Final
Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex
Lewis and Clark County, Montana



Prepared for:

Montana Department of Environmental Quality
Remediation Division

Montana Department of
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ACRONYMS AND ABBREVIATIONS

µg/cm^2	Microgram per square centimeter
µg/g	Micrograms per gram
µg/L	Micrograms per liter
µm	Micron
95UCL	95 percent upper confidence limit
ABA	Acid base accounting
AFDM	Ash free dry mass
AOC	Administrative Order of Consent
AP	Acidification potential
API	American Petroleum Institute
ARCO	Atlantic Richfield Company
As	Arsenic
ASARCO	American Smelting and Refining Company
ATSDR	Agency for Toxic Substances and Disease Registry
BAF	Bioaccumulation factor
BER	Board of Environmental Review
BERA	Baseline ecological risk assessment
bgs	Below ground surface
BLM	Bureau of Land Management
BTAG	Biological Technical Assistance Group
CCC	Continuous criteria concentration
CCME	Canadian Council of Ministers of the Environment
Cd	Cadmium
CEC	Cation exchange capacity
CECRA	Comprehensive Environmental Cleanup Responsibility Act
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CMC	Criteria maximum concentration
COPEC	Chemical of potential environmental concern
CSM	Conceptual site model
Cu	Copper
DEQ	Montana Department of Environmental Quality
DO	Dissolved oxygen
DOI	U.S. Department of the Interior
DQO	Data quality objective
DSL	Montana Department of State Lands

EC	Effects concentration
Eco-SSL	Ecological soil screening level
EE/CA	Engineering evaluation/cost analysis
EOT	Edge of tailings
EPA	U.S. Environmental Protection Agency
EPC	Exposure point concentration
EPT	Ephemeroptera, Plecoptera and Trichoptera
ERA	Ecological risk assessment
EU	Exposure unit
FCM	Food chain model
FWP	Montana Department of Fish, Wildlife, and Parks
FWS	U.S. Fish and Wildlife Service
g/m^2	Gram per cubic meter
HQ	Hazard quotient
IP	Implementation plan
kg	Kilogram
kg/day	Kilogram per day
kton	Kiloton
LC	Lethal concentration
MATC	Maximum acceptable toxicant concentration
MDHES	Montana Department of Health and Environmental Services
mg/kg	Milligrams per kilogram
mg/kg-day	Milligrams per kilogram per day
mg/L	Milligrams per liter
mg Pb/L	Milligrams lead per liter
mg Zn/kg	Milligrams zinc per kilogram
MMI	Multimetric index
Mn	Manganese
Navy	Department of the Navy
NNP	Net neutralization potential
NOAEL	No observed adverse effects level
NP	Neutralization potential
ORNL	Oak Ridge National Laboratory
OSWER	Office of Solid Waste and Emergency Response

ACRONYMS AND ABBREVIATIONS (Continued)

Pb	Lead
PEL	Probable effects level
PERG	Preliminary ecological remediation goal
PLP	Potentially liable person
ppb	Part per billion
ppm	Part per million
PSQG	Provincial Sediment Quality Guideline
RAIS	Risk Assessment Information System
RI/FS	Remedial investigation/feasibility study
SEL	Severe effects level
SLERA	Screening-level ecological risk assessment
SMDP	Scientific management decision point
SPLP	Synthetic precipitation leaching procedure
SRS	Site response section
SUF	Site use factor
TEL	Threshold effects level
TMDL	Total maximum daily load
TOC	Total organic carbon
TRV	Toxicity reference value
UBMC	Upper Blackfoot Mining Complex
USACE	U.S. Army Corps of Engineers
USFS	U.S. Forest Service
VCP	Voluntary cleanup plan
VCRA	Voluntary Cleanup and Redevelopment Act
XRF	X-ray fluorescence
Zn	Zinc

EXECUTIVE SUMMARY

This report presents the findings of the Baseline Ecological Risk Assessment (BERA) conducted at the Upper Blackfoot Mining Complex (UBMC) located in the headwaters of the Blackfoot River in Lewis and Clark County, Montana.

BACKGROUND

The UBMC is an approximately six-square-mile inactive mining district mined intermittently from 1889 to the 1950s; with exploration continuing through the 1970s. Tailings, waste rock dumps, and acid mine drainage from old adits have contaminated surface water, sediments, soils, and groundwater, and been taken up by plants and wildlife. The Mike Horse Mine is a major contributor to surface water contamination in the area; lesser contributors (or sources) include the Anaconda, Carbonate, Edith, Mary P., Consolation, Capitol, Number 3 Tunnel, and Paymaster Mines, and a surface impoundment on Beartrap Creek. In 1975, the impoundment failed during heavy rains and washed metal-laden tailings into the upper Blackfoot River.

Nearby national forest land is used by hunters and other recreationists, but the area is remote from large population centers. The town of Lincoln, Montana, is 15 miles west (downstream). One residence with a domestic well is located on Beartrap Creek above the impoundment. Three other residences are considered to occur within the study area downstream of the mining complex. The remedial investigation (RI) study area that includes these properties is located between the Upper Marsh and Highway 279. These three properties are either adjacent to the Blackfoot River or are bisected by the Blackfoot River.

ENVIRONMENTAL INVESTIGATIONS

The Montana Department of State Lands (DSL) completed an environmental assessment of the area in 1991. A 1991 state legislative action then transferred regulatory authority for the mining area from DSL to the Montana Department of Health and Environmental Services (MDHES) Comprehensive Environmental Cleanup and Responsibility Act (CECRA) program. MDHES became the Montana Department of Environmental Quality (DEQ) in 1995. Many other investigations have occurred since then (DEQ 2007a).

In 2008, DEQ completed a screening-level ecological risk assessment (SLERA) that identified aluminum, arsenic, cadmium, copper, iron, lead, manganese, mercury, and zinc as chemicals of potential ecological concern (COPEC). Additional field data were collected in 2008 and 2011 to address data gaps identified in the SLERA and to support the BERA. Data used in the BERA were collected during the RI in 2007 – 2008 and during an additional sampling event in fall 2011.

BERA OBJECTIVES AND SCOPE

The primary objective of the BERA is to evaluate site-specific risk to plants, invertebrates, fish, birds, and mammals to support risk management decisions and remedial actions at the UBMC.

Ecological risk was assessed at 13 separate exposure units (EU), identified by physical location, habitat type, and waste sources, as shown below:

- EU 1 – Upper Anaconda Mine Waste Removal Areas and Waste Piles
- EU 2 – Blackfoot River Dispersed Tailings Associated with Engineering Evaluation and Cost Analysis (EE/CA) Removal Action Area and Overbank Deposits
- EU 3 – Capital Mine Waste Area
- EU 4 – Carbonate Mine Waste Area
- EU 5 – Edith Mine Waste Areas
- EU 6 – Consolation Mine Waste Area
- EU 7 – Mary P. Mine Waste Pile
- EU 8 – Mike Horse Mine Waste Piles
- EU 9 – Paymaster Mine Waste Areas
- EU 10 – Number 3 Tunnel Waste Area
- EU 11 – Beartrap Creek Dispersed Tailings Deposits Associated with EE/CA Removal Action Area and Overbank Tailings Deposits and Flossie Louise Mine Waste Pile
- EU 12 – Upper Marsh
- EU 13 – Stream

BERA METHODOLOGY

The focus of the BERA is assessment of ecological endpoints most likely affected by metals at the UBMC. Fate and transport mechanisms, ecotoxicological properties, habitats, and receptors at the site all influenced the selection of the assessment endpoints. The survival, growth, and reproduction of the organisms described below are considered ecological values to be protected.

- **Maintenance of Healthy Plant Communities.** Plants provide structure and function to the terrestrial habitat. Plants form the basis of the food web for most consumers; adverse effects on the plant community could reduce the quantity and quality of food available to higher-trophic-level consumers. Plants are also essential to reducing soil erosion and maintaining good water quality in the streams.

- **Maintenance of Sufficient Rates of Survival, Growth, and Reproduction to Sustain Populations of Native Fish and Aquatic Invertebrates.** Fish and aquatic invertebrates play an important role in nutrient cycling and in food webs in the area. Adverse effects on invertebrates could reduce the quantity and quality of food available to higher-trophic-level consumers, including fish.

- **Maintenance of Sufficient Rates of Survival, Growth, and Reproduction to Sustain the Populations of Terrestrial Invertebrates.** Invertebrates play an important role in nutrient cycling and in food webs at the site. Adverse effects on invertebrates could reduce the quantity and quality of food available to higher-trophic-level consumers. Some aquatic invertebrates that are critical to the success of fish populations in the streams have terrestrial life stages.

- **Survival, Growth, and Reproduction of Herbivorous Birds and Mammals.** Herbivorous birds and mammals provide food for upper-trophic-level consumers. Adverse effects on these primary consumers could reduce the amount of food available to higher-trophic-level consumers. Some herbivorous animals, such as Canada goose, moose and elk, are directly important to humans.

- **Survival, Growth, and Reproduction of Omnivorous Birds and Mammals.** Omnivorous birds and mammals provide food for upper-trophic-level consumers. Adverse effects on these secondary consumers could reduce the amount of food available to higher-trophic-level consumers. Some omnivorous birds, such as waterfowl, and mammals, such as the grizzly bear, are highly valued and protected by humans.

- **Survival, Growth, and Reproduction of Insectivorous Birds and Mammals.** Insectivorous birds and mammals provide food for upper-trophic-level consumers, and play a role in maintaining ecosystem diversity. Adverse effects on these secondary consumers could reduce the amount of food available to higher-trophic-level consumers, and removing important controls of invertebrate populations.

- **Survival, Growth, and Reproduction of Carnivorous Birds and Mammals.** Carnivorous birds and mammals are important consumers at the site and play a role in structuring the community. Adverse effects on these top predators would be undesirable because the loss of top predators generally leads to disruption of lower trophic levels.

Measurement endpoints were selected to represent the species or communities present or potentially present at the UBMC that can be directly evaluated. A measurement endpoint is "a measurable ecological characteristic that is related to the valued characteristic chosen as the assessment endpoint and is a measure of biological effects (such as mortality, reproduction, or growth)" (EPA 1997). The following measurement endpoints were used in evaluating potential ecological effects on the assessment endpoints identified in this BERA:

- **For terrestrial plants, comparison of the concentrations of chemicals in soil with toxicity benchmarks for plants.** Chemical concentrations in soil were compared with Ecological Soil Screening Levels (Eco-SSL) (EPA 2008) or Oak Ridge National Laboratory (ORNL) benchmarks for plants (Efroymson and others 1997a; ORNL 2006).

- **For fish and aquatic invertebrates, comparison of the concentrations of chemicals in sediment with toxicity benchmarks for aquatic organisms.** Chemical concentrations in sediment were compared with Washington State sediment threshold effects levels (TEL), probable effects level (PEL) (Canadian Council of Ministers of the Environment [CCME] 2002), and severe effects levels (SEL) (Ontario Ministry of Environment 1993). The screening level benchmarks established by the EPA Region III Biological Technical Assistance Group (EPA 2006b) are similar to the PELs (see Table 2-22).

- **For terrestrial invertebrates, comparison of concentrations of chemicals in soil with toxicity benchmarks for invertebrates.** Chemical concentrations in soil were compared with Eco-SSLs (EPA 2008) or ORNL benchmarks for effects on soil and litter invertebrates (Efroymson and others 1997b; ORNL 2006).

- **For birds and mammals, reproductive or physiological effects were evaluated using toxicity reference values (TRV)** derived from the toxicological literature. Daily ingested doses were estimated based on chemical concentrations at the site and information on natural history for avian and mammalian receptors.

Twelve vertebrate receptors were selected as representative of the taxonomic groups and feeding guilds expected to occur in the EUs. Representative receptors were based on species known to occur in Lewis and Clark County and recommendations of local wildlife and fisheries experts from Montana Department of Fish, Wildlife, and Parks. The following table lists the vertebrate receptors evaluated in the BERA for each EU.

Representative Receptor	Applicable Habitat	Exposure Units	Feeding Guild
American Dipper (*Cinclus mexicanus*)	Stream	13	Insectivore
Great Blue Heron (*Ardea herodias*)	Stream, Marsh	12, 13	Carnivore
Mourning Dove (*Zenaida macrocura*)	Terrestrial, Marsh	1-12	Herbivore
Red-Tailed Hawk (*Buteo jamaicensis*)	Terrestrial, Marsh	1-12	Carnivore
American Kestrel (*Falco sparverius*)	Terrestrial, Marsh	1-12	Insectivore
Meadow Vole (*Microtus pennsylvanicus*)	Terrestrial, Marsh	1-12	Herbivore

Representative Receptor	Applicable Habitat	Exposure Units	Feeding Guild
White-Tailed Deer (*Odocoileus virginianus*)	Terrestrial, Marsh	1-12	Herbivore
Red Fox (*Vulpus vulpus*)	Terrestrial, Marsh	1-12	Carnivore
Masked Shrew (*Sorex cinereus*)	Terrestrial, Marsh	1-12	Insectivore
Canada Goose (*Branta canadensis*)	Marsh	12	Herbivore
Mallard (*Anas platyrhynchos*)	Marsh	12	Omnivore
Muskrat (*Ondatra zibethicus*)	Marsh	12	Herbivore
Mink (*Mustela vison*)	Marsh	12	Carnivore

SUMMARY OF RISK DRIVERS

The following table provides an overview of the number of risk drivers in each EU for the representative assessment endpoints evaluated in the BERA. The number of COPECs (risk drivers) ranges from zero to six (arsenic, cadmium, copper, lead, manganese, and zinc). Aluminum was evaluated based on pH and not on a risk-based screening value, so it is not included in the risk driver index. However, aluminum is retained as a COPEC in all EUs, and is considered to add to the total risk at any location where the pH is less than 5.5 (EPA 2003b), which represents about one-half of the sample locations.

At least one metal poses risk to one or more receptor groups in every EU. Although no statistical analysis of the distribution of risk is possible at this scale, EUs can be ranked according to the total number of risk drivers to receptors overall. A risk driver is defined as a metal for which the HQ is greater than 1.0 for a given receptor group. In the table below, risk drivers have been summed across all receptor groups in an EU; the total was then divided by the number of receptor groups evaluated in that EU. The resulting risk index provides a comparative measure of the overall risk posed by each EU.

- Of the terrestrial sites, EU 2 poses the greatest risk to receptors overall (37 risk drivers for 9 receptor groups, for a risk index of 4.11).
- Although relatively few receptor groups were evaluated in EU 13 (stream), the proportion that were at risk was high (21 risk drivers for 4 receptors, or a risk index of 5.25). Risk from COPECs at EU 12 (Upper, Lower, and Middle Marshes) was intermediate, with 45 risk drivers dispersed across 15 receptors, for a risk index of 3.0.

Ecological Receptor	Number of COPECs in Each EU												
	EU 1	**EU 2**	**EU 3**	**EU 4**	**EU 5**	**EU 6**	**EU 7**	**EU 8**	**EU 9**	**EU 10**	**EU 11**	**EU 12**	**EU 13**
Plants	5	6	5	5	5	5	5	5	3	5	6	6	--
Terrestrial invertebrates	5	5	5	4	4	5	5	5	2	5	5	5	--
Aquatic invertebrates	--	--	--	--	--	--	--	--	--	--	--	6	6
Fish	--	--	--	--	--	--	--	--	--	--	--	--	6
Mourning dove (herbivore)	1	5	0	0	0	0	0	0	0	0	1	2	--
Red-tailed hawk (carnivore)	1	2	0	0	0	0	0	0	0	0	1	0	--
American kestrel (insectivore)	2	6	0	0	0	0	0	1	0	0	4	6	--
Meadow vole (herbivore)	5	6	4	3	2	3	3	5	1	2	5	3	--
White-tailed deer (herbivore)	0	1	0	0	0	0	0	0	0	0	1	0	--
Red fox (carnivore)	0	0	0	0	2	0	0	0	0	0	0	0	--
Masked shrew (insectivore)	6	6	6	6	6	6	6	6	3	6	6	6	--
Canada goose (herbivore)	--	--	--	--	--	--	--	--	--	--	--	0	--
Great blue heron (carnivore)	--	--	--	--	--	--	--	--	--	--	--	3	3
Mallard (omnivore)	--	--	--	--	--	--	--	--	--	--	--	3	--
Muskrat (herbivore)	--	--	--	--	--	--	--	--	--	--	--	3	--
Mink (carnivore)	--	--	--	--	--	--	--	--	--	--	--	2	--
American dipper (insectivore)	--	--	--	--	--	--	--	--	--	--	--	--	6
TOTAL COPECs / Receptor Groups	25/9	37/9	20/9	18/9	19/9	19/9	19/9	22/9	9/9	18/9	29/9	45/15	21/4
Risk Driver Index	2.78	4.11	2.22	2.00	2.11	2.11	2.11	2.44	1.00	2.00	3.22	3.00	5.25

Notes: Aluminum was identified as a COPEC for at least one receptor in all EUs.

-- Not a representative receptor in that EU.

COPEC Chemical of potential environmental concern

UNCERTAINTY ANALYSIS

Ecological risk assessments are based on estimates and assumptions of how plants and animals interact with the physical and chemical realities at a site. Rarely are the assumptions met, and even more rarely are the risk estimates accurate to the degree that the risk assessor would like (Chapman and others 2003). Limitations of budget, schedule, logistics, and knowledge confound the true resolution of site-related risk. Generally, safety factors, or conservative assumptions, are incorporated into the risk assessment when the directional effect of uncertainty is not known so that the bias is toward greater rather than lesser protectiveness of ecological receptors. Even when the directional effect can be anticipated with some confidence, however, the magnitude of the uncertainty is often unknown. Thus, uncertainty is an essential component of a risk assessment, without which no conclusions can be drawn.

PRELIMINARY ECOLOGICAL REMEDIATION GOALS (PERG)

Risk-based ecological goals for EUs 1 through 13 were calculated for all birds and mammals evaluated in the BERA, using methods consistent with EPA guidance (EPA 1997). The comparison of PERGs identified the masked shrew as the most sensitive receptor to all COPECs in all EUs. The shrew is especially sensitive to contaminants in soil because it has a small home range and lives in intimate contact with the soil. It forages in the soil on invertebrates, especially earthworms. Consequently, the shrew is exposed to contaminants directly in the soil as well as indirectly in its prey.

BERA CONCLUSIONS

The BERA evaluated risk posed by aluminum, arsenic, cadmium, copper, iron, lead, manganese, mercury, and zinc to a variety of ecological receptors at the UBMC.

- No receptors were shown to be at risk from exposure to iron or mercury at the site.
- Aluminum poses a risk to all receptors wherever pH is less than 5.5, which represents about one-half of the sample locations.
- Given the assumptions of the BERA regarding exposure and effects, six metals (arsenic, cadmium, copper, lead, manganese, and zinc), in addition to aluminum, pose unacceptable risk to plants, invertebrates, birds, and small mammals at EUs 1 though 12, and to invertebrates, fish, and birds in EU 13, as summarized below.

Another way to summarize risk is to consider the magnitude of risk experienced by each receptor group. In the table below, risk drivers have been summed across all EUs for each receptor group; the total was then divided by the number of terrestrial EUs (11). The resulting terrestrial risk index provides a comparative measure of the overall risk experienced in the terrestrial EUs by each receptor.

If all terrestrial EUs are treated as a single habitat unit, and indexed with the marsh and stream, an overall risk index can be calculated for each receptor group. The sum of the terrestrial, marsh, and stream risk drivers was divided by the number of habitat units in which the receptor occurs to determine the overall risk driver index. For example, the mourning dove occurs in both terrestrial and marsh habitats, so the terrestrial risk index was averaged with the marsh risk index to determine the overall risk index, as shown in the table below.

Ecological Receptor	Number of Risk Drivers in all Terrestrial EUs	Terrestrial Risk Index	Number of Risk Drivers in EU 12	Number of Risk Drivers in EU 13	Overall Risk Index
Aquatic invertebrates	--	--	6	6	6.00
Fish	--	--	--	6	6.00
American dipper	--	--	--	6	6.00
Masked shrew	63	5.73	6	--	5.86
Plants	55	5.00	6	--	5.50
Terrestrial invertebrates	50	4.55	5	--	4.77
American kestrel	13	1.18	6	--	3.59
Meadow vole	39	3.55	3	--	3.27
Great blue heron	--	--	3	3	3.00
Mallard	--	--	3	--	3.00
Muskrat	--	--	3	--	3.00
Mink	--	--	2	--	2.00
Mourning dove	7	0.64	2	--	1.32
Red-tailed hawk	4	0.36	0	--	0.18
White-tailed deer	2	0.18	0	--	0.09
Red fox	2	0.18	0	--	0.09
Canada goose	--	--	0	--	0.00

- Aluminum poses risk to ecological receptors at all EUs wherever pH is less than 5.5 (EPA 2003b). The risk is not specific to any given receptor, and so aluminum is not included in the risk index.
- Based on the overall risk index, the greatest risk is to the aquatic receptors (invertebrates, fish, and American dipper). The fish and the dipper are exposed only to the stream habitat, where all six metals (plus aluminum) pose a risk.
- All six metals (plus aluminum) pose a risk to the masked shrew in all EUs except EU 9, resulting in the highest terrestrial risk driver index (5.73).
- Benthic invertebrates are at risk from all six metals (plus aluminum) in both marsh and stream habitats.
- At the other extreme of risk, no risk at all to the Canada goose was indicated.

- The red fox, white-tailed deer, and red-tailed hawk are exposed only minimally to risk.
- Other receptors are expected to experience intermediate levels of risk.

The risk estimates presented in the BERA are based on the assumption that representative receptors actually occur at the sites and eat the foods that were used to estimate daily doses. However, many of the soil samples were collected in places where the physical condition of the habitat is so poor as to preclude any substantial use by wildlife. For example, small mammals and birds are not likely to spend much time in the bare or sparsely vegetated tailings piles. Actual risk is likely lower than what the BERA predicts because the habitat cannot support a healthy community. Because risk only occurs when the receptor co-occurs with the chemical, much of the risk discussed in the BERA is hypothetical.

In addition to the chemical contamination that may have eliminated some species and disrupted the food web, physical degradation of habitat prevents true exposure from occurring in many areas. Given this scenario, actual impacts to wildlife species may be greater than or less than those predicted based on chemical risk alone.

1.0 INTRODUCTION

The Upper Blackfoot Mining Complex (UBMC) (also known as the Heddleston district) is an inactive mining district located 15 miles east of Lincoln, Lewis and Clark County, Montana, in the headwaters of the Blackfoot River (Figure 1-1). This approximately six square mile site was mined intermittently from 1889 to the 1950s and includes a mixture of National Forest and private lands. Tailings, waste rock dumps, and acid mine drainage from old adits have contaminated surface water, sediments, soils and groundwater. The main workings in the district are the Mike Horse Mine, which is a major contributor to surface water contamination; the Anaconda, Carbonate, Edith, Mary P, Consolation, Capitol, Number 3 Tunnel, and Paymaster Mines; and a surface impoundment on Beartrap Creek (Figure 1-2). In 1975, the impoundment failed during a heavy rain-on-snow event and washed metal-laden tailings down the drainage into the upper Blackfoot River.

Nearby national forest land is used by hunters and other recreationists, but the area is remote from large population centers. One residence with a domestic well is located on Beartrap Creek above the impoundment. Three other residences are considered to occur within the study area downstream of the mining complex. The remedial investigation (RI) study area that includes these properties is located between the Upper Marsh and Highway 279. These three properties are either adjacent to the Blackfoot River or are bisected by the Blackfoot River.

In 2008, the Montana Department of Environmental Quality (DEQ) completed a screening-level ecological risk assessment (SLERA) based on data collected during the remedial investigation (RI) in fall 2007 that identified aluminum, arsenic, cadmium, copper, iron, lead, manganese, mercury, and zinc as chemicals of potential ecological concern (COPEC) (Tetra Tech 2013). Additional field data were collected during spring and summer 2008 to address data gaps identified in the SLERA, and to support the baseline ecological risk assessment (BERA). The primary objective of the BERA is to evaluate site-specific risk to plants, invertebrates, fish, birds, and mammals to support risk management decisions and remedial actions at the UBMC.

1.1 REGULATORY HISTORY

The DEQ, formerly the Montana Department of Health and Environmental Services (MDHES), Site Response Section (SRS) is the lead agency for the UBMC site and has ranked it as a high priority Comprehensive Environmental Cleanup and Responsibility Act (CECRA) facility. A brief summary of the regulatory history of this site is presented below.

An August 1991 CERCLA preliminary assessment by MDHES summarized available information about the facility history and contamination.

In June 1991, ASARCO and ARCO were identified by DEQ as potentially liable persons (PLP) for hazardous or deleterious substance contamination at the UBMC, under CECRA. Required actions identified included development of a Remedial Investigation and Feasibility Study (RI/FS), and implementation of a remedy to be determined by DEQ.

Between February 1992 and May 1993, ASARCO and ARCO met with DEQ regarding implementation of a reclamation program at the UBMC in lieu of the RI/FS. Terms and conditions of that reclamation program are outlined in a May 26, 1993 letter from DEQ, including preparation and submittal of annual work plans and other documents. DEQ reviewed plans and work, but did not officially or unofficially approve any of the work. Site reclamation activities proceeded under this agreement until 1998.

In 1996 and 1997, work was also conducted under the newly established Voluntary Cleanup and Redevelopment Act (VCRA) program. Under a DEQ-approved voluntary cleanup plan (VCP), mine waste was removed from several areas in and near Paymaster Creek and taken to the Paymaster repository.

In 1999, ASARCO petitioned the Montana Board of Environmental Review (BER) for adoption of temporary water quality standards in portions of three streams at the UBMC (Hydrometrics 1999). Temporary standards were requested in portions of Mike Horse Creek, Beartrap Creek, and the upper Blackfoot River. The temporary standards were approved by the BER in June 2000. The temporary standards modified the surface water quality standards for a number of metals, including cadmium, copper, iron, lead, manganese and zinc, as well as pH, until 2008. As part of the temporary standards, ASARCO was required to develop a conceptual plan for mitigation of all "water quality limiting factors" identified in the temporary standards support document, referred to as the Temporary Standards Implementation Plan (Hydrometrics 2000).

In November 2002, ASARCO entered into an Administrative Order of Consent (AOC) with the USFS for performance of an EE/CA for certain public lands within the UBMC. The AOC covers National Forest System lands along portions of Mike Horse Creek, Beartrap Creek (including the Mike Horse tailings impoundment), and the Blackfoot River upstream of the confluence with Pass Creek that may have been affected by operation of the Mike Horse Mine and tailings impoundment. The objective of the AOC was for ASARCO to develop removal action alternatives for evaluation through preparation of an EE/CA.

In 2003, DEQ brought legal action in State District Court against ASARCO and ARCO for recovery of DEQ's past and future remedial action costs associated with contamination and threats of contamination at the UBMC, and to require the companies to implement required remedial actions. As part of this action, DEQ also sought a declaratory judgment to establish liability for all future remedial action costs, including clean-up, which DEQ would incur in connection with the UBMC.

In June 2003, DEQ also finalized the Water Quality Restoration Plan for Metals in the Blackfoot Headwaters TMDL (Total Maximum Daily Load) Planning Area. The restoration plan identified the UBMC as the primary source of metals contamination in the Blackfoot headwaters area.

In August 2005, ASARCO filed for Chapter 11 bankruptcy. DEQ and the Montana Department of Justice filed claims in the bankruptcy that have since been settled. As part of the settlement, DEQ dismissed the state court action. ASARCO also settled with ARCO and the USFS.

In December 2006, the BER revoked the temporary water quality standards due to failures and delays on the part of ASARCO in implementing the Temporary Water Quality Standards Implementation Plan. As part of the settlement of the bankruptcy action, ASARCO was responsible for constructing a water treatment plant. The plant, completed in January 2009, was designed to treat more than one-half million gallons of contaminated mine adit water per week. Long-term operation and maintenance (O&M) of the plant is funded by a separate settlement agreement. As part of that agreement, ASARCO transferred its ownership at the UBMC to the Montana Environmental Custodial Trust, who is responsible for operating the plant to treat water from the Mike Horse and Anaconda mine adit discharges. These discharges were regulated under a MPDES permit and are now overseen by DEQ's SRS.

In July 2007, the USFS - Region 1 and ASARCO released an EE/CA concerning cleanup of contaminants on USFS land at the UBMC titled *Engineering Evaluation Cost Analysis for the Mike Horse Dam and Impounded Tailings, Lower Mike Horse Creek, Beartrap Creek and the Upper Blackfoot River Floodplain Removal Areas Upper Blackfoot Mining Complex, Lewis and Clark County, MT* (Hydrometrics 2007). Also during July 2007, the Helena National Forest, Lincoln Ranger District, released an action memorandum based on the EE/CA (Helena National Forest 2007) selecting a preferred alternative for cleanup of the designated sub-areas. In brief, the action memorandum proposes:

(1) Total removal of the Mike Horse Dam and impounded tailings to an engineered repository (Paymaster Repository);

(2) Complete removal of mine waste from Lower Mike Horse Creek and placing the waste into the Paymaster Repository;

(3) Removal of all concentrated and intermixed tailings from the active floodplain of Beartrap Creek and placing the waste into the Paymaster Repository; and

(4) Complete mine waste removal (estimated at 45,000 cubic yards) from the Upper Blackfoot River Sub-area and placement of the waste into the Paymaster Repository.

In August 2007, DEQ initiated an RI for all areas at the UBMC that were not covered in the EE/CA. The RI was funded by $2 million from the Montana Legislature and is scheduled to be completed in the summer of 2013. The RI includes this BERA, as well as a human health risk assessment for the UBMC.

1.2 OVERVIEW OF THE ECOLOGICAL RISK ASSESSMENT PROCESS

The primary objective of the BERA is to evaluate site-specific risk to plants, invertebrates, fish, birds, and mammals to support the RI of the UBMC. The BERA includes data collected at the UBMC in 2007, 2008, and 2011. The results of this BERA will inform decisions on risk management and remedial action at the UBMC.

The National Oil and Hazardous Substances Pollution Contingency Plan (NCP) [Title 40 Code of Federal Regulations Section 300.430(d)(4)] requires an evaluation of ecological risk at known or suspected contaminated sites. Pursuant to these requirements, site-specific risk assessments must be conducted to characterize existing and potential threats to the environment that could be posed by chemicals of concern migrating to groundwater or surface water, being released to air, leaching through soil or sediment, remaining in soil or sediment, or bioaccumulating through the food chain. While DEQ is not required to comply with the NCP, this BERA generally follows the U.S. Environmental Protection Agency's (EPA) eight-step process and related guidance for conducting ecological risk assessments (ERA) (EPA 1992a, 1997, 1999a, 1999b). The eight steps of the ERA process are:

- Step 1: SLERA problem formulation and evaluation of ecological effects
- Step 2: SLERA exposure estimate and risk calculation
- Step 3: BERA problem formulation
- Step 4: Study design and data quality objectives (DQO)
- Step 5: Field verification of sampling design
- Step 6: Site investigation and analysis of exposure and effects
- Step 7: Risk characterization
- Step 8: Conclusions and risk management

A SLERA was conducted in 2008 to evaluate the potential risk posed to wildlife by chemicals in soil, sediment, surface water, and organisms in the UBMC (Tetra Tech 2007, 2008b). The SLERA used site data and conservative assumptions to provide a scientific basis for deciding whether the site should be eliminated from concern, to identify risks that might require immediate attention, and to decide whether an additional assessment, in the form of a BERA, was warranted.

The SLERA consisted of two steps: Step 1, screening-level problem formulation and evaluation of ecological effects; and Step 2, screening-level preliminary exposure estimate and risk calculation. Step 1 evaluated whether significant habitat and wildlife are present and whether actual or potentially complete exposure pathways existed. Step 2 included an exposure assessment and calculation of risk based on comparison of site-specific chemical concentrations in soil, sediment, and surface water with established ecological toxicity-based screening criteria. If a site passes the SLERA, it is considered to pose acceptable ecological risk, and no further work is required.

A scientific management decision point (SMDP) followed Step 2; SMDPs are significant communication points that require meetings among the risk manager, risk assessment team, and other involved parties to evaluate and approve or redirect work.

The decision criteria for the SLERA were as follows:

1. If no complete pathways were identified, then no further action would be recommended to assess ecological risk.
2. If a complete pathway and acceptable risk were identified, then no further action would be recommended to reduce ecological risk.
3. If a complete pathway and unacceptable risk were identified, then a BERA would be recommended.
4. If a complete pathway and uncertain risk or data gaps were identified, then a BERA would be recommended to further refine ecological risk to support a decision whether further action is required.

The SMDP resulted in a recommendation that additional data be collected and a BERA be conducted.

Problem formulation for the BERA, study design and data quality objectives, and field sampling (Steps 3 to 5) were completed as part of the RI (Tetra Tech 2013) and are summarized in this report. The sampling and analysis plan described sampling procedures and DQOs for additional field investigations conducted in 2008 to support the BERA (Steps 6 and 7) (Tetra Tech 2008a). Results from the 2008 field investigation were combined with data from the 2007 investigation to support this BERA. The BERA estimates and characterizes risk to major ecological receptors (plants, invertebrates, fish, birds, and mammals) (Step 7), and makes conclusions regarding ecological risk (Step 8).

A BERA is meant to be more site-specific and less conservative than a SLERA (EPA 1998). This BERA characterizes ecological risks posed to plants, invertebrates, fish, birds, and mammals within the UBMC. Comparisons of soil, sediment, and surface water concentrations with screening criteria are supplemented by additional lines of evidence in the BERA. Because ecological receptors are not exposed to groundwater until it is discharged to surface water or sediment, groundwater is not evaluated in the BERA. Risk estimates are based on food chain models, toxicity information in the literature, benthic community assessment data, and consideration of the frequency and magnitude of chemical detections at the UBMC. The information provided in this BERA supports one of two possible risk management decisions:

A. The site does not pose an unacceptable ecological risk. No further ecological evaluation or remediation is warranted.
B. The site poses an unacceptable ecological risk. Additional risk refinement may be warranted. Risk management and remedial action decisions must be made.

Risk management decisions also may be based on risks to human health, which will be presented separately from this BERA in summer 2013.

1.3 REPORT ORGANIZATION

This BERA is organized as follows:

- **Section 1.0, Introduction**. This section provides an overview of the ecological risk assessment process, information about previous risk assessment work, and an organizational overview of the report.
- **Section 2.0, Problem Formulation for the BERA**. This section describes the exposure units (EU), ecological characteristics and receptors at UBMC, the physical setting, data used in the BERA, and the conceptual site model (CSM) for UBMC.
- **Section 3.0, Analysis of Exposure and Effects.** This section describes the process for evaluating ecological receptors at UBMC and the screening criteria used in the BERA.
- **Section 4.0, Risk Characterization.** This section summarizes the potential risks posed to each ecological receptor by COPECs at UBMC.
- **Section 5.0, Uncertainty Analysis.** This section addresses uncertainties in the BERA.
- **Section 6.0, Preliminary Ecological Remedial Goals (PERG).** This section describes the process for developing the PERGs and identifies areas at each EU where PERGs are exceeded.
- **Section 7.0**, **BERA Conclusions**. This section summarizes the conclusions.
- **Section 8.0, References.** This section lists the documents used to prepare this BERA.

Figures and tables follow the main text. In addition, the following appendices are included:

- **Appendix A,** Photograph Log
- **Appendix B,** Toxicological Profiles
- **Appendix C,** Dose Calculations for Birds and Mammals
- **Appendix D,** Hazard Quotient Calculations for Plants, Invertebrates, and Surface Water
- **Appendix E,** Preliminary Ecological Remedial Goals Calculations
- **Appendix F,** Representative Species Profiles

2.0 PROBLEM FORMULATION FOR THE BERA

The UBMC and the Heddleston District contain both federally owned lands (U.S. National Forest) and private lands (ASARCO patented mining claims, ASARCO fee lands, and other private property) located within the boundaries of the Lewis and Clark National Forest and within Lewis and Clark County, Montana (Figure 1-1). The UBMC lies predominantly south of U.S. Highway 200, about 15 miles east of the community of Lincoln, Montana (population 1,100) and about 5 miles northeast of Highway 279 (Flesher Pass Road).

The UBMC covers an area of about 6 square miles and is characterized by heavily forested, steep mountainous terrain, with elevations ranging from 5,200 feet at the confluence of Pass Creek and the Blackfoot River (near the head of a major marsh system, Figure 1-1), to as much as 7,200 feet on the ridge that makes up Anaconda Hill along the northeastern edge of the UBMC study area.

The UBMC is situated at the headwaters of the Blackfoot River. Major tributary streams within the UBMC include Mike Horse Creek, Beartrap Creek, Anaconda Creek, Stevens Gulch, Shave Creek, Paymaster Creek, Pass Creek, Swamp Gulch, and Meadow Creek (Figure 1-1). The Blackfoot River proper is formed at the confluence of Beartrap and Anaconda Creeks.

Section 1.0 of the Final RI discusses historical mining operations within the UBMC boundary (Tetra Tech 2013), as well as previous studies and waste removal efforts. Metals released as a result of historical mining have contaminated soils, surface water, groundwater, and sediments at UBMC. Metals have been transported within and off site by soil erosion, groundwater – surface water interaction, leaching to groundwater, and a 1975 breach of a tailings impoundment. This BERA assesses the risk to ecological receptors based on site conditions in 2007 and 2008, when the RI data were collected.

2.1 EXPOSURE UNIT DESCRIPTIONS

Ecological risk was assessed at 13 separate EUs, identified by physical location, habitat type, and waste sources:

- EU 1 – Upper Anaconda Mine Waste Removal Areas and Waste Piles
- EU 2 – Blackfoot River Dispersed Tailings Associated with EE/CA Removal Action Area and Overbank Deposits
- EU 3 – Capital Mine Waste Area
- EU 4 – Carbonate Mine Waste Area
- EU 5 – Edith Mine Waste Areas
- EU 6 – Consolation Mine Waste Area
- EU 7 – Mary P. Mine Waste Pile

- EU 8 – Mike Horse Mine Waste Piles
- EU 9 – Paymaster Mine Waste Areas
- EU 10 – Number 3 Tunnel Waste Area
- EU 11 – Beartrap Creek Dispersed Tailings Deposits Associated with EE/CA Removal Action Area and Overbank Tailings Deposits and Flossie Louise Mine Waste Pile
- EU 12 – Upper Marsh
- EU 13 – Stream (Blackfoot River and Upper Tributaries)

The remainder of this section describes EUs 1 through 13, based on information provided in the Final RI (Tetra Tech 2013).

2.1.1 EU 1 – Upper Anaconda Mine Waste Removal Areas and Waste Piles

The Anaconda Mine was discovered and developed during the early 1900s. The mine is located at the headwaters of the Blackfoot River, adjacent to the confluence of Anaconda and Beartrap Creeks. The Upper Anaconda Mine Waste Removal Areas and Waste Piles are located on the south-facing hillside overlooking the former Anaconda constructed wetlands and the current location of the water treatment plant. There are two reclaimed waste pile areas (UAW2 and UAW5) and three un-reclaimed mine waste piles (UAW1, UAW3, and UAW4) within EU 1. Sampling locations are depicted in Figure 2-1.

The larger of the two reclaimed areas (UAW2) is located on the hillside overlooking the former Anaconda constructed wetland Cell 4. Another reclaimed area (UAW5) is located adjacent to an existing drainage.

The waste piles UAW2 and UAW5 were reclaimed in place by ASARCO in 1996. The larger of the two piles was removed and disposed in the Mike Horse Repository and the remainder from that pile and the second pile were reclaimed in place by grading to match the surrounding contours (Hydrometrics 1996b). They were reclaimed in place (primarily) because of their distance from any surface water drainage. Reclamation of the waste piles included amendment with cement kiln dust, regrading, covering with growth medium, and applying a seed and mulch mixture (Hydrometrics 1996b).

In 1995 and 1996, a passive wetlands-based water treatment system was built at the former location of the Anaconda mine waste adjacent to the confluence of Anaconda Creek and Blackfoot River. A portal-plug with piping and controls was installed in the Anaconda adit, with the water discharge directed to the water treatment system (Hydrometrics 1996b, 1997a). This system was replaced in 2009 by a new microfiltration water treatment plant. The new plant's location is where the old system's Cell 6 was once located. The new system integrated the old system's Cell 4 and Cell 5 to serve as emergency retention basins for the new plant (CDM 2008).

In the summer of 2008, vegetated cover for the two reclaimed areas was 57 percent and was dominated by sheep fescue (*Festuca ovina*) and chickpea milkvetch (*Astragalus cicer)*. Other species present included western wheatgrass *(Agropyron smithii*), penstemon (*Penstemon procerus*), tiny trumpet (*Collomia linearis*), and timothy (*Phleum pretense*). The areas were surrounded by mature lodgepole pines (*Pinus contorta)*, with a portion of the reclaimed area supporting regenerated lodgepole pine. Spotted knapweed (*Centaurea stoebe)* and cheatgrass (*Bromus tectorum*) were observed in the reclaimed area. Many of the trees in the area are affected by insect pests. The lodgepole pine in the area suffers from pine bark beetle infestation, while the fir and spruce in the area are stressed by the bud worm.

The three unreclaimed waste piles (UAW1, UAW3, and UAW4) are located northeast and upslope of the two larger reclaimed areas. A former adit located near UAW1 appears to have collapsed, and areas that may have been exploration pits are adjacent to UAW3 and UAW4. Mine waste in the three waste piles is primarily tan to yellow, shows signs of staining or oxidation, and smells of sulfur. Very little to no vegetation grows on the waste piles.

Based on results from the 2007 and 2008 investigations, the estimated area of affected soil associated with the two reclaimed waste areas and three unreclaimed waste piles of EU 1 is 7.3 acres (Figure 2-1).

2.1.2 EU 2 – Blackfoot River Dispersed Tailings Associated with EE/CA Removal Action Area and Dispersed Tailings and Overbank Deposits

The Mike Horse Tailings Impoundment was constructed on the Beartrap Creek drainage in 1941 for disposal of tailings from the Mike Horse Mine floatation mill. Before 1941, jig tailings were likely deposited directly on the ground and discharged to Mike Horse Creek. Surface water flow and subsequent precipitation and high flow events likely mobilized the tailings to the lower portion of Beartrap Creek and the upper Blackfoot River. In June 1975, heavy precipitation, along with blockage of a surface water diversion ditch by mudslide debris, caused a breach of the Mike Horse tailings impoundment. As a result, tailings were washed downstream and persist along Beartrap Creek and the upper Blackfoot River floodplains. Tailings continue to be transported along the floodplain during heavy rains and high flow events. Physical evidence of floodplain deposition and features indicative of former channels indicate the stream channel has moved over the years.

Results of the 2007 and 2008 investigations indicate the overbank deposits and dispersed tailings extend over the entire floodplain of the Blackfoot River. They reach from the toe of the eastern hillside to the toe of the western hillside (Figure 2-2), extending approximately 550 feet in the widest portion of the river. Approximately 45.5 acres have been affected. Migration of the tailings is visually evident as far downstream as the edge of the Upper Marsh (EU 12). The lateral extent of impacts also appears to widen as the floodplain widens toward the southeast side of the Upper Marsh area.

Tailings within the floodplain include dispersed tailings and overbank deposits left during high flow events. Dispersed tailings consist of areas of concentrated tailings deposited within the floodplain; they include areas of concentrated tailings such as the Shave Creek Tailings and

depositional bars where tailings are intermixed with coarser-grained sand and gravel sediments. Overbank deposits are primarily fine-grained tailings and tailings mixed with soil; they are generally tan to orange-brown as a result of iron oxide staining. Tailings also extend out of Stevens Gulch to the Blackfoot River floodplain. Figure 2-2 shows the location and approximate size of each of the dispersed tailings features. Vegetation on overbank and dispersed tailings deposits is either absent or sparse and total rock cover is high (Western Technology 1993). Dominant species include redtop (*Agrostis gigantean*), Idaho fescue (*Festuca idahoensis*), smooth brome (*Bromus inermis Leyss*), and seedlings of lodgepole pine (Western Technology 1993)

EU 2 was divided into three sub-areas, based on where soil samples were collected as described in Section 3.7 of the RI (Tetra Tech 2013): (1) within the tailings-contaminated floodplain area (that is, between the river and the outer edge of the tailings); (2) at the edge of tailings; and (3) outside the tailings-contaminated area.

2.1.3 EU 3 – Capital Mine Waste Area

The relatively small Capital Mine is located in upper Stevens Gulch on patented mining claims that were reclaimed by ASARCO in 1997 (Hydrometrics 1998). Previous historical investigations (DEQ 2007a) indicated that two discrete waste removal areas are immediately adjacent to the Capital Mine. During reclamation at Capital Mine, 725 cubic yards of mine waste was removed from the Stevens Gulch drainage bottom and placed in the Paymaster Repository. The Capital Mine adit was sealed with grout to eliminate seasonal discharge of water. The excavation area was amended with cement kiln dust, then regraded and re-vegetated. Approximately 2,000 feet of the Stevens Creek channel, which flows through the removal area, were reconstructed.

During the 2007 and 2008 investigations, the two mine waste removal areas were combined into one sampling area (designated as CMWA). The extent of contaminated soil is approximately 0.32 acre (Figure 2-3).

Vegetation covered about 45 percent of the Capital Mine waste area during the 2008 investigation. Arrowleaf ragwort (*Senecio triangularis*) and sheep fescue were the dominant, but not only, plant species in the area. The adjacent area was surrounded by a lodgepole pine forest. Approximately 40 percent of the non-vegetated area was litter; bare ground covered about 20 percent and rock about 6 percent. No signs of erosion were noted, nor were weedy species encountered. Field personnel did not collect soil reclamation samples because vegetation matched the reference site and was diverse.

2.1.4 EU 4 – Carbonate Mine Waste Area

The claims on the Carbonate Mine property were staked in 1889 and the mine was developed in the early 1900s. Various mining companies operated the mine, until ASARCO acquired it in 1981. The property consists of four patented claims with one adit. A mill associated with the mine processed ore for gold, silver, copper, and lead. Reclamation at the Carbonate Mine began in the summer of 1993 and was completed in 1994. Cleanup work included pouring concrete into

and onto an open mine shaft, diverting a surface water ditch, and removing waste rock and tailings from Swamp Gulch. Quicklime was added to mine waste deposited at the upper Carbonate repository, and then the mine waste was covered with a 6-inch layer of drainage gravel and 12 to 18 inches of cover soil. The level portion of the repository was covered with gravel, a geosynthetic clay liner, and clean soil. The remediation also included pumping contaminated water from the repository. Fill material was placed in the excavated hole, and the former tailings impoundment area was backfilled with borrow gravel and cover soil. The area was then graded to establish a wetland and meadow within Swamp Gulch. The repository, wetland, and other disturbed areas were revegetated. Groundwater monitoring wells were installed, final grading was completed, and storm water control ditches and structures were built. In 1995, the Carbonate Mine repository cap was compromised by erosion and the soil was subsequently replaced and an erosion mat placed over the eroded surface; the area was then re-seeded and mulched (Hydrometrics 1996b). After the removal and reclamation effort, surface water quality in Swamp Gulch improved significantly (Hydrometrics 1995a, 1996a, 1997b, 1998a).

The Carbonate Mine reclamation area is about 2.7 acres (Figure 2-4). Soil from beneath the cover soil at the Carbonate Mine waste area (designated CARM) was sampled during the 2007 and 2008 RI (Figure 2-4). No soil samples were collected from the 1.9-acre Carbonate Mine Repository; however, groundwater wells were sampled to monitor water quality in this area. Groundwater is discussed in the human health risk assessment only.

Results from the 2008 investigation indicated the Carbonate Mine waste removal area had 79 percent vegetative cover, with Baltic rush (*Juncus balticus)* and reed canary grass (*Phalaris arundinacea*) as the dominant species. Other plant species at the site included Kentucky bluegrass (*Poa pratensis*) and water sedge (*Carex aquatilis*). Litter covered about 21 percent of the area, and only 1 percent was bare ground. Rock areas were not measured. Weedy species in this area included yellow sweetclover *(Melilotus officinalis*), reed canary grass, and Canada thistle (*Cirsium arvense*). Spotted knapweed was observed along the access road to the site. No signs of erosion were documented.

Vegetation at the Carbonate Repository was dominated by hard fescue (*Festuca longifolia*); percent cover was about 55 percent. Several weedy species were observed. Soil samples were not collected at the Carbonate Mine waste area or repository in 2008 because vegetation matched the reference site and was diverse. No signs of erosion were documented.

2.1.5 EU 5 – Edith Mine Waste Areas

The Edith Mine is located along the Blackfoot River near its confluence with Shave Gulch. Original discovery work for the mine began prior to 1904; the mine was re-opened by the Anaconda Company in 1967. The Edith Mine is associated with the Paymaster and Black Diamond ore veins that were rich in molybdenum. In 1995, approximately 5,000 cubic yards of mine waste were removed from several waste piles and waste areas near Edith Mine and placed in the Mike Horse Repository. Removal of the waste piles resulted in three disturbed areas, referred to as the east (EEA), west (WEA) and central (CEA) Edith Mine waste areas during the 2007-2008 RI work (Figure 2-5). Mine waste removal areas were amended with lime-bearing material to neutralize soil acidity, and the area was seeded to promote vegetative cover.

Field personnel collected soil samples from the center and perimeters of the three disturbed areas (EEA, WEA, and CEA) associated with the Edith Mine during the 2007 RI (Figure 2-5). The three combined disturbed areas include about 3.2 acres (0.55 acre in WEA, 2.0 acres in CEA, and 0.67 acre in EEA).

The 2008 vegetation survey reported about 35 percent vegetative cover in the three areas combined, dominated by western wheatgrass and sheep fescue. Litter covered 52 percent, bare ground covered 6 percent, and rock covered 5 percent. Each of the disturbed areas was surrounded by mature lodgepole pine forest.

In this BERA, the three disturbed areas (EEA, WEA, and CEA) of EU 5 were evaluated separately. In recognition that metals concentrations (and thus risk) could differ among the three separate waste areas, samples from each waste area were grouped for separate evaluation.

2.1.6 EU 6 – Consolation Mine Waste Area

Development of the Consolation Mine before 1933 consisted of several pits, three caved adits, and a shaft (Pardee and Schrader 1933). The relatively small Consolation Mine is located in lower Shave Gulch on patented mining claims that were reclaimed by ASARCO in 1997 (Figure 2-6). During reclamation, the Consolation Mine reportedly consisted of two collapsed adits (upper and lower) and associated mine waste piles (Hydrometrics 1998). Waste from the mine was dispersed as a relatively thin pile covering about 2.5 acres of hillside below each adit. Reclamation involved consolidation of the mine waste into the lower adit area by pushing the upper mine waste downhill into the adit and hauling the lower mine waste pile uphill to the adit. Approximately 2,200 cubic yards of mine waste was placed into the prepared adit area. The upper 12 inches of waste was amended with cement kiln dust, and then covered with at least 12 inches of clean soil; the entire removal area was regraded to match the surrounding topography, then revegetated (Hydrometrics 1998).

The Consolation Mine waste area (CONM) was sampled in 2007 and 2008. The waste area extends west across the access road to the base of the hillside and east to the upper switchback of the road (Figure 2-6). During the summer 2008 sampling event, the waste at the base of the hillside was partially within a side channel of Shave Gulch. The area of contaminated soil for the Consolation Mine area is approximately 1.73 acres.

The vegetative cover was lower at the Consolation Mine waste area (14 percent) than at any other reclaimed area within the UBMC. Dominant species were sheep fescue and chickpea milkvetch, but other plant species were also present. The lodgepole pine was recruiting well throughout the reclamation area.

A small waste pile was observed east of the reclamation area in the forest, above the road. It is not known whether this small waste pile was part of the original waste removed from the adit or whether it may have been part of an exploration pit in this area. This waste pile was sampled during the 2007 RI work.

2.1.7 EU 7 – Mary P. Mine Waste Pile

The Mary P. Mine began operations in 1911. The mine was located a few hundred yards southeast of the Anaconda Mine on the opposite (southwestern) side of the Blackfoot River (Figure 2-7). The operation consisted of a discovery cut with a tunnel and a second tunnel with a short drift. There is no evidence of production from the Mary P. Mine; the mine was apparently operational for only a year or two (GCM 1993).

A small waste pile (MPWA1) associated with the Mary P. Mine is located on the western side of Mike Horse Road, southwest of the former Anaconda constructed wetlands. The 0.26-acre waste pile and affected area is on a narrow strip of land between Mike Horse Creek Road and the steep hillside (Figure 2-7).

The Mary P. Mine waste pile has not been reclaimed, and mine waste is still present. Vegetation was absent on the waste pile and sparse in the adjacent areas. No formal vegetation surveys were conducted due to the lack of vegetation.

2.1.8 EU 8 – Mike Horse Mine Waste Piles

The Mike Horse Mine is located in the upper portion of the Mike Horse drainage (Figure 2-8). The Mike Horse claim was first located in 1898; production at the mine began approximately 15 years later and continued until the 1920s. A mill was constructed at the mine to process lead-silver concentrate from the Mike Horse mine and ore from the Anaconda and Paymaster mines. The mine had a number of adits. Operation resumed in 1938, when the Mike Horse Mining and Milling Company leased the property and built a 150-tons-per-day flotation mill. In 1941, the Mike Horse Tailings Impoundment was constructed on Beartrap Creek and the mill tailings were deposited there. Before the impoundment was constructed, tailings were likely deposited in Mike Horse Creek. ASARCO purchased the mine in 1945 and operated it until 1955. The mine was operated by a different mining company from 1958 through 1964. Peak production at the mine was from 1941 to 1952, when 200 tons of ore per day were processed in the flotation mill to produce a lead-zinc concentrate (GCM 1993).

Reclamation at the Mike Horse Mine included excavation of mine waste and construction of a repository at the lower Mike Horse Mine in 1995 and 1996, and in-place reclamation of approximately 5 acres of disturbed land at the upper Mike Horse Mine in 1998 (Hydrometrics 1997b, 1998b). The 0.42-acre Mike Horse Repository was built to accommodate mine waste mainly from the Anaconda and Edith Mines, in addition to a relatively small volume of waste from the lower Mike Horse Mine. The repository includes a subsurface shallow groundwater collection and drainage system to maintain groundwater levels below the repository base and a limestone-gravel drainage layer beneath the repository. The upper 18 inches of mine waste in the repository was amended to limit long-term acid generation. The slopes of the repository were covered with a 12-inch layer of growth medium to support the vegetative cover; a geosynthetic clay liner was placed on the upper crest of the repository (Hydrometrics 1996a). Approximately 45,000 cubic yards of mine waste from the Anaconda, Edith, and Mike Horse mines was placed in the Mike Horse Repository. A sludge drying bed, part of the Mike Horse Mine water treatment system, was constructed on the top of the repository (Hydrometrics

1996b). Approximately 14,000 cubic yards of additional waste was removed from the upper Mike Horse waste area during 2004, 2005, and 2006. The waste was placed in the Paymaster repository (Hydrometrics 2006).

Land disturbance at the upper Mike Horse Mine consisted of waste rock piles spread over steep hillsides. Reclamation included consolidating and regrading mine waste to minimize the surface area and limit infiltration, incorporating amendments into the mine waste to raise pH and limit the solubility of metals, covering the mine waste with local borrow soil, constructing ditches and berms to divert storm water runoff, and seeding all disturbed areas. Regrading of the mine waste piles and establishment of a vegetative cover was intended to reduce infiltration of rainfall and snowmelt water, and limit erosion of mine waste, thus improving water quality in adjacent Mike Horse Creek (Hydrometrics 1998c; Montana State University Reclamation Research Unit 1998). The RI field investigations in 2007 and 2008 determined that the reclaimed Mike Horse waste rock-pile sites have not been revegetated to desired conditions (Tetra Tech 2013).

The field team investigated three reclaimed mine waste areas (UMH1, UMH2, and UMH3) in the Upper Mike Horse area during the 2007 and 2008 RI work (Figure 2-8), totaling about 4.3 acres (0.55 acre at UMH1, 1.7 acres at UMH2, and 2.1 acres at UMH3).

In 2008, percent vegetative cover at UMH1 was about 40 percent, with sheep fescue and common yarrow (*Achillea millefolium)* as co-dominant, and chickpea milkvetch well represented. Vegetation was patchy, with about 21 percent of the area being bare ground and about 20 percent rock. Fine soil particles and organic matter were rare in unvegetated areas.

Vegetative cover at UMH2 was 14 percent, with yarrow and chickpea milkvetch as the dominant species. Rock (42 percent) and litter (17 percent) represented the majority of the remaining cover on UMH2; the rest was bare ground. The area was relatively steep, rocky, and shaded for much of the day, which limit growing conditions for most plants.

Vegetative cover at UMH3 was 28 percent, with sheep fescue and yarrow as the dominant species. Litter (30 percent), bare ground (27 percent), and rock (15 percent) were interspersed. Although UMH3 is also rocky and steep, this area receives full sun for a portion of the day.

EU 8 contains three separate waste piles. Because the waste piles may differ in metals concentrations, the three sub-areas were evaluated separately. Risk was assessed at each of the three waste piles: (1) Mike Horse Creek Channel Area Deposits, (2) Waste Areas 1 and 2, and (3) Waste Area 3.

2.1.9 EU 9 – Paymaster Mine Waste Areas

The first work on the Paymaster Mine property occurred in February 1920 with construction of a tunnel. The mine operated until sometime before 1927 from three adits in the lower Paymaster Creek drainage (Figure 2-9). The Paymaster Mine was re-opened in the 1960s through the established lower adit, but no production was reported. The molybdenum-rich ore body in this area was also accessed by the Midnight and, later, the Edith mines.

Waste rock was removed at the Paymaster Mine area in 1996. Three distinct waste rock piles, totaling approximately 8,065 cubic yards, were removed from the Paymaster Creek drainage bottom and placed in an engineered repository (Paymaster Repository) located near the Paymaster Mine. The Paymaster Repository, which covers 1.44 acres, is not included in the risk assessment. The repository also accepted 4,955 cubic yards of mine waste from the Number 3 Tunnel area and 8,412 cubic yards of mine tailings from the Big Blackfoot mine, an off-site DEQ abandoned mine reclamation project (Hydrometrics 1997b, 1998b). The Big Blackfoot mine tailings were transported from their original location 25 miles west of the UBMC and placed in the Paymaster Repository with permission from ASARCO and ARCO. All material held in the repository was fully amended with cement kiln dust and lime products to neutralize acidity and decrease metal solubility (McCulley, Frick & Gilman 1996c). Approximately 14,000 cubic yards of additional waste from the upper Mike Horse Mine was placed in the Paymaster repository in 2007 (Hydrometrics 2006).

The 2008 vegetation survey of the repository documented about 59 percent vegetative cover of the repository. Sheep fescue and wheatgrass species were the dominant grasses, and kinnikinnick (*Arctostaphylos uva-ursa)* was also well represented. Bare ground accounted for 8 percent cover. No visible signs of erosion were noted.

The two mine waste removal areas were historically located south of the Paymaster Mine and one adjacent to the main mine adit. Each of these waste areas was located adjacent to the access road. A wetland was constructed on top of the northernmost waste removal area so the northernmost waste area was not sampled during the RI. The field team sampled two mine waste areas associated with the Paymaster Mine on the east side of the Paymaster gulch access road (PMWA1 and PMWA2) (Figure 2-9). Results of the 2007 and 2008 investigations indicated that about 0.14 acre of soil at PMWA1 and about 0.17 acre at PMWA2 are affected by the mine waste.

Vegetative cover at PMWA1 was 27 percent and at PMWA2 was 36 percent; sheep fescue was the dominant plant species in both areas. Litter was the dominant non-vegetative cover at PMWA1 and PMWA2 (44 and 35 percent). No visible indications of erosion were noted. Lodgepole pine regeneration was observed on the south side of the Paymaster reclamation areas. Knapweed was seen growing along the access road adjacent to the reclamation areas.

The BERA evaluated EU 9 as two sub-areas (Paymaster Mine Waste Area 1 and Paymaster Mine Waste Area 2) since metals concentrations, and thus risk, could differ between the two piles. Because there is no exposure pathway to ecological receptors to the native soils beneath the constructed wetland, the BERA did not evaluate these samples; the thickness of the wetland substrate ranges from 2 to 4 feet.

2.1.10 EU 10 – Number 3 Tunnel Waste Area

Number 3 Tunnel was first opened by the Anaconda Company in the late 1960s. An adit was driven south of the road approximately 1,700 feet into the southern limit of a copper-molybdenum ore body to obtain bulk samples for exploration. Most of the ore excavated from the mine was transported to the Edith area, with a smaller amount of mine waste remaining at the Number 3 Tunnel area. Approximately 4,955 cubic yards of mine waste was removed

from this waste area in 1996 and placed in the Paymaster Repository. After the upper 6 inches of soil in the removal area was amended, 12 inches of growth medium was spread over the area, which was then graded, hydroseeded, and mulched (Figure 2-10). The Number 3 Tunnel reclamation area covers 2.69 acres.

Vegetative cover was about 42 percent at the Number 3 Tunnel area in 2008. Cover contained many native forbs that were colonizing the site. Sheep fescue was the dominant grass species, and pussytoes (*Antennaria racemosa*) was also well represented across the area. A number of 3-foot lodgepole pine were scattered throughout the reclamation area. Litter dominated the non-vegetated cover (48 percent). Knapweed was observed on two of the three survey transects. No indication of erosion was noted.

An aerial photograph from 1979 shows a heavily disturbed area to the east and northeast of the Tunnel 3 waste area, north of Paymaster Road. The area appeared to be disturbed by heavy vehicle traffic. Field reports in 2008 confirmed areas that appeared to be disturbed soil, but reported no obvious mine waste.

2.1.11 EU 11 – Beartrap Creek Dispersed Tailings Deposits Associated with EE/CA Removal Action Area and Overbank Tailings Deposits and Flossie Louise Mine Waste Pile

The Mike Horse Creek Tailings Impoundment was constructed on the Beartrap Creek drainage in 1941 for disposal of tailings from the Mike Horse Mine flotation mill (Figure 2-11). Before 1941, the tailings were likely deposited directly on the ground surface and discharged to Mike Horse Creek. Surface water flow and subsequent heavy rains and high flow events likely mobilized the tailings to the lower portion of Beartrap Creek and then to the Blackfoot River.

In June 1975, a heavy rain-on-snow event, along with blockage of a surface water diversion ditch by mudslide debris, caused a breach of the Mike Horse Tailings Impoundment. As a result, tailings were washed downstream to Beartrap Creek and the upper Blackfoot River floodplains. Thick and laterally continuous sedimentary deposits of tailings from the release remain along Beartrap Creek and Blackfoot River. Tailings continue to be remobilized along the floodplain during heavy rains and high flow events.

Beartrap Creek canyon below the impoundment is steep and narrow. Flood waters associated with the breach appear to have been driven up onto the sidewalls of the canyon. The turbulent flow left behind a debris line of downed trees and other vegetation that became entangled in the rooted treeline when the waters receded.

Results from the 2007 and 2008 investigation indicate the overbank deposits and dispersed tailings extend over the entire floodplain of Beartrap Creek, from the tailings impoundment to the confluence with Anaconda Creek (Figure 2-11). The entire width of the floodplain (300 feet at its widest) is affected, from the toe of the slope on the southern side of the canyon to the toe of the slope on the northern side of the canyon. The floodplain impacts cover approximately 12.2 acres.

Overbank deposits primarily include areas of fine-grained tailings and tailings mixed with soil and are generally tan to orange-brown caused by iron oxide staining. Dispersed tailings consist of areas of concentrated tailings deposited within the floodplain; tincluding depositional bars. Vegetative cover on overbank and dispersed tailings deposits ranges from absent to sparse. Percent cover is slightly higher in areas where deposits are within forested areas along the riverbank.

EU 11 was divided into three sub-areas for this BERA, based on where soil samples were collected including: (1) within the tailings-contaminated floodplain area (that is, between the river and the edge of the tailings); (2) at the edge of the tailings; and (3) outside the tailings-contaminated area. In addition, one soil sample was collected in roughly the center of the Flossie Louise Mine Waste Pile east of Beartrap Creek (Figure 2-11).

2.1.12 EU 12 – Marsh

The Marsh is comprised of three freshwater marsh sections: (1) the Upper Marsh, a 71.5-acre wetland at the confluence of Pass Creek with the Blackfoot River, (2) the Middle Marsh, a 40.6-acre wetland at the confluence of the Blackfoot River and a small tributary entering the marsh from the north, west of Surveyors Gulch, and (3) the Lower Marsh, a 181.4-acre wetland approximately 20 feet downstream of the westernmost portion of the Middle Marsh (Figure 2-12). The Upper Marsh receives surface water from Pass Creek, the Blackfoot River, Paymaster Gulch, Swamp Gulch, and possibly Meadow Creek (at the extreme western edge of the wetland). The Lower Marsh receives surface water from all sources listed for the Upper Marsh, in addition to Porcupine Gulch, Surveyors Gulch, and an unnamed tributary, while the Lower Marsh also receives surface water from Cadotte Creek, Third Gulch, and an unnamed tributary from the south. The marshes also likely receive water from the surrounding bedrock and alluvium. Surface water-groundwater interaction in the marsh system appears to be complex. Based on piezometer data from 2008, some areas of the Upper Marsh receive water from shallow groundwater, and some areas lose water to groundwater.

The sediments of the marsh are a mixture of sediment from tributaries of the Blackfoot River intermixed with tailings from upstream mining in the headwaters. The 1975 tailings impoundment breach, and subsequent heavy rain and high flow events, dispersed the tailings well downstream. Sediments and tailings continue to be redistributed during high flow events.

Sediment was collected in the Upper Marsh during the 2007 and 2008 RI to evaluate deposition of mine wastes and impacts on the Marsh; in 2011, additional samples were collected at the inlets of the Middle and Lower Marshes to evaluate deposition of mine wastes and impacts on these downstream marshes . Sediment samples were collected from the 0- to 2-inch, 2- to 6-inch, and 6- to 12-inch depth intervals. The marsh was subdivided into subareas to better define ecological risk within the marsh habitat. The eastern portion of the Upper Marsh (Eastern Upper Marsh) and the western portion of the Upper Marsh (Western Upper Marsh) the Middle (Middle Marsh), and the Lower Marshes (Lower Marsh) were evaluated as separate areas in this BERA. Risk was characterized separately for the three sediment sampling intervals in each subarea to determine the depth to which the sediments exceeded benchmarks.

2.1.13 EU 13 – Stream

The drainage network in the UBMC is characterized by the dendritic pattern typical of montane streams (Figures 2-13A and 2-13B). Stream flow originates as snowmelt and as periodic rain events along steep upland slopes. Infiltration from these events provides base flow to streams throughout the remainder of the year. Major tributary streams in the UBMC include, from upstream to downstream, Beartrap Creek, Mike Horse Creek, Anaconda Creek, Blackfoot River, Stevens Gulch, Shave (or Shaue) Creek, Paymaster Creek, Pass Creek, and Swamp Gulch (Table 5 in Final RI [Tetra Tech 2012). The Blackfoot River is formed by the confluence of Beartrap Creek and Anaconda Creek. Numerous smaller tributaries join the Blackfoot River downstream of Swamp Gulch. Other significant surface water features include the Mike Horse Tailings Impoundment on Beartrap Creek and a large marsh system, described in Section 2.1.12 above.

In 2007 and 2008, sediment, surface water, benthic invertebrate tissue and macroinvertebrate community samples were collected from the surface of the Blackfoot River from the upgradient portion of Mike Horse Creek to Highway 279; this portion of the Blackfoot River covers approximately 15.0 acres within the UBMC. Additional surface water and sediment samples were collected in 2011 downgradient of Highway 279 to Hogum Creek to further delineate the nature and extent of surface water and sediment impacts in the Blackfoot River channel. The 2011 sampling added 19 acres to EU 13 for a total site area of 34 acres. The stream area was determined by estimating the average width of the stream using aerial photographs, then multiplying the average width of the stream within each reach by the length of the reach and summing the areas for the various reaches.

Groundwater in the alluvial aquifer and surface water in the Blackfoot River valley and larger tributaries are intimately related, with the streams losing surface water to the alluvial aquifer system in some reaches and gaining water from it in other reaches.

A floodplain analysis of the UBMC was completed as part of ASARCO's and ARCO's early site characterization program. The study included stream cross-section surveys and bankfull (the stream stage above which flooding begins) width and elevation measurements at various locations on the Blackfoot River and tributaries (Table 5 of the Final RI (Tetra Tech 2013). Peak flows at each point resulting from the 100-year storm event were also calculated using TR20 hydrologic modeling software. All surface waters within the UBMC are classified as B-1 waters with the following beneficial uses identified (Water Quality Restoration Plan for Metals in the Blackfoot Headwaters TMDL Planning Area, DEQ June 2003):

- Growth and propagation of salmonid fishes and associated aquatic life, waterfowl, and furbearers
- Contact recreation
- Agriculture water supply
- Industry water supply
- Drinking, culinary, and food purposes after conventional treatment

The Blackfoot River (above Landers Fork), Beartrap Creek, and Mike Horse Creek are listed on DEQ's 303(d) list as having impaired beneficial uses for aquatic life, cold water fish, and drinking water supply. Beneficial uses are identified as impaired based on elevated concentrations of cadmium, copper, iron, lead, manganese, and zinc in the Blackfoot River and Beartrap Creek; these metals plus aluminum are elevated in Mike Horse Creek.

Within the UBMC, 13 surface water right diversions with priority dates ranging from 1892 to 1963 are on file (Table 6 in Final RI [Tetra Tech 2013]). The purpose listed for all 13 rights is "mining." Eleven of the water rights are owned by ASARCO ASARCO and are now owned by Montana Environmental Trust Group, LLC one by a private individual, and one by the USFS (for Mike Horse Dam).

2.2 ECOLOGICAL CHARACTERIZATION

The following sections, which are based on the final RI (Tetra Tech 2013), historical documents (Stratus Consulting, Inc. 2007, Moore 1991, Spence 1975, Western Technology and Engineering Inc. 1983), and the Montana Natural Heritage Program, describe the terrestrial and aquatic ecology at the UBMC. The Montana Natural Heritage program can be found online at: http://mtnhp.org/. Selected ecological conditions of the site are illustrated in the photo log (Appendix A).

2.2.1 Terrestrial Habitats (EUs 1 though 11)

The following sections describe the terrestrial vegetation and wildlife at the UBMC. EUs 1 through 11 are similar in soil and vegetation and are expected to support the same general assemblage of terrestrial receptors.

2.2.1.1 Vegetation

The vegetation in the UBMC area is consistent with that typically found in the Northern Rocky Mountains, including coniferous forest and some mountain big sagebrush and fescue grassland on drier slopes (Western Technology and Engineering, Inc. 1983). The coniferous forest community in the upland areas is generally Engelmann spruce / fowl bluegrass (*Picea engelmannii / Poa palustris*). No complete plant surveys have been conducted at the UBMC. Plant species known to occur in Lewis and Clark County, and that may occur at the UBMC site, are shown in Table 2-1. Special status plant species are listed in Section 2.2.1.6 below.

Reclamation of the UBMC, which began in 1993, included revegetation of reclaimed sites (see Figure 2-14). Vegetative cover was monitored the 2007 – 2008 as part of the RI (Tetra Tech 2013) to evaluate whether the following goals were achieved: (1) the seeded vegetation is established and continues to reproduce; (2) canopy cover of seeded sites is sufficient to protect soils and promote continued plant recruitment; and (3) the established community is not dominated by weedy species, so that native plant species are able to colonize the site.

The description and results of vegetation monitoring for individual reclamation sites is discussed in greater detail in Sections 2.1 and 4.0. In general, revegetated areas are well established and tree species are beginning to volunteer on the reclaimed sites. However, some areas of concern

remain. In particular, vegetation at the Consolation waste area, Upper Mike Horse waste areas, and Paymaster waste areas has not become established to the degree expected.

Poor revegetation success may be attributed to several factors, including organic matter, pH, soil stability, and competition with invasive plants. All of these factors are thought to affect at least one of the reclamation sites, as described below. Little organic matter was observed in the soil at the Consolation and Upper Mike Horse areas. Organic matter can improve soil texture and enhance nutrient availability. Likewise, low pH can negatively affect plant growth. Although some plant species can become established and grow in acidic conditions (pH less than 7.0), their form and productivity can be affected. The pH of the soil in all three reclamation sites is less than 5.0.

Little evidence of soil erosion was noted in most revegetated areas, despite limited vegetative cover. Dense litter accumulation undoubtedly helps curtail erosion and contributes to soil stability. Of even greater importance is the pervasive occurrence of soil fungi and moss. Soil fungi play an important ecological role in water dynamics, nutrient cycling, and disease suppression in plants. Mosses provide valuable soil cover and create micro-sites for seed germination, helping reduce soil erosion from reclaimed sites. In contrast, soils appeared to be somewhat unstable at the Upper Mike Horse waste areas, which are characterized by high surface rock fragment content. The addition of coir soil matting would improve soil stability by increasing water infiltration and creating micro-sites favorable for seed germination. A reduction in erosion would lead directly to improved surface water quality by reducing the amount of suspended and dissolved sediment in Mike Horse Creek.

Noxious or invasive (non-native) weed infestation is a major problem throughout Montana. Invasive plant species such as spotted knapweed and Canada thistle have become established at several of the reclamation areas sampled at the UBMC. Many of the plants were growing along travel corridors and may have been introduced by recreational and work vehicles. Recommended methods to control these invasive plants include chemical treatment in the spring before plants develop seed.

2.2.1.2 Invertebrates

Terrestrial invertebrates at the UBMC include many flying insects such as moths and butterflies, grasshoppers, beetles, ants, and flies. Common non-insect invertebrate groups include spiders and snails. More invertebrate species that may occur within the UBMC are listed in Table 2-1.

2.2.1.3 Reptiles

Seven species of snake and one turtle may occur at the UBMC based on the observed species distribution in Montana, including the common gartersnake (*Thamnophis sirtalis*), eastern racer (*Coluber constrictor*), gophersnake (*Pituophis catenifer*), plains gartersnake (*Thamnophis radix*), prairie rattlesnake (*Crotalus viridis*), rubber boa (*Charina bottae*), terrestrial gartersnake (*Thamnophis elegans*), and the painted turtle (*Chrysemys picta*). None of the reptiles that may occur within the UBMC are special status species (Montana Field Guide 2012).

2.2.1.4 Birds

A wide variety of terrestrial birds occur at the UBMC and surrounding areas as residents or migrants. Terrestrial birds include numerous passerine species such as Cassin's vireo (*Vireo cassinii*), cedar waxwing (*Bombycilla cedrorum*), gray catbird (*Dumetella carolinensis*), Lincoln's sparrow (*Melospiza lincolnii*), northern waterthrush (*Seiurus noveboracensis*), red-breasted nuthatch (*Sitta canadensis*), white-crowned sparrow, (*Zonotrichia leucophrys*), and many others. Several birds of prey, including the osprey (*Pandion haliaetus*) and prairie falcon (*Falco mexicanus*), may occur at the UBMC. Bald eagle and golden eagle were reported in the Blackfoot River study area near Lincoln (Spence 1975). Table 2-1 presents a complete list of species potentially occurring at the UBMC. Special status birds are discussed in Section 2.2.1.6.

2.2.1.5 Mammals

Small mammals that may occur within the UBMC include bats, deer, mice, voles, squirrels, rabbits, beaver, weasels, and many others (Table 2-1). Larger mammals include various deer, coyote (*Canis latrans*), elk (*Cervus canadensis*), moose (*Alces alces*) and mountain lion (*Puma concolor*). Special status mammals are discussed in Section 2.2.1.6.

2.2.1.6 Special Status Species

Many species of concern are known to occur in Lewis and Clark County and could occur at the UBMC. Documented occurrences of special status species are included in Table 2-1. Of the 18 vascular plant species of concern that could occur within the UBMC, only the dense-leaf draba (*Draba densifolia*) and divide bladderpod (*Lesquerella klausii*) have been observed. None of the many insect species of concern that occur in Lewis and Clark County has been observed at the UBMC. Of the many bird species of concern that could occur at the UBMC, only the olive-sided flycatcher (*Contopus cooperi*) has actually been observed within the UBMC. Five mammal species of concern have been observed within and around the UBMC, including the Canada lynx (*Lynx canadensis*), fisher (*Martes pennanti*), gray wolf (*Canis lupus*), grizzly bear (*Ursus arctos*), and wolverine (*Gulo gulo*). The UBMC is included in the 9,600-square-mile Northern Continental Divide Ecosystem recovery area for the grizzly bear; more than 400 bears are thought to occur in this recovery area (U.S. Fish and Wildlife Service [FWS] 2009). The UBMC is also included in the Northern Rockies (Unit #3) revised designation of critical habitat for the Canada lynx (as published in 50 Code of Federal Regulations 17 on February 25, 2009). Eight other mammalian species of concern may occur in the UBMC, along with three potential species of concern (Table 2-1).

Although terrestrial habitats at the UBMC have benefited from reclamation, the effects of mining are still evident. Some areas are still sparsely vegetated, and areas of bare soil exist throughout the UBMC (Appendix A). Invasive plant species are common at the UBMC, although their impacts on native ecosystems have not been studied. Many of the dense stands of conifers exhibit stress from defoliating insects and parasitic mistletoe.

2.2.2 Wetland and Aquatic Habitat (EUs 12 and 13)

A wetland inventory was performed in the headwaters of the Blackfoot River, as well as along selected tributaries, including Mike Horse Creek, Shave Gulch, Paymaster Creek, Pass Creek, Swamp Gulch, Surveyors Gulch, Meadow Creek, Porcupine Gulch, Cadotte Creek, and several unnamed drainages (Western Technology and Engineering, Inc. 1983). The following sections describe the wetland vegetation and wildlife at the UBMC. Table 2-1 contains a list of species potentially occurring at the UBMC.

2.2.2.1 Vegetation

The 1983 wetland delineation report indicated that Mike Horse Creek (below the major mine disturbances), Beartrap Creek (below the reservoir), and the Blackfoot River (from the confluence of the Beartrap and Anaconda Creeks to Shave Gulch) had been affected substantially by historical mining operations and were lacking wetland vegetation (Western Technology and Engineering, Inc. 1983).

Within the UBMC is a large marsh complex where Pass Creek and Swamp Gulch feed into the Blackfoot River. The absence of vegetation in some areas of the marsh and the riparian corridors at the UBMC is likely a result from impacts of mining wastes.

2.2.2.2 Aquatic Invertebrates

Invertebrates in the wetland habitats at the UBMC include groups typical of montane wetlands: worms, snails, and insects. Several groups of high-gradient coldwater benthic macroinvertebrates are represented by a number of species, including 14 species of caddisfly, 16 species of mayfly, 6 species of riffle beetle, and 9 species of stonefly (Tetra Tech 2013). Periphyton and zooplankton are also present. Table 2-1 contains a list of species potentially occurring at the UBMC.

2.2.2.3 Reptiles and Amphibians

The painted turtle (*Chrysemys picta*) may occur in the waters of the UBMC. Nine species of amphibian may also occur, including the boreal chorus frog (*Pseudacris maculata*), Columbia spotted frog (*Rana luteiventris*), great plains toad (*Bufo cognatus*), long-toed salamander (*Ambystoma macrodactylum*), northern leopard frog (*Rana pipiens*), plains spadefoot (*Spea bombifrons*), Rocky Mountain tailed frog (*Ascaphus montanus*), tiger salamander (*Ambystoma tigrinum*), and western toad (*Bufo boreas*). None of these are special status species.

2.2.2.4 Fish

Some baseline information on fish in the UBMC area is available from a survey conducted from 1968 to 1974, before the breach of the tailings dam in 1975 (Spence 1975). The survey focused on the area near and below Landers Fork, but fish surveys were also conducted in several of the tributaries in the UBMC. Trout were collected in all waters sampled at UBMC, except in the Mike Horse Mine area. The mountain whitefish (*Prosopium williamsoni*) was also widespread; this salmonid has similar habits to the better-known trout species, moving within the river system on fall spawning migrations.

The native westslope cutthroat trout (*Oncorhynchus clarkia lewisi*) and the introduced brook trout (*Salvelinus fontinalis*) were the dominant fish in the Blackfoot River above Landers Fork. The introduced brown trout (*Salmo trutta*) was common farther downstream, but only one individual was collected above Landers Fork (Spence 1975). Cutthroat trout were collected in the tailings pond on Beartrap Creek and above the pond in Beartrap Creek. No fish were observed in the Blackfoot River below Anaconda Creek. Cutthroat and brook were observed in beaver ponds near Pass Creek and in Anaconda Creek. Cutthroat trout were also collected from Shave Gulch. Farther downstream, Cadotte Creek was found to have a thriving population of brook trout about a mile upstream of the Blackfoot River, where beaver dams blocked the flow into the river (Spence 1975).

The Blackfoot River is considered a substantial fisheries resource below USFS's Aspen Grove Campground (approximately 12 miles downstream of the Blackfoot headwaters), and the Montana Department of Fish, Wildlife, and Parks (FWP) considers the UBMC to include viable trout and big game habitats. During the late 1960s and early 1970s, it was reported that the Blackfoot River went dry every winter for about 3 miles above Lincoln, but that gamefish returned every spring (Spence 1975). Genetically pure westslope cutthroat trout were found in Anaconda Creek above the Anaconda mine site (McCulley, Frick, and Gilman 1996a). Westslope cutthroat trout, a species of special concern in Montana, has declined over much of its historical range within the last century. One individual westslope cutthroat trout was observed in the fall of 2007 in Anaconda Creek and one in the upper Blackfoot River.

The westslope cutthroat trout spawns from March to July, when river flows are highest. Several spawning and migration patterns are known, but all forms overwinter in the main river channels. Unlike the other trout in the UBMC, the westslope cutthroat forages mostly on invertebrates rather than on other fish (Behnke 1992). The westslope cutthroat trout no longer occursin much of its historical range. Causes of the decline of the westslope cutthroat include degradation of water quality coupled with the introduction of several non-native trout species. It has been replaced by the brook trout in many headwater streams and by brown and rainbow trout in larger channels (Behnke 1992). Chemical impacts from mining may further marginalize this vulnerable native species.

The bull trout is listed as threatened under the Endangered Species Act and is a Montana species of special concern. The recovery of bull trout is a fisheries priority under FWP and FWS programs in the Blackfoot Watershed. The bull trout inhabits approximately 125 miles of the Blackfoot River main stem. Densities of bull trout are very low in the upper Blackfoot River but increase downstream of the north fork of the river at river mile 54 (Montana Department of Fish, Wildlife, and Parks 2005).

An inventory of fisheries on the Blackfoot River in 1989 concluded that the 1975 dam breach that released mine tailings and contaminated sediments had an adverse impact on populations of westslope cutthroat trout and the native bull trout (*Salvelinus confluentus*). Abundance of the introduced brown trout, brook trout, and rainbow trout (*Oncorhynchus mykiss*) have also declined (FWP 1990).

A natural resource damage assessment was conducted to assess injury to resources at the UBMC, including aquatic biota (Stratus Consulting, Inc. 2007). Monitoring data collected since the 1989 inventory support the conclusion that the contamination has impaired the fish in the Blackfoot River. Monitoring and toxicity test data suggest that fish are avoiding metals-contaminated reaches of the river, a conclusion supported by the scientific literature (Linder and others 2003; Hansen and others 1999). Fish species known to be tolerant of higher metals concentrations, including introduced trout species, were more abundant downstream of mining areas, while native trout were more common in uncontaminated reference streams.

2.2.2.5 Birds

The UBMC provides a complex of habitats for birds that are typically associated with wetland and riverine habitat. According to wildlife biology staff at the Montana Department of Fish, Wildlife, and Parks, the great blue heron (*Ardea herodias*) has rookeries near the area. The American dipper (*Cinclus mexicanus*) occurs the upper Blackfoot River, Landers Fork, and throughout the general area. Scaup, Canada goose, mallard, and merganser are common in the area. The bald eagle was once common, but became rare in the area when the fish populations declined. Other birds that may use the marsh habitat include the American avocet (*Recurvirostra americana*), California gull (*Larus californicus*), mallard (*Anas platyrhynchos*), red-necked grebe (*Podiceps grisegena*), sora (*Porzana carolina*), and wood duck (*Aix sponsa*). Table 2-1 presents a list of species potentially occurring at the UBMC.

2.2.2.6 Mammals

Mammals that may occur within the wetlands and riverine habitats of the UBMC include beaver (*Castor canadensis*), mink (*Mustela vison*), muskrat (*Ondatra zibethicus*), and northern river otter (*Lontra canadensis*). A beaver complex has been reported at Cadotte Creek (Greg Neudecker, FWS, personal communication). Moose are common in the marshes near the Mike Horse Mine (Jay Colby, [FWP], personal communication). Table 2-1 contains a more complete list of mammal species potentially occurring at the UBMC.

2.2.2.7 Special Status Species

Many special status plants occur within the UBMC (Table 2-1), including the water bulrush (*Scirpus subterminalus*) and the nonvascular fringed bog moss. A caddisfly (*Agapetus montanus*) is the only invertebrate species of concern observed within and around the UBMC, though many others may also occur within the UBMC. The only fish species of concern that has been observed at the UBMC is the westslope cutthroat trout. The bull trout may occur there, also. The only special status bird species observed at the UBMC is the olive-sided flycatcher (*Contopus cooperi*). The special status mammals reported to occur in the terrestrial habitat (discussed in Section 2.2.1.6) could also occur in the wetland habitat.

2.2.2.8 Current Physical Condition

The lack of vegetation in some areas, the unnatural distribution of sediment types, the low pH, and the scarcity of fish species are directly or indirectly linked to past mining at the UBMC. Several areas at the UBMC have been subject to mine-related stress for decades. Even

before the tailings dam breach, extremely low pH was reported in water discharging from the Anaconda Adit (pH = 2.77), Number 3 Tunnel (pH = 2.84), and Paymaster Mine (pH = 2.62) (Spence 1975). Photos of the wetland habitat illustrate some of the physical disturbances that remain in the area (Appendix A).

2.3 DATA EVALUATION AND REDUCTION

DQO for the 2007 - 2008 RI were developed to ensure data quality and to define procedures for data collection (Tetra Tech 2013). Site-specific DQOs were identified following the EPA recommendations (EPA 1998, 2001). The DQO process allowed the determination of the level of data quality required for the specific data collection and to estimate the costs associated with the activities.

This section provides a summary of the data used in the BERA for EUs 1 through 13, a description of the reference site data, and the data assumptions.

2.3.1 Description of Data Used in the BERA, by Exposure Unit

The one-sided 95 percent upper confidence limit of the mean (95UCL) concentration within an EU is typically used as the source term or exposure point concentration (EPC) in risk assessments (EPA 2002, 2007c). However, calculation of the 95UCL requires that the data consist of random, independent measurements to ensure that the EPC is representative of the unknown population mean within an EU. Several factors preclude calculation of the 95UCL for the 13 EUs at the UBMC. In particular, samples were purposely biased toward known or suspected waste areas. Therefore, the pooled data within individual EUs are not expected to be representative of the area-wide average concentrations and cannot be used to develop source terms in a risk assessment.

Biased samples are best evaluated location by location. This method, also known as "point-by-point comparison" is a more robust way of developing risk estimates because the entire range of measured concentrations is evaluated. Furthermore, EU boundaries at the UBMC are not completely congruent with true exposure areas for individual receptors. For example, exposure of a small rodent that does not move about much during its life is better represented by a single sample location than by a statistical average of areas that it may never encounter. Even wide-ranging animals may spend substantial amounts of time in particular foraging areas, which makes the point-by-point method of exposure analysis useful.

The point-by-point approach also allows direct evaluation of both discrete sample results and composite results. Composite results effectively represent the mechanical average of the fixed number of increments within each composite sample. Therefore, composite samples represent average soil concentrations for the area or volume of soil defined by each composite. It is unnecessary to distinguish between discrete and composite results in the point-by-point comparisons, because composite and discrete results are not being combined to provide statistical estimates of the area-wide average or 95UCL.

Concentrations in soil samples were measured using X-ray fluorescence (XRF), in which samples were dried and sieved through a #10-mesh screen prior to being analyzed (RI results designated as XRF 10). Ten percent of the samples were also analyzed using standard laboratory methods for EUs 1 through 11. The evaluation of the relative percent difference between the XRF 10 and laboratory data conducted as part of the RI showed that XRF 10 data for all metals except cadmium were acceptable for use in the BERA (Section 4.2 of Tetra Tech 2013). The BERA for EUs 1 through 11 was based on XRF 10 results for soil only for all metals except cadmium. Cadmium results from the laboratory were used in the BERA because the XRF instrument did not provide reliable cadmium concentrations because the radiation source for the XRF instrument is cadmium and, in 2008, the instruments were not setup by the supplier to measure cadmium. Physico-chemical parameters such as pH and total organic carbon (TOC) were measured in the laboratory. One-half of the samples sent to the laboratory were also evaluated for acid base accounting (ABA) and synthetic precipitation leaching procedure (SPLP). Only laboratory data were available for EUs 12 and 13.

No XRF 10 results were available for aluminum in soils at EUs 1 through 11 because XRF instruments do not record aluminum. Furthermore, aluminum toxicity is most appropriately evaluated using soil pH rather than total aluminum concentrations (EPA 2003b) see Section 2.4.1.1. Therefore, risk posed by aluminum was based on pH rather than comparison with toxicological benchmarks (see Section 2.4.1.1). Concentrations of aluminum in soil samples were used in the evaluation of conditions of reclaimed/revegetated areas (Table 2-3), ABA (Tables 2-2 and 2-4), and terrestrial transects (Tables 2-5 through 2-8) laboratory results for aluminum in sediment samples were used to estimate risk in EUs 12 and 13 because aluminum tends to be bioavailable in aquatic environments (EPA 2008).

Mercury was not detected in any medium at any EU and so was not evaluated in this BERA. Iron was not evaluated as a COPEC because no toxicity benchmarks are available for iron (see Section 2.4.1.2).

In EU 2, Tetra Tech collected dispersed tailings samples in 2007 at select locations presented in the final RI report (Tetra Tech 2013). Further details regarding the edge of tailings (EOT) and dispersed tailings sampling effort are described in the RI report.

The following sections describe the data used in the BERA for EUs 1 through 13.

2.3.1.1 EU 1 Upper Anaconda Mine Waste Removal Areas and Waste Piles

Two mine waste removal areas and three smaller unreclaimed mine waste areas associated with the Anaconda Mine were sampled during the RI. The two reclaimed areas are UAW2 and UAW5; the three un-reclaimed waste areas (UAW1, UAW3, and UAW4) are located northeast and upslope of the two reclaimed areas (Figure 2-1). Perimeter (using XRF 10 and laboratory analysis) and composite samples were collected from areas UAW1, UAW2, and UAW5. At UAW3 and UAW4, perimeter samples were not collected for XRF10 or laboratory analysis because the boundaries of UAW3 and UAW4 overlapped with boundaries for UAW1, UAW2, and UAW5. Composite samples were collected from both UAW3 and UAW4; and field XRF

readings from the ground surface were taken around these piles to delineate the approximate extent of impacts from mine waste.

The following table provides a summary of the data that were evaluated in the BERA for EU 1.

Matrix	Analytical Method	Analytes	No. Samples (0-6 inches bgs)	Use of Data	Tables and Figures
Soil	XRF 10	As, Cu, Pb, Mn, Zn	46	Characterization of risk to terrestrial plants, invertebrates, birds, and mammals	Table 27a Final RI (Tetra Tech 2013)
Soil	Lab	Cd	13	Characterization of risk to terrestrial plants, invertebrates, birds, and mammals	Table 27a Final RI (Tetra Tech 2013)
Soil	Lab	pH, TOC, Total Sulfur, Fe, ABA, SPLP	8	Bioavailability evaluation	Table 2-2 BERA
Soil	Lab	Al, As, Cd, Cu, Pb, Mn, Zn, pH, TOC	2	Characterization of risk to plants	Table 2-3, Figure 2-14 BERA
Revegetation Cover Monitoring	Visual	--	--	Characterization of risk to plants	Figure 2-14 BERA

Note: Plant, invertebrate, and mammal tissue data collected in EUs 2 and 11 were used in the exposure assessment for birds and mammals at EU 1.

-- Not evaluated

bgs Below ground surface

SPLP Synthetic precipitation leaching procedure

2.3.1.2 EU 2 Blackfoot River Dispersed Tailings Associated with EE/CA Removal Action Area and Overbank Deposits

In June 1975, a heavy rain-on-snow event, along with blockage of a surface water diversion ditch by mudslide debris, caused a breach of the Mike Horse tailings impoundment (Figure 1-2). Tailings were released into the active channels and floodplains of the Blackfoot River at least as far downstream as the Upper Marsh. Thick and laterally continuous sedimentary deposits of tailings from the release remain along the Blackfoot River.

Overbank Deposit Samples

The tailings and other eroded mine waste released or remobilized as a result of the impoundment breach are designated as "overbank deposits." The lateral extent of mine waste deposition at the edges of the floodplains from the breach and other potential flood and high water events was delineated during the RI. A control point was established at the beginning of the Blackfoot River, at the confluence of Anaconda Creek and Beartrap Creek, to standardize all downstream measurements. Sampling transects were established on both sides of the river at 100-foot intervals downstream from the control point. Transects began at the approximate edge of visible

tailings (EOT) at each 100-foot transect location. A control stake was set at the EOT for each 100-foot stream segment to establish a relative reference point for sample locations. From the control stake, the transects were extended such that they were approximately perpendicular to the river in a generally north and south trend.

Sample locations along each transect were measured relative to the EOT stake, which was point zero. Samples collected from points between the stream and the EOT stake were assigned a negative number and were referred to as "within tailings." Samples collected beyond the EOT stake were assigned a positive number and were referred to as "outside of tailings." Intervals along sampling transects generally consisted of -12.5 feet, 0.0 feet (at EOT) and +25.0 feet from the EOT stake. The stake locations were placed at these intervals in an attempt to verify the edge of the overbank tailings deposits. All soil samples were collected from the top 6 inches of soil once duff and/or vegetation had been removed (Figure 2-2).

Sample identification for Blackfoot River samples consisted of the area designation (BREOT) followed by the lateral distance from the EOT stake. For example, an XRF 10 reading at BREOT-N24 at a point 75 lateral feet from the EOT stake was labeled BREOT-N24+75 (0-6").

Dispersed Tailings Samples

Dispersed tailings (DT) areas along the Blackfoot River were also included in EU 2. Soil samples were collected from six test pits excavated in distinct dispersed tailings features that had not been previously analyzed for metals concentrations (Figure 2-2). Dispersed tailings were grouped with the "within tailings" samples described above. The dispersed tailings samples were designated as UBDT. UBDT samples were collected at six depth intervals; 0 to 2, 2 to 12, 12 to 24, 24 to 36, 36 to 48, and 48 to 60 inches below ground surface (bgs).

Tissue Samples: Transects

One terrestrial transect (BR), consisting of three points, was established at EU2 (Figure 2-2); a reference transect (ANTREF) was established upstream of EU2 on Anaconda Creek (Figure 2-11). Three samples of plant, invertebrate, and small mammal tissue were collected from each transect to provide site-specific prey concentrations in the dose models used in the exposure and effects analysis (the food chain model [FCM], described in Section 3.1.4). Surface soil samples were collocated with tissue samples to the extent practicable.

One composite plant sample was collected as close as possible to the center of each of the sample locations. One invertebrate sample was collected from each sample location on transects ANTREF and BR. Invertebrates were collected in pitfall traps located at each point on the transect; additional specimens were collected opportunistically within 50 meters of the sample point. Invertebrate samples were composites of grasshoppers, moths, butterflies, spiders, and sometimes ants.

Three small mammals (two least chipmunks and one red squirrel) were collected from location BR01; each individual was analyzed as a separate sample. Three small mammals (one least chipmunk, one meadow vole, and one masked shrew) were collected from the ANTREF transect.

The following table provides a summary of the data that were evaluated in the BERA for EU 2.

Matrix	Analytical Method	Analytes	No. Samples (0-6 inches bgs)	Use of Data	Tables and Figures
Soil	XRF 10	As, Cu, Pb, Mn, Zn	122 Within tailings 115 EOT 127 Outside of tailings 30 DT (multiple depths) Total = 374	Characterization of risk to terrestrial plants, invertebrates, birds, and mammals	Table 29a and 31a Final RI (Tetra Tech 2013) Figure 2-2 BERA
Soil	Lab	Cd	14 Inside tailings 9 EOT 19 Outside of tailings 30 DT Total = 63	Characterization of risk to terrestrial plants, invertebrates, birds, and mammals	Table 29a and 31a Final RI (Tetra Tech 2013)
Soil	Lab	pH, TOC, Total Sulfur, Fe, ABA, SPLP	72*	Bioavailability evaluation	Table 2-4 BERA
Tissue / Soil	Lab	As, Cd, Cu, Pb, Mn, Zn, % moisture	3 soil 3 plant 3 invert 3 mammal	Characterization of risk to terrestrial plants and invertebrates; dose estimates for birds and mammals ingesting soil and tissue	Tables 2-5, 2-6, 2-7, 2-8 BERA
Vegetative Cover	Visual	--	3	Visual observations were used in characterization of risk to plants to assess vegetation conditions	Table 2-9; Figure 2-14 BERA

Notes: Plant, invertebrate, and mammal tissue data collected in EUs 2 and 11 were used in FCMs for EU 2.

* ABA evaluated at only 24 locations.

2.3.1.3 EU 3 Capital Mine Waste Area

Historical investigations indicated that the Capital Mine is associated with two discrete mine waste removal areas (DEQ 2007a), which were combined into one soil sampling area for this BERA. Samples from this waste area, which is located adjacent to the Capital Mine, are designated CMWA (Figure 2-3).

The following table provides a summary of the data that were evaluated in the BERA for EU 3.

Matrix	Analytical Method	Analytes	No. Samples (0-6 inches)	Use of Data	Tables and Figures
Soil	XRF 10	As, Cu, Pb, Mn, Zn	19*	Characterization of risk to terrestrial plants, invertebrates, birds, and mammals	Table 27a Final RI (Tetra Tech 2013)
Soil	Lab	Cd	7	Characterization of risk to terrestrial plants, invertebrates, birds, and mammals	Table 27a Final RI (Tetra Tech 2013)
Soil	Lab	pH, TOC, Total Sulfur, Fe, ABA, SPLP	5**	Bioavailability evaluation	Table 2-2 BERA
Revegetation Cover Monitoring	Visual	--	--	Characterization of risk plants	Figure 2-14 BERA

Notes: Plant, invertebrate, and mammal tissue data collected EUs 2 and 11were used in FCMs for EU 3.
* Only 17 results were available for arsenic.
** ABA was evaluated at only four locations.
SPLP Synthetic precipitation leaching procedure

2.3.1.4 EU 4 Carbonate Mine Waste Area

The Carbonate Mine Waste Area is located north of U.S. Highway 200 (Figure 2-4) in an area that formerly contained waste rock piles and a small tailings impoundment. Soil samples were collected from beneath the cover soil (which is approximately 13 to 17 inches thick). Almost the entire eastern half of the EU contains a low-lying wetland area (Figure 2-4). Samples collected from this area are designated CARM.

The following table provides a summary of the data that were evaluated in the BERA for EU 4.

Matrix	Analytical Method	Analytes	No. Samples (0-6 inches bgs)	Use of Data	Tables and Figures
Soil	XRF 10	As, Cu, Pb, Mn, Zn	29	Characterization of risk to terrestrial plants, invertebrates, birds, and mammals	Table 27a Final RI (Tetra Tech 2013)
Soil	Lab	Cd	6	Characterization of risk to terrestrial plants, invertebrates, birds, and mammals	Table 27a Final RI (Tetra Tech 2013)
Soil	Lab	pH, TOC, Total Sulfur, Fe, ABA, SPLP	3*	Bioavailability evaluation	Table 2-2 BERA
Revegetation Monitoring	Visual	--	--	Characterization of risk to plants	Figure 2-14 BERA

Notes: Plant, invertebrate, and mammal tissue data collected in EUs 2 and 11were used in FCMs for EU 4.
* ABA was evaluated at only one location.

2.3.1.5 EU 5 Edith Mine Waste Areas

Eleven mine waste piles associated with the Edith Mine have been removed, regraded, and revegetated (Tetra Tech 2013). These reclaimed mine waste areas were combined into three investigation groups during the RI because many of the individual removal areas were not visually distinguishable from one another. The three areas are referred to as the West Edith (WEA1), Central Edith (CEA1), and East Edith (EEA1) area waste piles (Figure 2-5).

The following table provides a summary of the data that were evaluated in the BERA for EU 5.

Matrix	Analytical Method	Analytes	No. Samples (0-6 inches bgs)	Use of Data	Tables and Figures
Soil	XRF 10	As, Cu, Pb, Mn, Zn	12 (west) 25 (central) 20 (east) Total = 57	Characterization of risk to terrestrial plants, invertebrates, birds, and mammals	Table 27a Final RI (Tetra Tech 2013)
Soil	Lab	Cd	2 (west) 5 (central) 2 (east) Total =9	Characterization of risk to terrestrial plants, invertebrates, birds, and mammals	Table 27a Final RI (Tetra Tech 2013)
Soil	Lab	pH, TOC, Total Sulfur, Fe, ABA, SPLP	9 *	Bioavailability evaluation	Table 2-2 BERA
Soil	Lab	Al, As, Cd, Cu, Pb, Mn, Zn, pH, TOC	3	Characterization of risk to plants	Table 2-3 Figure 2-14 BERA
Revegetation Cover Monitoring	Visual	--	--	Characterization of risk to plants	Figure 2-14 BERA

Notes: Plant, invertebrate, and mammal tissue data collected EUs 2 and 11were used in FCMs for EU 5.

* ABA conducted at only two locations at central Edith.

2.3.1.6 EU 6 Consolation Mine Waste Area

Previous historical investigations indicated that two mine waste piles from this area were removed, consolidated, and placed in the Consolation Mine adit (DEQ 2007a). One removal area is located above and one below the Consolation Mine adit. The two reclaimed removal areas were combined into one soil sampling area as the individual areas were indistinguishable from one another (Figure 2-6). One sample of what appeared to be mine waste was collected from an area east of and outside the EU boundary. Samples collected from these areas were designated as CONM.

The following table provides a summary of the data that were evaluated in the BERA for EU 6.

Matrix	Analytical Method	Analytes	No. Samples (0-6 inches bgs)	Use of Data	Tables and Figures
Soil	XRF 10	As, Cu, Pb, Mn, Zn	35	Characterization of risk to terrestrial plants, invertebrates, birds, and mammals	Table 27a Final RI (Tetra Tech 2013)
Soil	Lab	Cd	11	Characterization of risk to terrestrial plants, invertebrates, birds, and mammals	Table 27a Final RI (Tetra Tech 2013)
Soil	Lab	pH, TOC, Total Sulfur, Fe, ABA, SPLP	8*	Bioavailability evaluation	Table 2-3 ABA SPLP Mine Waste Areas
Soil	Lab	Al, As, Cd, Cu, Pb, Mn, Zn, pH, TOC	3	Characterization of risk to plants	Table 2-3 Figure 2-14 BERA
Revegetation Cover Montoring	Visual	--	--	Characterization of risk to plants	Figure 2-14 BERA

Notes: Plant, invertebrate, and mammal tissue data collected in EUs 2 and 11were used in FCMs for EU 6

* ABA evaluated for only three samples.

2.3.1.7 EU 7 Mary P. Mine Waste Pile

One mine waste pile (MPWA) associated with the Mary P. Mine is located on the south side of the site access road to the west of the Anaconda Constructed Wetlands (Figure 2-7). Samples were collected to delineate the lateral extent of the waste pile. Samples collected from these areas were designated as MPWA.

The following table provides a summary of the data that were evaluated in the BERA for EU 7.

Matrix	Analytical Method	Analytes	No. Samples (0-6 inches bgs)	Use of Data	Tables and Figures
Soil	XRF 10	As, Cu, Pb, Mn, Zn	8*	Characterization of risk to terrestrial plants, invertebrates, birds, and mammals	Table 27a Final RI (Tetra Tech 2013)
Soil	Lab	Cd	3	Characterization of risk to terrestrial plants, invertebrates, birds, and mammals	Table 27a Final RI (Tetra Tech 2013)
Soil	Lab	pH, TOC, Total Sulfur, Fe, ABA	1	Bioavailability evaluation	Table 2-2 BERA

Notes: Plant, invertebrate, and mammal tissue data collected in EUs 2 and 11were used in FCMs for EU 7.

* Only seven results were available for lead.

2.3.1.8 EU 8 Mike Horse Mine Waste Piles

Five mine waste rock piles historically existed south of the Mike Horse Mine and adjacent to Mike Horse Creek (Figure 2-8). These five waste areas covered about 3 acres, which were reclaimed in place by ASARCO in 1998 (DEQ 2007). Perimeter and composite soil samples were collected at three of the reclaimed waste rock piles (UMH1, UMH2, and UMH3) during the fall 2007 investigation and subsequent perimeter sampling in 2008 (Figure 2-8). The two remaining piles were removed in 2004/2005 and the removal areas were once again reclaimed during the fall of 2007. Samples were also collected in areas of dispersed tailings along Mike Horse Creek between the coffer dam, near mine waste areas, and the Mike Horse Mine waste repository; these samples were designated MHCS (Figure 2-8). Four samples were collected in 2007 to evaluate potential impacts to soil above the Mike Horse Repository caused by construction of the repository (contamination as a result of airborne deposition or tracking); these samples were designated AMHR (Figure 2-8).

The following table provides a summary of the data that were evaluated in the BERA for EU 8.

Matrix	Analytical Method	Analytes	No. Samples (0-6 inches bgs)	Use of Data	Tables and Figures
Soil	XRF 10	As, Cu, Pb, Mn, Zn	103*	Characterization of risk to terrestrial plants, invertebrates, birds, and mammals	Table 27a Final RI (Tetra Tech 2013)
Soil	Lab	Cd	17	Characterization of risk to terrestrial plants, invertebrates, birds, and mammals	Table 27a Final RI (Tetra Tech 2013)
Soil	Lab	pH, TOC, Total Sulfur, Fe, ABA, SPLP	13**	Bioavailability evaluation	Table 2-2 BERA
Soil	Lab	Al, As, Cd, Cu, Pb, Mn, Zn, pH, TOC	7	Characterization of risk to plants	Table 2-3 Figure 2-14 BERA
Revegetation Cover Monitoring	Visual Observation	--	--	Characterization of risk to plants	Figure 2-14 BERA

Notes: Plant, invertebrate, and mammal tissue data collected in EUs 2 and 11were used in FCMs for EU 8.

* Only 102 results were available for lead.

** ABA evaluated at only eight locations.

2.3.1.9 EU 9 Paymaster Mine Waste Areas

Two mine waste removal areas were historically located south of the Paymaster Mine and one adjacent to the main mine adit. Each of these waste areas were located adjacent to the access road. A wetland was constructed on top of the northernmost waste removal area, so it was not sampled during the RI. Perimeter soil samples were collected from the two remaining areas, PMWA1 and PMWA2 (Figure 2-9).

The following table provides a summary of the data that were evaluated in the BERA for EU 9.

Matrix	Analytical Method	Analytes	No. Samples (0-6 inches bgs)	Use of Data	Tables and Figures
Soil	XRF 10	As, Cu, Pb, Mn, Zn	14	Characterization of risk to terrestrial plants, invertebrates, birds, and mammals	Table 27a Final RI (Tetra Tech 2013)
Soil	Lab	Cd	9	Characterization of risk to terrestrial plants, invertebrates, birds, and mammals	Table 27a Final RI (Tetra Tech 2013)
Soil	Lab	pH, TOC, Total Sulfur, Fe, ABA, SPLP	5	Bioavailability evaluation	Table 2-2 BERA
Soil	Lab	Al, As, Cd, Cu, Pb, Mn, Zn, pH, TOC	3	Characterization of risk to plants	Table 2-3 Figure 2-14 BERA
Revegetation Cover Monitoring	Visual Observation	--	--	Characterization of risk to plants.	Figure 2-14 BERA Tetra Tech 2013

Notes: Plant, invertebrate, and mammal tissue data collected in EUs 2 and 11were used in FCMs for EU 9.

* ABA evaluated at only four locations.

2.3.1.10 EU 10 Number 3 Tunnel Waste Area

Mine waste was removed from No. 3 Tunnel in 1996. During the RI field reconnaissance, it was noted that the area to the east and northeast of the No. 3 Tunnel reclamation area was disturbed and may contain mine waste. A small depression (possibly a retention pond) and a possible mound of fine-grained tailings were observed adjacent to Paymaster Road. Heavy disturbance in this area was evident on a historical aerial photograph, as well. However, further investigation of the area during 2008 indicated no obvious mine waste piles. Soil samples from the removal area and from the two possible mine waste features were collected during the RI (N3TA) (Figure 2-10).

The following table provides a summary of the data that were evaluated in the BERA for EU 10.

Matrix	Analytical Method	Analytes	No. Samples (0-6 inches bgs)	Use of Data	Tables and Figures
Soil	XRF 10	As, Cu, Pb, Mn, Zn	30	Characterization of risk to terrestrial plants, invertebrates, birds, and mammals	Table 27a Final RI (Tetra Tech 2013)
Soil	Lab	Cd	3	Characterization of risk to terrestrial plants, invertebrates, birds, and mammals	Table 27a Final RI (Tetra Tech 2013)

Matrix	Analytical Method	Analytes	No. Samples (0-6 inches bgs)	Use of Data	Tables and Figures
Soil	Lab	pH, TOC, Total Sulfur, Fe, ABA, SPLP	3*	Bioavailability evaluation	Table 2-2 BERA
Revegetation Cover Monitoring	Visual Observation	--	--	Characterization of risk to plants	Figure 2-14 BERA Tetra Tech 2013

Notes: Plant, invertebrate, and mammal tissue data collected in EUs 2 and 11 were used in FCMs for EU 10.

* ABA evaluated at only one location.

2.3.1.11 EU 11 Beartrap Creek Dispersed Tailings Deposits Associated with EE/CA Removal Action Areas and Overbank Tailings Deposits and Flossie Louise Mine Waste Pile

The Mike Horse Tailings Impoundment dam located on Beartrap Creek was breached during a heavy rain event in 1975, as described in Section 2.1.2 (Figure 2-11).

Overbank Deposit Samples

As described in Section 2.3.1.2, the tailings and other eroded mine waste released or remobilized as a result of the impoundment breach are designated as "overbank deposits." Sampling transects were established at 100-foot intervals in the same way described for EU 2 in Section 2.3.1.2. All soil samples were collected from the top 6 inches of soil once duff and/or vegetation was removed (Figure 2-2).

Sample identification for Beartrap Creek consisted of the area designation (BCEOT) followed by the lateral distance from the EOT stake (Figure 2-11). One soil sample was collected at Flossie Louise Mine Waste Pile (FLWA-101).

Tissue Samples: Transects

One terrestrial transect (BC), consisting of three points, was established at EU 11 (Figure 2-11); a reference transect (ANTREF) established on Anaconda Creek served as reference for both EU 2 and EU 11(Figure 2-11). Samples of plant, invertebrate, and small mammal tissue were collected from each transect to provide site-specific prey concentrations in the dose models used in the exposure and effects analysis (the FCM, described in Section 3.1.4). Surface soil samples were collocated with tissue samples to the extent practicable.

One composite plant sample was collected as close as possible to the center of each of the sample locations. Three invertebrate samples were collected on transect ANTREF; only two invertebrate samples were collected from transect BC because insufficient tissue volume was obtained. Invertebrates were collected at EU 2 as described in Section 2.3.1.2. Invertebrate samples were composites of grasshoppers, moths, butterflies, spiders, and sometimes ants.

Three small mammals (two deer mice and a boreal redback vole) were collected from location BC02; each individual was analyzed as a separate sample. Three small mammals (one least chipmunk, one meadow vole, and one masked shrew) were collected on the ANTREF transect.

The following table provides a summary of the data that were evaluated in the BERA for EU 11.

Matrix	Analytical Method	Analytes	No. Samples (0-6 inches bgs)	Use of Data	Tables and Figures
Soil	XRF 10	As, Cu, Pb, Mn, Zn	152	Characterization of risk to terrestrial plants, invertebrates, birds, and mammals 49 – Inside tailings 50 – Edge of tailings 53 – Outside tailings	Table 30a Final RI (Tetra Tech 2013)
Soil	Lab	Cd	16	Characterization of risk to terrestrial plants, invertebrates, birds, and mammals 6 – Inside tailings 3 – Edge of tailings 7 – Outside tailings 0 – Dispersed tailings	Table 30a Final RI (Tetra Tech 2013)
Soil	Lab	pH, TOC, Total Sulfur, Fe, ABA	15*	Bioavailability evaluation	Tables 2-2 and 2-4 BERA
Tissue / Soil (transects)	Lab	As, Cd, Cu, Pb, Mn, Zn, % moisture	3 soil 3 plant 2 invertebrates 3 mammal	Characterization of risk to terrestrial plants and invertebrates; dose estimates for birds and mammals ingesting soil and tissue	Tables 2-5, 2-6, 2-7, and 2-8 BERA
Vegetation Cover	Visual	--	3	Characterization of risk to terrestrial plants	Table 2-9 Figure 2-14 BERA

Notes: Plant, invertebrate, and mammal tissue data collected in EUs 2 and 11were used in FCMs for EU 11.

* ABA evaluated at only seven locations.

2.3.1.12 EU 12 Upper Marsh

Soil and tissue samples collected in the Upper Marsh are described below.

Soil Samples

Samples were collected during the RI to evaluate the extent of tailings deposition in the marsh and to support the BERA. Figure 2-12 shows the marsh sediment sample locations.

Sediment samples were collected from three horizons (0 to 2 inches, 2 to 6 inches, and 6 to 12 inches bgs) at multiple locations on a sampling grid in the Upper, Middle, and Lower Marshes of EU 12 (Figure 2-12). Sample locations were not randomly selected, but were purposefully

biased toward areas where deposition was thought to have been significant. Sample designations consisted of the area designation (UM) followed by the location on the sample grid and the sample depth. For example, a sample at 1,000 feet on the southern (vertical line) grid and 3,500 feet on the lateral grid was labeled UM-1000S-3500E (0 to 2 inches).

Tissue Samples

Two marsh transects, each consisting of three points, were established in the Upper Marsh at EU 12 (Figure 2-12). Transect UMT1 is in the eastern Upper Marsh, upstream of where Paymaster Creek enters the marsh. Transect UMT2 is in the western Upper Marsh, below Paymaster Creek. A reference transect (PGREF) was established on Pass Creek (Figure 1-2). Samples of plant, invertebrate, and small mammal tissue were collected from each transect to provide site-specific prey concentrations in the dose models used in the exposure and effects analysis (the FCM, described in Section 3.1.4). Surface sediment samples were collocated with tissue samples to the extent practicable.

One composite plant sample was collected as close as possible to the center of each of the sample locations. Three invertebrate samples were collected on each transect, using the same methods described for EU 2 in Section 2.3.1.2. Invertebrate samples were composites of terrestrial species, including grasshoppers, moths, butterflies, spiders, and ants.

Three small mammals (one deer mouse, one meadow vole, and one masked shrew) were collected from location UMT1-03 in the eastern marsh; each individual was analyzed as a separate sample. No small mammals were caught in the western Upper Marsh, despite substantial effort (transect UMT2). Five small mammals (two meadow voles and three masked shrew) were collected on the PGREF transect.

Collocated sediment samples were collected at the 0- to 2-inch, 2- to 6-inch, and 6- to 12-inch depth intervals below the current root layer. Sample designations consisted of the following: UMTX_TS for soil, UMTX_VE for vegetation, UMTX_TI for invertebrate, and UMTX_MA for mammal, where X represents the transect number (1 or 2). Sediment and plant samples were collocated with the trap location of the small mammal sample. Invertebrate samples were collected as close as possible to collocated location; however, it was necessary to collect invertebrates from a larger area to obtain sufficient tissue for laboratory analysis. The percent cover of plant species present within a 2- by 2-meter quadrat where the vegetation samples were collected was also recorded.

The following table provides a summary of the data that were evaluated in the BERA for EU 12.

Matrix	Analytical Method	Analytes	No. Samples (several depths)	Use of Data	Tables and Figures
Soil	Lab	Al, As, Cd, Cu, Pb, Mn, Zn	139	Characterization of risk to plants, invertebrates, birds, and mammals	Table 22a Final RI (Tetra Tech 2013)

Matrix	Analytical Method	Analytes	No. Samples (several depths)	Use of Data	Tables and Figures
Soil	Lab	pH, TOC, Total Sulfur, Fe, ABA, SPLP	119*	Bioavailability evaluation	Table 2-10 BERA
Tissue / Soil (transects)	Lab	Al, As, Cd, Cu, Fe, Pb, Mn, Zn, % moisture	18 soil 6 plant 6 invertebrate 3 mammal	Characterization of risk to plants	Tables 2-11, 2-12, 2-13, and 2-14 BERA
Vegetation Cover	Visual	--	3	Characterization of risk to plants	Tetra Tech 2013

Note:

* ABA evaluated at only 59 locations.

2.3.1.13 EU 13 Stream

Surface water, sediment, macroinvertebrate, and bioassay samples collected in the Stream EU (Blackfoot River and upper tributaries) are described below.

2007 Surface Water Samples (Low Flow Conditions)

Surface water samples from 24 locations along Beartrap Creek, Blackfoot River, Stevens Gulch, and Paymaster Gulch and three reference locations in Anaconda Creek, Pass Creek, and Paymaster Gulch were collected in October 2007 to obtain data representative of low-flow conditions; three of the samples were considered to represent unaffected reference areas (Figure 2-13A). Surface water sampling locations were selected nonrandomly from stream reaches where previous evaluations indicated potential impacts from metals. Surface water samples were designated as BRSW.

2008 Surface Water Samples (High Flow Conditions)

An additional 13 surface water samples were collected along Beartrap Creek, Blackfoot River, and Stevens Gulch and from one reference location along Anaconda Creek in June 2008 to evaluate high-water conditions during spring runoff; one sample was collected at the reference site (Figure 2-13B). The 2008 surface water sampling locations corresponded with select stations sampled during the 2007 investigation, with the exception of location BRSW-4A which was added in 2008. Surface water samples were designated as BRSW.

2007 Streambed Sediment

Streambed sediment samples were collected at 21 of the surface water stations sampled on the Blackfoot River and its tributaries during the 2007 sampling event and three reference locations in Anaconda Creek, Pass Creek, and Paymaster Gulch – considered to represent unaffected areas (Figure 2-13A). Samples were collected from the 0- to 2-inch depth interval using a stainless steel trowel to scrape the surface of the streambed. Where possible, samples were also collected from deeper depth intervals (2 to 6 inches and 6 to 12 inches) by excavating a pit in the stream bed with a shovel. All sediment samples were sieved through a 2 millimeter (10-mesh) screen

before they were placed in sample jars for shipment to the analytical laboratory for analysis of total metal concentrations. Sediment samples were designated as BRSW, the same as surface water samples.

2008 Streambed Sediment

Streambed sediment samples were collected in 2008 at nine of the surface water locations sampled during the 2008 investigation and at the reference location on Anaconda Creek (BRSW-6) (Figure 2-13B). Surface samples (0- to 2-inches bgs) were collected at all locations; an additional sample was collected from the 2- to 6- inch depth interval at four of the locations. Sampling methods and analytical parameters were consistent with the 2007 investigation.

In 2008, six additional sediment samples were collected for testing with the *Hyalella azteca* bioassay; these samples were also analyzed for total metals. Bioassay sample locations sites were in the deeper channel of the Blackfoot River that runs through the Upper Marsh (BA1, BA2, BA4, BA5, BA7) and Lower Marsh (BA6); one reference test sediment sample was collected in Pass Creek (BA3-Ref) (Figure 2-13B). The bioassay samples were purposefully collected from areas thought to represent a range of impacts to benthic invertebrates. Sediment samples were collected at each location using a stainless steel Eckmann-style dredge. Samples collected with the dredge were composited in a sterilized 3-1/2-gallon high-density polyethylene bucket and then split among eight 1-liter glass jars provided by the laboratory. Sample jars were completely filled with sediment. An additional jar was filled and sent for analysis of metals, total organic carbon, and grain size. The control sediment for the bioassay was collected at Beaver Creek, south of Newport, Oregon by the bioassay laboratory.

2007 and 2008 Stream Biota Sampling

Benthic invertebrates and periphyton were collected from the stream in 2007 and 2008 at a subset of the locations where sediment and surface water samples were collected, including the reference location on Anaconda Creek.

Invertebrates were collected using DEQ's multimetric index (MMI) protocols to characterize the benthic community at 11 locations in 2007 and at five locations in 2008 (DEQ 2006). Seven locations from the 2007 sampling event and two locations from the 2008 sampling event were used in the BERA; four samples from 2007 and three samples from 2008 did not contain the minimum number of individuals required to calculate the MMI.

Composites samples of invertebrate tissue were collected at eight locations in 2007 and at two locations in 2008 for analysis of metals in tissue.

Periphyton samples were collected from the rock substrate by scraping and scrubbing rocks in riffles and shallow water runs. The resulting slurry was collected in a sample container and then frozen for later analysis. Periphyton samples were analyzed for chlorophyll composition and ash free dry mass (AFDM) at eight locations in 2007 and at four locations in 2008.

Invertebrate samples from the reference location were subjected to benthic community analysis and analyzed for metals concentrations. Periphyton was also collected from the reference location.

The following table provides a summary of the data that were evaluated in the BERA for EU 13.

Matrix	Analytical Method	Analytes	No. Samples (Multiple Depths)	Use of Data	Tables and Figures
Sediment (2007 and 2011 low flow)	Lab	As, Cd, Cu, Pb, Mn, Zn, DO, specific conductance, pH temperature, dissolved aluminum	47 samples at 27 locations	Characterization of risk to aquatic invertebrates, fish, and birds	Table 20 Final RI (Tetra Tech 2013)
Sediment (2008 high flow)	Lab	Al, As, Cd, Cu, Pb, Mn, Zn	13 samples at 9 locations	Characterization of risk to aquatic invertebrates, fish, and birds	Table 20 Final RI (Tetra Tech 2013)
Surface Water (2007 and 2011 low flow)	Lab	As, Cd, Cu, Pb, Mn, Zn, DO, specific conductance, pH temperature, dissolved Al	31	Characterization of risk to aquatic invertebrates and fish	Table 21a Final RI (Tetra Tech 2013)
Surface Water (2008 high flow)	Lab	As, Cd, Cu, Pb, Mn, Zn, DO, specific conductance, pH temperature, dissolved Al	13	Characterization of risk to aquatic invertebrates and fish	Table 21a Final RI (Tetra Tech 2013)
Invertebrate Tissue (2007)	Lab	Al, As, Cd, Cu, Pb, Mn, Zn	8	Characterization of risk to aquatic invertebrates, fish, and birds	Table 35 Final RI (Tetra Tech 2013) Table 2-15 BERA
Invertebrate Tissue (2008)	Lab	Al, As, Cd, Cu, Pb, Mn, Hg, Zn	2	Characterization of risk to aquatic invertebrates, fish, and birds	Table 35 Final RI (Tetra Tech 2013) Table 2-15 BERA
Macro-invertebrate Community Survey (2007)	Lab	MMI Score	11	Characterization of risk to aquatic invertebrates and fish	Table 38a Final RI (Tetra Tech 2013) Table 2-16 BERA
Periphyton (2007)	Lab	chlorophyll composition and AFDM	8	Characterization of risk to aquatic invertebrates and fish	Table 39 Final RI (Tetra Tech 2013)
Macro-invertebrate Community Survey (2008)	Lab	MMI	3	Characterization of risk to aquatic invertebrates and fish	Table 38a Final RI (Tetra Tech 2013) Table 2-16 BERA

Matrix	Analytical Method	Analytes	No. Samples (Multiple Depths)	Use of Data	Tables and Figures
Periphyton (2008)	Lab	chlorophyll composition and AFDM	5	Characterization of risk to aquatic invertebrates and fish	Table 39 Final RI (Tetra Tech 2013)
Bioassay (28-day *Hyallela azteca*)	Lab	Growth and Survival, grain size	6	Characterization of risk to aquatic invertebrates	Table 2-17 BERA
Sediment Concentrations from Bioassay Samples	Lab	Al, As, Cd, Cu, Pb, Mn, Zn	6	Characterization of risk to aquatic invertebrates	Table 2-18 BERA

Note:
DO Dissolved oxygen

2.3.2 Reference Site Samples

The following sections provide a summary of the reference samples used in the BERA for soil, sediment, surface water, tissue, and vegetation cover.

2.3.2.1 Terrestrial Sites (EUs 1 to 11)

The following sections summarize the reference site samples collected in the terrestrial habitat.

Soil

Thirty reference site soil samples were collected during 2007, 2008, and 2011 from the UBMC to evaluate baseline concentrations of metals in several unaffected drainages for comparison with site-related concentrations (Table 2-19). Of those, 23 reference site soil samples were deemed appropriate for use as background samples for EUs 1 through 11 (Figure 1-2). Reference sites for each EU were selected based on geologic profile, proximity to the EU, and expected similarity of soil type. Reference site soil samples were analyzed both in the laboratory and in the field with XRF 10, using the same methods described for soil samples in terrestrial EUs. XRF 10 site concentrations were screened against XRF 10 background (reference) concentrations to focus the BERA on site-related risk.

Analytical results for soil samples collocated with the revegetation cover monitoring plots were compared with results for reference site samples (Table 2-3). One additional reference site soil sample was collected at CONM-RF-RV1 at the same time as soil samples at the revegetation cover monitoring plots cover for the Consolation Mine reclamation area. It was determined in the field that a dedicated reference location should be established for the Consolation Mine reclamation area because the waste was reclaimed in place.

The following table lists the reference site soil samples used in the BERA for terrestrial EUs.

EU	Name	Reference Site Data Set
1	Upper Anaconda Mine Waste Removal Areas and Waste Piles	ACBG-1 ACBG-2
2	Blackfoot River Dispersed Tailings Associated with EE/CA Removal Action Area and Overbank Deposits	ACBG-1 ACBG-2 UBRBG-202 UBRBG-204
3	Capital Mine Waste Area	SGBG-1 SGBG-201
4	Carbonate Mine Waste Area	SWGBG-1 SWGBG-2
5	Edith Area Waste Areas	SHGBG-1 SHGBG-2 SHGBG-201 SHGBG-202
6	Consolation Mine Waste Area	SHGBG-1 SHGBG-2 CONM-RF-RV1[1]
7	Mary P. Mine Waste Pile	SGBG-1 UBRBG-204
8	Mike Horse Mine Waste Piles	BCBG-1 MHBG-201 MHBG-202
9	Paymaster Mine Waste Areas	PCBG-1 MGBG-1 MGBG-2 PCBG-201 BCBG-202
10	Number 3 Tunnel Waste Area	SGBG-1 UBRBG-201 SBGB-201
11	Beartrap Creek Dispersed Tailings Deposits Associated with EE/CA Removal Action Area and Overbank Tailings Deposits and Flossie Louise Mine Waste Pile	ACBG-1 ACBG-2 BCBG-201

Note:
1 Reference sample for revegetation cover monitoring only.

Tissue

Plant and animal tissue samples representative of an area unaffected by mining were collected near Anaconda Creek for use in the FCMs (Figure 2-12). Sample designations consisted of the following: ANTREFTS for soil, ANTREFVE for vegetation, ANTREFTI for invertebrate, and ANTREFMA for mammal, followed by the sample number.

Revegetation Cover Monitoring

Reference sites for vegetation cover were selected based on criteria in Chambers and Brown (1983), including proposed post-disturbance land use and the approved revegetation plan, site

conditions (such as elevation, precipitation, slope, and aspect), plant life form and seasonal varieties in vegetation, post-reclamation management, soil characteristics, and site potential (having the capability to realistically produce comparable vegetation). Reference areas selected were all located in the UBMC (Figure 2-14). As such, it is likely that all sites experienced some disturbance related to mining (such as select timber cutting for mine and structure timbers). Despite the relatively recent disturbance, selected reference sites were representative of forest conditions throughout the area.

Monitoring plots from nine reclamation areas were evaluated and compared with reference sites. Reclamation sites were dominated by herbaceous species, predominantly seeded grasses. Reference sites were selected to represent coniferous forest types, a grassland meadow, and riparian vegetation, as indicated in table below.

EU	List of Reclamation and Reference Sites		
	Reclamation Site	**Monitoring Plot Reference Site**	**Representative Vegetation Type**
1	Upper Anaconda Mine waste areas (UAW2, UAW5)	Upper Anaconda (UAW-RF1, UAW-RF2)	Douglas-fir forest
3	Capital Mine waste area (CMWA)	Consolation reference (CONM-RF1, CONM-RF2) Carbonate repository (CARM-FR1, CARM-RF2)	Lodgepole pine forest
4	Carbonate Mine waste area (CARM)	Pass Creek (PC-RF1, PC-RF2)	Riparian
4	Carbonate repository	Carbonate repository Consolation reference (CONM-RF1, CONM-RF2)	Lodgepole pine forest
5	Edith Mine waste areas (EEA, CEA, and WEA)	Shave Gulch (SHG-RF1, SHG-RF2)	Grassland meadow
6	Consolation Mine waste area (CONM)	Consolation reference (CONM-RF1, CONM-RF2) Carbonate repository (CARM-FR1, CARM-RF2)	Lodgepole pine forest
8	Upper Mike Horse Mine waste areas (UMH1, UMH2, and UMH3)	Consolation reference (CONM-RF1, CONM-RF2) Carbonate repository (CARM-FR1, CARM-RF2)	Lodgepole pine forest
9	Paymaster Mine waste areas (PM1, PM2) and repository	Consolation reference (CONM-RF1, CONM-RF2) Carbonate repository (CARM-FR1, CARM-RF2)	Lodgepole pine forest
10	Number 3 Tunnel Mine waste area (N3TA)	Consolation reference (CONM-RF1, CONM-RF2) Carbonate repository (CARM-FR1, CARM-RF2)	Lodgepole pine forest

2.3.2.2 Marsh (EU 12)

Sediment and tissue samples were collected from three locations in Pass Creek to represent unaffected habitats comparable to the Upper Marsh portion of EU 12 (Figure 2-12). Sediment samples were collected at three depths (0 to 2 inches, 2 to 6 inches, and 6 to 12 inches bgs) from three locations in Pass Creek Marsh (BRSD-5, PGBG-1, and PGBG-2) (Table 2-20). Plants, invertebrate, and small mammals for use in the FCMs were collected along a transect (Figure 1-2). Sample designations consisted of the following: PGREFTS for soil, PGREFVE for vegetation, PGREFTI for invertebrate, and PGREFMA for mammal, followed by the sample number.

2.3.2.3 Stream (EU 13)

The following sections summarize the reference site data for sediment and tissue used in the BERA for the stream.

For EU 13, surface water and sediment samples collected in 2007 and 2008 from sites upstream from historical mining were considered to represent reference site conditions (Tables 2-20 and 2-21). Reference sites include Anaconda Creek (BRSW-6) and Pass Creek (BRSW-11) (Figures 1-2, 2-13A, and 2-13B).

One macroinvertebrate community sample, one periphyton sample, and one macroinvertebrate tissue sample were collected from reference location BRSW-6 in Anaconda Creek in 2007, and again in 2008. Macroinvertebrate samples were analyzed as described for the UBMC samples in EU 13.

One surface sediment sample was collected in Pass Creek Gulch as a reference site for the *Hyallela azteca* bioassay (Figures 1-2, 2-13A, and 2-13B). The sample was also analyzed using the same protocols as for the site samples. The bioassay reference site sample was designated as BA3-Ref.

The following table lists the sediment and surface water reference site samples including year collected and the depth interval of the sample used in the BERA for EU 13.

Reference Site Data Set	Sediment or Surface Water
BRSW-6 SE (2007) (0-2 inches bgs) BRSW-6 SE (2008) (0-2 inches bgs) BRSW-11 SE (2007) (0-2 inches bgs)	Sediment
BRSW-6 (2007) BRSW-6 (2008) BRSW-11 (2007)	Surface Water
BRSW-6 (2007) BRSW-6 (2008)	Invertebrate tissue Benthic invertebrate community analysis Periphyton
BRSW-6 (2008)	Invertebrate Bioassay (sediment)

2.3.3 Data Assumptions

The following data assumptions were agreed on with DEQ for use in the BERA for all EUs. The assumptions below pertain to all EUs and reference locations. The subsequent three subsections present assumptions specific to terrestrial EUs, aquatic EUs, and reference locations.

- Risk from arsenic, cadmium, copper, lead, manganese, and zinc will be evaluated.
- Aluminum will be assumed to pose risk wherever soil pH is less than 5.5.

- Mercury will not be evaluated because it was not detected at any EU by either XRF 10 or by standard laboratory methods.
- Iron will not be evaluated because no screening benchmarks are available for soil, sediment, or FCM.
- Risk will be evaluated on a point-by-point basis. No EU-wide exposure concentration will be estimated.
- One-half the detection limit will be substituted for non-detects. Risk will not be evaluated for a sample when the non-detect value is less than the minimum detected reference site concentration.
- Although the DEQ arsenic action level is 40 milligrams per kilogram (mg/kg) arsenic in residential surface soil based on laboratory analysis of Montana native soil samples collected from unimpacted soils across Montana (DEQ 2005), in the BERA arsenic will be screened against the minimum reference value so that locations posing risk will not be inadvertently screened out. Where potential risk to a receptor is indicated, the DEQ arsenic action level will be considered in the risk characterization.
- Risk to birds and mammals will be evaluated using a FCM approach.
- Discrete and composite samples will be treated identically.
- PERGs will be based on risk to birds and mammals.

2.3.3.1 Terrestrial Exposure Units (EU 1 through 11)

- Except for cadmium, risk will be evaluated using XRF 10 results from 2007 and 2008 data. Cadmium will be evaluated using laboratory data.
- Aluminum will be assumed to pose risk wherever soil pH is less than 5.5. (Limited XRF 10 and laboratory results are available for aluminum.)
- HQs for plants and invertebrates will be calculated using screening benchmarks for terrestrial plants and invertebrates.
- PERGs for EUs 1 through 11 will be calculated using the maximum plant, invertebrate, and mammal bioaccumulation factors (BAF) from the Anaconda Creek reference location (ANTREF).
- Samples collected as part of the reclamation revegetation study will be evaluated as a line of evidence for risk to plants in the BERA. Reclamation area samples were composites of four to six points collected from surface soil in reclamation areas where vegetative cover was lacking or appeared stressed.

2.3.3.2 Marsh and Stream Exposure Units (EUs 12 and 13)

- Risk will be evaluated using laboratory data only.
- Aluminum will be assumed to pose risk wherever soil pH is less than 5.5.
- HQs for aquatic invertebrates and fish will be calculated using sediment and surface water screening benchmarks for aquatic biota.
- PERGs for EU 12 will be calculated using the maximum plant, mammal, and invertebrate bioaccumulation factor (BAF) from the reference area (PGREF); PERGs for EU 13 will be calculated using the maximum invertebrate BAF from the collocated stream samples.

2.3.3.3 Reference Site Locations

- When the reference site concentration is non-detect, the full detection limit will be used as the reference site concentration. Although 1/2 detection is used for the site concentrations, the full DL was used for reference locations because the PERG is set to the minimum reference location in cases where the calculated remedial goal or toxicity benchmark is lower than the minimum reference concentration. It is not practical to set a PERG to 1/2 the detection limit, because the detection limit is not achievable. This approach was approved by DEQ during the scoping meetings.
- If more than one reference site sample is available, the minimum reference site concentration will be used to screen the results (Table 2-19).
- Each sample concentration will be screened against reference sample results. Locations where the site concentrations are less than reference site will be flagged BB and excluded from further evaluation in the BERA.
- Aluminum will be assumed to pose risk wherever soil pH is less than 5.5. (No XRF 10 or laboratory results are available for aluminum for the reference sites.)
- Site concentrations that are greater than the minimum reference site concentration will be evaluated in the BERA, regardless of the range of reference site concentrations.

2.4 CONCEPTUAL SITE MODEL

The CSM defines the exposure pathways to be evaluated in the risk assessment and provides other key information, such as contaminant sources and release and transport mechanisms. The CSM illustrates the relative importance of each of those processes or components to specific assessment endpoints. It also establishes whether a complete exposure pathway exists to a receptor of interest and aids in identifying missing information or areas of uncertainty in the understanding of how different stressors may pose a risk to selected receptors. The CSM includes the following components:

- **Stressors:** identification of site stressors in an ecological context. Stressors can be defined as any factor that can cause adverse ecological impacts on natural resources at the site; only inorganic chemical stressors are addressed directly in this BERA. Other types of stressors are mentioned when relevant.
- **Exposure Pathways and Critical Receptors:** identification of complete ecological exposure pathways such as ingestion and the critical receptors that may be exposed. Critical receptors include representatives of important feeding guilds and special status species.
- **Fate and Transport:** description of potential pathways of chemical transport and the ultimate fate of site chemicals, including the potential for biogeochemical transformation of the chemicals, potential for on- and off-site migration of chemicals, and biotic transfer.
- **Assessment and Measurement Endpoints:** identification of assessment and measurement endpoints used to characterize risk at the site. Assessment endpoints are environmental characteristics or values that, if found to be significantly affected, would indicate a need for action by risk managers. Measurement endpoints more closely reflect technical considerations in the risk assessment process; that is, measurement endpoints are focused on more direct measures of ecological effects that allow for an evaluation of risk to assessment endpoints.

The site-wide CSM provides details about exposure routes for specific assessment endpoints (Figure 2-15). The following sections review components of the CSM.

2.4.1 Chemical Stressors

At the UBMC, nine metals were identified as COPECs in the draft RI: aluminum, arsenic, cadmium, copper, iron, lead, manganese, mercury, and zinc. Arsenic, cadmium, copper, lead, manganese, and zinc were evaluated for all receptors in all EUs, based on the assumptions presented in Section 2.3.3 regarding non-detects and reference concentrations.

Aluminum was not evaluated in soil because no XRF 10 data were available. Aluminum was evaluated in EU12 where low pH suggested potential toxicity. In EU 13, aluminum was evaluated in surface water and in the FCM for birds. Aluminum and iron are discussed further in the sections below.

2.4.1.1 Aluminum

Aluminum is the most commonly occurring metallic element in the Earth's crust, typically ranging from 1 to 30 percent. Benchmarks for plants and soil invertebrates are based on laboratory tests in which an aluminum solution is added to test soils (Efroymson 1997a, 1997b). EPA (2003b) recommends against using these benchmarks, however, because total aluminum in soil is not well correlated with actual toxicity in the field. Soluble aluminum (and not total aluminum) is associated with uptake and bioaccumulation of aluminum from soils into plants (EPA 2003b). Correlations between measured soil pH and aluminum toxicity indicate aluminum is toxic only where soil pH is less than 5.5. At such low pH levels, some of the aluminum enters

into solution, where it is readily bioavailable to living organisms (EPA 2003b). Therefore, soil pH rather than total aluminum is used to evaluate toxicity to ecological receptors in soil.

Soil pH ranged from 1.9 to 7.7 in the terrestrial EUs (EU 1 through 11); the pH of almost 63 percent of the 135 soil samples was less than 5.5. In every EU, the pH of at least one sample was less than 5.5 (see table below).

	Terrestrial Exposure Unit										
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**
Number of Results Less than pH 5.5/ Number of Samples Analyzed	6/8	43/65	2/5	1/3	3/9	6/8	1/1	8/13	4/5	2/3	11/15
Minimum Soil pH	1.9	2.0	2.1	5.3	2.9	2.6	4.2	4.0	3.7	4.7	3.6

Aluminum in soil potentially poses a risk to ecological receptors in all the terrestrial EUs based on the published literature suggesting that soils with pH less than 5.5 are associated with aluminum toxicity (EPA 2003b). Actual aluminum toxicity is not known because soluble aluminum in soil was not measured, and no screening benchmarks for soluble aluminum have been developed. Aluminum will be considered a COPEC in soil in all terrestrial EUs.

Potential toxicity of aluminum was evaluated spatially in the Marsh (EU 12). The pH in marsh sediment samples ranged from 1.8 to 7.1; the pH in 69 of the 140 samples (49 percent) was less than 5.5; all of the low pH samples were collected in the Upper Marsh (except location MMSD-202 from 0 to 2" bgs in the Middle Marsh, which had a pH of 5.1). Aluminum is more likely to be in a soluble form in a wetland habitat than in soil. It is assumed that aluminum poses a potential risk to ecological receptors where pH is less than 5.5 in marsh sediment (Figure 2-16). Aluminum toxicity at these locations is unknown because soluble aluminum in soil is not well characterized and no benchmarks other than pH have been established. Aluminum will be considered a COPEC in the Upper Marsh portion of EU 12. Toxicity of aluminum to birds and mammals was evaluated using the same FCM used to evaluate other metals.

In the stream (EU 13), aluminum was evaluated in surface water using aquatic life criteria (DEQ-7). No freshwater sediment criteria are available for aluminum in montane streams. The toxicity of aluminum in montane streams is highly variable and pH dependent (Besser and Leib 2007). Toxicity of aluminum to birds feeding in the stream was evaluated using the same FCM used to evaluate other metals.

2.4.1.2 Iron

Iron was not evaluated as a COPEC in the BERA because no toxicity benchmarks are available for iron. It is not considered a priority pollutant by EPA (40 Code of Federal Regulations Part 423). Iron is an essential trace element that mediates oxygen and energy transport in all living organisms (Aisen and others 2001). Worldwide, concentrations of iron in soils are highly variable, generally ranging from 0.2 percent to 55 percent (20,000 to 550,000 mg/kg) (Bodek and others 1988, as cited in EPA 2003c). Concentrations at the UBMC typically range from 15,000

to 75,000 mg/kg, with a minimum reported concentration of 8,760 mg/kg and a maximum of 199,000 mg/kg. Reference site concentrations of iron ranged from 14,900 to 63,900 mg/kg.

2.4.2 Non-chemical Stressors

Mining wastes directly and indirectly affect the physical integrity of a habitat. Habitat value is a function of many interdependent variables that together provide the features necessary to sustain a biological community. When an essential physical feature is disturbed, a cascade of indirect effects may reduce the ability of the habitat to function as it did before the disturbance. For example, release of masses of mine tailings into the Blackfoot River immediately reduced vegetative cover, altered stream hydrology, and increased sediment load and erosion; these physical effects are in addition to the toxicological impacts of the metals in the tailings. Indirect, or secondary, effects of the initial physical disturbance are numerous and may appear within days or not for many months after the disturbance. Indirect effects include increased water temperature resulting from loss of streamside vegetation; decreased food supply for fish and wildlife as benthic invertebrates are smothered by sediment; and stress to young fishes whose gills are clogged by suspended sediment.

Quantifying the ecological impacts that result from direct or indirect physical disturbance at the UBMC would require extensive regional study, which is beyond the scope of this BERA. However, the risk characterization would not be complete without an acknowledgement of the role that physical disturbance plays in community and ecosystem recovery. These variables are addressed to the extent practicable in the risk management section of this report (Section 7.0).

2.4.3 Exposure Pathways and Critical Receptors

The potential routes of exposure describe the means by which chemicals are transferred from a contaminated medium to ecological receptors. The routes by which ecological receptors may be exposed to COPECs at the UBMC are described in the following sections.

2.4.3.1 Plants

Plants can absorb chemicals from soil, sediment, surface water, and groundwater through their roots, leaves, or stems, and can store these chemicals in their tissues. Chemicals that have bioaccumulated in plant tissues can then be transported to receptors that eat the plants.

2.4.3.2 Invertebrates

Aquatic invertebrates may be exposed to chemicals in soil, sediment, and surface water through ingestion and absorption (direct contact). Some invertebrates ingest soil or sediment purposefully in the process of obtaining nutrients. Invertebrates that feed on periphyton may ingest high concentrations of metals as they graze (Chapman and others 2003). Others ingest sediment incidentally during feeding or burrowing. Likewise, ingestion of surface water may be necessary or accidental. Most invertebrates can absorb chemicals through the outer covering (integument or epidermis). Both aquatic and terrestrial invertebrates are critical transport links from abiotic media to higher vertebrates.

2.4.3.3 Fish

Fish and amphibians may be exposed to chemicals in sediment and surface water through dermal contact and uptake through gills, as well as through direct ingestion. Significant exposure may also occur through ingestion of contaminated prey (Hansen and others 2004).

2.4.3.4 Birds and Mammals

The principal route of exposure to birds and mammals at the UBMC is intentional and incidental ingestion; soil, sediment, and contaminated food items make up the majority of the daily dose of chemicals. Secondary components of exposure include dermal contact and inhalation of particulates. Contaminants are most often ingested during foraging, grooming, and burrowing. Invertivorous and carnivorous animals also consume the soil or sediment contained in the gut of their prey. Some animals, such as ground-feeding birds and deer, may deliberately ingest soil or sediment to meet their mineral requirements.

2.4.4 Fate and Transport

The potential pathways for chemical mobilization and transport at the UBMC include the following:

1. Groundwater-surface water interactions (groundwater recharge to surface water bodies) or direct discharge of groundwater that contains dissolved chemicals into the surface water.
2. Surface transport, including surface water transport of dissolved chemicals or chemicals adsorbed to suspended particles, and wind transport of chemicals in soil and dust.
3. Biotic transport of chemicals in plant and animal tissue from one area to another.

Sulfide-bearing vein deposits are enriched in sulfide minerals, principally pyrite, chalcopyrite, sphalerite, galena, marcasite, and molybdenite, with varying amounts of base and precious metals (including silver, arsenic, cadmium, copper, iron, lead, manganese, molybdenum, and zinc). When exposed to oxygen in the atmosphere, in either mine workings or in oxidizing groundwater in bedrock fractures and faults, weathering of these minerals releases sulfuric acid to the water, which then increases the solubility of most metals (Tetra Tech 2013).

Source areas in the headwaters of the upper Blackfoot River also contain a number of waste rock dumps and secondary deposits of sediment transported when the Mike Horse Tailings Impoundment breached and during other over-bank flow events. Historical underground adits at the Mike Horse and Anaconda, mines release a perennial discharge of poor-quality water. Other smaller adits with minor discharges/small seeps, like the one at the Paymaster mine, have been recently identified in peripheral upland valley portions of the UBMC. Infiltration, surface water runoff, and groundwater ultimately transport these metals to area streams (Tetra Tech 2013).

The Upper Marsh acts as a sink and a source for metals as water levels and oxidation/reduction potential fluctuates in response to seasonal perturbations. Contaminated sediments are transported downstream by surface waters, and then trapped in low-gradient areas. Vegetation benefits from the influx of nutrients (although some metals may actually limit plant growth); vegetation then acts to further slow the passage of water trough the marsh. Sediment and surface water have time to interact in the sluggish marsh environment, altering the chemical speciation of the original metals that were deposited there. Bacteria can also act on the sediment matrix, as their metal-binding proteins reduce the bioavailable fraction of some heavy metals. Depending on the season and the regional flow patterns, surface water may interact with groundwater in the marsh, further complicating the fate and transport of metals in the area (Tetra Tech 2013).

Transport pathways and the potential for migration of site chemicals are discussed in the following sections. A schematic diagram of exposure routes and potential receptors at the UBMC is provided in Figure 2-15.

2.4.4.1 Run-off and Erosion from Mine Wastes

Surface water runoff and erosion of mine waste represent a common release mechanism for contaminants to surface water throughout the UBMC. Erosion of mine waste by precipitation, storm water, and snowmelt, and its subsequent release to surface waters, is evidenced by failed tailings dams, erosional gullies, and alluvial sedimentary aprons present on the surface of, or near, mine waste deposits. Waste deposits located near surface water are susceptible to erosion of the mine wastes, such as scouring and undercutting of mine waste deposits located in stream banks adjacent to active channels. Erosion of surficial soil and waste piles has also resulted in transport of contaminants to the streams.

2.4.4.2 Oxidation of Sulfides

Metals are made available for mobilization as products of sulfide mineral oxidation. The oxidation of metal-bearing sulfide phases generates acidity and releases metals. Once freed from the mineral structure, metals and acidity can be leached from sources (mine wastes, tailings, sediment, and exposed ore deposits) and then transported via acidic water to receiving streams and to the groundwater system.

2.4.4.3 Metal Solubility in Water

The acidic waters that commonly result from the oxidation of sulfides greatly enhance the solubility of metals in solution. Dissolved metals can be directly toxic to aquatic organisms and can be accumulated in tissues at concentrations that can pose a risk to the organism itself or to its predator.

2.4.4.4 Leaching and Infiltration by Storm Water

Infiltration of storm water (including snowmelt) and leaching of contaminants may also contribute to contaminant transport from primary sources into subsurface soils, surface water, and shallow groundwater. Native soils several feet beneath the mine wastes contain elevated concentrations of some metals; this vertical profile indicates that metals have leached from the mine waste sources into the soil.

2.4.4.5 Surface and Groundwater

Shallow groundwater and surface water are in direct communication at the UBMC. Contaminants transported in solution or suspended in surface water can contaminate groundwater through losses of surface water to groundwater. Contaminated groundwater can contaminate surface water via these same interactions. Groundwater discharges to surface water through seeps and springs, and it contributes base flow to streams.

2.4.4.6 Wind Erosion

Contaminants are transported in soil that has been eroded and redeposited as particulates (fugitive dust). Wind and vehicular traffic can transport dry mine waste and tailings into the air.

2.4.4.7 Biotic Transport

Contaminants may also be transported around the site and off site in plant and animal tissues. Fish may provide a route of off-site transfer of chemicals when they are consumed by highly mobile birds and mammals, such as eagles and otter. Off-site transport also occurs directly when a contaminated fish moves downstream and is consumed by predators far from the UBMC. Chemicals in the tissues of mobile receptors (some flying insects, fish, birds, and mammals) may be carried off site and deposited in other locations in the form of feces or corpses (Chapman and others 2003).

Airborne particulate metals can dust the feathers of birds and the fur of mammals and can be transported off site wherever the animal travels. The ultimate fate of these particulates is varied: the animal or its conspecific may ingest the metals directly during preening or grooming; a predator may ingest the metals along with the animal; or the contaminated particulates may simply drop from the animal randomly as it travels.

2.4.5 Assessment and Measurement Endpoints

Assessment endpoints are "explicit expressions of the actual environmental values (e.g., ecological resources) that are to be protected" (EPA 1997). Assessment endpoints are environmental characteristics that, if impaired, would indicate a need for action by risk managers. Various definitions of valuable ecological resources include those without which ecosystem function would be impaired; those that provide critical resources, such as habitat for fisheries; and those perceived by humans as being sociologically valuable, such as endangered species and other issues addressed by legislation. Useful assessment endpoints define both the valuable ecological entities at the site and a characteristic of the entity to protect, such as reproductive success or production per unit area.

The focus during this BERA is on assessment endpoints most likely to be affected by metals at the UBMC. Fate and transport mechanisms, ecotoxicological properties, habitats, and receptors at the site all influence the selection of the assessment endpoints, given below:

- **Maintenance of Healthy Plant Communities.** Plants provide structure and function to the terrestrial habitat. Plants form the basis of the food web for most consumers; adverse effects on the plant community could reduce the quantity and quality of food available to higher-trophic-level consumers. Plants are also essential to reducing soil erosion and maintaining good water quality in the streams. Therefore, the survival, growth, and reproduction of plants are considered ecological values to be protected.

- **Maintenance of Sufficient Rates of Survival, Growth, and Reproduction to Sustain Populations of Fish and Aquatic Invertebrates.** Fish and aquatic invertebrates play an important role in nutrient cycling and in the food web at the site. Adverse effects on invertebrates could reduce the quantity and quality of food available to higher-trophic-level consumers. Therefore, the survival, growth, and reproduction of fish and aquatic invertebrates are considered ecological values to be protected.

- **Maintenance of Sufficient Rates of Survival, Growth, and Reproduction to Sustain the Populations of Terrestrial Invertebrates.** Invertebrates play an important role in nutrient cycling and in the food web at the site. Adverse effects on invertebrates could reduce the quantity and quality of food available to higher-trophic-level consumers. Aquatic invertebrates are critical to the success of fish populations in the streams. Therefore, the survival, growth, and reproduction of invertebrates are considered ecological values to be protected.

- **Survival, Growth, and Reproduction of Herbivorous Birds and Mammals.** Herbivorous birds and mammals provide food for upper-trophic-level consumers. Adverse effects on these primary consumers could reduce the amount of food available to higher-trophic-level consumers. Some herbivorous mammals, such as moose and elk, are directly important to humans. Therefore, the survival, growth, and reproduction of herbivorous birds and mammals are considered ecological values to be protected.

- **Survival, Growth, and Reproduction of Omnivorous Birds and Mammals.** Omnivorous birds and mammals provide food for upper-trophic-level consumers. Adverse effects on these secondary consumers could reduce the amount of food available to higher-trophic-level consumers. Some omnivorous birds, such as waterfowl, and mammals, such as the grizzly bear, are highly valued and protected by humans. Therefore, the survival, growth, and reproduction of omnivorous birds and mammals are considered ecological values to be protected.

- **Survival, Growth, and Reproduction of Insectivorous Birds and Mammals.** Insectivorous birds and mammals provide food for upper-trophic-level consumers. Adverse effects on these secondary consumers could reduce the amount of food available to higher-trophic-level consumers. Therefore, the survival, growth, and reproduction of insectivorous birds and mammals are considered ecological values to be protected.

- **Survival, Growth, and Reproduction of Carnivorous Birds and Mammals.** Carnivorous birds and mammals are important consumers at the site and play a role in structuring the community. Adverse effects on these top predators would be undesirable because the loss of top predators generally leads to disruption of lower trophic levels. Therefore, the survival, growth, and reproduction of carnivorous birds and mammals are considered ecological values to be protected.

A measurement endpoint is "a measurable ecological characteristic that is related to the valued characteristic chosen as the assessment endpoint and is a measure of biological effects (such as mortality, reproduction, or growth)" (EPA 1997). Measurement endpoints more closely reflect technical considerations in the risk assessment process; that is, they focus on both direct measures of ecological effects (such as toxicity tests) and indirect measures (such as food chain modeling) that allow for an evaluation of risk to representative receptors. Measurement endpoints are often expressed as statistical or arithmetic summaries of observations and can include measures of both effect and exposure. Each measurement endpoint correlates directly with one of the assessment endpoints presented above.

Measurement endpoints were selected to represent the species or communities present or potentially present at the UBMC. The following measurement endpoints were used in evaluating potential ecological effects on the assessment endpoints identified in this BERA:

- **For terrestrial plants, comparison of the concentrations of chemicals in soil with toxicity benchmarks for plants.** Chemical concentrations in soil were compared with Ecological Soil Screening Levels (Eco-SSL) (EPA 2008) or Oak Ridge National Laboratory (ORNL) benchmarks for plants (Efroymson and others 1997a; ORNL 2006).

- **For fish and aquatic invertebrates, comparison of the concentrations of chemicals in sediment with toxicity benchmarks for aquatic organisms.** Chemical concentrations in sediment were compared with Washington State sediment TEL, probable effects levels (PEL) (Canadian Council of Ministers of the Environment [CCME] 2002), and severe effect levels (SEL) (Ontario Ministry of Environment 1993). Ontario Ministry of Environment 1993). The screening level benchmarks established by the EPA Region III Biological Technical Assistance Group (EPA 2006b) are similar to the PELs (see Table 2-22).

- **For terrestrial invertebrates, comparison of concentrations of chemicals in soil with toxicity benchmarks for invertebrates.** Chemical concentrations in soil were compared with Eco-SSLs (EPA 2008) or ORNL benchmarks for effects on soil and litter invertebrates (Efroymson and others 1997b; ORNL 2006).

- **For birds and mammals, reproductive or physiological effects were evaluated using the HQ approach.** Potential reproductive or physiological effects were evaluated using literature-derived toxicity reference values (TRV). Daily doses were modeled based on chemical concentrations at the site and information on natural history for avian and mammalian receptors.

Twelve vertebrate receptors were selected as representative of the feeding guilds expected to occur in the EUs. Representative receptors were based on species known to occur in Lewis and Clark County (Table 2-1) and recommendations of local wildlife and fisheries experts from Montana Fish and Game (Tetra Tech 2009). The following table lists the vertebrate receptors evaluated in the BERA for each EU.

Representative Receptor	Applicable Habitat	Exposure Units	Feeding Guild
American Dipper (*Cinclus mexicanus*)	Stream	13	Insectivore
Great Blue Heron (*Ardea herodias*)	Stream, Marsh	12, 13	Carnivore
Mourning Dove (*Zenaida macrocura*)	Terrestrial, Marsh	1-12	Herbivore
Red-Tailed Hawk (*Buteo jamaicensis*)	Terrestrial, Marsh	1-12	Carnivore
American Kestrel (*Falco sparverius*)	Terrestrial, Marsh	1-12	Insectivore
Meadow Vole (*Microtus pennsylvanicus*)	Terrestrial, Marsh	1-12	Herbivore
White-Tailed Deer (*Odocoileus virginianus*)	Terrestrial, Marsh	1-12	Herbivore
Red Fox (*Vulpus vulpus*)	Terrestrial, Marsh	1-12	Carnivore
Masked Shrew (*Sorex cinereus*)	Terrestrial, Marsh	1-12	Insectivore
Canada Goose (*Branta canadensis*)	Marsh	12	Herbivore
Mallard (*Anas platyrhynchos*)	Marsh	12	Omnivore
Muskrat (*Ondatra zibethicus*)	Marsh	12	Herbivore
Mink (*Mustela vison*)	Marsh	12	Carnivore

The relationship between the selected assessment and measurement endpoints is summarized in the table below:

Assessment Endpoints	Measurement Endpoints
Terrestrial Plants	
Maintenance of healthy **plant communities**	• Comparison of soil concentrations of metals with benchmarks based on survival, reproduction, and growth of plants
Benthic Invertebrates and Fishes	
Maintenance of sufficient rates of survival, growth, and reproduction to sustain populations of native **aquatic invertebrates and fish**	• Comparison of sediment concentrations of metals with benchmarks based on survival, reproduction, and growth of benthic invertebrates (TEL, PEL, and SEL) • Comparison of total concentrations of metals in surface water with Montana numeric water quality standards for aquatic life (DEQ-7) • Measurement of survival and growth of amphipods in site sediment compared with laboratory control and reference site sediment • Measurement of metal residues in invertebrate tissue; comparison with effect ranges in literature • Evaluation of community metrics for benthic invertebrates • Evaluation of periphyton health • Measures of benthic community and periphyton health are indirectly linked to the fish assessment endpoint through protection of the food source of fishes
Terrestrial Invertebrates	
Maintenance of sufficient rates of survival, growth, and reproduction to sustain populations of native **terrestrial invertebrates**	• Comparison of soil concentrations of metals with benchmarks based on survival, reproduction, and growth of terrestrial invertebrates and soil litter
Birds and Mammals	
Protection of populations of **herbivorous birds** (for example, mourning dove) **and mammals** (for example, meadow vole) from toxic effects on survival, reproduction, and growth resulting from metals ingested in soil, sediment, and plants	• Measurement of metals concentrations in soil and plants • Comparison of daily ingested dose with TRVs based on survival, reproduction, and growth
Protection of populations of **omnivorous waterfowl** (for example, mallard) from toxic effects on survival, reproduction, and growth resulting from metals ingested in sediment and prey	• Measurement of metals in sediment and invertebrates • Comparison of daily ingested dose with TRVs based on survival, reproduction, and growth
Protection of populations of **insectivorous birds** (for example, American dipper and American kestrel) **and mammals** (for example, masked shrew) from adverse effects on survival, reproduction, and growth resulting from metals in soil, sediment, and prey	• Measurement of metals in soil, sediment, and terrestrial and aquatic invertebrates • Comparison of daily ingested dose with TRVs based on survival, reproduction, and growth
Protection of populations of **carnivorous birds** (for example, great blue heron) **and mammals** (for example, mink) from adverse effects on survival, reproduction, and growth resulting from chemicals in soil, sediment, and prey	• Measurement of chemical residue in soil, sediment, invertebrates, and small mammals • Comparison of daily ingested dose with TRVs based on survival, reproduction, and growth

3.0 ANALYSIS OF EXPOSURE AND EFFECTS

The analysis of risk focuses on estimates of two separate processes: (1) exposure of an organism to a chemical, and (2) adverse effect of the chemical to that organism. In the problem formulation phase, the environmental setting was described so that potential exposure and effects could be discerned. In the analysis phase, site-specific conditions are evaluated in the context of the scientific literature so that risk estimates can be developed. The CSM described in Section 2.4 provides the framework for the analysis, which focuses on the relationships between receptors, potential exposures, and potential effects. This evaluation of exposure (Section 3.1) and effects (Section 3.2) leads logically into the risk estimate and characterization in Section 4.0.

3.1 EVALUATION OF EXPOSURE

Receptor-specific natural and life history characteristics that can influence potential risk, such as diet, trophic relationships, site use, foraging range, and possible exposure pathways, were evaluated during the selection of assessment endpoints. These features are presented for each receptor in Appendix F. Additional natural history information was gathered from the published literature and is discussed where relevant in the sections below.

Based on EPA guidance (EPA 2007), exposure was assumed to be to soil from 0 to 6 inch bgs for EUs 1 through 11, which corresponds to the depth interval of samples available in most of the EUs. Additional samples were collected from 0 to 4 feet bgs at a sub-set of locations in EU 2, so the exposure assumption was expanded to include these deeper samples. Exposure to sediment in EU 12 and EU 13 was assumed to occur in the top 12 inches. Hand dug test pits were dug to a depth of about 12 inches and samples collected beginning from the top of the mineralized sediment interface (i.e., beginning at the base of the current vegetative root layer) to 2 inches (0-2 inches), 2-6 inches, and 6-12 inches. Exposure was evaluated separately for each depth interval. Stratigraphic differences with respect to metals deposition were also evaluated. One-half the detection limit was substituted for non-detects for all samples. Risk was not evaluated at locations where the detected value, or the substituted detection limit value, was less than the minimum reference site concentration.

Exposure assumptions for each receptor group are given below in Section 3.1.1 through Section 3.1.4. The effects of bioavailability on exposure estimates are discussed in Section 3.1.5. Comments on trophic linkages among EUs and habitats are in Section 3.1.6.

3.1.1 Exposure – Plants

The evaluation of risk to plants focused on determining whether conditions at UBMC were adequate to maintain sufficient rates of survival, growth, and reproduction of plants. Plants are exposed to chemicals via direct contact with contaminated soil. Root uptake is the dominant route for entry of metals into terrestrial plants (Hughes 1981). Bioavailability of metals for root uptake varies with the oxidation state and the organic composition of the soil. One hundred percent bioavailability was assumed for the BERA.

Risk to plants was evaluated for EUs 1 through 12. It was assumed that root depths of terrestrial and marsh plants could extend up to 12 inches bgs; therefore, all soil and sediment samples were used to evaluate plants.

3.1.2 Exposure – Terrestrial Invertebrates

The evaluation of risk to terrestrial invertebrates focused on determining whether metals concentrations in soil were likely to interfere with survival, growth, or reproduction. The CSM presented in Section 2.4 identifies a potentially complete exposure pathway from contaminated soils to terrestrial invertebrates in soil via direct contact. Similar to plants, risks to invertebrates are evaluated by comparing concentrations in soil at each sampling location with toxicological benchmarks (EPA 2008; Efroymson and others 1997b).

Risk to terrestrial invertebrates was evaluated for EUs 1 through 12. Exposure of terrestrial invertebrates was considered to occur via direct contact with contaminated soil. Ingestion of soil by terrestrial invertebrates is included in the direct contact pathway. Exposure point concentrations for invertebrates were assumed to be the concentration of each COPEC at each sampling location detected from 0 to 4 feet bgs at each site.

3.1.3 Exposure – Fish and Aquatic Invertebrates

The evaluation of risk to fish and aquatic invertebrates focused on maintaining sufficient rates of survival, growth, and reproduction to protect populations of invertebrates and fish in EU 12. The CSM presented in Section 2.4 identifies potentially complete exposure pathways from sediment and surface water to fish and aquatic invertebrates. Exposure of fish and aquatic invertebrates was considered to occur via ingestion of and dermal contact with contaminated sediment and surface water. Exposure point concentrations were assumed to be the metals concentrations in the top 1 foot of sediment at each sampling location in the stream habitat and the total metals concentrations in each surface water sample. Although it is acknowledged that fish are exposed to significant dietary sources of metals (Hansen and others 2004), current field methods are inadequate to quantify those sources. Dietary exposure to metals is addressed in Section 5.0 (Uncertainty Analysis).

3.1.4 Exposure – Birds and Mammals

FCMs for birds and mammals assume that exposure to COPECs is primarily through ingestion of contaminated soil and prey. Exposure models estimate the mass of a COPEC internalized daily by a receptor per kilogram of body weight per day (the daily COPEC dose). Estimates of exposure are generally based on knowledge of the spatial and temporal distribution of both COPECs and receptors and on specific natural and life history characteristics that influence exposure to COPECs. Soil and sediment concentrations at each sampling location at each site were used in FCMs to estimate doses to all vertebrate receptors. COPEC concentrations in prey were based on maximum BAFs calculated using collocated site-specific soil and tissue concentrations. The parameters used in estimating total daily doses to birds and mammals are provided in Tables 3-1 to 3-13. The BAFs for EUs 1 through 11, EU 12, and EU 13 are provided in Tables 3-14, 3-15, and 3-16.

3.1.4.1 Quantitative Exposure Estimate Using a Food-Chain Model

Daily doses were estimated for each COPEC and representative receptor. The calculated doses were then compared with TRVs, described in Section 3.2.5, to estimate the potential adverse biological effects on the receptor. The total exposure from ingestion for each receptor of concern was calculated as the sum of the separate dietary exposures. The following generic equation was adapted for each representative receptor:

$$Dose_{total} = \frac{([IR_{prey} \times C_{prey}] + [IR_{soil} \times C_{soil}]) \times SUF}{BW}$$

where:

$Dose_{total}$	=	Estimated dose from ingestion (milligrams per kilogram body weight per day [mg/kg-day])
IR_{prey}	=	Ingestion rate of prey (kilograms per day [kg/day])
C_{prey}	=	Concentration in dry weight of COPEC in prey (mg/kg)
IR_{soil}	=	Ingestion rate of soil (kg/day)
C_{soil}	=	Concentration in dry weight of COPEC in soil (mg/kg)
SUF	=	Site use factor (unitless)
BW	=	Adult body weight (kilogram [kg])

BERA risk estimates ensure that the assessment represents a realistic exposure scenario. Therefore, realistic exposure assumptions were used in this analysis, including species-specific site use factors and site-specific data (for example, plant, invertebrate, and mammal BAFs based on site data). Exposure was assessed in the context of the following linear food chains to evaluate potential ecological effects on birds and mammals:

EUs 1 through 11 (Terrestrial Sites)

Soil → Plants → Mourning Dove

Soil → Small Mammals → Red-Tailed Hawk

Soil → Invertebrates → American Kestrel

Soil → Plants → Meadow Vole (small mammals)

Soil → Plants → White-Tailed Deer (large mammals)

Soil → Small Mammals → Red Fox

Soil → Invertebrates → Masked Shrew

EU 12 (Upper Marsh)

Marsh Sediment → Plants → Mourning Dove

Marsh Sediment → Plants → Canada Goose

Marsh Sediment → Plants → Muskrat

Marsh Sediment → Plants → Meadow Vole (small mammals)

Marsh Sediment → Plants → White-Tailed Deer (large mammals)

Marsh Sediment → Plants and Invertebrates → Mallard

Marsh Sediment → Invertebrates → American Kestrel

Marsh Sediment → Invertebrates → Masked Shrew

Marsh Sediment → Small Mammals → Red-Tailed Hawk

Marsh Sediment → Small Mammals → Red Fox

Marsh Sediment → Small Mammals → Great Blue Heron

Marsh Sediment → Small Mammals → Mink

EU 13 (Stream)

Stream Sediment → Small Mammals → Great Blue Heron

Stream Sediment → Invertebrates → American Dipper

3.1.4.2 Bioaccumulation Factors and Models

Plant, invertebrate, and mammal tissues were collected from the terrestrial and marsh transects described in Section 2.3 (Figure 1-2). Terrestrial tissue samples were collected in EU 2 (Section 2.3.1.2) and EU 11 (Section 2.3.1.11). Marsh species were collected in EU 12 (Section 2.3.1.12). Benthic macroinvertebrate tissue was collected within the stream, as described in Section 2.3.1.13. Tissue concentrations were compared with collocated soil or sediment concentrations to generate BAFs.

The maximum plant, invertebrate, and mammal BAFs calculated using samples from the terrestrial transects (BC and BR) were used to evaluate risk to birds and mammals at EUs 1 through 11, and at the terrestrial reference location (ANTREF) (Table 3-17).

The maximum plant, invertebrate, and mammal BAFs calculated from the UMT1 and UMT2 transects were used to evaluate risk to birds and mammals in the Eastern and Western Upper Marsh (Table 3-19). No mammals were collected in the western portion of the Upper Marsh, so the maximum mammal BAF from the eastern portion of the Upper Marsh was used. The maximum plant, invertebrate, and mammal BAFs on the PCREF transect were used to evaluate risk to birds and mammals in the FCM at the marsh reference site locations (Table 3-18).

The maximum invertebrate BAF among all the collocated benthic invertebrate and sediment sampling locations in EU 13 was used to evaluate risk to aquatic birds in the stream. The maximum invertebrate BAF from the Anaconda Creek reference location (BRSW-6) was used to evaluate risk to aquatic birds at the stream reference locations (Table 3-19).

3.1.5 The Effect of Bioavailability on Exposure Estimates

Only the bioavailable fraction of the total metal concentration poses a risk. Total concentrations of metals detected in sediment and surface water are not expected to reflect actual exposure concentrations under most field conditions. Consideration of the factors affecting bioavailability of metals in terrestrial and aquatic habitats is a key component of this BERA.

The discussion of bioavailability in this section is presented in three parts: (1) estimating bioavailability (Section 3.1.5.1); (2) parameters that affect bioavailability of metals in sediment (Section 3.1.5.2); (3) descriptions of the chemistry, bioaccumulation potential, and toxicity of the six metals at the site (Section 3.1.5.3), and a summary of the bioavailability for each of the EUs. Uncertainties associated with estimating potential bioavailability of metals and for predicting potential toxicity based on bulk concentrations of metals are discussed in Section 5.0.

3.1.5.1 Estimating Bioavailability

The uptake of metals by plants and animals from soils, sediment, and water is a complex, dynamic process. A metal must be in a form available to an organism before true "exposure" can occur. Bioavailability is the extent to which a substance can be absorbed by a living organism or can cause an adverse physiological response. Plants take up bioavailable metals from soils, sediment, and water through contact with external surfaces. Animals absorb metals directly through their skin, ingest contaminated soil, sediment, water, and food, and inhale vapor-phase metals or airborne particles (Hamelink and others 1994). A fish, for example, can take up a metal directly from environmental media through its gills, its skin, or through incidental ingestion of sediment. Diet is an extremely important route of metals uptake in fish, as well as in higher-trophic level birds and mammals (Hamilton and Hoffman 2003).

Although exposure is a simple concept, accurately describing the fate and transport of metals from their source to a site of toxic action in a receptor can be complicated. For exposure to occur, a metal must leave the environmental matrix, move across several biological membranes, and ultimately concentrate in one or more tissues. A metal that can move from the environmental matrix to the tissue of a receptor is said to be bioavailable to that receptor (EPA 2004).

Bioavailability for ecological evaluations is typically addressed using one or more of the following approaches:

- Direct evaluation of exposures to the available fraction of metals in the environmental media using toxicity tests
- Indirect estimation of exposure using evidence of bioaccumulation
- Indirect estimation of food-chain exposure using models

Most of the total metals measured in soil or sediment typically occur in a residual fraction as part of the natural mineral matrix. The bioavailable portion of the metal is not bound within an environmental matrix and is able to enter into an organism. Bioavailability is specific to the existing environmental conditions and is a dynamic property, changing with environmental conditions (EPA 2007b).

Total metal concentrations alone do not accurately reflect the fraction that is biologically available to aquatic and terrestrial organisms (Barron 2003; Tessier and Campbell 1987; Campbell and Tessier 1989; Knezovich 1994; Newman and Jagoe 1994). The remaining nonresidual metals in soil or sediment are adsorbed or complexed with various components (such as clay particles; iron, manganese, and aluminum oxide coatings; iron oxyhydroxides; sulfides, carbonates, hydroxides, or chlorides; or dissolved and particulate organic matter) and, depending on physical and chemical conditions at a site, may be bioavailable. Estimates of the bioavailable fraction of the total measured concentration of a metal should consider the physical and chemical conditions at a site.

Bioavailability of metals in environmental media can be indirectly measured by comparing concentrations of metals in living organisms with concentrations in abiotic media. The ratio of the concentration of a metal in tissue versus soil or sediment (when collocated in time and space) is the BAF. Although BAFs greater than 1.0 can be interpreted as evidence of bioavailability of metals, BAFs less than 1.0 present some uncertainty. Not all metals to which an organism is exposed are retained in its tissues; some portion of the total metal concentration will be excreted, confounding absolute measures of bioavailability. Furthermore, bioaccumulation of metals cannot be described as a linear relationship. Uptake increases as soil concentration increases, but the rate of uptake decreases (EPA 2007b).

Measuring residual metals concentrations in tissues is a useful approach for estimating the potential for movement of chemicals through the food chain. When an animal consumes a plant or prey animal, any metals that have accumulated in the tissues of that organism can be transferred to the consumer. These metals may then be desorbed from the food, dissolved in the gut of the predator during digestion, then partitioned and absorbed into the tissues of the consumer. Metal uptake from food items is addressed using FCM in Section 3.1.4.

Some of the COPECs at the UBMC are essential micronutrients in most animals, such as, copper, iron, manganese, and zinc. Arsenic is considered beneficial but not essential to animals (EPA 2007). Essnetial and benenfical metals may occur in animal tissues at trace concentrations necessary for growth. Concentrations moderately above required levels can be safely stored by the animal without causing adverse effects because animals are generally able to regulate internal concentrations of essential metals. Because even essential elements can cause toxic effectswhen internal concentrations exceed what the animal can excrete or store (Hamilton and Hoffman 2003), these metals are included in the BERA.

Non-essential metals at UBMC include aluminum, cadmium, and lead; these metals have no known biological role and are highly toxic even at low concentrations (Rainbow 1985).

3.1.5.2 Parameters Affecting the Bioavailability of Metals in Sediment, Soil, and Water

Bioavailability can be easily measured in a controlled situation where metal uptake is a direct function of the concentration of metal in the diet; however, measurements under field conditions with wildlife are much less certain. In the field, food consumption is difficult if not impossible to measure. In addition, wildlife uptake through nondietary pathways can be significant. In this case, metal bioavailability may not be measured precisely, but may serve as a qualitative variable in the exposure assessment (EPA 2007b).

A wide range of chemical, biological, and physical factors control the form of contaminants in the environment and have the potential to influence the bioavailability of sediment and soil contaminants to biota. The bioavailability of sediment and soil contaminants is also affected by the route of exposure of the organism. The distinction between these categories is artificial; in reality, complex interactions between chemical, biological, and physical factors result in changes in contaminant bioavailability (EPA 2007b).

The primary factor that controls the potential bioavailability of metals in soil is pH, which in turn controls virtually all aspects of chemical and biological processes. Other factors include the presence and forms of other metals and the availability and character of metal-binding sites. In sediment, the bioavailability of metals depends on their distribution between the dissolved and solid phases. Dissolved metals in porewater are thought to be the most bioavailable fraction; however, the relative importance of exposure routes is site-specific and not easily characterized (EPA 2007b). Total concentrations in sediment were used to estimate risk for this BERA. Use of total concentrations is considered a conservative approach that may overestimate true risk. Measures of bioavailability used to characterize exposure are discussed below.

Metal concentrations in bulk soil overestimate the concentrations of metals that plants and invertebrates are actually exposed to because it does not account for differential bioavailability and aging. Some general guidelines on metal bioavailability and uptake based on soil pH and organic matter are available to add some realism to the risk estimate (EPA 2007b). Strongly acidic soils increase plant uptake of cadmium, manganese, and zinc and increase the potential for phytotoxicity from copper and zinc (EPA 2007b). Lead is not absorbed by plants to any significant extent at any pH (Chaney and Ryan, 1993, cited in EPA 2007b).

The age of the metal, or the time elapsed since the metal was released to the environment, has a substantial effect on its bioavailability. Metals are persistent in soils, but their bioavailability decreases over time as more of the metal becomes bound to inorganic matrices. The aging process can be reversed to some extent if environmental conditions change. For example, a drop in pH can make a portion of the previously bound metals become available. Care must be taken when comparing laboratory results with field results for this reason. A metal in a freshly spiked solution in the laboratory may be much more bioavailable than the same concentration of metal in a field-contaminated soil (EPA 2007b).

A summary of the important factors that affect bioavailability is shown in the following table.

Chemical Factors	Biological Factors	Physical Factors
• Redox conditions • pH • Organic carbon content • Iron and manganese oxides • Grain size • Speciation • Solubility • Temperature • DO • Hardness • Interactions among chemicals	• Bioturbation • Biotransformation • Organism size and age • Organism behavior • Diet (sediment ingestion, feeding mechanism, and particle size preference) • Organism response to physicochemical conditions • Route of exposure	• Rate of mixing • Rate of sedimentation • Diffusion • Resuspension

3.1.5.2.1 Chemical Factors Affecting Bioavailability of Metals

Chemical conditions to a large extent determine the degree to which metals associate with particles (for example, sorption, desorption, precipitation, and dissolution). This association is important because the potential bioavailability of sediment-associated chemicals such as divalent metals is primarily related to the amount of chemical freely available in sediment pore water.

Factors that affect the bioavailability of metals include redox potential (or E_h), pH, total sulfide, sediment organic carbon content, grain size, speciation, solubility, salinity, hardness, temperature, and interactions among contaminants. Major factors affecting the bioavailability of contaminants are reviewed in Landrum and Robbins (1990), Hamelink and others (1994), and EPA (2007b), and summarized below.

Chemical Factor	Effect on Bioavailability
E_h (redox potential)	↑ E_h, ↓ metal bioavailability
pH	low pH, ↑ metal bioavailability (cadmium, copper, lead, mercury, zinc) high pH, ↑ metal bioavailability (arsenic)
Total sulfide	↑ sulfide, ↓ metal bioavailability (cadmium, copper, lead, zinc)
TOC	↑ TOC, ↓ metal bioavailability
Iron and manganese oxides	↑ Iron and manganese oxides, ↑ metal bioavailability (under anoxic conditions) ↑ Iron and manganese oxides, ↓ metal bioavailability (under oxic conditions)
Grain size	Effect on bioavailability unknown ↑ grain size, ↓ TOC
Solubility	↑ solubility, ↑ metal bioavailability
Speciation	Variable
DO	↑ oxygen, ↓ metal bioavailability (cadmium, copper, nickel, and zinc)

Chemical Factor	Effect on Bioavailability
Temperature	↑ temperature, ↑ metal bioavailability (↑ uptake of contaminants)
Hardness	↑ hardness, ↓ metal bioavailability (cadmium, cobalt, copper, mercury, and zinc) Freshwater and saltwater interfaces may result in a local ↑ metal bioavailability
Interactions among contaminants	Variable or unknown

Oxidation-Reduction Potential

Redox potential is a measure of the tendency of a given system to act as an oxidizing (electron acceptor) or a reducing (electron donor) agent. In wetlands, sulfur, iron, manganese, and nitrogen are the most important elements involved in redox processes in submerged sediment. Both iron and manganese are in the divalent, relatively insoluble state in sediment. Iron oxides are an important sink for metals in oxic conditions because of the rapid adsorption of metals to negatively charged sites on the surfaces of iron oxides.

Hydrous iron and manganese oxides that form rapidly when reduced sediments are oxidized may scavenge soluble metalloids or metals, such as arsenic, copper, and zinc, from the water column by coprecipitation (U.S. Army Corps of Engineers [USACE] 1989). Hydrous iron oxides tend to decrease the bioavailability of sediment-bound arsenic, copper, lead, and zinc in aerobic or oxic conditions (Luoma and Bryan 1978; EPA 2007b). Iron and manganese oxides are reduced under anoxic conditions and become more soluble in water; formerly associated metal ions may then become more bioavailable (Mayer and others 1994).

In the Upper Marsh (EU 12), the top centimeter or so of the sediment is oxidized. The thickness of the oxidized layer in the sediment in the Blackfoot River varies with season and flow. It is assumed that the upper 12 inches of sediment may be subject to periodic oxidizing conditions because of physical perturbation, however, such as the movement of animals such as fish, otters, muskrat, and wading birds. Bioturbation by infauna is also known to increase the mobility of sulfide-bound metals by creating more oxic conditions (Greene and Chandler 1994).

Hydrogen Ion Concentration (pH)

The pH of a soil is often considered the controlling variable that affects the toxicity of metals. Metals are generally more toxic in acidic than in alkaline environments because metals generally become more bioavailable as pH decreases (Mayer and others 1994).

Changes in redox of sediment can allow the release of metals to the solute phase because of associated changes in pH. Insoluble sulfides of many metals formed under reduced conditions are rapidly oxidized when conditions become aerobic, releasing soluble metal ions. Oxidation of iron and manganese produces hydrogen ions, while sulfide oxidation produces sulfate; both of these processes result in an increase in acidity. Generally, free metal ions tend to be present in greater abundance and are more available at low pH and under oxidizing conditions (USACE 1989). A change to more oxic and acidic conditions, such as those that occur in

sediment disturbance or bioturbation, may therefore increase the mobility of cadmium, copper, lead, mercury, and zinc. Elements such as arsenic, on the other hand, are generally more soluble under alkaline conditions (Hong and others 1994).

Total Organic Carbon and Grain Size

Sediment TOC consists primarily of humic matter and fulvic acids resulting from the breakdown of plant and animal material. These and other natural organic ligands can form complexes and chelates with metals, thereby increasing their solubility (Hawker 1990). Although many metals form bonds and aggregations within an organic matrix, no simple relationship between TOC and bioavailability can be predicted. In general, TOC is assumed to increase with increasing proportion of fine particles. The interaction of TOC and pH affects the bioavailability of cationic metals, as shown in the table below:

Qualitative Bioavailability of Metal Cations in Natural Soils to Plants and Soil Invertebrates

Soil pH	Low Organic Matter (<2%)	Medium Organic Matter (2 <6%)	High Organic Matter (6 to 10%)
4 ≤ Soil pH ≤ 5.5	Very high	High	Medium
5.5 < Soil pH ≤ 7	High	Medium	Low
7 ≤ Soil pH ≤ 8.5	Medium	Low	Very low

Source: EPA (2007b)

Percent TOC evaluated in soil samples from the terrestrial EUs (1 to 11) ranged from 0.1 to 5.9 percent. TOC for EU 12, the Upper Marsh, ranged from 0.4 to 37.4 percent (Tables 2-2, 2-4, and 2-10).

The solid phase of sediment can vary from sand (larger than 63 micron [µm]) to silt (2 to 63 µm) to clay (less than 2 µm) (EPA 2007b). Clays have more active binding sites for metals because of their high surface area-to-volume ratio. Such fine-grained particles play an important role in metal binding. Sediment grain size at seven locations in the Upper Marsh ranged from fine-grained sand (three samples) to medium-grained sand (four samples). The fine-grained sand results ranged from 47 to 54 percent silt and clay (Table 3-20).

Solubility

SPLP data collected for the RI was used as a line of evidence to evaluate solubility at the UBMC. The SPLP results indicate the potential for metals to leach from the mine waste and be transported vertically to groundwater and and laterally to surrounding soil. The SPLP test simulates leaching in the field to estimate the potential mobility of metals during rain or flooding, as well as biological interactions with the soil (State of California 1990). Leachate for all EUs exceeded DEQ-7 chronic and acute criteria for cadmium, copper, lead, manganese, and zinc. Arsenic in leachate did not exceed DEQ-7water quality criteria at any location.

Acid mine drainage results in the acidification of surface water caused by the oxidation of pyrite and other sulfides exposed by mining (Kelly 1988). The oxidation process is catalyzed by bacteria that use pyrite as a source of energy. Extremely acid conditions generated at the site of oxidation lead to rapid dissolution of minerals, and very high conductivities can be attained. As acid mine drainage is neutralized downstream of the source, flocculation and precipitation — especially of iron hydroxides — may produce a substrate harmful to many benthic plants and animals (Calow 1994). ABA was used to evaluate the acid generating potential in each EU. ABA is the balance between the acid production and acid consumption properties of a mine-waste material. Minerals in the waste (sulfides and pyrite) react with water and oxygen to produce sulfuric acid. Acid leaches metals from the waste material and introduces them into the environment. ABA, which is based on the ratio and difference between neutralization potential (NP) and acidification potential (AP), was adopted by the U.S. Department of the Interior (DOI), Bureau of Land Management (BLM) (DOI BLM 1996) and EPA (1994) as presented in the following table.

Acid Generation Potential Criteria for Classification

Classification	Criteria for Classification
Potentially Acid Generating	NP:AP < 1 and NNP < -20 tons/kiloton [kton]
Uncertain Acid Generation Potential	NP:AP between 1 and 3 and/or NNP between -20 and +20 tons/kton
Unlikely to Generate Acid	NP:AP > 3 and NNP > +20 tons/kton

Note:
NNP Net neutralization potential

ABA results indicated potential acid generation at one or more locations at EUs 1, 2, 3, 11, and 12. About half the locations at EUs 1, 2, 11, and 12 were classified as potentially acid generating. ABA results were uncertain at EUs 4, 7, 8, 9, and 10. Acid generating potential was unlikely only in EU 5. Metals can be remobilized if pH decreases during periods of high flow. However, site-specific surface water results show reduced pH during periods of high flow only in a few very localized areas where shallow groundwater flows through waste areas.

Hardness

Hardness refers to the concentration in water of multivalent cations, particularly calcium and magnesium. As a general rule, the presence of divalent cations (calcium and magnesium) in surface water or porewater may cause particulate, colloidal, or soluble organic matter to flocculate and settle from the water column; trace metals may coprecipitate with the flocculated material (USACE 1989). In surface water, most metals are less toxic in harder water, if pH is held constant (Mayer and others 1994; EPA 2007b; Rattner and Heath 2003). The toxicity of lead, however, shows little change with respect to hardness (Rattner and Heath 2003). In general, calcium and magnesium cations do not affect the speciation of cationic chemicals but may compete for the same ligands at binding sites. Hardness may also affect the speciation of anionic chemicals (Erickson and others 1994).

A variety of studies have shown decreased toxicity to aquatic organisms with increased hardness for cadmium, copper, and zinc; similar studies have shown lower zinc residues in fish exposed to waters of increasing hardness (Mayer and others 1994). It is thought that hardness changes the physiology of fish gills, making them take up less zinc (Rattner and Heath 2003). High calcium levels have been shown to decrease bioaccumulation of cadmium in fresh water (Hawker 1990). Hawker (1990) demonstrated that the uptake of cadmium in snails and fish was less in hard water (defined as 150 micrograms per gram [µg/g] total divalent calcium and magnesium) than in soft water (0 µg/g total divalent calcium and magnesium). Dietary calcium blocked uptake of water-borne cadmium by juvenile rainbow trout (Franklin and others 2005). Other studies have shown negligible effects of hardness on metal toxicity (Erickson and others 1994). Laboratory tests on the effect of hardness on growth of rainbow trout exposed to copper revealed that the slope of the relationship between hardness and growth effects is different than for mortality effects, suggesting a complex interaction of factors (Hansen and others 2002).

Hardness measured in surface waters at the UBMC during 2007 and 2008 ranged from 28 to 1,500 milligrams per liter (mg/L), with the minimum hardness in Paymaster Gulch and the maximum in the Blackfoot River above the Upper Marsh. Studies in the late 1960s demonstrated that hardness in the Blackfoot River is not constant, but decreases as flow increases in the spring (Spence 1975).

Temperature

Metabolic rates for fish generally rise with increasing temperature, resulting in increased diffusion or uptake of water and solutes across gill surfaces and cell membranes (Hawker 1990; Mayer and others 1994). In general, the metabolism of ectothermic organisms increases approximately two-fold with every 10 degrees Celcius (° C) increase in temperature (Hamelink and others 1994; Rattner and Heath 2003). Increases in temperature may thus result in increased toxicity as organisms may be exposed to greater amounts of chemicals because of increased diffusion or more active uptake (Hamelink and others 1994). However, numerous examples of the opposite effect have been reported and are thought to be related to the increased ability of fish to excrete and detoxify chemicals as water temperatures increase. Rainbow trout were reported to be more sensitive to acute doses of arsenic (as arsenate) at low temperatures, but less sensitive to chronic concentrations (Rattner and Heath 2003). In short, the relationship between temperature and metals toxicity is not straightforward.

Nor does temperature act alone to influence the toxic effects of metals on fish. Temperature interacts with pH to mediate toxicity to trout, for example. Adult brook trout survived for a longer time at low pH when the water temperature was cool than when it was warm. Conversely, low pH was more harmful to trout embryos at colder temperatures, possibly because development was delayed at lower temperatures, thereby increasing the exposure time to acidic conditions (Rattner and Heath 2003).

Other studies have stated that there is no pattern to explain the effects of temperature on the toxicity of chemicals to aquatic organisms exposed to zinc (Sprague 1986). In general, however, studies show that rises in temperature cause the acute toxicity of most chemicals to increase by an average of 3.1 times per 10 °C rise (Hamelink and others 1994).

The surface water temperature at the UBMC varies diurnally and seasonally. Highest temperatures are during the summer daytime hours. Temperature can change suddenly, however, during high flow events. Some studies have suggested that a sudden change in temperature in the presence of potentially toxic chemicals can have a more significant effect on toxicity than absolute temperature (Rattner and Heath 2003).

Interaction among Contaminants

The interaction among metals can be independent, additive, antagonistic, or synergistic, as they compete for binding locations on specific enzymes or receptors during the processes of absorption, excretion, or sequestration, or at the target site (EPA 2007b; Hamilton and Hoffman 2003). Additive, synergistic, and antagonistc relationships among metals were found to occur with roughly equal frequency, but to be highly variable. The interaction that prevails in a given situation depends on the forms and concentrations of metals and the identity of receptors (Norwood and others, as cited in Chapman and others 2003).

Metal interactions confound the development of effect levels for plants. For example, excess aluminum can reduce copper uptake; copper and zinc can reduce cadmium uptake; and lead can increase cadmium uptake. Zinc and copper have been shown to mutually inhibit uptake by plants. Zinc also interferes with iron uptake. Zinc can be less toxic in the presence of arsenic. Aluminum, arsenic, cadmium, and iron can all interfere with phosphorus uptake or function. Conversely, phosphorus can reduce the effects of arsenic and lead but can cause iron and zinc deficiency (Pahlsson 1989).

Interactions are not well understood for most metal combinations and mixtures. However, some interactions have been well-characterized. For example, zinc and cadmium are known to have an additive effect on fish gills (Nimick and others 2007). Conversely, high zinc concentrations in terrestrial habitats are thought to reduce the toxicity of cadmium to wildlife (Beyer and Storm 1995). Rainbow trout juveniles that had been acclimated to copper in water were more resistant to cadmium than non-acclimated fish (Hansen and others 2002).

3.1.5.2.2 Biological Factors Affecting Bioavailability of Metals

In addition to the physical and chemical factors that control bioavailability of metals in the field, the animal's own condition can also exert an influence. Bioavailability of metals to a given individual varies according to the nutritional state (deficiency versus excess), age, sex, physiological state, pathological conditions, and presence of other substances (EPA 2007b).

An animal's behavior can also alter the bioavailability of metals in the immediate environment. Bioturbation can enhance the bioavailability of some cationic metals in surficial sediment by changing the physical and chemical microenvironmental surrounding the sediment particles. The physical reworking of sediment in laboratory microcosms by oligochaetes has been shown to increase contaminant concentrations (Karickhoff and Morris 1985).

An animal's feeding habits may also influence the bioavailability of metals in its food (Lee and others 2000). The depth to which an organism burrows, the type of feeding mechanism it uses (for example, filter feeding or particle ingestion), the size range of sediment particles it consumes, and its diet all have a large influence on the concentration of contaminant to which the organism will be exposed (Harkey and others 1994). For example, clams that feed on soft bottom deposits prefer fine grains (such as silt and clay), whereas sandy-bottom forms and suspension feeders prefer larger grains (sand and sandy silt) (Day and others 1989).

Many organometallic compounds are formed as a result of biologically mediated processes. Lead can be bioalkylated by microorganisms. Organic forms of arsenic can be formed by phytoplankton and passed along the food chain (Hawker 1990). The availability and toxicity of arsenic increase as a result of biomethylation, and it becomes more lipid soluble (Mayer and others 1994). In general, an increase in the number of organic substitutions on a metallic compound tends to make the compound more hydrophobic and therefore more likely to bioaccumulate (Hawker 1990).

3.1.5.2.3 Physical Factors

Sediment is a dynamic environment characterized by a wide range of competing processes with variable rates. In EUs 12 and 13, the rate of mixing in surficial sediment layers by physical processes such as turbulence and bioturbation competes with the rate of sedimentation to determine the depth the sediment will be buried. Concentration gradient-driven diffusion processes also affect the mobility and bioavailability of sediment-associated contaminants. Resuspension can also have a large impact on the contaminant bioavailability by either re-exposing receptors to contaminated particulates or by increasing the aqueous concentration of a contaminant through desorption from the particles within the water column (Landrum and others 1994).

3.1.5.3 Bioavailability, Bioaccumulation Potential, and Toxicity of Seven Metals at the UBMC

The sections above illustrate the difficulties in accurately estimating bioavailability of metals in the field. The most defensible scientific protocol, if budget and schedule were of no concern, would be to conduct new animal toxicology studies for every metal, using the precise form encountered at UBMC. However, such studies are rarely practical, nor are they always definitive. In fact, toxicological studies at some large complex mining sites, such as the Coeur d'Alene Basin and the Upper Clark Fork River, resulted in very thorough estimates of risk, but also long lists of uncertainties. In the absence of longitudinal site-specific studies, it is reasonable to rely on the default assumption that the metals at UBMC are the same as were used in the tests that support the effect levels used in the BERA. This approach, while not perfect, produces the most protective results (EPA 2007b).

The chemical behavior, bioavailability, bioaccumulation, and toxicity of arsenic, cadmium, copper, lead, manganese, and zinc to aquatic and terrestrial receptors are discussed in the following sections. Toxicity profiles for aluminum, arsenic, cadmium, copper, lead, manganese, and zinc as they relate to plants, invertebrates, birds, and mammals are provided in Appendix B.

BAFs were calculated wherever tissues were collected and are reported in the sections below. However, the interpretation of BAFs is problematic. BAFs greater than 1.0 clearly suggest that a metal is bioavailable and is being accumulated by the receptor. However, BAFs less than 1.0 are harder to interpret because the organism may have been exposed to the metal, but not accumulated the metal in its tissues. Low BAFs do not necessarily indicate low bioavailability, and exposure to the metal may cause direct effects that pose an unacceptable risk. BAFs for essential nutrients (copper, manganese, zinc, and possibly arsenic) are expected to be greater than 1.0. Plant and invertebrate samples were composites of more than one species, based on what was available at the site during the sampling effortDifferences among species in contaminant uptake are a recognized source of uncertainty in the interpretation of the BAFs (Newman and McIntosh 1991; EPA 2007b). Summaries of BAFs calculated for the terrestrial EUs, the marsh, and the stream are provided on Table 3-14, 3-15, and 3-16.

Aluminum

Aluminum is thought to be bioavailable in soil only when the pH is less than 5.5 (EPA 2003b). The speciation of aluminum is pH-dependent, and the bioavailability of its various forms is influenced by a tendency to sorb onto particles and bind to organic matter. The pH of water also influences the toxicity of aluminum. Studies of golden trout, native to the western United States, showed that aluminum toxicity increased when the pH dropped below 5.0 (DeLonay and others 1993). Survival of cutthroat trout was reduced in acidic water containing 50 micrograms per liter (µg/L) total aluminum (Woodward and others 1989 and 1991, as cited in DeLonay and others 1993). Golden trout swim-up fry were killed by 100 µg/L total aluminum (DeLonay and others 1993).

Arsenic

Arsenic occurs in contaminated soils primarily as the inorganic arsenic (V) and arsenic (III) but soil microorganisms can produce organic forms (Cullen and Reimer 1989; Huang 1994; CCME 1996). Transformations among inorganic and organic forms are controlled by the oxidation-reduction, precipitation and adsorption, and biomethylation processes in addition to the biological production and volatilization of the arsines (American Petroleum Institute [API] 1998). The availability or solubility of arsenic in soils depends on the soil's clay content, redox potential, and pH. Generally, factors that tend to increase arsenic availability are low clay content, low redox potential (reducing conditions), and high pH (alkaline conditions) (Cullen and Reimer 1989; API 1998).

Soil at EUs 1 to 11 had very low percent TOC (less than 6 percent). Sediment at EU 12 contained higher percent TOC, with a maximum of 35 percent. Arsenic in the marsh sediment may be less available to receptors than is arsenic in the terrestrial EUs.

Plant, invertebrate, and mammal BAFs were calculated for EUs 2, 11, and 12. Invertebrate BAFs only were calculated for EU 13. Arsenic BAFs were greater than 1.0 for plants in EU 12 and for invertebrates in all EUs where tissue was available. Mammal BAFs for arsenic were less than 1.0 in all EUs.

Cadmium

In the environment, cadmium occurs as a divalent metal that is insoluble in water, but its chloride and sulfate salts are freely soluble (Eisler 1985). If released or deposited on soil, cadmium is largely retained in the surface layers of soil. Cadmium is adsorbed to soil but to a much lesser extent than most other heavy metals. The most important soil properties influencing adsorption are high pH and organic content, both of which increase adsorption. Therefore, leaching is more apt to occur under acid conditions in sandy soil. Other studies indicate that cadmium adsorption correlates most with the cation exchange capacity (CEC) of the soil, especially when the soil is saturated in divalent cations.

Cadmium BAFs were greater than 1.0 for plants in EUs 11 and 12 and for invertebrates in all EUs. Mammal BAFs for cadmium were less than 1.0 in all EUs. Summaries of BAFs calculated for the terrestrial EUs, the marsh, and the stream are provided on Table 3-14, 3-15, and 3-16.

Copper

In soils, copper may be present as soluble compounds including nitrates, sulfates, and chlorides, and insoluble compounds such as oxides, hydroxides, carbonates, and sulfides (Bodek and others 1988; Budavari 1996). Soluble copper compounds strongly sorb to particles of organic matter, clay, soil, or sand, and demonstrate low mobility in soils (Bodek and others 1988). Insoluble copper compounds are solid salts and are effectively immobile in soils. The fate of copper in sediment and soil depends on whether the sediment or soil is reduced (anoxic) or oxidized (oxic). In reduced sediment, the copper-coated iron solid will remain undissolved for an indefinite period. The bond between the sulfide and the copper is often broken in oxic sediment and soils, releasing free copper as divalent ions into the environment. Copper is released in a soluble form as the iron solid begins to dissolve. The fate of these copper ions is determined by pH (Demayo and others 1982). If the pH is less than 6.0, the ions remain free and ultimately make their way into the water column as dissolved copper. If the pH is greater than 6.0, the copper typically sorbs to particulates or other forms of organic carbon or forms complexes and is unavailable (Demayo and others 1982).

Copper BAFs were greater than 1.0 for plants in EUs 11 and 12 and for invertebrates in all EUs. Mammal BAFs for copper were greater than 1.0 in EU 11.

Lead

Lead in soil is relatively immobile and persistent whether added to the soil as halides, hydroxides, oxides, carbonates, or sulfates (Agency for Toxic Substances and Disease Registry [ATSDR] 1993c). When released to soil, lead is normally converted from soluble lead compounds to relatively insoluble sulfate or phosphate derivatives. It also forms complexes with organic matter and clay minerals, which limits its mobility. The efficient fixation of lead in soils limits the transfer of lead to aquatic systems. However, leaching of lead can be relatively rapid from some soils, especially at highly contaminated sites or landfills (Kayser and others 1982). Lead is most available from acidic sandy soils that contain little material capable of binding lead (National Research Council of Canada 1978). Concentrations of lead in soil solution reach a minimum between pH 5 and 6 because metal-organic complexes form in this pH range.

The fate of lead in sediment and soil depends on whether the sediment or soil is reduced (anoxic) or oxidized (oxic). In reduced sediment or soil, lead sulfide and lead bound to organic carbon will remain in these forms for an indefinite period. The bond between the sulfide and the lead is often broken in oxic sediment and soils, releasing free lead as divalent ions into the sediment or soil. If the pH is less than 6.0, the lead ions remain free and make their way into the water column as dissolved lead. If the pH is greater than 6.0, the lead typically sorbs to particulates or other forms of organic carbon and is unavailable.

Lead BAFs were greater than 1.0 for plants in EU 12 and for invertebrates in EUs 2, 12, and 13. Mammal BAFs for lead were less than 1.0 for all EUs.

Manganese

In soils, redox reactions affect the sorption of manganese compounds, which have a considerable effect on soil properties such as cation exchange (Kabata-Pendias and Pendias 1992). Manganese is multi-valent and can exist in the 2+, 3+, 4+, 6+, and 7+ oxidation states, with 2+, 3+, and 4+ being the dominant oxidation states in the environment. Manganese 2+ is the most stable oxidation state in water, while manganese 3+ and 4+ compounds are immobile solids. Organic matter may reduce manganese 3+ and 4+ compounds, resulting in the formation of soluble manganese 2+ compounds. Insoluble manganese compounds are formed under aerobic conditions, and soluble compounds are formed under anaerobic conditions from reduction reactions by microorganisms. Soluble manganese compounds are relatively mobile and may leach into surface or ground water (Bodek and others 1988). Soluble manganese is released from soil through ion exchange when replaced by more strongly binding metals such as copper, zinc, or nickel (Bodek and others 1988). Reducing soil pH and soil aeration increase the solubility of manganese in the soil (World Health Organization 1981). In soils, manganese is known to interact with a handful of other elements. Iron absorption by plants can be affected in acidic soils that contain a large amount of manganese. Interactions also are known to occur between manganese and other heavy metals, including cadmium, lead, zinc, and phosphorous (ATSDR 1991). The availability of manganese increases as soil pH decreases. Manganese toxicity is common in acid soils below pH 5.5 (Schulte and Kelling 1999).

Manganese BAFs were greater than 1.0 for plants in EUs 2, 11, 12 and for invertebrates in all EUs. Mammal BAFs were less than 1.0 for all EUs.

Zinc

The fate of zinc in sediment depends on whether the sediment is reduced (anoxic) or oxidized (oxic). In reduced sediment, the zinc-coated iron solid will remain undissolved for an indefinite period. The bond between the sulfide and the zinc is often broken in oxic sediments, releasing free zinc as divalent ions into the sediment pore water (FWS 1993). As the iron in soil begins to dissolve, zinc is released in a soluble form (Wood and others 1995). If the pH is less than 6.0, the zinc ions occur as dissolved zinc. If the pH is greater than 6.0, the zinc typically sorbs to particulates or other forms of organic carbon or forms complexes and is unavailable.

Zinc BAFs were greater than 1.0 for plants in EUs 2, 11, 12 and for invertebrates in all EUs. Mammal BAFs were greater than 1.0 in EUs 2, 11, and 12.

Summary of Bioavailability Parameters Evaluated by Exposure Unit

The following table shows the range of the primary parameters used to evaluate bioavailability of metal contaminants at the UBMC. A more detailed summary of the results is provided on Tables 2-2 (Mine Waste Areas), 2-4 (Dispersed Tailings), and 2-10 (Marsh).

Exposure Unit	pH	Percent TOC	Solubility (Acid Generating Potential)	Solubility (Leachate Exceeds Chronic or Acute Criteria)
1	1.9 – 6.3	0.09 – 5.9	3 potential 5 uncertain	Acute – Cd, Cu, Mn, Pb, Zn
2	1.9 – 7.1	0.07 – 6.6	15 potential 9 uncertain	Acute – Cd, Cu, Mn, Pb, Zn Chronic – Al, Fe
3	2.1 – 7.7	1.4 – 3.8	1 potential 3 uncertain	Acute – Cd, Cu, Mn, Pb, Zn
4	5.3 – 6.6	0.87 – 2.3	1 uncertain	Acute – Cd, Cu, Pb, Zn Chronic – Mn
5	2.9 – 7.6	1.1 – 4.5	2 unlikely	Acute – Cd, Cu, Pb, Zn Chronic – Mn
6	2.6 – 7.5	1.1 – 5.4	3 uncertain 1 unlikely	Acute – Cd, Cu, Pb, Zn Chronic – Mn
7	4.2	3.5	1 uncertain	Acute – Cu, Pb, Zn Chronic – Al., Cd, Fe,
8	4 – 7.6	0.54 – 2.6	8 uncertain	Acute – Cu, Pb, Zn Chronic – Al., Cd, Fe, Mn
9	3.7 – 6.7	0.93 -1.26	5 uncertain	Acute – Cd, Cu, Pb, Zn Chronic – Mn
10	4.7 – 5.8	0.79 – 2.59	1 uncertain	Acute - Cd, Cu, Pb, Zn Chronic – Mn
11	3.6 – 6.2	0.09 – 12.7	5 potential 2 uncertain	Acute - Cd, Cu, Mn, Pb, Zn
12	1.8 – 7.1	0.4 - 37	19 potential 40 uncertain	Acute - Al, Cd, Cu, Mn, Pb, Zn Chronic - Fe

Notes:

pH	Low pH, ↑ metal bioavailability (cadmium, copper, lead, zinc) High pH, ↑ metal bioavailability (arsenic)
Percent TOC	↑ TOC, ↓ metal bioavailability
Solubility	↑ solubility, ↑ metal bioavailability

Al and Fe were not evaluated in EUs 1, 4, 5, 10, 11, or 13 because no Al or Fe SPLP data were available.

Based on the low pH and solubility results, all metals except arsenic are potentially bioavailable in all EUs. Additionally, potentially toxic metals may be remobilized from the EUs during spring snowmelt and storm events to downgradient water bodies, resulting in additional contamination to the watershed (Tetra Tech 2013).

3.1.6 Trophic Linkages among Habitats

Many animals at UBMC occur in both terrestrial and marsh habitats. Although the evaluation of risk is necessarily focused on the soil or sediment in a particular EU, it is recognized that the effects of contamination can easily spread beyond the boundaries of the EU. For example, decaying marsh plants and algae are consumed by both terrestrial and aquatic invertebrates. Herbivorous birds such as the mourning dove and many species of passerines are known to feed in both habitats on a wide variety of plants. Herbivorous mammals, such as the white-tailed deer and voles, are abundant in both habitats. Mammals and birds move between habitats based on seasonal cycles, water levels, rainfall, and other environmental factors. Predators such as the grey fox tend to follow their prey species into marsh or terrestrial habitats. The great blue heron consumes fish from the streams as well as small mammals, reptiles, and amphibians from the marsh. It can also feed in terrestrial areas if necessary. Raptors such as the red-tailed hawk and American kestrel may feed on small mammals and large invertebrates in the marsh, in addition to preying on terrestrial rodents, birds, and lizards. The movement of predators and prey within and among habitats affects exposure to and transport of contaminants.

Seasonal activities, habitat preference, and the feeding behavior of a receptor, as well as spatial variation in contaminant distribution, can influence the exposure of a receptor to contaminants. Species with comparatively large home ranges relative to the area of contamination may be less exposed than those with small home ranges; however, exceptions to this expectation are known. Home range generally includes the total area where an animal spends some amount of time during a certain season, including breeding, foraging, roosting, and travel routes (Lincoln and others 1982). Home ranges can vary by gender, reproductive condition, and size of the animal, as well as by season and other dynamic factors.

Local differences in metals concentrations can exert an effect on exposure in several ways. Individual animals often develop foraging habits that take them to the same place to feed day after day; the great blue heron, for example, has been shown to have marked fidelity to a given foraging area. If the heron's favored area is more contaminated than surrounding areas, then the individual bird will ingest a higher dose than expected based on area averages. Another source of bias occurs when the effect of contaminants on prey renders them more susceptible to capture. In this case, predators differentially consume more contaminated prey.

3.2 EVALUATION OF EFFECTS

The following sections describe the methodology for evaluating risk to plants, terrestrial invertebrates, fish and aquatic invertebrates, birds, and mammals from exposure to contaminants in soil or sediment at each EU. Effects on fish and aquatic invertebrates exposed to surface water are evaluated in EU 13 only.

3.2.1 Calculating Risk Estimates Using a Hazard Quotient Approach

Exposure estimates for plants, terrestrial invertebrates, fish and aquatic invertebrates, birds, and mammals were completed using a point-by-point approach, as described in Section 2.3. The exposure concentration at each point was compared with a screening benchmark or effect level for plants, terrestrial invertebrates, fish and aquatic invertebrates, birds, and mammals. HQs were calculated as the ratio of the maximum site concentration in soil, sediment, or water to the screening benchmark or effect level. The following sections describe the evaluation of risk using screening benchmarks and effects levels for plants, terrestrial invertebrates, fish and aquatic invertebrates, birds, and mammals.

3.2.2 Effect Levels – Plants

Concentrations of COPECs in soil and sediment samples were compared with Eco-SSLs (EPA 2008) to identify chemicals that pose a potentially unacceptable risk to plants (Table 3-21). Eco-SSLs are risk-based concentrations of chemicals in soil that are protective of ecological receptors likely to come into contact with soil, either directly or via ingestion of biota that live in or on soil (EPA 2008). Eco-SSLs were derived based on a literature review of available toxicity data on plants, invertebrates in soil, birds, and mammals. Eco-SSLs are intended for screening chemical concentrations in soil. Eco-SSLs for plants apply to soils where the pH is between 4.0 and 8.5, with an organic matter content less than or equal to 10 percent (EPA 2003a). Because soil pH less than 4.0 is widespread across UBMC, the applicability of the Eco-SSLs results in some uncertainty in the risk estimate. However, no alternative effect levels for plants in low pH soils are available.

3.2.3 Effect Levels – Terrestrial Invertebrates

Exposure estimates for COPECs were compared with available Eco-SSLs for invertebrates in soil (EPA 2003a) (Table 3-21). Toxicological benchmarks developed by ORNL (Efroymson and others 1997b) were used when necessary to augment the Eco-SSLs. As described above for plants, Eco-SSLs for terrestrial invertebrates apply to soils where the pH is between 4.0 and 8.5, with an organic matter content less than or equal to 10 percent (EPA 2003a). Eco-SSLs for terrestrial invertebrates in soil are available for all UBMC COPECs except arsenic. The ORNL toxicity benchmark for earthworms was used for arsenic and was derived by rank-ordering the lowest observed effect concentrations and then selecting a number that approximated the 10th percentile (Efroymson and others 1997b).

3.2.4 Effect Levels – Fish and Aquatic Invertebrates

Risk to fish and aquatic invertebrates was evaluated by comparing concentrations in sediment and surface water at each sampling location with toxicological benchmarks for sediment (CCME 2002; Ontario Ministry of Environment 1993) and surface water (DEQ 2008). Each set of effect levels is described below.

3.2.4.1 Sediment Effect Levels

Exposure estimates for COPECs were compared with TEL, PEL, and SEL described in "Development of Freshwater Sediment Quality Values for Use in Washington State," prepared for the Washington Department of Ecology Sediment Management Unit (SAIC and Avocet Consulting 2002; SAIC and Avocet Consulting 2003) (Table 3-22). TELs were derived by calculating the geometric mean of the 15th percentile of the effects data set and the 50th percentile of the no-effects data set. The TEL represents the level below which adverse biological effects rarely occur (CCME 2002). The TEL can function as the lower screening level to screen areas out from further regulatory attention, but not to identify them for further action. If contaminant concentrations in sediments do not exceed these values, they are unlikely to exhibit any adverse effects in bioassay tests. Unless the sediments have potential bioaccumulation issues, they can be considered clean, requiring no further action, and suitable for other beneficial uses (SAIC and Avocet Consulting 2002). The PEL defines the level above which adverse effects are expected to occur at least 50 percent of the time The definitions of these ranges are based on the assumption that the potential for observing toxicity resulting from exposure to a chemical increases with increasing concentration of the chemical in the sediment (Long and others 1995).

The SELs are part of a set of numerical guidelines (Provincial Sediment Quality Guideline [PSQG]) developed by the Ontario Ministry of Environment. PSQGs were derived to protect sediment-dwelling freshwater species, including fish and aquatic invertebrates. Sediments that contain metals at or above the SEL are considered highly contaminated. The SEL represents a level at which adverse effects are expected to occur in 95 percent of benthic species. However, as a result of variability in site-specific bioavailability, adverse effects may not always occur when SELs are exceeded (Ontario Ministry of Environment 1993). Washington state guidance suggests SELs not be considered rigid requirements for cleanup, but rather strong indicators of potential risk (SAIC and Avocet Consulting 2002).

3.2.4.2 Surface Water Quality Criteria

Exposure estimates for COPECs in surface water were compared with acute and chronic aquatic life criteria recommended by DEQ (2012) (Table 3-23). Acute and chronic life criteria are based on the Criteria Maximum Concentration (CMC) and the Criterion Continuous Concentration (CCC) (EPA 2006a). The CMC is an estimate of the highest concentration of a constituent in surface water to which an aquatic community can be exposed briefly without resulting in an unacceptable effect. The CCC is an estimate of the highest concentration of a constituent in surface water to which an aquatic community can be exposed indefinitely without resulting in an unacceptable effect. The National Recommended Water Quality Criteria are intended to be protective of the vast majority of the aquatic communities in the United States.

National criteria are inappropriate for some metals because site-specific physical conditions greatly affect the concentrations where toxicity occurs. Hardness-dependent criteria (for cadmium, copper, and zinc) were calculated using the measured hardness from the sampling location, with a minimum value of 25 mg/L and a maximum value of 400 mg/L as calcium carbonate. Hardness in surface water samples from UBMC ranged from 28 to 1500 mg/L, so these default values are considered protective. DEQ (2012) does not provide surface water

criteria for manganese, so the Tier II Secondary Acute Value for manganese was used for the acute value (Suter and Mabrey 1996) and the Tier II Office of Solid Waste and Emergency Response (OSWER) threshold value for aquatic life (EPA 1996) value was used as the chronic value (EPA 1996; Suter and Mabrey 1994, as cited in Suter and Mabrey 1996).

3.2.5 Effect Levels – Birds and Mammals

TRVs used in the FCMs were chosen first from the Department of the Navy (Navy)-Biological Technical Assistance Group (BTAG) technical memorandum (Navy 1998). The BTAG TRV for cadmium in birds was updated in 2009 to consider behavioral and systemic effects (California Department of Toxic Substances Control 2009). Each TRV represents a critical exposure level from a toxicological study and is supported by a data set of toxicological exposures and effects. The TRV represents a mid-range effect level for a COPEC, where the endpoint of toxicity was ecologically relevant. TRVs are presented in Table 3-24. TRVs used in this BERA are shown in the FCMs in Appendix C and are summarized below.

General TRVs derived for birds and mammals are allometrically converted for each site-specific receptor being evaluated to adjust for differences in body size between the test species and the site-specific receptor. The underlying assumption of allometric conversion is that physiological functions, such as metabolic rates, are a function of body size (Opresko and others 1993). Allometric conversions assume that smaller animals have higher metabolic rates and are typically able to detoxify or eliminate ingested COPECs more quickly than larger animals (Opresko and others 1993; Sample and others 1996). The allometric conversion equations developed by Sample and others (1998) were used to extrapolate doses according to methods described by Opresko and others (1993) and Sample and Arenal (1999). The following allometric conversion equations were used for this food-chain analysis:

$$\text{Birds:}\quad TRV_{receptor} = TRV_{test\ organism}\left(BodyWeight_{test\ organism} / BodyWeight_{receptor}\right)^{1-1.2}$$

$$\text{Mammals:}\quad TRV_{receptor} = TRV_{test\ organism}\left(BodyWeight_{test\ organism} / BodyWeight_{receptor}\right)^{1-0.94}$$

3.2.6 Interpretation of the HQ

Estimated ingested doses were calculated for representative receptors using average values for exposure parameters such as body weight and ingestion rate. By evaluating HQs, a risk manager can assess risk to the typical individuals in the overall population. An HQ (dose/TRV) greater than 1.0 indicates potential significant risk to the average receptor.

Section 4.0 presents the HQs for each site by chemical and representative receptor. The complete dose model calculations are provided in Appendix C.

4.0 RISK CHARACTERIZATION

Risk characterization focuses on the causal relationship between exposure and effects. The characterization incorporates what is known about potential exposure pathways to representative receptors at UBMC with evidence of metals in soil, sediment, water, and biota. Risk characterization consists of two parts: (1) Risk Estimation and (2) Risk Description.

Risk estimation is a quantitative process in which exposure concentrations are compared with effect levels appropriate to the receptor and medium being evaluated. The resulting HQs are numerical estimates of risk, given the assumptions stated elsewhere in the BERA. Risk estimates are calculated for individual chemicals and receptors, and do not take into account multiple exposures or indirect effects. For some receptors, more than one risk estimate was calculated, based on different exposure or effect assumptions. For example, risk estimates were calculated for surface water concentrations using both acute and chronic effect levels. For sediment, risk estimates were prepared for samples at three discrete depths. The particular assumptions that prevail for each type of risk estimate are explained in the appropriate sections below.

Risk description is a more qualitative evaluation of the numerical risk estimates and other factors that influence the realization of risk for each receptor. In the risk description, chemicals of greatest concern, or "risk drivers," are identified based on the magnitude of the risk estimate and the confidence level in the exposure assessment. The uncertainty inherent in the risk description is discussed in Section 5.0.

Risk estimates are presented for representative receptors in each EU in Section 4.1 through Section 4.13. The risk description for all EUs is in Section 4.14.

4.1 RISK ESTIMATES: EU 1

This section presents the results of the BERA for EU 1, Upper Anaconda Mine Waste Removal Area and Waste Piles. Risk estimates for terrestrial plants and invertebrates, birds, and mammals are presented below.

4.1.1 Risk to Plants – EU 1

Chemicals that pose potential risk to plants were identified based on a comparison of the maximum concentration detected in soil (0 to 6 inches bgs) with available Eco-SSL or ORNL plant toxicity benchmarks (EPA 2008; Efroymson and others 1997a). In addition, measures of percent cover were used to assess vegetation condition in reclaimed areas.

Maximum HQs and distribution of results for plants at EU 1 are presented in Table 4-1, and HQs for all locations are presented in Appendix D-1. The distribution of HQs greater than and less than 1.0 is summarized in the table below.

COPEC	EU 1 Terrestrial Plant HQs		
	No. of HQs <1	No. of HQs ≥1	Max HQ
Arsenic	9	36	**150**
Cadmium	12	0	0.48
Copper	0	36	**22**
Lead	1	45	**650**
Manganese	0	41	**18**
Zinc	2	41	**63**

Notes: Only sample results greater than or equal to the minimum reference site concentration were evaluated. HQs greater than 1.0 are in bold type.

Cadmium does not pose risk for terrestrial plants at EU1. However, arsenic, copper, lead, manganese, and zinc pose a potential risk throughout the EU.

Two soil samples were collected along the vegetation transects at EU 1. Concentrations of arsenic, cadmium, copper, lead, manganese, and zinc in transect soil samples were greater than the reference site concentrations (Table 2-3).

Percent vegetative cover in reclaimed areas of EU 1 was virtually the same as the reference area. The following table summarizes the results of the monitoring.

Summary of Anaconda Mine Waste Area Field Results				
	Anaconda Mine Waste Area		Reference Areas	
Vegetation Type	Observations	Cover (%)	Observations	Cover (%)
Vegetated Totals	286	57.20	116	58.00
Wood	6	1.20	0	0.00
Litter	173	34.60	65	32.50
Rock	19	3.80	8	4.00
Bare Ground	16	3.20	11	5.50
Non-Vegetated Totals	214	42.80	84	42.00
Number of Quadrants	500		200	
Number of Transects	5		2	

Notes: Observations = Total number of species observed per sampling area.
Source: Tetra Tech (2008b)

4.1.2 Risk to Invertebrates – EU 1

Chemicals that pose potential risk to invertebrates were identified based on a comparison of the maximum concentration detected in soil (0 to 6 inches bgs) with available Eco-SSL or ORNL invertebrate toxicity benchmarks (EPA 2008; Efroymson and others 1997b).

Maximum HQs and distribution of results for invertebrates at EU 1 are presented in Table 4-1 and HQs for all locations are presented in Appendix D-1. The distribution of HQs greater than and less than 1.0 is summarized in the table below.

COPEC	EU 1 Terrestrial Invertebrate HQs		
	No. of HQs <1	No. of HQs ≥1	Max HQ
Arsenic	29	16	**45**
Cadmium	12	0	0.11
Copper	0	36	**20**
Lead	36	10	**46**
Manganese	3	38	**8.7**
Zinc	0	43	**84**

Notes: Only sample results ≥ minimum reference site concentration were evaluated.
HQs greater than 1.0 are in bold type.

Cadmium does not pose a risk to terrestrial invertebrates at EU1. However, arsenic, copper, lead, manganese, and zinc may pose risk throughout the EU.

4.1.3 Risk to Birds – EU 1

An estimated daily dose for each COPEC at each soil sample location was calculated for the mourning dove, red-tailed hawk, and American kestrel based on life history and foraging habits. Estimated daily doses of arsenic, cadmium, copper, lead, manganese, and zinc were compared with TRVs, and HQs were calculated for each avian receptor. HQ calculations are presented in Appendices C-1A, C-1B, C-1C, C-1D, C-1E, and C-1F for arsenic, cadmium, copper, lead, manganese, and zinc.

The maximum HQ for each COPEC/receptor pair for which at least one HQ was greater than 1.0 is presented in the table below. Maximum HQs and distribution of results are presented in Table 4-2.

Assessment Endpoint	Maximum HQs EU 1 – Upper Anaconda Mine Waste Removal Area and Waste Piles					
	As	Cd	Cu	Pb	Mn	Zn
Mourning Dove (Herbivore)	--	--	--	5.77	--	--
Red-Tailed Hawk (Carnivore)	--	--	--	2.76	--	--
American Kestrel (Insectivore)	3.98	--	--	26.1	--	--

Note: -- Indicates all HQs <1

The highest HQs for the avian receptors were for lead in the unreclaimed mine waste areas, with HQs greater than 1.0 across the rest of the EU.

4.1.4 Risk to Mammals – EU 1

An estimated daily dose for each COPEC at each soil sample location was calculated for the meadow vole, white-tailed deer, red fox, and masked shrew based on life history and foraging habits. Estimated daily doses were compared with TRVs, and HQs were calculated for arsenic, cadmium, copper, lead, manganese, and zinc (Appendices C-1A, C-1B, C-1C, C-1D, C-1E, and C-1F).

The maximum HQ for each COPEC/receptor pair for which at least one HQ was greater than 1.0 is presented in the table below. No HQs exceeded 1.0 for the white-tailed deer or the red fox. A Maximum HQs and distribution of results are provided in Table 4-2.

	Maximum HQs EU 1 – Upper Anaconda Mine Waste Removal Area and Waste Piles					
Assessment Endpoint	**As**	**Cd**	**Cu**	**Pb**	**Mn**	**Zn**
Meadow Vole (Herbivore)	51.0	1.43	--	33.5	37.5	6.80
Masked Shrew (Insectivore)	1230	57.3	17.3	783	55.0	139

Note: -- Indicates all HQs <1

HQs for the meadow vole were greatest for arsenic in the unreclaimed mine waste areas. Risk to the masked shrew was indicated across the entire EU for all COPECs.

4.1.5 Summary of Risk Estimates – EU 1

Maximum concentrations in soil of a number of COPECs at EU 1 pose potential risk to plant, invertebrate, and vertebrate receptors, as shown below:

COPECs Based on HQs > 1.0 EU 1 – Upper Anaconda Mine Waste Removal Area and Waste Piles				
COPEC	**Terrestrial Plants**	**Terrestrial Invertebrates**	**Birds**	**Mammals**
Arsenic	**Yes**	**Yes**	**Yes**	**Yes**
Cadmium	No	No	No	**Yes**
Copper	**Yes**	**Yes**	No	**Yes**
Lead	**Yes**	**Yes**	**Yes**	**Yes**
Manganese	**Yes**	**Yes**	No	**Yes**
Zinc	**Yes**	**Yes**	No	**Yes**

4.2 RISK ESTIMATES: EU 2

This section presents the results of the BERA for EU 2, Blackfoot River Dispersed Tailings. Risk estimates for terrestrial plants and invertebrates, birds, and mammals are presented below.

4.2.1 Risk to Plants – EU 2

Chemicals that pose potential risk to plants were identified based on a comparison of the maximum concentration detected in soil (0 to 6 inches bgs) with available Eco-SSL or ORNL plant toxicity benchmarks (EPA 2008; Efroymson and others 1997a).

Maximum HQs and distribution of results for plants at EU 2 are presented in Table 4-3, and HQs for all locations are presented in Appendix D-2. The distribution of HQs greater than and less than 1.0 is summarized in the table below for areas inside the tailings, at the edge of tailings, and outside the tailings.

	EU 2 Terrestrial Plant HQs		
COPEC/ Location	**No. of HQs <1**	**No. of HQs ≥1**	**Max HQ**
Arsenic			
Inside Tailings	8	144	**68**
Edge of Tailings	24	90	**70**
Outside Tailings	37	80	**39**
Cadmium			
Inside Tailings	36	6	**5.0**
Edge of Tailings	7	0	0.94
Outside Tailings	1	0	0.081
Copper			
Inside Tailings	0	148	**53**
Edge of Tailings	0	108	**190**
Outside Tailings	0	108	**130**
Lead			
Inside Tailings	6	146	**180**
Edge of Tailings	22	93	**220**
Outside Tailings	51	76	**110**
Manganese			
Inside Tailings	0	126	**72**
Edge of Tailings	1	94	**2,900**
Outside Tailings	1	105	**3,100**
Zinc			
Inside Tailings	10	138	**120**
Edge of Tailings	8	97	**110**
Outside Tailings	22	93	**63**

Notes: Only sample results ≥ minimum reference site concentration were evaluated.
HQs greater than 1.0 are in **bold** type.

Arsenic, copper, lead, manganese, and zinc pose risk throughout EU 2. However, cadmium poses a risk only inside the tailings piles.

Three composite samples of plant tissue were collected at the Blackfoot River and three composite samples of plant tissue were collected at the Anaconda Creek reference location. Concentrations of arsenic, cadmium, copper, lead, manganese, and zinc were higher in all three site transect samples than in the minimum reference sample (Table 2-6). The concentration of aluminum exceeded the minimum reference concentration in one of three samples.

Plant species composition and amount of bare ground in the site transects differ from the Anaconda Creek reference transect (Table 2-9). Dominant vegetation species collected include bluegrass (*Poa* spp.), purplestem aster (*Symphyotrichum puniceum*), sedges (*Carex* spp.), and Oregon grape (*Mahonia repens*).

4.2.2 Risk to Invertebrates – EU 2

Chemicals that pose potential risk to invertebrates were identified based on a comparison of the maximum concentration detected in soil (0 to 6 inches bgs) with available Eco-SSL or ORNL invertebrate toxicity benchmarks (EPA 2008; Efroymson and others 1997b).

Maximum HQs and distribution of results for invertebrates at EU 2 are presented in Table 4-3 and HQs for all locations are presented in Appendix D-2. The distribution of HQs greater than and less than 1.0 is summarized in the table below.

	EU 2 Terrestrial Invertebrate HQs		
COPEC/Location	**No. of HQs <1**	**No. of HQs ≥1**	**Max HQ**
Arsenic			
Inside Tailings	0	124	**20**
Edge of Tailings	54	60	**21**
Outside Tailings	89	28	**12**
Cadmium			
Inside Tailings	41	1	**1.2**
Edge of Tailings	7	0	0.21
Outside Tailings	1	0	0.019
Copper			
Inside Tailings	0	148	**47**
Edge of Tailings	0	108	**170**
Outside Tailings	2	106	**110**
Lead			
Inside Tailings	99	53	**13**
Edge of Tailings	83	32	**16**
Outside Tailings	115	12	**7.5**

COPEC/Location	EU 2 Terrestrial Invertebrate HQs		
	No. of HQs <1	No. of HQs ≥1	Max HQ
Manganese			
Inside Tailings	10	121	**36**
Edge of Tailings	5	90	**1,400**
Outside Tailings	10	96	**1,500**
Zinc			
Inside Tailings	4	144	**170**
Edge of Tailings	5	100	**150**
Outside Tailings	12	103	**84**

Notes: Only sample results ≥ minimum reference site concentration were evaluated.
HQs greater than 1.0 are in **bold** type.

Arsenic, copper, lead, manganese, and zinc pose a potential risk throughout the EU. Cadmium does not pose risk to invertebrates at EU 2.

Three composite samples of invertebrate tissue were collected at the Blackfoot River and two samples were collected at the Anaconda Creek reference location. Concentrations of aluminum, arsenic, cadmium, copper, lead, manganese, and zinc in the invertebrate tissue samples collected at the Blackfoot River were higher than the minimum reference site concentrations in all samples (Table 2-7).

4.2.3 Risk to Birds – EU 2

An estimated daily dose for each COPEC at each soil sample location was calculated for the mourning dove, red-tailed hawk, and American kestrel based on life history and foraging habits. Estimated daily doses of arsenic, cadmium, copper, lead, manganese, and zinc were compared with TRVs, and HQs were calculated for each avian receptor (Appendices C-2A, C-2B, C-2C, C-2D, C-2E, and C-2F).

The maximum HQ for each COPEC/receptor pair for which at least one HQ was greater than 1.0 is presented in the table below. Maximum HQs and distribution of results are presented in Table 4-4.

Assessment Endpoint	Maximum HQs EU 2 – Blackfoot River Dispersed Tailings					
	As	Cd	Cu	Pb	Mn	Zn
Mourning Dove (Herbivore)						
Inside Tailings	--	1.62	--	10.0	--	1.38
Edge of Tailings	--	--	1.54	12.2	35.3	1.28
Outside Tailings	--	--	1.01	5.88	36.8	--

Assessment Endpoint	Maximum HQs EU 2 – Blackfoot River Dispersed Tailings					
	As	Cd	Cu	Pb	Mn	Zn
Red-Tailed Hawk (Carnivore)						
Inside Tailings	--	--	--	4.79	--	1.48
Edge of Tailings	--	--	--	5.82	--	1.37
Outside Tailings	--	--	--	2.81	--	--
American Kestrel (Insectivore)						
Inside Tailings	11.3	13.8	3.46	45.4	--	6.0
Edge of Tailings	11.6	2.57	12.6	55.2	11.0	5.55
Outside Tailings	6.42	--	8.20	26.6	11.4	3.06

Note: -- Indicates HQs <1

The highest HQs for the avian receptors were for lead in the unreclaimed dispersed tailings areas, with HQs greater than 1.0 across the rest of the EU.

4.2.4 Risk to Mammals – EU 2

An estimated daily dose for each COPEC at each soil sample location was calculated for the meadow vole, white-tailed deer, red fox, and masked shrew based on life history and foraging habits. Estimated daily doses of the COPECs for each mammal were compared with TRVs by calculating an HQ. Calculations are presented in their entirety in Appendices C-2A, C-2B, C-2C, C-2D, C-2E, and C-2F for arsenic, cadmium, copper, lead, manganese, and zinc.

The maximum HQ for each COPEC/receptor pair for which at least one HQ was greater than 1.0 is presented in the table below. Maximum HQs and distribution of results are presented in Table 4-4.

Assessment Endpoint	Maximum HQs EU 2 – Blackfoot River Dispersed Tailings					
	As	Cd	Cu	Pb	Mn	Zn
Meadow Vole (Herbivore)						
Inside Tailings	23.1	15.0	1.06	9.31	156	13.3
Edge of Tailings	23.7	2.8	3.83	11.3	6,220	12.3
Outside Tailings	13.2	--	2.50	5.46	6,480	6.80
White-tailed Deer (Herbivore)						
Inside Tailings	--	--	--	--	1.84	--
Edge of Tailings	--	--	--	--	73.3	--
Outside Tailings	--	--	--	--	76.4	--

Assessment Endpoint	Maximum HQs EU 2 – Blackfoot River Dispersed Tailings					
	As	Cd	Cu	Pb	Mn	Zn
Masked Shrew (Insectivore)						
Inside Tailings	5570	603	41.3	218	229	272
Edge of Tailings	5710	112	150	265	9120	251
Outside Tailings	3180	22.3	97.7	128	9510	139

Note: -- Indicates HQs <1

All HQs were less than 1.0 for the red fox. Potential risk to the meadow vole and masked shrew is indicated across EU 2 for all COPECs.

4.2.5 Summary of Risk Estimates – EU 2

Maximum soil concentrations of number of COPECs at EU 2 pose potential risk to plant, invertebrate, and vertebrate receptors, as shown below:

COPECs Based on HQs > 1.0 EU 2 – Upper Blackfoot River Dispersed Tailings				
COPEC	**Terrestrial Plants**	**Terrestrial Invertebrates**	**Birds**	**Mammals**
Arsenic	**Yes**	**Yes**	**Yes**	**Yes**
Cadmium	**Yes**	No	**Yes**	**Yes**
Copper	**Yes**	**Yes**	**Yes**	**Yes**
Lead	**Yes**	**Yes**	**Yes**	**Yes**
Manganese	**Yes**	**Yes**	**Yes**	**Yes**
Zinc	**Yes**	**Yes**	**Yes**	**Yes**

4.3 RISK ESTIMATES: EU 3

This section presents the results of the BERA for EU 3, Capital Mine Waste Area. Risk estimates for terrestrial plants and invertebrates, birds, and mammals are presented below.

4.3.1 Risk to Plants – EU 3

Chemicals that pose potential risk to plants were identified based on a comparison of the maximum concentration detected in soil (0 to 6 inches bgs) with available Eco-SSL or ORNL plant toxicity benchmarks (EPA 2008; Efroymson and others 1997a). In addition, measures of percent cover were used to assess vegetation condition in reclaimed areas.

Maximum HQs and distribution of results for plants at EU 3 are presented in Table 4-5, and HQs for all locations are presented in Appendix D-3. The distribution of HQs greater than and less than 1.0 is summarized in the table below for areas inside the tailings, at the edge of tailings, and outside the tailings.

COPEC	EU 3 Terrestrial Plant HQs		
	No. of HQs <1	No. of HQs ≥1	Max HQ
Arsenic	0	16	**69**
Cadmium	7	0	0.095
Copper	0	18	**11**
Lead	0	19	**21**
Manganese	3	16	**8.0**
Zinc	5	14	**11**

Notes: Only sample results ≥ minimum reference site concentration were evaluated.
HQs greater than 1.0 are in **bold** type.

Cadmium does not pose risk for terrestrial plants at EU3. However, arsenic, copper, lead, manganese, and zinc pose potential risk throughout the EU.

Neither erosion nor invasive weedy species were observed during the Capital Mine Waste Areas vegetation monitoring. The percent vegetative cover in the mine waste area was similar to the reference area, with a well-established and diverse plant community, as shown below:

Summary of Field Results				
	Capital Mine Waste Area		Reference Areas	
Vegetation Type	Observations	Cover (%)	Observations	Cover (%)
Vegetated Totals	90	45.00	213	53.25
Wood	0	0.00	1	0.25
Litter	79	39.50	179	44.75
Rock	12	6.00	6	1.50
Bare Ground	19	9.50	1	0.25
Non-Vegetated Totals	110	55.00	187	46.75
Number of Quadrants	200		400	
Number of Transects	2		4	

Notes: Observations = The total number of species observed per sampling area.

4.3.2 Risk to Invertebrates – EU 3

Chemicals that pose potential risk to invertebrates were identified based on a comparison of the maximum concentration detected in soil (0 to 6 inches bgs) with available Eco-SSL or ORNL invertebrate toxicity benchmarks (EPA 2008; Efroymson and others 1997b).

Maximum HQs and distribution of results for invertebrates are presented in Table 4-5, and HQs for all locations are presented in Appendix D-3. HQs for terrestrial invertebrates at EU 3 are summarized below.

COPEC	EU 3 Terrestrial Invertebrate HQs		
	No. of HQs <1	No. of HQs ≥1	Max HQ
Arsenic	6	10	**21**
Cadmium	7	0	0.022
Copper	0	18	**9.4**
Lead	16	3	**1.5**
Manganese	11	8	**3.9**
Zinc	2	17	**15**

Notes: Only sample results ≥ minimum reference site concentration were evaluated.
HQs greater than 1.0 are in **bold** type.

Cadmium does not pose risk for terrestrial invertebrates at EU3. However, arsenic, copper, lead, manganese, and zinc pose potential risk throughout the EU.

4.3.3 Risk to Birds – EU 3

An estimated daily dose was calculated at each soil sample location for the mourning dove, red-tailed hawk, and American kestrel based on life history and foraging habits. Estimated daily doses of arsenic, cadmium, copper, lead, manganese, and zinc were compared with TRVs, and TRVs were calculated (Appendices C-3A, C-3B, C-3C, C-3D, C-3E, and C-3F). Maximum HQs and distribution of results are presented in Table 4-5.

No HQs for the mourning dove, red-tailed hawk, or American kestrel exceeded 1.0 at EU 3.

4.3.4 Risk to Mammals – EU 3

An estimated daily dose for each COPEC was calculated at each soil sample location for the meadow vole, white-tailed deer, red fox, and masked shrew based on life history and foraging habits. Estimated daily doses were compared with TRVs by calculating HQs for arsenic, cadmium, copper, lead, manganese, and zinc (Appendices C-3A, C-3B, C-3C, C-3D, C-3E, and C-3F).

The maximum HQ for each COPEC/receptor pair for which at least one HQ was greater than 1.0 is presented in the table below. Maximum HQs and distribution of results are presented in Table 4-6.

Assessment Endpoint	Maximum HQs EU 3 – Capital Mine Waste Area					
	As	Cd	Cu	Pb	Mn	Zn
Meadow vole (Herbivore)	23.6	--	--	1.09	16.8	1.23
Masked shrew (Insectivore)	1850	3.70	2.71	8.30	8.00	8.18

Note: -- Indicates HQs <1

No HQs exceeded 1.0 for the white-tailed deer or the red fox. Risk to the masked shrew was indicated across the entire EU for all COPECs.

4.3.5 Summary of Risk Estimates – EU 3

Maximum concentrations of a number of COPECs at EU 3 pose potential risk to plant, invertebrate, and vertebrate receptors, as shown below:

COPECs Based on HQs > 1.0
EU 3 – Capital Mine Waste Area

COPEC	Terrestrial Plants	Terrestrial Invertebrates	Birds	Mammals
Arsenic	**Yes**	**Yes**	No	**Yes**
Cadmium	No	No	No	**Yes**
Copper	**Yes**	**Yes**	No	**Yes**
Lead	**Yes**	**Yes**	No	**Yes**
Manganese	**Yes**	**Yes**	No	**Yes**
Zinc	**Yes**	**Yes**	No	**Yes**

4.4 RISK ESTIMATES: EU 4

This section presents the results of the BERA for EU 4, Carbonate Mine Waste Area. Risk estimates for terrestrial plants and invertebrates, birds, and mammals are presented below.

4.4.1 Risk to Plants – EU 4

Chemicals that pose potential risk to plants were identified based on a comparison of the maximum concentration detected in soil (0 to 6 inches bgs) with available Eco-SSL or ORNL plant toxicity benchmarks (EPA 2008; Efroymson and others 1997a). In addition, measures of percent cover were used to assess vegetation condition in reclaimed areas.

Maximum HQs and distribution of results for plants at EU 4 are presented in Table 4-7, and HQs for all locations are presented in Appendix D-4. HQs for terrestrial plants at EU 4 are summarized in the table below.

COPEC	EU 4 Terrestrial Plant HQs		
	No. of HQs <1	No. of HQs ≥1	Max HQ
Arsenic	17	8	**2.7**
Cadmium	6	0	0.35
Copper	1	27	**9.2**
Lead	6	21	**21**
Manganese	0	23	**77**
Zinc	1	23	**5.1**

Notes: Only sample results ≥ minimum reference site concentration were evaluated.
HQs greater than 1.0 are in **bold** type.

Cadmium does not pose risk for terrestrial plants at EU4. However, arsenic, copper, lead, manganese, and zinc pose potential risk throughout the EU.

No sign of erosion was reported during the vegetation monitoring of the Carbonate Mine and Carbonate Repository areas. Percent vegetative cover in the mine waste area was less than in the reference area, with more ground covered by litter. Percent cover estimates in the Carbonate Repository were similar to the reference area, which was characterized as a well-established and diverse plant community. The following tables summarize the results of the monitoring in each area.

Summary of Carbonate Mine Area Results

	Carbonate Mine Waste Area (Riparian)		Reference Areas	
Vegetation Type	**Hits**	**Cover (%)**	**Hits**	**Cover (%)**
Vegetated Totals	236	78.67	191	95.50
Wood	0	0.00	0	0.00
Litter	62	20.67	9	4.50
Rock	0	0.00	0	0.00
Bare Ground	2	0.67	0	0.00
Non-Vegetated Totals	64	21.33	9	4.50
Number of Quadrants	200		200	
Number of Transects	2		2	

Notes: Hits = Number of hits or the total number of species hits per sampling area.

Summary of Carbonate Repository Field Results

	Carbonate Repository		Reference Areas	
Vegetation Type	**Hits**	**Cover (%)**	**Hits**	**Cover (%)**
Vegetated Totals	167	54.67	213	53.25
Wood	0	1.20	1	0.25
Litter	119	34.60	179	44.75
Rock	0	3.80	6	1.50
Bare Ground	17	3.20	1	0.25
Non-Vegetated Totals	136	42.80	187	46.75
Number of Quadrants	200		400	
Number of Transects	2		4	

Notes: Hits = Number of hits or the total number of species hits per sampling area.

4.4.2 Risk to Invertebrates – EU 4

Chemicals that pose potential risk to invertebrates were identified based on a comparison of the maximum concentration detected in soil (0 to 6 inches bgs) with available Eco-SSL or ORNL invertebrate toxicity benchmarks (EPA 2008; Efroymson and others 1997b).

Maximum HQs and distribution of results for invertebrates are presented in Table 4-7, and HQs for all locations are presented in Appendix D-4. HQs for terrestrial invertebrates at EU 4 are summarized in the table below:

COPEC	EU 4 Terrestrial Invertebrate HQs		
	No. of HQs <1	No. of HQs ≥1	Max HQ
Arsenic	25	0	0.82
Cadmium	6	0	0.079
Copper	1	27	**8.0**
Lead	26	1	**1.5**
Manganese	0	23	**38**
Zinc	0	24	**6.8**

Notes: Only sample results ≥ minimum reference site concentration were evaluated.
HQs greater than 1.0 are in **bold** type.

Cadmium and arsenic were below levels of concern for terrestrial invertebrates. Copper, lead, manganese and zinc pose a potential risk to invertebrates at EU4.

4.4.3 Risk to Birds – EU 4

An estimated daily dose was calculated at each soil sample location for the mourning dove, red-tailed hawk, and American kestrel based on life history and foraging habits. Doses of arsenic, cadmium, copper, lead, manganese, and zinc were compared with TRVs, and HQs were calculated (Appendices C-4A, C-4B, C-4C, C-4D, C-4E, and C-4F).

No HQs for the mourning dove, red-tailed hawk, or American kestrel exceeded 1.0 at EU 4.

4.4.4 Risk to Mammals – EU 4

An estimated daily dose for each COPEC was calculated at each soil sample location for the meadow vole, white-tailed deer, red fox, and masked shrew based on life history and foraging habits. Estimated daily doses of arsenic, cadmium, copper, lead, manganese, and zinc for each mammal were compared with TRVs, and HQs were calculated (Appendices C-4A, C-4B, C-4C, C-4D, C-4E, and C-4F).

The maximum HQ for each COPEC/receptor pair for which at least one HQ was greater than 1.0 is presented in the table below. Maximum HQs and distribution of results are presented in Table 4-8.

Assessment Endpoint	Maximum HQs EU 4 – Carbonate Mine Waste Area					
	As	Cd	Cu	Pb	Mn	Zn
Meadow Vole (Herbivore)	--	1.04	--	1.09	163	--
Masked Shrew (Insectivore)	223	41.6	7.11	25.6	239	11.2

Note: -- Indicates HQs <1

No HQs exceeded 1.0 for the white-tailed deer or the red fox. The highest HQs for the meadow vole were in the eastern portion of the site, near soil sample locations CARM-1000 and CARM-1050. Risk to the masked shrew was indicated across the entire EU for all COPECs. The areas with the highest HQs were the same for both the meadow vole and masked shrew.

4.4.5 Summary of Risk Estimates – EU 4

Maximum concentrations of a number of COPECs at EU 4 pose potential risk to plant, invertebrate, and mammalian receptors. No avian receptors were shown to be at risk in EU 4, as shown below:

COPECs Based on HQs > 1.0
EU 4 – Carbonate Mine Waste Area

COPEC	Terrestrial Plants	Terrestrial Invertebrates	Birds	Mammals
Arsenic	**Yes**	No	No	**Yes**
Cadmium	No	No	No	**Yes**
Copper	**Yes**	**Yes**	No	**Yes**
Lead	**Yes**	**Yes**	No	**Yes**
Manganese	**Yes**	**Yes**	No	**Yes**
Zinc	**Yes**	**Yes**	No	**Yes**

4.5 RISK ESTIMATES: EU 5

This section presents the results of the BERA for EU 5, Edith Mine Waste Areas. Risk estimates for terrestrial plants and invertebrates, birds, and mammals are presented below.

4.5.1 Risk to Plants – EU 5

Chemicals that pose potential risk to plants were identified based on a comparison of the maximum concentration detected in soil (0 to 6 inches bgs) with available Eco-SSL or ORNL plant toxicity benchmarks (EPA 2008; Efroymson and others 1997a). In addition, measures of percent cover were used to assess vegetation condition in reclaimed areas.

Maximum HQs and distribution of results for plants at EU 5 are presented in Table 4-9, and HQs for all locations are presented in Appendix D-5. HQs for terrestrial plants at EU 5 are summarized in the table below:

	EU 5 Terrestrial Plant HQs		
COPEC/Location	**No. of HQs <1**	**No. of HQs ≥1**	**Max HQ**
Arsenic			
West Edith Mine Waste Area	7	5	**1.5**
Central Edith Mine Waste Area	11	14	**4.8**
East Edith Mine Waste Area	13	4	**1.3**

COPEC/Location	EU 5 Terrestrial Plant HQs		
	No. of HQs <1	No. of HQs ≥1	Max HQ
Cadmium			
West Edith Mine Waste Area	NE	NE	NE
Central Edith Mine Waste Area	1	0	0.13
East Edith Mine Waste Area	NE	NE	NE
Copper			
West Edith Mine Waste Area	2	9	**6.4**
Central Edith Mine Waste Area	0	25	**19**
East Edith Mine Waste Area	3	14	**2.4**
Lead			
West Edith Mine Waste Area	5	6	**1.8**
Central Edith Mine Waste Area	10	15	**9.4**
East Edith Mine Waste Area	11	6	**2.0**
Manganese			
West Edith Mine Waste Area	0	10	**15**
Central Edith Mine Waste Area	4	18	**6.3**
East Edith Mine Waste Area	0	20	**5.9**
Zinc			
West Edith Mine Waste Area	3	8	**1.9**
Central Edith Mine Waste Area	6	12	**2.0**
East Edith Mine Waste Area	3	3	**1.3**

Notes: Only sample results ≥ minimum reference site concentration were evaluated. HQs greater than 1.0 are in **bold** type.

NE Not Evaluated

Cadmium does not pose risk for terrestrial plants at EU5. However, arsenic, copper, lead, manganese, and zinc pose potential risk throughout the EU.

Three soil samples were collected along the vegetation transects. Concentrations of metals in at least one of the three samples were greater than the reference site concentrations for arsenic, copper, lead, manganese, and zinc (Table 2-3).

No sign of erosion was noted during the vegetation monitoring of the Edith Mine waste areas. Percent vegetative cover in the mine waste area was slightly less than in the reference area, with more ground covered by litter. The following table summarizes the results of the monitoring.

Summary of Edith Mine Area Results				
	Vegetation Type		Vegetation Type	
Vegetation Type	Hits	Cover (%)	Hits	Cover (%)
Vegetated Totals	209	35.42	97	48.50
Wood	5	0.85	0	0.00
Litter	306	51.86	90	45.00

Summary of Edith Mine Area Results				
Vegetation Type	Vegetation Type		Vegetation Type	
	Hits	Cover (%)	Hits	Cover (%)
Rock	32	5.42	0	0.00
Bare Ground	38	6.44	13	6.50
Non-Vegetated Totals	381	64.58	103	51.50
Number of Quadrants	590		200	
Number of Transects	6		2	

Notes: Hits = Number of hits or the total number of species hits per sampling area.
One quadrat in the Central Edith Area was occupied by a mature lodgepole pine stem and was not recorded.

4.5.2 Risk to Invertebrates – EU 5

Chemicals that pose potential risk to invertebrates were identified based on a comparison of the maximum concentration detected in soil (0 to 6 inches bgs) with available Eco-SSL or ORNL invertebrate toxicity benchmarks (EPA 2008; Efroymson and others 1997b).

Maximum HQs and distribution of results for invertebrates are presented in Table 4-9, and HQs for all locations are presented in Appendix D-5. HQs for terrestrial invertebrates at EU 5 are summarized in the table below.

COPEC/Location	EU 5 Terrestrial Invertebrate HQs		
	No. of HQs <1	No. of HQs ≥1	Max HQ
Arsenic			
West Edith Mine Waste Area	12	0	0.46
Central Edith Mine Waste Area	24	1	**1.4**
East Edith Mine Waste Area	17	0	0.40
Cadmium			
West Edith Mine Waste Area	NE[1]	NE[1]	
Central Edith Mine Waste Area	1	0	0.031
East Edith Mine Waste Area	NE[1]	NE[1]	
Central Edith Mine Waste Area	1	0	0.031
Copper			
West Edith Mine Waste Area	3	8	**5.6**
Central Edith Mine Waste Area	3	22	**17**
East Edith Mine Waste Area	6	11	**2.1**
Lead			
West Edith Mine Waste Area	11	0	0.12
Central Edith Mine Waste Area	25	0	0.67
East Edith Mine Waste Area	17	0	0.14

COPEC/Location	EU 5 Terrestrial Invertebrate HQs		
	No. of HQs <1	No. of HQs ≥1	Max HQ
Manganese			
West Edith Mine Waste Area	1	9	**7.4**
Central Edith Mine Waste Area	12	10	**3.1**
East Edith Mine Waste Area	9	11	**2.9**
Zinc			
West Edith Mine Waste Area	0	11	**2.6**
Central Edith Mine Waste Area	3	15	**2.7**
East Edith Mine Waste Area	0	6	**1.7**

Notes: Only sample results ≥ minimum reference site concentration were evaluated. HQs greater than 1.0 are in **bold** type.

1 Samples collected in this area hadconcentrations lower than the minimum reference site concentration, and were therefore excluded from the BERA.

NE Not evaluated

Copper, manganese, and zinc pose potential risk for terrestrial invertebrates throughout the EU. One HQ for arsenic in the Central Edith Mine Waste Area was slightly greater than 1.0 (1.4); however, this single concentration is not considered to represent significant risk from arsenic.

4.5.3 Risk to Birds – EU 5

An estimated daily dose for each COPEC was calculated at each soil sample location for the mourning dove, red-tailed hawk, and American kestrel based on life history and foraging habits. Doses of arsenic, cadmium, copper, lead, manganese, and zinc were compared with TRVs, and HQs were calculated for each avian receptor (Appendices C-5A, C-5B, C-5C, C-5D, C-5E, and C-5F). No HQs for avian receptors exceeded 1.0 at EU 5.

4.5.4 Risk to Mammals – EU 5

An estimated daily dose for each COPEC at each soil sample location was calculated for the meadow vole, white-tailed deer, red fox, and masked shrew based on life history and foraging habits. Doses of the COPECs for each mammal were compared with TRVs, and HQs were calculated for arsenic, cadmium, copper, lead, manganese, and zinc (Appendices C-5A, C-5B, C-5C, C-5D, C-5E, and C-5F).

The maximum HQ for each COPEC/receptor pair for which at least one HQ was greater than 1.0 is presented in the table below. Maximum HQs and distribution of results are presented in Table 4-10.

\Assessment Endpoint	Maximum HQs EU 5 –Edith Mine Waste Areas					
	As	**Cd**	**Cu**	**Pb**	**Mn**	**Zn**
Meadow Vole (Herbivore)						
West Edith Mine	--	--	--	--	32.1	--
Central Edith Mine	1.63	--	--	--	13.3	--
East Edith Mine	--	--	--	--	12.3	--
Red Fox (Carnivore)						
West Edith Mine	--	--	--	--	--	--
Central Edith Mine	18.0	1.00	--	--	--	--
East Edith Mine	--	--	--	--	--	--
Masked Shrew (Insectivore)						
West Edith Mine	126	--	4.97	2.11	47.0	4.21
Central Edith Mine	393	16.1	14.9	11.3	19.5	3.85
East Edith Mine	109	--	1.83	2.44	18.1	2.84

Note: -- Indicates HQs <1

No HQs exceeded 1.0 for the white-tailed deer. Arsenic HQs for the vole exceeded 1.0 only rarely, and by a small margin; manganese HQs for the meadow vole were greater than 1.0 across the EU. HQs for the masked shrew were greater than 1.0 across the site. In general, samples with the highest HQs were composites within each of the waste piles.

4.5.5 Summary of Risk Estimates – EU 5

Maximum concentrations of a number of COPECs at EU 5 pose potential risk to plant, invertebrate, and mammalian receptors. The following table indicates the chemicals that pose potential risk to receptors at the site based on HQs greater than 1.0.

COPECs Based on HQs > 1.0
EU 5 – Upper Edith Mine Waste Areas

COPEC	Terrestrial Plants	Terrestrial Invertebrates	Birds	Mammals
Arsenic	**Yes**	No	No	**Yes**
Cadmium	No	No	No	**Yes**
Copper	**Yes**	**Yes**	No	**Yes**
Lead	**Yes**	No	No	**Yes**
Manganese	**Yes**	**Yes**	No	**Yes**
Zinc	**Yes**	**Yes**	No	**Yes**

4.6 RISK ESTIMATES: EU 6

This section presents the results of the BERA for EU 6, Consolation Mine Waste Area. Risk estimates for terrestrial plants and invertebrates, birds, and mammals are presented below.

4.6.1 Risk to Plants – EU 6

Chemicals that pose potential risk to plants were identified based on a comparison of the maximum concentration detected in soil (0 to 6 inches bgs) with available Eco-SSL or ORNL plant toxicity benchmarks (EPA 2008; Efroymson and others 1997a). In addition, measures of percent cover were used to assess the condition of vegetation in reclaimed areas.

Maximum HQs and distribution of results for plants at EU 6 are presented in Table 4-11, and HQs for all locations are presented in Appendix D-6. HQs for terrestrial plants at EU 6 are summarized in the table below.

COPEC	EU 6 Terrestrial Plant HQs		
	No. of HQs <1	No. of HQs ≥1	Max HQ
Arsenic	5	29	**60**
Cadmium	3	0	0.21
Copper	9	24	**4.5**
Lead	0	25	**49**
Manganese	0	7	**11**
Zinc	2	33	**5.1**

Notes: Only sample results ≥ minimum reference site concentration were evaluated.
HQs greater than 1.0 are in **bold** type.

Cadmium does not pose risk for terrestrial plants at EU6. However, arsenic, copper, lead, manganese, and zinc pose potential risk throughout the EU.

Two soil samples were collected along the vegetation transects, as well as a reference site sample for EU 6. It was determined in the field that the Consolation Mine waste area should have a dedicated reference sample. Concentrations of metals in at least one of the two samples were greater than the reference site concentration for arsenic, cadmium, lead, manganese, and zinc (Table 2-3).

No sign of erosion was noted during vegetation monitoring of the Consolation Mine waste area. Percent vegetative cover in the mine waste area was substantially less than in the reference area, with more bare ground, litter, and rock, as shown below.

Summary of Consolation Mine Field Results				
	Consolation Mine Waste Area		Reference Areas	
Vegetation Type	Hits	Cover (%)	Hits	Cover (%)
Vegetated Totals	42	14.00	213	53.25
Wood	24	8.00	1	0.25
Litter	94	31.33	179	44.75
Rock	85	28.33	6	1.50
Bare Ground	55	18.33	1	0.25
Non-Vegetated Totals	258	86.00	187	46.75
Number of Quadrants	300		400	
Number of Transects	3		4	

Notes: Hits = Number of hits or the total number of species hits per sampling area.

4.6.2 Risk to Invertebrates – EU 6

Chemicals that pose potential risk to invertebrates were identified based on a comparison of the maximum concentration detected in soil (0 to 6 inches bgs) with available Eco-SSL or ORNL invertebrate toxicity benchmarks (EPA 2008; Efroymson and others 1997b).

Maximum HQs and distribution of results for invertebrates are presented in Table 4-11, and HQs for all locations are presented in Appendix D-6. HQs for terrestrial plants at EU 6 are summarized in the table below.

	EU 6 Terrestrial Invertebrate HQs		
COPEC	No. of HQs <1	No. of HQs ≥1	Max HQ
Arsenic	26	8	**18**
Cadmium	3	0	0.048
Copper	11	22	**4.0**
Lead	21	4	**3.5**
Manganese	0	7	**5.3**
Zinc	1	34	**6.8**

Notes: Only sample results ≥ minimum reference site concentration were evaluated.
HQs greater than 1.0 are in **bold** type.

Cadmium does not pose risk for terrestrial invertebrates at EU6. However, arsenic, copper, lead, manganese, and zinc pose potential risk throughout the EU.

4.6.3 Risk to Birds – EU 6

An estimated daily dose for each COPEC at each soil sample location was calculated for the mourning dove, red-tailed hawk, and American kestrel based on life history and foraging habits. Doses of arsenic, cadmium, copper, lead, manganese, and zinc were compared with TRVs, and HQs were calculated (Appendices C-6A, C-6B, C-6C, C-6D, C-6E, and C-6F).

All HQs for avian receptors were less than 1.0 at EU 6.

4.6.4 Risk to Mammals – EU 6

Estimated daily doses for arsenic, cadmium, copper, lead, manganese, and zinc were calculated for the meadow vole, white-tailed deer, red fox, and masked shrew based on life history and foraging habits. HQs were calculated by comparing the dose with the appropriate TRV (Appendices C-6A, C-6B, C-6C, C-6D, C-6E, and C-6F).

The maximum HQ for each COPEC/receptor pair for which at least one HQ was greater than 1.0 is presented in the table below. Maximum HQs and distribution of results are presented in Table 4-12.

	Maximum HQs EU 6 – Consolation Mine Waste Area					
Assessment Endpoint	**As**	**Cd**	**Cu**	**Pb**	**Mn**	**Zn**
Meadow Vole (Herbivore)	20.5	--	--	2.54	23.0	--
Masked Shrew (Insectivore)	4,946	25.2	3.53	59.4	33.7	11.2

Note: -- Indicates HQs <1

No HQs exceeded 1.0 for the white-tailed deer or the red fox. Arsenic and manganese HQs exceeded 1.0 for the meadow vole at less than half of the locations sampled, scattered randomly across the EU. HQs for lead and meadow vole slightly exceeded 1.0 at only two locations. In contrast, potential risk to the masked shrew was indicated across the entire EU for all COPECs.

4.6.5 Summary of Risk Estimates – EU 6

Maximum concentrations of a number of COPECs at EU 6 pose potential risk to plant, invertebrate, and mammalian receptors, as shown below:

COPECs Based on HQs > 1.0 EU 6 – Consolation Mine Waste Area				
COPEC	**Terrestrial Plants**	**Terrestrial Invertebrates**	**Birds**	**Mammals**
Arsenic	**Yes**	**Yes**	No	**Yes**
Cadmium	No	No	No	**Yes**
Copper	**Yes**	**Yes**	No	**Yes**
Lead	**Yes**	**Yes**	No	**Yes**
Manganese	**Yes**	**Yes**	No	**Yes**
Zinc	**Yes**	**Yes**	No	**Yes**

4.7 RISK ESTIMATES: EU 7

This section presents the results of the BERA for EU 7, Mary P. Mine Waste Pile. Risk estimates for terrestrial plants and invertebrates, birds, and mammals are presented below.

4.7.1 Risk to Plants – EU 7

Chemicals that pose potential risk to plants were identified based on a comparison of the maximum concentration detected in soil (0 to 6 inches bgs) with available Eco-SSL or ORNL plant toxicity benchmarks (EPA 2008; Efroymson and others 1997a).

Maximum HQs and distribution of results for plants at EU 7 are presented in Table 4-13, and HQs for all locations are presented in Appendix D-7. HQs for terrestrial plants at EU 7 are summarized in the table below.

COPEC	EU 7 Terrestrial Plant HQs		
	No. of HQs <1	No. of HQs ≥1	Max HQ
Arsenic	1	6	**8.7**
Cadmium	3	0	0.028
Copper	0	8	**8.2**
Lead	0	7	**33**
Manganese	0	8	**4.9**
Zinc	3	5	**3.2**

Notes: Only sample results ≥ minimum reference site concentration were evaluated.
HQs greater than 1.0 are in **bold** type.

Cadmium does not pose risk at EU7 for terrestrial plants. However, arsenic, copper, lead, manganese, and zinc pose potential risk throughout the EU.

4.7.2 Risk to Invertebrates – EU 7

Chemicals that pose potential risk to invertebrates were identified based on a comparison of the maximum concentration detected in soil (0 to 6 inches bgs) with available Eco-SSL or ORNL invertebrate toxicity benchmarks (EPA 2008; Efroymson and others 1997b).

Maximum HQs and distribution of results for invertebrates are presented in Table 4-13, and HQs for all locations are presented in Appendix D-7. HQs for terrestrial invertebrates at EU 7 are summarized in the table below.

COPEC	EU 7 Terrestrial Invertebrate HQs		
	No. of HQs <1	No. of HQs ≥1	Max HQ
Arsenic	6	1	**2.6**
Cadmium	3	0	0.0064
Copper	0	8	**7.2**
Lead	6	1	**2.4**
Manganese	1	7	**2.4**
Zinc	1	7	**4.3**

Notes: Only sample results ≥ minimum reference site concentration were evaluated.
HQs greater than 1.0 are in **bold** type.

Cadmium does not pose risk for terrestrial invertebrates at EU 7. Arsenic and copper exceeded the screening concentration at only one location each. However, copper, manganese, and zinc pose potential risk throughout the EU.

4.7.3 Risk to Birds – EU 7

An estimated daily dose for each COPEC at each soil sample location was calculated for the mourning dove, red-tailed hawk, and American kestrel based on life history and foraging habits. Doses of arsenic, cadmium, copper, lead, manganese, and zinc were compared with TRVs, and HQs were calculated (Appendices C-7A, C-7B, C-7C, C-7D, C-7E, and C-7F).

All HQs for avian receptors were less than 1.0 at EU 7.

4.7.4 Risk to Mammals – EU 7

An estimated daily dose for each COPEC at each soil sample location was calculated for the meadow vole, white-tailed deer, red fox, and masked shrew based on life history and foraging habits. Doses for each mammal were compared with TRVs, and HQs were calculated for arsenic, cadmium, copper, lead, manganese, and zinc (Appendices C-7A, C-7B, C-7C, C-7D, C-7E, and C-7F).

The maximum HQ for each COPEC/receptor pair for which at least one HQ was greater than 1.0 is presented in the table below. Maximum HQs and distribution of results are presented in Table 4-14.

Assessment Endpoint	Maximum HQs EU 6 – Mary P. Mine Waste Area					
	As	Cd	Cu	Pb	Mn	Zn
Meadow Vole (Herbivore)	2.96	--	--	1.71	10.4	--
Masked Shrew (Insectivore)	196	--	1.75	11.00	4.19	1.94

Note: -- Indicates HQs <1

HQs were less than 1.0 for the white-tailed deer and the red fox. HQs for copper, lead, and zinc slightly exceeded 1.0 at several locations for the masked shrew. Arsenic and manganese HQs exceeded 1.0 for the meadow vole and the masked shrew across the EU.

4.7.5 Summary of Risk Estimates – EU 7

Maximum concentrations of a number of COPECs at EU 7 pose potential risk to plant, invertebrate, and mammalian receptors, as shown below.

COPECs Based on HQs > 1.0
EU 7 – Mary P. Mine Waste Pile

COPEC	Terrestrial Plants	Terrestrial Invertebrates	Birds	Mammals
Arsenic	**Yes**	**Yes**	No	**Yes**
Cadmium	No	No	No	No
Copper	**Yes**	**Yes**	No	**Yes**
Lead	**Yes**	**Yes**	No	**Yes**
Manganese	**Yes**	**Yes**	No	**Yes**
Zinc	**Yes**	**Yes**	No	**Yes**

4.8 RISK ESTIMATES: EU 8

This section presents the results of the BERA for EU 8, Mike Horse Mine Waste Piles. Risk estimates for terrestrial plants, invertebrates, birds, and mammals are presented below.

4.8.1 Risk to Plants – EU 8

Chemicals that pose potential risk to plants were identified based on a comparison of the maximum concentration detected in soil (0 to 6 inches bgs) with available Eco-SSL or ORNL plant toxicity benchmarks (EPA 2008; Efroymson and others 1997a). In addition, measures of percent cover were used to assess the condition of vegetation in reclaimed areas.

Maximum HQs and distribution of results for plants at EU 8 are presented in Table 4-15, and HQs for all locations are presented in Appendix D-8. HQs for terrestrial plants at EU 8 are summarized in the table below.

COPEC/Location	EU 8 Terrestrial Plant HQs		
	No. of HQs <1	No. of HQs ≥1	Max HQ
Arsenic			
Mike Horse Creek Channel Area Deposits	6	28	**23**
Waste Areas 1 and 2	3	42	**28**
Waste Area 3	4	19	**50**

COPEC/Location	EU 8 Terrestrial Plant HQs		
	No. of HQs <1	No. of HQs ≥1	Max HQ
Cadmium			
Mike Horse Creek Channel Area Deposits	1	0	0.35
Waste Areas 1 and 2	8	0	0.30
Waste Area 3	2	0	0.50
Copper			
Mike Horse Creek Channel Area Deposits	8	22	**41**
Waste Areas 1 and 2	15	23	**13**
Waste Area 3	6	17	**19**
Lead			
Mike Horse Creek Channel Area Deposits	4	30	**48**
Waste Areas 1 and 2	7	38	**92**
Waste Area 3	1	22	**140**
Manganese			
Mike Horse Creek Channel Area Deposits	0	25	**53**
Waste Areas 1 and 2	0	39	**39**
Waste Area 3	0	10	**8.7**
Zinc			
Mike Horse Creek Channel Area Deposits	2	32	**20**
Waste Areas 1 and 2	2	44	**15**
Waste Area 3	2	21	**14**

Notes: Only sample results ≥ minimum reference site concentration were evaluated. HQs greater than 1.0 are in **bold** type.

Cadmium does not pose risk for terrestrial plants at EU 8. However, arsenic, copper, lead, manganese, and zinc pose potential risk throughout the EU.

Concentrations of most metals in soil samples collected along the vegetation transects were greater than the reference site concentrations (Table 2-3). An exception was aluminum, which exceeded the reference concentration in only two of eight samples. Aluminum was not considered to pose a risk at locationUMH-RV6 because the pH was greater than 5.5 (EPA 2003b). A pH of 5.2 at the other location (UMH-RV1) suggests that aluminum may pose risk to ecological receptors

No sign of erosion was noted during vegetation monitoring of the Upper Mike Horse Mine waste areas (excluding areas seeded in 2007). Percent vegetative cover in all areas was substantially less than the reference area, as shown below.

Summary of Mike Horse Area UMH1 Field Results				
	Mike Horse Mine Waste Area 1 (UMH1)		Reference Areas	
Vegetation Type	Hits	Cover (%)	Hits	Cover (%)
Vegetated Totals	80	40.00	213	53.25
Wood	2	1.00	1	0.25
Litter	57	28.50	179	44.75
Rock	40	20.00	6	1.50
Bare Ground	21	20.50	1	0.25
Non-Vegetated Totals	120	60.00	187	46.75
Number of Quadrants	200		400	
Number of Transects	2		4	

Notes: Hits = Number of hits or the total number of species hits per sampling area.

Summary of Mike Horse Area UMH2 Field Results				
	Mike Horse Mine Waste Area 2 (UMH2)		Reference Areas	
Vegetation Type	Hits	Cover (%)	Hits	Cover (%)
Vegetated Totals	44	14.67	213	53.25
Wood	0	0.00	1	0.25
Litter	51	17.00	179	44.75
Rock	126	42.00	6	1.50
Bare Ground	79	26.33	1	0.25
Non-Vegetated Totals	256	85.33	187	46.75
Number of Quadrants	300		400	
Number of Transects	3		4	

Notes: Hits = Number of hits or the total number of species hits per sampling area.

Summary of Mike Horse Mine UMH3 Field Results				
	Mike Horse Mine Waste Area 3 (UMH3)		Reference Areas	
Vegetation Type	Hits	Cover (%)	Hits	Cover (%)
Vegetated Totals	28	28.00	213	53.25
Wood	0	0.00	1	0.25
Litter	30	30.00	179	44.75
Rock	15	15.00	6	1.50
Bare Ground	27	27.00	1	0.25
Non-Vegetated Totals	72	72.00	187	46.75
Number of Quadrants	100		400	
Number of Transects	1		4	

Notes: Hits = Number of hits or the total number of species hits per sampling area.

Summary of Mike Horse Town Site Field Results				
	Mike Horse Mine Town Site [1]		Reference Areas	
Vegetation Type	Hits	Cover (%)	Hits	Cover (%)
Vegetated Totals	62	31.00	213	53.25
Wood	0	0.00	1	0.25
Litter	52	26.00	179	44.75
Rock	14	7.00	6	1.50
Bare Ground	72	36.00	1	0.25
Non-Vegetated Totals	138	69.00	187	46.75
Number of Quadrants	200		400	
Number of Transects	2		4	

Notes: Hits = Number of hits or the total number of species hits per sampling area.

1 Mike Horse Mine Town Site is located downstream of the northern boundary of EU 8, at the confluence of Mike Horse Creek and Beartrap Creek. Revegetation sampling points are shown on Figure 2-14.

4.8.2 Risk to Invertebrates – EU 8

Chemicals that pose potential risk to invertebrates were identified based on a comparison of the maximum concentration detected in soil (0 to 6 inches bgs) with available Eco-SSL or ORNL invertebrate toxicity benchmarks (EPA 2008; Efroymson and others 1997b).

Maximum HQs and distribution of results for invertebrates are presented in Table 4-15, and HQs for all locations are presented in Appendix D-8. HQs for terrestrial invertebrates at EU 8 are summarized in the table below.

	EU 8 Terrestrial Invertebrate HQs		
COPEC/Location	No. of HQs <1	No. of HQs ≥1	Max HQ
Arsenic			
Mike Horse Creek Channel Area Deposits	18	16	**6.9**
Waste Areas 1 and 2	29	16	**8.3**
Waste Area 3	11	12	**15**
Cadmium			
Mike Horse Creek Channel Area Deposits	1	0	0.080
Waste Areas 1 and 2	8	0	0.070
Waste Area 3	2	0	0.11
Copper			
Mike Horse Creek Channel Area Deposits	11	19	**36**
Waste Areas 1 and 2	16	22	**12**
Waste Area 3	8	15	**16**

COPEC/Location	EU 8 Terrestrial Invertebrate HQs		
	No. of HQs <1	No. of HQs ≥1	Max HQ
Lead			
Mike Horse Creek Channel Area Deposits	21	13	**3.4**
Waste Areas 1 and 2	29	16	**6.5**
Waste Area 3	11	12	**9.9**
Manganese			
Mike Horse Creek Channel Area Deposits	0	25	**26**
Waste Areas 1 and 2	0	39	**19**
Waste Area 3	0	10	**4.2**
Zinc			
Mike Horse Creek Channel Area Deposits	0	34	**27**
Waste Areas 1 and 2	1	45	**20**
Waste Area 3	0	23	**19**

Notes: Only sample results ≥ minimum reference site concentration were evaluated. HQs greater than 1.0 are in **bold** type.

Cadmium does not pose risk for terrestrial invertebrates at EU 8. However, arsenic, copper, lead, manganese, and zinc pose potential risk throughout the EU.

4.8.3 Risk to Birds – EU 8

An estimated daily dose for each COPEC at each soil sample location was calculated for the mourning dove, red-tailed hawk, and American kestrel based on life history and foraging habits. Doses of arsenic, cadmium, copper, lead, manganese, and zinc were compared with TRVs, and HQs were calculated (Appendices C-8A, C-8B, C-8C, C-8D, C-8E, and C-8F).

Lead was shown to pose potential risk to the American kestrel in EU 8. Maximum HQs for lead were 1.12 for the Mike Horse Creek Channel, 2.17 for Waste Areas 1 and 2, and 3.29 for Waste Area 3. A complete list of the HQs for EU 8 is provided in Table 4-16.

4.8.4 Risk to Mammals – EU 8

Estimated daily doses were calculated for the meadow vole, white-tailed deer, red fox, and masked shrew based on life history and foraging habits. Doses of arsenic, cadmium, copper, lead, manganese, and zinc were compared with TRVs, and HQs were calculated (Appendices C-8A, C-8B, C-8C, C-8D, C-8E, and C-8F).

The maximum HQ for each COPEC/receptor pair for which at least one HQ was greater than 1.0 is presented in the table below. Maximum HQs and distribution of results are presented in Table 4-16.

Assessment Endpoint	Maximum HQs EU 8 – Mike Horse Mine Waste Piles					
	As	Cd	Cu	Pb	Mn	Zn
Meadow Vole (Herbivore)						
Mike Horse Creek Channel	7.77	1.05	--	2.44	111	2.16
Waste Areas 1 and 2	9.41	--	--	4.73	81.5	1.63
Waste Area 3	17.1	1.49	--	7.19	18.3	1.51
Masked Shrew (Insectivore)						
Mike Horse Creek Channel	1870	41.6	31.6	57.0	163	44.4
Waste Areas 1 and 2	2270	36.5	10.4	111	119	33.2
Waste Area 3	4110	59.6	14.6	168	26.8	30.8

Note: -- Indicates HQs <1

All HQs were less than 1.0 for the white-tailed deer and red fox. No risk was shown for the meadow vole exposed to copper. All other metals posed potential risk to the vole and the masked shrew.

4.8.5 Summary of Risk Estimates – EU 8

Maximum concentrations of a number of COPECs at EU 8 pose potential risk to plant, invertebrate, and mammalian receptors. The only potential risk to birds was from lead, as shown below.

COPECs Based on HQs > 1.0 EU 8 – Upper Mike Horse Mine Waste Piles				
COPEC	**Terrestrial Plants**	**Terrestrial Invertebrates**	**Birds**	**Mammals**
Arsenic	**Yes**	**Yes**	No	**Yes**
Cadmium	No	No	No	**Yes**
Copper	**Yes**	**Yes**	No	**Yes**
Lead	**Yes**	**Yes**	**Yes**	**Yes**
Manganese	**Yes**	**Yes**	No	**Yes**
Zinc	**Yes**	**Yes**	No	**Yes**

4.9 RISK ESTIMATES: EU 9

This section presents the results of the BERA for EU 9, Paymaster Mine Waste Areas. Risk estimates for terrestrial plants, invertebrates, birds, and mammals are presented below.

4.9.1 Risk to Plants – EU 9

Chemicals that pose potential risk to plants were identified based on a comparison of the maximum concentration detected in soil (0 to 6 inches bgs) with available Eco-SSL or ORNL

plant toxicity benchmarks (EPA 2008; Efroymson and others 1997a). In addition, measures of percent cover were used to assess vegetation condition in reclaimed areas.

Maximum HQs and distribution of results for plants at EU 9 are presented in Table 4-17, and HQs for all locations are presented in Appendix D-9. HQs for terrestrial plants at EU 9 are summarized in the table below.

COPEC Location	EU 9 Terrestrial Plant HQs		
	No. of HQs <1	No. of HQs ≥1	Max HQ
Cadmium			
Paymaster Mine Waste Area 1	NE	NE	NE
Paymaster Mine Waste Area 2	1	0	0.022
Copper			
Paymaster Mine Waste Area 1	0	8	**5.9**
Paymaster Mine Waste Area 2	0	6	**8.6**
Lead			
Paymaster Mine Waste Area 1	0	8	**7.1**
Paymaster Mine Waste Area 2	0	6	**5.4**
Manganese			
Paymaster Mine Waste Area 1	0	4	**2.3**
Paymaster Mine Waste Area 2	0	4	**4.2**
Zinc			
Paymaster Mine Waste Area 1	7	0	0.80
Paymaster Mine Waste Area 2	6	0	1.0

Notes: Only sample results ≥ minimum reference site concentration were evaluated. HQs greater than 1.0 are in **bold** type.

NE Not evaluated

Cadmium and zinc do not pose risk to plants at EU 9. Copper, lead, and manganese pose potential risk to plants at EU 9.

Three soil samples were collected along the vegetation transects. Concentrations of metals in three soil samples along the vegetation transects were greater than the reference site concentrations (Table 2-3). Aluminum was not considered to pose a risk at location PMR-RV1 because the pH was greater than 5.5 (EPA 2003b). The other location, PMR-RV2, has a pH of 4.9, suggesting that aluminum may pose risk to ecological receptors there.

No sign of erosion was noted during vegetation monitoring of the Paymaster Mine waste areas and Repository. Percent vegetative cover in Paymaster Mine Areas 1 and 2 was substantially less than in the reference area. However, the Paymaster Repository has greater percent cover than the reference area. The following tables summarize the results of the monitoring.

Summary of Paymaster Mine Area 1 (PM1) Field Results				
	Paymaster Mine Waste Area 1 (PM1)		Reference Areas	
Vegetation Type	Hits	Cover (%)	Hits	Cover (%)
Vegetated Totals	27	27.00	213	53.25
Wood	12	12.00	1	0.25
Litter	44	44.00	179	44.75
Rock	9	9.00	6	1.50
Bare Ground	8	8.00	1	0.25
Non-Vegetated Totals	73	73.00	187	46.75
Number of Quadrants	100		400	
Number of Transects	1		4	

Notes: Hits = Number of hits or the total number of species hits per sampling area.

Summary of Paymaster Mine Area 2 (PM2) Field Results				
	Paymaster Mine Waste Area 2 (PM2)		Reference Areas	
Vegetation Type	Hits	Cover (%)	Hits	Cover (%)
Vegetated Totals	36	36.00	213	53.25
Wood	15	15.00	1	0.25
Litter	35	35.00	179	44.75
Rock	8	8.00	6	1.50
Bare Ground	6	6.00	1	0.25
Non-Vegetated Totals	64	64.00	187	46.75
Number of Quadrants	100		400	
Number of Transects	1		4	

Notes: Hits = Number of hits or the total number of species hits per sampling area.

Summary of Paymaster Repository Field Results				
	Paymaster Repository		Reference Areas	
Vegetation Type	Hits	Cover (%)	Hits	Cover (%)
Vegetated Totals	177	59.00	213	53.25
Wood	0	0.00	1	0.25
Litter	86	28.67	179	44.75
Rock	13	4.33	6	1.50
Bare Ground	24	8.00	1	0.25
Non-Vegetated Totals	123	41.00	187	46.75
Number of Quadrants	300		400	
Number of Transects	3		4	

Notes: Hits = Number of hits or the total number of species hits per sampling area.

4.9.2 Risk to Invertebrates – EU 9

Chemicals that pose potential risk to invertebrates were identified based on a comparison of the maximum concentration detected in soil (0 to 6 inches bgs) with available Eco-SSL or ORNL invertebrate toxicity benchmarks (EPA 2008; Efroymson and others 1997b).

Maximum HQs and distribution of results for invertebrates are presented in Table 4-17, and HQs for all locations are presented in Appendix D-9. HQs for terrestrial invertebrates at EU 9 are summarized in the table below. Invertebrate HQ calculations are shown in their entirety in Appendix D-9.

COPEC/Location	EU 9 Terrestrial Invertebrates HQs		
	No. of HQs <1	No. of HQs ≥1	Max HQ
Cadmium			
Paymaster Mine Waste Area 1	NE	NE	NE
Paymaster Mine Waste Area 2	1	0	0.0049
Copper			
Paymaster Mine Waste Area 1	0	8	**5.1**
Paymaster Mine Waste Area 2	0	6	**7.5**
Lead			
Paymaster Mine Waste Area 1	8	0	0.50
Paymaster Mine Waste Area 2	6	0	0.38
Manganese			
Paymaster Mine Waste Area 1	3	1	**1.1**
Paymaster Mine Waste Area 2	1	3	**2.0**
Zinc			
Paymaster Mine Waste Area 1	5	2	**1.1**
Paymaster Mine Waste Area 2	3	3	**1.3**

Notes: Only sample results ≥ minimum reference site concentration were evaluated. HQs greater than 1.0 are in **bold** type.

NE Not evaluated

Copper, manganese, and zinc pose risk for terrestrial invertebrates at EU 9. However, cadmium and lead do not pose risk to invertebrates at EU 9.

4.9.3 Risk to Birds – EU 9

An estimated daily dose for each COPEC at each soil sample location was calculated for the mourning dove, red-tailed hawk, and American kestrel based on life history and foraging habits. Estimated daily doses of the following COPECs (cadmium, copper, lead, and manganese) for each avian receptor were compared with TRVs by calculating an HQ. Arsenic was not evaluated because no data were available for arsenic. Calculations are presented in their entirety in Appendices C-9A, C-9B, C-9C, C-9D and C-9E for cadmium, copper, lead, manganese, and zinc.

No HQs for the mourning dove, red-tailed hawk, or the American kestrel exceeded 1.0 at EU 9. Maximum HQs and distribution of results are presented in Table 4-18.

4.9.4 Risk to Mammals – EU 9

An estimated daily dose for each COPEC at each soil sample location was calculated for the meadow vole, white-tailed deer, red fox, and masked shrew based on life history and foraging habits. Estimated daily doses of the COPECs for each mammal were compared with TRVs by calculating an HQ. Calculations are presented in their entirety in Appendices C-9A, C-9B, C-9C, C-9D, and C-9E, for cadmium, copper, lead, manganese, and zinc.

The maximum HQs for all COPEC/receptor pairs for which at least one HQ was greater than 1.0 are presented in the table below. No HQs exceeded 1.0 for the white-tailed deer or red fox. Maximum HQs and distribution of results are presented in Table 4-18. All arsenic results for EU 9 were non-detect, so arsenic was not evaluated at EU 9.

	Maximum HQs EU 9 – Paymaster Mine Waste Areas			
Assessment Endpoint	**Cd**	**Cu**	**Pb**	**Mn**
Meadow Vole (Herbivore)				
Waste Area 1	--	--	--	4.92
Waste Area 2	--	--	--	8.78
Masked Shrew (Insectivore)				
Waste Area 1	--	1.43	2.66	2.26
Waste Area 2	--	1.43	2.66	4.02

Note: -- Indicates HQs <1

Cadmium and zinc posed no risk to any mammals in EU 9. HQs for copper, lead, and manganese slightly exceeded 1.0 for the masked shrew, and HQs for the meadow vole exposed to manganese exceeded 1.0 in three samples (PMWA1-Comp1, PMWA1-Comp2, and PMWA2-Comp1).

4.9.5 Summary of Risk Estimates – EU 9

Maximum concentrations of a number of COPECs at EU 9 pose potential risk to plant, invertebrate, and mammalian receptors. The following table indicates the chemicals that pose potential risk to receptors at the site based on HQs greater than 1.0.

COPECs based on HQs > 1.0 EU 9 – Upper Paymaster Mine Waste Areas				
COPEC	**Terrestrial Plants**	**Terrestrial Invertebrates**	**Birds**	**Mammals**
Arsenic	No	No	No	No
Cadmium	No	No	No	**Yes**
Copper	**Yes**	**Yes**	No	**Yes**

COPECs based on HQs > 1.0 EU 9 – Upper Paymaster Mine Waste Areas				
COPEC	**Terrestrial Plants**	**Terrestrial Invertebrates**	**Birds**	**Mammals**
Lead	**Yes**	**Yes**	No	**Yes**
Manganese	**Yes**	**Yes**	No	**Yes**
Zinc	No	No	No	No

4.10 RISK ESTIMATES: EU 10

This section presents the results of the BERA for EU 10, Number 3 Tunnel Waste Area. Risk estimates for terrestrial plants, invertebrates, birds, and mammals are presented below.

4.10.1 Risk to Plants – EU 10

Chemicals that pose potential risk to plants were identified based on a comparison of the maximum concentration detected in soil (0 to 6 inches bgs) with available Eco-SSL or ORNL plant toxicity benchmarks (EPA 2008; Efroymson and others 1997a). In addition, measures of percent cover were used to assess the condition of vegetation in reclaimed areas.

Maximum HQs and distribution of results for plants at EU 10 are presented in Table 4-19, and HQs for all locations are presented in Appendix D-10. HQs for terrestrial plants at EU 10 are summarized in the table below.

	EU 10 Terrestrial Plant HQs		
COPEC	**No. of HQs <1**	**No. of HQs ≥1**	**Max HQ**
Arsenic	15	15	**4.0**
Cadmium	2	0	0.043
Copper	0	29	**14**
Lead	12	13	**6.8**
Manganese	16	8	**28**
Zinc	9	5	**4.4**

Notes: Only sample results ≥ minimum reference site concentration were evaluated.
HQs greater than 1.0 are in **bold** type.

Cadmium does not pose risk for terrestrial plants at EU 10. However, arsenic, copper, lead, manganese, and zinc pose potential risk throughout the EU.

Monitoring at EU 10 indicated that vegetation is well established and diverse. Percent vegetative cover at the site was slightly less than at the reference area. Percent cover from litter and rock was similar to the reference area, as shown below.

Summary of Number 3 Tunnel Field Results				
	No. 3 Tunnel Mine Waste Area		Reference Areas	
Vegetation Type	Hits	Cover (%)	Hits	Cover (%)
Vegetated Totals	126	42.00	213	53.25
Wood	0	0.00	1	0.25
Litter	144	48.00	179	44.75
Rock	8	2.67	6	1.50
Bare Ground	22	7.33	1	0.25
Non-Vegetated Totals	174	58.00	187	46.75
Number of Quadrants	300		400	
Number of Transects	3		4	

Notes: Hits = Number of hits or the total number of species hits per sampling area.

4.10.2 Risk to Invertebrates – EU 10

Chemicals that pose potential risk to invertebrates were identified based on a comparison of the maximum concentration detected in soil (0 to 6 inches bgs) with available Eco-SSL or ORNL invertebrate toxicity benchmarks (EPA 2008; Efroymson and others 1997b).

Maximum HQs and distribution of results for invertebrates are presented in Table 4-19, and HQs for all locations are presented in Appendix D-10. HQs for terrestrial invertebrates at EU 10 are summarized in the table below.

	EU 10 Terrestrial Invertebrate HQs		
COPEC	No. of HQs <1	No. of HQs ≥1	Max HQ
Arsenic	29	1	**1.2**
Cadmium	2	0	0.0097
Copper	0	29	**12**
Lead	25	0	0.48
Manganese	18	6	**14**
Zinc	7	7	**5.8**

Notes: Only sample results ≥ minimum reference site concentration were evaluated.
HQs greater than 1.0 are in **bold** type.

Cadmium does not pose risk at EU10 for terrestrial invertebrates. However, arsenic, copper, manganese, and zinc pose potential risk throughout the EU.

4.10.3 Risk to Birds – EU 10

An estimated daily dose was calculated at each soil sample location for the mourning dove, red-tailed hawk, and American kestrel based on life history and foraging habits. Doses of arsenic, cadmium, copper, lead, manganese, and zinc were compared with TRVs, and HQs were calculated (Appendices C-10A, C-10B, C-10C, C-10D, C-10E, and C-10F).

All HQs for avian receptors were less than 1.0 at EU 10.

4.10.4 Risk to Mammals – EU 10

An estimated daily dose for each COPEC at each soil sample location was calculated for the meadow vole, white-tailed deer, red fox, and masked shrew based on life history and foraging habits. Doses of metals for each mammal were compared with TRVs, and HQs were calculated (Appendices C-10A, C-10B, C-10C, C-10D, C-10E, and C-10F).

The maximum HQs for all COPEC/receptor pairs for which at least one HQ was greater than 1.0 are presented in the table below. Maximum HQs and distribution of results are presented in Table 4-20.

Assessment Endpoint	Maximum HQs EU 10 – Number 3 Tunnel Waste Area					
	As	**Cd**	**Cu**	**Pb**	**Mn**	**Zn**
Meadow Vole (Herbivore)	1.35	--	--	--	59.4	--
Masked Shrew (Insectivore)	325	5.09	11.0	8.14	87.0	9.57

Note: -- Indicates HQs <1

No HQs exceeded 1.0 for the white-tailed deer or the red fox. The highest HQs for the meadow vole were for manganese. Risk to the masked shrew is indicated for all COPECs.

4.10.5 Summary of Risk Estimates – EU 10

Maximum concentrations of a number of COPECs at EU 10 pose potential risk to plant, invertebrate, and mammalian receptors. The following table indicates the chemicals that pose potential risk to receptors at the site based on HQs greater than 1.0.

COPECs Based on HQs > 1.0 EU 10 – Number 3 Tunnel Waste Area				
COPEC	**Terrestrial Plants**	**Terrestrial Invertebrates**	**Birds**	**Mammals**
Arsenic	**Yes**	**Yes**	No	**Yes**
Cadmium	No	No	No	**Yes**
Copper	**Yes**	**Yes**	No	**Yes**
Lead	**Yes**	**Yes**	No	**Yes**
Manganese	**Yes**	**Yes**	No	**Yes**
Zinc	**Yes**	**Yes**	No	**Yes**

4.11 RISK ESTIMATES: EU 11

This section presents the results of the BERA for EU 11, Beartrap Creek Dispersed Tailings. Risk estimates for terrestrial plants, invertebrates, birds, and mammals are presented below.

4.11.1 Risk to Plants – EU 11

Chemicals that pose potential risk to plants were identified based on a comparison of the maximum concentration detected in soil (0 to 6 inches bgs) with available Eco-SSL or ORNL plant toxicity benchmarks (EPA 2008; Efroymson and others 1997a).

Maximum HQs and distribution of results for plants at EU 11 are presented in Table 4-21, and HQs for all locations are presented in Appendix D-11. HQs for terrestrial plants at EU 11 are summarized in the table below.

COPEC/Location	EU 11 Terrestrial Plant HQs		
	No. of HQs <1	No. of HQs ≥1	Max HQ
Arsenic			
Inside Tailings	0	48	**41**
Edge of Tailings	5	36	**8.7**
Outside Tailings	2	40	**38**
Cadmium			
Inside Tailings	3	1	**2.3**
Edge of Tailings	1	0	0.051
Outside Tailings	5	0	0.060
Copper			
Inside Tailings	0	45	**38**
Edge of Tailings	3	33	**6.3**
Outside Tailings	3	36	**31**
Lead			
Inside Tailings	3	46	**150**
Edge of Tailings	19	31	**7.6**
Outside Tailings	23	28	**130**
Manganese			
Inside Tailings	5	44	**190**
Edge of Tailings	0	50	**27**
Outside Tailings	0	52	**36**
Zinc			
Inside Tailings	6	41	**100**
Edge of Tailings	11	34	**4.8**
Outside Tailings	18	32	**85**

Notes: Only sample results ≥ minimum reference site concentration were evaluated. HQs greater than 1.0 are in **bold** type.

Arsenic, copper, lead, manganese, and zinc pose risk throughout EU 11. However, the HQ was greater than 1.0 for cadmium for only one sample, which was inside the tailings pile.

Three composite samples of plant tissue were collected at Beartrap Creek and three samples at the Anaconda Creek reference location. Concentrations of aluminum, lead, manganese, and zinc in plant tissue samples at the site were greater than the minimum reference site concentrations in all three samples; concentrations of arsenic, cadmium, and copper were greater than the minimum reference site concentrations in one or two of three samples (Table 2-6).

Concentrations of metals in soil samples from the vegetation transects at the site were generally greater than the reference site concentrations (Table 2-5). However, aluminum exceeded the reference concentration in only one of eight samples. In this sample, the pH was higher than 5.5, indicating that aluminum is not likely to pose a risk (EPA 2003b).

Plant species composition and amount of bare ground at the site transect differ from the Anaconda Creek reference transect (Table 2-9). Dominant species collected include white spirea (*Spiraea betulifolia*), black huckleberry (*Vaccinium membranaceum*), and bearberry (*Arctostaphylos uva-ursi*).

4.11.2 Risk to Invertebrates – EU 11

Chemicals that pose potential risk to invertebrates were identified based on a comparison of the maximum concentration detected in soil (0 to 6 inches bgs) with available Eco-SSL or ORNL invertebrate toxicity benchmarks (EPA 2008; Efroymson and others 1997b).

Maximum HQs and distribution of results for invertebrates are presented in Table 4-21, and HQs for all locations are presented in Appendix D-11. HQs for terrestrial invertebrates at EU 2 are summarized in the table below.

	EU 11 Terrestrial Invertebrate HQs		
COPEC/ Location	**No. of HQs <1**	**No. of HQs ≥1**	**Max HQ**
Arsenic			
Inside Tailings	6	42	**12**
Edge of Tailings	36	9	**2.6**
Outside Tailings	28	14	**11**
Cadmium			
Inside Tailings	4	0	0.52
Edge of Tailings	1	0	0.012
Outside Tailings	5	0	0.014
Copper			
Inside Tailings	2	43	**34**
Edge of Tailings	9	27	**5.5**
Outside Tailings	8	31	**27**
Lead			
Inside Tailings	39	10	**10**
Edge of Tailings	50	0	0.54
Outside Tailings	49	2	**9.2**

COPEC/ Location	EU 11 Terrestrial Invertebrate HQs		
	No. of HQs <1	No. of HQs ≥1	Max HQ
Manganese			
Inside Tailings	9	40	**92**
Edge of Tailings	4	46	**13**
Outside Tailings	10	42	**18**
Zinc			
Inside Tailings	3	44	**130**
Edge of Tailings	3	42	**6.4**
Outside Tailings	6	44	**110**

Notes: Only sample results ≥ minimum reference site concentration were evaluated. HQs greater than 1.0 are in **bold** type.

All HQs for cadmium were less than 1.0. Arsenic, copper, lead, manganese, and zinc pose potential risk throughout the EU.

Two composite invertebrate tissue samples were collected at Beartrap Creek and two at the Anaconda Creek reference location. Concentrations of aluminum, arsenic, lead, manganese, and zinc in invertebrate tissue samples collected in Beartrap Creek were higher than the minimum reference site concentrations; concentrations of cadmium and copper were higher than the minimum reference concentration in one of two samples (Table 2-7).

4.11.3 Risk to Birds – EU 11

An estimated daily dose for each COPEC at each soil sample location was calculated for the mourning dove, red-tailed hawk, and American kestrel based on life history and foraging habits. Doses of arsenic, cadmium, copper, lead, manganese, and zinc were compared with TRVs, and HQs were calculated (Appendices C-11A, C-11B, C-11C, C-11D, C-11E, and C-11F).

The maximum HQ for each COPEC/receptor pair for which at least one HQ was greater than 1.0 is presented in the table below. Maximum HQs and distribution of results are presented in Table 4-22.

Assessment Endpoint	Maximum HQs EU 11 – Beartrap Creek Dispersed Tailings					
	As	Cd	Cu	Pb	Mn	Zn
Mourning Dove (Herbivore)						
Inside Tailings	--	--	--	2.17	--	--
Outside Tailings	--	--	--	1.96	--	--
Red-Tailed Hawk (Carnivore)						
Inside Tailings	--	--	--	1.04	--	--
American Kestrel (Insectivore)						
Inside Tailings	1.82	1.67	--	9.83	--	1.33
Outside Tailings	1.70	--	--	8.87	--	1.12

Note: -- Indicates HQs <1

No HQs exceeded 1.0 at the edge of the tailings for the mourning dove and American kestrel. No HQs exceeded 1.0 for the red-tailed hawk at the edge of the tailings or outside the tailings. HQs for lead were greater than 1.0 for all avian receptors.

4.11.4 Risk to Mammals – EU 11

An estimated daily dose for each COPEC at each soil sample location was calculated for the meadow vole, white-tailed deer, red fox, and masked shrew based on life history and foraging habits. Doses of arsenic, cadmium, copper, lead, manganese, and zinc were compared with TRVs, and HQs were calculated (Appendices C-11A, C-11B, C-11C, C-11D, C-11E, and C-11F).

The maximum HQ for each COPEC/receptor pair for which at least one HQ was greater than 1.0 is presented in the table below. Maximum HQs and distribution of results are presented in Table 4-22.

Assessment Endpoint	Maximum HQs EU 11 – Beartrap Creek Dispersed Tailings					
	As	**Cd**	**Cu**	**Pb**	**Mn**	**Zn**
Meadow Vole (Herbivore)						
Inside Tailings	13.8	6.75	--	7.46	397	10.9
Edge of Tailings	2.96	--	--	--	56.0	--
Outside Tailings	12.9	--	--	6.72	75.6	9.18
White-tailed Deer (Herbivore)						
Inside Tailings	--	--	--	--	1.27	--
Masked Shrew (Insectivore)						
Inside Tailings	3332	270	29.9	174	582	222
Edge of Tailings	713	6.07	4.89	9.15	82.1	10.6
Outside Tailings	3107	7.15	24.2	157	111	187

Note: -- Indicates HQs <1.0

No HQs exceeded 1.0 for the red fox. HQs for the white-tailed deer exceeded 1.0 only inside the tailings. HQs indicated potential risk for the meadow vole and masked shrew from several metals across the EU.

4.11.5 Summary of Risk Estimates – EU 11

Maximum concentrations of a number of COPECs at EU 11 pose potential risk to plant, invertebrate, and vertebrate receptors, as shown below.

COPECs Based on HQs > 1.0 EU 11 – Upper Beartrap Creek Dispersed Tailings				
COPEC	**Terrestrial Plants**	**Terrestrial Invertebrates**	**Birds**	**Mammals**
Arsenic	**Yes**	**Yes**	**Yes**	**Yes**
Cadmium	**Yes**	No	**Yes**	**Yes**
Copper	**Yes**	**Yes**	No	**Yes**
Lead	**Yes**	**Yes**	**Yes**	**Yes**
Manganese	**Yes**	**Yes**	No	**Yes**
Zinc	**Yes**	**Yes**	**Yes**	**Yes**

4.12 RISK ESTIMATES: EU 12

This section presents the results of the BERA for EU 12, Marsh. Risk estimates for marsh plants, invertebrates, birds, and mammals are presented below. Sediment samples collected from the marsh surface at three depths (0 to 2, 2 to 6, and 6 to 12 inches bgs) were evaluated separately. Results are presented at each depth for the eastern and western marsh.

4.12.1 Risk to Plants – EU 12

Chemicals that pose potential risk to plants were identified based on a comparison of the maximum concentration detected in soil with Eco-SSL or ORNL plant toxicity benchmarks because no plant toxicity benchmarks are available for wetland plants (EPA 2008; Efroymson and others 1997a).

Maximum HQs and distribution of results for plants at EU 12 are presented in Table 4-23, and HQs for all locations are presented in Appendix D-12A. HQs for wetland plants at EU 12 are summarized in the table below.

	EU 12 Terrestrial Plant HQs		
COPEC/ Location	**No. of HQs <1**	**No. of HQs ≥1**	**Max HQ**
Arsenic			
Eastern Upper Marsh (0-2”)	4	16	**13**
Eastern Upper Marsh (2-6”)	2	15	**28**
Eastern Upper Marsh (6-12”)	6	13	**10**
Western Upper Marsh (0-2”)	6	5	**2.6**
Western Upper Marsh (2-6”)	8	5	**2.7**
Western Upper Marsh (6-12”)	10	3	**3.3**
Middle Marsh (0-2”)	0	0	NE
Middle Marsh (2-6”)	0	0	NE
Middle Marsh (6-12”)	0	0	NE
Lower Marsh (0-2”)	0	0	NE
Lower Marsh (2-6”)	0	0	NE
Lower Marsh (6-12”)	0	0	NE

COPEC/ Location	EU 12 Terrestrial Plant HQs		
	No. of HQs <1	No. of HQs ≥1	Max HQ
Cadmium			
Eastern Upper Marsh (0-2”)	22	0	0.72
Eastern Upper Marsh (2-6”)	18	1	**1.1**
Eastern Upper Marsh (6-12”)	20	0	0.85
Western Upper Marsh (0-2”)	15	0	0.56
Western Upper Marsh (2-6”)	15	1	**2.4**
Western Upper Marsh (6-12”)	13	0	0.73
Middle Marsh (0-2”)	2	0	0.30
Middle Marsh (2-6”)	2	0	0.46
Middle Marsh (6-12”)	2	0	0.58
Lower Marsh (0-2”)	3	0	0.047
Lower Marsh (2-6”)	3	0	0.038
Lower Marsh (6-12”)	2	0	0.088
Copper			
Eastern Upper Marsh (0-2”)	2	20	**16**
Eastern Upper Marsh (2-6”)	0	20	**20**
Eastern Upper Marsh (6-12”)	1	19	**18**
Western Upper Marsh (0-2”)	0	15	**11**
Western Upper Marsh (2-6”)	2	15	**39**
Western Upper Marsh (6-12”)	1	16	**15**
Middle Marsh (0-2”)	0	2	**6.3**
Middle Marsh (2-6”)	0	2	**8.6**
Middle Marsh (6-12”)	0	2	**10**
Lower Marsh (0-2”)	0	2	**4.1**
Lower Marsh (2-6”)	0	2	**4.1**
Lower Marsh (6-12”)	0	2	**5.1**
Lead			
Eastern Upper Marsh (0-2”)	4	18	**19**
Eastern Upper Marsh (2-6”)	4	16	**26**
Eastern Upper Marsh (6-12”)	6	14	**35**
Western Upper Marsh (0-2”)	6	7	**21**
Western Upper Marsh (2-6”)	9	7	**21**
Western Upper Marsh (6-12”)	10	7	**27**
Middle Marsh (0-2”)	0	2	**5.8**
Middle Marsh (2-6”)	0	2	**6.9**
Middle Marsh (6-12”)	0	2	**8.1**
Lower Marsh (0-2”)	0	0	NE
Lower Marsh (2-6”)	0	0	NE
Lower Marsh (6-12”)	0	0	NE

COPEC/ Location	EU 12 Terrestrial Plant HQs		
	No. of HQs <1	No. of HQs ≥1	Max HQ
Manganese			
Eastern Upper Marsh (0-2")	2	19	**36**
Eastern Upper Marsh (2-6")	3	17	**46**
Eastern Upper Marsh (6-12")	5	15	**37**
Western Upper Marsh (0-2")	3	6	**25**
Western Upper Marsh (2-6")	4	6	**17**
Western Upper Marsh (6-12")	6	7	**35**
Middle Marsh (0-2")	0	1	**9.1**
Middle Marsh (2-6")	0	1	**6.7**
Middle Marsh (6-12")	0	1	**8.1**
Lower Marsh (0-2")	0	1	**9.3**
Lower Marsh (2-6")	0	1	**10**
Lower Marsh (6-12")	0	1	**33**
Zinc			
Eastern Upper Marsh (0-2")	0	22	**26**
Eastern Upper Marsh (2-6")	0	20	**24**
Eastern Upper Marsh (6-12")	0	20	**26**
Western Upper Marsh (0-2")	4	11	**18**
Western Upper Marsh (2-6")	4	13	**17**
Western Upper Marsh (6-12")	4	12	**23**
Middle Marsh (0-2")	0	2	**9.2**
Middle Marsh (2-6")	0	2	**13**
Middle Marsh (6-12")	0	2	**16**
Lower Marsh (0-2")	1	3	**3.3**
Lower Marsh (2-6")	1	3	**3.2**
Lower Marsh (6-12")	0	3	**4.6**

Notes: Only sample results ≥ minimum reference site concentration were evaluated. HQs greater than 1.0 are in **bold** type.

Toxicty benchmarks are not available for aluminum.

NE Not evaluated

Cadmium HQs were greater than 1.0 only in the 2- to 6-inch depth interval in the Eastern and Western Upper Marsh. Copper, manganese, and zinc HQs indicate potential risk to plants throughout EU 12, arsenic HQs indicate potential risk to plants in the Upper Marsh only, and lead HQs indicate potential risk to plants in the Upper and Middle Marshes only. Concentrations of arsenic in the Middle and Lower Marshes, and of lead in the Lower Marsh, were below the minimum reference site concentration.

Three composite samples of plant tissue were collected in the Upper Marsh and three samples at the Pass Creek reference location. Concentrations of aluminum, cadmium, copper, lead,

manganese, and zinc in plant tissue samples at the site were greater than the maximum reference site plant tissue concentrations (Table 2-12).

Concentrations of metals in soil samples from the Eastern and Western Upper Marsh vegetation transects at the site were generally greater than the reference site concentrations (Table 2-11), with the exception of aluminum.

Monitoring the Eastern Upper Marsh indicated that the percent vegetative cover is substantially less than in the reference area and less than in the Western Upper Marsh. Percent vegetative cover in the Western Upper Marsh was only slightly lower than in the reference area (Table 2-9). Dominant vegetation species collected from transect UMT1 include field horsetail (*Equisetum arvense*), bluegrasses, and sedges. Dominant vegetation collected from transect UMT2 include bluegrasses and sedges. Vegetation samples were not collected in the Middle and Lower Marshes.

4.12.2 Risk to Invertebrates – EU 12

Both terrestrial and aquatic invertebrates occur in the marsh in EU 12. Chemicals that pose potential risk to terrestrial invertebrates were identified based on a comparison of the maximum concentration detected in soil with available Eco-SSL or ORNL invertebrate toxicity benchmarks (EPA 2008, Efroymson and others 2007b). Chemicals that pose potential risk to aquatic invertebrates were identified based on a comparison of the maximum concentration detected in sediment at three depths (0 to 2 inches, 2 to 6 inches, and 6 to 12 inches bgs) with sediment effect levels. TELs, PELs, and SELs are described in Section 3.2.4. Uncertainty related to HQ interpretation is discussed in Section 5.0.

Maximum HQs and distribution of results for terrestrial and aquatic invertebrates are presented Tables 4-23 and 4-24, and HQs for all locations are presented in Appendices D-12A and D-12B. HQs for invertebrates at EU 12 are summarized in the table below.

Based on terrestrial invertebrate benchmarks, cadmium does not pose risk to invertebrates at EU 12; all HQs were less than 1.0 Arsenic poses potential risk to terrestrial invertebrates in the Eastern Upper Marsh only. Lead poses potential riskin the Eastern and Western Upper Marsh only, (though the HQs are low), and manganese poses potential risk in the Middle and Lower Marshes only. t Copper and zinc pose potential risk to terrestrial invertebrates throughout EU 12, with greatest risk in the Upper Marsh and lowest risk in the Lower Marsh.

Based on threshold, probable, and severe effect levels for freshwater sediment, cadmium, copper, and mangense pose potential risk to aquatic invertebrates and fish across EU 12 at all three sediment depths. Arsenic poses potential risk to aquatic invertebrates and fish in the Eastern and Western Upper Marshes only. Lead poses potential risk in the Upper and Middle Marshes. Zinc may pose potential risk to aquatic invertebrates and fish across EU 12, with the highest risk in the Upper Marsh. In the Lower Marsh, levels do not cause pronounced disturbance of the sediment-dwelling community in the Lower Marsh. Maximum HQs are generally higher in the Eastern Upper Marsh than in the Western Upper Marsh, and are higher in the Upper Marsh than in the Lower and Middle Marshes.

COPEC/ Location	EU 12 Invertebrate HQs											
	Terrestrial			Aquatic								
	No. of HQs <1	No. of HQs ≥1	Max HQ	No. of HQs <1 (TEL)	No. of HQs ≥1 (TEL)	Max HQ (TEL)	No. of HQs <1 (PEL)	No. of HQs ≥1 (PEL)	Max HQ (PEL)	No. of HQs <1 (SEL)	No. of HQs ≥1 (SEL)	Max HQ (SEL)
Arsenic												
Eastern Upper Marsh (0-2”)	5	15	**4.0**	0	20	**40**	4	16	**14**	4	16	**7.2**
Eastern Upper Marsh (2-6”)	6	11	**8.5**	0	17	**86**	2	15	**30**	3	14	**15**
Eastern Upper Marsh (6-12”)	9	10	**3.1**	0	19	**31**	6	13	**11**	9	10	**5.5**
Western Upper Marsh (0-2”)	11	0	0.79	0	11	**8.0**	6	5	**2.8**	9	2	**1.4**
Western Upper Marsh (2-6”)	13	0	0.82	0	13	**8.4**	6	7	**2.9**	11	2	**1.5**
Western Upper Marsh (6-12”)	13	0	0.98	0	13	**10**	8	5	**3.5**	11	2	**1.8**
Middle Marsh (0-2")	0	0	NE	0	0	NE	0	0	NE	0	0	NE
Middle Marsh (2-6")	0	0	NE	0	0	NE	0	0	NE	0	0	NE
Middle Marsh (6-12")	0	0	NE	0	0	NE	0	0	NE	0	0	NE
Lower Marsh (0-2")	0	0	NE	0	0	NE	0	0	NE	0	0	NE
Lower Marsh (2-6")	0	0	NE	0	0	NE	0	0	NE	0	0	NE
Lower Marsh (6-12")	0	0	NE	0	0	NE	0	0	NE	0	0	NE
Cadmium												
Eastern Upper Marsh (0-2”)	22	0	0.17	0	22	**39**	6	16	**6.5**	12	10	**2.3**
Eastern Upper Marsh (2-6”)	19	0	0.25	0	19	**58**	7	12	**9.8**	12	7	**3.5**
Eastern Upper Marsh (6-12”)	20	0	0.19	0	20	**46**	10	10	**7.7**	13	7	**2.7**
Western Upper Marsh (0-2”)	15	0	0.13	1	14	**30**	9	6	**5.1**	12	3	**1.8**
Western Upper Marsh (2-6”)	16	0	0.56	1	15	**130**	11	5	**22**	12	4	**7.8**
Western Upper Marsh (6-12”)	13	0	0.17	1	12	**39**	8	5	**6.7**	10	3	**2.4**
Middle Marsh (0-2")	2	0	0.068	0	2	**16**	1	1	**2.7**	2	0	0.95
Middle Marsh (2-6")	2	0	0.11	0	2	**25**	1	1	**4.2**	1	1	**1.5**
Middle Marsh (6-12")	2	0	0.13	0	2	**31**	1	1	**5.2**	1	1	**1.8**
Lower Marsh (0-2")	3	0	0.011	0	3	**2.5**	3	0	0.42	3	0	0.15
Lower Marsh (2-6")	3	0	0.0086	0	3	**2.0**	3	0	0.34	3	0	0.12
Lower Marsh (6-12")	2	0	0.02	0	2	**4.7**	2	0	0.79	2	0	0.28

COPEC/ Location	EU 12 Invertebrate HQs											
	Terrestrial			Aquatic								
	No. of HQs <1	No. of HQs ≥1	Max HQ	No. of HQs <1 (TEL)	No. of HQs ≥1 (TEL)	Max HQ (TEL)	No. of HQs <1 (PEL)	No. of HQs ≥1 (PEL)	Max HQ (PEL)	No. of HQs <1 (SEL)	No. of HQs ≥1 (SEL)	Max HQ (SEL)
Copper												
Eastern Upper Marsh (0-2”)	2	20	**14**	0	22	**31**	3	19	**5.7**	3	19	**10**
Eastern Upper Marsh (2-6”)	1	19	**18**	0	20	**40**	7	13	**7.2**	5	15	**13**
Eastern Upper Marsh (6-12”)	1	19	**16**	1	19	**35**	9	11	**6.3**	6	14	**11**
Western Upper Marsh (0-2”)	0	15	**9.9**	0	15	**22**	9	6	**4.0**	5	10	**7.2**
Western Upper Marsh (2-6”)	3	14	**35**	0	17	**77**	7	13	**7.2**	6	11	**25**
Western Upper Marsh (6-12”)	2	15	**14**	0	17	**30**	9	8	**5.5**	4	13	**9.8**
Middle Marsh (0-2")	0	2	**5.5**	0	2	**12**	0	2	**2.2**	0	2	**4.0**
Middle Marsh (2-6")	0	2	**7.5**	0	2	**17**	0	2	**3.0**	0	2	**5.5**
Middle Marsh (6-12")	0	2	**9.1**	0	2	**20**	0	2	**3.7**	0	2	**6.6**
Lower Marsh (0-2")	0	2	**3.6**	0	2	**8**	0	2	**1.5**	0	2	**2.6**
Lower Marsh (2-6")	0	2	**3.6**	0	2	**8**	0	2	**1.4**	0	2	**2.6**
Lower Marsh (6-12")	0	2	**4.5**	0	2	**10**	0	2	**1.8**	0	2	**3.3**
Lead												
Eastern Upper Marsh (0-2”)	16	6	**1.3**	0	22	**64**	2	20	**25**	5	17	**9.0**
Eastern Upper Marsh (2-6”)	15	5	**1.8**	0	20	**89**	1	19	**34**	6	14	**13**
Eastern Upper Marsh (6-12”)	16	4	**2.5**	0	20	**120**	4	16	**46**	8	12	**17**
Western Upper Marsh (0-2”)	11	2	**1.5**	0	13	**71**	2	11	**27**	9	4	**9.9**
Western Upper Marsh (2-6”)	15	1	**1.4**	0	16	**70**	1	19	**34**	10	6	**9.8**
Western Upper Marsh (6-12”)	16	1	**1.9**	0	17	**94**	2	15	**36**	12	5	**13**
Middle Marsh (0-2")	2	0	0.41	0	2	**20**	0	2	**7.6**	0	2	**2.8**
Middle Marsh (2-6")	2	0	0.49	0	2	**24**	0	2	**9.1**	0	2	**3.3**
Middle Marsh (6-12")	2	0	0.57	0	2	**28**	0	2	**11**	0	2	**3.9**
Lower Marsh (0-2")	0	0	NE	0	0	NE	0	0	BB	0	0	NE
Lower Marsh (2-6")	0	0	NE	0	0	NE	0	0	BB	0	0	NE
Lower Marsh (6-12")	0	0	NE	0	0	NE	0	0	BB	0	0	NE

COPEC/ Location	EU 12 Invertebrate HQs											
	Terrestrial			Aquatic								
	No. of HQs <1	No. of HQs ≥1	Max HQ	No. of HQs <1 (TEL)	No. of HQs ≥1 (TEL)	Max HQ (TEL)	No. of HQs <1 (PEL)	No. of HQs ≥1 (PEL)	Max HQ (PEL)	No. of HQs <1 (SEL)	No. of HQs ≥1 (SEL)	Max HQ (SEL)
Manganese												
Eastern Upper Marsh (0-2”)	4	17	**18**	4	17	**17**	NA	NA	NA	6	15	**7.3**
Eastern Upper Marsh (2-6”)	7	13	**22**	7	13	**22**	NA	NA	NA	9	11	**9.2**
Eastern Upper Marsh (6-12”)	8	12	**18**	8	12	**18**	NA	NA	NA	10	10	**7.4**
Western Upper Marsh (0-2”)	3	6	**12**	3	6	**12**	NA	NA	NA	4	5	**5.0**
Western Upper Marsh (2-6”)	5	5	**8.5**	5	5	**8.3**	NA	NA	NA	5	5	**3.5**
Western Upper Marsh (6-12”)	9	4	**17**	9	4	**17**	NA	NA	NA	9	4	**7.0**
Middle Marsh (0-2")	0	1	**4.5**	0	1	**4.4**	NA	NA	NA	0	1	**1.8**
Middle Marsh (2-6")	0	1	**3.3**	0	1	**3.2**	NA	NA	NA	0	1	**1.3**
Middle Marsh (6-12")	0	1	**4.0**	0	1	**3.9**	NA	NA	NA	0	1	**1.6**
Lower Marsh (0-2")	0	1	NE	0	1	**4.4**	NA	NA	NA	0	1	**1.9**
Lower Marsh (2-6")	0	1	NE	0	1	**5.0**	NA	NA	NA	0	1	**2.1**
Lower Marsh (6-12")	0	1	NE	0	1	**16**	NA	NA	NA	0	1	**6.5**
Zinc												
Eastern Upper Marsh (0-2”)	0	22	**34**	0	22	**33**	3	19	**13**	4	18	**5.0**
Eastern Upper Marsh (2-6”)	0	20	**32**	0	20	**32**	4	16	**12**	8	12	**4.7**
Eastern Upper Marsh (6-12”)	0	20	**35**	0	20	**34**	4	16	**13**	10	10	**5.1**
Western Upper Marsh (0-2”)	1	14	**24**	1	14	**23**	8	7	**9.1**	12	3	**3.5**
Western Upper Marsh (2-6”)	2	15	**23**	2	15	**22**	4	16	**12**	12	5	**3.4**
Western Upper Marsh (6-12”)	4	12	**23**	3	13	**29**	8	8	**11**	11	5	**4.4**
Middle Marsh (0-2")	0	2	**9.2**	0	2	**12**	0	2	**4.7**	1	1	**1.8**
Middle Marsh (2-6")	0	2	**13**	0	2	**17**	0	2	**6.5**	1	1	**2.5**
Middle Marsh (6-12")	0	2	**16**	0	2	**21**	0	2	**8.2**	1	1	**3.2**
Lower Marsh (0-2")	1	3	**3.3**	1	3	**4.2**	1	3	**1.7**	4	0	0.64
Lower Marsh (2-6")	1	3	**3.2**	1	3	**4.2**	1	3	**1.6**	4	0	0.62
Lower Marsh (6-12")	0	3	**4.6**	0	3	**6.0**	1	2	**2.3**	3	0	0.9

Notes: Only sample results ≥ minimum reference site concentration were evaluated. HQs greater than 1.0 are in **bold** type.
Toxicity benchmarks are not available for aluminum.

NA – PEL not available for manganese NE - Result less than minimum reference site concentration

Three composite invertebrate tissue samples were collected in both the Eastern and Western Upper Marsh transect locations and three at the Pass Creek reference location. Concentrations of aluminum, arsenic, cadmium, copper, lead, manganese, and zinc were greater than the minimum reference concentration in all samples in both the Eastern and Wastern Upper Marshes (Table 2-13).

4.12.3 Risk to Birds – EU 12

An estimated daily dose for each COPEC at each marsh soil sample location was calculated for the mourning dove, red-tailed hawk, American kestrel, Canada goose, great blue heron, and mallard based on life history and foraging habits. Doses of arsenic, cadmium, copper, lead, manganese, and zinc were compared with TRVs, and HQs were calculated. Doses and HQs were calculated separately for the three depth intervals. Calculations are presented in Appendices C-12AA, C-12AB, C-12BA, C-12BB, C-12CA, C-12CB, C-12DA, C-12DB, C-12EA, C-12EB, C-12FA, and C-12FB.

The maximum HQ for each COPEC/receptor pair for which at least one HQ was greater than 1.0 is presented in the table below. Maximum HQs and distribution of results are presented in Table 4-25.

	Maximum HQs						
	EU 12 – Marsh						
Assessment Endpoint	**Al**	**As**	**Cd**	**Cu**	**Pb**	**Mn**	**Zn**
Mourning Dove (Herbivore)							
Eastern Upper Marsh (0-2”)	--	--	1.9	--	2.6	1.0	2.1
Eastern Upper Marsh (2-6”)	--	--	2.9	--	3.7	1.3	2.0
Eastern Upper Marsh (6-12”)	--	--	2.3	--	4.9	1.1	2.2
Western Upper Marsh (0-2”)	--	--	1.4	--	2.3	--	1.4
Western Upper Marsh (2-6”)	--	--	6.2	--	2.3	--	1.3
Western Upper Marsh (6-12”)	--	--	1.9	--	3.0	1.4	1.8
Middle Marsh (0-2")	--	--	--	--	--	--	--
Middle Marsh (2-6")	--	--	1.2	--	--	--	--
Middle Marsh (6-12")	--	--	1.5	--	--	--	1.3
Lower Marsh (0-2")	--	--	--	--	--	--	--
Lower Marsh (2-6")	--	--	--	--	--	--	--
Lower Marsh (6-12")	--	--	--	--	--	--	--
Red-Tailed Hawk (Carnivore)							
Eastern Upper Marsh (0-2”)	--	--	--	--	--	--	--
Eastern Upper Marsh (2-6”)	--	--	--	--	--	--	--
Eastern Upper Marsh (6-12”)	--	--	--	--	1.1	--	--
Western Upper Marsh (0-2”)	--	--	--	--	--	--	--
Western Upper Marsh (2-6”)	--	--	--	--	--	--	--

Assessment Endpoint	Maximum HQs EU 12 – Marsh						
	Al	**As**	**Cd**	**Cu**	**Pb**	**Mn**	**Zn**
Western Upper Marsh (6-12”)	--	--	--	--	--	--	--
Middle Marsh (0-2")	--	--	--	--	--	--	--
Middle Marsh (2-6")	--	--	--	--	--	--	--
Middle Marsh (6-12")	--	--	--	--	--	--	--
Lower Marsh (0-2")	--	--	--	--	--	--	--
Lower Marsh (2-6")	--	--	--	--	--	--	--
Lower Marsh (6-12")	--	--	--	--	--	--	--
American Kestrel (Insectivore)							
Eastern Upper Marsh (0-2”)	1.1	1.8	99.0	20	551	20	43
Eastern Upper Marsh (2-6”)	1.2	3.8	149.0	25	770	25	41
Eastern Upper Marsh (6-12”)	1.1	1.4	117.0	22	1039	20	45
Western Upper Marsh (0-2”)	1.5	--	45.0	6.1	180	11	23
Western Upper Marsh (2-6”)	1.1	--	193.0	21	179	7.4	22
Western Upper Marsh (6-12”)	1.1	--	58.0	8.4	239	15	28
Middle Marsh (0-2")	--	--	24	3.4	51	3.9	12
Middle Marsh (2-6")	--	--	37	4.7	60	2.9	16
Middle Marsh (6-12")	--	--	46	5.6	70	3.5	20
Lower Marsh (0-2")	1.4	--	3.7	2.2	6.5	4.0	4.1
Lower Marsh (2-6")	1.3	--	3.0	2.2	6.3	4.5	4.0
Lower Marsh (6-12")	1.3	--	6.9	2.8	6.1	14	5.8
Great Blue Heron (Carnivore)							
Eastern Upper Marsh (0-2”)	5.0	--	--	--	1.7	--	1.2
Eastern Upper Marsh (2-6”)	5.3	--	--	--	2.4	--	1.2
Eastern Upper Marsh (6-12”)	4.9	--	--	--	3.2	--	1.3
Western Upper Marsh (0-2”)	7.1	--	--	--	1.9	--	--
Western Upper Marsh (2-6”)	4.9	--	1.3	--	1.9	--	--
Western Upper Marsh (6-12”)	5.2	--	--	--	2.5	--	1.1
Middle Marsh (0-2")	3.7	--	--	--	--	--	--
Middle Marsh (2-6")	3.7	--	--	--	--	--	--
Middle Marsh (6-12")	3.8	--	--	--	--	--	--
Lower Marsh (0-2")	6.4	--	--	--	--	--	--
Lower Marsh (2-6")	6.2	--	--	--	--	--	--
Lower Marsh (6-12")	6.2	--	--	--	--	--	--

Assessment Endpoint	Maximum HQs EU 12 – Marsh						
	Al	As	Cd	Cu	Pb	Mn	Zn
Mallard (Omnivore)							
Eastern Upper Marsh (0-2”)	26	--	13	2.6	70	3.0	6.3
Eastern Upper Marsh (2-6”)	27	2.0	20	3.3	98	3.7	6.0
Eastern Upper Marsh (6-12”)	26	--	16	2.9	133	3.0	6.6
Western Upper Marsh (0-2”)	28	--	6.2	--	23	1.8	3.4
Western Upper Marsh (2-6”)	25	--	27	2.9	23	1.2	3.3
Western Upper Marsh (6-12”)	27	--	8.1	1.1	31	2.5	4.3
Middle Marsh (0-2")	19	--	3.3	--	6.6	--	1.8
Middle Marsh (2-6")	19	--	5.1	--	7.8	--	2.5
Middle Marsh (6-12")	20	--	6.4	--	9.1	--	3.1
Lower Marsh (0-2")	33	--	--	--	--	--	--
Lower Marsh (2-6")	32	--	--	--	--	--	--
Lower Marsh (6-12")	31	--	--	--	--	2.3	--

Note: -- Indicates HQs <1

No HQs exceeded 1.0 for the Canada goose. The great blue heron and mallard may be at risk from several metals. The American kestrel is at risk from targest number of metals, particularly lead, cadmium, zinc, manganese, and copper. HQs are higher in the Upper Marsh than they are in the Lower or Middle Marshes. Arsenic poses potential risk to the American kestrel and mallard at only a few locations in the Eastern Upper Marsh, but does not pose risk to other receptors, or in other areas of EU 12.

4.12.4 Risk to Mammals – EU 12

An estimated daily dose for each COPEC at each marsh soil sample location was calculated for the meadow vole, white-tailed deer, red fox, masked shrew, muskrat, and mink based on life history and foraging habits. Doses of arsenic, cadmium, copper, lead, manganese, and zinc for each mammal were compared with TRVs, and HQs were calculated (Appendices C-12AA, C-12AB, C-12BA, C-12BB, C-12CA, C-12CB, C-12DA, C-12DB, C-12EA, C-12EB, C-12FA, and C-12FB).

The maximum HQ for each COPEC/receptor pair for which at least one HQ was greater than 1.0 is presented in the table below. Maximum HQs and distribution of results are presented in Table 4-25.

Assessment Endpoint	Maximum HQs EU 12 – Marsh						
	Al	As	Cd	Cu	Pb	Mn	Zn
Meadow Vole (Herbivore)							
Eastern Upper Marsh (0-2”)	11	--	2.8	--	--	28	3.2
Eastern Upper Marsh (2-6”)	12	--	4.2	--	--	35.0	3.1
Eastern Upper Marsh (6-12”)	11	--	2.2	--	--	29	3.3
Western Upper Marsh (0-2”)	7.1	--	2.1	--	--	27	2.1
Western Upper Marsh (2-6”)	7.0	--	9.0	--	--	19	2.0
Western Upper Marsh (6-12”)	11	--	2.7	--	--	38	2.6
Middle Marsh (0-2")	--	--	1.1	--	--	9.8	1.1
Middle Marsh (2-6")	--	--	1.7	--	--	7.2	1.5
Middle Marsh (6-12")	--	--	2.1	--	--	8.7	1.9
Lower Marsh (0-2")	--	--	--	--	--	10	--
Lower Marsh (2-6")	--	--	--	--	--	11	--
Lower Marsh (6-12")	10	--	--	--	--	35	--
White-Tailed Deer (Herbivore)							
Eastern Upper Marsh (0-2”)	--	--	--	--	--	2.1	--
Eastern Upper Marsh (2-6”)	1.1	--	--	--	--	2.7	--
Eastern Upper Marsh (6-12”)	--	--	--	--	--	2.2	--
Western Upper Marsh (0-2”)	--	--	--	--	--	2.1	--
Western Upper Marsh (2-6”)	--	--	--	--	--	1.4	--
Western Upper Marsh (6-12”)	--	--	--	--	--	2.9	--
Middle Marsh (0-2")	--	--	--	--	--	--	--
Middle Marsh (2-6")	--	--	--	--	--	--	--
Middle Marsh (6-12")	--	--	--	--	--	--	--
Lower Marsh (0-2")	--	--	--	--	--	--	--
Lower Marsh (2-6")	--	--	--	--	--	--	--
Lower Marsh (6-12")	--	--	--	--	--	2.7	--
Masked Shrew (Insectivore)							
Eastern Upper Marsh (0-2”)	1,754	557	667	36	393	2,453	298
Eastern Upper Marsh (2-6”)	1,849	1,190	1,000	46	550	3,128	285
Eastern Upper Marsh (6-12”)	1,723	428	786	40	741	2,505	309
Western Upper Marsh (0-2”)	2,392	32	300	11	129	1,328	156
Western Upper Marsh (2-6”)	1,659	33	1,300	39	128	914	150
Western Upper Marsh (6-12”)	1,741	40	391	15	36	1,835	197
Middle Marsh (0-2")	1,242	15	158	6.3	36	481	80
Middle Marsh (2-6")	1,262	16	247	8.6	43	354	112
Middle Marsh (6-12")	1,293	16	307	10	50	426	141
Masked Shrew (Insectivore)							
Lower Marsh (0-2")	2,148	16	25	4.1	4.7	488	28
Lower Marsh (2-6")	2,077	16	20	4.1	4.5	550	28
Lower Marsh (6-12")	2,026	17	47	5.1	4.4	1,718	40

Assessment Endpoint	Maximum HQs EU 12 – Marsh						
	Al	As	Cd	Cu	Pb	Mn	Zn
Muskrat (Herbivore)							
Eastern Upper Marsh (0-2”)	7.5	--	1.6	--	--	16	1.8
Eastern Upper Marsh (2-6”)	7.9	--	2.4	--	--	20	1.8
Eastern Upper Marsh (6-12”)	7.4	--	1.9	--	--	16	1.9
Western Upper Marsh (0-2”)	9.8	--	1.2	--	--	16	1.2
Western Upper Marsh (2-6”)	7.4	--	5.1	--	--	11	1.2
Western Upper Marsh (6-12”)	7.7	--	1.5	--	--	22	1.5
Middle Marsh (0-2")	5.5	--	--	--	--	5.6	--
Middle Marsh (2-6")	5.6	--	--	--	--	4.1	--
Middle Marsh (6-12")	5.7	--	1.2	--	--	5.0	1.1
Lower Marsh (0-2")	9.5	--	--	--	--	5.7	--
Lower Marsh (2-6")	9.2	--	--	--	--	6.4	--
Lower Marsh (6-12")	9.0	--	--	--	--	20	--
Mink (Carnivore)							
Eastern Upper Marsh (0-2”)	2.5	--	--	--	--	--	--
Eastern Upper Marsh (2-6”)	2.6	1.5	--	--	--	--	--
Eastern Upper Marsh (6-12”)	2.4	--	1.9	--	--	--	--
Western Upper Marsh (0-2”)	3.5	--	--	--	--	--	--
Western Upper Marsh (2-6”)	2.4	--	--	--	--	--	--
Western Upper Marsh (6-12”)	2.5	--	--	--	--	--	--
Middle Marsh (0-2")	1.8	--	--	--	--	--	--
Middle Marsh (2-6")	1.8	--	--	--	--	--	--
Middle Marsh (6-12")	1.9	--	--	--	--	--	--
Lower Marsh (0-2")	3.1	--	--	--	--	--	--
Lower Marsh (2-6")	3.0	--	--	--	--	--	--
Lower Marsh (6-12")	3.0	--	--	--	--	--	--

Note: -- Indicates HQs <1

The masked shrew is at risk from all seven metals in all areas of the marsh, with exposure concentrations exceeding the benchmark by three orders of magnitude for aluminum, arsenic, cadmium, and manganese and two orders of magnitude for zinc and lead. HQs for copper range up to 46.0 in the Eastern Upper Marsh.

At the other extreme, the red fox is nt at risk from an metal; all HQs were less than 1.0. The mink may be at a small risk from aluminum, for which HQs for aluminum, for which HQs ranged up to 3.0 throughout the marsh. In the eastern marsh, arsenic and cadmium may pose a slight risk to the mink; HQs were less than 2.0. Manganese HQs are less than 3.0 for the white-tailed deerin the western Upper Marsh. The meadow vole and muskrat are at potential risk across EU 12 from aluminum, cadmium, manganese, and zinc, especially in the Upper Marsh.

4.12.5 Summary of Risk Estimates – EU 12

Maximum concentrations of a number of COPECs at EU 12 pose potential risk to plant, invertebrate, and vertebrate receptors, as shown below.

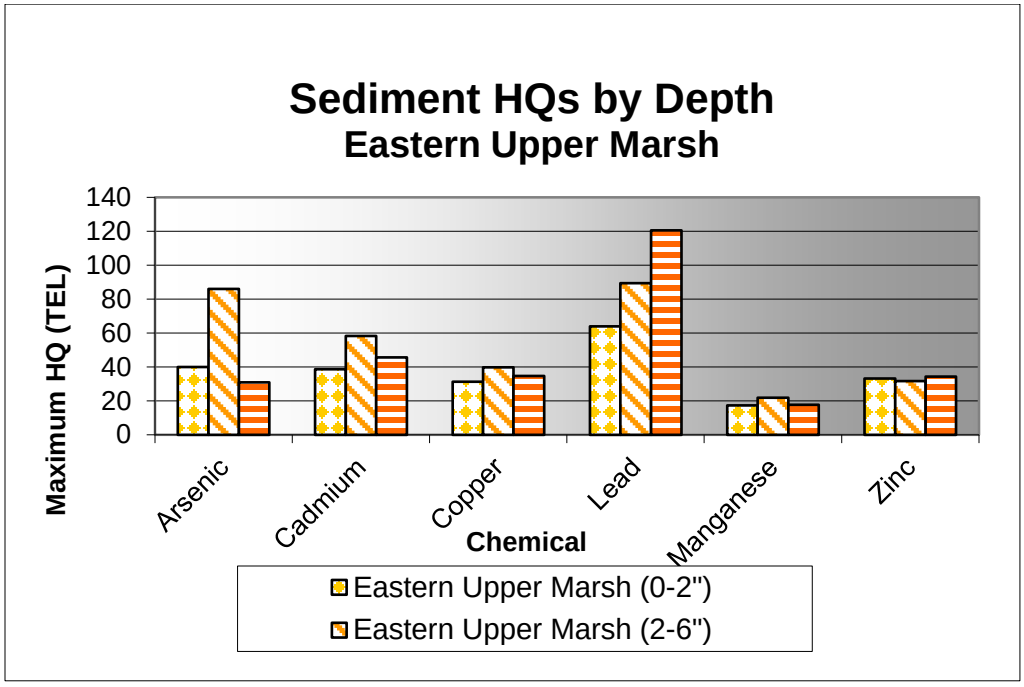
COPECs Based on HQs > 1.0 EU 12 – Upper Marsh					
	Receptors				
COPEC	**Plants**	**Aquatic Invertebrates and Fish**	**Terrestrial Invertebrates**	**Birds**	**Mammals**
Aluminum	NA	NA	NA	**Yes**	**Yes**
Arsenic	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**
Cadmium	**Yes**	**Yes**	No	**Yes**	**Yes**
Copper	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**
Lead	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**
Manganese	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**
Zinc	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**

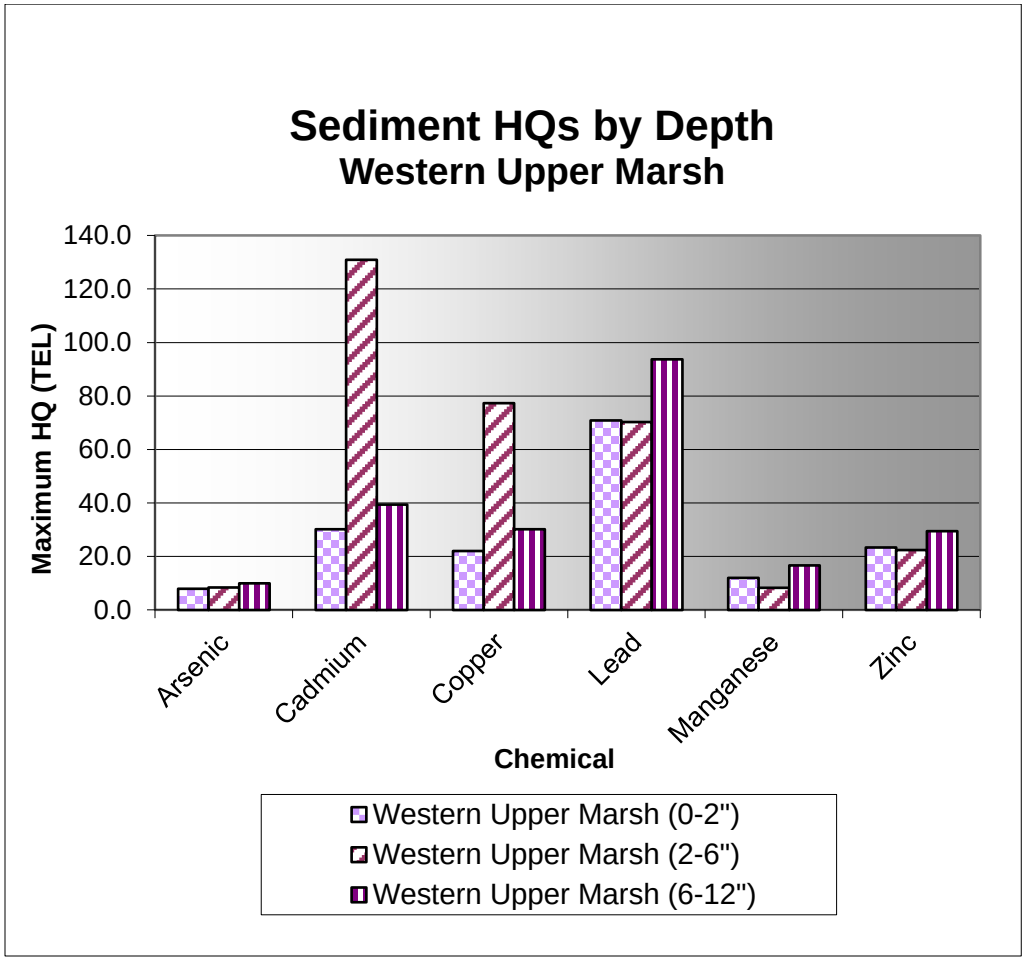
Note:
NA Not applicable – no toxicity benchmarks are available for aluminum.

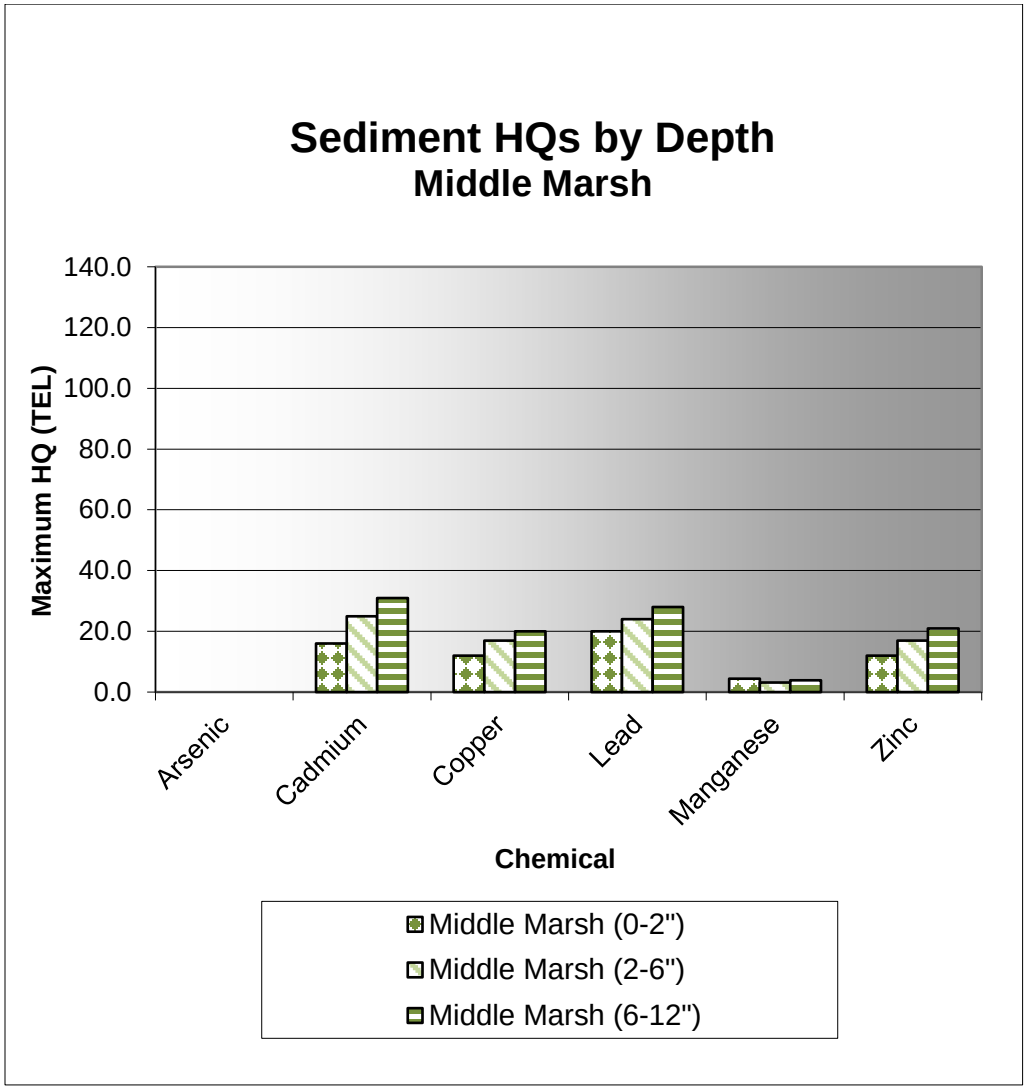
Risk was evaluated separately for each of the three sediment horizons sampled. Maximum metals concentrations are not uniformly distributed within the three depths or within the Upper, Middle, and Lower Marshes, but generally decrease moving downstream from the eastern Upper Marsh to the Lower Marsh. In the western and eastern marshes, maximum concentrations of cadmium and copper are substantially higher in the 2 to 6 inch layer than in the surface layer of sediment.

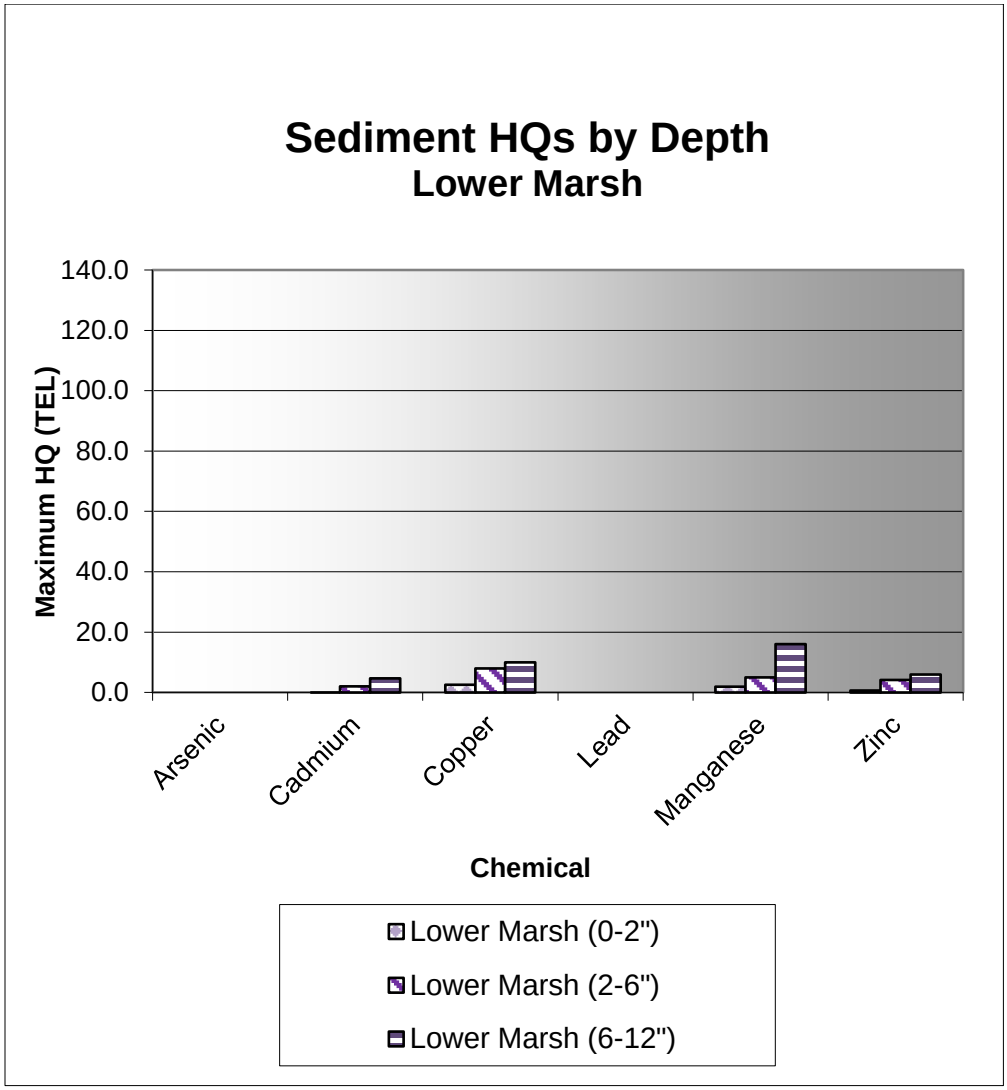
Whether this distribution is a result of the tailings deposits or some other factor is not known. Sediment dynamics have not been well-characterized at UBMC, but it is reasonable to assume that, in addition to the 1975 breach, some downgradient movement of surficial sediments occurs during heavy precipitation events. In some areas of the marsh, sedimentation and erosion are expected to be directly mediated by the river overtopping its banks and scouring the channel. In addition, metals may have been taken up by vegetation or been sequestered by the deeper sediments in the Upper Marsh, thus restricting further movement of metals to the Middle and Lower Marshes. Potential risk posed by metals at depth must be considered as part of the remediation and restoration plan because sediment depth is not considered a static condition.

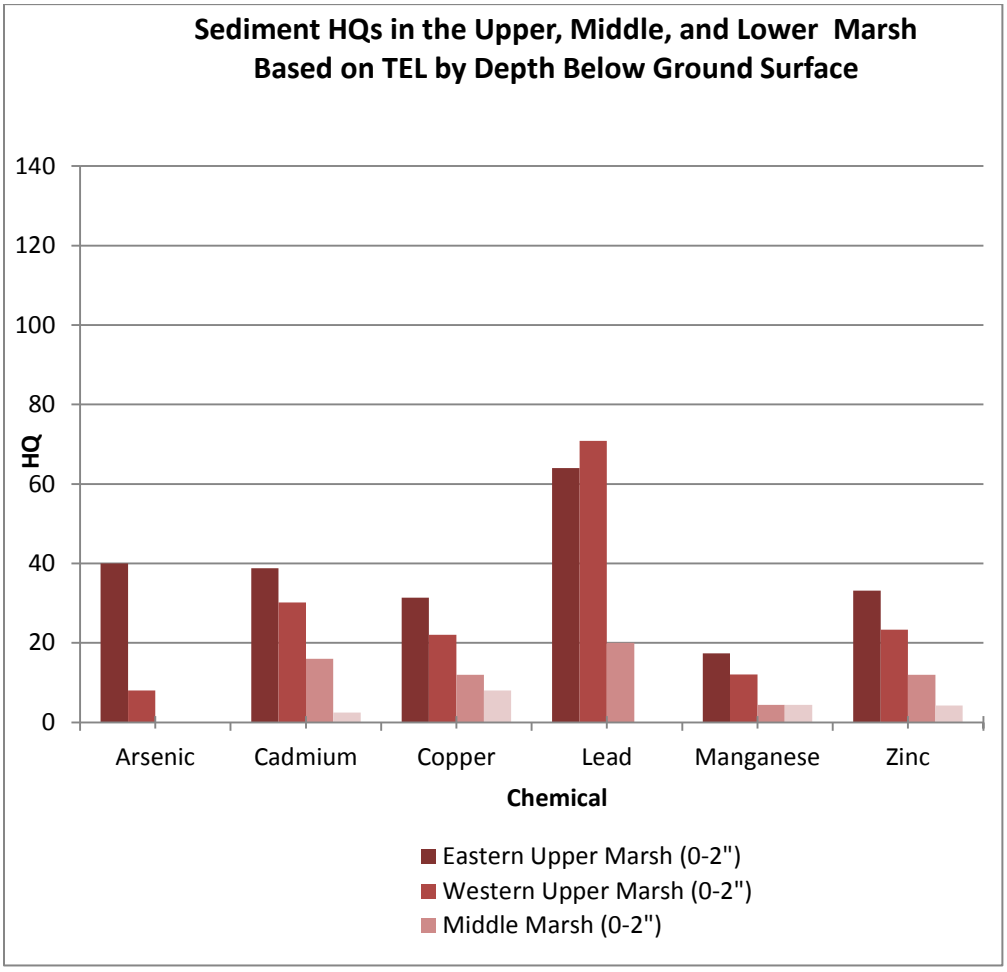
Sediment HQs by depth for the eastern Upper Marsh, western Upper Marsh, Middle Marsh, and Lower Marsh are provided below.

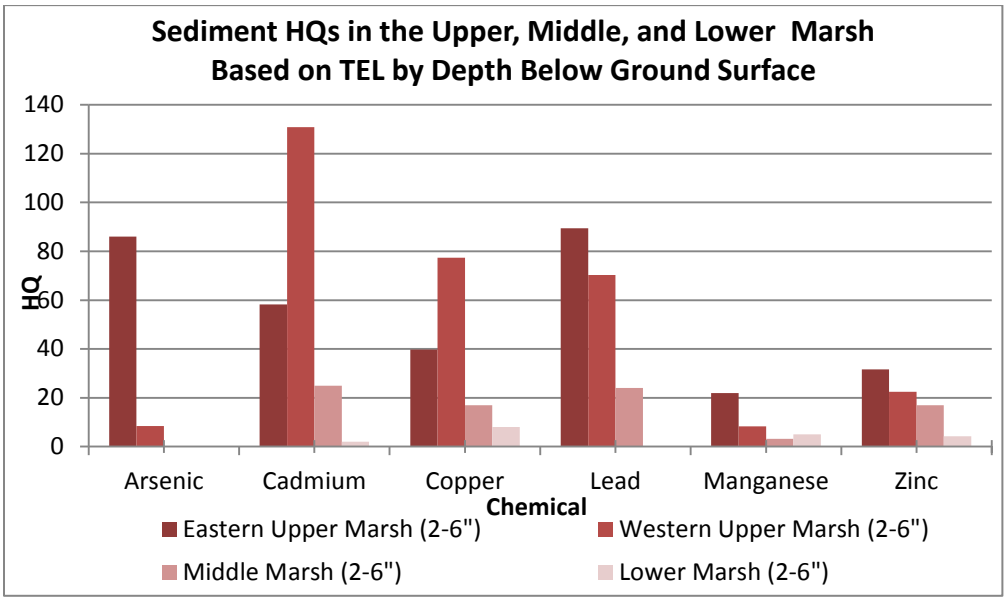

Sediment HQs by Depth
Eastern Upper Marsh
Maximum HQ (TEL)
140
120
100
80
60
40
20
0
Arsenic
Cadmium
Copper
Lead
Manganese
Zinc
Chemical
Eastern Upper Marsh (0-2")
Eastern Upper Marsh (2-6")

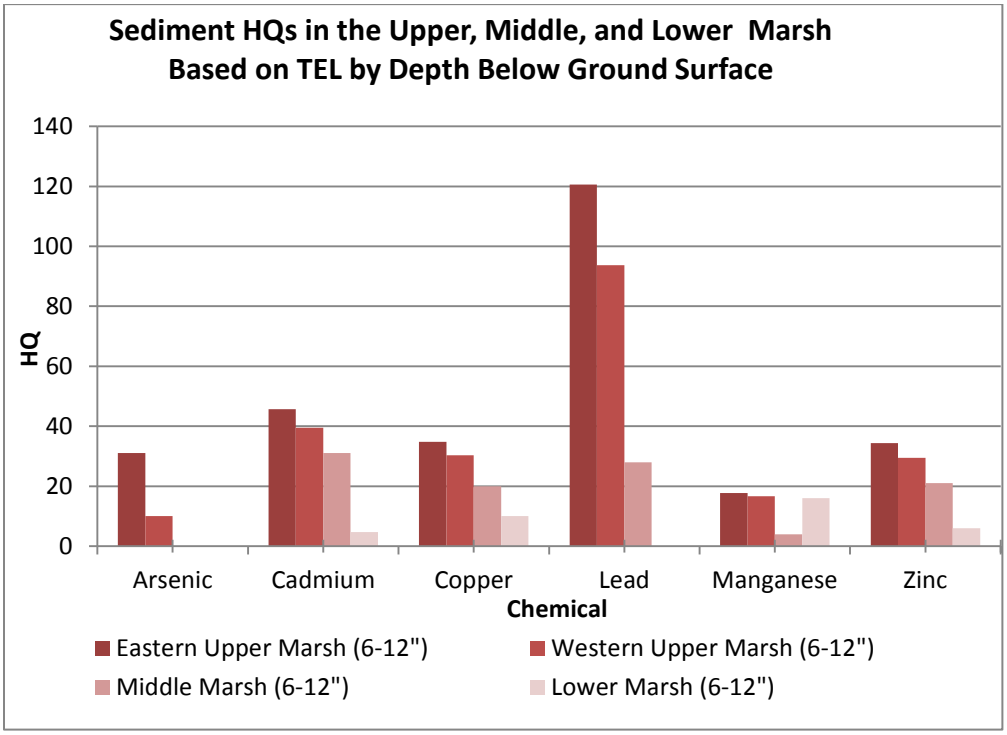

Sediment HQs by Depth
Western Upper Marsh
Maximum HQ (TEL)
140.0
120.0
100.0
80.0
60.0
40.0
20.0
0.0
Arsenic
Cadmium
Copper
Lead
Manganese
Zinc
Chemical
Western Upper Marsh (0-2")
Western Upper Marsh (2-6")
Western Upper Marsh (6-12")


Sediment HQs by Depth
Middle Marsh
Maximum HQ (TEL)
140.0
120.0
100.0
80.0
60.0
40.0
20.0
0.0
Arsenic
Cadmium
Copper
Lead
Manganese
Zinc
Chemical
Middle Marsh (0-2")
Middle Marsh (2-6")
Middle Marsh (6-12")


Sediment HQs by Depth
Lower Marsh
Maximum HQ (TEL)
140.0
120.0
100.0
80.0
60.0
40.0
20.0
0.0
Arsenic
Cadmium
Copper
Lead
Manganese
Zinc
Chemical
Lower Marsh (0-2")
Lower Marsh (2-6")
Lower Marsh (6-12")


Sediment HQs in the Upper, Middle, and Lower Marsh
Based on TEL by Depth Below Ground Surface
140
120
100
80
60
40
20
0
HQ
Arsenic
Cadmium
Copper
Lead
Manganese
Zinc
Chemical
Eastern Upper Marsh (0-2")
Western Upper Marsh (0-2")
Middle Marsh (0-2")


Sediment HQs in the Upper, Middle, and Lower Marsh
Based on TEL by Depth Below Ground Surface
140
120
100
80
60
40
20
0
HQ
Arsenic
Cadmium
Copper
Lead
Manganese
Zinc
Chemical
Eastern Upper Marsh (2-6")
Western Upper Marsh (2-6")
Middle Marsh (2-6")
Lower Marsh (2-6")



4.13 RISK ESTIMATES: EU 13

This section presents the results of the BERA for EU 13, Stream. Risk estimates for aquatic invertebrates, fish, and birds are presented below. The sediment and surface water evaluations are presented in Section 4.13.1 for aquatic invertebrates. However, the benchmarks for sediment and surface water apply to both aquatic invertebrates and fish. Therefore, the risk estimates for the sediment and surface water lines of evidence are identical for fish, and are referenced, rather than repeated, in Section 4.13.2. Where additional lines of evidence apply to either invertebrates or fish, but not both, the results are discussed in the appropriate section.

4.13.1 Risk to Aquatic Invertebrates – EU 13

Chemicals that pose potential risk to aquatic invertebrates were identified based on multiple lines of evidence, including sediment concentrations, surface water concentrations, multimetric index scores, tissue concentrations, and bioassay results.

4.13.1.1 Sediment Hazard Quotients

Chemicals that pose potential risk to aquatic invertebrates were identified based on a comparison of the maximum concentration detected in streambed sediment at three depths (0 to 2 inches, 2 to 6 inches, and 6 to 12 inches bgs) with sediment effect levels. TELs, PELs, and SELs are described in Section 3.2.4. Uncertainty related to HQ interpretation is in Section 5.0.

Maximum HQs and distribution of results for aquatic invertebrates at EU 13 are presented in Table 4-26, and HQs for all locations are presented in Appendix D-13. HQs are summarized in the table below.

	Aquatic Invertebrates (and Fish)								
COPEC/Location	**No. of HQs <1 (TEL)**	**No. of HQs ≥1 (TEL)**	**Max. HQ (TEL)**	**No. of HQs <1 (PEL)**	**No. of HQs ≥1 (PEL)**	**Max. HQ (PEL)**	**No. of HQs <1 (SEL)**	**No. of HQs ≥1 (SEL)**	**Max. HQ (SEL)**
Arsenic									
Streambed Sediments, 0-2"	2	24	**10**	17	9	**3.5**	24	2	**1.8**
Streambed Sediments, 2-6"	0	9	**15**	5	4	**5.1**	8	1	**2.6**
Streambed Sediments, 6-12"	0	3	**8.0**	1	2	**2.8**	2	1	**1.4**
Cadmium									
Streambed Sediments, 0-2"	1	26	**31**	11	16	**5.2**	21	6	**1.8**
Streambed Sediments, 2-6"	2	8	**34**	4	6	**5.8**	8	2	**2.0**
Streambed Sediments, 6-12"	0	3	**17**	1	2	**2.8**	3	0	**1.0**
Copper									
Streambed Sediments, 0-2"	4	29	**74**	18	15	**13**	14	19	**24**
Streambed Sediments, 2-6"	1	9	**85**	6	4	**15**	2	8	**28**
Streambed Sediments, 6-12"	0	3	**7.5**	1	2	**1.4**	0	3	**2.4**
Lead									
Streambed Sediments, 0-2"	6	21	**43**	9	18	**16**	17	10	**6.0**
Streambed Sediments, 2-6"	0	9	**14**	2	7	**5.2**	6	3	**1.9**
Streambed Sediments, 6-12"	0	3	**14**	0	3	**5.5**	1	2	**2.0**
Manganese*									
Streambed Sediments, 0-2"	5	24	**22**	NA	NA	NA	13	16	**9.2**
Streambed Sediments, 2-6"	1	8	**25**	NA	NA	NA	2	7	**10**
Streambed Sediments, 6-12"	0	2	**5.5**	NA	NA	NA	0	2	**2.3**
Zinc									
Streambed Sediments, 0-2"	2	31	**39**	9	24	**15**	16	17	**5.9**
Streambed Sediments, 2-6"	2	8	**19**	2	8	**7.5**	3	7	**2.9**
Streambed Sediments, 6-12"	0	3	**15**	1	2	**6.0**	1	2	**2.3**

Notes: * The Lowest Effects Level is substituted for the TEL for manganese. HQs greater than 1.0 are in **bold**.

All metals in stream sediment pose a potential risk to aquatic invertebrates and fish at UBMC. Metals are more highly concentrated in the upper 0 to 6 inches of sediment, although relatively few samples of deeper sediments were collected.

Six additional sediment samples were collected for toxicity testing using the amphipod, *Hyalella azteca*, as described in Section 2.3.1.13. Total metals concentrations in the test sediments were analyzed to support interpretation of bioassay results, but can also be used to evaluate risk to invertebrates and fish in general. HQs for aquatic invertebrates from the bioassay samples at EU 13 are summarized in the table below. Toxicity test results are discussed in Section 4.13.1.2.

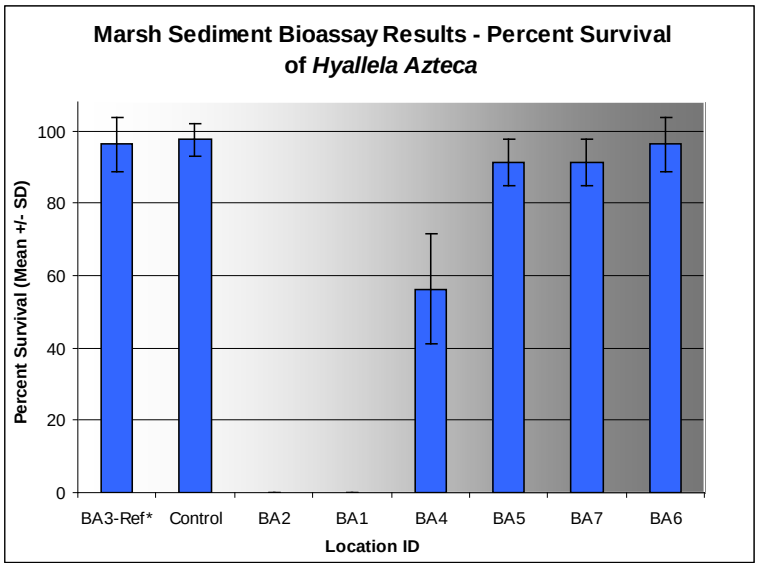
COPEC	Aquatic Invertebrates (and Fish)								
	No. of HQs <1 (TEL)	**No. of HQs ≥1 (TEL)**	**Maximum HQ (TEL)**	**No. of HQs <1 (PEL)**	**No. of HQs ≥1 (PEL)**	**Maximum HQ (PEL)**	**No. of HQs <1 (SEL)**	**No. of HQs ≥1 (SEL)**	**Maximum HQ (SEL)**
Arsenic	0	6	**4.2**	4	3	**1.4**	6	0	0.75
Cadmium	0	6	**16.1**	3	4	**3**	6	0	1
Copper	0	6	**7.39**	5	2	**1.3**	3	3	**2.4**
Lead	0	6	**21**	2	5	**8**	2	4	**2.9**
Manganese	3	3	**6.7**	NA	NA	NA	4	2	**2.8**
Zinc	0	6	**15.4**	4	3	**2**	3	3	**2.3**

Notes: * The Lowest Effects Level is substituted for the TEL for manganese. HQs greater than 1.0 are in **bold**.

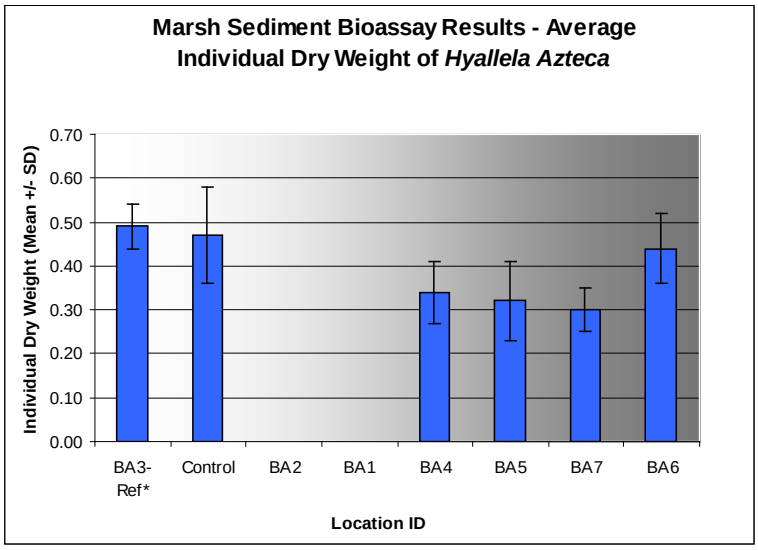
4.13.1.2 Sediment Toxicity Test

Test sediments were collected from sites within the deeper, channelized areas of Blackfoot River within the Upper and Lower Marsh, as described in Section 2.3.1.13 (Figure 2-13B). Northwestern Aquatic Sciences laboratory performed the 28-day *Hyalella azteca* (*H. azteca*) growth and survival test with sediment samples collected from five locations in the Upper Marsh, one location in the Lower Marsh, and one location in Pass Creek Marsh (the reference marsh). *H. azteca* were placed into the test sediment for 28 days under standardized conditions. *H. azteca* is an epibenthic detritovore that tends to ingest sediments along with algae and bacteria. This amphipod burrows into the sediment surface and inhabits lakes, ponds, and streams throughout North and South America (de March 1981, Pennak 1989, both as cited in Poretti 1996). Biological endpoints included survival and growth. The American Society for Testing and Materials 2001 standard test methods and EPA Method 100.1 were used.

H. azteca growth and survival were significantly reduced at some stream locations compared to the reference location (BA3-Ref) (Table 2-17). Percent survival was lower than the reference location in five out of six of the stream samples. All of the amphipods died in samples from the Eastern Upper Marsh (BA2 and BA1), compared with 96.3 percent survival in the reference site sediment. Survival was better in the Western Upper Marsh samples (BA4, BA5, and BA7) (56.3 percent, 91.3 percent, and 91.3 percent), but still statistically significantly lower than the reference sample. The survival in the single sample from the Lower Marsh (BA6) was equivalent to the reference site. Locations in the figure below are in upstream-to-downstream order.



Amphipods in three of the four test samples weighed significantly less than in the reference sample. The sample from the Lower Marsh (BA6) was not different from the reference sample. Locations in the figure below are in upstream-to-downstream order.



Test sediment exceeded the TEL for arsenic, cadmium, copper, lead, and zinc at all bioassay sampling locations, including the reference site Table 2-18. Manganese exceeded the TEL at BA2, BA1, and BA4. Several SELs were exceeded in sediment from BA2 and BA1 (copper, lead, manganese, and zinc), BA4 (copper and zinc), BA6 (zinc), and BA7 (lead). None of the SELs was exceeded in sediment from BA5 or the reference site Table 2-18.

Sediments in the western portion of the marsh were only somewhat toxic to amphipods under laboratory bioassay conditions, despite having concentrations of some metals higher than the SEL. The bioassay results show that the eastern (upgradient) area of the Upper Marsh are most toxic to amphipods, and that the middle portion of the Upper Marsh, represented by location BA4, is more

toxic than the downgradient areas. The eastern area is where material contaminated with tailings is carried into the marsh by the Blackfoot River.

4.13.1.3 Surface Water Hazard Quotients

Dissolved concentrations of aluminum and total concentrations of cadmium, copper, lead, and zinc at each stream sampling location were compared with acute and chronic aquatic life criteria described in Section 3.2.4. Arsenic was not evaluated because stream concentrations were not elevated above the reference site concentration.

Results for 2007, 2008, and 2011 samples are presented separately in upstream-to-downstream order in Appendix D-14, and maximum HQs and distribution of the surface water results are presented in Table 4-27; sample locations are shown in Figures 2-13A and 2-13B. Hardness dependent criteria for cadmium, copper, and zinc were calculated using the hardness result from the sampling location, defaulting to a minimum value of 25 milligrams per liter (mg/L) and a maximum value of 400 mg/L as calcium carbonate when the site-specific hardness was outside this range. The minimum hardness measured at UBMC was 28 mg/L.

The distribution of HQs, based on comparison of stream data with acute and chronic aquatic life criteria, is shown below.

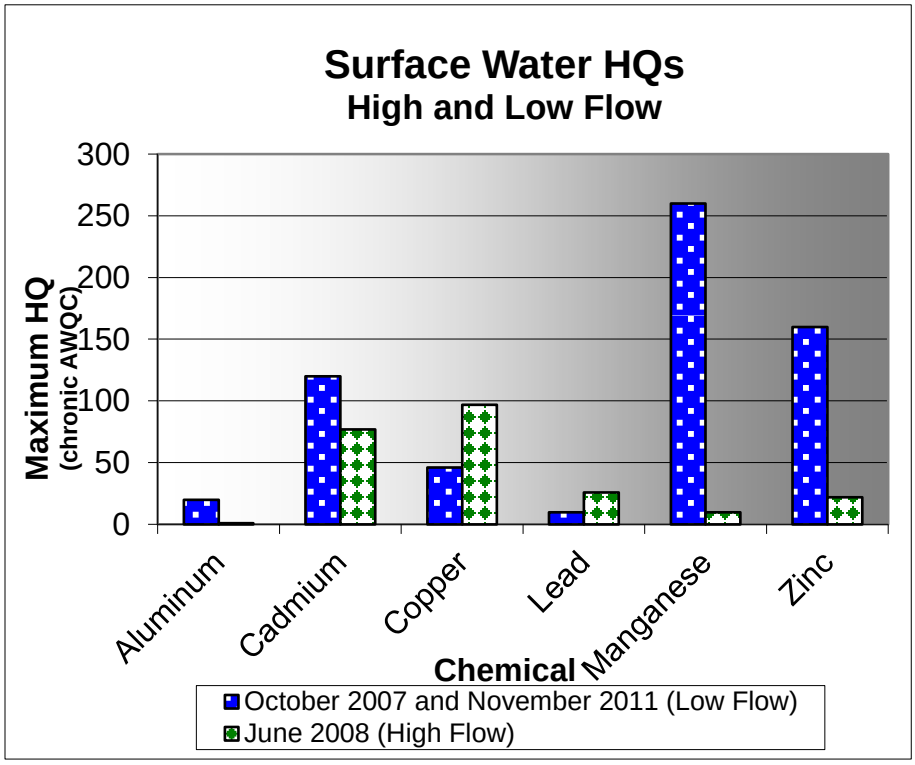
	October 2007 and November 2011: Low Flow Conditions					
	Acute			**Chronic**		
COPEC	**Number of HQs <1**	**Number of HQs ≥1**	**Max HQ**	**Number of HQs <1**	**Number of HQs ≥1**	**Max HQ**
Aluminum	3	2	**2.3**	1	4	**20**
Cadmium	13	11	**10**	2	22	**120**
Copper	15	8	**32**	12	11	**46**
Lead	19	0	0.38	12	7	**10**
Manganese	23	1	**13**	11	20	**12**
Zinc	6	21	**160**	6	21	**16**

	June 2008: High Flow Conditions					
	Acute			**Chronic**		
COPEC	**Number of HQs <1**	**Number of HQs ≥1**	**Max HQ**	**Number of HQs <1**	**Number of HQs ≥1**	**Max HQ**
Aluminum	1	0	0.11	1	0	0.92
Cadmium	5	8	**9.8**	1	12	**77**
Copper	4	9	**65**	4	9	**97**
Lead	12	1	**1.0**	4	9	**26**
Manganese	13	0	0.52	10	3	**9.9**
Zinc	1	12	**22**	1	12	**22**

Notes: Only sample results ≥ minimum reference site concentration were evaluated. All results for arsenic were below the minimum reference site concentration.
HQs greater than 1.0 are in **bold** type.

Note that the relative magnitudes of the HQs for a given chemical vary between low flow conditions (2007 and 2011) and high flow conditions (2008). As the figure below illustrates, maximum copper and lead concentrations in surface water increase when flows are high, as in the spring of 2008. Coincidentally, hardness may also increase when river flow is low (Spence 1975), which may reduce the impact of higher concentrations of metals. Conversely, concentrations of aluminum, cadmium, manganese and zinc *decreased* when flows were high. These data suggest that the metals are not from the same source and do not necessarily share fate and transport pathways. This issue is discussed in Section 5.4 (Data Gaps).

The pattern of high runoff in spring and lower discharge in winter is typical of montane streams. Studies of other streams conducted as part of the U.S. Geological Survey Abandoned Mines Initiative have shown similar variability in metals concentrations on the rising and falling hydrograph in streams affected by mining waste (Besser and Leib 1999, 2007). In fact, periods of chronic zinc toxicity during winter low flow periods are thought to explain the low densities and poor reproductive success of brook trout in the Animas River in Colorado (Besser and Leib 1999).



4.13.1.4 Macroinvertebrate Tissue Concentrations

Benthic macroinvertebrates were collected at nine sampling locations in 2007 and at three sampling locations in 2008. Samples were collected from within riffles because benthic organisms are more abundant in riffles than in pools (Spence 1975). A Hess or Surber sampler was used, depending on the depth and flow rate of the stream at the sampling location. Field personnel collected macroinvertebrates for whole-body analysis for metals. Figures 2-13A and 2-13B show the location of the stream macroinvertebrate sampling stations. The stations were selected based on potential exposure levels, location relative to marsh inlets and outlets, river

tributaries junctions, and whether the site could serve as a possible control or reference site. The dominant species in the stream samples were midges, caddisflies, stoneflies, and round worms. Table 2-15 presents the metals concentrations in tissue residues.

Chemical residues in tissues of aquatic organisms can serve as a basis for linkage of chemical exposure to effects caused by exposure. Jarvinen and Ankley (1999) evaluated available literature to develop an extensive database of effects linked to tissue-residues of aquatic organisms. The database includes tissue-residue concentrations and relevant endpoints (survival, growth, and reproduction) of test organisms.

The invertebrate samples were collected to provide input values to the dose model for vertebrate predators, and not to evaluate risk to the invertebrates themselves. The tissue samples were composites of several individuals of different species in unknown proportions. The tissue effect levels in Jarvinen and Ankley (1999) cannot be used to directly predict impacts to the benthic community because the samples do not represent single species. Instead, stream invertebrate sample concentrations were compared with tissue residue effect levels in invertebrate groups known to occur in the stream at UBMC, including midges *(Chironomus riparius* and *Chironomus decorus)*, mayflies *(Hexagenia rigida)*, caddisflies *(Hydropsyche betteni* and *Brachycentrus* sp.*)*, and stoneflies *(Pteronarcys dorsata)*.

Benthic invertebrates are known to bioaccumulate metals at different rates and to different extents. In the Upper Clark Fork River, interspecific differences in whole-body concentrations were consistent over time and at various locations (Cain, Luoma, and Wallace 2004). Overall variation in metal concentrations of the most widespread insects was loosely tied to contamination levels in sediments for copper and zinc, but not for cadmium. Stronger correlations were achieved when dissolved concentrations of metals were measured monthly from May through August, the time of hatching and greatest growth of insects. Metal concentrations were typically lowest in the caddisflies and highest in the mayflies (Cain, Luoma, and Wallace 2004). Differences in bioaccumulation among insect groups likely has important consequences for predators who favor one group over another.

The presence of metals in invertebrate tissue is evidence of exposure but not necessarily of effects. The text below describes the types of effects associated with concentrations of metals in benthic macroinvertebrates similar to those measured at UBMC. Effect levels for cadmium, copper, lead, and zinc presented in Jarvinen and Ankley (1999) are discussed below. No effect levels for aluminum, arsenic, or manganese in invertebrate tissue were available. No tissue samples were screened out based on comparison to the reference site because the composition of tissue samples was highly variable among sampling locations.

Cadmium

Cadmium concentrations in UMBC invertebrate tissue samples ranged from non-detect (less than 0.15 mg/kg) to 3.61 mg/kg in the stream (Table 2-15). Seven of the 10 samples exceed the maximum reference site concentration of 0.938 mg/kg. Tissue effect levels reported in Jarvinen and Ankley (1999) for organisms included in the composite samples included the following:

Chemical	Test Species	Tissue Residue (mg/kg)	Effect	Comments	Reference
Cadmium chloride	Caddisfly (*Hydropsyche betteni)*	40-60	Survival - No Effect		Spehar, Anderson, and Fiandt 1978
Cadmium chloride	Mayfly (*Hexagenia rigida)*	0.7	Survival, Growth - No Effect		Odin, Ribeyre, and Boudou 1995
Cadmium chloride	Mayfly *(Hexagenia rigida)*	2.1	Survival, Growth - No Effect		Odin, Ribeyre, and Boudou 1995
Cadmium chloride	Midge (*Chironomus ripariu)*	5.6	Survival - No Effect		Postma and others 1994
Cadmium chloride	Midge (*Chironomus ripariu)*	7.6	Growth, Reproduction - No effect		Postma and others 1994
Cadmium chloride	Midge (*Chironomus ripariu)*	**7.6**	**Survival - Reduced**		Postma and others 1994
Cadmium chloride	Midge (*Chironomus ripariu)*	17.8	Survival - Reproduction - No effect	No effects on generations one to five	Postma, van Nugteren, and Buckert-de Jong 1996
Cadmium chloride	Midge (*Chironomus ripariu)*	**33**	**Survival - Reproduction - Reduced**	Survival reduced by third generation, reproduction after the fourth generation	Postma, van Nugteren, and Buckert-de Jong 1996
Cadmium chloride	Midge (*Chironomus ripariu)*	**66**	**Survival - Reproduction - Reduced**	First generation survival reduced, reproduction reduced by the third generation	Postma, van Nugteren, and Buckert-de Jong 1996
Cadmium chloride	Midge (*Chironomus ripariu)*	67.4	Survival - No effect		Poulsen, Riisgard, and Mohlenberg 1982
Cadmium	Midge (*Chironomus ripariu)*	**22.6-40**	**Survival - Reduced 55%**		Timmermans, Peeters, and Tonkes 1992
Cadmium	Midge (*Chironomus ripariu)*	**43.4-50.8**	**Survival - Reduced 71%**		Timmermans, Peeters, and Tonkes 1992
Cadmium chloride	Stonefly (*Pteronarcys dorsata)*	29	Survival - No Effect		Spehar, Anderson, and Fiandt 1978

Source: Jarvinen and Ankley 1999

The lowest tissue concentration reported that exhibits effects on growth, survival, or reproduction on midges is 7.6 mg/kg cadmium chloride, which resulted in reduced survival of midge *(Chironomus riparius)* larvae, but did not affect growth or reproduction (Postma and others 1994, as cited in Jarvinen and Ankley 1999). The maximum cadmium concentration in benthic macroinvertebrate tissues collected at the site is 3.61 mg/kg, which is less than the lowest no effect level of 5.6 mg/kg (Postma and others 1994, as cited in Jarvinen and Ankley 1999).

Although concentrations of cadmium in tissues of benthic macroinvertebrates indicate that these animals have been exposed to and are bioaccumulating cadmium, tissue concentrations are not expected to be affecting these animals directly.

Copper

The copper concentrations of invertebrate tissue samples ranged from 2.81 mg/kg to 119 mg/kg in the stream (Table 2-15). Five of the 10 samples exceed the maximum reference site concentration of 22.6 mg/kg. Tissue effect levels for the organisms included in the composite samples included the following:

Chemical	Test Species	Tissue Residue (mg/kg)	Effect	Reference
Copper sulfate	Midge *(Chironomus decorus)*	140.4-169.4	Survival - Reduced ≥50%	Kosalwat and Knight 1987
Copper sulfate	Midge *(Chironomus decorus)*	154-190	Survival - Reduced 40-70%	Kosalwat and Knight 1987
Copper sulfate	Midge *(Chironomus decorus)*	179-197	Survival - Reduced 80-90%	Kosalwat and Knight 1987
Copper sulfate	Midge *(Chironomus decorus)*	779-1200	Survival - Reduced 100%	Kosalwat and Knight 1987

Source: Jarvinen and Ankley 1999

The lowest tissue effect concentration in midges is in the range of 140.4 to 169.4 mg/kg copper sulfate (Kosalwat and Knight 1987, as cited in Jarvinen and Ankley 1999). Concentrations of copper in invertebrate samples at the UBMC were well below this effect level. Because a no observed adverse effects level (NOAEL) was not reported, it is uncertain whether adverse effects are expected from copper concentrations in invertebrate tissue.

Lead

Concentrations of lead in invertebrate tissue samples ranged from 0.42 mg/kg to 133 mg/kg (Table 2-15). Six of the 10 samples exceed the maximum reference site concentration of 2.63 mg/kg. Two no-effect tissue levels were reported in the literature:

Chemical	Test Species	Tissue Residue (mg/kg)	Effect	Reference
Lead nitrate	Caddisfly *(Brachycentrus sp.)*	260	Survival - No Effect	Spehar, Anderson, and Fiandt 1978
Lead nitrate	Stonefly *(Pteronarcys dorsata)*	340	Survival - No Effect	Spehar, Anderson, and Fiandt 1978

Source: Jarvinen and Ankley 1999

No effects were observed in caddisflies that contained 260 mg/kg lead and stoneflies that contained 340 mg/kg lead (Spehar, Anderson, and Fiandt 1978, as cited in Jarvinen and Ankley 1999). None of the UBMC stream invertebrate samples exceeded this no-effect level. Lead in the tissues of benthic macroinvertebrates in the stream at UBMC is not expected to impact the invertebrate community.

Zinc

Zinc concentrations in invertebrate tissue samples ranged from 53 mg/kg to 1,200 mg/kg in the stream (Table 2-15). Six of the 10 samples exceed the maximum reference site concentration of 196 mg/kg.

The only tissue effect level for zinc reported in Jarvinen and Ankley (1999) was in midges. A tissue concentration of 524 mg/kg zinc significantly retarded development of midges, but did not affect survival (Timmermans, Peeters, and Tonkes 1992, as cited in Jarvinen and Ankley 1999).

Concentrations of zinc in invertebrate tissues at UBMC were greater than the effect level reported for midges. The maximum zinc concentration in benthic macroinvertebrate tissues collected at the site is 1,200 mg/kg, indicating that benthic macroinvertebrates in the stream at UBMC may experience adverse effects from zinc concentrations in tissue.

Summary

The benthic macroinvertebrate tissue samples were not strictly amenable to comparison with published effect levels because the samples contained more than one species. Most samples from the UBMC had greater concentrations than from the upstream reference location, suggesting that invertebrates are exposed to bioavailable forms of metals in the stream and that they are bioaccumulating metals. Interpreting the effect of these tissue concentrations on the invertebrates is highly uncertain, however. Based on qualitative interpretation of published tissue levels, it appears that neither cadmium nor copper tissue concentrations are high enough to exert an adverse effect on the invertebrate community. Furthermore, the data for lead are not adequate to support even a qualitative statement of risk. Zinc concentrations in invertebrates at the UBMC are higher than those shown to cause adverse effects in other studies.

4.13.1.5 Benthic Invertebrate Community Index

Using multivariate analysis, DEQ developed a benthic MMI suitable for evaluating stream conditions at UBMC (DEQ 2006). The MMI considers seven metrics, shown below:

Metric	Impairment Indicated By
Ephemeroptera Taxa	Decline
Plecoptera Taxa	Decline
Percent Ephemeroptera, Plecoptera, and Trichoptera (EPT)	Decline
Percent Predator	Decline
Percent Non-Insect	Increase
Burrower Taxa Percent	Increase
Hilsenhoff Biotic Index	Increase

The interpretation of the MMI for mountain streams is fairly straightforward. Ephemeroptera (mayflies) and Plecoptera (stoneflies) are generally sensitive to environmental contamination such as reduced dissolved oxygen, unstable substrates, and heavy metals and other toxicants. A decline in the abundance of these taxa suggests a degradation of environmental conditions. Conversely, an abundance of EPT (mayflies, stoneflies, and Trichoptera [caddisflies]) signifies

good water quality conditions. The percent EPT is calculated based on the number of distinct taxa within these three pollution-sensitive orders. The index allows for comparisons among sites. Predatory insects are general indicators of healthy stream habitats. As a habitat declines because of chemical or physical disturbance, the food chain may become simplified and predatory invertebrates may be replaced by collectors and filterers.

The percent non-insects index is an indicator of habitat degradation because non-insect invertebrates generally increase as water and sediment quality decline. It has been suggested that non-insects groups opportunistically feed on detritus, suspended organic materials, and epibenthic algae as habitat quality declines. Likewise, burrowing taxa, which favor fine sediment, are more common in streams that have been physically degraded (DEQ 2006).

The Hilsenhoff Biotic Index is widely accepted as an indicator of organic pollution (Hilsenhoff 1987, Barbour and others 1992, Hayslip 1993, and Kerans and Karr 1994, all as cited in DEQ 2006). It is included in the MMI, but is not considered particularly relevant at the UBMC site, where metals are the principal contaminants of concern.

Invertebrate habitat in streams includes riffles, runs, and pools. Samples were collected from riffles using a Hess or Surber Sampler, which require running water at least 2 feet deep. The goal at each location was to collect a sample of at least 300 individuals so that the MMI could be used to characterize the benthic community. The field team collected three samples in riffles surrounding the sample location. The samples were pooled, and the organisms were identified and enumerated. As required by the MMI procedure, only samples that contained at least 300 individuals were evaluated using the MMI; however, one sample was evaluated that contained only 296 individuals.

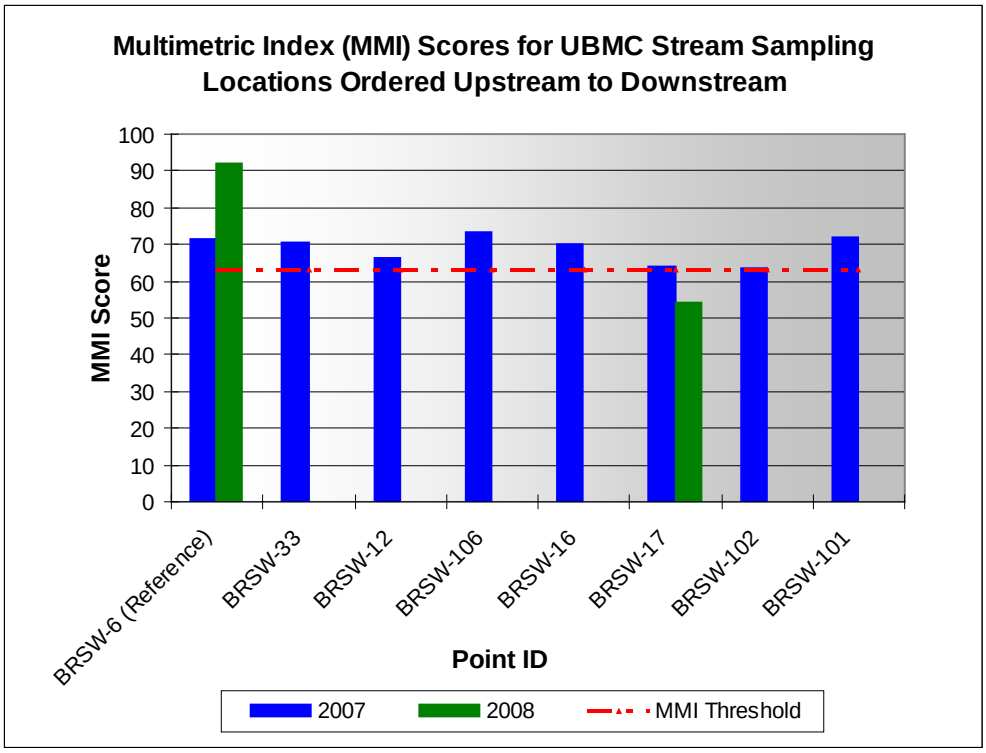
The dominant invertebrates in the stream were immature forms of flying insects, such as mayflies, stoneflies, caddisflies, and true flies (dipterans). Non-insect aquatic invertebrates in the samples included water mites, nematode worms, and aquatic earthworms. A small ostracod crustacean was collected only at the reference location.

MMI scores were calculated for seven samples (plus one reference site sample) in 2007 and one sample (plus one reference site sample) in 2008 where sufficient numbers of organisms were collected (Table 2-16). An MMI score greater than or equal to 63 for mountain regions indicates an unimpaired stream segment (DEQ 2006). Locations where the invertebrate collection was inadequate to develop an MMI score cannot be evaluated in this way. Although invertebrate abundance may be depressed as a result of contamination, non-chemical causes may also be at work. Substrate type, water flow and depth, amount of shade, time of day, presence of predators, interspecific competition, and other ecological dynamics can affect the local benthic invertebrate assemblage. Uncertainty related to the MMI scores is discussed in Section 5.0.

Overall MMI Scores

MMI scores can be calculated only for samples that contain at least 300 organisms. The figure below shows the MMI scores for locations sampled in 2007 and 2008, in upstream-to-downstream order. The 2007 samples were collected during October, when river flow was low; the 2008

samples were collected in June, during a period of high flow. All samples represent the top 2 inches of sediment. Based on the MMI score, only one sample (BRSW-17, in 2008) is considered impaired. MMI scores at most sampling locations range from the mid-60s to mid-70s. The high variability in the MMI score is illustrated by the increase in 2008 at the reference location. Complete MMI results are presented in Table 2-16.



4.13.1.6 Periphyton

Periphyton is a complex mixture of algae, cyanobacteria, heterotrophic microbes, and detritus that is attached to submerged surfaces in most aquatic ecosystems. It serves as an important food source for invertebrates and some fish. Periphyton can improve water quality by absorbing contaminants; however, the contaminants are then passed on to the consumers of the periphyton. The concentration of chlorophyll *a* is a standard measure of nutrient enrichment and potential eutrophication in an aquatic habitat. Benthic chlorophyll *a* concentrations greater than 10 micrograms per square centimeter ($\mu g/cm^2$) are considered to indicate eutrophication. Chlorophyll-a concentrations were less than 10 $\mu g/cm^2$ in all samples at the UBMC.

AFDM is a measure of the organic matter in a periphyton sample used to estimate algal biomass. AFDM greater than 50 grams per square meter (g/m^2) may indicate nuisance algal growth (Barbour and others 1999). AFDM was less than 50 g/m^2 for all samples at the UBMC.

These two measures indicate that periphyton growth is within acceptable bounds at these stream locations and likely provides adequate forage and cover for the benthic community assemblage. Chlorophyll *a* and AFDM are not discussed further in this report.

4.13.2 Risk to Fish – EU13

The sediment and surface water effect levels discussed above for invertebrates were developed using toxicity data for many kinds of freshwater aquatic organisms. As such, they are considered protective of "aquatic life" in general. However, the direct applicability of these criteria to particular species is influenced by the life stage, feeding behavior, condition, and other aspect of the individual being exposed. Extrapolation from laboratory studies to field conditions introduces uncertainty associated behavior of individual organisms and complex interactions among chemicals (Chapman and others 2003).

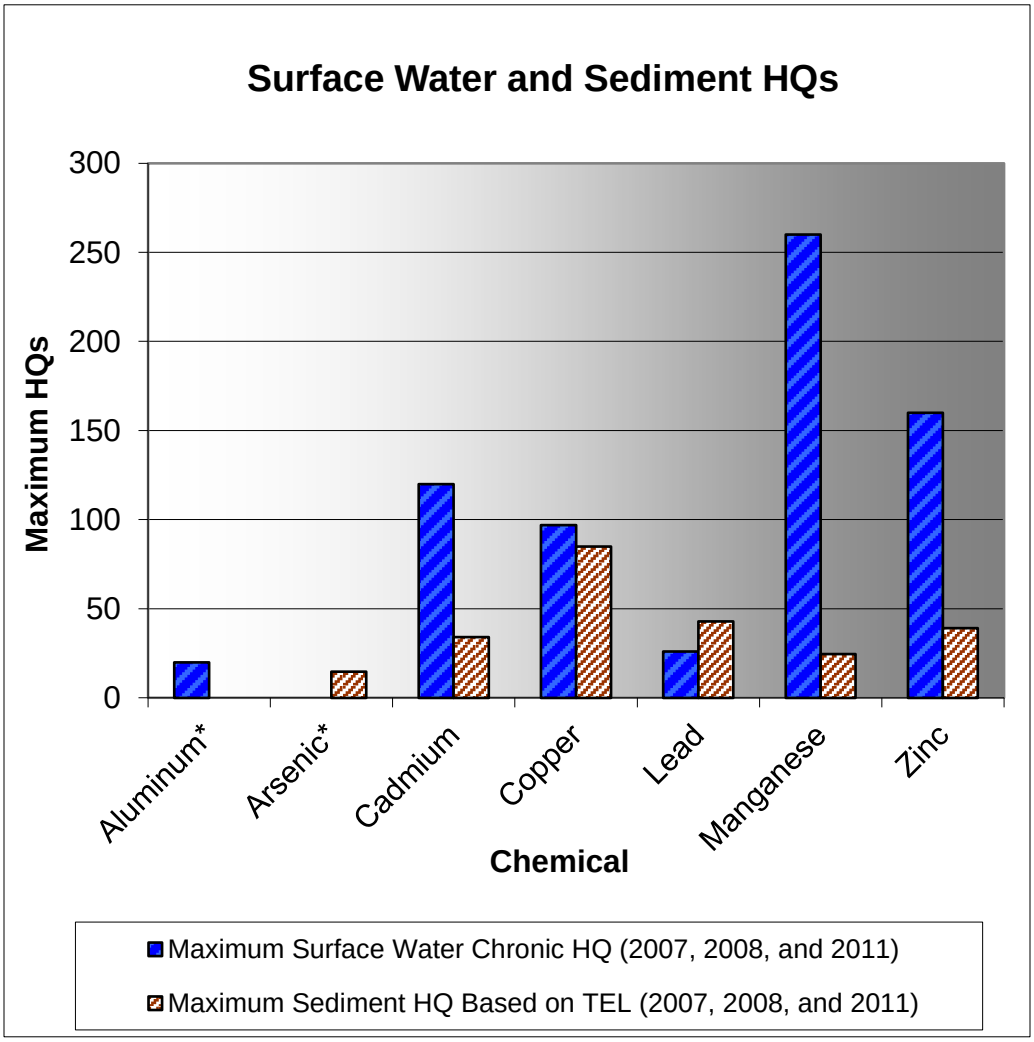
Differential sensitivity to pH can also confound the interpretation of metals toxicity in trout. Rainbow trout were found to be more sensitive to low pH than either brook trout or brown trout (DeLonay and others 1993). Cutthroat trout were even more sensitive than rainbow trout (Woodward and others 1989 and 1991, as cited in DeLonay and others 1993).

Recent studies of metals in a Montana stream affected by mining wastes have shown dramatic fluctuations in water quality over a typical 24-hour period (diel period) (Nimick and others 2007). Nighttime cadmium concentrations in water increased 61 percent, and zinc concentrations increased 125 percent, over daytime concentrations. Copper concentrations did not fluctuate. The effect of these pulses is difficult to investigate, however, because other variables also change at night. Temperatures are generally lower, leading to a reduction in metabolic rate in fishes, and a concomitant reduction in uptake of metals. However, pH also drops at night, which increases the bioavailability of most metals (Nimick and others 2007). Samples at UBMC were necessarily collected during daylight hours. The effect of diel fluctuations in metals concentrations on risk to the aquatic community at UBMC is unknown.

The health of the invertebrate community was considered a separate line of evidence in the risk assessment for fishes. A functional aquatic invertebrate community is a key component in the assessment of fishes because fish — and trout in particular — cannot live in a stream that does not support a healthy invertebrate community. The invertebrate tissue concentrations discussed in Section 4.13.1.4 cannot be used to calculate precise doses to fish, but they indicate that fish at UBMC would be ingesting dietary metals. Feeding studies using field collected invertebrates from similar mining-contaminated streams (Clark Fork River and Couer d'Alene River) suggest that contaminated invertebrates are a significant source of risk to trout (Linder and others 2003; CH2MHill 2005). Furthermore, the risk may be even greater for early life stages of trout. Smaller benthic invertebrates accumulated greater concentrations of metals than larger invertebrates in the Coeur d'Alene River. This differentially affects early life stages of trout, which are exposed to larger doses of metals at a sensitive life stage (Farag and others 1999).

Except for a short period when they are protected within the egg (Wren and others 1995), fish are exposed to both sediment and surface water throughout their lives. Fish are exposed also through their diets, as they consume aquatic invertebrates that have also been in close contact with sediment and surface water. Without long-term, site-specific field studies, the combined risk of metals in surface water, sediment, and prey cannot be accurately described. However, extensive evidence in the published literature supports the assumption that risks from metals in multiple media are cumulative in fishes (Linder and others 2003). In the stream at UBMC, fish

and aquatic invertebrates are exposed to concentrations of metals in both sediment and surface water that are likely to cause adverse effects, as illustrated in the figure below.



Note:

* Aluminum concentrations in sediment were not evaluated because no benchmarks are available. Arsenic concentrations in surface water were below the minimum reference site concentration, so arsenic was not retained as a COPEC in surface water in EU 13.

No fish were present in the stream at UBMC, so actual tissue concentrations could not be measured. However, whole body and kidney concentrations that may occur in fishes living under conditions at UBMC were estimated based on extensive data collected in the Coeur d'Alene Basin for a similar BERA (CH2MHill 2005). In that BERA, sediment-to-trout bioaccumulation relationships were developed using site-specific concentrations of several metals in sediment and fish. Sediment-to-trout bioaccumulation relationships were presented in Figure 3-21 for kidneys and Figure D-2 for whole fish (CH2MHill 2005). Although the precise geochemistry may differ between the Coeur d'Alene site and UBMC, the areas are considered similar enough to support these qualitative comparisons of potential effects on fishes. Whole body tissue concentrations (dry weight) were calculated using the regression equation provided in CH2MHill (2005) and the maximum sediment concentration measured in EU 13 at the

UBMC. Estimated dry weight fish concentrations were converted to wet weight using 76.35 percent moisture, based on an ATSDR study of cutthroat, brown, and rainbow trout. Tissue effect levels in trout for whole body and kidneys were taken from Jarvinen and Ankley (1999). The table below presents estimated tissue concentrations and associated effects in fish exposed to the maximum sediment concentrations in EU 13 at UBMC.

Metal	Maximum Sediment Concentration in EU 13 at UBMC (mg/kg) (Table D-13)	Estimated Fish Whole Body Concentrations at UBMC (mg/kg dry weight)*	Estimated Fish Whole Body Concentrations at UBMC (mg/kg wet weight)**
Arsenic	86.8	0.680	0.18
Cadmium	20.3	0.687	0.19
Copper	3030	9.37	2.55
Lead	1500	10.98	2.99
Zinc	4810	177.57	48.30

Notes:

* Dry weight based on regression equation in CH2MHill (2005).

** Wet weight calculated using 76.35 percent moisture, from ATSDR (2003).

n/d No data available

Arsenic

Trout tissue concentrations of arsenic at UBMC, estimated using the regression curves from CH2MHill (2005), are predicted to be well below the arsenic concentration range (5.4 – 11.6 mg/kg) of effect levels reported in Jarvinen and Ankley (1999). Arsenic is not expected to pose a risk to fish.

Cadmium

Benoit and others (1976, cited in Jarvinen and Ankley 1999) determined toxicity levels in three generations of brook trout following dietary exposure to cadmium chloride. Kidney concentrations in adults of 10.0 mg/kg were associated with reduced survival. The sediment-to-trout bioaccumulation regression curves for the Coeur d'Alene Basin indicate that a kidney concentration of 10.0 mg/kg 20.3 is associated with a sediment concentration of less than 1.0 mg/kg.

A whole body concentration of 0.12 mg/kg total cadmium was shown to reduce growth of rainbow trout (Kumada and others 1973, as cited in Jarvinen and Ankley 1999), although several other studies reported higher tissue effect concentrations. The estimate whole body concentration of trout at UBMC is 0.19 mg/kg, based on the maximum sediment concentration of cadmium (10.3 mg/kg). Assuming that tissue concentrations in trout at the UBMC would follow the trends documented at Coeur d'Alene, cadmium is expected to pose a risk to trout at the UBMC.

Copper

Lanno, Slinger, and Hilton (1985, cited in Jarvinen and Ankley 1999) determined toxicity levels in rainbow trout following dietary exposure to copper sulfate. Kidney concentrations in

juveniles of 3.4 mg/kg were associated with reduced growth. The sediment-to-trout bioaccumulation regression curves for the Couer d'Alene Basin indicate that a kidney concentration of 3.4 mg/kg is associated with a sediment concentration of less than 10 mg/kg. The maximum sediment concentration of copper in the UBMC is 3,030 mg/kg. Assuming that tissue concentrations in trout at the UBMC would follow the trends documented at Coeur d'Alene, copper is expected to pose a significant risk to trout at the UBMC.

Lead

A concentration of 4.0 to 8.8 mg/kg dry weight lead nitrate in the whole body of juvenile brook trout was associated with reduced hatchability, but not with effects on survival or growth (Holcombe and others 1976, as cited in Jarvinen and Ankley 1999). The regression curves prepared for the Coeur d'Alene Basin predict a whole body concentration of 10.98 at the maximum sediment concentration at UBMC (1500 mg/kg). Assuming that tissue concentrations in trout at the UBMC would follow the trends documented at Coeur d'Alene, lead may pose a risk to trout in some areas of the UBMC.

Zinc

A concentration of 36.9 mg/kg dry weight zinc sulfate in the kidneys of brook trout was associated with reduced hatchability, but not with effects on survival or growth. The regression curves prepared for the Coeur d'Alene Basin show that a kidney concentrations at the effect level are correlated with sediment concentration less than 100 mg/kg. The maximum sediment concentration of zinc in the UBMC is 4810 mg/kg. Assuming that tissue concentrations in trout at the UBMC would follow the trends documented at Coeur d'Alene, zinc is expected to pose a significant risk to trout at the UBMC.

The estimates of risk based on predicted tissue concentrations do not take into account the influence of surface water or ingestion of contaminated prey. However, neither surface water nor prey was included in the calculations for Coeur d'Alene study; as a result, it is reasonable to assume that similar multimedia effects are operating in both locales.

4.13.3 Risk to Birds – EU 13

An estimated daily dose for each COPEC at each soil sample location was calculated for the great blue heron and the American dipper based on life history and foraging habits. Doses of aluminum, arsenic, cadmium, copper, lead, manganese, and zinc were compared with TRVs, and HQs were calculated. Doses and HQs were calculated for three separate depth intervals: 0 to 2, 2 to 6, and 6 to 12 inches bgs. Calculations are presented in Appendices C-13A, C-13B, C-13C, C-13D, C-13E, C-13F, and C-13G.

The maximum HQs for all COPEC/receptor pairs for which at least one HQ was greater than 1.0 are presented in the table below. In general, HQs for three depth intervals were similar and varied by less than an order of magnitude; therefore, the maximum HQ of the three is provided in the table below. A complete list of the HQs for EU 13 is provided in Table 4-28.

Assessment Endpoint	Maximum HQs EU 13 – Streambed Sediment						
	Al	As	Cd	Cu	Pb	Mn	Zn
Great Blue Heron (Carnivore)	--	--	--	2.33	7.24	--	8.10
American Dipper (Insectivore)	1.32	2.11	125	53.0	86.9	17.1	318

Note: -- Indicates HQs <1

HQs for all metals indicate potential risk for the American dipper. The great blue heron may be at risk from copper, lead, and zinc.

4.13.4 Summary of Risk Estimates – EU 13

Maximum concentrations of a number of COPECs at EU 13 pose potential risk to invertebrates, fish, and birds in the streams at UBMC, as shown below.

COPECs Based on HQs > 1.0 EU 13 – Stream			
COPEC	Fish and Aquatic Invertebrates	American Dipper	Great Blue Heron
Aluminum	**Yes**	**Yes**	No
Arsenic	**Yes**	**Yes**	No
Cadmium	**Yes**	**Yes**	No
Copper	**Yes**	**Yes**	**Yes**
Lead	**Yes**	**Yes**	**Yes**
Manganese	**Yes**	**Yes**	No
Zinc	**Yes**	**Yes**	**Yes**

4.14 RISK DESCRIPTION

This section presents the results of the BERA for the UBMC. Risk is summarized across all 13 EUs for each receptor group. The toxicological effects of COPECs are discussed briefly here and in more detail in Appendix B.

4.14.1 Risk Description – Plants

Risk to plants is indicated by both soil effect levels and bioaccumulation in plant tissues. Comparisons of vegetative cover provide a qualitative assessment of the ability of the soil to support typical plant species in the area. COPECs for the 11 terrestrial EUs and the marsh (EU 12) are summarized below. Vegetation in the stream (EU 13) was not abundant enough to warrant inclusion in the BERA. A discussion of potential phytotoxicological effects follows.

Although metals were detected in plant tissues at concentrations that exceeded plants from the reference site, it must be noted that the biggest risk to plants at UBMC is from direct toxicity to the plants themselves. Most plant species do not bioconcentrate metals to any significant extent. The small amounts of arsenic and lead that plants take up are generally confined to root tissues (Chaney and others 2000; McGrath 1995; Chaney and Ryan 1994; Xu and Thornton 1985; all as cited in

EPA 2007b). In contrast, many plants are quite sensitive to direct effects of some metals (copper, manganese, and zinc). When plants are exposed to these highly phytotoxic metals, they die before enough metal is bioaccumulated to have effects on the animals that eat them (EPA 2007b). Instead, the animals must move to a different location to feed, or eat another type of plant that is not so sensitive to these metals. Risk drivers for terrestrial plants are summarized in the following table.

Summary of Risk to Terrestrial Plants

Exposure Unit	COPECs (Soil HQ > 1.0)	Reduced Vegetative Cover (Impacts Indicated)	Plant Tissue Concentrations (Greater than Reference Site)
1	As, Cu, Pb, Mn, Zn	No	ND
2	As, Cd, Cu, Pb, Mn, Zn	ND	Al, As, Cd, Cu, Pb, Mn, Zn
3	As, Cu, Pb, Mn, Zn	No	ND
4	As, Cu, Pb, Mn, Zn	Carbonate Mine – Yes Carbonate Repository – No	ND
5	As, Cu, Pb, Mn, Zn	Yes	ND
6	As, Cu, Pb, Mn, Zn	Yes	ND
7	As, Cu, Pb, Mn, Zn	ND	ND
8	As, Cu, Pb, Mn, Zn	Yes	ND
9	Cu, Pb, Mn, Zn	Mine Areas 1 and 2 – Yes Paymaster Repository – No	ND
10	As, Cu, Pb, Mn, Zn	Yes	ND
11	As, Cd, Cu, Pb, Mn, Zn	ND	Al, As, Cd, Cu, Pb, Mn, Zn
12	As, Cu, Pb, Mn, Zn	ND	Al, Cd, Cu, Pb, Mn, Zn

Notes: Aluminum is also considered a COPEC in all EUs, based on pH < 5.5.

ND No data

Aluminum

Terrestrial plants seem to store higher concentrations of aluminum in the roots than in other tissues. Roots of red, white, and black spruce grown in sand culture had 5.0 to 10.9 times more aluminum than their shoots, while roots of *Pinus slyvestris* have 3.2 to 6.1 times as much in needles (Hutchinson and others 1986).

Symptoms of aluminum toxicity in plants such as conifers include reduced growth of trees, needle discoloration and loss in spruce-fir forests, reduced root growth rates and root mass, alteration of ion uptake, crown thinning, apical bud die-back, and branch and tree mortality (Hutchinson and others 1986; Adams and Eagar 1992; Rengel 1992; Sparling and Lowe 1996). Such symptoms typically appear only at low soil pH. Growth significantly declined at pH 3.8 in red and white spruce (*Picea glauba*) at 50 mg/L aluminum, jack pine (*Pinus banksiana*) at 40 mg/L, and white pine (*Pinus strobus*) at 80 mg/L (Hutchinson and others 1986). When elevated aluminum concentrations in soil are accompanied by low soil pH, aluminum toxicity may occur.

Arsenic

Arsenic affects plants physiologically by stunting root elongation, reducing growth, and causing leaf necrosis (Peterson and others 1981). Arsenic inhibits nutrient uptake at high concentrations, which can lead to leaf loss and necrosis (Dushenko and others 1995). In a study of the effects of

toxic metals on plant communities in Anaconda, Montana, elevated concentrations of metals in soils were negatively correlated with vegetative productivity (Galbraith, LeJeune, and Lipton 1995). The elevated metals concentrations resulted in reduced vegetative cover and changes in the native plant communities that reduced the habitat value for wildlife. Arsenic was moderately to severely toxic to plants in soil bioassays at concentrations ranging from 107.6 mg/kg to 708.7 mg/kg (Kaputska and others 1995). Arsenic poses a potential risk to plants at all terrestrial EUs except EU 9.

Cadmium

The cadmium Eco-SSL for plants (32 mg/kg) is the geometric mean of maximum acceptable toxicant concentrations (MATC) from 9 mg/kg dry weight in barley to 79 mg/kg dry weight in alfalfa (EPA 2005a). Increased concentrations of other heavy metals, such as nickel, copper, and selenium, cause decreased plant uptake of cadmium (Page and others 1981). Cadmium is most common in roots, with decreasing amounts in leaves, fruits, and seeds (Adriano 1992; Page and others 1981). Cadmium decreases net photosynthesis, increases leaf chlorosis and inhibits water uptake in a variety of plants at concentrations of 5 to 10 mg/kg in soil (Carlson and others 1975). In a study of the effects of toxic metals on plant communities in Anaconda, Montana, cadmium was moderately to severely toxic to plants in soil bioassays at concentrations ranging from 2.9 mg/kg to 20.4 mg/kg (Kaputska and others 1995). Cadmium poses a potential risk to plants at EUs 2 and 11.

Copper

The copper Eco-SSL for plants (70 mg/kg) is the geometric mean of MATCs from 16 mg/kg dry weight in barley to 141 mg/kg dry weight in alfalfa (EPA 2007a). The availability of copper in contaminated soils is influenced by organic matter content, CEC, pH, and the chemical form of the metal (Hughes, Lepp, and Phillips 1980). Copper often complexes or interacts with other metals present in soil and behaves antagonistically with other heavy metals, such as cadmium, nickel, zinc, and lead (Cataldo and Wildung 1978). The concentration in soil where copper becomes toxic to plants varies greatly among plant species (Koeppe 1981). In a study of the effects of toxic metals on plant communities in Anaconda, Montana, copper was found to be moderately to severely toxic to plants in soil bioassays at concentrations ranging from 185.3 mg/kg to 2,856.0 mg/kg (Kaputska and others 1995). Copper poses a potential risk to plants at all terrestrial EUs.

Lead

Lead is not considered an essential element for plants (Demayo and others 1981). Only a fraction of the concentration of lead in soil is available for plant uptake, and a small portion of the lead that passes through the roots is translocated in the plant (Pain 1995). Lead affects plant physiological processes only at concentrations in soil of several hundred mg/kg (Demayo and others 1981). Several reports have found that high doses of lead can affect net photosynthesis, stomatal opening, respiration and enzyme activity, yield, mitosis, and water absorption. High doses can also reduce growth and biomass in higher plants (Koeppe 1981; Demayo and others 1981; FWS 1988). The lead Eco-SSL for plants (120 mg/kg) is the geometric mean of MATCs that ranged from 22 to 316 mg/kg (EPA 2005b). In a study of the effects of toxic metals on plant

communities in Anaconda, Montana, lead was moderately to severely toxic to plants in soil bioassays at concentrations ranging from 78.1 mg/kg to 309.6 mg/kg (Kaputska and others 1995). Lead poses a potential risk to plants in all terrestrial EUs.

Manganese

The toxicity of manganese to plants is proportional to soil acidity. Manganese becomes increasingly toxic as soil drops below a pH of 5.5 (Smith and others 1985; Jucker and others 1998). Plant species and cultivars differ widely in their tolerance to excess manganese, and the biochemical mechanisms that underlie this tolerance are unknown (Jucker and others1998). Signs of manganese toxicity include the appearance of a regular pattern of small black spots along the main veins on older leaves, necrosis of young leaves, chlorosis, darkening of leaf veins, leaf cupping, water-soaked lesions, and excessive leaf shedding (van Eysinga and others 1981; Scaife and Turner 1983; Smith and others 1985).

The manganese Eco-SSL for plants (220 mg/kg) is the geometric mean of MATCs that ranged from 71 to 707 mg/kg (EPA 2007d). Manganese poses a potential risk to plants at all terrestrial EUs.

Zinc

Plants generally take up little zinc from the soil, except under low pH conditions. High clay content, high soil CEC, and high phosphate concentration in the soil inhibit zinc uptake (Bodek and others 1988). The zinc Eco-SSL for plants (160 mg/kg) is the geometric mean of MATCs ranging from 143 and 185 mg/kg (EPA 2007e). Concentrations of zinc in acidic soils that produced toxicity to corn ranged from 450 to 1,400 mg/kg available zinc; toxicity to cowpeas ranged from 180 to 700 mg/kg available zinc (Gall and Barnette 1940, as cited in Adriano 1986). In a study of the effects of toxic metals on plant communities in Anaconda, Montana, zinc was moderately to severely toxic to plants in soil bioassays at concentrations ranging from 87.8 mg/kg to 580.5 mg/kg (Kaputska and others 1995). Zinc poses a potential risk to plants at all terrestrial EUs.

4.14.2 Risk Description – Terrestrial Invertebrates

Risk to invertebrates is indicated by both soil and sediment effect levels and bioaccumulation in tissues. COPECs for the 13 EUs are summarized below. A discussion of potential toxicological effects follows.

Summary of Risk to Terrestrial Invertebrates

Exposure Unit	COPECs (soil HQ > 1.0)	Invertebrate Tissue Concentrations (Greater than Reference Site)
1	As, Cu, Pb, Mn, Zn	ND
2	As, Cu, Pb, Mn, Zn	Al, As, Cd, Cu, Pb, Mn, Zn
3	As, Cu, Pb, Mn, Zn	ND
4	Cu, Pb, Mn, Zn	ND
5	Cu, Mn	ND

Summary of Risk to Terrestrial Invertebrates		
Exposure Unit	**COPECs (soil HQ > 1.0)**	**Invertebrate Tissue Concentrations (Greater than Reference Site)**
6	As, Cu, Pb, Mn, Zn	ND
7	As, Cu, Pb, Mn, Zn	ND
8	As, Cu, Pb, Mn, Zn	ND
9	Cu, Mn	ND
10	As, Cu, Pb, Mn, Zn	ND
11	As, Cu, Pb, Mn, Zn	As, Cd, Pb, Mn, Zn
12	As, Cu, Mn, Pb, Zn	Al, As, Cd, Cu, Pb, Mn, Zn

Note: Aluminum is also considered a COPEC in all EUs, based on pH < 5.5.

Aluminum

Sparling and Lowe (1996) reviewed the environmental hazards of aluminum with regard to various species, including invertebrates and reported that they were unable to find any reference to toxicity to terrestrial invertebrates.

Arsenic

Concentrations of 375 mg/kg arsenic in soil may reduce growth and metabolism of soil microbiota, while concentrations of 150 to 165 mg/kg may reduce the numbers of bacteria and protozoans, as well as the number of earthworms in the soil (National Research Council 1978, as cited in Eisler 1988). However, some soil microorganisms can tolerate and metabolize relatively high concentrations of arsenic (Wang and others 1984, as cited in Eisler 1988). Arsenic poses a potential risk to invertebrates at EUs 1 through 12.

Cadmium

Cadmium does not pose risk to terrestrial invertebrates at EUs 1 through 12. Site concentrations were either below or only slightly above the Eco-SSLindicating little to no potential risk.

Copper

The copper Eco-SSL for soil invertebrates (80 mg/kg) is based on toxic soil concentrations ranging from 13 to 188 mg/kg (EPA 2007a). The ORNL toxicity benchmark for soil invertebrates is 60 mg/kg (Efroymson and others 1997b). Copper poses a potential risk to terrestrial invertebrates at EUs 1 through 12.

Lead

The lead Eco-SSL for soil invertebrates is (1,700 mg/kg) is based on four studies on springtails (*Folsomia candida*) with MATCs ranging from 894 to 3,162 mg/kg (EPA 2005b). Lead poses a potential risk to terrestrial invertebrates at EUs 1 through 4 and 6 through 12.

Manganese

The manganese Eco-SSL for soil invertebrates (450 mg/kg) is based on three toxicity studies with soil concentrations ranging from 116 to 1,209 mg/kg (EPA 2007d). The Eco-SSL is the geometric mean of the lethal effects to 20 percent of the test population values for three test species, all worms, under different test conditions. Manganese poses a potential risk to terrestrial invertebrates in all terrestrial EUs.

Zinc

The zinc Eco-SSL for invertebrates (120 mg/kg) is based on toxic soil concentrations ranging from 99 to 355 mg/kg (EPA 2007e). Sensitivity to zinc varies widely among terrestrial invertebrate species, however. Reduced growth was observed in slugs fed 1,000 mg/kg for 27 days (Marigomez and others 1986, as cited in Eisler 1993). However, another study of slugs fed a diet of 1,000 mg/kg zinc for 30 days indicated no adverse effects except for glycogen depression (Recio and others 1988, as cited in Eisler 1993). An effect concentration (EC_{50}) of 662 mg/kg was developed based on a study of earthworms exposed to zinc for 2 weeks (Neuhauser and others 1985, as cited in Eisler 1993). Zinc poses a potential risk to terrestrial invertebrates at EUs 1 through 4, 5 through 8, 10, and 12.

4.14.3 Risk Description – Fish and Aquatic Invertebrates

Risk to aquatic invertebrates and fish is indicated by both sediment and surface water effect levels. The surface water HQ is a direct comparison. It equals the concentration of the surface water divided by the DEQ-7 Standard.COPECs for EU 13 are summarized below. A discussion of potential toxicological effects follows.

COPECs (Sediment HQ > 1.0)	COPECs (Surface Water HQ > 1.0
As, Cu, Pb, Mn, Zn	Al, Cd, Cu, Pb, Zn

Aluminum

Aluminum does not biomagnify to any great extent in aquatic systems (Wren and Stephenson 1991). Several studies suggest that aquatic invertebrates bioconcentrate less aluminum when in acidic water. Whole-body concentrations of aluminum decreased in blackflies and mayflies when they were transplanted from water with pH 6.2 to water with pH 4.2 (Hall and others 1988, as cited in Wren and Stephenson 1991). Similar findings were reported for crayfish, daphnids, unionid clams, caddisflies, and chironomids (Wren and Stephenson 1991, and references within). However, other studies showed either no relationship, or an inverse relationship, between water pH and aluminum concentrations in invertebrates (Wren and Stephenson 1991).

Direct toxicity of aluminum to aquatic invertebrates is also related to pH. When pH is higher than 6.0, invertebrates can tolerate up to 832 µg/L aluminum. Aluminum toxicity to freshwater invertebrates is species specific: insect larvae, zooplankton, and mollusks are all tolerant of low pH and elevated aluminum concentrations. Amphipods, on the other hand, are relatively less tolerant of low pH but relatively tolerant of elevated concentrations of aluminum. For example,

water of pH 4.0 was lethal to *Hyalella azteca*, but at pH 5.5, the EC_{50} was 320 µg/L aluminum (Mackie 1989, as cited in Wren and Stephenson 1991). Like amphipods, freshwater crustaceans are relatively sensitive to decreases in pH and elevated concentrations of aluminum (Hall and others 1985 and Allard and Moreau 1987, both as cited in Wren and Stephenson). Additional impacts on benthic communities at can result from loadings of iron and aluminum colloids formed during neutralization of inputs from acidic tributaries. Precipitation of colloids downstream degrades benthic habitats by filling the interstitial spaces in the streambed gravels. The aluminum and iron colloids may also contribute directly to toxic effects on fish and invertebrates (Besser and Leib 1999).

Toxicity of aluminum in the field depends on pH, calcium concentrations, and presence of complexing agents (DeLonay and others 1993). Aluminum is acutely toxic to freshwater fish in acidic waters (pH less than 5.0) (Poleo and others 1997). Toxic effects of aluminum on brook trout under acidic, low-calcium conditions (pH less than 5.5, Ca less than 3 mg/L) included reduced survival and growth and reduced swimming movements at concentrations of 300 to 400 µg/L (Cleveland and others 1986 and Mount and others 1988, both as cited in Besser and others 2001a). Toxicity of aluminum was reported to be greatest at a pH between 5.0 and 5.4 (DeLonay and others 1993). The toxicity of aluminum is reduced at higher concentrations of calcium (Besser and others 2001b). Brown trout suffered 75 percent mortality when exposed to aluminum concentrations of 402 µg/L at a pH of 5.17 for several days (Poleo and others 1997).

Aluminum is expected to pose a risk to trout at UBMC in areas where the pH level is less than 5.0. Aluminum can add to other ionoregulatory toxicants, such as cadmium and zinc, that affects respiration in fish (Chapman and others 2003). The highest concentration of aluminum in a low-pH location was at BRSW-13, in Paymaster Gulch. Other low-pH, high aluminum locations were BRSW-108, BRSW-13, and BRSW-21 (a reference site). Calcium levels were greater than 3.0 mg/L, but still considered low. Concentrations of dissolved aluminum, pH, and calcium in surface water samples where aluminum was detected are shown in the table below.

Point ID	Area	Collection Date	pH	Al (µg/L)	Ca, (mg/L)
BRSW-6	Anaconda Creek Reference Site	6/17/2008	7.7	30	14
BRSW-4	Mike Horse Creek	10/10/2007	7.7	50	37
BRSW-4A	Mike Horse Creek	6/17/2008	7.2	80	22
AW-003A	Outfall of the Anaconda Constructed Wetlands	10/9/2007	6.8	130	324
BRSW-108	Stevens Gulch	10/10/2007	4.7	910	9
BRSW-21	Paymaster Gulch Reference Site	10/5/2007	3.6	1,420	5
BRSW-13	Paymaster Gulch	10/5/2007	3.6	1,700	5

Arsenic

Arsenic can produce both carcinogenic and mutagenic effects in fish (Eisler 1988). Toxic effects of arsenic in fish include impaired behavior, reduced growth and weight gain, lack of appetite, failure to metabolize food, and mortality (Lacayo and others 1992, as cited in DOI 1998; Eisler 1988; Buhl and Hamilton 1990; Tanner and Clayton 1990; Ghosh and Chakrabarti 1990; McGeachy and Dixon 1990).

Cadmium

Among freshwater invertebrates, cadmium concentrations of 0.47 to 5.0 parts per billion (ppb) were associated with growth reduction, decreased reproduction, immobilization, and population alterations. Crustaceans appear to be more sensitive than fish or mollusks to cadmium (Phillips 1980, as cited in Sadiq 1992), and younger stages of aquatic life appear to be more sensitive than adults (Sadiq 1992). Certain insects, such as the caddis fly in the larval stage, can accumulate high levels of cadmium in their gill tissue (Sadiq 1992). Besser and Rabeni (1987) studied the effects of cover material on the movement of toxic metals in mine tailings leachates in relation to bioaccumulation and toxicity of aquatic invertebrates, including juvenile crayfish, mayfly nymphs, and midge larvae. As bioaccumulation of cadmium increased, survival, growth, and development decreased during the exposure period.

Copper

Copper is highly toxic in to aquatic invertebrates and fish and is a priority pollutant (EPA 1992b). Copper is mainly accumulated in the gill, liver, filaments, stomach, and intestine (Harvey 1978, as cited in Owen 1981). Copper concentrations can significantly affect the hatchability of fish eggs and reduce the growth of fry (EPA 1976). The species and age of the organism influence the toxicity of copper. In general, younger organisms are affected at lower concentration levels. The toxicity of copper varies with hardness: the softer the water, the greater the toxicity of copper.

Copper reduces the number of fish eggs that hatch successfully. It can also significantly reduce the growth of fry (Nriagu 1979, as cited in DOI 1998; Miller and others 1992; EPA 1976).

The acute toxicity of copper to cutthroat trout (*Salmo clarki*) in fresh water was inversely correlated with water hardness and alkalinity (Thurston and others 1979). At a given alkalinity, hardness determined the lethal concentration to 50 percent of the test population (LC_{50}), while at a given hardness, alkalinity determined the LC_{50}. The concentration of different forms of copper is controlled by the pH of the water at any given alkalinity and hardness levels.

The larvae and juveniles of freshwater fishes (brook trout, rainbow trout, lake trout, brown trout, northern pike, white sucker, and small-mouth bass) were more sensitive to copper than were the embryos of some species. The toxic concentrations of copper to larvae were similar for most fish species and ranged between 31.7 and 43.5 µg/L copper (McKim and others 1978). Another study of age-specific toxicity of copper was conducted using larval topsmelt (*Atherinops affinis*) (McNulty and others 1994). The early age cohorts (0, 3, and 5 days) were less sensitive to copper chloride than were larval fish 7 days or older. The LC_{50} ranged from 365 µg/L for the newly hatched to 137 µg/L for 20 day-old larvae. The no observed effect concentrations were 180 µg/L for larvae up to 3 days old and 100 µg/L for all other age cohorts.

Fish can accumulate copper, with bioconcentration factors ranging from 10 to 1,000 (Talmage and Walton 1991). The majority of this copper is bound to the protein metallothionein or sequestered in calcium granules. Although the metallothionein can be degraded to provide

copper for metabolic needs, the copper in calcium granules is not available to the organism (Nriagu 1979, as cited in DOI 1998).

Based on the PEL for copper in sediment (197 mg/kg), HQs for fish range up to 15.0 for surficial sediments in EU 13. Fish are exposed to sediment while foraging, spawning, and resting, as well as through food chain transfer. Copper may be taken up by benthic invertebrate prey (such as annelid worms) and transferred to fish. The uptake of copper by benthic invertebrates is mediated by reducible manganese oxide in the sediments (Eisler 1998).

Studies of cutthroat trout tissues in the Coeur d'Alene River showed that copper was taken up through both dietary and aqueous pathways (Farag and others 1999). The partitioning of copper to sediment is a dynamic process. Copper sulfides in sediment are generally not available for uptake, but when sediment becomes suspended and oxygenated, the copper will be released from the sediment and taken up by fish through the gills (McGeer and others 2004).

Lead

Lead toxicity to aquatic invertebrates and fish is a function of species variations in sensitivity, effects of water quality on lead solubility, development of tolerance during chronic exposures, and duration of exposure. Waterborne lead concentrations of 50 to 750 mg/L have resulted in short-term lethality to various species of aquatic invertebrates. Sublethal effects of lead on mortality and reproduction are observed at a waterborne lead concentration of 0.02 mg/L (Demayo and others 1981).

Insects, snails, and amphipods exposed for 28 days to lead concentrations of 0.032 mg/L lead accumulated significant amounts of lead in their tissues. The average lead residues were approximately 1,000 to 9,000 times greater than the corresponding concentration in water (Spehar and others 1978).

Lead from mining has severely reduced or eliminated populations of fish through direct lethal toxicity, and it is likely that low levels of contamination that cause waterborne concentrations in excess of 0.01 mg/L are having subtle, damaging effects on fish populations through direct sublethal toxicity or indirectly through toxicity to prey species (Demayo and others 1981).

The effects of fish exposed to lead include hematological effects, inhibition of enzymes, and neurotoxicity. The overall result is an impaired ability to survive, grow, and reproduce, and it is to be expected that, as waterborne concentrations increase above 0.01 mg Pb/L, there will be increasingly severe long-term effects on fish and fisheries. Thus, concentrations in excess of the usually observed surface water concentrations, less than 0.01 mg Pb/L, can harm fish (Demayo and others 1981).

Lead can also affect the bones, gills, and kidneys of fish (Holcombe 1976), and the effects vary with pH. Merlini and Pozzi (1977) conducted an 8-day study on the sunfish *(Lepomis gibbosus)* and found that the fish concentrated almost three times as much lead in water of pH 6 (concentration factor 4.88) as fish at pH 7.5 (approximately 1.86).

Chronic exposures of fish to lead caused elevated mortality rates, reduced hatching success, and an increased incidence of black tails (darkening of the caudal area) and spinal curvatures, both symptoms of neurotoxicity. These effects are often observed at lead concentrations at or below concentrations considered safe for human consumption (0.05 mg Pb/L) (Demayo and others 1981).

Manganese

Lasier and others (2000) studied the effects of manganese on two species of freshwater crustaceans, *Ceriodaphnia dubia* (Cladocera) and *Hyalella azteca* (Amphipoda). It was found that lethal and reproductive inhibition concentrations of manganese were assessed for *C. dubia* in acute 48 hour tests and chronic three brood tests using animals, 24 hours old and between 24 and 48 hours old. Sensitivity of *H. azteca* to manganese was assessed with 7-day-old animals in acute 96-hour tests (Lasier and others 2000).

Few data describe manganese toxicity to fish (ATSDR 1991; ORNL Risk Assessment Information System [RAIS] 1995). Manganese sulfate may cause reproductive effects, such as a decrease in spermatogenic activity and injury to testes, in fish (Srivastava and Agrawal 1983, as cited in Joardan and Sharma 1990).

Zinc

Zinc reduces growth, inhibits reproduction, and reduces survival in aquatic invertebrates (Eisler 1993). In water fleas (*Daphnia magna*), reproduction was impaired by 10 percent after a 21-day exposure to 70 ppb of zinc (EPA 1995). Additionally, Eisler (1993) reported that the acute LC_{50} (96-hour) values were between 32 and 40,930 µg/L for freshwater invertebrates and between 66 and 40,900 µg/L for freshwater teleosts.

Zinc toxicosis affects freshwater fish by destruction of gill epithelium and consequent tissue hypoxia (Eisler 1993). Signs of acute zinc toxicosis in freshwater fish include osmoregulatory failure, acidosis and low oxygen tensions in arterial blood, and disrupted gas exchange at the gill surface and at internal tissue sites (Spear 1981).

The pH of water alters the toxicity of zinc to fish, but the mechanism is not well-understood. Rainbow trout were more tolerant of zinc in acidic water than in neutral water and more tolerant in hard water than in soft water (Bradley and Sprague 1985). Surprisingly, larger trout were less tolerant than smaller trout to zinc exposure.

Fish that survived high sublethal concentrations of zinc had significant alterations in blood and serum chemistry and liver enzyme activity (Hilmy and others 1987), as well as muscle glycogen, total lipids, phospholipids, cholesterol, RNA, and proteins (Taneja and others 1988).

Reproductive impairment seems to be one of the more sensitive indicators of zinc stress in freshwater teleosts. These effects are evident in the 50 to 340 µg zinc/L range (Spear 1981). In some cases, reproduction was almost totally inhibited at zinc concentrations that had no effect on survival, growth, or maturation of these same fish (Brungs 1969)

4.14.4 Risk Description – Birds

Risk to the mourning dove, red-tailed hawk, and American kestrel in the 11 terrestrial EUs and the marsh was estimated using FCM. Risk to the mallard was estimated only in the marsh (EU12). Risk to the American dipper and great blue heron was evaluated in the stream (EU 13) COPECs for the 13 EUs are summarized below. A discussion of potential toxicological effects follows.

Summary of Risk to Birds

EU	Mourning Dove (Herbivore)	Red-Tailed Hawk (Carnivore)	American Kestrel (Insectivore)	Mallard (Omnivore)	Great Blue Heron (Carnivore)	American Dipper (Insectivore)
1	Pb	Pb	As, Pb	NA	NA	NA
2	Cd, Cu, Pb, Mn, Zn	Pb, Zn	As, Cd, Cu, Mn, Pb, Zn	NA	NA	NA
3	--	--	--	NA	NA	NA
4	--	--	--	NA	NA	NA
5	--	--	--	NA	NA	NA
6	--	--	--	NA	NA	NA
7	--	--	--	NA	NA	NA
8	--	--	Pb	NA	NA	NA
9	--	--	--	NA	NA	NA
10	--	--	--	NA	NA	NA
11	Pb	Pb	As, Cd, Pb, Zn	NA	NA	NA
12	Cd, Pb	--	As, Cd, Cu, Mn, Pb, Zn	Cd, Pb, Zn	Pb, Zn	NA
13	NA	NA	NA	NA	Cu, Pb, Zn	Al, As, Cd, Cu, Mn, Pb, Zn

Notes:

-- HQs < 1.0; no risk

NA Not applicable

Arsenic

Acute oral exposure of vertebrates to inorganic arsenic destroys the blood vessel lining in the gut, which can result in lower blood pressure and cause hepatocyte damage by arsenic inhibition of the sodium pump in cells (Nystrom 1984, as cited in Eisler 1988). Toxic effects of arsenite in birds include loss of muscular coordination, debility, slowness, jerkiness, falling, hyperactivity, fluffed feathers, drooped eyelids, huddled position, unkempt appearance, loss of righting reflex, immobility, and seizures (Eisler 1988; Camardese and others 1990 and Opresko and others 1994, both as cited in DOI 1998; Stanley and others 1994). Some species of birds are more sensitive to arsenic than others (Eisler 1988; DOI 1998).

Adult and 14-day old mallard ducklings were fed diets supplemented with sodium arsenate at concentrations of 0, 25, 100, or 400 mg sodium arsenate per kg diet (51.35 percent arsenic) for 115 to 128 days (Stanley and others 1994). Dietary arsenic had no effect on hatching success or embryo deformities, but the 400 mg/kg dose caused a reduction in hatching success (Stanley and others 1994). This concentration was considered the lowest observed adverse effects level. Additionally, arsenic accumulated in adult liver and eggs, reduced adult weight gain and liver weight, delayed the onset of egg laying, decreased whole egg weight, and caused eggshell thinning (Stanley and others 1994). In ducklings, arsenic accumulated in the liver and reduced body weight, growth, and liver weight. Another study on mallards concluded that 100 parts per million (ppm) sodium arsenite is a chronic NOAEL (FWS 1964, as cited in EPA 2001).

Arsenic poses a potential risk to insectivorous birds, represented by the American kestrel, at EUs 1, 2, and 11. Maximum HQs in EU2 based on ingested doses of arsenic were more than two orders of magnitude greater than levels considered protective of kestrels.

Cadmium

Birds appear to be relatively resistant to the toxic effects of cadmium. Sublethal effects in birds include growth retardation, nephrotoxicity, anemia, damage to the testicles, reduced egg production, and effects on calcium absorption and the absorptive epithelium of the duodenum (Scheuhammer 1987). Cadmium ingestion by mallards also increases kidney concentrations of copper and zinc (Di Giulio and Scanlon 1985).

Cadmium poses a potential risk to herbivorous birds (mourning dove) in EU 2 and insectivorous birds (American kestrel) in EUs 2 and 11. HQs at EU 2 were more than two orders of magnitude above levels considered protective of the kestrel.

Copper

Copper can be toxic to birds, although they appear to be fairly tolerant of chronic copper exposure. Minimum lethal doses of copper in adult chickens, pigeons, and ducks ranged from 300 to 1,500 mg/kg body weight (Demayo and others 1982). Ingested copper can slow the growth rate, diminish egg production, and cause developmental abnormalities in various avian species (Owen 1981). Food intake and egg production were significantly lowered in chickens at dietary concentrations of 598 and 758 mg/kg (Chiou and others 1977, as cited in Lockheed Martin 2005).

Mallards tolerated a daily dietary copper concentration of 29 mg/kg body weight, and adult chickens tolerated a daily dietary copper concentration of 60 mg/kg body weight. Minimum lethal doses of copper in adult chickens, pigeons, and ducks ranged from 300 to 1,500 mg/kg body weight (Demayo and others 1982). Diets that contain elevated levels of copper can slow the growth rate, diminish egg production, and cause developmental abnormalities in various avian species (Owen 1981).

Copper concentrations exceeded 1,000 mg/kg at 36 locations within EU 2, with a maximum concentration of 13,483 mg/kg. Based on ingested doses, copper poses a potential risk to herbivorous and insectivorous birds in EU 2.

Lead

Lead produces a variety of toxic effects in birds, including damage to the nervous system, muscular paralysis, inhibition of heme synthesis, damage to the kidneys, damage to the liver, and death (Mudge 1983, as cited in Eisler 2000). Sublethal exposure to lead may also have adverse systemic and reproductive effects in some species, including decreasing plasma calcium, inhibiting growth, and reducing hatchability of chicks. Lead acetate administered to American kestrels (*Falco sparverius*) at a 50 mg/kg dietary concentration did not cause significant adverse reproductive effects on egg production, incubation, fertility, or eggshell thickness (Pattee 1984).

An oral dose of 3 mg/kg-body weight of lead resulted in severe toxicosis of several species of carnivorus birds (raptors) (Reiser and Temple 1980, as cited in Lockheed Martin 2005). Effects included anorexia; green, bile-stained feces; and anemia. Furthermore, three of the birds died between weeks 3 and 4 after the onset of lead toxicosis. Heinz and others (1999, as cited in Lockheed Martin 2005) fed mallards a standard duck diet containing 103, 207, 414, and 828 µg/g lead for 5 weeks. Ducks in the treatment group receiving 828 µg/g lead-contaminated sediment showed atrophy of the breast muscles, green staining of the feathers around the vent, viscous bile, green staining of the gizzard lining, and renal tubular intranuclear inclusion bodies. Additionally, one of the 10 treated ducks died.

The American dipper is the only true aquatic passerine in the United States. The dipper prefers stream habitats with bottoms composed of rocks, sand, and rubble, in which it forages for aquatic invertebrates. The dipper has been suggested as a long-term indicator of water quality because it can accumulate heavy metals from its diet. Metals-tolerant invertebrate species are capable of accumulating high metal concentrations in their tissues, which are then passed on to the dipper (Strom, Ramsdell, and Archuleta 2002). A study of the dipper's exposure to lead in the Arkansas River in Colorado showed that lead in invertebrate samples was highly correlated with concentrations of lead in the blood of adult dippers. The lead exposure resulted in decreased d-aminolevulinic acid dehydratase ALAD activity in both nestling and adult dippers, compared with a reference site (Strom, Ramsdell, and Archuleta 2003). The maximum lead concentration in invertebrates from the stream at UBMC was 665 mg/kg dry weight, more than twenty times greater than the tissue concentration found to reduce ALAD activity in dippers in the Arkansas River (Strom, Ramsdell, and Archuleta 2003).

The chronic NOAEL for lead was based on a study of the red-tailed hawk given lead acetate at 0 and 4.32 mg/kg-day lead for 75 days (Redig and others 1991, as cited in EPA 2001). No mortality or other adverse effects were observed, but heme synthesis was reduced.

Lead poses a potential risk to herbivorous, insectivorous, and carnivorous (red-tailed hawk) birds in EUs 1, 2, and 11. HQs were more than two orders of magnitude above levels considered protective for the mourning dove in EU2 and the American kestrel in EUs 1 and 2.

Manganese

Manganese becomes bioavailable in soil when soil pH is less than about 5.5 (Smith and others 1985; Jucker and others 1998). Data on the toxicity of manganese to birds are scarce (ORNL RAIS 1995). Laskey and Edens (1985, as cited in Lockheed Martin 2005) fed male Japanese quail a diet containing 5,056 mg/kg to basal diets of 56 mg/kg manganese, supplemented with 5,000 mg/kg manganese oxide for 75 days. The study found no adverse reproductive effects. A daily dose of 977 mg/kg-day was considered a no effect level.

Manganese poses a potential risk to insectivorous birds in EUs 2 and 12 and to herbivorous birds in EU 2. The maximum daily dose of manganese for the American kestrel observed in EU 2 was 8,100 mg/kg-day. Maximum HQs were more than two orders of magnitude above levels considered protective for the mourning dove and American kestrel in EU 2.

Zinc

Zinc is an essential nutrient, and most vertebrates can regulate internal concentrations. The sensitivity to dietary zinc exposure varies among different species of birds, although most are relatively tolerant to ingested zinc (Eisler 1993). Tissue concentrations are poor indicators of exposure to zinc because animals regulate zinc efficiently (Beyer and Storm 1995).

Poultry chicks fed 2,000 to 8,000 mg/kg of zinc exhibited reduced growth or died. Domestic breeding hens fed 178 mg/kg-day of zinc for 3 weeks grew normally but displayed immunosuppression (Eisler 1993). Japanese quail, chickens, and turkeys fed diets that contained excess zinc had decreased weight gain (National Academy of Science 1980). Newly born and juvenile animals are more sensitive to zinc exposure than are adults. The pancreas and bone are the primary areas of zinc deposition in birds (Eisler 1993).

Eisler (1993) reported that pancreatic degeneration occurred in ducks fed diets containing 2,500 milligrams zinc per kilogram (mg zinc/kg) ration. Ducks died when fed diets containing 3,000 mg zinc/kg feed or when given single oral doses above 742 mg zinc/kg body weight. It was also found that zinc poisoning usually occurs in birds when the liver or kidney contains more than 2.1 mg zinc/kg dry weight (Eisler 1993).

Zinc poses a potential risk to herbivorous, insectivorous, and carnivorous birds in EU 2. Zinc also poses a risk to insectivorous birds in EU 11.

4.14.5 Risk Description – Mammals

Risk to the meadow vole, white-tailed deer, red fox, and masked shrew in the 11 terrestrial EUs and marsh EU was estimated using FCM. Risk to the muskrat and mink was also evaluated in the marsh (EU 12). No mammals were considered to be significantly exposed to sediment or prey in the stream (EU 13). No metals posed significant risk to the mink. COPECs for the 11 terrestrial EUs and the marsh are summarized below. A discussion of potential toxicological effects follows.

EU	Meadow Vole (Herbivore)	White-Tailed Deer (Herbivore)	Red Fox (Carnivore)	Masked Shrew (Insectivore)	Muskrat (Herbivore)
1	As, Cd, Pb, Mn, Zn	--	--	As, Cd, Cu, Pb, Mn, Zn	NA
2	As, Cd, Cu, Pb, Mn, Zn	Mn	--	As, Cd, Cu, Pb, Mn, Zn	NA
3	As, Pb, Mn, Zn	--	--	As, Cd, Cu, Pb, Mn, Zn	NA
4	Cd, Pb, Mn	--	--	As, Cd, Cu, Pb, Mn, Zn	NA
5	As, Mn	--	As, Cd	As, Cd, Cu, Pb, Mn, Zn	NA
6	As, Pb, Mn	--	--	As, Cd, Cu, Pb, Mn, Zn	NA
7	As, Pb, Mn	--	--	As, Cu, Pb, Mn, Zn	NA
8	As, Cd, Pb, Mn, Zn	--	--	As, Cd, Cu, Pb, Mn, Zn	NA
9	Mn	--	--	Cu, Pb, Mn	NA
10	As, Mn	--	--	As, Cd, Cu, Pb, Mn, Zn	NA
11	As, Cd, Pb, Mn, Zn	--	--	As, Cd, Cu, Pb, Mn, Zn	NA
12	Cd, Mn, Zn	--	--	As, Cd, Cu, Pb, Mn, Zn	Cd, Mn, Zn

Note:
NA Not applicable

Arsenic

Arsenic is not normally considered an essential element to most species and has been shown to be a carcinogen, teratogen, and a possible mutagen to mammals (Eisler 1988, 1994). Arsenic may be an essential nutrient at low levels, substituting for phosphorous in biochemical reactions (ATSDR 1993a). However, arsenic is recognized as an effective poison at high levels.

Adverse effects produced by arsenic are highly dose-dependent. Chronic exposure to sublethal levels of arsenic can produce malaise and fatigue, gastrointestinal distress, anemia and basophilic stippling, neuropathy, and skin lesions that can develop into skin cancer. Mammals with arsenic deficiencies display poor growth, reduced survival, and inhibited reproduction, whereas low doses of arsenic can actually stimulate growth in plants and other animals (Eisler 1994). The body burden of arsenic can reach considerable levels because it can be sequestered in the nails, hair, bones, teeth, skin, liver, kidneys, and lungs (ATSDR 1993a). Arsenic is a teratogen in mammals that can pass the placental barrier and produce fetal death and malformations (Eisler 1988; ATSDR 1993a; Domingo 1994).

Arsenic poses a potential risk to herbivorous and insectivorous mammals across all EUs. Maximum HQs for the meadow vole in EUs 1, 2, 3, 6, 8, and 11 are more than two orders of magnitude above levels considered protective. Maximum HQs for the masked shrew in EUs 1, 2, 3, 6, 8, and 11 are more than four orders of magnitude above levels considered protective.

Cadmium

Cadmium is a known developmental toxin, causing teratogenic and mutagenic effects. Parental doses of cadmium decrease testosterone and produce adverse effects on the testes and prostate of test animals. Prenatal exposure to cadmium has fetotoxic effects (ATSDR 1993b) and can cause

adverse effects during development of the lung, brain, testes, eye, and palate (Domingo 1994). It is believed that small amounts of cadmium could affect embryonic DNA and protein synthesis (Holt and Webb 1987, as cited in Domingo 1994).

Cadmium poses a potential risk to herbivorous mammals in EUs 1, 2, 4, 8, and 11 and to insectivorous mammals in all EUs except EU 9. Maximum HQs for the meadow vole in EUs 1, 3, and 11 are more than two orders of magnitude above levels considered protective. Maximum HQs for the masked shrew in EUs 1, 2, 3, 6, 8, and 11 are more than four orders of magnitude above levels considered protective. In the marsh, cadmium poses a risk to meadow vole, shrew, and muskrat. In marsh habitats, muskrat is considered a valid indicator of general cadmium pollution, because cadmium levels in their tissues are clearly related to plant concentrations (Wren and others 1995).

Copper

Mammals are relatively tolerant to copper, which is an essential nutrient required for normal enzymatic function. However, copper at high concentrations may act as a catalyst for the production of free radicals (DOI 1998) and may reduce life span (Massie and Aiello 1984).

Copper poses a potential risk to herbivorous mammals in EU 2 and a risk to insectivore mammals in all EUs. Maximum HQs for the masked shrew in EU 2 are more than three orders of magnitude above levels considered protective. HQs in EUs 1, 5, 8, 10, and 11 are more than two orders of magnitude above levels considered protective.

Lead

Lead can have multiple toxic effects in mammalian species, including damage to the nervous system, hematological effects, kidney dysfunction, sterility, abortion, neonatal mortality, growth retardation, delays in maturation, and reduced body weight (Amdur and others 1991; Eisler 2000). Younger mammals tend to be more sensitive to lead (Amdur and others 1991). Organic forms of lead are more toxic to mammals than inorganic forms.

More lead was stored in the kidneys of older muskrats that were fed cattails contaminated with lead compared with juveniles consuming the same diet. The higher concentration of lead in tissue of adults may be related to the duration of exposure (Erickson and Lindzey 1983).

Shrews feedings on lead-contaminated worms and insect larvae were found to exceed the critical exposure level in kidneys (Wei-chun and others 1991). Population level effects on river otter were observed when estimated intake level surpassed 2 mg/kg body weight/day (Mason and MacDonald 1986, as cited in Lockheed Martin 2005).

Lead poses a potential risk to herbivorous mammals in EU 1, 2, 4, 6, 7, 8, and 11 and a risk to insectivore mammals in all EUs. Maximum HQs for the masked shrew in EU 2 are more than three orders of magnitude above levels considered protective. HQs for the masked shrew in EUs 1, 5, 8, 10, and 11 are more than two orders of magnitude above levels considered protective.

Manganese

Manganese is an essential trace element in mammals. Serious toxic consequences can occur, however, if mammals are exposed to high oral doses of manganese. The central nervous system is the primary site of manganese toxicity (ORNL RAIS 1995). Rats that ingested elevated levels of manganese displayed a decrease in weight gain, an increase in physical activity, alterations of brain chemicals, insomnia, disorientation, slight irritation of the stomach, anxiety, memory loss, motor disturbances, transient rash, tremors, difficulty walking, alterations in brain chemistry, decreased fertility, and delayed testicular development (ATSDR 1991; ORNL RAIS 1995).

Manganese poses a potential risk to herbivorous and insectivorous mammals in all EUs. Maximum HQs for the meadow vole in EUs 4, 8, and 11 are more than three orders of magnitude above levels considered protective. Maximum HQs for the masked shrew in EU 2 are more than four orders of magnitude above levels considered protective. HQs for the masked shrew in EUs 4, 8, and 11are more than three orders of magnitude above levels considered protective.

Zinc

Zinc is an essential nutrient that is generally regulated by mammals. Excessive zinc intake adversely affects survival of all mammals tested and causes a wide variety of neurological, hematological, immunological, hepatic, renal, cardiovascular, developmental, and genotoxic effects (Public Health Service 1989, as cited in Eisler 1993). The adverse effects include growth retardation, testicular atrophy, skin changes, and poor appetite (Prasad 1979, as cited in Eisler 1993; Prasad 1995).

Mink exposed to zinc at an estimated daily intake of 16 mg/kg-day, with 121 ppm in the diet, for 73 days were found to have digestive problems. The NOAEL was estimated at 3.5 mg/kg-day (Mejborn 1990).

Zinc poses a potential risk to herbivorous mammals in EUs 1, 2, 3, 7, 8, and 11. Zinc poses a potential risk to insectivorous mammals in all EUs. For the meadow vole, maximum HQs in EUs 2 and 11 are greater than two orders of magnitude above levels considered protective. For the masked shrew, maximum HQs in EUs 1 and 2 are more than three orders of magnitude above levels considered protective. Masked shrew HQs in EUs 4, 6, 8, and 11are more than two orders of magnitude above levels considered protective.

4.14.6 Summary of Risk Drivers

The following table provides an overview of the number of risk drivers in each EU for the representative assessment endpoints evaluated in the BERA. The number of COPECs (risk drivers) ranges from zero to six (arsenic, cadmium, copper, lead, manganese, and zinc). (Aluminum is a risk driver wherever pH is less than 5.5 [EPA 2003b], but is not included in this summary table.)

At least one metal poses risk to one or more receptor groups in every EU. Although no statistical analysis of the distribution of risk is possible at this scale, EUs can be ranked according to the total number of risk drivers they present for receptors overall. Risk drivers are defined as metals

when HQs were greater than 1.0 for a receptor group. In the table below, risk drivers have been summed across all receptor groups in an EU; the total was then divided by the number of receptor groups evaluated at that EU. The resulting risk index presented in the table below provides a comparative measure of the overall risk posed by each EU. This comparison shows:

- Of the terrestrial sites, EU 2 poses the greatest risk to receptors overall (37 risk drivers for 9 receptor groups, for a risk index of 4.11).
- Although relatively few receptor groups were evaluated in the stream, the proportion that were at risk was high (21 risk drivers for 4 receptors, or an index of 5.25). The marsh was intermediate, with 45 risk drivers dispersed across 15 receptors, for an index of 3.0.

ECOLOGICAL RECEPTOR	Number of COPECs in Each EU												
	EU 1	**EU 2**	**EU 3**	**EU 4**	**EU 5**	**EU 6**	**EU 7**	**EU 8**	**EU 9**	**EU 10**	**EI 11**	**EU 12**	**EU 13**
Plants	5	6	5	5	5	5	5	5	3	5	6	6	--
Terrestrial invertebrates	5	5	5	4	4	5	5	5	3	5	5	5	--
Aquatic invertebrates	--	--	--	--	--	--	--	--	--	--	--	6	6
Fish	--	--	--	--	--	--	--	--	--	--	--	--	6
Mourning dove (herbivore)	1	5	0	0	0	0	0	0	0	0	1	2	--
Red-tailed hawk (carnivore)	1	2	0	0	0	0	0	0	0	0	1	0	--
American kestrel (insectivore)	2	6	0	0	0	0	0	1	0	0	4	6	--
Meadow vole (herbivore)	5	6	4	3	2	3	3	5	1	2	5	3	--
White-tailed deer (herbivore)	0	1	0	0	0	0	0	0	0	0	1	0	--
Red fox (carnivore)	0	0	0	0	2	0	0	0	0	0	0	0	--
Masked shrew (insectivore)	6	6	6	6	6	6	6	6	3	6	6	6	--
Canada goose (herbivore)	--	--	--	--	--	--	--	--	--	--	--	0	--
Great blue heron (carnivore)	--	--	--	--	--	--	--	--	--	--	--	3	3
Mallard (omnivore)	--	--	--	--	--	--	--	--	--	--	--	3	--
Muskrat (herbivore)	--	--	--	--	--	--	--	--	--	--	--	3	--
Mink (carnivore)	--	--	--	--	--	--	--	--	--	--	--	2	--
American dipper (insectivore)	--	--	--	--	--	--	--	--	--	--	--	--	6
TOTAL COPECs / Receptor Groups	25/9	37/9	20/9	18/9	19/9	19/9	19/9	22/9	10/9	18/9	29/9	45/15	21/4
Risk Driver Index	2.78	4.11	2.22	2.00	2.11	2.11	2.11	2.44	1.11	2.00	3.22	3.00	5.25

NoteS:

-- Not a representative receptor in that EU.

The number of COPECs (risk drivers) ranges from zero to six (arsenic, cadmium, copper, lead, manganese, and zinc). (Aluminum is a risk driver wherever pH is less than 5.5, but is not included in this summary table.)

5.0 UNCERTAINTY ANALYSIS

Ecological risk assessments are based on estimates and assumptions of how plants and animals interact with the physical and chemical realities at a site. Rarely are the assumptions met, and even more rarely are the risk estimates accurate to the degree that the risk assessor would like (Chapman and others 2003). Limitations of budget, schedule, logistics, and knowledge confound the true resolution of site-related risk. In this section, specific examples of uncertainty are discussed in the context of their impact on the risk assessment. Generally, safety factors, or conservative assumptions, are incorporated into the risk assessment when the directional effect of uncertainty is not known so that the bias is toward greater rather than lesser protectiveness of ecological receptors. When the likely directional effect of an uncertainty is known, it is reflected in the discussion below. Even when the directional effect can be anticipated with some confidence, however, the magnitude of the uncertainty is often unknown. Thus, the discussion of uncertainty is an essential component of a risk assessment, without which no conclusions can be drawn.

The sections below discuss some of the major areas of uncertainty in the Problem Formulation (Section 5.1), Exposure and Effects Analysis (Section 5.2) and Risk Characterization (Section 5.3) components of the risk assessment. Many of these uncertainties are inherent in the risk assessment process, and cannot be resolved. Some of them could be reduced, at least in principle, by additional sampling and analysis. A summary of known data gaps is presented in Section 5.4.

5.1 PROBLEM FORMULATION

The problem formulation step of the risk assessment focuses on characterizing the ecological setting, identifying the COPECs, and developing a working model of how the receptors and chemicals might be interacting at the site. Central to the problem formulation is the evaluation of background chemical concentrations that define the chemical boundary of site-related risk. Sampling and data analysis methods must be selected and data quality objectives specified. Uncertainty is associated with each of these components.

Issues of particular concern are summarized in the tables included with each section below. The expected directional effect on the risk estimate is given for each source of uncertainty. For example, "+" indicates that the risk is likely overstated, whereas "-" indicates that the risk is likely underestimated. The symbol "+/-" indicates that the direction of the uncertainty is unknown or variable, and may result in an overestimate or underestimate of risk. The notes provide some details of the source of the uncertainty.

Uncertainty in Problem Formulation	Effect on Risk Estimate	Notes
Various analytical methods yield different results	+/-	Soil samples were analyzed using XRF-10 methods in the field. A subset of samples was analyzed using standard laboratory methods. The results were not always comparable. XRF data for cadmium were not available, so only laboratory results were evaluated in the risk assessment.

Uncertainty in Problem Formulation	Effect on Risk Estimate	Notes
Representativeness of site-specific background concentrations	+/-	Very few samples were collected in unaffected locations to serve as reference concentrations. A population-level statistical analysis would provide greater confidence in identifying site-related risk. Site concentrations were evaluated with respect to the minimum and maximum concentrations in the reference area, leaving some question as to the site-related risk associated with concentrations of chemicals within the background range.
Detection limits greater than toxicologically-based screening concentrations	+/-	The detection limits for some chemicals achievable with the XRF were not low enough to accurately indicate whether the sample exceeded the screening effect level. In these cases, one-half the detection limit was substituted for the non-detected result. In some cases, almost all of the "risk" indicated is posed by non-detected concentrations.
Confounding effects of physical stressors	+/-	Effects of the physical alteration of habitat caused by mining on ecological receptors were not directly evaluated. Loss of topsoil, redistribution of sediment, and other disturbances likely add to chemical-mediated ecological risk. Conversely, habitat destruction may also interrupt exposure pathways, leading to a reduction in site-related risk for some species.

5.2 EXPOSURE AND EFFECTS ANALYSIS

The characterization of exposure and effects requires several assumptions about the spatial and temporal distribution of organisms across the site, the foraging behavior of animal species, and the forms of metals detected in soil, sediment, and water at the site. Uncertainties in the exposure analysis include:

(1) Discounted exposure pathways, such as inhalation of particulates, dermal contact, and ingestion of drinking water for birds and mammals;

(2) Actual site use by selected ecological receptors;

(3) Surrogate values for life history parameters pertinent to the dose estimate;

(4) Tissue concentrations of prey included in the dose estimate; and

(5) Speciation of metals.

No site-wide or EU-wide exposure estimates were developed because of the non-random sampling design. Instead, exposure was evaluated at each sampling location independently. However, wildlife may preferentially use or avoid areas with elevated contaminant levels, which may invalidate the exposure assumptions. Physical quality of the habitat may also influence the distribution of receptors at a given location, independent of contaminant concentrations. Receptors were selected to represent high likelihood of exposure and susceptibility to effects; however, little is known about small differences among species in physiology, foraging, and sensitivity to various metals in the field.

The effects analysis is also limited by uncertainties, including:

(1) The toxicological significance of measured bioaccumulation;

(2) The site-specific relevance of published effect levels used to develop risk estimates;

(3) The extrapolation of laboratory bioassay results to field conditions at the site;

(4) Compositing of tissue samples; and

(5) Indirect, sublethal effects on organisms not measured in this BERA.

Sediment effect levels and water quality criteria for aquatic life were selected in accordance with DEQ standard practices. TRVs for birds and mammals were identified based on a review of published toxicological studies for many test species, using protocols developed for large CERCLA projects in the western United States. Some uncertainty associated with results of all toxicological studies is propagated to any later use of the study, as shown in the table below.

Uncertainty in Exposure and Effects Analysis	Effect on Risk Estimate	Notes
Spatial overlap of receptors and contaminants is not known	+/-	Receptor use of the site was estimated based on general distribution of wildlife species in the area. No site-specific or EU-specific surveys were done.
Food-chain models are based on surrogate species	+/-	Whenever possible, life history and exposure parameters for resident species were used; however, lack of data required substitutions.
Food chain models are based on relatively bioavailable chemical forms	+	Virtually all of the TRVs were based on laboratory dosing studies, which generally used soluble forms of metals. Field data were generally reported as total metals, without regard to speciation. This incongruity adds uncertainty to the effects assessment, and likely overestimates risk, because toxicity is heavily influenced by the age and form of the metal.
Prey concentrations are estimated using bioaccumulation models	+/-	Samples of prey tissue were not available for every link in the food chain at every location. Bioaccumulation models are known to have several sources of uncertainty.
Total concentrations of metals in prey are generally not bioavailable to consumers	+	Whole-body metal concentrations in prey species likely overestimate the bioavailable fraction, resulting in conservative risk estimates.
Bioaccumulation indicates exposure but not necessarily effects	+/-	Measured tissue concentrations in plants and animals at UBMC indicate that uptake of metals (exposure) has occurred. However, the mere presence of metals in the tissues does not necessarily indicate risk, nor does the absence of metals in the tissues indicate lack of risk.
Rate of uptake is more important than total tissue concentration or bioaccumulation factor	+/-	Uptake rate is not known.
Effect levels are derived using surrogate species; not site-specific	+	Most of the effect levels for mammals are based on laboratory rats. Common avian test species include chickens and quail.

Uncertainty in Exposure and Effects Analysis	Effect on Risk Estimate	Notes
Some pathways were not evaluated	-	Inhalation and dermal exposure were not evaluated. In most situations, these pathways are insignificant contributors to total metal loads (EPA 2007b).
Laboratory bioassays do not reflect field conditions	+/-	Bioassays were conducted in the laboratory under static conditions. However, published literature suggests that pulses of metals often occur in streams at night (Nimick and others 2007). In addition, laboratory bioassays remove the organisms from biological interactions that may either increase or decrease their actual risk.
Bioassay test organisms are surrogates	+/-	The invertebrates occurring at the site may be more or less tolerant of metals concentrations than the laboratory test animals. Acclimation to metals under field conditions has been reported in some organisms.
Tissue samples were composites of several species; cannot be used to indicate bioaccumulation or effects	+/-	Tissue of plants and prey animals were collected for use in the food chain models, and so were composed of opportunistically collected prey to represent what a receptor might actually ingest in the field. However, the compositing of species limits the usefulness of these samples for indicating bioaccumulation or effects to any single species.
Plants are exposed to metals in porewater, not in soil	+	Porewater was not analyzed. It is expected that less than 100 percent of the metals in soil will be dissolved in porewater.

5.3 RISK CHARACTERIZATION

Uncertainties and limitations associated with the risk characterization include the interpretation of the magnitude of the HQ, the combined effect of multiple contaminants, the temporal variability of metals toxicity, the spatial variability of contaminants and receptors, the significance of subtle, non-lethal effects, and the community-level responses to contaminants.

The magnitude of the HQ indicates potential ecological risk, but is not an exact estimation of risk. Actual risk represented by an HQ of 10 could be equal to risk represented by an HQ of 1.0, if the dose/response curve is flat at concentrations relevant to the analysis. Alternatively, if the dose/response curve is steep, an HQ of 10 could represent substantially greater risk than a simple linear relationship would indicate. Likewise, HQs of multiple chemicals cannot simply be added to achieve an overall risk estimate. An HQ of 2.0 for a given chemical may be worse than an HQ of 15.0 for another chemical because of the uncertainties involved in setting the effect levels and estimating exposures, as well as the underlying shape of the dose/response curve. Furthermore, a significant obstacle to precise risk characterization is the complex interactions among metals in the field. In most cases, effect levels are derived from laboratory studies on single metals. However, receptors are exposed to fluctuating concentrations of several metals in multiple media over long periods of time. Precise risk characterization is compromised by the violation of most of the assumptions that underlie the single chemical effect models.

Concentrations of chemicals in discrete samples cannot represent the dynamic exposure and effects experienced by receptors in the field. Specifically, metals concentrations in mountain streams have been shown to fluctuate diurnally, although the mechanism is not well understood.

Temporal fluctuations in metals concentrations confound the analysis of toxicity, which varies with water temperature. If water temperature varies diurnally, and metals concentrations also vary diurnally, then risk characterization based on discrete samples collected during daytime hours must be considered to have a low degree of certainty.

Likewise, the spatial scale of sampling requires extrapolation of results from a small number of discreet non-random samples to populations of several groups of wide-ranging animals. The spatial distribution of metals is of great importance because the risk assessment is most concerned with population-level risk and community-level interaction. Yet, the risk of the entire site cannot be characterized using samples from only the most highly contaminated areas. This sampling bias likely leads to an overestimation of true risk.

Risk assessments are hampered by the limitations of scientific knowledge of sublethal effects. By necessity, toxicological studies on wildlife generally rely on easily measured endpoints such as mortality, growth, and reproduction. More focused studies on blood levels and organ-specific tissue concentrations are increasingly common but are difficult to generalize to wildlife species at a specific site. Even large, complex projects such as the Coeur d'Alene ERA, in which site-specific wildlife toxicological studies were conducted, cannot resolve the uncertainty associated with subtle, non-lethal effects on poorly-known species. Ideally, the risk assessment would reveal how exposure of individuals to metals in the field lead to effects on community-level interactions. However, the current science of risk assessment is far from that goal. These uncertainties are addressed in the table that follows.

Uncertainty in Risk Characterization	Effect on Risk Estimate	Notes
Magnitude of hazard quotient	+	Regulatory guidance identifies any HQ greater than 1.0 as representing risk. However, the relative risk indicated by HQs greater than1.0 cannot be evaluated.
Combined effect of multiple contaminants in multiple media	+/-	Combined effect could be additive, antagonistic, or unpredictable
Temporal variability of metals toxicity	+/-	Toxicity of metals in streams is influenced by other factors, such as pH, temperature, and hardness. Although diel and seasonal variability in these parameters were considered in the BERA, characterization of risk was based on DEQ-7 criteria.
Spatial variability of contaminants and receptors	+	A small number of non-random samples was used to characterize risk to multiple receptors in a large, heterogeneous area, variability at the spatial scale relevant to populations and communities was not addressed.
Significance of subtle, non-lethal effects	-	Reduced genetic diversity resulting from low population density, population bottlenecks, and inbreeding depression may have long-term consequences
Community responses to contaminants	-	Indirect effects of contaminants on species interactions are not accommodated in the BERA.

5.4 DATA GAPS

Despite the quantity of samples collected at the UBMC over the years, the BERA is necessarily limited by lack of information on several key processes. Even studies that have been on-going for more than a decade cannot provide precise values for all of the parameters necessary to remove uncertainty in a risk assessment. The sections above described many of the areas of uncertainty in this BERA, some of which cannot be resolved. The section below addresses variables that are amenable to additional study, if risk management decisions require refinement of this BERA.

5.4.1 Background Concentrations

Soil, sediment, and surface water concentrations were screened against background (reference) concentrations so that only site-related risk would be evaluated. However, the reference area data set was not adequate to support a statistical determination of true background concentrations. For example, two reference area concentrations of lead differed by more than 89 percent (SHGBG-1 and SHGBG-2). A more robust determination of background concentrations would support a more accurate characterization of site-related risks.

5.4.2 Receptor Use

The selection of representative receptors was based on lists of species that occur in Lewis and Clark County. In a few cases, State wildlife biologists provided additional recommendations and guidance. However, no site-specific animal surveys were conducted to document actual site use. While the BERA is understood to provide a general characterization of risk, based on assumptions of ecological exposure, the evaluation would benefit from information on the animal assemblages that actually occur at the site.

5.4.3 Diel Fluxes in Surface Water Concentrations

One of the principal goals of the remediation and restoration of the UBMC is to restore habitat for trout. The BERA concluded that trout exposed to metals in sediment and surface water at UBMC would likely be adversely affected. However, substantial uncertainty is associated with this conclusion because metals concentrations in surface water of mountain streams have been shown to be highly variable. Recent field studies in similar streams affected by historical mining activities have demonstrated significant diel fluctuations in metals concentrations and in pH. All of the surface water samples at UBMC were collected during daylight hours. The effect of diel pulses of metals on invertebrates and fishes cannot be evaluated using the available data.

5.4.4 Seasonal Changes in Surface Water Concentrations

Surface water concentrations in the streams at UBMC fluctuated substantially between October 2007 (low flow) and June 2008 (high flow). Specifically, concentrations of aluminum, cadmium, manganese, and zinc increased in surface water when stream flow was

low. Conversely, concentrations of lead and copper decreased when stream flow was low. Risk estimates in the BERA were based on the maximum concentration detected in either sampling event, and so are considered conservative. However, the existing samples cannot be considered representative of actual conditions at the UBMC. A 12-month series of surface water samples, collected during both the daylight and nighttime hours (as mentioned in Section 5.4.3) would allow more accurate characterization of risk posed by metals in surface water.

5.4.5 Surface Water-Ground Water Interactions

The variability in stream surface water concentrations during low flow and high flow periods has been characterized using data collected during several seasons over many years. Diurnal and seasonal fluctuations in metals concentrations in stream water are described in the Data Summary Report (Tetra Tech 2006). Data suggest that ground water may be contributing metals to the stream in some locations, especially under low flow conditions. However, the precise location and timing of such contributions is not known.

5.4.6 Bioavailability

Analysis of plant, invertebrate, and small mammal tissues demonstrated that these animals are exposed to metals at the UBMC. However, actual bioavailable concentrations of metals have not been measured. The BERA made the conservative assumption that most, if not all, of the measured concentrations of metals were bioavailable to ecological receptors. Studies from other sites, as well as the published toxicological literature, indicate that 100 percent bioavailability is `most certainly an overestimate. However, in the absence of site-specific data on bioavailability, no specific reduction in bioavailability can be supported.

5.4.7 Prey Tissue Concentrations

Plant, invertebrate, and small mammal tissues were collected to use in estimating ingested doses in the FCM. The plant and invertebrate tissue samples were limited to this use because each sample was composed of the assortment of species that were collected at the sampling location. Although this method of sample collection is appropriate to mimic the way an opportunistic predator may forage, it does not allow samples to be compared with one another or with the reference area.

Plant and invertebrate species differ in the rate of uptake of metals, and the extent to which the metals are retained in the tissues. For this reason, a sample of mixed species of unknown proportions cannot be used to calculate species-specific BAFs or to characterize relative bioavailability of metals at various sites. The small mammal tissue samples were not composited, but because the small set of samples varied by species, gender, age, and condition, no comparative description of bioavailability could be supported.

5.4.8 Fish Bioassays

The sudden extirpation of westslope cutthroat trout from the area below the tailings breach has been well-documented. The continued absence of fish from most of the UBMC may be attributed to metals contamination. Sediment and surface water concentrations are certainly elevated to such an extent to support that conclusion. However, other causes may also limit the return of westslope cutthroat trout to the area, including competition with non-native fishes and physical degradation of the habitat (Behnke 1992). Field bioassays that directly test the viability of trout in the UBMC would greatly enhance the characterization of risk to fishes.

6.0 PRELIMINARY ECOLOGICAL REMEDIAL GOALS (PERG)

This section describes the development of risk-based ecological remedial goals and PERGs presented in the BERA. Risk-based remedial goals are concentrations in environmental media that correspond to a specific, acceptable target risk or hazard level when an ecological receptor contacts the contaminated medium according to a defined exposure scenario. PERGs are remediation goals based on the greater of the minimum reference site concentration and the risk-based ecological removal goals. Background concentrations are considered in selecting the removal goals for each chemical. Where PERGs were set equal to the minimum reference concentration, the exact concentration value was selected as the PERG; calculated PERGs are reported to two significant figures. PERGs are the goals recommended in this BERA to protect ecological receptors at each EU (Tables 6-1 through 6-13). Section 6.1 presents the methodology used to develop ecological risk-based remedial goals and Section 6.2 provides the PERGs for each EU.

6.1 DEVELOPMENT OF RISK-BASED REMEDIAL GOALS AND PERGS

The following sections describe the development of the risk-based remedial goals for ecological receptors.

6.1.1 Development of Risk Based Remedial Goals and PERGs for Plants and Invertebrates

For plants and invertebrates, risk-based ecological goals for EUs 1 through 13 were based on the literature-derived toxicity benchmarks for direct exposure as described in Sections 3.2.1 through 3.2.4. For aquatic invertebrates and fish, the PEL was selected as the risk-based ecological goal. Toxicity benchmarks were compared with the minimum reference concentration for each EU, and in cases where the toxicity benchmark excceded the minimum reference concentration, the minimum reference concentration was selected as the PERG. The toxicity benchmarks are summarized in the table below.

Toxicity Benchmarks for Plants, Invertebrates, and Aquatic Invertebrates and Fish (mg/kg)

COPEC	Arsenic	Cadmium	Copper	Lead	Manganese	Zinc
Minimum Reference Concentration	*9.12*	*0.471*	*22*	*55*	*88*	*97.8*
Plants	18	32	70	120	220	160
Invertebrates (Terrestrial)	60	140	80	1,700	450	120
Aquatic Invertebrates and Fish	17	3.53	197	91	460 *	315

Note: * A PEL is not available for manganese; the LEL is substituted for the PEL.

6.1.2 Development of Risk Based Remedial Goals and PERGs for Birds and Mammals

Risk-based ecological goals for EUs 1 through 13 were calculated for all birds and mammals evaluated in the BERA, using methods consistent with EPA guidance (EPA 1997). The dose parameters (Tables 3-1 through 3-13) and the SUFs were the same as were used in the BERA.

The reference site BAFs, rather than the site BAFs, were used to back-calculate safe doses, based on the assumption that post-remediation chemical concentrations will be similar to reference site concentrations (Tables 3-14 through 3-16). The approach to estimating doses is discussed in detail in Section 3.2.6. The rationale for basing risk estimates on a point-by-point comparison is provided in Section 2.3.

Risk-based remedial goals for COPECs were calculated for all birds and mammals using the same equation presented in Section 3.2.6 for the FCM. Instead of inputting a sample soil concentration and calculating a dose, the risk-based remedial goal was calculated by setting the HQ equal to 1.0 and then solving for the soil concentration. This process is known as "back-calculating."

The equation below was used to back-calculate risk-based remedial goals for arsenic, cadmium, copper, lead, manganese, and zinc. Exposure parameters used in the equation and the resulting back-calculated values for each ecological receptor are provided in Tables E-1 through E-13. Risk-based remedial goals were reported to two significant figures.

$$C_{soil} = \frac{(High\ TRV/SUF) \times BW}{\left[IR_{Soil} + (BAF_{food} \times IR_{food})\right]}$$

where:

BAF_{food} = Bioaccumulation factor for food or prey (kg dry soil per kg dry tissue) calculated using site-specific collocated soil, sediment, and tissue data from the applicable reference locations

PERGs were then calculated by comparing the minimum reference site concentration for each EU with the chemical-specific risk-based remedial goal for each receptor for the corresponding EU (Tables 6-1 through 6-13). The greater of the two values was selected as the PERG. The PERG is set equal to the minimum reference site concentration where the risk-based ecological goal is less than the minimum reference site concentration. The ecological receptor with the lowest risk-based remedial goal at a given EU is the "most sensitive receptor." PERGs developed for the most sensitive receptor are expected to be protective of all ecological receptors exposed to soils or sediments within an EU.

6.2 PERGS BY EU

PERGs for each COPEC and EU are presented in Section 6.2.1 through 6.2.13. The comparison of PERGs identified the masked shrew as the most sensitive receptor to all COPECs in all EUs. The shrew is especially sensitive to contaminants in soil because it has a small home range and lives in intimate contact with the soil. It forages in the soil on invertebrates, especially earthworms. Consequently, the shrew is exposed to contaminants directly in the soil as well as indirectly in its prey. Doses to the shrew are likely even higher than were modeled in the BERA because the shrew's favored prey (earthworms) is known to bioaccumulate metals to a greater extent than the plant-associated invertebrates (such as adult grasshoppers, ants, and spiders) actually used in the model (Beyer and Storm 1995).

6.2.1 EU 1: Upper Anaconda Mine Waste Removal Areas and Waste Piles

The PERGs for EU 1 are presented in the table below. Table 6-1 compares the risk-based ecological goals with the reference site concentrations, and Figures 6-1A through 6-1E illustrate the distribution of sample locations with respect to the PERG for each vertebrate receptor. PERG calculations are in Appendix E-1. Bold values in the table below indicate that at least one site concentration at EU 1 exceeds the PERG for the corresponding chemical and receptor.

PERGs for Ecological Receptors (mg/kg dry weight)						
COPEC	**Arsenic**	**Cadmium**	**Copper**	**Lead**	**Manganese**	**Zinc**
Minimum Reference Concentration	*18.33*	*0.486*	*79.58*	*23.09*	*294.72*	*83.93*
Plants	**18.33**	32	**79.58**	**120**	**294.72**	**160**
Invertebrates	**60**	140	**80**	**1,700**	**450**	**120**
Mourning Dove	240,000	770	77,000	**72,000**	2,700,000	120,000
Red-Tailed Hawk	120,000	52,000	270,000	210,000	28,000,000	51,000
American Kestrel	4,300	73	8,700	**3,000**	370,000	11,000
Meadow Vole	**1,400**	**13**	5,100	**23,000**	**2,900**	**2,100**
White-Tailed Deer	880,000	7,200	2,700,000	13,000,000	1,500,000	1,100,000
Red Fox	89,000	850,000	8,100,000	20,000,000	16,000,000	400,000
Masked Shrew	**18.33**	**0.486**	**120**	**100**	**294.72**	**83.93**
Lowest PERG	18.33	0.486	79.58	100	294.72	83.93

6.2.2 EU 2: Blackfoot River Dispersed Tailings Associated with EE/CA Removal Action Area and Overbank Deposits

The PERGs for EU 2 are presented in the table below. Table 6-2 compares the risk-based ecological goals with the reference site concentrations, and Figures 6-2A through 6-2G illustrate the distribution of sample locations with respect to the PERG for each vertebrate receptor. PERG calculations are in Appendix E-2. Bold values in the table below indicate that at least one site concentration at EU 2 exceeds the PERG for the corresponding chemical and receptor.

PERGs for Ecological Receptors (mg/kg dry weight)						
COPEC	**Arsenic**	**Cadmium**	**Copper**	**Lead**	**Manganese**	**Zinc**
Minimum Reference Concentration	*13.93*	*0.486*	*79.58*	*23.09*	*294.72*	*53.72*
Plants	**18**	**32**	**79.58**	**120**	**294.72**	**160**
Invertebrates	**60**	**140**	**80**	**1,700**	**450**	**120**
Mourning Dove	39,000	**120**	12,000	**11,000**	**430,000**	20,000
Red-Tailed Hawk	19,000	8,400	43,000	34,000	4,500,000	**8,200**
American Kestrel	**690**	**12**	**1,400**	**480**	**59,000**	**1,700**

PERGs for Ecological Receptors (mg/kg dry weight)						
COPEC	**Arsenic**	**Cadmium**	**Copper**	**Lead**	**Manganese**	**Zinc**
Meadow Vole	1,400	**13**	**5,100**	**23,000**	**2,900**	**2,100**
White-Tailed Deer	140,000	1,100	430,000	2,000,000	**250,000**	180,000
Red Fox	14,000	140,000	1,300,000	3,200,000	2,600,000	63,000
Masked Shrew	**13.93**	**0.486**	**120**	**100**	**294.72**	**53.72**
Lowest PERG	13.93	0.486	79.58	100	294.72	53.72

6.2.3 EU 3: Capitol Mine Waste Pile

The PERGs for EU 3 are presented in the table below. Table 6-3 compares the risk-based ecological goals with the reference site concentrations, and Figures 6-3A and 6-3B illustrate the distribution of sample locations with respect to the PERG for each vertebrate receptor. PERG calculations are in Appendix E-3. Bold values in the table below indicate that at least one site concentration at EU 3 exceeds the PERG for the corresponding chemical and receptor.

PERGs for Ecological Receptors (mg/kg dry weight)						
COPEC	**Arsenic**	**Cadmium**	**Copper**	**Lead**	**Manganese**	**Zinc**
Minimum Reference Concentration	*16.56*	*0.284*	*71.85*	*62.21*	*130.88*	*40.94*
Plants	**18**	32	**71.85**	**120**	**220**	**160**
Invertebrates	**60**	140	**80**	**1,700**	**450**	**120**
Mourning Dove	5,600,000	18,000	1,700,000	1,600,000	61,000,000	2,800,000
Red-Tailed Hawk	2,700,000	1,200,000	6,000,000	4,800,000	640,000,000	1,200,000
American Kestrel	98,000	1,700	200,000	68,000	8,400,000	250,000
Meadow Vole	1,400	13	5,100	23,000	2,900	2,100
White-Tailed Deer	20,000,000	160,000	61,000,000	290,000,000	35,000,000	25,000,000
Red Fox	2,000,000	19,000,000	180,000,000	460,000,000	370,000,000	9,000,000
Masked Shrew	**16.56**	**0.82**	**360**	**310**	**220**	**120**
Lowest PERG	16.56	0.82	71.85	120	220	120

6.2.4 EU 4: Carbonate Mine Waste Area

The PERGs for EU 4 are presented in the table below. Table 6-4 compares the risk-based ecological goals with the reference site concentrations, and Figures 6-4A through 6-4C illustrate the distribution of sample locations with respect to the PERG for each vertebrate receptor. PERG calculations are in Appendix E-4. Bold values in the table below indicate that at least one site concentration at EU 4 exceeds the PERG for the corresponding chemical and receptor.

PERGs for Ecological Receptors (mg/kg dry weight)						
COPEC	**Arsenic**	**Cadmium**	**Copper**	**Lead**	**Manganese**	**Zinc**
Minimum Reference Concentration	*13.32*	*0.83*	*29.52*	*60.82*	*568.95*	*113.7*
Plants	**18**	32	**70**	**120**	**568.95**	**160**
Invertebrates	60	140	**80**	1,700	**568.95**	**120**
Mourning Dove	660,000	2,100	210,000	190,000	7,300,000	330,000
Red-Tailed Hawk	330,000	140,000	720,000	570,000	76,000,000	140,000
American Kestrel	12,000	200	24,000	8,100	1,000,000	30,000
Meadow Vole	1,400	13	5,100	23,000	**2,900**	2,100
White-Tailed Deer	2,400,000	19,000	7,300,000	34,000,000	4,200,000	3,000,000
Red Fox	240,000	2,300,000	22,000,000	55,000,000	44,000,000	1,100,000
Masked Shrew	**13.32**	**0.83**	**120**	**100**	**568.95**	**113.7**
Lowest PERG	13.32	0.83	70	100	568.95	113.7

6.2.5 EU 5: Edith Mine Waste Areas

The PERGs for EU 5 are presented in the table below. Table 6-5 compares the risk-based ecological goals with the reference site concentrations, and Figures 6-5A and 6-5B illustrate the distribution of sample locations with respect to the PERG for each vertebrate receptor. PERG calculations are in Appendix E-5. Bold values in the table below indicate that at least one site concentration at EU 5 exceeds the PERG for the corresponding chemical and receptor.

PERGs for Ecological Receptors (mg/kg dry weight)						
COPEC	**Arsenic**	**Cadmium**	**Copper**	**Lead**	**Manganese**	**Zinc**
Minimum Reference Concentration	*11.5*	*2.46*	*39.55*	*32.69*	*201.49*	*99.21*
Plants	**18**	32	**70**	**120**	**220**	**160**
Invertebrates	**60**	140	**80**	1,700	**450**	**120**
Mourning Dove	560,000	1,800	180,000	160,000	6,100,000	280,000
Red-Tailed Hawk	280,000	120,000	610,000	480,000	64,000,000	120,000
American Kestrel	9,800	170	20,000	6,800	840,000	25,000
Meadow Vole	1,400	13	5,100	23,000	2,900	2,100
White-Tailed Deer	2,000,000	16,000	6,200,000	29,000,000	3,500,000	2,500,000
Red Fox	200,000	1,900,000	19,000,000	46,000,000	37,000,000	900,000
Masked Shrew	**11.5**	**2.46**	**120**	**100**	**201.49**	**99.21**
Lowest PERG	11.5	2.46	70	100	201.49	99.21

6.2.6 EU 6: Consolation Mine Waste Area

The PERGs for EU 6 are presented in the table below. Table 6-6 compares the risk-based ecological goals with the reference site concentrations, and Figures 6-6A and 6-6B illustrate the

distribution of sample locations with respect to the PERG for each vertebrate receptor. PERG calculations are in Appendix E-6. Bold values in the table below indicate that at least one site concentration at EU 6 exceeds the PERG for the corresponding chemical and receptor.

PERGs for Ecological Receptors (mg/kg dry weight)						
COPEC	**Arsenic**	**Cadmium**	**Copper**	**Lead**	**Manganese**	**Zinc**
Minimum Reference Concentration	*16.06*	*2.46*	*39.55*	*32.69*	*1,008.4*	*99.21*
Plants	**18**	32	**70**	**120**	**1,008.4**	**160**
Invertebrates	**60**	140	**80**	**1,700**	**1,008.4**	**120**
Mourning Dove	1,000,000	3,300	320,000	300,000	11,000,000	520,000
Red-Tailed Hawk	510,000	220,000	1,100,000	880,000	120,000,000	210,000
American Kestrel	18,000	310	37,000	13,000	1,600,000	46,000
Meadow Vole	1,400	13	5,100	23,000	2,900	2,100
White-Tailed Deer	3,700,000	30,000	11,000,000	54,000,000	6,500,000	4,600,000
Red Fox	380,000	3,600,000	34,000,000	85,000,000	69,000,000	1,700,000
Masked Shrew	**16.06**	**2.46**	**120**	**100**	**1,008.4**	**99.21**
Lowest PERG	16.06	2.46	70	100	1,008.4	99.21

6.2.7 EU 7: Mary P. Mine Waste Pile

The PERGs for EU 7 are presented in the table below. Table 6-7 compares the risk-based ecological goals with the reference site concentrations, and Figures 6-7A and 6-7B illustrate the distribution of sample locations with respect to the PERG for each vertebrate receptor. PERG calculations are in Appendix E-7. Bold values in the table below indicate that at least one site concentration at EU 7 exceeds the PERG for the corresponding chemical and receptor.

PERGs for Ecological Receptors (mg/kg dry weight)						
COPEC	**Arsenic**	**Cadmium**	**Copper**	**Lead**	**Manganese**	**Zinc**
Minimum Reference Concentration	*19.5*	*0.284*	*92.51*	*53.2*	*141.05*	*40.94*
Plants	**19.5**	32	**92.51**	**120**	**220**	**160**
Invertebrates	**60**	140	**92.51**	**1,700**	**450**	**120**
Mourning Dove	6,600,000	21,000	2,100,000	1,900,000	72,000,000	3,300,000
Red-Tailed Hawk	3,200,000	1,400,000	7,100,000	5,600,000	760,000,000	1,400,000
American Kestrel	120,000	2,000	230,000	80,000	9,900,000	290,000
Meadow Vole	1,400	13	5,100	23,000	2,900	2,100
White-Tailed Deer	24,000,000	190,000	72,000,000	340,000,000	42,000,000	30,000,000
Red Fox	2,400,000	23,000,000	220,000,000	540,000,000	440,000,000	11,000,000
Masked Shrew	**19.5**	0.97	**430**	**360**	**260**	**140**
Lowest PERG	19.5	0.97	92.51	120	220	120

6.2.8 EU 8: Mike Horse Mine Waste Piles

The PERGs for EU 8 are presented in the table below. Table 6-8 compares the risk-based ecological goals with the reference site concentrations, and Figures 6-8A through 6-8D illustrate the distribution of sample locations with respect to the PERG for each vertebrate receptor. PERG calculations are in Appendix E-8. Bold values in the table below indicate that at least one site concentration at EU 8 exceeds the PERG for the corresponding chemical and receptor.

PERGs for Ecological Receptors (mg/kg dry weight)						
COPEC	**Arsenic**	**Cadmium**	**Copper**	**Lead**	**Manganese**	**Zinc**
Minimum Reference Concentration	*15.2*	*1.57*	*32.77*	*33.34*	*864.53*	*48.38*
Plants	**18**	32	**70**	**120**	**864.53**	**160**
Invertebrates	**60**	140	**80**	**1,700**	**864.53**	**120**
Mourning Dove	420,000	1,300	130,000	120,000	4,600,000	210,000
Red-Tailed Hawk	200,000	89,000	450,000	360,000	48,000,000	87,000
American Kestrel	7,300	120	15,000	**5,100**	630,000	19,000
Meadow Vole	1,400	13	5,100	23,000	2,900	2,100
White-Tailed Deer	1,500,000	12,000	4,600,000	22,000,000	2,600,000	1,900,000
Red Fox	150,000	1,400,000	14,000,000	34,000,000	28,000,000	670,000
Masked Shrew	**15.2**	**1.57**	**120**	**100**	**864.53**	**48.38**
Lowest PERG	15.2	1.57	70	100	864.53	48.38

6.2.9 EU 9: Paymaster Mine Waste Areas

The PERGs for EU 9 are presented in the table below. Table 6-9 compares the risk-based ecological goals with the reference site concentrations, and Figures 6-9A and 6-9B illustrate the distribution of sample locations with respect to the PERG for each vertebrate receptor. PERG calculations are in Appendix E-9. Bold values in the table below indicate that at least one site concentration at EU 9 exceeds the PERG for the corresponding chemical and receptor.

PERGs for Ecological Receptors (mg/kg dry weight)						
COPEC	**Arsenic**	**Cadmium**	**Copper**	**Lead**	**Manganese**	**Zinc**
Minimum Reference Concentration	*10*	*0.543*	*26.19*	*29.08*	*360.4*	*66.86*
Plants	18	32	**70**	**120**	**220**	160
Invertebrates	60	140	**80**	1,700	**450**	**120**
Mourning Dove	5,800,000	18,000	1,800,000	1,700,000	63,000,000	2,900,000
Red-Tailed Hawk	2,800,000	1,200,000	6,300,000	4,900,000	670,000,000	1,200,000
American Kestrel	100,000	1,700	210,000	71,000	8,700,000	260,000
Meadow Vole	1,400	13	5,100	23,000	2,900	2,100
White-Tailed Deer	21,000,000	170,000	64,000,000	300,000,000	37,000,000	26,000,000

PERGs for Ecological Receptors (mg/kg dry weight)						
COPEC	**Arsenic**	**Cadmium**	**Copper**	**Lead**	**Manganese**	**Zinc**
Minimum Reference Concentration	*10*	*0.543*	*26.19*	*29.08*	*360.4*	*66.86*
Red Fox	2,100,000	20,000,000	190,000,000	480,000,000	390,000,000	9,300,000
Masked Shrew	**10**	0.85	**370**	**320**	**360.4**	120
Lowest PERG	10	0.85	70	120	220	120

6.2.10 EU 10: Number 3 Tunnel Waste Area

The PERGs for EU 10 are presented in the table below. Table 6-10 compares the risk-based ecological goals with the reference site concentrations, and Figures 6-10A and 6-10B illustrate the distribution of sample locations with respect to the PERG for each vertebrate receptor. PERG calculations are in Appendix E-10. Bold values in the table below indicate that at least one site concentration at EU 10 exceeds the PERG for the corresponding chemical and receptor.

PERGs for Ecological Receptors (mg/kg dry weight)						
COPEC	**Arsenic**	**Cadmium**	**Copper**	**Lead**	**Manganese**	**Zinc**
Minimum Reference Concentration	*11.09*	*0.284*	*71.85*	*62.21*	*130.88*	*40.94*
Plants	**18**	32	**71.85**	**120**	**220**	**160**
Invertebrates	**60**	140	**80**	1,700	**450**	**120**
Mourning Dove	660,000	2,100	210,000	190,000	7,300,000	330,000
Red-Tailed Hawk	330,000	140,000	720,000	570,000	76,000,000	140,000
American Kestrel	12,000	200	24,000	8,100	1,000,000	30,000
Meadow Vole	1,400	13	5,100	23,000	2,900	2,100
White-Tailed Deer	2,400,000	19,000	7,300,000	34,000,000	4,200,000	3,000,000
Red Fox	240,000	2,300,000	22,000,000	55,000,000	44,000,000	1,100,000
Masked Shrew	**11.09**	**0.284**	**120**	**100**	**130.88**	**40.94**
Lowest PERG	11.09	0.284	71.85	100	130.88	40.94

6.2.11 EU 11: Beartrap Creek Dispersed Tailings Deposits Associated with EE/CA Removal Action Area and Overbank Tailings Deposits and Flossie Louise Mine Waste Pile

The PERGs for EU 11 are presented in the table below. Table 6-11 compares the risk-based ecological goals with the reference site concentrations, and Figures 6-11A through 6-11D illustrate the distribution of sample locations with respect to the PERG for each vertebrate receptor. PERG calculations are in Appendix E-11. Bold values in the table below indicate that at least one site concentration at EU 11 exceeds the PERG for the corresponding chemical and receptor.

PERGs for Ecological Receptors (mg/kg dry weight)						
COPEC	**Arsenic**	**Cadmium**	**Copper**	**Lead**	**Manganese**	**Zinc**
Minimum Reference Concentration	*18.33*	*0.486*	*62.8*	*23.09*	*161*	*83.93*
Plants	**18.33**	**32**	**70**	**120**	**220**	**160**
Invertebrates	**60**	140	**80**	**1,700**	**450**	**120**
Mourning Dove	150,000	460	45,000	42,000	1,600,000	73,000
Red-Tailed Hawk	71,000	31,000	160,000	120,000	17,000,000	30,000
American Kestrel	2,500	43	5,200	**1,800**	220,000	**6,500**
Meadow Vole	1,400	13	5,100	23,000	**2,900**	**2,100**
White-Tailed Deer	520,000	4,200	1,600,000	7,500,000	920,000	650,000
Red Fox	53,000	500,000	4,800,000	12,000,000	9,700,000	230,000
Masked Shrew	**18.33**	**0.486**	**120**	**100**	**161**	**83.93**
Lowest PERG	18.33	0.486	70	100	161	83.93

6.2.12 EU 12: Marsh

The PERGs for birds and mammals in EU 12 are presented in the two tables below. Table 6-12 compares the risk-based ecological goals with the reference site concentrations, and Figures 6-12A1 through 6-12M2 illustrate the distribution of sample locations with respect to the PERG for each vertebrate receptor. PERG calculations are in Appendix E-12. Bold values in the table below indicate that at least one site concentration at EU 12 exceeds the PERG for the corresponding chemical and receptor.

PERGs for Ecological Receptors (mg/kg dry weight)							
COPEC	**Aluminum**	**Arsenic**	**Cadmium**	**Copper**	**Lead**	**Manganese**	**Zinc**
Minimum Reference Concentration	*7,500*	*9.12*	*0.471*	*22*	*55*	*88*	*97.8*
Plants	NA	**18**	**32**	**70**	**120**	**220**	**160**
Invertebrates (Terrestrial)	NA	**60**	140	**80**	**1,700**	**450**	**120**
Aquatic Invertebrates and Fish	NA	**17**	**3.53**	**197**	**91**	**460 ***	**315**
Mourning Dove	370,000	6,100	**5**	**1,100**	**2,600**	**8,600**	2,200
Red-Tailed Hawk	1,600,000	28,000	1,300	4,900	**3,900**	480,000	2,400
American Kestrel	**15,000**	**90**	**0.471**	**65**	**55**	**1,100**	**210**
Canada Goose	11,000,000	190,000	140	30,000	82,000	240,000	61,000
Great Blue Heron	760,000	17,000	780	**1,400**	**1,300**	170,000	**680**
Mallard	120,000	710	**2.5**	**430**	**410**	**5,900**	**1,300**
Meadow Vole	**7,500**	1,400	**3.4**	2,800	64,000	**320**	**1,500**
White-Tailed Deer	40,000	22,000	**45**	37,000	1,000,000	**4,200**	20,000
Red Fox	93,000	40,000	21,000	150,000	350,000	250,000	19,000

PERGs for Ecological Receptors (mg/kg dry weight)							
COPEC	**Aluminum**	**Arsenic**	**Cadmium**	**Copper**	**Lead**	**Manganese**	**Zinc**
Masked Shrew	**7,500**	**9.12**	**0.471**	**35**	**72**	**88**	**97.8**
Muskrat	**7,500**	2,400	**5.9**	4,900	110,000	**550**	**2,600**
Mink	**7,500**	3,000	1,500	11,000	26,000	18,000	**1,400**
Lowest PERG	7,500	9.12	0.471	35	55	88	97.8

6.2.13 EU 13: Stream

The PERGs for EU 13 are presented in the table below. Table 6-13 compares the risk-based ecological goals with the reference site concentrations, and Figures 6-13A through 6-13C illustrate the distribution of sample locations with respect to the PERG for each vertebrate receptor. PERG calculations are in Appendix E-13. Bold values in the table below indicate that at least one site concentration at EU 13 exceeds the PERG for the corresponding chemical and receptor.

PERGs for Ecological Receptors (mg/kg dry weight)							
COPEC	**Aluminum**	**Arsenic**	**Cadmium**	**Copper**	**Lead**	**Manganese**	**Zinc**
Minimum Reference Concentration	*8,980*	*5.56*	*0.5*	*29.4*	*21.9*	*271*	*65.7*
Aquatic Invertebrates and Fish	NA	**17**	**3.53**	**197**	**91**	**460 ***	**315**
Great Blue Heron	**910,000**	**900**	**780**	**2,000**	1,900	270,000	**360**
American Dipper	**9,400**	**77**	**15**	**140**	**56**	**1,300**	**65.7**
Lowest PERG	9,400	17	3.5	140	56	1,300	65.7

Note:

* A PEL is not available for manganese; the LEL is substituted for the PEL.

7.0 CONCLUSIONS OF THE BERA

The BERA evaluated risk posed by aluminum, arsenic, cadmium, copper, iron, lead, manganese, mercury, and zinc to a variety of ecological receptors at the UBMC. No receptors were shown to be at risk from exposure to iron or mercury in soil or sediment in EUs 1 through 13. Aluminum poses a risk to all receptors wherever pH is less than 5.5, which represents about one-half of the sample locations. Given the assumptions of the BERA regarding exposure and effects, six metals (arsenic, cadmium, copper, lead, manganese, and zinc), in addition to aluminum, pose unacceptable risk to plants, invertebrates, birds, and small mammals at EUs 1 though 12, and to invertebrates, fish, and birds in EU 13, as summarized below.

In Section 4.14.3, a risk index was calculated for each EU. The number of COPECs (risk drivers) ranged from zero to six (arsenic, cadmium, copper, lead, manganese, and zinc). (Aluminum is a risk driver wherever pH is less than 5.5 [EPA 2003b], but was not included in the calculation of the risk driver index). Risk drivers are defined as metals for which HQs were greater than 1.0 for a receptor group. EUs were ranked according to the total number of risk drivers they presented for receptors overall, providing a spatial perspective of risk across the entire UBMC site.

Another way to summarize risk is to consider the magnitude of risk experienced by each receptor group. In the table below, risk drivers have been summed across all EUs for each receptor group; the total was then divided by the number of terrestrial EUs (11). The resulting terrestrial risk index provides a comparative measure of the overall risk experienced in the terrestrial EUs by each receptor. As shown in Section 4.14, all six metals pose a risk to the masked shrew in all EUs except EU 9, resulting in the highest terrestrial risk driver index (5.73) (see table below).

If all terrestrial EUs are treated as a single habitat unit, and indexed with the marsh and stream, an overall risk index can be calculated for each receptor group. The sum of the terrestrial, marsh, and stream risk drivers was divided by the number of habitat units in which the receptor occurs to determine the overall risk driver index. For example, the mourning dove occurs in both terrestrial and marsh habitats, so the terrestrial risk index was averaged with the marsh risk index to determine the overall risk index, as shown in the table below.

Ecological Receptor	Number of Risk Drivers in all Terrestrial EUs	Terrestrial Risk Index	Number of Risk Drivers in EU 12	Number of Risk Drivers in EU 13	Overall Risk Index
Aquatic invertebrates	--	--	6	6	6.00
Fish	--	--	--	6	6.00
American dipper	--	--	--	6	6.00
Masked shrew	63	5.73	6	--	5.86
Plants	55	5.00	6	--	5.50
Terrestrial invertebrates	50	4.55	5	--	4.77
American kestrel	13	1.18	6	--	3.59
Meadow vole	39	3.55	3	--	3.27

Ecological Receptor	Number of Risk Drivers in all Terrestrial EUs	Terrestrial Risk Index	Number of Risk Drivers in EU 12	Number of Risk Drivers in EU 13	Overall Risk Index
Great blue heron	--	--	3	3	3.00
Mallard	--	--	3	--	3.00
Muskrat	--	--	3	--	3.00
Mink	--	--	2	--	2.00
Mourning dove	7	0.64	2	--	1.32
Red-tailed hawk	4	0.36	0	--	0.18
White-tailed deer	2	0.18	0	--	0.09
Red fox	2	0.18	0	--	0.09
Canada goose	--	--	0	--	0.00

Based on the overall risk index, the greatest risk is to the aquatic receptors (invertebrates, fish, and American dipper). The fish and the dipper are exposed only to the stream habitat, where all six metals pose a risk. Benthic invertebrates are at risk from all six metals in both marsh and stream habitats. At the other extreme of risk, no risk at all to the Canada goose was indicated. The red fox, white-tailed deer, and red-tailed hawk are exposed only minimally to risk. Other receptors are expected to experience intermediate levels of risk.

As discussed in the sections on uncertainty and data gaps (Section 5.0), the risk estimates presented in the BERA are based on the assumption that representative receptors actually occur at the sites and eat the foods that were used to estimate daily doses. However, many of the soil samples were collected in places where the physical condition of the habitat is so poor as to preclude any substantial use by wildlife. For example, small mammals and birds are not likely to spend much time in the bare or sparsely vegetated tailings piles. Actual risk is likely lower than what the BERA predicts because the habitat cannot support a healthy community. Because risk only occurs when the receptor co-occurs with the chemical, much of the risk discussed in the BERA is hypothetical.

In addition to the chemical contamination that may have eliminated some species and disrupted the food web, physical degradation of habitat prevents true exposure from occurring in many areas. Given this scenario, actual impacts to wildlife species may be greater than or less than those predicted based on chemical risk alone.

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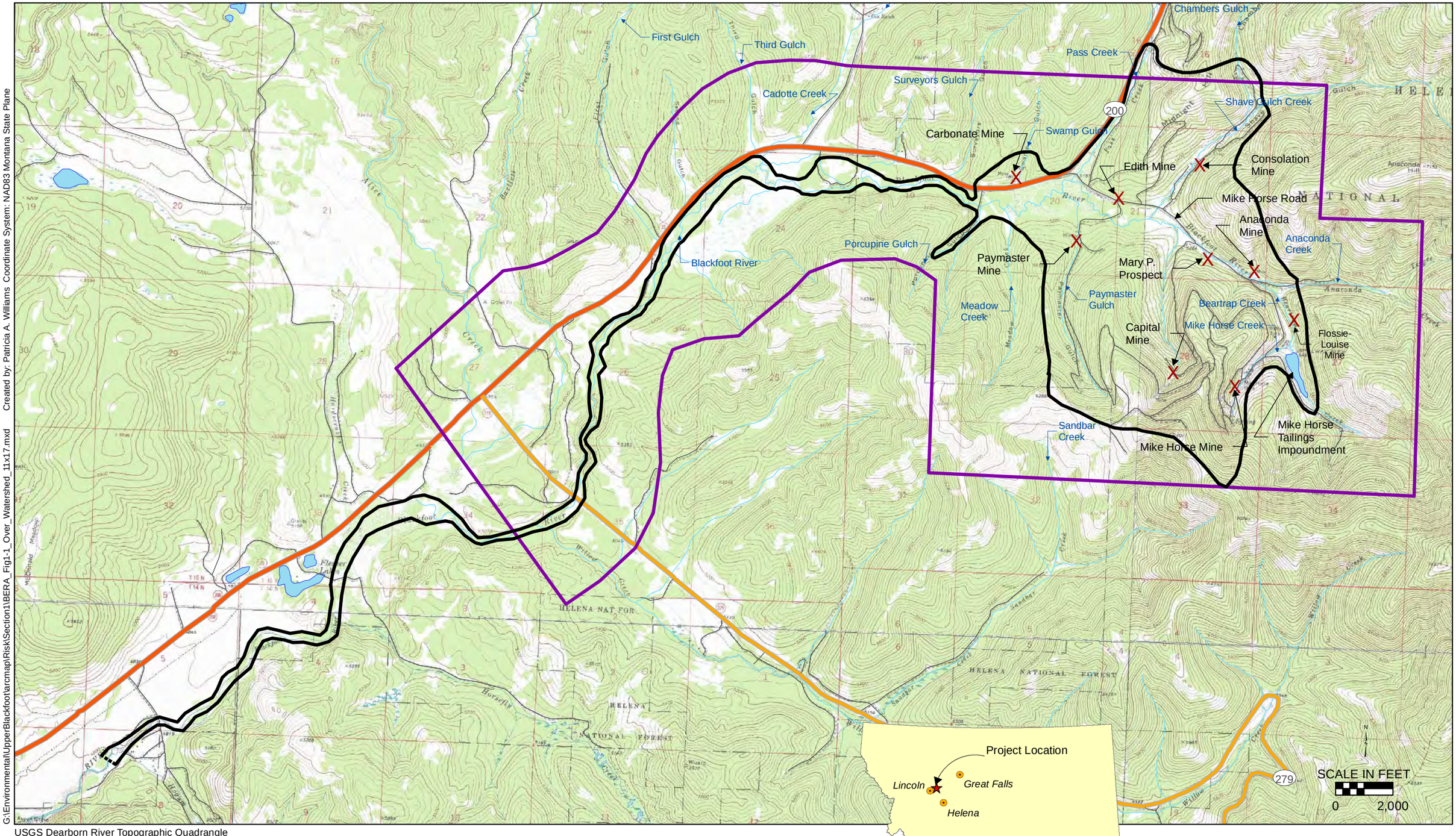
FIGURES



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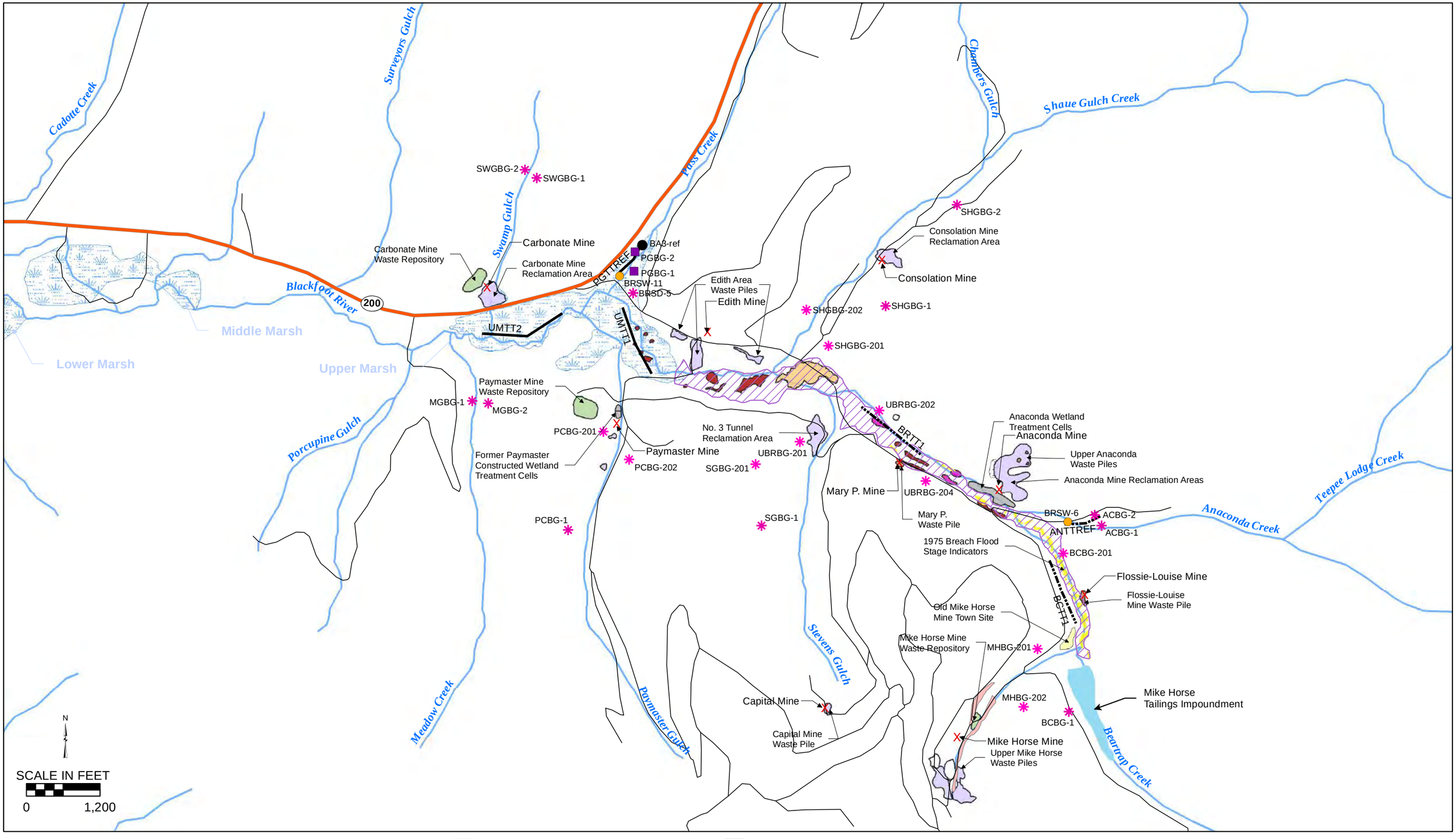
USGS Dearborn River Topographic Quadrangle

X Mines
Estimated Extent of Contamination
West estimated extent of contamination yet to be defined due to metals above sediment screening levels
Study Area Boundary
Highway
Major Road
Local Road
Streams
Lakes

Figure 1-1

Overview of UBMC Watershed

Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex



- Mines
- Reference Soil Samples
- Bioassay Reference Sample
- Stream Reference Surface Water and Sediment Samples
- Marsh Reference Sediment Samples
- Old Mike Horse Mine Town Site
- Estimated Extent of River Floodplain Sediments
- Mike Horse Creek and Repository Area Sampling
- Estimated Extent of Mine Areas (Sampled 2007/2008)
- Unreclaimed Mine Waste Areas (Sampled 2007/2008)
- Mine Waste Areas (Not Sampled)
- 1975 Breach Flood Stage Indicators
- Area of Concentrated Tailings/Mine Waste
- Area of Dispersed Coarse-Grained Tailings
- Area of Dispersed Sandy (Fine) Tailings
- Former Wetland Treatment Cells
- Mine Waste Repository
- Mike Horse Tailings Impoundment
- Streams
- Terrestrial Receptor Transects
- Upper Marsh Receptor Transects
- Marsh/Wetlands Area (Submerged)
- Outcrop/Talus Slope

Figure 1-2

Site Feature Map and Reference Sample Locations

Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex

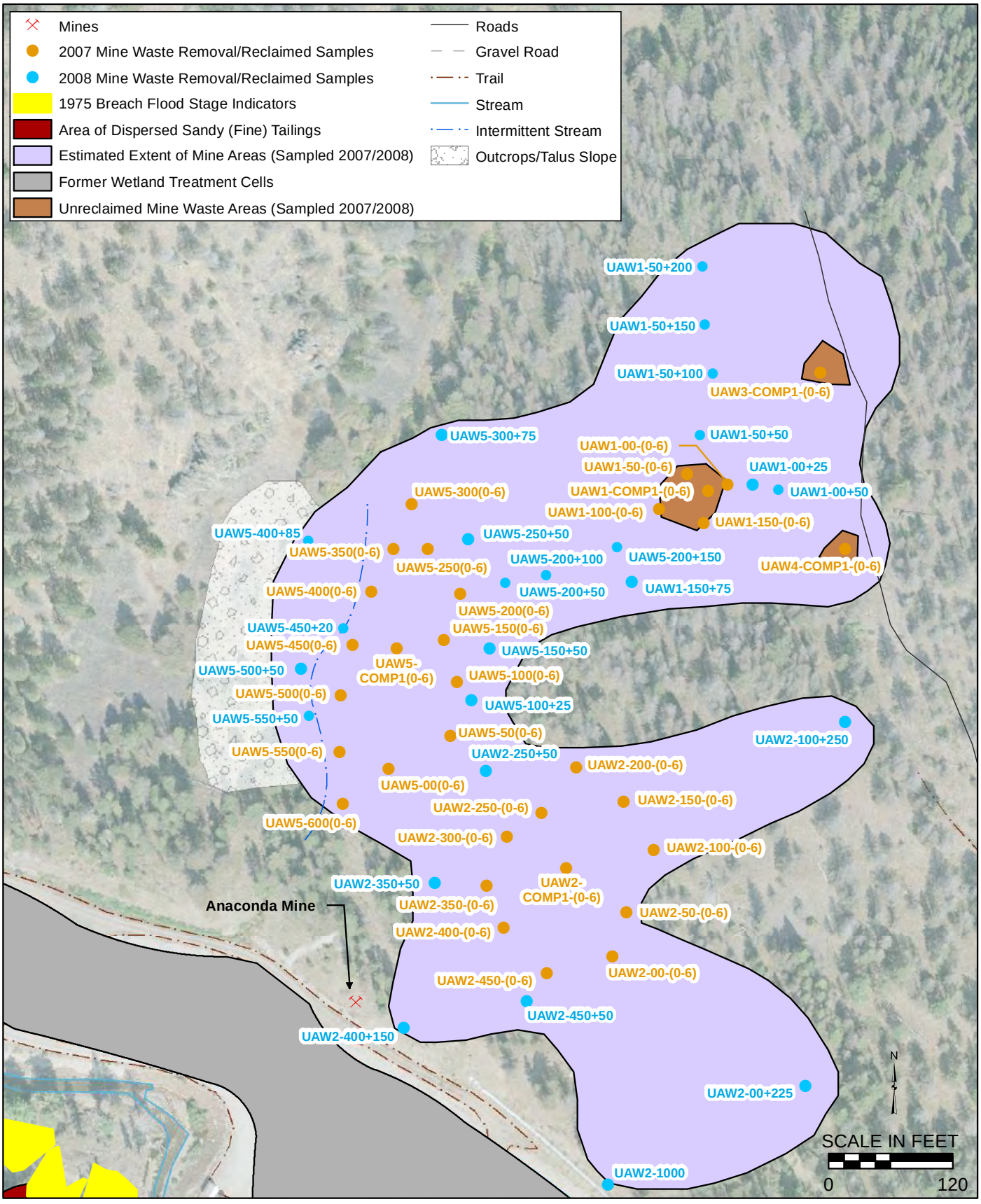


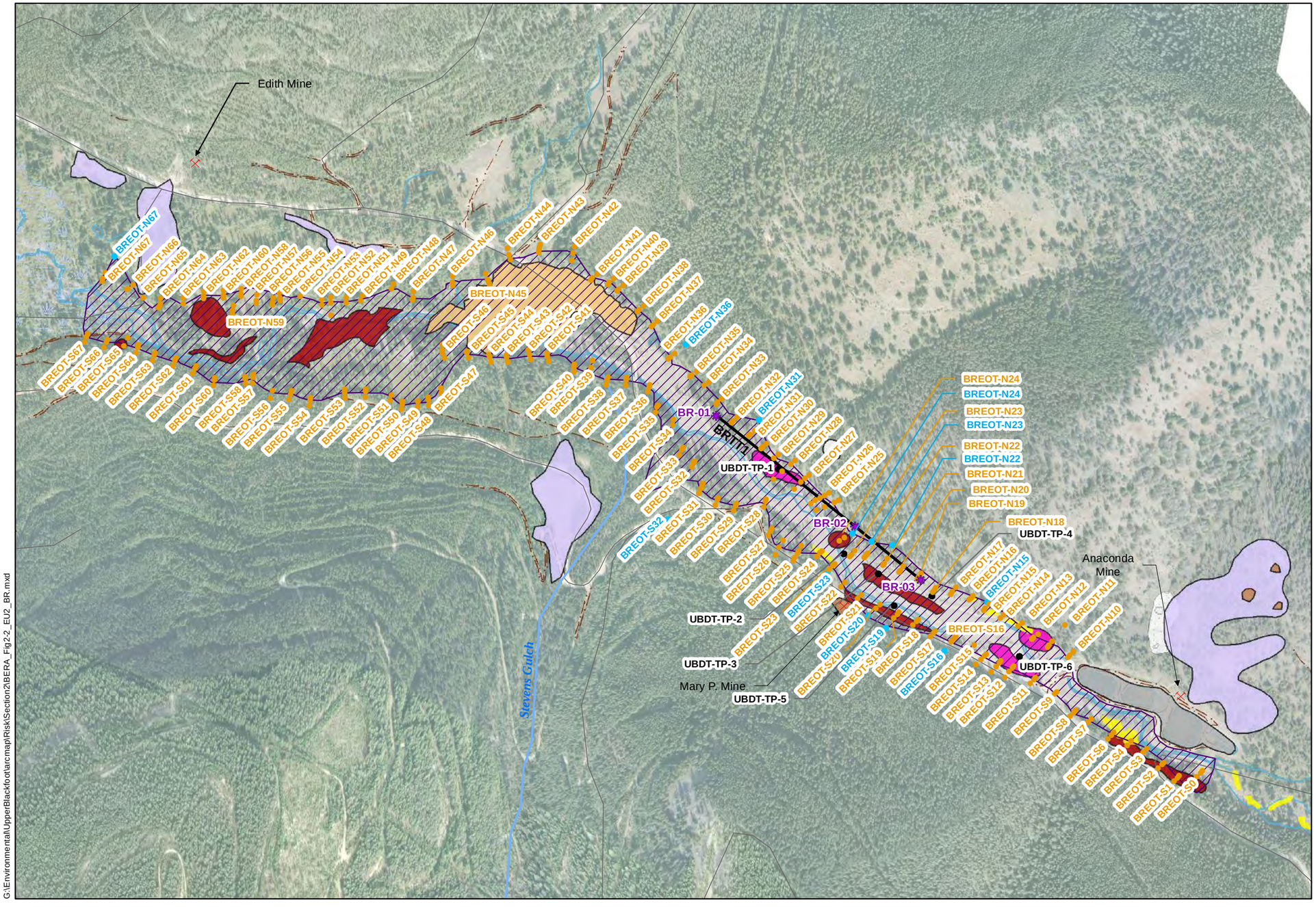
Figure 2-1

Site Features and Sampling Locations

EU 1 - Upper Anaconda Mine Waste Removal Areas and Waste Piles

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex



Mines
UBDT Samples
2007 Mine Waste Removal/Reclaimed Samples
2008 Mine Waste Removal/Reclaimed Samples
2008 Terrestrial Transect Sampling Locations
Terrestrial Receptor Transects
Roads
Gravel Road
Trail
Stream
Estimated Extent of Streamside Impacts Soil Sampling-BR
Outcrops/Talus Slope
Marshes
1975 Breach Flood Stage Indicators
Area of Concentrated Tailings/Mine Waste
Area of Dispersed Coarse-Grained Tailings
Area of Dispersed Sandy (Fine) Tailings
Estimated Extent of Mine Areas (Sampled 2007/2008)
Former Wetland Treatment Cells
Mine Waste Areas (Not Sampled)
Mine Waste Repository
Unreclaimed Mine Waste Areas (Sampled 2007/2008)

Note:
Three samples were collected at most sampling stations; one sample at the edge of the tailings, one sample within the tailings area, and one sample outside of the tailings area,

N

SCALE IN FEET
0 500

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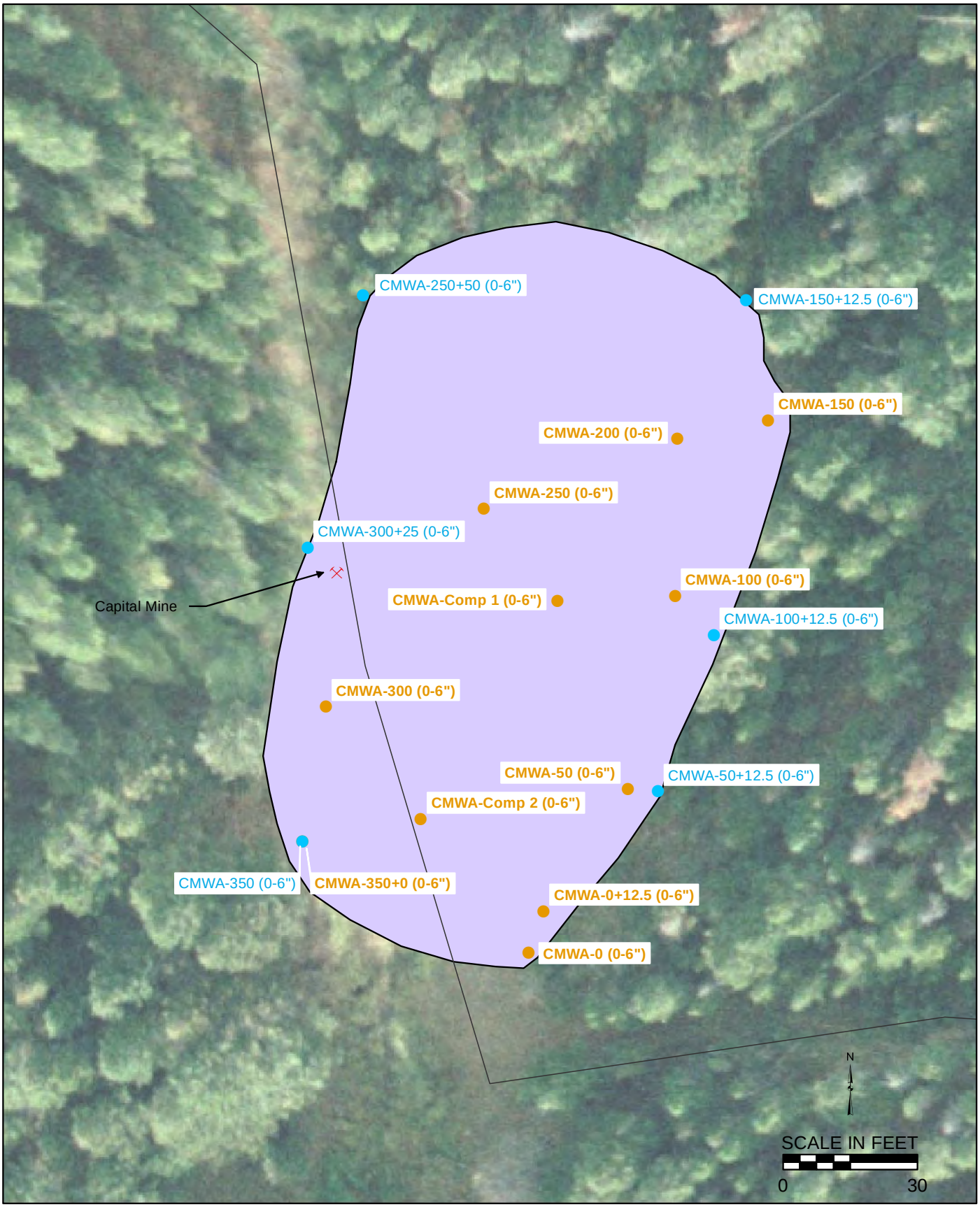
Figure 2-2

Site Features and Sample Locations

EU 2 - Blackfoot River Dispersed Tailings Associated with EE/CA Removal Action Area and Overbank Deposits

Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex



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Mines
2007 Mine Waste Removal/Reclaimed Samples
2008 Mine Waste Removal/Reclaimed Samples
Roads
Estimated Extent of Mine Areas (Sampled 2007/2008)

Figure 2-3
Site Features and Sample Locations
EU 3 - Capital Mine Waste Area
Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex

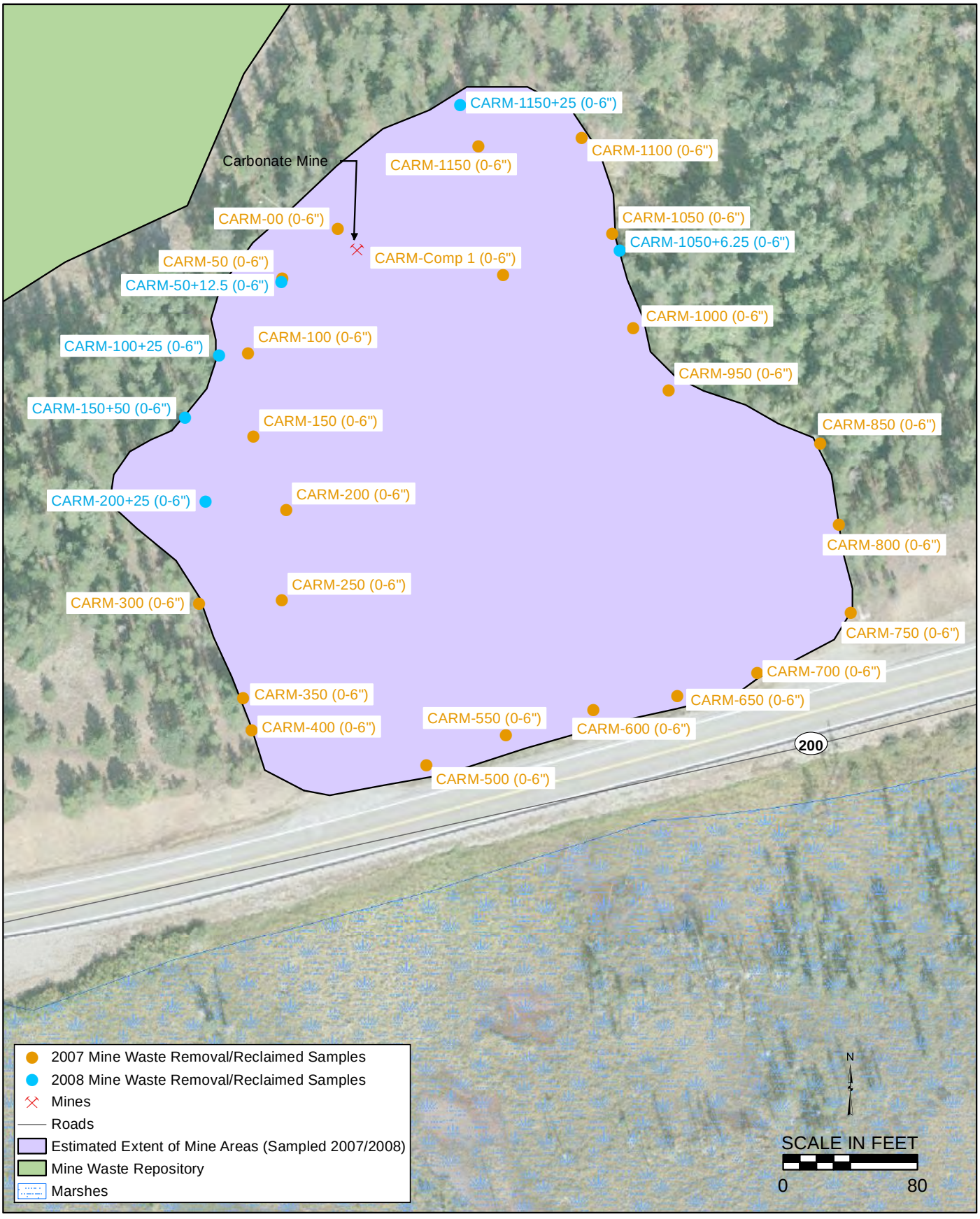

Figure 2-4

Site Features and Sample Locations

EU 4 - Carbonate Mine Waste Removal Area

Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex

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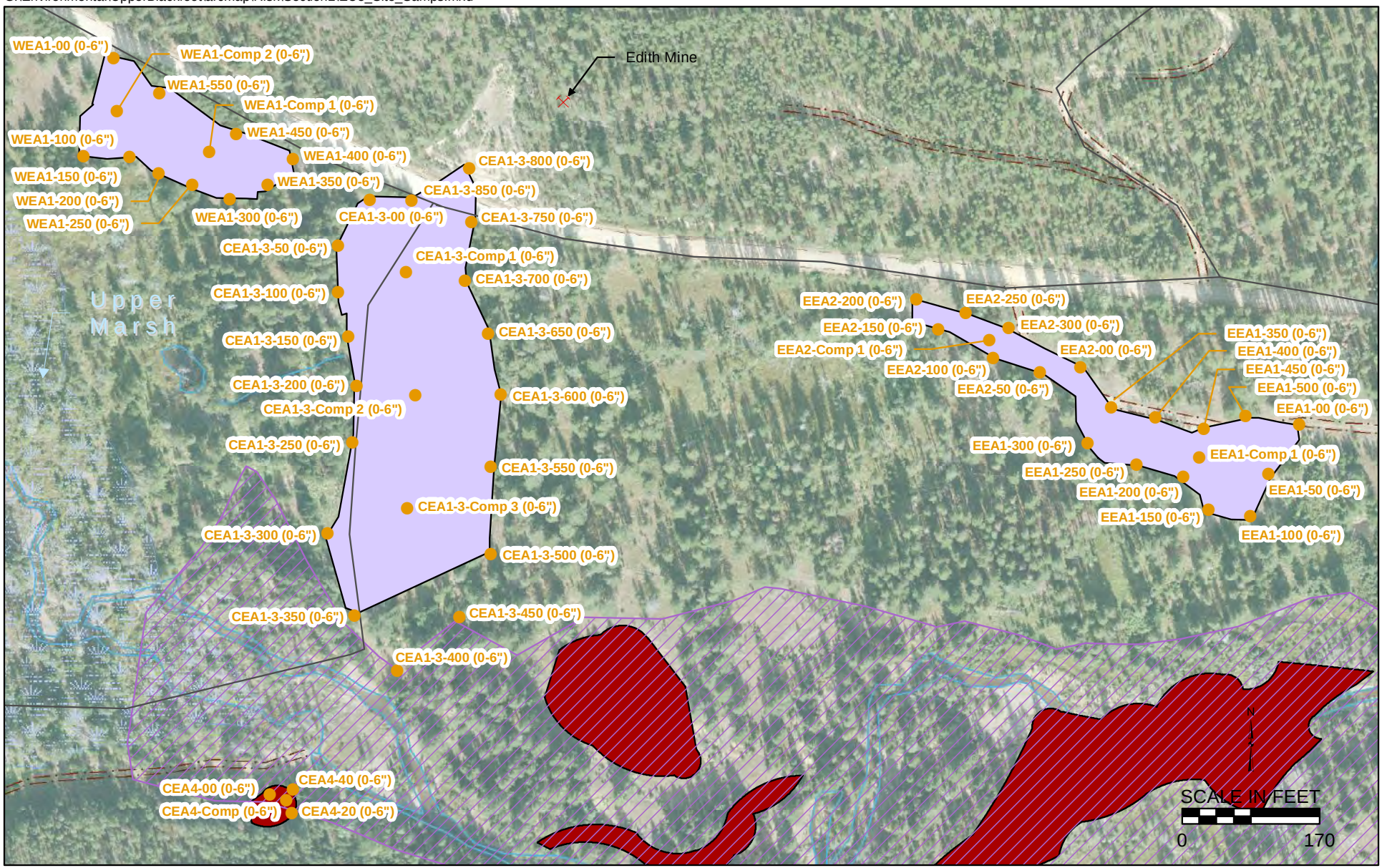


- 2007 Mine Waste Removal/Reclaimed Samples
- Mines
- Area of Dispersed Sandy (Fine) Tailings
- Estimated Extent of Mine Areas (Sampled 2007/2008)
- Roads
- Gravel Road
- Trail
- Stream
- Marshes

Figure 2-5
Site Features and Sample Locations
EU 5 - Edith Mine Waste Areas
Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex

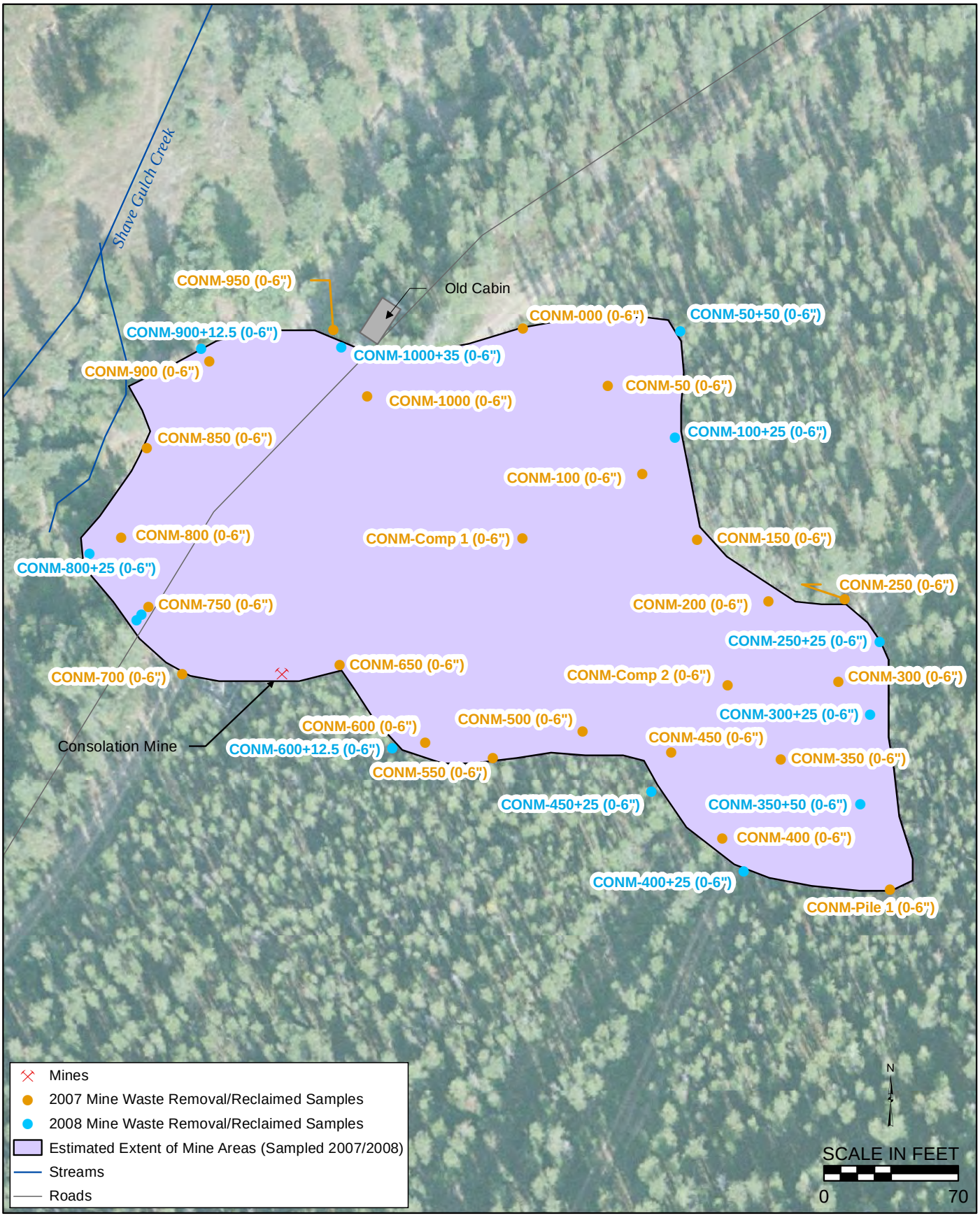


Figure 2-6

Site Features and Sample Locations

EU 6 - Consolation Mine Waste Area

Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex

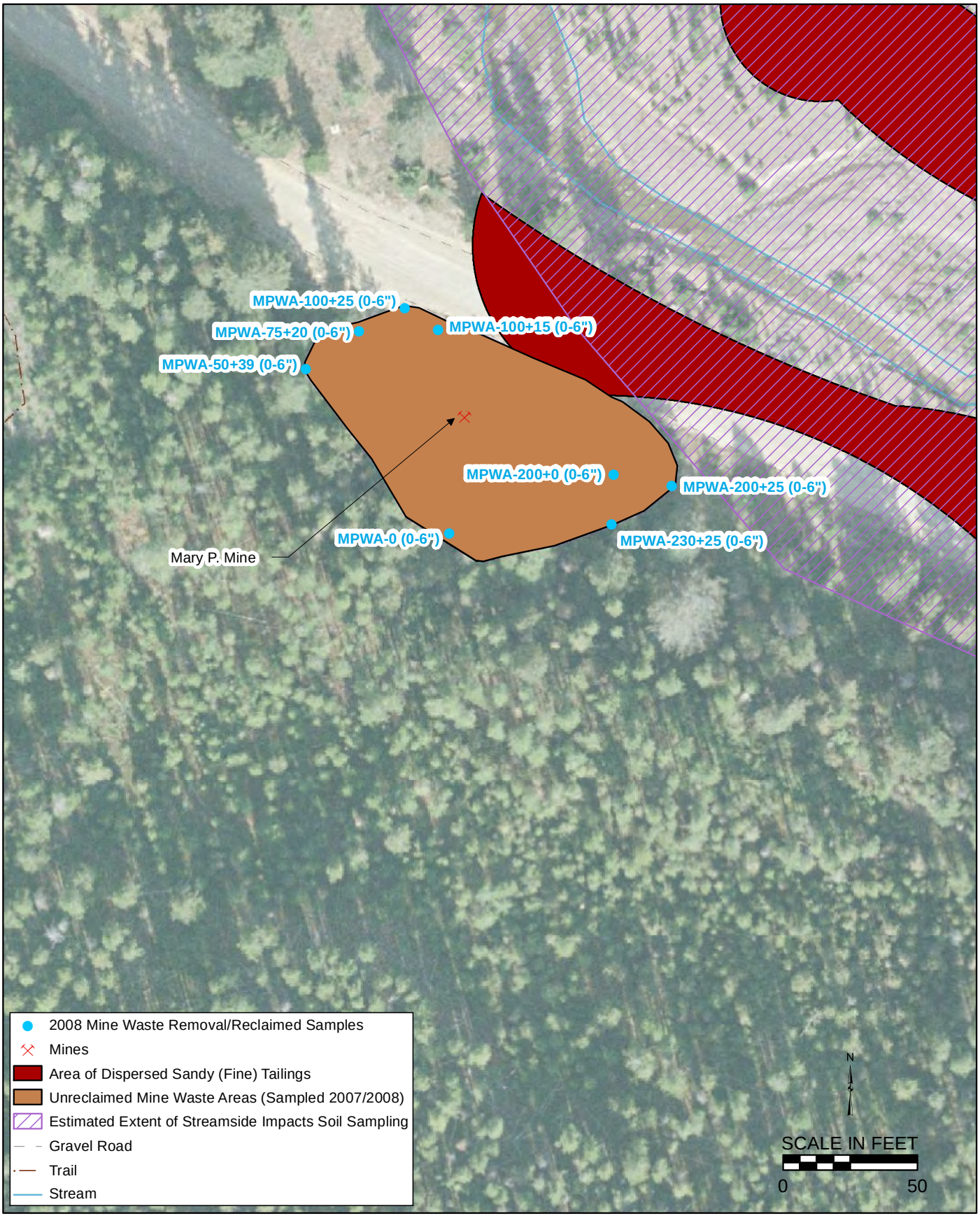
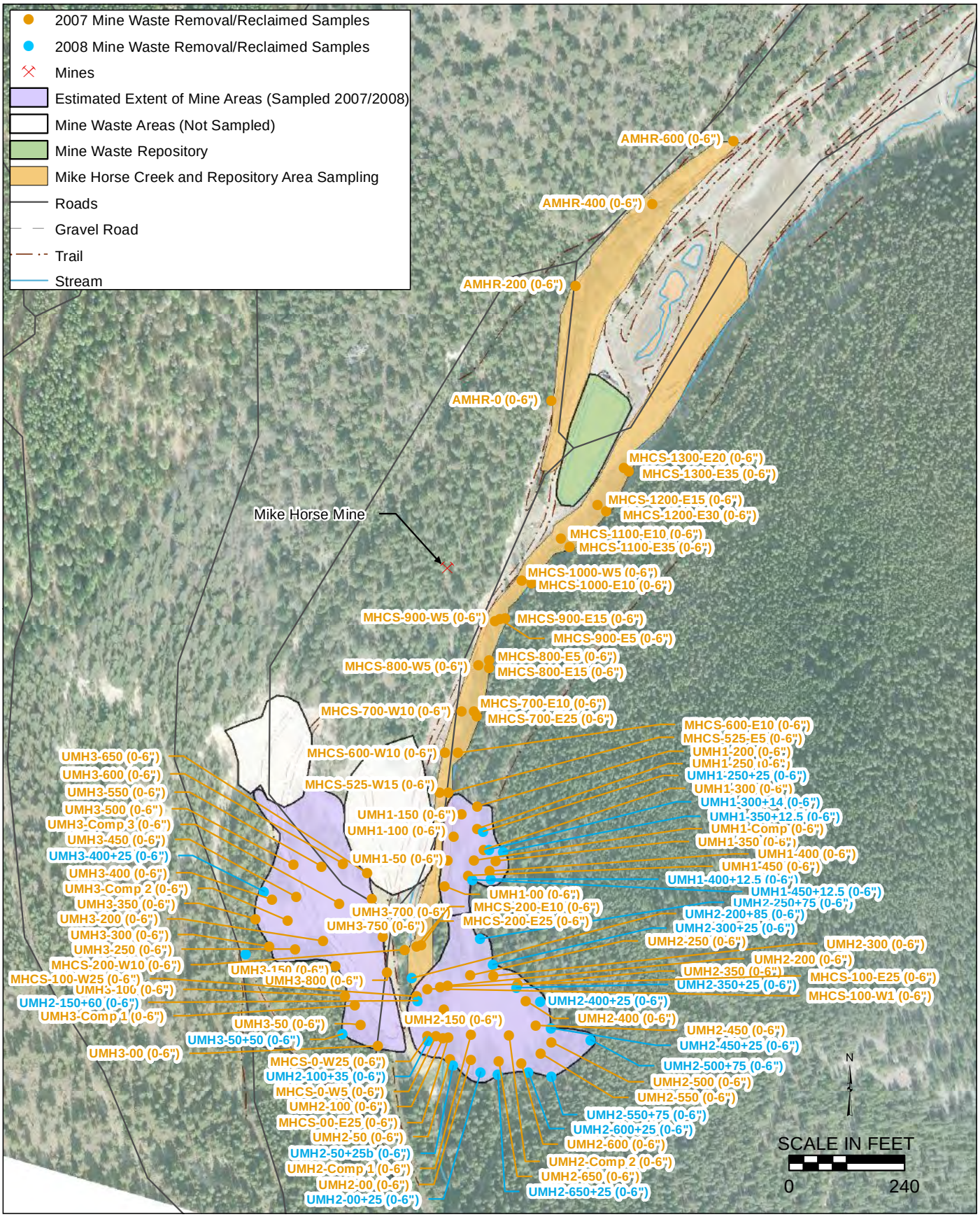


Figure 2-7

Site Features and Sample Locations

EU 7 - Mary P. Mine Waste Pile

Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex



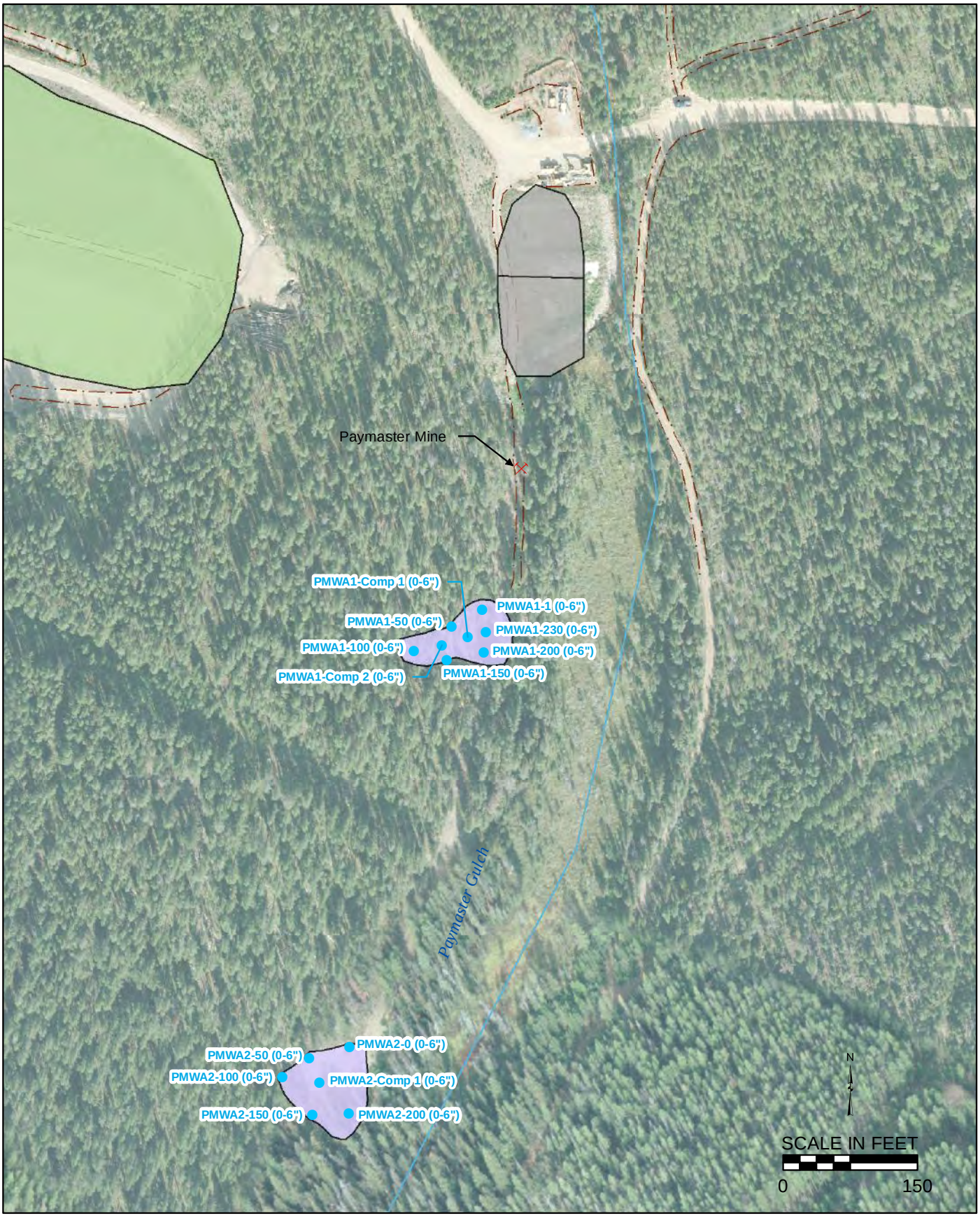
Note: Mike Horse Mine Town Site is located downstream of the northern boundary of EU 8, at the confluence of Mike Horse Creek and Beartrap Creek (Figure 1-2).

Figure 2-8

Site Features and Sample Locations

EU 8 - Mike Horse Mine Waste Piles

Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex



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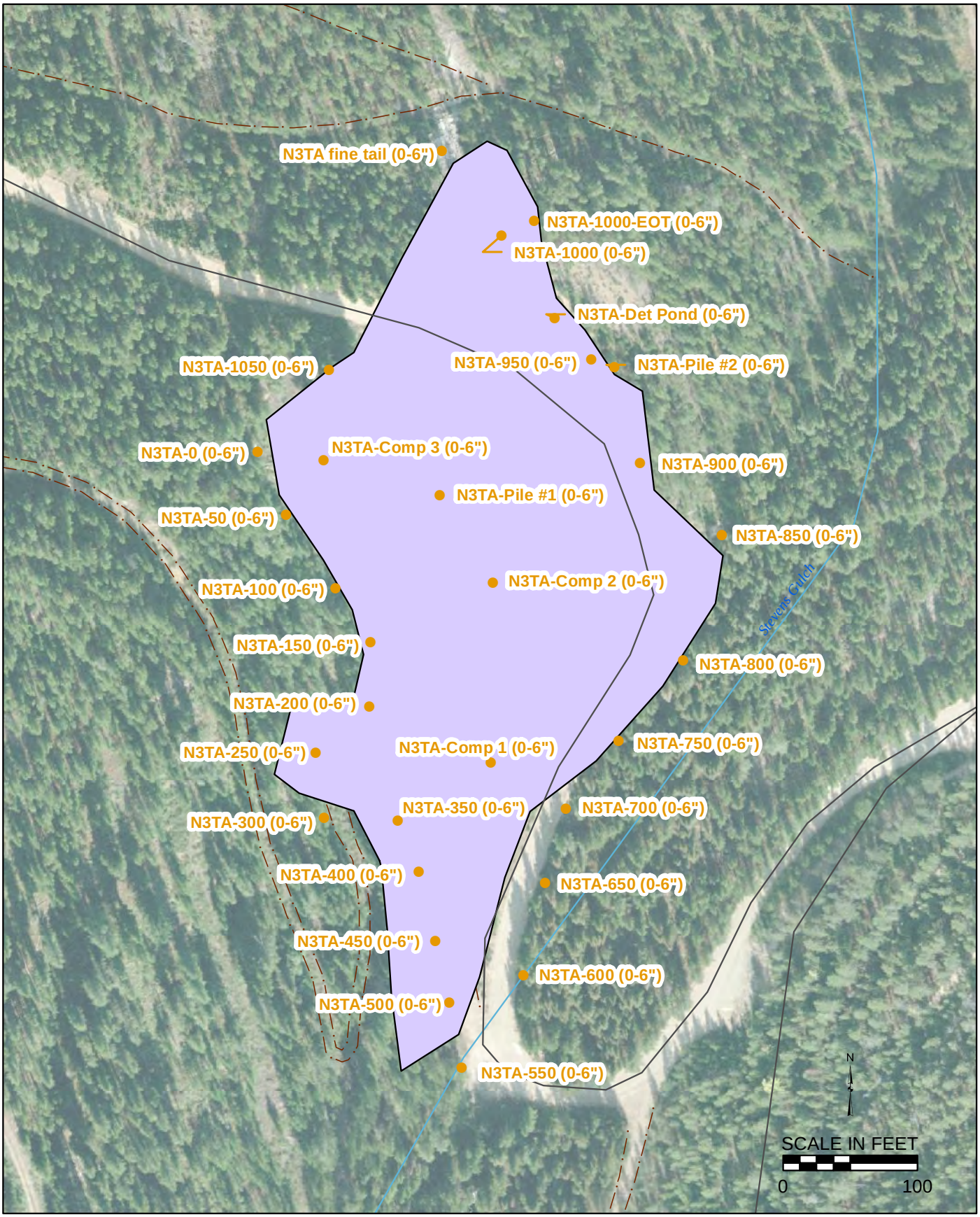
Mines
Trail
Streams
2008 Mine Waste Removal/Reclaimed Samples
Estimated Extent of Mine Areas (Sampled 2007/2008)
Former Wetland Treatment Cells
Mine Waste Repository

Figure 2-9

Site Features and Sample Locations

EU 9 - Paymaster Mine Waste Areas

Baseline Human Health Risk Assessment
Upper Blackfoot Mining Complex



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- 2007 Mine Waste Removal/Reclaimed Samples
- Estimated Extent of Mine Areas (Sampled 2007/2008)
- Roads
- Trail
- Stream

Figure 2-10

Site Features and Sample Locations

EU 10 - Number 3 Tunnel Waste Area

Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex

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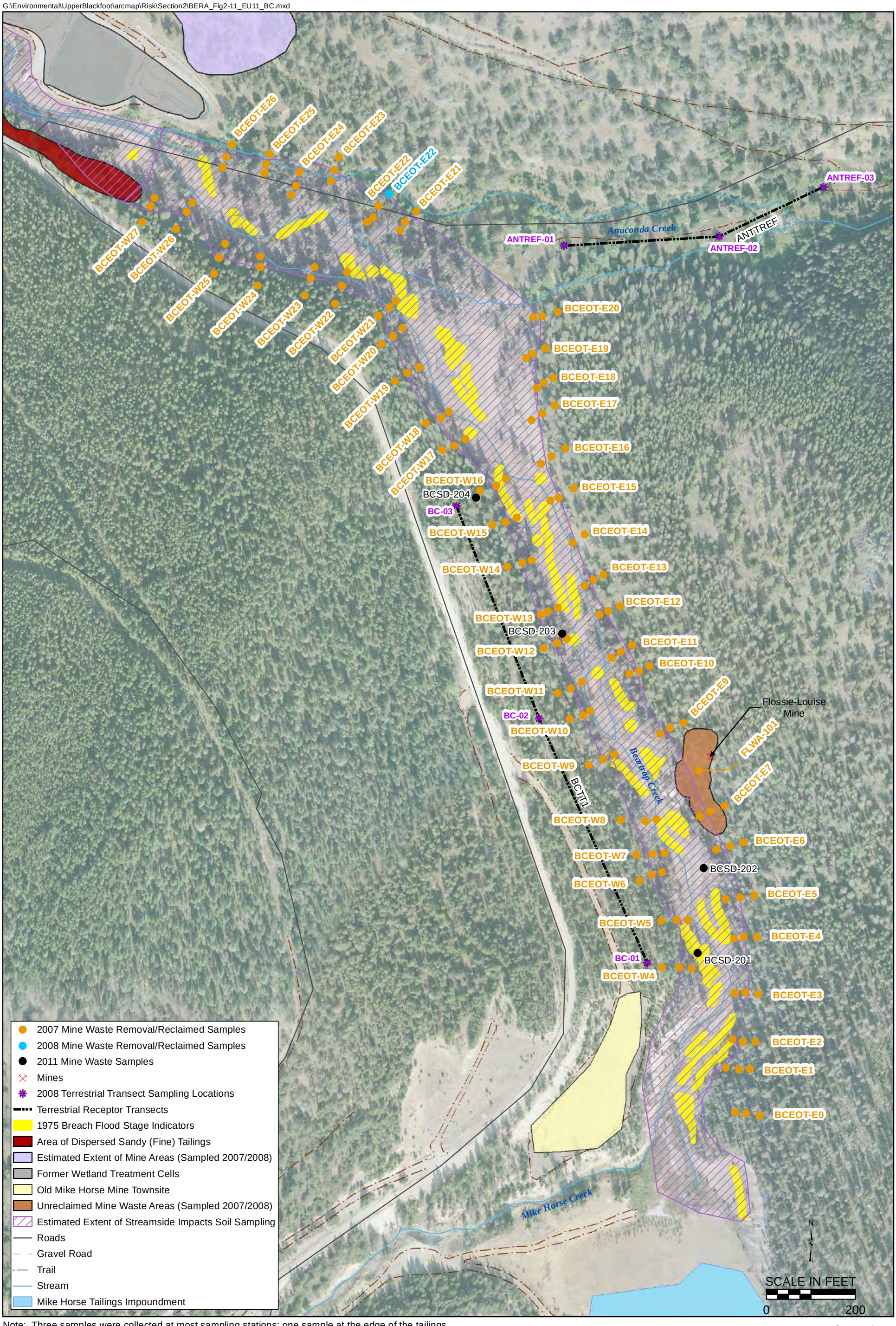


Note: Three samples were collected at most sampling stations; one sample at the edge of the tailings, one sample within the tailings area, and one sample outside of the tailings area.

Figure 2-11
Site Features and Sample Locations
EU 11 - Beartrap Creek Dispersed Tailings Deposits Associated with EE/CA Removal Action Area and Overbank Tailings Deposits and Flossie Louise Mine Waste Areas
Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex

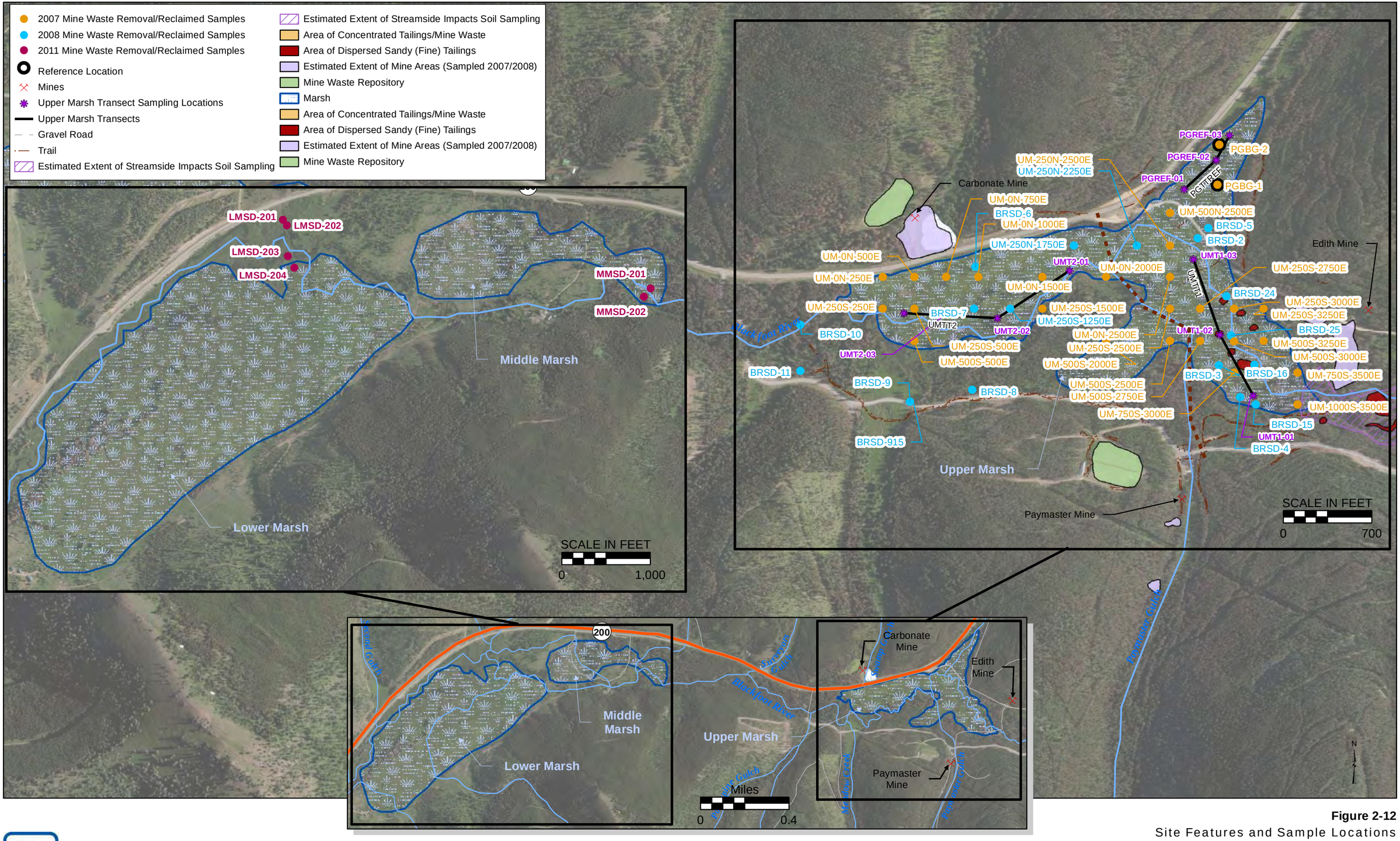


Figure 2-12
Site Features and Sample Locations
EU 12 - Marsh
Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex

Macroinvertebrate Community Sampling Location (insufficient number of individuals collected)
Macroinvertebrate Community Sampling Location
Benthic Invertebrate Tissue Sampling Location
Sediment Sampling Locations
Surface Water Sampling Locations
Reference Location
2011 Surface Water Sampling Locations
Mines
Roads
Streams
EU 13 ï Stream
Estimated Extent of Mine Areas (Sampled 2007/2008)
Mine Waste Areas (Not Sampled)
Marshes
Mike Horse Tailings Impoundment
Estimated Extent of Contamination
West estimated extent of contamination yet to be defined due to metals above sediment screening levels

Middle Marsh
Upper Marsh
Lower Marsh
Main Map
Inset Map Bottom Left

Locations collected upgradient of Highway 279 were sampled in 2007; locations collected downgradient of Highway 279 were sampled in 2011,

SCALE IN FEET
0 2,200
SCALE IN FEET
0 3,300

N

Figure 2-13A
Site Features and Sample Locations
EU 13 (2007 and 2011 - Low Flow Conditions) - Stream

Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex

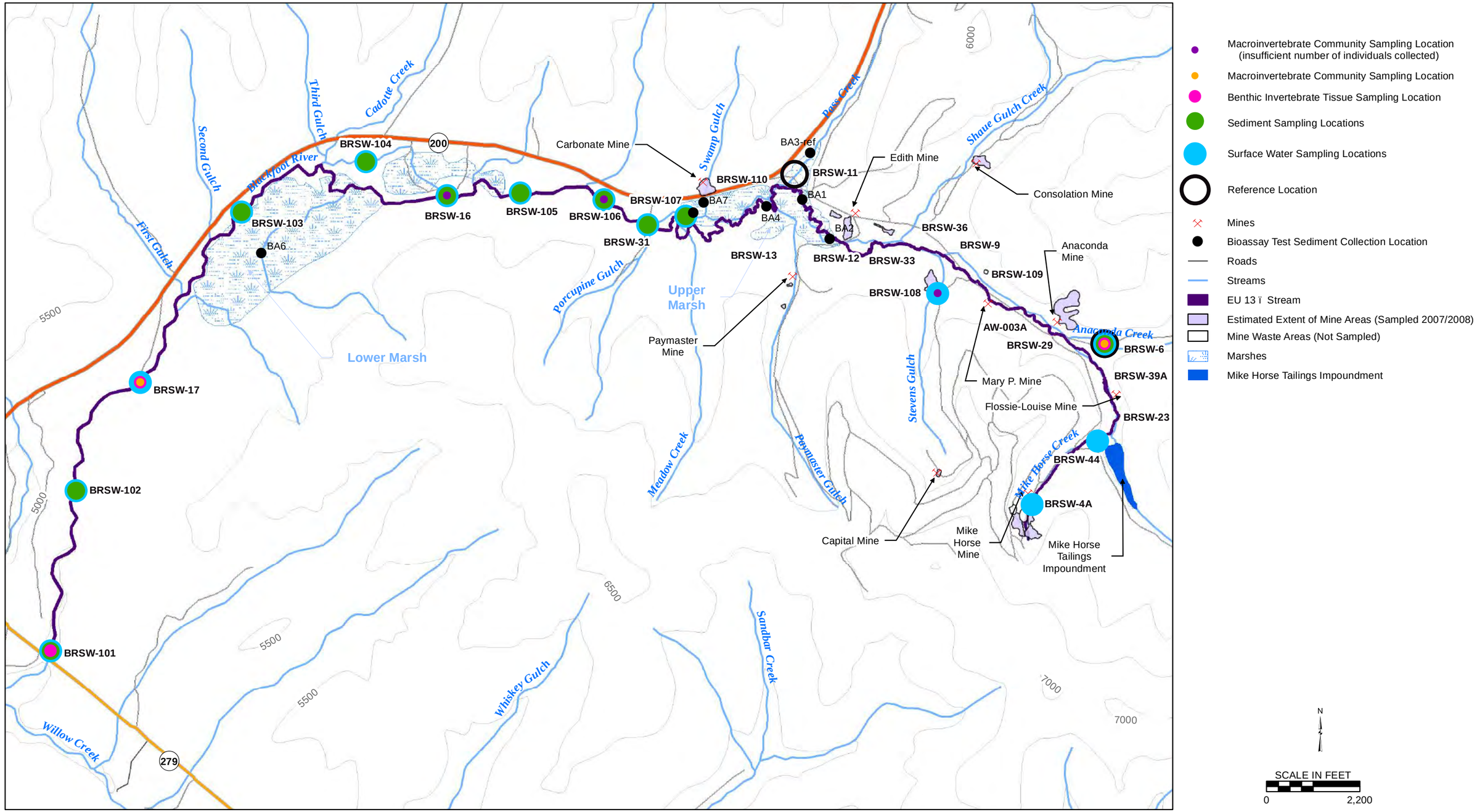
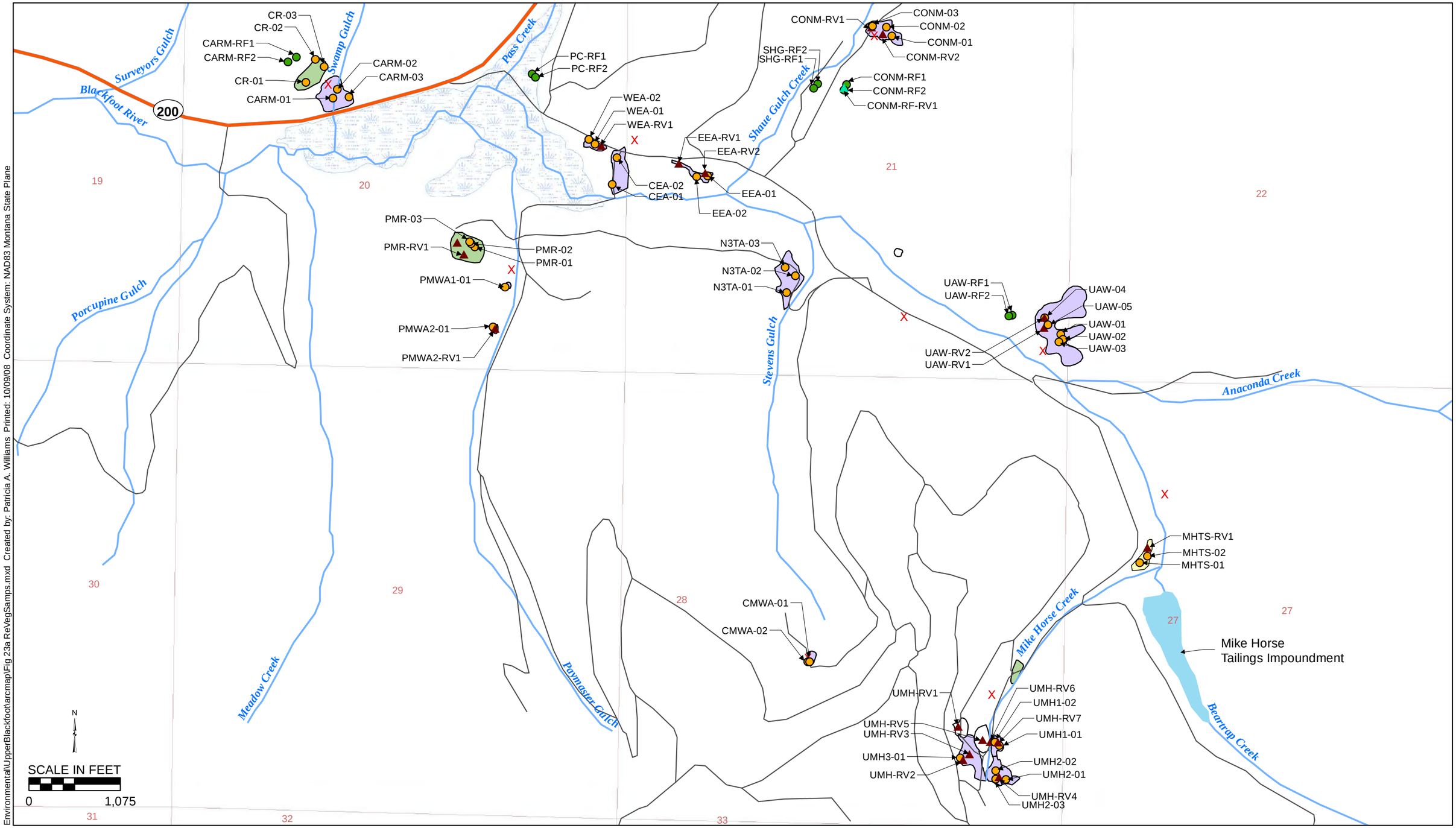


Figure 2-13B

Site Features and Sample Locations

EU 13 (2008 - High Flow Conditions) - Stream

Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex



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2008 Reclamation Sample Points

- Cover Transect
- Cover Reference Transect
- Reclamation Soil Sample
- Reclamation Reference Soil Sample

- Estimated Extent of Mine Areas (Sampled 2007/2008)
- Mine Waste Areas (Not Sampled)
- Mine Waste Repository
- Old Mike Horse Mine Townsite

- Streams
- Marshes
- Mike Horse Tailings Impoundment

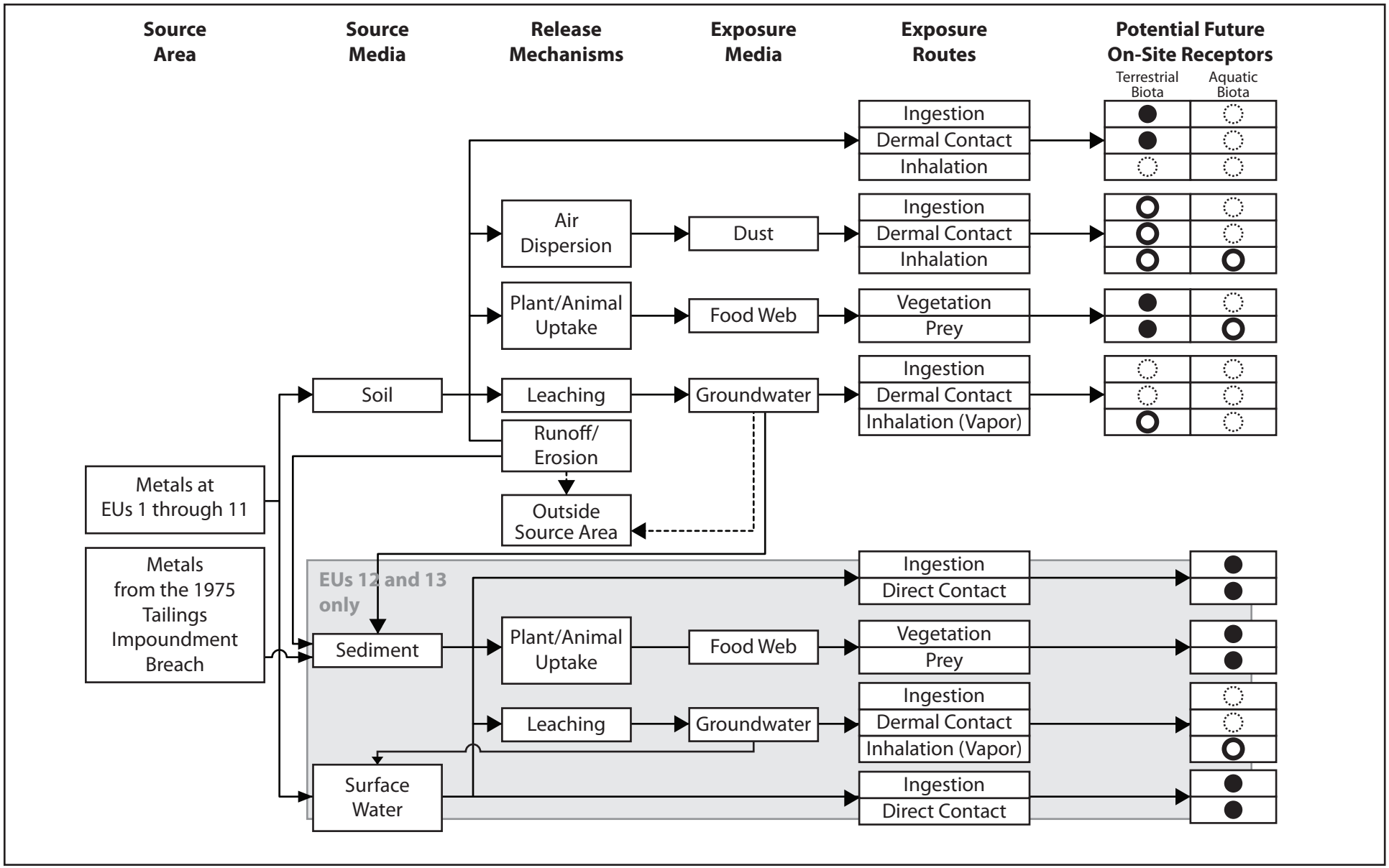
- X Mines
- Local Roads
- State Highway
- Sections

Figure 2-14

Revegetation Sample Points

Remedial Investigation

Upper Blackfoot Mining Complex
Baseline Ecological Risk Assessment



Notes:

- ● Complete Pathway; quantitatively evaluated
- ○ Potentially Complete Pathway; not evaluated
- ◌ Incomplete Pathway; not evaluated

Figure 2-15

Conceptual Site Model of Exposure Routes and Potential Ecological Receptors

Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex

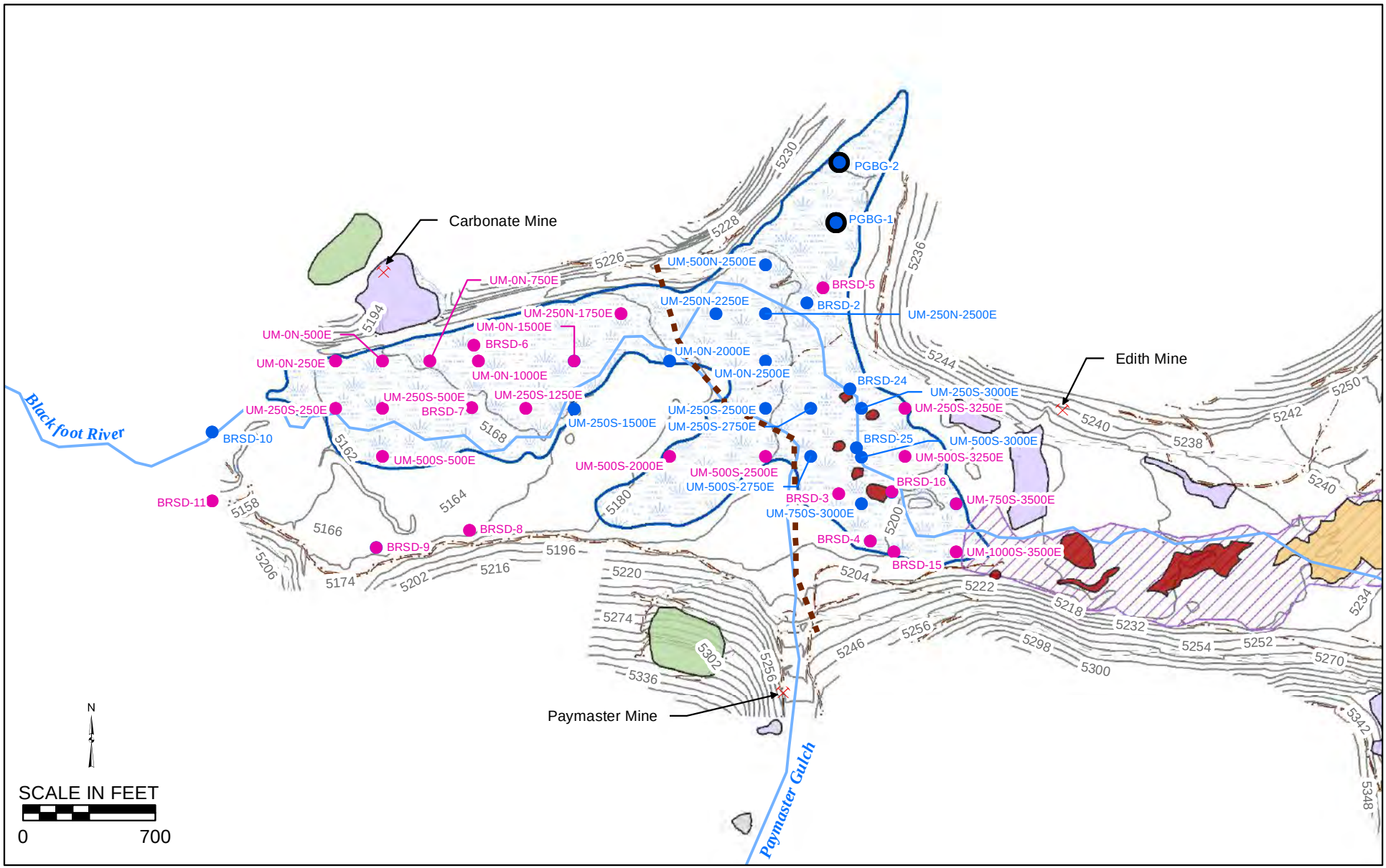


Figure 2-16A
pH Levels in Sediment Samples
EU 12 - Upper Marsh Portion
Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex

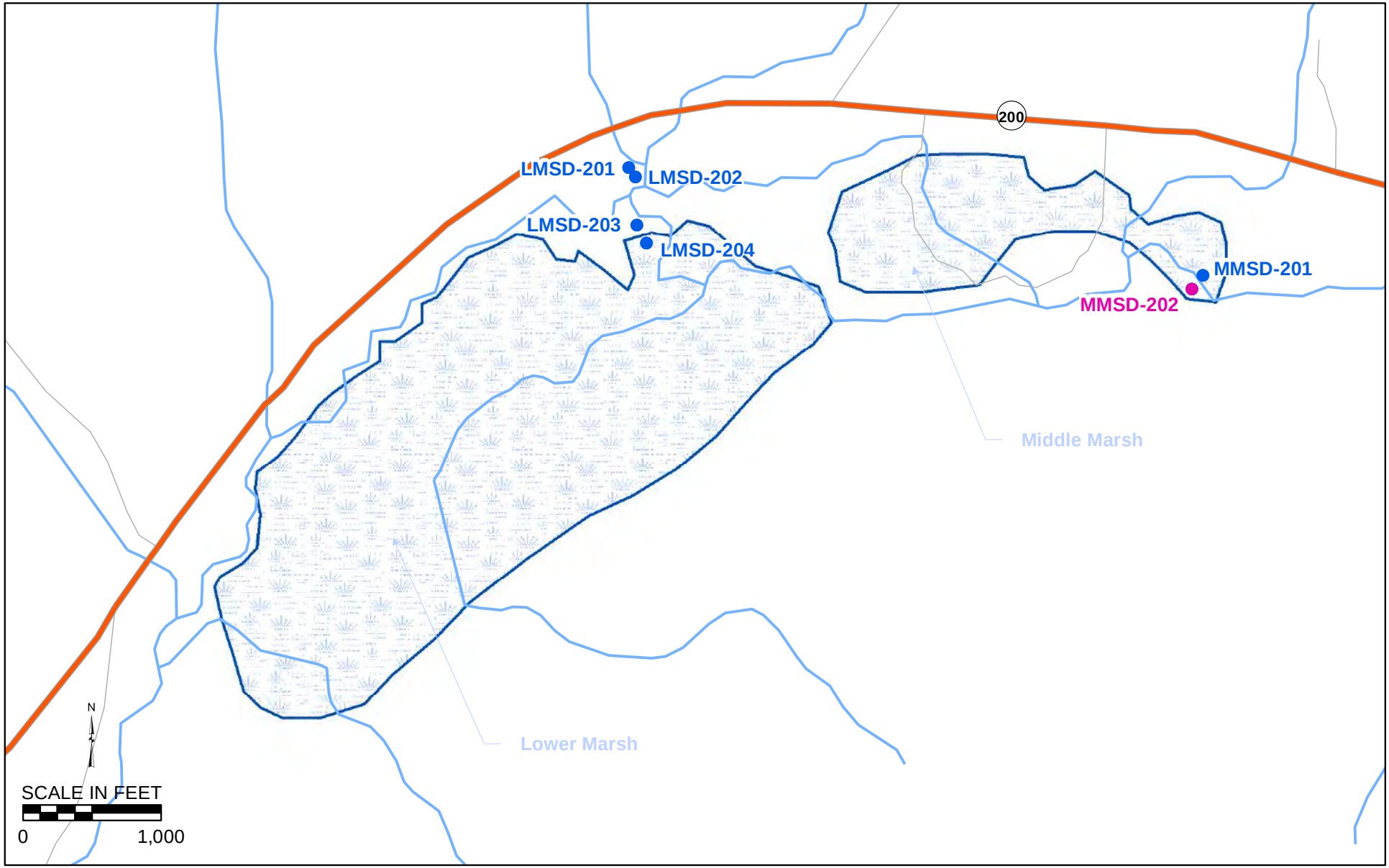
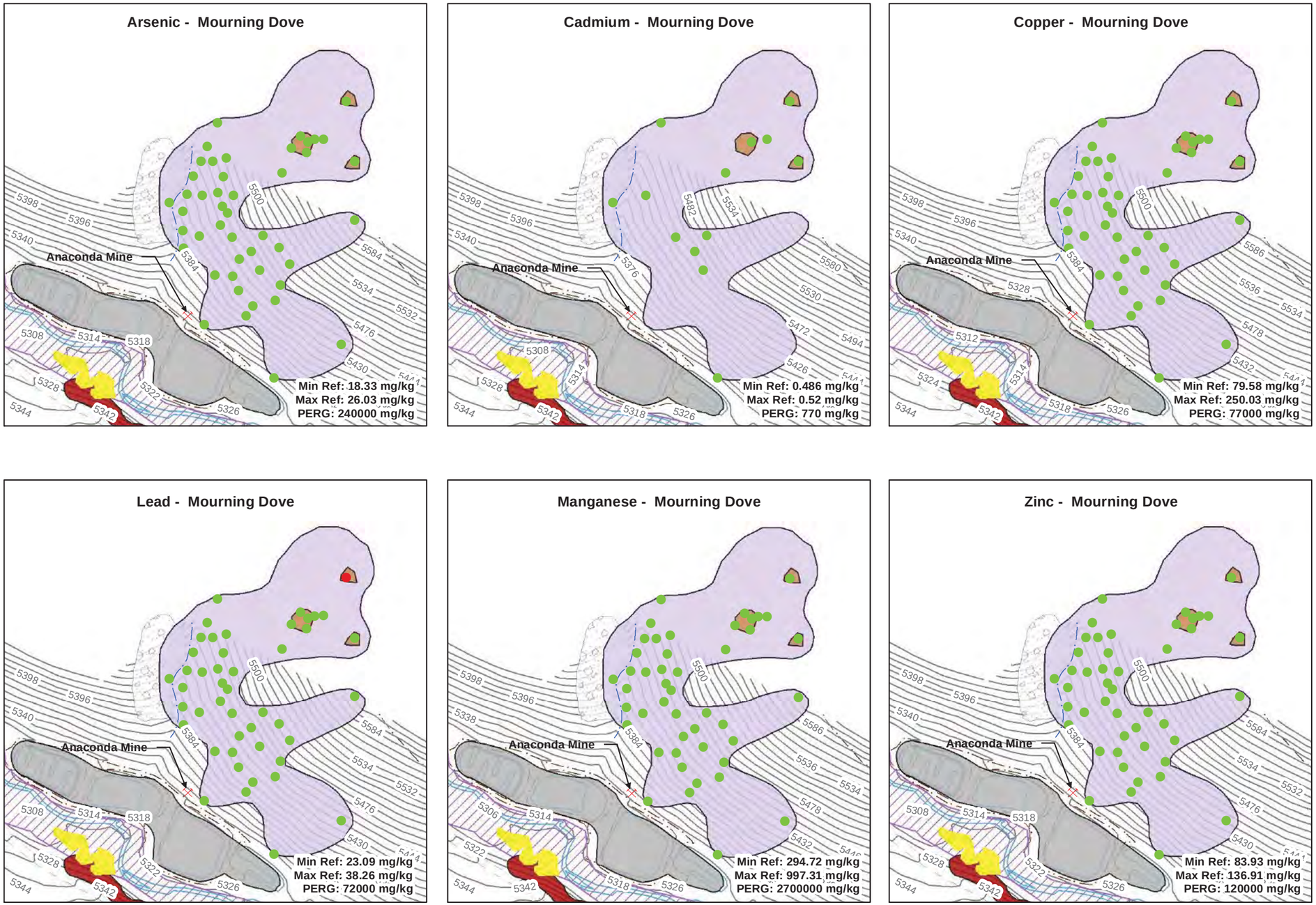


Figure 2-16B
pH Levels in Sediment Samples
EU 12 - Lower and Middle Marsh Portion
Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex



- Result < PERG (NO RISK)
- Result > PERG but < Maximum Reference Concentration (POTENTIAL RISK, BUT NOT SITE-RELATED)
- Result > PERG and Maximum Reference Concentration (SITE-RELATED RISK)
- Mines
- Topographic Contours
- Gravel Road
- Trail
- Stream
- Intermittent Stream
- Estimated Extent of Streamside Impacts Soil Sampling
- 1975 Breach Flood Stage Indicators
- Area of Dispersed Sandy (Fine) Tailings
- Estimated Extent of Mine Areas (Sampled 2007/2008)
- Former Wetland Treatment Cells
- Unreclaimed Mine Waste Areas (Sampled 2007/2008)
- Outcrops/Talus Slope

EU	Exposure unit
mg/kg	Milligram per kilogram
Max Ref	Maximum Reference Concentration
Min Ref	Minimum Reference Concentration
PERG	Preliminary Ecological Remediation Goal
XRF 10	X-ray fluorescence measurements on a sample that had been dried and sieved through a #10-mesh screen

Notes:

A PERG cannot be less than the minimum reference concentration. In cases where the calculated PERG was lower than the minimum reference concentration, the PERG was set equal to the minimum reference concentration.

XRF 10 concentrations in the top 6 inches of soil at each sampling location were compared with PERGs and reference concentrations.

One-half the detection limit was substituted for non-detect results.

No XRF 10 results were available for cadmium; analytical laboratory data were substituted.

PERG calculations are presented in Appendix E.

N

SCALE IN FEET

0 300

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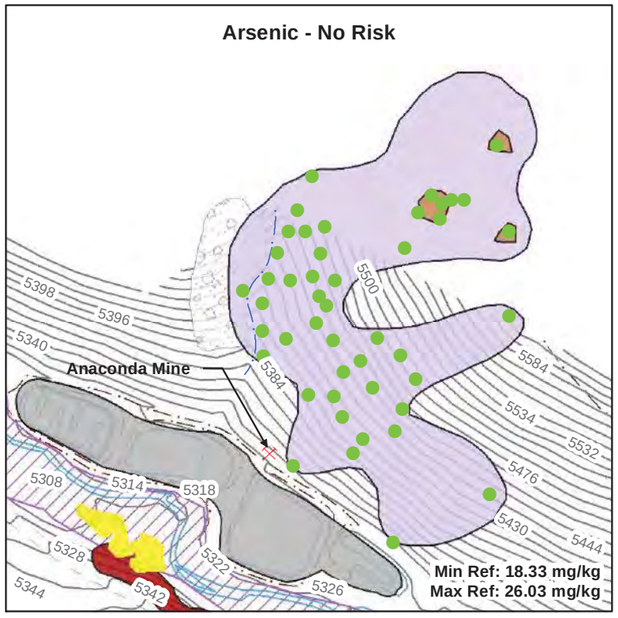
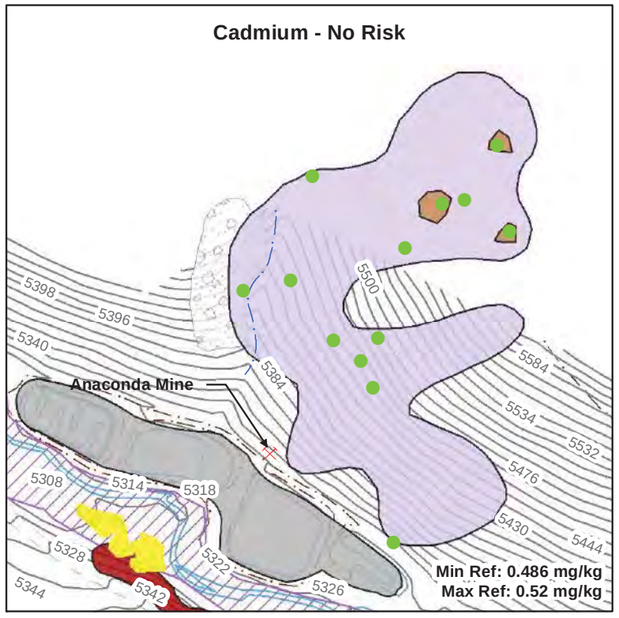
Figure 6-1A

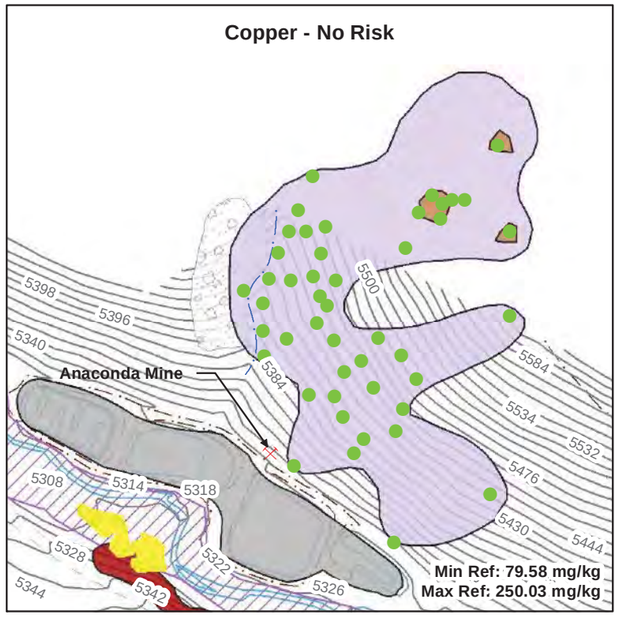
Comparison of Site Concentrations with Preliminary Ecological Remediation Goals and Reference Site Concentrations for the Mourning Dove

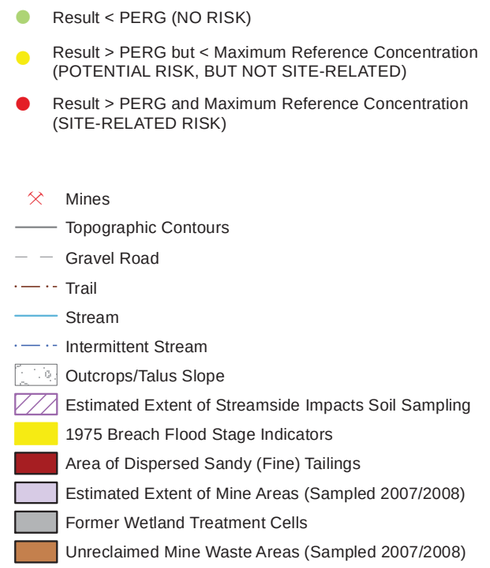
EU 1 - Upper Anaconda Mine Waste Removal Areas and Waste Piles

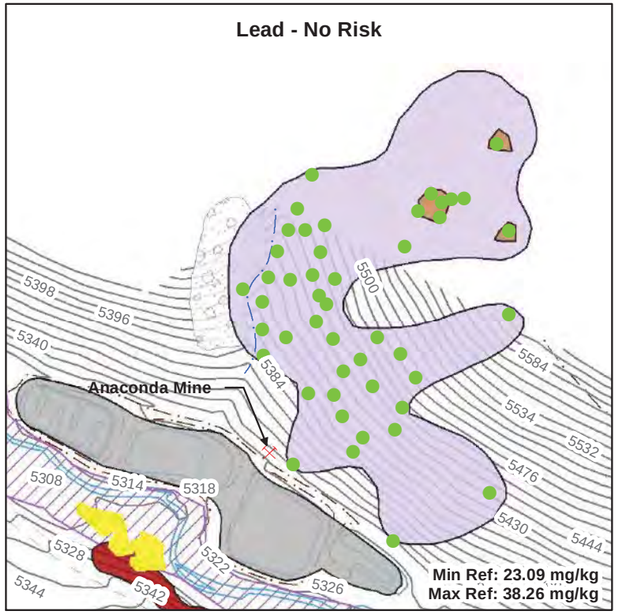
Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex

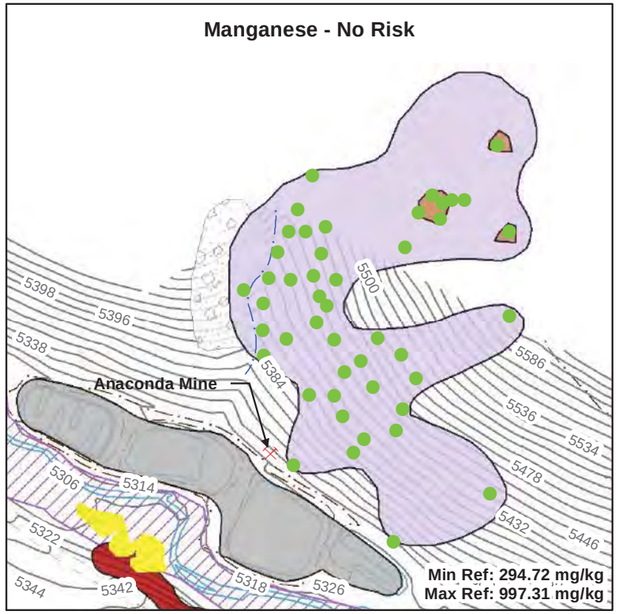


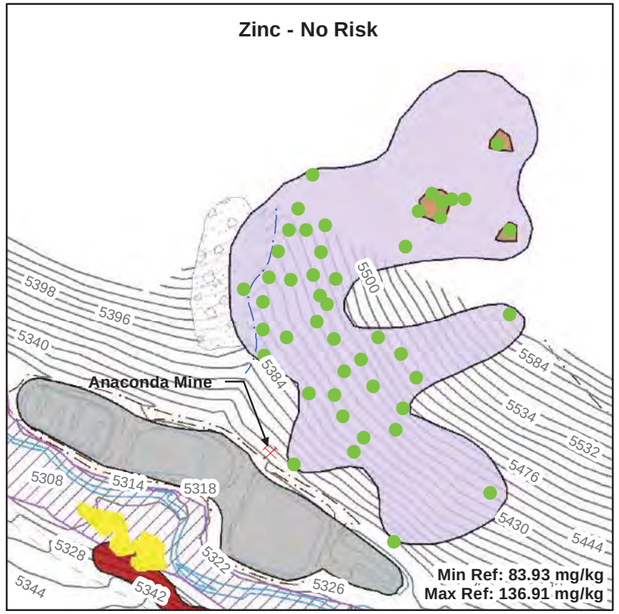












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EU Exposure unit
mg/kg Milligram per kilogram
Max Ref Maximum Reference Concentration
Min Ref Minimum Reference Concentration
PERG Preliminary Ecological Remediation Goal
XRF 10 X-ray fluorescence measurements on a sample that had been dried and sieved through a #10-mesh screen

Notes:

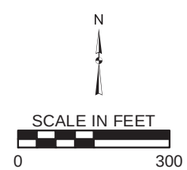
A PERG cannot be less than the minimum reference concentration. In cases where the calculated PERG was lower than the minimum reference concentration, the PERG was set equal to the minimum reference concentration.

XRF 10 concentrations in the top 6 inches of soil at each sampling location were compared with PERGs and reference concentrations.

One-half the detection limit was substituted for non-detect results.

No XRF 10 results were available for cadmium; analytical laboratory data were substituted.

PERG calculations are presented in Appendix E.

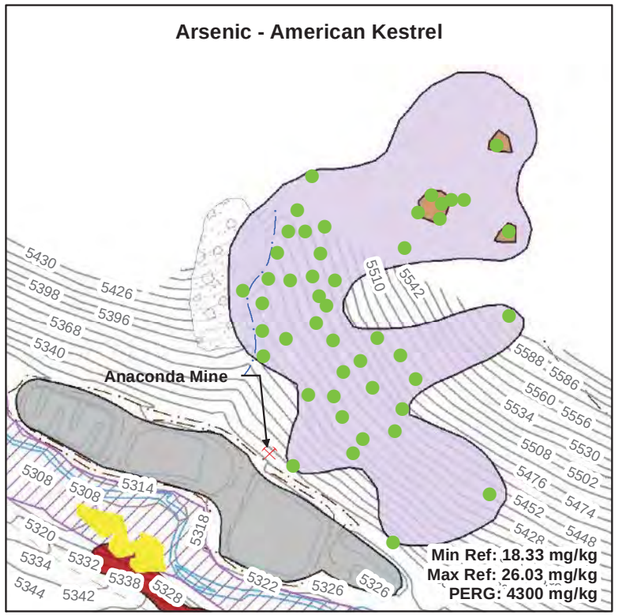


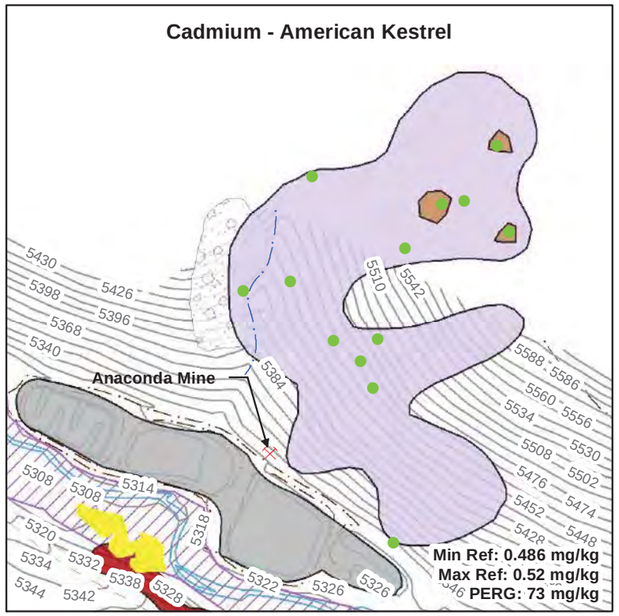
	PERG (mg/kg)					
Ecological Receptor	**Arsenic**	**Cadmium**	**Copper**	**Lead**	**Manganese**	**Zinc**
Red-Tailed Hawk	120,000	52,000	270,000	210,000	28,000,000	51,000
White-Tailed Deer	880,000	7,200	2,700,000	13,000,000	1,500,000	1,100,000
Red Fox	89,000	850,000	8,100,000	20,000,000	16,000,000	400,000

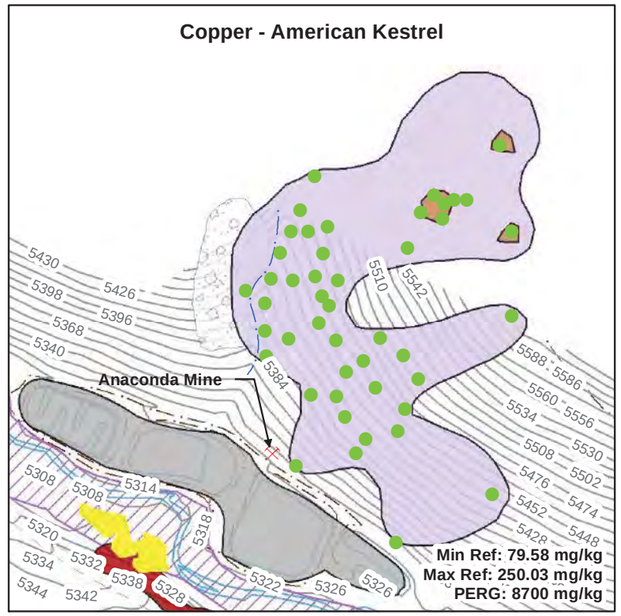
Figure 6-1B

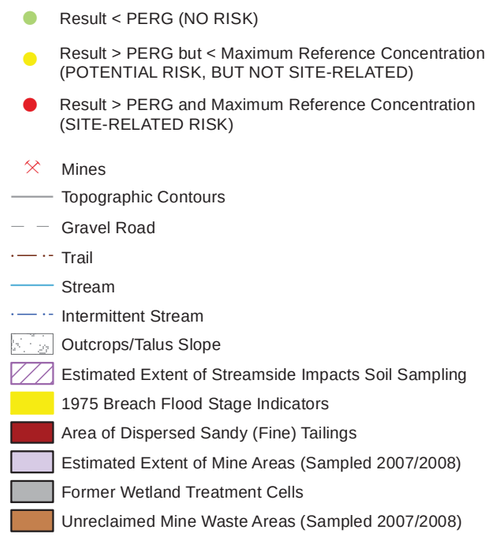
Comparison of Site Concentrations with Preliminary Ecological Remediation Goals and Reference Site Concentrations for the Red-Tailed Hawk, White-Tailed Deer and Red Fox
EU 1 - Upper Anaconda Mine Waste Removal Areas and Waste Piles

Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex

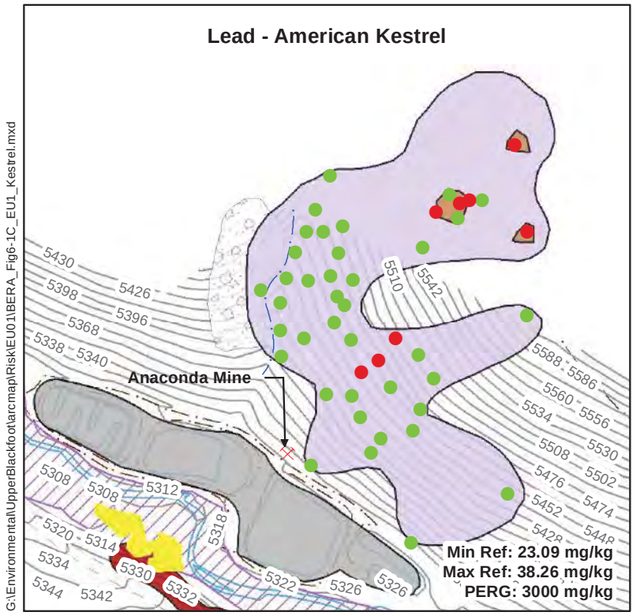


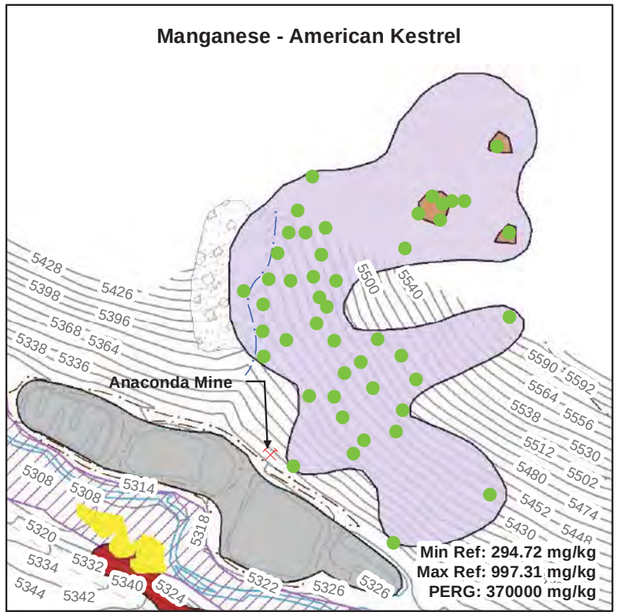


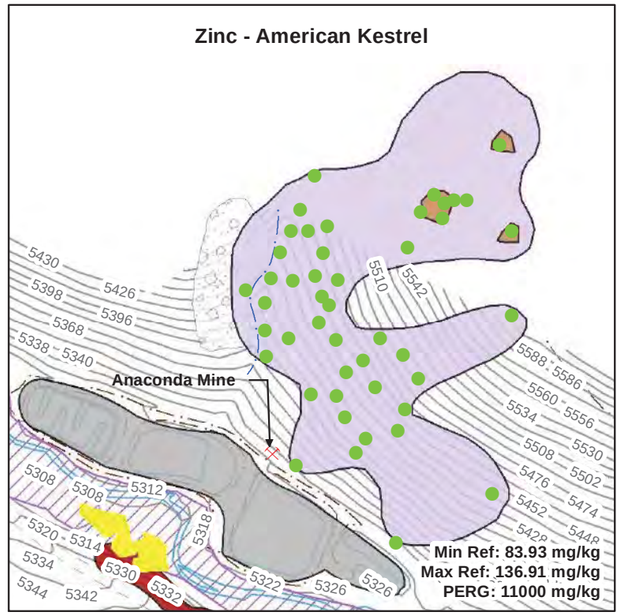




EU	Exposure unit
mg/kg	Milligram per kilogram
Max Ref	Maximum Reference Concentration
Min Ref	Minimum Reference Concentration
PERG	Preliminary Ecological Remediation Goal
XRF 10	X-ray fluorescence measurements on a sample that had been dried and sieved through a #10-mesh screen







Notes:

A PERG cannot be less than the minimum reference concentration. In cases where the calculated PERG was lower than the minimum reference concentration, the PERG was set equal to the minimum reference concentration.

XRF 10 concentrations in the top 6 inches of soil at each sampling location were compared with PERGs and reference concentrations.

One-half the detection limit was substituted for non-detect results.

No XRF 10 results were available for cadmium; analytical laboratory data were substituted.

PERG calculations are presented in Appendix E.

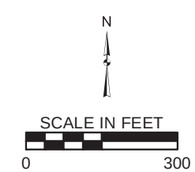


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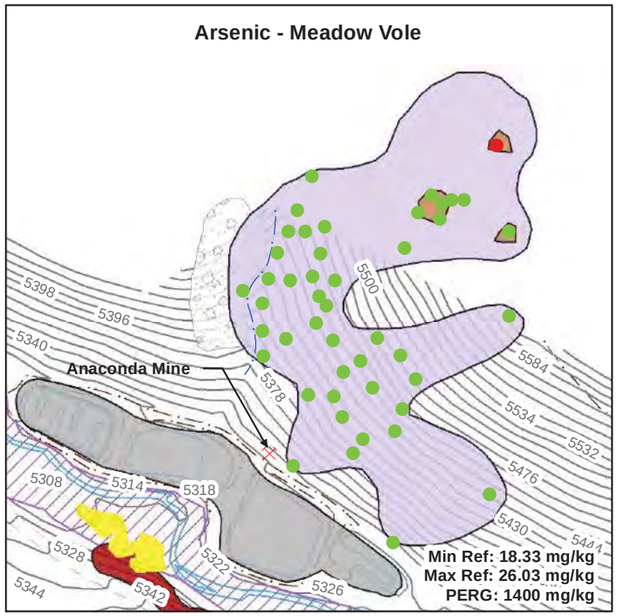
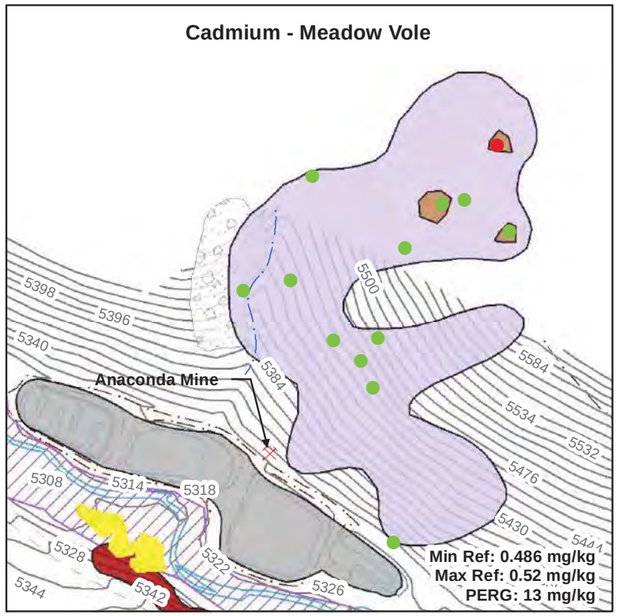
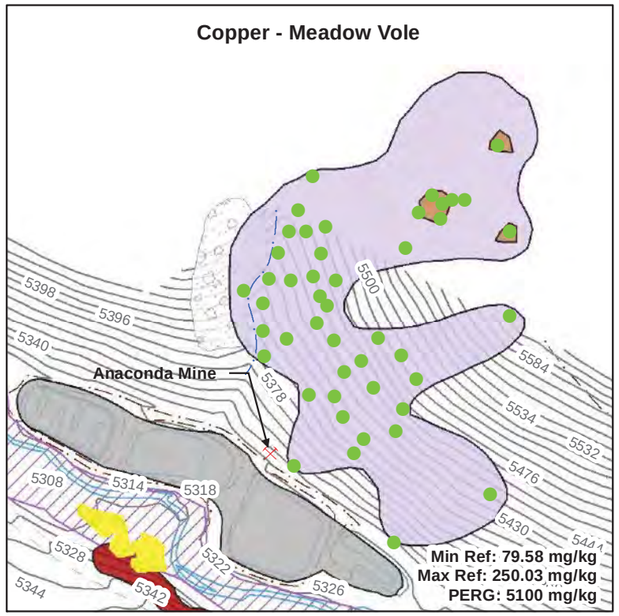
Figure 6-1C

Comparison of Site Concentrations with Preliminary Ecological Remediation Goals and Reference Site Concentrations for the American Kestrel
EU 1 - Upper Anaconda Mine Waste Removal Areas and Waste Piles

Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex

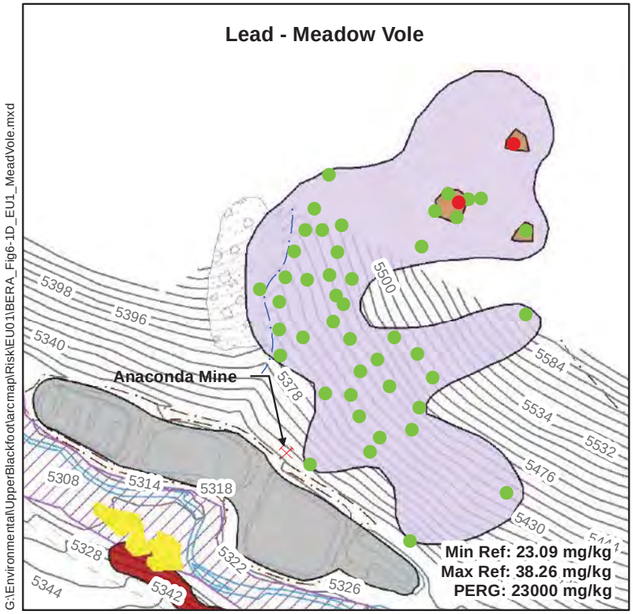


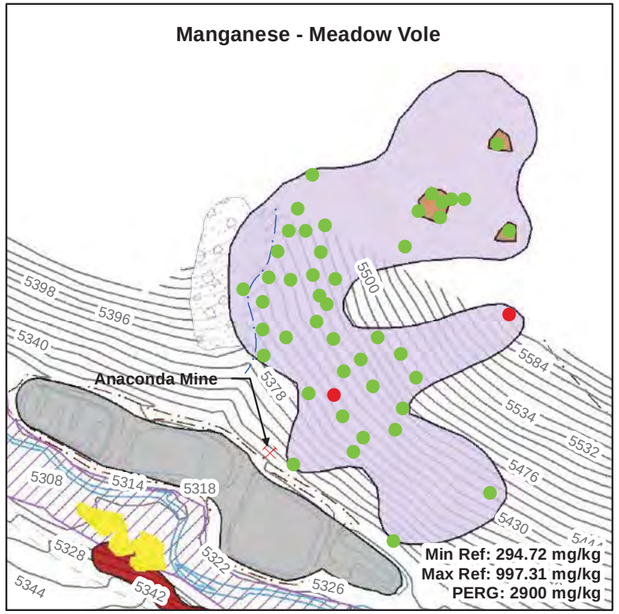


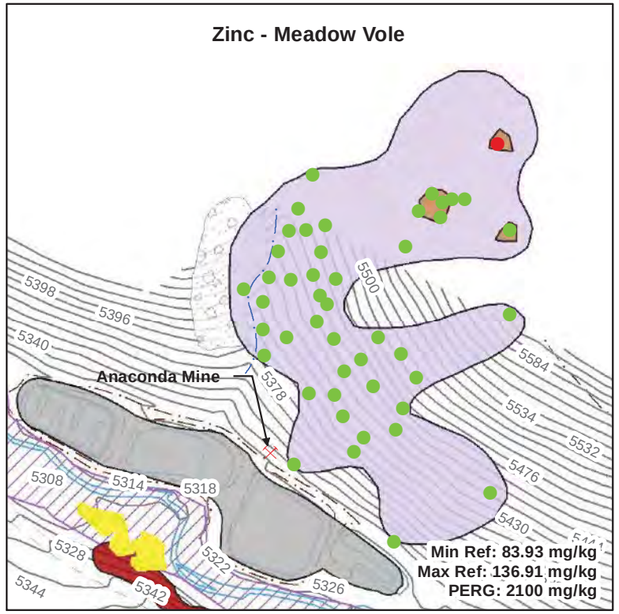


- Result < PERG (NO RISK)
- Result > PERG but < Maximum Reference Concentration (POTENTIAL RISK, BUT NOT SITE-RELATED)
- Result > PERG and Maximum Reference Concentration (SITE-RELATED RISK)
- Mines
- Topographic Contours
- Gravel Road
- Trail
- Stream
- Intermittent Stream
- Outcrops/Talus Slope
- Estimated Extent of Streamside Impacts Soil Sampling
- 1975 Breach Flood Stage Indicators
- Area of Dispersed Sandy (Fine) Tailings
- Estimated Extent of Mine Areas (Sampled 2007/2008)
- Former Wetland Treatment Cells
- Unreclaimed Mine Waste Areas (Sampled 2007/2008)

EU	Exposure unit
mg/kg	Milligram per kilogram
Max Ref	Maximum Reference Concentration
Min Ref	Minimum Reference Concentration
PERG	Preliminary Ecological Remediation Goal
XRF 10	X-ray fluorescence measurements on a sample that had been dried and sieved through a #10-mesh screen







Notes:

A PERG cannot be less than the minimum reference concentration. In cases where the calculated PERG was lower than the minimum reference concentration, the PERG was set equal to the minimum reference concentration.

XRF 10 concentrations in the top 6 inches of soil at each sampling location were compared with PERGs and reference concentrations.

One-half the detection limit was substituted for non-detect results.

No XRF 10 results were available for cadmium; analytical laboratory data were substituted.

PERG calculations are presented in Appendix E.

N

SCALE IN FEET

0 300

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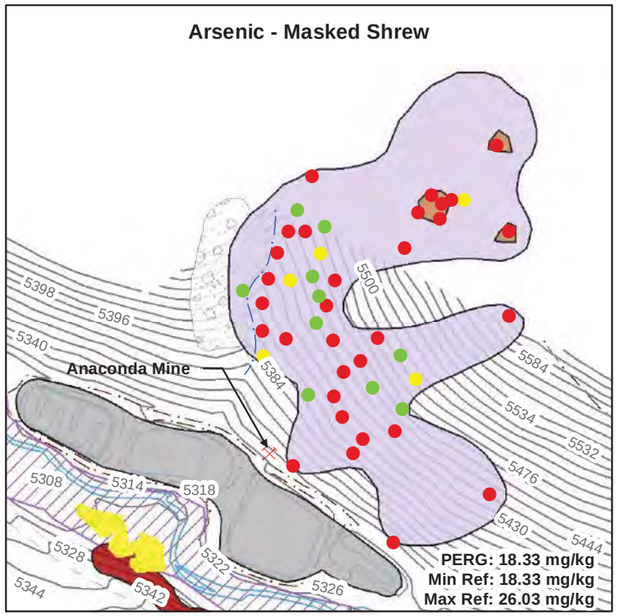
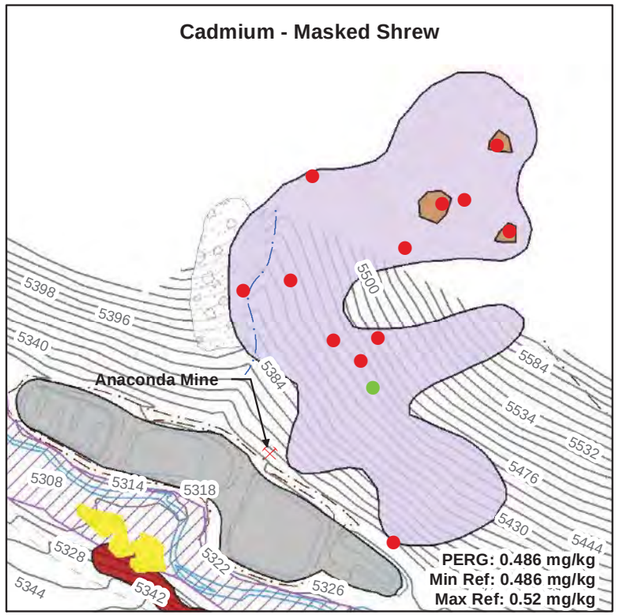
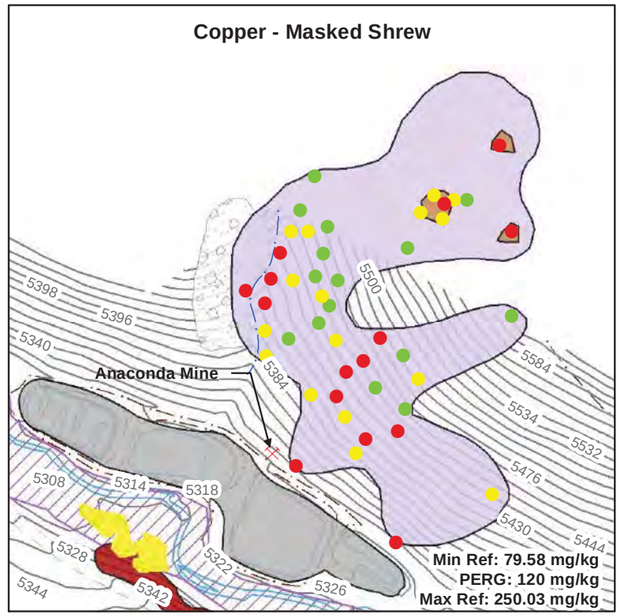
Figure 6-1D

Comparison of Site Concentrations with Preliminary Ecological Remediation Goals and Reference Site Concentrations for the Meadow Vole
EU 1 - Upper Anaconda Mine Waste Removal Areas and Waste Piles

Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex

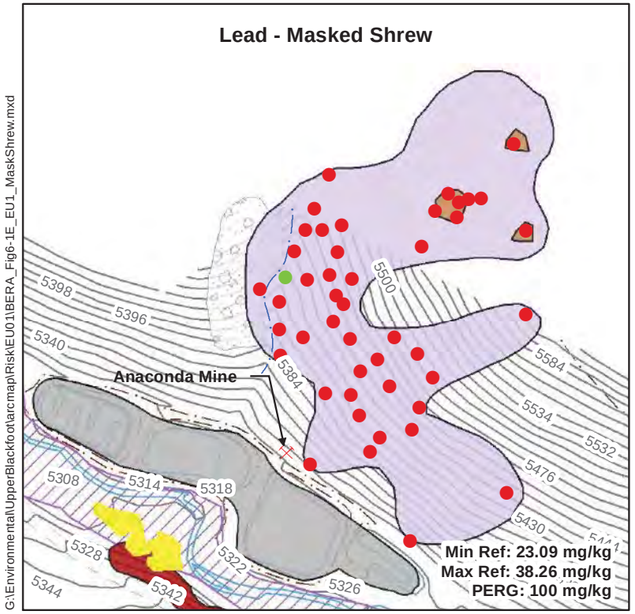


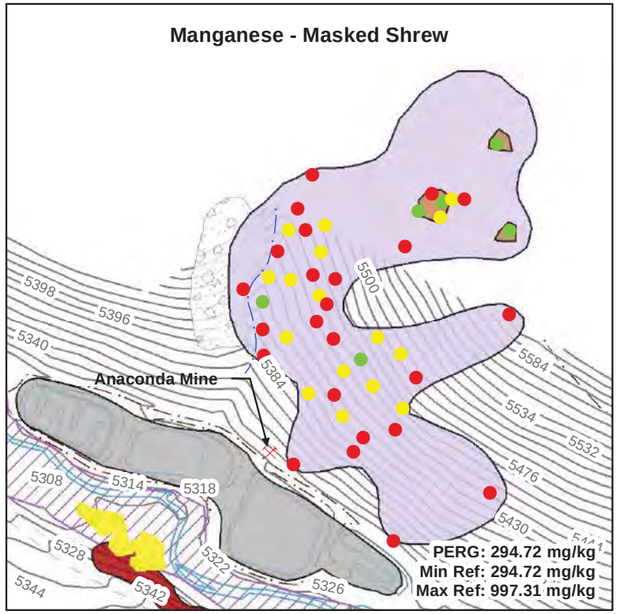


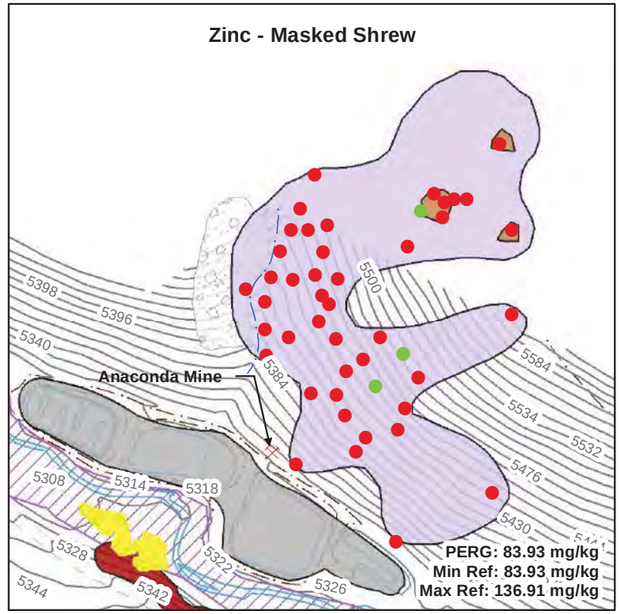


- Result < PERG (NO RISK)
- Result > PERG but < Maximum Reference Concentration (POTENTIAL RISK, BUT NOT SITE-RELATED)
- Result > PERG and Maximum Reference Concentration (SITE-RELATED RISK)
- Mines
- Topographic Contours
- Gravel Road
- Trail
- Stream
- Intermittent Stream
- Outcrops/Talus Slope
- Estimated Extent of Streamside Impacts Soil Sampling
- 1975 Breach Flood Stage Indicators
- Area of Dispersed Sandy (Fine) Tailings
- Estimated Extent of Mine Areas (Sampled 2007/2008)
- Former Wetland Treatment Cells
- Unreclaimed Mine Waste Areas (Sampled 2007/2008)

EU	Exposure unit
mg/kg	Milligram per kilogram
Max Ref	Maximum Reference Concentration
Min Ref	Minimum Reference Concentration
PERG	Preliminary Ecological Remediation Goal
XRF 10	X-ray fluorescence measurements on a sample that had been dried and sieved through a #10-mesh screen







Notes:

A PERG cannot be less than the minimum reference concentration. In cases where the calculated PERG was lower than the minimum reference concentration, the PERG was set equal to the minimum reference concentration.

XRF 10 concentrations in the top 6 inches of soil at each sampling location were compared with PERGs and reference concentrations.

One-half the detection limit was substituted for non-detect results.

No XRF 10 results were available for cadmium; analytical laboratory data were substituted.

PERG calculations are presented in Appendix E.

N

SCALE IN FEET

0 300

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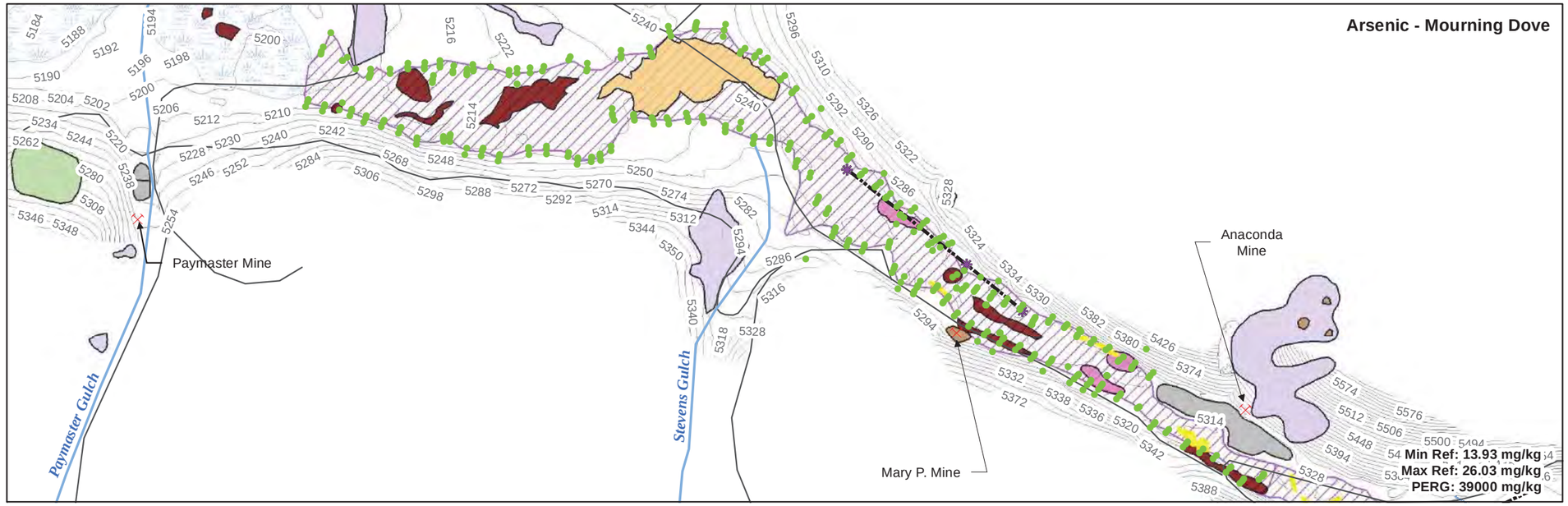
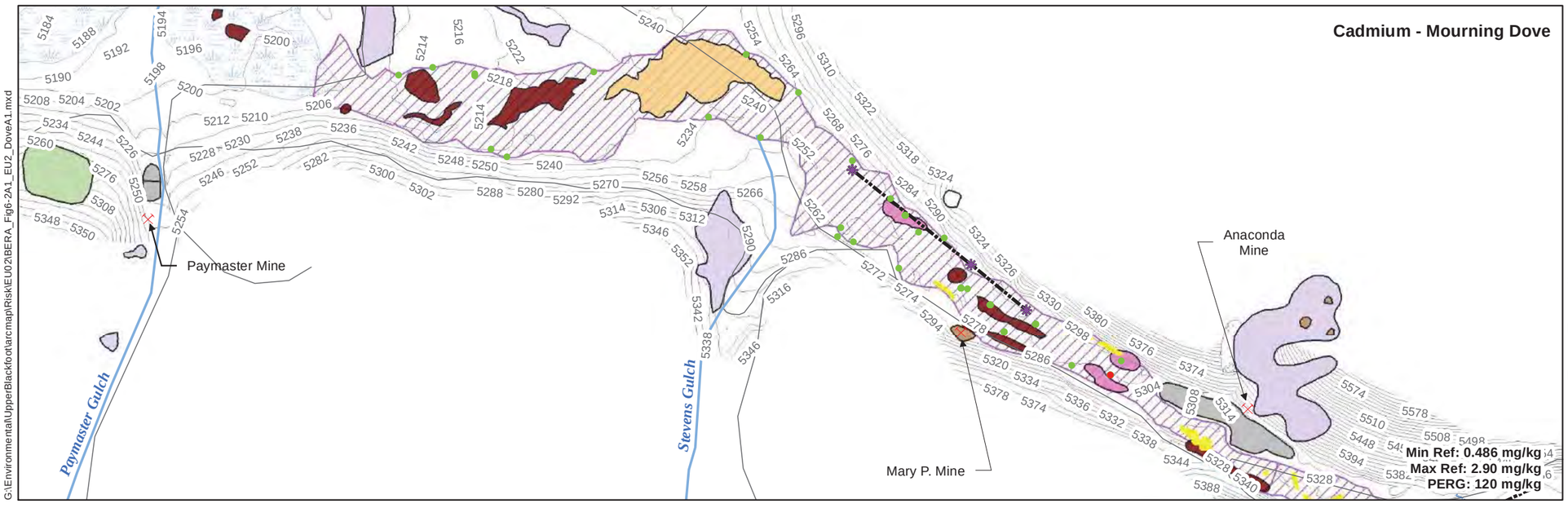
Figure 6-1E

Comparison of Site Concentrations with Preliminary Ecological Remediation Goals and Reference Site Concentrations for the Masked Shrew
EU 1 - Upper Anaconda Mine Waste Removal Areas and Waste Piles

Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex





G:\Environmental\UpperBlackfoot\arcmap\Risk\EU02\BERA_Fig6-2A1_EU2_DoveA1.mxd

- Result < PERG (NO RISK)
- Result > PERG but < Maximum Reference Concentration (POTENTIAL RISK, BUT NOT SITE-RELATED)
- Result > PERG and Maximum Reference Concentration (SITE-RELATED RISK)

- Mines
- 2008 Terrestrial Transect Sampling Locations
- Terrestrial Receptor Transects
- Topographic Contours
- Roads
- Outcrops/Talus Slope
- Marshes
- Estimated Extent of Streamside Impacts Soil Sampling
- 1975 Breach Flood Stage Indicators
- Area of Concentrated Tailings/Mine Waste
- Area of Dispersed Coarse-Grained Tailings
- Area of Dispersed Sandy (Fine) Tailings
- Estimated Extent of Mine Areas (Sampled 2007/2008)
- Former Wetland Treatment Cells
- Mine Waste Areas (Not Sampled)
- Mine Waste Repository
- Unreclaimed Mine Waste Areas (Sampled 2007/2008)

EU	Exposure unit
mg/kg	Milligram per kilogram
Max Ref	Maximum Reference Concentration
Min Ref	Minimum Reference Concentration
PERG	Preliminary Ecological Remediation Goal
XRF 10	X-ray fluorescence measurements on a sample that had been dried and sieved through a #10-mesh screen

Notes:

A PERG cannot be less than the minimum reference concentration. In cases where the calculated PERG was lower than the minimum reference concentration, the PERG was set equal to the minimum reference concentration.

The maximum XRF 10 concentrations in soil from 0-4 feet below ground surface at each sampling location was compared with PERGs and reference concentrations.

One-half the detection limit was substituted for non-detect results.

No XRF 10 results were available for cadmium; analytical laboratory data were substituted.

PERG calculations are presented in Appendix E.

N

SCALE IN FEET

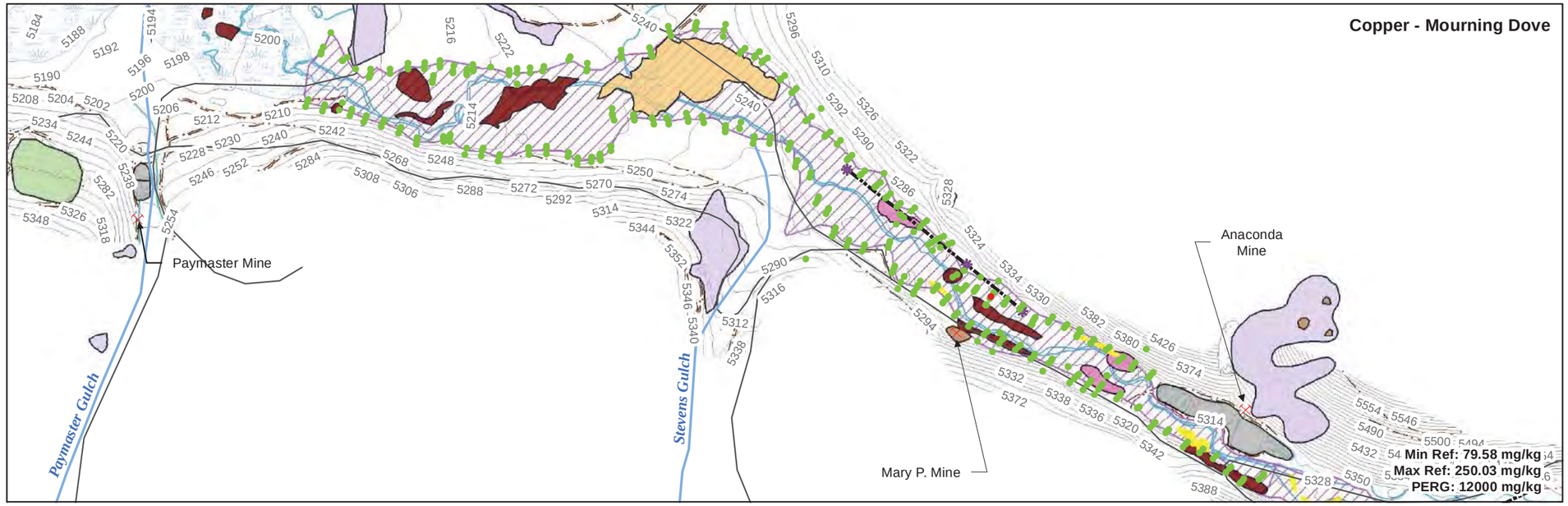
0 700

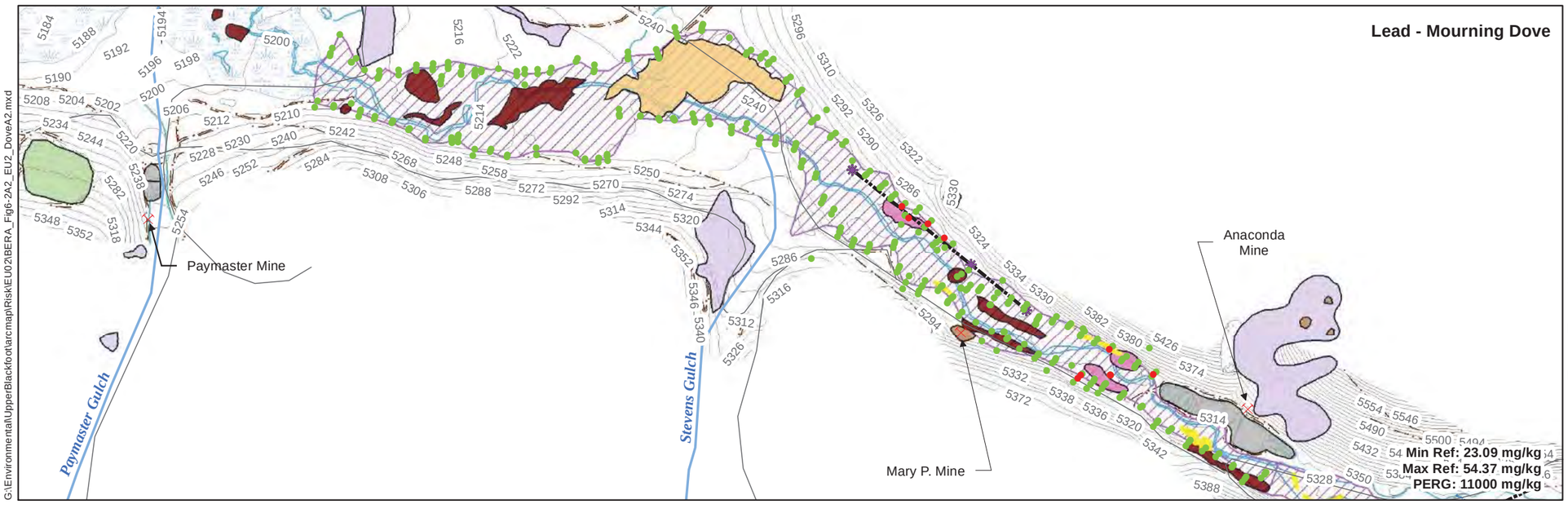
Figure 6-2A1

Comparison of Site Concentrations with Preliminary Ecological Remediation Goals and Reference Site Concentrations for the Mourning Dove

EU 2 - Blackfoot River Dispersed Tailings Associated with EE/CA Removal Action Area and Overbank Deposits

Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex





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- Result < PERG (NO RISK)
- Result > PERG but < Maximum Reference Concentration (POTENTIAL RISK, BUT NOT SITE-RELATED)
- Result > PERG and Maximum Reference Concentration (SITE-RELATED RISK)
- Mines
- 2008 Terrestrial Transect Sampling Locations
- Terrestrial Receptor Transects
- 1975 Breach Flood Stage Indicators
- Area of Concentrated Tailings/Mine Waste
- Area of Dispersed Coarse-Grained Tailings
- Area of Dispersed Sandy (Fine) Tailings
- Estimated Extent of Mine Areas (Sampled 2007/2008)
- Former Wetland Treatment Cells
- Mine Waste Areas (Not Sampled)
- Mine Waste Repository
- Unreclaimed Mine Waste Areas (Sampled 2007/2008)
- Topographic Contours
- Gravel Road
- Trail
- Stream
- Roads
- Outcrops/Talus Slope
- Marshes
- Estimated Extent of Streamside Impacts Soil Sampling

EU	Exposure unit
mg/kg	Milligram per kilogram
Max Ref	Maximum Reference Concentration
Min Ref	Minimum Reference Concentration
PERG	Preliminary Ecological Remediation Goal
XRF 10	X-ray fluorescence measurements on a sample that had been dried and sieved through a #10-mesh screen

Notes:

A PERG cannot be less than the minimum reference concentration. In cases where the calculated PERG was lower than the minimum reference concentration, the PERG was set equal to the minimum reference concentration.

The maximum XRF 10 concentrations in soil from 0-4 feet below ground surface at each sampling location was compared with PERGs and reference concentrations.

One-half the detection limit was substituted for non-detect results.

No XRF 10 results were available for cadmium; analytical laboratory data were substituted.

PERG calculations are presented in Appendix E.

N

SCALE IN FEET

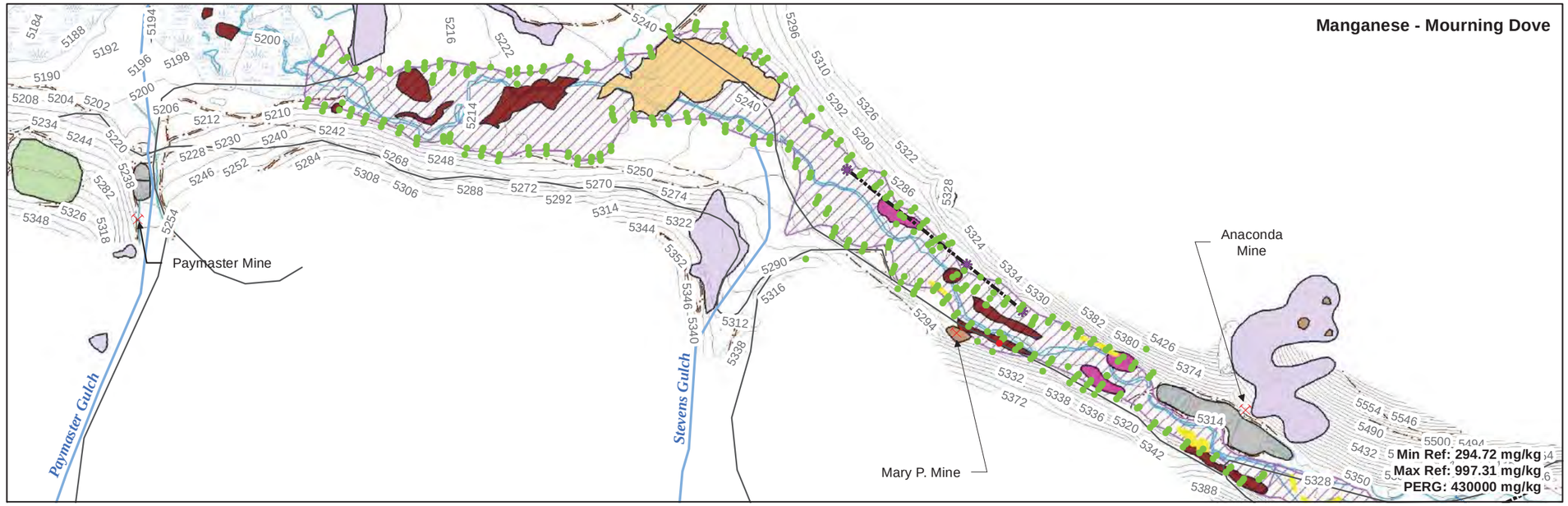
0 700

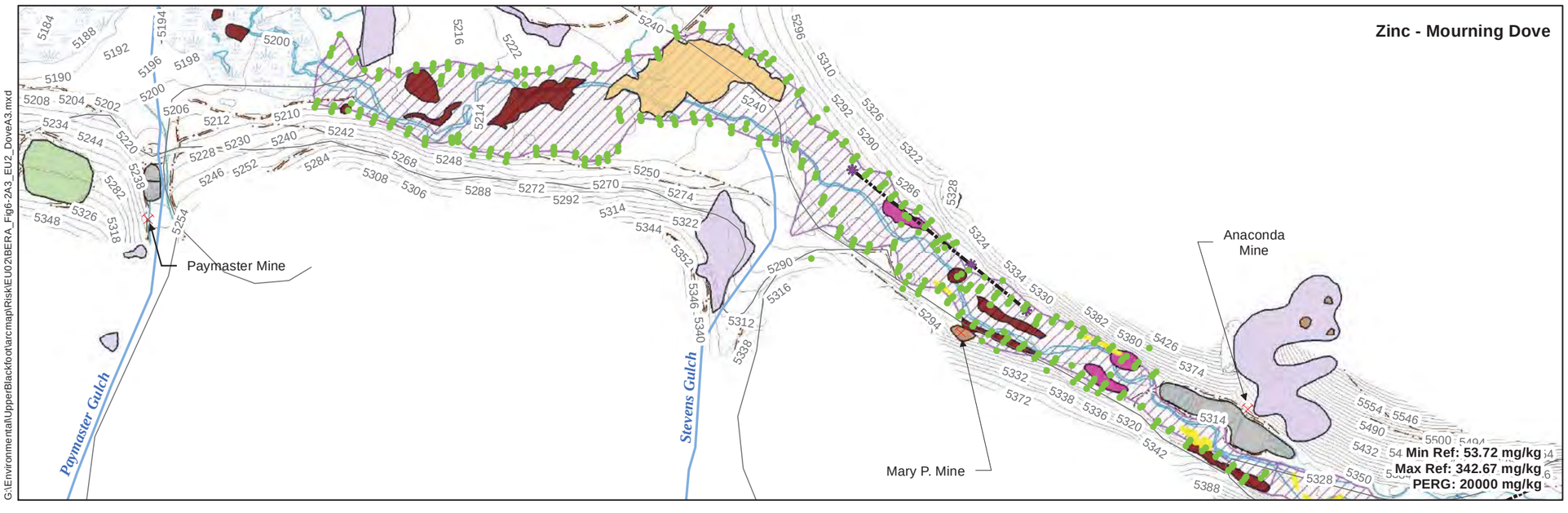
Figure 6-2A2

Comparison of Site Concentrations with Preliminary Ecological Remediation Goals and Reference Site Concentrations for the Mourning Dove

EU 2 - Blackfoot River Dispersed Tailings Associated with EE/CA Removal Action Area and Overbank Deposits

Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex





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- Result < PERG (NO RISK)
- Result > PERG but < Maximum Reference Concentration (POTENTIAL RISK, BUT NOT SITE-RELATED)
- Result > PERG and Maximum Reference Concentration (SITE-RELATED RISK)
- Mines
- 2008 Terrestrial Transect Sampling Locations
- Terrestrial Receptor Transects
- 1975 Breach Flood Stage Indicators
- Area of Concentrated Tailings/Mine Waste
- Area of Dispersed Coarse-Grained Tailings
- Area of Dispersed Sandy (Fine) Tailings
- Estimated Extent of Mine Areas (Sampled 2007/2008)
- Former Wetland Treatment Cells
- Mine Waste Areas (Not Sampled)
- Mine Waste Repository
- Unreclaimed Mine Waste Areas (Sampled 2007/2008)
- Topographic Contours
- Gravel Road
- Trail
- Stream
- Roads
- Outcrops/Talus Slope
- Marshes
- Estimated Extent of Streamside Impacts Soil Sampling

EU	Exposure unit
mg/kg	Milligram per kilogram
Max Ref	Maximum Reference Concentration
Min Ref	Minimum Reference Concentration
PERG	Preliminary Ecological Remediation Goal
XRF 10	X-ray fluorescence measurements on a sample that had been dried and sieved through a #10-mesh screen

Notes:

A PERG cannot be less than the minimum reference concentration. In cases where the calculated PERG was lower than the minimum reference concentration, the PERG was set equal to the minimum reference concentration.

The maximum XRF 10 concentrations in soil from 0-4 feet below ground surface at each sampling location was compared with PERGs and reference concentrations.

One-half the detection limit was substituted for non-detect results.

No XRF 10 results were available for cadmium; analytical laboratory data were substituted.

PERG calculations are presented in Appendix E.

N

SCALE IN FEET

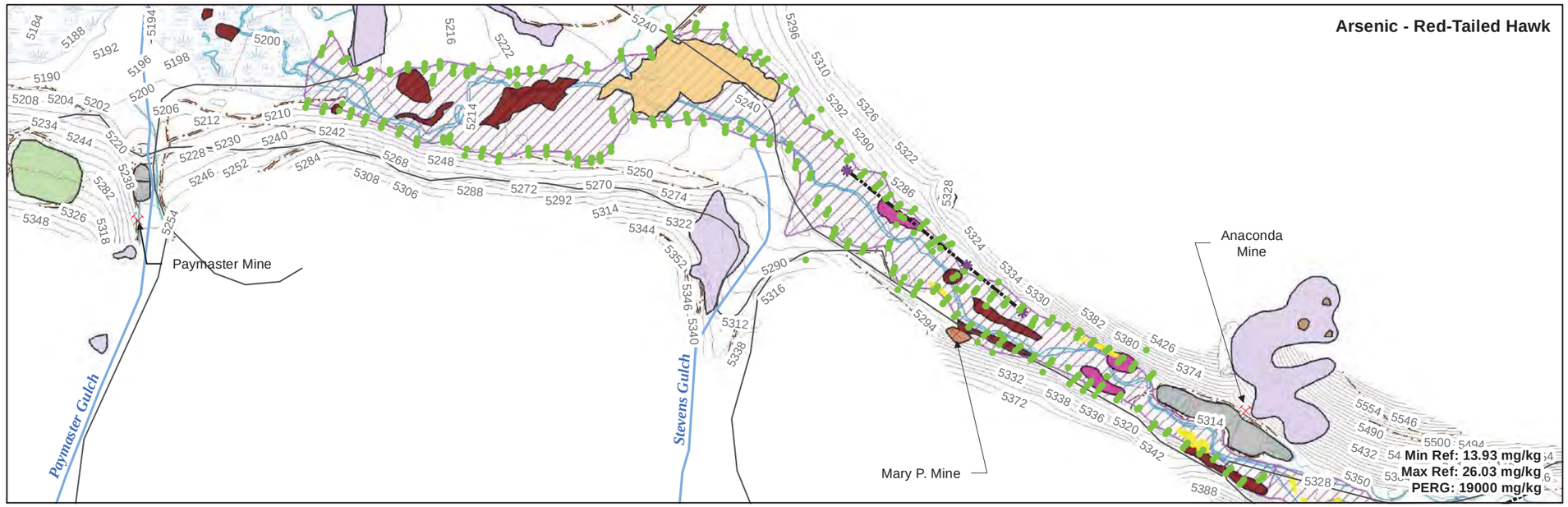
0 700

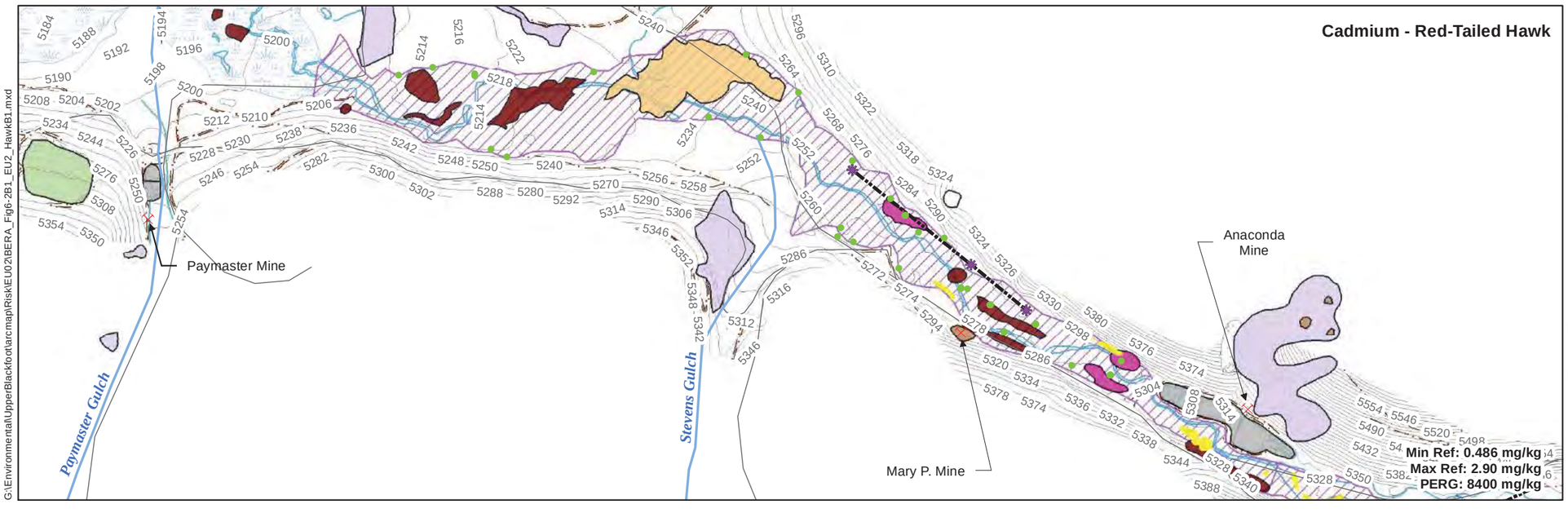
Figure 6-2A3

Comparison of Site Concentrations with Preliminary Ecological Remediation Goals and Reference Site Concentrations for the Mourning Dove

EU 2 - Blackfoot River Dispersed Tailings Associated with EE/CA Removal Action Area and Overbank Deposits

Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex





G:\Environmental\UpperBlackfoot\arcmap\Risk\EU02\BERA_Fig6-2B1_EU2_HawkB1.mxd

- Result < PERG (NO RISK)
- Result > PERG but < Maximum Reference Concentration (POTENTIAL RISK, BUT NOT SITE-RELATED)
- Result > PERG and Maximum Reference Concentration (SITE-RELATED RISK)
- Mines
- 2008 Terrestrial Transect Sampling Locations
- Terrestrial Receptor Transects
- 1975 Breach Flood Stage Indicators
- Area of Concentrated Tailings/Mine Waste
- Area of Dispersed Coarse-Grained Tailings
- Area of Dispersed Sandy (Fine) Tailings
- Estimated Extent of Mine Areas (Sampled 2007/2008)
- Former Wetland Treatment Cells
- Mine Waste Areas (Not Sampled)
- Mine Waste Repository
- Unreclaimed Mine Waste Areas (Sampled 2007/2008)
- Topographic Contours
- Gravel Road
- Trail
- Stream
- Roads
- Outcrops/Talus Slope
- Marshes

EU	Exposure unit
mg/kg	Milligram per kilogram
Max Ref	Maximum Reference Concentration
Min Ref	Minimum Reference Concentration
PERG	Preliminary Ecological Remediation Goal
XRF 10	X-ray fluorescence measurements on a sample that had been dried and sieved through a #10-mesh screen

Notes:

A PERG cannot be less than the minimum reference concentration. In cases where the calculated PERG was lower than the minimum reference concentration, the PERG was set equal to the minimum reference concentration.

The maximum XRF 10 concentrations in soil from 0-4 feet below ground surface at each sampling location was compared with PERGs and reference concentrations.

One-half the detection limit was substituted for non-detect results.

No XRF 10 results were available for cadmium; analytical laboratory data were substituted.

PERG calculations are presented in Appendix E.

N

SCALE IN FEET

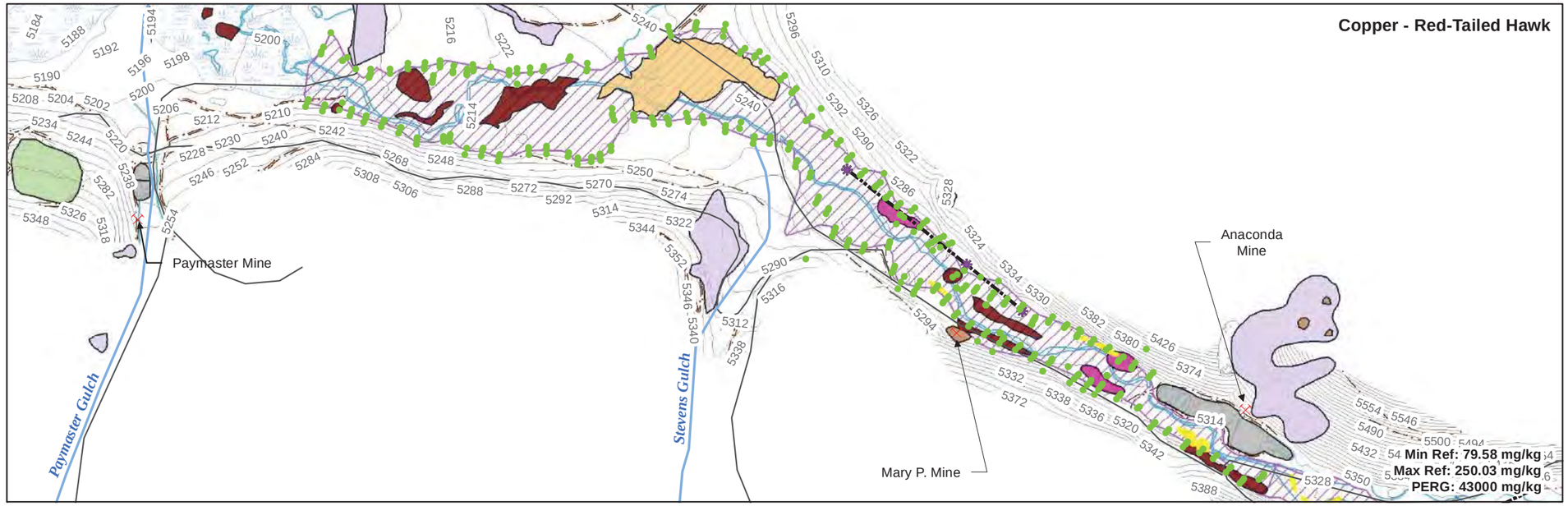
0 700

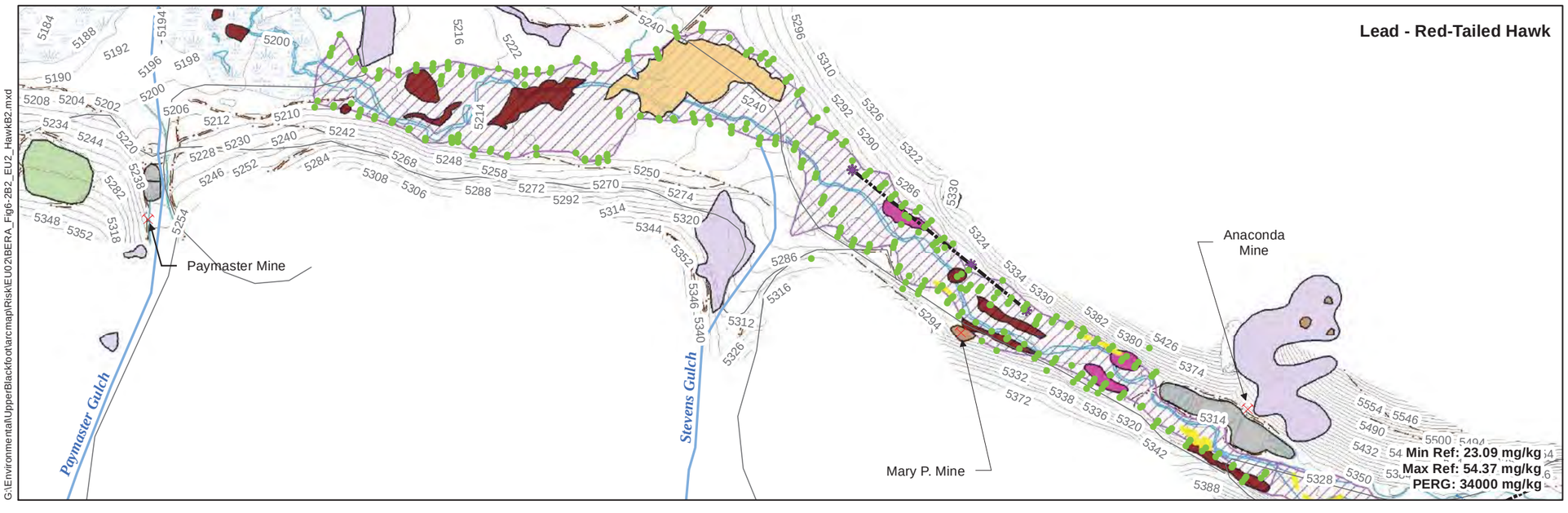
Figure 6-2B1

Comparison of Site Concentrations with Preliminary Ecological Remediation Goals and Reference Site Concentrations for the Red-Tailed Hawk

EU 2 - Blackfoot River Dispersed Tailings Associated with EE/CA Removal Action Area and Overbank Deposits

Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex





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- Result < PERG (NO RISK)
- Result > PERG but < Maximum Reference Concentration (POTENTIAL RISK, BUT NOT SITE-RELATED)
- Result > PERG and Maximum Reference Concentration (SITE-RELATED RISK)

- Mines
- 2008 Terrestrial Transect Sampling Locations
- Terrestrial Receptor Transects
- 1975 Breach Flood Stage Indicators
- Area of Concentrated Tailings/Mine Waste
- Area of Dispersed Coarse-Grained Tailings
- Area of Dispersed Sandy (Fine) Tailings
- Estimated Extent of Mine Areas (Sampled 2007/2008)
- Former Wetland Treatment Cells
- Mine Waste Areas (Not Sampled)
- Mine Waste Repository
- Unreclaimed Mine Waste Areas (Sampled 2007/2008)
- Topographic Contours
- Gravel Road
- Trail
- Stream
- Roads
- Outcrops/Talus Slope
- Marshes

EU	Exposure unit
mg/kg	Milligram per kilogram
Max Ref	Maximum Reference Concentration
Min Ref	Minimum Reference Concentration
PERG	Preliminary Ecological Remediation Goal
XRF 10	X-ray fluorescence measurements on a sample that had been dried and sieved through a #10-mesh screen

Notes:

A PERG cannot be less than the minimum reference concentration. In cases where the calculated PERG was lower than the minimum reference concentration, the PERG was set equal to the minimum reference concentration.

The maximum XRF 10 concentrations in soil from 0-4 feet below ground surface at each sampling location was compared with PERGs and reference concentrations.

One-half the detection limit was substituted for non-detect results.

No XRF 10 results were available for cadmium; analytical laboratory data were substituted.

PERG calculations are presented in Appendix E.

N

SCALE IN FEET

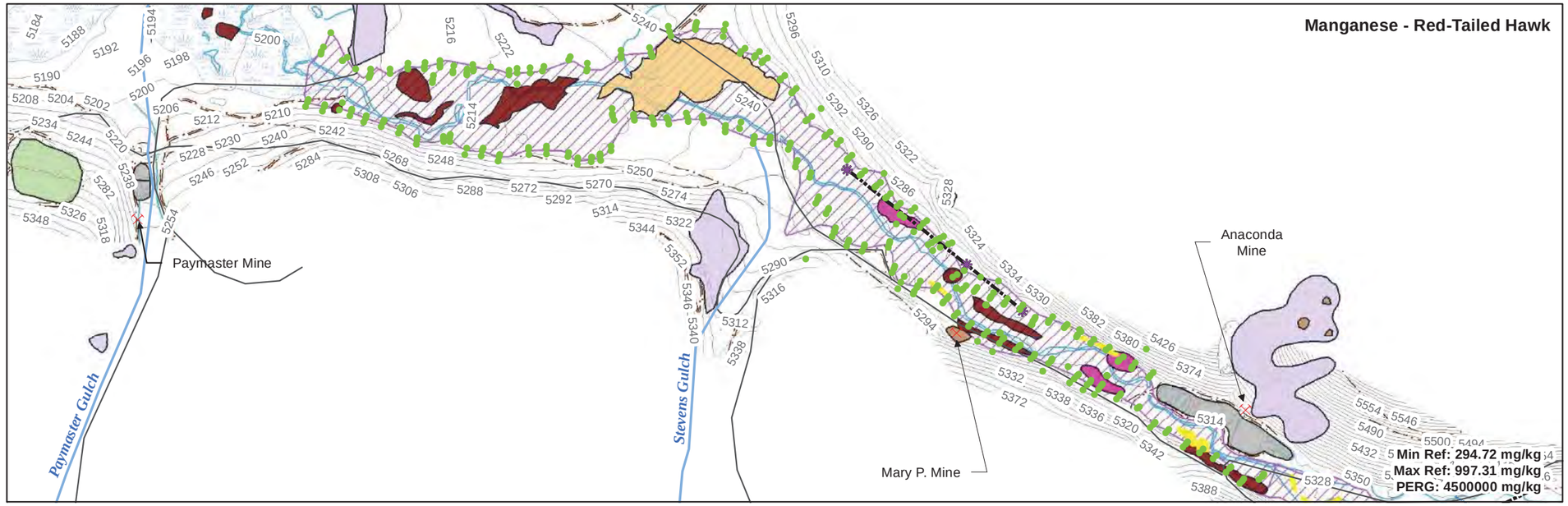
0 700

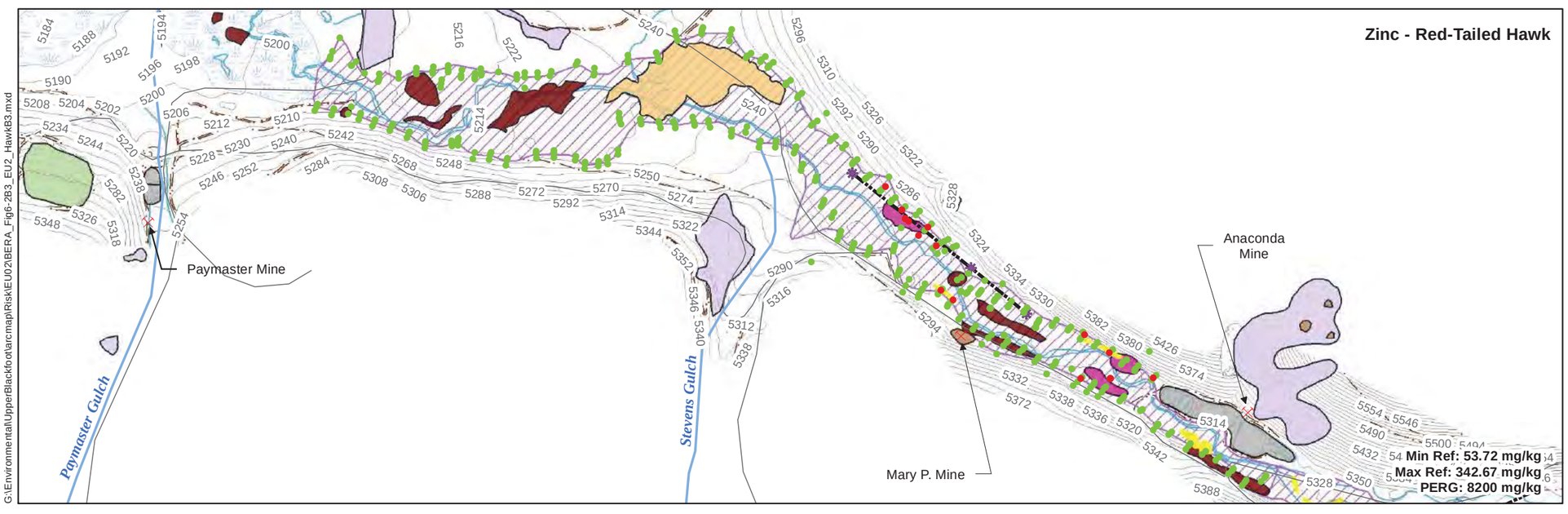
Figure 6-2B2

Comparison of Site Concentrations with Preliminary Ecological Remediation Goals and Reference Site Concentrations for the Red-Tailed Hawk

EU 2 - Blackfoot River Dispersed Tailings Associated with EE/CA Removal Action Area and Overbank Deposits

Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex





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- Result < PERG (NO RISK)
- Result > PERG but < Maximum Reference Concentration (POTENTIAL RISK, BUT NOT SITE-RELATED)
- Result > PERG and Maximum Reference Concentration (SITE-RELATED RISK)

- Mines
- 2008 Terrestrial Transect Sampling Locations
- Terrestrial Receptor Transects
- 1975 Breach Flood Stage Indicators
- Area of Concentrated Tailings/Mine Waste
- Area of Dispersed Coarse-Grained Tailings
- Area of Dispersed Sandy (Fine) Tailings
- Estimated Extent of Mine Areas (Sampled 2007/2008)
- Former Wetland Treatment Cells
- Mine Waste Areas (Not Sampled)
- Mine Waste Repository
- Unreclaimed Mine Waste Areas (Sampled 2007/2008)
- Topographic Contours
- Gravel Road
- Trail
- Stream
- Roads
- Outcrops/Talus Slope
- Marshes

EU	Exposure unit
mg/kg	Milligram per kilogram
Max Ref	Maximum Reference Concentration
Min Ref	Minimum Reference Concentration
PERG	Preliminary Ecological Remediation Goal
XRF 10	X-ray fluorescence measurements on a sample that had been dried and sieved through a #10-mesh screen

Notes:

A PERG cannot be less than the minimum reference concentration. In cases where the calculated PERG was lower than the minimum reference concentration, the PERG was set equal to the minimum reference concentration.

The maximum XRF 10 concentrations in soil from 0-4 feet below ground surface at each sampling location was compared with PERGs and reference concentrations.

One-half the detection limit was substituted for non-detect results.

No XRF 10 results were available for cadmium; analytical laboratory data were substituted.

PERG calculations are presented in Appendix E.

N

SCALE IN FEET

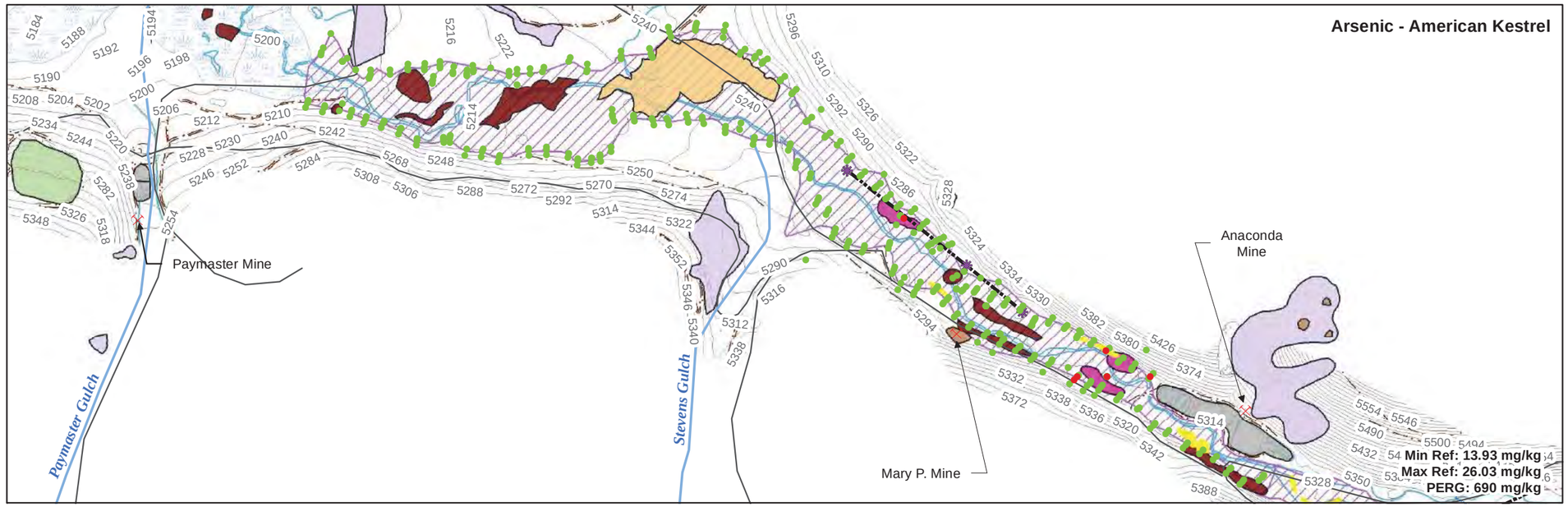
0 700

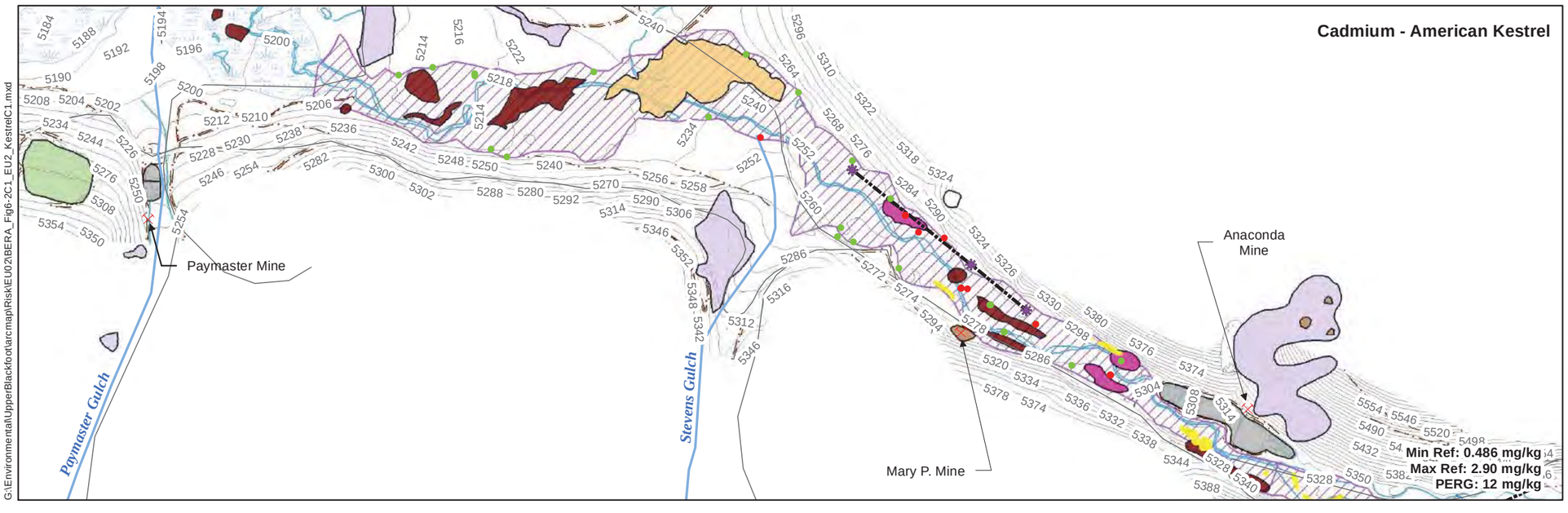
Figure 6-2B3

Comparison of Site Concentrations with Preliminary Ecological Remediation Goals and Reference Site Concentrations for the Red-Tailed Hawk

EU 2 - Blackfoot River Dispersed Tailings Associated with EE/CA Removal Action Area and Overbank Deposits

Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex





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- Result < PERG (NO RISK)
- Result > PERG but < Maximum Reference Concentration (POTENTIAL RISK, BUT NOT SITE-RELATED)
- Result > PERG and Maximum Reference Concentration (SITE-RELATED RISK)
- Mines
- 2008 Terrestrial Transect Sampling Locations
- Terrestrial Receptor Transects
- 1975 Breach Flood Stage Indicators
- Area of Concentrated Tailings/Mine Waste
- Area of Dispersed Coarse-Grained Tailings
- Area of Dispersed Sandy (Fine) Tailings
- Estimated Extent of Mine Areas (Sampled 2007/2008)
- Former Wetland Treatment Cells
- Mine Waste Areas (Not Sampled)
- Mine Waste Repository
- Unreclaimed Mine Waste Areas (Sampled 2007/2008)
- Topographic Contours
- Gravel Road
- Trail
- Stream
- Roads
- Outcrops/Talus Slope
- Marshes

EU	Exposure unit
mg/kg	Milligram per kilogram
Max Ref	Maximum Reference Concentration
Min Ref	Minimum Reference Concentration
PERG	Preliminary Ecological Remediation Goal
XRF 10	X-ray fluorescence measurements on a sample that had been dried and sieved through a #10-mesh screen

Notes:

A PERG cannot be less than the minimum reference concentration. In cases where the calculated PERG was lower than the minimum reference concentration, the PERG was set equal to the minimum reference concentration.

The maximum XRF 10 concentrations in soil from 0-4 feet below ground surface at each sampling location was compared with PERGs and reference concentrations.

One-half the detection limit was substituted for non-detect results.

No XRF 10 results were available for cadmium; analytical laboratory data were substituted.

PERG calculations are presented in Appendix E.

N

SCALE IN FEET

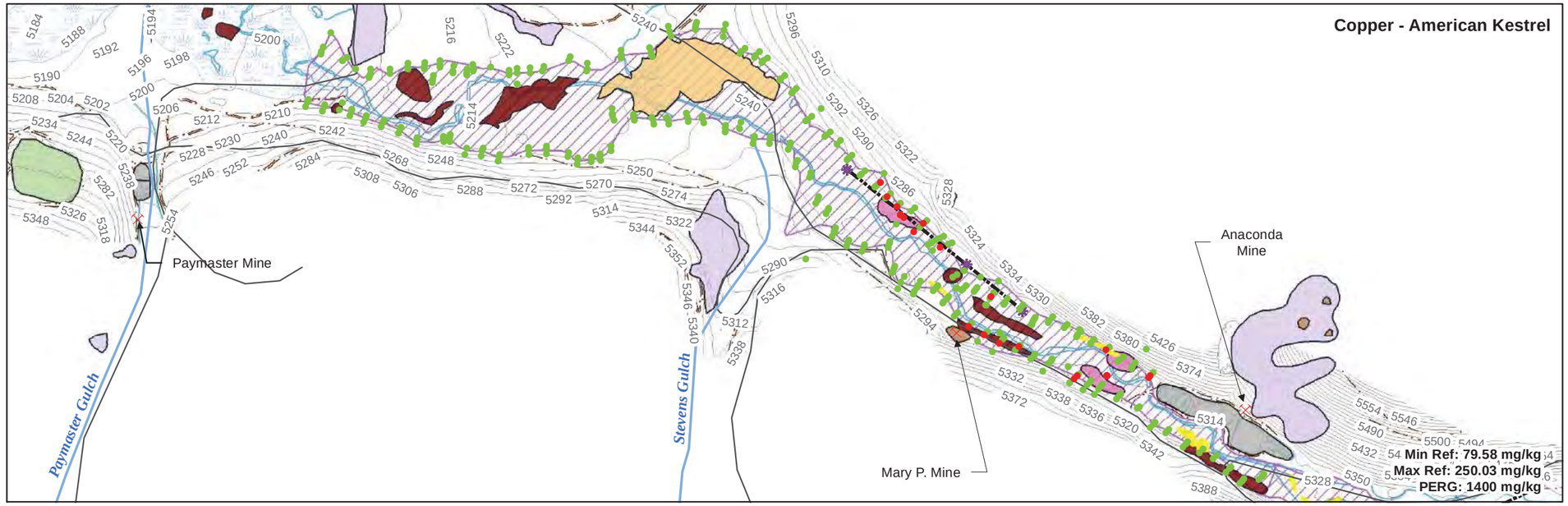
0 700

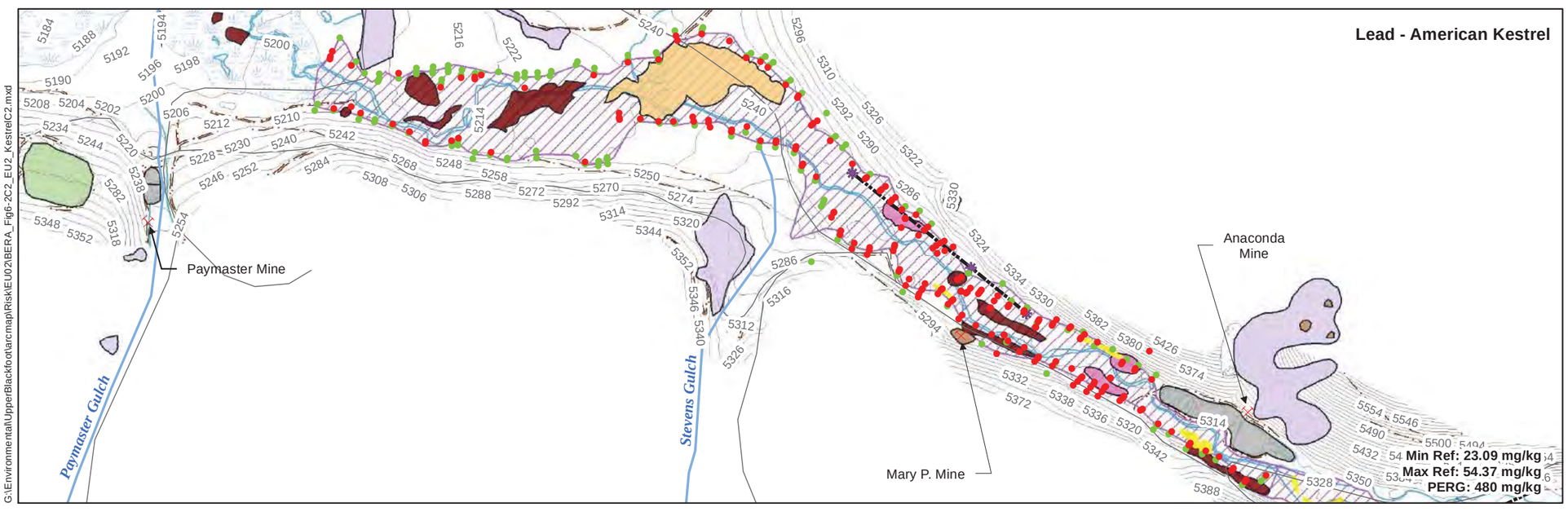
Figure 6-2C1

Comparison of Site Concentrations with Preliminary Ecological Remediation Goals and Reference Site Concentrations for the American Kestrel

EU 2 - Blackfoot River Dispersed Tailings Associated with EE/CA Removal Action Area and Overbank Deposits

Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex





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- Result < PERG (NO RISK)
- Result > PERG but < Maximum Reference Concentration (POTENTIAL RISK, BUT NOT SITE-RELATED)
- Result > PERG and Maximum Reference Concentration (SITE-RELATED RISK)

- Mines
- 2008 Terrestrial Transect Sampling Locations
- Terrestrial Receptor Transects
- 1975 Breach Flood Stage Indicators
- Area of Concentrated Tailings/Mine Waste
- Area of Dispersed Coarse-Grained Tailings
- Area of Dispersed Sandy (Fine) Tailings
- Estimated Extent of Mine Areas (Sampled 2007/2008)
- Former Wetland Treatment Cells
- Mine Waste Areas (Not Sampled)
- Mine Waste Repository
- Unreclaimed Mine Waste Areas (Sampled 2007/2008)
- Topographic Contours
- Gravel Road
- Trail
- Stream
- Roads
- Outcrops/Talus Slope
- Marshes

EU	Exposure unit
mg/kg	Milligram per kilogram
Max Ref	Maximum Reference Concentration
Min Ref	Minimum Reference Concentration
PERG	Preliminary Ecological Remediation Goal
XRF 10	X-ray fluorescence measurements on a sample that had been dried and sieved through a #10-mesh screen

Notes:

A PERG cannot be less than the minimum reference concentration. In cases where the calculated PERG was lower than the minimum reference concentration, the PERG was set equal to the minimum reference concentration.

The maximum XRF 10 concentrations in soil from 0-4 feet below ground surface at each sampling location was compared with PERGs and reference concentrations.

One-half the detection limit was substituted for non-detect results.

No XRF 10 results were available for cadmium; analytical laboratory data were substituted.

PERG calculations are presented in Appendix E.

N

SCALE IN FEET

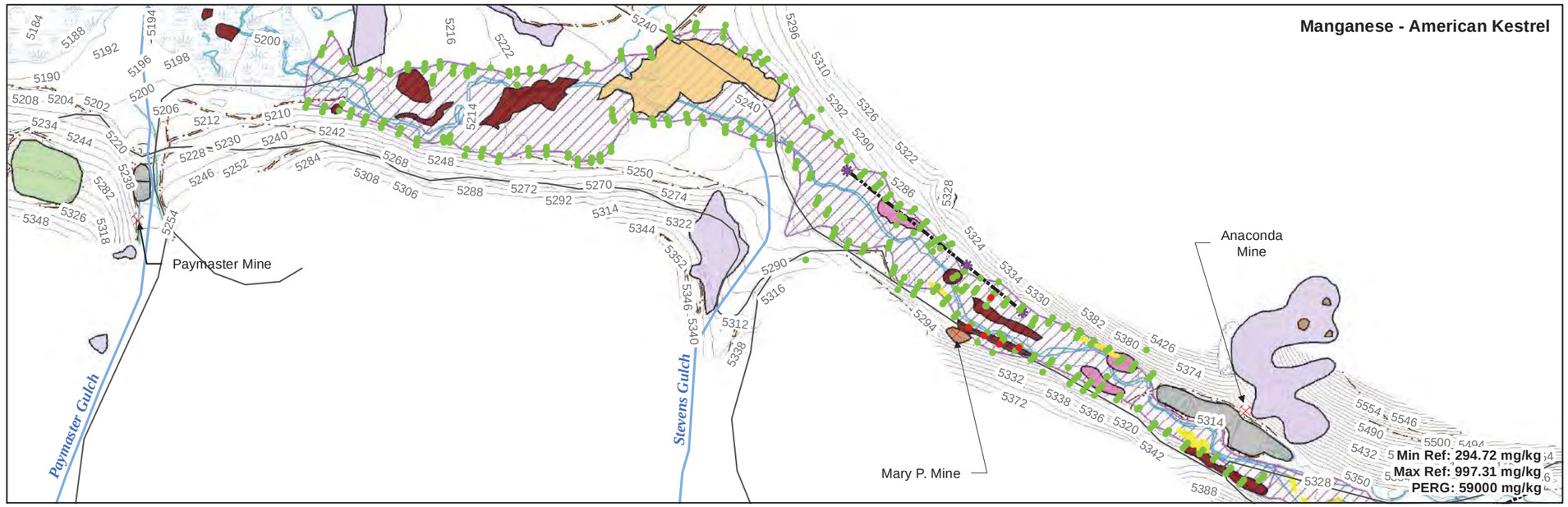
0 700

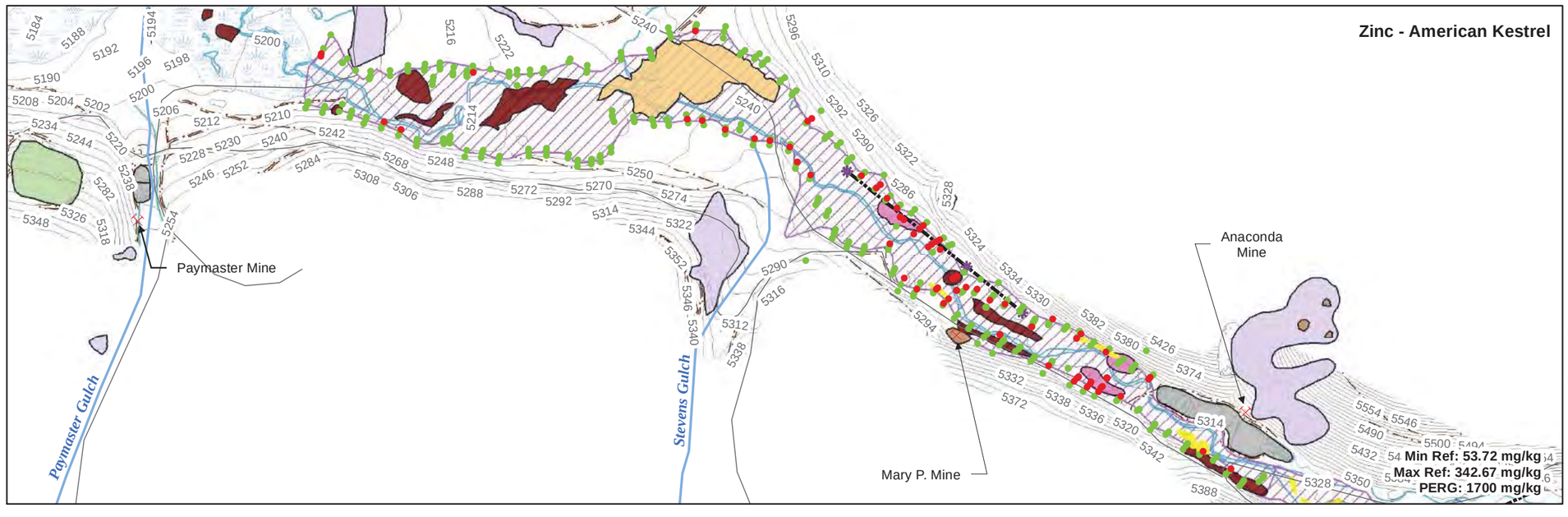
Figure 6-2C2

Comparison of Site Concentrations with Preliminary Ecological Remediation Goals and Reference Site Concentrations for the American Kestrel

EU 2 - Blackfoot River Dispersed Tailings Associated with EE/CA Removal Action Area and Overbank Deposits

Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex





- Result < PERG (NO RISK)
- Result > PERG but < Maximum Reference Concentration (POTENTIAL RISK, BUT NOT SITE-RELATED)
- Result > PERG and Maximum Reference Concentration (SITE-RELATED RISK)

- Mines
- 2008 Terrestrial Transect Sampling Locations
- Terrestrial Receptor Transects
- 1975 Breach Flood Stage Indicators
- Area of Concentrated Tailings/Mine Waste
- Area of Dispersed Coarse-Grained Tailings
- Area of Dispersed Sandy (Fine) Tailings
- Estimated Extent of Mine Areas (Sampled 2007/2008)
- Former Wetland Treatment Cells
- Mine Waste Areas (Not Sampled)
- Mine Waste Repository
- Unreclaimed Mine Waste Areas (Sampled 2007/2008)
- Topographic Contours
- Gravel Road
- Trail
- Stream
- Roads
- Outcrops/Talus Slope
- Marshes

EU	Exposure unit
mg/kg	Milligram per kilogram
Max Ref	Maximum Reference Concentration
Min Ref	Minimum Reference Concentration
PERG	Preliminary Ecological Remediation Goal
XRF 10	X-ray fluorescence measurements on a sample that had been dried and sieved through a #10-mesh screen

Notes:

A PERG cannot be less than the minimum reference concentration. In cases where the calculated PERG was lower than the minimum reference concentration, the PERG was set equal to the minimum reference concentration.

The maximum XRF 10 concentrations in soil from 0-4 feet below ground surface at each sampling location was compared with PERGs and reference concentrations.

One-half the detection limit was substituted for non-detect results.

No XRF 10 results were available for cadmium; analytical laboratory data were substituted.

PERG calculations are presented in Appendix E.

N

SCALE IN FEET

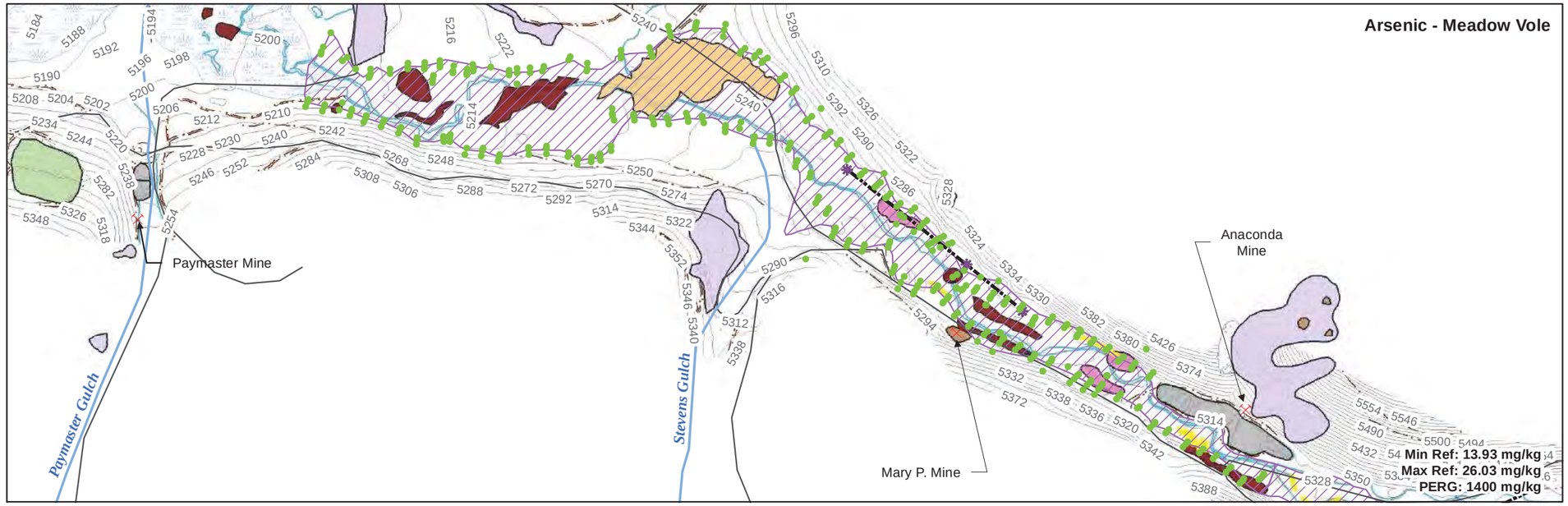
0 700

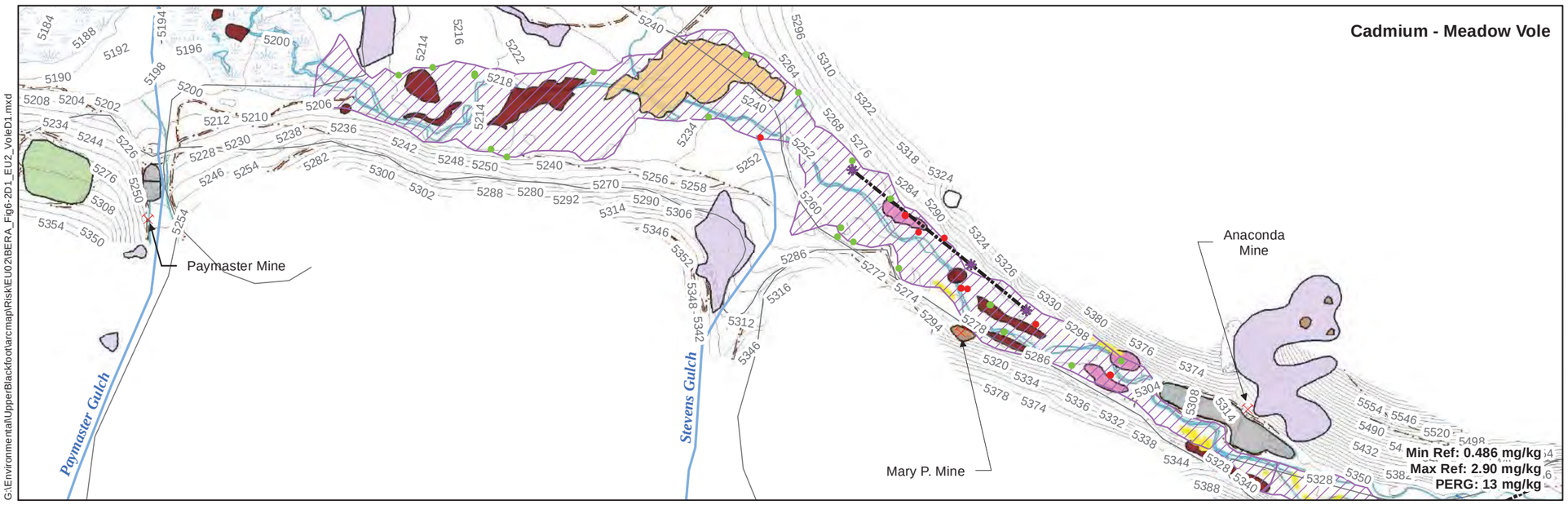
Figure 6-2C3

Comparison of Site Concentrations with Preliminary Ecological Remediation Goals and Reference Site Concentrations for the American Kestrel

EU 2 - Blackfoot River Dispersed Tailings Associated with EE/CA Removal Action Area and Overbank Deposits

Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex





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- Result < PERG (NO RISK)
- Result > PERG but < Maximum Reference Concentration (POTENTIAL RISK, BUT NOT SITE-RELATED)
- Result > PERG and Maximum Reference Concentration (SITE-RELATED RISK)

- Mines
- 2008 Terrestrial Transect Sampling Locations
- Terrestrial Receptor Transects
- 1975 Breach Flood Stage Indicators
- Area of Concentrated Tailings/Mine Waste
- Area of Dispersed Coarse-Grained Tailings
- Area of Dispersed Sandy (Fine) Tailings
- Estimated Extent of Mine Areas (Sampled 2007/2008)
- Former Wetland Treatment Cells
- Mine Waste Areas (Not Sampled)
- Mine Waste Repository
- Unreclaimed Mine Waste Areas (Sampled 2007/2008)
- Topographic Contours
- Gravel Road
- Trail
- Stream
- Roads
- Outcrops/Talus Slope
- Marshes

EU	Exposure unit
mg/kg	Milligram per kilogram
Max Ref	Maximum Reference Concentration
Min Ref	Minimum Reference Concentration
PERG	Preliminary Ecological Remediation Goal
XRF 10	X-ray fluorescence measurements on a sample that had been dried and sieved through a #10-mesh screen

Notes:

A PERG cannot be less than the minimum reference concentration. In cases where the calculated PERG was lower than the minimum reference concentration, the PERG was set equal to the minimum reference concentration.

The maximum XRF 10 concentrations in soil from 0-4 feet below ground surface at each sampling location was compared with PERGs and reference concentrations.

One-half the detection limit was substituted for non-detect results.

No XRF 10 results were available for cadmium; analytical laboratory data were substituted.

PERG calculations are presented in Appendix E.

N

SCALE IN FEET

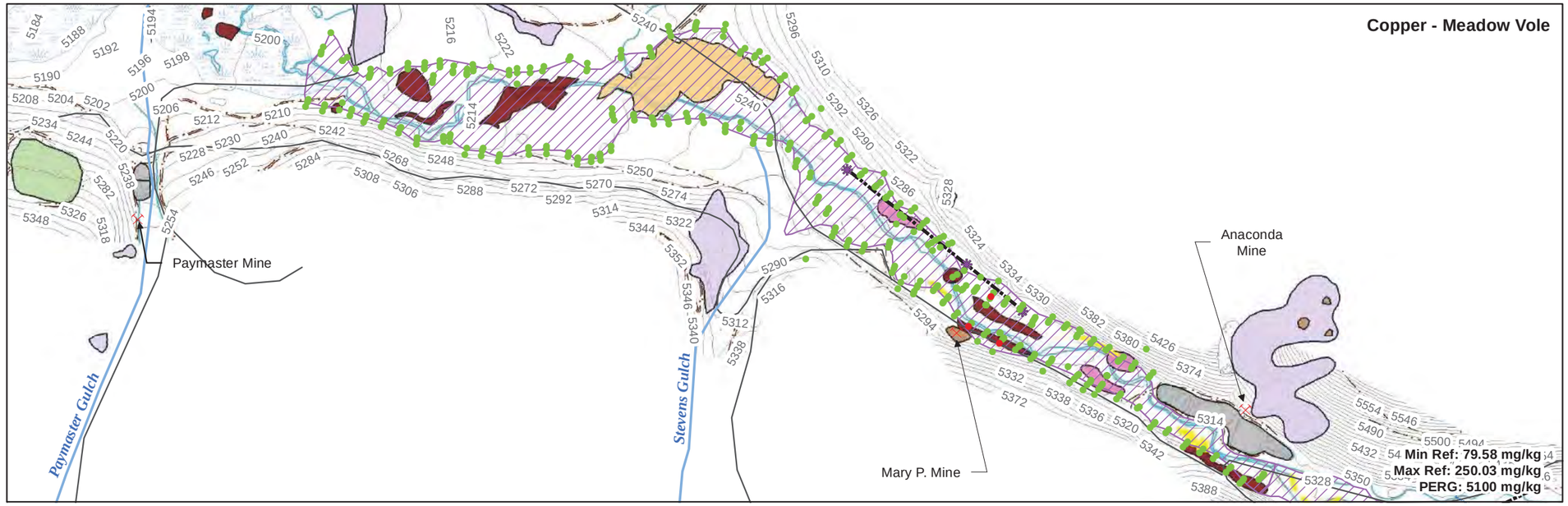
0 700

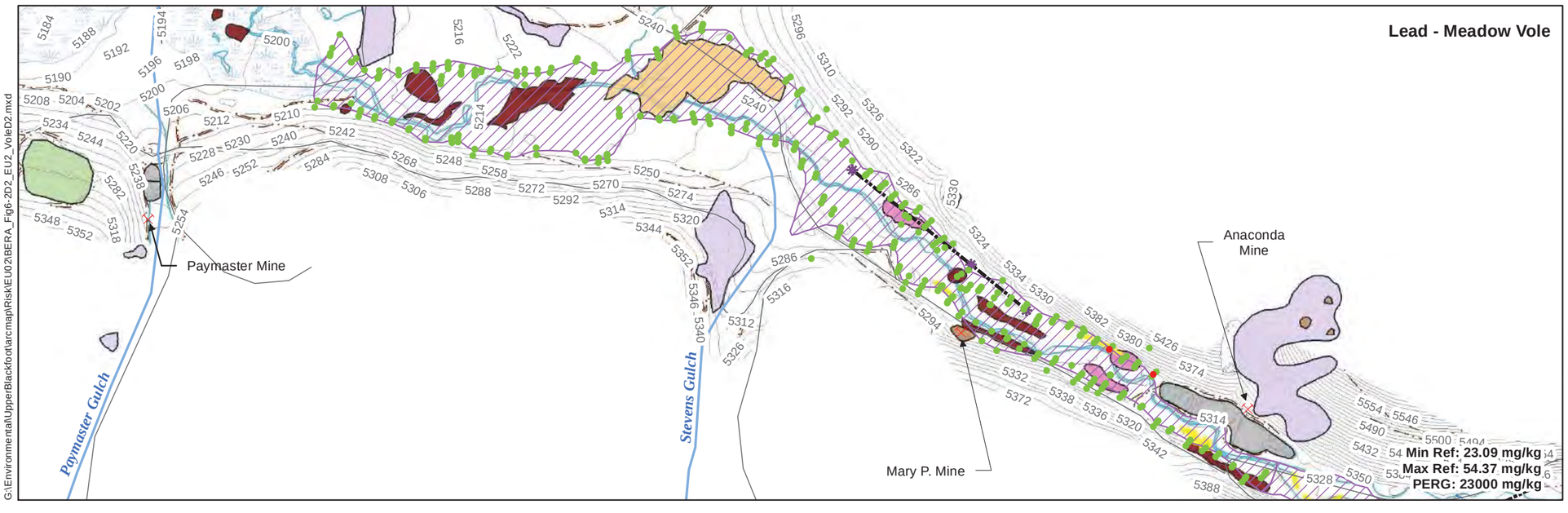
Figure 6-2D1

Comparison of Site Concentrations with Preliminary Ecological Remediation Goals and Reference Site Concentrations for the Meadow Vole

EU 2 - Blackfoot River Dispersed Tailings Associated with EE/CA Removal Action Area and Overbank Deposits

Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex





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- Result < PERG (NO RISK)
- Result > PERG but < Maximum Reference Concentration (POTENTIAL RISK, BUT NOT SITE-RELATED)
- Result > PERG and Maximum Reference Concentration (SITE-RELATED RISK)

- Mines
- 2008 Terrestrial Transect Sampling Locations
- Terrestrial Receptor Transects
- 1975 Breach Flood Stage Indicators
- Area of Concentrated Tailings/Mine Waste
- Area of Dispersed Coarse-Grained Tailings
- Area of Dispersed Sandy (Fine) Tailings
- Estimated Extent of Mine Areas (Sampled 2007/2008)
- Former Wetland Treatment Cells
- Mine Waste Areas (Not Sampled)
- Mine Waste Repository
- Unreclaimed Mine Waste Areas (Sampled 2007/2008)
- Topographic Contours
- Gravel Road
- Trail
- Stream
- Roads
- Outcrops/Talus Slope
- Marshes

EU	Exposure unit
mg/kg	Milligram per kilogram
Max Ref	Maximum Reference Concentration
Min Ref	Minimum Reference Concentration
PERG	Preliminary Ecological Remediation Goal
XRF 10	X-ray fluorescence measurements on a sample that had been dried and sieved through a #10-mesh screen

Notes:

A PERG cannot be less than the minimum reference concentration. In cases where the calculated PERG was lower than the minimum reference concentration, the PERG was set equal to the minimum reference concentration.

The maximum XRF 10 concentrations in soil from 0-4 feet below ground surface at each sampling location was compared with PERGs and reference concentrations.

One-half the detection limit was substituted for non-detect results.

No XRF 10 results were available for cadmium; analytical laboratory data were substituted.

PERG calculations are presented in Appendix E.

N

SCALE IN FEET

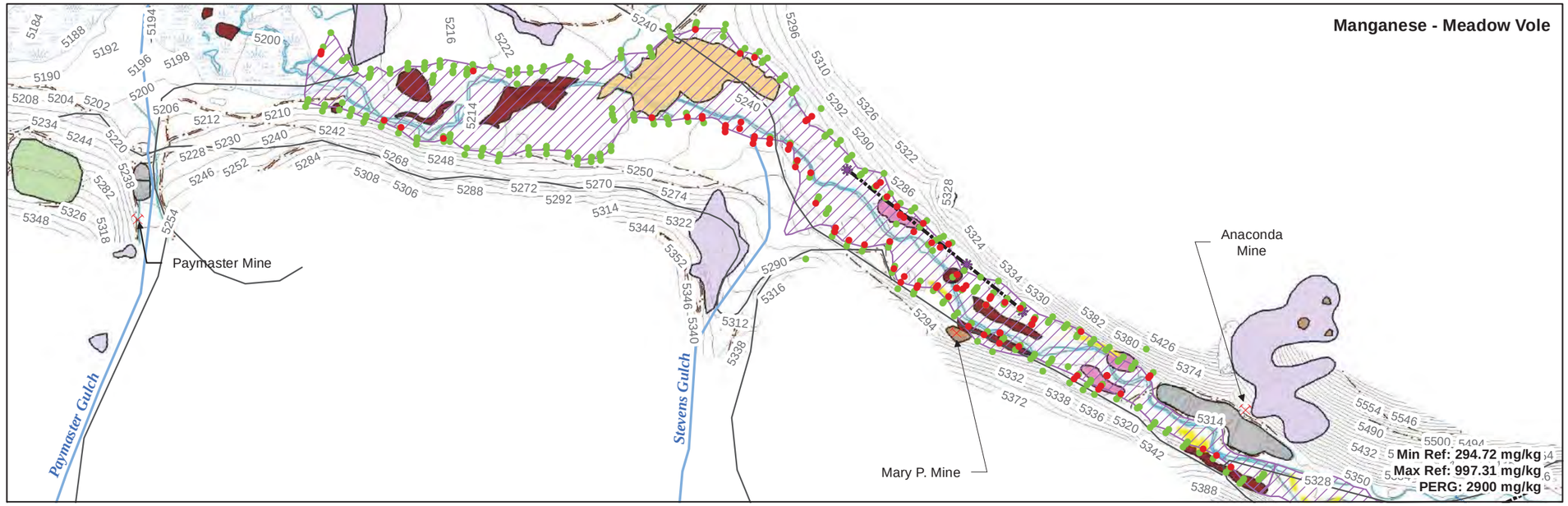
0 700

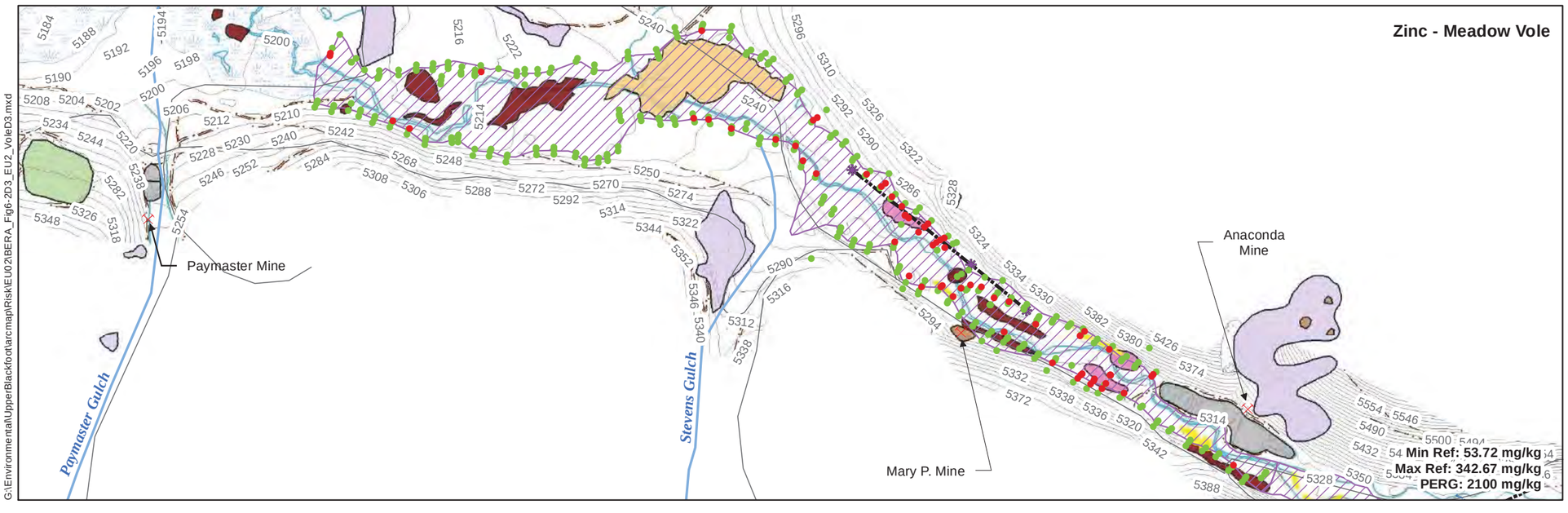
Figure 6-2D2

Comparison of Site Concentrations with Preliminary Ecological Remediation Goals and Reference Site Concentrations for the Meadow Vole

EU 2 - Blackfoot River Dispersed Tailings Associated with EE/CA Removal Action Area and Overbank Deposits

Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex





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- Result < PERG (NO RISK)
- Result > PERG but < Maximum Reference Concentration (POTENTIAL RISK, BUT NOT SITE-RELATED)
- Result > PERG and Maximum Reference Concentration (SITE-RELATED RISK)
- Mines
- 2008 Terrestrial Transect Sampling Locations
- Terrestrial Receptor Transects
- 1975 Breach Flood Stage Indicators
- Area of Concentrated Tailings/Mine Waste
- Area of Dispersed Coarse-Grained Tailings
- Area of Dispersed Sandy (Fine) Tailings
- Estimated Extent of Mine Areas (Sampled 2007/2008)
- Former Wetland Treatment Cells
- Mine Waste Areas (Not Sampled)
- Mine Waste Repository
- Unreclaimed Mine Waste Areas (Sampled 2007/2008)
- Topographic Contours
- Gravel Road
- Trail
- Stream
- Roads
- Outcrops/Talus Slope
- Marshes

EU	Exposure unit
mg/kg	Milligram per kilogram
Max Ref	Maximum Reference Concentration
Min Ref	Minimum Reference Concentration
PERG	Preliminary Ecological Remediation Goal
XRF 10	X-ray fluorescence measurements on a sample that had been dried and sieved through a #10-mesh screen

Notes:

A PERG cannot be less than the minimum reference concentration. In cases where the calculated PERG was lower than the minimum reference concentration, the PERG was set equal to the minimum reference concentration.

The maximum XRF 10 concentrations in soil from 0-4 feet below ground surface at each sampling location was compared with PERGs and reference concentrations.

One-half the detection limit was substituted for non-detect results.

No XRF 10 results were available for cadmium; analytical laboratory data were substituted.

PERG calculations are presented in Appendix E.

N

SCALE IN FEET

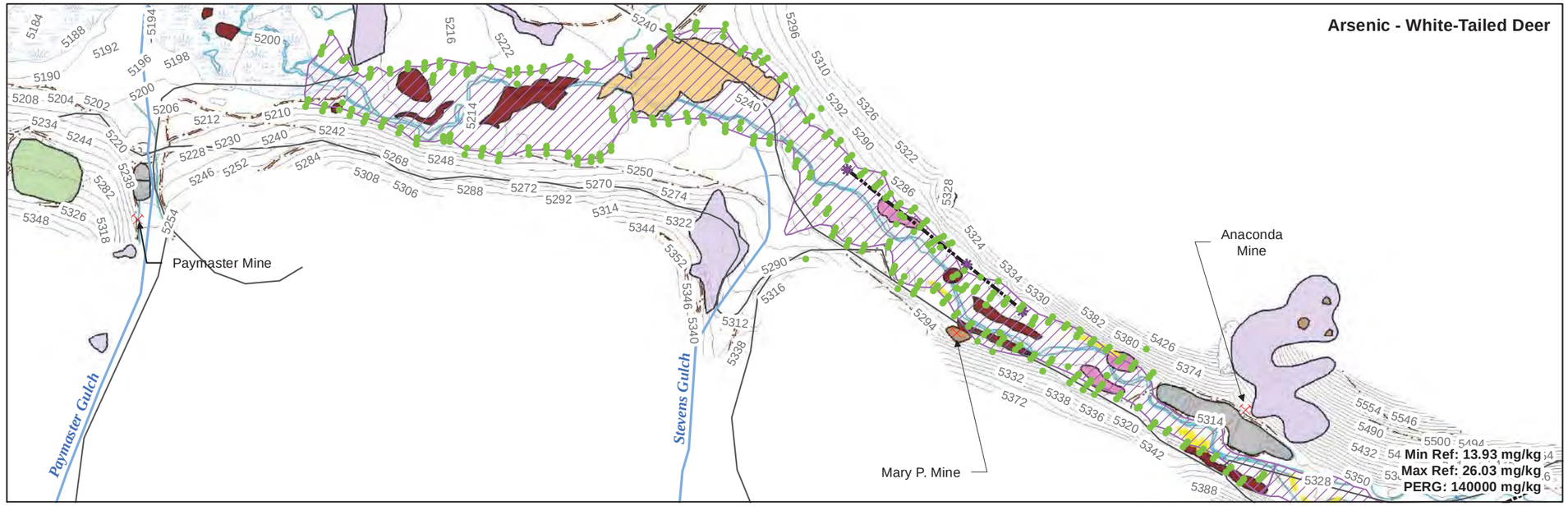
0 700

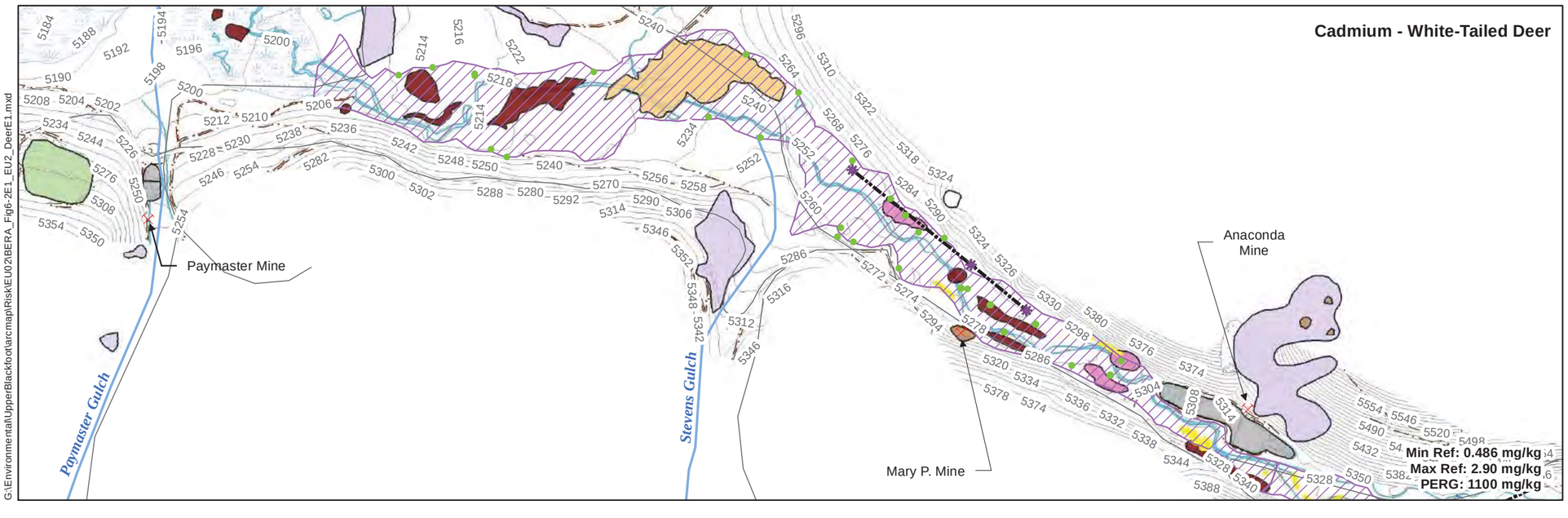
Figure 6-2D3

Comparison of Site Concentrations with Preliminary Ecological Remediation Goals and Reference Site Concentrations for the Meadow Vole

EU 2 - Blackfoot River Dispersed Tailings Associated with EE/CA Removal Action Area and Overbank Deposits

Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex





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- Result < PERG (NO RISK)
- Result > PERG but < Maximum Reference Concentration (POTENTIAL RISK, BUT NOT SITE-RELATED)
- Result > PERG and Maximum Reference Concentration (SITE-RELATED RISK)

- Mines
- 2008 Terrestrial Transect Sampling Locations
- Terrestrial Receptor Transects
- 1975 Breach Flood Stage Indicators
- Area of Concentrated Tailings/Mine Waste
- Area of Dispersed Coarse-Grained Tailings
- Area of Dispersed Sandy (Fine) Tailings
- Estimated Extent of Mine Areas (Sampled 2007/2008)
- Former Wetland Treatment Cells
- Mine Waste Areas (Not Sampled)
- Mine Waste Repository
- Unreclaimed Mine Waste Areas (Sampled 2007/2008)
- Topographic Contours
- Gravel Road
- Trail
- Stream
- Roads
- Outcrops/Talus Slope
- Marshes

EU	Exposure unit
mg/kg	Milligram per kilogram
Max Ref	Maximum Reference Concentration
Min Ref	Minimum Reference Concentration
PERG	Preliminary Ecological Remediation Goal
XRF 10	X-ray fluorescence measurements on a sample that had been dried and sieved through a #10-mesh screen

Notes:

A PERG cannot be less than the minimum reference concentration. In cases where the calculated PERG was lower than the minimum reference concentration, the PERG was set equal to the minimum reference concentration.

The maximum XRF 10 concentrations in soil from 0-4 feet below ground surface at each sampling location was compared with PERGs and reference concentrations.

One-half the detection limit was substituted for non-detect results.

No XRF 10 results were available for cadmium; analytical laboratory data were substituted.

PERG calculations are presented in Appendix E.

N

SCALE IN FEET

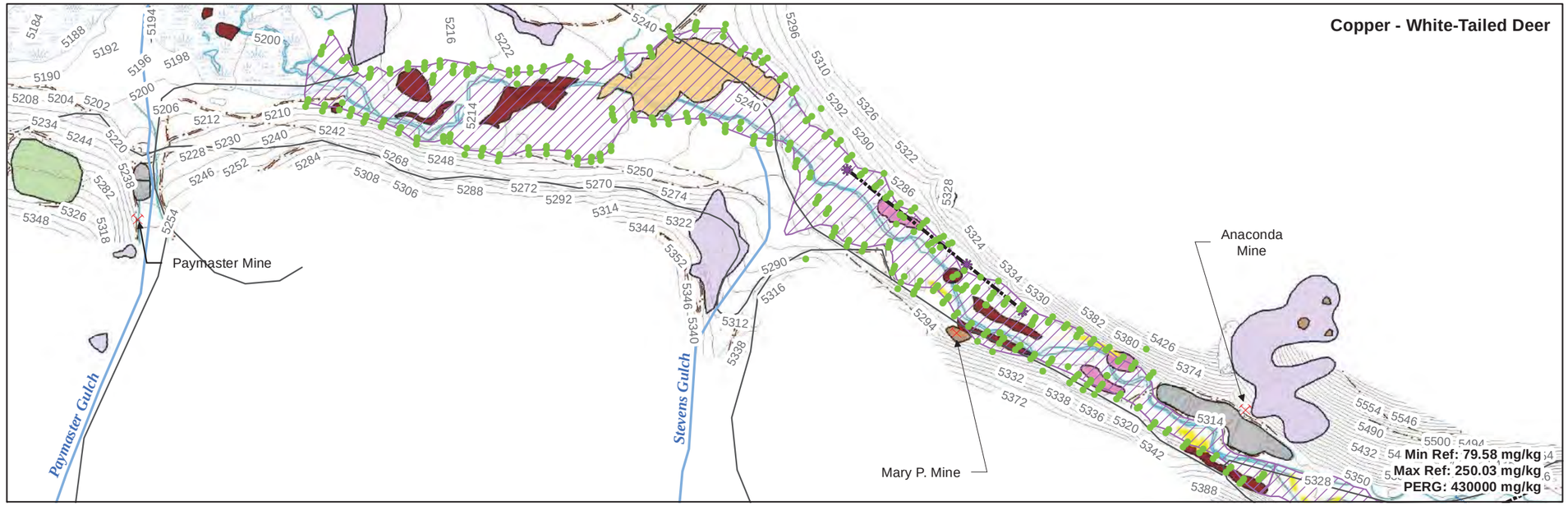
0 700

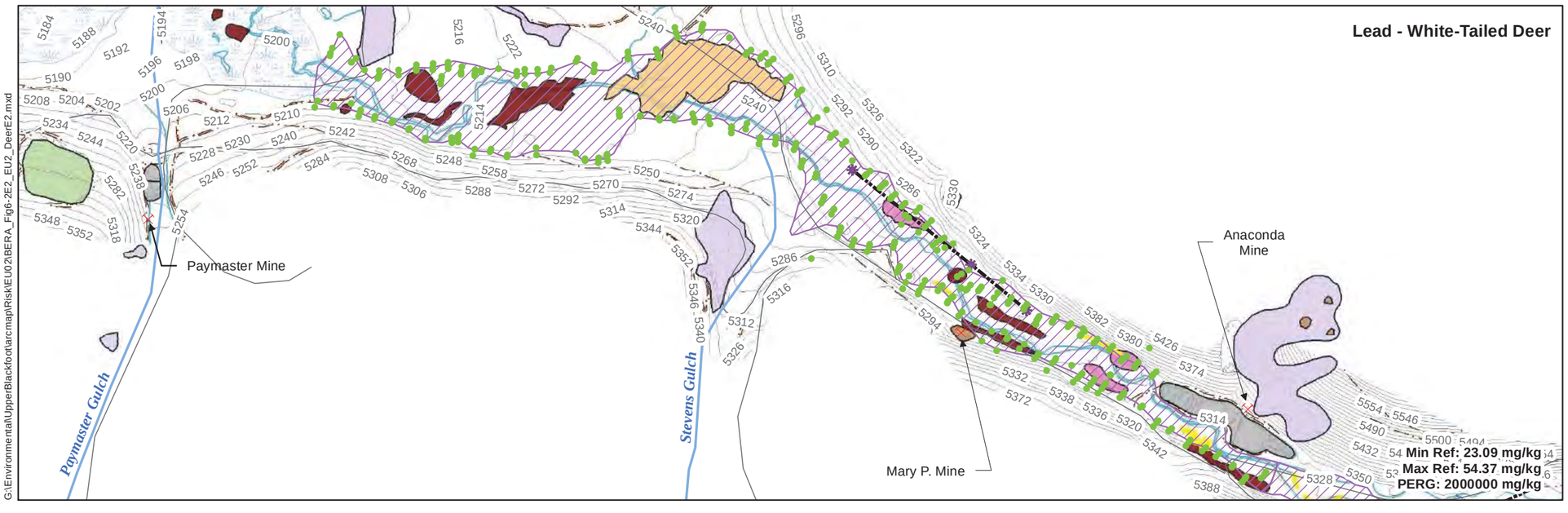
Figure 6-2E1

Comparison of Site Concentrations with Preliminary Ecological Remediation Goals and Reference Site Concentrations for the White-Tailed Deer

EU 2 - Blackfoot River Dispersed Tailings Associated with EE/CA Removal Action Area and Overbank Deposits

Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex





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- Result < PERG (NO RISK)
- Result > PERG but < Maximum Reference Concentration (POTENTIAL RISK, BUT NOT SITE-RELATED)
- Result > PERG and Maximum Reference Concentration (SITE-RELATED RISK)

- Mines
- 2008 Terrestrial Transect Sampling Locations
- Terrestrial Receptor Transects
- 1975 Breach Flood Stage Indicators
- Area of Concentrated Tailings/Mine Waste
- Area of Dispersed Coarse-Grained Tailings
- Area of Dispersed Sandy (Fine) Tailings
- Estimated Extent of Mine Areas (Sampled 2007/2008)
- Former Wetland Treatment Cells
- Mine Waste Areas (Not Sampled)
- Mine Waste Repository
- Unreclaimed Mine Waste Areas (Sampled 2007/2008)
- Topographic Contours
- Gravel Road
- Trail
- Stream
- Roads
- Outcrops/Talus Slope
- Marshes

EU	Exposure unit
mg/kg	Milligram per kilogram
Max Ref	Maximum Reference Concentration
Min Ref	Minimum Reference Concentration
PERG	Preliminary Ecological Remediation Goal
XRF 10	X-ray fluorescence measurements on a sample that had been dried and sieved through a #10-mesh screen

Notes:

A PERG cannot be less than the minimum reference concentration. In cases where the calculated PERG was lower than the minimum reference concentration, the PERG was set equal to the minimum reference concentration.

The maximum XRF 10 concentrations in soil from 0-4 feet below ground surface at each sampling location was compared with PERGs and reference concentrations.

One-half the detection limit was substituted for non-detect results.

No XRF 10 results were available for cadmium; analytical laboratory data were substituted.

PERG calculations are presented in Appendix E.

N

SCALE IN FEET

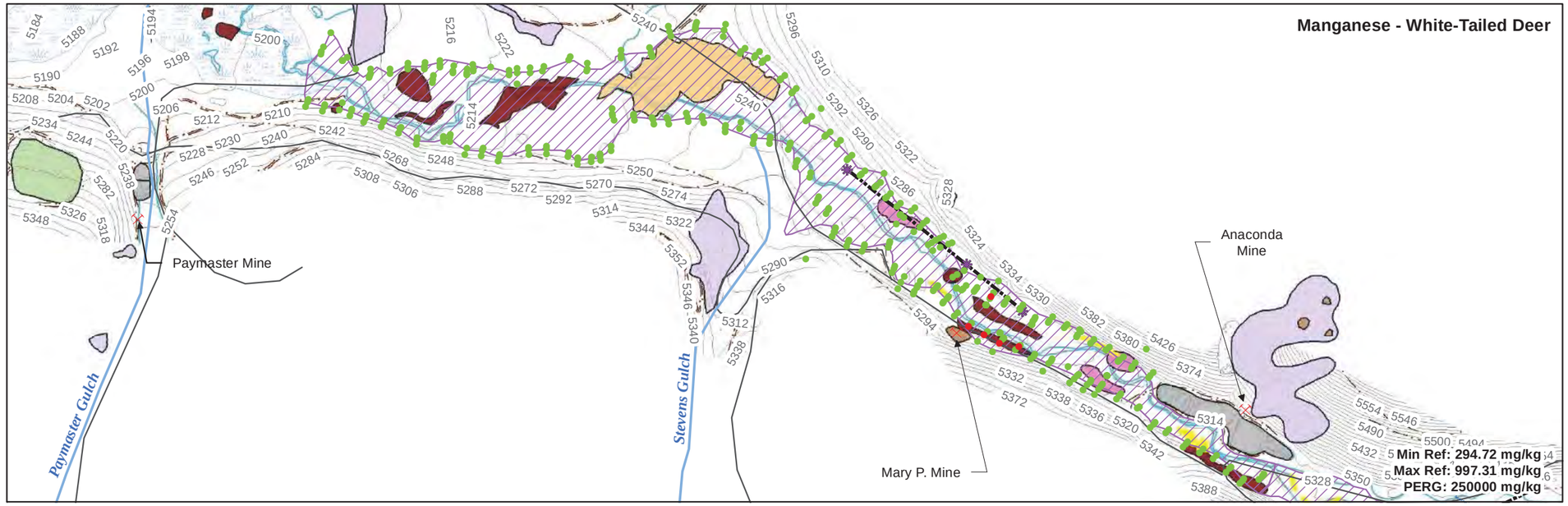
0 700

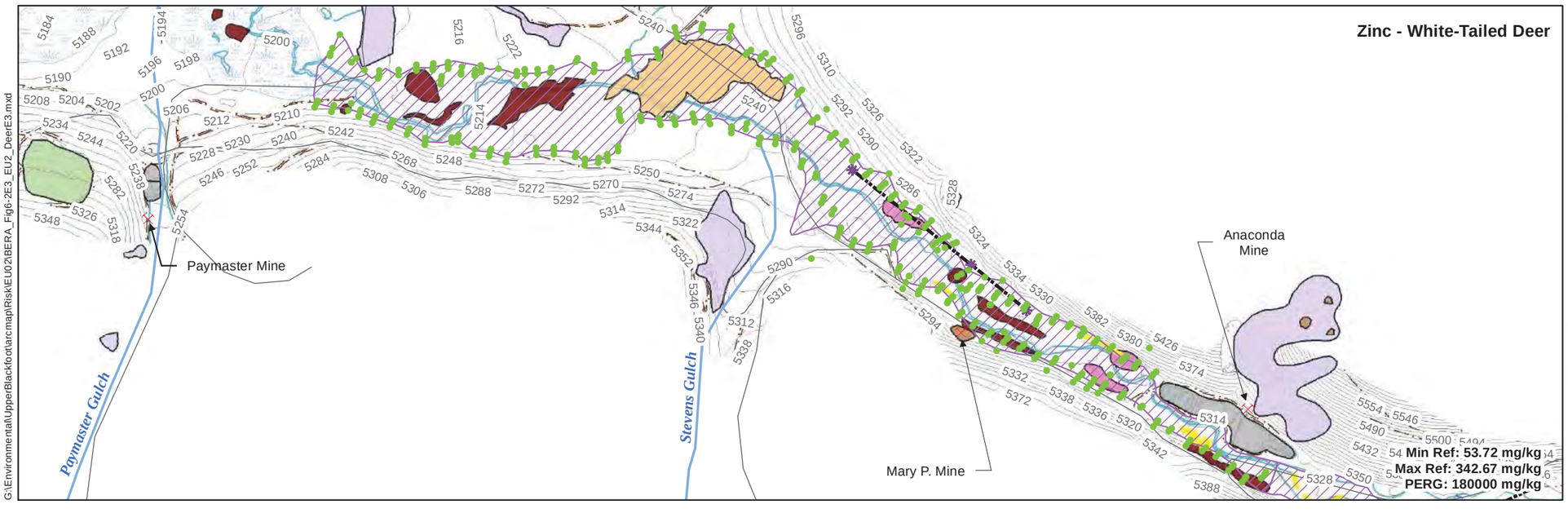
Figure 6-2E2

Comparison of Site Concentrations with Preliminary Ecological Remediation Goals and Reference Site Concentrations for the White-Tailed Deer

EU 2 - Blackfoot River Dispersed Tailings Associated with EE/CA Removal Action Area and Overbank Deposits

Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex





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- Result < PERG (NO RISK)
- Result > PERG but < Maximum Reference Concentration (POTENTIAL RISK, BUT NOT SITE-RELATED)
- Result > PERG and Maximum Reference Concentration (SITE-RELATED RISK)

- Mines
- 2008 Terrestrial Transect Sampling Locations
- Terrestrial Receptor Transects
- 1975 Breach Flood Stage Indicators
- Area of Concentrated Tailings/Mine Waste
- Area of Dispersed Coarse-Grained Tailings
- Area of Dispersed Sandy (Fine) Tailings
- Estimated Extent of Mine Areas (Sampled 2007/2008)
- Former Wetland Treatment Cells
- Mine Waste Areas (Not Sampled)
- Mine Waste Repository
- Unreclaimed Mine Waste Areas (Sampled 2007/2008)
- Topographic Contours
- Gravel Road
- Trail
- Stream
- Roads
- Outcrops/Talus Slope
- Marshes

EU	Exposure unit
mg/kg	Milligram per kilogram
Max Ref	Maximum Reference Concentration
Min Ref	Minimum Reference Concentration
PERG	Preliminary Ecological Remediation Goal
XRF 10	X-ray fluorescence measurements on a sample that had been dried and sieved through a #10-mesh screen

Notes:

A PERG cannot be less than the minimum reference concentration. In cases where the calculated PERG was lower than the minimum reference concentration, the PERG was set equal to the minimum reference concentration.

The maximum XRF 10 concentrations in soil from 0-4 feet below ground surface at each sampling location was compared with PERGs and reference concentrations.

One-half the detection limit was substituted for non-detect results.

No XRF 10 results were available for cadmium; analytical laboratory data were substituted.

PERG calculations are presented in Appendix E.

N

SCALE IN FEET

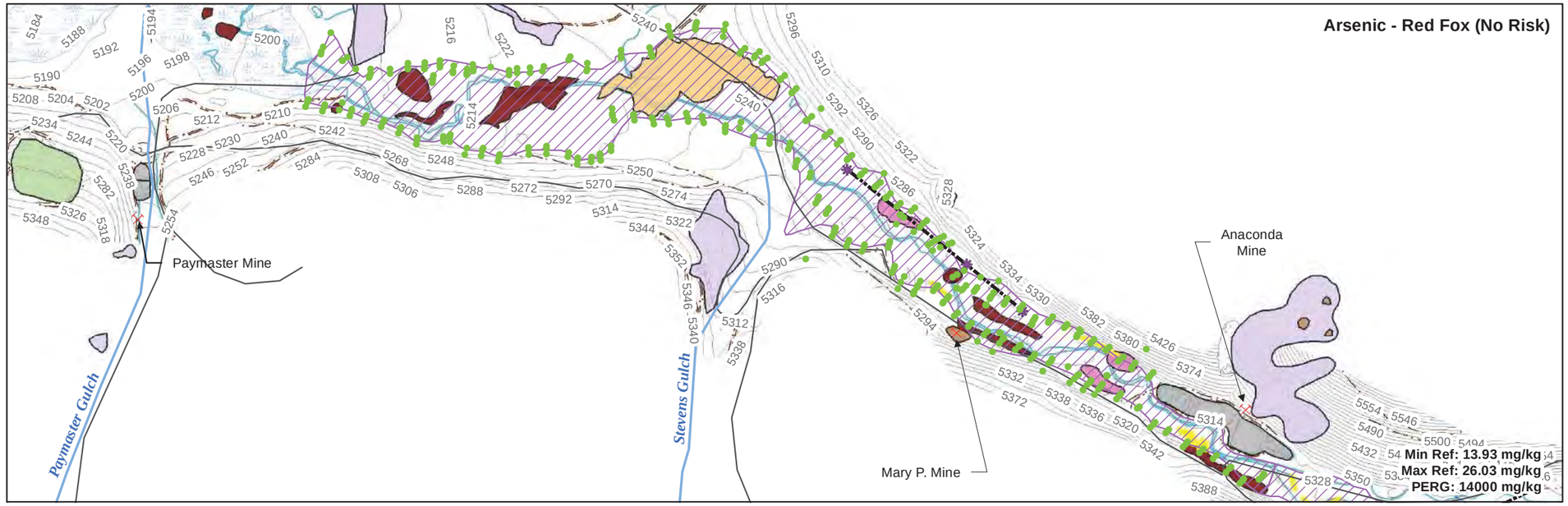
0 700

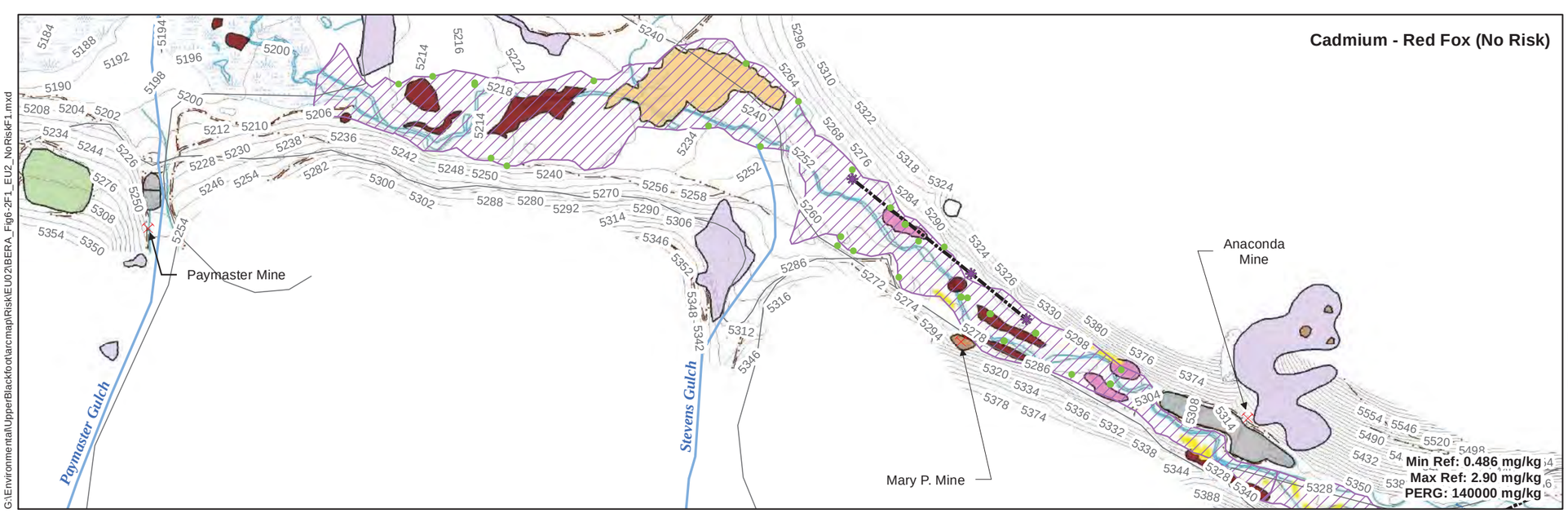
Figure 6-2E3

Comparison of Site Concentrations with Preliminary Ecological Remediation Goals and Reference Site Concentrations for the White-Tailed Deer

EU 2 - Blackfoot River Dispersed Tailings Associated with EE/CA Removal Action Area and Overbank Deposits

Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex





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- Result < PERG (NO RISK)
- Result > PERG but < Maximum Reference Concentration (POTENTIAL RISK, BUT NOT SITE-RELATED)
- Result > PERG and Maximum Reference Concentration (SITE-RELATED RISK)

- Mines
- 2008 Terrestrial Transect Sampling Locations
- Terrestrial Receptor Transects
- 1975 Breach Flood Stage Indicators
- Area of Concentrated Tailings/Mine Waste
- Area of Dispersed Coarse-Grained Tailings
- Area of Dispersed Sandy (Fine) Tailings
- Estimated Extent of Mine Areas (Sampled 2007/2008)
- Former Wetland Treatment Cells
- Mine Waste Areas (Not Sampled)
- Mine Waste Repository
- Unreclaimed Mine Waste Areas (Sampled 2007/2008)
- Topographic Contours
- Gravel Road
- Trail
- Stream
- Roads
- Outcrops/Talus Slope
- Marshes

EU	Exposure unit
mg/kg	Milligram per kilogram
Max Ref	Maximum Reference Concentration
Min Ref	Minimum Reference Concentration
PERG	Preliminary Ecological Remediation Goal
XRF 10	X-ray fluorescence measurements on a sample that had been dried and sieved through a #10-mesh screen

Notes:

A PERG cannot be less than the minimum reference concentration. In cases where the calculated PERG was lower than the minimum reference concentration, the PERG was set equal to the minimum reference concentration.

The maximum XRF 10 concentrations in soil from 0-4 feet below ground surface at each sampling location was compared with PERGs and reference concentrations.

One-half the detection limit was substituted for non-detect results.

No XRF 10 results were available for cadmium; analytical laboratory data were substituted.

PERG calculations are presented in Appendix E.

N

SCALE IN FEET

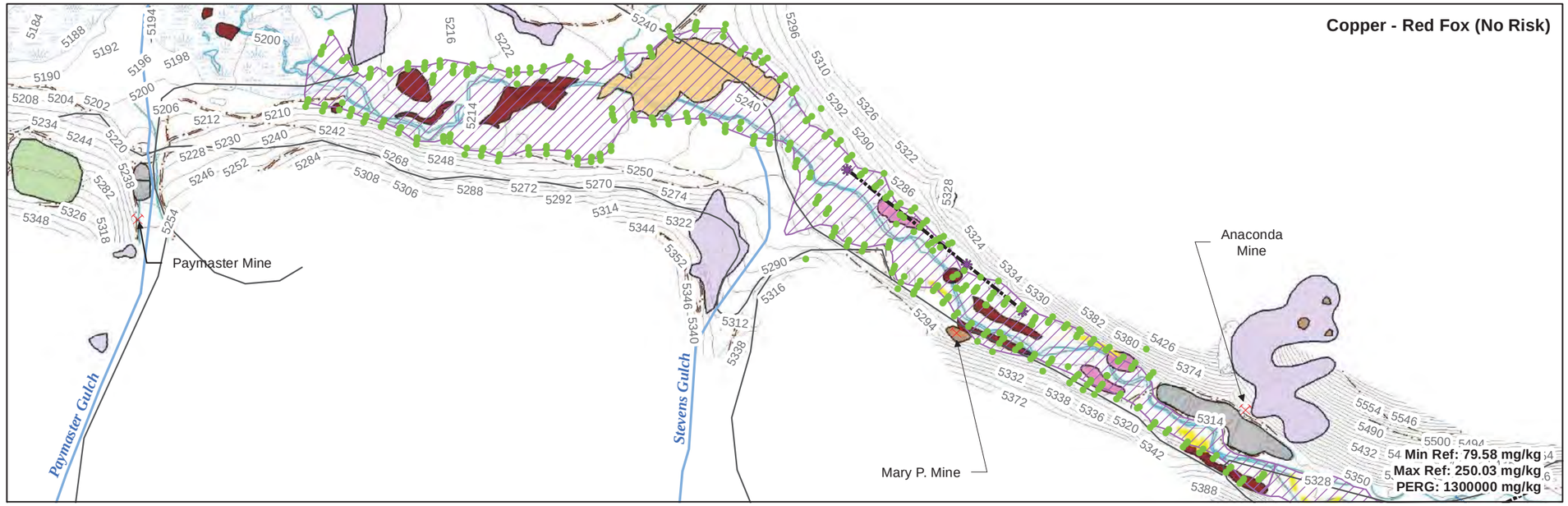
0 700

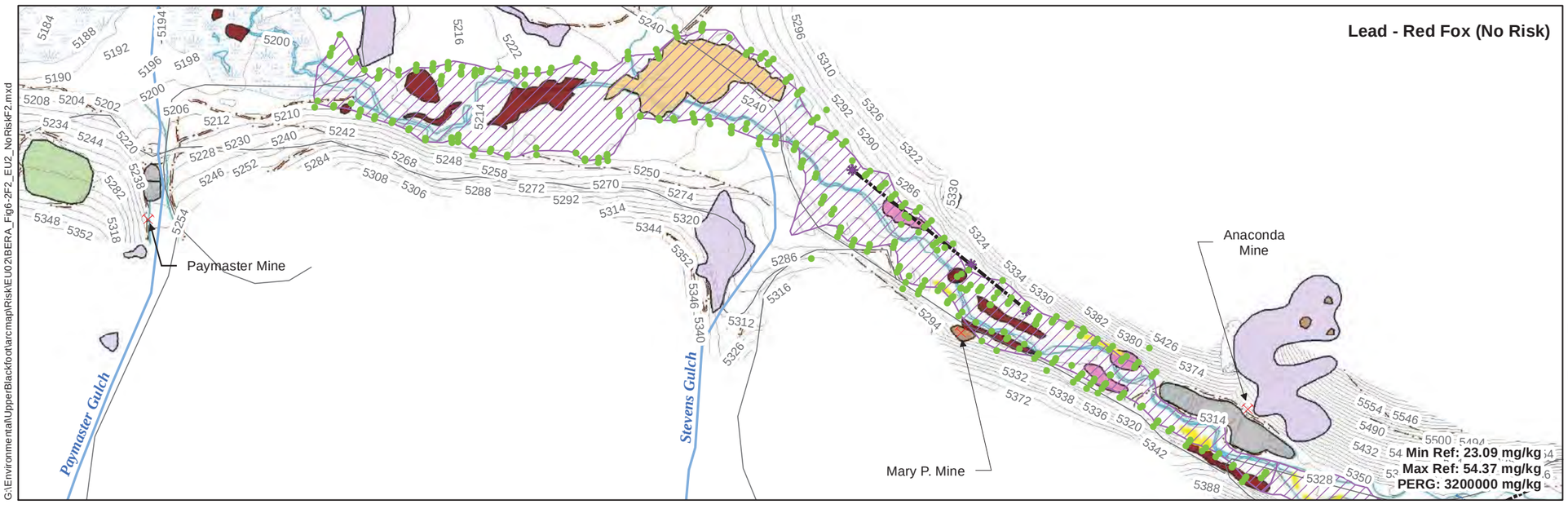
Figure 6-2F1

Comparison of Site Concentrations with Preliminary Ecological Remediation Goals and Reference Site Concentrations for the Red Fox

EU 2 - Blackfoot River Dispersed Tailings Associated with EE/CA Removal Action Area and Overbank Deposits

Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex





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- Result > PERG but < Maximum Reference Concentration (POTENTIAL RISK, BUT NOT SITE-RELATED)
- Result > PERG and Maximum Reference Concentration (SITE-RELATED RISK)

- Mines
- 2008 Terrestrial Transect Sampling Locations
- Terrestrial Receptor Transects
- 1975 Breach Flood Stage Indicators
- Area of Concentrated Tailings/Mine Waste
- Area of Dispersed Coarse-Grained Tailings
- Area of Dispersed Sandy (Fine) Tailings
- Estimated Extent of Mine Areas (Sampled 2007/2008)
- Former Wetland Treatment Cells
- Mine Waste Areas (Not Sampled)
- Mine Waste Repository
- Unreclaimed Mine Waste Areas (Sampled 2007/2008)
- Topographic Contours
- Gravel Road
- Trail
- Stream
- Roads
- Outcrops/Talus Slope
- Marshes

EU	Exposure unit
mg/kg	Milligram per kilogram
Max Ref	Maximum Reference Concentration
Min Ref	Minimum Reference Concentration
PERG	Preliminary Ecological Remediation Goal
XRF 10	X-ray fluorescence measurements on a sample that had been dried and sieved through a #10-mesh screen

Notes:

A PERG cannot be less than the minimum reference concentration. In cases where the calculated PERG was lower than the minimum reference concentration, the PERG was set equal to the minimum reference concentration.

The maximum XRF 10 concentrations in soil from 0-4 feet below ground surface at each sampling location was compared with PERGs and reference concentrations.

One-half the detection limit was substituted for non-detect results.

No XRF 10 results were available for cadmium; analytical laboratory data were substituted.

PERG calculations are presented in Appendix E.

N

SCALE IN FEET

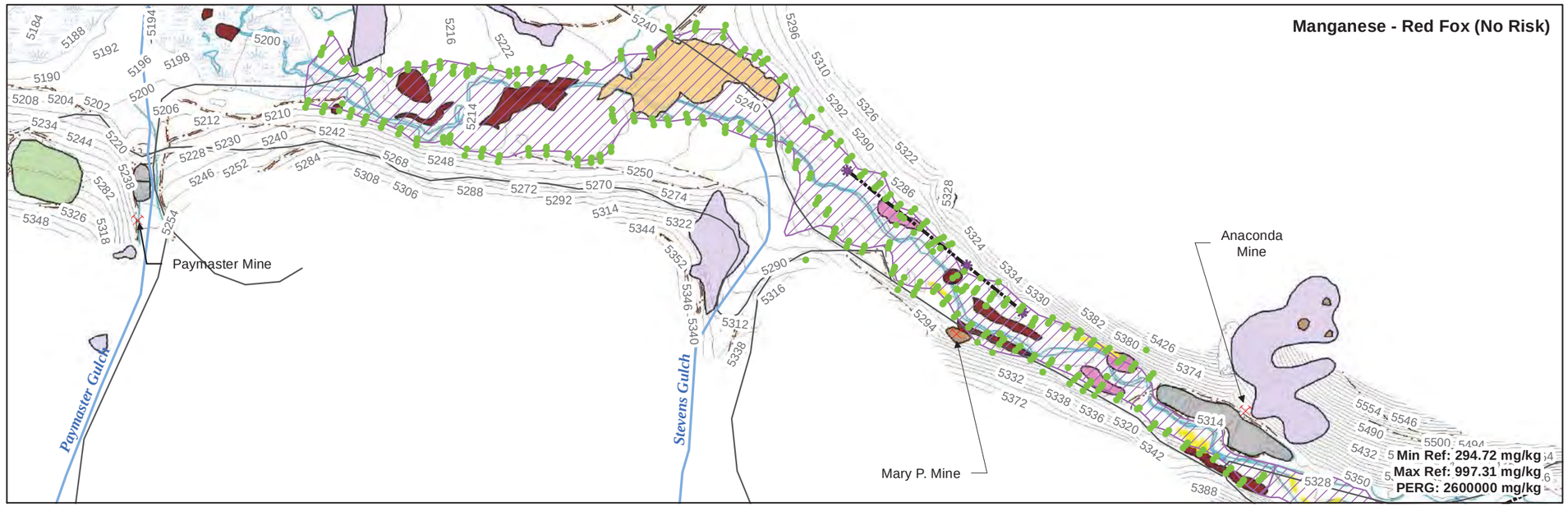
0 700

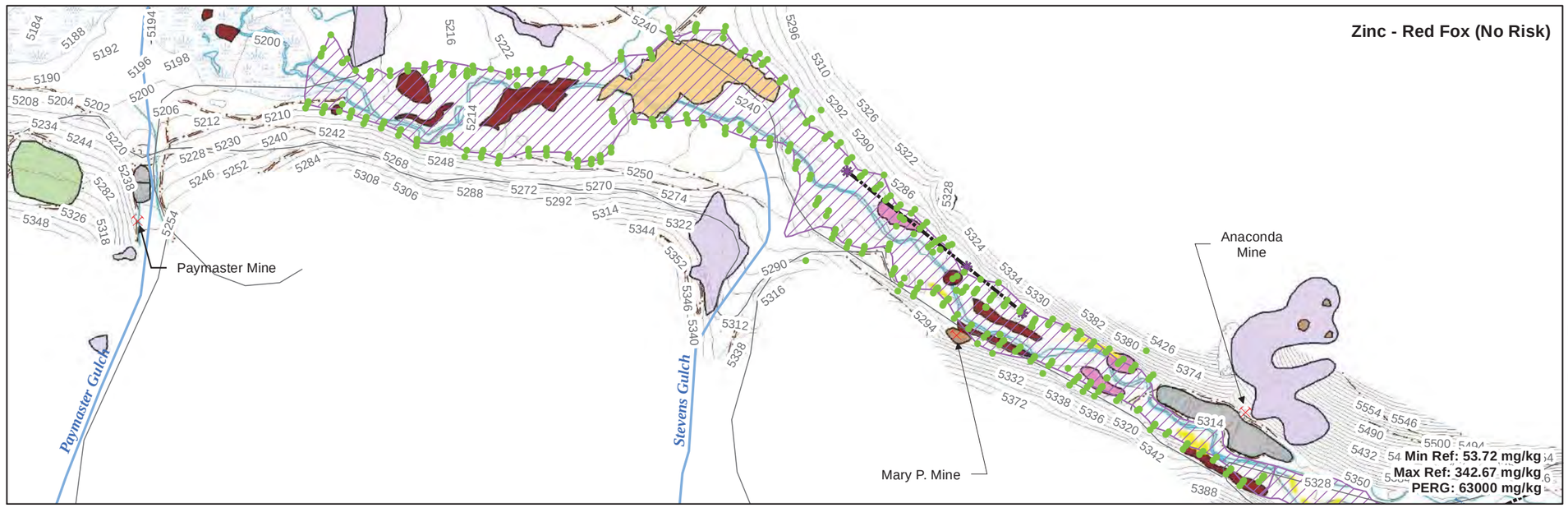
Figure 6-2F2

Comparison of Site Concentrations with Preliminary Ecological Remediation Goals and Reference Site Concentrations for the Red Fox

EU 2 - Blackfoot River Dispersed Tailings Associated with EE/CA Removal Action Area and Overbank Deposits

Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex





- Result < PERG (NO RISK)
- Result > PERG but < Maximum Reference Concentration (POTENTIAL RISK, BUT NOT SITE-RELATED)
- Result > PERG and Maximum Reference Concentration (SITE-RELATED RISK)

- Mines
- 2008 Terrestrial Transect Sampling Locations
- Terrestrial Receptor Transects
- 1975 Breach Flood Stage Indicators
- Area of Concentrated Tailings/Mine Waste
- Area of Dispersed Coarse-Grained Tailings
- Area of Dispersed Sandy (Fine) Tailings
- Estimated Extent of Mine Areas (Sampled 2007/2008)
- Former Wetland Treatment Cells
- Mine Waste Areas (Not Sampled)
- Mine Waste Repository
- Unreclaimed Mine Waste Areas (Sampled 2007/2008)
- Topographic Contours
- Gravel Road
- Trail
- Stream
- Roads
- Outcrops/Talus Slope
- Marshes

EU	Exposure unit
mg/kg	Milligram per kilogram
Max Ref	Maximum Reference Concentration
Min Ref	Minimum Reference Concentration
PERG	Preliminary Ecological Remediation Goal
XRF 10	X-ray fluorescence measurements on a sample that had been dried and sieved through a #10-mesh screen

Notes:

A PERG cannot be less than the minimum reference concentration. In cases where the calculated PERG was lower than the minimum reference concentration, the PERG was set equal to the minimum reference concentration.

The maximum XRF 10 concentrations in soil from 0-4 feet below ground surface at each sampling location was compared with PERGs and reference concentrations.

One-half the detection limit was substituted for non-detect results.

No XRF 10 results were available for cadmium; analytical laboratory data were substituted.

PERG calculations are presented in Appendix E.

N

SCALE IN FEET

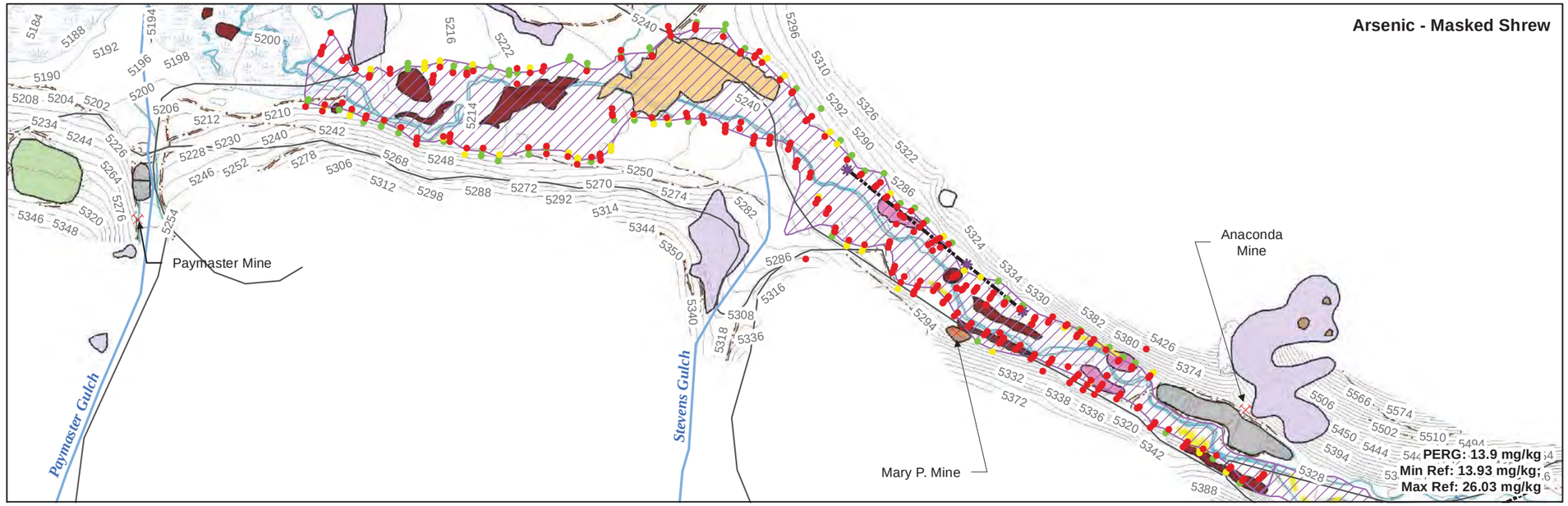
0 700

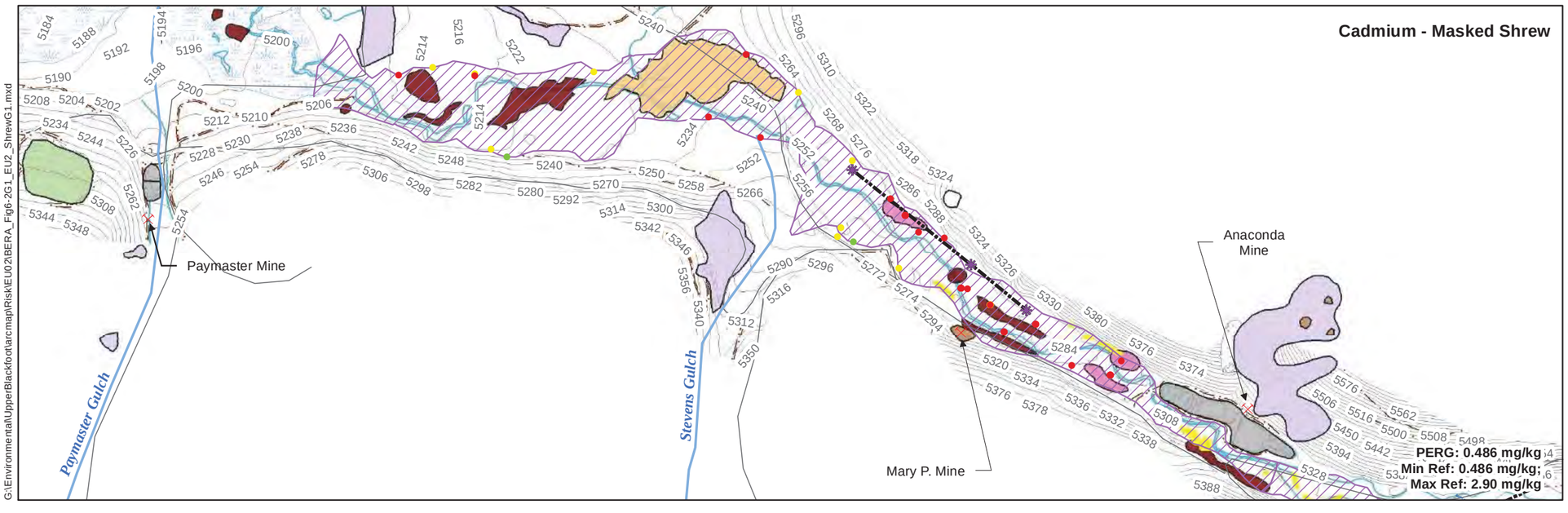
Figure 6-2F3

Comparison of Site Concentrations with Preliminary Ecological Remediation Goals and Reference Site Concentrations for the Red Fox

EU 2 - Blackfoot River Dispersed Tailings Associated with EE/CA Removal Action Area and Overbank Deposits

Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex





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- Result > PERG but < Maximum Reference Concentration (POTENTIAL RISK, BUT NOT SITE-RELATED)
- Result > PERG and Maximum Reference Concentration (SITE-RELATED RISK)
- Mines
- 2008 Terrestrial Transect Sampling Locations
- Terrestrial Receptor Transects
- 1975 Breach Flood Stage Indicators
- Area of Concentrated Tailings/Mine Waste
- Area of Dispersed Coarse-Grained Tailings
- Area of Dispersed Sandy (Fine) Tailings
- Estimated Extent of Mine Areas (Sampled 2007/2008)
- Former Wetland Treatment Cells
- Mine Waste Areas (Not Sampled)
- Mine Waste Repository
- Unreclaimed Mine Waste Areas (Sampled 2007/2008)
- Topographic Contours
- Gravel Road
- Trail
- Stream
- Roads
- Outcrops/Talus Slope
- Marshes
- Estimated Extent of Streamside Impacts Soil Sampling

EU	Exposure unit
mg/kg	Milligram per kilogram
Max Ref	Maximum Reference Concentration
Min Ref	Minimum Reference Concentration
PERG	Preliminary Ecological Remediation Goal
XRF 10	X-ray fluorescence measurements on a sample that had been dried and sieved through a #10-mesh screen

Notes:

A PERG cannot be less than the minimum reference concentration. In cases where the calculated PERG was lower than the minimum reference concentration, the PERG was set equal to the minimum reference concentration.

The maximum XRF 10 concentrations in soil from 0-4 feet below ground surface at each sampling location was compared with PERGs and reference concentrations.

One-half the detection limit was substituted for non-detect results.

No XRF 10 results were available for cadmium; analytical laboratory data were substituted.

PERG calculations are presented in Appendix E.

N

SCALE IN FEET

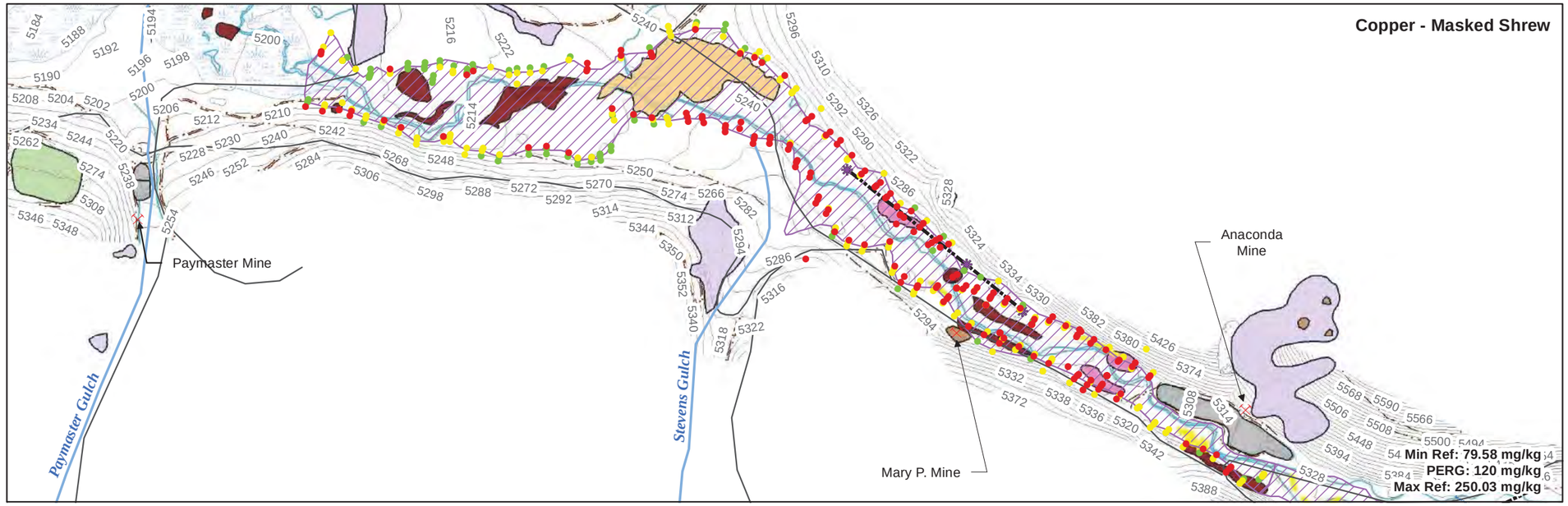
0 700

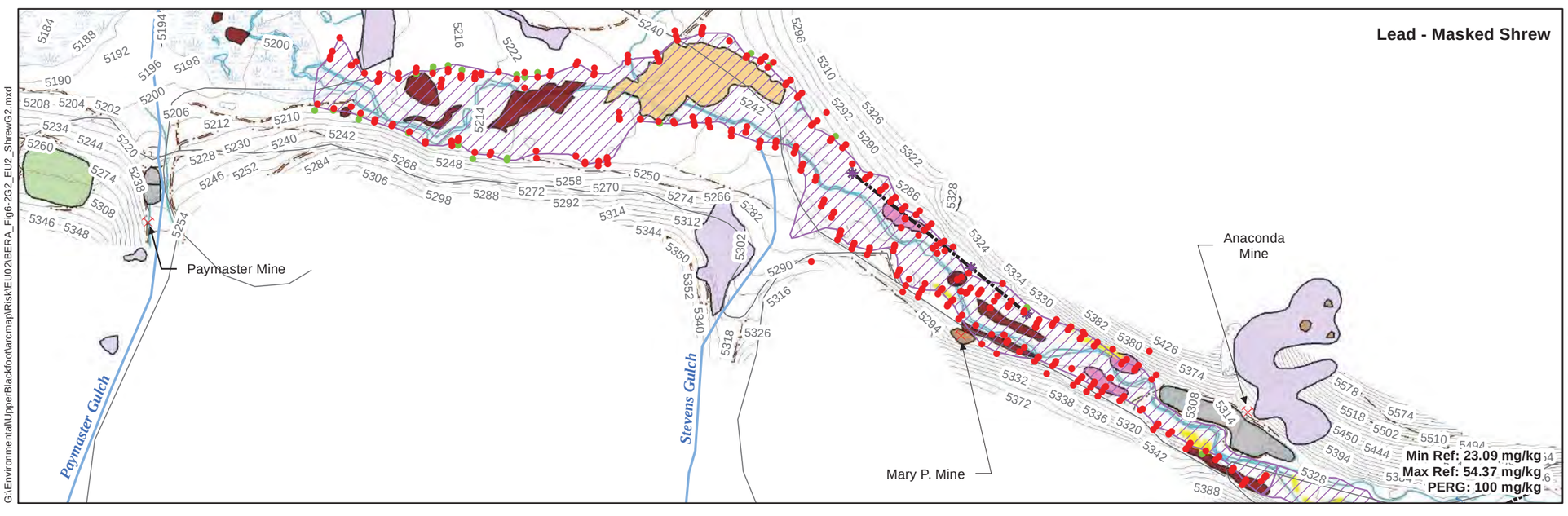
Figure 6-2G1

Comparison of Site Concentrations with Preliminary Ecological Remediation Goals and Reference Site Concentrations for the Masked Shrew

EU 2 - Blackfoot River Dispersed Tailings Associated with EE/CA Removal Action Area and Overbank Deposits

Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex





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- Result > PERG but < Maximum Reference Concentration (POTENTIAL RISK, BUT NOT SITE-RELATED)
- Result > PERG and Maximum Reference Concentration (SITE-RELATED RISK)

- Mines
- 2008 Terrestrial Transect Sampling Locations
- Terrestrial Receptor Transects
- Topographic Contours
- Gravel Road
- Trail
- Stream
- Roads
- Outcrops/Talus Slope
- Marshes

EU	Exposure unit
mg/kg	Milligram per kilogram
Max Ref	Maximum Reference Concentration
Min Ref	Minimum Reference Concentration
PERG	Preliminary Ecological Remediation Goal
XRF 10	X-ray fluorescence measurements on a sample that had been dried and sieved through a #10-mesh screen

Notes:

A PERG cannot be less than the minimum reference concentration. In cases where the calculated PERG was lower than the minimum reference concentration, the PERG was set equal to the minimum reference concentration.

The maximum XRF 10 concentrations in soil from 0-4 feet below ground surface at each sampling location was compared with PERGs and reference concentrations.

One-half the detection limit was substituted for non-detect results.

No XRF 10 results were available for cadmium; analytical laboratory data were substituted.

PERG calculations are presented in Appendix E.

N

SCALE IN FEET

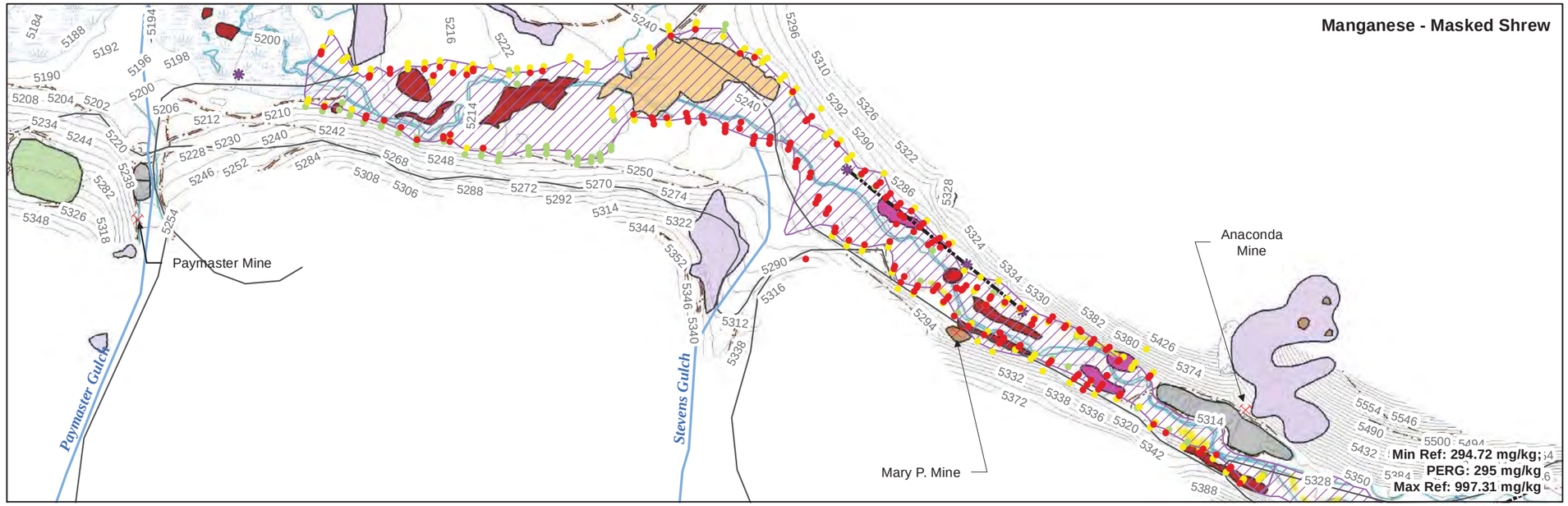
0 700

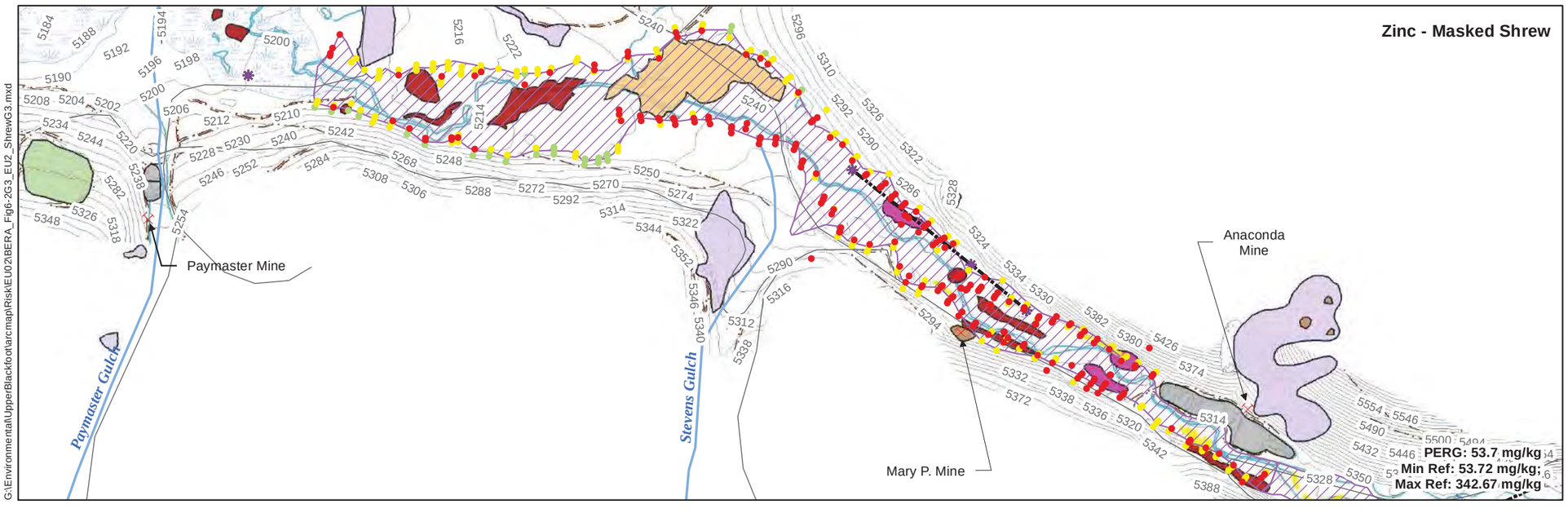
Figure 6-2G2

Comparison of Site Concentrations with Preliminary Ecological Remediation Goals and Reference Site Concentrations for the Masked Shrew

EU 2 - Blackfoot River Dispersed Tailings Associated with EE/CA Removal Action Area and Overbank Deposits

Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex





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- Result < PERG (NO RISK)
- Result > PERG but < Maximum Reference Concentration (POTENTIAL RISK, BUT NOT SITE-RELATED)
- Result > PERG and Maximum Reference Concentration (SITE-RELATED RISK)

- Mines
- 2008 Terrestrial Transect Sampling Locations
- Terrestrial Receptor Transects
- Topographic Contours
- Gravel Road
- Trail
- Stream
- Roads
- Outcrops/Talus Slope
- Marshes

EU	Exposure unit
mg/kg	Milligram per kilogram
Max Ref	Maximum Reference Concentration
Min Ref	Minimum Reference Concentration
PERG	Preliminary Ecological Remediation Goal
XRF 10	X-ray fluorescence measurements on a sample that had been dried and sieved through a #10-mesh screen

Notes:

A PERG cannot be less than the minimum reference concentration. In cases where the calculated PERG was lower than the minimum reference concentration, the PERG was set equal to the minimum reference concentration.

The maximum XRF 10 concentrations in soil from 0-4 feet below ground surface at each sampling location was compared with PERGs and reference concentrations.

One-half the detection limit was substituted for non-detect results.

No XRF 10 results were available for cadmium; analytical laboratory data were substituted.

PERG calculations are presented in Appendix E.

N

SCALE IN FEET

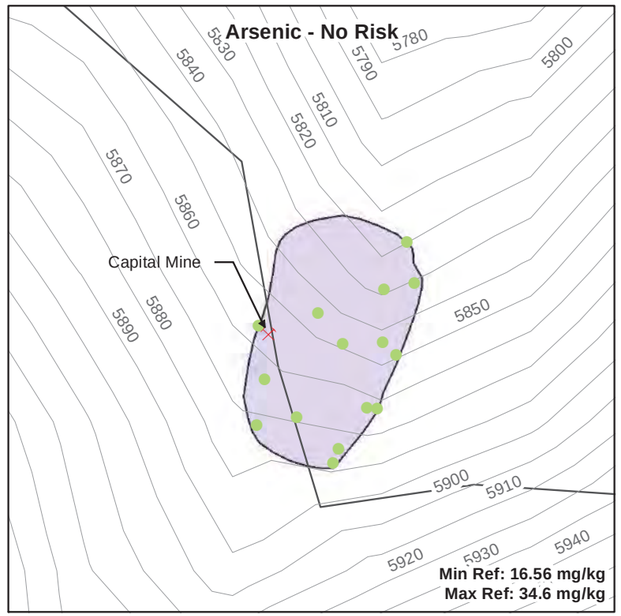
0 700

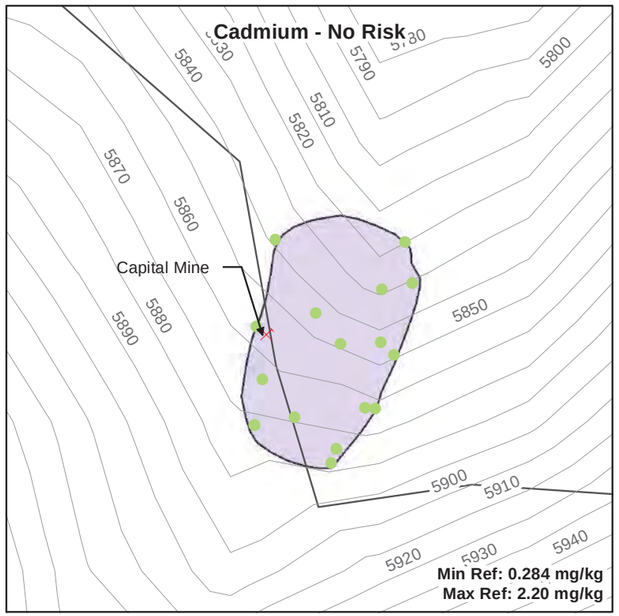
Figure 6-2G3

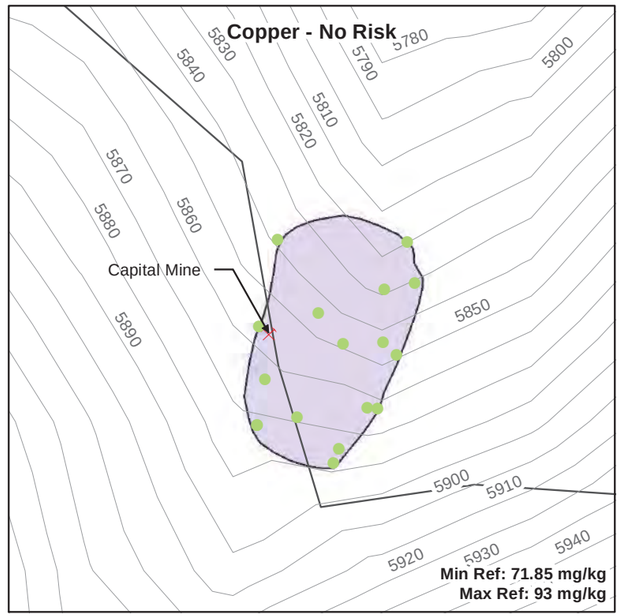
Comparison of Site Concentrations with Preliminary Ecological Remediation Goals and Reference Site Concentrations for the Masked Shrew

EU 2 - Blackfoot River Dispersed Tailings Associated with EE/CA Removal Action Area and Overbank Deposits

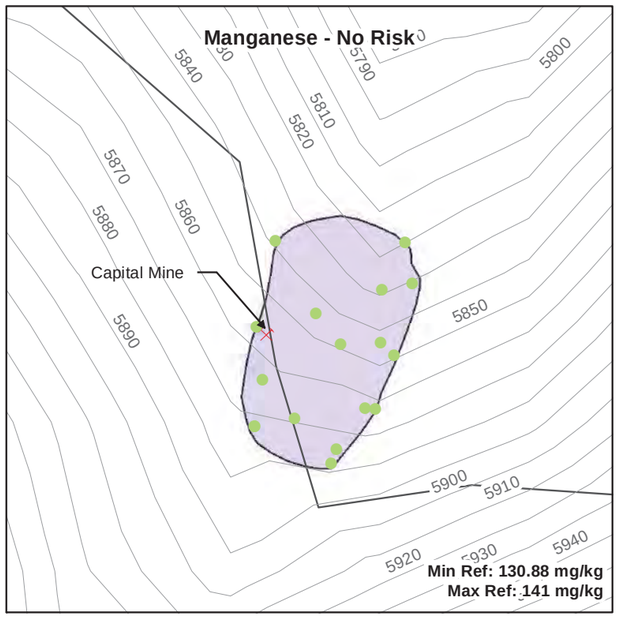
Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex

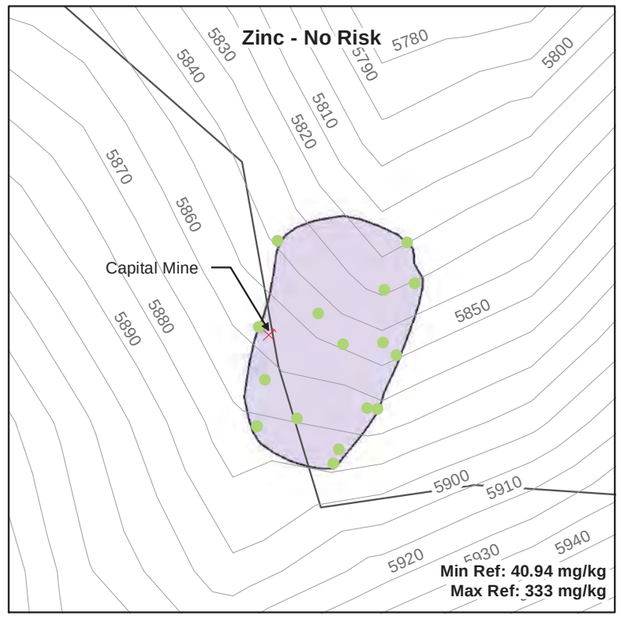












- Result < PERG (NO RISK)
- Result > PERG but < Maximum Reference Concentration (POTENTIAL RISK, BUT NOT SITE-RELATED)
- Result > PERG and Maximum Reference Concentration (SITE-RELATED RISK)

- Mines
- Estimated Extent of Mine Areas (Sampled 2007/2008)
- Roads
- Topographic Contours

EU	Exposure unit
mg/kg	Milligram per kilogram
Max Ref	Maximum Reference Concentration
Min Ref	Minimum Reference Concentration
PERG	Preliminary Ecological Remediation Goal
XRF 10	X-ray fluorescence measurements on a sample that had been dried and sieved through a #10-mesh screen

Notes:

A PERG cannot be less than the minimum reference concentration. In cases where the calculated PERG was lower than the minimum reference concentration, the PERG was set equal to the minimum reference concentration.

XRF 10 concentrations in the top 6 inches of soil at each sampling location were compared with PERGs and reference concentrations.

One-half the detection limit was substituted for non-detect results.

No XRF 10 results were available for cadmium; analytical laboratory data were substituted.

PERG calculations are presented in Appendix E.

Topographic Contours were created from 30 meter Digital Elevation Models (DEM).

N

SCALE IN FEET

0 100

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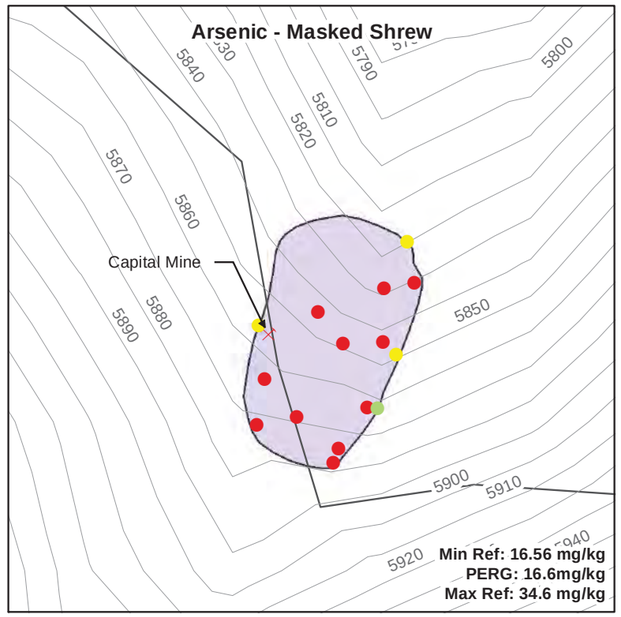
PERG (mg/kg)						
Ecological Receptor	**Arsenic**	**Cadmium**	**Copper**	**Lead**	**Manganese**	**Zinc**
Mourning Dove	5,600,000	18,000	1,700,000	1,600,000	61,000,000	2,800,000
Red-Tailed Hawk	2,700,000	1,200,000	6,000,000	4,800,000	640,000,000	1,200,000
American Kestral	98,000	1,700	200,000	68,000	8,400,000	250,000
Meadow Vole	1,400	13	5,100	23,000	2,900	2,100
White-Tailed Deer	20,000,000	160,000	61,000,000	290,000,000	35,000,000	25,000,000
Red Fox	2,000,000	19,000,000	180,000,000	460,000,000	370,000,000	9,000,000

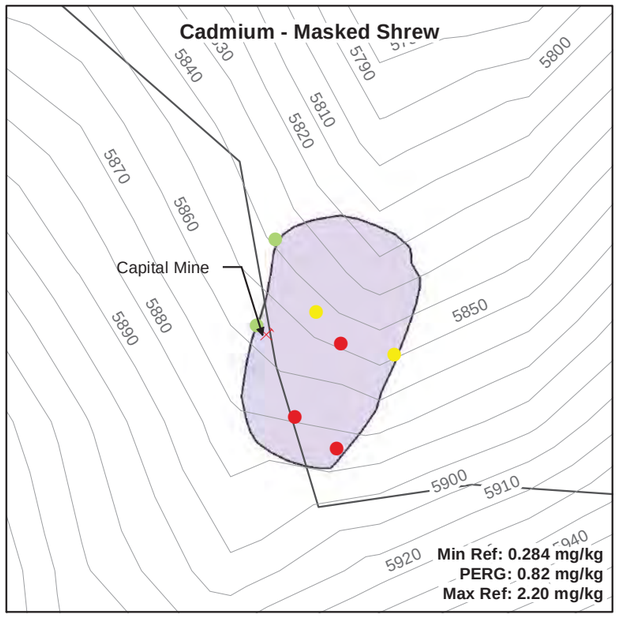
Figure 6-3A

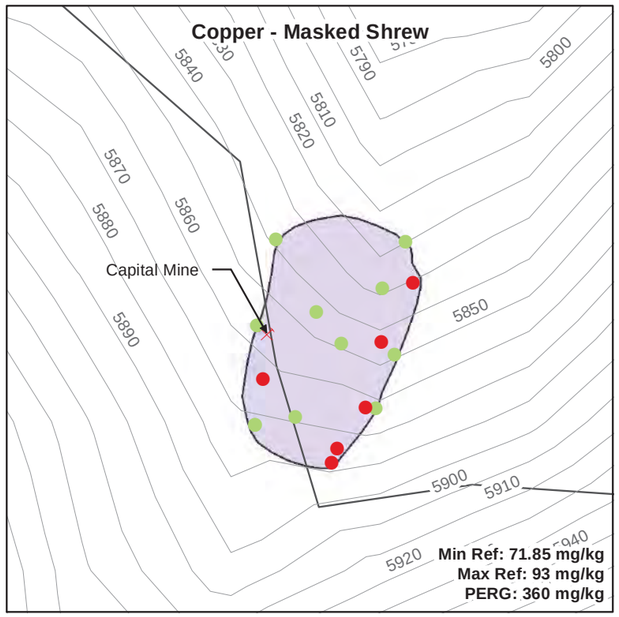
Comparison of Site Concentrations with Preliminary Ecological Remediation Goals and Reference Site Concentrations for the Morning Dove, Red-Tailed Hawk, American Kestrel, Meadow Vole, White-Tailed Deer and Red Fox

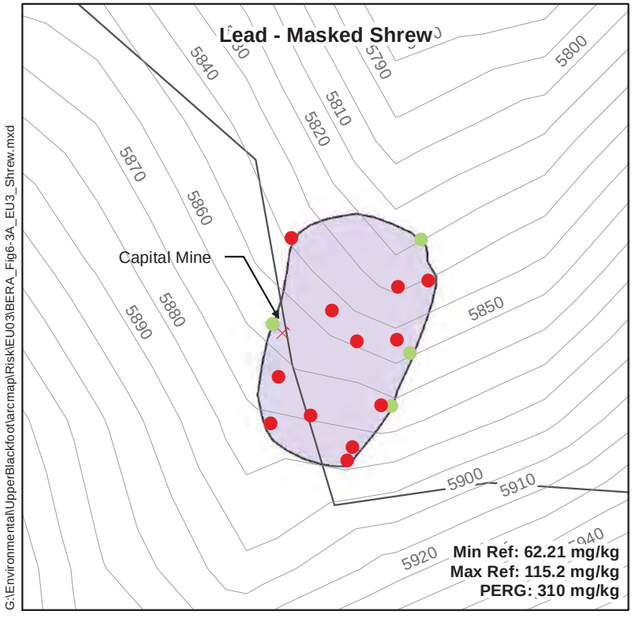
EU 3 - Capital Mine Waste Area

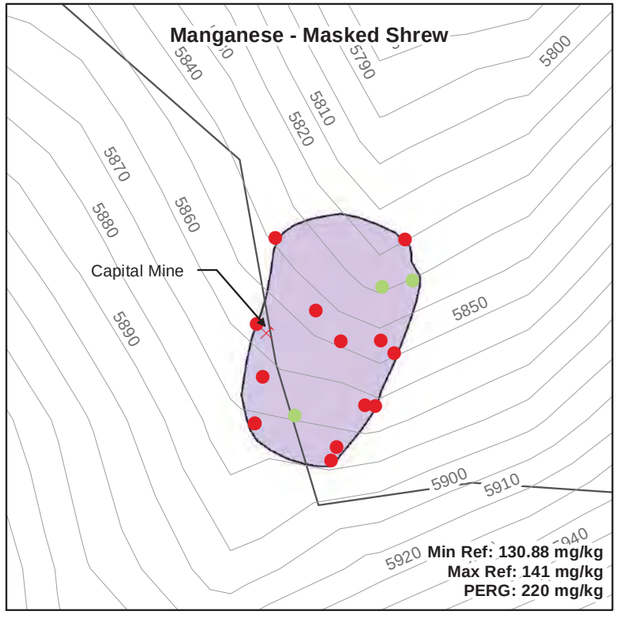
Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex

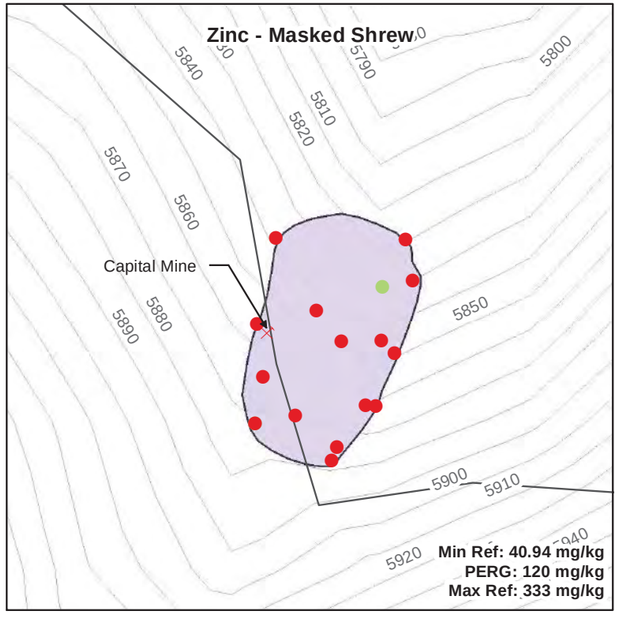












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- Result < PERG (NO RISK)
- Result > PERG but < Maximum Reference Concentration (POTENTIAL RISK, BUT NOT SITE-RELATED)
- Result > PERG and Maximum Reference Concentration (SITE-RELATED RISK)

- Mines
- Estimated Extent of Mine Areas (Sampled 2007/2008)
- Topographic Contours
- Roads

EU	Exposure unit
mg/kg	Milligram per kilogram
Max Ref	Maximum Reference Concentration
Min Ref	Minimum Reference Concentration
PERG	Preliminary Ecological Remediation Goal
XRF 10	X-ray fluorescence measurements on a sample that had been dried and seived through a #10-mesh screen

Notes:

A PERG cannot be less than the minimum reference concentration. In cases where the calculated PERG was lower than the minimum reference concentration, the PERG was set equal to the minimum reference concentration.

XRF 10 concentrations in the top 6 inches of soil at each sampling location were compared with PERGs and reference concentrations.

One-half the detection limit was substituted for non-detect results.

No XRF 10 results were available for cadmium; analytical laboratory data were substituted.

PERG calculations are presented in Appendix E.

Topographic Contours were created from 30 meter Digital Elevation Models (DEM).

N

SCALE IN FEET

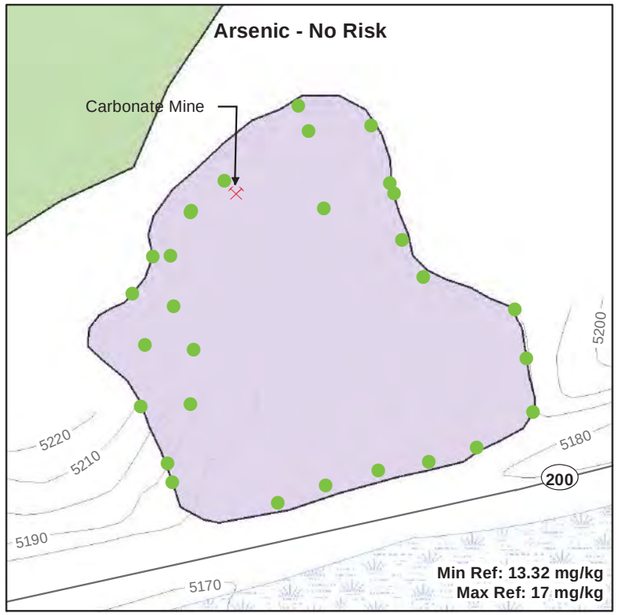
0 100

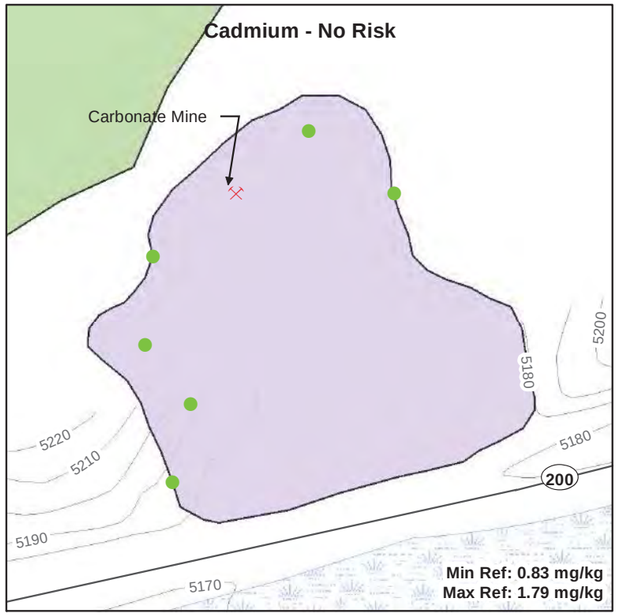
Figure 6-3B

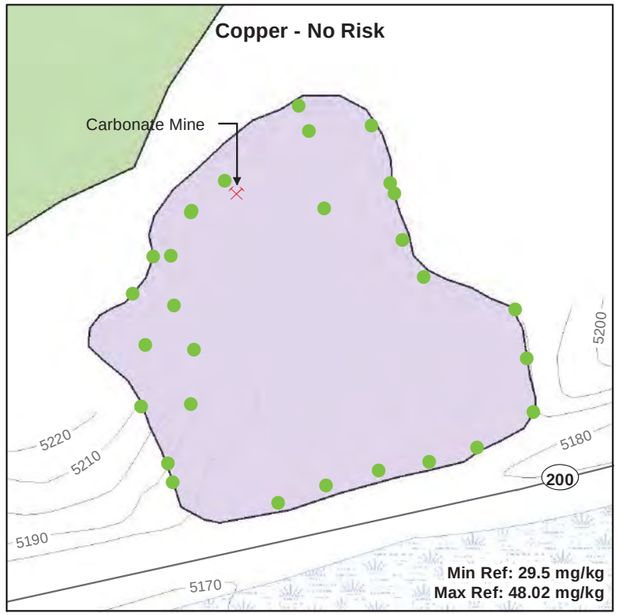
Comparison of Site Concentrations with Preliminary Ecological Remediation Goals and Reference Site Concentrations for the Masked Shrew

EU 3 - Capital Mine Waste Area

Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex







- Result < PERG (NO RISK)
- Result > PERG but < Maximum Reference Concentration (POTENTIAL RISK, BUT NOT SITE-RELATED)
- Result > PERG and Maximum Reference Concentration (SITE-RELATED RISK)

- Mines
- Estimated Extent of Mine Areas (Sampled 2007/2008)
- Mine Waste Repository
- Roads
- Marshes

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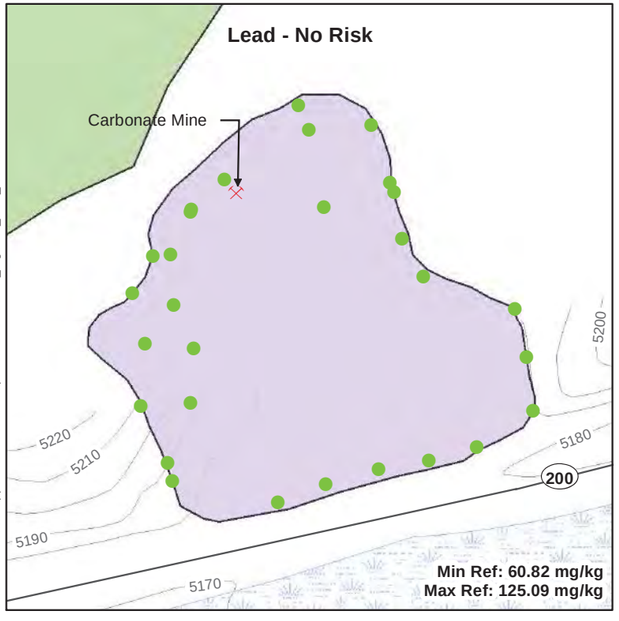
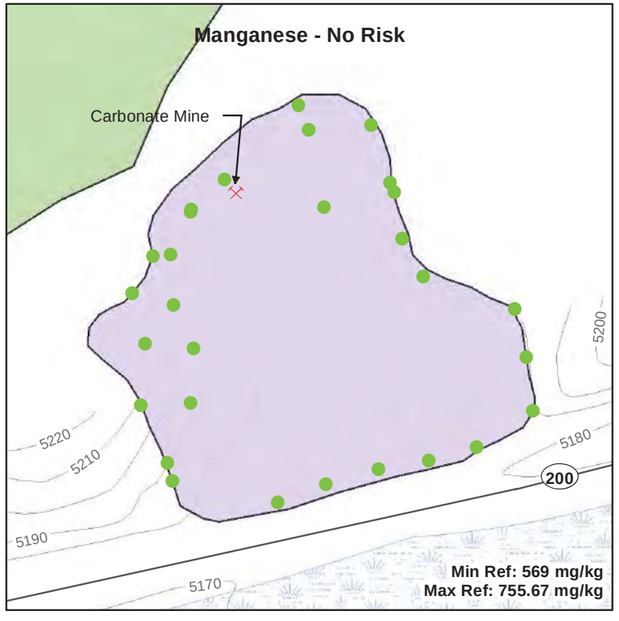
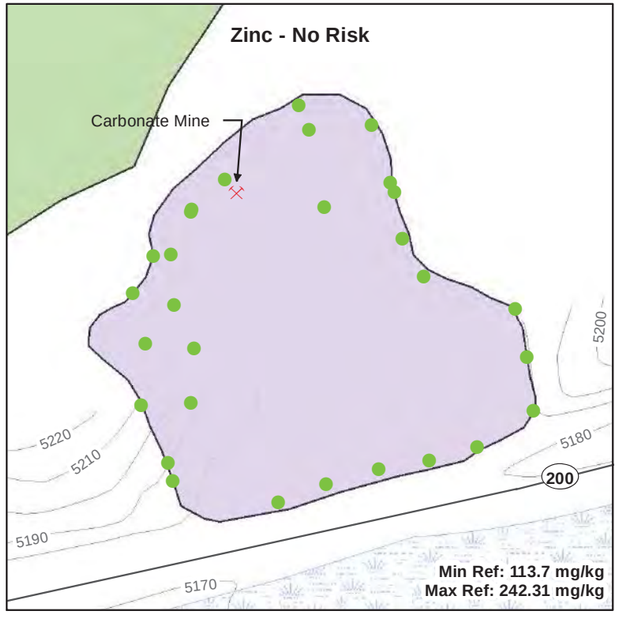






EU	Exposure unit
mg/kg	Milligram per kilogram
Max Ref	Maximum Reference Concentration
Min Ref	Minimum Reference Concentration
PERG	Preliminary Ecological Remediation Goal
XRF 10	X-ray fluorescence measurements on a sample that had been dried and sieved through a #10-mesh screen

Notes:

A PERG cannot be less than the minimum reference concentration. In cases where the calculated PERG was lower than the minimum reference concentration, the PERG was set equal to the minimum reference concentration.

XRF 10 concentrations in the top 6 inches of soil at each sampling location were compared with PERGs and reference concentrations.

One-half the detection limit was substituted for non-detect results.

No XRF 10 results were available for cadmium; analytical laboratory data were substituted.

PERG calculations are presented in Appendix E.

Topographic Contours were created from 30 meter Digital Elevation Models (DEM).

N

SCALE IN FEET

0 150

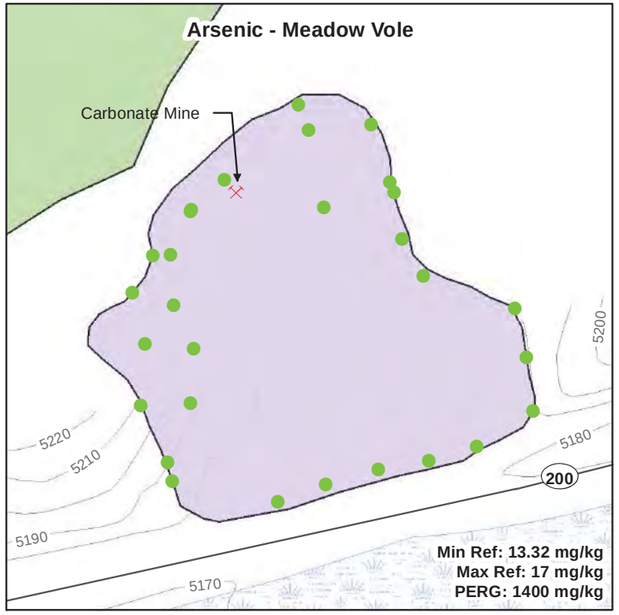
PERG (mg/kg)						
Ecological Receptor	**Arsenic**	**Cadmium**	**Copper**	**Lead**	**Manganese**	**Zinc**
Mourning Dove	660,000	2,100	210,000	190,000	7,300,000	330,000
Red-Tailed Hawk	330,000	140,000	720,000	570,000	76,000,000	140,000
American Kestral	12,000	200	24,000	8,100	1,000,000	30,000
White-Tailed Deer	2,400,000	19,000	7,300,000	34,000,000	4,200,000	3,000,000
Red Fox	240,000	2,300,000	22,000,000	55,000,000	44,000,000	1,100,000

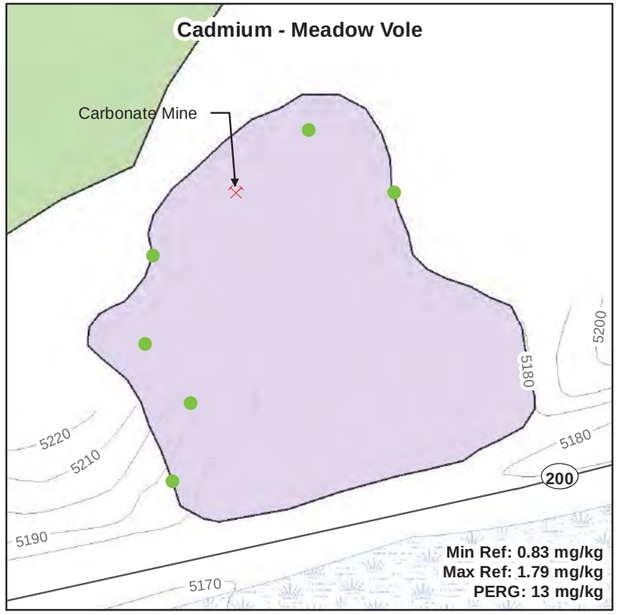
Figure 6-4A

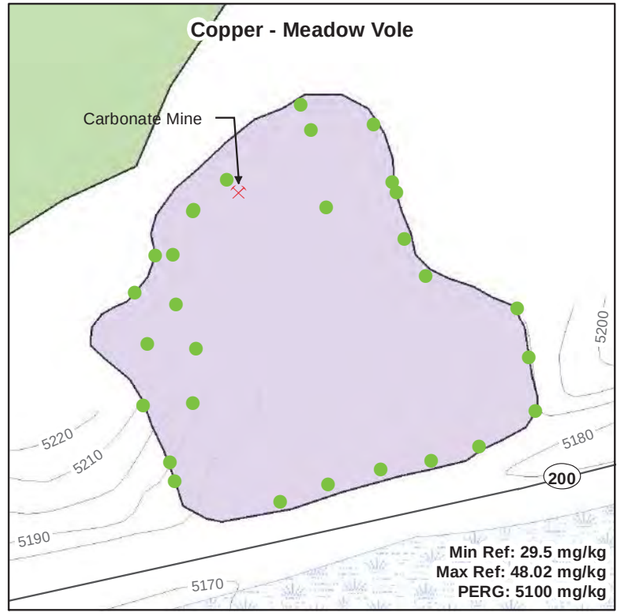
Comparison of Site Concentrations with Preliminary Ecological Remediation Goals and Reference Site Concentrations for the Mourning Dove, Red-Tailed Hawk, American Kestrel, White-Tailed Deer and Red Fox

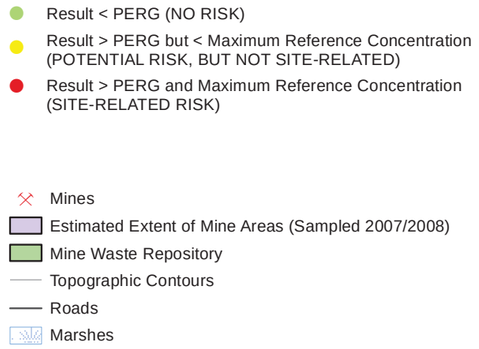
EU 4 - Carbonate Mine Waste Area

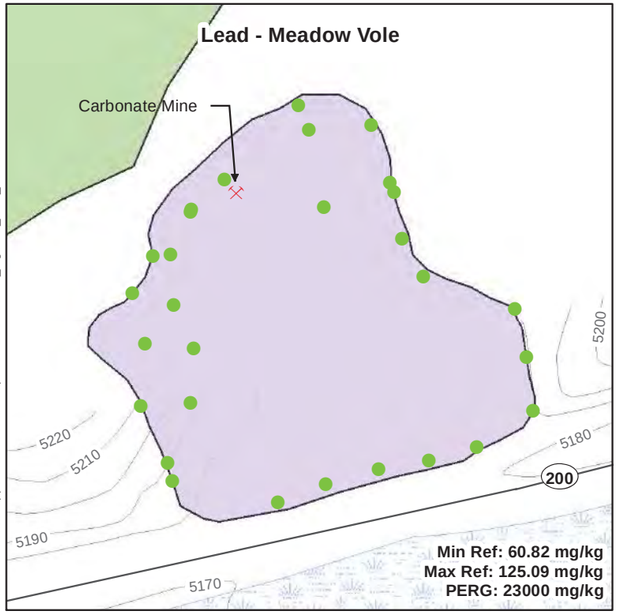
Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex

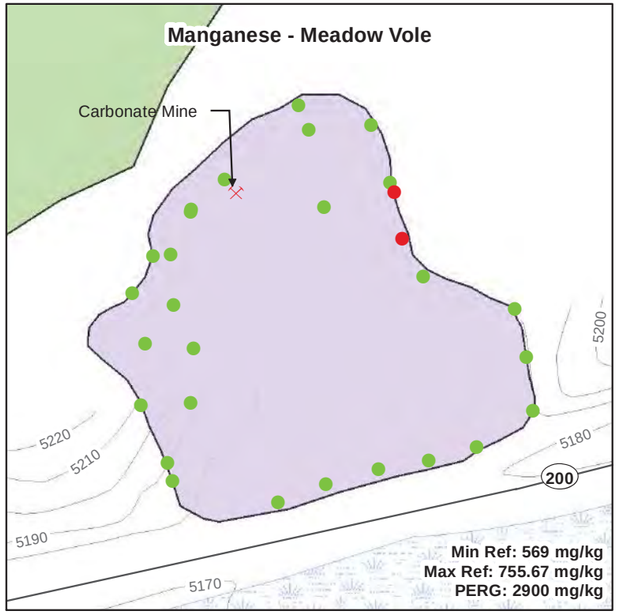


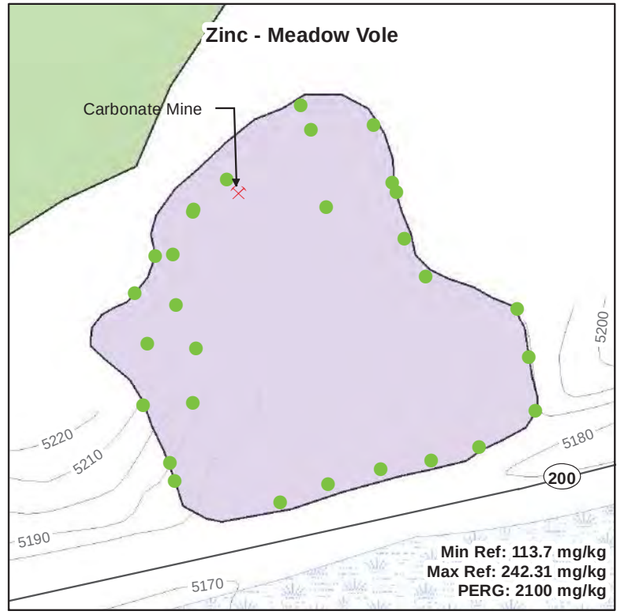












EU	Exposure unit
mg/kg	Milligram per kilogram
Max Ref	Maximum Reference Concentration
Min Ref	Minimum Reference Concentration
PERG	Preliminary Ecological Remediation Goal
XRF 10	X-ray fluorescence measurements on a sample that had been dried and sieved through a #10-mesh screen

Notes:

A PERG cannot be less than the minimum reference concentration. In cases where the calculated PERG was lower than the minimum reference concentration, the PERG was set equal to the minimum reference concentration.

XRF 10 concentrations in the top 6 inches of soil at each sampling location were compared with PERGs and reference concentrations.

One-half the detection limit was substituted for non-detect results.

No XRF 10 results were available for cadmium; analytical laboratory data were substituted.

PERG calculations are presented in Appendix E.

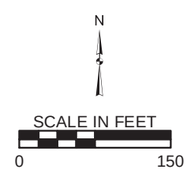


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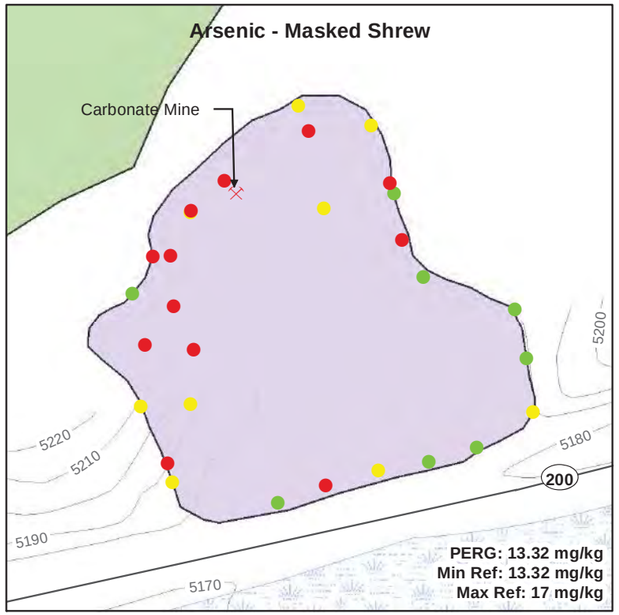
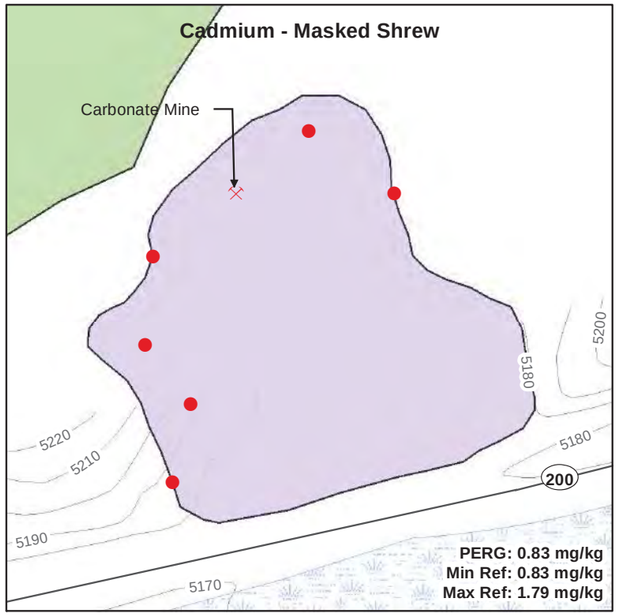
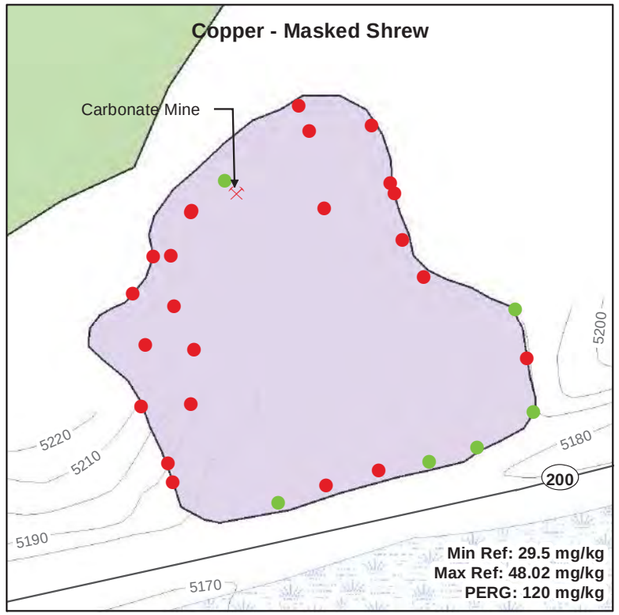
Figure 6-4B

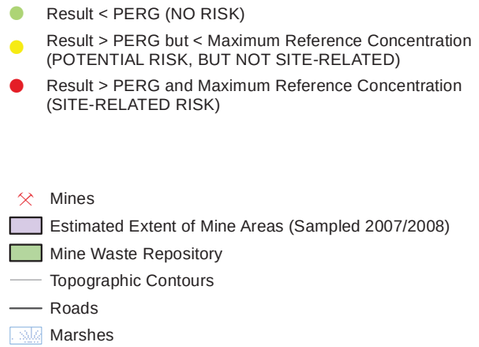
Comparison of Site Concentrations with Preliminary Ecological Remediation Goals and Reference Site Concentrations for the Meadow Vole
EU 4 - Carbonate Mine Waste Area

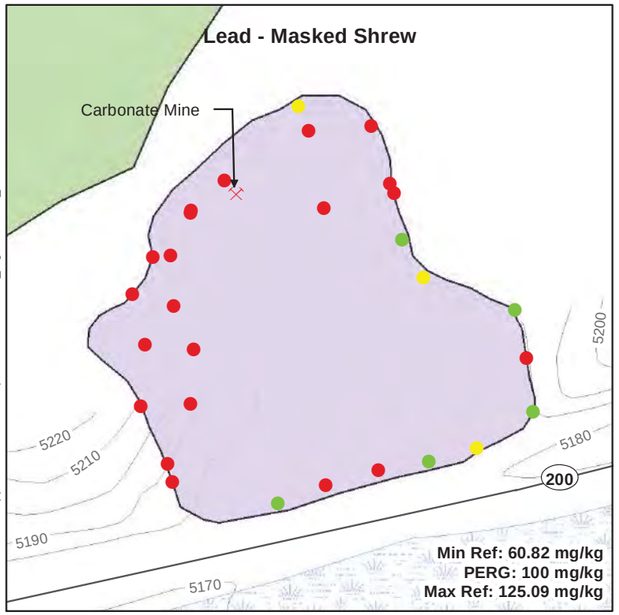
Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex

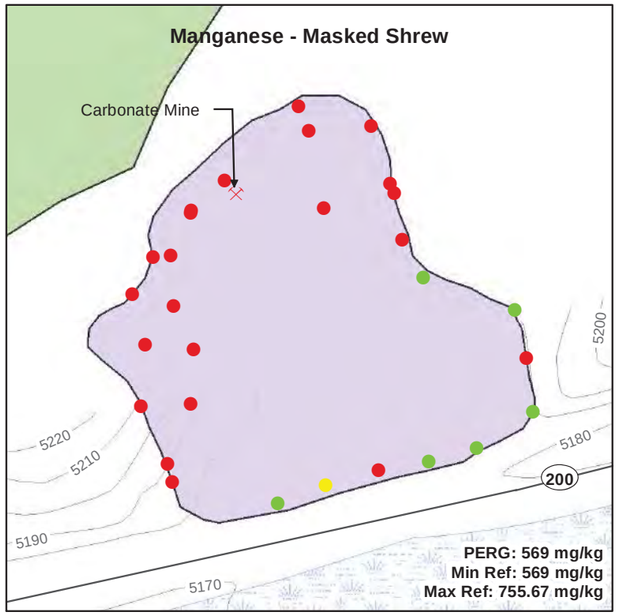


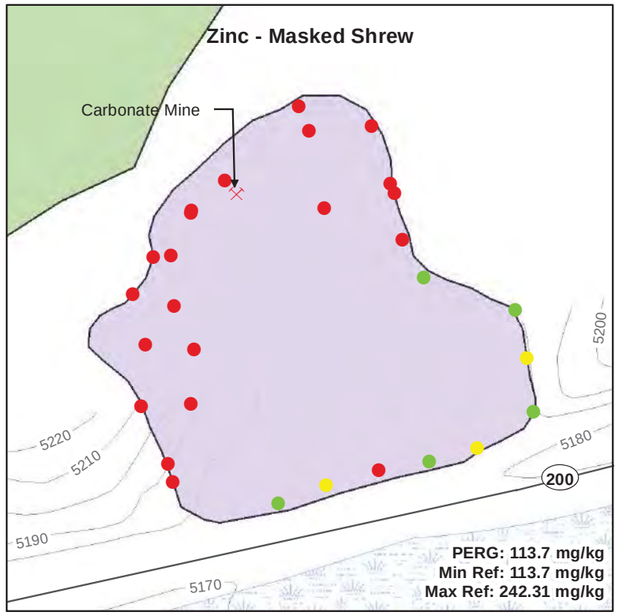












EU	Exposure unit
mg/kg	Milligram per kilogram
Max Ref	Maximum Reference Concentration
Min Ref	Minimum Reference Concentration
PERG	Preliminary Ecological Remediation Goal
XRF 10	X-ray fluorescence measurements on a sample that had been dried and sieved through a #10-mesh screen

Notes:

A PERG cannot be less than the minimum reference concentration. In cases where the calculated PERG was lower than the minimum reference concentration, the PERG was set equal to the minimum reference concentration.

XRF 10 concentrations in the top 6 inches of soil at each sampling location were compared with PERGs and reference concentrations.

One-half the detection limit was substituted for non-detect results.

No XRF 10 results were available for cadmium; analytical laboratory data were substituted.

PERG calculations are presented in Appendix E.

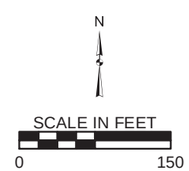


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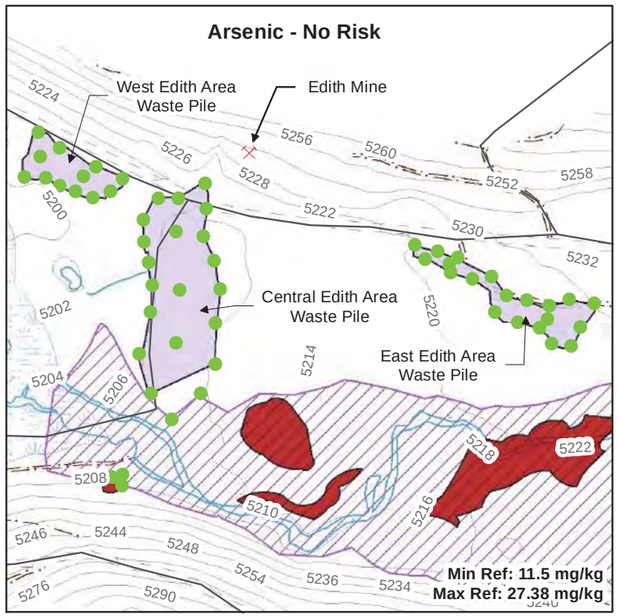
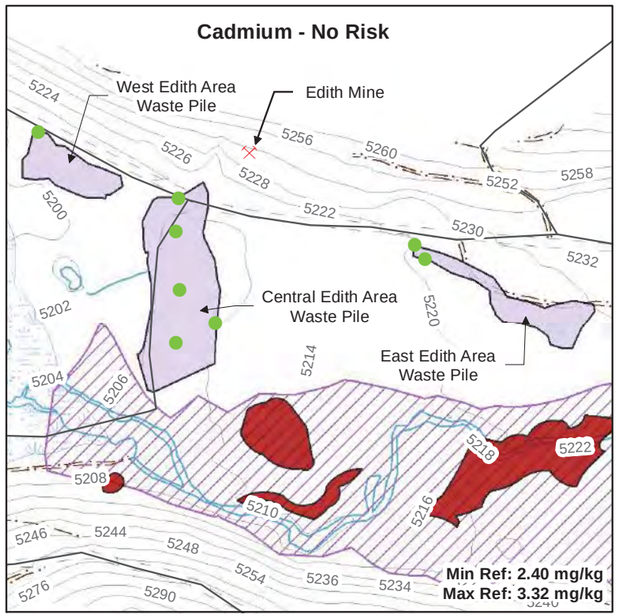
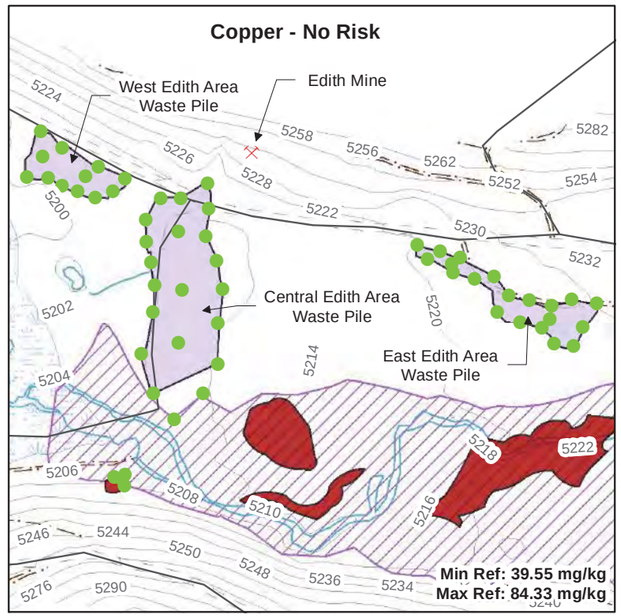
Figure 6-4C

Comparison of Site Concentrations with Preliminary Ecological Remediation Goals and Reference Site Concentrations for the Masked Shrew
EU 4 - Carbonate Mine Waste Removal Area

Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex

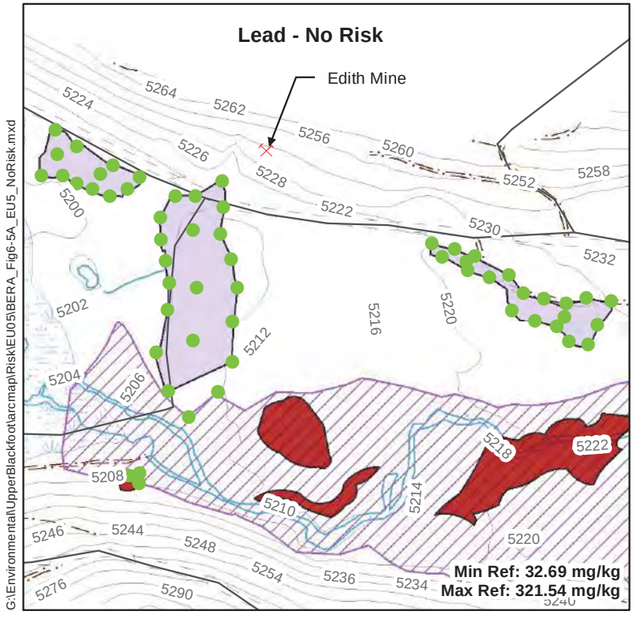


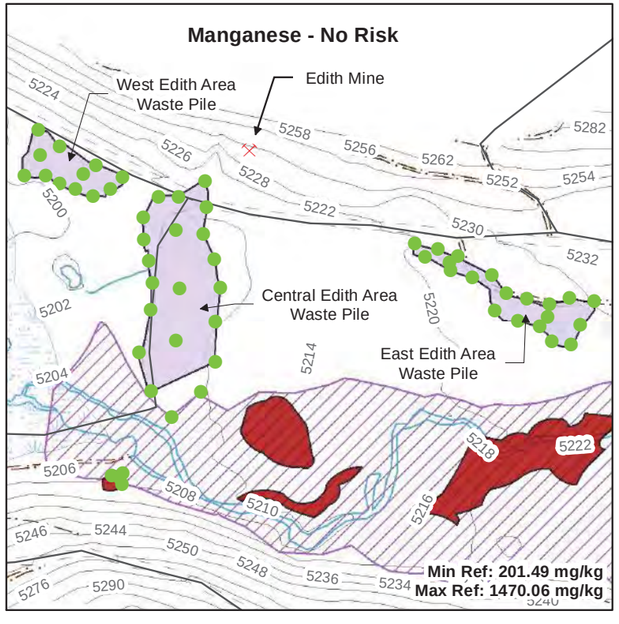


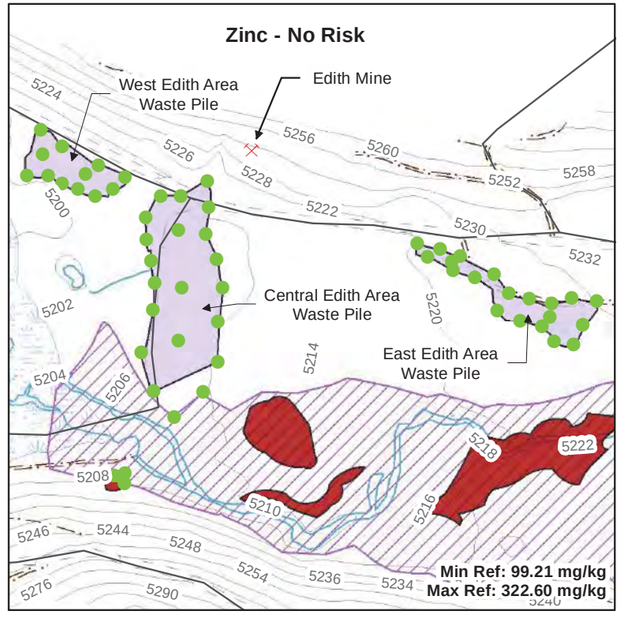


- Result < PERG (NO RISK)
- Result > PERG but < Maximum Reference Concentration (POTENTIAL RISK, BUT NOT SITE-RELATED)
- Result > PERG and Maximum Reference Concentration (SITE-RELATED RISK)

- Mines
- Estimated Extent of Streamside Impacts Soil Sampling
- Area of Dispersed Sandy (Fine) Tailings
- Estimated Extent of Mine Areas (Sampled 2007/2008)
- Topographic Contours
- Gravel Road
- Trail
- Stream
- Roads
- Marshes







EU	Exposure unit
mg/kg	Milligram per kilogram
Max Ref	Maximum Reference Concentration
Min Ref	Minimum Reference Concentration
PERG	Preliminary Ecological Remediation Goal
XRF 10	X-ray fluorescence measurements on a sample that had been dried and sieved through a #10-mesh screen

Notes:

A PERG cannot be less than the minimum reference concentration. In cases where the calculated PERG was lower than the minimum reference concentration, the PERG was set equal to the minimum reference concentration.

XRF 10 concentrations in the top 6 inches of soil at each sampling location were compared with PERGs and reference concentrations.

One-half the detection limit was substituted for non-detect results.

No XRF 10 results were available for cadmium; analytical laboratory data were substituted.

PERG calculations are presented in Appendix E.

N

SCALE IN FEET

0 400

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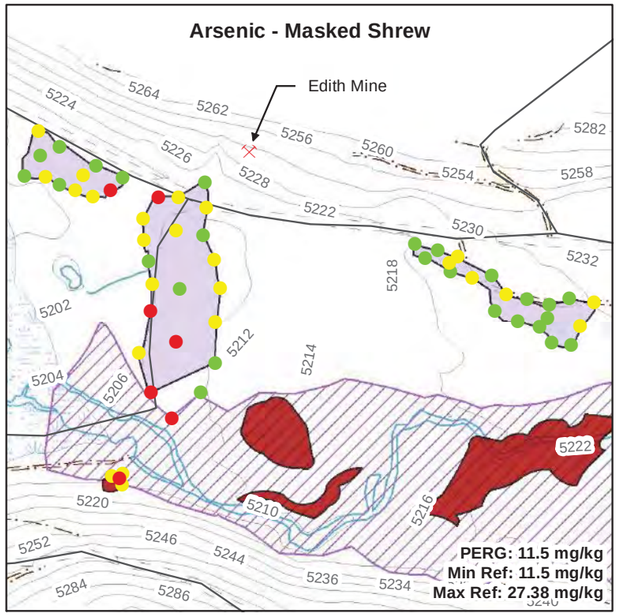
PERG (mg/kg)						
Ecological Receptor	**Arsenic**	**Cadmium**	**Copper**	**Lead**	**Manganese**	**Zinc**
Mourning Dove	560,000	1,800	180,000	160,000	6,100,000	280,000
Red-Tailed Hawk	280,000	120,000	610,000	480,000	64,000,000	120,000
American Kestral	9,800	170	20,000	6,800	840,000	25,000
Meadow Vole	1,400	13	5,100	23,000	2,900	2,100
White-Tailed Deer	2,000,000	16,000	6,200,000	29,000,000	3,500,000	2,500,000
Red Fox	200,000	1,900,000	19,000,000	46,000,000	37,000,000	900,000

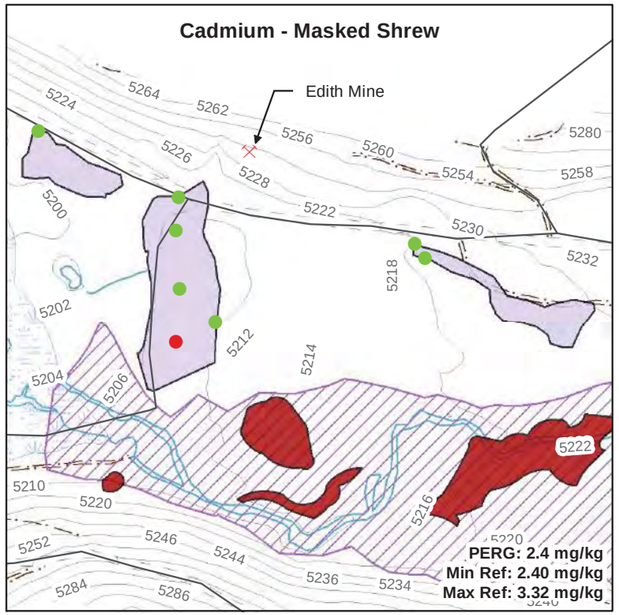
Figure 6-5A

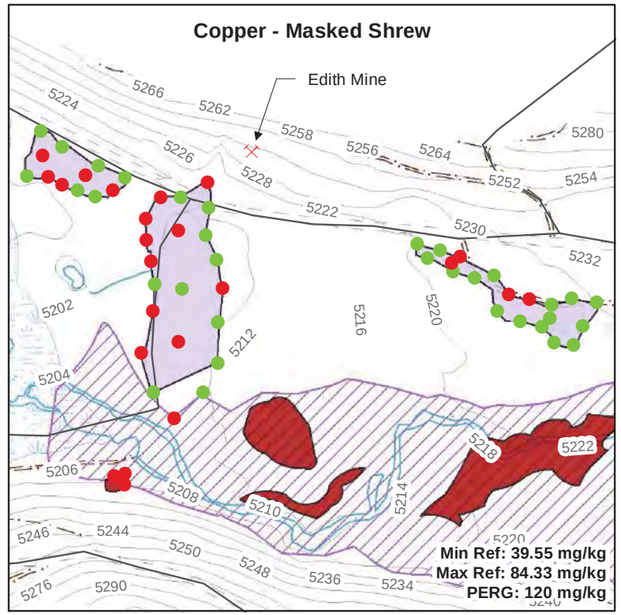
Comparison of Site Concentrations with Preliminary Ecological Remediation Goals and Reference Site Concentrations for the Mourning Dove, Red-Tailed Hawk, American Kestrel, Meadow Vole, White-Tailed Deer and Red Fox

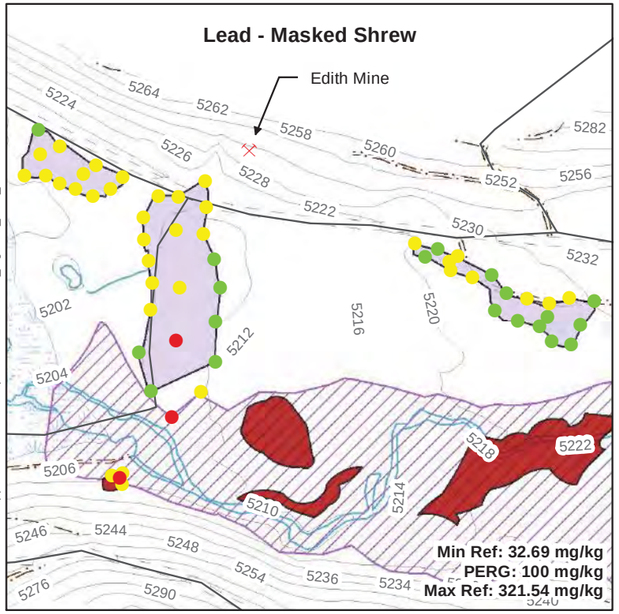
EU 5 - Edith Mine Waste Areas

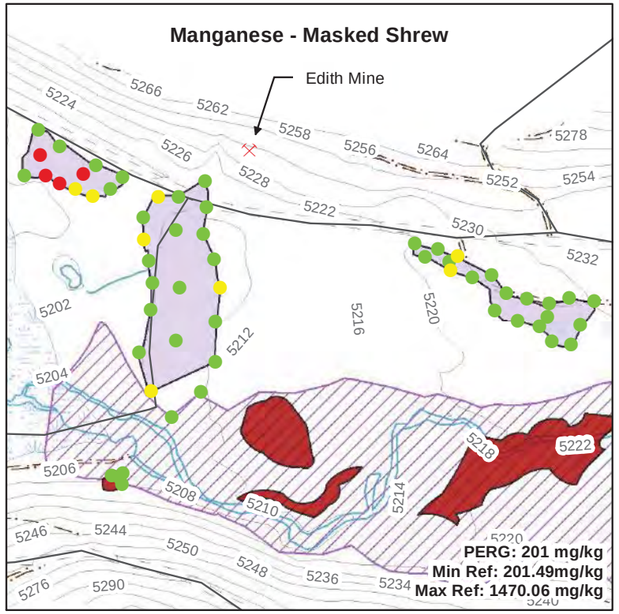
Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex

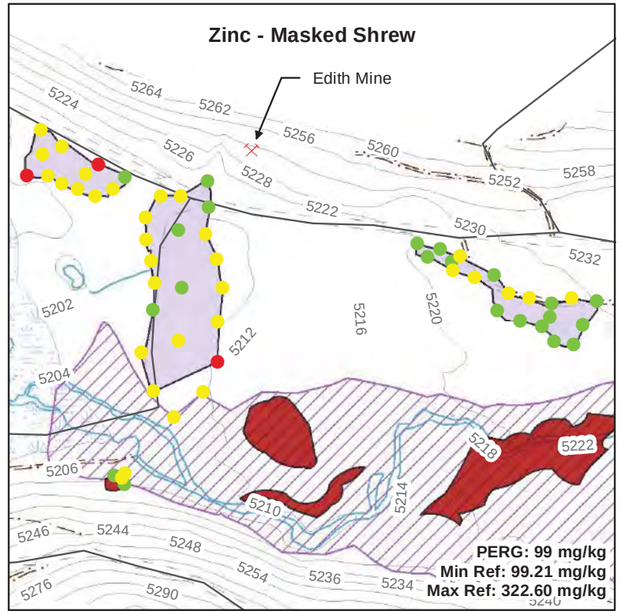












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- Result < PERG (NO RISK)
- Result > PERG but < Maximum Reference Concentration (POTENTIAL RISK, BUT NOT SITE-RELATED)
- Result > PERG and Maximum Reference Concentration (SITE-RELATED RISK)

- Mines
- Area of Dispersed Sandy (Fine) Tailings
- Estimated Extent of Mine Areas (Sampled 2007/2008)
- Topographic Contours
- Gravel Road
- Trail
- Stream
- Roads
- Marshes

EU	Exposure unit
mg/kg	Milligram per kilogram
Max Ref	Maximum Reference Concentration
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PERG	Preliminary Ecological Remediation Goal
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XRF 10 concentrations in the top 6 inches of soil at each sampling location were compared with PERGs and reference concentrations.

One-half the detection limit was substituted for non-detect results.

No XRF 10 results were available for cadmium; analytical laboratory data were substituted.

PERG calculations are presented in Appendix E.

N

SCALE IN FEET

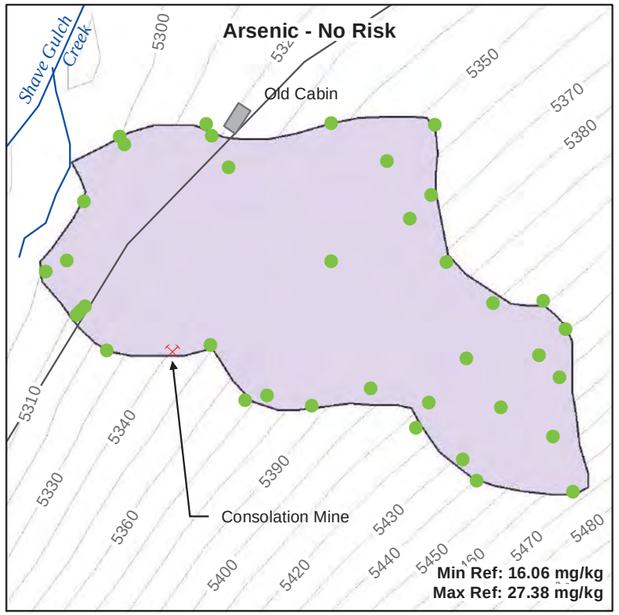
0 400

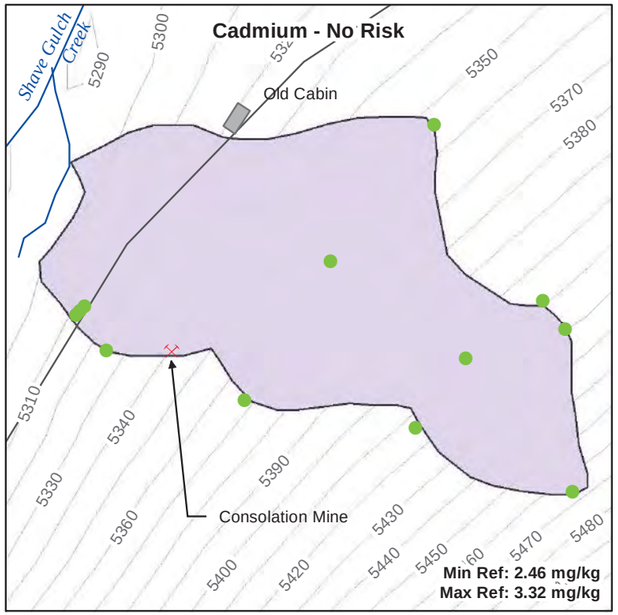
Figure 6-5B

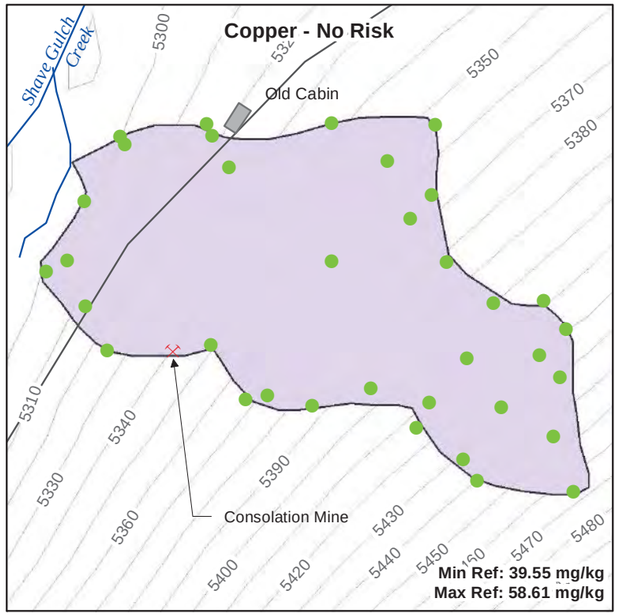
Comparison of Site Concentrations with Preliminary Ecological Remediation Goals and Reference Site Concentrations for the Masked Shrew

EU 5 - Edith Mine Waste Areas

Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex

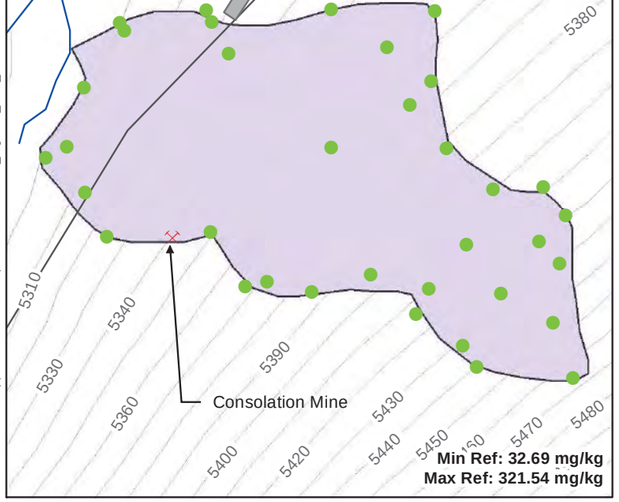


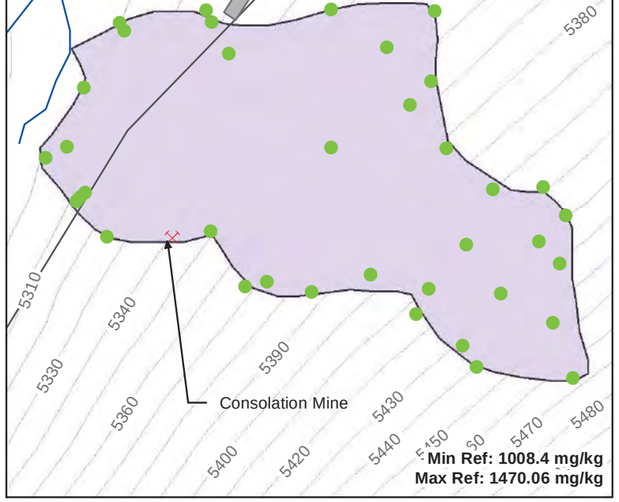


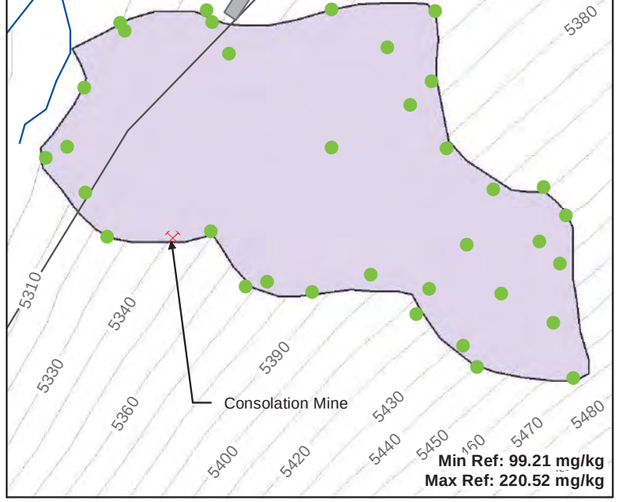


- Result < PERG (NO RISK)
- Result > PERG but < Maximum Reference Concentration (POTENTIAL RISK, BUT NOT SITE-RELATED)
- Result > PERG and Maximum Reference Concentration (SITE-RELATED RISK)

- Mines
- Estimated Extent of Mine Areas (Sampled 2007/2008)
- Topographic Contours
- Roads
- Streams







EU	Exposure unit
mg/kg	Milligram per kilogram
Max Ref	Maximum Reference Concentration
Min Ref	Minimum Reference Concentration
PERG	Preliminary Ecological Remediation Goal
XRF 10	X-ray fluorescence measurements on a sample that had been dried and sieved through a #10-mesh screen

Notes:

A PERG cannot be less than the minimum reference concentration. In cases where the calculated PERG was lower than the minimum reference concentration, the PERG was set equal to the minimum reference concentration.

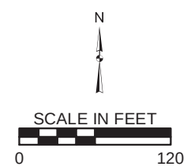
XRF 10 concentrations in the top 6 inches of soil at each sampling location were compared with PERGs and reference concentrations.

One-half the detection limit was substituted for non-detect results.

No XRF 10 results were available for cadmium; analytical laboratory data were substituted.

PERG calculations are presented in Appendix E.

Topographic Contours were created from 30 meter Digital Elevation Models (DEM).



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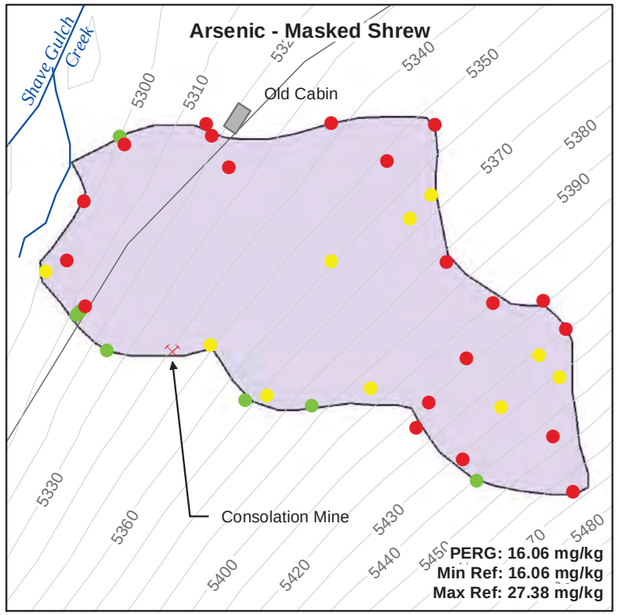
PERG (mg/kg)						
Ecological Receptor	**Arsenic**	**Cadmium**	**Copper**	**Lead**	**Manganese**	**Zinc**
Mourning Dove	1,000,000	3,300	320,000	300,000	11,000,000	520,000
Red-Tailed Hawk	510,000	220,000	1,100,000	880,000	120,000,000	210,000
American Kestral	18,000	310	37,000	13,000	1,600,000	46,000
Meadow Vole	1,400	13	5,100	23,000	2,900	2,100
White-Tailed Deer	3,700,000	30,000	11,000,000	54,000,000	6,500,000	4,600,000
Red Fox	380,000	3,600,000	34,000,000	85,000,000	69,000,000	1,700,000

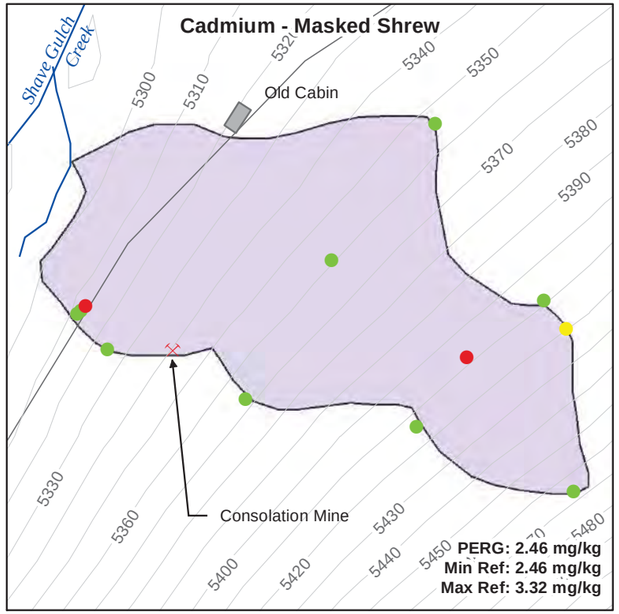
Figure 6-6A

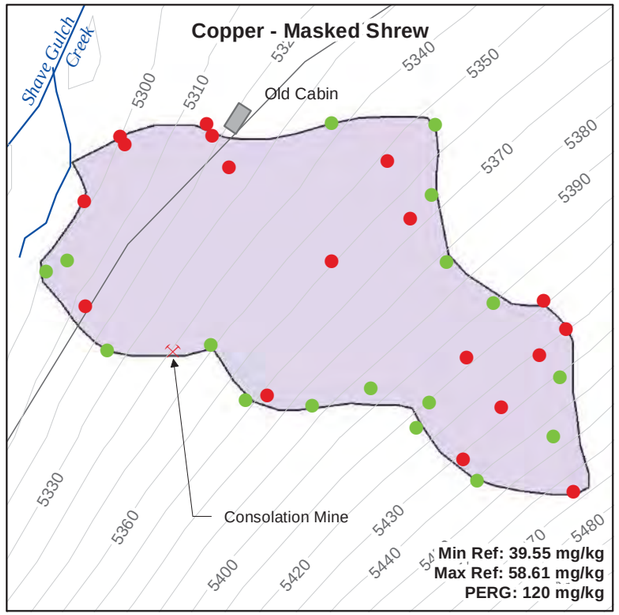
Comparison of Site Concentrations with Preliminary Ecological Remediation Goals and Reference Site Concentrations for the Mourning Dove, Red-Tailed Hawk, American Kestrel, Meadow Vole, White-Tailed Deer and Red Fox

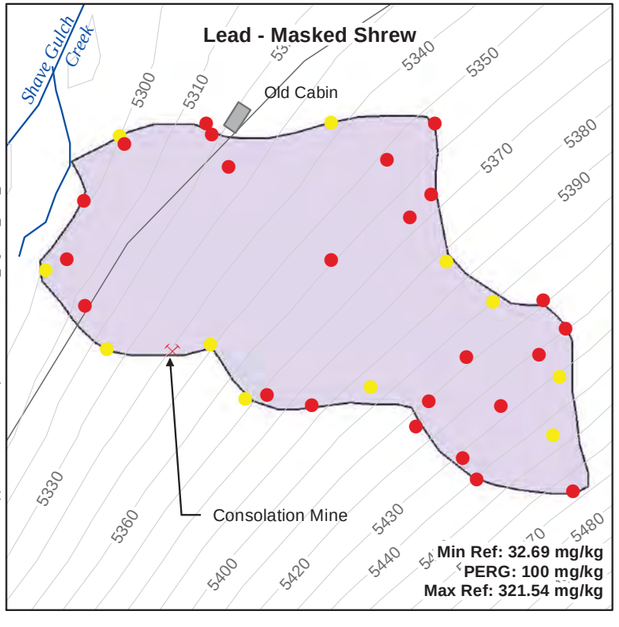
EU 6 - Consolation Mine Waste Area

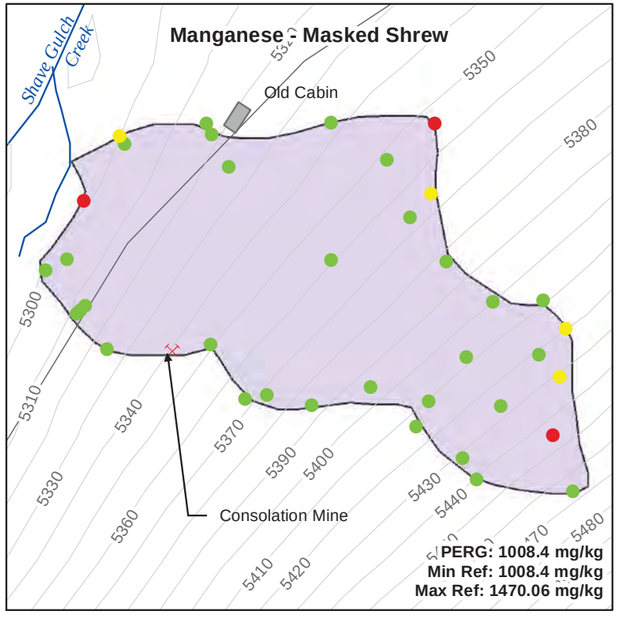
Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex

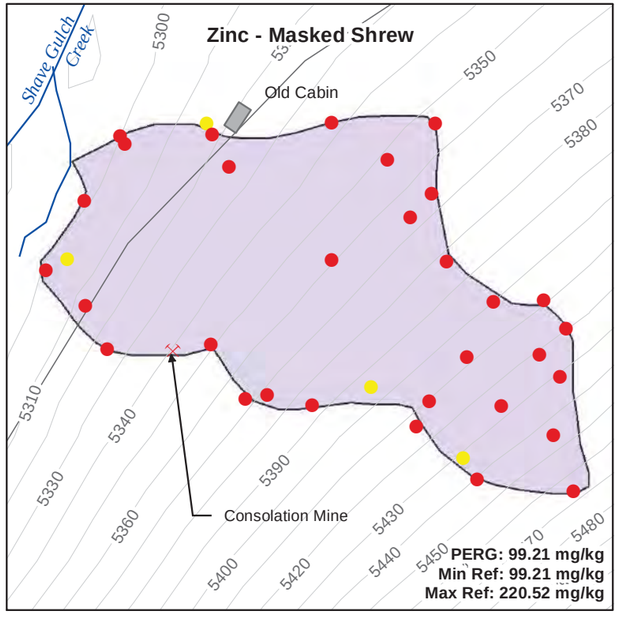












- Result < PERG (NO RISK)
- Result > PERG but < Maximum Reference Concentration (POTENTIAL RISK, BUT NOT SITE-RELATED)
- Result > PERG and Maximum Reference Concentration (SITE-RELATED RISK)

- Mines
- Estimated Extent of Mine Areas (Sampled 2007/2008)
- Roads
- Streams

EU	Exposure unit
mg/kg	Milligram per kilogram
Max Ref	Maximum Reference Concentration
Min Ref	Minimum Reference Concentration
PERG	Preliminary Ecological Remediation Goal
XRF 10	X-ray fluorescence measurements on a sample that had been dried and sieved through a #10-mesh screen

Notes:

A PERG cannot be less than the minimum reference concentration. In cases where the calculated PERG was lower than the minimum reference concentration, the PERG was set equal to the minimum reference concentration.

XRF 10 concentrations in the top 6 inches of soil at each sampling location were compared with PERGs and reference concentrations.

One-half the detection limit was substituted for non-detect results.

No XRF 10 results were available for cadmium; analytical laboratory data were substituted.

PERG calculations are presented in Appendix E.

Topographic Contours were created from 30 meter Digital Elevation Models (DEM).

N

SCALE IN FEET

0 120

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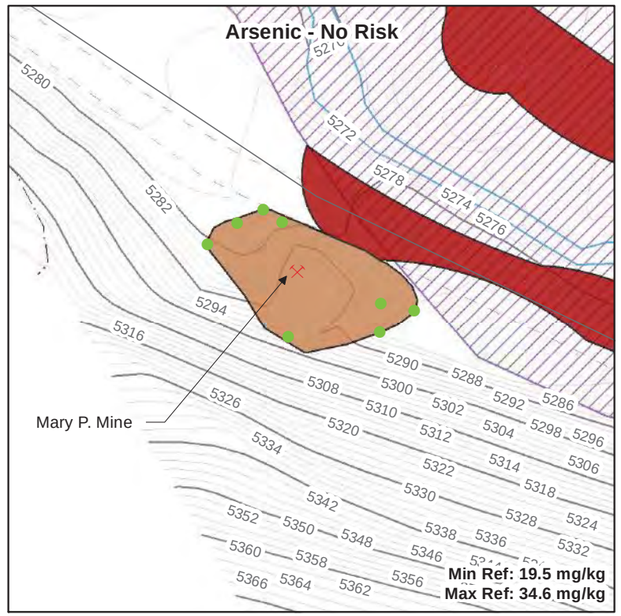
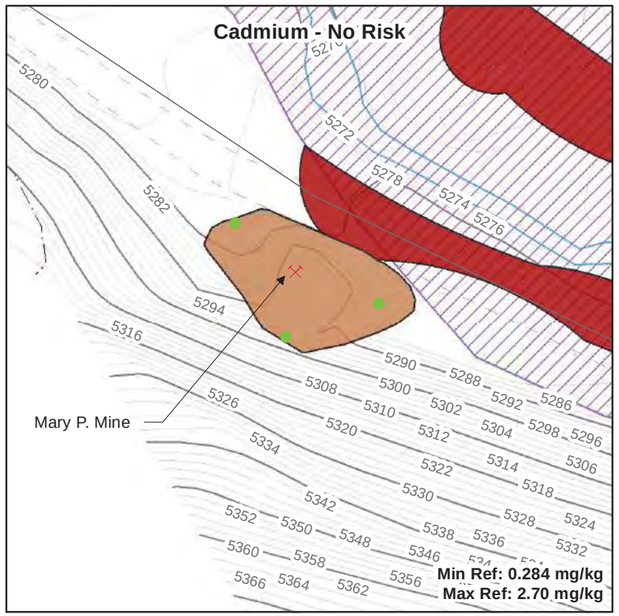
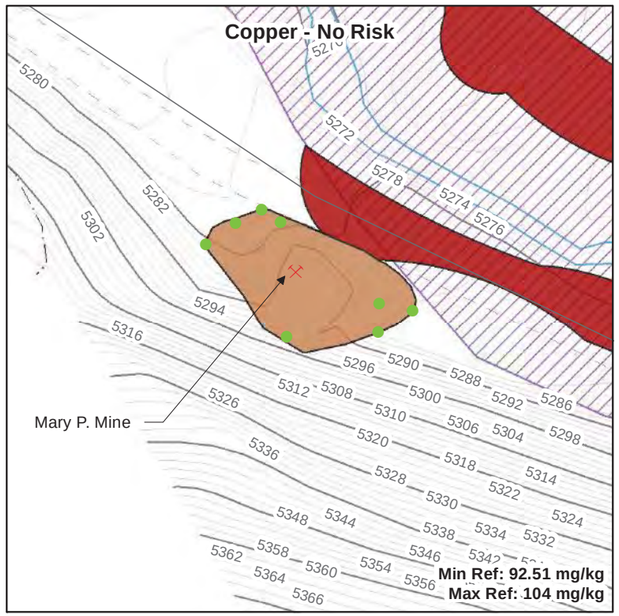
Figure 6-6B

Comparison of Site Concentrations with Preliminary Ecological Remediation Goals and Reference Site Concentrations for the Masked Shrew
EU 6 - Consolation Mine Waste Area

Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex

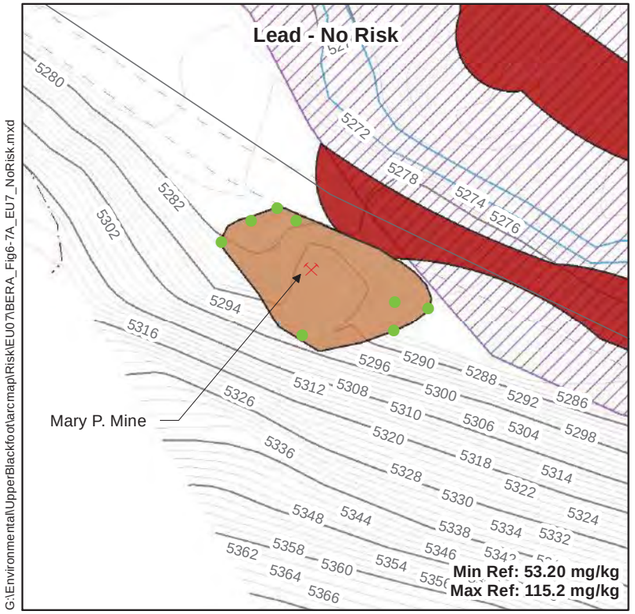


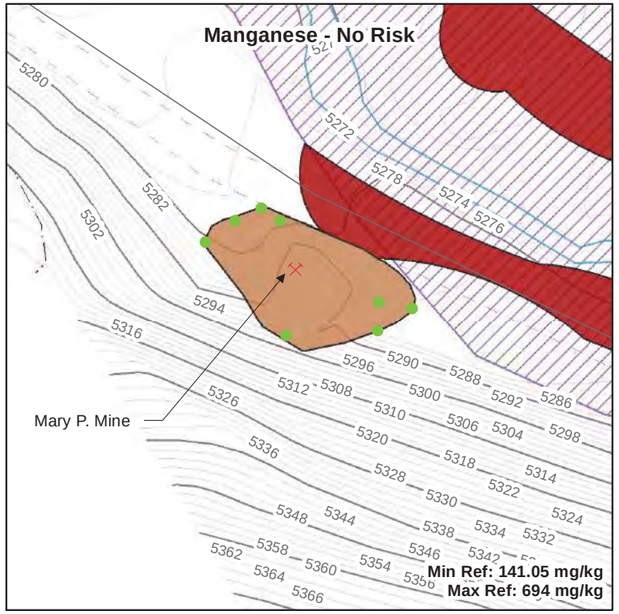


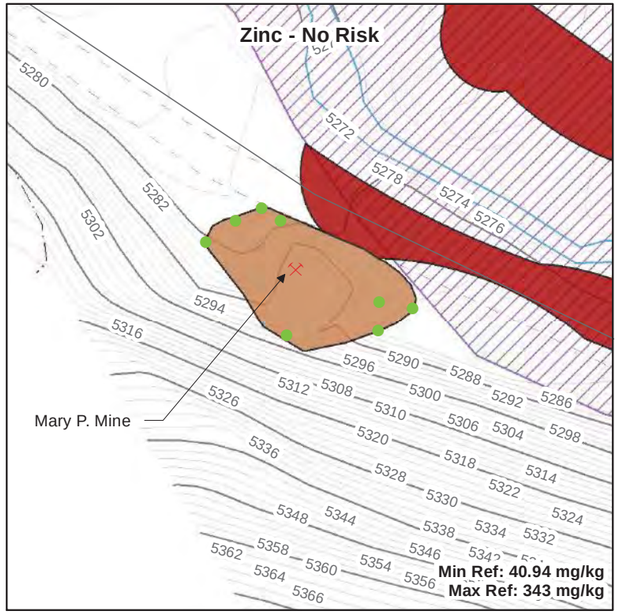


- Result < PERG (NO RISK)
- Result > PERG but < Maximum Reference Concentration (POTENTIAL RISK, BUT NOT SITE-RELATED)
- Result > PERG and Maximum Reference Concentration (SITE-RELATED RISK)

- Mines
- Area of Dispersed Sandy (Fine) Tailings
- Unreclaimed Mine Waste Areas (Sampled 2007/2008)
- Index Topographic Contours
- Interior Topograhic Contours
- Gravel Road
- Trail
- Stream
- Roads







EU	Exposure unit
mg/kg	Milligram per kilogram
Max Ref	Maximum Reference Concentration
Min Ref	Minimum Reference Concentration
PERG	Preliminary Ecological Remediation Goal
XRF 10	X-ray fluorescence measurements on a sample that had been dried and sieved through a #10-mesh screen

Notes:

A PERG cannot be less than the minimum reference concentration. In cases where the calculated PERG was lower than the minimum reference concentration, the PERG was set equal to the minimum reference concentration.

XRF 10 concentrations in the top 6 inches of soil at each sampling location were compared with PERGs and reference concentrations.

One-half the detection limit was substituted for non-detect results.

No XRF 10 results were available for cadmium; analytical laboratory data were substituted.

PERG calculations are presented in Appendix E.

N

SCALE IN FEET

0 100

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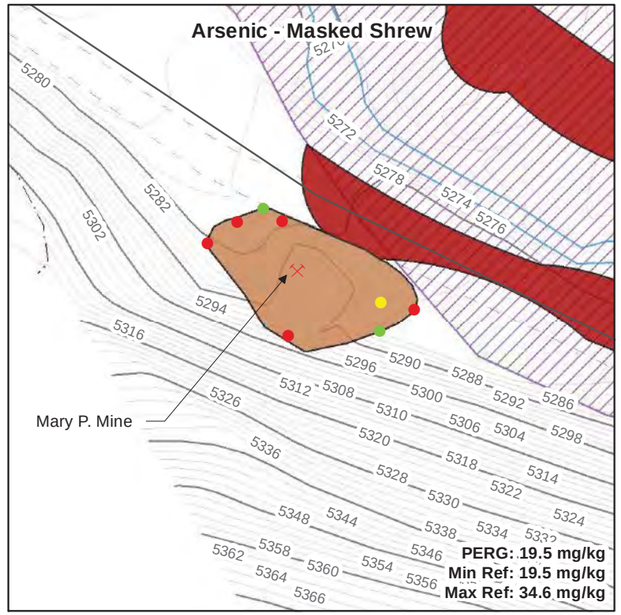
PERG (mg/kg)						
Ecological Receptor	**Arsenic**	**Cadmium**	**Copper**	**Lead**	**Manganese**	**Zinc**
Mourning Dove	6,600,000	21,000	2,100,000	1,900,000	72,000,000	3,300,000
Red-Tailed Hawk	3,200,000	1,400,000	7,100,000	5,600,000	760,000,000	1,400,000
American Kestral	120,000	2,000	230,000	80,000	9,900,000	290,000
Meadow Vole	1,400	13	5,100	23,000	2,900	2,100
White-Tailed Deer	24,000,000	190,000	72,000,000	340,000,000	42,000,000	30,000,000
Red Fox	2,400,000	23,000,000	220,000,000	540,000,000	440,000,000	11,000,000

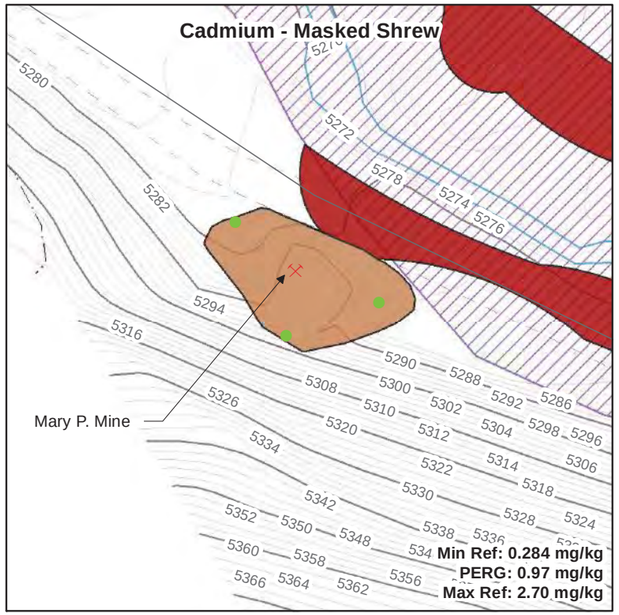
Figure 6-7A

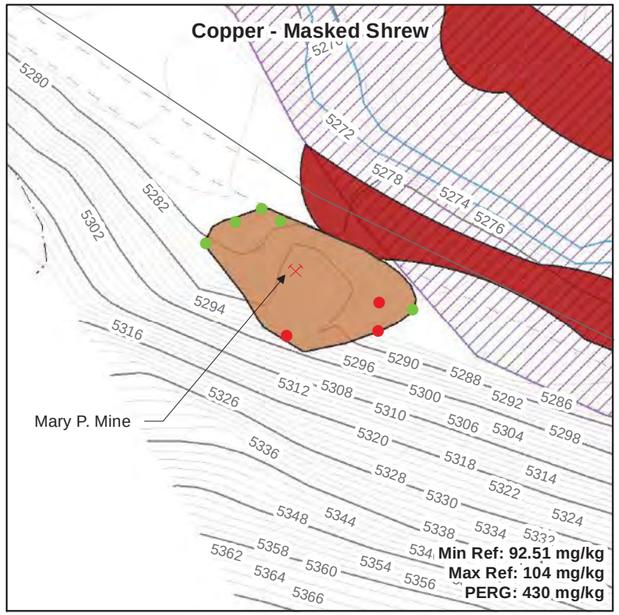
Comparison of Site Concentrations with Preliminary Ecological Remediation Goals and Reference Site Concentrations for the Mourning Dove, Red-Tailed Hawk, American Kestrel, Meadow Vole, White-Tailed Deer and Red Fox

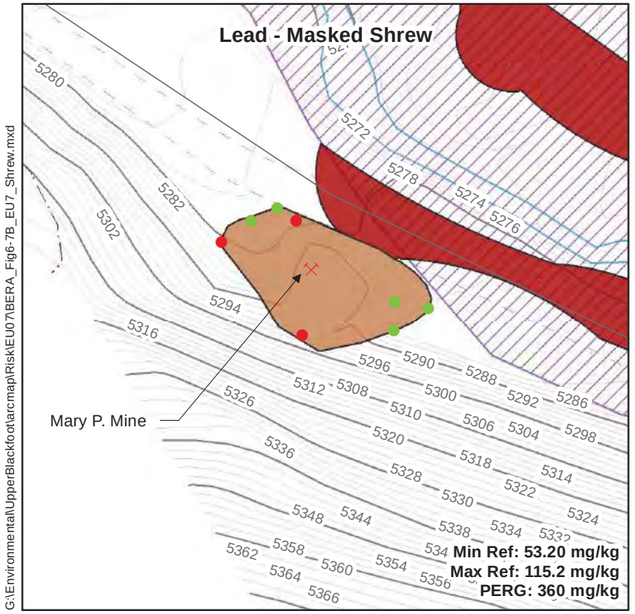
EU 7 - Mary P. Mine Waste Pile

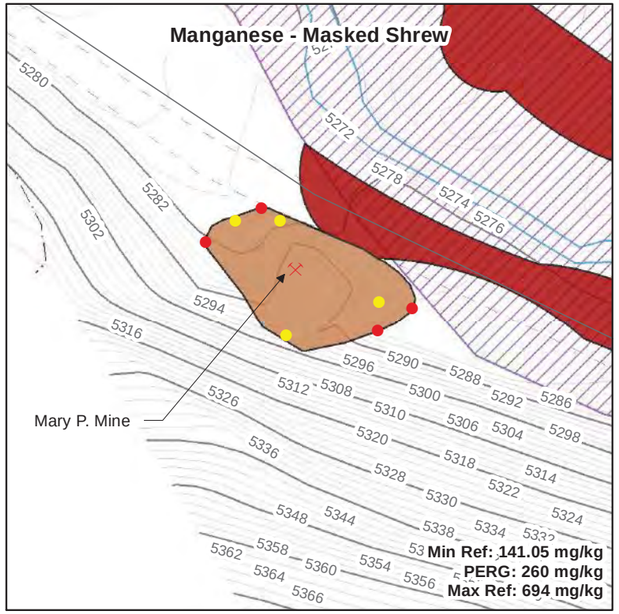
Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex

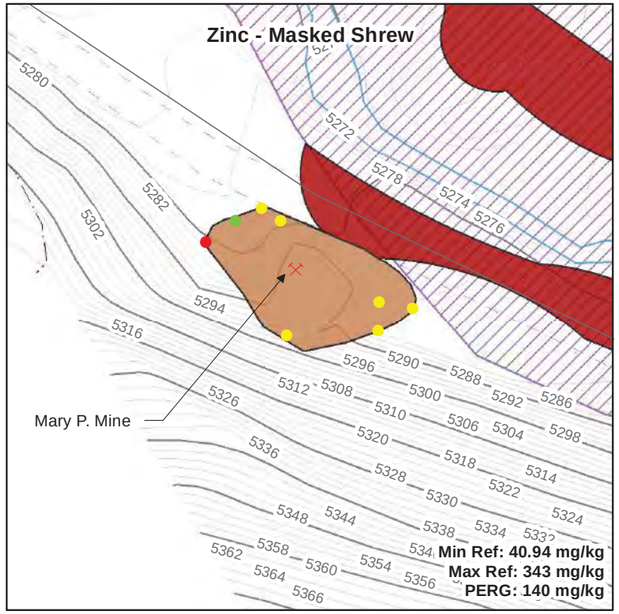












Result < PERG (NO RISK)

Result > PERG but < Maximum Reference Concentration (POTENTIAL RISK, BUT NOT SITE-RELATED)

Result > PERG and Maximum Reference Concentration (SITE-RELATED RISK)

Mines

Area of Dispersed Sandy (Fine) Tailings

Unreclaimed Mine Waste Areas (Sampled 2007/2008)

Index Topographic Contours

Interior Topograhic Contours

Gravel Road

Trail

Stream

Roads

EU	Exposure unit
mg/kg	Milligram per kilogram
Max Ref	Maximum Reference Concentration
Min Ref	Minimum Reference Concentration
PERG	Preliminary Ecological Remediation Goal
XRF 10	X-ray fluorescence measurements on a sample that had been dried and sieved through a #10-mesh screen

Notes:

A PERG cannot be less than the minimum reference concentration. In cases where the calculated PERG was lower than the minimum reference concentration, the PERG was set equal to the minimum reference concentration.

XRF 10 concentrations in the top 6 inches of soil at each sampling location were compared with PERGs and reference concentrations.

One-half the detection limit was substituted for non-detect results.

No XRF 10 results were available for cadmium; analytical laboratory data were substituted.

PERG calculations are presented in Appendix E.

N

SCALE IN FEET

0 100

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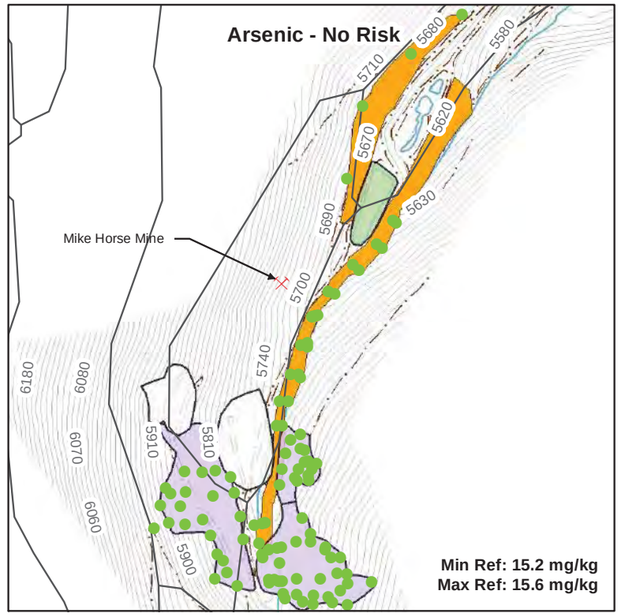
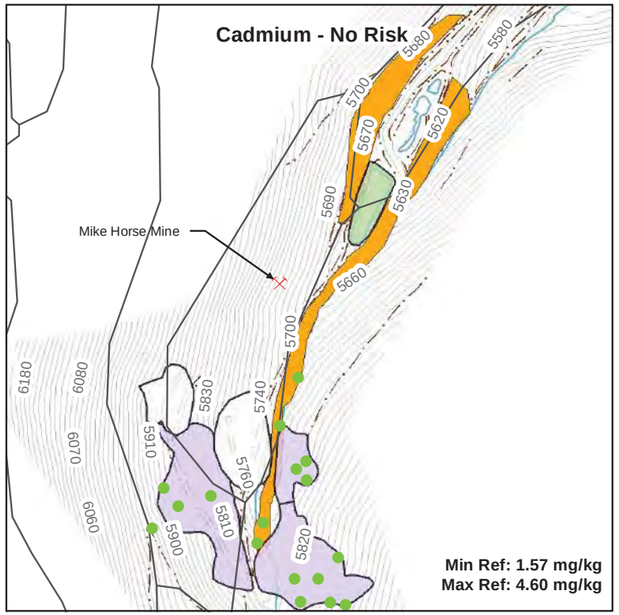
Figure 6-7B

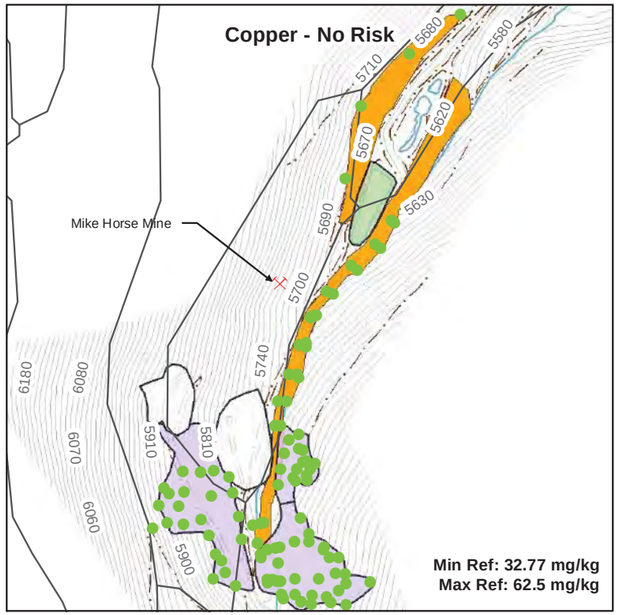
Comparison of Site Concentrations with Preliminary Ecological Remediation Goals and Reference Site Concentrations for the Masked Shrew

EU 7 - Mary P. Mine Waste Pile

Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex

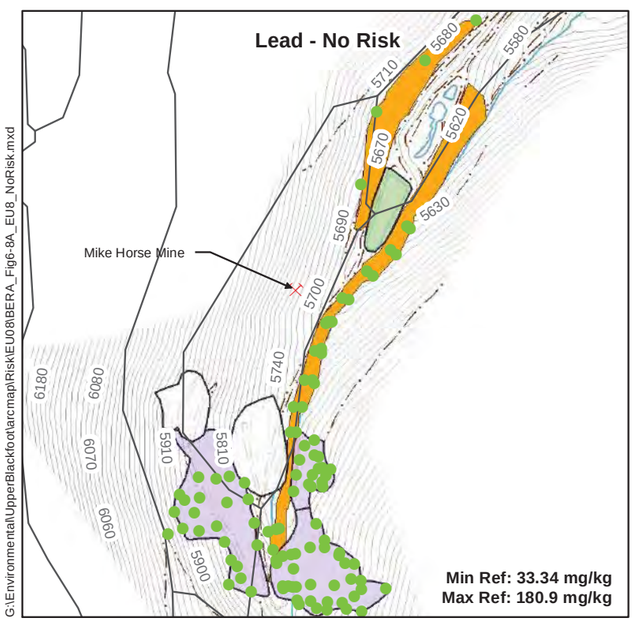


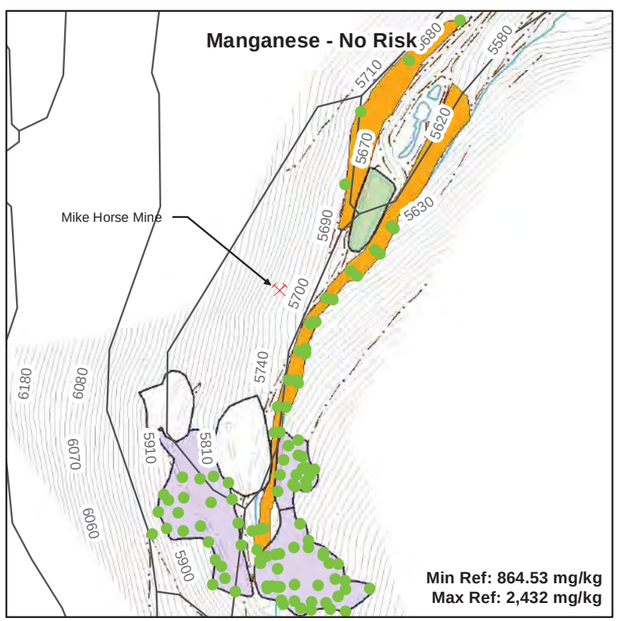


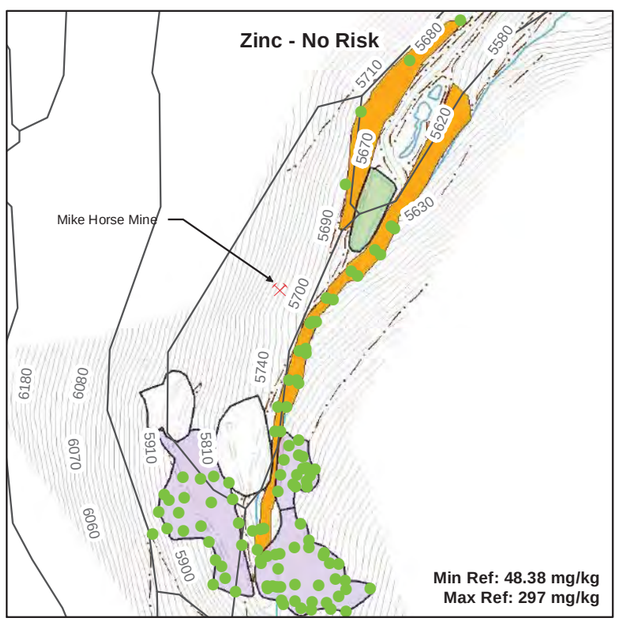


- Result < PERG (NO RISK)
- Result > PERG but < Maximum Reference Concentration (POTENTIAL RISK, BUT NOT SITE-RELATED)
- Result > PERG and Maximum Reference Concentration (SITE-RELATED RISK)

- Mines
- Estimated Extent of Mine Areas (Sampled 2007/2008)
- Mine Waste Areas (Not Sampled)
- Mine Waste Repository
- Mike Horse Creek and Repository Area Sampling
- Topographic Contours
- Gravel Road
- Trail
- Stream
- Roads







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EU	Exposure unit
mg/kg	Milligram per kilogram
Max Ref	Maximum Reference Concentration
Min Ref	Minimum Reference Concentration
PERG	Preliminary Ecological Remediation Goal
XRF 10	X-ray fluorescence measurements on a sample that had been dried and sieved through a #10-mesh screen

Notes:

A PERG cannot be less than the minimum reference concentration. In cases where the calculated PERG was lower than the minimum reference concentration, the PERG was set equal to the minimum reference concentration.

XRF 10 concentrations in the top 6 inches of soil at each sampling location were compared with PERGs and reference concentrations.

One-half the detection limit was substituted for non-detect results.

No XRF 10 results were available for cadmium; analytical laboratory data were substituted.

PERG calculations are presented in Appendix E.

N

SCALE IN FEET

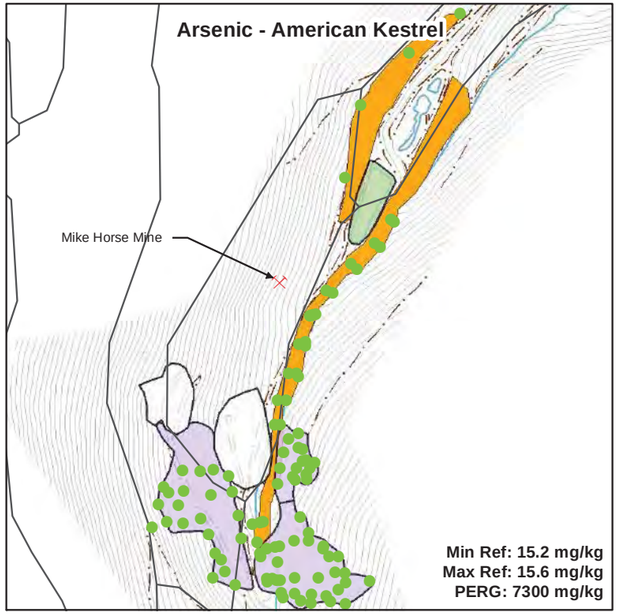
0 500

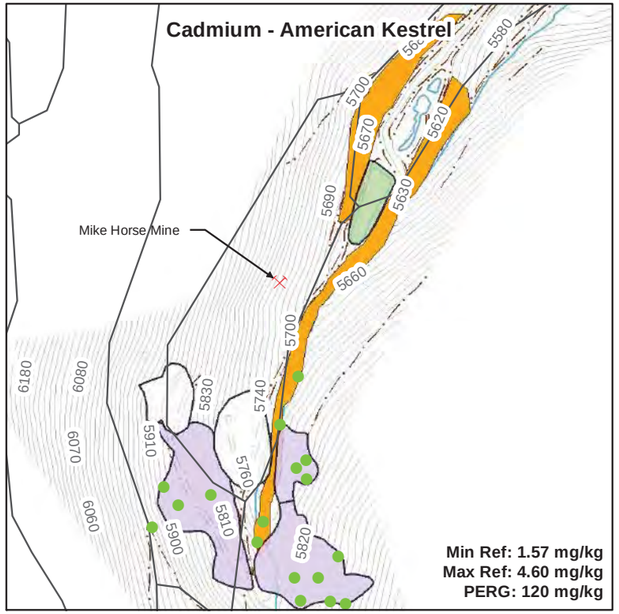
PERG (mg/kg)						
Ecological Receptor	**Arsenic**	**Cadmium**	**Copper**	**Lead**	**Manganese**	**Zinc**
Mourning Dove	420,000	1,300	130,000	120,000	4,600,000	210,000
Red-Tailed Hawk	200,000	89,000	450,000	360,000	48,000,000	87,000
White-Tailed Deer	1,500,000	12,000	4,600,000	22,000,000	2,600,000	1,900,000
Red Fox	150,000	1,400,000	14,000,000	34,000,000	28,000,000	670,000

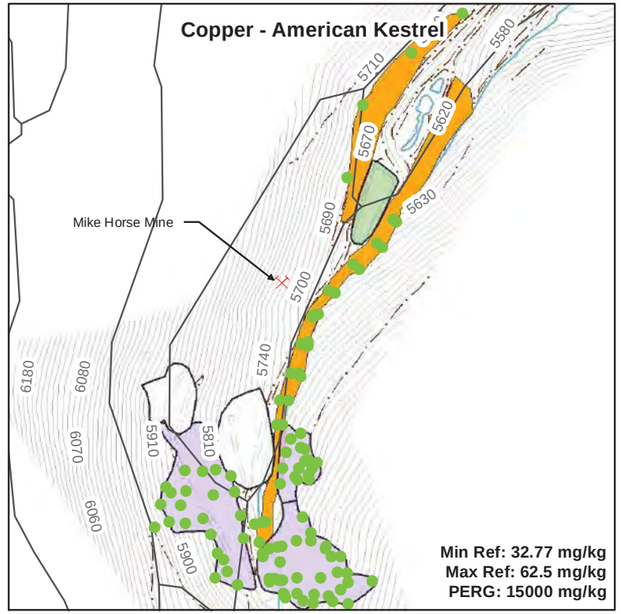
Figure 6-8A

Comparison of Site Concentrations with Preliminary Ecological Remediation Goals and Reference Site Concentrations for the Mourning Dove, Red-Tailed Hawk, White-Tailed Deer and Red Fox
EU 8 - Mike Horse Mine Waste Piles

Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex

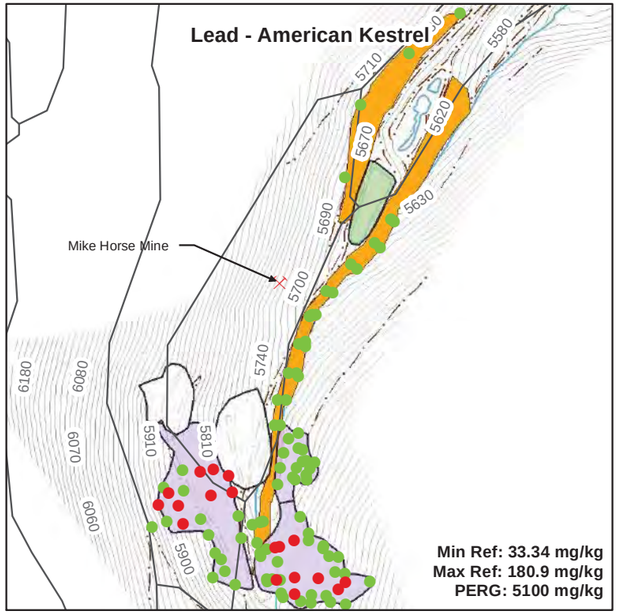


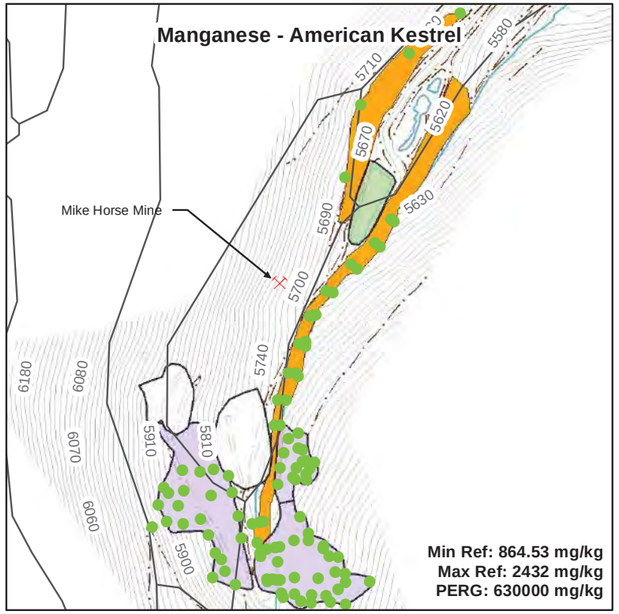


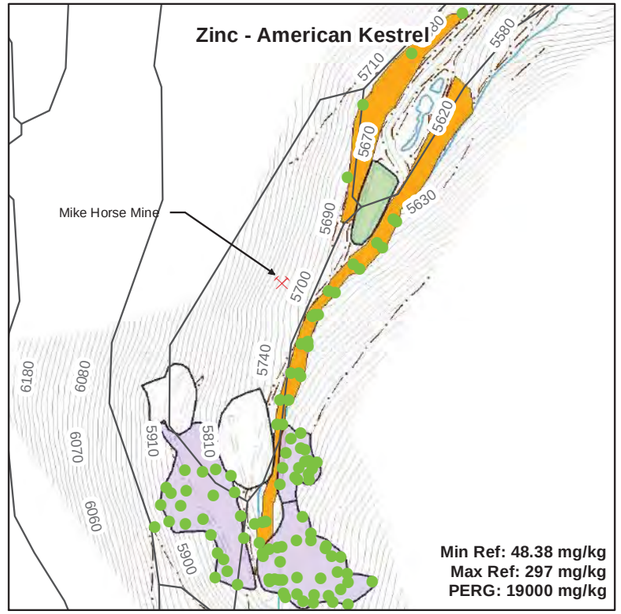


- Result < PERG (NO RISK)
- Result > PERG but < Maximum Reference Concentration (POTENTIAL RISK, BUT NOT SITE-RELATED)
- Result > PERG and Maximum Reference Concentration (SITE-RELATED RISK)

- Mines
- Estimated Extent of Mine Areas (Sampled 2007/2008)
- Mine Waste Areas (Not Sampled)
- Mine Waste Repository
- Mike Horse Creek and Repository Area Sampling
- Topographic Contours
- Gravel Road
- Trail
- Stream
- Roads







EU	Exposure unit
mg/kg	Milligram per kilogram
Max Ref	Maximum Reference Concentration
Min Ref	Minimum Reference Concentration
PERG	Preliminary Ecological Remediation Goal
XRF 10	X-ray fluorescence measurements on a sample that had been dried and sieved through a #10-mesh screen

Notes:

A PERG cannot be less than the minimum reference concentration. In cases where the calculated PERG was lower than the minimum reference concentration, the PERG was set equal to the minimum reference concentration.

XRF 10 concentrations in the top 6 inches of soil at each sampling location were compared with PERGs and reference concentrations.

One-half the detection limit was substituted for non-detect results.

No XRF 10 results were available for cadmium; analytical laboratory data were substituted.

PERG calculations are presented in Appendix E.

N

SCALE IN FEET

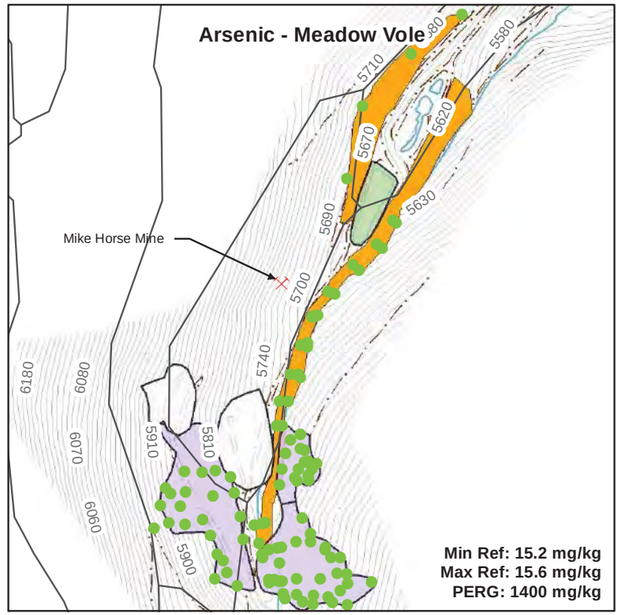
0 500

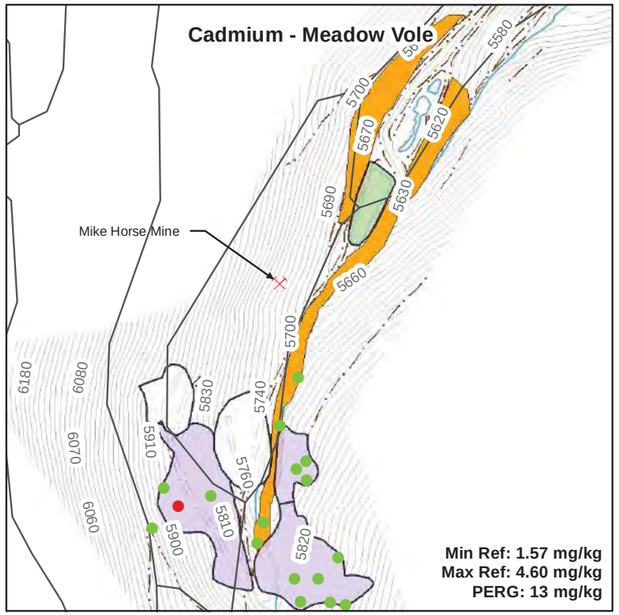
Figure 6-8B

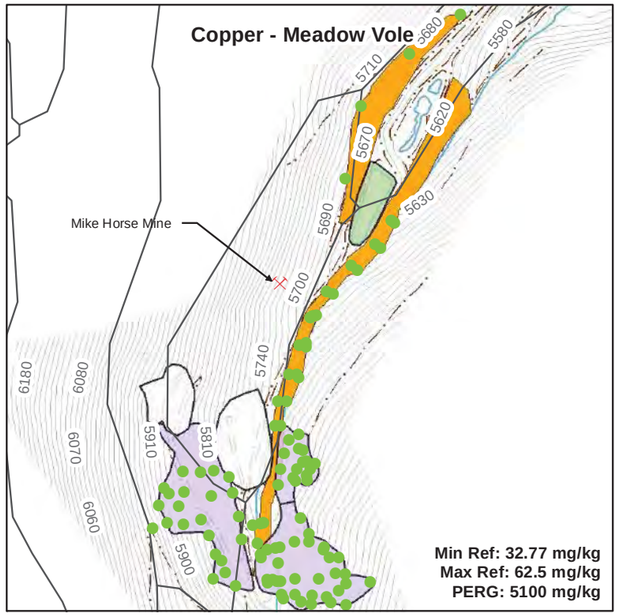
Comparison of Site Concentrations with Preliminary Ecological Remediation Goals and Reference Site Concentrations for the American Kestrel

EU 8 - Mike Horse Mine Waste Piles

Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex

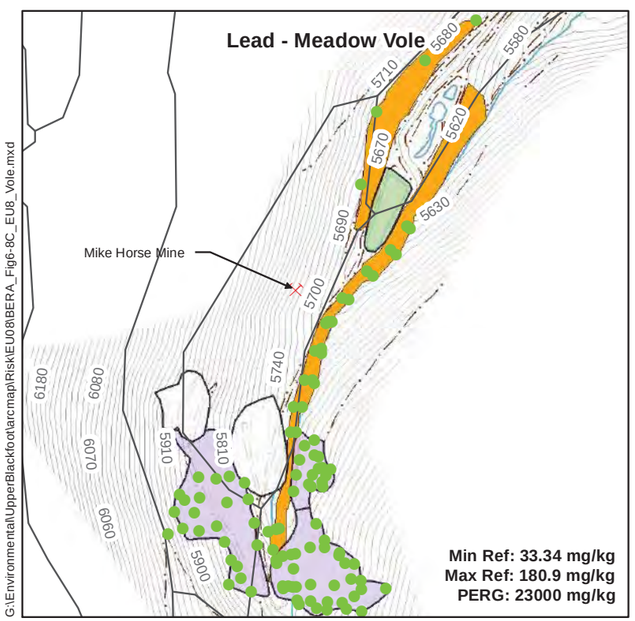


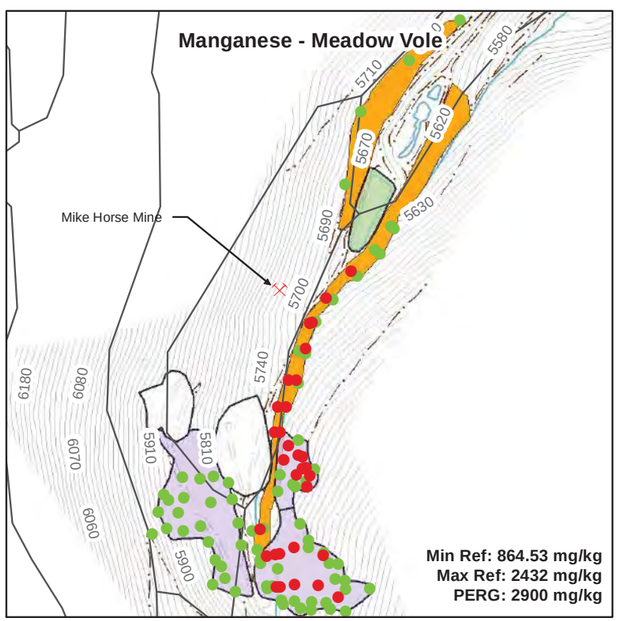


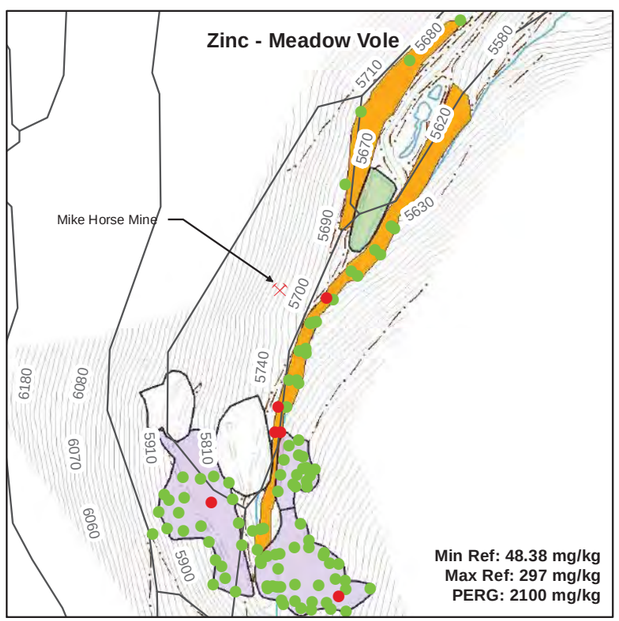


- Result < PERG (NO RISK)
- Result > PERG but < Maximum Reference Concentration (POTENTIAL RISK, BUT NOT SITE-RELATED)
- Result > PERG and Maximum Reference Concentration (SITE-RELATED RISK)

- Mines
- Estimated Extent of Mine Areas (Sampled 2007/2008)
- Mine Waste Areas (Not Sampled)
- Mine Waste Repository
- Mike Horse Creek and Repository Area Sampling
- Topographic Contours
- Gravel Road
- Trail
- Stream
- Roads







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EU	Exposure unit
mg/kg	Milligram per kilogram
Max Ref	Maximum Reference Concentration
Min Ref	Minimum Reference Concentration
PERG	Preliminary Ecological Remediation Goal
XRF 10	X-ray fluorescence measurements on a sample that had been dried and sieved through a #10-mesh screen

Notes:

A PERG cannot be less than the minimum reference concentration. In cases where the calculated PERG was lower than the minimum reference concentration, the PERG was set equal to the minimum reference concentration.

XRF 10 concentrations in the top 6 inches of soil at each sampling location were compared with PERGs and reference concentrations.

One-half the detection limit was substituted for non-detect results.

No XRF 10 results were available for cadmium; analytical laboratory data were substituted.

PERG calculations are presented in Appendix E.

N

SCALE IN FEET

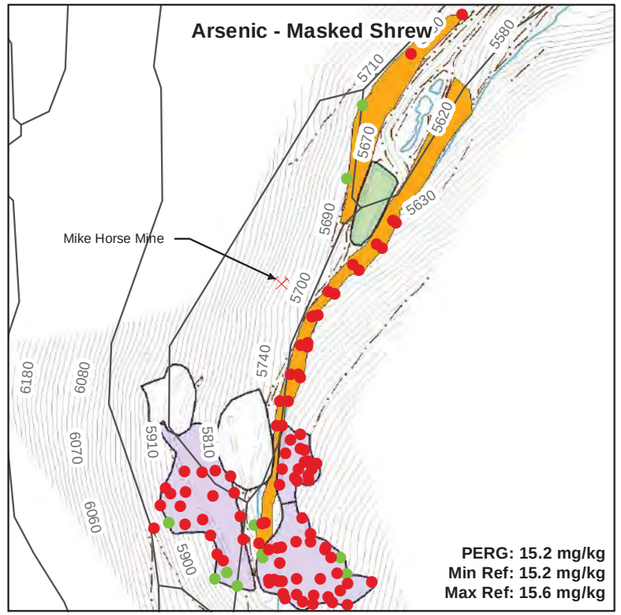
0 500

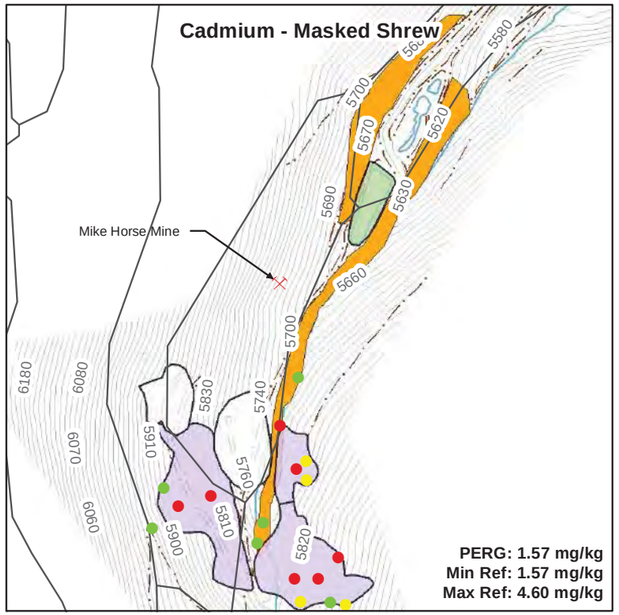
Figure 6-8C

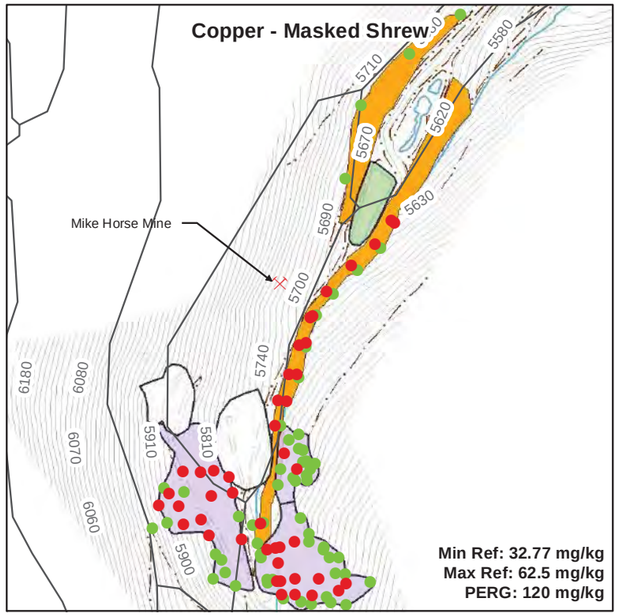
Comparison of Site Concentrations with Preliminary Ecological Remediation Goals and Reference Site Concentrations for the Meadow Vole

EU 8 - Mike Horse Mine Waste Piles

Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex

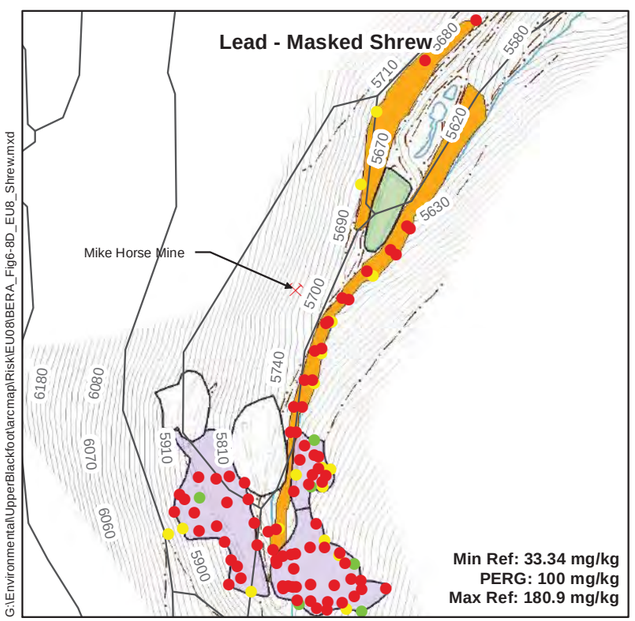


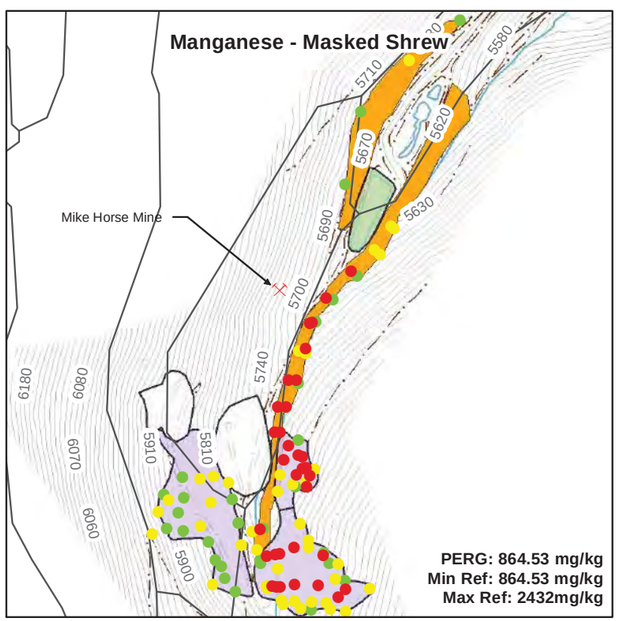


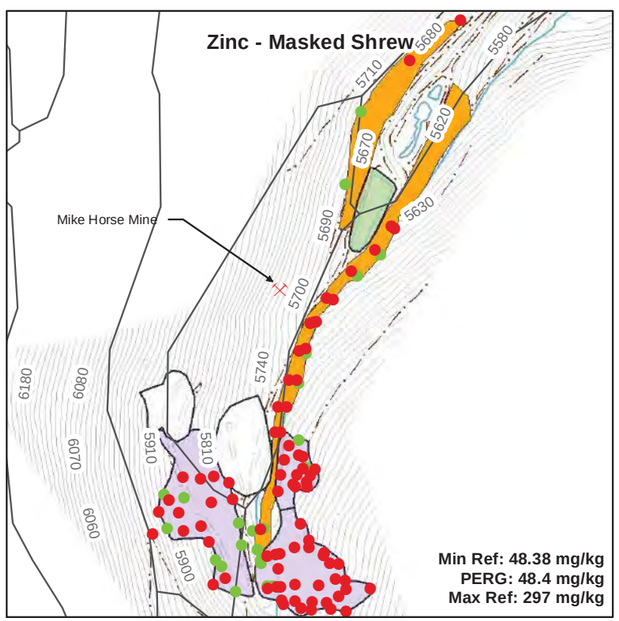


- Result < PERG (NO RISK)
- Result > PERG but < Maximum Reference Concentration (POTENTIAL RISK, BUT NOT SITE-RELATED)
- Result > PERG and Maximum Reference Concentration (SITE-RELATED RISK)

- Mines
- Estimated Extent of Mine Areas (Sampled 2007/2008)
- Mine Waste Areas (Not Sampled)
- Mine Waste Repository
- Mike Horse Creek and Repository Area Sampling
- Topographic Contours
- Gravel Road
- Trail
- Stream
- Roads







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EU	Exposure unit
mg/kg	Milligram per kilogram
Max Ref	Maximum Reference Concentration
Min Ref	Minimum Reference Concentration
PERG	Preliminary Ecological Remediation Goal
XRF 10	X-ray fluorescence measurements on a sample that had been dried and sieved through a #10-mesh screen

Notes:

A PERG cannot be less than the minimum reference concentration. In cases where the calculated PERG was lower than the minimum reference concentration, the PERG was set equal to the minimum reference concentration.

XRF 10 concentrations in the top 6 inches of soil at each sampling location were compared with PERGs and reference concentrations.

One-half the detection limit was substituted for non-detect results.

No XRF 10 results were available for cadmium; analytical laboratory data were substituted.

PERG calculations are presented in Appendix E.

N

SCALE IN FEET

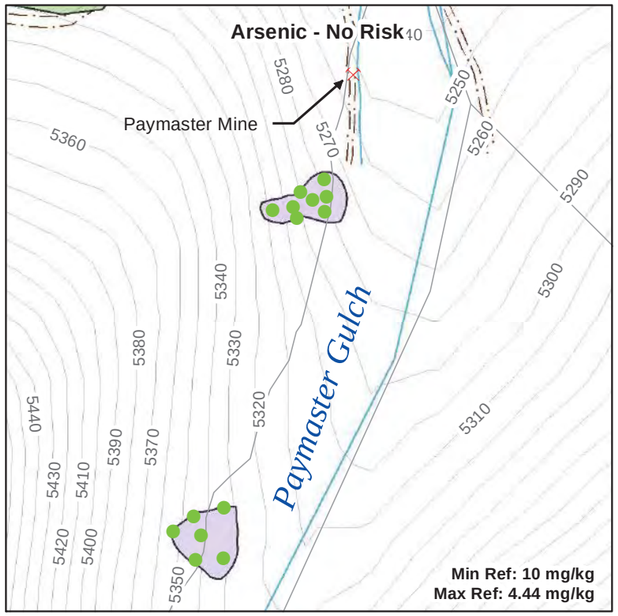
0 500

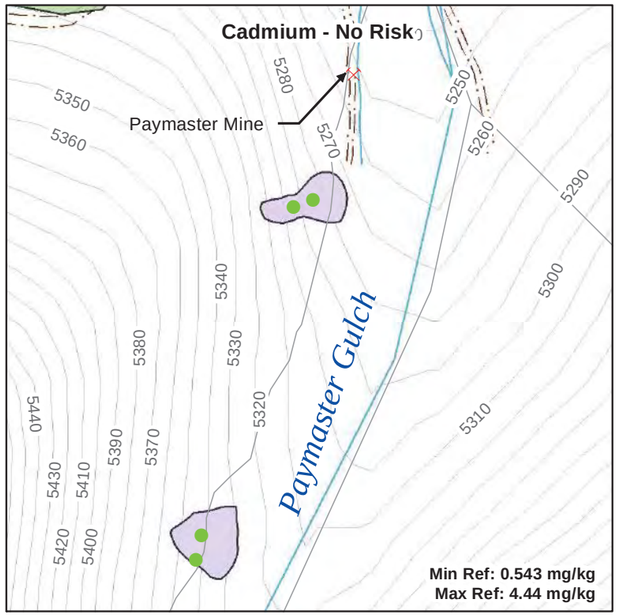
Figure 6-8D

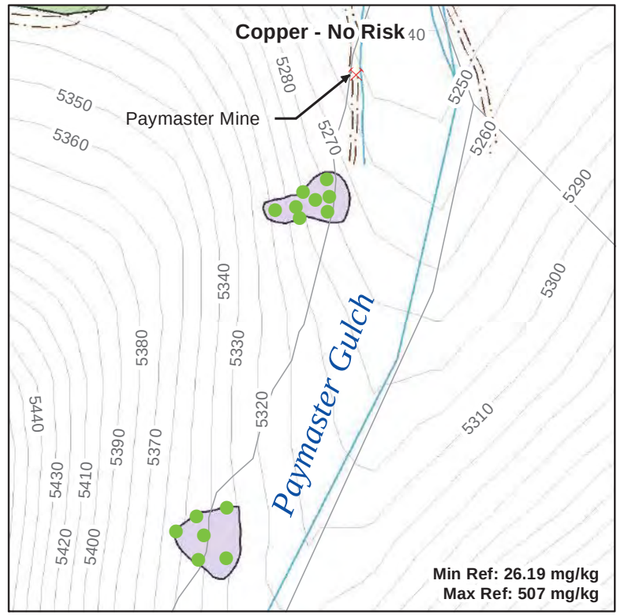
Comparison of Site Concentrations with Preliminary Ecological Remediation Goals and Reference Site Concentrations for the Masked Shrew

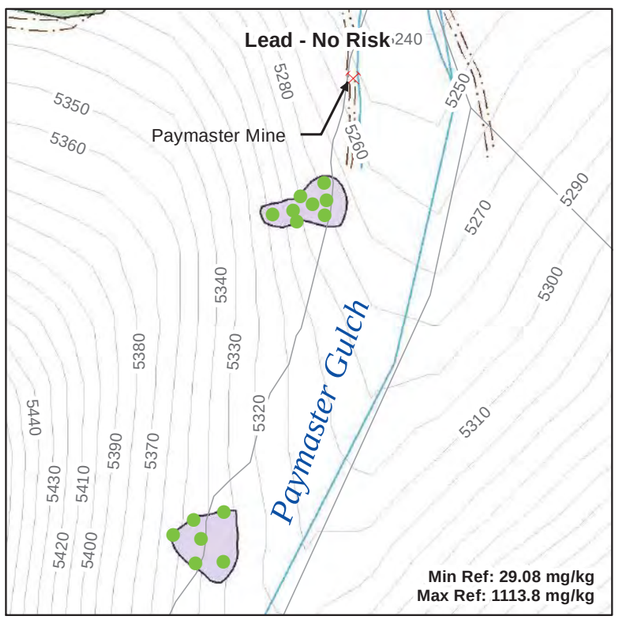
EU 8 - Mike Horse Mine Waste Piles

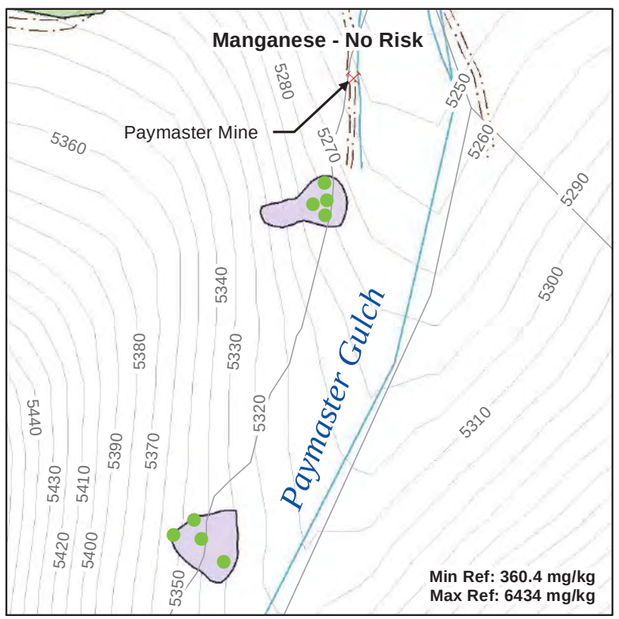
Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex

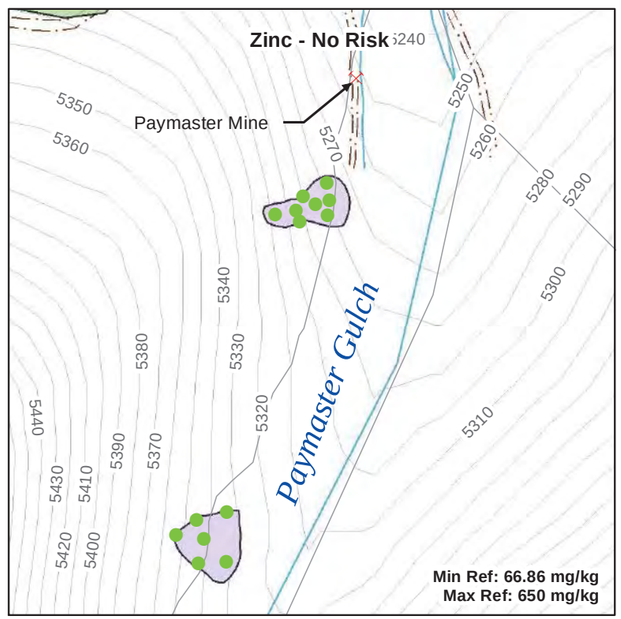












- Result < PERG (NO RISK)
- Result > PERG but < Maximum Reference Concentration (POTENTIAL RISK, BUT NOT SITE-RELATED)
- Result > PERG and Maximum Reference Concentration (SITE-RELATED RISK)
- Mines
- Estimated Extent of Mine Areas (Sampled 2007/2008)
- Mine Waste Repository
- Topographic Contours
- Roads
- Trail
- Stream

EU	Exposure unit
mg/kg	Milligram per kilogram
Max Ref	Maximum Reference Concentration
Min Ref	Minimum Reference Concentration
PERG	Preliminary Ecological Remediation Goal
XRF 10	X-ray fluorescence measurements on a sample that had been dried and sieved through a #10-mesh screen

Notes:

A PERG cannot be less than the minimum reference concentration. In cases where the calculated PERG was lower than the minimum reference concentration, the PERG was set equal to the minimum reference concentration.

XRF 10 concentrations in the top 6 inches of soil at each sampling location were compared with PERGs and reference concentrations.

One-half the detection limit was substituted for non-detect results.

No XRF 10 results were available for cadmium; analytical laboratory data were substituted.

PERG calculations are presented in Appendix E.

N

SCALE IN FEET

0 225

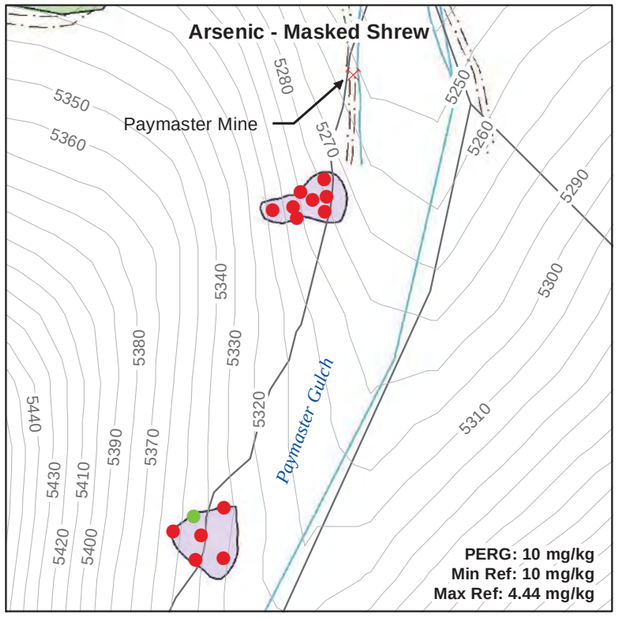
PERG (mg/kg)						
Ecological Receptor	**Arsenic**	**Cadmium**	**Copper**	**Lead**	**Manganese**	**Zinc**
Mourning Dove	5,800,000	18,000	1,800,000	1,700,000	63,000,000	2,900,000
Red-Tailed Hawk	2,800,000	1,200,000	6,300,000	4,900,000	670,000,000	1,200,000
American Kestral	100,000	1,700	210,000	71,000	8,700,000	260,000
Meadow Vole	1,400	13	5,100	23,000	2,900	2,100
White-Tailed Deer	21,000,000	170,000	64,000,000	300,000,000	37,000,000	26,000,000
Red Fox	2,100,000	20,000,000	190,000,000	480,000,000	390,000,000	9,300,000

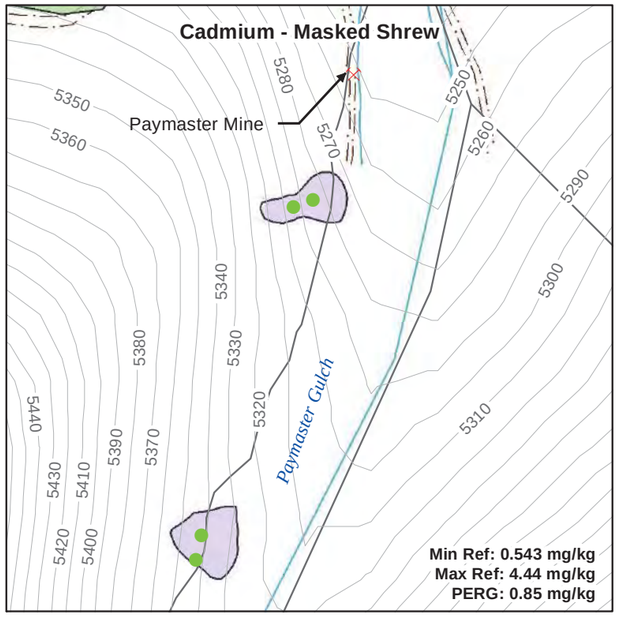
Figure 6-9A

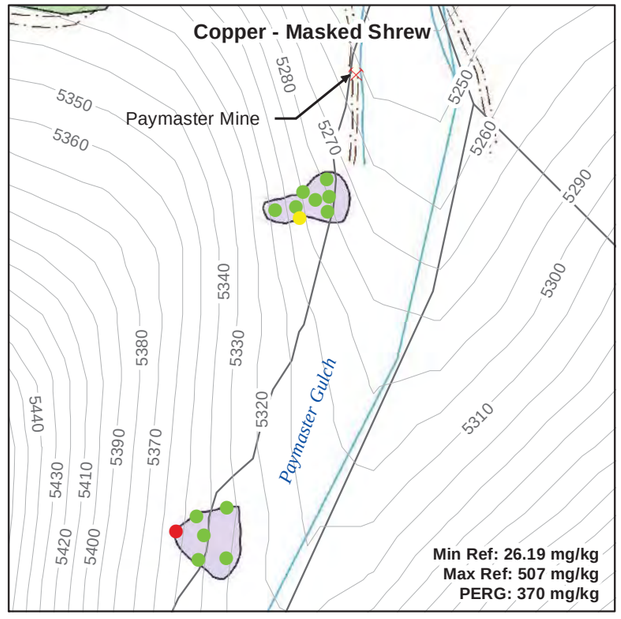
Comparison of Site Concentrations with Preliminary Ecological Remediation Goals and Reference Site Concentrations for the Mourning Dove, Red-Tailed Hawk, American Kestrel, Meadow Vole, White-Tailed Deer and Red Fox

EU 9 - Paymaster Mine Waste Areas

Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex







- Result < PERG (NO RISK)
- Result > PERG but < Maximum Reference Concentration (POTENTIAL RISK, BUT NOT SITE-RELATED)
- Result > PERG and Maximum Reference Concentration (SITE-RELATED RISK)

- Mines
- Estimated Extent of Mine Areas (Sampled 2007/2008)
- Mine Waste Repository
- Topographic Contours
- Roads
- Trail
- Stream

EU	Exposure unit
mg/kg	Milligram per kilogram
Max Ref	Maximum Reference Concentration
Min Ref	Minimum Reference Concentration
PERG	Preliminary Ecological Remediation Goal
XRF 10	X-ray fluorescence measurements on a sample that had been dried and sieved through a #10-mesh screen

Notes:

A PERG cannot be less than the minimum reference concentration. In cases where the calculated PERG was lower than the minimum reference concentration, the PERG was set equal to the minimum reference concentration.

XRF 10 concentrations in the top 6 inches of soil at each sampling location were compared with PERGs and reference concentrations.

One-half the detection limit was substituted for non-detect results.

No XRF 10 results were available for cadmium; analytical laboratory data were substituted.

PERG calculations are presented in Appendix E.

Topographic Contours were created from 30 meter Digital Elevation Models (DEM).

N

SCALE IN FEET

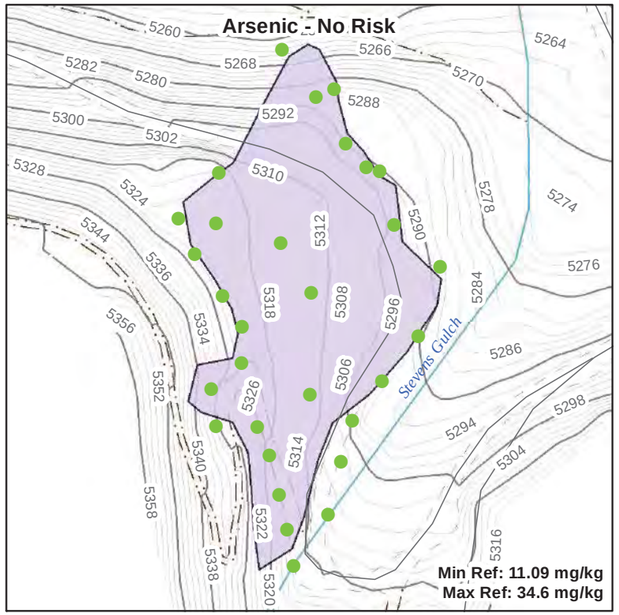
0 225

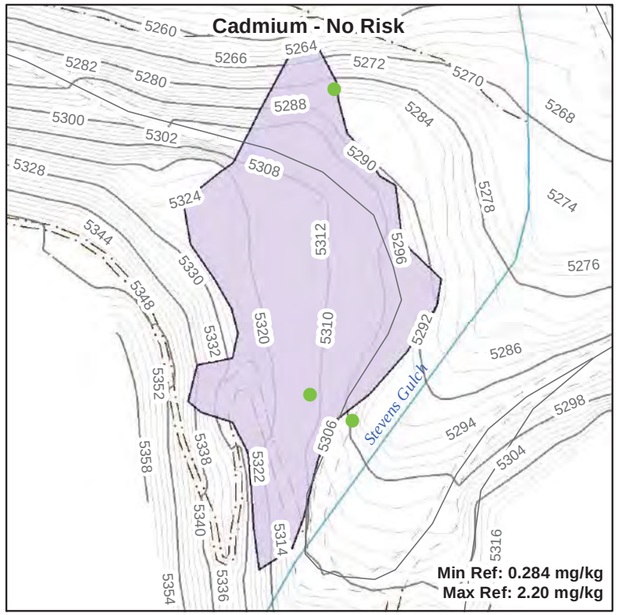
Figure 6-9B

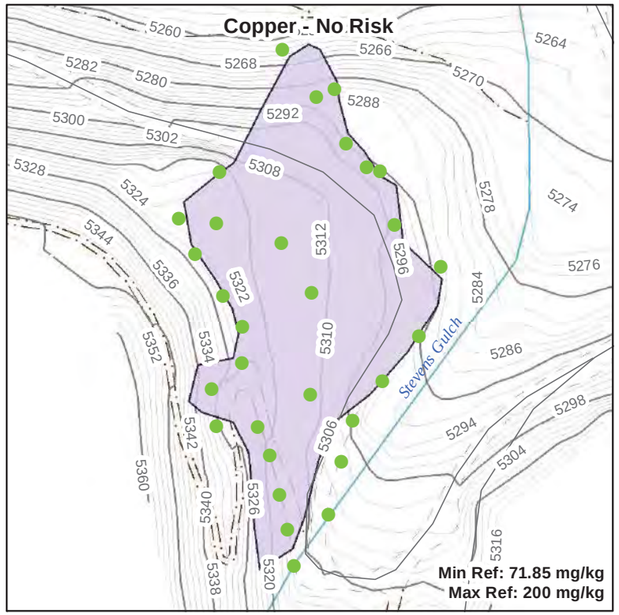
Comparison of Site Concentrations with Preliminary Ecological Remediation Goals and Reference Site Concentrations for the Masked Shrew

EU 9 - Paymaster Mine Waste Areas

Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex

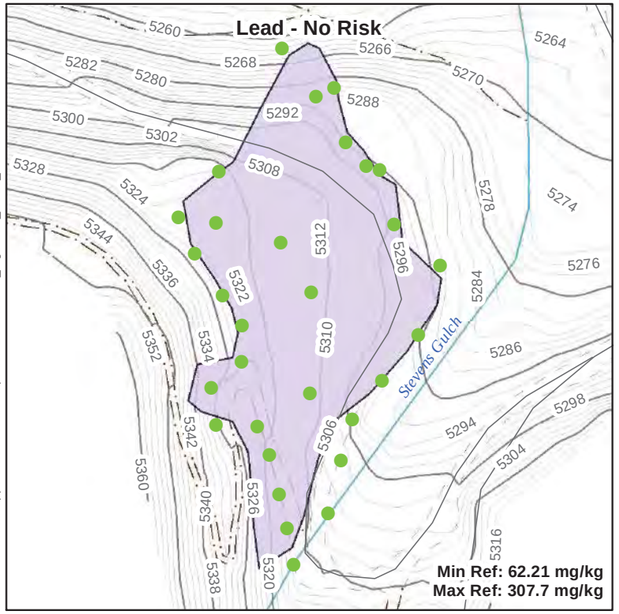


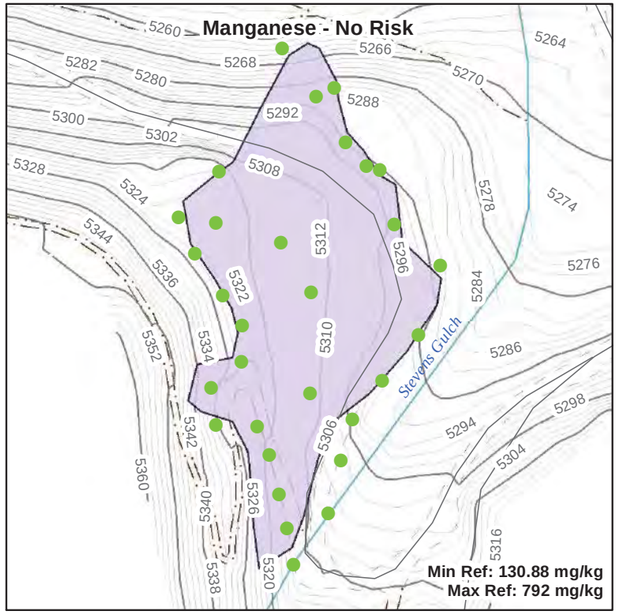


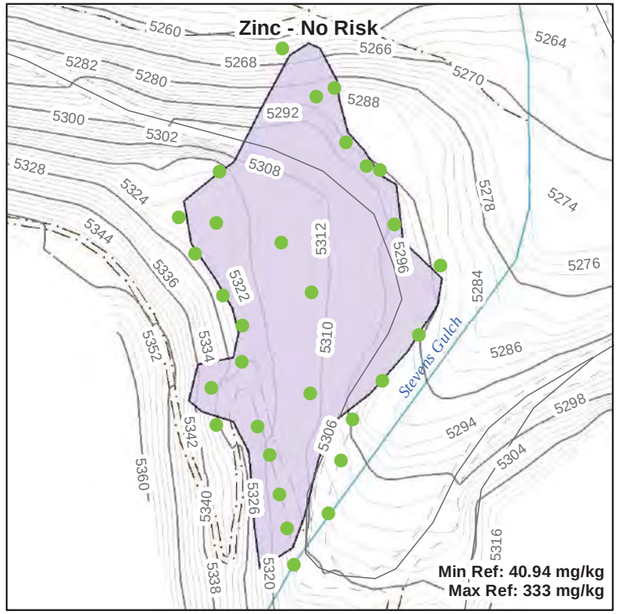


- Result < PERG (NO RISK)
- Result > PERG but < Maximum Reference Concentration (POTENTIAL RISK, BUT NOT SITE-RELATED)
- Result > PERG and Maximum Reference Concentration (SITE-RELATED RISK)

- Mines
- Estimated Extent of Mine Areas (Sampled 2007/2008)
- Topographic Contours
- Interior Contours
- Gravel Road
- Trail
- Stream
- Roads







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EU	Exposure unit
mg/kg	Milligram per kilogram
Max Ref	Maximum Reference Concentration
Min Ref	Minimum Reference Concentration
PERG	Preliminary Ecological Remediation Goal
XRF 10	X-ray fluorescence measurements on a sample that had been dried and sieved through a #10-mesh screen

Notes:

A PERG cannot be less than the minimum reference concentration. In cases where the calculated PERG was lower than the minimum reference concentration, the PERG was set equal to the minimum reference concentration.

XRF 10 concentrations in the top 6 inches of soil at each sampling location were compared with PERGs and reference concentrations.

One-half the detection limit was substituted for non-detect results.

No XRF 10 results were available for cadmium; analytical laboratory data were substituted.

PERG calculations are presented in Appendix E.

N

SCALE IN FEET
0 200

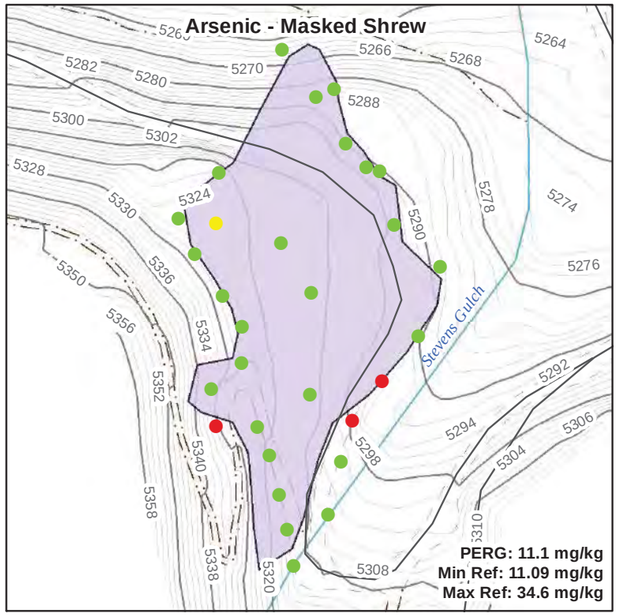
	PERG (mg/kg)					
Ecological Receptor	**Arsenic**	**Cadmium**	**Copper**	**Lead**	**Manganese**	**Zinc**
Mourning Dove	660,000	2,100	210,000	190,000	7,300,000	330,000
Red-Tailed Hawk	330,000	140,000	720,000	570,000	76,000,000	140,000
American Kestral	12,000	200	24,000	8,100	1,000,000	30,000
Meadow Vole	1,400	13	5,100	23,000	2,900	2,100
White-Tailed Deer	2,400,000	19,000	7,300,000	34,000,000	4,200,000	3,000,000
Red Fox	240,000	2,300,000	22,000,000	55,000,000	44,000,000	1,100,000

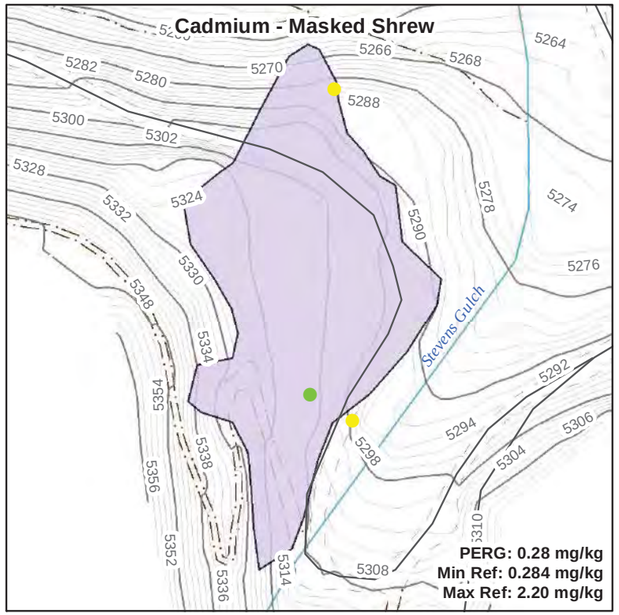
Figure 6-10A

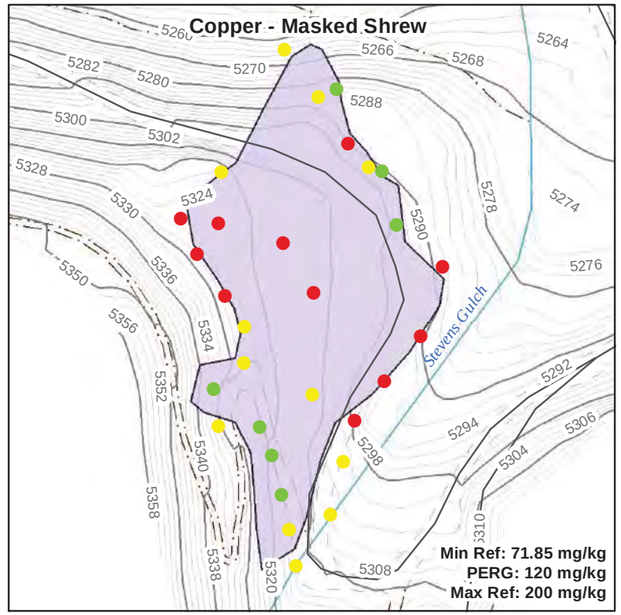
Comparison of Site Concentrations with Preliminary Ecological Remediation Goals and Reference Site Concentrations for the Mourning Dove, Red-Tailed Hawk, American Kestrel, Meadow Vole, White-Tailed Deer and Red Fox

EU 10 - Number 3 Tunnel Waste Area

Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex

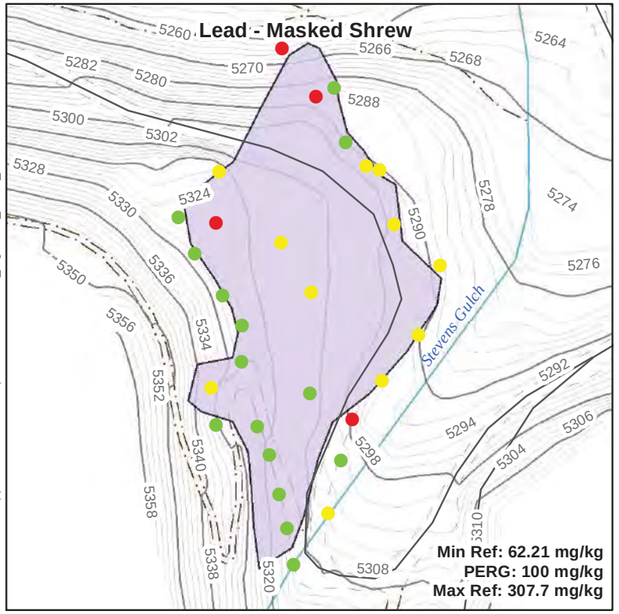


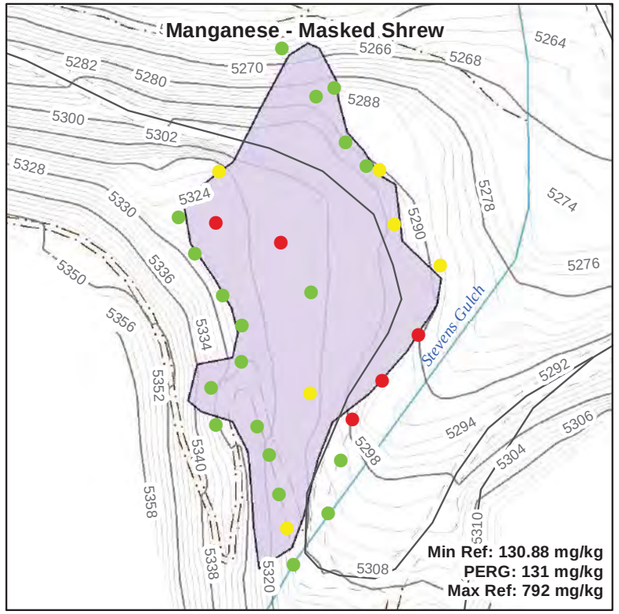


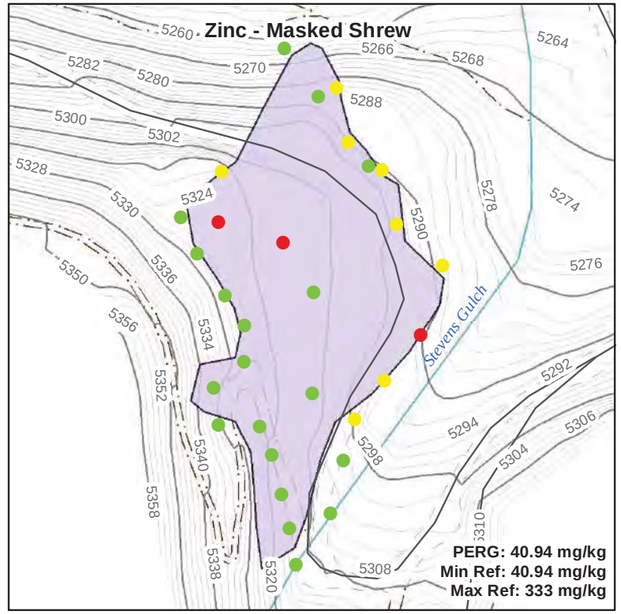


- Result < PERG (NO RISK)
- Result > PERG but < Maximum Reference Concentration (POTENTIAL RISK, BUT NOT SITE-RELATED)
- Result > PERG and Maximum Reference Concentration (SITE-RELATED RISK)

- Estimated Extent of Mine Areas (Sampled 2007/2008)
- Gravel Road
- Trail
- Stream
- Roads
- Topographic Contours
- Interior Contours







EU	Exposure unit
mg/kg	Milligram per kilogram
Max Ref	Maximum Reference Concentration
Min Ref	Minimum Reference Concentration
PERG	Preliminary Ecological Remediation Goal
XRF 10	X-ray fluorescence measurements on a sample that had been dried and sieved through a #10-mesh screen

Notes:

A PERG cannot be less than the minimum reference concentration. In cases where the calculated PERG was lower than the minimum reference concentration, the PERG was set equal to the minimum reference concentration.

XRF 10 concentrations in the top 6 inches of soil at each sampling location were compared with PERGs and reference concentrations.

One-half the detection limit was substituted for non-detect results.

No XRF 10 results were available for cadmium; analytical laboratory data were substituted.

PERG calculations are presented in Appendix E.

N

SCALE IN FEET

0 200

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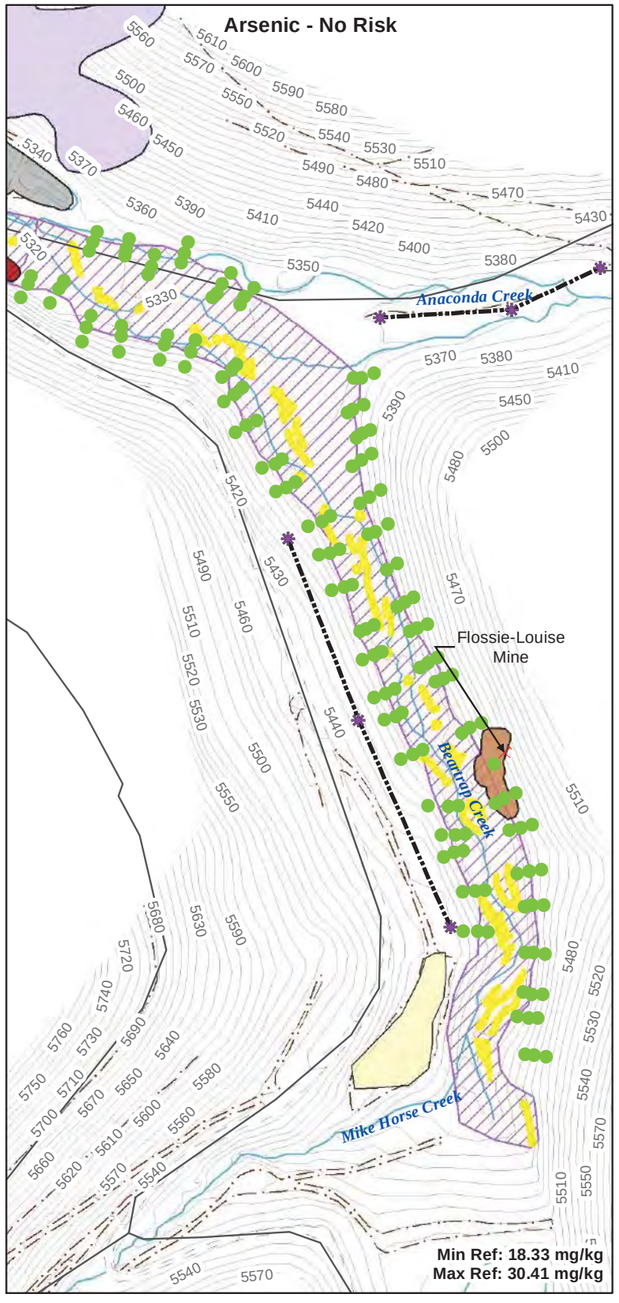
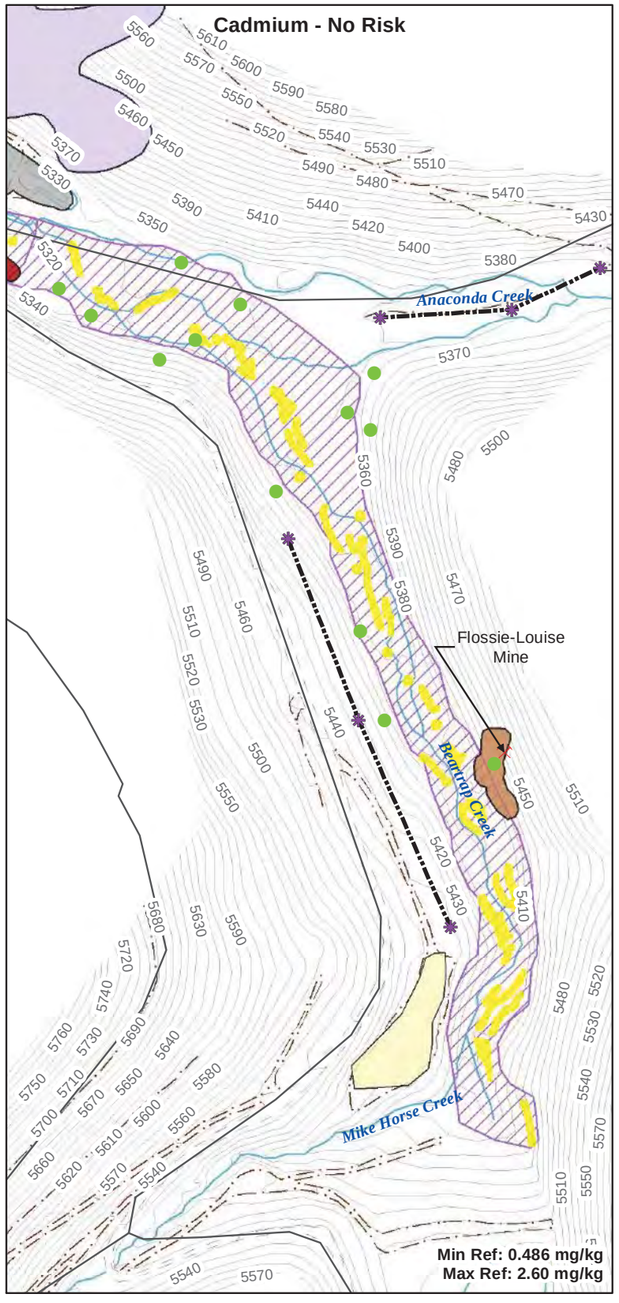
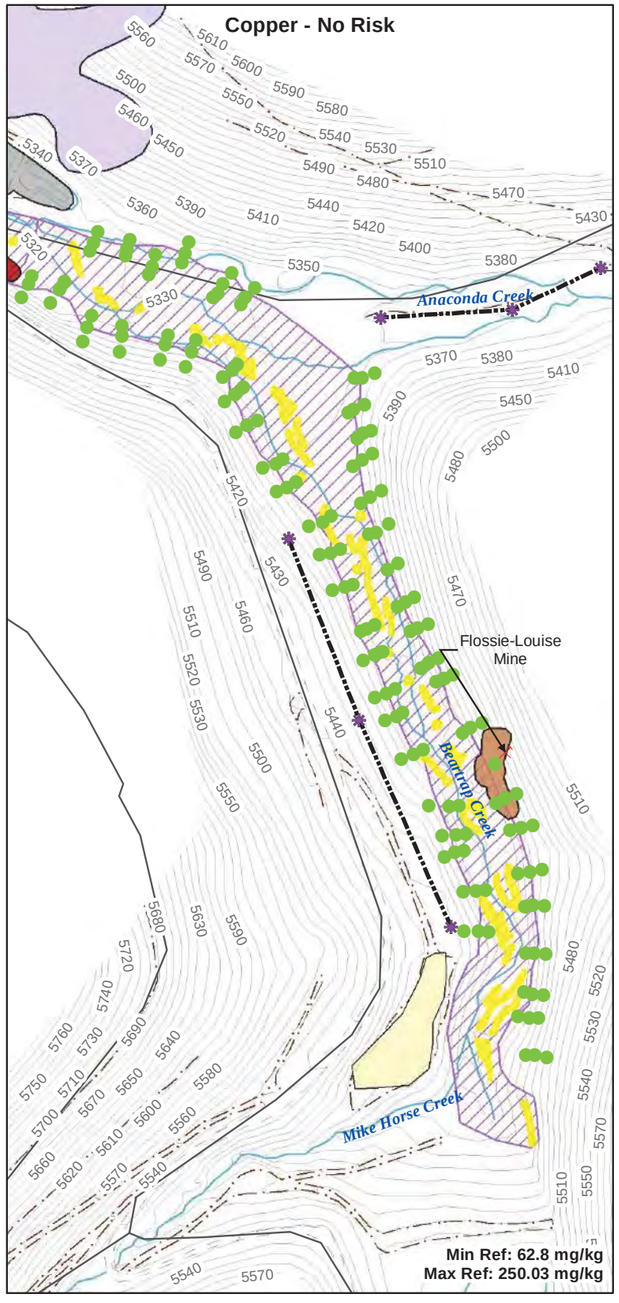
Figure 6-10B

Comparison of Site Concentrations with Preliminary Ecological Remediation Goals and Reference Site Concentrations for the Masked Shrew
EU 10 - Number 3 Tunnel Waste Area

Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex







- Result < PERG (NO RISK)
- Result > PERG but < Maximum Reference Concentration (POTENTIAL RISK, BUT NOT SITE-RELATED)
- Result > PERG and Maximum Reference Concentration (SITE-RELATED RISK)

- Mines
- 2008 Terrestrial Transect Sampling Locations
- Terrestrial Receptor Transects
- Estimated Extent of Streamside Impacts Soil Sampling
- 1975 Breach Flood Stage Indicators
- Area of Dispersed Sandy (Fine) Tailings
- Estimated Extent of Mine Areas (Sampled 2007/2008)
- Former Wetland Treatment Cells
- Old Mike Horse Mine Townsite
- Unreclaimed Mine Waste Areas (Sampled 2007/2008)
- Topographic Contours
- Roads
- Gravel Road
- Trail
- Stream

EU	Exposure unit
mg/kg	Milligram per kilogram
Max Ref	Maximum Reference Concentration
Min Ref	Minimum Reference Concentration
PERG	Preliminary Ecological Remediation Goal
XRF 10	X-ray fluorescence measurements on a sample that had been dried and sieved through a #10-mesh screen

Notes:

A PERG cannot be less than the minimum reference concentration. In cases where the calculated PERG was lower than the minimum reference concentration, the PERG was set equal to the minimum reference concentration.

XRF 10 concentrations in the top 6 inches of soil at each sampling location were compared with PERGs and reference concentrations.

One-half the detection limit was substituted for non-detect results.

No XRF 10 results were available for cadmium; analytical laboratory data were substituted.

PERG calculations are presented in Appendix E.

N

SCALE IN FEET

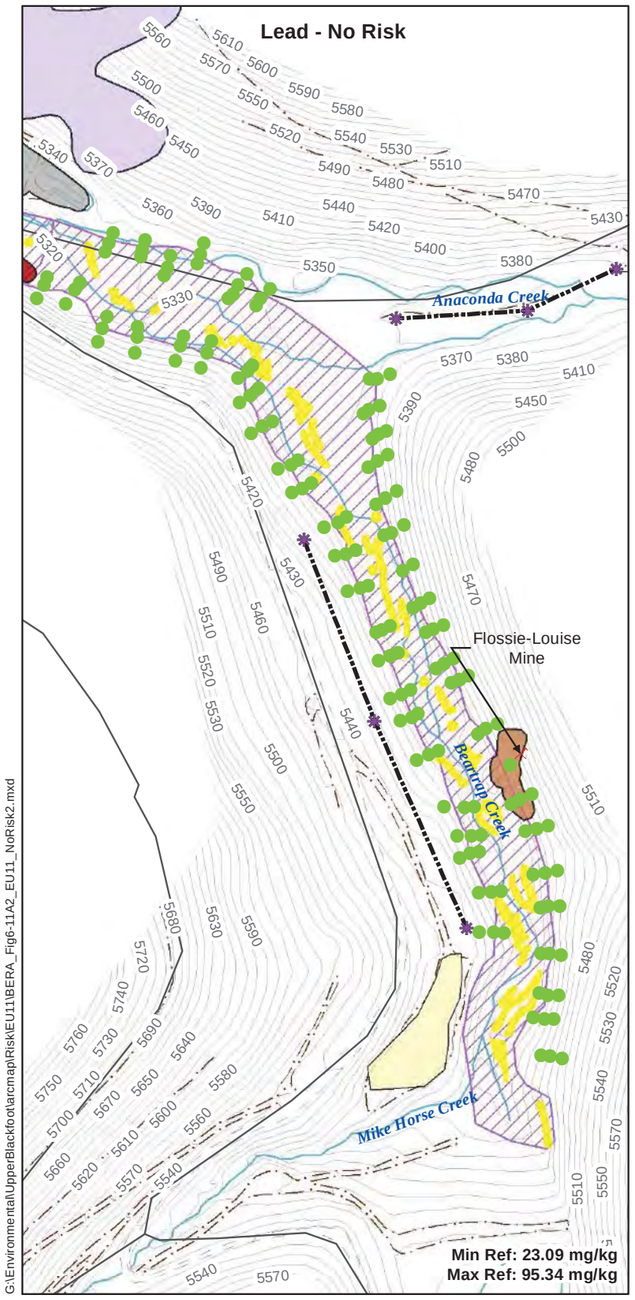
0 400

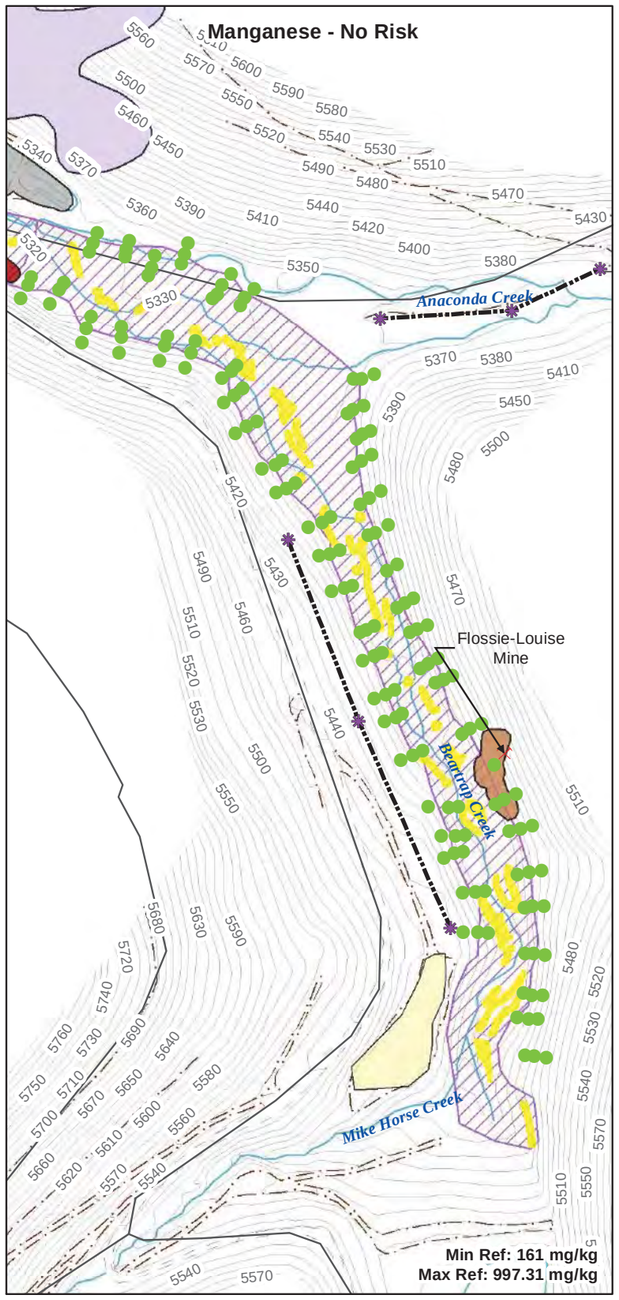
PERG (mg/kg)						
Ecological Receptor	Arsenic	Cadmium	Copper	Lead	Manganese	Zinc
Mourning Dove	150,000	460	45,000	42,000	1,600,000	73,000
Red-Tailed Hawk	71,000	31,000	160,000	120,000	17,000,000	30,000
White-Tailed Deer	520,000	4,200	1,600,000	7,500,000	920,000	650,000
Red Fox	53,000	500,000	4,800,000	12,000,000	9,700,000	230,000

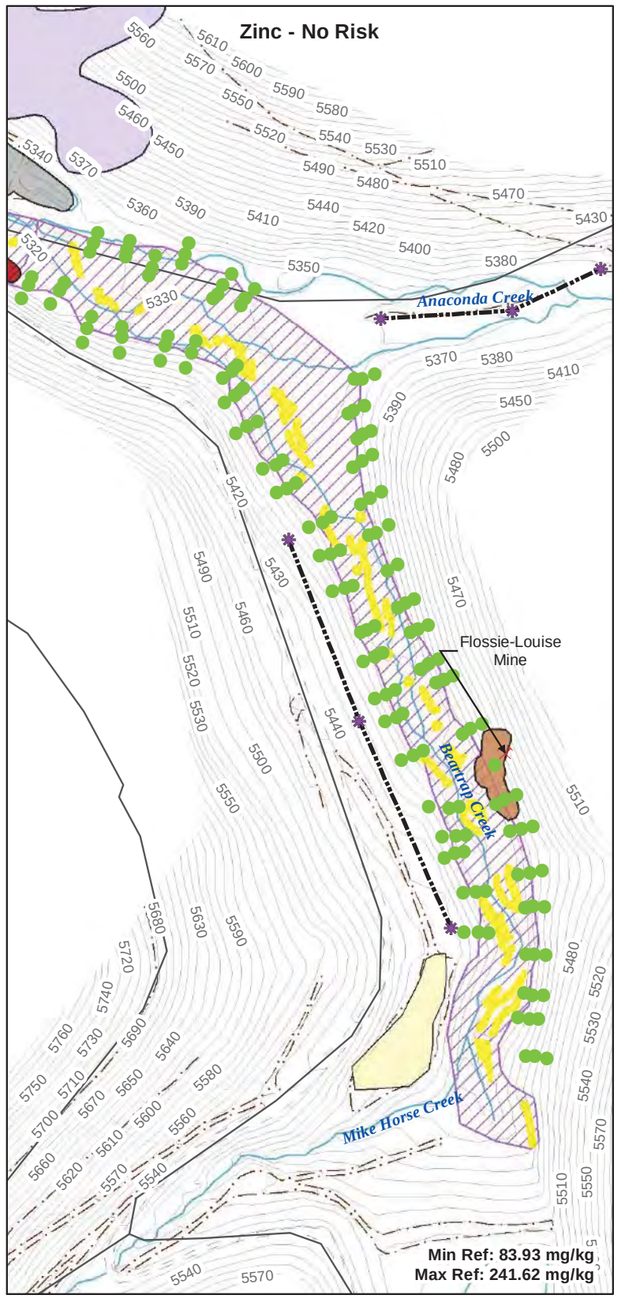
Figure 6-11A1

Comparison of Site Concentrations with Preliminary Ecological Remediation Goals and Reference Site Concentrations for the Mourning Dove, Red-Tailed Hawk, White-Tailed Deer and Red Fox
EU 11 - Beartrap Creek Dispersed Tailings Deposits Associated with EE/CA Removal Action Area and Overbank Tailings Deposits and Flossie Louise Mine Waste Areas

Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex







- Result < PERG (NO RISK)
- Result > PERG but < Maximum Reference Concentration (POTENTIAL RISK, BUT NOT SITE-RELATED)
- Result > PERG and Maximum Reference Concentration (SITE-RELATED RISK)

- Mines
- 2008 Terrestrial Transect Sampling Locations
- Terrestrial Receptor Transects
- Estimated Extent of Streamside Impacts Soil Sampling
- 1975 Breach Flood Stage Indicators
- Area of Dispersed Sandy (Fine) Tailings
- Estimated Extent of Mine Areas (Sampled 2007/2008)
- Former Wetland Treatment Cells
- Old Mike Horse Mine Townsite
- Unreclaimed Mine Waste Areas (Sampled 2007/2008)
- Topographic Contours
- Roads
- Gravel Road
- Trail
- Stream

EU	Exposure unit
mg/kg	Milligram per kilogram
Max Ref	Maximum Reference Concentration
Min Ref	Minimum Reference Concentration
PERG	Preliminary Ecological Remediation Goal
XRF 10	X-ray fluorescence measurements on a sample that had been dried and sieved through a #10-mesh screen

Notes:

A PERG cannot be less than the minimum reference concentration. In cases where the calculated PERG was lower than the minimum reference concentration, the PERG was set equal to the minimum reference concentration.

XRF 10 concentrations in the top 6 inches of soil at each sampling location were compared with PERGs and reference concentrations.

One-half the detection limit was substituted for non-detect results.

No XRF 10 results were available for cadmium; analytical laboratory data were substituted.

PERG calculations are presented in Appendix E.

N

SCALE IN FEET

0 375

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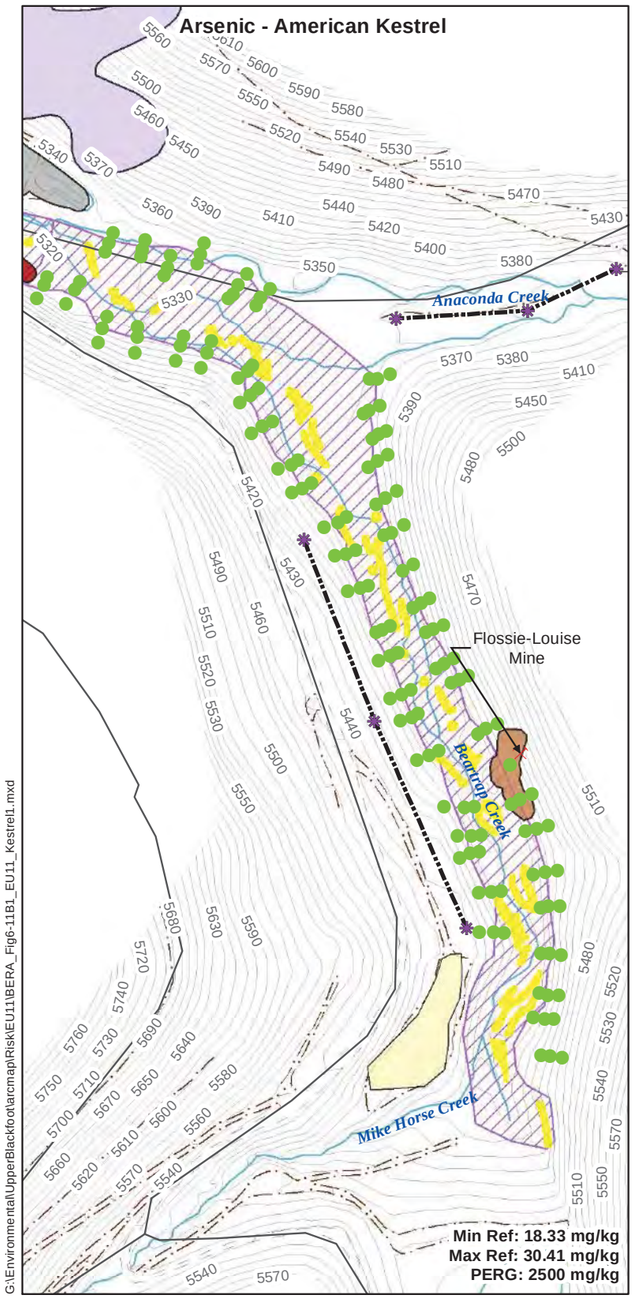
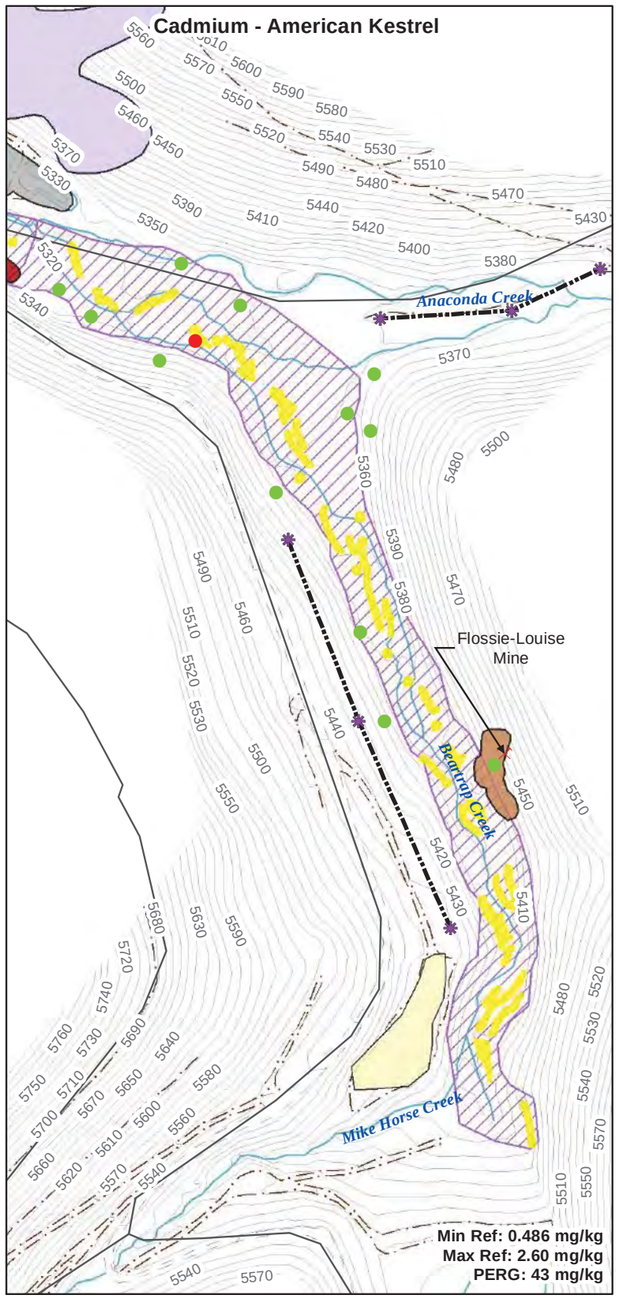
PERG (mg/kg)						
Ecological Receptor	Arsenic	Cadmium	Copper	Lead	Manganese	Zinc
Mourning Dove	150,000	460	45,000	42,000	1,600,000	73,000
Red-Tailed Hawk	71,000	31,000	160,000	120,000	17,000,000	30,000
White-Tailed Deer	520,000	4,200	1,600,000	7,500,000	920,000	650,000
Red Fox	53,000	500,000	4,800,000	12,000,000	9,700,000	230,000

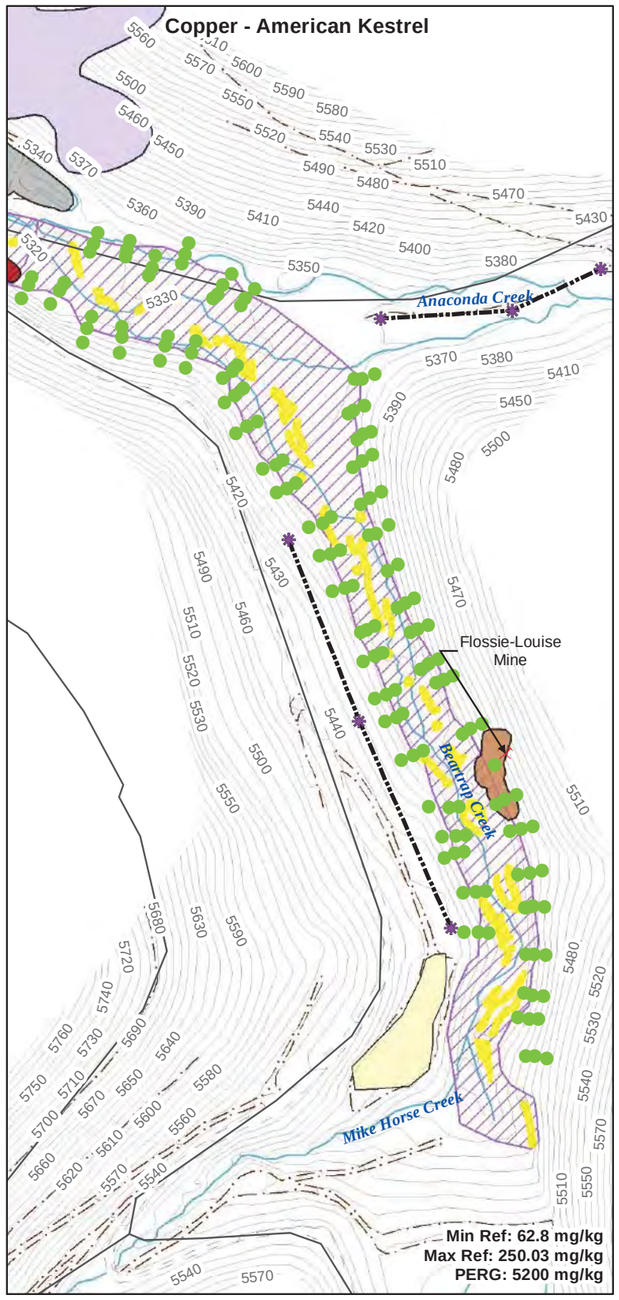
Figure 6-11A2

Comparison of Site Concentrations with Preliminary Ecological Remediation Goals and Reference Site Concentrations for the Mourning Dove, Red-Tailed Hawk, White-Tailed Deer and Red Fox
EU 11 - Beartrap Creek Dispersed Tailings Deposits Associated with EE/CA Removal Action Area and Overbank Tailings Deposits and Flossie Louise Mine Waste Areas

Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex







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- Result < PERG (NO RISK)
- Result > PERG but < Maximum Reference Concentration (POTENTIAL RISK, BUT NOT SITE-RELATED)
- Result > PERG and Maximum Reference Concentration (SITE-RELATED RISK)

- Mines
- 2008 Terrestrial Transect Sampling Locations
- Terrestrial Receptor Transects
- Estimated Extent of Streamside Impacts Soil Sampling
- 1975 Breach Flood Stage Indicators
- Area of Dispersed Sandy (Fine) Tailings
- Estimated Extent of Mine Areas (Sampled 2007/2008)
- Former Wetland Treatment Cells
- Old Mike Horse Mine Townsite
- Unreclaimed Mine Waste Areas (Sampled 2007/2008)
- Topographic Contours
- Roads
- Gravel Road
- Trail
- Stream

EU	Exposure unit
mg/kg	Milligram per kilogram
Max Ref	Maximum Reference Concentration
Min Ref	Minimum Reference Concentration
PERG	Preliminary Ecological Remediation Goal
XRF 10	X-ray fluorescence measurements on a sample that had been dried and sieved through a #10-mesh screen

Notes:

A PERG cannot be less than the minimum reference concentration. In cases where the calculated PERG was lower than the minimum reference concentration, the PERG was set equal to the minimum reference concentration.

XRF 10 concentrations in the top 6 inches of soil at each sampling location were compared with PERGs and reference concentrations.

One-half the detection limit was substituted for non-detect results.

No XRF 10 results were available for cadmium; analytical laboratory data were substituted.

PERG calculations are presented in Appendix E.

N

SCALE IN FEET

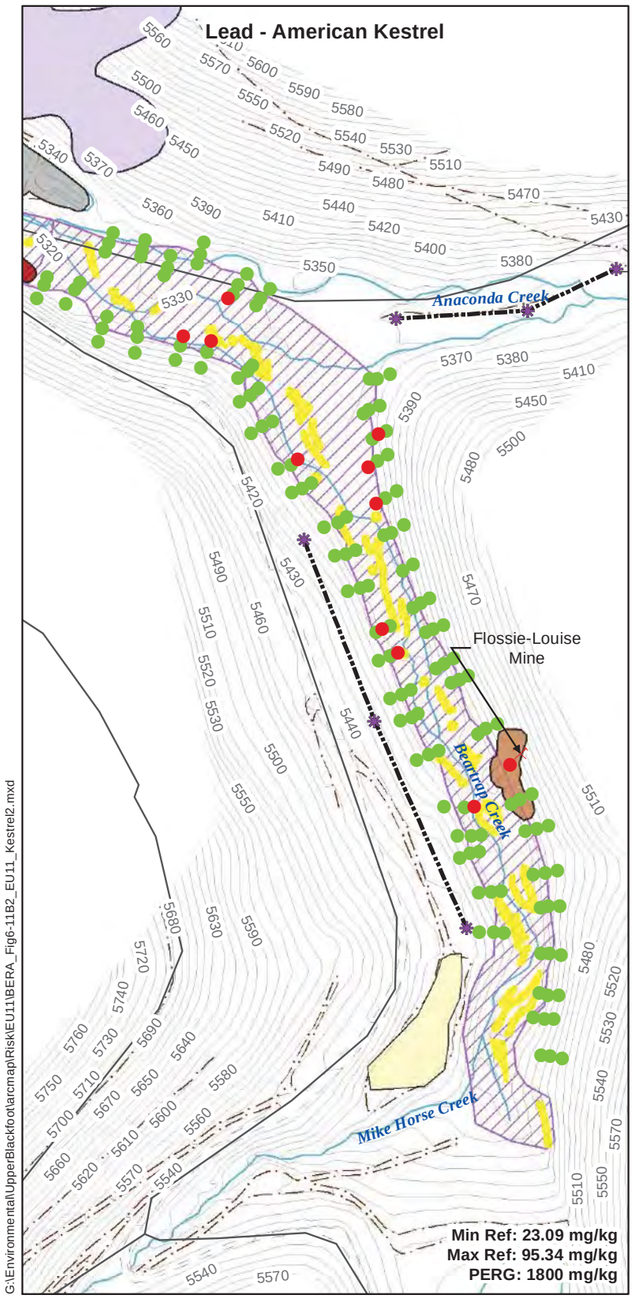
0 400

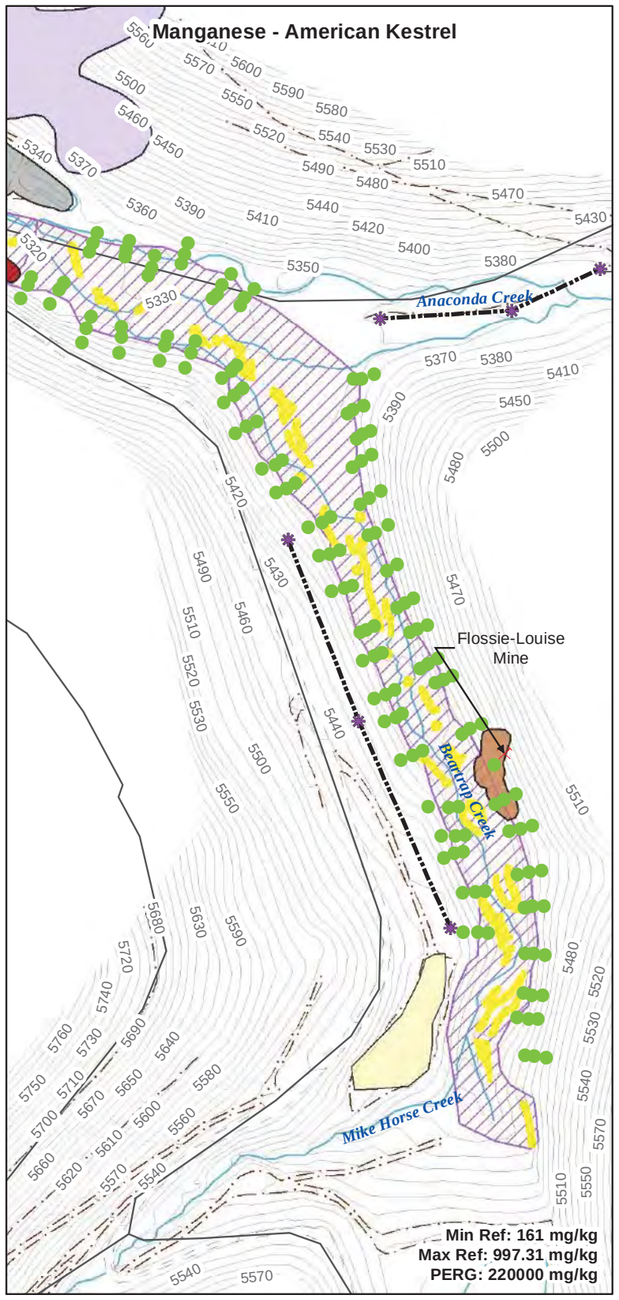
Figure 6-11B1

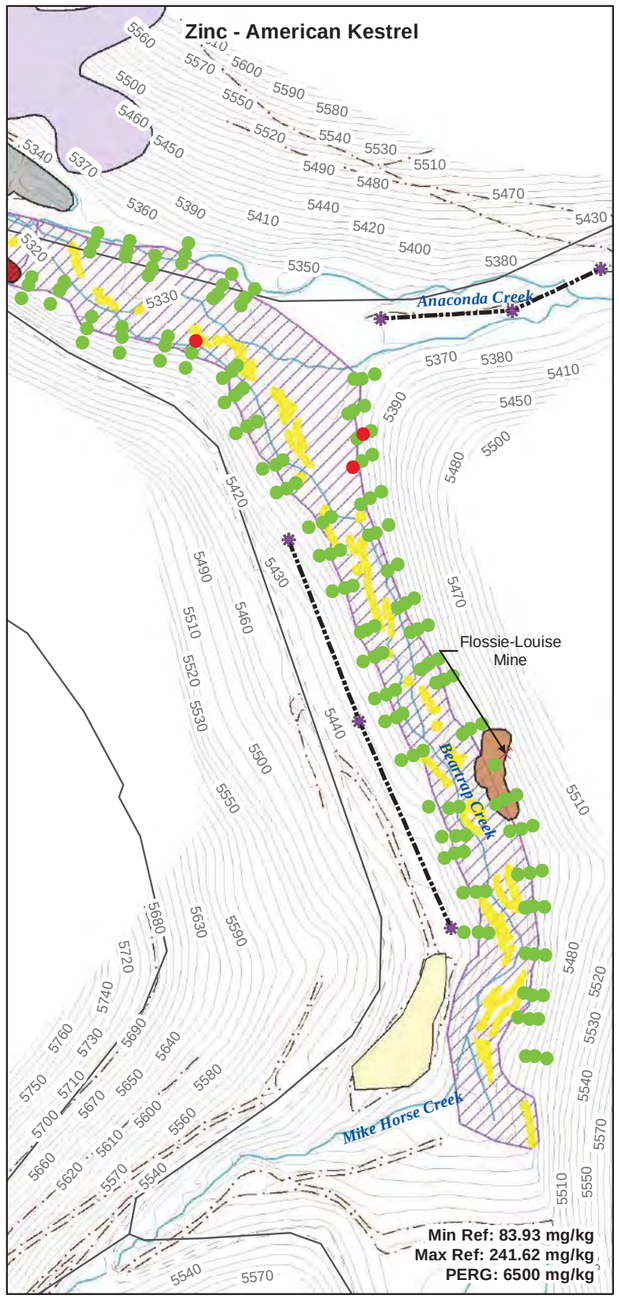
Comparison of Site Concentrations with Preliminary Ecological Remediation Goals and Reference Site Concentrations for the American Kestrel

EU 11 - Beartrap Creek Dispersed Tailings Deposits Associated with EE/CA Removal Action Area and Overbank Tailings Deposits and Flossie Louise Mine Waste Areas

Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex







- Result < PERG (NO RISK)
- Result > PERG but < Maximum Reference Concentration (POTENTIAL RISK, BUT NOT SITE-RELATED)
- Result > PERG and Maximum Reference Concentration (SITE-RELATED RISK)

- Mines
- Estimated Extent of Streamside Impacts Soil Sampling
- 1975 Breach Flood Stage Indicators
- Area of Dispersed Sandy (Fine) Tailings
- Estimated Extent of Mine Areas (Sampled 2007/2008)
- Former Wetland Treatment Cells
- Old Mike Horse Mine Townsite
- Unreclaimed Mine Waste Areas (Sampled 2007/2008)
- Topographic Contours
- Roads
- Gravel Road
- Trail
- Stream

EU	Exposure unit
mg/kg	Milligram per kilogram
Max Ref	Maximum Reference Concentration
Min Ref	Minimum Reference Concentration
PERG	Preliminary Ecological Remediation Goal
XRF 10	X-ray fluorescence measurements on a sample that had been dried and sieved through a #10-mesh screen

Notes:

A PERG cannot be less than the minimum reference concentration. In cases where the calculated PERG was lower than the minimum reference concentration, the PERG was set equal to the minimum reference concentration.

XRF 10 concentrations in the top 6 inches of soil at each sampling location were compared with PERGs and reference concentrations.

One-half the detection limit was substituted for non-detect results.

No XRF 10 results were available for cadmium; analytical laboratory data were substituted.

PERG calculations are presented in Appendix E.

N

SCALE IN FEET

0 375

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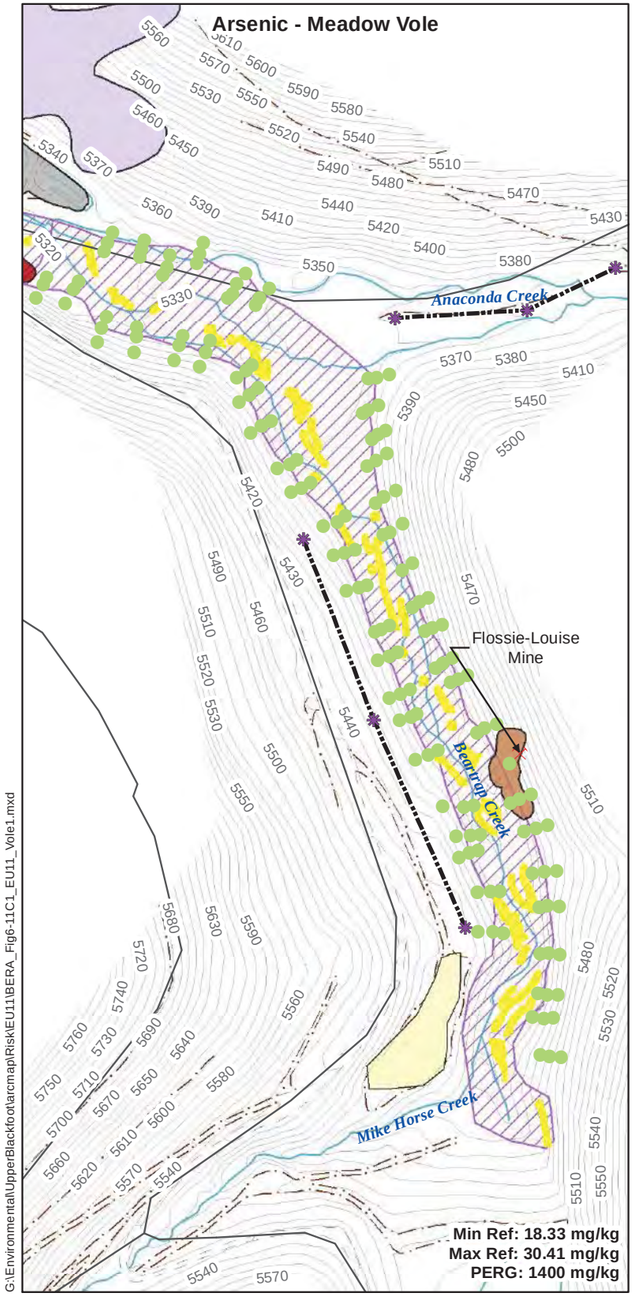
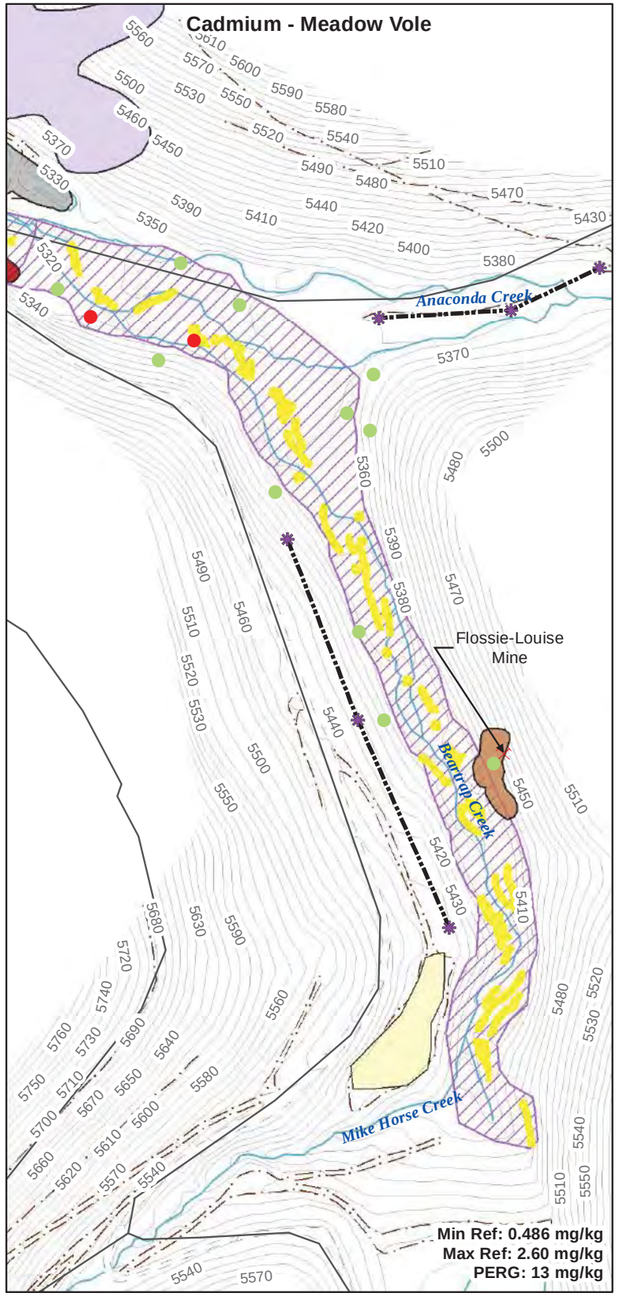
Figure 6-11B2

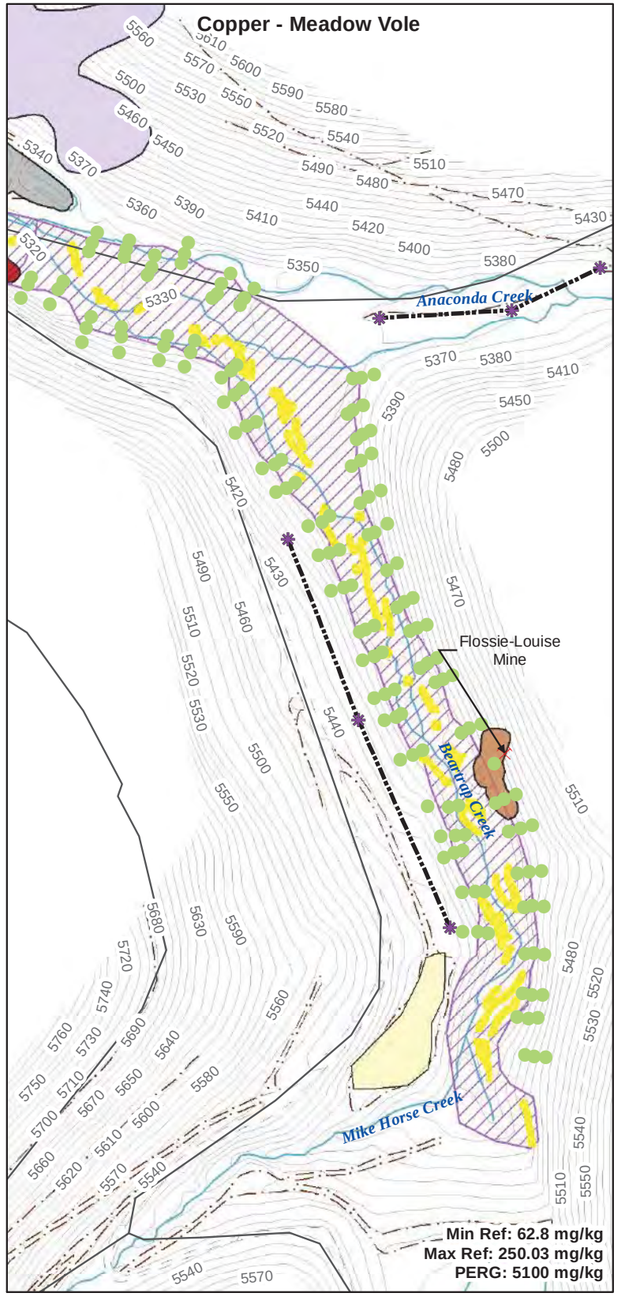
Comparison of Site Concentrations with Preliminary Ecological Remediation Goals and Reference Site Concentrations for the American Kestrel

EU 11 - Beartrap Creek Dispersed Tailings Deposits Associated with EE/CA Removal Action Area and Overbank Tailings Deposits and Flossie Louise Mine Waste Areas

Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex







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- Result < PERG (NO RISK)
- Result > PERG but < Maximum Reference Concentration (POTENTIAL RISK, BUT NOT SITE-RELATED)
- Result > PERG and Maximum Reference Concentration (SITE-RELATED RISK)

- Mines
- 2008 Terrestrial Transect Sampling Locations
- Terrestrial Receptor Transects
- Estimated Extent of Streamside Impacts Soil Sampling
- 1975 Breach Flood Stage Indicators
- Area of Dispersed Sandy (Fine) Tailings
- Estimated Extent of Mine Areas (Sampled 2007/2008)
- Former Wetland Treatment Cells
- Old Mike Horse Mine Townsite
- Unreclaimed Mine Waste Areas (Sampled 2007/2008)
- Topographic Contours
- Roads
- Gravel Road
- Trail
- Stream

EU	Exposure unit
mg/kg	Milligram per kilogram
Max Ref	Maximum Reference Concentration
Min Ref	Minimum Reference Concentration
PERG	Preliminary Ecological Remediation Goal
XRF 10	X-ray fluorescence measurements on a sample that had been dried and sieved through a #10-mesh screen

Notes:

A PERG cannot be less than the minimum reference concentration. In cases where the calculated PERG was lower than the minimum reference concentration, the PERG was set equal to the minimum reference concentration.

XRF 10 concentrations in the top 6 inches of soil at each sampling location were compared with PERGs and reference concentrations.

One-half the detection limit was substituted for non-detect results.

No XRF 10 results were available for cadmium; analytical laboratory data were substituted.

PERG calculations are presented in Appendix E.

N

SCALE IN FEET

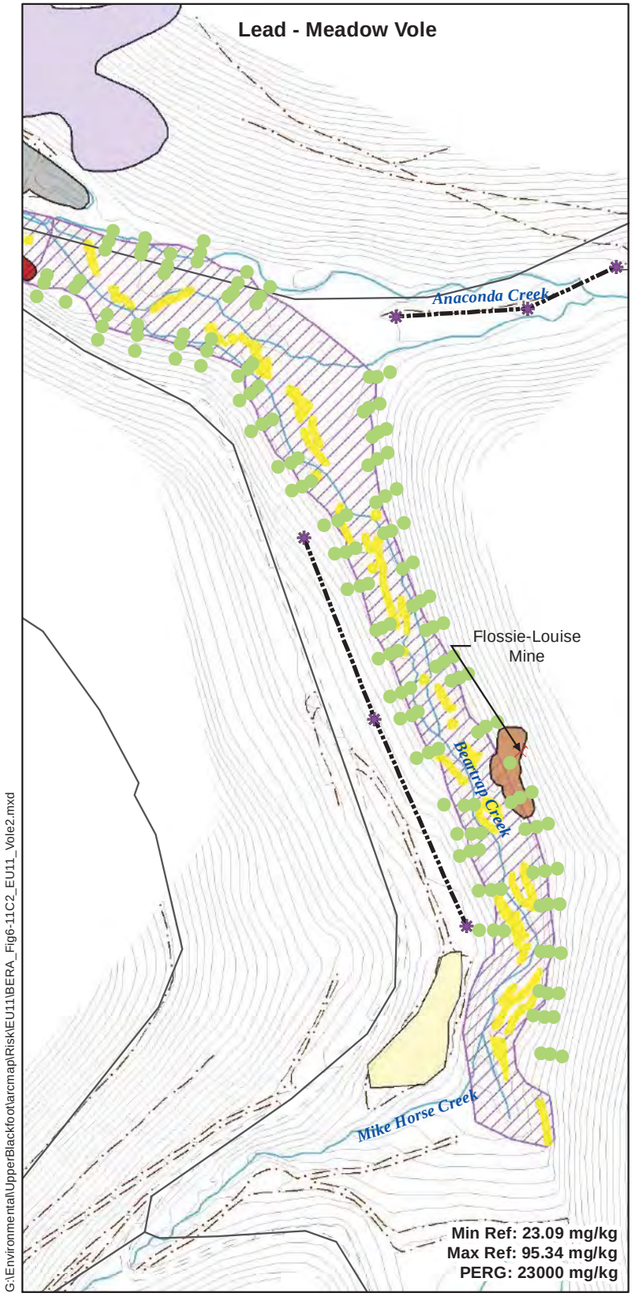
0 375

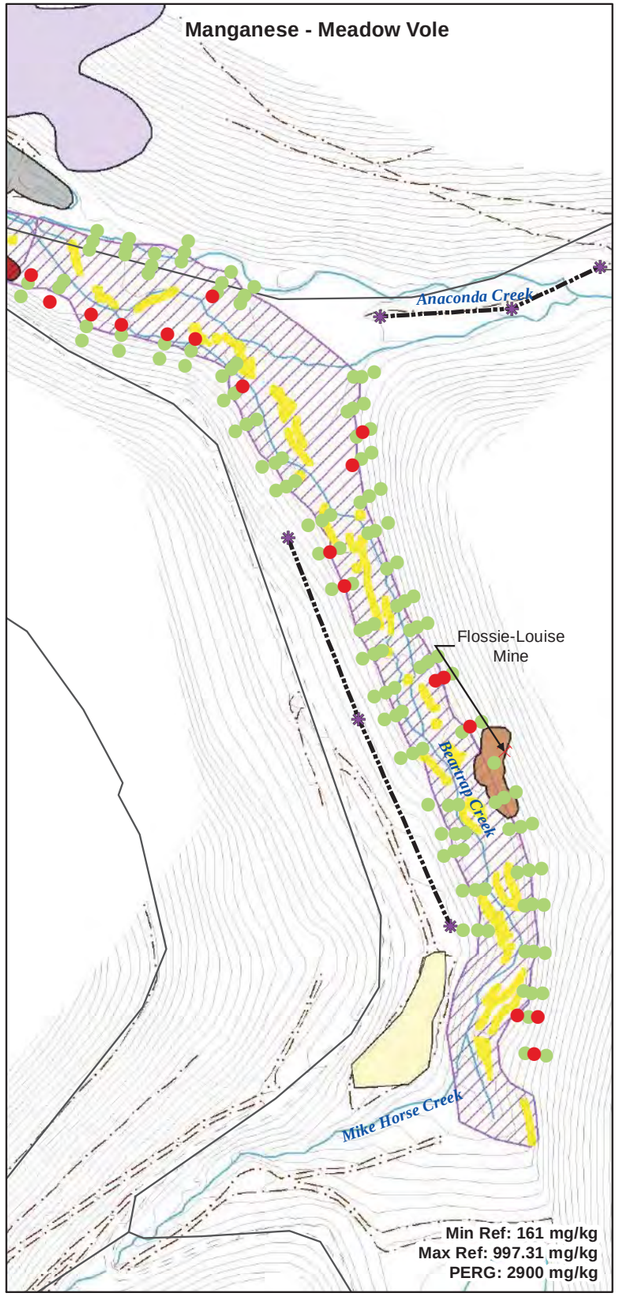
Figure 6-11C1

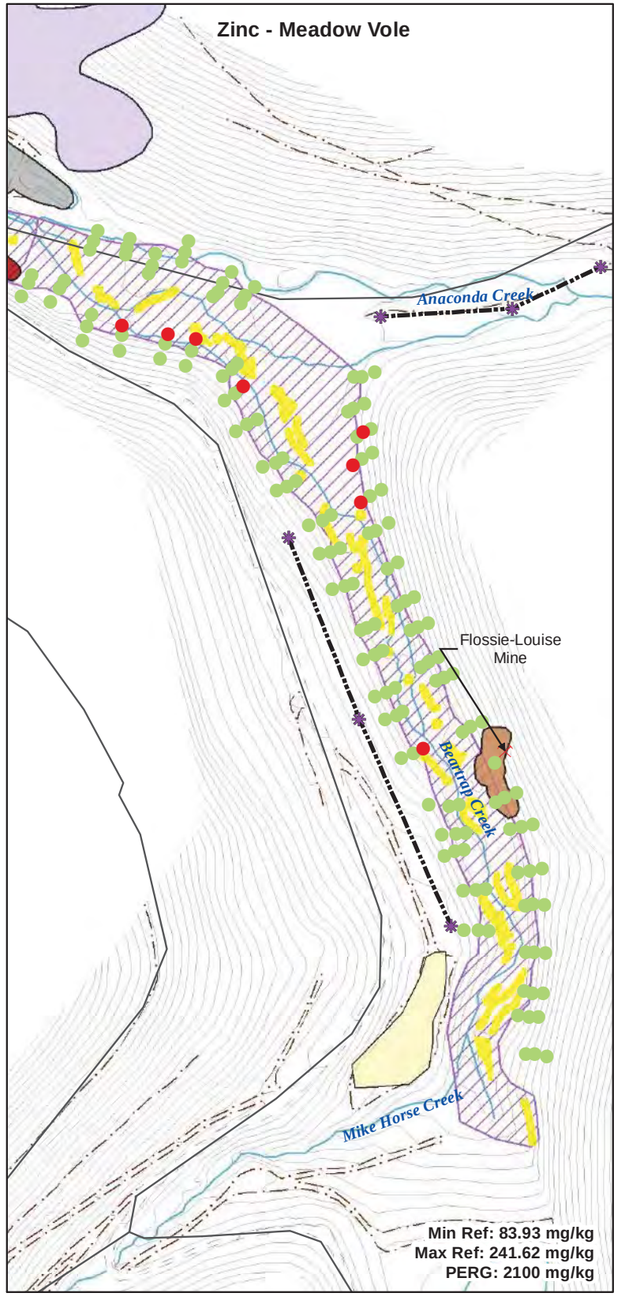
Comparison of Site Concentrations with Preliminary Ecological Remediation Goals and Reference Site Concentrations for the Meadow Vole

EU 11 - Beartrap Creek Dispersed Tailings Deposits Associated with EE/CA Removal Action Area and Overbank Tailings Deposits and Flossie Louise Mine Waste Areas

Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex







- Result < PERG (NO RISK)
- Result > PERG but < Maximum Reference Concentration (POTENTIAL RISK, BUT NOT SITE-RELATED)
- Result > PERG and Maximum Reference Concentration (SITE-RELATED RISK)

- Mines
- 2008 Terrestrial Transect Sampling Locations
- Terrestrial Receptor Transects
- Estimated Extent of Streamside Impacts Soil Sampling
- 1975 Breach Flood Stage Indicators
- Area of Dispersed Sandy (Fine) Tailings
- Estimated Extent of Mine Areas (Sampled 2007/2008)
- Former Wetland Treatment Cells
- Old Mike Horse Mine Townsite
- Unreclaimed Mine Waste Areas (Sampled 2007/2008)
- Roads
- Gravel Road
- Trail
- Stream

EU	Exposure unit
mg/kg	Milligram per kilogram
Max Ref	Maximum Reference Concentration
Min Ref	Minimum Reference Concentration
PERG	Preliminary Ecological Remediation Goal
XRF 10	X-ray fluorescence measurements on a sample that had been dried and sieved through a #10-mesh screen

Notes:

A PERG cannot be less than the minimum reference concentration. In cases where the calculated PERG was lower than the minimum reference concentration, the PERG was set equal to the minimum reference concentration.

XRF 10 concentrations in the top 6 inches of soil at each sampling location were compared with PERGs and reference concentrations.

One-half the detection limit was substituted for non-detect results.

No XRF 10 results were available for cadmium; analytical laboratory data were substituted.

PERG calculations are presented in Appendix E.

N

SCALE IN FEET

0 400

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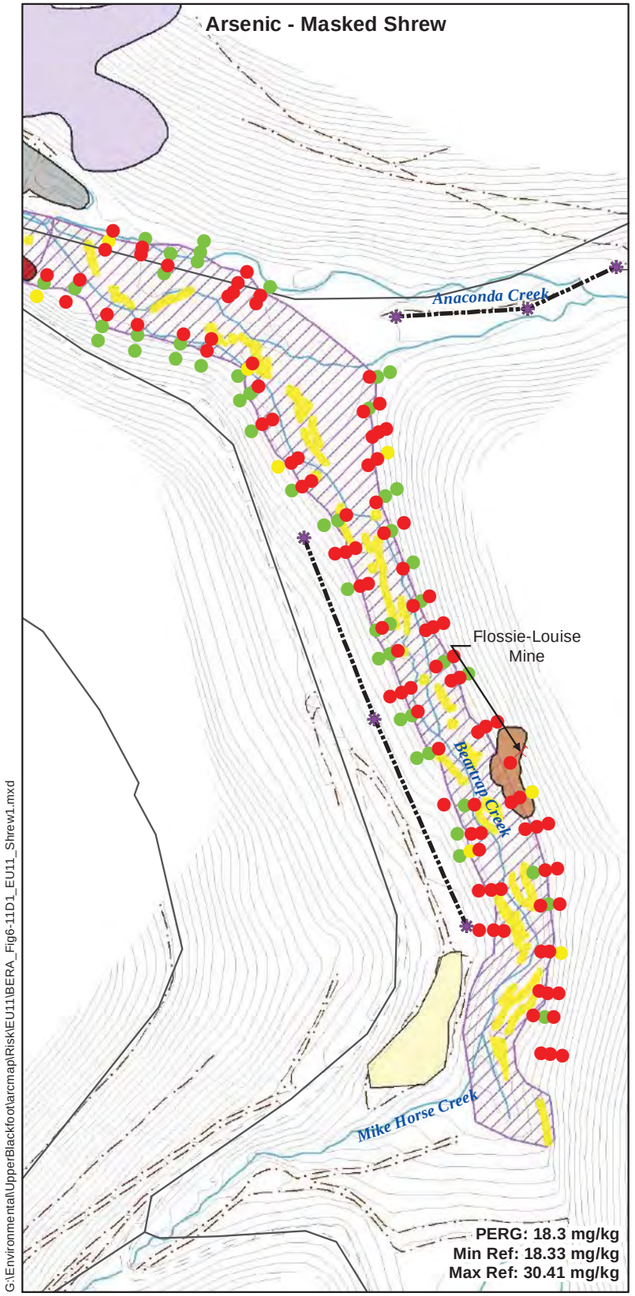
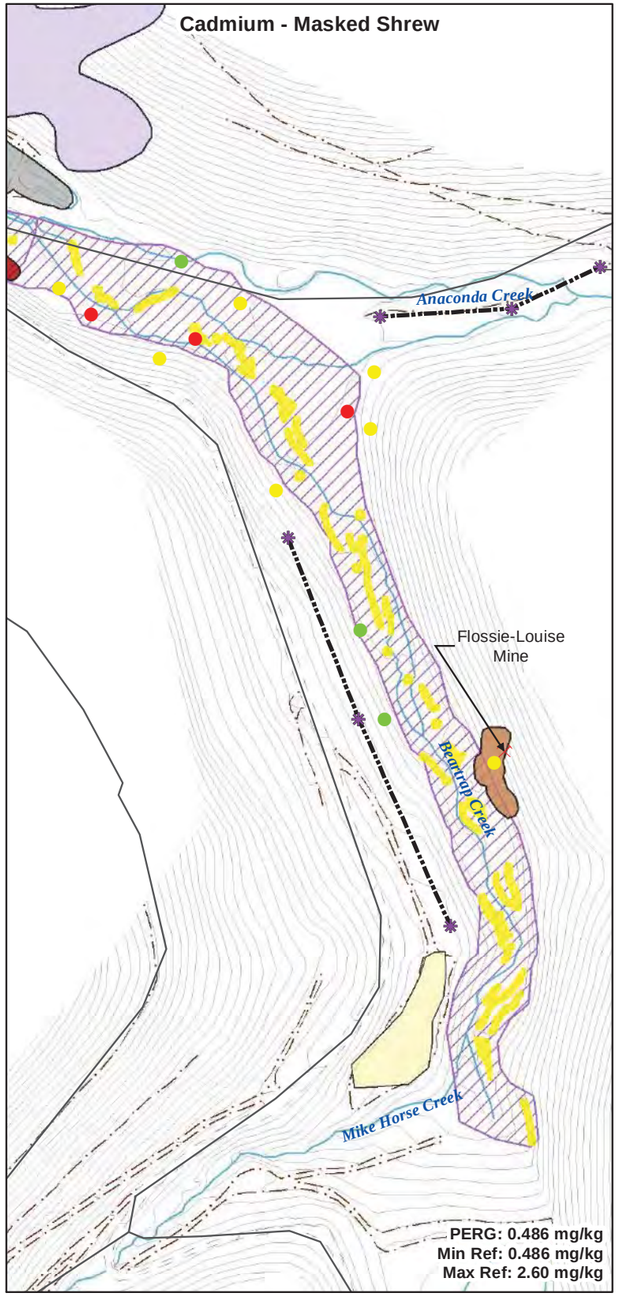
Figure 6-11C2

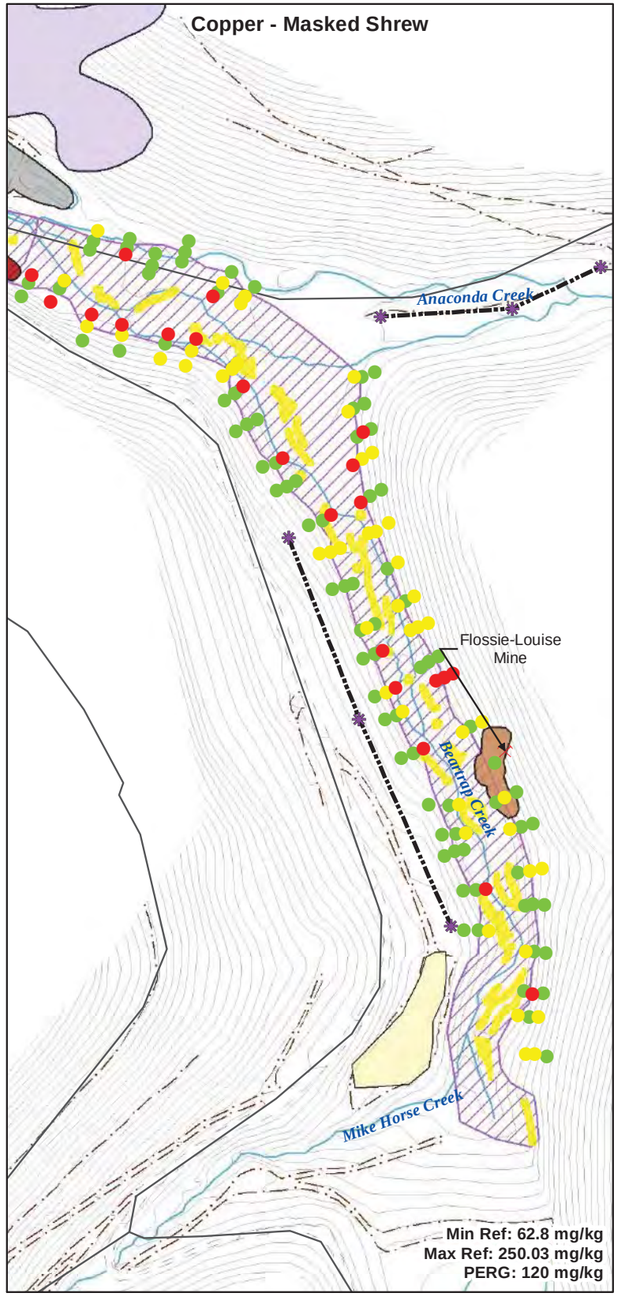
Comparison of Site Concentrations with Preliminary Ecological Remediation Goals and Reference Site Concentrations for the Meadow Vole

EU 11 - Beartrap Creek Dispersed Tailings Deposits Associated with EE/CA Removal Action Area and Overbank Tailings Deposits and Flossie Louise Mine Waste Areas

Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex







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- Result < PERG (NO RISK)
- Result > PERG but < Maximum Reference Concentration (POTENTIAL RISK, BUT NOT SITE-RELATED)
- Result > PERG and Maximum Reference Concentration (SITE-RELATED RISK)

- Mines
- 2008 Terrestrial Transect Sampling Locations
- Terrestrial Receptor Transects
- Estimated Extent of Streamside Impacts Soil Sampling
- 1975 Breach Flood Stage Indicators
- Area of Dispersed Sandy (Fine) Tailings
- Estimated Extent of Mine Areas (Sampled 2007/2008)
- Former Wetland Treatment Cells
- Old Mike Horse Mine Townsite
- Unreclaimed Mine Waste Areas (Sampled 2007/2008)
- Roads
- Gravel Road
- Trail
- Stream
- Topographic Contours

EU	Exposure unit
mg/kg	Milligram per kilogram
Max Ref	Maximum Reference Concentration
Min Ref	Minimum Reference Concentration
PERG	Preliminary Ecological Remediation Goal
XRF 10	X-ray fluorescence measurements on a sample that had been dried and sieved through a #10-mesh screen

Notes:

A PERG cannot be less than the minimum reference concentration. In cases where the calculated PERG was lower than the minimum reference concentration, the PERG was set equal to the minimum reference concentration.

XRF 10 concentrations in the top 6 inches of soil at each sampling location were compared with PERGs and reference concentrations.

One-half the detection limit was substituted for non-detect results.

No XRF 10 results were available for cadmium; analytical laboratory data were substituted.

PERG calculations are presented in Appendix E.

N

SCALE IN FEET

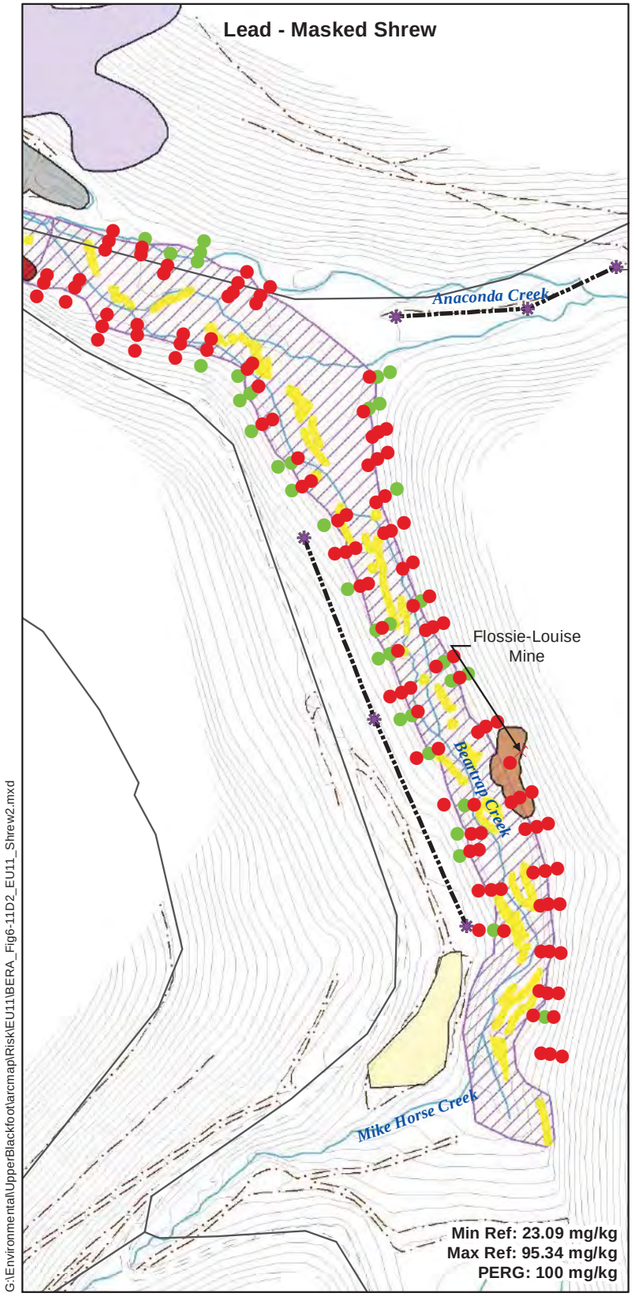
0 400

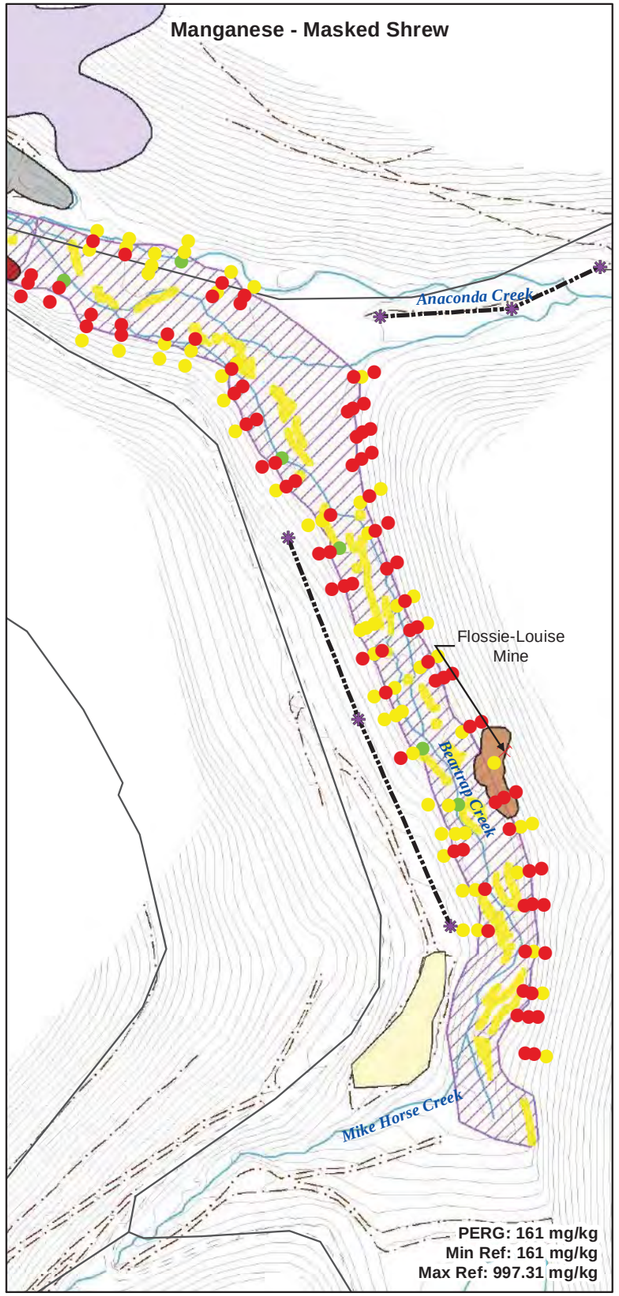
Figure 6-11D1

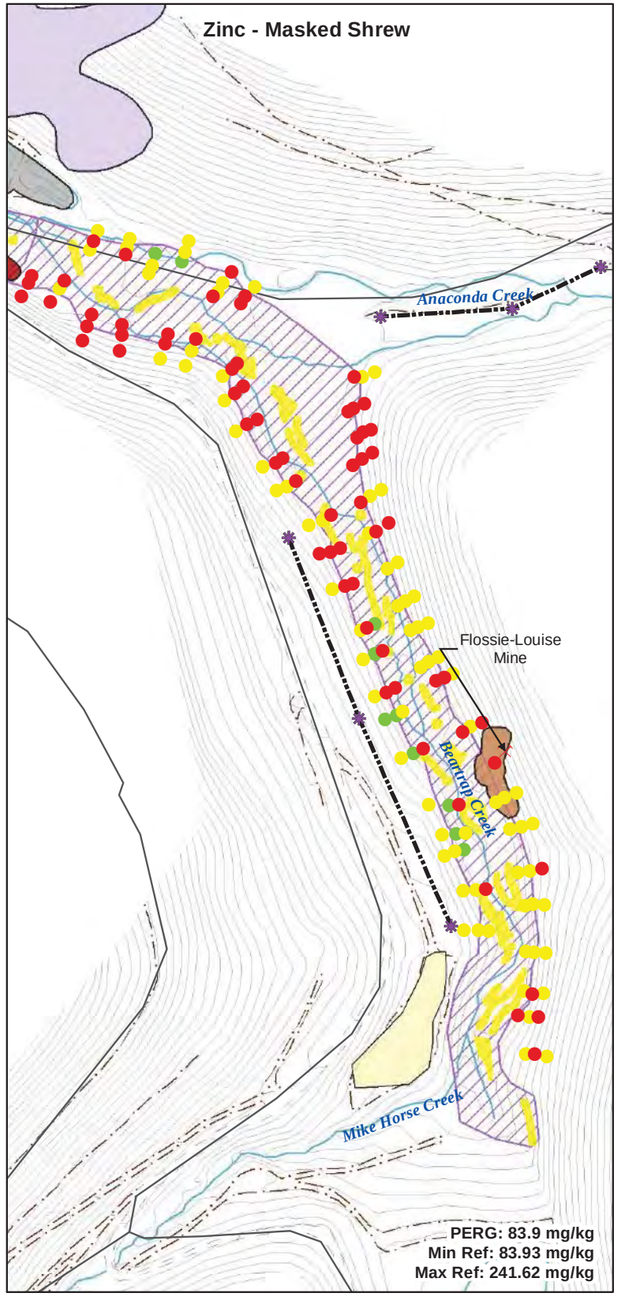
Comparison of Site Concentrations with Preliminary Ecological Remediation Goals and Reference Site Concentrations for the Masked Shrew

EU 11 - Beartrap Creek Dispersed Tailings Deposits Associated with EE/CA Removal Action Area and Overbank Tailings Deposits and Flossie Louise Mine Waste Areas

Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex







- Result < PERG (NO RISK)
- Result > PERG but < Maximum Reference Concentration (POTENTIAL RISK, BUT NOT SITE-RELATED)
- Result > PERG and Maximum Reference Concentration (SITE-RELATED RISK)

- Mines
- 2008 Terrestrial Transect Sampling Locations
- Terrestrial Receptor Transects
- Estimated Extent of Streamside Impacts Soil Sampling
- 1975 Breach Flood Stage Indicators
- Area of Dispersed Sandy (Fine) Tailings
- Estimated Extent of Mine Areas (Sampled 2007/2008)
- Former Wetland Treatment Cells
- Old Mike Horse Mine Townsite
- Unreclaimed Mine Waste Areas (Sampled 2007/2008)
- Roads
- Gravel Road
- Trail
- Stream
- Topographic Contours

EU	Exposure unit
mg/kg	Milligram per kilogram
Max Ref	Maximum Reference Concentration
Min Ref	Minimum Reference Concentration
PERG	Preliminary Ecological Remediation Goal
XRF 10	X-ray fluorescence measurements on a sample that had been dried and sieved through a #10-mesh screen

Notes:

A PERG cannot be less than the minimum reference concentration. In cases where the calculated PERG was lower than the minimum reference concentration, the PERG was set equal to the minimum reference concentration.

XRF 10 concentrations in the top 6 inches of soil at each sampling location were compared with PERGs and reference concentrations.

One-half the detection limit was substituted for non-detect results.

No XRF 10 results were available for cadmium; analytical laboratory data were substituted.

PERG calculations are presented in Appendix E.

N

SCALE IN FEET

0 375

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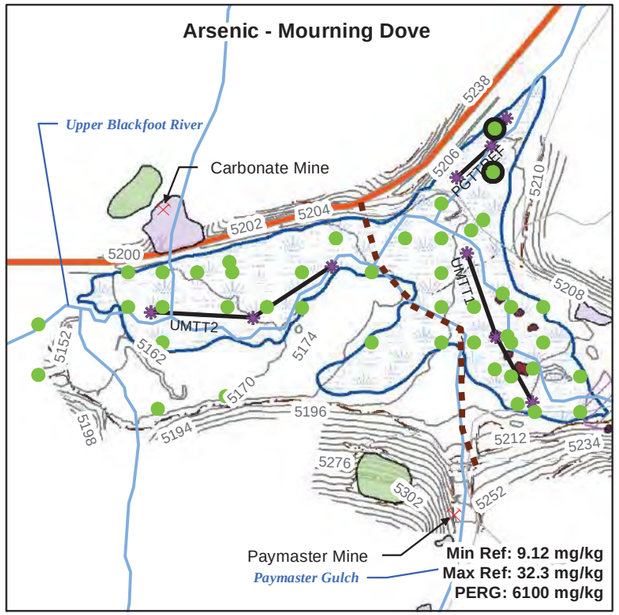
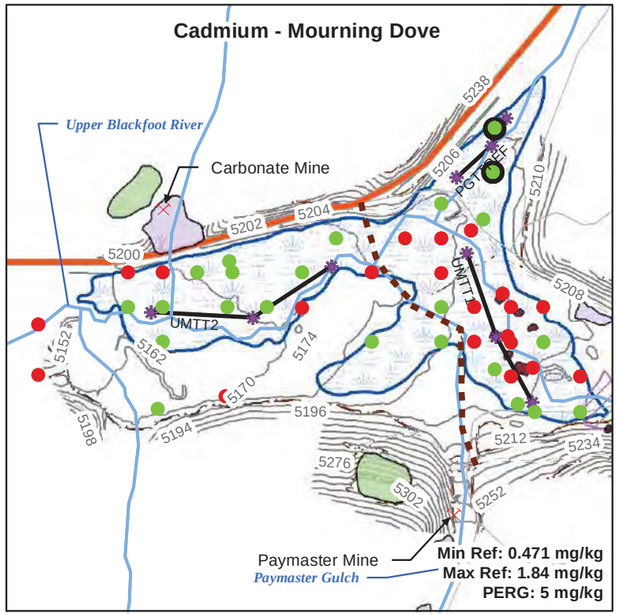
Figure 6-11D2

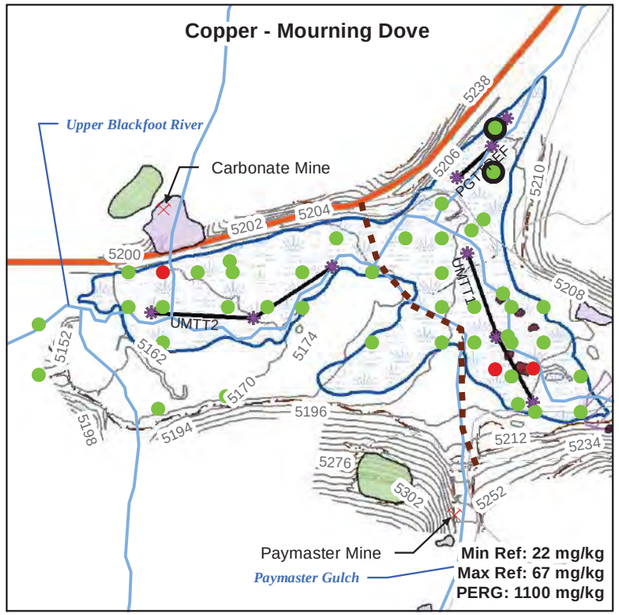
Comparison of Site Concentrations with Preliminary Ecological Remediation Goals and Reference Site Concentrations for the Masked Shrew

EU 11 - Beartrap Creek Dispersed Tailings Deposits Associated with EE/CA Removal Action Area and Overbank Tailings Deposits and Flossie Louise Mine Waste Areas

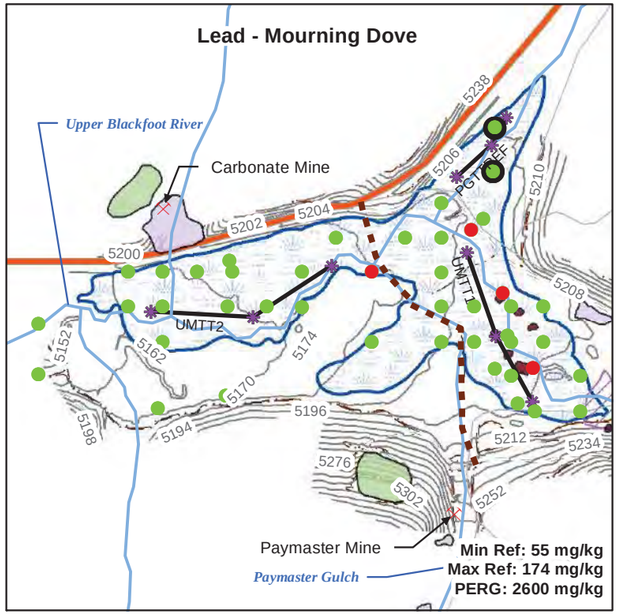
Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex

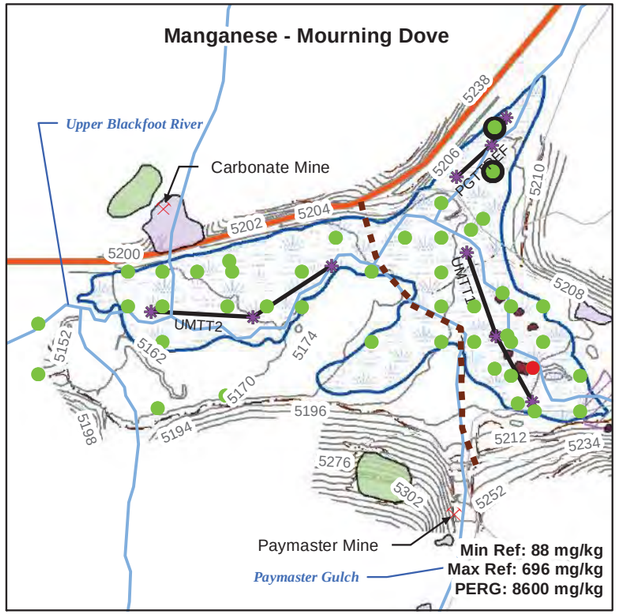


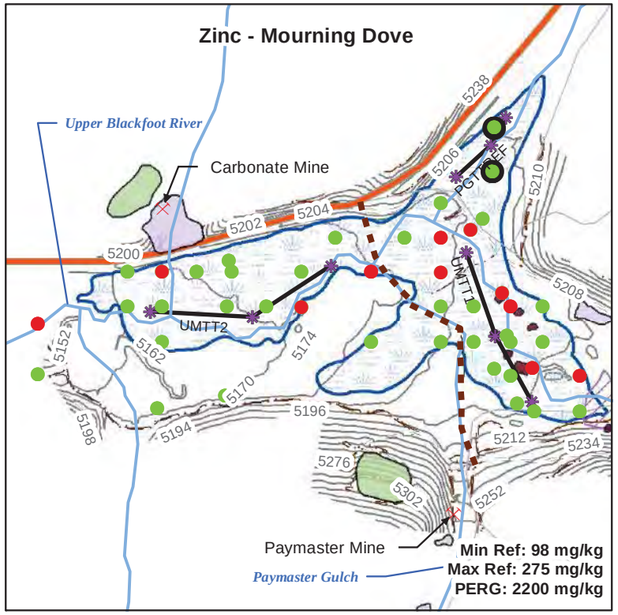




- Result < PERG (NO RISK)
- Result > PERG but < Maximum Reference Concentration (POTENTIAL RISK, BUT NOT SITE-RELATED)
- Result > PERG and Maximum Reference Concentration (SITE-RELATED RISK)
- Reference Location
- Sampling Boundary Between Eastern and Western Portions of Upper Marsh
- Mines
- Upper Marsh Transect Sampling Locations
- Upper Marsh Transects
- Estimated Extent of Streamside Impacts Soil Sampling
- Area of Dispersed Sandy (Fine) Tailings
- Estimated Extent of Mine Areas (Sampled 2007/2008)
- Mine Waste Repository
- Upper Marsh
- Topographic Contours
- Highway
- Major Road
- Local Road
- Streams







EU	Exposure unit
mg/kg	Milligram per kilogram
Max Ref	Maximum Reference Concentration
Min Ref	Minimum Reference Concentration
PERG	Preliminary Ecological Remediation Goal

Notes:

A PERG cannot be less than the minimum reference concentration. In cases where the calculated PERG was lower than the minimum reference concentration, the PERG was set equal to the minimum reference concentration.

The maximum laboratory concentrations in sediment from 0-1 foot below the sediment surface at each sampling location was compared with PERGs and reference concentrations.

One-half the detection limit was substituted for non-detect results.

PERG calculations are presented in Appendix E.

N

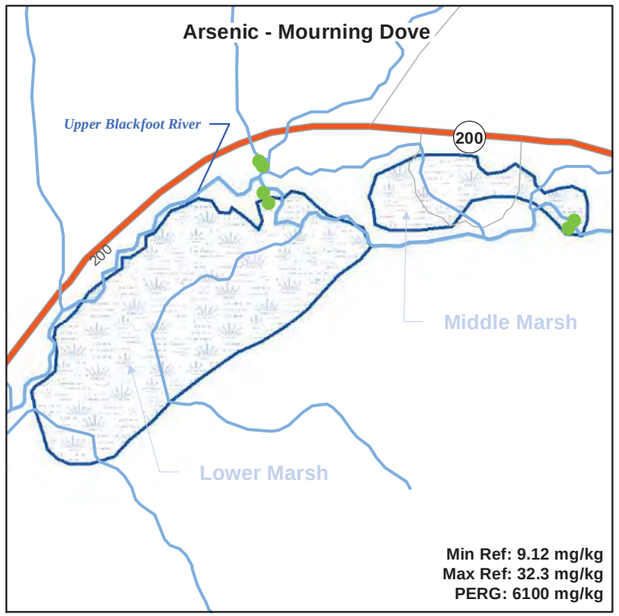
SCALE IN FEET

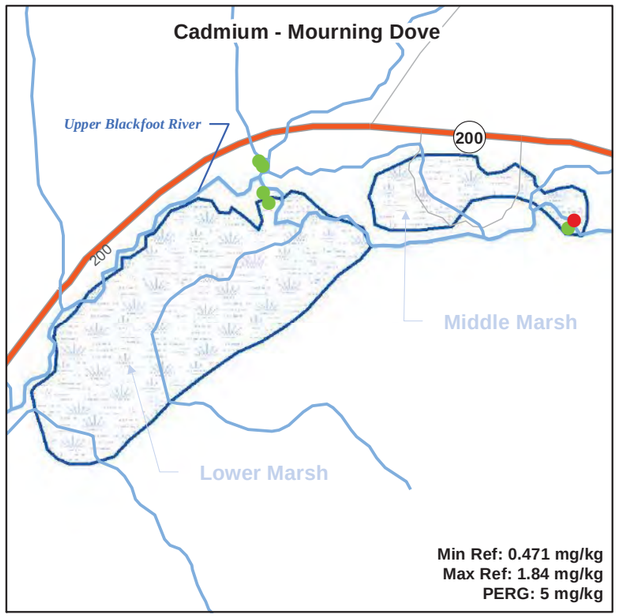
0 1,100

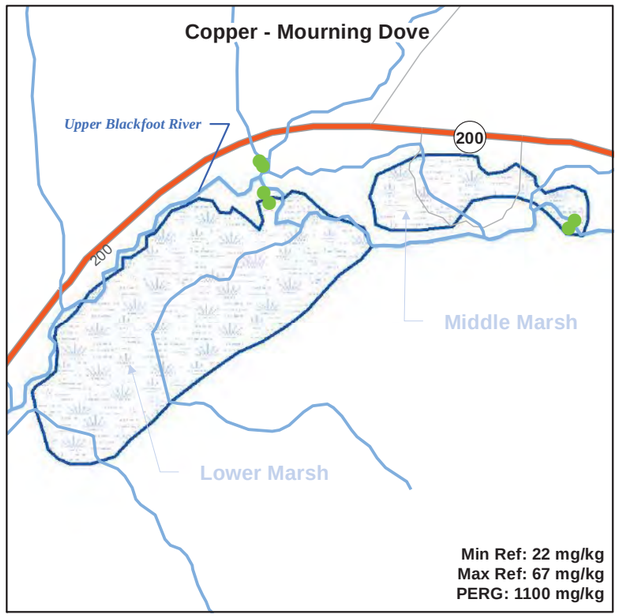
Figure 6-12A1

Comparison of Site Concentrations with Preliminary Ecological Remediation Goals and Reference Site Concentrations for the Mourning Dove
EU 12 - Upper Marsh Portion

Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex







Result < PERG (NO RISK)

Result > PERG but < Maximum Reference Concentration (POTENTIAL RISK, BUT NOT SITE-RELATED)

Result > PERG and Maximum Reference Concentration (SITE-RELATED RISK)

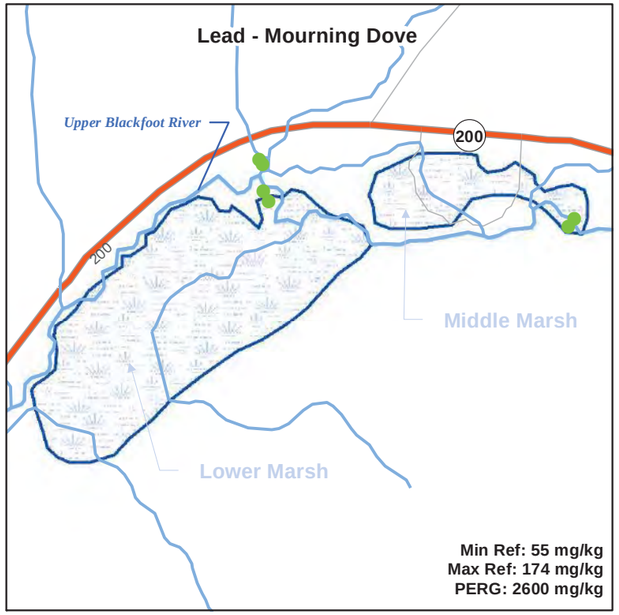
Lower and Middle Marsh

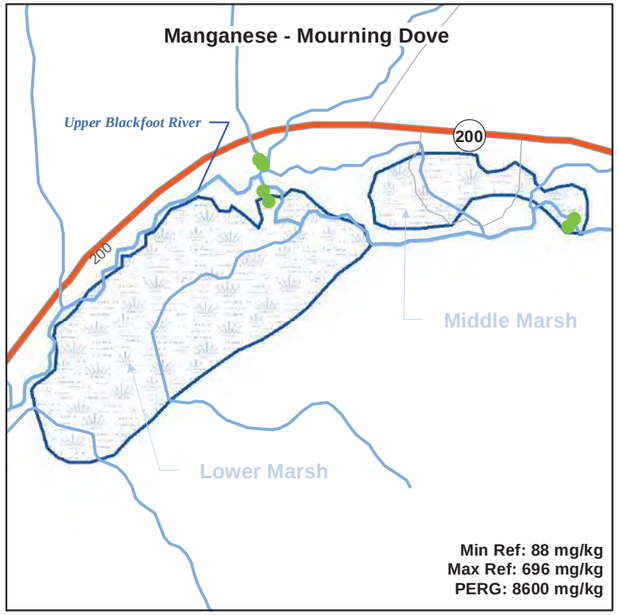
Highway

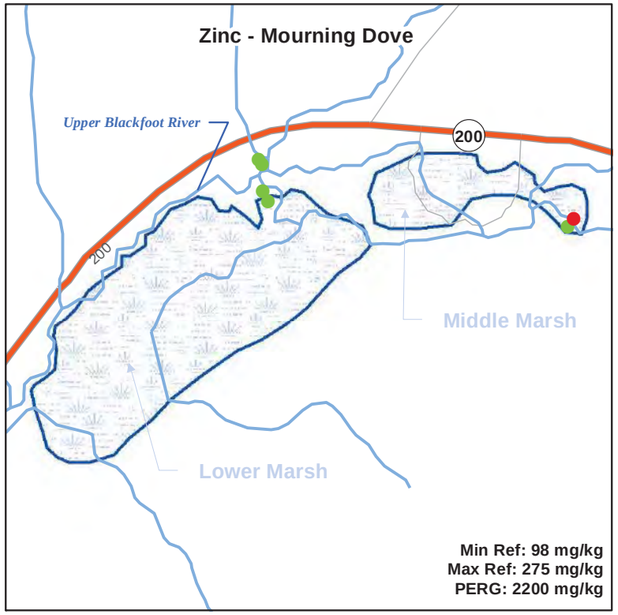
Major Road

Local Road

Streams







EU	Exposure unit
mg/kg	Milligram per kilogram
Max Ref	Maximum Reference Concentration
Min Ref	Minimum Reference Concentration
PERG	Preliminary Ecological Remediation Goal

Notes:

A PERG cannot be less than the minimum reference concentration. In cases where the calculated PERG was lower than the minimum reference concentration, the PERG was set equal to the minimum reference concentration.

The maximum laboratory concentrations in sediment from 0-1 foot below the sediment surface at each sampling location was compared with PERGs and reference concentrations.

One-half the detection limit was substituted for non-detect results.

PERG calculations are presented in Appendix E.

N

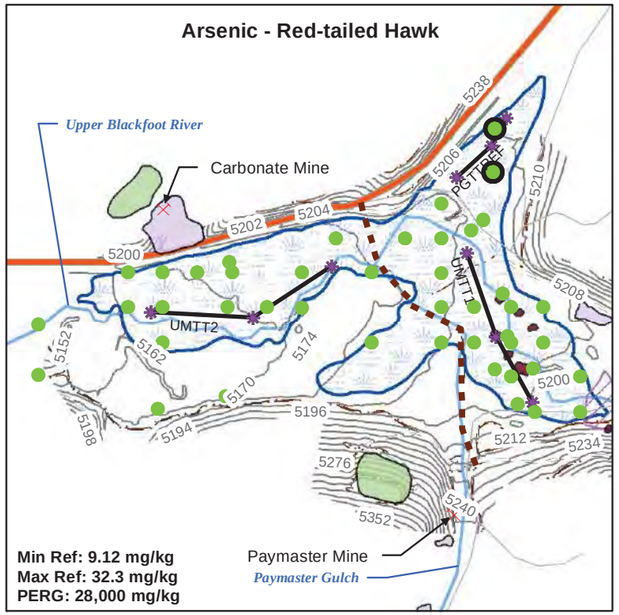
SCALE IN FEET

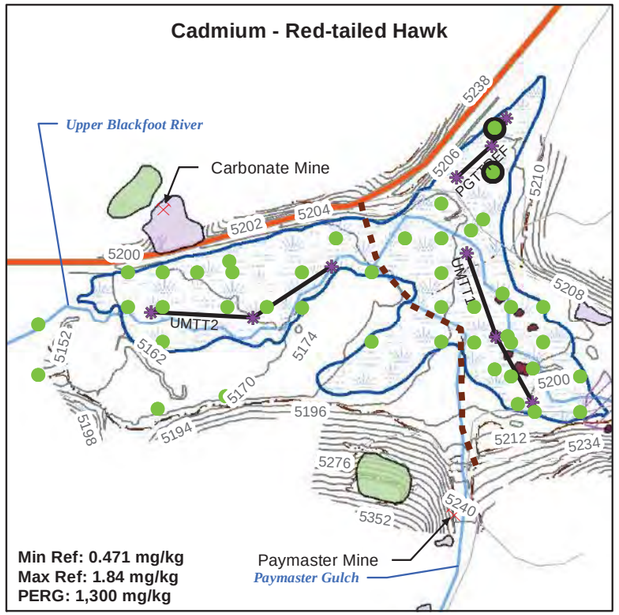
0 2,400

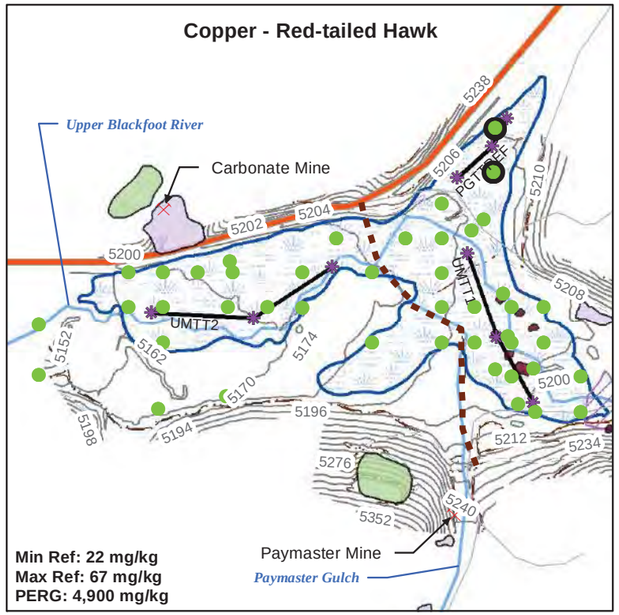
Figure 6-12A2

Comparison of Site Concentrations with Preliminary Ecological Remediation Goals and Reference Site Concentrations for the Mourning Dove
EU 12 - Lower and Middle Marsh Portion

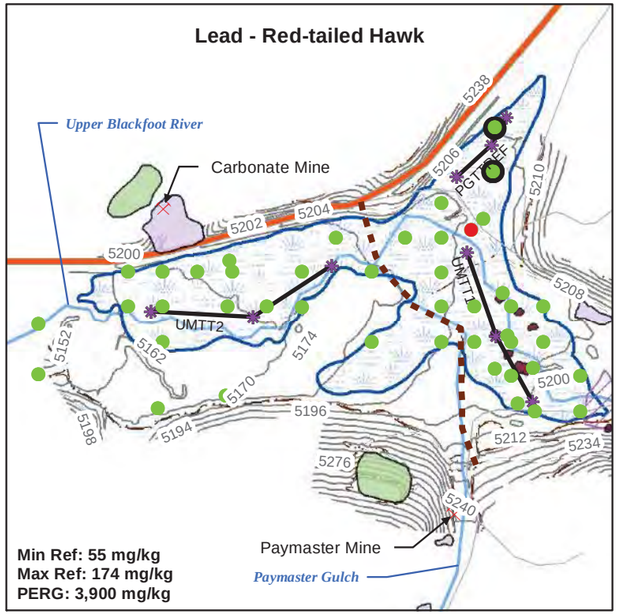
Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex

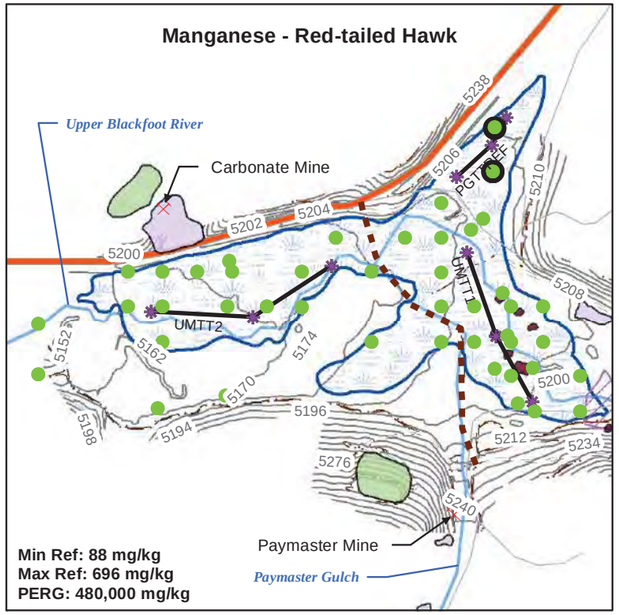


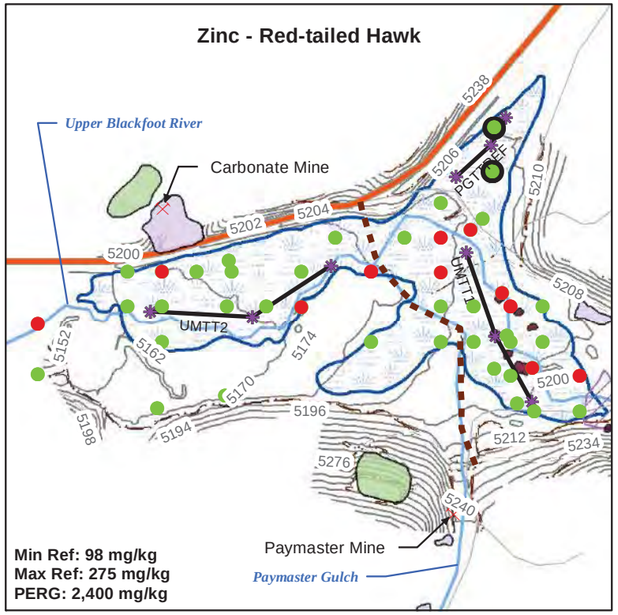




- Result < PERG (NO RISK)
- Result > PERG but < Maximum Reference Concentration (POTENTIAL RISK, BUT NOT SITE-RELATED)
- Result > PERG and Maximum Reference Concentration (SITE-RELATED RISK)
- Reference Location
- Sampling Boundary Between Eastern and Western Portions of Upper Marsh
- Mines
- Upper Marsh Transect Sampling Locations
- Upper Marsh Transects
- Estimated Extent of Streamside Impacts Soil Sampling
- Area of Dispersed Sandy (Fine) Tailings
- Estimated Extent of Mine Areas (Sampled 2007/2008)
- Mine Waste Repository
- Upper Marsh
- Topographic Contours







EU	Exposure unit
mg/kg	Milligram per kilogram
Max Ref	Maximum Reference Concentration
Min Ref	Minimum Reference Concentration
PERG	Preliminary Ecological Remediation Goal

Notes:

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The maximum laboratory concentrations in sediment from 0-1 foot below the sediment surface at each sampling location was compared with PERGs and reference concentrations.

One-half the detection limit was substituted for non-detect results.

PERG calculations are presented in Appendix E.

N

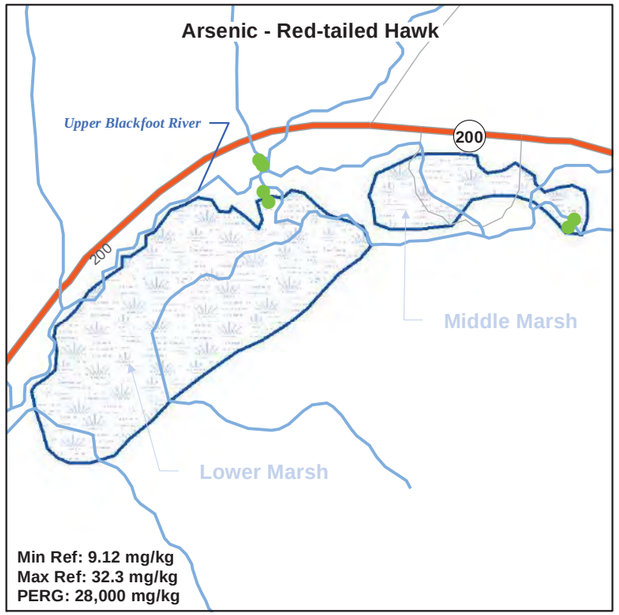
SCALE IN FEET

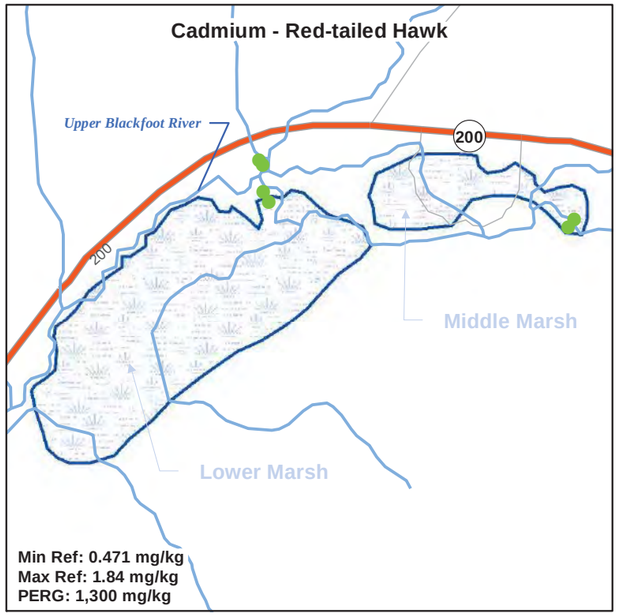
0 1,100

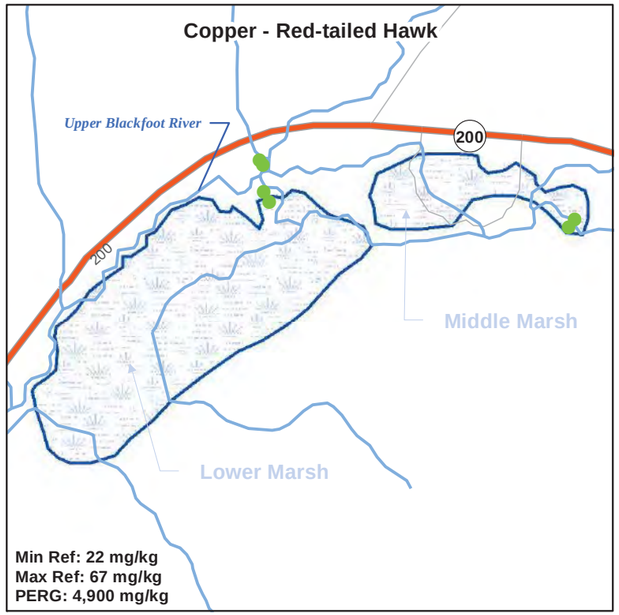
Figure 6-12B1

Comparison of Site Concentrations with Preliminary Ecological Remediation Goals and Reference Site Concentrations for the Red-Tailed Hawk
EU 12 - Upper Marsh Portion

Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex







Result < PERG (NO RISK)

Result > PERG but < Maximum Reference Concentration (POTENTIAL RISK, BUT NOT SITE-RELATED)

Result > PERG and Maximum Reference Concentration (SITE-RELATED RISK)

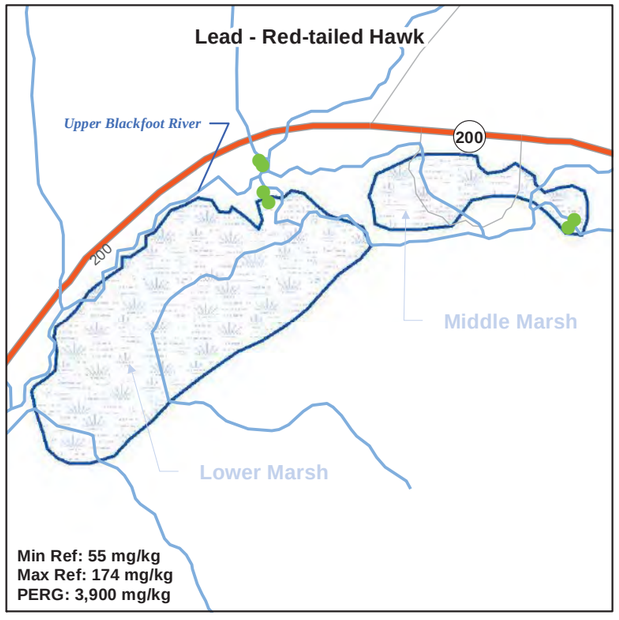
Lower and Middle Marsh

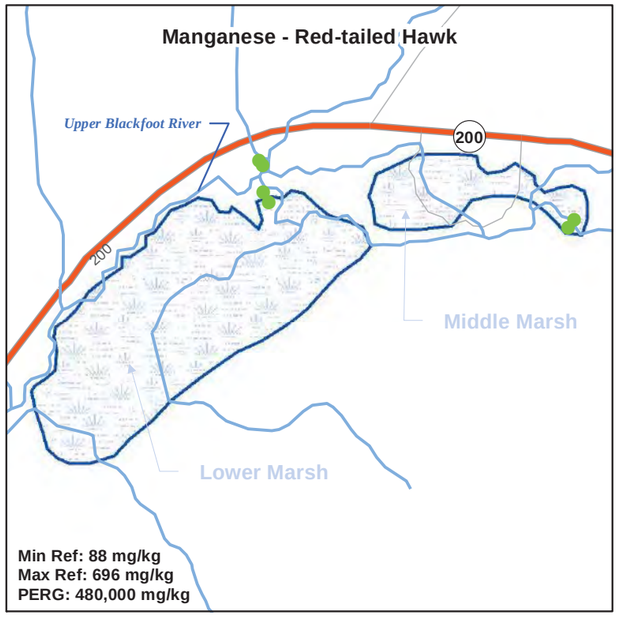
Highway

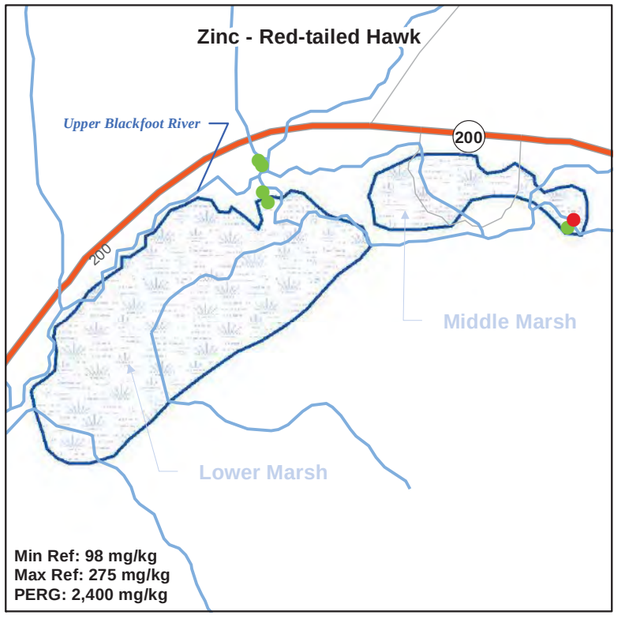
Major Road

Local Road

Streams







EU	Exposure unit
mg/kg	Milligram per kilogram
Max Ref	Maximum Reference Concentration
Min Ref	Minimum Reference Concentration
PERG	Preliminary Ecological Remediation Goal

Notes:

A PERG cannot be less than the minimum reference concentration. In cases where the calculated PERG was lower than the minimum reference concentration, the PERG was set equal to the minimum reference concentration.

The maximum laboratory concentrations in sediment from 0-1 foot below the sediment surface at each sampling location was compared with PERGs and reference concentrations.

One-half the detection limit was substituted for non-detect results.

PERG calculations are presented in Appendix E.

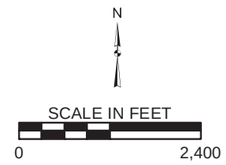
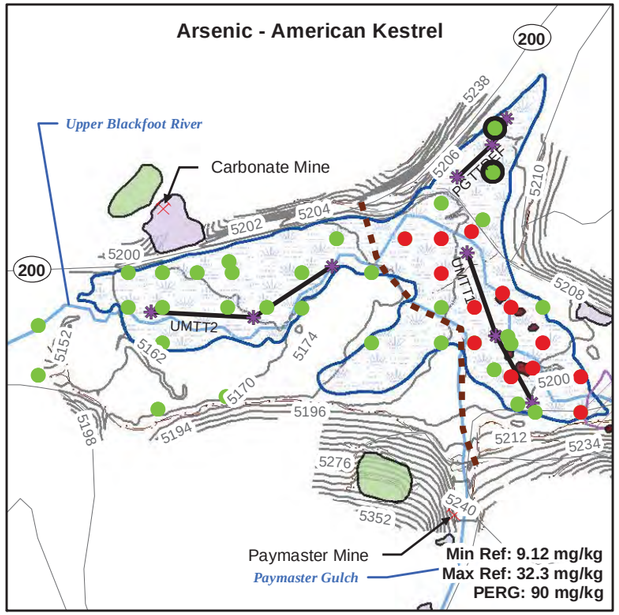
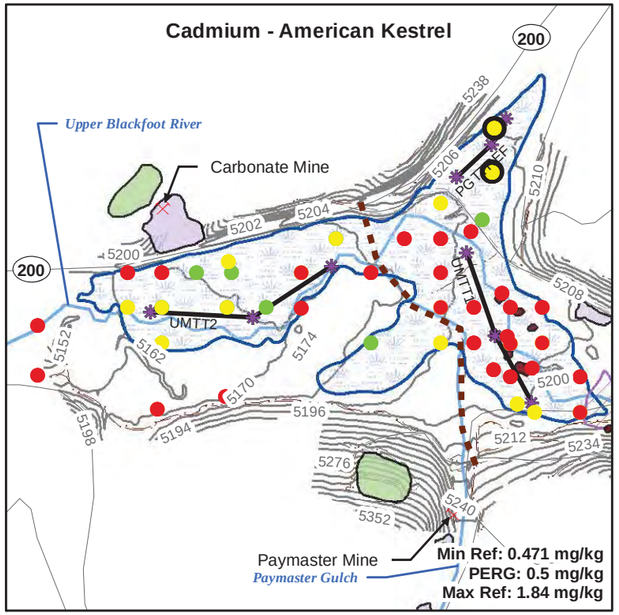


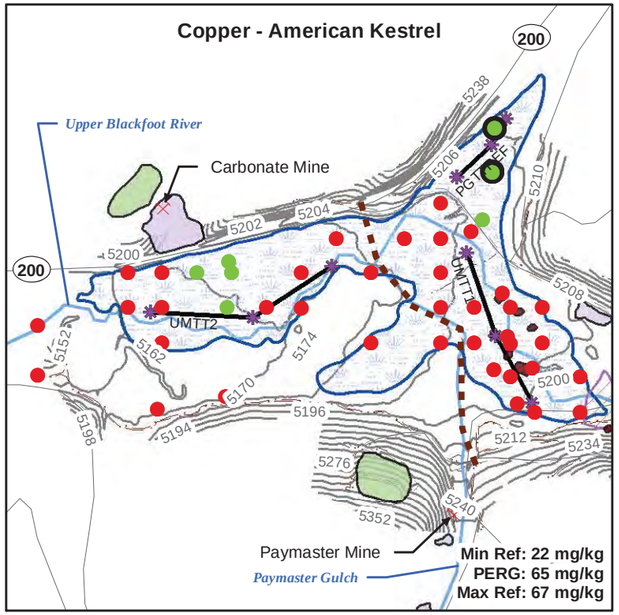
Figure 6-12B2

Comparison of Site Concentrations with Preliminary Ecological Remediation Goals and Reference Site Concentrations for the Red-Tailed Hawk
EU 12 - Lower and Middle Marsh Portion

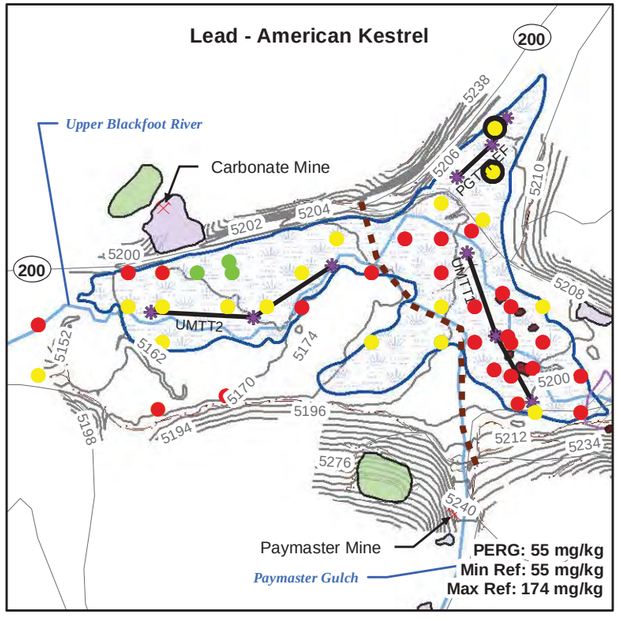
Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex

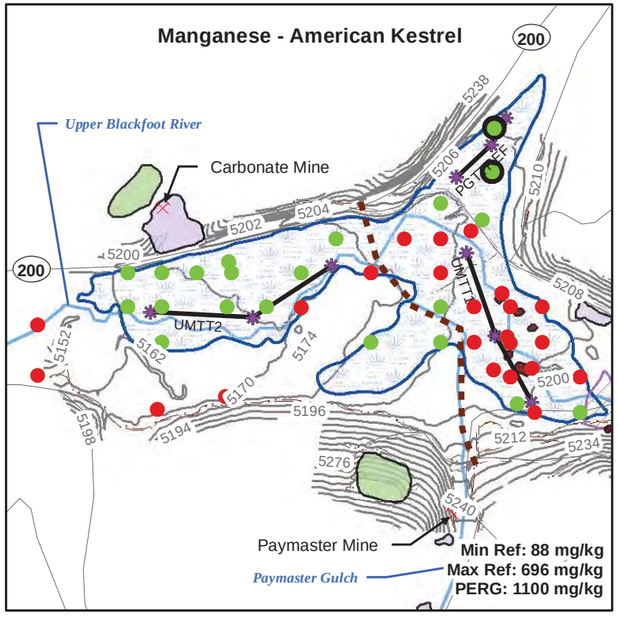


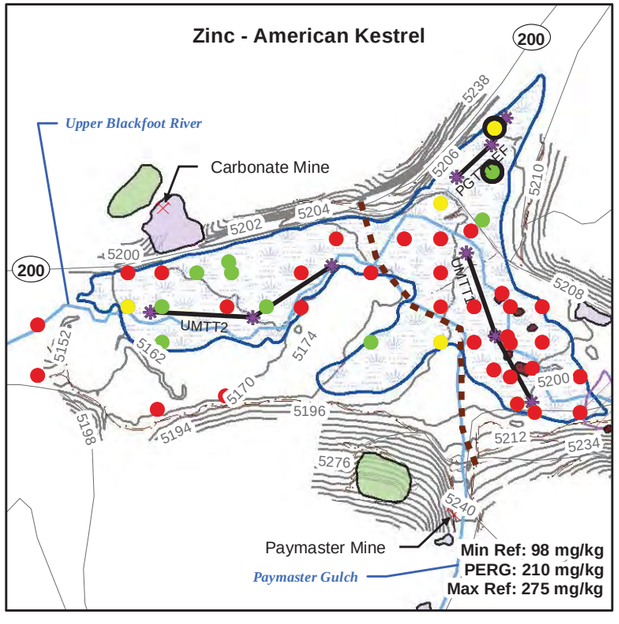




- Result < PERG (NO RISK)
- Result > PERG but < Maximum Reference Concentration (POTENTIAL RISK, BUT NOT SITE-RELATED)
- Result > PERG and Maximum Reference Concentration (SITE-RELATED RISK)
- Reference Location
- Sampling Boundary Between Eastern and Western Portions of Upper Marsh
- Mines
- Upper Marsh Transect Sampling Locations
- Upper Marsh Transects
- Estimated Extent of Streamside Impacts Soil Sampling
- Area of Dispersed Sandy (Fine) Tailings
- Estimated Extent of Mine Areas (Sampled 2007/2008)
- Mine Waste Repository
- Topographic Contours
- Roads
- Upper Marsh







EU	Exposure unit
mg/kg	Milligram per kilogram
Max Ref	Maximum Reference Concentration
Min Ref	Minimum Reference Concentration
PERG	Preliminary Ecological Remediation Goal

Notes:

A PERG cannot be less than the minimum reference concentration. In cases where the calculated PERG was lower than the minimum reference concentration, the PERG was set equal to the minimum reference concentration.

The maximum laboratory concentrations in sediment from 0-1 foot below the sediment surface at each sampling location was compared with PERGs and reference concentrations.

One-half the detection limit was substituted for non-detect results.

PERG calculations are presented in Appendix E.

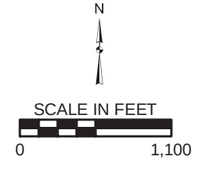
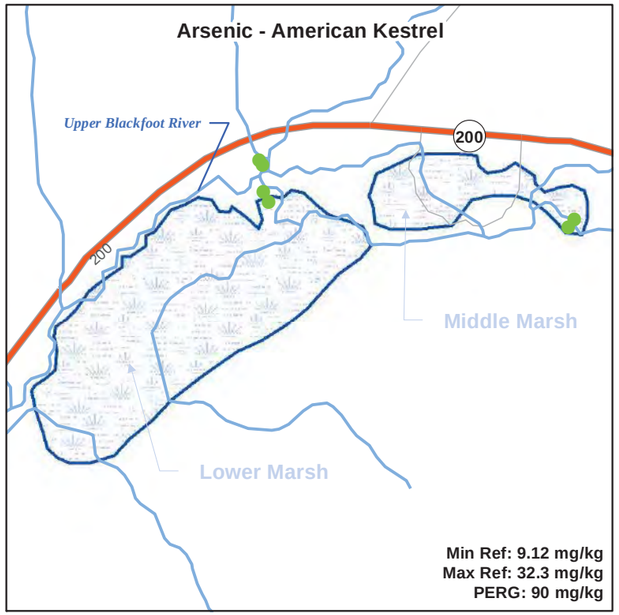
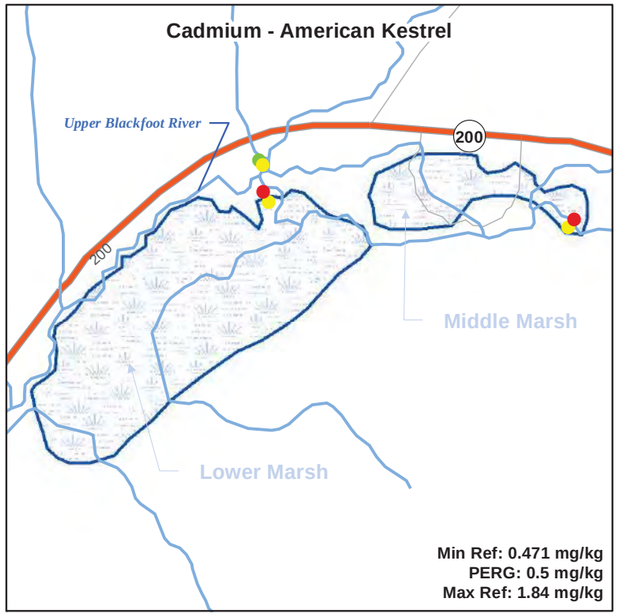


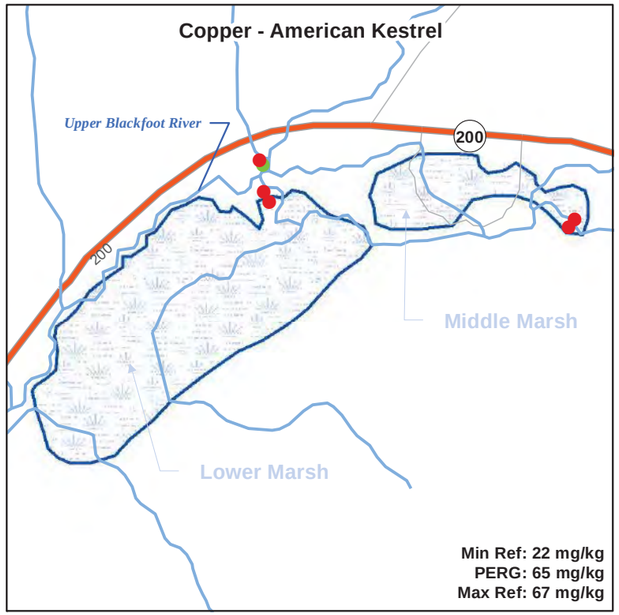
Figure 6-12C1

Comparison of Site Concentrations with Preliminary Ecological Remediation Goals and Reference Site Concentrations for the American Kestrel
EU 12 - Upper Marsh Portion

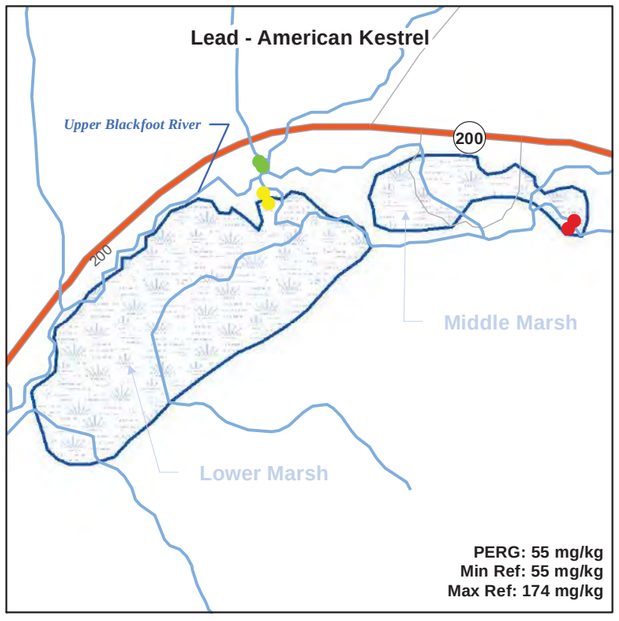
Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex

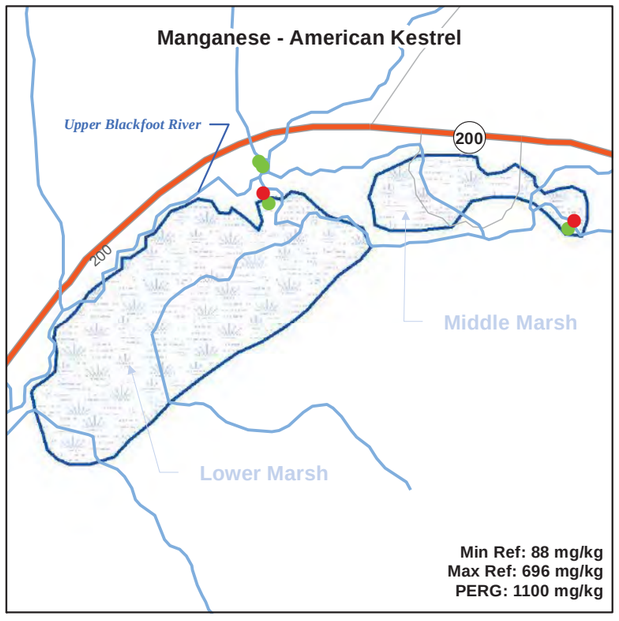


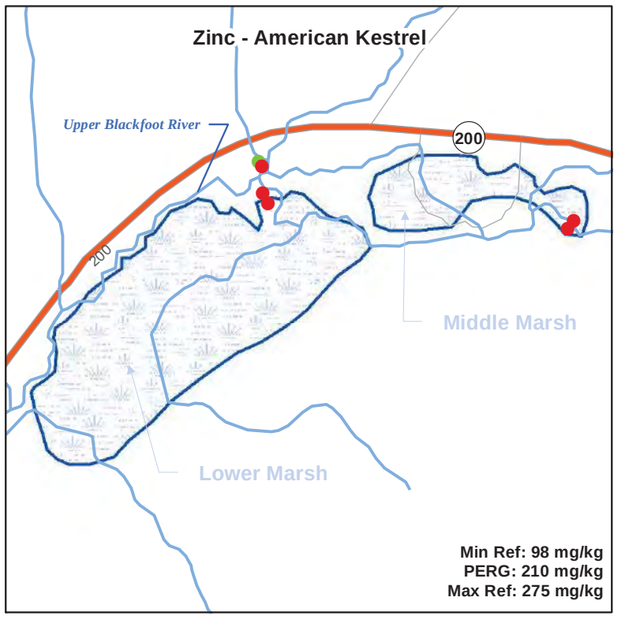




- Result < PERG (NO RISK)
- Result > PERG but < Maximum Reference Concentration (POTENTIAL RISK, BUT NOT SITE-RELATED)
- Result > PERG and Maximum Reference Concentration (SITE-RELATED RISK)
- Lower and Middle Marsh
- Highway
- Major Road
- Local Road
- Streams







EU	Exposure unit
mg/kg	Milligram per kilogram
Max Ref	Maximum Reference Concentration
Min Ref	Minimum Reference Concentration
PERG	Preliminary Ecological Remediation Goal

Notes:

A PERG cannot be less than the minimum reference concentration. In cases where the calculated PERG was lower than the minimum reference concentration, the PERG was set equal to the minimum reference concentration.

The maximum laboratory concentrations in sediment from 0-1 foot below the sediment surface at each sampling location was compared with PERGs and reference concentrations.

One-half the detection limit was substituted for non-detect results.

PERG calculations are presented in Appendix E.

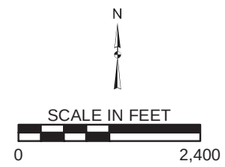
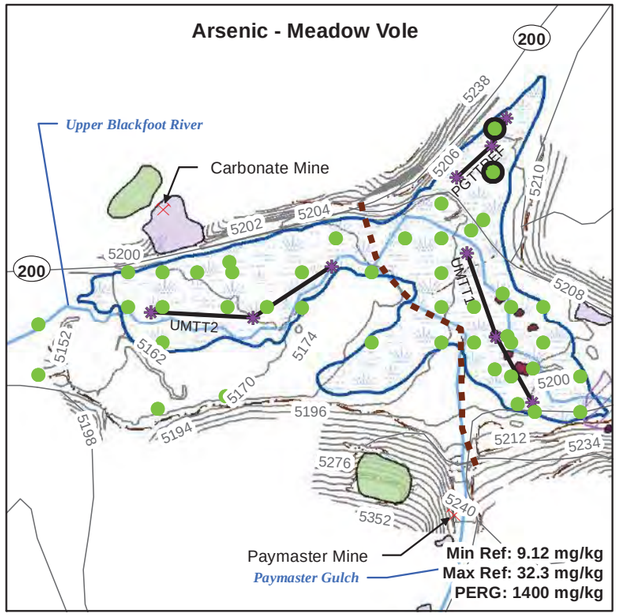
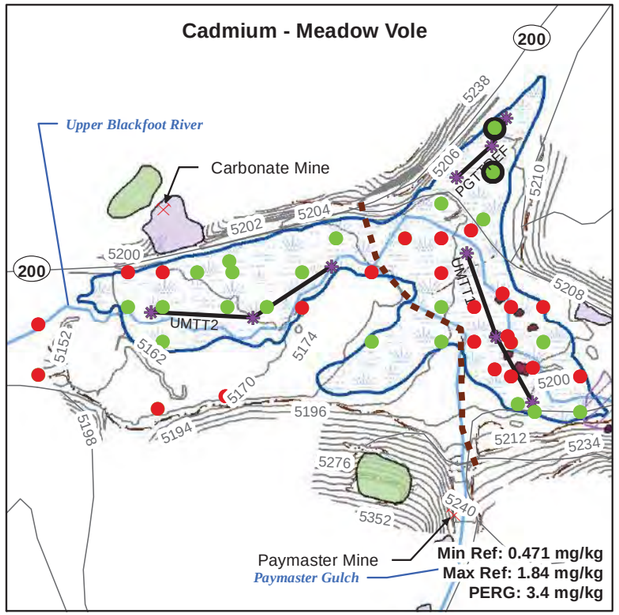


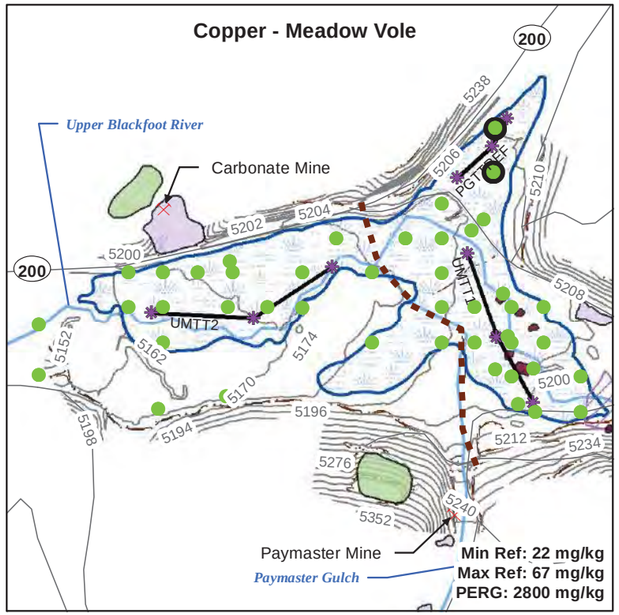
Figure 6-12C2

Comparison of Site Concentrations with Preliminary Ecological Remediation Goals and Reference Site Concentrations for the American Kestrel
EU 12 - Lower and Middle Marsh Portion

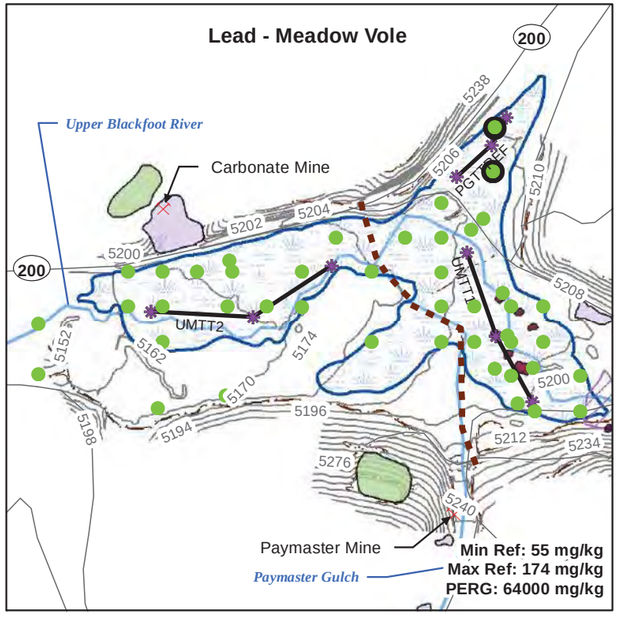
Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex

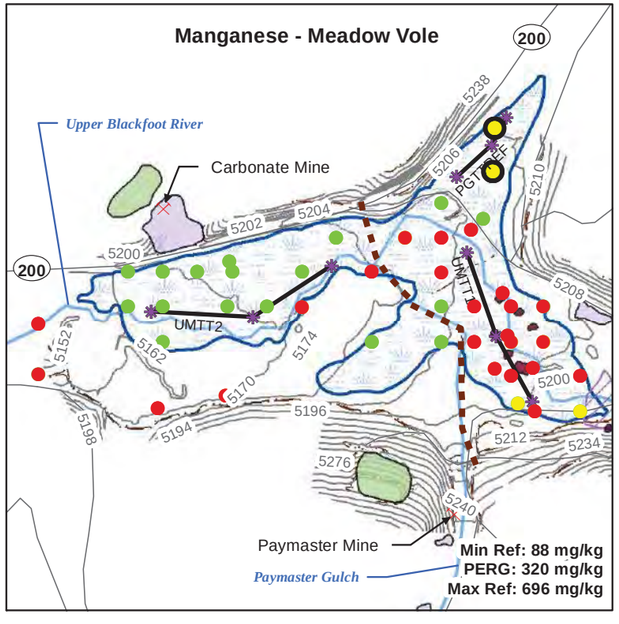


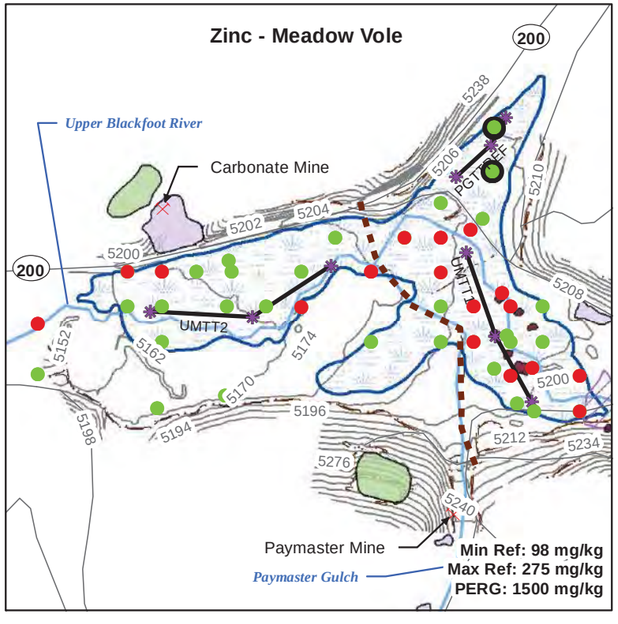




- Result < PERG (NO RISK)
- Result > PERG but < Maximum Reference Concentration (POTENTIAL RISK, BUT NOT SITE-RELATED)
- Result > PERG and Maximum Reference Concentration (SITE-RELATED RISK)
- Reference Location
- Sampling Boundary Between Eastern and Western Portions of Upper Marsh
- Mines
- Upper Marsh Transect Sampling Locations
- Upper Marsh Transects
- Estimated Extent of Streamside Impacts Soil Sampling
- Area of Dispersed Sandy (Fine) Tailings
- Estimated Extent of Mine Areas (Sampled 2007/2008)
- Mine Waste Repository
- Upper Marsh
- Topographic Contours
- Roads







EU	Exposure unit
mg/kg	Milligram per kilogram
Max Ref	Maximum Reference Concentration
Min Ref	Minimum Reference Concentration
PERG	Preliminary Ecological Remediation Goal

Notes:

A PERG cannot be less than the minimum reference concentration. In cases where the calculated PERG was lower than the minimum reference concentration, the PERG was set equal to the minimum reference concentration.

The maximum laboratory concentrations in sediment from 0-1 foot below the sediment surface at each sampling location was compared with PERGs and reference concentrations.

One-half the detection limit was substituted for non-detect results.

PERG calculations are presented in Appendix E.

N

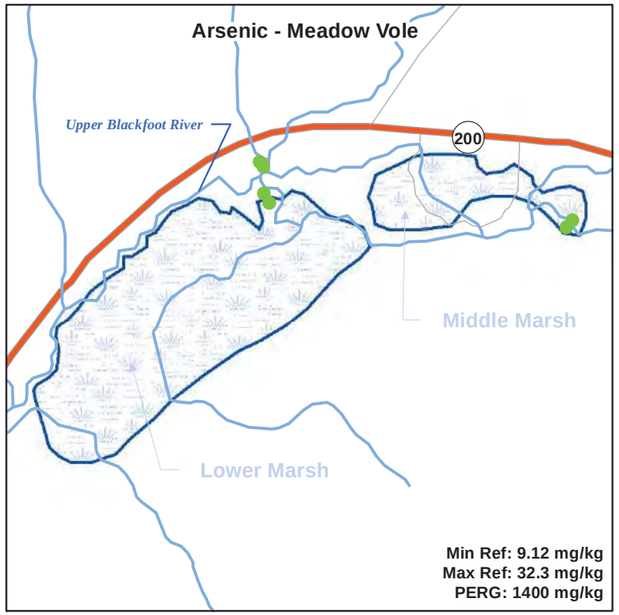
SCALE IN FEET

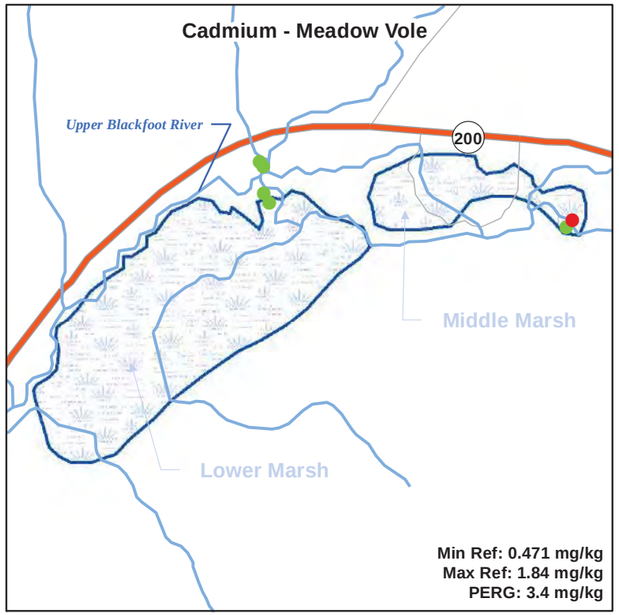
0 1,100

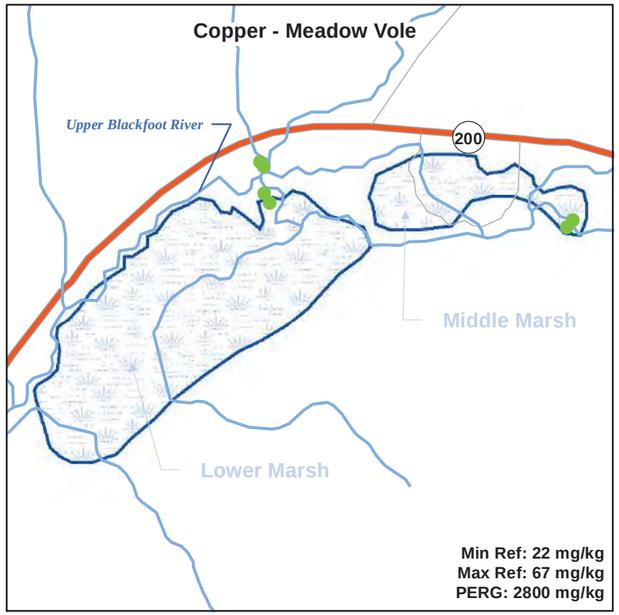
Figure 6-12D1

Comparison of Site Concentrations with Preliminary Ecological Remediation Goals and Reference Site Concentrations for the Meadow Vole
EU 12 - Upper Marsh Portion

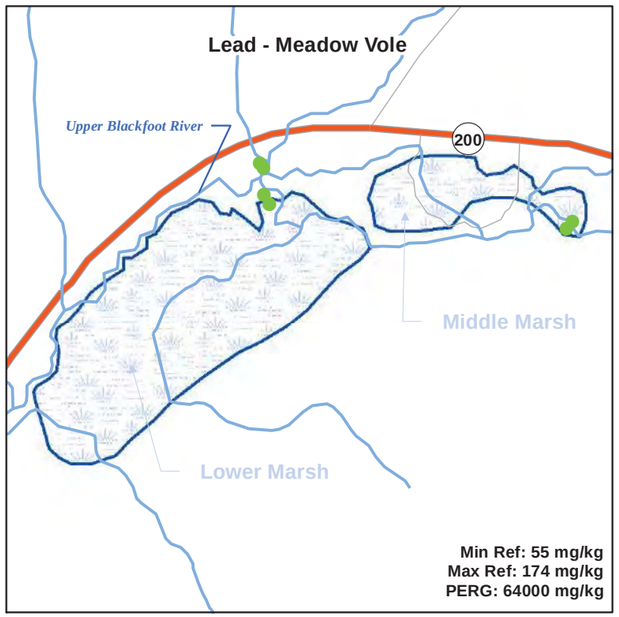
Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex

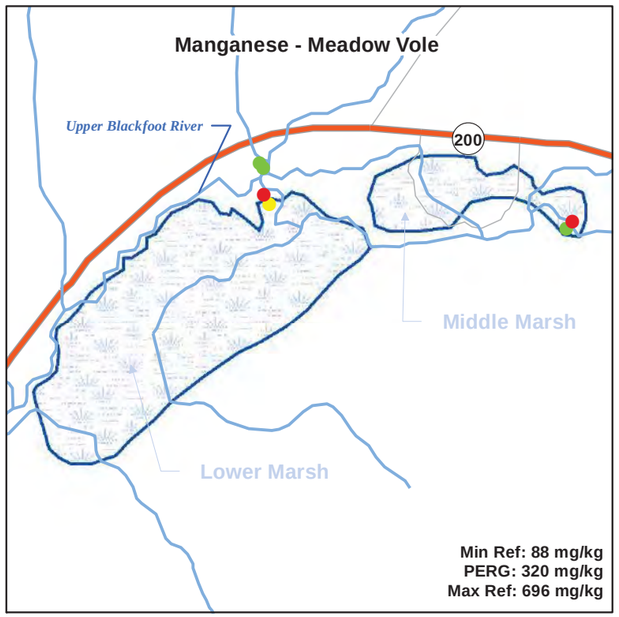


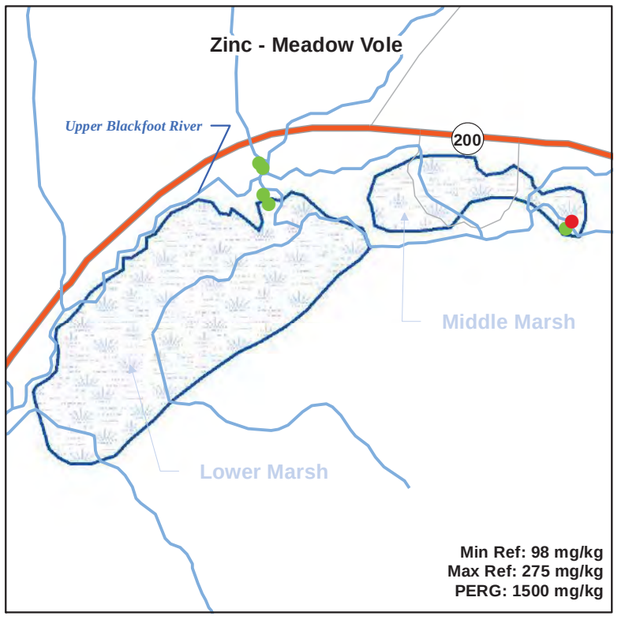




- Result < PERG (NO RISK)
- Result > PERG but < Maximum Reference Concentration (POTENTIAL RISK, BUT NOT SITE-RELATED)
- Result > PERG and Maximum Reference Concentration (SITE-RELATED RISK)
- Lower and Middle Marsh
- Highway
- Major Road
- Local Road
- Streams







EU	Exposure unit
mg/kg	Milligram per kilogram
Max Ref	Maximum Reference Concentration
Min Ref	Minimum Reference Concentration
PERG	Preliminary Ecological Remediation Goal

Notes:

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One-half the detection limit was substituted for non-detect results.

PERG calculations are presented in Appendix E.

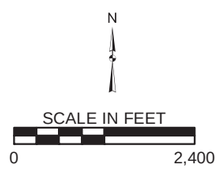
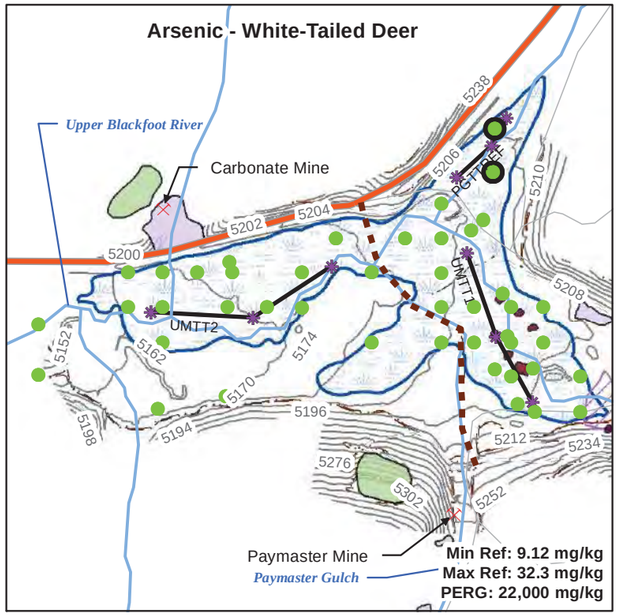
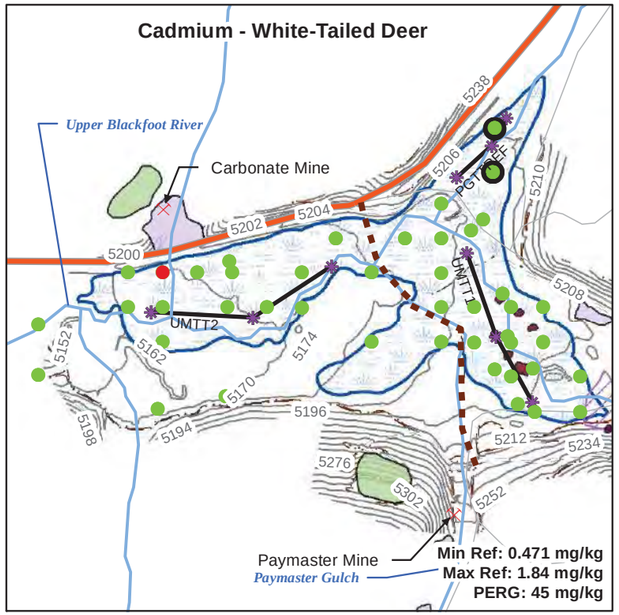


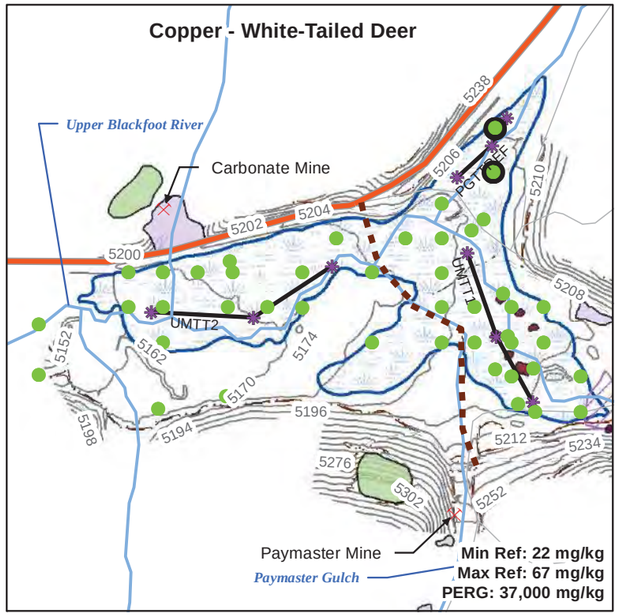
Figure 6-12D2

Comparison of Site Concentrations with Preliminary Ecological Remediation Goals and Reference Site Concentrations for the Meadow Vole
EU 12 - Lower and Middle Marsh Portion

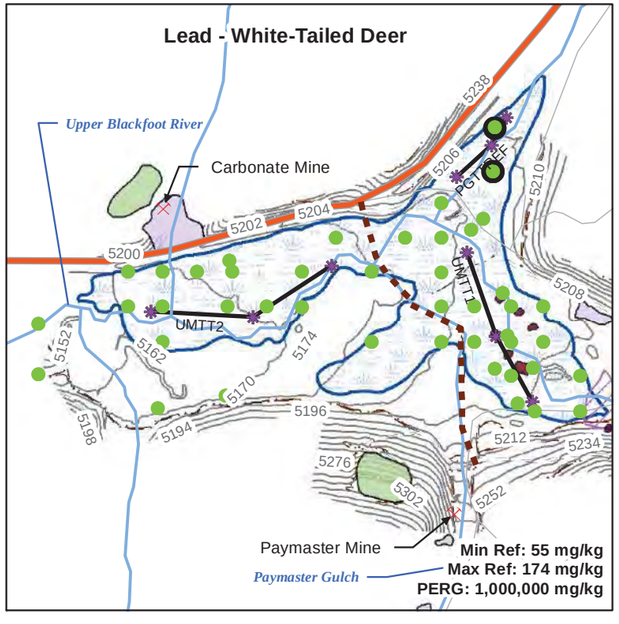
Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex

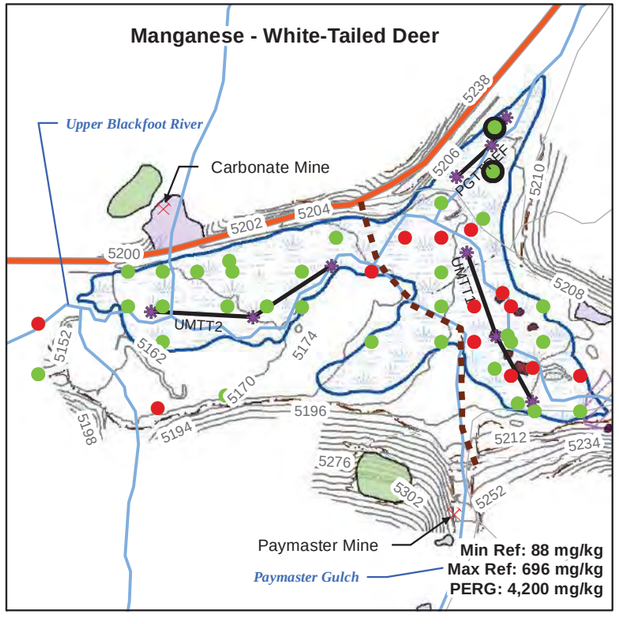


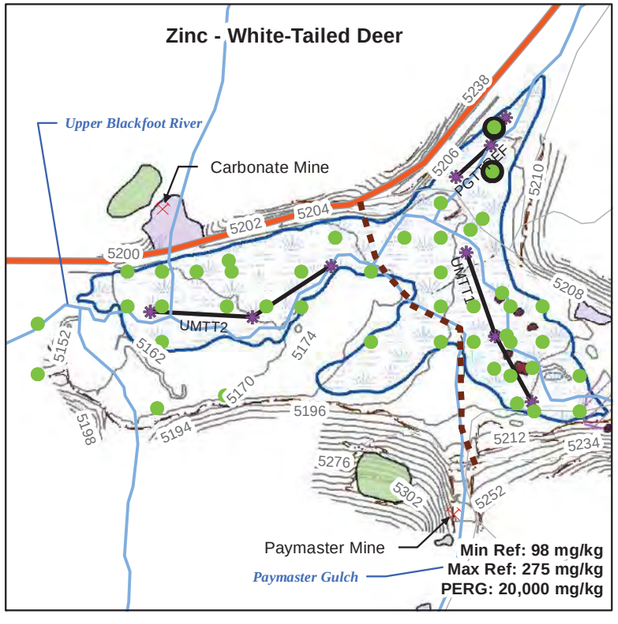




- Result < PERG (NO RISK)
- Result > PERG but < Maximum Reference Concentration (POTENTIAL RISK, BUT NOT SITE-RELATED)
- Result > PERG and Maximum Reference Concentration (SITE-RELATED RISK)
- Reference Location
- Sampling Boundary Between Eastern and Western Portions of Upper Marsh
- Mines
- Upper Marsh Transect Sampling Locations
- Upper Marsh Transects
- Estimated Extent of Streamside Impacts Soil Sampling
- Area of Dispersed Sandy (Fine) Tailings
- Estimated Extent of Mine Areas (Sampled 2007/2008)
- Mine Waste Repository
- Upper Marsh
- Topographic Contours
- Streams







EU	Exposure unit
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Min Ref	Minimum Reference Concentration
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PERG calculations are presented in Appendix E.

N

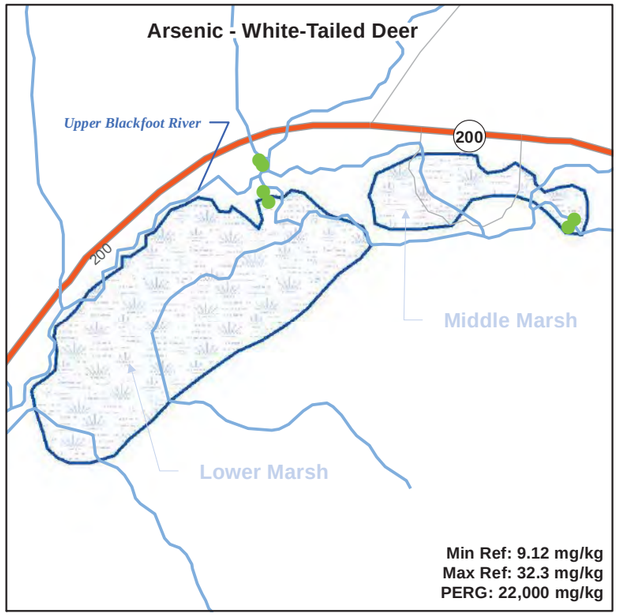
SCALE IN FEET

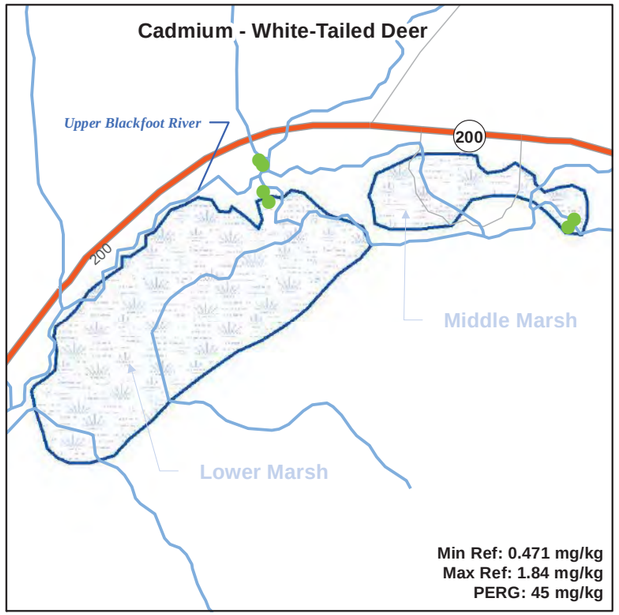
0 1,100

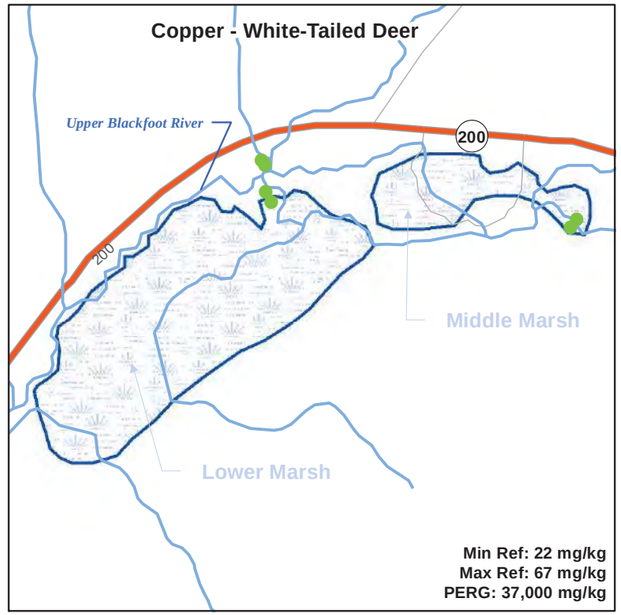
Figure 6-12E1

Comparison of Site Concentrations with Preliminary Ecological Remediation Goals and Reference Site Concentrations for the White-Tailed Deer
EU 12 - Upper Marsh Portion

Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex







- Result < PERG (NO RISK)
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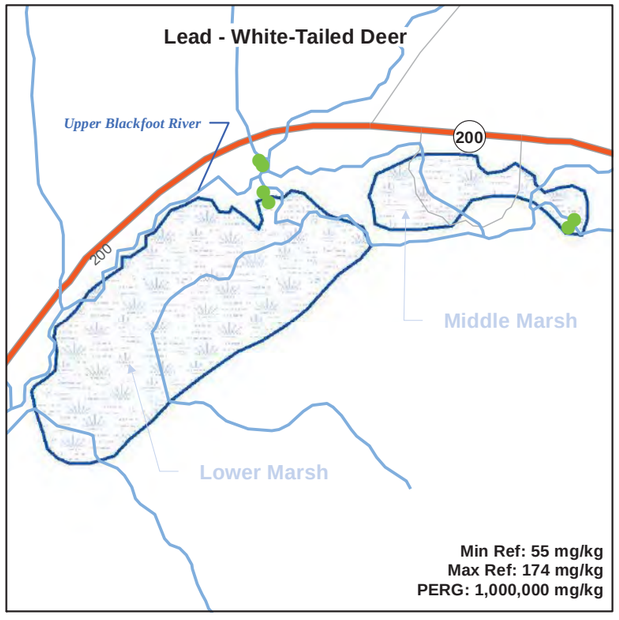
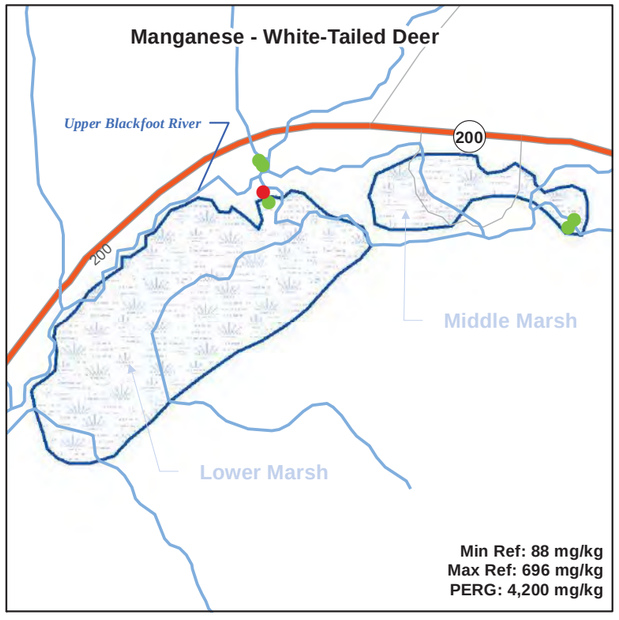
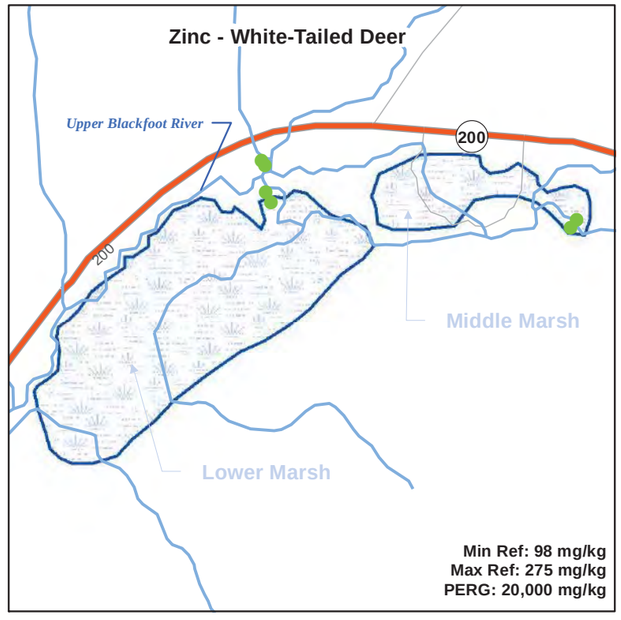
- Result > PERG and Maximum Reference Concentration (SITE-RELATED RISK)
- Lower and Middle Marsh
- Streams
- Highway
- Major Road
- Local Road







EU	Exposure unit
mg/kg	Milligram per kilogram
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PERG calculations are presented in Appendix E.

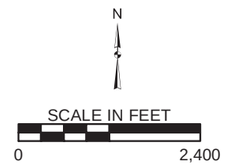
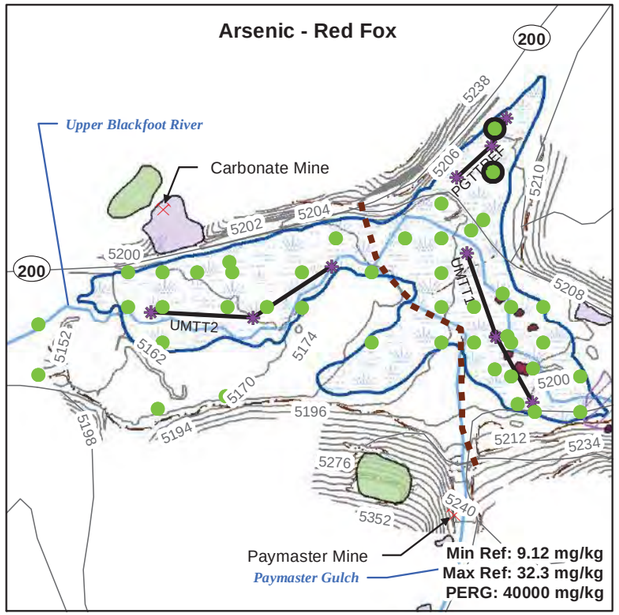
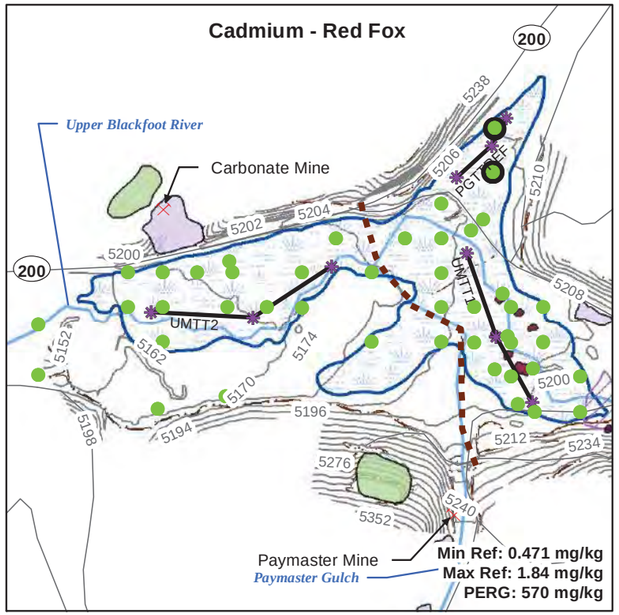


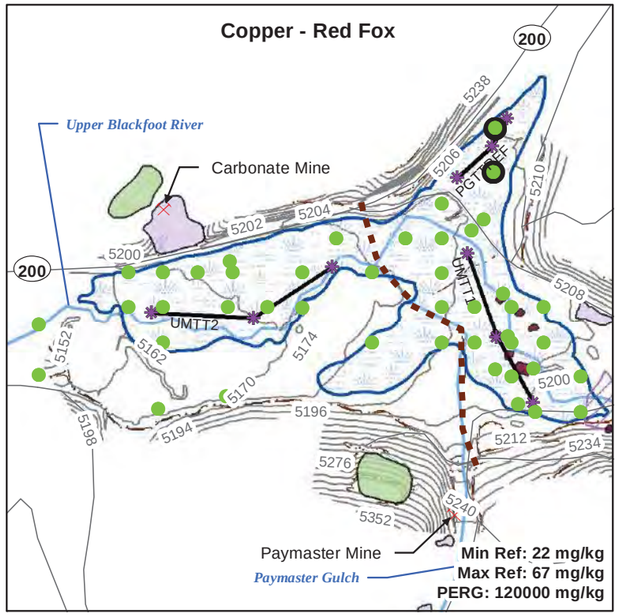
Figure 6-12E2

Comparison of Site Concentrations with Preliminary Ecological Remediation Goals and Reference Site Concentrations for the White-Tailed Deer
EU 12 - Lower and Middle Marsh Portion

Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex







- Result < PERG (NO RISK)
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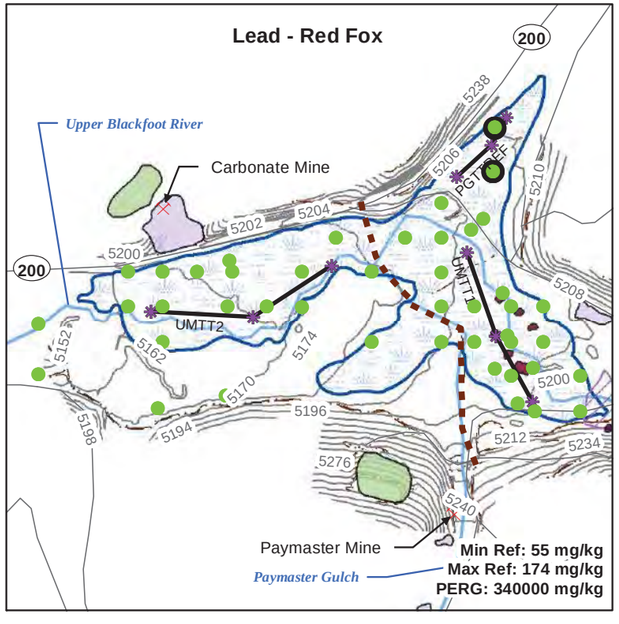
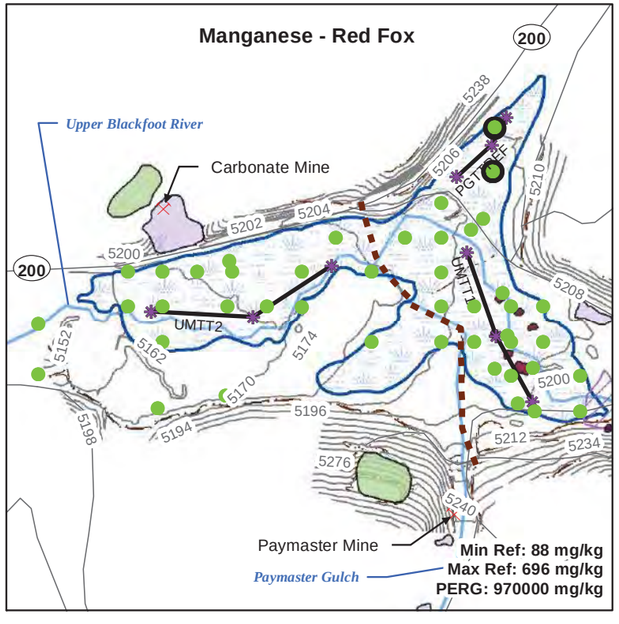
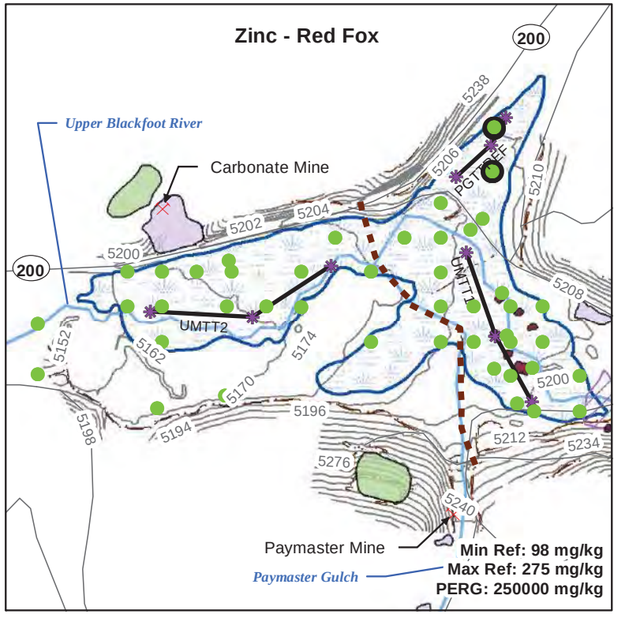
- Mines
- Upper Marsh Transect Sampling Locations
- Upper Marsh Transects
- Estimated Extent of Streamside Impacts Soil Sampling
- Area of Dispersed Sandy (Fine) Tailings
- Estimated Extent of Mine Areas (Sampled 2007/2008)
- Mine Waste Repository
- Upper Marsh
- Topographic Contours
- Roads







EU	Exposure unit
mg/kg	Milligram per kilogram
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PERG calculations are presented in Appendix E.

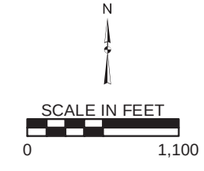
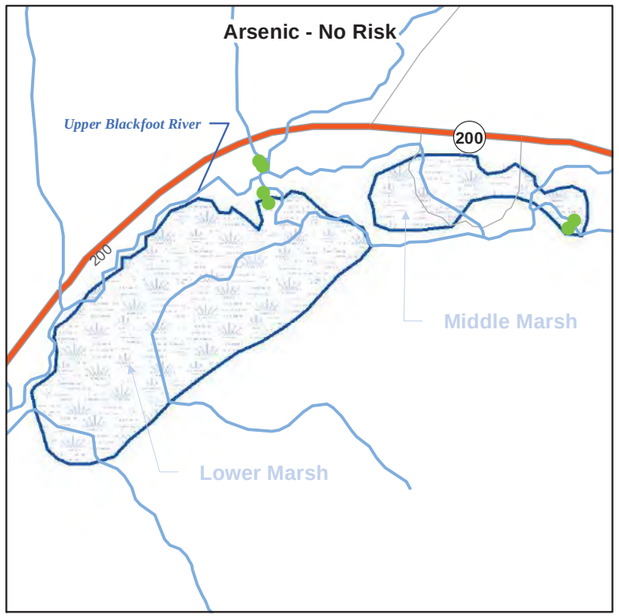
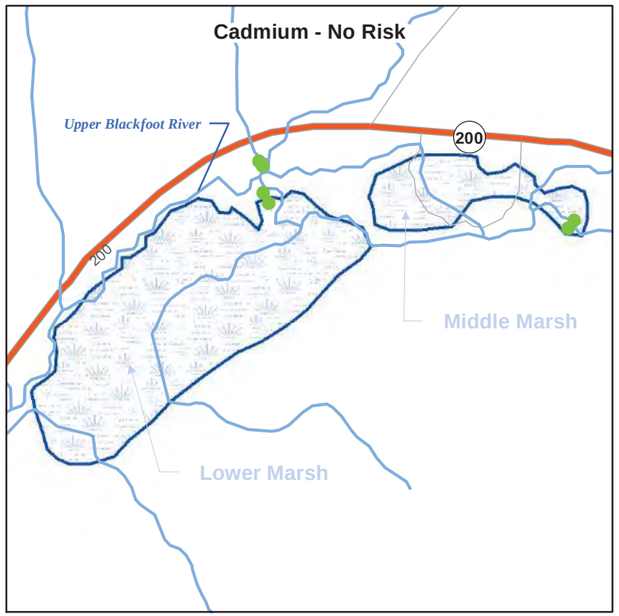


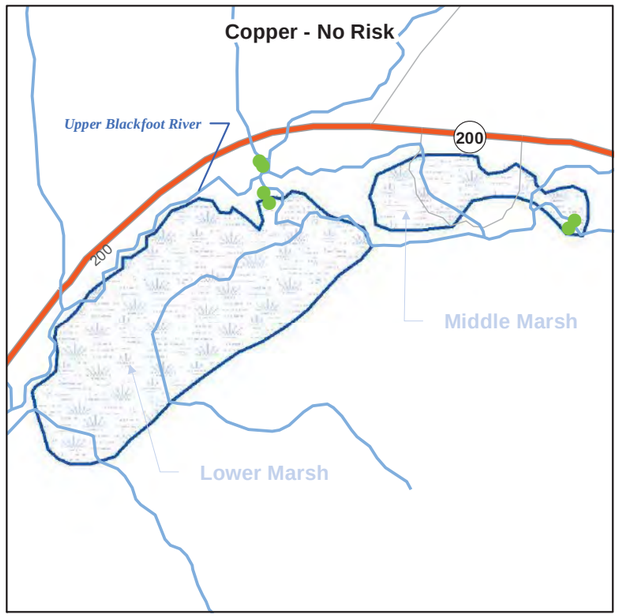
Figure 6-12F1

Comparison of Site Concentrations with Preliminary Ecological Remediation Goals and Reference Site Concentrations for the Red Fox
EU 12 - Upper Marsh Portion

Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex







Result < PERG (NO RISK)

Result > PERG but < Maximum Reference Concentration (POTENTIAL RISK, BUT NOT SITE-RELATED)

Result > PERG and Maximum Reference Concentration (SITE-RELATED RISK)

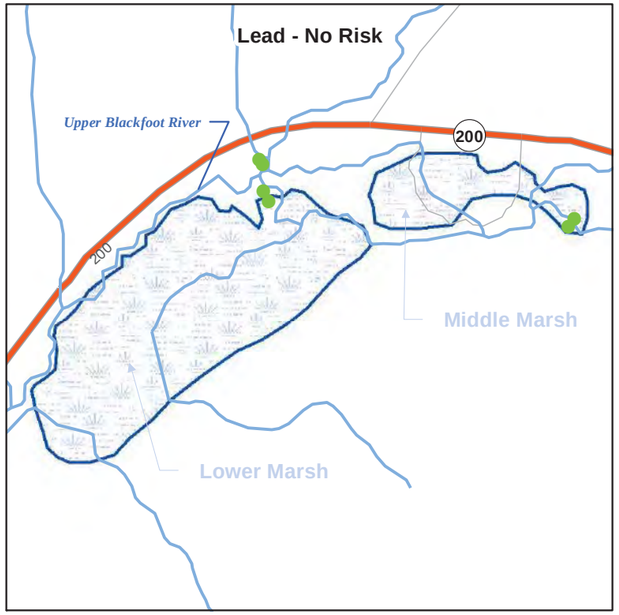
Lower and Middle Marsh

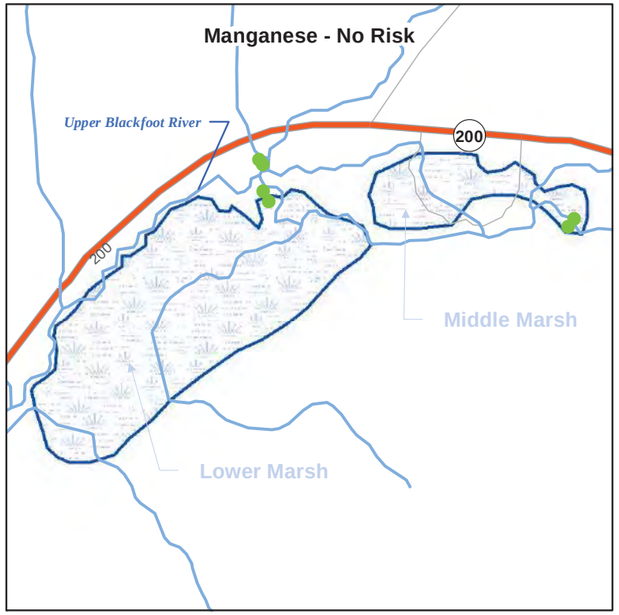
Highway

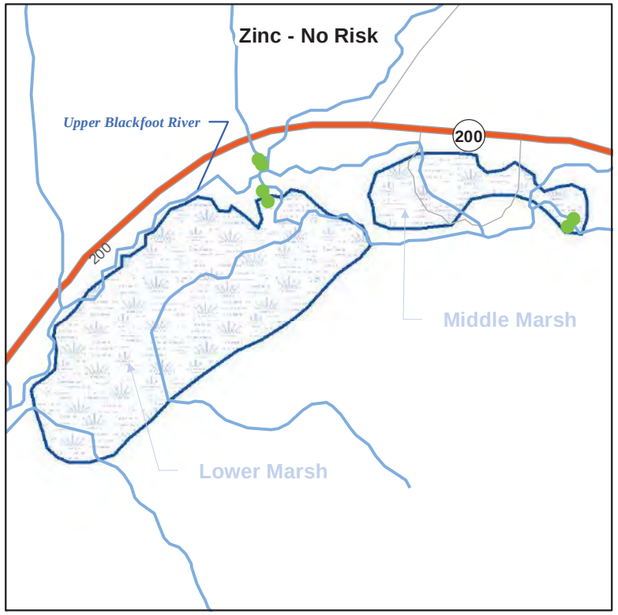
Major Road

Local Road

Streams







EU	Exposure unit
mg/kg	Milligram per kilogram
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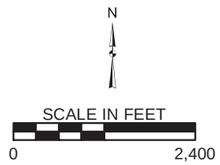
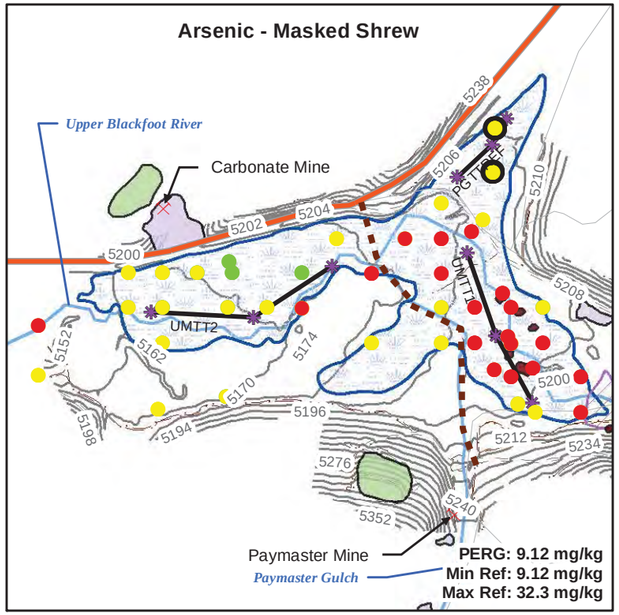


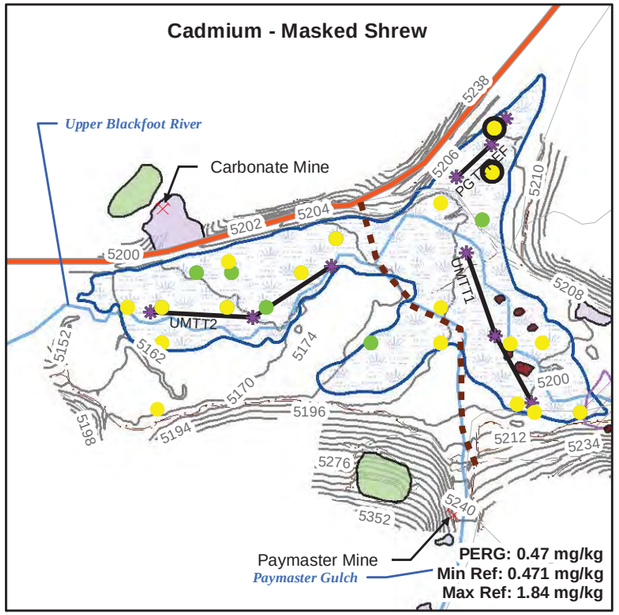
PERG (mg/kg)						
Ecological Receptor	**Arsenic**	**Cadmium**	**Copper**	**Lead**	**Manganese**	**Zinc**
Red Fox	40,000	21,000	150,000	350,000	250,000	19,000
Canada Goose	780,000	570	120,000	340,000	970,000	250,000

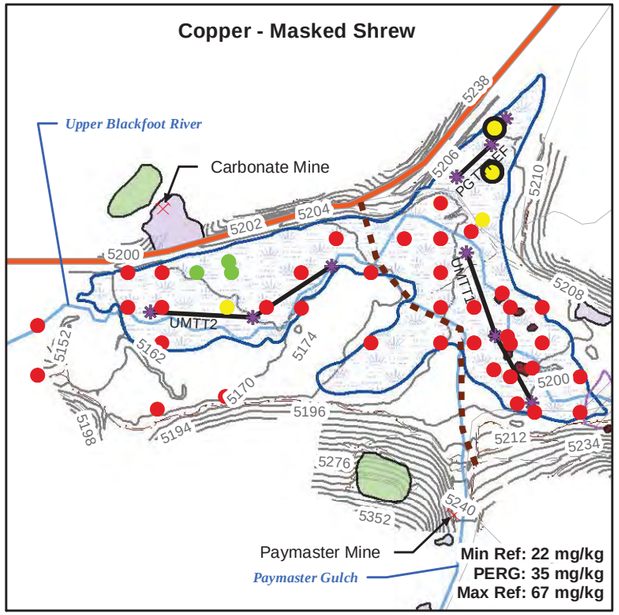
Figure 6-12F2

Comparison of Site Concentrations with Preliminary Ecological Remediation Goals and Reference Site Concentrations for the Red Fox and Canada Goose
EU 12 - Lower and Middle Marsh Portion

Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex







- Result < PERG (NO RISK)
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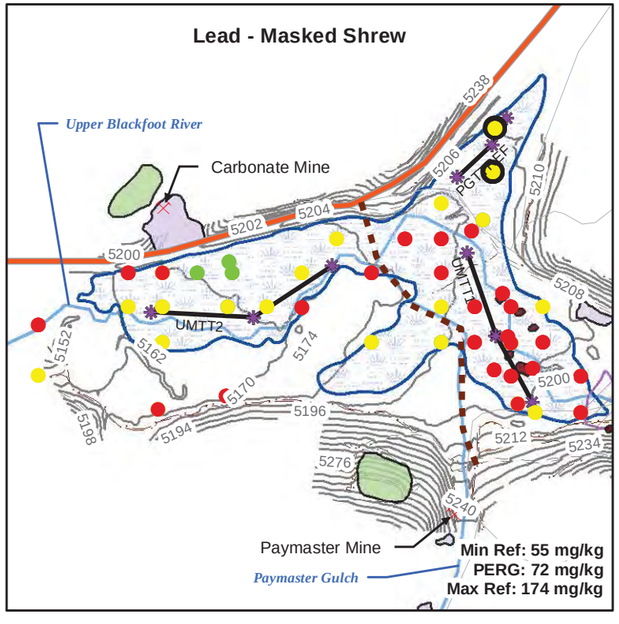
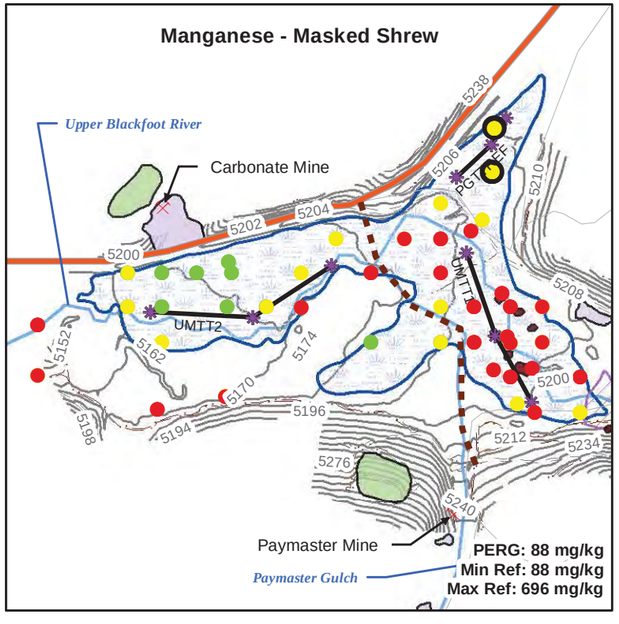
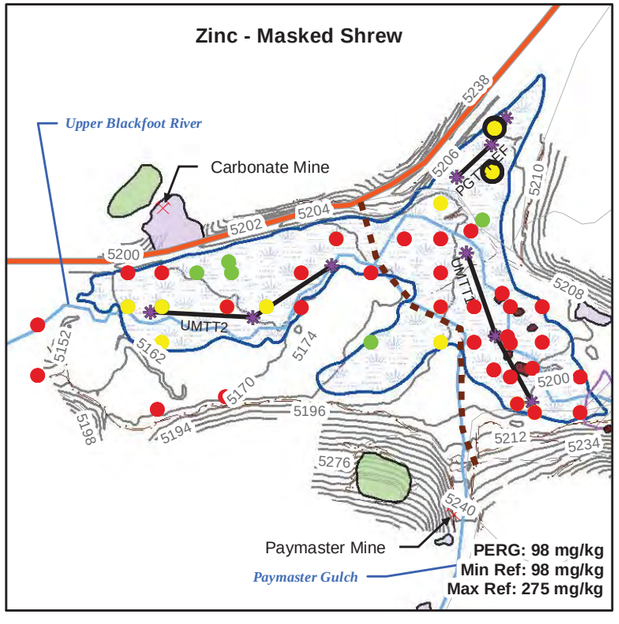
- Reference Location
- Sampling Boundary Between Eastern and Western Portions of Upper Marsh
- Mines
- Upper Marsh Transect Sampling Locations
- Reference Location
- Upper Marsh Transects
- Estimated Extent of Streamside Impacts Soil Sampling
- Area of Dispersed Sandy (Fine) Tailings
- Estimated Extent of Mine Areas (Sampled 2007/2008)
- Mine Waste Repository
- Upper Marsh
- Topographic Contours







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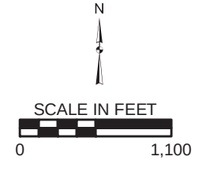
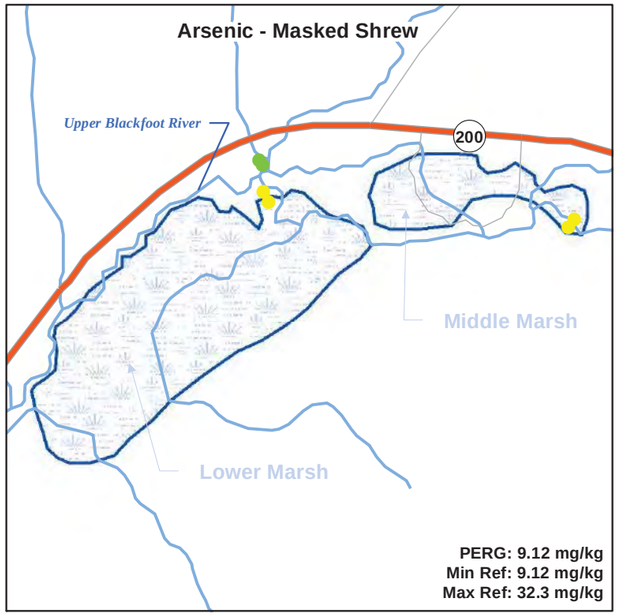
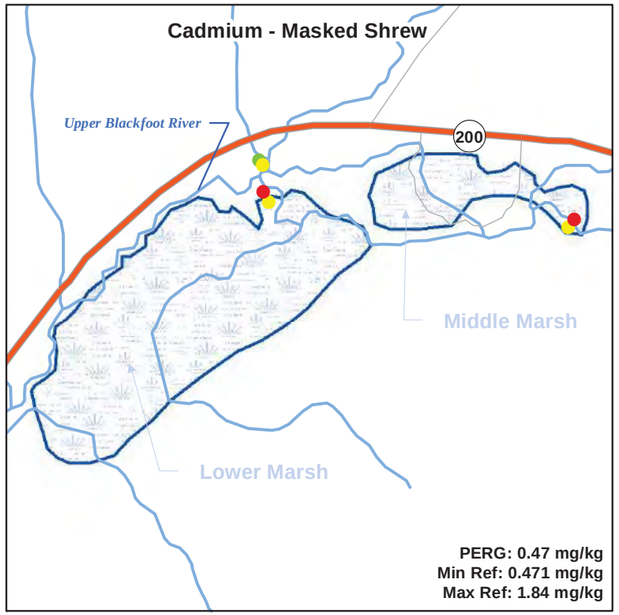


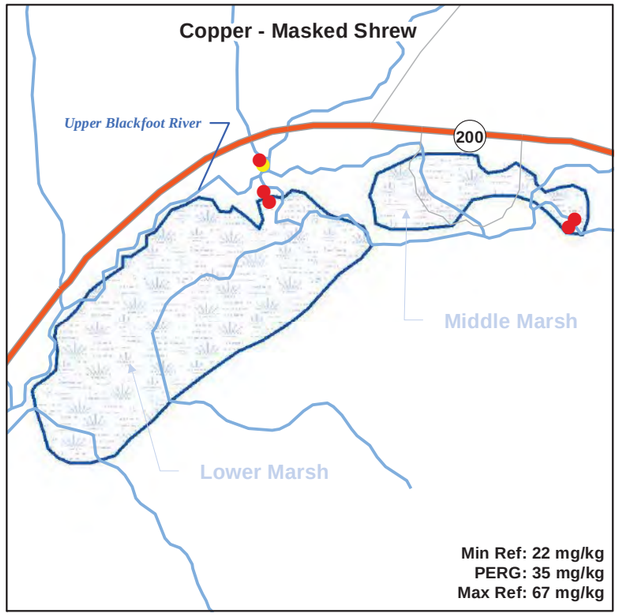
Figure 6-12G1

Comparison of Site Concentrations with Preliminary Ecological Remediation Goals and Reference Site Concentrations for the Masked Shrew
EU 12 - Upper Marsh Portion

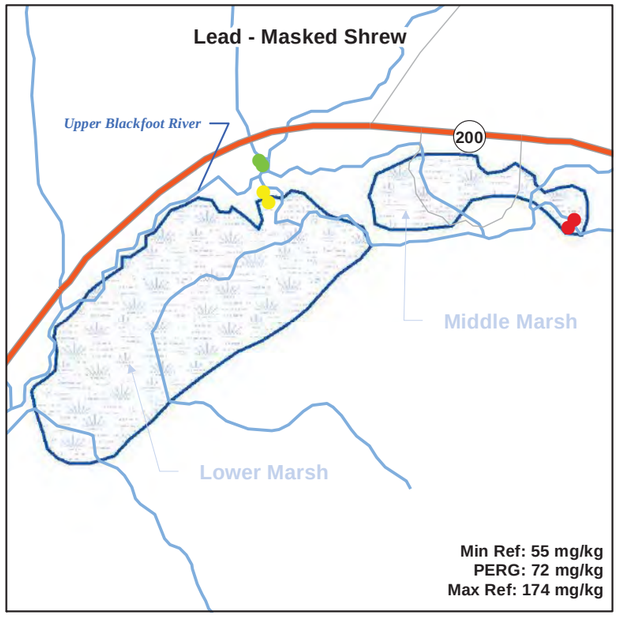
Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex

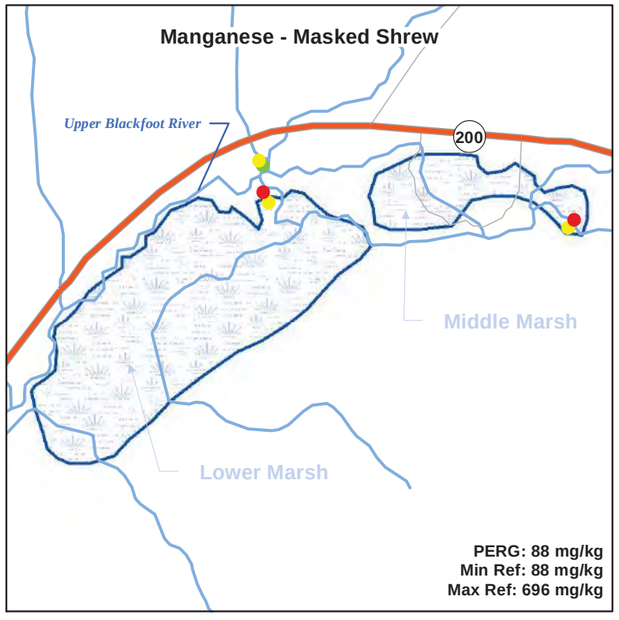


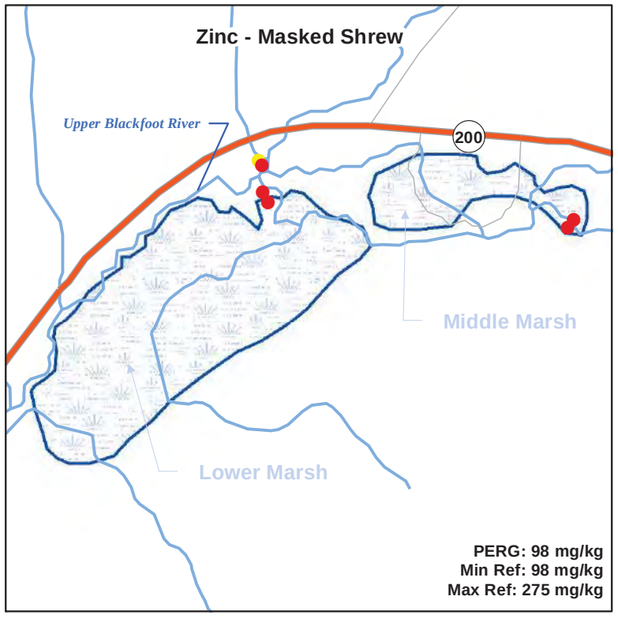




- Result < PERG (NO RISK)
- Result > PERG but < Maximum Reference Concentration (POTENTIAL RISK, BUT NOT SITE-RELATED)
- Result > PERG and Maximum Reference Concentration (SITE-RELATED RISK)
- Lower and Middle Marsh
- Streams
- Highway
- Major Road
- Local Road







EU	Exposure unit
mg/kg	Milligram per kilogram
Max Ref	Maximum Reference Concentration
Min Ref	Minimum Reference Concentration
PERG	Preliminary Ecological Remediation Goal

Notes:

A PERG cannot be less than the minimum reference concentration. In cases where the calculated PERG was lower than the minimum reference concentration, the PERG was set equal to the minimum reference concentration.

The maximum laboratory concentrations in sediment from 0-1 foot below the sediment surface at each sampling location was compared with PERGs and reference concentrations.

One-half the detection limit was substituted for non-detect results.

PERG calculations are presented in Appendix E.

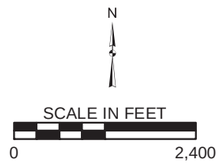
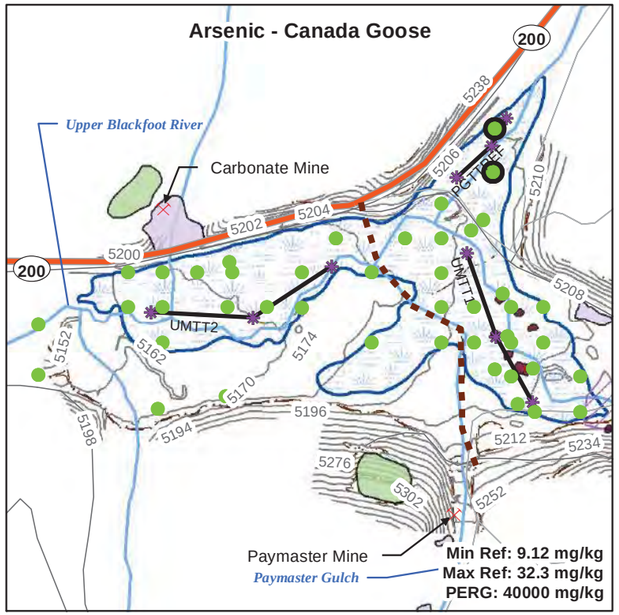
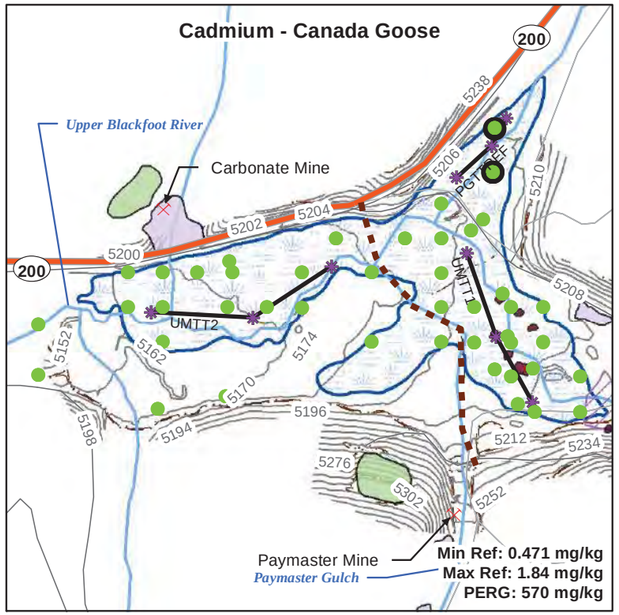


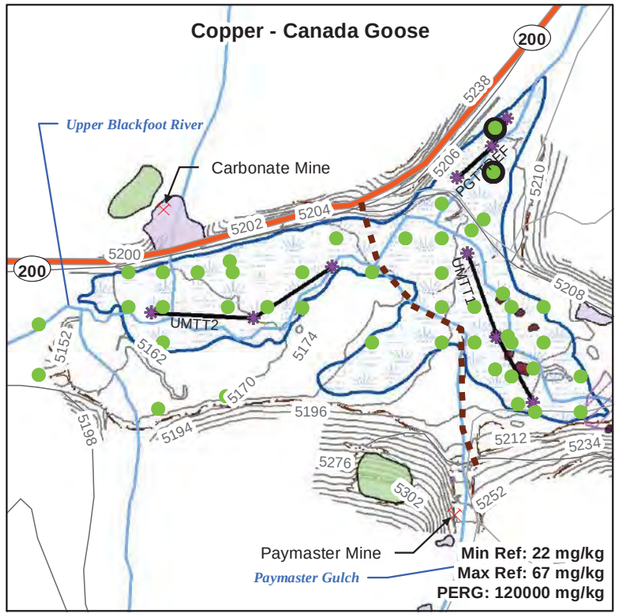
Figure 6-12G2

Comparison of Site Concentrations with Preliminary Ecological Remediation Goals and Reference Site Concentrations for the Masked Shrew
EU 12 - Lower and Middle Marsh Portion

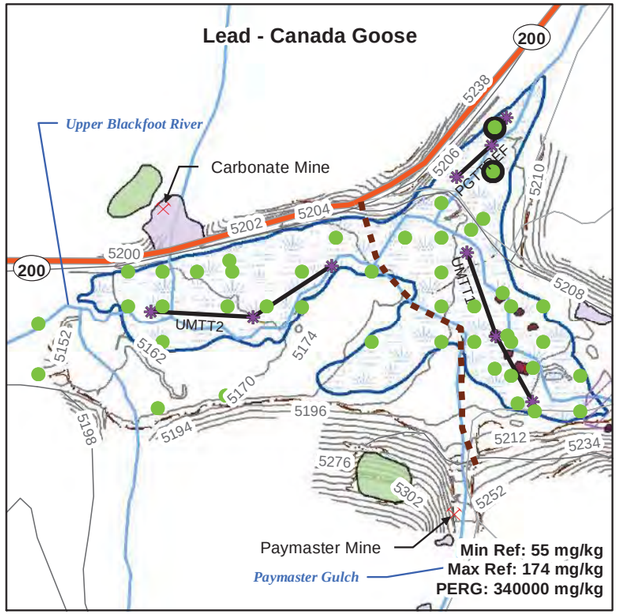
Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex

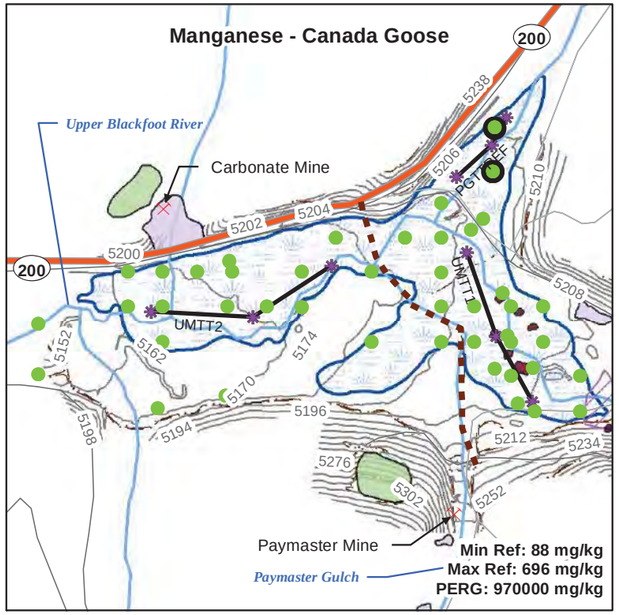


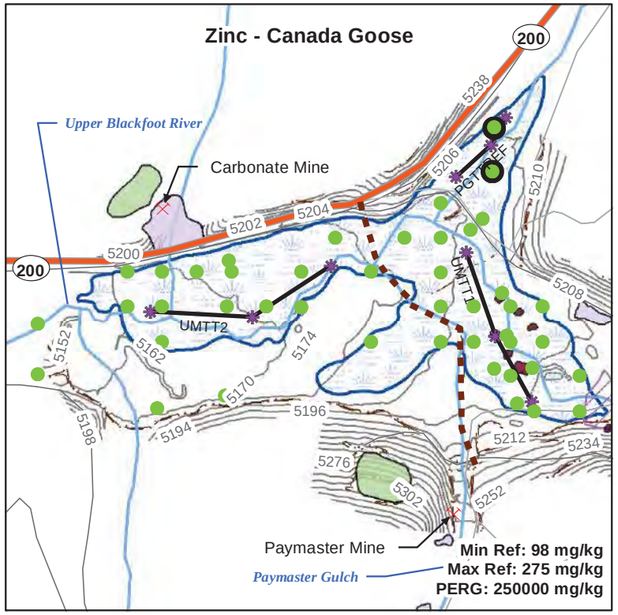




- Result < PERG (NO RISK)
- Result > PERG but < Maximum Reference Concentration (POTENTIAL RISK, BUT NOT SITE-RELATED)
- Result > PERG and Maximum Reference Concentration (SITE-RELATED RISK)
- Reference Location
- Sampling Boundary Between Eastern and Western Portions of Upper Marsh
- Mines
- Upper Marsh Transect Sampling Locations
- Upper Marsh Transects
- Estimated Extent of Streamside Impacts Soil Sampling
- Area of Dispersed Sandy (Fine) Tailings
- Estimated Extent of Mine Areas (Sampled 2007/2008)
- Mine Waste Repository
- Upper Marsh
- Topographic Contours
- Roads







EU	Exposure unit
mg/kg	Milligram per kilogram
Max Ref	Maximum Reference Concentration
Min Ref	Minimum Reference Concentration
PERG	Preliminary Ecological Remediation Goal

Notes:

A PERG cannot be less than the minimum reference concentration. In cases where the calculated PERG was lower than the minimum reference concentration, the PERG was set equal to the minimum reference concentration.

The maximum laboratory concentrations in sediment from 0-1 foot below the sediment surface at each sampling location was compared with PERGs and reference concentrations.

One-half the detection limit was substituted for non-detect results.

PERG calculations are presented in Appendix E.

N

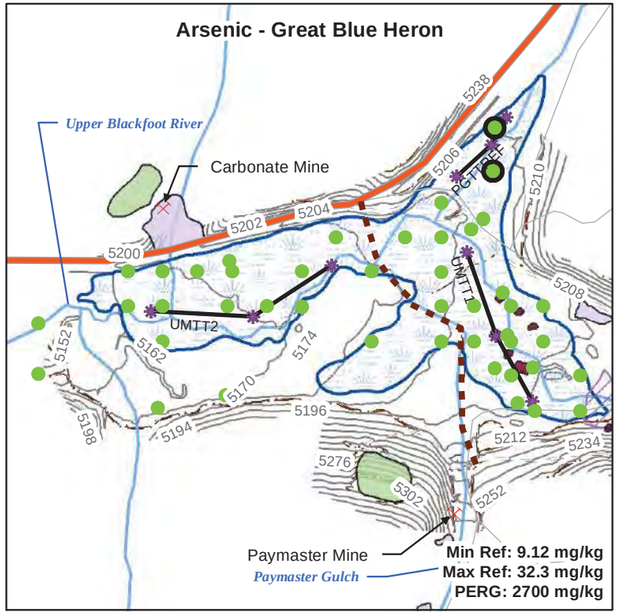
SCALE IN FEET

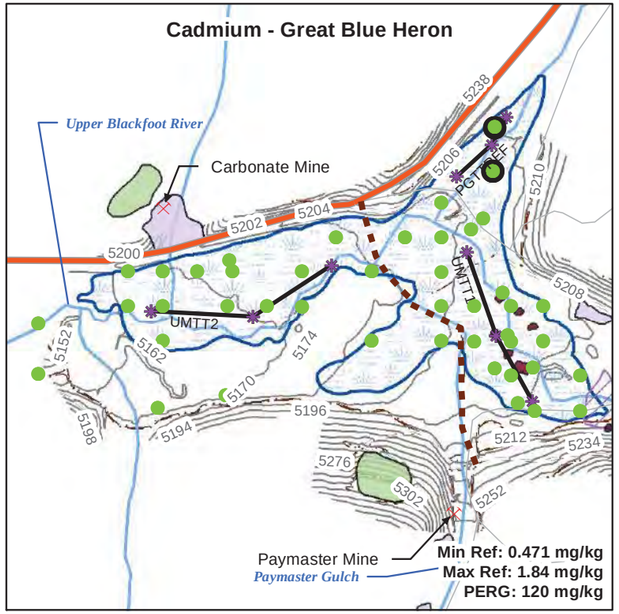
0 1,100

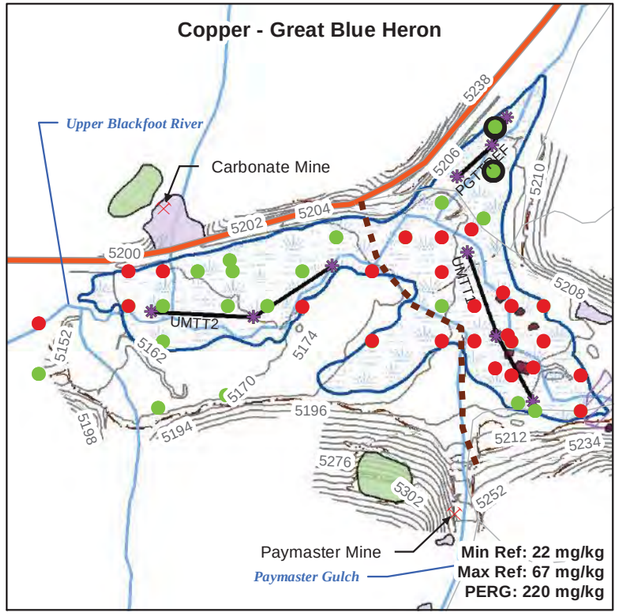
Figure 6-12H1

Comparison of Site Concentrations with Preliminary Ecological Remediation Goals and Reference Site Concentrations for the Canada Goose
EU 12 - Upper Marsh Portion

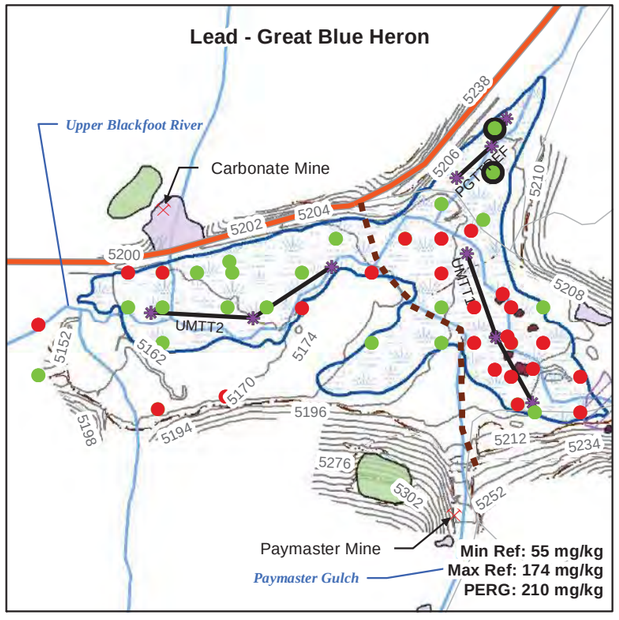
Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex

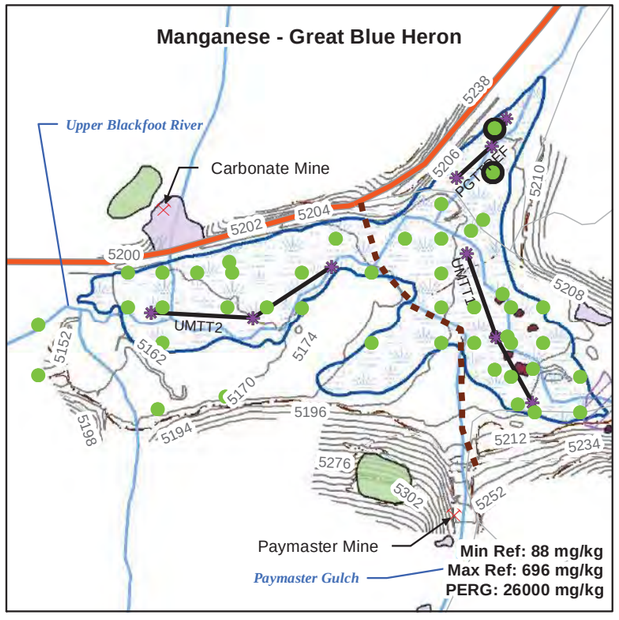


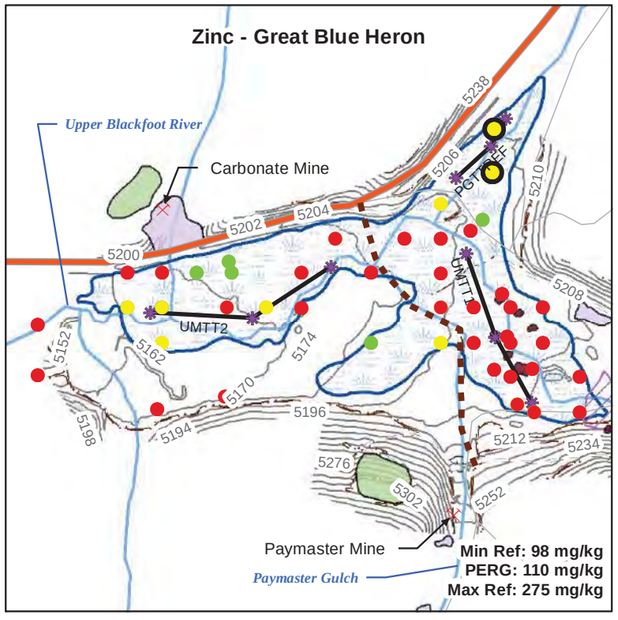




- Result < PERG (NO RISK)
- Result > PERG but < Maximum Reference Concentration (POTENTIAL RISK, BUT NOT SITE-RELATED)
- Result > PERG and Maximum Reference Concentration (SITE-RELATED RISK)
- Reference Location
- Sampling Boundary Between Eastern and Western Portions of Upper Marsh
- Mines
- Upper Marsh Transect Sampling Locations
- Upper Marsh Transects
- Estimated Extent of Streamside Impacts Soil Sampling
- Area of Dispersed Sandy (Fine) Tailings
- Estimated Extent of Mine Areas (Sampled 2007/2008)
- Mine Waste Repository
- Upper Marsh
- Topographic Contours
- Streams
- Highway
- Major Road
- Local Road







EU	Exposure unit
mg/kg	Milligram per kilogram
Max Ref	Maximum Reference Concentration
Min Ref	Minimum Reference Concentration
PERG	Preliminary Ecological Remediation Goal

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One-half the detection limit was substituted for non-detect results.

PERG calculations are presented in Appendix E.

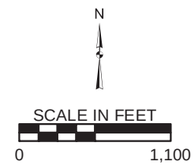
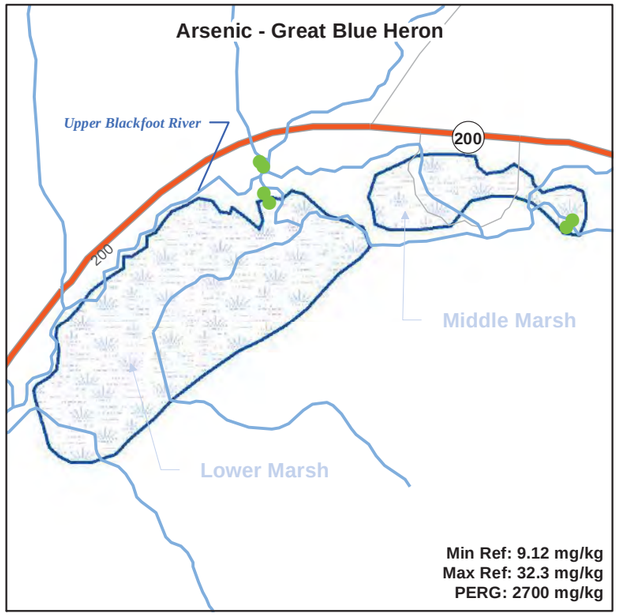
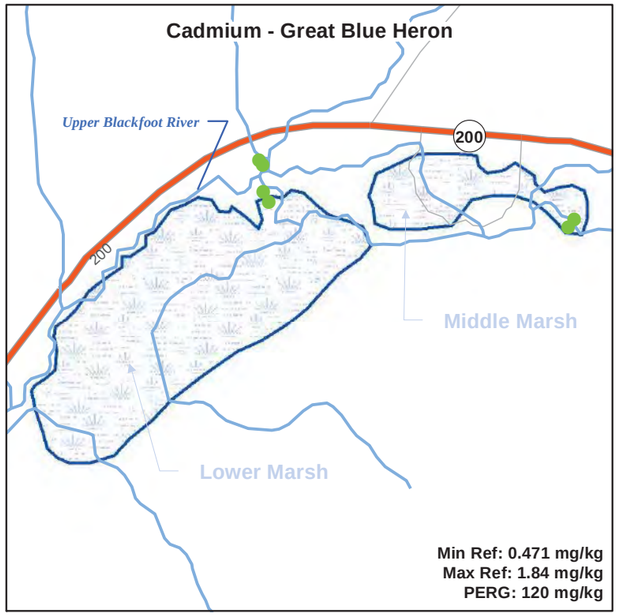


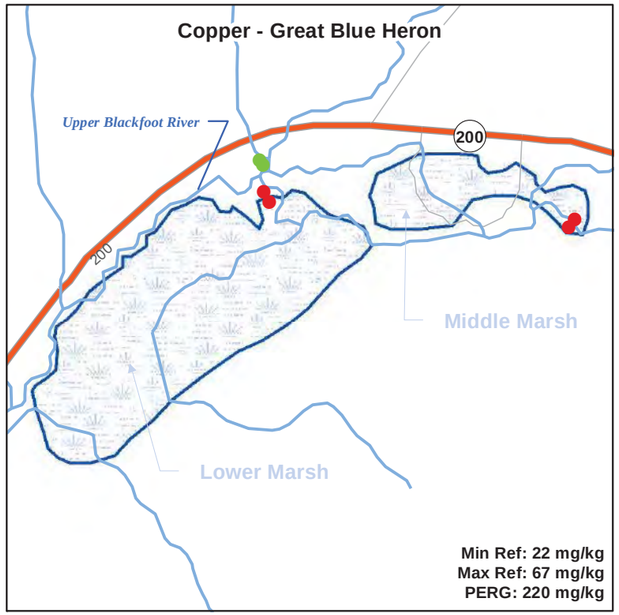
Figure 6-12I1

Comparison of Site Concentrations with Preliminary Ecological Remediation Goals and Reference Site Concentrations for the Great Blue Heron
EU 12 - Upper Marsh Portion

Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex







Result < PERG (NO RISK)

Result > PERG but < Maximum Reference Concentration (POTENTIAL RISK, BUT NOT SITE-RELATED)

Result > PERG and Maximum Reference Concentration (SITE-RELATED RISK)

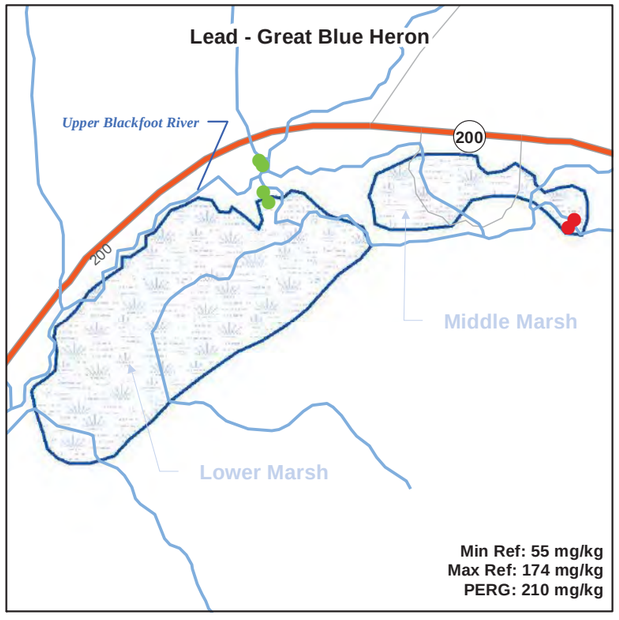
Lower and Middle Marsh

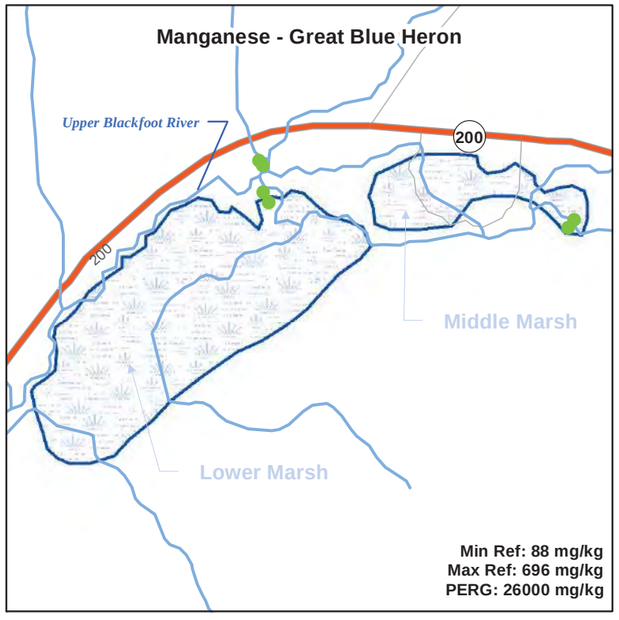
Highway

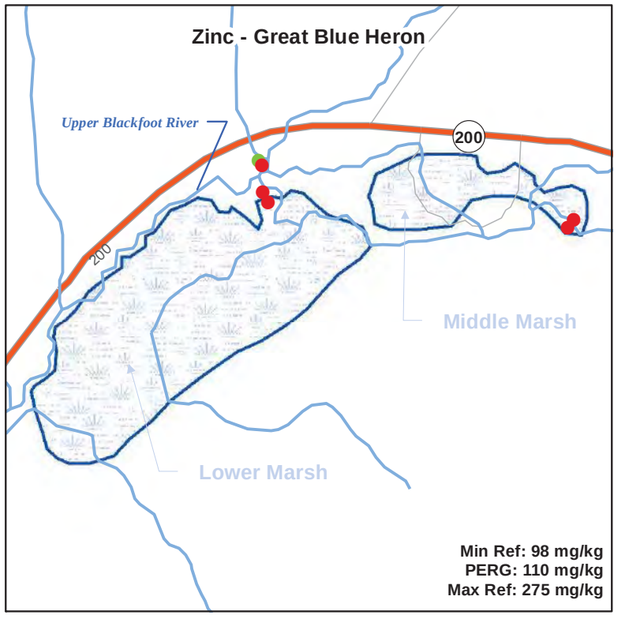
Major Road

Local Road

Streams







EU	Exposure unit
mg/kg	Milligram per kilogram
Max Ref	Maximum Reference Concentration
Min Ref	Minimum Reference Concentration
PERG	Preliminary Ecological Remediation Goal

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The maximum laboratory concentrations in sediment from 0-1 foot below the sediment surface at each sampling location was compared with PERGs and reference concentrations.

One-half the detection limit was substituted for non-detect results.

PERG calculations are presented in Appendix E.

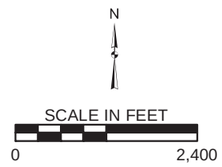
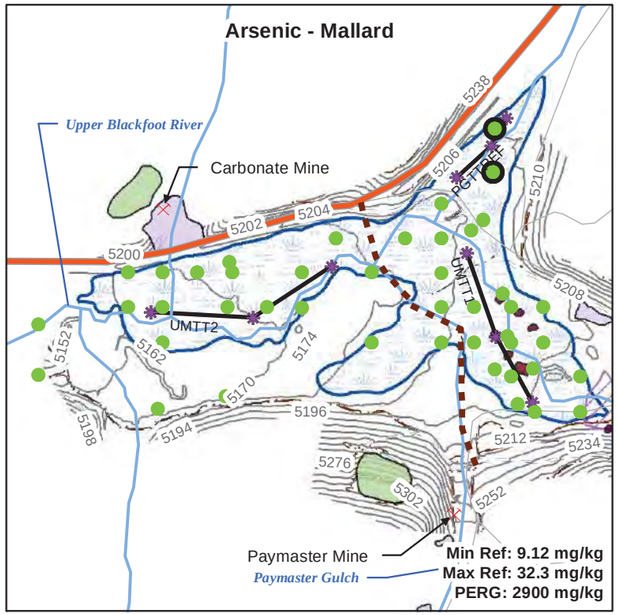
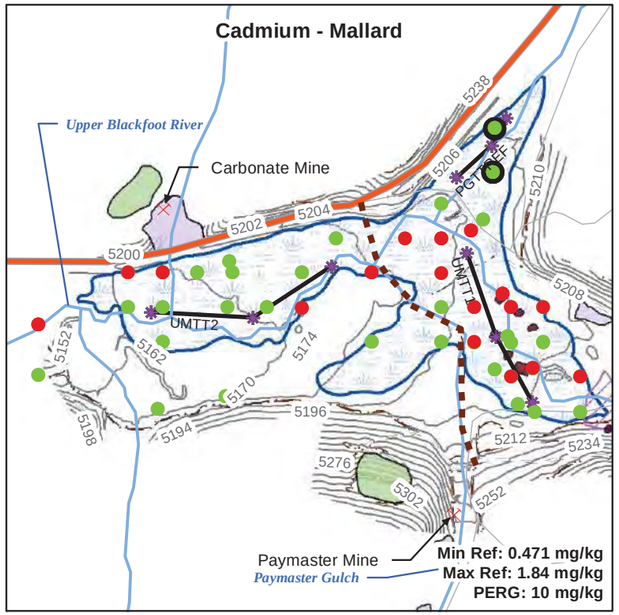


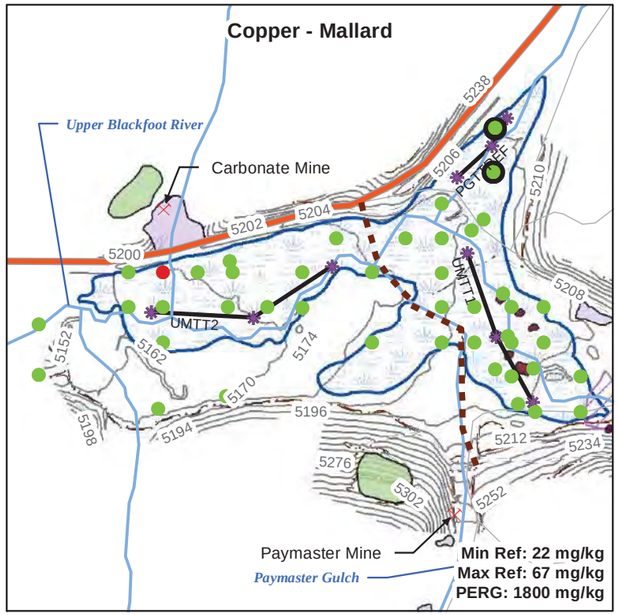
Figure 6-12I2

Comparison of Site Concentrations with Preliminary Ecological Remediation Goals and Reference Site Concentrations for the Great Blue Heron
EU 12 - Lower and Middle Marsh Portion

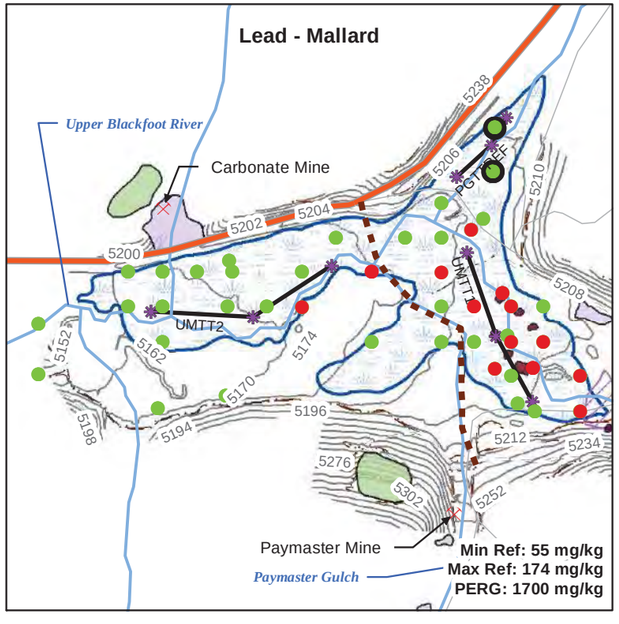
Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex

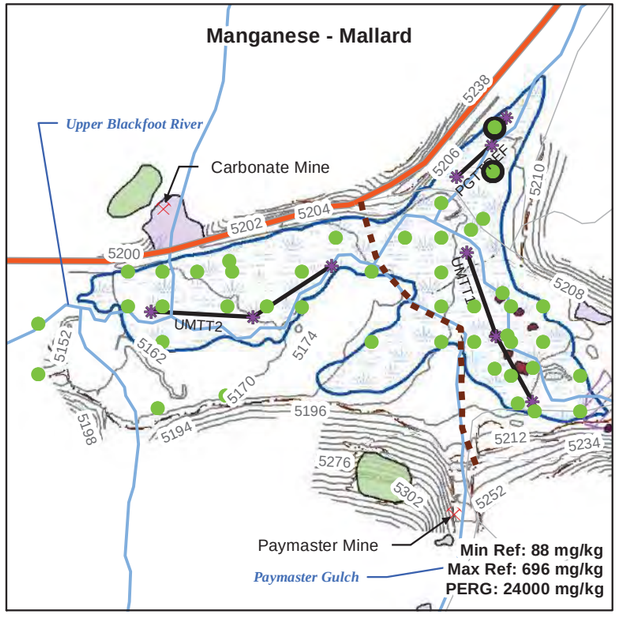


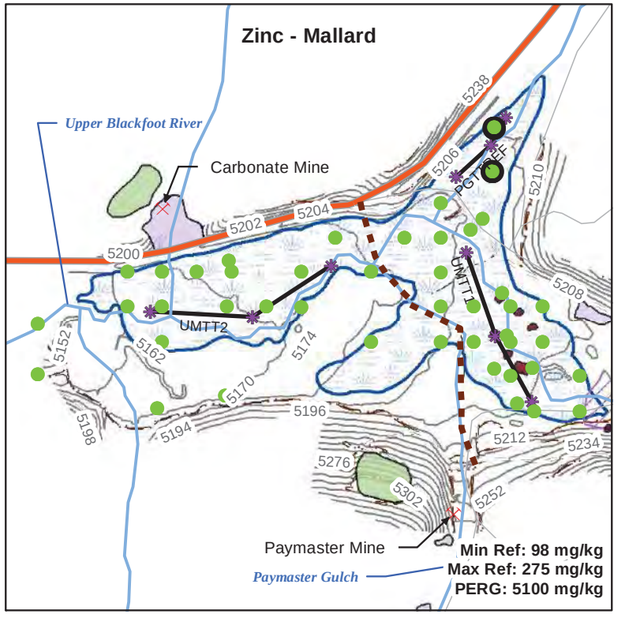




- Result < PERG (NO RISK)
- Result > PERG but < Maximum Reference Concentration (POTENTIAL RISK, BUT NOT SITE-RELATED)
- Result > PERG and Maximum Reference Concentration (SITE-RELATED RISK)
- Reference Location
- Sampling Boundary Between Eastern and Western Portions of Upper Marsh
- Mines
- Upper Marsh Transect Sampling Locations
- Estimated Extent of Streamside Impacts Soil Sampling
- Area of Dispersed Sandy (Fine) Tailings
- Estimated Extent of Mine Areas (Sampled 2007/2008)
- Mine Waste Repository
- Upper Marsh
- Upper Marsh Transects
- Topographic Contours
- Streams
- Highway
- Major Road
- Local Road







EU	Exposure unit
mg/kg	Milligram per kilogram
Max Ref	Maximum Reference Concentration
Min Ref	Minimum Reference Concentration
PERG	Preliminary Ecological Remediation Goal

Notes:

A PERG cannot be less than the minimum reference concentration. In cases where the calculated PERG was lower than the minimum reference concentration, the PERG was set equal to the minimum reference concentration.

The maximum laboratory concentrations in sediment from 0-1 foot below the sediment surface at each sampling location was compared with PERGs and reference concentrations.

One-half the detection limit was substituted for non-detect results.

PERG calculations are presented in Appendix E.

N

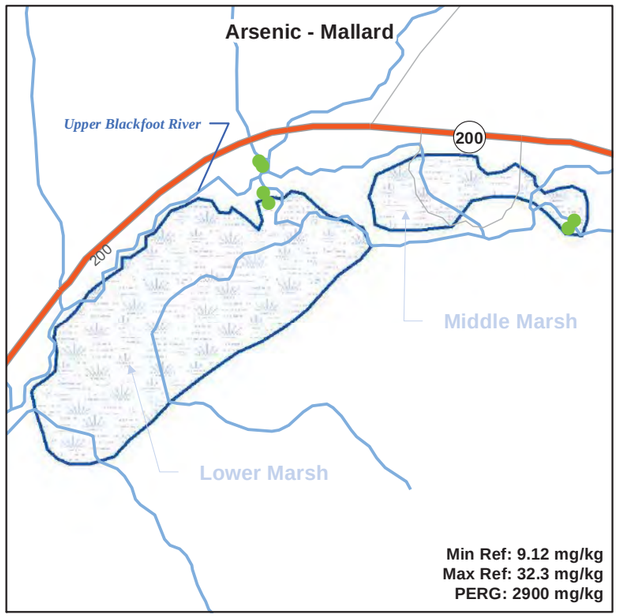
SCALE IN FEET

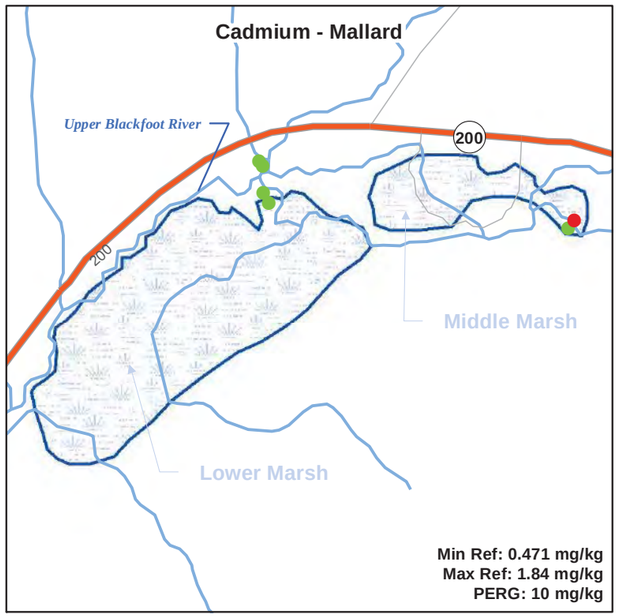
0 1,100

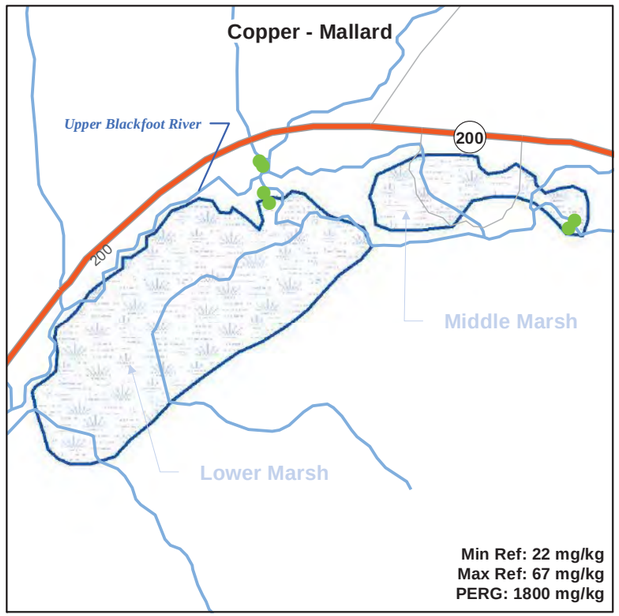
Figure 6-12J1

Comparison of Site Concentrations with Preliminary Ecological Remediation Goals and Reference Site Concentrations for the Mallard
EU 12 - Upper Marsh Portion

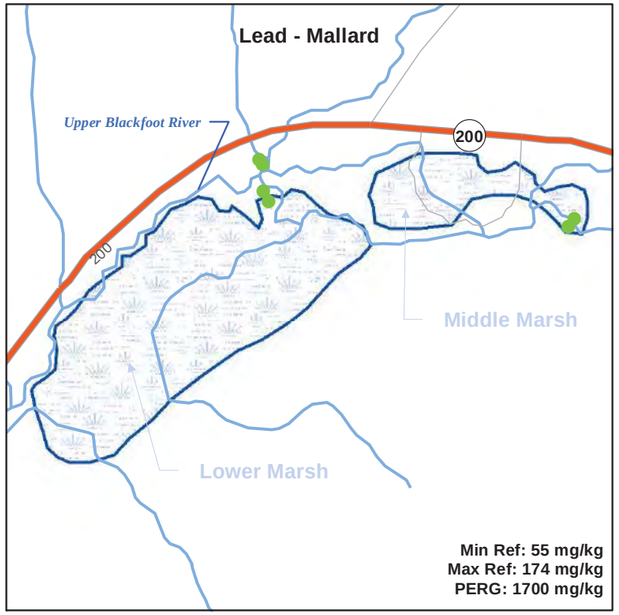
Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex

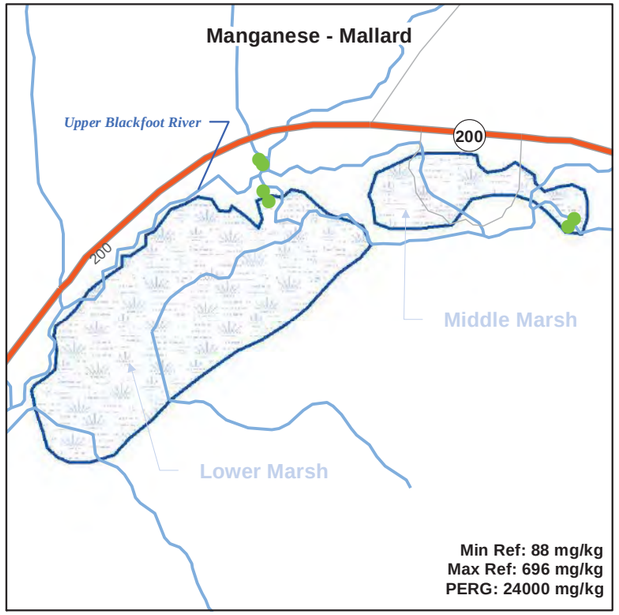


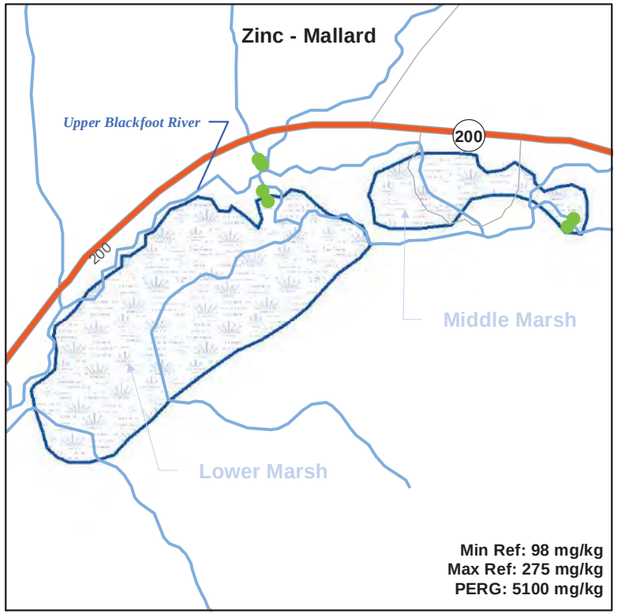




- Result < PERG (NO RISK)
- Result > PERG but < Maximum Reference Concentration (POTENTIAL RISK, BUT NOT SITE-RELATED)
- Result > PERG and Maximum Reference Concentration (SITE-RELATED RISK)
- Lower and Middle Marsh
- Streams
- Highway
- Major Road
- Local Road







EU	Exposure unit
mg/kg	Milligram per kilogram
Max Ref	Maximum Reference Concentration
Min Ref	Minimum Reference Concentration
PERG	Preliminary Ecological Remediation Goal

Notes:

A PERG cannot be less than the minimum reference concentration. In cases where the calculated PERG was lower than the minimum reference concentration, the PERG was set equal to the minimum reference concentration.

The maximum laboratory concentrations in sediment from 0-1 foot below the sediment surface at each sampling location was compared with PERGs and reference concentrations.

One-half the detection limit was substituted for non-detect results.

PERG calculations are presented in Appendix E.

N

SCALE IN FEET

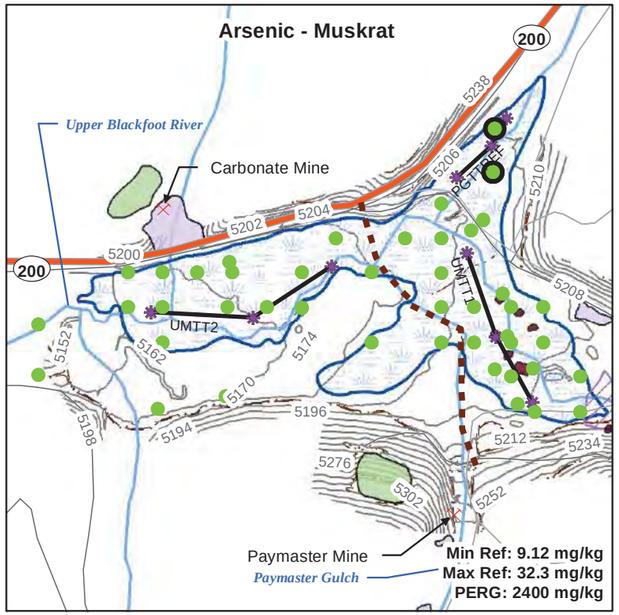
0 1,100

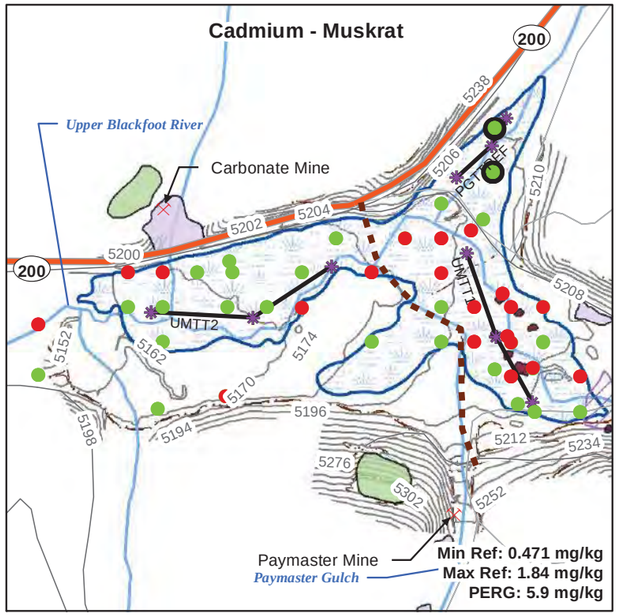
Figure 6-12J2

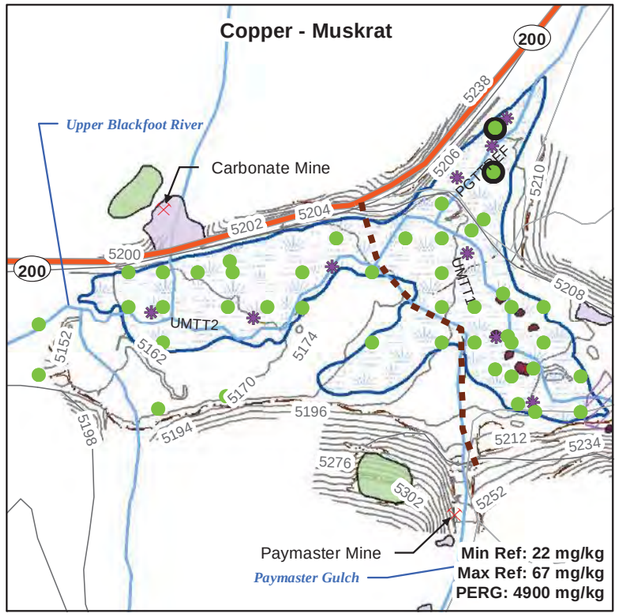
Comparison of Site Concentrations with Preliminary Ecological Remediation Goals and Reference Site Concentrations for the Mallard

EU 12 - Lower and Middle Marsh Portion

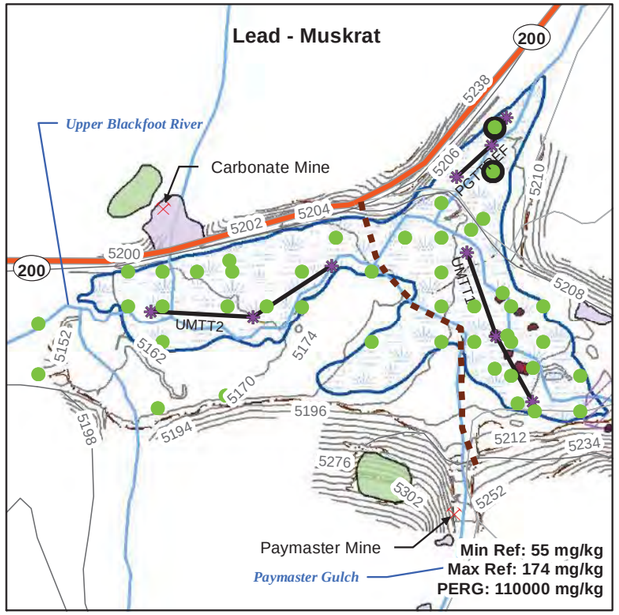
Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex

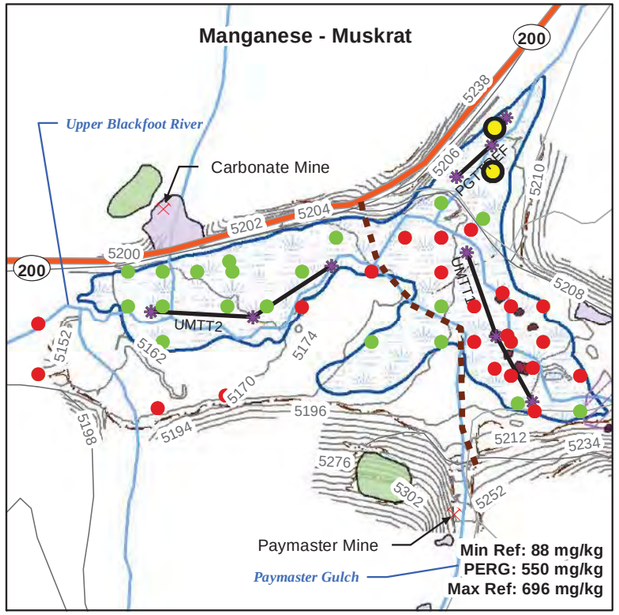


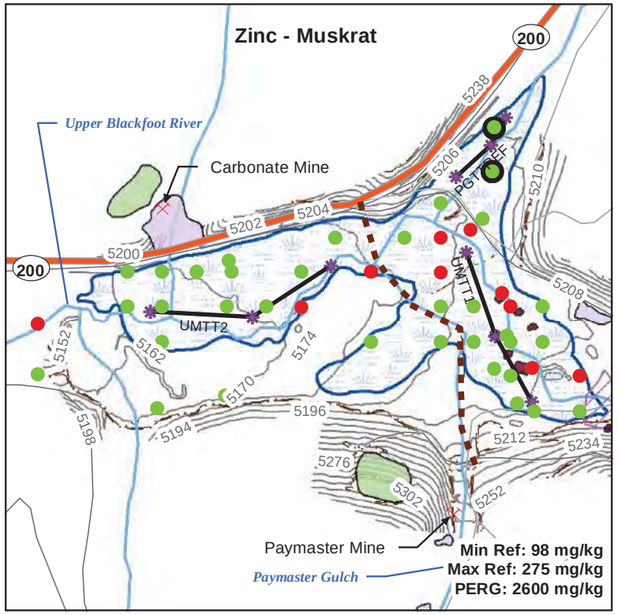




- Result < PERG (NO RISK)
- Result > PERG but < Maximum Reference Concentration (POTENTIAL RISK, BUT NOT SITE-RELATED)
- Result > PERG and Maximum Reference Concentration (SITE-RELATED RISK)
- Reference Location
- Sampling Boundary Between Eastern and Western Portions of Upper Marsh
- Mines
- Upper Marsh Transect Sampling Locations
- Upper Marsh Transects
- Estimated Extent of Streamside Impacts Soil Sampling
- Area of Dispersed Sandy (Fine) Tailings
- Estimated Extent of Mine Areas (Sampled 2007/2008)
- Mine Waste Repository
- Upper Marsh
- Topographic Contours
- Roads







EU	Exposure unit
mg/kg	Milligram per kilogram
Max Ref	Maximum Reference Concentration
Min Ref	Minimum Reference Concentration
PERG	Preliminary Ecological Remediation Goal

Notes:

A PERG cannot be less than the minimum reference concentration. In cases where the calculated PERG was lower than the minimum reference concentration, the PERG was set equal to the minimum reference concentration.

The maximum laboratory concentrations in sediment from 0-1 foot below the sediment surface at each sampling location was compared with PERGs and reference concentrations.

One-half the detection limit was substituted for non-detect results.

PERG calculations are presented in Appendix E.

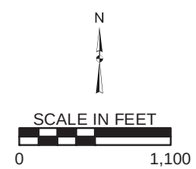
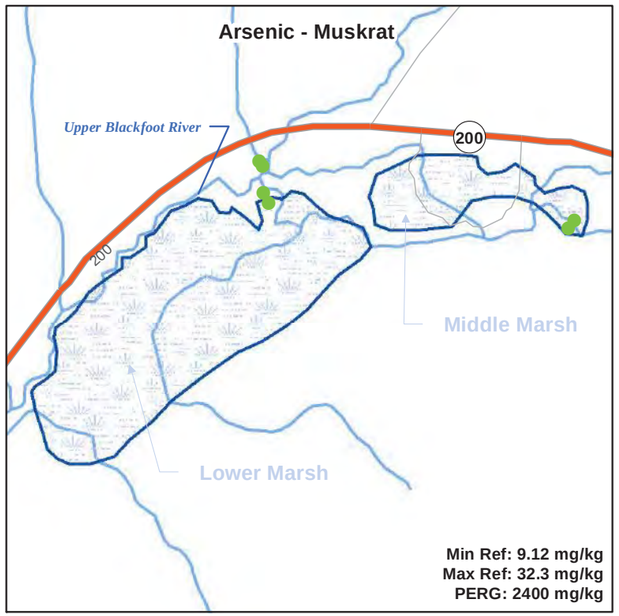
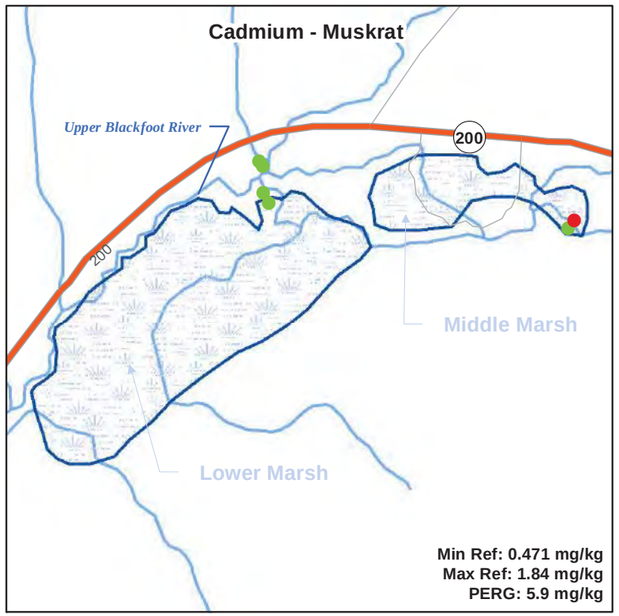


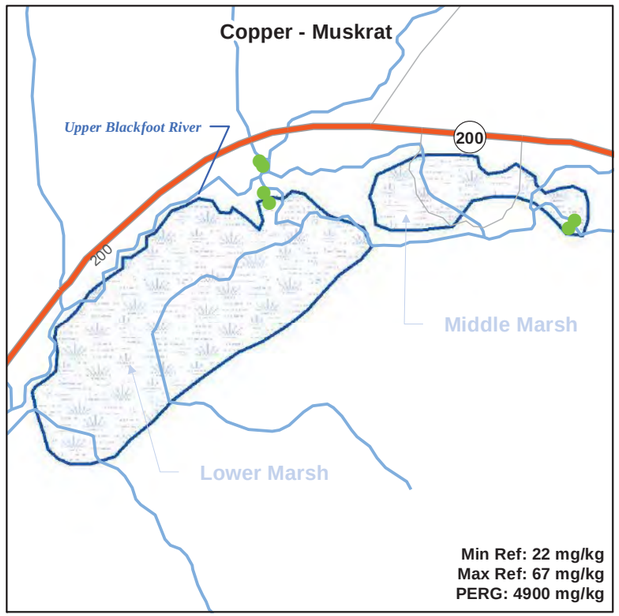
Figure 6-12K1

Comparison of Site Concentrations with Preliminary Ecological Remediation Goals and Reference Site Concentrations for the Muskrat
EU 12 - Upper Marsh Portion

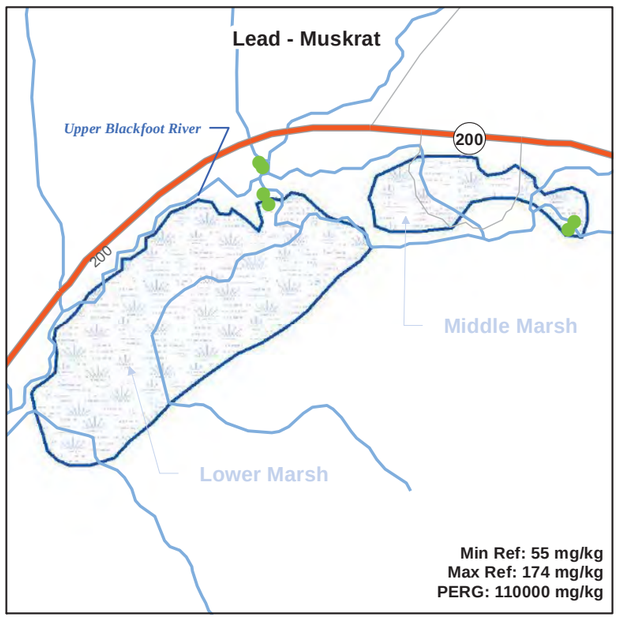
Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex

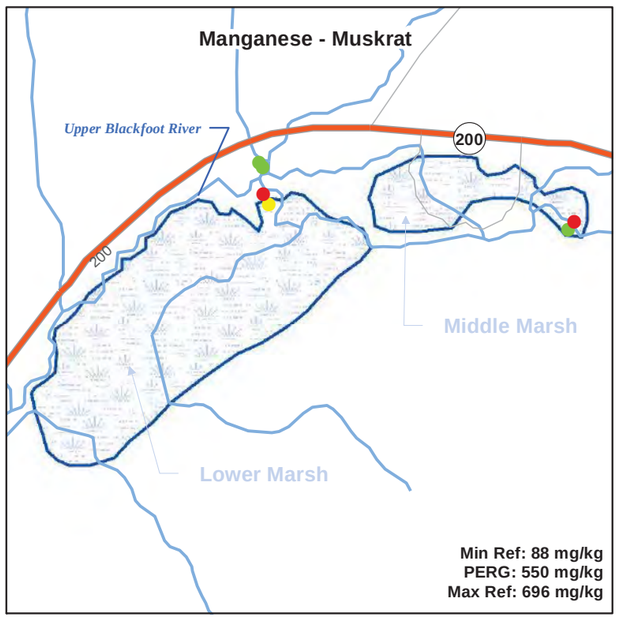


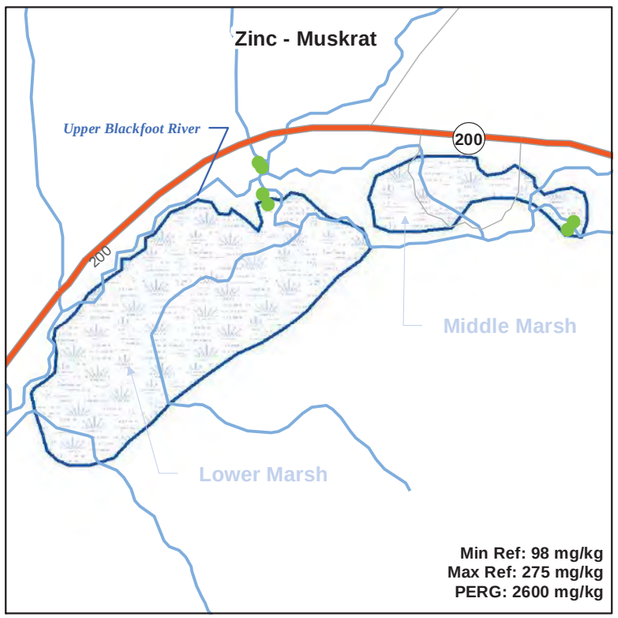




- Result < PERG (NO RISK)
- Result > PERG but < Maximum Reference Concentration (POTENTIAL RISK, BUT NOT SITE-RELATED)
- Result > PERG and Maximum Reference Concentration (SITE-RELATED RISK)
- Lower and Middle Marsh
- Highway
- Major Road
- Local Road
- Streams







EU	Exposure unit
mg/kg	Milligram per kilogram
Max Ref	Maximum Reference Concentration
Min Ref	Minimum Reference Concentration
PERG	Preliminary Ecological Remediation Goal

Notes:

A PERG cannot be less than the minimum reference concentration. In cases where the calculated PERG was lower than the minimum reference concentration, the PERG was set equal to the minimum reference concentration.

The maximum laboratory concentrations in sediment from 0-1 foot below the sediment surface at each sampling location was compared with PERGs and reference concentrations.

One-half the detection limit was substituted for non-detect results.

PERG calculations are presented in Appendix E.

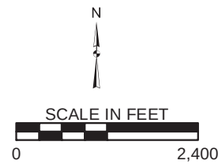
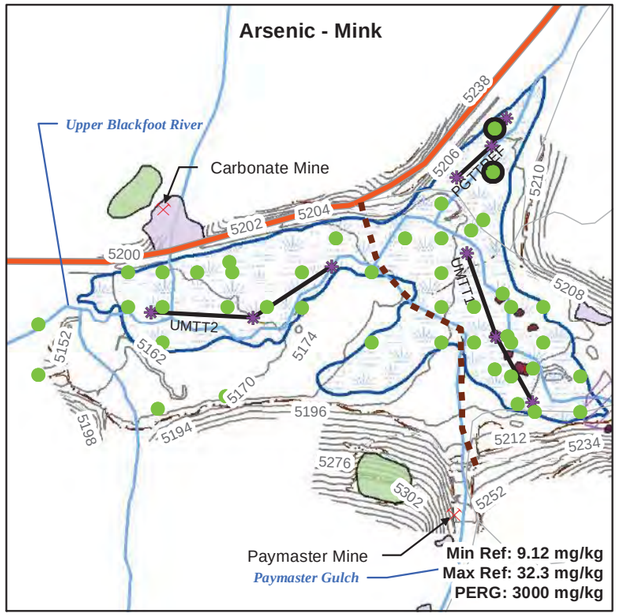
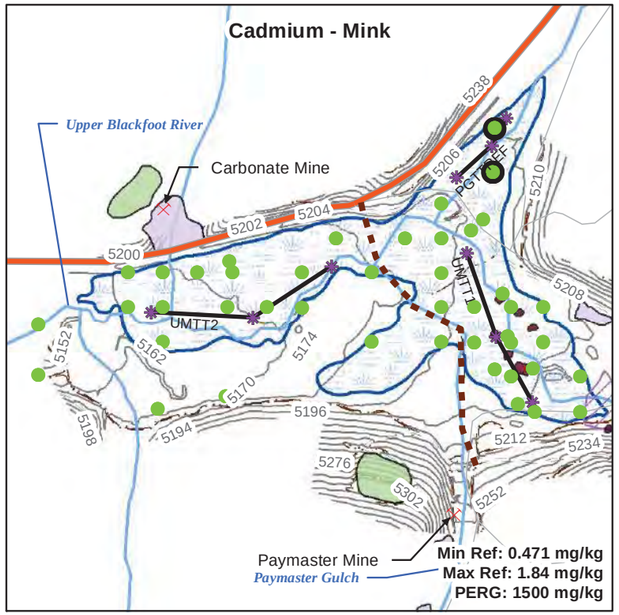


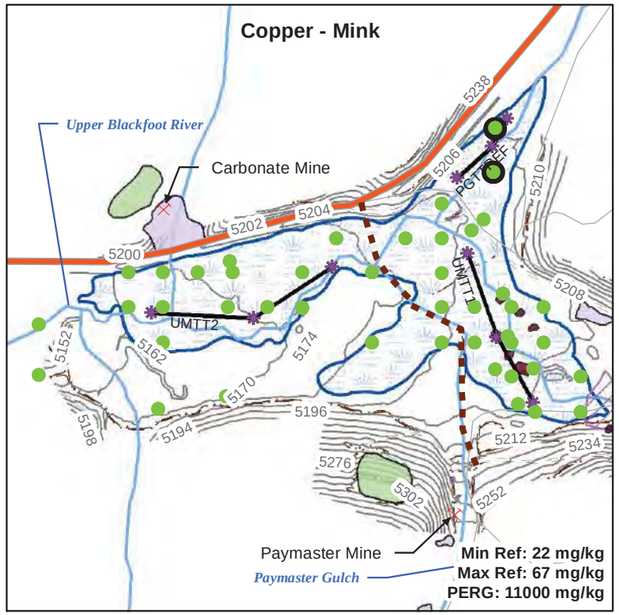
Figure 6-12K2

Comparison of Site Concentrations with Preliminary Ecological Remediation Goals and Reference Site Concentrations for the Muskrat
EU 12 - Lower and Middle Marsh Portion

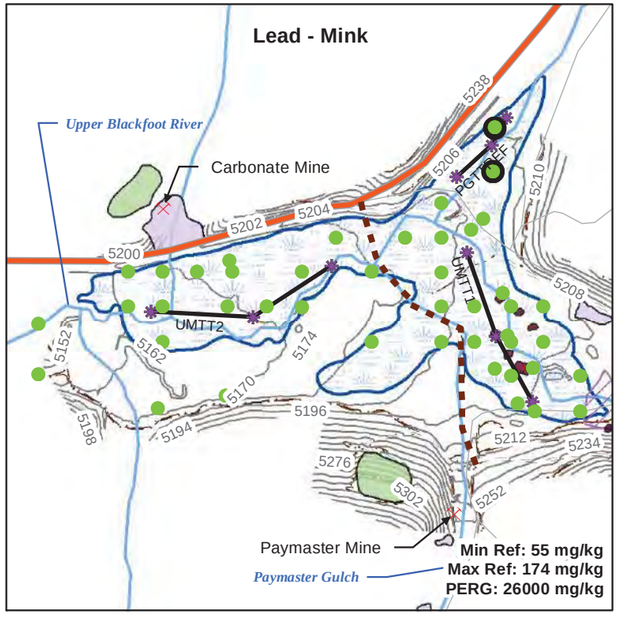
Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex

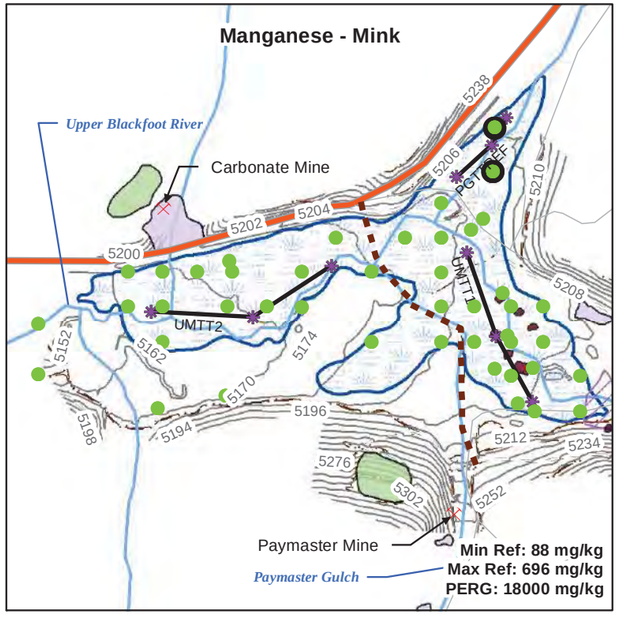


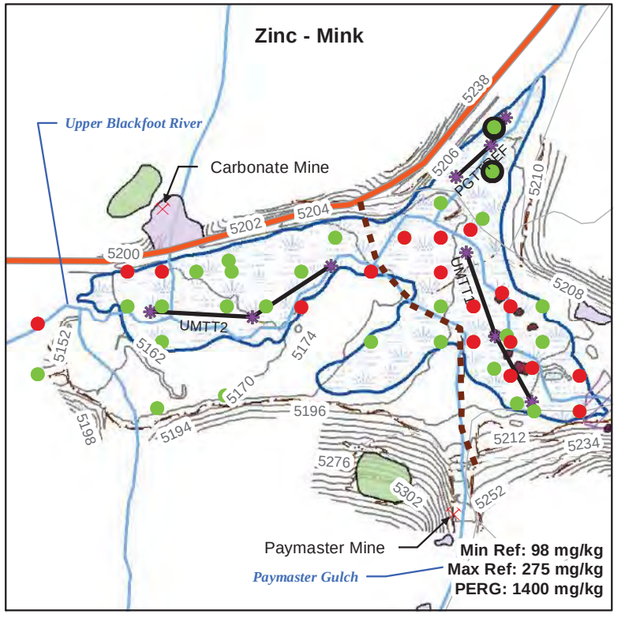




- Result < PERG (NO RISK)
- Result > PERG but < Maximum Reference Concentration (POTENTIAL RISK, BUT NOT SITE-RELATED)
- Result > PERG and Maximum Reference Concentration (SITE-RELATED RISK)
- Reference Location
- Sampling Boundary Between Eastern and Western Portions of Upper Marsh
- Mines
- Upper Marsh Transect Sampling Locations
- Upper Marsh Transects
- Estimated Extent of Streamside Impacts Soil Sampling
- Area of Dispersed Sandy (Fine) Tailings
- Estimated Extent of Mine Areas (Sampled 2007/2008)
- Mine Waste Repository
- Upper Marsh
- Topographic Contours
- Streams







EU	Exposure unit
mg/kg	Milligram per kilogram
Max Ref	Maximum Reference Concentration
Min Ref	Minimum Reference Concentration
PERG	Preliminary Ecological Remediation Goal

Notes:

A PERG cannot be less than the minimum reference concentration. In cases where the calculated PERG was lower than the minimum reference concentration, the PERG was set equal to the minimum reference concentration.

The maximum laboratory concentrations in sediment from 0-1 foot below the sediment surface at each sampling location was compared with PERGs and reference concentrations.

One-half the detection limit was substituted for non-detect results.

PERG calculations are presented in Appendix E.

N

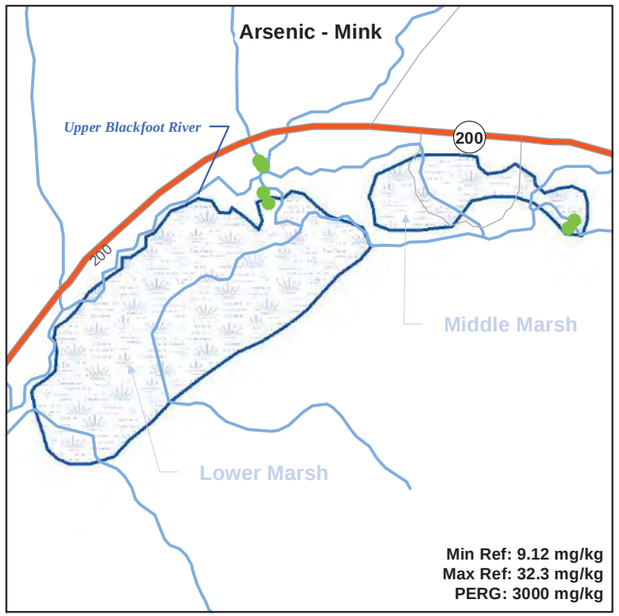
SCALE IN FEET

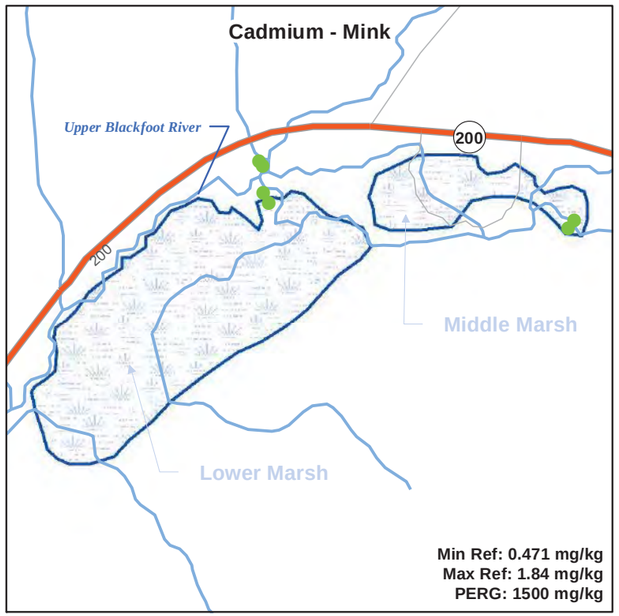
0 1,100

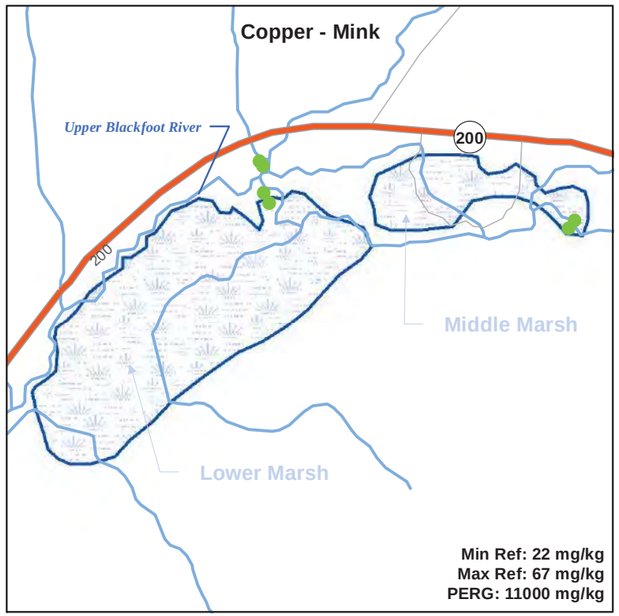
Figure 6-12L1

Comparison of Site Concentrations with Preliminary Ecological Remediation Goals and Reference Site Concentrations for the Mink
EU 12 - Upper Marsh Portion

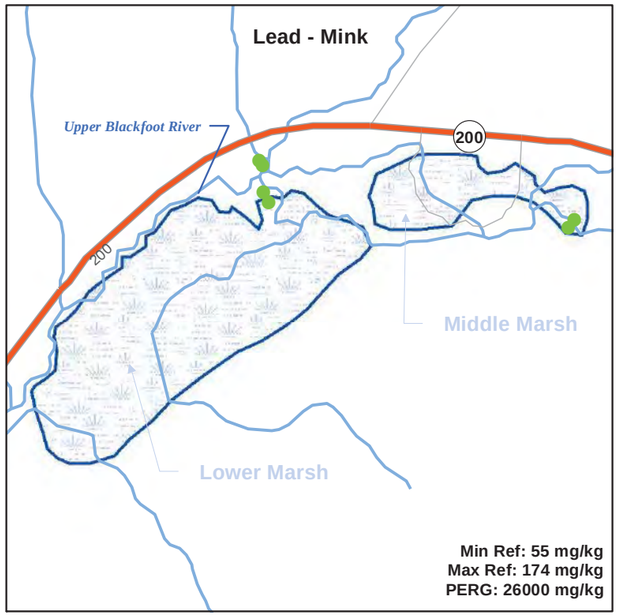
Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex

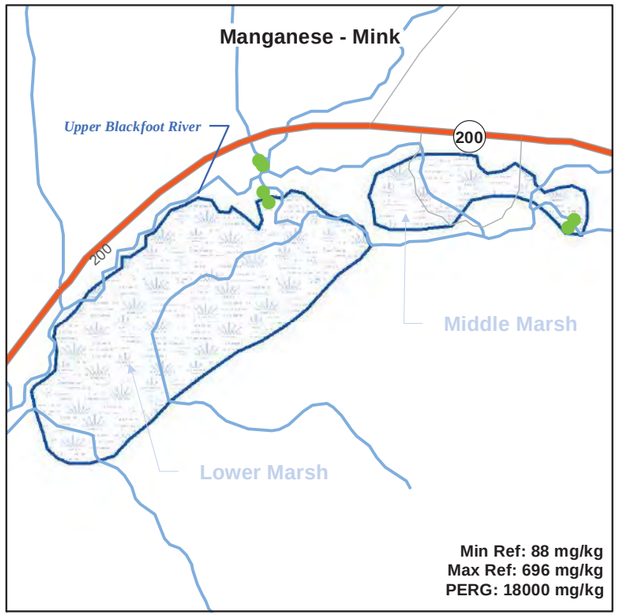


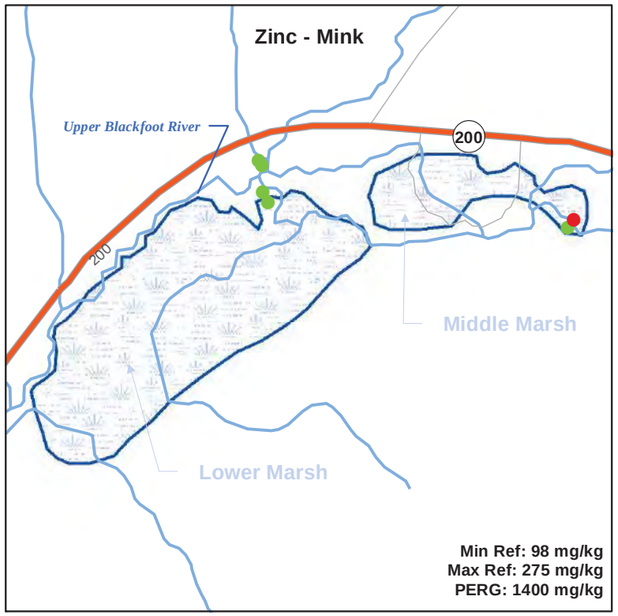




- Result < PERG (NO RISK)
- Result > PERG but < Maximum Reference Concentration (POTENTIAL RISK, BUT NOT SITE-RELATED)
- Result > PERG and Maximum Reference Concentration (SITE-RELATED RISK)
- Lower and Middle Marsh
- Highway
- Major Road
- Local Road
- Streams







EU	Exposure unit
mg/kg	Milligram per kilogram
Max Ref	Maximum Reference Concentration
Min Ref	Minimum Reference Concentration
PERG	Preliminary Ecological Remediation Goal

Notes:

A PERG cannot be less than the minimum reference concentration. In cases where the calculated PERG was lower than the minimum reference concentration, the PERG was set equal to the minimum reference concentration.

The maximum laboratory concentrations in sediment from 0-1 foot below the sediment surface at each sampling location was compared with PERGs and reference concentrations.

One-half the detection limit was substituted for non-detect results.

PERG calculations are presented in Appendix E.

N

SCALE IN FEET

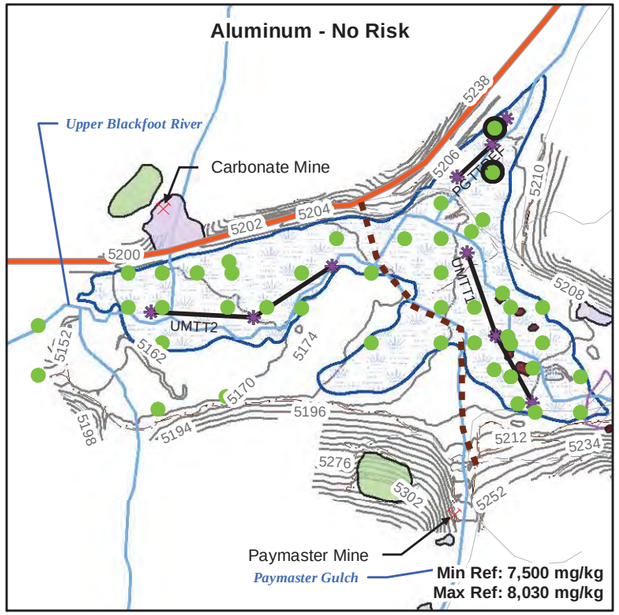
0 1,100

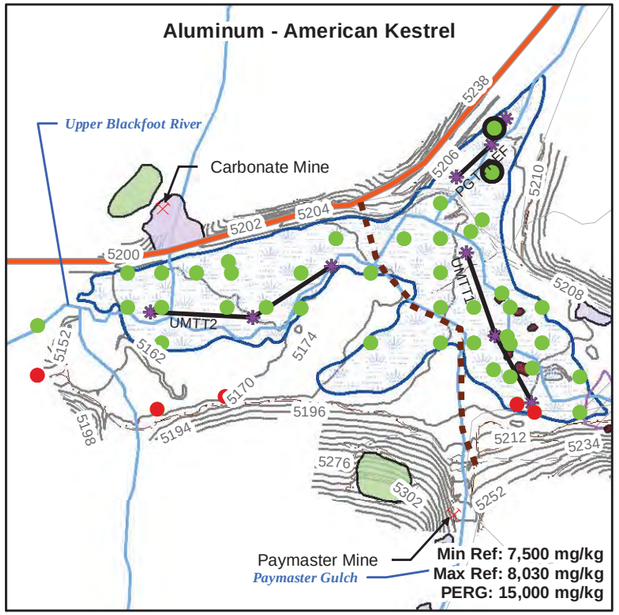
Figure 6-12L2

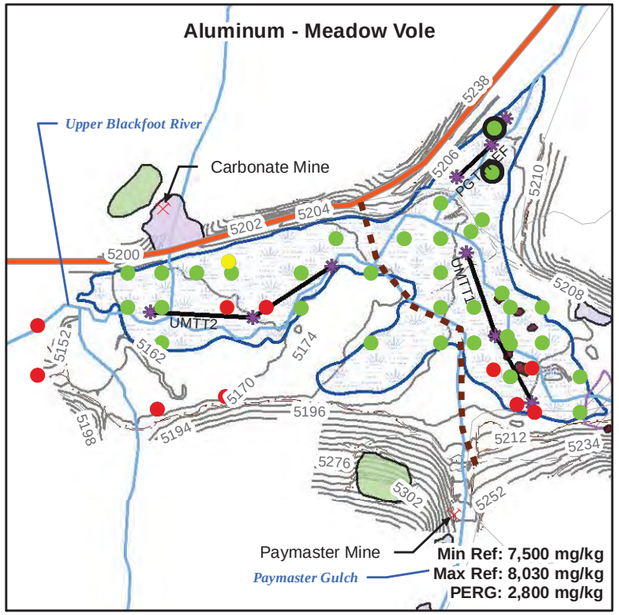
Comparison of Site Concentrations with Preliminary Ecological Remediation Goals and Reference Site Concentrations for the Mink

EU 12 - Lower and Middle Marsh Portion

Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex

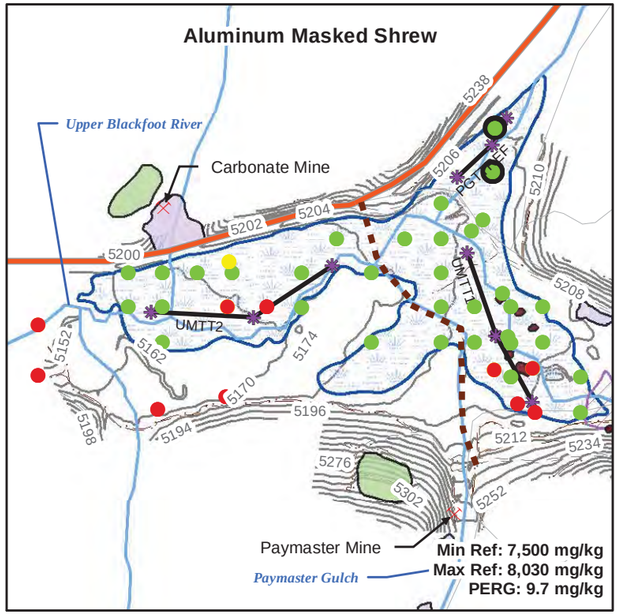


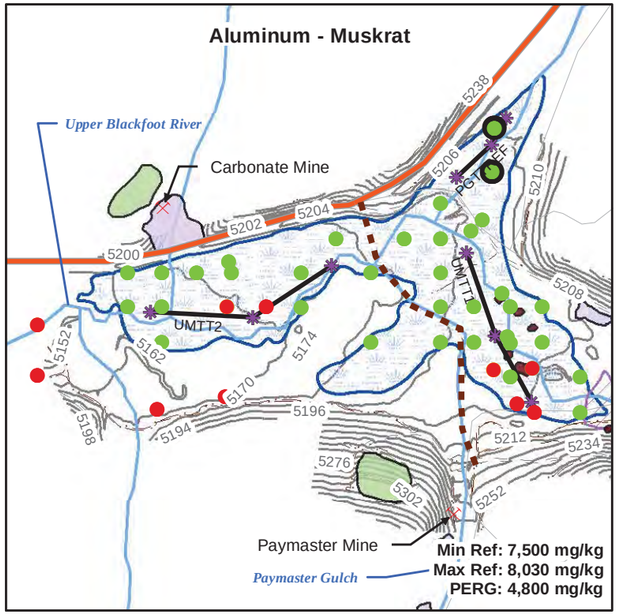


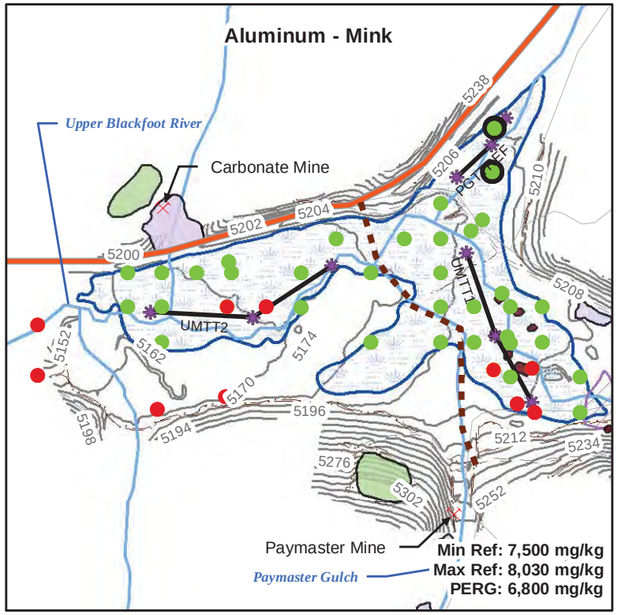


- Result < PERG (NO RISK)
- Result > PERG but < Maximum Reference Concentration (POTENTIAL RISK, BUT NOT SITE-RELATED)
- Result > PERG and Maximum Reference Concentration (SITE-RELATED RISK)
- Reference Location
- Sampling Boundary Between Eastern and Western Portions of Upper Marsh
- Mines
- Upper Marsh Transect Sampling Locations
- Upper Marsh Transects
- Estimated Extent of Streamside Impacts Soil Sampling
- Area of Dispersed Sandy (Fine) Tailings
- Estimated Extent of Mine Areas (Sampled 2007/2008)
- Mine Waste Repository
- Upper Marsh
- Topographic Contours
- Streams

EU	Exposure unit
mg/kg	Milligram per kilogram
Max Ref	Maximum Reference Concentration
Min Ref	Minimum Reference Concentration
PERG	Preliminary Ecological Remediation Goal







Notes:

A PERG cannot be less than the minimum reference concentration. In cases where the calculated PERG was lower than the minimum reference concentration, the PERG was set equal to the minimum reference concentration.

The maximum laboratory concentrations in sediment from 0-1 foot below the sediment surface at each sampling location was compared with PERGs and reference concentrations.

One-half the detection limit was substituted for non-detect results.

PERG calculations are presented in Appendix E.

Aluminum PERGs for Ecological Receptors with No Risk (mg/kg)	
Mourning Dove	370,000
Red-Tailed Hawk	1,600,000
White-Tailed Deer	40,000
Red Fox	93,000
Canada Goose	11,000,000
Great Blue Heron	760,000
Mallard	120,000

N

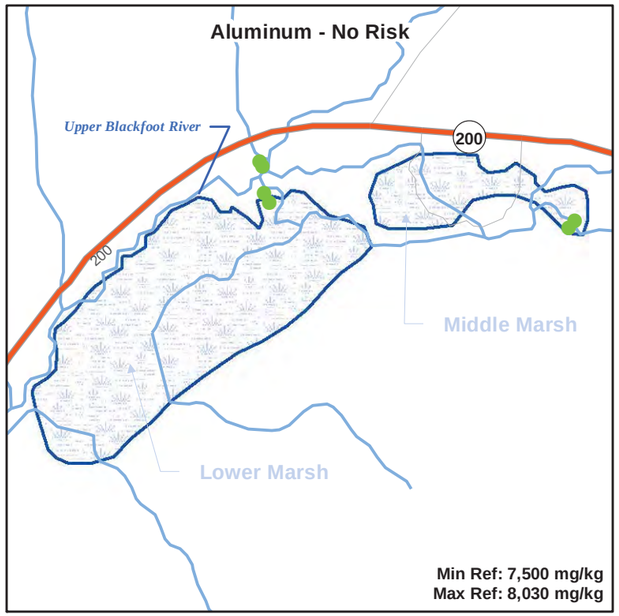
SCALE IN FEET

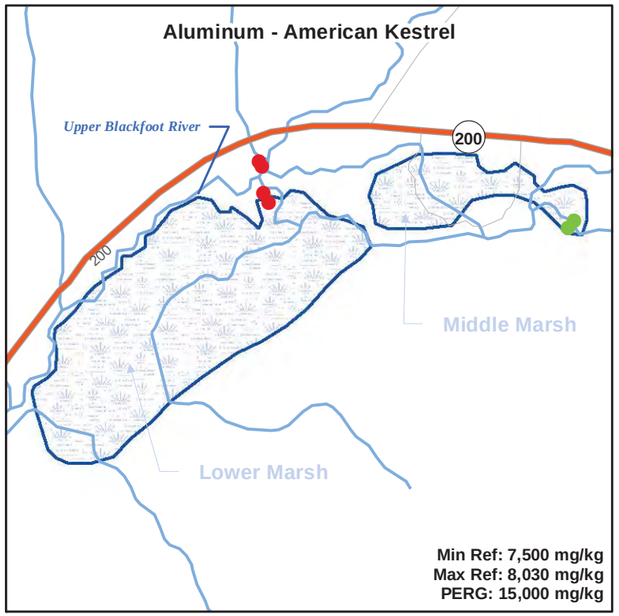
0 1,100

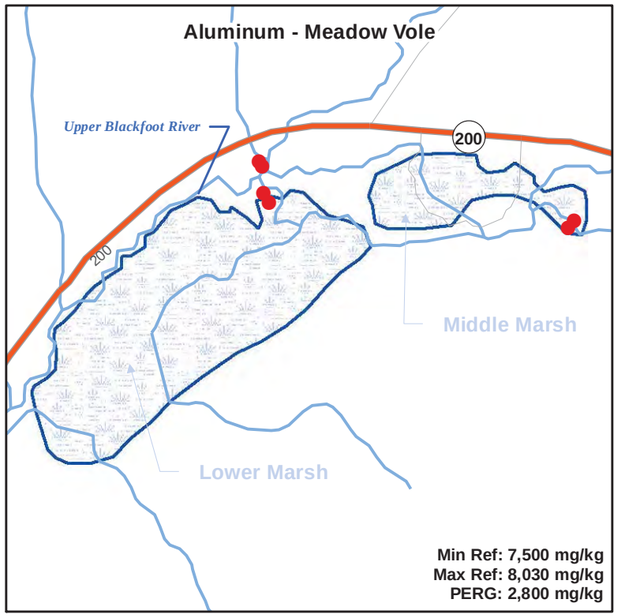
Figure 6-12M1

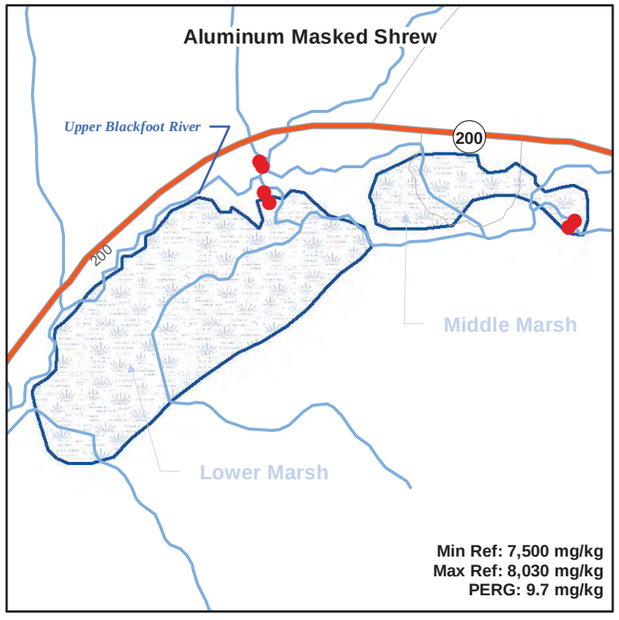
Comparison of Aluminum Site Concentrations with Preliminary Ecological Remediation Goals and Reference Site Concentrations
EU 12 - Upper Marsh Portion

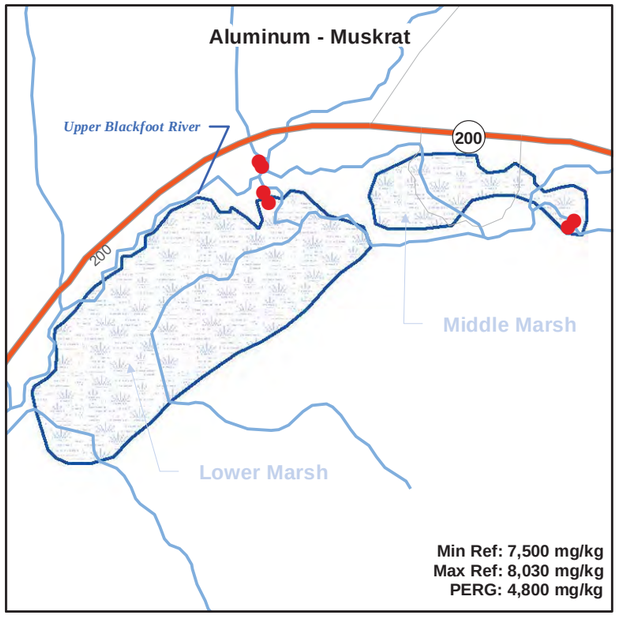
Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex

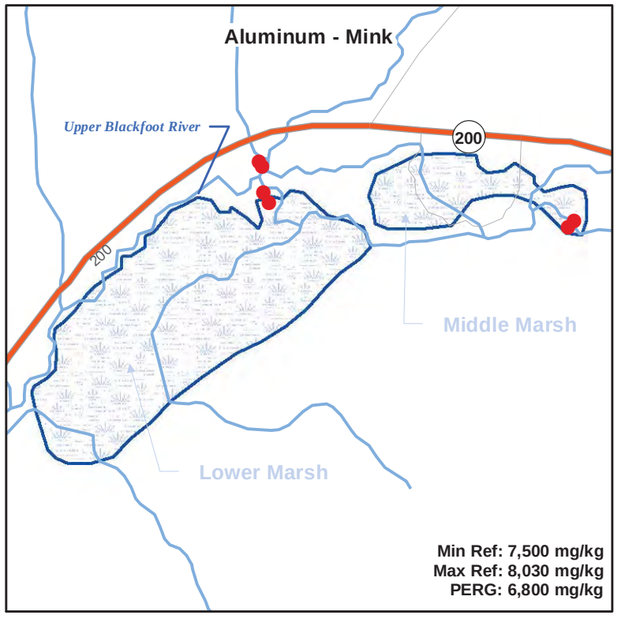












- Result < PERG (NO RISK)
- Result > PERG but < Maximum Reference Concentration (POTENTIAL RISK, BUT NOT SITE-RELATED)
- Result > PERG and Maximum Reference Concentration (SITE-RELATED RISK)
- Lower and Middle Marsh
- Highway
- Major Road
- Local Road
- Streams

EU	Exposure unit
mg/kg	Milligram per kilogram
Max Ref	Maximum Reference Concentration
Min Ref	Minimum Reference Concentration
PERG	Preliminary Ecological Remediation Goal

Notes:

A PERG cannot be less than the minimum reference concentration. In cases where the calculated PERG was lower than the minimum reference concentration, the PERG was set equal to the minimum reference concentration.

The maximum laboratory concentrations in sediment from 0-1 foot below the sediment surface at each sampling location was compared with PERGs and reference concentrations.

One-half the detection limit was substituted for non-detect results.

PERG calculations are presented in Appendix E.

Aluminum PERGs for Ecological Receptors with No Risk (mg/kg)	
Mourning Dove	370,000
Red-Tailed Hawk	1,600,000
White-Tailed Deer	40,000
Red Fox	93,000
Canada Goose	11,000,000
Great Blue Heron	760,000
Mallard	120,000

N

SCALE IN FEET

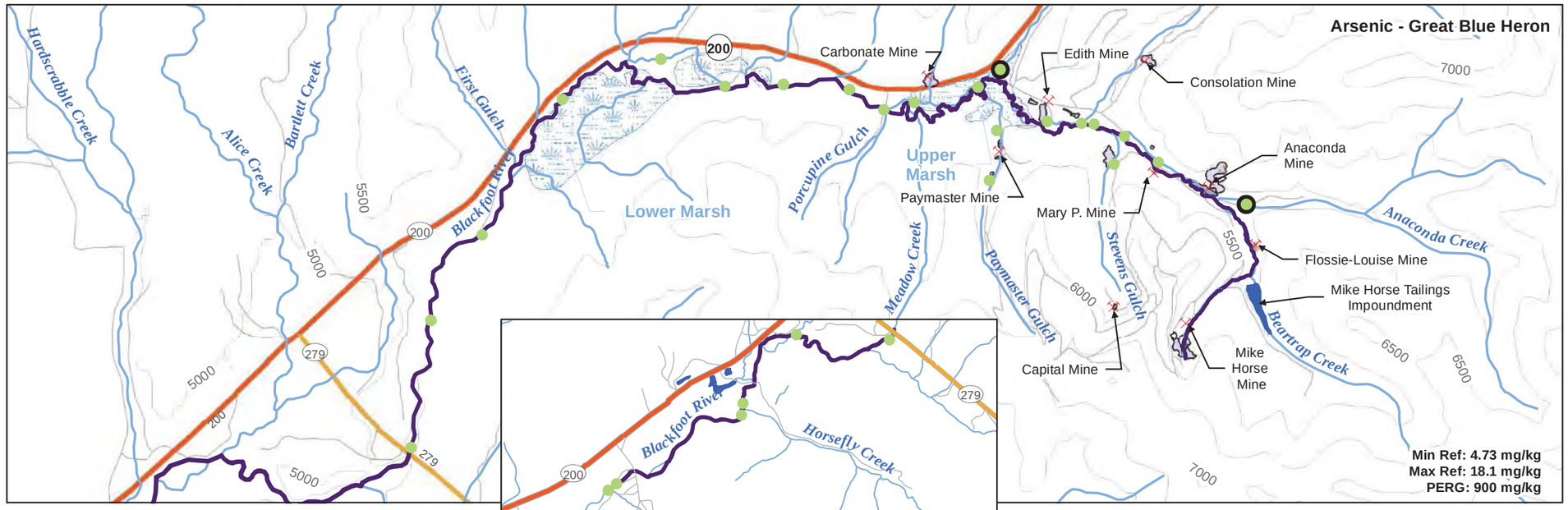
0 2,000

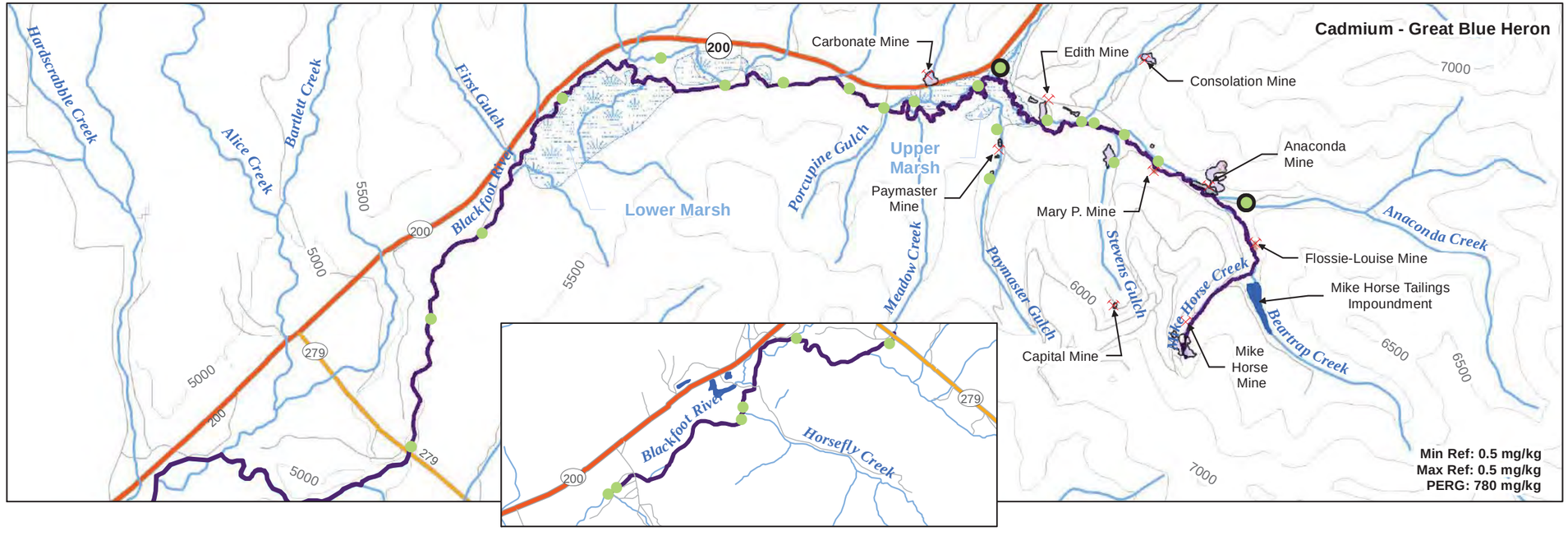
Figure 6-12M2

Comparison of Aluminum Site Concentrations with Preliminary Ecological Remediation Goals and Reference Site Concentrations

EU 12 - Lower and Middle Marsh Portion

Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex





- Result < PERG (NO RISK)
- Result > PERG but < Maximum Reference Concentration (POTENTIAL RISK, BUT NOT SITE-RELATED)
- Result > PERG and Maximum Reference Concentration (SITE-RELATED RISK)

- Mines
- Reference Location
- Estimated Extent of Mine Areas (Sampled 2007/2008)
- Former Wetland Treatment Cells
- Mine Waste Areas (Not Sampled)
- Unreclaimed Mine Waste Areas (Sampled 2007/2008)
- Streams
- Surface Water and Sediment
- Marshes
- Mike Horse Tailings Impoundment

DEQ	Department of Environmental Quality
EU	Exposure unit
mg/kg	Milligram per kilogram
Max Ref	Maximum Reference Concentration
Min Ref	Minimum Reference Concentration
PERG	Preliminary Ecological Remediation Goal

Notes:

A PERG cannot be less than the minimum reference concentration. In cases where the calculated PERG was lower than the minimum reference concentration, the PERG was set equal to the minimum reference concentration.

The maximum laboratory concentration in sediment from 0 – 1 foot below the sediment surface at each sampling location was compared with PERGs and reference concentrations.

One-half the detection limit was substituted for non-detect results.

PERG calculations are presented in Appendix E.

Topographic Contours were created from 30 meter Digital Elevation Models (DEM).

N

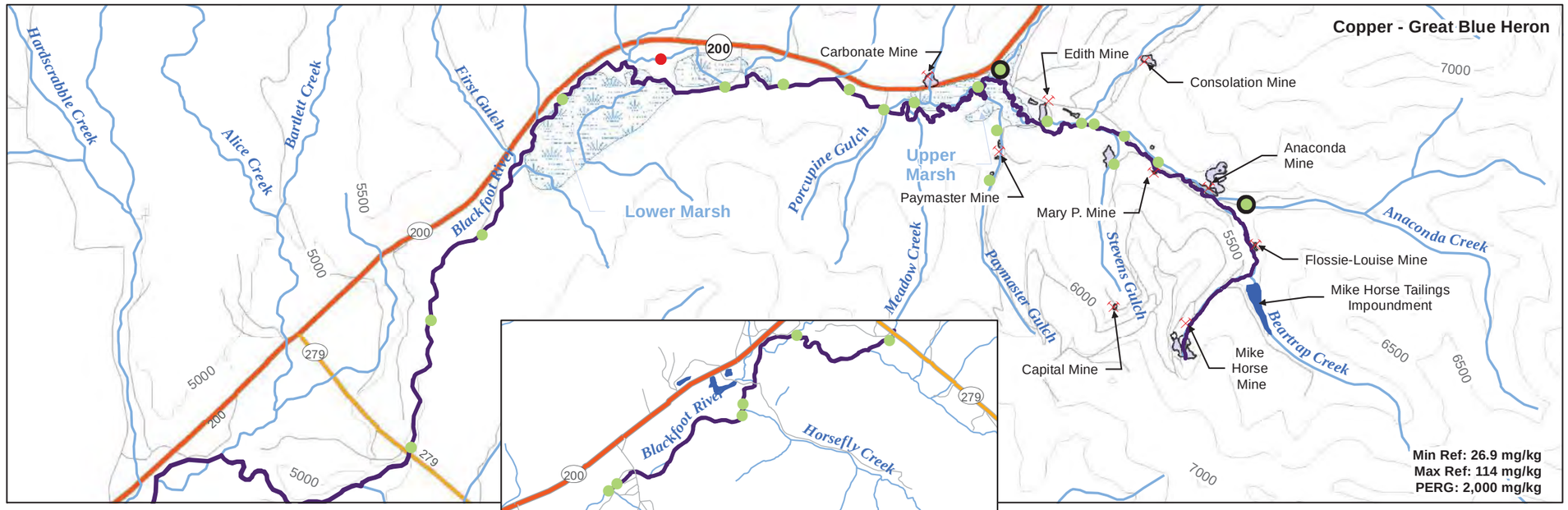
SCALE IN FEET

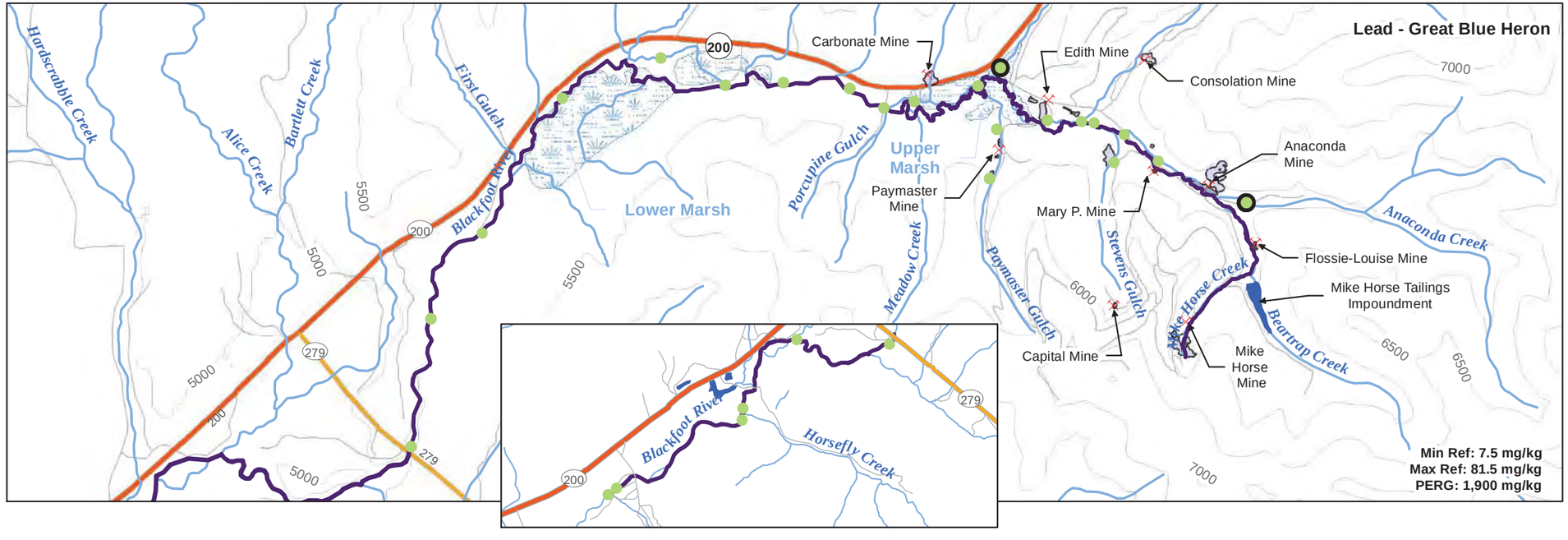
0 3,700

Figure 6-13A1

Comparison of Site Concentrations with Preliminary Ecological Remediation Goals and Reference Site Concentrations for the Great Blue Heron
EU 13 - Stream

Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex





- Result < PERG (NO RISK)
- Result > PERG but < Maximum Reference Concentration (POTENTIAL RISK, BUT NOT SITE-RELATED)
- Result > PERG and Maximum Reference Concentration (SITE-RELATED RISK)

- Mines
- Reference Location
- Estimated Extent of Mine Areas (Sampled 2007/2008)
- Former Wetland Treatment Cells
- Mine Waste Areas (Not Sampled)
- Unreclaimed Mine Waste Areas (Sampled 2007/2008)
- Streams
- Surface Water and Sediment
- Marshes
- Mike Horse Tailings Impoundment

DEQ	Department of Environmental Quality
EU	Exposure unit
mg/kg	Milligram per kilogram
Max Ref	Maximum Reference Concentration
Min Ref	Minimum Reference Concentration
PERG	Preliminary Ecological Remediation Goal

Notes:

A PERG cannot be less than the minimum reference concentration. In cases where the calculated PERG was lower than the minimum reference concentration, the PERG was set equal to the minimum reference concentration.

The maximum laboratory concentration in sediment from 0 – 1 foot below the sediment surface at each sampling location was compared with PERGs and reference concentrations.

One-half the detection limit was substituted for non-detect results.

PERG calculations are presented in Appendix E.

Topographic Contours were created from 30 meter Digital Elevation Models (DEM).

N

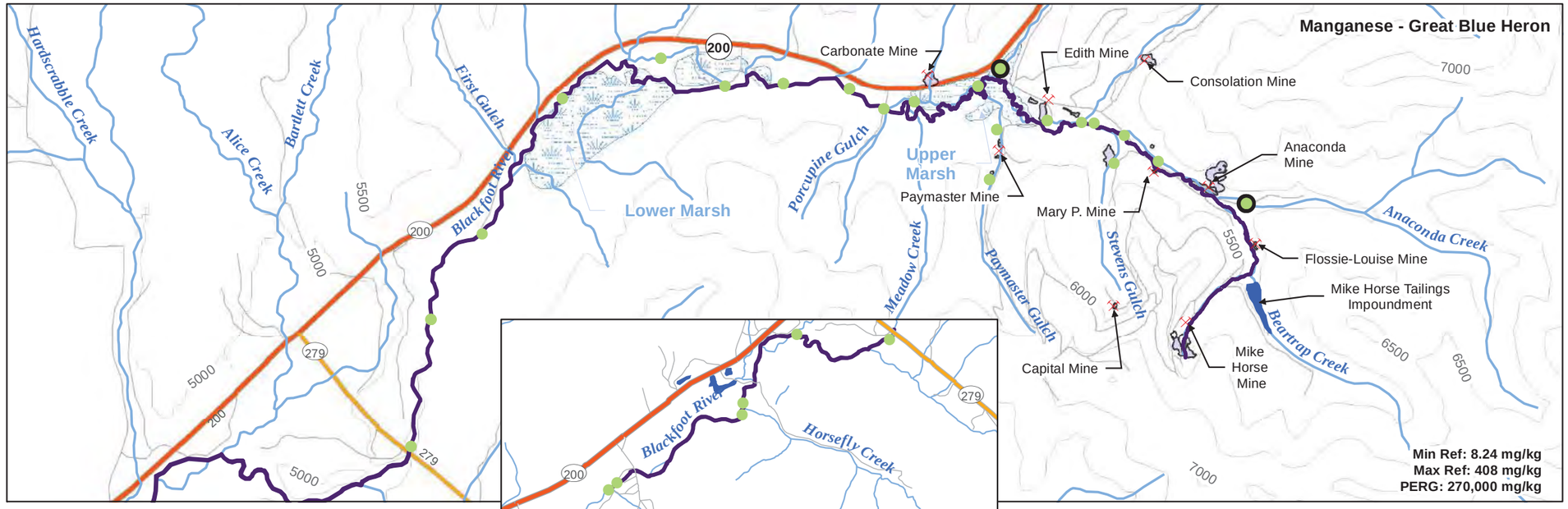
SCALE IN FEET

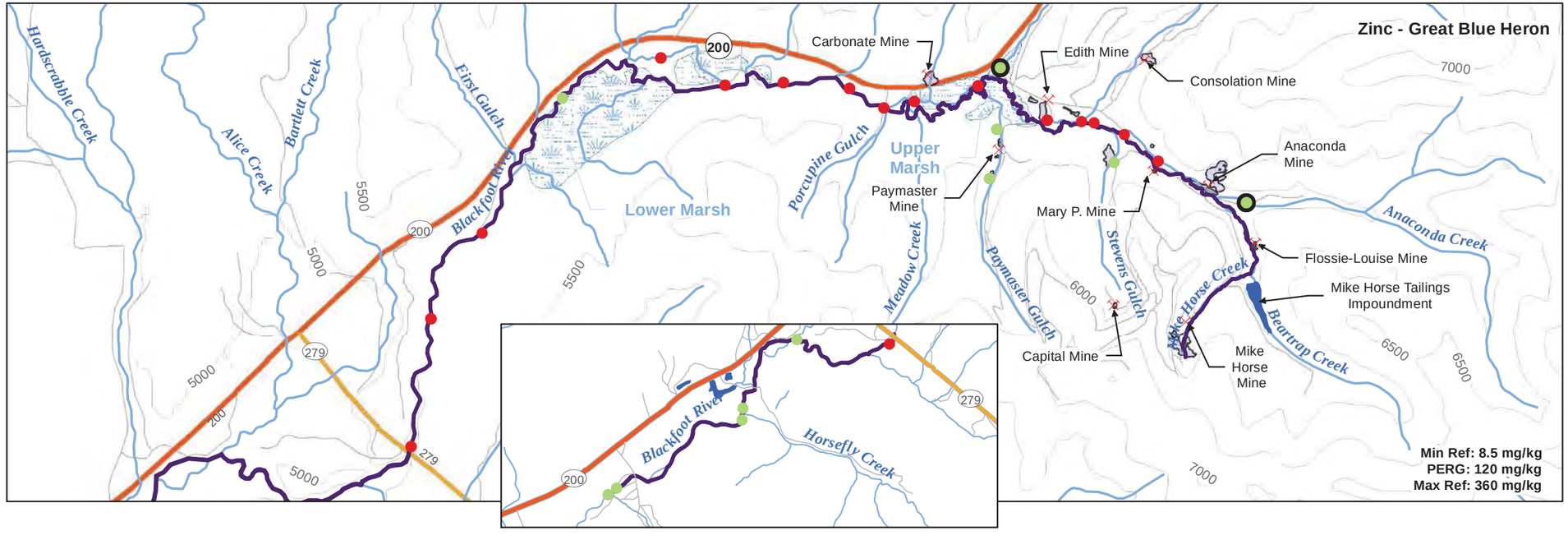
0 3,700

Figure 6-13A2

Comparison of Site Concentrations with Preliminary Ecological Remediation Goals and Reference Site Concentrations for the Great Blue Heron EU 13 - Stream

Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex





- Result < PERG (NO RISK)
- Result > PERG but < Maximum Reference Concentration (POTENTIAL RISK, BUT NOT SITE-RELATED)
- Result > PERG and Maximum Reference Concentration (SITE-RELATED RISK)

- Mines
- Reference Location
- Estimated Extent of Mine Areas (Sampled 2007/2008)
- Former Wetland Treatment Cells
- Mine Waste Areas (Not Sampled)
- Unreclaimed Mine Waste Areas (Sampled 2007/2008)
- Streams
- Surface Water and Sediment
- Marshes
- Mike Horse Tailings Impoundment

DEQ	Department of Environmental Quality
EU	Exposure unit
mg/kg	Milligram per kilogram
Max Ref	Maximum Reference Concentration
Min Ref	Minimum Reference Concentration
PERG	Preliminary Ecological Remediation Goal

Notes:

A PERG cannot be less than the minimum reference concentration. In cases where the calculated PERG was lower than the minimum reference concentration, the PERG was set equal to the minimum reference concentration.

The maximum laboratory concentration in sediment from 0 – 1 foot below the sediment surface at each sampling location was compared with PERGs and reference concentrations.

One-half the detection limit was substituted for non-detect results.

PERG calculations are presented in Appendix E.

Topographic Contours were created from 30 meter Digital Elevation Models (DEM).

N

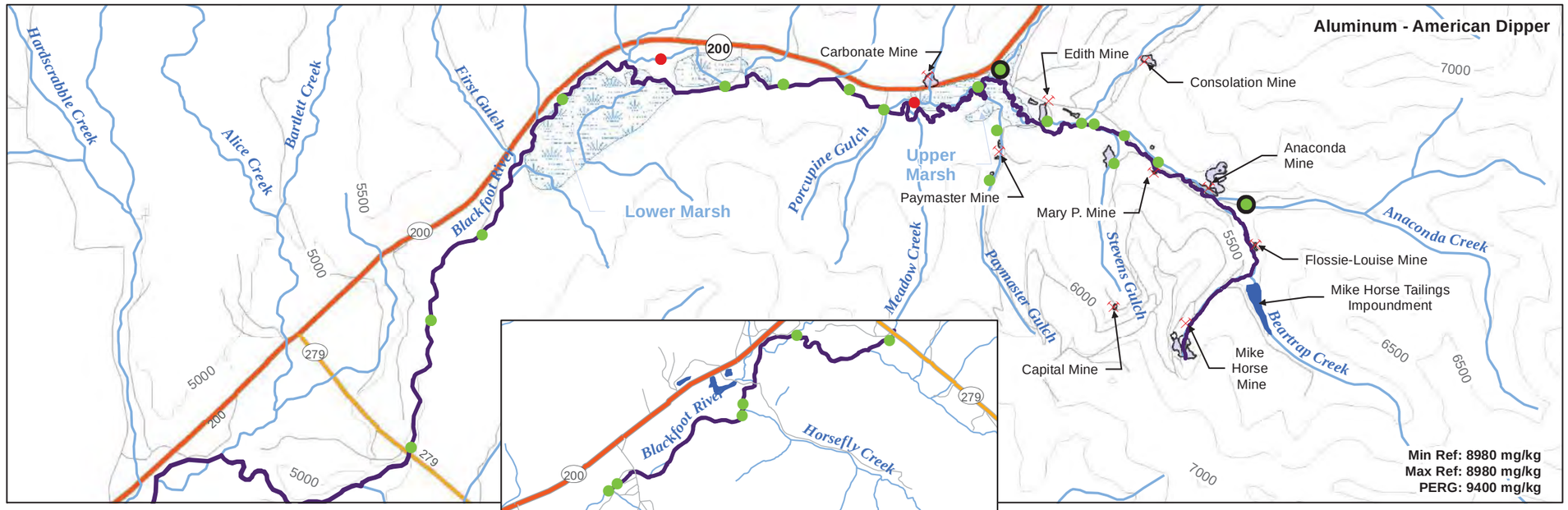
SCALE IN FEET

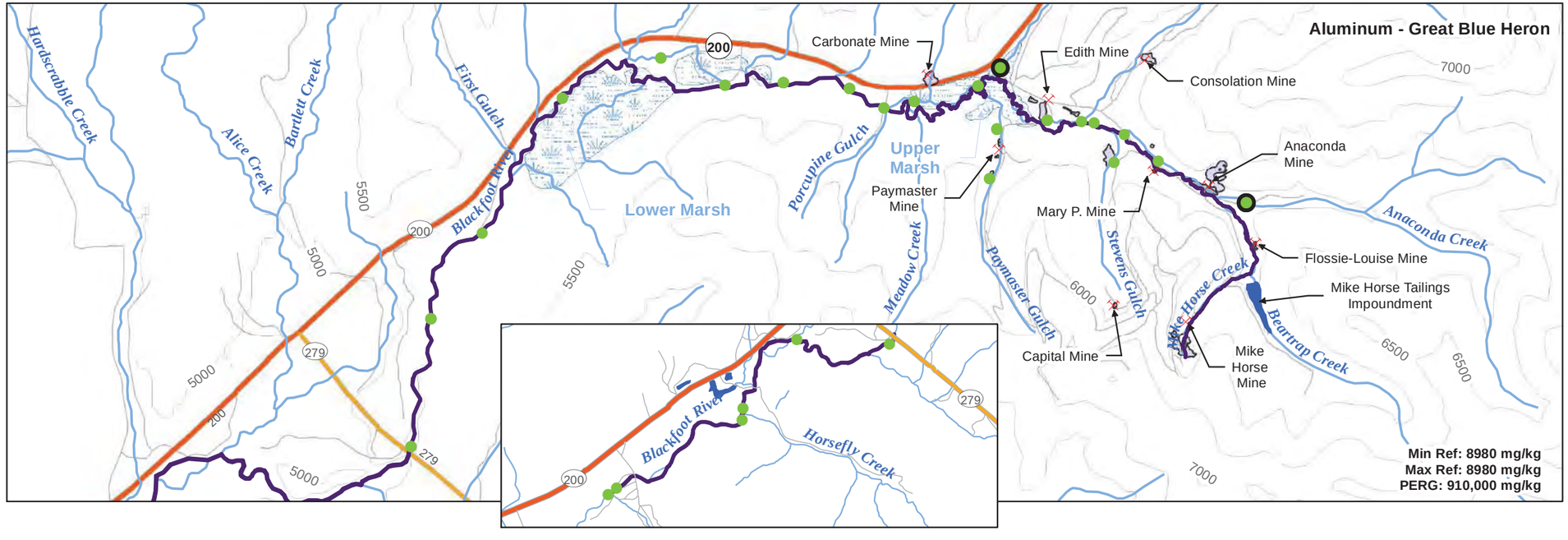
0 3,700

Figure 6-13A3

Comparison of Site Concentrations with Preliminary Ecological Remediation Goals and Reference Site Concentrations for the Great Blue Heron EU 13 - Stream

Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex





- Result < PERG (NO RISK)
- Result > PERG but < Maximum Reference Concentration (POTENTIAL RISK, BUT NOT SITE-RELATED)
- Result > PERG and Maximum Reference Concentration (SITE-RELATED RISK)

- Mines
- Reference Location
- Surface Water and Sediment
- Estimated Extent of Mine Areas (Sampled 2007/2008)
- Former Wetland Treatment Cells
- Mine Waste Areas (Not Sampled)
- Unreclaimed Mine Waste Areas (Sampled 2007/2008)
- Streams
- Marshes
- Mike Horse Tailings Impoundment

DEQ	Department of Environmental Quality
EU	Exposure unit
mg/kg	Milligram per kilogram
Max Ref	Maximum Reference Concentration
Min Ref	Minimum Reference Concentration
PERG	Preliminary Ecological Remediation Goal

Notes:

A PERG cannot be less than the minimum reference concentration. In cases where the calculated PERG was lower than the minimum reference concentration, the PERG was set equal to the minimum reference concentration.

The maximum laboratory concentration in sediment from 0 – 1 foot below the sediment surface at each sampling location was compared with PERGs and reference concentrations.

One-half the detection limit was substituted for non-detect results.

PERG calculations are presented in Appendix E.

Topographic Contours were created from 30 meter Digital Elevation Models (DEM).

N

SCALE IN FEET

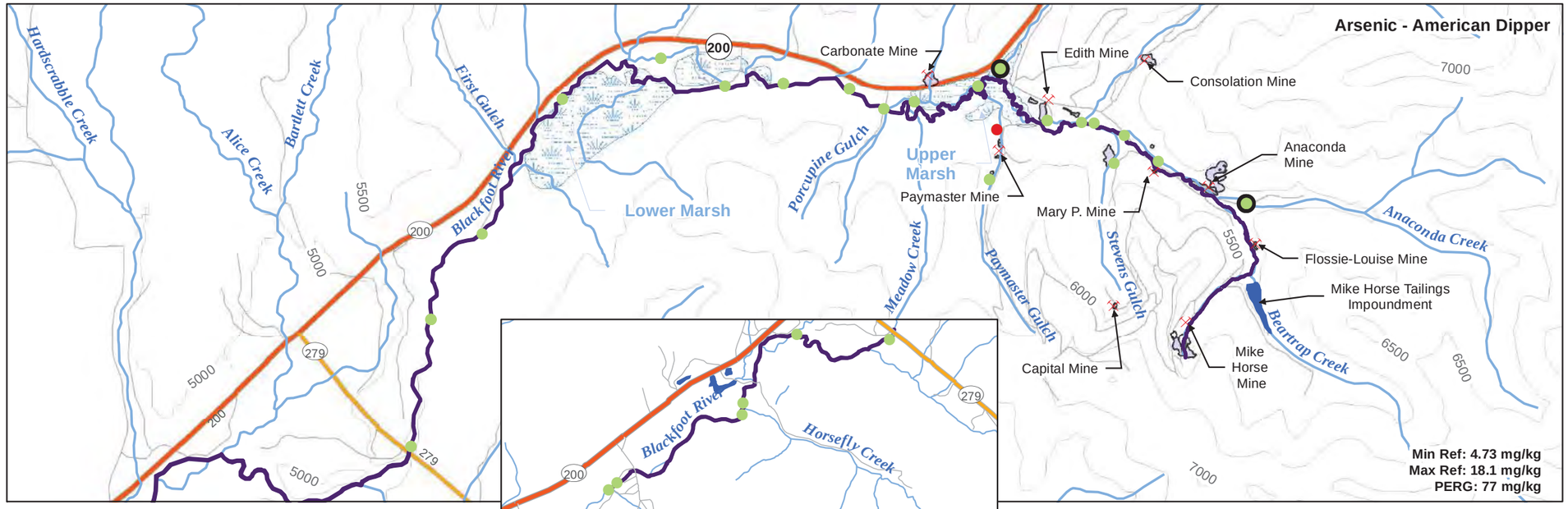
0 3,700

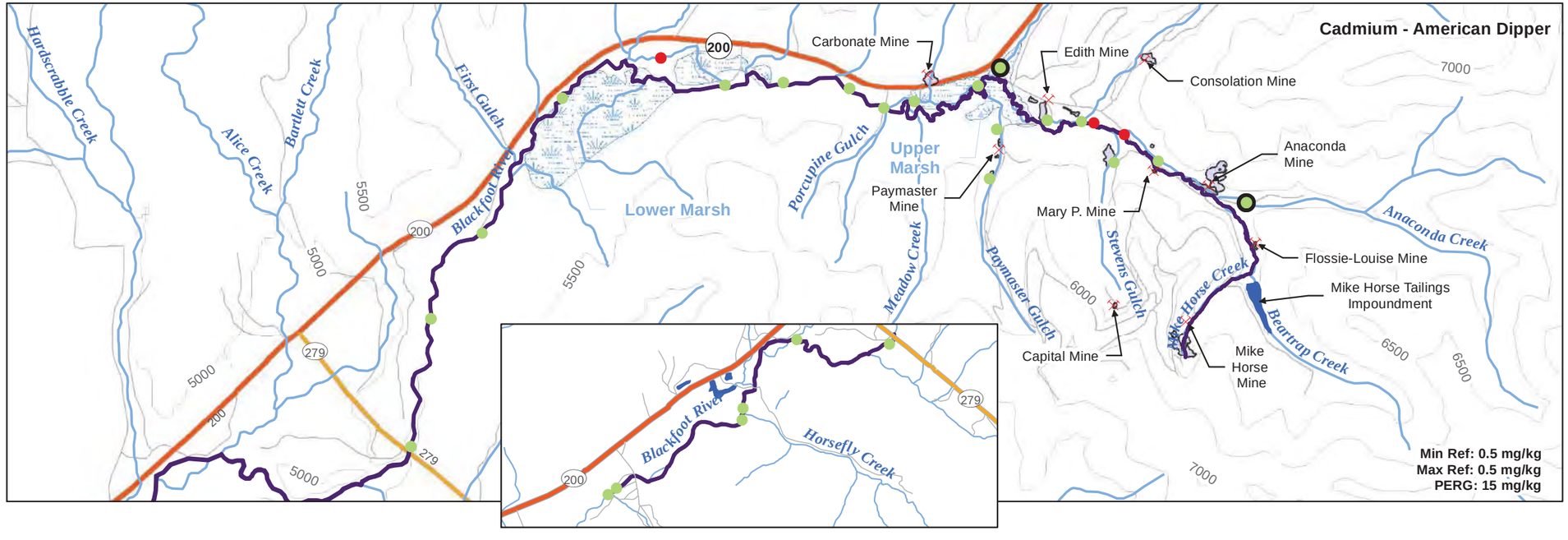
Figure 6-13B

Comparison of Aluminum Site Concentrations with Preliminary Ecological Remediation Goals and Reference Site Concentrations for the Great Blue Heron and the American Dipper

EU 13 - Stream

Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex





- Result < PERG (NO RISK)
- Result > PERG but < Maximum Reference Concentration (POTENTIAL RISK, BUT NOT SITE-RELATED)
- Result > PERG and Maximum Reference Concentration (SITE-RELATED RISK)

- Mines
- Reference Location
- Estimated Extent of Mine Areas (Sampled 2007/2008)
- Former Wetland Treatment Cells
- Mine Waste Areas (Not Sampled)
- Unreclaimed Mine Waste Areas (Sampled 2007/2008)
- Streams
- Surface Water and Sediment
- Marshes
- Mike Horse Tailings Impoundment

DEQ	Department of Environmental Quality
EU	Exposure unit
mg/kg	Milligram per kilogram
Max Ref	Maximum Reference Concentration
Min Ref	Minimum Reference Concentration
PERG	Preliminary Ecological Remediation Goal

Notes:

A PERG cannot be less than the minimum reference concentration. In cases where the calculated PERG was lower than the minimum reference concentration, the PERG was set equal to the minimum reference concentration.

The maximum laboratory concentration in sediment from 0 – 1 foot below the sediment surface at each sampling location was compared with PERGs and reference concentrations.

One-half the detection limit was substituted for non-detect results.

PERG calculations are presented in Appendix E.

Topographic Contours were created from 30 meter Digital Elevation Models (DEM).

N

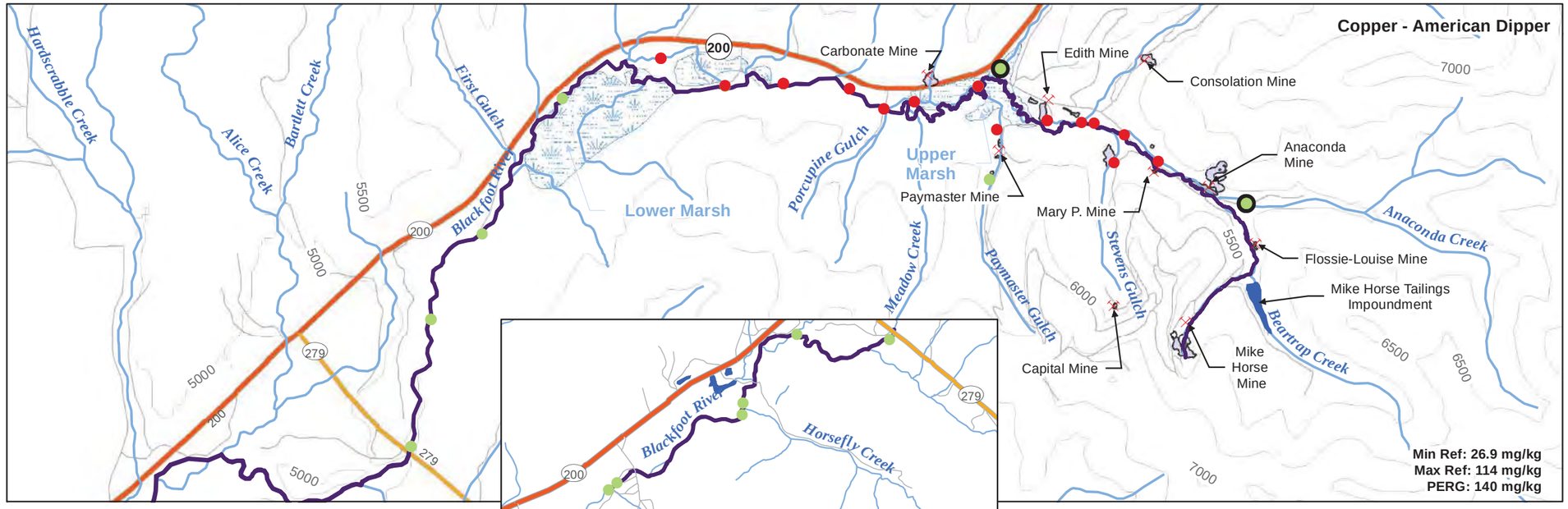
SCALE IN FEET

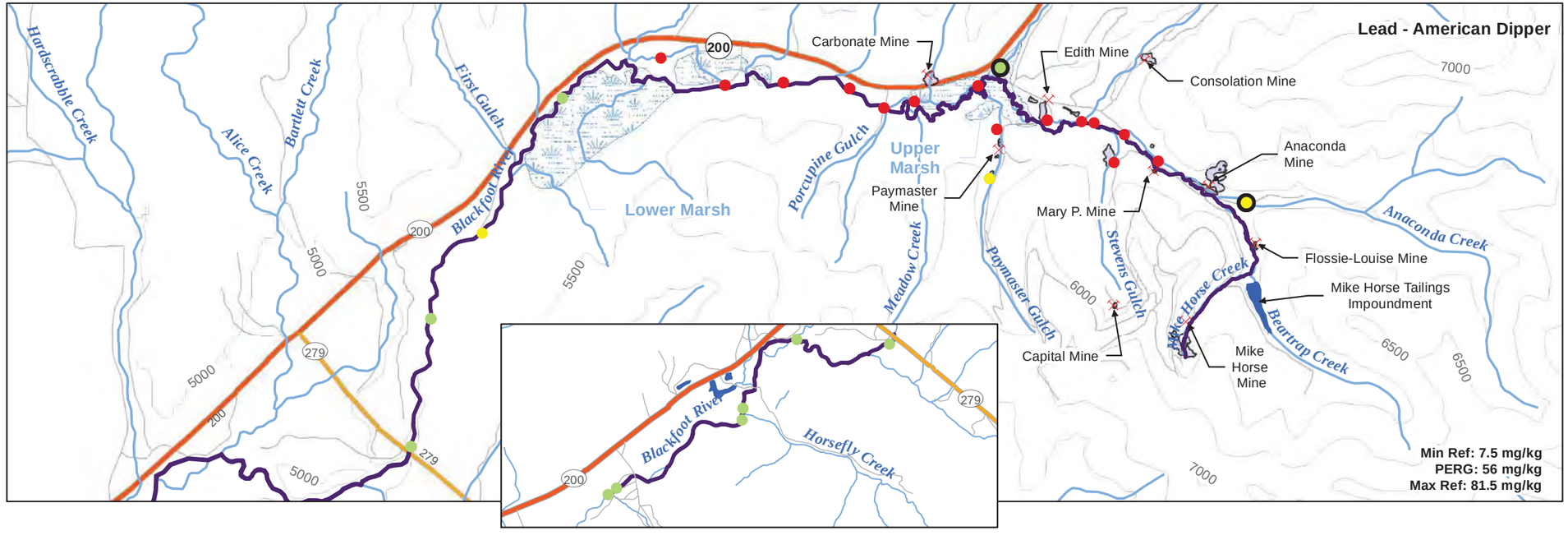
0 3,700

Figure 6-13C1

Comparison of Site Concentrations with Preliminary Ecological Remediation Goals and Reference Site Concentrations for the American Dipper
EU 13 - Stream

Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex





- Result < PERG (NO RISK)
- Result > PERG but < Maximum Reference Concentration (POTENTIAL RISK, BUT NOT SITE-RELATED)
- Result > PERG and Maximum Reference Concentration (SITE-RELATED RISK)

- Mines
- Reference Location
- Estimated Extent of Mine Areas (Sampled 2007/2008)
- Former Wetland Treatment Cells
- Mine Waste Areas (Not Sampled)
- Unreclaimed Mine Waste Areas (Sampled 2007/2008)
- Streams
- Surface Water and Sediment
- Marshes
- Mike Horse Tailings Impoundment

DEQ	Department of Environmental Quality
EU	Exposure unit
mg/kg	Milligram per kilogram
Max Ref	Maximum Reference Concentration
Min Ref	Minimum Reference Concentration
PERG	Preliminary Ecological Remediation Goal

Notes:

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One-half the detection limit was substituted for non-detect results.

PERG calculations are presented in Appendix E.

Topographic Contours were created from 30 meter Digital Elevation Models (DEM).

N

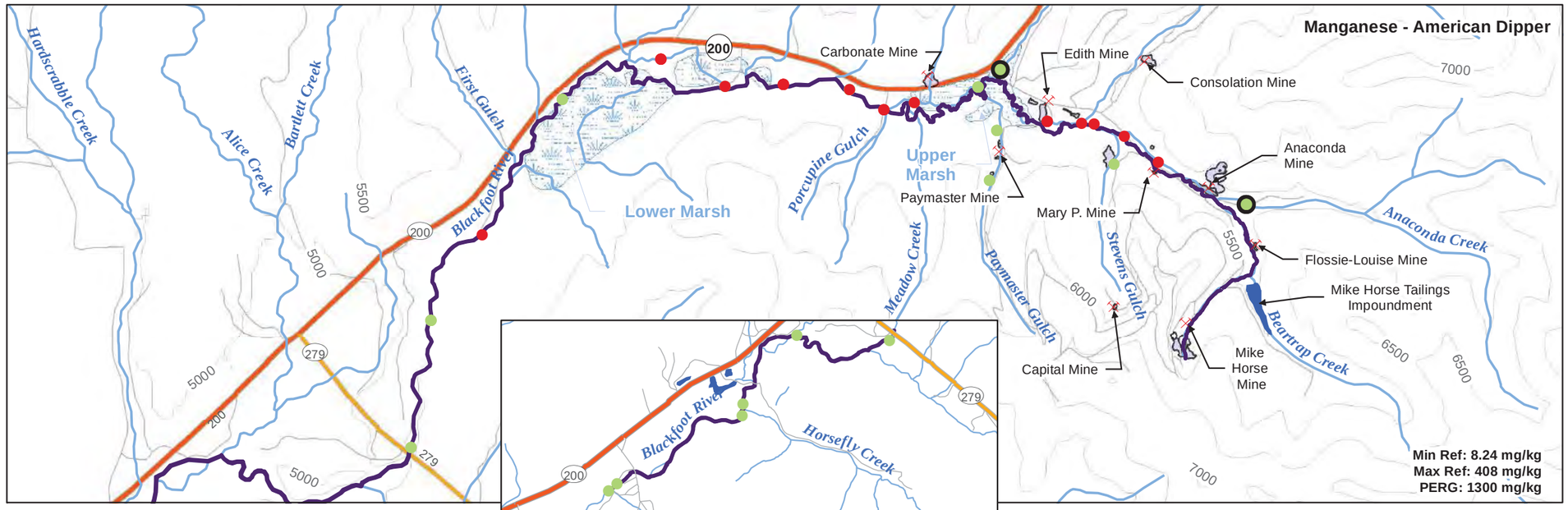
SCALE IN FEET

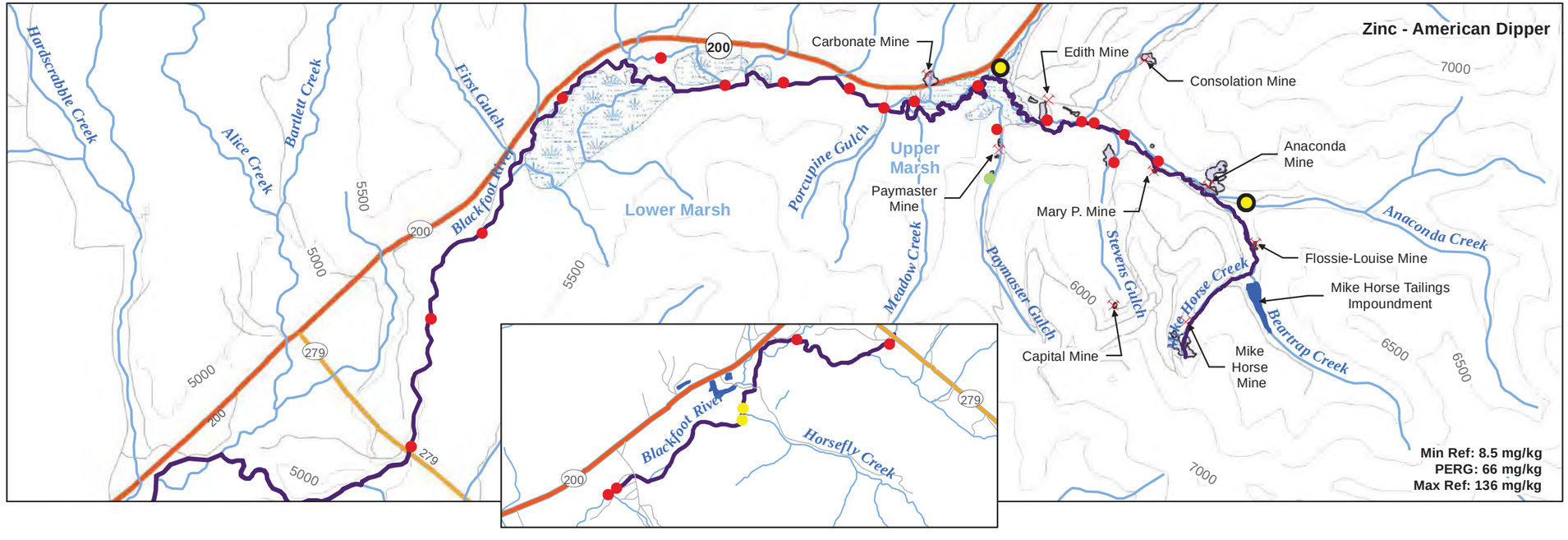
0 3,700

Figure 6-13C2

Comparison of Site Concentrations with Preliminary Ecological Remediation Goals and Reference Site Concentrations for the American Dipper EU 13 - Stream

Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex





- Result < PERG (NO RISK)
- Result > PERG but < Maximum Reference Concentration (POTENTIAL RISK, BUT NOT SITE-RELATED)
- Result > PERG and Maximum Reference Concentration (SITE-RELATED RISK)

- Mines
- Reference Location
- Estimated Extent of Mine Areas (Sampled 2007/2008)
- Former Wetland Treatment Cells
- Mine Waste Areas (Not Sampled)
- Unreclaimed Mine Waste Areas (Sampled 2007/2008)
- Streams
- Surface Water and Sediment
- Marshes
- Mike Horse Tailings Impoundment

DEQ	Department of Environmental Quality
EU	Exposure unit
mg/kg	Milligram per kilogram
Max Ref	Maximum Reference Concentration
Min Ref	Minimum Reference Concentration
PERG	Preliminary Ecological Remediation Goal

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One-half the detection limit was substituted for non-detect results.

PERG calculations are presented in Appendix E.

Topographic Contours were created from 30 meter Digital Elevation Models (DEM).

N

SCALE IN FEET

0 3,700

Figure 6-13C3

Comparison of Site Concentrations with Preliminary Ecological Remediation Goals and Reference Site Concentrations for the American Dipper
EU 13 - Stream

Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex

TABLES

TABLE 2-1: SPECIES POTENTIALLY OCCURRING AT UBMC

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

Taxa	Common Name	Scientific Name	Species of Concern?	Global Rank	State Rank	First Sighting of the Calendar Year	Last Sighting of the Calendar Year	Oldest Historical Sighting	Latest Historical Sighting	Number of Documented Sightings
Mammals	Badger	Taxidea taxus		G5	S4	May 7	Nov 25	1916	2003	6
Mammals	Beaver	Castor canadensis		G5	S5	Jan 1	Aug 1	1977	2006	6
Mammals	Big Brown Bat	Eptesicus fuscus		G5	S4	Jul 11	Sep 15	1994	2006	9
Mammals	Bighorn Sheep	Ovis canadensis		G4	S4					1
Mammals	Black Bear	Ursus americanus		G5	S5	Mar 25	Aug 27	1921	2008	53
Mammals	Black-tailed Jack Rabbit	Lepus californicus	Species of Concern	G5	S2	Aug 26	Aug 26	2008	2008	1
Mammals	Black-tailed Prairie Dog	Cynomys ludovicianus	Species of Concern	G4	S3	Feb 23	Oct 7	1915	2007	31
Mammals	Bobcat	Lynx rufus		G5	S5	Feb 21	Dec 24	1915	2003	246
Mammals	Bushy-tailed Woodrat	Neotoma cinerea		G5	S5	Jan 1	Sep 26	1937	2008	14
Mammals	**Canada Lynx**	**Lynx canadensis**	**Species of Concern**	**G5**	**S3**	**Jan 1**	**Dec 15**	**1963**	**2007**	**102**
Mammals	Columbian Ground Squirrel	Spermophilus columbianus		G5	S5	May 10	Aug 19	1909	2006	10
Mammals	Coyote	Canis latrans		G5	S5	Apr 11	Aug 26	1997	2008	9
Mammals	Deer Mouse	Peromyscus maniculatus		G5	S5	Jan 1	Aug 21	1888	2008	124
Mammals	Dusky or Montane Shrew	Sorex monticolus		G5	S5	May 25	Aug 22	1949	2005	12
Mammals	Eastern Fox Squirrel	Sciurus niger		G5	SNA	Nov 14	Nov 14	2007	2007	3
Mammals	Eastern Gray Squirrel	Sciurus carolinensis	Exotic Species (not native to Montana)	G5	SNA	Aug 18	Aug 18	1997	1997	1
Mammals	Elk or Wapiti	Cervus canadensis		G5	S5	May 22	Aug 26	1997	2008	7
Mammals	**Fisher**	**Martes pennanti**	**Species of Concern**	**G5**	**S3**					**2**
Mammals	Fringed Myotis	Myotis thysanodes	Species of Concern	G4G5	S3	Jul 10	Sep 11	1994	2006	10
Mammals	Golden-mantled Ground Squirrel	Spermophilus lateralis		G5	S4	Jan 1	Aug 13	1888	2008	9
Mammals	**Gray Wolf**	**Canis lupus**	**Species of Concern**	**G4**	**S3**	**May 10**	**Dec 25**	**1964**	**1994**	**11**
Mammals	**Grizzly Bear**	**Ursus arctos**	**Species of Concern**	**G4**	**S2S3**	**Apr 1**	**Nov 17**	**1908**	**2006**	**66**
Mammals	Hayden's Shrew	Sorex haydeni	Potential Species of Concern	G4	S3S4	Jun 10	Jun 10	2005	2005	1
Mammals	Heather Vole	Phenacomys intermedius		G5	S4	Jan 1	Jul 12	1958	1980	3
Mammals	Hoary Bat	Lasiurus cinereus	Species of Concern	G5	S3	Jul 11	Sep 17	1961	2007	13
Mammals	Hoary Marmot	Marmota caligata	Potential Species of Concern	G5	S3S4	Jul 11	Jul 23	1949	2007	4
Mammals	House Mouse	Mus musculus	Exotic Species (not native to Montana)	G5	SNA	Dec 23	Dec 23	2005	2005	1
Mammals	Least Chipmunk	Tamias minimus		G5	S4	Jul 26	Jul 26	2008	2008	2
Mammals	Least Weasel	Mustela nivalis		G5	S4	Jul 16	Oct 1	1951	1981	2
Mammals	Little Brown Myotis	Myotis lucifugus		G5	S4	May 24	Sep 11	1994	2006	33
Mammals	Long-eared Myotis	Myotis evotis		G5	S4	Jul 10	Aug 23	1994	2006	11
Mammals	Long-legged Myotis	Myotis volans		G5	S4	Jul 11	Sep 11	1994	2006	8
Mammals	Long-tailed Vole	Microtus longicaudus		G5	S4	May 25	Aug 7	1949	2006	12
Mammals	Long-tailed Weasel	Mustela frenata		G5	S5	Aug 31	Aug 31	1940	1940	1
Mammals	Marten	Martes americana		G5	S4	Feb 25	Jul 16	1991	1992	14
Mammals	Masked Shrew	Sorex cinereus		G5	S5	Jan 1	Aug 30	1949	2008	11
Mammals	Meadow Vole	Microtus pennsylvanicus		G5	S5	Jan 13	Sep 1	1949	2008	29
Mammals	Mink	Mustela vison		G5	S5	May 24	Jun 2	1997	2005	2
Mammals	Montane Vole	Microtus montanus		G5	S5	May 23	Jun 10	2005	2006	5
Mammals	Moose	Alces alces		G5	S5	Aug 26	Aug 26	2008	2008	1
Mammals	Mountain Cottontail	Sylvilagus nuttallii		G5	S4	May 22	Nov 29	1944	2008	7
Mammals	Mountain Goat	Oreamnos americanus		G5	S5	May 6	Nov 18	1948	2006	4
Mammals	Mountain Lion	Puma concolor		G5	S4	Jan 1	Dec 31	1988	2008	226
Mammals	Mule Deer	Odocoileus hemionus		G5	S5	May 22	Nov 14	1997	2008	13
Mammals	Muskrat	Ondatra zibethicus		G5	S5	Aug 1	Nov 21	1997	2008	2
Mammals	Northern Bog Lemming	Synaptomys borealis	Species of Concern	G4	S2	Aug 31	Aug 31	1993	1993	1

TABLE 2-1: SPECIES POTENTIALLY OCCURRING AT UBMC (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

Taxa	Common Name	Scientific Name	Species of Concern?	Global Rank	State Rank	First Sighting of the Calendar Year	Last Sighting of the Calendar Year	Oldest Historical Sighting	Latest Historical Sighting	Number of Documented Sightings
Mammals	Northern Flying Squirrel	Glaucomys sabrinus		G5	S4	Jul 28	Jul 28	2005	2008	2
Mammals	Northern Pocket Gopher	Thomomys talpoides		G5	S5	Jun 1	Aug 1	1996	2005	6
Mammals	Northern River Otter	Lontra canadensis		G5	S4	Aug 6	Oct 1	1994	2002	58
Mammals	Pika	Ochotona princeps		G5	S4	Jun 14	Aug 24	1945	2008	6
Mammals	Porcupine	Erethizon dorsatum		G5	S4	Feb 25	Nov 16	1917	2008	15
Mammals	Pronghorn	Antilocapra americana		G5	S5	May 23	Jun 21	2005	2006	6
Mammals	Raccoon	Procyon lotor		G5	S5	Aug 3	Oct 1	2001	2008	2
Mammals	Red Fox	Vulpes vulpes		G5	S5	Jan 19	Sep 17	1998	2008	7
Mammals	Red Squirrel	Tamiasciurus hudsonicus		G5	S5	May 22	Nov 24	1939	2008	15
Mammals	Red-tailed Chipmunk	Tamias ruficaudus		G5	S4	Jan 1	Aug 22	1954	1980	3
Mammals	Richardson's Ground Squirrel	Spermophilus richardsonii		G5	S5	Apr 19	Jun 27	1981	2005	4
Mammals	Sagebrush Vole	Lemmiscus curtatus		G5	S4	Jun 22	Jun 22	2005	2005	1
Mammals	Short-tailed Weasel	Mustela erminea		G5	S5	Jun 1	Jul 1	1983	1996	2
Mammals	Silver-haired Bat	Lasionycteris noctivagans	Potential Species of Concern	G5	S3S4	Jul 11	Sep 15	1961	2006	15
Mammals	Snowshoe Hare	Lepus americanus		G5	S4	Nov 29	Nov 29	1960	1960	1
Mammals	Southern Red-backed Vole	Clethrionomys gapperi		G5	S4	Jun 1	Aug 22	1954	2008	3
Mammals	Spotted Bat	Euderma maculatum	Species of Concern	G4	S2	Jul 12	Jul 12	2006	2006	1
Mammals	Striped Skunk	Mephitis mephitis		G5	S5	May 25	Oct 29	1997	2005	9
Mammals	Swift Fox	Vulpes velox	Species of Concern	G3	S3	Apr 16	Sep 21	2004	2006	4
Mammals	Townsend's Big-eared Bat	Corynorhinus townsendii	Species of Concern	G4	S2	Aug 17	Aug 17	1994	1994	1
Mammals	Vagrant Shrew	Sorex vagrans		G5	S4	Mar 20	Aug 30	1951	2007	10
Mammals	Water Shrew	Sorex palustris		G5	S4	May 24	Jun 27	2005	2006	3
Mammals	Western Jumping Mouse	Zapus princeps		G5	S4	May 25	Aug 21	1949	2006	18
Mammals	Western Small-footed Myotis	Myotis ciliolabrum		G5	S4	Jun 26	Oct 8	1994	2006	14
Mammals	White-tailed Deer	Odocoileus virginianus		G5	S5	May 22	Nov 20	1997	2008	7
Mammals	White-tailed Jack Rabbit	Lepus townsendii		G5	S4	Jan 28	Jan 28	1982	1982	1
Mammals	**Wolverine**	**Gulo gulo**	**Species of Concern**	**G4**	**S3**	**Jan 1**	**Nov 14**	**1947**	**2008**	**38**
Mammals	Yellow-bellied Marmot	Marmota flaviventris		G5	S4	Apr 26	Aug 5	1939	1960	4
Mammals	Yellow-pine Chipmunk	Tamias amoenus		G5	S5	May 23	Sep 18	1888	2006	15
Birds	American Avocet	Recurvirostra americana		G5	S4B	Mar 26	Aug 30	1991	2008	23
Birds	American Bittern	Botaurus lentiginosus	Species of Concern	G4	S3B	May 12	Aug 21	1992	2007	4
Birds	American Coot	Fulica americana		G5	S5B	Jan 12	Dec 24	1989	2008	39
Birds	American Crow	Corvus brachyrhynchos		G5	S5B	Feb 11	Oct 16	1987	2008	89
Birds	American Dipper	Cinclus mexicanus		G5	S5	Feb 15	Dec 11	1990	2008	32
Birds	American Golden-Plover	Pluvialis dominica		G5	SNA					1
Birds	American Goldfinch	Carduelis tristis		G5	S5B	Jan 27	Dec 18	1989	2008	104
Birds	American Kestrel	Falco sparverius		G5	S5B	Jan 15	Oct 20	1989	2008	103
Birds	American Pipit	Anthus rubescens		G5	S4B	Aug 24	Oct 13	1990	2008	6
Birds	American Redstart	Setophaga ruticilla		G5	S5B	May 16	Sep 7	1992	2008	26
Birds	American Robin	Turdus migratorius		G5	S5B	Jan 9	Dec 17	1989	2008	971
Birds	American Three-toed Woodpeck	Picoides dorsalis	Potential Species of Concern	G5	S3S4	Jan 11	Aug 29	1990	2008	38
Birds	American Tree Sparrow	Spizella arborea		G5	SNA	Jan 6	Dec 24	1987	2005	20
Birds	American White Pelican	Pelecanus erythrorhynchos	Species of Concern	G3	S3B	Apr 9	Dec 21	1987	2008	57
Birds	American Wigeon	Anas americana		G5	S5B	Mar 13	Nov 3	1988	2008	30
Birds	American Woodcock	Scolopax minor		G5	SNA	Jan 9	Jan 9	2000	2000	1
Birds	Anna's Hummingbird	Calypte anna		G5	SNA	Jul 22	Nov 21	1993	2005	3

TABLE 2-1: SPECIES POTENTIALLY OCCURRING AT UBMC (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

Taxa	Common Name	Scientific Name	Species of Concern?	Global Rank	State Rank	First Sighting of the Calendar Year	Last Sighting of the Calendar Year	Oldest Historical Sighting	Latest Historical Sighting	Number of Documented Sightings
Birds	Ash-throated Flycatcher	Myiarchus cinerascens		G5	SNA			1978	1978	1
Birds	Audubon's Warbler	Dendroica coronata coronata		G5TU	S5B	May 5	Jul 10	1993	2008	6
Birds	Baird's Sandpiper	Calidris bairdii		G5	SNA	Sep 15	Sep 15	2001	2001	2
Birds	Baird's Sparrow	Ammodramus bairdii	Species of Concern	G4	S2B	Jun 4	Jul 3	1977	1992	37
Birds	Bald Eagle	Haliaeetus leucocephalus	Species of Concern	G5	S3	Jan 8	Dec 19	1990	2008	250
Birds	Baltimore Oriole	Icterus galbula	Potential Species of Concern	G5	S3S4B	May 31	May 31	1989	1989	1
Birds	Bank Swallow	Riparia riparia		G5	S5B	May 13	Jul 25	1987	2005	27
Birds	Barn Swallow	Hirundo rustica		G5	S5B	Apr 23	Sep 28	1992	2008	69
Birds	Barred Owl	Strix varia		G5	S4	Jun 1	Aug 27	1994	2004	5
Birds	Barrow's Goldeneye	Bucephala islandica		G5	S5B	Jan 14	Dec 13	1988	2008	24
Birds	Belted Kingfisher	Megaceryle alcyon		G5	S5B	Jan 20	Dec 24	1991	2008	69
Birds	Black Scoter	Melanitta nigra		G5	SNA	Oct 17	Nov 14	1977	2006	2
Birds	Black Tern	Chlidonias niger	Species of Concern	G4	S3B	May 11	Jul 29	1995	2001	4
Birds	Black-and-white Warbler	Mniotilta varia	Species of Concern	G5	S2S3B	May 21	Jun 26	1992	2004	3
Birds	Black-backed Woodpecker	Picoides arcticus	Species of Concern	G5	S2	Mar 22	Nov 21	1992	2008	16
Birds	Black-bellied Plover	Pluvialis squatarola		G5	SNA	May 15	Nov 3	1991	2008	8
Birds	Black-billed Cuckoo	Coccyzus erythropthalmus	Potential Species of Concern	G5	S3S4B	Sep 27	Sep 27	1988	1998	3
Birds	Black-billed Magpie	Pica hudsonia		G5	S5	Jan 6	Dec 19	1990	2008	135
Birds	Black-capped Chickadee	Poecile atricapillus		G5	S5	Jan 5	Dec 30	1992	2008	118
Birds	Black-chinned Hummingbird	Archilochus alexandri		G5	S4B	May 27	Jul 20	1991	2001	6
Birds	Black-crowned Night-Heron	Nycticorax nycticorax	Species of Concern	G5	S3B	Jul 19	Sep 9	1988	2001	7
Birds	Black-headed Grosbeak	Pheucticus melanocephalus		G5	S5B	May 22	Jul 22	1992	2008	44
Birds	Black-legged Kittiwake	Rissa tridactyla		G5	SNA	Nov 23	Nov 23	1990	1990	1
Birds	Black-necked Stilt	Himantopus mexicanus	Potential Species of Concern	G5	S3S4B	May 16	Sep 9	1994	2008	7
Birds	Black-throated Gray Warbler	Dendroica nigrescens		G5	SNA	Mar 25	Mar 25	1983	1983	1
Birds	Black-throated Sparrow	Amphispiza bilineata		G5	SNA	Jun 17	Jun 17	2000	2000	1
Birds	Blackpoll Warbler	Dendroica striata		G5	SNA	May 13	Jun 1	2002	2006	4
Birds	Blue Grosbeak	Passerina caerulea		G5	SNA	Jul 4	Jul 4	1996	1996	1
Birds	Blue Jay	Cyanocitta cristata		G5	S5N	Jan 25	Nov 24	1989	2008	18
Birds	Blue-winged Teal	Anas discors		G5	S5B	Apr 5	Jul 5	1992	2008	28
Birds	Bobolink	Dolichonyx oryzivorus	Species of Concern	G5	S2B	May 16	Aug 4	1992	2008	43
Birds	Bohemian Waxwing	Bombycilla garrulus		G5	S5N	Jan 7	Dec 18	1991	2008	23
Birds	Bonaparte's Gull	Chroicocephalus philadelphia		G5	SNA	Apr 24	Oct 31	1992	2004	6
Birds	Boreal Chickadee	Poecile hudsonica	Species of Concern	G5	S1S2					1
Birds	Boreal Owl	Aegolius funereus		G5	S4	Feb 4	Jul 5	1989	2005	4
Birds	Brambling	Fringilla montifringilla		G5	SNA	Dec 1	Dec 1	1999	1999	1
Birds	Brewer's Blackbird	Euphagus cyanocephalus		G5	S5B	May 3	Aug 1	1991	2008	108
Birds	Brewer's Sparrow	Spizella breweri	Species of Concern	G5	S2B	May 24	Jul 25	1992	2008	24
Birds	Broad-tailed Hummingbird	Selasphorus platycercus	Species of Concern	G5	S1B	Jun 5	Jun 16	2005	2005	2
Birds	Broad-winged Hawk	Buteo platypterus		G5	SNA	May 11	May 11	1997	1997	1
Birds	Brown Creeper	Certhia americana		G5	S4	Jan 5	Nov 30	1990	2006	29
Birds	Brown Thrasher	Toxostoma rufum		G5	S5B	Jun 4	Jun 4	1999	1999	2
Birds	Brown-headed Cowbird	Molothrus ater		G5	S5B	May 12	Aug 29	1990	2008	406
Birds	Buff-breasted Sandpiper	Tryngites subruficollis		G4	SNA	Aug 23	Sep 3	1973	2006	2
Birds	Bufflehead	Bucephala albeola		G5	S5B	Jan 31	Dec 17	1990	2006	26
Birds	Bullock's Oriole	Icterus bullockii		G5	S5B	May 14	Jul 16	1992	2008	30

TABLE 2-1: SPECIES POTENTIALLY OCCURRING AT UBMC (Continued)
Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

Taxa	Common Name	Scientific Name	Species of Concern?	Global Rank	State Rank	First Sighting of the Calendar Year	Last Sighting of the Calendar Year	Oldest Historical Sighting	Latest Historical Sighting	Number of Documented Sightings
Birds	Burrowing Owl	Athene cunicularia	Species of Concern	G4	S2B			1986	1986	2
Birds	California Gull	Larus californicus		G5	S5B	May 16	Nov 28	1990	2008	45
Birds	Calliope Hummingbird	Stellula calliope		G5	S5B	May 9	Aug 25	1986	2007	27
Birds	Canada Goose	Branta canadensis		G5	S5B	Jan 23	Dec 19	1989	2008	104
Birds	Canvasback	Aythya valisineria		G5	S5B	Jan 13	Oct 21	1991	2008	19
Birds	Canyon Wren	Catherpes mexicanus		G5	S4	Jan 9	Dec 25	1990	2007	26
Birds	Caspian Tern	Hydroprogne caspia	Species of Concern	G5	S2B	May 11	Sep 7	1994	2008	13
Birds	Cassin's Finch	Carpodacus cassinii	Species of Concern	G5	S3	Apr 24	Jul 11	1992	2007	104
Birds	Cassin's Vireo	Vireo cassinii		G5	S4B	May 13	Jul 13	1994	2008	127
Birds	Cattle Egret	Bubulcus ibis		G5	SNA	Jun 2	Jun 2	1996	1996	2
Birds	Cedar Waxwing	Bombycilla cedrorum		G5	S5B	Mar 25	Dec 15	1991	2008	94
Birds	Chestnut-collared Longspur	Calcarius ornatus	Species of Concern	G5	S3B	Jun 13	Jun 13	1994	1994	2
Birds	Chipping Sparrow	Spizella passerina		G5	S5B	May 12	Aug 8	1990	2008	940
Birds	Chukar	Alectoris chukar	Exotic Species (not native to Montana)	G5	SNA	Apr 18	Apr 28	1993	2005	2
Birds	Cinnamon Teal	Anas cyanoptera		G5	S5B	Apr 7	Nov 5	1990	2008	36
Birds	Clark's Grebe	Aechmophorus clarkii	Species of Concern	G5	S3B	May 5	Oct 9	1989	2007	7
Birds	Clark's Nutcracker	Nucifraga columbiana	Species of Concern	G5	S3	Jan 5	Dec 30	1991	2008	326
Birds	Clay-colored Sparrow	Spizella pallida		G5	S4B	May 16	Aug 3	1992	2004	21
Birds	Cliff Swallow	Petrochelidon pyrrhonota		G5	S5B	Apr 2	Aug 9	1990	2008	81
Birds	Common Goldeneye	Bucephala clangula		G5	S5	Jan 9	Dec 24	1989	2008	46
Birds	Common Grackle	Quiscalus quiscula		G5	S5B	May 9	Jul 26	1990	2008	28
Birds	Common Loon	Gavia immer	Species of Concern	G5	S2B	Apr 12	Nov 18	1989	2008	40
Birds	Common Merganser	Mergus merganser		G5	S5B	Jan 9	Nov 5	1986	2008	57
Birds	Common Nighthawk	Chordeiles minor		G5	S5B	May 25	Aug 30	1990	2008	53
Birds	Common Poorwill	Phalaenoptilus nuttallii	Potential Species of Concern	G5	S3S4B					1
Birds	Common Raven	Corvus corax		G5	S5	Jan 31	Dec 19	1990	2008	522
Birds	Common Redpoll	Carduelis flammea		G5	S5N	Jan 16	Dec 27	1990	2005	13
Birds	Common Tern	Sterna hirundo	Species of Concern	G5	S3B	May 5	Sep 7	1993	2001	6
Birds	Common Yellowthroat	Geothlypis trichas		G5	S5B	May 13	Oct 29	1992	2008	272
Birds	Cooper's Hawk	Accipiter cooperii		G5	S4B	Jan 17	Nov 13	1989	2008	40
Birds	Cordilleran Flycatcher	Empidonax occidentalis		G5	S5	Jun 3	Jul 20	1989	2008	37
Birds	Dark-eyed Junco	Junco hyemalis		G5	S5B	Mar 23	Nov 15	1990	2008	1198
Birds	Dark-eyed Junco (Gray-headed)	Junco hyemalis caniceps		G5T5	SNR	May 18	May 18	2003	2003	1
Birds	Dark-eyed Junco (Oregon)	Junco hyemalis oreganus		G5T5	SNR	Mar 4	Oct 16	1992	2006	20
Birds	Dark-eyed Junco (Pink-sided)	Junco hyemalis mearnsi		G5TNR	SNR	Apr 16	Oct 3	1993	2004	5
Birds	Dark-eyed Junco (Slate-colored)	Junco hyemalis hyemalis		G5T5	SNR	Apr 13	Dec 30	2000	2003	4
Birds	Double-crested Cormorant	Phalacrocorax auritus		G5	S5B	Apr 12	Nov 11	1976	2008	48
Birds	Downy Woodpecker	Picoides pubescens		G5	S5	Jan 5	Dec 30	1987	2008	61
Birds	Dunlin	Calidris alpina		G5	SNA	May 3	Nov 2	1962	2003	3
Birds	Dusky Flycatcher	Empidonax oberholseri		G5	S5B	May 15	Jul 16	1992	2007	579
Birds	Dusky Grouse	Dendragapus obscurus		G5	S4	May 17	Nov 14	1991	2007	32
Birds	Eared Grebe	Podiceps nigricollis		G5	S5B	Apr 21	Nov 11	1991	2008	17
Birds	Eastern Kingbird	Tyrannus tyrannus		G5	S5B	May 14	Sep 14	1991	2008	101
Birds	Eastern Screech-Owl	Megascops asio	Potential Species of Concern	G5	S3S4					1
Birds	Eurasian Collared-Dove	Streptopelia decaocto	Exotic Species (not native to Montana)	G5	SNA	May 25	Sep 3	2004	2008	5
Birds	Eurasian Wigeon	Anas penelope		G5	SNA	Apr 6	Oct 18	1987	2001	5

TABLE 2-1: SPECIES POTENTIALLY OCCURRING AT UBMC (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

Taxa	Common Name	Scientific Name	Species of Concern?	Global Rank	State Rank	First Sighting of the Calendar Year	Last Sighting of the Calendar Year	Oldest Historical Sighting	Latest Historical Sighting	Number of Documented Sightings
Birds	European Starling	Sturnus vulgaris	Exotic Species (not native to Montana)	G5	SNA	Jan 17	Dec 19	1990	2008	124
Birds	Evening Grosbeak	Coccothraustes vespertinus		G5	S5	Jan 14	Oct 2	1990	2007	90
Birds	Ferruginous Hawk	Buteo regalis	Species of Concern	G4	S3B	May 18	Oct 14	1993	2008	15
Birds	Flammulated Owl	Otus flammeolus	Species of Concern	G4	S3B	Jun 13	Nov 10	1965	2005	20
Birds	Forster's Tern	Sterna forsteri	Species of Concern	G5	S2B	Jun 2	Sep 24	1991	2001	6
Birds	Fox Sparrow	Passerella iliaca		G5	S5B	May 26	Jul 13	1994	2003	28
Birds	Franklin's Gull	Leucophaeus pipixcan	Species of Concern	G4G5	S3B	Apr 12	Oct 22	1989	2008	23
Birds	Gadwall	Anas strepera		G5	S5B	Jan 31	Dec 16	1991	2008	32
Birds	Glaucous Gull	Larus hyperboreus		G5	SNA	Dec 20	Dec 20	1997	1997	1
Birds	Glaucous-winged Gull	Larus glaucescens		G5	SNA			2007	2007	1
Birds	Golden Eagle	Aquila chrysaetos	Potential Species of Concern	G5	S4	Jan 23	Dec 19	1989	2007	50
Birds	Golden-crowned Kinglet	Regulus satrapa		G5	S5	Jan 7	Nov 21	1994	2007	95
Birds	Grasshopper Sparrow	Ammodramus savannarum	Species of Concern	G5	S3B	Jul 2	Jul 25	1994	2008	5
Birds	Gray Catbird	Dumetella carolinensis		G5	S5B	May 21	Sep 7	1991	2008	142
Birds	Gray Jay	Perisoreus canadensis		G5	S5	Jan 16	Dec 30	1990	2008	118
Birds	Gray Partridge	Perdix perdix	Exotic Species (not native to Montana)	G5	SNA	Jan 23	Dec 14	1987	2008	29
Birds	Gray-crowned Rosy-Finch	Leucosticte tephrocotis	Species of Concern	G5	S2B,S5N	Apr 9	Nov 11	1995	2007	9
Birds	Great Blue Heron	Ardea herodias	Potential Species of Concern	G5	S3S4	Jan 9	Dec 18	1976	2008	79
Birds	Great Egret	Ardea alba		G5	SNA	May 14	Sep 14	1996	2008	7
Birds	Great Gray Owl	Strix nebulosa	Species of Concern	G5	S3	Jan 25	Jan 25	1989	2005	3
Birds	Great Horned Owl	Bubo virginianus		G5	S5	Jan 12	Dec 18	1990	2006	35
Birds	Greater Scaup	Aythya marila		G5	SNA	Jan 23	Oct 13	2002	2006	4
Birds	Greater White-fronted Goose	Anser albifrons		G5	SNA	Apr 1	Nov 18	1988	2006	5
Birds	Greater Yellowlegs	Tringa melanoleuca		G5	SNA	Apr 20	Sep 9	1991	2001	7
Birds	Green-tailed Towhee	Pipilo chlorurus		G5	S4B	May 15	Jul 13	1989	2006	37
Birds	Green-winged Teal	Anas crecca		G5	S5B	Jan 15	Jul 5	1991	2008	26
Birds	Gyrfalcon	Falco rusticolus		G5	SNA	Jan 18	Dec 19	1987	2002	14
Birds	Hairy Woodpecker	Picoides villosus		G5	S5	Jan 5	Dec 30	1991	2008	135
Birds	Hammond's Flycatcher	Empidonax hammondii		G5	S4B	May 12	Jul 24	1991	2007	65
Birds	Harlequin Duck	Histrionicus histrionicus	Species of Concern	G4	S2B	Mar 27	Nov 24	1975	2008	244
Birds	Harris's Sparrow	Zonotrichia querula		G5	SNA	Nov 16	Dec 15	1989	2007	11
Birds	Hermit Thrush	Catharus guttatus		G5	S5B	May 17	Aug 10	1992	2008	308
Birds	Herring Gull	Larus argentatus		G5	SNA	Mar 11	Nov 11	1989	2006	11
Birds	Hooded Merganser	Lophodytes cucullatus		G5	S4B	Jan 7	Nov 11	1990	2008	16
Birds	Horned Grebe	Podiceps auritus	Potential Species of Concern	G5	S4	May 8	Nov 16	1991	2008	15
Birds	Horned Lark	Eremophila alpestris		G5	S5	Mar 26	Nov 1	1990	2008	63
Birds	House Finch	Carpodacus mexicanus		G5	S5	Jan 6	Dec 19	1987	2008	45
Birds	House Sparrow	Passer domesticus	Exotic Species (not native to Montana)	G5	SNA	Jan 20	Dec 31	1991	2008	76
Birds	House Wren	Troglodytes aedon		G5	S5B	Mar 13	Aug 1	1992	2008	163
Birds	Hudsonian Godwit	Limosa haemastica		G4	SNA	Sep 14	Sep 14	2004	2004	1
Birds	Indigo Bunting	Passerina cyanea		G5	SNA	May 23	Jun 12	1994	2003	4
Birds	Killdeer	Charadrius vociferus		G5	S5B	Mar 31	Dec 18	1988	2008	97
Birds	Lapland Longspur	Calcarius lapponicus		G5	SNA	Nov 3	Nov 3	1991	1991	3
Birds	Lark Bunting	Calamospiza melanocorys	Species of Concern	G5	S3B	May 13	Jul 4	1988	2001	7
Birds	Lark Sparrow	Chondestes grammacus		G5	S5B	May 12	Aug 12	1991	2008	26
Birds	Lazuli Bunting	Passerina amoena		G5	S5B	Mar 13	Jul 22	1992	2008	131

TABLE 2-1: SPECIES POTENTIALLY OCCURRING AT UBMC (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

Taxa	Common Name	Scientific Name	Species of Concern?	Global Rank	State Rank	First Sighting of the Calendar Year	Last Sighting of the Calendar Year	Oldest Historical Sighting	Latest Historical Sighting	Number of Documented Sightings
Birds	Le Conte's Sparrow	Ammodramus leconteii	Species of Concern	G4	S3B	Oct 6	Oct 6	1990	1990	1
Birds	Least Flycatcher	Empidonax minimus		G5	S5B	May 12	Jul 10	1992	2008	43
Birds	Least Sandpiper	Calidris minutilla		G5	SNA	May 12	Sep 1	1993	2001	4
Birds	Lesser Scaup	Aythya affinis		G5	S5B	Mar 13	Nov 25	1989	2008	26
Birds	Lesser Yellowlegs	Tringa flavipes		G5	SNA	Apr 30	Oct 13	1991	2004	8
Birds	Lewis's Woodpecker	Melanerpes lewis	Species of Concern	G4	S2B	May 14	Aug 2	1990	2006	17
Birds	Lincoln's Sparrow	Melospiza lincolnii		G5	S5B	May 6	Oct 10	1994	2008	132
Birds	Loggerhead Shrike	Lanius ludovicianus	Species of Concern	G4	S3B	Apr 16	Apr 16	1993	2001	4
Birds	Long-billed Curlew	Numenius americanus	Species of Concern	G5	S2B	Apr 6	Aug 1	1991	2008	70
Birds	Long-billed Dowitcher	Limnodromus scolopaceus		G5	SNA	Aug 21	Sep 14	1989	2004	5
Birds	Long-eared Owl	Asio otus		G5	S5	Sep 3	Sep 3	1994	1994	3
Birds	Long-tailed Duck	Clangula hyemalis		G5	SNA	Jan 20	Dec 22	1989	2007	10
Birds	Long-tailed Jaeger	Stercorarius longicaudus		G5	SNA	Sep 29	Sep 29	2002	2002	1
Birds	MacGillivray's Warbler	Oporornis tolmiei		G5	S5B	May 15	Sep 23	1990	2006	310
Birds	Magnolia Warbler	Dendroica magnolia		G5	SNA	May 24	Jun 20	1974	1998	2
Birds	Mallard	Anas platyrhynchos		G5	S5	Jan 7	Dec 19	1990	2008	112
Birds	Marbled Godwit	Limosa fedoa		G5	S4B	Apr 21	Jul 8	1991	2008	15
Birds	Marsh Wren	Cistothorus palustris		G5	S5B	May 16	Oct 9	1990	2008	16
Birds	McCown's Longspur	Calcarius mccownii	Species of Concern	G4	S2B	May 3	Jul 12	1994	2008	26
Birds	Merlin	Falco columbarius		G5	S4	Jan 7	Dec 18	1991	2008	32
Birds	Mew Gull	Larus canus		G5	SNA	Sep 20	Oct 12	2004	2007	2
Birds	Mountain Bluebird	Sialia currucoides		G5	S5B	Mar 23	Nov 17	1990	2008	230
Birds	Mountain Chickadee	Poecile gambeli		G5	S5	Jan 5	Dec 30	1991	2008	774
Birds	Mourning Dove	Zenaida macroura		G5	S5B	May 3	Sep 6	1991	2008	183
Birds	Myrtle Warbler	Dendroica coronata auduboni		G5T5	S5B	Apr 28	Jul 5	1992	2006	29
Birds	Nashville Warbler	Vermivora ruficapilla		G5	S5B	Jun 19	Jun 19	1998	1998	2
Birds	Northern Bobwhite	Colinus virginianus	Exotic Species (not native to Montana)	G5	SNA	Jul 15	Jul 15	2005	2005	1
Birds	Northern Flicker	Colaptes auratus		G5	S5	Jan 7	Dec 16	1987	2008	439
Birds	Northern Flicker (Red-shafted)	Colaptes auratus cafer		G5T5	SNRB	Mar 13	Dec 31	1992	2008	54
Birds	Northern Flicker (Yellow-shafted)	Colaptes auratus auratus		G5T5	SNRB	Jan 28	Jun 19	1999	2007	3
Birds	Northern Goshawk	Accipiter gentilis	Potential Species of Concern	G5	S4	Feb 8	Dec 30	1909	2007	28
Birds	Northern Harrier	Circus cyaneus		G5	S4B	Jan 9	Dec 18	1987	2008	69
Birds	Northern Mockingbird	Mimus polyglottos		G5	SNA	Sep 16	Nov 9	1987	1990	6
Birds	Northern Oriole	Icterus galbula		G5	SNR	May 16	Jun 27	1992	1995	8
Birds	Northern Pintail	Anas acuta		G5	S5B	Jan 17	Dec 18	1990	2008	22
Birds	Northern Pygmy-Owl	Glaucidium gnoma		G5	S4	Jan 11	Dec 24	1988	2008	23
Birds	Northern Rough-winged Swallow	Stelgidopteryx serripennis		G5	S5B	May 12	Aug 19	1991	2008	47
Birds	Northern Saw-whet Owl	Aegolius acadicus		G5	S4	Aug 31	Dec 11	1994	2007	5
Birds	Northern Shoveler	Anas clypeata		G5	S5B	Apr 5	Dec 19	1987	2008	26
Birds	Northern Shrike	Lanius excubitor		G5	S5N	Jan 14	Dec 19	1990	2007	24
Birds	Northern Waterthrush	Seiurus noveboracensis		G5	S5B	May 24	Aug 9	1991	2008	59
Birds	**Olive-sided Flycatcher**	**Contopus cooperi**	**Species of Concern**	**G4**	**S3B**	**May 12**	**Aug 1**	**1994**	**2006**	**73**
Birds	Orange-crowned Warbler	Vermivora celata		G5	S5B	May 12	Sep 7	1993	2008	66
Birds	Osprey	Pandion haliaetus		G5	S5B	Apr 4	Aug 18	1988	2008	104
Birds	Ovenbird	Seiurus aurocapilla	Potential Species of Concern	G5	S3S4B	Jun 6	Jul 14	1991	2000	12
Birds	Pacific Loon	Gavia pacifica		G5	SNA	Nov 1	Nov 2	1995	2007	3

TABLE 2-1: SPECIES POTENTIALLY OCCURRING AT UBMC (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

Taxa	Common Name	Scientific Name	Species of Concern?	Global Rank	State Rank	First Sighting of the Calendar Year	Last Sighting of the Calendar Year	Oldest Historical Sighting	Latest Historical Sighting	Number of Documented Sightings
Birds	Palm Warbler	Dendroica palmarum		G5	SNA	Sep 18	Sep 18	1993	1993	1
Birds	Parasitic Jaeger	Stercorarius parasiticus		G5	SNA	Sep 17	Sep 20	1978	2004	3
Birds	Pectoral Sandpiper	Calidris melanotos		G5	SNA	Sep 21	Sep 28	2008	2008	3
Birds	Peregrine Falcon	Falco peregrinus	Species of Concern	G4	S2B	Jan 30	Aug 29	1992	2008	35
Birds	Pied-billed Grebe	Podilymbus podiceps		G5	S5B	Mar 2	Oct 22	1894	2005	17
Birds	Pileated Woodpecker	Dryocopus pileatus		G5	S4	Jan 4	Nov 30	1987	2008	40
Birds	Pine Grosbeak	Pinicola enucleator		G5	S5	Jan 16	Dec 16	1994	2007	16
Birds	Pine Siskin	Carduelis pinus		G5	S5	Jan 6	Dec 27	1988	2008	1053
Birds	Pinyon Jay	Gymnorhinus cyanocephalus	Species of Concern	G5	S3	Jan 5	Jul 24	1989	2007	11
Birds	Piping Plover	Charadrius melodus	Species of Concern	G3	S2B					1
Birds	Prairie Falcon	Falco mexicanus		G5	S4	Feb 1	Dec 3	1989	2008	23
Birds	Prothonotary Warbler	Protonotaria citrea		G5	SNA			1981	1981	1
Birds	Purple Finch	Carpodacus purpureus		G5	SNA	Apr 30	Aug 21	1991	2000	7
Birds	Pygmy Nuthatch	Sitta pygmaea		G5	S4	Jun 18	Nov 1	1998	2008	4
Birds	Red Crossbill	Loxia curvirostra		G5	S5	Jan 31	Nov 24	1986	2008	352
Birds	Red Knot	Calidris canutus		G4	SNA	May 12	May 12	2001	2001	2
Birds	Red-breasted Merganser	Mergus serrator		G5	SNA	Apr 8	Oct 22	1987	2005	10
Birds	Red-breasted Nuthatch	Sitta canadensis		G5	S5	Jan 5	Dec 30	1989	2008	845
Birds	Red-eyed Vireo	Vireo olivaceus		G5	S5B	May 24	Jun 19	1994	2008	5
Birds	Red-headed Woodpecker	Melanerpes erythrocephalus	Species of Concern	G5	S3B	Jun 26	Jun 26	1989	1993	3
Birds	Red-naped Sapsucker	Sphyrapicus nuchalis		G5	S4B	May 16	Jul 19	1989	2008	103
Birds	Red-necked Grebe	Podiceps grisegena		G5	S4B	Apr 16	Sep 7	1990	2008	23
Birds	Red-necked Phalarope	Phalaropus lobatus		G4G5	SNA					1
Birds	Red-tailed Hawk	Buteo jamaicensis		G5	S5B	Jan 3	Dec 18	1989	2008	147
Birds	Red-throated Loon	Gavia stellata		G5	SNA			2002	2002	1
Birds	Red-winged Blackbird	Agelaius phoeniceus		G5	S5B	Mar 6	Dec 18	1990	2008	163
Birds	Redhead	Aythya americana		G5	S5B	Mar 13	Oct 20	1993	2002	18
Birds	Ring-billed Gull	Larus delawarensis		G5	S5B	Apr 16	Dec 16	1991	2008	80
Birds	Ring-necked Duck	Aythya collaris		G5	S5B	Mar 13	Jul 4	1991	2008	21
Birds	Ring-necked Pheasant	Phasianus colchicus	Exotic Species (not native to Montana)	G5	SNA	Feb 8	Aug 11	1989	2003	15
Birds	Rock Pigeon	Columba livia	Exotic Species (not native to Montana)	G5	SNA	Jan 26	Dec 19	1992	2008	45
Birds	Rock Wren	Salpinctes obsoletus		G5	S5B	May 7	Jul 26	1992	2008	107
Birds	Rose-breasted Grosbeak	Pheucticus ludovicianus		G5	SNA	May 25	Jun 22	1989	2004	5
Birds	Ross's Goose	Chen rossii		G4	S4N	May 12	May 12	2001	2001	2
Birds	Rough-legged Hawk	Buteo lagopus		G5	S5N	Jan 20	Dec 24	1990	2008	25
Birds	Ruby-crowned Kinglet	Regulus calendula		G5	S5B	Apr 15	Oct 29	1989	2008	989
Birds	Ruddy Duck	Oxyura jamaicensis		G5	S5B	Mar 2	Dec 19	1992	2003	20
Birds	Ruddy Turnstone	Arenaria interpres		G5	SNA			1986	1986	1
Birds	Ruffed Grouse	Bonasa umbellus		G5	S5	Jan 11	Nov 5	1989	2007	105
Birds	Rufous Hummingbird	Selasphorus rufus	Potential Species of Concern	G5	S4B	May 12	Aug 22	1988	2008	32
Birds	Rusty Blackbird	Euphagus carolinus		G4	SNA	Jan 26	Dec 18	1991	2004	4
Birds	Sabine's Gull	Xema sabini		G5	SNA	Sep 9	Sep 27	1995	2007	5
Birds	Sage Thrasher	Oreoscoptes montanus	Species of Concern	G5	S3B	Jun 3	Jun 16	1992	2008	9
Birds	Sanderling	Calidris alba		G5	SNA	Sep 4	Oct 23	1999	2002	3
Birds	Sandhill Crane	Grus canadensis		G5	S5B,S2N	Apr 1	Oct 2	1991	2008	57
Birds	Savannah Sparrow	Passerculus sandwichensis		G5	S5B	May 3	Sep 28	1992	2008	109

TABLE 2-1: SPECIES POTENTIALLY OCCURRING AT UBMC (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

Taxa	Common Name	Scientific Name	Species of Concern?	Global Rank	State Rank	First Sighting of the Calendar Year	Last Sighting of the Calendar Year	Oldest Historical Sighting	Latest Historical Sighting	Number of Documented Sightings
Birds	Say's Phoebe	Sayornis saya		G5	S5B	Apr 2	Jul 3	1991	2003	6
Birds	Scissor-tailed Flycatcher	Tyrannus forficatus		G5	SNA	Sep 20	Sep 20	2006	2006	1
Birds	Semipalmated Plover	Charadrius semipalmatus		G5	SNA	Sep 4	Sep 7	1999	2001	3
Birds	Semipalmated Sandpiper	Calidris pusilla		G5	SNA	Sep 21	Sep 22	2008	2008	3
Birds	Sharp-shinned Hawk	Accipiter striatus		G5	S4B	Jan 13	Dec 26	1988	2007	28
Birds	Sharp-tailed Grouse	Tympanuchus phasianellus		G4	S4	Jun 7	Jun 7	1902	1902	1
Birds	Sharp-tailed Grouse (Plains)	Tympanuchus phasianellus jamesi		G4T4	S4	Mar 19	Jul 5	1981	2005	12
Birds	Short-eared Owl	Asio flammeus	Potential Species of Concern	G5	S3S4	Mar 9	Jul 22	1987	2003	12
Birds	Snow Bunting	Plectrophenax nivalis		G5	S5N	Aug 1	Nov 30	1991	2003	7
Birds	Snow Goose	Chen caerulescens		G5	S4N	Feb 25	Oct 30	1991	2008	12
Birds	Snowy Egret	Egretta thula		G5	SNA	May 16	Jun 5	1995	2003	4
Birds	Snowy Owl	Bubo scandiacus		G5	SNA	Nov 15	Nov 15	1992	1992	3
Birds	Solitary Sandpiper	Tringa solitaria		G5	SNA	Jul 29	Sep 16	1995	2008	7
Birds	Solitary Vireo	Vireo solitarius		G5	SNR	May 10	Jun 18	1993	2007	13
Birds	Song Sparrow	Melospiza melodia		G5	S5B	Feb 8	Dec 18	1992	2008	282
Birds	Sora	Porzana carolina		G5	S5B	May 25	Sep 1	1992	2008	31
Birds	Spotted Sandpiper	Actitis macularius		G5	S5B	May 12	Sep 21	1991	2008	80
Birds	Spotted Towhee	Pipilo maculatus		G5	S5B	Jan 1	Jul 22	1992	2008	90
Birds	Sprague's Pipit	Anthus spragueii	Species of Concern	G4	S2B	May 8	Jul 25	1987	2008	12
Birds	Spruce Grouse	Falcipennis canadensis		G5	S4	Jul 16	Oct 7	1995	2005	5
Birds	Steller's Jay	Cyanocitta stelleri		G5	S5	Jan 16	Dec 30	1991	2008	25
Birds	Surf Scoter	Melanitta perspicillata		G5	SNA	Oct 18	Oct 30	1992	2006	7
Birds	Swainson's Hawk	Buteo swainsoni	Species of Concern	G5	S3B	May 3	Jun 23	1993	2003	9
Birds	Swainson's Thrush	Catharus ustulatus		G5	S5B	May 15	Jul 29	1989	2008	320
Birds	Tennessee Warbler	Vermivora peregrina	Potential Species of Concern	G5	S2S4B	May 16	May 16	1991	2004	2
Birds	Thayer's Gull	Larus thayeri		G5	SNA	Oct 12	Nov 16	2006	2007	4
Birds	Townsend's Solitaire	Myadestes townsendi		G5	S5	Jan 6	Dec 24	1992	2008	394
Birds	Townsend's Warbler	Dendroica townsendi		G5	S5B	May 20	Oct 2	1990	2007	140
Birds	Tree Swallow	Tachycineta bicolor		G5	S5B	Apr 12	Jul 24	1991	2008	158
Birds	Trumpeter Swan	Cygnus buccinator	Species of Concern	G4	S2	Feb 10	Dec 18	1983	2006	29
Birds	Tundra Swan	Cygnus columbianus		G5	SNA	Jan 8	Dec 19	1988	2008	17
Birds	Turkey Vulture	Cathartes aura		G5	S4B	Apr 9	Sep 25	1991	2008	34
Birds	Upland Sandpiper	Bartramia longicauda		G5	S4B	May 17	Jul 4	1993	2003	18
Birds	Varied Thrush	Ixoreus naevius		G5	S5B	May 9	Dec 18	1985	2008	53
Birds	Vaux's Swift	Chaetura vauxi		G5	S4B	Jun 14	Jul 1	1995	2008	3
Birds	Veery	Catharus fuscescens		G5	S4B	May 28	Jul 5	1989	2008	85
Birds	Vesper Sparrow	Pooecetes gramineus		G5	S5B	May 3	Sep 3	1991	2008	374
Birds	Violet-green Swallow	Tachycineta thalassina		G5	S5B	Apr 16	Aug 15	1990	2008	75
Birds	Virginia Rail	Rallus limicola		G5	S5B	Jul 31	Sep 4	1989	2005	3
Birds	Warbling Vireo	Vireo gilvus		G5	S5B	May 15	Aug 23	1991	2008	695
Birds	Western Bluebird	Sialia mexicana		G5	S4B	Apr 18	Jun 28	1986	2005	17
Birds	Western Grebe	Aechmophorus occidentalis		G5	S4B	May 16	Nov 21	1989	2008	25
Birds	Western Kingbird	Tyrannus verticalis		G5	S5B	May 12	Aug 7	1991	2008	23
Birds	Western Meadowlark	Sturnella neglecta		G5	S5B	Mar 10	Oct 14	1991	2008	266
Birds	Western Sandpiper	Calidris mauri		G5	SNA	Sep 1	Sep 1	2001	2001	1
Birds	Western Tanager	Piranga ludoviciana		G5	S5B	May 14	Sep 20	1988	2008	455

TABLE 2-1: SPECIES POTENTIALLY OCCURRING AT UBMC (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

Taxa	Common Name	Scientific Name	Species of Concern?	Global Rank	State Rank	First Sighting of the Calendar Year	Last Sighting of the Calendar Year	Oldest Historical Sighting	Latest Historical Sighting	Number of Documented Sightings
Birds	Western Wood-Pewee	Contopus sordidulus		G5	S5B	May 28	Jul 28	1991	2008	108
Birds	Whimbrel	Numenius phaeopus		G5	SNA			1989	2001	3
Birds	White-breasted Nuthatch	Sitta carolinensis		G5	S4	Jan 21	Oct 8	1993	2008	73
Birds	White-crowned Sparrow	Zonotrichia leucophrys		G5	S5B	Apr 24	Oct 20	1991	2008	122
Birds	White-eyed Vireo	Vireo griseus		G5	SNA	Jul 23	Jul 23	2002	2002	1
Birds	White-faced Ibis	Plegadis chihi	Species of Concern	G5	S1B	May 16	Jun 2	1990	2008	8
Birds	White-tailed Ptarmigan	Lagopus leucura	Species of Concern	G5	S3			1993	1993	2
Birds	White-throated Sparrow	Zonotrichia albicollis		G5	SNA	Jun 17	Nov 24	1990	2002	8
Birds	White-throated Swift	Aeronautes saxatalis		G5	S5B	May 22	Jul 13	1990	2008	19
Birds	White-winged Crossbill	Loxia leucoptera		G5	S4	May 4	Nov 26	1995	2008	6
Birds	White-winged Scoter	Melanitta fusca		G5	SNA	Oct 17	Nov 24	1987	2002	10
Birds	Wild Turkey	Meleagris gallopavo	Exotic Species (not native to Montana)	G5	SNA	Aug 27	Aug 27	2000	2000	2
Birds	Willet	Tringa semipalmata		G5	S5B	Apr 29	Jul 3	1993	2008	10
Birds	Williamson's Sapsucker	Sphyrapicus thyroideus	Potential Species of Concern	G5	S3S4B	May 25	Jul 9	1994	2006	14
Birds	Willow Flycatcher	Empidonax traillii		G5	S4B	May 28	Jul 28	1991	2008	155
Birds	Wilson's Phalarope	Phalaropus tricolor		G5	S4B	May 12	Jul 4	1991	2008	34
Birds	Wilson's Snipe	Gallinago delicata		G5	S5	Jan 25	Dec 15	1991	2008	153
Birds	Wilson's Warbler	Wilsonia pusilla		G5	S5B	May 12	Sep 23	1991	2008	64
Birds	Winter Wren	Troglodytes troglodytes		G5	S4	Apr 24	Dec 20	1989	2006	14
Birds	Wood Duck	Aix sponsa		G5	S5B	Jan 28	Nov 13	1990	2008	22
Birds	Yellow Warbler	Dendroica petechia		G5	S5B	May 14	Jul 21	1992	2008	345
Birds	Yellow-breasted Chat	Icteria virens		G5	S5B	Jun 6	Sep 7	1989	1998	4
Birds	Yellow-headed Blackbird	Xanthocephalus xanthocephalus		G5	S5B	Apr 29	Aug 28	1985	2008	46
Birds	Yellow-rumped Warbler	Dendroica coronata		G5	S5B	May 12	Oct 9	1991	2008	979
Reptiles	Common Gartersnake	Thamnophis sirtalis		G5	S4	May 5	Aug 2	1994	2006	13
Reptiles	Eastern Racer	Coluber constrictor		G5	S5	Apr 23	Jul 13	1995	2008	9
Reptiles	Gophersnake	Pituophis catenifer		G5	S5	May 15	Oct 15	1941	2008	16
Reptiles	Painted Turtle	Chrysemys picta		G5	S4	Apr 22	Nov 28	1994	2008	11
Reptiles	Plains Gartersnake	Thamnophis radix		G5	S4	Aug 25	Aug 25	1998	1998	1
Reptiles	Prairie Rattlesnake	Crotalus viridis		G5	S4	Jun 23	Aug 2	1949	2007	7
Reptiles	Rubber Boa	Charina bottae		G5	S4	Mar 1	Sep 11	1949	2008	9
Reptiles	Terrestrial Gartersnake	Thamnophis elegans		G5	S5	May 18	Sep 28	1949	2008	44
Amphibians	Boreal Chorus Frog	Pseudacris maculata		G5	S4	May 13	Jul 29	1994	2007	29
Amphibians	Columbia Spotted Frog	Rana luteiventris		G4	S4	Apr 22	Sep 9	1975	2008	245
Amphibians	Great Plains Toad	Bufo cognatus	Species of Concern	G5	S2	Apr 27	Sep 24	2003	2004	13
Amphibians	Long-toed Salamander	Ambystoma macrodactylum		G5	S4	Apr 26	Nov 1	1947	2008	82
Amphibians	Northern Leopard Frog	Rana pipiens	Species of Concern	G5	S1S3	Aug 11	Aug 11	1948	1993	3
Amphibians	Plains Spadefoot	Spea bombifrons	Species of Concern	G5	S3	May 23	Jul 10	1988	2007	6
Amphibians	Rocky Mountain Tailed Frog	Ascaphus montanus		G4	S4	Jun 8	Sep 9	1994	2007	14
Amphibians	Tiger Salamander	Ambystoma tigrinum		G5	S4	Sep 28	Sep 28	2005	2005	1
Amphibians	Western Toad	Bufo boreas	Species of Concern	G4	S2	Apr 22	Sep 9	1948	2008	94
Fish	Arctic Grayling	Thymallus arcticus	Species of Concern	G5	S1	Jun 20	Jun 20	2002	2002	2
Fish	Brassy Minnow	Hybognathus hankinsoni	Potential Species of Concern	G5	SU	May 28	May 28	1998	1998	1
Fish	Brook Trout	Salvelinus fontinalis	Exotic Species (not native to Montana)	G5	SNA	Jun 1	Nov 25	1971	2004	45
Fish	Brown Trout	Salmo trutta	Exotic Species (not native to Montana)	G5	SNA	Jan 1	Nov 25	1980	2004	30
Fish	Bull Trout	Salvelinus confluentus	Species of Concern	G3	S2	Jul 1	Sep 4	1972	2004	9

TABLE 2-1: SPECIES POTENTIALLY OCCURRING AT UBMC (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

Taxa	Common Name	Scientific Name	Species of Concern?	Global Rank	State Rank	First Sighting of the Calendar Year	Last Sighting of the Calendar Year	Oldest Historical Sighting	Latest Historical Sighting	Number of Documented Sightings
Fish	Burbot	Lota lota	Potential Species of Concern	G5	SU	Jun 9	Jun 9	1998	1998	1
Fish	Lake Chub	Couesius plumbeus		G5	S5	Aug 20	Aug 20	2004	2004	1
Fish	Longnose Dace	Rhinichthys cataractae		G5	S5	Aug 20	Sep 10	2002	2004	2
Fish	Longnose Sucker	Catostomus catostomus		G5	S5	Sep 10	Sep 10	2002	2002	1
Fish	Mottled Sculpin	Cottus bairdi		G5	S5	Jan 1	Dec 27	1893	2004	19
Fish	Mountain Whitefish	Prosopium williamsoni		G5	S5	Jan 1	Sep 10	1988	2004	4
Fish	Northern Redbelly Dace	Phoxinus eos	Potential Species of Concern	G5	SU	Aug 20	Aug 20	2004	2004	1
Fish	Rainbow Trout	Oncorhynchus mykiss		G5	S5	Jan 1	Oct 30	1971	2004	34
Fish	Walleye	Sander vitreus	Exotic Species (not native to Montana)	G5	SNA	Jun 9	Jun 9	1998	1999	2
Fish	**Westslope Cutthroat Trout**	**Oncorhynchus clarkii lewisi**	**Species of Concern**	**G4T3**	**S2**	**Jun 14**	**Oct 4**	**1975**	**2008**	**33**
Fish	White Sucker	Catostomus commersoni		G5	S5	Aug 20	Sep 10	2002	2004	2
Invertebrates	A Caddisfly	Parapsyche elsis		G5	SNR	Jun 27	Oct 3	1999	2006	6
Invertebrates	A Caddisfly	Chyrandra centralis		G5	SNR	Jul 23	Jul 23	2005	2005	1
Invertebrates	A Caddisfly	Dicosmoecus gilvipes		G5	SNR	Aug 7	Aug 7	2007	2007	3
Invertebrates	A Caddisfly	Arctopsyche grandis		G5	SNR	Jul 20	Oct 3	1999	2004	5
Invertebrates	A Caddisfly	Neophylax rickeri		G5	SNR	Jul 20	Jul 20	2004	2004	1
Invertebrates	A Caddisfly	Neophylax splendens		G5	SNR	Jun 27	Jun 27	2006	2006	1
Invertebrates	A Caddisfly	Micrasema bactro		G5	SNR	Jun 27	Oct 3	1999	2006	4
Invertebrates	A Caddisfly	Onocosmoecus unicolor		G5	SNR	Jul 20	Jul 20	2004	2004	1
Invertebrates	A Caddisfly	Brachycentrus americanus		G5	SNR	Jun 27	Oct 3	1994	2006	7
Invertebrates	A Caddisfly	Brachycentrus occidentalis		G5	SNR	Oct 3	Oct 3	1999	1999	3
Invertebrates	A Mayfly	Serratella micheneri		G5	SNR					1
Invertebrates	A Mayfly	Serratella tibialis		G4	SNR	Jul 20	Oct 3	1999	2005	5
Invertebrates	A Mayfly	Ephemerella excrucians		G5	SNR	Oct 3	Oct 3	1999	1999	2
Invertebrates	A Mayfly	Baetis bicaudatus		G5	S5	Oct 3	Oct 3	1999	1999	2
Invertebrates	A Mayfly	Baetis tricaudatus		G5	S5	Jun 27	Oct 3	1994	2006	9
Invertebrates	A Mayfly	Epeorus albertae		G5	SNR					1
Invertebrates	A Mayfly	Epeorus deceptivus		G5	SNR	Aug 3	Aug 3	1994	1994	1
Invertebrates	A Mayfly	Epeorus grandis		G5	SNR	Oct 3	Oct 3	1999	1999	2
Invertebrates	A Mayfly	Epeorus longimanus		G5	SNR	Jun 27	Aug 3	1994	2006	4
Invertebrates	A Mayfly	Drunella coloradensis		G5	SNR	Jun 27	Oct 3	1994	2006	5
Invertebrates	A Mayfly	Drunella doddsi		G5	S5	Jun 27	Oct 3	1994	2006	7
Invertebrates	A Mayfly	Drunella flavilinea		G5	SNR					1
Invertebrates	A Mayfly	Drunella grandis		G5	SNR	Jul 20	Oct 3	1999	2004	3
Invertebrates	A Mayfly	Drunella spinifera		G5	SNR	Jun 27	Jun 27	2006	2006	1
Invertebrates	A Mayfly	Acentrella insignificans		G5	SNR	Oct 3	Oct 3	1999	1999	2
Invertebrates	A Mayfly	Caudatella hystrix		G5	SNR	Jun 27	Oct 3	1999	2006	3
Invertebrates	A Planarid Worm	Polycelis coronata		GNR	S5	Oct 3	Oct 3	1999	1999	3
Invertebrates	A Rhyacophilan Caddisfly	Rhyacophila narvae		G5	SNR	Oct 3	Oct 3	1999	1999	2
Invertebrates	A Rhyacophilan Caddisfly	Rhyacophila pellisa		G5	SNR	Oct 3	Oct 3	1999	1999	1
Invertebrates	A Rhyacophilan Caddisfly	Rhyacophila verrula		G5	SNR	Jun 27	Jun 27	2006	2006	1
Invertebrates	A Riffle Beetle	Zaitzevia parvula		GNR	SNR	Jul 20	Oct 3	1999	2004	3
Invertebrates	A Riffle Beetle	Heterlimnius corpulentus		GNR	SNR	Jun 27	Oct 3	1994	2006	7
Invertebrates	A Riffle Beetle	Cleptelmis addenda		GNR	SNR	Jun 27	Jul 23	2004	2006	3
Invertebrates	A Riffle Beetle	Cleptelmis ornata		GNR	SNR					1
Invertebrates	A Riffle Beetle	Lara avara		GNR	SNR	Jul 23	Jul 23	2005	2005	1

TABLE 2-1: SPECIES POTENTIALLY OCCURRING AT UBMC (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

Taxa	Common Name	Scientific Name	Species of Concern?	Global Rank	State Rank	First Sighting of the Calendar Year	Last Sighting of the Calendar Year	Oldest Historical Sighting	Latest Historical Sighting	Number of Documented Sightings
Invertebrates	A Riffle Beetle	Narpus concolor		GNR	SNR	Jun 27	Jul 23	2004	2006	3
Invertebrates	A Stonefly	Despaxia augusta		G4	SNR	Oct 3	Oct 3	1999	1999	2
Invertebrates	A Stonefly	Zapada cinctipes		G5	SNR	Jul 20	Oct 3	1999	2004	4
Invertebrates	A Stonefly	Zapada columbiana		G5	SNR	Jun 27	Oct 3	1999	2006	3
Invertebrates	A Stonefly	Yoraperla brevis		G5	SNR	Jun 27	Oct 3	1999	2006	2
Invertebrates	A Stonefly	Doroneuria theodora		G4	SNR	Jun 27	Oct 3	1994	2006	7
Invertebrates	A Stonefly	Hesperoperla pacifica		G5	SNR	Aug 3	Oct 3	1994	1999	5
Invertebrates	A Stonefly	Setvena bradleyi		G3	SNR	Oct 3	Oct 3	1999	1999	1
Invertebrates	A Stonefly	Pteronarcella badia		G5	SNR	Oct 3	Oct 3	1999	1999	2
Invertebrates	Alpine Mountainsnail	Oreohelix alpina	Species of Concern	G1	S1	Jul 24	Aug 24	2007	2008	2
Invertebrates	**An Agapetus Caddisfly**	**Agapetus montanus**	**Species of Concern**	**G3**	**S3**	**Jul 20**	**Aug 30**	**1969**	**2005**	**18**
Invertebrates	Arrowhead Blue	Glaucopsyche piasus		G5	S5	Jun 11	Jun 11	2003	2003	1
Invertebrates	Blue Glass	Nesovitrea binneyana		G5	S5	Jul 22	Jul 22	2007	2007	1
Invertebrates	Blue-eyed Darner	Rhionaeschna multicolor	Potential Species of Concern	G5	S2S4	Sep 8	Sep 8	2004	2004	1
Invertebrates	Boisduval's Blue	Plebejus icarioides		G5	S5	Jul 12	Jul 12	2006	2006	1
Invertebrates	Brown Hive	Euconulus fulvus		G5	S5	Jul 22	Oct 6	2005	2008	12
Invertebrates	Cabbage White	Pieris rapae	Exotic Species (not native to Montana)	G5	SNA	May 17	May 17	2003	2003	1
Invertebrates	Carinate Mountainsnail	Oreohelix elrodi	Species of Concern	G1	S1	Jul 24	Jul 24	2007	2007	1
Invertebrates	Common Alpine	Erebia epipsodea		G5	S5	Jun 15	Jun 15	2003	2003	1
Invertebrates	Common Wood Nymph	Cercyonis pegala		G5	S5	Aug 29	Aug 29	2004	2004	1
Invertebrates	Crested Vertigo	Vertigo cristata		G5	SNR	Jul 23	Jul 23	2007	2007	1
Invertebrates	Cross Vertigo	Vertigo modesta		G5	S4S5	Aug 27	Aug 27	2008	2008	2
Invertebrates	Grooved Fingernailclam	Sphaerium simile		G5	SNR	Aug 7	Aug 7	2007	2007	1
Invertebrates	Hagen's Small Minnow Mayfly	Diphetor hageni		G5	SNR	Jul 20	Jul 23	2004	2005	2
Invertebrates	Hayden's Ringlet	Coenonympha haydenii		G4	S4	Jul 1	Jul 12	2006	2008	2
Invertebrates	Large Marble	Euchloe ausonides		G5	S5	Jul 1	Jul 1	2006	2006	1
Invertebrates	Last Best Place Damselfly	Enallagma optimolocus	Species of Concern	G1G3Q	S1S3	Aug 25	Aug 25	1993	1993	1
Invertebrates	Long Dash	Polites mystic		G5	S5	Aug 29	Aug 29	2004	2004	1
Invertebrates	Meadow Slug	Deroceras laeve	Exotic Species (not native to Montana)	G5	SNA	Aug 23	Oct 5	2005	2008	2
Invertebrates	Milbert's Tortoiseshell	Aglais milberti		G5	S5	Apr 19	Apr 19	2003	2003	1
Invertebrates	Mountain Emerald	Somatochlora semicircularis	Potential Species of Concern	G5	S3S5	Sep 9	Sep 9	2004	2004	1
Invertebrates	Mourning Cloak	Nymphalis antiopa		G5	S5	May 17	May 17	2003	2003	1
Invertebrates	Quick Gloss	Zonitoides arboreus		G5	S5	Aug 23	Oct 1	2006	2008	8
Invertebrates	Rocky Mountainsnail	Oreohelix strigosa		G5	S5	Aug 28	Oct 6	2005	2008	5
Invertebrates	Salmonfly	Pteronarcys californica		G5	SNR					1
Invertebrates	Satyr Comma	Polygonia satyrus		G5	S5	Apr 29	Apr 29	2006	2006	1
Invertebrates	Silvery Blue	Glaucopsyche lygdamus		G5	S5	Aug 29	Aug 29	2004	2004	1
Invertebrates	Spruce Snail	Microphysula ingersolli		G5	S5	Jul 22	Oct 6	2005	2008	13
Invertebrates	Subalpine Mountainsnail	Oreohelix subrudis		G5	S5	Jul 23	Oct 6	2005	2007	5
Invertebrates	Virile Crayfish	Orconectes virilis		G5	S4	Aug 7	Aug 7	2007	2007	3
Invertebrates	Western Glass-snail	Vitrina pellucida		G5	S5	Sep 22	Oct 6	2005	2006	6
Invertebrates	Western Pine Elfin	Callophrys eryphon		G5	S5	Apr 29	Apr 29	2006	2006	1
Invertebrates	Western Tiger Swallowtail	Papilio rutulus		G5	S5	Jul 12	Jul 12	2006	2006	1
Invertebrates	White-faced Meadowhawk	Sympetrum obtrusum		G5	S5	Sep 8	Sep 8	2004	2004	2
Vascular Plants	Austin's Knotweed	Polygonum austiniae	Species of Concern	G5T4	S2S3	Jul 20	Sep 3	1982	2001	8
Vascular Plants	Beaked Spikerush	Eleocharis rostellata	Species of Concern	G5	S2	Aug 11	Aug 11	1887	1887	1

TABLE 2-1: SPECIES POTENTIALLY OCCURRING AT UBMC (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

Taxa	Common Name	Scientific Name	Species of Concern?	Global Rank	State Rank	First Sighting of the Calendar Year	Last Sighting of the Calendar Year	Oldest Historical Sighting	Latest Historical Sighting	Number of Documented Sightings
Vascular Plants	Cliff Toothwort	Cardamine rupicola	Species of Concern	G3	S3	Jul 14	Sep 13	1965	1992	10
Vascular Plants	**Dense-leaf Draba**	**Draba densifolia**	**Species of Concern**	**G5**	**S2**	**May 31**	**Jul 10**	**1964**	**1986**	**3**
Vascular Plants	**Divide Bladderpod**	**Lesquerella klausii**	**Species of Concern**	**G3**	**S3**	**May 9**	**Oct 19**	**1964**	**1999**	**78**
Vascular Plants	English Sundew	Drosera anglica	Species of Concern	G5	S2S3	Jun 19	Aug 24	1985	2007	5
Vascular Plants	Great Basin Downingia	Downingia laeta	Species of Concern	G5	S1	Jun 29	Jun 29	1988	1988	1
Vascular Plants	Lackschewitz' Fleabane	Erigeron lackschewitzii	Species of Concern	G3	S2	Jul 24	Aug 28	1979	1992	6
Vascular Plants	Lesser Rushy Milkvetch	Astragalus convallarius	Species of Concern	G5	S2	May 26	Sep 26	1980	2004	36
Vascular Plants	Limestone Larkspur	Delphinium bicolor ssp. calcicola	Species of Concern	G4G5T3	S3	May 21	May 21	1992	1992	1
Vascular Plants	Linear-leaf Fleabane	Erigeron linearis	Species of Concern	G5	S1	Jun 9	Jun 24	1997	1998	3
Vascular Plants	Linear-leaved Sundew	Drosera linearis	Species of Concern	G4	S1	Aug 4	Sep 17	1985	2007	6
Vascular Plants	Long-styled Thistle	Cirsium longistylum	Species of Concern	G3	S3	Sep 3	Sep 3	2001	2001	2
Vascular Plants	Mingan Island Moonwort	Botrychium minganense	Potential Species of Concern	G4	S3	Jul 4	Sep 25	1978	1998	3
Vascular Plants	Missoula Phlox	Phlox kelseyi var. missoulensis	Species of Concern	G2	S2	Jun 1	Jul 18	1968	2002	6
Vascular Plants	Moonwort Grape-fern	Botrychium lunaria	Status Under Review	G5	S3?	Jul 24	Jul 27	1978	1978	2
Vascular Plants	Pale Sedge	Carex livida	Potential Species of Concern	G5	S3	Aug 4	Sep 17	1985	2007	5
Vascular Plants	Round-leaved Orchis	Amerorchis rotundifolia	Species of Concern	G5	S2S3	Jun 27	Aug 12	1948	2008	62
Vascular Plants	Sparrow's-egg Lady's-slipper	Cypripedium passerinum	Species of Concern	G4G5	S2	Jul 5	Jul 5	2008	2008	1
Vascular Plants	Upward-lobed Moonwort	Botrychium ascendens	Species of Concern	G2G3	S1S2	Jul 27	Jul 27	1948	1948	1
Vascular Plants	Water Bulrush	Scirpus subterminalis	Species of Concern	G4G5	S2	Aug 4	Aug 4	2007	2007	1
Vascular Plants	Wedge-leaved Saltbush	Atriplex truncata	Species of Concern	G5	S1			1899	1899	1
Nonvascular Plants	**Fringed Bog Moss**	**Sphagnum fimbriatum**	**Species of Concern**	**G5**	**S1**	**Jul 27**	**Jul 27**	**1987**	**1987**	**1**

Notes:

Bold	Species of concern observed within and around Upper Blackfoot Mining Complex.
?	Inexact Numeric Rank - Denotes inexact numeric rank.
A	Accidental - Species is accidental or casual in Montana, in other words, infrequent and outside usual range. Includes species (usually birds or butterflies) recorded once or only a few times at a location. A few of these species may have bred on the one or two occasions they were recorded.
B	Breeding - Rank refers to the breeding population of the species in Montana.
C	Captive or Cultivated Only - Species at present is extant only in captivity or cultivation, or as a reintroduced population not yet established.
G	Global Status
G1SI	At high risk because of extremely limited and potentially declining numbers, extent and/or habitat, making it highly vulnerable to global extinction or extirpation in the state.
G2S2	At risk because of very limited and potentially declining numbers, extent and/or habitat, making it vulnerable to global extinction or extirpation in the state.
G3S3	Potentially at risk because of limited and potentially declining numbers, extent and/or habitat, even though it may be abundant in some areas.
G4S4	Uncommon but not rare (although it may be rare in parts of its range), and usually widespread. Apparently not vulnerable in most of its range, but possibly cause for long-term concern.
G5S5	Common, widespread, and abundant (although it may be rare in parts of its range). Not vulnerable in most of its range.
GHSH	Possibly Extinct or Extirpated - Species is known only from historical records, but may nevertheless still be extant; additional surveys are needed.
GNASNA	A conservation status rank is not applicable for one of the following reasons: The taxa is of Hybrid Origin; is Exotic or Introduced; is Accidental or is Not Confidently Present in the state. (See other codes below.)
GNRSNR	Not yet ranked.
GUSU	Unrankable - Species currently unrankable due to lack of information or due to substantially conflicting information about status or trends.
HYB	Hybrid-Entity not ranked because it represents an interspecific hybrid and not a species.
M	Migratory - Species occurs in Montana on during migration.
N	Nonbreeding - Rank refers to the non-breeding population of the species in Montana.
Q	Questionable taxonomy that may reduce conservation priority - Distinctiveness of this entity as a taxon at the current level is questionable; resolution of this uncertainty may result in change from a species to a subspecies or hybrid, or inclusion of this taxon in another taxon, with the resulting taxon having a lower-priority (numerically higher) conservation status rank.

TABLE 2-1: SPECIES POTENTIALLY OCCURRING AT UBMC (Continued)
Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

Taxa	Common Name	Scientific Name	Species of Concern?	Global Rank	State Rank	First Sighting of the Calendar Year	Last Sighting of the Calendar Year	Oldest Historical Sighting	Latest Historical Sighting	Number of Documented Sightings

S	State Status
SYN	Synonym - Species reported as occurring in Montana, but the Montana Natural Heritage Program does not recognize the taxon; therefore the species is not assigned a rank.
T	Infraspecific Taxon (trinomial) - The status of infraspecific taxa (subspecies or varieties) are indicated by a "T-rank" following the species' global rank.

Source: Montana Natural Heritage Program. 2009. Lewis and Clark County Species List. Requested January 7, 2009. http://mtnhp.org/

TABLE 2-2: ACID BASE ACCOUNTING AND SYNTHETIC PRECIPITATION LEACHING PROCEDURE, MINE WASTE
Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

EU	Area	Sample ID	Collection Date	pH	Conductivity mmhos/cm	TOC %	Sulfur Total %	Fe mg/kg	Neutrali-zation Potential (NP) t/kt	Acid Potential (AP) t/kt	Acid/Base Potential t/kt (NNP[1])	NP:AP[1]	Acid Generation Potential[1]	Aquatic Life Criteria[2]	Al SPLP mg/L	As SPLP mg/L	Cd-SPLP mg/L	Cu-SPLP mg/L	Fe-SPLP mg/L	Hg SPLP mg/L	Mn-SPLP mg/L	Pb-SPLP mg/L	Zn-SPLP mg/L
														Chronic	0.087	0.15	0.0001	0.0029	1	0.00091	0.12	0.0005	0.037
														Acute	0.75	0.34	0.0005	0.0038	--	0.0017	2.3	0.0140	0.037
1	Upper Anaconda	UAW1-0150+75 (0-6")	15-Jul-08	6.3	0.36	5.9	0.01	27,800	13	0.12	12.88	108.33	Uncertain Acid Generation Potential		**20**	0.024	0.0014	0.023	**12**	0.0001 <	**0.85**	0.32	0.68
1	Upper Anaconda	UAW2-Comp (0-6")	11-Oct-07	6.2	1.77	--	0.17	30,600	8	5	3	1.60	Uncertain Acid Generation Potential			0.018	**0.0002** <	0.062	--	0.0002 <	**0.12**	0.78	0.07
1	Upper Anaconda	UAW3-Comp 1 (0-6")	11-Oct-07	2	16.2	--	4.1	68,100	1	130	-129	0.01	Potentially Acid Generating		--	0.003 <	0.28	2.2	--	0.0002 <	5.5	3.7	51
1	Upper Anaconda	UAW1-Comp 1 (0-6")	11-Oct-07	1.9	23.7	--	5.1	97,300	0	150	-150	0.00	Potentially Acid Generating		--	0.02	0.0091	1.5	--	0.0002 <	**0.52**	3.5	1.8
1	Upper Anaconda	UAW4-Comp 1 (0-6")	11-Oct-07	2.2	3.9	0.09	7.78	--	-6	210	-216	-0.03	Potentially Acid Generating		--	0.1 <	0.02	0.3	--	0.0003	**1.4**	6.2	3.3
1	Upper Anaconda	UAW5-Comp 1 (0-6")	16-Oct-07	4.6	0.18	1.01	0.18	--	4	3.4	0.6	1.18	Uncertain Acid Generation Potential		--	0.1 <	0.01 <	0.2	--	0.0001 <	**0.8**	1.3	0.6
1	Upper Anaconda	UAW2-0250 (0-6")	11-Oct-07	2.7	1.13	1.27	1.29	--	-2	15	-17	-0.13	Uncertain Acid Generation Potential		--	0.1 <	0.01 <	0.5	--	0.0001 <	**0.2**	0.2	0.5 <
1	Upper Anaconda	UAW2-0200 (0-6")	11-Oct-07	3.3	0.84	1.46	0.83	--	1	10	-9	0.10	Uncertain Acid Generation Potential		--	0.1 <	0.01 <	0.1	--	0.0001 <	0.1 <	1.6	0.5 <
3	Capital	CMWA-0250+50 (0-6")	16-Jul-08	5.7	0.19	1.4	0.02	34,600	2	0.43	1.57	4.65	Uncertain Acid Generation Potential		**7.9**	0.018	0.0009	0.033	**7.2**	0.0001 <	0.089	0.09	0.05
3	Capital	CMWA-0+12.5 (0-6")	16-Jul-08	6.9	0.43	3.3	0.34	40,900	19	11	8	1.73	Uncertain Acid Generation Potential		**3.4**	0.018	**0.0003**	0.069	**6.6**	0.0001 <	**0.12**	0.14	0.07
3	Capital	CMWA-Comp 2 (0-6)	04-Oct-07	7.7	2.69	--	1.4	51,600	120	45	75	2.67	Uncertain Acid Generation Potential		--	0.042	**0.0002** <	0.008	--	0.0002 <	0.005 <	0.015	0.02
3	Capital	CMWA-Comp 1 (0-6")	04-Oct-07	2.1	7.55	--	2	194,000	1	56	-55	0.02	Potentially Acid Generating		--	0.003 <	0.0058	0.44	--	0.0002 <	2.7	0.16	0.67
3	Capital	CMWA-0250 (0-6")	04-Oct-07	4.9	2.66	3.83	--	--	--	--	--	--	--		--	--		--	--	--	--	--	--
4	Carbonate	CARM-0400 (0-6")	15-Oct-07	6.6	0.14	0.87	0.02	--	7	0.23	6.77	30.43	Uncertain Acid Generation Potential		--	0.1 <	0.01 <	0.3	--	0.0001 <	**1.6**	0.2	0.5 <
4	Carbonate	CARM-1150 (0-6")	15-Oct-07	6	0.13	0.98	--	--	--	--	--	--	--		--	--		--	--	--	--	--	--
4	Carbonate	CARM-0250 (0-6")	15-Oct-07	5.3	0.26	2.29	--	--	--	--	--	--	--		--	--		--	--	--	--	--	--
5	Edith	CEA1-3-Comp 1 (0-6")	12-Oct-07	7.6	1.45	--	0.13	28,700	57	4	53	14.25	Unlikely to Generate Acid		--	0.01	**0.0002** <	0.037	--	0.0002 <	0.026	0.11	0.05
5	Edith	CEA1-3-Comp 2 (0-6")	12-Oct-07	7.5	0.59	--	0.05	31,400	29	1	28	29.00	Unlikely to Generate Acid		--	0.012	**0.0003**	0.05	--	0.0002 <	0.093	0.097	0.08
5	Edith	WEA1-400 (0-6")	12-Oct-07	5.3	0.12	1.07	--	--	--	--	--	--	--		--	--	-- --	--	--	--	--	--	--
5	Edith	EEA2-150 (0-6")	10-Oct-07	6.1	0.55	1.19	--	--	--	--	--	--	--		--	--	-- --	--	--	--	--	--	--
5	Edith	EEA2-200 (0-6")	10-Oct-07	6.1	0.49	1.22	--	--	--	--	--	--	--		--	--	-- --	--	--	--	--	--	--
5	Edith	CEA1-3-0850 (0-6")	12-Oct-07	7.5	0.31	1.24	--	--	--	--	--	--	--		--	--	-- --	--	--	--	--	--	--
5	Edith	WEA1-00 (0-6")	12-Oct-07	7.2	0.48	1.58	--	--	--	--	--	--	--		--	--	-- --	--	--	--	--	--	--
5	Edith	CEA1-3-Comp 3 (0-6")	11-Oct-07	2.9	1.45	2.13	--	--	--	--	--	--	--		--	--	-- --	--	--	--	--	--	--
5	Edith	CEA1-3-0550 (0-6")	12-Oct-07	5.4	0.17	4.48	--	--	--	--	--	--	--		--	--	-- --	--	--	--	--	--	--
6	Consolation	CONM-0750+6.0 (0-6")	10-Jul-08	5.2	0.19	2.5	0.01	23,700	--	0.03	--	--	--		**9.4**	0.014	**0.0002**	0.026	**8.5**	0.0001 <	**0.17**	0.061	0.06
6	Consolation	CONM-0250+25 (0-6")	09-Jul-08	4.7	0.31	3.9	0.02	40,400	--	0.58	--	--	--		**13**	0.034	0.0005	0.031	**8.5**	0.0001 <	**0.38**	0.2	0.2
6	Consolation	CONM-Comp 1 (0-6")	09-Oct-07	5.8	0.28	--	0.06	60,100	6	2	4	3.00	Uncertain Acid Generation Potential		--	0.018	**0.0004**	0.069		0.0002 <	**0.28**	0.25	0.1
6	Consolation	CONM-Pile 1 (0-6)	09-Oct-07	3.4	0.19	--	0.53	65,700	1	15	-14	0.07	Uncertain Acid Generation Potential		--	0.003 <	**0.0002** <	0.012		0.0002 <	0.014	**0.0024**	0.02
6	Consolation	CONM-Comp 2 (0-6)	09-Oct-07	7.5	0.98	--	0.11	73,600	42	3	39	14.00	Unlikely to Generate Acid		--	0.021	**0.0002** <	0.028		0.0002 <	0.069	0.13	0.1
6	Consolation	CONM-0700 (0-6")	09-Oct-07	5.2	0.17	1.07	--	--	--	--	--	--	--		--	-- --	-- --	-- --	-- --	--	--	--	--
6	Consolation	CONM-0250 (0-6")	09-Oct-07	2.6	1.51	1.28	--	--	--	--	--	--	--		--	-- --	-- --	-- --	--	--	--	--	--
6	Consolation	CONM-0750 (0-6")	09-Oct-07	4	0.77	5.36	0.56	--	1	8.5	-7.5	0.12	Uncertain Acid Generation Potential			0.1 <	0.01 <	0.1 <		0.0001 <	0.1 <	0.4	0.5 <
7	Mary P.	MPWA-200+0 (0-6")	10-Jul-08	4.2	0.22	3.5	0.02	28,400	-3	0.44	-3.44	-6.82	Uncertain Acid Generation Potential		**12**	0.015	**0.0003**	0.13	**13**	0.0001 <	0.1	0.13	0.09
8	Upper Mike Horse	UMH2-400+25 (0-6")	15-Jul-08	5.2	0.19	2.6	0.01	18,400	2	0.01	1.99	200.00	Uncertain Acid Generation Potential		**19**	0.008	0.0011	0.014	**9.3**	0.0001 <	**0.69**	0.035	0.41
8	Upper Mike Horse	UMH3-400+25 (0-6")	15-Jul-08	5.2	0.19	2.6	0.01	21,300	2	0.01	1.99	200.00	Uncertain Acid Generation Potential		**8.9**	0.011	**0.0002**	0.022	**5.8**	0.0001 <	**0.23**	0.22	0.1
8	Upper Mike Horse	UMH2-Comp 1 (0-6")	10-Oct-07	7.4	0.79	--	0.06	23,800	7	2	5	3.50	Uncertain Acid Generation Potential		--	0.066	0.0013	0.057	--	0.0002 <	**1.1**	1.2	0.26
8	Upper Mike Horse	UMH2-Comp 2 (0-6")	10-Oct-07	7.5	0.85	--	0.23	29,800	16	6	10	2.67	Uncertain Acid Generation Potential		--	0.023	0.0007	0.054	--	0.0002 <	**0.31**	0.86	0.13
8	Upper Mike Horse	UMH1-Comp (0-6")	10-Oct-07	7.6	0.53	--	0.04	30,700	15	1	14	15.00	Uncertain Acid Generation Potential		--	0.027	**0.0003**	0.009	--	0.0002 <	**0.16**	0.11	0.09
8	Upper Mike Horse	UMH3-Comp 2 (0-6")	10-Oct-07	7.5	1.09	--	0.3	36,400	22	8	14	2.75	Uncertain Acid Generation Potential		--	0.04	**0.0005**	0.11	--	0.0002 <	0.096	1.6	0.09
8	Upper Mike Horse	UMH3-Comp 3 (0-6")	10-Oct-07	4.5	0.29	--	0.46	50,700	1	13	-12	0.08	Uncertain Acid Generation Potential		--	0.003 <	0.0006	0.007	--	0.0002 <	**0.23**	0.026	0.05
8	Anaconda Mike Horse	AMHR-0200 (0-6")	11-Oct-07	5.2	0.74	0.54	--	--	--	--	--	--	--		--				--	--	--	--	--
8	Mike Horse	MHCS-700-E25 (0-6")	16-Oct-07	5.3	0.12	0.81	0.01	--	4	0.17	3.83	23.53	Uncertain Acid Generation Potential		--	0.1 <	0.01 <	0.1 <	--	0.0001 <	**0.3**	0.1	0.5 <
8	Mike Horse	MHCS-200-E25 (0-6")	15-Oct-07	5.2	0.17	0.91	--	--	--	--	--	--	--		--	-- --	--	--	--	--	--	--	--
8	Mike Horse	MHTS-Comp 2 (0-6")	11-Oct-07	4	0.24	1.13	--	--	--	--	--	--	--		--	-- --	--	--	--	--	--	--	--
8	Mike Horse	MHTS-Comp 1 (0-6")	11-Oct-07	4	0.54	1.3	--	--	--	--	--	--	--		--	-- --	--	--	--	--	--	--	--
8	Mike Horse	MHCS-525-E5 (0 -6")	16-Oct-07	6	0.19	2.11	--	--	--	--	--	--	--		--	-- --	--	--	--	--	--	--	--
9	Paymaster	PMWA2-Comp 1 (0-6")	03-Oct-07	6.7	0.25	--	0.05	49,800	4	1	3	4.00	Uncertain Acid Generation Potential		--	0.015	**0.0003**	0.14	--	0.0002 <	**0.19**	0.33	0.11
9	Paymaster	PMWA1-Comp 1 (0-6)	03-Oct-07	5.3	0.15	--	0.05	55,900	4	1	3	4.00	Uncertain Acid Generation Potential		--	0.01	**0.0002** <	0.11	--	0.0002 <	0.091	0.23	0.09

TABLE 2-2: ACID BASE ACCOUNTING AND SYNTHETIC PRECIPITATION LEACHING PROCEDURE, MINE WASTE (Continued)
Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

EU	Area	Sample ID	Collection Date	pH	Conductivity mmhos/cm	TOC %	Sulfur Total %	Fe mg/kg	Neutrali-zation Potential (NP) t/kt	Acid Potential (AP) t/kt	Acid/Base Potential t/kt (NNP[1])	NP:AP[1]	Acid Generation Potential[1]	Aquatic Life Criteria[2]	Al SPLP mg/L	As SPLP mg/L	Cd-SPLP mg/L	Cu-SPLP mg/L	Fe-SPLP mg/L	Hg SPLP mg/L	Mn-SPLP mg/L	Pb-SPLP mg/L	Zn-SPLP mg/L
														Chronic	0.087	0.15	0.0001	0.0029	1	0.00091	0.12	0.0005	0.037
														Acute	0.75	0.34	0.0005	0.0038	--	0.0017	2.3	0.0140	0.037
9	Paymaster	PMWA1-Comp 2 (0-6)	03-Oct-07	4.9	0.19	--	0.06	63,600	2	2	0	1.00	Uncertain Acid Generation Potential		--	0.019	**0.0002** <	0.14	--	0.0002 <	**0.14**	0.43	0.12
9	Paymaster	PMWA1-0050 (0-6")	03-Oct-07	3.7	0.51	0.93	0.13		2	2.4	-0.4	0.83	Uncertain Acid Generation Potential		--	0.1 <	0.01 <	0.1 <	--	0.0001	0.1 <	0.1	0.5 <
9	Paymaster	PMWA2-0150 (0-6")	03-Oct-07	4.3	0.15	1.26	--	--							--				--		--	--	--
10	No3Tunnel	N3TA-Comp 1 (0-6")	04-Oct-07	5.8	0.28	1.34	0.06	--	4	1.5	2.5	2.67	Uncertain Acid Generation Potential		--	0.1 <	0.01 <	0.2	--	0.0001 <	**0.6**	0.1	0.5 <
10	No3Tunnel	N3TA-0750 (0-6")	08-Oct-07	4.7	0.14	2.5	--	--	--	--	--	--	--		--	-- --	-- --	-- --	-- --	-- --	-- --	-- --	--
10	No3Tunnel	N3TA-1000-EOT (--)	08-Oct-07	5.2	0.23	2.59	0.03	--	--	0.6	--	--	--		--	0.1 <	0.01 <	0.1 <	--	0.0001 <	0.1 <	0.1	0.5 <

Notes:

1 The NPP, NP/AP and Acid Generation Potential are based on calculations presented in EPA (1994).

2 The acute and chronic water quality criteria are from Montana Department of Environmental Quality (2008). Acute and chronic water quality criteria for cadmium, copper, and zinc are based on hardness. Hardness data was not available so a default hardness value of 25 mg/L $CaCO_3$ was used.

Bold values represent SPLP results that exceed the chronic aquatic life criteria.

Shaded cells represent SPLP results that exceed the acute aquatic life criteria.

Potentially acid generating = NP:AP[2]<1 and NNP<-20 t/kt
Uncertain acid generation potential=NP:AP between 1 and 3 and/or NNP between -20 and +20 t/kt
Unlikely to generate acid = NP:AP>3 and NNP>+20 t/kt

--	Not analyzed	mg/L	Milligrams per liter
AP	Acid production potential	NNP	
$CaC0_3$	Calcium carbonate	NP	Neutralization potential
EPA	U.S. Environmental Protection Agency	NP:AP	Ratio of the neutralization potential to acid production potential
EU	Exposure Unit	NPP	Net neutralization potential (the acid potential subtracted from the neutralization potential
COND	Conductivity	SPLP	Synthetic precipitation leaching procedure
ID	Identification	t/kt	Tons $CaC0_3$ per thousand tonnes
mmhos/cm	Millimhos per centimeter	TOC	Total organic carbon

Sources: Montana Department of Environmental Quality. 2010. Circular DEQ-7. Montana Numeric Water Quality Standards.
EPA. 1994. Technical Document EPA 530-R-94-036 NTIS PB94-201829: Acid Mine Drainage Potential. 52p.

TABLE 2-3: SOIL CONCENTRATIONS IN RECLAIMED/REVEGETATED AREAS

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

EU	Area	Point ID	pH	Total Organic Carbon (%)	Aluminum		Arsenic		Cadmium		Copper		Lead		Manganese		Zinc	
					Soil (mg/kg) [1,2]	Site Concentration Exceeds Reference? [3]	Soil (mg/kg) [1,2]	Site Concentration Exceeds Reference? [3]	Soil (mg/kg) [1,2]	Site Concentration Exceeds Reference? [3]	Soil (mg/kg) [1,2]	Site Concentration Exceeds Reference? [3]	Soil (mg/kg) [1,2]	Site Concentration Exceeds Reference? [3]	Soil (mg/kg) [1,2]	Site Concentration Exceeds Reference? [3]	Soil (mg/kg) [1,2]	Site Concentration Exceeds Reference? [3]
1	**Reference Sites - Edith Mine Waste Areas**																	
		ACBG-1	4.7	1.77	*16000*	--	26.6	--	*0.486*	--	*144*	--	51	--	*498*	--	204	--
		ACBG-2	6.6	1.71	*16600*	--	*17.4*	--	0.52	--	242	--	*46*	--	1050	--	*108*	--
	Site Samples - Upper Anaconda Mine Waste Removal Areas and Waste Piles																	
		UAW-RV1	3.1	1.8	*8770*	No	46.2	**Yes**	1.77	**Yes**	*86*	No	*437*	**Yes**	*579*	**Yes**	*216*	**Yes**
		UAW-RV2	6	2.4	10700	No	*23.8*	**Yes**	*1.61*	**Yes**	172	**Yes**	1040	**Yes**	1070	**Yes**	541	**Yes**
5	**Reference Sites - Edith Mine Waste Areas**																	
		SHGBG-1	5.2	5.27	15400	--	29.7	--	3.32	--	*50.8*	--	342	--	3050	--	266	--
		SHGBG-2	4.8	14.9	*12700*	--	24.6	--	2.46	--	53	--	*43*	--	2580	--	150	--
		SHGBG-201	5.2	1.56	17400	--	16	--	2.5	--	108	--	75	--	*639*	--	120	--
		SHGBG-202	5.2	1.99	19100	--	*14*	--	*2.4*	--	82.3	--	63	--	802	--	*88*	--
	Site Samples - Edith Mine Waste Areas																	
		WEA-RV1	4	2.4	13300	**Yes**	31.8	**Yes**	< 0.5	No	197	**Yes**	271	**Yes**	969	**Yes**	269	**Yes**
		EEA2-RV1	6	1.6	8910	No	8.71	No	< 0.5	No	75	**Yes**	82.7	**Yes**	366	No	73.5	No
		EEA1-RV1	6	2.2	10100	No	14	No	0.922	No	83.6	**Yes**	101	**Yes**	514	No	167	**Yes**
6	**Reference Site - Consolation Mine Waste Area [4]**																	
		CONM-RF-RV1	4.7	1.9	*23100*	--	*14.5*	--	*3.73*	--	*579*	--	*968*	--	*321*	--	*163*	--
	Site Samples - Consolation Mine Waste Area																	
		CONM-RV1	4.7	0.8	16900	No	382	**Yes**	5.29	**Yes**	370	No	2880	**Yes**	968	**Yes**	479	**Yes**
		CONM-RV2	6.1	0.9	19200	No	446	**Yes**	2.77	No	350	No	1190	**Yes**	1180	**Yes**	407	**Yes**
8	**Reference Sites - Mike Horse Mine Waste Piles and Town Site**																	
		BCBG-1	4.5	1.96	24500	--	23.5	--	*1.57*	--	43.8	--	76.6	--	2500	--	282	--
		MHBG-201	5.8	2.45	*13800*	--	*9*	--	4.5	--	35.8	--	*68*	--	1100	--	*144*	--
		MHBG-202	5.6	1.31	19800	--	11	--	4.6	--	*17.6*	--	188	--	*504*	--	333	--
	Site Samples - Mike Horse Mine Waste Piles																	
		UMH-RV1	5.2	0.6	19500	**Yes**	28.9	**Yes**	0.798	No	517	**Yes**	1010	**Yes**	390	No	139	No
		UMH-RV2	6.8	1.2	10800	No	431	**Yes**	7.63	**Yes**	1590	**Yes**	26700	**Yes**	1360	**Yes**	1350	**Yes**
		UMH-RV3	4.4	0.5	6710	No	405	**Yes**	24	**Yes**	2310	**Yes**	35200	**Yes**	811	**Yes**	4060	**Yes**
		UMH-RV4	7	1.8	6770	No	154	**Yes**	14.5	**Yes**	740	**Yes**	11000	**Yes**	4090	**Yes**	1750	**Yes**
		UMH-RV5	6.5	0.7	11200	No	114	**Yes**	4.34	**Yes**	793	**Yes**	2480	**Yes**	920	**Yes**	495	**Yes**
		UMH-RV6	5.5	0.4	25300	**Yes**	21.9	**Yes**	0.686	No	564	**Yes**	1010	**Yes**	343	No	172	**Yes**
		UMH-RV7	6.6	0.7	6290	No	64.8	**Yes**	6.69	**Yes**	129	**Yes**	2560	**Yes**	4810	**Yes**	1110	**Yes**
	Site Sample - Mike Horse Mine Town Site																	
		MHTS-RV1	3.9	1.5	6930	No	64.8	**Yes**	6.69	**Yes**	129	**Yes**	2560	**Yes**	4810	**Yes**	1110	**Yes**
9	**Reference Sites - Paymaster Mine Waste Areas**																	
		MGBG-1	5.8	8	*16600*	--	23.2	--	4.44	--	87.8	--	96.8	--	7740	--	756	--
		MGBG-2	5.2	1.82	19400	--	13.3	--	3.59	--	299	--	304	--	1810	--	559	--
		PCBG-1	5.4	2.34	21200	--	*7.68*	--	*0.543*	--	*12.1*	--	*34.4*	--	1140	--	201	--
		PCBG-201	5.4	1.45	22600	--	11	--	2.2	--	339	--	294	--	*229*	--	107	--
		PCBG-202	5	3.26	20300	--	22	--	2.2	--	82.5	--	60	--	233	--	*55*	--
	Site Samples - Paymaster Mine Waste Areas																	
		PMR-RV1	6.4	1.1	18800	**Yes**	33.7	**Yes**	0.776	**Yes**	480	**Yes**	1310	**Yes**	310	**Yes**	152	**Yes**
		PMR-RV2	4.9	1	22200	**Yes**	20.4	**Yes**	0.66	**Yes**	549	**Yes**	726	**Yes**	257	**Yes**	122	**Yes**
		PMW2-RV1	5.3	0.6	16200	No	20.3	**Yes**	0.698	**Yes**	359	**Yes**	510	**Yes**	268	**Yes**	107	**Yes**

Notes:

1 Reference site soil samples are discrete samples collected from surface soil (0-6 inches bgs) in areas near each site representative of background conditions. Sample results reported are laboratory results. The minimum reference soil concentration within the EU is *italicized*.

2 Site soil samples were composites of four to six points collected from surface soil in reclamation areas where vegetative cover was lacking or appeared stressed (i.e., discolored, stunted, deformed). Sample results reported are laboratory results.

3 Site soil samples are compared to the the minimum concentration of the reference site samples.

4 The reference site CONM-RF-RV1 was collected at the same time as the site samples for the Consolation Mine reclamation area. The Consolation mine waste was reclaimed in place and it was determined in the field that this area should have a reference sample specific to the site.

<	Non-detect result	bgs	Below ground surface	ID	Identification
--	Not applicable	EU	Exposure Unit	mg/kg	Milligrams per kilogram

TABLE 2-4: ACID BASE ACCOUNTING AND SYNTHETIC PRECIPITATION LEACHING POTENTIAL, DISPERSED TAILINGS
Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

EU	Area	Sample ID	Collection Date	pH	Conductivity, mmhos/cm	TOC, %	Sulfur, Total, %	Neut-ralization Potential, t/kt	Acid Potential, t/kt	Fe (mg/kg)	Acid/Base Potential, t/kt (NNP[1])	NP:AP[1]	Acid Generating Potential[1]	Aquatic Life Criteria[2]	Al SPLP mg/L	As SPLP mg/L	Cd SPLP mg/L	Cu SPLP mg/L	Fe SPLP mg/L	Hg SPLP mg/L	Mn SPLP mg/L	Pb SPLP mg/L	Zn SPLP mg/L
														Chronic	0.087	0.15	0.0001	0.0029	1	0.00091	0.12	0.001	0.037
														Acute	0.75	0.34	0.0005	0.0038	--	0.0017	2.3	0.01	0.037
2	Blackfoot River Tailings	BREOT-E22+70 (0-6")	18-Jul-08	--	--	--	--	--	--	--	--	--	--		--	--	0	0		0	0	0	--
2	Blackfoot River Tailings	BREOT-N11+25 (0-6")	8-Oct-07	5.2	0.14	1.15	0.02	6	0.32	--	5.68	18.75	Uncertain Acid Generation Potential		--	0.1 <	0.01 <	0.5	--	0.0001 <	**2**	0.3	0.5 <
2	Blackfoot River Tailings	BREOT-N12-12.5 (0-6")	8-Oct-07	2.7	2.53	0.15	1.08	0	25	--	-25	0.00	Potentially Acid Generating		--	0.1 <	0.01 <	0.4	--	0.0001 <	3	3.7	1.1
2	Blackfoot River Tailings	BREOT-N21+25 (0-6")	9-Oct-07	3.1	0.49	2.05	--	--	--	--	--	--	--		--	--	--	--	--	--	--	--	--
2	Blackfoot River Tailings	BREOT-N23+115 (0-6")	8-Jul-08	--	--	--	--	--	--	--	--	--	--		--	0.1 <	**0.0**	0	--	0	0	0	0
2	Blackfoot River Tailings	BREOT-N23-0 (0-6")	9-Oct-07	4.2	10.4	0.5	10.5	-5	310	--	-315	-0.02	Potentially Acid Generating		--	0.1 <	0.11	0.1 <	--	0.0002	35	0.1 <	5.8
2	Blackfoot River Tailings	BREOT-N26-0 (0-6")	9-Oct-07	3	4.39	1.8	--	--	--	--	--	--	--		--	--	--	--	--	--	--	--	--
2	Blackfoot River Tailings	BREOT-N27-75 (0-6")	9-Oct-07	6.2	0.52	3.02	--	--	--	--	--	--	--		--	--	--	--	--	--	--	--	--
2	Blackfoot River Tailings	BREOT-N28+25 (0-6")	9-Oct-07	5.7	0.48	1.95	0.07	8	1.7	--	6.3	4.71	Uncertain Acid Generation Potential		--	0.1 <	0.01 <	0.1 <	--	0.0001 <	**0.4**	0.1 <	0.5 <
2	Blackfoot River Tailings	BREOT-N30-12.5 (0-6")	10-Oct-07	3.3	1.47	3.12	0.82	1	12	--	-11	0.08	Potentially Acid Generating		--	0	0.01 <	0.1 <	--	0.0001 <	2.8	0.1 <	0.6
2	Blackfoot River Tailings	BREOT-N31+75 (0-6")	8-Jul-08	--	--	--	--	--	--	--	--	--	--		--	0.1 <	**0**	0	--	0	0	0	0
2	Blackfoot River Tailings	BREOT-N33-12.5 (0-6")	10-Oct-07	2.1	4.54	2.88	--	--	--	--	--	--	--		--	--	--	--	--	--	--	--	--
2	Blackfoot River Tailings	BREOT-N37+25 (0-6")	10-Oct-07	4.6	0.39	1.38	0.05	7	0.78	--	6.22	8.97	Uncertain Acid Generation Potential		--	0	0.01 <	0.1	--	0.0001 <	**0.2**	0.1 <	0.5 <
2	Blackfoot River Tailings	BREOT-N37-0 (0-6")	10-Oct-07	3.3	3.77	2.41	--	--	--	--	--	--	--		--	--	--	--	--	--	--	--	--
2	Blackfoot River Tailings	BREOT-N41-12.5 (0-6")	10-Oct-07	3.5	2.77	0.28	--	--	--	--	--	--	--		--	--	--	--	--	--	--	--	--
2	Blackfoot River Tailings	BREOT-N47-12.5 (0-6")	11-Oct-07	2.9	1.37	3.44	0.37	-3	3.1	--	-6.1	-0.97	Potentially Acid Generating		--	0	0.01 <	0.3	--	0.0001 <	2.4	0.2	0.7
2	Blackfoot River Tailings	BREOT-N56-0 (0-6")	12-Oct-07	3.3	2.85	5.36	--	--	--	--	--	--	--		--	--	--	--	--	--	--	--	--
2	Blackfoot River Tailings	BREOT-N56-12.5 (0-6")	12-Oct-07	2.7	4.32	3.2	2.61	-2	62	--	-64	-0.03	Potentially Acid Generating		--	0.1 <	0.03	0.8	--	0.0001 <	13	3.4	4.9
2	Blackfoot River Tailings	BREOT-N60+25 (0-6")	15-Oct-07	5	0.32	5.82	0.07	7	1.3	--	5.7	5.38	Uncertain Acid Generation Potential		--	0.1 <	0.01 <	0.1 <	--	0.0001 <	**0.2**	0.1 <	0.5 <
2	Blackfoot River Tailings	BREOT-N60-0 (0-6")	15-Oct-07	5.6	0.19	4.76	--	--	--	--	--	--	--		--	--	--	--	--	--	--	--	--
2	Blackfoot River Tailings	BREOT-N63-0 (0-6")	15-Oct-07	5.1	0.35	4.52	0.07	7	1.6		5.4	4.38	Uncertain Acid Generation Potential		--	0.1 <	0.01 <	0.1 <	--	0.0001 <	**0.4**	0.2	0.5 <
2	Blackfoot River Tailings	BREOT-N67+125 (0-6")	9-Jul-08	--	--	--	--	--	--	--	--	--	--		--	0.1 <	**0**	0	--	0	0	0	0
2	Blackfoot River Tailings	BREOT-S1+25 (0-6")	8-Oct-07	5.1	0.17	2.43	0.04	5	0.39		4.61	12.82	Uncertain Acid Generation Potential		--	0	0.01 <	0.1 <	--	0.0001 <	**0.8**	0.1 <	0.5 <
2	Blackfoot River Tailings	BREOT-S11+63 (0-6")	8-Oct-07	3.1	0.54	1.04	--	--	--	--	--	--	--		--	--	--	--	--	--	--	--	--
2	Blackfoot River Tailings	BREOT-S15-12.5 (0-6")	8-Oct-07	2	7.55	0.55	--	--	--	--	--	--	--		--	--	--	--	--	--	--	--	--
2	Blackfoot River Tailings	BREOT-S16+75 (0-6")	8-Jul-08	--	--	--	--	--	--	--	--	--	--		--	0.1 <	**0**	0	--	0	0	0	0
2	Blackfoot River Tailings	BREOT-S19+85 (0-6")	8-Jul-08	--	--	--	--	--	--	--	--	--	--		--	0.1 <	**0**	0	--	0	0	0	0
2	Blackfoot River Tailings	BREOT-S20+75 (0-6")	8-Jul-08	5.3	0.6	6.6	0.02	8	0.54	16900	7.46	14.81	Uncertain Acid Generation Potential		**8.3**	0.1 <	**0.0002**	0	5.7	0.0001 <	**0.15**	0.03	0.07
2	Blackfoot River Tailings	BREOT-S21+25 (0-6")	9-Oct-07	3.3	0.44	0.86	0.57	-1	10		-11	-0.10	Potentially Acid Generating		--	0.1 <	0.01 <	0.1 <	--	0.0001 <	0.1	0.1 <	0.5 <
2	Blackfoot River Tailings	BREOT-S27-0 (0-6")	9-Oct-07	2.6	1.61	5.59	0.89		11		-11	0.00	Potentially Acid Generating		--	0.1 <	0.01 <	0.3	--	0.0001 <	3.4	2.8	0.5 <
2	Blackfoot River Tailings	BREOT-S29+25 (0-6")	10-Oct-07	3.6	0.94	0.91	0.38		10		-10	0.00	Potentially Acid Generating		--	0.1 <	0.01 <	0.1 <	--	0.0001	**0.4**	0.1 <	0.5 <
2	Blackfoot River Tailings	BREOT-S30-0 (0-6")	10-Oct-07	5.3	0.21	0.72	--	--	--	--	--	--	--		--	--	--	--	--	--	--	--	--
2	Blackfoot River Tailings	BREOT-S31-25 (0-6")	10-Oct-07	3.1	1.77	0.23	--	--	--	--	--	--	--		--	--	--	--	--	--	--	--	--
2	Blackfoot River Tailings	BREOT-S32+300 (0-6")	8-Jul-08	--	--	--	--	--	--	--	--	--	--		--	0.1 <	**0**	0	--	0	0	0	0
2	Blackfoot River Tailings	BREOT-S37+25 (0-6")	10-Oct-07	5.5	0.28	5.55	0.18	8	4.3		3.7	1.86	Uncertain Acid Generation Potential		--	0.1 <	0.01 <	0.1 <	--	0.0001 <	**0.3**	0.1 <	0.5 <
2	Blackfoot River Tailings	BREOT-S38+25 (0-6")	10-Oct-07	5.6	0.44	5.15	--	--	--	--	--	--	--		--	--	--	--	--	--	--	--	--
2	Blackfoot River Tailings	BREOT-S38-12.5 (0-6")	10-Oct-07	5	8.34	1.14	9.34	59	280	--	-221	0.21	Potentially Acid Generating		--	0.1 <	0.06	0.1 <	--	0.0001 <	31	0.1 <	1.8
2	Blackfoot River Tailings	BREOT-S41-12.5 (0-6")	10-Oct-07	5	7.8	0.96	13.8	43	400	--	-357	0.11	Potentially Acid Generating		--	0.1 <	0.03	0.1 <	--	0.0001	39	0.1 <	0.8
2	Blackfoot River Tailings	BREOT-S48+25 (0-6")	12-Oct-07	5.1	0.11	0.38	0.14	3	3.5	--	-0.5	0.86	Potentially Acid Generating		--	0.1 <	0.01 <	0.1 <	--	0.0001 <	0.1	0.1 <	0.5 <
2	Blackfoot River Tailings	BREOT-S50+25 (0-6")	12-Oct-07	4.8	0.17	1.33	0.15	1	3.6	--	-2.6	0.28	Potentially Acid Generating		--	0.1 <	0.01 <	0.1 <	--	0.0001 <	0.1	0.1 <	0.5 <
2	Blackfoot River Tailings	BREOT-S54-0 (0-6")	15-Oct-07	4.1	0.12	1	0.08	1	2.1	--	-1.1	0.48	Potentially Acid Generating		--	0.01	0.01 <	0.1 <	--	0.0001 <	0.1	0.1 <	0.5 <
2	Blackfoot River Tailings	BREOT-S55-12.5 (0-6")	15-Oct-07	4.2	0.15	1.68	0.08	2	1	--	1	2.00	Uncertain Acid Generation Potential		--	0.1 <	0.01 <	0.1	--	0.0001 <	**0.2**	0.2	0.5 <
2	Upper Black Foot River	UBDT-TP-1 (0-2")	17-Oct-07	7	0.53	2.93	--	--	--	--	--	--	--		--	--	--	--	--	--	--	--	--
2	Upper Black Foot River	UBDT-TP-1 (12-24")	17-Oct-07	6.5	2.02	2.8	--	--	--	--	--	--	--		--	--	--	--	--	--	--	--	--
2	Upper Black Foot River	UBDT-TP-1 (2-12")	17-Oct-07	6.20	1.29	2.33	10.8	14	--	17800	--	--	--		--	0.1 <	0.01	0.1 <	--	0.0001 <	**0.8**	0.1 <	0.5 <
2	Upper Black Foot River	UBDT-TP-1 (24-36")	17-Oct-07	6.10	1.02	0.52	--	--	--	3620	--	--	--		--	--	--	--	--	--	--	--	--
2	Upper Black Foot River	UBDT-TP-1 (36-48")	17-Oct-07	6.20	0.88	0.30	--	--	--	1490	--	--	--		--	--	--	--	--	--	--	--	--
2	Upper Black Foot River	UBDT-TP-1 (48-60")	17-Oct-07	4.60	1.06	0.09	--	--	--	524	--	--	--		--	--	--	--	--	--	--	--	--
2	Upper Black Foot River	UBDT-TP-2 (0-2")	17-Oct-07	6.80	1.73	0.77	--	--	--	3500	--	--	--		--	--	--	--	--	--	--	--	--
2	Upper Black Foot River	UBDT-TP-2 (12-24")	17-Oct-07	7.10	1.75	1.19	--	--	--	3350	--	--	--		--	--	--	--	--	--	--	--	--
2	Upper Black Foot River	UBDT-TP-2 (2-12")	17-Oct-07	6.4	3.02	0.69	5.86	47	160		-113	0.29	Potentially Acid Generating		--	0.1 <	0.01 <	0.1 <	--	0.0001 <	0.1	0.1 <	0.5 <
2	Upper Black Foot River	UBDT-TP-2 (24-36")	17-Oct-07	5.50	2.13	0.12	--	--	--	1150	--	--	--		--	--	--	--	--	--	--	--	--
2	Upper Black Foot River	UBDT-TP-2 (36-48")	17-Oct-07	5.40	1.59	0.17	--	--	--	1060	--	--	--		--	--	--	--	--	--	--	--	--
2	Upper Black Foot River	UBDT-TP-3 (0-2")	17-Oct-07	2.3	6.12	0.23	--	--	--	--	--	--	--		--	--	--	--	--	--	--	--	--
2	Upper Black Foot River	UBDT-TP-3 (12-24")	17-Oct-07	2.3	6.97	0.12	--	--	--	--	--	--	--		--	--	--	--	--	--	--	--	--

TABLE 2-4: ACID BASE ACCOUNTING AND SYNTHETIC PRECIPITATION LEACHING POTENTIAL, DISPERSED TAILINGS (Continued)
Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

EU	Area	Sample ID	Collection Date	pH	Conductivity, mmhos/cm	TOC, %	Sulfur, Total, %	Neut-ralization Potential, t/kt	Acid Potential, t/kt	Fe (mg/kg)	Acid/Base Potential, t/kt (NNP[1])	NP:AP[1]	Acid Generating Potential[1]	Aquatic Life Criteria[2]	Al SPLP mg/L	As SPLP mg/L	Cd SPLP mg/L	Cu SPLP mg/L	Fe SPLP mg/L	Hg SPLP mg/L	Mn SPLP mg/L	Pb SPLP mg/L	Zn SPLP mg/L
														Chronic	0.087	0.15	0.0001	0.0029	1	0.00091	0.12	0.001	0.037
														Acute	0.75	0.34	0.0005	0.0038	--	0.0017	2.3	0.01	0.037
2	Upper Black Foot River	UBDT-TP-3 (2-12")	17-Oct-07	1.9	4.65	0.15	--	--	--	--	--	--	--		--	--	--	--	--	--	--	--	--
2	Upper Black Foot River	UBDT-TP-3 (24-36")	17-Oct-07	2.50	6.12	0.21	--	--	--	518	--	--	--		--	--	--	--	--	--	--	--	--
2	Upper Black Foot River	UBDT-TP-3 (36-48")	17-Oct-07	3.20	6.95	0.21	0.9	16		1120	--	--	--		--	0.1 <	0.03	1	--	0.0001 <	9.6	1.8	5.7
2	Upper Black Foot River	UBDT-TP-3 (48-60")	17-Oct-07	5.40	2.68	0.10	--	--	--	701	--	--	--		--	--	--	--	--	--	--	--	--
2	Upper Black Foot River	UBDT-TP-4 (0-2")	16-Oct-07	7	1.16	0.5	5.87	24	170		-146	0.14	Potentially Acid Generating		--	0.1 <	0.01 <	0.1 <	--	0.0001 <	**0.3**	0.3	0.5 <
2	Upper Black Foot River	UBDT-TP-4 (12-24")	16-Oct-07	6.50	1.00	0.13	--	--	--	655	--	--	--		--	--	--	--	--	--	--	--	--
2	Upper Black Foot River	UBDT-TP-4 (2-12")	16-Oct-07	3.7	3.68	0.07	--	--	--	--	--	--	--		--	--	--	--	--	--	--	--	--
2	Upper Black Foot River	UBDT-TP-4 (24-36")	16-Oct-07	6.4	1.14	0.32	--	--	--	--	--	--	--		--	--	--	--	--	--	--	--	--
2	Upper Black Foot River	UBDT-TP-5 (0-2")	17-Oct-07	6.30	1.17	0.36	4.25	14	--	1980	--	--	--		--	0.1 <	0.01 <	0.1 <	--	0.0001 <	0.1	0.1	0.5 <
2	Upper Black Foot River	UBDT-TP-5 (12-24")	17-Oct-07	6	1.23	0.28	--	--	--		--	--	--		--	--	--	--	--	--	--	--	--
2	Upper Black Foot River	UBDT-TP-5 (2-12")	17-Oct-07	6.20	1.26	0.24	--	--	--	1200	--	--	--		--	--	--	--	--	--	--	--	--
2	Upper Black Foot River	UBDT-TP-6 (0-2")	16-Oct-07	6.40	0.74	1.62	8.27	25	--	24000	--	--	--		--	0.1 <	0.01 <	0.1 <	--	0.0001 <	**0.2**	0.1 <	0.5 <
2	Upper Black Foot River	UBDT-TP-6 (12-24")	16-Oct-07	4.3	17.7	0.65	--	--	--	--	--	--	--		--	--	--	--	--	--	--	--	--
2	Upper Black Foot River	UBDT-TP-6 (2-12")	16-Oct-07	6.4	0.99	1.33	--	--	--	--	--	--	--		--	--	--	--	--	--	--	--	--
2	Upper Black Foot River	UBDT-TP-6 (24-36")	16-Oct-07	4.1	12.8	0.43	--	--	--	--	--	--	--		--	--	--	--	--	--	--	--	--
2	Upper Black Foot River	UBDT-TP-6 (36-48")	16-Oct-07	4.9	2.25	0.07	--	--	--	--	--	--	--		--	--	--	--	--	--	--	--	--
2	Upper Black Foot River	UBDT-TP-6 (48-60")	16-Oct-07	4.3	2.98	0.22	--	--	--	--	--	--	--		--	--	--	--	--	--	--	--	--
11	Beartrap Creek	BCEOT-E03-8 (0-6")	16-Oct-07	5.9	0.42	2.28	--	--	--	--	--	--	--		--	--	--	--	--	--	--	--	--
11	Beartrap Creek	BCEOT-E04-12.5 (0-6")	16-Oct-07	3.6	0.48	3.94	--	--	--	--	--	--	--		--				--				--
11	Beartrap Creek	BCEOT-E05+25 (0-6")	16-Oct-07	3.7	3.01	9.48	0.95	2	14	--	-12	0.14	Potentially Acid Generating		--	0.1 <	0.01 <	0.1 <	--	0.0001 <	13	0.1 <	1.1
11	Beartrap Creek	BCEOT-E18+25 (0-6")	16-Oct-07	5.3	0.21	4.13	--	--	--	--	--	--	--		--	--	--	--	--	--	--	--	--
11	Beartrap Creek	BCEOT-E19-12.5 (0-6")	16-Oct-07	3.6	3.36	4.7	5.8	12	150	--	-138	0.08	Potentially Acid Generating		--	0	0.01 <	0.1 <	--	0.0001 <	7.2	0.1 <	1
11	Beartrap Creek	BCEOT-E20+25 (0-6")	16-Oct-07	5	0.15	6.85	--	--	--	--	--	--	--		--	--	--	--	--	--	--	--	--
11	Beartrap Creek	BCEOT-E21-12.5 (0-6")	17-Oct-07	3.6	0.48	12.7	--	--	--	--	--	--	--		--	--	--	--	--	--	--	--	--
11	Beartrap Creek	BCEOT-W08-0 (0-6")	17-Oct-07	5	0.22	0.29	--	--	--	--	--	--	--		--	--	--	--	--	--	--	--	--
11	Beartrap Creek	BCEOT-W10+25 (0-6")	17-Oct-07	4	2.09	1.29	--	--	--	--	--	--	--		--	--	--	--	--	--	--	--	--
11	Beartrap Creek	BCEOT-W13-0 (0-6")	16-Oct-07	5.8	0.8	1.82	0.28	9	3.1	--	5.9	2.90	Uncertain Acid Generation Potential		--	0.1 <	0.01 <	0.1 <	--	0.0001 <	**0.3**	0.1 <	0.5 <
11	Beartrap Creek	BCEOT-W17+25 (0-6")	16-Oct-07	4.4	0.21	3.04	0.17	3	4.7	--	-1.7	0.64	Potentially Acid Generating		--	0	0.01 <	0.1 <	--	0.0001 <	**0.3**	0.1 <	0.5 <
11	Beartrap Creek	BCEOT-W22-12.5 (0-6")	17-Oct-07	6.2	2.32	1.76	5.79	39	160	--	-121	0.24	Potentially Acid Generating		--	0.1 <	0.01 <	0.1 <	--	0.0001 <	0.1	0.1 <	1.5
11	Beartrap Creek	BCEOT-W23+25 (0-6")	17-Oct-07	5.4	0.14	1.54	0.02	5	0.45	--	4.55	11.11	Uncertain Acid Generation Potential		--	0.1 <	0.01 <	0.1 <	--	0.0001 <	**0.2**	0.1 <	0.5 <
11	Beartrap Creek	BCEOT-W25-12.5 (0-6")	17-Oct-07	5.7	6.06	2.49	14	14	370	--	-356	0.04	Potentially Acid Generating		--	0.1 <	0.01 <	0.1 <	--	0.0001 <	4.3	0.1 <	0.5 <
11	Beartrap Creek	BCEOT-W26-0 (0-6")	17-Oct-07	4.7	0.26	1	--	--	--	--	--	--	--		--	--			--	--	--	--	--

Notes:

1 The NPP, NP/AP and Acid Generation Potential are based on calculations presented in EPA (1994).

2 The acute and chronic water quality criteria are from Montana Department of Environmental Quality (2008). Acute and chronic water quality criteria for cadmium, copper, and zinc are based on hardness. Hardness data was not available so a default hardness value of 25 mg/L $CaCO_3$ was used.

Bold values represent SPLP data that exceed the chronic aquatic life criteria.
Shaded cells represent SPLP data that exceed the acute aquatic life criteria.

Potentially acid generating = NP:AP[2]<1 and NNP<-20 t/kt
Uncertain acid generation potential=NP:AP between 1 and 3 and/or NNP between -20 and +20 t/kt
Unlikely to generate acid = NP:AP>3 and NNP>+20 t/kt

--	Not analyzed	mg/L	Milligrams per liter
AP	Acid production potential	NNP	
$CaC0_3$	Calcium carbonate	NP	Neutralization potential
EPA	U.S. Environmental Protection Agency	NP:AP	Ratio of the neutralization potential to acid production potential
EU	Exposure Unit	NPP	Net neutralization potential (the acid potential subtracted from the neutralization potential
COND	Conductivity	SPLP	Synthetic precipitation leaching procedure
ID	Identification	t/kt	Tons $CaC0_3$ per thousand tonnes
mmhos/cm	Millimhos per centimeter	TOC	Total organic carbon

Sources: Montana Department of Environmental Quality. 2010. Circular DEQ-7. Montana Numeric Water Quality Standards.
EPA. 1994. Technical Document EPA 530-R-94-036 NTIS PB94-201829: Acid Mine Drainage Potential. 52p.

TABLE 2-5: TERRESTRIAL TRANSECT SOIL CONCENTRATIONS

Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

EU	Area	Point ID	Aluminum (mg/kg)	Arsenic (mg/kg)	Cadmium (mg/kg)	Copper (mg/kg)	Lead (mg/kg)	Manganese (mg/kg)	Zinc (mg/kg)
	Anaconda Creek Reference Transect								
--		ANT REF TS 01	11700	14.80	0.92	42	81	436	106
--		ANT REF TS 02	*11200*	15.20	0.85	40	25	*428*	67
--		ANT REF TS 03	12700	*12.30*	*0.74*	*32*	*24*	564	*64*
	Blackfoot River Transect								
2		BR TS 01	10600	**23.90**	**8.62**	**126**	**212**	**1390**	**582**
2		BR TS 02	**11600**	**31.90**	**1.33**	**60**	**68**	**720**	**174**
2		BR TS 03	7670	**101.00**	**4.36**	**264**	**1840**	**785**	**764**
	Beartrap Creek Transect								
11		BC TS 01	**17800**	8.20	**0.79**	14	**37**	**673**	**124**
11		BC TS 02	**12600**	7.57	0.62	10	**26**	**701**	**81**
11		BC TS 03	**17200**	**35.20**	**1.45**	**100**	**264**	**1150**	**165**

Notes:

Results in *italics* indicate the minimum reference transect concentration.

Results in **bold** exceed the minimum reference transect concentration.

Terrestrial samples were collected from two transects along Beartrap Creek and Blackfoot River; reference site samples were collected from one transect along Anaconda Creek.

EU Exposure Unit
ID Identification
mg/kg Milligrams per kilogram

TABLE 2-6: TERRESTRIAL TRANSECT PLANT TISSUE CONCENTRATIONS

Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

EU	Area	Point ID	Aluminum (mg/kg)	Arsenic (mg/kg)	Cadmium (mg/kg)	Copper (mg/kg)	Lead (mg/kg)	Manganese (mg/kg)	Zinc (mg/kg)
	Anaconda Creek Reference Transect								
--		Minimum Reference Concentration	*11200*	*12.3*	*0.738*	*31.6*	*428*	*23.7*	*64.4*
--		Maximum Reference Concentration	12700	15.2	0.917	42.4	564	81.3	106
	Blackfoot River Transect								
2		BR TS 01	10600	**23.9**	**8.62**	**126**	**1390**	**212**	**582**
2		BR TS 02	**11600**	**31.9**	**1.33**	**59.8**	**720**	**68.1**	**174**
2		BR TS 03	7670	**101**	**4.36**	**264**	**785**	**1840**	**764**
	Beartrap Creek Transect								
11		BC TS 01	**17800**	8.2	**0.786**	13.9	**673**	**37.2**	**124**
11		BC TS 02	**12600**	7.57	0.618	10.3	**701**	**25.8**	**81.4**
11		BC TS 03	**17200**	**35.2**	**1.45**	**99.6**	**1150**	**264**	**165**

Notes:

Results in *italics* indicate the minimum reference transect concentration.

Results in **bold** exceed the minimum reference transect concentration.

Terrestrial plant samples were collected from two transects along Beartrap Creek and Blackfoot River; reference site samples were collected from one transect along Anaconda Creek.

-- Not applicable
EU Exposure Unit
ID Identification
mg/kg Milligrams per kilogram

TABLE 2-7: TERRESTRIAL TRANSECT INVERTEBRATE TISSUE CONCENTRATIONS

Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

EU	Area Point ID	Aluminum (mg/kg)	Arsenic (mg/kg)	Cadmium (mg/kg)	Copper (mg/kg)	Lead (mg/kg)	Manganese (mg/kg)	Zinc (mg/kg)
	Anaconda Creek Reference Transect							
--	Minimum Reference Concentration	21.9	0.616	0.76	34.9	40	0.508	156
--	Maximum Reference Concentration	304	9.73	1.04	46.4	103	2.02	197
	Blackfoot River Transect							
2	BR T1 01	**415**	**16.3**	**3.68**	**68**	**636**	**102**	**386**
2	BR T1 02	**96**	**8.19**	**2.01**	**38.3**	**80**	**9.24**	**230**
2	BR T1 03	**40.4**	**24.3**	**9.46**	**27.9**	**263**	**13.5**	**196**
	Beartrap Creek Transect							
11	BC T1 01	**214**	**41.9**	0.456	20.9	**173**	**16**	**163**
11	BC T1 03	**196**	**50.2**	**1.46**	**38.6**	**117**	**4.91**	**224**

Notes:

Results in **bold** exceed the minimum reference transect concentration.

Terrestrial invertebrate samples were collected from two transects along Beartrap Creek and Blackfoot River; reference site samples were collected from one transect along Anaconda Creek. Invertebrates collected include grasshoppers, moths, butterflies, ants, and spiders.

-- Not applicable
EU Exposure Unit
ID Identification
mg/kg Milligrams per kilogram

TABLE 2-8: TERRESTRIAL TRANSECT SMALL MAMMAL TISSUE CONCENTRATIONS AND SAMPLE INFORMATION
Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

EU	Area	Sample ID	Point ID	Species	Age/ Sex	Body Length (cm)	Tail Length (cm)	Weight (g)	Aluminum (mg/kg)	Arsenic (mg/kg)	Cadmium (mg/kg)	Copper (mg/kg)	Lead (mg/kg)	Manganese (mg/kg)	Zinc (mg/kg)
	Anaconda Creek Reference Transect														
--		MA 01	ANTREF-01	Least Chipmunk	A/M	9	10	52	11	< 2.5	< 0.2	2.32	< 0.75	1.07	141.0
--		MA 02	ANTREF-01	Meadow Vole	A/U	11	5	38	29	< 2.5	< 0.2	3.83	< 0.75	6.95	351.0
--		MA 03	ANTREF-02	Masked Shrew	A/U	4	4	2	25	< 2.5	< 0.2	5.34	< 0.75	5.08	33.5
	Blackfoot River Transect														
2		MA 01	BR-01	Red Squirrel	A/M	18	15	220	8	3.7	< 0.2	5.53	2.83	1.99	376.0
2		MA 02	BR-01	Least Chipmunk	A/M	11	10	52	17	< 2.5	< 0.2	3.62	5.17	4.92	59.3
2		MA 03	BR-01	Least Chipmunk	A/M	13	10	57	17	3	< 0.2	4.68	4.54	4.81	64.8
	Beartrap Creek Transect														
11		MA 01	BC-02	Deer Mouse	A/M	8	6	18	< 8	< 2.5	< 0.2	3.18	< 0.75	1.56	30.8
11		MA 02	BC-02	Boreal Redback Vole	J/U	8	3	17	18	< 2.5	< 0.2	3.33	1.34	6.28	164.0
11		MA 03	BC-02	Deer Mouse	A/M	9	7	21	< 8	< 2.5	< 0.2	1.92	7.66	3.59	63.0

Notes:

Terrestrial mammal samples were collected from two transects along Beartrap Creek and Blackfoot River; reference site samples were collected from one transect along Anaconda Creek.

<	Non-detect result	EU	Exposure Unit	M	Male
--	Not applicable	ID	Identification	mg/kg	Milligrams per kilogram
A	Adult	J	Juvenile	U	Unknown

TABLE 2-9: VEGETATION QUADRAT PERCENT COVER MEASUREMENTS FROM BLACKFOOT RIVER, BEARTRAP CREEK, AND UPPER MARSH TRANSECTS

Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

EU	Transect	Sample	Percent Cover	Genus Species	Common Name
2	BR (Blackfoot River - High Risk)	VE01	30	*Poa* spp.	blue grass spp.
			10	*Symphyotrichum puniceum*	purplestem aster
			5	*Achillea millefolium*	common yarrow
			5	*Campanula rotundifolia*	harebells
			5	*Mentha arvensis*	wild mint
			1	*Galium boreale*	northern bedstraw
			1	*Stellaria* spp.	chickweed spp.
			30	litter	litter
			13	bareground	bareground
		VE02	30	*Symphyotrichum puniceum*	purplestem aster
			18	*Carex* spp.	sedge spp.
			10	*Symphoricarpos albus*	snowberry
			10	*Mahonia repens*	Oregon grape
			10	*Galium boreale*	northern bedstraw
			10	*Elymus* spp.	wildrye spp.
			5	*Angelica arguta*	white angelica
			1	*Eurybia macrophylla*	bigleaf aster
			1	*Maianthemum stellatum*	star false Solomon's seal
			5	litter	litter
		VE03	15	*Mahonia repens*	Oregon grape
			10	*Symphyotrichum puniceum*	purplestem aster
			5	*Achillea millefolium*	common yarrow
			5	*Poa* spp.	blue grass spp.
			2	*Senecio* spp.	ragwort spp.
			1	*Mentha arvensis*	wild mint
			1	*Elymus* spp.	wildrye spp.
			1	*Phluem pratense*	Timothy grass
			10	litter	litter
			50	bareground	bareground
11	BC (Beartrap Creek - Moderate to Low Risk	VE01	15	*Arctostaphylos uva-ursi*	bearberry
			10	*Vaccinium membranaceum*	black huckleberry
			5	*Pseudotsuga menziesii*	Douglas-fir
			5	*Pinus contorta*	lodgepole pine
			50	litter	litter
			15	bareground	bareground
		VE02	25	*Vaccinium membranaceum*	black huckleberry
			10	*Spiraea betulifolia*	white spirea
			5	*Pseudotsuga menziesii*	Douglas-fir
			1	*Arctostaphylos uva-ursi*	bearberry
			1	unknown grass spp.	unknown grass spp.
			58	litter	litter
		VE03	30	*Spiraea betulifolia*	white spirea
			5	*Vaccinium membranaceum*	black huckleberry
			5	*Eurybia macrophylla*	bigleaf aster
			5	*Epilobium angustifolium*	fireweed
			5	unknown grass spp.	unknown grass spp.
			1	*Vaccinium scoparium*	grouse whortleberry
			39	litter	litter
			10	bareground	bareground

TABLE 2-9: VEGETATION QUADRAT PERCENT COVER MEASUREMENTS FROM BLACKFOOT RIVER, BEARTRAP CREEK, AND UPPER MARSH TRANSECTS (Continued)

Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

EU	Transect	Sample	Percent Cover	Genus Species	Common Name
--	ANTREF (Anaconda Creek - Reference)	VE01	30	*Senecio* spp.	ragwort spp.
			28	*Bromus inermis*	smooth brome
			10	*Stachys palustris*	marsh hedgenettle
			5	*Physocarpus monogynus*	mountain ninebark
			1	*Achillea millefolium*	common yarrow
			1	*Angelica arguta*	white angelica
			25	litter	litter
		VE02	30	*Symphyotrichum puniceum*	purplestem aster
			10	*Geranium richardsonii*	Richardson's geranium
			10	*Achillea millefolium*	common yarrow
			10	*Fragaria virginiana*	Virginia strawberry
			5	*Angelica arguta*	white angelica
			5	*Stachys palustris*	marsh hedgenettle
			5	*Prunella vulgaris*	common selfheal
			5	*Phluem pratense*	Timothy grass
			10	litter	litter
			10	bareground	bareground
		VE03	20	*Phluem pratense*	Timothy grass
			15	*Potentilla diversifolia*	varileaf cinquefoil
			10	*Bromus inermis*	smooth brome
			5	*Poa* spp.	blue grass spp.
			5	*Achillea millefolium*	common yarrow
			5	*Symphyotrichum puniceum*	purplestem aster
			5	*Centaurea biebersteinii*	spotted knapweed
			1	*Campanula rotundifolia*	harebells
			1	*Prunella vulgaris*	common selfheal
			28	litter	litter
			5	bareground	bareground
12	UMT1 (Eastern Upper Marsh - High Risk)	VE01	70	*Equisetum arvense*	field horsetail
			25	*Poa* spp.	blue grass spp.
			5	litter	litter
		VE02	24	*Carex* spp.	sedge spp.
			5	*Alnus viridis*	green alder
			5	*Salix* spp.	willow spp.
			5	*Equisetum arvense*	field horsetail
			1	*Pyrola* spp.	wintergreen spp.
			50	litter	litter
			10	bareground	bareground
		VE03	25	*Carex* spp.	sedge spp.
			10	*Betula pumila*	bog birch
			4	*Salix* spp.	willow spp.
			1	*Equisetum arvense*	field horsetail
			15	litter	litter
			45	bareground	bareground

TABLE 2-9: VEGETATION QUADRAT PERCENT COVER MEASUREMENTS FROM BLACKFOOT RIVER, BEARTRAP CREEK, AND UPPER MARSH TRANSECTS (Continued)

Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

EU	Transect	Sample	Percent Cover	Genus Species	Common Name
12	UMT2 (Western Upper Marsh - Moderate to Low Risk)	VE01	40	*Poa* spp.	blue grass spp.
			15	*Carex* spp.	sedge spp.
			5	*Betula pumila*	bog birch
			25	moss	moss
			15	litter	litter
		VE02	50	*Poa* spp.	blue grass spp.
			20	*Carex* spp.	sedge spp.
			1	*Pyrola* spp.	wintergreen spp.
			1	*Salix* spp.	willow spp.
			28	litter	litter
		VE03	20	*Carex* spp.	sedge spp.
			15	*Linnaea borealis*	twinflower
			15	*Vaccinium membranaceum*	black huckleberry
			12	unknown grass spp.	unknown grass spp.
			5	*Fragaria virginiana*	Virginia strawberry
			5	*Rosa acicularis*	prickly rose
			5	*Cornus sericea*	redosier dogwood
			1	*Salix* spp.	willow spp.
			1	*Geum macrophyllum*	largeleaf avens
			1	*Galium boreale*	northern bedstraw
			20	litter	litter
--	PGREF (Pass Creek Marsh - Reference)	VE01	30	*Carex* spp.	sedge spp.
			15	*Juncus* spp.	rush spp.
			10	*Epilobium* spp.	willowherb spp.
			10	*Physocarpus monogynus*	mountain ninebark
			5	*Salix spp* .	willow spp.
			1	*Geum macrophyllum*	largeleaf avens
			10	moss	moss
			10	litter	litter
			9	bareground	bareground
		VE02	25	*Fragaria virginiana*	Virginia strawberry
			15	*Salix* spp.	willow spp.
			10	*Equisetum arvense*	field horsetail
			10	*Carex* spp.	sedge spp.
			10	*Symphyotrichum puniceum*	purplestem aster
			5	*Geum macrophyllum*	largeleaf avens
			5	*Achillea millefolium*	common yarrow
			5	*Phluem pratense*	Timothy grass
			5	*Juncus* spp.	rush spp.
			5	*Physocarpus monogynus*	mountain ninebark
			1	*Galium boreale*	northern bedstraw
			1	*Arctostaphylos uva-ursi*	bearberry
			1	*Angelica arguta*	white angelica
			1	*Mentha arvensis*	wild mint
			1	*Poa* spp.	blue grass spp.

TABLE 2-9: VEGETATION QUADRAT PERCENT COVER MEASUREMENTS FROM BLACKFOOT RIVER, BEARTRAP CREEK, AND UPPER MARSH TRANSECTS (Continued)

Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

EU	Transect	Sample	Percent Cover	Genus Species	Common Name
--	**PGREF (Pass Creek Marsh - Reference)**	VE03	25	*Carex* spp.	sedge spp.
			25	*Eurybia macrophylla*	bigleaf aster
			20	*Maianthemum stellatum*	star false Solomon's seal
			10	*Symphyotrichum puniceum*	purplestem aster
			7	*Equisetum arvense*	field horsetail
			1	*Bidens cernua*	nodding beggartick
			1	*Fragaria virginiana*	Virginia strawberry
			1	*Angelica arguta*	white angelica
			1	*Mentha arvensis*	wild mint
			1	*Phluem pratense*	Timothy grass
			1	*Juncus* spp.	rush spp.
			1	*Pyrola* spp.	wintergreen spp.
			1	*Galium boreale*	northern bedstraw
			5	litter	litter

Note:

EU Exposure Unit

TABLE 2-10: ACID BASE ACCOUNTING AND SYNTHETIC PRECIPITATION LEACHING POTENTIAL, MARSH
Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

EU	Area	Sample ID	pH	Conductivity, mmhos/cm	TOC (%)	Sulfur Total (%)	NP (t/kt)	AP (t/kt)	Acid/Base Potential t/kt (NNP)	NP:AP[1]	Acid Generation Potential[1]	Aquatic Life Criteria[2]	Al SPLP mg/L	As SPLP mg/L	Cd SPLP mg/L	Cu SPLP mg/L	Fe SPLP mg/L	Hg SPLP mg/L	Mn SPLP mg/L	Pb SPLP mg/L	Zn SPLP mg/L
												Chronic	**0.087**	**0.15**	**0.0001**	**0.0029**	**1**	**0.00091**	**0.12**	**0.001**	**0.037**
												Acute	**0.75**	**0.34**	**0.0005**	**0.0038**	**--**	**0.0017**	**2.3**	**0.01**	**0.037**
12	Eastern	BRSD-15 (0-2")	4.7	0.26	3.3	0.01	4	0.39	3.61	10.26	Uncertain Acid Generation Potential		20	0.024	0.0007	0.11	25	0.0001 <	0.73	0.094	0.31
12	Eastern	BRSD-15 (2-6")	5.4	0.36	2.8	--	--	--	--	--	--		--	--	--	--	--	--	--	--	-- --
12	Eastern	BRSD-16 (0-2")	2.6	1.96	1.9	--	--	--	--	--	--		--	--	--	--	--	--	--	--	-- --
12	Eastern	BRSD-16 (2-6")	2.9	2.73	2.3	1.31	-2	28	-30	-0.07	Potentially Acid Generating		0.06	0.003 <	0.001	0.007	0.05 <	0.0001 <	5.8	**0.01** <	0.02
12	Eastern	BRSD-16 (6-12)	6	1.58	3	--	--	--	--	--	--		--	--	--	--	--	--	--	--	-- --
12	Eastern	BRSD-2 (0-2)	6.1	0.48	3.8	--	--	--	--	--	--		--	--	--	--	--	--	--	--	-- --
12	Eastern	BRSD-2 (2-6)	5.9	0.6	4.1	6.5	3	200	-197	0.02	Potentially Acid Generating		4	0.072	0.0048	0.21	**3.9**	0.0001 <	0.1	1.9	0.78
12	Eastern	BRSD-2 (6-12)	5.9	0.58	4.9	--	--	--	--	--	--		--	--	--	--	--	--	--	--	-- --
12	Eastern	BRSD-24 (0-2)	6.5	0.69	3.3	--	--	--	--	--	--		--	--	--	--	--	--	--	--	-- --
12	Eastern	BRSD-24 (2-6)	6.1	0.67	4.4	5.69	82	180	-98	0.46	Potentially Acid Generating		3.3	0.047	0.0048	0.18	**3**	0.0001 <	0.098	1.6	0.98
12	Eastern	BRSD-24 (6-12)	5.9	0.57	4.3	--	--	--	--	--	--		--	--	--	--	--	--	--	--	-- --
12	Eastern	BRSD-25 (0-2)	6.3	1.22	2.4	8.02	92	250	-158	0.37	Potentially Acid Generating		6.3	0.03	0.0043	0.27	7.2	0.0001 <	0.18	1.7 <	0.68
12	Eastern	BRSD-25 (2-6)	6.3	0.8	3.2	--	--	--	--	--	--		--	--	--	--	--	--	--	--	-- --
12	Eastern	BRSD-25 (6-12)	6.3	0.95	4.1	6.03	69	190	-121	0.36	Potentially Acid Generating		5.7	0.057	0.0077	0.31	5	0.0001 <	0.05	1.8	1.1
12	Eastern	BRSD-3 (0-2")	4.2	1.42	8.6	1.39	8	42	-34	0.19	Potentially Acid Generating		0.04	0.003 <	0.0022	0.01	0.05 <	0.0002	2.8	0.005	0.06
12	Eastern	BRSD-3 (2-6")	4	1.28	7.7	--	--	--	--	--	--		--	--	--	--	--	--	--	--	-- --
12	Eastern	BRSD-3 (6-12")	4.3	1.23	7.3	0.29	0	6.3	-6.3	0.00	Uncertain Acid Generation Potential		0.68	0.003 <	0.0002	0.017	0.35	0.0001 <	0.46	0.008	0.05
12	Eastern	BRSD-4 (0-2")	5.4	0.29	3	--	--	--	--	--	--		--	--	--	--	--	--	--	--	-- --
12	Eastern	BRSD-4 (2-6")	5.2	0.24	2.5	0.27	7	7		1.00	Uncertain Acid Generation Potential		25	0.047	0.0008	0.18	12	0.0001 <	0.064	0.1	0.22
12	Eastern	BRSD-4 (6-12")	5.6	0.27	2.3	--	--	--	--	--	--		--	--	--	--	--	--	--	--	-- --
12	Eastern	BRSD-5 (0-2)	5.1	0.32	2	0.04	4	0.8	3.2	5.00	Uncertain Acid Generation Potential		7.6	0.019	**0.0003**	0.023	**11**	0.0001 <	**0.17**	0.066	0.09
12	Eastern	BRSD-5 (2-6)	5.1	0.16	1.4	--	--	--	--	--	--		--	--	--	--	--	--	--	--	-- --
12	Eastern	BRSD-5 (6-12)	5	0.14	1.3	0.01	4	0.22	3.78	18.18	Uncertain Acid Generation Potential		6.2	0.016	9E-05 <	0.022	**7.1**	0.0001 <	0.075	0.054	0.07
12	Eastern	PGBG-1 (0-2")	5.7	0.32	9.81	0.07	15	1.9	13.1	7.89	Uncertain Acid Generation Potential			0.10 <	0.01 <	0.1 <		0.0001 <	0.1	0.1	0.5 <
12	Eastern	PGBG-1 (2-6")	5.7	0.41	4.45	--	--	--	--	--	--		--	--	--	--	--	--	--	--	--
12	Eastern	PGBG-1 (6-12")	5.8	0.32	2.39	0.04	8	0.8	7.2	10.00	Uncertain Acid Generation Potential			0.10 <	0.01 <	0.1 <		0.0001 <	0.1 <	0.1	0.5 <
12	Eastern	PGBG-2 (0-2")	5.6	0.41	4.05	--	--	--	--	--	--		--	--	--	--	--	--	--	--	--
12	Eastern	PGBG-2 (2-6")	6	0.35	3.14	0.09	9	1	8	9.00	Uncertain Acid Generation Potential			0.10 <	0.01 <	0.1 <		0.0001 <	0.1	0.1 <	0.5 <
12	Eastern	PGBG-2 (6-12")	6.3	0.36	1.48	--	--	--	--	--	--		--	--	--	--	--	--	--	--	--
12	Eastern	UM-0N-1000E (0-2")	5.4	0.57	33.7	5	13	87	-74	0.15	Potentially Acid Generating			0.10 <	0.01 <	0.1 <		0.0001 <	0.1 <	0.1	0.5 <
12	Eastern	UM-0N-1000E (2-6")	5.2	0.95	34.3	--	--	--	--	--	--		--	--	--	--	--	--	--	--	--
12	Eastern	UM-0N-1000E (6-12")	5.2	0.62	25.8	6.4	15	110	-95	0.14	Potentially Acid Generating			0.10 <	0.01 <	0.1 <		0.0001 <	0.1 <	0.1 <	0.5 <
12	Eastern	UM-0N-2500E (0-2")	6.3	0.97	4.01	--	--	--	--	--	--		--	--	--	--	--	--	--	--	--
12	Eastern	UM-0N-2500E (2-6")	6.5	0.6	3.58	--	--	--	--	--	--		--	--	--	--	--	--	--	--	--
12	Eastern	UM-1000S-3500E (0-2")	4.2	1.18	0.79	--	--	--	--	--	--		--	--	--	--	--	--	--	--	--
12	Eastern	UM-1000S-3500E (2-6")	4.3	0.86	2.13	0.13	2	1	1	2.00	Uncertain Acid Generation Potential			0.10 <	0.01 <	0.1 <		0.0001 <	0.1 <	0.2	0.5 <
12	Eastern	UM-1000S-3500E (6-12")	3.7	0.56	1.5	--	--	--	--	--	--		--	--	--	--	--	--	--	--	--
12	Eastern	UM-250N-2250E (0-2)	6.4	0.63	3.9	--	--	--	--	--	--		--	--	--	--	--	--	--	--	--
12	Eastern	UM-250N-2250E (2-6)	6.1	0.49	4.2	5.92	140	190	-50	0.74	Potentially Acid Generating		4.7	0.027	0.0007	0.074	3.1	0.0001 <	0.026	0.095	0.28
12	Eastern	UM-250N-2250E (6-12)	5.6	0.39	4.8	--	--	--	--	--	--		--	--	--	--	--	--	--	--	--
12	Eastern	UM-250N-2500E (0-2")	6.8	0.86	1.91	--	--	--	--	--	--		--	--	--	--	--	--	--	--	--
12	Eastern	UM-250N-2500E (2-6")	7.1	0.57	3.32	--	--	--	--	--	--		--	--	--	--	--	--	--	--	--
12	Eastern	UM-250N-2500E (6-12")	7	0.69	3.62	--	--	--	--	--	--		--	--	--	--	--	--	--	--	--
12	Eastern	UM-250S-2500E (0-2")	6.2	0.77	3.72	--	--	--	--	--	--		--	--	--	--	--	--	--	--	--
12	Eastern	UM-250S-2500E (6-12")	5.8	0.42	2.52	0.17	10	3.9	6.1	2.56	Uncertain Acid Generation Potential			0.1 <	0.01 <	0.1		0.0001 <	0.1 <	0.1	0.5 <
12	Eastern	UM-250S-2750E (0-2")	6.5	0.91	3.71	7	240	190	50	1.26	Uncertain Acid Generation Potential			0.1 <	0.01 <	0.1 <		0.0001 <	0.4	0.8	0.5 <
12	Eastern	UM-250S-2750E (2-6")	6.1	0.74	4.07	--	--	--	--	--	--		--	--	--	--	--	--	--	--	--
12	Eastern	UM-250S-2750E (6-12")	6	1.57	6.91	3.56	59	110	-51	0.54	Potentially Acid Generating			0.1	0.01 <	0.2		0.0001	0.1 <	1.7	0.7
12	Eastern	UM-250S-3000E (0-2")	6.2	1.1	3.68	--	--	--	--	--	--		--	--	--	--	--	--	--	--	--
12	Eastern	UM-250S-3000E (2-6")	6.2	1.05	3.53	7.21	34	210	-176	0.16	Potentially Acid Generating			0.1 <	0.01 <	0.2		0.0001 <	0.1 <	0.3	0.5 <

TABLE 2-10: ACID BASE ACCOUNTING AND SYNTHETIC PRECIPITATION LEACHING POTENTIAL, MARSH (Continued)
Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

EU	Area	Sample ID	pH	Conductivity, mmhos/cm	TOC (%)	Sulfur Total (%)	NP (t/kt)	AP (t/kt)	Acid/Base Potential t/kt (NNP)	NP:AP[1]	Acid Generation Potential[1]	Aquatic Life Criteria[2]	Al SPLP mg/L	As SPLP mg/L	Cd SPLP mg/L	Cu SPLP mg/L	Fe SPLP mg/L	Hg SPLP mg/L	Mn SPLP mg/L	Pb SPLP mg/L	Zn SPLP mg/L
												Chronic	0.087	0.15	0.0001	0.0029	1	0.00091	0.12	0.001	0.037
												Acute	0.75	0.34	0.0005	0.0038	--	0.0017	2.3	0.01	0.037
12	Eastern	UM-250S-3000E (6-12")	6.6	0.67	2.56	--	--	--	--	--	--		--	--	--	--	--	--	--	--	--
12	Eastern	UM-250S-3250E (0-2")	5	0.4	3.63	0.05	10	1.3	8.7	7.69	Uncertain Acid Generation Potential			0.1 <	0.01 <	0.1		0.0001 <	0.1	0.1	0.8
12	Eastern	UM-250S-3250E (2-6")	5.5	0.39	2.49	--	--	--	--	--	--		--	--	--	--	--	--	--	--	--
12	Eastern	UM-250S-3250E (6-12")	5.5	0.36	1	0.02	7	0.12	6.88	58.33	Uncertain Acid Generation Potential			0.1 <	0.01 <	0.1		0.0001 <	0.1 <	0.1	0.9
12	Eastern	UM-500N-2500E (0-2")	6.4	0.47	3.23	--	--	--	--	--	--		--	--	--	--	--	--	--	--	--
12	Eastern	UM-500S-2750E (0-2")	6.2	1.31	3.55	--	--	--	--	--	--		--	--	--	--	--	--	--	--	--
12	Eastern	UM-500S-2750E (2-6")	6.3	2.24	3.03	8.5	210	240	-30	0.88	Potentially Acid Generating			0.1 <	0.01 <	0.1 <		0.0001 <	**0.3**	0.4	0.5 <
12	Eastern	UM-500S-2750E (6-12")	6.7	1.02	3.03	--	--	--	--	--	--		--	--	--	--	--	--	--	--	--
12	Eastern	UM-500S-3000E (0-2")	6	2.12	3.1	11.4	160	330	-170	0.48	Potentially Acid Generating			0.1 <	0.01 <	0.1		0.0001 <	0.1 <	1.1	0.5 <
12	Eastern	UM-500S-3000E (2-6")	5.9	0.91	2.56	--	--	--	--	--	--		--	--	--	--	--	--	--	--	--
12	Eastern	UM-500S-3000E (6-12")	5.9	0.92	1.69	0.44	9	10	-1	0.90	Uncertain Acid Generation Potential			0.1 <	0.01 <	0.1 <		0.0001 <	0.1 <	0.1	0.5 <
12	Eastern	UM-500S-3250E (0-2")	2.4	6.53	2.33	--	--	--	--	--	--		--	--	--	--	--	--	--	--	--
12	Eastern	UM-500S-3250E (2-6")	2.2	7.37	1.36	0.74	-4	5.5	-9.5	-0.73	Uncertain Acid Generation Potential			0.1 <	0.02	0.6		0.0001 <	10	2.2	3
12	Eastern	UM-500S-3250E (6-12")	1.8	15.4	0.4	--	--	--	--	--	--		--	--	--	--	--	--	--	--	--
12	Eastern	UM-750S-3000E (0-2")	6.6	2.38	3.73	--	--	--	--	--	--		--	--	--	--	--	--	--	--	-- --
12	Eastern	UM-750S-3000E (2-6")	6.8	1.96	3.36	4.6	230	130	100	1.77	Uncertain Acid Generation Potential			0.1 <	0.01 <	0.1 <		0.0001 <	1.1	0.2	0.5 <
12	Eastern	UM-750S-3000E (6-12")	6.8	1.15	3.9	--	--	--	--	--	--		--	--	--	--	--	--	--	--	--
12	Eastern	UM-750S-3500E (0-2")	4.2	1.21	4.67	1.07	6	27	-21	0.22	Potentially Acid Generating			0.1 <	0.03	0.2		0.0001 <	1.2	0.1	2.7
12	Eastern	UM-750S-3500E (2-6")	6.1	2.21	2.28	--	--	--	--	--	--		--	--	--	--	--	--	--	--	--
12	Eastern	UM-750S-3500E (6-12")	6.8	1.15	2.67	7.41	180	220	-40	0.82	Potentially Acid Generating			0.1 <	0.01 <	0.1 <		0.0001 <	**0.2**	0.1	0.5 <
12	Western	BRSD-10 (0-2")	6.2	0.3	5.6	--	--	--	--	--	--		--	--	--	--	--	--	--	--	--
12	Western	BRSD-10 (2-6")	6.3	0.28	5	0.41	17	12	5	1.42	Uncertain Acid Generation Potential		3.4	0.015	0.0018	0.14	**8.3**	0.0001 <	**0.17**	0.22	0.63
12	Western	BRSD-10 (6-12")	6.3	0.25	5.2	--	--	--	--	--	--		--	--	--	--	--	--	--	--	-- --
12	Western	BRSD-11 (0-2")	4.8	0.18	8.7	0.04	7	1.1	5.9	6.36	Uncertain Acid Generation Potential		110	0.033	0.0042	0.36	**47**	0.0002	**0.2**	0.21	1.2
12	Western	BRSD-11 (2-6")	5	0.55	4.3	--	--	--	--	--	--		--	--	--	--	--	--	--	--	-- --
12	Western	BRSD-11 (6-12")	5.4	0.1	3.4	0.01	0	0.07	-0.07	0.00	Uncertain Acid Generation Potential		180	0.069	0.0071	0.79	**87**	0.0003	**0.28**	0.51	2.1
12	Western	BRSD-6 (0-2")	4.5	0.96	19	--	--	--	--	--	--		--	--	--	--	--	--	--	--	-- --
12	Western	BRSD-6 (2-6")	3.6	0.65	22	5.81	-6	150	-156	-0.04	Potentially Acid Generating		3.6	0.003 <	8E-05 <	0.011	19	0.0001 <	0.016	0.003	0.02
12	Western	BRSD-6 (6-12")	3.7	0.79	23	--	--	--	--	--	--		--	--	--	--	--	--	--	--	-- --
12	Western	BRSD-7 (0-2")	4.8	0.61	12	3.22	9	45	-36		Potentially Acid Generating		40	0.049	0.0004	0.25	85	0.0001	0.18	0.19 <	0.52
12	Western	BRSD-7 (2-6")	4.1	0.32	2.9	--	--	--	--	--	--		--	--	--	--	--	--	--	--	-- --
12	Western	BRSD-7 (6-12")	3.9	0.22	0.9	0.1	0	1.5	-1.5	0.00	Uncertain Acid Generation Potential		46	0.041	**0.0003**	0.36	**60**	0.0001 <	**0.16**	0.22 <	0.56
12	Western	BRSD-8 (0-2")	5.2	0.2	5.4	0.01	9	0.23	8.77	39.13	Uncertain Acid Generation Potential		36	0.009	0.0042	0.28	33	0.0001 <	0.23	0.3 <	0.88
12	Western	BRSD-8 (2-6")	5.2	0.17	3	--	--	--	--	--	--		--	--	--	--	--	--	--	--	--
12	Western	BRSD-8 (6-12")	5.2	0.13	2.9	0.01	8	0.01	7.99	800.00	Uncertain Acid Generation Potential		35	0.02	0.0014	0.13	30	0.0001	0.82	0.16	0.53
12	Western	BRSD-9 (0-2")	5.6	0.29	5.3	--	--	--	--	--	--		--	--	--	--	--	--	--	--	--
12	Western	BRSD-9 (2-6")	5.4	0.19	1.9	0.01	7	0.16	6.84	43.75	Uncertain Acid Generation Potential		38	0.023	0.001	0.1	36	0.0001 <	1.2	0.14	0.59
12	Western	BRSD-9 (6-12")	5.6	0.22	1.4	--	--	--	--	--	--		--	--	--	--	--	--	--	--	--
12	Western	BRSD-915(6-12")	5.4	0.26	2.6	0.01	7	0	7		Uncertain Acid Generation Potential		**18**	0.02	**0.0005**	0.072	**18**	0.0001 <	**0.48**	0.082	0.26
12	Western	UM-0N-1500E (0-2")	5.8	0.46	2.86	--	--	--	--	--	--		--	--	--	--	--	--	--	--	--
12	Western	UM-0N-1500E (2-6")	5.8	0.37	1.97	0.25	8	5.8	2.2	1.38	Uncertain Acid Generation Potential			0.10 <	0.01 <	0.2		0.0001 <	0.1 <	0.1	0.5 <
12	Western	UM-0N-1500E (6-12")	5.4	0.36	3.18	--	--	--	--	--	--		--	--	--	--	--	--	--	--	--
12	Western	UM-0N-2000E (0-2")	6.4	0.37	6.1	0.21	20	5.2	14.8	3.85	Uncertain Acid Generation Potential			0.10 <	0.01 <	0.1 <		0.0001 <	0.1 <	0.2	0.5 <
12	Western	UM-0N-2000E (2-6")	6.4	0.41	6.01	--	--	--	--	--	--		--	--	--	--	--	--	--	--	--
12	Western	UM-0N-2000E (6-12")	6.5	0.41	6.18	0.26	16	6.2	9.8	2.58	Uncertain Acid Generation Potential			0.10 <	0.01 <	0.1 <		0.0001 <	0.1 <	0.1 <	0.5 <
12	Western	UM-0N-250E (0-2")	4.8	1.49	6.73	--	--	--	--	--	--		--	--	--	--	--	--	--	--	--
12	Western	UM-0N-250E (2-6")	4.8	0.87	4.73	0.59	11	14	-3	0.79	Uncertain Acid Generation Potential			0.10 <	0.01 <	0.1		0.0002	0.1 <	0.1	0.5 <
12	Western	UM-0N-250E (6-12")	4.8	0.75	4.19	--	--	--	--	--	--		--	--	--	--	--	--	--	--	--
12	Western	UM-0N-500E (0-2")	5.1	0.98	11.3	1.81	18	22	-4	0.82	Uncertain Acid Generation Potential			0.10 <	0.01 <	0.2		0.0001 <	0.1 <	0.1	0.5 <
12	Western	UM-0N-500E (2-6")	5.2	1.02	19.4	--	--	--	--	--	--		--	--	--	--	--	--	--	--	--

TABLE 2-10: ACID BASE ACCOUNTING AND SYNTHETIC PRECIPITATION LEACHING POTENTIAL, MARSH (Continued)
Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

EU	Area	Sample ID	pH	Conductivity, mmhos/cm	TOC (%)	Sulfur Total (%)	NP (t/kt)	AP (t/kt)	Acid/Base Potential t/kt (NNP)	NP:AP[1]	Acid Generation Potential[1]	Aquatic Life Criteria[2]	Al SPLP mg/L	As SPLP mg/L	Cd SPLP mg/L	Cu SPLP mg/L	Fe SPLP mg/L	Hg SPLP mg/L	Mn SPLP mg/L	Pb SPLP mg/L	Zn SPLP mg/L
												Chronic	**0.087**	**0.15**	**0.0001**	**0.0029**	**1**	**0.00091**	**0.12**	**0.001**	**0.037**
												Acute	**0.75**	**0.34**	**0.0005**	**0.0038**	**--**	**0.0017**	**2.3**	**0.01**	**0.037**
12	Western	UM-0N-500E (6-12")	5.1	1.21	19.6	4.03	15	130	-115	0.12	Potentially Acid Generating			0.10 <	0.01 <	0.5		0.0001 <	0.1 <	0.1	1.1
12	Western	UM-0N-750E (0-2")	3.7	0.61	9.95	--	--	--	--	--	--		--	--	--	--	--	--	--	--	--
12	Western	UM-0N-750E (2-6")	4.7	0.62	37.4	2.96	23	75	-52	0.31	Potentially Acid Generating			0.10 <	0.01 <	0.1 <		0.0001 <	0.1 <	0.1	0.5 <
12	Western	UM-0N-750E (6-12")	4.7	0.62	26.9	--	--	--	--	--	--		--	--	--	--	--	--	--	--	--
12	Western	UM-250N-1750E (0-2)	4.2	0.23	1.7	0.11	-2	2.5	-4.5	-0.80	Uncertain Acid Generation Potential		130	0.11	0.001	0.66	82	0.0001	0.69	0.49	0.62
12	Western	UM-250N-1750E (2-6)	4.7	0.34	2.9	--	--	--	--	--	--		--	--	--	--	--	--	--	--	--
12	Western	UM-250N-1750E (6-12)	4.2	0.31	2.2	0.11	2	2.4	-0.4	0.83	Uncertain Acid Generation Potential		78	0.076	0.0007	0.52	49	0.0001 <	0.27	0.3	0.35
12	Western	UM-250S-1250E (0-2")	4	0.21	1.9	--	--	--	--	--	--		--	--	--	--	--	--	--	--	--
12	Western	UM-250S-1250E (2-6")	3.9	0.23	1.8	0.07	0	0.78	-0.78	0.00	Uncertain Acid Generation Potential		28	0.031	0.0002	0.17	28	0.0001 <	0.095	0.12	0.19
12	Western	UM-250S-1250E (6-12")	3.9	0.2	1.5	--	--	--	--	--	--		--	--	--	--	--	--	--	--	--
12	Western	UM-250S-1500E (0-2")	6.4	0.52	2.1	0.11	8	2.6	5.4	3.08	Uncertain Acid Generation Potential			0.1 <	0.01 <	0.2		0.0001 <	0.3	0.6	1.2
12	Western	UM-250S-1500E (2-6")	6.4	0.54	3.71	--	--	--	--	--	--		--	--	--	--	--	--	--	--	--
12	Western	UM-250S-1500E (6-12")	6.4	0.53	4.7	0.11	13	1.7	11.3	7.65	Uncertain Acid Generation Potential			0.1 <	0.01 <	0.1		0.0001 <	0.1 <	0.3	0.5 <
12	Western	UM-250S-250E (0-2")	3.7	0.6	5.96	0.16	0	4.3	-4.3	0.00	Uncertain Acid Generation Potential			0.1 <	0.01 <	0.1 <		0.0001 <	0.1 <	0.1	0.5 <
12	Western	UM-250S-250E (2-6")	4.1	0.48	2.25	--	--	--	--	--	--		--	--	--	--	--	--	--	--	--
12	Western	UM-250S-250E (6-12")	5.2	0.46	0.95	0.03	5	0.6	4.4	8.33	Uncertain Acid Generation Potential			0.1 <	0.01 <	0.2		0.0001 <	**0.2**	0.1	0.5 <
12	Western	UM-250S-500E (0-2")	5	0.69	9.76	--	--	--	--	--	--		--	--	--	--	--	--	--	--	--
12	Western	UM-250S-500E (2-6")	4.7	0.28	2.91	0.15	3	3.1	-0.1	0.97	Uncertain Acid Generation Potential			0.1 <	0.01 <	0.3		0.0001 <	0.1	0.3	0.5 <
12	Western	UM-250S-500E (6-12")	4.2	0.21	1.42	--	--	--	--	--	--		--	--	--	--	--	--	--	--	--
12	Western	UM-500N-2500E (2-6")	6.6	0.38	2.16	--	--	--	--	--	--		--	--	--	--	--	--	--	--	--
12	Western	UM-500N-2500E (6-12")	6.2	0.68	2.19	--	--	--	--	--	--		--	--	--	--	--	--	--	--	--
12	Western	UM-500S-2000E (0-2")	4.6	0.45	19.4	--	--	--	--	--	--		--	--	--	--	--	--	--	--	--
12	Western	UM-500S-2000E (2-6")	4.4	0.47	5.72	0.2	0	3.2	-3.2	0.00	Uncertain Acid Generation Potential			0.1 <	0.01 <	0.1 <		0.0001 <	0.1 <	0.1	0.5 <
12	Western	UM-500S-2000E (6-12")	4.5	0.43	4.58	--	--	--	--	--	--		--	--	--	--	--	--	--	--	--
12	Western	UM-500S-2500E (0-2")	4.5	1.07	10.3	--	--	--	--	--	--		--	--	--	--	--	--	--	--	--
12	Western	UM-500S-2500E (2-6")	4.6	1.11	7.69	--	--	--	--	--	--		--	--	--	--	--	--	--	--	--
12	Western	UM-500S-2500E (6-12")	5.2	0.31	2.14	--	--	--	--	--	--		--	--	--	--	--	--	--	--	--
12	Western	UM-500S-500E (0-2")	4.8	0.44	3.11	0.3	8	6.9	1.1	1.16	Uncertain Acid Generation Potential			0.1 <	0.01 <	0.1 <		0.0001 <	0.1 <	0.1	0.5 <
12	Western	UM-500S-500E (2-6")	4.8	0.31	3.13	--	--	--	--	--	--		--	--	--	--	--	--	--	--	--
12	Western	UM-500S-500E (6-12")	4.9	0.35	0.67	0.07	4	0.93	3.07	4.30	Uncertain Acid Generation Potential			0.1 <	0.01 <	0.1		0.0001 <	0.1 <	0.1	0.5 <

Notes:

1 The NPP, NP/AP and Acid Generation Potential are based on calculations presented in EPA (1994).

2 The acute and chronic water quality criteria are from Montana Department of Environmental Quality (2008). Acute and chronic water quality criteria for cadmium, copper, and zinc are based on hardness. Hardness data was not available so a default hardness value of 25 mg/L $CaCO_3$ was used.

Bold values represent SPLP data that exceed the chronic aquatic life criteria.

Shaded cells represent SPLP data that exceed the acute aquatic life criteria.

Potentially acid generating = NP:AP^2<1 and N
Uncertain acid generation potential=NP:AP between 1 and 3 and/or NNP between -20 and +20 t/kt
Unlikely to generate acid = NP:AP>3 and NNP>+20 t/kt

--	Not analyzed	mg/L	Milligrams per liter
AP	Acid production potential	NNP	Net neutralization potential
$CaC0_3$	Calcium carbonate	NP	Neutralization potential
EPA	U.S. Environmental Protection Agency	NP:AP	Ratio of the neutralization potential to acid production potential
EU	Exposure Unit	NPP	Net neutralization potential (the acid potential subtracted from the neutralization potential
COND	Conductivity	SPLP	Synthetic precipitation leaching procedure
ID	Identification	t/kt	Tons $CaC0_3$ per thousand tonnes
mmhos/cm	Millimhos per centimeter	TOC	Total organic carbon

Sources: Montana Department of Environmental Quality. 2010. Circular DEQ-7. Montana Numeric Water Quality Standards.
EPA. 1994. Technical Document EPA 530-R-94-036 NTIS PB94-201829: Acid Mine Drainage Potential. 52p.

TABLE 2-11: UPPER MARSH TRANSECT SEDIMENT CONCENTRATIONS

Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

EU	Area	Point ID	Aluminum (mg/kg)	Arsenic (mg/kg)	Cadmium (mg/kg)	Copper (mg/kg)	Lead (mg/kg)	Manganese (mg/kg)	Zinc (mg/kg)
	Pass Creek Marsh Reference Sites								
--		Minimum Reference Concentration (0-12 inches)	4990	7.06	0.522	12.8	156	31.2	101
--		Maximum Reference Concentration (0-12 inches)	14300	17.4	1.58	55	727	86	225
	Eastern Upper Marsh Transect								
12		UMT1 TS 01 (0-2 inches)	11200	17	**1.97**	**89.1**	530	**117**	**352**
12		UMT1TS02 Dup (0-2 inches)	4360	**119**	**12.9**	**406**	**6680**	**1550**	**1690**
12		UMT1 TS 01 (2-6 inches)	10800	**17.5**	1.34	**94.9**	400	**103**	**418**
12		UMT1TS01 (6-12 inches)	9060	13	1.36	**79**	256	61.9	**301**
12		UMT1TS 02 (0-2 inches)	5160	**128**	**14.1**	**450**	**4200**	**2250**	**2040**
12		UMT1TS 02 (2-6 inches)	5560	**110**	**18.4**	**573**	**4910**	**2440**	**2830**
12		UMT1TS 02 (6-12 inches)	5700	**55.8**	**19.2**	**662**	**2890**	**2200**	**2740**
12		UMT1TS03 (0-2 inches)	4940	**82.6**	**13.9**	**570**	**2840**	**1780**	**2060**
12		UMT1TS03 (2-6 inches)	4420	**46.2**	**9.49**	**413**	**1500**	**1130**	**1710**
12		UMT1TS03 (6-12 inches)	5680	**33.3**	**10.1**	**263**	**1210**	**656**	**1520**
	Western Upper Marsh Transect								
12		UMTT2TS 01 (0-2 inches)	8910	**54.2**	**2.16**	**249**	330	**1030**	**264**
12		UMTT2TS 01 (2-6 inches)	11000	**42.4**	**8.93**	**162**	314	**163**	**585**
12		UMTT2TS 01 (6-12 inches)	12200	**18.7**	**2.27**	**109**	202	**87.9**	**380**
12		UMTT2TS 02 (0-2 inches)	12700	**26.5**	**2.92**	**84.2**	**1370**	**125**	**420**
12		UMTT2TS 02 (2-6 inches)	13200	**21.8**	0.948	**99.3**	**1260**	**93**	214
12		UMTT2TS 02 (6-12 inches)	10800	**17.5**	0.761	**97.7**	**1390**	**91.8**	207
12		UMTT2TS 03 (0-2 inches)	8840	14.3	1.09	**59.2**	241	45.2	174
12		UMTT2TS 03 (2-6 inches)	12500	11.3	1.36	**77.8**	158	62.5	184
12		UMTT2TS 03 (6-12 inches)	10800	17.2	0.341	**112**	300	51.8	186

TABLE 2-11: UPPER MARSH TRANSECT SEDIMENT CONCENTRATIONS (Continued)

Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

Notes:

Results in **bold** exceed the minimum reference transect concentration.
Upper Marsh sediment samples were collected along two transects in the Upper Marsh; reference site samples were collected along one transect near Pass Creek.

--	Not applicable
EU	Exposure Unit
ID	Identification
mg/kg	Milligrams per kilogram
No	Sediment concentration from the site is below or between the minimum and maximum sediment concentrations from the reference area.
Yes	Sediment concentration from the site is greater than the maximum sediment concentration from the reference area.

TABLE 2-12: UPPER MARSH TRANSECT PLANT TISSUE CONCENTRATIONS

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

EU	Area	Point ID	Aluminum (mg/kg)	Arsenic (mg/kg)	Cadmium (mg/kg)	Copper (mg/kg)	Lead (mg/kg)	Manganese (mg/kg)	Zinc (mg/kg)
	Pass Creek Marsh Reference Site								
--		Minimum Reference Concentration	27.1	< 0.7	< 0.05	4.88	< 0.25	59.5	26.4
--		Maximum Reference Concentration	40.6	< 0.7	1.49	5.68	< 0.25	236	66.9
	Eastern Upper Marsh Transect								
12		UMT1 TI 01	**102**	< 0.7	**5.21**	**20**	**20.9**	**389**	**661**
12		UMT1 TI 02	18.3	< 0.7	**0.74**	**7.02**	**3.18**	**249**	**188**
12		UMT1 TI 03	**106**	< 0.7	**1.91**	**16.7**	**24.3**	**419**	**251**
	Western Upper Marsh Transect								
12		UMT2 TI 01	23.5	< 0.7	**0.63**	**7.11**	**5.01**	**255**	**245**
12		UMT2 TI 02	15	< 0.7	**0.24**	3.84	**1.02**	**341**	**70.3**
12		UMT2 TI 03	25.6	< 0.7	**0.25**	4.34	**0.85**	**298**	**55.6**

Notes:

Results in **bold** exceed the minimum reference transect concentration.

Upper Marsh plant samples were collected along two transects in the Upper Marsh; reference site samples were collected along one transect near Pass Creek.

--	Not applicable
EU	Exposure Unit
ID	Identification
mg/kg	Milligrams per kilogram

TABLE 2-13: UPPER MARSH TRANSECT INVERTEBRATE TISSUE CONCENTRATIONS

Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

EU	Area Point ID	Aluminum (mg/kg)	Arsenic (mg/kg)	Cadmium (mg/kg)	Copper (mg/kg)	Lead (mg/kg)	Manganese (mg/kg)	Zinc (mg/kg)
	Pass Creek Marsh Reference Site							
--	Minimum Reference Concentration	114	1.26	0.865	23.3	1.17	52.6	204
--	Maximum Reference Concentration	3060	6.56	4.29	116	34.1	532	236
	Eastern Upper Marsh Transect							
12	UMT1 TI 01	**1660**	**21.9**	**14.7**	**227**	**364**	**1790**	**1440**
12	UMT1 TI 02	**1370**	**26.2**	**13.1**	**200**	**440**	**1310**	**2080**
12	UMT1 TI 03	**749**	**10.2**	**11.2**	**137**	**163**	**697**	**798**
	Western Upper Marsh Transect							
12	UMT2 TI 01	**1120**	**8.73**	**12.9**	**137**	**152**	**1100**	**939**
12	UMT2 TI 02	**2770**	**6.84**	**4.81**	**57.3**	**76.9**	**377**	**377**
12	UMT2 TI 03	**1170**	**2.76**	**1.9**	**29.2**	**27.6**	**183**	**210**

Notes:

Results in **bold** exceed the minimum reference transect concentration.

Upper Marsh invertebrate samples were collected along two transects in the Upper Marsh; reference site samples were collected along one transect near Pass Creek. Invertebrates collected include grasshoppers, moths, butterflies, ants, and spiders.

--	Not applicable
EU	Exposure Unit
ID	Identification
mg/kg	Milligrams per kilogram

TABLE 2-14: UPPER MARSH TRANSECT SMALL MAMMAL TISSUE CONCENTRATIONS AND SAMPLE INFORMATION
Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

EU	Area	Sample ID	Point ID	Species	Age/ Sex	Body Length (cm)	Tail Length (cm)	Weight (g)	Aluminum (mg/kg)	Arsenic (mg/kg)	Cadmium (mg/kg)	Copper (mg/kg)	Lead (mg/kg)	Manganese (mg/kg)	Zinc (mg/kg)
	Pass Creek Marsh Reference Sites														
--		MA 01	PGREF-01	Meadow Vole	A/PF	11.0	3.0	32.0	11.3	< 2.5	< 0.2	3.97	< 0.75	7.23	158.0
--		MA 02	PGREF-02	Masked Shrew	J/U	3.0	4.0	2.8	29.4	< 2.5	< 0.2	2.54	< 0.75	4.46	23.9
--		MA 03	PGREF-02	Masked Shrew	A/U	4.5	4.0	4.7	27.6	< 2.5	< 0.2	3.77	1.20	4.75	26.4
--		MA 04	PGREF-03	Masked Shrew	A/U	4.0	4.0	3.5	29.2	< 2.5	< 0.2	3.04	0.81	2.53	25.4
--		MA 05	PGREF-01	Meadow Vole	A/U	11.4	3.2	39.0	16.4	< 2.5	< 0.2	2.55	< 0.75	6.66	91.6
	Eastern Upper Marsh Transect														
12		MA 01	UMT1-03	Masked Shrew	A/U	N/A	N/A	3.8	53.3	2.5	0.98	11.70	25.90	80.00	69.3
12		MA 02	UMT1-03	Deer Mouse	J/U	7.6	5.7	14.0	< 8	< 2.5	< 0.2	1.48	< 0.75	1.77	44.8
12		MA 03	UMT1-03	Meadow Vole	A/LF	8.9	3.8	28.0	42.2	< 2.5	0.47	8.78	8.56	49.20	537.0

Notes:
Field crew attempted to collect mammal samples along two transects in the Upper Marsh; mammals were only caught along the Eastern Upper Marsh transect. Reference site samples were collected along one transect near Pass Creek.

<	Non-detect result	F	Female	mg/kg	Milligrams per kilogram
--	Not applicable	ID	Identification	N/A	Not available
A	Adult	J	Juvenile	P	Pregnant
EU	Exposure Unit	L	Lactating	U	Unknown

TABLE 2-15: STREAM BENTHIC MACROINVERTEBRATE TISSUE CONCENTRATIONS

Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

EU	Area	Point ID	Aluminum (mg/kg wet weight)	Arsenic (mg/kg wet weight)	Cadmium (mg/kg wet weight)	Copper (mg/kg wet weight)	Lead (mg/kg wet weight)	Manganese (mg/kg wet weight)	Zinc (mg/kg wet weight)
	Anaconda Creek Reference Site								
--		BRSW-06 (2007)	NE	0.63	< 0.15	4.04	1.15	20	19.3
--		BRSW-06 (2008)	499	1.56	0.938	22.6	2.63	248	196
	Blackfoot River Streambed								
13		BRSW-33 (2007)	NE	6.03	0.92	51.4	128	193	188
13		BRSW-12 (2007)	NE	3.7	3.61	119	133	755	599
13		BRSW-106 (2007)	NE	1.21	1.25	40.8	15.4	353	262
13		BRSW-16 (2007)	NE	0.57	0.67	19.4	4.93	120	159
13		BRSW-17 (2007)	NE	0.92	1.83	6.17	1.53	837	301
13		BRSW-17 (2008)	935	1.31	3.04	39	7.6	665	855
13		BRSW-102 (2007)	NE	< 0.58	0.98	4.03	0.92	206	162
13		BRSW-101 (2007)	NE	< 0.5	0.21	2.81	0.42	47	53
13		BRSW-101 (2008)	69	0.54	1.63	20.1	1.89	118	323
	Stevens Gulch Streambed								
13		BRSW-108 (2007)	NE	< 3	2.01	75	50.3	283	1200

Notes:

Benthic macroinvertebrates were were collected in riffles with a Hess or Surber sampler in Blackfoot River streambed and Stevens Gulch streambed; reference site samples were collected in Anaconda Creek.

< Non-detect result
EU Exposure Unit
ID Identification
mg/kg Milligrams per kilogram
NE Not evaluated

TABLE 2-16: MULTIMETRIC INDEX SCORES FOR BENTHIC MACROINVERTEBRATE SAMPLES

Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

Point ID	BRSW-6 (Reference)	BRSW-6 (Reference)	BRSW-33	BRSW-12	BRSW-106[1]	BRSW-16	BRSW-17	BRSW-17	BRSW-102	BRSW-101
Date	**10-05-2007**	**06-17-2008**	**10-05-2007**	**10-05-2007**	**10-04-2007**	**10-04-2007**	**10-03-2007**	**06-18-2008**	**10-03-2007**	**10-03-2007**
Metric Values										
Ephemeroptera Richness	5.00	11.00	2.00	0.00	2.00	1.00	2.00	2.00	4.00	3.00
Plecoptera Richness	6.00	11.00	5.00	4.00	7.00	4.00	5.00	5.00	8.00	8.00
% EPT	40.33	65.67	44.67	68.00	84.46	73.00	49.67	20.67	27.33	54.33
% Non-Insect Individuals	10.00	3.67	2.67	4.00	3.72	0.33	3.67	4.00	2.00	1.33
% Predators	34.12	40.67	50.00	23.41	6.08	21.40	19.67	13.67	16.33	20.74
Burrower Taxa %	9.76	5.00	7.69	7.69	3.70	12.50	5.13	17.39	7.50	9.76
Biotic Index	3.35	2.39	3.84	2.32	1.61	2.23	3.73	4.36	5.06	3.58
Metric Scores										
Ephemeroptera Richness	50.00	100.00	20.00	0.00	20.00	10.00	20.00	20.00	40.00	30.00
Plecoptera Richness	85.71	100.00	71.43	57.14	100.00	57.14	71.43	71.43	100.00	100.00
% EPT	44.81	72.97	49.63	75.56	93.84	81.11	55.19	22.97	30.37	60.37
% Non-Insect Individuals	64.29	86.89	90.46	85.71	86.71	98.82	86.89	85.71	92.86	95.25
% Predators	87.49	100.00	100.00	60.03	15.59	54.88	50.43	35.05	41.88	53.17
Burrower Taxa %	100.00	100.00	100.00	100.00	100.00	99.30	100.00	92.41	100.00	100.00
Biotic Index	69.10	85.17	61.07	86.33	98.23	87.87	62.80	52.33	40.68	65.35
MMI Scores	**71.63**	**92.15**	**70.37**	**66.40**	**73.48**	**69.88**	**63.82**	**54.27**	**63.68**	**72.02**
Impairment Determination	**Unimpaired**	**Unimpaired**	**Unimpaired**	**Unimpaired**	**Unimpaired**	**Unimpaired**	**Unimpaired**	**Impaired**	**Unimpaired**	**Unimpaired**

Notes:

Results are presented in upstream to downstream order.

1 Sample BRSW-106, collected in 2007) included only 296 of the 300 individuals required for an MMI sample, but was included in the analysis.

EPT Ephemeroptera plecoptera tricoptera
ID Identification
MMI Multimetric Index

TABLE 2-17: STREAMBED SEDIMENT BIOASSAY RESULTS

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

Location ID	Area Description	Average Percent Survival	Average Percent Survival SD	Is the average percent survival statistically significantly less than the percent survival of the reference?	Average Individual Dry Weight (mg)	Individual Dry Weight SD	Is the average individual dry weight statistically significantly less than the weight of the reference?
BA3-Ref	Reference Site	96.3	7.4	--	0.49	0.05	--
Control	Laboratory Control	97.5	4.6	--	0.47	0.11	--
BA2	Eastern Upper Marsh	0.0	0.0	Yes	--	--	--
BA1	Eastern Upper Marsh	0.0	0.0	Yes	--	--	--
BA4	Western Upper Marsh	56.3	15.1	Yes	0.34	0.07	Yes
BA5	Western Upper Marsh	91.3	6.4	Yes	0.32	0.09	Yes
BA7	Western Upper Marsh	91.3	6.4	Yes	0.30	0.05	Yes
BA6	Lower Marsh	96.3	7.4	No	0.44	0.08	No

Notes:

Results are presented in the order of location upstream to downstream. Samples were collected from the stream that runs through Pass Creek, Upper Marsh, and Lower Marsh.

The sediment toxicity test performed was a 28-day *Hyallela azteca* growth and survival test.

1 Based on mean from trask

2 Mechanical sieve does not differentiate silt/clay fractions

-- Not applicable

ID Identification

mg Milligrams

mm Millimeter

SD Standard deviation

TABLE 2-18: STREAMBED SEDIMENT CONCENTRATIONS (BIOASSAY SAMPLES)

Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

COPEC		Aluminum[1] (mg/kg)	Arsenic (mg/kg)	Arsenic HQ (based on TEL)	Arsenic HQ (based on PEL)	Arsenic HQ (based on SEL)	Cadmium (mg/kg)	Cadmium HQ (based on TEL)	Cadmium HQ (based on PEL)	Cadmium HQ (based on SEL)	Copper (mg/kg)	Copper HQ (based on TEL)	Copper HQ (based on PEL)	Copper HQ (based on SEL)	Lead (mg/kg)	Lead HQ (based on TEL)	Lead HQ (based on PEL)	Lead HQ (based on SEL)	Manganese (mg/kg)	Manganese HQ (based on LEL[2])	Manganese HQ (based on PEL)	Manganese HQ (based on SEL)	Zinc (mg/kg)	Zinc HQ (based on TEL)	Zinc HQ (based on PEL)	Zinc HQ (based on SEL)
Sediment Screening Criteria (mg/kg)		--	--	5.9	17	33	--	0.596	3.53	10	--	35.7	197	110	--	35	91.3	250	--	460	NA	1100	--	123	820	820
BA3-Ref	Reference Site	8810	12.9	**2.2**	0.8	0.39	1	**1.7**	0.3	0.10	39.8	**1.1**	0.2	0.36	69.5	**2.0**	0.8	0.28	248	0.54	**NA**	0.23	231	**1.9**	0.3	0.28
BA2	Eastern Upper Marsh	7430	23.3	**3.9**	**1.4**	0.71	5.94	**10**	**2**	0.59	239	**6.7**	**1.2**	**2.2**	431	**12**	**5**	**1.7**	1870	**4.1**	**NA**	**1.7**	1440	**12**	**2**	**1.8**
BA1	Eastern Upper Marsh	8160	19.3	**3.3**	**1.1**	0.58	9.59	**16**	**3**	0.96	264	**7.4**	**1.3**	**2.4**	560	**16**	**6**	**2.2**	3090	**6.7**	**NA**	**2.8**	1890	**15**	**2**	**2.3**
BA4	Western Upper Marsh	6180	24.6	**4.2**	**1.4**	0.75	3.36	**5.6**	1.0	0.34	179	**5.0**	0.9	**1.6**	728	**21**	**8**	**2.9**	794	**1.7**	**NA**	0.72	657	**5.3**	0.8	0.80
BA5	Western Upper Marsh	7090	15.9	**2.7**	0.9	0.48	1.55	**2.6**	0.4	0.16	73.1	**2.0**	0.4	0.66	67	**1.9**	0.7	0.27	61.6	0.13	**NA**	0.056	229	**1.9**	0.3	0.28
BA7	Western Upper Marsh	1440	15.2	**2.6**	0.9	0.46	5.36	**9.0**	**1.5**	0.54	80.6	**2.3**	0.4	0.73	283	**8.1**	**3.1**	**1.1**	31.5	0.068	**NA**	0.029	817	**6.6**	1.0	1.0
BA6	Lower Marsh	1720	13.5	**2.3**	0.8	0.41	6.11	**10**	**2**	0.61	74.8	**2.1**	0.4	0.68	149	**4.3**	**1.6**	0.60	74.3	0.16	**NA**	0.068	1320	**11**	**2**	**1.6**

Notes:

Results are presented in the order of location upstream to downstream (see Figures 2-13A and 2-13B).
Sediment collected from the same composite sample was used in a 28-day *Hyalella azteca* growth and survival toxicity test.
HQ = site concentration/[TEL or SEL]. HQs greater than 1.0 are in **bold**.

1 There are no sediment screening values for aluminum.
2 The LEL is substituted for the TEL for manganese; no TEL is available.

-- Not applicable
COPEC Chemical of potential ecological concern
HQ Hazard quotient
LEL Lowest effect level - the level of sediment contamination that can be tolerated by the majoirty of benthic organisms.
mg/kg Milligrams per kilogram
SEL Severe effect level - the level of sediment contamination at which pronounced disturbance of the sediment-dwelling community can be expected; the concentration that would be detrimental to the majority of the benthic community.
PEL Probable effect level - the level of sediment contamination at which an effect is probable to the sediment-dwelling community
TEL Threshold effect level - the level of sediment contamination below which adverse biological effects are expected to occur rarely.

TABLE 2-19: PERCENT DIFFERENCE IN REFERENCE SAMPLE RESULTS FOR SOIL
Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

EU	Point ID	Year Collected	Arsenic (mg/kg)	Percent Difference	Cadmium (mg/kg)	Percent Difference	Copper (mg/kg)	Percent Difference	Lead (mg/kg)	Percent Difference	Manganese (mg/kg)	Percent Difference	Zinc (mg/kg)	Percent Difference
1	ACBG-1	2007	26.03	--	**0.486**	6.54%	**79.58**	68.17%	**23.09**	39.65%	**294.72**	70.45%	136.91	--
	ACBG-2	2007	**18.33**	29.58%	0.52	--	250.03	--	38.26	--	997.31	--	**83.93**	38.70%
2	ACBG-1	2007	26.03	--	**0.486**	83.24%	**79.58**	68.17%	**23.09**	57.53%	**294.72**	70.45%	136.91	60.05%
	ACBG-2	2007	18.33	29.58%	0.52	82.07%	250.03	--	38.26	29.63%	997.31	--	83.93	75.51%
	UBRBG-202	2011	**13.93**	46.48%	2.9	--	218.49	12.61%	54.37	--	901.15	9.64%	**53.72**	84.32%
	UBRBG-204	2011	19.5	25.09%	2.7	6.90%	104.28	58.29%	53.2	2.15%	693.84	30.43%	342.67	--
3	SGBG-1	2007	34.57	--	**0.284**	87.09%	92.51	--	115.16	--	141.05	--	**40.94**	87.71%
	SGBG-201	2011	**16.56**	52.10%	2.2	--	**71.85**	22.33%	**62.21**	45.98%	**130.88**	7.21%	333.04	--
4	SWGBG-1	2007	***13.32***	23.84%	**0.83**	53.63%	***29.52***	38.53%	**60.82**	51.38%	**568.95**	24.71%	**113.7**	53.08%
	SWGBG-2	2007	*17.49*	--	1.79	--	48.02	--	125.09	--	755.67	--	242.31	--
5	SHGBG-1	2007	27.38	--	3.32	--	**39.55**	53.10%	321.54	--	1470.06	--	290.52	9.94%
	SHGBG-2	2007	16.06	41.34%	**2.46**	25.90%	58.61	30.50%	**32.69**	89.83%	1008.4	31.40%	**99.21**	69.25%
	SHGBG-201	2011	26.02	4.97%	2.5	24.70%	84.33	--	45.3	85.91%	226.74	84.58%	131.02	59.39%
	SHGBG-202	2011	***11.5***	58.00%	2.4	27.71%	78.85	6.50%	36.31	88.71%	**201.49**	86.29%	322.6	--
6	SHGBG-1	2007	27.38	--	3.32	--	**39.55**	32.52%	321.54	--	1470.06	--	290.52	--
	SHGBG-2	2007	**16.06**	41.34%	**2.46**	25.90%	58.61	--	**32.69**	89.83%	**1008.4**	31.40%	**99.21**	65.85%
7	SGBG-1	2007	34.57	--	**0.284**	89.48%	**92.51**	11.29%	115.16	--	**141.05**	79.67%	**40.94**	88.05%
	UBRBG-204	2011	***19.5***	43.59%	2.7	--	104.28	--	**53.2**	53.80%	693.84	--	342.67	--
8	BCBG-1	2007	*15.33*	1.48%	**1.57**	65.11%	**32.77**	47.57%	83.98	53.57%	**864.53**	64.45%	297.33	--
	MHBG-201	2011	15.56		4.5	--	*62.5*	--	**33.34**	81.57%	2432.05	--	52.3	82.41%
	MHBG-202	2011	***15.2***	2.31%	4.6	-2.22%	*54.2*	13.28%	180.86	--	1472.87	39.44%	**48.38**	83.73%
9	MGBG-1	2007	33.08	35.10%	4.44	--	82.15	83.81%	311.02	72.08%	6433.67	--	650.47	--
	MGBG-2	2007	*25.72*	49.54%	3.59	19.14%	228.19	55.03%	235.04	78.90%	1244.5	80.66%	507.72	21.95%
	PCBG-1	2007	*10*	80.38%	0.543	87.77%	*26.19*	94.84%	29.08	97.39%	360.4	94.40%	192.35	70.43%
	PCBG-201	2011	50.97	--	2.2	50.45%	507.47	--	378.37	66.03%	989.32	84.62%	66.86	89.72%
	PCBG-202	2011	40.38	20.78%	2.2	50.45%	98.17	80.66%	1113.82	--	576.93	91.03%	125.27	80.74%

TABLE 2-19: PERCENT DIFFERENCE IN REFERENCE SAMPLE RESULTS FOR SOIL
Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

EU	Point ID	Year Collected	Arsenic (mg/kg)	Percent Difference	Cadmium (mg/kg)	Percent Difference	Copper (mg/kg)	Percent Difference	Lead (mg/kg)	Percent Difference	Manganese (mg/kg)	Percent Difference	Zinc (mg/kg)	Percent Difference
10	SGBG-1	2007	34.57	--	**0.284**	87.09%	92.51	53.70%	115.16	62.58%	141.05	82.19%	**40.94**	87.71%
	SGBG-201	2011	16.56	52.10%	2.2	--	**71.85**	64.04%	**62.21**	79.78%	**130.88**	83.47%	333.04	--
	UBRBG-201	2011	**11.09**	67.92%	2.1	4.55%	199.8	--	307.73	--	791.91	--	106.96	67.88%
11	ACBG-1	2007	26.03	14.40%	0.486	81.31%	79.58	68.17%	**23.09**	75.78%	294.72	70.45%	136.91	43.34%
	ACBG-2	2007	18.33	39.72%	**0.52**	80.00%	250.03	--	38.26	59.87%	997.31	--	**83.93**	65.26%
	BCBG-201	2011	30.41	--	2.6	--	*62.8*	74.88%	95.34	--	***161***	83.86%	241.62	--

Notes:

Cells with a border and yellow shading indicate a percent difference of greater than 30% between the associated value to the left and the maximum reference value.

Percent difference is between the minimum reference result and the maximum reference result.

All results were measured by XRF 10 except for cadmium, which was measured in the laboratory.

Bold values represent the minimum background reference value.

Italicized values represent non-detect results. The detection limit was used for non-detect results to calculate the percent difference.

--	Percent difference was not calculated because there is only one reference sample or the corresponding value is the maximum value of the reference dataset.
%	Percent
EU	Exposure Unit
ID	Identification
mg/kg	Milligrams per kilogram
XRF 10	X-Ray fluorescence measurements on a sample that had been dried and sieved through a #10-mesh screen.

TABLE 2-20: PERCENT DIFFERENCE IN REFERENCE SAMPLE RESULTS FOR SEDIMENT

Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

EU	Point ID	Aluminum (mg/kg)	Percent Difference	Arsenic (mg/kg)	Percent Difference	Cadmium (mg/kg)	Percent Difference	Copper (mg/kg)	Percent Difference	Lead (mg/kg)	Percent Difference	Manganese (mg/kg)	Percent Difference	Zinc (mg/kg)	Percent Difference
12	BRSD-5 (0-2")	**7500**	6.60%	17.2	46.75%	0.619	66.36%	39.2	41.84%	320	--	64.7	90.70%	107	61.09%
	BRSD-5 (2-6")	8030	--	19.2	40.56%	0.521	71.68%	41.7	38.13%	250	40.23%	61.7	91.14%	100	63.64%
	BRSD-5 (6-12")	7620	5.11%	24.6	23.84%	**0.471**	74.40%	45.3	32.79%	244	43.68%	79	88.65%	97.8	64.44%
	PCBG-1 (0-2")	NE	--	12.4	61.61%	1.51	17.93%	34.7	48.52%	55	152.30%	696	--	158	42.55%
	PCBG-1 (2-6")	NE	--	**9.12**	71.76%	1.44	21.74%	37	45.10%	101	125.86%	199	71.41%	174	36.73%
	PCBG-1 (6-12")	NE	--	9.4	70.90%	0.649	64.73%	**22**	67.36%	174	83.91%	**88**	87.36%	**133**	51.64%
	PCBG-2 (0-2")	NE	--	18.8	41.80%	1.84	--	52	22.85%	105	123.56%	586	15.80%	263	4.36%
	PCBG-2 (2-6")	NE	--	18.5	42.72%	1.54	16.30%	55	18.40%	108	121.84%	498	28.45%	252	8.36%
	PCBG-2 (6-12")	NE	--	32.3	--	1.57	14.67%	67.4	--	113	118.97%	293	57.90%	275	--
13	BRSW-6 SE (2007) (0-2")	NE	--	**5.56**	95.12%	***0.5***	0.00%	41.9	63.25%	**21.9**	73.13%	**271**	53.11%	**65.7**	51.69%
	BRSW-6 SE (2008) (0-2")	8980	--	15.4	--	***0.5***	0.00%	114	--	81.5	--	578	--	128	5.88%
	BRSW-11 SE (2007) (0-2")	NE	--	7.87	93.10%	***0.5***	0.00%	**29.4**	74.21%	47.5	41.72%	408	29.41%	136	--

Notes:

Cells with a border and yellow shading indicate a percent difference of greater than 30% between the associated value to the left and the maximum reference value.

Percent difference is between the minimum reference result and the maximum reference result.

All results were measured in the laboratory.

Bold values represent the minimum background reference value.

Italicized values represent non-detect results. The detection limit was used for non-detect results to calculate the percent difference.

--	Percent difference was not calculated because there is only one reference sample or the corresponding value is the maximum value of the reference dataset.
%	Percent
EU	Exposure Unit
ID	Identification
mg/kg	Milligrams per kilogram

TABLE 2-21. PERCENT DIFFERENCE IN REFERENCE SAMPLE RESULTS FOR SURFACE WATER

Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

Point ID	Aluminum (µg/L)	Percent Difference	Arsenic (µg/L)	Percent Difference	Cadmium (µg/L)	Percent Difference	Copper (µg/L)	Percent Difference	Lead (µg/L)	Percent Difference	Manganese (µg/L)	Percent Difference	Zinc (µg/L)	Percent Difference
BRSW-6 (2007)	***0.03***	0.00%	***0.002***	0.00%	***0.00008***	0.00%	***0.001***	0.00%	***0.0005***	0.00%	***0.003***	97.62%	***0.01***	0.00%
BRSW-11 (2007)	***0.03***	0.00%	***0.002***	0.00%	***0.00008***	0.00%	***0.001***	0.00%	***0.0005***	0.00%	0.126	--	***0.01***	0.00%
BRSW-6 (2008)	**0.03**	--	***0.003***	--	***0.00008***	--	***0.001***	--	***0.0005***	--	***0.005***	--	***0.01***	--

Notes:

Cells with a border and yellow shading indicate a percent difference of greater than 30% between the associated value to the left and the maximum reference value.

Percent difference is between the minimum reference result and the maximum reference result.

All results were measured in the laboratory.

Bold values represent the minimum background reference value.

Italicized values represent non-detect results. The detection limit was used for non-detect results to calculate the percent difference.

All reference samples correspond to EU 13.

µg/L	Micrograms per liter
--	Percent difference was not calculated because there is only one reference sample or the corresponding value is the maximum value of the reference dataset.
%	Percent
EU	Exposure Unit
ID	Identification

Table 2-22. Comparison Between Sediment Screening Benchmarks Used in Draft BERA and BTAG Region III Benchmarks

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

	CCME and Ontario Ministry of Environment Freshwater Sediment Screening Benchmarks [1]			Sediment Screening Benchmark [2]
Analyte	TEL [3] (mg/kg)	PEL (mg/kg)	SEL [4] (mg/kg)	Benchmark (mg/kg)
Aluminum	NA	NA	NA	NA
Arsenic	5.9	17	33	9.8 [5]
Cadmium	0.596	3.53	10	0.99 [5,6]
Copper	35.7	197	110	31.6 [5,6]
Lead	35	91.3	250	35.8 [5,6]
Manganese	460 [7]	NA	1,100	460 [7,8]
Mercury	0.174	0.486	2.0	0.18 [5]
Zinc	123	315	820	121 [5,6]

Footnotes:

1 From CCME (2002) and Ontario Ontario Ministry of Environment (1993).

2 From EPA (2006).

3 TELs were used in the BERA as a lower screening level to screen areas out from further regulatory attention, but not to identify areas for further action.

4 SELs were used in the BERA to identify areas that are considered highly contaminated.

5 From MacDonald, Ingersoll, and Berger (2000).

6 BTAG Region III Endnote: EPA has published Equilibrium Partitioning Sediment Benchmarks (ESB) for metal mixtures including this metal. Implementation of the ESB requires metal concentration data based on the simultaneously extracted metals procedure (SEM) and measurement of the acid volatile sulfide (AVS) concentration during the period from November to May. Application of ESB benefits significantly from the quantification of the organic carbon. BTAG recommends that these metals be screened against listed benchmarks in the screening level ecological risk assessment. Any exceedances should be further evaluated using ESBs following the sampling and analysis guidance in EPA-600-R-02-011 in Step 3 of the baseline ecological risk assessment.

7 Based on the LEL.

8 From Persaud, Jaaguamagi, and Hayton (1993).

CCME Canadian Council of Ministers of the Environment

EPA United States Environmental Protection Agency

LEL Lowest effect level - the level of contamination that can be tolerated by the majoirty of benthic organisms.

NA Not applicable

PEL Probable effect level - the level above which adverse effects are expected to occur frequently.

SEL Severe effect level - the level at which pronouced distrurbance of the sediment-dwelling community can be expected; the concentration that would be detrimental to the majority of the benthic community.

TEL Threshold effect level - the concentration below which adverse biological effects are expected to occur rarely.

References:

CCME. 2002. Summary Tables. Canadian Sediment Quality Guidelines for the Protection of Aquatic Life. Updated. Available on-line at: http://ceqg-rcqe.ccme.ca/

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Ontario Ministry of Environment. 1993. Guideline for the Protection and Management of Aquatic Sediment Quality in Ontario. Queens Printer for Ontario. August. Available on-line at: http://www.ene.gov.on.ca/envision/gp/B1-3.pdf

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EPA. 2006. Region III BTAG Freshwater Sediment Screening Benchmarks. August. Available online at: http://www.epa.gov/reg3hwmd/risk/eco/btag/sbv/fwsed/R3_BTAG_FW_Sediment_Benchmarks_8-06.pdf

TABLE 3-1: DOSE PARAMETERS FOR THE MOURNING DOVE (*Zenaida macrocura*)
Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

Parameter	Average Adult	Unit	Reference/Notes
Ingestion Rate$_{food}$	0.0058	kg/day	Calculated using the equation for the food requirement for intake of dry matter for galliformes (food ingestion rate = [0.088*(BW[grams])^0.891]/1000) (Nagy 2001).
Ingestion Rate$_{plant}$	0.0058	kg/day	100 percent of food ingestion rate.
Ingestion Rate$_{soil}$	0.0005	kg/day	9.3 percent of food ingestion rate based on wild turkey (similar feeding habits) (Beyer and others 1994).
Soil Concentrations	Sample Concentration	mg/kg	Based on the concentration detected at each surface sampling location.
Food Concentrations	Food Chain Model	mg/kg	Diet concentrations were estimated using the maximum site-specific BAF.
Diet Composition[a]	100%	Plant Tissue	Food is assumed to be 100 percent plant tissue. This receptor is representative of herbivorous birds in the terrestrial habitat.
Foraging Range	259	Hectare	Based on home range of 1 mile in Missouri (Tomlinson and others 1960, as cited in Zeiner and others 1990a).
Site Use Factor	Varies	Unitless	The site use factor is calculated by dividing the exposure unit area by the home range. If the exposure unit area divided by home range is greater than 1.0, a site use factor of 1.0 is assumed.
Body Weight	0.109	kg	Based on mean body weight of mourning dove (Griffing and others 1972, MacMillen 1962, as cited in OEHHA Database).

Notes:

a The mourning dove primarily eats seeds and other vegetation (Davis 1975, as cited in OEHHA Database).

BAF Bioaccumulation factor
BW Body weight
kg Kilogram
kg/day Kilogram per day
mg/kg Milligrams per kilogram
OEHHA Office of Environmental Health Hazard Assessment

References:

Beyer, W.N., E.E. Connor, and S. Gerould. 1994. "Estimates of Soil Ingestion by Wildlife." *Journal of Wildlife Management*. Volume 58, No. 2. Pages 375-382.

Nagy, K.A. 2001. "Food Requirements of Wild Animals: Predictive Equations for Free-Living Mammals, Reptiles, and Birds." Nutrition Abstracts and Reviews, Series B. Volume 71, No. 10. Pages 2R-12R.

OEHHA. 2003. Cal/Ecotox Database. Available on-line at: http://www.oehha.org/cal_ecotox/

Zeiner, D.C., W.F. Laudenslayer, Jr., K.E. Mayer, and M. White. 1990a. *California's Wildlife: Volume II, Birds.* CWHR System. State of Agency, California Department of Fish and Game. Sacramento, California.

TABLE 3-2: DOSE PARAMETERS FOR THE CANADA GOOSE *(Branta canadensis)*

Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

Parameter	Average Adult	Unit	Reference/Notes
Ingestion Rate$_{food}$	0.857	kg/day	Calculated using the equation for the food requirement for intake of dry matter for all birds [0.638*(BW[grams])^0.685] / 1000 based on dry weight (Nagy 2001).
Ingestion Rate$_{plant}$	0.857	kg/day	100 percent of food ingestion rate.
Ingestion Rate$_{sediment}$	0.070	kg/day	8.2 percent of food ingestion rate (Beyer and others 1994).
Soil Concentrations	Sample Concentration	mg/kg	Based on the concentration detected at each surface sampling location.
Food Concentrations	Food Chain Model	mg/kg	Diet concentrations were estimated using the maximum site-specific BAF.
Diet Composition [a]	100%	Plant Tissue	Food is assumed to be 100 percent plant tissue. This receptor is representative of herbivorous birds in the wetland habitat.
Foraging Range	983	Hectare	Based on mean home range provided Eberhardt and others 1989, as cited in EPA 1993.
Site Use Factor	Varies	Unitless	The site use factor is calculated by dividing the exposure unit area by the home range. If the exposure unit area divided by home range is greater than 1.0, a site use factor of 1.0 is assumed.
Body Weight	36.9	kg	Based on average body weight for adult males and females (Raveling 1968, Brakhage 1965, and Grieb 1970, all as cited in EPA 1993).

Notes:

a Canada geese are almost exclusively herbivorous, and feeding activity is concentrated in areas where food is plentiful. They are primarily grazers, but must consume grit at some point to assure proper digestion (Palmer 1962; Steel and others 1957, both as cited in EPA 1993).

BAF Bioaccumulation factor
BW Body weight
EPA U.S. Environmental Protection Agency
kg Kilogram
kg/day Kilogram per day
mg/kg Milligrams per kilogram

References:

Beyer, W.N., E.E. Connor, and S. Gerould. 1994. "Estimates of Soil Ingestion by Wildlife." *Journal of Wildlife Management* . Volume 58, No. 2. Pages 375-382.

Nagy, K.A. 2001. "Food Requirements of Wild Animals: Predictive Equations for Free-Living Mammals, Reptiles, and Birds." Nutrition Abstracts and Reviews, Series B. Volume 71, No. 10. Pages 2R-12R.
Available on-line at: http://www.wildlifeconflicts.org/journal/fall2008/Groepper_etal.pdf

EPA. 1993. *Wildlife Exposure Factors Handbook.* December.

TABLE 3-3: DOSE PARAMETERS FOR THE RED-TAILED HAWK (*Buteo jamaicensis*)

Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

Parameter	Average Adult	Units	Reference/Notes
Ingestion Rate$_{food}$	0.090	kg/day	Calculated using the equation for the food requirement for intake of dry matter for carnivorous birds (food ingestion rate = [0.849*(BW[grams])^0.663]/1000) (Nagy 2001).
Ingestion Rate$_{mammal}$	0.090	kg/day	100 percent of food ingestion rate.
Ingestion Rate$_{soil}$	0.0051	kg/day	5.7 percent of total ingestion rate, based on the 90th percentile result for the hawk determined for use in the Eco-SSL calculations (EPA 2007a).
Soil Concentrations	Sample Concentration	mg/kg	Based on the concentration detected at each surface sampling location.
Food Concentrations	Food Chain Model	mg/kg	Diet concentrations were estimated using the maximum site-specific BAF.
Diet Composition [a]	100%	Mammal Tissue	Food is assumed to be 100 percent mammal tissue. This receptor is representative of carnivorous birds in the terrestrial habitat.
Foraging Range	697	Hectare	Based on mean of home range provided in Craigshead and Craigshead 1956, as cited in EPA 1993.
Site Use Factor	Varies	Unitless	The site use factor is calculated by dividing the exposure unit area by the home range. If the exposure unit area divided by home range is greater than 1.0, a site use factor of 1.0 is assumed.
Body Weight	1.13	kg	Based on average body weight for adult males and females (Steenhof 1983 Craighead and Craighead 1956, and Springer and Osborne 1983, all as cited in EPA 1993).

Notes:

a Red-tailed hawks eat primarily ground squirrels and other small rodents, but also feed on a wide variety of other animals. Red-tailed hawks often eat snakes, including rattlesnakes (Montana Field Guide 2009).

BAF Bioaccumulation factor
BW Body weight
Eco-SSL Ecological soil screening level
EPA U.S. Environmental Protection Agency
kg Kilogram
kg/day Kilogram per day
mg/kg Milligrams per kilogram

References:

Montana Field Guide. 2009. Available on-line at: http://fieldguide.mt.gov/default.aspx

Nagy, K.A. 2001. "Food Requirements of Wild Animals: Predictive Equations for Free-Living Mammals, Reptiles, and Birds." Nutrition Abstracts and Reviews, Series B. Volume 71, No. 10. Pages 2R-12R.

EPA. 1993. *Wildlife Exposure Factors Handbook.* December.

EPA. 2007a. Eco-SSL, Attachment 4-1. "Guidance for Developing Ecological Soil Screening Levels (Eco-SSLs). Available on-line at: http://www.epa.gov/ecotox/ecossl/pdf/ecossl_attachment_4-1.pd f.

TABLE 3-4: DOSE PARAMETERS FOR THE GREAT BLUE HERON (*Ardea herodias*)

Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

Parameter	Average Adult	Units	Reference/Notes
Ingestion Rate$_{food}$	0.13	kg/day	Calculated using the equation for the food requirement for intake of dry matter for all birds [0.638*(BW[grams])^0.685]/1000 (Nagy 2001).
Ingestion Rate$_{mammal}$	0.13	kg/day	100 percent of food ingestion rate.
Ingestion Rate$_{sed}$	0.0036	kg/day	2.7 percent of food ingestion rate, based on the median of the range of non-probing aquatic birds (Beyer and others 1994).
Soil Concentrations	Sample Concentration	mg/kg	Based on the concentration detected at each surface sampling location.
Food Concentrations	Food Chain Model	mg/kg	Diet concentrations were estimated using the maximum site-specific BAF.
Diet Composition[a]	100%	Mammal Tissue	Although the great blue heron primarily consumes fish, prey is assumed to be 100 percent small mammals where fish are absent. This receptor is representative of carnivorous birds in the wetland and stream habitats.
Foraging Range	4.5	Hectare	Based on median of foraging ranges (0.6-8.4 hectares) from Bayer 1978, as cited in EPA 1993.
Site Use Factor	Varies	Unitless	The site use factor is calculated by dividing the exposure unit area by the home range. If the exposure unit area divided by home range is greater than 1.0, a site use factor of 1.0 is assumed.
Body Weight	2.39	kg	Mean body weight of both sexes (Dunning 1993)

Notes:

a In the stream, the great blue heron primarily consumes fish when fish are present. In the marsh, substantial quantities of small mammals, birds, amphibians, and large invertebrates are also included.

BAF Bioaccumulation factor
BW Body weight
EPA U.S. Environmental Protection Agency
kg Kilogram
kg/day Kilogram per day
mg/kg Milligrams per kilogram

References:

Beyer, W.N., E.E. Connor, and S. Gerould. 1994. "Estimates of Soil Ingestion by Wildlife." *Journal of Wildlife Management*. Volume 58, No. 2. Pages 375-382.

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EPA. 1993. "Wildlife Exposure Factors Handbook." December. 1993

Nagy, K.A. 2001. "Food requirements of wild animals: predictive equations for free-living mammals, reptiles, and birds." Nutrition Abstracts and Reviews, Series B. Volume 71. Number 10. Pages 2R-12R.

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TABLE 3-5: DOSE PARAMETERS FOR THE AMERICAN DIPPER *(Cinclus mexicanus)*

Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

Parameter	Average Adult	Unit	Reference/Notes
Ingestion Rate$_{food}$	0.0114	kg/day	Calculated using the equation for the food requirement for intake of dry matter for charadriiformes (food ingestion rate = [0.522*(BW[grams])^0.769]/1000) (Nagy 2001).
Ingestion Rate$_{invertebrate}$	0.011	kg/day	100 percent of food ingestion rate.
Ingestion Rate$_{sediment}$	0.0020	kg/day	18 percent of ingestion rate, based on western sandpiper (Beyer and others 1994).
Soil Concentrations	Sample Concentration	mg/kg	Based on the concentration detected at each surface sampling location.
Food Concentrations	Food Chain Model	mg/kg	Diet concentrations were estimated using the maximum site-specific BAF.
Diet Composition[a]	100%	Invertebrate Tissue	Food is assumed to be 100 percent invertebrate tissue. This receptor is representative of invertivorous birds in the stream habitat.
Foraging Range	433	Meters	Based on mid-point of range for home range along stream (Bent 1948, as cited in Zeiner 1990a).
Site Use Factor	Varies	Unitless	The site use factor is calculated by dividing the exposure unit area by the home range. If the exposure unit area divided by home range is greater than 1.0, a site use factor of 1.0 is assumed.
Body Weight	0.055	kg	Average of the range of body weights of American dippers (Cornell Lab of Ornithology 2007).

Notes:

a The American dipper eats aquatic insects and larvae, small fish, snails, tadpoles, and occasionally flying insects. Gleans rocks in streams, on shore, and under water; swims after small fish and tadpoles, and sometimes hawks insects. Uses wings and feet to swim under water, and walks on stream bottom. Usually feeds along clear, fast-flowing stream or river with rocky bottom, but sometimes feeds along alpine pond near stream (Bent 1948) in Zeiner (1990a).

BAF Bioaccumulation factor
BW Body weight
kg Kilogram
kg/day Kilogram per day
mg/kg Milligrams per kilogram

References:

Beyer, W.N., E.E. Connor, and S. Gerould. 1994. "Estimates of Soil Ingestion by Wildlife." *Journal of Wildlife Management* . Volume 58, No. 2. Pages 375-382.

Cornell Lab of Ornithology. 2007. All About Birds. Available on-line at: http://www.birds.cornell.edu/AllAboutBirds/

Nagy, K.A. 2001. "Food Requirements of Wild Animals: Predictive Equations for Free-Living Mammals, Reptiles, and Birds." *Nutrition Abstracts and Reviews,* Series B. Volume 71. Pages 21R-31R.

Zeiner, D.C., W.F. Laudenslayer, Jr., K.E. Mayer, and M. White. 1990a. *California's Wildlife: Volume II, Birds.* CWHR System. State of California, the Resource State Agency, California Department of Fish and Game. Sacramento, California.

TABLE 3-6: DOSE PARAMETERS FOR THE AMERICAN KESTREL *(Falco sparverius)*
Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

Parameter	Average Adult	Unit	Reference/Notes
Ingestion Rate$_{food}$	0.0138	kg/day	Calculated using the equation for the food requirement for intake of dry matter for omnivorous birds (food ingestion rate = [0.670*(BW[grams])^0.627]/1000) (Nagy 2001).
Ingestion Rate$_{invertebrate}$	0.014	kg/day	100 percent of food ingestion rate.
Ingestion Rate$_{soil}$	0.0008	kg/day	5.7 percent of total ingestion rate, based on the 90th percentile result for the hawk determined for use in the Eco-SSL calculations (EPA 2007a).
Soil Concentrations	Sample Concentration	mg/kg	Based on the concentration detected at each surface sampling location.
Food Concentrations	Food Chain Model	mg/kg	Diet concentrations were estimated using the maximum site-specific BAF.
Diet Composition[a]	100%	Invertebrate Tissue	Food is assumed to be 100% percent invertebrate tissue. This receptor is representative of insectivorous birds in the terrestrial habitat.
Foraging Range	262	Hectares	Based on mean home range of males and females in Illinois, Wyoming, and Michigan (Mills 1975 and Craighead and Craighead 1956, both as cited in EPA 1993).
Site Use Factor	Varies	Unitless	The site use factor is calculated by dividing the exposure unit area by the home range. If the exposure unit area divided by home range is greater than 1.0, a site use factor of 1.0 is assumed.
Body Weight	0.124	kg	Average of the mean body weights of male and female American kestrels in Utah during the fall and winter (Gessaman and Haggas 1987, as cited in EPA 1993).

Notes:

a Kestrels prey on a variety of small animals including invertebrates such as worms, spiders, scorpions, beetles, other large insects, amphibians and reptiles such as frogs, lizards, and snakes, and a wide variety of small- to medium-sized birds and mammals (Brown and Amadon 1968 and Mueller 1987, both as cited in EPA 1993).

BAF	Bioaccumulation factor
BW	Body weight
Eco-SSL	Ecological soil screening level
EPA	U.S. Environmental Protection Agency
kg	Kilogram
kg/day	Kilogram per day
mg/kg	Milligrams per kilogram

References:

Nagy, K.A. 2001. "Food Requirements of Wild Animals: Predictive Equations for Free-Living Mammals, Reptiles, and Birds." *Nutrition Abstracts and Reviews,* Series B. Volume 71. Pages 21R-31R.

EPA. 1993. *Wildlife Exposure Factors Handbook.* December.

EPA. 2007a. Eco-SSL, Attachment 4-1. "Guidance for Developing Ecological Soil Screening Levels (Eco-SSLs). Available on-line at: http://www.epa.gov/ecotox/ecossl/pdf/ecossl_attachment_4-1.pd f.

TABLE 3-7: DOSE PARAMETERS FOR THE MALLARD (*Anas platyrhynchos*)

Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

Parameter	Average Adult	Units	Reference/Notes
Ingestion Rate $_{food}$	0.079	kg/day	Calculated using the equation for the food requirement for intake of dry matter for all birds (food ingestion rate = [0.638*(BW[grams])^0.685]/1000 based on dry weight (Nagy 2001).
Ingestion Rate$_{plant}$	0.050	kg/day	63 percent of food ingestion rate (Swanson and others 1985, as cited in EPA 1993).
Ingestion Rate$_{invertebrate}$	0.029	kg/day	37 percent of food ingestion rate (Swanson and others 1985, as cited in EPA 1993).
Ingestion Rate$_{sediment}$	0.003	kg/day	3.3 percent of food ingestion rate based on the mallard (Beyer and others 1994).
Soil Concentrations	Sample Concentration	mg/kg	Based on the concentration detected at each surface sampling location.
Food Concentrations	Food Chain Model	mg/kg	Diet concentrations were estimated using the maximum site-specific BAF.
Diet Composition[a]	63% 37%	Mammal Tissue Invertebrate Tissue	Food is assumed to be 63 percent plant tissue and 37 percent invertebrate tissue. This receptor is representative of omnivorous birds in the wetland habitat.
Foraging Range	308	Hectares	mallards in Minnesota, North Dakota, and Manitoba (Zeiner 1990a; Mauser and others 1994; Kirby and others 1985, as cited in OEHHA Database 2003).
Site Use Factor	Varies	Unitless	The site use factor is calculated by dividing the exposure unit area by the home range. If the exposure unit area divided by home range is greater than 1.0, a site use factor of 1.0 is assumed.
Body Weight	1.143	kg	Mean body weight of male and female adults in North America (Heitmeyer 1988 and Nelson and Martin 1953, both as cited in EPA 1993).

Notes:

a The mallard's diet consists mainly of plants, with the exception of the breeding season, during which animal foods (fish, invertebrates) become predominant in the diet (EPA 1993, Zeiner and others 1990a).

BAF Bioaccumulation factor
BW Body weight
EPA U.S. Environmental Protection Agency
kg Kilogram
kg/day Kilograms per day
mg/kg Milligrams per kilogram
OEHHA Office of Environmental Health Hazard Assessment

References:

Beyer, W.N., E.E. Connor, and S. Gerould. 1994. "Estimates of Soil Ingestion by Wildlife." *Journal of Wildlife Management*. Volume 58, No. 2. Pages 375-382.

Nagy, K.A. 2001. "Food requirements of wild animals: predictive equations for free-living mammals, reptiles, and birds." Nutrition Abstracts and Reviews, Series B. Volume 71. Number 10. Pages 2R-12R.

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EPA. 1993. "Wildlife Exposure Factors Handbook." December.

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TABLE 3-8: DOSE PARAMETERS FOR THE MEADOW VOLE *(Microtus pennsylvanicus)*

Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

Parameter	Average Adult	Units	Reference/Notes
Ingestion Rate$_{food}$	0.005	kg/day	Calculated using the equation for the food requirement for intake of dry matter for rodents (food ingestion rate = [0.332*(BW[grams])^0.774]/1000) (Nagy 2001).
Ingestion Rate$_{plant}$	0.005	kg/day	100 percent of food ingestion rate.
Ingestion Rate$_{soil}$	0.00011	kg/day	2.4 percent of food ingestion rate based on meadow vole (Beyer and others 1994).
Soil Concentrations	Sample Concentration	mg/kg	Based on the concentration detected at each surface sampling location.
Food Concentrations	Food Chain Model	mg/kg	Diet concentrations were estimated using the maximum site-specific BAF.
Diet Composition[a]	100%	Plant Tissue	Food is assumed to be 100 percent plant tissue. This receptor is representative of small herbivorous mammals in the terrestrial habitat.
Foraging Range	0.007	Hectare	Based on mean summer and winter home range in Montana from Douglass 1976 and Douglass 1977, both as cited in EPA 1993).
Site Use Factor	Varies	Unitless	The site use factor is calculated by dividing the exposure unit area by the home range. If the exposure unit area divided by home range is greater than 1.0, a site use factor of 1.0 is assumed.
Body Weight	0.031	kg	Average of male and female mean weights from Brochu and others 1988, Boonstra and Rodd 1983, Anderson and others 1984, and Myers and Krebs 1971, all as cited in EPA 1993.

Notes:

a Meadow voles consume green succulent vegetation, sedges, seeds, roots, bark, fungi, insects, and small amounts of animal matter (EPA 1993).

BAF Bioaccumulation factor
BW Body weight
EPA U.S. Environmental Protection Agency
kg Kilograms
kg/day Kilograms per day
mg/kg Milligrams per kilogram

References:

Beyer, W.N., E.E. Connor, and S. Gerould. 1994. "Estimates of Soil Ingestion by Wildlife." *Journal of Wildlife Management* . Volume 58, No. 2. Pages 375-382.

EPA. 1993. *Wildlife Exposure Factors Handbook.* December.

Nagy, K.A. 2001. "Food requirements of wild animals: predictive equations for free-living mammals, reptiles, and birds." Nutrition Abstracts and Reviews, Series B. Volume 71. Number 10. Pages 2R-12R.

TABLE 3-9: DOSE PARAMETERS FOR THE WHITE-TAILED DEER *(Odocoileus virginianus*

Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

Parameter	Average Adult	Units	Reference/Notes
Ingestion Rate$_{food}$	1.432	kg/day	Calculated using the equation for the food requirement for intake of dry matter for herbivores (food ingestion rate = [0.859*(BW[grams])^0.628]/1000) (Nagy 2001).
Ingestion Rate$_{plant}$	1.432	kg/day	100 percent of food ingestion rate.
Ingestion Rate$_{soil}$	0.029	kg/day	2 percent of food ingestion rate (Beyer and others 1994).
Soil Concentrations	Sample Concentration	mg/kg	Based on the concentration detected at each surface sampling location.
Food Concentrations	Food Chain Model	mg/kg	Diet concentrations were estimated using the maximum site-specific BAF.
Diet Composition[a]	100%	Plant Tissue	Food is assumed to be 100 percent plant tissue. This receptor is representative of large herbivorous mammals in the terrestrial habitat.
Foraging Range	179	Hectare	Based on average of mean annual home ranges of white-tailed deer (Banfield 1974 and Smith 1991, both as cited in NatureServe Explorer Database 2009).
Site Use Factor	Varies	Unitless	The site use factor is calculated by dividing the exposure unit area by the home range. If the exposure unit area divided by home range is greater than 1.0, a site use factor of 1.0 is assumed.
Body Weight	135	kg	Weight reported for white-tailed deer in NatureServe Explorer Database 2009.

Notes:

a	The deer forages on a variety of plant material; its diet consists of predominantly browse as opposed to sedges or grasses (Sample 1997).
BAF	Bioaccumulation factor
BW	Body weight
kg	Kilograms
kg/day	Kilograms per day
mg/kg	Milligrams per kilogram

References:

Beyer, W.N., E.E. Connor, and S. Gerould. 1994. "Estimates of Soil Ingestion by Wildlife." *Journal of Wildlife Management* . Volume 58, No. 2. Pages 375-382.

Nagy, K.A. 2001. "Food requirements of wild animals: predictive equations for free-living mammals, reptiles, and birds." Nutrition Abstracts and Reviews, Series B. Volume 71. Number 10. Pages 2R-12R.

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Sample, B.E., M.S. Alpin., R. A. Efroymson, G.W. Suter II, and C.J.E. Welsh. 1997. "Methods and Tools for Estimation of the Exposure of Terrestrial Wildlife to Contaminants." Oak Ridge National Laboratory. Oak Ridge, Tennessee.

TABLE 3-10: DOSE PARAMETERS FOR THE MUSKRAT *(Ondatra zibethicus)*

Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

Parameter	Average Adult	Units	Reference/Notes
Ingestion Rate$_{food}$	0.063	kg/day	Calculated using the equation for the food requirement for intake of dry matter for rodents (food ingestion rate = [0.332*(BW[grams])^0.774]/1000) (Nagy 2001).
Ingestion Rate$_{plant}$	0.063	kg/day	100 percent of food ingestion rate.
Ingestion Rate$_{sediment}$	0.00151	kg/day	2.4 percent of food ingestion rate based on meadow vole (Beyer and others 1994).
Soil Concentrations	Sample Concentration	mg/kg	Based on the concentration detected at each surface sampling location.
Food Concentrations	Food Chain Model	mg/kg	Diet concentrations were estimated using the maximum site-specific BAF.
Diet Composition[a]	100%	Plant Tissue	Food is assumed to be 100 percent plant tissue. This receptor is representative of herbivorous mammals in the wetland habitat.
Foraging Range	0.170	Hectare	Based on mean summer home range in a marsh (Neal 1968 and Proulx and Gilbert 1983, both as cited in EPA 1993).
Site Use Factor	Varies	Unitless	The site use factor is calculated by dividing the exposure unit area by the home range. If the exposure unit area divided by home range is greater than 1.0, a site use factor of 1.0 is assumed.
Body Weight	0.873	kg	Average of male and female mean weights in Idaho from Reeves and Williams 1957, as cited in EPA 1993.

Notes:

a The roots and basal portions of aquatic plants make up most of the muskrat's diet, although shoots, bulbs, tubers, stems, and leaves also are eaten (Dozier 1953; Willner and others 1980; Svihla and Svihla 1931, all as cited in EPA 1993).

BAF Bioaccumulation factor
BW Body weight
EPA U.S. Environmental Protection Agency
kg Kilograms
kg/day Kilograms per day
mg/kg Milligrams per kilogram

References:

Beyer, W.N., E.E. Connor, and S. Gerould. 1994. "Estimates of Soil Ingestion by Wildlife." *Journal of Wildlife Management* . Volume 58, No. 2. Pages 375-382.

EPA. 1993. *Wildlife Exposure Factors Handbook.* December.

Nagy, K.A. 2001. "Food requirements of wild animals: predictive equations for free-living mammals, reptiles, and birds." Nutrition Abstracts and Reviews, Series B. Volume 71. Number 10. Pages 2R-12R.

TABLE 3-11: DOSE PARAMETERS FOR THE RED FOX *(Vulpus vulpus)*

Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

Parameter	Average Adult	Units	Reference/Notes
Ingestion Rate$_{food}$	0.172	kg/day	Calculated using the equation for the food requirement for intake of dry matter for carnivores (food ingestion rate = [0.153*(BW[grams])^0.834]/1000) (Nagy 2001).
Ingestion Rate$_{mammal}$	0.172	kg/day	100 percent of food ingestion rate.
Ingestion Rate$_{soil}$	0.005	kg/day	2.8 percent of food ingestion rate based on red fox (Beyer and others 1994).
Soil Concentrations	Sample Concentration	mg/kg	Based on the concentration detected at each surface sampling location.
Food Concentrations	Food Chain Model	mg/kg	Diet concentrations were estimated using the maximum site-specific BAF.
Diet Composition[a]	100%	Mammal Tissue	Food is assumed to be 100 percent mammal tissue. This receptor is representative of carnivorous mammals in the terrestrial habitat.
Foraging Range	1,354	Hectare	Based on mean annual home range of red fox (Jones and Theberge 1982 and Sargeant 1972, both as cited in EPA 1993).
Site Use Factor	Varies	Unitless	The site use factor is calculated by dividing the exposure unit area by the home range. If the exposure unit area divided by home range is greater than 1.0, a site use factor of 1.0 is assumed.
Body Weight	4.5	kg	Average of male and female mean weights from Storm and others 1976, as cited in EPA 1993.

Notes:

a The red fox eats mostly small mammals, birds, insects, and fruit (Korschgen 1959; Samuel and Nelson 1982, both as cited in EPA 1993). Meadow voles are a major food in most areas of North America; other common prey include mice and rabbits (Korschgen 1959, as cited in EPA 1993).

BAF Bioaccumulation factor
BW Body weight
EPA U.S. Environmental Protection Agency
kg Kilograms
kg/day Kilograms per day
mg/kg Milligrams per kilogram

References:

Beyer, W.N., E.E. Connor, and S. Gerould. 1994. "Estimates of Soil Ingestion by Wildlife." *Journal of Wildlife Management* . Volume 58, No. 2. Pages 375-382.

EPA. 1993. *Wildlife Exposure Factors Handbook.* December.

Nagy, K.A. 2001. "Food requirements of wild animals: predictive equations for free-living mammals, reptiles, and birds." Nutrition Abstracts and Reviews, Series B. Volume 71. Number 10. Pages 2R-12R.

TABLE 3-12: DOSE PARAMETERS FOR THE MINK *(Mustela vison)*
Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

Parameter	Average Adult	Units	Reference/Notes
Ingestion Rate$_{food}$	0.043	kg/day	Calculated using the equation for the food requirement for intake of dry matter for carnivorves (food ingestion rate = [0.153*(BW[grams])^0.834]/1000) (Nagy 2001).
Ingestion Rate$_{mammals}$	0.043	kg/day	100 percent of food ingestion rate.
Ingestion Rate$_{sediment}$	0.0012	kg/day	2.8 percent of food ingestion rate based on red fox (Beyer and others 1994).
Soil Concentrations	Sample Concentration	mg/kg	Based on the concentration detected at each surface sampling location.
Food Concentrations	Food Chain Model	mg/kg	Diet concentrations were estimated using the maximum site-specific BAF.
Diet Composition[a]	100%	Mammal Tissue	Food is assumed to be 100 percent mammal tissue. This receptor is representative of carnivorous mammals in the wetland habitat.
Foraging Range	14.1	Hectare	Based on mean home range for females in heavily and sparsely vegetated rivers in Montana (Mitchell 1961, as cited in EPA 1993).
Site Use Factor	Varies	Unitless	The site use factor is calculated by dividing the exposure unit area by the home range. If the exposure unit area divided by home range is greater than 1.0, a site use factor of 1.0 is assumed.
Body Weight	0.9	kg	Average of male and female mean summer and fall weights from Montana (Mitchell 1961, as cited in EPA 1993).

Notes:

a Shorelines and emergent vegetation are the mink's principal hunting areas (Arnold 1986, as cited in EPA 1993). Mink are opportunistic feeders, taking whatever prey is abundant (Hamilton 1936, 1940; Errington 1954; Sargeant and others 1973, all as cited in EPA 1993).

BAF Bioaccumulation factor
BW Body weight
EPA U.S. Environmental Protection Agency
kg Kilograms
kg/day Kilograms per day
mg/kg Milligrams per kilogram

References:

Beyer, W.N., E.E. Connor, and S. Gerould. 1994. “Estimates of Soil Ingestion by Wildlife.” *Journal of Wildlife Management* . Volume 58, No. 2. Pages 375-382.

EPA. 1993. *Wildlife Exposure Factors Handbook.* December.

Nagy, K.A. 2001. "Food requirements of wild animals: predictive equations for free-living mammals, reptiles, and birds." Nutrition Abstracts and Reviews, Series B. Volume 71. Number 10. Pages 2R-12R.

TABLE 3-13: DOSE PARAMETERS FOR THE MASKED SHREW *(Sorex cinereus)*

Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

Parameter	Average Adult	Units	Reference/Notes
Ingestion Rate $_{food}$	0.0085	kg/day	Calculated with body weight of 5.5 grams using median of food ingestion rates (1.54 g/g/d) of mean food ingestion rates (1.26 g/g/d and 1.81 g/g/d) for Ornate Shrew (food ingestion rate = [1.54*(BW[grams])/1000]) (Rust 1978, as cited in OEHHA Database 2003).
Ingestion Rate $_{invertebrate}$	0.008	kg/day	100 percent of food ingestion rate.
Ingestion Rate $_{soil\ or\ sediment}$	0.0011	kg/day	13 percent of food ingestion rate based on shrews (Garten 1980, as cited in Talmage and Walton 1993).
Sediment Concentrations	Sample Concentration	mg/kg	Based on the concentration detected at each surface sampling location.
Food Concentrations	Food Chain Model	mg/kg	Diet concentrations were estimated using the maximum site-specific BAF.
Diet Composition [a]	100%	Invertebrate Tissue	Food is assumed to be 100 percent invertebrate tissue. This receptor is representative of omnivorous mammals in the terrestrial and wetland habitat.
Foraging Range	0.4	Hectare	Based on mid-point of the range of masked shrew home ranges (Saunders 1988).
Site Use Factor	Varies	Unitless	The site use factor is calculated by dividing the exposure unit area by the home range. If the exposure unit area divided by home range is greater than 1.0, a site use factor of 1.0 is assumed.
Body Weight	0.0055	kg	Based on mean of range (Burt and Grossenheider 1976).

Notes:

a	A generalist, opportunistic invertivore. Eats primarily insects and other invertebrates, carrion, small vertebrates, occasionally seeds. Echolocation may be used for detecting prey (Gould and others 1964). Consumes daily its own weight in food.

BAF	Bioaccumulation factor
BW	Body weight
g/g/d	Gram per gram per day
kg	Kilogram
kg/day	Kilogram per day
mg/kg	Milligrams per kilogram
OEHHA	Office of Environmental Health Hazard Assessment

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TABLE 3-14: TERRESTRIAL BIOACCUMULATION FACTORS USED IN THE FOOD-CHAIN MODEL

Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

Terrestrial Site BAFs			
COPEC	**Plant**	**Mammal**	**Terrestrial Invertebrate**
Arsenic	0.60	0.48	16
Cadmium	1.6	0.0	7.0
Copper	1.1	1.0	4.9
Lead	0.63	0.93	1.6
Manganese	9.9	0.028	1.5
Zinc	2.0	6.3	4.4

Reference Site Terrestrial BAFs			
COPEC	**Plant**	**Mammal**	**Terrestrial Invertebrate**
Arsenic	0.0	0.48	2.6
Cadmium	1.3	0.0	7.0
Copper	0.78	0.66	3.7
Lead	0.043	0.076	1.6
Manganese	0.33	0.059	1.5
Zinc	1.4	10	8.3

Notes:

BAF Bioaccumulation factor
COPEC Chemical of potential ecological concern

TABLE 3-15: UPPER MARSH BIOACCUMULATION FACTORS USED IN THE FOOD-CHAIN MODEL

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

Eastern Upper Marsh BAFs

COPEC	Plant	Mammal	Marsh Invertebrate
Aluminum	0.059	0.038	1.3
Arsenic	0.0	0.23	8.4
Cadmium	2.1	0.32	55
Copper	0.33	0.14	14
Lead	0.19	0.12	29
Manganese	3.6	0.21	35
Zinc	2.3	1.1	24

Western Upper Marsh BAFs

COPEC	Plant	Mammal	Marsh Invertebrate
Aluminum	0.0077	0.038	1.3
Arsenic	0.0	0.23	2.3
Cadmium	2.0	0.32	32
Copper	0.20	0.14	6.3
Lead	0.13	0.12	8.6
Manganese	5.0	0.21	27
Zinc	2.1	1.1	18

Reference Site Upper Marsh BAFs

COPEC	Plant	Mammal	Marsh Invertebrate
Aluminum	0.022	0.018	1.3
Arsenic	0.0	0.0	3.0
Cadmium	5.1	0.0	33
Copper	1.4	0.92	13
Lead	0.00	0.12	2.2
Manganese	3.2	0.11	13
Zinc	2.0	5.5	11

Notes: Mammal BAFs from the Eastern Upper Marsh were used for the Western Upper Marsh because no mammals were collected in the Western Upper Marsh.

BAF Bioaccumulation factor

COPEC Chemical of potential ecological concern

TABLE 3-16: STREAM SEDIMENT BIOACCUMULATION FACTORS USED IN THE FOOD-CHAIN MODEL

Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

Stream Site BAFs		
COPEC	**Mammal**	**Stream Invertebrate**
Aluminum	0.0050	0.070
Arsenic	0.48	1.2
Cadmium	0.0	16
Copper	1.0	2.8
Lead	0.93	1.3
Manganese	0.028	4.2
Zinc	6.3	31

Stream Reference Site BAFs		
COPEC	**Mammal**	**Stream Invertebrate**
Aluminum	0.010	0.28
Arsenic	0.48	0.57
Cadmium	0.0	0.0
Copper	0.66	0.99
Lead	0.076	0.26
Manganese	0.059	2.1
Zinc	10	7.7

Notes:

BAF Bioaccumulation factor
COPEC Chemical of potential ecological concern

TABLE 3-17: SOIL CONCENTRATIONS AND BIOACCUMULATION FACTORS FOR THE TERRESTRIAL TRANSECTS

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

Area	Sample ID	Type	Aluminum	Arsenic	Cadmium	Copper	Lead	Manganese	Zinc
						Soil Concentration (mg/kg)			
Anaconda Creek Reference Transect									
	ANT REF TS 01	Soil	11700	14.8	0.92	42	81	436	106
	ANT REF TS 02	Soil	11200	15.2	0.85	40	25	428	67
	ANT REF TS 03	Soil	12700	12.3	0.74	32	24	564	64
Beartrap Creek Transect									
	BC TS 01	Soil	17800	8.2	0.79	14	37	673	124
	BC TS 02	Soil	12600	7.57	0.62	10	26	701	81
	BC TS 03	Soil	17200	35.2	1.45	100	264	1150	165
Blackfoot River Transect									
	BR TS 01	Soil	10600	23.9	8.62	126	212	1390	582
	BR TS 02	Soil	11600	31.9	1.33	60	68	720	174
	BR TS 03	Soil	7670	101	4.36	264	1840	785	764
						BAF (unitless)			
BAFs using ANT REF TS 01									
	ANTREF01	Plant	0.00	0.00	0.00	0.78	0.03	0.30	1.13
	ANTREFMA01	Least Chipmunk	0.00	0.00	0.00	0.17	0.00	0.01	4.16
	ANTREFMA02	Meadow Vole	0.01	0.00	0.00	0.28	0.00	0.05	10.35
	ANT REF T1 01	Invertebrate	0.01	0.41	3.66	3.16	0.04	0.47	6.00
BAFs using ANT REF TS 03									
	ANTREF02	Plant	0.01	0.00	0.00	0.48	0.00	0.15	1.13
	ANTREFMA03	Masked Shrew	0.01	0.00	0.00	0.66	0.00	0.06	2.21
	ANT REF T1 02	Invertebrate	0.01	0.13	3.77	3.70	0.07	0.30	3.00
BAFs using ANT REF TS 03									
	ANTREF03	Plant	0.00	0.00	0.86	0.41	0.00	0.27	1.41
	ANT REF T1 03	Invertebrate	0.08	2.55	3.32	3.56	0.27	0.59	8.31
BAFs using BC TS 01									
	BCVE01	Plant	0.02	0.60	0.63	0.73	0.63	4.87	0.82
	BC T1 01	Invertebrate	0.04	16.48	1.87	4.85	1.39	0.83	4.24

TABLE 3-17: SOIL CONCENTRATIONS AND BIOACCUMULATION FACTORS FOR THE TERRESTRIAL TRANSECTS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

Area	Sample ID	Type	Aluminum	Arsenic	Cadmium	Copper	Lead	Manganese	Zinc
						BAF (unitless)			
BAFs using BC TS 02									
	BCVE02	Plant	0.03	0.00	1.11	1.13	0.16	9.91	1.98
	BCMA01	Deer Mouse	0.00	0.00	0.00	0.96	0.00	0.01	1.18
	BCMA02	Boreal Redback Vole	0.00	0.00	0.00	1.01	0.16	0.03	6.30
	BCMA03	Deer Mouse	0.00	0.00	0.00	0.58	0.93	0.02	2.42
BAFs using BC TS 03									
	BCVE03	Plant	0.01	0.00	1.59	0.10	0.02	0.99	1.12
	BC T1 03	Invertebrate	0.04	4.60	3.25	1.25	0.06	0.33	4.38
BAFs using BR TS 01									
	BRVE01	Plant	0.00	0.00	0.26	0.20	0.04	0.33	0.98
	BRMA01	Red Squirrel	0.00	0.48	0.00	0.14	0.04	0.00	2.02
	BRMA02	Least Chipmunk	0.01	0.00	0.00	0.09	0.08	0.01	0.32
	BRMA03	Least Chipmunk	0.01	0.39	0.00	0.12	0.07	0.01	0.35
	BR T1 01	Invertebrate	0.13	2.20	1.38	1.74	1.55	1.48	2.14
BAFs using BR TS 02									
	BRVE02	Plant	0.00	0.00	1.26	0.37	0.00	0.32	1.29
	BR T1 02	Invertebrate	0.03	0.83	4.88	2.07	0.00	0.36	4.26
BAFs using BR TS 03									
	BRVE03	Plant	0.00	0.00	0.49	0.08	0.00	0.06	0.60
	BR TI 03	Invertebrate	0.02	0.78	7.00	0.34	0.02	1.08	0.83

Notes:

BAFs were calculated by dividing the tissue concentration by the soil concentration at the specified location. If the tissue or soil concentration for a chemical was non-detect, the BAF is 0.

Terrestrial samples were collected from two transects along Beartrap Creek and Blackfoot River; reference site samples were collected from one transect along Anaconda Creek.

Soil samples were collected from the 0 to 6 inch depth interval.

Dry weight invertebrate tissue concentrations were compared to the soil concentrations.

BAF Bioaccumulation factor

ID Identification

mg/kg Milligrams per kilogram

TABLE 3-18: SEDIMENT CONCENTRATIONS AND BIOACCUMULATION FACTORS FOR THE UPPER MARSH TRANSECTS

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

Area	Sample ID	Type	Corresponding Sediment Depth (inches bgs)	Aluminum	Arsenic	Cadmium	Copper	Lead	Manganese	Zinc
				Sediment Concentration (mg/kg)						
Reference Transect (Pass Creek Marsh)										
	PGREFTS01	Sediment	0-2	11700	10.80	1.25	46	86	218	198
	PGREFTS01	Sediment	2-6	13300	13.90	1.53	50	77	207	200
	PGREFTS01	Sediment	6-12	13000	15.20	1.35	48	82	200	204
	PGREFTS02	Sediment	0-2	8750	15.40	1.58	40	53	494	159
	PGREFTS02	Sediment	2-6	6460	10.30	1.53	26	39	186	130
	PGREFTS02	Sediment	6-12	4990	12.30	0.89	13	31	156	101
	PGREFTS03	Sediment	0-2	10600	17.40	1.34	39	74	708	216
	PGREFTS03	Sediment	2-6	9890	14.60	1.05	31	66	727	183
	PGREFTS03	Sediment	6-12	6120	7.06	0.52	14	37	452	108
Eastern Upper Marsh Transect										
	UMT1 TS 01	Sediment	0-2	11200	17.00	1.97	89	117	530	352
	UMT1 TS 01	Sediment	2-6	10800	17.50	1.34	95	103	400	418
	UMT1 TS 01	Sediment	6-12	9060	13.00	1.36	79	62	256	301
	UMT1 TS 02	Sediment	0-2	5160	128.00	14.10	450	2250	4200	2040
	UMT1 TS 02	Sediment	2-6	5560	110.00	18.40	573	2440	4910	2830
	UMT1 TS 02	Sediment	6-12	5700	55.80	19.20	662	2200	2890	2740
	UMT1 TS 03	Sediment	0-2	4940	82.60	13.90	570	1780	2840	2060
	UMT1 TS 03	Sediment	2-6	4420	46.20	9.49	413	1130	1500	1710
	UMT1 TS 03	Sediment	6-12	5680	33.30	10.10	263	656	1210	1520
Western Upper Marsh Transect										
	UMT2 TS 01	Sediment	0-2	8910	54.20	2.16	249	1030	330	264
	UMT2 TS 01	Sediment	2-6	11000	42.40	8.93	162	163	314	585
	UMT2 TS 01	Sediment	6-12	12200	18.70	2.27	109	88	202	380
	UMT2 TS 02	Sediment	0-2	12700	26.50	2.92	84	125	1370	420
	UMT2 TS 02	Sediment	2-6	13200	21.80	0.95	99	93	1260	214
	UMT2 TS 02	Sediment	6-12	10800	17.50	0.76	98	92	1390	207
	UMT2 TS 03	Sediment	0-2	8840	14.30	1.09	59	45	241	174
	UMT2 TS 03	Sediment	2-6	12500	11.30	1.36	78	63	158	184
	UMT2 TS 03	Sediment	6-12	10800	17.20	0.34	112	52	300	186

TABLE 3-18: SEDIMENT CONCENTRATIONS AND BIOACCUMULATION FACTORS FOR THE UPPER MARSH TRANSECTS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

Area	Sample ID	Type	Corresponding Sediment Depth (inches bgs)	Aluminum	Arsenic	Cadmium	Copper	Lead	Manganese	Zinc
							BAF (unitless)			
BAFs using PGREFTS01										
	PGREFVE01	Marsh Plant	0-2	0.010	0.00	0.00	0.32	0.00	3.0	0.47
	PGREFVE01	Marsh Plant	2-6	0.008	0.00	0.00	0.29	0.00	3.1	0.46
	PGREFVE01	Marsh Plant	6-12	0.009	0.00	0.00	0.30	0.00	3.2	0.45
	PGREFMA01	Meadow Vole	0-2	0.003	0.00	0.00	0.27	0.00	0.1	2.49
	PGREFMA01	Meadow Vole	2-6	0.003	0.00	0.00	0.25	0.00	0.1	2.47
	PGREFMA01	Meadow Vole	6-12	0.003	0.00	0.00	0.26	0.00	0.1	2.42
	PGREFMA05	Meadow Vole	0-2	0.004	0.00	0.00	0.17	0.00	0.1	0.24
	PGREFMA05	Meadow Vole	2-6	0.001	0.00	0.00	0.16	0.00	0.1	1.43
	PGREFMA05	Meadow Vole	6-12	0.001	0.00	0.00	0.16	0.00	0.1	1.40
	PGREFT101	Marsh Invertebrate	0-2	1.31	3.04	17.16	12.6	2.0	12.2	6.0
	PGREFT101	Marsh Invertebrate	2-6	1.15	2.36	14.02	11.6	2.2	12.9	5.9
	PGREFT101	Marsh Invertebrate	6-12	1.18	2.16	15.89	12.0	2.1	13.3	5.8
BAFs using PGREFTS02										
	PGREFVE02	Marsh Plant	0-2	0.012	0.00	2.83	0.37	0	0.36	1.3
	PGREFVE02	Marsh Plant	2-6	0.017	0.00	2.92	0.57	0	0.96	1.5
	PGREFVE02	Marsh Plant	6-12	0.022	0.00	5.05	1.14	0	1.15	2.0
	PGREFMA02	Masked Shrew	0-2	0.011	0.00	0.00	0.20	0	0.03	0.47
	PGREFMA02	Masked Shrew	2-6	0.014	0.00	0.00	0.31	0	0.07	0.57
	PGREFMA02	Masked Shrew	6-12	0.018	0.00	0.00	0.62	0	0.09	0.74
	PGREFMA03	Masked Shrew	0-2	0.010	0.00	0.00	0.29	0.07	0.03	0.52
	PGREFMA03	Masked Shrew	2-6	0.013	0.00	0.00	0.46	0.10	0.08	0.63
	PGREFMA03	Masked Shrew	6-12	0.017	0.00	0.00	0.92	0.12	0.10	0.82
	PGREFT102	Marsh Invertebrate	0-2	0.065	0.85	2.74	2.9	0.11	0.8	6.4
	PGREFT102	Marsh Invertebrate	2-6	0.088	1.28	2.83	4.5	0.15	2.1	7.8
	PGREFT102	Marsh Invertebrate	6-12	0.114	1.07	4.88	9.1	0.19	2.5	10.1

TABLE 3-18: SEDIMENT CONCENTRATIONS AND BIOACCUMULATION FACTORS FOR THE UPPER MARSH TRANSECTS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

Area	Sample ID	Type	Corresponding Sediment Depth (inches bgs)	Aluminum	Arsenic	Cadmium	Copper	Lead	Manganese	Zinc
							BAF (unitless)			
BAFs using PGREFTS03										
	PGREFVE03	Marsh Plant	0-2	0.01	0.00	0.00	0.5	0	0.324	0.44
	PGREFVE03	Marsh Plant	2-6	0.01	0.00	0.00	0.7	0	0.316	0.52
	PGREFVE03	Marsh Plant	6-12	0.02	0.00	0.00	1.4	0	0.508	0.88
	PGREFMA04	Masked Shrew	0-2	0.009	0.00	0.00	0.2	0.03	0.01	5.5
	PGREFMA04	Masked Shrew	2-6	0.009	0.00	0.00	0.3	0.04	0.01	1.9
	PGREFMA04	Masked Shrew	6-12	0.015	0.00	0.00	0.7	0.07	0.02	3.9
	PGREFT103	Marsh Invertebrate	0-2	0.20	0.36	12.69	4.47	0.26	0.37	5.46
	PGREFT103	Marsh Invertebrate	2-6	0.21	0.43	16.19	5.63	0.29	0.36	6.45
	PGREFT103	Marsh Invertebrate	6-12	0.34	0.89	32.57	12.17	0.52	0.58	10.93
BAFs using UMT1 TS 01										
	UMT1 VE 01	Marsh Plant	0-2	0.006	0.00	1.40	0.29	0.1	1.7	2.0
	UMT1 VE 01	Marsh Plant	2-6	0.006	0.00	2.05	0.27	0.1	2.3	1.7
	UMT1 VE 01	Marsh Plant	6-12	0.008	0.00	2.02	0.33	0.2	3.6	2.3
	UMT1 T1 01	Marsh Invertebrate	0-2	0.74	6.44	37.31	12.7	15.6	16.9	20.5
	UMT1 T1 01	Marsh Invertebrate	2-6	0.77	6.26	54.85	12.0	17.7	22.4	17.2
	UMT1 T1 01	Marsh Invertebrate	6-12	0.92	8.42	54.04	14.4	29.4	35.0	23.9
BAFs using UMT1 TS 02										
	UMT1 VE 02	Marsh Plant	0-2	0.051	0.00	0.33	0.09	0.03	0.25	0.30
	UMT1 VE 02	Marsh Plant	2-6	0.047	0.00	0.26	0.07	0.02	0.21	0.22
	UMT1 VE 02	Marsh Plant	6-12	0.046	0.00	0.25	0.06	0.03	0.36	0.23
	UMT1 T1 02	Marsh Invertebrate	0-2	1.3	1.0	4.65	2.2	0.98	1.6	5.10
	UMT1 T1 02	Marsh Invertebrate	2-6	1.2	1.2	3.56	1.7	0.9	1.3	3.67
	UMT1 T1 02	Marsh Invertebrate	6-12	1.2	2.3	3.41	1.5	1.00	2.3	3.80

TABLE 3-18: SEDIMENT CONCENTRATIONS AND BIOACCUMULATION FACTORS FOR THE UPPER MARSH TRANSECTS (Continued)
Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

Area	Sample ID	Type	Corresponding Sediment Depth (inches bgs)	Aluminum	Arsenic	Cadmium	Copper	Lead	Manganese	Zinc
							BAF (unitless)			
BAFs using UMT1 TS 03										
	UMT1 VE 03	Marsh Plant	0-2	0.05	0.00	0.96	0.09	0.03	0.35	0.82
	UMT1 VE 03	Marsh Plant	2-6	0.06	0.00	1.40	0.12	0.05	0.66	0.99
	UMT1 VE 03	Marsh Plant	6-12	0.05	0.00	1.32	0.19	0.08	0.82	1.11
	UMT1 MA 01	Masked Shrew	0-2	0.03	0.09	0.22	0.06	0.05	0.09	0.11
	UMT1 MA 01	Masked Shrew	2-6	0.04	0.17	0.32	0.09	0.07	0.17	0.13
	UMT1 MA 01	Masked Shrew	6-12	0.03	0.23	0.30	0.14	0.12	0.21	0.14
	UMT1 MA 02	Deer Mouse	0-2	0.00	0.00	0.00	0.01	0.00	0.00	0.07
	UMT1 MA 02	Deer Mouse	2-6	0.00	0.00	0.00	0.01	0.00	0.00	0.08
	UMT1 MA 02	Deer Mouse	6-12	0.00	0.00	0.00	0.02	0.00	0.00	0.09
	UMT1 MA 03	Meadow Vole	0-2	0.03	0.00	0.11	0.05	0.02	0.05	0.81
	UMT1 MA 03	Meadow Vole	2-6	0.03	0.00	0.15	0.07	0.02	0.10	0.98
	UMT1 MA 03	Meadow Vole	6-12	0.02	0.00	0.15	0.10	0.04	0.13	1.10
	UMT1 T1 03	Marsh Invertebrate	0-2	0.8	0.6	4.03	1.2	0.5	1.2	1.9
	UMT1 T1 03	Marsh Invertebrate	2-6	0.8	1.1	5.90	1.7	0.7	2.3	2.3
	UMT1 T1 03	Marsh Invertebrate	6-12	0.7	1.5	5.54	2.6	1.2	2.9	2.6
BAFs using UMT2 TS 01										
	UMT2 VE 01	Marsh Plant	0-2	0.006	0.00	0.68	0.07	0.01	1.8	2.1
	UMT2 VE 01	Marsh Plant	2-6	0.005	0.00	0.16	0.10	0.07	1.9	0.97
	UMT2 VE 01	Marsh Plant	6-12	0.004	0.00	0.64	0.15	0.13	2.9	1.5
	UMT2 T1 01	Marsh Invertebrate	0-2	0.629	0.81	29.86	2.8	0.7	16.7	17.8
	UMT2 T1 01	Marsh Invertebrate	2-6	0.509	1.03	7.22	4.2	4.7	17.5	8.0
	UMT2 T1 01	Marsh Invertebrate	6-12	0.459	2.33	28.41	6.3	8.6	27.2	12.4
BAFs using UMT2 TS 02										
	UMT2 VE 02	Marsh Plant	0-2	0.003	0.00	0.21	0.12	0.02	0.65	0.44
	UMT2 VE 02	Marsh Plant	2-6	0.003	0.00	0.66	0.10	0.03	0.71	0.86
	UMT2 VE 02	Marsh Plant	6-12	0.004	0.00	0.82	0.10	0.03	0.64	0.89
	UMT2 T1 02	Marsh Invertebrate	0-2	1.1	1.29	8.24	3.4	3.1	1.4	4.5
	UMT2 T1 02	Marsh Invertebrate	2-6	1.0	1.57	25.37	2.9	4.1	1.5	8.8
	UMT2 T1 02	Marsh Invertebrate	6-12	1.3	1.95	31.60	2.9	4.2	1.4	9.1

TABLE 3-18: SEDIMENT CONCENTRATIONS AND BIOACCUMULATION FACTORS FOR THE UPPER MARSH TRANSECTS (Continued)

Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

Area	Sample ID	Type	Corresponding Sediment Depth (inches bgs)	Aluminum	Arsenic	Cadmium	Copper	Lead	Manganese	Zinc
							BAF (unitless)			
BAFs using UMT2 TS 03										
	UMT2 VE 03	Marsh Plant	0-2	0.008	0.00	0.61	0.20	0.05	3.3	0.85
	UMT2 VE 03	Marsh Plant	2-6	0.005	0.00	0.49	0.15	0.04	5.0	0.81
	UMT2 VE 03	Marsh Plant	6-12	0.006	0.00	1.96	0.10	0.04	2.7	0.80
	UMT2 T1 03	Marsh Invertebrate	0-2	0.66	0.97	8.72	2.5	3.1	3.8	6.0
	UMT2 T1 03	Marsh Invertebrate	2-6	0.47	1.22	6.99	1.9	2.2	5.8	5.7
	UMT2 T1 03	Marsh Invertebrate	6-12	0.54	0.80	27.86	1.3	2.7	3.1	5.6

Notes:

BAFs were calculated by dividing the tissue concentration by the sediment concentration at each depth interval. If the tissue or sediment concentration for a chemical was non-detect, the BAF is 0.
Upper marsh macroinvertebrate samples were collected along two transects in the Upper Marsh; reference site samples were collected along one transect near Pass Creek.
Dry weight macroinvertebrate tissue concentrations were compared to the sediment concentrations.

BAF Bioaccumulation factor
bgs Below ground surface
ID Identification
mg/kg Milligrams per kilogram

TABLE 3-19: SEDIMENT CONCENTRATIONS AND BIOACCUMULATION FACTORS FOR THE STREAM

Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

Area	Sample ID	Type	Aluminum	Arsenic	Cadmium	Copper	Lead	Manganese	Zinc
						Sediment Concentration (mg/kg)			
Anaconda Creek Streambed (Reference)									
	BRSW-06 SE (2007)	Sediment	NA	5.56	ND	42	22	271	66
	BRSW-06 SE (2008)	Sediment	8980	15.40	ND	114	82	578	128
Blackfoot River Streambed									
	BRSW-12 SE (2007)	Sediment	NA	19.00	10.40	253	530	2770	2000
	BRSW-16 SE (2007)	Sediment	NA	6.21	5.34	145	135	1500	1230
	BRSW-17 SE (2007)	Sediment	NA	6.22	3.86	51	69	2280	936
	BRSW-33 SE (2007)	Sediment	NA	24.60	8.33	320	542	1960	1670
	BRSW-101 SE (2007)	Sediment	NA	8.88	1.91	28	20	767	612
	BRSW-101 SE (2008)	Sediment	5130	9.87	0.84	36	29	589	396
	BRSW-102 SE (2007)	Sediment	NA	4.47	1.99	41	29	992	660
	BRSW-106 SE (2007)	Sediment	NA	9.48	5.19	193	177	1390	1180
Stevens Creek Streambed									
	BRSW-108 SE (2007)	Sediment	NA	59.20	0.63	283	395	336	194
						BAF (unitless)			
BAFs for Anaconda Creek Streambed Using Corresponding Sediment Samples									
	BRSW-06 (2007)	Macroinvertebrate	NA	0.57	0.00	0.48	0.26	0.37	1.47
	BRSW-06 (2008)	Macroinvertebrate	0.28	0.51	0.00	0.99	0.16	2.15	7.66
BAFs for Blackfoot River Streambed Using Corresponding Sediment Samples									
	BRSW-12 (2007)	Macroinvertebrate	NA	0.97	1.74	2.35	1.25	1.36	1.50
	BRSW-16 (2007)	Macroinvertebrate	NA	0.46	0.63	0.67	0.18	0.40	0.65
	BRSW-17 (2007)	Macroinvertebrate	NA	0.74	2.37	0.60	0.11	1.84	1.61
	BRSW-33 (2007)	Macroinvertebrate	NA	1.23	0.55	0.80	1.18	0.49	0.56
	BRSW-101 (2007)	Macroinvertebrate	NA	0.00	0.55	0.51	0.11	0.31	0.43
	BRSW-101 (2008)	Macroinvertebrate	0.067	0.27	9.71	2.78	0.33	1.00	4.08
	BRSW-102 (2007)	Macroinvertebrate	NA	0.00	2.46	0.49	0.16	1.04	1.23
	BRSW-106 (2007)	Macroinvertebrate	NA	0.64	1.20	1.06	0.44	1.27	1.11
BAFs for Stevens Creek Streambed Using Corresponding Sediment Sample									
	BRSW-108 (2007)	Macroinvertebrate	NA	0.00	16.03	1.33	0.64	4.21	30.93

Notes:

BAFs were calculated by dividing the tissue concentration by the sediment concentration from 0 to 2 inches bgs. If the tissue or sediment concentration for a chemical was non-detect, the BAF is 0.

Dry weight macroinvertebrate tissue concentrations were compared to the sediment concentrations.

BAF	Bioaccumulation factor	mg/kg	Milligrams per kilogram
bgs	Below ground surface	NA	Not available
	Identification		

TABLE 3-20: BIOASSAY TEST SEDIMENT GRAIN SIZE

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

Location ID	Area Description	Mean Grain Size Description[1]	Median Grain Size (mm)	Particle Size Distribution (percent of weight)						
					Sand Size					
				Gravel	Course	Medium	Fine	Silt	Clay	Silt and Clay
BA3-Ref	Reference Site	Medium Sand	0.651	0.00	2.04	64.83	26.11	footnote 2	footnote 2	7.02
BA2	Eastern Upper Marsh	Medium Sand	0.679	0.00	0.00	80.98	15.60	footnote 2	footnote 2	3.42
BA1	Eastern Upper Marsh	Medium Sand	0.684	0.00	0.40	83.21	14.29	footnote 2	footnote 2	2.10
BA4	Western Upper Marsh	Medium Sand	0.839	3.07	0.44	78.51	15.13	footnote 2	footnote 2	2.85
BA5	Western Upper Marsh	Fine Sand	0.046	0.00	0.00	11.32	28.86	49.24	10.57	59.82
BA7	Western Upper Marsh	Fine Sand	0.055	0.00	0.00	17.55	27.92	38.79	15.74	54.52
BA6	Lower Marsh	Fine Sand	0.080	0.00	0.00	9.14	43.19	42.97	4.70	47.67

Notes:

Results are presented in the order of location upstream to downstream.

1	Based on mean from sample
2	Mechanical sieve does not differentiate silt/clay fractions
--	Not applicable
ID	Identification
mg	Milligrams
mm	Millimeter

TABLE 3-21: TERRESTRIAL PLANT AND INVERTEBRATE TOXICITY BENCHMARK VALUES USED IN THE HAZARD QUOTIENT ANALYSIS

Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

Plant Benchmarks

COPEC	Plant Benchmarks (mg/kg)	Reference
Arsenic	18	EPA 2007
Cadmium	32	EPA 2007
Copper	70	EPA 2007
Lead	120	EPA 2007
Manganese	220	EPA 2007
Zinc	160	EPA 2007

Invertebrate Benchmarks

COPEC	Invertebrate Benchmarks (mg/kg)	Reference
Arsenic	60	Efroymson and others 1997
Cadmium	140	EPA 2007
Copper	80	EPA 2007
Lead	1700	EPA 2007
Manganese	450	EPA 2007
Zinc	160	EPA 2007

Notes:

COPEC	Chemical of potential ecological concern
EPA	U.S. Environmental Protection Agency
mg/kg	Milligrams per kilogram
NA	Not applicable

Sources:

Efroymson, R.A., M.E, Will, and G.W. Suter II. 1997. "Toxicological Benchmarks for Contaminants of Potential Concern for Effects on Soil and Litter Invertebrates and Heterotrophic Processes: 1997 Revision." Oak Ridge National Laboratory, Oak Ridge TN. ES/ER/TM-126/R2.

EPA. 2007. Interim Ecological Soil Screening Levels. Available Online at: http://www.epa.gov/ecotox/ecossl/

TABLE 3-22: AQUATIC INVERTEBRATE TOXICITY BENCHMARK VALUES USED IN THE HAZARD QUOTIENT ANALYSIS

Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

	Benthic Invertebrate Benchmarks		
COPEC	**TEL (mg/kg)**	**SEL (mg/kg)**	**PEL (mg/kg)**
Arsenic	5.9	33	17
Cadmium	0.596	10	3.53
Copper	35.7	110	197
Lead	35	250	91.3
Manganese*	460	1,100	NA
Zinc	123	820	315

Notes:

*	The LEL is substituted for the TEL for manganese.
COPEC	Chemical of potential ecological concern
LEL	Lowest effect level - the level of contamination that can be tolerated by the majority of benthic organisms.
mg/kg	Milligrams per kilogram
NA	Not applicable
PEL	Probable effect level - the level above which adverse effects are expected to occur frequently.
SEL	Severe effect level - the level at which pronounced disturbance of the sediment-dwelling community can be expected; the concentration that would be detrimental to the majority of the benthic community.
TEL	Threshold effect level - the concentration below which adverse biological effects are expected to occur rarely.

Source:

SAIC and Avocet Consulting. 2002. Development of Freshwater Sediment Quality Values in Washington State, Phase I Final Report. Prepared by SAIC, Bothell, WA and Avocet Consulting, Kenmore, WA for the Washington Department of Ecology, Olympia, WA. September.

SAIC and Avocet Consulting. 2003. Development of Freshwater Sediment Quality Values in Washington State, Phase II Report: Development and Recommendation of SQVs for Freshwater Sediments in Washington State. Prepared by SAIC, Bothell, WA and Avocet Consulting, Kenmore, WA for the Washington Department of Ecology, Olympia, WA. September.

TABLE 3-23: SURFACE WATER QUALITY CRITERIA

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

	Aquatic Life Standards	
COPEC	**Acute[1]**	**Chronic[1]**
Aluminum	750	87
Arsenic	340	150
Cadmium	0.52@25 mg/L hardness	0.097@25 mg/L hardness
Copper	3.79@25 mg/L hardness	2.85@25 mg/L hardness
Lead	13.98@25 mg/L hardness	0.545@25 mg/L hardness
Manganese[2]	--	--
Zinc	37@25 mg/L hardness	37@25 mg/L hardness

Notes:

1 Freshwater aquatic life standards are expressed as a function of total hardness (mg/L, $CaCO_3$). The values displayed in the chart correspond to a total hardness of 25 mg/L. Hardness relationships can be found in Montana Department of Environmental Quality (2008).

2 The concentration of manganese must not reach values that interfere with the uses specified in the surface and ground water standards (17.30.601 et seq. and 17.30.1001 et seq.). The Secondary Maximum Contaminant Level of 50 micrograms per liter which is based on aesthetic properties such as taste, odor, and staining may be considered as guidance to determine the levels that will interfere with the specified uses.

-- No criteria available

@ At

$CaCO_3$ Calcium carbonate

COPEC Chemical of potential ecological concern

mg/L Milligrams per liter

Source: Montana Department of Environmental Quality. 2012. Circular DEQ-7. Montana Numeric Water Quality Standards. February.

TABLE 3-24: AVIAN AND MAMMALIAN TOXICITY REFERENCE VALUES USED IN THE FOOD-CHAIN MODEL

Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

Avian TRVs			
COPEC	High TRV (mg/kg Body Weight-day)	High TRV Body Weight (kg)	Reference
Aluminum	1097	0.155	Sample and others 1996
Arsenic	22.01	1.1722	Navy 1998
Cadmium	1	1.13	DTSC 2009
Copper	52.26	0.409	Navy 1998
Lead	8.75	0.8	Navy 1998
Manganese	776	196.5	Navy 1998
Zinc	172	0.955	Navy 1998

Mammalian TRVs			
COPEC	High TRV (mg/kg Body Weight-day)	High TRV Body Weight (kg)	Reference
Aluminum	19.3	0.03	Sample and others 1996
Arsenic	4.7	0.11	Navy 1998
Cadmium	2.64	0.03141	Navy 1998
Copper	631.58	0.0247	Navy 1998
Lead	240.64	0.0187	Navy 1998
Manganese	159.09	29.7	Navy 1998
Zinc	411.43	0.175	Navy 1998

Notes:

COPEC	Chemical of potential ecological concern
DTSC	California Department of Toxic Substances Control
kg	Kilogram
mg/kg	Milligrams per kilogram
Navy	Department of the Navy
TRV	Toxicity reference value

Sources:

Department of the Navy. 1998. "Development of Toxicity Reference Values for Conducting Ecological Risk Assessments at Naval Facilities in California, Interim Final." Prepared by Naval Facilities Engineering Command, Engineering Field Activity West (EFA West).

DTSC. 2009. HERD Ecological Risk Assessment Note 6. February. Available online at: http://www.dtsc.ca.gov/AssessingRisk/upload/CdEconote_Final.pdf.

Sample, B.E., D.M. Opresko, and G.W. Suter, II. 1996. "Toxicological Benchmarks for Wildlife: 1996 Revision." ES/ER/TM-86/R3. Oak Ridge National Laboratory. Oak Ridge, Tennessee.

TABLE 4-1: TERRESTRIAL PLANT AND INVERTEBRATE HAZARD QUOTIENT COUNTS AND MAXIMUM HAZARD QUOTIENTS, EU 1 - UPPER ANACONDA MINE WASTE REMOVAL AREAS AND WASTE PILES

Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

COPEC	All Soil Samples			Terrestrial Plants				Terrestrial Invertebrates			
				Number of HQs <1	Number of HQs ≥1	Maximum HQ		Number of HQs <1	Number of HQs ≥1	Maximum HQ	
	Total Number of Samples Evaluated	Number of Samples with Non-detect Results	Number of Sample Results Detected Below Minimum Reference Site Concentration	For Sample Results ≥ Minimum Reference Site Concentration			Minimum Reference Site HQ	For Sample Results ≥ Minimum Reference Site Concentration			Minimum Reference Site HQ
ARSENIC											
Upper Anaconda Mine	46	15	0	9	36	**150**	**1.0**	29	16	**45**	0.31
CADMIUM											
Upper Anaconda Mine	13	0	1	12	0	0.48	0.015	12	0	0.11	0.0035
COPPER											
Upper Anaconda Mine	46	0	10	0	36	**22**	**1.1**	0	36	**20**	0.99
LEAD											
Upper Anaconda Mine	46	0	0	1	45	**650**	0.19	36	10	**46**	0.014
MANGANESE											
Upper Anaconda Mine	46	4	2	0	41	**18**	**1.3**	3	38	**8.7**	0.65
ZINC											
Upper Anaconda Mine	46	0	3	2	41	**63**	0.52	0	43	**84**	0.70

Notes:
Bold values indicate HQs greater than 1.0.
No data were available for aluminum, and all mercury results were non-detect.
HQs were calculated by dividing the site concentration by the plant or invertebrate screening benchmark.
The minimum reference site HQ is the minimum HQ of all reference site locations.
HQ tables are presented in Appendix D.

COPEC	Chemical of potential ecological concern
EU	Exposure Unit
HQ	Hazard quotient

TABLE 4-2: HAZARD QUOTIENT COUNTS AND MAXIMUM HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 1 - UPPER ANACONDA MINE WASTE REMOVAL AREAS AND WASTE PILES

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

COPEC	All Receptors			Mourning Dove (Herbivore)				Red-Tailed Hawk (Carnivore)				American Kestrel (Insectivore)			
	Total Number of Samples Evaluated	Number of Samples with Non-Detect Results	Number of Sample Results Detected Below Minimum Reference Site Concentration	Number of HQs <1	Number of HQs ≥1	Maximum HQ	Minimum Reference Site HQ	Number of HQs <1	Number of HQs ≥1	Maximum HQ	Minimum Reference Site HQ	Number of HQs <1	Number of HQs ≥1	Maximum HQ	Minimum Reference Site HQ
				For Sample Results ≥ Minimum Reference Site Concentration				For Sample Results ≥ Minimum Reference Site Concentration				For Sample Results ≥ Minimum Reference Site Concentration			
ARSENIC															
Upper Anaconda Mine	46	15	0	45	0	8.23E-02	7.48E-05	45	0	2.25E-02	1.52E-04	43	2	**3.98E+00**	4.26E-03
CADMIUM															
Upper Anaconda Mine	13	0	1	12	0	2.47E-02	6.29E-04	12	0	2.93E-04	9.30E-06	11	0	2.10E-01	6.67E-03
COPPER															
Upper Anaconda Mine	46	0	10	36	0	2.86E-02	1.04E-03	36	0	8.73E-03	2.99E-04	36	0	2.33E-01	9.10E-03
LEAD															
Upper Anaconda Mine	46	0	0	44	2	**5.77E+00**	3.22E-04	44	2	**2.76E+00**	1.10E-04	38	8	**2.61E+01**	7.71E-03
MANGANESE															
Upper Anaconda Mine	46	4	2	41	0	3.41E-02	1.10E-04	41	0	1.01E-04	1.05E-05	41	0	1.06E-02	7.99E-04
ZINC															
Upper Anaconda Mine	46	0	3	43	0	1.13E-01	6.81E-04	43	0	1.21E-01	1.65E-03	43	0	4.90E-01	7.69E-03

TABLE 4-2: HAZARD QUOTIENT COUNTS AND MAXIMUM HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 1 - UPPER ANACONDA MINE WASTE REMOVAL AREAS AND WASTE PILES (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

COPEC	Meadow Vole (Herbivore)				White-Tailed Deer (Herbivore)				Red Fox (Carnivore)				Masked Shrew (Omnivore)			
	Number of HQs <1	Number of HQs ≥1	Maximum HQ	Minimum Reference Site HQ	Number of HQs <1	Number of HQs ≥1	Maximum HQ	Minimum Reference Site HQ	Number of HQs <1	Number of HQs ≥1	Maximum HQ	Minimum Reference Site HQ	Number of HQs <1	Number of HQs ≥1	Maximum HQ	Minimum Reference Site HQ
	For Sample Results ≥ Minimum Reference Site Concentration				For Sample Results ≥ Minimum Reference Site Concentration				For Sample Results ≥ Minimum Reference Site Concentration				For Sample Results ≥ Minimum Reference Site Concentration			
ARSENIC																
Upper Anaconda Mine	27	18	**5.10E+01**	1.33E-02	45	0	9.58E-02	2.09E-05	45	0	3.03E-02	2.06E-04	0	45	**1.23E+04**	**1.35E+01**
CADMIUM																
Upper Anaconda Mine	11	1	**1.43E+00**	3.61E-02	12	0	2.69E-03	6.79E-05	12	0	1.80E-05	5.73E-07	0	12	**5.73E+01**	**1.82E+00**
COPPER																
Upper Anaconda Mine	36	0	4.43E-01	1.57E-02	36	0	8.35E-04	2.95E-05	36	0	2.89E-04	9.78E-06	1	35	**1.73E+01**	6.80E-01
LEAD																
Upper Anaconda Mine	36	10	**3.35E+01**	1.02E-03	46	0	6.29E-02	1.82E-06	46	0	3.56E-02	1.15E-06	1	45	**7.83E+02**	2.31E-01
MANGANESE																
Upper Anaconda Mine	0	41	**3.75E+01**	1.02E-01	41	0	7.09E-02	1.90E-04	41	0	1.54E-04	1.80E-05	0	41	**5.50E+01**	**4.14E+00**
ZINC																
Upper Anaconda Mine	42	1	**6.80E+00**	4.04E-02	43	0	1.28E-02	7.61E-05	43	0	1.56E-02	2.12E-04	0	43	**1.39E+02**	**2.16E+00**

Notes:

Bold values indicate HQs greater than 1.0.

No data were available for aluminum, and all mercury results were non-detect.

Food chain model tables for each COPEC are presented in Appendix C.

COPEC	Chemical of potential ecological concern
EU	Exposure Unit
HQ	Hazard quotient

TABLE 4-3: TERRESTRIAL PLANT AND INVERTEBRATE HAZARD QUOTIENT COUNTS AND MAXIMUM HAZARD QUOTIENTS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

COPEC	All Soil Samples			Terrestrial Plants				Terrestrial Invertebrates			
				Number of HQs <1	Number of HQs ≥1	Maximum HQ		Number of HQs <1	Number of HQs ≥1	Maximum HQ	
	Total Number of Samples Evaluated	Number of Samples with Non-detect Results	Number of Sample Results Detected Below Minimum Reference Site Concentration	For Sample Results ≥ Minimum Reference Site Concentration			Minimum Reference Site HQ	For Sample Results ≥ Minimum Reference Site Concentration			Minimum Reference Site HQ
ARSENIC											
Inside Tailings	152	10	0	8	144	**68**	0.77	0	124	**20**	0.23
At Edge of Tailings	115	23	5	24	90	**70**	0.77	54	60	**21**	0.23
Outside Tailings	127	44	4	37	80	**39**	0.77	89	28	**12**	0.23
CADMIUM											
Inside Tailings	42	0	0	36	6	**5.0**	0.015	41	1	**1.2**	0.0035
At Edge of Tailings	9	0	2	7	0	0.94	0.015	7	0	0.21	0.0035
Outside Tailings	1	0	0	1	0	0.081	0.015	1	0	0.019	0.0035
COPPER											
Inside Tailings	152	0	4	0	148	**53**	**1.1**	0	148	**47**	0.99
At Edge of Tailings	115	1	7	0	108	**190**	**1.1**	0	108	**170**	0.99
Outside Tailings	127	1	19	0	108	**130**	**1.1**	2	106	**110**	0.99
LEAD											
Inside Tailings	152	0	0	6	146	**180**	0.19	99	53	**13**	0.014
At Edge of Tailings	115	2	0	22	93	**220**	0.19	83	32	**16**	0.014
Outside Tailings	127	2	0	51	76	**110**	0.19	115	12	**7.5**	0.014
MANGANESE											
Inside Tailings	152	12	9	0	126	**72**	**1.3**	10	121	**36**	0.65
At Edge of Tailings	115	12	9	1	94	**2900**	**1.3**	5	90	**1400**	0.65
Outside Tailings	127	15	7	1	105	**3100**	**1.3**	10	96	**1500**	0.65
ZINC											
Inside Tailings	152	3	2	10	138	**120**	0.34	4	144	**170**	0.45
At Edge of Tailings	115	10	3	8	97	**110**	0.34	5	100	**150**	0.45
Outside Tailings	127	12	7	22	93	**63**	0.34	12	103	**84**	0.45

Notes:

Bold values indicate HQs greater than 1.0.

No data were available for aluminum, and all mercury results were non-detect.

HQs were calculated by dividing the site concentration by the plant or invertebrate screening benchmark.

The minimum reference site HQ is the minimum HQ of all reference site locations.

HQ tables are presented in Appendix D.

COPEC	Chemical of potential ecological concern	EU	Exposure Unit
EE/CA	Engineering Evaluation/Cost Analysis	HQ	Hazard quotient

TABLE 4-4: HAZARD QUOTIENT COUNTS AND MAXIMUM HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS

Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

	All Receptors			Mourning Dove (Herbivore)				Red-Tailed Hawk (Carnivore)				American Kestrel (Insectivore)			
COPEC	Total Number of Samples Evaluated	Number of Samples with Non-Detect Results	Number of Sample Results Detected Below Minimum Reference Site Concentration	Number of HQs <1	Number of HQs ≥1	Maximum HQ	Minimum Reference Site HQ	Number of HQs <1	Number of HQs ≥1	Maximum HQ	Minimum Reference Site HQ	Number of HQs <1	Number of HQs ≥1	Maximum HQ	Minimum Reference Site HQ
				For Sample Results ≥ Minimum Reference Site Concentration				For Sample Results ≥ Minimum Reference Site Concentration				For Sample Results ≥ Minimum Reference Site Concentration			
ARSENIC															
Inside Tailings	152	10	0	152	0	2.33E-01	3.55E-04	152	0	6.35E-02	7.22E-04	65	87	**1.13E+01**	2.02E-02
At Edge of Tailings	115	23	1	114	0	2.39E-01	3.55E-04	114	0	6.51E-02	7.22E-04	67	47	**1.16E+01**	2.02E-02
Outside Tailings	127	44	2	113	0	1.33E-01	3.55E-04	117	0	3.62E-02	7.22E-04	103	14	**6.42E+00**	2.02E-02
CADMIUM															
Inside Tailings	44	0	1	43	1	**1.62E+00**	3.92E-03	44	0	1.92E-02	5.80E-05	30	14	**1.38E+01**	4.17E-02
At Edge of Tailings	9	0	2	7	0	3.02E-01	3.92E-03	7	0	3.58E-03	5.80E-05	5	2	**2.57E+00**	4.17E-02
Outside Tailings	19	0	1	0	0	5.99E-02	3.92E-03	0	0	7.10E-04	5.80E-05	0	0	5.10E-01	4.17E-02
COPPER															
Inside Tailings	152	0	4	148	0	4.26E-01	6.48E-03	148	0	1.30E-01	1.87E-03	132	16	**3.46E+00**	5.68E-02
At Edge of Tailings	115	1	7	107	1	**1.54E+00**	6.48E-03	108	0	4.71E-01	1.87E-03	100	8	**1.26E+01**	5.68E-02
Outside Tailings	127	1	19	107	1	**1.01E+00**	6.48E-03	108	0	3.07E-01	1.87E-03	99	9	**8.20E+00**	5.68E-02
LEAD															
Inside Tailings	152	0	0	114	38	**1.00E+01**	2.01E-03	137	15	**4.79E+00**	6.87E-04	23	129	**4.54E+01**	4.81E-02
At Edge of Tailings	115	2	0	92	23	**1.22E+01**	2.01E-03	107	8	**5.82E+00**	6.87E-04	57	58	**5.52E+01**	4.81E-02
Outside Tailings	127	2	0	116	11	**5.88E+00**	2.01E-03	121	6	**2.81E+00**	6.87E-04	97	30	**2.66E+01**	4.81E-02
MANGANESE															
Inside Tailings	152	12	9	131	0	8.85E-01	6.85E-04	131	0	2.63E-03	6.52E-05	131	0	2.75E-01	4.98E-03
At Edge of Tailings	115	12	9	92	3	**3.53E+01**	6.85E-04	95	0	1.05E-01	6.52E-05	93	2	**1.10E+01**	4.98E-03
Outside Tailings	127	15	7	102	3	**3.68E+01**	6.85E-04	105	0	1.09E-01	6.52E-05	102	3	**1.14E+01**	4.98E-03
ZINC															
Inside Tailings	152	3	2	145	2	**1.38E+00**	2.72E-03	144	3	**1.48E+00**	6.58E-03	128	19	**6.00E+00**	3.07E-02
At Edge of Tailings	115	10	3	102	2	**1.28E+00**	2.72E-03	102	2	**1.37E+00**	6.58E-03	95	9	**5.55E+00**	3.07E-02
Outside Tailings	127	12	7	114	0	7.06E-01	2.72E-03	114	0	7.57E-01	6.58E-03	108	6	**3.06E+00**	3.07E-02

TABLE 4-4: HAZARD QUOTIENT COUNTS AND MAXIMUM HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS (Continued)

Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

COPEC	Meadow Vole (Herbivore)				White-Tailed Deer (Herbivore)				Red Fox (Carnivore)				Masked Shrew (Omnivore)			
	Number of HQs <1	Number of HQs ≥1	Maximum HQ	Minimum Reference Site HQ	Number of HQs <1	Number of HQs ≥1	Maximum HQ	Minimum Reference Site HQ	Number of HQs <1	Number of HQs ≥1	Maximum HQ	Minimum Reference Site HQ	Number of HQs <1	Number of HQs ≥1	Maximum HQ	Minimum Reference Site HQ
	For Sample Results ≥ Minimum Reference Site Concentration				For Sample Results ≥ Minimum Reference Site Concentration				For Sample Results ≥ Minimum Reference Site Concentration				For Sample Results ≥ Minimum Reference Site Concentration			
ARSENIC																
Inside Tailings	24	128	**2.31E+01**	1.01E-02	152	0	2.71E-01	9.92E-05	152	0	8.58E-02	9.75E-04	0	152	**5.57E+03**	**1.02E+01**
At Edge of Tailings	51	63	**2.37E+01**	1.01E-02	114	0	2.78E-01	9.92E-05	114	0	8.79E-02	9.75E-04	0	114	**5.71E+03**	**1.02E+01**
Outside Tailings	85	32	**1.32E+01**	1.01E-02	117	0	1.54E-01	9.92E-05	117	0	4.89E-02	9.75E-04	0	117	**3.18E+03**	**1.02E+01**
CADMIUM																
Inside Tailings	30	14	**1.50E+01**	3.61E-02	44	0	1.77E-01	4.24E-04	44	0	1.18E-03	3.57E-06	0	44	**6.03E+02**	**1.82E+00**
At Edge of Tailings	5	2	**2.80E+00**	3.61E-02	7	0	3.30E-02	4.24E-04	7	0	2.21E-04	3.57E-06	0	7	**1.12E+02**	**1.82E+00**
Outside Tailings	0	0	5.56E-01	3.61E-02	0	0	6.54E-03	4.24E-04	0	0	4.37E-05	3.57E-06	0	17	**2.23E+01**	**1.82E+00**
COPPER																
Inside Tailings	147	1	**1.06E+00**	1.57E-02	148	0	1.24E-02	1.84E-04	148	0	4.30E-03	6.10E-05	1	147	**4.13E+01**	6.80E-01
At Edge of Tailings	106	2	**3.83E+00**	1.57E-02	108	0	4.50E-02	1.84E-04	108	0	1.56E-02	6.10E-05	5	103	**1.50E+02**	6.80E-01
Outside Tailings	106	2	**2.50E+00**	1.57E-02	108	0	2.94E-02	1.84E-04	108	0	1.02E-02	6.10E-05	11	97	**9.77E+01**	6.80E-01
LEAD																
Inside Tailings	118	34	**9.31E+00**	1.02E-03	152	0	1.09E-01	1.13E-05	152	0	6.18E-02	7.15E-06	5	147	**2.18E+02**	2.31E-01
At Edge of Tailings	95	20	**1.13E+01**	1.02E-03	115	0	1.33E-01	1.13E-05	115	0	7.52E-02	7.15E-06	16	99	**2.65E+02**	2.31E-01
Outside Tailings	116	11	**5.46E+00**	1.02E-03	127	0	6.40E-02	1.13E-05	127	0	3.63E-02	7.15E-06	38	89	**1.28E+02**	2.31E-01
MANGANESE																
Inside Tailings	0	131	**1.56E+02**	1.02E-01	125	6	**1.84E+00**	1.19E-03	131	0	3.98E-03	1.13E-04	0	131	**2.29E+02**	**4.14E+00**
At Edge of Tailings	0	95	**6.22E+03**	1.02E-01	88	7	**7.33E+01**	1.19E-03	95	0	1.59E-01	1.13E-04	0	95	**9.12E+03**	**4.14E+00**
Outside Tailings	0	105	**6.48E+03**	1.02E-01	101	4	**7.64E+01**	1.19E-03	105	0	1.66E-01	1.13E-04	0	105	**9.51E+03**	**4.14E+00**
ZINC																
Inside Tailings	98	49	**1.33E+01**	2.59E-02	147	0	1.57E-01	3.04E-04	147	0	1.90E-01	8.47E-04	0	147	**2.72E+02**	**1.38E+00**
At Edge of Tailings	80	24	**1.23E+01**	2.59E-02	104	0	1.45E-01	3.04E-04	104	0	1.76E-01	8.47E-04	0	104	**2.51E+02**	**1.38E+00**
Outside Tailings	102	12	**6.80E+00**	2.59E-02	114	0	8.01E-02	3.04E-04	114	0	9.72E-02	8.47E-04	2	112	**1.39E+02**	**1.38E+00**

Notes:
Bold values indicate HQs greater than 1.0.
No data were available for aluminum, and all mercury results were non-detect.
Food chain model tables for each COPEC are presented in Appendix C.

COPEC	Chemical of potential ecological concern	EU	Exposure Unit
EE/CA	Engineering Evaluation/Cost Analysis	HQ	Hazard quotient

TABLE 4-5: TERRESTRIAL PLANT AND INVERTEBRATE HAZARD QUOTIENT COUNTS AND MAXIMUM HAZARD QUOTIENTS, EU 3 - CAPITOL MINE WASTE AREA

Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

COPEC	All Soil Samples			Terrestrial Plants				Terrestrial Invertebrates			
	Total Number of Samples Evaluated	Number of Samples with Non-detect Results	Number of Sample Results Detected Below Minimum Reference Site Concentration	Number of HQs <1 (For Sample Results ≥ Minimum Reference Site Concentration)	Number of HQs ≥1 (For Sample Results ≥ Minimum Reference Site Concentration)	Maximum HQ (For Sample Results ≥ Minimum Reference Site Concentration)	Minimum Reference Site HQ	Number of HQs <1 (For Sample Results ≥ Minimum Reference Site Concentration)	Number of HQs ≥1 (For Sample Results ≥ Minimum Reference Site Concentration)	Maximum HQ (For Sample Results ≥ Minimum Reference Site Concentration)	Minimum Reference Site HQ
ARSENIC											
Capitol Mine	17	2	0	0	16	**69**	0.92	6	10	**21**	0.28
CADMIUM											
Capitol Mine	7	1	0	7	0	0.095	0.0089	7	0	0.022	0.002
COPPER											
Capitol Mine	19	0	1	0	18	**11**	**1.0**	0	18	**9.4**	0.90
LEAD											
Capitol Mine	19	0	0	0	19	**21**	0.52	16	3	**1.5**	0.037
MANGANESE											
Capitol Mine	19	3	0	3	16	**8.0**	0.59	11	8	**3.9**	0.29
ZINC											
Capitol Mine	19	0	0	5	14	**11**	0.26	2	17	**15**	0.34

Notes:
Bold values indicate HQs greater than 1.0.
No data were available for aluminum, and all mercury results were non-detect.
HQs were calculated by dividing the site concentration by the plant or invertebrate screening benchmark.
The minimum reference site HQ is the minimum HQ of all reference site locations.
HQ tables are presented in Appendix D.

COPEC	Chemical of potential ecological concern
EU	Exposure Unit
HQ	Hazard quotient

TABLE 4-6: HAZARD QUOTIENT COUNTS AND MAXIMUM HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 3 - CAPITOL MINE WASTE AREA

Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

COPEC	All Receptors			Mourning Dove (Herbivore)				Red-Tailed Hawk (Carnivore)				American Kestrel (Insectivore)			
	Total Number of Samples Evaluated	Number of Samples with Non-Detect Results	Number of Sample Results Detected Below Minimum Reference Site Concentration	Number of HQs <1	Number of HQs ≥1	Maximum HQ	Minimum Reference Site HQ	Number of HQs <1	Number of HQs ≥1	Maximum HQ	Minimum Reference Site HQ	Number of HQs <1	Number of HQs ≥1	Maximum HQ	Minimum Reference Site HQ
				For Sample Results ≥ Minimum Reference Site Concentration				For Sample Results ≥ Minimum Reference Site Concentration				For Sample Results ≥ Minimum Reference Site Concentration			
ARSENIC															
Capitol Mine	17	2	0	15	0	1.68E-03	2.98E-06	15	0	4.58E-04	6.06E-06	15	0	8.12E-02	1.70E-04
CADMIUM															
Capitol Mine	7	1	0	7	0	2.16E-04	1.62E-05	7	0	2.56E-06	2.39E-07	7	0	1.84E-03	1.72E-04
COPPER															
Capitol Mine	19	0	1	18	0	6.06E-04	4.13E-05	18	0	1.85E-04	1.19E-05	18	0	4.93E-03	3.62E-04
LEAD															
Capitol Mine	19	0	0	19	0	8.30E-03	3.83E-05	19	0	3.97E-03	1.31E-05	19	0	3.76E-02	9.16E-04
MANGANESE															
Capitol Mine	19	3	0	19	0	6.73E-04	2.15E-06	19	0	2.00E-06	2.05E-07	19	0	2.09E-04	1.56E-05
ZINC															
Capitol Mine	19	0	0	19	0	9.04E-04	1.46E-05	19	0	9.69E-04	3.54E-05	19	0	3.92E-03	1.65E-04

TABLE 4-6: HAZARD QUOTIENT COUNTS AND MAXIMUM HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 3 - CAPITOL MINE WASTE AREA (Continued)

Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

COPEC	Meadow Vole (Herbivore)				White-Tailed Deer (Herbivore)				Red Fox (Carnivore)				Masked Shrew (Omnivore)			
	Number of HQs <1	Number of HQs ≥1	Maximum HQ	Minimum Reference Site HQ	Number of HQs <1	Number of HQs ≥1	Maximum HQ	Minimum Reference Site HQ	Number of HQs <1	Number of HQs ≥1	Maximum HQ	Minimum Reference Site HQ	Number of HQs <1	Number of HQs ≥1	Maximum HQ	Minimum Reference Site HQ
	For Sample Results ≥ Minimum Reference Site Concentration				For Sample Results ≥ Minimum Reference Site Concentration				For Sample Results ≥ Minimum Reference Site Concentration				For Sample Results ≥ Minimum Reference Site Concentration			
ARSENIC																
Capitol Mine	5	10	**2.36E+01**	1.20E-02	15	0	1.95E-03	8.33E-07	15	0	6.18E-04	8.19E-06	0	15	**1.85E+03**	**3.95E+00**
CADMIUM																
Capitol Mine	7	0	2.84E-01	2.11E-02	7	0	2.36E-05	1.75E-06	7	0	1.58E-07	1.47E-08	2	5	**3.70E+00**	3.46E-01
COPPER																
Capitol Mine	18	0	2.13E-01	1.42E-02	18	0	1.77E-05	1.17E-06	18	0	6.12E-06	3.89E-07	9	9	**2.71E+00**	2.00E-01
LEAD																
Capitol Mine	18	1	**1.09E+00**	2.75E-03	19	0	9.05E-05	2.16E-07	19	0	5.12E-05	1.36E-07	5	14	**8.30E+00**	2.02E-01
MANGANESE																
Capitol Mine	1	18	**1.68E+01**	4.52E-02	19	0	1.40E-03	3.73E-06	19	0	3.03E-06	3.53E-07	3	16	**8.00E+00**	5.98E-01
ZINC																
Capitol Mine	18	1	**1.23E+00**	1.97E-02	19	0	1.03E-04	1.64E-06	19	0	1.25E-04	4.56E-06	7	12	**8.18E+00**	3.42E-01

Notes:
Bold values indicate HQs greater than 1.0.
No data were available for aluminum, and all mercury results were non-detect.
Food chain model tables for each COPEC are presented in Appendix C.

COPEC	Chemical of potential ecological concern
EU	Exposure Unit
HQ	Hazard quotient

TABLE 4-7: TERRESTRIAL PLANT AND INVERTEBRATE HAZARD QUOTIENT COUNTS AND MAXIMUM HAZARD QUOTIENTS, EU 4 - CARBONATE MINE WASTE AREA

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

COPEC	All Receptors			Terrestrial Plants				Terrestrial Invertebrates			
	Total Number of Samples Evaluated	Number of Samples with Non-detect Results	Number of Sample Results Detected Below Minimum Reference Site Concentration	Number of HQs <1 (For Sample Results ≥ Minimum Reference Site Concentration)	Number of HQs ≥1 (For Sample Results ≥ Minimum Reference Site Concentration)	Maximum HQ (For Sample Results ≥ Minimum Reference Site Concentration)	Minimum Reference Site HQ	Number of HQs <1 (For Sample Results ≥ Minimum Reference Site Concentration)	Number of HQs ≥1 (For Sample Results ≥ Minimum Reference Site Concentration)	Maximum HQ (For Sample Results ≥ Minimum Reference Site Concentration)	Minimum Reference Site HQ
ARSENIC											
Carbonate Mine	29	22	0	17	8	**2.7**	0.74	25	0	0.82	0.22
CADMIUM											
Carbonate Mine	6	0	0	6	0	0.35	0.026	6	0	0.079	0.0059
COPPER											
Carbonate Mine	29	1	1	1	27	**9.2**	0.42	1	27	**8.0**	0.37
LEAD											
Carbonate Mine	29	0	2	6	21	**21**	0.51	26	1	**1.5**	0.036
MANGANESE											
Carbonate Mine	29	0	6	0	23	**77**	**2.6**	0	23	**38**	**1.3**
ZINC											
Carbonate Mine	29	0	5	1	23	**5.10**	0.71	0	24	**6.8**	0.95

Notes:

Bold values indicate HQs greater than 1.0.

No data were available for aluminum, and all mercury results were non-detect.

HQs were calculated by dividing the site concentration by the plant or invertebrate screening benchmark.

The minimum reference site HQ is the minimum HQ of all reference site locations.

HQ tables are presented in Appendix D.

COPEC	Chemical of potential ecological concern
EU	Exposure Unit
HQ	Hazard quotient

TABLE 4-8: HAZARD QUOTIENT COUNTS AND MAXIMUM HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 4 - CARBONATE MINE WASTE AREA

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

COPEC	All Receptors			Mourning Dove (Herbivore)				Red-Tailed Hawk (Carnivore)				American Kestrel (Insectivore)			
	Total Number of Samples Evaluated	Number of Samples with Non-Detect Results	Number of Sample Results Detected Below Minimum Reference Site Concentration	Number of HQs <1	Number of HQs ≥1	Maximum HQ	Minimum Reference Site HQ	Number of HQs <1	Number of HQs ≥1	Maximum HQ	Minimum Reference Site HQ	Number of HQs <1	Number of HQs ≥1	Maximum HQ	Minimum Reference Site HQ
				For Sample Results ≥ Minimum Reference Site Concentration				For Sample Results ≥ Minimum Reference Site Concentration				For Sample Results ≥ Minimum Reference Site Concentration			
ARSENIC															
Carbonate Mine	29	22	0	15	0	5.52E-04	2.01E-05	15	0	1.50E-04	4.09E-05	15	0	2.67E-02	1.14E-03
CADMIUM															
Carbonate Mine	6	0	0	4	0	6.61E-03	3.97E-04	4	0	7.85E-05	5.87E-06	4	0	5.63E-02	4.21E-03
COPPER															
Carbonate Mine	29	1	1	18	0	4.34E-03	1.42E-04	18	0	1.32E-03	4.10E-05	18	0	3.53E-02	1.25E-03
LEAD															
Carbonate Mine	29	0	2	17	0	6.96E-02	3.14E-04	17	0	3.33E-02	1.07E-04	17	0	3.15E-01	7.51E-03
MANGANESE															
Carbonate Mine	29	0	6	13	0	5.47E-02	7.82E-05	13	0	1.63E-04	7.46E-06	13	0	1.70E-02	5.70E-04
ZINC															
Carbonate Mine	29	0	5	14	0	3.37E-03	3.41E-04	14	0	3.61E-03	8.25E-04	14	0	1.46E-02	3.85E-03

TABLE 4-8: HAZARD QUOTIENT COUNTS AND MAXIMUM HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 4 - CARBONATE MINE WASTE AREA (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

COPEC	Meadow Vole (Herbivore)				White-Tailed Deer (Herbivore)				Red Fox (Carnivore)				Masked Shrew (Omnivore)			
	Number of HQs <1	Number of HQs ≥1	Maximum HQ	Minimum Reference Site HQ	Number of HQs <1	Number of HQs ≥1	Maximum HQ	Minimum Reference Site HQ	Number of HQs <1	Number of HQs ≥1	Maximum HQ	Minimum Reference Site HQ	Number of HQs <1	Number of HQs ≥1	Maximum HQ	Minimum Reference Site HQ
	For Sample Results ≥ Minimum Reference Site Concentration				For Sample Results ≥ Minimum Reference Site Concentration				For Sample Results ≥ Minimum Reference Site Concentration				For Sample Results ≥ Minimum Reference Site Concentration			
ARSENIC																
Carbonate Mine	15	0	9.25E-01	9.65E-03	15	0	6.42E-04	5.62E-06	15	0	2.03E-04	5.52E-05	0	25	**2.23E+02**	**9.78E+00**
CADMIUM																
Carbonate Mine	3	1	**1.04E+00**	6.16E-02	4	0	7.22E-04	4.29E-05	4	0	4.83E-06	3.61E-07	0	6	**4.16E+01**	**3.11E+00**
COPPER																
Carbonate Mine	18	0	1.82E-01	5.83E-03	18	0	1.27E-04	4.05E-06	18	0	4.39E-05	1.34E-06	2	26	**7.11E+00**	2.52E-01
LEAD																
Carbonate Mine	16	1	**1.09E+00**	2.69E-03	17	0	7.58E-04	1.77E-06	17	0	4.30E-04	1.12E-06	3	24	**2.56E+01**	6.08E-01
MANGANESE																
Carbonate Mine	0	23	**1.63E+02**	1.97E-01	13	0	1.14E-01	1.36E-04	13	0	2.46E-04	1.29E-05	0	23	**2.39E+02**	**7.99E+00**
ZINC																
Carbonate Mine	14	0	5.48E-01	5.47E-02	14	0	3.82E-04	3.81E-05	14	0	4.64E-04	1.06E-04	0	24	**1.12E+01**	**2.92E+00**

Notes:

Bold values indicate HQs greater than 1.0.

No data were available for aluminum, and all mercury results were non-detect.

Food chain model tables for each COPEC are presented in Appendix C.

COPEC	Chemical of potential ecological concern
EU	Exposure Unit
HQ	Hazard quotient

TABLE 4-9: TERRESTRIAL PLANT AND INVERTEBRATE HAZARD QUOTIENT COUNTS AND MAXIMUM HAZARD QUOTIENTS, EU 5 - EDITH MINE WASTE AREAS
Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

COPEC	All Receptors			Terrestrial Plants				Terrestrial Invertebrates			
				Number of HQs <1	Number of HQs ≥1	Maximum HQ		Number of HQs <1	Number of HQs ≥1	Maximum HQ	
	Total Number of Samples Evaluated	Number of Samples with Non-detect Results	Number of Sample Results Detected Below Minimum Reference Site Concentration	For Sample Results ≥ Minimum Reference Site Concentration			Minimum Reference Site HQ	For Sample Results ≥ Minimum Reference Site Concentration			Minimum Reference Site HQ
ARSENIC											
West Edith Mine Waste Area	12	7	0	7	5	**1.5**	0.64	12	0	0.46	0.19
Central Edith Mine Waste Area	25	9	0	11	14	**4.8**	0.64	24	1	**1.4**	0.19
East Edith Mine Waste Area	20	11	1	13	4	**1.3**	0.64	17	0	0.40	0.19
CADMIUM											
West Edith Mine Waste Area	2	0	2	NE	NE	NE	NE	NE	NE	NE	NE
Central Edith Mine Waste Area	5	0	4	1	0	0.13	0.075	1	0	0.031	0.017
East Edith Mine Waste Area	2	0	2	NE	NE	NE	NE	NE	NE	NE	NE
COPPER											
West Edith Mine Waste Area	12	0	1	2	9	**6.4**	0.57	3	8	**5.6**	0.49
Central Edith Mine Waste Area	25	0	0	0	25	**19**	0.57	3	22	**17**	0.49
East Edith Mine Waste Area	20	1	2	3	14	**2.4**	0.57	6	11	**2.1**	0.49
LEAD											
West Edith Mine Waste Area	12	0	1	5	6	**1.8**	0.27	11	0	0.12	0.019
Central Edith Mine Waste Area	25	0	0	10	15	**9.4**	0.27	25	0	0.67	0.019
East Edith Mine Waste Area	20	0	3	11	6	**2.0**	0.27	17	0	0.14	0.019
MANGANESE											
West Edith Mine Waste Area	12	0	2	0	10	**15**	0.92	1	9	**7.4**	0.45
Central Edith Mine Waste Area	25	5	0	4	18	**6.3**	0.92	12	10	**3.1**	0.45
East Edith Mine Waste Area	20	0	0	0	20	**5.9**	0.92	9	11	**2.9**	0.45
ZINC											
West Edith Mine Waste Area	12	0	1	3	8	**1.9**	0.62	0	11	**2.6**	0.83
Central Edith Mine Waste Area	25	2	5	6	12	**2.0**	0.62	3	15	**2.7**	0.83
East Edith Mine Waste Area	20	0	14	3	3	**1.3**	0.62	0	6	**1.7**	0.83

Notes:
Bold values indicate HQs greater than 1.0.
No data were available for aluminum, and all mercury results were non-detect.
HQs were calculated by dividing the site concentration by the plant or invertebrate screening benchmark.
The minimum reference site HQ is the minimum HQ of all reference site locations.
All detected results for West Edith Mine Waste Area and East Edith Mine Waste Area were below the minimum background reference site concentration for cadmium
HQ tables are presented in Appendix D.

COPEC	Chemical of potential ecological concern
EU	Exposure Unit
HQ	Hazard quotient
NE	Not evaluated

TABLE 4-10: HAZARD QUOTIENT COUNTS AND MAXIMUM HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 5 - EDITH MINE WASTE AREAS

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

COPEC	All Receptors			Mourning Dove (Herbivore)				Red-Tailed Hawk (Carnivore)				American Kestrel (Insectivore)			
	Total Number of Samples Evaluated	Number of Samples with Non-Detect Results	Number of Sample Results Detected Below Minimum Reference Site Concentration	Number of HQs <1 (For Sample Results ≥ Minimum Reference Site Concentration)	Number of HQs ≥1 (For Sample Results ≥ Minimum Reference Site Concentration)	Maximum HQ (For Sample Results ≥ Minimum Reference Site Concentration)	Minimum Reference Site HQ	Number of HQs <1 (For Sample Results ≥ Minimum Reference Site Concentration)	Number of HQs ≥1 (For Sample Results ≥ Minimum Reference Site Concentration)	Maximum HQ (For Sample Results ≥ Minimum Reference Site Concentration)	Minimum Reference Site HQ	Number of HQs <1 (For Sample Results ≥ Minimum Reference Site Concentration)	Number of HQs ≥1 (For Sample Results ≥ Minimum Reference Site Concentration)	Maximum HQ (For Sample Results ≥ Minimum Reference Site Concentration)	Minimum Reference Site HQ
ARSENIC															
West Edith Mine Waste Area	12	7	0	17	0	3.69E-04	2.05E-05	19	0	1.01E-04	4.18E-05	19	0	1.79E-02	1.17E-03
Central Edith Mine Waste Area	25	9	0	20	0	1.15E-03	2.05E-05	20	0	3.14E-04	4.18E-05	20	0	5.57E-02	1.17E-03
East Edith Mine Waste Area	20	11	1	17	0	3.19E-04	2.05E-05	16	0	8.71E-05	4.18E-05	16	0	1.55E-02	1.17E-03
CADMIUM															
West Edith Mine Waste Area	2	0	2	5	0	NA	1.36E-03	6	0	NA	2.01E-05	6	0	NA	1.44E-02
Central Edith Mine Waste Area	5	0	4	1	0	3.04E-03	1.36E-03	1	0	3.61E-05	2.01E-05	1	0	2.59E-02	1.44E-02
East Edith Mine Waste Area	2	0	2	0	0	NA	1.36E-03	0	0	NA	2.01E-05	0	0	NA	1.44E-02
COPPER															
West Edith Mine Waste Area	12	0	1	16	0	3.59E-03	2.26E-04	18	0	1.09E-03	6.51E-05	18	0	2.92E-02	1.98E-03
Central Edith Mine Waste Area	25	0	0	20	0	1.07E-02	2.26E-04	20	0	3.27E-03	6.51E-05	20	0	8.73E-02	1.98E-03
East Edith Mine Waste Area	20	1	2	17	0	1.32E-03	2.26E-04	17	0	4.04E-04	6.51E-05	17	0	1.08E-02	1.98E-03
LEAD															
West Edith Mine Waste Area	12	0	1	16	0	6.81E-03	2.00E-04	18	0	3.26E-03	6.82E-05	18	0	3.08E-02	4.78E-03
Central Edith Mine Waste Area	25	0	0	20	0	3.65E-02	2.00E-04	20	0	1.75E-02	6.82E-05	20	0	1.65E-01	4.78E-03
East Edith Mine Waste Area	20	0	3	17	0	7.88E-03	2.00E-04	17	0	3.77E-03	6.82E-05	17	0	3.57E-02	4.78E-03
MANGANESE															
West Edith Mine Waste Area	12	0	2	15	0	1.28E-02	3.28E-05	17	0	3.79E-05	3.12E-06	17	0	3.97E-03	2.39E-04
Central Edith Mine Waste Area	25	5	0	17	0	5.28E-03	3.28E-05	17	0	1.57E-05	3.12E-06	16	0	1.64E-03	2.39E-04
East Edith Mine Waste Area	20	0	0	20	0	4.90E-03	3.28E-05	20	0	1.46E-05	3.12E-06	20	0	1.53E-03	2.39E-04
ZINC															
West Edith Mine Waste Area	12	0	1	16	0	1.50E-03	3.52E-04	17	0	1.61E-03	8.52E-04	17	0	6.51E-03	3.97E-03
Central Edith Mine Waste Area	25	2	5	14	0	1.58E-03	3.52E-04	14	0	1.69E-03	8.52E-04	14	0	6.86E-03	3.97E-03
East Edith Mine Waste Area	20	0	14	6	0	1.01E-03	3.52E-04	6	0	1.09E-03	8.52E-04	6	0	4.40E-03	3.97E-03

TABLE 4-10: HAZARD QUOTIENT COUNTS AND MAXIMUM HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 5 - EDITH MINE WASTE AREAS (Continued)
Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

COPEC	Meadow Vole (Herbivore)				White-Tailed Deer (Herbivore)				Red Fox (Carnivore)				Masked Shrew (Omnivore)			
	Number of HQs <1	Number of HQs ≥1	Maximum HQ	Minimum Reference Site HQ	Number of HQs <1	Number of HQs ≥1	Maximum HQ	Minimum Reference Site HQ	Number of HQs <1	Number of HQs ≥1	Maximum HQ	Minimum Reference Site HQ	Number of HQs <1	Number of HQs ≥1	Maximum HQ	Minimum Reference Site HQ
	For Sample Results ≥ Minimum Concentration		Reference Site		For Sample Results ≥ Minimum Concentration		Reference Site		For Sample Results ≥ Minimum Concentration		Reference Site		For Sample Results ≥ Minimum Concentration		Reference Site	
ARSENIC																
West Edith Mine Waste Area	19	0	5.23E-01	8.33E-03	19	0	4.30E-04	5.74E-06	19	0	1.36E-04	5.64E-05	2	12	**1.26E+02**	**8.44E+00**
Central Edith Mine Waste Area	19	1	**1.63E+00**	8.33E-03	20	0	1.34E-03	5.74E-06	20	20	**2.00E+01**	**2.00E+01**	0	25	**3.93E+02**	**8.44E+00**
East Edith Mine Waste Area	17	0	4.53E-01	8.33E-03	17	0	3.72E-04	5.74E-06	17	0	1.18E-04	5.64E-05	0	16	**1.09E+02**	**8.44E+00**
CADMIUM																
West Edith Mine Waste Area	6	0	NA	1.78E-01	6	0	NA	1.47E-04	6	0	NA	1.24E-06	1	0	NA	**8.99E+00**
Central Edith Mine Waste Area	1	0	4.03E-01	1.78E-01	1	0	3.32E-04	1.47E-04	1	1	**1.00E+00**	**1.00E+00**	0	1	**1.61E+01**	**8.99E+00**
East Edith Mine Waste Area	0	0	NA	1.78E-01	0	0	NA	1.47E-04	0	0	NA	1.24E-06	0	0	NA	**8.99E+00**
COPPER																
West Edith Mine Waste Area	18	0	1.27E-01	7.80E-03	18	0	1.05E-04	6.42E-06	18	0	3.62E-05	2.13E-06	10	8	**4.97E+00**	3.38E-01
Central Edith Mine Waste Area	20	0	3.80E-01	7.80E-03	20	0	3.13E-04	6.42E-06	19	19	0.00E+00	0.00E+00	3	21	**1.49E+01**	3.38E-01
East Edith Mine Waste Area	17	0	4.69E-02	7.80E-03	17	0	3.86E-05	6.42E-06	17	0	1.34E-05	2.13E-06	9	8	**1.83E+00**	3.38E-01
LEAD																
West Edith Mine Waste Area	18	0	9.03E-02	1.45E-03	18	0	7.42E-05	1.12E-06	18	0	4.20E-05	7.09E-07	6	11	**2.11E+00**	3.27E-01
Central Edith Mine Waste Area	20	0	4.85E-01	1.45E-03	20	0	3.98E-04	1.12E-06	20	0	2.25E-04	7.09E-07	6	18	**1.13E+01**	3.27E-01
East Edith Mine Waste Area	17	0	1.05E-01	1.45E-03	17	0	8.59E-05	1.12E-06	17	0	4.86E-05	7.09E-07	9	8	**2.44E+00**	3.27E-01
MANGANESE																
West Edith Mine Waste Area	7	10	**3.21E+01**	6.97E-02	15	0	2.65E-02	5.69E-05	17	0	5.74E-05	5.39E-06	2	10	**4.70E+01**	**2.83E+00**
Central Edith Mine Waste Area	0	22	**1.33E+01**	6.97E-02	17	0	1.10E-02	5.69E-05	16	0	2.38E-05	5.39E-06	0	21	**1.95E+01**	**2.83E+00**
East Edith Mine Waste Area	0	20	**1.23E+01**	6.97E-02	20	0	1.02E-02	5.69E-05	20	0	2.21E-05	5.39E-06	0	20	**1.81E+01**	**2.83E+00**
ZINC																
West Edith Mine Waste Area	17	0	2.06E-01	4.78E-02	17	0	1.70E-04	3.94E-05	17	0	2.07E-04	1.10E-04	1	11	**4.21E+00**	**2.55E+00**
Central Edith Mine Waste Area	14	0	2.17E-01	4.78E-02	14	0	1.79E-04	3.94E-05	14	0	2.18E-04	1.10E-04	0	17	**3.85E+00**	**2.55E+00**
East Edith Mine Waste Area	6	0	1.39E-01	4.78E-02	6	0	1.15E-04	3.94E-05	6	0	1.40E-04	1.10E-04	0	6	**2.84E+00**	**2.55E+00**

Notes:
Bold values indicate HQs greater than 1.0.
No data were available for aluminum, and all mercury results were non-detect.
Food chain model tables for each COPEC are presented in Appendix C.

COPEC	Chemical of potential ecological concern
EU	Exposure Unit
HQ	Hazard quotient
NA	Not applicable

TABLE 4-11: TERRESTRIAL PLANT AND INVERTEBRATE HAZARD QUOTIENT COUNTS AND MAXIMUM HAZARD QUOTIENTS, EU 6 - CONSOLATION MINE WASTE AREA

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

COPEC	All Soil Samples			Terrestrial Plants				Terrestrial Invertebrates			
	Total Number of Samples Evaluated	Number of Samples with Non-detect Results	Number of Sample Results Detected Below Minimum Reference Site Concentration	Number of HQs <1 (For Sample Results ≥ Minimum Reference Site Concentration)	Number of HQs ≥1 (For Sample Results ≥ Minimum Reference Site Concentration)	Maximum HQ (For Sample Results ≥ Minimum Reference Site Concentration)	Minimum Reference Site HQ	Number of HQs <1 (For Sample Results ≥ Minimum Reference Site Concentration)	Number of HQs ≥1 (For Sample Results ≥ Minimum Reference Site Concentration)	Maximum HQ (For Sample Results ≥ Minimum Reference Site Concentration)	Minimum Reference Site HQ
ARSENIC											
Consolation Mine	35	10	1	5	29	**60**	0.89	26	8	**18**	0.27
CADMIUM											
Consolation Mine	10	0	7	3	0	0.21	0.077	3	0	0.048	0.018
COPPER											
Consolation Mine	35	1	1	9	24	**4.5**	0.57	11	22	**4.0**	0.49
LEAD											
Consolation Mine	35	0	10	0	25	**49**	0.27	21	4	**3.5**	0.019
MANGANESE											
Consolation Mine	35	2	26	0	7	**11**	**4.6**	0	7	**5.3**	**2.2**
ZINC											
Consolation Mine	35	0	0	2	33	**5.1**	0.62	1	34	**6.8**	0.83

Notes:

Bold values indicate HQs greater than 1.0.

No data were available for aluminum, and all mercury results were non-detect.

HQs were calculated by dividing the site concentration by the plant or invertebrate screening benchmark.

The minimum reference site HQ is the minimum HQ of all reference site locations.

HQ tables are presented in Appendix D.

COPEC	Chemical of potential ecological concern
EU	Exposure Unit
HQ	Hazard quotient

TABLE 4-12: HAZARD QUOTIENT COUNTS AND MAXIMUM HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 6 - CONSOLATION MINE WASTE AREA
Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

COPEC	All Receptors			Mourning Dove (Herbivore)				Red-Tailed Hawk (Carnivore)				American Kestrel (Insectivore)			
	Total Number of Samples Evaluated	Number of Samples with Non-Detect Results	Number of Sample Results Detected Below Minimum Reference Site Concentration	Number of HQs <1	Number of HQs ≥1	Maximum HQ	Minimum Reference Site HQ	Number of HQs <1	Number of HQs ≥1	Maximum HQ	Minimum Reference Site HQ	Number of HQs <1	Number of HQs ≥1	Maximum HQ	Minimum Reference Site HQ
				For Sample Results ≥ Minimum Reference Site Concentration				For Sample Results ≥ Minimum Reference Site Concentration				For Sample Results ≥ Minimum Reference Site Concentration			
ARSENIC															
Consolation Mine	35	10	1	35	0	7.86E-03	1.56E-05	35	0	2.14E-03	3.17E-05	35	0	3.80E-01	8.86E-04
CADMIUM															
Consolation Mine	11	0	8	3	0	2.57E-03	7.55E-04	2	0	3.05E-05	1.12E-05	3	0	2.19E-02	8.02E-03
COPPER															
Consolation Mine	35	1	1	33	0	1.39E-03	1.23E-04	33	0	4.23E-04	3.53E-05	33	0	1.13E-02	1.07E-03
LEAD															
Consolation Mine	35	0	10	25	0	1.04E-01	1.08E-04	25	0	4.96E-02	3.70E-05	25	0	4.70E-01	2.59E-03
MANGANESE															
Consolation Mine	35	2	26	7	0	4.96E-03	8.91E-05	7	0	1.48E-05	8.49E-06	7	0	1.54E-03	6.48E-04
ZINC															
Consolation Mine	35	0	0	35	0	2.16E-03	1.91E-04	35	0	2.32E-03	4.62E-04	35	0	9.38E-03	2.16E-03

TABLE 4-12: HAZARD QUOTIENT COUNTS AND MAXIMUM HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 6 - CONSOLATION MINE WASTE AREA (Continued)
Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

COPEC	Meadow Vole (Herbivore)				White-Tailed Deer (Herbivore)				Red Fox (Carnivore)				Masked Shrew (Omnivore)			
	Number of HQs <1	Number of HQs ≥1	Maximum HQ	Minimum Reference Site HQ	Number of HQs <1	Number of HQs ≥1	Maximum HQ	Minimum Reference Site HQ	Number of HQs <1	Number of HQs ≥1	Maximum HQ	Minimum Reference Site HQ	Number of HQs <1	Number of HQs ≥1	Maximum HQ	Minimum Reference Site HQ
	For Sample Results ≥ Minimum Reference Site Concentration				For Sample Results ≥ Minimum Reference Site Concentration				For Sample Results ≥ Minimum Reference Site Concentration				For Sample Results ≥ Minimum Reference Site Concentration			
ARSENIC																
Consolation Mine	27	8	**2.05E+01**	1.16E-02	35	0	9.14E-03	4.35E-06	34	0	2.90E-03	4.28E-05	0	35	**4.95E+03**	**1.18E+01**
CADMIUM																
Consolation Mine	3	0	6.28E-01	1.83E-01	3	0	2.81E-04	8.16E-05	3	0	1.88E-06	6.88E-07	0	3	**2.52E+01**	**9.21E+00**
COPPER																
Consolation Mine	33	0	9.04E-02	7.80E-03	33	0	4.04E-05	3.48E-06	33	0	1.40E-05	1.15E-06	11	22	**3.53E+00**	3.38E-01
LEAD																
Consolation Mine	22	3	**2.54E+00**	1.45E-03	25	0	1.13E-03	6.10E-07	25	0	6.41E-04	3.85E-07	0	25	**5.94E+01**	3.27E-01
MANGANESE																
Consolation Mine	0	7	**2.30E+01**	3.49E-01	7	0	1.03E-02	1.55E-04	7	0	2.23E-05	1.46E-05	0	7	**3.37E+01**	**1.42E+01**
ZINC																
Consolation Mine	35	0	5.48E-01	4.78E-02	35	0	2.45E-04	2.14E-05	35	0	2.98E-04	5.95E-05	0	35	**1.12E+01**	**2.55E+00**

Notes:
Bold values indicate HQs greater than 1.0.
No data were available for aluminum, and all mercury results were non-detect.
Food chain model tables for each COPEC are presented in Appendix C.

COPEC	Chemical of potential ecological concern
EU	Exposure Unit
HQ	Hazard quotient

TABLE 4-13: TERRESTRIAL PLANT AND INVERTEBRATE HAZARD QUOTIENT COUNTS AND MAXIMUM HAZARD QUOTIENTS, EU 7 - MARY P. MINE WASTE PILE

Raseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

COPEC	All Soil Samples			Terrestrial Plants				Terrestrial Invertebrates			
	Total Number of Samples Evaluated	Number of Samples with Non-detect Results	Number of Sample Results Detected Below Minimum Reference Site Concentration	Number of HQs <1 (For Sample Results ≥ Minimum Reference Site Concentration)	Number of HQs ≥1 (For Sample Results ≥ Minimum Reference Site Concentration)	Maximum HQ (For Sample Results ≥ Minimum Reference Site Concentration)	Minimum Reference Site HQ	Number of HQs <1 (For Sample Results ≥ Minimum Reference Site Concentration)	Number of HQs ≥1 (For Sample Results ≥ Minimum Reference Site Concentration)	Maximum HQ (For Sample Results ≥ Minimum Reference Site Concentration)	Minimum Reference Site HQ
ARSENIC											
Mary P. Mine Waste Pile	8	3	0	1	6	**8.7**	**1.1**	6	1	**2.6**	0.33
CADMIUM											
Mary P. Mine Waste Pile	3	1	0	3	0	0.028	0.0089	3	0	0.0064	0.0020
COPPER											
Mary P. Mine Waste Pile	8	0	0	0	8	**8.2**	**1.3**	0	8	**7.2**	**1.2**
LEAD											
Mary P. Mine Waste Pile	7	0	1	0	7	**33**	0.44	6	1	**2.4**	0.031
MANGANESE											
Mary P. Mine Waste Pile	8	0	0	0	8	**4.9**	0.64	1	7	**2.4**	0.31
ZINC											
Mary P. Mine Waste Pile	8	0	0	3	5	**3.2**	0.26	1	7	**4.3**	0.34

Notes:

Bold values indicate HQs greater than 1.0.

No data were available for aluminum, and all mercury results were non-detect.

HQs were calculated by dividing the site concentration by the plant or invertebrate screening benchmark.

The minimum reference site HQ is the minimum HQ of all reference site locations.

HQ tables are presented in Appendix D.

COPEC	Chemical of potential ecological concern
EU	Exposure Unit
HQ	Hazard quotient

TABLE 4-14: HAZARD QUOTIENT COUNTS AND MAXIMUM HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 7 - MARY P. MINE WASTE PILE
Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

COPEC	All Receptors			Mourning Dove (Herbivore)				Red-Tailed Hawk (Carnivore)				American Kestrel (Insectivore)			
				Number of HQs <1	Number of HQs ≥1	Maximum HQ		Number of HQs <1	Number of HQs ≥1	Maximum HQ		Number of HQs <1	Number of HQs ≥1	Maximum HQ	
	Total Number of Samples Evaluated	Number of Samples with Non-Detect Results	Number of Sample Results Detected Below Minimum Reference Site Concentration	For Sample Results ≥ Minimum Reference Site Concentration			Minimum Reference Site HQ	For Sample Results ≥ Minimum Reference Site Concentration			Minimum Reference Site HQ	For Sample Results ≥ Minimum Reference Site Concentration			Minimum Reference Site HQ
ARSENIC															
Mary P. Mine Waste Pile	8	3	0	7	0	1.78E-04	2.97E-06	7	0	4.85E-05	6.04E-06	7	0	8.60E-03	1.69E-04
CADMIUM															
Mary P. Mine Waste Pile	3	1	0	3	0	5.41E-05	1.37E-05	3	0	6.42E-07	2.03E-07	3	0	4.61E-04	1.45E-04
COPPER															
Mary P. Mine Waste Pile	8	0	0	8	0	3.92E-04	4.50E-05	8	0	1.19E-04	1.30E-05	8	0	3.19E-03	3.94E-04
LEAD															
Mary P. Mine Waste Pile	7	0	0	7	0	1.10E-02	2.77E-05	7	0	5.26E-03	9.46E-06	7	0	4.98E-02	6.63E-04
MANGANESE															
Mary P. Mine Waste Pile	8	0	0	8	0	3.52E-04	1.96E-06	8	0	1.05E-06	1.87E-07	8	0	1.10E-04	1.43E-05
ZINC															
Mary P. Mine Waste Pile	8	0	0	8	0	2.14E-04	1.24E-05	8	0	3.66E-05	2.51E-04	8	0	9.30E-04	1.40E-04

TABLE 4-14: HAZARD QUOTIENT COUNTS AND MAXIMUM HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 7 - MARY P. MINE WASTE PILE (Continued)
Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

COPEC	Meadow Vole (Herbivore)				White-Tailed Deer (Herbivore)				Red Fox (Carnivore)				Masked Shrew (Omnivore)			
	Number of HQs <1	Number of HQs ≥1	Maximum HQ	Minimum Reference Site HQ	Number of HQs <1	Number of HQs ≥1	Maximum HQ	Minimum Reference Site HQ	Number of HQs <1	Number of HQs ≥1	Maximum HQ	Minimum Reference Site HQ	Number of HQs <1	Number of HQs ≥1	Maximum HQ	Minimum Reference Site HQ
	For Sample Results ≥ Minimum Reference Site Concentration				For Sample Results ≥ Minimum Reference Site Concentration				For Sample Results ≥ Minimum Reference Site Concentration				For Sample Results ≥ Minimum Reference Site Concentration			
ARSENIC																
Mary P. Mine Waste Pile	5	2	**2.96E+00**	1.41E-02	7	0	2.07E-04	8.30E-07	7	0	6.55E-05	8.16E-06	0	7	**1.96E+02**	**3.94E+00**
CADMIUM																
Mary P. Mine Waste Pile	3	0	8.41E-02	2.00E-01	3	0	5.91E-06	1.48E-06	3	0	3.95E-08	1.25E-08	3	0	9.27E-01	2.93E-01
COPPER																
Mary P. Mine Waste Pile	8	0	1.63E-01	2.06E-02	8	0	1.14E-05	1.28E-06	8	0	3.96E-06	4.24E-07	3	5	**1.75E+00**	2.17E-01
LEAD																
Mary P. Mine Waste Pile	6	1	**1.71E+00**	2.35E-03	7	0	1.20E-04	1.56E-07	7	0	6.79E-05	9.84E-08	4	3	**1.10E+01**	1.46E-01
MANGANESE																
Mary P. Mine Waste Pile	0	8	**1.04E+01**	2.40E-01	8	0	7.32E-04	3.40E-06	8	0	1.59E-06	3.22E-07	0	8	**4.19E+00**	5.45E-01
ZINC																
Mary P. Mine Waste Pile	8	0	3.46E-01	1.65E-01	8	0	2.43E-05	1.39E-06	8	0	2.95E-05	3.86E-06	6	2	**1.94E+00**	2.89E-01

Notes:
Bold values indicate HQs greater than 1.0.
No data were available for aluminum, and all mercury results were non-detect.
Food chain model tables for each COPEC are presented in Appendix C.

COPEC	Chemical of potential ecological concern
EU	Exposure Unit
HQ	Hazard quotient

TABLE 4-15: TERRESTRIAL PLANT AND INVERTEBRATE HAZARD QUOTIENT COUNTS AND MAXIMUM HAZARD QUOTIENTS, EU 8 - MIKE HORSE MINE WASTE PILES

Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

COPEC	All Receptors			Terrestrial Plants				Terrestrial Invertebrates			
	Total Number of Samples Evaluated	Number of Samples with Non-detect Results	Number of Sample Results Detected Below Minimum Reference Site Concentration	Number of HQs <1 (For Sample Results ≥ Minimum Reference Site Concentration)	Number of HQs ≥1 (For Sample Results ≥ Minimum Reference Site Concentration)	Maximum HQ (For Sample Results ≥ Minimum Reference Site Concentration)	Minimum Reference Site HQ	Number of HQs <1 (For Sample Results ≥ Minimum Reference Site Concentration)	Number of HQs ≥1 (For Sample Results ≥ Minimum Reference Site Concentration)	Maximum HQ (For Sample Results ≥ Minimum Reference Site Concentration)	Minimum Reference Site HQ
ARSENIC											
Mike Horse Creek Channel Area Deposits	34	8	0	6	28	**23**	0.84	18	16	**6.9**	0.25
Waste Areas 1 and 2	46	9	1	3	42	**28**	0.84	29	16	**8.3**	0.25
Waste Area 3	23	6	0	4	19	**50**	0.84	11	12	**15**	0.25
CADMIUM											
Mike Horse Creek Channel Area Deposits	4	0	3	1	0	0.35	0.049	1	0	0.080	0.011
Waste Areas 1 and 2	10	0	2	8	0	0.30	0.049	8	0	0.070	0.011
Waste Area 3	4	0	2	2	0	0.50	0.84	2	0	0.11	0.011
COPPER											
Mike Horse Creek Channel Area Deposits	34	3	1	8	22	**41**	0.47	11	19	**36**	0.41
Waste Areas 1 and 2	46	4	5	15	23	**13**	0.47	16	22	**12**	0.41
Waste Area 3	23	0	0	6	17	**19**	0.47	8	15	**16**	0.41
LEAD											
Mike Horse Creek Channel Area Deposits	34	0	0	4	30	**48**	0.28	21	13	**3.4**	0.020
Waste Areas 1 and 2	45	0	1	7	38	**92**	0.28	29	16	**6.5**	0.020
Waste Area 3	23	0	0	1	22	**140**	0.28	11	12	**9.9**	0.020
MANGANESE											
Mike Horse Creek Channel Area Deposits	34	0	9	0	25	**53**	**3.9**	0	25	**26**	**1.9**
Waste Areas 1 and 2	46	0	7	0	39	**39**	**3.9**	0	39	**19**	**1.9**
Waste Area 3	23	0	13	0	10	**8.7**	**3.9**	0	10	**4.2**	**1.9**
ZINC											
Mike Horse Creek Channel Area Deposits	34	0	0	2	32	**20**	0.30	0	34	**27**	0.40
Waste Areas 1 and 2	46	0	0	2	44	**15**	0.30	1	45	**20**	0.40
Waste Area 3	23	0	0	2	21	**14**	0.30	0	23	**19**	0.40

Notes:
Bold values indicate HQs greater than 1.0.
No data were available for aluminum, and all mercury results were non-detect.
HQs were calculated by dividing the site concentration by the plant or invertebrate screening benchmark.
The minimum reference site HQ is the minimum HQ of all reference site locations.
HQ tables are presented in Appendix D.

COPEC	Chemical of potential ecological concern
EU	Exposure Unit
HQ	Hazard quotient

TABLE 4-16: HAZARD QUOTIENT COUNTS AND MAXIMUM HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 8 - MIKE HORSE MINE WASTE PILES
Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

COPEC	All Receptors			Mourning Dove (Herbivore)				Red-Tailed Hawk (Carnivore)				American Kestrel (Insectivore)			
	Total Number of Samples Evaluated	Number of Samples with Non-Detect Results	Number of Sample Results Detected Below Minimum Reference Site Concentration	Number of HQs <1	Number of HQs ≥1	Maximum HQ	Minimum Reference Site HQ	Number of HQs <1	Number of HQs ≥1	Maximum HQ	Minimum Reference Site HQ	Number of HQs <1	Number of HQs ≥1	Maximum HQ	Minimum Reference Site HQ
				For Sample Results ≥ Minimum Reference Site Concentration				For Sample Results ≥ Minimum Reference Site Concentration				For Sample Results ≥ Minimum Reference Site Concentration			
ARSENIC															
Mike Horse Creek Channel Area Deposits	34	8	0	34	0	7.35E-03	3.64E-05	34	0	2.01E-03	7.40E-05	34	0	3.56E-01	2.07E-03
Waste Areas 1 and 2	46	9	1	45	0	8.91E-03	3.64E-05	45	0	2.43E-03	7.40E-05	45	0	4.31E-01	2.07E-03
Waste Area 3	23	6	0	23	0	1.62E-02	3.64E-05	23	0	4.41E-03	7.40E-05	23	0	7.81E-01	2.07E-03
CADMIUM															
Mike Horse Creek Channel Area Deposits	4	0	3	1	0	1.06E-02	1.19E-03	1	0	1.26E-04	5.16E-05	1	0	9.02E-02	1.26E-02
Waste Areas 1 and 2	10	0	2	8	0	9.21E-03	1.19E-03	8	0	1.09E-04	5.16E-05	8	0	7.84E-02	1.26E-02
Waste Area 3	4	0	2	2	0	1.50E-02	1.19E-03	2	0	1.78E-04	5.16E-05	2	0	1.28E-01	1.26E-02
COPPER															
Mike Horse Creek Channel Area Deposits	34	3	1	30	0	3.06E-02	2.51E-04	30	0	9.35E-03	7.23E-05	30	0	2.49E-01	2.20E-03
Waste Areas 1 and 2	46	4	5	38	0	1.01E-02	2.51E-04	38	0	3.07E-03	7.23E-05	38	0	8.18E-02	2.20E-03
Waste Area 3	23	0	0	23	0	1.42E-02	2.51E-04	23	0	4.32E-03	7.23E-05	23	0	1.15E-01	2.20E-03
LEAD															
Mike Horse Creek Channel Area Deposits	34	0	0	34	0	2.47E-01	2.73E-04	34	0	1.18E-01	9.32E-05	33	1	**1.12E+00**	6.53E-03
Waste Areas 1 and 2	45	0	1	45	0	4.78E-01	2.73E-04	45	0	2.29E-01	9.32E-05	37	8	**2.17E+00**	6.53E-03
Waste Area 3	23	0	0	23	0	7.28E-01	2.73E-04	23	0	3.48E-01	9.32E-05	14	9	**3.29E+00**	6.53E-03
MANGANESE															
Mike Horse Creek Channel Area Deposits	34	0	9	25	0	5.91E-02	1.89E-04	25	0	1.76E-04	1.80E-05	25	0	1.84E-02	1.37E-03
Waste Areas 1 and 2	46	0	7	39	0	4.34E-02	1.89E-04	39	0	1.29E-04	1.80E-05	39	0	1.35E-02	1.37E-03
Waste Area 3	23	0	13	10	0	9.76E-03	1.89E-04	10	0	2.90E-05	1.80E-05	10	0	3.04E-03	1.37E-03
ZINC															
Mike Horse Creek Channel Area Deposits	34	0	0	34	0	2.10E-02	2.30E-04	34	0	2.25E-02	5.57E-04	34	0	9.12E-02	2.60E-03
Waste Areas 1 and 2	46	0	0	46	0	1.59E-02	2.30E-04	46	0	1.70E-02	5.57E-04	46	0	6.88E-02	2.60E-03
Waste Area 3	23	0	0	23	0	1.47E-02	2.30E-04	23	0	1.58E-02	5.57E-04	22	0	6.39E-02	2.60E-03

TABLE 4-16: HAZARD QUOTIENT COUNTS AND MAXIMUM HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 8 - MIKE HORSE MINE WASTE PILES (Continued)
Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

COPEC	Meadow Vole (Herbivore)				White-Tailed Deer (Herbivore)				Red Fox (Carnivore)				Masked Shrew (Omnivore)			
	Number of HQs <1	Number of HQs ≥1	Maximum HQ	Minimum Reference Site HQ	Number of HQs <1	Number of HQs ≥1	Maximum HQ	Minimum Reference Site HQ	Number of HQs <1	Number of HQs ≥1	Maximum HQ	Minimum Reference Site HQ	Number of HQs <1	Number of HQs ≥1	Maximum HQ	Minimum Reference Site HQ
	For Sample Results ≥ Minimum Reference Site Concentration				For Sample Results ≥ Minimum Reference Site Concentration				For Sample Results ≥ Minimum Reference Site Concentration				For Sample Results ≥ Minimum Reference Site Concentration			
ARSENIC																
Mike Horse Creek Channel Area Deposits	17	17	**7.77E+00**	1.10E-02	34	0	8.55E-03	1.02E-05	34	0	2.71E-03	1.00E-04	0	34	**1.87E+03**	**1.12E+01**
Waste Areas 1 and 2	29	16	**9.41E+00**	1.10E-02	45	0	1.04E-02	1.02E-05	45	0	3.28E-03	1.00E-04	0	45	**2.27E+03**	**1.12E+01**
Waste Area 3	10	13	**1.71E+01**	1.10E-02	23	0	1.88E-02	1.02E-05	23	0	5.95E-03	1.00E-04	0	23	**4.11E+03**	**1.12E+01**
CADMIUM																
Mike Horse Creek Channel Area Deposits	0	1	**1.05E+00**	1.16E-01	1	0	1.16E-03	1.29E-04	1	0	7.74E-06	1.08E-06	0	1	**4.20E+01**	**5.88E+00**
Waste Areas 1 and 2	8	0	9.10E-01	1.16E-01	8	0	1.01E-03	1.29E-04	8	0	6.73E-06	1.08E-06	0	8	**3.65E+01**	**5.88E+00**
Waste Area 3	1	1	**1.49E+00**	1.16E-01	2	0	1.64E-03	1.29E-04	2	0	1.10E-05	1.08E-06	0	2	**5.96E+01**	**5.88E+00**
COPPER																
Mike Horse Creek Channel Area Deposits	30	0	8.09E-01	6.47E-03	30	0	8.94E-04	7.13E-06	30	0	3.10E-04	2.36E-06	11	19	**3.16E+01**	2.80E-01
Waste Areas 1 and 2	38	0	2.65E-01	6.47E-03	38	0	2.93E-04	7.13E-06	38	0	1.02E-04	2.36E-06	17	21	**1.04E+01**	2.80E-01
Waste Area 3	23	0	3.74E-01	6.47E-03	23	0	4.13E-04	7.13E-06	23	0	1.43E-04	2.36E-06	9	14	**1.46E+01**	2.80E-01
LEAD																
Mike Horse Creek Channel Area Deposits	23	11	**2.44E+00**	1.48E-03	34	0	2.69E-03	8.34E-06	34	0	1.52E-03	9.70E-07	0	34	**5.70E+01**	3.33E-01
Waste Areas 1 and 2	33	12	**4.73E+00**	1.48E-03	45	0	5.21E-03	8.34E-06	45	0	2.95E-03	9.70E-07	4	41	**1.11E+02**	3.33E-01
Waste Area 3	13	10	**7.19E+00**	1.48E-03	23	0	7.92E-03	8.34E-06	23	0	4.49E-03	9.70E-07	1	22	**1.68E+02**	3.33E-01
MANGANESE																
Mike Horse Creek Channel Area Deposits	0	25	**1.11E+02**	2.99E-01	25	0	1.23E-01	3.28E-04	25	0	2.66E-04	3.10E-05	0	25	**1.63E+02**	**1.21E+01**
Waste Areas 1 and 2	0	39	**8.15E+01**	2.99E-01	39	0	9.03E-02	3.28E-04	39	0	1.96E-04	3.10E-05	0	39	**1.19E+02**	**1.21E+01**
Waste Area 3	0	10	**1.83E+01**	2.99E-01	10	0	2.03E-02	3.28E-04	10	0	4.39E-05	3.10E-05	0	10	**2.68E+01**	**1.21E+01**
ZINC																
Mike Horse Creek Channel Area Deposits	27	7	**2.16E+00**	2.33E-02	34	0	2.38E-03	2.57E-05	34	0	2.90E-03	7.17E-05	0	34	**4.40E+01**	**1.24E+00**
Waste Areas 1 and 2	40	6	**1.63E+00**	2.33E-02	46	0	1.80E-03	2.57E-05	46	0	2.18E-03	7.17E-05	0	46	**3.32E+01**	**1.24E+00**
Waste Area 3	22	1	**1.51E+00**	2.33E-02	23	0	1.67E-03	2.57E-05	23	0	2.03E-03	7.17E-05	0	23	**3.08E+01**	**1.24E+00**

Notes:
Bold values indicate HQs greater than 1.0.

No data was available for aluminum, and all mercury results were non-detect.
Food chain model tables for each COPEC are presented in Appendix C.

COPEC	Chemical of potential ecological concern
EU	Exposure Unit
HQ	Hazard quotient

TABLE 4-17: TERRESTRIAL PLANT AND INVERTEBRATE HAZARD QUOTIENT COUNTS AND MAXIMUM HAZARD QUOTIENTS, EU 9 - PAYMASTER MINE WASTE AREAS

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

COPEC	All Soil Samples			Terrestrial Plants				Terrestrial Invertebrates			
	Total Number of Samples Evaluated	Number of Samples with Non-detect Results	Number of Sample Results Detected Below Minimum Reference Site Concentration	Number of HQs <1 (For Sample Results ≥ Minimum Reference Site Concentration)	Number of HQs ≥1 (For Sample Results ≥ Minimum Reference Site Concentration)	Maximum HQ (For Sample Results ≥ Minimum Reference Site Concentration)	Minimum Reference Site HQ	Number of HQs <1 (For Sample Results ≥ Minimum Reference Site Concentration)	Number of HQs ≥1 (For Sample Results ≥ Minimum Reference Site Concentration)	Maximum HQ (For Sample Results ≥ Minimum Reference Site Concentration)	Minimum Reference Site HQ
CADMIUM											
Paymaster Mine Waste Area 1	3	0	3	NE	NE	NE	NE	NE	NE	NE	NE
Paymaster Mine Waste Area 2	2	0	1	1	0	0.022	0.017	1	0	0.0049	0.0039
COPPER											
Paymaster Mine Waste Area 1	8	0	0	0	8	**5.9**	0.37	0	8	**5.1**	0.33
Paymaster Mine Waste Area 2	6	0	0	0	6	**8.6**	0.37	0	6	**7.5**	0.33
LEAD											
Paymaster Mine Waste Area 1	8	0	0	0	8	**7.1**	0.24	8	0	0.50	0.017
Paymaster Mine Waste Area 2	6	0	0	0	6	**5.4**	0.24	6	0	0.38	0.017
MANGANESE											
Paymaster Mine Waste Area 1	8	0	4	0	4	**2.3**	**1.6**	3	1	**1.1**	0.80
Paymaster Mine Waste Area 2	6	0	2	0	4	**4.2**	**1.6**	1	3	**2.0**	0.80
ZINC											
Paymaster Mine Waste Area 1	8	0	1	7	0	0.80	0.42	5	2	**1.1**	0.56
Paymaster Mine Waste Area 2	6	0	0	6	0	1.0	0.42	3	3	**1.3**	0.56

Notes:

Bold values indicate HQs greater than 1.0.

No data were available for aluminum and arsenic, and all mercury results were non-detect.

HQs were calculated by dividing the site concentration by the plant or invertebrate screening benchmark.

The minimum reference site HQ is the minimum HQ of all reference site locations.

All detected results for Paymaster Mine Waste Area 1 were below the minimum background reference site concentration for cadmium.

HQ tables are presented in Appendix D.

COPEC	Chemical of potential ecological concern
EU	Exposure Unit
HQ	Hazard quotient
NE	Not evaluated

TABLE 4-18: HAZARD QUOTIENT COUNTS AND MAXIMUM HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 9 - PAYMASTER MINE WASTE AREAS
Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

COPEC	All Receptors			Mourning Dove (Herbivore)				Red-Tailed Hawk (Carnivore)				American Kestrel (Insectivore)			
	Total Number of Samples Evaluated	Number of Samples with Non-Detect Results	Number of Sample Results Detected Below Minimum Reference Site Concentration	Number of HQs <1	Number of HQs ≥1	Maximum HQ	Minimum Reference Site HQ	Number of HQs <1	Number of HQs ≥1	Maximum HQ	Minimum Reference Site HQ	Number of HQs <1	Number of HQs ≥1	Maximum HQ	Minimum Reference Site HQ
				For Sample Results ≥ Minimum Reference Site Concentration				For Sample Results ≥ Minimum Reference Site Concentration				For Sample Results ≥ Minimum Reference Site Concentration			
CADMIUM															
Paymaster Mine Waste Area 1	6	3	3	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
Paymaster Mine Waste Area 2	3	0	1	2	0	4.78E-05	2.98E-05	2	0	5.67E-07	4.40E-07	2	0	4.07E-04	3.16E-04
COPPER															
Paymaster Mine Waste Area 1	8	0	0	8	0	3.20E-04	1.45E-05	8	0	9.76E-05	4.18E-06	8	0	2.60E-03	1.27E-04
Paymaster Mine Waste Area 2	6	0	0	6	0	4.67E-04	1.45E-05	6	0	1.42E-04	4.18E-06	6	0	3.80E-03	1.27E-04
LEAD															
Paymaster Mine Waste Area 1	8	0	0	8	0	2.66E-03	1.72E-05	8	0	1.27E-03	5.88E-06	8	0	1.21E-02	4.12E-04
Paymaster Mine Waste Area 2	6	0	0	6	0	2.02E-03	1.72E-05	6	0	9.63E-04	5.88E-06	6	0	9.13E-03	4.12E-04
MANGANESE															
Paymaster Mine Waste Area 1	8	0	4	4	0	1.90E-04	5.68E-06	4	0	5.64E-07	5.42E-07	4	0	5.90E-05	4.14E-05
Paymaster Mine Waste Area 2	6	0	2	4	0	3.38E-04	5.68E-06	4	0	1.01E-06	5.42E-07	4	0	1.05E-04	4.14E-05
ZINC															
Paymaster Mine Waste Area 1	8	0	1	7	0	6.02E-05	2.30E-05	7	0	6.45E-05	5.56E-05	7	0	2.61E-04	2.60E-04
Paymaster Mine Waste Area 2	6	0	0	6	0	7.47E-05	2.30E-05	6	0	8.00E-05	5.56E-05	6	0	3.24E-04	2.60E-04

TABLE 4-18: HAZARD QUOTIENT COUNTS AND MAXIMUM HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 9 - PAYMASTER MINE WASTE AREAS (Continued)
Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

COPEC	Meadow Vole (Herbivore)				White-Tailed Deer (Herbivore)				Red Fox (Carnivore)				Masked Shrew (Omnivore)			
	Number of HQs <1	Number of HQs ≥1	Maximum HQ	Minimum Reference Site HQ	Number of HQs <1	Number of HQs ≥1	Maximum HQ	Minimum Reference Site HQ	Number of HQs <1	Number of HQs ≥1	Maximum HQ	Minimum Reference Site HQ	Number of HQs <1	Number of HQs ≥1	Maximum HQ	Minimum Reference Site HQ
	For Sample Results ≥ Minimum Reference Site Concentration				For Sample Results ≥ Minimum Reference Site Concentration				For Sample Results ≥ Minimum Reference Site Concentration				For Sample Results ≥ Minimum Reference Site Concentration			
CADMIUM																
Paymaster Mine Waste Area 1	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
Paymaster Mine Waste Area 2	2	0	6.54E-02	4.03E-02	2	0	5.22E-06	3.22E-06	2	0	3.49E-08	2.71E-08	2	0	8.19E-01	6.36E-01
COPPER																
Paymaster Mine Waste Area 1	8	0	1.17E-01	5.17E-03	8	0	9.33E-06	4.12E-07	8	0	3.23E-06	1.36E-07	4	4	**1.43E+00**	6.99E-02
Paymaster Mine Waste Area 2	6	0	1.71E-01	5.17E-03	6	0	1.36E-05	4.12E-07	6	0	4.72E-06	1.36E-07	2	4	**2.08E+00**	6.99E-02
LEAD																
Paymaster Mine Waste Area 1	8	0	3.64E-01	1.29E-03	8	0	2.90E-05	9.69E-08	8	0	1.64E-05	6.11E-08	3	5	**2.66E+00**	9.09E-02
Paymaster Mine Waste Area 2	6	0	2.76E-01	1.29E-03	6	0	2.19E-05	9.69E-08	6	0	1.24E-05	6.11E-08	4	2	**2.02E+00**	9.09E-02
MANGANESE																
Paymaster Mine Waste Area 1	0	4	**4.92E+00**	1.25E-01	4	0	3.94E-04	9.87E-06	4	0	8.54E-07	9.34E-07	0	4	**2.26E+00**	**1.58E+00**
Paymaster Mine Waste Area 2	0	4	**8.78E+00**	1.25E-01	4	0	7.03E-04	9.87E-06	4	0	1.52E-06	9.34E-07	0	4	**4.02E+00**	**1.58E+00**
ZINC																
Paymaster Mine Waste Area 1	7	0	8.55E-02	3.22E-02	7	0	6.83E-06	2.57E-06	7	0	8.29E-06	7.16E-06	7	0	5.44E-01	5.37E-01
Paymaster Mine Waste Area 2	6	0	1.06E-01	3.22E-02	6	0	8.47E-06	2.57E-06	6	0	1.03E-05	7.16E-06	6	0	6.75E-01	5.37E-01

Notes:
Bold values indicate HQs greater than 1.0.
No data were available for aluminum, and all arsenic and mercury results were non-detect.
Food chain model tables for each COPEC are presented in Appendix C.

COPEC	Chemical of potential ecological concern
EU	Exposure Unit
HQ	Hazard quotient
NE	Not Evaluated

TABLE 4-19: TERRESTRIAL PLANT AND INVERTEBRATE HAZARD QUOTIENT COUNTS AND MAXIMUM HAZARD QUOTIENTS, EU 10 - NUMBER 3 TUNNEL WASTE AREA

Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

COPEC	All Soil Samples			Terrestrial Plants				Terrestrial Invertebrates			
	Total Number of Samples Evaluated	Number of Samples with Non-detect Results	Number of Sample Results Detected Below Minimum Reference Site Concentration	Number of HQs <1 (For Sample Results ≥ Minimum Reference Site Concentration)	Number of HQs ≥1 (For Sample Results ≥ Minimum Reference Site Concentration)	Maximum HQ (For Sample Results ≥ Minimum Reference Site Concentration)	Minimum Reference Site HQ	Number of HQs <1 (For Sample Results ≥ Minimum Reference Site Concentration)	Number of HQs ≥1 (For Sample Results ≥ Minimum Reference Site Concentration)	Maximum HQ (For Sample Results ≥ Minimum Reference Site Concentration)	Minimum Reference Site HQ
ARSENIC											
Tunnel No. 3 Area	30	15	0	15	15	**4.0**	0.62	29	1	**1.2**	0.18
CADMIUM											
Tunnel No. 3 Area	3	0	1	2	0	0.043	0.0089	2	0	0.0097	0.0020
COPPER											
Tunnel No. 3 Area	30	0	1	0	29	**14**	**1.0**	0	29	**12**	0.90
LEAD											
Tunnel No. 3 Area	30	0	5	12	13	**6.8**	0.52	25	0	0.48	0.037
MANGANESE											
Tunnel No. 3 Area	30	19	0	16	8	**28**	0.59	18	6	**14**	0.29
ZINC											
Tunnel No. 3 Area	30	17	2	9	5	**4.4**	0.26	7	7	**5.8**	0.34

Notes:
Bold values indicate HQs greater than 1.0.

No data were available for aluminum, and all mercury results were non-detect.

HQs were calculated by dividing the site concentration by the plant or invertebrate screening benchmark.

The minimum reference site HQ is the minimum HQ of all reference site locations.

HQ tables are presented in Appendix D.

COPEC	Chemical of potential ecological concern
EU	Exposure Unit
HQ	Hazard quotient

TABLE 4-20: HAZARD QUOTIENT COUNTS AND MAXIMUM HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 10 - NUMBER 3 TUNNEL WASTE AREA

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

COPEC	All Receptors			Mourning Dove (Herbivore)				Red-Tailed Hawk (Carnivore)				American Kestrel (Insectivore)			
	Total Number of Samples Evaluated	Number of Samples with Non-Detect Results	Number of Sample Results Detected Below Minimum Reference Site Concentration	Number of HQs <1	Number of HQs ≥1	Maximum HQ	Minimum Reference Site HQ	Number of HQs <1	Number of HQs ≥1	Maximum HQ	Minimum Reference Site HQ	Number of HQs <1	Number of HQs ≥1	Maximum HQ	Minimum Reference Site HQ
				For Sample Results ≥ Minimum Reference Site Concentration				For Sample Results ≥ Minimum Reference Site Concentration				For Sample Results ≥ Minimum Reference Site Concentration			
ARSENIC															
Tunnel No. 3 Area	30	15	0	30	0	8.04E-04	1.67E-05	30	0	2.19E-04	3.40E-05	30	0	3.89E-02	9.51E-04
CADMIUM															
Tunnel No. 3 Area	3	0	1	2	0	8.09E-04	1.36E-04	2	0	9.60E-06	2.01E-06	2	0	6.90E-03	1.44E-03
COPPER															
Tunnel No. 3 Area	30	0	1	29	0	6.70E-03	3.46E-04	29	0	2.04E-03	9.98E-05	29	0	5.45E-02	3.03E-03
LEAD															
Tunnel No. 3 Area	30	0	5	24	0	2.22E-02	3.21E-04	24	0	1.06E-02	1.10E-04	25	0	1.00E-01	7.67E-03
MANGANESE															
Tunnel No. 3 Area	30	19	0	24	0	1.99E-02	1.80E-05	23	0	5.92E-05	1.71E-06	24	0	6.20E-03	1.31E-04
ZINC															
Tunnel No. 3 Area	30	17	2	14	0	2.88E-03	1.23E-04	14	0	3.09E-03	2.97E-04	14	0	1.25E-02	1.38E-03

TABLE 4-20: HAZARD QUOTIENT COUNTS AND MAXIMUM HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 10 - NUMBER 3 TUNNEL WASTE AREA (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

COPEC	Meadow Vole (Herbivore)				White-Tailed Deer (Herbivore)				Red Fox (Carnivore)				Masked Shrew (Omnivore)			
	Number of HQs <1	Number of HQs ≥1	Maximum HQ	Minimum Reference Site HQ	Number of HQs <1	Number of HQs ≥1	Maximum HQ	Minimum Reference Site HQ	Number of HQs <1	Number of HQs ≥1	Maximum HQ	Minimum Reference Site HQ	Number of HQs <1	Number of HQs ≥1	Maximum HQ	Minimum Reference Site HQ
	For Sample Results ≥ Minimum Reference Site Concentration				For Sample Results ≥ Minimum Reference Site Concentration				For Sample Results ≥ Minimum Reference Site Concentration				For Sample Results ≥ Minimum Reference Site Concentration			
ARSENIC																
Tunnel No. 3 Area	29	1	**1.35E+00**	8.04E-03	30	0	9.35E-04	4.67E-06	30	0	2.96E-04	4.59E-05	0	4	**3.25E+02**	**8.14E+00**
CADMIUM																
Tunnel No. 3 Area	2	0	1.27E-01	2.11E-02	2	0	8.84E-05	1.47E-05	2	0	5.91E-07	1.24E-07	0	2	**5.09E+00**	**1.06E+00**
COPPER																
Tunnel No. 3 Area	29	0	2.81E-01	1.42E-02	29	0	1.95E-04	9.84E-06	29	0	6.77E-05	3.26E-06	1	28	**1.10E+01**	6.14E-01
LEAD																
Tunnel No. 3 Area	25	0	3.48E-01	2.75E-03	25	0	2.41E-04	1.81E-06	25	0	1.37E-04	1.14E-06	7	18	**8.14E+00**	6.22E-01
MANGANESE																
Tunnel No. 3 Area	11	13	**5.94E+01**	4.52E-02	23	0	4.14E-02	3.12E-05	24	0	8.97E-05	2.96E-06	5	11	**8.70E+01**	**1.84E+00**
ZINC																
Tunnel No. 3 Area	14	0	4.69E-01	1.97E-02	14	0	3.27E-04	1.37E-05	14	0	3.97E-04	3.82E-05	5	8	**9.57E+00**	**1.05E+00**

Notes:

Bold values indicate HQs greater than 1.0.

No data were available for aluminum, and all mercury results were non-detect.

Food chain model tables for each COPEC are presented in Appendix C.

COPEC	Chemical of potential ecological concern
EU	Exposure Unit
HQ	Hazard quotient

TABLE 4-21: TERRESTRIAL PLANT AND INVERTEBRATE HAZARD QUOTIENT COUNTS AND MAXIMUM HAZARD QUOTIENTS, EU 11 - BEARTRAP CREEK DISPERSED TAILINGS DEPOSITS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK TAILINGS DEPOSITS AND FLOSSIE LOUISE MINE WASTE PILE

Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

COPEC	All Soil Samples			Terrestrial Plants				Terrestrial Invertebrates			
	Total Number of Samples Evaluated	Number of Samples with Non-detect Results	Number of Sample Results Detected Below Minimum Reference Site Concentration	Number of HQs <1	Number of HQs ≥1	Maximum HQ	Minimum Reference Site HQ	Number of HQs <1	Number of HQs ≥1	Maximum HQ	Minimum Reference Site HQ
				For Sample Results ≥ Minimum Reference Site Concentration				For Sample Results ≥ Minimum Reference Site Concentration			
ARSENIC											
Inside Tailings Pile	49	0	1	0	48	**41**	**1.0**	6	42	**12**	0.31
Edge of Tailings Pile	50	13	0	5	36	**8.7**	**1.0**	32	9	**2.6**	0.31
Outside Tailings Pile	53	7	4	2	40	**38**	**1.0**	28	14	**11**	0.31
CADMIUM											
Inside Tailings Pile	4	0	0	3	1	**2.3**	**0.015**	4	0	0.52	0.015
Edge of Tailings Pile	2	0	1	1	0	0.051	0.015	1	0	0.012	0.015
Outside Tailings Pile	6	0	1	5	0	0.060	0.015	5	0	0.014	0.015
COPPER											
Inside Tailings Pile	49	0	0	0	45	**38**	0.90	2	43	**34**	0.90
Edge of Tailings Pile	50	3	0	3	33	**6.3**	0.90	9	27	**5.5**	0.90
Outside Tailings Pile	52	4	1	3	36	**31**	0.90	8	31	**27**	0.90
LEAD											
Inside Tailings Pile	49	0	0	3	46	**150**	0.19	39	10	**10**	0.014
Edge of Tailings Pile	50	0	0	19	31	**7.6**	0.19	50	0	0.54	0.014
Outside Tailings Pile	52	0	2	23	28	**130**	0.19	49	2	**9.2**	0.014
MANGANESE											
Inside Tailings Pile	49	5	0	5	44	**190**	0.73	9	40	**92**	0.65
Edge of Tailings Pile	50	0	0	0	50	**27**	0.73	4	46	**13**	0.65
Outside Tailings Pile	52	0	4	0	52	**36**	0.73	10	42	**18**	0.65
ZINC											
Inside Tailings Pile	49	0	7	6	41	**100**	0.52	3	44	**130**	0.70
Edge of Tailings Pile	50	1	12	11	34	**4.8**	0.52	3	42	**6.4**	0.70
Outside Tailings Pile	52	0	13	18	32	**85**	0.52	6	44	**110**	0.70

Notes:
Bold values indicate HQs greater than 1.0.
No data were available for aluminum, and all mercury results were non-detect.
HQs were calculated by dividing the site concentration by the plant or invertebrate screening benchmark.
The minimum reference site HQ is the minimum HQ of all reference site locations.
HQ tables are presented in Appendix D.

COPEC	Chemical of potential ecological concern	EU	Exposure Unit
EE/CA	Engineering Evaluation/Cost Analysis	HQ	Hazard quotient

TABLE 4-22: HAZARD QUOTIENT COUNTS AND MAXIMUM HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 11 - BEARTRAP CREEK DISPERSED TAILINGS DEPOSITS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK TAILINGS DEPOSITS AND FLOSSIE LOUISE MINE WASTE PILE

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

COPEC	All Receptors			Mourning Dove (Herbivore)				Red-Tailed Hawk (Carnivore)				American Kestrel (Insectivore)			
	Total Number of Samples Evaluated	Number of Samples with Non-Detect Results	Number of Sample Results Detected Below Minimum Reference Site Concentration	Number of HQs <1	Number of HQs ≥1	Maximum HQ	Minimum Reference Site HQ	Number of HQs <1	Number of HQs ≥1	Maximum HQ	Minimum Reference Site HQ	Number of HQs <1	Number of HQs ≥1	Maximum HQ	Minimum Reference Site HQ
				For Sample Results ≥ Minimum Reference Site Concentration				For Sample Results ≥ Minimum Reference Site Concentration				For Sample Results ≥ Minimum Reference Site Concentration			
ARSENIC															
Inside Tailings Pile	49	0	1	48	0	3.77E-02	1.26E-04	48	0	1.03E-02	2.57E-04	47	1	**1.82E+00**	7.19E-03
Edge of Tailings Pile	50	13	0	41	0	8.07E-03	1.26E-04	41	0	2.20E-03	2.57E-04	41	0	3.90E-01	7.19E-03
Outside Tailings Pile	53	7	4	42	0	3.51E-02	1.26E-04	42	0	9.58E-03	2.57E-04	41	1	**1.70E+00**	7.19E-03
CADMIUM															
Inside Tailings Pile	6	0	0	6	0	1.97E-01	1.06E-03	6	0	3.95E-03	1.57E-05	5	1	**1.67E+00**	1.13E-02
Edge of Tailings Pile	3	0	2	1	0	4.41E-03	1.06E-03	1	0	5.23E-05	1.57E-05	1	0	3.76E-02	1.13E-02
Outside Tailings Pile	7	0	1	6	0	5.28E-03	1.06E-03	6	0	5.28E-03	1.57E-05	6	0	4.43E-02	1.13E-02
COPPER															
Inside Tailings Pile	49	0	0	45	0	8.35E-02	1.38E-03	45	0	2.55E-02	3.99E-04	45	0	6.79E-01	1.21E-02
Edge of Tailings Pile	50	3	0	36	0	1.36E-02	1.38E-03	36	0	4.16E-03	3.99E-04	36	0	1.11E-01	1.21E-02
Outside Tailings Pile	52	4	1	39	0	6.75E-02	1.38E-03	39	0	2.06E-02	3.99E-04	39	0	5.49E-01	1.21E-02
LEAD															
Inside Tailings Pile	49	0	0	48	1	**2.17E+00**	5.44E-04	48	1	**1.04E+00**	1.86E-04	40	9	**9.83E+00**	1.30E-02
Edge of Tailings Pile	50	0	0	50	0	1.14E-01	5.44E-04	50	0	5.44E-02	1.86E-04	50	0	5.16E-01	1.30E-02
Outside Tailings Pile	52	0	2	50	1	**1.96E+00**	5.44E-04	51	0	9.36E-01	1.86E-04	49	2	**8.87E+00**	1.30E-02
MANGANESE															
Inside Tailings Pile	49	5	0	48	0	6.09E-01	1.01E-04	49	0	1.81E-03	9.64E-06	49	0	1.89E-01	7.37E-04
Edge of Tailings Pile	50	0	0	50	0	8.60E-02	1.01E-04	50	0	2.56E-04	9.64E-06	50	0	2.67E-02	7.37E-04
Outside Tailings Pile	52	0	4	52	0	1.16E-01	1.01E-04	52	0	3.45E-04	9.64E-06	52	0	3.61E-02	7.37E-04
ZINC															
Inside Tailings Pile	49	0	7	47	0	3.06E-01	1.15E-03	47	0	3.28E-01	2.78E-03	45	2	**1.33E+00**	1.30E-02
Edge of Tailings Pile	50	1	12	45	0	1.46E-02	1.15E-03	45	0	1.56E-02	2.78E-03	45	0	6.32E-02	1.30E-02
Outside Tailings Pile	52	0	13	50	0	2.58E-01	1.15E-03	50	0	2.76E-01	2.78E-03	49	1	**1.12E+00**	1.30E-02

TABLE 4-22: HAZARD QUOTIENT COUNTS AND MAXIMUM HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 11 - BEARTRAP CREEK DISPERSED TAILINGS DEPOSITS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK TAILINGS DEPOSITS AND FLOSSIE LOUISE MINE WASTE PILE (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

COPEC	Meadow Vole (Herbivore)				White-Tailed Deer (Herbivore)				Red Fox (Carnivore)				Masked Shrew (Omnivore)			
	Number of HQs <1	Number of HQs ≥1	Maximum HQ	Minimum Reference Site HQ	Number of HQs <1	Number of HQs ≥1	Maximum HQ	Minimum Reference Site HQ	Number of HQs <1	Number of HQs ≥1	Maximum HQ	Minimum Reference Site HQ	Number of HQs <1	Number of HQs ≥1	Maximum HQ	Minimum Reference Site HQ
	For Sample Results ≥ Minimum Reference Site Concentration				For Sample Results ≥ Minimum Reference Site Concentration				For Sample Results ≥ Minimum Reference Site Concentration				For Sample Results ≥ Minimum Reference Site Concentration			
ARSENIC																
Inside Tailings Pile	6	42	**1.38E+01**	1.33E-02	48	0	4.38E-02	3.53E-05	48	0	1.39E-02	3.47E-04	0	48	**3.33E+03**	**1.35E+01**
Edge of Tailings Pile	30	11	**2.96E+00**	1.33E-02	41	0	9.38E-03	3.53E-05	41	0	2.97E-03	3.47E-04	0	41	**7.13E+02**	**1.35E+01**
Outside Tailings Pile	25	17	**1.29E+01**	1.33E-02	42	0	4.09E-02	3.53E-05	42	0	1.29E-02	3.47E-04	0	42	**3.11E+03**	**1.35E+01**
CADMIUM																
Inside Tailings Pile	4	2	**6.75E+00**	3.61E-02	6	0	2.15E-02	1.15E-04	6	0	3.95E-03	9.67E-07	2	4	**2.70E+02**	**1.82E+00**
Edge of Tailings Pile	1	0	1.51E-01	3.61E-02	1	0	4.82E-04	1.15E-04	1	0	3.22E-06	9.67E-07	0	1	**6.07E+00**	**1.82E+00**
Outside Tailings Pile	6	0	1.78E-01	3.61E-02	6	0	5.28E-03	1.15E-04	6	0	5.28E-03	9.67E-07	1	5	**7.15E+00**	**1.82E+00**
COPPER																
Inside Tailings Pile	45	0	7.65E-01	1.24E-02	45	0	2.43E-03	3.94E-05	45	0	8.43E-04	1.30E-05	4	41	**2.99E+01**	5.37E-01
Edge of Tailings Pile	36	0	1.25E-01	1.24E-02	36	0	3.98E-04	3.94E-05	36	0	1.38E-04	1.30E-05	11	25	**4.89E+00**	5.37E-01
Outside Tailings Pile	39	0	6.19E-01	1.24E-02	39	0	1.97E-03	3.94E-05	39	0	6.82E-04	1.30E-05	12	27	**2.42E+01**	5.37E-01
LEAD																
Inside Tailings Pile	45	4	**7.46E+00**	1.02E-03	49	0	2.37E-02	3.07E-06	49	0	1.34E-02	1.93E-06	2	47	**1.74E+02**	2.31E-01
Edge of Tailings Pile	50	0	3.91E-01	1.02E-03	50	0	1.24E-03	3.07E-06	50	0	7.03E-04	1.93E-06	14	36	**9.15E+00**	2.31E-01
Outside Tailings Pile	50	1	**6.72E+00**	1.02E-03	51	0	2.13E-02	3.07E-06	51	0	1.21E-02	1.93E-06	18	33	**1.57E+02**	2.31E-01
MANGANESE																
Inside Tailings Pile	2	47	**3.97E+02**	5.57E-02	48	1	**1.27E+00**	1.76E-04	49	0	2.74E-03	1.66E-05	0	44	**5.82E+02**	**2.26E+00**
Edge of Tailings Pile	0	50	**5.60E+01**	5.57E-02	50	0	1.79E-01	1.76E-04	50	0	3.87E-04	1.66E-05	0	50	**8.21E+01**	**2.26E+00**
Outside Tailings Pile	0	52	**7.55E+01**	5.57E-02	52	0	2.41E-01	1.76E-04	52	0	5.22E-04	1.66E-05	0	52	**1.11E+02**	**2.26E+00**
ZINC																
Inside Tailings Pile	37	10	**1.09E+01**	4.04E-02	47	0	3.47E-02	1.29E-04	47	0	4.21E-02	3.58E-04	0	41	**2.22E+02**	**2.16E+00**
Edge of Tailings Pile	45	0	5.19E-01	4.04E-02	45	0	1.65E-03	1.29E-04	45	0	2.01E-03	3.58E-04	0	34	**1.06E+01**	**2.16E+00**
Outside Tailings Pile	49	1	**9.18E+00**	4.04E-02	50	0	2.92E-02	1.29E-04	50	0	3.55E-02	3.58E-04	0	34	**1.87E+02**	**2.16E+00**

Notes:

Bold values indicate HQs greater than 1.0.

No data were available for aluminum, and all mercury results were non-detect.

Food chain model tables for each COPEC are presented in Appendix C.

COPEC	Chemical of potential ecological concern	EU	Exposure Unit
EE/CA	Engineering Evaluation/Cost Analysis	HQ	Hazard quotient

TABLE 4-23: TERRESTRIAL PLANT AND INVERTEBRATE HAZARD QUOTIENT COUNTS AND MAXIMUM HAZARD QUOTIENTS, EU 12 - UPPER MARSH

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

COPEC	All Sediment Samples			Terrestrial Plants				Terrestrial Invertebrates			
				Number of HQs <1	Number of HQs ≥1	Maximum HQ		Number of HQs <1	Number of HQs ≥1	Maximum HQ	
	Total Number of Samples Evaluated	Number of Samples with Non-detect Results	Number of Sample Results Detected Below Minimum Reference Site Concentration	For Sample Results ≥ Minimum Reference Site Concentration			Minimum Reference Site HQ	For Sample Results ≥ Minimum Reference Site Concentration			Minimum Reference Site HQ
ARSENIC											
Eastern Upper Marsh (0-2")	23	0	2	4	16	**13**	0.51	5	15	**4.0**	0.15
Western Upper Marsh (0-2")	19	0	8	6	5	**2.6**	0.51	11	0	0.79	0.15
Eastern Upper Marsh (2-6")	21	0	3	2	15	**28**	0.51	6	11	**8.5**	0.15
Western Upper Marsh (2-6")	20	0	7	8	5	**2.7**	0.51	13	0	0.82	0.15
Eastern Upper Marsh (6-12")	21	0	1	6	13	**10**	0.51	9	10	**3.1**	0.15
Western Upper Marsh (6-12")	20	0	7	10	3	**3.3**	0.51	13	0	0.98	0.15
Middle Marsh (0-2")	2	0	2	0	0	BB	0.51	0	0	BB	0.15
Middle Marsh (2-6")	2	0	2	0	0	BB	0.51	0	0	BB	0.15
Middle Marsh (6-12")	2	0	2	0	0	BB	0.51	0	0	BB	0.15
Lower Marsh (0-2")	4	0	4	0	0	BB	0.51	0	0	BB	0.15
Lower Marsh (2-6")	4	0	4	0	0	BB	0.51	0	0	BB	0.15
Lower Marsh (6-12")	4	0	4	0	0	BB	0.51	0	0	BB	0.15
CADMIUM											
Eastern Upper Marsh (0-2")	23	0	0	22	0	0.72	0.015	22	0	0.17	0.0034
Western Upper Marsh (0-2")	19	2	2	15	0	0.56	0.015	15	0	0.13	0.0034
Eastern Upper Marsh (2-6")	21	1	0	18	1	**1.1**	0.015	19	0	0.25	0.0034
Western Upper Marsh (2-6")	20	3	1	15	1	**2.4**	0.015	16	0	0.56	0.0034
Eastern Upper Marsh (6-12")	21	0	1	20	0	0.85	0.015	20	0	0.19	0.0034
Western Upper Marsh (6-12")	20	2	5	13	0	0.73	0.015	13	0	0.17	0.0034
Middle Marsh (0-2")	2	0	0	2	0	0.30	0.015	2	0	0.068	0.0034
Middle Marsh (2-6")	2	0	0	2	0	0.46	0.015	2	0	0.11	0.0034
Middle Marsh (6-12")	2	0	0	2	0	0.58	0.015	2	0	0.13	0.0034
Lower Marsh (0-2")	4	1	0	3	0	0.047	0.015	3	0	0.011	0.0034
Lower Marsh (2-6")	4	1	0	3	0	0.038	0.015	3	0	0.0086	0.0034
Lower Marsh (6-12")	4	1	1	2	0	0.088	0.015	2	0	0.020	0.0034
COPPER											
Eastern Upper Marsh (0-2")	23	0	0	2	20	**16**	0.31	2	20	**14**	0.28
Western Upper Marsh (0-2")	19	0	4	0	15	**11**	0.31	0	15	**9.9**	0.28
Eastern Upper Marsh (2-6")	21	0	0	0	20	**20**	0.31	1	19	**18**	0.28
Western Upper Marsh (2-6")	20	0	3	2	15	**39**	0.31	3	14	**35**	0.28
Eastern Upper Marsh (6-12")	21	0	0	1	19	**18**	0.31	1	19	**16**	0.28
Western Upper Marsh (6-12")	20	0	3	1	16	**15**	0.31	2	15	**14**	0.28
Middle Marsh (0-2")	2	0	0	0	2	**6.3**	0.31	0	2	**5.5**	0.28
Middle Marsh (2-6")	2	0	0	0	2	**8.6**	0.31	0	2	**7.5**	0.28
Middle Marsh (6-12")	2	0	0	0	2	**10**	0.31	0	2	**9.1**	0.28
Lower Marsh (0-2")	4	0	2	0	2	**4.1**	0.31	0	2	**3.6**	0.28
Lower Marsh (2-6")	4	0	2	0	2	**4.1**	0.31	0	2	**3.6**	0.28
Lower Marsh (6-12")	4	0	2	0	2	**5.1**	0.31	0	2	**4.5**	0.28

TABLE 4-23: TERRESTRIAL PLANT AND INVERTEBRATE HAZARD QUOTIENT COUNTS AND MAXIMUM HAZARD QUOTIENTS, EU 12 - UPPER MARSH (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

COPEC	All Sediment Samples			Terrestrial Plants				Terrestrial Invertebrates			
	Total Number of Samples Evaluated	Number of Samples with Non-detect Results	Number of Sample Results Detected Below Minimum Reference Site Concentration	Number of HQs <1 (For Sample Results ≥ Minimum Reference Site Concentration)	Number of HQs ≥1 (For Sample Results ≥ Minimum Reference Site Concentration)	Maximum HQ (For Sample Results ≥ Minimum Reference Site Concentration)	Minimum Reference Site HQ	Number of HQs <1 (For Sample Results ≥ Minimum Reference Site Concentration)	Number of HQs ≥1 (For Sample Results ≥ Minimum Reference Site Concentration)	Maximum HQ (For Sample Results ≥ Minimum Reference Site Concentration)	Minimum Reference Site HQ
LEAD											
Eastern Upper Marsh (0-2")	23	0	0	4	18	**19**	0.46	16	6	**1.3**	0.032
Western Upper Marsh (0-2")	19	0	6	6	7	**21**	0.46	11	2	**1.5**	0.032
Eastern Upper Marsh (2-6")	21	0	0	4	16	**26**	0.46	15	5	**1.8**	0.032
Western Upper Marsh (2-6")	20	0	4	9	7	**21**	0.46	15	1	**1.4**	0.032
Eastern Upper Marsh (6-12")	21	0	0	6	14	**35**	0.46	16	4	**2.5**	0.032
Western Upper Marsh (6-12")	20	0	3	10	7	**27**	0.46	16	1	**1.9**	0.032
Middle Marsh (0-2")	2	0	0	0	2	**5.8**	0.46	2	0	0.41	0.032
Middle Marsh (2-6")	2	0	0	0	2	**6.9**	0.46	2	0	0.49	0.032
Middle Marsh (6-12")	2	0	0	0	2	**8.1**	0.46	2	0	0.57	0.032
Lower Marsh (0-2")	4	0	4	0	0	BB	0.46	0	0	BB	0.032
Lower Marsh (2-6")	4	0	4	0	0	BB	0.46	0	0	BB	0.032
Lower Marsh (6-12")	4	0	4	0	0	BB	0.46	0	0	BB	0.032
MANGANESE											
Eastern Upper Marsh (0-2")	23	0	1	2	19	**36**	0.40	4	17	**18**	0.20
Western Upper Marsh (0-2")	19	0	10	3	6	**25**	0.40	3	6	**12**	0.20
Eastern Upper Marsh (2-6")	21	0	0	3	17	**46**	0.40	7	13	**22**	0.20
Western Upper Marsh (2-6")	20	0	10	4	6	**17**	0.40	5	5	**8.5**	0.20
Eastern Upper Marsh (6-12")	21	0	0	5	15	**37**	0.40	8	12	**18**	0.20
Western Upper Marsh (6-12")	20	1	6	6	7	**35**	0.40	9	4	**17**	0.20
Middle Marsh (0-2")	2	0	1	0	1	**9.1**	0.40	0	1	**4.5**	0.20
Middle Marsh (2-6")	2	0	1	0	1	**6.7**	0.40	0	1	**3.3**	0.20
Middle Marsh (6-12")	2	0	1	0	1	**8.1**	0.40	0	1	**4.0**	0.20
Lower Marsh (0-2")	4	0	3	0	1	**9.3**	0.40	0	1	BB	0.20
Lower Marsh (2-6")	4	0	3	0	1	**10**	0.40	0	1	BB	0.20
Lower Marsh (6-12")	4	0	3	0	1	**33**	0.40	0	1	BB	0.20
ZINC											
Eastern Upper Marsh (0-2")	23	0	0	0	22	**26**	0.61	0	22	**34**	0.82
Western Upper Marsh (0-2")	19	1	3	4	11	**18**	0.61	1	14	**24**	0.82
Eastern Upper Marsh (2-6")	21	0	0	0	20	**24**	0.61	0	20	**32**	0.82
Western Upper Marsh (2-6")	20	0	3	4	13	**17**	0.61	2	15	**23**	0.82
Eastern Upper Marsh (6-12")	21	0	1	0	20	**26**	0.61	0	20	**35**	0.82
Western Upper Marsh (6-12")	20	0	4	4	12	**23**	0.61	4	12	**23**	0.82
Middle Marsh (0-2")	2	0	0	0	2	**9.2**	0.61	0	2	**9.2**	0.82
Middle Marsh (2-6")	2	0	0	0	2	**13**	0.61	0	2	**13**	0.82
Middle Marsh (6-12")	2	0	0	0	2	**16**	0.61	0	2	**16**	0.82
Lower Marsh (0-2")	4	0	0	1	3	**3.3**	0.61	1	3	**3.3**	0.82
Lower Marsh (2-6")	4	0	0	1	3	**3.2**	0.61	1	3	**3.2**	0.82
Lower Marsh (6-12")	4	0	1	0	3	**4.6**	0.61	0	3	**4.6**	0.82

TABLE 4-23: TERRESTRIAL PLANT AND INVERTEBRATE HAZARD QUOTIENT COUNTS AND MAXIMUM HAZARD QUOTIENTS, EU 12 - UPPER MARSH (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

COPEC	All Sediment Samples			Terrestrial Plants				Terrestrial Invertebrates			
				Number of HQs <1	Number of HQs ≥1	Maximum HQ		Number of HQs <1	Number of HQs ≥1	Maximum HQ	
	Total Number of Samples Evaluated	Number of Samples with Non-detect Results	Number of Sample Results Detected Below Minimum Reference Site Concentration	For Sample Results ≥ Minimum Reference Site Concentration			Minimum Reference Site HQ	For Sample Results ≥ Minimum Reference Site Concentration			Minimum Reference Site HQ

Notes:

Bold values indicate HQs greater than 1.0.

No screening values exist for aluminum, and all mercury results were non-detect.

HQs were calculated by dividing the site concentration by the plant or invertebrate screening benchmark.

The minimum reference site HQ is the minimum HQ of all reference site locations.

BB	Below minimum background reference site concentration
COPEC	Chemical of potential ecological concern
EU	Exposure Unit
HQ	Hazard quotient

TABLE 4-24: AQUATIC INVERTEBRATE AND FISH HAZARD QUOTIENT COUNTS AND MAXIMUM HAZARD QUOTIENTS FOR ALL RECEPTORS, EU 12 - UPPER MARSH

Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

COPEC	All Sediment Samples			Aquatic Invertebrates and Fish (based on TEL)				Aquatic Invertebrates and Fish (based on PEL)				Aquatic Invertebrates and Fish (based on SEL)			
	Total Number of Samples Evaluated	Number of Samples with Non-detect Results	Number of Sample Results Detected Below Minimum Reference Site Concentration	Number of HQs <1	Number of HQs ≥1	Maximum HQ	Minimum Reference Site HQ	Number of HQs <1	Number of HQs ≥1	Maximum HQ	Minimum Reference Site HQ	Number of HQs <1	Number of HQs ≥1	Maximum HQ	Minimum Reference Site HQ
				For Sample Results ≥ Minimum Reference Site Concentration				For Sample Results ≥ Minimum Reference Site Concentration				For Sample Results ≥ Minimum Reference Site Concentration			
ARSENIC															
Eastern Upper Marsh (0-2")	22	0	2	0	20	**40**	**1.5**	4	16	**14**	0.54	4	16	**7.2**	0.28
Western Upper Marsh (0-2")	19	0	8	0	11	**8.0**	**1.5**	6	5	**2.8**	0.54	9	2	**1.4**	0.28
Eastern Upper Marsh (2-6")	20	0	3	0	17	**86**	**1.5**	2	15	**30**	0.54	3	14	**15**	0.28
Western Upper Marsh (2-6")	20	0	7	0	13	**8.4**	**1.5**	6	7	**2.9**	0.54	11	2	**1.5**	0.28
Eastern Upper Marsh (6-12")	20	0	1	0	19	**31**	**1.5**	6	13	**11**	0.54	9	10	**5.5**	0.28
Western Upper Marsh (6-12")	20	0	7	0	13	**10**	**1.5**	8	5	**3.5**	0.54	11	2	**1.8**	0.28
Middle Marsh (0-2")	2	0	2	0	0	BB	**1.5**	0	0	BB	0.54	0	0	BB	0.28
Middle Marsh (2-6")	2	0	2	0	0	BB	**1.5**	0	0	BB	0.54	0	0	BB	0.28
Middle Marsh (6-12")	2	0	2	0	0	BB	**1.5**	0	0	BB	0.54	0	0	BB	0.28
Lower Marsh (0-2")	4	0	4	0	0	BB	**1.5**	0	0	BB	0.54	0	0	BB	0.28
Lower Marsh (2-6")	4	0	4	0	0	BB	**1.5**	0	0	BB	0.54	0	0	BB	0.28
Lower Marsh (6-12")	4	0	4	0	0	BB	**1.5**	0	0	BB	0.54	0	0	BB	0.28
CADMIUM															
Eastern Upper Marsh (0-2")	22	0	0	0	22	**39**	0.79	6	16	**6.5**	0.13	12	10	**2.3**	0.047
Western Upper Marsh (0-2")	19	2	2	1	14	**30**	0.79	9	6	**5.1**	0.13	12	3	**1.8**	0.047
Eastern Upper Marsh (2-6")	20	1	0	0	19	**58**	0.79	7	12	**9.8**	0.13	12	7	**3.5**	0.047
Western Upper Marsh (2-6")	20	3	1	1	15	**130**	0.79	11	5	**22**	0.13	12	4	**7.8**	0.047
Eastern Upper Marsh (6-12")	20	0	0	0	20	**46**	0.79	10	10	**7.7**	0.13	13	7	**2.7**	0.047
Western Upper Marsh (6-12")	20	2	5	1	12	**39**	0.79	8	5	**6.7**	0.13	10	3	**2.4**	0.047
Middle Marsh (0-2")	2	0	0	0	2	**16**	0.79	1	1	**2.7**	0.13	2	0	0.95	0.047
Middle Marsh (2-6")	2	0	0	0	2	**25**	0.79	1	1	**4.2**	0.13	1	1	**1.5**	0.047
Middle Marsh (6-12")	2	0	0	0	2	**31**	0.79	1	1	**5.2**	0.13	1	1	**1.8**	0.047
Lower Marsh (0-2")	4	1	0	0	3	**2.5**	0.79	3	0	0.42	0.13	3	0	0.15	0.047
Lower Marsh (2-6")	4	1	0	0	3	**2.0**	0.79	3	0	0.34	0.13	3	0	0.12	0.047
Lower Marsh (6-12")	4	1	1	0	2	**4.7**	0.79	2	0	0.79	0.13	2	0	0.28	0.047
COPPER															
Eastern Upper Marsh (0-2")	22	0	0	0	22	**31**	0.62	3	19	**5.7**	0.11	3	19	**10**	0.20
Western Upper Marsh (0-2")	19	0	4	0	15	**22**	0.62	9	6	**4**	0.11	5	10	**7.2**	0.20
Eastern Upper Marsh (2-6")	20	0	0	0	20	**40**	0.62	7	13	**7.2**	0.11	5	15	**13**	0.20
Western Upper Marsh (2-6")	20	0	3	0	17	**77**	0.62	9	8	**14**	0.11	6	11	**25**	0.20
Eastern Upper Marsh (6-12")	20	0	0	1	19	**35**	0.62	9	11	**6.3**	0.11	6	14	**11**	0.20
Western Upper Marsh (6-12")	20	0	3	0	17	**30**	0.62	9	8	**5.5**	0.11	4	13	**9.8**	0.20
Middle Marsh (0-2")	2	0	0	0	2	**12**	0.62	0	2	**2.2**	0.11	0	2	**4.0**	0.20
Middle Marsh (2-6")	2	0	0	0	2	**17**	0.62	0	2	**3.0**	0.11	0	2	**5.5**	0.20
Middle Marsh (6-12")	2	0	0	0	2	**20**	0.62	0	2	**3.7**	0.11	0	2	**6.6**	0.20
Lower Marsh (0-2")	4	0	2	0	2	**8.0**	0.62	0	2	**1.5**	0.11	0	2	**2.6**	0.20
Lower Marsh (2-6")	4	0	2	0	2	**8.0**	0.62	0	2	**1.4**	0.11	0	2	**2.6**	0.20
Lower Marsh (6-12")	4	0	2	0	2	**10**	0.62	0	2	**1.8**	0.11	0	2	**3.3**	0.20

TABLE 4-24: AQUATIC INVERTEBRATE AND FISH HAZARD QUOTIENT COUNTS AND MAXIMUM HAZARD QUOTIENTS FOR ALL RECEPTORS, EU 12 - UPPER MARSH (Continued)

Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

COPEC	All Sediment Samples			Aquatic Invertebrates and Fish (based on TEL)				Aquatic Invertebrates and Fish (based on PEL)				Aquatic Invertebrates and Fish (based on SEL)			
	Total Number of Samples Evaluated	Number of Samples with Non-detect Results	Number of Sample Results Detected Below Minimum Reference Site Concentration	Number of HQs <1	Number of HQs ≥1	Maximum HQ	Minimum Reference Site HQ	Number of HQs <1	Number of HQs ≥1	Maximum HQ	Minimum Reference Site HQ	Number of HQs <1	Number of HQs ≥1	Maximum HQ	Minimum Reference Site HQ
				For Sample Results ≥ Minimum Reference Site Concentration				For Sample Results ≥ Minimum Reference Site Concentration				For Sample Results ≥ Minimum Reference Site Concentration			
LEAD															
Eastern Upper Marsh (0-2")	22	0	0	0	22	**64**	**1.6**	2	20	**25**	0.60	5	17	**9.0**	0.22
Western Upper Marsh (0-2")	19	0	6	0	13	**71**	**1.6**	2	11	**27**	0.60	9	4	**9.9**	0.22
Eastern Upper Marsh (2-6")	20	0	0	0	20	**89**	**1.6**	1	19	**34**	0.60	6	14	**13**	0.22
Western Upper Marsh (2-6")	20	0	4	0	16	**70**	**1.6**	3	13	**27**	0.60	10	6	**9.8**	0.22
Eastern Upper Marsh (6-12")	20	0	0	0	20	**120**	**1.6**	4	16	**46**	0.60	8	12	**17**	0.22
Western Upper Marsh (6-12")	20	0	3	0	17	**94**	**1.6**	2	15	**36**	0.60	12	5	**13.0**	0.22
Middle Marsh (0-2")	2	0	0	0	2	**20**	**1.6**	0	2	**7.6**	0.60	0	2	**2.8**	0.22
Middle Marsh (2-6")	2	0	0	0	2	**24**	**1.6**	0	2	**9.1**	0.60	0	2	**3.3**	0.22
Middle Marsh (6-12")	2	0	0	0	2	**28**	**1.6**	0	2	**11**	0.60	0	2	**3.9**	0.22
Lower Marsh (0-2")	4	0	4	0	0	BB	**1.6**	0	0	BB	0.60	0	0	BB	0.22
Lower Marsh (2-6")	4	0	4	0	0	BB	**1.6**	0	0	BB	0.60	0	0	BB	0.22
Lower Marsh (6-12")	4	0	4	0	0	BB	**1.6**	0	0	BB	0.60	0	0	BB	0.22
MANGANESE*															
Eastern Upper Marsh (0-2")	22	0	1	4	17	**17**	0.19	NA	NA	NA	NA	6	15	**7.3**	0.080
Western Upper Marsh (0-2")	19	0	10	3	6	**12**	0.19	NA	NA	NA	NA	4	5	**5.0**	0.080
Eastern Upper Marsh (2-6")	20	0	0	7	13	**22**	0.19	NA	NA	NA	NA	9	11	**9.2**	0.080
Western Upper Marsh (2-6")	20	0	10	5	5	**8.3**	0.19	NA	NA	NA	NA	5	5	**3.5**	0.080
Eastern Upper Marsh (6-12")	20	0	0	8	12	**18**	0.19	NA	NA	NA	NA	10	10	**7.4**	0.080
Western Upper Marsh (6-12")	20	1	6	9	4	**17**	0.19	NA	NA	NA	NA	9	4	**7.0**	0.080
Middle Marsh (0-2")	2	0	1	0	1	**4.4**	0.19	NA	NA	NA	NA	0	1	**1.8**	0.080
Middle Marsh (2-6")	2	0	1	0	1	**3.2**	0.19	NA	NA	NA	NA	0	1	**1.3**	0.080
Middle Marsh (6-12")	2	0	1	0	1	**3.9**	0.19	NA	NA	NA	NA	0	1	**1.6**	0.080
Lower Marsh (0-2")	4	0	3	0	1	**4.4**	0.19	NA	NA	NA	NA	0	1	**1.9**	0.080
Lower Marsh (2-6")	4	0	3	0	1	**5.0**	0.19	NA	NA	NA	NA	0	1	**2.1**	0.080
Lower Marsh (6-12")	4	0	3	0	1	**16**	0.19	NA	NA	NA	NA	0	1	**6.5**	0.080
ZINC															
Eastern Upper Marsh (0-2")	22	0	0	0	22	**33**	0.80	3	19	**13**	0.31	4	18	**5.0**	0.12
Western Upper Marsh (0-2")	19	1	3	1	14	**23**	0.80	8	7	**9.1**	0.31	12	3	**3.5**	0.12
Eastern Upper Marsh (2-6")	20	0	0	0	20	**32**	0.80	4	16	**12**	0.31	8	12	**4.7**	0.12
Western Upper Marsh (2-6")	20	0	3	2	15	**22**	0.80	11	6	**8.8**	0.31	12	5	**3.4**	0.12
Eastern Upper Marsh (6-12")	20	0	0	0	20	**34**	0.80	4	16	**13**	0.31	10	10	**5.1**	0.12
Western Upper Marsh (6-12")	20	0	4	3	13	**29**	0.80	8	8	**11**	0.31	11	5	**4.4**	0.12
Middle Marsh (0-2")	2	0	0	0	2	**12**	0.80	0	2	**4.7**	0.31	1	1	**1.8**	0.12
Middle Marsh (2-6")	2	0	0	0	2	**17**	0.80	0	2	**6.5**	0.31	1	1	**2.5**	0.12
Middle Marsh (6-12")	2	0	0	0	2	**21**	0.80	0	2	**8.2**	0.31	1	1	**3.2**	0.12
Lower Marsh (0-2")	4	0	0	1	3	**4.2**	0.80	1	3	**1.7**	0.31	4	0	0.64	0.12
Lower Marsh (2-6")	4	0	0	1	3	**4.2**	0.80	1	3	**1.6**	0.31	4	0	0.62	0.12
Lower Marsh (6-12")	4	0	1	0	3	**6.0**	0.80	1	2	**2.3**	0.31	3	0	0.90	0.12

TABLE 4-24: AQUATIC INVERTEBRATE AND FISH HAZARD QUOTIENT COUNTS AND MAXIMUM HAZARD QUOTIENTS FOR ALL RECEPTORS, EU 12 - UPPER MARSH (Continued)

Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

COPEC	All Sediment Samples			Aquatic Invertebrates and Fish (based on TEL)				Aquatic Invertebrates and Fish (based on PEL)				Aquatic Invertebrates and Fish (based on SEL)			
	Total Number of Samples Evaluated	Number of Samples with Non-detect Results	Number of Sample Results Detected Below Minimum Reference Site Concentration	Number of HQs <1	Number of HQs ≥1	Maximum HQ	Minimum Reference Site HQ	Number of HQs <1	Number of HQs ≥1	Maximum HQ	Minimum Reference Site HQ	Number of HQs <1	Number of HQs ≥1	Maximum HQ	Minimum Reference Site HQ
				For Sample Results ≥ Minimum Reference Site Concentration				For Sample Results ≥ Minimum Reference Site Concentration				For Sample Results ≥ Minimum Reference Site Concentration			

Notes:

* The LEL is substituted for the TEL for manganese. A PEL is not available for manganese.

Bold values indicate HQs greater than 1.0.

No screening values exist for aluminum, and all mercury results were non-detect.

HQs were calculated by dividing the site concentration by the invertebrate screening benchmark.

The minimum reference site HQ is the minimum HQ of all reference site locations.

COPEC	Chemical of potential ecological concern
EU	Exposure Unit
HQ	Hazard quotient
LEL	Lowest effect level - the level of sediment contamination that can be tolerated by the majoirty of benthic organisms.
PEL	Probable effect level - the level above which adverse effects are expected to occur frequently.
SEL	Severe effect level - the level of sediment contamination at which pronounced disturbance of the sediment-dwelling community can be expected; the concentration that would be detrimental to the majority of the benthic community.
TEL	Threshold effect level - the level of sediment contamination below which adverse biological effects are expected to occur rarely.

TABLE 4-25: HAZARD QUOTIENT COUNTS AND MAXIMUM HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 12 - MARSH
Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

	All Receptors			Mourning Dove (Herbivore)				Red-Tailed Hawk (Carnivore)				American Kestral (Insectivore)			
COPEC / Area	Total Number of Samples Evaluated	Number of Samples with Non-Detect Results	Number of Sample Results Detected Below Minimum Reference Site Concentration	Number of HQs <1	Number of HQs ≥1	Maximum HQ	Minimum Reference Site HQ	Number of HQs <1	Number of HQs ≥1	Maximum HQ	Minimum Reference Site HQ	Number of HQs <1	Number of HQs ≥1	Maximum HQ	Minimum Reference Site HQ
				For Sample Results ≥ Minimum Reference Site Concentration				For Sample Results ≥ Minimum Reference Site Concentration				For Sample Results ≥ Minimum Reference Site Concentration			
ALUMINUM															
Eastern Upper Marsh (0-2")	8	0	5	3	0	6.00E-02	2.03E-02	3	0	1.31E-02	4.68E-03	2	1	**1.11E+00**	4.91E-01
Western Upper Marsh (0-2")	8	0	3	5	0	5.60E-02	2.03E-02	5	0	1.84E-02	4.68E-03	2	3	**1.51E+00**	4.91E-01
Eastern Upper Marsh (2-6")	8	0	5	3	0	6.32E-02	2.03E-02	3	0	1.38E-02	4.68E-03	2	1	**1.17E+00**	4.91E-01
Western Upper Marsh (2-6")	8	0	1	7	0	3.88E-02	2.03E-02	7	0	1.28E-02	4.68E-03	6	1	**1.05E+00**	4.91E-01
Eastern Upper Marsh (6-12")	8	0	4	4	0	5.89E-02	2.03E-02	4	0	1.29E-02	4.68E-03	3	1	**1.09E+00**	4.91E-01
Western Upper Marsh (6-12")	8	0	1	7	0	4.07E-02	2.03E-02	7	0	1.34E-02	4.68E-03	5	2	**1.10E+00**	4.91E-01
Middle Marsh (0-2")	2	0	0	2	0	2.91E-02	2.03E-02	2	0	9.56E-03	4.68E-03	2	0	7.84E-01	4.91E-01
Middle Marsh (2-6")	2	0	0	2	0	2.95E-02	2.03E-02	2	0	9.72E-03	4.68E-03	2	0	7.97E-01	4.91E-01
Middle Marsh (6-12")	2	0	0	2	0	3.03E-02	2.03E-02	2	0	9.95E-03	4.68E-03	2	0	8.16E-01	4.91E-01
Lower Marsh (0-2")	4	0	0	4	0	7.58E-02	2.03E-02	4	0	1.65E-02	4.68E-03	1	3	**1.36E+00**	4.91E-01
Lower Marsh (2-6")	4	0	0	4	0	7.33E-02	2.03E-02	4	0	1.60E-02	4.68E-03	2	2	**1.31E+00**	4.91E-01
Lower Marsh (6-12")	4	0	0	4	0	7.15E-02	2.03E-02	4	0	1.60E-02	4.68E-03	1	3	**1.28E+00**	4.91E-01
ARSENIC															
Eastern Upper Marsh (0-2")	23	0	2	20	0	9.52E-03	3.65E-04	20	0	1.04E-02	7.82E-05	11	9	**1.8E+00**	2.46E-02
Western Upper Marsh (0-2")	19	0	8	11	0	1.89E-03	3.65E-04	11	0	2.07E-03	7.82E-05	10	0	9.9E-02	2.46E-02
Eastern Upper Marsh (2-6")	21	0	3	16	0	2.03E-02	3.65E-04	17	0	2.22E-02	7.82E-05	11	6	**3.8E+00**	2.46E-02
Western Upper Marsh (2-6")	20	0	7	13	0	1.98E-03	3.65E-04	13	0	2.17E-03	7.82E-05	13	0	1.0E-01	2.46E-02
Eastern Upper Marsh (6-12")	21	0	1	19	0	7.32E-03	3.65E-04	19	0	8.03E-03	7.82E-05	16	3	**1.4E+00**	2.46E-02
Western Upper Marsh (6-12")	20	0	7	13	0	2.36E-03	3.65E-04	13	0	2.59E-03	7.82E-05	13	0	1.2E-01	2.46E-02
Middle Marsh (0-2")	2	0	0	2	0	8.80E-04	3.65E-04	2	0	9.65E-04	7.82E-05	2	0	4.6E-02	2.46E-02
Middle Marsh (2-6")	2	0	0	2	0	9.20E-04	3.65E-04	2	0	1.01E-03	7.82E-05	2	0	4.8E-02	2.46E-02
Middle Marsh (6-12")	2	0	0	2	0	9.60E-04	3.65E-04	2	0	1.05E-03	7.82E-05	2	0	5.0E-02	2.46E-02
Lower Marsh (0-2")	4	0	2	2	0	9.60E-04	3.65E-04	2	0	1.05E-03	7.82E-05	2	0	5.0E-02	2.46E-02
Lower Marsh (2-6")	4	0	2	2	0	9.20E-04	3.65E-04	2	0	1.01E-03	7.82E-05	2	0	4.8E-02	2.46E-02
Lower Marsh (6-12")	4	0	2	2	#REF!	#REF!	3.65E-04	2	0	1.01E-03	7.82E-05	2	0	5.2E-02	2.46E-02
CADMIUM															
Eastern Upper Marsh (0-2")	23	0	0	16	5	**1.91E+00**	9.35E-02	22	0	1.18E-01	3.63E-04	0	22	**9.9E+01**	**1.20E+00**
Western Upper Marsh (0-2")	19	2	2	10	3	**1.43E+00**	9.35E-02	13	0	9.23E-02	3.63E-04	0	13	**4.5E+01**	**1.20E+00**
Eastern Upper Marsh (2-6")	21	1	0	12	7	**2.87E+00**	9.35E-02	19	0	1.78E-01	3.63E-04	0	19	**1.5E+02**	**1.20E+00**
Western Upper Marsh (2-6")	20	3	1	11	3	**6.18E+00**	9.35E-02	14	0	4.00E-01	3.63E-04	0	14	**1.9E+02**	**1.20E+00**
Eastern Upper Marsh (6-12")	21	0	1	13	7	**2.25E+00**	9.35E-02	20	0	1.40E-01	3.63E-04	0	20	**1.2E+02**	**1.20E+00**
Western Upper Marsh (6-12")	20	2	5	9	3	**1.86E+00**	9.35E-02	12	0	1.21E-01	3.63E-04	0	12	**5.8E+01**	**1.20E+00**
Middle Marsh (0-2")	2	0	0	2	0	7.53E-01	9.35E-02	2	0	4.87E-02	3.63E-04	0	2	**2.4E+01**	**1.20E+00**
Middle Marsh (2-6")	2	0	0	1	1	**1.17E+00**	9.35E-02	2	0	7.59E-02	3.63E-04	0	2	**3.7E+01**	**1.20E+00**
Middle Marsh (6-12")	2	0	0	1	1	**1.46E+00**	9.35E-02	2	0	9.44E-02	3.63E-04	0	2	**4.6E+01**	**1.20E+00**
Lower Marsh (0-2")	4	1	0	3	0	1.24E-01	9.35E-02	3	0	7.69E-03	3.63E-04	0	3	**3.7E+00**	**1.20E+00**
Lower Marsh (2-6")	4	1	0	3	0	9.94E-02	9.35E-02	3	0	6.15E-03	3.63E-04	0	3	**3.0E+00**	**1.20E+00**
Lower Marsh (6-12")	4	1	1	2	0	2.32E-01	9.35E-02	2	0	6.15E-03	3.63E-04	0	2	**6.9E+00**	**1.20E+00**
COPPER															
Eastern Upper Marsh (0-2")	23	0	0	22	0	2.86E-01	2.01E-02	22	0	4.63E-02	4.54E-03	0	22	**2.0E+01**	3.39E-01
Western Upper Marsh (0-2")	19	0	4	15	0	1.37E-01	2.01E-02	15	0	3.26E-02	4.54E-03	5	10	**6.1E+00**	3.39E-01
Eastern Upper Marsh (2-6")	21	0	0	20	0	3.62E-01	2.01E-02	20	0	5.87E-02	4.54E-03	0	20	**2.5E+01**	3.39E-01
Western Upper Marsh (2-6")	20	0	3	17	0	4.81E-01	2.01E-02	17	0	1.14E-01	4.54E-03	6	11	**2.1E+01**	3.39E-01
Eastern Upper Marsh (6-12")	21	0	0	20	0	3.16E-01	2.01E-02	20	0	5.13E-02	4.54E-03	1	19	**2.2E+01**	3.39E-01
Western Upper Marsh (6-12")	20	0	3	17	0	1.88E-01	2.01E-02	17	0	4.47E-02	4.54E-03	6	11	**8.4E+00**	3.39E-01
Middle Marsh (0-2")	2	0	0	2	0	7.63E-02	2.01E-02	2	0	1.81E-02	4.54E-03	0	2	**3.4E+00**	3.39E-01
Middle Marsh (2-6")	2	0	0	2	0	1.05E-01	2.01E-02	2	0	2.48E-02	4.54E-03	0	2	**4.7E+00**	3.39E-01
Middle Marsh (6-12")	2	0	0	2	0	1.26E-01	2.01E-02	2	0	3.00E-02	4.54E-03	0	2	**5.6E+00**	3.39E-01
Lower Marsh (0-2")	4	0	0	4	0	7.32E-02	2.01E-02	4	0	1.19E-02	4.54E-03	2	2	**2.2E+00**	3.39E-01
Lower Marsh (2-6")	4	0	0	4	0	7.27E-02	2.01E-02	4	0	1.18E-02	4.54E-03	2	2	**2.2E+00**	3.39E-01
Lower Marsh (6-12")	4	0	0	4	0	9.19E-02	2.01E-02	4	0	1.18E-02	4.54E-03	2	2	**2.8E+00**	3.39E-01

TABLE 4-25: HAZARD QUOTIENT COUNTS AND MAXIMUM HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 12 - MARSH
Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

	All Receptors			Mourning Dove (Herbivore)				Red-Tailed Hawk (Carnivore)				American Kestral (Insectivore)			
				Number of HQs <1	Number of HQs ≥1	Maximum HQ		Number of HQs <1	Number of HQs ≥1	Maximum HQ		Number of HQs <1	Number of HQs ≥1	Maximum HQ	
COPEC / Area	Total Number of Samples Evaluated	Number of Samples with Non-Detect Results	Number of Sample Results Detected Below Minimum Reference Site Concentration	For Sample Results ≥ Minimum Reference Site Concentration			Minimum Reference Site HQ	For Sample Results ≥ Minimum Reference Site Concentration			Minimum Reference Site HQ	For Sample Results ≥ Minimum Reference Site Concentration			Minimum Reference Site HQ
LEAD															
Eastern Upper Marsh (0-2")	23	0	0	7	15	**2.62E+00**	2.11E-02	22	0	5.82E-01	1.40E-02	0	22	**5.5E+02**	**1.05E+00**
Western Upper Marsh (0-2")	19	0	6	11	2	**2.30E+00**	2.11E-02	13	0	6.45E-01	1.40E-02	0	13	**1.8E+02**	**1.05E+00**
Eastern Upper Marsh (2-6")	21	0	0	8	12	**3.66E+00**	2.11E-02	20	0	8.13E-01	1.40E-02	0	20	**7.7E+02**	**1.05E+00**
Western Upper Marsh (2-6")	20	0	4	14	2	**2.28E+00**	2.11E-02	16	0	6.39E-01	1.40E-02	0	16	**1.8E+02**	**1.05E+00**
Eastern Upper Marsh (6-12")	21	0	0	11	9	**4.93E+00**	2.11E-02	19	1	**1.10E+00**	1.40E-02	0	20	**1.0E+03**	**1.05E+00**
Western Upper Marsh (6-12")	20	0	3	15	2	**3.04E+00**	2.11E-02	17	0	8.52E-01	1.40E-02	0	17	**2.4E+02**	**1.05E+00**
Middle Marsh (0-2")	2	0	0	2	0	6.44E-01	2.11E-02	2	0	1.81E-01	1.40E-02	0	2	**5.1E+01**	**1.05E+00**
Middle Marsh (2-6")	2	0	0	2	0	7.67E-01	2.11E-02	2	0	2.15E-01	1.40E-02	0	2	**6.0E+01**	**1.05E+00**
Middle Marsh (6-12")	2	0	0	2	0	8.95E-01	2.11E-02	2	0	2.51E-01	1.40E-02	0	2	**7.0E+01**	**1.05E+00**
Lower Marsh (0-2")	4	0	2	2	0	1.05E-01	2.11E-02	2	0	2.34E-02	1.40E-02	0	2	**6.5E+00**	**1.05E+00**
Lower Marsh (2-6")	4	0	2	2	0	1.02E-01	2.11E-02	2	0	2.26E-02	1.40E-02	0	2	**6.3E+00**	**1.05E+00**
Lower Marsh (6-12")	4	0	2	2	0	9.82E-02	2.11E-02	2	0	2.26E-02	1.40E-02	0	2	**6.1E+00**	**1.05E+00**
MANGANESE															
Eastern Upper Marsh (0-2")	23	0	1	19	2	**1.04E+00**	1.03E-02	21	0	2.58E-02	1.84E-04	4	17	**2.0E+01**	8.36E-02
Western Upper Marsh (0-2")	19	0	10	9	0	9.99E-01	1.03E-02	9	0	1.79E-02	1.84E-04	4	5	**1.1E+01**	8.36E-02
Eastern Upper Marsh (2-6")	21	0	0	17	3	**1.31E+00**	1.03E-02	20	0	3.27E-02	1.84E-04	5	15	**2.5E+01**	8.36E-02
Western Upper Marsh (2-6")	20	0	10	10	0	6.88E-01	1.03E-02	10	0	1.24E-02	1.84E-04	5	5	**7.4E+00**	8.36E-02
Eastern Upper Marsh (6-12")	21	0	0	19	1	**1.06E+00**	1.03E-02	20	0	2.64E-02	1.84E-04	8	12	**2.0E+01**	8.36E-02
Western Upper Marsh (6-12")	20	1	6	12	1	**1.38E+00**	1.03E-02	13	0	2.48E-02	1.84E-04	9	4	**1.5E+01**	8.36E-02
Middle Marsh (0-2")	2	0	0	2	0	3.62E-01	1.03E-02	2	0	6.50E-03	1.84E-04	1	1	**3.9E+00**	8.36E-02
Middle Marsh (2-6")	2	0	0	2	0	2.66E-01	1.03E-02	2	0	4.79E-03	1.84E-04	1	1	**2.9E+00**	8.36E-02
Middle Marsh (6-12")	2	0	0	2	0	3.20E-01	1.03E-02	2	0	5.76E-03	1.84E-04	1	1	**3.5E+00**	8.36E-02
Lower Marsh (0-2")	4	0	1	3	0	2.65E-01	1.03E-02	3	0	6.60E-03	1.84E-04	2	1	**4.0E+00**	8.36E-02
Lower Marsh (2-6")	4	0	1	3	0	2.99E-01	1.03E-02	3	0	7.44E-03	1.84E-04	2	1	**4.5E+00**	8.36E-02
Lower Marsh (6-12")	4	0	1	3	0	9.33E-01	1.03E-02	3	0	7.44E-03	1.84E-04	1	2	**1.4E+01**	8.36E-02
ZINC															
Eastern Upper Marsh (0-2")	23	0	0	15	7	**2.14E+00**	4.42E-02	22	0	3.60E-01	4.10E-02	0	22	**4.3E+01**	4.73E-01
Western Upper Marsh (0-2")	19	1	3	9	3	**1.40E+00**	4.42E-02	12	0	2.53E-01	4.10E-02	0	12	**2.3E+01**	4.73E-01
Eastern Upper Marsh (2-6")	21	0	0	13	7	**2.04E+00**	4.42E-02	20	0	3.43E-01	4.10E-02	0	20	**4.1E+01**	4.73E-01
Western Upper Marsh (2-6")	20	0	3	12	3	**1.34E+00**	4.42E-02	15	0	2.43E-01	4.10E-02	0	15	**2.2E+01**	4.73E-01
Eastern Upper Marsh (6-12")	21	0	1	15	5	**2.21E+00**	4.42E-02	20	0	3.72E-01	4.10E-02	0	20	**4.5E+01**	4.73E-01
Western Upper Marsh (6-12")	20	0	4	11	2	**1.76E+00**	4.42E-02	13	0	3.19E-01	4.10E-02	0	13	**2.8E+01**	4.73E-01
Middle Marsh (0-2")	2	0	0	2	0	7.15E-01	4.42E-02	2	0	1.30E-01	4.10E-02	0	2	**1.2E+01**	4.73E-01
Middle Marsh (2-6")	2	0	0	1	1	**1.00E+00**	4.42E-02	2	0	1.82E-01	4.10E-02	0	2	**1.6E+01**	4.73E-01
Middle Marsh (6-12")	2	0	0	1	1	**1.26E+00**	4.42E-02	2	0	2.28E-01	4.10E-02	0	2	**2.0E+01**	4.73E-01
Lower Marsh (0-2")	4	0	0	4	0	2.73E-01	4.42E-02	4	0	4.59E-02	4.10E-02	1	3	**4.1E+00**	4.73E-01
Lower Marsh (2-6")	4	0	0	4	0	2.68E-01	4.42E-02	4	0	4.51E-02	4.10E-02	1	3	**4.0E+00**	4.73E-01
Lower Marsh (6-12")	4	0	1	3	0	3.88E-01	4.42E-02	3	0	4.51E-02	4.10E-02	0	3	**5.8E+00**	4.73E-01

TABLE 4-25: HAZARD QUOTIENT COUNTS AND MAXIMUM HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 12 - UPPER MARSH (Continued)
Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

	Meadow Vole (Herbivore)				White-Tailed Deer (Herbivore)				Red Fox (Carnivore)			
	Number of HQs <1	Number of HQs ≥1	Maximum HQ	Minimum Reference Site HQ	Number of HQs <1	Number of HQs ≥1	Maximum HQ	Minimum Reference Site HQ	Number of HQs <1	Number of HQs ≥1	Maximum HQ	Minimum Reference Site HQ
COPEC / Area	For Sample Results ≥ Minimum Reference Site Concentration				For Sample Results ≥ Minimum Reference Site Concentration				For Sample Results ≥ Minimum Reference Site Concentration			
ALUMINUM												
Eastern Upper Marsh (0-2")	0	3	**1.10E+01**	**2.72E+00**	3	0	7.96E-01	1.88E-01	3	0	2.55E-01	8.09E-02
Western Upper Marsh (0-2")	0	5	**7.11E+00**	**2.72E+00**	4	1	**1.11E+00**	1.88E-01	5	0	3.59E-01	8.09E-02
Eastern Upper Marsh (2-6")	0	3	**1.16E+01**	**2.72E+00**	3	0	8.39E-01	1.88E-01	3	0	2.69E-01	8.09E-02
Western Upper Marsh (2-6")	0	7	**6.98E+00**	**2.72E+00**	7	0	5.05E-01	1.88E-01	7	0	2.49E-01	8.09E-02
Eastern Upper Marsh (6-12")	0	4	**1.08E+01**	**2.72E+00**	3	0	7.82E-01	1.88E-01	4	0	2.50E-01	8.09E-02
Western Upper Marsh (6-12")	0	7	**1.13E+01**	**2.72E+00**	7	0	8.15E-01	1.88E-01	7	0	2.61E-01	8.09E-02
Middle Marsh (0-2")	2	0	3.71E-01	**2.72E+00**	2	0	2.05E-01	1.88E-01	2	0	1.86E-01	8.09E-02
Middle Marsh (2-6")	2	0	5.20E-01	**2.72E+00**	2	0	2.08E-01	1.88E-01	2	0	1.89E-01	8.09E-02
Middle Marsh (6-12")	2	0	6.54E-01	**2.72E+00**	2	0	2.13E-01	1.88E-01	2	0	1.94E-01	8.09E-02
Lower Marsh (0-2")	4	0	1.31E-01	**2.72E+00**	4	0	3.54E-01	1.88E-01	4	0	3.22E-01	8.09E-02
Lower Marsh (2-6")	4	0	1.29E-01	**2.72E+00**	4	0	3.42E-01	1.88E-01	4	0	3.11E-01	8.09E-02
Lower Marsh (6-12")	3	1	**1.03E+01**	**2.72E+00**	4	0	7.49E-01	1.88E-01	4	0	3.04E-01	8.09E-02
ARSENIC												
Eastern Upper Marsh (0-2")	20	0	1.7E-01	6.61E-03	20	0	2.66E-03	1.02E-04	20	0	1.34E-02	5.48E-05
Western Upper Marsh (0-2")	11	0	3.4E-02	6.61E-03	11	0	5.28E-04	1.02E-04	11	0	2.66E-03	5.48E-05
Eastern Upper Marsh (2-6")	17	0	3.7E-01	6.61E-03	17	0	5.67E-03	1.02E-04	17	0	2.86E-02	5.48E-05
Western Upper Marsh (2-6")	13	0	3.6E-02	6.61E-03	13	0	5.52E-04	1.02E-04	13	0	2.79E-03	5.48E-05
Eastern Upper Marsh (6-12")	19	0	1.3E-01	6.61E-03	19	0	2.05E-03	1.02E-04	19	0	1.03E-02	5.48E-05
Western Upper Marsh (6-12")	13	0	4.3E-02	6.61E-03	13	0	6.60E-04	1.02E-04	13	0	3.33E-03	5.48E-05
Middle Marsh (0-2")	2	0	1.6E-02	6.61E-03	2	0	2.46E-04	1.02E-04	2	0	1.24E-03	5.48E-05
Middle Marsh (2-6")	2	0	1.7E-02	6.61E-03	2	0	2.57E-04	1.02E-04	2	0	1.30E-03	5.48E-05
Middle Marsh (6-12")	2	0	1.7E-02	6.61E-03	2	0	2.68E-04	1.02E-04	2	0	1.35E-03	5.48E-05
Lower Marsh (0-2")	2	0	1.7E-02	6.61E-03	2	0	2.68E-04	1.02E-04	2	0	1.35E-03	5.48E-05
Lower Marsh (2-6")	2	0	1.7E-02	6.61E-03	2	0	2.57E-04	1.02E-04	2	0	1.30E-03	5.48E-05
Lower Marsh (6-12")	2	0	1.8E-02	6.61E-03	2	0	2.79E-04	1.02E-04	2	0	1.41E-03	5.48E-05
CADMIUM												
Eastern Upper Marsh (0-2")	11	11	**2.8E+00**	1.39E-01	22	0	2.11E-01	1.05E-02	22	0	1.37E-02	2.23E-05
Western Upper Marsh (0-2")	10	3	**2.1E+00**	1.39E-01	13	0	1.57E-01	1.05E-02	13	0	1.07E-02	2.23E-05
Eastern Upper Marsh (2-6")	8	11	**4.2E+00**	1.39E-01	19	0	3.17E-01	1.05E-02	19	0	2.06E-02	2.23E-05
Western Upper Marsh (2-6")	10	4	**9.0E+00**	1.39E-01	14	0	6.81E-01	1.05E-02	14	0	4.63E-02	2.23E-05
Eastern Upper Marsh (6-12")	12	7	**2.2E+00**	1.39E-01	20	0	2.49E-01	1.05E-02	20	0	2.49E-01	2.23E-05
Western Upper Marsh (6-12")	9	3	**2.7E+00**	1.39E-01	12	0	2.05E-01	1.05E-02	12	0	1.40E-02	2.23E-05
Middle Marsh (0-2")	1	1	**1.1E+00**	1.39E-01	2	0	8.29E-02	1.05E-02	2	0	5.64E-03	2.23E-05
Middle Marsh (2-6")	1	1	**1.7E+00**	1.39E-01	2	0	1.29E-01	1.05E-02	2	0	8.79E-03	2.23E-05
Middle Marsh (6-12")	1	1	**2.1E+00**	1.39E-01	2	0	1.61E-01	1.05E-02	2	0	1.09E-02	2.23E-05
Lower Marsh (0-2")	3	0	1.7E-01	1.39E-01	3	0	1.31E-02	1.05E-02	3	0	8.91E-04	2.23E-05
Lower Marsh (2-6")	3	0	1.4E-01	1.39E-01	3	0	1.05E-02	1.05E-02	3	0	7.13E-04	2.23E-05
Lower Marsh (6-12")	2	0	3.2E-01	1.39E-01	2	0	2.44E-02	1.05E-02	2	0	1.66E-03	2.23E-05
COPPER												
Eastern Upper Marsh (0-2")	22	0	9.8E-02	7.83E-03	22	0	7.33E-03	5.94E-04	22	0	1.34E-03	1.50E-04
Western Upper Marsh (0-2")	15	0	4.3E-02	7.83E-03	15	0	3.18E-03	5.94E-04	15	0	9.45E-04	1.50E-04
Eastern Upper Marsh (2-6")	20	0	1.2E-01	7.83E-03	20	0	9.30E-03	5.94E-04	20	0	1.70E-03	1.50E-04
Western Upper Marsh (2-6")	17	0	1.5E-01	7.83E-03	17	0	1.11E-02	5.94E-04	17	0	3.31E-03	1.50E-04
Eastern Upper Marsh (6-12")	20	0	1.1E-01	7.83E-03	20	0	8.12E-03	5.94E-04	20	0	1.49E-03	1.50E-04
Western Upper Marsh (6-12")	17	0	5.8E-02	7.83E-03	17	0	4.36E-03	5.94E-04	17	0	1.30E-03	1.50E-04
Middle Marsh (0-2")	2	0	2.4E-02	7.83E-03	2	0	1.77E-03	5.94E-04	2	0	5.25E-04	1.50E-04
Middle Marsh (2-6")	2	0	3.2E-02	7.83E-03	2	0	2.42E-03	5.94E-04	2	0	7.20E-04	1.50E-04
Middle Marsh (6-12")	2	0	3.9E-02	7.83E-03	2	0	2.93E-03	5.94E-04	2	0	8.71E-04	1.50E-04
Lower Marsh (0-2")	4	0	1.6E-02	7.83E-03	4	0	1.16E-03	5.94E-04	4	0	3.44E-04	1.50E-04
Lower Marsh (2-6")	4	0	1.5E-02	7.83E-03	4	0	1.15E-03	5.94E-04	4	0	3.42E-04	1.50E-04
Lower Marsh (6-12")	4	0	1.9E-02	7.83E-03	4	0	1.45E-03	5.94E-04	4	0	4.32E-04	1.50E-04

TABLE 4-25: HAZARD QUOTIENT COUNTS AND MAXIMUM HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 12 - UPPER MARSH (Continued)
Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

	Meadow Vole (Herbivore)				White-Tailed Deer (Herbivore)				Red Fox (Carnivore)			
	Number of HQs <1	Number of HQs ≥1	Maximum HQ	Minimum Reference Site HQ	Number of HQs <1	Number of HQs ≥1	Maximum HQ	Minimum Reference Site HQ	Number of HQs <1	Number of HQs ≥1	Maximum HQ	Minimum Reference Site HQ
COPEC / Area	For Sample Results ≥ Minimum Reference Site Concentration				For Sample Results ≥ Minimum Reference Site Concentration				For Sample Results ≥ Minimum Reference Site Concentration			
LEAD												
Eastern Upper Marsh (0-2")	22	0	3.2E-01	8.66E-04	22	0	2.36E-02	5.49E-05	22	0	6.50E-03	1.56E-04
Western Upper Marsh (0-2")	13	0	2.5E-01	8.66E-04	13	0	1.88E-02	5.49E-05	13	0	7.19E-03	1.56E-04
Eastern Upper Marsh (2-6")	20	0	4.4E-01	8.66E-04	20	0	3.29E-02	5.49E-05	20	0	9.08E-03	1.56E-04
Western Upper Marsh (2-6")	16	0	2.5E-01	8.66E-04	16	0	1.86E-02	5.49E-05	16	0	7.14E-03	1.56E-04
Eastern Upper Marsh (6-12")	20	0	6.0E-01	8.66E-04	20	0	4.44E-02	5.49E-05	20	0	1.22E-02	1.56E-04
Western Upper Marsh (6-12")	17	0	3.4E-01	8.66E-04	17	0	2.49E-02	5.49E-05	17	0	9.52E-03	1.56E-04
Middle Marsh (0-2")	2	0	7.1E-02	8.66E-04	2	0	5.27E-03	5.49E-05	2	0	2.02E-03	1.56E-04
Middle Marsh (2-6")	2	0	8.5E-02	8.66E-04	2	0	6.28E-03	5.49E-05	2	0	2.40E-03	1.56E-04
Middle Marsh (6-12")	2	0	9.9E-02	8.66E-04	2	0	7.33E-03	5.49E-05	2	0	2.81E-03	1.56E-04
Lower Marsh (0-2")	2	0	9.2E-03	8.66E-04	2	0	6.82E-04	5.49E-05	2	0	2.61E-04	1.56E-04
Lower Marsh (2-6")	2	0	8.9E-03	8.66E-04	2	0	6.59E-04	5.49E-05	2	0	2.52E-04	1.56E-04
Lower Marsh (6-12")	2	0	8.6E-03	8.66E-04	2	0	6.37E-04	5.49E-05	2	0	2.44E-04	1.56E-04
MANGANESE												
Eastern Upper Marsh (0-2")	4	17	**2.8E+01**	2.77E-01	12	9	**2.13E+00**	2.11E-02	21	0	5.29E-02	3.50E-04
Western Upper Marsh (0-2")	3	6	**2.7E+01**	2.77E-01	6	3	**2.06E+00**	2.11E-02	9	0	3.67E-02	3.50E-04
Eastern Upper Marsh (2-6")	4	16	**3.5E+01**	2.77E-01	13	7	**2.70E+00**	2.11E-02	20	0	6.68E-02	3.50E-04
Western Upper Marsh (2-6")	4	6	**1.9E+01**	2.77E-01	8	2	**1.42E+00**	2.11E-02	10	0	2.53E-02	3.50E-04
Eastern Upper Marsh (6-12")	6	14	**2.9E+01**	2.77E-01	15	5	**2.18E+00**	2.11E-02	20	0	5.40E-02	3.50E-04
Western Upper Marsh (6-12")	6	7	**3.8E+01**	2.77E-01	11	2	**2.85E+00**	2.11E-02	13	0	5.07E-02	3.50E-04
Middle Marsh (0-2")	1	1	**9.8E+00**	2.77E-01	2	0	7.47E-01	2.11E-02	2	0	1.33E-02	3.50E-04
Middle Marsh (2-6")	0	2	**7.2E+00**	2.77E-01	2	0	5.50E-01	2.11E-02	2	0	9.79E-03	3.50E-04
Middle Marsh (6-12")	0	2	**8.7E+00**	2.77E-01	2	0	6.61E-01	2.11E-02	2	0	1.18E-02	3.50E-04
Lower Marsh (0-2")	1	2	**1.0E+01**	2.77E-01	3	0	7.58E-01	2.11E-02	3	0	1.35E-02	3.50E-04
Lower Marsh (2-6")	1	2	**1.1E+01**	2.77E-01	3	0	8.55E-01	2.11E-02	3	0	1.52E-02	3.50E-04
Lower Marsh (6-12")	1	2	**3.5E+01**	2.77E-01	2	1	**2.67E+00**	2.11E-02	3	0	4.75E-02	3.50E-04
ZINC												
Eastern Upper Marsh (0-2")	10	12	**3.2E+00**	6.60E-02	22	0	2.44E-01	5.01E-03	22	0	4.53E-02	5.26E-03
Western Upper Marsh (0-2")	9	3	**2.1E+00**	6.60E-02	12	0	1.59E-01	5.01E-03	12	0	3.18E-02	5.26E-03
Eastern Upper Marsh (2-6")	10	10	**3.1E+00**	6.60E-02	20	0	2.32E-01	5.01E-03	20	0	4.32E-02	5.26E-03
Western Upper Marsh (2-6")	10	5	**2.0E+00**	6.60E-02	15	0	1.53E-01	5.01E-03	15	0	3.06E-02	5.26E-03
Eastern Upper Marsh (6-12")	11	9	**3.3E+00**	6.60E-02	20	0	2.52E-01	5.01E-03	20	0	4.68E-02	5.26E-03
Western Upper Marsh (6-12")	10	3	**2.6E+00**	6.60E-02	13	0	2.00E-01	5.01E-03	13	0	4.02E-02	5.26E-03
Middle Marsh (0-2")	1	1	**1.1E+00**	6.60E-02	2	0	8.13E-02	5.01E-03	2	0	1.63E-02	5.26E-03
Middle Marsh (2-6")	1	1	**1.5E+00**	6.60E-02	2	0	1.14E-01	5.01E-03	2	0	2.29E-02	5.26E-03
Middle Marsh (6-12")	1	1	**1.9E+00**	6.60E-02	2	0	1.43E-01	5.01E-03	2	0	2.87E-02	5.26E-03
Lower Marsh (0-2")	4	0	3.8E-01	6.60E-02	4	0	2.88E-02	5.01E-03	4	0	5.78E-03	5.26E-03
Lower Marsh (2-6")	4	0	3.7E-01	6.60E-02	4	0	2.83E-02	5.01E-03	4	0	5.67E-03	5.26E-03
Lower Marsh (6-12")	3	0	5.4E-01	6.60E-02	3	0	4.09E-02	5.01E-03	3	0	8.21E-03	5.26E-03

TABLE 4-25: HAZARD QUOTIENT COUNTS AND MAXIMUM HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 12 - UPPER MARSH (Continued)
Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

	Masked Shrew (Invertivore)				Canada Goose (Herbivore)				Great Blue Heron (Carnivore)			
	Number of HQs <1	Number of HQs ≥1	Maximum HQ	Minimum Reference Site HQ	Number of HQs <1	Number of HQs ≥1	Maximum HQ	Minimum Reference Site HQ	Number of HQs <1	Number of HQs ≥1	Maximum HQ	Minimum Reference Site HQ
COPEC / Area	For Sample Results ≥ Minimum Reference Site Concentration				For Sample Results ≥ Minimum Reference Site Concentration				For Sample Results ≥ Minimum Reference Site Concentration			
ALUMINUM												
Eastern Upper Marsh (0-2")	0	3	**1754**	**7.77E+02**	3	0	3.16E-01	1.22E-01	0	1	**5.03E+00**	**1.10E+01**
Western Upper Marsh (0-2")	0	5	**2392**	**7.77E+02**	5	0	4.12E-01	1.22E-01	0	4	**7.08E+00**	**1.10E+01**
Eastern Upper Marsh (2-6")	0	3	**1849**	**7.77E+02**	3	0	3.33E-01	1.22E-01	0	2	**5.30E+00**	**1.10E+01**
Western Upper Marsh (2-6")	0	7	**1659**	**7.77E+02**	7	0	3.08E-01	1.22E-01	0	4	**4.91E+00**	**1.10E+01**
Eastern Upper Marsh (6-12")	0	3	**1723**	**7.77E+02**	4	0	3.10E-01	1.22E-01	0	2	**4.94E+00**	**1.10E+01**
Western Upper Marsh (6-12")	0	7	**1741**	**7.77E+02**	7	0	3.23E-01	1.22E-01	0	6	**5.15E+00**	**1.10E+01**
Middle Marsh (0-2")	0	2	**1242**	**7.77E+02**	2	0	2.31E-01	1.22E-01	0	2	**3.67E+00**	**1.10E+01**
Middle Marsh (2-6")	0	2	**1262**	**7.77E+02**	2	0	2.34E-01	1.22E-01	0	2	**3.74E+00**	**1.10E+01**
Middle Marsh (6-12")	0	2	**1293**	**7.77E+02**	2	0	2.40E-01	1.22E-01	0	2	**3.83E+00**	**1.10E+01**
Lower Marsh (0-2")	0	4	**2148**	**7.77E+02**	4	0	3.99E-01	1.22E-01	0	4	**6.36E+00**	**1.10E+01**
Lower Marsh (2-6")	0	4	**2077**	**7.77E+02**	4	0	3.85E-01	1.22E-01	0	4	**6.15E+00**	**1.10E+01**
Lower Marsh (6-12")	0	4	**2026**	**7.77E+02**	4	0	3.76E-01	1.22E-01	0	4	**6.15E+00**	**1.10E+01**
ARSENIC												
Eastern Upper Marsh (0-2")	0	20	**5.6E+02**	**7.91E+00**	20	0	1.25E-03	4.79E-05	20	0	1.35E-01	5.34E-04
Western Upper Marsh (0-2")	0	11	**3.2E+01**	**7.91E+00**	11	0	2.48E-04	4.79E-05	11	0	2.68E-02	5.34E-04
Eastern Upper Marsh (2-6")	0	17	**1.2E+03**	**7.91E+00**	16	0	2.66E-03	4.79E-05	17	0	2.88E-01	5.34E-04
Western Upper Marsh (2-6")	0	13	**3.3E+01**	**7.91E+00**	13	0	2.59E-04	4.79E-05	13	0	2.80E-02	5.34E-04
Eastern Upper Marsh (6-12")	0	19	**4.3E+02**	**7.91E+00**	19	0	9.60E-04	4.79E-05	19	0	1.04E-01	5.34E-04
Western Upper Marsh (6-12")	0	0	**4.0E+01**	**7.91E+00**	13	0	3.10E-04	4.79E-05	13	0	3.35E-02	5.34E-04
Middle Marsh (0-2")	0	2	**1.5E+01**	**7.91E+00**	2	0	1.15E-04	4.79E-05	2	0	1.25E-02	5.34E-04
Middle Marsh (2-6")	0	2	**1.6E+01**	**7.91E+00**	2	0	1.21E-04	4.79E-05	2	0	1.30E-02	5.34E-04
Middle Marsh (6-12")	0	2	**1.6E+01**	**7.91E+00**	2	0	1.26E-04	4.79E-05	2	0	1.36E-02	5.34E-04
Lower Marsh (0-2")	0	2	**1.6E+01**	**7.91E+00**	2	0	1.26E-04	4.79E-05	2	0	1.36E-02	5.34E-04
Lower Marsh (2-6")	0	2	**1.6E+01**	**7.91E+00**	2	0	1.21E-04	4.79E-05	2	0	1.30E-02	5.34E-04
Lower Marsh (6-12")	0	2	**1.7E+01**	**7.91E+00**	2	0	1.31E-04	4.79E-05	2	0	1.30E-02	5.34E-04
CADMIUM												
Eastern Upper Marsh (0-2")	0	22	**6.7E+02**	**8.09E+00**	22	0	6.90E-02	3.38E-03	22	0	3.83E-01	6.02E-04
Western Upper Marsh (0-2")	0	13	**3.0E+02**	**8.09E+00**	13	0	5.14E-02	3.38E-03	13	0	2.98E-01	6.02E-04
Eastern Upper Marsh (2-6")	0	19	**1.0E+03**	**8.09E+00**	19	0	1.04E-01	3.38E-03	19	0	5.75E-01	6.02E-04
Western Upper Marsh (2-6")	0	14	**1.3E+03**	**8.09E+00**	14	0	2.23E-01	3.38E-03	13	1	**1.29E+00**	6.02E-04
Eastern Upper Marsh (6-12")	0	20	**7.9E+02**	**8.09E+00**	20	0	8.12E-02	3.38E-03	20	0	4.51E-01	6.02E-04
Western Upper Marsh (6-12")	0	12	**3.9E+02**	**8.09E+00**	12	0	6.71E-02	3.38E-03	12	0	3.89E-01	6.02E-04
Middle Marsh (0-2")	0	2	**1.6E+02**	**8.09E+00**	2	0	2.71E-02	3.38E-03	2	0	1.57E-01	6.02E-04
Middle Marsh (2-6")	0	2	**2.5E+02**	**8.09E+00**	2	0	4.23E-02	3.38E-03	2	0	2.45E-01	6.02E-04
Middle Marsh (6-12")	0	2	**3.1E+02**	**8.09E+00**	2	0	5.25E-02	3.38E-03	2	0	3.05E-01	6.02E-04
Lower Marsh (0-2")	0	3	**2.5E+01**	**8.09E+00**	3	0	2.86E-03	3.38E-03	3	0	1.66E-02	6.02E-04
Lower Marsh (2-6")	0	3	**2.0E+01**	**8.09E+00**	3	0	2.28E-03	3.38E-03	3	0	1.33E-02	6.02E-04
Lower Marsh (6-12")	0	2	**4.7E+01**	**8.09E+00**	2	0	8.00E-03	3.38E-03	2	0	1.33E-02	6.02E-04
COPPER												
Eastern Upper Marsh (0-2")	0	22	**3.6E+01**	6.22E-01	22	0	1.01E-02	7.23E-04	22	0	1.38E-01	1.54E-02
Western Upper Marsh (0-2")	0	15	**1.1E+01**	6.22E-01	15	0	4.78E-03	7.23E-04	15	0	9.68E-02	1.54E-02
Eastern Upper Marsh (2-6")	0	20	**4.6E+01**	6.22E-01	20	0	1.28E-02	7.23E-04	20	0	1.74E-01	1.54E-02
Western Upper Marsh (2-6")	2	15	**3.9E+01**	6.22E-01	17	0	1.68E-02	7.23E-04	17	0	3.39E-01	1.54E-02
Eastern Upper Marsh (6-12")	0	20	**4.0E+01**	6.22E-01	20	0	1.12E-02	7.23E-04	20	0	1.52E-01	1.54E-02
Western Upper Marsh (6-12")	1	16	**1.5E+01**	6.22E-01	17	0	6.56E-03	7.23E-04	17	0	1.33E-01	1.54E-02
Middle Marsh (0-2")	0	2	**6.3E+00**	6.22E-01	2	0	2.66E-03	7.23E-04	2	0	5.38E-02	1.54E-02
Middle Marsh (2-6")	0	2	**8.6E+00**	6.22E-01	2	0	3.64E-03	7.23E-04	2	0	7.37E-02	1.54E-02
Middle Marsh (6-12")	0	2	**1.0E+01**	6.22E-01	2	0	4.41E-03	7.23E-04	2	0	8.92E-02	1.54E-02
Lower Marsh (0-2")	1	3	**4.1E+00**	6.22E-01	4	0	1.74E-03	7.23E-04	4	0	3.53E-02	1.54E-02
Lower Marsh (2-6")	1	3	**4.1E+00**	6.22E-01	4	0	1.73E-03	7.23E-04	4	0	3.50E-02	1.54E-02
Lower Marsh (6-12")	1	3	**5.1E+00**	6.22E-01	4	0	2.19E-03	7.23E-04	4	0	3.50E-02	1.54E-02

TABLE 4-25: HAZARD QUOTIENT COUNTS AND MAXIMUM HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 12 - UPPER MARSH (Continued)
Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

	Masked Shrew (Invertivore)				Canada Goose (Herbivore)				Great Blue Heron (Carnivore)			
	Number of HQs <1	Number of HQs ≥1	Maximum HQ	Minimum Reference Site HQ	Number of HQs <1	Number of HQs ≥1	Maximum HQ	Minimum Reference Site HQ	Number of HQs <1	Number of HQs ≥1	Maximum HQ	Minimum Reference Site HQ
COPEC / Area	For Sample Results ≥ Minimum Reference Site Concentration				For Sample Results ≥ Minimum Reference Site Concentration				For Sample Results ≥ Minimum Reference Site Concentration			
LEAD												
Eastern Upper Marsh (0-2")	0	22	**3.9E+02**	7.69E-01	22	0	9.12E-02	6.73E-04	13	9	**1.70**	4.09E-02
Western Upper Marsh (0-2")	0	13	**1.3E+02**	7.69E-01	13	0	7.91E-02	6.73E-04	11	2	**1.88**	4.09E-02
Eastern Upper Marsh (2-6")	0	20	**5.5E+02**	7.69E-01	20	0	1.27E-01	6.73E-04	12	8	**2.38**	4.09E-02
Western Upper Marsh (2-6")	0	16	**1.3E+02**	7.69E-01	16	0	7.85E-02	6.73E-04	14	2	**1.87**	4.09E-02
Eastern Upper Marsh (6-12")	0	20	**7.4E+02**	7.69E-01	20	0	1.72E-01	6.73E-04	16	4	**3.21**	4.09E-02
Western Upper Marsh (6-12")	0	17	**1.7E+02**	7.69E-01	17	0	1.05E-01	6.73E-04	15	2	**2.49**	4.09E-02
Middle Marsh (0-2")	0	2	**3.6E+01**	7.69E-01	2	0	2.22E-02	6.73E-04	2	0	0.53	4.09E-02
Middle Marsh (2-6")	0	2	**4.3E+01**	7.69E-01	2	0	2.64E-02	6.73E-04	2	0	0.63	4.09E-02
Middle Marsh (6-12")	0	2	**5.0E+01**	7.69E-01	2	0	3.09E-02	6.73E-04	2	0	0.73	4.09E-02
Lower Marsh (0-2")	0	2	**4.7E+00**	7.69E-01	2	0	2.87E-03	6.73E-04	2	0	0.07	4.09E-02
Lower Marsh (2-6")	0	2	**4.5E+00**	7.69E-01	2	0	2.78E-03	6.73E-04	2	0	0.07	4.09E-02
Lower Marsh (6-12")	0	2	**4.4E+00**	7.69E-01	2	0	2.68E-03	6.73E-04	2	0	0.07	4.09E-02
MANGANESE												
Eastern Upper Marsh (0-2")	0	21	**2.5E+03**	**1.03E+01**	21	0	3.75E-02	3.71E-04	21	0	8.03E-02	5.30E-04
Western Upper Marsh (0-2")	0	9	**1.3E+03**	**1.03E+01**	9	0	3.61E-02	3.71E-04	9	0	5.58E-02	5.30E-04
Eastern Upper Marsh (2-6")	0	20	**3.1E+03**	**1.03E+01**	20	0	4.74E-02	3.71E-04	20	0	1.02E-01	5.30E-04
Western Upper Marsh (2-6")	0	10	**9.1E+02**	**1.03E+01**	10	0	2.49E-02	3.71E-04	10	0	3.84E-02	5.30E-04
Eastern Upper Marsh (6-12")	0	20	**2.5E+03**	**1.03E+01**	20	0	3.83E-02	3.71E-04	20	0	8.20E-02	5.30E-04
Western Upper Marsh (6-12")	0	13	**1.8E+03**	**1.03E+01**	13	0	4.99E-02	3.71E-04	13	0	7.71E-02	5.30E-04
Middle Marsh (0-2")	0	2	**4.8E+02**	**1.03E+01**	2	0	1.31E-02	3.71E-04	2	0	2.02E-02	5.30E-04
Middle Marsh (2-6")	0	2	**3.5E+02**	**1.03E+01**	2	0	9.63E-03	3.71E-04	2	0	1.49E-02	5.30E-04
Middle Marsh (6-12")	0	2	**4.3E+02**	**1.03E+01**	2	0	1.16E-02	3.71E-04	2	0	1.79E-02	5.30E-04
Lower Marsh (0-2")	0	3	**4.9E+02**	**1.03E+01**	3	0	1.33E-02	3.71E-04	3	0	2.05E-02	5.30E-04
Lower Marsh (2-6")	0	3	**5.5E+02**	**1.03E+01**	3	0	1.50E-02	3.71E-04	3	0	2.31E-02	5.30E-04
Lower Marsh (6-12")	0	3	**1.7E+03**	**1.03E+01**	3	0	4.67E-02	3.71E-04	3	0	2.31E-02	5.30E-04
ZINC												
Eastern Upper Marsh (0-2")	0	22	**3.0E+02**	**3.29E+00**	22	0	7.71E-02	1.59E-03	20	2	**1.23E+00**	1.43E-01
Western Upper Marsh (0-2")	0	12	**1.6E+02**	**3.29E+00**	12	0	5.03E-02	1.59E-03	12	0	8.65E-01	1.43E-01
Eastern Upper Marsh (2-6")	0	20	**2.8E+02**	**3.29E+00**	20	0	7.35E-02	1.59E-03	17	3	**1.17E+00**	1.43E-01
Western Upper Marsh (2-6")	0	15	**1.5E+02**	**3.29E+00**	15	0	4.84E-02	1.59E-03	15	0	8.31E-01	1.43E-01
Eastern Upper Marsh (6-12")	0	20	**3.1E+02**	**3.29E+00**	20	0	7.97E-02	1.59E-03	19	1	**1.27E+00**	1.43E-01
Western Upper Marsh (6-12")	0	13	**2.0E+02**	**3.29E+00**	13	0	6.35E-02	1.59E-03	12	1	**1.09E+00**	1.43E-01
Middle Marsh (0-2")	0	2	**8.0E+01**	**3.29E+00**	2	0	2.58E-02	1.59E-03	2	0	4.43E-01	1.43E-01
Middle Marsh (2-6")	0	2	**1.1E+02**	**3.29E+00**	2	0	3.61E-02	1.59E-03	2	0	6.21E-01	1.43E-01
Middle Marsh (6-12")	0	2	**1.4E+02**	**3.29E+00**	2	0	4.54E-02	1.59E-03	2	0	7.80E-01	1.43E-01
Lower Marsh (0-2")	0	4	**2.8E+01**	**3.29E+00**	4	0	9.13E-03	1.59E-03	4	0	1.57E-01	1.43E-01
Lower Marsh (2-6")	0	4	**2.8E+01**	**3.29E+00**	4	0	8.96E-03	1.59E-03	4	0	1.54E-01	1.43E-01
Lower Marsh (6-12")	0	3	**4.0E+01**	**3.29E+00**	3	0	1.30E-02	1.59E-03	3	0	1.54E-01	1.43E-01

TABLE 4-25: HAZARD QUOTIENT COUNTS AND MAXIMUM HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 12 - UPPER MARSH (Continued)
Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

COPEC / Area	Mallard (Omnivore)				Muskrat (Herbivore)				Mink (Carnivore)			
	Number of HQs <1	Number of HQs ≥1	Maximum HQ	Minimum Reference Site HQ	Number of HQs <1	Number of HQs ≥1	Maximum HQ	Minimum Reference Site HQ	Number of HQs <1	Number of HQs ≥1	Maximum HQ	Minimum Reference Site HQ
	For Sample Results ≥ Minimum Reference Site Concentration				For Sample Results ≥ Minimum Reference Site Concentration				For Sample Results ≥ Minimum Reference Site Concentration			
ALUMINUM												
Eastern Upper Marsh (0-2")	0	3	**2.59E+01**	**6.00E+00**	0	3	**7.53E+00**	**2.90E+00**	0	0	**2.48E+00**	**5.48E+00**
Western Upper Marsh (0-2")	0	5	**2.81E+01**	**6.00E+00**	0	5	**9.82E+00**	**2.90E+00**	0	0	**3.49E+00**	**5.48E+00**
Eastern Upper Marsh (2-6")	0	3	**2.73E+01**	**6.00E+00**	0	3	**7.94E+00**	**2.90E+00**	0	0	**2.62E+00**	**5.48E+00**
Western Upper Marsh (2-6")	0	7	**2.53E+01**	**6.00E+00**	0	7	**7.35E+00**	**2.90E+00**	0	0	**2.42E+00**	**5.48E+00**
Eastern Upper Marsh (6-12")	0	4	**2.55E+01**	**6.00E+00**	0	4	**7.40E+00**	**2.90E+00**	0	0	**2.44E+00**	**5.48E+00**
Western Upper Marsh (6-12")	0	7	**2.66E+01**	**6.00E+00**	0	7	**7.72E+00**	**2.90E+00**	0	0	**2.54E+00**	**5.48E+00**
Middle Marsh (0-2")	0	2	**1.89E+01**	**6.00E+00**	0	2	**5.50E+00**	**2.90E+00**	0	2	**1.81E+00**	**5.48E+00**
Middle Marsh (2-6")	0	2	**1.93E+01**	**6.00E+00**	0	2	**5.59E+00**	**2.90E+00**	0	2	**1.84E+00**	**5.48E+00**
Middle Marsh (6-12")	0	2	**1.97E+01**	**6.00E+00**	0	2	**5.73E+00**	**2.90E+00**	0	2	**1.89E+00**	**5.48E+00**
Lower Marsh (0-2")	0	4	**3.28E+01**	**6.00E+00**	0	4	**9.52E+00**	**2.90E+00**	0	4	**3.14E+00**	**5.48E+00**
Lower Marsh (2-6")	0	4	**3.17E+01**	**6.00E+00**	0	4	**9.20E+00**	**2.90E+00**	0	4	**3.03E+00**	**5.48E+00**
Lower Marsh (6-12")	0	4	**3.09E+01**	**6.00E+00**	0	4	**8.98E+00**	**2.90E+00**	0	4	**2.96E+00**	**5.48E+00**
ARSENIC												
Eastern Upper Marsh (0-2")	20	0	9.2E-01	1.29E-02	20	0	9.9E-02	3.79E-03	20	0	6.99E-01	1.10E-03
Western Upper Marsh (0-2")	10	0	5.2E-02	1.29E-02	11	0	2.0E-02	3.79E-03	11	0	1.39E-01	1.10E-03
Eastern Upper Marsh (2-6")	16	1	**2.0E+00**	1.29E-02	17	0	2.1E-01	3.79E-03	16	1	**1.49E+00**	1.10E-03
Western Upper Marsh (2-6")	13	0	5.4E-02	1.29E-02	13	0	2.1E-02	3.79E-03	13	0	1.45E-01	1.10E-03
Eastern Upper Marsh (6-12")	19	0	7.0E-01	1.29E-02	19	0	7.6E-02	3.79E-03	19	0	5.38E-01	1.10E-03
Western Upper Marsh (6-12")	13	0	6.5E-02	1.29E-02	13	0	2.5E-02	3.79E-03	13	0	1.73E-01	1.10E-03
Middle Marsh (0-2")	2	0	2.4E-02	1.29E-02	2	0	9.1E-03	3.79E-03	2	0	6.46E-02	1.10E-03
Middle Marsh (2-6")	2	0	2.5E-02	1.29E-02	2	0	9.6E-03	3.79E-03	2	0	6.76E-02	1.10E-03
Middle Marsh (6-12")	2	0	2.6E-02	1.29E-02	2	0	1.0E-02	3.79E-03	2	0	7.05E-02	1.10E-03
Lower Marsh (0-2")	2	0	2.6E-02	1.29E-02	2	0	1.0E-02	3.79E-03	2	0	7.05E-02	1.10E-03
Lower Marsh (2-6")	2	0	2.5E-02	1.29E-02	2	0	9.6E-03	3.79E-03	2	0	6.76E-02	1.10E-03
Lower Marsh (6-12")	2	0	2.7E-02	1.29E-02	2	0	1.0E-02	3.79E-03	2	0	7.34E-02	1.10E-03
CADMIUM												
Eastern Upper Marsh (0-2")	2	19	**1.3E+01**	1.92E-01	19	2	**1.6E+00**	7.94E-02	22	0	1.77E-01	1.09E-04
Western Upper Marsh (0-2")	7	6	**6.2E+00**	1.92E-01	11	2	**1.2E+00**	7.94E-02	13	0	1.38E-01	1.09E-04
Eastern Upper Marsh (2-6")	4	15	**2.0E+01**	1.92E-01	15	4	**2.4E+00**	7.94E-02	19	0	2.66E-01	1.09E-04
Western Upper Marsh (2-6")	8	6	**2.7E+01**	1.92E-01	12	2	**5.1E+00**	7.94E-02	14	0	5.98E-01	1.09E-04
Eastern Upper Marsh (6-12")	5	15	**1.6E+01**	1.92E-01	15	5	**1.9E+00**	7.94E-02	19	1	**1.88E+00**	1.09E-04
Western Upper Marsh (6-12")	6	6	**8.1E+00**	1.92E-01	10	2	**1.5E+00**	7.94E-02	12	0	1.80E-01	1.09E-04
Middle Marsh (0-2")	1	1	**3.3E+00**	1.92E-01	2	0	6.3E-01	7.94E-02	2	0	7.28E-02	1.09E-04
Middle Marsh (2-6")	1	1	**5.1E+00**	1.92E-01	2	0	9.8E-01	7.94E-02	2	0	1.13E-01	1.09E-04
Middle Marsh (6-12")	1	1	**6.4E+00**	1.92E-01	1	1	**1.2E+00**	7.94E-02	2	0	1.41E-01	1.09E-04
Lower Marsh (0-2")	3	0	5.2E-01	1.92E-01	2	0	6.6E-02	7.94E-02	3	0	7.67E-03	1.09E-04
Lower Marsh (2-6")	3	0	4.2E-01	1.92E-01	2	0	5.3E-02	7.94E-02	3	0	6.13E-03	1.09E-04
Lower Marsh (6-12")	2	0	9.7E-01	1.92E-01	2	0	1.8E-01	7.94E-02	2	0	2.15E-02	1.09E-04
COPPER												
Eastern Upper Marsh (0-2")	13	9	**2.6E+00**	5.11E-02	22	0	5.6E-02	4.49E-03	22	0	1.63E-02	2.00E-03
Western Upper Marsh (0-2")	15	0	8.2E-01	5.11E-02	15	0	2.4E-02	4.49E-03	15	0	1.15E-02	2.00E-03
Eastern Upper Marsh (2-6")	14	6	**3.3E+00**	5.11E-02	20	0	7.1E-02	4.49E-03	20	0	2.07E-02	2.00E-03
Western Upper Marsh (2-6")	16	1	**2.9E+00**	5.11E-02	17	0	8.6E-02	4.49E-03	17	0	4.02E-02	2.00E-03
Eastern Upper Marsh (6-12")	14	6	**2.9E+00**	5.11E-02	20	0	6.2E-02	4.49E-03	20	0	1.81E-02	2.00E-03
Western Upper Marsh (6-12")	15	2	**1.1E+00**	5.11E-02	17	0	3.3E-02	4.49E-03	17	0	1.57E-02	2.00E-03
Middle Marsh (0-2")	2	0	4.5E-01	5.11E-02	2	0	1.4E-02	4.49E-03	2	0	6.38E-03	2.00E-03
Middle Marsh (2-6")	2	0	6.2E-01	5.11E-02	2	0	1.9E-02	4.49E-03	2	0	8.74E-03	2.00E-03
Middle Marsh (6-12")	2	0	7.5E-01	5.11E-02	2	0	2.3E-02	4.49E-03	2	0	1.06E-02	2.00E-03
Lower Marsh (0-2")	4	0	3.0E-01	5.11E-02	4	0	8.9E-03	4.49E-03	4	0	4.18E-03	2.00E-03
Lower Marsh (2-6")	4	0	2.9E-01	5.11E-02	4	0	8.8E-03	4.49E-03	4	0	4.15E-03	2.00E-03
Lower Marsh (6-12")	4	0	3.7E-01	5.11E-02	4	0	1.1E-02	4.49E-03	4	0	5.24E-03	2.00E-03

TABLE 4-25: HAZARD QUOTIENT COUNTS AND MAXIMUM HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 12 - UPPER MARSH (Continued)
Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

COPEC / Area	Mallard (Omnivore)				Muskrat (Herbivore)				Mink (Carnivore)			
	Number of HQs <1	Number of HQs ≥1	Maximum HQ	Minimum Reference Site HQ	Number of HQs <1	Number of HQs ≥1	Maximum HQ	Minimum Reference Site HQ	Number of HQs <1	Number of HQs ≥1	Maximum HQ	Minimum Reference Site HQ
	For Sample Results ≥ Minimum Reference Site Concentration				For Sample Results ≥ Minimum Reference Site Concentration				For Sample Results ≥ Minimum Reference Site Concentration			
LEAD												
Eastern Upper Marsh (0-2")	0	22	**7.0E+01**	1.34E-01	22	0	1.8E-01	4.96E-04	22	0	7.79E-02	1.87E-03
Western Upper Marsh (0-2")	6	7	**2.3E+01**	1.34E-01	13	0	1.5E-01	4.96E-04	13	0	8.63E-02	1.87E-03
Eastern Upper Marsh (2-6")	0	20	**9.8E+01**	1.34E-01	20	0	2.5E-01	4.96E-04	20	0	1.09E-01	1.87E-03
Western Upper Marsh (2-6")	8	8	**2.3E+01**	1.34E-01	16	0	1.4E-01	4.96E-04	16	0	8.56E-02	1.87E-03
Eastern Upper Marsh (6-12")	0	20	**1.3E+02**	1.34E-01	20	0	3.4E-01	4.96E-04	20	0	1.47E-01	1.87E-03
Western Upper Marsh (6-12")	8	9	**3.1E+01**	1.34E-01	17	0	1.9E-01	4.96E-04	17	0	1.14E-01	1.87E-03
Middle Marsh (0-2")	0	2	**6.6E+00**	1.34E-01	2	0	4.1E-02	4.96E-04	2	0	2.42E-02	1.87E-03
Middle Marsh (2-6")	0	2	**7.8E+00**	1.34E-01	2	0	4.9E-02	4.96E-04	2	0	2.88E-02	1.87E-03
Middle Marsh (6-12")	0	2	**9.1E+00**	1.34E-01	2	0	5.7E-02	4.96E-04	2	0	3.36E-02	1.87E-03
Lower Marsh (0-2")	2	0	8.5E-01	1.34E-01	2	0	5.3E-03	4.96E-04	2	0	3.13E-03	1.87E-03
Lower Marsh (2-6")	2	0	8.2E-01	1.34E-01	2	0	5.1E-03	4.96E-04	2	0	3.03E-03	1.87E-03
Lower Marsh (6-12")	2	0	7.9E-01	1.34E-01	2	0	4.9E-03	4.96E-04	2	0	2.92E-03	1.87E-03
MANGANESE												
Eastern Upper Marsh (0-2")	12	9	**3.0E+00**	1.49E-02	4	17	**1.6E+01**	1.59E-01	21	0	6.64E-01	4.15E-03
Western Upper Marsh (0-2")	6	3	**1.8E+00**	1.49E-02	3	6	**1.6E+01**	1.59E-01	9	0	4.61E-01	4.15E-03
Eastern Upper Marsh (2-6")	11	9	**3.7E+00**	1.49E-02	7	13	**2.0E+01**	1.59E-01	20	0	8.40E-01	4.15E-03
Western Upper Marsh (2-6")	8	2	**1.2E+00**	1.49E-02	5	5	**1.1E+01**	1.59E-01	10	0	3.18E-01	4.15E-03
Eastern Upper Marsh (6-12")	15	5	**3.0E+00**	1.49E-02	9	11	**1.6E+01**	1.59E-01	20	0	6.78E-01	4.15E-03
Western Upper Marsh (6-12")	11	2	**2.5E+00**	1.49E-02	8	5	**2.2E+01**	1.59E-01	13	0	6.38E-01	4.15E-03
Middle Marsh (0-2")	2	0	6.5E-01	1.49E-02	1	1	**5.6E+00**	1.59E-01	2	0	1.67E-01	4.15E-03
Middle Marsh (2-6")	2	0	4.8E-01	1.49E-02	1	1	**4.1E+00**	1.59E-01	2	0	1.23E-01	4.15E-03
Middle Marsh (6-12")	2	0	5.7E-01	1.49E-02	1	1	**5.0E+00**	1.59E-01	2	0	1.48E-01	4.15E-03
Lower Marsh (0-2")	3	0	6.6E-01	1.49E-02	2	1	**5.7E+00**	1.59E-01	3	0	1.70E-01	4.15E-03
Lower Marsh (2-6")	3	0	7.4E-01	1.49E-02	1	2	**6.4E+00**	1.59E-01	3	0	1.91E-01	4.15E-03
Lower Marsh (6-12")	2	1	**2.3E+00**	1.49E-02	1	2	**2.0E+01**	1.59E-01	3	0	5.97E-01	4.15E-03
ZINC												
Eastern Upper Marsh (0-2")	4	18	**6.3E+00**	7.82E-02	19	3	**1.8E+00**	3.79E-02	22	0	6.06E-01	7.14E-02
Western Upper Marsh (0-2")	9	3	**3.4E+00**	7.82E-02	9	3	**1.2E+00**	3.79E-02	12	0	4.27E-01	7.14E-02
Eastern Upper Marsh (2-6")	6	14	**6.0E+00**	7.82E-02	15	5	**1.8E+00**	3.79E-02	20	0	5.78E-01	7.14E-02
Western Upper Marsh (2-6")	10	5	**3.3E+00**	7.82E-02	13	2	**1.2E+00**	3.79E-02	15	0	4.10E-01	7.14E-02
Eastern Upper Marsh (6-12")	9	11	**6.6E+00**	7.82E-02	16	4	**1.9E+00**	3.79E-02	20	0	6.27E-01	7.14E-02
Western Upper Marsh (6-12")	8	5	**4.3E+00**	7.82E-02	11	2	**1.5E+00**	3.79E-02	13	0	5.38E-01	7.14E-02
Middle Marsh (0-2")	1	1	**1.8E+00**	7.82E-02	2	0	6.1E-01	3.79E-02	2	0	2.18E-01	7.14E-02
Middle Marsh (2-6")	1	1	**2.5E+00**	7.82E-02	2	0	8.6E-01	3.79E-02	2	0	3.06E-01	7.14E-02
Middle Marsh (6-12")	1	1	**3.1E+00**	7.82E-02	1	1	**1.1E+00**	3.79E-02	2	0	3.85E-01	7.14E-02
Lower Marsh (0-2")	4	0	6.2E-01	7.82E-02	4	0	2.2E-01	3.79E-02	4	0	7.74E-02	7.14E-02
Lower Marsh (2-6")	4	0	6.1E-01	7.82E-02	4	0	2.1E-01	3.79E-02	4	0	7.59E-02	7.14E-02
Lower Marsh (6-12")	3	0	8.8E-01	7.82E-02	3	0	3.1E-01	3.79E-02	3	0	1.10E-01	7.14E-02

Notes:
Bold values indicate HQs greater than 1.0.
All mercury results were non-detect.
Food chain model tables for each COPEC are presented in Appendix C.

COPEC	Chemical of potential ecological concern
EU	Exposure Unit
HQ	Hazard quotient

TABLE 4-26: AQUATIC INVERTEBRATE AND FISH HAZARD QUOTIENT COUNTS AND MAXIMUM HAZARD QUOTIENTS, EU 13 - STREAM

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

COPEC	All Sediment Samples			Aquatic Invertebrates and Fish (based on TEL)				Aquatic Invertebrates (based on PEL)				Aquatic Invertebrates and Fish (based on SEL)			
	Total Number of Samples Evaluated	Number of Samples with Non-detect Results	Number of Sample Results Detected Below Minimum Reference Site Concentration	Number of HQs <1	Number of HQs ≥1	Maximum HQ	Minimum Reference Site HQ	Number of HQs <1	Number of HQs ≥1	Maximum HQ	Minimum Reference Site HQ	Number of HQs <1	Number of HQs ≥1	Maximum HQ	Minimum Reference Site HQ
				For Sample Results ≥ Minimum Reference Site Concentration				For Sample Results ≥ Minimum Reference Site Concentration				For Sample Results ≥ Minimum Reference Site Concentration			
ARSENIC															
Streambed Sediments, 0-2"	34	0	8	2	24	**10**	0.94	17	9	**3.5**	0.33	24	2	**1.8**	0.17
Streambed Sediments, 2-6"	10	0	1	0	9	**15**	0.94	5	4	**5.1**	0.33	8	1	**2.6**	0.17
Streambed Sediments, 6-12"	3	0	0	0	3	**8.0**	0.94	1	2	**2.8**	0.33	2	1	**1.4**	0.17
CADMIUM															
Streambed Sediments, 0-2"	34	8	0	1	26	**31**	0.84	11	16	**5.2**	0.14	21	6	**1.8**	0.050
Streambed Sediments, 2-6"	10	1	0	2	8	**34**	0.84	4	6	**5.8**	0.14	8	2	**2.0**	0.050
Streambed Sediments, 6-12"	3	0	0	0	3	**17**	0.84	1	2	**2.8**	0.14	3	0	**1.0**	0.050
COPPER															
Streambed Sediments, 0-2"	34	0	1	4	29	**74**	0.82	18	15	**13**	0.15	14	19	**24**	0.27
Streambed Sediments, 2-6"	10	0	0	1	9	**85**	0.82	6	4	**15**	0.15	2	8	**28**	0.27
Streambed Sediments, 6-12"	3	0	0	0	3	**7.5**	0.82	1	2	**1.4**	0.15	0	3	**2.4**	0.27
LEAD															
Streambed Sediments, 0-2"	34	0	7	6	21	**43**	0.63	9	18	**16**	0.24	17	10	**6.0**	0.088
Streambed Sediments, 2-6"	10	0	1	0	9	**14**	0.63	2	7	**5.2**	0.24	6	3	**1.9**	0.088
Streambed Sediments, 6-12"	3	0	0	0	3	**14**	0.63	0	3	**5.5**	0.24	1	2	**2.0**	0.088
MANGANESE*															
Streambed Sediments, 0-2"	34	0	5	5	24	**22**	0.59	NA	NA	NA	NA	13	16	**9.2**	0.25
Streambed Sediments, 2-6"	10	0	1	1	8	**25**	0.59	NA	NA	NA	NA	2	7	**10**	0.25
Streambed Sediments, 6-12"	3	0	1	0	2	**5.5**	0.59	NA	NA	NA	NA	0	2	**2.3**	0.25
ZINC															
Streambed Sediments, 0-2"	34	0	1	2	31	**39**	0.53	9	24	**15**	0.21	16	17	**5.9**	0.080
Streambed Sediments, 2-6"	10	0	0	2	8	**19**	0.53	2	8	**7.5**	0.21	3	7	**2.9**	0.080
Streambed Sediments, 6-12"	3	0	0	0	3	**15**	0.53	1	2	**6.0**	0.21	1	2	**2.3**	0.080

Notes:

* The LEL is substituted for the TEL for manganese. A PEL is not available for manganese.

Bold values indicate HQs greater than 1.0.

No screening values exist for aluminum, and all mercury results were non-detect.

HQs were calculated by dividing the site concentration by the invertebrate screening benchmark.

The minimum reference site HQ is the minimum HQ of all reference site locations.

HQ tables are presented in Appendix D.

COPEC	Chemical of potential ecological concern
EU	Exposure Unit
HQ	Hazard quotient
LEL	Lowest effect level - the level of sediment contamination that can be tolerated by the majoirty of benthic organisms.
PEL	Probable effect level - the level above which adverse effects are expected to occur frequently.
SEL	Severe effect level - the level of sediment contamination at which pronounced disturbance of the sediment-dwelling community can be expected; the concentration that would be detrimental to the majority of the benthic community.
TEL	Threshold effect level - the level of sediment contamination below which adverse biological effects are expected to occur rarely.

TABLE 4-27: HAZARD QUOTIENT COUNTS AND MAXIMUM HAZARD QUOTIENTS FOR SURFACE WATER, EU 13 - STREAM

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

COPEC	2007 and 2011 Surface Water Samples (Low Flow Conditions)			2007 and 2011 Surface Water (Low Flow Conditions) (based on Acute Aquatic Life Criteria)				2007 and 2011 Surface Water (Low Flow Conditions) (based on Chronic Aquatic Life Criteria)			
	Total Number of Samples Evaluated	Number of Samples with Non-Detect Results	Number of Sample Results Detected Below Minimum Reference Site Concentration	Number of HQs <1 (For Sample Results ≥ Minimum Reference Site Concentration)	Number of HQs ≥1 (For Sample Results ≥ Minimum Reference Site Concentration)	Maximum HQ (For Sample Results ≥ Minimum Reference Site Concentration)	Minimum Reference Site HQ	Number of HQs <1 (For Sample Results ≥ Minimum Reference Site Concentration)	Number of HQs ≥1 (For Sample Results ≥ Minimum Reference Site Concentration)	Maximum HQ (For Sample Results ≥ Minimum Reference Site Concentration)	Minimum Reference Site HQ
ALUMINUM											
Blackfoot River Surface Water	31	27	0	3	2	**2.3**	0.04	1	4	**20**	0.34
CADMIUM											
Blackfoot River Surface Water	31	7	0	13	11	**10**	0.041	2	22	**19**	0.32
COPPER											
Blackfoot River Surface Water	31	6	2	15	8	**32**	0.078	12	11	**43**	0.12
LEAD											
Blackfoot River Surface Water	31	12	0	19	0	0.38	0.0069	12	7	**10**	0.18
MANGANESE											
Blackfoot River Surface Water	31	2	0	30	1	**13**	0.0013	11	20	**12**	0.025
ZINC											
Blackfoot River Surface Water	31	1	4	6	21	**160**	0.090	6	21	**16**	0.090

TABLE 4-27: HAZARD QUOTIENT COUNTS AND MAXIMUM HAZARD QUOTIENTS FOR SURFACE WATER, EU 13 - STREAM (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

COPEC	2008 Surface Water (High Flow Conditions) Samples (High Flow Conditions)			2008 Surface Water (High Flow Conditions) (based on Acute Aquatic Life Criteria)				2008 Surface Water (High Flow Conditions) (based on Chronic Aquatic Life Criteria)			
	Total Number of Samples Evaluated	Number of Samples with Non-Detect Results	Number of Sample Results Detected Below Minimum Reference Site Concentration	Number of HQs <1	Number of HQs ≥1	Maximum HQ	Minimum Reference Site HQ	Number of HQs <1	Number of HQs ≥1	Maximum HQ	Minimum Reference Site HQ
				For Sample Results ≥ Minimum Reference Site Concentration				For Sample Results ≥ Minimum Reference Site Concentration			
ALUMINUM											
Blackfoot River Surface Water	13	12	0	1	0	0.11	0.040	1	0	0.92	0.34
CADMIUM											
Blackfoot River Surface Water	13	0	0	5	8	**9.8**	0.064	1	12	**77**	0.44
COPPER											
Blackfoot River Surface Water	13	0	0	4	9	**65**	0.12	4	9	**97**	0.17
LEAD											
Blackfoot River Surface Water	13	0	0	12	1	**1.0**	0.012	4	9	**26**	0.31
MANGANESE											
Blackfoot River Surface Water	13	0	0	13	0	0.52	0.0022	10	3	**9.9**	0.042
ZINC											
Blackfoot River Surface Water	13	0	0	1	12	**22**	0.13	1	12	**22**	0.13

Notes:

Bold values indicate HQs greater than 1.0.

All results were below the minimum reference site concentration for arsenic.

HQ tables are presented in Appendix D.

COPEC	Chemical of potential ecological concern
EU	Exposure unit
HQ	Hazard quotient

TABLE 4-28: HAZARD QUOTIENT COUNTS AND MAXIMUM HAZARD QUOTIENTS FOR BIRDS, EU 13 - STREAM

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

COPEC	All Receptors			Great Blue Heron (Carnivore)				American Dipper (Insectivore)			
	Total Number of Samples Evaluated	Number of Samples with Non-Detect Results	Number of Sample Results Detected Below Minimum Reference Site Concentration	Number of HQs <1 For Sample Results ≥ Minimum Reference Site Concentration	Number of HQs ≥1 For Sample Results ≥ Minimum Reference Site Concentration	Maximum HQ For Sample Results ≥ Minimum Reference Site Concentration	Minimum Reference Site HQ	Number of HQs <1 For Sample Results ≥ Minimum Reference Site Concentration	Number of HQs ≥1 For Sample Results ≥ Minimum Reference Site Concentration	Maximum HQ For Sample Results ≥ Minimum Reference Site Concentration	Minimum Reference Site HQ
ALUMINUM											
Streambed Sediments, 0-2"	15	0	13	2	0	2.13E-02	9.89E-03	1	1	**1.31E+00**	9.54E-01
Streambed Sediments, 2-6"	4	0	3	1	0	2.15E-02	9.89E-03	0	1	**1.32E+00**	9.54E-01
Streambed Sediments, 6-12"	0	0	0	0	0	NE	9.89E-03	0	0	NE	9.54E-01
ARSENIC											
Streambed Sediments, 0-2"	34	0	9	25	0	6.56E-02	6.16E-03	24	1	**1.44E+00**	7.19E-02
Streambed Sediments, 2-6"	10	0	1	7	0	9.61E-02	6.16E-03	5	1	**2.11E+00**	7.19E-02
Streambed Sediments, 6-12"	3	0	0	3	0	5.21E-02	6.16E-03	2	1	**1.14E+00**	7.19E-02
CADMIUM											
Streambed Sediments, 0-2"	34	8	0	26	0	2.33E-02	6.40E-04	0	26	**1.12E+02**	3.41E-02
Streambed Sediments, 2-6"	10	1	0	8	0	2.60E-02	6.40E-04	0	9	**1.25E+02**	3.41E-02
Streambed Sediments, 6-12"	3	0	0	3	0	1.28E-02	6.40E-04	0	3	**6.12E+01**	3.41E-02
COPPER											
Streambed Sediments, 0-2"	34	0	2	31	1	**2.02E+00**	1.50E-02	10	22	**4.60E+01**	2.04E-01
Streambed Sediments, 2-6"	10	0	0	7	1	**2.33E+00**	1.50E-02	1	9	**5.30E+01**	2.04E-01
Streambed Sediments, 6-12"	3	0	0	2	0	1.90E-01	1.50E-02	0	3	**4.68E+00**	2.04E-01
LEAD											
Streambed Sediments, 0-2"	34	0	8	15	11	**7.24E+00**	1.14E-02	0	26	**8.69E+01**	3.91E-01
Streambed Sediments, 2-6"	10	0	1	4	3	**2.29E+00**	1.14E-02	0	9	**2.75E+01**	3.91E-01
Streambed Sediments, 6-12"	3	0	0	1	2	**2.42E+00**	1.14E-02	0	3	**2.91E+01**	3.91E-01
MANGANESE											
Streambed Sediments, 0-2"	34	0	6	28	0	2.39E-02	1.01E-03	6	22	**1.53E+01**	2.17E-01
Streambed Sediments, 2-6"	10	0	2	7	0	2.67E-02	1.01E-03	1	7	**1.71E+01**	2.17E-01
Streambed Sediments, 6-12"	3	0	1	2	0	6.01E-03	1.01E-03	0	2	**3.84E+00**	2.17E-01
ZINC											
Streambed Sediments, 0-2"	34	0	2	11	21	**8.10E+00**	1.82E-01	0	32	**3.18E+02**	**1.10E+00**
Streambed Sediments, 2-6"	10	0	1	2	7	**3.96E+00**	1.82E-01	0	9	**1.56E+02**	**1.10E+00**
Streambed Sediments, 6-12"	3	0	0	1	2	**3.18E+00**	1.82E-01	0	3	**1.25E+02**	**1.10E+00**

Notes:

Bold values indicate HQs greater than 1.0.

All mercury results were non-detect.

Food chain model tables for each COPEC are presented in Appendix C.

COPEC	Chemical of potential ecological concern
EU	Exposure Unit
HQ	Hazard quotient
NE	Not evaluated

TABLE 6-1: PRELIMINARY ECOLOGICAL REMEDIATION GOALS FOR CHEMICALS OF ECOLOGICAL CONCERN IN SOIL, EU 1 – UPPER ANACONDA MINE WASTE REMOVAL AREAS AND WASTE PILES

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

Chemical of Ecological Concern	Exposure Medium	Ecological Receptor	Risk-Based Ecological Goal [1]	Minimum Background Concentration[2]	Maximum Background Concentration[3]	Preliminary Ecological Remediation Goal (PERG)[4]
Arsenic	Surface soil (0-6 inches bgs)	Plants	18	18.33	26.03	18.33
		Invertebrates	60	18.33	26.03	60
		Mourning Dove	240,000	18.33	26.03	240,000
		Red-Tailed Hawk	120,000	18.33	26.03	120,000
		American Kestrel	4,300	18.33	26.03	4,300
		Meadow Vole	1,400	18.33	26.03	1,400
		White-Tailed Deer	880,000	18.33	26.03	880,000
		Red Fox	89,000	18.33	26.03	89,000
		Masked Shrew	1.40	18.33	26.03	**18.33**
Cadmium	Surface soil (0-6 inches bgs)	Plants	32	0.486	0.52	32
		Invertebrates	140	0.486	0.52	140
		Mourning Dove	770	0.486	0.52	770
		Red-Tailed Hawk	52,000	0.486	0.52	52,000
		American Kestrel	73	0.486	0.52	73
		Meadow Vole	13	0.486	0.52	13
		White-Tailed Deer	7,200	0.486	0.52	7,200
		Red Fox	850,000	0.486	0.52	850,000
		Masked Shrew	0.27	0.486	0.52	**0.486**
Copper	Surface soil (0-6 inches bgs)	Plants	70	79.58	250.03	79.58
		Invertebrates	80	79.58	250.03	80
		Mourning Dove	77,000	79.58	250.03	77,000
		Red-Tailed Hawk	270,000	79.58	250.03	270,000
		American Kestrel	8,700	79.58	250.03	8,700
		Meadow Vole	5,100	79.58	250.03	5,100
		White-Tailed Deer	2,700,000	79.58	250.03	2,700,000
		Red Fox	8,100,000	79.58	250.03	8,100,000
		Masked Shrew	120	79.58	250.03	**120**
Lead	Surface soil (0-6 inches bgs)	Plants	120	23.09	38.26	120
		Invertebrates	1,700	23.09	38.26	1,700
		Mourning Dove	72,000	23.09	38.26	72,000
		Red-Tailed Hawk	210,000	23.09	38.26	210,000
		American Kestrel	3,000	23.09	38.26	3,000
		Meadow Vole	23,000	23.09	38.26	23,000
		White-Tailed Deer	13,000,000	23.09	38.26	13,000,000
		Red Fox	20,000,000	23.09	38.26	20,000,000
		Masked Shrew	100	23.09	38.26	**100**

TABLE 6-1: PRELIMINARY ECOLOGICAL REMEDIATION GOALS FOR CHEMICALS OF ECOLOGICAL CONCERN IN SOIL, EU 1 – UPPER ANACONDA MINE WASTE REMOVAL AREAS AND WASTE PILES

Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

Chemical of Ecological Concern	Exposure Medium	Ecological Receptor	Risk-Based Ecological Goal [1]	Minimum Background Concentration[2]	Maximum Background Concentration[3]	Preliminary Ecological Remediation Goal (PERG)[4]
Manganese	Surface soil (0-6 inches bgs)	Plants	220	294.72	997.31	294.72
		Invertebrates	450	294.72	997.31	450
		Mourning Dove	2,700,000	294.72	997.31	2,700,000
		Red-Tailed Hawk	28,000,000	294.72	997.31	28,000,000
		American Kestrel	370,000	294.72	997.31	370,000
		Meadow Vole	2,900	294.72	997.31	2,900
		White-Tailed Deer	1,500,000	294.72	997.31	1,500,000
		Red Fox	16,000,000	294.72	997.31	16,000,000
		Masked Shrew	71	294.72	997.31	**294.72**
Zinc	Surface soil (0-6 inches bgs)	Plants	160	83.93	136.91	160
		Invertebrates	120	83.93	136.91	120
		Mourning Dove	120,000	83.93	136.91	120,000
		Red-Tailed Hawk	51,000	83.93	136.91	51,000
		American Kestrel	11,000	83.93	136.91	11,000
		Meadow Vole	2,100	83.93	136.91	2,100
		White-Tailed Deer	1,100,000	83.93	136.91	1,100,000
		Red Fox	400,000	83.93	136.91	400,000
		Masked Shrew	39	83.93	136.91	**83.93**

Notes:

All concentrations are shown in milligrams per kilogram.
Bold values indicate the lowest calculated preliminary ecological remediation goal from all the vertebrate receptors.

1 The derivation of the risk-based ecological remediation goal is described in Section 6.0 of the main text.

2 The minimum background concentration represents the lowest of the background concentrations from surface soils (0 to 6 inches bgs).

3 The maximum background concentration represents the highest of the background concentrations from surface soils (0 to 6 inches bgs).

4 The remediation goal is based on the greater of the risk-based ecological goal and minimum background concentration.

bgs Below ground surface
EU Exposure Unit

TABLE 6-2: PRELIMINARY ECOLOGICAL REMEDIATION GOALS FOR CHEMICALS OF ECOLOGICAL CONCERN IN SOIL, EU 2 – BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND DISPERSED TAILINGS AND OVERBANK DEPOSITS AND FLOSSIE LOUISE MINE WASTE PILE

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

Chemical of Ecological Concern	Exposure Medium	Ecological Receptor	Risk-Based Ecological Goal [1]	Minimum Background Concentration[2]	Maximum Background Concentration[3]	Preliminary Ecological Remediation Goal (PERG)[4]
Arsenic	Surface and subsurface soil (0-4 feet bgs)	Plants	18	13.93	26.03	18
		Invertebrates	60	13.93	26.03	60
		Mourning Dove	39,000	13.93	26.03	39,000
		Red-Tailed Hawk	19,000	13.93	26.03	19,000
		American Kestrel	690	13.93	26.03	690
		Meadow Vole	1,400	13.93	26.03	1,400
		White-Tailed Deer	140,000	13.93	26.03	140,000
		Red Fox	14,000	13.93	26.03	14,000
		Masked Shrew	1.40	13.93	26.03	**13.93**
Cadmium	Surface and subsurface soil (0-4 feet bgs)	Plants	32	0.486	2.90	32
		Invertebrates	140	0.486	2.90	140
		Mourning Dove	120	0.486	2.90	120
		Red-Tailed Hawk	8,400	0.486	2.90	8,400
		American Kestrel	12	0.486	2.90	12
		Meadow Vole	13	0.486	2.90	13
		White-Tailed Deer	1,100	0.486	2.90	1,100
		Red Fox	140,000	0.486	2.90	140,000
		Masked Shrew	0.27	0.486	2.90	**0.486**
Copper	Surface and subsurface soil (0-4 feet bgs)	Plants	70	79.58	250.03	79.58
		Invertebrates	80	79.58	250.03	80
		Mourning Dove	12,000	79.58	250.03	12,000
		Red-Tailed Hawk	43,000	79.58	250.03	43,000
		American Kestrel	1,400	79.58	250.03	1,400
		Meadow Vole	5,100	79.58	250.03	5,100
		White-Tailed Deer	430,000	79.58	250.03	430,000
		Red Fox	1,300,000	79.58	250.03	1,300,000
		Masked Shrew	120	79.58	250.03	**120**
Lead	Surface and subsurface soil (0-4 feet bgs)	Plants	120	23.09	54.37	120
		Invertebrates	1,700	23.09	54.37	1,700
		Mourning Dove	11,000	23.09	54.37	11,000
		Red-Tailed Hawk	34,000	23.09	54.37	34,000
		American Kestrel	480	23.09	54.37	480
		Meadow Vole	23,000	23.09	54.37	23,000
		White-Tailed Deer	2,000,000	23.09	54.37	2,000,000
		Red Fox	3,200,000	23.09	54.37	3,200,000
		Masked Shrew	100.0	23.09	54.37	**100**

TABLE 6-2: PRELIMINARY ECOLOGICAL REMEDIATION GOALS FOR CHEMICALS OF ECOLOGICAL CONCERN IN SOIL, EU 2 – BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND DISPERSED TAILINGS AND OVERBANK DEPOSITS AND FLOSSIE LOUISE MINE WASTE PILE

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

Chemical of Ecological Concern	Exposure Medium	Ecological Receptor	Risk-Based Ecological Goal [1]	Minimum Background Concentration[2]	Maximum Background Concentration[3]	Preliminary Ecological Remediation Goal (PERG)[4]
Manganese	Surface and subsurface soil (0-4 feet bgs)	Plants	220	294.72	997.31	294.72
		Invertebrates	450	294.72	997.31	450
		Mourning Dove	430,000	294.72	997.31	430,000
		Red-Tailed Hawk	4,500,000	294.72	997.31	4,500,000
		American Kestrel	59,000	294.72	997.31	59,000
		Meadow Vole	2,900	294.72	997.31	2,900
		White-Tailed Deer	250,000	294.72	997.31	250,000
		Red Fox	2,600,000	294.72	997.31	2,600,000
		Masked Shrew	71	294.72	997.31	**294.72**
Zinc	Surface and subsurface soil (0-4 feet bgs)	Plants	160	53.72	342.67	160
		Invertebrates	120	53.72	342.67	120
		Mourning Dove	20,000	53.72	342.67	20,000
		Red-Tailed Hawk	8,200	53.72	342.67	8,200
		American Kestrel	1,700	53.72	342.67	1,700
		Meadow Vole	2,100	53.72	342.67	2,100
		White-Tailed Deer	180,000	53.72	342.67	180,000
		Red Fox	63,000	53.72	342.67	63,000
		Masked Shrew	39.0	53.72	342.67	**53.72**

Notes:

All concentrations are shown in milligrams per kilogram.

Bold values indicate the lowest calculated preliminary ecological remediation goal from all the vertebrate receptors.

1 The derivation of the risk-based ecological remediation goal is described in Section 6.0 of the main text.

2 The minimum background concentration represents the lowest of the background concentrations from surface and subsurface soils (0 to 2 feet bgs).

3 The maximum background concentration represents the highest of the background concentrations from surface and subsurface soils (0 to 2 feet bgs).

4 The remediation goal is based on the greater of the risk-based ecological goal and minimum background concentration.

bgs Below ground surface

EE/CA Engineering Evaluation/Cost Analysis

EU Exposure Unit

TABLE 6-3: PRELIMINARY ECOLOGICAL REMEDIATION GOALS FOR CHEMICALS OF ECOLOGICAL CONCERN IN SOIL, EU 3 – CAPITAL MINE WASTE AREA

Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

Chemical of Ecological Concern	Exposure Medium	Ecological Receptor	Risk-Based Ecological Goal [1]	Minimum Background Concentration[2]	Maximum Background Concentration[3]	Preliminary Ecological Remediation Goal (PERG)[4]
Arsenic	Surface soil (0-6 inches bgs)	Plants	18	16.56	34.6	18
		Invertebrates	60	16.56	34.6	60
		Mourning Dove	5,600,000	16.56	34.6	5,600,000
		Red-Tailed Hawk	2,700,000	16.56	34.6	2,700,000
		American Kestrel	98,000	16.56	34.6	98,000
		Meadow Vole	1,400	16.56	34.6	1,400
		White-Tailed Deer	20,000,000	16.56	34.6	20,000,000
		Red Fox	2,000,000	16.56	34.6	2,000,000
		Masked Shrew	4.2	16.56	34.6	**16.56**
Cadmium	Surface soil (0-6 inches bgs)	Plants	32	0.284	2.20	32
		Invertebrates	140	0.284	2.20	140
		Mourning Dove	18,000	0.284	2.20	18,000
		Red-Tailed Hawk	1,200,000	0.284	2.20	1,200,000
		American Kestrel	1,700	0.284	2.20	1,700
		Meadow Vole	13	0.284	2.20	13
		White-Tailed Deer	160,000	0.284	2.20	160,000
		Red Fox	19,000,000	0.284	2.20	19,000,000
		Masked Shrew	0.82	0.284	2.20	**0.82**
Copper	Surface soil (0-6 inches bgs)	Plants	70	71.85	93	71.85
		Invertebrates	80	71.85	93	80
		Mourning Dove	1,700,000	71.85	93	1,700,000
		Red-Tailed Hawk	6,000,000	71.85	93	6,000,000
		American Kestrel	200,000	71.85	93	200,000
		Meadow Vole	5,100	71.85	93	5,100
		White-Tailed Deer	61,000,000	71.85	93	61,000,000
		Red Fox	180,000,000	71.85	93	180,000,000
		Masked Shrew	360	71.85	93	**360**
Lead	Surface soil (0-6 inches bgs)	Plants	120	62.21	115.2	120
		Invertebrates	1,700	62.21	115.2	1,700
		Mourning Dove	1,600,000	62.21	115.2	1,600,000
		Red-Tailed Hawk	4,800,000	62.21	115.2	4,800,000
		American Kestrel	68,000	62.21	115.2	68,000
		Meadow Vole	23,000	62.21	115.2	23,000
		White-Tailed Deer	290,000,000	62.21	115.2	290,000,000
		Red Fox	460,000,000	62.21	115.2	460,000,000
		Masked Shrew	310	62.21	115.2	**310**

TABLE 6-3: PRELIMINARY ECOLOGICAL REMEDIATION GOALS FOR CHEMICALS OF ECOLOGICAL CONCERN IN SOIL, EU 3 – CAPITAL MINE WASTE AREA

Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

Chemical of Ecological Concern	Exposure Medium	Ecological Receptor	Risk-Based Ecological Goal [1]	Minimum Background Concentration[2]	Maximum Background Concentration[3]	Preliminary Ecological Remediation Goal (PERG)[4]
Manganese	Surface soil (0-6 inches bgs)	Plants	220	130.88	141	220
		Invertebrates	450	130.88	141	450
		Mourning Dove	61,000,000	130.88	141	61,000,000
		Red-Tailed Hawk	640,000,000	130.88	141	640,000,000
		American Kestrel	8,400,000	130.88	141	8,400,000
		Meadow Vole	2,900	130.88	141	2,900
		White-Tailed Deer	35,000,000	130.88	141	35,000,000
		Red Fox	370,000,000	130.88	141	370,000,000
		Masked Shrew	220	130.88	141	**220**
Zinc	Surface soil (0-6 inches bgs)	Plants	160	40.94	333	160
		Invertebrates	120	40.94	333	120
		Mourning Dove	2,800,000	40.94	333	2,800,000
		Red-Tailed Hawk	1,200,000	40.94	333	1,200,000
		American Kestrel	250,000	40.94	333	250,000
		Meadow Vole	2,100	40.94	333	2,100
		White-Tailed Deer	25,000,000	40.94	333	25,000,000
		Red Fox	9,000,000	40.94	333	9,000,000
		Masked Shrew	120	40.94	333	**120**

Notes:

All concentrations are shown in milligrams per kilogram.
Bold values indicate the lowest calculated preliminary ecological remediation goal from all the vertebrate receptors.

1 The derivation of the risk-based ecological remediation goal is described in Section 6.0 of the main text.

2 The minimum background concentration represents the lowest of the background concentrations from surface soils (0 to 6 inches bgs).

3 The maximum background concentration represents the highest of the background concentrations from surface soils (0 to 6 inches bgs).

4 The remediation goal is based on the greater of the risk-based ecological goal and minimum background concentration.

-- Not applicable
bgs Below ground surface
EU Exposure Unit

TABLE 6-4: PRELIMINARY ECOLOGICAL REMEDIATION GOALS FOR CHEMICALS OF ECOLOGICAL CONCERN IN SOIL, EU 4 – CARBONATE MINE WASTE AREA

Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

Chemical of Ecological Concern	Exposure Medium	Ecological Receptor	Risk-Based Ecological Goal [1]	Minimum Background Concentration [2]	Maximum Background Concentration [3]	Preliminary Ecological Remediation Goal (PERG) [4]
Arsenic	Surface soil (0-6 inches bgs)	Plants	18	13.32	17	18
		Invertebrates	60	13.32	17	60
		Mourning Dove	660,000	13.32	17	660,000
		Red-Tailed Hawk	330,000	13.32	17	330,000
		American Kestrel	12,000	13.32	17	12,000
		Meadow Vole	1,400	13.32	17	1,400
		White-Tailed Deer	2,400,000	13.32	17	2,400,000
		Red Fox	240,000	13.32	17	240,000
		Masked Shrew	1.40	13.32	17	**13.32**
Cadmium	Surface soil (0-6 inches bgs)	Plants	32	0.83	1.79	32
		Invertebrates	140	0.83	1.79	140
		Mourning Dove	2,100	0.83	1.79	2,100
		Red-Tailed Hawk	140,000	0.83	1.79	140,000
		American Kestrel	200	0.83	1.79	200
		Meadow Vole	13	0.83	1.79	13
		White-Tailed Deer	19,000	0.83	1.79	19,000
		Red Fox	2,300,000	0.83	1.79	2,300,000
		Masked Shrew	0.27	0.83	1.79	**0.83**
Copper	Surface soil (0-6 inches bgs)	Plants	70	29.52	48.02	70
		Invertebrates	80	29.52	48.02	80
		Mourning Dove	210,000	29.52	48.02	210,000
		Red-Tailed Hawk	720,000	29.52	48.02	720,000
		American Kestrel	24,000	29.52	48.02	24,000
		Meadow Vole	5,100	29.52	48.02	5,100
		White-Tailed Deer	7,300,000	29.52	48.02	7,300,000
		Red Fox	22,000,000	29.52	48.02	22,000,000
		Masked Shrew	120	29.52	48.02	**120**
Lead	Surface soil (0-6 inches bgs)	Plants	120	60.82	125.09	120
		Invertebrates	1,700	60.82	125.09	1,700
		Mourning Dove	190,000	60.82	125.09	190,000
		Red-Tailed Hawk	570,000	60.82	125.09	570,000
		American Kestrel	8,100	60.82	125.09	8,100
		Meadow Vole	23,000	60.82	125.09	23,000
		White-Tailed Deer	34,000,000	60.82	125.09	34,000,000
		Red Fox	55,000,000	60.82	125.09	55,000,000
		Masked Shrew	100.0	60.82	125.09	**100**

TABLE 6-4: PRELIMINARY ECOLOGICAL REMEDIATION GOALS FOR CHEMICALS OF ECOLOGICAL CONCERN IN SOIL, EU 4 – CARBONATE MINE WASTE AREA

Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

Chemical of Ecological Concern	Exposure Medium	Ecological Receptor	Risk-Based Ecological Goal [1]	Minimum Background Concentration [2]	Maximum Background Concentration [3]	Preliminary Ecological Remediation Goal (PERG) [4]
Manganese	Surface soil (0-6 inches bgs)	Plants	220	568.95	755.67	568.95
		Invertebrates	450	568.95	755.67	568.95
		Mourning Dove	7,300,000	568.95	755.67	7,300,000
		Red-Tailed Hawk	76,000,000	568.95	755.67	76,000,000
		American Kestrel	1,000,000	568.95	755.67	1,000,000
		Meadow Vole	2,900	568.95	755.67	2,900
		White-Tailed Deer	4,200,000	568.95	755.67	4,200,000
		Red Fox	44,000,000	568.95	755.67	44,000,000
		Masked Shrew	71	568.95	755.67	**568.95**
Zinc	Surface soil (0-6 inches bgs)	Plants	160	113.7	242.31	160
		Invertebrates	120	113.7	242.31	120
		Mourning Dove	330,000	113.7	242.31	330,000
		Red-Tailed Hawk	140,000	113.7	242.31	140,000
		American Kestrel	30,000	113.7	242.31	30,000
		Meadow Vole	2,100	113.7	242.31	2,100
		White-Tailed Deer	3,000,000	113.7	242.31	3,000,000
		Red Fox	1,100,000	113.7	242.31	1,100,000
		Masked Shrew	39.0	113.7	242.31	**113.7**

Notes:

All concentrations are shown in milligrams per kilogram.
Bold values indicate the lowest calculated preliminary ecological remediation goal from all the vertebrate receptors.

1 The derivation of the risk-based ecological remediation goal is described in Section 6.0 of the main text.

2 The minimum background concentration represents the lowest of the background concentrations from surface soils (0 to 6 inches bgs).

3 The maximum background concentration represents the highest of the background concentrations from surface soils (0 to 6 inches bgs).

4 The remediation goal is based on the greater of the risk-based ecological goal and minimum background concentration.

< Non-detect result
bgs Below ground surface
EU Exposure Unit

TABLE 6-5: PRELIMINARY ECOLOGICAL REMEDIATION GOALS FOR CHEMICALS OF ECOLOGICAL CONCERN IN SOIL, EU 5 – EDITH MINE WASTE AREAS

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

Chemical of Ecological Concern	Exposure Medium	Ecological Receptor	Risk-Based Ecological Goal [1]	Minimum Background Concentration[2]	Maximum Background Concentration[3]	Preliminary Ecological Remediation Goal (PERG)[4]
Arsenic	Surface soil (0-6 inches bgs)	Plants	18	11.5 <	27.38	18
		Invertebrates	60	11.5 <	27.38	60
		Mourning Dove	560,000	11.5 <	27.38	560,000
		Red-Tailed Hawk	280,000	11.5 <	27.38	280,000
		American Kestrel	9,800	11.5 <	27.38	9,800
		Meadow Vole	1,400	11.5 <	27.38	1,400
		White-Tailed Deer	2,000,000	11.5 <	27.38	2,000,000
		Red Fox	200,000	11.5 <	27.38	200,000
		Masked Shrew	1.40	11.5 <	27.38	**11.5**
Cadmium	Surface soil (0-6 inches bgs)	Plants	32	2.46	3.32	32
		Invertebrates	140	2.46	3.32	140
		Mourning Dove	1,800	2.46	3.32	1,800
		Red-Tailed Hawk	120,000	2.46	3.32	120,000
		American Kestrel	170	2.46	3.32	170
		Meadow Vole	13	2.46	3.32	13
		White-Tailed Deer	16,000	2.46	3.32	16,000
		Red Fox	1,900,000	2.46	3.32	1,900,000
		Masked Shrew	0.27	2.46	3.32	**2.46**
Copper	Surface soil (0-6 inches bgs)	Plants	70	39.55	84.33	70
		Invertebrates	80	39.55	84.33	80
		Mourning Dove	180,000	39.55	84.33	180,000
		Red-Tailed Hawk	610,000	39.55	84.33	610,000
		American Kestrel	20,000	39.55	84.33	20,000
		Meadow Vole	5,100	39.55	84.33	5,100
		White-Tailed Deer	6,200,000	39.55	84.33	6,200,000
		Red Fox	19,000,000	39.55	84.33	19,000,000
		Masked Shrew	120	39.55	84.33	**120**
Lead	Surface soil (0-6 inches bgs)	Plants	120	32.69	321.54	120
		Invertebrates	1,700	32.69	321.54	1,700
		Mourning Dove	160,000	32.69	321.54	160,000
		Red-Tailed Hawk	480,000	32.69	321.54	480,000
		American Kestrel	6,800	32.69	321.54	6,800
		Meadow Vole	23,000	32.69	321.54	23,000
		White-Tailed Deer	29,000,000	32.69	321.54	29,000,000
		Red Fox	46,000,000	32.69	321.54	46,000,000
		Masked Shrew	100.0	32.69	321.54	**100**

TABLE 6-5: PRELIMINARY ECOLOGICAL REMEDIATION GOALS FOR CHEMICALS OF ECOLOGICAL CONCERN IN SOIL, EU 5 – EDITH MINE WASTE AREAS

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

Chemical of Ecological Concern	Exposure Medium	Ecological Receptor	Risk-Based Ecological Goal [1]	Minimum Background Concentration[2]	Maximum Background Concentration[3]	Preliminary Ecological Remediation Goal (PERG)[4]
Manganese	Surface soil (0-6 inches bgs)	Plants	220	201.49	1,470.06	220
		Invertebrates	450	201.49	1,470.06	450
		Mourning Dove	6,100,000	201.49	1,470.06	6,100,000
		Red-Tailed Hawk	64,000,000	201.49	1,470.06	64,000,000
		American Kestrel	840,000	201.49	1,470.06	840,000
		Meadow Vole	2,900	201.49	1,470.06	2,900
		White-Tailed Deer	3,500,000	201.49	1,470.06	3,500,000
		Red Fox	37,000,000	201.49	1,470.06	37,000,000
		Masked Shrew	71	201.49	1,470.06	**201.49**
Zinc	Surface soil (0-6 inches bgs)	Plants	160	99.21	322.60	160
		Invertebrates	120	99.21	322.60	120
		Mourning Dove	280,000	99.21	322.60	280,000
		Red-Tailed Hawk	120,000	99.21	322.60	120,000
		American Kestrel	25,000	99.21	322.60	25,000
		Meadow Vole	2,100	99.21	322.60	2,100
		White-Tailed Deer	2,500,000	99.21	322.60	2,500,000
		Red Fox	900,000	99.21	322.60	900,000
		Masked Shrew	39.0	99.21	322.60	**99.21**

Notes:

All concentrations are shown in milligrams per kilogram.

Bold values indicate the lowest calculated preliminary ecological remediation goal from all the vertebrate receptors.

1 The derivation of the risk-based ecological remediation goal is described in Section 6.0 of the main text.

2 The minimum background concentration represents the lowest of the background concentrations from surface soils (0 to 6 inches bgs).

3 The maximum background concentration represents the highest of the background concentrations from surface soils (0 to 6 inches bgs).

4 The remediation goal is based on the greater of the risk-based ecological goal and minimum background concentration.

bgs Below ground surface

EU Exposure Unit

TABLE 6-6: PRELIMINARY ECOLOGICAL REMEDIATION GOALS FOR CHEMICALS OF ECOLOGICAL CONCERN IN SOIL, EU 6 – CONSOLATION MINE WASTE AREA

Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

Chemical of Ecological Concern	Exposure Medium	Ecological Receptor	Risk-Based Ecological Goal [1]	Minimum Background Concentration[2]	Maximum Background Concentration[3]	Preliminary Ecological Remediation Goal (PERG)[4]
Arsenic	Surface soil (0-6 inches bgs)	Plants	18	16.06	27.38	18
		Invertebrates	60	16.06	27.38	60
		Mourning Dove	1,000,000	16.06	27.38	1,000,000
		Red-Tailed Hawk	510,000	16.06	27.38	510,000
		American Kestrel	18,000	16.06	27.38	18,000
		Meadow Vole	1,400	16.06	27.38	1,400
		White-Tailed Deer	3,700,000	16.06	27.38	3,700,000
		Red Fox	380,000	16.06	27.38	380,000
		Masked Shrew	1.40	16.06	27.38	**16.06**
Cadmium	Surface soil (0-6 inches bgs)	Plants	32	2.46	3.32	32
		Invertebrates	140	2.46	3.32	140
		Mourning Dove	3,300	2.46	3.32	3,300
		Red-Tailed Hawk	220,000	2.46	3.32	220,000
		American Kestrel	310	2.46	3.32	310
		Meadow Vole	13	2.46	3.32	13
		White-Tailed Deer	30,000	2.46	3.32	30,000
		Red Fox	3,600,000	2.46	3.32	3,600,000
		Masked Shrew	0.27	2.46	3.32	**2.46**
Copper	Surface soil (0-6 inches bgs)	Plants	70	39.55	58.61	70
		Invertebrates	80	39.55	58.61	80
		Mourning Dove	320,000	39.55	58.61	320,000
		Red-Tailed Hawk	1,100,000	39.55	58.61	1,100,000
		American Kestrel	37,000	39.55	58.61	37,000
		Meadow Vole	5,100	39.55	58.61	5,100
		White-Tailed Deer	11,000,000	39.55	58.61	11,000,000
		Red Fox	34,000,000	39.55	58.61	34,000,000
		Masked Shrew	120	39.55	58.61	**120**
Lead	Surface soil (0-6 inches bgs)	Plants	120	32.69	321.54	120
		Invertebrates	1,700	32.69	321.54	1,700
		Mourning Dove	300,000	32.69	321.54	300,000
		Red-Tailed Hawk	880,000	32.69	321.54	880,000
		American Kestrel	13,000	32.69	321.54	13,000
		Meadow Vole	23,000	32.69	321.54	23,000
		White-Tailed Deer	54,000,000	32.69	321.54	54,000,000
		Red Fox	85,000,000	32.69	321.54	85,000,000
		Masked Shrew	100.0	32.69	321.54	**100**

TABLE 6-6: PRELIMINARY ECOLOGICAL REMEDIATION GOALS FOR CHEMICALS OF ECOLOGICAL CONCERN IN SOIL, EU 6 – CONSOLATION MINE WASTE AREA

Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

Chemical of Ecological Concern	Exposure Medium	Ecological Receptor	Risk-Based Ecological Goal [1]	Minimum Background Concentration[2]	Maximum Background Concentration[3]	Preliminary Ecological Remediation Goal (PERG)[4]
Manganese	Surface soil (0-6 inches bgs)	Plants	220	1008.4	1470.06	1,008.4
		Invertebrates	450	1008.4	1470.06	1,008.4
		Mourning Dove	11,000,000	1008.4	1470.06	11,000,000
		Red-Tailed Hawk	120,000,000	1008.4	1470.06	120,000,000
		American Kestrel	1,600,000	1008.4	1470.06	1,600,000
		Meadow Vole	2,900	1008.4	1470.06	2,900
		White-Tailed Deer	6,500,000	1008.4	1470.06	6,500,000
		Red Fox	69,000,000	1008.4	1470.06	69,000,000
		Masked Shrew	71	1008.4	1470.06	**1,008.4**
Zinc	Surface soil (0-6 inches bgs)	Plants	160	99.21	220.52	160
		Invertebrates	120	99.21	220.52	120
		Mourning Dove	520,000	99.21	220.52	520,000
		Red-Tailed Hawk	210,000	99.21	220.52	210,000
		American Kestrel	46,000	99.21	220.52	46,000
		Meadow Vole	2,100	99.21	220.52	2,100
		White-Tailed Deer	4,600,000	99.21	220.52	4,600,000
		Red Fox	1,700,000	99.21	220.52	1,700,000
		Masked Shrew	39.0	99.21	220.52	**99.21**

Notes:

All concentrations are shown in milligrams per kilogram.
Bold values indicate the lowest calculated preliminary ecological remediation goal from all the vertebrate receptors.

1 The derivation of the risk-based ecological remediation goal is described in Section 6.0 of the main text.

2 The minimum background concentration represents the lowest of the background concentrations from surface soils (0 to 6 inches bgs).

3 The maximum background concentration represents the highest of the background concentrations from surface soils (0 to 6 inches bgs).

4 The remediation goal is based on the greater of the risk-based ecological goal and minimum background concentration.

bgs Below ground surface
EU Exposure Unit

TABLE 6-7: PRELIMINARY ECOLOGICAL REMEDIATION GOALS FOR CHEMICALS OF ECOLOGICAL CONCERN IN SOIL, EU 7 – MARY P. MINE WASTE PILE

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

Chemical of Ecological Concern	Exposure Medium	Ecological Receptor	Risk-Based Ecological Goal [1]	Minimum Background Concentration[2]	Maximum Background Concentration[3]	Preliminary Ecological Remediation Goal (PERG)[4]
Arsenic	Surface soil (0-6 inches bgs)	Plants	18	19.5 <	34.6	19.5
		Invertebrates	60	19.5 <	34.6	60
		Mourning Dove	6,600,000	19.5 <	34.6	6,600,000
		Red-Tailed Hawk	3,200,000	19.5 <	34.6	3,200,000
		American Kestrel	120,000	19.5 <	34.6	120,000
		Meadow Vole	1,400	19.5 <	34.6	1,400
		White-Tailed Deer	24,000,000	19.5 <	34.6	24,000,000
		Red Fox	2,400,000	19.5 <	34.6	2,400,000
		Masked Shrew	5.0	19.5 <	34.6	**19.5**
Cadmium	Surface soil (0-6 inches bgs)	Plants	32	0.284	2.70	32
		Invertebrates	140	0.284	2.70	140
		Mourning Dove	21,000	0.284	2.70	21,000
		Red-Tailed Hawk	1,400,000	0.284	2.70	1,400,000
		American Kestrel	2,000	0.284	2.70	2,000
		Meadow Vole	13	0.284	2.70	13
		White-Tailed Deer	190,000	0.284	2.70	190,000
		Red Fox	23,000,000	0.284	2.70	23,000,000
		Masked Shrew	0.97	0.284	2.70	**0.97**
Copper	Surface soil (0-6 inches bgs)	Plants	70	92.51	104	92.51
		Invertebrates	80	92.51	104	92.51
		Mourning Dove	2,100,000	92.51	104	2,100,000
		Red-Tailed Hawk	7,100,000	92.51	104	7,100,000
		American Kestrel	230,000	92.51	104	230,000
		Meadow Vole	5,100	92.51	104	5,100
		White-Tailed Deer	72,000,000	92.51	104	72,000,000
		Red Fox	220,000,000	92.51	104	220,000,000
		Masked Shrew	430	92.51	104	**430**
Lead	Surface soil (0-6 inches bgs)	Plants	120	53.2	115.2	120
		Invertebrates	1,700	53.2	115.2	1,700
		Mourning Dove	1,900,000	53.2	115.2	1,900,000
		Red-Tailed Hawk	5,600,000	53.2	115.2	5,600,000
		American Kestrel	80,000	53.2	115.2	80,000
		Meadow Vole	23,000	53.2	115.2	23,000
		White-Tailed Deer	340,000,000	53.2	115.2	340,000,000
		Red Fox	540,000,000	53.2	115.2	540,000,000
		Masked Shrew	360	53.2	115.2	**360**

TABLE 6-7: PRELIMINARY ECOLOGICAL REMEDIATION GOALS FOR CHEMICALS OF ECOLOGICAL CONCERN IN SOIL, EU 7 – MARY P. MINE WASTE PILE

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

Chemical of Ecological Concern	Exposure Medium	Ecological Receptor	Risk-Based Ecological Goal [1]	Minimum Background Concentration[2]	Maximum Background Concentration[3]	Preliminary Ecological Remediation Goal (PERG)[4]
Manganese	Surface soil (0-6 inches bgs)	Plants	220	141.05	694	220
		Invertebrates	450	141.05	694	450
		Mourning Dove	72,000,000	141.05	694	72,000,000
		Red-Tailed Hawk	760,000,000	141.05	694	760,000,000
		American Kestrel	9,900,000	141.05	694	9,900,000
		Meadow Vole	2,900	141.05	694	2,900
		White-Tailed Deer	42,000,000	141.05	694	42,000,000
		Red Fox	440,000,000	141.05	694	440,000,000
		Masked Shrew	260	141.05	694	**260**
Zinc	Surface soil (0-6 inches bgs)	Plants	160	40.94	343	160
		Invertebrates	120	40.94	343	120
		Mourning Dove	3,300,000	40.94	343	3,300,000
		Red-Tailed Hawk	1,400,000	40.94	343	1,400,000
		American Kestrel	290,000	40.94	343	290,000
		Meadow Vole	2,100	40.94	343	2,100
		White-Tailed Deer	30,000,000	40.94	343	30,000,000
		Red Fox	11,000,000	40.94	343	11,000,000
		Masked Shrew	140.0	40.94	343	**140**

Notes:

All concentrations are shown in milligrams per kilogram.

Bold values indicate the lowest calculated preliminary ecological remediation goal from all the vertebrate receptors.

1 The derivation of the risk-based ecological remediation goal is described in Section 6.0 of the main text.

2 The minimum background concentration represents the lowest of the background concentrations from surface soils (0 to 6 inches bgs).

3 The maximum background concentration represents the highest of the background concentrations from surface soils (0 to 6 inches bgs).

4 The remediation goal is based on the greater of the risk-based ecological goal and minimum background concentration.

-- Not applicable

bgs Below ground surface

EU Exposure Unit

TABLE 6-8: PRELIMINARY ECOLOGICAL REMEDIATION GOALS FOR CHEMICALS OF ECOLOGICAL CONCERN IN SOIL, EU 8 – MIKE HORSE MINE WASTE PILES

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

Chemical of Ecological Concern	Exposure Medium	Ecological Receptor	Risk-Based Ecological Goal [1]	Minimum Background Concentration[2]	Maximum Background Concentration[4]	Preliminary Ecological Remediation Goal (PERG)[4]
Arsenic	Surface soil (0-6 inches bgs)	Plants	18	15.2 <	15.6	18
		Invertebrates	60	15.2 <	15.6	60
		Mourning Dove	420,000	15.2 <	15.6	420,000
		Red-Tailed Hawk	200,000	15.2 <	15.6	200,000
		American Kestrel	7,300	15.2 <	15.6	7,300
		Meadow Vole	1,400	15.2 <	15.6	1,400
		White-Tailed Deer	1,500,000	15.2 <	15.6	1,500,000
		Red Fox	150,000	15.2 <	15.6	150,000
		Masked Shrew	1.40	15.2 <	15.6	**15.2**
Cadmium	Surface soil (0-6 inches bgs)	Plants	32	1.57	4.60	32
		Invertebrates	140	1.57	4.60	140
		Mourning Dove	1,300	1.57	4.60	1,300
		Red-Tailed Hawk	89,000	1.57	4.60	89,000
		American Kestrel	120	1.57	4.60	120
		Meadow Vole	13	1.57	4.60	13
		White-Tailed Deer	12,000	1.57	4.60	12,000
		Red Fox	1,400,000	1.57	4.60	1,400,000
		Masked Shrew	0.27	1.57	4.60	**1.57**
Copper	Surface soil (0-6 inches bgs)	Plants	70	32.77	62.5 <	70
		Invertebrates	80	32.77	62.5 <	80
		Mourning Dove	130,000	32.77	62.5 <	130,000
		Red-Tailed Hawk	450,000	32.77	62.5 <	450,000
		American Kestrel	15,000	32.77	62.5 <	15,000
		Meadow Vole	5,100	32.77	62.5 <	5,100
		White-Tailed Deer	4,600,000	32.77	62.5 <	4,600,000
		Red Fox	14,000,000	32.77	62.5 <	14,000,000
		Masked Shrew	120	32.77	62.5 <	**120**
Lead	Surface soil (0-6 inches bgs)	Plants	120	33.34	180.9	120
		Invertebrates	1,700	33.34	180.9	1,700
		Mourning Dove	120,000	33.34	180.9	120,000
		Red-Tailed Hawk	360,000	33.34	180.9	360,000
		American Kestrel	5,100	33.34	180.9	5,100
		Meadow Vole	23,000	33.34	180.9	23,000
		White-Tailed Deer	22,000,000	33.34	180.9	22,000,000
		Red Fox	34,000,000	33.34	180.9	34,000,000
		Masked Shrew	100.0	33.34	180.9	**100**

TABLE 6-8: PRELIMINARY ECOLOGICAL REMEDIATION GOALS FOR CHEMICALS OF ECOLOGICAL CONCERN IN SOIL, EU 8 – MIKE HORSE MINE WASTE PILES

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

Chemical of Ecological Concern	Exposure Medium	Ecological Receptor	Risk-Based Ecological Goal [1]	Minimum Background Concentration[2]	Maximum Background Concentration[4]	Preliminary Ecological Remediation Goal (PERG)[4]
Manganese	Surface soil (0-6 inches bgs)	Plants	220	864.53	2,432	864.53
		Invertebrates	450	864.53	2,432	864.53
		Mourning Dove	4,600,000	864.53	2,432	4,600,000
		Red-Tailed Hawk	48,000,000	864.53	2,432	48,000,000
		American Kestrel	630,000	864.53	2,432	630,000
		Meadow Vole	2,900	864.53	2,432	2,900
		White-Tailed Deer	2,600,000	864.53	2,432	2,600,000
		Red Fox	28,000,000	864.53	2,432	28,000,000
		Masked Shrew	71	864.53	2,432	**864.53**
Zinc	Surface soil (0-6 inches bgs)	Plants	160	48.38	297	160
		Invertebrates	120	48.38	297	120
		Mourning Dove	210,000	48.38	297	210,000
		Red-Tailed Hawk	87,000	48.38	297	87,000
		American Kestrel	19,000	48.38	297	19,000
		Meadow Vole	2,100	48.38	297	2,100
		White-Tailed Deer	1,900,000	48.38	297	1,900,000
		Red Fox	670,000	48.38	297	670,000
		Masked Shrew	39.0	48.38	297	**48.38**

Notes:

All concentrations are shown in milligrams per kilogram.

Bold values indicate the lowest calculated preliminary ecological remediation goal from all the vertebrate receptors.

1 The derivation of the risk-based ecological remediation goal is described in Section 6.0 of the main text.

2 The minimum background concentration shown represents the lowest of the background concentrations from surface soils (0 to 6 inches bgs). The minimum background concentration at EU 8 was non-detect; the detection limit was used as the minimum background concentration because no other background value was available.

3 The maximum background concentration represents the highest of the background concentrations from surface soils (0 to 6 inches bgs).

4 The remediation goal is based on the greater of the risk-based ecological goal and minimum background concentration.

< Non-detect result

-- Not applicable

bgs Below ground surface

EU Exposure Unit

TABLE 6-9: PRELIMINARY ECOLOGICAL REMEDIATION GOALS FOR CHEMICALS OF ECOLOGICAL CONCERN IN SOIL, EU 9 – PAYMASTER MINE WASTE AREAS

Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

Chemical of Ecological Concern	Exposure Medium	Ecological Receptor	Risk-Based Ecological Goal [1]	Minimum Background Concentration[2]	Maximum Background Concentration[3]	Preliminary Ecological Remediation Goal (PERG)[4]
Arsenic	Surface soil (0-6 inches bgs)	Plants	18	10 <	50.97	18
		Invertebrates	60	10 <	50.97	60
		Mourning Dove	5,800,000	10 <	50.97	5,800,000
		Red-Tailed Hawk	2,800,000	10 <	50.97	2,800,000
		American Kestrel	100,000	10 <	50.97	100,000
		Meadow Vole	1,400	10 <	50.97	1,400
		White-Tailed Deer	21,000,000	10 <	50.97	21,000,000
		Red Fox	2,100,000	10 <	50.97	2,100,000
		Masked Shrew	4.40	10 <	50.97	**10**
Cadmium	Surface soil (0-6 inches bgs)	Plants	32	0.543	4.44	32
		Invertebrates	140	0.543	4.44	140
		Mourning Dove	18,000	0.543	4.44	18,000
		Red-Tailed Hawk	1,200,000	0.543	4.44	1,200,000
		American Kestrel	1,700	0.543	4.44	1,700
		Meadow Vole	13	0.543	4.44	13
		White-Tailed Deer	170,000	0.543	4.44	170,000
		Red Fox	20,000,000	0.543	4.44	20,000,000
		Masked Shrew	0.85	0.543	4.44	**0.85**
Copper	Surface soil (0-6 inches bgs)	Plants	70	26.19 <	507	70
		Invertebrates	80	26.19 <	507	80
		Mourning Dove	1,800,000	26.19 <	507	1,800,000
		Red-Tailed Hawk	6,300,000	26.19 <	507	6,300,000
		American Kestrel	210,000	26.19 <	507	210,000
		Meadow Vole	5,100	26.19 <	507	5,100
		White-Tailed Deer	64,000,000	26.19 <	507	64,000,000
		Red Fox	190,000,000	26.19 <	507	190,000,000
		Masked Shrew	370	26.19 <	507	**370**
Lead	Surface soil (0-6 inches bgs)	Plants	120	29.08	1,114	120
		Invertebrates	1,700	29.08	1,114	1,700
		Mourning Dove	1,700,000	29.08	1,114	1,700,000
		Red-Tailed Hawk	4,900,000	29.08	1,114	4,900,000
		American Kestrel	71,000	29.08	1,114	71,000
		Meadow Vole	23,000	29.08	1,114	23,000
		White-Tailed Deer	300,000,000	29.08	1,114	300,000,000
		Red Fox	480,000,000	29.08	1,114	480,000,000
		Masked Shrew	320.0	29.08	1,114	**320**

TABLE 6-9: PRELIMINARY ECOLOGICAL REMEDIATION GOALS FOR CHEMICALS OF ECOLOGICAL CONCERN IN SOIL, EU 9 – PAYMASTER MINE WASTE AREAS

Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

Chemical of Ecological Concern	Exposure Medium	Ecological Receptor	Risk-Based Ecological Goal [1]	Minimum Background Concentration[2]	Maximum Background Concentration[3]	Preliminary Ecological Remediation Goal (PERG)[4]
Manganese	Surface soil (0-6 inches bgs)	Plants	220	360.4	6,434	360.4
		Invertebrates	450	360.4	6,434	450
		Mourning Dove	63,000,000	360.4	6,434	63,000,000
		Red-Tailed Hawk	670,000,000	360.4	6,434	670,000,000
		American Kestrel	8,700,000	360.4	6,434	8,700,000
		Meadow Vole	2,900	360.4	6,434	2,900
		White-Tailed Deer	37,000,000	360.4	6,434	37,000,000
		Red Fox	390,000,000	360.4	6,434	390,000,000
		Masked Shrew	230	360.4	6,434	**360.4**
Zinc	Surface soil (0-6 inches bgs)	Plants	160	66.86	650	160
		Invertebrates	120	66.86	650	120
		Mourning Dove	2,900,000	66.86	650	2,900,000
		Red-Tailed Hawk	1,200,000	66.86	650	1,200,000
		American Kestrel	260,000	66.86	650	260,000
		Meadow Vole	2,100	66.86	650	2,100
		White-Tailed Deer	26,000,000	66.86	650	26,000,000
		Red Fox	9,300,000	66.86	650	9,300,000
		Masked Shrew	120	66.86	650	**120**

Notes:

All concentrations are shown in milligrams per kilogram.
Bold values indicate the lowest calculated preliminary ecological remediation goal from all the vertebrate receptors.

1 The derivation of the risk-based ecological remediation goal is described in Section 6.0 of the main text.

2 The minimum background concentration represents the lowest of the background concentrations from surface soils (0 to 6 inches bgs).

3 The maximum background concentration represents the highest of the background concentrations from surface soils (0 to 6 inches bgs).

4 The remediation goal is based on the greater of the risk-based ecological goal and minimum background concentration.

< Non-detect result
-- Not applicable
bgs Below ground surface
EU Exposure Unit

TABLE 6-10: PRELIMINARY ECOLOGICAL REMEDIATION GOALS FOR CHEMICALS OF ECOLOGICAL CONCERN IN SOIL, EU 10 – NUMBER 3 TUNNEL WASTE AREA

Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

Chemical of Ecological Concern	Exposure Medium	Ecological Receptor	Risk-Based Ecological Goal [1]	Minimum Background Concentration[2]	Maximum Background Concentration[3]	Preliminary Ecological Remediation Goal (PERG)[4]
Arsenic	Surface soil (0-6 inches bgs)	Plants	18	11.09	34.6	18
		Invertebrates	60	11.09	34.6	60
		Mourning Dove	660,000	11.09	34.6	660,000
		Red-Tailed Hawk	330,000	11.09	34.6	330,000
		American Kestrel	12,000	11.09	34.6	12,000
		Meadow Vole	1,400	11.09	34.6	1,400
		White-Tailed Deer	2,400,000	11.09	34.6	2,400,000
		Red Fox	240,000	11.09	34.6	240,000
		Masked Shrew	1.40	11.09	34.6	**11.09**
Cadmium	Surface soil (0-6 inches bgs)	Plants	32	0.284	2.20	32
		Invertebrates	140	0.284	2.20	140
		Mourning Dove	2,100	0.284	2.20	2,100
		Red-Tailed Hawk	140,000	0.284	2.20	140,000
		American Kestrel	200	0.284	2.20	200
		Meadow Vole	13	0.284	2.20	13
		White-Tailed Deer	19,000	0.284	2.20	19,000
		Red Fox	2,300,000	0.284	2.20	2,300,000
		Masked Shrew	0.27	0.284	2.20	**0.284**
Copper	Surface soil (0-6 inches bgs)	Plants	70	71.85	200	72
		Invertebrates	80	71.85	200	80
		Mourning Dove	210,000	71.85	200	210,000
		Red-Tailed Hawk	720,000	71.85	200	720,000
		American Kestrel	24,000	71.85	200	24,000
		Meadow Vole	5,100	71.85	200	5,100
		White-Tailed Deer	7,300,000	71.85	200	7,300,000
		Red Fox	22,000,000	71.85	200	22,000,000
		Masked Shrew	120	71.85	200	**120**
Lead	Surface soil (0-6 inches bgs)	Plants	120	62.21	307.7	120
		Invertebrates	1,700	62.21	307.7	1,700
		Mourning Dove	190,000	62.21	307.7	190,000
		Red-Tailed Hawk	570,000	62.21	307.7	570,000
		American Kestrel	8,100	62.21	307.7	8,100
		Meadow Vole	23,000	62.21	307.7	23,000
		White-Tailed Deer	34,000,000	62.21	307.7	34,000,000
		Red Fox	55,000,000	62.21	307.7	55,000,000
		Masked Shrew	100	62.21	307.7	**100**

TABLE 6-10: PRELIMINARY ECOLOGICAL REMEDIATION GOALS FOR CHEMICALS OF ECOLOGICAL CONCERN IN SOIL, EU 10 – NUMBER 3 TUNNEL WASTE AREA

Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

Chemical of Ecological Concern	Exposure Medium	Ecological Receptor	Risk-Based Ecological Goal [1]	Minimum Background Concentration[2]	Maximum Background Concentration[3]	Preliminary Ecological Remediation Goal (PERG)[4]
Manganese	Surface soil (0-6 inches bgs)	Plants	220	130.88	792	220
		Invertebrates	450	130.88	792	450
		Mourning Dove	7,300,000	130.88	792	7,300,000
		Red-Tailed Hawk	76,000,000	130.88	792	76,000,000
		American Kestrel	1,000,000	130.88	792	1,000,000
		Meadow Vole	2,900	130.88	792	2,900
		White-Tailed Deer	4,200,000	130.88	792	4,200,000
		Red Fox	44,000,000	130.88	792	44,000,000
		Masked Shrew	71	130.88	792	**130.88**
Zinc	Surface soil (0-6 inches bgs)	Plants	160	40.94	333	160
		Invertebrates	120	40.94	333	120
		Mourning Dove	330,000	40.94	333	330,000
		Red-Tailed Hawk	140,000	40.94	333	140,000
		American Kestrel	30,000	40.94	333	30,000
		Meadow Vole	2,100	40.94	333	2,100
		White-Tailed Deer	3,000,000	40.94	333	3,000,000
		Red Fox	1,100,000	40.94	333	1,100,000
		Masked Shrew	39.0	40.94	333	**40.94**

Notes:

All concentrations are shown in milligrams per kilogram.
Bold values indicate the lowest calculated preliminary ecological remediation goal from all the vertebrate receptors.

1 The derivation of the risk-based ecological remediation goal is described in Section 6.0 of the main text.

2 The minimum background concentration represents the lowest of the background concentrations from surface soils (0 to 6 inches bgs).

3 The maximum background concentration represents the highest of the background concentrations from surface soils (0 to 6 inches bgs).

4 The remediation goal is based on the greater of the risk-based ecological goal and minimum background concentration.

-- Not applicable
bgs Below ground surface
EU Exposure Unit

TABLE 6-11: PRELIMINARY ECOLOGICAL REMEDIATION GOALS FOR CHEMICALS OF ECOLOGICAL CONCERN IN SOIL, EU 11 – BEARTRAP CREEK DISPERSED TAILINGS DEPOSITS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK TAILINGS DEPOSIT AND FLOSSIE LOUISE MINE WASTE PILE

Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

Chemical of Ecological Concern	Exposure Medium	Ecological Receptor	Risk-Based Ecological Goal [1]	Minimum Background Concentration[2]	Maximum Background Concentration[3]	Preliminary Ecological Remediation Goal (PERG)[4]
Arsenic	Surface soil (0-2 feet bgs)	Plants	18	18.33	30.41	18
		Invertebrates	60	18.33	30.41	60
		Mourning Dove	150,000	18.33	30.41	150,000
		Red-Tailed Hawk	71,000	18.33	30.41	71,000
		American Kestrel	2,500	18.33	30.41	2,500
		Meadow Vole	1,400	18.33	30.41	1,400
		White-Tailed Deer	520,000	18.33	30.41	520,000
		Red Fox	53,000	18.33	30.41	53,000
		Masked Shrew	1.40	18.33	30.41	**18.33**
Cadmium	Surface soil (0-2 feet bgs)	Plants	32	0.486	2.60	32
		Invertebrates	140	0.486	2.60	140
		Mourning Dove	460	0.486	2.60	460
		Red-Tailed Hawk	31,000	0.486	2.60	31,000
		American Kestrel	43	0.486	2.60	43
		Meadow Vole	13	0.486	2.60	13
		White-Tailed Deer	4,200	0.486	2.60	4,200
		Red Fox	500,000	0.486	2.60	500,000
		Masked Shrew	0.27	0.486	2.60	**0.486**
Copper	Surface soil (0-2 feet bgs)	Plants	70	62.8 <	250.03	70
		Invertebrates	80	62.8 <	250.03	80
		Mourning Dove	45,000	62.8 <	250.03	45,000
		Red-Tailed Hawk	160,000	62.8 <	250.03	160,000
		American Kestrel	5,200	62.8 <	250.03	5,200
		Meadow Vole	5,100	62.8 <	250.03	5,100
		White-Tailed Deer	1,600,000	62.8 <	250.03	1,600,000
		Red Fox	4,800,000	62.8 <	250.03	4,800,000
		Masked Shrew	120	62.8 <	250.03	**120**
Lead	Surface soil (0-2 feet bgs)	Plants	120	23.09	95.34	120
		Invertebrates	1,700	23.09	95.34	1,700
		Mourning Dove	42,000	23.09	95.34	42,000
		Red-Tailed Hawk	120,000	23.09	95.34	120,000
		American Kestrel	1,800	23.09	95.34	1,800
		Meadow Vole	23,000	23.09	95.34	23,000
		White-Tailed Deer	7,500,000	23.09	95.34	7,500,000
		Red Fox	12,000,000	23.09	95.34	12,000,000
		Masked Shrew	100.0	23.09	95.34	**100**

TABLE 6-11: PRELIMINARY ECOLOGICAL REMEDIATION GOALS FOR CHEMICALS OF ECOLOGICAL CONCERN IN SOIL, EU 11 – BEARTRAP CREEK DISPERSED TAILINGS DEPOSITS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK TAILINGS DEPOSIT AND FLOSSIE LOUISE MINE WASTE PILE

Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

Chemical of Ecological Concern	Exposure Medium	Ecological Receptor	Risk-Based Ecological Goal [1]	Minimum Background Concentration[2]	Maximum Background Concentration[3]	Preliminary Ecological Remediation Goal (PERG)[4]
Manganese	Surface soil (0-2 feet bgs)	Plants	220	161 <	997.31	220
		Invertebrates	450	161 <	997.31	450
		Mourning Dove	1,600,000	161 <	997.31	1,600,000
		Red-Tailed Hawk	17,000,000	161 <	997.31	17,000,000
		American Kestrel	220,000	161 <	997.31	220,000
		Meadow Vole	2,900	161 <	997.31	2,900
		White-Tailed Deer	920,000	161 <	997.31	920,000
		Red Fox	9,700,000	161 <	997.31	9,700,000
		Masked Shrew	71	161 <	997.31	**161**
Zinc	Surface soil (0-2 feet bgs)	Plants	160	83.93	241.62	160
		Invertebrates	120	83.93	241.62	120
		Mourning Dove	73,000	83.93	241.62	73,000
		Red-Tailed Hawk	30,000	83.93	241.62	30,000
		American Kestrel	6,500	83.93	241.62	6,500
		Meadow Vole	2,100	83.93	241.62	2,100
		White-Tailed Deer	650,000	83.93	241.62	650,000
		Red Fox	230,000	83.93	241.62	230,000
		Masked Shrew	39.0	83.93	241.62	**83.93**

Notes:

All concentrations are shown in milligrams per kilogram.
Bold values indicate the lowest calculated preliminary ecological remediation goal from all the vertebrate receptors.

1 The derivation of the risk-based ecological remediation goal is described in Section 6.0 of the main text.

2 The minimum background concentration represents the lowest of the background concentrations from surface soils (0 to 2 feet bgs). The minimum background concentrations for arsenic was non-detect, so the detected concentration was used as both the minimum and maximum background concentration.

3 The maximum background concentration represents the highest of the background concentrations from surface soils (0 to 2 feet bgs).

4 The remediation goal is based on the greater of the risk-based ecological goal and minimum background concentration.

bgs Below ground surface
EE/CA Engineering Evaluation/Cost Analysis
EU Exposure Unit

TABLE 6-12: PRELIMINARY ECOLOGICAL REMEDIATION GOALS FOR CHEMICALS OF ECOLOGICAL CONCERN IN SEDIMENT, EU 12 – MARSH

Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

Chemical of Ecological Concern	Exposure Medium	Ecological Receptor	Risk-Based Ecological Goal [1]	Minimum Background Concentration[2]	Maximum Background Concentration[3]	Preliminary Ecological Remediation Goal (PERG)[4]
Aluminum	Surface sediment (0-12 inches bgs)	Plants	NA	7,500	8,030	7,500
		Invertebrates	NA	7,500	8,030	7,500
		Aquatic Invertebrates and Fish	NA	7,500	8,030	7,500
		Mourning Dove	370,000	7,500	8,030	370,000
		Red-Tailed Hawk	1,600,000	7,500	8,030	1,600,000
		American Kestrel	15,000	7,500	8,030	15,000
		Meadow Vole	2,800	7,500	8,030	**7,500**
		White-Tailed Deer	40,000	7,500	8,030	40,000
		Red Fox	93,000	7,500	8,030	93,000
		Masked Shrew	9.7	7,500	8,030	**7,500**
		Canada Goose	11,000,000	7,500	8,030	11,000,000
		Great Blue Heron	760,000	7,500	8,030	760,000
		Mallard	120,000	7,500	8,030	120,000
		Muskrat	4,800	7,500	8,030	**7,500**
		Mink	6,800	7,500	8,030	**7,500**
Arsenic	Surface sediment (0-12 inches bgs)	Plants	18	9.12	32.3	18
		Invertebrates	60	9.12	32.3	60
		Aquatic Invertebrates and Fish	17	9.12	32.3	17
		Mourning Dove	6,100	9.12	32.3	6,100
		Red-Tailed Hawk	28,000	9.12	32.3	28,000
		American Kestrel	90	9.12	32.3	90
		Meadow Vole	1,400	9.12	32.3	1,400
		White-Tailed Deer	22,000	9.12	32.3	22,000
		Red Fox	40,000	9.12	32.3	40,000
		Masked Shrew	1.20	9.12	32.3	**9.12**
		Canada Goose	190,000	9.12	32.3	190,000
		Great Blue Heron	17,000	9.12	32.3	17,000
		Mallard	710	9.12	32.3	710
		Muskrat	2,400	9.12	32.3	2,400
		Mink	3,000	9.12	32.3	3,000

TABLE 6-12: PRELIMINARY ECOLOGICAL REMEDIATION GOALS FOR CHEMICALS OF ECOLOGICAL CONCERN IN SEDIMENT, EU 12 – MARSH

Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

Chemical of Ecological Concern	Exposure Medium	Ecological Receptor	Risk-Based Ecological Goal [1]	Minimum Background Concentration[2]	Maximum Background Concentration[3]	Preliminary Ecological Remediation Goal (PERG)[4]
Cadmium	Surface sediment (0-12 inches bgs)	Plants	32	0.471	1.84	32
		Invertebrates	140	0.471	1.84	140
		Aquatic Invertebrates and Fish	3.53	0.471	1.84	3.53
		Mourning Dove	5	0.471	1.84	5
		Red-Tailed Hawk	1,300	0.471	1.84	1,300
		American Kestrel	0.4	0.471	1.84	**0.471**
		Meadow Vole	3.4	0.471	1.84	3.4
		White-Tailed Deer	45	0.471	1.84	45
		Red Fox	21,000	0.471	1.84	21,000
		Masked Shrew	0.058	0.471	1.84	**0.471**
		Canada Goose	140	0.471	1.84	140
		Great Blue Heron	780	0.471	1.84	780
		Mallard	2.5	0.471	1.84	2.5
		Muskrat	5.9	0.471	1.84	5.9
		Mink	1,500	0.471	1.84	1,500
Copper	Surface sediment (0-12 inches bgs)	Plants	70	22	67	70
		Invertebrates	80	22	67	80
		Aquatic Invertebrates and Fish	197	22	67	197
		Mourning Dove	1,100	22	67	1,100
		Red-Tailed Hawk	4,900	22	67	4,900
		American Kestrel	65	22	67	65
		Meadow Vole	2,800	22	67	2,800
		White-Tailed Deer	37,000	22	67	37,000
		Red Fox	150,000	22	67	150,000
		Masked Shrew	35	22	67	**35**
		Canada Goose	30,000	22	67	30,000
		Great Blue Heron	1,400	22	67	1,400
		Mallard	430	22	67	430
		Muskrat	4,900	22	67	4,900
		Mink	11,000	22	67	11,000

TABLE 6-12: PRELIMINARY ECOLOGICAL REMEDIATION GOALS FOR CHEMICALS OF ECOLOGICAL CONCERN IN SEDIMENT, EU 12 – MARSH

Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

Chemical of Ecological Concern	Exposure Medium	Ecological Receptor	Risk-Based Ecological Goal [1]	Minimum Background Concentration[2]	Maximum Background Concentration[3]	Preliminary Ecological Remediation Goal (PERG)[4]
Lead	Surface sediment (0-12 inches bgs)	Plants	120	55	174	120
		Invertebrates	1,700	55	174	1,700
		Aquatic Invertebrates and Fish	91	55	174	91
		Mourning Dove	2,600	55	174	2,600
		Red-Tailed Hawk	3,900	55	174	3,900
		American Kestrel	53	55	174	**55**
		Meadow Vole	64,000	55	174	64,000
		White-Tailed Deer	1,000,000	55	174	1,000,000
		Red Fox	350,000	55	174	350,000
		Masked Shrew	72	55	174	72
		Canada Goose	82,000	55	174	82,000
		Great Blue Heron	1,300	55	174	1,300
		Mallard	410	55	174	410
		Muskrat	110,000	55	174	110,000
		Mink	26,000	55	174	26,000
Manganese	Surface sediment (0-12 inches bgs)	Plants	220	88	696	220
		Invertebrates	450	88	696	450
		Aquatic Invertebrates and Fish	460	88	696	460
		Mourning Dove	8,600	88	696	8,600
		Red-Tailed Hawk	480,000	88	696	480,000
		American Kestrel	1,100	88	696	1,100
		Meadow Vole	320	88	696	320
		White-Tailed Deer	4,200	88	696	4,200
		Red Fox	250,000	88	696	250,000
		Masked Shrew	8.5	88	696	**88**
		Canada Goose	240,000	88	696	240,000
		Great Blue Heron	170,000	88	696	170,000
		Mallard	5,900	88	696	5,900
		Muskrat	550	88	696	550
		Mink	18,000	88	696	18,000

TABLE 6-12: PRELIMINARY ECOLOGICAL REMEDIATION GOALS FOR CHEMICALS OF ECOLOGICAL CONCERN IN SEDIMENT, EU 12 – MARSH

Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

Chemical of Ecological Concern	Exposure Medium	Ecological Receptor	Risk-Based Ecological Goal [1]	Minimum Background Concentration[2]	Maximum Background Concentration[3]	Preliminary Ecological Remediation Goal (PERG)[4]
Zinc	Surface sediment (0-12 inches bgs)	Plants	160	97.8	275	160
		Invertebrates	120	97.8	275	120
		Aquatic Invertebrates and Fish	315	97.8	275	315
		Mourning Dove	2,200	97.8	275	2,200
		Red-Tailed Hawk	2,400	97.8	275	2,400
		American Kestrel	210	97.8	275	210
		Meadow Vole	1,500	97.8	275	1,500
		White-Tailed Deer	20,000	97.8	275	20,000
		Red Fox	19,000	97.8	275	19,000
		Masked Shrew	30	97.8	275	**97.8**
		Canada Goose	61,000	97.8	275	61,000
		Great Blue Heron	680	97.8	275	680
		Mallard	1,300	97.8	275	1,300
		Muskrat	2,600	97.8	275	2,600
		Mink	1,400	97.8	275	1,400

Notes:

All concentrations are shown in milligrams per kilogram.
Bold values indicate the lowest calculated preliminary ecological remediation goal from all the vertebrate receptors.

1 The derivation of the risk-based ecological remediation goal is described in Section 6.0 of the main text.

2 The minimum background concentration represents the lowest of the background concentrations from surface and subsurface sediments (0 to 12 inches bgs).

3 The maximum background concentration represents the highest of the background concentrations from surface and subsurface sediments (0 to 12 inches bgs).

4 The remediation goal is based on the greater of the risk-based ecological goal and minimum background concentration.

bgs Below ground surface
EU Exposure Unit

TABLE 6-13: PRELIMINARY ECOLOGICAL REMEDIATION GOALS FOR CHEMICALS OF ECOLOGICAL CONCERN IN SEDIMENT, EU 13 – STREAM

Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

Chemical of Ecological Concern	Exposure Medium	Ecological Receptor	Risk-Based Ecological Goal [1]	Minimum Background Concentration[2]	Maximum Background Concentration[3]	Preliminary Ecological Remediation Goal (PERG)[4]
Aluminum	Surface sediment (0-12 inches bgs)	Aquatic Invertebrates and Fish	NA	8,980	--	8,980
		Great Blue Heron	910,000	8,980	--	910,000
		American Dipper	9,400	8,980	--	**9,400**
Arsenic	Surface sediment (0-12 inches bgs)	Aquatic Invertebrates and Fish	17	5.56	15.4	17
		Great Blue Heron	900	5.56	15.4	900
		American Dipper	77	5.56	15.4	**77**
Cadmium	Surface sediment (0-12 inches bgs)	Aquatic Invertebrates and Fish	4	0.5 <	0.50	4
		Great Blue Heron	780	0.5 <	0.50	780
		American Dipper	15	0.5 <	0.50	**15**
Copper	Surface sediment (0-12 inches bgs)	Aquatic Invertebrates and Fish	197	29.4	114	197
		Great Blue Heron	2,000	29.4	114	2,000
		American Dipper	140	29.4	114	**140**
Lead	Surface sediment (0-12 inches bgs)	Aquatic Invertebrates and Fish	91	21.9	81.5	91
		Great Blue Heron	1,900	21.9	81.5	1,900
		American Dipper	56	21.9	81.5	**56**
Manganese	Surface sediment (0-12 inches bgs)	Aquatic Invertebrates and Fish	460	271	408	460
		Great Blue Heron	270,000	271	408	270,000
		American Dipper	1,300	271	408	**1,300**
Zinc	Surface sediment (0-12 inches bgs)	Aquatic Invertebrates and Fish	315	65.7	136	315
		Great Blue Heron	360	65.7	136	360
		American Dipper	60	65.7	136	**65.7**

Notes:

All concentrations are shown in milligrams per kilogram.
Bold values indicate the lowest calculated preliminary ecological remediation goal from all the vertebrate receptors.

1 The derivation of the risk-based ecological remediation goal is described in Section 6.0 of the main text.

2 The minimum background concentration represents the lowest of the background concentrations from surface sediments (0 to 12 inches bgs).

3 The maximum background concentration represents the highest of the background concentrations from surface sediments (0 to 2 feet bgs).

4 The remediation goal is based on the greater of the risk-based ecological goal and minimum background concentration.

< Non-detect result
-- Not applicable
bgs Below ground surface
EU Exposure Unit

APPENDIX A
PHOTOGRAPH LOG

APPENDIX A
UPPER BLACKFOOT MINING COMPLEX
PHOTOGRAPH LOG
2007 AND 2008 SITE PHOTOGRAPHS



EU 1 – Upper Anaconda Mine Waste Area – UAW1



EU 1 – Upper Anaconda Mine Waste Area – UAW2



EU 1 – Upper Anaconda Mine Waste Area – UAW3 waste pile. Looking west-northwest.



EU 1 – Upper Anaconda Mine Waste Area – UAW4 waste pile. Looking south.



EU 1 – Upper Anaconda Mine Waste Area – UAW5



EU 2 – Blackfoot River - 2007 head-cut northwest of former Anaconda Constructed Wetlands. Looking northwest.

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EU 2 – Blackfoot River northwest of former Anaconda Constructed Wetlands. Looking northwest.



EU 2 – Upper Blackfoot from river crossing northwest of confluence with Stevens Gulch and southeast of confluence with Shave Gulch. Looking northwest.



EU 2 – Upper Blackfoot from river crossing northwest of confluence with Stevens Gulch and southeast of confluence with Shave Gulch. Looking southeast.



EU 3 – Capitol Mine Waste Area. Looking north and downslope from access road. Stevens Gulch creek in center of photograph.





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EU 3 – Capitol Mine Waste Area. Looking northeast and downslope from access road.



EU 4 – Carbonate Mine Waste Area. Looking southwest toward Highway 200 and Upper Marsh.



EU 4 – Carbonate Mine Repository. Looking southwest.



EU 5 – East Edith Waste Area. Looking east.



EU 5 – Central Edith Waste Area. Looking south.



EU 5 – West Edith Waste Area. Looking east.



EU 6 – Consolation Mine Waste Area. Looking southeast.

EU 6 – Consolation Mine Waste Area. Area below (west) of access road. Looking north-northeast.

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EU 7 – Mary P Mine Waste Pile. Looking southwest.



EU 7 – Mary P Mine Waste Pile. Looking northwest. Mike Horse Creek Road in foreground.



EU 7 – Mary P Mine Waste Pile. Looking southeast from northern side of pile.



EU 8 – Mike Horse Mine Waste Pile – UMH1. Looking northeast.



EU 8 – Mike Horse Mine Waste Pile – UMH2. Looking southeast.



EU 8 – Mike Horse Mine Waste Pile – UMH3. Looking north-northwest.

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EU 8 – Mike Horse Creek Repository. Repository in center background. Mike Horse Creek in foreground. Looking southwest.



EU 8 – Mike Horse Creek Repository from upper access road. Photograph shows side of repository (left) and top of repository (center). Adit drainage treatment oxidation/settling pond and sand filter bed are on top of repository (center background).



EU 8 – Mike Horse Creek Repository. Oxidation/settling pond in center background, Mike Horse adit in lower left of photograph.



EU 9 – Paymaster Waste Area – PMWA1. Looking north-northwest.



EU 9 – Paymaster Waste Area – PMWA2. Looking south-southwest.



EU 9 – Paymaster Repository. Looking southeast from Carbonate Mine Repository.

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EU 9 – Paymaster Repository. Looking northwest. Carbonate Mine Repository to right in background (vegetated, unforested area)



EU 9 – Paymaster Repository, northern slope. Looking northwest. Carbonate Mine Repository in center background (vegetated, unforested area).



EU 10 – No. 3 Tunnel Area. Looking west.



EU 11 – Beartrap Creek looking southeast. Flossie-Louise mine waste pile on left in background.



EU 11 – Beartrap Creek below Mike Horse Tailings Impoundment. Looking north-northwest.



EU 12 – Upper Marsh. Looking east-southeast.

APPENDIX B
TOXICOLOGICAL PROFILES

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ACRONYMS AND ABBREVIATIONS

µg/cm^2	Microgram per square centimeter
µg/g	Microgram per gram
µg/L	Microgram per liter
µM	MicroMolar
ATSDR	Agency for Toxic Substances and Disease Registry
BCF	Bioconcentration factor
BW/day	Body weight per day
CEC	Cation exchange capacity
COPEC	Chemical of potential ecological concern
DOI	U.S. Department of the Interior
EC_{10}	Concentration that produces toxic effects in 10 percent of a test population
EC_{50}	Median lethal concentration value
Eco-SSL	Ecological soil screening level
Eh	Oxidation-reduction potential
EPA	U.S. Environmental Protection Agency
g	Gram
g/kg	Gram per kilogram
HSDB	Hazardous Substances Databank
IC_{50}	Effective lethal concentration value
ICA	International Copper Association
IPCS	International Programme on Chemical Safety
km	Kilometers
LC_{50}	Concentration lethal to 50 percent of the test population
LD_{50}	Lethal dose for 50 percent of a test population
LOAEL	Lowest observed adverse effect level
MATC	Maximum acceptable toxicant concentration
mg/g	Milligrams per gram
mg/kg	Milligram per kilogram
mg/kg-day	Milligram per kilogram per day
mg/L	Milligram per liter
mg/m^3	Milligrams per cubic meter

ACRONYMS AND ABBREVIATIONS (Continued)

NAP	National Academic Press
NAS	National Academy of Sciences
NOAEL	No observed adverse effect level
ORNL	Oak Ridge National Laboratory
PCB	Polychlorinated biphenyl
ppb	Part per billion
ppm	Part per million
ppt	Parts per trillion
TEC	Threshold effect concentration
TRV	Toxicity reference value
USFWS	U.S. Fish and Wildlife Service
WHO	World Health Organization

B1.0 INTRODUCTION

This attachment provides toxicological information about chemicals of potential ecological concern (COPEC) for the Upper Blackfoot Mining Complex. This information was used, along with other lines of evidence, to evaluate whether COPECs posed unacceptable risk to ecological receptors.

A literature search was conducted for each COPEC to identify potential toxicological effects. Potential adverse effects to ecological receptors from each COPEC, based on the findings of this literature search, are described in following paragraphs of this attachment.

B2.0 CHEMICALS OF POTENTIAL CONCERN

B2.1 ALUMINUM

Aluminum is the most commonly occurring metallic element, making up 8 percent of the earth's crust (Press and Siever 1974, as cited in U.S. Environmental Protection Agency [EPA] 2003). The typical range of aluminum in soils is from 1 to 30 percent, or from 10,000 to 300,000 milligrams per kilogram [mg/kg] (Lindsay 1979 and Dragun 1988, both as cited in EPA 2003).

EPA recommends identifying aluminum as a COPEC only in soils with a pH less than 5.5, since soluble and toxic forms of aluminum occur only under this condition (EPA 2003). The bioavailability and toxicity of aluminum is associated with pH; aluminum is soluble and biologically available in acidic soils (pH less than 5.5) but is biologically inactive in circumneutral to alkaline (pH 5.5 to 8) conditions. The solubility of aluminum increases in alkaline soils and solutions (pH greater than 8.0), but the bioavailability is uncertain (Sparling and Lowe 1996).

The speciation of aluminum is pH-dependent, and the bioavailability of its various forms is influenced by a tendency to sorb onto particles and bind to organic matter. Acidity can ameliorate the toxic effects of H+ (Calow 1994).

B2.1.1 Aquatic Plants

Aquatic plants have been shown to tolerate higher levels of aluminum and acidity than aquatic invertebrates or fish. Several species of algae have been observed at pH less than 3.0 and dissolved aluminum greater than 100 milligrams per liter (mg/L) (Havas 1986, as cited in Sparling and Lowe 1996). Under conditions of elevated aluminum, overall algal density declines and diatom and chrysophyte communities are replaced by dinoflagellates and chlamydomonads. However, filamentous green algae, especially *Mougoetia*, may increase in biomass (Havens and Heath 1990, as cited in Sparling and Lowe 1996).

Aluminum has been shown to affect the abundance of the diatom *Asterionella ralfsii* in lake water independent of pH. The diatom was abundant in lake water of ph 5.7 and acidified lake

water with pH 4.7, but decreased with the addition of 50 micrograms per liter (µg/L), and nearly disappeared at 100 µg/L. Other aquatic species (*Peridinum limbarum, Dinobryon bavaricum,* and *Elaklothrix* spp.) declined when 200 µg/L were added (Sparling and Lowe 1996).

Many plants that grow in acidic conditions are probably tolerant to aluminum, as aqueous aluminum is commonly negatively correlated with pH (Sprenger and McIntosh 1989, as cited in Sparling and Lowe 1996).

B2.1.2 Terrestrial Plants

Terrestrial plants seem to store higher concentrations of aluminum in the roots than in other tissues. Roots of red, white, and black spruce grown in sand culture had 5.0 – 10.9 times more aluminum than their shoots, while roots of *Pinus slyvestris* have 3.2 – 6.1 times as much in needles (Hutchinson and others 1986).

Symptoms of aluminum toxicity in plants such as conifers include reduced growth of trees, needle discoloration and loss in spruce-fir forests, reduced root growth rates and root mass, alteration of ion uptake, crown thinning, apical bud die-back, and branch and tree mortality (Hutchinson and others 1986; Adams and Eagar 1992; Rengel 1992; Sparling and Lowe 1996). Growth significantly declined at pH 3.8 in red and white spruce (*Picea glauba*) at 50 mg/L aluminum, jack pine (*Pinus banksiana*) at 40 mg/L, and white pine (*Pinus strobus*) at 80 mg/L (Hutchinson and others 1986). Elevated aluminum concentrations in soil are frequently accompanied by low soil pH.

B2.1.3 Aquatic Invertebrates

Aluminum tends to be nontoxic to invertebrates at aqueous levels found in circumneutral (pH 5.5 to 7.4) water (between 500 µg/L and 1000 µg/L); lethal concentrations of aluminum may exceed 23 mg/L. In many studies, no effects were observed after adding aluminum to acidic water. Clams, amphipods, isopods, snails, or insect larvae had no additional effect after the addition of 400-500 µg/L. Concentrations up to 1000 µg/L did not cause 100 percent mortality to *Chaoborus* sp., *Chironomus* sp., or *Holopedium* sp. at pH 4.0, though mortality was greater for Holopedium sp at pH 4.0 than a circumneutral pH (Havas and Likens 1985, as cited in Sparling and Lowe 1996).

Larvel *Phyacophilia* sp. and *Dinocras* sp. exhibited 20 percent mortality when exposure to water with a pH of 4.7 and an aluminum concentration of 890 µg/L, but all individuals survived in water at the same pH without the aluminum (McCahon and others 1989, as cited in Sparling and Lowe 1996). Season may influence the toxicity to aquatic invertebrates: the addition of 500 µg/L aluminum to water of pH 4.0 had no additive effect on morality in the stoneflies *Nemoura* sp. or *Asellus* sp. during summer, but mortality did increase during winter (Burton and Allan 1986, as cited in Sparling and Lowe 1996).

In water with a pH below 5.5, aluminum may affect ion regulation and calcium uptake in crustaceans and insects. Changes in respiration rates and oxygen transport have been observed in invertebrates exposure to elevated concentrations of aluminum and acidity.

Aquatic invertebrates may accumulate aluminum on or within their bodies when they are exposed to elevated aluminum and acidity, consequently becoming potentially toxic to predators. When exposed to water with 2000 µg/L aluminum for four weeks, a bioconcentration factor of 1170 was observed in the mayfly *Heptagenia sluphurea*, which resulted in a final body concentration of 2340 mg/kg. Seventy percent of the body burden was lost during a molt, indicating that aluminum was absorbed rather than assimilated. Frick and Herrmann speculated that species that feed on larval insects may be exposed to high levels of aluminum in the diet; and that terrestrial predators have little risk of contamination by aquatic insects because most species (except Plecoptera) molt before emerging as adults (Frick and Herrmann 1990, as cited in Sparling and Lowe 1996).

B2.1.4 Terrestrial Invertebrates

Sparling and Lowe (1996) reviewed the environmental hazards of aluminum with regard to various species, including invertebrates, and reported that they were unable to find any reference to toxicity to terrestrial invertebrates.

B2.1.5 Fish

Most fish species are equally sensitive to the three forms of aqueous aluminum, and effects include asphyxiation, impaired ion regulation, increased gill mucus production, and gill tissue damage. The relative importance of asphyxiation or ion regulation is dependent on pH, aluminum concentration, and the magnitude of the pH change of water irrigating the gills (Playle and Wood 1991, as cited in Sparling and Lowe 1996). Within the pH range of 6.5 – 5.5, asphyxiation appears to be the predominant mechanism of toxicity. Within the pH range of 5.5 – 4.5, impaired ion regulation predominates as the toxicity mechanism, marked by losses of electrolytes from the blood and body fluids and increased H^+ and carbon dioxide concentrations in the blood (Neville and Campbell 1988; Neville 1985; both as cited in Sparling and Lowe 1996).

It has been suggested that the asphyxiation responses resulting from pH levels of 6.4 – 4.0 and aluminum concentrations of 76 µg/L were produced by one of two causes: 1) precipitation of $Al(OH)_3$ on the gill surfaces, causing gill mucification and inflammation which blocked diffusion of O_2 and CO_2 across gill membranes; or 2) formation of mixed gill-ligand-$Al(OH)_x$ and AL^{3+} complexes that provoked an unidentified biochemical response (Sparling and Lowe 1996).

Playle and Wood found that in juvenile rainbow trout in water with 138 µg/L aluminum, gill levels of aluminum progressively rose in with increasing pH (tested at 4.0, 4.7, and 5.1) that was attributed primarily to precipitation of $Al(OH)_2^-$ and $Al(OH)_3$ on grill surfaces; the resulting mucification and inflammation of the gill tissues blocked diffusion of O_2 and CO_2 across gill membranes (Playle and Wood 1991, as cited in Sparling and Lowe 1996).

Saturated aluminum solutions at pH of around 6.09 can threaten free-living fish populations in areas where an influx of acidic water with high dissolved aluminum mixes with neutral or slightly acidic waters, such as may occur during runoff events. Overexposure to dissolved aluminum resulting from rapidly increasing pH may have killed adult Atlantic salmon during a spawning run in a Norwegian river (Skogheim and others 1984, as cited in Sparling and Lowe 1996).

B2.1.6 Birds

Birds are most likely to be exposed to aluminum through their diets. However, only a fraction of the ingested metal is assimilated, and fecal excretion is relatively efficient. Although aluminum has not been identified as a required mineral, indirect evidence suggests that low dietary levels may be necessary to maintain calcium and phosphorus metabolism (National Academy of Sciences [NAS] 1980).

Bones, particularly in growing chicks and reproductive females, appear to be the most efficient tissues for storing metal, followed by the brains, liver, and kidneys. Levels in feathers of raptor chicks may also reflect dietary exposure (Bortolotti and Barlow 1988).

Effects of aluminum include depressed food consumption, reduced egg production, alterations in plasma phosphorus and calcium metabolism, interferences with ATPase activity, reduced eggshell breaking strength, lowered tibial breaking strength and shortened limbs, malformations, microphthalamia, decreased body weight, ectopic viscera, and hemorrhages (NAS 1980; Lundholm and Mathson 1986; Hussein, Cantor, and Johnson 1988)

Insectivorous birds may be at risk in acidified environments because insects contain aluminum at up to 5,000 mg/kg, and levels in some estuarine invertebrates exceed 17,000 mg/kg (Havas and Hutchinson 1983; Sadler and Lynam 1985, both as cited in Sparling and Lowe 1996).

Carnivorous and herbivorous birds may also be at risk from consumption of aluminum. Many insectivorous birds, especially those that probe in the soil, may also consume substantial amounts of aluminum-rich soil with their foods. Most of the aluminum may be biologically active in acidified environments.

B2.1.7 Mammals

In general, mammals appear to be at a moderate to minimal risk of aluminum toxicity, although cattle may be prone to tetany when forage is low. Unless the soil is acidic, aluminum ingested with soil is probably insoluble and its biological availability is low. Aluminum is not accumulated at sufficient levels in soft animal tissues to produce secondary toxicity in carnivores (Sparling and Lowe 1996).

The lethal dose for 50 percent of a test population (LD_{50}) values for mammals exposed to aluminum range from 320 to 980 mg/kg (Ondriecka and others 1966; Adamson and others 1975; Krasovskii and others 1979, all as cited in Sparling and Lowe 1996).

The principal effects of elevated concentrations of aluminum on mammals include depressed food intake, decreased weight gain in young animals or weight loss in adults, impaired locomotion, abnormal posture, splayed limbs, depressed serum magnesium and phosphorus, impaired learning and memory, and increased aluminum in some tissues (Rosa and others 1982; Allen 1984; Yokel 1984; Yokel 1987; Crowe and others 1990, all as cited in Sparling and Lowe 1996).

Clinical signs of aluminum toxicity, primarily as a result of hypomagnesemia, include bellowing in cattle, muscular fasiculations or twitches, galloping in an undirected fashion, convulsions, hypersensitivity, hyperurination, and death. Aluminum concentrations that result in these behaviors ranged from 2,000 to 14,500 mg/kg in forage (ryegrass, ryegrass mixed with grain, and fescue) (Allen and Robinson 1980).

B2.2 ARSENIC

Arsenic is a naturally occurring element that is widely distributed in the environment and is present in both inorganic and organic forms. The bioavailability and toxicity of arsenic depend on the chemical and physical forms of arsenic, the exposure route, and the species of concern. Inorganic arsenic is present in the environment in two major forms: arsenate (As5+) and arsenite (As3+). Arsenate is more abundant and bioaccumulates more rapidly than arsenite. However, arsenite is more toxic (Sadiq 1992). Any environmental conditions that promote an increase in arsenite concentrations will increase the toxicity of arsenic. The oxidation-reduction environment is the most important environmental parameter that affects the bioavailability of arsenic. Reduced conditions cause the ratio of arsenite to arsenate to increase, thus increasing the toxicity of arsenic in the environment. In addition, the pH of the aquatic environment influences the toxicity of arsenic. As the pH of the water increases, the toxicity of arsenic decreases as more arsenate is produced (Sadiq 1992).

Bioconcentration factors (BCF) experimentally determined for arsenic appear to be relatively low. The methylated species of arsenic are efficiently transferred in the food chain (Eisler 1988). However, arsenic does not appear to be biomagnified through the food chain (Eisler 1988, Callahan and others 1979, EPA 1982a and 1983e, as cited in ATSDR 2007).

B2.2.1 Aquatic Plants

The available data indicate that freshwater plants differ in sensitivity to trivalent arsenic, arsenic(III), and pentavalent arsenic, arsenic(V). In comparable tests, green alga (*Selenastrum capricornutum*) was 45 times more sensitive to arsenic(V) than to arsenic(III). However, other data present conflicting information on the sensitivity of green alga to arsenic(V). Many plant values for inorganic arsenic(III) were in the same range as the available chronic values for freshwater animals. Additionally, several plant values for arsenic(V) were lower than the one available chronic value (EPA 1986).

B2.2.2 Terrestrial Plants

Plant tolerance to arsenic has been reported in soils of high naturally occurring concentrations. Areas of high natural arsenic content characteristically support communities with low plant diversity; sparse vegetation; and mostly stunted, woody plants.

Arsenic enters plants through the roots as arsenate or arsenite dissolved in water, soil, or sediment pore water and is found in decreasing concentrations in the plant roots, leaves, stems, fruits, and seeds. Arsenate is taken up at three to four times the rate of arsenite (Tamaki and Frankenberger 1992).

Arsenite is more toxic to plants than is arsenate (Tamaki and Frankenberger 1992; Asher and Reay 1979, Peterson and others 1981). Arsenite is more common in reducing environments, such as deeper soil strata; arsenic is predominantly present as arsenate in pH-neutral, oxidized surface soils (Peterson and others 1981).

Arsenic affects plants physiologically by stunting root elongation, reducing growth, and causing leaf necrosis (Peterson and others 1981). Arsenic inhibits nutrient uptake at high concentrations, potentially leading to leaf loss and necrosis (Dushenko and others 1995). Concentrations in soil of 25 to 85 milligrams per kilogram (mg/kg) of total arsenic reduced crop plant yields (Eisler 1988).

Concentrations of arsenic as low as 1.0 mg/kg in root tissue caused reductions in root elongation, and concentrations of 3.0 mg/kg in root tissue terminated root growth. The shoot weight of cotton and soybean was reduced when exposed to 11 mg/kg of arsenic (As III) in fine sandy loam soil (Duel and Swaboda 1972); cotton growth was reduced 29 percent by exposure to 89.6 mg/kg arsenic in soil in the same study. Corn yield was reduced when exposed to 10 mg/kg of arsenic in soil (Woolson and others 1971, as cited in EPA 1999).

Cobb and others (2000) studied the effects of mine wastes on cherry belle radish (*Raphanus sativus*), iceberg lettuce (*Latuca sativa*), Better Boy tomato (*Lycopersicon esculentum*) and roma bush bean (*Phaseolus* sp.). In the study, 0, 25, 50, 75, or 100 percent of contaminated soil was mixed with the appropriate amount of clean topsoil. The topsoil was also used as a control. Each species had eight replicates for each treatment group, and the concentrations of four different metals, including arsenic, were measured in various plant parts. Arsenic concentrations were similar between the control group and all treatment groups for all parts of beans and radish plants. However, bean roots from the 75 percent treatment group had significantly higher concentrations than did radish in the same treatment group. The study found plants can transport arsenic into the leaves. The study suggests plants harvested from higher concentrations of mine wastes should not be consumed based on visible signs of toxicity, including reddening of leaves, reduced growth, and poor-quality fruits (Cobb and others 2000).

In a study of the effects of toxic metals on vegetation communities in Anaconda, Montana, elevated concentrations of arsenic, cadmium, copper, lead, and zinc in soils were negatively correlated with vegetative productivity (Galbraith, LeJeune, and Lipton 1995). The elevated metals concentrations, associated with the activities of a smelter, resulted in reduced vegetative cover and changes in the native plant communities that reduced the habitat value for wildlife. Arsenic was found to be moderately to severely toxic to plants in bioassays conducted with soils at the site at concentrations ranging from 107.6 mg/kg to 708.7 mg/kg (Kaputska and others 1995).

B2.2.3 Aquatic Invertebrates

The relative toxicities of the various forms of arsenic apparently vary from species to species. Acute values of inorganic arsenic (III) for 16 freshwater animal species ranged from 812 µg/L for a cladoceran to 97,000 µg/L for a midge, but the three acute-chronic ratios only ranged from 4.660 to 4.862. The five acute values for inorganic arsenic (V) covered about the same range, but the single acute-chronic ratio was 28.71. Freshwater residue data indicated that

arsenic does not bioconcentrate to a high degree, but that lower forms of aquatic life may accumulate higher arsenic residues than fish. The low bioconcentration factor and short half-life of arsenic in fish tissue suggest that residues should not be a problem to predators of aquatic life (EPA 1986).

B2.2.4 Terrestrial Invertebrates

Arsenic has been used as a pesticide in the past. Concentrations of 375 mg/kg arsenic in soil may reduce growth and metabolism of soil microbiota, while concentrations of 150 to 165 mg/kg were found to reduce the numbers of bacteria and protozoans, as well as the number of earthworms in the soil (NRC 1978, as cited in Eisler 1988). However, some soil microorganisms can tolerate and metabolize relatively high concentrations of arsenic (Wang and others 1984, as cited in Eisler 1988).

B2.2.5 Fish

Arsenic can produce both carcinogenic and mutagenic effects in fish (Eisler 1988). Toxic effects of arsenic in fish include impaired behavior, reduced growth and weight gain, lack of appetite, failure to metabolize food, and mortality (Lacayo and others 1992, as cited in DOI 1998, Eisler 1988, Buhl and Hamilton 1990, Tanner and Clayton 1990, Ghosh and Chakrabarti 1990, McGeachy and Dixon 1990). The main uptake of arsenic is through gill tissue (Sadiq 1992). In water, arsenic is usually in the form of arsenate or arsenite. Arsenic(III) is systemically more poisonous than arsenic(V). The solubility of arsenic(III) oxide in water is fairly low, but increases in either acidic or alkali conditions. Arsenic(V) must be reduced to the trivalent form before it exerts any toxic effects. The toxic effects of arsenite can be potentiated by dithiols, but arsenic has a protective effect against the toxicity of selenium in several species. However, methylated forms of selenium have a strong synergistic effect with arsenic (Jonnalagadda and Rao 1993).

Acute toxicities of arsenic, copper, lead, and zinc to three species of salmonids at different early life stages were assessed individually and in environmentally relevant mixtures. Of the metals evaluated, arsenic was found to be the least toxic to all fish at all stages. Sensitivity was greater in juveniles than in younger fry (Buhl and Hamilton 1990). The freshwater mooneye (*Notopterus notopterus*) was more sensitive to arsenic than to cadmium in a static bioassay. The 96-hour concentration lethal to 56 percent of the text population LC_{50} for mooneye was 30.93 mg/L As. Fish exposed to waterborne arsenic showed increased opercular movements and decreased swimming activity (Ghosh and Chakrabarti 1990).

In a study of acute and chronic toxicity of waterborne arsenite to rainbow trout (*Oncorhyncus mykiss*), the 144-hour LC_{50} of arsenite for a rainbow trout of 4.5 grams was 18.5 milligrams per liter (mg/L). Arsenite reduced growth by 55 percent at an exposure of 9.64 mg/L over a 17-week period. Growth reduction was attributed primarily to reduced appetite and marginally to direct metabolic impact. The 10 percent mortality detected at 9.64 mg/L occurred with necrotic erosion of the mandibular and olfactory regions of the head. All fish exposed to 9.64 mg/L arsenite showed lesions in the gallbladder, which were absent at lower exposure concentrations. The threshold for chronic toxicity was estimated as 4.9 mg/L (Rankin and Dixon 1994).

Fish were more tolerant of chronic exposure to arsenate at 15 °C than at 5 °C in toxicity tests of arsenate to trout at different temperatures over an 11-week period. The whole body arsenic concentrations in moribund trout varied between 4 and 6 micrograms per gram (µg/g), suggesting that a critical arsenic body concentration was reached before death or toxic damage occurred (McGeachy and Dixon 1990). The LC_{50} observed for rainbow trout exposed for 28 days to arsenic trioxide in sea water in flow-through tanks in temperatures of 14 to 16 °C and pH of 6.9 to 7.3 was 0.961 ppm (Ramamoorthy and Baddaloo 1995). In another study, arsenic at 0.27 mg/kg wet weight (approximately 1 mg/kg dry weight) was reported to be the 85th percentile concentration for freshwater fish (Schmitt and Brumbaugh 1990).

Fathead minnows (*Pimephales promelas*) exposed to sodium arsenite in flow-through tanks with water temperature of 23 to 26 °C and pH of 7.2 to 8.1 showed no observed adverse effects at 2.13 parts per million (ppm) during a 29 days of chronic exposure. The median 24-hour lethal concentration was 18.9 ppm, the median 48-hour lethal concentration was 15.9 ppm, and the median 96-hour lethal concentration was 14.1 ppm (Ramamoorthy and Baddaloo 1995).

B2.2.6 Birds

Acute oral exposure to inorganic arsenic destroys the blood vessel lining in the gut, which can result in lower blood pressure and cause hepatocyte damage by arsenic inhibition of the sodium pump in cells (Nystrom 1984, as cited in Eisler 1988). Toxic effects of arsenite in birds include loss of muscular coordination, debility, slowness, jerkiness, falling, hyperactivity, fluffed feathers, drooped eyelids, huddled position, unkempt appearance, loss of righting reflex, immobility, and seizures (Eisler 1988; Camardese and others 1990 and Opresko and others 1994, both as cited in DOI 1998; Stanley and others 1994). Some species of birds are more sensitive to arsenic than others (Eisler 1988; DOI 1998).

An antagonistic interaction between arsenic and selenium is documented with nondomestic birds (Stanley and others 1994). According to the study, arsenic reduced selenium accumulation in both liver and eggs. Arsenic also alleviated the effects of selenium on hatching success and embryo deformities in mallards.

Hudson and others (1984, as cited in Lockheed Martin 2005) found that the lethal dose for 50 percent of a test population (LD_{50}) for the California quail (*Callipepla californica*) for a single oral dose of an organoarsenical compound to be 47.6 mg/kg body weight per day (BW/day). NAS (1977, as cited in Lockheed Martin 2005) found this level to be 33 mg/kg BW/day for chickens.

Adult mallards (*Anas* platyrhynchos) and 14-day old ducklings were fed diets supplemented with sodium arsenate at concentrations of 0, 25, 100, or 400 milligrams sodium arsenate per kilogram diet (51.35 percent arsenic) for 115 to 128 days (Stanley and others 1994). The experiment showed that dietary arsenic had no effect on hatching success or embryo deformities. However, nests producing more than a single egg found that the number of ducklings to survive at day 14 was significantly reduced when exposed to 400 mg/kg sodium arsenate, 205.4 mg/kg arsenic (Stanley and others 1994). This concentration was determined to be the lowest observed adverse effect level (LOAEL). Additionally, the ducks showed that

arsenic accumulated in adult liver and eggs, reduced adult weight gain and liver weight, delayed the onset of egg laying, decreased whole egg weight, and caused eggshell thinning (Stanley and others 1994). Arsenic did not affect hatching success and was not teratogenic. In ducklings, arsenic accumulated in the liver and reduced body weight, growth, and liver weight. At those levels of exposure, arsenic did not increase duckling mortality, but it decreased overall duckling production by adults. Stanley and others (1994) also reported antagonistic effects between arsenic and selenium in mallards. The two metals often occur together in high concentrations in the environment and can accumulate in aquatic plants and invertebrates consumed by waterfowl. Arsenic may reduce selenium accumulation in liver and egg and alleviate the effects of selenium on hatching success and embryo deformities. Antagonistic effects of arsenic and selenium on the survival, growth, and physiology of mallard ducklings reduce observed toxicity when nutrition is otherwise adequate. More severe toxicological effects were observed when dietary protein is diminished (Hoffman and others 1992).

The U.S. Fish and Wildlife Service (USFWS) (1964, as cited in EPA 2001) fed mallards an oral diet of sodium arsenite (51.35 percent As+3) for 128 days at four dose levels, 100, 250, 500, and 1000 ppm sodium arsenite. The study found that mallards in the 250 ppm group experienced 12 percent mortality, in the 500 ppm group experienced 60 percent mortality, and in the 1,000 ppm group experienced 92 percent mortality. No deaths were reported in the 100 ppm group over the course of the study, therefore 100 ppm sodium arsenite was considered to be a chronic no observed adverse effect level (NOAEL). Additionally, the dose of 250 ppm was considered to be a chronic LOAEL.

B2.2.7 Mammals

Arsenic is not normally considered an essential element to most species and has been shown to be a carcinogen, teratogen, and a possible mutagen to mammals (Eisler 1988, 1994). However, beneficial effects have been reported in tadpoles, silkworms, rats, goats, and pigs at low dietary concentrations (Eisler 1988). Arsenic may be an essential nutrient at low levels and substitute for phosphorous in biochemical reactions (ATSDR 1993). However, arsenic is recognized as an effective poison at high levels.

Adverse effects produced by arsenic are highly dose-dependent. Chronic exposure to low levels of arsenic can produce malaise and fatigue, gastrointestinal distress, anemia and basophilic stippling, neuropathy, and skin lesions that can develop into skin cancer. Mammals with arsenic deficiencies display poor growth, reduced survival, and inhibited reproduction, whereas low doses of arsenic can actually stimulate growth in plants and other animals (Eisler 1994). Water-soluble arsenic is efficiently absorbed from the gastrointestinal tract and circulated throughout the body. Trivalent arsenic is detoxified in the liver by conversion to methylarsenic acid and dimethylarsenic acid, which are the principal forms excreted in the urine. The body burden of arsenic can reach considerable levels because it can be sequestered in nails, hair, bones, teeth, skin, liver, kidneys, and lungs (ATSDR 1993). In mammals, arsenic is a teratogen that can pass the placental barrier and produce fetal death and malformations that consist of exencephaly, eye defects, and renal and gonadal agenesis (Eisler 1988; ATSDR 1993; Domingo 1994).

The kidney accumulates arsenic and plays a major role in its metabolism and excretion (Brown and others 1976). The mitochondria in rat kidneys were found in vitro to be highly sensitive to arsenic toxicity. In vivo mitochondrial toxicity was evaluated in the kidneys of rats exposed to arsenate in drinking water at concentrations of 40, 85, or 125 ppm for 6 weeks. Decreased state 3 respiration and respiratory control ratios were observed in kidneys of rats exposed at the 85- and 125-ppm dose levels. Ultrastructural alterations, consisting of swollen mitochondria and increased numbers of dense autophagic lysosome-like bodies, were confined to the renal proximal tubule cells of those same animals. The mammalian high toxicity reference value (TRV) was based on the systemic effects seen in the study by Brown and others in 1976 (Department of the Navy [Navy] 1998).

The oral LD_{50} for mammals, in general, ranges between 10 and 50 mg/kg of lead arsenate (National Resources Council of Canada 1978, as cited in Lockheed Martin 2005). Another study, National Academy of Sciences (NAS) (1977, as cited in Lockheed Martin 2005) found the oral dose LD_{50} after 96 hours for mice was 39.4 mg/kg BW/day.

A 64-day experiment showed that two types of ultrastructural alterations occur in the liver cells of mice exposed to arsenic in drinking water (Mohelska and others 1980). The first type was an acute reaction after a maximum 4-day exposure characterized by enlargement of the surfaces of some inner membranes as well as loss of glycogen. These changes receded slowly during the course of the experiment and were considered the consequence of the direct toxic action of arsenic. The second type was characterized by a strikingly delayed change after a maximum of 32 days, marked by the occurrence of dense lamellar structures in the peroxisomes. This change was considered an expression of induced tolerance to arsenic of the organism.

Rats given 5 ppm sodium arsenite in drinking water from weaning to natural death did not evidence tumorigenic or carcinogenic effects; that dose was considered tolerable for growth (Schroeder and others 1968). The mammalian TRV-low was based on the Schroeder study (Navy 1998). Large amounts of arsenic had accumulated in tissues, especially the aorta and red blood cells, with no signs of toxicity.

Nemec and others (1998, as in EPA 2001) fed mice four dose levels, in the form of H_3AsO_4, for 6 to 15 days. The four levels of concentrations were 0, 3.96, 12.67, and 25.33 mg/kg-day of arsenic. The study found the number of live fetuses and litter size decreased with increasing dose (12.3, 11.6, and 11.0, for the 0, 3.96, and 12.67 mg/kg-day doses). Fetal resorptions also increased with increasing dose, with the increase being statistically significant ($p<0.01$) only for the 25.33 mg/kg-day dose. The study considered exposure during a critical lifestage; therefore, the 25.33 mg/kg-day dose was considered a chronic LOAEL.

In another study, Byron and others (1967, as in EPA 2001) fed sodium arsenite to rats for 1 year at six concentrations, 0, 15.63, 31.25, 62.5, 125, and 250 mg/kg. The study found that survival generally decreased with increasing concentration of arsenite in food, from 92 percent in control, to 90 percent in the 15.63 and 31.25 mg/kg diets, to 88 percent in the 62.5 mg/kg diet, to 72 percent in the 250 mg/kg diet. Additionally, survival was 94 percent in the 125 mg/kg diet. The study considered exposure over 1 year and mortality was increased by more than 20 percent by the 250 mg/kg diet; therefore, this diet was considered a chronic LOAEL. The NOAEL is 6.06 mg/kg-day.

B2.3 CADMIUM

Cadmium is a naturally occurring element, with concentrations ranging from 0.05 to 1.0 mg/kg in uncontaminated soils. In rare instances, such as in soils derived from the Monterey Shale along the California coast, concentrations in soil will reach as high as 30 mg/kg (Page and others 1981).

B2.3.1 Aquatic Plants

Freshwater aquatic plants are affected by cadmium at concentrations ranging from 2 to 7,400 µg/L. These values are in the same range as the acute toxicity values for fish and invertebrate species and are considerably above the chronic values. The BCF for cadmium in fresh water ranges from 164 to 4,190 for invertebrates and from 3 to 2,213 for fishes (EPA 1986).

B2.3.2 Terrestrial Plants

The cadmium ecological soil screening level (Eco-SSL) for plants is 32 mg/kg dry weight in soil (EPA 2005a). The results of 14 studies were used to derive the Eco-SSL. Study species included ryegrass, oats, tomatoes, white pine, and choke cherry. The maximum acceptable toxicant concentration (MATC) values ranged from 9 mg/kg dry weight in barley to 79 mg/kg dry weight in alfalfa. The Eco-SSL is the geometric mean of the MATCs.

The bioavailability of cadmium depends on the composition and chemistry of the soil or sediment. Like other metals, the availability of cadmium is affected by the pH, organic content, ion exchange capacity, temperature, and redox potential (McComish and Ong 1988, as cited in ATSDR 1993; Page and others 1981). Lowering the pH in the soil will mobilize bound cadmium, thus increasing its bioavailability (EPA 1985a, as cited in ATSDR 1993; Page and others 1981). Adriano (1992) noted that a three-factor increase will occur in available cadmium with each decrease by one unit in pH.

Increased concentrations of other heavy metals, such as nickel, copper, and selenium, cause decreased plant uptake of cadmium (Page and others 1981). Zinc also works antagonistically with cadmium; high concentrations of zinc in the soil reduce plant uptake of cadmium (Page and others 1981; Jarvis and others 1976; Adriano 1992).

Roots of plants respond linearly in uptake with increased concentrations of cadmium in soil (Adriano 1992). Cadmium is found in roots, with decreasing amounts in leaves, fruits, and seeds of the plant in whole-plant accumulation studies (Adriano 1992; Page and others 1981).

Cadmium decreases net photosynthesis, increases leaf chlorosis, and inhibits water uptake in a variety of plants at concentrations of 5 to 10 mg/kg in soil (Carlson and others 1975). Cadmium alters the functionality of membranes by inducing changes in lipid composition (Ouariti and others 1997) and affecting the enzymatic activities associated with membranes (Fodor and others 1995). Cadmium toxicity is also correlated with disturbances in the uptake and distribution of macro- and micro-nutrients in plants (Gussarson and others 1996).

Seed germination declines at concentrations of cadmium in soil of 0.1 ppm (Mrozek 1980). Using pea plants as an indicator, Sandalio and others (2001), found that adding CdCl to the plant caused a significant reduction in growth. This effect was observed mainly in the leaves. However at high concentration, 50 micromolar (µM) cadmium, the roots became damaged, namely the lateral roots. In addition, adding this concentration reduced the productivity of photosynthesis 6-fold (Sandalio and others 2001). aszy ki and others (1980) also found that relatively low concentration of cadmium, 20 µM, reduced the net photosynthesis rate based on the leave area of tomato plants to about 85 percent of the untreated plants (aszy ki and others 1980).

Cobb and others (2000) studied the effects of mine wastes on Cherry Belle radish, iceberg lettuce, Better Boy tomato, and roma bush bean. In the study, 0, 25, 50, 75, or 100 percent of contaminated soil was mixed with the appropriate amount clean topsoil. The topsoil was also used as a control. Each species had eight replicates for each treatment group, and concentrations of four different metals, including cadmium, were measured in various plant parts. The concentration of cadmium in bean roots was higher in 100 percent mine wastes compared with the control group. In radish leaves, cadmium was lower in control groups compared with the other groups. However, radish roots were not significantly different from any of the mine waste treatments. Similarly, there were no differences in concentrations of cadmium in tomato plant parts between any of the treatment groups. The study suggests plants harvested from higher concentrations of mine wastes should not be consumed based on visible signs of toxicity, including reddening of leaves, reduced growth, and poor quality fruits (Cobb and others 2000).

Redente and others (2002) grew two types of native plants, bluebunch wheatgrss (*Agropyron spicatum*) and western yarrow (*Achillea lanulosa*), for 50 days to evaluate whether soil fertility, pH, or trace elements were the limiting factor in plant growth in the area of a century-old copper smelting facility. The study called for a mixture of smelter-contaminated and non-smelter-contaminated soils. The research found that the concentrations of trace elements in root and shoots were higher in plants grown on contaminated soil compared with the non-smelter-contaminated soil. Additionally, arsenic was the only trace element in the study found to have shoot concentrations that were phytotoxic (Redente and others 2002).

In a study of the effects of toxic metals on vegetation communities in Anaconda, Montana, elevated concentrations of arsenic, cadmium, copper, lead, and zinc in soils were negatively correlated with vegetative productivity (Galbraith, LeJeune, and Lipton 1995). The elevated metals concentrations, associated with the smelter, resulted in reduced vegetative cover and changes in the native plant communities that reduced the habitat value for wildlife. Cadmium was found to be moderately to severely toxic to plants in bioassays conducted with soils at the site at concentrations ranging from 2.9 mg/kg to 20.4 mg/kg (Kaputska and others 1995).

B2.3.3 Aquatic Invertebrates

Among freshwater invertebrates, cadmium concentrations of 0.47 to 5.0 parts per billion (ppb) were associated with growth reduction, decreased reproduction, immobilization, and population alterations (Eisler 1985).

Besser and Rabeni (1987) studied the effects of cover material on the movement of toxic metals in mine tailings leachates in relation to bioaccumulation and toxicity of aquatic invertebrates. They study exposed juvenile crayfish (*Orconectes nais*), mayfly nymphs (*Hexagenia limbata*), and midge larvae (*Chironomus riparius*) to leachates from rainwater with various vegetation cover for a period of 10 to 120 days. The study found that the bioaccumulation of cadmium increased, while survival, growth, and development decreased during the exposure period.

B2.3.4 Terrestrial Invertebrates

The Eco-SSL for soil invertebrates for cadmium is 140 mg/kg (EPA 2005a). Ten studies were used to derive the Eco-SSL. The three species included were earthworm, springtail, and nematode. The lone nematode study reported a toxic soil concentration of 566 mg/kg dry weight. There were two earthworm studies with resulting toxicity values of 13 and 24 mg/kg dry weight. The toxicity values reported for the seven springtail studies ranged between 6 and 600 mg/kg dry weight.

Some insects can accumulate large quantities of cadmium without observable adverse effects (Jamil and Hussain 1992).

Spurgeon and others (1994) conducted a study on the effects of metals, including cadmium, on earthworm survival and reproduction. It was found that no significant mortality was observed at a concentration of cadmium at 300 µg/g. The number of juveniles that emerged was not adversely affected; thus, reproduction was not significantly affected (Spurgeon and others 1994). However, cadmium had the greatest detrimental effect on cocoon production, followed by copper, zinc, and lead.

B2.3.5 Fish

Cadmium accumulates in the liver and kidney of fish (Sindayigaya and others 1994, Sadiq 1992). Cadmium can be highly toxic in aquatic environments and has been implicated as the cause of severe deleterious effects on fish, including increased mortality, respiratory disruptions, altered enzyme levels, abnormal muscular contractions, reduced growth, and reduced reproduction (Eisler 1985). Cadmium concentrations in the water column damage the reproductive organs of fish, decrease the survival rate of fish embryos, and reduce growth rates of fry (EPA 1976).

Some fish species, such as the rainbow trout and other salmonids, are particularly susceptible to poisoning by cadmium, whereas others, such as roach and stone loach, show more resistance. Salmonids are vulnerable because (1) the metallothionein — a cysteine-rich, low molecular weight protein — in their tissue cannot bind cadmium, and (2) cadmium cannot switch on the genes for apo-thionein production (Kay and others 1987). Consequently, cadmium is sequestered in the fish liver, kidney, and gills by nonmetallothionein proteins, and no excretion mechanism seems to exist.

Cadmium affects the rate of oxygen uptake by fish. Fish appear most susceptible to cadmium salts contamination in their early months of growth and develop tolerance to cadmium salts with age (Chattopadyay and others 1995). Juvenile red sea bream (*Pagrus major*) concentrate a larger amount of cadmium before metallothionein is synthesized and suffer more severe toxic effects than older fish (Kuroshima and others 1993). Water temperature also appears to play a role in cadmium toxicity. Cold-acclimated rainbow trout survive longer than warm-acclimated trout when exposed to lethal levels of cadmium (Roch and Maly 1979).

Long-term effects of cadmium exposure at concentrations near the European inland water quality standard of 5 µg/L were studied for rainbow trout (*Salmo gairdneri*) and brown trout (*Salmo trutta L.*) for periods of up to 90 weeks (Brown and others 1994). Continuous exposure of rainbow trout adults to up to 5.5 µg/L of cadmium did not affect their survival or growth. However, eggs obtained from rainbow trout exposed to waterborne concentrations of 1.8 and 3.4 µg/L failed to develop to the fry stage. Oogenesis was delayed in brown trout exposed to 9.3 and 29.1 µg/L, but the eggs and fry produced developed normally after fertilization. Adult brown trout showed high mortality when exposed to 29.1 µg/L, with a median survival of 54 weeks.

A 4-week exposure of the freshwater major carp (*Labeo rohita*) to sublethal waterborne cadmium chloride concentration of 20 mg/L showed a marked decrease in swimming activity, hemoglobin, plasma protein, and liver glycogen content, as well as increases in blood glucose and opercular movement (Mukherjee and Sinha 1993). Changes in ventilatory behavior, such as coughs and gill purges, were observed in bluegill (*Lepomis macrochirus*) fish as a result of sublethal exposure to cadmium (Diamond and others 1990).

Cadmium also has teratogenic effects on fish. Embryos of the bluegill held in water at 80 ppb cadmium or more exhibited edema, microcephalia, and malformed caudal fins (Eaton 1974).

Signs of cadmium poisoning in rainbow trout include a decline in calcium concentrations in the plasma of the fish. The rate of decline of calcium was found to be correlated to the rate of mortality. In experimental exposure of the eggs of the freshwater teleost *Oryzias latipes* to cadmium, it was determined that, of the two hardness constituents, calcium ions contribute to the suppression of cadmium toxicity, while magnesium ions do not. A high-calcium medium decreases egg mortality remarkably (Michibata and others 1986). Similar results were reported for the brook trout, *Salvelinus fontinalis* (Carroll and others 1979), the mummichog, *Fundulus heteroclitus* (Gill and Epple 1993), and for rainbow trout, *Salmo gairdneri* (Calamari and others 1980). It is possible that action by cadmium depends on the role of calcium in regulating gill permeability.

Rainbow trout exposed orally to cadmium stearate at a concentration of 10 mg/cadmium/kg for 12 weeks were found to have a slight degree in their livers and kidneys, while exposure via water or food were found to have no adverse effects on the survival or growth of rainbow trout (Kumada and others 1980).

B2.3.6 Birds

Birds appear to be relatively resistant to the toxic effects of cadmium. Sublethal effects in birds include growth retardation, nephrotoxicity, anemia, damage to the testicles, absorptive epithelium of the duodenum, reduced egg production, and effects on calcium absorption (Scheuhammer 1987).

Cadmium ingestion by mallards (*Anas platyrhynchos*) enhances alterations induced by food restriction, such as reduced plasma triiodothyronine and thyroxine concentrations and increased concentration of plasma nonesterified fatty acids and corticosterone. Cadmium ingestion by mallards also increases kidney concentrations of copper and zinc (Di Giulio and Scanlon 1985).

Three-week-old chicks fed 75 ppm cadmium showed a decrease in hematocrit, hemoglobin, liver iron, and intestinal iron-59 absorption, pointing to a defect in iron metabolism (Freeland and Cousins 1973). Cadmium fed to young Japanese quails (*Coturnix coturnix*) at a level of 75 mg/kg of diet from hatching to 4 weeks of age produced gross, microscopic, and ultrastructural lesions in the proximal small intestine (Richardson and Spivey Fox 1974).

Japanese quails fed simultaneously with polychlorinated biphenyls (PCB) and cadmium showed PCB accumulation in muscle tissue five times greater than in quails fed PCBs only (Leonzio and others 1992). The interaction appears related to an increase in cholesterol and triglycerides, caused by the cadmium-containing diet, which favors the accumulation of lipophilic compounds.

B2.3.7 Mammals

Cadmium is a known developmental toxin, causing teratogenic and mutagenic effects. Parental doses of cadmium decrease testosterone and produce adverse effects on the testes and prostate of test animals. Prenatal exposure to cadmium has fetotoxic effects, such as reduced fetal weights (ATSDR 1993), and can cause adverse effects during development of the lung, brain, testes, eye, and palate (Domingo 1994). It is believed that small amounts of cadmium could affect embryonic DNA and protein synthesis (Holt and Webb 1987, as cited in Domingo 1994). The mammalian high and low TRVs are based on studies of reproductive effects on mice (Webster 1988, Schroeder and Mitchener 1971, both as cited in Navy 1998).

Mice that drank water containing 300 mg/L cadmium chloride for 12 months exhibited marrow hypoplasia, characterized by significant reduction in totipotent stem cells, granulocyte-monocyte progenitor cells, and erythroid progenitor cells (Hays and Margaretten 1985). The treated mice did not show increased mortality or increased susceptibility to infections, but their body weight was significantly reduced and showed iron deficiency. The anemia of cadmium toxicity is probably the combined result of bone marrow hypoplasia and iron deficiency.

Chronic exposure of mice to cadmium (300 mg/L cadmium chloride in drinking water for 10 weeks) results in a decrease of antibody synthesis. This immunosuppression persists and is more pronounced several weeks after exposure is discontinued (Koller and others 1975). Effects are produced at relatively low cadmium exposures (up to 50 micrograms per milliliter

cadmium for 3 weeks), suggesting that the immune system is vulnerable to the toxic effects of cadmium (Blakley 1985). Metabolic changes, histopathologic alterations, and liver necrosis have been observed in rats, mice, and rabbits after oral exposure to cadmium at concentrations ranging from 0.05 to 138 mg/kg-day (ATSDR 1993).

Schroeder and Mitchener (1971, as cited in Lockheed Martin 2005) administered mice an oral dose of 10 ppm cadmium in drinking water. The study found numerous abnormalities in offspring of effected mice, and 60 percent of second generation breeding pairs were unable to reproduce.

Groten and others (1994, as cited in Lockheed Martin 2005) fed male Wistar rats a diet consisting of cadmium in the form of either cadmium chloride or cadmiummetallothionein (CdMt) at concentrations of 0, 0.3, 3, 30, or 90 mg/kg cadmium for 10 months. Rats fed cadmium chloride had higher concentrations of cadmium in the kidneys compared with the same treatment of CdMt. Additionally, histopathological effects were found in the treatment groups that were fed at concentrations ranging from 30 to 90 mg/kg cadmium and 90 mg/kg for CdMt (Groten and others 1994, as cited in Lockheed Martin 2005)

Schroeder and Mitchener (1971, as cited in EPA 2001) gave mice soluble salts with water for two generations at a single dose level of 10 ppm cadmium in water and 0.1 ppm cadmium in food. Research showed that mice exposed to cadmium displayed reduced reproductive success (the strain did not survive to the third generation) and congenital deformities. This dose was considered a chronic LOAEL.

In another study, Wills and others (1981, as cited in EPA 2001) fed mice $CdCl_2$ at three dose levels, 0.08, 0.1, and 0.125 ppm cadmium, for four generations. The study found no reduction in the growth or survivorship of offspring or in the fertility of the first two generations of rats at any dose level. However, fertility (number of litters and number of females) was reduced by 63 percent in the third generation of rats receiving the 0.125 ppm cadmium diet and fertility was not reduced in the 0.1 ppm cadmium diet. The study considered multigeneration exposure and was long term; the 0.1 ppm dose was considered the chronic NOAEL and the 0.125 ppm dose was considered the chronic LOAEL.

Machemer and Lorke (1981, as cited in EPA 2001) fed rats $CdCl_2$ at five dose levels, 0, 1.82, 6.13, 18.39, and 61.32 mg Cd/kg/d, from day six to day 15 of gestations to test reproductive success. The research found that rats exposed to 61.32 mg Cd/kg/d displayed significantly reduced percentage fertilization and did not reproduce. At the next lower dose, 18.39 mg/kg/d, the percentage fertilization was not reduced. However, the numbers of stunted and malformed fetuses were significantly greater than controls and fetal weights were significantly decreased. No adverse effects on reproduction were observed at the 6.13 mg/kg/d dose level. The study considered oral exposure during reproduction; therefore, the NOAEL was considered to be 6.13 mg/kg/d and the LOAEL was considered to be 18.39 mg/kg/d.

B2.4 COPPER

Copper is a naturally occurring element that is widely distributed in the environment. Copper is the main component of alloys, which include brass, bronze, and gun metal. Copper is an essential trace mineral nutrient and is a dietary requirement for most animals in daily doses between 8 and 17 mg/kg-day (Pascoe and others 1996). However, it becomes a toxicant to all organisms at higher doses (ATSDR 2004).

Copper is mobile under oxidizing and acidic conditions and is immobile in organic-rich and reducing environments. Adsorption increases with pH and with higher organic matter content. In aquatic systems, copper binds primarily to organic matter and forms complexes with both organic and inorganic ligands (mainly with calcium carbonate) that settle out in sediments (Kirk-Othmer 1965). Under normal pH and redox conditions, copper tends to be present in sediments in the form of organic complexes and coprecipitates with iron oxides, manganese oxides, and cupric carbonate complexes.

Copper is an essential nutrient, and biomagnification is not a significant fate process for copper under homeostatic control. Bioaccumulated copper is stored in the liver, kidney, bone marrow, and hair (Hammond and Beliles 1980, as cited in Talmage and Walton 1991).

B2.4.1 Aquatic Plants

Aquatic plants are directly exposed to the harmful effects of copper. Copper inhibits a large number of enzymes and interferes with several aspects of plant biochemistry, including photosynthesis, pigment synthesis, and membrane integrity. Copper can also create problems associated with blocking photosynthetic electron transport, leading to the production of radicals that start peroxidative chain reactions involving membrane lipids (Fernandes and Henriques 1991).

Copper affects plant physiology in a variety of ways, including interference with fatty acid, protein metabolism and inhibition of respiration and nitrogen fixation processes. At the whole plant level, copper is an effective inhibitor of vegetative growth and induces general symptoms of senescence (Fernandes and Henriques 1991). Thus, some species of aquatic higher plants are more susceptible to copper toxicity (Fernandes and Henriques 1991).

B2.4.2 Terrestrial Plants

The availability of copper in contaminated soils is influenced by organic matter content, cation exchange capacity, pH, and the chemical form of the metal (Hughes, Lepp, and Phillips 1980). One hundred mg/kg total copper in the soil causes a 14 to 28 percent crop reduction and is considered the threshold concentration for toxicity to plants (EPA 1987, Bengtsson and Tranvik 1989, both as cited in International Copper Association [ICA] 1992). The general signs of copper toxicity in plants are induced iron chlorosis (yellowing); thick-, short-, or barbed-wire roots; depressed tillering (shoots growing from the plant stem); and stunted growth (Foy and others 1978; Kabata-Pendias and Pendias 1992).

Copper often complexes or interacts with other metals present in soil. Copper behaves antagonistically with other heavy metals such as cadmium, nickel, zinc, and lead (Cataldo and Wildung 1978). Excess copper in soil can reduce uptake of cadmium and nickel in plants (Cataldo and Wildung 1978). Binding of copper by plant xylem prevents the uptake of lead and zinc by xylem elements (Graham 1979). The amount of iron and manganese in soil influences the distribution of copper in the various soil fractions (Doelman and Haanstra 1984). Increasing nitrogen, phosphorus, and arsenic in soil also inhibit copper uptake by plants (Koeppe 1981). The mechanism of copper uptake by roots is uncertain, but most evidence indicates passive transport (Koeppe 1981). The concentration in soil where copper becomes toxic to plants varies greatly among different plant species. Because many plants are metal-tolerant, variation may occur within species in the amount of copper that enters the plant or in how copper is stored or sequestered in the plant tissues (Koeppe 1981). Generally, plants accumulate copper in the roots, with decreasing concentrations in the shoots, fruits, and seeds, in that order. In roots, copper is accumulated in epidermal cells, the endodermis, and the pericycle (Brams and Fiskell 1971).

Either an excess or a deficiency of copper causes serious physiological problems in plants. Copper chlorosis, a result of iron deficiency, is believed to reduce net photosynthesis by inhibiting respiration enzymes (Koeppe 1981). Excess copper in root tips inhibits lateral root development (Brams and Fiskell1971). Excess copper also reduces root length and root cell functions (Koeppe 1981). The mechanism that causes copper to stunt root growth is unknown, however. Copper also affects mitosis, reduces nucleic acid content, and may reduce or increase the activity of various enzyme systems (Koeppe 1981).

The copper Eco-SSL for plants is 70 mg/kg (EPA 2007a). The results of six studies were used to derive the Eco-SSL. The species evaluated included alfalfa, perennial ryegrass, black bindweed, and the Cleopatra mandarin, a citrus cultivar. Three EC_{10} (concentration that produces toxic effects in 10 percent of a test population) values for alfalfa ranged between 32 and 115 mg/kg dry weight. The MATC for perennial ryegrass was 16 mg/kg. The MATC for black bindweed was 251 mg/kg dry weight. The mandarin MATC was 141 mg/kg.

A greenhouse experiment was conducted to study copper bioavailability and bioaccumulation in agricultural soils spiked with different types of copper-rich mine solid wastes (copper ore, tailing sand, smelter dust, and smelter slag) and copper concentrate. Results showed that smelter dust, tailing sand, and copper sulfate ($CuSO_{4)}$ are more likely to be bioavailable and, thus, toxic to plants compared with smelter slag, concentrate, and ore at equivalent total copper concentrations. The copper toxicity and bioaccumulation in plants also varied according to soil physicochemical characteristics (such as pH and total organic carbon) and the available levels of plant nutrients, such as nitrogen, phosphorus, and potassium (Ginocchio and others 2006).

Redente and others (2002) grew two types of native plants, bluebunch wheatgrass and western yarrow, for 50 days to determine whether soil fertility, pH, or trace elements was the limiting factor in plant growth in the area of a century-old copper smelting facility. The study called for a mixture of smelter-contaminated and non-smelter-contaminated soils and conducted in two locations: German Gulch (14 kilometers [km] southeast of the smelter site) and Mount Haggins (8 km south of the smelter site). The study found that root concentrations were higher than shoots at all locations. Bluebunch wheatgrass grown in Mouth Haggin soil had a concentration

that was seven times higher in the roots compared with the shoots. Bluebunch wheatgrass grown in German Gulch soil had a concentration that was five times higher in roots than shoots. Western yarrow grown in Mouth Haggin soil had a concentration that was four times higher in the roots compared with the shoots. Similarly, western yarrow grown in German Gulch soil had a concentration that was three times higher in roots than shoots.

In a study of the effects of toxic metals on vegetation communities in Anaconda, Montana, elevated concentrations of arsenic, cadmium, copper, lead, and zinc in soils were negatively correlated with vegetative productivity (Galbraith, LeJeune, and Lipton 1995). The elevated metals concentrations, associated with a smelter, resulted in reduced vegetative cover and changes in the native plant communities that reduced the habitat value for wildlife. Copper was found to be moderately to severely toxic to plants in bioassays conducted with soils at the site at concentrations ranging from 185.3 mg/kg to 2,856.0 mg/kg (Kaputska and others 1995).

B2.4.3 Aquatic Invertebrates

A value of 9 µg/L (hardness level of 100 mg/L) is a benchmark for freshwater aquatic biota (Tetra Tech Inc. (Tetra Tech) 2004). A consensus-based threshold effect concentration (TEC) for freshwater sediments is 32 mg/kg (Tetra Tech 2004).

Copper is highly toxic in aquatic environments and is a priority pollutant (EPA 1992). Copper is toxic to many fish and aquatic organisms, including mussels, striped bass, bluegill, and carp. The gill is the primary organ for concentrating copper in aquatic organisms. Copper is mainly accumulated in the gill, liver, filaments, stomach, and intestine (Harvey 1978, as cited in Owen 1981). Copper concentrations can significantly affect the hatchability of fish eggs and reduce the growth of fry (EPA 1976). The species of the organism and the organism's age influence the toxicity characteristics of copper. In general, younger organisms are affected at lower concentration levels.

B2.4.4 Terrestrial Invertebrates

The copper Eco-SSL for soil invertebrates is 80 mg/kg (EPA 2007a). Ten studies were used to develop the Eco-SSL. The species evaluated included springtail, nematode, and earthworm. The EC_{10} for the springtail was 38 mg/kg dry weight. The nematode MATC ranged from 13 to 14 mg/kg. There were six earthworm studies with toxic soil concentrations that ranged between 13 and 15 mg/kg.

The Oak Ridge National Laboratory (ORNL) soil toxicity benchmark for soil invertebrates is 60 mg/kg (Efroymson and others 1997). One hundred mg/kg is the threshold copper concentration for toxicity for invertebrates in soil (EPA 1987, Bengtsson and Tranvik 1989, both as cited in ICA 1992).

B2.4.5 Fish

The gill is the primary route of entry for copper. Once in the organism, copper accumulates mainly in the liver, as well as in bone, kidney, and the gill filaments (Harvey 1978, as cited in Owen 1981). The average body concentration of freshwater fish is 0.65 mg/kg wet weight

(about 2.60 mg/kg dry weight). The 85th percentile concentration is 1.0 mg/kg wet weight (4.0 mg/kg dry weight) (Schmitt and Brumbaugh 1990). The toxicity of copper varies with hardness: the softer the water, the greater the toxicity of copper.

Copper reduces the number of fish eggs that hatch successfully. It can also significantly reduce the growth of fry (Nriagu 1979, as cited in DOI 1998; Miller and others 1992; EPA 1976).

In freshwater, the acute toxicity of copper to cutthroat trout (*Salmo clarki*) was inversely correlated with water hardness and alkalinity (Thurston and others 1979). At a given alkalinity, hardness determined the LC_{50}, while at a given hardness, alkalinity determined the LC_{50}. At any given alkalinity and hardness levels, the concentration of different forms of copper is controlled by the pH of the water. Under experimental conditions, divalent copper ion, cupric hydroxide, cuprous hydroxide, and the copper aquo ion were found to be toxic forms, whereas copper bicarbonate and copper carbonate were not toxic.

The larvae and juveniles of freshwater fishes (brook trout, rainbow trout, lake trout, brown trout, northern pike, white sucker, and small-mouth bass) were more sensitive to copper toxicity than were the embryos of some species. The toxic concentrations of copper to larvae were similar for most fish species and ranged between 31.7 and 43.5 mg/L copper (McKim and others 1978). Another study of age specific toxicity of copper was conducted using larval topsmelt (*Atherinops affinis*) (McNulty and others 1994). The early age cohorts (0, 3, and 5 days) were less sensitive to copper chloride than were larval fish 7 days or older. The LC_{50} ranged from 365 µg/L for the newly hatched to 137 µg/L for 20 day-old larvae. The no observed effect concentrations were 180 µg/L for larvae up to 3 days old and 100 µg/L for all other age cohorts.

Fish can accumulate copper with BCFs ranging from 10 to 1,000 (Talmage and Walton 1991). The majority of this copper is bound to the protein metallothionein or sequestered in calcium granules. While the metallothionein can be degraded to provide copper for metabolic needs, the copper in calcium granules is not available to the organism (Nriagu 1979, as cited in DOI 1998). Mollusks have BCFs for copper that range up to 30,000 (Perwack and others 1980; Chapman and others 1968; Raymont 1972).

B2.4.6 Birds

Copper can be toxic to birds, although they appear to be fairly tolerant of chronic copper exposure. Mallards tolerated a daily dietary copper concentration of 29 mg/kg body weight and adult chickens tolerated a daily dietary copper concentration of 60 mg/kg body weight. In adult chickens, pigeons, and ducks, minimum lethal doses of copper ranged from 300 to 1,500 mg/kg body weight (Demayo and others 1982). Diets that contain elevated levels of copper can slow the growth rate, diminish egg production, and cause developmental abnormalities in various avian species (Owen 1981).

For example, chicks showed a slight reduction in weight gain at dietary copper concentrations of 350 mg/kg or higher. Turkeys tolerated a diet with 676 mg/kg copper. In another study, 1-day-old broiler chickens were administered a dietary concentration of 43 mg/kg-day. The study observed a decrease in weight among chicks (Norvell and others 1975, as cited in Tetra Tech 2004).

In another study, Mehring and others (1960, as cited in Lockheed Martin 2005) fed 1-day old New Hampshire chicks a diet consisting of supplemental copper, in the form of copper oxide, at concentrations of 0, 10.8, 26, 47.5, 78, 121.1, 182, 268.1, 390, 562.2, 806, and 1,150 mg/kg diet for 10 weeks. The study observed that mortality rates of 15 and 40 percent were found in the two highest exposure treatment groups.

Chiou and others (1977, as cited in Lockheed Martin 2005) fed white leghorns layers diets consisting of 0, 200, 400, 600, or 800 mg/kg copper sulfate for 4 weeks. The dietary copper concentrations were determined to be 27, 195, 405, 598, and 758 mg/kg. The study found that food intake and egg production were significantly lowered when comparing the birds in the dietary concentration group of 598 and 758 mg/kg and the control group. Additionally, liver enzyme activities were significantly higher in the two highest treatment groups.

B2.4.7 Mammals

Mammals are relatively tolerant to copper. The accumulation of copper in animal tissues is influenced by several factors, including the genetic make-up of the animal, the levels of dietary iron and zinc, the intake of molybdenum and sulfate or sulfide, the availability of pantothenic acid and vitamin E, the quantity and source of protein, and other factors that remain unidentified (Hill 1977). Copper is primarily stored in the liver, kidney, bone marrow, and hair (Hammond and Beliles 1980, as cited in Talmage and Walton 1991).

The toxic effects of copper have been studied on many animals, including cats, dogs, cattle, sheep, rats, mice, horses, guinea pigs, pigs, and monkeys. Different species of animals display varying levels of sensitivity to copper. However, the principal organ affected by exposure to copper is the liver, where copper primarily accumulates in the subcellular organelles, ultimately causing liver cirrhosis in all mammals. Copper can also cause necrotic kidney tubules and brain damage (Owen 1981).

The primary toxic effects of an acute copper dose given orally are gastrointestinal irritation, vomiting (including blood), low blood pressure, jaundice caused by liver necrosis, and coma. Other chronic signs include inhibition of growth, muscular dystrophy, anemia, impaired reproduction, and decreased longevity (Zervas and others 1990, as cited in DOI 1998; Demayo and others 1982; Talmage and Walton 1991). Chronic exposure to copper causes accumulation of copper in the body, resulting in hemolytic anemia and lesions in the liver, brain, and eye. Rat studies show liver, kidney, and stomach damage to be both short- and long-term effects caused by copper ingestion (ATSDR 2004). The acute toxic effects of copper given orally include gastrointestinal irritation, vomiting (including blood), low blood pressure, jaundice caused by liver necrosis, and coma. Chronic exposure to copper can cause accumulation of copper in the body, leading to lesions in the liver, brain, and eye, and hemolytic anemia. The kidneys, bone marrow, and hair become storage organs when overexposed to copper (Hammond and Beliles 1980).

Copper is an essential nutrient required for normal enzymatic function. In high concentrations, copper may act as a catalyst for the production of free radicals (DOI 1998). Serum copper concentrations increase with age in both mice and humans, but renal and hepatic concentrations decline. Dietary copper influences the life span of mice (Massie and Aiello 1984). Aging in mice was accelerated when mice were fed copper (administered as copper gluconate in drinking water) at a concentration of 317 ppm (Massie and Aiello 1984).

The magnitude of copper toxicity for most animals varies with the ratio of copper to molybdenum in the diet. Low concentrations of molybdenum cause copper to accumulate at a faster rate and cause toxicity at lower concentrations (DOI 1998). Whole-body copper concentrations in small mammals collected from various uncontaminated sites ranged from 8.3 to 13.4 mg/kg dry weight (Talmage and Walton 1991).

In a feedings study of mice by Massie and Aiello (1984), it was observed that a daily intake of 4.2 mg/kg-day resulted in a decrease in body weight gain. Alternatively, in a 1-year feeding study with minks, a NOAEL for effects of copper (50 ppm in diet) on the reproductive system, blood chemistry, and weight gain was observed at 7.5 mg/kg-day.

Aulerich and others (1982, as cited in EPA 2001) fed mink copper sulfate at five dose levels — 0, 25, 50, 100, and 200 ppm copper supplemental plus 60.5 ppm copper in base feed — for 357 days. The study found that consumption of 50, 100, and 200 ppm supplemental copper increased the percentage mortality of mink kits. Additionally, kit survivorship among the 25 ppm supplemental copper group was actually greater than the controls. The 25 ppm supplemental copper exposure dose was considered a chronic NOAEL and the 50 ppm supplemental copper dose was considered a chronic NOAEL.

Boyden and others (1938, as cited in EPA 2001) fed rats diets consisting of copper sulfate at five dose levels, 0, 500, 1000, 2,000, 4,000 ppm copper, for 4 weeks to test mortality and growth. The study found that all rats died within 1 week at the 4,000 ppm dose. At the 2,000 ppm dose, one rat died in the fourth week. However, no rats died in the other dose levels. Growth was reduced in a dose-dependent manner, decreasing from a gain of 106 grams (g) in the controls to 83.5 g in the 500 ppm diet, 51 g in the 1,000 ppm diet, and 5.5 g in the 2,000 ppm diets. The study found that the diet of 500 ppm diet reduced growth by less than 20 percent; therefore, this level was determined to be a subchronic LOAEL.

Kinnamon (1963, as cited in EPA 2001) also fed copper sulfate to rats. The exposed rats to two dose levels, 0 and 118 ppm, for 7 weeks through a reproductive cycle. The study found reproduction among rats exposed to 118 ppm copper was not adversely affected. Based on the lack of harmful effects, 118 ppm copper was considered a chronic NOAEL.

B2.5 IRON

Iron is an essential trace element for all living organisms because it is a mediator in oxygen and energy transport (Aisen and others 2001). Concentrations of iron in soils generally range from 0.2 percent to 55 percent (20,000 to 550,000 mg/kg), though they can vary as a result of soil type, region, and other factors (Bodek and others 1988, as cited in EPA 2005b).

B2.5.1 Aquatic Plants

Winterbourn and others (2000) observed the effects of acid mine drainage, particularly iron and aluminum, on algae and bryophytes in New Zealand. The study found that concentrations of iron in aquatic algae and bryophytes in the New Zealand streams ranged from 0.01 to 27.0 milligrams per gram (mg/g) dry weight. However, another study found Fe concentrations up to 58.2 mg/g dry weight (Mason and Macdonald 1988, as cited in Winterbourn and others 2000).

B2.5.2 Terrestrial Plants

The demand for iron of plants exceeds the amount of iron available in the soil in well aerated soils between pH 5 and 8 (Römheld and Marschner 1986, as cited in EPA 2005b). Plants have evolved physiological mechanisms to enhance iron uptake to compensate for the lack of available iron (Marschner 1986, as cited in EPA 2005b). Iron is not expected to be toxic to plants under these soil conditions.

In a study of tobacco plants injured by iron toxicity, leaf strength decreased with increasing iron content between 450 and 1,126 mg/kg (Rhoads 1971, as cited in EPA 2005b). Other observed effects of iron toxicity on crops include necrotic spots on leaves, darkened foliage, and stunted root growth (Tanaka and Yoshida 1970 and Millikan 1949, as cited in EPA 2005b).

Plant tolerance to iron toxicity appears to be correlated with tolerance to waterlogging in soils. The roots of plant species tolerant to wet soil oxidize iron more effectively and reduced its transport to plant tops than did plants sensitive to wet soil in a study by Barlett in 1960 (as cited in EPA 2005b). Barlett (1960, as cited in EPA 2005b) hypothesized that wet-soil loving plants lower the toxicity of Fe^{+2} by oxidation in the root zone.

B2.5.3 Aquatic Invertebrates

Gerhardt (1994) found that invertebrates exposed to iron at a concentration of 250 mg iron per liter lost their ability to escape from prodding by swimming to the nearest available shelter and remained inactive. Additionally, Gerhardt (1992) found that chronic iron exposure causes decreased activity and food consumption in *L. marginata*.

B2.5.4 Terrestrial Invertebrates

A study of the effects of iron in the diet of the springtail (*Orchesella cincta*) fed green algae (*Pleurococcus* spp.) that contained various concentrations of iron for 21 days. Changes in percent growth, feeding, and molting were measured. A diet that contained 7,533 mg/kg of iron reduced springtail growth by 42 percent, but there was no effect from a diet that contained 3,515 mg/kg of iron (Nottrot and others 1987, as cited in EPA 2005b).

B2.5.5 Fish

The ferrous, or bivalent (Fe++), and the ferric, or trivalent (Fe+++) irons, are the primary forms of concern in the aquatic environment, although other forms may be in organic and inorganic wastewater streams. The ferrous form can persist in waters void of dissolved oxygen and originates usually from groundwater or mines when they are pumped or drained. The ferric form is insoluble. Iron can exist in natural organometallic or humic compounds and collidal forms. Black or brown swamp waters may contain iron concentrations of several mg/L in the presence or absence of dissolved oxygen, but this form of iron has little effect on aquatic life (EPA 1986).

B2.5.6 Birds

Iron accumulation in the liver and other tissues has been linked to disease in birds, though it is most often reported in Indian hill mynas (*Gracula religiosa*) and toucans (*Ramphastos* spp.) (Cork 2000).

B2.5.7 Mammals

Iron toxicosis is rare in mammals because iron is an essential nutrient. It is seen in livestock that are fed a diet with an excessive dose of iron. Maximum recommended dietary levels of iron range from 500 mg/kg for sheep to 3,000 mg/kg for pigs (NAS1980).

Sobotka and others (1996, as cited in Lockheed Martin 2005) fed male weanling Sprague-Dawley rats at iron concentrations of 4 (deficient), 35 (control), 350, 3,500, or 20,000 mg/kg iron for 12 weeks. The study found that rats exposed to the higher concentrations had a decreased weight and were less active. The study also found that rats exposed to higher concentrations displayed startle reflex and conditioned avoidance response performance.

B2.6 LEAD

Lead is found at a worldwide mean concentration of 16 micrograms per gram(µg/g) of soil in the earth's crust. Lead has been characterized as a poison for centuries, and environmental pollution from lead is well documented (Eisler 2000; Sadiq 1992; Pain 1995). Lead has been used in the production of solder, pipes, paint, ceramics, roofing materials, caulking, ammunition, and as a gasoline additive. From a geochemical perspective, lead is ubiquitous and occurs in rocks, soils, water, plants, animals, and air. Lead is neither essential nor beneficial to living organisms, and all data show that its metabolic effects are adverse. Lead is a mutagen and a teratogen.

B2.6.1 Aquatic Plants

The ability of wetland plants such as broad-leafed cattail *(Typha latifolia)* and common reed *(Phragmites australis)* to remove lead and other metals from the water column is well-studied (Deng, Ye, and Wong 2006; Liu and others 2007). However, there is limited information on effects to aquatic plants caused by lead toxicity.

Lead concentrations in soil that are found to be toxic to vital plant processes vary greatly among different studies due to the interaction of lead with plant species and many environmental factors. Gu and others (1989, as cited in Liu and others 2003) found that 1,000 mg/kg lead in soil affected the growth of rice plant significantly and reduced the grain yield by 11.5 percent. However, studies by Xie and Huang (1994, as cited in Liu and others 2003) indicated that the growth of the hybrid rice cultivar Shan you 63 was not affected by 2,500 mg/kg lead in soil. Although there is no evidence that lead is essential for the growth of any plant species, there are many reports that lead has stimulating effects on plant growth at low concentrations. Though the mechanism is not fully understood, it was reported that 100 mg/kg lead in soil increased the biomass weight and grain yield of rice (Wang and Yu 1997, as cited in Liu and others 2003), and the plant fresh weight and seed production of sunflower was improved in soils with 96.9 mg/kg lead (Murillo and others, as cited by Liu and others 2003).

B2.6.2 Terrestrial Plants

Lead is not considered an essential element for plants (Demayo and others 1981). Plants can bioaccumulate lead (Crowder 1991, as cited in Pain 1995; Sadiq 1992; Suedel and others 1994), but there are no reported events of biomagnification to higher trophic levels. Only a fraction of the concentration of lead in soil is available for plant uptake and a small portion of the lead that passes through the roots is translocated in the plant (Pain 1995). Several whole plant studies have shown that lead absorbed by the plants remains mostly in the roots and senescent foliage, with small proportions passing on to the shoots, and even less to the seed (Crowder 1991, as cited in Pain 1995; Demayo and others 1981; Koeppe 1981; Carlson and others 1975; Baker 1981). Airborne lead accumulates on the leaf surfaces of terrestrial plants. The quantity of lead accumulated depends on the texture of the leaf surface, with rough-surfaced leaves accumulating the most lead in winter (Pain 1995). When sewage sludge was applied to crops, lead was the least mobile and bioavailable of all the metals tested (Adriano 1992). This low bioavailability is caused by the precipitation of lead to the root surface, in the cell walls, and in the dictysome vesicles of root cells (Malone and others 1974; Koeppe 1981). Only a small proportion of lead escapes the inhibitory complexes of the roots to reach other parts of the plant. Lead uptake can be further reduced by application of calcium and phosphate to soil (Pain 1995).

Lead affects plant physiological processes only when found in soil at very high concentrations. In fact, detrimental effects of lead on plants seem to appear only at total concentrations of several hundred mg/kg of lead in soil (Demayo and others 1981). Several reports have found that high doses of lead can affect net photosynthesis, stomatal opening, respiration and enzyme activity, yield, mitosis, and water absorption. High doses can also cause reduction in growth and biomass in higher plants (Koeppe 1981; Demayo and others 1981; U.S. Fish and Wildlife Service 1988). Lead can cause abnormalities in chromosomal and cellular or organelle membranes, which includes reductions in phosphatase activity (Koeppe 1981). Lead has significant effects in the food chain, mostly from aerial deposition and ingestion by mammals of lead-coated vegetation. Only in cases of very high lead levels in soil will there be a direct pathway from soil to mammal through plants (Koeppe 1981; Williamson and Evans 1972).

The lead Eco-SSL for plants is 120 mg/kg (EPA 2005c). The results of four studies were used to derive the Eco-SSL. The species evaluated included loblolly pine (*Pinus taeda*), red maple (*Acer rubrum*), berseem clover (*Trifolium alexandrium*), and ryegrass (*Lolium rigidum*). Three MATCs ranged between 22 and 316 mg/kg.

Cobb and others (2000) studied the effects of mine wastes on Cherry Belle radish, iceberg lettuce, Better Boy tomato, and roma bush bean. Within the study, 0, 25, 50, 75, or 100 percent of contaminated soil was mixed with the appropriate amount clean topsoil. The topsoil was also used as a control. Each vegetable had eight replicates for each treatment group and were evaluated at the various plant parts for four different metals, including lead. In beans, lead accumulated displayed significant difference between the roots in the control group and the roots from the treatment group with 50, 75, or 100 percent mine wastes. In radish leaves, plants grown in the 100 percent treatment group had significantly higher concentrations of lead compared with the control leaves. Similarly, concentrations in tomato roots grown in treatment groups 50 and 75 percent were significantly higher than the control group and all tomatoes grown in the 100 percent group did not survive. Additionally, all control vegetables were visibly healthier and flowered and produced fruit faster than vegetables grown in the mine wastes. The study suggests plants from higher concentrations of mine wastes should not be consumed based on visible signs of toxicity, including reddening of leaves, reduced growth, and poor quality fruits (Cobb and others 2000).

Redente and others (2002) grew two types of native plants, bluebunch wheatgrss and western yarrow, for 50 days to determine whether soil fertility, pH, or trace elements were the limiting factor in plant growth in the area of a century-old copper smelting facility. The study called for a mixture of smelter-contaminated and non-smelter-contaminated soils and was conducted in two locations: German Gulch (14 km southeast of the smelter site) and Mount Haggins (8 km south of the smelter site). The study found that root concentrations were higher than shoots at all locations. Bluebunch wheatgrass grown in Mouth Haggin soil had a concentration that was seven times higher in the roots compared with the shoots. Western yarrow grown in Mouth Haggin soil had a concentration that was 10 times higher in the roots compared with the shoots. Similarly, bluebunch wheatgrass grown in German Gulch soil had a concentration that was two times higher in roots than shoots.

In a study of the effects of toxic metals on vegetation communities in Anaconda, Montana, elevated concentrations of arsenic, cadmium, copper, lead, and zinc in soils were negatively correlated with vegetative productivity (Galbraith, LeJeune, and Lipton 1995). The elevated metals concentrations, associated with the smelter, resulted in reduced vegetative cover and changes in the native plant communities that reduced the habitat value for wildlife. Lead was found to be moderately to severely toxic to plants in bioassays conducted with soils at the site at concentrations ranging from 78.1 mg/kg to 309.6 mg/kg (Kaputska and others 1995).

B2.6.3 Aquatic Invertebrates

Lead toxicity to aquatic invertebrates is a function of species variations in sensitivity, effects of water quality on lead solubility, development of tolerance during chronic exposures, and duration of exposure. Waterborne lead concentrations of 50 to 750 mg/L have resulted in short-term lethality to various species of aquatic invertebrates. Sublethal effects of lead on

mortality and reproduction are observed at waterborne lead concentrations of 0.02 mg/L (Demayo and others 1981).

Invertebrates including insects (*Pteronarcys dorsata, Brachycentrus* sp.), snails (*Physa integrand*) and the amphipod (*Gammarus pseudo Umnaeus*) exposed for 28 days to lead concentrations of 0.032 mg Pb/L and above accumulated significant amounts of lead. The average lead residues were approximately 1,000 to 9,000 times greater than the corresponding concentration in water (Spehar 1978).

A study of erosion and leaching of abandoned deposits of lead-mine tailings in southeast Missouri observed bioaccumulation and toxic effects in aquatic invertebrates. The study exposed juvenile crayfish (*Orconectes nais*), mayfly nymphs (*Hexagenia limbata*), and midge larvae (*Chironomus riparius*) to leachates from test plots of tailings that had been given various cover treatments. Bioaccumulation of lead was correlated with the dissolved metal concentrations in the leachates. Toxic effects on invertebrate survival, growth, and development were correlated with the metal concentrations in leachate samples and, for lead, with body burdens in invertebrates. The results indicated that leachates from mine tailings deposits can adversely affect aquatic invertebrates, and that cover materials that release organic complexing agents can increase the mobilization of toxic metals in leachates (Besser and Rabeni 1987).

B2.6.4 Terrestrial Invertebrates

Two sets of invertebrates were compared at a lead and zinc mine in Great Britain. One group of invertebrates was collected from a site where lead concentration in soil averaged 14,010 µg/g. The second group was a control taken from a reference site. The invertebrates taken from the contaminated soil were found to have an accumulation of 82 µg/g compared with only 22 µg/g from the reference site (Johnson and others 1978; Roberts and Johnson 1978).

The lead Eco-SSL for soil invertebrates is 1,700 mg/kg (EPA 2005c). Four studies on springtails (*Folsomia candida*) were used to develop the Eco-SSL. The MATCs were 894 and 3,162 mg/kg.

B2.6.5 Fish

Lead from mining has severely reduced or eliminated populations of fish through direct lethal toxicity and it is likely that low levels of contamination causing waterborne concentrations in excess of 0.01 mg/L are having subtle, damaging effects on fish populations through direct sublethal toxicity or indirectly through toxicity to prey species (Demayo and others 1981).

The effects of fish exposed to lead include hematological effects, inhibition of enzymes, and neurotoxicity. The overall result is an impaired ability to survive, grow, and reproduce and it is to be expected that, as waterborne concentrations increase above 0.01 mg Pb/L, there will be increasingly severe long-term effects on fish and fisheries. Thus, concentrations in excess of the usually observed surface water concentrations, less than 0.01 mg Pb/L, will harm fish (Demayo and others 1981).

Lead can also affect the bone, gill, and kidney of fish (Holcombe 1976). Merlini and Pozzi (1977) conducted an 8-day study on the sunfish *(Lepomis gibbosus)* and found that in water of pH 6.0 the fish concentrated almost three times as much lead (concentration factor 4.88) as fish at pH 7.5 (approximately 1.86). The highest concentration factors were for the fins, gills, and liver: 18.56 in the fins, 21.0 in the gills, and 13.94 in the liver at pH 6.0, and 9.05 in the fins, 6.81 in the gills, and 5.84 in the liver at pH 7.5, compared with muscle with a concentration factor of only 0.46 at pH 6.0 and 0.33 at pH 7.5 (Merlini and Pozzi 1977).

Another study assessed the exposure of fish from the Spring and Neosho Rivers in northeast Oklahoma to lead, zinc, and cadmium from historical mining in the Tri-States Mining District. Fish blood was analyzed for -aminolevulinic acid dehydratase (ALA-D) activity. The activity of ALA-D, an enzyme involved in heme synthesis, is inhibited by Pb. Enzyme activity was inhibited by more than 50 percent relative to reference sites in channel catfish from several Tri-States Mining District sites (Schmitt and others 2005).

Chronic exposures of fish to lead caused elevated mortality rates, reduced hatching success, and an increased incidence of black tails (darkening of the caudal area) and spinal curvatures, both symptoms of neurotoxicity. These effects are often observed at lead concentrations at or below concentrations considered safe for human consumption (0.05 mg Pb/L) (Demayo and others 1981).

B2.6.6 Birds

Lead produces a variety of toxic effects in birds, including damage to the nervous system, muscular paralysis, inhibition of heme synthesis, damage to kidneys, damage to the liver, and death (Mudge 1983, as cited in Eisler 2000). Sublethal exposure to lead may also have adverse systemic and reproductive effects in some species by decreasing plasma calcium, inhibiting growth, and reducing hatchability of chicks. Organic forms of lead are more toxic than inorganic forms to avian receptors.

The low TRV for lead was derived from a study (Edens and others 1976) that used a very soluble form of lead (lead acetate) fed to Japanese quails. Reproductive effects were measured, including plasma calcium levels, eggshell thickness, and number of hatchlings. Japanese quails are one of the most sensitive species to reproductive effects. A comparable study (Pattee 1984), where the same form of lead was administered to American kestrels (*Falco sparverius*) with similar endpoints, was used to account for differences in the sensitivity of receptors to lead. A dose of up to 50 mg/kg did not cause significant adverse reproductive effects on egg production, incubation, fertility, or eggshell thickness in the study using kestrels, a raptor species. A dose as small as 10 mg/kg in the TRV study was sufficient to cause significant reduction in egg production in the Japanese quail (Edens and Garlich 1983).

Hoffman and others (2000b, as cited in Lockheed Martin 2005) fed 1-day-old mallard ducklings lead-containing sediment at concentrations of 1.9, 414, and 828 µg/g for 6 weeks. The study found that mortality was observed in the higher concentrations groups, but there was no significant difference between mortality in higher concentration groups and the control. Renal inclusion bodies were found in two of nine ducklings from the 414 µg/g group and also found in four of nine ducklings from the 828 µg/g group.

Heinz and others (1999, as cited in Lockheed Martin 2005) fed mallards a standard duck diet containing 103, 207, 414, and 828 µg/g lead for 5 weeks. Ducks in the treatment group receiving 828 µg/g lead-contaminated sediment showed atrophy of the breast muscles, green staining of the feathers around the vent, viscous bile, green staining of the gizzard lining, and renal tubular intranuclear inclusion bodies. Additionally, one of the ten treated ducks died.

Reiser and Temple (1980, as cited in Lockheed Martin 2005) orally delivered nine raptors (five red-tailed hawks, three rough-legged hawks, and one golden eagle) 3 mg/kg body weight lead daily in the form of a lead acetate trihydrate solution for 30 weeks. Additionally, control birds (six red-tailed hawks and one Swainson's hawk) were given sodium acetate solution orally. The experiment showed that the nine experimental birds all displayed signs of lead toxicosis. These effects included anorexia, green bile-stained feces, and anemia. Furthermore, three of the birds died between weeks 3 and 4 after the onset of the lead toxicosis was witnessed.

B2.6.7 Mammals

Lead can have multiple toxic effects in mammalian species. Lead may cause damage to the nervous system, hematological effects, kidney dysfunction, sterility, abortion, neonatal mortality, growth retardation, delays in maturation, and reduced body weight (Amdur and others 1991; Eisler 2000). Younger mammals may have greater sensitivity to lead toxicity from their developing blood-brain barrier. Developing capillaries in the brain allow lead levels in the blood to be transported to newly formed components of the brain (Amdur and others 1991). Organic forms of lead are more toxic to mammals than inorganic forms.

Erickson and Lindzey (1983) found that older muskrats (*Ondatra zibethicus*) fed diets of cattails contaminated with lead had more stored lead in their kidneys compared with juveniles consuming the same diet. The study suggests that the higher concentration of lead in tissue of adults implies that concentrations of these metals are related to exposure duration (Erickson and Lindzey 1983). The study found no difference between male and female liver or kidney tissues.

Shrews (*Sorex*) feedings on diets of lead-contaminated Oligochaeta and larvae of Coleoptera, Diptera, and Lepidoptera were found to exceed the exposure critical level of 25 µg/g in target organs, such as the kidneys, for small mammals (Wei-chun and others 1991). This study also found that small herbivorous mammals, such as the vole, were below this critical level. The lower tissue concentrations of voles can be mainly attributed to their diet since the major source for the intake of metals by the shrews consisted of earthworms (Wei-chun and others 1991).

The high mammalian TRV is based on a study of female rats administered lead acetate in food for 8 days (Wise 1981). A dose of 240.64 mg/kg-day resulted in decreased body and organ weights. This dose was chosen as the basis for the high TRV because it was in the middle of the range of reported effects. The low TRV is based on a study of long-term exposure of rats to lead acetate in drinking water by Fowler and others (1980). Rats were exposed to lead in utero as their mothers were administered lead acetate in drinking water during pregnancy and later as their mothers were lactating. Chronic toxicity was evaluated in rats aged 6 months and 9 months. The NOAEL is based on the group exposed to 5 ppm lead in drinking water.

A study evaluated the extent of absorption of lead in mining waste soil from Butte, Montana, and investigated the effect of mining waste soil dose in grams of soil per day on tissue lead concentrations. Young, 7- to 8-week-old male and female Sprague-Dawley rats (5/sex/group) were given mining waste soil that contained 810 or 3,908 ppm lead mixed in a purified diet (AIN-76) at four different dose levels (0.2, 0.5, 2, and 5 percent dietary soil) for 30 consecutive days. Mean relative percentage bioavailability values of lead in the Butte mining waste soil were 20 percent based on the blood data, 9 percent based on the bone data, and 8 percent based on the liver data (Freeman and others1992).

Mason and MacDonald (1986, as cited in Lockheed Martin 2005) researched the effects of lead and cadmium on otter (*Lutra lutra*). The lead intake was determined by measuring the fecal lead levels, the known ingestion rate, and gastrointestinal lead absorption rate for mammals. The study found no adverse affects on population levels at a lead intake of less than 0.15 mg/kg BW/day. However, otter populations were decreased when the estimated intake level surpassed 2 mg/kg BW/day.

Ronis and others (1998a, as cited in EPA 2001) exposed rats to lead acetate (63.7 percent lead) in water at four dose levels, 0, 320, 960, and 2,870 mg lead per liter, between day 5 of gestation and through parturition. The study found that pup mortality was not affected by lead doses up to 960 mg lead per liter. However, the 2,870 mg lead per liter dose significantly increased pup mortality. Birth weights of male pups were significantly reduced at both the 960 and 2,870 mg lead per liter doses. However, female birth weights were reduced only at the highest dose. The 320 mg lead per liter dose level was considered to be the chronic NOAEL and 960 mg lead per liter doses were considered to be chronic LOAEL.

In another study, Azar and others (1973, as cited in EPA 2001) fed lead acetate at five dose levels, 10, 50, 100, 1000, and 2000 ppm, to rats for three generations to test reproductive success. The study found that none of the lead exposure levels studied affected the number of pregnancies, the number of live births, or other reproductive indices. However, lead exposure of 1,000 and 2,000 ppm resulted in reduced offspring weights and produced kidney damage in the young. Therefore, the 100 ppm lead dose was considered a chronic NOAEL (8 mg/kg-day) and the 1,000 ppm lead dose was considered a chronic LOAEL (80 mg/kg-day).

Anders and others (1982, as cited in EPA 2001) inserted a tube into the respiratory or gastrointestinal tract through the mouth of pigeons and inserted lead acetate at two dose levels, 0 and 6.25 mg/kg-day, for 64 weeks. The study found only one of the 23 birds died. Only minimal effects were observed among other birds. Therefore the 6.25 mg/kg-day dose was considered the chronic NOAEL.

Redig and others (1991, as cited in EPA 2001) used the technique of oral intubation on red-tailed hawks for 75 days to expose the birds to lead acetate at dose levels of 0 and 4.32 mg/kg-day lead. The study found birds were exposed to increasing doses of lead over 75 days. No mortality or other adverse effects were observed, but heme synthesis was reduced. Therefore, this dose was considered the chronic NOAEL.

B2.7 MANGANESE

Manganese is an essential element. It occurs naturally in many soil types and can be present in the environment in several different oxidation states. Although the main use of manganese is in iron and copper alloys, it is also used in dry cells, matches and pyrotechnics, fossil fuels, and numerous chemical processes.

Manganese occurs in four oxidation states (+2, +3, +4, and +7). Environmental factors, such as pH and oxidation-reduction potential (Eh), determine the oxidation state of manganese (ATSDR 1991). The most abundant form of manganese is the divalent ion (EPA 1984a, as cited in ATSDR 1991). Whether manganese sorbs to soil and sediment depends on the organic content in the soil or sediment and the ion exchange capacity of the medium (Hemstock and Low 1953, Curtin and others 1980, McBride 1979, Schnitzer 1969, all as cited in ATSDR 1991; Kabata-Pendias and Pendias 1984).

B2.7.1 Aquatic Plants

Signs of manganese toxicity include the appearance of a regular pattern of small black spots concentrated along the main veins on older leaves, necrosis of young leaves, chlorosis, darkening of leaf veins, leaf cupping, water-soaked lesions, and excessive leaf shedding (van Eysinga and others 1981; Scaife and Turner 1983; Smith and others 1985).

B2.7.2 Terrestrial Plants

Soil acidity influences the toxicity of manganese. Higher concentrations of manganese become available as soil becomes more acidic. A soil pH of 5.5 is the critical point (Smith and others 1985; Jucker and others 1998). Plants growing in these areas often show signs of manganese toxicity because poorly drained soils frequently exhibit low pH (Jucker and others 1998).

Plant species and cultivars differ widely in their tolerance to excess manganese, and the biochemical mechanisms underlying this tolerance are unknown. Silicon is reported to reduce the toxicity of manganese to plants (Jucker and others 1998).

The manganese Eco-SSL for plants is 220 mg/kg (EPA 2007b). The results of four studies were used to derive the Eco-SSL. The species evaluated included barley (*Hordeum vulgare*), cotton (*Gossypium* spp.), and nile grass (*Heroceras macrum*). The MATCs for the studies were 71 and 707 mg/kg.

B2.7.3 Aquatic Invertebrates

Lasier and others (2000) studied the effects of manganese on two species of freshwater crustaceans, Ceriodaphnia dubia (Cladocera) and Hyalella azteca (Amphipoda). It was found that lethal and reproductive inhibition concentrations of manganese were determined for C. dubia in acute 48 hour tests and chronic three brood tests using animals, 24 hours old and between 24 and 48 hours old. Sensitivity of H. azteca to manganese was assessed with 7-day-old animals in acute 96-hour tests (Lasier and others 2000).

B2.7.4 Terrestrial Invertebrates

Reincecke and Reinecke (1997) studied the effects of manganese and lead on the spermatozoan ultrastructure of *Eisenia fetida*. Pre-clitellate worms were fed fresh cattle manure containing sublethal quantities of heavy metals for 8 weeks. After the exposure, the body loads of heavy metals were 41.8 picogram/g (0.20 picomole/g) for lead and 9.3 picogram /g (0.17 picomole/g) for manganese. Electron microscopical was performed to evaluate the any possible spermatozoa damage. Worms exposed to the heavy metals were observed to have marked cellular damage compared with the control group. Additionally, structural damage of spermatozoa included breakage and loss of nuclear and flagellar membranes, thickening of membranes, malformed acrosomes, and loss of nuclear material (Reinecke and Reinecke 1997).

B2.7.5 Fish

Few data describe manganese toxicity to fish (ATSDR 1991; ORNL RAIS 1995). Manganese sulfate may cause reproductive effects, such as a decrease in spermatogenic activity and injury to testes, in fish (Srivastava and Agrawal 1983, as cited in Joardan and Sharma 1990).

Permanganates have been reported to kill fish in 8 to 18 hours at concentrations of 2.2 to 4.1 mg/L, but permanganates are not persistent because they rapidly oxidize organic materials and are thereby reduced and rendered nontoxic (EPA 1986).

B2.7.6 Birds

Few data describe manganese toxicity to birds (RAIS 1995). Manganese concentrations in birds were higher in bones, livers, and kidneys than in the brain, heart, or muscle (Mahoney 1978). In chicks, high dietary levels of manganese caused decreased hemoglobin concentrations, decreased liver iron levels, mild anemia, and depressed growth (Southern and Baker 1983). Reproductive effects were minimal in poultry fed 90 times the normal dietary level of manganese (Laskey and Edens 1985). In addition, embryos that died as a result of magnesium toxicity were characterized by chondrodystrophy, a condition characterized by a parrot-like beak, wiry down, and shortening of the leg bones.

Laskey and Edens (1985, as cited in Lockheed Martin 2005) exposed male Japanese quail to basal diets of 56 mg/kg manganese, supplemented with 5,000 mg/kg manganese oxide for 75 days. The study found no adverse reproductive effects. Additionally, aggressive behavior decreased compared with the control group.

B2.7.7 Mammals

Manganese is an essential trace element in mammals. Serious toxic consequences can occur, however, if mammals are exposed to high doses of manganese orally or by inhalation. The central nervous system is the primary site of manganese toxicity (ORNL RAIS 1995). Signs observed in rats that ingested elevated levels of manganese include a decrease in weight gain, an increase in physical activity, alterations of brain chemicals, insomnia, disorientation, slight irritation of the stomach, anxiety, memory loss, motor disturbances, transient rash, tremors, difficulty walking, alterations in brain chemistry, decreased fertility, and delayed testicular

development (ATSDR 1991; ORNL RAIS 1995). Pregnant rats that drank water that contained manganese had young that weighed less than normal (ATSDR 1991). Monkeys that drank water that contained manganese became weak, with rigid muscles (ATSDR 1991).

Breathing elevated concentrations of manganese dust caused rats and monkeys to develop irritation and swelling in the lungs (ATSDR 1991). Monkeys also developed chemical alterations in the brain (ATSDR 1991). Mice exposed to elevated concentrations of manganese in the air were more likely to catch pneumonia and develop behavioral changes (ATSDR 1991). Female mice exposed to manganese in air displayed behavioral abnormalities and had smaller offspring controls (ATSDR 1991). Calves fed organic manganese had lower body temperatures, higher feed intake, and greater body weight gain after challenge with infectious bovine rhinotracheitis virus (Chirase and others 1994, as cited in ORNL RAIS 1995). Lambs fed a high manganese diet had reduced hemoglobin concentrations (Stokinger 1981, as cited in ORNL RAIS 1995).

Excess calcium and phosphorus interfere with the absorption of manganese from the intestinal tract. Intestinal absorption is estimated to be between 3 and 10 percent of ingested manganese (EPA 1995, as cited in ORNL RAIS 1995).

Laskey and others (1982, as cited in Lockheed Martin 2005) exposed pregnant female Long-Evans rats to standard or low iron diets consisting of manganese oxide at concentrations of 50 (basal), 400, 1,100, or 3,550 mg/kg from the day of exposure until the offspring was 224 days old. Within the study, the offspring were fed manganese-treated diets at the age of 14 to 15 days. Research found that rats fed a low iron diet with 3,550 mg/kg manganese had a mortality rate that surpassed 90 percent by day 50. However, this treatment group was the only that experienced fatalities. Between days 90 and 100, rats were mated to assess fertility. It was found that pregnancy percentages of the highest treatment group were comparatively lower than the control group. The study observed that the males receiving normal iron levels and 3,500 mg/kg manganese had reproductive impairments, including decreased testes weight, lowered sperm count, and decreased testosterone concentrations. Using an ingestion rate of 0.031 kg/day and body weight of 0.41 kg, as determined through EPA (1988, as cited in Lockheed Martin 2005), a LOAEL of 268 mg/kg BW/day, and a NOAEL of 83 mg/kg BW/day were calculated.

B2.8 MERCURY

Mercury, a heavy metal, is volatile, even at temperatures below its melting point. Mercury occurs in both organic and inorganic forms in soil. Mercury typically complexes with chloride and hydroxide ions in the soil (Alloway 1990) and has a high affinity for sulfide groups (Sindayigaya and others 1994). In soil, mercury may leach to the subsoil, be adsorbed by plants, volatilize, be absorbed by soil colloids, or precipitate as insoluble mercury (Hogg and others 1978). Its fate depends on the chemical form of the mercury and the organic content, pH, and cation exchange capacity (CEC) of the soil (Hogg and others 1978).

B2.8.1 Aquatic Plants

Organomercury compounds, such as methyl- or butyl-mercury chloride, are more toxic to aquatic plants than are inorganic forms (World Health Organization 1989).

One study assessed the EC_{50} values in the presence of mercuric chloride for the various growth parameter of Eurasian milfoil. The EC_{50} value for the root weight was 3.4 mg/L, 4.4 mg/L for the shoot weight, 12.0 mg/L for the root length, and 1.2 mg/L for the shoot length (Stanley 1974).

B2.8.2 Terrestrial Plants

Plants take up both ionic mercury and neutral organic mercury complexes (Breteler and others 1981). Mercury adsorbs to sites in the plant roots, limiting the translocation of the mercury to the plant foliage. If this root binding capacity is exceeded, the plant may release volatile mercury from the leaves (Beauford and others 1977). Uptake occurs through the leaves when foliage is sprayed with mercurial pesticides or is exposed to volatile mercury. This mercury may be transported to other aboveground parts of the plant.

Binding sites on the plant cell walls become saturated at high levels of mercury in soil, and the unbound mercury adversely affects the plant's cellular biochemistry (Beauford and others 1977). All forms of mercury are nonessential and exert their toxicity at the biochemical level, inhibiting enzyme-catalyzed reactions and protein synthesis. Plants growing in soils with elevated mercury concentrations are stunted and have smaller leaves, decreased photosynthetic activity, and reduced root and shoot growth (Beauford and others 1977). The chlorophyll and protein concentrations in the leaves are also reduced. Ion permeability and other transport systems are permanently affected because the binding of mercury is irreversible.

The accumulation of mercury in plants increases with increasing soil concentration. Soil type can also play a role in the process. Plants have the highest concentration of mercury in their roots, but translocation can occur (Boening 2000).

The mercury content in vegetation was monitored near a mercury mine in Spain. The mean concentration of total mercury ranged from more than 100 mg/kg within 0.5 km of the mine to 0.20 mg/kg 20 km from the mine (Huckabee and others 1983). Additionally, there was significantly higher mercury content in vegetation 25 km upwind from the mine. This study found that mosses were observed to contain 7.58 mg/kg, while herbaceous plants were observed to have 2.25 mg/kg of mercury (Huckabee and others 1983).

Leaf litter from trees also plays a role in mercury concentration. Tree leaves can trap atmospheric mercury (Godbold 1991). After leaf fall, the amount of deposition will be greater than in areas that do not contain trees or shrubs (Boening 2000). Moss samples and peat cores that contain leaf litter can have higher concentration (Godbold 1991).

Exposure to mercury in higher plants reduces photosynthesis and transpiration, water uptake, and chlorophyll synthesis (Godbold and Huttermann 1986). In spruce seedlings exposed to mercury and methyl mercury, changes in photosynthesis and transpiration were attributed to

mercury that induced root damage. Godbold and Huttermann (1986) suggest that the primary damage to the roots affects nutrient and water supply to the needles. Another study on spruce seedlings found that methyl mercury significantly decreased root elongation, while mercury chloride had no impact on root length (Godbold 1991).

B2.8.3 Aquatic Invertebrates

The impact of the toxicity of mercury can include several factors, including concentration and species of mercury, the developmental stage of the organism, temperature, salinity, hardness, and water flow rate. The larval state is the most sensitive life stage of invertebrates to mercury exposure (Boening 2000).

Midge (*Chironomus riparius*) larvae were placed in a solution of 5 g/L for 1 minute and were found to have accumulated 9.32 mg mercury/kg body weight. Adult midges accumulated 40 percent less mercury/kg body weight compared with the larvae (World Health Organization 1989).

B2.8.4 Terrestrial Invertebrates

Microorganisms in soil and sediment can convert various forms of mercury to methylmercury, which is available for uptake by various organisms and for transport in the food chain (Peterle 1991; Heinz 1996; Wolfe and others 1998). Some terrestrial invertebrates accumulate mercury through the food chain, with few or no observable effects (Jamil and Hussain 1992). In some fly species, methylmercury induces abnormal sex chromosomes (National Academy of Sciences 1978 and Khera 1979, both as cited in Eisler 2000). Mercury in soil may cause reduced segment regeneration in worms or mortality at high concentrations (Abbasi and Soni 1983, as cited in Eisler 2000).

One study fed a terrestrial slug (*Arion ater*) a diet consisting of mercuric chloride at 0, 10, 25, 50, 100, 300, or 1,000 mg/kg for 27 days. Slug mortality was low at all treatments and unrelated to dose (Marigomez and others 1986). These results that slug exposure to mercury at levels likely to be found in the environment will not cause death. However, there were other effects noted in the study including a significant reduction in food consumption with more than 10 mg/kg exposure and a signification dose related reduction in the growth rate of the slugs (Marigomez and others 1986).

In another study, beetles were fed mercury spiked insect larvae for 30 days and their excretions were examined (Lindqvist and others 1995). After 2 weeks, inorganic mercury had decreased approximately 1 percent, while higher levels of methyl mercury were retained in the beetle. Inorganic mercury was stored mainly in the gut, while methylmercury was evenly distributed in most body tissue (Lindqvist and others 1995).

Abassi and Soni (1983, as cited in Eisler 1987) concluded that the LC_{50} for earthworm exposures to mercury was 2.39 mg/kg at 10 days. In the 60-day experiment, earthworms were kept in tanks at a density of 120 earthworms per cubic meter and mercuric chloride was added at dose levels of 0, 0.5, 1.0, 2.0 and 5.0 mg mercury/kg in soil. The LC_{50} decreased over the 60-day exposure period to 0.79 mg/kg. Another study evaluated earthworm interaction and methyl mercuric chloride at levels of 0, 1, 5, 25, 125 mg/kg in soil (Beyer and others 1985). All worms dosed

between 25 and 125 mg/kg died within 12 weeks. Those worms receiving doses of 0 mg/kg have survival rates at 97 percent, of 1 mg/kg have survival rates at 92 percent, and of 5 mg/kg have survival rates at 79 percent (Beyer and others 1985).

B2.8.5 Fish

Methylmercury is the most toxic form of mercury to fish (MacDonald 1993), because methylmercury can cross the intestinal wall of fish. Methylated mercury accumulates over time in muscle tissue (Giblin and Massaro 1973). Accumulation of mercury in the brain, compared with blood and muscle, is much less in fish than in mammals.

Acute signs of mercury poisoning in fish are increased respiratory movement and flaring of gills, loss of equilibrium, and sluggishness (Armstrong 1979). Chronic mercury exposure causes loss of appetite, brain lesions, cataracts, hyperplasia of the gill epithelium, abnormal motor coordination, and behavior changes. Low concentrations adversely affect reproduction, growth, behavior, metabolism, blood chemistry, osmoregulation, and oxygen exchange of freshwater fishes (Niimi and Lowe-Jinde 1984; Eisler 1987). Histopathological effects were present in every tissue evaluated (gill, kidney, endocrine pancreas, bile ducts, liver, and erythrocytes) (Sorensen 1991). Developing embryos in early developmental stages are the most vulnerable life stage to mercury exposure (Wiener and Spry 1996).

Mercury selenium toxicity interactions have been observed (Klaverkamp and others 1983a; Cuvin-Aralar and Furness 1991; Sorensen 1991). For example, concentrations of 100 mg/L selenium and higher showed a protective effect of selenium on mercury toxicity to lake trout eggs (Klaverkamp and others 1983b).

Fish have been observed to have higher concentrations of mercury with an increase in age (Boening 2000).

B2.8.6 Birds

Sublethal effects of mercury on birds include adverse effects on growth, development, the immune system, reproduction, blood and tissue chemistry, metabolism, and behavior (Peterle 1991; Spalding and others 1991, 1994; Zillioux and others 1993). Various biochemical and enzyme effects have also been reported (Wolfe and Norman 1998). These effects manifest themselves as abnormal feather loss, weight loss, progressive weakness in wings and legs, difficulty flying, inability to coordinate muscle movements, and reduced nesting and hatching success (Peterle 1991; Spalding and others 1991; Becker and others 1994; Bowerman and others 1994; Monteiro and Furness 1995; Monteiro and others 1995). Inorganic mercury exerts its greatest effects on the kidneys, whereas methylmercury is a potent embryo and nervous system toxicant (Spalding and others 1994; Monteiro and Furness 1995). Methylmercury readily crosses the blood-brain barrier in birds, producing central nervous system dysfunction (Scheuhammer 1987).

Low doses of mercury can cause reproductive effects before overt signs of toxicity are apparent in adult birds (Scheuhammer 1987; Hoffman and Heinz 1998). Significant reproductive effects of chronic dietary exposure to inorganic mercury in birds include delayed

testicular development, altered mating and nesting behavior, reduced fertility and clutch size, eggshell thinning, reduced survivability and growth in young and gonadal atresia (Walsh 1990; Becker 1992; Peterle 1991; Spalding and others 1994). In birds, mercury is transferred into the egg, where it has adverse effects on the developing embryo (Peterle 1991). Concentrations of mercury in the egg are good predictors of mercury risk to avian reproduction. Concentrations ranging from 0.5 to 16 mg/kg are associated with adverse effects, including decreased hatchability.

Birds have the highest mercury levels in their liver and kidneys. However, feathers can also show signs of methyl mercury exposure. Feathers can hold up to 70 percent of the body burden of mercury (Braune 1987). Exposure to organomercury can cause reproductive impairment (Boening 2000)

Mallards fed a diet containing 0.5 ppm mercury laid fewer eggs and produced fewer young than mallards not fed the mercury rich diet (Wiemeyer and others 1984). The average residues in eggs from three generations ranged from 0.79 to 0.86 ppm. In another mallard study, Heinz (1974, as cited in Lockheed Martin 2005) fed ducks diets consisting of methylmercury at concentrations of 0, 0.5, and 3 mg/kg for 12 months. The study found that there were no treatment-related deaths among the birds. However, the number of eggs laid and the hatching success was lower for birds exposed to the higher concentrations. Additionally, survivorship was affected by the increase in concentrations. Research found that the number of ducklings that died in the first week of life was significantly higher than the lower concentration groups. Further research was conducted and it was concluded that the ducklings died of damage to the nervous tissue in the cerebellum.

Welsh and Soares (1976, as cited in Lockheed Martin 2005) fed Japanese quail a diet that consisted of methylmercury at concentrations of 0 or 30 mg/kg. The study found that all birds fed the diet at a concentration of 30 mg/kg died within 2 weeks.

Pribilincova and others (1996, as cited in Lockheed Martin 2005) fed laying hens a diet that consisted of concentrations of 0, 5, or 30 mg/kg mercury, in the form of phenyl mercuric chloride, for 2 months. Research found that egg production and egg weight were significantly decreased in the group receiving concentrations of 30 mg/kg mercury compared with the lower concentrations. However, the fertility and hatchability of the eggs were not affected in any of the treatment concentrations.

Scheuhammer (1988, as cited in Lockheed Martin 2005) fed zebra finches diets consisting of 0, 1, 2.5, or 5 µg/g mercury, in the form of methylmercury. This study found that zebra finches with a dietary intake of 5 µg/g mercury had significant neurological impairment and caused death. However, no symptoms or death was reported in the other three concentration treatment groups.

Heinz and Heinz and Hoffman (1976 and 1998, both cited in EPA 2001) fed mallards methyl mercury chloride and dicyandiamide at four doses, 0, 0.53, 2.88, and 9.2 ppm, for two generations. The study found that duckling survival at 7 days was significantly reduced at the two highest dose levels. However, no significant difference was observed at the 0.068 mg/kg-day dose. The 0.37 mg/kg/dat dose was considered a chronic LOAEL.

Fimreite (1971, as cited in EPA 2001) fed methyl mercury dicyandiamide at four dose levels, 0, 0.09, 0.153, and 0.274 mg/kg-day mercury, to ring-necked pheasant for 12 weeks to study the effects of mercury on reproduction. The study found that all dose levels resulted in significant reductions in shell-less eggs, egg hatchability, and chick production. The 0.09 mg/kg/dat dose was considered a chronic LOAEL.

B2.8.7 Mammals

Mercury has teratogenic, carcinogenic, and mutagenic effects on mammals, with the fetus being the most sensitive life stage (NAS 1978; Chang 1979; Khera 1979; EPA 1980, 1985; Elhassani 1983; Greener and Kochen 1983; Clarkson and others 1984; all as cited in Eisler 2000). Methylmercury affects the central nervous system, and can cause cerebral palsy, blindness, deafness, and tremors (Chang 1979; EPA 1980, 1985; Elhassani 1983; Clarkson and others 1984; all as cited in Eisler 2000). Adverse effects of organomercury compounds have been recorded at doses of 0.25 mg mercury per kilogram body weight daily, dietary levels of 1.1 mg/kg, and blood mercury levels of 1.2 mg/L (Eisler 2000).

Aulerich and others (1974) fed minks with either 5 mg/kg methyl mercury (or 2.25 percent mercury) or 10 mg mercuric chloride/kg for 30 days. No adverse effects were observed after 3 weeks. However, after 25 days, the mink fed organic mercury showed ataxia, loss of balance, anorexia, and loss of weight, and 4 days later paralysis, tremors, and death were observed. Another mink study fed adult minks a daily diet containing methyl mercury at 1 mg/kg for 3 months. A daily dose of this treatment resulted in deaths of eight out of 12 females and one out of four males (Wren and others 1987).

In another study, Aulerich and other (1974, as cited in EPA 2001) fed mink mercuric chloride ($HgCl_2$: 73.9 percent mercury) at two dose levels, 0, 10 ppm mercuric chloride, for 6 months to study reproduction. Research found kit weight was somewhat reduced, 9 percent relative to controls. However, fertility and kit survival were not reduced. The study found a dose 7.39 ppm mercury was considered a chronic NOAEL.

Wobeser and others (1976, as cited in Lockheed Martin 2005) fed adult female mink a diet consisting of 1.1, 1.8, 4.8, 8.3, and 15.0 µg/g mercury, in the form of methyl mercuric chloride, for a 93-day period. The study observed that minks fed at a concentration of 1.8 and great µg/g mercuric chloride showed signed of mercury intoxication. These symptoms were anorexia, weight loss, ataxia, splaying of the hind legs, irregular vocalization, and convulsions. Research also found that the rate of onset of intoxication directly related to the content of mercury in the mink's diet.

Hartke and others (1976) calculated the acute LD_{50} of 10 mg/kg body weight for phenyl mercuric acetate in female prairie voles. Animals treated with more than 1.0 mg/kg had no live fetuses, but all maintained a resorption site in the uterus (Hartke and others 1976).

Verschuuren and others (1976a, 1976b, and 1976c, all cited in EPA 2001) fed rats methyl mercury chloride (CH_3HgCl; 79.89 percent mercury) at four dose levels, 0, 0.1, 0.5, and 2.5 ppm methyl mercury chloride, for three generations over 2 years. The study found

exposure to 2.5 ppm methyl mercury chloride reduced pup viability in the F1 generation. Additionally, no adverse effects were observed at lower doses. Two-year survival was also reduced in a dose-dependent manner (reduced by more than 20 percent at the 0.5 ppm dose level). The 0.5 ppm methyl mercury chloride dose level was considered a chronic NOAEL and the 2.5 ppm methyl mercury chloride was considered a chronic LOAEL.

B2.9 ZINC

Zinc is an essential trace element for all living organisms, and zinc deficiency can be a problem for both plants and animals.

B2.9.1 Aquatic Plants

The sensitivity range of freshwater plants to zinc is greater than that for animals. Growth of the alga (*Selenastrum capriocornutum*) was inhibited by 30 µg/L. On the other hand, with several other species of green algae, the 4-day EC_{5O} exceeded 200,000 µg/L. Zinc was found to bioaccumulate in freshwater animal tissues from 51 to 1,130 times the concentration present in the water (EPA 1986). The most sensitive aquatic species were adversely affected at nominal water concentrations between 10 and 25 µg/L, including representative species of plants (Eisler 1993).

B2.9.2 Terrestrial Plants

Many vegetation studies indicate little uptake of zinc by plants from the soil. Low pH in soil promotes zinc uptake by plants, and high pH in soil reduces zinc uptake. High clay content, high soil cation exchange capacity, and high phosphate concentration in the soil also inhibit zinc uptake (Bodek and others 1988). Transport of zinc into the plant is metabolically mediated and does not occur by passive diffusion. Two factors — a decrease in temperature and anaerobic soils — decrease uptake of zinc by plants (Collins 1981). Once in the plant tissues, zinc is probably transported throughout the plant as the divalent ion (Collins 1981).

The zinc Eco-SSL for plants is 160 mg/kg (EPA 2007c). The results of five studies were used to derive the Eco-SSL. The species evaluated included soybean (*Glycine max*), oats (*Avena* sp.), and lettuce (*Lactuca sativa*). The MATCs ranged between 143 and 185 mg/kg.

Eisler (1993) reported that sensitive terrestrial plants die when soil zinc levels exceed 100 mg/kg (oak and maple seedlings) and that photosynthesis is inhibited in lichens at concentrations greater than 178 mg zinc/kg dry weight whole plant.

Concentrations of zinc in acidic soils that produced toxicity to corn ranged from 450 to 1,400 mg/kg available zinc; toxicity to cowpeas ranged from 180 to 700 mg/kg available zinc (Gall and Barnette 1940, as cited in Adriano 1986).

Cobb and others (2000) studied the effects of mine wastes on cherry belle radish, iceberg lettuce, better boy tomato, and roma bush bean. Within the study, 0, 25, 50, 75, or 100 percent of contaminated soil was mixed with the appropriate amount clean topsoil. The topsoil was

also used as a control. Each vegetable had eight replicates for each treatment group and were evaluated at the various plant parts for four different metals, including zinc. An increase in zinc concentration usually correlated with an increase in the uptake of roots, shoots, and leaves of the plants. However, zinc was not found (less than 1.5 g zinc/g tissue) in bean fruits in treatment groups 75 and 100 percent or tomato fruits from treatment groups 50 or 75 percent. Additionally, chlorosis of plant tissues indicated plant stress and possible tissue damage. The study suggests plants harvested from higher concentrations of mine wastes should not be consumed based on visible signs of toxicity, including reddening of leaves, reduced growth, and poor quality fruits (Cobb and others 2000).

In a study of the effects of toxic metals on vegetation communities in Anaconda, Montana, elevated concentrations of arsenic, cadmium, copper, lead, and zinc in soils were negatively correlated with vegetative productivity (Galbraith, LeJeune, and Lipton 1995). The elevated metals concentrations, associated with the smelter, resulted in reduced vegetative cover and changes in the native plant communities that reduced the habitat value for wildlife. Zinc was found to be moderately to severely toxic to plants in bioassays conducted with soils at the site at concentrations ranging from 87.8 mg/kg to 580.5 mg/kg (Kaputska and others 1995).

B2.9.3 Aquatic Invertebrates

Zinc reduces growth, inhibits reproduction, and reduces survival in aquatic invertebrates (Eisler 1993). In water fleas (*Daphnia magna*), reproduction was impaired by 10 percent after a 21-day exposure to 70 ppb of zinc (EPA 1995). Additionally, Eisler (1993) reported that the acute LC_{50} (96-hour) values were between 32 and 40,930 µg/L for freshwater invertebrates and between 66 and 40,900 µg/L for freshwater teleosts.

B2.9.4 Terrestrial Invertebrates

The zinc Eco-SSL for invertebrates is 120 mg/kg (EPA 2007c). The results of six studies were used to derive the Eco-SSL. The species evaluated included springtails and multiple nematodes. EC_{10} values for springtails ranged between 99 and 355 mg/kg, and MATCs for nemaodes ranged between 143 and 185 mg/kg.

Sensitivity to zinc varies widely among terrestrial invertebrate species. A reduction in growth was observed in slugs fed 1,000 mg/kg in a 27-day study (Marigomez and others 1986, as cited in Eisler 1993). Another study of slugs fed a diet of 1,000 mg/kg zinc for 30 days indicated that no adverse effects were observed except for glycogen depression (Recio and others 1988, as cited in Eisler 1993). A study of earthworms exposed to zinc for 2 weeks reported an EC_{50} of 662 mg/kg in artificial soil (Neuhauser and others 1985, as cited in Eisler 1993). Woodlice fed soil litter that contained up to 12,800 mg/kg for 64 weeks exhibited adverse effects on reproduction at concentrations of 1,600 mg/kg and above and increased mortality at concentrations greater than 6,400 mg/kg (Beyer and Anderson 1985, as cited in Eisler 1993).

Eisler (1993) reported that sensitive terrestrial invertebrates have reduced survival when soil levels exceeded 470 mg zinc/kg (earthworms), reduced growth at more than 300 mg zinc/kg diet (slugs), and inhibited reproduction at more than 1,600 mg zinc/kg soil (woodlouse).

B2.9.5 Fish

Freshwater fish are more sensitive to zinc exposure than their marine counterparts (Eisler 1993). Zinc toxicosis affects freshwater fish by destruction of gill epithelium and consequent tissue hypoxia (Eisler 1993). Signs of acute zinc toxicosis in freshwater fish include osmoregulatory failure, acidosis and low oxygen tensions in arterial blood, and disrupted gas exchange at the gill surface and at internal tissue sites (Spear 1981).

Signs of zinc poisoning in fish included hyperactivity followed by sluggishness before death, fish swam at the surface, were lethargic and uncoordinated, showed hemorrhaging at gills and base of fins, shed scales, and had extensive body and gill mucous (Bengeri and Patil 1986). Acute zinc poisoning in fish is generally attributed to blockade of gas exchange across the gills, causing hypoxia at the tissue level. Tissue hypoxia in fish is a major physiological change before death once the gas exchange process at the gills is no longer sufficient to meet its oxygen requirements (Burton and others 1972).

Fish that survived high sublethal concentrations of zinc had significant alterations in blood and serum chemistry and liver enzyme activity (Hilmy and others 1987), as well as muscle glycogen, total lipids, phospholipids, cholesterol, RNA, and proteins (Taneja and others 1988).

Reproductive impairment seems to be one of the more sensitive indicators of zinc stress in freshwater teleosts. These effects are evident in the 50 to 340 µg zinc/L range (Spear 1981). In some cases, reproduction was almost totally inhibited at zinc concentrations that had no effect on survival, growth, or maturation of these same fish (Brungs 1969).

Eggs of the Baltic herring (*Clupea harengus*) exposed to greater than 6 mg zinc/L had an altered rate of development and produced deformed larvae with cellular disruptions in the brain, muscle, and epidermis (Somasundaram and others 1985).

B2.9.6 Birds

Birds are relatively tolerant to zinc ingested in the diet or drinking water (Eisler 1993). The sensitivity to dietary zinc exposure varies among different species of birds; normal tissue concentrations of zinc are less than 210 mg/kg dry weight worldwide (Eisler 1993). Acute effects of zinc in ducks include mortality, diarrhea, leg paralysis, and pancreatic degradation (Eisler 1993).

Poultry chicks fed 2,000 to 8,000 mg/kg of zinc exhibited reduced growth or died. Domestic breeding hens fed 178 mg/kg of zinc for 3 weeks grew normally but displayed immunosuppression (Eisler 1993). Japanese quail, chickens, and turkeys fed diets that contained zinc had decreased weight gain (NAS 1980). Newly born and juvenile animals are more sensitive to zinc exposure than are adults. The pancreas and bone are the primary areas of zinc deposition in birds (Eisler 1993).

Mallards fed an estimated dose of 125mg/kg-day of zinc, with 3,000 ppm in diet, for 60 days showed leg paralysis and decreased food consumption (Eisler 1993). Three-day-old Pekin ducks

were fed 100 mg/kg-day, with 2,300 ppm in diet, for 56 days and were observed to show degeneration of the pancreas (Eisler 1993).

Eisler (1993) reported that pancreatic degeneration occurred in ducks fed diets containing 2,500 mg zinc/kg ration. Ducks died when fed diets containing 3,000 mg zinc/kg feed or when given single oral doses above 742 mg zinc/kg body weight. It was also found that zinc poisoning usually occurs in birds when the liver or kidney contains more than 2.1 g zinc/kg DW (Eisler 1993).

Gasaway and Buss (1972, as cited in Lockheed Martin 2005) fed mallard ducks a diet consisting of supplemental zinc at concentrations of 0, 3,000, 6,000, or 12,000 mg/kg Zn, in the form of zinc carbonate, for 60 days. The study found that food consumption of treated birds decreased immediately after the zinc treatment began. Additionally, all birds suffered effects within 10 days of exposure, including leg paralysis, diarrhea, and weight loss. Furthermore, birds that were treated with zinc were found to have reduced gonads that may reduce reproductive function. Of the birds treated with 3,000 mg/kg zinc, only two of the six birds survived to the end of the experiment, while all others died. Based on the effects that were observed at all doses, the 3,000 ppm dose was considered a subchronic LOAEL. (The final LOAEL is 108.9 mg/kg-day, based on food consumption rate of 0.0363 kg food/day as reported in the study.)

B2.9.7 Mammals

Excessive zinc intake adversely affects survival of all mammals tested and causes a wide variety of neurological, hematological, immunological, hepatic, renal, cardiovascular, developmental, and genotoxic effects (Public Health Service 1989, as cited in Eisler 1993). The adverse effects include growth retardation, testicular atrophy, skin changes, and poor appetite (Prasad 1979, as cited in Eisler 1993; Prasad 1995). The pancreas and bone are primary areas of zinc deposition in mammals (Eisler 1993). Toxic effects of zinc can be observed in many domestic animals, including dogs, cats, ferrets, cattle, sheep, and horses, after they ingest objects that contain zinc (Eisler 1993). Elevated zinc concentrations in the diet of pregnant rats and sheep caused an increased incidence of hypocuprosis, still births, and fetal resorptions (Ketchenson and others 1969, Campbell and Mill 1979, both as cited in Domingo 1994).

Acute oral toxicity in rodents exposed to zinc is low, with LD_{50} values ranging from 30 to 600 mg/kg body weight, depending on the zinc salt administered (IPCS 1996). Acute effects in rodents after inhalation or intratracheal instillation of zinc compounds include respiratory distress, pulmonary edema, and infiltration of the lung by leukocytes. Effects of zinc toxicity after short-term oral exposure to rodents include weakness, anorexia, anemia, diminished growth, loss of hair, and lowered food utilization. Zinc produced no adverse symptoms at a level set at about 160 mg/kg body weight in rats (IPCS 1996).

Pancreatic changes were observed in calves exposed to high levels of dietary zinc. Short-term inhalation exposure of guinea pigs and rats to zinc oxide at concentrations greater than 5.9 milligrams per cubic meter (mg/m^3) resulted in inflammation and pulmonary damage. Long-term oral exposure to zinc indicated the target organs of toxicity to be the hematopoietic system in rats, ferrets, and rabbits, the kidney in rats and ferrets and the pancreas in mice and ferrets. No observed effects level was reported to be less than 100 mg/kg for zinc sulfate fed to rats with respect to growth and anemia. Increases in zinc concentrations in the body of

experimental animals exposed to zinc are accompanied by reduced levels of copper, suggesting that some of the signs of toxicity ascribed to exposure to excess levels of zinc may be caused by zinc-induced copper deficiency. Further studies have shown that exposure to zinc alters the levels of other essential metals in the body of exposed animals, including iron. Some signs of toxicity observed in animals exposed to high levels of zinc can be alleviated by the addition of copper or iron (IPCS 1996).

Schlicker and Cox (1968, as cited in Lockheed Martin 2005) exposed Sprague-Dawley rats to dietary concentration of either 2,000 or 4,000 mg/kg zinc for 37 days. The study also called for a control group. The study documented mating and gestation periods between the groups and found no adverse effects at the 2,000 mg/kg zinc concentration. However, at the 4,000 mg/kg zinc concentration, the study found an increase in the rate of fetal resorption and reduced fetal growth rates.

Minks (*Mustela vison*) exposed to zinc at an estimated daily intake of 16 mg/kg-day, with 121 ppm in diet, for 73 days were found to have digestive problems. The NOAEL was estimated at 3.5 mg/kg-day (Mejborn 1990). In another study, Bleavins and others (1983, as cited in Lockheed Martin 2005) exposed adult minks to a diet supplemented with 1000 mg/kg zinc, in the form of $ZnSO_4$ $7H_20$, for 22 weeks. The experiment also called for a control group, fed a diet of 20.2 mg/kg zinc. The study found that gestation length, litter size, kit birth weight, and kit mortality to weaning were not significantly different between the two zinc-treated groups. However, offspring of treated females displayed reduced growth rate, alopecia, achromatrichia, and profound immunosuppression.

Schlicker and Cox (1968, as cited in EPA 2001) fed rats a diets consisting of zinc oxide at three dose levels, 0, 2,000, and 4,000 ppm zinc, between day 1 to day 16 of gestations to study reproductive success. The study found rats exposed to 4,000 ppm zinc in the diet displayed increased rates of fetal resorption and reduced fetal growth rates. No effects were observed at the 2,000 ppm zinc dose rate and the exposure occurred during gestation (a critical lifestage); therefore, the dose was considered a chronic NOAEL. The 4,000 ppm zinc dose was considered a chronic LOAEL.

Kinnamon (1963, as cited in EPA 2001) fed rats zinc carbonate at two dose levels, 0 and 5,070 ppm zinc, from 7 weeks through reproduction. Research found that reproduction among rats exposed to 5,070 ppm zinc was not adversely affected. No effects were observed at the 5,070 ppm zinc dose rate and the exposure occurred during gestation (a critical lifestage); therefore, this dose was considered a chronic NOAEL. (The final NOAEL is 451 mg/kg-day, based on a food consumption rate of 0.0227 kg/day.)

Straube and others (1980, as cited in EPA 2001) fed ferrets a diets consisting of zinc oxide at four dose levels, 27, 527, 1,527, and 3,027 ppm zinc, for up to 197 days. The study found that all ferrets in the 1,527 and 3,027 ppm zinc dose levels died or were euthanized in extremis within 21 days. However, no adverse effects were observed among the 27 and 527 ppm diets. Since no effects were observed at the 527 ppm zinc dose rate, this dose was considered a subchronic NOAEL. (The final NOAEL was 38.03 mg/kg/d, based on a food consumption rate of 0.0433 kg/d.)

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APPENDIX C
DOSE CALCULATIONS FOR BIRDS AND MAMMALS

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C-1C Copper Dose Calculations and Hazard Quotients for Birds and Mammals, EU 1 – Upper Anaconda Mine Waste Removal Areas and Waste Piles

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C-7C Copper Dose Calculations and Hazard Quotients for Birds and Mammals, EU 7 – Mary P. Mine Waste Pile

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C-10C Copper Dose Calculations and Hazard Quotients for Birds and Mammals, EU 10 – Number 3 Tunnel Waste Area

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C-12BA Arsenic Dose Calculations and Hazard Quotients for Birds and Mammals, EU 12 –Marsh, Terrestrial Receptors

C-12BB Arsenic Dose Calculations and Hazard Quotients for Birds and Mammals, EU 12 –Marsh, Wetland Receptors

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TABLE C-1A: ARSENIC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 1 - UPPER ANACONDA MINE WASTE REMOVAL AREAS AND WASTE PILES

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **2.95**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Mourning Dove (Herbivorous Birds - Terrestrial)																							
Reference Sites																							
ACBG-1	5.76E-03	NA	NA	NA	NA	5.76E-03	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	5.36E-04	2.60E+01	1.39E-02	1.14E-02	1.09E-01	1.45E-03	2.20E+01	1.17E+00	1.37E+01	1.06E-04
ACBG-2	5.76E-03	NA	NA	NA	NA	5.76E-03	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	5.36E-04	1.83E+01	9.82E-03	1.14E-02	1.09E-01	1.02E-03	2.20E+01	1.17E+00	1.37E+01	7.48E-05
Upper Anaconda Mine																						**Minimum HQ (Reference Sites)**	**7.48E-05**
UAW1-00 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.93E+02	1.11E+00	NA	NA	NA	NA	5.36E-04	3.21E+02	1.72E-01	1.14E-02	1.09E-01	1.34E-01	2.20E+01	1.17E+00	1.37E+01	9.78E-03
UAW1-00+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.33E+01	7.65E-02	NA	NA	NA	NA	5.36E-04	2.21E+01	1.18E-02	1.14E-02	1.09E-01	9.21E-03	2.20E+01	1.17E+00	1.37E+01	6.73E-04
UAW1-050 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	7.03E+01	4.05E-01	NA	NA	NA	NA	5.36E-04	1.17E+02	6.27E-02	1.14E-02	1.09E-01	4.88E-02	2.20E+01	1.17E+00	1.37E+01	3.56E-03
UAW1-100 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	2.08E+02	1.20E+00	NA	NA	NA	NA	5.36E-04	3.46E+02	1.85E-01	1.14E-02	1.09E-01	1.44E-01	2.20E+01	1.17E+00	1.37E+01	1.05E-02
UAW1-150 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.25E+02	7.23E-01	NA	NA	NA	NA	5.36E-04	2.09E+02	1.12E-01	1.14E-02	1.09E-01	8.71E-02	2.20E+01	1.17E+00	1.37E+01	6.36E-03
UAW1-150+75 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	2.39E+01	1.38E-01	NA	NA	NA	NA	5.36E-04	3.98E+01	2.13E-02	1.14E-02	1.09E-01	1.66E-02	2.20E+01	1.17E+00	1.37E+01	1.21E-03
UAW1-Comp 1 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	7.22E+02	4.16E+00	NA	NA	NA	NA	5.36E-04	1.20E+03	6.44E-01	1.14E-02	1.09E-01	5.01E-01	2.20E+01	1.17E+00	1.37E+01	3.66E-02
UAW2-0000 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	3.69E+01	2.12E-01	NA	NA	NA	NA	5.36E-04	6.14E+01	3.29E-02	1.14E-02	1.09E-01	2.56E-02	2.20E+01	1.17E+00	1.37E+01	1.87E-03
UAW2-0000+225 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	2.22E+01	1.28E-01	NA	NA	NA	NA	5.36E-04	3.69E+01	1.98E-02	1.14E-02	1.09E-01	1.54E-02	2.20E+01	1.17E+00	1.37E+01	1.12E-03
UAW2-0050 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	6.65E+00	3.83E-02	NA	NA	NA	NA	5.36E-04	1.11E+01	5.93E-03	1.14E-02	1.09E-01	4.61E-03	2.20E+01	1.17E+00	1.37E+01	3.37E-04
UAW2-0100 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.15E+01	6.61E-02	NA	NA	NA	NA	5.36E-04	1.91E+01	1.02E-02	1.14E-02	1.09E-01	7.96E-03	2.20E+01	1.17E+00	1.37E+01	5.82E-04
UAW2-0100+250 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	2.30E+01	1.32E-01	NA	NA	NA	NA	5.36E-04	3.82E+01	2.05E-02	1.14E-02	1.09E-01	1.59E-02	2.20E+01	1.17E+00	1.37E+01	1.16E-03
UAW2-0150 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UAW2-0200 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.05E+02	6.03E-01	NA	NA	NA	NA	5.36E-04	1.74E+02	9.33E-02	1.14E-02	1.09E-01	7.26E-02	2.20E+01	1.17E+00	1.37E+01	5.30E-03
UAW2-0250 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	3.46E+01	1.99E-01	NA	NA	NA	NA	5.36E-04	5.76E+01	3.09E-02	1.14E-02	1.09E-01	2.40E-02	2.20E+01	1.17E+00	1.37E+01	1.75E-03
UAW2-0250+50 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.92E+01	1.10E-01	NA	NA	NA	NA	5.36E-04	3.19E+01	1.71E-02	1.14E-02	1.09E-01	1.33E-02	2.20E+01	1.17E+00	1.37E+01	9.72E-04
UAW2-0300 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.02E+02	5.90E-01	NA	NA	NA	NA	5.36E-04	1.70E+02	9.13E-02	1.14E-02	1.09E-01	7.11E-02	2.20E+01	1.17E+00	1.37E+01	5.19E-03
UAW2-0350 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	5.08E+01	2.93E-01	NA	NA	NA	NA	5.36E-04	8.45E+01	4.53E-02	1.14E-02	1.09E-01	3.53E-02	2.20E+01	1.17E+00	1.37E+01	2.58E-03
UAW2-0350+50 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	6.82E+00	3.93E-02	NA	NA	NA	NA	5.36E-04	1.14E+01	6.08E-03	1.14E-02	1.09E-01	4.73E-03	2.20E+01	1.17E+00	1.37E+01	3.46E-04
UAW2-0400 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	4.74E+01	2.73E-01	NA	NA	NA	NA	5.36E-04	7.89E+01	4.23E-02	1.14E-02	1.09E-01	3.29E-02	2.20E+01	1.17E+00	1.37E+01	2.40E-03
UAW2-0400+150 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	2.49E+01	1.43E-01	NA	NA	NA	NA	5.36E-04	4.14E+01	2.22E-02	1.14E-02	1.09E-01	1.73E-02	2.20E+01	1.17E+00	1.37E+01	1.26E-03
UAW2-0450 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	2.72E+01	1.57E-01	NA	NA	NA	NA	5.36E-04	4.53E+01	2.43E-02	1.14E-02	1.09E-01	1.89E-02	2.20E+01	1.17E+00	1.37E+01	1.38E-03
UAW2-0450+50 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.94E+01	1.12E-01	NA	NA	NA	NA	5.36E-04	3.22E+01	1.73E-02	1.14E-02	1.09E-01	1.34E-02	2.20E+01	1.17E+00	1.37E+01	9.81E-04
UAW2-1000 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	2.34E+01	1.35E-01	NA	NA	NA	NA	5.36E-04	3.89E+01	2.08E-02	1.14E-02	1.09E-01	1.62E-02	2.20E+01	1.17E+00	1.37E+01	1.18E-03
UAW2-Comp (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	7.54E+00	4.34E-02	NA	NA	NA	NA	5.36E-04	1.25E+01	6.72E-03	1.14E-02	1.09E-01	5.23E-03	2.20E+01	1.17E+00	1.37E+01	3.82E-04
UAW3-Comp 1 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.62E+03	9.36E+00	NA	NA	NA	NA	5.36E-04	2.70E+03	1.45E+00	1.14E-02	1.09E-01	1.13E+00	2.20E+01	1.17E+00	1.37E+01	8.23E-02
UAW4-Comp 1 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	2.82E+02	1.63E+00	NA	NA	NA	NA	5.36E-04	4.70E+02	2.52E-01	1.14E-02	1.09E-01	1.96E-01	2.20E+01	1.17E+00	1.37E+01	1.43E-02
UAW5-00 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	2.07E+01	1.20E-01	NA	NA	NA	NA	5.36E-04	3.45E+01	1.85E-02	1.14E-02	1.09E-01	1.44E-02	2.20E+01	1.17E+00	1.37E+01	1.05E-03
UAW5-050 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	7.99E+00	4.61E-02	NA	NA	NA	NA	5.36E-04	1.33E+01	7.13E-03	1.14E-02	1.09E-01	5.55E-03	2.20E+01	1.17E+00	1.37E+01	4.05E-04
UAW5-100 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.00E+01	5.76E-02	NA	NA	NA	NA	5.36E-04	1.66E+01	8.91E-03	1.14E-02	1.09E-01	6.94E-03	2.20E+01	1.17E+00	1.37E+01	5.07E-04
UAW5-100+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	2.06E+01	1.19E-01	NA	NA	NA	NA	5.36E-04	3.43E+01	1.84E-02	1.14E-02	1.09E-01	1.43E-02	2.20E+01	1.17E+00	1.37E+01	1.04E-03
UAW5-150 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.05E+01	6.03E-02	NA	NA	NA	NA	5.36E-04	1.74E+01	9.33E-03	1.14E-02	1.09E-01	7.26E-03	2.20E+01	1.17E+00	1.37E+01	5.30E-04
UAW5-150+50 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.60E+01	9.25E-02	NA	NA	NA	NA	5.36E-04	2.67E+01	1.43E-02	1.14E-02	1.09E-01	1.11E-02	2.20E+01	1.17E+00	1.37E+01	8.13E-04
UAW5-200 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.18E+01	6.82E-02	NA	NA	NA	NA	5.36E-04	1.97E+01	1.06E-02	1.14E-02	1.09E-01	8.21E-03	2.20E+01	1.17E+00	1.37E+01	6.00E-04
UAW5-250 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	4.15E+01	2.39E-01	NA	NA	NA	NA	5.36E-04	6.90E+01	3.70E-02	1.14E-02	1.09E-01	2.88E-02	2.20E+01	1.17E+00	1.37E+01	2.10E-03
UAW5-250+50 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	7.09E+00	4.09E-02	NA	NA	NA	NA	5.36E-04	1.18E+01	6.32E-03	1.14E-02	1.09E-01	4.92E-03	2.20E+01	1.17E+00	1.37E+01	3.59E-04
UAW5-300 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.07E+01	6.18E-02	NA	NA	NA	NA	5.36E-04	1.78E+01	9.56E-03	1.14E-02	1.09E-01	7.44E-03	2.20E+01	1.17E+00	1.37E+01	5.43E-04
UAW5-300+75 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	2.60E+01	1.50E-01	NA	NA	NA	NA	5.36E-04	4.32E+01	2.31E-02	1.14E-02	1.09E-01	1.80E-02	2.20E+01	1.17E+00	1.37E+01	1.32E-03
UAW5-350 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	3.55E+01	2.05E-01	NA	NA	NA	NA	5.36E-04	5.91E+01	3.16E-02	1.14E-02	1.09E-01	2.46E-02	2.20E+01	1.17E+00	1.37E+01	1.80E-03
UAW5-400 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	5.15E+01	2.97E-01	NA	NA	NA	NA	5.36E-04	8.57E+01	4.59E-02	1.14E-02	1.09E-01	3.57E-02	2.20E+01	1.17E+00	1.37E+01	2.61E-03
UAW5-450 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	2.85E+01	1.64E-01	NA	NA	NA	NA	5.36E-04	4.74E+01	2.54E-02	1.14E-02	1.09E-01	1.98E-02	2.20E+01	1.17E+00	1.37E+01	1.45E-03
UAW5-500 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	8.62E+01	4.97E-01	NA	NA	NA	NA	5.36E-04	1.43E+02	7.69E-02	1.14E-02	1.09E-01	5.98E-02	2.20E+01	1.17E+00	1.37E+01	4.37E-03
UAW5-500+50 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	9.47E+00	5.45E-02	NA	NA	NA	NA	5.36E-04	1.58E+01	8.44E-03	1.14E-02	1.09E-01	6.57E-03	2.20E+01	1.17E+00	1.37E+01	4.80E-04
UAW5-550 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	4.64E+01	2.67E-01	NA	NA	NA	NA	5.36E-04	7.72E+01	4.13E-02	1.14E-02	1.09E-01	3.22E-02	2.20E+01	1.17E+00	1.37E+01	2.35E-03
UAW5-600 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.13E+01	6.53E-02	NA	NA	NA	NA	5.36E-04	1.89E+01	1.01E-02	1.14E-02	1.09E-01	7.86E-03	2.20E+01	1.17E+00	1.37E+01	5.74E-04
UAW5-Comp 1 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.51E+01	8.68E-02	NA	NA	NA	NA	5.36E-04	2.51E+01	1.34E-02	1.14E-02	1.09E-01	1.05E-02	2.20E+01	1.17E+00	1.37E+01	7.64E-04
																						Maximum HQ (Upper Anaconda Mine)	**8.23E-02**

TABLE C-1A: ARSENIC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 1 - UPPER ANACONDA MINE WASTE REMOVAL AREAS AND WASTE PILES (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **2.95**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Red-Tailed Hawk (Carnivorous Birds - Terrestrial)																							
Reference Sites																							
ACBG-1	9.00E-02	9.00E-02	4.84E-01	1.26E+01	1.13E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.60E+01	1.33E-01	4.23E-03	1.13E+00	4.73E-03	2.20E+01	1.17E+00	2.19E+01	2.16E-04
ACBG-2	9.00E-02	9.00E-02	4.84E-01	8.87E+00	7.98E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.83E+01	9.40E-02	4.23E-03	1.13E+00	3.33E-03	2.20E+01	1.17E+00	2.19E+01	1.52E-04
Upper Anaconda Mine																						**Minimum HQ (Reference Sites)**	**1.52E-04**
UAW1-00 (0-6")	9.00E-02	9.00E-02	4.84E-01	1.55E+02	1.40E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.21E+02	1.65E+00	4.23E-03	1.13E+00	5.83E-02	2.20E+01	1.17E+00	2.19E+01	2.67E-03
UAW1-00+25 (0-6")	9.00E-02	9.00E-02	4.84E-01	1.07E+01	9.61E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.21E+01	1.13E-01	4.23E-03	1.13E+00	4.01E-03	2.20E+01	1.17E+00	2.19E+01	1.84E-04
UAW1-050 (0-6")	9.00E-02	9.00E-02	4.84E-01	5.66E+01	5.09E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.17E+02	6.00E-01	4.23E-03	1.13E+00	2.12E-02	2.20E+01	1.17E+00	2.19E+01	9.72E-04
UAW1-100 (0-6")	9.00E-02	9.00E-02	4.84E-01	1.67E+02	1.50E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.46E+02	1.77E+00	4.23E-03	1.13E+00	6.28E-02	2.20E+01	1.17E+00	2.19E+01	2.87E-03
UAW1-150 (0-6")	9.00E-02	9.00E-02	4.84E-01	1.01E+02	9.09E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.09E+02	1.07E+00	4.23E-03	1.13E+00	3.79E-02	2.20E+01	1.17E+00	2.19E+01	1.73E-03
UAW1-150+75 (0-6")	9.00E-02	9.00E-02	4.84E-01	1.92E+01	1.73E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.98E+01	2.04E-01	4.23E-03	1.13E+00	7.22E-03	2.20E+01	1.17E+00	2.19E+01	3.30E-04
UAW1-Comp 1 (0-6")	9.00E-02	9.00E-02	4.84E-01	5.81E+02	5.23E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.20E+03	6.16E+00	4.23E-03	1.13E+00	2.18E-01	2.20E+01	1.17E+00	2.19E+01	9.98E-03
UAW2-0000 (0-6")	9.00E-02	9.00E-02	4.84E-01	2.97E+01	2.67E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	6.14E+01	3.15E-01	4.23E-03	1.13E+00	1.11E-02	2.20E+01	1.17E+00	2.19E+01	5.10E-04
UAW2-0000+225 (0-6")	9.00E-02	9.00E-02	4.84E-01	1.79E+01	1.61E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.69E+01	1.89E-01	4.23E-03	1.13E+00	6.70E-03	2.20E+01	1.17E+00	2.19E+01	3.07E-04
UAW2-0050 (0-6")	9.00E-02	9.00E-02	4.84E-01	5.35E+00	4.81E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.11E+01	5.67E-02	4.23E-03	1.13E+00	2.01E-03	2.20E+01	1.17E+00	2.19E+01	9.19E-05
UAW2-0100 (0-6")	9.00E-02	9.00E-02	4.84E-01	9.24E+00	8.31E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.91E+01	9.79E-02	4.23E-03	1.13E+00	3.47E-03	2.20E+01	1.17E+00	2.19E+01	1.59E-04
UAW2-0100+250 (0-6")	9.00E-02	9.00E-02	4.84E-01	1.85E+01	1.66E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.82E+01	1.96E-01	4.23E-03	1.13E+00	6.94E-03	2.20E+01	1.17E+00	2.19E+01	3.17E-04
UAW2-0150 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UAW2-0200 (0-6")	9.00E-02	9.00E-02	4.84E-01	8.42E+01	7.58E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.74E+02	8.93E-01	4.23E-03	1.13E+00	3.16E-02	2.20E+01	1.17E+00	2.19E+01	1.45E-03
UAW2-0250 (0-6")	9.00E-02	9.00E-02	4.84E-01	2.79E+01	2.51E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.76E+01	2.95E-01	4.23E-03	1.13E+00	1.05E-02	2.20E+01	1.17E+00	2.19E+01	4.79E-04
UAW2-0250+50 (0-6")	9.00E-02	9.00E-02	4.84E-01	1.54E+01	1.39E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.19E+01	1.64E-01	4.23E-03	1.13E+00	5.79E-03	2.20E+01	1.17E+00	2.19E+01	2.65E-04
UAW2-0300 (0-6")	9.00E-02	9.00E-02	4.84E-01	8.24E+01	7.41E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.70E+02	8.74E-01	4.23E-03	1.13E+00	3.09E-02	2.20E+01	1.17E+00	2.19E+01	1.42E-03
UAW2-0350 (0-6")	9.00E-02	9.00E-02	4.84E-01	4.09E+01	3.68E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	8.45E+01	4.33E-01	4.23E-03	1.13E+00	1.54E-02	2.20E+01	1.17E+00	2.19E+01	7.02E-04
UAW2-0350+50 (0-6")	9.00E-02	9.00E-02	4.84E-01	5.49E+00	4.94E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.14E+01	5.82E-02	4.23E-03	1.13E+00	2.06E-03	2.20E+01	1.17E+00	2.19E+01	9.43E-05
UAW2-0400 (0-6")	9.00E-02	9.00E-02	4.84E-01	3.82E+01	3.43E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	7.89E+01	4.04E-01	4.23E-03	1.13E+00	1.43E-02	2.20E+01	1.17E+00	2.19E+01	6.55E-04
UAW2-0400+150 (0-6")	9.00E-02	9.00E-02	4.84E-01	2.00E+01	1.80E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.14E+01	2.12E-01	4.23E-03	1.13E+00	7.52E-03	2.20E+01	1.17E+00	2.19E+01	3.44E-04
UAW2-0450 (0-6")	9.00E-02	9.00E-02	4.84E-01	2.19E+01	1.97E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.53E+01	2.32E-01	4.23E-03	1.13E+00	8.22E-03	2.20E+01	1.17E+00	2.19E+01	3.76E-04
UAW2-0450+50 (0-6")	9.00E-02	9.00E-02	4.84E-01	1.56E+01	1.40E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.22E+01	1.65E-01	4.23E-03	1.13E+00	5.85E-03	2.20E+01	1.17E+00	2.19E+01	2.67E-04
UAW2-1000 (0-6")	9.00E-02	9.00E-02	4.84E-01	1.88E+01	1.69E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.89E+01	1.99E-01	4.23E-03	1.13E+00	7.06E-03	2.20E+01	1.17E+00	2.19E+01	3.23E-04
UAW2-Comp (0-6")	9.00E-02	9.00E-02	4.84E-01	6.07E+00	5.46E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.25E+01	6.43E-02	4.23E-03	1.13E+00	2.28E-03	2.20E+01	1.17E+00	2.19E+01	1.04E-04
UAW3-Comp 1 (0-6")	9.00E-02	9.00E-02	4.84E-01	1.31E+03	1.18E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.70E+03	1.39E+01	4.23E-03	1.13E+00	4.91E-01	2.20E+01	1.17E+00	2.19E+01	2.25E-02
UAW4-Comp 1 (0-6")	9.00E-02	9.00E-02	4.84E-01	2.27E+02	2.04E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.70E+02	2.41E+00	4.23E-03	1.13E+00	8.53E-02	2.20E+01	1.17E+00	2.19E+01	3.90E-03
UAW5-00 (0-6")	9.00E-02	9.00E-02	4.84E-01	1.67E+01	1.50E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.45E+01	1.77E-01	4.23E-03	1.13E+00	6.27E-03	2.20E+01	1.17E+00	2.19E+01	2.87E-04
UAW5-050 (0-6")	9.00E-02	9.00E-02	4.84E-01	6.43E+00	5.79E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.33E+01	6.82E-02	4.23E-03	1.13E+00	2.42E-03	2.20E+01	1.17E+00	2.19E+01	1.10E-04
UAW5-100 (0-6")	9.00E-02	9.00E-02	4.84E-01	8.05E+00	7.24E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.66E+01	8.53E-02	4.23E-03	1.13E+00	3.02E-03	2.20E+01	1.17E+00	2.19E+01	1.38E-04
UAW5-100+25 (0-6")	9.00E-02	9.00E-02	4.84E-01	1.66E+01	1.49E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.43E+01	1.76E-01	4.23E-03	1.13E+00	6.23E-03	2.20E+01	1.17E+00	2.19E+01	2.85E-04
UAW5-150 (0-6")	9.00E-02	9.00E-02	4.84E-01	8.43E+00	7.58E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.74E+01	8.93E-02	4.23E-03	1.13E+00	3.16E-03	2.20E+01	1.17E+00	2.19E+01	1.45E-04
UAW5-150+50 (0-6")	9.00E-02	9.00E-02	4.84E-01	1.29E+01	1.16E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.67E+01	1.37E-01	4.23E-03	1.13E+00	4.85E-03	2.20E+01	1.17E+00	2.19E+01	2.22E-04
UAW5-200 (0-6")	9.00E-02	9.00E-02	4.84E-01	9.53E+00	8.57E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.97E+01	1.01E-01	4.23E-03	1.13E+00	3.58E-03	2.20E+01	1.17E+00	2.19E+01	1.64E-04
UAW5-250 (0-6")	9.00E-02	9.00E-02	4.84E-01	3.34E+01	3.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	6.90E+01	3.54E-01	4.23E-03	1.13E+00	1.25E-02	2.20E+01	1.17E+00	2.19E+01	5.73E-04
UAW5-250+50 (0-6")	9.00E-02	9.00E-02	4.84E-01	5.71E+00	5.14E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.18E+01	6.05E-02	4.23E-03	1.13E+00	2.14E-03	2.20E+01	1.17E+00	2.19E+01	9.80E-05
UAW5-300 (0-6")	9.00E-02	9.00E-02	4.84E-01	8.63E+00	7.76E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.78E+01	9.14E-02	4.23E-03	1.13E+00	3.24E-03	2.20E+01	1.17E+00	2.19E+01	1.48E-04
UAW5-300+75 (0-6")	9.00E-02	9.00E-02	4.84E-01	2.09E+01	1.88E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.32E+01	2.22E-01	4.23E-03	1.13E+00	7.85E-03	2.20E+01	1.17E+00	2.19E+01	3.59E-04
UAW5-350 (0-6")	9.00E-02	9.00E-02	4.84E-01	2.86E+01	2.57E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.91E+01	3.03E-01	4.23E-03	1.13E+00	1.07E-02	2.20E+01	1.17E+00	2.19E+01	4.91E-04
UAW5-400 (0-6")	9.00E-02	9.00E-02	4.84E-01	4.15E+01	3.73E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	8.57E+01	4.39E-01	4.23E-03	1.13E+00	1.56E-02	2.20E+01	1.17E+00	2.19E+01	7.12E-04
UAW5-450 (0-6")	9.00E-02	9.00E-02	4.84E-01	2.30E+01	2.06E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.74E+01	2.43E-01	4.23E-03	1.13E+00	8.62E-03	2.20E+01	1.17E+00	2.19E+01	3.94E-04
UAW5-500 (0-6")	9.00E-02	9.00E-02	4.84E-01	6.94E+01	6.24E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.43E+02	7.36E-01	4.23E-03	1.13E+00	2.61E-02	2.20E+01	1.17E+00	2.19E+01	1.19E-03
UAW5-500+50 (0-6")	9.00E-02	9.00E-02	4.84E-01	7.62E+00	6.85E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.58E+01	8.08E-02	4.23E-03	1.13E+00	2.86E-03	2.20E+01	1.17E+00	2.19E+01	1.31E-04
UAW5-550 (0-6")	9.00E-02	9.00E-02	4.84E-01	3.73E+01	3.36E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	7.72E+01	3.96E-01	4.23E-03	1.13E+00	1.40E-02	2.20E+01	1.17E+00	2.19E+01	6.41E-04
UAW5-600 (0-6")	9.00E-02	9.00E-02	4.84E-01	9.12E+00	8.21E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.89E+01	9.67E-02	4.23E-03	1.13E+00	3.42E-03	2.20E+01	1.17E+00	2.19E+01	1.57E-04
UAW5-Comp 1 (0-6")	9.00E-02	9.00E-02	4.84E-01	1.21E+01	1.09E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.51E+01	1.29E-01	4.23E-03	1.13E+00	4.56E-03	2.20E+01	1.17E+00	2.19E+01	2.08E-04
																						Maximum HQ (Upper Anaconda Mine)	**2.25E-02**

TABLE C-1A: ARSENIC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 1 - UPPER ANACONDA MINE WASTE REMOVAL AREAS AND WASTE PILES (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 2.95

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
American Kestrel (Insectivorous Birds - Terrestrial)																							
Reference Sites																							
ACBG-1	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	2.55E+00	6.64E+01	9.14E-01	7.84E-04	2.60E+01	2.04E-02	1.13E-02	1.24E-01	8.50E-02	2.20E+01	1.17E+00	1.40E+01	6.05E-03
ACBG-2	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	2.55E+00	4.68E+01	6.44E-01	7.84E-04	1.83E+01	1.44E-02	1.13E-02	1.24E-01	5.98E-02	2.20E+01	1.17E+00	1.40E+01	4.26E-03
Upper Anaconda Mine																						**Minimum HQ (Reference Sites)**	**4.26E-03**
UAW1-00 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	5.29E+03	7.28E+01	7.84E-04	3.21E+02	2.52E-01	1.13E-02	1.24E-01	6.64E+00	2.20E+01	1.17E+00	1.40E+01	4.73E-01
UAW1-00+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	3.64E+02	5.01E+00	7.84E-04	2.21E+01	1.73E-02	1.13E-02	1.24E-01	4.57E-01	2.20E+01	1.17E+00	1.40E+01	3.25E-02
UAW1-050 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	1.93E+03	2.65E+01	7.84E-04	1.17E+02	9.17E-02	1.13E-02	1.24E-01	2.42E+00	2.20E+01	1.17E+00	1.40E+01	1.72E-01
UAW1-100 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	5.70E+03	7.84E+01	7.84E-04	3.46E+02	2.71E-01	1.13E-02	1.24E-01	7.16E+00	2.20E+01	1.17E+00	1.40E+01	5.10E-01
UAW1-150 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	3.44E+03	4.74E+01	7.84E-04	2.09E+02	1.64E-01	1.13E-02	1.24E-01	4.32E+00	2.20E+01	1.17E+00	1.40E+01	3.08E-01
UAW1-150+75 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	6.56E+02	9.02E+00	7.84E-04	3.98E+01	3.12E-02	1.13E-02	1.24E-01	8.23E-01	2.20E+01	1.17E+00	1.40E+01	5.86E-02
UAW1-Comp 1 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	1.98E+04	2.73E+02	7.84E-04	1.20E+03	9.43E-01	1.13E-02	1.24E-01	2.49E+01	2.20E+01	1.17E+00	1.40E+01	1.77E+00
UAW2-0000 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	1.01E+03	1.39E+01	7.84E-04	6.14E+01	4.81E-02	1.13E-02	1.24E-01	1.27E+00	2.20E+01	1.17E+00	1.40E+01	9.04E-02
UAW2-0000+225 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	6.08E+02	8.37E+00	7.84E-04	3.69E+01	2.89E-02	1.13E-02	1.24E-01	7.64E-01	2.20E+01	1.17E+00	1.40E+01	5.44E-02
UAW2-0050 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	1.82E+02	2.51E+00	7.84E-04	1.11E+01	8.68E-03	1.13E-02	1.24E-01	2.29E-01	2.20E+01	1.17E+00	1.40E+01	1.63E-02
UAW2-0100 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	3.15E+02	4.33E+00	7.84E-04	1.91E+01	1.50E-02	1.13E-02	1.24E-01	3.95E-01	2.20E+01	1.17E+00	1.40E+01	2.81E-02
UAW2-0100+250 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	6.30E+02	8.66E+00	7.84E-04	3.82E+01	3.00E-02	1.13E-02	1.24E-01	7.91E-01	2.20E+01	1.17E+00	1.40E+01	5.63E-02
UAW2-0150 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UAW2-0200 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	2.87E+03	3.95E+01	7.84E-04	1.74E+02	1.37E-01	1.13E-02	1.24E-01	3.60E+00	2.20E+01	1.17E+00	1.40E+01	2.56E-01
UAW2-0250 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	9.50E+02	1.31E+01	7.84E-04	5.76E+01	4.52E-02	1.13E-02	1.24E-01	1.19E+00	2.20E+01	1.17E+00	1.40E+01	8.49E-02
UAW2-0250+50 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	5.26E+02	7.24E+00	7.84E-04	3.19E+01	2.50E-02	1.13E-02	1.24E-01	6.60E-01	2.20E+01	1.17E+00	1.40E+01	4.70E-02
UAW2-0300 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	2.81E+03	3.86E+01	7.84E-04	1.70E+02	1.34E-01	1.13E-02	1.24E-01	3.53E+00	2.20E+01	1.17E+00	1.40E+01	2.51E-01
UAW2-0350 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	1.39E+03	1.92E+01	7.84E-04	8.45E+01	6.63E-02	1.13E-02	1.24E-01	1.75E+00	2.20E+01	1.17E+00	1.40E+01	1.25E-01
UAW2-0350+50 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	1.87E+02	2.57E+00	7.84E-04	1.14E+01	8.90E-03	1.13E-02	1.24E-01	2.35E-01	2.20E+01	1.17E+00	1.40E+01	1.67E-02
UAW2-0400 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	1.30E+03	1.79E+01	7.84E-04	7.89E+01	6.19E-02	1.13E-02	1.24E-01	1.63E+00	2.20E+01	1.17E+00	1.40E+01	1.16E-01
UAW2-0400+150 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	6.82E+02	9.39E+00	7.84E-04	4.14E+01	3.25E-02	1.13E-02	1.24E-01	8.57E-01	2.20E+01	1.17E+00	1.40E+01	6.10E-02
UAW2-0450 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	7.46E+02	1.03E+01	7.84E-04	4.53E+01	3.55E-02	1.13E-02	1.24E-01	9.37E-01	2.20E+01	1.17E+00	1.40E+01	6.67E-02
UAW2-0450+50 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	5.31E+02	7.30E+00	7.84E-04	3.22E+01	2.53E-02	1.13E-02	1.24E-01	6.66E-01	2.20E+01	1.17E+00	1.40E+01	4.74E-02
UAW2-1000 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	6.41E+02	8.82E+00	7.84E-04	3.89E+01	3.05E-02	1.13E-02	1.24E-01	8.05E-01	2.20E+01	1.17E+00	1.40E+01	5.73E-02
UAW2-Comp (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	2.07E+02	2.85E+00	7.84E-04	1.25E+01	9.84E-03	1.13E-02	1.24E-01	2.60E-01	2.20E+01	1.17E+00	1.40E+01	1.85E-02
UAW3-Comp 1 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	4.45E+04	6.13E+02	7.84E-04	2.70E+03	2.12E+00	1.13E-02	1.24E-01	5.59E+01	2.20E+01	1.17E+00	1.40E+01	3.98E+00
UAW4-Comp 1 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	7.74E+03	1.07E+02	7.84E-04	4.70E+02	3.68E-01	1.13E-02	1.24E-01	9.72E+00	2.20E+01	1.17E+00	1.40E+01	6.92E-01
UAW5-00 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	5.69E+02	7.83E+00	7.84E-04	3.45E+01	2.71E-02	1.13E-02	1.24E-01	7.14E-01	2.20E+01	1.17E+00	1.40E+01	5.09E-02
UAW5-050 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	2.19E+02	3.02E+00	7.84E-04	1.33E+01	1.04E-02	1.13E-02	1.24E-01	2.75E-01	2.20E+01	1.17E+00	1.40E+01	1.96E-02
UAW5-100 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	2.74E+02	3.77E+00	7.84E-04	1.66E+01	1.30E-02	1.13E-02	1.24E-01	3.44E-01	2.20E+01	1.17E+00	1.40E+01	2.45E-02
UAW5-100+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	5.65E+02	7.78E+00	7.84E-04	3.43E+01	2.69E-02	1.13E-02	1.24E-01	7.10E-01	2.20E+01	1.17E+00	1.40E+01	5.05E-02
UAW5-150 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	2.87E+02	3.95E+00	7.84E-04	1.74E+01	1.37E-02	1.13E-02	1.24E-01	3.60E-01	2.20E+01	1.17E+00	1.40E+01	2.57E-02
UAW5-150+50 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	4.40E+02	6.06E+00	7.84E-04	2.67E+01	2.09E-02	1.13E-02	1.24E-01	5.53E-01	2.20E+01	1.17E+00	1.40E+01	3.93E-02
UAW5-200 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	3.25E+02	4.47E+00	7.84E-04	1.97E+01	1.54E-02	1.13E-02	1.24E-01	4.07E-01	2.20E+01	1.17E+00	1.40E+01	2.90E-02
UAW5-250 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	1.14E+03	1.56E+01	7.84E-04	6.90E+01	5.41E-02	1.13E-02	1.24E-01	1.43E+00	2.20E+01	1.17E+00	1.40E+01	1.02E-01
UAW5-250+50 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	1.95E+02	2.68E+00	7.84E-04	1.18E+01	9.26E-03	1.13E-02	1.24E-01	2.44E-01	2.20E+01	1.17E+00	1.40E+01	1.74E-02
UAW5-300 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	2.94E+02	4.05E+00	7.84E-04	1.78E+01	1.40E-02	1.13E-02	1.24E-01	3.69E-01	2.20E+01	1.17E+00	1.40E+01	2.63E-02
UAW5-300+75 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	7.12E+02	9.80E+00	7.84E-04	4.32E+01	3.39E-02	1.13E-02	1.24E-01	8.94E-01	2.20E+01	1.17E+00	1.40E+01	6.37E-02
UAW5-350 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	9.73E+02	1.34E+01	7.84E-04	5.91E+01	4.63E-02	1.13E-02	1.24E-01	1.22E+00	2.20E+01	1.17E+00	1.40E+01	8.70E-02
UAW5-400 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	1.41E+03	1.94E+01	7.84E-04	8.57E+01	6.72E-02	1.13E-02	1.24E-01	1.77E+00	2.20E+01	1.17E+00	1.40E+01	1.26E-01
UAW5-450 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	7.82E+02	1.08E+01	7.84E-04	4.74E+01	3.72E-02	1.13E-02	1.24E-01	9.82E-01	2.20E+01	1.17E+00	1.40E+01	6.99E-02
UAW5-500 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	2.36E+03	3.25E+01	7.84E-04	1.43E+02	1.13E-01	1.13E-02	1.24E-01	2.97E+00	2.20E+01	1.17E+00	1.40E+01	2.11E-01
UAW5-500+50 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	2.60E+02	3.57E+00	7.84E-04	1.58E+01	1.24E-02	1.13E-02	1.24E-01	3.26E-01	2.20E+01	1.17E+00	1.40E+01	2.32E-02
UAW5-550 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	1.27E+03	1.75E+01	7.84E-04	7.72E+01	6.05E-02	1.13E-02	1.24E-01	1.60E+00	2.20E+01	1.17E+00	1.40E+01	1.14E-01
UAW5-600 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	3.11E+02	4.28E+00	7.84E-04	1.89E+01	1.48E-02	1.13E-02	1.24E-01	3.90E-01	2.20E+01	1.17E+00	1.40E+01	2.78E-02
UAW5-Comp 1 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	4.13E+02	5.69E+00	7.84E-04	2.51E+01	1.97E-02	1.13E-02	1.24E-01	5.19E-01	2.20E+01	1.17E+00	1.40E+01	3.70E-02
																						Maximum HQ (Upper Anaconda Mine)	**3.98E+00**

TABLE C-1A: ARSENIC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 1 - UPPER ANACONDA MINE WASTE REMOVAL AREAS AND WASTE PILES (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 2.95

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Meadow Vole (Small Herbivorous Mammal - Terrestrial)																							
Reference Sites																							
ACBG-1	4.69E-03	NA	NA	NA	NA	4.69E-03	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	1.13E-04	2.60E+01	2.93E-03	1.00E+00	3.06E-02	9.57E-02	4.70E+00	1.10E-01	5.08E+00	1.89E-02
ACBG-2	4.69E-03	NA	NA	NA	NA	4.69E-03	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	1.13E-04	1.83E+01	2.06E-03	1.00E+00	3.06E-02	6.74E-02	4.70E+00	1.10E-01	5.08E+00	1.33E-02
Upper Anaconda Mine																						**Minimum HQ (Reference Sites)**	**1.33E-02**
UAW1-00 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.93E+02	9.05E-01	NA	NA	NA	NA	1.13E-04	3.21E+02	3.61E-02	1.00E+00	3.06E-02	3.07E+01	4.70E+00	1.10E-01	5.08E+00	6.06E+00
UAW1-00+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.33E+01	6.23E-02	NA	NA	NA	NA	1.13E-04	2.21E+01	2.49E-03	1.00E+00	3.06E-02	2.12E+00	4.70E+00	1.10E-01	5.08E+00	4.17E-01
UAW1-050 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	7.03E+01	3.30E-01	NA	NA	NA	NA	1.13E-04	1.17E+02	1.32E-02	1.00E+00	3.06E-02	1.12E+01	4.70E+00	1.10E-01	5.08E+00	2.21E+00
UAW1-100 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	2.08E+02	9.75E-01	NA	NA	NA	NA	1.13E-04	3.46E+02	3.89E-02	1.00E+00	3.06E-02	3.31E+01	4.70E+00	1.10E-01	5.08E+00	6.53E+00
UAW1-150 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.25E+02	5.88E-01	NA	NA	NA	NA	1.13E-04	2.09E+02	2.35E-02	1.00E+00	3.06E-02	2.00E+01	4.70E+00	1.10E-01	5.08E+00	3.94E+00
UAW1-150+75 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	2.39E+01	1.12E-01	NA	NA	NA	NA	1.13E-04	3.98E+01	4.48E-03	1.00E+00	3.06E-02	3.81E+00	4.70E+00	1.10E-01	5.08E+00	7.51E-01
UAW1-Comp 1 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	7.22E+02	3.39E+00	NA	NA	NA	NA	1.13E-04	1.20E+03	1.35E-01	1.00E+00	3.06E-02	1.15E+02	4.70E+00	1.10E-01	5.08E+00	2.27E+01
UAW2-0000 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	3.69E+01	1.73E-01	NA	NA	NA	NA	1.13E-04	6.14E+01	6.91E-03	1.00E+00	3.06E-02	5.88E+00	4.70E+00	1.10E-01	5.08E+00	1.16E+00
UAW2-0000+225 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	2.22E+01	1.04E-01	NA	NA	NA	NA	1.13E-04	3.69E+01	4.15E-03	1.00E+00	3.06E-02	3.53E+00	4.70E+00	1.10E-01	5.08E+00	6.96E-01
UAW2-0050 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	6.65E+00	3.12E-02	NA	NA	NA	NA	1.13E-04	1.11E+01	1.24E-03	1.00E+00	3.06E-02	1.06E+00	4.70E+00	1.10E-01	5.08E+00	2.09E-01
UAW2-0100 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.15E+01	5.38E-02	NA	NA	NA	NA	1.13E-04	1.91E+01	2.15E-03	1.00E+00	3.06E-02	1.83E+00	4.70E+00	1.10E-01	5.08E+00	3.60E-01
UAW2-0100+250 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	2.30E+01	1.08E-01	NA	NA	NA	NA	1.13E-04	3.82E+01	4.30E-03	1.00E+00	3.06E-02	3.66E+00	4.70E+00	1.10E-01	5.08E+00	7.21E-01
UAW2-0150 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UAW2-0200 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.05E+02	4.91E-01	NA	NA	NA	NA	1.13E-04	1.74E+02	1.96E-02	1.00E+00	3.06E-02	1.67E+01	4.70E+00	1.10E-01	5.08E+00	3.29E+00
UAW2-0250 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	3.46E+01	1.62E-01	NA	NA	NA	NA	1.13E-04	5.76E+01	6.48E-03	1.00E+00	3.06E-02	5.52E+00	4.70E+00	1.10E-01	5.08E+00	1.09E+00
UAW2-0250+50 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.92E+01	8.99E-02	NA	NA	NA	NA	1.13E-04	3.19E+01	3.59E-03	1.00E+00	3.06E-02	3.06E+00	4.70E+00	1.10E-01	5.08E+00	6.02E-01
UAW2-0300 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.02E+02	4.80E-01	NA	NA	NA	NA	1.13E-04	1.70E+02	1.92E-02	1.00E+00	3.06E-02	1.63E+01	4.70E+00	1.10E-01	5.08E+00	3.22E+00
UAW2-0350 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	5.08E+01	2.38E-01	NA	NA	NA	NA	1.13E-04	8.45E+01	9.51E-03	1.00E+00	3.06E-02	8.10E+00	4.70E+00	1.10E-01	5.08E+00	1.60E+00
UAW2-0350+50 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	6.82E+00	3.20E-02	NA	NA	NA	NA	1.13E-04	1.14E+01	1.28E-03	1.00E+00	3.06E-02	1.09E+00	4.70E+00	1.10E-01	5.08E+00	2.14E-01
UAW2-0400 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	4.74E+01	2.22E-01	NA	NA	NA	NA	1.13E-04	7.89E+01	8.87E-03	1.00E+00	3.06E-02	7.55E+00	4.70E+00	1.10E-01	5.08E+00	1.49E+00
UAW2-0400+150 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	2.49E+01	1.17E-01	NA	NA	NA	NA	1.13E-04	4.14E+01	4.66E-03	1.00E+00	3.06E-02	3.97E+00	4.70E+00	1.10E-01	5.08E+00	7.81E-01
UAW2-0450 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	2.72E+01	1.28E-01	NA	NA	NA	NA	1.13E-04	4.53E+01	5.09E-03	1.00E+00	3.06E-02	4.33E+00	4.70E+00	1.10E-01	5.08E+00	8.54E-01
UAW2-0450+50 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.94E+01	9.07E-02	NA	NA	NA	NA	1.13E-04	3.22E+01	3.62E-03	1.00E+00	3.06E-02	3.08E+00	4.70E+00	1.10E-01	5.08E+00	6.08E-01
UAW2-1000 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	2.34E+01	1.10E-01	NA	NA	NA	NA	1.13E-04	3.89E+01	4.38E-03	1.00E+00	3.06E-02	3.72E+00	4.70E+00	1.10E-01	5.08E+00	7.34E-01
UAW2-Comp (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	7.54E+00	3.54E-02	NA	NA	NA	NA	1.13E-04	1.25E+01	1.41E-03	1.00E+00	3.06E-02	1.20E+00	4.70E+00	1.10E-01	5.08E+00	2.37E-01
UAW3-Comp 1 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.62E+03	7.62E+00	NA	NA	NA	NA	1.13E-04	2.70E+03	3.04E-01	1.00E+00	3.06E-02	2.59E+02	4.70E+00	1.10E-01	5.08E+00	5.10E+01
UAW4-Comp 1 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	2.82E+02	1.32E+00	NA	NA	NA	NA	1.13E-04	4.70E+02	5.29E-02	1.00E+00	3.06E-02	4.50E+01	4.70E+00	1.10E-01	5.08E+00	8.87E+00
UAW5-00 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	2.07E+01	9.73E-02	NA	NA	NA	NA	1.13E-04	3.45E+01	3.88E-03	1.00E+00	3.06E-02	3.31E+00	4.70E+00	1.10E-01	5.08E+00	6.51E-01
UAW5-050 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	7.99E+00	3.75E-02	NA	NA	NA	NA	1.13E-04	1.33E+01	1.50E-03	1.00E+00	3.06E-02	1.27E+00	4.70E+00	1.10E-01	5.08E+00	2.51E-01
UAW5-100 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.00E+01	4.69E-02	NA	NA	NA	NA	1.13E-04	1.66E+01	1.87E-03	1.00E+00	3.06E-02	1.59E+00	4.70E+00	1.10E-01	5.08E+00	3.14E-01
UAW5-100+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	2.06E+01	9.67E-02	NA	NA	NA	NA	1.13E-04	3.43E+01	3.86E-03	1.00E+00	3.06E-02	3.29E+00	4.70E+00	1.10E-01	5.08E+00	6.47E-01
UAW5-150 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.05E+01	4.91E-02	NA	NA	NA	NA	1.13E-04	1.74E+01	1.96E-03	1.00E+00	3.06E-02	1.67E+00	4.70E+00	1.10E-01	5.08E+00	3.29E-01
UAW5-150+50 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.60E+01	7.52E-02	NA	NA	NA	NA	1.13E-04	2.67E+01	3.00E-03	1.00E+00	3.06E-02	2.56E+00	4.70E+00	1.10E-01	5.08E+00	5.04E-01
UAW5-200 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.18E+01	5.55E-02	NA	NA	NA	NA	1.13E-04	1.97E+01	2.22E-03	1.00E+00	3.06E-02	1.89E+00	4.70E+00	1.10E-01	5.08E+00	3.72E-01
UAW5-250 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	4.15E+01	1.94E-01	NA	NA	NA	NA	1.13E-04	6.90E+01	7.76E-03	1.00E+00	3.06E-02	6.61E+00	4.70E+00	1.10E-01	5.08E+00	1.30E+00
UAW5-250+50 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	7.09E+00	3.33E-02	NA	NA	NA	NA	1.13E-04	1.18E+01	1.33E-03	1.00E+00	3.06E-02	1.13E+00	4.70E+00	1.10E-01	5.08E+00	2.23E-01
UAW5-300 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.07E+01	5.03E-02	NA	NA	NA	NA	1.13E-04	1.78E+01	2.01E-03	1.00E+00	3.06E-02	1.71E+00	4.70E+00	1.10E-01	5.08E+00	3.37E-01
UAW5-300+75 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	2.60E+01	1.22E-01	NA	NA	NA	NA	1.13E-04	4.32E+01	4.86E-03	1.00E+00	3.06E-02	4.14E+00	4.70E+00	1.10E-01	5.08E+00	8.15E-01
UAW5-350 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	3.55E+01	1.66E-01	NA	NA	NA	NA	1.13E-04	5.91E+01	6.65E-03	1.00E+00	3.06E-02	5.66E+00	4.70E+00	1.10E-01	5.08E+00	1.11E+00
UAW5-400 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	5.15E+01	2.41E-01	NA	NA	NA	NA	1.13E-04	8.57E+01	9.64E-03	1.00E+00	3.06E-02	8.21E+00	4.70E+00	1.10E-01	5.08E+00	1.62E+00
UAW5-450 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	2.85E+01	1.34E-01	NA	NA	NA	NA	1.13E-04	4.74E+01	5.34E-03	1.00E+00	3.06E-02	4.54E+00	4.70E+00	1.10E-01	5.08E+00	8.95E-01
UAW5-500 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	8.62E+01	4.04E-01	NA	NA	NA	NA	1.13E-04	1.43E+02	1.61E-02	1.00E+00	3.06E-02	1.37E+01	4.70E+00	1.10E-01	5.08E+00	2.71E+00
UAW5-500+50 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	9.47E+00	4.44E-02	NA	NA	NA	NA	1.13E-04	1.58E+01	1.77E-03	1.00E+00	3.06E-02	1.51E+00	4.70E+00	1.10E-01	5.08E+00	2.97E-01
UAW5-550 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	4.64E+01	2.17E-01	NA	NA	NA	NA	1.13E-04	7.72E+01	8.68E-03	1.00E+00	3.06E-02	7.39E+00	4.70E+00	1.10E-01	5.08E+00	1.46E+00
UAW5-600 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.13E+01	5.31E-02	NA	NA	NA	NA	1.13E-04	1.89E+01	2.12E-03	1.00E+00	3.06E-02	1.81E+00	4.70E+00	1.10E-01	5.08E+00	3.56E-01
UAW5-Comp 1 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.51E+01	7.07E-02	NA	NA	NA	NA	1.13E-04	2.51E+01	2.82E-03	1.00E+00	3.06E-02	2.40E+00	4.70E+00	1.10E-01	5.08E+00	4.73E-01
																						Maximum HQ (Upper Anaconda Mine)	**5.10E+01**

TABLE C-1A: ARSENIC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 1 - UPPER ANACONDA MINE WASTE REMOVAL AREAS AND WASTE PILES (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **2.95**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
White-Tailed Deer (Large Herbivorous Mammal - Terrestrial)																							
Reference Sites																							
ACBG-1	1.43E+00	NA	NA	NA	NA	1.43E+00	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	2.86E-02	2.60E+01	7.45E-01	1.65E-02	1.35E+02	9.11E-05	4.70E+00	1.10E-01	3.07E+00	2.97E-05
ACBG-2	1.43E+00	NA	NA	NA	NA	1.43E+00	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	2.86E-02	1.83E+01	5.25E-01	1.65E-02	1.35E+02	6.42E-05	4.70E+00	1.10E-01	3.07E+00	2.09E-05
Upper Anaconda Mine																						**Minimum HQ (Reference Sites)**	**2.09E-05**
UAW1-00 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.93E+02	2.76E+02	NA	NA	NA	NA	2.86E-02	3.21E+02	9.19E+00	1.65E-02	1.35E+02	3.49E-02	4.70E+00	1.10E-01	3.07E+00	1.14E-02
UAW1-00+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.33E+01	1.90E+01	NA	NA	NA	NA	2.86E-02	2.21E+01	6.33E-01	1.65E-02	1.35E+02	2.40E-03	4.70E+00	1.10E-01	3.07E+00	7.83E-04
UAW1-050 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	7.03E+01	1.01E+02	NA	NA	NA	NA	2.86E-02	1.17E+02	3.35E+00	1.65E-02	1.35E+02	1.27E-02	4.70E+00	1.10E-01	3.07E+00	4.14E-03
UAW1-100 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	2.08E+02	2.98E+02	NA	NA	NA	NA	2.86E-02	3.46E+02	9.90E+00	1.65E-02	1.35E+02	3.76E-02	4.70E+00	1.10E-01	3.07E+00	1.23E-02
UAW1-150 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.25E+02	1.80E+02	NA	NA	NA	NA	2.86E-02	2.09E+02	5.98E+00	1.65E-02	1.35E+02	2.27E-02	4.70E+00	1.10E-01	3.07E+00	7.40E-03
UAW1-150+75 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	2.39E+01	3.42E+01	NA	NA	NA	NA	2.86E-02	3.98E+01	1.14E+00	1.65E-02	1.35E+02	4.32E-03	4.70E+00	1.10E-01	3.07E+00	1.41E-03
UAW1-Comp 1 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	7.22E+02	1.03E+03	NA	NA	NA	NA	2.86E-02	1.20E+03	3.44E+01	1.65E-02	1.35E+02	1.31E-01	4.70E+00	1.10E-01	3.07E+00	4.26E-02
UAW2-0000 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	3.69E+01	5.28E+01	NA	NA	NA	NA	2.86E-02	6.14E+01	1.76E+00	1.65E-02	1.35E+02	6.67E-03	4.70E+00	1.10E-01	3.07E+00	2.17E-03
UAW2-0000+225 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	2.22E+01	3.18E+01	NA	NA	NA	NA	2.86E-02	3.69E+01	1.06E+00	1.65E-02	1.35E+02	4.01E-03	4.70E+00	1.10E-01	3.07E+00	1.31E-03
UAW2-0050 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	6.65E+00	9.52E+00	NA	NA	NA	NA	2.86E-02	1.11E+01	3.17E-01	1.65E-02	1.35E+02	1.20E-03	4.70E+00	1.10E-01	3.07E+00	3.92E-04
UAW2-0100 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.15E+01	1.64E+01	NA	NA	NA	NA	2.86E-02	1.91E+01	5.47E-01	1.65E-02	1.35E+02	2.08E-03	4.70E+00	1.10E-01	3.07E+00	6.77E-04
UAW2-0100+250 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	2.30E+01	3.29E+01	NA	NA	NA	NA	2.86E-02	3.82E+01	1.09E+00	1.65E-02	1.35E+02	4.15E-03	4.70E+00	1.10E-01	3.07E+00	1.35E-03
UAW2-0150 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UAW2-0200 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.05E+02	1.50E+02	NA	NA	NA	NA	2.86E-02	1.74E+02	4.98E+00	1.65E-02	1.35E+02	1.89E-02	4.70E+00	1.10E-01	3.07E+00	6.17E-03
UAW2-0250 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	3.46E+01	4.96E+01	NA	NA	NA	NA	2.86E-02	5.76E+01	1.65E+00	1.65E-02	1.35E+02	6.26E-03	4.70E+00	1.10E-01	3.07E+00	2.04E-03
UAW2-0250+50 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.92E+01	2.74E+01	NA	NA	NA	NA	2.86E-02	3.19E+01	9.13E-01	1.65E-02	1.35E+02	3.47E-03	4.70E+00	1.10E-01	3.07E+00	1.13E-03
UAW2-0300 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.02E+02	1.47E+02	NA	NA	NA	NA	2.86E-02	1.70E+02	4.88E+00	1.65E-02	1.35E+02	1.85E-02	4.70E+00	1.10E-01	3.07E+00	6.04E-03
UAW2-0350 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	5.08E+01	7.27E+01	NA	NA	NA	NA	2.86E-02	8.45E+01	2.42E+00	1.65E-02	1.35E+02	9.19E-03	4.70E+00	1.10E-01	3.07E+00	3.00E-03
UAW2-0350+50 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	6.82E+00	9.77E+00	NA	NA	NA	NA	2.86E-02	1.14E+01	3.25E-01	1.65E-02	1.35E+02	1.23E-03	4.70E+00	1.10E-01	3.07E+00	4.02E-04
UAW2-0400 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	4.74E+01	6.79E+01	NA	NA	NA	NA	2.86E-02	7.89E+01	2.26E+00	1.65E-02	1.35E+02	8.57E-03	4.70E+00	1.10E-01	3.07E+00	2.79E-03
UAW2-0400+150 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	2.49E+01	3.56E+01	NA	NA	NA	NA	2.86E-02	4.14E+01	1.19E+00	1.65E-02	1.35E+02	4.50E-03	4.70E+00	1.10E-01	3.07E+00	1.47E-03
UAW2-0450 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	2.72E+01	3.89E+01	NA	NA	NA	NA	2.86E-02	4.53E+01	1.30E+00	1.65E-02	1.35E+02	4.92E-03	4.70E+00	1.10E-01	3.07E+00	1.60E-03
UAW2-0450+50 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.94E+01	2.77E+01	NA	NA	NA	NA	2.86E-02	3.22E+01	9.22E-01	1.65E-02	1.35E+02	3.50E-03	4.70E+00	1.10E-01	3.07E+00	1.14E-03
UAW2-1000 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	2.34E+01	3.35E+01	NA	NA	NA	NA	2.86E-02	3.89E+01	1.11E+00	1.65E-02	1.35E+02	4.23E-03	4.70E+00	1.10E-01	3.07E+00	1.38E-03
UAW2-Comp (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	7.54E+00	1.08E+01	NA	NA	NA	NA	2.86E-02	1.25E+01	3.59E-01	1.65E-02	1.35E+02	1.36E-03	4.70E+00	1.10E-01	3.07E+00	4.45E-04
UAW3-Comp 1 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.62E+03	2.33E+03	NA	NA	NA	NA	2.86E-02	2.70E+03	7.74E+01	1.65E-02	1.35E+02	2.94E-01	4.70E+00	1.10E-01	3.07E+00	9.58E-02
UAW4-Comp 1 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	2.82E+02	4.04E+02	NA	NA	NA	NA	2.86E-02	4.70E+02	1.35E+01	1.65E-02	1.35E+02	5.11E-02	4.70E+00	1.10E-01	3.07E+00	1.66E-02
UAW5-00 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	2.07E+01	2.97E+01	NA	NA	NA	NA	2.86E-02	3.45E+01	9.88E-01	1.65E-02	1.35E+02	3.75E-03	4.70E+00	1.10E-01	3.07E+00	1.22E-03
UAW5-050 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	7.99E+00	1.14E+01	NA	NA	NA	NA	2.86E-02	1.33E+01	3.81E-01	1.65E-02	1.35E+02	1.45E-03	4.70E+00	1.10E-01	3.07E+00	4.71E-04
UAW5-100 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.00E+01	1.43E+01	NA	NA	NA	NA	2.86E-02	1.66E+01	4.76E-01	1.65E-02	1.35E+02	1.81E-03	4.70E+00	1.10E-01	3.07E+00	5.89E-04
UAW5-100+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	2.06E+01	2.95E+01	NA	NA	NA	NA	2.86E-02	3.43E+01	9.82E-01	1.65E-02	1.35E+02	3.73E-03	4.70E+00	1.10E-01	3.07E+00	1.22E-03
UAW5-150 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.05E+01	1.50E+01	NA	NA	NA	NA	2.86E-02	1.74E+01	4.99E-01	1.65E-02	1.35E+02	1.89E-03	4.70E+00	1.10E-01	3.07E+00	6.17E-04
UAW5-150+50 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.60E+01	2.30E+01	NA	NA	NA	NA	2.86E-02	2.67E+01	7.65E-01	1.65E-02	1.35E+02	2.90E-03	4.70E+00	1.10E-01	3.07E+00	9.46E-04
UAW5-200 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.18E+01	1.69E+01	NA	NA	NA	NA	2.86E-02	1.97E+01	5.64E-01	1.65E-02	1.35E+02	2.14E-03	4.70E+00	1.10E-01	3.07E+00	6.98E-04
UAW5-250 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	4.15E+01	5.94E+01	NA	NA	NA	NA	2.86E-02	6.90E+01	1.98E+00	1.65E-02	1.35E+02	7.50E-03	4.70E+00	1.10E-01	3.07E+00	2.44E-03
UAW5-250+50 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	7.09E+00	1.02E+01	NA	NA	NA	NA	2.86E-02	1.18E+01	3.38E-01	1.65E-02	1.35E+02	1.28E-03	4.70E+00	1.10E-01	3.07E+00	4.18E-04
UAW5-300 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.07E+01	1.53E+01	NA	NA	NA	NA	2.86E-02	1.78E+01	5.11E-01	1.65E-02	1.35E+02	1.94E-03	4.70E+00	1.10E-01	3.07E+00	6.32E-04
UAW5-300+75 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	2.60E+01	3.72E+01	NA	NA	NA	NA	2.86E-02	4.32E+01	1.24E+00	1.65E-02	1.35E+02	4.70E-03	4.70E+00	1.10E-01	3.07E+00	1.53E-03
UAW5-350 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	3.55E+01	5.08E+01	NA	NA	NA	NA	2.86E-02	5.91E+01	1.69E+00	1.65E-02	1.35E+02	6.42E-03	4.70E+00	1.10E-01	3.07E+00	2.09E-03
UAW5-400 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	5.15E+01	7.37E+01	NA	NA	NA	NA	2.86E-02	8.57E+01	2.45E+00	1.65E-02	1.35E+02	9.31E-03	4.70E+00	1.10E-01	3.07E+00	3.04E-03
UAW5-450 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	2.85E+01	4.08E+01	NA	NA	NA	NA	2.86E-02	4.74E+01	1.36E+00	1.65E-02	1.35E+02	5.16E-03	4.70E+00	1.10E-01	3.07E+00	1.68E-03
UAW5-500 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	8.62E+01	1.23E+02	NA	NA	NA	NA	2.86E-02	1.43E+02	4.11E+00	1.65E-02	1.35E+02	1.56E-02	4.70E+00	1.10E-01	3.07E+00	5.08E-03
UAW5-500+50 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	9.47E+00	1.36E+01	NA	NA	NA	NA	2.86E-02	1.58E+01	4.51E-01	1.65E-02	1.35E+02	1.71E-03	4.70E+00	1.10E-01	3.07E+00	5.58E-04
UAW5-550 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	4.64E+01	6.64E+01	NA	NA	NA	NA	2.86E-02	7.72E+01	2.21E+00	1.65E-02	1.35E+02	8.39E-03	4.70E+00	1.10E-01	3.07E+00	2.73E-03
UAW5-600 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.13E+01	1.62E+01	NA	NA	NA	NA	2.86E-02	1.89E+01	5.40E-01	1.65E-02	1.35E+02	2.05E-03	4.70E+00	1.10E-01	3.07E+00	6.68E-04
UAW5-Comp 1 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.51E+01	2.16E+01	NA	NA	NA	NA	2.86E-02	2.51E+01	7.18E-01	1.65E-02	1.35E+02	2.73E-03	4.70E+00	1.10E-01	3.07E+00	8.89E-04
																						Maximum HQ (Upper Anaconda Mine)	**9.58E-02**

TABLE C-1A: ARSENIC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 1 - UPPER ANACONDA MINE WASTE REMOVAL AREAS AND WASTE PILES (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 2.95

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Red Fox (Carnivorous Mammal - Terrestrial)																							
Reference Sites																							
ACBG-1	1.72E-01	1.72E-01	4.84E-01	1.26E+01	2.16E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.60E+01	1.25E-01	2.18E-03	4.54E+00	1.10E-03	4.70E+00	1.10E-01	3.76E+00	2.92E-04
ACBG-2	1.72E-01	1.72E-01	4.84E-01	8.87E+00	1.52E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.83E+01	8.80E-02	2.18E-03	4.54E+00	7.73E-04	4.70E+00	1.10E-01	3.76E+00	2.06E-04
Upper Anaconda Mine																						**Minimum HQ (Reference Sites)**	**2.06E-04**
UAW1-00 (0-6")	1.72E-01	1.72E-01	4.84E-01	1.55E+02	2.66E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.21E+02	1.54E+00	2.18E-03	4.54E+00	1.35E-02	4.70E+00	1.10E-01	3.76E+00	3.60E-03
UAW1-00+25 (0-6")	1.72E-01	1.72E-01	4.84E-01	1.07E+01	1.83E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.21E+01	1.06E-01	2.18E-03	4.54E+00	9.32E-04	4.70E+00	1.10E-01	3.76E+00	2.48E-04
UAW1-050 (0-6")	1.72E-01	1.72E-01	4.84E-01	5.66E+01	9.71E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.17E+02	5.62E-01	2.18E-03	4.54E+00	4.93E-03	4.70E+00	1.10E-01	3.76E+00	1.31E-03
UAW1-100 (0-6")	1.72E-01	1.72E-01	4.84E-01	1.67E+02	2.87E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.46E+02	1.66E+00	2.18E-03	4.54E+00	1.46E-02	4.70E+00	1.10E-01	3.76E+00	3.88E-03
UAW1-150 (0-6")	1.72E-01	1.72E-01	4.84E-01	1.01E+02	1.73E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.09E+02	1.00E+00	2.18E-03	4.54E+00	8.81E-03	4.70E+00	1.10E-01	3.76E+00	2.34E-03
UAW1-150+75 (0-6")	1.72E-01	1.72E-01	4.84E-01	1.92E+01	3.30E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.98E+01	1.91E-01	2.18E-03	4.54E+00	1.68E-03	4.70E+00	1.10E-01	3.76E+00	4.46E-04
UAW1-Comp 1 (0-6")	1.72E-01	1.72E-01	4.84E-01	5.81E+02	9.97E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.20E+03	5.77E+00	2.18E-03	4.54E+00	5.07E-02	4.70E+00	1.10E-01	3.76E+00	1.35E-02
UAW2-0000 (0-6")	1.72E-01	1.72E-01	4.84E-01	2.97E+01	5.09E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	6.14E+01	2.95E-01	2.18E-03	4.54E+00	2.59E-03	4.70E+00	1.10E-01	3.76E+00	6.88E-04
UAW2-0000+225 (0-6")	1.72E-01	1.72E-01	4.84E-01	1.79E+01	3.06E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.69E+01	1.77E-01	2.18E-03	4.54E+00	1.56E-03	4.70E+00	1.10E-01	3.76E+00	4.14E-04
UAW2-0050 (0-6")	1.72E-01	1.72E-01	4.84E-01	5.35E+00	9.18E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.11E+01	5.31E-02	2.18E-03	4.54E+00	4.67E-04	4.70E+00	1.10E-01	3.76E+00	1.24E-04
UAW2-0100 (0-6")	1.72E-01	1.72E-01	4.84E-01	9.24E+00	1.58E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.91E+01	9.17E-02	2.18E-03	4.54E+00	8.05E-04	4.70E+00	1.10E-01	3.76E+00	2.14E-04
UAW2-0100+250 (0-6")	1.72E-01	1.72E-01	4.84E-01	1.85E+01	3.17E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.82E+01	1.83E-01	2.18E-03	4.54E+00	1.61E-03	4.70E+00	1.10E-01	3.76E+00	4.29E-04
UAW2-0150 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UAW2-0200 (0-6")	1.72E-01	1.72E-01	4.84E-01	8.42E+01	1.44E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.74E+02	8.36E-01	2.18E-03	4.54E+00	7.34E-03	4.70E+00	1.10E-01	3.76E+00	1.95E-03
UAW2-0250 (0-6")	1.72E-01	1.72E-01	4.84E-01	2.79E+01	4.78E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.76E+01	2.77E-01	2.18E-03	4.54E+00	2.43E-03	4.70E+00	1.10E-01	3.76E+00	6.46E-04
UAW2-0250+50 (0-6")	1.72E-01	1.72E-01	4.84E-01	1.54E+01	2.65E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.19E+01	1.53E-01	2.18E-03	4.54E+00	1.35E-03	4.70E+00	1.10E-01	3.76E+00	3.58E-04
UAW2-0300 (0-6")	1.72E-01	1.72E-01	4.84E-01	8.24E+01	1.41E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.70E+02	8.18E-01	2.18E-03	4.54E+00	7.19E-03	4.70E+00	1.10E-01	3.76E+00	1.91E-03
UAW2-0350 (0-6")	1.72E-01	1.72E-01	4.84E-01	4.09E+01	7.02E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	8.45E+01	4.06E-01	2.18E-03	4.54E+00	3.57E-03	4.70E+00	1.10E-01	3.76E+00	9.48E-04
UAW2-0350+50 (0-6")	1.72E-01	1.72E-01	4.84E-01	5.49E+00	9.42E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.14E+01	5.45E-02	2.18E-03	4.54E+00	4.79E-04	4.70E+00	1.10E-01	3.76E+00	1.27E-04
UAW2-0400 (0-6")	1.72E-01	1.72E-01	4.84E-01	3.82E+01	6.54E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	7.89E+01	3.79E-01	2.18E-03	4.54E+00	3.33E-03	4.70E+00	1.10E-01	3.76E+00	8.85E-04
UAW2-0400+150 (0-6")	1.72E-01	1.72E-01	4.84E-01	2.00E+01	3.44E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.14E+01	1.99E-01	2.18E-03	4.54E+00	1.75E-03	4.70E+00	1.10E-01	3.76E+00	4.64E-04
UAW2-0450 (0-6")	1.72E-01	1.72E-01	4.84E-01	2.19E+01	3.76E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.53E+01	2.17E-01	2.18E-03	4.54E+00	1.91E-03	4.70E+00	1.10E-01	3.76E+00	5.08E-04
UAW2-0450+50 (0-6")	1.72E-01	1.72E-01	4.84E-01	1.56E+01	2.67E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.22E+01	1.55E-01	2.18E-03	4.54E+00	1.36E-03	4.70E+00	1.10E-01	3.76E+00	3.61E-04
UAW2-1000 (0-6")	1.72E-01	1.72E-01	4.84E-01	1.88E+01	3.23E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.89E+01	1.87E-01	2.18E-03	4.54E+00	1.64E-03	4.70E+00	1.10E-01	3.76E+00	4.36E-04
UAW2-Comp (0-6")	1.72E-01	1.72E-01	4.84E-01	6.07E+00	1.04E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.25E+01	6.03E-02	2.18E-03	4.54E+00	5.29E-04	4.70E+00	1.10E-01	3.76E+00	1.41E-04
UAW3-Comp 1 (0-6")	1.72E-01	1.72E-01	4.84E-01	1.31E+03	2.24E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.70E+03	1.30E+01	2.18E-03	4.54E+00	1.14E-01	4.70E+00	1.10E-01	3.76E+00	3.03E-02
UAW4-Comp 1 (0-6")	1.72E-01	1.72E-01	4.84E-01	2.27E+02	3.90E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.70E+02	2.26E+00	2.18E-03	4.54E+00	1.98E-02	4.70E+00	1.10E-01	3.76E+00	5.27E-03
UAW5-00 (0-6")	1.72E-01	1.72E-01	4.84E-01	1.67E+01	2.86E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.45E+01	1.66E-01	2.18E-03	4.54E+00	1.46E-03	4.70E+00	1.10E-01	3.76E+00	3.87E-04
UAW5-050 (0-6")	1.72E-01	1.72E-01	4.84E-01	6.43E+00	1.10E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.33E+01	6.39E-02	2.18E-03	4.54E+00	5.61E-04	4.70E+00	1.10E-01	3.76E+00	1.49E-04
UAW5-100 (0-6")	1.72E-01	1.72E-01	4.84E-01	8.05E+00	1.38E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.66E+01	7.99E-02	2.18E-03	4.54E+00	7.02E-04	4.70E+00	1.10E-01	3.76E+00	1.87E-04
UAW5-100+25 (0-6")	1.72E-01	1.72E-01	4.84E-01	1.66E+01	2.85E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.43E+01	1.65E-01	2.18E-03	4.54E+00	1.45E-03	4.70E+00	1.10E-01	3.76E+00	3.85E-04
UAW5-150 (0-6")	1.72E-01	1.72E-01	4.84E-01	8.43E+00	1.45E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.74E+01	8.37E-02	2.18E-03	4.54E+00	7.35E-04	4.70E+00	1.10E-01	3.76E+00	1.95E-04
UAW5-150+50 (0-6")	1.72E-01	1.72E-01	4.84E-01	1.29E+01	2.22E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.67E+01	1.28E-01	2.18E-03	4.54E+00	1.13E-03	4.70E+00	1.10E-01	3.76E+00	3.00E-04
UAW5-200 (0-6")	1.72E-01	1.72E-01	4.84E-01	9.53E+00	1.63E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.97E+01	9.46E-02	2.18E-03	4.54E+00	8.31E-04	4.70E+00	1.10E-01	3.76E+00	2.21E-04
UAW5-250 (0-6")	1.72E-01	1.72E-01	4.84E-01	3.34E+01	5.73E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	6.90E+01	3.31E-01	2.18E-03	4.54E+00	2.91E-03	4.70E+00	1.10E-01	3.76E+00	7.74E-04
UAW5-250+50 (0-6")	1.72E-01	1.72E-01	4.84E-01	5.71E+00	9.79E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.18E+01	5.67E-02	2.18E-03	4.54E+00	4.98E-04	4.70E+00	1.10E-01	3.76E+00	1.32E-04
UAW5-300 (0-6")	1.72E-01	1.72E-01	4.84E-01	8.63E+00	1.48E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.78E+01	8.57E-02	2.18E-03	4.54E+00	7.52E-04	4.70E+00	1.10E-01	3.76E+00	2.00E-04
UAW5-300+75 (0-6")	1.72E-01	1.72E-01	4.84E-01	2.09E+01	3.59E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.32E+01	2.08E-01	2.18E-03	4.54E+00	1.82E-03	4.70E+00	1.10E-01	3.76E+00	4.85E-04
UAW5-350 (0-6")	1.72E-01	1.72E-01	4.84E-01	2.86E+01	4.90E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.91E+01	2.84E-01	2.18E-03	4.54E+00	2.49E-03	4.70E+00	1.10E-01	3.76E+00	6.63E-04
UAW5-400 (0-6")	1.72E-01	1.72E-01	4.84E-01	4.15E+01	7.11E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	8.57E+01	4.12E-01	2.18E-03	4.54E+00	3.61E-03	4.70E+00	1.10E-01	3.76E+00	9.61E-04
UAW5-450 (0-6")	1.72E-01	1.72E-01	4.84E-01	2.30E+01	3.94E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.74E+01	2.28E-01	2.18E-03	4.54E+00	2.00E-03	4.70E+00	1.10E-01	3.76E+00	5.32E-04
UAW5-500 (0-6")	1.72E-01	1.72E-01	4.84E-01	6.94E+01	1.19E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.43E+02	6.89E-01	2.18E-03	4.54E+00	6.05E-03	4.70E+00	1.10E-01	3.76E+00	1.61E-03
UAW5-500+50 (0-6")	1.72E-01	1.72E-01	4.84E-01	7.62E+00	1.31E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.58E+01	7.57E-02	2.18E-03	4.54E+00	6.64E-04	4.70E+00	1.10E-01	3.76E+00	1.77E-04
UAW5-550 (0-6")	1.72E-01	1.72E-01	4.84E-01	3.73E+01	6.40E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	7.72E+01	3.71E-01	2.18E-03	4.54E+00	3.25E-03	4.70E+00	1.10E-01	3.76E+00	8.66E-04
UAW5-600 (0-6")	1.72E-01	1.72E-01	4.84E-01	9.12E+00	1.56E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.89E+01	9.06E-02	2.18E-03	4.54E+00	7.95E-04	4.70E+00	1.10E-01	3.76E+00	2.12E-04
UAW5-Comp 1 (0-6")	1.72E-01	1.72E-01	4.84E-01	1.21E+01	2.08E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.51E+01	1.20E-01	2.18E-03	4.54E+00	1.06E-03	4.70E+00	1.10E-01	3.76E+00	2.81E-04
																						Maximum HQ (Upper Anaconda Mine)	**3.03E-02**

TABLE C-1A: ARSENIC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 1 - UPPER ANACONDA MINE WASTE REMOVAL AREAS AND WASTE PILES (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 2.95

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Masked Shrew (Omnivorous Mammal - Terrestrial, Wetland)																							
Reference Sites																							
ACBG-1	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	2.55E+00	6.64E+01	5.63E-01	1.10E-03	2.60E+01	2.87E-02	1.00E+00	5.50E-03	1.08E+02	4.70E+00	1.10E-01	5.63E+00	1.91E+01
ACBG-2	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	2.55E+00	4.68E+01	3.96E-01	1.10E-03	1.83E+01	2.02E-02	1.00E+00	5.50E-03	7.57E+01	4.70E+00	1.10E-01	5.63E+00	1.35E+01
Upper Anaconda Mine																						**Minimum HQ (Reference Sites)**	**1.35E+01**
UAW1-00 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	5.29E+03	4.48E+01	1.10E-03	3.21E+02	3.53E-01	1.00E+00	5.50E-03	8.21E+03	4.70E+00	1.10E-01	5.63E+00	1.46E+03
UAW1-00+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	3.64E+02	3.08E+00	1.10E-03	2.21E+01	2.43E-02	1.00E+00	5.50E-03	5.65E+02	4.70E+00	1.10E-01	5.63E+00	1.00E+02
UAW1-050 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	1.93E+03	1.63E+01	1.10E-03	1.17E+02	1.29E-01	1.00E+00	5.50E-03	2.99E+03	4.70E+00	1.10E-01	5.63E+00	5.32E+02
UAW1-100 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	5.70E+03	4.83E+01	1.10E-03	3.46E+02	3.81E-01	1.00E+00	5.50E-03	8.85E+03	4.70E+00	1.10E-01	5.63E+00	1.57E+03
UAW1-150 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	3.44E+03	2.91E+01	1.10E-03	2.09E+02	2.30E-01	1.00E+00	5.50E-03	5.34E+03	4.70E+00	1.10E-01	5.63E+00	9.49E+02
UAW1-150+75 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	6.56E+02	5.55E+00	1.10E-03	3.98E+01	4.38E-02	1.00E+00	5.50E-03	1.02E+03	4.70E+00	1.10E-01	5.63E+00	1.81E+02
UAW1-Comp 1 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	1.98E+04	1.68E+02	1.10E-03	1.20E+03	1.32E+00	1.00E+00	5.50E-03	3.07E+04	4.70E+00	1.10E-01	5.63E+00	5.47E+03
UAW2-0000 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	1.01E+03	8.57E+00	1.10E-03	6.14E+01	6.76E-02	1.00E+00	5.50E-03	1.57E+03	4.70E+00	1.10E-01	5.63E+00	2.79E+02
UAW2-0000+225 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	6.08E+02	5.15E+00	1.10E-03	3.69E+01	4.06E-02	1.00E+00	5.50E-03	9.44E+02	4.70E+00	1.10E-01	5.63E+00	1.68E+02
UAW2-0050 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	1.82E+02	1.54E+00	1.10E-03	1.11E+01	1.22E-02	1.00E+00	5.50E-03	2.83E+02	4.70E+00	1.10E-01	5.63E+00	5.03E+01
UAW2-0100 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	3.15E+02	2.67E+00	1.10E-03	1.91E+01	2.10E-02	1.00E+00	5.50E-03	4.89E+02	4.70E+00	1.10E-01	5.63E+00	8.68E+01
UAW2-0100+250 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	6.30E+02	5.33E+00	1.10E-03	3.82E+01	4.21E-02	1.00E+00	5.50E-03	9.77E+02	4.70E+00	1.10E-01	5.63E+00	1.74E+02
UAW2-0150 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UAW2-0200 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	2.87E+03	2.43E+01	1.10E-03	1.74E+02	1.92E-01	1.00E+00	5.50E-03	4.45E+03	4.70E+00	1.10E-01	5.63E+00	7.92E+02
UAW2-0250 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	9.50E+02	8.04E+00	1.10E-03	5.76E+01	6.34E-02	1.00E+00	5.50E-03	1.47E+03	4.70E+00	1.10E-01	5.63E+00	2.62E+02
UAW2-0250+50 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	5.26E+02	4.45E+00	1.10E-03	3.19E+01	3.51E-02	1.00E+00	5.50E-03	8.16E+02	4.70E+00	1.10E-01	5.63E+00	1.45E+02
UAW2-0300 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	2.81E+03	2.38E+01	1.10E-03	1.70E+02	1.88E-01	1.00E+00	5.50E-03	4.36E+03	4.70E+00	1.10E-01	5.63E+00	7.75E+02
UAW2-0350 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	1.39E+03	1.18E+01	1.10E-03	8.45E+01	9.31E-02	1.00E+00	5.50E-03	2.16E+03	4.70E+00	1.10E-01	5.63E+00	3.84E+02
UAW2-0350+50 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	1.87E+02	1.58E+00	1.10E-03	1.14E+01	1.25E-02	1.00E+00	5.50E-03	2.90E+02	4.70E+00	1.10E-01	5.63E+00	5.16E+01
UAW2-0400 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	1.30E+03	1.10E+01	1.10E-03	7.89E+01	8.68E-02	1.00E+00	5.50E-03	2.02E+03	4.70E+00	1.10E-01	5.63E+00	3.59E+02
UAW2-0400+150 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	6.82E+02	5.78E+00	1.10E-03	4.14E+01	4.56E-02	1.00E+00	5.50E-03	1.06E+03	4.70E+00	1.10E-01	5.63E+00	1.88E+02
UAW2-0450 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	7.46E+02	6.32E+00	1.10E-03	4.53E+01	4.98E-02	1.00E+00	5.50E-03	1.16E+03	4.70E+00	1.10E-01	5.63E+00	2.06E+02
UAW2-0450+50 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	5.31E+02	4.50E+00	1.10E-03	3.22E+01	3.55E-02	1.00E+00	5.50E-03	8.24E+02	4.70E+00	1.10E-01	5.63E+00	1.46E+02
UAW2-1000 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	6.41E+02	5.43E+00	1.10E-03	3.89E+01	4.28E-02	1.00E+00	5.50E-03	9.95E+02	4.70E+00	1.10E-01	5.63E+00	1.77E+02
UAW2-Comp (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	2.07E+02	1.75E+00	1.10E-03	1.25E+01	1.38E-02	1.00E+00	5.50E-03	3.21E+02	4.70E+00	1.10E-01	5.63E+00	5.71E+01
UAW3-Comp 1 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	4.45E+04	3.77E+02	1.10E-03	2.70E+03	2.98E+00	1.00E+00	5.50E-03	6.91E+04	4.70E+00	1.10E-01	5.63E+00	1.23E+04
UAW4-Comp 1 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	7.74E+03	6.56E+01	1.10E-03	4.70E+02	5.17E-01	1.00E+00	5.50E-03	1.20E+04	4.70E+00	1.10E-01	5.63E+00	2.14E+03
UAW5-00 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	5.69E+02	4.82E+00	1.10E-03	3.45E+01	3.80E-02	1.00E+00	5.50E-03	8.83E+02	4.70E+00	1.10E-01	5.63E+00	1.57E+02
UAW5-050 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	2.19E+02	1.86E+00	1.10E-03	1.33E+01	1.46E-02	1.00E+00	5.50E-03	3.40E+02	4.70E+00	1.10E-01	5.63E+00	6.05E+01
UAW5-100 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	2.74E+02	2.32E+00	1.10E-03	1.66E+01	1.83E-02	1.00E+00	5.50E-03	4.26E+02	4.70E+00	1.10E-01	5.63E+00	7.57E+01
UAW5-100+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	5.65E+02	4.79E+00	1.10E-03	3.43E+01	3.78E-02	1.00E+00	5.50E-03	8.78E+02	4.70E+00	1.10E-01	5.63E+00	1.56E+02
UAW5-150 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	2.87E+02	2.43E+00	1.10E-03	1.74E+01	1.92E-02	1.00E+00	5.50E-03	4.46E+02	4.70E+00	1.10E-01	5.63E+00	7.92E+01
UAW5-150+50 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	4.40E+02	3.73E+00	1.10E-03	2.67E+01	2.94E-02	1.00E+00	5.50E-03	6.83E+02	4.70E+00	1.10E-01	5.63E+00	1.21E+02
UAW5-200 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	3.25E+02	2.75E+00	1.10E-03	1.97E+01	2.17E-02	1.00E+00	5.50E-03	5.04E+02	4.70E+00	1.10E-01	5.63E+00	8.95E+01
UAW5-250 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	1.14E+03	9.63E+00	1.10E-03	6.90E+01	7.60E-02	1.00E+00	5.50E-03	1.77E+03	4.70E+00	1.10E-01	5.63E+00	3.14E+02
UAW5-250+50 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	1.95E+02	1.65E+00	1.10E-03	1.18E+01	1.30E-02	1.00E+00	5.50E-03	3.02E+02	4.70E+00	1.10E-01	5.63E+00	5.37E+01
UAW5-300 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	2.94E+02	2.49E+00	1.10E-03	1.78E+01	1.96E-02	1.00E+00	5.50E-03	4.56E+02	4.70E+00	1.10E-01	5.63E+00	8.11E+01
UAW5-300+75 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	7.12E+02	6.03E+00	1.10E-03	4.32E+01	4.76E-02	1.00E+00	5.50E-03	1.11E+03	4.70E+00	1.10E-01	5.63E+00	1.96E+02
UAW5-350 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	9.73E+02	8.25E+00	1.10E-03	5.91E+01	6.50E-02	1.00E+00	5.50E-03	1.51E+03	4.70E+00	1.10E-01	5.63E+00	2.69E+02
UAW5-400 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	1.41E+03	1.20E+01	1.10E-03	8.57E+01	9.43E-02	1.00E+00	5.50E-03	2.19E+03	4.70E+00	1.10E-01	5.63E+00	3.90E+02
UAW5-450 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	7.82E+02	6.62E+00	1.10E-03	4.74E+01	5.22E-02	1.00E+00	5.50E-03	1.21E+03	4.70E+00	1.10E-01	5.63E+00	2.16E+02
UAW5-500 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	2.36E+03	2.00E+01	1.10E-03	1.43E+02	1.58E-01	1.00E+00	5.50E-03	3.67E+03	4.70E+00	1.10E-01	5.63E+00	6.53E+02
UAW5-500+50 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	2.60E+02	2.20E+00	1.10E-03	1.58E+01	1.73E-02	1.00E+00	5.50E-03	4.03E+02	4.70E+00	1.10E-01	5.63E+00	7.16E+01
UAW5-550 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	1.27E+03	1.08E+01	1.10E-03	7.72E+01	8.50E-02	1.00E+00	5.50E-03	1.97E+03	4.70E+00	1.10E-01	5.63E+00	3.51E+02
UAW5-600 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	3.11E+02	2.63E+00	1.10E-03	1.89E+01	2.08E-02	1.00E+00	5.50E-03	4.82E+02	4.70E+00	1.10E-01	5.63E+00	8.58E+01
UAW5-Comp 1 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	4.13E+02	3.50E+00	1.10E-03	2.51E+01	2.76E-02	1.00E+00	5.50E-03	6.42E+02	4.70E+00	1.10E-01	5.63E+00	1.14E+02
																						Maximum HQ (Upper Anaconda Mine)	**1.23E+04**

TABLE C-1A: ARSENIC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 1 - UPPER ANACONDA MINE WASTE REMOVAL AREAS AND WASTE PILES (Continued)

Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)
calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 2.95

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)

Notes

1 See Tables 3-1 through 3-13 for ingestion rates, foraging ranges used to calculate the SUF, and body weights.
2 BAFs were calculated by dividing site-collected tissue by collocated soil concentrations (BAFs are in dry weight). The maximum BAF calculated from the Beartrap Creek and Blackfoot River transects was used for site dose calculations. The maximum BAF from the terrestrial reference site was used for reference site dose calculations.
3 The mammal, plant, and invertebrate concentrations were calculated by multiplying the soil concentration by the BAF to generate a tissue concentration (see note 2).
4 Mammal, plant, and invertebrate daily doses were calculated by multiplying the ingestion rate (see note 1) by the tissue concentration (see note 3).
5 Soil concentration from 0 to 6 inches below ground surface at point ID as measured by XRF 10. Doses were not calculated for detected and non-detected soil concentrations measured below the minimum reference site concentration, as indicated by BB. For results that were measured at less than the detection limit, doses were calculated using half of the detection limit.
6 Soil daily dose was calculated by multiplying the soil ingestion rate (see note 1) by soil concentration (see note 5).
7 Total daily dose is calculated using the following equation: total daily dose = ([mammal daily dose (if applicable) + plant daily dose (if applicable) + invertebrate daily dose (if applicable) + soil daily dose]*SUF)/receptor species body weight.
8 The TRVs used in this risk assessment represent a mid-range effects level. The derivation of TRVs is described in Navy (1998).
9 Allometrically adjusted TRVs for birds were calculated using the following equation: receptor species TRV = (test species TRV) x (test species body weight / receptor species body weight)$^{(1-1.2)}$.
10 Allometrically adjusted TRVs for mammals were calculated using the following equation: receptor species TRV = (test species TRV) x (test species body weight / receptor species body weight)$^{(1-0.94)}$.
11 HQs were calculated using the following equation: HQ = total daily dose/allometrically adjusted TRV.
12 Highlighted cells indicate an HQ greater than 1.0.

BAF	Bioaccumulation factor	mg/kg	Milligram per kilogram
BB	Below minimum background reference site concentration	NA	Not applicable
EU	Exposure unit	Navy	Department of the Navy
HQ	Hazard quotient	SUF	Site use factor
ID	Identification	TRV	Toxicity reference value
kg	Kilogram	XRF	X-ray flourescence
kg/day	Kilogram per day	XRF 10	XRF measurements recorded following drying and seiving through a #10 -mesh screen
mg/day	Milligram per day		

Sources: Department of the Navy. 1998. "Development of Toxicity Reference Values for Conducting Ecological Risk Assessments at Naval Facilities in California, Interim Final." Prepared by Naval Facilities Engineering Command, Engineering Field Activity West (EFA West). San Bruno, California.

TABLE C-1B: CADMIUM DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 1 - UPPER ANACONDA MINE WASTE REMOVAL AREAS AND WASTE PILES

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **2.95**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Mourning Dove (Herbivorous Birds - Terrestrial)																							
Reference Sites																							
ACBG-1	5.76E-03	NA	NA	NA	NA	5.76E-03	1.26E+00	6.11E-01	3.52E-03	NA	NA	NA	NA	5.36E-04	4.86E-01	2.60E-04	1.14E-02	1.09E-01	3.94E-04	1.00E+00	1.13E+00	6.27E-01	6.29E-04
ACBG-2	5.76E-03	NA	NA	NA	NA	5.76E-03	1.26E+00	6.53E-01	3.76E-03	NA	NA	NA	NA	5.36E-04	5.20E-01	2.79E-04	1.14E-02	1.09E-01	4.22E-04	1.00E+00	1.13E+00	6.27E-01	6.73E-04
Upper Anaconda Mine																						**Minimum HQ (Reference Sites)**	**6.29E-04**
UAW1-00 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UAW1-00+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.59E+00	5.56E+00	3.20E-02	NA	NA	NA	NA	5.36E-04	3.50E+00	1.88E-03	1.14E-02	1.09E-01	3.54E-03	1.00E+00	1.13E+00	6.27E-01	5.64E-03
UAW1-050 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UAW1-100 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UAW1-150 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UAW1-150+75 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.59E+00	1.09E+01	6.27E-02	NA	NA	NA	NA	5.36E-04	6.85E+00	3.67E-03	1.14E-02	1.09E-01	6.92E-03	1.00E+00	1.13E+00	6.27E-01	1.10E-02
UAW1-Comp 1 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.59E+00	5.42E+00	3.12E-02	NA	NA	NA	NA	5.36E-04	3.41E+00	1.83E-03	1.14E-02	1.09E-01	3.44E-03	1.00E+00	1.13E+00	6.27E-01	5.50E-03
UAW2-0000 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UAW2-0000+225 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UAW2-0050 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UAW2-0100 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UAW2-0100+250 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UAW2-0150 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UAW2-0200 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.59E+00	1.54E+00	8.87E-03	NA	NA	NA	NA	5.36E-04	9.70E-01	5.20E-04	1.14E-02	1.09E-01	9.80E-04	1.00E+00	1.13E+00	6.27E-01	1.56E-03
UAW2-0250 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.59E+00	1.60E+00	9.24E-03	NA	NA	NA	NA	5.36E-04	1.01E+00	5.41E-04	1.14E-02	1.09E-01	1.02E-03	1.00E+00	1.13E+00	6.27E-01	1.63E-03
UAW2-0250+50 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.59E+00	6.99E+00	4.03E-02	NA	NA	NA	NA	5.36E-04	4.40E+00	2.36E-03	1.14E-02	1.09E-01	4.44E-03	1.00E+00	1.13E+00	6.27E-01	7.09E-03
UAW2-0300 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UAW2-0350 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UAW2-0350+50 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UAW2-0400 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UAW2-0400+150 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UAW2-0450 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UAW2-0450+50 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UAW2-1000 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.59E+00	2.38E+00	1.37E-02	NA	NA	NA	NA	5.36E-04	1.50E+00	8.04E-04	1.14E-02	1.09E-01	1.52E-03	1.00E+00	1.13E+00	6.27E-01	2.42E-03
UAW2-Comp (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UAW3-Comp 1 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.59E+00	2.43E+01	1.40E-01	NA	NA	NA	NA	5.36E-04	1.53E+01	8.20E-03	1.14E-02	1.09E-01	1.55E-02	1.00E+00	1.13E+00	6.27E-01	2.47E-02
UAW4-Comp 1 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.59E+00	2.22E+00	1.28E-02	NA	NA	NA	NA	5.36E-04	1.40E+00	7.50E-04	1.14E-02	1.09E-01	1.41E-03	1.00E+00	1.13E+00	6.27E-01	2.26E-03
UAW5-00 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UAW5-050 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UAW5-100 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UAW5-100+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UAW5-150 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UAW5-150+50 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UAW5-200 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UAW5-250 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UAW5-250+50 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UAW5-300 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UAW5-300+75 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.59E+00	1.16E+01	6.68E-02	NA	NA	NA	NA	5.36E-04	7.30E+00	3.91E-03	1.14E-02	1.09E-01	7.37E-03	1.00E+00	1.13E+00	6.27E-01	1.18E-02
UAW5-350 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UAW5-400 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UAW5-450 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UAW5-500 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UAW5-500+50 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.59E+00	1.06E+01	6.13E-02	NA	NA	NA	NA	5.36E-04	6.70E+00	3.59E-03	1.14E-02	1.09E-01	6.77E-03	1.00E+00	1.13E+00	6.27E-01	1.08E-02
UAW5-550 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UAW5-600 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UAW5-Comp 1 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.59E+00	3.26E+00	1.88E-02	NA	NA	NA	NA	5.36E-04	2.05E+00	1.10E-03	1.14E-02	1.09E-01	2.07E-03	1.00E+00	1.13E+00	6.27E-01	3.30E-03
																						Maximum HQ (Upper Anaconda Mine)	**2.47E-02**

TABLE C-1B: CADMIUM DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 1 - UPPER ANACONDA MINE WASTE REMOVAL AREAS AND WASTE PILES (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 2.95

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Red-Tailed Hawk (Carnivorous Birds - Terrestrial)																							
Reference Sites																							
ACBG-1	9.00E-02	9.00E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.86E-01	2.49E-03	4.23E-03	1.13E+00	9.30E-06	1.00E+00	1.13E+00	1.00E+00	9.30E-06
ACBG-2	9.00E-02	9.00E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.20E-01	2.67E-03	4.23E-03	1.13E+00	9.95E-06	1.00E+00	1.13E+00	1.00E+00	9.95E-06
Upper Anaconda Mine																						**Minimum HQ (Reference Sites)**	**9.30E-06**
UAW1-00 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UAW1-00+25 (0-6")	9.00E-02	9.00E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.50E+00	1.79E-02	4.23E-03	1.13E+00	6.70E-05	1.00E+00	1.13E+00	1.00E+00	6.70E-05
UAW1-050 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UAW1-100 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UAW1-150 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UAW1-150+75 (0-6")	9.00E-02	9.00E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	6.85E+00	3.51E-02	4.23E-03	1.13E+00	1.31E-04	1.00E+00	1.13E+00	1.00E+00	1.31E-04
UAW1-Comp 1 (0-6")	9.00E-02	9.00E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.41E+00	1.75E-02	4.23E-03	1.13E+00	6.53E-05	1.00E+00	1.13E+00	1.00E+00	6.52E-05
UAW2-0000 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UAW2-0000+225 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UAW2-0050 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UAW2-0100 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UAW2-0100+250 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UAW2-0150 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UAW2-0200 (0-6")	9.00E-02	9.00E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	9.70E-01	4.97E-03	4.23E-03	1.13E+00	1.86E-05	1.00E+00	1.13E+00	1.00E+00	1.86E-05
UAW2-0250 (0-6")	9.00E-02	9.00E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.01E+00	5.18E-03	4.23E-03	1.13E+00	1.93E-05	1.00E+00	1.13E+00	1.00E+00	1.93E-05
UAW2-0250+50 (0-6")	9.00E-02	9.00E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.40E+00	2.26E-02	4.23E-03	1.13E+00	8.42E-05	1.00E+00	1.13E+00	1.00E+00	8.42E-05
UAW2-0300 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UAW2-0350 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UAW2-0350+50 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UAW2-0400 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UAW2-0400+150 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UAW2-0450 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UAW2-0450+50 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UAW2-1000 (0-6")	9.00E-02	9.00E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.50E+00	7.69E-03	4.23E-03	1.13E+00	2.87E-05	1.00E+00	1.13E+00	1.00E+00	2.87E-05
UAW2-Comp (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UAW3-Comp 1 (0-6")	9.00E-02	9.00E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.53E+01	7.85E-02	4.23E-03	1.13E+00	2.93E-04	1.00E+00	1.13E+00	1.00E+00	2.93E-04
UAW4-Comp 1 (0-6")	9.00E-02	9.00E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.40E+00	7.18E-03	4.23E-03	1.13E+00	2.68E-05	1.00E+00	1.13E+00	1.00E+00	2.68E-05
UAW5-00 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UAW5-050 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UAW5-100 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UAW5-100+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UAW5-150 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UAW5-150+50 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UAW5-200 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UAW5-250 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UAW5-250+50 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UAW5-300 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UAW5-300+75 (0-6")	9.00E-02	9.00E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	7.30E+00	3.74E-02	4.23E-03	1.13E+00	1.40E-04	1.00E+00	1.13E+00	1.00E+00	1.40E-04
UAW5-350 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UAW5-400 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UAW5-450 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UAW5-500 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UAW5-500+50 (0-6")	9.00E-02	9.00E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	6.70E+00	3.44E-02	4.23E-03	1.13E+00	1.28E-04	1.00E+00	1.13E+00	1.00E+00	1.28E-04
UAW5-550 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UAW5-600 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UAW5-Comp 1 (0-6")	9.00E-02	9.00E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.05E+00	1.05E-02	4.23E-03	1.13E+00	3.92E-05	1.00E+00	1.13E+00	1.00E+00	3.92E-05
																						Maximum HQ (Upper Anaconda Mine)	**2.93E-04**

TABLE C-1B: CADMIUM DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 1 - UPPER ANACONDA MINE WASTE REMOVAL AREAS AND WASTE PILES (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 2.95

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
American Kestrel (Insectivorous Birds - Terrestrial)																							
Reference Sites																							
ACBG-1	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	7.00E+00	3.40E+00	4.68E-02	7.84E-04	4.86E-01	3.81E-04	1.13E-02	1.24E-01	4.29E-03	1.00E+00	1.13E+00	6.43E-01	6.67E-03
ACBG-2	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	7.00E+00	3.64E+00	5.01E-02	7.84E-04	5.20E-01	4.08E-04	1.13E-02	1.24E-01	4.59E-03	1.00E+00	1.13E+00	6.43E-01	7.14E-03
Upper Anaconda Mine																						**Minimum HQ (Reference Sites)**	**6.67E-03**
UAW1-00 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UAW1-00+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	7.00E+00	2.45E+01	3.37E-01	7.84E-04	3.50E+00	2.75E-03	1.13E-02	1.24E-01	3.09E-02	1.00E+00	1.13E+00	6.43E-01	4.81E-02
UAW1-050 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UAW1-100 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UAW1-150 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UAW1-150+75 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	7.00E+00	4.79E+01	6.60E-01	7.84E-04	6.85E+00	5.37E-03	1.13E-02	1.24E-01	6.05E-02	1.00E+00	1.13E+00	6.43E-01	9.41E-02
UAW1-Comp 1 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	7.00E+00	2.39E+01	3.28E-01	7.84E-04	3.41E+00	2.67E-03	1.13E-02	1.24E-01	3.01E-02	1.00E+00	1.13E+00	6.43E-01	4.68E-02
UAW2-0000 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UAW2-0000+225 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UAW2-0050 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UAW2-0100 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UAW2-0100+250 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UAW2-0150 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UAW2-0200 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	7.00E+00	6.79E+00	9.34E-02	7.84E-04	9.70E-01	7.61E-04	1.13E-02	1.24E-01	8.56E-03	1.00E+00	1.13E+00	6.43E-01	1.33E-02
UAW2-0250 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	7.00E+00	7.07E+00	9.73E-02	7.84E-04	1.01E+00	7.92E-04	1.13E-02	1.24E-01	8.92E-03	1.00E+00	1.13E+00	6.43E-01	1.39E-02
UAW2-0250+50 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	7.00E+00	3.08E+01	4.24E-01	7.84E-04	4.40E+00	3.45E-03	1.13E-02	1.24E-01	3.88E-02	1.00E+00	1.13E+00	6.43E-01	6.04E-02
UAW2-0300 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UAW2-0350 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UAW2-0350+50 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UAW2-0400 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UAW2-0400+150 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UAW2-0450 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UAW2-0450+50 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UAW2-1000 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	7.00E+00	1.05E+01	1.44E-01	7.84E-04	1.50E+00	1.18E-03	1.13E-02	1.24E-01	1.32E-02	1.00E+00	1.13E+00	6.43E-01	2.06E-02
UAW2-Comp (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UAW3-Comp 1 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	7.00E+00	1.07E+02	1.47E+00	7.84E-04	1.53E+01	1.20E-02	1.13E-02	1.24E-01	1.35E-01	1.00E+00	1.13E+00	6.43E-01	2.10E-01
UAW4-Comp 1 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	1.40E+00	NE	NE	NE	NE	NE	NE	NE	NE
UAW5-00 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UAW5-050 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UAW5-100 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UAW5-100+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UAW5-150 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UAW5-150+50 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UAW5-200 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UAW5-250 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UAW5-250+50 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UAW5-300 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UAW5-300+75 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	7.00E+00	5.11E+01	7.03E-01	7.84E-04	7.30E+00	5.73E-03	1.13E-02	1.24E-01	6.44E-02	1.00E+00	1.13E+00	6.43E-01	1.00E-01
UAW5-350 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UAW5-400 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UAW5-450 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UAW5-500 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UAW5-500+50 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	7.00E+00	4.69E+01	6.45E-01	7.84E-04	6.70E+00	5.26E-03	1.13E-02	1.24E-01	5.91E-02	1.00E+00	1.13E+00	6.43E-01	9.20E-02
UAW5-550 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UAW5-600 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UAW5-Comp 1 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	7.00E+00	1.43E+01	1.97E-01	7.84E-04	2.05E+00	1.61E-03	1.13E-02	1.24E-01	1.81E-02	1.00E+00	1.13E+00	6.43E-01	2.82E-02
																						Maximum HQ (Upper Anaconda Mine)	**2.10E-01**

TABLE C-1B: CADMIUM DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 1 - UPPER ANACONDA MINE WASTE REMOVAL AREAS AND WASTE PILES (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 2.95

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Meadow Vole (Small Herbivorous Mammal - Terrestrial)																							
Reference Sites																							
ACBG-1	4.69E-03	NA	NA	NA	NA	4.69E-03	1.26E+00	6.11E-01	2.86E-03	NA	NA	NA	NA	1.13E-04	4.86E-01	5.47E-05	1.00E+00	3.06E-02	9.53E-02	2.64E+00	3.14E-02	2.64E+00	3.61E-02
ACBG-2	4.69E-03	NA	NA	NA	NA	4.69E-03	1.26E+00	6.53E-01	3.06E-03	NA	NA	NA	NA	1.13E-04	5.20E-01	5.85E-05	1.00E+00	3.06E-02	1.02E-01	2.64E+00	3.14E-02	2.64E+00	3.86E-02
Upper Anaconda Mine																						**Minimum HQ (Reference Sites)**	**3.61E-02**
UAW1-00 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UAW1-00+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.59E+00	5.56E+00	2.61E-02	NA	NA	NA	NA	1.13E-04	3.50E+00	3.94E-04	1.00E+00	3.06E-02	8.65E-01	2.64E+00	3.14E-02	2.64E+00	3.27E-01
UAW1-050 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UAW1-100 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UAW1-150 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UAW1-150+75 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.59E+00	1.09E+01	5.10E-02	NA	NA	NA	NA	1.13E-04	6.85E+00	7.71E-04	1.00E+00	3.06E-02	1.69E+00	2.64E+00	3.14E-02	2.64E+00	6.40E-01
UAW1-Comp 1 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.59E+00	5.42E+00	2.54E-02	NA	NA	NA	NA	1.13E-04	3.41E+00	3.84E-04	1.00E+00	3.06E-02	8.42E-01	2.64E+00	3.14E-02	2.64E+00	3.19E-01
UAW2-0000 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UAW2-0000+225 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UAW2-0050 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UAW2-0100 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UAW2-0100+250 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UAW2-0150 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UAW2-0200 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.59E+00	1.54E+00	7.22E-03	NA	NA	NA	NA	1.13E-04	9.70E-01	1.09E-04	1.00E+00	3.06E-02	2.40E-01	2.64E+00	3.14E-02	2.64E+00	9.06E-02
UAW2-0250 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.59E+00	1.60E+00	7.52E-03	NA	NA	NA	NA	1.13E-04	1.01E+00	1.14E-04	1.00E+00	3.06E-02	2.49E-01	2.64E+00	3.14E-02	2.64E+00	9.44E-02
UAW2-0250+50 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.59E+00	6.99E+00	3.28E-02	NA	NA	NA	NA	1.13E-04	4.40E+00	4.95E-04	1.00E+00	3.06E-02	1.09E+00	2.64E+00	3.14E-02	2.64E+00	4.11E-01
UAW2-0300 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UAW2-0350 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UAW2-0350+50 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UAW2-0400 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UAW2-0400+150 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UAW2-0450 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UAW2-0450+50 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UAW2-1000 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.59E+00	2.38E+00	1.12E-02	NA	NA	NA	NA	1.13E-04	1.50E+00	1.69E-04	1.00E+00	3.06E-02	3.71E-01	2.64E+00	3.14E-02	2.64E+00	1.40E-01
UAW2-Comp (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UAW3-Comp 1 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.59E+00	2.43E+01	1.14E-01	NA	NA	NA	NA	1.13E-04	1.53E+01	1.72E-03	1.00E+00	3.06E-02	3.78E+00	2.64E+00	3.14E-02	2.64E+00	1.43E+00
UAW4-Comp 1 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.59E+00	2.22E+00	1.04E-02	NA	NA	NA	NA	1.13E-04	1.40E+00	1.58E-04	1.00E+00	3.06E-02	3.46E-01	2.64E+00	3.14E-02	2.64E+00	1.31E-01
UAW5-00 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UAW5-050 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UAW5-100 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UAW5-100+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UAW5-150 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UAW5-150+50 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UAW5-200 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UAW5-250 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UAW5-250+50 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UAW5-300 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UAW5-300+75 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.59E+00	1.16E+01	5.44E-02	NA	NA	NA	NA	1.13E-04	7.30E+00	8.22E-04	1.00E+00	3.06E-02	1.80E+00	2.64E+00	3.14E-02	2.64E+00	6.82E-01
UAW5-350 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UAW5-400 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UAW5-450 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UAW5-500 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UAW5-500+50 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.59E+00	1.06E+01	4.99E-02	NA	NA	NA	NA	1.13E-04	6.70E+00	7.54E-04	1.00E+00	3.06E-02	1.66E+00	2.64E+00	3.14E-02	2.64E+00	6.26E-01
UAW5-550 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UAW5-600 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UAW5-Comp 1 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.59E+00	3.26E+00	1.53E-02	NA	NA	NA	NA	1.13E-04	2.05E+00	2.31E-04	1.00E+00	3.06E-02	5.06E-01	2.64E+00	3.14E-02	2.64E+00	1.92E-01
																						Maximum HQ (Upper Anaconda Mine)	**1.43E+00**

TABLE C-1B: CADMIUM DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 1 - UPPER ANACONDA MINE WASTE REMOVAL AREAS AND WASTE PILES (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **2.95**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
White-Tailed Deer (Large Herbivorous Mammal - Terrestrial)																							
Reference Sites																							
ACBG-1	1.43E+00	NA	NA	NA	NA	1.43E+00	1.26E+00	6.11E-01	8.74E-01	NA	NA	NA	NA	2.86E-02	4.86E-01	1.39E-02	1.65E-02	1.35E+02	1.09E-04	2.64E+00	3.14E-02	1.60E+00	6.79E-05
ACBG-2	1.43E+00	NA	NA	NA	NA	1.43E+00	1.26E+00	6.53E-01	9.35E-01	NA	NA	NA	NA	2.86E-02	5.20E-01	1.49E-02	1.65E-02	1.35E+02	1.16E-04	2.64E+00	3.14E-02	1.60E+00	7.27E-05
Upper Anaconda Mine																						**Minimum HQ (Reference Sites)**	**6.79E-05**
UAW1-00 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UAW1-00+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.59E+00	5.56E+00	7.96E+00	NA	NA	NA	NA	2.86E-02	3.50E+00	1.00E-01	1.65E-02	1.35E+02	9.85E-04	2.64E+00	3.14E-02	1.60E+00	6.16E-04
UAW1-050 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UAW1-100 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UAW1-150 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UAW1-150+75 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.59E+00	1.09E+01	1.56E+01	NA	NA	NA	NA	2.86E-02	6.85E+00	1.96E-01	1.65E-02	1.35E+02	1.93E-03	2.64E+00	3.14E-02	1.60E+00	1.21E-03
UAW1-Comp 1 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.59E+00	5.42E+00	7.75E+00	NA	NA	NA	NA	2.86E-02	3.41E+00	9.76E-02	1.65E-02	1.35E+02	9.60E-04	2.64E+00	3.14E-02	1.60E+00	6.01E-04
UAW2-0000 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UAW2-0000+225 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UAW2-0050 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UAW2-0100 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UAW2-0100+250 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UAW2-0150 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UAW2-0200 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.59E+00	1.54E+00	2.21E+00	NA	NA	NA	NA	2.86E-02	9.70E-01	2.78E-02	1.65E-02	1.35E+02	2.73E-04	2.64E+00	3.14E-02	1.60E+00	1.71E-04
UAW2-0250 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.59E+00	1.60E+00	2.30E+00	NA	NA	NA	NA	2.86E-02	1.01E+00	2.89E-02	1.65E-02	1.35E+02	2.84E-04	2.64E+00	3.14E-02	1.60E+00	1.78E-04
UAW2-0250+50 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.59E+00	6.99E+00	1.00E+01	NA	NA	NA	NA	2.86E-02	4.40E+00	1.26E-01	1.65E-02	1.35E+02	1.24E-03	2.64E+00	3.14E-02	1.60E+00	7.75E-04
UAW2-0300 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UAW2-0350 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UAW2-0350+50 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UAW2-0400 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UAW2-0400+150 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UAW2-0450 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UAW2-0450+50 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UAW2-1000 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.59E+00	2.38E+00	3.41E+00	NA	NA	NA	NA	2.86E-02	1.50E+00	4.30E-02	1.65E-02	1.35E+02	4.22E-04	2.64E+00	3.14E-02	1.60E+00	2.64E-04
UAW2-Comp (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UAW3-Comp 1 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.59E+00	2.43E+01	3.48E+01	NA	NA	NA	NA	2.86E-02	1.53E+01	4.38E-01	1.65E-02	1.35E+02	4.31E-03	2.64E+00	3.14E-02	1.60E+00	2.69E-03
UAW4-Comp 1 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.59E+00	2.22E+00	3.18E+00	NA	NA	NA	NA	2.86E-02	1.40E+00	4.01E-02	1.65E-02	1.35E+02	3.94E-04	2.64E+00	3.14E-02	1.60E+00	2.47E-04
UAW5-00 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UAW5-050 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UAW5-100 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UAW5-100+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UAW5-150 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UAW5-150+50 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UAW5-200 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UAW5-250 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UAW5-250+50 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UAW5-300 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UAW5-300+75 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.59E+00	1.16E+01	1.66E+01	NA	NA	NA	NA	2.86E-02	7.30E+00	2.09E-01	1.65E-02	1.35E+02	2.05E-03	2.64E+00	3.14E-02	1.60E+00	1.29E-03
UAW5-350 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UAW5-400 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UAW5-450 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UAW5-500 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UAW5-500+50 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.59E+00	1.06E+01	1.52E+01	NA	NA	NA	NA	2.86E-02	6.70E+00	1.92E-01	1.65E-02	1.35E+02	1.89E-03	2.64E+00	3.14E-02	1.60E+00	1.18E-03
UAW5-550 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UAW5-600 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UAW5-Comp 1 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.59E+00	3.26E+00	4.66E+00	NA	NA	NA	NA	2.86E-02	2.05E+00	5.87E-02	1.65E-02	1.35E+02	5.77E-04	2.64E+00	3.14E-02	1.60E+00	3.61E-04
																						Maximum HQ (Upper Anaconda Mine)	**2.69E-03**

TABLE C-1B: CADMIUM DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 1 - UPPER ANACONDA MINE WASTE REMOVAL AREAS AND WASTE PILES (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 2.95

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Red Fox (Carnivorous Mammal - Terrestrial)																							
Reference Sites																							
ACBG-1	1.72E-01	1.72E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.86E-01	2.33E-03	2.18E-03	4.54E+00	1.12E-06	2.64E+00	3.14E-02	1.96E+00	5.73E-07
ACBG-2	1.72E-01	1.72E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.20E-01	2.50E-03	2.18E-03	4.54E+00	1.20E-06	2.64E+00	3.14E-02	1.96E+00	6.13E-07
Upper Anaconda Mine																						**Minimum HQ (Reference Sites)**	**5.73E-07**
UAW1-00 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UAW1-00+25 (0-6")	1.72E-01	1.72E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.50E+00	1.68E-02	2.18E-03	4.54E+00	8.08E-06	2.64E+00	3.14E-02	1.96E+00	4.12E-06
UAW1-050 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UAW1-100 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UAW1-150 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UAW1-150+75 (0-6")	1.72E-01	1.72E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	6.85E+00	3.29E-02	2.18E-03	4.54E+00	1.58E-05	2.64E+00	3.14E-02	1.96E+00	8.07E-06
UAW1-Comp 1 (0-6")	1.72E-01	1.72E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.41E+00	1.64E-02	2.18E-03	4.54E+00	7.87E-06	2.64E+00	3.14E-02	1.96E+00	4.02E-06
UAW2-0000 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UAW2-0000+225 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UAW2-0050 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UAW2-0100 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UAW2-0100+250 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UAW2-0150 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UAW2-0200 (0-6")	1.72E-01	1.72E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	9.70E-01	4.66E-03	2.18E-03	4.54E+00	2.24E-06	2.64E+00	3.14E-02	1.96E+00	1.14E-06
UAW2-0250 (0-6")	1.72E-01	1.72E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.01E+00	4.85E-03	2.18E-03	4.54E+00	2.33E-06	2.64E+00	3.14E-02	1.96E+00	1.19E-06
UAW2-0250+50 (0-6")	1.72E-01	1.72E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.40E+00	2.11E-02	2.18E-03	4.54E+00	1.02E-05	2.64E+00	3.14E-02	1.96E+00	5.18E-06
UAW2-0300 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UAW2-0350 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UAW2-0350+50 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UAW2-0400 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UAW2-0400+150 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UAW2-0450 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UAW2-0450+50 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UAW2-1000 (0-6")	1.72E-01	1.72E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.50E+00	7.21E-03	2.18E-03	4.54E+00	3.46E-06	2.64E+00	3.14E-02	1.96E+00	1.77E-06
UAW2-Comp (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UAW3-Comp 1 (0-6")	1.72E-01	1.72E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.53E+01	7.35E-02	2.18E-03	4.54E+00	3.53E-05	2.64E+00	3.14E-02	1.96E+00	1.80E-05
UAW4-Comp 1 (0-6")	1.72E-01	1.72E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.40E+00	6.72E-03	2.18E-03	4.54E+00	3.23E-06	2.64E+00	3.14E-02	1.96E+00	1.65E-06
UAW5-00 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UAW5-050 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UAW5-100 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UAW5-100+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UAW5-150 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UAW5-150+50 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UAW5-200 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UAW5-250 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UAW5-250+50 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UAW5-300 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UAW5-300+75 (0-6")	1.72E-01	1.72E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	7.30E+00	3.51E-02	2.18E-03	4.54E+00	1.68E-05	2.64E+00	3.14E-02	1.96E+00	8.60E-06
UAW5-350 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UAW5-400 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UAW5-450 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UAW5-500 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UAW5-500+50 (0-6")	1.72E-01	1.72E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	6.70E+00	3.22E-02	2.18E-03	4.54E+00	1.55E-05	2.64E+00	3.14E-02	1.96E+00	7.89E-06
UAW5-550 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UAW5-600 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UAW5-Comp 1 (0-6")	1.72E-01	1.72E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.05E+00	9.85E-03	2.18E-03	4.54E+00	4.73E-06	2.64E+00	3.14E-02	1.96E+00	2.42E-06
																						Maximum HQ (Upper Anaconda Mine)	**1.80E-05**

TABLE C-1B: CADMIUM DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 1 - UPPER ANACONDA MINE WASTE REMOVAL AREAS AND WASTE PILES (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 2.95

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Masked Shrew (Omnivorous Mammal - Terrestrial, Wetland)																							
Reference Sites																							
ACBG-1	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	7.00E+00	3.40E+00	2.88E-02	1.10E-03	4.86E-01	5.35E-04	1.00E+00	5.50E-03	5.34E+00	2.64E+00	3.14E-02	2.93E+00	1.82E+00
ACBG-2	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	7.00E+00	3.64E+00	3.08E-02	1.10E-03	5.20E-01	5.73E-04	1.00E+00	5.50E-03	5.71E+00	2.64E+00	3.14E-02	2.93E+00	1.95E+00
Upper Anaconda Mine																						**Minimum HQ (Reference Sites)**	**1.82E+00**
UAW1-00 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UAW1-00+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	7.00E+00	2.45E+01	2.07E-01	1.10E-03	3.50E+00	3.85E-03	1.00E+00	5.50E-03	3.84E+01	2.64E+00	3.14E-02	2.93E+00	1.31E+01
UAW1-050 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UAW1-100 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UAW1-150 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UAW1-150+75 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	7.00E+00	4.79E+01	4.06E-01	1.10E-03	6.85E+00	7.54E-03	1.00E+00	5.50E-03	7.52E+01	2.64E+00	3.14E-02	2.93E+00	2.57E+01
UAW1-Comp 1 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	7.00E+00	2.39E+01	2.02E-01	1.10E-03	3.41E+00	3.75E-03	1.00E+00	5.50E-03	3.74E+01	2.64E+00	3.14E-02	2.93E+00	1.28E+01
UAW2-0000 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UAW2-0000+225 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UAW2-0050 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UAW2-0100 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UAW2-0100+250 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UAW2-0150 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UAW2-0200 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	7.00E+00	6.79E+00	5.75E-02	1.10E-03	9.70E-01	1.07E-03	1.00E+00	5.50E-03	1.06E+01	2.64E+00	3.14E-02	2.93E+00	3.63E+00
UAW2-0250 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	7.00E+00	7.07E+00	5.99E-02	1.10E-03	1.01E+00	1.11E-03	1.00E+00	5.50E-03	1.11E+01	2.64E+00	3.14E-02	2.93E+00	3.78E+00
UAW2-0250+50 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	7.00E+00	3.08E+01	2.61E-01	1.10E-03	4.40E+00	4.84E-03	1.00E+00	5.50E-03	4.83E+01	2.64E+00	3.14E-02	2.93E+00	1.65E+01
UAW2-0300 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UAW2-0350 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UAW2-0350+50 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UAW2-0400 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UAW2-0400+150 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UAW2-0450 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UAW2-0450+50 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UAW2-1000 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	7.00E+00	1.05E+01	8.89E-02	1.10E-03	1.50E+00	1.65E-03	1.00E+00	5.50E-03	1.65E+01	2.64E+00	3.14E-02	2.93E+00	5.62E+00
UAW2-Comp (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	1.00E+00	BB	BB	BB	BB	BB	BB
UAW3-Comp 1 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	7.00E+00	1.07E+02	9.07E-01	1.10E-03	1.53E+01	1.68E-02	1.00E+00	5.50E-03	1.68E+02	2.64E+00	3.14E-02	2.93E+00	5.73E+01
UAW4-Comp 1 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	7.00E+00	9.80E+00	8.30E-02	1.10E-03	1.40E+00	1.54E-03	1.00E+00	5.50E-03	1.54E+01	2.64E+00	3.14E-02	2.93E+00	5.24E+00
UAW5-00 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UAW5-050 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UAW5-100 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UAW5-100+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UAW5-150 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UAW5-150+50 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UAW5-200 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UAW5-250 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UAW5-250+50 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UAW5-300 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UAW5-300+75 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	7.00E+00	5.11E+01	4.33E-01	1.10E-03	7.30E+00	8.04E-03	1.00E+00	5.50E-03	8.01E+01	2.64E+00	3.14E-02	2.93E+00	2.73E+01
UAW5-350 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UAW5-400 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UAW5-450 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UAW5-500 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UAW5-500+50 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	7.00E+00	4.69E+01	3.97E-01	1.10E-03	6.70E+00	7.38E-03	1.00E+00	5.50E-03	7.36E+01	2.64E+00	3.14E-02	2.93E+00	2.51E+01
UAW5-550 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UAW5-600 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UAW5-Comp 1 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	7.00E+00	1.43E+01	1.22E-01	1.10E-03	2.05E+00	2.26E-03	1.00E+00	5.50E-03	2.25E+01	2.64E+00	3.14E-02	2.93E+00	7.68E+00
																						Maximum HQ (Upper Anaconda Mine)	**5.73E+01**

TABLE C-1B: CADMIUM DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 1 - UPPER ANACONDA MINE WASTE REMOVAL AREAS AND WASTE PILES (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **2.95**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)

Notes

1 See Tables 3-1 through 3-13 for ingestion rates, foraging ranges used to calculate the SUF, and body weights.

2 BAFs were calculated by dividing site-collected tissue by collocated soil concentrations (BAFs are in dry weight). The maximum BAF calculated from the Beartrap Creek and Blackfoot River transects was used for site dose calculations. The maximum BAF from the terrestrial reference site was used for reference site dose calculations.

3 The mammal, plant, and invertebrate concentrations were calculated by multiplying the soil concentration by the BAF to generate a tissue concentration (see note 2).

4 Mammal, plant, and invertebrate daily doses were calculated by multiplying the ingestion rate (see note 1) by the tissue concentration (see note 3).

5 Soil concentration from 0 to 6 inches below ground surface at point ID from laboratory analysis. XRF 10 data were unavailable for cadmium. Doses were not calculated for detected and non-detected soil concentrations measured below the minimum reference site concentration, as indicated by BB. For results that were measured at less than the detection limit, doses were calculated using half of the detection limit.

6 Soil daily dose was calculated by multiplying the soil ingestion rate (see note 1) by soil concentration (see note 5).

7 Total daily dose is calculated using the following equation: total daily dose = ([mammal daily dose (if applicable) + plant daily dose (if applicable) + invertebrate daily dose (if applicable) + soil daily dose]*SUF)/receptor species body weight.

8 The TRVs used in this risk assessment represent a mid-range effects level. The derivation of TRVs is described in Navy (1998) and DTSC (2009).

9 Allometrically adjusted TRVs for birds were calculated using the following equation: receptor species TRV = (test species TRV) x (test species body weight / receptor species body weight)$^{(1-1.2)}$.

10 Allometrically adjusted TRVs for mammals were calculated using the following equation: receptor species TRV = (test species TRV) x (test species body weight / receptor species body weight)$^{(1-0.94)}$.

11 HQs were calculated using the following equation: HQ = total daily dose/allometrically adjusted TRV.

12 Highlighted cells indicate an HQ greater than 1.0.

BAF	Bioaccumulation factor	mg/kg	Milligram per kilogram
BB	Below minimum background reference site concentration	NA	Not applicable
DTSC	California Department of Toxic Substances Control	Navy	Department of the Navy
EU	Exposure unit	NE	Not evaluated (no data for that point ID)
HQ	Hazard quotient	SUF	Site use factor
ID	Identification	TRV	Toxicity reference value
kg	Kilogram	XRF	X-ray flourescence
kg/day	Kilogram per day	XRF 10	XRF measurements recorded following drying and seiving through a #10 -mesh screen
mg/day	Milligram per day		

Sources: Department of the Navy. 1998. "Development of Toxicity Reference Values for Conducting Ecological Risk Assessments at Naval Facilities in California, Interim Final." Prepared by Naval Facilities Engineering Command, Engineering Field Activity West (EFA West). San Bruno, California.
DTSC. 2009. HERD Ecological Risk Assessment Note 6. February. Available on-line at: http://www.dtsc.ca.gov/AssessingRisk/upload/CdEconote_Final.pdf.

TABLE C-1C: COPPER DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 1 - UPPER ANACONDA MINE WASTE REMOVAL AREAS AND WASTE PILES (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **2.95**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Mourning Dove (Herbivorous Birds - Terrestrial)																							
Reference Sites																							
ACBG-1	5.76E-03	NA	NA	NA	NA	5.76E-03	7.79E-01	6.20E+01	3.57E-01	NA	NA	NA	NA	5.36E-04	7.96E+01	4.26E-02	1.14E-02	1.09E-01	4.17E-02	5.23E+01	4.09E-01	4.01E+01	1.04E-03
ACBG-2	5.76E-03	NA	NA	NA	NA	5.76E-03	7.79E-01	1.95E+02	1.12E+00	NA	NA	NA	NA	5.36E-04	2.50E+02	1.34E-01	1.14E-02	1.09E-01	1.31E-01	5.23E+01	4.09E-01	4.01E+01	3.26E-03
Upper Anaconda Mine																						**Minimum HQ (Reference Sites)**	**1.04E-03**
UAW1-00 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	1.51E+02	8.70E-01	NA	NA	NA	NA	5.36E-04	1.33E+02	7.15E-02	1.14E-02	1.09E-01	9.82E-02	5.23E+01	4.09E-01	4.01E+01	2.45E-03
UAW1-00+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UAW1-050 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	1.57E+02	9.07E-01	NA	NA	NA	NA	5.36E-04	1.39E+02	7.46E-02	1.14E-02	1.09E-01	1.02E-01	5.23E+01	4.09E-01	4.01E+01	2.55E-03
UAW1-100 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	1.48E+02	8.50E-01	NA	NA	NA	NA	5.36E-04	1.30E+02	6.99E-02	1.14E-02	1.09E-01	9.60E-02	5.23E+01	4.09E-01	4.01E+01	2.39E-03
UAW1-150 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	1.98E+02	1.14E+00	NA	NA	NA	NA	5.36E-04	1.75E+02	9.38E-02	1.14E-02	1.09E-01	1.29E-01	5.23E+01	4.09E-01	4.01E+01	3.21E-03
UAW1-150+75 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	1.01E+02	5.82E-01	NA	NA	NA	NA	5.36E-04	8.93E+01	4.79E-02	1.14E-02	1.09E-01	6.57E-02	5.23E+01	4.09E-01	4.01E+01	1.64E-03
UAW1-Comp 1 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	5.42E+02	3.12E+00	NA	NA	NA	NA	5.36E-04	4.79E+02	2.57E-01	1.14E-02	1.09E-01	3.52E-01	5.23E+01	4.09E-01	4.01E+01	8.78E-03
UAW2-0000 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	3.98E+02	2.29E+00	NA	NA	NA	NA	5.36E-04	3.51E+02	1.88E-01	1.14E-02	1.09E-01	2.59E-01	5.23E+01	4.09E-01	4.01E+01	6.44E-03
UAW2-0000+225 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	1.67E+02	9.65E-01	NA	NA	NA	NA	5.36E-04	1.48E+02	7.93E-02	1.14E-02	1.09E-01	1.09E-01	5.23E+01	4.09E-01	4.01E+01	2.71E-03
UAW2-0050 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	1.03E+02	5.91E-01	NA	NA	NA	NA	5.36E-04	9.06E+01	4.85E-02	1.14E-02	1.09E-01	6.67E-02	5.23E+01	4.09E-01	4.01E+01	1.66E-03
UAW2-0100 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	2.44E+02	1.41E+00	NA	NA	NA	NA	5.36E-04	2.16E+02	1.16E-01	1.14E-02	1.09E-01	1.59E-01	5.23E+01	4.09E-01	4.01E+01	3.96E-03
UAW2-0100+250 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	1.05E+02	6.06E-01	NA	NA	NA	NA	5.36E-04	9.30E+01	4.98E-02	1.14E-02	1.09E-01	6.84E-02	5.23E+01	4.09E-01	4.01E+01	1.71E-03
UAW2-0150 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	1.03E+02	5.95E-01	NA	NA	NA	NA	5.36E-04	9.13E+01	4.89E-02	1.14E-02	1.09E-01	6.72E-02	5.23E+01	4.09E-01	4.01E+01	1.67E-03
UAW2-0200 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	5.64E+02	3.25E+00	NA	NA	NA	NA	5.36E-04	4.98E+02	2.67E-01	1.14E-02	1.09E-01	3.67E-01	5.23E+01	4.09E-01	4.01E+01	9.14E-03
UAW2-0250 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	5.52E+02	3.18E+00	NA	NA	NA	NA	5.36E-04	4.88E+02	2.61E-01	1.14E-02	1.09E-01	3.59E-01	5.23E+01	4.09E-01	4.01E+01	8.95E-03
UAW2-0250+50 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	1.58E+02	9.13E-01	NA	NA	NA	NA	5.36E-04	1.40E+02	7.50E-02	1.14E-02	1.09E-01	1.03E-01	5.23E+01	4.09E-01	4.01E+01	2.57E-03
UAW2-0300 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	8.61E+02	4.96E+00	NA	NA	NA	NA	5.36E-04	7.61E+02	4.08E-01	1.14E-02	1.09E-01	5.60E-01	5.23E+01	4.09E-01	4.01E+01	1.40E-02
UAW2-0350 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	3.59E+02	2.07E+00	NA	NA	NA	NA	5.36E-04	3.17E+02	1.70E-01	1.14E-02	1.09E-01	2.33E-01	5.23E+01	4.09E-01	4.01E+01	5.82E-03
UAW2-0350+50 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	1.47E+02	8.48E-01	NA	NA	NA	NA	5.36E-04	1.30E+02	6.97E-02	1.14E-02	1.09E-01	9.57E-02	5.23E+01	4.09E-01	4.01E+01	2.38E-03
UAW2-0400 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	1.97E+02	1.14E+00	NA	NA	NA	NA	5.36E-04	1.74E+02	9.34E-02	1.14E-02	1.09E-01	1.28E-01	5.23E+01	4.09E-01	4.01E+01	3.20E-03
UAW2-0400+150 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	6.60E+02	3.80E+00	NA	NA	NA	NA	5.36E-04	5.83E+02	3.12E-01	1.14E-02	1.09E-01	4.29E-01	5.23E+01	4.09E-01	4.01E+01	1.07E-02
UAW2-0450 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	3.42E+02	1.97E+00	NA	NA	NA	NA	5.36E-04	3.02E+02	1.62E-01	1.14E-02	1.09E-01	2.23E-01	5.23E+01	4.09E-01	4.01E+01	5.55E-03
UAW2-0450+50 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	2.63E+02	1.51E+00	NA	NA	NA	NA	5.36E-04	2.32E+02	1.24E-01	1.14E-02	1.09E-01	1.71E-01	5.23E+01	4.09E-01	4.01E+01	4.25E-03
UAW2-1000 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	4.33E+02	2.50E+00	NA	NA	NA	NA	5.36E-04	3.83E+02	2.05E-01	1.14E-02	1.09E-01	2.82E-01	5.23E+01	4.09E-01	4.01E+01	7.02E-03
UAW2-Comp (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UAW3-Comp 1 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	1.77E+03	1.02E+01	NA	NA	NA	NA	5.36E-04	1.56E+03	8.36E-01	1.14E-02	1.09E-01	1.15E+00	5.23E+01	4.09E-01	4.01E+01	2.86E-02
UAW4-Comp 1 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	7.62E+02	4.39E+00	NA	NA	NA	NA	5.36E-04	6.74E+02	3.61E-01	1.14E-02	1.09E-01	4.96E-01	5.23E+01	4.09E-01	4.01E+01	1.24E-02
UAW5-00 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UAW5-050 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UAW5-100 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	1.40E+02	8.07E-01	NA	NA	NA	NA	5.36E-04	1.24E+02	6.63E-02	1.14E-02	1.09E-01	9.11E-02	5.23E+01	4.09E-01	4.01E+01	2.27E-03
UAW5-100+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UAW5-150 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	1.14E+02	6.54E-01	NA	NA	NA	NA	5.36E-04	1.00E+02	5.38E-02	1.14E-02	1.09E-01	7.39E-02	5.23E+01	4.09E-01	4.01E+01	1.84E-03
UAW5-150+50 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UAW5-200 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UAW5-250 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	1.59E+02	9.14E-01	NA	NA	NA	NA	5.36E-04	1.40E+02	7.51E-02	1.14E-02	1.09E-01	1.03E-01	5.23E+01	4.09E-01	4.01E+01	2.57E-03
UAW5-250+50 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UAW5-300 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UAW5-300+75 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UAW5-350 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	2.08E+02	1.20E+00	NA	NA	NA	NA	5.36E-04	1.84E+02	9.86E-02	1.14E-02	1.09E-01	1.35E-01	5.23E+01	4.09E-01	4.01E+01	3.37E-03
UAW5-400 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	4.19E+02	2.42E+00	NA	NA	NA	NA	5.36E-04	3.70E+02	1.99E-01	1.14E-02	1.09E-01	2.73E-01	5.23E+01	4.09E-01	4.01E+01	6.79E-03
UAW5-450 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	4.07E+02	2.34E+00	NA	NA	NA	NA	5.36E-04	3.60E+02	1.93E-01	1.14E-02	1.09E-01	2.65E-01	5.23E+01	4.09E-01	4.01E+01	6.59E-03
UAW5-500 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	5.15E+02	2.97E+00	NA	NA	NA	NA	5.36E-04	4.55E+02	2.44E-01	1.14E-02	1.09E-01	3.35E-01	5.23E+01	4.09E-01	4.01E+01	8.35E-03
UAW5-500+50 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	3.44E+02	1.98E+00	NA	NA	NA	NA	5.36E-04	3.04E+02	1.63E-01	1.14E-02	1.09E-01	2.24E-01	5.23E+01	4.09E-01	4.01E+01	5.58E-03
UAW5-550 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	1.71E+02	9.87E-01	NA	NA	NA	NA	5.36E-04	1.51E+02	8.11E-02	1.14E-02	1.09E-01	1.11E-01	5.23E+01	4.09E-01	4.01E+01	2.78E-03
UAW5-600 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	1.39E+02	8.00E-01	NA	NA	NA	NA	5.36E-04	1.23E+02	6.57E-02	1.14E-02	1.09E-01	9.03E-02	5.23E+01	4.09E-01	4.01E+01	2.25E-03
UAW5-Comp 1 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	2.53E+02	1.45E+00	NA	NA	NA	NA	5.36E-04	2.23E+02	1.20E-01	1.14E-02	1.09E-01	1.64E-01	5.23E+01	4.09E-01	4.01E+01	4.09E-03
																						Maximum HQ (Upper Anaconda Mine)	**2.86E-02**

TABLE C-1C: COPPER DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 1 - UPPER ANACONDA MINE WASTE REMOVAL AREAS AND WASTE PILES (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **2.95**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Red-Tailed Hawk (Carnivorous Birds - Terrestrial)																							
Reference Sites																							
ACBG-1	9.00E-02	9.00E-02	6.61E-01	5.26E+01	4.73E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	7.96E+01	4.08E-01	4.23E-03	1.13E+00	1.92E-02	5.23E+01	4.09E-01	6.41E+01	2.99E-04
ACBG-2	9.00E-02	9.00E-02	6.61E-01	1.65E+02	1.49E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.50E+02	1.28E+00	4.23E-03	1.13E+00	6.03E-02	5.23E+01	4.09E-01	6.41E+01	9.41E-04
Upper Anaconda Mine																						**Minimum HQ (Reference Sites)**	**2.99E-04**
UAW1-00 (0-6")	9.00E-02	9.00E-02	1.01E+00	1.35E+02	1.21E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.33E+02	6.84E-01	4.23E-03	1.13E+00	4.78E-02	5.23E+01	4.09E-01	6.41E+01	7.46E-04
UAW1-00+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UAW1-050 (0-6")	9.00E-02	9.00E-02	1.01E+00	1.41E+02	1.26E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.39E+02	7.13E-01	4.23E-03	1.13E+00	4.99E-02	5.23E+01	4.09E-01	6.41E+01	7.78E-04
UAW1-100 (0-6")	9.00E-02	9.00E-02	1.01E+00	1.32E+02	1.19E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.30E+02	6.69E-01	4.23E-03	1.13E+00	4.67E-02	5.23E+01	4.09E-01	6.41E+01	7.29E-04
UAW1-150 (0-6")	9.00E-02	9.00E-02	1.01E+00	1.77E+02	1.59E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.75E+02	8.97E-01	4.23E-03	1.13E+00	6.27E-02	5.23E+01	4.09E-01	6.41E+01	9.79E-04
UAW1-150+75 (0-6")	9.00E-02	9.00E-02	1.01E+00	9.03E+01	8.12E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	8.93E+01	4.58E-01	4.23E-03	1.13E+00	3.20E-02	5.23E+01	4.09E-01	6.41E+01	5.00E-04
UAW1-Comp 1 (0-6")	9.00E-02	9.00E-02	1.01E+00	4.84E+02	4.35E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.79E+02	2.46E+00	4.23E-03	1.13E+00	1.72E-01	5.23E+01	4.09E-01	6.41E+01	2.68E-03
UAW2-0000 (0-6")	9.00E-02	9.00E-02	1.01E+00	3.55E+02	3.19E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.51E+02	1.80E+00	4.23E-03	1.13E+00	1.26E-01	5.23E+01	4.09E-01	6.41E+01	1.97E-03
UAW2-0000+225 (0-6")	9.00E-02	9.00E-02	1.01E+00	1.50E+02	1.35E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.48E+02	7.59E-01	4.23E-03	1.13E+00	5.31E-02	5.23E+01	4.09E-01	6.41E+01	8.28E-04
UAW2-0050 (0-6")	9.00E-02	9.00E-02	1.01E+00	9.15E+01	8.23E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	9.06E+01	4.64E-01	4.23E-03	1.13E+00	3.25E-02	5.23E+01	4.09E-01	6.41E+01	5.07E-04
UAW2-0100 (0-6")	9.00E-02	9.00E-02	1.01E+00	2.18E+02	1.96E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.16E+02	1.11E+00	4.23E-03	1.13E+00	7.74E-02	5.23E+01	4.09E-01	6.41E+01	1.21E-03
UAW2-0100+250 (0-6")	9.00E-02	9.00E-02	1.01E+00	9.40E+01	8.45E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	9.30E+01	4.77E-01	4.23E-03	1.13E+00	3.33E-02	5.23E+01	4.09E-01	6.41E+01	5.20E-04
UAW2-0150 (0-6")	9.00E-02	9.00E-02	1.01E+00	9.23E+01	8.30E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	9.13E+01	4.68E-01	4.23E-03	1.13E+00	3.27E-02	5.23E+01	4.09E-01	6.41E+01	5.11E-04
UAW2-0200 (0-6")	9.00E-02	9.00E-02	1.01E+00	5.03E+02	4.53E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.98E+02	2.55E+00	4.23E-03	1.13E+00	1.79E-01	5.23E+01	4.09E-01	6.41E+01	2.79E-03
UAW2-0250 (0-6")	9.00E-02	9.00E-02	1.01E+00	4.93E+02	4.43E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.88E+02	2.50E+00	4.23E-03	1.13E+00	1.75E-01	5.23E+01	4.09E-01	6.41E+01	2.73E-03
UAW2-0250+50 (0-6")	9.00E-02	9.00E-02	1.01E+00	1.41E+02	1.27E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.40E+02	7.18E-01	4.23E-03	1.13E+00	5.02E-02	5.23E+01	4.09E-01	6.41E+01	7.83E-04
UAW2-0300 (0-6")	9.00E-02	9.00E-02	1.01E+00	7.69E+02	6.92E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	7.61E+02	3.90E+00	4.23E-03	1.13E+00	2.73E-01	5.23E+01	4.09E-01	6.41E+01	4.26E-03
UAW2-0350 (0-6")	9.00E-02	9.00E-02	1.01E+00	3.21E+02	2.88E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.17E+02	1.63E+00	4.23E-03	1.13E+00	1.14E-01	5.23E+01	4.09E-01	6.41E+01	1.77E-03
UAW2-0350+50 (0-6")	9.00E-02	9.00E-02	1.01E+00	1.31E+02	1.18E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.30E+02	6.67E-01	4.23E-03	1.13E+00	4.66E-02	5.23E+01	4.09E-01	6.41E+01	7.27E-04
UAW2-0400 (0-6")	9.00E-02	9.00E-02	1.01E+00	1.76E+02	1.59E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.74E+02	8.94E-01	4.23E-03	1.13E+00	6.25E-02	5.23E+01	4.09E-01	6.41E+01	9.76E-04
UAW2-0400+150 (0-6")	9.00E-02	9.00E-02	1.01E+00	5.89E+02	5.30E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.83E+02	2.99E+00	4.23E-03	1.13E+00	2.09E-01	5.23E+01	4.09E-01	6.41E+01	3.26E-03
UAW2-0450 (0-6")	9.00E-02	9.00E-02	1.01E+00	3.06E+02	2.75E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.02E+02	1.55E+00	4.23E-03	1.13E+00	1.08E-01	5.23E+01	4.09E-01	6.41E+01	1.69E-03
UAW2-0450+50 (0-6")	9.00E-02	9.00E-02	1.01E+00	2.34E+02	2.11E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.32E+02	1.19E+00	4.23E-03	1.13E+00	8.32E-02	5.23E+01	4.09E-01	6.41E+01	1.30E-03
UAW2-1000 (0-6")	9.00E-02	9.00E-02	1.01E+00	3.87E+02	3.48E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.83E+02	1.96E+00	4.23E-03	1.13E+00	1.37E-01	5.23E+01	4.09E-01	6.41E+01	2.14E-03
UAW2-Comp (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UAW3-Comp 1 (0-6")	9.00E-02	9.00E-02	1.01E+00	1.58E+03	1.42E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.56E+03	8.00E+00	4.23E-03	1.13E+00	5.59E-01	5.23E+01	4.09E-01	6.41E+01	8.73E-03
UAW4-Comp 1 (0-6")	9.00E-02	9.00E-02	1.01E+00	6.81E+02	6.12E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	6.74E+02	3.45E+00	4.23E-03	1.13E+00	2.41E-01	5.23E+01	4.09E-01	6.41E+01	3.77E-03
UAW5-00 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UAW5-050 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UAW5-100 (0-6")	9.00E-02	9.00E-02	1.01E+00	1.25E+02	1.13E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.24E+02	6.35E-01	4.23E-03	1.13E+00	4.44E-02	5.23E+01	4.09E-01	6.41E+01	6.92E-04
UAW5-100+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UAW5-150 (0-6")	9.00E-02	9.00E-02	1.01E+00	1.01E+02	9.12E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.00E+02	5.15E-01	4.23E-03	1.13E+00	3.60E-02	5.23E+01	4.09E-01	6.41E+01	5.61E-04
UAW5-150+50 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UAW5-200 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UAW5-250 (0-6")	9.00E-02	9.00E-02	1.01E+00	1.42E+02	1.27E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.40E+02	7.18E-01	4.23E-03	1.13E+00	5.02E-02	5.23E+01	4.09E-01	6.41E+01	7.84E-04
UAW5-250+50 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UAW5-300 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UAW5-300+75 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UAW5-350 (0-6")	9.00E-02	9.00E-02	1.01E+00	1.86E+02	1.67E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.84E+02	9.43E-01	4.23E-03	1.13E+00	6.60E-02	5.23E+01	4.09E-01	6.41E+01	1.03E-03
UAW5-400 (0-6")	9.00E-02	9.00E-02	1.01E+00	3.74E+02	3.37E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.70E+02	1.90E+00	4.23E-03	1.13E+00	1.33E-01	5.23E+01	4.09E-01	6.41E+01	2.07E-03
UAW5-450 (0-6")	9.00E-02	9.00E-02	1.01E+00	3.63E+02	3.27E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.60E+02	1.84E+00	4.23E-03	1.13E+00	1.29E-01	5.23E+01	4.09E-01	6.41E+01	2.01E-03
UAW5-500 (0-6")	9.00E-02	9.00E-02	1.01E+00	4.60E+02	4.14E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.55E+02	2.34E+00	4.23E-03	1.13E+00	1.63E-01	5.23E+01	4.09E-01	6.41E+01	2.55E-03
UAW5-500+50 (0-6")	9.00E-02	9.00E-02	1.01E+00	3.07E+02	2.76E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.04E+02	1.56E+00	4.23E-03	1.13E+00	1.09E-01	5.23E+01	4.09E-01	6.41E+01	1.70E-03
UAW5-550 (0-6")	9.00E-02	9.00E-02	1.01E+00	1.53E+02	1.38E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.51E+02	7.76E-01	4.23E-03	1.13E+00	5.43E-02	5.23E+01	4.09E-01	6.41E+01	8.47E-04
UAW5-600 (0-6")	9.00E-02	9.00E-02	1.01E+00	1.24E+02	1.11E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.23E+02	6.29E-01	4.23E-03	1.13E+00	4.40E-02	5.23E+01	4.09E-01	6.41E+01	6.86E-04
UAW5-Comp 1 (0-6")	9.00E-02	9.00E-02	1.01E+00	2.25E+02	2.03E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.23E+02	1.14E+00	4.23E-03	1.13E+00	8.00E-02	5.23E+01	4.09E-01	6.41E+01	1.25E-03
																						Maximum HQ (Upper Anaconda Mine)	**8.73E-03**

TABLE C-1C: COPPER DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 1 - UPPER ANACONDA MINE WASTE REMOVAL AREAS AND WASTE PILES (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **2.95**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
American Kestrel (Insectivorous Birds - Terrestrial)																							
Reference Sites																							
ACBG-1	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	3.70E+00	2.95E+02	4.06E+00	7.84E-04	7.96E+01	6.24E-02	1.13E-02	1.24E-01	3.75E-01	5.23E+01	4.09E-01	4.12E+01	9.10E-03
ACBG-2	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	3.70E+00	9.26E+02	1.27E+01	7.84E-04	2.50E+02	1.96E-01	1.13E-02	1.24E-01	1.18E+00	5.23E+01	4.09E-01	4.12E+01	2.86E-02
Upper Anaconda Mine																						**Minimum HQ (Reference Sites)**	**9.10E-03**
UAW1-00 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	6.47E+02	8.91E+00	7.84E-04	1.33E+02	1.05E-01	1.13E-02	1.24E-01	8.19E-01	5.23E+01	4.09E-01	4.12E+01	1.99E-02
UAW1-00+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UAW1-050 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	6.75E+02	9.29E+00	7.84E-04	1.39E+02	1.09E-01	1.13E-02	1.24E-01	8.54E-01	5.23E+01	4.09E-01	4.12E+01	2.08E-02
UAW1-100 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	6.32E+02	8.70E+00	7.84E-04	1.30E+02	1.02E-01	1.13E-02	1.24E-01	8.01E-01	5.23E+01	4.09E-01	4.12E+01	1.94E-02
UAW1-150 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	8.49E+02	1.17E+01	7.84E-04	1.75E+02	1.37E-01	1.13E-02	1.24E-01	1.07E+00	5.23E+01	4.09E-01	4.12E+01	2.61E-02
UAW1-150+75 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	4.33E+02	5.96E+00	7.84E-04	8.93E+01	7.01E-02	1.13E-02	1.24E-01	5.48E-01	5.23E+01	4.09E-01	4.12E+01	1.33E-02
UAW1-Comp 1 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	2.32E+03	3.20E+01	7.84E-04	4.79E+02	3.76E-01	1.13E-02	1.24E-01	2.94E+00	5.23E+01	4.09E-01	4.12E+01	7.14E-02
UAW2-0000 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	1.70E+03	2.35E+01	7.84E-04	3.51E+02	2.76E-01	1.13E-02	1.24E-01	2.16E+00	5.23E+01	4.09E-01	4.12E+01	5.24E-02
UAW2-0000+225 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	7.18E+02	9.88E+00	7.84E-04	1.48E+02	1.16E-01	1.13E-02	1.24E-01	9.09E-01	5.23E+01	4.09E-01	4.12E+01	2.21E-02
UAW2-0050 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	4.39E+02	6.05E+00	7.84E-04	9.06E+01	7.10E-02	1.13E-02	1.24E-01	5.56E-01	5.23E+01	4.09E-01	4.12E+01	1.35E-02
UAW2-0100 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	1.05E+03	1.44E+01	7.84E-04	2.16E+02	1.69E-01	1.13E-02	1.24E-01	1.33E+00	5.23E+01	4.09E-01	4.12E+01	3.22E-02
UAW2-0100+250 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	4.51E+02	6.21E+00	7.84E-04	9.30E+01	7.29E-02	1.13E-02	1.24E-01	5.71E-01	5.23E+01	4.09E-01	4.12E+01	1.39E-02
UAW2-0150 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	4.43E+02	6.10E+00	7.84E-04	9.13E+01	7.16E-02	1.13E-02	1.24E-01	5.61E-01	5.23E+01	4.09E-01	4.12E+01	1.36E-02
UAW2-0200 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	2.42E+03	3.32E+01	7.84E-04	4.98E+02	3.91E-01	1.13E-02	1.24E-01	3.06E+00	5.23E+01	4.09E-01	4.12E+01	7.43E-02
UAW2-0250 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	2.37E+03	3.26E+01	7.84E-04	4.88E+02	3.83E-01	1.13E-02	1.24E-01	3.00E+00	5.23E+01	4.09E-01	4.12E+01	7.28E-02
UAW2-0250+50 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	6.79E+02	9.34E+00	7.84E-04	1.40E+02	1.10E-01	1.13E-02	1.24E-01	8.60E-01	5.23E+01	4.09E-01	4.12E+01	2.09E-02
UAW2-0300 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	3.69E+03	5.08E+01	7.84E-04	7.61E+02	5.97E-01	1.13E-02	1.24E-01	4.67E+00	5.23E+01	4.09E-01	4.12E+01	1.14E-01
UAW2-0350 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	1.54E+03	2.12E+01	7.84E-04	3.17E+02	2.49E-01	1.13E-02	1.24E-01	1.95E+00	5.23E+01	4.09E-01	4.12E+01	4.73E-02
UAW2-0350+50 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	6.31E+02	8.68E+00	7.84E-04	1.30E+02	1.02E-01	1.13E-02	1.24E-01	7.98E-01	5.23E+01	4.09E-01	4.12E+01	1.94E-02
UAW2-0400 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	8.46E+02	1.16E+01	7.84E-04	1.74E+02	1.37E-01	1.13E-02	1.24E-01	1.07E+00	5.23E+01	4.09E-01	4.12E+01	2.60E-02
UAW2-0400+150 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	2.83E+03	3.89E+01	7.84E-04	5.83E+02	4.57E-01	1.13E-02	1.24E-01	3.58E+00	5.23E+01	4.09E-01	4.12E+01	8.70E-02
UAW2-0450 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	1.47E+03	2.02E+01	7.84E-04	3.02E+02	2.37E-01	1.13E-02	1.24E-01	1.86E+00	5.23E+01	4.09E-01	4.12E+01	4.51E-02
UAW2-0450+50 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	1.13E+03	1.55E+01	7.84E-04	2.32E+02	1.82E-01	1.13E-02	1.24E-01	1.42E+00	5.23E+01	4.09E-01	4.12E+01	3.46E-02
UAW2-1000 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	1.86E+03	2.56E+01	7.84E-04	3.83E+02	3.00E-01	1.13E-02	1.24E-01	2.35E+00	5.23E+01	4.09E-01	4.12E+01	5.71E-02
UAW2-Comp (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UAW3-Comp 1 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	7.57E+03	1.04E+02	7.84E-04	1.56E+03	1.22E+00	1.13E-02	1.24E-01	9.58E+00	5.23E+01	4.09E-01	4.12E+01	2.33E-01
UAW4-Comp 1 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	3.27E+03	4.50E+01	7.84E-04	6.74E+02	5.28E-01	1.13E-02	1.24E-01	4.14E+00	5.23E+01	4.09E-01	4.12E+01	1.00E-01
UAW5-00 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UAW5-050 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UAW5-100 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	6.00E+02	8.26E+00	7.84E-04	1.24E+02	9.71E-02	1.13E-02	1.24E-01	7.60E-01	5.23E+01	4.09E-01	4.12E+01	1.85E-02
UAW5-100+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UAW5-150 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	4.87E+02	6.70E+00	7.84E-04	1.00E+02	7.87E-02	1.13E-02	1.24E-01	6.16E-01	5.23E+01	4.09E-01	4.12E+01	1.50E-02
UAW5-150+50 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UAW5-200 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UAW5-250 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	6.80E+02	9.35E+00	7.84E-04	1.40E+02	1.10E-01	1.13E-02	1.24E-01	8.60E-01	5.23E+01	4.09E-01	4.12E+01	2.09E-02
UAW5-250+50 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UAW5-300 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UAW5-300+75 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UAW5-350 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	8.92E+02	1.23E+01	7.84E-04	1.84E+02	1.44E-01	1.13E-02	1.24E-01	1.13E+00	5.23E+01	4.09E-01	4.12E+01	2.74E-02
UAW5-400 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	1.80E+03	2.47E+01	7.84E-04	3.70E+02	2.91E-01	1.13E-02	1.24E-01	2.27E+00	5.23E+01	4.09E-01	4.12E+01	5.53E-02
UAW5-450 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	1.74E+03	2.40E+01	7.84E-04	3.60E+02	2.82E-01	1.13E-02	1.24E-01	2.21E+00	5.23E+01	4.09E-01	4.12E+01	5.36E-02
UAW5-500 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	2.21E+03	3.04E+01	7.84E-04	4.55E+02	3.57E-01	1.13E-02	1.24E-01	2.80E+00	5.23E+01	4.09E-01	4.12E+01	6.79E-02
UAW5-500+50 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	1.47E+03	2.03E+01	7.84E-04	3.04E+02	2.38E-01	1.13E-02	1.24E-01	1.87E+00	5.23E+01	4.09E-01	4.12E+01	4.53E-02
UAW5-550 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	7.34E+02	1.01E+01	7.84E-04	1.51E+02	1.19E-01	1.13E-02	1.24E-01	9.29E-01	5.23E+01	4.09E-01	4.12E+01	2.26E-02
UAW5-600 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	5.95E+02	8.19E+00	7.84E-04	1.23E+02	9.62E-02	1.13E-02	1.24E-01	7.53E-01	5.23E+01	4.09E-01	4.12E+01	1.83E-02
UAW5-Comp 1 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	1.08E+03	1.49E+01	7.84E-04	2.23E+02	1.75E-01	1.13E-02	1.24E-01	1.37E+00	5.23E+01	4.09E-01	4.12E+01	3.33E-02
																						Maximum HQ (Upper Anaconda Mine)	**2.33E-01**

TABLE C-1C: COPPER DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 1 - UPPER ANACONDA MINE WASTE REMOVAL AREAS AND WASTE PILES (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **2.95**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Meadow Vole (Small Herbivorous Mammal - Terrestrial)																							
Reference Sites																							
ACBG-1	4.69E-03	NA	NA	NA	NA	4.69E-03	7.79E-01	6.20E+01	2.91E-01	NA	NA	NA	NA	1.13E-04	7.96E+01	8.96E-03	1.00E+00	3.06E-02	9.79E+00	6.32E+02	2.47E-02	6.24E+02	1.57E-02
ACBG-2	4.69E-03	NA	NA	NA	NA	4.69E-03	7.79E-01	1.95E+02	9.13E-01	NA	NA	NA	NA	1.13E-04	2.50E+02	2.81E-02	1.00E+00	3.06E-02	3.08E+01	6.32E+02	2.47E-02	6.24E+02	4.93E-02
Upper Anaconda Mine																						**Minimum HQ (Reference Sites)**	**1.57E-02**
UAW1-00 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	1.51E+02	7.08E-01	NA	NA	NA	NA	1.13E-04	1.33E+02	1.50E-02	1.00E+00	3.06E-02	2.36E+01	6.32E+02	2.47E-02	6.24E+02	3.79E-02
UAW1-00+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UAW1-050 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	1.57E+02	7.38E-01	NA	NA	NA	NA	1.13E-04	1.39E+02	1.57E-02	1.00E+00	3.06E-02	2.46E+01	6.32E+02	2.47E-02	6.24E+02	3.95E-02
UAW1-100 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	1.48E+02	6.92E-01	NA	NA	NA	NA	1.13E-04	1.30E+02	1.47E-02	1.00E+00	3.06E-02	2.31E+01	6.32E+02	2.47E-02	6.24E+02	3.70E-02
UAW1-150 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	1.98E+02	9.29E-01	NA	NA	NA	NA	1.13E-04	1.75E+02	1.97E-02	1.00E+00	3.06E-02	3.10E+01	6.32E+02	2.47E-02	6.24E+02	4.97E-02
UAW1-150+75 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	1.01E+02	4.74E-01	NA	NA	NA	NA	1.13E-04	8.93E+01	1.01E-02	1.00E+00	3.06E-02	1.58E+01	6.32E+02	2.47E-02	6.24E+02	2.54E-02
UAW1-Comp 1 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	5.42E+02	2.54E+00	NA	NA	NA	NA	1.13E-04	4.79E+02	5.39E-02	1.00E+00	3.06E-02	8.48E+01	6.32E+02	2.47E-02	6.24E+02	1.36E-01
UAW2-0000 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	3.98E+02	1.86E+00	NA	NA	NA	NA	1.13E-04	3.51E+02	3.95E-02	1.00E+00	3.06E-02	6.22E+01	6.32E+02	2.47E-02	6.24E+02	9.98E-02
UAW2-0000+225 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	1.67E+02	7.85E-01	NA	NA	NA	NA	1.13E-04	1.48E+02	1.67E-02	1.00E+00	3.06E-02	2.62E+01	6.32E+02	2.47E-02	6.24E+02	4.20E-02
UAW2-0050 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	1.03E+02	4.81E-01	NA	NA	NA	NA	1.13E-04	9.06E+01	1.02E-02	1.00E+00	3.06E-02	1.60E+01	6.32E+02	2.47E-02	6.24E+02	2.57E-02
UAW2-0100 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	2.44E+02	1.15E+00	NA	NA	NA	NA	1.13E-04	2.16E+02	2.43E-02	1.00E+00	3.06E-02	3.82E+01	6.32E+02	2.47E-02	6.24E+02	6.13E-02
UAW2-0100+250 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	1.05E+02	4.93E-01	NA	NA	NA	NA	1.13E-04	9.30E+01	1.05E-02	1.00E+00	3.06E-02	1.65E+01	6.32E+02	2.47E-02	6.24E+02	2.64E-02
UAW2-0150 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	1.03E+02	4.85E-01	NA	NA	NA	NA	1.13E-04	9.13E+01	1.03E-02	1.00E+00	3.06E-02	1.62E+01	6.32E+02	2.47E-02	6.24E+02	2.59E-02
UAW2-0200 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	5.64E+02	2.64E+00	NA	NA	NA	NA	1.13E-04	4.98E+02	5.61E-02	1.00E+00	3.06E-02	8.82E+01	6.32E+02	2.47E-02	6.24E+02	1.41E-01
UAW2-0250 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	5.52E+02	2.59E+00	NA	NA	NA	NA	1.13E-04	4.88E+02	5.49E-02	1.00E+00	3.06E-02	8.64E+01	6.32E+02	2.47E-02	6.24E+02	1.39E-01
UAW2-0250+50 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	1.58E+02	7.43E-01	NA	NA	NA	NA	1.13E-04	1.40E+02	1.58E-02	1.00E+00	3.06E-02	2.48E+01	6.32E+02	2.47E-02	6.24E+02	3.98E-02
UAW2-0300 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	8.61E+02	4.04E+00	NA	NA	NA	NA	1.13E-04	7.61E+02	8.56E-02	1.00E+00	3.06E-02	1.35E+02	6.32E+02	2.47E-02	6.24E+02	2.16E-01
UAW2-0350 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	3.59E+02	1.68E+00	NA	NA	NA	NA	1.13E-04	3.17E+02	3.57E-02	1.00E+00	3.06E-02	5.62E+01	6.32E+02	2.47E-02	6.24E+02	9.01E-02
UAW2-0350+50 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	1.47E+02	6.90E-01	NA	NA	NA	NA	1.13E-04	1.30E+02	1.46E-02	1.00E+00	3.06E-02	2.30E+01	6.32E+02	2.47E-02	6.24E+02	3.69E-02
UAW2-0400 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	1.97E+02	9.25E-01	NA	NA	NA	NA	1.13E-04	1.74E+02	1.96E-02	1.00E+00	3.06E-02	3.09E+01	6.32E+02	2.47E-02	6.24E+02	4.95E-02
UAW2-0400+150 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	6.60E+02	3.09E+00	NA	NA	NA	NA	1.13E-04	5.83E+02	6.56E-02	1.00E+00	3.06E-02	1.03E+02	6.32E+02	2.47E-02	6.24E+02	1.66E-01
UAW2-0450 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	3.42E+02	1.60E+00	NA	NA	NA	NA	1.13E-04	3.02E+02	3.40E-02	1.00E+00	3.06E-02	5.36E+01	6.32E+02	2.47E-02	6.24E+02	8.59E-02
UAW2-0450+50 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	2.63E+02	1.23E+00	NA	NA	NA	NA	1.13E-04	2.32E+02	2.61E-02	1.00E+00	3.06E-02	4.11E+01	6.32E+02	2.47E-02	6.24E+02	6.59E-02
UAW2-1000 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	4.33E+02	2.03E+00	NA	NA	NA	NA	1.13E-04	3.83E+02	4.31E-02	1.00E+00	3.06E-02	6.78E+01	6.32E+02	2.47E-02	6.24E+02	1.09E-01
UAW2-Comp (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UAW3-Comp 1 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	1.77E+03	8.28E+00	NA	NA	NA	NA	1.13E-04	1.56E+03	1.76E-01	1.00E+00	3.06E-02	2.76E+02	6.32E+02	2.47E-02	6.24E+02	4.43E-01
UAW4-Comp 1 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	7.62E+02	3.57E+00	NA	NA	NA	NA	1.13E-04	6.74E+02	7.58E-02	1.00E+00	3.06E-02	1.19E+02	6.32E+02	2.47E-02	6.24E+02	1.91E-01
UAW5-00 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UAW5-050 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UAW5-100 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	1.40E+02	6.57E-01	NA	NA	NA	NA	1.13E-04	1.24E+02	1.39E-02	1.00E+00	3.06E-02	2.19E+01	6.32E+02	2.47E-02	6.24E+02	3.52E-02
UAW5-100+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UAW5-150 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	1.14E+02	5.32E-01	NA	NA	NA	NA	1.13E-04	1.00E+02	1.13E-02	1.00E+00	3.06E-02	1.78E+01	6.32E+02	2.47E-02	6.24E+02	2.85E-02
UAW5-150+50 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UAW5-200 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UAW5-250 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	1.59E+02	7.44E-01	NA	NA	NA	NA	1.13E-04	1.40E+02	1.58E-02	1.00E+00	3.06E-02	2.48E+01	6.32E+02	2.47E-02	6.24E+02	3.98E-02
UAW5-250+50 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UAW5-300 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UAW5-300+75 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UAW5-350 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	2.08E+02	9.76E-01	NA	NA	NA	NA	1.13E-04	1.84E+02	2.07E-02	1.00E+00	3.06E-02	3.26E+01	6.32E+02	2.47E-02	6.24E+02	5.23E-02
UAW5-400 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	4.19E+02	1.97E+00	NA	NA	NA	NA	1.13E-04	3.70E+02	4.17E-02	1.00E+00	3.06E-02	6.56E+01	6.32E+02	2.47E-02	6.24E+02	1.05E-01
UAW5-450 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	4.07E+02	1.91E+00	NA	NA	NA	NA	1.13E-04	3.60E+02	4.05E-02	1.00E+00	3.06E-02	6.37E+01	6.32E+02	2.47E-02	6.24E+02	1.02E-01
UAW5-500 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	5.15E+02	2.42E+00	NA	NA	NA	NA	1.13E-04	4.55E+02	5.13E-02	1.00E+00	3.06E-02	8.07E+01	6.32E+02	2.47E-02	6.24E+02	1.29E-01
UAW5-500+50 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	3.44E+02	1.61E+00	NA	NA	NA	NA	1.13E-04	3.04E+02	3.42E-02	1.00E+00	3.06E-02	5.38E+01	6.32E+02	2.47E-02	6.24E+02	8.63E-02
UAW5-550 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	1.71E+02	8.03E-01	NA	NA	NA	NA	1.13E-04	1.51E+02	1.70E-02	1.00E+00	3.06E-02	2.68E+01	6.32E+02	2.47E-02	6.24E+02	4.30E-02
UAW5-600 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	1.39E+02	6.51E-01	NA	NA	NA	NA	1.13E-04	1.23E+02	1.38E-02	1.00E+00	3.06E-02	2.17E+01	6.32E+02	2.47E-02	6.24E+02	3.48E-02
UAW5-Comp 1 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	2.53E+02	1.18E+00	NA	NA	NA	NA	1.13E-04	2.23E+02	2.51E-02	1.00E+00	3.06E-02	3.95E+01	6.32E+02	2.47E-02	6.24E+02	6.34E-02
																						Maximum HQ (Upper Anaconda Mine)	**4.43E-01**

TABLE C-1C: COPPER DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 1 - UPPER ANACONDA MINE WASTE REMOVAL AREAS AND WASTE PILES (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **2.95**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
White-Tailed Deer (Large Herbivorous Mammal - Terrestrial)																							
Reference Sites																							
ACBG-1	1.43E+00	NA	NA	NA	NA	1.43E+00	7.79E-01	6.20E+01	8.87E+01	NA	NA	NA	NA	2.86E-02	7.96E+01	2.28E+00	1.65E-02	1.35E+02	1.11E-02	6.32E+02	2.47E-02	3.77E+02	2.95E-05
ACBG-2	1.43E+00	NA	NA	NA	NA	1.43E+00	7.79E-01	1.95E+02	2.79E+02	NA	NA	NA	NA	2.86E-02	2.50E+02	7.16E+00	1.65E-02	1.35E+02	3.50E-02	6.32E+02	2.47E-02	3.77E+02	9.28E-05
Upper Anaconda Mine																						**Minimum HQ (Reference Sites)**	**2.95E-05**
UAW1-00 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	1.51E+02	2.16E+02	NA	NA	NA	NA	2.86E-02	1.33E+02	3.82E+00	1.65E-02	1.35E+02	2.69E-02	6.32E+02	2.47E-02	3.77E+02	7.14E-05
UAW1-00+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UAW1-050 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	1.57E+02	2.25E+02	NA	NA	NA	NA	2.86E-02	1.39E+02	3.98E+00	1.65E-02	1.35E+02	2.80E-02	6.32E+02	2.47E-02	3.77E+02	7.44E-05
UAW1-100 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	1.48E+02	2.11E+02	NA	NA	NA	NA	2.86E-02	1.30E+02	3.73E+00	1.65E-02	1.35E+02	2.63E-02	6.32E+02	2.47E-02	3.77E+02	6.97E-05
UAW1-150 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	1.98E+02	2.84E+02	NA	NA	NA	NA	2.86E-02	1.75E+02	5.01E+00	1.65E-02	1.35E+02	3.53E-02	6.32E+02	2.47E-02	3.77E+02	9.36E-05
UAW1-150+75 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	1.01E+02	1.45E+02	NA	NA	NA	NA	2.86E-02	8.93E+01	2.56E+00	1.65E-02	1.35E+02	1.80E-02	6.32E+02	2.47E-02	3.77E+02	4.78E-05
UAW1-Comp 1 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	5.42E+02	7.76E+02	NA	NA	NA	NA	2.86E-02	4.79E+02	1.37E+01	1.65E-02	1.35E+02	9.65E-02	6.32E+02	2.47E-02	3.77E+02	2.56E-04
UAW2-0000 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	3.98E+02	5.69E+02	NA	NA	NA	NA	2.86E-02	3.51E+02	1.01E+01	1.65E-02	1.35E+02	7.08E-02	6.32E+02	2.47E-02	3.77E+02	1.88E-04
UAW2-0000+225 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	1.67E+02	2.40E+02	NA	NA	NA	NA	2.86E-02	1.48E+02	4.24E+00	1.65E-02	1.35E+02	2.98E-02	6.32E+02	2.47E-02	3.77E+02	7.92E-05
UAW2-0050 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	1.03E+02	1.47E+02	NA	NA	NA	NA	2.86E-02	9.06E+01	2.59E+00	1.65E-02	1.35E+02	1.83E-02	6.32E+02	2.47E-02	3.77E+02	4.84E-05
UAW2-0100 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	2.44E+02	3.50E+02	NA	NA	NA	NA	2.86E-02	2.16E+02	6.18E+00	1.65E-02	1.35E+02	4.35E-02	6.32E+02	2.47E-02	3.77E+02	1.15E-04
UAW2-0100+250 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	1.05E+02	1.51E+02	NA	NA	NA	NA	2.86E-02	9.30E+01	2.66E+00	1.65E-02	1.35E+02	1.87E-02	6.32E+02	2.47E-02	3.77E+02	4.97E-05
UAW2-0150 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	1.03E+02	1.48E+02	NA	NA	NA	NA	2.86E-02	9.13E+01	2.61E+00	1.65E-02	1.35E+02	1.84E-02	6.32E+02	2.47E-02	3.77E+02	4.88E-05
UAW2-0200 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	5.64E+02	8.07E+02	NA	NA	NA	NA	2.86E-02	4.98E+02	1.43E+01	1.65E-02	1.35E+02	1.00E-01	6.32E+02	2.47E-02	3.77E+02	2.66E-04
UAW2-0250 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	5.52E+02	7.91E+02	NA	NA	NA	NA	2.86E-02	4.88E+02	1.40E+01	1.65E-02	1.35E+02	9.83E-02	6.32E+02	2.47E-02	3.77E+02	2.61E-04
UAW2-0250+50 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	1.58E+02	2.27E+02	NA	NA	NA	NA	2.86E-02	1.40E+02	4.01E+00	1.65E-02	1.35E+02	2.82E-02	6.32E+02	2.47E-02	3.77E+02	7.49E-05
UAW2-0300 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	8.61E+02	1.23E+03	NA	NA	NA	NA	2.86E-02	7.61E+02	2.18E+01	1.65E-02	1.35E+02	1.53E-01	6.32E+02	2.47E-02	3.77E+02	4.07E-04
UAW2-0350 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	3.59E+02	5.14E+02	NA	NA	NA	NA	2.86E-02	3.17E+02	9.08E+00	1.65E-02	1.35E+02	6.39E-02	6.32E+02	2.47E-02	3.77E+02	1.70E-04
UAW2-0350+50 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	1.47E+02	2.11E+02	NA	NA	NA	NA	2.86E-02	1.30E+02	3.72E+00	1.65E-02	1.35E+02	2.62E-02	6.32E+02	2.47E-02	3.77E+02	6.95E-05
UAW2-0400 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	1.97E+02	2.83E+02	NA	NA	NA	NA	2.86E-02	1.74E+02	4.99E+00	1.65E-02	1.35E+02	3.52E-02	6.32E+02	2.47E-02	3.77E+02	9.33E-05
UAW2-0400+150 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	6.60E+02	9.45E+02	NA	NA	NA	NA	2.86E-02	5.83E+02	1.67E+01	1.65E-02	1.35E+02	1.18E-01	6.32E+02	2.47E-02	3.77E+02	3.12E-04
UAW2-0450 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	3.42E+02	4.90E+02	NA	NA	NA	NA	2.86E-02	3.02E+02	8.66E+00	1.65E-02	1.35E+02	6.10E-02	6.32E+02	2.47E-02	3.77E+02	1.62E-04
UAW2-0450+50 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	2.63E+02	3.76E+02	NA	NA	NA	NA	2.86E-02	2.32E+02	6.64E+00	1.65E-02	1.35E+02	4.68E-02	6.32E+02	2.47E-02	3.77E+02	1.24E-04
UAW2-1000 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	4.33E+02	6.20E+02	NA	NA	NA	NA	2.86E-02	3.83E+02	1.10E+01	1.65E-02	1.35E+02	7.72E-02	6.32E+02	2.47E-02	3.77E+02	2.05E-04
UAW2-Comp (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UAW3-Comp 1 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	1.77E+03	2.53E+03	NA	NA	NA	NA	2.86E-02	1.56E+03	4.47E+01	1.65E-02	1.35E+02	3.15E-01	6.32E+02	2.47E-02	3.77E+02	8.35E-04
UAW4-Comp 1 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	7.62E+02	1.09E+03	NA	NA	NA	NA	2.86E-02	6.74E+02	1.93E+01	1.65E-02	1.35E+02	1.36E-01	6.32E+02	2.47E-02	3.77E+02	3.60E-04
UAW5-00 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UAW5-050 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UAW5-100 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	1.40E+02	2.01E+02	NA	NA	NA	NA	2.86E-02	1.24E+02	3.54E+00	1.65E-02	1.35E+02	2.50E-02	6.32E+02	2.47E-02	3.77E+02	6.62E-05
UAW5-100+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UAW5-150 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	1.14E+02	1.63E+02	NA	NA	NA	NA	2.86E-02	1.00E+02	2.87E+00	1.65E-02	1.35E+02	2.02E-02	6.32E+02	2.47E-02	3.77E+02	5.37E-05
UAW5-150+50 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UAW5-200 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UAW5-250 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	1.59E+02	2.27E+02	NA	NA	NA	NA	2.86E-02	1.40E+02	4.01E+00	1.65E-02	1.35E+02	2.82E-02	6.32E+02	2.47E-02	3.77E+02	7.49E-05
UAW5-250+50 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UAW5-300 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UAW5-300+75 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UAW5-350 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	2.08E+02	2.98E+02	NA	NA	NA	NA	2.86E-02	1.84E+02	5.27E+00	1.65E-02	1.35E+02	3.71E-02	6.32E+02	2.47E-02	3.77E+02	9.84E-05
UAW5-400 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	4.19E+02	6.00E+02	NA	NA	NA	NA	2.86E-02	3.70E+02	1.06E+01	1.65E-02	1.35E+02	7.47E-02	6.32E+02	2.47E-02	3.77E+02	1.98E-04
UAW5-450 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	4.07E+02	5.82E+02	NA	NA	NA	NA	2.86E-02	3.60E+02	1.03E+01	1.65E-02	1.35E+02	7.25E-02	6.32E+02	2.47E-02	3.77E+02	1.92E-04
UAW5-500 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	5.15E+02	7.38E+02	NA	NA	NA	NA	2.86E-02	4.55E+02	1.30E+01	1.65E-02	1.35E+02	9.18E-02	6.32E+02	2.47E-02	3.77E+02	2.44E-04
UAW5-500+50 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	3.44E+02	4.93E+02	NA	NA	NA	NA	2.86E-02	3.04E+02	8.70E+00	1.65E-02	1.35E+02	6.13E-02	6.32E+02	2.47E-02	3.77E+02	1.63E-04
UAW5-550 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	1.71E+02	2.45E+02	NA	NA	NA	NA	2.86E-02	1.51E+02	4.33E+00	1.65E-02	1.35E+02	3.05E-02	6.32E+02	2.47E-02	3.77E+02	8.10E-05
UAW5-600 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	1.39E+02	1.99E+02	NA	NA	NA	NA	2.86E-02	1.23E+02	3.51E+00	1.65E-02	1.35E+02	2.47E-02	6.32E+02	2.47E-02	3.77E+02	6.56E-05
UAW5-Comp 1 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	2.53E+02	3.62E+02	NA	NA	NA	NA	2.86E-02	2.23E+02	6.39E+00	1.65E-02	1.35E+02	4.50E-02	6.32E+02	2.47E-02	3.77E+02	1.19E-04
																						Maximum HQ (Upper Anaconda Mine)	**8.35E-04**

TABLE C-1C: COPPER DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 1 - UPPER ANACONDA MINE WASTE REMOVAL AREAS AND WASTE PILES (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **2.95**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Red Fox (Carnivorous Mammal - Terrestrial)																							
Reference Sites																							
ACBG-1	1.72E-01	1.72E-01	6.61E-01	5.26E+01	9.02E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	7.96E+01	3.82E-01	2.18E-03	4.54E+00	4.52E-03	6.32E+02	2.47E-02	4.62E+02	9.78E-06
ACBG-2	1.72E-01	1.72E-01	6.61E-01	1.65E+02	2.83E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.50E+02	1.20E+00	2.18E-03	4.54E+00	1.42E-02	6.32E+02	2.47E-02	4.62E+02	3.07E-05
Upper Anaconda Mine																						**Minimum HQ (Reference Sites)**	**9.78E-06**
UAW1-00 (0-6")	1.72E-01	1.72E-01	1.01E+00	1.35E+02	2.31E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.33E+02	6.41E-01	2.18E-03	4.54E+00	1.14E-02	6.32E+02	2.47E-02	4.62E+02	2.47E-05
UAW1-00+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UAW1-050 (0-6")	1.72E-01	1.72E-01	1.01E+00	1.41E+02	2.41E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.39E+02	6.68E-01	2.18E-03	4.54E+00	1.19E-02	6.32E+02	2.47E-02	4.62E+02	2.58E-05
UAW1-100 (0-6")	1.72E-01	1.72E-01	1.01E+00	1.32E+02	2.26E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.30E+02	6.26E-01	2.18E-03	4.54E+00	1.12E-02	6.32E+02	2.47E-02	4.62E+02	2.42E-05
UAW1-150 (0-6")	1.72E-01	1.72E-01	1.01E+00	1.77E+02	3.03E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.75E+02	8.41E-01	2.18E-03	4.54E+00	1.50E-02	6.32E+02	2.47E-02	4.62E+02	3.24E-05
UAW1-150+75 (0-6")	1.72E-01	1.72E-01	1.01E+00	9.03E+01	1.55E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	8.93E+01	4.29E-01	2.18E-03	4.54E+00	7.64E-03	6.32E+02	2.47E-02	4.62E+02	1.65E-05
UAW1-Comp 1 (0-6")	1.72E-01	1.72E-01	1.01E+00	4.84E+02	8.30E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.79E+02	2.30E+00	2.18E-03	4.54E+00	4.10E-02	6.32E+02	2.47E-02	4.62E+02	8.87E-05
UAW2-0000 (0-6")	1.72E-01	1.72E-01	1.01E+00	3.55E+02	6.09E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.51E+02	1.69E+00	2.18E-03	4.54E+00	3.01E-02	6.32E+02	2.47E-02	4.62E+02	6.51E-05
UAW2-0000+225 (0-6")	1.72E-01	1.72E-01	1.01E+00	1.50E+02	2.57E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.48E+02	7.11E-01	2.18E-03	4.54E+00	1.27E-02	6.32E+02	2.47E-02	4.62E+02	2.74E-05
UAW2-0050 (0-6")	1.72E-01	1.72E-01	1.01E+00	9.15E+01	1.57E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	9.06E+01	4.35E-01	2.18E-03	4.54E+00	7.75E-03	6.32E+02	2.47E-02	4.62E+02	1.68E-05
UAW2-0100 (0-6")	1.72E-01	1.72E-01	1.01E+00	2.18E+02	3.74E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.16E+02	1.04E+00	2.18E-03	4.54E+00	1.85E-02	6.32E+02	2.47E-02	4.62E+02	4.00E-05
UAW2-0100+250 (0-6")	1.72E-01	1.72E-01	1.01E+00	9.40E+01	1.61E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	9.30E+01	4.47E-01	2.18E-03	4.54E+00	7.96E-03	6.32E+02	2.47E-02	4.62E+02	1.72E-05
UAW2-0150 (0-6")	1.72E-01	1.72E-01	1.01E+00	9.23E+01	1.58E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	9.13E+01	4.39E-01	2.18E-03	4.54E+00	7.82E-03	6.32E+02	2.47E-02	4.62E+02	1.69E-05
UAW2-0200 (0-6")	1.72E-01	1.72E-01	1.01E+00	5.03E+02	8.63E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.98E+02	2.39E+00	2.18E-03	4.54E+00	4.26E-02	6.32E+02	2.47E-02	4.62E+02	9.23E-05
UAW2-0250 (0-6")	1.72E-01	1.72E-01	1.01E+00	4.93E+02	8.46E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.88E+02	2.34E+00	2.18E-03	4.54E+00	4.18E-02	6.32E+02	2.47E-02	4.62E+02	9.04E-05
UAW2-0250+50 (0-6")	1.72E-01	1.72E-01	1.01E+00	1.41E+02	2.43E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.40E+02	6.72E-01	2.18E-03	4.54E+00	1.20E-02	6.32E+02	2.47E-02	4.62E+02	2.59E-05
UAW2-0300 (0-6")	1.72E-01	1.72E-01	1.01E+00	7.69E+02	1.32E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	7.61E+02	3.66E+00	2.18E-03	4.54E+00	6.51E-02	6.32E+02	2.47E-02	4.62E+02	1.41E-04
UAW2-0350 (0-6")	1.72E-01	1.72E-01	1.01E+00	3.21E+02	5.50E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.17E+02	1.52E+00	2.18E-03	4.54E+00	2.71E-02	6.32E+02	2.47E-02	4.62E+02	5.88E-05
UAW2-0350+50 (0-6")	1.72E-01	1.72E-01	1.01E+00	1.31E+02	2.25E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.30E+02	6.24E-01	2.18E-03	4.54E+00	1.11E-02	6.32E+02	2.47E-02	4.62E+02	2.41E-05
UAW2-0400 (0-6")	1.72E-01	1.72E-01	1.01E+00	1.76E+02	3.02E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.74E+02	8.38E-01	2.18E-03	4.54E+00	1.49E-02	6.32E+02	2.47E-02	4.62E+02	3.23E-05
UAW2-0400+150 (0-6")	1.72E-01	1.72E-01	1.01E+00	5.89E+02	1.01E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.83E+02	2.80E+00	2.18E-03	4.54E+00	4.99E-02	6.32E+02	2.47E-02	4.62E+02	1.08E-04
UAW2-0450 (0-6")	1.72E-01	1.72E-01	1.01E+00	3.06E+02	5.24E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.02E+02	1.45E+00	2.18E-03	4.54E+00	2.59E-02	6.32E+02	2.47E-02	4.62E+02	5.60E-05
UAW2-0450+50 (0-6")	1.72E-01	1.72E-01	1.01E+00	2.34E+02	4.02E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.32E+02	1.11E+00	2.18E-03	4.54E+00	1.99E-02	6.32E+02	2.47E-02	4.62E+02	4.30E-05
UAW2-1000 (0-6")	1.72E-01	1.72E-01	1.01E+00	3.87E+02	6.64E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.83E+02	1.84E+00	2.18E-03	4.54E+00	3.28E-02	6.32E+02	2.47E-02	4.62E+02	7.10E-05
UAW2-Comp (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UAW3-Comp 1 (0-6")	1.72E-01	1.72E-01	1.01E+00	1.58E+03	2.70E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.56E+03	7.50E+00	2.18E-03	4.54E+00	1.34E-01	6.32E+02	2.47E-02	4.62E+02	2.89E-04
UAW4-Comp 1 (0-6")	1.72E-01	1.72E-01	1.01E+00	6.81E+02	1.17E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	6.74E+02	3.24E+00	2.18E-03	4.54E+00	5.77E-02	6.32E+02	2.47E-02	4.62E+02	1.25E-04
UAW5-00 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UAW5-050 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UAW5-100 (0-6")	1.72E-01	1.72E-01	1.01E+00	1.25E+02	2.15E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.24E+02	5.95E-01	2.18E-03	4.54E+00	1.06E-02	6.32E+02	2.47E-02	4.62E+02	2.29E-05
UAW5-100+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UAW5-150 (0-6")	1.72E-01	1.72E-01	1.01E+00	1.01E+02	1.74E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.00E+02	4.82E-01	2.18E-03	4.54E+00	8.59E-03	6.32E+02	2.47E-02	4.62E+02	1.86E-05
UAW5-150+50 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UAW5-200 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UAW5-250 (0-6")	1.72E-01	1.72E-01	1.01E+00	1.42E+02	2.43E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.40E+02	6.73E-01	2.18E-03	4.54E+00	1.20E-02	6.32E+02	2.47E-02	4.62E+02	2.60E-05
UAW5-250+50 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UAW5-300 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UAW5-300+75 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UAW5-350 (0-6")	1.72E-01	1.72E-01	1.01E+00	1.86E+02	3.19E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.84E+02	8.84E-01	2.18E-03	4.54E+00	1.57E-02	6.32E+02	2.47E-02	4.62E+02	3.41E-05
UAW5-400 (0-6")	1.72E-01	1.72E-01	1.01E+00	3.74E+02	6.42E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.70E+02	1.78E+00	2.18E-03	4.54E+00	3.17E-02	6.32E+02	2.47E-02	4.62E+02	6.86E-05
UAW5-450 (0-6")	1.72E-01	1.72E-01	1.01E+00	3.63E+02	6.23E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.60E+02	1.73E+00	2.18E-03	4.54E+00	3.08E-02	6.32E+02	2.47E-02	4.62E+02	6.66E-05
UAW5-500 (0-6")	1.72E-01	1.72E-01	1.01E+00	4.60E+02	7.89E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.55E+02	2.19E+00	2.18E-03	4.54E+00	3.90E-02	6.32E+02	2.47E-02	4.62E+02	8.44E-05
UAW5-500+50 (0-6")	1.72E-01	1.72E-01	1.01E+00	3.07E+02	5.27E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.04E+02	1.46E+00	2.18E-03	4.54E+00	2.60E-02	6.32E+02	2.47E-02	4.62E+02	5.63E-05
UAW5-550 (0-6")	1.72E-01	1.72E-01	1.01E+00	1.53E+02	2.62E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.51E+02	7.27E-01	2.18E-03	4.54E+00	1.30E-02	6.32E+02	2.47E-02	4.62E+02	2.80E-05
UAW5-600 (0-6")	1.72E-01	1.72E-01	1.01E+00	1.24E+02	2.13E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.23E+02	5.89E-01	2.18E-03	4.54E+00	1.05E-02	6.32E+02	2.47E-02	4.62E+02	2.27E-05
UAW5-Comp 1 (0-6")	1.72E-01	1.72E-01	1.01E+00	2.25E+02	3.87E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.23E+02	1.07E+00	2.18E-03	4.54E+00	1.91E-02	6.32E+02	2.47E-02	4.62E+02	4.13E-05
																						Maximum HQ (Upper Anaconda Mine)	**2.89E-04**

TABLE C-1C: COPPER DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 1 - UPPER ANACONDA MINE WASTE REMOVAL AREAS AND WASTE PILES (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **2.95**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Masked Shrew (Omnivorous Mammal - Terrestrial, Wetland)																							
Reference Sites																							
ACBG-1	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	3.70E+00	2.95E+02	2.50E+00	1.10E-03	7.96E+01	8.76E-02	1.00E+00	5.50E-03	4.70E+02	6.32E+02	2.47E-02	6.91E+02	6.80E-01
ACBG-2	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	3.70E+00	9.26E+02	7.85E+00	1.10E-03	2.50E+02	2.75E-01	1.00E+00	5.50E-03	1.48E+03	6.32E+02	2.47E-02	6.91E+02	2.14E+00
Upper Anaconda Mine																						**Minimum HQ (Reference Sites)**	**6.80E-01**
UAW1-00 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	6.47E+02	5.48E+00	1.10E-03	1.33E+02	1.47E-01	1.00E+00	5.50E-03	1.02E+03	6.32E+02	2.47E-02	6.91E+02	1.48E+00
UAW1-00+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UAW1-050 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	6.75E+02	5.72E+00	1.10E-03	1.39E+02	1.53E-01	1.00E+00	5.50E-03	1.07E+03	6.32E+02	2.47E-02	6.91E+02	1.54E+00
UAW1-100 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	6.32E+02	5.36E+00	1.10E-03	1.30E+02	1.44E-01	1.00E+00	5.50E-03	1.00E+03	6.32E+02	2.47E-02	6.91E+02	1.45E+00
UAW1-150 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	8.49E+02	7.19E+00	1.10E-03	1.75E+02	1.93E-01	1.00E+00	5.50E-03	1.34E+03	6.32E+02	2.47E-02	6.91E+02	1.94E+00
UAW1-150+75 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	4.33E+02	3.67E+00	1.10E-03	8.93E+01	9.84E-02	1.00E+00	5.50E-03	6.85E+02	6.32E+02	2.47E-02	6.91E+02	9.91E-01
UAW1-Comp 1 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	2.32E+03	1.97E+01	1.10E-03	4.79E+02	5.27E-01	1.00E+00	5.50E-03	3.67E+03	6.32E+02	2.47E-02	6.91E+02	5.31E+00
UAW2-0000 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	1.70E+03	1.44E+01	1.10E-03	3.51E+02	3.87E-01	1.00E+00	5.50E-03	2.70E+03	6.32E+02	2.47E-02	6.91E+02	3.90E+00
UAW2-0000+225 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	7.18E+02	6.08E+00	1.10E-03	1.48E+02	1.63E-01	1.00E+00	5.50E-03	1.14E+03	6.32E+02	2.47E-02	6.91E+02	1.64E+00
UAW2-0050 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	4.39E+02	3.72E+00	1.10E-03	9.06E+01	9.97E-02	1.00E+00	5.50E-03	6.95E+02	6.32E+02	2.47E-02	6.91E+02	1.01E+00
UAW2-0100 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	1.05E+03	8.87E+00	1.10E-03	2.16E+02	2.38E-01	1.00E+00	5.50E-03	1.66E+03	6.32E+02	2.47E-02	6.91E+02	2.39E+00
UAW2-0100+250 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	4.51E+02	3.82E+00	1.10E-03	9.30E+01	1.02E-01	1.00E+00	5.50E-03	7.13E+02	6.32E+02	2.47E-02	6.91E+02	1.03E+00
UAW2-0150 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	4.43E+02	3.75E+00	1.10E-03	9.13E+01	1.01E-01	1.00E+00	5.50E-03	7.00E+02	6.32E+02	2.47E-02	6.91E+02	1.01E+00
UAW2-0200 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	2.42E+03	2.05E+01	1.10E-03	4.98E+02	5.49E-01	1.00E+00	5.50E-03	3.82E+03	6.32E+02	2.47E-02	6.91E+02	5.53E+00
UAW2-0250 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	2.37E+03	2.00E+01	1.10E-03	4.88E+02	5.37E-01	1.00E+00	5.50E-03	3.74E+03	6.32E+02	2.47E-02	6.91E+02	5.41E+00
UAW2-0250+50 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	6.79E+02	5.75E+00	1.10E-03	1.40E+02	1.54E-01	1.00E+00	5.50E-03	1.07E+03	6.32E+02	2.47E-02	6.91E+02	1.55E+00
UAW2-0300 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	3.69E+03	3.13E+01	1.10E-03	7.61E+02	8.38E-01	1.00E+00	5.50E-03	5.84E+03	6.32E+02	2.47E-02	6.91E+02	8.44E+00
UAW2-0350 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	1.54E+03	1.30E+01	1.10E-03	3.17E+02	3.49E-01	1.00E+00	5.50E-03	2.43E+03	6.32E+02	2.47E-02	6.91E+02	3.52E+00
UAW2-0350+50 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	6.31E+02	5.34E+00	1.10E-03	1.30E+02	1.43E-01	1.00E+00	5.50E-03	9.97E+02	6.32E+02	2.47E-02	6.91E+02	1.44E+00
UAW2-0400 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	8.46E+02	7.16E+00	1.10E-03	1.74E+02	1.92E-01	1.00E+00	5.50E-03	1.34E+03	6.32E+02	2.47E-02	6.91E+02	1.94E+00
UAW2-0400+150 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	2.83E+03	2.40E+01	1.10E-03	5.83E+02	6.42E-01	1.00E+00	5.50E-03	4.47E+03	6.32E+02	2.47E-02	6.91E+02	6.47E+00
UAW2-0450 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	1.47E+03	1.24E+01	1.10E-03	3.02E+02	3.33E-01	1.00E+00	5.50E-03	2.32E+03	6.32E+02	2.47E-02	6.91E+02	3.36E+00
UAW2-0450+50 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	1.13E+03	9.53E+00	1.10E-03	2.32E+02	2.55E-01	1.00E+00	5.50E-03	1.78E+03	6.32E+02	2.47E-02	6.91E+02	2.57E+00
UAW2-1000 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	1.86E+03	1.57E+01	1.10E-03	3.83E+02	4.22E-01	1.00E+00	5.50E-03	2.94E+03	6.32E+02	2.47E-02	6.91E+02	4.25E+00
UAW2-Comp (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UAW3-Comp 1 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	7.57E+03	6.41E+01	1.10E-03	1.56E+03	1.72E+00	1.00E+00	5.50E-03	1.20E+04	6.32E+02	2.47E-02	6.91E+02	1.73E+01
UAW4-Comp 1 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	3.27E+03	2.77E+01	1.10E-03	6.74E+02	7.42E-01	1.00E+00	5.50E-03	5.17E+03	6.32E+02	2.47E-02	6.91E+02	7.48E+00
UAW5-00 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UAW5-050 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UAW5-100 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	6.00E+02	5.09E+00	1.10E-03	1.24E+02	1.36E-01	1.00E+00	5.50E-03	9.49E+02	6.32E+02	2.47E-02	6.91E+02	1.37E+00
UAW5-100+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UAW5-150 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	4.87E+02	4.12E+00	1.10E-03	1.00E+02	1.10E-01	1.00E+00	5.50E-03	7.70E+02	6.32E+02	2.47E-02	6.91E+02	1.11E+00
UAW5-150+50 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UAW5-200 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UAW5-250 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	6.80E+02	5.76E+00	1.10E-03	1.40E+02	1.54E-01	1.00E+00	5.50E-03	1.07E+03	6.32E+02	2.47E-02	6.91E+02	1.55E+00
UAW5-250+50 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UAW5-300 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UAW5-300+75 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UAW5-350 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	8.92E+02	7.56E+00	1.10E-03	1.84E+02	2.03E-01	1.00E+00	5.50E-03	1.41E+03	6.32E+02	2.47E-02	6.91E+02	2.04E+00
UAW5-400 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	1.80E+03	1.52E+01	1.10E-03	3.70E+02	4.08E-01	1.00E+00	5.50E-03	2.84E+03	6.32E+02	2.47E-02	6.91E+02	4.11E+00
UAW5-450 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	1.74E+03	1.48E+01	1.10E-03	3.60E+02	3.96E-01	1.00E+00	5.50E-03	2.76E+03	6.32E+02	2.47E-02	6.91E+02	3.99E+00
UAW5-500 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	2.21E+03	1.87E+01	1.10E-03	4.55E+02	5.02E-01	1.00E+00	5.50E-03	3.49E+03	6.32E+02	2.47E-02	6.91E+02	5.05E+00
UAW5-500+50 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	1.47E+03	1.25E+01	1.10E-03	3.04E+02	3.35E-01	1.00E+00	5.50E-03	2.33E+03	6.32E+02	2.47E-02	6.91E+02	3.37E+00
UAW5-550 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	7.34E+02	6.22E+00	1.10E-03	1.51E+02	1.67E-01	1.00E+00	5.50E-03	1.16E+03	6.32E+02	2.47E-02	6.91E+02	1.68E+00
UAW5-600 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	5.95E+02	5.04E+00	1.10E-03	1.23E+02	1.35E-01	1.00E+00	5.50E-03	9.41E+02	6.32E+02	2.47E-02	6.91E+02	1.36E+00
UAW5-Comp 1 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	1.08E+03	9.17E+00	1.10E-03	2.23E+02	2.46E-01	1.00E+00	5.50E-03	1.71E+03	6.32E+02	2.47E-02	6.91E+02	2.48E+00
																						Maximum HQ (Upper Anaconda Mine)	**1.73E+01**

TABLE C-1C: COPPER DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 1 - UPPER ANACONDA MINE WASTE REMOVAL AREAS AND WASTE PILES (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **2.95**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)

Notes

1 See Tables 3-1 through 3-13 for ingestion rates, foraging ranges used to calculate the SUF, and body weights.

2 BAFs were calculated by dividing site-collected tissue by collocated soil concentrations (BAFs are in dry weight). The maximum BAF calculated from the Beartrap Creek and Blackfoot River transects was used for site dose calculations. The maximum BAF from the terrestrial reference site was used for reference site dose calculations.

3 The mammal, plant, and invertebrate concentrations were calculated by multiplying the soil concentration by the BAF to generate a tissue concentration (see note 2).

4 Mammal, plant, and invertebrate daily doses were calculated by multiplying the ingestion rate (see note 1) by the tissue concentration (see note 3).

5 Soil concentration from 0 to 6 inches below ground surface at point ID as measured by XRF 10. Doses were not calculated for detected and non-detected soil concentrations measured below the minimum reference site concentration, as indicated by BB. For results that were measured at less than the detection limit, doses were calculated using half of the detection limit.

6 Soil daily dose was calculated by multiplying the soil ingestion rate (see note 1) by soil concentration (see note 5).

7 Total daily dose is calculated using the following equation: total daily dose = ([mammal daily dose (if applicable) + plant daily dose (if applicable) + invertebrate daily dose (if applicable) + soil daily dose]*SUF)/receptor species body weight.

8 The TRVs used in this risk assessment represent a mid-range effects level. The derivation of TRVs is described in Navy (1998).

9 Allometrically adjusted TRVs for birds were calculated using the following equation: receptor species TRV = (test species TRV) x (test species body weight / receptor species body weight)$^{(1-1.2)}$.

10 Allometrically adjusted TRVs for mammals were calculated using the following equation: receptor species TRV = (test species TRV) x (test species body weight / receptor species body weight)$^{(1-0.94)}$.

11 HQs were calculated using the following equation: HQ = total daily dose/allometrically adjusted TRV.

12 Highlighted cells indicate an HQ greater than 1.0.

BAF	Bioaccumulation factor	mg/kg	Milligram per kilogram
BB	Below minimum background reference site concentration	NA	Not applicable
EU	Exposure unit	Navy	Department of the Navy
HQ	Hazard quotient	SUF	Site use factor
ID	Identification	TRV	Toxicity reference value
kg	Kilogram	XRF	X-ray flourescence
kg/day	Kilogram per day	XRF 10	XRF measurements recorded following drying and seiving through a #10 -mesh screen
mg/day	Milligram per day		

Sources: Department of the Navy. 1998. "Development of Toxicity Reference Values for Conducting Ecological Risk Assessments at Naval Facilities in California, Interim Final." Prepared by Naval Facilities Engineering Command, Engineering Field Activity West (EFA West). San Bruno, California.

TABLE C-1D: LEAD DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 1 - UPPER ANACONDA MINE WASTE REMOVAL AREAS AND WASTE PILES (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

Site Area (hectares) 2.95

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Mourning Dove (Herbivorous Birds - Terrestrial)																							
Reference Sites																							
ACBG-1	5.76E-03	NA	NA	NA	NA	5.76E-03	4.35E-02	1.00E+00	5.78E-03	NA	NA	NA	NA	5.36E-04	2.31E+01	1.24E-02	1.14E-02	1.09E-01	1.89E-03	8.75E+00	8.00E-01	5.88E+00	3.22E-04
ACBG-2	5.76E-03	NA	NA	NA	NA	5.76E-03	4.35E-02	1.66E+00	9.58E-03	NA	NA	NA	NA	5.36E-04	3.83E+01	2.05E-02	1.14E-02	1.09E-01	3.14E-03	8.75E+00	8.00E-01	5.88E+00	5.34E-04
Upper Anaconda Mine																						**Minimum HQ (Reference Sites)**	**3.22E-04**
UAW1-00 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	3.90E+03	2.25E+01	NA	NA	NA	NA	5.36E-04	6.21E+03	3.33E+00	1.14E-02	1.09E-01	2.69E+00	8.75E+00	8.00E-01	5.88E+00	4.58E-01
UAW1-00+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	2.14E+02	1.23E+00	NA	NA	NA	NA	5.36E-04	3.40E+02	1.82E-01	1.14E-02	1.09E-01	1.48E-01	8.75E+00	8.00E-01	5.88E+00	2.51E-02
UAW1-050 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	1.06E+03	6.11E+00	NA	NA	NA	NA	5.36E-04	1.69E+03	9.05E-01	1.14E-02	1.09E-01	7.32E-01	8.75E+00	8.00E-01	5.88E+00	1.25E-01
UAW1-100 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	6.96E+03	4.01E+01	NA	NA	NA	NA	5.36E-04	1.11E+04	5.94E+00	1.14E-02	1.09E-01	4.80E+00	8.75E+00	8.00E-01	5.88E+00	8.17E-01
UAW1-150 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	1.56E+03	8.97E+00	NA	NA	NA	NA	5.36E-04	2.48E+03	1.33E+00	1.14E-02	1.09E-01	1.07E+00	8.75E+00	8.00E-01	5.88E+00	1.83E-01
UAW1-150+75 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	4.82E+02	2.78E+00	NA	NA	NA	NA	5.36E-04	7.68E+02	4.12E-01	1.14E-02	1.09E-01	3.33E-01	8.75E+00	8.00E-01	5.88E+00	5.67E-02
UAW1-Comp 1 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	2.61E+04	1.50E+02	NA	NA	NA	NA	5.36E-04	4.15E+04	2.22E+01	1.14E-02	1.09E-01	1.80E+01	8.75E+00	8.00E-01	5.88E+00	3.06E+00
UAW2-0000 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	5.40E+02	3.11E+00	NA	NA	NA	NA	5.36E-04	8.59E+02	4.60E-01	1.14E-02	1.09E-01	3.72E-01	8.75E+00	8.00E-01	5.88E+00	6.34E-02
UAW2-0000+225 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	1.57E+02	9.05E-01	NA	NA	NA	NA	5.36E-04	2.50E+02	1.34E-01	1.14E-02	1.09E-01	1.08E-01	8.75E+00	8.00E-01	5.88E+00	1.84E-02
UAW2-0050 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	1.18E+02	6.80E-01	NA	NA	NA	NA	5.36E-04	1.88E+02	1.01E-01	1.14E-02	1.09E-01	8.14E-02	8.75E+00	8.00E-01	5.88E+00	1.39E-02
UAW2-0100 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	4.73E+02	2.73E+00	NA	NA	NA	NA	5.36E-04	7.54E+02	4.04E-01	1.14E-02	1.09E-01	3.27E-01	8.75E+00	8.00E-01	5.88E+00	5.56E-02
UAW2-0100+250 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	9.29E+01	5.35E-01	NA	NA	NA	NA	5.36E-04	1.48E+02	7.92E-02	1.14E-02	1.09E-01	6.41E-02	8.75E+00	8.00E-01	5.88E+00	1.09E-02
UAW2-0150 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	7.88E+01	4.54E-01	NA	NA	NA	NA	5.36E-04	1.25E+02	6.72E-02	1.14E-02	1.09E-01	5.44E-02	8.75E+00	8.00E-01	5.88E+00	9.26E-03
UAW2-0200 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	2.33E+03	1.34E+01	NA	NA	NA	NA	5.36E-04	3.71E+03	1.99E+00	1.14E-02	1.09E-01	1.61E+00	8.75E+00	8.00E-01	5.88E+00	2.74E-01
UAW2-0250 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	2.76E+03	1.59E+01	NA	NA	NA	NA	5.36E-04	4.39E+03	2.35E+00	1.14E-02	1.09E-01	1.90E+00	8.75E+00	8.00E-01	5.88E+00	3.24E-01
UAW2-0250+50 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	3.19E+02	1.84E+00	NA	NA	NA	NA	5.36E-04	5.08E+02	2.72E-01	1.14E-02	1.09E-01	2.20E-01	8.75E+00	8.00E-01	5.88E+00	3.75E-02
UAW2-0300 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	2.85E+03	1.64E+01	NA	NA	NA	NA	5.36E-04	4.54E+03	2.43E+00	1.14E-02	1.09E-01	1.97E+00	8.75E+00	8.00E-01	5.88E+00	3.35E-01
UAW2-0350 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	6.62E+02	3.81E+00	NA	NA	NA	NA	5.36E-04	1.05E+03	5.65E-01	1.14E-02	1.09E-01	4.57E-01	8.75E+00	8.00E-01	5.88E+00	7.77E-02
UAW2-0350+50 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	2.37E+02	1.37E+00	NA	NA	NA	NA	5.36E-04	3.77E+02	2.02E-01	1.14E-02	1.09E-01	1.63E-01	8.75E+00	8.00E-01	5.88E+00	2.78E-02
UAW2-0400 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	7.66E+02	4.41E+00	NA	NA	NA	NA	5.36E-04	1.22E+03	6.53E-01	1.14E-02	1.09E-01	5.28E-01	8.75E+00	8.00E-01	5.88E+00	8.99E-02
UAW2-0400+150 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	1.72E+02	9.92E-01	NA	NA	NA	NA	5.36E-04	2.74E+02	1.47E-01	1.14E-02	1.09E-01	1.19E-01	8.75E+00	8.00E-01	5.88E+00	2.02E-02
UAW2-0450 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	5.81E+02	3.35E+00	NA	NA	NA	NA	5.36E-04	9.25E+02	4.96E-01	1.14E-02	1.09E-01	4.01E-01	8.75E+00	8.00E-01	5.88E+00	6.83E-02
UAW2-0450+50 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	3.22E+02	1.86E+00	NA	NA	NA	NA	5.36E-04	5.13E+02	2.75E-01	1.14E-02	1.09E-01	2.22E-01	8.75E+00	8.00E-01	5.88E+00	3.78E-02
UAW2-1000 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	1.99E+02	1.15E+00	NA	NA	NA	NA	5.36E-04	3.17E+02	1.70E-01	1.14E-02	1.09E-01	1.37E-01	8.75E+00	8.00E-01	5.88E+00	2.34E-02
UAW2-Comp (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	2.03E+02	1.17E+00	NA	NA	NA	NA	5.36E-04	3.23E+02	1.73E-01	1.14E-02	1.09E-01	1.40E-01	8.75E+00	8.00E-01	5.88E+00	2.38E-02
UAW3-Comp 1 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	4.92E+04	2.83E+02	NA	NA	NA	NA	5.36E-04	7.83E+04	4.19E+01	1.14E-02	1.09E-01	3.39E+01	8.75E+00	8.00E-01	5.88E+00	5.77E+00
UAW4-Comp 1 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	8.38E+03	4.83E+01	NA	NA	NA	NA	5.36E-04	1.33E+04	7.15E+00	1.14E-02	1.09E-01	5.78E+00	8.75E+00	8.00E-01	5.88E+00	9.84E-01
UAW5-00 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	1.99E+02	1.15E+00	NA	NA	NA	NA	5.36E-04	3.17E+02	1.70E-01	1.14E-02	1.09E-01	1.37E-01	8.75E+00	8.00E-01	5.88E+00	2.34E-02
UAW5-050 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	2.36E+02	1.36E+00	NA	NA	NA	NA	5.36E-04	3.76E+02	2.01E-01	1.14E-02	1.09E-01	1.63E-01	8.75E+00	8.00E-01	5.88E+00	2.77E-02
UAW5-100 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	3.54E+02	2.04E+00	NA	NA	NA	NA	5.36E-04	5.63E+02	3.02E-01	1.14E-02	1.09E-01	2.44E-01	8.75E+00	8.00E-01	5.88E+00	4.15E-02
UAW5-100+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	2.90E+02	1.67E+00	NA	NA	NA	NA	5.36E-04	4.62E+02	2.47E-01	1.14E-02	1.09E-01	2.00E-01	8.75E+00	8.00E-01	5.88E+00	3.40E-02
UAW5-150 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	4.11E+02	2.37E+00	NA	NA	NA	NA	5.36E-04	6.54E+02	3.51E-01	1.14E-02	1.09E-01	2.84E-01	8.75E+00	8.00E-01	5.88E+00	4.83E-02
UAW5-150+50 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	2.98E+02	1.72E+00	NA	NA	NA	NA	5.36E-04	4.74E+02	2.54E-01	1.14E-02	1.09E-01	2.05E-01	8.75E+00	8.00E-01	5.88E+00	3.50E-02
UAW5-200 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	4.55E+02	2.62E+00	NA	NA	NA	NA	5.36E-04	7.24E+02	3.88E-01	1.14E-02	1.09E-01	3.14E-01	8.75E+00	8.00E-01	5.88E+00	5.34E-02
UAW5-250 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	7.42E+02	4.27E+00	NA	NA	NA	NA	5.36E-04	1.18E+03	6.32E-01	1.14E-02	1.09E-01	5.12E-01	8.75E+00	8.00E-01	5.88E+00	8.71E-02
UAW5-250+50 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	2.90E+02	1.67E+00	NA	NA	NA	NA	5.36E-04	4.62E+02	2.48E-01	1.14E-02	1.09E-01	2.00E-01	8.75E+00	8.00E-01	5.88E+00	3.41E-02
UAW5-300 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	4.28E+02	2.46E+00	NA	NA	NA	NA	5.36E-04	6.81E+02	3.65E-01	1.14E-02	1.09E-01	2.95E-01	8.75E+00	8.00E-01	5.88E+00	5.02E-02
UAW5-300+75 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	2.57E+02	1.48E+00	NA	NA	NA	NA	5.36E-04	4.10E+02	2.19E-01	1.14E-02	1.09E-01	1.78E-01	8.75E+00	8.00E-01	5.88E+00	3.02E-02
UAW5-350 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	4.75E+02	2.74E+00	NA	NA	NA	NA	5.36E-04	7.56E+02	4.05E-01	1.14E-02	1.09E-01	3.28E-01	8.75E+00	8.00E-01	5.88E+00	5.58E-02
UAW5-400 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	5.91E+02	3.40E+00	NA	NA	NA	NA	5.36E-04	9.40E+02	5.04E-01	1.14E-02	1.09E-01	4.08E-01	8.75E+00	8.00E-01	5.88E+00	6.94E-02
UAW5-450 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	3.02E+01	1.74E-01	NA	NA	NA	NA	5.36E-04	4.80E+01	2.57E-02	1.14E-02	1.09E-01	2.08E-02	8.75E+00	8.00E-01	5.88E+00	3.54E-03
UAW5-500 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	1.60E+03	9.25E+00	NA	NA	NA	NA	5.36E-04	2.55E+03	1.37E+00	1.14E-02	1.09E-01	1.11E+00	8.75E+00	8.00E-01	5.88E+00	1.88E-01
UAW5-500+50 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	4.42E+02	2.55E+00	NA	NA	NA	NA	5.36E-04	7.04E+02	3.77E-01	1.14E-02	1.09E-01	3.05E-01	8.75E+00	8.00E-01	5.88E+00	5.19E-02
UAW5-550 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	5.16E+02	2.97E+00	NA	NA	NA	NA	5.36E-04	8.21E+02	4.40E-01	1.14E-02	1.09E-01	3.56E-01	8.75E+00	8.00E-01	5.88E+00	6.05E-02
UAW5-600 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	3.82E+02	2.20E+00	NA	NA	NA	NA	5.36E-04	6.08E+02	3.26E-01	1.14E-02	1.09E-01	2.64E-01	8.75E+00	8.00E-01	5.88E+00	4.49E-02
UAW5-Comp 1 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	6.16E+02	3.55E+00	NA	NA	NA	NA	5.36E-04	9.80E+02	5.25E-01	1.14E-02	1.09E-01	4.25E-01	8.75E+00	8.00E-01	5.88E+00	7.23E-02
																						Maximum HQ (Upper Anaconda Mine)	**5.77E+00**

TABLE C-1D: LEAD DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 1 - UPPER ANACONDA MINE WASTE REMOVAL AREAS AND WASTE PILES (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

Site Area (hectares) **2.95**

from dose parameters tables; from BAF table; linked to soil or sed concentration table (VLOOKUP)

calculated values; linked to TRV table (VLOOKUP) - should be same for all birds or mammals

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Red-Tailed Hawk (Carnivorous Birds - Terrestrial)																							
Reference Sites																							
ACBG-1	9.00E-02	9.00E-02	7.62E-02	1.76E+00	1.58E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.31E+01	1.18E-01	4.23E-03	1.13E+00	1.03E-03	8.75E+00	8.00E-01	9.38E+00	1.10E-04
ACBG-2	9.00E-02	9.00E-02	7.62E-02	2.92E+00	2.62E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.83E+01	1.96E-01	4.23E-03	1.13E+00	1.71E-03	8.75E+00	8.00E-01	9.38E+00	1.82E-04
Upper Anaconda Mine																						**Minimum HQ (Reference Sites)**	**1.10E-04**
UAW1-00 (0-6")	9.00E-02	9.00E-02	9.28E-01	5.76E+03	5.18E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	6.21E+03	3.19E+01	4.23E-03	1.13E+00	2.05E+00	8.75E+00	8.00E-01	9.38E+00	2.19E-01
UAW1-00+25 (0-6")	9.00E-02	9.00E-02	9.28E-01	3.16E+02	2.84E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.40E+02	1.75E+00	4.23E-03	1.13E+00	1.13E-01	8.75E+00	8.00E-01	9.38E+00	1.20E-02
UAW1-050 (0-6")	9.00E-02	9.00E-02	9.28E-01	1.57E+03	1.41E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.69E+03	8.66E+00	4.23E-03	1.13E+00	5.58E-01	8.75E+00	8.00E-01	9.38E+00	5.95E-02
UAW1-100 (0-6")	9.00E-02	9.00E-02	9.28E-01	1.03E+04	9.25E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.11E+04	5.68E+01	4.23E-03	1.13E+00	3.66E+00	8.75E+00	8.00E-01	9.38E+00	3.91E-01
UAW1-150 (0-6")	9.00E-02	9.00E-02	9.28E-01	2.30E+03	2.07E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.48E+03	1.27E+01	4.23E-03	1.13E+00	8.20E-01	8.75E+00	8.00E-01	9.38E+00	8.74E-02
UAW1-150+75 (0-6")	9.00E-02	9.00E-02	9.28E-01	7.13E+02	6.41E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	7.68E+02	3.94E+00	4.23E-03	1.13E+00	2.54E-01	8.75E+00	8.00E-01	9.38E+00	2.71E-02
UAW1-Comp 1 (0-6")	9.00E-02	9.00E-02	9.28E-01	3.85E+04	3.46E+03	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.15E+04	2.13E+02	4.23E-03	1.13E+00	1.37E+01	8.75E+00	8.00E-01	9.38E+00	1.46E+00
UAW2-0000 (0-6")	9.00E-02	9.00E-02	9.28E-01	7.97E+02	7.17E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	8.59E+02	4.41E+00	4.23E-03	1.13E+00	2.84E-01	8.75E+00	8.00E-01	9.38E+00	3.03E-02
UAW2-0000+225 (0-6")	9.00E-02	9.00E-02	9.28E-01	2.32E+02	2.09E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.50E+02	1.28E+00	4.23E-03	1.13E+00	8.27E-02	8.75E+00	8.00E-01	9.38E+00	8.82E-03
UAW2-0050 (0-6")	9.00E-02	9.00E-02	9.28E-01	1.74E+02	1.57E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.88E+02	9.63E-01	4.23E-03	1.13E+00	6.21E-02	8.75E+00	8.00E-01	9.38E+00	6.62E-03
UAW2-0100 (0-6")	9.00E-02	9.00E-02	9.28E-01	6.99E+02	6.29E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	7.54E+02	3.86E+00	4.23E-03	1.13E+00	2.49E-01	8.75E+00	8.00E-01	9.38E+00	2.66E-02
UAW2-0100+250 (0-6")	9.00E-02	9.00E-02	9.28E-01	1.37E+02	1.23E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.48E+02	7.58E-01	4.23E-03	1.13E+00	4.89E-02	8.75E+00	8.00E-01	9.38E+00	5.21E-03
UAW2-0150 (0-6")	9.00E-02	9.00E-02	9.28E-01	1.16E+02	1.05E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.25E+02	6.43E-01	4.23E-03	1.13E+00	4.15E-02	8.75E+00	8.00E-01	9.38E+00	4.42E-03
UAW2-0200 (0-6")	9.00E-02	9.00E-02	9.28E-01	3.44E+03	3.09E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.71E+03	1.90E+01	4.23E-03	1.13E+00	1.23E+00	8.75E+00	8.00E-01	9.38E+00	1.31E-01
UAW2-0250 (0-6")	9.00E-02	9.00E-02	9.28E-01	4.08E+03	3.67E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.39E+03	2.25E+01	4.23E-03	1.13E+00	1.45E+00	8.75E+00	8.00E-01	9.38E+00	1.55E-01
UAW2-0250+50 (0-6")	9.00E-02	9.00E-02	9.28E-01	4.72E+02	4.24E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.08E+02	2.61E+00	4.23E-03	1.13E+00	1.68E-01	8.75E+00	8.00E-01	9.38E+00	1.79E-02
UAW2-0300 (0-6")	9.00E-02	9.00E-02	9.28E-01	4.21E+03	3.79E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.54E+03	2.33E+01	4.23E-03	1.13E+00	1.50E+00	8.75E+00	8.00E-01	9.38E+00	1.60E-01
UAW2-0350 (0-6")	9.00E-02	9.00E-02	9.28E-01	9.78E+02	8.80E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.05E+03	5.40E+00	4.23E-03	1.13E+00	3.49E-01	8.75E+00	8.00E-01	9.38E+00	3.72E-02
UAW2-0350+50 (0-6")	9.00E-02	9.00E-02	9.28E-01	3.50E+02	3.15E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.77E+02	1.93E+00	4.23E-03	1.13E+00	1.25E-01	8.75E+00	8.00E-01	9.38E+00	1.33E-02
UAW2-0400 (0-6")	9.00E-02	9.00E-02	9.28E-01	1.13E+03	1.02E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.22E+03	6.25E+00	4.23E-03	1.13E+00	4.03E-01	8.75E+00	8.00E-01	9.38E+00	4.30E-02
UAW2-0400+150 (0-6")	9.00E-02	9.00E-02	9.28E-01	2.54E+02	2.29E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.74E+02	1.41E+00	4.23E-03	1.13E+00	9.07E-02	8.75E+00	8.00E-01	9.38E+00	9.67E-03
UAW2-0450 (0-6")	9.00E-02	9.00E-02	9.28E-01	8.59E+02	7.72E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	9.25E+02	4.75E+00	4.23E-03	1.13E+00	3.06E-01	8.75E+00	8.00E-01	9.38E+00	3.26E-02
UAW2-0450+50 (0-6")	9.00E-02	9.00E-02	9.28E-01	4.76E+02	4.28E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.13E+02	2.63E+00	4.23E-03	1.13E+00	1.70E-01	8.75E+00	8.00E-01	9.38E+00	1.81E-02
UAW2-1000 (0-6")	9.00E-02	9.00E-02	9.28E-01	2.94E+02	2.64E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.17E+02	1.62E+00	4.23E-03	1.13E+00	1.05E-01	8.75E+00	8.00E-01	9.38E+00	1.12E-02
UAW2-Comp (0-6")	9.00E-02	9.00E-02	9.28E-01	3.00E+02	2.70E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.23E+02	1.66E+00	4.23E-03	1.13E+00	1.07E-01	8.75E+00	8.00E-01	9.38E+00	1.14E-02
UAW3-Comp 1 (0-6")	9.00E-02	9.00E-02	9.28E-01	7.26E+04	6.53E+03	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	7.83E+04	4.01E+02	4.23E-03	1.13E+00	2.59E+01	8.75E+00	8.00E-01	9.38E+00	2.76E+00
UAW4-Comp 1 (0-6")	9.00E-02	9.00E-02	9.28E-01	1.24E+04	1.11E+03	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.33E+04	6.84E+01	4.23E-03	1.13E+00	4.41E+00	8.75E+00	8.00E-01	9.38E+00	4.70E-01
UAW5-00 (0-6")	9.00E-02	9.00E-02	9.28E-01	2.94E+02	2.65E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.17E+02	1.63E+00	4.23E-03	1.13E+00	1.05E-01	8.75E+00	8.00E-01	9.38E+00	1.12E-02
UAW5-050 (0-6")	9.00E-02	9.00E-02	9.28E-01	3.49E+02	3.14E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.76E+02	1.93E+00	4.23E-03	1.13E+00	1.24E-01	8.75E+00	8.00E-01	9.38E+00	1.32E-02
UAW5-100 (0-6")	9.00E-02	9.00E-02	9.28E-01	5.22E+02	4.70E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.63E+02	2.89E+00	4.23E-03	1.13E+00	1.86E-01	8.75E+00	8.00E-01	9.38E+00	1.98E-02
UAW5-100+25 (0-6")	9.00E-02	9.00E-02	9.28E-01	4.28E+02	3.85E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.62E+02	2.37E+00	4.23E-03	1.13E+00	1.53E-01	8.75E+00	8.00E-01	9.38E+00	1.63E-02
UAW5-150 (0-6")	9.00E-02	9.00E-02	9.28E-01	6.07E+02	5.46E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	6.54E+02	3.35E+00	4.23E-03	1.13E+00	2.16E-01	8.75E+00	8.00E-01	9.38E+00	2.31E-02
UAW5-150+50 (0-6")	9.00E-02	9.00E-02	9.28E-01	4.40E+02	3.96E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.74E+02	2.43E+00	4.23E-03	1.13E+00	1.57E-01	8.75E+00	8.00E-01	9.38E+00	1.67E-02
UAW5-200 (0-6")	9.00E-02	9.00E-02	9.28E-01	6.71E+02	6.04E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	7.24E+02	3.71E+00	4.23E-03	1.13E+00	2.39E-01	8.75E+00	8.00E-01	9.38E+00	2.55E-02
UAW5-250 (0-6")	9.00E-02	9.00E-02	9.28E-01	1.10E+03	9.85E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.18E+03	6.05E+00	4.23E-03	1.13E+00	3.90E-01	8.75E+00	8.00E-01	9.38E+00	4.16E-02
UAW5-250+50 (0-6")	9.00E-02	9.00E-02	9.28E-01	4.29E+02	3.86E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.62E+02	2.37E+00	4.23E-03	1.13E+00	1.53E-01	8.75E+00	8.00E-01	9.38E+00	1.63E-02
UAW5-300 (0-6")	9.00E-02	9.00E-02	9.28E-01	6.32E+02	5.68E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	6.81E+02	3.49E+00	4.23E-03	1.13E+00	2.25E-01	8.75E+00	8.00E-01	9.38E+00	2.40E-02
UAW5-300+75 (0-6")	9.00E-02	9.00E-02	9.28E-01	3.80E+02	3.42E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.10E+02	2.10E+00	4.23E-03	1.13E+00	1.35E-01	8.75E+00	8.00E-01	9.38E+00	1.44E-02
UAW5-350 (0-6")	9.00E-02	9.00E-02	9.28E-01	7.01E+02	6.31E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	7.56E+02	3.88E+00	4.23E-03	1.13E+00	2.50E-01	8.75E+00	8.00E-01	9.38E+00	2.66E-02
UAW5-400 (0-6")	9.00E-02	9.00E-02	9.28E-01	8.73E+02	7.85E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	9.40E+02	4.82E+00	4.23E-03	1.13E+00	3.11E-01	8.75E+00	8.00E-01	9.38E+00	3.32E-02
UAW5-450 (0-6")	9.00E-02	9.00E-02	9.28E-01	4.45E+01	4.01E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.80E+01	2.46E-01	4.23E-03	1.13E+00	1.59E-02	8.75E+00	8.00E-01	9.38E+00	1.69E-03
UAW5-500 (0-6")	9.00E-02	9.00E-02	9.28E-01	2.37E+03	2.13E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.55E+03	1.31E+01	4.23E-03	1.13E+00	8.45E-01	8.75E+00	8.00E-01	9.38E+00	9.01E-02
UAW5-500+50 (0-6")	9.00E-02	9.00E-02	9.28E-01	6.53E+02	5.88E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	7.04E+02	3.61E+00	4.23E-03	1.13E+00	2.33E-01	8.75E+00	8.00E-01	9.38E+00	2.48E-02
UAW5-550 (0-6")	9.00E-02	9.00E-02	9.28E-01	7.61E+02	6.85E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	8.21E+02	4.21E+00	4.23E-03	1.13E+00	2.71E-01	8.75E+00	8.00E-01	9.38E+00	2.89E-02
UAW5-600 (0-6")	9.00E-02	9.00E-02	9.28E-01	5.64E+02	5.08E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	6.08E+02	3.12E+00	4.23E-03	1.13E+00	2.01E-01	8.75E+00	8.00E-01	9.38E+00	2.14E-02
UAW5-Comp 1 (0-6")	9.00E-02	9.00E-02	9.28E-01	9.09E+02	8.18E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	9.80E+02	5.03E+00	4.23E-03	1.13E+00	3.24E-01	8.75E+00	8.00E-01	9.38E+00	3.46E-02
																						Maximum HQ (Upper Anaconda Mine)	**2.76E+00**

TABLE C-1D: LEAD DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 1 - UPPER ANACONDA MINE WASTE REMOVAL AREAS AND WASTE PILES (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

Site Area (hectares) 2.95

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
American Kestrel (Insectivorous Birds - Terrestrial)																							
Reference Sites																							
ACBG-1	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	3.58E+01	4.93E-01	7.84E-04	2.31E+01	1.81E-02	1.13E-02	1.24E-01	4.65E-02	8.75E+00	8.00E-01	6.03E+00	7.71E-03
ACBG-2	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	5.94E+01	8.17E-01	7.84E-04	3.83E+01	3.00E-02	1.13E-02	1.24E-01	7.70E-02	8.75E+00	8.00E-01	6.03E+00	1.28E-02
Upper Anaconda Mine																						**Minimum HQ (Reference Sites)**	**7.71E-03**
UAW1-00 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	9.64E+03	1.33E+02	7.84E-04	6.21E+03	4.87E+00	1.13E-02	1.24E-01	1.25E+01	8.75E+00	8.00E-01	6.03E+00	2.07E+00
UAW1-00+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	5.28E+02	7.27E+00	7.84E-04	3.40E+02	2.67E-01	1.13E-02	1.24E-01	6.85E-01	8.75E+00	8.00E-01	6.03E+00	1.14E-01
UAW1-050 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	2.62E+03	3.61E+01	7.84E-04	1.69E+03	1.32E+00	1.13E-02	1.24E-01	3.40E+00	8.75E+00	8.00E-01	6.03E+00	5.64E-01
UAW1-100 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.72E+04	2.37E+02	7.84E-04	1.11E+04	8.69E+00	1.13E-02	1.24E-01	2.23E+01	8.75E+00	8.00E-01	6.03E+00	3.70E+00
UAW1-150 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	3.85E+03	5.29E+01	7.84E-04	2.48E+03	1.94E+00	1.13E-02	1.24E-01	4.99E+00	8.75E+00	8.00E-01	6.03E+00	8.28E-01
UAW1-150+75 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.19E+03	1.64E+01	7.84E-04	7.68E+02	6.02E-01	1.13E-02	1.24E-01	1.55E+00	8.75E+00	8.00E-01	6.03E+00	2.57E-01
UAW1-Comp 1 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	6.44E+04	8.86E+02	7.84E-04	4.15E+04	3.25E+01	1.13E-02	1.24E-01	8.35E+01	8.75E+00	8.00E-01	6.03E+00	1.39E+01
UAW2-0000 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.33E+03	1.84E+01	7.84E-04	8.59E+02	6.74E-01	1.13E-02	1.24E-01	1.73E+00	8.75E+00	8.00E-01	6.03E+00	2.87E-01
UAW2-0000+225 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	3.88E+02	5.34E+00	7.84E-04	2.50E+02	1.96E-01	1.13E-02	1.24E-01	5.03E-01	8.75E+00	8.00E-01	6.03E+00	8.35E-02
UAW2-0050 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	2.92E+02	4.01E+00	7.84E-04	1.88E+02	1.47E-01	1.13E-02	1.24E-01	3.78E-01	8.75E+00	8.00E-01	6.03E+00	6.28E-02
UAW2-0100 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.17E+03	1.61E+01	7.84E-04	7.54E+02	5.91E-01	1.13E-02	1.24E-01	1.52E+00	8.75E+00	8.00E-01	6.03E+00	2.52E-01
UAW2-0100+250 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	2.30E+02	3.16E+00	7.84E-04	1.48E+02	1.16E-01	1.13E-02	1.24E-01	2.98E-01	8.75E+00	8.00E-01	6.03E+00	4.94E-02
UAW2-0150 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.95E+02	2.68E+00	7.84E-04	1.25E+02	9.84E-02	1.13E-02	1.24E-01	2.53E-01	8.75E+00	8.00E-01	6.03E+00	4.19E-02
UAW2-0200 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	5.76E+03	7.92E+01	7.84E-04	3.71E+03	2.91E+00	1.13E-02	1.24E-01	7.46E+00	8.75E+00	8.00E-01	6.03E+00	1.24E+00
UAW2-0250 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	6.82E+03	9.38E+01	7.84E-04	4.39E+03	3.45E+00	1.13E-02	1.24E-01	8.85E+00	8.75E+00	8.00E-01	6.03E+00	1.47E+00
UAW2-0250+50 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	7.89E+02	1.09E+01	7.84E-04	5.08E+02	3.99E-01	1.13E-02	1.24E-01	1.02E+00	8.75E+00	8.00E-01	6.03E+00	1.70E-01
UAW2-0300 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	7.05E+03	9.70E+01	7.84E-04	4.54E+03	3.56E+00	1.13E-02	1.24E-01	9.14E+00	8.75E+00	8.00E-01	6.03E+00	1.52E+00
UAW2-0350 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.64E+03	2.25E+01	7.84E-04	1.05E+03	8.27E-01	1.13E-02	1.24E-01	2.12E+00	8.75E+00	8.00E-01	6.03E+00	3.52E-01
UAW2-0350+50 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	5.85E+02	8.06E+00	7.84E-04	3.77E+02	2.96E-01	1.13E-02	1.24E-01	7.59E-01	8.75E+00	8.00E-01	6.03E+00	1.26E-01
UAW2-0400 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.89E+03	2.60E+01	7.84E-04	1.22E+03	9.56E-01	1.13E-02	1.24E-01	2.45E+00	8.75E+00	8.00E-01	6.03E+00	4.07E-01
UAW2-0400+150 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	4.26E+02	5.86E+00	7.84E-04	2.74E+02	2.15E-01	1.13E-02	1.24E-01	5.52E-01	8.75E+00	8.00E-01	6.03E+00	9.16E-02
UAW2-0450 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.44E+03	1.98E+01	7.84E-04	9.25E+02	7.26E-01	1.13E-02	1.24E-01	1.86E+00	8.75E+00	8.00E-01	6.03E+00	3.09E-01
UAW2-0450+50 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	7.96E+02	1.09E+01	7.84E-04	5.13E+02	4.02E-01	1.13E-02	1.24E-01	1.03E+00	8.75E+00	8.00E-01	6.03E+00	1.71E-01
UAW2-1000 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	4.91E+02	6.76E+00	7.84E-04	3.17E+02	2.48E-01	1.13E-02	1.24E-01	6.37E-01	8.75E+00	8.00E-01	6.03E+00	1.06E-01
UAW2-Comp (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	5.02E+02	6.90E+00	7.84E-04	3.23E+02	2.53E-01	1.13E-02	1.24E-01	6.51E-01	8.75E+00	8.00E-01	6.03E+00	1.08E-01
UAW3-Comp 1 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.21E+05	1.67E+03	7.84E-04	7.83E+04	6.14E+01	1.13E-02	1.24E-01	1.58E+02	8.75E+00	8.00E-01	6.03E+00	2.61E+01
UAW4-Comp 1 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	2.07E+04	2.85E+02	7.84E-04	1.33E+04	1.05E+01	1.13E-02	1.24E-01	2.68E+01	8.75E+00	8.00E-01	6.03E+00	4.46E+00
UAW5-00 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	4.92E+02	6.77E+00	7.84E-04	3.17E+02	2.49E-01	1.13E-02	1.24E-01	6.38E-01	8.75E+00	8.00E-01	6.03E+00	1.06E-01
UAW5-050 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	5.83E+02	8.03E+00	7.84E-04	3.76E+02	2.95E-01	1.13E-02	1.24E-01	7.56E-01	8.75E+00	8.00E-01	6.03E+00	1.26E-01
UAW5-100 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	8.74E+02	1.20E+01	7.84E-04	5.63E+02	4.41E-01	1.13E-02	1.24E-01	1.13E+00	8.75E+00	8.00E-01	6.03E+00	1.88E-01
UAW5-100+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	7.16E+02	9.86E+00	7.84E-04	4.62E+02	3.62E-01	1.13E-02	1.24E-01	9.29E-01	8.75E+00	8.00E-01	6.03E+00	1.54E-01
UAW5-150 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.02E+03	1.40E+01	7.84E-04	6.54E+02	5.13E-01	1.13E-02	1.24E-01	1.32E+00	8.75E+00	8.00E-01	6.03E+00	2.19E-01
UAW5-150+50 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	7.36E+02	1.01E+01	7.84E-04	4.74E+02	3.72E-01	1.13E-02	1.24E-01	9.54E-01	8.75E+00	8.00E-01	6.03E+00	1.58E-01
UAW5-200 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.12E+03	1.55E+01	7.84E-04	7.24E+02	5.68E-01	1.13E-02	1.24E-01	1.46E+00	8.75E+00	8.00E-01	6.03E+00	2.42E-01
UAW5-250 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.83E+03	2.52E+01	7.84E-04	1.18E+03	9.26E-01	1.13E-02	1.24E-01	2.38E+00	8.75E+00	8.00E-01	6.03E+00	3.94E-01
UAW5-250+50 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	7.17E+02	9.87E+00	7.84E-04	4.62E+02	3.63E-01	1.13E-02	1.24E-01	9.30E-01	8.75E+00	8.00E-01	6.03E+00	1.54E-01
UAW5-300 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.06E+03	1.45E+01	7.84E-04	6.81E+02	5.34E-01	1.13E-02	1.24E-01	1.37E+00	8.75E+00	8.00E-01	6.03E+00	2.27E-01
UAW5-300+75 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	6.36E+02	8.75E+00	7.84E-04	4.10E+02	3.21E-01	1.13E-02	1.24E-01	8.25E-01	8.75E+00	8.00E-01	6.03E+00	1.37E-01
UAW5-350 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.17E+03	1.61E+01	7.84E-04	7.56E+02	5.93E-01	1.13E-02	1.24E-01	1.52E+00	8.75E+00	8.00E-01	6.03E+00	2.52E-01
UAW5-400 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.46E+03	2.01E+01	7.84E-04	9.40E+02	7.38E-01	1.13E-02	1.24E-01	1.89E+00	8.75E+00	8.00E-01	6.03E+00	3.14E-01
UAW5-450 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	7.45E+01	1.03E+00	7.84E-04	4.80E+01	3.77E-02	1.13E-02	1.24E-01	9.66E-02	8.75E+00	8.00E-01	6.03E+00	1.60E-02
UAW5-500 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	3.97E+03	5.46E+01	7.84E-04	2.55E+03	2.00E+00	1.13E-02	1.24E-01	5.14E+00	8.75E+00	8.00E-01	6.03E+00	8.53E-01
UAW5-500+50 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.09E+03	1.50E+01	7.84E-04	7.04E+02	5.52E-01	1.13E-02	1.24E-01	1.42E+00	8.75E+00	8.00E-01	6.03E+00	2.35E-01
UAW5-550 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.27E+03	1.75E+01	7.84E-04	8.21E+02	6.44E-01	1.13E-02	1.24E-01	1.65E+00	8.75E+00	8.00E-01	6.03E+00	2.74E-01
UAW5-600 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	9.44E+02	1.30E+01	7.84E-04	6.08E+02	4.77E-01	1.13E-02	1.24E-01	1.22E+00	8.75E+00	8.00E-01	6.03E+00	2.03E-01
UAW5-Comp 1 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.52E+03	2.09E+01	7.84E-04	9.80E+02	7.69E-01	1.13E-02	1.24E-01	1.97E+00	8.75E+00	8.00E-01	6.03E+00	3.27E-01
																						Maximum HQ (Upper Anaconda Mine)	**2.61E+01**

TABLE C-1D: LEAD DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 1 - UPPER ANACONDA MINE WASTE REMOVAL AREAS AND WASTE PILES (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

Site Area (hectares) **2.95**

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Meadow Vole (Small Herbivorous Mammal - Terrestrial)																							
Reference Sites																							
ACBG-1	4.69E-03	NA	NA	NA	NA	4.69E-03	4.35E-02	1.00E+00	4.70E-03	NA	NA	NA	NA	1.13E-04	2.31E+01	2.60E-03	1.00E+00	3.06E-02	2.39E-01	2.41E+02	1.87E-02	2.34E+02	1.02E-03
ACBG-2	4.69E-03	NA	NA	NA	NA	4.69E-03	4.35E-02	1.66E+00	7.80E-03	NA	NA	NA	NA	1.13E-04	3.83E+01	4.31E-03	1.00E+00	3.06E-02	3.95E-01	2.41E+02	1.87E-02	2.34E+02	1.69E-03
Upper Anaconda Mine																						**Minimum HQ (Reference Sites)**	**1.02E-03**
UAW1-00 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	3.90E+03	1.83E+01	NA	NA	NA	NA	1.13E-04	6.21E+03	6.99E-01	1.00E+00	3.06E-02	6.21E+02	2.41E+02	1.87E-02	2.34E+02	2.66E+00
UAW1-00+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	2.14E+02	1.00E+00	NA	NA	NA	NA	1.13E-04	3.40E+02	3.83E-02	1.00E+00	3.06E-02	3.40E+01	2.41E+02	1.87E-02	2.34E+02	1.46E-01
UAW1-050 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	1.06E+03	4.97E+00	NA	NA	NA	NA	1.13E-04	1.69E+03	1.90E-01	1.00E+00	3.06E-02	1.69E+02	2.41E+02	1.87E-02	2.34E+02	7.22E-01
UAW1-100 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	6.96E+03	3.26E+01	NA	NA	NA	NA	1.13E-04	1.11E+04	1.25E+00	1.00E+00	3.06E-02	1.11E+03	2.41E+02	1.87E-02	2.34E+02	4.74E+00
UAW1-150 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	1.56E+03	7.30E+00	NA	NA	NA	NA	1.13E-04	2.48E+03	2.79E-01	1.00E+00	3.06E-02	2.48E+02	2.41E+02	1.87E-02	2.34E+02	1.06E+00
UAW1-150+75 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	4.82E+02	2.26E+00	NA	NA	NA	NA	1.13E-04	7.68E+02	8.64E-02	1.00E+00	3.06E-02	7.68E+01	2.41E+02	1.87E-02	2.34E+02	3.29E-01
UAW1-Comp 1 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	2.61E+04	1.22E+02	NA	NA	NA	NA	1.13E-04	4.15E+04	4.67E+00	1.00E+00	3.06E-02	4.14E+03	2.41E+02	1.87E-02	2.34E+02	1.77E+01
UAW2-0000 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	5.40E+02	2.53E+00	NA	NA	NA	NA	1.13E-04	8.59E+02	9.67E-02	1.00E+00	3.06E-02	8.59E+01	2.41E+02	1.87E-02	2.34E+02	3.68E-01
UAW2-0000+225 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	1.57E+02	7.37E-01	NA	NA	NA	NA	1.13E-04	2.50E+02	2.81E-02	1.00E+00	3.06E-02	2.50E+01	2.41E+02	1.87E-02	2.34E+02	1.07E-01
UAW2-0050 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	1.18E+02	5.53E-01	NA	NA	NA	NA	1.13E-04	1.88E+02	2.11E-02	1.00E+00	3.06E-02	1.88E+01	2.41E+02	1.87E-02	2.34E+02	8.04E-02
UAW2-0100 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	4.73E+02	2.22E+00	NA	NA	NA	NA	1.13E-04	7.54E+02	8.48E-02	1.00E+00	3.06E-02	7.53E+01	2.41E+02	1.87E-02	2.34E+02	3.22E-01
UAW2-0100+250 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	9.29E+01	4.36E-01	NA	NA	NA	NA	1.13E-04	1.48E+02	1.66E-02	1.00E+00	3.06E-02	1.48E+01	2.41E+02	1.87E-02	2.34E+02	6.33E-02
UAW2-0150 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	7.88E+01	3.70E-01	NA	NA	NA	NA	1.13E-04	1.25E+02	1.41E-02	1.00E+00	3.06E-02	1.25E+01	2.41E+02	1.87E-02	2.34E+02	5.37E-02
UAW2-0200 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	2.33E+03	1.09E+01	NA	NA	NA	NA	1.13E-04	3.71E+03	4.17E-01	1.00E+00	3.06E-02	3.71E+02	2.41E+02	1.87E-02	2.34E+02	1.59E+00
UAW2-0250 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	2.76E+03	1.29E+01	NA	NA	NA	NA	1.13E-04	4.39E+03	4.94E-01	1.00E+00	3.06E-02	4.39E+02	2.41E+02	1.87E-02	2.34E+02	1.88E+00
UAW2-0250+50 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	3.19E+02	1.50E+00	NA	NA	NA	NA	1.13E-04	5.08E+02	5.72E-02	1.00E+00	3.06E-02	5.08E+01	2.41E+02	1.87E-02	2.34E+02	2.17E-01
UAW2-0300 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	2.85E+03	1.34E+01	NA	NA	NA	NA	1.13E-04	4.54E+03	5.11E-01	1.00E+00	3.06E-02	4.54E+02	2.41E+02	1.87E-02	2.34E+02	1.94E+00
UAW2-0350 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	6.62E+02	3.10E+00	NA	NA	NA	NA	1.13E-04	1.05E+03	1.19E-01	1.00E+00	3.06E-02	1.05E+02	2.41E+02	1.87E-02	2.34E+02	4.51E-01
UAW2-0350+50 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	2.37E+02	1.11E+00	NA	NA	NA	NA	1.13E-04	3.77E+02	4.24E-02	1.00E+00	3.06E-02	3.77E+01	2.41E+02	1.87E-02	2.34E+02	1.61E-01
UAW2-0400 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	7.66E+02	3.59E+00	NA	NA	NA	NA	1.13E-04	1.22E+03	1.37E-01	1.00E+00	3.06E-02	1.22E+02	2.41E+02	1.87E-02	2.34E+02	5.21E-01
UAW2-0400+150 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	1.72E+02	8.08E-01	NA	NA	NA	NA	1.13E-04	2.74E+02	3.09E-02	1.00E+00	3.06E-02	2.74E+01	2.41E+02	1.87E-02	2.34E+02	1.17E-01
UAW2-0450 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	5.81E+02	2.73E+00	NA	NA	NA	NA	1.13E-04	9.25E+02	1.04E-01	1.00E+00	3.06E-02	9.25E+01	2.41E+02	1.87E-02	2.34E+02	3.96E-01
UAW2-0450+50 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	3.22E+02	1.51E+00	NA	NA	NA	NA	1.13E-04	5.13E+02	5.77E-02	1.00E+00	3.06E-02	5.12E+01	2.41E+02	1.87E-02	2.34E+02	2.19E-01
UAW2-1000 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	1.99E+02	9.33E-01	NA	NA	NA	NA	1.13E-04	3.17E+02	3.56E-02	1.00E+00	3.06E-02	3.16E+01	2.41E+02	1.87E-02	2.34E+02	1.35E-01
UAW2-Comp (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	2.03E+02	9.52E-01	NA	NA	NA	NA	1.13E-04	3.23E+02	3.64E-02	1.00E+00	3.06E-02	3.23E+01	2.41E+02	1.87E-02	2.34E+02	1.38E-01
UAW3-Comp 1 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	4.92E+04	2.31E+02	NA	NA	NA	NA	1.13E-04	7.83E+04	8.81E+00	1.00E+00	3.06E-02	7.82E+03	2.41E+02	1.87E-02	2.34E+02	3.35E+01
UAW4-Comp 1 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	8.38E+03	3.93E+01	NA	NA	NA	NA	1.13E-04	1.33E+04	1.50E+00	1.00E+00	3.06E-02	1.33E+03	2.41E+02	1.87E-02	2.34E+02	5.71E+00
UAW5-00 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	1.99E+02	9.34E-01	NA	NA	NA	NA	1.13E-04	3.17E+02	3.57E-02	1.00E+00	3.06E-02	3.17E+01	2.41E+02	1.87E-02	2.34E+02	1.36E-01
UAW5-050 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	2.36E+02	1.11E+00	NA	NA	NA	NA	1.13E-04	3.76E+02	4.23E-02	1.00E+00	3.06E-02	3.76E+01	2.41E+02	1.87E-02	2.34E+02	1.61E-01
UAW5-100 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	3.54E+02	1.66E+00	NA	NA	NA	NA	1.13E-04	5.63E+02	6.33E-02	1.00E+00	3.06E-02	5.63E+01	2.41E+02	1.87E-02	2.34E+02	2.41E-01
UAW5-100+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	2.90E+02	1.36E+00	NA	NA	NA	NA	1.13E-04	4.62E+02	5.19E-02	1.00E+00	3.06E-02	4.61E+01	2.41E+02	1.87E-02	2.34E+02	1.97E-01
UAW5-150 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	4.11E+02	1.93E+00	NA	NA	NA	NA	1.13E-04	6.54E+02	7.36E-02	1.00E+00	3.06E-02	6.54E+01	2.41E+02	1.87E-02	2.34E+02	2.80E-01
UAW5-150+50 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	2.98E+02	1.40E+00	NA	NA	NA	NA	1.13E-04	4.74E+02	5.33E-02	1.00E+00	3.06E-02	4.74E+01	2.41E+02	1.87E-02	2.34E+02	2.03E-01
UAW5-200 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	4.55E+02	2.13E+00	NA	NA	NA	NA	1.13E-04	7.24E+02	8.14E-02	1.00E+00	3.06E-02	7.23E+01	2.41E+02	1.87E-02	2.34E+02	3.10E-01
UAW5-250 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	7.42E+02	3.48E+00	NA	NA	NA	NA	1.13E-04	1.18E+03	1.33E-01	1.00E+00	3.06E-02	1.18E+02	2.41E+02	1.87E-02	2.34E+02	5.05E-01
UAW5-250+50 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	2.90E+02	1.36E+00	NA	NA	NA	NA	1.13E-04	4.62E+02	5.20E-02	1.00E+00	3.06E-02	4.62E+01	2.41E+02	1.87E-02	2.34E+02	1.98E-01
UAW5-300 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	4.28E+02	2.01E+00	NA	NA	NA	NA	1.13E-04	6.81E+02	7.66E-02	1.00E+00	3.06E-02	6.80E+01	2.41E+02	1.87E-02	2.34E+02	2.91E-01
UAW5-300+75 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	2.57E+02	1.21E+00	NA	NA	NA	NA	1.13E-04	4.10E+02	4.61E-02	1.00E+00	3.06E-02	4.09E+01	2.41E+02	1.87E-02	2.34E+02	1.75E-01
UAW5-350 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	4.75E+02	2.23E+00	NA	NA	NA	NA	1.13E-04	7.56E+02	8.51E-02	1.00E+00	3.06E-02	7.55E+01	2.41E+02	1.87E-02	2.34E+02	3.23E-01
UAW5-400 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	5.91E+02	2.77E+00	NA	NA	NA	NA	1.13E-04	9.40E+02	1.06E-01	1.00E+00	3.06E-02	9.40E+01	2.41E+02	1.87E-02	2.34E+02	4.02E-01
UAW5-450 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	3.02E+01	1.41E-01	NA	NA	NA	NA	1.13E-04	4.80E+01	5.40E-03	1.00E+00	3.06E-02	4.80E+00	2.41E+02	1.87E-02	2.34E+02	2.05E-02
UAW5-500 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	1.60E+03	7.53E+00	NA	NA	NA	NA	1.13E-04	2.55E+03	2.88E-01	1.00E+00	3.06E-02	2.55E+02	2.41E+02	1.87E-02	2.34E+02	1.09E+00
UAW5-500+50 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	4.42E+02	2.07E+00	NA	NA	NA	NA	1.13E-04	7.04E+02	7.92E-02	1.00E+00	3.06E-02	7.04E+01	2.41E+02	1.87E-02	2.34E+02	3.01E-01
UAW5-550 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	5.16E+02	2.42E+00	NA	NA	NA	NA	1.13E-04	8.21E+02	9.24E-02	1.00E+00	3.06E-02	8.20E+01	2.41E+02	1.87E-02	2.34E+02	3.51E-01
UAW5-600 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	3.82E+02	1.79E+00	NA	NA	NA	NA	1.13E-04	6.08E+02	6.84E-02	1.00E+00	3.06E-02	6.08E+01	2.41E+02	1.87E-02	2.34E+02	2.60E-01
UAW5-Comp 1 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	6.16E+02	2.89E+00	NA	NA	NA	NA	1.13E-04	9.80E+02	1.10E-01	1.00E+00	3.06E-02	9.80E+01	2.41E+02	1.87E-02	2.34E+02	4.19E-01
																						Maximum HQ (Upper Anaconda Mine)	**3.35E+01**

TABLE C-1D: LEAD DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 1 - UPPER ANACONDA MINE WASTE REMOVAL AREAS AND WASTE PILES (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **2.95**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
White-Tailed Deer (Large Herbivorous Mammal - Terrestrial)																							
Reference Sites																							
ACBG-1	1.43E+00	NA	NA	NA	NA	1.43E+00	4.35E-02	1.00E+00	1.44E+00	NA	NA	NA	NA	2.86E-02	2.31E+01	6.61E-01	1.65E-02	1.35E+02	2.56E-04	2.41E+02	1.87E-02	1.41E+02	1.82E-06
ACBG-2	1.43E+00	NA	NA	NA	NA	1.43E+00	4.35E-02	1.66E+00	2.38E+00	NA	NA	NA	NA	2.86E-02	3.83E+01	1.10E+00	1.65E-02	1.35E+02	4.25E-04	2.41E+02	1.87E-02	1.41E+02	3.01E-06
Upper Anaconda Mine																						**Minimum HQ (Reference Sites)**	**1.82E-06**
UAW1-00 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	3.90E+03	5.59E+03	NA	NA	NA	NA	2.86E-02	6.21E+03	1.78E+02	1.65E-02	1.35E+02	7.05E-01	2.41E+02	1.87E-02	1.41E+02	4.99E-03
UAW1-00+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	2.14E+02	3.06E+02	NA	NA	NA	NA	2.86E-02	3.40E+02	9.75E+00	1.65E-02	1.35E+02	3.86E-02	2.41E+02	1.87E-02	1.41E+02	2.74E-04
UAW1-050 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	1.06E+03	1.52E+03	NA	NA	NA	NA	2.86E-02	1.69E+03	4.84E+01	1.65E-02	1.35E+02	1.92E-01	2.41E+02	1.87E-02	1.41E+02	1.36E-03
UAW1-100 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	6.96E+03	9.96E+03	NA	NA	NA	NA	2.86E-02	1.11E+04	3.17E+02	1.65E-02	1.35E+02	1.26E+00	2.41E+02	1.87E-02	1.41E+02	8.90E-03
UAW1-150 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	1.56E+03	2.23E+03	NA	NA	NA	NA	2.86E-02	2.48E+03	7.10E+01	1.65E-02	1.35E+02	2.81E-01	2.41E+02	1.87E-02	1.41E+02	1.99E-03
UAW1-150+75 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	4.82E+02	6.91E+02	NA	NA	NA	NA	2.86E-02	7.68E+02	2.20E+01	1.65E-02	1.35E+02	8.71E-02	2.41E+02	1.87E-02	1.41E+02	6.17E-04
UAW1-Comp 1 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	2.61E+04	3.73E+04	NA	NA	NA	NA	2.86E-02	4.15E+04	1.19E+03	1.65E-02	1.35E+02	4.70E+00	2.41E+02	1.87E-02	1.41E+02	3.33E-02
UAW2-0000 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	5.40E+02	7.73E+02	NA	NA	NA	NA	2.86E-02	8.59E+02	2.46E+01	1.65E-02	1.35E+02	9.75E-02	2.41E+02	1.87E-02	1.41E+02	6.90E-04
UAW2-0000+225 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	1.57E+02	2.25E+02	NA	NA	NA	NA	2.86E-02	2.50E+02	7.16E+00	1.65E-02	1.35E+02	2.84E-02	2.41E+02	1.87E-02	1.41E+02	2.01E-04
UAW2-0050 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	1.18E+02	1.69E+02	NA	NA	NA	NA	2.86E-02	1.88E+02	5.38E+00	1.65E-02	1.35E+02	2.13E-02	2.41E+02	1.87E-02	1.41E+02	1.51E-04
UAW2-0100 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	4.73E+02	6.78E+02	NA	NA	NA	NA	2.86E-02	7.54E+02	2.16E+01	1.65E-02	1.35E+02	8.55E-02	2.41E+02	1.87E-02	1.41E+02	6.06E-04
UAW2-0100+250 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	9.29E+01	1.33E+02	NA	NA	NA	NA	2.86E-02	1.48E+02	4.23E+00	1.65E-02	1.35E+02	1.68E-02	2.41E+02	1.87E-02	1.41E+02	1.19E-04
UAW2-0150 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	7.88E+01	1.13E+02	NA	NA	NA	NA	2.86E-02	1.25E+02	3.59E+00	1.65E-02	1.35E+02	1.42E-02	2.41E+02	1.87E-02	1.41E+02	1.01E-04
UAW2-0200 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	2.33E+03	3.34E+03	NA	NA	NA	NA	2.86E-02	3.71E+03	1.06E+02	1.65E-02	1.35E+02	4.21E-01	2.41E+02	1.87E-02	1.41E+02	2.98E-03
UAW2-0250 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	2.76E+03	3.95E+03	NA	NA	NA	NA	2.86E-02	4.39E+03	1.26E+02	1.65E-02	1.35E+02	4.98E-01	2.41E+02	1.87E-02	1.41E+02	3.53E-03
UAW2-0250+50 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	3.19E+02	4.57E+02	NA	NA	NA	NA	2.86E-02	5.08E+02	1.46E+01	1.65E-02	1.35E+02	5.77E-02	2.41E+02	1.87E-02	1.41E+02	4.08E-04
UAW2-0300 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	2.85E+03	4.09E+03	NA	NA	NA	NA	2.86E-02	4.54E+03	1.30E+02	1.65E-02	1.35E+02	5.15E-01	2.41E+02	1.87E-02	1.41E+02	3.65E-03
UAW2-0350 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	6.62E+02	9.48E+02	NA	NA	NA	NA	2.86E-02	1.05E+03	3.02E+01	1.65E-02	1.35E+02	1.20E-01	2.41E+02	1.87E-02	1.41E+02	8.47E-04
UAW2-0350+50 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	2.37E+02	3.39E+02	NA	NA	NA	NA	2.86E-02	3.77E+02	1.08E+01	1.65E-02	1.35E+02	4.28E-02	2.41E+02	1.87E-02	1.41E+02	3.03E-04
UAW2-0400 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	7.66E+02	1.10E+03	NA	NA	NA	NA	2.86E-02	1.22E+03	3.49E+01	1.65E-02	1.35E+02	1.38E-01	2.41E+02	1.87E-02	1.41E+02	9.79E-04
UAW2-0400+150 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	1.72E+02	2.47E+02	NA	NA	NA	NA	2.86E-02	2.74E+02	7.85E+00	1.65E-02	1.35E+02	3.11E-02	2.41E+02	1.87E-02	1.41E+02	2.20E-04
UAW2-0450 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	5.81E+02	8.32E+02	NA	NA	NA	NA	2.86E-02	9.25E+02	2.65E+01	1.65E-02	1.35E+02	1.05E-01	2.41E+02	1.87E-02	1.41E+02	7.44E-04
UAW2-0450+50 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	3.22E+02	4.61E+02	NA	NA	NA	NA	2.86E-02	5.13E+02	1.47E+01	1.65E-02	1.35E+02	5.82E-02	2.41E+02	1.87E-02	1.41E+02	4.12E-04
UAW2-1000 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	1.99E+02	2.85E+02	NA	NA	NA	NA	2.86E-02	3.17E+02	9.07E+00	1.65E-02	1.35E+02	3.59E-02	2.41E+02	1.87E-02	1.41E+02	2.54E-04
UAW2-Comp (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	2.03E+02	2.91E+02	NA	NA	NA	NA	2.86E-02	3.23E+02	9.25E+00	1.65E-02	1.35E+02	3.67E-02	2.41E+02	1.87E-02	1.41E+02	2.60E-04
UAW3-Comp 1 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	4.92E+04	7.04E+04	NA	NA	NA	NA	2.86E-02	7.83E+04	2.24E+03	1.65E-02	1.35E+02	8.88E+00	2.41E+02	1.87E-02	1.41E+02	6.29E-02
UAW4-Comp 1 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	8.38E+03	1.20E+04	NA	NA	NA	NA	2.86E-02	1.33E+04	3.82E+02	1.65E-02	1.35E+02	1.51E+00	2.41E+02	1.87E-02	1.41E+02	1.07E-02
UAW5-00 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	1.99E+02	2.85E+02	NA	NA	NA	NA	2.86E-02	3.17E+02	9.08E+00	1.65E-02	1.35E+02	3.60E-02	2.41E+02	1.87E-02	1.41E+02	2.55E-04
UAW5-050 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	2.36E+02	3.38E+02	NA	NA	NA	NA	2.86E-02	3.76E+02	1.08E+01	1.65E-02	1.35E+02	4.26E-02	2.41E+02	1.87E-02	1.41E+02	3.02E-04
UAW5-100 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	3.54E+02	5.06E+02	NA	NA	NA	NA	2.86E-02	5.63E+02	1.61E+01	1.65E-02	1.35E+02	6.39E-02	2.41E+02	1.87E-02	1.41E+02	4.52E-04
UAW5-100+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	2.90E+02	4.15E+02	NA	NA	NA	NA	2.86E-02	4.62E+02	1.32E+01	1.65E-02	1.35E+02	5.24E-02	2.41E+02	1.87E-02	1.41E+02	3.71E-04
UAW5-150 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	4.11E+02	5.88E+02	NA	NA	NA	NA	2.86E-02	6.54E+02	1.87E+01	1.65E-02	1.35E+02	7.42E-02	2.41E+02	1.87E-02	1.41E+02	5.26E-04
UAW5-150+50 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	2.98E+02	4.26E+02	NA	NA	NA	NA	2.86E-02	4.74E+02	1.36E+01	1.65E-02	1.35E+02	5.38E-02	2.41E+02	1.87E-02	1.41E+02	3.81E-04
UAW5-200 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	4.55E+02	6.51E+02	NA	NA	NA	NA	2.86E-02	7.24E+02	2.07E+01	1.65E-02	1.35E+02	8.21E-02	2.41E+02	1.87E-02	1.41E+02	5.81E-04
UAW5-250 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	7.42E+02	1.06E+03	NA	NA	NA	NA	2.86E-02	1.18E+03	3.38E+01	1.65E-02	1.35E+02	1.34E-01	2.41E+02	1.87E-02	1.41E+02	9.48E-04
UAW5-250+50 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	2.90E+02	4.16E+02	NA	NA	NA	NA	2.86E-02	4.62E+02	1.32E+01	1.65E-02	1.35E+02	5.24E-02	2.41E+02	1.87E-02	1.41E+02	3.71E-04
UAW5-300 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	4.28E+02	6.12E+02	NA	NA	NA	NA	2.86E-02	6.81E+02	1.95E+01	1.65E-02	1.35E+02	7.72E-02	2.41E+02	1.87E-02	1.41E+02	5.47E-04
UAW5-300+75 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	2.57E+02	3.68E+02	NA	NA	NA	NA	2.86E-02	4.10E+02	1.17E+01	1.65E-02	1.35E+02	4.65E-02	2.41E+02	1.87E-02	1.41E+02	3.29E-04
UAW5-350 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	4.75E+02	6.80E+02	NA	NA	NA	NA	2.86E-02	7.56E+02	2.16E+01	1.65E-02	1.35E+02	8.58E-02	2.41E+02	1.87E-02	1.41E+02	6.07E-04
UAW5-400 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	5.91E+02	8.46E+02	NA	NA	NA	NA	2.86E-02	9.40E+02	2.69E+01	1.65E-02	1.35E+02	1.07E-01	2.41E+02	1.87E-02	1.41E+02	7.56E-04
UAW5-450 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	3.02E+01	4.32E+01	NA	NA	NA	NA	2.86E-02	4.80E+01	1.37E+00	1.65E-02	1.35E+02	5.45E-03	2.41E+02	1.87E-02	1.41E+02	3.86E-05
UAW5-500 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	1.60E+03	2.30E+03	NA	NA	NA	NA	2.86E-02	2.55E+03	7.32E+01	1.65E-02	1.35E+02	2.90E-01	2.41E+02	1.87E-02	1.41E+02	2.05E-03
UAW5-500+50 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	4.42E+02	6.33E+02	NA	NA	NA	NA	2.86E-02	7.04E+02	2.02E+01	1.65E-02	1.35E+02	7.99E-02	2.41E+02	1.87E-02	1.41E+02	5.66E-04
UAW5-550 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	5.16E+02	7.38E+02	NA	NA	NA	NA	2.86E-02	8.21E+02	2.35E+01	1.65E-02	1.35E+02	9.31E-02	2.41E+02	1.87E-02	1.41E+02	6.59E-04
UAW5-600 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	3.82E+02	5.47E+02	NA	NA	NA	NA	2.86E-02	6.08E+02	1.74E+01	1.65E-02	1.35E+02	6.90E-02	2.41E+02	1.87E-02	1.41E+02	4.89E-04
UAW5-Comp 1 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	6.16E+02	8.82E+02	NA	NA	NA	NA	2.86E-02	9.80E+02	2.81E+01	1.65E-02	1.35E+02	1.11E-01	2.41E+02	1.87E-02	1.41E+02	7.88E-04
																						Maximum HQ (Upper Anaconda Mine)	**6.29E-02**

TABLE C-1D: LEAD DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 1 - UPPER ANACONDA MINE WASTE REMOVAL AREAS AND WASTE PILES (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

Site Area (hectares) **2.95**

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Red Fox (Carnivorous Mammal - Terrestrial)																							
Reference Sites																							
ACBG-1	1.72E-01	1.72E-01	7.62E-02	1.76E+00	3.02E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.31E+01	1.11E-01	2.18E-03	4.54E+00	1.98E-04	2.41E+02	1.87E-02	1.73E+02	1.15E-06
ACBG-2	1.72E-01	1.72E-01	7.62E-02	2.92E+00	5.00E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.83E+01	1.84E-01	2.18E-03	4.54E+00	3.29E-04	2.41E+02	1.87E-02	1.73E+02	1.90E-06
Upper Anaconda Mine																						**Minimum HQ (Reference Sites)**	**1.15E-06**
UAW1-00 (0-6")	1.72E-01	1.72E-01	9.28E-01	5.76E+03	9.89E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	6.21E+03	2.98E+01	2.18E-03	4.54E+00	4.89E-01	2.41E+02	1.87E-02	1.73E+02	2.83E-03
UAW1-00+25 (0-6")	1.72E-01	1.72E-01	9.28E-01	3.16E+02	5.42E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.40E+02	1.64E+00	2.18E-03	4.54E+00	2.68E-02	2.41E+02	1.87E-02	1.73E+02	1.55E-04
UAW1-050 (0-6")	1.72E-01	1.72E-01	9.28E-01	1.57E+03	2.69E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.69E+03	8.11E+00	2.18E-03	4.54E+00	1.33E-01	2.41E+02	1.87E-02	1.73E+02	7.69E-04
UAW1-100 (0-6")	1.72E-01	1.72E-01	9.28E-01	1.03E+04	1.76E+03	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.11E+04	5.32E+01	2.18E-03	4.54E+00	8.73E-01	2.41E+02	1.87E-02	1.73E+02	5.04E-03
UAW1-150 (0-6")	1.72E-01	1.72E-01	9.28E-01	2.30E+03	3.94E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.48E+03	1.19E+01	2.18E-03	4.54E+00	1.95E-01	2.41E+02	1.87E-02	1.73E+02	1.13E-03
UAW1-150+75 (0-6")	1.72E-01	1.72E-01	9.28E-01	7.13E+02	1.22E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	7.68E+02	3.69E+00	2.18E-03	4.54E+00	6.05E-02	2.41E+02	1.87E-02	1.73E+02	3.50E-04
UAW1-Comp 1 (0-6")	1.72E-01	1.72E-01	9.28E-01	3.85E+04	6.60E+03	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.15E+04	1.99E+02	2.18E-03	4.54E+00	3.27E+00	2.41E+02	1.87E-02	1.73E+02	1.89E-02
UAW2-0000 (0-6")	1.72E-01	1.72E-01	9.28E-01	7.97E+02	1.37E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	8.59E+02	4.13E+00	2.18E-03	4.54E+00	6.77E-02	2.41E+02	1.87E-02	1.73E+02	3.91E-04
UAW2-0000+225 (0-6")	1.72E-01	1.72E-01	9.28E-01	2.32E+02	3.98E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.50E+02	1.20E+00	2.18E-03	4.54E+00	1.97E-02	2.41E+02	1.87E-02	1.73E+02	1.14E-04
UAW2-0050 (0-6")	1.72E-01	1.72E-01	9.28E-01	1.74E+02	2.99E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.88E+02	9.02E-01	2.18E-03	4.54E+00	1.48E-02	2.41E+02	1.87E-02	1.73E+02	8.55E-05
UAW2-0100 (0-6")	1.72E-01	1.72E-01	9.28E-01	6.99E+02	1.20E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	7.54E+02	3.62E+00	2.18E-03	4.54E+00	5.94E-02	2.41E+02	1.87E-02	1.73E+02	3.43E-04
UAW2-0100+250 (0-6")	1.72E-01	1.72E-01	9.28E-01	1.37E+02	2.35E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.48E+02	7.10E-01	2.18E-03	4.54E+00	1.17E-02	2.41E+02	1.87E-02	1.73E+02	6.73E-05
UAW2-0150 (0-6")	1.72E-01	1.72E-01	9.28E-01	1.16E+02	2.00E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.25E+02	6.03E-01	2.18E-03	4.54E+00	9.88E-03	2.41E+02	1.87E-02	1.73E+02	5.71E-05
UAW2-0200 (0-6")	1.72E-01	1.72E-01	9.28E-01	3.44E+03	5.90E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.71E+03	1.78E+01	2.18E-03	4.54E+00	2.92E-01	2.41E+02	1.87E-02	1.73E+02	1.69E-03
UAW2-0250 (0-6")	1.72E-01	1.72E-01	9.28E-01	4.08E+03	6.99E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.39E+03	2.11E+01	2.18E-03	4.54E+00	3.46E-01	2.41E+02	1.87E-02	1.73E+02	2.00E-03
UAW2-0250+50 (0-6")	1.72E-01	1.72E-01	9.28E-01	4.72E+02	8.09E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.08E+02	2.44E+00	2.18E-03	4.54E+00	4.00E-02	2.41E+02	1.87E-02	1.73E+02	2.31E-04
UAW2-0300 (0-6")	1.72E-01	1.72E-01	9.28E-01	4.21E+03	7.23E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.54E+03	2.18E+01	2.18E-03	4.54E+00	3.58E-01	2.41E+02	1.87E-02	1.73E+02	2.07E-03
UAW2-0350 (0-6")	1.72E-01	1.72E-01	9.28E-01	9.78E+02	1.68E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.05E+03	5.06E+00	2.18E-03	4.54E+00	8.30E-02	2.41E+02	1.87E-02	1.73E+02	4.80E-04
UAW2-0350+50 (0-6")	1.72E-01	1.72E-01	9.28E-01	3.50E+02	6.00E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.77E+02	1.81E+00	2.18E-03	4.54E+00	2.97E-02	2.41E+02	1.87E-02	1.73E+02	1.72E-04
UAW2-0400 (0-6")	1.72E-01	1.72E-01	9.28E-01	1.13E+03	1.94E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.22E+03	5.85E+00	2.18E-03	4.54E+00	9.60E-02	2.41E+02	1.87E-02	1.73E+02	5.55E-04
UAW2-0400+150 (0-6")	1.72E-01	1.72E-01	9.28E-01	2.54E+02	4.36E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.74E+02	1.32E+00	2.18E-03	4.54E+00	2.16E-02	2.41E+02	1.87E-02	1.73E+02	1.25E-04
UAW2-0450 (0-6")	1.72E-01	1.72E-01	9.28E-01	8.59E+02	1.47E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	9.25E+02	4.45E+00	2.18E-03	4.54E+00	7.29E-02	2.41E+02	1.87E-02	1.73E+02	4.21E-04
UAW2-0450+50 (0-6")	1.72E-01	1.72E-01	9.28E-01	4.76E+02	8.16E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.13E+02	2.46E+00	2.18E-03	4.54E+00	4.04E-02	2.41E+02	1.87E-02	1.73E+02	2.33E-04
UAW2-1000 (0-6")	1.72E-01	1.72E-01	9.28E-01	2.94E+02	5.04E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.17E+02	1.52E+00	2.18E-03	4.54E+00	2.49E-02	2.41E+02	1.87E-02	1.73E+02	1.44E-04
UAW2-Comp (0-6")	1.72E-01	1.72E-01	9.28E-01	3.00E+02	5.14E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.23E+02	1.55E+00	2.18E-03	4.54E+00	2.55E-02	2.41E+02	1.87E-02	1.73E+02	1.47E-04
UAW3-Comp 1 (0-6")	1.72E-01	1.72E-01	9.28E-01	7.26E+04	1.25E+04	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	7.83E+04	3.76E+02	2.18E-03	4.54E+00	6.17E+00	2.41E+02	1.87E-02	1.73E+02	3.56E-02
UAW4-Comp 1 (0-6")	1.72E-01	1.72E-01	9.28E-01	1.24E+04	2.12E+03	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.33E+04	6.41E+01	2.18E-03	4.54E+00	1.05E+00	2.41E+02	1.87E-02	1.73E+02	6.07E-03
UAW5-00 (0-6")	1.72E-01	1.72E-01	9.28E-01	2.94E+02	5.05E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.17E+02	1.52E+00	2.18E-03	4.54E+00	2.50E-02	2.41E+02	1.87E-02	1.73E+02	1.44E-04
UAW5-050 (0-6")	1.72E-01	1.72E-01	9.28E-01	3.49E+02	5.98E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.76E+02	1.80E+00	2.18E-03	4.54E+00	2.96E-02	2.41E+02	1.87E-02	1.73E+02	1.71E-04
UAW5-100 (0-6")	1.72E-01	1.72E-01	9.28E-01	5.22E+02	8.96E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.63E+02	2.70E+00	2.18E-03	4.54E+00	4.43E-02	2.41E+02	1.87E-02	1.73E+02	2.56E-04
UAW5-100+25 (0-6")	1.72E-01	1.72E-01	9.28E-01	4.28E+02	7.35E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.62E+02	2.22E+00	2.18E-03	4.54E+00	3.64E-02	2.41E+02	1.87E-02	1.73E+02	2.10E-04
UAW5-150 (0-6")	1.72E-01	1.72E-01	9.28E-01	6.07E+02	1.04E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	6.54E+02	3.14E+00	2.18E-03	4.54E+00	5.15E-02	2.41E+02	1.87E-02	1.73E+02	2.98E-04
UAW5-150+50 (0-6")	1.72E-01	1.72E-01	9.28E-01	4.40E+02	7.54E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.74E+02	2.28E+00	2.18E-03	4.54E+00	3.73E-02	2.41E+02	1.87E-02	1.73E+02	2.16E-04
UAW5-200 (0-6")	1.72E-01	1.72E-01	9.28E-01	6.71E+02	1.15E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	7.24E+02	3.48E+00	2.18E-03	4.54E+00	5.70E-02	2.41E+02	1.87E-02	1.73E+02	3.29E-04
UAW5-250 (0-6")	1.72E-01	1.72E-01	9.28E-01	1.10E+03	1.88E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.18E+03	5.67E+00	2.18E-03	4.54E+00	9.30E-02	2.41E+02	1.87E-02	1.73E+02	5.37E-04
UAW5-250+50 (0-6")	1.72E-01	1.72E-01	9.28E-01	4.29E+02	7.36E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.62E+02	2.22E+00	2.18E-03	4.54E+00	3.64E-02	2.41E+02	1.87E-02	1.73E+02	2.10E-04
UAW5-300 (0-6")	1.72E-01	1.72E-01	9.28E-01	6.32E+02	1.08E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	6.81E+02	3.27E+00	2.18E-03	4.54E+00	5.36E-02	2.41E+02	1.87E-02	1.73E+02	3.10E-04
UAW5-300+75 (0-6")	1.72E-01	1.72E-01	9.28E-01	3.80E+02	6.52E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.10E+02	1.97E+00	2.18E-03	4.54E+00	3.23E-02	2.41E+02	1.87E-02	1.73E+02	1.86E-04
UAW5-350 (0-6")	1.72E-01	1.72E-01	9.28E-01	7.01E+02	1.20E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	7.56E+02	3.63E+00	2.18E-03	4.54E+00	5.95E-02	2.41E+02	1.87E-02	1.73E+02	3.44E-04
UAW5-400 (0-6")	1.72E-01	1.72E-01	9.28E-01	8.73E+02	1.50E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	9.40E+02	4.52E+00	2.18E-03	4.54E+00	7.41E-02	2.41E+02	1.87E-02	1.73E+02	4.28E-04
UAW5-450 (0-6")	1.72E-01	1.72E-01	9.28E-01	4.45E+01	7.64E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.80E+01	2.31E-01	2.18E-03	4.54E+00	3.78E-03	2.41E+02	1.87E-02	1.73E+02	2.18E-05
UAW5-500 (0-6")	1.72E-01	1.72E-01	9.28E-01	2.37E+03	4.07E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.55E+03	1.23E+01	2.18E-03	4.54E+00	2.01E-01	2.41E+02	1.87E-02	1.73E+02	1.16E-03
UAW5-500+50 (0-6")	1.72E-01	1.72E-01	9.28E-01	6.53E+02	1.12E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	7.04E+02	3.38E+00	2.18E-03	4.54E+00	5.55E-02	2.41E+02	1.87E-02	1.73E+02	3.20E-04
UAW5-550 (0-6")	1.72E-01	1.72E-01	9.28E-01	7.61E+02	1.31E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	8.21E+02	3.94E+00	2.18E-03	4.54E+00	6.47E-02	2.41E+02	1.87E-02	1.73E+02	3.74E-04
UAW5-600 (0-6")	1.72E-01	1.72E-01	9.28E-01	5.64E+02	9.68E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	6.08E+02	2.92E+00	2.18E-03	4.54E+00	4.79E-02	2.41E+02	1.87E-02	1.73E+02	2.77E-04
UAW5-Comp 1 (0-6")	1.72E-01	1.72E-01	9.28E-01	9.09E+02	1.56E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	9.80E+02	4.71E+00	2.18E-03	4.54E+00	7.72E-02	2.41E+02	1.87E-02	1.73E+02	4.46E-04
																						Maximum HQ (Upper Anaconda Mine)	**3.56E-02**

TABLE C-1D: LEAD DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 1 - UPPER ANACONDA MINE WASTE REMOVAL AREAS AND WASTE PILES (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

Site Area (hectares) **2.95**

from dose parameters tables; from BAF table; linked to soil or sed concentration table (VLOOKUP)

calculated values; linked to TRV table (VLOOKUP) - should be same for all birds or mammals

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Masked Shrew (Omnivorous Mammal - Terrestrial, Wetland)																							
Reference Sites																							
ACBG-1	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	3.58E+01	3.04E-01	1.10E-03	2.31E+01	2.54E-02	1.00E+00	5.50E-03	5.98E+01	2.41E+02	1.87E-02	2.59E+02	2.31E-01
ACBG-2	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	5.94E+01	5.03E-01	1.10E-03	3.83E+01	4.21E-02	1.00E+00	5.50E-03	9.91E+01	2.41E+02	1.87E-02	2.59E+02	3.83E-01
Upper Anaconda Mine																						**Minimum HQ (Reference Sites)**	**2.31E-01**
UAW1-00 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	9.64E+03	8.17E+01	1.10E-03	6.21E+03	6.84E+00	1.00E+00	5.50E-03	1.61E+04	2.41E+02	1.87E-02	2.59E+02	6.21E+01
UAW1-00+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	5.28E+02	4.48E+00	1.10E-03	3.40E+02	3.75E-01	1.00E+00	5.50E-03	8.82E+02	2.41E+02	1.87E-02	2.59E+02	3.41E+00
UAW1-050 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	2.62E+03	2.22E+01	1.10E-03	1.69E+03	1.86E+00	1.00E+00	5.50E-03	4.37E+03	2.41E+02	1.87E-02	2.59E+02	1.69E+01
UAW1-100 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.72E+04	1.46E+02	1.10E-03	1.11E+04	1.22E+01	1.00E+00	5.50E-03	2.87E+04	2.41E+02	1.87E-02	2.59E+02	1.11E+02
UAW1-150 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	3.85E+03	3.26E+01	1.10E-03	2.48E+03	2.73E+00	1.00E+00	5.50E-03	6.42E+03	2.41E+02	1.87E-02	2.59E+02	2.48E+01
UAW1-150+75 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.19E+03	1.01E+01	1.10E-03	7.68E+02	8.46E-01	1.00E+00	5.50E-03	1.99E+03	2.41E+02	1.87E-02	2.59E+02	7.68E+00
UAW1-Comp 1 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	6.44E+04	5.45E+02	1.10E-03	4.15E+04	4.57E+01	1.00E+00	5.50E-03	1.07E+05	2.41E+02	1.87E-02	2.59E+02	4.15E+02
UAW2-0000 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.33E+03	1.13E+01	1.10E-03	8.59E+02	9.46E-01	1.00E+00	5.50E-03	2.23E+03	2.41E+02	1.87E-02	2.59E+02	8.59E+00
UAW2-0000+225 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	3.88E+02	3.29E+00	1.10E-03	2.50E+02	2.75E-01	1.00E+00	5.50E-03	6.48E+02	2.41E+02	1.87E-02	2.59E+02	2.50E+00
UAW2-0050 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	2.92E+02	2.47E+00	1.10E-03	1.88E+02	2.07E-01	1.00E+00	5.50E-03	4.87E+02	2.41E+02	1.87E-02	2.59E+02	1.88E+00
UAW2-0100 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.17E+03	9.91E+00	1.10E-03	7.54E+02	8.30E-01	1.00E+00	5.50E-03	1.95E+03	2.41E+02	1.87E-02	2.59E+02	7.54E+00
UAW2-0100+250 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	2.30E+02	1.94E+00	1.10E-03	1.48E+02	1.63E-01	1.00E+00	5.50E-03	3.83E+02	2.41E+02	1.87E-02	2.59E+02	1.48E+00
UAW2-0150 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.95E+02	1.65E+00	1.10E-03	1.25E+02	1.38E-01	1.00E+00	5.50E-03	3.25E+02	2.41E+02	1.87E-02	2.59E+02	1.25E+00
UAW2-0200 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	5.76E+03	4.87E+01	1.10E-03	3.71E+03	4.08E+00	1.00E+00	5.50E-03	9.61E+03	2.41E+02	1.87E-02	2.59E+02	3.71E+01
UAW2-0250 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	6.82E+03	5.78E+01	1.10E-03	4.39E+03	4.84E+00	1.00E+00	5.50E-03	1.14E+04	2.41E+02	1.87E-02	2.59E+02	4.39E+01
UAW2-0250+50 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	7.89E+02	6.68E+00	1.10E-03	5.08E+02	5.60E-01	1.00E+00	5.50E-03	1.32E+03	2.41E+02	1.87E-02	2.59E+02	5.08E+00
UAW2-0300 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	7.05E+03	5.97E+01	1.10E-03	4.54E+03	5.00E+00	1.00E+00	5.50E-03	1.18E+04	2.41E+02	1.87E-02	2.59E+02	4.54E+01
UAW2-0350 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.64E+03	1.39E+01	1.10E-03	1.05E+03	1.16E+00	1.00E+00	5.50E-03	2.73E+03	2.41E+02	1.87E-02	2.59E+02	1.05E+01
UAW2-0350+50 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	5.85E+02	4.96E+00	1.10E-03	3.77E+02	4.15E-01	1.00E+00	5.50E-03	9.77E+02	2.41E+02	1.87E-02	2.59E+02	3.77E+00
UAW2-0400 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.89E+03	1.60E+01	1.10E-03	1.22E+03	1.34E+00	1.00E+00	5.50E-03	3.16E+03	2.41E+02	1.87E-02	2.59E+02	1.22E+01
UAW2-0400+150 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	4.26E+02	3.60E+00	1.10E-03	2.74E+02	3.02E-01	1.00E+00	5.50E-03	7.10E+02	2.41E+02	1.87E-02	2.59E+02	2.74E+00
UAW2-0450 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.44E+03	1.22E+01	1.10E-03	9.25E+02	1.02E+00	1.00E+00	5.50E-03	2.40E+03	2.41E+02	1.87E-02	2.59E+02	9.26E+00
UAW2-0450+50 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	7.96E+02	6.74E+00	1.10E-03	5.13E+02	5.64E-01	1.00E+00	5.50E-03	1.33E+03	2.41E+02	1.87E-02	2.59E+02	5.13E+00
UAW2-1000 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	4.91E+02	4.16E+00	1.10E-03	3.17E+02	3.49E-01	1.00E+00	5.50E-03	8.20E+02	2.41E+02	1.87E-02	2.59E+02	3.17E+00
UAW2-Comp (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	5.02E+02	4.25E+00	1.10E-03	3.23E+02	3.56E-01	1.00E+00	5.50E-03	8.37E+02	2.41E+02	1.87E-02	2.59E+02	3.23E+00
UAW3-Comp 1 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.21E+05	1.03E+03	1.10E-03	7.83E+04	8.62E+01	1.00E+00	5.50E-03	2.03E+05	2.41E+02	1.87E-02	2.59E+02	7.83E+02
UAW4-Comp 1 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	2.07E+04	1.75E+02	1.10E-03	1.33E+04	1.47E+01	1.00E+00	5.50E-03	3.45E+04	2.41E+02	1.87E-02	2.59E+02	1.33E+02
UAW5-00 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	4.92E+02	4.17E+00	1.10E-03	3.17E+02	3.49E-01	1.00E+00	5.50E-03	8.21E+02	2.41E+02	1.87E-02	2.59E+02	3.17E+00
UAW5-050 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	5.83E+02	4.94E+00	1.10E-03	3.76E+02	4.14E-01	1.00E+00	5.50E-03	9.73E+02	2.41E+02	1.87E-02	2.59E+02	3.76E+00
UAW5-100 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	8.74E+02	7.40E+00	1.10E-03	5.63E+02	6.20E-01	1.00E+00	5.50E-03	1.46E+03	2.41E+02	1.87E-02	2.59E+02	5.63E+00
UAW5-100+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	7.16E+02	6.07E+00	1.10E-03	4.62E+02	5.08E-01	1.00E+00	5.50E-03	1.20E+03	2.41E+02	1.87E-02	2.59E+02	4.62E+00
UAW5-150 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.02E+03	8.60E+00	1.10E-03	6.54E+02	7.20E-01	1.00E+00	5.50E-03	1.69E+03	2.41E+02	1.87E-02	2.59E+02	6.54E+00
UAW5-150+50 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	7.36E+02	6.23E+00	1.10E-03	4.74E+02	5.22E-01	1.00E+00	5.50E-03	1.23E+03	2.41E+02	1.87E-02	2.59E+02	4.74E+00
UAW5-200 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.12E+03	9.51E+00	1.10E-03	7.24E+02	7.97E-01	1.00E+00	5.50E-03	1.87E+03	2.41E+02	1.87E-02	2.59E+02	7.24E+00
UAW5-250 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.83E+03	1.55E+01	1.10E-03	1.18E+03	1.30E+00	1.00E+00	5.50E-03	3.06E+03	2.41E+02	1.87E-02	2.59E+02	1.18E+01
UAW5-250+50 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	7.17E+02	6.08E+00	1.10E-03	4.62E+02	5.09E-01	1.00E+00	5.50E-03	1.20E+03	2.41E+02	1.87E-02	2.59E+02	4.62E+00
UAW5-300 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.06E+03	8.95E+00	1.10E-03	6.81E+02	7.49E-01	1.00E+00	5.50E-03	1.76E+03	2.41E+02	1.87E-02	2.59E+02	6.81E+00
UAW5-300+75 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	6.36E+02	5.38E+00	1.10E-03	4.10E+02	4.51E-01	1.00E+00	5.50E-03	1.06E+03	2.41E+02	1.87E-02	2.59E+02	4.10E+00
UAW5-350 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.17E+03	9.94E+00	1.10E-03	7.56E+02	8.32E-01	1.00E+00	5.50E-03	1.96E+03	2.41E+02	1.87E-02	2.59E+02	7.56E+00
UAW5-400 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.46E+03	1.24E+01	1.10E-03	9.40E+02	1.04E+00	1.00E+00	5.50E-03	2.44E+03	2.41E+02	1.87E-02	2.59E+02	9.41E+00
UAW5-450 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	7.45E+01	6.31E-01	1.10E-03	4.80E+01	5.29E-02	1.00E+00	5.50E-03	1.24E+02	2.41E+02	1.87E-02	2.59E+02	4.80E-01
UAW5-500 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	3.97E+03	3.36E+01	1.10E-03	2.55E+03	2.81E+00	1.00E+00	5.50E-03	6.62E+03	2.41E+02	1.87E-02	2.59E+02	2.56E+01
UAW5-500+50 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.09E+03	9.26E+00	1.10E-03	7.04E+02	7.75E-01	1.00E+00	5.50E-03	1.82E+03	2.41E+02	1.87E-02	2.59E+02	7.04E+00
UAW5-550 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.27E+03	1.08E+01	1.10E-03	8.21E+02	9.04E-01	1.00E+00	5.50E-03	2.13E+03	2.41E+02	1.87E-02	2.59E+02	8.21E+00
UAW5-600 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	9.44E+02	8.00E+00	1.10E-03	6.08E+02	6.70E-01	1.00E+00	5.50E-03	1.58E+03	2.41E+02	1.87E-02	2.59E+02	6.08E+00
UAW5-Comp 1 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.52E+03	1.29E+01	1.10E-03	9.80E+02	1.08E+00	1.00E+00	5.50E-03	2.54E+03	2.41E+02	1.87E-02	2.59E+02	9.80E+00
																						Maximum HQ (Upper Anaconda Mine)	**7.83E+02**

TABLE C-1D: LEAD DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 1 - UPPER ANACONDA MINE WASTE REMOVAL AREAS AND WASTE PILES (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

Site Area (hectares) **2.95**

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)

Notes

1 See Tables 3-1 through 3-13 for ingestion rates, foraging ranges used to calculate the SUF, and body weights.

2 BAFs were calculated by dividing site-collected tissue by collocated soil concentrations (BAFs are in dry weight). The maximum BAF calculated from the Beartrap Creek and Blackfoot River transects was used for site dose calculations. The maximum BAF from the terrestrial reference site was used for reference site dose calculations.

3 The mammal, plant, and invertebrate concentrations were calculated by multiplying the soil concentration by the BAF to generate a tissue concentration (see note 2).

4 Mammal, plant, and invertebrate daily doses were calculated by multiplying the ingestion rate (see note 1) by the tissue concentration (see note 3).

5 Soil concentration from 0 to 6 inches below ground surface at point ID as measured by XRF 10. Doses were not calculated for detected and non-detected soil concentrations measured below the minimum reference site concentration, as indicated by BB. For results that were measured at less than the detection limit, doses were calculated using half of the detection limit.

6 Soil daily dose was calculated by multiplying the soil ingestion rate (see note 1) by soil concentration (see note 5).

7 Total daily dose is calculated using the following equation: total daily dose = ([mammal daily dose (if applicable) + plant daily dose (if applicable) + invertebrate daily dose (if applicable) + soil daily dose]*SUF)/receptor species body weight.

8 The TRVs used in this risk assessment represent a mid-range effects level. The derivation of TRVs is described in Navy (1998) and DTSC (2002).

9 Allometrically adjusted TRVs for birds were calculated using the following equation: receptor species TRV = (test species TRV) x (test species body weight / receptor species body weight)$^{(1-1.2)}$.

10 Allometrically adjusted TRVs for mammals were calculated using the following equation: receptor species TRV = (test species TRV) x (test species body weight / receptor species body weight)$^{(1-0.94)}$.

11 HQs were calculated using the following equation: HQ = total daily dose/allometrically adjusted TRV.

12 Highlighted cells indicate an HQ greater than 1.0.

BAF	Bioaccumulation factor	mg/kg	Milligram per kilogram
BB	Below minimum background reference site concentration	NA	Not applicable
EU	Exposure unit	Navy	Department of the Navy
HQ	Hazard quotient	SUF	Site use factor
ID	Identification	TRV	Toxicity reference value
kg	Kilogram	XRF	X-ray flourescence
kg/day	Kilogram per day	XRF 10	XRF measurements recorded following drying and seiving through a #10 -mesh screen
mg/day	Milligram per day		

Sources:

Department of the Navy. 1998. "Development of Toxicity Reference Values for Conducting Ecological Risk Assessments at Naval Facilities in California, Interim Final." Prepared by Naval Facilities Engineering Command, Engineering Field Activity West (EFA West). San Bruno, California.

DTSC. 2002. HERD Ecological Risk Assessment Note 5. Available on-line at: http://www.dtsc.ca.gov/AssessingRisk/upload/econote5.pdf

TABLE C-1E: MANGANESE DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 1 - UPPER ANACONDA MINE WASTE REMOVAL AREAS AND WASTE PILES

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **2.95**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Mourning Dove (Herbivorous Birds - Terrestrial)																							
Reference Sites																							
ACBG-1	5.76E-03	NA	NA	NA	NA	5.76E-03	3.34E-01	9.85E+01	5.68E-01	NA	NA	NA	NA	5.36E-04	2.95E+02	1.58E-01	1.14E-02	1.09E-01	7.57E-02	7.76E+02	1.97E-01	6.90E+02	1.10E-04
ACBG-2	5.76E-03	NA	NA	NA	NA	5.76E-03	3.34E-01	3.33E+02	1.92E+00	NA	NA	NA	NA	5.36E-04	9.97E+02	5.34E-01	1.14E-02	1.09E-01	2.56E-01	7.76E+02	1.97E-01	6.90E+02	3.71E-04
Upper Anaconda Mine																						**Minimum HQ (Reference Sites)**	**1.10E-04**
UAW1-00 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	6.25E+03	3.60E+01	NA	NA	NA	NA	5.36E-04	6.31E+02	3.38E-01	1.14E-02	1.09E-01	3.79E+00	7.76E+02	1.97E-01	6.90E+02	5.49E-03
UAW1-00+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	2.00E+04	1.15E+02	NA	NA	NA	NA	5.36E-04	2.02E+03	1.08E+00	1.14E-02	1.09E-01	1.21E+01	7.76E+02	1.97E-01	6.90E+02	1.76E-02
UAW1-050 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	2.83E+04	1.63E+02	NA	NA	NA	NA	5.36E-04	2.85E+03	1.53E+00	1.14E-02	1.09E-01	1.72E+01	7.76E+02	1.97E-01	6.90E+02	2.49E-02
UAW1-100 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UAW1-150 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	4.73E+03	2.73E+01	NA	NA	NA	NA	5.36E-04	4.78E+02	2.56E-01	1.14E-02	1.09E-01	2.87E+00	7.76E+02	1.97E-01	6.90E+02	4.16E-03
UAW1-150+75 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	2.25E+04	1.30E+02	NA	NA	NA	NA	5.36E-04	2.27E+03	1.22E+00	1.14E-02	1.09E-01	1.37E+01	7.76E+02	1.97E-01	6.90E+02	1.98E-02
UAW1-Comp 1 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UAW2-0000 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	1.74E+04	1.00E+02	NA	NA	NA	NA	5.36E-04	1.76E+03	9.42E-01	1.14E-02	1.09E-01	1.06E+01	7.76E+02	1.97E-01	6.90E+02	1.53E-02
UAW2-0000+225 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	2.21E+04	1.27E+02	NA	NA	NA	NA	5.36E-04	2.23E+03	1.19E+00	1.14E-02	1.09E-01	1.34E+01	7.76E+02	1.97E-01	6.90E+02	1.94E-02
UAW2-0050 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	8.16E+03	4.70E+01	NA	NA	NA	NA	5.36E-04	8.24E+02	4.41E-01	1.14E-02	1.09E-01	4.95E+00	7.76E+02	1.97E-01	6.90E+02	7.17E-03
UAW2-0100 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	1.32E+04	7.61E+01	NA	NA	NA	NA	5.36E-04	1.33E+03	7.15E-01	1.14E-02	1.09E-01	8.02E+00	7.76E+02	1.97E-01	6.90E+02	1.16E-02
UAW2-0100+250 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	3.88E+04	2.23E+02	NA	NA	NA	NA	5.36E-04	3.91E+03	2.10E+00	1.14E-02	1.09E-01	2.35E+01	7.76E+02	1.97E-01	6.90E+02	3.41E-02
UAW2-0150 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	4.32E+03	2.49E+01	NA	NA	NA	NA	5.36E-04	4.36E+02	2.34E-01	1.14E-02	1.09E-01	2.62E+00	7.76E+02	1.97E-01	6.90E+02	3.80E-03
UAW2-0200 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	5.81E+03	3.35E+01	NA	NA	NA	NA	5.36E-04	5.87E+02	3.14E-01	1.14E-02	1.09E-01	3.53E+00	7.76E+02	1.97E-01	6.90E+02	5.11E-03
UAW2-0250 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UAW2-0250+50 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	2.53E+04	1.46E+02	NA	NA	NA	NA	5.36E-04	2.55E+03	1.37E+00	1.14E-02	1.09E-01	1.53E+01	7.76E+02	1.97E-01	6.90E+02	2.22E-02
UAW2-0300 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	3.63E+03	2.09E+01	NA	NA	NA	NA	5.36E-04	3.67E+02	1.97E-01	1.14E-02	1.09E-01	2.20E+00	7.76E+02	1.97E-01	6.90E+02	3.20E-03
UAW2-0350 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	3.27E+04	1.88E+02	NA	NA	NA	NA	5.36E-04	3.30E+03	1.77E+00	1.14E-02	1.09E-01	1.98E+01	7.76E+02	1.97E-01	6.90E+02	2.87E-02
UAW2-0350+50 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	7.67E+03	4.42E+01	NA	NA	NA	NA	5.36E-04	7.74E+02	4.15E-01	1.14E-02	1.09E-01	4.65E+00	7.76E+02	1.97E-01	6.90E+02	6.74E-03
UAW2-0400 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	5.58E+03	3.21E+01	NA	NA	NA	NA	5.36E-04	5.63E+02	3.02E-01	1.14E-02	1.09E-01	3.38E+00	7.76E+02	1.97E-01	6.90E+02	4.90E-03
UAW2-0400+150 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	1.78E+04	1.03E+02	NA	NA	NA	NA	5.36E-04	1.80E+03	9.64E-01	1.14E-02	1.09E-01	1.08E+01	7.76E+02	1.97E-01	6.90E+02	1.57E-02
UAW2-0450 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	1.74E+04	1.00E+02	NA	NA	NA	NA	5.36E-04	1.76E+03	9.40E-01	1.14E-02	1.09E-01	1.05E+01	7.76E+02	1.97E-01	6.90E+02	1.53E-02
UAW2-0450+50 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	1.04E+04	5.98E+01	NA	NA	NA	NA	5.36E-04	1.05E+03	5.62E-01	1.14E-02	1.09E-01	6.30E+00	7.76E+02	1.97E-01	6.90E+02	9.13E-03
UAW2-1000 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	1.71E+04	9.87E+01	NA	NA	NA	NA	5.36E-04	1.73E+03	9.26E-01	1.14E-02	1.09E-01	1.04E+01	7.76E+02	1.97E-01	6.90E+02	1.51E-02
UAW2-Comp (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	4.69E+03	2.70E+01	NA	NA	NA	NA	5.36E-04	4.73E+02	2.54E-01	1.14E-02	1.09E-01	2.85E+00	7.76E+02	1.97E-01	6.90E+02	4.12E-03
UAW3-Comp 1 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	2.39E+03	1.37E+01	NA	NA	NA	NA	5.36E-04	2.41E+02	1.29E-01	1.14E-02	1.09E-01	1.45E+00	7.76E+02	1.97E-01	6.90E+02	2.10E-03
UAW4-Comp 1 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UAW5-00 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	8.70E+03	5.01E+01	NA	NA	NA	NA	5.36E-04	8.78E+02	4.71E-01	1.14E-02	1.09E-01	5.28E+00	7.76E+02	1.97E-01	6.90E+02	7.65E-03
UAW5-050 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	1.05E+04	6.06E+01	NA	NA	NA	NA	5.36E-04	1.06E+03	5.69E-01	1.14E-02	1.09E-01	6.38E+00	7.76E+02	1.97E-01	6.90E+02	9.25E-03
UAW5-100 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	9.26E+03	5.34E+01	NA	NA	NA	NA	5.36E-04	9.35E+02	5.01E-01	1.14E-02	1.09E-01	5.62E+00	7.76E+02	1.97E-01	6.90E+02	8.14E-03
UAW5-100+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	1.42E+04	8.20E+01	NA	NA	NA	NA	5.36E-04	1.44E+03	7.69E-01	1.14E-02	1.09E-01	8.63E+00	7.76E+02	1.97E-01	6.90E+02	1.25E-02
UAW5-150 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	1.13E+04	6.52E+01	NA	NA	NA	NA	5.36E-04	1.14E+03	6.12E-01	1.14E-02	1.09E-01	6.87E+00	7.76E+02	1.97E-01	6.90E+02	9.95E-03
UAW5-150+50 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	1.89E+04	1.09E+02	NA	NA	NA	NA	5.36E-04	1.91E+03	1.02E+00	1.14E-02	1.09E-01	1.15E+01	7.76E+02	1.97E-01	6.90E+02	1.66E-02
UAW5-200 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	4.80E+03	2.77E+01	NA	NA	NA	NA	5.36E-04	4.85E+02	2.60E-01	1.14E-02	1.09E-01	2.91E+00	7.76E+02	1.97E-01	6.90E+02	4.22E-03
UAW5-250 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	2.53E+04	1.46E+02	NA	NA	NA	NA	5.36E-04	2.55E+03	1.37E+00	1.14E-02	1.09E-01	1.53E+01	7.76E+02	1.97E-01	6.90E+02	2.22E-02
UAW5-250+50 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	7.25E+03	4.18E+01	NA	NA	NA	NA	5.36E-04	7.32E+02	3.92E-01	1.14E-02	1.09E-01	4.40E+00	7.76E+02	1.97E-01	6.90E+02	6.38E-03
UAW5-300 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	2.00E+04	1.15E+02	NA	NA	NA	NA	5.36E-04	2.02E+03	1.08E+00	1.14E-02	1.09E-01	1.21E+01	7.76E+02	1.97E-01	6.90E+02	1.76E-02
UAW5-300+75 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	2.53E+04	1.46E+02	NA	NA	NA	NA	5.36E-04	2.55E+03	1.37E+00	1.14E-02	1.09E-01	1.53E+01	7.76E+02	1.97E-01	6.90E+02	2.22E-02
UAW5-350 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	8.37E+03	4.82E+01	NA	NA	NA	NA	5.36E-04	8.45E+02	4.53E-01	1.14E-02	1.09E-01	5.08E+00	7.76E+02	1.97E-01	6.90E+02	7.36E-03
UAW5-400 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	1.69E+04	9.72E+01	NA	NA	NA	NA	5.36E-04	1.70E+03	9.12E-01	1.14E-02	1.09E-01	1.02E+01	7.76E+02	1.97E-01	6.90E+02	1.48E-02
UAW5-450 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	7.71E+03	4.44E+01	NA	NA	NA	NA	5.36E-04	7.78E+02	4.17E-01	1.14E-02	1.09E-01	4.68E+00	7.76E+02	1.97E-01	6.90E+02	6.78E-03
UAW5-500 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UAW5-500+50 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	2.46E+04	1.42E+02	NA	NA	NA	NA	5.36E-04	2.48E+03	1.33E+00	1.14E-02	1.09E-01	1.49E+01	7.76E+02	1.97E-01	6.90E+02	2.16E-02
UAW5-550 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	1.21E+04	6.99E+01	NA	NA	NA	NA	5.36E-04	1.22E+03	6.56E-01	1.14E-02	1.09E-01	7.36E+00	7.76E+02	1.97E-01	6.90E+02	1.07E-02
UAW5-600 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	1.25E+04	7.22E+01	NA	NA	NA	NA	5.36E-04	1.26E+03	6.77E-01	1.14E-02	1.09E-01	7.60E+00	7.76E+02	1.97E-01	6.90E+02	1.10E-02
UAW5-Comp 1 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	9.29E+03	5.35E+01	NA	NA	NA	NA	5.36E-04	9.37E+02	5.02E-01	1.14E-02	1.09E-01	5.63E+00	7.76E+02	1.97E-01	6.90E+02	8.17E-03
																						Maximum HQ (Upper Anaconda Mine)	**3.41E-02**

TABLE C-1E: MANGANESE DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 1 - UPPER ANACONDA MINE WASTE REMOVAL AREAS AND WASTE PILES (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **2.95**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Red-Tailed Hawk (Carnivorous Birds - Terrestrial)																							
Reference Sites																							
ACBG-1	9.00E-02	9.00E-02	5.93E-02	1.75E+01	1.57E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.95E+02	1.51E+00	4.23E-03	1.13E+00	1.15E-02	7.76E+02	1.97E-01	1.10E+03	1.05E-05
ACBG-2	9.00E-02	9.00E-02	5.93E-02	5.92E+01	5.32E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	9.97E+02	5.11E+00	4.23E-03	1.13E+00	3.90E-02	7.76E+02	1.97E-01	1.10E+03	3.54E-05
Upper Anaconda Mine																						**Minimum HQ (Reference Sites)**	**1.05E-05**
UAW1-00 (0-6")	9.00E-02	9.00E-02	2.80E-02	1.77E+01	1.59E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	6.31E+02	3.23E+00	4.23E-03	1.13E+00	1.80E-02	7.76E+02	1.97E-01	1.10E+03	1.63E-05
UAW1-00+25 (0-6")	9.00E-02	9.00E-02	2.80E-02	5.65E+01	5.08E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.02E+03	1.03E+01	4.23E-03	1.13E+00	5.76E-02	7.76E+02	1.97E-01	1.10E+03	5.23E-05
UAW1-050 (0-6")	9.00E-02	9.00E-02	2.80E-02	7.99E+01	7.19E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.85E+03	1.46E+01	4.23E-03	1.13E+00	8.15E-02	7.76E+02	1.97E-01	1.10E+03	7.39E-05
UAW1-100 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UAW1-150 (0-6")	9.00E-02	9.00E-02	2.80E-02	1.34E+01	1.20E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.78E+02	2.45E+00	4.23E-03	1.13E+00	1.36E-02	7.76E+02	1.97E-01	1.10E+03	1.24E-05
UAW1-150+75 (0-6")	9.00E-02	9.00E-02	2.80E-02	6.36E+01	5.72E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.27E+03	1.16E+01	4.23E-03	1.13E+00	6.48E-02	7.76E+02	1.97E-01	1.10E+03	5.88E-05
UAW1-Comp 1 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UAW2-0000 (0-6")	9.00E-02	9.00E-02	2.80E-02	4.92E+01	4.43E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.76E+03	9.02E+00	4.23E-03	1.13E+00	5.02E-02	7.76E+02	1.97E-01	1.10E+03	4.56E-05
UAW2-0000+225 (0-6")	9.00E-02	9.00E-02	2.80E-02	6.23E+01	5.61E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.23E+03	1.14E+01	4.23E-03	1.13E+00	6.36E-02	7.76E+02	1.97E-01	1.10E+03	5.77E-05
UAW2-0050 (0-6")	9.00E-02	9.00E-02	2.80E-02	2.31E+01	2.07E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	8.24E+02	4.22E+00	4.23E-03	1.13E+00	2.35E-02	7.76E+02	1.97E-01	1.10E+03	2.13E-05
UAW2-0100 (0-6")	9.00E-02	9.00E-02	2.80E-02	3.73E+01	3.36E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.33E+03	6.84E+00	4.23E-03	1.13E+00	3.81E-02	7.76E+02	1.97E-01	1.10E+03	3.45E-05
UAW2-0100+250 (0-6")	9.00E-02	9.00E-02	2.80E-02	1.10E+02	9.86E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.91E+03	2.01E+01	4.23E-03	1.13E+00	1.12E-01	7.76E+02	1.97E-01	1.10E+03	1.01E-04
UAW2-0150 (0-6")	9.00E-02	9.00E-02	2.80E-02	1.22E+01	1.10E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.36E+02	2.24E+00	4.23E-03	1.13E+00	1.25E-02	7.76E+02	1.97E-01	1.10E+03	1.13E-05
UAW2-0200 (0-6")	9.00E-02	9.00E-02	2.80E-02	1.64E+01	1.48E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.87E+02	3.01E+00	4.23E-03	1.13E+00	1.68E-02	7.76E+02	1.97E-01	1.10E+03	1.52E-05
UAW2-0250 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UAW2-0250+50 (0-6")	9.00E-02	9.00E-02	2.80E-02	7.14E+01	6.43E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.55E+03	1.31E+01	4.23E-03	1.13E+00	7.28E-02	7.76E+02	1.97E-01	1.10E+03	6.61E-05
UAW2-0300 (0-6")	9.00E-02	9.00E-02	2.80E-02	1.03E+01	9.24E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.67E+02	1.88E+00	4.23E-03	1.13E+00	1.05E-02	7.76E+02	1.97E-01	1.10E+03	9.50E-06
UAW2-0350 (0-6")	9.00E-02	9.00E-02	2.80E-02	9.23E+01	8.30E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.30E+03	1.69E+01	4.23E-03	1.13E+00	9.41E-02	7.76E+02	1.97E-01	1.10E+03	8.54E-05
UAW2-0350+50 (0-6")	9.00E-02	9.00E-02	2.80E-02	2.17E+01	1.95E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	7.74E+02	3.97E+00	4.23E-03	1.13E+00	2.21E-02	7.76E+02	1.97E-01	1.10E+03	2.01E-05
UAW2-0400 (0-6")	9.00E-02	9.00E-02	2.80E-02	1.58E+01	1.42E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.63E+02	2.89E+00	4.23E-03	1.13E+00	1.61E-02	7.76E+02	1.97E-01	1.10E+03	1.46E-05
UAW2-0400+150 (0-6")	9.00E-02	9.00E-02	2.80E-02	5.04E+01	4.53E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.80E+03	9.22E+00	4.23E-03	1.13E+00	5.14E-02	7.76E+02	1.97E-01	1.10E+03	4.66E-05
UAW2-0450 (0-6")	9.00E-02	9.00E-02	2.80E-02	4.91E+01	4.42E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.76E+03	9.00E+00	4.23E-03	1.13E+00	5.01E-02	7.76E+02	1.97E-01	1.10E+03	4.55E-05
UAW2-0450+50 (0-6")	9.00E-02	9.00E-02	2.80E-02	2.93E+01	2.64E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.05E+03	5.37E+00	4.23E-03	1.13E+00	2.99E-02	7.76E+02	1.97E-01	1.10E+03	2.72E-05
UAW2-1000 (0-6")	9.00E-02	9.00E-02	2.80E-02	4.84E+01	4.35E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.73E+03	8.86E+00	4.23E-03	1.13E+00	4.93E-02	7.76E+02	1.97E-01	1.10E+03	4.48E-05
UAW2-Comp (0-6")	9.00E-02	9.00E-02	2.80E-02	1.33E+01	1.19E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.73E+02	2.43E+00	4.23E-03	1.13E+00	1.35E-02	7.76E+02	1.97E-01	1.10E+03	1.23E-05
UAW3-Comp 1 (0-6")	9.00E-02	9.00E-02	2.80E-02	6.74E+00	6.06E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.41E+02	1.23E+00	4.23E-03	1.13E+00	6.87E-03	7.76E+02	1.97E-01	1.10E+03	6.24E-06
UAW4-Comp 1 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UAW5-00 (0-6")	9.00E-02	9.00E-02	2.80E-02	2.46E+01	2.21E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	8.78E+02	4.50E+00	4.23E-03	1.13E+00	2.51E-02	7.76E+02	1.97E-01	1.10E+03	2.28E-05
UAW5-050 (0-6")	9.00E-02	9.00E-02	2.80E-02	2.97E+01	2.67E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.06E+03	5.45E+00	4.23E-03	1.13E+00	3.03E-02	7.76E+02	1.97E-01	1.10E+03	2.75E-05
UAW5-100 (0-6")	9.00E-02	9.00E-02	2.80E-02	2.62E+01	2.35E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	9.35E+02	4.79E+00	4.23E-03	1.13E+00	2.67E-02	7.76E+02	1.97E-01	1.10E+03	2.42E-05
UAW5-100+25 (0-6")	9.00E-02	9.00E-02	2.80E-02	4.02E+01	3.62E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.44E+03	7.36E+00	4.23E-03	1.13E+00	4.10E-02	7.76E+02	1.97E-01	1.10E+03	3.72E-05
UAW5-150 (0-6")	9.00E-02	9.00E-02	2.80E-02	3.20E+01	2.88E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.14E+03	5.86E+00	4.23E-03	1.13E+00	3.26E-02	7.76E+02	1.97E-01	1.10E+03	2.96E-05
UAW5-150+50 (0-6")	9.00E-02	9.00E-02	2.80E-02	5.34E+01	4.81E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.91E+03	9.78E+00	4.23E-03	1.13E+00	5.45E-02	7.76E+02	1.97E-01	1.10E+03	4.94E-05
UAW5-200 (0-6")	9.00E-02	9.00E-02	2.80E-02	1.36E+01	1.22E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.85E+02	2.49E+00	4.23E-03	1.13E+00	1.38E-02	7.76E+02	1.97E-01	1.10E+03	1.26E-05
UAW5-250 (0-6")	9.00E-02	9.00E-02	2.80E-02	7.14E+01	6.43E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.55E+03	1.31E+01	4.23E-03	1.13E+00	7.28E-02	7.76E+02	1.97E-01	1.10E+03	6.61E-05
UAW5-250+50 (0-6")	9.00E-02	9.00E-02	2.80E-02	2.05E+01	1.84E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	7.32E+02	3.75E+00	4.23E-03	1.13E+00	2.09E-02	7.76E+02	1.97E-01	1.10E+03	1.90E-05
UAW5-300 (0-6")	9.00E-02	9.00E-02	2.80E-02	5.66E+01	5.09E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.02E+03	1.04E+01	4.23E-03	1.13E+00	5.77E-02	7.76E+02	1.97E-01	1.10E+03	5.23E-05
UAW5-300+75 (0-6")	9.00E-02	9.00E-02	2.80E-02	7.14E+01	6.42E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.55E+03	1.31E+01	4.23E-03	1.13E+00	7.28E-02	7.76E+02	1.97E-01	1.10E+03	6.61E-05
UAW5-350 (0-6")	9.00E-02	9.00E-02	2.80E-02	2.37E+01	2.13E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	8.45E+02	4.33E+00	4.23E-03	1.13E+00	2.41E-02	7.76E+02	1.97E-01	1.10E+03	2.19E-05
UAW5-400 (0-6")	9.00E-02	9.00E-02	2.80E-02	4.77E+01	4.29E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.70E+03	8.73E+00	4.23E-03	1.13E+00	4.86E-02	7.76E+02	1.97E-01	1.10E+03	4.41E-05
UAW5-450 (0-6")	9.00E-02	9.00E-02	2.80E-02	2.18E+01	1.96E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	7.78E+02	3.99E+00	4.23E-03	1.13E+00	2.22E-02	7.76E+02	1.97E-01	1.10E+03	2.02E-05
UAW5-500 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UAW5-500+50 (0-6")	9.00E-02	9.00E-02	2.80E-02	6.95E+01	6.25E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.48E+03	1.27E+01	4.23E-03	1.13E+00	7.09E-02	7.76E+02	1.97E-01	1.10E+03	6.43E-05
UAW5-550 (0-6")	9.00E-02	9.00E-02	2.80E-02	3.43E+01	3.08E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.22E+03	6.28E+00	4.23E-03	1.13E+00	3.50E-02	7.76E+02	1.97E-01	1.10E+03	3.17E-05
UAW5-600 (0-6")	9.00E-02	9.00E-02	2.80E-02	3.54E+01	3.18E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.26E+03	6.48E+00	4.23E-03	1.13E+00	3.61E-02	7.76E+02	1.97E-01	1.10E+03	3.27E-05
UAW5-Comp 1 (0-6")	9.00E-02	9.00E-02	2.80E-02	2.62E+01	2.36E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	9.37E+02	4.81E+00	4.23E-03	1.13E+00	2.68E-02	7.76E+02	1.97E-01	1.10E+03	2.43E-05
																						Maximum HQ (Upper Anaconda Mine)	**1.01E-04**

TABLE C-1E: MANGANESE DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 1 - UPPER ANACONDA MINE WASTE REMOVAL AREAS AND WASTE PILES (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **2.95**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
American Kestrel (Insectivorous Birds - Terrestrial)																							
Reference Sites																							
ACBG-1	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	4.35E+02	5.99E+00	7.84E-04	2.95E+02	2.31E-01	1.13E-02	1.24E-01	5.65E-01	7.76E+02	1.97E-01	7.08E+02	7.99E-04
ACBG-2	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.47E+03	2.03E+01	7.84E-04	9.97E+02	7.82E-01	1.13E-02	1.24E-01	1.91E+00	7.76E+02	1.97E-01	7.08E+02	2.70E-03
Upper Anaconda Mine																						**Minimum HQ (Reference Sites)**	**7.99E-04**
UAW1-00 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	9.31E+02	1.28E+01	7.84E-04	6.31E+02	4.95E-01	1.13E-02	1.24E-01	1.21E+00	7.76E+02	1.97E-01	7.08E+02	1.71E-03
UAW1-00+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	2.98E+03	4.10E+01	7.84E-04	2.02E+03	1.58E+00	1.13E-02	1.24E-01	3.87E+00	7.76E+02	1.97E-01	7.08E+02	5.47E-03
UAW1-050 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	4.21E+03	5.80E+01	7.84E-04	2.85E+03	2.24E+00	1.13E-02	1.24E-01	5.47E+00	7.76E+02	1.97E-01	7.08E+02	7.73E-03
UAW1-100 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UAW1-150 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	7.05E+02	9.70E+00	7.84E-04	4.78E+02	3.75E-01	1.13E-02	1.24E-01	9.16E-01	7.76E+02	1.97E-01	7.08E+02	1.29E-03
UAW1-150+75 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	3.35E+03	4.61E+01	7.84E-04	2.27E+03	1.78E+00	1.13E-02	1.24E-01	4.36E+00	7.76E+02	1.97E-01	7.08E+02	6.16E-03
UAW1-Comp 1 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UAW2-0000 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	2.60E+03	3.57E+01	7.84E-04	1.76E+03	1.38E+00	1.13E-02	1.24E-01	3.37E+00	7.76E+02	1.97E-01	7.08E+02	4.77E-03
UAW2-0000+225 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	3.29E+03	4.52E+01	7.84E-04	2.23E+03	1.75E+00	1.13E-02	1.24E-01	4.27E+00	7.76E+02	1.97E-01	7.08E+02	6.04E-03
UAW2-0050 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.22E+03	1.67E+01	7.84E-04	8.24E+02	6.46E-01	1.13E-02	1.24E-01	1.58E+00	7.76E+02	1.97E-01	7.08E+02	2.23E-03
UAW2-0100 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.97E+03	2.71E+01	7.84E-04	1.33E+03	1.05E+00	1.13E-02	1.24E-01	2.56E+00	7.76E+02	1.97E-01	7.08E+02	3.61E-03
UAW2-0100+250 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	5.78E+03	7.95E+01	7.84E-04	3.91E+03	3.07E+00	1.13E-02	1.24E-01	7.51E+00	7.76E+02	1.97E-01	7.08E+02	1.06E-02
UAW2-0150 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	6.44E+02	8.86E+00	7.84E-04	4.36E+02	3.42E-01	1.13E-02	1.24E-01	8.37E-01	7.76E+02	1.97E-01	7.08E+02	1.18E-03
UAW2-0200 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	8.66E+02	1.19E+01	7.84E-04	5.87E+02	4.60E-01	1.13E-02	1.24E-01	1.13E+00	7.76E+02	1.97E-01	7.08E+02	1.59E-03
UAW2-0250 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UAW2-0250+50 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	3.77E+03	5.18E+01	7.84E-04	2.55E+03	2.00E+00	1.13E-02	1.24E-01	4.89E+00	7.76E+02	1.97E-01	7.08E+02	6.92E-03
UAW2-0300 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	5.41E+02	7.45E+00	7.84E-04	3.67E+02	2.88E-01	1.13E-02	1.24E-01	7.03E-01	7.76E+02	1.97E-01	7.08E+02	9.94E-04
UAW2-0350 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	4.87E+03	6.70E+01	7.84E-04	3.30E+03	2.59E+00	1.13E-02	1.24E-01	6.32E+00	7.76E+02	1.97E-01	7.08E+02	8.94E-03
UAW2-0350+50 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.14E+03	1.57E+01	7.84E-04	7.74E+02	6.07E-01	1.13E-02	1.24E-01	1.48E+00	7.76E+02	1.97E-01	7.08E+02	2.10E-03
UAW2-0400 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	8.31E+02	1.14E+01	7.84E-04	5.63E+02	4.42E-01	1.13E-02	1.24E-01	1.08E+00	7.76E+02	1.97E-01	7.08E+02	1.53E-03
UAW2-0400+150 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	2.66E+03	3.65E+01	7.84E-04	1.80E+03	1.41E+00	1.13E-02	1.24E-01	3.45E+00	7.76E+02	1.97E-01	7.08E+02	4.88E-03
UAW2-0450 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	2.59E+03	3.56E+01	7.84E-04	1.76E+03	1.38E+00	1.13E-02	1.24E-01	3.37E+00	7.76E+02	1.97E-01	7.08E+02	4.76E-03
UAW2-0450+50 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.55E+03	2.13E+01	7.84E-04	1.05E+03	8.22E-01	1.13E-02	1.24E-01	2.01E+00	7.76E+02	1.97E-01	7.08E+02	2.84E-03
UAW2-1000 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	2.55E+03	3.51E+01	7.84E-04	1.73E+03	1.36E+00	1.13E-02	1.24E-01	3.31E+00	7.76E+02	1.97E-01	7.08E+02	4.68E-03
UAW2-Comp (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	6.99E+02	9.61E+00	7.84E-04	4.73E+02	3.71E-01	1.13E-02	1.24E-01	9.08E-01	7.76E+02	1.97E-01	7.08E+02	1.28E-03
UAW3-Comp 1 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	3.55E+02	4.89E+00	7.84E-04	2.41E+02	1.89E-01	1.13E-02	1.24E-01	4.62E-01	7.76E+02	1.97E-01	7.08E+02	6.52E-04
UAW4-Comp 1 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UAW5-00 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.30E+03	1.78E+01	7.84E-04	8.78E+02	6.89E-01	1.13E-02	1.24E-01	1.68E+00	7.76E+02	1.97E-01	7.08E+02	2.38E-03
UAW5-050 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.57E+03	2.16E+01	7.84E-04	1.06E+03	8.33E-01	1.13E-02	1.24E-01	2.04E+00	7.76E+02	1.97E-01	7.08E+02	2.88E-03
UAW5-100 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.38E+03	1.90E+01	7.84E-04	9.35E+02	7.33E-01	1.13E-02	1.24E-01	1.79E+00	7.76E+02	1.97E-01	7.08E+02	2.53E-03
UAW5-100+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	2.12E+03	2.92E+01	7.84E-04	1.44E+03	1.13E+00	1.13E-02	1.24E-01	2.75E+00	7.76E+02	1.97E-01	7.08E+02	3.89E-03
UAW5-150 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.69E+03	2.32E+01	7.84E-04	1.14E+03	8.96E-01	1.13E-02	1.24E-01	2.19E+00	7.76E+02	1.97E-01	7.08E+02	3.10E-03
UAW5-150+50 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	2.82E+03	3.88E+01	7.84E-04	1.91E+03	1.50E+00	1.13E-02	1.24E-01	3.66E+00	7.76E+02	1.97E-01	7.08E+02	5.17E-03
UAW5-200 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	7.15E+02	9.84E+00	7.84E-04	4.85E+02	3.80E-01	1.13E-02	1.24E-01	9.30E-01	7.76E+02	1.97E-01	7.08E+02	1.31E-03
UAW5-250 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	3.77E+03	5.18E+01	7.84E-04	2.55E+03	2.00E+00	1.13E-02	1.24E-01	4.89E+00	7.76E+02	1.97E-01	7.08E+02	6.92E-03
UAW5-250+50 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.08E+03	1.49E+01	7.84E-04	7.32E+02	5.74E-01	1.13E-02	1.24E-01	1.40E+00	7.76E+02	1.97E-01	7.08E+02	1.98E-03
UAW5-300 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	2.98E+03	4.10E+01	7.84E-04	2.02E+03	1.58E+00	1.13E-02	1.24E-01	3.87E+00	7.76E+02	1.97E-01	7.08E+02	5.48E-03
UAW5-300+75 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	3.77E+03	5.18E+01	7.84E-04	2.55E+03	2.00E+00	1.13E-02	1.24E-01	4.89E+00	7.76E+02	1.97E-01	7.08E+02	6.91E-03
UAW5-350 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.25E+03	1.72E+01	7.84E-04	8.45E+02	6.63E-01	1.13E-02	1.24E-01	1.62E+00	7.76E+02	1.97E-01	7.08E+02	2.29E-03
UAW5-400 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	2.51E+03	3.46E+01	7.84E-04	1.70E+03	1.34E+00	1.13E-02	1.24E-01	3.27E+00	7.76E+02	1.97E-01	7.08E+02	4.61E-03
UAW5-450 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.15E+03	1.58E+01	7.84E-04	7.78E+02	6.10E-01	1.13E-02	1.24E-01	1.49E+00	7.76E+02	1.97E-01	7.08E+02	2.11E-03
UAW5-500 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UAW5-500+50 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	3.67E+03	5.04E+01	7.84E-04	2.48E+03	1.95E+00	1.13E-02	1.24E-01	4.76E+00	7.76E+02	1.97E-01	7.08E+02	6.73E-03
UAW5-550 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.81E+03	2.49E+01	7.84E-04	1.22E+03	9.61E-01	1.13E-02	1.24E-01	2.35E+00	7.76E+02	1.97E-01	7.08E+02	3.32E-03
UAW5-600 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.87E+03	2.57E+01	7.84E-04	1.26E+03	9.91E-01	1.13E-02	1.24E-01	2.42E+00	7.76E+02	1.97E-01	7.08E+02	3.43E-03
UAW5-Comp 1 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.38E+03	1.90E+01	7.84E-04	9.37E+02	7.35E-01	1.13E-02	1.24E-01	1.80E+00	7.76E+02	1.97E-01	7.08E+02	2.54E-03
																						Maximum HQ (Upper Anaconda Mine)	**1.06E-02**

TABLE C-1E: MANGANESE DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 1 - UPPER ANACONDA MINE WASTE REMOVAL AREAS AND WASTE PILES (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **2.95**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Meadow Vole (Small Herbivorous Mammal - Terrestrial)																							
Reference Sites																							
ACBG-1	4.69E-03	NA	NA	NA	NA	4.69E-03	3.34E-01	9.85E+01	4.62E-01	NA	NA	NA	NA	1.13E-04	2.95E+02	3.32E-02	1.00E+00	3.06E-02	1.62E+01	1.59E+02	2.97E-02	1.59E+02	1.02E-01
ACBG-2	4.69E-03	NA	NA	NA	NA	4.69E-03	3.34E-01	3.33E+02	1.56E+00	NA	NA	NA	NA	1.13E-04	9.97E+02	1.12E-01	1.00E+00	3.06E-02	5.48E+01	1.59E+02	2.97E-02	1.59E+02	3.45E-01
Upper Anaconda Mine																						**Minimum HQ (Reference Sites)**	**1.02E-01**
UAW1-00 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	6.25E+03	2.93E+01	NA	NA	NA	NA	1.13E-04	6.31E+02	7.10E-02	1.00E+00	3.06E-02	9.60E+02	1.59E+02	2.97E-02	1.59E+02	6.05E+00
UAW1-00+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	2.00E+04	9.37E+01	NA	NA	NA	NA	1.13E-04	2.02E+03	2.27E-01	1.00E+00	3.06E-02	3.07E+03	1.59E+02	2.97E-02	1.59E+02	1.93E+01
UAW1-050 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	2.83E+04	1.33E+02	NA	NA	NA	NA	1.13E-04	2.85E+03	3.21E-01	1.00E+00	3.06E-02	4.34E+03	1.59E+02	2.97E-02	1.59E+02	2.74E+01
UAW1-100 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UAW1-150 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	4.73E+03	2.22E+01	NA	NA	NA	NA	1.13E-04	4.78E+02	5.38E-02	1.00E+00	3.06E-02	7.27E+02	1.59E+02	2.97E-02	1.59E+02	4.58E+00
UAW1-150+75 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	2.25E+04	1.06E+02	NA	NA	NA	NA	1.13E-04	2.27E+03	2.56E-01	1.00E+00	3.06E-02	3.46E+03	1.59E+02	2.97E-02	1.59E+02	2.18E+01
UAW1-Comp 1 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UAW2-0000 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	1.74E+04	8.17E+01	NA	NA	NA	NA	1.13E-04	1.76E+03	1.98E-01	1.00E+00	3.06E-02	2.68E+03	1.59E+02	2.97E-02	1.59E+02	1.69E+01
UAW2-0000+225 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	2.21E+04	1.03E+02	NA	NA	NA	NA	1.13E-04	2.23E+03	2.51E-01	1.00E+00	3.06E-02	3.39E+03	1.59E+02	2.97E-02	1.59E+02	2.13E+01
UAW2-0050 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	8.16E+03	3.83E+01	NA	NA	NA	NA	1.13E-04	8.24E+02	9.27E-02	1.00E+00	3.06E-02	1.25E+03	1.59E+02	2.97E-02	1.59E+02	7.89E+00
UAW2-0100 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	1.32E+04	6.20E+01	NA	NA	NA	NA	1.13E-04	1.33E+03	1.50E-01	1.00E+00	3.06E-02	2.03E+03	1.59E+02	2.97E-02	1.59E+02	1.28E+01
UAW2-0100+250 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	3.88E+04	1.82E+02	NA	NA	NA	NA	1.13E-04	3.91E+03	4.40E-01	1.00E+00	3.06E-02	5.96E+03	1.59E+02	2.97E-02	1.59E+02	3.75E+01
UAW2-0150 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	4.32E+03	2.03E+01	NA	NA	NA	NA	1.13E-04	4.36E+02	4.91E-02	1.00E+00	3.06E-02	6.64E+02	1.59E+02	2.97E-02	1.59E+02	4.18E+00
UAW2-0200 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	5.81E+03	2.73E+01	NA	NA	NA	NA	1.13E-04	5.87E+02	6.60E-02	1.00E+00	3.06E-02	8.93E+02	1.59E+02	2.97E-02	1.59E+02	5.62E+00
UAW2-0250 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UAW2-0250+50 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	2.53E+04	1.19E+02	NA	NA	NA	NA	1.13E-04	2.55E+03	2.87E-01	1.00E+00	3.06E-02	3.88E+03	1.59E+02	2.97E-02	1.59E+02	2.45E+01
UAW2-0300 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	3.63E+03	1.70E+01	NA	NA	NA	NA	1.13E-04	3.67E+02	4.13E-02	1.00E+00	3.06E-02	5.58E+02	1.59E+02	2.97E-02	1.59E+02	3.52E+00
UAW2-0350 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	3.27E+04	1.53E+02	NA	NA	NA	NA	1.13E-04	3.30E+03	3.71E-01	1.00E+00	3.06E-02	5.02E+03	1.59E+02	2.97E-02	1.59E+02	3.16E+01
UAW2-0350+50 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	7.67E+03	3.60E+01	NA	NA	NA	NA	1.13E-04	7.74E+02	8.71E-02	1.00E+00	3.06E-02	1.18E+03	1.59E+02	2.97E-02	1.59E+02	7.42E+00
UAW2-0400 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	5.58E+03	2.62E+01	NA	NA	NA	NA	1.13E-04	5.63E+02	6.34E-02	1.00E+00	3.06E-02	8.57E+02	1.59E+02	2.97E-02	1.59E+02	5.40E+00
UAW2-0400+150 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	1.78E+04	8.36E+01	NA	NA	NA	NA	1.13E-04	1.80E+03	2.02E-01	1.00E+00	3.06E-02	2.74E+03	1.59E+02	2.97E-02	1.59E+02	1.72E+01
UAW2-0450 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	1.74E+04	8.15E+01	NA	NA	NA	NA	1.13E-04	1.76E+03	1.98E-01	1.00E+00	3.06E-02	2.67E+03	1.59E+02	2.97E-02	1.59E+02	1.68E+01
UAW2-0450+50 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	1.04E+04	4.87E+01	NA	NA	NA	NA	1.13E-04	1.05E+03	1.18E-01	1.00E+00	3.06E-02	1.60E+03	1.59E+02	2.97E-02	1.59E+02	1.00E+01
UAW2-1000 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	1.71E+04	8.03E+01	NA	NA	NA	NA	1.13E-04	1.73E+03	1.95E-01	1.00E+00	3.06E-02	2.63E+03	1.59E+02	2.97E-02	1.59E+02	1.66E+01
UAW2-Comp (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	4.69E+03	2.20E+01	NA	NA	NA	NA	1.13E-04	4.73E+02	5.33E-02	1.00E+00	3.06E-02	7.20E+02	1.59E+02	2.97E-02	1.59E+02	4.54E+00
UAW3-Comp 1 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	2.39E+03	1.12E+01	NA	NA	NA	NA	1.13E-04	2.41E+02	2.71E-02	1.00E+00	3.06E-02	3.66E+02	1.59E+02	2.97E-02	1.59E+02	2.31E+00
UAW4-Comp 1 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UAW5-00 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	8.70E+03	4.08E+01	NA	NA	NA	NA	1.13E-04	8.78E+02	9.88E-02	1.00E+00	3.06E-02	1.34E+03	1.59E+02	2.97E-02	1.59E+02	8.42E+00
UAW5-050 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	1.05E+04	4.94E+01	NA	NA	NA	NA	1.13E-04	1.06E+03	1.20E-01	1.00E+00	3.06E-02	1.62E+03	1.59E+02	2.97E-02	1.59E+02	1.02E+01
UAW5-100 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	9.26E+03	4.34E+01	NA	NA	NA	NA	1.13E-04	9.35E+02	1.05E-01	1.00E+00	3.06E-02	1.42E+03	1.59E+02	2.97E-02	1.59E+02	8.96E+00
UAW5-100+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	1.42E+04	6.67E+01	NA	NA	NA	NA	1.13E-04	1.44E+03	1.62E-01	1.00E+00	3.06E-02	2.19E+03	1.59E+02	2.97E-02	1.59E+02	1.38E+01
UAW5-150 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	1.13E+04	5.31E+01	NA	NA	NA	NA	1.13E-04	1.14E+03	1.29E-01	1.00E+00	3.06E-02	1.74E+03	1.59E+02	2.97E-02	1.59E+02	1.09E+01
UAW5-150+50 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	1.89E+04	8.87E+01	NA	NA	NA	NA	1.13E-04	1.91E+03	2.15E-01	1.00E+00	3.06E-02	2.90E+03	1.59E+02	2.97E-02	1.59E+02	1.83E+01
UAW5-200 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	4.80E+03	2.25E+01	NA	NA	NA	NA	1.13E-04	4.85E+02	5.45E-02	1.00E+00	3.06E-02	7.38E+02	1.59E+02	2.97E-02	1.59E+02	4.65E+00
UAW5-250 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	2.53E+04	1.19E+02	NA	NA	NA	NA	1.13E-04	2.55E+03	2.87E-01	1.00E+00	3.06E-02	3.88E+03	1.59E+02	2.97E-02	1.59E+02	2.45E+01
UAW5-250+50 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	7.25E+03	3.40E+01	NA	NA	NA	NA	1.13E-04	7.32E+02	8.24E-02	1.00E+00	3.06E-02	1.11E+03	1.59E+02	2.97E-02	1.59E+02	7.02E+00
UAW5-300 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	2.00E+04	9.39E+01	NA	NA	NA	NA	1.13E-04	2.02E+03	2.27E-01	1.00E+00	3.06E-02	3.08E+03	1.59E+02	2.97E-02	1.59E+02	1.94E+01
UAW5-300+75 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	2.53E+04	1.19E+02	NA	NA	NA	NA	1.13E-04	2.55E+03	2.87E-01	1.00E+00	3.06E-02	3.88E+03	1.59E+02	2.97E-02	1.59E+02	2.45E+01
UAW5-350 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	8.37E+03	3.93E+01	NA	NA	NA	NA	1.13E-04	8.45E+02	9.51E-02	1.00E+00	3.06E-02	1.29E+03	1.59E+02	2.97E-02	1.59E+02	8.10E+00
UAW5-400 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	1.69E+04	7.91E+01	NA	NA	NA	NA	1.13E-04	1.70E+03	1.92E-01	1.00E+00	3.06E-02	2.59E+03	1.59E+02	2.97E-02	1.59E+02	1.63E+01
UAW5-450 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	7.71E+03	3.61E+01	NA	NA	NA	NA	1.13E-04	7.78E+02	8.75E-02	1.00E+00	3.06E-02	1.18E+03	1.59E+02	2.97E-02	1.59E+02	7.46E+00
UAW5-500 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UAW5-500+50 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	2.46E+04	1.15E+02	NA	NA	NA	NA	1.13E-04	2.48E+03	2.79E-01	1.00E+00	3.06E-02	3.78E+03	1.59E+02	2.97E-02	1.59E+02	2.38E+01
UAW5-550 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	1.21E+04	5.69E+01	NA	NA	NA	NA	1.13E-04	1.22E+03	1.38E-01	1.00E+00	3.06E-02	1.86E+03	1.59E+02	2.97E-02	1.59E+02	1.17E+01
UAW5-600 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	1.25E+04	5.87E+01	NA	NA	NA	NA	1.13E-04	1.26E+03	1.42E-01	1.00E+00	3.06E-02	1.92E+03	1.59E+02	2.97E-02	1.59E+02	1.21E+01
UAW5-Comp 1 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	9.29E+03	4.35E+01	NA	NA	NA	NA	1.13E-04	9.37E+02	1.05E-01	1.00E+00	3.06E-02	1.43E+03	1.59E+02	2.97E-02	1.59E+02	8.98E+00
																						Maximum HQ (Upper Anaconda Mine)	**3.75E+01**

TABLE C-1E: MANGANESE DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 1 - UPPER ANACONDA MINE WASTE REMOVAL AREAS AND WASTE PILES (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **2.95**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
White-Tailed Deer (Large Herbivorous Mammal - Terrestrial)																							
Reference Sites																							
ACBG-1	1.43E+00	NA	NA	NA	NA	1.43E+00	3.34E-01	9.85E+01	1.41E+02	NA	NA	NA	NA	2.86E-02	2.95E+02	8.44E+00	1.65E-02	1.35E+02	1.83E-02	1.59E+02	2.97E-02	9.60E+01	1.90E-04
ACBG-2	1.43E+00	NA	NA	NA	NA	1.43E+00	3.34E-01	3.33E+02	4.77E+02	NA	NA	NA	NA	2.86E-02	9.97E+02	2.86E+01	1.65E-02	1.35E+02	6.18E-02	1.59E+02	2.97E-02	9.60E+01	6.44E-04
Upper Anaconda Mine																						**Minimum HQ (Reference Sites)**	**1.90E-04**
UAW1-00 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	6.25E+03	8.95E+03	NA	NA	NA	NA	2.86E-02	6.31E+02	1.81E+01	1.65E-02	1.35E+02	1.10E+00	1.59E+02	2.97E-02	9.60E+01	1.14E-02
UAW1-00+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	2.00E+04	2.86E+04	NA	NA	NA	NA	2.86E-02	2.02E+03	5.77E+01	1.65E-02	1.35E+02	3.50E+00	1.59E+02	2.97E-02	9.60E+01	3.65E-02
UAW1-050 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	2.83E+04	4.05E+04	NA	NA	NA	NA	2.86E-02	2.85E+03	8.17E+01	1.65E-02	1.35E+02	4.96E+00	1.59E+02	2.97E-02	9.60E+01	5.17E-02
UAW1-100 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UAW1-150 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	4.73E+03	6.78E+03	NA	NA	NA	NA	2.86E-02	4.78E+02	1.37E+01	1.65E-02	1.35E+02	8.30E-01	1.59E+02	2.97E-02	9.60E+01	8.65E-03
UAW1-150+75 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	2.25E+04	3.22E+04	NA	NA	NA	NA	2.86E-02	2.27E+03	6.50E+01	1.65E-02	1.35E+02	3.95E+00	1.59E+02	2.97E-02	9.60E+01	4.11E-02
UAW1-Comp 1 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UAW2-0000 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	1.74E+04	2.49E+04	NA	NA	NA	NA	2.86E-02	1.76E+03	5.04E+01	1.65E-02	1.35E+02	3.06E+00	1.59E+02	2.97E-02	9.60E+01	3.18E-02
UAW2-0000+225 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	2.21E+04	3.16E+04	NA	NA	NA	NA	2.86E-02	2.23E+03	6.38E+01	1.65E-02	1.35E+02	3.87E+00	1.59E+02	2.97E-02	9.60E+01	4.03E-02
UAW2-0050 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	8.16E+03	1.17E+04	NA	NA	NA	NA	2.86E-02	8.24E+02	2.36E+01	1.65E-02	1.35E+02	1.43E+00	1.59E+02	2.97E-02	9.60E+01	1.49E-02
UAW2-0100 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	1.32E+04	1.89E+04	NA	NA	NA	NA	2.86E-02	1.33E+03	3.82E+01	1.65E-02	1.35E+02	2.32E+00	1.59E+02	2.97E-02	9.60E+01	2.41E-02
UAW2-0100+250 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	3.88E+04	5.55E+04	NA	NA	NA	NA	2.86E-02	3.91E+03	1.12E+02	1.65E-02	1.35E+02	6.80E+00	1.59E+02	2.97E-02	9.60E+01	7.09E-02
UAW2-0150 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	4.32E+03	6.19E+03	NA	NA	NA	NA	2.86E-02	4.36E+02	1.25E+01	1.65E-02	1.35E+02	7.58E-01	1.59E+02	2.97E-02	9.60E+01	7.90E-03
UAW2-0200 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	5.81E+03	8.32E+03	NA	NA	NA	NA	2.86E-02	5.87E+02	1.68E+01	1.65E-02	1.35E+02	1.02E+00	1.59E+02	2.97E-02	9.60E+01	1.06E-02
UAW2-0250 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UAW2-0250+50 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	2.53E+04	3.62E+04	NA	NA	NA	NA	2.86E-02	2.55E+03	7.31E+01	1.65E-02	1.35E+02	4.43E+00	1.59E+02	2.97E-02	9.60E+01	4.62E-02
UAW2-0300 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	3.63E+03	5.20E+03	NA	NA	NA	NA	2.86E-02	3.67E+02	1.05E+01	1.65E-02	1.35E+02	6.37E-01	1.59E+02	2.97E-02	9.60E+01	6.64E-03
UAW2-0350 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	3.27E+04	4.68E+04	NA	NA	NA	NA	2.86E-02	3.30E+03	9.44E+01	1.65E-02	1.35E+02	5.73E+00	1.59E+02	2.97E-02	9.60E+01	5.97E-02
UAW2-0350+50 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	7.67E+03	1.10E+04	NA	NA	NA	NA	2.86E-02	7.74E+02	2.22E+01	1.65E-02	1.35E+02	1.35E+00	1.59E+02	2.97E-02	9.60E+01	1.40E-02
UAW2-0400 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	5.58E+03	7.99E+03	NA	NA	NA	NA	2.86E-02	5.63E+02	1.61E+01	1.65E-02	1.35E+02	9.78E-01	1.59E+02	2.97E-02	9.60E+01	1.02E-02
UAW2-0400+150 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	1.78E+04	2.55E+04	NA	NA	NA	NA	2.86E-02	1.80E+03	5.15E+01	1.65E-02	1.35E+02	3.13E+00	1.59E+02	2.97E-02	9.60E+01	3.26E-02
UAW2-0450 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	1.74E+04	2.49E+04	NA	NA	NA	NA	2.86E-02	1.76E+03	5.03E+01	1.65E-02	1.35E+02	3.05E+00	1.59E+02	2.97E-02	9.60E+01	3.18E-02
UAW2-0450+50 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	1.04E+04	1.49E+04	NA	NA	NA	NA	2.86E-02	1.05E+03	3.00E+01	1.65E-02	1.35E+02	1.82E+00	1.59E+02	2.97E-02	9.60E+01	1.90E-02
UAW2-1000 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	1.71E+04	2.45E+04	NA	NA	NA	NA	2.86E-02	1.73E+03	4.95E+01	1.65E-02	1.35E+02	3.00E+00	1.59E+02	2.97E-02	9.60E+01	3.13E-02
UAW2-Comp (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	4.69E+03	6.72E+03	NA	NA	NA	NA	2.86E-02	4.73E+02	1.36E+01	1.65E-02	1.35E+02	8.23E-01	1.59E+02	2.97E-02	9.60E+01	8.57E-03
UAW3-Comp 1 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	2.39E+03	3.41E+03	NA	NA	NA	NA	2.86E-02	2.41E+02	6.89E+00	1.65E-02	1.35E+02	4.18E-01	1.59E+02	2.97E-02	9.60E+01	4.36E-03
UAW4-Comp 1 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UAW5-00 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	8.70E+03	1.25E+04	NA	NA	NA	NA	2.86E-02	8.78E+02	2.51E+01	1.65E-02	1.35E+02	1.53E+00	1.59E+02	2.97E-02	9.60E+01	1.59E-02
UAW5-050 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	1.05E+04	1.51E+04	NA	NA	NA	NA	2.86E-02	1.06E+03	3.04E+01	1.65E-02	1.35E+02	1.85E+00	1.59E+02	2.97E-02	9.60E+01	1.92E-02
UAW5-100 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	9.26E+03	1.33E+04	NA	NA	NA	NA	2.86E-02	9.35E+02	2.68E+01	1.65E-02	1.35E+02	1.62E+00	1.59E+02	2.97E-02	9.60E+01	1.69E-02
UAW5-100+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	1.42E+04	2.04E+04	NA	NA	NA	NA	2.86E-02	1.44E+03	4.11E+01	1.65E-02	1.35E+02	2.50E+00	1.59E+02	2.97E-02	9.60E+01	2.60E-02
UAW5-150 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	1.13E+04	1.62E+04	NA	NA	NA	NA	2.86E-02	1.14E+03	3.27E+01	1.65E-02	1.35E+02	1.98E+00	1.59E+02	2.97E-02	9.60E+01	2.07E-02
UAW5-150+50 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	1.89E+04	2.71E+04	NA	NA	NA	NA	2.86E-02	1.91E+03	5.46E+01	1.65E-02	1.35E+02	3.32E+00	1.59E+02	2.97E-02	9.60E+01	3.45E-02
UAW5-200 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	4.80E+03	6.88E+03	NA	NA	NA	NA	2.86E-02	4.85E+02	1.39E+01	1.65E-02	1.35E+02	8.42E-01	1.59E+02	2.97E-02	9.60E+01	8.77E-03
UAW5-250 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	2.53E+04	3.62E+04	NA	NA	NA	NA	2.86E-02	2.55E+03	7.31E+01	1.65E-02	1.35E+02	4.43E+00	1.59E+02	2.97E-02	9.60E+01	4.62E-02
UAW5-250+50 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	7.25E+03	1.04E+04	NA	NA	NA	NA	2.86E-02	7.32E+02	2.10E+01	1.65E-02	1.35E+02	1.27E+00	1.59E+02	2.97E-02	9.60E+01	1.33E-02
UAW5-300 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	2.00E+04	2.87E+04	NA	NA	NA	NA	2.86E-02	2.02E+03	5.78E+01	1.65E-02	1.35E+02	3.51E+00	1.59E+02	2.97E-02	9.60E+01	3.66E-02
UAW5-300+75 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	2.53E+04	3.62E+04	NA	NA	NA	NA	2.86E-02	2.55E+03	7.30E+01	1.65E-02	1.35E+02	4.43E+00	1.59E+02	2.97E-02	9.60E+01	4.62E-02
UAW5-350 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	8.37E+03	1.20E+04	NA	NA	NA	NA	2.86E-02	8.45E+02	2.42E+01	1.65E-02	1.35E+02	1.47E+00	1.59E+02	2.97E-02	9.60E+01	1.53E-02
UAW5-400 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	1.69E+04	2.42E+04	NA	NA	NA	NA	2.86E-02	1.70E+03	4.88E+01	1.65E-02	1.35E+02	2.96E+00	1.59E+02	2.97E-02	9.60E+01	3.08E-02
UAW5-450 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	7.71E+03	1.10E+04	NA	NA	NA	NA	2.86E-02	7.78E+02	2.23E+01	1.65E-02	1.35E+02	1.35E+00	1.59E+02	2.97E-02	9.60E+01	1.41E-02
UAW5-500 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UAW5-500+50 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	2.46E+04	3.52E+04	NA	NA	NA	NA	2.86E-02	2.48E+03	7.11E+01	1.65E-02	1.35E+02	4.32E+00	1.59E+02	2.97E-02	9.60E+01	4.50E-02
UAW5-550 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	1.21E+04	1.74E+04	NA	NA	NA	NA	2.86E-02	1.22E+03	3.51E+01	1.65E-02	1.35E+02	2.13E+00	1.59E+02	2.97E-02	9.60E+01	2.22E-02
UAW5-600 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	1.25E+04	1.79E+04	NA	NA	NA	NA	2.86E-02	1.26E+03	3.62E+01	1.65E-02	1.35E+02	2.20E+00	1.59E+02	2.97E-02	9.60E+01	2.29E-02
UAW5-Comp 1 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	9.29E+03	1.33E+04	NA	NA	NA	NA	2.86E-02	9.37E+02	2.68E+01	1.65E-02	1.35E+02	1.63E+00	1.59E+02	2.97E-02	9.60E+01	1.70E-02
																						Maximum HQ (Upper Anaconda Mine)	**7.09E-02**

TABLE C-1E: MANGANESE DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 1 - UPPER ANACONDA MINE WASTE REMOVAL AREAS AND WASTE PILES (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables; from BAF table; linked to soil or sed concentration table (VLOOKUP)

calculated values; linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **2.95**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Red Fox (Carnivorous Mammal - Terrestrial)																							
Reference Sites																							
ACBG-1	1.72E-01	1.72E-01	5.93E-02	1.75E+01	3.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.95E+02	1.42E+00	2.18E-03	4.54E+00	2.12E-03	1.59E+02	2.97E-02	1.18E+02	1.80E-05
ACBG-2	1.72E-01	1.72E-01	5.93E-02	5.92E+01	1.02E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	9.97E+02	4.79E+00	2.18E-03	4.54E+00	7.18E-03	1.59E+02	2.97E-02	1.18E+02	6.10E-05
Upper Anaconda Mine																						**Minimum HQ (Reference Sites)**	**1.80E-05**
UAW1-00 (0-6")	1.72E-01	1.72E-01	2.80E-02	1.77E+01	3.03E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	6.31E+02	3.03E+00	2.18E-03	4.54E+00	2.91E-03	1.59E+02	2.97E-02	1.18E+02	2.47E-05
UAW1-00+25 (0-6")	1.72E-01	1.72E-01	2.80E-02	5.65E+01	9.69E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.02E+03	9.69E+00	2.18E-03	4.54E+00	9.31E-03	1.59E+02	2.97E-02	1.18E+02	7.91E-05
UAW1-050 (0-6")	1.72E-01	1.72E-01	2.80E-02	7.99E+01	1.37E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.85E+03	1.37E+01	2.18E-03	4.54E+00	1.32E-02	1.59E+02	2.97E-02	1.18E+02	1.12E-04
UAW1-100 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UAW1-150 (0-6")	1.72E-01	1.72E-01	2.80E-02	1.34E+01	2.29E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.78E+02	2.30E+00	2.18E-03	4.54E+00	2.21E-03	1.59E+02	2.97E-02	1.18E+02	1.87E-05
UAW1-150+75 (0-6")	1.72E-01	1.72E-01	2.80E-02	6.36E+01	1.09E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.27E+03	1.09E+01	2.18E-03	4.54E+00	1.05E-02	1.59E+02	2.97E-02	1.18E+02	8.91E-05
UAW1-Comp 1 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UAW2-0000 (0-6")	1.72E-01	1.72E-01	2.80E-02	4.92E+01	8.45E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.76E+03	8.45E+00	2.18E-03	4.54E+00	8.12E-03	1.59E+02	2.97E-02	1.18E+02	6.90E-05
UAW2-0000+225 (0-6")	1.72E-01	1.72E-01	2.80E-02	6.23E+01	1.07E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.23E+03	1.07E+01	2.18E-03	4.54E+00	1.03E-02	1.59E+02	2.97E-02	1.18E+02	8.74E-05
UAW2-0050 (0-6")	1.72E-01	1.72E-01	2.80E-02	2.31E+01	3.96E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	8.24E+02	3.96E+00	2.18E-03	4.54E+00	3.80E-03	1.59E+02	2.97E-02	1.18E+02	3.23E-05
UAW2-0100 (0-6")	1.72E-01	1.72E-01	2.80E-02	3.73E+01	6.40E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.33E+03	6.41E+00	2.18E-03	4.54E+00	6.15E-03	1.59E+02	2.97E-02	1.18E+02	5.23E-05
UAW2-0100+250 (0-6")	1.72E-01	1.72E-01	2.80E-02	1.10E+02	1.88E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.91E+03	1.88E+01	2.18E-03	4.54E+00	1.81E-02	1.59E+02	2.97E-02	1.18E+02	1.54E-04
UAW2-0150 (0-6")	1.72E-01	1.72E-01	2.80E-02	1.22E+01	2.10E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.36E+02	2.10E+00	2.18E-03	4.54E+00	2.01E-03	1.59E+02	2.97E-02	1.18E+02	1.71E-05
UAW2-0200 (0-6")	1.72E-01	1.72E-01	2.80E-02	1.64E+01	2.82E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.87E+02	2.82E+00	2.18E-03	4.54E+00	2.71E-03	1.59E+02	2.97E-02	1.18E+02	2.30E-05
UAW2-0250 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UAW2-0250+50 (0-6")	1.72E-01	1.72E-01	2.80E-02	7.14E+01	1.23E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.55E+03	1.23E+01	2.18E-03	4.54E+00	1.18E-02	1.59E+02	2.97E-02	1.18E+02	1.00E-04
UAW2-0300 (0-6")	1.72E-01	1.72E-01	2.80E-02	1.03E+01	1.76E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.67E+02	1.76E+00	2.18E-03	4.54E+00	1.69E-03	1.59E+02	2.97E-02	1.18E+02	1.44E-05
UAW2-0350 (0-6")	1.72E-01	1.72E-01	2.80E-02	9.23E+01	1.58E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.30E+03	1.58E+01	2.18E-03	4.54E+00	1.52E-02	1.59E+02	2.97E-02	1.18E+02	1.29E-04
UAW2-0350+50 (0-6")	1.72E-01	1.72E-01	2.80E-02	2.17E+01	3.72E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	7.74E+02	3.72E+00	2.18E-03	4.54E+00	3.57E-03	1.59E+02	2.97E-02	1.18E+02	3.04E-05
UAW2-0400 (0-6")	1.72E-01	1.72E-01	2.80E-02	1.58E+01	2.70E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.63E+02	2.70E+00	2.18E-03	4.54E+00	2.60E-03	1.59E+02	2.97E-02	1.18E+02	2.21E-05
UAW2-0400+150 (0-6")	1.72E-01	1.72E-01	2.80E-02	5.04E+01	8.64E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.80E+03	8.64E+00	2.18E-03	4.54E+00	8.30E-03	1.59E+02	2.97E-02	1.18E+02	7.06E-05
UAW2-0450 (0-6")	1.72E-01	1.72E-01	2.80E-02	4.91E+01	8.43E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.76E+03	8.43E+00	2.18E-03	4.54E+00	8.10E-03	1.59E+02	2.97E-02	1.18E+02	6.88E-05
UAW2-0450+50 (0-6")	1.72E-01	1.72E-01	2.80E-02	2.93E+01	5.03E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.05E+03	5.03E+00	2.18E-03	4.54E+00	4.84E-03	1.59E+02	2.97E-02	1.18E+02	4.11E-05
UAW2-1000 (0-6")	1.72E-01	1.72E-01	2.80E-02	4.84E+01	8.30E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.73E+03	8.30E+00	2.18E-03	4.54E+00	7.98E-03	1.59E+02	2.97E-02	1.18E+02	6.78E-05
UAW2-Comp (0-6")	1.72E-01	1.72E-01	2.80E-02	1.33E+01	2.27E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.73E+02	2.27E+00	2.18E-03	4.54E+00	2.18E-03	1.59E+02	2.97E-02	1.18E+02	1.86E-05
UAW3-Comp 1 (0-6")	1.72E-01	1.72E-01	2.80E-02	6.74E+00	1.16E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.41E+02	1.16E+00	2.18E-03	4.54E+00	1.11E-03	1.59E+02	2.97E-02	1.18E+02	9.44E-06
UAW4-Comp 1 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UAW5-00 (0-6")	1.72E-01	1.72E-01	2.80E-02	2.46E+01	4.22E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	8.78E+02	4.22E+00	2.18E-03	4.54E+00	4.05E-03	1.59E+02	2.97E-02	1.18E+02	3.45E-05
UAW5-050 (0-6")	1.72E-01	1.72E-01	2.80E-02	2.97E+01	5.10E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.06E+03	5.10E+00	2.18E-03	4.54E+00	4.90E-03	1.59E+02	2.97E-02	1.18E+02	4.17E-05
UAW5-100 (0-6")	1.72E-01	1.72E-01	2.80E-02	2.62E+01	4.49E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	9.35E+02	4.49E+00	2.18E-03	4.54E+00	4.31E-03	1.59E+02	2.97E-02	1.18E+02	3.67E-05
UAW5-100+25 (0-6")	1.72E-01	1.72E-01	2.80E-02	4.02E+01	6.90E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.44E+03	6.90E+00	2.18E-03	4.54E+00	6.63E-03	1.59E+02	2.97E-02	1.18E+02	5.63E-05
UAW5-150 (0-6")	1.72E-01	1.72E-01	2.80E-02	3.20E+01	5.49E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.14E+03	5.49E+00	2.18E-03	4.54E+00	5.27E-03	1.59E+02	2.97E-02	1.18E+02	4.48E-05
UAW5-150+50 (0-6")	1.72E-01	1.72E-01	2.80E-02	5.34E+01	9.16E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.91E+03	9.17E+00	2.18E-03	4.54E+00	8.81E-03	1.59E+02	2.97E-02	1.18E+02	7.48E-05
UAW5-200 (0-6")	1.72E-01	1.72E-01	2.80E-02	1.36E+01	2.33E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.85E+02	2.33E+00	2.18E-03	4.54E+00	2.24E-03	1.59E+02	2.97E-02	1.18E+02	1.90E-05
UAW5-250 (0-6")	1.72E-01	1.72E-01	2.80E-02	7.14E+01	1.23E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.55E+03	1.23E+01	2.18E-03	4.54E+00	1.18E-02	1.59E+02	2.97E-02	1.18E+02	1.00E-04
UAW5-250+50 (0-6")	1.72E-01	1.72E-01	2.80E-02	2.05E+01	3.52E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	7.32E+02	3.52E+00	2.18E-03	4.54E+00	3.38E-03	1.59E+02	2.97E-02	1.18E+02	2.87E-05
UAW5-300 (0-6")	1.72E-01	1.72E-01	2.80E-02	5.66E+01	9.70E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.02E+03	9.70E+00	2.18E-03	4.54E+00	9.32E-03	1.59E+02	2.97E-02	1.18E+02	7.93E-05
UAW5-300+75 (0-6")	1.72E-01	1.72E-01	2.80E-02	7.14E+01	1.23E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.55E+03	1.23E+01	2.18E-03	4.54E+00	1.18E-02	1.59E+02	2.97E-02	1.18E+02	1.00E-04
UAW5-350 (0-6")	1.72E-01	1.72E-01	2.80E-02	2.37E+01	4.06E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	8.45E+02	4.06E+00	2.18E-03	4.54E+00	3.90E-03	1.59E+02	2.97E-02	1.18E+02	3.32E-05
UAW5-400 (0-6")	1.72E-01	1.72E-01	2.80E-02	4.77E+01	8.18E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.70E+03	8.18E+00	2.18E-03	4.54E+00	7.86E-03	1.59E+02	2.97E-02	1.18E+02	6.68E-05
UAW5-450 (0-6")	1.72E-01	1.72E-01	2.80E-02	2.18E+01	3.74E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	7.78E+02	3.74E+00	2.18E-03	4.54E+00	3.59E-03	1.59E+02	2.97E-02	1.18E+02	3.05E-05
UAW5-500 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UAW5-500+50 (0-6")	1.72E-01	1.72E-01	2.80E-02	6.95E+01	1.19E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.48E+03	1.19E+01	2.18E-03	4.54E+00	1.15E-02	1.59E+02	2.97E-02	1.18E+02	9.74E-05
UAW5-550 (0-6")	1.72E-01	1.72E-01	2.80E-02	3.43E+01	5.88E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.22E+03	5.88E+00	2.18E-03	4.54E+00	5.65E-03	1.59E+02	2.97E-02	1.18E+02	4.80E-05
UAW5-600 (0-6")	1.72E-01	1.72E-01	2.80E-02	3.54E+01	6.07E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.26E+03	6.07E+00	2.18E-03	4.54E+00	5.83E-03	1.59E+02	2.97E-02	1.18E+02	4.96E-05
UAW5-Comp 1 (0-6")	1.72E-01	1.72E-01	2.80E-02	2.62E+01	4.50E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	9.37E+02	4.50E+00	2.18E-03	4.54E+00	4.33E-03	1.59E+02	2.97E-02	1.18E+02	3.68E-05
																						Maximum HQ (Upper Anaconda Mine)	**1.54E-04**

TABLE C-1E: MANGANESE DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 1 - UPPER ANACONDA MINE WASTE REMOVAL AREAS AND WASTE PILES (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables; from BAF table; linked to soil or sed concentration table (VLOOKUP)

calculated values; linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **2.95**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Masked Shrew (Omnivorous Mammal - Terrestrial, Wetland)																							
Reference Sites																							
ACBG-1	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	4.35E+02	3.68E+00	1.10E-03	2.95E+02	3.25E-01	1.00E+00	5.50E-03	7.29E+02	1.59E+02	2.97E-02	1.76E+02	4.14E+00
ACBG-2	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.47E+03	1.25E+01	1.10E-03	9.97E+02	1.10E+00	1.00E+00	5.50E-03	2.47E+03	1.59E+02	2.97E-02	1.76E+02	1.40E+01
Upper Anaconda Mine																						**Minimum HQ (Reference Sites)**	**4.14E+00**
UAW1-00 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	9.31E+02	7.88E+00	1.10E-03	6.31E+02	6.94E-01	1.00E+00	5.50E-03	1.56E+03	1.59E+02	2.97E-02	1.76E+02	8.86E+00
UAW1-00+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	2.98E+03	2.52E+01	1.10E-03	2.02E+03	2.22E+00	1.00E+00	5.50E-03	4.99E+03	1.59E+02	2.97E-02	1.76E+02	2.83E+01
UAW1-050 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	4.21E+03	3.57E+01	1.10E-03	2.85E+03	3.14E+00	1.00E+00	5.50E-03	7.06E+03	1.59E+02	2.97E-02	1.76E+02	4.01E+01
UAW1-100 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UAW1-150 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	7.05E+02	5.97E+00	1.10E-03	4.78E+02	5.26E-01	1.00E+00	5.50E-03	1.18E+03	1.59E+02	2.97E-02	1.76E+02	6.71E+00
UAW1-150+75 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	3.35E+03	2.84E+01	1.10E-03	2.27E+03	2.50E+00	1.00E+00	5.50E-03	5.62E+03	1.59E+02	2.97E-02	1.76E+02	3.19E+01
UAW1-Comp 1 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UAW2-0000 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	2.60E+03	2.20E+01	1.10E-03	1.76E+03	1.94E+00	1.00E+00	5.50E-03	4.35E+03	1.59E+02	2.97E-02	1.76E+02	2.47E+01
UAW2-0000+225 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	3.29E+03	2.78E+01	1.10E-03	2.23E+03	2.45E+00	1.00E+00	5.50E-03	5.51E+03	1.59E+02	2.97E-02	1.76E+02	3.13E+01
UAW2-0050 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.22E+03	1.03E+01	1.10E-03	8.24E+02	9.07E-01	1.00E+00	5.50E-03	2.04E+03	1.59E+02	2.97E-02	1.76E+02	1.16E+01
UAW2-0100 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.97E+03	1.67E+01	1.10E-03	1.33E+03	1.47E+00	1.00E+00	5.50E-03	3.30E+03	1.59E+02	2.97E-02	1.76E+02	1.87E+01
UAW2-0100+250 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	5.78E+03	4.89E+01	1.10E-03	3.91E+03	4.31E+00	1.00E+00	5.50E-03	9.68E+03	1.59E+02	2.97E-02	1.76E+02	5.50E+01
UAW2-0150 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	6.44E+02	5.45E+00	1.10E-03	4.36E+02	4.80E-01	1.00E+00	5.50E-03	1.08E+03	1.59E+02	2.97E-02	1.76E+02	6.13E+00
UAW2-0200 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	8.66E+02	7.34E+00	1.10E-03	5.87E+02	6.46E-01	1.00E+00	5.50E-03	1.45E+03	1.59E+02	2.97E-02	1.76E+02	8.24E+00
UAW2-0250 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UAW2-0250+50 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	3.77E+03	3.19E+01	1.10E-03	2.55E+03	2.81E+00	1.00E+00	5.50E-03	6.31E+03	1.59E+02	2.97E-02	1.76E+02	3.59E+01
UAW2-0300 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	5.41E+02	4.59E+00	1.10E-03	3.67E+02	4.04E-01	1.00E+00	5.50E-03	9.07E+02	1.59E+02	2.97E-02	1.76E+02	5.15E+00
UAW2-0350 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	4.87E+03	4.12E+01	1.10E-03	3.30E+03	3.63E+00	1.00E+00	5.50E-03	8.16E+03	1.59E+02	2.97E-02	1.76E+02	4.63E+01
UAW2-0350+50 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.14E+03	9.68E+00	1.10E-03	7.74E+02	8.52E-01	1.00E+00	5.50E-03	1.91E+03	1.59E+02	2.97E-02	1.76E+02	1.09E+01
UAW2-0400 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	8.31E+02	7.04E+00	1.10E-03	5.63E+02	6.20E-01	1.00E+00	5.50E-03	1.39E+03	1.59E+02	2.97E-02	1.76E+02	7.91E+00
UAW2-0400+150 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	2.66E+03	2.25E+01	1.10E-03	1.80E+03	1.98E+00	1.00E+00	5.50E-03	4.45E+03	1.59E+02	2.97E-02	1.76E+02	2.53E+01
UAW2-0450 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	2.59E+03	2.19E+01	1.10E-03	1.76E+03	1.93E+00	1.00E+00	5.50E-03	4.34E+03	1.59E+02	2.97E-02	1.76E+02	2.47E+01
UAW2-0450+50 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.55E+03	1.31E+01	1.10E-03	1.05E+03	1.15E+00	1.00E+00	5.50E-03	2.59E+03	1.59E+02	2.97E-02	1.76E+02	1.47E+01
UAW2-1000 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	2.55E+03	2.16E+01	1.10E-03	1.73E+03	1.90E+00	1.00E+00	5.50E-03	4.27E+03	1.59E+02	2.97E-02	1.76E+02	2.43E+01
UAW2-Comp (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	6.99E+02	5.92E+00	1.10E-03	4.73E+02	5.21E-01	1.00E+00	5.50E-03	1.17E+03	1.59E+02	2.97E-02	1.76E+02	6.65E+00
UAW3-Comp 1 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	3.55E+02	3.01E+00	1.10E-03	2.41E+02	2.65E-01	1.00E+00	5.50E-03	5.95E+02	1.59E+02	2.97E-02	1.76E+02	3.38E+00
UAW4-Comp 1 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UAW5-00 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.30E+03	1.10E+01	1.10E-03	8.78E+02	9.67E-01	1.00E+00	5.50E-03	2.17E+03	1.59E+02	2.97E-02	1.76E+02	1.23E+01
UAW5-050 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.57E+03	1.33E+01	1.10E-03	1.06E+03	1.17E+00	1.00E+00	5.50E-03	2.63E+03	1.59E+02	2.97E-02	1.76E+02	1.49E+01
UAW5-100 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.38E+03	1.17E+01	1.10E-03	9.35E+02	1.03E+00	1.00E+00	5.50E-03	2.31E+03	1.59E+02	2.97E-02	1.76E+02	1.31E+01
UAW5-100+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	2.12E+03	1.80E+01	1.10E-03	1.44E+03	1.58E+00	1.00E+00	5.50E-03	3.55E+03	1.59E+02	2.97E-02	1.76E+02	2.02E+01
UAW5-150 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.69E+03	1.43E+01	1.10E-03	1.14E+03	1.26E+00	1.00E+00	5.50E-03	2.82E+03	1.59E+02	2.97E-02	1.76E+02	1.60E+01
UAW5-150+50 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	2.82E+03	2.39E+01	1.10E-03	1.91E+03	2.10E+00	1.00E+00	5.50E-03	4.72E+03	1.59E+02	2.97E-02	1.76E+02	2.68E+01
UAW5-200 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	7.15E+02	6.06E+00	1.10E-03	4.85E+02	5.34E-01	1.00E+00	5.50E-03	1.20E+03	1.59E+02	2.97E-02	1.76E+02	6.81E+00
UAW5-250 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	3.77E+03	3.19E+01	1.10E-03	2.55E+03	2.81E+00	1.00E+00	5.50E-03	6.31E+03	1.59E+02	2.97E-02	1.76E+02	3.59E+01
UAW5-250+50 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.08E+03	9.15E+00	1.10E-03	7.32E+02	8.06E-01	1.00E+00	5.50E-03	1.81E+03	1.59E+02	2.97E-02	1.76E+02	1.03E+01
UAW5-300 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	2.98E+03	2.53E+01	1.10E-03	2.02E+03	2.22E+00	1.00E+00	5.50E-03	5.00E+03	1.59E+02	2.97E-02	1.76E+02	2.84E+01
UAW5-300+75 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	3.77E+03	3.19E+01	1.10E-03	2.55E+03	2.81E+00	1.00E+00	5.50E-03	6.31E+03	1.59E+02	2.97E-02	1.76E+02	3.58E+01
UAW5-350 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.25E+03	1.06E+01	1.10E-03	8.45E+02	9.31E-01	1.00E+00	5.50E-03	2.09E+03	1.59E+02	2.97E-02	1.76E+02	1.19E+01
UAW5-400 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	2.51E+03	2.13E+01	1.10E-03	1.70E+03	1.87E+00	1.00E+00	5.50E-03	4.21E+03	1.59E+02	2.97E-02	1.76E+02	2.39E+01
UAW5-450 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.15E+03	9.72E+00	1.10E-03	7.78E+02	8.56E-01	1.00E+00	5.50E-03	1.92E+03	1.59E+02	2.97E-02	1.76E+02	1.09E+01
UAW5-500 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UAW5-500+50 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	3.67E+03	3.10E+01	1.10E-03	2.48E+03	2.73E+00	1.00E+00	5.50E-03	6.14E+03	1.59E+02	2.97E-02	1.76E+02	3.49E+01
UAW5-550 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.81E+03	1.53E+01	1.10E-03	1.22E+03	1.35E+00	1.00E+00	5.50E-03	3.03E+03	1.59E+02	2.97E-02	1.76E+02	1.72E+01
UAW5-600 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.87E+03	1.58E+01	1.10E-03	1.26E+03	1.39E+00	1.00E+00	5.50E-03	3.13E+03	1.59E+02	2.97E-02	1.76E+02	1.78E+01
UAW5-Comp 1 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.38E+03	1.17E+01	1.10E-03	9.37E+02	1.03E+00	1.00E+00	5.50E-03	2.32E+03	1.59E+02	2.97E-02	1.76E+02	1.32E+01
																						Maximum HQ (Upper Anaconda Mine)	**5.50E+01**

TABLE C-1E: MANGANESE DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 1 - UPPER ANACONDA MINE WASTE REMOVAL AREAS AND WASTE PILES (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **2.95**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)

Notes

1 See Tables 3-1 through 3-13 for ingestion rates, foraging ranges used to calculate the SUF, and body weights.

2 BAFs were calculated by dividing site-collected tissue by collocated soil concentrations (BAFs are in dry weight). The maximum BAF calculated from the Beartrap Creek and Blackfoot River transects was used for site dose calculations. The maximum BAF from the terrestrial reference site was used for reference site dose calculations.

3 The mammal, plant, and invertebrate concentrations were calculated by multiplying the soil concentration by the BAF to generate a tissue concentration (see note 2).

4 Mammal, plant, and invertebrate daily doses were calculated by multiplying the ingestion rate (see note 1) by the tissue concentration (see note 3).

5 Soil concentration from 0 to 6 inches below ground surface at point ID as measured by XRF 10. Doses were not calculated for detected and non-detected soil concentrations measured below the minimum reference site concentration, as indicated by BB. For results that were measured at less than the detection limit, doses were calculated using half of the detection limit.

6 Soil daily dose was calculated by multiplying the soil ingestion rate (see note 1) by soil concentration (see note 5).

7 Total daily dose is calculated using the following equation: total daily dose = ([mammal daily dose (if applicable) + plant daily dose (if applicable) + invertebrate daily dose (if applicable) + soil daily dose]*SUF)/receptor species body weight.

8 The TRVs used in this risk assessment represent a mid-range effects level. The derivation of TRVs is described in Navy (1998).

9 Allometrically adjusted TRVs for birds were calculated using the following equation: receptor species TRV = (test species TRV) x (test species body weight / receptor species body weight)$^{(1-1.2)}$.

10 Allometrically adjusted TRVs for mammals were calculated using the following equation: receptor species TRV = (test species TRV) x (test species body weight / receptor species body weight)$^{(1-0.94)}$.

11 HQs were calculated using the following equation: HQ = total daily dose/allometrically adjusted TRV.

12 Highlighted cells indicate an HQ greater than 1.0.

BAF	Bioaccumulation factor	mg/kg	Milligram per kilogram
BB	Below minimum background reference site concentration	NA	Not applicable
EU	Exposure unit	Navy	Department of the Navy
HQ	Hazard quotient	SUF	Site use factor
ID	Identification	TRV	Toxicity reference value
kg	Kilogram	XRF	X-ray flourescence
kg/day	Kilogram per day	XRF 10	XRF measurements recorded following drying and seiving through a #10 -mesh screen
mg/day	Milligram per day		

Sources: Department of the Navy. 1998. "Development of Toxicity Reference Values for Conducting Ecological Risk Assessments at Naval Facilities in California, Interim Final." Prepared by Naval Facilities Engineering Command, Engineering Field Activity West (EFA West). San Bruno, California.

TABLE C-1F: ZINC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 1 - UPPER ANACONDA MINE WASTE REMOVAL AREAS AND WASTE PILES

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **2.95**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Mourning Dove (Herbivorous Birds - Terrestrial)																							
Reference Sites																							
ACBG-1	5.76E-03	NA	NA	NA	NA	5.76E-03	1.41E+00	1.93E+02	1.11E+00	NA	NA	NA	NA	5.36E-04	1.37E+02	7.34E-02	1.14E-02	1.09E-01	1.24E-01	1.72E+02	9.55E-01	1.11E+02	1.11E-03
ACBG-2	5.76E-03	NA	NA	NA	NA	5.76E-03	1.41E+00	1.18E+02	6.82E-01	NA	NA	NA	NA	5.36E-04	8.39E+01	4.50E-02	1.14E-02	1.09E-01	7.59E-02	1.72E+02	9.55E-01	1.11E+02	6.81E-04
Upper Anaconda Mine																						**Minimum HQ (Reference Sites)**	**6.81E-04**
UAW1-00 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	7.73E+02	4.45E+00	NA	NA	NA	NA	5.36E-04	3.90E+02	2.09E-01	1.14E-02	1.09E-01	4.86E-01	1.72E+02	9.55E-01	1.11E+02	4.36E-03
UAW1-00+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	9.52E+02	5.49E+00	NA	NA	NA	NA	5.36E-04	4.81E+02	2.58E-01	1.14E-02	1.09E-01	5.99E-01	1.72E+02	9.55E-01	1.11E+02	5.38E-03
UAW1-050 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	1.65E+03	9.51E+00	NA	NA	NA	NA	5.36E-04	8.33E+02	4.46E-01	1.14E-02	1.09E-01	1.04E+00	1.72E+02	9.55E-01	1.11E+02	9.31E-03
UAW1-100 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UAW1-150 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	8.39E+02	4.83E+00	NA	NA	NA	NA	5.36E-04	4.23E+02	2.27E-01	1.14E-02	1.09E-01	5.28E-01	1.72E+02	9.55E-01	1.11E+02	4.73E-03
UAW1-150+75 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	2.44E+03	1.40E+01	NA	NA	NA	NA	5.36E-04	1.23E+03	6.59E-01	1.14E-02	1.09E-01	1.53E+00	1.72E+02	9.55E-01	1.11E+02	1.37E-02
UAW1-Comp 1 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	1.44E+03	8.31E+00	NA	NA	NA	NA	5.36E-04	7.28E+02	3.90E-01	1.14E-02	1.09E-01	9.08E-01	1.72E+02	9.55E-01	1.11E+02	8.15E-03
UAW2-0000 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	7.63E+02	4.40E+00	NA	NA	NA	NA	5.36E-04	3.85E+02	2.06E-01	1.14E-02	1.09E-01	4.80E-01	1.72E+02	9.55E-01	1.11E+02	4.31E-03
UAW2-0000+225 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	1.42E+03	8.17E+00	NA	NA	NA	NA	5.36E-04	7.16E+02	3.84E-01	1.14E-02	1.09E-01	8.92E-01	1.72E+02	9.55E-01	1.11E+02	8.01E-03
UAW2-0050 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	2.74E+02	1.58E+00	NA	NA	NA	NA	5.36E-04	1.38E+02	7.40E-02	1.14E-02	1.09E-01	1.72E-01	1.72E+02	9.55E-01	1.11E+02	1.54E-03
UAW2-0100 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	9.07E+02	5.22E+00	NA	NA	NA	NA	5.36E-04	4.58E+02	2.45E-01	1.14E-02	1.09E-01	5.70E-01	1.72E+02	9.55E-01	1.11E+02	5.12E-03
UAW2-0100+250 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	8.58E+02	4.94E+00	NA	NA	NA	NA	5.36E-04	4.33E+02	2.32E-01	1.14E-02	1.09E-01	5.40E-01	1.72E+02	9.55E-01	1.11E+02	4.84E-03
UAW2-0150 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UAW2-0200 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	5.21E+02	3.00E+00	NA	NA	NA	NA	5.36E-04	2.63E+02	1.41E-01	1.14E-02	1.09E-01	3.28E-01	1.72E+02	9.55E-01	1.11E+02	2.94E-03
UAW2-0250 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	3.56E+02	2.05E+00	NA	NA	NA	NA	5.36E-04	1.80E+02	9.63E-02	1.14E-02	1.09E-01	2.24E-01	1.72E+02	9.55E-01	1.11E+02	2.01E-03
UAW2-0250+50 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	9.90E+02	5.70E+00	NA	NA	NA	NA	5.36E-04	4.99E+02	2.68E-01	1.14E-02	1.09E-01	6.23E-01	1.72E+02	9.55E-01	1.11E+02	5.58E-03
UAW2-0300 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	3.92E+02	2.26E+00	NA	NA	NA	NA	5.36E-04	1.98E+02	1.06E-01	1.14E-02	1.09E-01	2.47E-01	1.72E+02	9.55E-01	1.11E+02	2.21E-03
UAW2-0350 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	1.32E+03	7.61E+00	NA	NA	NA	NA	5.36E-04	6.66E+02	3.57E-01	1.14E-02	1.09E-01	8.31E-01	1.72E+02	9.55E-01	1.11E+02	7.45E-03
UAW2-0350+50 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	8.21E+02	4.73E+00	NA	NA	NA	NA	5.36E-04	4.14E+02	2.22E-01	1.14E-02	1.09E-01	5.16E-01	1.72E+02	9.55E-01	1.11E+02	4.63E-03
UAW2-0400 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	2.72E+02	1.56E+00	NA	NA	NA	NA	5.36E-04	1.37E+02	7.34E-02	1.14E-02	1.09E-01	1.71E-01	1.72E+02	9.55E-01	1.11E+02	1.53E-03
UAW2-0400+150 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	6.26E+02	3.61E+00	NA	NA	NA	NA	5.36E-04	3.16E+02	1.69E-01	1.14E-02	1.09E-01	3.94E-01	1.72E+02	9.55E-01	1.11E+02	3.53E-03
UAW2-0450 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	9.99E+02	5.75E+00	NA	NA	NA	NA	5.36E-04	5.04E+02	2.70E-01	1.14E-02	1.09E-01	6.28E-01	1.72E+02	9.55E-01	1.11E+02	5.64E-03
UAW2-0450+50 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	8.15E+02	4.70E+00	NA	NA	NA	NA	5.36E-04	4.11E+02	2.20E-01	1.14E-02	1.09E-01	5.13E-01	1.72E+02	9.55E-01	1.11E+02	4.60E-03
UAW2-1000 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	8.48E+02	4.89E+00	NA	NA	NA	NA	5.36E-04	4.28E+02	2.29E-01	1.14E-02	1.09E-01	5.34E-01	1.72E+02	9.55E-01	1.11E+02	4.79E-03
UAW2-Comp (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UAW3-Comp 1 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	2.00E+04	1.15E+02	NA	NA	NA	NA	5.36E-04	1.01E+04	5.41E+00	1.14E-02	1.09E-01	1.26E+01	1.72E+02	9.55E-01	1.11E+02	1.13E-01
UAW4-Comp 1 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	1.01E+03	5.84E+00	NA	NA	NA	NA	5.36E-04	5.11E+02	2.74E-01	1.14E-02	1.09E-01	6.38E-01	1.72E+02	9.55E-01	1.11E+02	5.72E-03
UAW5-00 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	8.56E+02	4.93E+00	NA	NA	NA	NA	5.36E-04	4.32E+02	2.31E-01	1.14E-02	1.09E-01	5.38E-01	1.72E+02	9.55E-01	1.11E+02	4.83E-03
UAW5-050 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	9.32E+02	5.37E+00	NA	NA	NA	NA	5.36E-04	4.70E+02	2.52E-01	1.14E-02	1.09E-01	5.86E-01	1.72E+02	9.55E-01	1.11E+02	5.26E-03
UAW5-100 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	8.36E+02	4.82E+00	NA	NA	NA	NA	5.36E-04	4.22E+02	2.26E-01	1.14E-02	1.09E-01	5.26E-01	1.72E+02	9.55E-01	1.11E+02	4.72E-03
UAW5-100+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	1.36E+03	7.82E+00	NA	NA	NA	NA	5.36E-04	6.85E+02	3.67E-01	1.14E-02	1.09E-01	8.54E-01	1.72E+02	9.55E-01	1.11E+02	7.66E-03
UAW5-150 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	8.50E+02	4.90E+00	NA	NA	NA	NA	5.36E-04	4.29E+02	2.30E-01	1.14E-02	1.09E-01	5.35E-01	1.72E+02	9.55E-01	1.11E+02	4.80E-03
UAW5-150+50 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	1.44E+03	8.28E+00	NA	NA	NA	NA	5.36E-04	7.25E+02	3.88E-01	1.14E-02	1.09E-01	9.04E-01	1.72E+02	9.55E-01	1.11E+02	8.11E-03
UAW5-200 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	7.02E+02	4.04E+00	NA	NA	NA	NA	5.36E-04	3.54E+02	1.90E-01	1.14E-02	1.09E-01	4.42E-01	1.72E+02	9.55E-01	1.11E+02	3.96E-03
UAW5-250 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	9.35E+02	5.39E+00	NA	NA	NA	NA	5.36E-04	4.72E+02	2.53E-01	1.14E-02	1.09E-01	5.89E-01	1.72E+02	9.55E-01	1.11E+02	5.28E-03
UAW5-250+50 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	7.91E+02	4.56E+00	NA	NA	NA	NA	5.36E-04	3.99E+02	2.14E-01	1.14E-02	1.09E-01	4.98E-01	1.72E+02	9.55E-01	1.11E+02	4.47E-03
UAW5-300 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	1.83E+03	1.05E+01	NA	NA	NA	NA	5.36E-04	9.23E+02	4.95E-01	1.14E-02	1.09E-01	1.15E+00	1.72E+02	9.55E-01	1.11E+02	1.03E-02
UAW5-300+75 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	1.65E+03	9.49E+00	NA	NA	NA	NA	5.36E-04	8.31E+02	4.45E-01	1.14E-02	1.09E-01	1.04E+00	1.72E+02	9.55E-01	1.11E+02	9.30E-03
UAW5-350 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	3.24E+02	1.87E+00	NA	NA	NA	NA	5.36E-04	1.64E+02	8.77E-02	1.14E-02	1.09E-01	2.04E-01	1.72E+02	9.55E-01	1.11E+02	1.83E-03
UAW5-400 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	1.07E+03	6.18E+00	NA	NA	NA	NA	5.36E-04	5.42E+02	2.90E-01	1.14E-02	1.09E-01	6.75E-01	1.72E+02	9.55E-01	1.11E+02	6.06E-03
UAW5-450 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	4.01E+02	2.31E+00	NA	NA	NA	NA	5.36E-04	2.02E+02	1.08E-01	1.14E-02	1.09E-01	2.52E-01	1.72E+02	9.55E-01	1.11E+02	2.26E-03
UAW5-500 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	7.42E+02	4.28E+00	NA	NA	NA	NA	5.36E-04	3.75E+02	2.01E-01	1.14E-02	1.09E-01	4.67E-01	1.72E+02	9.55E-01	1.11E+02	4.19E-03
UAW5-500+50 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	1.52E+03	8.78E+00	NA	NA	NA	NA	5.36E-04	7.69E+02	4.12E-01	1.14E-02	1.09E-01	9.59E-01	1.72E+02	9.55E-01	1.11E+02	8.60E-03
UAW5-550 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	1.40E+03	8.05E+00	NA	NA	NA	NA	5.36E-04	7.05E+02	3.78E-01	1.14E-02	1.09E-01	8.79E-01	1.72E+02	9.55E-01	1.11E+02	7.89E-03
UAW5-600 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	1.11E+03	6.38E+00	NA	NA	NA	NA	5.36E-04	5.59E+02	3.00E-01	1.14E-02	1.09E-01	6.97E-01	1.72E+02	9.55E-01	1.11E+02	6.25E-03
UAW5-Comp 1 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	8.96E+02	5.16E+00	NA	NA	NA	NA	5.36E-04	4.52E+02	2.42E-01	1.14E-02	1.09E-01	5.64E-01	1.72E+02	9.55E-01	1.11E+02	5.06E-03
																						Maximum HQ (Upper Anaconda Mine)	**1.13E-01**

TABLE C-1F: ZINC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 1 - UPPER ANACONDA MINE WASTE REMOVAL AREAS AND WASTE PILES (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 2.95

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Red-Tailed Hawk (Carnivorous Birds - Terrestrial)																							
Reference Sites																							
ACBG-1	9.00E-02	9.00E-02	1.03E+01	1.42E+03	1.27E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.37E+02	7.02E-01	4.23E-03	1.13E+00	4.78E-01	1.72E+02	9.55E-01	1.78E+02	2.69E-03
ACBG-2	9.00E-02	9.00E-02	1.03E+01	8.68E+02	7.81E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	8.39E+01	4.30E-01	4.23E-03	1.13E+00	2.93E-01	1.72E+02	9.55E-01	1.78E+02	1.65E-03
Upper Anaconda Mine																						**Minimum HQ (Reference Sites)**	**1.65E-03**
UAW1-00 (0-6")	9.00E-02	9.00E-02	6.30E+00	2.46E+03	2.21E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.90E+02	2.00E+00	4.23E-03	1.13E+00	8.33E-01	1.72E+02	9.55E-01	1.78E+02	4.68E-03
UAW1-00+25 (0-6")	9.00E-02	9.00E-02	6.30E+00	3.03E+03	2.72E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.81E+02	2.46E+00	4.23E-03	1.13E+00	1.03E+00	1.72E+02	9.55E-01	1.78E+02	5.76E-03
UAW1-050 (0-6")	9.00E-02	9.00E-02	6.30E+00	5.24E+03	4.72E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	8.33E+02	4.27E+00	4.23E-03	1.13E+00	1.78E+00	1.72E+02	9.55E-01	1.78E+02	9.98E-03
UAW1-100 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UAW1-150 (0-6")	9.00E-02	9.00E-02	6.30E+00	2.67E+03	2.40E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.23E+02	2.17E+00	4.23E-03	1.13E+00	9.03E-01	1.72E+02	9.55E-01	1.78E+02	5.07E-03
UAW1-150+75 (0-6")	9.00E-02	9.00E-02	6.30E+00	7.74E+03	6.96E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.23E+03	6.30E+00	4.23E-03	1.13E+00	2.62E+00	1.72E+02	9.55E-01	1.78E+02	1.47E-02
UAW1-Comp 1 (0-6")	9.00E-02	9.00E-02	6.30E+00	4.59E+03	4.13E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	7.28E+02	3.73E+00	4.23E-03	1.13E+00	1.55E+00	1.72E+02	9.55E-01	1.78E+02	8.73E-03
UAW2-0000 (0-6")	9.00E-02	9.00E-02	6.30E+00	2.42E+03	2.18E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.85E+02	1.97E+00	4.23E-03	1.13E+00	8.22E-01	1.72E+02	9.55E-01	1.78E+02	4.62E-03
UAW2-0000+225 (0-6")	9.00E-02	9.00E-02	6.30E+00	4.51E+03	4.05E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	7.16E+02	3.67E+00	4.23E-03	1.13E+00	1.53E+00	1.72E+02	9.55E-01	1.78E+02	8.58E-03
UAW2-0050 (0-6")	9.00E-02	9.00E-02	6.30E+00	8.69E+02	7.82E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.38E+02	7.08E-01	4.23E-03	1.13E+00	2.95E-01	1.72E+02	9.55E-01	1.78E+02	1.65E-03
UAW2-0100 (0-6")	9.00E-02	9.00E-02	6.30E+00	2.88E+03	2.59E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.58E+02	2.35E+00	4.23E-03	1.13E+00	9.76E-01	1.72E+02	9.55E-01	1.78E+02	5.48E-03
UAW2-0100+250 (0-6")	9.00E-02	9.00E-02	6.30E+00	2.73E+03	2.45E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.33E+02	2.22E+00	4.23E-03	1.13E+00	9.24E-01	1.72E+02	9.55E-01	1.78E+02	5.19E-03
UAW2-0150 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UAW2-0200 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.66E+03	1.49E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.63E+02	1.35E+00	4.23E-03	1.13E+00	5.62E-01	1.72E+02	9.55E-01	1.78E+02	3.15E-03
UAW2-0250 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.13E+03	1.02E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.80E+02	9.21E-01	4.23E-03	1.13E+00	3.83E-01	1.72E+02	9.55E-01	1.78E+02	2.15E-03
UAW2-0250+50 (0-6")	9.00E-02	9.00E-02	6.30E+00	3.14E+03	2.83E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.99E+02	2.56E+00	4.23E-03	1.13E+00	1.07E+00	1.72E+02	9.55E-01	1.78E+02	5.99E-03
UAW2-0300 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.25E+03	1.12E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.98E+02	1.02E+00	4.23E-03	1.13E+00	4.22E-01	1.72E+02	9.55E-01	1.78E+02	2.37E-03
UAW2-0350 (0-6")	9.00E-02	9.00E-02	6.30E+00	4.20E+03	3.77E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	6.66E+02	3.42E+00	4.23E-03	1.13E+00	1.42E+00	1.72E+02	9.55E-01	1.78E+02	7.99E-03
UAW2-0350+50 (0-6")	9.00E-02	9.00E-02	6.30E+00	2.61E+03	2.35E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.14E+02	2.12E+00	4.23E-03	1.13E+00	8.84E-01	1.72E+02	9.55E-01	1.78E+02	4.96E-03
UAW2-0400 (0-6")	9.00E-02	9.00E-02	6.30E+00	8.63E+02	7.76E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.37E+02	7.03E-01	4.23E-03	1.13E+00	2.92E-01	1.72E+02	9.55E-01	1.78E+02	1.64E-03
UAW2-0400+150 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.99E+03	1.79E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.16E+02	1.62E+00	4.23E-03	1.13E+00	6.74E-01	1.72E+02	9.55E-01	1.78E+02	3.79E-03
UAW2-0450 (0-6")	9.00E-02	9.00E-02	6.30E+00	3.17E+03	2.86E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.04E+02	2.58E+00	4.23E-03	1.13E+00	1.08E+00	1.72E+02	9.55E-01	1.78E+02	6.04E-03
UAW2-0450+50 (0-6")	9.00E-02	9.00E-02	6.30E+00	2.59E+03	2.33E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.11E+02	2.11E+00	4.23E-03	1.13E+00	8.78E-01	1.72E+02	9.55E-01	1.78E+02	4.93E-03
UAW2-1000 (0-6")	9.00E-02	9.00E-02	6.30E+00	2.70E+03	2.43E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.28E+02	2.20E+00	4.23E-03	1.13E+00	9.14E-01	1.72E+02	9.55E-01	1.78E+02	5.13E-03
UAW2-Comp (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UAW3-Comp 1 (0-6")	9.00E-02	9.00E-02	6.30E+00	6.36E+04	5.72E+03	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.01E+04	5.18E+01	4.23E-03	1.13E+00	2.16E+01	1.72E+02	9.55E-01	1.78E+02	1.21E-01
UAW4-Comp 1 (0-6")	9.00E-02	9.00E-02	6.30E+00	3.22E+03	2.90E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.11E+02	2.62E+00	4.23E-03	1.13E+00	1.09E+00	1.72E+02	9.55E-01	1.78E+02	6.13E-03
UAW5-00 (0-6")	9.00E-02	9.00E-02	6.30E+00	2.72E+03	2.45E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.32E+02	2.21E+00	4.23E-03	1.13E+00	9.22E-01	1.72E+02	9.55E-01	1.78E+02	5.18E-03
UAW5-050 (0-6")	9.00E-02	9.00E-02	6.30E+00	2.96E+03	2.66E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.70E+02	2.41E+00	4.23E-03	1.13E+00	1.00E+00	1.72E+02	9.55E-01	1.78E+02	5.64E-03
UAW5-100 (0-6")	9.00E-02	9.00E-02	6.30E+00	2.66E+03	2.39E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.22E+02	2.16E+00	4.23E-03	1.13E+00	9.00E-01	1.72E+02	9.55E-01	1.78E+02	5.06E-03
UAW5-100+25 (0-6")	9.00E-02	9.00E-02	6.30E+00	4.31E+03	3.88E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	6.85E+02	3.51E+00	4.23E-03	1.13E+00	1.46E+00	1.72E+02	9.55E-01	1.78E+02	8.21E-03
UAW5-150 (0-6")	9.00E-02	9.00E-02	6.30E+00	2.70E+03	2.43E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.29E+02	2.20E+00	4.23E-03	1.13E+00	9.15E-01	1.72E+02	9.55E-01	1.78E+02	5.14E-03
UAW5-150+50 (0-6")	9.00E-02	9.00E-02	6.30E+00	4.56E+03	4.11E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	7.25E+02	3.72E+00	4.23E-03	1.13E+00	1.55E+00	1.72E+02	9.55E-01	1.78E+02	8.69E-03
UAW5-200 (0-6")	9.00E-02	9.00E-02	6.30E+00	2.23E+03	2.01E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.54E+02	1.82E+00	4.23E-03	1.13E+00	7.56E-01	1.72E+02	9.55E-01	1.78E+02	4.25E-03
UAW5-250 (0-6")	9.00E-02	9.00E-02	6.30E+00	2.97E+03	2.67E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.72E+02	2.42E+00	4.23E-03	1.13E+00	1.01E+00	1.72E+02	9.55E-01	1.78E+02	5.66E-03
UAW5-250+50 (0-6")	9.00E-02	9.00E-02	6.30E+00	2.51E+03	2.26E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.99E+02	2.05E+00	4.23E-03	1.13E+00	8.52E-01	1.72E+02	9.55E-01	1.78E+02	4.79E-03
UAW5-300 (0-6")	9.00E-02	9.00E-02	6.30E+00	5.81E+03	5.23E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	9.23E+02	4.73E+00	4.23E-03	1.13E+00	1.97E+00	1.72E+02	9.55E-01	1.78E+02	1.11E-02
UAW5-300+75 (0-6")	9.00E-02	9.00E-02	6.30E+00	5.23E+03	4.71E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	8.31E+02	4.26E+00	4.23E-03	1.13E+00	1.77E+00	1.72E+02	9.55E-01	1.78E+02	9.96E-03
UAW5-350 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.03E+03	9.27E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.64E+02	8.39E-01	4.23E-03	1.13E+00	3.49E-01	1.72E+02	9.55E-01	1.78E+02	1.96E-03
UAW5-400 (0-6")	9.00E-02	9.00E-02	6.30E+00	3.41E+03	3.07E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.42E+02	2.78E+00	4.23E-03	1.13E+00	1.16E+00	1.72E+02	9.55E-01	1.78E+02	6.49E-03
UAW5-450 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.27E+03	1.15E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.02E+02	1.04E+00	4.23E-03	1.13E+00	4.32E-01	1.72E+02	9.55E-01	1.78E+02	2.43E-03
UAW5-500 (0-6")	9.00E-02	9.00E-02	6.30E+00	2.36E+03	2.12E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.75E+02	1.92E+00	4.23E-03	1.13E+00	7.99E-01	1.72E+02	9.55E-01	1.78E+02	4.49E-03
UAW5-500+50 (0-6")	9.00E-02	9.00E-02	6.30E+00	4.84E+03	4.36E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	7.69E+02	3.95E+00	4.23E-03	1.13E+00	1.64E+00	1.72E+02	9.55E-01	1.78E+02	9.22E-03
UAW5-550 (0-6")	9.00E-02	9.00E-02	6.30E+00	4.44E+03	3.99E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	7.05E+02	3.62E+00	4.23E-03	1.13E+00	1.50E+00	1.72E+02	9.55E-01	1.78E+02	8.45E-03
UAW5-600 (0-6")	9.00E-02	9.00E-02	6.30E+00	3.52E+03	3.17E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.59E+02	2.87E+00	4.23E-03	1.13E+00	1.19E+00	1.72E+02	9.55E-01	1.78E+02	6.70E-03
UAW5-Comp 1 (0-6")	9.00E-02	9.00E-02	6.30E+00	2.85E+03	2.56E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.52E+02	2.32E+00	4.23E-03	1.13E+00	9.65E-01	1.72E+02	9.55E-01	1.78E+02	5.42E-03
																						Maximum HQ (Upper Anaconda Mine)	**1.21E-01**

TABLE C-1F: ZINC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 1 - UPPER ANACONDA MINE WASTE REMOVAL AREAS AND WASTE PILES (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 2.95

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
American Kestrel (Insectivorous Birds - Terrestrial)																							
Reference Sites																							
ACBG-1	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	8.31E+00	1.14E+03	1.57E+01	7.84E-04	1.37E+02	1.07E-01	1.13E-02	1.24E-01	1.43E+00	1.72E+02	9.55E-01	1.14E+02	1.25E-02
ACBG-2	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	8.31E+00	6.98E+02	9.60E+00	7.84E-04	8.39E+01	6.58E-02	1.13E-02	1.24E-01	8.79E-01	1.72E+02	9.55E-01	1.14E+02	7.69E-03
Upper Anaconda Mine																						**Minimum HQ (Reference Sites)**	**7.69E-03**
UAW1-00 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	1.71E+03	2.35E+01	7.84E-04	3.90E+02	3.06E-01	1.13E-02	1.24E-01	2.17E+00	1.72E+02	9.55E-01	1.14E+02	1.89E-02
UAW1-00+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	2.10E+03	2.90E+01	7.84E-04	4.81E+02	3.77E-01	1.13E-02	1.24E-01	2.67E+00	1.72E+02	9.55E-01	1.14E+02	2.33E-02
UAW1-050 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	3.65E+03	5.02E+01	7.84E-04	8.33E+02	6.53E-01	1.13E-02	1.24E-01	4.62E+00	1.72E+02	9.55E-01	1.14E+02	4.04E-02
UAW1-100 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UAW1-150 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	1.85E+03	2.55E+01	7.84E-04	4.23E+02	3.32E-01	1.13E-02	1.24E-01	2.35E+00	1.72E+02	9.55E-01	1.14E+02	2.05E-02
UAW1-150+75 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	5.38E+03	7.41E+01	7.84E-04	1.23E+03	9.64E-01	1.13E-02	1.24E-01	6.82E+00	1.72E+02	9.55E-01	1.14E+02	5.97E-02
UAW1-Comp 1 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	3.19E+03	4.39E+01	7.84E-04	7.28E+02	5.71E-01	1.13E-02	1.24E-01	4.04E+00	1.72E+02	9.55E-01	1.14E+02	3.54E-02
UAW2-0000 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	1.69E+03	2.32E+01	7.84E-04	3.85E+02	3.02E-01	1.13E-02	1.24E-01	2.14E+00	1.72E+02	9.55E-01	1.14E+02	1.87E-02
UAW2-0000+225 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	3.14E+03	4.31E+01	7.84E-04	7.16E+02	5.62E-01	1.13E-02	1.24E-01	3.97E+00	1.72E+02	9.55E-01	1.14E+02	3.48E-02
UAW2-0050 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	6.05E+02	8.32E+00	7.84E-04	1.38E+02	1.08E-01	1.13E-02	1.24E-01	7.66E-01	1.72E+02	9.55E-01	1.14E+02	6.70E-03
UAW2-0100 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	2.00E+03	2.76E+01	7.84E-04	4.58E+02	3.59E-01	1.13E-02	1.24E-01	2.54E+00	1.72E+02	9.55E-01	1.14E+02	2.22E-02
UAW2-0100+250 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	1.90E+03	2.61E+01	7.84E-04	4.33E+02	3.40E-01	1.13E-02	1.24E-01	2.40E+00	1.72E+02	9.55E-01	1.14E+02	2.10E-02
UAW2-0150 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UAW2-0200 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	1.15E+03	1.59E+01	7.84E-04	2.63E+02	2.06E-01	1.13E-02	1.24E-01	1.46E+00	1.72E+02	9.55E-01	1.14E+02	1.28E-02
UAW2-0250 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	7.87E+02	1.08E+01	7.84E-04	1.80E+02	1.41E-01	1.13E-02	1.24E-01	9.97E-01	1.72E+02	9.55E-01	1.14E+02	8.72E-03
UAW2-0250+50 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	2.19E+03	3.01E+01	7.84E-04	4.99E+02	3.92E-01	1.13E-02	1.24E-01	2.77E+00	1.72E+02	9.55E-01	1.14E+02	2.42E-02
UAW2-0300 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	8.67E+02	1.19E+01	7.84E-04	1.98E+02	1.55E-01	1.13E-02	1.24E-01	1.10E+00	1.72E+02	9.55E-01	1.14E+02	9.61E-03
UAW2-0350 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	2.92E+03	4.02E+01	7.84E-04	6.66E+02	5.23E-01	1.13E-02	1.24E-01	3.70E+00	1.72E+02	9.55E-01	1.14E+02	3.23E-02
UAW2-0350+50 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	1.81E+03	2.50E+01	7.84E-04	4.14E+02	3.25E-01	1.13E-02	1.24E-01	2.30E+00	1.72E+02	9.55E-01	1.14E+02	2.01E-02
UAW2-0400 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	6.00E+02	8.26E+00	7.84E-04	1.37E+02	1.07E-01	1.13E-02	1.24E-01	7.61E-01	1.72E+02	9.55E-01	1.14E+02	6.65E-03
UAW2-0400+150 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	1.38E+03	1.90E+01	7.84E-04	3.16E+02	2.48E-01	1.13E-02	1.24E-01	1.75E+00	1.72E+02	9.55E-01	1.14E+02	1.53E-02
UAW2-0450 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	2.21E+03	3.04E+01	7.84E-04	5.04E+02	3.95E-01	1.13E-02	1.24E-01	2.80E+00	1.72E+02	9.55E-01	1.14E+02	2.45E-02
UAW2-0450+50 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	1.80E+03	2.48E+01	7.84E-04	4.11E+02	3.23E-01	1.13E-02	1.24E-01	2.28E+00	1.72E+02	9.55E-01	1.14E+02	2.00E-02
UAW2-1000 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	1.88E+03	2.58E+01	7.84E-04	4.28E+02	3.36E-01	1.13E-02	1.24E-01	2.38E+00	1.72E+02	9.55E-01	1.14E+02	2.08E-02
UAW2-Comp (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UAW3-Comp 1 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	4.42E+04	6.09E+02	7.84E-04	1.01E+04	7.92E+00	1.13E-02	1.24E-01	5.61E+01	1.72E+02	9.55E-01	1.14E+02	4.90E-01
UAW4-Comp 1 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	2.24E+03	3.08E+01	7.84E-04	5.11E+02	4.01E-01	1.13E-02	1.24E-01	2.84E+00	1.72E+02	9.55E-01	1.14E+02	2.48E-02
UAW5-00 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	1.89E+03	2.60E+01	7.84E-04	4.32E+02	3.39E-01	1.13E-02	1.24E-01	2.40E+00	1.72E+02	9.55E-01	1.14E+02	2.10E-02
UAW5-050 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	2.06E+03	2.83E+01	7.84E-04	4.70E+02	3.69E-01	1.13E-02	1.24E-01	2.61E+00	1.72E+02	9.55E-01	1.14E+02	2.28E-02
UAW5-100 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	1.85E+03	2.54E+01	7.84E-04	4.22E+02	3.31E-01	1.13E-02	1.24E-01	2.34E+00	1.72E+02	9.55E-01	1.14E+02	2.05E-02
UAW5-100+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	3.00E+03	4.13E+01	7.84E-04	6.85E+02	5.37E-01	1.13E-02	1.24E-01	3.80E+00	1.72E+02	9.55E-01	1.14E+02	3.32E-02
UAW5-150 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	1.88E+03	2.58E+01	7.84E-04	4.29E+02	3.36E-01	1.13E-02	1.24E-01	2.38E+00	1.72E+02	9.55E-01	1.14E+02	2.08E-02
UAW5-150+50 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	3.17E+03	4.37E+01	7.84E-04	7.25E+02	5.69E-01	1.13E-02	1.24E-01	4.02E+00	1.72E+02	9.55E-01	1.14E+02	3.52E-02
UAW5-200 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	1.55E+03	2.13E+01	7.84E-04	3.54E+02	2.78E-01	1.13E-02	1.24E-01	1.97E+00	1.72E+02	9.55E-01	1.14E+02	1.72E-02
UAW5-250 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	2.07E+03	2.85E+01	7.84E-04	4.72E+02	3.70E-01	1.13E-02	1.24E-01	2.62E+00	1.72E+02	9.55E-01	1.14E+02	2.29E-02
UAW5-250+50 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	1.75E+03	2.41E+01	7.84E-04	3.99E+02	3.13E-01	1.13E-02	1.24E-01	2.22E+00	1.72E+02	9.55E-01	1.14E+02	1.94E-02
UAW5-300 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	4.04E+03	5.56E+01	7.84E-04	9.23E+02	7.24E-01	1.13E-02	1.24E-01	5.12E+00	1.72E+02	9.55E-01	1.14E+02	4.48E-02
UAW5-300+75 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	3.64E+03	5.01E+01	7.84E-04	8.31E+02	6.52E-01	1.13E-02	1.24E-01	4.61E+00	1.72E+02	9.55E-01	1.14E+02	4.04E-02
UAW5-350 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	7.16E+02	9.86E+00	7.84E-04	1.64E+02	1.28E-01	1.13E-02	1.24E-01	9.08E-01	1.72E+02	9.55E-01	1.14E+02	7.94E-03
UAW5-400 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	2.37E+03	3.26E+01	7.84E-04	5.42E+02	4.25E-01	1.13E-02	1.24E-01	3.01E+00	1.72E+02	9.55E-01	1.14E+02	2.63E-02
UAW5-450 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	8.86E+02	1.22E+01	7.84E-04	2.02E+02	1.59E-01	1.13E-02	1.24E-01	1.12E+00	1.72E+02	9.55E-01	1.14E+02	9.82E-03
UAW5-500 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	1.64E+03	2.26E+01	7.84E-04	3.75E+02	2.94E-01	1.13E-02	1.24E-01	2.08E+00	1.72E+02	9.55E-01	1.14E+02	1.82E-02
UAW5-500+50 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	3.37E+03	4.64E+01	7.84E-04	7.69E+02	6.03E-01	1.13E-02	1.24E-01	4.27E+00	1.72E+02	9.55E-01	1.14E+02	3.73E-02
UAW5-550 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	3.09E+03	4.25E+01	7.84E-04	7.05E+02	5.53E-01	1.13E-02	1.24E-01	3.91E+00	1.72E+02	9.55E-01	1.14E+02	3.42E-02
UAW5-600 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	2.45E+03	3.37E+01	7.84E-04	5.59E+02	4.39E-01	1.13E-02	1.24E-01	3.10E+00	1.72E+02	9.55E-01	1.14E+02	2.71E-02
UAW5-Comp 1 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	1.98E+03	2.72E+01	7.84E-04	4.52E+02	3.55E-01	1.13E-02	1.24E-01	2.51E+00	1.72E+02	9.55E-01	1.14E+02	2.19E-02
																						Maximum HQ (Upper Anaconda Mine)	**4.90E-01**

TABLE C-1F: ZINC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 1 - UPPER ANACONDA MINE WASTE REMOVAL AREAS AND WASTE PILES (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 2.95

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Meadow Vole (Small Herbivorous Mammal - Terrestrial)																							
Reference Sites																							
ACBG-1	4.69E-03	NA	NA	NA	NA	4.69E-03	1.41E+00	1.93E+02	9.06E-01	NA	NA	NA	NA	1.13E-04	1.37E+02	1.54E-02	1.00E+00	3.06E-02	3.01E+01	4.11E+02	1.75E-01	4.57E+02	6.59E-02
ACBG-2	4.69E-03	NA	NA	NA	NA	4.69E-03	1.41E+00	1.18E+02	5.55E-01	NA	NA	NA	NA	1.13E-04	8.39E+01	9.45E-03	1.00E+00	3.06E-02	1.85E+01	4.11E+02	1.75E-01	4.57E+02	4.04E-02
Upper Anaconda Mine																						**Minimum HQ (Reference Sites)**	**4.04E-02**
UAW1-00 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	7.73E+02	3.63E+00	NA	NA	NA	NA	1.13E-04	3.90E+02	4.39E-02	1.00E+00	3.06E-02	1.20E+02	4.11E+02	1.75E-01	4.57E+02	2.63E-01
UAW1-00+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	9.52E+02	4.47E+00	NA	NA	NA	NA	1.13E-04	4.81E+02	5.41E-02	1.00E+00	3.06E-02	1.48E+02	4.11E+02	1.75E-01	4.57E+02	3.23E-01
UAW1-050 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	1.65E+03	7.74E+00	NA	NA	NA	NA	1.13E-04	8.33E+02	9.37E-02	1.00E+00	3.06E-02	2.56E+02	4.11E+02	1.75E-01	4.57E+02	5.60E-01
UAW1-100 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UAW1-150 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	8.39E+02	3.93E+00	NA	NA	NA	NA	1.13E-04	4.23E+02	4.76E-02	1.00E+00	3.06E-02	1.30E+02	4.11E+02	1.75E-01	4.57E+02	2.85E-01
UAW1-150+75 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	2.44E+03	1.14E+01	NA	NA	NA	NA	1.13E-04	1.23E+03	1.38E-01	1.00E+00	3.06E-02	3.78E+02	4.11E+02	1.75E-01	4.57E+02	8.27E-01
UAW1-Comp 1 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	1.44E+03	6.77E+00	NA	NA	NA	NA	1.13E-04	7.28E+02	8.20E-02	1.00E+00	3.06E-02	2.24E+02	4.11E+02	1.75E-01	4.57E+02	4.90E-01
UAW2-0000 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	7.63E+02	3.58E+00	NA	NA	NA	NA	1.13E-04	3.85E+02	4.33E-02	1.00E+00	3.06E-02	1.18E+02	4.11E+02	1.75E-01	4.57E+02	2.59E-01
UAW2-0000+225 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	1.42E+03	6.65E+00	NA	NA	NA	NA	1.13E-04	7.16E+02	8.06E-02	1.00E+00	3.06E-02	2.20E+02	4.11E+02	1.75E-01	4.57E+02	4.82E-01
UAW2-0050 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	2.74E+02	1.28E+00	NA	NA	NA	NA	1.13E-04	1.38E+02	1.55E-02	1.00E+00	3.06E-02	4.24E+01	4.11E+02	1.75E-01	4.57E+02	9.29E-02
UAW2-0100 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	9.07E+02	4.25E+00	NA	NA	NA	NA	1.13E-04	4.58E+02	5.15E-02	1.00E+00	3.06E-02	1.41E+02	4.11E+02	1.75E-01	4.57E+02	3.08E-01
UAW2-0100+250 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	8.58E+02	4.02E+00	NA	NA	NA	NA	1.13E-04	4.33E+02	4.87E-02	1.00E+00	3.06E-02	1.33E+02	4.11E+02	1.75E-01	4.57E+02	2.91E-01
UAW2-0150 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UAW2-0200 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	5.21E+02	2.45E+00	NA	NA	NA	NA	1.13E-04	2.63E+02	2.96E-02	1.00E+00	3.06E-02	8.09E+01	4.11E+02	1.75E-01	4.57E+02	1.77E-01
UAW2-0250 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	3.56E+02	1.67E+00	NA	NA	NA	NA	1.13E-04	1.80E+02	2.02E-02	1.00E+00	3.06E-02	5.52E+01	4.11E+02	1.75E-01	4.57E+02	1.21E-01
UAW2-0250+50 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	9.90E+02	4.64E+00	NA	NA	NA	NA	1.13E-04	4.99E+02	5.62E-02	1.00E+00	3.06E-02	1.53E+02	4.11E+02	1.75E-01	4.57E+02	3.36E-01
UAW2-0300 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	3.92E+02	1.84E+00	NA	NA	NA	NA	1.13E-04	1.98E+02	2.23E-02	1.00E+00	3.06E-02	6.08E+01	4.11E+02	1.75E-01	4.57E+02	1.33E-01
UAW2-0350 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	1.32E+03	6.19E+00	NA	NA	NA	NA	1.13E-04	6.66E+02	7.50E-02	1.00E+00	3.06E-02	2.05E+02	4.11E+02	1.75E-01	4.57E+02	4.48E-01
UAW2-0350+50 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	8.21E+02	3.85E+00	NA	NA	NA	NA	1.13E-04	4.14E+02	4.66E-02	1.00E+00	3.06E-02	1.27E+02	4.11E+02	1.75E-01	4.57E+02	2.79E-01
UAW2-0400 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	2.72E+02	1.27E+00	NA	NA	NA	NA	1.13E-04	1.37E+02	1.54E-02	1.00E+00	3.06E-02	4.21E+01	4.11E+02	1.75E-01	4.57E+02	9.22E-02
UAW2-0400+150 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	6.26E+02	2.93E+00	NA	NA	NA	NA	1.13E-04	3.16E+02	3.55E-02	1.00E+00	3.06E-02	9.70E+01	4.11E+02	1.75E-01	4.57E+02	2.12E-01
UAW2-0450 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	9.99E+02	4.68E+00	NA	NA	NA	NA	1.13E-04	5.04E+02	5.67E-02	1.00E+00	3.06E-02	1.55E+02	4.11E+02	1.75E-01	4.57E+02	3.39E-01
UAW2-0450+50 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	8.15E+02	3.82E+00	NA	NA	NA	NA	1.13E-04	4.11E+02	4.63E-02	1.00E+00	3.06E-02	1.26E+02	4.11E+02	1.75E-01	4.57E+02	2.77E-01
UAW2-1000 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	8.48E+02	3.98E+00	NA	NA	NA	NA	1.13E-04	4.28E+02	4.82E-02	1.00E+00	3.06E-02	1.32E+02	4.11E+02	1.75E-01	4.57E+02	2.88E-01
UAW2-Comp (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UAW3-Comp 1 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	2.00E+04	9.39E+01	NA	NA	NA	NA	1.13E-04	1.01E+04	1.14E+00	1.00E+00	3.06E-02	3.10E+03	4.11E+02	1.75E-01	4.57E+02	6.80E+00
UAW4-Comp 1 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	1.01E+03	4.75E+00	NA	NA	NA	NA	1.13E-04	5.11E+02	5.76E-02	1.00E+00	3.06E-02	1.57E+02	4.11E+02	1.75E-01	4.57E+02	3.44E-01
UAW5-00 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	8.56E+02	4.01E+00	NA	NA	NA	NA	1.13E-04	4.32E+02	4.86E-02	1.00E+00	3.06E-02	1.33E+02	4.11E+02	1.75E-01	4.57E+02	2.91E-01
UAW5-050 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	9.32E+02	4.37E+00	NA	NA	NA	NA	1.13E-04	4.70E+02	5.29E-02	1.00E+00	3.06E-02	1.44E+02	4.11E+02	1.75E-01	4.57E+02	3.16E-01
UAW5-100 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	8.36E+02	3.92E+00	NA	NA	NA	NA	1.13E-04	4.22E+02	4.75E-02	1.00E+00	3.06E-02	1.30E+02	4.11E+02	1.75E-01	4.57E+02	2.84E-01
UAW5-100+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	1.36E+03	6.36E+00	NA	NA	NA	NA	1.13E-04	6.85E+02	7.71E-02	1.00E+00	3.06E-02	2.10E+02	4.11E+02	1.75E-01	4.57E+02	4.61E-01
UAW5-150 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	8.50E+02	3.99E+00	NA	NA	NA	NA	1.13E-04	4.29E+02	4.83E-02	1.00E+00	3.06E-02	1.32E+02	4.11E+02	1.75E-01	4.57E+02	2.89E-01
UAW5-150+50 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	1.44E+03	6.74E+00	NA	NA	NA	NA	1.13E-04	7.25E+02	8.16E-02	1.00E+00	3.06E-02	2.23E+02	4.11E+02	1.75E-01	4.57E+02	4.88E-01
UAW5-200 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	7.02E+02	3.29E+00	NA	NA	NA	NA	1.13E-04	3.54E+02	3.99E-02	1.00E+00	3.06E-02	1.09E+02	4.11E+02	1.75E-01	4.57E+02	2.38E-01
UAW5-250 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	9.35E+02	4.39E+00	NA	NA	NA	NA	1.13E-04	4.72E+02	5.31E-02	1.00E+00	3.06E-02	1.45E+02	4.11E+02	1.75E-01	4.57E+02	3.18E-01
UAW5-250+50 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	7.91E+02	3.71E+00	NA	NA	NA	NA	1.13E-04	3.99E+02	4.49E-02	1.00E+00	3.06E-02	1.23E+02	4.11E+02	1.75E-01	4.57E+02	2.69E-01
UAW5-300 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	1.83E+03	8.58E+00	NA	NA	NA	NA	1.13E-04	9.23E+02	1.04E-01	1.00E+00	3.06E-02	2.84E+02	4.11E+02	1.75E-01	4.57E+02	6.21E-01
UAW5-300+75 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	1.65E+03	7.72E+00	NA	NA	NA	NA	1.13E-04	8.31E+02	9.36E-02	1.00E+00	3.06E-02	2.55E+02	4.11E+02	1.75E-01	4.57E+02	5.59E-01
UAW5-350 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	3.24E+02	1.52E+00	NA	NA	NA	NA	1.13E-04	1.64E+02	1.84E-02	1.00E+00	3.06E-02	5.03E+01	4.11E+02	1.75E-01	4.57E+02	1.10E-01
UAW5-400 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	1.07E+03	5.03E+00	NA	NA	NA	NA	1.13E-04	5.42E+02	6.10E-02	1.00E+00	3.06E-02	1.66E+02	4.11E+02	1.75E-01	4.57E+02	3.64E-01
UAW5-450 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	4.01E+02	1.88E+00	NA	NA	NA	NA	1.13E-04	2.02E+02	2.28E-02	1.00E+00	3.06E-02	6.22E+01	4.11E+02	1.75E-01	4.57E+02	1.36E-01
UAW5-500 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	7.42E+02	3.48E+00	NA	NA	NA	NA	1.13E-04	3.75E+02	4.22E-02	1.00E+00	3.06E-02	1.15E+02	4.11E+02	1.75E-01	4.57E+02	2.52E-01
UAW5-500+50 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	1.52E+03	7.15E+00	NA	NA	NA	NA	1.13E-04	7.69E+02	8.66E-02	1.00E+00	3.06E-02	2.36E+02	4.11E+02	1.75E-01	4.57E+02	5.18E-01
UAW5-550 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	1.40E+03	6.55E+00	NA	NA	NA	NA	1.13E-04	7.05E+02	7.94E-02	1.00E+00	3.06E-02	2.17E+02	4.11E+02	1.75E-01	4.57E+02	4.75E-01
UAW5-600 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	1.11E+03	5.20E+00	NA	NA	NA	NA	1.13E-04	5.59E+02	6.29E-02	1.00E+00	3.06E-02	1.72E+02	4.11E+02	1.75E-01	4.57E+02	3.76E-01
UAW5-Comp 1 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	8.96E+02	4.20E+00	NA	NA	NA	NA	1.13E-04	4.52E+02	5.09E-02	1.00E+00	3.06E-02	1.39E+02	4.11E+02	1.75E-01	4.57E+02	3.04E-01
																						Maximum HQ (Upper Anaconda Mine)	**6.80E+00**

TABLE C-1F: ZINC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 1 - UPPER ANACONDA MINE WASTE REMOVAL AREAS AND WASTE PILES (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 2.95

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
White-Tailed Deer (Large Herbivorous Mammal - Terrestrial)																							
Reference Sites																							
ACBG-1	1.43E+00	NA	NA	NA	NA	1.43E+00	1.41E+00	1.93E+02	2.77E+02	NA	NA	NA	NA	2.86E-02	1.37E+02	3.92E+00	1.65E-02	1.35E+02	3.43E-02	4.11E+02	1.75E-01	2.76E+02	1.24E-04
ACBG-2	1.43E+00	NA	NA	NA	NA	1.43E+00	1.41E+00	1.18E+02	1.70E+02	NA	NA	NA	NA	2.86E-02	8.39E+01	2.40E+00	1.65E-02	1.35E+02	2.10E-02	4.11E+02	1.75E-01	2.76E+02	7.61E-05
Upper Anaconda Mine																						**Minimum HQ (Reference Sites)**	**7.61E-05**
UAW1-00 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	7.73E+02	1.11E+03	NA	NA	NA	NA	2.86E-02	3.90E+02	1.12E+01	1.65E-02	1.35E+02	1.37E-01	4.11E+02	1.75E-01	2.76E+02	4.95E-04
UAW1-00+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	9.52E+02	1.36E+03	NA	NA	NA	NA	2.86E-02	4.81E+02	1.38E+01	1.65E-02	1.35E+02	1.68E-01	4.11E+02	1.75E-01	2.76E+02	6.10E-04
UAW1-050 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	1.65E+03	2.36E+03	NA	NA	NA	NA	2.86E-02	8.33E+02	2.38E+01	1.65E-02	1.35E+02	2.92E-01	4.11E+02	1.75E-01	2.76E+02	1.06E-03
UAW1-100 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UAW1-150 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	8.39E+02	1.20E+03	NA	NA	NA	NA	2.86E-02	4.23E+02	1.21E+01	1.65E-02	1.35E+02	1.48E-01	4.11E+02	1.75E-01	2.76E+02	5.37E-04
UAW1-150+75 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	2.44E+03	3.49E+03	NA	NA	NA	NA	2.86E-02	1.23E+03	3.52E+01	1.65E-02	1.35E+02	4.31E-01	4.11E+02	1.75E-01	2.76E+02	1.56E-03
UAW1-Comp 1 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	1.44E+03	2.07E+03	NA	NA	NA	NA	2.86E-02	7.28E+02	2.09E+01	1.65E-02	1.35E+02	2.55E-01	4.11E+02	1.75E-01	2.76E+02	9.24E-04
UAW2-0000 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	7.63E+02	1.09E+03	NA	NA	NA	NA	2.86E-02	3.85E+02	1.10E+01	1.65E-02	1.35E+02	1.35E-01	4.11E+02	1.75E-01	2.76E+02	4.89E-04
UAW2-0000+225 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	1.42E+03	2.03E+03	NA	NA	NA	NA	2.86E-02	7.16E+02	2.05E+01	1.65E-02	1.35E+02	2.51E-01	4.11E+02	1.75E-01	2.76E+02	9.08E-04
UAW2-0050 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	2.74E+02	3.92E+02	NA	NA	NA	NA	2.86E-02	1.38E+02	3.95E+00	1.65E-02	1.35E+02	4.84E-02	4.11E+02	1.75E-01	2.76E+02	1.75E-04
UAW2-0100 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	9.07E+02	1.30E+03	NA	NA	NA	NA	2.86E-02	4.58E+02	1.31E+01	1.65E-02	1.35E+02	1.60E-01	4.11E+02	1.75E-01	2.76E+02	5.80E-04
UAW2-0100+250 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	8.58E+02	1.23E+03	NA	NA	NA	NA	2.86E-02	4.33E+02	1.24E+01	1.65E-02	1.35E+02	1.52E-01	4.11E+02	1.75E-01	2.76E+02	5.49E-04
UAW2-0150 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UAW2-0200 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	5.21E+02	7.47E+02	NA	NA	NA	NA	2.86E-02	2.63E+02	7.54E+00	1.65E-02	1.35E+02	9.22E-02	4.11E+02	1.75E-01	2.76E+02	3.34E-04
UAW2-0250 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	3.56E+02	5.10E+02	NA	NA	NA	NA	2.86E-02	1.80E+02	5.14E+00	1.65E-02	1.35E+02	6.29E-02	4.11E+02	1.75E-01	2.76E+02	2.28E-04
UAW2-0250+50 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	9.90E+02	1.42E+03	NA	NA	NA	NA	2.86E-02	4.99E+02	1.43E+01	1.65E-02	1.35E+02	1.75E-01	4.11E+02	1.75E-01	2.76E+02	6.34E-04
UAW2-0300 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	3.92E+02	5.62E+02	NA	NA	NA	NA	2.86E-02	1.98E+02	5.67E+00	1.65E-02	1.35E+02	6.94E-02	4.11E+02	1.75E-01	2.76E+02	2.51E-04
UAW2-0350 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	1.32E+03	1.89E+03	NA	NA	NA	NA	2.86E-02	6.66E+02	1.91E+01	1.65E-02	1.35E+02	2.33E-01	4.11E+02	1.75E-01	2.76E+02	8.45E-04
UAW2-0350+50 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	8.21E+02	1.17E+03	NA	NA	NA	NA	2.86E-02	4.14E+02	1.19E+01	1.65E-02	1.35E+02	1.45E-01	4.11E+02	1.75E-01	2.76E+02	5.26E-04
UAW2-0400 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	2.72E+02	3.89E+02	NA	NA	NA	NA	2.86E-02	1.37E+02	3.92E+00	1.65E-02	1.35E+02	4.80E-02	4.11E+02	1.75E-01	2.76E+02	1.74E-04
UAW2-0400+150 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	6.26E+02	8.96E+02	NA	NA	NA	NA	2.86E-02	3.16E+02	9.04E+00	1.65E-02	1.35E+02	1.11E-01	4.11E+02	1.75E-01	2.76E+02	4.01E-04
UAW2-0450 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	9.99E+02	1.43E+03	NA	NA	NA	NA	2.86E-02	5.04E+02	1.44E+01	1.65E-02	1.35E+02	1.77E-01	4.11E+02	1.75E-01	2.76E+02	6.40E-04
UAW2-0450+50 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	8.15E+02	1.17E+03	NA	NA	NA	NA	2.86E-02	4.11E+02	1.18E+01	1.65E-02	1.35E+02	1.44E-01	4.11E+02	1.75E-01	2.76E+02	5.22E-04
UAW2-1000 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	8.48E+02	1.21E+03	NA	NA	NA	NA	2.86E-02	4.28E+02	1.23E+01	1.65E-02	1.35E+02	1.50E-01	4.11E+02	1.75E-01	2.76E+02	5.43E-04
UAW2-Comp (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UAW3-Comp 1 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	2.00E+04	2.87E+04	NA	NA	NA	NA	2.86E-02	1.01E+04	2.89E+02	1.65E-02	1.35E+02	3.54E+00	4.11E+02	1.75E-01	2.76E+02	1.28E-02
UAW4-Comp 1 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	1.01E+03	1.45E+03	NA	NA	NA	NA	2.86E-02	5.11E+02	1.46E+01	1.65E-02	1.35E+02	1.79E-01	4.11E+02	1.75E-01	2.76E+02	6.49E-04
UAW5-00 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	8.56E+02	1.23E+03	NA	NA	NA	NA	2.86E-02	4.32E+02	1.24E+01	1.65E-02	1.35E+02	1.51E-01	4.11E+02	1.75E-01	2.76E+02	5.48E-04
UAW5-050 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	9.32E+02	1.33E+03	NA	NA	NA	NA	2.86E-02	4.70E+02	1.35E+01	1.65E-02	1.35E+02	1.65E-01	4.11E+02	1.75E-01	2.76E+02	5.97E-04
UAW5-100 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	8.36E+02	1.20E+03	NA	NA	NA	NA	2.86E-02	4.22E+02	1.21E+01	1.65E-02	1.35E+02	1.48E-01	4.11E+02	1.75E-01	2.76E+02	5.35E-04
UAW5-100+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	1.36E+03	1.94E+03	NA	NA	NA	NA	2.86E-02	6.85E+02	1.96E+01	1.65E-02	1.35E+02	2.40E-01	4.11E+02	1.75E-01	2.76E+02	8.69E-04
UAW5-150 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	8.50E+02	1.22E+03	NA	NA	NA	NA	2.86E-02	4.29E+02	1.23E+01	1.65E-02	1.35E+02	1.50E-01	4.11E+02	1.75E-01	2.76E+02	5.44E-04
UAW5-150+50 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	1.44E+03	2.06E+03	NA	NA	NA	NA	2.86E-02	7.25E+02	2.08E+01	1.65E-02	1.35E+02	2.54E-01	4.11E+02	1.75E-01	2.76E+02	9.20E-04
UAW5-200 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	7.02E+02	1.00E+03	NA	NA	NA	NA	2.86E-02	3.54E+02	1.01E+01	1.65E-02	1.35E+02	1.24E-01	4.11E+02	1.75E-01	2.76E+02	4.49E-04
UAW5-250 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	9.35E+02	1.34E+03	NA	NA	NA	NA	2.86E-02	4.72E+02	1.35E+01	1.65E-02	1.35E+02	1.65E-01	4.11E+02	1.75E-01	2.76E+02	5.99E-04
UAW5-250+50 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	7.91E+02	1.13E+03	NA	NA	NA	NA	2.86E-02	3.99E+02	1.14E+01	1.65E-02	1.35E+02	1.40E-01	4.11E+02	1.75E-01	2.76E+02	5.07E-04
UAW5-300 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	1.83E+03	2.62E+03	NA	NA	NA	NA	2.86E-02	9.23E+02	2.64E+01	1.65E-02	1.35E+02	3.23E-01	4.11E+02	1.75E-01	2.76E+02	1.17E-03
UAW5-300+75 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	1.65E+03	2.36E+03	NA	NA	NA	NA	2.86E-02	8.31E+02	2.38E+01	1.65E-02	1.35E+02	2.91E-01	4.11E+02	1.75E-01	2.76E+02	1.05E-03
UAW5-350 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	3.24E+02	4.64E+02	NA	NA	NA	NA	2.86E-02	1.64E+02	4.68E+00	1.65E-02	1.35E+02	5.73E-02	4.11E+02	1.75E-01	2.76E+02	2.08E-04
UAW5-400 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	1.07E+03	1.54E+03	NA	NA	NA	NA	2.86E-02	5.42E+02	1.55E+01	1.65E-02	1.35E+02	1.90E-01	4.11E+02	1.75E-01	2.76E+02	6.87E-04
UAW5-450 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	4.01E+02	5.74E+02	NA	NA	NA	NA	2.86E-02	2.02E+02	5.79E+00	1.65E-02	1.35E+02	7.09E-02	4.11E+02	1.75E-01	2.76E+02	2.57E-04
UAW5-500 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	7.42E+02	1.06E+03	NA	NA	NA	NA	2.86E-02	3.75E+02	1.07E+01	1.65E-02	1.35E+02	1.31E-01	4.11E+02	1.75E-01	2.76E+02	4.75E-04
UAW5-500+50 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	1.52E+03	2.18E+03	NA	NA	NA	NA	2.86E-02	7.69E+02	2.20E+01	1.65E-02	1.35E+02	2.70E-01	4.11E+02	1.75E-01	2.76E+02	9.76E-04
UAW5-550 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	1.40E+03	2.00E+03	NA	NA	NA	NA	2.86E-02	7.05E+02	2.02E+01	1.65E-02	1.35E+02	2.47E-01	4.11E+02	1.75E-01	2.76E+02	8.95E-04
UAW5-600 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	1.11E+03	1.59E+03	NA	NA	NA	NA	2.86E-02	5.59E+02	1.60E+01	1.65E-02	1.35E+02	1.96E-01	4.11E+02	1.75E-01	2.76E+02	7.09E-04
UAW5-Comp 1 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	8.96E+02	1.28E+03	NA	NA	NA	NA	2.86E-02	4.52E+02	1.29E+01	1.65E-02	1.35E+02	1.58E-01	4.11E+02	1.75E-01	2.76E+02	5.74E-04
																						Maximum HQ (Upper Anaconda Mine)	**1.28E-02**

TABLE C-1F: ZINC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 1 - UPPER ANACONDA MINE WASTE REMOVAL AREAS AND WASTE PILES (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 2.95

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Red Fox (Carnivorous Mammal - Terrestrial)																							
Reference Sites																							
ACBG-1	1.72E-01	1.72E-01	1.03E+01	1.42E+03	2.43E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.37E+02	6.58E-01	2.18E-03	4.54E+00	1.17E-01	4.11E+02	1.75E-01	3.38E+02	3.46E-04
ACBG-2	1.72E-01	1.72E-01	1.03E+01	8.68E+02	1.49E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	8.39E+01	4.03E-01	2.18E-03	4.54E+00	7.18E-02	4.11E+02	1.75E-01	3.38E+02	2.12E-04
Upper Anaconda Mine																						**Minimum HQ (Reference Sites)**	**2.12E-04**
UAW1-00 (0-6")	1.72E-01	1.72E-01	6.30E+00	2.46E+03	4.21E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.90E+02	1.87E+00	2.18E-03	4.54E+00	2.03E-01	4.11E+02	1.75E-01	3.38E+02	6.01E-04
UAW1-00+25 (0-6")	1.72E-01	1.72E-01	6.30E+00	3.03E+03	5.19E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.81E+02	2.31E+00	2.18E-03	4.54E+00	2.51E-01	4.11E+02	1.75E-01	3.38E+02	7.40E-04
UAW1-050 (0-6")	1.72E-01	1.72E-01	6.30E+00	5.24E+03	8.99E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	8.33E+02	4.00E+00	2.18E-03	4.54E+00	4.34E-01	4.11E+02	1.75E-01	3.38E+02	1.28E-03
UAW1-100 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UAW1-150 (0-6")	1.72E-01	1.72E-01	6.30E+00	2.67E+03	4.57E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.23E+02	2.03E+00	2.18E-03	4.54E+00	2.21E-01	4.11E+02	1.75E-01	3.38E+02	6.52E-04
UAW1-150+75 (0-6")	1.72E-01	1.72E-01	6.30E+00	7.74E+03	1.33E+03	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.23E+03	5.90E+00	2.18E-03	4.54E+00	6.41E-01	4.11E+02	1.75E-01	3.38E+02	1.89E-03
UAW1-Comp 1 (0-6")	1.72E-01	1.72E-01	6.30E+00	4.59E+03	7.87E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	7.28E+02	3.50E+00	2.18E-03	4.54E+00	3.80E-01	4.11E+02	1.75E-01	3.38E+02	1.12E-03
UAW2-0000 (0-6")	1.72E-01	1.72E-01	6.30E+00	2.42E+03	4.16E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.85E+02	1.85E+00	2.18E-03	4.54E+00	2.01E-01	4.11E+02	1.75E-01	3.38E+02	5.93E-04
UAW2-0000+225 (0-6")	1.72E-01	1.72E-01	6.30E+00	4.51E+03	7.73E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	7.16E+02	3.44E+00	2.18E-03	4.54E+00	3.73E-01	4.11E+02	1.75E-01	3.38E+02	1.10E-03
UAW2-0050 (0-6")	1.72E-01	1.72E-01	6.30E+00	8.69E+02	1.49E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.38E+02	6.63E-01	2.18E-03	4.54E+00	7.20E-02	4.11E+02	1.75E-01	3.38E+02	2.13E-04
UAW2-0100 (0-6")	1.72E-01	1.72E-01	6.30E+00	2.88E+03	4.94E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.58E+02	2.20E+00	2.18E-03	4.54E+00	2.38E-01	4.11E+02	1.75E-01	3.38E+02	7.05E-04
UAW2-0100+250 (0-6")	1.72E-01	1.72E-01	6.30E+00	2.73E+03	4.68E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.33E+02	2.08E+00	2.18E-03	4.54E+00	2.26E-01	4.11E+02	1.75E-01	3.38E+02	6.67E-04
UAW2-0150 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UAW2-0200 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.66E+03	2.84E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.63E+02	1.26E+00	2.18E-03	4.54E+00	1.37E-01	4.11E+02	1.75E-01	3.38E+02	4.05E-04
UAW2-0250 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.13E+03	1.94E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.80E+02	8.63E-01	2.18E-03	4.54E+00	9.36E-02	4.11E+02	1.75E-01	3.38E+02	2.77E-04
UAW2-0250+50 (0-6")	1.72E-01	1.72E-01	6.30E+00	3.14E+03	5.39E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.99E+02	2.40E+00	2.18E-03	4.54E+00	2.60E-01	4.11E+02	1.75E-01	3.38E+02	7.69E-04
UAW2-0300 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.25E+03	2.14E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.98E+02	9.51E-01	2.18E-03	4.54E+00	1.03E-01	4.11E+02	1.75E-01	3.38E+02	3.05E-04
UAW2-0350 (0-6")	1.72E-01	1.72E-01	6.30E+00	4.20E+03	7.20E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	6.66E+02	3.20E+00	2.18E-03	4.54E+00	3.47E-01	4.11E+02	1.75E-01	3.38E+02	1.03E-03
UAW2-0350+50 (0-6")	1.72E-01	1.72E-01	6.30E+00	2.61E+03	4.47E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.14E+02	1.99E+00	2.18E-03	4.54E+00	2.16E-01	4.11E+02	1.75E-01	3.38E+02	6.38E-04
UAW2-0400 (0-6")	1.72E-01	1.72E-01	6.30E+00	8.63E+02	1.48E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.37E+02	6.58E-01	2.18E-03	4.54E+00	7.14E-02	4.11E+02	1.75E-01	3.38E+02	2.11E-04
UAW2-0400+150 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.99E+03	3.41E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.16E+02	1.52E+00	2.18E-03	4.54E+00	1.65E-01	4.11E+02	1.75E-01	3.38E+02	4.86E-04
UAW2-0450 (0-6")	1.72E-01	1.72E-01	6.30E+00	3.17E+03	5.44E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.04E+02	2.42E+00	2.18E-03	4.54E+00	2.63E-01	4.11E+02	1.75E-01	3.38E+02	7.76E-04
UAW2-0450+50 (0-6")	1.72E-01	1.72E-01	6.30E+00	2.59E+03	4.44E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.11E+02	1.98E+00	2.18E-03	4.54E+00	2.14E-01	4.11E+02	1.75E-01	3.38E+02	6.33E-04
UAW2-1000 (0-6")	1.72E-01	1.72E-01	6.30E+00	2.70E+03	4.63E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.28E+02	2.06E+00	2.18E-03	4.54E+00	2.23E-01	4.11E+02	1.75E-01	3.38E+02	6.60E-04
UAW2-Comp (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UAW3-Comp 1 (0-6")	1.72E-01	1.72E-01	6.30E+00	6.36E+04	1.09E+04	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.01E+04	4.85E+01	2.18E-03	4.54E+00	5.27E+00	4.11E+02	1.75E-01	3.38E+02	1.56E-02
UAW4-Comp 1 (0-6")	1.72E-01	1.72E-01	6.30E+00	3.22E+03	5.52E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.11E+02	2.46E+00	2.18E-03	4.54E+00	2.67E-01	4.11E+02	1.75E-01	3.38E+02	7.88E-04
UAW5-00 (0-6")	1.72E-01	1.72E-01	6.30E+00	2.72E+03	4.67E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.32E+02	2.07E+00	2.18E-03	4.54E+00	2.25E-01	4.11E+02	1.75E-01	3.38E+02	6.65E-04
UAW5-050 (0-6")	1.72E-01	1.72E-01	6.30E+00	2.96E+03	5.08E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.70E+02	2.26E+00	2.18E-03	4.54E+00	2.45E-01	4.11E+02	1.75E-01	3.38E+02	7.24E-04
UAW5-100 (0-6")	1.72E-01	1.72E-01	6.30E+00	2.66E+03	4.56E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.22E+02	2.03E+00	2.18E-03	4.54E+00	2.20E-01	4.11E+02	1.75E-01	3.38E+02	6.50E-04
UAW5-100+25 (0-6")	1.72E-01	1.72E-01	6.30E+00	4.31E+03	7.40E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	6.85E+02	3.29E+00	2.18E-03	4.54E+00	3.57E-01	4.11E+02	1.75E-01	3.38E+02	1.05E-03
UAW5-150 (0-6")	1.72E-01	1.72E-01	6.30E+00	2.70E+03	4.63E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.29E+02	2.06E+00	2.18E-03	4.54E+00	2.24E-01	4.11E+02	1.75E-01	3.38E+02	6.61E-04
UAW5-150+50 (0-6")	1.72E-01	1.72E-01	6.30E+00	4.56E+03	7.83E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	7.25E+02	3.48E+00	2.18E-03	4.54E+00	3.78E-01	4.11E+02	1.75E-01	3.38E+02	1.12E-03
UAW5-200 (0-6")	1.72E-01	1.72E-01	6.30E+00	2.23E+03	3.83E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.54E+02	1.70E+00	2.18E-03	4.54E+00	1.85E-01	4.11E+02	1.75E-01	3.38E+02	5.46E-04
UAW5-250 (0-6")	1.72E-01	1.72E-01	6.30E+00	2.97E+03	5.10E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.72E+02	2.27E+00	2.18E-03	4.54E+00	2.46E-01	4.11E+02	1.75E-01	3.38E+02	7.27E-04
UAW5-250+50 (0-6")	1.72E-01	1.72E-01	6.30E+00	2.51E+03	4.31E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.99E+02	1.92E+00	2.18E-03	4.54E+00	2.08E-01	4.11E+02	1.75E-01	3.38E+02	6.15E-04
UAW5-300 (0-6")	1.72E-01	1.72E-01	6.30E+00	5.81E+03	9.97E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	9.23E+02	4.43E+00	2.18E-03	4.54E+00	4.81E-01	4.11E+02	1.75E-01	3.38E+02	1.42E-03
UAW5-300+75 (0-6")	1.72E-01	1.72E-01	6.30E+00	5.23E+03	8.98E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	8.31E+02	3.99E+00	2.18E-03	4.54E+00	4.33E-01	4.11E+02	1.75E-01	3.38E+02	1.28E-03
UAW5-350 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.03E+03	1.77E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.64E+02	7.86E-01	2.18E-03	4.54E+00	8.53E-02	4.11E+02	1.75E-01	3.38E+02	2.52E-04
UAW5-400 (0-6")	1.72E-01	1.72E-01	6.30E+00	3.41E+03	5.85E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.42E+02	2.60E+00	2.18E-03	4.54E+00	2.82E-01	4.11E+02	1.75E-01	3.38E+02	8.34E-04
UAW5-450 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.27E+03	2.19E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.02E+02	9.72E-01	2.18E-03	4.54E+00	1.05E-01	4.11E+02	1.75E-01	3.38E+02	3.12E-04
UAW5-500 (0-6")	1.72E-01	1.72E-01	6.30E+00	2.36E+03	4.05E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.75E+02	1.80E+00	2.18E-03	4.54E+00	1.95E-01	4.11E+02	1.75E-01	3.38E+02	5.77E-04
UAW5-500+50 (0-6")	1.72E-01	1.72E-01	6.30E+00	4.84E+03	8.31E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	7.69E+02	3.70E+00	2.18E-03	4.54E+00	4.01E+01	4.11E+02	1.75E-01	3.38E+02	1.18E-03
UAW5-550 (0-6")	1.72E-01	1.72E-01	6.30E+00	4.44E+03	7.62E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	7.05E+02	3.39E+00	2.18E-03	4.54E+00	3.68E-01	4.11E+02	1.75E-01	3.38E+02	1.09E-03
UAW5-600 (0-6")	1.72E-01	1.72E-01	6.30E+00	3.52E+03	6.04E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.59E+02	2.69E+00	2.18E-03	4.54E+00	2.91E-01	4.11E+02	1.75E-01	3.38E+02	8.61E-04
UAW5-Comp 1 (0-6")	1.72E-01	1.72E-01	6.30E+00	2.85E+03	4.88E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.52E+02	2.17E+00	2.18E-03	4.54E+00	2.36E-01	4.11E+02	1.75E-01	3.38E+02	6.96E-04
																						Maximum HQ (Upper Anaconda Mine)	**1.56E-02**

TABLE C-1F: ZINC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 1 - UPPER ANACONDA MINE WASTE REMOVAL AREAS AND WASTE PILES (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 2.95

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Masked Shrew (Omnivorous Mammal - Terrestrial, Wetland)																							
Reference Sites																							
ACBG-1	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	8.31E+00	1.14E+03	9.64E+00	1.10E-03	1.37E+02	1.51E-01	1.00E+00	5.50E-03	1.78E+03	4.11E+02	1.75E-01	5.06E+02	3.52E+00
ACBG-2	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	8.31E+00	6.98E+02	5.91E+00	1.10E-03	8.39E+01	9.24E-02	1.00E+00	5.50E-03	1.09E+03	4.11E+02	1.75E-01	5.06E+02	2.16E+00
Upper Anaconda Mine																						**Minimum HQ (Reference Sites)**	**2.16E+00**
UAW1-00 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	1.71E+03	1.45E+01	1.10E-03	3.90E+02	4.30E-01	1.00E+00	5.50E-03	2.71E+03	4.11E+02	1.75E-01	5.06E+02	5.35E+00
UAW1-00+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	2.10E+03	1.78E+01	1.10E-03	4.81E+02	5.29E-01	1.00E+00	5.50E-03	3.34E+03	4.11E+02	1.75E-01	5.06E+02	6.59E+00
UAW1-050 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	3.65E+03	3.09E+01	1.10E-03	8.33E+02	9.17E-01	1.00E+00	5.50E-03	5.78E+03	4.11E+02	1.75E-01	5.06E+02	1.14E+01
UAW1-100 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UAW1-150 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	1.85E+03	1.57E+01	1.10E-03	4.23E+02	4.66E-01	1.00E+00	5.50E-03	2.94E+03	4.11E+02	1.75E-01	5.06E+02	5.80E+00
UAW1-150+75 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	5.38E+03	4.56E+01	1.10E-03	1.23E+03	1.35E+00	1.00E+00	5.50E-03	8.53E+03	4.11E+02	1.75E-01	5.06E+02	1.69E+01
UAW1-Comp 1 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	3.19E+03	2.70E+01	1.10E-03	7.28E+02	8.02E-01	1.00E+00	5.50E-03	5.06E+03	4.11E+02	1.75E-01	5.06E+02	9.99E+00
UAW2-0000 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	1.69E+03	1.43E+01	1.10E-03	3.85E+02	4.24E-01	1.00E+00	5.50E-03	2.67E+03	4.11E+02	1.75E-01	5.06E+02	5.28E+00
UAW2-0000+225 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	3.14E+03	2.66E+01	1.10E-03	7.16E+02	7.88E-01	1.00E+00	5.50E-03	4.97E+03	4.11E+02	1.75E-01	5.06E+02	9.82E+00
UAW2-0050 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	6.05E+02	5.12E+00	1.10E-03	1.38E+02	1.52E-01	1.00E+00	5.50E-03	9.59E+02	4.11E+02	1.75E-01	5.06E+02	1.89E+00
UAW2-0100 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	2.00E+03	1.70E+01	1.10E-03	4.58E+02	5.04E-01	1.00E+00	5.50E-03	3.18E+03	4.11E+02	1.75E-01	5.06E+02	6.27E+00
UAW2-0100+250 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	1.90E+03	1.61E+01	1.10E-03	4.33E+02	4.77E-01	1.00E+00	5.50E-03	3.01E+03	4.11E+02	1.75E-01	5.06E+02	5.94E+00
UAW2-0150 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UAW2-0200 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	1.15E+03	9.76E+00	1.10E-03	2.63E+02	2.90E-01	1.00E+00	5.50E-03	1.83E+03	4.11E+02	1.75E-01	5.06E+02	3.61E+00
UAW2-0250 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	7.87E+02	6.66E+00	1.10E-03	1.80E+02	1.98E-01	1.00E+00	5.50E-03	1.25E+03	4.11E+02	1.75E-01	5.06E+02	2.46E+00
UAW2-0250+50 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	2.19E+03	1.85E+01	1.10E-03	4.99E+02	5.50E-01	1.00E+00	5.50E-03	3.47E+03	4.11E+02	1.75E-01	5.06E+02	6.85E+00
UAW2-0300 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	8.67E+02	7.34E+00	1.10E-03	1.98E+02	2.18E-01	1.00E+00	5.50E-03	1.37E+03	4.11E+02	1.75E-01	5.06E+02	2.72E+00
UAW2-0350 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	2.92E+03	2.47E+01	1.10E-03	6.66E+02	7.34E-01	1.00E+00	5.50E-03	4.63E+03	4.11E+02	1.75E-01	5.06E+02	9.14E+00
UAW2-0350+50 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	1.81E+03	1.54E+01	1.10E-03	4.14E+02	4.56E-01	1.00E+00	5.50E-03	2.88E+03	4.11E+02	1.75E-01	5.06E+02	5.68E+00
UAW2-0400 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	6.00E+02	5.08E+00	1.10E-03	1.37E+02	1.51E-01	1.00E+00	5.50E-03	9.52E+02	4.11E+02	1.75E-01	5.06E+02	1.88E+00
UAW2-0400+150 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	1.38E+03	1.17E+01	1.10E-03	3.16E+02	3.48E-01	1.00E+00	5.50E-03	2.19E+03	4.11E+02	1.75E-01	5.06E+02	4.33E+00
UAW2-0450 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	2.21E+03	1.87E+01	1.10E-03	5.04E+02	5.55E-01	1.00E+00	5.50E-03	3.50E+03	4.11E+02	1.75E-01	5.06E+02	6.91E+00
UAW2-0450+50 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	1.80E+03	1.53E+01	1.10E-03	4.11E+02	4.53E-01	1.00E+00	5.50E-03	2.86E+03	4.11E+02	1.75E-01	5.06E+02	5.64E+00
UAW2-1000 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	1.88E+03	1.59E+01	1.10E-03	4.28E+02	4.72E-01	1.00E+00	5.50E-03	2.97E+03	4.11E+02	1.75E-01	5.06E+02	5.87E+00
UAW2-Comp (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UAW3-Comp 1 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	4.42E+04	3.75E+02	1.10E-03	1.01E+04	1.11E+01	1.00E+00	5.50E-03	7.02E+04	4.11E+02	1.75E-01	5.06E+02	1.39E+02
UAW4-Comp 1 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	2.24E+03	1.90E+01	1.10E-03	5.11E+02	5.63E-01	1.00E+00	5.50E-03	3.55E+03	4.11E+02	1.75E-01	5.06E+02	7.01E+00
UAW5-00 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	1.89E+03	1.60E+01	1.10E-03	4.32E+02	4.76E-01	1.00E+00	5.50E-03	3.00E+03	4.11E+02	1.75E-01	5.06E+02	5.92E+00
UAW5-050 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	2.06E+03	1.74E+01	1.10E-03	4.70E+02	5.18E-01	1.00E+00	5.50E-03	3.26E+03	4.11E+02	1.75E-01	5.06E+02	6.45E+00
UAW5-100 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	1.85E+03	1.56E+01	1.10E-03	4.22E+02	4.65E-01	1.00E+00	5.50E-03	2.93E+03	4.11E+02	1.75E-01	5.06E+02	5.79E+00
UAW5-100+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	3.00E+03	2.54E+01	1.10E-03	6.85E+02	7.54E-01	1.00E+00	5.50E-03	4.75E+03	4.11E+02	1.75E-01	5.06E+02	9.39E+00
UAW5-150 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	1.88E+03	1.59E+01	1.10E-03	4.29E+02	4.72E-01	1.00E+00	5.50E-03	2.98E+03	4.11E+02	1.75E-01	5.06E+02	5.88E+00
UAW5-150+50 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	3.17E+03	2.69E+01	1.10E-03	7.25E+02	7.98E-01	1.00E+00	5.50E-03	5.03E+03	4.11E+02	1.75E-01	5.06E+02	9.94E+00
UAW5-200 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	1.55E+03	1.31E+01	1.10E-03	3.54E+02	3.90E-01	1.00E+00	5.50E-03	2.46E+03	4.11E+02	1.75E-01	5.06E+02	4.86E+00
UAW5-250 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	2.07E+03	1.75E+01	1.10E-03	4.72E+02	5.20E-01	1.00E+00	5.50E-03	3.28E+03	4.11E+02	1.75E-01	5.06E+02	6.47E+00
UAW5-250+50 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	1.75E+03	1.48E+01	1.10E-03	3.99E+02	4.40E-01	1.00E+00	5.50E-03	2.77E+03	4.11E+02	1.75E-01	5.06E+02	5.48E+00
UAW5-300 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	4.04E+03	3.42E+01	1.10E-03	9.23E+02	1.02E+00	1.00E+00	5.50E-03	6.41E+03	4.11E+02	1.75E-01	5.06E+02	1.27E+01
UAW5-300+75 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	3.64E+03	3.08E+01	1.10E-03	8.31E+02	9.15E-01	1.00E+00	5.50E-03	5.77E+03	4.11E+02	1.75E-01	5.06E+02	1.14E+01
UAW5-350 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	7.16E+02	6.07E+00	1.10E-03	1.64E+02	1.80E-01	1.00E+00	5.50E-03	1.14E+03	4.11E+02	1.75E-01	5.06E+02	2.24E+00
UAW5-400 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	2.37E+03	2.01E+01	1.10E-03	5.42E+02	5.96E-01	1.00E+00	5.50E-03	3.76E+03	4.11E+02	1.75E-01	5.06E+02	7.43E+00
UAW5-450 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	8.86E+02	7.51E+00	1.10E-03	2.02E+02	2.23E-01	1.00E+00	5.50E-03	1.41E+03	4.11E+02	1.75E-01	5.06E+02	2.78E+00
UAW5-500 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	1.64E+03	1.39E+01	1.10E-03	3.75E+02	4.13E-01	1.00E+00	5.50E-03	2.60E+03	4.11E+02	1.75E-01	5.06E+02	5.14E+00
UAW5-500+50 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	3.37E+03	2.85E+01	1.10E-03	7.69E+02	8.47E-01	1.00E+00	5.50E-03	5.34E+03	4.11E+02	1.75E-01	5.06E+02	1.06E+01
UAW5-550 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	3.09E+03	2.62E+01	1.10E-03	7.05E+02	7.77E-01	1.00E+00	5.50E-03	4.90E+03	4.11E+02	1.75E-01	5.06E+02	9.67E+00
UAW5-600 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	2.45E+03	2.07E+01	1.10E-03	5.59E+02	6.16E-01	1.00E+00	5.50E-03	3.88E+03	4.11E+02	1.75E-01	5.06E+02	7.67E+00
UAW5-Comp 1 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	1.98E+03	1.68E+01	1.10E-03	4.52E+02	4.98E-01	1.00E+00	5.50E-03	3.14E+03	4.11E+02	1.75E-01	5.06E+02	6.20E+00
																						Maximum HQ (Upper Anaconda Mine)	**1.39E+02**

TABLE C-1F: ZINC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 1 - UPPER ANACONDA MINE WASTE REMOVAL AREAS AND WASTE PILES (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 2.95

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)

Notes

1 See Tables 3-1 through 3-13 for ingestion rates, foraging ranges used to calculate the SUF, and body weights.

2 BAFs were calculated by dividing site-collected tissue by collocated soil concentrations (BAFs are in dry weight). The maximum BAF calculated from the Beartrap Creek and Blackfoot River transects was used for site dose calculations. The maximum BAF from the terrestrial reference site was used for reference site dose calculations.

3 The mammal, plant, and invertebrate concentrations were calculated by multiplying the soil concentration by the BAF to generate a tissue concentration (see note 2).

4 Mammal, plant, and invertebrate daily doses were calculated by multiplying the ingestion rate (see note 1) by the tissue concentration (see note 3).

5 Soil concentration from 0 to 6 inches below ground surface at point ID as measured by XRF 10. Doses were not calculated for detected and non-detected soil concentrations measured below the minimum reference site concentration, as indicated by BB. For results that were measured at less than the detection limit, doses were calculated using half of the detection limit.

6 Soil daily dose was calculated by multiplying the soil ingestion rate (see note 1) by soil concentration (see note 5).

7 Total daily dose is calculated using the following equation: total daily dose = ([mammal daily dose (if applicable) + plant daily dose (if applicable) + invertebrate daily dose (if applicable) + soil daily dose]*SUF)/receptor species body weight.

8 The TRVs used in this risk assessment represent a mid-range effects level. The derivation of TRVs is described in Navy (1998).

9 Allometrically adjusted TRVs for birds were calculated using the following equation: receptor species TRV = (test species TRV) x (test species body weight / receptor species body weight)$^{(1-1.2)}$.

10 Allometrically adjusted TRVs for mammals were calculated using the following equation: receptor species TRV = (test species TRV) x (test species body weight / receptor species body weight)$^{(1-0.94)}$.

11 HQs were calculated using the following equation: HQ = total daily dose/allometrically adjusted TRV.

12 Highlighted cells indicate an HQ greater than 1.0.

BAF	Bioaccumulation factor	mg/kg	Milligram per kilogram
BB	Below minimum background reference site concentration	NA	Not applicable
EU	Exposure unit	Navy	Department of the Navy
HQ	Hazard quotient	SUF	Site use factor
ID	Identification	TRV	Toxicity reference value
kg	Kilogram	XRF	X-ray flourescence
kg/day	Kilogram per day	XRF 10	XRF measurements recorded following drying and seiving through a #10 -mesh screen
mg/day	Milligram per day		

Sources: Department of the Navy. 1998. "Development of Toxicity Reference Values for Conducting Ecological Risk Assessments at Naval Facilities in California, Interim Final." Prepared by Naval Facilities Engineering Command, Engineering Field Activity West (EFA West). San Bruno, California.

TABLE C-2A: ARSENIC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **18.41**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Mourning Dove (Herbivorous Birds - Terrestrial)																							
Reference Sites																							
ACBG-1 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	5.36E-04	2.60E+01	1.39E-02	7.11E-02	1.09E-01	9.08E-03	2.20E+01	1.17E+00	1.37E+01	6.63E-04
ACBG-2 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	5.36E-04	1.83E+01	9.82E-03	7.11E-02	1.09E-01	6.39E-03	2.20E+01	1.17E+00	1.37E+01	4.67E-04
UBRBG-202 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	5.36E-04	1.39E+01	7.46E-03	7.11E-02	1.09E-01	4.86E-03	2.20E+01	1.17E+00	1.37E+01	3.55E-04
UBRBG-204 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	5.36E-04	1.95E+01	1.04E-02	7.11E-02	1.09E-01	6.80E-03	2.20E+01	1.17E+00	1.37E+01	4.97E-04
Inside Tailings																						**Minimum HQ (Reference Sites)**	**3.55E-04**
BREOT-S6-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.20E+02	6.90E-01	NA	NA	NA	NA	5.36E-04	1.99E+02	1.07E-01	7.11E-02	1.09E-01	5.18E-01	2.20E+01	1.17E+00	1.37E+01	3.79E-02
BREOT-S2-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.56E+02	8.98E-01	NA	NA	NA	NA	5.36E-04	2.59E+02	1.39E-01	7.11E-02	1.09E-01	6.75E-01	2.20E+01	1.17E+00	1.37E+01	4.93E-02
BREOT-S0-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	7.68E+01	4.42E-01	NA	NA	NA	NA	5.36E-04	1.28E+02	6.84E-02	7.11E-02	1.09E-01	3.32E-01	2.20E+01	1.17E+00	1.37E+01	2.43E-02
BREOT-S1-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	5.56E+01	3.20E-01	NA	NA	NA	NA	5.36E-04	9.25E+01	4.96E-02	7.11E-02	1.09E-01	2.41E-01	2.20E+01	1.17E+00	1.37E+01	1.76E-02
BREOT-S7-25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	7.20E+00	4.15E-02	NA	NA	NA	NA	5.36E-04	1.20E+01	6.42E-03	7.11E-02	1.09E-01	3.12E-02	2.20E+01	1.17E+00	1.37E+01	2.28E-03
BREOT-S8-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	6.36E+01	3.66E-01	NA	NA	NA	NA	5.36E-04	1.06E+02	5.67E-02	7.11E-02	1.09E-01	2.75E-01	2.20E+01	1.17E+00	1.37E+01	2.01E-02
BREOT-S9-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	6.06E+01	3.49E-01	NA	NA	NA	NA	5.36E-04	1.01E+02	5.40E-02	7.11E-02	1.09E-01	2.63E-01	2.20E+01	1.17E+00	1.37E+01	1.92E-02
BREOT-N10-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	2.88E+02	1.66E+00	NA	NA	NA	NA	5.36E-04	4.80E+02	2.57E-01	7.11E-02	1.09E-01	1.25E+00	2.20E+01	1.17E+00	1.37E+01	9.12E-02
BREOT-N11-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.47E+02	8.48E-01	NA	NA	NA	NA	5.36E-04	2.45E+02	1.31E-01	7.11E-02	1.09E-01	6.37E-01	2.20E+01	1.17E+00	1.37E+01	4.65E-02
BREOT-N11-125 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.03E+02	5.94E-01	NA	NA	NA	NA	5.36E-04	1.72E+02	9.20E-02	7.11E-02	1.09E-01	4.47E-01	2.20E+01	1.17E+00	1.37E+01	3.26E-02
BREOT-S11-12 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.69E+02	9.75E-01	NA	NA	NA	NA	5.36E-04	2.81E+02	1.51E-01	7.11E-02	1.09E-01	7.33E-01	2.20E+01	1.17E+00	1.37E+01	5.35E-02
BREOT-S11+63 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	8.77E+01	5.05E-01	NA	NA	NA	NA	5.36E-04	1.46E+02	7.82E-02	7.11E-02	1.09E-01	3.80E-01	2.20E+01	1.17E+00	1.37E+01	2.77E-02
UBDT-TP-6 (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	4.24E+02	2.44E+00	NA	NA	NA	NA	5.36E-04	7.05E+02	3.78E-01	7.11E-02	1.09E-01	1.83E+00	2.20E+01	1.17E+00	1.37E+01	1.34E-01
UBDT-TP-6 (2-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	3.83E+02	2.21E+00	NA	NA	NA	NA	5.36E-04	6.37E+02	3.41E-01	7.11E-02	1.09E-01	1.66E+00	2.20E+01	1.17E+00	1.37E+01	1.21E-01
UBDT-TP-6 (12-24")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	3.10E+02	1.79E+00	NA	NA	NA	NA	5.36E-04	5.16E+02	2.76E-01	7.11E-02	1.09E-01	1.34E+00	2.20E+01	1.17E+00	1.37E+01	9.80E-02
UBDT-TP-6 (24-36")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	7.37E+01	4.25E-01	NA	NA	NA	NA	5.36E-04	1.23E+02	6.57E-02	7.11E-02	1.09E-01	3.19E-01	2.20E+01	1.17E+00	1.37E+01	2.33E-02
UBDT-TP-6 (36-48")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.08E+02	6.23E-01	NA	NA	NA	NA	5.36E-04	1.80E+02	9.65E-02	7.11E-02	1.09E-01	4.69E-01	2.20E+01	1.17E+00	1.37E+01	3.42E-02
UBDT-TP-6 (48-60")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	3.60E+01	2.07E-01	NA	NA	NA	NA	5.36E-04	5.99E+01	3.21E-02	7.11E-02	1.09E-01	1.56E-01	2.20E+01	1.17E+00	1.37E+01	1.14E-02
BREOT-N12-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	6.93E+01	3.99E-01	NA	NA	NA	NA	5.36E-04	1.15E+02	6.18E-02	7.11E-02	1.09E-01	3.00E-01	2.20E+01	1.17E+00	1.37E+01	2.19E-02
BREOT-S12-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	6.66E+01	3.84E-01	NA	NA	NA	NA	5.36E-04	1.11E+02	5.94E-02	7.11E-02	1.09E-01	2.88E-01	2.20E+01	1.17E+00	1.37E+01	2.11E-02
BREOT-S13-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.44E+02	8.28E-01	NA	NA	NA	NA	5.36E-04	2.39E+02	1.28E-01	7.11E-02	1.09E-01	6.22E-01	2.20E+01	1.17E+00	1.37E+01	4.55E-02
BREOT-S14-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	4.05E+01	2.33E-01	NA	NA	NA	NA	5.36E-04	6.74E+01	3.61E-02	7.11E-02	1.09E-01	1.75E-01	2.20E+01	1.17E+00	1.37E+01	1.28E-02
BREOT-N15-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.64E+02	9.46E-01	NA	NA	NA	NA	5.36E-04	2.73E+02	1.46E-01	7.11E-02	1.09E-01	7.11E-01	2.20E+01	1.17E+00	1.37E+01	5.19E-02
BREOT-S15-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	2.25E+02	1.30E+00	NA	NA	NA	NA	5.36E-04	3.74E+02	2.01E-01	7.11E-02	1.09E-01	9.74E-01	2.20E+01	1.17E+00	1.37E+01	7.11E-02
BREOT-N16-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.32E+02	7.58E-01	NA	NA	NA	NA	5.36E-04	2.19E+02	1.17E-01	7.11E-02	1.09E-01	5.70E-01	2.20E+01	1.17E+00	1.37E+01	4.16E-02
BREOT-N16-25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	8.55E+00	4.92E-02	NA	NA	NA	NA	5.36E-04	1.42E+01	7.62E-03	7.11E-02	1.09E-01	3.70E-02	2.20E+01	1.17E+00	1.37E+01	2.70E-03
BREOT-S16-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	8.89E+01	5.12E-01	NA	NA	NA	NA	5.36E-04	1.48E+02	7.92E-02	7.11E-02	1.09E-01	3.85E-01	2.20E+01	1.17E+00	1.37E+01	2.81E-02
BREOT-N17-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	9.63E+01	5.55E-01	NA	NA	NA	NA	5.36E-04	1.60E+02	8.58E-02	7.11E-02	1.09E-01	4.17E-01	2.20E+01	1.17E+00	1.37E+01	3.05E-02
BREOT-S17-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	4.03E+01	2.32E-01	NA	NA	NA	NA	5.36E-04	6.70E+01	3.59E-02	7.11E-02	1.09E-01	1.74E-01	2.20E+01	1.17E+00	1.37E+01	1.27E-02
BREOT-S17-25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	3.36E+01	1.94E-01	NA	NA	NA	NA	5.36E-04	5.59E+01	3.00E-02	7.11E-02	1.09E-01	1.46E-01	2.20E+01	1.17E+00	1.37E+01	1.06E-02
UBDT-TP-4 (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.06E+02	6.09E-01	NA	NA	NA	NA	5.36E-04	1.76E+02	9.42E-02	7.11E-02	1.09E-01	4.58E-01	2.20E+01	1.17E+00	1.37E+01	3.34E-02
UBDT-TP-4 (2-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	7.13E+01	4.11E-01	NA	NA	NA	NA	5.36E-04	1.19E+02	6.36E-02	7.11E-02	1.09E-01	3.09E-01	2.20E+01	1.17E+00	1.37E+01	2.26E-02
UBDT-TP-4 (12-24")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	6.28E+01	3.62E-01	NA	NA	NA	NA	5.36E-04	1.05E+02	5.60E-02	7.11E-02	1.09E-01	2.72E-01	2.20E+01	1.17E+00	1.37E+01	1.99E-02
UBDT-TP-4 (24-36")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	3.84E+01	2.21E-01	NA	NA	NA	NA	5.36E-04	6.38E+01	3.42E-02	7.11E-02	1.09E-01	1.66E-01	2.20E+01	1.17E+00	1.37E+01	1.21E-02
BREOT-N18-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.25E+02	7.19E-01	NA	NA	NA	NA	5.36E-04	2.08E+02	1.11E-01	7.11E-02	1.09E-01	5.41E-01	2.20E+01	1.17E+00	1.37E+01	3.95E-02
BREOT-N18-25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.37E+01	7.92E-02	NA	NA	NA	NA	5.36E-04	2.29E+01	1.22E-02	7.11E-02	1.09E-01	5.95E-02	2.20E+01	1.17E+00	1.37E+01	4.35E-03
BREOT-S18-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	6.30E+01	3.63E-01	NA	NA	NA	NA	5.36E-04	1.05E+02	5.62E-02	7.11E-02	1.09E-01	2.73E-01	2.20E+01	1.17E+00	1.37E+01	1.99E-02
BREOT-N19-10 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.11E+02	6.41E-01	NA	NA	NA	NA	5.36E-04	1.85E+02	9.92E-02	7.11E-02	1.09E-01	4.82E-01	2.20E+01	1.17E+00	1.37E+01	3.52E-02
BREOT-S19-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	4.51E+01	2.60E-01	NA	NA	NA	NA	5.36E-04	7.50E+01	4.02E-02	7.11E-02	1.09E-01	1.95E-01	2.20E+01	1.17E+00	1.37E+01	1.43E-02
UBDT-TP-5 (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	5.72E+01	3.30E-01	NA	NA	NA	NA	5.36E-04	9.52E+01	5.10E-02	7.11E-02	1.09E-01	2.48E-01	2.20E+01	1.17E+00	1.37E+01	1.81E-02
UBDT-TP-5 (2-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	5.56E+01	3.20E-01	NA	NA	NA	NA	5.36E-04	9.25E+01	4.95E-02	7.11E-02	1.09E-01	2.41E-01	2.20E+01	1.17E+00	1.37E+01	1.76E-02
UBDT-TP-5 (12-24")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	4.33E+01	2.49E-01	NA	NA	NA	NA	5.36E-04	7.20E+01	3.86E-02	7.11E-02	1.09E-01	1.87E-01	2.20E+01	1.17E+00	1.37E+01	1.37E-02
BREOT-N20-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.46E+02	8.42E-01	NA	NA	NA	NA	5.36E-04	2.43E+02	1.30E-01	7.11E-02	1.09E-01	6.33E-01	2.20E+01	1.17E+00	1.37E+01	4.62E-02
UBDT-TP-3 (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.02E+02	5.90E-01	NA	NA	NA	NA	5.36E-04	1.70E+02	9.13E-02	7.11E-02	1.09E-01	4.43E-01	2.20E+01	1.17E+00	1.37E+01	3.24E-02
UBDT-TP-3 (2-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	9.87E+01	5.69E-01	NA	NA	NA	NA	5.36E-04	1.64E+02	8.80E-02	7.11E-02	1.09E-01	4.27E-01	2.20E+01	1.17E+00	1.37E+01	3.12E-02
UBDT-TP-3 (12-24")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	9.16E+01	5.27E-01	NA	NA	NA	NA	5.36E-04	1.52E+02	8.16E-02	7.11E-02	1.09E-01	3.96E-01	2.20E+01	1.17E+00	1.37E+01	2.90E-02
UBDT-TP-3 (24-36")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	8.18E+01	4.71E-01	NA	NA	NA	NA	5.36E-04	1.36E+02	7.29E-02	7.11E-02	1.09E-01	3.54E-01	2.20E+01	1.17E+00	1.37E+01	2.59E-02
UBDT-TP-3 (36-48")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.34E+02	7.73E-01	NA	NA	NA	NA	5.36E-04	2.23E+02	1.20E-01	7.11E-02	1.09E-01	5.81E-01	2.20E+01	1.17E+00	1.37E+01	4.25E-02
UBDT-TP-3 (48-60")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	2.78E+01	1.60E-01	NA	NA	NA	NA	5.36E-04	4.63E+01	2.48E-02	7.11E-02	1.09E-01	1.20E-01	2.20E+01	1.17E+00	1.37E+01	8.79E-03
BREOT-N21-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	5.87E+01	3.38E-01	NA	NA	NA	NA	5.36E-04	9.77E+01	5.23E-02	7.11E-02	1.09E-01	2.54E-01	2.20E+01	1.17E+00	1.37E+01	1.86E-02
BREOT-N22-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.11E+02	6.40E-01	NA	NA	NA	NA	5.36E-04	1.85E+02	9.90E-02	7.11E-02	1.09E-01	4.81E-01	2.20E+01	1.17E+00	1.37E+01	3.51E-02

TABLE C-2A: ARSENIC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables; from BAF table; linked to soil or sed concentration table (VLOOKUP)

calculated values; linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 18.41

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Mourning Dove (Herbivorous Birds - Terrestrial)																							
BREOT-N23-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.20E+02	6.90E-01	NA	NA	NA	NA	5.36E-04	1.99E+02	1.07E-01	7.11E-02	1.09E-01	5.18E-01	2.20E+01	1.17E+00	1.37E+01	3.79E-02
BREOT-S23-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	6.83E+01	3.93E-01	NA	NA	NA	NA	5.36E-04	1.14E+02	6.09E-02	7.11E-02	1.09E-01	2.96E-01	2.20E+01	1.17E+00	1.37E+01	2.16E-02
UBDT-TP-2 (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.33E+02	7.63E-01	NA	NA	NA	NA	5.36E-04	2.20E+02	1.18E-01	7.11E-02	1.09E-01	5.74E-01	2.20E+01	1.17E+00	1.37E+01	4.19E-02
UBDT-TP-2 (2-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	6.63E+01	3.82E-01	NA	NA	NA	NA	5.36E-04	1.10E+02	5.91E-02	7.11E-02	1.09E-01	2.87E-01	2.20E+01	1.17E+00	1.37E+01	2.10E-02
UBDT-TP-2 (12-24")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.84E+01	1.06E-01	NA	NA	NA	NA	5.36E-04	3.06E+01	1.64E-02	7.11E-02	1.09E-01	7.97E-02	2.20E+01	1.17E+00	1.37E+01	5.82E-03
UBDT-TP-2 (24-36")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	3.86E+01	2.22E-01	NA	NA	NA	NA	5.36E-04	6.42E+01	3.44E-02	7.11E-02	1.09E-01	1.67E-01	2.20E+01	1.17E+00	1.37E+01	1.22E-02
UBDT-TP-2 (36-48")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	4.24E+01	2.44E-01	NA	NA	NA	NA	5.36E-04	7.05E+01	3.78E-02	7.11E-02	1.09E-01	1.84E-01	2.20E+01	1.17E+00	1.37E+01	1.34E-02
BREOT-S24-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	8.49E+01	4.89E-01	NA	NA	NA	NA	5.36E-04	1.41E+02	7.57E-02	7.11E-02	1.09E-01	3.68E-01	2.20E+01	1.17E+00	1.37E+01	2.69E-02
BREOT-N25-50 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	2.03E+02	1.17E+00	NA	NA	NA	NA	5.36E-04	3.38E+02	1.81E-01	7.11E-02	1.09E-01	8.79E-01	2.20E+01	1.17E+00	1.37E+01	6.42E-02
BREOT-N25-95 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.65E+02	9.52E-01	NA	NA	NA	NA	5.36E-04	2.75E+02	1.47E-01	7.11E-02	1.09E-01	7.16E-01	2.20E+01	1.17E+00	1.37E+01	5.23E-02
BREOT-S25-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	9.60E+01	5.53E-01	NA	NA	NA	NA	5.36E-04	1.60E+02	8.56E-02	7.11E-02	1.09E-01	4.16E-01	2.20E+01	1.17E+00	1.37E+01	3.04E-02
BREOT-S25-40 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	7.26E+01	4.18E-01	NA	NA	NA	NA	5.36E-04	1.21E+02	6.47E-02	7.11E-02	1.09E-01	3.14E-01	2.20E+01	1.17E+00	1.37E+01	2.30E-02
BREOT-N26A-25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.11E+01	6.41E-02	NA	NA	NA	NA	5.36E-04	1.85E+01	9.92E-03	7.11E-02	1.09E-01	4.82E-02	2.20E+01	1.17E+00	1.37E+01	3.52E-03
BREOT-N26B-25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	6.71E+01	3.86E-01	NA	NA	NA	NA	5.36E-04	1.12E+02	5.98E-02	7.11E-02	1.09E-01	2.90E-01	2.20E+01	1.17E+00	1.37E+01	2.12E-02
BREOT-N26-50 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.49E+02	8.59E-01	NA	NA	NA	NA	5.36E-04	2.48E+02	1.33E-01	7.11E-02	1.09E-01	6.46E-01	2.20E+01	1.17E+00	1.37E+01	4.72E-02
BREOT-N26-75 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.27E+02	7.35E-01	NA	NA	NA	NA	5.36E-04	2.12E+02	1.14E-01	7.11E-02	1.09E-01	5.52E-01	2.20E+01	1.17E+00	1.37E+01	4.03E-02
BREOT-S26-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	6.13E+01	3.53E-01	NA	NA	NA	NA	5.36E-04	1.02E+02	5.46E-02	7.11E-02	1.09E-01	2.65E-01	2.20E+01	1.17E+00	1.37E+01	1.94E-02
BREOT-S26-40 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	8.83E+01	5.09E-01	NA	NA	NA	NA	5.36E-04	1.47E+02	7.87E-02	7.11E-02	1.09E-01	3.82E-01	2.20E+01	1.17E+00	1.37E+01	2.79E-02
BREOT-N27-30 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	2.49E+02	1.44E+00	NA	NA	NA	NA	5.36E-04	4.15E+02	2.22E-01	7.11E-02	1.09E-01	1.08E+00	2.20E+01	1.17E+00	1.37E+01	7.89E-02
BREOT-N27-75 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	2.47E+02	1.43E+00	NA	NA	NA	NA	5.36E-04	4.12E+02	2.21E-01	7.11E-02	1.09E-01	1.07E+00	2.20E+01	1.17E+00	1.37E+01	7.83E-02
BREOT-S27-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	7.70E+01	4.44E-01	NA	NA	NA	NA	5.36E-04	1.28E+02	6.87E-02	7.11E-02	1.09E-01	3.34E-01	2.20E+01	1.17E+00	1.37E+01	2.44E-02
BREOT-N28-110 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	6.94E+01	4.00E-01	NA	NA	NA	NA	5.36E-04	1.15E+02	6.19E-02	7.11E-02	1.09E-01	3.01E-01	2.20E+01	1.17E+00	1.37E+01	2.20E-02
BREOT-N28-55 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	7.36E+02	4.24E+00	NA	NA	NA	NA	5.36E-04	1.22E+03	6.56E-01	7.11E-02	1.09E-01	3.19E+00	2.20E+01	1.17E+00	1.37E+01	2.33E-01
BREOT-S28-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	4.78E+01	2.75E-01	NA	NA	NA	NA	5.36E-04	7.95E+01	4.26E-02	7.11E-02	1.09E-01	2.07E-01	2.20E+01	1.17E+00	1.37E+01	1.51E-02
UBDT-TP-1 (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	2.37E+02	1.37E+00	NA	NA	NA	NA	5.36E-04	3.94E+02	2.11E-01	7.11E-02	1.09E-01	1.03E+00	2.20E+01	1.17E+00	1.37E+01	7.50E-02
UBDT-TP-1 (2-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	4.13E+02	2.38E+00	NA	NA	NA	NA	5.36E-04	6.87E+02	3.68E-01	7.11E-02	1.09E-01	1.79E+00	2.20E+01	1.17E+00	1.37E+01	1.31E-01
UBDT-TP-1 (12-24")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.30E+02	7.50E-01	NA	NA	NA	NA	5.36E-04	2.17E+02	1.16E-01	7.11E-02	1.09E-01	5.64E-01	2.20E+01	1.17E+00	1.37E+01	4.12E-02
UBDT-TP-1 (24-36")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	9.95E+01	5.73E-01	NA	NA	NA	NA	5.36E-04	1.66E+02	8.87E-02	7.11E-02	1.09E-01	4.31E-01	2.20E+01	1.17E+00	1.37E+01	3.15E-02
UBDT-TP-1 (36-48")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	7.07E+00	4.07E-02	NA	NA	NA	NA	5.36E-04	1.18E+01	6.30E-03	7.11E-02	1.09E-01	3.06E-02	2.20E+01	1.17E+00	1.37E+01	2.23E-03
UBDT-TP-1 (48-60")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	7.56E+00	4.36E-02	NA	NA	NA	NA	5.36E-04	1.26E+01	6.74E-03	7.11E-02	1.09E-01	3.28E-02	2.20E+01	1.17E+00	1.37E+01	2.39E-03
BREOT-N29-30 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	3.76E+02	2.17E+00	NA	NA	NA	NA	5.36E-04	6.25E+02	3.35E-01	7.11E-02	1.09E-01	1.63E+00	2.20E+01	1.17E+00	1.37E+01	1.19E-01
BREOT-S29-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	9.14E+01	5.27E-01	NA	NA	NA	NA	5.36E-04	1.52E+02	8.15E-02	7.11E-02	1.09E-01	3.96E-01	2.20E+01	1.17E+00	1.37E+01	2.89E-02
BREOT-N30-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	6.21E+01	3.58E-01	NA	NA	NA	NA	5.36E-04	1.03E+02	5.54E-02	7.11E-02	1.09E-01	2.69E-01	2.20E+01	1.17E+00	1.37E+01	1.96E-02
BREOT-S30-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	8.84E+01	5.09E-01	NA	NA	NA	NA	5.36E-04	1.47E+02	7.88E-02	7.11E-02	1.09E-01	3.83E-01	2.20E+01	1.17E+00	1.37E+01	2.79E-02
BREOT-N31-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	8.22E+01	4.73E-01	NA	NA	NA	NA	5.36E-04	1.37E+02	7.33E-02	7.11E-02	1.09E-01	3.56E-01	2.20E+01	1.17E+00	1.37E+01	2.60E-02
BREOT-S31-25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	5.00E+01	2.88E-01	NA	NA	NA	NA	5.36E-04	8.32E+01	4.46E-02	7.11E-02	1.09E-01	2.16E-01	2.20E+01	1.17E+00	1.37E+01	1.58E-02
BREOT-S31-5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.02E+02	5.86E-01	NA	NA	NA	NA	5.36E-04	1.69E+02	9.06E-02	7.11E-02	1.09E-01	4.40E-01	2.20E+01	1.17E+00	1.37E+01	3.22E-02
BREOT-N32-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.82E+02	1.05E+00	NA	NA	NA	NA	5.36E-04	3.03E+02	1.63E-01	7.11E-02	1.09E-01	7.90E-01	2.20E+01	1.17E+00	1.37E+01	5.77E-02
BREOT-S32-6 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.07E+02	6.14E-01	NA	NA	NA	NA	5.36E-04	1.77E+02	9.50E-02	7.11E-02	1.09E-01	4.61E-01	2.20E+01	1.17E+00	1.37E+01	3.37E-02
BREOT-N33-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.74E+02	1.00E+00	NA	NA	NA	NA	5.36E-04	2.90E+02	1.55E-01	7.11E-02	1.09E-01	7.54E-01	2.20E+01	1.17E+00	1.37E+01	5.51E-02
BREOT-S33-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	8.77E+00	5.05E-02	NA	NA	NA	NA	5.36E-04	1.46E+01	7.82E-03	7.11E-02	1.09E-01	3.80E-02	2.20E+01	1.17E+00	1.37E+01	2.77E-03
BREOT-N35-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	4.75E+01	2.74E-01	NA	NA	NA	NA	5.36E-04	7.90E+01	4.23E-02	7.11E-02	1.09E-01	2.06E-01	2.20E+01	1.17E+00	1.37E+01	1.50E-02
BREOT-S35-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.13E+02	6.49E-01	NA	NA	NA	NA	5.36E-04	1.87E+02	1.00E-01	7.11E-02	1.09E-01	4.88E-01	2.20E+01	1.17E+00	1.37E+01	3.56E-02
BREOT-N36-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	9.28E+01	5.35E-01	NA	NA	NA	NA	5.36E-04	1.54E+02	8.27E-02	7.11E-02	1.09E-01	4.02E-01	2.20E+01	1.17E+00	1.37E+01	2.93E-02
BREOT-S36-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	8.93E+01	5.15E-01	NA	NA	NA	NA	5.36E-04	1.49E+02	7.96E-02	7.11E-02	1.09E-01	3.87E-01	2.20E+01	1.17E+00	1.37E+01	2.83E-02
BREOT-N37-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.33E+02	7.66E-01	NA	NA	NA	NA	5.36E-04	2.21E+02	1.19E-01	7.11E-02	1.09E-01	5.76E-01	2.20E+01	1.17E+00	1.37E+01	4.21E-02
BREOT-S37-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	6.44E+01	3.71E-01	NA	NA	NA	NA	5.36E-04	1.07E+02	5.74E-02	7.11E-02	1.09E-01	2.79E-01	2.20E+01	1.17E+00	1.37E+01	2.04E-02

TABLE C-2A: ARSENIC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **18.41**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Mourning Dove (Herbivorous Birds - Terrestrial)																							
BREOT-N38-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	6.15E+01	3.54E-01	NA	NA	NA	NA	5.36E-04	1.02E+02	5.48E-02	7.11E-02	1.09E-01	2.66E-01	2.20E+01	1.17E+00	1.37E+01	1.94E-02
BREOT-S38-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.21E+02	6.98E-01	NA	NA	NA	NA	5.36E-04	2.02E+02	1.08E-01	7.11E-02	1.09E-01	5.25E-01	2.20E+01	1.17E+00	1.37E+01	3.83E-02
BREOT-N39-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.50E+02	8.66E-01	NA	NA	NA	NA	5.36E-04	2.50E+02	1.34E-01	7.11E-02	1.09E-01	6.51E-01	2.20E+01	1.17E+00	1.37E+01	4.75E-02
BREOT-S39-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	9.51E+01	5.48E-01	NA	NA	NA	NA	5.36E-04	1.58E+02	8.48E-02	7.11E-02	1.09E-01	4.12E-01	2.20E+01	1.17E+00	1.37E+01	3.01E-02
BREOT-N40-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	9.13E+01	5.26E-01	NA	NA	NA	NA	5.36E-04	1.52E+02	8.14E-02	7.11E-02	1.09E-01	3.95E-01	2.20E+01	1.17E+00	1.37E+01	2.89E-02
BREOT-S40-14 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.59E+02	9.14E-01	NA	NA	NA	NA	5.36E-04	2.64E+02	1.41E-01	7.11E-02	1.09E-01	6.87E-01	2.20E+01	1.17E+00	1.37E+01	5.02E-02
BREOT-N41-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.69E+01	9.74E-02	NA	NA	NA	NA	5.36E-04	2.81E+01	1.51E-02	7.11E-02	1.09E-01	7.32E-02	2.20E+01	1.17E+00	1.37E+01	5.35E-03
BREOT-S41-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.99E+02	1.15E+00	NA	NA	NA	NA	5.36E-04	3.31E+02	1.77E-01	7.11E-02	1.09E-01	8.61E-01	2.20E+01	1.17E+00	1.37E+01	6.29E-02
BREOT-N42-35 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	7.13E+01	4.11E-01	NA	NA	NA	NA	5.36E-04	1.19E+02	6.35E-02	7.11E-02	1.09E-01	3.09E-01	2.20E+01	1.17E+00	1.37E+01	2.25E-02
BREOT-S42-25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.19E+02	6.87E-01	NA	NA	NA	NA	5.36E-04	1.98E+02	1.06E-01	7.11E-02	1.09E-01	5.16E-01	2.20E+01	1.17E+00	1.37E+01	3.77E-02
BREOT-N43-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.02E+02	5.85E-01	NA	NA	NA	NA	5.36E-04	1.69E+02	9.05E-02	7.11E-02	1.09E-01	4.40E-01	2.20E+01	1.17E+00	1.37E+01	3.21E-02
BREOT-S43-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	9.76E+01	5.62E-01	NA	NA	NA	NA	5.36E-04	1.62E+02	8.70E-02	7.11E-02	1.09E-01	4.23E-01	2.20E+01	1.17E+00	1.37E+01	3.09E-02
BREOT-N44-30 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	6.99E+01	4.03E-01	NA	NA	NA	NA	5.36E-04	1.16E+02	6.23E-02	7.11E-02	1.09E-01	3.03E-01	2.20E+01	1.17E+00	1.37E+01	2.21E-02
BREOT-S44-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	8.40E+01	4.84E-01	NA	NA	NA	NA	5.36E-04	1.40E+02	7.49E-02	7.11E-02	1.09E-01	3.64E-01	2.20E+01	1.17E+00	1.37E+01	2.66E-02
BREOT-N45-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	9.90E+01	5.70E-01	NA	NA	NA	NA	5.36E-04	1.65E+02	8.82E-02	7.11E-02	1.09E-01	4.29E-01	2.20E+01	1.17E+00	1.37E+01	3.13E-02
BREOT-N43-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.02E+02	5.85E-01	NA	NA	NA	NA	5.36E-04	1.69E+02	9.05E-02	7.11E-02	1.09E-01	4.40E-01	2.20E+01	1.17E+00	1.37E+01	3.21E-02
BREOT-S45-6 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	7.91E+01	4.56E-01	NA	NA	NA	NA	5.36E-04	1.32E+02	7.05E-02	7.11E-02	1.09E-01	3.42E-01	2.20E+01	1.17E+00	1.37E+01	2.50E-02
BREOT-N46-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	3.97E+01	2.29E-01	NA	NA	NA	NA	5.36E-04	6.60E+01	3.54E-02	7.11E-02	1.09E-01	1.72E-01	2.20E+01	1.17E+00	1.37E+01	1.26E-02
BREOT-S46-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	3.85E+01	2.22E-01	NA	NA	NA	NA	5.36E-04	6.40E+01	3.43E-02	7.11E-02	1.09E-01	1.67E-01	2.20E+01	1.17E+00	1.37E+01	1.22E-02
BREOT-S46-40 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	5.64E+01	3.25E-01	NA	NA	NA	NA	5.36E-04	9.38E+01	5.03E-02	7.11E-02	1.09E-01	2.44E-01	2.20E+01	1.17E+00	1.37E+01	1.78E-02
BREOT-N47-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	5.81E+01	3.35E-01	NA	NA	NA	NA	5.36E-04	9.66E+01	5.18E-02	7.11E-02	1.09E-01	2.52E-01	2.20E+01	1.17E+00	1.37E+01	1.84E-02
BREOT-S47-999 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	9.16E+01	5.28E-01	NA	NA	NA	NA	5.36E-04	1.52E+02	8.17E-02	7.11E-02	1.09E-01	3.97E-01	2.20E+01	1.17E+00	1.37E+01	2.90E-02
BREOT-S48-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	2.80E+01	1.61E-01	NA	NA	NA	NA	5.36E-04	4.65E+01	2.49E-02	7.11E-02	1.09E-01	1.21E-01	2.20E+01	1.17E+00	1.37E+01	8.85E-03
BREOT-S49-2.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	3.32E+01	1.91E-01	NA	NA	NA	NA	5.36E-04	5.53E+01	2.96E-02	7.11E-02	1.09E-01	1.44E-01	2.20E+01	1.17E+00	1.37E+01	1.05E-02
BREOT-S50-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.04E+01	5.99E-02	NA	NA	NA	NA	5.36E-04	1.73E+01	9.26E-03	7.11E-02	1.09E-01	4.50E-02	2.20E+01	1.17E+00	1.37E+01	3.29E-03
BREOT-S50-25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.57E+01	9.02E-02	NA	NA	NA	NA	5.36E-04	2.61E+01	1.40E-02	7.11E-02	1.09E-01	6.78E-02	2.20E+01	1.17E+00	1.37E+01	4.95E-03
BREOT-N52-60 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.29E+02	7.41E-01	NA	NA	NA	NA	5.36E-04	2.14E+02	1.15E-01	7.11E-02	1.09E-01	5.57E-01	2.20E+01	1.17E+00	1.37E+01	4.07E-02
BREOT-S52-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	5.81E+01	3.35E-01	NA	NA	NA	NA	5.36E-04	9.67E+01	5.18E-02	7.11E-02	1.09E-01	2.52E-01	2.20E+01	1.17E+00	1.37E+01	1.84E-02
BREOT-S53-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.72E+01	9.93E-02	NA	NA	NA	NA	5.36E-04	2.87E+01	1.54E-02	7.11E-02	1.09E-01	7.47E-02	2.20E+01	1.17E+00	1.37E+01	5.45E-03
BREOT-S54-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.27E+01	7.30E-02	NA	NA	NA	NA	5.36E-04	2.11E+01	1.13E-02	7.11E-02	1.09E-01	5.49E-02	2.20E+01	1.17E+00	1.37E+01	4.01E-03
BREOT-N55-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.12E+02	6.46E-01	NA	NA	NA	NA	5.36E-04	1.87E+02	1.00E-01	7.11E-02	1.09E-01	4.86E-01	2.20E+01	1.17E+00	1.37E+01	3.55E-02
BREOT-S55-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	3.90E+01	2.25E-01	NA	NA	NA	NA	5.36E-04	6.49E+01	3.47E-02	7.11E-02	1.09E-01	1.69E-01	2.20E+01	1.17E+00	1.37E+01	1.23E-02
BREOT-N56-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	7.62E+01	4.39E-01	NA	NA	NA	NA	5.36E-04	1.27E+02	6.79E-02	7.11E-02	1.09E-01	3.30E-01	2.20E+01	1.17E+00	1.37E+01	2.41E-02
BREOT-S56-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.65E+01	9.50E-02	NA	NA	NA	NA	5.36E-04	2.74E+01	1.47E-02	7.11E-02	1.09E-01	7.14E-02	2.20E+01	1.17E+00	1.37E+01	5.22E-03
BREOT-N57-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	7.40E+01	4.26E-01	NA	NA	NA	NA	5.36E-04	1.23E+02	6.60E-02	7.11E-02	1.09E-01	3.20E-01	2.20E+01	1.17E+00	1.37E+01	2.34E-02
BREOT-S57-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	4.33E+01	2.49E-01	NA	NA	NA	NA	5.36E-04	7.20E+01	3.86E-02	7.11E-02	1.09E-01	1.87E-01	2.20E+01	1.17E+00	1.37E+01	1.37E-02
BREOT-N58-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	3.16E+01	1.82E-01	NA	NA	NA	NA	5.36E-04	5.25E+01	2.81E-02	7.11E-02	1.09E-01	1.37E-01	2.20E+01	1.17E+00	1.37E+01	9.98E-03
BREOT-S58-12 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	4.97E+01	2.86E-01	NA	NA	NA	NA	5.36E-04	8.27E+01	4.43E-02	7.11E-02	1.09E-01	2.15E-01	2.20E+01	1.17E+00	1.37E+01	1.57E-02
BREOT-N59-18 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	5.52E+01	3.18E-01	NA	NA	NA	NA	5.36E-04	9.18E+01	4.92E-02	7.11E-02	1.09E-01	2.39E-01	2.20E+01	1.17E+00	1.37E+01	1.75E-02
BREOT-N60-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.56E+01	9.00E-02	NA	NA	NA	NA	5.36E-04	2.60E+01	1.39E-02	7.11E-02	1.09E-01	6.76E-02	2.20E+01	1.17E+00	1.37E+01	4.94E-03
BREOT-S60-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	4.78E+01	2.75E-01	NA	NA	NA	NA	5.36E-04	7.95E+01	4.26E-02	7.11E-02	1.09E-01	2.07E-01	2.20E+01	1.17E+00	1.37E+01	1.51E-02
BREOT-S61-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	2.69E+01	1.55E-01	NA	NA	NA	NA	5.36E-04	4.47E+01	2.40E-02	7.11E-02	1.09E-01	1.16E-01	2.20E+01	1.17E+00	1.37E+01	8.51E-03
BREOT-N62-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	5.44E+00	3.13E-02	NA	NA	NA	NA	5.36E-04	9.05E+00	4.85E-03	7.11E-02	1.09E-01	2.36E-02	2.20E+01	1.17E+00	1.37E+01	1.72E-03
BREOT-S62-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	6.14E+01	3.54E-01	NA	NA	NA	NA	5.36E-04	1.02E+02	5.47E-02	7.11E-02	1.09E-01	2.66E-01	2.20E+01	1.17E+00	1.37E+01	1.94E-02
BREOT-S63-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	3.78E+01	2.18E-01	NA	NA	NA	NA	5.36E-04	6.29E+01	3.37E-02	7.11E-02	1.09E-01	1.64E-01	2.20E+01	1.17E+00	1.37E+01	1.19E-02
BREOT-N64-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	2.38E+01	1.37E-01	NA	NA	NA	NA	5.36E-04	3.96E+01	2.12E-02	7.11E-02	1.09E-01	1.03E-01	2.20E+01	1.17E+00	1.37E+01	7.52E-03
BREOT-N64-20 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	2.94E+01	1.69E-01	NA	NA	NA	NA	5.36E-04	4.89E+01	2.62E-02	7.11E-02	1.09E-01	1.27E-01	2.20E+01	1.17E+00	1.37E+01	9.29E-03
Mourning Dove (Herbivorous Birds - Terrestrial)																							
BREOT-S64-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	3.76E+01	2.17E-01	NA	NA	NA	NA	5.36E-04	6.25E+01	3.35E-02	7.11E-02	1.09E-01	1.63E-01	2.20E+01	1.17E+00	1.37E+01	1.19E-02
BREOT-N65-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.69E+01	9.73E-02	NA	NA	NA	NA	5.36E-04	2.81E+01	1.51E-02	7.11E-02	1.09E-01	7.31E-02	2.20E+01	1.17E+00	1.37E+01	5.34E-03

TABLE C-2A: ARSENIC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **18.41**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
BREOT-S65-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	7.28E+01	4.19E-01	NA	NA	NA	NA	5.36E-04	1.21E+02	6.49E-02	7.11E-02	1.09E-01	3.15E-01	2.20E+01	1.17E+00	1.37E+01	2.30E-02
BREOT-N66-5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	5.92E+01	3.41E-01	NA	NA	NA	NA	5.36E-04	9.86E+01	5.28E-02	7.11E-02	1.09E-01	2.57E-01	2.20E+01	1.17E+00	1.37E+01	1.87E-02
BREOT-S66-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	4.17E+01	2.41E-01	NA	NA	NA	NA	5.36E-04	6.95E+01	3.72E-02	7.11E-02	1.09E-01	1.81E-01	2.20E+01	1.17E+00	1.37E+01	1.32E-02
BREOT-N67-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	5.86E+01	3.37E-01	NA	NA	NA	NA	5.36E-04	9.75E+01	5.22E-02	7.11E-02	1.09E-01	2.54E-01	2.20E+01	1.17E+00	1.37E+01	1.85E-02
BREOT-S67-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	7.62E+00	4.39E-02	NA	NA	NA	NA	5.36E-04	1.27E+01	6.79E-03	7.11E-02	1.09E-01	3.30E-02	2.20E+01	1.17E+00	1.37E+01	2.41E-03
At Edge of Tailings																						**Maximum HQ (Inside Tailings)**	**2.33E-01**
BREOT-S0-0 (06)	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	4.73E+01	2.73E-01	NA	NA	NA	NA	5.36E-04	7.87E+01	4.22E-02	7.11E-02	1.09E-01	2.05E-01	2.20E+01	1.17E+00	1.37E+01	1.50E-02
BREOT-S1-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.44E+02	8.27E-01	NA	NA	NA	NA	5.36E-04	2.39E+02	1.28E-01	7.11E-02	1.09E-01	6.22E-01	2.20E+01	1.17E+00	1.37E+01	4.54E-02
BREOT-S2-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	4.09E+01	2.36E-01	NA	NA	NA	NA	5.36E-04	6.81E+01	3.65E-02	7.11E-02	1.09E-01	1.77E-01	2.20E+01	1.17E+00	1.37E+01	1.29E-02
BREOT-S3-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.60E+02	9.24E-01	NA	NA	NA	NA	5.36E-04	2.67E+02	1.43E-01	7.11E-02	1.09E-01	6.95E-01	2.20E+01	1.17E+00	1.37E+01	5.07E-02
BREOT-S4-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.46E+02	8.39E-01	NA	NA	NA	NA	5.36E-04	2.42E+02	1.30E-01	7.11E-02	1.09E-01	6.31E-01	2.20E+01	1.17E+00	1.37E+01	4.61E-02
BREOT-S6-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.75E+02	1.01E+00	NA	NA	NA	NA	5.36E-04	2.91E+02	1.56E-01	7.11E-02	1.09E-01	7.57E-01	2.20E+01	1.17E+00	1.37E+01	5.53E-02
BREOT-S7-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.04E+02	6.02E-01	NA	NA	NA	NA	5.36E-04	1.74E+02	9.31E-02	7.11E-02	1.09E-01	4.52E-01	2.20E+01	1.17E+00	1.37E+01	3.30E-02
BREOT-S8-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	3.12E+01	1.80E-01	NA	NA	NA	NA	5.36E-04	5.20E+01	2.79E-02	7.11E-02	1.09E-01	1.35E-01	2.20E+01	1.17E+00	1.37E+01	9.88E-03
BREOT-S9-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	7.15E+01	4.12E-01	NA	NA	NA	NA	5.36E-04	1.19E+02	6.38E-02	7.11E-02	1.09E-01	3.10E-01	2.20E+01	1.17E+00	1.37E+01	2.26E-02
BREOT-N10-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	6.40E+02	3.69E+00	NA	NA	NA	NA	5.36E-04	1.07E+03	5.71E-01	7.11E-02	1.09E-01	2.77E+00	2.20E+01	1.17E+00	1.37E+01	2.02E-01
BREOT-N11-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.76E+02	1.01E+00	NA	NA	NA	NA	5.36E-04	2.92E+02	1.57E-01	7.11E-02	1.09E-01	7.60E-01	2.20E+01	1.17E+00	1.37E+01	5.55E-02
BREOT-S11-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	6.07E+01	3.50E-01	NA	NA	NA	NA	5.36E-04	1.01E+02	5.41E-02	7.11E-02	1.09E-01	2.63E-01	2.20E+01	1.17E+00	1.37E+01	1.92E-02
BREOT-N12-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	6.59E+01	3.80E-01	NA	NA	NA	NA	5.36E-04	1.10E+02	5.87E-02	7.11E-02	1.09E-01	2.85E-01	2.20E+01	1.17E+00	1.37E+01	2.08E-02
BREOT-S12-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	6.63E+01	3.82E-01	NA	NA	NA	NA	5.36E-04	1.10E+02	5.91E-02	7.11E-02	1.09E-01	2.87E-01	2.20E+01	1.17E+00	1.37E+01	2.10E-02
BREOT-N13-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	7.55E+02	4.35E+00	NA	NA	NA	NA	5.36E-04	1.26E+03	6.73E-01	7.11E-02	1.09E-01	3.27E+00	2.20E+01	1.17E+00	1.37E+01	2.39E-01
BREOT-S13-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.09E+01	6.28E-02	NA	NA	NA	NA	5.36E-04	1.81E+01	9.72E-03	7.11E-02	1.09E-01	4.72E-02	2.20E+01	1.17E+00	1.37E+01	3.45E-03
BREOT-N14-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	9.88E+01	5.69E-01	NA	NA	NA	NA	5.36E-04	1.64E+02	8.81E-02	7.11E-02	1.09E-01	4.28E-01	2.20E+01	1.17E+00	1.37E+01	3.13E-02
BREOT-S14-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	4.26E+02	2.45E+00	NA	NA	NA	NA	5.36E-04	7.08E+02	3.80E-01	7.11E-02	1.09E-01	1.84E+00	2.20E+01	1.17E+00	1.37E+01	1.35E-01
BREOT-N15-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.94E+02	1.12E+00	NA	NA	NA	NA	5.36E-04	3.23E+02	1.73E-01	7.11E-02	1.09E-01	8.41E-01	2.20E+01	1.17E+00	1.37E+01	6.14E-02
BREOT-N16-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.21E+02	7.00E-01	NA	NA	NA	NA	5.36E-04	2.02E+02	1.08E-01	7.11E-02	1.09E-01	5.26E-01	2.20E+01	1.17E+00	1.37E+01	3.84E-02
BREOT-S16-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.95E+01	1.12E-01	NA	NA	NA	NA	5.36E-04	3.24E+01	1.74E-02	7.11E-02	1.09E-01	8.44E-02	2.20E+01	1.17E+00	1.37E+01	6.16E-03
BREOT-N17-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.16E+02	6.71E-01	NA	NA	NA	NA	5.36E-04	1.94E+02	1.04E-01	7.11E-02	1.09E-01	5.04E-01	2.20E+01	1.17E+00	1.37E+01	3.68E-02
BREOT-S17-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.32E+02	7.60E-01	NA	NA	NA	NA	5.36E-04	2.20E+02	1.18E-01	7.11E-02	1.09E-01	5.72E-01	2.20E+01	1.17E+00	1.37E+01	4.17E-02
BREOT-N18-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.02E+02	5.86E-01	NA	NA	NA	NA	5.36E-04	1.69E+02	9.07E-02	7.11E-02	1.09E-01	4.41E-01	2.20E+01	1.17E+00	1.37E+01	3.22E-02
BREOT-S18-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	2.98E+02	1.72E+00	NA	NA	NA	NA	5.36E-04	4.96E+02	2.66E-01	7.11E-02	1.09E-01	1.29E+00	2.20E+01	1.17E+00	1.37E+01	9.43E-02
BREOT-N19-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.45E+02	8.37E-01	NA	NA	NA	NA	5.36E-04	2.42E+02	1.30E-01	7.11E-02	1.09E-01	6.29E-01	2.20E+01	1.17E+00	1.37E+01	4.60E-02
BREOT-S19-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	3.63E+01	2.09E-01	NA	NA	NA	NA	5.36E-04	6.03E+01	3.23E-02	7.11E-02	1.09E-01	1.57E-01	2.20E+01	1.17E+00	1.37E+01	1.15E-02
BREOT-N20-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.04E+02	5.97E-01	NA	NA	NA	NA	5.36E-04	1.72E+02	9.23E-02	7.11E-02	1.09E-01	4.48E-01	2.20E+01	1.17E+00	1.37E+01	3.28E-02
BREOT-S20-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	3.23E+01	1.86E-01	NA	NA	NA	NA	5.36E-04	5.38E+01	2.88E-02	7.11E-02	1.09E-01	1.40E-01	2.20E+01	1.17E+00	1.37E+01	1.02E-02
BREOT-N21-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	2.89E+02	1.67E+00	NA	NA	NA	NA	5.36E-04	4.81E+02	2.58E-01	7.11E-02	1.09E-01	1.25E+00	2.20E+01	1.17E+00	1.37E+01	9.15E-02
BREOT-S21-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.11E+02	6.38E-01	NA	NA	NA	NA	5.36E-04	1.84E+02	9.88E-02	7.11E-02	1.09E-01	4.80E-01	2.20E+01	1.17E+00	1.37E+01	3.50E-02
BREOT-N22-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.25E+02	7.20E-01	NA	NA	NA	NA	5.36E-04	2.08E+02	1.11E-01	7.11E-02	1.09E-01	5.41E-01	2.20E+01	1.17E+00	1.37E+01	3.95E-02
BREOT-S22-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.12E+02	6.43E-01	NA	NA	NA	NA	5.36E-04	1.86E+02	9.96E-02	7.11E-02	1.09E-01	4.84E-01	2.20E+01	1.17E+00	1.37E+01	3.53E-02
BREOT-N23-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.25E+02	7.19E-01	NA	NA	NA	NA	5.36E-04	2.08E+02	1.11E-01	7.11E-02	1.09E-01	5.40E-01	2.20E+01	1.17E+00	1.37E+01	3.95E-02
BREOT-S23-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.42E+02	8.17E-01	NA	NA	NA	NA	5.36E-04	2.36E+02	1.26E-01	7.11E-02	1.09E-01	6.14E-01	2.20E+01	1.17E+00	1.37E+01	4.48E-02
BREOT-N24-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.39E+02	8.01E-01	NA	NA	NA	NA	5.36E-04	2.31E+02	1.24E-01	7.11E-02	1.09E-01	6.02E-01	2.20E+01	1.17E+00	1.37E+01	4.40E-02
BREOT-S24-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	8.82E+01	5.08E-01	NA	NA	NA	NA	5.36E-04	1.47E+02	7.86E-02	7.11E-02	1.09E-01	3.82E-01	2.20E+01	1.17E+00	1.37E+01	2.79E-02
BREOT-N25-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.32E+02	7.60E-01	NA	NA	NA	NA	5.36E-04	2.19E+02	1.18E-01	7.11E-02	1.09E-01	5.71E-01	2.20E+01	1.17E+00	1.37E+01	4.17E-02
BREOT-S25-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	7.77E+01	4.48E-01	NA	NA	NA	NA	5.36E-04	1.29E+02	6.92E-02	7.11E-02	1.09E-01	3.36E-01	2.20E+01	1.17E+00	1.37E+01	2.46E-02
BREOT-N26-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	2.84E+02	1.64E+00	NA	NA	NA	NA	5.36E-04	4.72E+02	2.53E-01	7.11E-02	1.09E-01	1.23E+00	2.20E+01	1.17E+00	1.37E+01	8.98E-02
BREOT-S26-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	8.45E+01	4.87E-01	NA	NA	NA	NA	5.36E-04	1.41E+02	7.53E-02	7.11E-02	1.09E-01	3.66E-01	2.20E+01	1.17E+00	1.37E+01	2.67E-02
BREOT-N27-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	2.80E+02	1.61E+00	NA	NA	NA	NA	5.36E-04	4.65E+02	2.49E-01	7.11E-02	1.09E-01	1.21E+00	2.20E+01	1.17E+00	1.37E+01	8.85E-02
BREOT-S27-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.26E+02	7.24E-01	NA	NA	NA	NA	5.36E-04	2.09E+02	1.12E-01	7.11E-02	1.09E-01	5.44E-01	2.20E+01	1.17E+00	1.37E+01	3.97E-02
Mourning Dove (Herbivorous Birds - Terrestrial)																							
BREOT-N28-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	7.44E+01	4.28E-01	NA	NA	NA	NA	5.36E-04	1.24E+02	6.63E-02	7.11E-02	1.09E-01	3.22E-01	2.20E+01	1.17E+00	1.37E+01	2.35E-02
BREOT-S28-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	6.94E+01	4.00E-01	NA	NA	NA	NA	5.36E-04	1.16E+02	6.19E-02	7.11E-02	1.09E-01	3.01E-01	2.20E+01	1.17E+00	1.37E+01	2.20E-02
BREOT-S29-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.02E+01	5.87E-02	NA	NA	NA	NA	5.36E-04	1.70E+01	9.09E-03	7.11E-02	1.09E-01	4.42E-02	2.20E+01	1.17E+00	1.37E+01	3.23E-03
BREOT-N30-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	2.65E+02	1.53E+00	NA	NA	NA	NA	5.36E-04	4.41E+02	2.36E-01	7.11E-02	1.09E-01	1.15E+00	2.20E+01	1.17E+00	1.37E+01	8.38E-02
BREOT-S30-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	7.45E+00	4.29E-02	NA	NA	NA	NA	5.36E-04	1.24E+01	6.64E-03	7.11E-02	1.09E-01	3.22E-02	2.20E+01	1.17E+00	1.37E+01	2.36E-03
BREOT-N31-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	6.50E+01	3.75E-01	NA	NA	NA	NA	5.36E-04	1.08E+02	5.80E-02	7.11E-02	1.09E-01	2.82E-01	2.20E+01	1.17E+00	1.37E+01	2.06E-02

TABLE C-2A: ARSENIC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 18.41

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
BREOT-S31-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	6.83E+00	3.94E-02	NA	NA	NA	NA	5.36E-04	1.14E+01	6.09E-03	7.11E-02	1.09E-01	2.96E-02	2.20E+01	1.17E+00	1.37E+01	2.16E-03
BREOT-N32-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	8.45E+01	4.87E-01	NA	NA	NA	NA	5.36E-04	1.41E+02	7.54E-02	7.11E-02	1.09E-01	3.66E-01	2.20E+01	1.17E+00	1.37E+01	2.67E-02
BREOT-S32-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	5.28E+01	3.04E-01	NA	NA	NA	NA	5.36E-04	8.79E+01	4.71E-02	7.11E-02	1.09E-01	2.29E-01	2.20E+01	1.17E+00	1.37E+01	1.67E-02
BREOT-N33-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	9.88E+00	5.69E-02	NA	NA	NA	NA	5.36E-04	1.64E+01	8.81E-03	7.11E-02	1.09E-01	4.28E-02	2.20E+01	1.17E+00	1.37E+01	3.13E-03
BREOT-S33-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	5.03E+01	2.90E-01	NA	NA	NA	NA	5.36E-04	8.37E+01	4.49E-02	7.11E-02	1.09E-01	2.18E-01	2.20E+01	1.17E+00	1.37E+01	1.59E-02
BREOT-N34-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.50E+01	8.62E-02	NA	NA	NA	NA	5.36E-04	2.49E+01	1.33E-02	7.11E-02	1.09E-01	6.48E-02	2.20E+01	1.17E+00	1.37E+01	4.73E-03
BREOT-S34-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	8.33E+01	4.80E-01	NA	NA	NA	NA	5.36E-04	1.39E+02	7.43E-02	7.11E-02	1.09E-01	3.61E-01	2.20E+01	1.17E+00	1.37E+01	2.64E-02
BREOT-N35-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.49E+01	8.56E-02	NA	NA	NA	NA	5.36E-04	2.47E+01	1.33E-02	7.11E-02	1.09E-01	6.44E-02	2.20E+01	1.17E+00	1.37E+01	4.70E-03
BREOT-S35-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	6.59E+01	3.80E-01	NA	NA	NA	NA	5.36E-04	1.10E+02	5.87E-02	7.11E-02	1.09E-01	2.85E-01	2.20E+01	1.17E+00	1.37E+01	2.08E-02
BREOT-N36-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.30E+02	7.48E-01	NA	NA	NA	NA	5.36E-04	2.16E+02	1.16E-01	7.11E-02	1.09E-01	5.62E-01	2.20E+01	1.17E+00	1.37E+01	4.10E-02
BREOT-S36-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	9.64E+01	5.55E-01	NA	NA	NA	NA	5.36E-04	1.60E+02	8.59E-02	7.11E-02	1.09E-01	4.17E-01	2.20E+01	1.17E+00	1.37E+01	3.05E-02
BREOT-N37-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	5.11E+01	2.94E-01	NA	NA	NA	NA	5.36E-04	8.50E+01	4.56E-02	7.11E-02	1.09E-01	2.21E-01	2.20E+01	1.17E+00	1.37E+01	1.62E-02
BREOT-S37-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	9.08E+01	5.23E-01	NA	NA	NA	NA	5.36E-04	1.51E+02	8.10E-02	7.11E-02	1.09E-01	3.93E-01	2.20E+01	1.17E+00	1.37E+01	2.87E-02
BREOT-N38-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.10E+01	6.32E-02	NA	NA	NA	NA	5.36E-04	1.83E+01	9.78E-03	7.11E-02	1.09E-01	4.75E-02	2.20E+01	1.17E+00	1.37E+01	3.47E-03
BREOT-S38-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.87E+01	1.08E-01	NA	NA	NA	NA	5.36E-04	3.11E+01	1.67E-02	7.11E-02	1.09E-01	8.11E-02	2.20E+01	1.17E+00	1.37E+01	5.92E-03
BREOT-N39-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.19E+01	6.88E-02	NA	NA	NA	NA	5.36E-04	1.99E+01	1.06E-02	7.11E-02	1.09E-01	5.17E-02	2.20E+01	1.17E+00	1.37E+01	3.78E-03
BREOT-N40-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	2.52E+01	1.45E-01	NA	NA	NA	NA	5.36E-04	4.19E+01	2.25E-02	7.11E-02	1.09E-01	1.09E-01	2.20E+01	1.17E+00	1.37E+01	7.97E-03
BREOT-S40-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.02E+02	5.88E-01	NA	NA	NA	NA	5.36E-04	1.70E+02	9.10E-02	7.11E-02	1.09E-01	4.42E-01	2.20E+01	1.17E+00	1.37E+01	3.23E-02
BREOT-N41-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.77E+01	1.02E-01	NA	NA	NA	NA	5.36E-04	2.94E+01	1.57E-02	7.11E-02	1.09E-01	7.65E-02	2.20E+01	1.17E+00	1.37E+01	5.59E-03
BREOT-S41-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.25E+02	7.19E-01	NA	NA	NA	NA	5.36E-04	2.08E+02	1.11E-01	7.11E-02	1.09E-01	5.40E-01	2.20E+01	1.17E+00	1.37E+01	3.95E-02
BREOT-N42-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S42-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.30E+02	7.49E-01	NA	NA	NA	NA	5.36E-04	2.16E+02	1.16E-01	7.11E-02	1.09E-01	5.63E-01	2.20E+01	1.17E+00	1.37E+01	4.11E-02
BREOT-N43-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	2.11E+01	1.22E-01	NA	NA	NA	NA	5.36E-04	3.51E+01	1.88E-02	7.11E-02	1.09E-01	9.14E-02	2.20E+01	1.17E+00	1.37E+01	6.68E-03
BREOT-N44-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	3.92E+01	2.26E-01	NA	NA	NA	NA	5.36E-04	6.52E+01	3.49E-02	7.11E-02	1.09E-01	1.70E-01	2.20E+01	1.17E+00	1.37E+01	1.24E-02
BREOT-S44-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	4.39E+00	2.53E-02	NA	NA	NA	NA	5.36E-04	7.30E+00	3.91E-03	7.11E-02	1.09E-01	1.90E-02	2.20E+01	1.17E+00	1.37E+01	1.39E-03
BREOT-N45-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	5.93E+00	3.42E-02	NA	NA	NA	NA	5.36E-04	9.87E+00	5.29E-03	7.11E-02	1.09E-01	2.57E-02	2.20E+01	1.17E+00	1.37E+01	1.88E-03
BREOT-S45-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.45E+01	8.35E-02	NA	NA	NA	NA	5.36E-04	2.41E+01	1.29E-02	7.11E-02	1.09E-01	6.27E-02	2.20E+01	1.17E+00	1.37E+01	4.58E-03
BREOT-N46-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	5.75E+00	3.31E-02	NA	NA	NA	NA	5.36E-04	9.56E+00	5.12E-03	7.11E-02	1.09E-01	2.49E-02	2.20E+01	1.17E+00	1.37E+01	1.82E-03
BREOT-S46-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	2.74E+01	1.58E-01	NA	NA	NA	NA	5.36E-04	4.55E+01	2.44E-02	7.11E-02	1.09E-01	1.19E-01	2.20E+01	1.17E+00	1.37E+01	8.66E-03
BREOT-N47-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	5.26E+00	3.03E-02	NA	NA	NA	NA	5.36E-04	8.75E+00	4.69E-03	7.11E-02	1.09E-01	2.28E-02	2.20E+01	1.17E+00	1.37E+01	1.66E-03
BREOT-S47-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.22E+01	7.03E-02	NA	NA	NA	NA	5.36E-04	2.03E+01	1.09E-02	7.11E-02	1.09E-01	5.28E-02	2.20E+01	1.17E+00	1.37E+01	3.86E-03
BREOT-N48-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	6.77E+00	3.90E-02	NA	NA	NA	NA	5.36E-04	1.13E+01	6.03E-03	7.11E-02	1.09E-01	2.93E-02	2.20E+01	1.17E+00	1.37E+01	2.14E-03
BREOT-S48-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	3.85E+01	2.22E-01	NA	NA	NA	NA	5.36E-04	6.41E+01	3.44E-02	7.11E-02	1.09E-01	1.67E-01	2.20E+01	1.17E+00	1.37E+01	1.22E-02
BREOT-N49-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.82E+01	1.05E-01	NA	NA	NA	NA	5.36E-04	3.02E+01	1.62E-02	7.11E-02	1.09E-01	7.87E-02	2.20E+01	1.17E+00	1.37E+01	5.74E-03
BREOT-S49-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	5.10E+00	2.94E-02	NA	NA	NA	NA	5.36E-04	8.49E+00	4.55E-03	7.11E-02	1.09E-01	2.21E-02	2.20E+01	1.17E+00	1.37E+01	1.61E-03
BREOT-S50-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.51E+01	8.72E-02	NA	NA	NA	NA	5.36E-04	2.52E+01	1.35E-02	7.11E-02	1.09E-01	6.55E-02	2.20E+01	1.17E+00	1.37E+01	4.79E-03
BREOT-N51-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	3.42E+01	1.97E-01	NA	NA	NA	NA	5.36E-04	5.69E+01	3.05E-02	7.11E-02	1.09E-01	1.48E-01	2.20E+01	1.17E+00	1.37E+01	1.08E-02
BREOT-S51-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.48E+01	8.52E-02	NA	NA	NA	NA	5.36E-04	2.46E+01	1.32E-02	7.11E-02	1.09E-01	6.40E-02	2.20E+01	1.17E+00	1.37E+01	4.68E-03
BREOT-N52-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	4.34E+00	2.50E-02	NA	NA	NA	NA	5.36E-04	7.22E+00	3.87E-03	7.11E-02	1.09E-01	1.88E-02	2.20E+01	1.17E+00	1.37E+01	1.37E-03
BREOT-S52-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	4.24E+00	2.44E-02	NA	NA	NA	NA	5.36E-04	7.06E+00	3.78E-03	7.11E-02	1.09E-01	1.84E-02	2.20E+01	1.17E+00	1.37E+01	1.34E-03
BREOT-N53-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	5.92E+00	3.41E-02	NA	NA	NA	NA	5.36E-04	9.85E+00	5.28E-03	7.11E-02	1.09E-01	2.56E-02	2.20E+01	1.17E+00	1.37E+01	1.87E-03
BREOT-S53-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.05E+01	6.06E-02	NA	NA	NA	NA	5.36E-04	1.75E+01	9.37E-03	7.11E-02	1.09E-01	4.55E-02	2.20E+01	1.17E+00	1.37E+01	3.32E-03
BREOT-N54-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	6.43E+00	3.71E-02	NA	NA	NA	NA	5.36E-04	1.07E+01	5.74E-03	7.11E-02	1.09E-01	2.79E-02	2.20E+01	1.17E+00	1.37E+01	2.04E-03
BREOT-S54-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	4.77E+00	2.75E-02	NA	NA	NA	NA	5.36E-04	7.94E+00	4.25E-03	7.11E-02	1.09E-01	2.07E-02	2.20E+01	1.17E+00	1.37E+01	1.51E-03
BREOT-N55-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	5.33E+00	3.07E-02	NA	NA	NA	NA	5.36E-04	8.86E+00	4.75E-03	7.11E-02	1.09E-01	2.31E-02	2.20E+01	1.17E+00	1.37E+01	1.68E-03
BREOT-S55-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	5.39E+00	3.10E-02	NA	NA	NA	NA	5.36E-04	8.96E+00	4.80E-03	7.11E-02	1.09E-01	2.33E-02	2.20E+01	1.17E+00	1.37E+01	1.70E-03
BREOT-N56-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	5.03E+01	2.90E-01	NA	NA	NA	NA	5.36E-04	8.38E+01	4.49E-02	7.11E-02	1.09E-01	2.18E-01	2.20E+01	1.17E+00	1.37E+01	1.59E-02
BREOT-N57-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	6.46E+00	3.72E-02	NA	NA	NA	NA	5.36E-04	1.07E+01	5.76E-03	7.11E-02	1.09E-01	2.80E-02	2.20E+01	1.17E+00	1.37E+01	2.04E-03
BREOT-S43-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.21E+01	6.95E-02	NA	NA	NA	NA	5.36E-04	2.01E+01	1.07E-02	7.11E-02	1.09E-01	5.22E-02	2.20E+01	1.17E+00	1.37E+01	3.81E-03

TABLE C-2A: ARSENIC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **18.41**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Mourning Dove (Herbivorous Birds - Terrestrial)																							
BREOT-S57-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	2.37E+01	1.36E-01	NA	NA	NA	NA	5.36E-04	3.94E+01	2.11E-02	7.11E-02	1.09E-01	1.03E-01	2.20E+01	1.17E+00	1.37E+01	7.49E-03
BREOT-N58-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.25E+01	7.20E-02	NA	NA	NA	NA	5.36E-04	2.08E+01	1.11E-02	7.11E-02	1.09E-01	5.41E-02	2.20E+01	1.17E+00	1.37E+01	3.95E-03
BREOT-S58-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.45E+01	8.33E-02	NA	NA	NA	NA	5.36E-04	2.41E+01	1.29E-02	7.11E-02	1.09E-01	6.26E-02	2.20E+01	1.17E+00	1.37E+01	4.57E-03
BREOT-N59-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	2.09E+01	1.20E-01	NA	NA	NA	NA	5.36E-04	3.48E+01	1.86E-02	7.11E-02	1.09E-01	9.05E-02	2.20E+01	1.17E+00	1.37E+01	6.61E-03
BREOT-N60-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.19E+01	6.83E-02	NA	NA	NA	NA	5.36E-04	1.97E+01	1.06E-02	7.11E-02	1.09E-01	5.13E-02	2.20E+01	1.17E+00	1.37E+01	3.75E-03
BREOT-S60-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	4.89E+01	2.82E-01	NA	NA	NA	NA	5.36E-04	8.13E+01	4.36E-02	7.11E-02	1.09E-01	2.12E-01	2.20E+01	1.17E+00	1.37E+01	1.55E-02
BREOT-S61-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	5.42E+00	3.12E-02	NA	NA	NA	NA	5.36E-04	9.02E+00	4.83E-03	7.11E-02	1.09E-01	2.35E-02	2.20E+01	1.17E+00	1.37E+01	1.71E-03
BREOT-N62-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.10E+01	6.33E-02	NA	NA	NA	NA	5.36E-04	1.83E+01	9.80E-03	7.11E-02	1.09E-01	4.76E-02	2.20E+01	1.17E+00	1.37E+01	3.48E-03
BREOT-S62-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	5.62E+00	3.24E-02	NA	NA	NA	NA	5.36E-04	9.35E+00	5.01E-03	7.11E-02	1.09E-01	2.43E-02	2.20E+01	1.17E+00	1.37E+01	1.78E-03
BREOT-N63-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	3.35E+01	1.93E-01	NA	NA	NA	NA	5.36E-04	5.57E+01	2.98E-02	7.11E-02	1.09E-01	1.45E-01	2.20E+01	1.17E+00	1.37E+01	1.06E-02
BREOT-S63-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.77E+01	1.02E-01	NA	NA	NA	NA	5.36E-04	2.94E+01	1.58E-02	7.11E-02	1.09E-01	7.65E-02	2.20E+01	1.17E+00	1.37E+01	5.59E-03
BREOT-N64-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	5.23E+00	3.01E-02	NA	NA	NA	NA	5.36E-04	8.70E+00	4.66E-03	7.11E-02	1.09E-01	2.26E-02	2.20E+01	1.17E+00	1.37E+01	1.65E-03
BREOT-S64-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	6.48E+00	3.73E-02	NA	NA	NA	NA	5.36E-04	1.08E+01	5.78E-03	7.11E-02	1.09E-01	2.81E-02	2.20E+01	1.17E+00	1.37E+01	2.05E-03
BREOT-N66-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	2.23E+01	1.28E-01	NA	NA	NA	NA	5.36E-04	3.70E+01	1.98E-02	7.11E-02	1.09E-01	9.64E-02	2.20E+01	1.17E+00	1.37E+01	7.04E-03
BREOT-S66-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.11E+01	6.39E-02	NA	NA	NA	NA	5.36E-04	1.85E+01	9.89E-03	7.11E-02	1.09E-01	4.80E-02	2.20E+01	1.17E+00	1.37E+01	3.51E-03
BREOT-N67-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	5.11E+01	2.94E-01	NA	NA	NA	NA	5.36E-04	8.50E+01	4.56E-02	7.11E-02	1.09E-01	2.21E-01	2.20E+01	1.17E+00	1.37E+01	1.62E-02
BREOT-S67-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	4.75E+00	2.74E-02	NA	NA	NA	NA	5.36E-04	7.90E+00	4.23E-03	7.11E-02	1.09E-01	2.06E-02	2.20E+01	1.17E+00	1.37E+01	1.50E-03
Outside Tailings																						**Maximum HQ (At Edge of Tailings)**	**2.39E-01**
BREOT-S0+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	2.25E+01	1.30E-01	NA	NA	NA	NA	5.36E-04	3.75E+01	2.01E-02	7.11E-02	1.09E-01	9.76E-02	2.20E+01	1.17E+00	1.37E+01	7.13E-03
BREOT-S1+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	5.89E+00	3.40E-02	NA	NA	NA	NA	5.36E-04	9.81E+00	5.25E-03	7.11E-02	1.09E-01	2.55E-02	2.20E+01	1.17E+00	1.37E+01	1.86E-03
BREOT-S2+95 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.37E+01	7.90E-02	NA	NA	NA	NA	5.36E-04	2.28E+01	1.22E-02	7.11E-02	1.09E-01	5.94E-02	2.20E+01	1.17E+00	1.37E+01	4.34E-03
BREOT-S3+6 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	6.28E+00	3.62E-02	NA	NA	NA	NA	5.36E-04	1.05E+01	5.60E-03	7.11E-02	1.09E-01	2.72E-02	2.20E+01	1.17E+00	1.37E+01	1.99E-03
BREOT-S4+10 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.23E+01	7.06E-02	NA	NA	NA	NA	5.36E-04	2.04E+01	1.09E-02	7.11E-02	1.09E-01	5.31E-02	2.20E+01	1.17E+00	1.37E+01	3.88E-03
BREOT-S6+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.74E+01	1.00E-01	NA	NA	NA	NA	5.36E-04	2.90E+01	1.55E-02	7.11E-02	1.09E-01	7.54E-02	2.20E+01	1.17E+00	1.37E+01	5.51E-03
BREOT-S8+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	2.09E+01	1.20E-01	NA	NA	NA	NA	5.36E-04	3.47E+01	1.86E-02	7.11E-02	1.09E-01	9.04E-02	2.20E+01	1.17E+00	1.37E+01	6.60E-03
BREOT-N10+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.25E+01	7.20E-02	NA	NA	NA	NA	5.36E-04	2.08E+01	1.11E-02	7.11E-02	1.09E-01	5.41E-02	2.20E+01	1.17E+00	1.37E+01	3.95E-03
BREOT-N11+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	6.18E+00	3.56E-02	NA	NA	NA	NA	5.36E-04	1.03E+01	5.51E-03	7.11E-02	1.09E-01	2.68E-02	2.20E+01	1.17E+00	1.37E+01	1.95E-03
BREOT-N12+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	7.76E+00	4.47E-02	NA	NA	NA	NA	5.36E-04	1.29E+01	6.92E-03	7.11E-02	1.09E-01	3.36E-02	2.20E+01	1.17E+00	1.37E+01	2.45E-03
BREOT-S12+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.53E+02	8.81E-01	NA	NA	NA	NA	5.36E-04	2.54E+02	1.36E-01	7.11E-02	1.09E-01	6.62E-01	2.20E+01	1.17E+00	1.37E+01	4.83E-02
BREOT-S12+60 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	5.12E+01	2.95E-01	NA	NA	NA	NA	5.36E-04	8.51E+01	4.56E-02	7.11E-02	1.09E-01	2.22E-01	2.20E+01	1.17E+00	1.37E+01	1.62E-02
BREOT-N13+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	7.78E+00	4.48E-02	NA	NA	NA	NA	5.36E-04	1.30E+01	6.94E-03	7.11E-02	1.09E-01	3.37E-02	2.20E+01	1.17E+00	1.37E+01	2.46E-03
BREOT-S13+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.11E+02	6.41E-01	NA	NA	NA	NA	5.36E-04	1.85E+02	9.92E-02	7.11E-02	1.09E-01	4.82E-01	2.20E+01	1.17E+00	1.37E+01	3.52E-02
BREOT-S13+65 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	6.22E+01	3.58E-01	NA	NA	NA	NA	5.36E-04	1.03E+02	5.54E-02	7.11E-02	1.09E-01	2.69E-01	2.20E+01	1.17E+00	1.37E+01	1.97E-02
BREOT-N14+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	2.38E+01	1.37E-01	NA	NA	NA	NA	5.36E-04	3.95E+01	2.12E-02	7.11E-02	1.09E-01	1.03E-01	2.20E+01	1.17E+00	1.37E+01	7.52E-03
BREOT-S14+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	4.20E+02	2.42E+00	NA	NA	NA	NA	5.36E-04	6.99E+02	3.74E-01	7.11E-02	1.09E-01	1.82E+00	2.20E+01	1.17E+00	1.37E+01	1.33E-01
BREOT-S14+59 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	6.04E+01	3.48E-01	NA	NA	NA	NA	5.36E-04	1.00E+02	5.38E-02	7.11E-02	1.09E-01	2.62E-01	2.20E+01	1.17E+00	1.37E+01	1.91E-02
BREOT-N15+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	6.28E+01	3.62E-01	NA	NA	NA	NA	5.36E-04	1.04E+02	5.60E-02	7.11E-02	1.09E-01	2.72E-01	2.20E+01	1.17E+00	1.37E+01	1.99E-02
BREOT-N15+50 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	5.32E+00	3.06E-02	NA	NA	NA	NA	5.36E-04	8.85E+00	4.74E-03	7.11E-02	1.09E-01	2.30E-02	2.20E+01	1.17E+00	1.37E+01	1.68E-03
BREOT-S16+20 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	9.47E+01	5.45E-01	NA	NA	NA	NA	5.36E-04	1.58E+02	8.44E-02	7.11E-02	1.09E-01	4.10E-01	2.20E+01	1.17E+00	1.37E+01	2.99E-02
BREOT-S16+75 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.60E+01	9.25E-02	NA	NA	NA	NA	5.36E-04	2.67E+01	1.43E-02	7.11E-02	1.09E-01	6.95E-02	2.20E+01	1.17E+00	1.37E+01	5.08E-03
BREOT-N17+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	9.82E+01	5.66E-01	NA	NA	NA	NA	5.36E-04	1.63E+02	8.75E-02	7.11E-02	1.09E-01	4.25E-01	2.20E+01	1.17E+00	1.37E+01	3.11E-02
BREOT-S18+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	2.88E+01	1.66E-01	NA	NA	NA	NA	5.36E-04	4.80E+01	2.57E-02	7.11E-02	1.09E-01	1.25E-01	2.20E+01	1.17E+00	1.37E+01	9.12E-03
BREOT-N19+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	4.50E+00	2.59E-02	NA	NA	NA	NA	5.36E-04	7.49E+00	4.01E-03	7.11E-02	1.09E-01	1.95E-02	2.20E+01	1.17E+00	1.37E+01	1.42E-03
BREOT-S19+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	2.50E+02	1.44E+00	NA	NA	NA	NA	5.36E-04	4.16E+02	2.23E-01	7.11E-02	1.09E-01	1.08E+00	2.20E+01	1.17E+00	1.37E+01	7.92E-02
BREOT-S19+85 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	9.44E+00	5.44E-02	NA	NA	NA	NA	5.36E-04	1.57E+01	8.41E-03	7.11E-02	1.09E-01	4.09E-02	2.20E+01	1.17E+00	1.37E+01	2.98E-03
BREOT-N20+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	7.36E+00	4.24E-02	NA	NA	NA	NA	5.36E-04	1.22E+01	6.56E-03	7.11E-02	1.09E-01	3.19E-02	2.20E+01	1.17E+00	1.37E+01	2.33E-03
BREOT-S20+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	3.56E+02	2.05E+00	NA	NA	NA	NA	5.36E-04	5.92E+02	3.17E-01	7.11E-02	1.09E-01	1.54E+00	2.20E+01	1.17E+00	1.37E+01	1.13E-01
BREOT-S20+75 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N21+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.25E+02	7.19E-01	NA	NA	NA	NA	5.36E-04	2.08E+02	1.11E-01	7.11E-02	1.09E-01	5.40E-01	2.20E+01	1.17E+00	1.37E+01	3.95E-02
BREOT-S21+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	2.14E+02	1.23E+00	NA	NA	NA	NA	5.36E-04	3.56E+02	1.91E-01	7.11E-02	1.09E-01	9.27E-01	2.20E+01	1.17E+00	1.37E+01	6.77E-02
BREOT-N22+150 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	4.99E+00	2.87E-02	NA	NA	NA	NA	5.36E-04	8.30E+00	4.45E-03	7.11E-02	1.09E-01	2.16E-02	2.20E+01	1.17E+00	1.37E+01	1.58E-03
BREOT-N22+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	5.53E+01	3.19E-01	NA	NA	NA	NA	5.36E-04	9.20E+01	4.93E-02	7.11E-02	1.09E-01	2.39E-01	2.20E+01	1.17E+00	1.37E+01	1.75E-02
BREOT-S22+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	5.53E+01	3.18E-01	NA	NA	NA	NA	5.36E-04	9.20E+01	4.93E-02	7.11E-02	1.09E-01	2.39E-01	2.20E+01	1.17E+00	1.37E+01	1.75E-02
BREOT-N23+115 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.40E+01	8.07E-02	NA	NA	NA	NA	5.36E-04	2.33E+01	1.25E-02	7.11E-02	1.09E-01	6.06E-02	2.20E+01	1.17E+00	1.37E+01	4.43E-03
BREOT-N23+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.98E+02	1.14E+00	NA	NA	NA	NA	5.36E-04	3.29E+02	1.76E-01	7.11E-02	1.09E-01	8.56E-01	2.20E+01	1.17E+00	1.37E+01	6.25E-02

TABLE C-2A: ARSENIC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 18.41

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Mourning Dove (Herbivorous Birds - Terrestrial)																							
BREOT-S23+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	6.31E+01	3.64E-01	NA	NA	NA	NA	5.36E-04	1.05E+02	5.63E-02	7.11E-02	1.09E-01	2.73E-01	2.20E+01	1.17E+00	1.37E+01	2.00E-02
BREOT-S23+37.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.64E+01	9.45E-02	NA	NA	NA	NA	5.36E-04	2.73E+01	1.46E-02	7.11E-02	1.09E-01	7.11E-02	2.20E+01	1.17E+00	1.37E+01	5.19E-03
BREOT-N24+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	9.47E+01	5.46E-01	NA	NA	NA	NA	5.36E-04	1.58E+02	8.44E-02	7.11E-02	1.09E-01	4.10E-01	2.20E+01	1.17E+00	1.37E+01	3.00E-02
BREOT-N24+75 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.33E+01	7.65E-02	NA	NA	NA	NA	5.36E-04	2.21E+01	1.18E-02	7.11E-02	1.09E-01	5.75E-02	2.20E+01	1.17E+00	1.37E+01	4.20E-03
BREOT-S24+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	4.97E+01	2.87E-01	NA	NA	NA	NA	5.36E-04	8.28E+01	4.43E-02	7.11E-02	1.09E-01	2.15E-01	2.20E+01	1.17E+00	1.37E+01	1.57E-02
BREOT-N25+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	4.55E+00	2.62E-02	NA	NA	NA	NA	5.36E-04	7.57E+00	4.06E-03	7.11E-02	1.09E-01	1.97E-02	2.20E+01	1.17E+00	1.37E+01	1.44E-03
BREOT-S25+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	3.44E+01	1.98E-01	NA	NA	NA	NA	5.36E-04	5.72E+01	3.07E-02	7.11E-02	1.09E-01	1.49E-01	2.20E+01	1.17E+00	1.37E+01	1.09E-02
BREOT-S25+40 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	5.67E+01	3.26E-01	NA	NA	NA	NA	5.36E-04	9.43E+01	5.05E-02	7.11E-02	1.09E-01	2.45E-01	2.20E+01	1.17E+00	1.37E+01	1.79E-02
BREOT-S26+37 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.36E+01	7.83E-02	NA	NA	NA	NA	5.36E-04	2.26E+01	1.21E-02	7.11E-02	1.09E-01	5.89E-02	2.20E+01	1.17E+00	1.37E+01	4.30E-03
BREOT-N27+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	5.70E+00	3.29E-02	NA	NA	NA	NA	5.36E-04	9.49E+00	5.08E-03	7.11E-02	1.09E-01	2.47E-02	2.20E+01	1.17E+00	1.37E+01	1.80E-03
BREOT-S27+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	2.12E+01	1.22E-01	NA	NA	NA	NA	5.36E-04	3.52E+01	1.89E-02	7.11E-02	1.09E-01	9.17E-02	2.20E+01	1.17E+00	1.37E+01	6.70E-03
BREOT-N28+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	5.66E+00	3.26E-02	NA	NA	NA	NA	5.36E-04	9.43E+00	5.05E-03	7.11E-02	1.09E-01	2.45E-02	2.20E+01	1.17E+00	1.37E+01	1.79E-03
BREOT-S28+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	5.77E+01	3.33E-01	NA	NA	NA	NA	5.36E-04	9.61E+01	5.15E-02	7.11E-02	1.09E-01	2.50E-01	2.20E+01	1.17E+00	1.37E+01	1.83E-02
BREOT-N29+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	7.86E+00	4.53E-02	NA	NA	NA	NA	5.36E-04	1.31E+01	7.01E-03	7.11E-02	1.09E-01	3.40E-02	2.20E+01	1.17E+00	1.37E+01	2.49E-03
BREOT-S29+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.27E+01	7.33E-02	NA	NA	NA	NA	5.36E-04	2.12E+01	1.13E-02	7.11E-02	1.09E-01	5.51E-02	2.20E+01	1.17E+00	1.37E+01	4.02E-03
BREOT-N30+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	9.48E+00	5.46E-02	NA	NA	NA	NA	5.36E-04	1.58E+01	8.45E-03	7.11E-02	1.09E-01	4.11E-02	2.20E+01	1.17E+00	1.37E+01	3.00E-03
BREOT-S30+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.07E+01	6.17E-02	NA	NA	NA	NA	5.36E-04	1.78E+01	9.55E-03	7.11E-02	1.09E-01	4.64E-02	2.20E+01	1.17E+00	1.37E+01	3.39E-03
BREOT-N31+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.64E+02	9.45E-01	NA	NA	NA	NA	5.36E-04	2.73E+02	1.46E-01	7.11E-02	1.09E-01	7.11E-01	2.20E+01	1.17E+00	1.37E+01	5.19E-02
BREOT-N31+75 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S31+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	5.44E+00	3.13E-02	NA	NA	NA	NA	5.36E-04	9.05E+00	4.85E-03	7.11E-02	1.09E-01	2.36E-02	2.20E+01	1.17E+00	1.37E+01	1.72E-03
BREOT-N32+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	5.43E+00	3.13E-02	NA	NA	NA	NA	5.36E-04	9.04E+00	4.84E-03	7.11E-02	1.09E-01	2.35E-02	2.20E+01	1.17E+00	1.37E+01	1.72E-03
BREOT-S32+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	8.14E+01	4.69E-01	NA	NA	NA	NA	5.36E-04	1.35E+02	7.26E-02	7.11E-02	1.09E-01	3.53E-01	2.20E+01	1.17E+00	1.37E+01	2.58E-02
BREOT-S32+300 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	3.75E+01	2.16E-01	NA	NA	NA	NA	5.36E-04	6.24E+01	3.34E-02	7.11E-02	1.09E-01	1.62E-01	2.20E+01	1.17E+00	1.37E+01	1.19E-02
BREOT-N33+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	5.24E+00	3.02E-02	NA	NA	NA	NA	5.36E-04	8.72E+00	4.67E-03	7.11E-02	1.09E-01	2.27E-02	2.20E+01	1.17E+00	1.37E+01	1.66E-03
BREOT-S33+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	2.04E+01	1.18E-01	NA	NA	NA	NA	5.36E-04	3.40E+01	1.82E-02	7.11E-02	1.09E-01	8.85E-02	2.20E+01	1.17E+00	1.37E+01	6.46E-03
BREOT-N34+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	5.92E+00	3.41E-02	NA	NA	NA	NA	5.36E-04	9.85E+00	5.28E-03	7.11E-02	1.09E-01	2.56E-02	2.20E+01	1.17E+00	1.37E+01	1.87E-03
BREOT-S34+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	3.09E+01	1.78E-01	NA	NA	NA	NA	5.36E-04	5.14E+01	2.76E-02	7.11E-02	1.09E-01	1.34E-01	2.20E+01	1.17E+00	1.37E+01	9.78E-03
BREOT-N35+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.37E+01	7.87E-02	NA	NA	NA	NA	5.36E-04	2.27E+01	1.22E-02	7.11E-02	1.09E-01	5.92E-02	2.20E+01	1.17E+00	1.37E+01	4.32E-03
BREOT-S35+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.95E+01	1.12E-01	NA	NA	NA	NA	5.36E-04	3.24E+01	1.74E-02	7.11E-02	1.09E-01	8.44E-02	2.20E+01	1.17E+00	1.37E+01	6.16E-03
BREOT-N36+100 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	9.74E+00	5.61E-02	NA	NA	NA	NA	5.36E-04	1.62E+01	8.68E-03	7.11E-02	1.09E-01	4.22E-02	2.20E+01	1.17E+00	1.37E+01	3.08E-03
BREOT-N36+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.13E+02	6.51E-01	NA	NA	NA	NA	5.36E-04	1.88E+02	1.01E-01	7.11E-02	1.09E-01	4.89E-01	2.20E+01	1.17E+00	1.37E+01	3.57E-02
BREOT-S36+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	2.13E+01	1.23E-01	NA	NA	NA	NA	5.36E-04	3.55E+01	1.90E-02	7.11E-02	1.09E-01	9.24E-02	2.20E+01	1.17E+00	1.37E+01	6.75E-03
BREOT-N37+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	9.05E+00	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S37+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.75E+01	1.01E-01	NA	NA	NA	NA	5.36E-04	2.91E+01	1.56E-02	7.11E-02	1.09E-01	7.58E-02	2.20E+01	1.17E+00	1.37E+01	5.53E-03
BREOT-N38+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.46E+01	8.40E-02	NA	NA	NA	NA	5.36E-04	2.43E+01	1.30E-02	7.11E-02	1.09E-01	6.31E-02	2.20E+01	1.17E+00	1.37E+01	4.61E-03
BREOT-S38+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.69E+01	9.74E-02	NA	NA	NA	NA	5.36E-04	2.81E+01	1.51E-02	7.11E-02	1.09E-01	7.32E-02	2.20E+01	1.17E+00	1.37E+01	5.35E-03
BREOT-N39+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.32E+01	7.59E-02	NA	NA	NA	NA	5.36E-04	2.19E+01	1.18E-02	7.11E-02	1.09E-01	5.71E-02	2.20E+01	1.17E+00	1.37E+01	4.17E-03
BREOT-S39+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	2.85E+01	1.64E-01	NA	NA	NA	NA	5.36E-04	4.74E+01	2.54E-02	7.11E-02	1.09E-01	1.23E-01	2.20E+01	1.17E+00	1.37E+01	9.01E-03
BREOT-N40+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.92E+01	1.11E-01	NA	NA	NA	NA	5.36E-04	3.19E+01	1.71E-02	7.11E-02	1.09E-01	8.31E-02	2.20E+01	1.17E+00	1.37E+01	6.07E-03
BREOT-S40+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	2.33E+01	1.34E-01	NA	NA	NA	NA	5.36E-04	3.88E+01	2.08E-02	7.11E-02	1.09E-01	1.01E-01	2.20E+01	1.17E+00	1.37E+01	7.37E-03
BREOT-N41+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	8.79E+00	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S41+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	3.90E+01	2.25E-01	NA	NA	NA	NA	5.36E-04	6.49E+01	3.48E-02	7.11E-02	1.09E-01	1.69E-01	2.20E+01	1.17E+00	1.37E+01	1.23E-02
BREOT-N42+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S42+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	5.08E+00	2.93E-02	NA	NA	NA	NA	5.36E-04	8.45E+00	4.53E-03	7.11E-02	1.09E-01	2.20E-02	2.20E+01	1.17E+00	1.37E+01	1.61E-03
BREOT-N43+12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	2.37E+01	1.36E-01	NA	NA	NA	NA	5.36E-04	3.94E+01	2.11E-02	7.11E-02	1.09E-01	1.03E-01	2.20E+01	1.17E+00	1.37E+01	7.49E-03
BREOT-N43+40 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	8.21E+00	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S43+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	1.43E+01	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N44+55 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.84E+01	1.06E-01	NA	NA	NA	NA	5.36E-04	3.06E+01	1.64E-02	7.11E-02	1.09E-01	7.95E-02	2.20E+01	1.17E+00	1.37E+01	5.81E-03
BREOT-S44+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.33E+01	7.67E-02	NA	NA	NA	NA	5.36E-04	2.22E+01	1.19E-02	7.11E-02	1.09E-01	5.77E-02	2.20E+01	1.17E+00	1.37E+01	4.21E-03
BREOT-N45+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	4.79E+00	2.76E-02	NA	NA	NA	NA	5.36E-04	7.97E+00	4.27E-03	7.11E-02	1.09E-01	2.07E-02	2.20E+01	1.17E+00	1.37E+01	1.52E-03
BREOT-S45+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N46+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	2.53E+01	1.46E-01	NA	NA	NA	NA	5.36E-04	4.21E+01	2.26E-02	7.11E-02	1.09E-01	1.10E-01	2.20E+01	1.17E+00	1.37E+01	8.00E-03
BREOT-S46+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N47+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	5.78E+00	3.33E-02	NA	NA	NA	NA	5.36E-04	9.62E+00	5.15E-03	7.11E-02	1.09E-01	2.50E-02	2.20E+01	1.17E+00	1.37E+01	1.83E-03
BREOT-S47+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.25E+01	7.19E-02	NA	NA	NA	NA	5.36E-04	2.08E+01	1.11E-02	7.11E-02	1.09E-01	5.40E-02	2.20E+01	1.17E+00	1.37E+01	3.95E-03

TABLE C-2A: ARSENIC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **18.41**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Mourning Dove (Herbivorous Birds - Terrestrial)																							
BREOT-N48+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	4.73E+00	2.72E-02	NA	NA	NA	NA	5.36E-04	7.87E+00	4.21E-03	7.11E-02	1.09E-01	2.05E-02	2.20E+01	1.17E+00	1.37E+01	1.50E-03
BREOT-S48+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	2.50E+01	1.44E-01	NA	NA	NA	NA	5.36E-04	4.15E+01	2.23E-02	7.11E-02	1.09E-01	1.08E-01	2.20E+01	1.17E+00	1.37E+01	7.90E-03
BREOT-N49+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	3.50E+01	2.01E-01	NA	NA	NA	NA	5.36E-04	5.82E+01	3.12E-02	7.11E-02	1.09E-01	1.51E-01	2.20E+01	1.17E+00	1.37E+01	1.11E-02
BREOT-S49+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	5.65E+00	3.26E-02	NA	NA	NA	NA	5.36E-04	9.40E+00	5.04E-03	7.11E-02	1.09E-01	2.45E-02	2.20E+01	1.17E+00	1.37E+01	1.79E-03
BREOT-N51+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.40E+01	8.09E-02	NA	NA	NA	NA	5.36E-04	2.34E+01	1.25E-02	7.11E-02	1.09E-01	6.08E-02	2.20E+01	1.17E+00	1.37E+01	4.44E-03
BREOT-S51+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.80E+01	1.04E-01	NA	NA	NA	NA	5.36E-04	3.00E+01	1.61E-02	7.11E-02	1.09E-01	7.80E-02	2.20E+01	1.17E+00	1.37E+01	5.70E-03
BREOT-N52+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	2.81E+01	1.62E-01	NA	NA	NA	NA	5.36E-04	4.67E+01	2.50E-02	7.11E-02	1.09E-01	1.22E-01	2.20E+01	1.17E+00	1.37E+01	8.87E-03
BREOT-S52+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.57E+01	9.06E-02	NA	NA	NA	NA	5.36E-04	2.62E+01	1.40E-02	7.11E-02	1.09E-01	6.81E-02	2.20E+01	1.17E+00	1.37E+01	4.97E-03
BREOT-N53+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S53+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	5.37E+00	3.09E-02	NA	NA	NA	NA	5.36E-04	8.94E+00	4.79E-03	7.11E-02	1.09E-01	2.33E-02	2.20E+01	1.17E+00	1.37E+01	1.70E-03
BREOT-S54+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N55+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.19E+01	6.87E-02	NA	NA	NA	NA	5.36E-04	1.98E+01	1.06E-02	7.11E-02	1.09E-01	5.16E-02	2.20E+01	1.17E+00	1.37E+01	3.77E-03
BREOT-S55+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N56+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	5.48E+00	3.15E-02	NA	NA	NA	NA	5.36E-04	9.11E+00	4.88E-03	7.11E-02	1.09E-01	2.37E-02	2.20E+01	1.17E+00	1.37E+01	1.73E-03
BREOT-S56+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.37E+01	7.87E-02	NA	NA	NA	NA	5.36E-04	2.27E+01	1.22E-02	7.11E-02	1.09E-01	5.91E-02	2.20E+01	1.17E+00	1.37E+01	4.32E-03
BREOT-N57+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	4.75E+00	2.74E-02	NA	NA	NA	NA	5.36E-04	7.90E+00	4.23E-03	7.11E-02	1.09E-01	2.06E-02	2.20E+01	1.17E+00	1.37E+01	1.50E-03
BREOT-S57+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	2.08E+01	1.20E-01	NA	NA	NA	NA	5.36E-04	3.45E+01	1.85E-02	7.11E-02	1.09E-01	8.99E-02	2.20E+01	1.17E+00	1.37E+01	6.56E-03
BREOT-N58+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.39E+01	8.00E-02	NA	NA	NA	NA	5.36E-04	2.31E+01	1.24E-02	7.11E-02	1.09E-01	6.02E-02	2.20E+01	1.17E+00	1.37E+01	4.39E-03
BREOT-S58+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	5.55E+00	3.20E-02	NA	NA	NA	NA	5.36E-04	9.24E+00	4.95E-03	7.11E-02	1.09E-01	2.41E-02	2.20E+01	1.17E+00	1.37E+01	1.76E-03
BREOT-N59+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	3.22E+01	1.86E-01	NA	NA	NA	NA	5.36E-04	5.36E+01	2.87E-02	7.11E-02	1.09E-01	1.40E-01	2.20E+01	1.17E+00	1.37E+01	1.02E-02
BREOT-N60+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.48E+01	8.53E-02	NA	NA	NA	NA	5.36E-04	2.46E+01	1.32E-02	7.11E-02	1.09E-01	6.41E-02	2.20E+01	1.17E+00	1.37E+01	4.68E-03
BREOT-S60+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.60E+01	9.24E-02	NA	NA	NA	NA	5.36E-04	2.67E+01	1.43E-02	7.11E-02	1.09E-01	6.94E-02	2.20E+01	1.17E+00	1.37E+01	5.07E-03
BREOT-S61+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	4.73E+00	2.73E-02	NA	NA	NA	NA	5.36E-04	7.88E+00	4.22E-03	7.11E-02	1.09E-01	2.05E-02	2.20E+01	1.17E+00	1.37E+01	1.50E-03
BREOT-N62+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	5.55E+00	3.20E-02	NA	NA	NA	NA	5.36E-04	9.24E+00	4.95E-03	7.11E-02	1.09E-01	2.41E-02	2.20E+01	1.17E+00	1.37E+01	1.76E-03
BREOT-S62+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N63+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	4.43E+01	2.55E-01	NA	NA	NA	NA	5.36E-04	7.37E+01	3.95E-02	7.11E-02	1.09E-01	1.92E-01	2.20E+01	1.17E+00	1.37E+01	1.40E-02
BREOT-S63+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N64+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.25E+01	7.22E-02	NA	NA	NA	NA	5.36E-04	2.09E+01	1.12E-02	7.11E-02	1.09E-01	5.43E-02	2.20E+01	1.17E+00	1.37E+01	3.96E-03
BREOT-S64+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.53E+01	8.83E-02	NA	NA	NA	NA	5.36E-04	2.55E+01	1.37E-02	7.11E-02	1.09E-01	6.64E-02	2.20E+01	1.17E+00	1.37E+01	4.85E-03
BREOT-S65+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	5.83E+00	3.36E-02	NA	NA	NA	NA	5.36E-04	9.71E+00	5.20E-03	7.11E-02	1.09E-01	2.53E-02	2.20E+01	1.17E+00	1.37E+01	1.84E-03
BREOT-N66+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.79E+01	1.03E-01	NA	NA	NA	NA	5.36E-04	2.99E+01	1.60E-02	7.11E-02	1.09E-01	7.77E-02	2.20E+01	1.17E+00	1.37E+01	5.67E-03
BREOT-S66+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	2.34E+01	1.35E-01	NA	NA	NA	NA	5.36E-04	3.89E+01	2.08E-02	7.11E-02	1.09E-01	1.01E-01	2.20E+01	1.17E+00	1.37E+01	7.39E-03
BREOT-N67+125 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	3.20E+01	1.84E-01	NA	NA	NA	NA	5.36E-04	5.32E+01	2.85E-02	7.11E-02	1.09E-01	1.38E-01	2.20E+01	1.17E+00	1.37E+01	1.01E-02
BREOT-S67+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.57E+01	9.06E-02	NA	NA	NA	NA	5.36E-04	2.62E+01	1.40E-02	7.11E-02	1.09E-01	6.81E-02	2.20E+01	1.17E+00	1.37E+01	4.97E-03
BREOT-N67+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	6.27E+01	3.61E-01	NA	NA	NA	NA	5.36E-04	1.04E+02	5.59E-02	7.11E-02	1.09E-01	2.72E-01	2.20E+01	1.17E+00	1.37E+01	1.98E-02
																						Maximum HQ (Outside Tailings)	**1.33E-01**
Red-Tailed Hawk (Carnivorous Birds - Terrestrial)																							
Reference Sites																							
ACBG-1 (0-6")	9.00E-02	9.00E-02	4.84E-01	1.26E+01	1.13E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.60E+01	1.33E-01	2.64E-02	1.13E+00	2.95E-02	2.20E+01	1.17E+00	2.19E+01	1.35E-03
ACBG-2 (0-6")	9.00E-02	9.00E-02	4.84E-01	8.87E+00	7.98E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.83E+01	9.40E-02	2.64E-02	1.13E+00	2.08E-02	2.20E+01	1.17E+00	2.19E+01	9.50E-04
UBRBG-202 (0-6")	9.00E-02	9.00E-02	4.84E-01	6.74E+00	6.06E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.39E+01	7.14E-02	2.64E-02	1.13E+00	1.58E-02	2.20E+01	1.17E+00	2.19E+01	7.22E-04
UBRBG-204 (0-6")	9.00E-02	9.00E-02	4.84E-01	9.43E+00	8.49E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.95E+01	1.00E-01	2.64E-02	1.13E+00	2.21E-02	2.20E+01	1.17E+00	2.19E+01	1.01E-03
Inside Tailings																						**Minimum HQ (Reference Sites)**	**7.22E-04**
BREOT-S6-12.5 (0-6")	9.00E-02	9.00E-02	4.84E-01	9.63E+01	8.67E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.99E+02	1.02E+00	2.64E-02	1.13E+00	2.26E-01	2.20E+01	1.17E+00	2.19E+01	1.03E-02
BREOT-S2-12.5 (0-6")	9.00E-02	9.00E-02	4.84E-01	1.26E+02	1.13E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.59E+02	1.33E+00	2.64E-02	1.13E+00	2.94E-01	2.20E+01	1.17E+00	2.19E+01	1.35E-02
BREOT-S0-12.5 (0-6")	9.00E-02	9.00E-02	4.84E-01	6.18E+01	5.56E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.28E+02	6.55E-01	2.64E-02	1.13E+00	1.45E-01	2.20E+01	1.17E+00	2.19E+01	6.62E-03
BREOT-S1-12.5 (0-6")	9.00E-02	9.00E-02	4.84E-01	4.47E+01	4.03E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	9.25E+01	4.74E-01	2.64E-02	1.13E+00	1.05E-01	2.20E+01	1.17E+00	2.19E+01	4.79E-03
BREOT-S7-25 (0-6")	9.00E-02	9.00E-02	4.84E-01	5.79E+00	5.21E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.20E+01	6.14E-02	2.64E-02	1.13E+00	1.36E-02	2.20E+01	1.17E+00	2.19E+01	6.21E-04
BREOT-S8-12.5 (0-6")	9.00E-02	9.00E-02	4.84E-01	5.12E+01	4.60E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.06E+02	5.42E-01	2.64E-02	1.13E+00	1.20E-01	2.20E+01	1.17E+00	2.19E+01	5.48E-03
BREOT-S9-12.5 (0-6")	9.00E-02	9.00E-02	4.84E-01	4.88E+01	4.39E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.01E+02	5.17E-01	2.64E-02	1.13E+00	1.14E-01	2.20E+01	1.17E+00	2.19E+01	5.23E-03
BREOT-N10-12.5 (0-6")	9.00E-02	9.00E-02	4.84E-01	2.32E+02	2.09E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.80E+02	2.46E+00	2.64E-02	1.13E+00	5.44E-01	2.20E+01	1.17E+00	2.19E+01	2.49E-02
BREOT-N11-12.5 (0-6")	9.00E-02	9.00E-02	4.84E-01	1.18E+02	1.07E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.45E+02	1.26E+00	2.64E-02	1.13E+00	2.77E-01	2.20E+01	1.17E+00	2.19E+01	1.27E-02
BREOT-N11-125 (0-6")	9.00E-02	9.00E-02	4.84E-01	8.30E+01	7.47E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.72E+02	8.80E-01	2.64E-02	1.13E+00	1.95E-01	2.20E+01	1.17E+00	2.19E+01	8.90E-03
BREOT-S11-12 (0-6")	9.00E-02	9.00E-02	4.84E-01	1.36E+02	1.22E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.81E+02	1.44E+00	2.64E-02	1.13E+00	3.19E-01	2.20E+01	1.17E+00	2.19E+01	1.46E-02
BREOT-S11+63 (0-6")	9.00E-02	9.00E-02	4.84E-01	7.06E+01	6.35E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.46E+02	7.48E-01	2.64E-02	1.13E+00	1.65E-01	2.20E+01	1.17E+00	2.19E+01	7.57E-03
UBDT-TP-6 (0-2")	9.00E-02	9.00E-02	4.84E-01	3.41E+02	3.07E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	7.05E+02	3.61E+00	2.64E-02	1.13E+00	7.99E-01	2.20E+01	1.17E+00	2.19E+01	3.65E-02
UBDT-TP-6 (2-12")	9.00E-02	9.00E-02	4.84E-01	3.08E+02	2.77E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	6.37E+02	3.27E+00	2.64E-02	1.13E+00	7.22E-01	2.20E+01	1.17E+00	2.19E+01	3.30E-02

TABLE C-2A: ARSENIC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **18.41**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Red-Tailed Hawk (Carnivorous Birds - Terrestrial)																							
UBDT-TP-6 (12-24")	9.00E-02	9.00E-02	4.84E-01	2.49E+02	2.24E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.16E+02	2.64E+00	2.64E-02	1.13E+00	5.85E-01	2.20E+01	1.17E+00	2.19E+01	2.67E-02
UBDT-TP-6 (24-36")	9.00E-02	9.00E-02	4.84E-01	5.93E+01	5.34E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.23E+02	6.29E-01	2.64E-02	1.13E+00	1.39E-01	2.20E+01	1.17E+00	2.19E+01	6.36E-03
UBDT-TP-6 (36-48")	9.00E-02	9.00E-02	4.84E-01	8.71E+01	7.83E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.80E+02	9.23E-01	2.64E-02	1.13E+00	2.04E-01	2.20E+01	1.17E+00	2.19E+01	9.33E-03
UBDT-TP-6 (48-60")	9.00E-02	9.00E-02	4.84E-01	2.90E+01	2.61E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.99E+01	3.07E-01	2.64E-02	1.13E+00	6.79E-02	2.20E+01	1.17E+00	2.19E+01	3.10E-03
BREOT-N12-12.5 (0-6")	9.00E-02	9.00E-02	4.84E-01	5.58E+01	5.02E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.15E+02	5.91E-01	2.64E-02	1.13E+00	1.31E-01	2.20E+01	1.17E+00	2.19E+01	5.98E-03
BREOT-S12-12.5 (0-6")	9.00E-02	9.00E-02	4.84E-01	5.36E+01	4.82E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.11E+02	5.68E-01	2.64E-02	1.13E+00	1.26E-01	2.20E+01	1.17E+00	2.19E+01	5.74E-03
BREOT-S13-12.5 (0-6")	9.00E-02	9.00E-02	4.84E-01	1.16E+02	1.04E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.39E+02	1.23E+00	2.64E-02	1.13E+00	2.71E-01	2.20E+01	1.17E+00	2.19E+01	1.24E-02
BREOT-S14-12.5 (0-6")	9.00E-02	9.00E-02	4.84E-01	3.26E+01	2.93E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	6.74E+01	3.46E-01	2.64E-02	1.13E+00	7.64E-02	2.20E+01	1.17E+00	2.19E+01	3.49E-03
BREOT-N15-12.5 (0-6")	9.00E-02	9.00E-02	4.84E-01	1.32E+02	1.19E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.73E+02	1.40E+00	2.64E-02	1.13E+00	3.10E-01	2.20E+01	1.17E+00	2.19E+01	1.42E-02
BREOT-S15-12.5 (0-6")	9.00E-02	9.00E-02	4.84E-01	1.81E+02	1.63E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.74E+02	1.92E+00	2.64E-02	1.13E+00	4.24E-01	2.20E+01	1.17E+00	2.19E+01	1.94E-02
BREOT-N16-12.5 (0-6")	9.00E-02	9.00E-02	4.84E-01	1.06E+02	9.52E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.19E+02	1.12E+00	2.64E-02	1.13E+00	2.48E-01	2.20E+01	1.17E+00	2.19E+01	1.13E-02
BREOT-N16-25 (0-6")	9.00E-02	9.00E-02	4.84E-01	6.88E+00	6.19E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.42E+01	7.29E-02	2.64E-02	1.13E+00	1.61E-02	2.20E+01	1.17E+00	2.19E+01	7.37E-04
BREOT-S16-12.5 (0-6")	9.00E-02	9.00E-02	4.84E-01	7.16E+01	6.44E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.48E+02	7.58E-01	2.64E-02	1.13E+00	1.68E-01	2.20E+01	1.17E+00	2.19E+01	7.67E-03
BREOT-N17-12.5 (0-6")	9.00E-02	9.00E-02	4.84E-01	7.75E+01	6.97E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.60E+02	8.21E-01	2.64E-02	1.13E+00	1.82E-01	2.20E+01	1.17E+00	2.19E+01	8.30E-03
BREOT-S17-12.5 (0-6")	9.00E-02	9.00E-02	4.84E-01	3.24E+01	2.92E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	6.70E+01	3.44E-01	2.64E-02	1.13E+00	7.60E-02	2.20E+01	1.17E+00	2.19E+01	3.47E-03
BREOT-S17-25 (0-6")	9.00E-02	9.00E-02	4.84E-01	2.70E+01	2.43E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.59E+01	2.87E-01	2.64E-02	1.13E+00	6.34E-02	2.20E+01	1.17E+00	2.19E+01	2.90E-03
UBDT-TP-4 (0-2")	9.00E-02	9.00E-02	4.84E-01	8.51E+01	7.65E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.76E+02	9.02E-01	2.64E-02	1.13E+00	1.99E-01	2.20E+01	1.17E+00	2.19E+01	9.12E-03
UBDT-TP-4 (2-12")	9.00E-02	9.00E-02	4.84E-01	5.74E+01	5.16E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.19E+02	6.08E-01	2.64E-02	1.13E+00	1.34E-01	2.20E+01	1.17E+00	2.19E+01	6.15E-03
UBDT-TP-4 (12-24")	9.00E-02	9.00E-02	4.84E-01	5.06E+01	4.55E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.05E+02	5.36E-01	2.64E-02	1.13E+00	1.18E-01	2.20E+01	1.17E+00	2.19E+01	5.42E-03
UBDT-TP-4 (24-36")	9.00E-02	9.00E-02	4.84E-01	3.09E+01	2.78E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	6.38E+01	3.27E-01	2.64E-02	1.13E+00	7.23E-02	2.20E+01	1.17E+00	2.19E+01	3.31E-03
BREOT-N18-12.5 (0-6")	9.00E-02	9.00E-02	4.84E-01	1.01E+02	9.04E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.08E+02	1.07E+00	2.64E-02	1.13E+00	2.35E-01	2.20E+01	1.17E+00	2.19E+01	1.08E-02
BREOT-N18-25 (0-6")	9.00E-02	9.00E-02	4.84E-01	1.11E+01	9.95E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.29E+01	1.17E-01	2.64E-02	1.13E+00	2.59E-02	2.20E+01	1.17E+00	2.19E+01	1.19E-03
BREOT-S18-12.5 (0-6")	9.00E-02	9.00E-02	4.84E-01	5.07E+01	4.57E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.05E+02	5.38E-01	2.64E-02	1.13E+00	1.19E-01	2.20E+01	1.17E+00	2.19E+01	5.44E-03
BREOT-N19-10 (0-6")	9.00E-02	9.00E-02	4.84E-01	8.95E+01	8.05E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.85E+02	9.49E-01	2.64E-02	1.13E+00	2.10E-01	2.20E+01	1.17E+00	2.19E+01	9.59E-03
BREOT-S19-12.5 (0-6")	9.00E-02	9.00E-02	4.84E-01	3.63E+01	3.26E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	7.50E+01	3.85E-01	2.64E-02	1.13E+00	8.50E-02	2.20E+01	1.17E+00	2.19E+01	3.89E-03
UBDT-TP-5 (0-2")	9.00E-02	9.00E-02	4.84E-01	4.60E+01	4.14E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	9.52E+01	4.88E-01	2.64E-02	1.13E+00	1.08E-01	2.20E+01	1.17E+00	2.19E+01	4.93E-03
UBDT-TP-5 (2-12")	9.00E-02	9.00E-02	4.84E-01	4.47E+01	4.02E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	9.25E+01	4.74E-01	2.64E-02	1.13E+00	1.05E-01	2.20E+01	1.17E+00	2.19E+01	4.79E-03
UBDT-TP-5 (12-24")	9.00E-02	9.00E-02	4.84E-01	3.48E+01	3.13E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	7.20E+01	3.69E-01	2.64E-02	1.13E+00	8.16E-02	2.20E+01	1.17E+00	2.19E+01	3.73E-03
BREOT-N20-12.5 (0-6")	9.00E-02	9.00E-02	4.84E-01	1.18E+02	1.06E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.43E+02	1.25E+00	2.64E-02	1.13E+00	2.76E-01	2.20E+01	1.17E+00	2.19E+01	1.26E-02
UBDT-TP-3 (0-2")	9.00E-02	9.00E-02	4.84E-01	8.24E+01	7.41E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.70E+02	8.73E-01	2.64E-02	1.13E+00	1.93E-01	2.20E+01	1.17E+00	2.19E+01	8.83E-03
UBDT-TP-3 (2-12")	9.00E-02	9.00E-02	4.84E-01	7.94E+01	7.15E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.64E+02	8.42E-01	2.64E-02	1.13E+00	1.86E-01	2.20E+01	1.17E+00	2.19E+01	8.51E-03
UBDT-TP-3 (12-24")	9.00E-02	9.00E-02	4.84E-01	7.37E+01	6.63E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.52E+02	7.81E-01	2.64E-02	1.13E+00	1.73E-01	2.20E+01	1.17E+00	2.19E+01	7.90E-03
UBDT-TP-3 (24-36")	9.00E-02	9.00E-02	4.84E-01	6.59E+01	5.92E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.36E+02	6.98E-01	2.64E-02	1.13E+00	1.54E-01	2.20E+01	1.17E+00	2.19E+01	7.06E-03
UBDT-TP-3 (36-48")	9.00E-02	9.00E-02	4.84E-01	1.08E+02	9.72E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.23E+02	1.15E+00	2.64E-02	1.13E+00	2.53E-01	2.20E+01	1.17E+00	2.19E+01	1.16E-02
UBDT-TP-3 (48-60")	9.00E-02	9.00E-02	4.84E-01	2.24E+01	2.01E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.63E+01	2.37E-01	2.64E-02	1.13E+00	5.24E-02	2.20E+01	1.17E+00	2.19E+01	2.40E-03
BREOT-N21-12.5 (0-6")	9.00E-02	9.00E-02	4.84E-01	4.73E+01	4.25E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	9.77E+01	5.01E-01	2.64E-02	1.13E+00	1.11E-01	2.20E+01	1.17E+00	2.19E+01	5.06E-03
BREOT-N22-12.5 (0-6")	9.00E-02	9.00E-02	4.84E-01	8.94E+01	8.04E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.85E+02	9.48E-01	2.64E-02	1.13E+00	2.09E-01	2.20E+01	1.17E+00	2.19E+01	9.58E-03
BREOT-N23-12.5 (0-6")	9.00E-02	9.00E-02	4.84E-01	9.63E+01	8.67E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.99E+02	1.02E+00	2.64E-02	1.13E+00	2.26E-01	2.20E+01	1.17E+00	2.19E+01	1.03E-02
BREOT-S23-12.5 (0-6")	9.00E-02	9.00E-02	4.84E-01	5.49E+01	4.94E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.14E+02	5.82E-01	2.64E-02	1.13E+00	1.29E-01	2.20E+01	1.17E+00	2.19E+01	5.89E-03
UBDT-TP-2 (0-2")	9.00E-02	9.00E-02	4.84E-01	1.07E+02	9.59E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.20E+02	1.13E+00	2.64E-02	1.13E+00	2.50E-01	2.20E+01	1.17E+00	2.19E+01	1.14E-02
UBDT-TP-2 (2-12")	9.00E-02	9.00E-02	4.84E-01	5.33E+01	4.80E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.10E+02	5.65E-01	2.64E-02	1.13E+00	1.25E-01	2.20E+01	1.17E+00	2.19E+01	5.71E-03
UBDT-TP-2 (12-24")	9.00E-02	9.00E-02	4.84E-01	1.48E+01	1.33E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.06E+01	1.57E-01	2.64E-02	1.13E+00	3.47E-02	2.20E+01	1.17E+00	2.19E+01	1.59E-03
UBDT-TP-2 (24-36")	9.00E-02	9.00E-02	4.84E-01	3.10E+01	2.79E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	6.42E+01	3.29E-01	2.64E-02	1.13E+00	7.27E-02	2.20E+01	1.17E+00	2.19E+01	3.33E-03
UBDT-TP-2 (36-48")	9.00E-02	9.00E-02	4.84E-01	3.41E+01	3.07E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	7.05E+01	3.62E-01	2.64E-02	1.13E+00	8.00E-02	2.20E+01	1.17E+00	2.19E+01	3.66E-03
BREOT-S24-12.5 (0-6")	9.00E-02	9.00E-02	4.84E-01	6.83E+01	6.15E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.41E+02	7.24E-01	2.64E-02	1.13E+00	1.60E-01	2.20E+01	1.17E+00	2.19E+01	7.32E-03
BREOT-N25-50 (0-6")	9.00E-02	9.00E-02	4.84E-01	1.63E+02	1.47E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.38E+02	1.73E+00	2.64E-02	1.13E+00	3.83E-01	2.20E+01	1.17E+00	2.19E+01	1.75E-02
BREOT-N25-95 (0-6")	9.00E-02	9.00E-02	4.84E-01	1.33E+02	1.20E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.75E+02	1.41E+00	2.64E-02	1.13E+00	3.12E-01	2.20E+01	1.17E+00	2.19E+01	1.43E-02
BREOT-S25-12.5 (0-6")	9.00E-02	9.00E-02	4.84E-01	7.73E+01	6.95E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.60E+02	8.19E-01	2.64E-02	1.13E+00	1.81E-01	2.20E+01	1.17E+00	2.19E+01	8.28E-03
BREOT-S25-40 (0-6")	9.00E-02	9.00E-02	4.84E-01	5.84E+01	5.25E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.21E+02	6.19E-01	2.64E-02	1.13E+00	1.37E-01	2.20E+01	1.17E+00	2.19E+01	6.26E-03
BREOT-N26A-25 (0-6")	9.00E-02	9.00E-02	4.84E-01	8.96E+00	8.06E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.85E+01	9.50E-02	2.64E-02	1.13E+00	2.10E-02	2.20E+01	1.17E+00	2.19E+01	9.60E-04
BREOT-N26B-25 (0-6")	9.00E-02	9.00E-02	4.84E-01	5.40E+01	4.86E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.12E+02	5.72E-01	2.64E-02	1.13E+00	1.26E-01	2.20E+01	1.17E+00	2.19E+01	5.78E-03
BREOT-N26-50 (0-6")	9.00E-02	9.00E-02	4.84E-01	1.20E+02	1.08E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.48E+02	1.27E+00	2.64E-02	1.13E+00	2.81E-01	2.20E+01	1.17E+00	2.19E+01	1.29E-02
BREOT-N26-75 (0-6")	9.00E-02	9.00E-02	4.84E-01	1.03E+02	9.23E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.12E+02	1.09E+00	2.64E-02	1.13E+00	2.40E-01	2.20E+01	1.17E+00	2.19E+01	1.10E-02
BREOT-S26-12.5 (0-6")	9.00E-02	9.00E-02	4.84E-01	4.93E+01	4.44E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.02E+02	5.23E-01	2.64E-02	1.13E+00	1.16E-01	2.20E+01	1.17E+00	2.19E+01	5.28E-03
BREOT-S26-40 (0-6")	9.00E-02	9.00E-02	4.84E-01	7.11E+01	6.39E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.47E+02	7.53E-01	2.64E-02	1.13E+00	1.66E-01	2.20E+01	1.17E+00	2.19E+01	7.61E-03

TABLE C-2A: ARSENIC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 18.41

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Red-Tailed Hawk (Carnivorous Birds - Terrestrial)																							
BREOT-N27-30 (0-6")	9.00E-02	9.00E-02	4.84E-01	2.01E+02	1.81E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.15E+02	2.13E+00	2.64E-02	1.13E+00	4.70E-01	2.20E+01	1.17E+00	2.19E+01	2.15E-02
BREOT-N27-75 (0-6")	9.00E-02	9.00E-02	4.84E-01	1.99E+02	1.79E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.12E+02	2.11E+00	2.64E-02	1.13E+00	4.67E-01	2.20E+01	1.17E+00	2.19E+01	2.13E-02
BREOT-S27-12.5 (0-6")	9.00E-02	9.00E-02	4.84E-01	6.20E+01	5.58E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.28E+02	6.57E-01	2.64E-02	1.13E+00	1.45E-01	2.20E+01	1.17E+00	2.19E+01	6.64E-03
BREOT-N28-110 (0-6")	9.00E-02	9.00E-02	4.84E-01	5.59E+01	5.03E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.15E+02	5.92E-01	2.64E-02	1.13E+00	1.31E-01	2.20E+01	1.17E+00	2.19E+01	5.99E-03
BREOT-N28-55 (0-6")	9.00E-02	9.00E-02	4.84E-01	5.93E+02	5.33E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.22E+03	6.28E+00	2.64E-02	1.13E+00	1.39E+00	2.20E+01	1.17E+00	2.19E+01	6.35E-02
BREOT-S28-12.5 (0-6")	9.00E-02	9.00E-02	4.84E-01	3.85E+01	3.46E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	7.95E+01	4.08E-01	2.64E-02	1.13E+00	9.01E-02	2.20E+01	1.17E+00	2.19E+01	4.12E-03
UBDT-TP-1 (0-2")	9.00E-02	9.00E-02	4.84E-01	1.91E+02	1.72E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.94E+02	2.02E+00	2.64E-02	1.13E+00	4.47E-01	2.20E+01	1.17E+00	2.19E+01	2.04E-02
UBDT-TP-1 (2-12")	9.00E-02	9.00E-02	4.84E-01	3.32E+02	2.99E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	6.87E+02	3.52E+00	2.64E-02	1.13E+00	7.79E-01	2.20E+01	1.17E+00	2.19E+01	3.56E-02
UBDT-TP-1 (12-24")	9.00E-02	9.00E-02	4.84E-01	1.05E+02	9.43E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.17E+02	1.11E+00	2.64E-02	1.13E+00	2.46E-01	2.20E+01	1.17E+00	2.19E+01	1.12E-02
UBDT-TP-1 (24-36")	9.00E-02	9.00E-02	4.84E-01	8.01E+01	7.21E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.66E+02	8.49E-01	2.64E-02	1.13E+00	1.88E-01	2.20E+01	1.17E+00	2.19E+01	8.58E-03
UBDT-TP-1 (36-48")	9.00E-02	9.00E-02	4.84E-01	5.69E+00	5.12E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.18E+01	6.03E-02	2.64E-02	1.13E+00	1.33E-02	2.20E+01	1.17E+00	2.19E+01	6.09E-04
UBDT-TP-1 (48-60")	9.00E-02	9.00E-02	4.84E-01	6.09E+00	5.48E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.26E+01	6.45E-02	2.64E-02	1.13E+00	1.43E-02	2.20E+01	1.17E+00	2.19E+01	6.52E-04
BREOT-N29-30 (0-6")	9.00E-02	9.00E-02	4.84E-01	3.03E+02	2.72E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	6.25E+02	3.21E+00	2.64E-02	1.13E+00	7.09E-01	2.20E+01	1.17E+00	2.19E+01	3.24E-02
BREOT-S29-12.5 (0-6")	9.00E-02	9.00E-02	4.84E-01	7.36E+01	6.62E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.52E+02	7.80E-01	2.64E-02	1.13E+00	1.72E-01	2.20E+01	1.17E+00	2.19E+01	7.88E-03
BREOT-N30-12.5 (0-6")	9.00E-02	9.00E-02	4.84E-01	5.00E+01	4.50E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.03E+02	5.30E-01	2.64E-02	1.13E+00	1.17E-01	2.20E+01	1.17E+00	2.19E+01	5.36E-03
BREOT-S30-12.5 (0-6")	9.00E-02	9.00E-02	4.84E-01	7.11E+01	6.40E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.47E+02	7.54E-01	2.64E-02	1.13E+00	1.67E-01	2.20E+01	1.17E+00	2.19E+01	7.62E-03
BREOT-N31-12.5 (0-6")	9.00E-02	9.00E-02	4.84E-01	6.61E+01	5.95E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.37E+02	7.01E-01	2.64E-02	1.13E+00	1.55E-01	2.20E+01	1.17E+00	2.19E+01	7.09E-03
BREOT-S31-25 (0-6")	9.00E-02	9.00E-02	4.84E-01	4.02E+01	3.62E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	8.32E+01	4.26E-01	2.64E-02	1.13E+00	9.43E-02	2.20E+01	1.17E+00	2.19E+01	4.31E-03
BREOT-S31-5 (0-6")	9.00E-02	9.00E-02	4.84E-01	8.18E+01	7.36E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.69E+02	8.67E-01	2.64E-02	1.13E+00	1.92E-01	2.20E+01	1.17E+00	2.19E+01	8.77E-03
BREOT-N32-12.5 (0-6")	9.00E-02	9.00E-02	4.84E-01	1.47E+02	1.32E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.03E+02	1.56E+00	2.64E-02	1.13E+00	3.44E-01	2.20E+01	1.17E+00	2.19E+01	1.57E-02
BREOT-S32-6 (0-6")	9.00E-02	9.00E-02	4.84E-01	8.57E+01	7.71E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.77E+02	9.09E-01	2.64E-02	1.13E+00	2.01E-01	2.20E+01	1.17E+00	2.19E+01	9.19E-03
BREOT-N33-12.5 (0-6")	9.00E-02	9.00E-02	4.84E-01	1.40E+02	1.26E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.90E+02	1.49E+00	2.64E-02	1.13E+00	3.28E-01	2.20E+01	1.17E+00	2.19E+01	1.50E-02
BREOT-S33-12.5 (0-6")	9.00E-02	9.00E-02	4.84E-01	7.06E+00	6.35E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.46E+01	7.48E-02	2.64E-02	1.13E+00	1.65E-02	2.20E+01	1.17E+00	2.19E+01	7.57E-04
BREOT-N35-12.5 (0-6")	9.00E-02	9.00E-02	4.84E-01	3.82E+01	3.44E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	7.90E+01	4.05E-01	2.64E-02	1.13E+00	8.96E-02	2.20E+01	1.17E+00	2.19E+01	4.10E-03
BREOT-S35-12.5 (0-6")	9.00E-02	9.00E-02	4.84E-01	9.07E+01	8.16E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.87E+02	9.61E-01	2.64E-02	1.13E+00	2.12E-01	2.20E+01	1.17E+00	2.19E+01	9.72E-03
BREOT-N36-12.5 (0-6")	9.00E-02	9.00E-02	4.84E-01	7.47E+01	6.72E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.54E+02	7.92E-01	2.64E-02	1.13E+00	1.75E-01	2.20E+01	1.17E+00	2.19E+01	8.00E-03
BREOT-S36-12.5 (0-6")	9.00E-02	9.00E-02	4.84E-01	7.19E+01	6.47E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.49E+02	7.62E-01	2.64E-02	1.13E+00	1.68E-01	2.20E+01	1.17E+00	2.19E+01	7.70E-03
BREOT-N37-12.5 (0-6")	9.00E-02	9.00E-02	4.84E-01	1.07E+02	9.63E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.21E+02	1.13E+00	2.64E-02	1.13E+00	2.51E-01	2.20E+01	1.17E+00	2.19E+01	1.15E-02
BREOT-S37-12.5 (0-6")	9.00E-02	9.00E-02	4.84E-01	5.18E+01	4.66E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.07E+02	5.49E-01	2.64E-02	1.13E+00	1.21E-01	2.20E+01	1.17E+00	2.19E+01	5.55E-03
BREOT-N38-12.5 (0-6")	9.00E-02	9.00E-02	4.84E-01	4.95E+01	4.45E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.02E+02	5.25E-01	2.64E-02	1.13E+00	1.16E-01	2.20E+01	1.17E+00	2.19E+01	5.30E-03
BREOT-S38-12.5 (0-6")	9.00E-02	9.00E-02	4.84E-01	9.76E+01	8.78E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.02E+02	1.03E+00	2.64E-02	1.13E+00	2.29E-01	2.20E+01	1.17E+00	2.19E+01	1.05E-02
BREOT-N39-12.5 (0-6")	9.00E-02	9.00E-02	4.84E-01	1.21E+02	1.09E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.50E+02	1.28E+00	2.64E-02	1.13E+00	2.83E-01	2.20E+01	1.17E+00	2.19E+01	1.30E-02
BREOT-S39-12.5 (0-6")	9.00E-02	9.00E-02	4.84E-01	7.65E+01	6.88E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.58E+02	8.11E-01	2.64E-02	1.13E+00	1.79E-01	2.20E+01	1.17E+00	2.19E+01	8.20E-03
BREOT-N40-12.5 (0-6")	9.00E-02	9.00E-02	4.84E-01	7.35E+01	6.61E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.52E+02	7.79E-01	2.64E-02	1.13E+00	1.72E-01	2.20E+01	1.17E+00	2.19E+01	7.87E-03
BREOT-S40-14 (0-6")	9.00E-02	9.00E-02	4.84E-01	1.28E+02	1.15E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.64E+02	1.35E+00	2.64E-02	1.13E+00	2.99E-01	2.20E+01	1.17E+00	2.19E+01	1.37E-02
BREOT-N41-12.5 (0-6")	9.00E-02	9.00E-02	4.84E-01	1.36E+01	1.22E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.81E+01	1.44E-01	2.64E-02	1.13E+00	3.19E-02	2.20E+01	1.17E+00	2.19E+01	1.46E-03
BREOT-S41-12.5 (0-6")	9.00E-02	9.00E-02	4.84E-01	1.60E+02	1.44E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.31E+02	1.70E+00	2.64E-02	1.13E+00	3.75E-01	2.20E+01	1.17E+00	2.19E+01	1.71E-02
BREOT-N42-35 (0-6")	9.00E-02	9.00E-02	4.84E-01	5.74E+01	5.16E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.19E+02	6.08E-01	2.64E-02	1.13E+00	1.34E-01	2.20E+01	1.17E+00	2.19E+01	6.15E-03
BREOT-S42-25 (0-6")	9.00E-02	9.00E-02	4.84E-01	9.59E+01	8.63E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.98E+02	1.02E+00	2.64E-02	1.13E+00	2.25E-01	2.20E+01	1.17E+00	2.19E+01	1.03E-02
BREOT-N43-12.5 (0-6")	9.00E-02	9.00E-02	4.84E-01	8.17E+01	7.35E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.69E+02	8.66E-01	2.64E-02	1.13E+00	1.91E-01	2.20E+01	1.17E+00	2.19E+01	8.76E-03
BREOT-S43-12.5 (0-6")	9.00E-02	9.00E-02	4.84E-01	7.86E+01	7.07E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.62E+02	8.33E-01	2.64E-02	1.13E+00	1.84E-01	2.20E+01	1.17E+00	2.19E+01	8.42E-03
BREOT-N44-30 (0-6")	9.00E-02	9.00E-02	4.84E-01	5.62E+01	5.06E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.16E+02	5.96E-01	2.64E-02	1.13E+00	1.32E-01	2.20E+01	1.17E+00	2.19E+01	6.03E-03
BREOT-S44-12.5 (0-6")	9.00E-02	9.00E-02	4.84E-01	6.76E+01	6.09E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.40E+02	7.17E-01	2.64E-02	1.13E+00	1.58E-01	2.20E+01	1.17E+00	2.19E+01	7.25E-03
BREOT-N45-12.5 (0-6")	9.00E-02	9.00E-02	4.84E-01	7.97E+01	7.17E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.65E+02	8.44E-01	2.64E-02	1.13E+00	1.87E-01	2.20E+01	1.17E+00	2.19E+01	8.54E-03
BREOT-N43-12.5 (0-6")	9.00E-02	9.00E-02	4.84E-01	8.17E+01	7.35E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.69E+02	8.66E-01	2.64E-02	1.13E+00	1.91E-01	2.20E+01	1.17E+00	2.19E+01	8.76E-03
BREOT-S45-6 (0-6")	9.00E-02	9.00E-02	4.84E-01	6.36E+01	5.72E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.32E+02	6.74E-01	2.64E-02	1.13E+00	1.49E-01	2.20E+01	1.17E+00	2.19E+01	6.82E-03
BREOT-N46-12.5 (0-6")	9.00E-02	9.00E-02	4.84E-01	3.19E+01	2.87E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	6.60E+01	3.39E-01	2.64E-02	1.13E+00	7.48E-02	2.20E+01	1.17E+00	2.19E+01	3.42E-03
BREOT-S46-12.5 (0-6")	9.00E-02	9.00E-02	4.84E-01	3.10E+01	2.79E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	6.40E+01	3.28E-01	2.64E-02	1.13E+00	7.26E-02	2.20E+01	1.17E+00	2.19E+01	3.32E-03
BREOT-S46-40 (0-6")	9.00E-02	9.00E-02	4.84E-01	4.54E+01	4.08E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	9.38E+01	4.81E-01	2.64E-02	1.13E+00	1.06E-01	2.20E+01	1.17E+00	2.19E+01	4.86E-03
BREOT-N47-12.5 (0-6")	9.00E-02	9.00E-02	4.84E-01	4.68E+01	4.21E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	9.66E+01	4.96E-01	2.64E-02	1.13E+00	1.10E-01	2.20E+01	1.17E+00	2.19E+01	5.01E-03
BREOT-S47-999 (0-6")	9.00E-02	9.00E-02	4.84E-01	7.38E+01	6.64E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.52E+02	7.82E-01	2.64E-02	1.13E+00	1.73E-01	2.20E+01	1.17E+00	2.19E+01	7.90E-03
BREOT-S48-12.5 (0-6")	9.00E-02	9.00E-02	4.84E-01	2.25E+01	2.03E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.65E+01	2.39E-01	2.64E-02	1.13E+00	5.27E-02	2.20E+01	1.17E+00	2.19E+01	2.41E-03
BREOT-S49-2.5 (0-6")	9.00E-02	9.00E-02	4.84E-01	2.67E+01	2.41E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.53E+01	2.83E-01	2.64E-02	1.13E+00	6.26E-02	2.20E+01	1.17E+00	2.19E+01	2.87E-03
BREOT-S50-12.5 (0-6")	9.00E-02	9.00E-02	4.84E-01	8.36E+00	7.52E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.73E+01	8.86E-02	2.64E-02	1.13E+00	1.96E-02	2.20E+01	1.17E+00	2.19E+01	8.96E-04
BREOT-S50-25 (0-6")	9.00E-02	9.00E-02	4.84E-01	1.26E+01	1.13E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.61E+01	1.34E-01	2.64E-02	1.13E+00	2.95E-02	2.20E+01	1.17E+00	2.19E+01	1.35E-03

TABLE C-2A: ARSENIC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **18.41**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Red-Tailed Hawk (Carnivorous Birds - Terrestrial)																							
BREOT-N52-60 (0-6")	9.00E-02	9.00E-02	4.84E-01	1.03E+02	9.31E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.14E+02	1.10E+00	2.64E-02	1.13E+00	2.42E-01	2.20E+01	1.17E+00	2.19E+01	1.11E-02
BREOT-S52-12.5 (0-6")	9.00E-02	9.00E-02	4.84E-01	4.68E+01	4.21E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	9.67E+01	4.96E-01	2.64E-02	1.13E+00	1.10E-01	2.20E+01	1.17E+00	2.19E+01	5.01E-03
BREOT-S53-12.5 (0-6")	9.00E-02	9.00E-02	4.84E-01	1.39E+01	1.25E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.87E+01	1.47E-01	2.64E-02	1.13E+00	3.25E-02	2.20E+01	1.17E+00	2.19E+01	1.49E-03
BREOT-S54-12.5 (0-6")	9.00E-02	9.00E-02	4.84E-01	1.02E+01	9.18E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.11E+01	1.08E-01	2.64E-02	1.13E+00	2.39E-02	2.20E+01	1.17E+00	2.19E+01	1.09E-03
BREOT-N55-12.5 (0-6")	9.00E-02	9.00E-02	4.84E-01	9.03E+01	8.12E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.87E+02	9.57E-01	2.64E-02	1.13E+00	2.12E-01	2.20E+01	1.17E+00	2.19E+01	9.68E-03
BREOT-S55-12.5 (0-6")	9.00E-02	9.00E-02	4.84E-01	3.14E+01	2.82E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	6.49E+01	3.33E-01	2.64E-02	1.13E+00	7.35E-02	2.20E+01	1.17E+00	2.19E+01	3.36E-03
BREOT-N56-12.5 (0-6")	9.00E-02	9.00E-02	4.84E-01	6.13E+01	5.51E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.27E+02	6.50E-01	2.64E-02	1.13E+00	1.44E-01	2.20E+01	1.17E+00	2.19E+01	6.57E-03
BREOT-S56-12.5 (0-6")	9.00E-02	9.00E-02	4.84E-01	1.33E+01	1.19E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.74E+01	1.41E-01	2.64E-02	1.13E+00	3.11E-02	2.20E+01	1.17E+00	2.19E+01	1.42E-03
BREOT-N57-12.5 (0-6")	9.00E-02	9.00E-02	4.84E-01	5.95E+01	5.36E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.23E+02	6.31E-01	2.64E-02	1.13E+00	1.40E-01	2.20E+01	1.17E+00	2.19E+01	6.38E-03
BREOT-S57-12.5 (0-6")	9.00E-02	9.00E-02	4.84E-01	3.48E+01	3.13E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	7.20E+01	3.69E-01	2.64E-02	1.13E+00	8.16E-02	2.20E+01	1.17E+00	2.19E+01	3.73E-03
BREOT-N58-12.5 (0-6")	9.00E-02	9.00E-02	4.84E-01	2.54E+01	2.28E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.25E+01	2.69E-01	2.64E-02	1.13E+00	5.95E-02	2.20E+01	1.17E+00	2.19E+01	2.72E-03
BREOT-S58-12 (0-6")	9.00E-02	9.00E-02	4.84E-01	4.00E+01	3.60E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	8.27E+01	4.24E-01	2.64E-02	1.13E+00	9.37E-02	2.20E+01	1.17E+00	2.19E+01	4.29E-03
BREOT-N59-18 (0-6")	9.00E-02	9.00E-02	4.84E-01	4.44E+01	4.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	9.18E+01	4.71E-01	2.64E-02	1.13E+00	1.04E-01	2.20E+01	1.17E+00	2.19E+01	4.76E-03
BREOT-N60-12.5 (0-6")	9.00E-02	9.00E-02	4.84E-01	1.26E+01	1.13E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.60E+01	1.33E-01	2.64E-02	1.13E+00	2.94E-02	2.20E+01	1.17E+00	2.19E+01	1.35E-03
BREOT-S60-12.5 (0-6")	9.00E-02	9.00E-02	4.84E-01	3.85E+01	3.46E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	7.95E+01	4.08E-01	2.64E-02	1.13E+00	9.01E-02	2.20E+01	1.17E+00	2.19E+01	4.12E-03
BREOT-S61-12.5 (0-6")	9.00E-02	9.00E-02	4.84E-01	2.16E+01	1.95E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.47E+01	2.29E-01	2.64E-02	1.13E+00	5.07E-02	2.20E+01	1.17E+00	2.19E+01	2.32E-03
BREOT-N62-12.5 (0-6")	9.00E-02	9.00E-02	4.84E-01	4.38E+00	3.94E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	9.05E+00	4.64E-02	2.64E-02	1.13E+00	1.03E-02	2.20E+01	1.17E+00	2.19E+01	4.69E-04
BREOT-S62-12.5 (0-6")	9.00E-02	9.00E-02	4.84E-01	4.94E+01	4.44E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.02E+02	5.24E-01	2.64E-02	1.13E+00	1.16E-01	2.20E+01	1.17E+00	2.19E+01	5.29E-03
BREOT-S63-12.5 (0-6")	9.00E-02	9.00E-02	4.84E-01	3.04E+01	2.74E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	6.29E+01	3.22E-01	2.64E-02	1.13E+00	7.12E-02	2.20E+01	1.17E+00	2.19E+01	3.26E-03
BREOT-N64-12.5 (0-6")	9.00E-02	9.00E-02	4.84E-01	1.91E+01	1.72E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.96E+01	2.03E-01	2.64E-02	1.13E+00	4.48E-02	2.20E+01	1.17E+00	2.19E+01	2.05E-03
BREOT-N64-20 (0-6")	9.00E-02	9.00E-02	4.84E-01	2.36E+01	2.13E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.89E+01	2.51E-01	2.64E-02	1.13E+00	5.54E-02	2.20E+01	1.17E+00	2.19E+01	2.53E-03
BREOT-S64-12.5 (0-6")	9.00E-02	9.00E-02	4.84E-01	3.03E+01	2.72E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	6.25E+01	3.21E-01	2.64E-02	1.13E+00	7.09E-02	2.20E+01	1.17E+00	2.19E+01	3.24E-03
BREOT-N65-12.5 (0-6")	9.00E-02	9.00E-02	4.84E-01	1.36E+01	1.22E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.81E+01	1.44E-01	2.64E-02	1.13E+00	3.18E-02	2.20E+01	1.17E+00	2.19E+01	1.46E-03
BREOT-S65-12.5 (0-6")	9.00E-02	9.00E-02	4.84E-01	5.86E+01	5.27E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.21E+02	6.21E-01	2.64E-02	1.13E+00	1.37E-01	2.20E+01	1.17E+00	2.19E+01	6.28E-03
BREOT-N66-5 (0-6")	9.00E-02	9.00E-02	4.84E-01	4.77E+01	4.29E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	9.86E+01	5.05E-01	2.64E-02	1.13E+00	1.12E-01	2.20E+01	1.17E+00	2.19E+01	5.11E-03
BREOT-S66-12.5 (0-6")	9.00E-02	9.00E-02	4.84E-01	3.36E+01	3.02E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	6.95E+01	3.56E-01	2.64E-02	1.13E+00	7.87E-02	2.20E+01	1.17E+00	2.19E+01	3.60E-03
BREOT-N67-12.5 (0-6")	9.00E-02	9.00E-02	4.84E-01	4.71E+01	4.24E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	9.75E+01	5.00E-01	2.64E-02	1.13E+00	1.10E-01	2.20E+01	1.17E+00	2.19E+01	5.05E-03
BREOT-S67-12.5 (0-6")	9.00E-02	9.00E-02	4.84E-01	6.13E+00	5.51E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.27E+01	6.50E-02	2.64E-02	1.13E+00	1.44E-02	2.20E+01	1.17E+00	2.19E+01	6.57E-04
At Edge of Tailings																						**Maximum HQ (Inside Tailings)**	**6.35E-02**
BREOT-S0-0 (06)	9.00E-02	9.00E-02	4.84E-01	3.81E+01	3.43E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	7.87E+01	4.04E-01	2.64E-02	1.13E+00	8.92E-02	2.20E+01	1.17E+00	2.19E+01	4.08E-03
BREOT-S1-0 (0-6")	9.00E-02	9.00E-02	4.84E-01	1.16E+02	1.04E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.39E+02	1.23E+00	2.64E-02	1.13E+00	2.71E-01	2.20E+01	1.17E+00	2.19E+01	1.24E-02
BREOT-S2-0 (0-6")	9.00E-02	9.00E-02	4.84E-01	3.30E+01	2.96E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	6.81E+01	3.49E-01	2.64E-02	1.13E+00	7.72E-02	2.20E+01	1.17E+00	2.19E+01	3.53E-03
BREOT-S3-0 (0-6")	9.00E-02	9.00E-02	4.84E-01	1.29E+02	1.16E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.67E+02	1.37E+00	2.64E-02	1.13E+00	3.02E-01	2.20E+01	1.17E+00	2.19E+01	1.38E-02
BREOT-S4-0 (0-6")	9.00E-02	9.00E-02	4.84E-01	1.17E+02	1.05E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.42E+02	1.24E+00	2.64E-02	1.13E+00	2.75E-01	2.20E+01	1.17E+00	2.19E+01	1.26E-02
BREOT-S6-0 (0-6")	9.00E-02	9.00E-02	4.84E-01	1.41E+02	1.27E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.91E+02	1.49E+00	2.64E-02	1.13E+00	3.29E-01	2.20E+01	1.17E+00	2.19E+01	1.51E-02
BREOT-S7-0 (0-6")	9.00E-02	9.00E-02	4.84E-01	8.41E+01	7.56E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.74E+02	8.91E-01	2.64E-02	1.13E+00	1.97E-01	2.20E+01	1.17E+00	2.19E+01	9.01E-03
BREOT-S8-0 (0-6")	9.00E-02	9.00E-02	4.84E-01	2.51E+01	2.26E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.20E+01	2.67E-01	2.64E-02	1.13E+00	5.89E-02	2.20E+01	1.17E+00	2.19E+01	2.69E-03
BREOT-S9-0 (0-6")	9.00E-02	9.00E-02	4.84E-01	5.76E+01	5.18E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.19E+02	6.10E-01	2.64E-02	1.13E+00	1.35E-01	2.20E+01	1.17E+00	2.19E+01	6.17E-03
BREOT-N10-0 (0-6")	9.00E-02	9.00E-02	4.84E-01	5.15E+02	4.64E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.07E+03	5.46E+00	2.64E-02	1.13E+00	1.21E+00	2.20E+01	1.17E+00	2.19E+01	5.52E-02
BREOT-N11-0 (0-6")	9.00E-02	9.00E-02	4.84E-01	1.41E+02	1.27E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.92E+02	1.50E+00	2.64E-02	1.13E+00	3.31E-01	2.20E+01	1.17E+00	2.19E+01	1.51E-02
BREOT-S11-0 (0-6")	9.00E-02	9.00E-02	4.84E-01	4.88E+01	4.39E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.01E+02	5.18E-01	2.64E-02	1.13E+00	1.14E-01	2.20E+01	1.17E+00	2.19E+01	5.23E-03
BREOT-N12-0 (0-6")	9.00E-02	9.00E-02	4.84E-01	5.30E+01	4.77E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.10E+02	5.62E-01	2.64E-02	1.13E+00	1.24E-01	2.20E+01	1.17E+00	2.19E+01	5.68E-03
BREOT-S12-0 (0-6")	9.00E-02	9.00E-02	4.84E-01	5.34E+01	4.80E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.10E+02	5.66E-01	2.64E-02	1.13E+00	1.25E-01	2.20E+01	1.17E+00	2.19E+01	5.72E-03
BREOT-N13-0 (0-6")	9.00E-02	9.00E-02	4.84E-01	6.08E+02	5.47E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.26E+03	6.44E+00	2.64E-02	1.13E+00	1.42E+00	2.20E+01	1.17E+00	2.19E+01	6.51E-02
BREOT-S13-0 (0-6")	9.00E-02	9.00E-02	4.84E-01	8.77E+00	7.89E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.81E+01	9.30E-02	2.64E-02	1.13E+00	2.06E-02	2.20E+01	1.17E+00	2.19E+01	9.40E-04
BREOT-N14-0 (0-6")	9.00E-02	9.00E-02	4.84E-01	7.96E+01	7.16E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.64E+02	8.43E-01	2.64E-02	1.13E+00	1.86E-01	2.20E+01	1.17E+00	2.19E+01	8.52E-03
BREOT-S14-0 (0-6")	9.00E-02	9.00E-02	4.84E-01	3.43E+02	3.08E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	7.08E+02	3.63E+00	2.64E-02	1.13E+00	8.03E-01	2.20E+01	1.17E+00	2.19E+01	3.67E-02
BREOT-N15-0 (0-6")	9.00E-02	9.00E-02	4.84E-01	1.56E+02	1.41E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.23E+02	1.66E+00	2.64E-02	1.13E+00	3.66E-01	2.20E+01	1.17E+00	2.19E+01	1.67E-02
BREOT-N16-0 (0-6")	9.00E-02	9.00E-02	4.84E-01	9.78E+01	8.79E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.02E+02	1.04E+00	2.64E-02	1.13E+00	2.29E-01	2.20E+01	1.17E+00	2.19E+01	1.05E-02
BREOT-S16-0 (0-6")	9.00E-02	9.00E-02	4.84E-01	1.57E+01	1.41E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.24E+01	1.66E-01	2.64E-02	1.13E+00	3.67E-02	2.20E+01	1.17E+00	2.19E+01	1.68E-03
BREOT-N17-0 (0-6")	9.00E-02	9.00E-02	4.84E-01	9.37E+01	8.43E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.94E+02	9.93E-01	2.64E-02	1.13E+00	2.19E-01	2.20E+01	1.17E+00	2.19E+01	1.00E-02
BREOT-S17-0 (0-6")	9.00E-02	9.00E-02	4.84E-01	1.06E+02	9.56E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.20E+02	1.13E+00	2.64E-02	1.13E+00	2.49E-01	2.20E+01	1.17E+00	2.19E+01	1.14E-02
BREOT-N18-0 (0-6")	9.00E-02	9.00E-02	4.84E-01	8.19E+01	7.37E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.69E+02	8.68E-01	2.64E-02	1.13E+00	1.92E-01	2.20E+01	1.17E+00	2.19E+01	8.78E-03
BREOT-S18-0 (0-6")	9.00E-02	9.00E-02	4.84E-01	2.40E+02	2.16E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.96E+02	2.54E+00	2.64E-02	1.13E+00	5.62E-01	2.20E+01	1.17E+00	2.19E+01	2.57E-02
BREOT-N19-0 (0-6")	9.00E-02	9.00E-02	4.84E-01	1.17E+02	1.05E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.42E+02	1.24E+00	2.64E-02	1.13E+00	2.74E-01	2.20E+01	1.17E+00	2.19E+01	1.25E-02

TABLE C-2A: ARSENIC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables; from BAF table; linked to soil or sed concentration table (VLOOKUP)

calculated values; linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 18.41

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Red-Tailed Hawk (Carnivorous Birds - Terrestrial)																							
BREOT-S19-0 (0-6")	9.00E-02	9.00E-02	4.84E-01	2.92E+01	2.63E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	6.03E+01	3.09E-01	2.64E-02	1.13E+00	6.84E-02	2.20E+01	1.17E+00	2.19E+01	3.13E-03
BREOT-N20-0 (0-6")	9.00E-02	9.00E-02	4.84E-01	8.34E+01	7.50E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.72E+02	8.84E-01	2.64E-02	1.13E+00	1.95E-01	2.20E+01	1.17E+00	2.19E+01	8.93E-03
BREOT-S20-0 (0-6")	9.00E-02	9.00E-02	4.84E-01	2.60E+01	2.34E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.38E+01	2.76E-01	2.64E-02	1.13E+00	6.09E-02	2.20E+01	1.17E+00	2.19E+01	2.79E-03
BREOT-N21-0 (0-6")	9.00E-02	9.00E-02	4.84E-01	2.33E+02	2.09E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.81E+02	2.47E+00	2.64E-02	1.13E+00	5.46E-01	2.20E+01	1.17E+00	2.19E+01	2.50E-02
BREOT-S21-0 (0-6")	9.00E-02	9.00E-02	4.84E-01	8.92E+01	8.02E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.84E+02	9.45E-01	2.64E-02	1.13E+00	2.09E-01	2.20E+01	1.17E+00	2.19E+01	9.56E-03
BREOT-N22-0 (0-6")	9.00E-02	9.00E-02	4.84E-01	1.01E+02	9.04E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.08E+02	1.07E+00	2.64E-02	1.13E+00	2.36E-01	2.20E+01	1.17E+00	2.19E+01	1.08E-02
BREOT-S22-0 (0-6")	9.00E-02	9.00E-02	4.84E-01	8.99E+01	8.09E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.86E+02	9.53E-01	2.64E-02	1.13E+00	2.11E-01	2.20E+01	1.17E+00	2.19E+01	9.63E-03
BREOT-N23-0 (0-6")	9.00E-02	9.00E-02	4.84E-01	1.00E+02	9.04E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.08E+02	1.06E+00	2.64E-02	1.13E+00	2.35E-01	2.20E+01	1.17E+00	2.19E+01	1.08E-02
BREOT-S23-0 (0-6")	9.00E-02	9.00E-02	4.84E-01	1.14E+02	1.03E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.36E+02	1.21E+00	2.64E-02	1.13E+00	2.67E-01	2.20E+01	1.17E+00	2.19E+01	1.22E-02
BREOT-N24-0 (0-6")	9.00E-02	9.00E-02	4.84E-01	1.12E+02	1.01E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.31E+02	1.19E+00	2.64E-02	1.13E+00	2.62E-01	2.20E+01	1.17E+00	2.19E+01	1.20E-02
BREOT-S24-0 (0-6")	9.00E-02	9.00E-02	4.84E-01	7.10E+01	6.39E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.47E+02	7.52E-01	2.64E-02	1.13E+00	1.66E-01	2.20E+01	1.17E+00	2.19E+01	7.61E-03
BREOT-N25-0 (0-6")	9.00E-02	9.00E-02	4.84E-01	1.06E+02	9.55E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.19E+02	1.12E+00	2.64E-02	1.13E+00	2.49E-01	2.20E+01	1.17E+00	2.19E+01	1.14E-02
BREOT-S25-0 (0-6")	9.00E-02	9.00E-02	4.84E-01	6.25E+01	5.62E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.29E+02	6.63E-01	2.64E-02	1.13E+00	1.46E-01	2.20E+01	1.17E+00	2.19E+01	6.70E-03
BREOT-N26-0 (0-6")	9.00E-02	9.00E-02	4.84E-01	2.29E+02	2.06E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.72E+02	2.42E+00	2.64E-02	1.13E+00	5.35E-01	2.20E+01	1.17E+00	2.19E+01	2.45E-02
BREOT-S26-0 (0-6")	9.00E-02	9.00E-02	4.84E-01	6.80E+01	6.12E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.41E+02	7.21E-01	2.64E-02	1.13E+00	1.59E-01	2.20E+01	1.17E+00	2.19E+01	7.29E-03
BREOT-N27-0 (0-6")	9.00E-02	9.00E-02	4.84E-01	2.25E+02	2.03E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.65E+02	2.39E+00	2.64E-02	1.13E+00	5.27E-01	2.20E+01	1.17E+00	2.19E+01	2.41E-02
BREOT-S27-0 (0-6")	9.00E-02	9.00E-02	4.84E-01	1.01E+02	9.10E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.09E+02	1.07E+00	2.64E-02	1.13E+00	2.37E-01	2.20E+01	1.17E+00	2.19E+01	1.08E-02
BREOT-N28-0 (0-6")	9.00E-02	9.00E-02	4.84E-01	5.99E+01	5.38E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.24E+02	6.34E-01	2.64E-02	1.13E+00	1.40E-01	2.20E+01	1.17E+00	2.19E+01	6.41E-03
BREOT-S28-0 (0-6")	9.00E-02	9.00E-02	4.84E-01	5.59E+01	5.03E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.16E+02	5.92E-01	2.64E-02	1.13E+00	1.31E-01	2.20E+01	1.17E+00	2.19E+01	5.99E-03
BREOT-S29-0 (0-6")	9.00E-02	9.00E-02	4.84E-01	8.21E+00	7.38E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.70E+01	8.70E-02	2.64E-02	1.13E+00	1.92E-02	2.20E+01	1.17E+00	2.19E+01	8.79E-04
BREOT-N30-0 (0-6")	9.00E-02	9.00E-02	4.84E-01	2.13E+02	1.92E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.41E+02	2.26E+00	2.64E-02	1.13E+00	5.00E-01	2.20E+01	1.17E+00	2.19E+01	2.29E-02
BREOT-S30-0 (0-6")	9.00E-02	9.00E-02	4.84E-01	5.99E+00	5.39E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.24E+01	6.35E-02	2.64E-02	1.13E+00	1.40E-02	2.20E+01	1.17E+00	2.19E+01	6.42E-04
BREOT-N31-0 (0-6")	9.00E-02	9.00E-02	4.84E-01	5.24E+01	4.71E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.08E+02	5.55E-01	2.64E-02	1.13E+00	1.23E-01	2.20E+01	1.17E+00	2.19E+01	5.61E-03
BREOT-S31-0 (0-6")	9.00E-02	9.00E-02	4.84E-01	5.50E+00	4.95E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.14E+01	5.83E-02	2.64E-02	1.13E+00	1.29E-02	2.20E+01	1.17E+00	2.19E+01	5.89E-04
BREOT-N32-0 (0-6")	9.00E-02	9.00E-02	4.84E-01	6.80E+01	6.12E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.41E+02	7.21E-01	2.64E-02	1.13E+00	1.59E-01	2.20E+01	1.17E+00	2.19E+01	7.29E-03
BREOT-S32-0 (0-6")	9.00E-02	9.00E-02	4.84E-01	4.25E+01	3.82E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	8.79E+01	4.51E-01	2.64E-02	1.13E+00	9.96E-02	2.20E+01	1.17E+00	2.19E+01	4.55E-03
BREOT-N33-0 (0-6")	9.00E-02	9.00E-02	4.84E-01	7.95E+00	7.15E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.64E+01	8.43E-02	2.64E-02	1.13E+00	1.86E-02	2.20E+01	1.17E+00	2.19E+01	8.52E-04
BREOT-S33-0 (0-6")	9.00E-02	9.00E-02	4.84E-01	4.05E+01	3.64E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	8.37E+01	4.29E-01	2.64E-02	1.13E+00	9.49E-02	2.20E+01	1.17E+00	2.19E+01	4.34E-03
BREOT-N34-0 (0-6")	9.00E-02	9.00E-02	4.84E-01	1.20E+01	1.08E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.49E+01	1.28E-01	2.64E-02	1.13E+00	2.82E-02	2.20E+01	1.17E+00	2.19E+01	1.29E-03
BREOT-S34-0 (0-6")	9.00E-02	9.00E-02	4.84E-01	6.71E+01	6.03E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.39E+02	7.11E-01	2.64E-02	1.13E+00	1.57E-01	2.20E+01	1.17E+00	2.19E+01	7.19E-03
BREOT-N35-0 (0-6")	9.00E-02	9.00E-02	4.84E-01	1.20E+01	1.08E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.47E+01	1.27E-01	2.64E-02	1.13E+00	2.80E-02	2.20E+01	1.17E+00	2.19E+01	1.28E-03
BREOT-S35-0 (0-6")	9.00E-02	9.00E-02	4.84E-01	5.30E+01	4.77E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.10E+02	5.62E-01	2.64E-02	1.13E+00	1.24E-01	2.20E+01	1.17E+00	2.19E+01	5.68E-03
BREOT-N36-0 (0-6")	9.00E-02	9.00E-02	4.84E-01	1.04E+02	9.40E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.16E+02	1.11E+00	2.64E-02	1.13E+00	2.45E-01	2.20E+01	1.17E+00	2.19E+01	1.12E-02
BREOT-S36-0 (0-6")	9.00E-02	9.00E-02	4.84E-01	7.76E+01	6.98E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.60E+02	8.22E-01	2.64E-02	1.13E+00	1.82E-01	2.20E+01	1.17E+00	2.19E+01	8.31E-03
BREOT-N37-0 (0-6")	9.00E-02	9.00E-02	4.84E-01	4.11E+01	3.70E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	8.50E+01	4.36E-01	2.64E-02	1.13E+00	9.64E-02	2.20E+01	1.17E+00	2.19E+01	4.41E-03
BREOT-S37-0 (0-6")	9.00E-02	9.00E-02	4.84E-01	7.31E+01	6.58E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.51E+02	7.75E-01	2.64E-02	1.13E+00	1.71E-01	2.20E+01	1.17E+00	2.19E+01	7.83E-03
BREOT-N38-0 (0-6")	9.00E-02	9.00E-02	4.84E-01	8.83E+00	7.94E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.83E+01	9.36E-02	2.64E-02	1.13E+00	2.07E-02	2.20E+01	1.17E+00	2.19E+01	9.46E-04
BREOT-S38-0 (0-6")	9.00E-02	9.00E-02	4.84E-01	1.51E+01	1.36E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.11E+01	1.60E-01	2.64E-02	1.13E+00	3.53E-02	2.20E+01	1.17E+00	2.19E+01	1.61E-03
BREOT-N39-0 (0-6")	9.00E-02	9.00E-02	4.84E-01	9.61E+00	8.64E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.99E+01	1.02E-01	2.64E-02	1.13E+00	2.25E-02	2.20E+01	1.17E+00	2.19E+01	1.03E-03
BREOT-N40-0 (0-6")	9.00E-02	9.00E-02	4.84E-01	2.03E+01	1.82E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.19E+01	2.15E-01	2.64E-02	1.13E+00	4.75E-02	2.20E+01	1.17E+00	2.19E+01	2.17E-03
BREOT-S40-0 (0-6")	9.00E-02	9.00E-02	4.84E-01	8.22E+01	7.39E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.70E+02	8.71E-01	2.64E-02	1.13E+00	1.92E-01	2.20E+01	1.17E+00	2.19E+01	8.80E-03
BREOT-N41-0 (0-6")	9.00E-02	9.00E-02	4.84E-01	1.42E+01	1.28E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.94E+01	1.51E-01	2.64E-02	1.13E+00	3.33E-02	2.20E+01	1.17E+00	2.19E+01	1.52E-03
BREOT-S41-0 (0-6")	9.00E-02	9.00E-02	4.84E-01	1.00E+02	9.03E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.08E+02	1.06E+00	2.64E-02	1.13E+00	2.35E-01	2.20E+01	1.17E+00	2.19E+01	1.08E-02
BREOT-N42-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S42-0 (0-6")	9.00E-02	9.00E-02	4.84E-01	1.05E+02	9.41E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.16E+02	1.11E+00	2.64E-02	1.13E+00	2.45E-01	2.20E+01	1.17E+00	2.19E+01	1.12E-02
BREOT-N43-0 (0-6")	9.00E-02	9.00E-02	4.84E-01	1.70E+01	1.53E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.51E+01	1.80E-01	2.64E-02	1.13E+00	3.98E-02	2.20E+01	1.17E+00	2.19E+01	1.82E-03
BREOT-S43-0 (0-6")	9.00E-02	9.00E-02	4.84E-01	9.70E+00	8.73E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.01E+01	1.03E-01	2.64E-02	1.13E+00	2.27E-02	2.20E+01	1.17E+00	2.19E+01	1.04E-03
BREOT-N44-0 (0-6")	9.00E-02	9.00E-02	4.84E-01	3.16E+01	2.84E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	6.52E+01	3.34E-01	2.64E-02	1.13E+00	7.39E-02	2.20E+01	1.17E+00	2.19E+01	3.38E-03
BREOT-S44-0 (0-6")	9.00E-02	9.00E-02	4.84E-01	3.53E+00	3.18E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	7.30E+00	3.74E-02	2.64E-02	1.13E+00	8.27E-03	2.20E+01	1.17E+00	2.19E+01	3.78E-04
BREOT-N45-0 (0-6")	9.00E-02	9.00E-02	4.84E-01	4.77E+00	4.29E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	9.87E+00	5.06E-02	2.64E-02	1.13E+00	1.12E-02	2.20E+01	1.17E+00	2.19E+01	5.11E-04
BREOT-S45-0 (0-6")	9.00E-02	9.00E-02	4.84E-01	1.17E+01	1.05E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.41E+01	1.24E-01	2.64E-02	1.13E+00	2.73E-02	2.20E+01	1.17E+00	2.19E+01	1.25E-03
BREOT-N46-0 (0-6")	9.00E-02	9.00E-02	4.84E-01	4.63E+00	4.16E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	9.56E+00	4.90E-02	2.64E-02	1.13E+00	1.08E-02	2.20E+01	1.17E+00	2.19E+01	4.96E-04
BREOT-S46-0 (0-6")	9.00E-02	9.00E-02	4.84E-01	2.20E+01	1.98E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.55E+01	2.34E-01	2.64E-02	1.13E+00	5.16E-02	2.20E+01	1.17E+00	2.19E+01	2.36E-03
BREOT-N47-0 (0-6")	9.00E-02	9.00E-02	4.84E-01	4.23E+00	3.81E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	8.75E+00	4.49E-02	2.64E-02	1.13E+00	9.92E-03	2.20E+01	1.17E+00	2.19E+01	4.54E-04
BREOT-S47-0 (0-6")	9.00E-02	9.00E-02	4.84E-01	9.82E+00	8.83E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.03E+01	1.04E-01	2.64E-02	1.13E+00	2.30E-02	2.20E+01	1.17E+00	2.19E+01	1.05E-03

TABLE C-2A: ARSENIC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **18.41**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Red-Tailed Hawk (Carnivorous Birds - Terrestrial)																							
BREOT-N48-0 (0-6")	9.00E-02	9.00E-02	4.84E-01	5.45E+00	4.90E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.13E+01	5.77E-02	2.64E-02	1.13E+00	1.28E-02	2.20E+01	1.17E+00	2.19E+01	5.84E-04
BREOT-S48-0 (0-6")	9.00E-02	9.00E-02	4.84E-01	3.10E+01	2.79E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	6.41E+01	3.29E-01	2.64E-02	1.13E+00	7.27E-02	2.20E+01	1.17E+00	2.19E+01	3.32E-03
BREOT-N49-0 (0-6")	9.00E-02	9.00E-02	4.84E-01	1.46E+01	1.32E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.02E+01	1.55E-01	2.64E-02	1.13E+00	3.43E-02	2.20E+01	1.17E+00	2.19E+01	1.57E-03
BREOT-S49-0 (0-6")	9.00E-02	9.00E-02	4.84E-01	4.10E+00	3.69E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	8.49E+00	4.35E-02	2.64E-02	1.13E+00	9.62E-03	2.20E+01	1.17E+00	2.19E+01	4.40E-04
BREOT-S50-0 (0-6")	9.00E-02	9.00E-02	4.84E-01	1.22E+01	1.10E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.52E+01	1.29E-01	2.64E-02	1.13E+00	2.85E-02	2.20E+01	1.17E+00	2.19E+01	1.31E-03
BREOT-N51-0 (0-6")	9.00E-02	9.00E-02	4.84E-01	2.75E+01	2.48E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.69E+01	2.92E-01	2.64E-02	1.13E+00	6.45E-02	2.20E+01	1.17E+00	2.19E+01	2.95E-03
BREOT-S51-0 (0-6")	9.00E-02	9.00E-02	4.84E-01	1.19E+01	1.07E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.46E+01	1.26E-01	2.64E-02	1.13E+00	2.79E-02	2.20E+01	1.17E+00	2.19E+01	1.28E-03
BREOT-N52-0 (0-6")	9.00E-02	9.00E-02	4.84E-01	3.49E+00	3.14E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	7.22E+00	3.70E-02	2.64E-02	1.13E+00	8.18E-03	2.20E+01	1.17E+00	2.19E+01	3.74E-04
BREOT-S52-0 (0-6")	9.00E-02	9.00E-02	4.84E-01	3.42E+00	3.07E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	7.06E+00	3.62E-02	2.64E-02	1.13E+00	8.00E-03	2.20E+01	1.17E+00	2.19E+01	3.66E-04
BREOT-N53-0 (0-6")	9.00E-02	9.00E-02	4.84E-01	4.77E+00	4.29E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	9.85E+00	5.05E-02	2.64E-02	1.13E+00	1.12E-02	2.20E+01	1.17E+00	2.19E+01	5.11E-04
BREOT-S53-0 (0-6")	9.00E-02	9.00E-02	4.84E-01	8.46E+00	7.61E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.75E+01	8.97E-02	2.64E-02	1.13E+00	1.98E-02	2.20E+01	1.17E+00	2.19E+01	9.07E-04
BREOT-N54-0 (0-6")	9.00E-02	9.00E-02	4.84E-01	5.18E+00	4.66E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.07E+01	5.49E-02	2.64E-02	1.13E+00	1.21E-02	2.20E+01	1.17E+00	2.19E+01	5.55E-04
BREOT-S54-0 (0-6")	9.00E-02	9.00E-02	4.84E-01	3.84E+00	3.45E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	7.94E+00	4.07E-02	2.64E-02	1.13E+00	8.99E-03	2.20E+01	1.17E+00	2.19E+01	4.11E-04
BREOT-N55-0 (0-6")	9.00E-02	9.00E-02	4.84E-01	4.29E+00	3.86E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	8.86E+00	4.54E-02	2.64E-02	1.13E+00	1.00E-02	2.20E+01	1.17E+00	2.19E+01	4.59E-04
BREOT-S55-0 (0-6")	9.00E-02	9.00E-02	4.84E-01	4.33E+00	3.90E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	8.96E+00	4.59E-02	2.64E-02	1.13E+00	1.02E-02	2.20E+01	1.17E+00	2.19E+01	4.64E-04
BREOT-N56-0 (0-6")	9.00E-02	9.00E-02	4.84E-01	4.05E+01	3.65E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	8.38E+01	4.30E-01	2.64E-02	1.13E+00	9.49E-02	2.20E+01	1.17E+00	2.19E+01	4.34E-03
BREOT-N57-0 (0-6")	9.00E-02	9.00E-02	4.84E-01	5.20E+00	4.68E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.07E+01	5.51E-02	2.64E-02	1.13E+00	1.22E-02	2.20E+01	1.17E+00	2.19E+01	5.57E-04
BREOT-S57-0 (0-6")	9.00E-02	9.00E-02	4.84E-01	1.91E+01	1.71E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.94E+01	2.02E-01	2.64E-02	1.13E+00	4.47E-02	2.20E+01	1.17E+00	2.19E+01	2.04E-03
BREOT-N58-0 (0-6")	9.00E-02	9.00E-02	4.84E-01	1.01E+01	9.05E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.08E+01	1.07E-01	2.64E-02	1.13E+00	2.36E-02	2.20E+01	1.17E+00	2.19E+01	1.08E-03
BREOT-S58-0 (0-6")	9.00E-02	9.00E-02	4.84E-01	1.16E+01	1.05E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.41E+01	1.23E-01	2.64E-02	1.13E+00	2.73E-02	2.20E+01	1.17E+00	2.19E+01	1.25E-03
BREOT-N59-0 (0-6")	9.00E-02	9.00E-02	4.84E-01	1.68E+01	1.51E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.48E+01	1.78E-01	2.64E-02	1.13E+00	3.94E-02	2.20E+01	1.17E+00	2.19E+01	1.80E-03
BREOT-N60-0 (0-6")	9.00E-02	9.00E-02	4.84E-01	9.54E+00	8.58E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.97E+01	1.01E-01	2.64E-02	1.13E+00	2.24E-02	2.20E+01	1.17E+00	2.19E+01	1.02E-03
BREOT-S60-0 (0-6")	9.00E-02	9.00E-02	4.84E-01	3.93E+01	3.54E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	8.13E+01	4.17E-01	2.64E-02	1.13E+00	9.21E-02	2.20E+01	1.17E+00	2.19E+01	4.21E-03
BREOT-S61-0 (0-6")	9.00E-02	9.00E-02	4.84E-01	4.36E+00	3.93E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	9.02E+00	4.63E-02	2.64E-02	1.13E+00	1.02E-02	2.20E+01	1.17E+00	2.19E+01	4.68E-04
BREOT-N62-0 (0-6")	9.00E-02	9.00E-02	4.84E-01	8.85E+00	7.96E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.83E+01	9.38E-02	2.64E-02	1.13E+00	2.07E-02	2.20E+01	1.17E+00	2.19E+01	9.48E-04
BREOT-S62-0 (0-6")	9.00E-02	9.00E-02	4.84E-01	4.52E+00	4.07E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	9.35E+00	4.79E-02	2.64E-02	1.13E+00	1.06E-02	2.20E+01	1.17E+00	2.19E+01	4.85E-04
BREOT-N63-0 (0-6")	9.00E-02	9.00E-02	4.84E-01	2.69E+01	2.42E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.57E+01	2.86E-01	2.64E-02	1.13E+00	6.31E-02	2.20E+01	1.17E+00	2.19E+01	2.89E-03
BREOT-S63-0 (0-6")	9.00E-02	9.00E-02	4.84E-01	1.42E+01	1.28E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.94E+01	1.51E-01	2.64E-02	1.13E+00	3.33E-02	2.20E+01	1.17E+00	2.19E+01	1.52E-03
BREOT-N64-0 (0-6")	9.00E-02	9.00E-02	4.84E-01	4.21E+00	3.78E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	8.70E+00	4.46E-02	2.64E-02	1.13E+00	9.86E-03	2.20E+01	1.17E+00	2.19E+01	4.51E-04
BREOT-S64-0 (0-6")	9.00E-02	9.00E-02	4.84E-01	5.22E+00	4.69E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.08E+01	5.53E-02	2.64E-02	1.13E+00	1.22E-02	2.20E+01	1.17E+00	2.19E+01	5.59E-04
BREOT-N66-0 (0-6")	9.00E-02	9.00E-02	4.84E-01	1.79E+01	1.61E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.70E+01	1.90E-01	2.64E-02	1.13E+00	4.20E-02	2.20E+01	1.17E+00	2.19E+01	1.92E-03
BREOT-S66-0 (0-6")	9.00E-02	9.00E-02	4.84E-01	8.93E+00	8.03E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.85E+01	9.47E-02	2.64E-02	1.13E+00	2.09E-02	2.20E+01	1.17E+00	2.19E+01	9.57E-04
BREOT-N67-0 (0-6")	9.00E-02	9.00E-02	4.84E-01	4.11E+01	3.70E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	8.50E+01	4.36E-01	2.64E-02	1.13E+00	9.64E-02	2.20E+01	1.17E+00	2.19E+01	4.41E-03
BREOT-S67-0 (0-6")	9.00E-02	9.00E-02	4.84E-01	3.82E+00	3.44E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	7.90E+00	4.05E-02	2.64E-02	1.13E+00	8.95E-03	2.20E+01	1.17E+00	2.19E+01	4.10E-04
Outside Tailings																						**Maximum HQ (At Edge of Tailings)**	**6.51E-02**
BREOT-S0+25 (0-6")	9.00E-02	9.00E-02	4.84E-01	1.81E+01	1.63E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.75E+01	1.92E-01	2.64E-02	1.13E+00	4.25E-02	2.20E+01	1.17E+00	2.19E+01	1.94E-03
BREOT-S1+25 (0-6")	9.00E-02	9.00E-02	4.84E-01	4.74E+00	4.27E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	9.81E+00	5.03E-02	2.64E-02	1.13E+00	1.11E-02	2.20E+01	1.17E+00	2.19E+01	5.08E-04
BREOT-S2+95 (0-6")	9.00E-02	9.00E-02	4.84E-01	1.10E+01	9.93E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.28E+01	1.17E-01	2.64E-02	1.13E+00	2.59E-02	2.20E+01	1.17E+00	2.19E+01	1.18E-03
BREOT-S3+6 (0-6")	9.00E-02	9.00E-02	4.84E-01	5.06E+00	4.55E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.05E+01	5.36E-02	2.64E-02	1.13E+00	1.18E-02	2.20E+01	1.17E+00	2.19E+01	5.42E-04
BREOT-S4+10 (0-6")	9.00E-02	9.00E-02	4.84E-01	9.87E+00	8.88E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.04E+01	1.05E-01	2.64E-02	1.13E+00	2.31E-02	2.20E+01	1.17E+00	2.19E+01	1.06E-03
BREOT-S6+25 (0-6")	9.00E-02	9.00E-02	4.84E-01	1.40E+01	1.26E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.90E+01	1.49E-01	2.64E-02	1.13E+00	3.28E-02	2.20E+01	1.17E+00	2.19E+01	1.50E-03
BREOT-S8+25 (0-6")	9.00E-02	9.00E-02	4.84E-01	1.68E+01	1.51E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.47E+01	1.78E-01	2.64E-02	1.13E+00	3.94E-02	2.20E+01	1.17E+00	2.19E+01	1.80E-03
BREOT-N10+25 (0-6")	9.00E-02	9.00E-02	4.84E-01	1.01E+01	9.05E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.08E+01	1.07E-01	2.64E-02	1.13E+00	2.36E-02	2.20E+01	1.17E+00	2.19E+01	1.08E-03
BREOT-N11+25 (0-6")	9.00E-02	9.00E-02	4.84E-01	4.97E+00	4.47E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.03E+01	5.27E-02	2.64E-02	1.13E+00	1.17E-02	2.20E+01	1.17E+00	2.19E+01	5.33E-04
BREOT-N12+25 (0-6")	9.00E-02	9.00E-02	4.84E-01	6.25E+00	5.62E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.29E+01	6.62E-02	2.64E-02	1.13E+00	1.46E-02	2.20E+01	1.17E+00	2.19E+01	6.69E-04
BREOT-S12+25 (0-6")	9.00E-02	9.00E-02	4.84E-01	1.23E+02	1.11E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.54E+02	1.30E+00	2.64E-02	1.13E+00	2.88E-01	2.20E+01	1.17E+00	2.19E+01	1.32E-02
BREOT-S12+60 (0-6")	9.00E-02	9.00E-02	4.84E-01	4.12E+01	3.71E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	8.51E+01	4.37E-01	2.64E-02	1.13E+00	9.65E-02	2.20E+01	1.17E+00	2.19E+01	4.41E-03
BREOT-N13+25 (0-6")	9.00E-02	9.00E-02	4.84E-01	6.27E+00	5.64E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.30E+01	6.64E-02	2.64E-02	1.13E+00	1.47E-02	2.20E+01	1.17E+00	2.19E+01	6.71E-04
BREOT-S13+25 (0-6")	9.00E-02	9.00E-02	4.84E-01	8.96E+01	8.06E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.85E+02	9.49E-01	2.64E-02	1.13E+00	2.10E-01	2.20E+01	1.17E+00	2.19E+01	9.60E-03
BREOT-S13+65 (0-6")	9.00E-02	9.00E-02	4.84E-01	5.00E+01	4.50E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.03E+02	5.30E-01	2.64E-02	1.13E+00	1.17E-01	2.20E+01	1.17E+00	2.19E+01	5.36E-03
BREOT-N14+25 (0-6")	9.00E-02	9.00E-02	4.84E-01	1.91E+01	1.72E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.95E+01	2.03E-01	2.64E-02	1.13E+00	4.48E-02	2.20E+01	1.17E+00	2.19E+01	2.05E-03
BREOT-S14+25 (0-6")	9.00E-02	9.00E-02	4.84E-01	3.38E+02	3.04E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	6.99E+02	3.58E+00	2.64E-02	1.13E+00	7.92E-01	2.20E+01	1.17E+00	2.19E+01	3.62E-02
BREOT-S14+59 (0-6")	9.00E-02	9.00E-02	4.84E-01	4.86E+01	4.37E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.00E+02	5.15E-01	2.64E-02	1.13E+00	1.14E-01	2.20E+01	1.17E+00	2.19E+01	5.21E-03
BREOT-N15+25 (0-6")	9.00E-02	9.00E-02	4.84E-01	5.05E+01	4.55E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.04E+02	5.36E-01	2.64E-02	1.13E+00	1.18E-01	2.20E+01	1.17E+00	2.19E+01	5.42E-03
BREOT-N15+50 (0-6")	9.00E-02	9.00E-02	4.84E-01	4.28E+00	3.85E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	8.85E+00	4.54E-02	2.64E-02	1.13E+00	1.00E-02	2.20E+01	1.17E+00	2.19E+01	4.59E-04

TABLE C-2A: ARSENIC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **18.41**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Red-Tailed Hawk (Carnivorous Birds - Terrestrial)																							
BREOT-S16+20 (0-6")	9.00E-02	9.00E-02	4.84E-01	7.62E+01	6.85E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.58E+02	8.08E-01	2.64E-02	1.13E+00	1.79E-01	2.20E+01	1.17E+00	2.19E+01	8.17E-03
BREOT-S16+75 (0-6")	9.00E-02	9.00E-02	4.84E-01	1.29E+01	1.16E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.67E+01	1.37E-01	2.64E-02	1.13E+00	3.03E-02	2.20E+01	1.17E+00	2.19E+01	1.38E-03
BREOT-N17+25 (0-6")	9.00E-02	9.00E-02	4.84E-01	7.90E+01	7.11E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.63E+02	8.38E-01	2.64E-02	1.13E+00	1.85E-01	2.20E+01	1.17E+00	2.19E+01	8.47E-03
BREOT-S18+25 (0-6")	9.00E-02	9.00E-02	4.84E-01	2.32E+01	2.09E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.80E+01	2.46E-01	2.64E-02	1.13E+00	5.43E-02	2.20E+01	1.17E+00	2.19E+01	2.49E-03
BREOT-N19+25 (0-6")	9.00E-02	9.00E-02	4.84E-01	3.62E+00	3.26E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	7.49E+00	3.84E-02	2.64E-02	1.13E+00	8.49E-03	2.20E+01	1.17E+00	2.19E+01	3.88E-04
BREOT-S19+25 (0-6")	9.00E-02	9.00E-02	4.84E-01	2.01E+02	1.81E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.16E+02	2.14E+00	2.64E-02	1.13E+00	4.72E-01	2.20E+01	1.17E+00	2.19E+01	2.16E-02
BREOT-S19+85 (0-6")	9.00E-02	9.00E-02	4.84E-01	7.60E+00	6.83E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.57E+01	8.05E-02	2.64E-02	1.13E+00	1.78E-02	2.20E+01	1.17E+00	2.19E+01	8.14E-04
BREOT-N20+25 (0-6")	9.00E-02	9.00E-02	4.84E-01	5.92E+00	5.33E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.22E+01	6.28E-02	2.64E-02	1.13E+00	1.39E-02	2.20E+01	1.17E+00	2.19E+01	6.35E-04
BREOT-S20+25 (0-6")	9.00E-02	9.00E-02	4.84E-01	2.86E+02	2.58E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.92E+02	3.04E+00	2.64E-02	1.13E+00	6.71E-01	2.20E+01	1.17E+00	2.19E+01	3.07E-02
BREOT-S20+75 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N21+25 (0-6")	9.00E-02	9.00E-02	4.84E-01	1.00E+02	9.03E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.08E+02	1.06E+00	2.64E-02	1.13E+00	2.35E-01	2.20E+01	1.17E+00	2.19E+01	1.08E-02
BREOT-S21+25 (0-6")	9.00E-02	9.00E-02	4.84E-01	1.72E+02	1.55E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.56E+02	1.83E+00	2.64E-02	1.13E+00	4.04E-01	2.20E+01	1.17E+00	2.19E+01	1.85E-02
BREOT-N22+150 (0-6")	9.00E-02	9.00E-02	4.84E-01	4.02E+00	3.61E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	8.30E+00	4.26E-02	2.64E-02	1.13E+00	9.41E-03	2.20E+01	1.17E+00	2.19E+01	4.30E-04
BREOT-N22+25 (0-6")	9.00E-02	9.00E-02	4.84E-01	4.45E+01	4.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	9.20E+01	4.72E-01	2.64E-02	1.13E+00	1.04E-01	2.20E+01	1.17E+00	2.19E+01	4.77E-03
BREOT-S22+25 (0-6")	9.00E-02	9.00E-02	4.84E-01	4.45E+01	4.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	9.20E+01	4.71E-01	2.64E-02	1.13E+00	1.04E-01	2.20E+01	1.17E+00	2.19E+01	4.77E-03
BREOT-N23+115 (0-6")	9.00E-02	9.00E-02	4.84E-01	1.13E+01	1.01E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.33E+01	1.19E-01	2.64E-02	1.13E+00	2.64E-02	2.20E+01	1.17E+00	2.19E+01	1.21E-03
BREOT-N23+25 (0-6")	9.00E-02	9.00E-02	4.84E-01	1.59E+02	1.43E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.29E+02	1.69E+00	2.64E-02	1.13E+00	3.73E-01	2.20E+01	1.17E+00	2.19E+01	1.70E-02
BREOT-S23+25 (0-6")	9.00E-02	9.00E-02	4.84E-01	5.08E+01	4.57E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.05E+02	5.39E-01	2.64E-02	1.13E+00	1.19E-01	2.20E+01	1.17E+00	2.19E+01	5.45E-03
BREOT-S23+37.5 (0-6")	9.00E-02	9.00E-02	4.84E-01	1.32E+01	1.19E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.73E+01	1.40E-01	2.64E-02	1.13E+00	3.09E-02	2.20E+01	1.17E+00	2.19E+01	1.42E-03
BREOT-N24+25 (0-6")	9.00E-02	9.00E-02	4.84E-01	7.62E+01	6.86E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.58E+02	8.08E-01	2.64E-02	1.13E+00	1.79E-01	2.20E+01	1.17E+00	2.19E+01	8.17E-03
BREOT-N24+75 (0-6")	9.00E-02	9.00E-02	4.84E-01	1.07E+01	9.62E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.21E+01	1.13E-01	2.64E-02	1.13E+00	2.50E-02	2.20E+01	1.17E+00	2.19E+01	1.15E-03
BREOT-S24+25 (0-6")	9.00E-02	9.00E-02	4.84E-01	4.00E+01	3.60E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	8.28E+01	4.24E-01	2.64E-02	1.13E+00	9.38E-02	2.20E+01	1.17E+00	2.19E+01	4.29E-03
BREOT-S25+25 (0-6")	9.00E-02	9.00E-02	4.84E-01	2.77E+01	2.49E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.72E+01	2.93E-01	2.64E-02	1.13E+00	6.49E-02	2.20E+01	1.17E+00	2.19E+01	2.97E-03
BREOT-S25+40 (0-6")	9.00E-02	9.00E-02	4.84E-01	4.56E+01	4.10E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	9.43E+01	4.83E-01	2.64E-02	1.13E+00	1.07E-01	2.20E+01	1.17E+00	2.19E+01	4.89E-03
BREOT-S26+37 (0-6")	9.00E-02	9.00E-02	4.84E-01	1.09E+01	9.84E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.26E+01	1.16E-01	2.64E-02	1.13E+00	2.56E-02	2.20E+01	1.17E+00	2.19E+01	1.17E-03
BREOT-N27+25 (0-6")	9.00E-02	9.00E-02	4.84E-01	4.59E+00	4.13E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	9.49E+00	4.87E-02	2.64E-02	1.13E+00	1.08E-02	2.20E+01	1.17E+00	2.19E+01	4.92E-04
BREOT-S27+25 (0-6")	9.00E-02	9.00E-02	4.84E-01	1.70E+01	1.53E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.52E+01	1.81E-01	2.64E-02	1.13E+00	3.99E-02	2.20E+01	1.17E+00	2.19E+01	1.83E-03
BREOT-N28+25 (0-6")	9.00E-02	9.00E-02	4.84E-01	4.56E+00	4.10E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	9.43E+00	4.83E-02	2.64E-02	1.13E+00	1.07E-02	2.20E+01	1.17E+00	2.19E+01	4.89E-04
BREOT-S28+25 (0-6")	9.00E-02	9.00E-02	4.84E-01	4.65E+01	4.18E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	9.61E+01	4.93E-01	2.64E-02	1.13E+00	1.09E-01	2.20E+01	1.17E+00	2.19E+01	4.98E-03
BREOT-N29+25 (0-6")	9.00E-02	9.00E-02	4.84E-01	6.33E+00	5.69E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.31E+01	6.70E-02	2.64E-02	1.13E+00	1.48E-02	2.20E+01	1.17E+00	2.19E+01	6.78E-04
BREOT-S29+25 (0-6")	9.00E-02	9.00E-02	4.84E-01	1.02E+01	9.21E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.12E+01	1.08E-01	2.64E-02	1.13E+00	2.40E-02	2.20E+01	1.17E+00	2.19E+01	1.10E-03
BREOT-N30+25 (0-6")	9.00E-02	9.00E-02	4.84E-01	7.63E+00	6.87E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.58E+01	8.09E-02	2.64E-02	1.13E+00	1.79E-02	2.20E+01	1.17E+00	2.19E+01	8.18E-04
BREOT-S30+25 (0-6")	9.00E-02	9.00E-02	4.84E-01	8.62E+00	7.76E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.78E+01	9.14E-02	2.64E-02	1.13E+00	2.02E-02	2.20E+01	1.17E+00	2.19E+01	9.24E-04
BREOT-N31+25 (0-6")	9.00E-02	9.00E-02	4.84E-01	1.32E+02	1.19E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.73E+02	1.40E+00	2.64E-02	1.13E+00	3.09E-01	2.20E+01	1.17E+00	2.19E+01	1.42E-02
BREOT-N31+75 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S31+25 (0-6")	9.00E-02	9.00E-02	4.84E-01	4.38E+00	3.94E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	9.05E+00	4.64E-02	2.64E-02	1.13E+00	1.03E-02	2.20E+01	1.17E+00	2.19E+01	4.69E-04
BREOT-N32+25 (0-6")	9.00E-02	9.00E-02	4.84E-01	4.37E+00	3.93E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	9.04E+00	4.63E-02	2.64E-02	1.13E+00	1.02E-02	2.20E+01	1.17E+00	2.19E+01	4.68E-04
BREOT-S32+25 (0-6")	9.00E-02	9.00E-02	4.84E-01	6.55E+01	5.90E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.35E+02	6.95E-01	2.64E-02	1.13E+00	1.54E-01	2.20E+01	1.17E+00	2.19E+01	7.02E-03
BREOT-S32+300 (0-6")	9.00E-02	9.00E-02	4.84E-01	3.02E+01	2.72E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	6.24E+01	3.20E-01	2.64E-02	1.13E+00	7.07E-02	2.20E+01	1.17E+00	2.19E+01	3.23E-03
BREOT-N33+25 (0-6")	9.00E-02	9.00E-02	4.84E-01	4.22E+00	3.79E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	8.72E+00	4.47E-02	2.64E-02	1.13E+00	9.88E-03	2.20E+01	1.17E+00	2.19E+01	4.52E-04
BREOT-S33+25 (0-6")	9.00E-02	9.00E-02	4.84E-01	1.64E+01	1.48E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.40E+01	1.74E-01	2.64E-02	1.13E+00	3.85E-02	2.20E+01	1.17E+00	2.19E+01	1.76E-03
BREOT-N34+25 (0-6")	9.00E-02	9.00E-02	4.84E-01	4.77E+00	4.29E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	9.85E+00	5.05E-02	2.64E-02	1.13E+00	1.12E-02	2.20E+01	1.17E+00	2.19E+01	5.11E-04
BREOT-S34+25 (0-6")	9.00E-02	9.00E-02	4.84E-01	2.49E+01	2.24E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.14E+01	2.64E-01	2.64E-02	1.13E+00	5.83E-02	2.20E+01	1.17E+00	2.19E+01	2.67E-03
BREOT-N35+25 (0-6")	9.00E-02	9.00E-02	4.84E-01	1.10E+01	9.90E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.27E+01	1.17E-01	2.64E-02	1.13E+00	2.58E-02	2.20E+01	1.17E+00	2.19E+01	1.18E-03
BREOT-S35+25 (0-6")	9.00E-02	9.00E-02	4.84E-01	1.57E+01	1.41E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.24E+01	1.66E-01	2.64E-02	1.13E+00	3.67E-02	2.20E+01	1.17E+00	2.19E+01	1.68E-03
BREOT-N36+100 (0-6")	9.00E-02	9.00E-02	4.84E-01	7.84E+00	7.05E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.62E+01	8.31E-02	2.64E-02	1.13E+00	1.84E-02	2.20E+01	1.17E+00	2.19E+01	8.40E-04
BREOT-N36+25 (0-6")	9.00E-02	9.00E-02	4.84E-01	9.09E+01	8.18E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.88E+02	9.64E-01	2.64E-02	1.13E+00	2.13E-01	2.20E+01	1.17E+00	2.19E+01	9.74E-03
BREOT-S36+25 (0-6")	9.00E-02	9.00E-02	4.84E-01	1.72E+01	1.55E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.55E+01	1.82E-01	2.64E-02	1.13E+00	4.02E-02	2.20E+01	1.17E+00	2.19E+01	1.84E-03
BREOT-N37+25 (0-6")	9.00E-02	9.00E-02	4.84E-01	4.38E+00	3.94E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	9.05E+00	4.64E-02	2.64E-02	1.13E+00	1.03E-02	2.20E+01	1.17E+00	2.19E+01	4.69E-04
BREOT-S37+25 (0-6")	9.00E-02	9.00E-02	4.84E-01	1.41E+01	1.27E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.91E+01	1.49E-01	2.64E-02	1.13E+00	3.30E-02	2.20E+01	1.17E+00	2.19E+01	1.51E-03
BREOT-N38+25 (0-6")	9.00E-02	9.00E-02	4.84E-01	1.17E+01	1.06E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.43E+01	1.24E-01	2.64E-02	1.13E+00	2.75E-02	2.20E+01	1.17E+00	2.19E+01	1.26E-03
BREOT-S38+25 (0-6")	9.00E-02	9.00E-02	4.84E-01	1.36E+01	1.22E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.81E+01	1.44E-01	2.64E-02	1.13E+00	3.19E-02	2.20E+01	1.17E+00	2.19E+01	1.46E-03
BREOT-N39+25 (0-6")	9.00E-02	9.00E-02	4.84E-01	1.06E+01	9.54E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.19E+01	1.12E-01	2.64E-02	1.13E+00	2.49E-02	2.20E+01	1.17E+00	2.19E+01	1.14E-03
BREOT-S39+25 (0-6")	9.00E-02	9.00E-02	4.84E-01	2.29E+01	2.06E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.74E+01	2.43E-01	2.64E-02	1.13E+00	5.37E-02	2.20E+01	1.17E+00	2.19E+01	2.46E-03

TABLE C-2A: ARSENIC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **18.41**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Red-Tailed Hawk (Carnivorous Birds - Terrestrial)																							
BREOT-N40+25 (0-6")	9.00E-02	9.00E-02	4.84E-01	1.55E+01	1.39E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.19E+01	1.64E-01	2.64E-02	1.13E+00	3.62E-02	2.20E+01	1.17E+00	2.19E+01	1.66E-03
BREOT-S40+25 (0-6")	9.00E-02	9.00E-02	4.84E-01	1.88E+01	1.69E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.88E+01	1.99E-01	2.64E-02	1.13E+00	4.40E-02	2.20E+01	1.17E+00	2.19E+01	2.01E-03
BREOT-N41+25 (0-6")	9.00E-02	9.00E-02	4.84E-01	4.25E+00	3.82E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	8.79E+00	4.50E-02	2.64E-02	1.13E+00	9.96E-03	2.20E+01	1.17E+00	2.19E+01	4.55E-04
BREOT-S41+25 (0-6")	9.00E-02	9.00E-02	4.84E-01	3.14E+01	2.83E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	6.49E+01	3.33E-01	2.64E-02	1.13E+00	7.36E-02	2.20E+01	1.17E+00	2.19E+01	3.37E-03
BREOT-N42+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S42+25 (0-6")	9.00E-02	9.00E-02	4.84E-01	4.09E+00	3.68E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	8.45E+00	4.33E-02	2.64E-02	1.13E+00	9.58E-03	2.20E+01	1.17E+00	2.19E+01	4.38E-04
BREOT-N43+12.5 (0-6")	9.00E-02	9.00E-02	4.84E-01	1.91E+01	1.72E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.94E+01	2.02E-01	2.64E-02	1.13E+00	4.47E-02	2.20E+01	1.17E+00	2.19E+01	2.04E-03
BREOT-N43+40 (0-6")	9.00E-02	9.00E-02	4.84E-01	3.97E+00	3.57E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	8.21E+00	4.21E-02	2.64E-02	1.13E+00	9.30E-03	2.20E+01	1.17E+00	2.19E+01	4.25E-04
BREOT-S43+25 (0-6")	9.00E-02	9.00E-02	4.84E-01	6.89E+00	6.20E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.43E+01	7.31E-02	2.64E-02	1.13E+00	1.62E-02	2.20E+01	1.17E+00	2.19E+01	7.39E-04
BREOT-N44+55 (0-6")	9.00E-02	9.00E-02	4.84E-01	1.48E+01	1.33E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.06E+01	1.57E-01	2.64E-02	1.13E+00	3.46E-02	2.20E+01	1.17E+00	2.19E+01	1.58E-03
BREOT-S44+25 (0-6")	9.00E-02	9.00E-02	4.84E-01	1.07E+01	9.64E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.22E+01	1.14E-01	2.64E-02	1.13E+00	2.51E-02	2.20E+01	1.17E+00	2.19E+01	1.15E-03
BREOT-N45+25 (0-6")	9.00E-02	9.00E-02	4.84E-01	3.86E+00	3.47E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	7.97E+00	4.09E-02	2.64E-02	1.13E+00	9.03E-03	2.20E+01	1.17E+00	2.19E+01	4.13E-04
BREOT-S45+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N46+25 (0-6")	9.00E-02	9.00E-02	4.84E-01	2.04E+01	1.83E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.21E+01	2.16E-01	2.64E-02	1.13E+00	4.77E-02	2.20E+01	1.17E+00	2.19E+01	2.18E-03
BREOT-S46+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N47+25 (0-6")	9.00E-02	9.00E-02	4.84E-01	4.65E+00	4.18E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	9.62E+00	4.93E-02	2.64E-02	1.13E+00	1.09E-02	2.20E+01	1.17E+00	2.19E+01	4.98E-04
BREOT-S47+25 (0-6")	9.00E-02	9.00E-02	4.84E-01	1.00E+01	9.03E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.08E+01	1.06E-01	2.64E-02	1.13E+00	2.35E-02	2.20E+01	1.17E+00	2.19E+01	1.08E-03
BREOT-N48+25 (0-6")	9.00E-02	9.00E-02	4.84E-01	3.80E+00	3.42E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	7.87E+00	4.03E-02	2.64E-02	1.13E+00	8.91E-03	2.20E+01	1.17E+00	2.19E+01	4.08E-04
BREOT-S48+25 (0-6")	9.00E-02	9.00E-02	4.84E-01	2.01E+01	1.81E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.15E+01	2.13E-01	2.64E-02	1.13E+00	4.71E-02	2.20E+01	1.17E+00	2.19E+01	2.15E-03
BREOT-N49+25 (0-6")	9.00E-02	9.00E-02	4.84E-01	2.81E+01	2.53E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.82E+01	2.98E-01	2.64E-02	1.13E+00	6.59E-02	2.20E+01	1.17E+00	2.19E+01	3.02E-03
BREOT-S49+25 (0-6")	9.00E-02	9.00E-02	4.84E-01	4.55E+00	4.09E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	9.40E+00	4.82E-02	2.64E-02	1.13E+00	1.07E-02	2.20E+01	1.17E+00	2.19E+01	4.87E-04
BREOT-N51+25 (0-6")	9.00E-02	9.00E-02	4.84E-01	1.13E+01	1.02E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.34E+01	1.20E-01	2.64E-02	1.13E+00	2.65E-02	2.20E+01	1.17E+00	2.19E+01	1.21E-03
BREOT-S51+25 (0-6")	9.00E-02	9.00E-02	4.84E-01	1.45E+01	1.30E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.00E+01	1.54E-01	2.64E-02	1.13E+00	3.40E-02	2.20E+01	1.17E+00	2.19E+01	1.55E-03
BREOT-N52+25 (0-6")	9.00E-02	9.00E-02	4.84E-01	2.26E+01	2.03E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.67E+01	2.39E-01	2.64E-02	1.13E+00	5.29E-02	2.20E+01	1.17E+00	2.19E+01	2.42E-03
BREOT-S52+25 (0-6")	9.00E-02	9.00E-02	4.84E-01	1.27E+01	1.14E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.62E+01	1.34E-01	2.64E-02	1.13E+00	2.97E-02	2.20E+01	1.17E+00	2.19E+01	1.36E-03
BREOT-N53+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S53+25 (0-6")	9.00E-02	9.00E-02	4.84E-01	4.32E+00	3.89E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	8.94E+00	4.58E-02	2.64E-02	1.13E+00	1.01E-02	2.20E+01	1.17E+00	2.19E+01	4.63E-04
BREOT-S54+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N55+25 (0-6")	9.00E-02	9.00E-02	4.84E-01	9.59E+00	8.63E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.98E+01	1.02E-01	2.64E-02	1.13E+00	2.25E-02	2.20E+01	1.17E+00	2.19E+01	1.03E-03
BREOT-S55+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N56+25 (0-6")	9.00E-02	9.00E-02	4.84E-01	4.41E+00	3.96E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	9.11E+00	4.67E-02	2.64E-02	1.13E+00	1.03E-02	2.20E+01	1.17E+00	2.19E+01	4.72E-04
BREOT-S56+25 (0-6")	9.00E-02	9.00E-02	4.84E-01	1.10E+01	9.89E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.27E+01	1.16E-01	2.64E-02	1.13E+00	2.58E-02	2.20E+01	1.17E+00	2.19E+01	1.18E-03
BREOT-N57+25 (0-6")	9.00E-02	9.00E-02	4.84E-01	3.82E+00	3.44E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	7.90E+00	4.05E-02	2.64E-02	1.13E+00	8.95E-03	2.20E+01	1.17E+00	2.19E+01	4.10E-04
BREOT-S57+25 (0-6")	9.00E-02	9.00E-02	4.84E-01	1.67E+01	1.50E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.45E+01	1.77E-01	2.64E-02	1.13E+00	3.91E-02	2.20E+01	1.17E+00	2.19E+01	1.79E-03
BREOT-N58+25 (0-6")	9.00E-02	9.00E-02	4.84E-01	1.12E+01	1.01E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.31E+01	1.18E-01	2.64E-02	1.13E+00	2.62E-02	2.20E+01	1.17E+00	2.19E+01	1.20E-03
BREOT-S58+25 (0-6")	9.00E-02	9.00E-02	4.84E-01	4.47E+00	4.02E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	9.24E+00	4.74E-02	2.64E-02	1.13E+00	1.05E-02	2.20E+01	1.17E+00	2.19E+01	4.79E-04
BREOT-N59+25 (0-6")	9.00E-02	9.00E-02	4.84E-01	2.59E+01	2.33E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.36E+01	2.75E-01	2.64E-02	1.13E+00	6.08E-02	2.20E+01	1.17E+00	2.19E+01	2.78E-03
BREOT-N60+25 (0-6")	9.00E-02	9.00E-02	4.84E-01	1.19E+01	1.07E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.46E+01	1.26E-01	2.64E-02	1.13E+00	2.79E-02	2.20E+01	1.17E+00	2.19E+01	1.28E-03
BREOT-S60+25 (0-6")	9.00E-02	9.00E-02	4.84E-01	1.29E+01	1.16E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.67E+01	1.37E-01	2.64E-02	1.13E+00	3.02E-02	2.20E+01	1.17E+00	2.19E+01	1.38E-03
BREOT-S61+25 (0-6")	9.00E-02	9.00E-02	4.84E-01	3.81E+00	3.43E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	7.88E+00	4.04E-02	2.64E-02	1.13E+00	8.93E-03	2.20E+01	1.17E+00	2.19E+01	4.08E-04
BREOT-N62+25 (0-6")	9.00E-02	9.00E-02	4.84E-01	4.47E+00	4.02E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	9.24E+00	4.74E-02	2.64E-02	1.13E+00	1.05E-02	2.20E+01	1.17E+00	2.19E+01	4.79E-04
BREOT-S62+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N63+25 (0-6")	9.00E-02	9.00E-02	4.84E-01	3.57E+01	3.21E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	7.37E+01	3.78E-01	2.64E-02	1.13E+00	8.36E-02	2.20E+01	1.17E+00	2.19E+01	3.82E-03
BREOT-S63+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N64+25 (0-6")	9.00E-02	9.00E-02	4.84E-01	1.01E+01	9.07E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.09E+01	1.07E-01	2.64E-02	1.13E+00	2.36E-02	2.20E+01	1.17E+00	2.19E+01	1.08E-03
BREOT-S64+25 (0-6")	9.00E-02	9.00E-02	4.84E-01	1.23E+01	1.11E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.55E+01	1.31E-01	2.64E-02	1.13E+00	2.89E-02	2.20E+01	1.17E+00	2.19E+01	1.32E-03
BREOT-S65+25 (0-6")	9.00E-02	9.00E-02	4.84E-01	4.70E+00	4.22E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	9.71E+00	4.98E-02	2.64E-02	1.13E+00	1.10E-02	2.20E+01	1.17E+00	2.19E+01	5.03E-04
BREOT-N66+25 (0-6")	9.00E-02	9.00E-02	4.84E-01	1.44E+01	1.30E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.99E+01	1.53E-01	2.64E-02	1.13E+00	3.38E-02	2.20E+01	1.17E+00	2.19E+01	1.55E-03
BREOT-S66+25 (0-6")	9.00E-02	9.00E-02	4.84E-01	1.88E+01	1.69E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.89E+01	1.99E-01	2.64E-02	1.13E+00	4.40E-02	2.20E+01	1.17E+00	2.19E+01	2.01E-03
BREOT-N67+125 (0-6")	9.00E-02	9.00E-02	4.84E-01	2.57E+01	2.32E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.32E+01	2.73E-01	2.64E-02	1.13E+00	6.03E-02	2.20E+01	1.17E+00	2.19E+01	2.76E-03
BREOT-S67+25 (0-6")	9.00E-02	9.00E-02	4.84E-01	1.27E+01	1.14E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.62E+01	1.34E-01	2.64E-02	1.13E+00	2.96E-02	2.20E+01	1.17E+00	2.19E+01	1.36E-03
BREOT-N67+25 (0-6")	9.00E-02	9.00E-02	4.84E-01	5.05E+01	4.54E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.04E+02	5.35E-01	2.64E-02	1.13E+00	1.18E-01	2.20E+01	1.17E+00	2.19E+01	5.41E-03
																						Maximum HQ (Outside Tailings)	**3.62E-02**

TABLE C-2A: ARSENIC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

Site Area (hectares) **18.41**

from dose parameters tables; from BAF table; linked to soil or sed concentration table (VLOOKUP)

calculated values; linked to TRV table (VLOOKUP) - should be same for all birds or mammals

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
American Kestrel (Insectivorous Birds - Terrestrial)																							
Reference Sites																							
ACBG-1 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	2.55E+00	6.64E+01	9.14E-01	7.84E-04	2.60E+01	2.04E-02	7.04E-02	1.24E-01	5.30E-01	2.20E+01	1.17E+00	1.40E+01	3.78E-02
ACBG-2 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	2.55E+00	4.68E+01	6.44E-01	7.84E-04	1.83E+01	1.44E-02	7.04E-02	1.24E-01	3.73E-01	2.20E+01	1.17E+00	1.40E+01	2.66E-02
UBRBG-202 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	2.55E+00	3.55E+01	4.89E-01	7.84E-04	1.39E+01	1.09E-02	7.04E-02	1.24E-01	2.84E-01	2.20E+01	1.17E+00	1.40E+01	2.02E-02
UBRBG-204 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	2.55E+00	4.98E+01	6.85E-01	7.84E-04	1.95E+01	1.53E-02	7.04E-02	1.24E-01	3.97E-01	2.20E+01	1.17E+00	1.40E+01	2.83E-02
Inside Tailings																						**Minimum HQ (Reference Sites)**	**2.02E-02**
BREOT-S6-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	3.28E+03	4.52E+01	7.84E-04	1.99E+02	1.56E-01	7.04E-02	1.24E-01	2.57E+01	2.20E+01	1.17E+00	1.40E+01	1.83E+00
BREOT-S2-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	4.28E+03	5.89E+01	7.84E-04	2.59E+02	2.04E-01	7.04E-02	1.24E-01	3.35E+01	2.20E+01	1.17E+00	1.40E+01	2.39E+00
BREOT-S0-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	2.11E+03	2.90E+01	7.84E-04	1.28E+02	1.00E-01	7.04E-02	1.24E-01	1.65E+01	2.20E+01	1.17E+00	1.40E+01	1.17E+00
BREOT-S1-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	1.52E+03	2.10E+01	7.84E-04	9.25E+01	7.25E-02	7.04E-02	1.24E-01	1.19E+01	2.20E+01	1.17E+00	1.40E+01	8.50E-01
BREOT-S7-25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	1.97E+02	2.72E+00	7.84E-04	1.20E+01	9.39E-03	7.04E-02	1.24E-01	1.55E+00	2.20E+01	1.17E+00	1.40E+01	1.10E-01
BREOT-S8-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	1.74E+03	2.40E+01	7.84E-04	1.06E+02	8.29E-02	7.04E-02	1.24E-01	1.37E+01	2.20E+01	1.17E+00	1.40E+01	9.72E-01
BREOT-S9-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	1.66E+03	2.29E+01	7.84E-04	1.01E+02	7.91E-02	7.04E-02	1.24E-01	1.30E+01	2.20E+01	1.17E+00	1.40E+01	9.27E-01
BREOT-N10-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	7.91E+03	1.09E+02	7.84E-04	4.80E+02	3.76E-01	7.04E-02	1.24E-01	6.20E+01	2.20E+01	1.17E+00	1.40E+01	4.41E+00
BREOT-N11-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	4.03E+03	5.55E+01	7.84E-04	2.45E+02	1.92E-01	7.04E-02	1.24E-01	3.16E+01	2.20E+01	1.17E+00	1.40E+01	2.25E+00
BREOT-N11-125 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	2.83E+03	3.89E+01	7.84E-04	1.72E+02	1.35E-01	7.04E-02	1.24E-01	2.22E+01	2.20E+01	1.17E+00	1.40E+01	1.58E+00
BREOT-S11-12 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	4.64E+03	6.38E+01	7.84E-04	2.81E+02	2.21E-01	7.04E-02	1.24E-01	3.63E+01	2.20E+01	1.17E+00	1.40E+01	2.59E+00
BREOT-S11+63 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	2.41E+03	3.31E+01	7.84E-04	1.46E+02	1.14E-01	7.04E-02	1.24E-01	1.88E+01	2.20E+01	1.17E+00	1.40E+01	1.34E+00
UBDT-TP-6 (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	1.16E+04	1.60E+02	7.84E-04	7.05E+02	5.53E-01	7.04E-02	1.24E-01	9.10E+01	2.20E+01	1.17E+00	1.40E+01	6.48E+00
UBDT-TP-6 (2-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	1.05E+04	1.44E+02	7.84E-04	6.37E+02	5.00E-01	7.04E-02	1.24E-01	8.23E+01	2.20E+01	1.17E+00	1.40E+01	5.86E+00
UBDT-TP-6 (12-24")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	8.50E+03	1.17E+02	7.84E-04	5.16E+02	4.05E-01	7.04E-02	1.24E-01	6.66E+01	2.20E+01	1.17E+00	1.40E+01	4.74E+00
UBDT-TP-6 (24-36")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	2.02E+03	2.78E+01	7.84E-04	1.23E+02	9.62E-02	7.04E-02	1.24E-01	1.58E+01	2.20E+01	1.17E+00	1.40E+01	1.13E+00
UBDT-TP-6 (36-48")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	2.97E+03	4.08E+01	7.84E-04	1.80E+02	1.41E-01	7.04E-02	1.24E-01	2.32E+01	2.20E+01	1.17E+00	1.40E+01	1.66E+00
UBDT-TP-6 (48-60")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	9.87E+02	1.36E+01	7.84E-04	5.99E+01	4.70E-02	7.04E-02	1.24E-01	7.73E+00	2.20E+01	1.17E+00	1.40E+01	5.51E-01
BREOT-N12-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	1.90E+03	2.62E+01	7.84E-04	1.15E+02	9.05E-02	7.04E-02	1.24E-01	1.49E+01	2.20E+01	1.17E+00	1.40E+01	1.06E+00
BREOT-S12-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	1.83E+03	2.51E+01	7.84E-04	1.11E+02	8.69E-02	7.04E-02	1.24E-01	1.43E+01	2.20E+01	1.17E+00	1.40E+01	1.02E+00
BREOT-S13-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	3.94E+03	5.42E+01	7.84E-04	2.39E+02	1.88E-01	7.04E-02	1.24E-01	3.09E+01	2.20E+01	1.17E+00	1.40E+01	2.20E+00
BREOT-S14-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	1.11E+03	1.53E+01	7.84E-04	6.74E+01	5.29E-02	7.04E-02	1.24E-01	8.70E+00	2.20E+01	1.17E+00	1.40E+01	6.20E-01
BREOT-N15-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	4.50E+03	6.19E+01	7.84E-04	2.73E+02	2.14E-01	7.04E-02	1.24E-01	3.53E+01	2.20E+01	1.17E+00	1.40E+01	2.51E+00
BREOT-S15-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	6.17E+03	8.49E+01	7.84E-04	3.74E+02	2.94E-01	7.04E-02	1.24E-01	4.83E+01	2.20E+01	1.17E+00	1.40E+01	3.44E+00
BREOT-N16-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	3.61E+03	4.96E+01	7.84E-04	2.19E+02	1.72E-01	7.04E-02	1.24E-01	2.83E+01	2.20E+01	1.17E+00	1.40E+01	2.01E+00
BREOT-N16-25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	2.34E+02	3.23E+00	7.84E-04	1.42E+01	1.12E-02	7.04E-02	1.24E-01	1.84E+00	2.20E+01	1.17E+00	1.40E+01	1.31E-01
BREOT-S16-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	2.44E+03	3.35E+01	7.84E-04	1.48E+02	1.16E-01	7.04E-02	1.24E-01	1.91E+01	2.20E+01	1.17E+00	1.40E+01	1.36E+00
BREOT-N17-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	2.64E+03	3.63E+01	7.84E-04	1.60E+02	1.26E-01	7.04E-02	1.24E-01	2.07E+01	2.20E+01	1.17E+00	1.40E+01	1.47E+00
BREOT-S17-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	1.10E+03	1.52E+01	7.84E-04	6.70E+01	5.26E-02	7.04E-02	1.24E-01	8.65E+00	2.20E+01	1.17E+00	1.40E+01	6.16E-01
BREOT-S17-25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	9.22E+02	1.27E+01	7.84E-04	5.59E+01	4.39E-02	7.04E-02	1.24E-01	7.22E+00	2.20E+01	1.17E+00	1.40E+01	5.14E-01
UBDT-TP-4 (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	2.90E+03	3.99E+01	7.84E-04	1.76E+02	1.38E-01	7.04E-02	1.24E-01	2.27E+01	2.20E+01	1.17E+00	1.40E+01	1.62E+00
UBDT-TP-4 (2-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	1.96E+03	2.69E+01	7.84E-04	1.19E+02	9.31E-02	7.04E-02	1.24E-01	1.53E+01	2.20E+01	1.17E+00	1.40E+01	1.09E+00
UBDT-TP-4 (12-24")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	1.72E+03	2.37E+01	7.84E-04	1.05E+02	8.20E-02	7.04E-02	1.24E-01	1.35E+01	2.20E+01	1.17E+00	1.40E+01	9.61E-01
UBDT-TP-4 (24-36")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	1.05E+03	1.45E+01	7.84E-04	6.38E+01	5.01E-02	7.04E-02	1.24E-01	8.24E+00	2.20E+01	1.17E+00	1.40E+01	5.87E-01
BREOT-N18-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	3.42E+03	4.71E+01	7.84E-04	2.08E+02	1.63E-01	7.04E-02	1.24E-01	2.68E+01	2.20E+01	1.17E+00	1.40E+01	1.91E+00
BREOT-N18-25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	3.77E+02	5.19E+00	7.84E-04	2.29E+01	1.79E-02	7.04E-02	1.24E-01	2.95E+00	2.20E+01	1.17E+00	1.40E+01	2.10E-01
BREOT-S18-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	1.73E+03	2.38E+01	7.84E-04	1.05E+02	8.23E-02	7.04E-02	1.24E-01	1.35E+01	2.20E+01	1.17E+00	1.40E+01	9.65E-01
BREOT-N19-10 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	3.05E+03	4.20E+01	7.84E-04	1.85E+02	1.45E-01	7.04E-02	1.24E-01	2.39E+01	2.20E+01	1.17E+00	1.40E+01	1.70E+00
BREOT-S19-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	1.24E+03	1.70E+01	7.84E-04	7.50E+01	5.88E-02	7.04E-02	1.24E-01	9.69E+00	2.20E+01	1.17E+00	1.40E+01	6.90E-01
UBDT-TP-5 (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	1.57E+03	2.16E+01	7.84E-04	9.52E+01	7.47E-02	7.04E-02	1.24E-01	1.23E+01	2.20E+01	1.17E+00	1.40E+01	8.75E-01
UBDT-TP-5 (2-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	1.52E+03	2.10E+01	7.84E-04	9.25E+01	7.25E-02	7.04E-02	1.24E-01	1.19E+01	2.20E+01	1.17E+00	1.40E+01	8.50E-01
UBDT-TP-5 (12-24")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	1.19E+03	1.63E+01	7.84E-04	7.20E+01	5.65E-02	7.04E-02	1.24E-01	9.29E+00	2.20E+01	1.17E+00	1.40E+01	6.62E-01
BREOT-N20-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	4.01E+03	5.52E+01	7.84E-04	2.43E+02	1.91E-01	7.04E-02	1.24E-01	3.14E+01	2.20E+01	1.17E+00	1.40E+01	2.24E+00
UBDT-TP-3 (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	2.81E+03	3.86E+01	7.84E-04	1.70E+02	1.34E-01	7.04E-02	1.24E-01	2.20E+01	2.20E+01	1.17E+00	1.40E+01	1.57E+00
UBDT-TP-3 (2-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	2.71E+03	3.72E+01	7.84E-04	1.64E+02	1.29E-01	7.04E-02	1.24E-01	2.12E+01	2.20E+01	1.17E+00	1.40E+01	1.51E+00
UBDT-TP-3 (12-24")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	2.51E+03	3.46E+01	7.84E-04	1.52E+02	1.19E-01	7.04E-02	1.24E-01	1.97E+01	2.20E+01	1.17E+00	1.40E+01	1.40E+00
UBDT-TP-3 (24-36")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	2.24E+03	3.09E+01	7.84E-04	1.36E+02	1.07E-01	7.04E-02	1.24E-01	1.76E+01	2.20E+01	1.17E+00	1.40E+01	1.25E+00
UBDT-TP-3 (36-48")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	3.68E+03	5.07E+01	7.84E-04	2.23E+02	1.75E-01	7.04E-02	1.24E-01	2.88E+01	2.20E+01	1.17E+00	1.40E+01	2.05E+00
UBDT-TP-3 (48-60")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	7.63E+02	1.05E+01	7.84E-04	4.63E+01	3.63E-02	7.04E-02	1.24E-01	5.97E+00	2.20E+01	1.17E+00	1.40E+01	4.25E-01
BREOT-N21-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	1.61E+03	2.22E+01	7.84E-04	9.77E+01	7.66E-02	7.04E-02	1.24E-01	1.26E+01	2.20E+01	1.17E+00	1.40E+01	8.98E-01
BREOT-N22-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	3.05E+03	4.19E+01	7.84E-04	1.85E+02	1.45E-01	7.04E-02	1.24E-01	2.39E+01	2.20E+01	1.17E+00	1.40E+01	1.70E+00

TABLE C-2A: ARSENIC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 18.41

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
American Kestrel (Insectivorous Birds - Terrestrial)																							
BREOT-N23-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	3.28E+03	4.52E+01	7.84E-04	1.99E+02	1.56E-01	7.04E-02	1.24E-01	2.57E+01	2.20E+01	1.17E+00	1.40E+01	1.83E+00
BREOT-S23-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	1.87E+03	2.58E+01	7.84E-04	1.14E+02	8.91E-02	7.04E-02	1.24E-01	1.47E+01	2.20E+01	1.17E+00	1.40E+01	1.04E+00
UBDT-TP-2 (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	3.63E+03	5.00E+01	7.84E-04	2.20E+02	1.73E-01	7.04E-02	1.24E-01	2.85E+01	2.20E+01	1.17E+00	1.40E+01	2.03E+00
UBDT-TP-2 (2-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	1.82E+03	2.50E+01	7.84E-04	1.10E+02	8.65E-02	7.04E-02	1.24E-01	1.42E+01	2.20E+01	1.17E+00	1.40E+01	1.01E+00
UBDT-TP-2 (12-24")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	5.05E+02	6.94E+00	7.84E-04	3.06E+01	2.40E-02	7.04E-02	1.24E-01	3.95E+00	2.20E+01	1.17E+00	1.40E+01	2.82E-01
UBDT-TP-2 (24-36")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	1.06E+03	1.46E+01	7.84E-04	6.42E+01	5.03E-02	7.04E-02	1.24E-01	8.29E+00	2.20E+01	1.17E+00	1.40E+01	5.90E-01
UBDT-TP-2 (36-48")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	1.16E+03	1.60E+01	7.84E-04	7.05E+01	5.53E-02	7.04E-02	1.24E-01	9.11E+00	2.20E+01	1.17E+00	1.40E+01	6.49E-01
BREOT-S24-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	2.33E+03	3.20E+01	7.84E-04	1.41E+02	1.11E-01	7.04E-02	1.24E-01	1.82E+01	2.20E+01	1.17E+00	1.40E+01	1.30E+00
BREOT-N25-50 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	5.57E+03	7.66E+01	7.84E-04	3.38E+02	2.65E-01	7.04E-02	1.24E-01	4.36E+01	2.20E+01	1.17E+00	1.40E+01	3.11E+00
BREOT-N25-95 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	4.53E+03	6.24E+01	7.84E-04	2.75E+02	2.16E-01	7.04E-02	1.24E-01	3.55E+01	2.20E+01	1.17E+00	1.40E+01	2.53E+00
BREOT-S25-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	2.63E+03	3.62E+01	7.84E-04	1.60E+02	1.25E-01	7.04E-02	1.24E-01	2.06E+01	2.20E+01	1.17E+00	1.40E+01	1.47E+00
BREOT-S25-40 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	1.99E+03	2.74E+01	7.84E-04	1.21E+02	9.47E-02	7.04E-02	1.24E-01	1.56E+01	2.20E+01	1.17E+00	1.40E+01	1.11E+00
BREOT-N26A-25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	3.05E+02	4.20E+00	7.84E-04	1.85E+01	1.45E-02	7.04E-02	1.24E-01	2.39E+00	2.20E+01	1.17E+00	1.40E+01	1.70E-01
BREOT-N26B-25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	1.84E+03	2.53E+01	7.84E-04	1.12E+02	8.75E-02	7.04E-02	1.24E-01	1.44E+01	2.20E+01	1.17E+00	1.40E+01	1.03E+00
BREOT-N26-50 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	4.09E+03	5.63E+01	7.84E-04	2.48E+02	1.95E-01	7.04E-02	1.24E-01	3.20E+01	2.20E+01	1.17E+00	1.40E+01	2.28E+00
BREOT-N26-75 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	3.50E+03	4.81E+01	7.84E-04	2.12E+02	1.66E-01	7.04E-02	1.24E-01	2.74E+01	2.20E+01	1.17E+00	1.40E+01	1.95E+00
BREOT-S26-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	1.68E+03	2.31E+01	7.84E-04	1.02E+02	7.99E-02	7.04E-02	1.24E-01	1.32E+01	2.20E+01	1.17E+00	1.40E+01	9.37E-01
BREOT-S26-40 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	2.42E+03	3.33E+01	7.84E-04	1.47E+02	1.15E-01	7.04E-02	1.24E-01	1.90E+01	2.20E+01	1.17E+00	1.40E+01	1.35E+00
BREOT-N27-30 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	6.84E+03	9.41E+01	7.84E-04	4.15E+02	3.25E-01	7.04E-02	1.24E-01	5.36E+01	2.20E+01	1.17E+00	1.40E+01	3.82E+00
BREOT-N27-75 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	6.79E+03	9.34E+01	7.84E-04	4.12E+02	3.23E-01	7.04E-02	1.24E-01	5.32E+01	2.20E+01	1.17E+00	1.40E+01	3.79E+00
BREOT-S27-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	2.11E+03	2.91E+01	7.84E-04	1.28E+02	1.01E-01	7.04E-02	1.24E-01	1.65E+01	2.20E+01	1.17E+00	1.40E+01	1.18E+00
BREOT-N28-110 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	1.90E+03	2.62E+01	7.84E-04	1.15E+02	9.06E-02	7.04E-02	1.24E-01	1.49E+01	2.20E+01	1.17E+00	1.40E+01	1.06E+00
BREOT-N28-55 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	2.02E+04	2.78E+02	7.84E-04	1.22E+03	9.61E-01	7.04E-02	1.24E-01	1.58E+02	2.20E+01	1.17E+00	1.40E+01	1.13E+01
BREOT-S28-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	1.31E+03	1.80E+01	7.84E-04	7.95E+01	6.24E-02	7.04E-02	1.24E-01	1.03E+01	2.20E+01	1.17E+00	1.40E+01	7.31E-01
UBDT-TP-1 (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	6.50E+03	8.95E+01	7.84E-04	3.94E+02	3.09E-01	7.04E-02	1.24E-01	5.09E+01	2.20E+01	1.17E+00	1.40E+01	3.63E+00
UBDT-TP-1 (2-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	1.13E+04	1.56E+02	7.84E-04	6.87E+02	5.39E-01	7.04E-02	1.24E-01	8.87E+01	2.20E+01	1.17E+00	1.40E+01	6.32E+00
UBDT-TP-1 (12-24")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	3.57E+03	4.91E+01	7.84E-04	2.17E+02	1.70E-01	7.04E-02	1.24E-01	2.80E+01	2.20E+01	1.17E+00	1.40E+01	1.99E+00
UBDT-TP-1 (24-36")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	2.73E+03	3.76E+01	7.84E-04	1.66E+02	1.30E-01	7.04E-02	1.24E-01	2.14E+01	2.20E+01	1.17E+00	1.40E+01	1.52E+00
UBDT-TP-1 (36-48")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	1.94E+02	2.67E+00	7.84E-04	1.18E+01	9.22E-03	7.04E-02	1.24E-01	1.52E+00	2.20E+01	1.17E+00	1.40E+01	1.08E-01
UBDT-TP-1 (48-60")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	2.07E+02	2.85E+00	7.84E-04	1.26E+01	9.87E-03	7.04E-02	1.24E-01	1.63E+00	2.20E+01	1.17E+00	1.40E+01	1.16E-01
BREOT-N29-30 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	1.03E+04	1.42E+02	7.84E-04	6.25E+02	4.91E-01	7.04E-02	1.24E-01	8.08E+01	2.20E+01	1.17E+00	1.40E+01	5.75E+00
BREOT-S29-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	2.51E+03	3.45E+01	7.84E-04	1.52E+02	1.19E-01	7.04E-02	1.24E-01	1.96E+01	2.20E+01	1.17E+00	1.40E+01	1.40E+00
BREOT-N30-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	1.70E+03	2.34E+01	7.84E-04	1.03E+02	8.10E-02	7.04E-02	1.24E-01	1.33E+01	2.20E+01	1.17E+00	1.40E+01	9.50E-01
BREOT-S30-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	2.42E+03	3.33E+01	7.84E-04	1.47E+02	1.15E-01	7.04E-02	1.24E-01	1.90E+01	2.20E+01	1.17E+00	1.40E+01	1.35E+00
BREOT-N31-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	2.25E+03	3.10E+01	7.84E-04	1.37E+02	1.07E-01	7.04E-02	1.24E-01	1.77E+01	2.20E+01	1.17E+00	1.40E+01	1.26E+00
BREOT-S31-25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	1.37E+03	1.89E+01	7.84E-04	8.32E+01	6.52E-02	7.04E-02	1.24E-01	1.07E+01	2.20E+01	1.17E+00	1.40E+01	7.65E-01
BREOT-S31-5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	2.79E+03	3.84E+01	7.84E-04	1.69E+02	1.33E-01	7.04E-02	1.24E-01	2.18E+01	2.20E+01	1.17E+00	1.40E+01	1.56E+00
BREOT-N32-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	5.00E+03	6.88E+01	7.84E-04	3.03E+02	2.38E-01	7.04E-02	1.24E-01	3.92E+01	2.20E+01	1.17E+00	1.40E+01	2.79E+00
BREOT-S32-6 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	2.92E+03	4.02E+01	7.84E-04	1.77E+02	1.39E-01	7.04E-02	1.24E-01	2.29E+01	2.20E+01	1.17E+00	1.40E+01	1.63E+00
BREOT-N33-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	4.78E+03	6.57E+01	7.84E-04	2.90E+02	2.27E-01	7.04E-02	1.24E-01	3.74E+01	2.20E+01	1.17E+00	1.40E+01	2.66E+00
BREOT-S33-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	2.41E+02	3.31E+00	7.84E-04	1.46E+01	1.14E-02	7.04E-02	1.24E-01	1.88E+00	2.20E+01	1.17E+00	1.40E+01	1.34E-01
BREOT-N35-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	1.30E+03	1.79E+01	7.84E-04	7.90E+01	6.20E-02	7.04E-02	1.24E-01	1.02E+01	2.20E+01	1.17E+00	1.40E+01	7.27E-01
BREOT-S35-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	3.09E+03	4.25E+01	7.84E-04	1.87E+02	1.47E-01	7.04E-02	1.24E-01	2.42E+01	2.20E+01	1.17E+00	1.40E+01	1.72E+00
BREOT-N36-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	2.54E+03	3.50E+01	7.84E-04	1.54E+02	1.21E-01	7.04E-02	1.24E-01	1.99E+01	2.20E+01	1.17E+00	1.40E+01	1.42E+00
BREOT-S36-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	2.45E+03	3.37E+01	7.84E-04	1.49E+02	1.17E-01	7.04E-02	1.24E-01	1.92E+01	2.20E+01	1.17E+00	1.40E+01	1.37E+00
BREOT-N37-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	3.65E+03	5.02E+01	7.84E-04	2.21E+02	1.74E-01	7.04E-02	1.24E-01	2.86E+01	2.20E+01	1.17E+00	1.40E+01	2.03E+00
BREOT-S37-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	1.77E+03	2.43E+01	7.84E-04	1.07E+02	8.40E-02	7.04E-02	1.24E-01	1.38E+01	2.20E+01	1.17E+00	1.40E+01	9.85E-01
BREOT-N38-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	1.69E+03	2.32E+01	7.84E-04	1.02E+02	8.02E-02	7.04E-02	1.24E-01	1.32E+01	2.20E+01	1.17E+00	1.40E+01	9.41E-01
BREOT-S38-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	3.32E+03	4.57E+01	7.84E-04	2.02E+02	1.58E-01	7.04E-02	1.24E-01	2.60E+01	2.20E+01	1.17E+00	1.40E+01	1.85E+00
BREOT-N39-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	4.12E+03	5.67E+01	7.84E-04	2.50E+02	1.96E-01	7.04E-02	1.24E-01	3.23E+01	2.20E+01	1.17E+00	1.40E+01	2.30E+00
BREOT-S39-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	2.61E+03	3.59E+01	7.84E-04	1.58E+02	1.24E-01	7.04E-02	1.24E-01	2.04E+01	2.20E+01	1.17E+00	1.40E+01	1.45E+00
BREOT-N40-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	2.50E+03	3.44E+01	7.84E-04	1.52E+02	1.19E-01	7.04E-02	1.24E-01	1.96E+01	2.20E+01	1.17E+00	1.40E+01	1.40E+00
BREOT-S40-14 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	4.35E+03	5.99E+01	7.84E-04	2.64E+02	2.07E-01	7.04E-02	1.24E-01	3.41E+01	2.20E+01	1.17E+00	1.40E+01	2.43E+00
BREOT-N41-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	4.64E+02	6.38E+00	7.84E-04	2.81E+01	2.21E-02	7.04E-02	1.24E-01	3.63E+00	2.20E+01	1.17E+00	1.40E+01	2.59E-01
BREOT-S41-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	5.45E+03	7.50E+01	7.84E-04	3.31E+02	2.59E-01	7.04E-02	1.24E-01	4.27E+01	2.20E+01	1.17E+00	1.40E+01	3.04E+00

TABLE C-2A: ARSENIC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

Site Area (hectares) **18.41**

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
American Kestrel (Insectivorous Birds - Terrestrial)																							
BREOT-N42-35 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	1.95E+03	2.69E+01	7.84E-04	1.19E+02	9.30E-02	7.04E-02	1.24E-01	1.53E+01	2.20E+01	1.17E+00	1.40E+01	1.09E+00
BREOT-S42-25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	3.27E+03	4.50E+01	7.84E-04	1.98E+02	1.56E-01	7.04E-02	1.24E-01	2.56E+01	2.20E+01	1.17E+00	1.40E+01	1.82E+00
BREOT-N43-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	2.78E+03	3.83E+01	7.84E-04	1.69E+02	1.32E-01	7.04E-02	1.24E-01	2.18E+01	2.20E+01	1.17E+00	1.40E+01	1.55E+00
BREOT-S43-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	2.68E+03	3.68E+01	7.84E-04	1.62E+02	1.27E-01	7.04E-02	1.24E-01	2.10E+01	2.20E+01	1.17E+00	1.40E+01	1.49E+00
BREOT-N44-30 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	1.92E+03	2.64E+01	7.84E-04	1.16E+02	9.12E-02	7.04E-02	1.24E-01	1.50E+01	2.20E+01	1.17E+00	1.40E+01	1.07E+00
BREOT-S44-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	2.30E+03	3.17E+01	7.84E-04	1.40E+02	1.10E-01	7.04E-02	1.24E-01	1.81E+01	2.20E+01	1.17E+00	1.40E+01	1.29E+00
BREOT-N45-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	2.71E+03	3.73E+01	7.84E-04	1.65E+02	1.29E-01	7.04E-02	1.24E-01	2.13E+01	2.20E+01	1.17E+00	1.40E+01	1.51E+00
BREOT-N43-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	2.78E+03	3.83E+01	7.84E-04	1.69E+02	1.32E-01	7.04E-02	1.24E-01	2.18E+01	2.20E+01	1.17E+00	1.40E+01	1.55E+00
BREOT-S45-6 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	2.17E+03	2.98E+01	7.84E-04	1.32E+02	1.03E-01	7.04E-02	1.24E-01	1.70E+01	2.20E+01	1.17E+00	1.40E+01	1.21E+00
BREOT-N46-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	1.09E+03	1.50E+01	7.84E-04	6.60E+01	5.18E-02	7.04E-02	1.24E-01	8.53E+00	2.20E+01	1.17E+00	1.40E+01	6.07E-01
BREOT-S46-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	1.06E+03	1.45E+01	7.84E-04	6.40E+01	5.02E-02	7.04E-02	1.24E-01	8.27E+00	2.20E+01	1.17E+00	1.40E+01	5.89E-01
BREOT-S46-40 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	1.55E+03	2.13E+01	7.84E-04	9.38E+01	7.36E-02	7.04E-02	1.24E-01	1.21E+01	2.20E+01	1.17E+00	1.40E+01	8.63E-01
BREOT-N47-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	1.59E+03	2.19E+01	7.84E-04	9.66E+01	7.58E-02	7.04E-02	1.24E-01	1.25E+01	2.20E+01	1.17E+00	1.40E+01	8.89E-01
BREOT-S47-999 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	2.51E+03	3.46E+01	7.84E-04	1.52E+02	1.20E-01	7.04E-02	1.24E-01	1.97E+01	2.20E+01	1.17E+00	1.40E+01	1.40E+00
BREOT-S48-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	7.67E+02	1.06E+01	7.84E-04	4.65E+01	3.65E-02	7.04E-02	1.24E-01	6.01E+00	2.20E+01	1.17E+00	1.40E+01	4.28E-01
BREOT-S49-2.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	9.11E+02	1.25E+01	7.84E-04	5.53E+01	4.34E-02	7.04E-02	1.24E-01	7.14E+00	2.20E+01	1.17E+00	1.40E+01	5.08E-01
BREOT-S50-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	2.85E+02	3.92E+00	7.84E-04	1.73E+01	1.36E-02	7.04E-02	1.24E-01	2.23E+00	2.20E+01	1.17E+00	1.40E+01	1.59E-01
BREOT-S50-25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	4.29E+02	5.91E+00	7.84E-04	2.61E+01	2.04E-02	7.04E-02	1.24E-01	3.36E+00	2.20E+01	1.17E+00	1.40E+01	2.40E-01
BREOT-N52-60 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	3.53E+03	4.85E+01	7.84E-04	2.14E+02	1.68E-01	7.04E-02	1.24E-01	2.76E+01	2.20E+01	1.17E+00	1.40E+01	1.97E+00
BREOT-S52-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	1.59E+03	2.19E+01	7.84E-04	9.67E+01	7.58E-02	7.04E-02	1.24E-01	1.25E+01	2.20E+01	1.17E+00	1.40E+01	8.89E-01
BREOT-S53-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	4.73E+02	6.51E+00	7.84E-04	2.87E+01	2.25E-02	7.04E-02	1.24E-01	3.71E+00	2.20E+01	1.17E+00	1.40E+01	2.64E-01
BREOT-S54-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	3.48E+02	4.78E+00	7.84E-04	2.11E+01	1.65E-02	7.04E-02	1.24E-01	2.72E+00	2.20E+01	1.17E+00	1.40E+01	1.94E-01
BREOT-N55-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	3.08E+03	4.23E+01	7.84E-04	1.87E+02	1.46E-01	7.04E-02	1.24E-01	2.41E+01	2.20E+01	1.17E+00	1.40E+01	1.72E+00
BREOT-S55-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	1.07E+03	1.47E+01	7.84E-04	6.49E+01	5.09E-02	7.04E-02	1.24E-01	8.37E+00	2.20E+01	1.17E+00	1.40E+01	5.96E-01
BREOT-N56-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	2.09E+03	2.87E+01	7.84E-04	1.27E+02	9.94E-02	7.04E-02	1.24E-01	1.64E+01	2.20E+01	1.17E+00	1.40E+01	1.17E+00
BREOT-S56-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	4.52E+02	6.22E+00	7.84E-04	2.74E+01	2.15E-02	7.04E-02	1.24E-01	3.54E+00	2.20E+01	1.17E+00	1.40E+01	2.52E-01
BREOT-N57-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	2.03E+03	2.79E+01	7.84E-04	1.23E+02	9.65E-02	7.04E-02	1.24E-01	1.59E+01	2.20E+01	1.17E+00	1.40E+01	1.13E+00
BREOT-S57-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	1.19E+03	1.63E+01	7.84E-04	7.20E+01	5.65E-02	7.04E-02	1.24E-01	9.30E+00	2.20E+01	1.17E+00	1.40E+01	6.62E-01
BREOT-N58-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	8.65E+02	1.19E+01	7.84E-04	5.25E+01	4.12E-02	7.04E-02	1.24E-01	6.78E+00	2.20E+01	1.17E+00	1.40E+01	4.83E-01
BREOT-S58-12 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	1.36E+03	1.87E+01	7.84E-04	8.27E+01	6.48E-02	7.04E-02	1.24E-01	1.07E+01	2.20E+01	1.17E+00	1.40E+01	7.60E-01
BREOT-N59-18 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	1.51E+03	2.08E+01	7.84E-04	9.18E+01	7.20E-02	7.04E-02	1.24E-01	1.19E+01	2.20E+01	1.17E+00	1.40E+01	8.44E-01
BREOT-N60-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	4.28E+02	5.89E+00	7.84E-04	2.60E+01	2.04E-02	7.04E-02	1.24E-01	3.36E+00	2.20E+01	1.17E+00	1.40E+01	2.39E-01
BREOT-S60-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	1.31E+03	1.80E+01	7.84E-04	7.95E+01	6.24E-02	7.04E-02	1.24E-01	1.03E+01	2.20E+01	1.17E+00	1.40E+01	7.31E-01
BREOT-S61-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	7.37E+02	1.01E+01	7.84E-04	4.47E+01	3.51E-02	7.04E-02	1.24E-01	5.78E+00	2.20E+01	1.17E+00	1.40E+01	4.11E-01
BREOT-N62-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	1.49E+02	2.05E+00	7.84E-04	9.05E+00	7.10E-03	7.04E-02	1.24E-01	1.17E+00	2.20E+01	1.17E+00	1.40E+01	8.32E-02
BREOT-S62-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	1.68E+03	2.32E+01	7.84E-04	1.02E+02	8.01E-02	7.04E-02	1.24E-01	1.32E+01	2.20E+01	1.17E+00	1.40E+01	9.39E-01
BREOT-S63-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	1.04E+03	1.43E+01	7.84E-04	6.29E+01	4.93E-02	7.04E-02	1.24E-01	8.12E+00	2.20E+01	1.17E+00	1.40E+01	5.78E-01
BREOT-N64-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	6.52E+02	8.97E+00	7.84E-04	3.96E+01	3.10E-02	7.04E-02	1.24E-01	5.11E+00	2.20E+01	1.17E+00	1.40E+01	3.64E-01
BREOT-N64-20 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	8.06E+02	1.11E+01	7.84E-04	4.89E+01	3.83E-02	7.04E-02	1.24E-01	6.31E+00	2.20E+01	1.17E+00	1.40E+01	4.49E-01
BREOT-S64-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	1.03E+03	1.42E+01	7.84E-04	6.25E+01	4.90E-02	7.04E-02	1.24E-01	8.08E+00	2.20E+01	1.17E+00	1.40E+01	5.75E-01
BREOT-N65-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	4.63E+02	6.37E+00	7.84E-04	2.81E+01	2.20E-02	7.04E-02	1.24E-01	3.63E+00	2.20E+01	1.17E+00	1.40E+01	2.58E-01
BREOT-S65-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	2.00E+03	2.75E+01	7.84E-04	1.21E+02	9.50E-02	7.04E-02	1.24E-01	1.56E+01	2.20E+01	1.17E+00	1.40E+01	1.11E+00
BREOT-N66-5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	1.62E+03	2.24E+01	7.84E-04	9.86E+01	7.73E-02	7.04E-02	1.24E-01	1.27E+01	2.20E+01	1.17E+00	1.40E+01	9.06E-01
BREOT-S66-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	1.14E+03	1.58E+01	7.84E-04	6.95E+01	5.45E-02	7.04E-02	1.24E-01	8.97E+00	2.20E+01	1.17E+00	1.40E+01	6.39E-01
BREOT-N67-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	1.61E+03	2.21E+01	7.84E-04	9.75E+01	7.64E-02	7.04E-02	1.24E-01	1.26E+01	2.20E+01	1.17E+00	1.40E+01	8.96E-01
BREOT-S67-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	2.09E+02	2.87E+00	7.84E-04	1.27E+01	9.94E-03	7.04E-02	1.24E-01	1.64E+00	2.20E+01	1.17E+00	1.40E+01	1.17E-01
At Edge of Tailings																						**Maximum HQ (Inside Tailings)**	**1.13E+01**
BREOT-S0-0 (06)	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	1.30E+03	1.79E+01	7.84E-04	7.87E+01	6.18E-02	7.04E-02	1.24E-01	1.02E+01	2.20E+01	1.17E+00	1.40E+01	7.24E-01
BREOT-S1-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	3.94E+03	5.42E+01	7.84E-04	2.39E+02	1.87E-01	7.04E-02	1.24E-01	3.09E+01	2.20E+01	1.17E+00	1.40E+01	2.20E+00
BREOT-S2-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	1.12E+03	1.55E+01	7.84E-04	6.81E+01	5.34E-02	7.04E-02	1.24E-01	8.80E+00	2.20E+01	1.17E+00	1.40E+01	6.26E-01
BREOT-S3-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	4.40E+03	6.05E+01	7.84E-04	2.67E+02	2.09E-01	7.04E-02	1.24E-01	3.45E+01	2.20E+01	1.17E+00	1.40E+01	2.45E+00
BREOT-S4-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	4.00E+03	5.50E+01	7.84E-04	2.42E+02	1.90E-01	7.04E-02	1.24E-01	3.13E+01	2.20E+01	1.17E+00	1.40E+01	2.23E+00
BREOT-S6-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	4.79E+03	6.59E+01	7.84E-04	2.91E+02	2.28E-01	7.04E-02	1.24E-01	3.75E+01	2.20E+01	1.17E+00	1.40E+01	2.67E+00
BREOT-S7-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	2.86E+03	3.94E+01	7.84E-04	1.74E+02	1.36E-01	7.04E-02	1.24E-01	2.24E+01	2.20E+01	1.17E+00	1.40E+01	1.60E+00
BREOT-S8-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	8.57E+02	1.18E+01	7.84E-04	5.20E+01	4.08E-02	7.04E-02	1.24E-01	6.71E+00	2.20E+01	1.17E+00	1.40E+01	4.78E-01

TABLE C-2A: ARSENIC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 18.41

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
American Kestrel (Insectivorous Birds - Terrestrial)																							
BREOT-S9-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	1.96E+03	2.70E+01	7.84E-04	1.19E+02	9.34E-02	7.04E-02	1.24E-01	1.54E+01	2.20E+01	1.17E+00	1.40E+01	1.09E+00
BREOT-N10-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	1.76E+04	2.42E+02	7.84E-04	1.07E+03	8.35E-01	7.04E-02	1.24E-01	1.38E+02	2.20E+01	1.17E+00	1.40E+01	9.79E+00
BREOT-N11-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	4.82E+03	6.63E+01	7.84E-04	2.92E+02	2.29E-01	7.04E-02	1.24E-01	3.77E+01	2.20E+01	1.17E+00	1.40E+01	2.69E+00
BREOT-S11-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	1.66E+03	2.29E+01	7.84E-04	1.01E+02	7.92E-02	7.04E-02	1.24E-01	1.30E+01	2.20E+01	1.17E+00	1.40E+01	9.28E-01
BREOT-N12-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	1.81E+03	2.49E+01	7.84E-04	1.10E+02	8.60E-02	7.04E-02	1.24E-01	1.42E+01	2.20E+01	1.17E+00	1.40E+01	1.01E+00
BREOT-S12-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	1.82E+03	2.50E+01	7.84E-04	1.10E+02	8.65E-02	7.04E-02	1.24E-01	1.42E+01	2.20E+01	1.17E+00	1.40E+01	1.01E+00
BREOT-N13-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	2.07E+04	2.85E+02	7.84E-04	1.26E+03	9.85E-01	7.04E-02	1.24E-01	1.62E+02	2.20E+01	1.17E+00	1.40E+01	1.16E+01
BREOT-S13-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	2.99E+02	4.11E+00	7.84E-04	1.81E+01	1.42E-02	7.04E-02	1.24E-01	2.34E+00	2.20E+01	1.17E+00	1.40E+01	1.67E-01
BREOT-N14-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	2.71E+03	3.73E+01	7.84E-04	1.64E+02	1.29E-01	7.04E-02	1.24E-01	2.12E+01	2.20E+01	1.17E+00	1.40E+01	1.51E+00
BREOT-S14-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	1.17E+04	1.61E+02	7.84E-04	7.08E+02	5.56E-01	7.04E-02	1.24E-01	9.15E+01	2.20E+01	1.17E+00	1.40E+01	6.51E+00
BREOT-N15-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	5.32E+03	7.32E+01	7.84E-04	3.23E+02	2.53E-01	7.04E-02	1.24E-01	4.17E+01	2.20E+01	1.17E+00	1.40E+01	2.97E+00
BREOT-N16-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	3.33E+03	4.58E+01	7.84E-04	2.02E+02	1.58E-01	7.04E-02	1.24E-01	2.61E+01	2.20E+01	1.17E+00	1.40E+01	1.86E+00
BREOT-S16-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	5.34E+02	7.35E+00	7.84E-04	3.24E+01	2.54E-02	7.04E-02	1.24E-01	4.19E+00	2.20E+01	1.17E+00	1.40E+01	2.98E-01
BREOT-N17-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	3.19E+03	4.39E+01	7.84E-04	1.94E+02	1.52E-01	7.04E-02	1.24E-01	2.50E+01	2.20E+01	1.17E+00	1.40E+01	1.78E+00
BREOT-S17-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	3.62E+03	4.98E+01	7.84E-04	2.20E+02	1.72E-01	7.04E-02	1.24E-01	2.84E+01	2.20E+01	1.17E+00	1.40E+01	2.02E+00
BREOT-N18-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	2.79E+03	3.84E+01	7.84E-04	1.69E+02	1.33E-01	7.04E-02	1.24E-01	2.19E+01	2.20E+01	1.17E+00	1.40E+01	1.56E+00
BREOT-S18-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	8.17E+03	1.12E+02	7.84E-04	4.96E+02	3.89E-01	7.04E-02	1.24E-01	6.40E+01	2.20E+01	1.17E+00	1.40E+01	4.56E+00
BREOT-N19-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	3.99E+03	5.48E+01	7.84E-04	2.42E+02	1.90E-01	7.04E-02	1.24E-01	3.12E+01	2.20E+01	1.17E+00	1.40E+01	2.22E+00
BREOT-S19-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	9.94E+02	1.37E+01	7.84E-04	6.03E+01	4.73E-02	7.04E-02	1.24E-01	7.79E+00	2.20E+01	1.17E+00	1.40E+01	5.55E-01
BREOT-N20-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	2.84E+03	3.91E+01	7.84E-04	1.72E+02	1.35E-01	7.04E-02	1.24E-01	2.23E+01	2.20E+01	1.17E+00	1.40E+01	1.58E+00
BREOT-S20-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	8.86E+02	1.22E+01	7.84E-04	5.38E+01	4.22E-02	7.04E-02	1.24E-01	6.94E+00	2.20E+01	1.17E+00	1.40E+01	4.94E-01
BREOT-N21-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	7.93E+03	1.09E+02	7.84E-04	4.81E+02	3.78E-01	7.04E-02	1.24E-01	6.22E+01	2.20E+01	1.17E+00	1.40E+01	4.43E+00
BREOT-S21-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	3.04E+03	4.18E+01	7.84E-04	1.84E+02	1.45E-01	7.04E-02	1.24E-01	2.38E+01	2.20E+01	1.17E+00	1.40E+01	1.70E+00
BREOT-N22-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	3.43E+03	4.71E+01	7.84E-04	2.08E+02	1.63E-01	7.04E-02	1.24E-01	2.68E+01	2.20E+01	1.17E+00	1.40E+01	1.91E+00
BREOT-S22-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	3.06E+03	4.21E+01	7.84E-04	1.86E+02	1.46E-01	7.04E-02	1.24E-01	2.40E+01	2.20E+01	1.17E+00	1.40E+01	1.71E+00
BREOT-N23-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	3.42E+03	4.71E+01	7.84E-04	2.08E+02	1.63E-01	7.04E-02	1.24E-01	2.68E+01	2.20E+01	1.17E+00	1.40E+01	1.91E+00
BREOT-S23-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	3.89E+03	5.35E+01	7.84E-04	2.36E+02	1.85E-01	7.04E-02	1.24E-01	3.05E+01	2.20E+01	1.17E+00	1.40E+01	2.17E+00
BREOT-N24-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	3.81E+03	5.25E+01	7.84E-04	2.31E+02	1.81E-01	7.04E-02	1.24E-01	2.99E+01	2.20E+01	1.17E+00	1.40E+01	2.13E+00
BREOT-S24-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	2.42E+03	3.33E+01	7.84E-04	1.47E+02	1.15E-01	7.04E-02	1.24E-01	1.89E+01	2.20E+01	1.17E+00	1.40E+01	1.35E+00
BREOT-N25-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	3.62E+03	4.98E+01	7.84E-04	2.19E+02	1.72E-01	7.04E-02	1.24E-01	2.83E+01	2.20E+01	1.17E+00	1.40E+01	2.02E+00
BREOT-S25-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	2.13E+03	2.93E+01	7.84E-04	1.29E+02	1.01E-01	7.04E-02	1.24E-01	1.67E+01	2.20E+01	1.17E+00	1.40E+01	1.19E+00
BREOT-N26-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	7.79E+03	1.07E+02	7.84E-04	4.72E+02	3.71E-01	7.04E-02	1.24E-01	6.10E+01	2.20E+01	1.17E+00	1.40E+01	4.34E+00
BREOT-S26-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	2.32E+03	3.19E+01	7.84E-04	1.41E+02	1.10E-01	7.04E-02	1.24E-01	1.82E+01	2.20E+01	1.17E+00	1.40E+01	1.29E+00
BREOT-N27-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	7.67E+03	1.06E+02	7.84E-04	4.65E+02	3.65E-01	7.04E-02	1.24E-01	6.01E+01	2.20E+01	1.17E+00	1.40E+01	4.28E+00
BREOT-S27-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	3.45E+03	4.74E+01	7.84E-04	2.09E+02	1.64E-01	7.04E-02	1.24E-01	2.70E+01	2.20E+01	1.17E+00	1.40E+01	1.92E+00
BREOT-N28-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	2.04E+03	2.81E+01	7.84E-04	1.24E+02	9.70E-02	7.04E-02	1.24E-01	1.60E+01	2.20E+01	1.17E+00	1.40E+01	1.14E+00
BREOT-S28-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	1.90E+03	2.62E+01	7.84E-04	1.16E+02	9.06E-02	7.04E-02	1.24E-01	1.49E+01	2.20E+01	1.17E+00	1.40E+01	1.06E+00
BREOT-S29-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	2.80E+02	3.85E+00	7.84E-04	1.70E+01	1.33E-02	7.04E-02	1.24E-01	2.19E+00	2.20E+01	1.17E+00	1.40E+01	1.56E-01
BREOT-N30-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	7.27E+03	1.00E+02	7.84E-04	4.41E+02	3.46E-01	7.04E-02	1.24E-01	5.70E+01	2.20E+01	1.17E+00	1.40E+01	4.06E+00
BREOT-S30-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	2.04E+02	2.81E+00	7.84E-04	1.24E+01	9.72E-03	7.04E-02	1.24E-01	1.60E+00	2.20E+01	1.17E+00	1.40E+01	1.14E-01
BREOT-N31-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	1.78E+03	2.45E+01	7.84E-04	1.08E+02	8.49E-02	7.04E-02	1.24E-01	1.40E+01	2.20E+01	1.17E+00	1.40E+01	9.95E-01
BREOT-S31-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	1.87E+02	2.58E+00	7.84E-04	1.14E+01	8.92E-03	7.04E-02	1.24E-01	1.47E+00	2.20E+01	1.17E+00	1.40E+01	1.05E-01
BREOT-N32-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	2.32E+03	3.19E+01	7.84E-04	1.41E+02	1.10E-01	7.04E-02	1.24E-01	1.82E+01	2.20E+01	1.17E+00	1.40E+01	1.29E+00
BREOT-S32-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	1.45E+03	1.99E+01	7.84E-04	8.79E+01	6.89E-02	7.04E-02	1.24E-01	1.13E+01	2.20E+01	1.17E+00	1.40E+01	8.08E-01
BREOT-N33-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	2.71E+02	3.73E+00	7.84E-04	1.64E+01	1.29E-02	7.04E-02	1.24E-01	2.12E+00	2.20E+01	1.17E+00	1.40E+01	1.51E-01
BREOT-S33-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	1.38E+03	1.90E+01	7.84E-04	8.37E+01	6.57E-02	7.04E-02	1.24E-01	1.08E+01	2.20E+01	1.17E+00	1.40E+01	7.70E-01
BREOT-N34-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	4.10E+02	5.64E+00	7.84E-04	2.49E+01	1.95E-02	7.04E-02	1.24E-01	3.21E+00	2.20E+01	1.17E+00	1.40E+01	2.29E-01
BREOT-S34-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	2.29E+03	3.15E+01	7.84E-04	1.39E+02	1.09E-01	7.04E-02	1.24E-01	1.79E+01	2.20E+01	1.17E+00	1.40E+01	1.28E+00
BREOT-N35-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	4.08E+02	5.61E+00	7.84E-04	2.47E+01	1.94E-02	7.04E-02	1.24E-01	3.19E+00	2.20E+01	1.17E+00	1.40E+01	2.27E-01
BREOT-S35-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	1.81E+03	2.49E+01	7.84E-04	1.10E+02	8.60E-02	7.04E-02	1.24E-01	1.42E+01	2.20E+01	1.17E+00	1.40E+01	1.01E+00
BREOT-N36-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	3.56E+03	4.90E+01	7.84E-04	2.16E+02	1.69E-01	7.04E-02	1.24E-01	2.79E+01	2.20E+01	1.17E+00	1.40E+01	1.99E+00
BREOT-S36-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	2.64E+03	3.64E+01	7.84E-04	1.60E+02	1.26E-01	7.04E-02	1.24E-01	2.07E+01	2.20E+01	1.17E+00	1.40E+01	1.47E+00
BREOT-N37-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	1.40E+03	1.93E+01	7.84E-04	8.50E+01	6.67E-02	7.04E-02	1.24E-01	1.10E+01	2.20E+01	1.17E+00	1.40E+01	7.82E-01
BREOT-S37-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	2.49E+03	3.43E+01	7.84E-04	1.51E+02	1.19E-01	7.04E-02	1.24E-01	1.95E+01	2.20E+01	1.17E+00	1.40E+01	1.39E+00
BREOT-N38-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	3.01E+02	4.14E+00	7.84E-04	1.83E+01	1.43E-02	7.04E-02	1.24E-01	2.36E+00	2.20E+01	1.17E+00	1.40E+01	1.68E-01

TABLE C-2A: ARSENIC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **18.41**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
American Kestrel (Insectivorous Birds - Terrestrial)																							
BREOT-S38-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	5.13E+02	7.06E+00	7.84E-04	3.11E+01	2.44E-02	7.04E-02	1.24E-01	4.02E+00	2.20E+01	1.17E+00	1.40E+01	2.86E-01
BREOT-N39-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	3.27E+02	4.50E+00	7.84E-04	1.99E+01	1.56E-02	7.04E-02	1.24E-01	2.56E+00	2.20E+01	1.17E+00	1.40E+01	1.83E-01
BREOT-N40-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	6.91E+02	9.51E+00	7.84E-04	4.19E+01	3.29E-02	7.04E-02	1.24E-01	5.41E+00	2.20E+01	1.17E+00	1.40E+01	3.86E-01
BREOT-S40-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	2.80E+03	3.85E+01	7.84E-04	1.70E+02	1.33E-01	7.04E-02	1.24E-01	2.19E+01	2.20E+01	1.17E+00	1.40E+01	1.56E+00
BREOT-N41-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	4.84E+02	6.67E+00	7.84E-04	2.94E+01	2.31E-02	7.04E-02	1.24E-01	3.80E+00	2.20E+01	1.17E+00	1.40E+01	2.70E-01
BREOT-S41-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	3.42E+03	4.71E+01	7.84E-04	2.08E+02	1.63E-01	7.04E-02	1.24E-01	2.68E+01	2.20E+01	1.17E+00	1.40E+01	1.91E+00
BREOT-N42-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S42-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	3.56E+03	4.90E+01	7.84E-04	2.16E+02	1.70E-01	7.04E-02	1.24E-01	2.79E+01	2.20E+01	1.17E+00	1.40E+01	1.99E+00
BREOT-N43-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	5.79E+02	7.97E+00	7.84E-04	3.51E+01	2.75E-02	7.04E-02	1.24E-01	4.54E+00	2.20E+01	1.17E+00	1.40E+01	3.23E-01
BREOT-S43-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	3.31E+02	4.55E+00	7.84E-04	2.01E+01	1.57E-02	7.04E-02	1.24E-01	2.59E+00	2.20E+01	1.17E+00	1.40E+01	1.84E-01
BREOT-N44-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	1.08E+03	1.48E+01	7.84E-04	6.52E+01	5.12E-02	7.04E-02	1.24E-01	8.42E+00	2.20E+01	1.17E+00	1.40E+01	6.00E-01
BREOT-S44-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	1.20E+02	1.66E+00	7.84E-04	7.30E+00	5.73E-03	7.04E-02	1.24E-01	9.43E-01	2.20E+01	1.17E+00	1.40E+01	6.71E-02
BREOT-N45-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	1.63E+02	2.24E+00	7.84E-04	9.87E+00	7.74E-03	7.04E-02	1.24E-01	1.27E+00	2.20E+01	1.17E+00	1.40E+01	9.07E-02
BREOT-S45-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	3.97E+02	5.47E+00	7.84E-04	2.41E+01	1.89E-02	7.04E-02	1.24E-01	3.11E+00	2.20E+01	1.17E+00	1.40E+01	2.22E-01
BREOT-N46-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	1.58E+02	2.17E+00	7.84E-04	9.56E+00	7.50E-03	7.04E-02	1.24E-01	1.23E+00	2.20E+01	1.17E+00	1.40E+01	8.79E-02
BREOT-S46-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	7.51E+02	1.03E+01	7.84E-04	4.55E+01	3.57E-02	7.04E-02	1.24E-01	5.88E+00	2.20E+01	1.17E+00	1.40E+01	4.19E-01
BREOT-N47-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	1.44E+02	1.98E+00	7.84E-04	8.75E+00	6.86E-03	7.04E-02	1.24E-01	1.13E+00	2.20E+01	1.17E+00	1.40E+01	8.05E-02
BREOT-S47-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	3.35E+02	4.60E+00	7.84E-04	2.03E+01	1.59E-02	7.04E-02	1.24E-01	2.62E+00	2.20E+01	1.17E+00	1.40E+01	1.87E-01
BREOT-N48-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	1.86E+02	2.55E+00	7.84E-04	1.13E+01	8.83E-03	7.04E-02	1.24E-01	1.45E+00	2.20E+01	1.17E+00	1.40E+01	1.04E-01
BREOT-S48-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	1.06E+03	1.45E+01	7.84E-04	6.41E+01	5.03E-02	7.04E-02	1.24E-01	8.28E+00	2.20E+01	1.17E+00	1.40E+01	5.90E-01
BREOT-N49-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	4.98E+02	6.85E+00	7.84E-04	3.02E+01	2.37E-02	7.04E-02	1.24E-01	3.90E+00	2.20E+01	1.17E+00	1.40E+01	2.78E-01
BREOT-S49-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	1.40E+02	1.92E+00	7.84E-04	8.49E+00	6.66E-03	7.04E-02	1.24E-01	1.10E+00	2.20E+01	1.17E+00	1.40E+01	7.80E-02
BREOT-S50-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	4.15E+02	5.71E+00	7.84E-04	2.52E+01	1.98E-02	7.04E-02	1.24E-01	3.25E+00	2.20E+01	1.17E+00	1.40E+01	2.32E-01
BREOT-N51-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	9.38E+02	1.29E+01	7.84E-04	5.69E+01	4.46E-02	7.04E-02	1.24E-01	7.35E+00	2.20E+01	1.17E+00	1.40E+01	5.23E-01
BREOT-S51-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	4.05E+02	5.58E+00	7.84E-04	2.46E+01	1.93E-02	7.04E-02	1.24E-01	3.18E+00	2.20E+01	1.17E+00	1.40E+01	2.26E-01
BREOT-N52-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	1.19E+02	1.64E+00	7.84E-04	7.22E+00	5.66E-03	7.04E-02	1.24E-01	9.32E-01	2.20E+01	1.17E+00	1.40E+01	6.63E-02
BREOT-S52-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	1.16E+02	1.60E+00	7.84E-04	7.06E+00	5.54E-03	7.04E-02	1.24E-01	9.12E-01	2.20E+01	1.17E+00	1.40E+01	6.49E-02
BREOT-N53-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	1.62E+02	2.23E+00	7.84E-04	9.85E+00	7.73E-03	7.04E-02	1.24E-01	1.27E+00	2.20E+01	1.17E+00	1.40E+01	9.06E-02
BREOT-S53-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	2.88E+02	3.97E+00	7.84E-04	1.75E+01	1.37E-02	7.04E-02	1.24E-01	2.26E+00	2.20E+01	1.17E+00	1.40E+01	1.61E-01
BREOT-N54-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	1.76E+02	2.43E+00	7.84E-04	1.07E+01	8.40E-03	7.04E-02	1.24E-01	1.38E+00	2.20E+01	1.17E+00	1.40E+01	9.84E-02
BREOT-S54-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	1.31E+02	1.80E+00	7.84E-04	7.94E+00	6.22E-03	7.04E-02	1.24E-01	1.02E+00	2.20E+01	1.17E+00	1.40E+01	7.30E-02
BREOT-N55-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	1.46E+02	2.01E+00	7.84E-04	8.86E+00	6.95E-03	7.04E-02	1.24E-01	1.14E+00	2.20E+01	1.17E+00	1.40E+01	8.15E-02
BREOT-S55-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	1.48E+02	2.03E+00	7.84E-04	8.96E+00	7.03E-03	7.04E-02	1.24E-01	1.16E+00	2.20E+01	1.17E+00	1.40E+01	8.24E-02
BREOT-N56-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	1.38E+03	1.90E+01	7.84E-04	8.38E+01	6.57E-02	7.04E-02	1.24E-01	1.08E+01	2.20E+01	1.17E+00	1.40E+01	7.70E-01
BREOT-N57-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	1.77E+02	2.44E+00	7.84E-04	1.07E+01	8.43E-03	7.04E-02	1.24E-01	1.39E+00	2.20E+01	1.17E+00	1.40E+01	9.88E-02
BREOT-S57-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	6.49E+02	8.94E+00	7.84E-04	3.94E+01	3.09E-02	7.04E-02	1.24E-01	5.09E+00	2.20E+01	1.17E+00	1.40E+01	3.62E-01
BREOT-N58-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	3.43E+02	4.72E+00	7.84E-04	2.08E+01	1.63E-02	7.04E-02	1.24E-01	2.68E+00	2.20E+01	1.17E+00	1.40E+01	1.91E-01
BREOT-S58-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	3.96E+02	5.46E+00	7.84E-04	2.41E+01	1.89E-02	7.04E-02	1.24E-01	3.11E+00	2.20E+01	1.17E+00	1.40E+01	2.21E-01
BREOT-N59-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	5.73E+02	7.89E+00	7.84E-04	3.48E+01	2.73E-02	7.04E-02	1.24E-01	4.49E+00	2.20E+01	1.17E+00	1.40E+01	3.20E+01
BREOT-N60-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	3.25E+02	4.47E+00	7.84E-04	1.97E+01	1.55E-02	7.04E-02	1.24E-01	2.55E+00	2.20E+01	1.17E+00	1.40E+01	1.81E-01
BREOT-S60-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	1.34E+03	1.84E+01	7.84E-04	8.13E+01	6.38E-02	7.04E-02	1.24E-01	1.05E+01	2.20E+01	1.17E+00	1.40E+01	7.48E-01
BREOT-S61-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	1.49E+02	2.05E+00	7.84E-04	9.02E+00	7.08E-03	7.04E-02	1.24E-01	1.16E+00	2.20E+01	1.17E+00	1.40E+01	8.29E-02
BREOT-N62-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	3.01E+02	4.15E+00	7.84E-04	1.83E+01	1.43E-02	7.04E-02	1.24E-01	2.36E+00	2.20E+01	1.17E+00	1.40E+01	1.68E-01
BREOT-S62-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	1.54E+02	2.12E+00	7.84E-04	9.35E+00	7.33E-03	7.04E-02	1.24E-01	1.21E+00	2.20E+01	1.17E+00	1.40E+01	8.60E-02
BREOT-N63-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	9.18E+02	1.26E+01	7.84E-04	5.57E+01	4.37E-02	7.04E-02	1.24E-01	7.19E+00	2.20E+01	1.17E+00	1.40E+01	5.12E-01
BREOT-S63-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	4.85E+02	6.67E+00	7.84E-04	2.94E+01	2.31E-02	7.04E-02	1.24E-01	3.80E+00	2.20E+01	1.17E+00	1.40E+01	2.70E-01
BREOT-N64-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	1.43E+02	1.97E+00	7.84E-04	8.70E+00	6.82E-03	7.04E-02	1.24E-01	1.12E+00	2.20E+01	1.17E+00	1.40E+01	8.00E-02
BREOT-S64-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	1.78E+02	2.45E+00	7.84E-04	1.08E+01	8.46E-03	7.04E-02	1.24E-01	1.39E+00	2.20E+01	1.17E+00	1.40E+01	9.92E-02
BREOT-N66-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	6.11E+02	8.40E+00	7.84E-04	3.70E+01	2.91E-02	7.04E-02	1.24E-01	4.78E+00	2.20E+01	1.17E+00	1.40E+01	3.41E-01
BREOT-S66-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	3.04E+02	4.19E+00	7.84E-04	1.85E+01	1.45E-02	7.04E-02	1.24E-01	2.38E+00	2.20E+01	1.17E+00	1.40E+01	1.70E-01
BREOT-N67-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	1.40E+03	1.93E+01	7.84E-04	8.50E+01	6.67E-02	7.04E-02	1.24E-01	1.10E+01	2.20E+01	1.17E+00	1.40E+01	7.82E-01
BREOT-S67-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	1.30E+02	1.79E+00	7.84E-04	7.90E+00	6.20E-03	7.04E-02	1.24E-01	1.02E+00	2.20E+01	1.17E+00	1.40E+01	7.26E-02
Outside Tailings																						**Maximum HQ (At Edge of Tailings)**	**1.16E+01**
BREOT-S0+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	6.18E+02	8.50E+00	7.84E-04	3.75E+01	2.94E-02	7.04E-02	1.24E-01	4.84E+00	2.20E+01	1.17E+00	1.40E+01	3.45E-01
BREOT-S1+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	1.62E+02	2.22E+00	7.84E-04	9.81E+00	7.69E-03	7.04E-02	1.24E-01	1.27E+00	2.20E+01	1.17E+00	1.40E+01	9.02E-02

TABLE C-2A: ARSENIC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 18.41

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
American Kestrel (Insectivorous Birds - Terrestrial)																							
BREOT-S2+95 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	3.76E+02	5.17E+00	7.84E-04	2.28E+01	1.79E-02	7.04E-02	1.24E-01	2.95E+00	2.20E+01	1.17E+00	1.40E+01	2.10E-01
BREOT-S3+6 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	1.72E+02	2.37E+00	7.84E-04	1.05E+01	8.20E-03	7.04E-02	1.24E-01	1.35E+00	2.20E+01	1.17E+00	1.40E+01	9.61E-02
BREOT-S4+10 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	3.36E+02	4.63E+00	7.84E-04	2.04E+01	1.60E-02	7.04E-02	1.24E-01	2.63E+00	2.20E+01	1.17E+00	1.40E+01	1.88E-01
BREOT-S6+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	4.78E+02	6.57E+00	7.84E-04	2.90E+01	2.27E-02	7.04E-02	1.24E-01	3.74E+00	2.20E+01	1.17E+00	1.40E+01	2.66E-01
BREOT-S8+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	5.72E+02	7.88E+00	7.84E-04	3.47E+01	2.72E-02	7.04E-02	1.24E-01	4.49E+00	2.20E+01	1.17E+00	1.40E+01	3.19E-01
BREOT-N10+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	3.43E+02	4.72E+00	7.84E-04	2.08E+01	1.63E-02	7.04E-02	1.24E-01	2.69E+00	2.20E+01	1.17E+00	1.40E+01	1.91E-01
BREOT-N11+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	1.69E+02	2.33E+00	7.84E-04	1.03E+01	8.06E-03	7.04E-02	1.24E-01	1.33E+00	2.20E+01	1.17E+00	1.40E+01	9.45E-02
BREOT-N12+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	2.13E+02	2.93E+00	7.84E-04	1.29E+01	1.01E-02	7.04E-02	1.24E-01	1.67E+00	2.20E+01	1.17E+00	1.40E+01	1.19E-01
BREOT-S12+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	4.19E+03	5.77E+01	7.84E-04	2.54E+02	1.99E-01	7.04E-02	1.24E-01	3.28E+01	2.20E+01	1.17E+00	1.40E+01	2.34E+00
BREOT-S12+60 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	1.40E+03	1.93E+01	7.84E-04	8.51E+01	6.68E-02	7.04E-02	1.24E-01	1.10E+01	2.20E+01	1.17E+00	1.40E+01	7.83E-01
BREOT-N13+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	2.13E+02	2.94E+00	7.84E-04	1.30E+01	1.02E-02	7.04E-02	1.24E-01	1.67E+00	2.20E+01	1.17E+00	1.40E+01	1.19E-01
BREOT-S13+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	3.05E+03	4.20E+01	7.84E-04	1.85E+02	1.45E-01	7.04E-02	1.24E-01	2.39E+01	2.20E+01	1.17E+00	1.40E+01	1.70E+00
BREOT-S13+65 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	1.71E+03	2.35E+01	7.84E-04	1.03E+02	8.11E-02	7.04E-02	1.24E-01	1.34E+01	2.20E+01	1.17E+00	1.40E+01	9.51E-01
BREOT-N14+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	6.52E+02	8.97E+00	7.84E-04	3.95E+01	3.10E-02	7.04E-02	1.24E-01	5.11E+00	2.20E+01	1.17E+00	1.40E+01	3.64E-01
BREOT-S14+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	1.15E+04	1.58E+02	7.84E-04	6.99E+02	5.48E-01	7.04E-02	1.24E-01	9.02E+01	2.20E+01	1.17E+00	1.40E+01	6.42E+00
BREOT-S14+59 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	1.66E+03	2.28E+01	7.84E-04	1.00E+02	7.88E-02	7.04E-02	1.24E-01	1.30E+01	2.20E+01	1.17E+00	1.40E+01	9.24E-01
BREOT-N15+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	1.72E+03	2.37E+01	7.84E-04	1.04E+02	8.19E-02	7.04E-02	1.24E-01	1.35E+01	2.20E+01	1.17E+00	1.40E+01	9.61E-01
BREOT-N15+50 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	1.46E+02	2.01E+00	7.84E-04	8.85E+00	6.94E-03	7.04E-02	1.24E-01	1.14E+00	2.20E+01	1.17E+00	1.40E+01	8.14E-02
BREOT-S16+20 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	2.60E+03	3.57E+01	7.84E-04	1.58E+02	1.24E-01	7.04E-02	1.24E-01	2.03E+01	2.20E+01	1.17E+00	1.40E+01	1.45E+00
BREOT-S16+75 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	4.40E+02	6.06E+00	7.84E-04	2.67E+01	2.09E-02	7.04E-02	1.24E-01	3.45E+00	2.20E+01	1.17E+00	1.40E+01	2.46E-01
BREOT-N17+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	2.69E+03	3.71E+01	7.84E-04	1.63E+02	1.28E-01	7.04E-02	1.24E-01	2.11E+01	2.20E+01	1.17E+00	1.40E+01	1.50E+00
BREOT-S18+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	7.90E+02	1.09E+01	7.84E-04	4.80E+01	3.76E-02	7.04E-02	1.24E-01	6.19E+00	2.20E+01	1.17E+00	1.40E+01	4.41E-01
BREOT-S19+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	6.86E+03	9.45E+01	7.84E-04	4.16E+02	3.27E-01	7.04E-02	1.24E-01	5.38E+01	2.20E+01	1.17E+00	1.40E+01	3.83E+00
BREOT-S19+85 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	2.59E+02	3.56E+00	7.84E-04	1.57E+01	1.23E-02	7.04E-02	1.24E-01	2.03E+00	2.20E+01	1.17E+00	1.40E+01	1.44E-01
BREOT-N20+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	2.02E+02	2.78E+00	7.84E-04	1.22E+01	9.60E-03	7.04E-02	1.24E-01	1.58E+00	2.20E+01	1.17E+00	1.40E+01	1.13E-01
BREOT-S20+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	9.76E+03	1.34E+02	7.84E-04	5.92E+02	4.65E-01	7.04E-02	1.24E-01	7.65E+01	2.20E+01	1.17E+00	1.40E+01	5.45E+00
BREOT-S20+75 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N21+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	3.42E+03	4.71E+01	7.84E-04	2.08E+02	1.63E-01	7.04E-02	1.24E-01	2.68E+01	2.20E+01	1.17E+00	1.40E+01	1.91E+00
BREOT-S21+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	5.87E+03	8.08E+01	7.84E-04	3.56E+02	2.79E-01	7.04E-02	1.24E-01	4.60E+01	2.20E+01	1.17E+00	1.40E+01	3.27E+00
BREOT-N22+150 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	1.37E+02	1.88E+00	7.84E-04	8.30E+00	6.51E-03	7.04E-02	1.24E-01	1.07E+00	2.20E+01	1.17E+00	1.40E+01	7.63E-02
BREOT-N22+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	1.52E+03	2.09E+01	7.84E-04	9.20E+01	7.22E-02	7.04E-02	1.24E-01	1.19E+01	2.20E+01	1.17E+00	1.40E+01	8.46E-01
BREOT-S22+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	1.52E+03	2.09E+01	7.84E-04	9.20E+01	7.21E-02	7.04E-02	1.24E-01	1.19E+01	2.20E+01	1.17E+00	1.40E+01	8.46E-01
BREOT-N23+115 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	3.84E+02	5.28E+00	7.84E-04	2.33E+01	1.83E-02	7.04E-02	1.24E-01	3.01E+00	2.20E+01	1.17E+00	1.40E+01	2.14E-01
BREOT-N23+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	5.42E+03	7.46E+01	7.84E-04	3.29E+02	2.58E-01	7.04E-02	1.24E-01	4.25E+01	2.20E+01	1.17E+00	1.40E+01	3.02E+00
BREOT-S23+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	1.73E+03	2.38E+01	7.84E-04	1.05E+02	8.24E-02	7.04E-02	1.24E-01	1.36E+01	2.20E+01	1.17E+00	1.40E+01	9.66E-01
BREOT-S23+37.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	4.50E+02	6.19E+00	7.84E-04	2.73E+01	2.14E-02	7.04E-02	1.24E-01	3.53E+00	2.20E+01	1.17E+00	1.40E+01	2.51E-01
BREOT-N24+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	2.60E+03	3.57E+01	7.84E-04	1.58E+02	1.24E-01	7.04E-02	1.24E-01	2.04E+01	2.20E+01	1.17E+00	1.40E+01	1.45E+00
BREOT-N24+75 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	3.64E+02	5.01E+00	7.84E-04	2.21E+01	1.73E-02	7.04E-02	1.24E-01	2.85E+00	2.20E+01	1.17E+00	1.40E+01	2.03E-01
BREOT-S24+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	1.36E+03	1.88E+01	7.84E-04	8.28E+01	6.49E-02	7.04E-02	1.24E-01	1.07E+01	2.20E+01	1.17E+00	1.40E+01	7.61E-01
BREOT-N25+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	1.25E+02	1.72E+00	7.84E-04	7.57E+00	5.94E-03	7.04E-02	1.24E-01	9.78E-01	2.20E+01	1.17E+00	1.40E+01	6.96E-02
BREOT-S25+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	9.43E+02	1.30E+01	7.84E-04	5.72E+01	4.49E-02	7.04E-02	1.24E-01	7.39E+00	2.20E+01	1.17E+00	1.40E+01	5.26E-01
BREOT-S25+40 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	1.55E+03	2.14E+01	7.84E-04	9.43E+01	7.39E-02	7.04E-02	1.24E-01	1.22E+01	2.20E+01	1.17E+00	1.40E+01	8.67E-01
BREOT-S26+37 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	3.73E+02	5.13E+00	7.84E-04	2.26E+01	1.77E-02	7.04E-02	1.24E-01	2.92E+00	2.20E+01	1.17E+00	1.40E+01	2.08E-01
BREOT-N27+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	1.56E+02	2.15E+00	7.84E-04	9.49E+00	7.44E-03	7.04E-02	1.24E-01	1.23E+00	2.20E+01	1.17E+00	1.40E+01	8.73E-02
BREOT-S27+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	5.81E+02	7.99E+00	7.84E-04	3.52E+01	2.76E-02	7.04E-02	1.24E-01	4.55E+00	2.20E+01	1.17E+00	1.40E+01	3.24E-01
BREOT-N28+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	1.55E+02	2.14E+00	7.84E-04	9.43E+00	7.39E-03	7.04E-02	1.24E-01	1.22E+00	2.20E+01	1.17E+00	1.40E+01	8.67E-02
BREOT-S28+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	1.58E+03	2.18E+01	7.84E-04	9.61E+01	7.54E-02	7.04E-02	1.24E-01	1.24E+01	2.20E+01	1.17E+00	1.40E+01	8.83E-01
BREOT-N29+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	2.16E+02	2.97E+00	7.84E-04	1.31E+01	1.03E-02	7.04E-02	1.24E-01	1.69E+00	2.20E+01	1.17E+00	1.40E+01	1.20E-01
BREOT-S29+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	3.49E+02	4.80E+00	7.84E-04	2.12E+01	1.66E-02	7.04E-02	1.24E-01	2.73E+00	2.20E+01	1.17E+00	1.40E+01	1.95E-01
BREOT-N30+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	2.60E+02	3.58E+00	7.84E-04	1.58E+01	1.24E-02	7.04E-02	1.24E-01	2.04E+00	2.20E+01	1.17E+00	1.40E+01	1.45E-01
BREOT-S30+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	2.94E+02	4.04E+00	7.84E-04	1.78E+01	1.40E-02	7.04E-02	1.24E-01	2.30E+00	2.20E+01	1.17E+00	1.40E+01	1.64E-01
BREOT-N31+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	4.50E+03	6.19E+01	7.84E-04	2.73E+02	2.14E-01	7.04E-02	1.24E-01	3.53E+01	2.20E+01	1.17E+00	1.40E+01	2.51E+00
BREOT-N31+75 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S31+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	1.49E+02	2.05E+00	7.84E-04	9.05E+00	7.10E-03	7.04E-02	1.24E-01	1.17E+00	2.20E+01	1.17E+00	1.40E+01	8.32E-02

TABLE C-2A: ARSENIC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 18.41

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
American Kestrel (Insectivorous Birds - Terrestrial)																							
BREOT-N32+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	1.49E+02	2.05E+00	7.84E-04	9.04E+00	7.09E-03	7.04E-02	1.24E-01	1.17E+00	2.20E+01	1.17E+00	1.40E+01	8.31E-02
BREOT-S32+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	2.23E+03	3.07E+01	7.84E-04	1.35E+02	1.06E-01	7.04E-02	1.24E-01	1.75E+01	2.20E+01	1.17E+00	1.40E+01	1.25E+00
BREOT-S32+300 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	1.03E+03	1.42E+01	7.84E-04	6.24E+01	4.89E-02	7.04E-02	1.24E-01	8.06E+00	2.20E+01	1.17E+00	1.40E+01	5.74E-01
BREOT-N33+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	1.44E+02	1.98E+00	7.84E-04	8.72E+00	6.84E-03	7.04E-02	1.24E-01	1.13E+00	2.20E+01	1.17E+00	1.40E+01	8.01E-02
BREOT-S33+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	5.60E+02	7.71E+00	7.84E-04	3.40E+01	2.67E-02	7.04E-02	1.24E-01	4.39E+00	2.20E+01	1.17E+00	1.40E+01	3.13E-01
BREOT-N34+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	1.62E+02	2.23E+00	7.84E-04	9.85E+00	7.73E-03	7.04E-02	1.24E-01	1.27E+00	2.20E+01	1.17E+00	1.40E+01	9.06E-02
BREOT-S34+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	8.48E+02	1.17E+01	7.84E-04	5.14E+01	4.03E-02	7.04E-02	1.24E-01	6.64E+00	2.20E+01	1.17E+00	1.40E+01	4.73E-01
BREOT-N35+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	3.75E+02	5.16E+00	7.84E-04	2.27E+01	1.78E-02	7.04E-02	1.24E-01	2.94E+00	2.20E+01	1.17E+00	1.40E+01	2.09E-01
BREOT-S35+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	5.34E+02	7.35E+00	7.84E-04	3.24E+01	2.54E-02	7.04E-02	1.24E-01	4.19E+00	2.20E+01	1.17E+00	1.40E+01	2.98E-01
BREOT-N36+100 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	2.67E+02	3.67E+00	7.84E-04	1.62E+01	1.27E-02	7.04E-02	1.24E-01	2.09E+00	2.20E+01	1.17E+00	1.40E+01	1.49E-01
BREOT-N36+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	3.10E+03	4.26E+01	7.84E-04	1.88E+02	1.47E-01	7.04E-02	1.24E-01	2.43E+01	2.20E+01	1.17E+00	1.40E+01	1.73E+00
BREOT-S36+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	5.85E+02	8.05E+00	7.84E-04	3.55E+01	2.79E-02	7.04E-02	1.24E-01	4.59E+00	2.20E+01	1.17E+00	1.40E+01	3.27E-01
BREOT-N37+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	1.49E+02	2.05E+00	7.84E-04	9.05E+00	7.09E-03	7.04E-02	1.24E-01	1.17E+00	2.20E+01	1.17E+00	1.40E+01	8.32E-02
BREOT-S37+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	4.80E+02	6.60E+00	7.84E-04	2.91E+01	2.28E-02	7.04E-02	1.24E-01	3.76E+00	2.20E+01	1.17E+00	1.40E+01	2.68E-01
BREOT-N38+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	4.00E+02	5.50E+00	7.84E-04	2.43E+01	1.90E-02	7.04E-02	1.24E-01	3.13E+00	2.20E+01	1.17E+00	1.40E+01	2.23E-01
BREOT-S38+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	4.64E+02	6.38E+00	7.84E-04	2.81E+01	2.21E-02	7.04E-02	1.24E-01	3.63E+00	2.20E+01	1.17E+00	1.40E+01	2.59E-01
BREOT-N39+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	3.61E+02	4.97E+00	7.84E-04	2.19E+01	1.72E-02	7.04E-02	1.24E-01	2.83E+00	2.20E+01	1.17E+00	1.40E+01	2.02E-01
BREOT-S39+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	7.81E+02	1.07E+01	7.84E-04	4.74E+01	3.72E-02	7.04E-02	1.24E-01	6.12E+00	2.20E+01	1.17E+00	1.40E+01	4.36E-01
BREOT-N40+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	5.26E+02	7.24E+00	7.84E-04	3.19E+01	2.51E-02	7.04E-02	1.24E-01	4.12E+00	2.20E+01	1.17E+00	1.40E+01	2.94E-01
BREOT-S40+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	6.39E+02	8.80E+00	7.84E-04	3.88E+01	3.04E-02	7.04E-02	1.24E-01	5.01E+00	2.20E+01	1.17E+00	1.40E+01	3.57E-01
BREOT-N41+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	1.45E+02	1.99E+00	7.84E-04	8.79E+00	6.89E-03	7.04E-02	1.24E-01	1.13E+00	2.20E+01	1.17E+00	1.40E+01	8.08E-02
BREOT-S41+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	1.07E+03	1.47E+01	7.84E-04	6.49E+01	5.09E-02	7.04E-02	1.24E-01	8.38E+00	2.20E+01	1.17E+00	1.40E+01	5.97E-01
BREOT-N42+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S42+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	1.39E+02	1.92E+00	7.84E-04	8.45E+00	6.63E-03	7.04E-02	1.24E-01	1.09E+00	2.20E+01	1.17E+00	1.40E+01	7.77E-02
BREOT-N43+12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	6.50E+02	8.94E+00	7.84E-04	3.94E+01	3.09E-02	7.04E-02	1.24E-01	5.09E+00	2.20E+01	1.17E+00	1.40E+01	3.62E-01
BREOT-N43+40 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	1.35E+02	1.86E+00	7.84E-04	8.21E+00	6.44E-03	7.04E-02	1.24E-01	1.06E+00	2.20E+01	1.17E+00	1.40E+01	7.54E-02
BREOT-S43+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	2.35E+02	3.23E+00	7.84E-04	1.43E+01	1.12E-02	7.04E-02	1.24E-01	1.84E+00	2.20E+01	1.17E+00	1.40E+01	1.31E-01
BREOT-N44+55 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	5.04E+02	6.93E+00	7.84E-04	3.06E+01	2.40E-02	7.04E-02	1.24E-01	3.95E+00	2.20E+01	1.17E+00	1.40E+01	2.81E-01
BREOT-S44+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	3.65E+02	5.02E+00	7.84E-04	2.22E+01	1.74E-02	7.04E-02	1.24E-01	2.86E+00	2.20E+01	1.17E+00	1.40E+01	2.04E-01
BREOT-N45+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	1.31E+02	1.81E+00	7.84E-04	7.97E+00	6.25E-03	7.04E-02	1.24E-01	1.03E+00	2.20E+01	1.17E+00	1.40E+01	7.33E-02
BREOT-S45+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N46+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	6.94E+02	9.55E+00	7.84E-04	4.21E+01	3.30E-02	7.04E-02	1.24E-01	5.44E+00	2.20E+01	1.17E+00	1.40E+01	3.87E-01
BREOT-S46+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N47+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	1.58E+02	2.18E+00	7.84E-04	9.62E+00	7.54E-03	7.04E-02	1.24E-01	1.24E+00	2.20E+01	1.17E+00	1.40E+01	8.84E-02
BREOT-S47+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	3.42E+02	4.71E+00	7.84E-04	2.08E+01	1.63E-02	7.04E-02	1.24E-01	2.68E+00	2.20E+01	1.17E+00	1.40E+01	1.91E-01
BREOT-N48+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	1.30E+02	1.78E+00	7.84E-04	7.87E+00	6.17E-03	7.04E-02	1.24E-01	1.02E+00	2.20E+01	1.17E+00	1.40E+01	7.23E-02
BREOT-S48+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	6.85E+02	9.42E+00	7.84E-04	4.15E+01	3.26E-02	7.04E-02	1.24E-01	5.36E+00	2.20E+01	1.17E+00	1.40E+01	3.82E-01
BREOT-N49+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	9.59E+02	1.32E+01	7.84E-04	5.82E+01	4.56E-02	7.04E-02	1.24E-01	7.51E+00	2.20E+01	1.17E+00	1.40E+01	5.35E-01
BREOT-S49+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	1.55E+02	2.13E+00	7.84E-04	9.40E+00	7.37E-03	7.04E-02	1.24E-01	1.21E+00	2.20E+01	1.17E+00	1.40E+01	8.64E-02
BREOT-N51+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	3.85E+02	5.30E+00	7.84E-04	2.34E+01	1.83E-02	7.04E-02	1.24E-01	3.02E+00	2.20E+01	1.17E+00	1.40E+01	2.15E-01
BREOT-S51+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	4.94E+02	6.80E+00	7.84E-04	3.00E+01	2.35E-02	7.04E-02	1.24E-01	3.87E+00	2.20E+01	1.17E+00	1.40E+01	2.76E-01
BREOT-N52+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	7.69E+02	1.06E+01	7.84E-04	4.67E+01	3.66E-02	7.04E-02	1.24E-01	6.03E+00	2.20E+01	1.17E+00	1.40E+01	4.29E-01
BREOT-S52+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	4.31E+02	5.94E+00	7.84E-04	2.62E+01	2.05E-02	7.04E-02	1.24E-01	3.38E+00	2.20E+01	1.17E+00	1.40E+01	2.41E-01
BREOT-N53+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S53+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	1.47E+02	2.03E+00	7.84E-04	8.94E+00	7.01E-03	7.04E-02	1.24E-01	1.15E+00	2.20E+01	1.17E+00	1.40E+01	8.22E-02
BREOT-S54+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N55+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	3.27E+02	4.50E+00	7.84E-04	1.98E+01	1.56E-02	7.04E-02	1.24E-01	2.56E+00	2.20E+01	1.17E+00	1.40E+01	1.82E-01
BREOT-S55+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N56+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	1.50E+02	2.07E+00	7.84E-04	9.11E+00	7.15E-03	7.04E-02	1.24E-01	1.18E+00	2.20E+01	1.17E+00	1.40E+01	8.38E-02
BREOT-S56+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	3.74E+02	5.15E+00	7.84E-04	2.27E+01	1.78E-02	7.04E-02	1.24E-01	2.93E+00	2.20E+01	1.17E+00	1.40E+01	2.09E-01
BREOT-N57+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	1.30E+02	1.79E+00	7.84E-04	7.90E+00	6.20E-03	7.04E-02	1.24E-01	1.02E+00	2.20E+01	1.17E+00	1.40E+01	7.26E-02
BREOT-S57+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	5.69E+02	7.83E+00	7.84E-04	3.45E+01	2.71E-02	7.04E-02	1.24E-01	4.46E+00	2.20E+01	1.17E+00	1.40E+01	3.18E-01
BREOT-N58+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	3.81E+02	5.24E+00	7.84E-04	2.31E+01	1.81E-02	7.04E-02	1.24E-01	2.98E+00	2.20E+01	1.17E+00	1.40E+01	2.13E-01
BREOT-S58+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	1.52E+02	2.10E+00	7.84E-04	9.24E+00	7.25E-03	7.04E-02	1.24E-01	1.19E+00	2.20E+01	1.17E+00	1.40E+01	8.50E-02
BREOT-N59+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	8.84E+02	1.22E+01	7.84E-04	5.36E+01	4.21E-02	7.04E-02	1.24E-01	6.92E+00	2.20E+01	1.17E+00	1.40E+01	4.93E-01

TABLE C-2A: ARSENIC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **18.41**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
American Kestrel (Insectivorous Birds - Terrestrial)																							
BREOT-N60+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	4.06E+02	5.58E+00	7.84E-04	2.46E+01	1.93E-02	7.04E-02	1.24E-01	3.18E+00	2.20E+01	1.17E+00	1.40E+01	2.26E-01
BREOT-S60+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	4.40E+02	6.05E+00	7.84E-04	2.67E+01	2.09E-02	7.04E-02	1.24E-01	3.45E+00	2.20E+01	1.17E+00	1.40E+01	2.45E-01
BREOT-S61+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	1.30E+02	1.79E+00	7.84E-04	7.88E+00	6.18E-03	7.04E-02	1.24E-01	1.02E+00	2.20E+01	1.17E+00	1.40E+01	7.24E-02
BREOT-N62+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	1.52E+02	2.10E+00	7.84E-04	9.24E+00	7.25E-03	7.04E-02	1.24E-01	1.19E+00	2.20E+01	1.17E+00	1.40E+01	8.50E-02
BREOT-S62+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N63+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	1.22E+03	1.67E+01	7.84E-04	7.37E+01	5.78E-02	7.04E-02	1.24E-01	9.52E+00	2.20E+01	1.17E+00	1.40E+01	6.78E-01
BREOT-S63+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N64+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	3.44E+02	4.73E+00	7.84E-04	2.09E+01	1.64E-02	7.04E-02	1.24E-01	2.69E+00	2.20E+01	1.17E+00	1.40E+01	1.92E-01
BREOT-S64+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	4.20E+02	5.78E+00	7.84E-04	2.55E+01	2.00E-02	7.04E-02	1.24E-01	3.29E+00	2.20E+01	1.17E+00	1.40E+01	2.34E-01
BREOT-S65+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	1.60E+02	2.20E+00	7.84E-04	9.71E+00	7.61E-03	7.04E-02	1.24E-01	1.25E+00	2.20E+01	1.17E+00	1.40E+01	8.92E-02
BREOT-N66+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	4.92E+02	6.77E+00	7.84E-04	2.99E+01	2.34E-02	7.04E-02	1.24E-01	3.85E+00	2.20E+01	1.17E+00	1.40E+01	2.74E-01
BREOT-S66+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	6.40E+02	8.81E+00	7.84E-04	3.89E+01	3.05E-02	7.04E-02	1.24E-01	5.02E+00	2.20E+01	1.17E+00	1.40E+01	3.57E-01
BREOT-N67+125 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	8.77E+02	1.21E+01	7.84E-04	5.32E+01	4.17E-02	7.04E-02	1.24E-01	6.87E+00	2.20E+01	1.17E+00	1.40E+01	4.89E-01
BREOT-S67+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	4.31E+02	5.93E+00	7.84E-04	2.62E+01	2.05E-02	7.04E-02	1.24E-01	3.38E+00	2.20E+01	1.17E+00	1.40E+01	2.40E-01
BREOT-N67+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	1.72E+03	2.37E+01	7.84E-04	1.04E+02	8.19E-02	7.04E-02	1.24E-01	1.35E+01	2.20E+01	1.17E+00	1.40E+01	9.60E-01
																						Maximum HQ (Outside Tailings)	**6.42E+00**
Meadow Vole (Small Herbivorous Mammal - Terrestrial)																							
Reference Sites																							
ACBG-1 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	1.13E-04	2.60E+01	2.93E-03	1.00E+00	3.06E-02	9.57E-02	4.70E+00	1.10E-01	5.08E+00	1.89E-02
ACBG-2 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	1.13E-04	1.83E+01	2.06E-03	1.00E+00	3.06E-02	6.74E-02	4.70E+00	1.10E-01	5.08E+00	1.33E-02
UBRBG-202 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	1.13E-04	1.39E+01	1.57E-03	1.00E+00	3.06E-02	5.12E-02	4.70E+00	1.10E-01	5.08E+00	1.01E-02
UBRBG-204 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	1.13E-04	1.95E+01	2.19E-03	1.00E+00	3.06E-02	7.17E-02	4.70E+00	1.10E-01	5.08E+00	1.41E-02
Inside Tailings																						**Minimum HQ (Reference Sites)**	**1.01E-02**
BREOT-S6-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.20E+02	5.61E-01	NA	NA	NA	NA	1.13E-04	1.99E+02	2.24E-02	1.00E+00	3.06E-02	1.91E+01	4.70E+00	1.10E-01	5.08E+00	3.76E+00
BREOT-S2-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.56E+02	7.31E-01	NA	NA	NA	NA	1.13E-04	2.59E+02	2.92E-02	1.00E+00	3.06E-02	2.49E+01	4.70E+00	1.10E-01	5.08E+00	4.90E+00
BREOT-S0-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	7.68E+01	3.60E-01	NA	NA	NA	NA	1.13E-04	1.28E+02	1.44E-02	1.00E+00	3.06E-02	1.22E+01	4.70E+00	1.10E-01	5.08E+00	2.41E+00
BREOT-S1-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	5.56E+01	2.61E-01	NA	NA	NA	NA	1.13E-04	9.25E+01	1.04E-02	1.00E+00	3.06E-02	8.86E+00	4.70E+00	1.10E-01	5.08E+00	1.75E+00
BREOT-S7-25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	7.20E+00	3.37E-02	NA	NA	NA	NA	1.13E-04	1.20E+01	1.35E-03	1.00E+00	3.06E-02	1.15E+00	4.70E+00	1.10E-01	5.08E+00	2.26E-01
BREOT-S8-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	6.36E+01	2.98E-01	NA	NA	NA	NA	1.13E-04	1.06E+02	1.19E-02	1.00E+00	3.06E-02	1.01E+01	4.70E+00	1.10E-01	5.08E+00	2.00E+00
BREOT-S9-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	6.06E+01	2.84E-01	NA	NA	NA	NA	1.13E-04	1.01E+02	1.14E-02	1.00E+00	3.06E-02	9.66E+00	4.70E+00	1.10E-01	5.08E+00	1.90E+00
BREOT-N10-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	2.88E+02	1.35E+00	NA	NA	NA	NA	1.13E-04	4.80E+02	5.40E-02	1.00E+00	3.06E-02	4.60E+01	4.70E+00	1.10E-01	5.08E+00	9.06E+00
BREOT-N11-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.47E+02	6.90E-01	NA	NA	NA	NA	1.13E-04	2.45E+02	2.75E-02	1.00E+00	3.06E-02	2.34E+01	4.70E+00	1.10E-01	5.08E+00	4.62E+00
BREOT-N11-125 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.03E+02	4.84E-01	NA	NA	NA	NA	1.13E-04	1.72E+02	1.93E-02	1.00E+00	3.06E-02	1.64E+01	4.70E+00	1.10E-01	5.08E+00	3.24E+00
BREOT-S11-12 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.69E+02	7.93E-01	NA	NA	NA	NA	1.13E-04	2.81E+02	3.17E-02	1.00E+00	3.06E-02	2.70E+01	4.70E+00	1.10E-01	5.08E+00	5.31E+00
BREOT-S11+63 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	8.77E+01	4.11E-01	NA	NA	NA	NA	1.13E-04	1.46E+02	1.64E-02	1.00E+00	3.06E-02	1.40E+01	4.70E+00	1.10E-01	5.08E+00	2.75E+00
UBDT-TP-6 (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	4.24E+02	1.99E+00	NA	NA	NA	NA	1.13E-04	7.05E+02	7.93E-02	1.00E+00	3.06E-02	6.75E+01	4.70E+00	1.10E-01	5.08E+00	1.33E+01
UBDT-TP-6 (2-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	3.83E+02	1.80E+00	NA	NA	NA	NA	1.13E-04	6.37E+02	7.17E-02	1.00E+00	3.06E-02	6.10E+01	4.70E+00	1.10E-01	5.08E+00	1.20E+01
UBDT-TP-6 (12-24")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	3.10E+02	1.45E+00	NA	NA	NA	NA	1.13E-04	5.16E+02	5.80E-02	1.00E+00	3.06E-02	4.94E+01	4.70E+00	1.10E-01	5.08E+00	9.73E+00
UBDT-TP-6 (24-36")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	7.37E+01	3.46E-01	NA	NA	NA	NA	1.13E-04	1.23E+02	1.38E-02	1.00E+00	3.06E-02	1.17E+01	4.70E+00	1.10E-01	5.08E+00	2.32E+00
UBDT-TP-6 (36-48")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.08E+02	5.07E-01	NA	NA	NA	NA	1.13E-04	1.80E+02	2.03E-02	1.00E+00	3.06E-02	1.72E+01	4.70E+00	1.10E-01	5.08E+00	3.40E+00
UBDT-TP-6 (48-60")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	3.60E+01	1.69E-01	NA	NA	NA	NA	1.13E-04	5.99E+01	6.74E-03	1.00E+00	3.06E-02	5.74E+00	4.70E+00	1.10E-01	5.08E+00	1.13E+00
BREOT-N12-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	6.93E+01	3.25E-01	NA	NA	NA	NA	1.13E-04	1.15E+02	1.30E-02	1.00E+00	3.06E-02	1.10E+01	4.70E+00	1.10E-01	5.08E+00	2.18E+00
BREOT-S12-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	6.66E+01	3.12E-01	NA	NA	NA	NA	1.13E-04	1.11E+02	1.25E-02	1.00E+00	3.06E-02	1.06E+01	4.70E+00	1.10E-01	5.08E+00	2.09E+00
BREOT-S13-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.44E+02	6.74E-01	NA	NA	NA	NA	1.13E-04	2.39E+02	2.69E-02	1.00E+00	3.06E-02	2.29E+01	4.70E+00	1.10E-01	5.08E+00	4.51E+00
BREOT-S14-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	4.05E+01	1.90E-01	NA	NA	NA	NA	1.13E-04	6.74E+01	7.58E-03	1.00E+00	3.06E-02	6.45E+00	4.70E+00	1.10E-01	5.08E+00	1.27E+00
BREOT-N15-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.64E+02	7.70E-01	NA	NA	NA	NA	1.13E-04	2.73E+02	3.07E-02	1.00E+00	3.06E-02	2.62E+01	4.70E+00	1.10E-01	5.08E+00	5.15E+00
BREOT-S15-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	2.25E+02	1.05E+00	NA	NA	NA	NA	1.13E-04	3.74E+02	4.21E-02	1.00E+00	3.06E-02	3.58E+01	4.70E+00	1.10E-01	5.08E+00	7.06E+00
BREOT-N16-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.32E+02	6.17E-01	NA	NA	NA	NA	1.13E-04	2.19E+02	2.46E-02	1.00E+00	3.06E-02	2.10E+01	4.70E+00	1.10E-01	5.08E+00	4.13E+00
BREOT-N16-25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	8.55E+00	4.01E-02	NA	NA	NA	NA	1.13E-04	1.42E+01	1.60E-03	1.00E+00	3.06E-02	1.36E+00	4.70E+00	1.10E-01	5.08E+00	2.68E-01
BREOT-S16-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	8.89E+01	4.17E-01	NA	NA	NA	NA	1.13E-04	1.48E+02	1.66E-02	1.00E+00	3.06E-02	1.42E+01	4.70E+00	1.10E-01	5.08E+00	2.79E+00
BREOT-N17-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	9.63E+01	4.51E-01	NA	NA	NA	NA	1.13E-04	1.60E+02	1.80E-02	1.00E+00	3.06E-02	1.53E+01	4.70E+00	1.10E-01	5.08E+00	3.02E+00
BREOT-S17-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	4.03E+01	1.89E-01	NA	NA	NA	NA	1.13E-04	6.70E+01	7.54E-03	1.00E+00	3.06E-02	6.42E+00	4.70E+00	1.10E-01	5.08E+00	1.26E+00
BREOT-S17-25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	3.36E+01	1.58E-01	NA	NA	NA	NA	1.13E-04	5.59E+01	6.29E-03	1.00E+00	3.06E-02	5.35E+00	4.70E+00	1.10E-01	5.08E+00	1.06E+00
UBDT-TP-4 (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.06E+02	4.96E-01	NA	NA	NA	NA	1.13E-04	1.76E+02	1.98E-02	1.00E+00	3.06E-02	1.68E+01	4.70E+00	1.10E-01	5.08E+00	3.32E+00
UBDT-TP-4 (2-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	7.13E+01	3.34E-01	NA	NA	NA	NA	1.13E-04	1.19E+02	1.34E-02	1.00E+00	3.06E-02	1.14E+01	4.70E+00	1.10E-01	5.08E+00	2.24E+00
UBDT-TP-4 (12-24")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	6.28E+01	2.95E-01	NA	NA	NA	NA	1.13E-04	1.05E+02	1.18E-02	1.00E+00	3.06E-02	1.00E+01	4.70E+00	1.10E-01	5.08E+00	1.97E+00
UBDT-TP-4 (24-36")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	3.84E+01	1.80E-01	NA	NA	NA	NA	1.13E-04	6.38E+01	7.18E-03	1.00E+00	3.06E-02	6.11E+00	4.70E+00	1.10E-01	5.08E+00	1.20E+00

TABLE C-2A: ARSENIC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

Site Area (hectares) **18.41**

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Meadow Vole (Small Herbivorous Mammal - Terrestrial)																							
BREOT-N18-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.25E+02	5.85E-01	NA	NA	NA	NA	1.13E-04	2.08E+02	2.34E-02	1.00E+00	3.06E-02	1.99E+01	4.70E+00	1.10E-01	5.08E+00	3.92E+00
BREOT-N18-25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.37E+01	6.44E-02	NA	NA	NA	NA	1.13E-04	2.29E+01	2.57E-03	1.00E+00	3.06E-02	2.19E+00	4.70E+00	1.10E-01	5.08E+00	4.31E-01
BREOT-S18-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	6.30E+01	2.96E-01	NA	NA	NA	NA	1.13E-04	1.05E+02	1.18E-02	1.00E+00	3.06E-02	1.00E+01	4.70E+00	1.10E-01	5.08E+00	1.98E+00
BREOT-N19-10 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.11E+02	5.22E-01	NA	NA	NA	NA	1.13E-04	1.85E+02	2.08E-02	1.00E+00	3.06E-02	1.77E+01	4.70E+00	1.10E-01	5.08E+00	3.49E+00
BREOT-S19-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	4.51E+01	2.11E-01	NA	NA	NA	NA	1.13E-04	7.50E+01	8.44E-03	1.00E+00	3.06E-02	7.18E+00	4.70E+00	1.10E-01	5.08E+00	1.42E+00
UBDT-TP-5 (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	5.72E+01	2.68E-01	NA	NA	NA	NA	1.13E-04	9.52E+01	1.07E-02	1.00E+00	3.06E-02	9.12E+00	4.70E+00	1.10E-01	5.08E+00	1.80E+00
UBDT-TP-5 (2-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	5.56E+01	2.61E-01	NA	NA	NA	NA	1.13E-04	9.25E+01	1.04E-02	1.00E+00	3.06E-02	8.86E+00	4.70E+00	1.10E-01	5.08E+00	1.74E+00
UBDT-TP-5 (12-24")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	4.33E+01	2.03E-01	NA	NA	NA	NA	1.13E-04	7.20E+01	8.10E-03	1.00E+00	3.06E-02	6.89E+00	4.70E+00	1.10E-01	5.08E+00	1.36E+00
BREOT-N20-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.46E+02	6.85E-01	NA	NA	NA	NA	1.13E-04	2.43E+02	2.74E-02	1.00E+00	3.06E-02	2.33E+01	4.70E+00	1.10E-01	5.08E+00	4.59E+00
UBDT-TP-3 (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.02E+02	4.80E-01	NA	NA	NA	NA	1.13E-04	1.70E+02	1.92E-02	1.00E+00	3.06E-02	1.63E+01	4.70E+00	1.10E-01	5.08E+00	3.21E+00
UBDT-TP-3 (2-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	9.87E+01	4.63E-01	NA	NA	NA	NA	1.13E-04	1.64E+02	1.85E-02	1.00E+00	3.06E-02	1.57E+01	4.70E+00	1.10E-01	5.08E+00	3.10E+00
UBDT-TP-3 (12-24")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	9.16E+01	4.29E-01	NA	NA	NA	NA	1.13E-04	1.52E+02	1.71E-02	1.00E+00	3.06E-02	1.46E+01	4.70E+00	1.10E-01	5.08E+00	2.87E+00
UBDT-TP-3 (24-36")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	8.18E+01	3.84E-01	NA	NA	NA	NA	1.13E-04	1.36E+02	1.53E-02	1.00E+00	3.06E-02	1.30E+01	4.70E+00	1.10E-01	5.08E+00	2.57E+00
UBDT-TP-3 (36-48")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.34E+02	6.29E-01	NA	NA	NA	NA	1.13E-04	2.23E+02	2.51E-02	1.00E+00	3.06E-02	2.14E+01	4.70E+00	1.10E-01	5.08E+00	4.22E+00
UBDT-TP-3 (48-60")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	2.78E+01	1.30E-01	NA	NA	NA	NA	1.13E-04	4.63E+01	5.21E-03	1.00E+00	3.06E-02	4.43E+00	4.70E+00	1.10E-01	5.08E+00	8.73E-01
BREOT-N21-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	5.87E+01	2.75E-01	NA	NA	NA	NA	1.13E-04	9.77E+01	1.10E-02	1.00E+00	3.06E-02	9.35E+00	4.70E+00	1.10E-01	5.08E+00	1.84E+00
BREOT-N22-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.11E+02	5.21E-01	NA	NA	NA	NA	1.13E-04	1.85E+02	2.08E-02	1.00E+00	3.06E-02	1.77E+01	4.70E+00	1.10E-01	5.08E+00	3.49E+00
BREOT-N23-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.20E+02	5.61E-01	NA	NA	NA	NA	1.13E-04	1.99E+02	2.24E-02	1.00E+00	3.06E-02	1.91E+01	4.70E+00	1.10E-01	5.08E+00	3.76E+00
BREOT-S23-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	6.83E+01	3.20E-01	NA	NA	NA	NA	1.13E-04	1.14E+02	1.28E-02	1.00E+00	3.06E-02	1.09E+01	4.70E+00	1.10E-01	5.08E+00	2.14E+00
UBDT-TP-2 (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.33E+02	6.21E-01	NA	NA	NA	NA	1.13E-04	2.20E+02	2.48E-02	1.00E+00	3.06E-02	2.11E+01	4.70E+00	1.10E-01	5.08E+00	4.16E+00
UBDT-TP-2 (2-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	6.63E+01	3.11E-01	NA	NA	NA	NA	1.13E-04	1.10E+02	1.24E-02	1.00E+00	3.06E-02	1.06E+01	4.70E+00	1.10E-01	5.08E+00	2.08E+00
UBDT-TP-2 (12-24")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.84E+01	8.63E-02	NA	NA	NA	NA	1.13E-04	3.06E+01	3.45E-03	1.00E+00	3.06E-02	2.93E+00	4.70E+00	1.10E-01	5.08E+00	5.78E-01
UBDT-TP-2 (24-36")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	3.86E+01	1.81E-01	NA	NA	NA	NA	1.13E-04	6.42E+01	7.22E-03	1.00E+00	3.06E-02	6.15E+00	4.70E+00	1.10E-01	5.08E+00	1.21E+00
UBDT-TP-2 (36-48")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	4.24E+01	1.99E-01	NA	NA	NA	NA	1.13E-04	7.05E+01	7.94E-03	1.00E+00	3.06E-02	6.76E+00	4.70E+00	1.10E-01	5.08E+00	1.33E+00
BREOT-S24-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	8.49E+01	3.98E-01	NA	NA	NA	NA	1.13E-04	1.41E+02	1.59E-02	1.00E+00	3.06E-02	1.35E+01	4.70E+00	1.10E-01	5.08E+00	2.67E+00
BREOT-N25-50 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	2.03E+02	9.52E-01	NA	NA	NA	NA	1.13E-04	3.38E+02	3.80E-02	1.00E+00	3.06E-02	3.23E+01	4.70E+00	1.10E-01	5.08E+00	6.37E+00
BREOT-N25-95 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.65E+02	7.75E-01	NA	NA	NA	NA	1.13E-04	2.75E+02	3.09E-02	1.00E+00	3.06E-02	2.63E+01	4.70E+00	1.10E-01	5.08E+00	5.19E+00
BREOT-S25-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	9.60E+01	4.50E-01	NA	NA	NA	NA	1.13E-04	1.60E+02	1.80E-02	1.00E+00	3.06E-02	1.53E+01	4.70E+00	1.10E-01	5.08E+00	3.02E+00
BREOT-S25-40 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	7.26E+01	3.40E-01	NA	NA	NA	NA	1.13E-04	1.21E+02	1.36E-02	1.00E+00	3.06E-02	1.16E+01	4.70E+00	1.10E-01	5.08E+00	2.28E+00
BREOT-N26A-25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.11E+01	5.22E-02	NA	NA	NA	NA	1.13E-04	1.85E+01	2.08E-03	1.00E+00	3.06E-02	1.77E+00	4.70E+00	1.10E-01	5.08E+00	3.50E-01
BREOT-N26B-25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	6.71E+01	3.14E-01	NA	NA	NA	NA	1.13E-04	1.12E+02	1.26E-02	1.00E+00	3.06E-02	1.07E+01	4.70E+00	1.10E-01	5.08E+00	2.11E+00
BREOT-N26-50 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.49E+02	6.99E-01	NA	NA	NA	NA	1.13E-04	2.48E+02	2.79E-02	1.00E+00	3.06E-02	2.38E+01	4.70E+00	1.10E-01	5.08E+00	4.68E+00
BREOT-N26-75 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.27E+02	5.98E-01	NA	NA	NA	NA	1.13E-04	2.12E+02	2.39E-02	1.00E+00	3.06E-02	2.03E+01	4.70E+00	1.10E-01	5.08E+00	4.00E+00
BREOT-S26-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	6.13E+01	2.87E-01	NA	NA	NA	NA	1.13E-04	1.02E+02	1.15E-02	1.00E+00	3.06E-02	9.76E+00	4.70E+00	1.10E-01	5.08E+00	1.92E+00
BREOT-S26-40 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	8.83E+01	4.14E-01	NA	NA	NA	NA	1.13E-04	1.47E+02	1.65E-02	1.00E+00	3.06E-02	1.41E+01	4.70E+00	1.10E-01	5.08E+00	2.77E+00
BREOT-N27-30 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	2.49E+02	1.17E+00	NA	NA	NA	NA	1.13E-04	4.15E+02	4.67E-02	1.00E+00	3.06E-02	3.97E+01	4.70E+00	1.10E-01	5.08E+00	7.83E+00
BREOT-N27-75 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	2.47E+02	1.16E+00	NA	NA	NA	NA	1.13E-04	4.12E+02	4.63E-02	1.00E+00	3.06E-02	3.94E+01	4.70E+00	1.10E-01	5.08E+00	7.77E+00
BREOT-S27-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	7.70E+01	3.61E-01	NA	NA	NA	NA	1.13E-04	1.28E+02	1.44E-02	1.00E+00	3.06E-02	1.23E+01	4.70E+00	1.10E-01	5.08E+00	2.42E+00
BREOT-N28-110 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	6.94E+01	3.25E-01	NA	NA	NA	NA	1.13E-04	1.15E+02	1.30E-02	1.00E+00	3.06E-02	1.11E+01	4.70E+00	1.10E-01	5.08E+00	2.18E+00
BREOT-N28-55 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	7.36E+02	3.45E+00	NA	NA	NA	NA	1.13E-04	1.22E+03	1.38E-01	1.00E+00	3.06E-02	1.17E+02	4.70E+00	1.10E-01	5.08E+00	2.31E+01
BREOT-S28-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	4.78E+01	2.24E-01	NA	NA	NA	NA	1.13E-04	7.95E+01	8.95E-03	1.00E+00	3.06E-02	7.62E+00	4.70E+00	1.10E-01	5.08E+00	1.50E+00
UBDT-TP-1 (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	2.37E+02	1.11E+00	NA	NA	NA	NA	1.13E-04	3.94E+02	4.44E-02	1.00E+00	3.06E-02	3.78E+01	4.70E+00	1.10E-01	5.08E+00	7.44E+00
UBDT-TP-1 (2-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	4.13E+02	1.94E+00	NA	NA	NA	NA	1.13E-04	6.87E+02	7.73E-02	1.00E+00	3.06E-02	6.58E+01	4.70E+00	1.10E-01	5.08E+00	1.30E+01
UBDT-TP-1 (12-24")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.30E+02	6.11E-01	NA	NA	NA	NA	1.13E-04	2.17E+02	2.44E-02	1.00E+00	3.06E-02	2.08E+01	4.70E+00	1.10E-01	5.08E+00	4.09E+00
UBDT-TP-1 (24-36")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	9.95E+01	4.67E-01	NA	NA	NA	NA	1.13E-04	1.66E+02	1.86E-02	1.00E+00	3.06E-02	1.59E+01	4.70E+00	1.10E-01	5.08E+00	3.12E+00
UBDT-TP-1 (36-48")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	7.07E+00	3.31E-02	NA	NA	NA	NA	1.13E-04	1.18E+01	1.32E-03	1.00E+00	3.06E-02	1.13E+00	4.70E+00	1.10E-01	5.08E+00	2.22E-01
UBDT-TP-1 (48-60")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	7.56E+00	3.55E-02	NA	NA	NA	NA	1.13E-04	1.26E+01	1.42E-03	1.00E+00	3.06E-02	1.21E+00	4.70E+00	1.10E-01	5.08E+00	2.38E-01
BREOT-N29-30 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	3.76E+02	1.76E+00	NA	NA	NA	NA	1.13E-04	6.25E+02	7.04E-02	1.00E+00	3.06E-02	5.99E+01	4.70E+00	1.10E-01	5.08E+00	1.18E+01
BREOT-S29-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	9.14E+01	4.29E-01	NA	NA	NA	NA	1.13E-04	1.52E+02	1.71E-02	1.00E+00	3.06E-02	1.46E+01	4.70E+00	1.10E-01	5.08E+00	2.87E+00
BREOT-N30-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	6.21E+01	2.91E-01	NA	NA	NA	NA	1.13E-04	1.03E+02	1.16E-02	1.00E+00	3.06E-02	9.90E+00	4.70E+00	1.10E-01	5.08E+00	1.95E+00
BREOT-S30-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	8.84E+01	4.14E-01	NA	NA	NA	NA	1.13E-04	1.47E+02	1.65E-02	1.00E+00	3.06E-02	1.41E+01	4.70E+00	1.10E-01	5.08E+00	2.77E+00
BREOT-N31-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	8.22E+01	3.85E-01	NA	NA	NA	NA	1.13E-04	1.37E+02	1.54E-02	1.00E+00	3.06E-02	1.31E+01	4.70E+00	1.10E-01	5.08E+00	2.58E+00
BREOT-S31-25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	5.00E+01	2.34E-01	NA	NA	NA	NA	1.13E-04	8.32E+01	9.36E-03	1.00E+00	3.06E-02	7.97E+00	4.70E+00	1.10E-01	5.08E+00	1.57E+00
BREOT-S31-5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.02E+02	4.77E-01	NA	NA	NA	NA	1.13E-04	1.69E+02	1.90E-02	1.00E+00	3.06E-02	1.62E+01	4.70E+00	1.10E-01	5.08E+00	3.19E+00
BREOT-N32-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.82E+02	8.55E-01	NA	NA	NA	NA	1.13E-04	3.03E+02	3.41E-02	1.00E+00	3.06E-02	2.91E+01	4.70E+00	1.10E-01	5.08E+00	5.73E+00

TABLE C-2A: ARSENIC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

Site Area (hectares) **18.41**

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Meadow Vole (Small Herbivorous Mammal - Terrestrial)																							
BREOT-S32-6 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.07E+02	4.99E-01	NA	NA	NA	NA	1.13E-04	1.77E+02	1.99E-02	1.00E+00	3.06E-02	1.70E+01	4.70E+00	1.10E-01	5.08E+00	3.34E+00
BREOT-N33-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.74E+02	8.16E-01	NA	NA	NA	NA	1.13E-04	2.90E+02	3.26E-02	1.00E+00	3.06E-02	2.77E+01	4.70E+00	1.10E-01	5.08E+00	5.47E+00
BREOT-S33-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	8.77E+00	4.11E-02	NA	NA	NA	NA	1.13E-04	1.46E+01	1.64E-03	1.00E+00	3.06E-02	1.40E+00	4.70E+00	1.10E-01	5.08E+00	2.75E-01
BREOT-N35-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	4.75E+01	2.23E-01	NA	NA	NA	NA	1.13E-04	7.90E+01	8.89E-03	1.00E+00	3.06E-02	7.57E+00	4.70E+00	1.10E-01	5.08E+00	1.49E+00
BREOT-S35-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.13E+02	5.28E-01	NA	NA	NA	NA	1.13E-04	1.87E+02	2.11E-02	1.00E+00	3.06E-02	1.80E+01	4.70E+00	1.10E-01	5.08E+00	3.54E+00
BREOT-N36-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	9.28E+01	4.35E-01	NA	NA	NA	NA	1.13E-04	1.54E+02	1.74E-02	1.00E+00	3.06E-02	1.48E+01	4.70E+00	1.10E-01	5.08E+00	2.91E+00
BREOT-S36-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	8.93E+01	4.19E-01	NA	NA	NA	NA	1.13E-04	1.49E+02	1.67E-02	1.00E+00	3.06E-02	1.42E+01	4.70E+00	1.10E-01	5.08E+00	2.80E+00
BREOT-N37-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.33E+02	6.23E-01	NA	NA	NA	NA	1.13E-04	2.21E+02	2.49E-02	1.00E+00	3.06E-02	2.12E+01	4.70E+00	1.10E-01	5.08E+00	4.17E+00
BREOT-S37-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	6.44E+01	3.02E-01	NA	NA	NA	NA	1.13E-04	1.07E+02	1.21E-02	1.00E+00	3.06E-02	1.03E+01	4.70E+00	1.10E-01	5.08E+00	2.02E+00
BREOT-N38-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	6.15E+01	2.88E-01	NA	NA	NA	NA	1.13E-04	1.02E+02	1.15E-02	1.00E+00	3.06E-02	9.80E+00	4.70E+00	1.10E-01	5.08E+00	1.93E+00
BREOT-S38-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.21E+02	5.68E-01	NA	NA	NA	NA	1.13E-04	2.02E+02	2.27E-02	1.00E+00	3.06E-02	1.93E+01	4.70E+00	1.10E-01	5.08E+00	3.81E+00
BREOT-N39-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.50E+02	7.05E-01	NA	NA	NA	NA	1.13E-04	2.50E+02	2.81E-02	1.00E+00	3.06E-02	2.39E+01	4.70E+00	1.10E-01	5.08E+00	4.72E+00
BREOT-S39-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	9.51E+01	4.46E-01	NA	NA	NA	NA	1.13E-04	1.58E+02	1.78E-02	1.00E+00	3.06E-02	1.52E+01	4.70E+00	1.10E-01	5.08E+00	2.99E+00
BREOT-N40-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	9.13E+01	4.28E-01	NA	NA	NA	NA	1.13E-04	1.52E+02	1.71E-02	1.00E+00	3.06E-02	1.45E+01	4.70E+00	1.10E-01	5.08E+00	2.87E+00
BREOT-S40-14 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.59E+02	7.44E-01	NA	NA	NA	NA	1.13E-04	2.64E+02	2.97E-02	1.00E+00	3.06E-02	2.53E+01	4.70E+00	1.10E-01	5.08E+00	4.98E+00
BREOT-N41-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.69E+01	7.93E-02	NA	NA	NA	NA	1.13E-04	2.81E+01	3.17E-03	1.00E+00	3.06E-02	2.69E+00	4.70E+00	1.10E-01	5.08E+00	5.31E-01
BREOT-S41-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.99E+02	9.32E-01	NA	NA	NA	NA	1.13E-04	3.31E+02	3.72E-02	1.00E+00	3.06E-02	3.17E+01	4.70E+00	1.10E-01	5.08E+00	6.24E+00
BREOT-N42-35 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	7.13E+01	3.34E-01	NA	NA	NA	NA	1.13E-04	1.19E+02	1.33E-02	1.00E+00	3.06E-02	1.14E+01	4.70E+00	1.10E-01	5.08E+00	2.24E+00
BREOT-S42-25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.19E+02	5.59E-01	NA	NA	NA	NA	1.13E-04	1.98E+02	2.23E-02	1.00E+00	3.06E-02	1.90E+01	4.70E+00	1.10E-01	5.08E+00	3.74E+00
BREOT-N43-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.02E+02	4.76E-01	NA	NA	NA	NA	1.13E-04	1.69E+02	1.90E-02	1.00E+00	3.06E-02	1.62E+01	4.70E+00	1.10E-01	5.08E+00	3.19E+00
BREOT-S43-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	9.76E+01	4.58E-01	NA	NA	NA	NA	1.13E-04	1.62E+02	1.83E-02	1.00E+00	3.06E-02	1.56E+01	4.70E+00	1.10E-01	5.08E+00	3.07E+00
BREOT-N44-30 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	6.99E+01	3.28E-01	NA	NA	NA	NA	1.13E-04	1.16E+02	1.31E-02	1.00E+00	3.06E-02	1.11E+01	4.70E+00	1.10E-01	5.08E+00	2.19E+00
BREOT-S44-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	8.40E+01	3.94E-01	NA	NA	NA	NA	1.13E-04	1.40E+02	1.57E-02	1.00E+00	3.06E-02	1.34E+01	4.70E+00	1.10E-01	5.08E+00	2.64E+00
BREOT-N45-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	9.90E+01	4.64E-01	NA	NA	NA	NA	1.13E-04	1.65E+02	1.85E-02	1.00E+00	3.06E-02	1.58E+01	4.70E+00	1.10E-01	5.08E+00	3.11E+00
BREOT-N43-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.02E+02	4.76E-01	NA	NA	NA	NA	1.13E-04	1.69E+02	1.90E-02	1.00E+00	3.06E-02	1.62E+01	4.70E+00	1.10E-01	5.08E+00	3.19E+00
BREOT-S45-6 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	7.91E+01	3.71E-01	NA	NA	NA	NA	1.13E-04	1.32E+02	1.48E-02	1.00E+00	3.06E-02	1.26E+01	4.70E+00	1.10E-01	5.08E+00	2.48E+00
BREOT-N46-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	3.97E+01	1.86E-01	NA	NA	NA	NA	1.13E-04	6.60E+01	7.43E-03	1.00E+00	3.06E-02	6.32E+00	4.70E+00	1.10E-01	5.08E+00	1.25E+00
BREOT-S46-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	3.85E+01	1.80E-01	NA	NA	NA	NA	1.13E-04	6.40E+01	7.20E-03	1.00E+00	3.06E-02	6.13E+00	4.70E+00	1.10E-01	5.08E+00	1.21E+00
BREOT-S46-40 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	5.64E+01	2.64E-01	NA	NA	NA	NA	1.13E-04	9.38E+01	1.06E-02	1.00E+00	3.06E-02	8.99E+00	4.70E+00	1.10E-01	5.08E+00	1.77E+00
BREOT-N47-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	5.81E+01	2.72E-01	NA	NA	NA	NA	1.13E-04	9.66E+01	1.09E-02	1.00E+00	3.06E-02	9.26E+00	4.70E+00	1.10E-01	5.08E+00	1.82E+00
BREOT-S47-999 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	9.16E+01	4.30E-01	NA	NA	NA	NA	1.13E-04	1.52E+02	1.72E-02	1.00E+00	3.06E-02	1.46E+01	4.70E+00	1.10E-01	5.08E+00	2.88E+00
BREOT-S48-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	2.80E+01	1.31E-01	NA	NA	NA	NA	1.13E-04	4.65E+01	5.24E-03	1.00E+00	3.06E-02	4.46E+00	4.70E+00	1.10E-01	5.08E+00	8.78E-01
BREOT-S49-2.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	3.32E+01	1.56E-01	NA	NA	NA	NA	1.13E-04	5.53E+01	6.22E-03	1.00E+00	3.06E-02	5.29E+00	4.70E+00	1.10E-01	5.08E+00	1.04E+00
BREOT-S50-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.04E+01	4.87E-02	NA	NA	NA	NA	1.13E-04	1.73E+01	1.95E-03	1.00E+00	3.06E-02	1.66E+00	4.70E+00	1.10E-01	5.08E+00	3.26E-01
BREOT-S50-25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.57E+01	7.34E-02	NA	NA	NA	NA	1.13E-04	2.61E+01	2.93E-03	1.00E+00	3.06E-02	2.50E+00	4.70E+00	1.10E-01	5.08E+00	4.92E-01
BREOT-N52-60 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.29E+02	6.03E-01	NA	NA	NA	NA	1.13E-04	2.14E+02	2.41E-02	1.00E+00	3.06E-02	2.05E+01	4.70E+00	1.10E-01	5.08E+00	4.04E+00
BREOT-S52-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	5.81E+01	2.72E-01	NA	NA	NA	NA	1.13E-04	9.67E+01	1.09E-02	1.00E+00	3.06E-02	9.26E+00	4.70E+00	1.10E-01	5.08E+00	1.82E+00
BREOT-S53-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.72E+01	8.09E-02	NA	NA	NA	NA	1.13E-04	2.87E+01	3.23E-03	1.00E+00	3.06E-02	2.75E+00	4.70E+00	1.10E-01	5.08E+00	5.41E-01
BREOT-S54-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.27E+01	5.94E-02	NA	NA	NA	NA	1.13E-04	2.11E+01	2.37E-03	1.00E+00	3.06E-02	2.02E+00	4.70E+00	1.10E-01	5.08E+00	3.98E-01
BREOT-N55-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.12E+02	5.26E-01	NA	NA	NA	NA	1.13E-04	1.87E+02	2.10E-02	1.00E+00	3.06E-02	1.79E+01	4.70E+00	1.10E-01	5.08E+00	3.52E+00
BREOT-S55-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	3.90E+01	1.83E-01	NA	NA	NA	NA	1.13E-04	6.49E+01	7.30E-03	1.00E+00	3.06E-02	6.21E+00	4.70E+00	1.10E-01	5.08E+00	1.22E+00
BREOT-N56-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	7.62E+01	3.57E-01	NA	NA	NA	NA	1.13E-04	1.27E+02	1.43E-02	1.00E+00	3.06E-02	1.21E+01	4.70E+00	1.10E-01	5.08E+00	2.39E+00
BREOT-S56-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.65E+01	7.73E-02	NA	NA	NA	NA	1.13E-04	2.74E+01	3.09E-03	1.00E+00	3.06E-02	2.63E+00	4.70E+00	1.10E-01	5.08E+00	5.18E-01
BREOT-N57-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	7.40E+01	3.47E-01	NA	NA	NA	NA	1.13E-04	1.23E+02	1.39E-02	1.00E+00	3.06E-02	1.18E+01	4.70E+00	1.10E-01	5.08E+00	2.32E+00
BREOT-S57-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	4.33E+01	2.03E-01	NA	NA	NA	NA	1.13E-04	7.20E+01	8.10E-03	1.00E+00	3.06E-02	6.90E+00	4.70E+00	1.10E-01	5.08E+00	1.36E+00
BREOT-N58-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	3.16E+01	1.48E-01	NA	NA	NA	NA	1.13E-04	5.25E+01	5.91E-03	1.00E+00	3.06E-02	5.03E+00	4.70E+00	1.10E-01	5.08E+00	9.91E-01
BREOT-S58-12 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	4.97E+01	2.33E-01	NA	NA	NA	NA	1.13E-04	8.27E+01	9.30E-03	1.00E+00	3.06E-02	7.92E+00	4.70E+00	1.10E-01	5.08E+00	1.56E+00
BREOT-N59-18 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	5.52E+01	2.59E-01	NA	NA	NA	NA	1.13E-04	9.18E+01	1.03E-02	1.00E+00	3.06E-02	8.80E+00	4.70E+00	1.10E-01	5.08E+00	1.73E+00
BREOT-N60-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.56E+01	7.32E-02	NA	NA	NA	NA	1.13E-04	2.60E+01	2.92E-03	1.00E+00	3.06E-02	2.49E+00	4.70E+00	1.10E-01	5.08E+00	4.90E-01
BREOT-S60-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	4.78E+01	2.24E-01	NA	NA	NA	NA	1.13E-04	7.95E+01	8.95E-03	1.00E+00	3.06E-02	7.61E+00	4.70E+00	1.10E-01	5.08E+00	1.50E+00
BREOT-S61-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	2.69E+01	1.26E-01	NA	NA	NA	NA	1.13E-04	4.47E+01	5.03E-03	1.00E+00	3.06E-02	4.29E+00	4.70E+00	1.10E-01	5.08E+00	8.44E-01
BREOT-N62-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	5.44E+00	2.55E-02	NA	NA	NA	NA	1.13E-04	9.05E+00	1.02E-03	1.00E+00	3.06E-02	8.67E-01	4.70E+00	1.10E-01	5.08E+00	1.71E-01
BREOT-S62-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	6.14E+01	2.88E-01	NA	NA	NA	NA	1.13E-04	1.02E+02	1.15E-02	1.00E+00	3.06E-02	9.78E+00	4.70E+00	1.10E-01	5.08E+00	1.93E+00
BREOT-S63-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	3.78E+01	1.77E-01	NA	NA	NA	NA	1.13E-04	6.29E+01	7.07E-03	1.00E+00	3.06E-02	6.02E+00	4.70E+00	1.10E-01	5.08E+00	1.19E+00
BREOT-N64-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	2.38E+01	1.11E-01	NA	NA	NA	NA	1.13E-04	3.96E+01	4.45E-03	1.00E+00	3.06E-02	3.79E+00	4.70E+00	1.10E-01	5.08E+00	7.47E-01

TABLE C-2A: ARSENIC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

Site Area (hectares) **18.41**

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Meadow Vole (Small Herbivorous Mammal - Terrestrial)																							
BREOT-N64-20 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	2.94E+01	1.38E-01	NA	NA	NA	NA	1.13E-04	4.89E+01	5.50E-03	1.00E+00	3.06E-02	4.68E+00	4.70E+00	1.10E-01	5.08E+00	9.22E-01
BREOT-S64-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	3.76E+01	1.76E-01	NA	NA	NA	NA	1.13E-04	6.25E+01	7.04E-03	1.00E+00	3.06E-02	5.99E+00	4.70E+00	1.10E-01	5.08E+00	1.18E+00
BREOT-N65-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.69E+01	7.92E-02	NA	NA	NA	NA	1.13E-04	2.81E+01	3.16E-03	1.00E+00	3.06E-02	2.69E+00	4.70E+00	1.10E-01	5.08E+00	5.30E-01
BREOT-S65-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	7.28E+01	3.41E-01	NA	NA	NA	NA	1.13E-04	1.21E+02	1.36E-02	1.00E+00	3.06E-02	1.16E+01	4.70E+00	1.10E-01	5.08E+00	2.29E+00
BREOT-N66-5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	5.92E+01	2.78E-01	NA	NA	NA	NA	1.13E-04	9.86E+01	1.11E-02	1.00E+00	3.06E-02	9.44E+00	4.70E+00	1.10E-01	5.08E+00	1.86E+00
BREOT-S66-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	4.17E+01	1.96E-01	NA	NA	NA	NA	1.13E-04	6.95E+01	7.82E-03	1.00E+00	3.06E-02	6.65E+00	4.70E+00	1.10E-01	5.08E+00	1.31E+00
BREOT-N67-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	5.86E+01	2.75E-01	NA	NA	NA	NA	1.13E-04	9.75E+01	1.10E-02	1.00E+00	3.06E-02	9.33E+00	4.70E+00	1.10E-01	5.08E+00	1.84E+00
BREOT-S67-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	7.62E+00	3.57E-02	NA	NA	NA	NA	1.13E-04	1.27E+01	1.43E-03	1.00E+00	3.06E-02	1.21E+00	4.70E+00	1.10E-01	5.08E+00	2.39E-01
At Edge of Tailings																						**Maximum HQ (Inside Tailings)**	**2.31E+01**
BREOT-S0-0 (06)	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	4.73E+01	2.22E-01	NA	NA	NA	NA	1.13E-04	7.87E+01	8.86E-03	1.00E+00	3.06E-02	7.54E+00	4.70E+00	1.10E-01	5.08E+00	1.49E+00
BREOT-S1-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.44E+02	6.73E-01	NA	NA	NA	NA	1.13E-04	2.39E+02	2.69E-02	1.00E+00	3.06E-02	2.29E+01	4.70E+00	1.10E-01	5.08E+00	4.51E+00
BREOT-S2-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	4.09E+01	1.92E-01	NA	NA	NA	NA	1.13E-04	6.81E+01	7.67E-03	1.00E+00	3.06E-02	6.52E+00	4.70E+00	1.10E-01	5.08E+00	1.29E+00
BREOT-S3-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.60E+02	7.52E-01	NA	NA	NA	NA	1.13E-04	2.67E+02	3.00E-02	1.00E+00	3.06E-02	2.56E+01	4.70E+00	1.10E-01	5.08E+00	5.04E+00
BREOT-S4-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.46E+02	6.83E-01	NA	NA	NA	NA	1.13E-04	2.42E+02	2.73E-02	1.00E+00	3.06E-02	2.32E+01	4.70E+00	1.10E-01	5.08E+00	4.57E+00
BREOT-S6-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.75E+02	8.19E-01	NA	NA	NA	NA	1.13E-04	2.91E+02	3.27E-02	1.00E+00	3.06E-02	2.78E+01	4.70E+00	1.10E-01	5.08E+00	5.49E+00
BREOT-S7-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.04E+02	4.90E-01	NA	NA	NA	NA	1.13E-04	1.74E+02	1.96E-02	1.00E+00	3.06E-02	1.66E+01	4.70E+00	1.10E-01	5.08E+00	3.28E+00
BREOT-S8-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	3.12E+01	1.46E-01	NA	NA	NA	NA	1.13E-04	5.20E+01	5.85E-03	1.00E+00	3.06E-02	4.98E+00	4.70E+00	1.10E-01	5.08E+00	9.81E-01
BREOT-S9-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	7.15E+01	3.35E-01	NA	NA	NA	NA	1.13E-04	1.19E+02	1.34E-02	1.00E+00	3.06E-02	1.14E+01	4.70E+00	1.10E-01	5.08E+00	2.25E+00
BREOT-N10-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	6.40E+02	3.00E+00	NA	NA	NA	NA	1.13E-04	1.07E+03	1.20E-01	1.00E+00	3.06E-02	1.02E+02	4.70E+00	1.10E-01	5.08E+00	2.01E+01
BREOT-N11-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.76E+02	8.23E-01	NA	NA	NA	NA	1.13E-04	2.92E+02	3.29E-02	1.00E+00	3.06E-02	2.80E+01	4.70E+00	1.10E-01	5.08E+00	5.51E+00
BREOT-S11-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	6.07E+01	2.84E-01	NA	NA	NA	NA	1.13E-04	1.01E+02	1.14E-02	1.00E+00	3.06E-02	9.67E+00	4.70E+00	1.10E-01	5.08E+00	1.90E+00
BREOT-N12-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	6.59E+01	3.09E-01	NA	NA	NA	NA	1.13E-04	1.10E+02	1.23E-02	1.00E+00	3.06E-02	1.05E+01	4.70E+00	1.10E-01	5.08E+00	2.07E+00
BREOT-S12-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	6.63E+01	3.11E-01	NA	NA	NA	NA	1.13E-04	1.10E+02	1.24E-02	1.00E+00	3.06E-02	1.06E+01	4.70E+00	1.10E-01	5.08E+00	2.08E+00
BREOT-N13-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	7.55E+02	3.54E+00	NA	NA	NA	NA	1.13E-04	1.26E+03	1.41E-01	1.00E+00	3.06E-02	1.20E+02	4.70E+00	1.10E-01	5.08E+00	2.37E+01
BREOT-S13-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.09E+01	5.11E-02	NA	NA	NA	NA	1.13E-04	1.81E+01	2.04E-03	1.00E+00	3.06E-02	1.74E+00	4.70E+00	1.10E-01	5.08E+00	3.42E-01
BREOT-N14-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	9.88E+01	4.63E-01	NA	NA	NA	NA	1.13E-04	1.64E+02	1.85E-02	1.00E+00	3.06E-02	1.57E+01	4.70E+00	1.10E-01	5.08E+00	3.10E+00
BREOT-S14-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	4.26E+02	2.00E+00	NA	NA	NA	NA	1.13E-04	7.08E+02	7.97E-02	1.00E+00	3.06E-02	6.78E+01	4.70E+00	1.10E-01	5.08E+00	1.34E+01
BREOT-N15-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.94E+02	9.10E-01	NA	NA	NA	NA	1.13E-04	3.23E+02	3.63E-02	1.00E+00	3.06E-02	3.09E+01	4.70E+00	1.10E-01	5.08E+00	6.09E+00
BREOT-N16-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.21E+02	5.69E-01	NA	NA	NA	NA	1.13E-04	2.02E+02	2.27E-02	1.00E+00	3.06E-02	1.94E+01	4.70E+00	1.10E-01	5.08E+00	3.81E+00
BREOT-S16-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.95E+01	9.13E-02	NA	NA	NA	NA	1.13E-04	3.24E+01	3.65E-03	1.00E+00	3.06E-02	3.10E+00	4.70E+00	1.10E-01	5.08E+00	6.12E-01
BREOT-N17-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.16E+02	5.46E-01	NA	NA	NA	NA	1.13E-04	1.94E+02	2.18E-02	1.00E+00	3.06E-02	1.85E+01	4.70E+00	1.10E-01	5.08E+00	3.65E+00
BREOT-S17-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.32E+02	6.19E-01	NA	NA	NA	NA	1.13E-04	2.20E+02	2.47E-02	1.00E+00	3.06E-02	2.10E+01	4.70E+00	1.10E-01	5.08E+00	4.14E+00
BREOT-N18-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.02E+02	4.77E-01	NA	NA	NA	NA	1.13E-04	1.69E+02	1.91E-02	1.00E+00	3.06E-02	1.62E+01	4.70E+00	1.10E-01	5.08E+00	3.19E+00
BREOT-S18-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	2.98E+02	1.40E+00	NA	NA	NA	NA	1.13E-04	4.96E+02	5.58E-02	1.00E+00	3.06E-02	4.75E+01	4.70E+00	1.10E-01	5.08E+00	9.36E+00
BREOT-N19-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.45E+02	6.81E-01	NA	NA	NA	NA	1.13E-04	2.42E+02	2.72E-02	1.00E+00	3.06E-02	2.32E+01	4.70E+00	1.10E-01	5.08E+00	4.56E+00
BREOT-S19-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	3.63E+01	1.70E-01	NA	NA	NA	NA	1.13E-04	6.03E+01	6.79E-03	1.00E+00	3.06E-02	5.78E+00	4.70E+00	1.10E-01	5.08E+00	1.14E+00
BREOT-N20-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.04E+02	4.86E-01	NA	NA	NA	NA	1.13E-04	1.72E+02	1.94E-02	1.00E+00	3.06E-02	1.65E+01	4.70E+00	1.10E-01	5.08E+00	3.25E+00
BREOT-S20-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	3.23E+01	1.51E-01	NA	NA	NA	NA	1.13E-04	5.38E+01	6.05E-03	1.00E+00	3.06E-02	5.15E+00	4.70E+00	1.10E-01	5.08E+00	1.01E+00
BREOT-N21-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	2.89E+02	1.36E+00	NA	NA	NA	NA	1.13E-04	4.81E+02	5.42E-02	1.00E+00	3.06E-02	4.61E+01	4.70E+00	1.10E-01	5.08E+00	9.08E+00
BREOT-S21-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.11E+02	5.20E-01	NA	NA	NA	NA	1.13E-04	1.84E+02	2.07E-02	1.00E+00	3.06E-02	1.77E+01	4.70E+00	1.10E-01	5.08E+00	3.48E+00
BREOT-N22-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.25E+02	5.86E-01	NA	NA	NA	NA	1.13E-04	2.08E+02	2.34E-02	1.00E+00	3.06E-02	1.99E+01	4.70E+00	1.10E-01	5.08E+00	3.92E+00
BREOT-S22-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.12E+02	5.24E-01	NA	NA	NA	NA	1.13E-04	1.86E+02	2.09E-02	1.00E+00	3.06E-02	1.78E+01	4.70E+00	1.10E-01	5.08E+00	3.51E+00
BREOT-N23-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.25E+02	5.85E-01	NA	NA	NA	NA	1.13E-04	2.08E+02	2.34E-02	1.00E+00	3.06E-02	1.99E+01	4.70E+00	1.10E-01	5.08E+00	3.92E+00
BREOT-S23-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.42E+02	6.65E-01	NA	NA	NA	NA	1.13E-04	2.36E+02	2.65E-02	1.00E+00	3.06E-02	2.26E+01	4.70E+00	1.10E-01	5.08E+00	4.45E+00
BREOT-N24-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.39E+02	6.52E-01	NA	NA	NA	NA	1.13E-04	2.31E+02	2.60E-02	1.00E+00	3.06E-02	2.22E+01	4.70E+00	1.10E-01	5.08E+00	4.37E+00
BREOT-S24-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	8.82E+01	4.13E-01	NA	NA	NA	NA	1.13E-04	1.47E+02	1.65E-02	1.00E+00	3.06E-02	1.41E+01	4.70E+00	1.10E-01	5.08E+00	2.77E+00
BREOT-N25-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.32E+02	6.18E-01	NA	NA	NA	NA	1.13E-04	2.19E+02	2.47E-02	1.00E+00	3.06E-02	2.10E+01	4.70E+00	1.10E-01	5.08E+00	4.14E+00
BREOT-S25-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	7.77E+01	3.64E-01	NA	NA	NA	NA	1.13E-04	1.29E+02	1.45E-02	1.00E+00	3.06E-02	1.24E+01	4.70E+00	1.10E-01	5.08E+00	2.44E+00
BREOT-N26-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	2.84E+02	1.33E+00	NA	NA	NA	NA	1.13E-04	4.72E+02	5.32E-02	1.00E+00	3.06E-02	4.52E+01	4.70E+00	1.10E-01	5.08E+00	8.92E+00
BREOT-S26-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	8.45E+01	3.96E-01	NA	NA	NA	NA	1.13E-04	1.41E+02	1.58E-02	1.00E+00	3.06E-02	1.35E+01	4.70E+00	1.10E-01	5.08E+00	2.65E+00
BREOT-N27-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	2.80E+02	1.31E+00	NA	NA	NA	NA	1.13E-04	4.65E+02	5.24E-02	1.00E+00	3.06E-02	4.46E+01	4.70E+00	1.10E-01	5.08E+00	8.78E+00
BREOT-S27-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.26E+02	5.89E-01	NA	NA	NA	NA	1.13E-04	2.09E+02	2.35E-02	1.00E+00	3.06E-02	2.00E+01	4.70E+00	1.10E-01	5.08E+00	3.95E+00
BREOT-N28-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	7.44E+01	3.49E-01	NA	NA	NA	NA	1.13E-04	1.24E+02	1.39E-02	1.00E+00	3.06E-02	1.18E+01	4.70E+00	1.10E-01	5.08E+00	2.33E+00
BREOT-S28-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	6.94E+01	3.26E-01	NA	NA	NA	NA	1.13E-04	1.16E+02	1.30E-02	1.00E+00	3.06E-02	1.11E+01	4.70E+00	1.10E-01	5.08E+00	2.18E+00
BREOT-S29-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.02E+01	4.78E-02	NA	NA	NA	NA	1.13E-04	1.70E+01	1.91E-03	1.00E+00	3.06E-02	1.62E+00	4.70E+00	1.10E-01	5.08E+00	3.20E-01

TABLE C-2A: ARSENIC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 18.41

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Meadow Vole (Small Herbivorous Mammal - Terrestrial)																							
BREOT-N30-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	2.65E+02	1.24E+00	NA	NA	NA	NA	1.13E-04	4.41E+02	4.96E-02	1.00E+00	3.06E-02	4.22E+01	4.70E+00	1.10E-01	5.08E+00	8.32E+00
BREOT-S30-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	7.45E+00	3.49E-02	NA	NA	NA	NA	1.13E-04	1.24E+01	1.39E-03	1.00E+00	3.06E-02	1.19E+00	4.70E+00	1.10E-01	5.08E+00	2.34E-01
BREOT-N31-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	6.50E+01	3.05E-01	NA	NA	NA	NA	1.13E-04	1.08E+02	1.22E-02	1.00E+00	3.06E-02	1.04E+01	4.70E+00	1.10E-01	5.08E+00	2.04E+00
BREOT-S31-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	6.83E+00	3.20E-02	NA	NA	NA	NA	1.13E-04	1.14E+01	1.28E-03	1.00E+00	3.06E-02	1.09E+00	4.70E+00	1.10E-01	5.08E+00	2.15E-01
BREOT-N32-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	8.45E+01	3.96E-01	NA	NA	NA	NA	1.13E-04	1.41E+02	1.58E-02	1.00E+00	3.06E-02	1.35E+01	4.70E+00	1.10E-01	5.08E+00	2.65E+00
BREOT-S32-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	5.28E+01	2.48E-01	NA	NA	NA	NA	1.13E-04	8.79E+01	9.89E-03	1.00E+00	3.06E-02	8.42E+00	4.70E+00	1.10E-01	5.08E+00	1.66E+00
BREOT-N33-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	9.88E+00	4.63E-02	NA	NA	NA	NA	1.13E-04	1.64E+01	1.85E-03	1.00E+00	3.06E-02	1.57E+00	4.70E+00	1.10E-01	5.08E+00	3.10E-01
BREOT-S33-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	5.03E+01	2.36E-01	NA	NA	NA	NA	1.13E-04	8.37E+01	9.42E-03	1.00E+00	3.06E-02	8.02E+00	4.70E+00	1.10E-01	5.08E+00	1.58E+00
BREOT-N34-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.50E+01	7.01E-02	NA	NA	NA	NA	1.13E-04	2.49E+01	2.80E-03	1.00E+00	3.06E-02	2.38E+00	4.70E+00	1.10E-01	5.08E+00	4.70E-01
BREOT-S34-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	8.33E+01	3.91E-01	NA	NA	NA	NA	1.13E-04	1.39E+02	1.56E-02	1.00E+00	3.06E-02	1.33E+01	4.70E+00	1.10E-01	5.08E+00	2.62E+00
BREOT-N35-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.49E+01	6.97E-02	NA	NA	NA	NA	1.13E-04	2.47E+01	2.78E-03	1.00E+00	3.06E-02	2.37E+00	4.70E+00	1.10E-01	5.08E+00	4.67E-01
BREOT-S35-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	6.59E+01	3.09E-01	NA	NA	NA	NA	1.13E-04	1.10E+02	1.23E-02	1.00E+00	3.06E-02	1.05E+01	4.70E+00	1.10E-01	5.08E+00	2.07E+00
BREOT-N36-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.30E+02	6.08E-01	NA	NA	NA	NA	1.13E-04	2.16E+02	2.43E-02	1.00E+00	3.06E-02	2.07E+01	4.70E+00	1.10E-01	5.08E+00	4.07E+00
BREOT-S36-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	9.64E+01	4.52E-01	NA	NA	NA	NA	1.13E-04	1.60E+02	1.80E-02	1.00E+00	3.06E-02	1.54E+01	4.70E+00	1.10E-01	5.08E+00	3.03E+00
BREOT-N37-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	5.11E+01	2.40E-01	NA	NA	NA	NA	1.13E-04	8.50E+01	9.57E-03	1.00E+00	3.06E-02	8.14E+00	4.70E+00	1.10E-01	5.08E+00	1.60E+00
BREOT-S37-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	9.08E+01	4.26E-01	NA	NA	NA	NA	1.13E-04	1.51E+02	1.70E-02	1.00E+00	3.06E-02	1.45E+01	4.70E+00	1.10E-01	5.08E+00	2.85E+00
BREOT-N38-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.10E+01	5.14E-02	NA	NA	NA	NA	1.13E-04	1.83E+01	2.05E-03	1.00E+00	3.06E-02	1.75E+00	4.70E+00	1.10E-01	5.08E+00	3.44E-01
BREOT-S38-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.87E+01	8.78E-02	NA	NA	NA	NA	1.13E-04	3.11E+01	3.50E-03	1.00E+00	3.06E-02	2.98E+00	4.70E+00	1.10E-01	5.08E+00	5.88E-01
BREOT-N39-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.19E+01	5.60E-02	NA	NA	NA	NA	1.13E-04	1.99E+01	2.23E-03	1.00E+00	3.06E-02	1.90E+00	4.70E+00	1.10E-01	5.08E+00	3.75E-01
BREOT-N40-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	2.52E+01	1.18E-01	NA	NA	NA	NA	1.13E-04	4.19E+01	4.72E-03	1.00E+00	3.06E-02	4.02E+00	4.70E+00	1.10E-01	5.08E+00	7.91E-01
BREOT-S40-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.02E+02	4.79E-01	NA	NA	NA	NA	1.13E-04	1.70E+02	1.91E-02	1.00E+00	3.06E-02	1.63E+01	4.70E+00	1.10E-01	5.08E+00	3.20E+00
BREOT-N41-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.77E+01	8.28E-02	NA	NA	NA	NA	1.13E-04	2.94E+01	3.31E-03	1.00E+00	3.06E-02	2.81E+00	4.70E+00	1.10E-01	5.08E+00	5.55E-01
BREOT-S41-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.25E+02	5.85E-01	NA	NA	NA	NA	1.13E-04	2.08E+02	2.34E-02	1.00E+00	3.06E-02	1.99E+01	4.70E+00	1.10E-01	5.08E+00	3.92E+00
BREOT-N42-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S42-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.30E+02	6.09E-01	NA	NA	NA	NA	1.13E-04	2.16E+02	2.43E-02	1.00E+00	3.06E-02	2.07E+01	4.70E+00	1.10E-01	5.08E+00	4.08E+00
BREOT-N43-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	2.11E+01	9.90E-02	NA	NA	NA	NA	1.13E-04	3.51E+01	3.95E-03	1.00E+00	3.06E-02	3.36E+00	4.70E+00	1.10E-01	5.08E+00	6.63E-01
BREOT-S43-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.21E+01	5.65E-02	NA	NA	NA	NA	1.13E-04	2.01E+01	2.26E-03	1.00E+00	3.06E-02	1.92E+00	4.70E+00	1.10E-01	5.08E+00	3.79E-01
BREOT-N44-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	3.92E+01	1.84E-01	NA	NA	NA	NA	1.13E-04	6.52E+01	7.34E-03	1.00E+00	3.06E-02	6.25E+00	4.70E+00	1.10E-01	5.08E+00	1.23E+00
BREOT-S44-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	4.39E+00	2.06E-02	NA	NA	NA	NA	1.13E-04	7.30E+00	8.22E-04	1.00E+00	3.06E-02	6.99E-01	4.70E+00	1.10E-01	5.08E+00	1.38E-01
BREOT-N45-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	5.93E+00	2.78E-02	NA	NA	NA	NA	1.13E-04	9.87E+00	1.11E-03	1.00E+00	3.06E-02	9.45E-01	4.70E+00	1.10E-01	5.08E+00	1.86E-01
BREOT-S45-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.45E+01	6.79E-02	NA	NA	NA	NA	1.13E-04	2.41E+01	2.71E-03	1.00E+00	3.06E-02	2.31E+00	4.70E+00	1.10E-01	5.08E+00	4.55E-01
BREOT-N46-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	5.75E+00	2.69E-02	NA	NA	NA	NA	1.13E-04	9.56E+00	1.08E-03	1.00E+00	3.06E-02	9.16E-01	4.70E+00	1.10E-01	5.08E+00	1.80E-01
BREOT-S46-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	2.74E+01	1.28E-01	NA	NA	NA	NA	1.13E-04	4.55E+01	5.12E-03	1.00E+00	3.06E-02	4.36E+00	4.70E+00	1.10E-01	5.08E+00	8.59E-01
BREOT-N47-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	5.26E+00	2.47E-02	NA	NA	NA	NA	1.13E-04	8.75E+00	9.85E-04	1.00E+00	3.06E-02	8.38E-01	4.70E+00	1.10E-01	5.08E+00	1.65E-01
BREOT-S47-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.22E+01	5.72E-02	NA	NA	NA	NA	1.13E-04	2.03E+01	2.28E-03	1.00E+00	3.06E-02	1.94E+00	4.70E+00	1.10E-01	5.08E+00	3.83E-01
BREOT-N48-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	6.77E+00	3.17E-02	NA	NA	NA	NA	1.13E-04	1.13E+01	1.27E-03	1.00E+00	3.06E-02	1.08E+00	4.70E+00	1.10E-01	5.08E+00	2.13E-01
BREOT-S48-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	3.85E+01	1.81E-01	NA	NA	NA	NA	1.13E-04	6.41E+01	7.22E-03	1.00E+00	3.06E-02	6.14E+00	4.70E+00	1.10E-01	5.08E+00	1.21E+00
BREOT-N49-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.82E+01	8.52E-02	NA	NA	NA	NA	1.13E-04	3.02E+01	3.40E-03	1.00E+00	3.06E-02	2.89E+00	4.70E+00	1.10E-01	5.08E+00	5.70E-01
BREOT-S49-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	5.10E+00	2.39E-02	NA	NA	NA	NA	1.13E-04	8.49E+00	9.55E-04	1.00E+00	3.06E-02	8.13E-01	4.70E+00	1.10E-01	5.08E+00	1.60E-01
BREOT-S50-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.51E+01	7.10E-02	NA	NA	NA	NA	1.13E-04	2.52E+01	2.83E-03	1.00E+00	3.06E-02	2.41E+00	4.70E+00	1.10E-01	5.08E+00	4.75E-01
BREOT-N51-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	3.42E+01	1.60E-01	NA	NA	NA	NA	1.13E-04	5.69E+01	6.40E-03	1.00E+00	3.06E-02	5.45E+00	4.70E+00	1.10E-01	5.08E+00	1.07E+00
BREOT-S51-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.48E+01	6.93E-02	NA	NA	NA	NA	1.13E-04	2.46E+01	2.77E-03	1.00E+00	3.06E-02	2.36E+00	4.70E+00	1.10E-01	5.08E+00	4.64E-01
BREOT-N52-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	4.34E+00	2.03E-02	NA	NA	NA	NA	1.13E-04	7.22E+00	8.12E-04	1.00E+00	3.06E-02	6.91E-01	4.70E+00	1.10E-01	5.08E+00	1.36E-01
BREOT-S52-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	4.24E+00	1.99E-02	NA	NA	NA	NA	1.13E-04	7.06E+00	7.95E-04	1.00E+00	3.06E-02	6.76E-01	4.70E+00	1.10E-01	5.08E+00	1.33E-01
BREOT-N53-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	5.92E+00	2.78E-02	NA	NA	NA	NA	1.13E-04	9.85E+00	1.11E-03	1.00E+00	3.06E-02	9.43E-01	4.70E+00	1.10E-01	5.08E+00	1.86E-01
BREOT-S53-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.05E+01	4.93E-02	NA	NA	NA	NA	1.13E-04	1.75E+01	1.97E-03	1.00E+00	3.06E-02	1.68E+00	4.70E+00	1.10E-01	5.08E+00	3.30E-01
BREOT-N54-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	6.43E+00	3.02E-02	NA	NA	NA	NA	1.13E-04	1.07E+01	1.20E-03	1.00E+00	3.06E-02	1.03E+00	4.70E+00	1.10E-01	5.08E+00	2.02E-01
BREOT-S54-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	4.77E+00	2.24E-02	NA	NA	NA	NA	1.13E-04	7.94E+00	8.93E-04	1.00E+00	3.06E-02	7.60E-01	4.70E+00	1.10E-01	5.08E+00	1.50E-01
BREOT-N55-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	5.33E+00	2.50E-02	NA	NA	NA	NA	1.13E-04	8.86E+00	9.97E-04	1.00E+00	3.06E-02	8.49E-01	4.70E+00	1.10E-01	5.08E+00	1.67E-01
BREOT-S55-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	5.39E+00	2.53E-02	NA	NA	NA	NA	1.13E-04	8.96E+00	1.01E-03	1.00E+00	3.06E-02	8.58E-01	4.70E+00	1.10E-01	5.08E+00	1.69E-01
BREOT-N56-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	5.03E+01	2.36E-01	NA	NA	NA	NA	1.13E-04	8.38E+01	9.43E-03	1.00E+00	3.06E-02	8.02E+00	4.70E+00	1.10E-01	5.08E+00	1.58E+00
BREOT-N57-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	6.46E+00	3.03E-02	NA	NA	NA	NA	1.13E-04	1.07E+01	1.21E-03	1.00E+00	3.06E-02	1.03E+00	4.70E+00	1.10E-01	5.08E+00	2.03E-01
BREOT-S57-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	2.37E+01	1.11E-01	NA	NA	NA	NA	1.13E-04	3.94E+01	4.43E-03	1.00E+00	3.06E-02	3.77E+00	4.70E+00	1.10E-01	5.08E+00	7.44E-01
BREOT-N58-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.25E+01	5.86E-02	NA	NA	NA	NA	1.13E-04	2.08E+01	2.34E-03	1.00E+00	3.06E-02	1.99E+00	4.70E+00	1.10E-01	5.08E+00	3.92E-01
BREOT-S58-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.45E+01	6.78E-02	NA	NA	NA	NA	1.13E-04	2.41E+01	2.71E-03	1.00E+00	3.06E-02	2.30E+00	4.70E+00	1.10E-01	5.08E+00	4.54E-01

TABLE C-2A: ARSENIC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **18.41**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Meadow Vole (Small Herbivorous Mammal - Terrestrial)																							
BREOT-N59-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	2.09E+01	9.80E-02	NA	NA	NA	NA	1.13E-04	3.48E+01	3.91E-03	1.00E+00	3.06E-02	3.33E+00	4.70E+00	1.10E-01	5.08E+00	6.56E-01
BREOT-N60-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.19E+01	5.56E-02	NA	NA	NA	NA	1.13E-04	1.97E+01	2.22E-03	1.00E+00	3.06E-02	1.89E+00	4.70E+00	1.10E-01	5.08E+00	3.72E-01
BREOT-S60-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	4.89E+01	2.29E-01	NA	NA	NA	NA	1.13E-04	8.13E+01	9.15E-03	1.00E+00	3.06E-02	7.79E+00	4.70E+00	1.10E-01	5.08E+00	1.53E+00
BREOT-S61-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	5.42E+00	2.54E-02	NA	NA	NA	NA	1.13E-04	9.02E+00	1.02E-03	1.00E+00	3.06E-02	8.64E-01	4.70E+00	1.10E-01	5.08E+00	1.70E-01
BREOT-N62-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.10E+01	5.15E-02	NA	NA	NA	NA	1.13E-04	1.83E+01	2.06E-03	1.00E+00	3.06E-02	1.75E+00	4.70E+00	1.10E-01	5.08E+00	3.45E-01
BREOT-S62-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	5.62E+00	2.64E-02	NA	NA	NA	NA	1.13E-04	9.35E+00	1.05E-03	1.00E+00	3.06E-02	8.96E-01	4.70E+00	1.10E-01	5.08E+00	1.76E-01
BREOT-N63-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	3.35E+01	1.57E-01	NA	NA	NA	NA	1.13E-04	5.57E+01	6.27E-03	1.00E+00	3.06E-02	5.33E+00	4.70E+00	1.10E-01	5.08E+00	1.05E+00
BREOT-S63-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.77E+01	8.29E-02	NA	NA	NA	NA	1.13E-04	2.94E+01	3.31E-03	1.00E+00	3.06E-02	2.82E+00	4.70E+00	1.10E-01	5.08E+00	5.55E-01
BREOT-N64-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	5.23E+00	2.45E-02	NA	NA	NA	NA	1.13E-04	8.70E+00	9.79E-04	1.00E+00	3.06E-02	8.33E-01	4.70E+00	1.10E-01	5.08E+00	1.64E-01
BREOT-S64-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	6.48E+00	3.04E-02	NA	NA	NA	NA	1.13E-04	1.08E+01	1.21E-03	1.00E+00	3.06E-02	1.03E+00	4.70E+00	1.10E-01	5.08E+00	2.04E-01
BREOT-N66-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	2.23E+01	1.04E-01	NA	NA	NA	NA	1.13E-04	3.70E+01	4.17E-03	1.00E+00	3.06E-02	3.55E+00	4.70E+00	1.10E-01	5.08E+00	6.99E-01
BREOT-S66-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.11E+01	5.20E-02	NA	NA	NA	NA	1.13E-04	1.85E+01	2.08E-03	1.00E+00	3.06E-02	1.77E+00	4.70E+00	1.10E-01	5.08E+00	3.48E-01
BREOT-N67-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	5.11E+01	2.40E-01	NA	NA	NA	NA	1.13E-04	8.50E+01	9.57E-03	1.00E+00	3.06E-02	8.14E+00	4.70E+00	1.10E-01	5.08E+00	1.60E+00
BREOT-S67-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	4.75E+00	2.23E-02	NA	NA	NA	NA	1.13E-04	7.90E+00	8.89E-04	1.00E+00	3.06E-02	7.57E-01	4.70E+00	1.10E-01	5.08E+00	1.49E-01
Outside Tailings																						**Maximum HQ (At Edge of Tailings)**	**2.37E+01**
BREOT-S0+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	2.25E+01	1.06E-01	NA	NA	NA	NA	1.13E-04	3.75E+01	4.22E-03	1.00E+00	3.06E-02	3.59E+00	4.70E+00	1.10E-01	5.08E+00	7.07E-01
BREOT-S1+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	5.89E+00	2.76E-02	NA	NA	NA	NA	1.13E-04	9.81E+00	1.10E-03	1.00E+00	3.06E-02	9.39E-01	4.70E+00	1.10E-01	5.08E+00	1.85E-01
BREOT-S2+95 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.37E+01	6.43E-02	NA	NA	NA	NA	1.13E-04	2.28E+01	2.57E-03	1.00E+00	3.06E-02	2.18E+00	4.70E+00	1.10E-01	5.08E+00	4.30E-01
BREOT-S3+6 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	6.28E+00	2.95E-02	NA	NA	NA	NA	1.13E-04	1.05E+01	1.18E-03	1.00E+00	3.06E-02	1.00E+00	4.70E+00	1.10E-01	5.08E+00	1.97E-01
BREOT-S4+10 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.23E+01	5.75E-02	NA	NA	NA	NA	1.13E-04	2.04E+01	2.30E-03	1.00E+00	3.06E-02	1.95E+00	4.70E+00	1.10E-01	5.08E+00	3.85E-01
BREOT-S6+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.74E+01	8.16E-02	NA	NA	NA	NA	1.13E-04	2.90E+01	3.26E-03	1.00E+00	3.06E-02	2.77E+00	4.70E+00	1.10E-01	5.08E+00	5.47E-01
BREOT-S8+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	2.09E+01	9.79E-02	NA	NA	NA	NA	1.13E-04	3.47E+01	3.91E-03	1.00E+00	3.06E-02	3.33E+00	4.70E+00	1.10E-01	5.08E+00	6.55E-01
BREOT-N10+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.25E+01	5.86E-02	NA	NA	NA	NA	1.13E-04	2.08E+01	2.34E-03	1.00E+00	3.06E-02	1.99E+00	4.70E+00	1.10E-01	5.08E+00	3.93E-01
BREOT-N11+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	6.18E+00	2.90E-02	NA	NA	NA	NA	1.13E-04	1.03E+01	1.16E-03	1.00E+00	3.06E-02	9.85E-01	4.70E+00	1.10E-01	5.08E+00	1.94E-01
BREOT-N12+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	7.76E+00	3.64E-02	NA	NA	NA	NA	1.13E-04	1.29E+01	1.45E-03	1.00E+00	3.06E-02	1.24E+00	4.70E+00	1.10E-01	5.08E+00	2.44E-01
BREOT-S12+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.53E+02	7.17E-01	NA	NA	NA	NA	1.13E-04	2.54E+02	2.86E-02	1.00E+00	3.06E-02	2.44E+01	4.70E+00	1.10E-01	5.08E+00	4.80E+00
BREOT-S12+60 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	5.12E+01	2.40E-01	NA	NA	NA	NA	1.13E-04	8.51E+01	9.58E-03	1.00E+00	3.06E-02	8.15E+00	4.70E+00	1.10E-01	5.08E+00	1.61E+00
BREOT-N13+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	7.78E+00	3.65E-02	NA	NA	NA	NA	1.13E-04	1.30E+01	1.46E-03	1.00E+00	3.06E-02	1.24E+00	4.70E+00	1.10E-01	5.08E+00	2.44E-01
BREOT-S13+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.11E+02	5.22E-01	NA	NA	NA	NA	1.13E-04	1.85E+02	2.08E-02	1.00E+00	3.06E-02	1.77E+01	4.70E+00	1.10E-01	5.08E+00	3.49E+00
BREOT-S13+65 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	6.22E+01	2.92E-01	NA	NA	NA	NA	1.13E-04	1.03E+02	1.16E-02	1.00E+00	3.06E-02	9.91E+00	4.70E+00	1.10E-01	5.08E+00	1.95E+00
BREOT-N14+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	2.38E+01	1.11E-01	NA	NA	NA	NA	1.13E-04	3.95E+01	4.45E-03	1.00E+00	3.06E-02	3.79E+00	4.70E+00	1.10E-01	5.08E+00	7.46E-01
BREOT-S14+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	4.20E+02	1.97E+00	NA	NA	NA	NA	1.13E-04	6.99E+02	7.86E-02	1.00E+00	3.06E-02	6.69E+01	4.70E+00	1.10E-01	5.08E+00	1.32E+01
BREOT-S14+59 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	6.04E+01	2.83E-01	NA	NA	NA	NA	1.13E-04	1.00E+02	1.13E-02	1.00E+00	3.06E-02	9.62E+00	4.70E+00	1.10E-01	5.08E+00	1.90E+00
BREOT-N15+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	6.28E+01	2.94E-01	NA	NA	NA	NA	1.13E-04	1.04E+02	1.18E-02	1.00E+00	3.06E-02	1.00E+01	4.70E+00	1.10E-01	5.08E+00	1.97E+00
BREOT-N15+50 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	5.32E+00	2.49E-02	NA	NA	NA	NA	1.13E-04	8.85E+00	9.96E-04	1.00E+00	3.06E-02	8.48E-01	4.70E+00	1.10E-01	5.08E+00	1.67E-01
BREOT-S16+20 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	9.47E+01	4.44E-01	NA	NA	NA	NA	1.13E-04	1.58E+02	1.77E-02	1.00E+00	3.06E-02	1.51E+01	4.70E+00	1.10E-01	5.08E+00	2.97E+00
BREOT-S16+75 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.60E+01	7.52E-02	NA	NA	NA	NA	1.13E-04	2.67E+01	3.00E-03	1.00E+00	3.06E-02	2.56E+00	4.70E+00	1.10E-01	5.08E+00	5.04E-01
BREOT-N17+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	9.82E+01	4.60E-01	NA	NA	NA	NA	1.13E-04	1.63E+02	1.84E-02	1.00E+00	3.06E-02	1.56E+01	4.70E+00	1.10E-01	5.08E+00	3.08E+00
BREOT-S18+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	2.88E+01	1.35E-01	NA	NA	NA	NA	1.13E-04	4.80E+01	5.40E-03	1.00E+00	3.06E-02	4.59E+00	4.70E+00	1.10E-01	5.08E+00	9.05E-01
BREOT-N19+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	4.50E+00	2.11E-02	NA	NA	NA	NA	1.13E-04	7.49E+00	8.43E-04	1.00E+00	3.06E-02	7.17E-01	4.70E+00	1.10E-01	5.08E+00	1.41E-01
BREOT-S19+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	2.50E+02	1.17E+00	NA	NA	NA	NA	1.13E-04	4.16E+02	4.69E-02	1.00E+00	3.06E-02	3.99E+01	4.70E+00	1.10E-01	5.08E+00	7.86E+00
BREOT-S19+85 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	9.44E+00	4.42E-02	NA	NA	NA	NA	1.13E-04	1.57E+01	1.77E-03	1.00E+00	3.06E-02	1.50E+00	4.70E+00	1.10E-01	5.08E+00	2.96E-01
BREOT-N20+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	7.36E+00	3.45E-02	NA	NA	NA	NA	1.13E-04	1.22E+01	1.38E-03	1.00E+00	3.06E-02	1.17E+00	4.70E+00	1.10E-01	5.08E+00	2.31E-01
BREOT-S20+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	3.56E+02	1.67E+00	NA	NA	NA	NA	1.13E-04	5.92E+02	6.66E-02	1.00E+00	3.06E-02	5.67E+01	4.70E+00	1.10E-01	5.08E+00	1.12E+01
BREOT-S20+75 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N21+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.25E+02	5.85E-01	NA	NA	NA	NA	1.13E-04	2.08E+02	2.34E-02	1.00E+00	3.06E-02	1.99E+01	4.70E+00	1.10E-01	5.08E+00	3.92E+00
BREOT-S21+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	2.14E+02	1.00E+00	NA	NA	NA	NA	1.13E-04	3.56E+02	4.01E-02	1.00E+00	3.06E-02	3.41E+01	4.70E+00	1.10E-01	5.08E+00	6.72E+00
BREOT-N22+150 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	4.99E+00	2.34E-02	NA	NA	NA	NA	1.13E-04	8.30E+00	9.34E-04	1.00E+00	3.06E-02	7.95E-01	4.70E+00	1.10E-01	5.08E+00	1.57E-01
BREOT-N22+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	5.53E+01	2.59E-01	NA	NA	NA	NA	1.13E-04	9.20E+01	1.04E-02	1.00E+00	3.06E-02	8.81E+00	4.70E+00	1.10E-01	5.08E+00	1.74E+00
BREOT-S22+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	5.53E+01	2.59E-01	NA	NA	NA	NA	1.13E-04	9.20E+01	1.03E-02	1.00E+00	3.06E-02	8.81E+00	4.70E+00	1.10E-01	5.08E+00	1.74E+00
BREOT-N23+115 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.40E+01	6.57E-02	NA	NA	NA	NA	1.13E-04	2.33E+01	2.62E-03	1.00E+00	3.06E-02	2.23E+00	4.70E+00	1.10E-01	5.08E+00	4.40E-01
BREOT-N23+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.98E+02	9.27E-01	NA	NA	NA	NA	1.13E-04	3.29E+02	3.70E-02	1.00E+00	3.06E-02	3.15E+01	4.70E+00	1.10E-01	5.08E+00	6.21E+00
BREOT-S23+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	6.31E+01	2.96E-01	NA	NA	NA	NA	1.13E-04	1.05E+02	1.18E-02	1.00E+00	3.06E-02	1.01E+01	4.70E+00	1.10E-01	5.08E+00	1.98E+00
BREOT-S23+37.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.64E+01	7.69E-02	NA	NA	NA	NA	1.13E-04	2.73E+01	3.07E-03	1.00E+00	3.06E-02	2.61E+00	4.70E+00	1.10E-01	5.08E+00	5.15E-01
BREOT-N24+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	9.47E+01	4.44E-01	NA	NA	NA	NA	1.13E-04	1.58E+02	1.77E-02	1.00E+00	3.06E-02	1.51E+01	4.70E+00	1.10E-01	5.08E+00	2.97E+00

TABLE C-2A: ARSENIC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 18.41

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Meadow Vole (Small Herbivorous Mammal - Terrestrial)																							
BREOT-N24+75 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.33E+01	6.23E-02	NA	NA	NA	NA	1.13E-04	2.21E+01	2.49E-03	1.00E+00	3.06E-02	2.12E+00	4.70E+00	1.10E-01	5.08E+00	4.17E-01
BREOT-S24+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	4.97E+01	2.33E-01	NA	NA	NA	NA	1.13E-04	8.28E+01	9.31E-03	1.00E+00	3.06E-02	7.93E+00	4.70E+00	1.10E-01	5.08E+00	1.56E+00
BREOT-N25+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	4.55E+00	2.13E-02	NA	NA	NA	NA	1.13E-04	7.57E+00	8.52E-04	1.00E+00	3.06E-02	7.25E-01	4.70E+00	1.10E-01	5.08E+00	1.43E-01
BREOT-S25+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	3.44E+01	1.61E-01	NA	NA	NA	NA	1.13E-04	5.72E+01	6.44E-03	1.00E+00	3.06E-02	5.48E+00	4.70E+00	1.10E-01	5.08E+00	1.08E+00
BREOT-S25+40 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	5.67E+01	2.66E-01	NA	NA	NA	NA	1.13E-04	9.43E+01	1.06E-02	1.00E+00	3.06E-02	9.03E+00	4.70E+00	1.10E-01	5.08E+00	1.78E+00
BREOT-S26+37 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.36E+01	6.37E-02	NA	NA	NA	NA	1.13E-04	2.26E+01	2.55E-03	1.00E+00	3.06E-02	2.17E+00	4.70E+00	1.10E-01	5.08E+00	4.27E-01
BREOT-N27+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	5.70E+00	2.67E-02	NA	NA	NA	NA	1.13E-04	9.49E+00	1.07E-03	1.00E+00	3.06E-02	9.09E-01	4.70E+00	1.10E-01	5.08E+00	1.79E-01
BREOT-S27+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	2.12E+01	9.93E-02	NA	NA	NA	NA	1.13E-04	3.52E+01	3.96E-03	1.00E+00	3.06E-02	3.37E+00	4.70E+00	1.10E-01	5.08E+00	6.65E-01
BREOT-N28+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	5.66E+00	2.66E-02	NA	NA	NA	NA	1.13E-04	9.43E+00	1.06E-03	1.00E+00	3.06E-02	9.03E-01	4.70E+00	1.10E-01	5.08E+00	1.78E-01
BREOT-S28+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	5.77E+01	2.71E-01	NA	NA	NA	NA	1.13E-04	9.61E+01	1.08E-02	1.00E+00	3.06E-02	9.20E+00	4.70E+00	1.10E-01	5.08E+00	1.81E+00
BREOT-N29+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	7.86E+00	3.68E-02	NA	NA	NA	NA	1.13E-04	1.31E+01	1.47E-03	1.00E+00	3.06E-02	1.25E+00	4.70E+00	1.10E-01	5.08E+00	2.47E-01
BREOT-S29+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.27E+01	5.96E-02	NA	NA	NA	NA	1.13E-04	2.12E+01	2.38E-03	1.00E+00	3.06E-02	2.03E+00	4.70E+00	1.10E-01	5.08E+00	3.99E-01
BREOT-N30+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	9.48E+00	4.45E-02	NA	NA	NA	NA	1.13E-04	1.58E+01	1.78E-03	1.00E+00	3.06E-02	1.51E+00	4.70E+00	1.10E-01	5.08E+00	2.98E-01
BREOT-S30+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.07E+01	5.02E-02	NA	NA	NA	NA	1.13E-04	1.78E+01	2.01E-03	1.00E+00	3.06E-02	1.71E+00	4.70E+00	1.10E-01	5.08E+00	3.36E-01
BREOT-N31+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.64E+02	7.69E-01	NA	NA	NA	NA	1.13E-04	2.73E+02	3.07E-02	1.00E+00	3.06E-02	2.61E+01	4.70E+00	1.10E-01	5.08E+00	5.15E+00
BREOT-N31+75 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S31+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	5.44E+00	2.55E-02	NA	NA	NA	NA	1.13E-04	9.05E+00	1.02E-03	1.00E+00	3.06E-02	8.67E-01	4.70E+00	1.10E-01	5.08E+00	1.71E-01
BREOT-N32+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	5.43E+00	2.55E-02	NA	NA	NA	NA	1.13E-04	9.04E+00	1.02E-03	1.00E+00	3.06E-02	8.65E-01	4.70E+00	1.10E-01	5.08E+00	1.71E-01
BREOT-S32+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	8.14E+01	3.82E-01	NA	NA	NA	NA	1.13E-04	1.35E+02	1.52E-02	1.00E+00	3.06E-02	1.30E+01	4.70E+00	1.10E-01	5.08E+00	2.56E+00
BREOT-S32+300 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	3.75E+01	1.76E-01	NA	NA	NA	NA	1.13E-04	6.24E+01	7.02E-03	1.00E+00	3.06E-02	5.98E+00	4.70E+00	1.10E-01	5.08E+00	1.18E+00
BREOT-N33+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	5.24E+00	2.46E-02	NA	NA	NA	NA	1.13E-04	8.72E+00	9.81E-04	1.00E+00	3.06E-02	8.35E-01	4.70E+00	1.10E-01	5.08E+00	1.64E-01
BREOT-S33+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	2.04E+01	9.58E-02	NA	NA	NA	NA	1.13E-04	3.40E+01	3.83E-03	1.00E+00	3.06E-02	3.26E+00	4.70E+00	1.10E-01	5.08E+00	6.41E-01
BREOT-N34+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	5.92E+00	2.78E-02	NA	NA	NA	NA	1.13E-04	9.85E+00	1.11E-03	1.00E+00	3.06E-02	9.43E-01	4.70E+00	1.10E-01	5.08E+00	1.86E-01
BREOT-S34+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	3.09E+01	1.45E-01	NA	NA	NA	NA	1.13E-04	5.14E+01	5.79E-03	1.00E+00	3.06E-02	4.92E+00	4.70E+00	1.10E-01	5.08E+00	9.70E-01
BREOT-N35+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.37E+01	6.41E-02	NA	NA	NA	NA	1.13E-04	2.27E+01	2.56E-03	1.00E+00	3.06E-02	2.18E+00	4.70E+00	1.10E-01	5.08E+00	4.29E-01
BREOT-S35+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.95E+01	9.14E-02	NA	NA	NA	NA	1.13E-04	3.24E+01	3.65E-03	1.00E+00	3.06E-02	3.11E+00	4.70E+00	1.10E-01	5.08E+00	6.12E-01
BREOT-N36+100 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	9.74E+00	4.57E-02	NA	NA	NA	NA	1.13E-04	1.62E+01	1.82E-03	1.00E+00	3.06E-02	1.55E+00	4.70E+00	1.10E-01	5.08E+00	3.06E-01
BREOT-N36+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.13E+02	5.30E-01	NA	NA	NA	NA	1.13E-04	1.88E+02	2.11E-02	1.00E+00	3.06E-02	1.80E+01	4.70E+00	1.10E-01	5.08E+00	3.55E+00
BREOT-S36+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	2.13E+01	1.00E-01	NA	NA	NA	NA	1.13E-04	3.55E+01	4.00E-03	1.00E+00	3.06E-02	3.40E+00	4.70E+00	1.10E-01	5.08E+00	6.70E-01
BREOT-N37+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	5.44E+00	2.55E-02	NA	NA	NA	NA	1.13E-04	9.05E+00	1.02E-03	1.00E+00	3.06E-02	8.66E-01	4.70E+00	1.10E-01	5.08E+00	1.71E-01
BREOT-S37+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.75E+01	8.20E-02	NA	NA	NA	NA	1.13E-04	2.91E+01	3.28E-03	1.00E+00	3.06E-02	2.79E+00	4.70E+00	1.10E-01	5.08E+00	5.49E-01
BREOT-N38+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.46E+01	6.83E-02	NA	NA	NA	NA	1.13E-04	2.43E+01	2.73E-03	1.00E+00	3.06E-02	2.32E+00	4.70E+00	1.10E-01	5.08E+00	4.58E-01
BREOT-S38+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.69E+01	7.93E-02	NA	NA	NA	NA	1.13E-04	2.81E+01	3.17E-03	1.00E+00	3.06E-02	2.70E+00	4.70E+00	1.10E-01	5.08E+00	5.31E-01
BREOT-N39+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.32E+01	6.18E-02	NA	NA	NA	NA	1.13E-04	2.19E+01	2.47E-03	1.00E+00	3.06E-02	2.10E+00	4.70E+00	1.10E-01	5.08E+00	4.14E-01
BREOT-S39+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	2.85E+01	1.34E-01	NA	NA	NA	NA	1.13E-04	4.74E+01	5.33E-03	1.00E+00	3.06E-02	4.54E+00	4.70E+00	1.10E-01	5.08E+00	8.94E-01
BREOT-N40+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.92E+01	9.00E-02	NA	NA	NA	NA	1.13E-04	3.19E+01	3.59E-03	1.00E+00	3.06E-02	3.06E+00	4.70E+00	1.10E-01	5.08E+00	6.03E-01
BREOT-S40+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	2.33E+01	1.09E-01	NA	NA	NA	NA	1.13E-04	3.88E+01	4.36E-03	1.00E+00	3.06E-02	3.71E+00	4.70E+00	1.10E-01	5.08E+00	7.32E-01
BREOT-N41+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	5.28E+00	2.48E-02	NA	NA	NA	NA	1.13E-04	8.79E+00	9.89E-04	1.00E+00	3.06E-02	8.41E-01	4.70E+00	1.10E-01	5.08E+00	1.66E-01
BREOT-S41+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	3.90E+01	1.83E-01	NA	NA	NA	NA	1.13E-04	6.49E+01	7.31E-03	1.00E+00	3.06E-02	6.22E+00	4.70E+00	1.10E-01	5.08E+00	1.23E+00
BREOT-N42+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S42+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	5.08E+00	2.38E-02	NA	NA	NA	NA	1.13E-04	8.45E+00	9.51E-04	1.00E+00	3.06E-02	8.09E-01	4.70E+00	1.10E-01	5.08E+00	1.59E-01
BREOT-N43+12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	2.37E+01	1.11E-01	NA	NA	NA	NA	1.13E-04	3.94E+01	4.44E-03	1.00E+00	3.06E-02	3.77E+00	4.70E+00	1.10E-01	5.08E+00	7.44E-01
BREOT-N43+40 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	4.93E+00	2.31E-02	NA	NA	NA	NA	1.13E-04	8.21E+00	9.23E-04	1.00E+00	3.06E-02	7.86E-01	4.70E+00	1.10E-01	5.08E+00	1.55E-01
BREOT-S43+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	8.56E+00	4.02E-02	NA	NA	NA	NA	1.13E-04	1.43E+01	1.60E-03	1.00E+00	3.06E-02	1.36E+00	4.70E+00	1.10E-01	5.08E+00	2.69E-01
BREOT-N44+55 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.84E+01	8.61E-02	NA	NA	NA	NA	1.13E-04	3.06E+01	3.44E-03	1.00E+00	3.06E-02	2.93E+00	4.70E+00	1.10E-01	5.08E+00	5.77E-01
BREOT-S44+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.33E+01	6.24E-02	NA	NA	NA	NA	1.13E-04	2.22E+01	2.49E-03	1.00E+00	3.06E-02	2.12E+00	4.70E+00	1.10E-01	5.08E+00	4.18E-01
BREOT-N45+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	4.79E+00	2.25E-02	NA	NA	NA	NA	1.13E-04	7.97E+00	8.97E-04	1.00E+00	3.06E-02	7.63E-01	4.70E+00	1.10E-01	5.08E+00	1.50E-01
BREOT-S45+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N46+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	2.53E+01	1.19E-01	NA	NA	NA	NA	1.13E-04	4.21E+01	4.74E-03	1.00E+00	3.06E-02	4.03E+00	4.70E+00	1.10E-01	5.08E+00	7.95E-01
BREOT-S46+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N47+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	5.78E+00	2.71E-02	NA	NA	NA	NA	1.13E-04	9.62E+00	1.08E-03	1.00E+00	3.06E-02	9.21E-01	4.70E+00	1.10E-01	5.08E+00	1.81E-01
BREOT-S47+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.25E+01	5.85E-02	NA	NA	NA	NA	1.13E-04	2.08E+01	2.34E-03	1.00E+00	3.06E-02	1.99E+00	4.70E+00	1.10E-01	5.08E+00	3.92E-01
BREOT-N48+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	4.73E+00	2.22E-02	NA	NA	NA	NA	1.13E-04	7.87E+00	8.85E-04	1.00E+00	3.06E-02	7.53E-01	4.70E+00	1.10E-01	5.08E+00	1.48E-01
BREOT-S48+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	2.50E+01	1.17E-01	NA	NA	NA	NA	1.13E-04	4.15E+01	4.67E-03	1.00E+00	3.06E-02	3.98E+00	4.70E+00	1.10E-01	5.08E+00	7.84E-01
BREOT-N49+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	3.50E+01	1.64E-01	NA	NA	NA	NA	1.13E-04	5.82E+01	6.55E-03	1.00E+00	3.06E-02	5.57E+00	4.70E+00	1.10E-01	5.08E+00	1.10E+00

TABLE C-2A: ARSENIC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **18.41**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Meadow Vole (Small Herbivorous Mammal - Terrestrial)																							
BREOT-S49+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	5.65E+00	2.65E-02	NA	NA	NA	NA	1.13E-04	9.40E+00	1.06E-03	1.00E+00	3.06E-02	9.00E-01	4.70E+00	1.10E-01	5.08E+00	1.77E-01
BREOT-N51+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.40E+01	6.58E-02	NA	NA	NA	NA	1.13E-04	2.34E+01	2.63E-03	1.00E+00	3.06E-02	2.24E+00	4.70E+00	1.10E-01	5.08E+00	4.41E-01
BREOT-S51+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.80E+01	8.45E-02	NA	NA	NA	NA	1.13E-04	3.00E+01	3.37E-03	1.00E+00	3.06E-02	2.87E+00	4.70E+00	1.10E-01	5.08E+00	5.66E-01
BREOT-N52+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	2.81E+01	1.32E-01	NA	NA	NA	NA	1.13E-04	4.67E+01	5.25E-03	1.00E+00	3.06E-02	4.47E+00	4.70E+00	1.10E-01	5.08E+00	8.81E-01
BREOT-S52+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.57E+01	7.38E-02	NA	NA	NA	NA	1.13E-04	2.62E+01	2.95E-03	1.00E+00	3.06E-02	2.51E+00	4.70E+00	1.10E-01	5.08E+00	4.94E-01
BREOT-N53+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S53+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	5.37E+00	2.52E-02	NA	NA	NA	NA	1.13E-04	8.94E+00	1.01E-03	1.00E+00	3.06E-02	8.56E-01	4.70E+00	1.10E-01	5.08E+00	1.69E-01
BREOT-S54+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N55+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.19E+01	5.59E-02	NA	NA	NA	NA	1.13E-04	1.98E+01	2.23E-03	1.00E+00	3.06E-02	1.90E+00	4.70E+00	1.10E-01	5.08E+00	3.74E-01
BREOT-S55+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N56+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	5.48E+00	2.57E-02	NA	NA	NA	NA	1.13E-04	9.11E+00	1.03E-03	1.00E+00	3.06E-02	8.73E-01	4.70E+00	1.10E-01	5.08E+00	1.72E-01
BREOT-S56+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.37E+01	6.40E-02	NA	NA	NA	NA	1.13E-04	2.27E+01	2.56E-03	1.00E+00	3.06E-02	2.18E+00	4.70E+00	1.10E-01	5.08E+00	4.29E-01
BREOT-N57+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	4.75E+00	2.23E-02	NA	NA	NA	NA	1.13E-04	7.90E+00	8.89E-04	1.00E+00	3.06E-02	7.57E-01	4.70E+00	1.10E-01	5.08E+00	1.49E-01
BREOT-S57+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	2.08E+01	9.73E-02	NA	NA	NA	NA	1.13E-04	3.45E+01	3.89E-03	1.00E+00	3.06E-02	3.31E+00	4.70E+00	1.10E-01	5.08E+00	6.52E-01
BREOT-N58+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.39E+01	6.51E-02	NA	NA	NA	NA	1.13E-04	2.31E+01	2.60E-03	1.00E+00	3.06E-02	2.21E+00	4.70E+00	1.10E-01	5.08E+00	4.36E-01
BREOT-S58+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	5.55E+00	2.60E-02	NA	NA	NA	NA	1.13E-04	9.24E+00	1.04E-03	1.00E+00	3.06E-02	8.85E-01	4.70E+00	1.10E-01	5.08E+00	1.74E-01
BREOT-N59+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	3.22E+01	1.51E-01	NA	NA	NA	NA	1.13E-04	5.36E+01	6.03E-03	1.00E+00	3.06E-02	5.13E+00	4.70E+00	1.10E-01	5.08E+00	1.01E+00
BREOT-N60+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.48E+01	6.94E-02	NA	NA	NA	NA	1.13E-04	2.46E+01	2.77E-03	1.00E+00	3.06E-02	2.36E+00	4.70E+00	1.10E-01	5.08E+00	4.65E-01
BREOT-S60+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.60E+01	7.52E-02	NA	NA	NA	NA	1.13E-04	2.67E+01	3.00E-03	1.00E+00	3.06E-02	2.56E+00	4.70E+00	1.10E-01	5.08E+00	5.04E-01
BREOT-S61+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	4.73E+00	2.22E-02	NA	NA	NA	NA	1.13E-04	7.88E+00	8.86E-04	1.00E+00	3.06E-02	7.54E-01	4.70E+00	1.10E-01	5.08E+00	1.49E-01
BREOT-N62+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	5.55E+00	2.60E-02	NA	NA	NA	NA	1.13E-04	9.24E+00	1.04E-03	1.00E+00	3.06E-02	8.85E-01	4.70E+00	1.10E-01	5.08E+00	1.74E-01
BREOT-S62+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N63+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	4.43E+01	2.08E-01	NA	NA	NA	NA	1.13E-04	7.37E+01	8.30E-03	1.00E+00	3.06E-02	7.06E+00	4.70E+00	1.10E-01	5.08E+00	1.39E+00
BREOT-S63+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N64+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.25E+01	5.88E-02	NA	NA	NA	NA	1.13E-04	2.09E+01	2.35E-03	1.00E+00	3.06E-02	2.00E+00	4.70E+00	1.10E-01	5.08E+00	3.93E-01
BREOT-S64+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.53E+01	7.19E-02	NA	NA	NA	NA	1.13E-04	2.55E+01	2.87E-03	1.00E+00	3.06E-02	2.44E+00	4.70E+00	1.10E-01	5.08E+00	4.81E-01
BREOT-S65+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	5.83E+00	2.74E-02	NA	NA	NA	NA	1.13E-04	9.71E+00	1.09E-03	1.00E+00	3.06E-02	9.30E-01	4.70E+00	1.10E-01	5.08E+00	1.83E-01
BREOT-N66+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.79E+01	8.41E-02	NA	NA	NA	NA	1.13E-04	2.99E+01	3.36E-03	1.00E+00	3.06E-02	2.86E+00	4.70E+00	1.10E-01	5.08E+00	5.63E-01
BREOT-S66+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	2.34E+01	1.09E-01	NA	NA	NA	NA	1.13E-04	3.89E+01	4.37E-03	1.00E+00	3.06E-02	3.72E+00	4.70E+00	1.10E-01	5.08E+00	7.33E-01
BREOT-N67+125 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	3.20E+01	1.50E-01	NA	NA	NA	NA	1.13E-04	5.32E+01	5.99E-03	1.00E+00	3.06E-02	5.10E+00	4.70E+00	1.10E-01	5.08E+00	1.00E+00
BREOT-S67+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.57E+01	7.37E-02	NA	NA	NA	NA	1.13E-04	2.62E+01	2.94E-03	1.00E+00	3.06E-02	2.50E+00	4.70E+00	1.10E-01	5.08E+00	4.94E-01
BREOT-N67+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	6.27E+01	2.94E-01	NA	NA	NA	NA	1.13E-04	1.04E+02	1.17E-02	1.00E+00	3.06E-02	1.00E+01	4.70E+00	1.10E-01	5.08E+00	1.97E+00
																						Maximum HQ (Outside Tailings)	**1.32E+01**
White-Tailed Deer (Large Herbivorous Mammal - Terrestrial)																							
Reference Sites																							
ACBG-1 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	2.86E-02	2.60E+01	7.45E-01	1.03E-01	1.35E+02	5.69E-04	4.70E+00	1.10E-01	3.07E+00	1.85E-04
ACBG-2 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	2.86E-02	1.83E+01	5.25E-01	1.03E-01	1.35E+02	4.00E-04	4.70E+00	1.10E-01	3.07E+00	1.31E-04
UBRBG-202 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	2.86E-02	1.39E+01	3.99E-01	1.03E-01	1.35E+02	3.04E-04	4.70E+00	1.10E-01	3.07E+00	9.92E-05
UBRBG-204 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	2.86E-02	1.95E+01	5.58E-01	1.03E-01	1.35E+02	4.26E-04	4.70E+00	1.10E-01	3.07E+00	1.39E-04
Inside Tailings																						**Minimum HQ (Reference Sites)**	**9.92E-05**
BREOT-S6-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.20E+02	1.71E+02	NA	NA	NA	NA	2.86E-02	1.99E+02	5.70E+00	1.03E-01	1.35E+02	1.35E-01	4.70E+00	1.10E-01	3.07E+00	4.40E-02
BREOT-S2-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.56E+02	2.23E+02	NA	NA	NA	NA	2.86E-02	2.59E+02	7.43E+00	1.03E-01	1.35E+02	1.76E-01	4.70E+00	1.10E-01	3.07E+00	5.74E-02
BREOT-S0-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	7.68E+01	1.10E+02	NA	NA	NA	NA	2.86E-02	1.28E+02	3.66E+00	1.03E-01	1.35E+02	8.66E-02	4.70E+00	1.10E-01	3.07E+00	2.82E-02
BREOT-S1-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	5.56E+01	7.96E+01	NA	NA	NA	NA	2.86E-02	9.25E+01	2.65E+00	1.03E-01	1.35E+02	6.27E-02	4.70E+00	1.10E-01	3.07E+00	2.05E-02
BREOT-S7-25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	7.20E+00	1.03E+01	NA	NA	NA	NA	2.86E-02	1.20E+01	3.43E-01	1.03E-01	1.35E+02	8.12E-03	4.70E+00	1.10E-01	3.07E+00	2.65E-03
BREOT-S8-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	6.36E+01	9.10E+01	NA	NA	NA	NA	2.86E-02	1.06E+02	3.03E+00	1.03E-01	1.35E+02	7.17E-02	4.70E+00	1.10E-01	3.07E+00	2.34E-02
BREOT-S9-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	6.06E+01	8.68E+01	NA	NA	NA	NA	2.86E-02	1.01E+02	2.89E+00	1.03E-01	1.35E+02	6.84E-02	4.70E+00	1.10E-01	3.07E+00	2.23E-02
BREOT-N10-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	2.88E+02	4.13E+02	NA	NA	NA	NA	2.86E-02	4.80E+02	1.37E+01	1.03E-01	1.35E+02	3.25E-01	4.70E+00	1.10E-01	3.07E+00	1.06E-01
BREOT-N11-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.47E+02	2.11E+02	NA	NA	NA	NA	2.86E-02	2.45E+02	7.01E+00	1.03E-01	1.35E+02	1.66E-01	4.70E+00	1.10E-01	3.07E+00	5.41E-02
BREOT-N11-125 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.03E+02	1.48E+02	NA	NA	NA	NA	2.86E-02	1.72E+02	4.92E+00	1.03E-01	1.35E+02	1.16E-01	4.70E+00	1.10E-01	3.07E+00	3.80E-02
BREOT-S11-12 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.69E+02	2.42E+02	NA	NA	NA	NA	2.86E-02	2.81E+02	8.06E+00	1.03E-01	1.35E+02	1.91E-01	4.70E+00	1.10E-01	3.07E+00	6.22E-02
BREOT-S11+63 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	8.77E+01	1.26E+02	NA	NA	NA	NA	2.86E-02	1.46E+02	4.18E+00	1.03E-01	1.35E+02	9.90E-02	4.70E+00	1.10E-01	3.07E+00	3.23E-02
UBDT-TP-6 (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	4.24E+02	6.06E+02	NA	NA	NA	NA	2.86E-02	7.05E+02	2.02E+01	1.03E-01	1.35E+02	4.78E-01	4.70E+00	1.10E-01	3.07E+00	1.56E-01
UBDT-TP-6 (2-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	3.83E+02	5.48E+02	NA	NA	NA	NA	2.86E-02	6.37E+02	1.82E+01	1.03E-01	1.35E+02	4.32E-01	4.70E+00	1.10E-01	3.07E+00	1.41E-01
UBDT-TP-6 (12-24")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	3.10E+02	4.44E+02	NA	NA	NA	NA	2.86E-02	5.16E+02	1.48E+01	1.03E-01	1.35E+02	3.50E-01	4.70E+00	1.10E-01	3.07E+00	1.14E-01
UBDT-TP-6 (24-36")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	7.37E+01	1.06E+02	NA	NA	NA	NA	2.86E-02	1.23E+02	3.51E+00	1.03E-01	1.35E+02	8.32E-02	4.70E+00	1.10E-01	3.07E+00	2.71E-02
UBDT-TP-6 (36-48")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.08E+02	1.55E+02	NA	NA	NA	NA	2.86E-02	1.80E+02	5.15E+00	1.03E-01	1.35E+02	1.22E-01	4.70E+00	1.10E-01	3.07E+00	3.98E-02

TABLE C-2A: ARSENIC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

Site Area (hectares) **18.41**

from dose parameters tables; from BAF table; linked to soil or sed concentration table (VLOOKUP)

calculated values; linked to TRV table (VLOOKUP) - should be same for all birds or mammals

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
White-Tailed Deer (Large Herbivorous Mammal - Terrestrial)																							
UBDT-TP-6 (48-60")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	3.60E+01	5.15E+01	NA	NA	NA	NA	2.86E-02	5.99E+01	1.71E+00	1.03E-01	1.35E+02	4.06E-02	4.70E+00	1.10E-01	3.07E+00	1.32E-02
BREOT-N12-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	6.93E+01	9.93E+01	NA	NA	NA	NA	2.86E-02	1.15E+02	3.30E+00	1.03E-01	1.35E+02	7.82E-02	4.70E+00	1.10E-01	3.07E+00	2.55E-02
BREOT-S12-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	6.66E+01	9.53E+01	NA	NA	NA	NA	2.86E-02	1.11E+02	3.17E+00	1.03E-01	1.35E+02	7.52E-02	4.70E+00	1.10E-01	3.07E+00	2.45E-02
BREOT-S13-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.44E+02	2.06E+02	NA	NA	NA	NA	2.86E-02	2.39E+02	6.85E+00	1.03E-01	1.35E+02	1.62E-01	4.70E+00	1.10E-01	3.07E+00	5.29E-02
BREOT-S14-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	4.05E+01	5.80E+01	NA	NA	NA	NA	2.86E-02	6.74E+01	1.93E+00	1.03E-01	1.35E+02	4.57E-02	4.70E+00	1.10E-01	3.07E+00	1.49E-02
BREOT-N15-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.64E+02	2.35E+02	NA	NA	NA	NA	2.86E-02	2.73E+02	7.82E+00	1.03E-01	1.35E+02	1.85E-01	4.70E+00	1.10E-01	3.07E+00	6.04E-02
BREOT-S15-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	2.25E+02	3.22E+02	NA	NA	NA	NA	2.86E-02	3.74E+02	1.07E+01	1.03E-01	1.35E+02	2.54E-01	4.70E+00	1.10E-01	3.07E+00	8.28E-02
BREOT-N16-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.32E+02	1.88E+02	NA	NA	NA	NA	2.86E-02	2.19E+02	6.27E+00	1.03E-01	1.35E+02	1.48E-01	4.70E+00	1.10E-01	3.07E+00	4.84E-02
BREOT-N16-25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	8.55E+00	1.22E+01	NA	NA	NA	NA	2.86E-02	1.42E+01	4.07E-01	1.03E-01	1.35E+02	9.65E-03	4.70E+00	1.10E-01	3.07E+00	3.14E-03
BREOT-S16-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	8.89E+01	1.27E+02	NA	NA	NA	NA	2.86E-02	1.48E+02	4.23E+00	1.03E-01	1.35E+02	1.00E-01	4.70E+00	1.10E-01	3.07E+00	3.27E-02
BREOT-N17-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	9.63E+01	1.38E+02	NA	NA	NA	NA	2.86E-02	1.60E+02	4.59E+00	1.03E-01	1.35E+02	1.09E-01	4.70E+00	1.10E-01	3.07E+00	3.54E-02
BREOT-S17-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	4.03E+01	5.77E+01	NA	NA	NA	NA	2.86E-02	6.70E+01	1.92E+00	1.03E-01	1.35E+02	4.55E-02	4.70E+00	1.10E-01	3.07E+00	1.48E-02
BREOT-S17-25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	3.36E+01	4.81E+01	NA	NA	NA	NA	2.86E-02	5.59E+01	1.60E+00	1.03E-01	1.35E+02	3.79E-02	4.70E+00	1.10E-01	3.07E+00	1.24E-02
UBDT-TP-4 (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.06E+02	1.51E+02	NA	NA	NA	NA	2.86E-02	1.76E+02	5.04E+00	1.03E-01	1.35E+02	1.19E-01	4.70E+00	1.10E-01	3.07E+00	3.89E-02
UBDT-TP-4 (2-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	7.13E+01	1.02E+02	NA	NA	NA	NA	2.86E-02	1.19E+02	3.40E+00	1.03E-01	1.35E+02	8.05E-02	4.70E+00	1.10E-01	3.07E+00	2.62E-02
UBDT-TP-4 (12-24")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	6.28E+01	9.00E+01	NA	NA	NA	NA	2.86E-02	1.05E+02	2.99E+00	1.03E-01	1.35E+02	7.09E-02	4.70E+00	1.10E-01	3.07E+00	2.31E-02
UBDT-TP-4 (24-36")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	3.84E+01	5.49E+01	NA	NA	NA	NA	2.86E-02	6.38E+01	1.83E+00	1.03E-01	1.35E+02	4.33E-02	4.70E+00	1.10E-01	3.07E+00	1.41E-02
BREOT-N18-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.25E+02	1.79E+02	NA	NA	NA	NA	2.86E-02	2.08E+02	5.95E+00	1.03E-01	1.35E+02	1.41E-01	4.70E+00	1.10E-01	3.07E+00	4.59E-02
BREOT-N18-25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.37E+01	1.97E+01	NA	NA	NA	NA	2.86E-02	2.29E+01	6.55E-01	1.03E-01	1.35E+02	1.55E-02	4.70E+00	1.10E-01	3.07E+00	5.06E-03
BREOT-S18-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	6.30E+01	9.03E+01	NA	NA	NA	NA	2.86E-02	1.05E+02	3.00E+00	1.03E-01	1.35E+02	7.12E-02	4.70E+00	1.10E-01	3.07E+00	2.32E-02
BREOT-N19-10 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.11E+02	1.59E+02	NA	NA	NA	NA	2.86E-02	1.85E+02	5.30E+00	1.03E-01	1.35E+02	1.26E-01	4.70E+00	1.10E-01	3.07E+00	4.09E-02
BREOT-S19-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	4.51E+01	6.45E+01	NA	NA	NA	NA	2.86E-02	7.50E+01	2.15E+00	1.03E-01	1.35E+02	5.09E-02	4.70E+00	1.10E-01	3.07E+00	1.66E-02
UBDT-TP-5 (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	5.72E+01	8.19E+01	NA	NA	NA	NA	2.86E-02	9.52E+01	2.73E+00	1.03E-01	1.35E+02	6.46E-02	4.70E+00	1.10E-01	3.07E+00	2.10E-02
UBDT-TP-5 (2-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	5.56E+01	7.96E+01	NA	NA	NA	NA	2.86E-02	9.25E+01	2.65E+00	1.03E-01	1.35E+02	6.27E-02	4.70E+00	1.10E-01	3.07E+00	2.04E-02
UBDT-TP-5 (12-24")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	4.33E+01	6.19E+01	NA	NA	NA	NA	2.86E-02	7.20E+01	2.06E+00	1.03E-01	1.35E+02	4.88E-02	4.70E+00	1.10E-01	3.07E+00	1.59E-02
BREOT-N20-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.46E+02	2.09E+02	NA	NA	NA	NA	2.86E-02	2.43E+02	6.96E+00	1.03E-01	1.35E+02	1.65E-01	4.70E+00	1.10E-01	3.07E+00	5.38E-02
UBDT-TP-3 (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.02E+02	1.47E+02	NA	NA	NA	NA	2.86E-02	1.70E+02	4.88E+00	1.03E-01	1.35E+02	1.16E-01	4.70E+00	1.10E-01	3.07E+00	3.77E-02
UBDT-TP-3 (2-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	9.87E+01	1.41E+02	NA	NA	NA	NA	2.86E-02	1.64E+02	4.70E+00	1.03E-01	1.35E+02	1.11E-01	4.70E+00	1.10E-01	3.07E+00	3.63E-02
UBDT-TP-3 (12-24")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	9.16E+01	1.31E+02	NA	NA	NA	NA	2.86E-02	1.52E+02	4.36E+00	1.03E-01	1.35E+02	1.03E-01	4.70E+00	1.10E-01	3.07E+00	3.37E-02
UBDT-TP-3 (24-36")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	8.18E+01	1.17E+02	NA	NA	NA	NA	2.86E-02	1.36E+02	3.90E+00	1.03E-01	1.35E+02	9.23E-02	4.70E+00	1.10E-01	3.07E+00	3.01E-02
UBDT-TP-3 (36-48")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.34E+02	1.92E+02	NA	NA	NA	NA	2.86E-02	2.23E+02	6.40E+00	1.03E-01	1.35E+02	1.52E-01	4.70E+00	1.10E-01	3.07E+00	4.94E-02
UBDT-TP-3 (48-60")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	2.78E+01	3.98E+01	NA	NA	NA	NA	2.86E-02	4.63E+01	1.32E+00	1.03E-01	1.35E+02	3.14E-02	4.70E+00	1.10E-01	3.07E+00	1.02E-02
BREOT-N21-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	5.87E+01	8.40E+01	NA	NA	NA	NA	2.86E-02	9.77E+01	2.80E+00	1.03E-01	1.35E+02	6.63E-02	4.70E+00	1.10E-01	3.07E+00	2.16E-02
BREOT-N22-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.11E+02	1.59E+02	NA	NA	NA	NA	2.86E-02	1.85E+02	5.29E+00	1.03E-01	1.35E+02	1.25E-01	4.70E+00	1.10E-01	3.07E+00	4.09E-02
BREOT-N23-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.20E+02	1.71E+02	NA	NA	NA	NA	2.86E-02	1.99E+02	5.70E+00	1.03E-01	1.35E+02	1.35E-01	4.70E+00	1.10E-01	3.07E+00	4.40E-02
BREOT-S23-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	6.83E+01	9.77E+01	NA	NA	NA	NA	2.86E-02	1.14E+02	3.25E+00	1.03E-01	1.35E+02	7.70E-02	4.70E+00	1.10E-01	3.07E+00	2.51E-02
UBDT-TP-2 (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.33E+02	1.90E+02	NA	NA	NA	NA	2.86E-02	2.20E+02	6.31E+00	1.03E-01	1.35E+02	1.50E-01	4.70E+00	1.10E-01	3.07E+00	4.88E-02
UBDT-TP-2 (2-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	6.63E+01	9.49E+01	NA	NA	NA	NA	2.86E-02	1.10E+02	3.16E+00	1.03E-01	1.35E+02	7.48E-02	4.70E+00	1.10E-01	3.07E+00	2.44E-02
UBDT-TP-2 (12-24")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.84E+01	2.63E+01	NA	NA	NA	NA	2.86E-02	3.06E+01	8.77E-01	1.03E-01	1.35E+02	2.08E-02	4.70E+00	1.10E-01	3.07E+00	6.77E-03
UBDT-TP-2 (24-36")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	3.86E+01	5.52E+01	NA	NA	NA	NA	2.86E-02	6.42E+01	1.84E+00	1.03E-01	1.35E+02	4.35E-02	4.70E+00	1.10E-01	3.07E+00	1.42E-02
UBDT-TP-2 (36-48")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	4.24E+01	6.07E+01	NA	NA	NA	NA	2.86E-02	7.05E+01	2.02E+00	1.03E-01	1.35E+02	4.78E-02	4.70E+00	1.10E-01	3.07E+00	1.56E-02
BREOT-S24-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	8.49E+01	1.22E+02	NA	NA	NA	NA	2.86E-02	1.41E+02	4.04E+00	1.03E-01	1.35E+02	9.58E-02	4.70E+00	1.10E-01	3.07E+00	3.12E-02
BREOT-N25-50 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	2.03E+02	2.91E+02	NA	NA	NA	NA	2.86E-02	3.38E+02	9.67E+00	1.03E-01	1.35E+02	2.29E-01	4.70E+00	1.10E-01	3.07E+00	7.47E-02
BREOT-N25-95 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.65E+02	2.37E+02	NA	NA	NA	NA	2.86E-02	2.75E+02	7.87E+00	1.03E-01	1.35E+02	1.87E-01	4.70E+00	1.10E-01	3.07E+00	6.08E-02
BREOT-S25-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	9.60E+01	1.37E+02	NA	NA	NA	NA	2.86E-02	1.60E+02	4.58E+00	1.03E-01	1.35E+02	1.08E-01	4.70E+00	1.10E-01	3.07E+00	3.53E-02
BREOT-S25-40 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	7.26E+01	1.04E+02	NA	NA	NA	NA	2.86E-02	1.21E+02	3.46E+00	1.03E-01	1.35E+02	8.19E-02	4.70E+00	1.10E-01	3.07E+00	2.67E-02
BREOT-N26A-25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.11E+01	1.59E+01	NA	NA	NA	NA	2.86E-02	1.85E+01	5.30E-01	1.03E-01	1.35E+02	1.26E-02	4.70E+00	1.10E-01	3.07E+00	4.10E-03
BREOT-N26B-25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	6.71E+01	9.60E+01	NA	NA	NA	NA	2.86E-02	1.12E+02	3.20E+00	1.03E-01	1.35E+02	7.57E-02	4.70E+00	1.10E-01	3.07E+00	2.47E-02
BREOT-N26-50 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.49E+02	2.13E+02	NA	NA	NA	NA	2.86E-02	2.48E+02	7.10E+00	1.03E-01	1.35E+02	1.68E-01	4.70E+00	1.10E-01	3.07E+00	5.49E-02
BREOT-N26-75 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.27E+02	1.83E+02	NA	NA	NA	NA	2.86E-02	2.12E+02	6.07E+00	1.03E-01	1.35E+02	1.44E-01	4.70E+00	1.10E-01	3.07E+00	4.69E-02
BREOT-S26-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	6.13E+01	8.77E+01	NA	NA	NA	NA	2.86E-02	1.02E+02	2.92E+00	1.03E-01	1.35E+02	6.91E-02	4.70E+00	1.10E-01	3.07E+00	2.25E-02
BREOT-S26-40 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	8.83E+01	1.26E+02	NA	NA	NA	NA	2.86E-02	1.47E+02	4.21E+00	1.03E-01	1.35E+02	9.96E-02	4.70E+00	1.10E-01	3.07E+00	3.25E-02
BREOT-N27-30 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	2.49E+02	3.57E+02	NA	NA	NA	NA	2.86E-02	4.15E+02	1.19E+01	1.03E-01	1.35E+02	2.81E-01	4.70E+00	1.10E-01	3.07E+00	9.18E-02
BREOT-N27-75 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	2.47E+02	3.54E+02	NA	NA	NA	NA	2.86E-02	4.12E+02	1.18E+01	1.03E-01	1.35E+02	2.79E-01	4.70E+00	1.10E-01	3.07E+00	9.11E-02
BREOT-S27-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	7.70E+01	1.10E+02	NA	NA	NA	NA	2.86E-02	1.28E+02	3.67E+00	1.03E-01	1.35E+02	8.69E-02	4.70E+00	1.10E-01	3.07E+00	2.83E-02

TABLE C-2A: ARSENIC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

Site Area (hectares) 18.41

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
White-Tailed Deer (Large Herbivorous Mammal - Terrestrial)																							
BREOT-N28-110 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	6.94E+01	9.94E+01	NA	NA	NA	NA	2.86E-02	1.15E+02	3.31E+00	1.03E-01	1.35E+02	7.83E-02	4.70E+00	1.10E-01	3.07E+00	2.55E-02
BREOT-N28-55 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	7.36E+02	1.05E+03	NA	NA	NA	NA	2.86E-02	1.22E+03	3.51E+01	1.03E-01	1.35E+02	8.31E-01	4.70E+00	1.10E-01	3.07E+00	2.71E-01
BREOT-S28-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	4.78E+01	6.84E+01	NA	NA	NA	NA	2.86E-02	7.95E+01	2.28E+00	1.03E-01	1.35E+02	5.39E-02	4.70E+00	1.10E-01	3.07E+00	1.76E-02
UBDT-TP-1 (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	2.37E+02	3.39E+02	NA	NA	NA	NA	2.86E-02	3.94E+02	1.13E+01	1.03E-01	1.35E+02	2.68E-01	4.70E+00	1.10E-01	3.07E+00	8.72E-02
UBDT-TP-1 (2-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	4.13E+02	5.91E+02	NA	NA	NA	NA	2.86E-02	6.87E+02	1.97E+01	1.03E-01	1.35E+02	4.66E-01	4.70E+00	1.10E-01	3.07E+00	1.52E-01
UBDT-TP-1 (12-24")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.30E+02	1.86E+02	NA	NA	NA	NA	2.86E-02	2.17E+02	6.20E+00	1.03E-01	1.35E+02	1.47E-01	4.70E+00	1.10E-01	3.07E+00	4.79E-02
UBDT-TP-1 (24-36")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	9.95E+01	1.42E+02	NA	NA	NA	NA	2.86E-02	1.66E+02	4.74E+00	1.03E-01	1.35E+02	1.12E-01	4.70E+00	1.10E-01	3.07E+00	3.66E-02
UBDT-TP-1 (36-48")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	7.07E+00	1.01E+01	NA	NA	NA	NA	2.86E-02	1.18E+01	3.37E-01	1.03E-01	1.35E+02	7.97E-03	4.70E+00	1.10E-01	3.07E+00	2.60E-03
UBDT-TP-1 (48-60")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	7.56E+00	1.08E+01	NA	NA	NA	NA	2.86E-02	1.26E+01	3.60E-01	1.03E-01	1.35E+02	8.54E-03	4.70E+00	1.10E-01	3.07E+00	2.78E-03
BREOT-N29-30 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	3.76E+02	5.38E+02	NA	NA	NA	NA	2.86E-02	6.25E+02	1.79E+01	1.03E-01	1.35E+02	4.24E-01	4.70E+00	1.10E-01	3.07E+00	1.38E-01
BREOT-S29-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	9.14E+01	1.31E+02	NA	NA	NA	NA	2.86E-02	1.52E+02	4.35E+00	1.03E-01	1.35E+02	1.03E-01	4.70E+00	1.10E-01	3.07E+00	3.36E-02
BREOT-N30-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	6.21E+01	8.89E+01	NA	NA	NA	NA	2.86E-02	1.03E+02	2.96E+00	1.03E-01	1.35E+02	7.01E-02	4.70E+00	1.10E-01	3.07E+00	2.28E-02
BREOT-S30-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	8.84E+01	1.27E+02	NA	NA	NA	NA	2.86E-02	1.47E+02	4.21E+00	1.03E-01	1.35E+02	9.97E-02	4.70E+00	1.10E-01	3.07E+00	3.25E-02
BREOT-N31-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	8.22E+01	1.18E+02	NA	NA	NA	NA	2.86E-02	1.37E+02	3.91E+00	1.03E-01	1.35E+02	9.27E-02	4.70E+00	1.10E-01	3.07E+00	3.02E-02
BREOT-S31-25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	5.00E+01	7.16E+01	NA	NA	NA	NA	2.86E-02	8.32E+01	2.38E+00	1.03E-01	1.35E+02	5.64E-02	4.70E+00	1.10E-01	3.07E+00	1.84E-02
BREOT-S31-5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.02E+02	1.46E+02	NA	NA	NA	NA	2.86E-02	1.69E+02	4.84E+00	1.03E-01	1.35E+02	1.15E-01	4.70E+00	1.10E-01	3.07E+00	3.74E-02
BREOT-N32-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.82E+02	2.61E+02	NA	NA	NA	NA	2.86E-02	3.03E+02	8.69E+00	1.03E-01	1.35E+02	2.06E-01	4.70E+00	1.10E-01	3.07E+00	6.71E-02
BREOT-S32-6 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.07E+02	1.52E+02	NA	NA	NA	NA	2.86E-02	1.77E+02	5.07E+00	1.03E-01	1.35E+02	1.20E-01	4.70E+00	1.10E-01	3.07E+00	3.92E-02
BREOT-N33-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.74E+02	2.49E+02	NA	NA	NA	NA	2.86E-02	2.90E+02	8.30E+00	1.03E-01	1.35E+02	1.97E-01	4.70E+00	1.10E-01	3.07E+00	6.41E-02
BREOT-S33-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	8.77E+00	1.26E+01	NA	NA	NA	NA	2.86E-02	1.46E+01	4.18E-01	1.03E-01	1.35E+02	9.90E-03	4.70E+00	1.10E-01	3.07E+00	3.23E-03
BREOT-N35-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	4.75E+01	6.80E+01	NA	NA	NA	NA	2.86E-02	7.90E+01	2.26E+00	1.03E-01	1.35E+02	5.36E-02	4.70E+00	1.10E-01	3.07E+00	1.75E-02
BREOT-S35-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.13E+02	1.61E+02	NA	NA	NA	NA	2.86E-02	1.87E+02	5.37E+00	1.03E-01	1.35E+02	1.27E-01	4.70E+00	1.10E-01	3.07E+00	4.14E-02
BREOT-N36-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	9.28E+01	1.33E+02	NA	NA	NA	NA	2.86E-02	1.54E+02	4.42E+00	1.03E-01	1.35E+02	1.05E-01	4.70E+00	1.10E-01	3.07E+00	3.41E-02
BREOT-S36-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	8.93E+01	1.28E+02	NA	NA	NA	NA	2.86E-02	1.49E+02	4.26E+00	1.03E-01	1.35E+02	1.01E-01	4.70E+00	1.10E-01	3.07E+00	3.29E-02
BREOT-N37-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.33E+02	1.90E+02	NA	NA	NA	NA	2.86E-02	2.21E+02	6.33E+00	1.03E-01	1.35E+02	1.50E-01	4.70E+00	1.10E-01	3.07E+00	4.89E-02
BREOT-S37-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	6.44E+01	9.22E+01	NA	NA	NA	NA	2.86E-02	1.07E+02	3.07E+00	1.03E-01	1.35E+02	7.27E-02	4.70E+00	1.10E-01	3.07E+00	2.37E-02
BREOT-N38-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	6.15E+01	8.80E+01	NA	NA	NA	NA	2.86E-02	1.02E+02	2.93E+00	1.03E-01	1.35E+02	6.94E-02	4.70E+00	1.10E-01	3.07E+00	2.26E-02
BREOT-S38-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.21E+02	1.74E+02	NA	NA	NA	NA	2.86E-02	2.02E+02	5.77E+00	1.03E-01	1.35E+02	1.37E-01	4.70E+00	1.10E-01	3.07E+00	4.46E-02
BREOT-N39-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.50E+02	2.15E+02	NA	NA	NA	NA	2.86E-02	2.50E+02	7.16E+00	1.03E-01	1.35E+02	1.70E-01	4.70E+00	1.10E-01	3.07E+00	5.53E-02
BREOT-S39-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	9.51E+01	1.36E+02	NA	NA	NA	NA	2.86E-02	1.58E+02	4.53E+00	1.03E-01	1.35E+02	1.07E-01	4.70E+00	1.10E-01	3.07E+00	3.50E-02
BREOT-N40-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	9.13E+01	1.31E+02	NA	NA	NA	NA	2.86E-02	1.52E+02	4.35E+00	1.03E-01	1.35E+02	1.03E-01	4.70E+00	1.10E-01	3.07E+00	3.36E-02
BREOT-S40-14 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.59E+02	2.27E+02	NA	NA	NA	NA	2.86E-02	2.64E+02	7.56E+00	1.03E-01	1.35E+02	1.79E-01	4.70E+00	1.10E-01	3.07E+00	5.84E-02
BREOT-N41-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.69E+01	2.42E+01	NA	NA	NA	NA	2.86E-02	2.81E+01	8.05E-01	1.03E-01	1.35E+02	1.91E-02	4.70E+00	1.10E-01	3.07E+00	6.22E-03
BREOT-S41-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.99E+02	2.85E+02	NA	NA	NA	NA	2.86E-02	3.31E+02	9.47E+00	1.03E-01	1.35E+02	2.24E-01	4.70E+00	1.10E-01	3.07E+00	7.31E-02
BREOT-N42-35 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	7.13E+01	1.02E+02	NA	NA	NA	NA	2.86E-02	1.19E+02	3.40E+00	1.03E-01	1.35E+02	8.04E-02	4.70E+00	1.10E-01	3.07E+00	2.62E-02
BREOT-S42-25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.19E+02	1.71E+02	NA	NA	NA	NA	2.86E-02	1.98E+02	5.68E+00	1.03E-01	1.35E+02	1.34E-01	4.70E+00	1.10E-01	3.07E+00	4.38E-02
BREOT-N43-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.02E+02	1.45E+02	NA	NA	NA	NA	2.86E-02	1.69E+02	4.84E+00	1.03E-01	1.35E+02	1.15E-01	4.70E+00	1.10E-01	3.07E+00	3.74E-02
BREOT-S43-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	9.76E+01	1.40E+02	NA	NA	NA	NA	2.86E-02	1.62E+02	4.65E+00	1.03E-01	1.35E+02	1.10E-01	4.70E+00	1.10E-01	3.07E+00	3.59E-02
BREOT-N44-30 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	6.99E+01	1.00E+02	NA	NA	NA	NA	2.86E-02	1.16E+02	3.33E+00	1.03E-01	1.35E+02	7.89E-02	4.70E+00	1.10E-01	3.07E+00	2.57E-02
BREOT-S44-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	8.40E+01	1.20E+02	NA	NA	NA	NA	2.86E-02	1.40E+02	4.00E+00	1.03E-01	1.35E+02	9.48E-02	4.70E+00	1.10E-01	3.07E+00	3.09E-02
BREOT-N45-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	9.90E+01	1.42E+02	NA	NA	NA	NA	2.86E-02	1.65E+02	4.71E+00	1.03E-01	1.35E+02	1.12E-01	4.70E+00	1.10E-01	3.07E+00	3.64E-02
BREOT-N43-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.02E+02	1.45E+02	NA	NA	NA	NA	2.86E-02	1.69E+02	4.84E+00	1.03E-01	1.35E+02	1.15E-01	4.70E+00	1.10E-01	3.07E+00	3.74E-02
BREOT-S45-6 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	7.91E+01	1.13E+02	NA	NA	NA	NA	2.86E-02	1.32E+02	3.77E+00	1.03E-01	1.35E+02	8.92E-02	4.70E+00	1.10E-01	3.07E+00	2.91E-02
BREOT-N46-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	3.97E+01	5.68E+01	NA	NA	NA	NA	2.86E-02	6.60E+01	1.89E+00	1.03E-01	1.35E+02	4.48E-02	4.70E+00	1.10E-01	3.07E+00	1.46E-02
BREOT-S46-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	3.85E+01	5.51E+01	NA	NA	NA	NA	2.86E-02	6.40E+01	1.83E+00	1.03E-01	1.35E+02	4.34E-02	4.70E+00	1.10E-01	3.07E+00	1.42E-02
BREOT-S46-40 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	5.64E+01	8.07E+01	NA	NA	NA	NA	2.86E-02	9.38E+01	2.69E+00	1.03E-01	1.35E+02	6.36E-02	4.70E+00	1.10E-01	3.07E+00	2.07E-02
BREOT-N47-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	5.81E+01	8.32E+01	NA	NA	NA	NA	2.86E-02	9.66E+01	2.77E+00	1.03E-01	1.35E+02	6.56E-02	4.70E+00	1.10E-01	3.07E+00	2.14E-02
BREOT-S47-999 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	9.16E+01	1.31E+02	NA	NA	NA	NA	2.86E-02	1.52E+02	4.37E+00	1.03E-01	1.35E+02	1.03E-01	4.70E+00	1.10E-01	3.07E+00	3.37E-02
BREOT-S48-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	2.80E+01	4.00E+01	NA	NA	NA	NA	2.86E-02	4.65E+01	1.33E+00	1.03E-01	1.35E+02	3.16E-02	4.70E+00	1.10E-01	3.07E+00	1.03E-02
BREOT-S49-2.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	3.32E+01	4.76E+01	NA	NA	NA	NA	2.86E-02	5.53E+01	1.58E+00	1.03E-01	1.35E+02	3.75E-02	4.70E+00	1.10E-01	3.07E+00	1.22E-02
BREOT-S50-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.04E+01	1.49E+01	NA	NA	NA	NA	2.86E-02	1.73E+01	4.95E-01	1.03E-01	1.35E+02	1.17E-02	4.70E+00	1.10E-01	3.07E+00	3.82E-03
BREOT-S50-25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.57E+01	2.24E+01	NA	NA	NA	NA	2.86E-02	2.61E+01	7.46E-01	1.03E-01	1.35E+02	1.77E-02	4.70E+00	1.10E-01	3.07E+00	5.76E-03
BREOT-N52-60 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.29E+02	1.84E+02	NA	NA	NA	NA	2.86E-02	2.14E+02	6.12E+00	1.03E-01	1.35E+02	1.45E-01	4.70E+00	1.10E-01	3.07E+00	4.73E-02
BREOT-S52-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	5.81E+01	8.32E+01	NA	NA	NA	NA	2.86E-02	9.67E+01	2.77E+00	1.03E-01	1.35E+02	6.56E-02	4.70E+00	1.10E-01	3.07E+00	2.14E-02
BREOT-S53-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.72E+01	2.47E+01	NA	NA	NA	NA	2.86E-02	2.87E+01	8.21E-01	1.03E-01	1.35E+02	1.95E-02	4.70E+00	1.10E-01	3.07E+00	6.34E-03

TABLE C-2A: ARSENIC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

Site Area (hectares) **18.41**

from dose parameters tables; from BAF table; linked to soil or sed concentration table (VLOOKUP)

calculated values; linked to TRV table (VLOOKUP) - should be same for all birds or mammals

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
White-Tailed Deer (Large Herbivorous Mammal - Terrestrial)																							
BREOT-S54-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.27E+01	1.81E+01	NA	NA	NA	NA	2.86E-02	2.11E+01	6.04E-01	1.03E-01	1.35E+02	1.43E-02	4.70E+00	1.10E-01	3.07E+00	4.66E-03
BREOT-N55-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.12E+02	1.61E+02	NA	NA	NA	NA	2.86E-02	1.87E+02	5.34E+00	1.03E-01	1.35E+02	1.27E-01	4.70E+00	1.10E-01	3.07E+00	4.13E-02
BREOT-S55-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	3.90E+01	5.58E+01	NA	NA	NA	NA	2.86E-02	6.49E+01	1.86E+00	1.03E-01	1.35E+02	4.40E-02	4.70E+00	1.10E-01	3.07E+00	1.43E-02
BREOT-N56-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	7.62E+01	1.09E+02	NA	NA	NA	NA	2.86E-02	1.27E+02	3.63E+00	1.03E-01	1.35E+02	8.60E-02	4.70E+00	1.10E-01	3.07E+00	2.80E-02
BREOT-S56-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.65E+01	2.36E+01	NA	NA	NA	NA	2.86E-02	2.74E+01	7.86E-01	1.03E-01	1.35E+02	1.86E-02	4.70E+00	1.10E-01	3.07E+00	6.07E-03
BREOT-N57-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	7.40E+01	1.06E+02	NA	NA	NA	NA	2.86E-02	1.23E+02	3.52E+00	1.03E-01	1.35E+02	8.35E-02	4.70E+00	1.10E-01	3.07E+00	2.72E-02
BREOT-S57-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	4.33E+01	6.20E+01	NA	NA	NA	NA	2.86E-02	7.20E+01	2.06E+00	1.03E-01	1.35E+02	4.89E-02	4.70E+00	1.10E-01	3.07E+00	1.59E-02
BREOT-N58-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	3.16E+01	4.52E+01	NA	NA	NA	NA	2.86E-02	5.25E+01	1.50E+00	1.03E-01	1.35E+02	3.56E-02	4.70E+00	1.10E-01	3.07E+00	1.16E-02
BREOT-S58-12 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	4.97E+01	7.11E+01	NA	NA	NA	NA	2.86E-02	8.27E+01	2.37E+00	1.03E-01	1.35E+02	5.61E-02	4.70E+00	1.10E-01	3.07E+00	1.83E-02
BREOT-N59-18 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	5.52E+01	7.90E+01	NA	NA	NA	NA	2.86E-02	9.18E+01	2.63E+00	1.03E-01	1.35E+02	6.23E-02	4.70E+00	1.10E-01	3.07E+00	2.03E-02
BREOT-N60-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.56E+01	2.24E+01	NA	NA	NA	NA	2.86E-02	2.60E+01	7.44E-01	1.03E-01	1.35E+02	1.76E-02	4.70E+00	1.10E-01	3.07E+00	5.75E-03
BREOT-S60-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	4.78E+01	6.84E+01	NA	NA	NA	NA	2.86E-02	7.95E+01	2.28E+00	1.03E-01	1.35E+02	5.39E-02	4.70E+00	1.10E-01	3.07E+00	1.76E-02
BREOT-S61-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	2.69E+01	3.85E+01	NA	NA	NA	NA	2.86E-02	4.47E+01	1.28E+00	1.03E-01	1.35E+02	3.03E-02	4.70E+00	1.10E-01	3.07E+00	9.89E-03
BREOT-N62-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	5.44E+00	7.79E+00	NA	NA	NA	NA	2.86E-02	9.05E+00	2.59E-01	1.03E-01	1.35E+02	6.14E-03	4.70E+00	1.10E-01	3.07E+00	2.00E-03
BREOT-S62-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	6.14E+01	8.79E+01	NA	NA	NA	NA	2.86E-02	1.02E+02	2.92E+00	1.03E-01	1.35E+02	6.93E-02	4.70E+00	1.10E-01	3.07E+00	2.26E-02
BREOT-S63-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	3.78E+01	5.41E+01	NA	NA	NA	NA	2.86E-02	6.29E+01	1.80E+00	1.03E-01	1.35E+02	4.26E-02	4.70E+00	1.10E-01	3.07E+00	1.39E-02
BREOT-N64-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	2.38E+01	3.40E+01	NA	NA	NA	NA	2.86E-02	3.96E+01	1.13E+00	1.03E-01	1.35E+02	2.68E-02	4.70E+00	1.10E-01	3.07E+00	8.75E-03
BREOT-N64-20 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	2.94E+01	4.21E+01	NA	NA	NA	NA	2.86E-02	4.89E+01	1.40E+00	1.03E-01	1.35E+02	3.32E-02	4.70E+00	1.10E-01	3.07E+00	1.08E-02
BREOT-S64-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	3.76E+01	5.38E+01	NA	NA	NA	NA	2.86E-02	6.25E+01	1.79E+00	1.03E-01	1.35E+02	4.24E-02	4.70E+00	1.10E-01	3.07E+00	1.38E-02
BREOT-N65-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.69E+01	2.42E+01	NA	NA	NA	NA	2.86E-02	2.81E+01	8.05E-01	1.03E-01	1.35E+02	1.91E-02	4.70E+00	1.10E-01	3.07E+00	6.21E-03
BREOT-S65-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	7.28E+01	1.04E+02	NA	NA	NA	NA	2.86E-02	1.21E+02	3.47E+00	1.03E-01	1.35E+02	8.22E-02	4.70E+00	1.10E-01	3.07E+00	2.68E-02
BREOT-N66-5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	5.92E+01	8.48E+01	NA	NA	NA	NA	2.86E-02	9.86E+01	2.82E+00	1.03E-01	1.35E+02	6.69E-02	4.70E+00	1.10E-01	3.07E+00	2.18E-02
BREOT-N67-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	5.86E+01	8.39E+01	NA	NA	NA	NA	2.86E-02	9.75E+01	2.79E+00	1.03E-01	1.35E+02	6.61E-02	4.70E+00	1.10E-01	3.07E+00	2.16E-02
BREOT-S67-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	7.62E+00	1.09E+01	NA	NA	NA	NA	2.86E-02	1.27E+01	3.63E-01	1.03E-01	1.35E+02	8.59E-03	4.70E+00	1.10E-01	3.07E+00	2.80E-03
At Edge of Tailings																						**Maximum HQ (Inside Tailings)**	**2.71E-01**
BREOT-S0-0 (06)	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	4.73E+01	6.77E+01	NA	NA	NA	NA	2.86E-02	7.87E+01	2.25E+00	1.03E-01	1.35E+02	5.34E-02	4.70E+00	1.10E-01	3.07E+00	1.74E-02
BREOT-S1-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.44E+02	2.06E+02	NA	NA	NA	NA	2.86E-02	2.39E+02	6.84E+00	1.03E-01	1.35E+02	1.62E-01	4.70E+00	1.10E-01	3.07E+00	5.28E-02
BREOT-S2-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	4.09E+01	5.86E+01	NA	NA	NA	NA	2.86E-02	6.81E+01	1.95E+00	1.03E-01	1.35E+02	4.62E-02	4.70E+00	1.10E-01	3.07E+00	1.51E-02
BREOT-S3-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.60E+02	2.30E+02	NA	NA	NA	NA	2.86E-02	2.67E+02	7.64E+00	1.03E-01	1.35E+02	1.81E-01	4.70E+00	1.10E-01	3.07E+00	5.90E-02
BREOT-S4-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.46E+02	2.09E+02	NA	NA	NA	NA	2.86E-02	2.42E+02	6.94E+00	1.03E-01	1.35E+02	1.64E-01	4.70E+00	1.10E-01	3.07E+00	5.36E-02
BREOT-S6-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.75E+02	2.50E+02	NA	NA	NA	NA	2.86E-02	2.91E+02	8.32E+00	1.03E-01	1.35E+02	1.97E-01	4.70E+00	1.10E-01	3.07E+00	6.43E-02
BREOT-S7-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.04E+02	1.50E+02	NA	NA	NA	NA	2.86E-02	1.74E+02	4.98E+00	1.03E-01	1.35E+02	1.18E-01	4.70E+00	1.10E-01	3.07E+00	3.84E-02
BREOT-S8-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	3.12E+01	4.47E+01	NA	NA	NA	NA	2.86E-02	5.20E+01	1.49E+00	1.03E-01	1.35E+02	3.53E-02	4.70E+00	1.10E-01	3.07E+00	1.15E-02
BREOT-S9-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	7.15E+01	1.02E+02	NA	NA	NA	NA	2.86E-02	1.19E+02	3.41E+00	1.03E-01	1.35E+02	8.07E-02	4.70E+00	1.10E-01	3.07E+00	2.63E-02
BREOT-N10-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	6.40E+02	9.16E+02	NA	NA	NA	NA	2.86E-02	1.07E+03	3.05E+01	1.03E-01	1.35E+02	7.22E-01	4.70E+00	1.10E-01	3.07E+00	2.36E-01
BREOT-N11-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.76E+02	2.51E+02	NA	NA	NA	NA	2.86E-02	2.92E+02	8.37E+00	1.03E-01	1.35E+02	1.98E-01	4.70E+00	1.10E-01	3.07E+00	6.46E-02
BREOT-S11-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	6.07E+01	8.69E+01	NA	NA	NA	NA	2.86E-02	1.01E+02	2.89E+00	1.03E-01	1.35E+02	6.85E-02	4.70E+00	1.10E-01	3.07E+00	2.23E-02
BREOT-N12-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	6.59E+01	9.43E+01	NA	NA	NA	NA	2.86E-02	1.10E+02	3.14E+00	1.03E-01	1.35E+02	7.44E-02	4.70E+00	1.10E-01	3.07E+00	2.42E-02
BREOT-S12-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	6.63E+01	9.49E+01	NA	NA	NA	NA	2.86E-02	1.10E+02	3.16E+00	1.03E-01	1.35E+02	7.48E-02	4.70E+00	1.10E-01	3.07E+00	2.44E-02
BREOT-N13-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	7.55E+02	1.08E+03	NA	NA	NA	NA	2.86E-02	1.26E+03	3.60E+01	1.03E-01	1.35E+02	8.52E-01	4.70E+00	1.10E-01	3.07E+00	2.78E-01
BREOT-S13-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.09E+01	1.56E+01	NA	NA	NA	NA	2.86E-02	1.81E+01	5.19E-01	1.03E-01	1.35E+02	1.23E-02	4.70E+00	1.10E-01	3.07E+00	4.01E-03
BREOT-N14-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	9.88E+01	1.41E+02	NA	NA	NA	NA	2.86E-02	1.64E+02	4.71E+00	1.03E-01	1.35E+02	1.12E-01	4.70E+00	1.10E-01	3.07E+00	3.64E-02
BREOT-S14-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	4.26E+02	6.10E+02	NA	NA	NA	NA	2.86E-02	7.08E+02	2.03E+01	1.03E-01	1.35E+02	4.80E-01	4.70E+00	1.10E-01	3.07E+00	1.57E-01
BREOT-N15-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.94E+02	2.78E+02	NA	NA	NA	NA	2.86E-02	3.23E+02	9.25E+00	1.03E-01	1.35E+02	2.19E-01	4.70E+00	1.10E-01	3.07E+00	7.14E-02
BREOT-N16-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.21E+02	1.74E+02	NA	NA	NA	NA	2.86E-02	2.02E+02	5.79E+00	1.03E-01	1.35E+02	1.37E-01	4.70E+00	1.10E-01	3.07E+00	4.47E-02
BREOT-S16-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.95E+01	2.79E+01	NA	NA	NA	NA	2.86E-02	3.24E+01	9.28E-01	1.03E-01	1.35E+02	2.20E-02	4.70E+00	1.10E-01	3.07E+00	7.17E-03
BREOT-N17-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.16E+02	1.67E+02	NA	NA	NA	NA	2.86E-02	1.94E+02	5.54E+00	1.03E-01	1.35E+02	1.31E-01	4.70E+00	1.10E-01	3.07E+00	4.28E-02
BREOT-S17-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.32E+02	1.89E+02	NA	NA	NA	NA	2.86E-02	2.20E+02	6.29E+00	1.03E-01	1.35E+02	1.49E-01	4.70E+00	1.10E-01	3.07E+00	4.86E-02
BREOT-N18-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.02E+02	1.46E+02	NA	NA	NA	NA	2.86E-02	1.69E+02	4.85E+00	1.03E-01	1.35E+02	1.15E-01	4.70E+00	1.10E-01	3.07E+00	3.74E-02
BREOT-S18-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	2.98E+02	4.27E+02	NA	NA	NA	NA	2.86E-02	4.96E+02	1.42E+01	1.03E-01	1.35E+02	3.36E-01	4.70E+00	1.10E-01	3.07E+00	1.10E-01
BREOT-N19-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.45E+02	2.08E+02	NA	NA	NA	NA	2.86E-02	2.42E+02	6.92E+00	1.03E-01	1.35E+02	1.64E-01	4.70E+00	1.10E-01	3.07E+00	5.35E-02
BREOT-S19-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	3.63E+01	5.19E+01	NA	NA	NA	NA	2.86E-02	6.03E+01	1.73E+00	1.03E-01	1.35E+02	4.09E-02	4.70E+00	1.10E-01	3.07E+00	1.33E-02
BREOT-N20-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.04E+02	1.48E+02	NA	NA	NA	NA	2.86E-02	1.72E+02	4.93E+00	1.03E-01	1.35E+02	1.17E-01	4.70E+00	1.10E-01	3.07E+00	3.81E-02
BREOT-S20-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	3.23E+01	4.63E+01	NA	NA	NA	NA	2.86E-02	5.38E+01	1.54E+00	1.03E-01	1.35E+02	3.65E-02	4.70E+00	1.10E-01	3.07E+00	1.19E-02

TABLE C-2A: ARSENIC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 18.41

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
White-Tailed Deer (Large Herbivorous Mammal - Terrestrial)																							
BREOT-N21-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	2.89E+02	4.14E+02	NA	NA	NA	NA	2.86E-02	4.81E+02	1.38E+01	1.03E-01	1.35E+02	3.26E-01	4.70E+00	1.10E-01	3.07E+00	1.06E-01
BREOT-S21-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.11E+02	1.59E+02	NA	NA	NA	NA	2.86E-02	1.84E+02	5.28E+00	1.03E-01	1.35E+02	1.25E-01	4.70E+00	1.10E-01	3.07E+00	4.08E-02
BREOT-N22-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.25E+02	1.79E+02	NA	NA	NA	NA	2.86E-02	2.08E+02	5.95E+00	1.03E-01	1.35E+02	1.41E-01	4.70E+00	1.10E-01	3.07E+00	4.60E-02
BREOT-S22-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.12E+02	1.60E+02	NA	NA	NA	NA	2.86E-02	1.86E+02	5.32E+00	1.03E-01	1.35E+02	1.26E-01	4.70E+00	1.10E-01	3.07E+00	4.11E-02
BREOT-N23-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.25E+02	1.79E+02	NA	NA	NA	NA	2.86E-02	2.08E+02	5.94E+00	1.03E-01	1.35E+02	1.41E-01	4.70E+00	1.10E-01	3.07E+00	4.59E-02
BREOT-S23-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.42E+02	2.03E+02	NA	NA	NA	NA	2.86E-02	2.36E+02	6.75E+00	1.03E-01	1.35E+02	1.60E-01	4.70E+00	1.10E-01	3.07E+00	5.21E-02
BREOT-N24-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.39E+02	1.99E+02	NA	NA	NA	NA	2.86E-02	2.31E+02	6.63E+00	1.03E-01	1.35E+02	1.57E-01	4.70E+00	1.10E-01	3.07E+00	5.12E-02
BREOT-S24-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	8.82E+01	1.26E+02	NA	NA	NA	NA	2.86E-02	1.47E+02	4.20E+00	1.03E-01	1.35E+02	9.95E-02	4.70E+00	1.10E-01	3.07E+00	3.24E-02
BREOT-N25-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.32E+02	1.89E+02	NA	NA	NA	NA	2.86E-02	2.19E+02	6.28E+00	1.03E-01	1.35E+02	1.49E-01	4.70E+00	1.10E-01	3.07E+00	4.85E-02
BREOT-S25-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	7.77E+01	1.11E+02	NA	NA	NA	NA	2.86E-02	1.29E+02	3.70E+00	1.03E-01	1.35E+02	8.77E-02	4.70E+00	1.10E-01	3.07E+00	2.86E-02
BREOT-N26-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	2.84E+02	4.07E+02	NA	NA	NA	NA	2.86E-02	4.72E+02	1.35E+01	1.03E-01	1.35E+02	3.20E-01	4.70E+00	1.10E-01	3.07E+00	1.04E-01
BREOT-S26-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	8.45E+01	1.21E+02	NA	NA	NA	NA	2.86E-02	1.41E+02	4.02E+00	1.03E-01	1.35E+02	9.53E-02	4.70E+00	1.10E-01	3.07E+00	3.11E-02
BREOT-N27-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	2.80E+02	4.00E+02	NA	NA	NA	NA	2.86E-02	4.65E+02	1.33E+01	1.03E-01	1.35E+02	3.16E-01	4.70E+00	1.10E-01	3.07E+00	1.03E-01
BREOT-S27-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.26E+02	1.80E+02	NA	NA	NA	NA	2.86E-02	2.09E+02	5.99E+00	1.03E-01	1.35E+02	1.42E-01	4.70E+00	1.10E-01	3.07E+00	4.62E-02
BREOT-N28-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	7.44E+01	1.06E+02	NA	NA	NA	NA	2.86E-02	1.24E+02	3.54E+00	1.03E-01	1.35E+02	8.39E-02	4.70E+00	1.10E-01	3.07E+00	2.74E-02
BREOT-S28-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	6.94E+01	9.94E+01	NA	NA	NA	NA	2.86E-02	1.16E+02	3.31E+00	1.03E-01	1.35E+02	7.84E-02	4.70E+00	1.10E-01	3.07E+00	2.55E-02
BREOT-S29-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.02E+01	1.46E+01	NA	NA	NA	NA	2.86E-02	1.70E+01	4.86E-01	1.03E-01	1.35E+02	1.15E-02	4.70E+00	1.10E-01	3.07E+00	3.75E-03
BREOT-N30-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	2.65E+02	3.80E+02	NA	NA	NA	NA	2.86E-02	4.41E+02	1.26E+01	1.03E-01	1.35E+02	2.99E-01	4.70E+00	1.10E-01	3.07E+00	9.75E-02
BREOT-S30-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	7.45E+00	1.07E+01	NA	NA	NA	NA	2.86E-02	1.24E+01	3.55E-01	1.03E-01	1.35E+02	8.40E-03	4.70E+00	1.10E-01	3.07E+00	2.74E-03
BREOT-N31-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	6.50E+01	9.31E+01	NA	NA	NA	NA	2.86E-02	1.08E+02	3.10E+00	1.03E-01	1.35E+02	7.34E-02	4.70E+00	1.10E-01	3.07E+00	2.39E-02
BREOT-S31-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	6.83E+00	9.78E+00	NA	NA	NA	NA	2.86E-02	1.14E+01	3.26E-01	1.03E-01	1.35E+02	7.71E-03	4.70E+00	1.10E-01	3.07E+00	2.51E-03
BREOT-N32-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	8.45E+01	1.21E+02	NA	NA	NA	NA	2.86E-02	1.41E+02	4.03E+00	1.03E-01	1.35E+02	9.54E-02	4.70E+00	1.10E-01	3.07E+00	3.11E-02
BREOT-S32-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	5.28E+01	7.56E+01	NA	NA	NA	NA	2.86E-02	8.79E+01	2.52E+00	1.03E-01	1.35E+02	5.96E-02	4.70E+00	1.10E-01	3.07E+00	1.94E-02
BREOT-N33-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	9.88E+00	1.41E+01	NA	NA	NA	NA	2.86E-02	1.64E+01	4.71E-01	1.03E-01	1.35E+02	1.12E-02	4.70E+00	1.10E-01	3.07E+00	3.64E-03
BREOT-S33-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	5.03E+01	7.20E+01	NA	NA	NA	NA	2.86E-02	8.37E+01	2.40E+00	1.03E-01	1.35E+02	5.68E-02	4.70E+00	1.10E-01	3.07E+00	1.85E-02
BREOT-N34-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.50E+01	2.14E+01	NA	NA	NA	NA	2.86E-02	2.49E+01	7.12E-01	1.03E-01	1.35E+02	1.69E-02	4.70E+00	1.10E-01	3.07E+00	5.50E-03
BREOT-S34-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	8.33E+01	1.19E+02	NA	NA	NA	NA	2.86E-02	1.39E+02	3.97E+00	1.03E-01	1.35E+02	9.41E-02	4.70E+00	1.10E-01	3.07E+00	3.07E-02
BREOT-N35-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.49E+01	2.13E+01	NA	NA	NA	NA	2.86E-02	2.47E+01	7.08E-01	1.03E-01	1.35E+02	1.68E-02	4.70E+00	1.10E-01	3.07E+00	5.47E-03
BREOT-S35-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	6.59E+01	9.43E+01	NA	NA	NA	NA	2.86E-02	1.10E+02	3.14E+00	1.03E-01	1.35E+02	7.44E-02	4.70E+00	1.10E-01	3.07E+00	2.42E-02
BREOT-N36-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.30E+02	1.86E+02	NA	NA	NA	NA	2.86E-02	2.16E+02	6.18E+00	1.03E-01	1.35E+02	1.46E-01	4.70E+00	1.10E-01	3.07E+00	4.77E-02
BREOT-S36-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	9.64E+01	1.38E+02	NA	NA	NA	NA	2.86E-02	1.60E+02	4.59E+00	1.03E-01	1.35E+02	1.09E-01	4.70E+00	1.10E-01	3.07E+00	3.55E-02
BREOT-N37-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	5.11E+01	7.31E+01	NA	NA	NA	NA	2.86E-02	8.50E+01	2.43E+00	1.03E-01	1.35E+02	5.77E-02	4.70E+00	1.10E-01	3.07E+00	1.88E-02
BREOT-S37-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	9.08E+01	1.30E+02	NA	NA	NA	NA	2.86E-02	1.51E+02	4.33E+00	1.03E-01	1.35E+02	1.02E-01	4.70E+00	1.10E-01	3.07E+00	3.34E-02
BREOT-N38-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.10E+01	1.57E+01	NA	NA	NA	NA	2.86E-02	1.83E+01	5.23E-01	1.03E-01	1.35E+02	1.24E-02	4.70E+00	1.10E-01	3.07E+00	4.04E-03
BREOT-S38-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.87E+01	2.68E+01	NA	NA	NA	NA	2.86E-02	3.11E+01	8.92E-01	1.03E-01	1.35E+02	2.11E-02	4.70E+00	1.10E-01	3.07E+00	6.89E-03
BREOT-N39-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.19E+01	1.71E+01	NA	NA	NA	NA	2.86E-02	1.99E+01	5.69E-01	1.03E-01	1.35E+02	1.35E-02	4.70E+00	1.10E-01	3.07E+00	4.39E-03
BREOT-N40-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	2.52E+01	3.61E+01	NA	NA	NA	NA	2.86E-02	4.19E+01	1.20E+00	1.03E-01	1.35E+02	2.84E-02	4.70E+00	1.10E-01	3.07E+00	9.27E-03
BREOT-S40-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.02E+02	1.46E+02	NA	NA	NA	NA	2.86E-02	1.70E+02	4.86E+00	1.03E-01	1.35E+02	1.15E-01	4.70E+00	1.10E-01	3.07E+00	3.76E-02
BREOT-N41-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.77E+01	2.53E+01	NA	NA	NA	NA	2.86E-02	2.94E+01	8.42E-01	1.03E-01	1.35E+02	1.99E-02	4.70E+00	1.10E-01	3.07E+00	6.50E-03
BREOT-S41-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.25E+02	1.79E+02	NA	NA	NA	NA	2.86E-02	2.08E+02	5.94E+00	1.03E-01	1.35E+02	1.41E-01	4.70E+00	1.10E-01	3.07E+00	4.59E-02
BREOT-N42-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S42-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.30E+02	1.86E+02	NA	NA	NA	NA	2.86E-02	2.16E+02	6.19E+00	1.03E-01	1.35E+02	1.47E-01	4.70E+00	1.10E-01	3.07E+00	4.78E-02
BREOT-N43-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	2.11E+01	3.02E+01	NA	NA	NA	NA	2.86E-02	3.51E+01	1.01E+00	1.03E-01	1.35E+02	2.38E-02	4.70E+00	1.10E-01	3.07E+00	7.77E-03
BREOT-S43-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.21E+01	1.73E+01	NA	NA	NA	NA	2.86E-02	2.01E+01	5.74E-01	1.03E-01	1.35E+02	1.36E-02	4.70E+00	1.10E-01	3.07E+00	4.44E-03
BREOT-N44-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	3.92E+01	5.61E+01	NA	NA	NA	NA	2.86E-02	6.52E+01	1.87E+00	1.03E-01	1.35E+02	4.42E-02	4.70E+00	1.10E-01	3.07E+00	1.44E-02
BREOT-S44-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	4.39E+00	6.28E+00	NA	NA	NA	NA	2.86E-02	7.30E+00	2.09E-01	1.03E-01	1.35E+02	4.95E-03	4.70E+00	1.10E-01	3.07E+00	1.61E-03
BREOT-N45-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	5.93E+00	8.49E+00	NA	NA	NA	NA	2.86E-02	9.87E+00	2.82E-01	1.03E-01	1.35E+02	6.69E-03	4.70E+00	1.10E-01	3.07E+00	2.18E-03
BREOT-S45-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.45E+01	2.07E+01	NA	NA	NA	NA	2.86E-02	2.41E+01	6.90E-01	1.03E-01	1.35E+02	1.63E-02	4.70E+00	1.10E-01	3.07E+00	5.33E-03
BREOT-N46-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	5.75E+00	8.23E+00	NA	NA	NA	NA	2.86E-02	9.56E+00	2.74E-01	1.03E-01	1.35E+02	6.48E-03	4.70E+00	1.10E-01	3.07E+00	2.11E-03
BREOT-S46-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	2.74E+01	3.92E+01	NA	NA	NA	NA	2.86E-02	4.55E+01	1.30E+00	1.03E-01	1.35E+02	3.09E-02	4.70E+00	1.10E-01	3.07E+00	1.01E-02
BREOT-N47-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	5.26E+00	7.53E+00	NA	NA	NA	NA	2.86E-02	8.75E+00	2.51E-01	1.03E-01	1.35E+02	5.94E-03	4.70E+00	1.10E-01	3.07E+00	1.93E-03
BREOT-S47-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.22E+01	1.75E+01	NA	NA	NA	NA	2.86E-02	2.03E+01	5.81E-01	1.03E-01	1.35E+02	1.38E-02	4.70E+00	1.10E-01	3.07E+00	4.49E-03
BREOT-N48-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	6.77E+00	9.69E+00	NA	NA	NA	NA	2.86E-02	1.13E+01	3.22E-01	1.03E-01	1.35E+02	7.64E-03	4.70E+00	1.10E-01	3.07E+00	2.49E-03
BREOT-S48-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	3.85E+01	5.52E+01	NA	NA	NA	NA	2.86E-02	6.41E+01	1.84E+00	1.03E-01	1.35E+02	4.35E-02	4.70E+00	1.10E-01	3.07E+00	1.42E-02
BREOT-N49-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.82E+01	2.60E+01	NA	NA	NA	NA	2.86E-02	3.02E+01	8.65E-01	1.03E-01	1.35E+02	2.05E-02	4.70E+00	1.10E-01	3.07E+00	6.68E-03

TABLE C-2A: ARSENIC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

Site Area (hectares) **18.41**

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
White-Tailed Deer (Large Herbivorous Mammal - Terrestrial)																							
BREOT-S49-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	5.10E+00	7.30E+00	NA	NA	NA	NA	2.86E-02	8.49E+00	2.43E-01	1.03E-01	1.35E+02	5.76E-03	4.70E+00	1.10E-01	3.07E+00	1.88E-03
BREOT-S50-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.51E+01	2.17E+01	NA	NA	NA	NA	2.86E-02	2.52E+01	7.21E-01	1.03E-01	1.35E+02	1.71E-02	4.70E+00	1.10E-01	3.07E+00	5.57E-03
BREOT-N51-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	3.42E+01	4.89E+01	NA	NA	NA	NA	2.86E-02	5.69E+01	1.63E+00	1.03E-01	1.35E+02	3.86E-02	4.70E+00	1.10E-01	3.07E+00	1.26E-02
BREOT-S51-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.48E+01	2.12E+01	NA	NA	NA	NA	2.86E-02	2.46E+01	7.04E-01	1.03E-01	1.35E+02	1.67E-02	4.70E+00	1.10E-01	3.07E+00	5.44E-03
BREOT-N52-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	4.34E+00	6.21E+00	NA	NA	NA	NA	2.86E-02	7.22E+00	2.07E-01	1.03E-01	1.35E+02	4.89E-03	4.70E+00	1.10E-01	3.07E+00	1.60E-03
BREOT-S52-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	4.24E+00	6.07E+00	NA	NA	NA	NA	2.86E-02	7.06E+00	2.02E-01	1.03E-01	1.35E+02	4.79E-03	4.70E+00	1.10E-01	3.07E+00	1.56E-03
BREOT-N53-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	5.92E+00	8.48E+00	NA	NA	NA	NA	2.86E-02	9.85E+00	2.82E-01	1.03E-01	1.35E+02	6.68E-03	4.70E+00	1.10E-01	3.07E+00	2.18E-03
BREOT-S53-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.05E+01	1.50E+01	NA	NA	NA	NA	2.86E-02	1.75E+01	5.01E-01	1.03E-01	1.35E+02	1.19E-02	4.70E+00	1.10E-01	3.07E+00	3.87E-03
BREOT-N54-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	6.43E+00	9.21E+00	NA	NA	NA	NA	2.86E-02	1.07E+01	3.07E-01	1.03E-01	1.35E+02	7.26E-03	4.70E+00	1.10E-01	3.07E+00	2.37E-03
BREOT-S54-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	4.77E+00	6.83E+00	NA	NA	NA	NA	2.86E-02	7.94E+00	2.27E-01	1.03E-01	1.35E+02	5.38E-03	4.70E+00	1.10E-01	3.07E+00	1.75E-03
BREOT-N55-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	5.33E+00	7.62E+00	NA	NA	NA	NA	2.86E-02	8.86E+00	2.54E-01	1.03E-01	1.35E+02	6.01E-03	4.70E+00	1.10E-01	3.07E+00	1.96E-03
BREOT-S55-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	5.39E+00	7.71E+00	NA	NA	NA	NA	2.86E-02	8.96E+00	2.57E-01	1.03E-01	1.35E+02	6.08E-03	4.70E+00	1.10E-01	3.07E+00	1.98E-03
BREOT-N56-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	5.03E+01	7.21E+01	NA	NA	NA	NA	2.86E-02	8.38E+01	2.40E+00	1.03E-01	1.35E+02	5.68E-02	4.70E+00	1.10E-01	3.07E+00	1.85E-02
BREOT-N57-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	6.46E+00	9.25E+00	NA	NA	NA	NA	2.86E-02	1.07E+01	3.08E-01	1.03E-01	1.35E+02	7.29E-03	4.70E+00	1.10E-01	3.07E+00	2.38E-03
BREOT-S57-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	2.37E+01	3.39E+01	NA	NA	NA	NA	2.86E-02	3.94E+01	1.13E+00	1.03E-01	1.35E+02	2.67E-02	4.70E+00	1.10E-01	3.07E+00	8.71E-03
BREOT-N58-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.25E+01	1.79E+01	NA	NA	NA	NA	2.86E-02	2.08E+01	5.95E-01	1.03E-01	1.35E+02	1.41E-02	4.70E+00	1.10E-01	3.07E+00	4.60E-03
BREOT-S58-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.45E+01	2.07E+01	NA	NA	NA	NA	2.86E-02	2.41E+01	6.89E-01	1.03E-01	1.35E+02	1.63E-02	4.70E+00	1.10E-01	3.07E+00	5.32E-03
BREOT-N59-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	2.09E+01	2.99E+01	NA	NA	NA	NA	2.86E-02	3.48E+01	9.96E-01	1.03E-01	1.35E+02	2.36E-02	4.70E+00	1.10E-01	3.07E+00	7.69E-03
BREOT-N60-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.19E+01	1.70E+01	NA	NA	NA	NA	2.86E-02	1.97E+01	5.65E-01	1.03E-01	1.35E+02	1.34E-02	4.70E+00	1.10E-01	3.07E+00	4.36E-03
BREOT-S60-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	4.89E+01	7.00E+01	NA	NA	NA	NA	2.86E-02	8.13E+01	2.33E+00	1.03E-01	1.35E+02	5.51E-02	4.70E+00	1.10E-01	3.07E+00	1.80E-02
BREOT-S61-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	5.42E+00	7.76E+00	NA	NA	NA	NA	2.86E-02	9.02E+00	2.58E-01	1.03E-01	1.35E+02	6.12E-03	4.70E+00	1.10E-01	3.07E+00	1.99E-03
BREOT-N62-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.10E+01	1.57E+01	NA	NA	NA	NA	2.86E-02	1.83E+01	5.24E-01	1.03E-01	1.35E+02	1.24E-02	4.70E+00	1.10E-01	3.07E+00	4.04E-03
BREOT-N63-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	3.35E+01	4.79E+01	NA	NA	NA	NA	2.86E-02	5.57E+01	1.59E+00	1.03E-01	1.35E+02	3.78E-02	4.70E+00	1.10E-01	3.07E+00	1.23E-02
BREOT-S63-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.77E+01	2.53E+01	NA	NA	NA	NA	2.86E-02	2.94E+01	8.42E-01	1.03E-01	1.35E+02	1.99E-02	4.70E+00	1.10E-01	3.07E+00	6.50E-03
BREOT-N64-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	5.23E+00	7.48E+00	NA	NA	NA	NA	2.86E-02	8.70E+00	2.49E-01	1.03E-01	1.35E+02	5.90E-03	4.70E+00	1.10E-01	3.07E+00	1.92E-03
BREOT-S64-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	6.48E+00	9.28E+00	NA	NA	NA	NA	2.86E-02	1.08E+01	3.09E-01	1.03E-01	1.35E+02	7.32E-03	4.70E+00	1.10E-01	3.07E+00	2.39E-03
BREOT-N66-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	2.23E+01	3.19E+01	NA	NA	NA	NA	2.86E-02	3.70E+01	1.06E+00	1.03E-01	1.35E+02	2.51E-02	4.70E+00	1.10E-01	3.07E+00	8.19E-03
BREOT-S66-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.11E+01	1.59E+01	NA	NA	NA	NA	2.86E-02	1.85E+01	5.29E-01	1.03E-01	1.35E+02	1.25E-02	4.70E+00	1.10E-01	3.07E+00	4.08E-03
BREOT-N67-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	5.11E+01	7.32E+01	NA	NA	NA	NA	2.86E-02	8.50E+01	2.43E+00	1.03E-01	1.35E+02	5.77E-02	4.70E+00	1.10E-01	3.07E+00	1.88E-02
BREOT-S67-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	4.75E+00	6.80E+00	NA	NA	NA	NA	2.86E-02	7.90E+00	2.26E-01	1.03E-01	1.35E+02	5.36E-03	4.70E+00	1.10E-01	3.07E+00	1.75E-03
Outside Tailings																						**Maximum HQ (At Edge of Tailings)**	**2.78E-01**
BREOT-S0+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	2.25E+01	3.23E+01	NA	NA	NA	NA	2.86E-02	3.75E+01	1.07E+00	1.03E-01	1.35E+02	2.54E-02	4.70E+00	1.10E-01	3.07E+00	8.29E-03
BREOT-S1+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	5.89E+00	8.44E+00	NA	NA	NA	NA	2.86E-02	9.81E+00	2.81E-01	1.03E-01	1.35E+02	6.65E-03	4.70E+00	1.10E-01	3.07E+00	2.17E-03
BREOT-S2+95 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.37E+01	1.96E+01	NA	NA	NA	NA	2.86E-02	2.28E+01	6.53E-01	1.03E-01	1.35E+02	1.55E-02	4.70E+00	1.10E-01	3.07E+00	5.04E-03
BREOT-S3+6 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	6.28E+00	8.99E+00	NA	NA	NA	NA	2.86E-02	1.05E+01	2.99E-01	1.03E-01	1.35E+02	7.09E-03	4.70E+00	1.10E-01	3.07E+00	2.31E-03
BREOT-S4+10 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.23E+01	1.76E+01	NA	NA	NA	NA	2.86E-02	2.04E+01	5.84E-01	1.03E-01	1.35E+02	1.38E-02	4.70E+00	1.10E-01	3.07E+00	4.51E-03
BREOT-S6+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.74E+01	2.49E+01	NA	NA	NA	NA	2.86E-02	2.90E+01	8.30E-01	1.03E-01	1.35E+02	1.97E-02	4.70E+00	1.10E-01	3.07E+00	6.41E-03
BREOT-S8+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	2.09E+01	2.99E+01	NA	NA	NA	NA	2.86E-02	3.47E+01	9.94E-01	1.03E-01	1.35E+02	2.36E-02	4.70E+00	1.10E-01	3.07E+00	7.68E-03
BREOT-N10+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.25E+01	1.79E+01	NA	NA	NA	NA	2.86E-02	2.08E+01	5.96E-01	1.03E-01	1.35E+02	1.41E-02	4.70E+00	1.10E-01	3.07E+00	4.60E-03
BREOT-N11+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	6.18E+00	8.85E+00	NA	NA	NA	NA	2.86E-02	1.03E+01	2.94E-01	1.03E-01	1.35E+02	6.97E-03	4.70E+00	1.10E-01	3.07E+00	2.27E-03
BREOT-N12+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	7.76E+00	1.11E+01	NA	NA	NA	NA	2.86E-02	1.29E+01	3.70E-01	1.03E-01	1.35E+02	8.76E-03	4.70E+00	1.10E-01	3.07E+00	2.85E-03
BREOT-S12+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.53E+02	2.19E+02	NA	NA	NA	NA	2.86E-02	2.54E+02	7.28E+00	1.03E-01	1.35E+02	1.72E-01	4.70E+00	1.10E-01	3.07E+00	5.62E-02
BREOT-S12+60 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	5.12E+01	7.33E+01	NA	NA	NA	NA	2.86E-02	8.51E+01	2.44E+00	1.03E-01	1.35E+02	5.78E-02	4.70E+00	1.10E-01	3.07E+00	1.88E-02
BREOT-N13+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	7.78E+00	1.11E+01	NA	NA	NA	NA	2.86E-02	1.30E+01	3.71E-01	1.03E-01	1.35E+02	8.78E-03	4.70E+00	1.10E-01	3.07E+00	2.86E-03
BREOT-S13+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.11E+02	1.59E+02	NA	NA	NA	NA	2.86E-02	1.85E+02	5.30E+00	1.03E-01	1.35E+02	1.26E-01	4.70E+00	1.10E-01	3.07E+00	4.09E-02
BREOT-S13+65 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	6.22E+01	8.90E+01	NA	NA	NA	NA	2.86E-02	1.03E+02	2.96E+00	1.03E-01	1.35E+02	7.02E-02	4.70E+00	1.10E-01	3.07E+00	2.29E-02
BREOT-N14+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	2.38E+01	3.40E+01	NA	NA	NA	NA	2.86E-02	3.95E+01	1.13E+00	1.03E-01	1.35E+02	2.68E-02	4.70E+00	1.10E-01	3.07E+00	8.74E-03
BREOT-S14+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	4.20E+02	6.01E+02	NA	NA	NA	NA	2.86E-02	6.99E+02	2.00E+01	1.03E-01	1.35E+02	4.74E-01	4.70E+00	1.10E-01	3.07E+00	1.54E-01
BREOT-S14+59 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	6.04E+01	8.65E+01	NA	NA	NA	NA	2.86E-02	1.00E+02	2.88E+00	1.03E-01	1.35E+02	6.82E-02	4.70E+00	1.10E-01	3.07E+00	2.22E-02
BREOT-N15+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	6.28E+01	8.99E+01	NA	NA	NA	NA	2.86E-02	1.04E+02	2.99E+00	1.03E-01	1.35E+02	7.09E-02	4.70E+00	1.10E-01	3.07E+00	2.31E-02
BREOT-N15+50 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	5.32E+00	7.62E+00	NA	NA	NA	NA	2.86E-02	8.85E+00	2.53E-01	1.03E-01	1.35E+02	6.00E-03	4.70E+00	1.10E-01	3.07E+00	1.96E-03
BREOT-S16+20 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	9.47E+01	1.36E+02	NA	NA	NA	NA	2.86E-02	1.58E+02	4.51E+00	1.03E-01	1.35E+02	1.07E-01	4.70E+00	1.10E-01	3.07E+00	3.48E-02
BREOT-S16+75 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.60E+01	2.30E+01	NA	NA	NA	NA	2.86E-02	2.67E+01	7.65E-01	1.03E-01	1.35E+02	1.81E-02	4.70E+00	1.10E-01	3.07E+00	5.90E-03
BREOT-N17+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	9.82E+01	1.41E+02	NA	NA	NA	NA	2.86E-02	1.63E+02	4.68E+00	1.03E-01	1.35E+02	1.11E-01	4.70E+00	1.10E-01	3.07E+00	3.61E-02

TABLE C-2A: ARSENIC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

Site Area (hectares) **18.41**

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
White-Tailed Deer (Large Herbivorous Mammal - Terrestrial)																							
BREOT-S18+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	2.88E+01	4.13E+01	NA	NA	NA	NA	2.86E-02	4.80E+01	1.37E+00	1.03E-01	1.35E+02	3.25E-02	4.70E+00	1.10E-01	3.07E+00	1.06E-02
BREOT-N19+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	4.50E+00	6.44E+00	NA	NA	NA	NA	2.86E-02	7.49E+00	2.14E-01	1.03E-01	1.35E+02	5.08E-03	4.70E+00	1.10E-01	3.07E+00	1.66E-03
BREOT-S19+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	2.50E+02	3.58E+02	NA	NA	NA	NA	2.86E-02	4.16E+02	1.19E+01	1.03E-01	1.35E+02	2.83E-01	4.70E+00	1.10E-01	3.07E+00	9.21E-02
BREOT-S19+85 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	9.44E+00	1.35E+01	NA	NA	NA	NA	2.86E-02	1.57E+01	4.50E-01	1.03E-01	1.35E+02	1.06E-02	4.70E+00	1.10E-01	3.07E+00	3.47E-03
BREOT-N20+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	7.36E+00	1.05E+01	NA	NA	NA	NA	2.86E-02	1.22E+01	3.51E-01	1.03E-01	1.35E+02	8.31E-03	4.70E+00	1.10E-01	3.07E+00	2.71E-03
BREOT-S20+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	3.56E+02	5.10E+02	NA	NA	NA	NA	2.86E-02	5.92E+02	1.70E+01	1.03E-01	1.35E+02	4.02E-01	4.70E+00	1.10E-01	3.07E+00	1.31E-01
BREOT-S20+75 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N21+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.25E+02	1.79E+02	NA	NA	NA	NA	2.86E-02	2.08E+02	5.94E+00	1.03E-01	1.35E+02	1.41E-01	4.70E+00	1.10E-01	3.07E+00	4.59E-02
BREOT-S21+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	2.14E+02	3.06E+02	NA	NA	NA	NA	2.86E-02	3.56E+02	1.02E+01	1.03E-01	1.35E+02	2.41E-01	4.70E+00	1.10E-01	3.07E+00	7.87E-02
BREOT-N22+150 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	4.99E+00	7.14E+00	NA	NA	NA	NA	2.86E-02	8.30E+00	2.38E-01	1.03E-01	1.35E+02	5.63E-03	4.70E+00	1.10E-01	3.07E+00	1.84E-03
BREOT-N22+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	5.53E+01	7.92E+01	NA	NA	NA	NA	2.86E-02	9.20E+01	2.63E+00	1.03E-01	1.35E+02	6.24E-02	4.70E+00	1.10E-01	3.07E+00	2.03E-02
BREOT-S22+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	5.53E+01	7.91E+01	NA	NA	NA	NA	2.86E-02	9.20E+01	2.63E+00	1.03E-01	1.35E+02	6.24E-02	4.70E+00	1.10E-01	3.07E+00	2.03E-02
BREOT-N23+115 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.40E+01	2.00E+01	NA	NA	NA	NA	2.86E-02	2.33E+01	6.67E-01	1.03E-01	1.35E+02	1.58E-02	4.70E+00	1.10E-01	3.07E+00	5.15E-03
BREOT-N23+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.98E+02	2.83E+02	NA	NA	NA	NA	2.86E-02	3.29E+02	9.42E+00	1.03E-01	1.35E+02	2.23E-01	4.70E+00	1.10E-01	3.07E+00	7.27E-02
BREOT-S23+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	6.31E+01	9.04E+01	NA	NA	NA	NA	2.86E-02	1.05E+02	3.01E+00	1.03E-01	1.35E+02	7.13E-02	4.70E+00	1.10E-01	3.07E+00	2.32E-02
BREOT-S23+37.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.64E+01	2.35E+01	NA	NA	NA	NA	2.86E-02	2.73E+01	7.82E-01	1.03E-01	1.35E+02	1.85E-02	4.70E+00	1.10E-01	3.07E+00	6.04E-03
BREOT-N24+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	9.47E+01	1.36E+02	NA	NA	NA	NA	2.86E-02	1.58E+02	4.51E+00	1.03E-01	1.35E+02	1.07E-01	4.70E+00	1.10E-01	3.07E+00	3.48E-02
BREOT-N24+75 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.33E+01	1.90E+01	NA	NA	NA	NA	2.86E-02	2.21E+01	6.33E-01	1.03E-01	1.35E+02	1.50E-02	4.70E+00	1.10E-01	3.07E+00	4.89E-03
BREOT-S24+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	4.97E+01	7.12E+01	NA	NA	NA	NA	2.86E-02	8.28E+01	2.37E+00	1.03E-01	1.35E+02	5.61E-02	4.70E+00	1.10E-01	3.07E+00	1.83E-02
BREOT-N25+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	4.55E+00	6.51E+00	NA	NA	NA	NA	2.86E-02	7.57E+00	2.17E-01	1.03E-01	1.35E+02	5.13E-03	4.70E+00	1.10E-01	3.07E+00	1.67E-03
BREOT-S25+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	3.44E+01	4.92E+01	NA	NA	NA	NA	2.86E-02	5.72E+01	1.64E+00	1.03E-01	1.35E+02	3.88E-02	4.70E+00	1.10E-01	3.07E+00	1.27E-02
BREOT-S25+40 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	5.67E+01	8.11E+01	NA	NA	NA	NA	2.86E-02	9.43E+01	2.70E+00	1.03E-01	1.35E+02	6.39E-02	4.70E+00	1.10E-01	3.07E+00	2.08E-02
BREOT-N27+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	5.70E+00	8.17E+00	NA	NA	NA	NA	2.86E-02	9.49E+00	2.72E-01	1.03E-01	1.35E+02	6.44E-03	4.70E+00	1.10E-01	3.07E+00	2.10E-03
BREOT-S27+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	2.12E+01	3.03E+01	NA	NA	NA	NA	2.86E-02	3.52E+01	1.01E+00	1.03E-01	1.35E+02	2.39E-02	4.70E+00	1.10E-01	3.07E+00	7.79E-03
BREOT-N28+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	5.66E+00	8.11E+00	NA	NA	NA	NA	2.86E-02	9.43E+00	2.70E-01	1.03E-01	1.35E+02	6.39E-03	4.70E+00	1.10E-01	3.07E+00	2.08E-03
BREOT-S28+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	5.77E+01	8.27E+01	NA	NA	NA	NA	2.86E-02	9.61E+01	2.75E+00	1.03E-01	1.35E+02	6.52E-02	4.70E+00	1.10E-01	3.07E+00	2.12E-02
BREOT-N29+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	7.86E+00	1.13E+01	NA	NA	NA	NA	2.86E-02	1.31E+01	3.74E-01	1.03E-01	1.35E+02	8.87E-03	4.70E+00	1.10E-01	3.07E+00	2.89E-03
BREOT-S29+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.27E+01	1.82E+01	NA	NA	NA	NA	2.86E-02	2.12E+01	6.06E-01	1.03E-01	1.35E+02	1.44E-02	4.70E+00	1.10E-01	3.07E+00	4.68E-03
BREOT-N30+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	9.48E+00	1.36E+01	NA	NA	NA	NA	2.86E-02	1.58E+01	4.52E-01	1.03E-01	1.35E+02	1.07E-02	4.70E+00	1.10E-01	3.07E+00	3.49E-03
BREOT-S30+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.07E+01	1.53E+01	NA	NA	NA	NA	2.86E-02	1.78E+01	5.10E-01	1.03E-01	1.35E+02	1.21E-02	4.70E+00	1.10E-01	3.07E+00	3.94E-03
BREOT-N31+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.64E+02	2.35E+02	NA	NA	NA	NA	2.86E-02	2.73E+02	7.82E+00	1.03E-01	1.35E+02	1.85E-01	4.70E+00	1.10E-01	3.07E+00	6.04E-02
BREOT-N31+75 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S31+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	5.44E+00	7.79E+00	NA	NA	NA	NA	2.86E-02	9.05E+00	2.59E-01	1.03E-01	1.35E+02	6.14E-03	4.70E+00	1.10E-01	3.07E+00	2.00E-03
BREOT-N32+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	5.43E+00	7.77E+00	NA	NA	NA	NA	2.86E-02	9.04E+00	2.59E-01	1.03E-01	1.35E+02	6.13E-03	4.70E+00	1.10E-01	3.07E+00	2.00E-03
BREOT-S32+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	8.14E+01	1.17E+02	NA	NA	NA	NA	2.86E-02	1.35E+02	3.88E+00	1.03E-01	1.35E+02	9.19E-02	4.70E+00	1.10E-01	3.07E+00	3.00E-02
BREOT-S32+300 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	3.75E+01	5.37E+01	NA	NA	NA	NA	2.86E-02	6.24E+01	1.79E+00	1.03E-01	1.35E+02	4.23E-02	4.70E+00	1.10E-01	3.07E+00	1.38E-02
BREOT-N33+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	5.24E+00	7.50E+00	NA	NA	NA	NA	2.86E-02	8.72E+00	2.50E-01	1.03E-01	1.35E+02	5.91E-03	4.70E+00	1.10E-01	3.07E+00	1.93E-03
BREOT-S33+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	2.04E+01	2.92E+01	NA	NA	NA	NA	2.86E-02	3.40E+01	9.73E-01	1.03E-01	1.35E+02	2.31E-02	4.70E+00	1.10E-01	3.07E+00	7.52E-03
BREOT-N34+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	5.92E+00	8.48E+00	NA	NA	NA	NA	2.86E-02	9.85E+00	2.82E-01	1.03E-01	1.35E+02	6.68E-03	4.70E+00	1.10E-01	3.07E+00	2.18E-03
BREOT-S34+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	3.09E+01	4.42E+01	NA	NA	NA	NA	2.86E-02	5.14E+01	1.47E+00	1.03E-01	1.35E+02	3.49E-02	4.70E+00	1.10E-01	3.07E+00	1.14E-02
BREOT-N35+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.37E+01	1.96E+01	NA	NA	NA	NA	2.86E-02	2.27E+01	6.51E-01	1.03E-01	1.35E+02	1.54E-02	4.70E+00	1.10E-01	3.07E+00	5.03E-03
BREOT-S35+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.95E+01	2.79E+01	NA	NA	NA	NA	2.86E-02	3.24E+01	9.28E-01	1.03E-01	1.35E+02	2.20E-02	4.70E+00	1.10E-01	3.07E+00	7.17E-03
BREOT-N36+100 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	9.74E+00	1.39E+01	NA	NA	NA	NA	2.86E-02	1.62E+01	4.64E-01	1.03E-01	1.35E+02	1.10E-02	4.70E+00	1.10E-01	3.07E+00	3.58E-03
BREOT-N36+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.13E+02	1.62E+02	NA	NA	NA	NA	2.86E-02	1.88E+02	5.38E+00	1.03E-01	1.35E+02	1.27E-01	4.70E+00	1.10E-01	3.07E+00	4.16E-02
BREOT-S36+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	2.13E+01	3.06E+01	NA	NA	NA	NA	2.86E-02	3.55E+01	1.02E+00	1.03E-01	1.35E+02	2.41E-02	4.70E+00	1.10E-01	3.07E+00	7.85E-03
BREOT-N37+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	5.44E+00	7.78E+00	NA	NA	NA	NA	2.86E-02	9.05E+00	2.59E-01	1.03E-01	1.35E+02	6.14E-03	4.70E+00	1.10E-01	3.07E+00	2.00E-03
BREOT-S37+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.75E+01	2.50E+01	NA	NA	NA	NA	2.86E-02	2.91E+01	8.34E-01	1.03E-01	1.35E+02	1.97E-02	4.70E+00	1.10E-01	3.07E+00	6.44E-03
BREOT-N38+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.46E+01	2.09E+01	NA	NA	NA	NA	2.86E-02	2.43E+01	6.94E-01	1.03E-01	1.35E+02	1.64E-02	4.70E+00	1.10E-01	3.07E+00	5.36E-03
BREOT-S38+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.69E+01	2.42E+01	NA	NA	NA	NA	2.86E-02	2.81E+01	8.06E-01	1.03E-01	1.35E+02	1.91E-02	4.70E+00	1.10E-01	3.07E+00	6.22E-03
BREOT-N39+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.32E+01	1.89E+01	NA	NA	NA	NA	2.86E-02	2.19E+01	6.28E-01	1.03E-01	1.35E+02	1.49E-02	4.70E+00	1.10E-01	3.07E+00	4.85E-03
BREOT-S39+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	2.85E+01	4.08E+01	NA	NA	NA	NA	2.86E-02	4.74E+01	1.36E+00	1.03E-01	1.35E+02	3.21E-02	4.70E+00	1.10E-01	3.07E+00	1.05E-02
BREOT-N40+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.92E+01	2.75E+01	NA	NA	NA	NA	2.86E-02	3.19E+01	9.15E-01	1.03E-01	1.35E+02	2.17E-02	4.70E+00	1.10E-01	3.07E+00	7.06E-03
BREOT-S40+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	2.33E+01	3.34E+01	NA	NA	NA	NA	2.86E-02	3.88E+01	1.11E+00	1.03E-01	1.35E+02	2.63E-02	4.70E+00	1.10E-01	3.07E+00	8.58E-03
BREOT-N41+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	5.28E+00	7.56E+00	NA	NA	NA	NA	2.86E-02	8.79E+00	2.52E-01	1.03E-01	1.35E+02	5.96E-03	4.70E+00	1.10E-01	3.07E+00	1.94E-03

TABLE C-2A: ARSENIC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 18.41

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
White-Tailed Deer (Large Herbivorous Mammal - Terrestrial)																							
BREOT-S41+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	3.90E+01	5.59E+01	NA	NA	NA	NA	2.86E-02	6.49E+01	1.86E+00	1.03E-01	1.35E+02	4.40E-02	4.70E+00	1.10E-01	3.07E+00	1.44E-02
BREOT-N42+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S42+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	5.08E+00	7.27E+00	NA	NA	NA	NA	2.86E-02	8.45E+00	2.42E-01	1.03E-01	1.35E+02	5.73E-03	4.70E+00	1.10E-01	3.07E+00	1.87E-03
BREOT-N43+12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	2.37E+01	3.39E+01	NA	NA	NA	NA	2.86E-02	3.94E+01	1.13E+00	1.03E-01	1.35E+02	2.67E-02	4.70E+00	1.10E-01	3.07E+00	8.72E-03
BREOT-N43+40 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	4.93E+00	7.06E+00	NA	NA	NA	NA	2.86E-02	8.21E+00	2.35E-01	1.03E-01	1.35E+02	5.57E-03	4.70E+00	1.10E-01	3.07E+00	1.81E-03
BREOT-S43+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	8.56E+00	1.23E+01	NA	NA	NA	NA	2.86E-02	1.43E+01	4.08E-01	1.03E-01	1.35E+02	9.67E-03	4.70E+00	1.10E-01	3.07E+00	3.15E-03
BREOT-N44+55 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.84E+01	2.63E+01	NA	NA	NA	NA	2.86E-02	3.06E+01	8.75E-01	1.03E-01	1.35E+02	2.07E-02	4.70E+00	1.10E-01	3.07E+00	6.76E-03
BREOT-S44+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.33E+01	1.91E+01	NA	NA	NA	NA	2.86E-02	2.22E+01	6.34E-01	1.03E-01	1.35E+02	1.50E-02	4.70E+00	1.10E-01	3.07E+00	4.90E-03
BREOT-N45+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	4.79E+00	6.86E+00	NA	NA	NA	NA	2.86E-02	7.97E+00	2.28E-01	1.03E-01	1.35E+02	5.41E-03	4.70E+00	1.10E-01	3.07E+00	1.76E-03
BREOT-S45+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N46+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	2.53E+01	3.62E+01	NA	NA	NA	NA	2.86E-02	4.21E+01	1.21E+00	1.03E-01	1.35E+02	2.86E-02	4.70E+00	1.10E-01	3.07E+00	9.31E-03
BREOT-S46+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N47+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	5.78E+00	8.27E+00	NA	NA	NA	NA	2.86E-02	9.62E+00	2.75E-01	1.03E-01	1.35E+02	6.52E-03	4.70E+00	1.10E-01	3.07E+00	2.13E-03
BREOT-S47+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.25E+01	1.79E+01	NA	NA	NA	NA	2.86E-02	2.08E+01	5.94E-01	1.03E-01	1.35E+02	1.41E-02	4.70E+00	1.10E-01	3.07E+00	4.59E-03
BREOT-N48+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	4.73E+00	6.77E+00	NA	NA	NA	NA	2.86E-02	7.87E+00	2.25E-01	1.03E-01	1.35E+02	5.33E-03	4.70E+00	1.10E-01	3.07E+00	1.74E-03
BREOT-S48+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	2.50E+01	3.57E+01	NA	NA	NA	NA	2.86E-02	4.15E+01	1.19E+00	1.03E-01	1.35E+02	2.82E-02	4.70E+00	1.10E-01	3.07E+00	9.19E-03
BREOT-N49+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	3.50E+01	5.01E+01	NA	NA	NA	NA	2.86E-02	5.82E+01	1.67E+00	1.03E-01	1.35E+02	3.95E-02	4.70E+00	1.10E-01	3.07E+00	1.29E-02
BREOT-S49+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	5.65E+00	8.09E+00	NA	NA	NA	NA	2.86E-02	9.40E+00	2.69E-01	1.03E-01	1.35E+02	6.38E-03	4.70E+00	1.10E-01	3.07E+00	2.08E-03
BREOT-N51+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.40E+01	2.01E+01	NA	NA	NA	NA	2.86E-02	2.34E+01	6.69E-01	1.03E-01	1.35E+02	1.58E-02	4.70E+00	1.10E-01	3.07E+00	5.17E-03
BREOT-S51+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.80E+01	2.58E+01	NA	NA	NA	NA	2.86E-02	3.00E+01	8.58E-01	1.03E-01	1.35E+02	2.03E-02	4.70E+00	1.10E-01	3.07E+00	6.63E-03
BREOT-N52+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	2.81E+01	4.02E+01	NA	NA	NA	NA	2.86E-02	4.67E+01	1.34E+00	1.03E-01	1.35E+02	3.17E-02	4.70E+00	1.10E-01	3.07E+00	1.03E-02
BREOT-S52+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.57E+01	2.25E+01	NA	NA	NA	NA	2.86E-02	2.62E+01	7.49E-01	1.03E-01	1.35E+02	1.78E-02	4.70E+00	1.10E-01	3.07E+00	5.79E-03
BREOT-N53+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S53+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	5.37E+00	7.69E+00	NA	NA	NA	NA	2.86E-02	8.94E+00	2.56E-01	1.03E-01	1.35E+02	6.06E-03	4.70E+00	1.10E-01	3.07E+00	1.98E-03
BREOT-S54+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N55+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.19E+01	1.71E+01	NA	NA	NA	NA	2.86E-02	1.98E+01	5.68E-01	1.03E-01	1.35E+02	1.35E-02	4.70E+00	1.10E-01	3.07E+00	4.39E-03
BREOT-S55+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N56+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	5.48E+00	7.84E+00	NA	NA	NA	NA	2.86E-02	9.11E+00	2.61E-01	1.03E-01	1.35E+02	6.18E-03	4.70E+00	1.10E-01	3.07E+00	2.01E-03
BREOT-S56+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.37E+01	1.96E+01	NA	NA	NA	NA	2.86E-02	2.27E+01	6.51E-01	1.03E-01	1.35E+02	1.54E-02	4.70E+00	1.10E-01	3.07E+00	5.02E-03
BREOT-N57+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	4.75E+00	6.80E+00	NA	NA	NA	NA	2.86E-02	7.90E+00	2.26E-01	1.03E-01	1.35E+02	5.36E-03	4.70E+00	1.10E-01	3.07E+00	1.75E-03
BREOT-S57+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	2.08E+01	2.97E+01	NA	NA	NA	NA	2.86E-02	3.45E+01	9.89E-01	1.03E-01	1.35E+02	2.34E-02	4.70E+00	1.10E-01	3.07E+00	7.64E-03
BREOT-N58+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.39E+01	1.99E+01	NA	NA	NA	NA	2.86E-02	2.31E+01	6.62E-01	1.03E-01	1.35E+02	1.57E-02	4.70E+00	1.10E-01	3.07E+00	5.11E-03
BREOT-S58+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	5.55E+00	7.95E+00	NA	NA	NA	NA	2.86E-02	9.24E+00	2.65E-01	1.03E-01	1.35E+02	6.27E-03	4.70E+00	1.10E-01	3.07E+00	2.04E-03
BREOT-N59+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	3.22E+01	4.61E+01	NA	NA	NA	NA	2.86E-02	5.36E+01	1.54E+00	1.03E-01	1.35E+02	3.64E-02	4.70E+00	1.10E-01	3.07E+00	1.19E-02
BREOT-N60+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.48E+01	2.12E+01	NA	NA	NA	NA	2.86E-02	2.46E+01	7.05E-01	1.03E-01	1.35E+02	1.67E-02	4.70E+00	1.10E-01	3.07E+00	5.44E-03
BREOT-S60+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.60E+01	2.30E+01	NA	NA	NA	NA	2.86E-02	2.67E+01	7.64E-01	1.03E-01	1.35E+02	1.81E-02	4.70E+00	1.10E-01	3.07E+00	5.90E-03
BREOT-S61+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	4.73E+00	6.78E+00	NA	NA	NA	NA	2.86E-02	7.88E+00	2.25E-01	1.03E-01	1.35E+02	5.34E-03	4.70E+00	1.10E-01	3.07E+00	1.74E-03
BREOT-N62+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	5.55E+00	7.95E+00	NA	NA	NA	NA	2.86E-02	9.24E+00	2.65E-01	1.03E-01	1.35E+02	6.27E-03	4.70E+00	1.10E-01	3.07E+00	2.04E-03
BREOT-S62+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N63+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	4.43E+01	6.35E+01	NA	NA	NA	NA	2.86E-02	7.37E+01	2.11E+00	1.03E-01	1.35E+02	5.00E-02	4.70E+00	1.10E-01	3.07E+00	1.63E-02
BREOT-S63+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N64+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.25E+01	1.79E+01	NA	NA	NA	NA	2.86E-02	2.09E+01	5.97E-01	1.03E-01	1.35E+02	1.41E-02	4.70E+00	1.10E-01	3.07E+00	4.61E-03
BREOT-S64+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.53E+01	2.19E+01	NA	NA	NA	NA	2.86E-02	2.55E+01	7.30E-01	1.03E-01	1.35E+02	1.73E-02	4.70E+00	1.10E-01	3.07E+00	5.64E-03
BREOT-S65+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	5.83E+00	8.35E+00	NA	NA	NA	NA	2.86E-02	9.71E+00	2.78E-01	1.03E-01	1.35E+02	6.58E-03	4.70E+00	1.10E-01	3.07E+00	2.15E-03
BREOT-N66+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.79E+01	2.57E+01	NA	NA	NA	NA	2.86E-02	2.99E+01	8.55E-01	1.03E-01	1.35E+02	2.02E-02	4.70E+00	1.10E-01	3.07E+00	6.60E-03
BREOT-S66+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	2.34E+01	3.34E+01	NA	NA	NA	NA	2.86E-02	3.89E+01	1.11E+00	1.03E-01	1.35E+02	2.64E-02	4.70E+00	1.10E-01	3.07E+00	8.59E-03
BREOT-N67+125 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	3.20E+01	4.58E+01	NA	NA	NA	NA	2.86E-02	5.32E+01	1.52E+00	1.03E-01	1.35E+02	3.61E-02	4.70E+00	1.10E-01	3.07E+00	1.18E-02
BREOT-S67+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.57E+01	2.25E+01	NA	NA	NA	NA	2.86E-02	2.62E+01	7.49E-01	1.03E-01	1.35E+02	1.77E-02	4.70E+00	1.10E-01	3.07E+00	5.78E-03
BREOT-N67+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	6.27E+01	8.98E+01	NA	NA	NA	NA	2.86E-02	1.04E+02	2.99E+00	1.03E-01	1.35E+02	7.08E-02	4.70E+00	1.10E-01	3.07E+00	2.31E-02
																					Maximum HQ (Outside Tailings)		**1.54E-01**

TABLE C-2A: ARSENIC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

Site Area (hectares) **18.41**

from dose parameters tables; from BAF table; linked to soil or sed concentration table (VLOOKUP)

calculated values; linked to TRV table (VLOOKUP) - should be same for all birds or mammals

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Red Fox (Carnivorous Mammal - Terrestrial)																							
Reference Sites																							
ACBG-1 (0-6")	1.72E-01	1.72E-01	4.84E-01	1.26E+01	2.16E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.60E+01	1.25E-01	1.36E-02	4.54E+00	6.85E-03	4.70E+00	1.10E-01	3.76E+00	1.82E-03
ACBG-2 (0-6")	1.72E-01	1.72E-01	4.84E-01	8.87E+00	1.52E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.83E+01	8.80E-02	1.36E-02	4.54E+00	4.83E-03	4.70E+00	1.10E-01	3.76E+00	1.28E-03
UBRBG-202 (0-6")	1.72E-01	1.72E-01	4.84E-01	6.74E+00	1.16E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.39E+01	6.69E-02	1.36E-02	4.54E+00	3.67E-03	4.70E+00	1.10E-01	3.76E+00	9.75E-04
UBRBG-204 (0-6")	1.72E-01	1.72E-01	4.84E-01	9.43E+00	1.62E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.95E+01	9.37E-02	1.36E-02	4.54E+00	5.13E-03	4.70E+00	1.10E-01	3.76E+00	1.37E-03
Inside Tailings																						**Minimum HQ (Reference Sites)**	**9.75E-04**
BREOT-S6-12.5 (0-6")	1.72E-01	1.72E-01	4.84E-01	9.63E+01	1.65E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.99E+02	9.57E-01	1.36E-02	4.54E+00	5.24E-02	4.70E+00	1.10E-01	3.76E+00	1.39E-02
BREOT-S2-12.5 (0-6")	1.72E-01	1.72E-01	4.84E-01	1.26E+02	2.15E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.59E+02	1.25E+00	1.36E-02	4.54E+00	6.83E-02	4.70E+00	1.10E-01	3.76E+00	1.82E-02
BREOT-S0-12.5 (0-6")	1.72E-01	1.72E-01	4.84E-01	6.18E+01	1.06E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.28E+02	6.14E-01	1.36E-02	4.54E+00	3.36E-02	4.70E+00	1.10E-01	3.76E+00	8.94E-03
BREOT-S1-12.5 (0-6")	1.72E-01	1.72E-01	4.84E-01	4.47E+01	7.68E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	9.25E+01	4.44E-01	1.36E-02	4.54E+00	2.43E-02	4.70E+00	1.10E-01	3.76E+00	6.48E-03
BREOT-S7-25 (0-6")	1.72E-01	1.72E-01	4.84E-01	5.79E+00	9.94E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.20E+01	5.75E-02	1.36E-02	4.54E+00	3.15E-03	4.70E+00	1.10E-01	3.76E+00	8.38E-04
BREOT-S8-12.5 (0-6")	1.72E-01	1.72E-01	4.84E-01	5.12E+01	8.78E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.06E+02	5.08E-01	1.36E-02	4.54E+00	2.78E-02	4.70E+00	1.10E-01	3.76E+00	7.40E-03
BREOT-S9-12.5 (0-6")	1.72E-01	1.72E-01	4.84E-01	4.88E+01	8.37E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.01E+02	4.84E-01	1.36E-02	4.54E+00	2.66E-02	4.70E+00	1.10E-01	3.76E+00	7.06E-03
BREOT-N10-12.5 (0-6")	1.72E-01	1.72E-01	4.84E-01	2.32E+02	3.98E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.80E+02	2.30E+00	1.36E-02	4.54E+00	1.26E-01	4.70E+00	1.10E-01	3.76E+00	3.36E-02
BREOT-N11-12.5 (0-6")	1.72E-01	1.72E-01	4.84E-01	1.18E+02	2.03E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.45E+02	1.18E+00	1.36E-02	4.54E+00	6.44E-02	4.70E+00	1.10E-01	3.76E+00	1.71E-02
BREOT-N11-125 (0-6")	1.72E-01	1.72E-01	4.84E-01	8.30E+01	1.42E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.72E+02	8.25E-01	1.36E-02	4.54E+00	4.52E-02	4.70E+00	1.10E-01	3.76E+00	1.20E-02
BREOT-S11-12 (0-6")	1.72E-01	1.72E-01	4.84E-01	1.36E+02	2.34E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.81E+02	1.35E+00	1.36E-02	4.54E+00	7.41E-02	4.70E+00	1.10E-01	3.76E+00	1.97E-02
BREOT-S11+63 (0-6")	1.72E-01	1.72E-01	4.84E-01	7.06E+01	1.21E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.46E+02	7.01E-01	1.36E-02	4.54E+00	3.84E-02	4.70E+00	1.10E-01	3.76E+00	1.02E-02
UBDT-TP-6 (0-2")	1.72E-01	1.72E-01	4.84E-01	3.41E+02	5.85E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	7.05E+02	3.38E+00	1.36E-02	4.54E+00	1.85E-01	4.70E+00	1.10E-01	3.76E+00	4.93E-02
UBDT-TP-6 (2-12")	1.72E-01	1.72E-01	4.84E-01	3.08E+02	5.29E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	6.37E+02	3.06E+00	1.36E-02	4.54E+00	1.68E-01	4.70E+00	1.10E-01	3.76E+00	4.46E-02
UBDT-TP-6 (12-24")	1.72E-01	1.72E-01	4.84E-01	2.49E+02	4.28E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.16E+02	2.48E+00	1.36E-02	4.54E+00	1.36E-01	4.70E+00	1.10E-01	3.76E+00	3.61E-02
UBDT-TP-6 (24-36")	1.72E-01	1.72E-01	4.84E-01	5.93E+01	1.02E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.23E+02	5.89E-01	1.36E-02	4.54E+00	3.23E-02	4.70E+00	1.10E-01	3.76E+00	8.59E-03
UBDT-TP-6 (36-48")	1.72E-01	1.72E-01	4.84E-01	8.71E+01	1.49E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.80E+02	8.65E-01	1.36E-02	4.54E+00	4.74E-02	4.70E+00	1.10E-01	3.76E+00	1.26E-02
UBDT-TP-6 (48-60")	1.72E-01	1.72E-01	4.84E-01	2.90E+01	4.97E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.99E+01	2.88E-01	1.36E-02	4.54E+00	1.58E-02	4.70E+00	1.10E-01	3.76E+00	4.19E-03
BREOT-N12-12.5 (0-6")	1.72E-01	1.72E-01	4.84E-01	5.58E+01	9.57E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.15E+02	5.54E-01	1.36E-02	4.54E+00	3.04E-02	4.70E+00	1.10E-01	3.76E+00	8.08E-03
BREOT-S12-12.5 (0-6")	1.72E-01	1.72E-01	4.84E-01	5.36E+01	9.19E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.11E+02	5.32E-01	1.36E-02	4.54E+00	2.92E-02	4.70E+00	1.10E-01	3.76E+00	7.76E-03
BREOT-S13-12.5 (0-6")	1.72E-01	1.72E-01	4.84E-01	1.16E+02	1.98E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.39E+02	1.15E+00	1.36E-02	4.54E+00	6.29E-02	4.70E+00	1.10E-01	3.76E+00	1.67E-02
BREOT-S14-12.5 (0-6")	1.72E-01	1.72E-01	4.84E-01	3.26E+01	5.59E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	6.74E+01	3.24E-01	1.36E-02	4.54E+00	1.77E-02	4.70E+00	1.10E-01	3.76E+00	4.72E-03
BREOT-N15-12.5 (0-6")	1.72E-01	1.72E-01	4.84E-01	1.32E+02	2.27E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.73E+02	1.31E+00	1.36E-02	4.54E+00	7.19E-02	4.70E+00	1.10E-01	3.76E+00	1.91E-02
BREOT-S15-12.5 (0-6")	1.72E-01	1.72E-01	4.84E-01	1.81E+02	3.11E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.74E+02	1.80E+00	1.36E-02	4.54E+00	9.85E-02	4.70E+00	1.10E-01	3.76E+00	2.62E-02
BREOT-N16-12.5 (0-6")	1.72E-01	1.72E-01	4.84E-01	1.06E+02	1.82E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.19E+02	1.05E+00	1.36E-02	4.54E+00	5.76E-02	4.70E+00	1.10E-01	3.76E+00	1.53E-02
BREOT-N16-25 (0-6")	1.72E-01	1.72E-01	4.84E-01	6.88E+00	1.18E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.42E+01	6.83E-02	1.36E-02	4.54E+00	3.74E-03	4.70E+00	1.10E-01	3.76E+00	9.96E-04
BREOT-S16-12.5 (0-6")	1.72E-01	1.72E-01	4.84E-01	7.16E+01	1.23E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.48E+02	7.10E-01	1.36E-02	4.54E+00	3.89E-02	4.70E+00	1.10E-01	3.76E+00	1.04E-02
BREOT-N17-12.5 (0-6")	1.72E-01	1.72E-01	4.84E-01	7.75E+01	1.33E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.60E+02	7.70E-01	1.36E-02	4.54E+00	4.22E-02	4.70E+00	1.10E-01	3.76E+00	1.12E-02
BREOT-S17-12.5 (0-6")	1.72E-01	1.72E-01	4.84E-01	3.24E+01	5.56E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	6.70E+01	3.22E-01	1.36E-02	4.54E+00	1.76E-02	4.70E+00	1.10E-01	3.76E+00	4.69E-03
BREOT-S17-25 (0-6")	1.72E-01	1.72E-01	4.84E-01	2.70E+01	4.64E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.59E+01	2.69E-01	1.36E-02	4.54E+00	1.47E-02	4.70E+00	1.10E-01	3.76E+00	3.91E-03
UBDT-TP-4 (0-2")	1.72E-01	1.72E-01	4.84E-01	8.51E+01	1.46E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.76E+02	8.45E-01	1.36E-02	4.54E+00	4.63E-02	4.70E+00	1.10E-01	3.76E+00	1.23E-02
UBDT-TP-4 (2-12")	1.72E-01	1.72E-01	4.84E-01	5.74E+01	9.85E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.19E+02	5.70E-01	1.36E-02	4.54E+00	3.12E-02	4.70E+00	1.10E-01	3.76E+00	8.31E-03
UBDT-TP-4 (12-24")	1.72E-01	1.72E-01	4.84E-01	5.06E+01	8.68E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.05E+02	5.02E-01	1.36E-02	4.54E+00	2.75E-02	4.70E+00	1.10E-01	3.76E+00	7.32E-03
UBDT-TP-4 (24-36")	1.72E-01	1.72E-01	4.84E-01	3.09E+01	5.30E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	6.38E+01	3.07E-01	1.36E-02	4.54E+00	1.68E-02	4.70E+00	1.10E-01	3.76E+00	4.47E-03
BREOT-N18-12.5 (0-6")	1.72E-01	1.72E-01	4.84E-01	1.01E+02	1.72E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.08E+02	9.98E-01	1.36E-02	4.54E+00	5.47E-02	4.70E+00	1.10E-01	3.76E+00	1.45E-02
BREOT-N18-25 (0-6")	1.72E-01	1.72E-01	4.84E-01	1.11E+01	1.90E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.29E+01	1.10E-01	1.36E-02	4.54E+00	6.02E-03	4.70E+00	1.10E-01	3.76E+00	1.60E-03
BREOT-S18-12.5 (0-6")	1.72E-01	1.72E-01	4.84E-01	5.07E+01	8.71E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.05E+02	5.04E-01	1.36E-02	4.54E+00	2.76E-02	4.70E+00	1.10E-01	3.76E+00	7.34E-03
BREOT-N19-10 (0-6")	1.72E-01	1.72E-01	4.84E-01	8.95E+01	1.54E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.85E+02	8.89E-01	1.36E-02	4.54E+00	4.87E-02	4.70E+00	1.10E-01	3.76E+00	1.30E-02
BREOT-S19-12.5 (0-6")	1.72E-01	1.72E-01	4.84E-01	3.63E+01	6.22E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	7.50E+01	3.60E-01	1.36E-02	4.54E+00	1.97E-02	4.70E+00	1.10E-01	3.76E+00	5.25E-03
UBDT-TP-5 (0-2")	1.72E-01	1.72E-01	4.84E-01	4.60E+01	7.90E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	9.52E+01	4.57E-01	1.36E-02	4.54E+00	2.51E-02	4.70E+00	1.10E-01	3.76E+00	6.66E-03
UBDT-TP-5 (2-12")	1.72E-01	1.72E-01	4.84E-01	4.47E+01	7.67E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	9.25E+01	4.44E-01	1.36E-02	4.54E+00	2.43E-02	4.70E+00	1.10E-01	3.76E+00	6.47E-03
UBDT-TP-5 (12-24")	1.72E-01	1.72E-01	4.84E-01	3.48E+01	5.97E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	7.20E+01	3.46E-01	1.36E-02	4.54E+00	1.89E-02	4.70E+00	1.10E-01	3.76E+00	5.04E-03
BREOT-N20-12.5 (0-6")	1.72E-01	1.72E-01	4.84E-01	1.18E+02	2.02E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.43E+02	1.17E+00	1.36E-02	4.54E+00	6.40E-02	4.70E+00	1.10E-01	3.76E+00	1.70E-02
UBDT-TP-3 (0-2")	1.72E-01	1.72E-01	4.84E-01	8.24E+01	1.41E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.70E+02	8.18E-01	1.36E-02	4.54E+00	4.48E-02	4.70E+00	1.10E-01	3.76E+00	1.19E-02
UBDT-TP-3 (2-12")	1.72E-01	1.72E-01	4.84E-01	7.94E+01	1.36E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.64E+02	7.89E-01	1.36E-02	4.54E+00	4.32E-02	4.70E+00	1.10E-01	3.76E+00	1.15E-02
UBDT-TP-3 (12-24")	1.72E-01	1.72E-01	4.84E-01	7.37E+01	1.26E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.52E+02	7.32E-01	1.36E-02	4.54E+00	4.01E-02	4.70E+00	1.10E-01	3.76E+00	1.07E-02
UBDT-TP-3 (24-36")	1.72E-01	1.72E-01	4.84E-01	6.59E+01	1.13E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.36E+02	6.54E-01	1.36E-02	4.54E+00	3.58E-02	4.70E+00	1.10E-01	3.76E+00	9.53E-03
UBDT-TP-3 (36-48")	1.72E-01	1.72E-01	4.84E-01	1.08E+02	1.85E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.23E+02	1.07E+00	1.36E-02	4.54E+00	5.88E-02	4.70E+00	1.10E-01	3.76E+00	1.56E-02
UBDT-TP-3 (48-60")	1.72E-01	1.72E-01	4.84E-01	2.24E+01	3.84E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.63E+01	2.22E-01	1.36E-02	4.54E+00	1.22E-02	4.70E+00	1.10E-01	3.76E+00	3.24E-03
BREOT-N21-12.5 (0-6")	1.72E-01	1.72E-01	4.84E-01	4.73E+01	8.11E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	9.77E+01	4.69E-01	1.36E-02	4.54E+00	2.57E-02	4.70E+00	1.10E-01	3.76E+00	6.84E-03
BREOT-N22-12.5 (0-6")	1.72E-01	1.72E-01	4.84E-01	8.94E+01	1.53E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.85E+02	8.88E-01	1.36E-02	4.54E+00	4.86E-02	4.70E+00	1.10E-01	3.76E+00	1.29E-02

TABLE C-2A: ARSENIC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **18.41**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Red Fox (Carnivorous Mammal - Terrestrial)																							
BREOT-N23-12.5 (0-6")	1.72E-01	1.72E-01	4.84E-01	9.63E+01	1.65E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.99E+02	9.56E-01	1.36E-02	4.54E+00	5.24E-02	4.70E+00	1.10E-01	3.76E+00	1.39E-02
BREOT-S23-12.5 (0-6")	1.72E-01	1.72E-01	4.84E-01	5.49E+01	9.43E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.14E+02	5.46E-01	1.36E-02	4.54E+00	2.99E-02	4.70E+00	1.10E-01	3.76E+00	7.95E-03
UBDT-TP-2 (0-2")	1.72E-01	1.72E-01	4.84E-01	1.07E+02	1.83E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.20E+02	1.06E+00	1.36E-02	4.54E+00	5.80E-02	4.70E+00	1.10E-01	3.76E+00	1.54E-02
UBDT-TP-2 (2-12")	1.72E-01	1.72E-01	4.84E-01	5.33E+01	9.15E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.10E+02	5.30E-01	1.36E-02	4.54E+00	2.90E-02	4.70E+00	1.10E-01	3.76E+00	7.72E-03
UBDT-TP-2 (12-24")	1.72E-01	1.72E-01	4.84E-01	1.48E+01	2.54E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.06E+01	1.47E-01	1.36E-02	4.54E+00	8.06E-03	4.70E+00	1.10E-01	3.76E+00	2.14E-03
UBDT-TP-2 (24-36")	1.72E-01	1.72E-01	4.84E-01	3.10E+01	5.33E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	6.42E+01	3.08E-01	1.36E-02	4.54E+00	1.69E-02	4.70E+00	1.10E-01	3.76E+00	4.49E-03
UBDT-TP-2 (36-48")	1.72E-01	1.72E-01	4.84E-01	3.41E+01	5.85E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	7.05E+01	3.39E-01	1.36E-02	4.54E+00	1.86E-02	4.70E+00	1.10E-01	3.76E+00	4.94E-03
BREOT-S24-12.5 (0-6")	1.72E-01	1.72E-01	4.84E-01	6.83E+01	1.17E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.41E+02	6.78E-01	1.36E-02	4.54E+00	3.72E-02	4.70E+00	1.10E-01	3.76E+00	9.89E-03
BREOT-N25-50 (0-6")	1.72E-01	1.72E-01	4.84E-01	1.63E+02	2.80E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.38E+02	1.62E+00	1.36E-02	4.54E+00	8.89E-02	4.70E+00	1.10E-01	3.76E+00	2.36E-02
BREOT-N25-95 (0-6")	1.72E-01	1.72E-01	4.84E-01	1.33E+02	2.28E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.75E+02	1.32E+00	1.36E-02	4.54E+00	7.24E-02	4.70E+00	1.10E-01	3.76E+00	1.93E-02
BREOT-S25-12.5 (0-6")	1.72E-01	1.72E-01	4.84E-01	7.73E+01	1.33E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.60E+02	7.67E-01	1.36E-02	4.54E+00	4.21E-02	4.70E+00	1.10E-01	3.76E+00	1.12E-02
BREOT-S25-40 (0-6")	1.72E-01	1.72E-01	4.84E-01	5.84E+01	1.00E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.21E+02	5.80E-01	1.36E-02	4.54E+00	3.18E-02	4.70E+00	1.10E-01	3.76E+00	8.45E-03
BREOT-N26A-25 (0-6")	1.72E-01	1.72E-01	4.84E-01	8.96E+00	1.54E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.85E+01	8.90E-02	1.36E-02	4.54E+00	4.88E-03	4.70E+00	1.10E-01	3.76E+00	1.30E-03
BREOT-N26B-25 (0-6")	1.72E-01	1.72E-01	4.84E-01	5.40E+01	9.26E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.12E+02	5.36E-01	1.36E-02	4.54E+00	2.94E-02	4.70E+00	1.10E-01	3.76E+00	7.81E-03
BREOT-N26-50 (0-6")	1.72E-01	1.72E-01	4.84E-01	1.20E+02	2.06E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.48E+02	1.19E+00	1.36E-02	4.54E+00	6.53E-02	4.70E+00	1.10E-01	3.76E+00	1.74E-02
BREOT-N26-75 (0-6")	1.72E-01	1.72E-01	4.84E-01	1.03E+02	1.76E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.12E+02	1.02E+00	1.36E-02	4.54E+00	5.58E-02	4.70E+00	1.10E-01	3.76E+00	1.49E-02
BREOT-S26-12.5 (0-6")	1.72E-01	1.72E-01	4.84E-01	4.93E+01	8.46E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.02E+02	4.90E-01	1.36E-02	4.54E+00	2.68E-02	4.70E+00	1.10E-01	3.76E+00	7.14E-03
BREOT-S26-40 (0-6")	1.72E-01	1.72E-01	4.84E-01	7.11E+01	1.22E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.47E+02	7.05E-01	1.36E-02	4.54E+00	3.87E-02	4.70E+00	1.10E-01	3.76E+00	1.03E-02
BREOT-N27-30 (0-6")	1.72E-01	1.72E-01	4.84E-01	2.01E+02	3.44E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.15E+02	1.99E+00	1.36E-02	4.54E+00	1.09E-01	4.70E+00	1.10E-01	3.76E+00	2.91E-02
BREOT-N27-75 (0-6")	1.72E-01	1.72E-01	4.84E-01	1.99E+02	3.42E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.12E+02	1.98E+00	1.36E-02	4.54E+00	1.08E-01	4.70E+00	1.10E-01	3.76E+00	2.88E-02
BREOT-S27-12.5 (0-6")	1.72E-01	1.72E-01	4.84E-01	6.20E+01	1.06E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.28E+02	6.16E-01	1.36E-02	4.54E+00	3.37E-02	4.70E+00	1.10E-01	3.76E+00	8.97E-03
BREOT-N28-110 (0-6")	1.72E-01	1.72E-01	4.84E-01	5.59E+01	9.58E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.15E+02	5.55E-01	1.36E-02	4.54E+00	3.04E-02	4.70E+00	1.10E-01	3.76E+00	8.09E-03
BREOT-N28-55 (0-6")	1.72E-01	1.72E-01	4.84E-01	5.93E+02	1.02E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.22E+03	5.88E+00	1.36E-02	4.54E+00	3.22E-01	4.70E+00	1.10E-01	3.76E+00	8.58E-02
BREOT-S28-12.5 (0-6")	1.72E-01	1.72E-01	4.84E-01	3.85E+01	6.60E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	7.95E+01	3.82E-01	1.36E-02	4.54E+00	2.09E-02	4.70E+00	1.10E-01	3.76E+00	5.57E-03
UBDT-TP-1 (0-2")	1.72E-01	1.72E-01	4.84E-01	1.91E+02	3.27E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.94E+02	1.89E+00	1.36E-02	4.54E+00	1.04E-01	4.70E+00	1.10E-01	3.76E+00	2.76E-02
UBDT-TP-1 (2-12")	1.72E-01	1.72E-01	4.84E-01	3.32E+02	5.70E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	6.87E+02	3.30E+00	1.36E-02	4.54E+00	1.81E-01	4.70E+00	1.10E-01	3.76E+00	4.81E-02
UBDT-TP-1 (12-24")	1.72E-01	1.72E-01	4.84E-01	1.05E+02	1.80E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.17E+02	1.04E+00	1.36E-02	4.54E+00	5.70E-02	4.70E+00	1.10E-01	3.76E+00	1.52E-02
UBDT-TP-1 (24-36")	1.72E-01	1.72E-01	4.84E-01	8.01E+01	1.37E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.66E+02	7.95E-01	1.36E-02	4.54E+00	4.36E-02	4.70E+00	1.10E-01	3.76E+00	1.16E-02
UBDT-TP-1 (36-48")	1.72E-01	1.72E-01	4.84E-01	5.69E+00	9.76E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.18E+01	5.65E-02	1.36E-02	4.54E+00	3.09E-03	4.70E+00	1.10E-01	3.76E+00	8.23E-04
UBDT-TP-1 (48-60")	1.72E-01	1.72E-01	4.84E-01	6.09E+00	1.04E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.26E+01	6.05E-02	1.36E-02	4.54E+00	3.31E-03	4.70E+00	1.10E-01	3.76E+00	8.81E-04
BREOT-N29-30 (0-6")	1.72E-01	1.72E-01	4.84E-01	3.03E+02	5.19E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	6.25E+02	3.00E+00	1.36E-02	4.54E+00	1.65E-01	4.70E+00	1.10E-01	3.76E+00	4.38E-02
BREOT-S29-12.5 (0-6")	1.72E-01	1.72E-01	4.84E-01	7.36E+01	1.26E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.52E+02	7.31E-01	1.36E-02	4.54E+00	4.00E-02	4.70E+00	1.10E-01	3.76E+00	1.06E-02
BREOT-N30-12.5 (0-6")	1.72E-01	1.72E-01	4.84E-01	5.00E+01	8.58E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.03E+02	4.96E-01	1.36E-02	4.54E+00	2.72E-02	4.70E+00	1.10E-01	3.76E+00	7.23E-03
BREOT-S30-12.5 (0-6")	1.72E-01	1.72E-01	4.84E-01	7.11E+01	1.22E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.47E+02	7.06E-01	1.36E-02	4.54E+00	3.87E-02	4.70E+00	1.10E-01	3.76E+00	1.03E-02
BREOT-N31-12.5 (0-6")	1.72E-01	1.72E-01	4.84E-01	6.61E+01	1.13E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.37E+02	6.57E-01	1.36E-02	4.54E+00	3.60E-02	4.70E+00	1.10E-01	3.76E+00	9.57E-03
BREOT-S31-25 (0-6")	1.72E-01	1.72E-01	4.84E-01	4.02E+01	6.90E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	8.32E+01	4.00E-01	1.36E-02	4.54E+00	2.19E-02	4.70E+00	1.10E-01	3.76E+00	5.82E-03
BREOT-S31-5 (0-6")	1.72E-01	1.72E-01	4.84E-01	8.18E+01	1.40E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.69E+02	8.12E-01	1.36E-02	4.54E+00	4.45E-02	4.70E+00	1.10E-01	3.76E+00	1.18E-02
BREOT-N32-12.5 (0-6")	1.72E-01	1.72E-01	4.84E-01	1.47E+02	2.52E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.03E+02	1.46E+00	1.36E-02	4.54E+00	7.99E-02	4.70E+00	1.10E-01	3.76E+00	2.12E-02
BREOT-S32-6 (0-6")	1.72E-01	1.72E-01	4.84E-01	8.57E+01	1.47E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.77E+02	8.51E-01	1.36E-02	4.54E+00	4.66E-02	4.70E+00	1.10E-01	3.76E+00	1.24E-02
BREOT-N33-12.5 (0-6")	1.72E-01	1.72E-01	4.84E-01	1.40E+02	2.40E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.90E+02	1.39E+00	1.36E-02	4.54E+00	7.63E-02	4.70E+00	1.10E-01	3.76E+00	2.03E-02
BREOT-S33-12.5 (0-6")	1.72E-01	1.72E-01	4.84E-01	7.06E+00	1.21E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.46E+01	7.01E-02	1.36E-02	4.54E+00	3.84E-03	4.70E+00	1.10E-01	3.76E+00	1.02E-03
BREOT-N35-12.5 (0-6")	1.72E-01	1.72E-01	4.84E-01	3.82E+01	6.56E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	7.90E+01	3.80E-01	1.36E-02	4.54E+00	2.08E-02	4.70E+00	1.10E-01	3.76E+00	5.53E-03
BREOT-S35-12.5 (0-6")	1.72E-01	1.72E-01	4.84E-01	9.07E+01	1.56E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.87E+02	9.00E-01	1.36E-02	4.54E+00	4.93E-02	4.70E+00	1.10E-01	3.76E+00	1.31E-02
BREOT-N36-12.5 (0-6")	1.72E-01	1.72E-01	4.84E-01	7.47E+01	1.28E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.54E+02	7.42E-01	1.36E-02	4.54E+00	4.06E-02	4.70E+00	1.10E-01	3.76E+00	1.08E-02
BREOT-S36-12.5 (0-6")	1.72E-01	1.72E-01	4.84E-01	7.19E+01	1.23E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.49E+02	7.14E-01	1.36E-02	4.54E+00	3.91E-02	4.70E+00	1.10E-01	3.76E+00	1.04E-02
BREOT-N37-12.5 (0-6")	1.72E-01	1.72E-01	4.84E-01	1.07E+02	1.84E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.21E+02	1.06E+00	1.36E-02	4.54E+00	5.82E-02	4.70E+00	1.10E-01	3.76E+00	1.55E-02
BREOT-S37-12.5 (0-6")	1.72E-01	1.72E-01	4.84E-01	5.18E+01	8.89E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.07E+02	5.15E-01	1.36E-02	4.54E+00	2.82E-02	4.70E+00	1.10E-01	3.76E+00	7.50E-03
BREOT-N38-12.5 (0-6")	1.72E-01	1.72E-01	4.84E-01	4.95E+01	8.49E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.02E+02	4.91E-01	1.36E-02	4.54E+00	2.69E-02	4.70E+00	1.10E-01	3.76E+00	7.16E-03
BREOT-S38-12.5 (0-6")	1.72E-01	1.72E-01	4.84E-01	9.76E+01	1.67E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.02E+02	9.69E-01	1.36E-02	4.54E+00	5.31E-02	4.70E+00	1.10E-01	3.76E+00	1.41E-02
BREOT-N39-12.5 (0-6")	1.72E-01	1.72E-01	4.84E-01	1.21E+02	2.07E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.50E+02	1.20E+00	1.36E-02	4.54E+00	6.58E-02	4.70E+00	1.10E-01	3.76E+00	1.75E-02
BREOT-S39-12.5 (0-6")	1.72E-01	1.72E-01	4.84E-01	7.65E+01	1.31E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.58E+02	7.60E-01	1.36E-02	4.54E+00	4.16E-02	4.70E+00	1.10E-01	3.76E+00	1.11E-02
BREOT-N40-12.5 (0-6")	1.72E-01	1.72E-01	4.84E-01	7.35E+01	1.26E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.52E+02	7.30E-01	1.36E-02	4.54E+00	4.00E-02	4.70E+00	1.10E-01	3.76E+00	1.06E-02
BREOT-S40-14 (0-6")	1.72E-01	1.72E-01	4.84E-01	1.28E+02	2.19E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.64E+02	1.27E+00	1.36E-02	4.54E+00	6.95E-02	4.70E+00	1.10E-01	3.76E+00	1.85E-02
BREOT-N41-12.5 (0-6")	1.72E-01	1.72E-01	4.84E-01	1.36E+01	2.33E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.81E+01	1.35E-01	1.36E-02	4.54E+00	7.40E-03	4.70E+00	1.10E-01	3.76E+00	1.97E-03
BREOT-S41-12.5 (0-6")	1.72E-01	1.72E-01	4.84E-01	1.60E+02	2.74E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.31E+02	1.59E+00	1.36E-02	4.54E+00	8.71E-02	4.70E+00	1.10E-01	3.76E+00	2.32E-02

TABLE C-2A: ARSENIC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **18.41**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Red Fox (Carnivorous Mammal - Terrestrial)																							
BREOT-N42-35 (0-6")	1.72E-01	1.72E-01	4.84E-01	5.74E+01	9.84E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.19E+02	5.70E-01	1.36E-02	4.54E+00	3.12E-02	4.70E+00	1.10E-01	3.76E+00	8.30E-03
BREOT-S42-25 (0-6")	1.72E-01	1.72E-01	4.84E-01	9.59E+01	1.65E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.98E+02	9.52E-01	1.36E-02	4.54E+00	5.22E-02	4.70E+00	1.10E-01	3.76E+00	1.39E-02
BREOT-N43-12.5 (0-6")	1.72E-01	1.72E-01	4.84E-01	8.17E+01	1.40E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.69E+02	8.11E-01	1.36E-02	4.54E+00	4.45E-02	4.70E+00	1.10E-01	3.76E+00	1.18E-02
BREOT-S43-12.5 (0-6")	1.72E-01	1.72E-01	4.84E-01	7.86E+01	1.35E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.62E+02	7.80E-01	1.36E-02	4.54E+00	4.28E-02	4.70E+00	1.10E-01	3.76E+00	1.14E-02
BREOT-N44-30 (0-6")	1.72E-01	1.72E-01	4.84E-01	5.62E+01	9.65E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.16E+02	5.58E-01	1.36E-02	4.54E+00	3.06E-02	4.70E+00	1.10E-01	3.76E+00	8.14E-03
BREOT-S44-12.5 (0-6")	1.72E-01	1.72E-01	4.84E-01	6.76E+01	1.16E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.40E+02	6.72E-01	1.36E-02	4.54E+00	3.68E-02	4.70E+00	1.10E-01	3.76E+00	9.79E-03
BREOT-N45-12.5 (0-6")	1.72E-01	1.72E-01	4.84E-01	7.97E+01	1.37E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.65E+02	7.91E-01	1.36E-02	4.54E+00	4.33E-02	4.70E+00	1.10E-01	3.76E+00	1.15E-02
BREOT-N43-12.5 (0-6")	1.72E-01	1.72E-01	4.84E-01	8.17E+01	1.40E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.69E+02	8.11E-01	1.36E-02	4.54E+00	4.45E-02	4.70E+00	1.10E-01	3.76E+00	1.18E-02
BREOT-S45-6 (0-6")	1.72E-01	1.72E-01	4.84E-01	6.36E+01	1.09E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.32E+02	6.32E-01	1.36E-02	4.54E+00	3.46E-02	4.70E+00	1.10E-01	3.76E+00	9.21E-03
BREOT-N46-12.5 (0-6")	1.72E-01	1.72E-01	4.84E-01	3.19E+01	5.48E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	6.60E+01	3.17E-01	1.36E-02	4.54E+00	1.74E-02	4.70E+00	1.10E-01	3.76E+00	4.62E-03
BREOT-S46-12.5 (0-6")	1.72E-01	1.72E-01	4.84E-01	3.10E+01	5.31E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	6.40E+01	3.08E-01	1.36E-02	4.54E+00	1.69E-02	4.70E+00	1.10E-01	3.76E+00	4.48E-03
BREOT-S46-40 (0-6")	1.72E-01	1.72E-01	4.84E-01	4.54E+01	7.79E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	9.38E+01	4.51E-01	1.36E-02	4.54E+00	2.47E-02	4.70E+00	1.10E-01	3.76E+00	6.57E-03
BREOT-N47-12.5 (0-6")	1.72E-01	1.72E-01	4.84E-01	4.68E+01	8.02E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	9.66E+01	4.64E-01	1.36E-02	4.54E+00	2.54E-02	4.70E+00	1.10E-01	3.76E+00	6.77E-03
BREOT-S47-999 (0-6")	1.72E-01	1.72E-01	4.84E-01	7.38E+01	1.27E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.52E+02	7.32E-01	1.36E-02	4.54E+00	4.01E-02	4.70E+00	1.10E-01	3.76E+00	1.07E-02
BREOT-S48-12.5 (0-6")	1.72E-01	1.72E-01	4.84E-01	2.25E+01	3.86E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.65E+01	2.24E-01	1.36E-02	4.54E+00	1.23E-02	4.70E+00	1.10E-01	3.76E+00	3.26E-03
BREOT-S49-2.5 (0-6")	1.72E-01	1.72E-01	4.84E-01	2.67E+01	4.59E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.53E+01	2.65E-01	1.36E-02	4.54E+00	1.45E-02	4.70E+00	1.10E-01	3.76E+00	3.87E-03
BREOT-S50-12.5 (0-6")	1.72E-01	1.72E-01	4.84E-01	8.36E+00	1.43E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.73E+01	8.30E-02	1.36E-02	4.54E+00	4.55E-03	4.70E+00	1.10E-01	3.76E+00	1.21E-03
BREOT-S50-25 (0-6")	1.72E-01	1.72E-01	4.84E-01	1.26E+01	2.16E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.61E+01	1.25E-01	1.36E-02	4.54E+00	6.86E-03	4.70E+00	1.10E-01	3.76E+00	1.82E-03
BREOT-N52-60 (0-6")	1.72E-01	1.72E-01	4.84E-01	1.03E+02	1.78E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.14E+02	1.03E+00	1.36E-02	4.54E+00	5.63E-02	4.70E+00	1.10E-01	3.76E+00	1.50E-02
BREOT-S52-12.5 (0-6")	1.72E-01	1.72E-01	4.84E-01	4.68E+01	8.02E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	9.67E+01	4.64E-01	1.36E-02	4.54E+00	2.54E-02	4.70E+00	1.10E-01	3.76E+00	6.77E-03
BREOT-S53-12.5 (0-6")	1.72E-01	1.72E-01	4.84E-01	1.39E+01	2.38E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.87E+01	1.38E-01	1.36E-02	4.54E+00	7.55E-03	4.70E+00	1.10E-01	3.76E+00	2.01E-03
BREOT-S54-12.5 (0-6")	1.72E-01	1.72E-01	4.84E-01	1.02E+01	1.75E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.11E+01	1.01E-01	1.36E-02	4.54E+00	5.55E-03	4.70E+00	1.10E-01	3.76E+00	1.48E-03
BREOT-N55-12.5 (0-6")	1.72E-01	1.72E-01	4.84E-01	9.03E+01	1.55E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.87E+02	8.97E-01	1.36E-02	4.54E+00	4.91E-02	4.70E+00	1.10E-01	3.76E+00	1.31E-02
BREOT-S55-12.5 (0-6")	1.72E-01	1.72E-01	4.84E-01	3.14E+01	5.38E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	6.49E+01	3.12E-01	1.36E-02	4.54E+00	1.71E-02	4.70E+00	1.10E-01	3.76E+00	4.54E-03
BREOT-N56-12.5 (0-6")	1.72E-01	1.72E-01	4.84E-01	6.13E+01	1.05E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.27E+02	6.09E-01	1.36E-02	4.54E+00	3.34E-02	4.70E+00	1.10E-01	3.76E+00	8.87E-03
BREOT-S56-12.5 (0-6")	1.72E-01	1.72E-01	4.84E-01	1.33E+01	2.28E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.74E+01	1.32E-01	1.36E-02	4.54E+00	7.22E-03	4.70E+00	1.10E-01	3.76E+00	1.92E-03
BREOT-N57-12.5 (0-6")	1.72E-01	1.72E-01	4.84E-01	5.95E+01	1.02E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.23E+02	5.91E-01	1.36E-02	4.54E+00	3.24E-02	4.70E+00	1.10E-01	3.76E+00	8.62E-03
BREOT-S57-12.5 (0-6")	1.72E-01	1.72E-01	4.84E-01	3.48E+01	5.98E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	7.20E+01	3.46E-01	1.36E-02	4.54E+00	1.90E-02	4.70E+00	1.10E-01	3.76E+00	5.04E-03
BREOT-N58-12.5 (0-6")	1.72E-01	1.72E-01	4.84E-01	2.54E+01	4.36E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.25E+01	2.52E-01	1.36E-02	4.54E+00	1.38E-02	4.70E+00	1.10E-01	3.76E+00	3.68E-03
BREOT-S58-12 (0-6")	1.72E-01	1.72E-01	4.84E-01	4.00E+01	6.86E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	8.27E+01	3.97E-01	1.36E-02	4.54E+00	2.18E-02	4.70E+00	1.10E-01	3.76E+00	5.79E-03
BREOT-N59-18 (0-6")	1.72E-01	1.72E-01	4.84E-01	4.44E+01	7.62E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	9.18E+01	4.41E-01	1.36E-02	4.54E+00	2.42E-02	4.70E+00	1.10E-01	3.76E+00	6.43E-03
BREOT-N60-12.5 (0-6")	1.72E-01	1.72E-01	4.84E-01	1.26E+01	2.16E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.60E+01	1.25E-01	1.36E-02	4.54E+00	6.84E-03	4.70E+00	1.10E-01	3.76E+00	1.82E-03
BREOT-S60-12.5 (0-6")	1.72E-01	1.72E-01	4.84E-01	3.85E+01	6.60E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	7.95E+01	3.82E-01	1.36E-02	4.54E+00	2.09E-02	4.70E+00	1.10E-01	3.76E+00	5.57E-03
BREOT-S61-12.5 (0-6")	1.72E-01	1.72E-01	4.84E-01	2.16E+01	3.71E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.47E+01	2.15E-01	1.36E-02	4.54E+00	1.18E-02	4.70E+00	1.10E-01	3.76E+00	3.13E-03
BREOT-N62-12.5 (0-6")	1.72E-01	1.72E-01	4.84E-01	4.38E+00	7.51E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	9.05E+00	4.35E-02	1.36E-02	4.54E+00	2.38E-03	4.70E+00	1.10E-01	3.76E+00	6.34E-04
BREOT-S62-12.5 (0-6")	1.72E-01	1.72E-01	4.84E-01	4.94E+01	8.47E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.02E+02	4.90E-01	1.36E-02	4.54E+00	2.69E-02	4.70E+00	1.10E-01	3.76E+00	7.15E-03
BREOT-S63-12.5 (0-6")	1.72E-01	1.72E-01	4.84E-01	3.04E+01	5.22E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	6.29E+01	3.02E-01	1.36E-02	4.54E+00	1.65E-02	4.70E+00	1.10E-01	3.76E+00	4.40E-03
BREOT-N64-12.5 (0-6")	1.72E-01	1.72E-01	4.84E-01	1.91E+01	3.28E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.96E+01	1.90E-01	1.36E-02	4.54E+00	1.04E-02	4.70E+00	1.10E-01	3.76E+00	2.77E-03
BREOT-N64-20 (0-6")	1.72E-01	1.72E-01	4.84E-01	2.36E+01	4.06E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.89E+01	2.35E-01	1.36E-02	4.54E+00	1.29E-02	4.70E+00	1.10E-01	3.76E+00	3.42E-03
BREOT-S64-12.5 (0-6")	1.72E-01	1.72E-01	4.84E-01	3.03E+01	5.19E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	6.25E+01	3.00E-01	1.36E-02	4.54E+00	1.65E-02	4.70E+00	1.10E-01	3.76E+00	4.38E-03
BREOT-N65-12.5 (0-6")	1.72E-01	1.72E-01	4.84E-01	1.36E+01	2.33E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.81E+01	1.35E-01	1.36E-02	4.54E+00	7.40E-03	4.70E+00	1.10E-01	3.76E+00	1.97E-03
BREOT-S65-12.5 (0-6")	1.72E-01	1.72E-01	4.84E-01	5.86E+01	1.01E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.21E+02	5.82E-01	1.36E-02	4.54E+00	3.19E-02	4.70E+00	1.10E-01	3.76E+00	8.48E-03
BREOT-N66-5 (0-6")	1.72E-01	1.72E-01	4.84E-01	4.77E+01	8.18E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	9.86E+01	4.74E-01	1.36E-02	4.54E+00	2.60E-02	4.70E+00	1.10E-01	3.76E+00	6.90E-03
BREOT-S66-12.5 (0-6")	1.72E-01	1.72E-01	4.84E-01	3.36E+01	5.76E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	6.95E+01	3.34E-01	1.36E-02	4.54E+00	1.83E-02	4.70E+00	1.10E-01	3.76E+00	4.86E-03
BREOT-N67-12.5 (0-6")	1.72E-01	1.72E-01	4.84E-01	4.71E+01	8.09E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	9.75E+01	4.68E-01	1.36E-02	4.54E+00	2.57E-02	4.70E+00	1.10E-01	3.76E+00	6.82E-03
BREOT-S67-12.5 (0-6")	1.72E-01	1.72E-01	4.84E-01	6.13E+00	1.05E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.27E+01	6.09E-02	1.36E-02	4.54E+00	3.34E-03	4.70E+00	1.10E-01	3.76E+00	8.87E-04
At Edge of Tailings																						**Maximum HQ (Inside Tailings)**	**8.58E-02**
BREOT-S0-0 (06)	1.72E-01	1.72E-01	4.84E-01	3.81E+01	6.53E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	7.87E+01	3.78E-01	1.36E-02	4.54E+00	2.07E-02	4.70E+00	1.10E-01	3.76E+00	5.51E-03
BREOT-S1-0 (0-6")	1.72E-01	1.72E-01	4.84E-01	1.16E+02	1.98E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.39E+02	1.15E+00	1.36E-02	4.54E+00	6.29E-02	4.70E+00	1.10E-01	3.76E+00	1.67E-02
BREOT-S2-0 (0-6")	1.72E-01	1.72E-01	4.84E-01	3.30E+01	5.65E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	6.81E+01	3.27E-01	1.36E-02	4.54E+00	1.79E-02	4.70E+00	1.10E-01	3.76E+00	4.77E-03
BREOT-S3-0 (0-6")	1.72E-01	1.72E-01	4.84E-01	1.29E+02	2.22E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.67E+02	1.28E+00	1.36E-02	4.54E+00	7.03E-02	4.70E+00	1.10E-01	3.76E+00	1.87E-02
BREOT-S4-0 (0-6")	1.72E-01	1.72E-01	4.84E-01	1.17E+02	2.01E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.42E+02	1.16E+00	1.36E-02	4.54E+00	6.38E-02	4.70E+00	1.10E-01	3.76E+00	1.70E-02
BREOT-S6-0 (0-6")	1.72E-01	1.72E-01	4.84E-01	1.41E+02	2.41E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.91E+02	1.40E+00	1.36E-02	4.54E+00	7.65E-02	4.70E+00	1.10E-01	3.76E+00	2.04E-02
BREOT-S7-0 (0-6")	1.72E-01	1.72E-01	4.84E-01	8.41E+01	1.44E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.74E+02	8.35E-01	1.36E-02	4.54E+00	4.57E-02	4.70E+00	1.10E-01	3.76E+00	1.22E-02
BREOT-S8-0 (0-6")	1.72E-01	1.72E-01	4.84E-01	2.51E+01	4.31E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.20E+01	2.50E-01	1.36E-02	4.54E+00	1.37E-02	4.70E+00	1.10E-01	3.76E+00	3.64E-03

TABLE C-2A: ARSENIC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 18.41

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Red Fox (Carnivorous Mammal - Terrestrial)																							
BREOT-S9-0 (0-6")	1.72E-01	1.72E-01	4.84E-01	5.76E+01	9.88E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.19E+02	5.72E-01	1.36E-02	4.54E+00	3.13E-02	4.70E+00	1.10E-01	3.76E+00	8.33E-03
BREOT-N10-0 (0-6")	1.72E-01	1.72E-01	4.84E-01	5.15E+02	8.84E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.07E+03	5.12E+00	1.36E-02	4.54E+00	2.80E-01	4.70E+00	1.10E-01	3.76E+00	7.46E-02
BREOT-N11-0 (0-6")	1.72E-01	1.72E-01	4.84E-01	1.41E+02	2.42E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.92E+02	1.40E+00	1.36E-02	4.54E+00	7.69E-02	4.70E+00	1.10E-01	3.76E+00	2.05E-02
BREOT-S11-0 (0-6")	1.72E-01	1.72E-01	4.84E-01	4.88E+01	8.38E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.01E+02	4.85E-01	1.36E-02	4.54E+00	2.66E-02	4.70E+00	1.10E-01	3.76E+00	7.07E-03
BREOT-N12-0 (0-6")	1.72E-01	1.72E-01	4.84E-01	5.30E+01	9.10E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.10E+02	5.27E-01	1.36E-02	4.54E+00	2.89E-02	4.70E+00	1.10E-01	3.76E+00	7.68E-03
BREOT-S12-0 (0-6")	1.72E-01	1.72E-01	4.84E-01	5.34E+01	9.16E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.10E+02	5.30E-01	1.36E-02	4.54E+00	2.90E-02	4.70E+00	1.10E-01	3.76E+00	7.72E-03
BREOT-N13-0 (0-6")	1.72E-01	1.72E-01	4.84E-01	6.08E+02	1.04E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.26E+03	6.03E+00	1.36E-02	4.54E+00	3.31E-01	4.70E+00	1.10E-01	3.76E+00	8.79E-02
BREOT-S13-0 (0-6")	1.72E-01	1.72E-01	4.84E-01	8.77E+00	1.51E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.81E+01	8.71E-02	1.36E-02	4.54E+00	4.77E-03	4.70E+00	1.10E-01	3.76E+00	1.27E-03
BREOT-N14-0 (0-6")	1.72E-01	1.72E-01	4.84E-01	7.96E+01	1.36E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.64E+02	7.90E-01	1.36E-02	4.54E+00	4.33E-02	4.70E+00	1.10E-01	3.76E+00	1.15E-02
BREOT-S14-0 (0-6")	1.72E-01	1.72E-01	4.84E-01	3.43E+02	5.88E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	7.08E+02	3.40E+00	1.36E-02	4.54E+00	1.86E-01	4.70E+00	1.10E-01	3.76E+00	4.96E-02
BREOT-N15-0 (0-6")	1.72E-01	1.72E-01	4.84E-01	1.56E+02	2.68E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.23E+02	1.55E+00	1.36E-02	4.54E+00	8.50E-02	4.70E+00	1.10E-01	3.76E+00	2.26E-02
BREOT-N16-0 (0-6")	1.72E-01	1.72E-01	4.84E-01	9.78E+01	1.68E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.02E+02	9.71E-01	1.36E-02	4.54E+00	5.32E-02	4.70E+00	1.10E-01	3.76E+00	1.41E-02
BREOT-S16-0 (0-6")	1.72E-01	1.72E-01	4.84E-01	1.57E+01	2.69E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.24E+01	1.56E-01	1.36E-02	4.54E+00	8.53E-03	4.70E+00	1.10E-01	3.76E+00	2.27E-03
BREOT-N17-0 (0-6")	1.72E-01	1.72E-01	4.84E-01	9.37E+01	1.61E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.94E+02	9.30E-01	1.36E-02	4.54E+00	5.10E-02	4.70E+00	1.10E-01	3.76E+00	1.36E-02
BREOT-S17-0 (0-6")	1.72E-01	1.72E-01	4.84E-01	1.06E+02	1.82E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.20E+02	1.05E+00	1.36E-02	4.54E+00	5.78E-02	4.70E+00	1.10E-01	3.76E+00	1.54E-02
BREOT-N18-0 (0-6")	1.72E-01	1.72E-01	4.84E-01	8.19E+01	1.40E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.69E+02	8.13E-01	1.36E-02	4.54E+00	4.46E-02	4.70E+00	1.10E-01	3.76E+00	1.19E-02
BREOT-S18-0 (0-6")	1.72E-01	1.72E-01	4.84E-01	2.40E+02	4.11E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.96E+02	2.38E+00	1.36E-02	4.54E+00	1.31E-01	4.70E+00	1.10E-01	3.76E+00	3.47E-02
BREOT-N19-0 (0-6")	1.72E-01	1.72E-01	4.84E-01	1.17E+02	2.01E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.42E+02	1.16E+00	1.36E-02	4.54E+00	6.37E-02	4.70E+00	1.10E-01	3.76E+00	1.69E-02
BREOT-S19-0 (0-6")	1.72E-01	1.72E-01	4.84E-01	2.92E+01	5.01E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	6.03E+01	2.90E-01	1.36E-02	4.54E+00	1.59E-02	4.70E+00	1.10E-01	3.76E+00	4.22E-03
BREOT-N20-0 (0-6")	1.72E-01	1.72E-01	4.84E-01	8.34E+01	1.43E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.72E+02	8.28E-01	1.36E-02	4.54E+00	4.54E-02	4.70E+00	1.10E-01	3.76E+00	1.21E-02
BREOT-S20-0 (0-6")	1.72E-01	1.72E-01	4.84E-01	2.60E+01	4.46E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.38E+01	2.58E-01	1.36E-02	4.54E+00	1.41E-02	4.70E+00	1.10E-01	3.76E+00	3.76E-03
BREOT-N21-0 (0-6")	1.72E-01	1.72E-01	4.84E-01	2.33E+02	3.99E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.81E+02	2.31E+00	1.36E-02	4.54E+00	1.27E-01	4.70E+00	1.10E-01	3.76E+00	3.37E-02
BREOT-S21-0 (0-6")	1.72E-01	1.72E-01	4.84E-01	8.92E+01	1.53E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.84E+02	8.86E-01	1.36E-02	4.54E+00	4.85E-02	4.70E+00	1.10E-01	3.76E+00	1.29E-02
BREOT-N22-0 (0-6")	1.72E-01	1.72E-01	4.84E-01	1.01E+02	1.72E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.08E+02	9.98E-01	1.36E-02	4.54E+00	5.47E-02	4.70E+00	1.10E-01	3.76E+00	1.45E-02
BREOT-S22-0 (0-6")	1.72E-01	1.72E-01	4.84E-01	8.99E+01	1.54E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.86E+02	8.92E-01	1.36E-02	4.54E+00	4.89E-02	4.70E+00	1.10E-01	3.76E+00	1.30E-02
BREOT-N23-0 (0-6")	1.72E-01	1.72E-01	4.84E-01	1.00E+02	1.72E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.08E+02	9.97E-01	1.36E-02	4.54E+00	5.47E-02	4.70E+00	1.10E-01	3.76E+00	1.45E-02
BREOT-S23-0 (0-6")	1.72E-01	1.72E-01	4.84E-01	1.14E+02	1.96E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.36E+02	1.13E+00	1.36E-02	4.54E+00	6.21E-02	4.70E+00	1.10E-01	3.76E+00	1.65E-02
BREOT-N24-0 (0-6")	1.72E-01	1.72E-01	4.84E-01	1.12E+02	1.92E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.31E+02	1.11E+00	1.36E-02	4.54E+00	6.09E-02	4.70E+00	1.10E-01	3.76E+00	1.62E-02
BREOT-S24-0 (0-6")	1.72E-01	1.72E-01	4.84E-01	7.10E+01	1.22E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.47E+02	7.05E-01	1.36E-02	4.54E+00	3.86E-02	4.70E+00	1.10E-01	3.76E+00	1.03E-02
BREOT-N25-0 (0-6")	1.72E-01	1.72E-01	4.84E-01	1.06E+02	1.82E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.19E+02	1.05E+00	1.36E-02	4.54E+00	5.78E-02	4.70E+00	1.10E-01	3.76E+00	1.54E-02
BREOT-S25-0 (0-6")	1.72E-01	1.72E-01	4.84E-01	6.25E+01	1.07E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.29E+02	6.21E-01	1.36E-02	4.54E+00	3.40E-02	4.70E+00	1.10E-01	3.76E+00	9.05E-03
BREOT-N26-0 (0-6")	1.72E-01	1.72E-01	4.84E-01	2.29E+02	3.92E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.72E+02	2.27E+00	1.36E-02	4.54E+00	1.24E-01	4.70E+00	1.10E-01	3.76E+00	3.31E-02
BREOT-S26-0 (0-6")	1.72E-01	1.72E-01	4.84E-01	6.80E+01	1.17E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.41E+02	6.75E-01	1.36E-02	4.54E+00	3.70E-02	4.70E+00	1.10E-01	3.76E+00	9.84E-03
BREOT-N27-0 (0-6")	1.72E-01	1.72E-01	4.84E-01	2.25E+02	3.86E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.65E+02	2.24E+00	1.36E-02	4.54E+00	1.23E-01	4.70E+00	1.10E-01	3.76E+00	3.26E-02
BREOT-S27-0 (0-6")	1.72E-01	1.72E-01	4.84E-01	1.01E+02	1.74E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.09E+02	1.00E+00	1.36E-02	4.54E+00	5.50E-02	4.70E+00	1.10E-01	3.76E+00	1.46E-02
BREOT-N28-0 (0-6")	1.72E-01	1.72E-01	4.84E-01	5.99E+01	1.03E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.24E+02	5.94E-01	1.36E-02	4.54E+00	3.26E-02	4.70E+00	1.10E-01	3.76E+00	8.66E-03
BREOT-S28-0 (0-6")	1.72E-01	1.72E-01	4.84E-01	5.59E+01	9.59E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.16E+02	5.55E-01	1.36E-02	4.54E+00	3.04E-02	4.70E+00	1.10E-01	3.76E+00	8.09E-03
BREOT-S29-0 (0-6")	1.72E-01	1.72E-01	4.84E-01	8.21E+00	1.41E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.70E+01	8.15E-02	1.36E-02	4.54E+00	4.47E-03	4.70E+00	1.10E-01	3.76E+00	1.19E-03
BREOT-N30-0 (0-6")	1.72E-01	1.72E-01	4.84E-01	2.13E+02	3.66E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.41E+02	2.12E+00	1.36E-02	4.54E+00	1.16E-01	4.70E+00	1.10E-01	3.76E+00	3.09E-02
BREOT-S30-0 (0-6")	1.72E-01	1.72E-01	4.84E-01	5.99E+00	1.03E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.24E+01	5.95E-02	1.36E-02	4.54E+00	3.26E-03	4.70E+00	1.10E-01	3.76E+00	8.67E-04
BREOT-N31-0 (0-6")	1.72E-01	1.72E-01	4.84E-01	5.24E+01	8.98E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.08E+02	5.20E-01	1.36E-02	4.54E+00	2.85E-02	4.70E+00	1.10E-01	3.76E+00	7.58E-03
BREOT-S31-0 (0-6")	1.72E-01	1.72E-01	4.84E-01	5.50E+00	9.44E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.14E+01	5.46E-02	1.36E-02	4.54E+00	2.99E-03	4.70E+00	1.10E-01	3.76E+00	7.96E-04
BREOT-N32-0 (0-6")	1.72E-01	1.72E-01	4.84E-01	6.80E+01	1.17E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.41E+02	6.76E-01	1.36E-02	4.54E+00	3.70E-02	4.70E+00	1.10E-01	3.76E+00	9.85E-03
BREOT-S32-0 (0-6")	1.72E-01	1.72E-01	4.84E-01	4.25E+01	7.29E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	8.79E+01	4.22E-01	1.36E-02	4.54E+00	2.31E-02	4.70E+00	1.10E-01	3.76E+00	6.15E-03
BREOT-N33-0 (0-6")	1.72E-01	1.72E-01	4.84E-01	7.95E+00	1.36E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.64E+01	7.90E-02	1.36E-02	4.54E+00	4.33E-03	4.70E+00	1.10E-01	3.76E+00	1.15E-03
BREOT-S33-0 (0-6")	1.72E-01	1.72E-01	4.84E-01	4.05E+01	6.95E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	8.37E+01	4.02E-01	1.36E-02	4.54E+00	2.20E-02	4.70E+00	1.10E-01	3.76E+00	5.86E-03
BREOT-N34-0 (0-6")	1.72E-01	1.72E-01	4.84E-01	1.20E+01	2.06E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.49E+01	1.20E-01	1.36E-02	4.54E+00	6.55E-03	4.70E+00	1.10E-01	3.76E+00	1.74E-03
BREOT-S34-0 (0-6")	1.72E-01	1.72E-01	4.84E-01	6.71E+01	1.15E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.39E+02	6.66E-01	1.36E-02	4.54E+00	3.65E-02	4.70E+00	1.10E-01	3.76E+00	9.71E-03
BREOT-N35-0 (0-6")	1.72E-01	1.72E-01	4.84E-01	1.20E+01	2.05E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.47E+01	1.19E-01	1.36E-02	4.54E+00	6.51E-03	4.70E+00	1.10E-01	3.76E+00	1.73E-03
BREOT-S35-0 (0-6")	1.72E-01	1.72E-01	4.84E-01	5.30E+01	9.10E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.10E+02	5.27E-01	1.36E-02	4.54E+00	2.89E-02	4.70E+00	1.10E-01	3.76E+00	7.68E-03
BREOT-N36-0 (0-6")	1.72E-01	1.72E-01	4.84E-01	1.04E+02	1.79E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.16E+02	1.04E+00	1.36E-02	4.54E+00	5.68E-02	4.70E+00	1.10E-01	3.76E+00	1.51E-02
BREOT-S36-0 (0-6")	1.72E-01	1.72E-01	4.84E-01	7.76E+01	1.33E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.60E+02	7.70E-01	1.36E-02	4.54E+00	4.22E-02	4.70E+00	1.10E-01	3.76E+00	1.12E-02
BREOT-N37-0 (0-6")	1.72E-01	1.72E-01	4.84E-01	4.11E+01	7.06E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	8.50E+01	4.08E-01	1.36E-02	4.54E+00	2.24E-02	4.70E+00	1.10E-01	3.76E+00	5.95E-03
BREOT-S37-0 (0-6")	1.72E-01	1.72E-01	4.84E-01	7.31E+01	1.25E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.51E+02	7.26E-01	1.36E-02	4.54E+00	3.98E-02	4.70E+00	1.10E-01	3.76E+00	1.06E-02
BREOT-N38-0 (0-6")	1.72E-01	1.72E-01	4.84E-01	8.83E+00	1.51E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.83E+01	8.77E-02	1.36E-02	4.54E+00	4.80E-03	4.70E+00	1.10E-01	3.76E+00	1.28E-03

TABLE C-2A: ARSENIC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **18.41**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Red Fox (Carnivorous Mammal - Terrestrial)																							
BREOT-S38-0 (0-6")	1.72E-01	1.72E-01	4.84E-01	1.51E+01	2.58E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.11E+01	1.50E-01	1.36E-02	4.54E+00	8.20E-03	4.70E+00	1.10E-01	3.76E+00	2.18E-03
BREOT-N39-0 (0-6")	1.72E-01	1.72E-01	4.84E-01	9.61E+00	1.65E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.99E+01	9.54E-02	1.36E-02	4.54E+00	5.23E-03	4.70E+00	1.10E-01	3.76E+00	1.39E-03
BREOT-N40-0 (0-6")	1.72E-01	1.72E-01	4.84E-01	2.03E+01	3.48E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.19E+01	2.01E-01	1.36E-02	4.54E+00	1.10E-02	4.70E+00	1.10E-01	3.76E+00	2.94E-03
BREOT-S40-0 (0-6")	1.72E-01	1.72E-01	4.84E-01	8.22E+01	1.41E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.70E+02	8.16E-01	1.36E-02	4.54E+00	4.47E-02	4.70E+00	1.10E-01	3.76E+00	1.19E-02
BREOT-N41-0 (0-6")	1.72E-01	1.72E-01	4.84E-01	1.42E+01	2.44E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.94E+01	1.41E-01	1.36E-02	4.54E+00	7.74E-03	4.70E+00	1.10E-01	3.76E+00	2.06E-03
BREOT-S41-0 (0-6")	1.72E-01	1.72E-01	4.84E-01	1.00E+02	1.72E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.08E+02	9.97E-01	1.36E-02	4.54E+00	5.46E-02	4.70E+00	1.10E-01	3.76E+00	1.45E-02
BREOT-N42-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S42-0 (0-6")	1.72E-01	1.72E-01	4.84E-01	1.05E+02	1.79E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.16E+02	1.04E+00	1.36E-02	4.54E+00	5.69E-02	4.70E+00	1.10E-01	3.76E+00	1.51E-02
BREOT-N43-0 (0-6")	1.72E-01	1.72E-01	4.84E-01	1.70E+01	2.91E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.51E+01	1.69E-01	1.36E-02	4.54E+00	9.25E-03	4.70E+00	1.10E-01	3.76E+00	2.46E-03
BREOT-S43-0 (0-6")	1.72E-01	1.72E-01	4.84E-01	9.70E+00	1.66E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.01E+01	9.64E-02	1.36E-02	4.54E+00	5.28E-03	4.70E+00	1.10E-01	3.76E+00	1.40E-03
BREOT-N44-0 (0-6")	1.72E-01	1.72E-01	4.84E-01	3.16E+01	5.41E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	6.52E+01	3.13E-01	1.36E-02	4.54E+00	1.72E-02	4.70E+00	1.10E-01	3.76E+00	4.57E-03
BREOT-S44-0 (0-6")	1.72E-01	1.72E-01	4.84E-01	3.53E+00	6.06E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	7.30E+00	3.51E-02	1.36E-02	4.54E+00	1.92E-03	4.70E+00	1.10E-01	3.76E+00	5.11E-04
BREOT-N45-0 (0-6")	1.72E-01	1.72E-01	4.84E-01	4.77E+00	8.19E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	9.87E+00	4.74E-02	1.36E-02	4.54E+00	2.60E-03	4.70E+00	1.10E-01	3.76E+00	6.91E-04
BREOT-S45-0 (0-6")	1.72E-01	1.72E-01	4.84E-01	1.17E+01	2.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.41E+01	1.16E-01	1.36E-02	4.54E+00	6.34E-03	4.70E+00	1.10E-01	3.76E+00	1.69E-03
BREOT-N46-0 (0-6")	1.72E-01	1.72E-01	4.84E-01	4.63E+00	7.93E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	9.56E+00	4.59E-02	1.36E-02	4.54E+00	2.52E-03	4.70E+00	1.10E-01	3.76E+00	6.69E-04
BREOT-S46-0 (0-6")	1.72E-01	1.72E-01	4.84E-01	2.20E+01	3.78E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.55E+01	2.19E-01	1.36E-02	4.54E+00	1.20E-02	4.70E+00	1.10E-01	3.76E+00	3.19E-03
BREOT-N47-0 (0-6")	1.72E-01	1.72E-01	4.84E-01	4.23E+00	7.26E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	8.75E+00	4.20E-02	1.36E-02	4.54E+00	2.30E-03	4.70E+00	1.10E-01	3.76E+00	6.13E-04
BREOT-S47-0 (0-6")	1.72E-01	1.72E-01	4.84E-01	9.82E+00	1.68E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.03E+01	9.75E-02	1.36E-02	4.54E+00	5.34E-03	4.70E+00	1.10E-01	3.76E+00	1.42E-03
BREOT-N48-0 (0-6")	1.72E-01	1.72E-01	4.84E-01	5.45E+00	9.35E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.13E+01	5.41E-02	1.36E-02	4.54E+00	2.96E-03	4.70E+00	1.10E-01	3.76E+00	7.88E-04
BREOT-S48-0 (0-6")	1.72E-01	1.72E-01	4.84E-01	3.10E+01	5.32E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	6.41E+01	3.08E-01	1.36E-02	4.54E+00	1.69E-02	4.70E+00	1.10E-01	3.76E+00	4.49E-03
BREOT-N49-0 (0-6")	1.72E-01	1.72E-01	4.84E-01	1.46E+01	2.51E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.02E+01	1.45E-01	1.36E-02	4.54E+00	7.96E-03	4.70E+00	1.10E-01	3.76E+00	2.12E-03
BREOT-S49-0 (0-6")	1.72E-01	1.72E-01	4.84E-01	4.10E+00	7.04E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	8.49E+00	4.08E-02	1.36E-02	4.54E+00	2.23E-03	4.70E+00	1.10E-01	3.76E+00	5.94E-04
BREOT-S50-0 (0-6")	1.72E-01	1.72E-01	4.84E-01	1.22E+01	2.09E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.52E+01	1.21E-01	1.36E-02	4.54E+00	6.63E-03	4.70E+00	1.10E-01	3.76E+00	1.76E-03
BREOT-N51-0 (0-6")	1.72E-01	1.72E-01	4.84E-01	2.75E+01	4.72E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.69E+01	2.73E-01	1.36E-02	4.54E+00	1.50E-02	4.70E+00	1.10E-01	3.76E+00	3.98E-03
BREOT-S51-0 (0-6")	1.72E-01	1.72E-01	4.84E-01	1.19E+01	2.04E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.46E+01	1.18E-01	1.36E-02	4.54E+00	6.48E-03	4.70E+00	1.10E-01	3.76E+00	1.72E-03
BREOT-N52-0 (0-6")	1.72E-01	1.72E-01	4.84E-01	3.49E+00	5.99E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	7.22E+00	3.47E-02	1.36E-02	4.54E+00	1.90E-03	4.70E+00	1.10E-01	3.76E+00	5.05E-04
BREOT-S52-0 (0-6")	1.72E-01	1.72E-01	4.84E-01	3.42E+00	5.86E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	7.06E+00	3.39E-02	1.36E-02	4.54E+00	1.86E-03	4.70E+00	1.10E-01	3.76E+00	4.94E-04
BREOT-N53-0 (0-6")	1.72E-01	1.72E-01	4.84E-01	4.77E+00	8.17E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	9.85E+00	4.73E-02	1.36E-02	4.54E+00	2.59E-03	4.70E+00	1.10E-01	3.76E+00	6.90E-04
BREOT-S53-0 (0-6")	1.72E-01	1.72E-01	4.84E-01	8.46E+00	1.45E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.75E+01	8.40E-02	1.36E-02	4.54E+00	4.60E-03	4.70E+00	1.10E-01	3.76E+00	1.22E-03
BREOT-N54-0 (0-6")	1.72E-01	1.72E-01	4.84E-01	5.18E+00	8.88E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.07E+01	5.14E-02	1.36E-02	4.54E+00	2.82E-03	4.70E+00	1.10E-01	3.76E+00	7.49E-04
BREOT-S54-0 (0-6")	1.72E-01	1.72E-01	4.84E-01	3.84E+00	6.59E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	7.94E+00	3.81E-02	1.36E-02	4.54E+00	2.09E-03	4.70E+00	1.10E-01	3.76E+00	5.56E-04
BREOT-N55-0 (0-6")	1.72E-01	1.72E-01	4.84E-01	4.29E+00	7.35E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	8.86E+00	4.26E-02	1.36E-02	4.54E+00	2.33E-03	4.70E+00	1.10E-01	3.76E+00	6.20E-04
BREOT-S55-0 (0-6")	1.72E-01	1.72E-01	4.84E-01	4.33E+00	7.44E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	8.96E+00	4.30E-02	1.36E-02	4.54E+00	2.36E-03	4.70E+00	1.10E-01	3.76E+00	6.27E-04
BREOT-N56-0 (0-6")	1.72E-01	1.72E-01	4.84E-01	4.05E+01	6.95E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	8.38E+01	4.02E-01	1.36E-02	4.54E+00	2.21E-02	4.70E+00	1.10E-01	3.76E+00	5.87E-03
BREOT-N57-0 (0-6")	1.72E-01	1.72E-01	4.84E-01	5.20E+00	8.92E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.07E+01	5.16E-02	1.36E-02	4.54E+00	2.83E-03	4.70E+00	1.10E-01	3.76E+00	7.52E-04
BREOT-S57-0 (0-6")	1.72E-01	1.72E-01	4.84E-01	1.91E+01	3.27E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.94E+01	1.89E-01	1.36E-02	4.54E+00	1.04E-02	4.70E+00	1.10E-01	3.76E+00	2.76E-03
BREOT-N58-0 (0-6")	1.72E-01	1.72E-01	4.84E-01	1.01E+01	1.73E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.08E+01	9.99E-02	1.36E-02	4.54E+00	5.47E-03	4.70E+00	1.10E-01	3.76E+00	1.46E-03
BREOT-S58-0 (0-6")	1.72E-01	1.72E-01	4.84E-01	1.16E+01	2.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.41E+01	1.16E-01	1.36E-02	4.54E+00	6.33E-03	4.70E+00	1.10E-01	3.76E+00	1.68E-03
BREOT-N59-0 (0-6")	1.72E-01	1.72E-01	4.84E-01	1.68E+01	2.89E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.48E+01	1.67E-01	1.36E-02	4.54E+00	9.16E-03	4.70E+00	1.10E-01	3.76E+00	2.44E-03
BREOT-N60-0 (0-6")	1.72E-01	1.72E-01	4.84E-01	9.54E+00	1.64E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.97E+01	9.47E-02	1.36E-02	4.54E+00	5.19E-03	4.70E+00	1.10E-01	3.76E+00	1.38E-03
BREOT-S60-0 (0-6")	1.72E-01	1.72E-01	4.84E-01	3.93E+01	6.75E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	8.13E+01	3.91E-01	1.36E-02	4.54E+00	2.14E-02	4.70E+00	1.10E-01	3.76E+00	5.69E-03
BREOT-S61-0 (0-6")	1.72E-01	1.72E-01	4.84E-01	4.36E+00	7.49E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	9.02E+00	4.33E-02	1.36E-02	4.54E+00	2.37E-03	4.70E+00	1.10E-01	3.76E+00	6.32E-04
BREOT-N62-0 (0-6")	1.72E-01	1.72E-01	4.84E-01	8.85E+00	1.52E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.83E+01	8.79E-02	1.36E-02	4.54E+00	4.81E-03	4.70E+00	1.10E-01	3.76E+00	1.28E-03
BREOT-S62-0 (0-6")	1.72E-01	1.72E-01	4.84E-01	4.52E+00	7.76E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	9.35E+00	4.49E-02	1.36E-02	4.54E+00	2.46E-03	4.70E+00	1.10E-01	3.76E+00	6.55E-04
BREOT-N63-0 (0-6")	1.72E-01	1.72E-01	4.84E-01	2.69E+01	4.62E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.57E+01	2.68E-01	1.36E-02	4.54E+00	1.47E-02	4.70E+00	1.10E-01	3.76E+00	3.90E-03
BREOT-S63-0 (0-6")	1.72E-01	1.72E-01	4.84E-01	1.42E+01	2.44E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.94E+01	1.41E-01	1.36E-02	4.54E+00	7.74E-03	4.70E+00	1.10E-01	3.76E+00	2.06E-03
BREOT-N64-0 (0-6")	1.72E-01	1.72E-01	4.84E-01	4.21E+00	7.22E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	8.70E+00	4.18E-02	1.36E-02	4.54E+00	2.29E-03	4.70E+00	1.10E-01	3.76E+00	6.09E-04
BREOT-S64-0 (0-6")	1.72E-01	1.72E-01	4.84E-01	5.22E+00	8.95E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.08E+01	5.18E-02	1.36E-02	4.54E+00	2.84E-03	4.70E+00	1.10E-01	3.76E+00	7.55E-04
BREOT-N66-0 (0-6")	1.72E-01	1.72E-01	4.84E-01	1.79E+01	3.07E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.70E+01	1.78E-01	1.36E-02	4.54E+00	9.75E-03	4.70E+00	1.10E-01	3.76E+00	2.59E-03
BREOT-S66-0 (0-6")	1.72E-01	1.72E-01	4.84E-01	8.93E+00	1.53E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.85E+01	8.87E-02	1.36E-02	4.54E+00	4.86E-03	4.70E+00	1.10E-01	3.76E+00	1.29E-03
BREOT-N67-0 (0-6")	1.72E-01	1.72E-01	4.84E-01	4.11E+01	7.06E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	8.50E+01	4.08E-01	1.36E-02	4.54E+00	2.24E-02	4.70E+00	1.10E-01	3.76E+00	5.95E-03
BREOT-S67-0 (0-6")	1.72E-01	1.72E-01	4.84E-01	3.82E+00	6.56E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	7.90E+00	3.79E-02	1.36E-02	4.54E+00	2.08E-03	4.70E+00	1.10E-01	3.76E+00	5.53E-04
Outside Tailings																						**Maximum HQ (At Edge of Tailings)**	**8.79E-02**
BREOT-S0+25 (0-6")	1.72E-01	1.72E-01	4.84E-01	1.81E+01	3.11E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.75E+01	1.80E-01	1.36E-02	4.54E+00	9.87E-03	4.70E+00	1.10E-01	3.76E+00	2.62E-03
BREOT-S1+25 (0-6")	1.72E-01	1.72E-01	4.84E-01	4.74E+00	8.14E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	9.81E+00	4.71E-02	1.36E-02	4.54E+00	2.58E-03	4.70E+00	1.10E-01	3.76E+00	6.86E-04

TABLE C-2A: ARSENIC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 18.41

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Red Fox (Carnivorous Mammal - Terrestrial)																							
BREOT-S2+95 (0-6")	1.72E-01	1.72E-01	4.84E-01	1.10E+01	1.89E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.28E+01	1.10E-01	1.36E-02	4.54E+00	6.00E-03	4.70E+00	1.10E-01	3.76E+00	1.60E-03
BREOT-S3+6 (0-6")	1.72E-01	1.72E-01	4.84E-01	5.06E+00	8.67E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.05E+01	5.02E-02	1.36E-02	4.54E+00	2.75E-03	4.70E+00	1.10E-01	3.76E+00	7.32E-04
BREOT-S4+10 (0-6")	1.72E-01	1.72E-01	4.84E-01	9.87E+00	1.69E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.04E+01	9.80E-02	1.36E-02	4.54E+00	5.37E-03	4.70E+00	1.10E-01	3.76E+00	1.43E-03
BREOT-S6+25 (0-6")	1.72E-01	1.72E-01	4.84E-01	1.40E+01	2.40E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.90E+01	1.39E-01	1.36E-02	4.54E+00	7.63E-03	4.70E+00	1.10E-01	3.76E+00	2.03E-03
BREOT-S8+25 (0-6")	1.72E-01	1.72E-01	4.84E-01	1.68E+01	2.88E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.47E+01	1.67E-01	1.36E-02	4.54E+00	9.14E-03	4.70E+00	1.10E-01	3.76E+00	2.43E-03
BREOT-N10+25 (0-6")	1.72E-01	1.72E-01	4.84E-01	1.01E+01	1.73E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.08E+01	9.99E-02	1.36E-02	4.54E+00	5.48E-03	4.70E+00	1.10E-01	3.76E+00	1.46E-03
BREOT-N11+25 (0-6")	1.72E-01	1.72E-01	4.84E-01	4.97E+00	8.53E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.03E+01	4.94E-02	1.36E-02	4.54E+00	2.71E-03	4.70E+00	1.10E-01	3.76E+00	7.20E-04
BREOT-N12+25 (0-6")	1.72E-01	1.72E-01	4.84E-01	6.25E+00	1.07E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.29E+01	6.20E-02	1.36E-02	4.54E+00	3.40E-03	4.70E+00	1.10E-01	3.76E+00	9.04E-04
BREOT-S12+25 (0-6")	1.72E-01	1.72E-01	4.84E-01	1.23E+02	2.11E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.54E+02	1.22E+00	1.36E-02	4.54E+00	6.69E-02	4.70E+00	1.10E-01	3.76E+00	1.78E-02
BREOT-S12+60 (0-6")	1.72E-01	1.72E-01	4.84E-01	4.12E+01	7.07E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	8.51E+01	4.09E-01	1.36E-02	4.54E+00	2.24E-02	4.70E+00	1.10E-01	3.76E+00	5.96E-03
BREOT-N13+25 (0-6")	1.72E-01	1.72E-01	4.84E-01	6.27E+00	1.07E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.30E+01	6.22E-02	1.36E-02	4.54E+00	3.41E-03	4.70E+00	1.10E-01	3.76E+00	9.07E-04
BREOT-S13+25 (0-6")	1.72E-01	1.72E-01	4.84E-01	8.96E+01	1.54E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.85E+02	8.89E-01	1.36E-02	4.54E+00	4.87E-02	4.70E+00	1.10E-01	3.76E+00	1.30E-02
BREOT-S13+65 (0-6")	1.72E-01	1.72E-01	4.84E-01	5.00E+01	8.59E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.03E+02	4.97E-01	1.36E-02	4.54E+00	2.72E-02	4.70E+00	1.10E-01	3.76E+00	7.24E-03
BREOT-N14+25 (0-6")	1.72E-01	1.72E-01	4.84E-01	1.91E+01	3.28E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.95E+01	1.90E-01	1.36E-02	4.54E+00	1.04E-02	4.70E+00	1.10E-01	3.76E+00	2.77E-03
BREOT-S14+25 (0-6")	1.72E-01	1.72E-01	4.84E-01	3.38E+02	5.80E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	6.99E+02	3.36E+00	1.36E-02	4.54E+00	1.84E-01	4.70E+00	1.10E-01	3.76E+00	4.89E-02
BREOT-S14+59 (0-6")	1.72E-01	1.72E-01	4.84E-01	4.86E+01	8.34E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.00E+02	4.83E-01	1.36E-02	4.54E+00	2.65E-02	4.70E+00	1.10E-01	3.76E+00	7.03E-03
BREOT-N15+25 (0-6")	1.72E-01	1.72E-01	4.84E-01	5.05E+01	8.67E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.04E+02	5.02E-01	1.36E-02	4.54E+00	2.75E-02	4.70E+00	1.10E-01	3.76E+00	7.31E-03
BREOT-N15+50 (0-6")	1.72E-01	1.72E-01	4.84E-01	4.28E+00	7.35E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	8.85E+00	4.25E-02	1.36E-02	4.54E+00	2.33E-03	4.70E+00	1.10E-01	3.76E+00	6.20E-04
BREOT-S16+20 (0-6")	1.72E-01	1.72E-01	4.84E-01	7.62E+01	1.31E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.58E+02	7.57E-01	1.36E-02	4.54E+00	4.15E-02	4.70E+00	1.10E-01	3.76E+00	1.10E-02
BREOT-S16+75 (0-6")	1.72E-01	1.72E-01	4.84E-01	1.29E+01	2.22E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.67E+01	1.28E-01	1.36E-02	4.54E+00	7.03E-03	4.70E+00	1.10E-01	3.76E+00	1.87E-03
BREOT-N17+25 (0-6")	1.72E-01	1.72E-01	4.84E-01	7.90E+01	1.36E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.63E+02	7.85E-01	1.36E-02	4.54E+00	4.30E-02	4.70E+00	1.10E-01	3.76E+00	1.14E-02
BREOT-S18+25 (0-6")	1.72E-01	1.72E-01	4.84E-01	2.32E+01	3.98E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.80E+01	2.30E-01	1.36E-02	4.54E+00	1.26E-02	4.70E+00	1.10E-01	3.76E+00	3.36E-03
BREOT-N19+25 (0-6")	1.72E-01	1.72E-01	4.84E-01	3.62E+00	6.22E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	7.49E+00	3.60E-02	1.36E-02	4.54E+00	1.97E-03	4.70E+00	1.10E-01	3.76E+00	5.24E-04
BREOT-S19+25 (0-6")	1.72E-01	1.72E-01	4.84E-01	2.01E+02	3.46E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.16E+02	2.00E+00	1.36E-02	4.54E+00	1.10E-01	4.70E+00	1.10E-01	3.76E+00	2.92E-02
BREOT-S19+85 (0-6")	1.72E-01	1.72E-01	4.84E-01	7.60E+00	1.30E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.57E+01	7.54E-02	1.36E-02	4.54E+00	4.13E-03	4.70E+00	1.10E-01	3.76E+00	1.10E-03
BREOT-N20+25 (0-6")	1.72E-01	1.72E-01	4.84E-01	5.92E+00	1.02E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.22E+01	5.88E-02	1.36E-02	4.54E+00	3.22E-03	4.70E+00	1.10E-01	3.76E+00	8.57E-04
BREOT-S20+25 (0-6")	1.72E-01	1.72E-01	4.84E-01	2.86E+02	4.91E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.92E+02	2.84E+00	1.36E-02	4.54E+00	1.56E-01	4.70E+00	1.10E-01	3.76E+00	4.15E-02
BREOT-S20+75 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N21+25 (0-6")	1.72E-01	1.72E-01	4.84E-01	1.00E+02	1.72E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.08E+02	9.97E-01	1.36E-02	4.54E+00	5.46E-02	4.70E+00	1.10E-01	3.76E+00	1.45E-02
BREOT-S21+25 (0-6")	1.72E-01	1.72E-01	4.84E-01	1.72E+02	2.95E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.56E+02	1.71E+00	1.36E-02	4.54E+00	9.37E-02	4.70E+00	1.10E-01	3.76E+00	2.49E-02
BREOT-N22+150 (0-6")	1.72E-01	1.72E-01	4.84E-01	4.02E+00	6.89E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	8.30E+00	3.99E-02	1.36E-02	4.54E+00	2.18E-03	4.70E+00	1.10E-01	3.76E+00	5.81E-04
BREOT-N22+25 (0-6")	1.72E-01	1.72E-01	4.84E-01	4.45E+01	7.64E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	9.20E+01	4.42E-01	1.36E-02	4.54E+00	2.42E-02	4.70E+00	1.10E-01	3.76E+00	6.44E-03
BREOT-S22+25 (0-6")	1.72E-01	1.72E-01	4.84E-01	4.45E+01	7.63E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	9.20E+01	4.42E-01	1.36E-02	4.54E+00	2.42E-02	4.70E+00	1.10E-01	3.76E+00	6.44E-03
BREOT-N23+115 (0-6")	1.72E-01	1.72E-01	4.84E-01	1.13E+01	1.93E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.33E+01	1.12E-01	1.36E-02	4.54E+00	6.13E-03	4.70E+00	1.10E-01	3.76E+00	1.63E-03
BREOT-N23+25 (0-6")	1.72E-01	1.72E-01	4.84E-01	1.59E+02	2.73E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.29E+02	1.58E+00	1.36E-02	4.54E+00	8.66E-02	4.70E+00	1.10E-01	3.76E+00	2.30E-02
BREOT-S23+25 (0-6")	1.72E-01	1.72E-01	4.84E-01	5.08E+01	8.72E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.05E+02	5.05E-01	1.36E-02	4.54E+00	2.77E-02	4.70E+00	1.10E-01	3.76E+00	7.35E-03
BREOT-S23+37.5 (0-6")	1.72E-01	1.72E-01	4.84E-01	1.32E+01	2.27E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.73E+01	1.31E-01	1.36E-02	4.54E+00	7.19E-03	4.70E+00	1.10E-01	3.76E+00	1.91E-03
BREOT-N24+25 (0-6")	1.72E-01	1.72E-01	4.84E-01	7.62E+01	1.31E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.58E+02	7.57E-01	1.36E-02	4.54E+00	4.15E-02	4.70E+00	1.10E-01	3.76E+00	1.10E-02
BREOT-N24+75 (0-6")	1.72E-01	1.72E-01	4.84E-01	1.07E+01	1.83E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.21E+01	1.06E-01	1.36E-02	4.54E+00	5.82E-03	4.70E+00	1.10E-01	3.76E+00	1.55E-03
BREOT-S24+25 (0-6")	1.72E-01	1.72E-01	4.84E-01	4.00E+01	6.87E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	8.28E+01	3.97E-01	1.36E-02	4.54E+00	2.18E-02	4.70E+00	1.10E-01	3.76E+00	5.79E-03
BREOT-N25+25 (0-6")	1.72E-01	1.72E-01	4.84E-01	3.66E+00	6.28E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	7.57E+00	3.64E-02	1.36E-02	4.54E+00	1.99E-03	4.70E+00	1.10E-01	3.76E+00	5.30E-04
BREOT-S25+25 (0-6")	1.72E-01	1.72E-01	4.84E-01	2.77E+01	4.75E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.72E+01	2.75E-01	1.36E-02	4.54E+00	1.51E-02	4.70E+00	1.10E-01	3.76E+00	4.01E-03
BREOT-S25+40 (0-6")	1.72E-01	1.72E-01	4.84E-01	4.56E+01	7.82E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	9.43E+01	4.53E-01	1.36E-02	4.54E+00	2.48E-02	4.70E+00	1.10E-01	3.76E+00	6.60E-03
BREOT-S26+37 (0-6")	1.72E-01	1.72E-01	4.84E-01	1.09E+01	1.88E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.26E+01	1.09E-01	1.36E-02	4.54E+00	5.95E-03	4.70E+00	1.10E-01	3.76E+00	1.58E-03
BREOT-N27+25 (0-6")	1.72E-01	1.72E-01	4.84E-01	4.59E+00	7.88E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	9.49E+00	4.56E-02	1.36E-02	4.54E+00	2.50E-03	4.70E+00	1.10E-01	3.76E+00	6.64E-04
BREOT-S27+25 (0-6")	1.72E-01	1.72E-01	4.84E-01	1.70E+01	2.92E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.52E+01	1.69E-01	1.36E-02	4.54E+00	9.27E-03	4.70E+00	1.10E-01	3.76E+00	2.47E-03
BREOT-N28+25 (0-6")	1.72E-01	1.72E-01	4.84E-01	4.56E+00	7.82E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	9.43E+00	4.53E-02	1.36E-02	4.54E+00	2.48E-03	4.70E+00	1.10E-01	3.76E+00	6.60E-04
BREOT-S28+25 (0-6")	1.72E-01	1.72E-01	4.84E-01	4.65E+01	7.97E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	9.61E+01	4.61E-01	1.36E-02	4.54E+00	2.53E-02	4.70E+00	1.10E-01	3.76E+00	6.73E-03
BREOT-N29+25 (0-6")	1.72E-01	1.72E-01	4.84E-01	6.33E+00	1.09E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.31E+01	6.28E-02	1.36E-02	4.54E+00	3.44E-03	4.70E+00	1.10E-01	3.76E+00	9.15E-04
BREOT-S29+25 (0-6")	1.72E-01	1.72E-01	4.84E-01	1.02E+01	1.76E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.12E+01	1.02E-01	1.36E-02	4.54E+00	5.57E-03	4.70E+00	1.10E-01	3.76E+00	1.48E-03
BREOT-N30+25 (0-6")	1.72E-01	1.72E-01	4.84E-01	7.63E+00	1.31E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.58E+01	7.58E-02	1.36E-02	4.54E+00	4.15E-03	4.70E+00	1.10E-01	3.76E+00	1.10E-03
BREOT-S30+25 (0-6")	1.72E-01	1.72E-01	4.84E-01	8.62E+00	1.48E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.78E+01	8.56E-02	1.36E-02	4.54E+00	4.69E-03	4.70E+00	1.10E-01	3.76E+00	1.25E-03
BREOT-N31+25 (0-6")	1.72E-01	1.72E-01	4.84E-01	1.32E+02	2.27E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.73E+02	1.31E+00	1.36E-02	4.54E+00	7.19E-02	4.70E+00	1.10E-01	3.76E+00	1.91E-02
BREOT-N31+75 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S31+25 (0-6")	1.72E-01	1.72E-01	4.84E-01	4.38E+00	7.51E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	9.05E+00	4.35E-02	1.36E-02	4.54E+00	2.38E-03	4.70E+00	1.10E-01	3.76E+00	6.34E-04

TABLE C-2A: ARSENIC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 18.41

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Red Fox (Carnivorous Mammal - Terrestrial)																							
BREOT-N32+25 (0-6")	1.72E-01	1.72E-01	4.84E-01	4.37E+00	7.50E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	9.04E+00	4.34E-02	1.36E-02	4.54E+00	2.38E-03	4.70E+00	1.10E-01	3.76E+00	6.33E-04
BREOT-S32+25 (0-6")	1.72E-01	1.72E-01	4.84E-01	6.55E+01	1.12E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.35E+02	6.51E-01	1.36E-02	4.54E+00	3.57E-02	4.70E+00	1.10E-01	3.76E+00	9.48E-03
BREOT-S32+300 (0-6")	1.72E-01	1.72E-01	4.84E-01	3.02E+01	5.18E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	6.24E+01	3.00E-01	1.36E-02	4.54E+00	1.64E-02	4.70E+00	1.10E-01	3.76E+00	4.37E-03
BREOT-N33+25 (0-6")	1.72E-01	1.72E-01	4.84E-01	4.22E+00	7.23E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	8.72E+00	4.19E-02	1.36E-02	4.54E+00	2.29E-03	4.70E+00	1.10E-01	3.76E+00	6.10E-04
BREOT-S33+25 (0-6")	1.72E-01	1.72E-01	4.84E-01	1.64E+01	2.82E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.40E+01	1.63E-01	1.36E-02	4.54E+00	8.95E-03	4.70E+00	1.10E-01	3.76E+00	2.38E-03
BREOT-N34+25 (0-6")	1.72E-01	1.72E-01	4.84E-01	4.77E+00	8.17E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	9.85E+00	4.73E-02	1.36E-02	4.54E+00	2.59E-03	4.70E+00	1.10E-01	3.76E+00	6.90E-04
BREOT-S34+25 (0-6")	1.72E-01	1.72E-01	4.84E-01	2.49E+01	4.27E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.14E+01	2.47E-01	1.36E-02	4.54E+00	1.35E-02	4.70E+00	1.10E-01	3.76E+00	3.60E-03
BREOT-N35+25 (0-6")	1.72E-01	1.72E-01	4.84E-01	1.10E+01	1.89E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.27E+01	1.09E-01	1.36E-02	4.54E+00	5.99E-03	4.70E+00	1.10E-01	3.76E+00	1.59E-03
BREOT-S35+25 (0-6")	1.72E-01	1.72E-01	4.84E-01	1.57E+01	2.69E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.24E+01	1.56E-01	1.36E-02	4.54E+00	8.53E-03	4.70E+00	1.10E-01	3.76E+00	2.27E-03
BREOT-N36+100 (0-6")	1.72E-01	1.72E-01	4.84E-01	7.84E+00	1.34E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.62E+01	7.78E-02	1.36E-02	4.54E+00	4.26E-03	4.70E+00	1.10E-01	3.76E+00	1.13E-03
BREOT-N36+25 (0-6")	1.72E-01	1.72E-01	4.84E-01	9.09E+01	1.56E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.88E+02	9.03E-01	1.36E-02	4.54E+00	4.95E-02	4.70E+00	1.10E-01	3.76E+00	1.32E-02
BREOT-S36+25 (0-6")	1.72E-01	1.72E-01	4.84E-01	1.72E+01	2.95E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.55E+01	1.71E-01	1.36E-02	4.54E+00	9.35E-03	4.70E+00	1.10E-01	3.76E+00	2.49E-03
BREOT-N37+25 (0-6")	1.72E-01	1.72E-01	4.84E-01	4.38E+00	7.51E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	9.05E+00	4.34E-02	1.36E-02	4.54E+00	2.38E-03	4.70E+00	1.10E-01	3.76E+00	6.33E-04
BREOT-S37+25 (0-6")	1.72E-01	1.72E-01	4.84E-01	1.41E+01	2.42E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.91E+01	1.40E-01	1.36E-02	4.54E+00	7.66E-03	4.70E+00	1.10E-01	3.76E+00	2.04E-03
BREOT-N38+25 (0-6")	1.72E-01	1.72E-01	4.84E-01	1.17E+01	2.01E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.43E+01	1.16E-01	1.36E-02	4.54E+00	6.38E-03	4.70E+00	1.10E-01	3.76E+00	1.70E-03
BREOT-S38+25 (0-6")	1.72E-01	1.72E-01	4.84E-01	1.36E+01	2.34E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.81E+01	1.35E-01	1.36E-02	4.54E+00	7.41E-03	4.70E+00	1.10E-01	3.76E+00	1.97E-03
BREOT-N39+25 (0-6")	1.72E-01	1.72E-01	4.84E-01	1.06E+01	1.82E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.19E+01	1.05E-01	1.36E-02	4.54E+00	5.77E-03	4.70E+00	1.10E-01	3.76E+00	1.54E-03
BREOT-S39+25 (0-6")	1.72E-01	1.72E-01	4.84E-01	2.29E+01	3.93E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.74E+01	2.28E-01	1.36E-02	4.54E+00	1.25E-02	4.70E+00	1.10E-01	3.76E+00	3.32E-03
BREOT-N40+25 (0-6")	1.72E-01	1.72E-01	4.84E-01	1.55E+01	2.65E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.19E+01	1.53E-01	1.36E-02	4.54E+00	8.41E-03	4.70E+00	1.10E-01	3.76E+00	2.24E-03
BREOT-S40+25 (0-6")	1.72E-01	1.72E-01	4.84E-01	1.88E+01	3.22E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.88E+01	1.86E-01	1.36E-02	4.54E+00	1.02E-02	4.70E+00	1.10E-01	3.76E+00	2.72E-03
BREOT-N41+25 (0-6")	1.72E-01	1.72E-01	4.84E-01	4.25E+00	7.29E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	8.79E+00	4.22E-02	1.36E-02	4.54E+00	2.31E-03	4.70E+00	1.10E-01	3.76E+00	6.15E-04
BREOT-S41+25 (0-6")	1.72E-01	1.72E-01	4.84E-01	3.14E+01	5.39E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	6.49E+01	3.12E-01	1.36E-02	4.54E+00	1.71E-02	4.70E+00	1.10E-01	3.76E+00	4.55E-03
BREOT-N42+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S42+25 (0-6")	1.72E-01	1.72E-01	4.84E-01	4.09E+00	7.01E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	8.45E+00	4.06E-02	1.36E-02	4.54E+00	2.22E-03	4.70E+00	1.10E-01	3.76E+00	5.92E-04
BREOT-N43+12.5 (0-6")	1.72E-01	1.72E-01	4.84E-01	1.91E+01	3.27E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.94E+01	1.89E-01	1.36E-02	4.54E+00	1.04E-02	4.70E+00	1.10E-01	3.76E+00	2.76E-03
BREOT-N43+40 (0-6")	1.72E-01	1.72E-01	4.84E-01	3.97E+00	6.81E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	8.21E+00	3.94E-02	1.36E-02	4.54E+00	2.16E-03	4.70E+00	1.10E-01	3.76E+00	5.74E-04
BREOT-S43+25 (0-6")	1.72E-01	1.72E-01	4.84E-01	6.89E+00	1.18E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.43E+01	6.84E-02	1.36E-02	4.54E+00	3.75E-03	4.70E+00	1.10E-01	3.76E+00	9.98E-04
BREOT-N44+55 (0-6")	1.72E-01	1.72E-01	4.84E-01	1.48E+01	2.54E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.06E+01	1.47E-01	1.36E-02	4.54E+00	8.04E-03	4.70E+00	1.10E-01	3.76E+00	2.14E-03
BREOT-S44+25 (0-6")	1.72E-01	1.72E-01	4.84E-01	1.07E+01	1.84E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.22E+01	1.06E-01	1.36E-02	4.54E+00	5.83E-03	4.70E+00	1.10E-01	3.76E+00	1.55E-03
BREOT-N45+25 (0-6")	1.72E-01	1.72E-01	4.84E-01	3.86E+00	6.61E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	7.97E+00	3.83E-02	1.36E-02	4.54E+00	2.10E-03	4.70E+00	1.10E-01	3.76E+00	5.58E-04
BREOT-S45+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N46+25 (0-6")	1.72E-01	1.72E-01	4.84E-01	2.04E+01	3.49E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.21E+01	2.02E-01	1.36E-02	4.54E+00	1.11E-02	4.70E+00	1.10E-01	3.76E+00	2.95E-03
BREOT-S46+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N47+25 (0-6")	1.72E-01	1.72E-01	4.84E-01	4.65E+00	7.98E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	9.62E+00	4.62E-02	1.36E-02	4.54E+00	2.53E-03	4.70E+00	1.10E-01	3.76E+00	6.73E-04
BREOT-S47+25 (0-6")	1.72E-01	1.72E-01	4.84E-01	1.00E+01	1.72E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.08E+01	9.97E-02	1.36E-02	4.54E+00	5.46E-03	4.70E+00	1.10E-01	3.76E+00	1.45E-03
BREOT-N48+25 (0-6")	1.72E-01	1.72E-01	4.84E-01	3.80E+00	6.53E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	7.87E+00	3.78E-02	1.36E-02	4.54E+00	2.07E-03	4.70E+00	1.10E-01	3.76E+00	5.51E-04
BREOT-S48+25 (0-6")	1.72E-01	1.72E-01	4.84E-01	2.01E+01	3.45E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.15E+01	2.00E-01	1.36E-02	4.54E+00	1.09E-02	4.70E+00	1.10E-01	3.76E+00	2.91E-03
BREOT-N49+25 (0-6")	1.72E-01	1.72E-01	4.84E-01	2.81E+01	4.83E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.82E+01	2.79E-01	1.36E-02	4.54E+00	1.53E-02	4.70E+00	1.10E-01	3.76E+00	4.07E-03
BREOT-S49+25 (0-6")	1.72E-01	1.72E-01	4.84E-01	4.55E+00	7.80E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	9.40E+00	4.52E-02	1.36E-02	4.54E+00	2.47E-03	4.70E+00	1.10E-01	3.76E+00	6.58E-04
BREOT-N51+25 (0-6")	1.72E-01	1.72E-01	4.84E-01	1.13E+01	1.94E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.34E+01	1.12E-01	1.36E-02	4.54E+00	6.15E-03	4.70E+00	1.10E-01	3.76E+00	1.64E-03
BREOT-S51+25 (0-6")	1.72E-01	1.72E-01	4.84E-01	1.45E+01	2.49E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.00E+01	1.44E-01	1.36E-02	4.54E+00	7.89E-03	4.70E+00	1.10E-01	3.76E+00	2.10E-03
BREOT-N52+25 (0-6")	1.72E-01	1.72E-01	4.84E-01	2.26E+01	3.87E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.67E+01	2.24E-01	1.36E-02	4.54E+00	1.23E-02	4.70E+00	1.10E-01	3.76E+00	3.27E-03
BREOT-S52+25 (0-6")	1.72E-01	1.72E-01	4.84E-01	1.27E+01	2.17E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.62E+01	1.26E-01	1.36E-02	4.54E+00	6.89E-03	4.70E+00	1.10E-01	3.76E+00	1.83E-03
BREOT-N53+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S53+25 (0-6")	1.72E-01	1.72E-01	4.84E-01	4.32E+00	7.42E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	8.94E+00	4.29E-02	1.36E-02	4.54E+00	2.35E-03	4.70E+00	1.10E-01	3.76E+00	6.26E-04
BREOT-S54+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N55+25 (0-6")	1.72E-01	1.72E-01	4.84E-01	9.59E+00	1.65E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.98E+01	9.53E-02	1.36E-02	4.54E+00	5.22E-03	4.70E+00	1.10E-01	3.76E+00	1.39E-03
BREOT-S55+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N56+25 (0-6")	1.72E-01	1.72E-01	4.84E-01	4.41E+00	7.56E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	9.11E+00	4.38E-02	1.36E-02	4.54E+00	2.40E-03	4.70E+00	1.10E-01	3.76E+00	6.38E-04
BREOT-S56+25 (0-6")	1.72E-01	1.72E-01	4.84E-01	1.10E+01	1.89E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.27E+01	1.09E-01	1.36E-02	4.54E+00	5.98E-03	4.70E+00	1.10E-01	3.76E+00	1.59E-03
BREOT-N57+25 (0-6")	1.72E-01	1.72E-01	4.84E-01	3.82E+00	6.56E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	7.90E+00	3.79E-02	1.36E-02	4.54E+00	2.08E-03	4.70E+00	1.10E-01	3.76E+00	5.53E-04
BREOT-S57+25 (0-6")	1.72E-01	1.72E-01	4.84E-01	1.67E+01	2.87E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.45E+01	1.66E-01	1.36E-02	4.54E+00	9.09E-03	4.70E+00	1.10E-01	3.76E+00	2.42E-03
BREOT-N58+25 (0-6")	1.72E-01	1.72E-01	4.84E-01	1.12E+01	1.92E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.31E+01	1.11E-01	1.36E-02	4.54E+00	6.08E-03	4.70E+00	1.10E-01	3.76E+00	1.62E-03
BREOT-S58+25 (0-6")	1.72E-01	1.72E-01	4.84E-01	4.47E+00	7.67E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	9.24E+00	4.44E-02	1.36E-02	4.54E+00	2.43E-03	4.70E+00	1.10E-01	3.76E+00	6.47E-04
BREOT-N59+25 (0-6")	1.72E-01	1.72E-01	4.84E-01	2.59E+01	4.45E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.36E+01	2.58E-01	1.36E-02	4.54E+00	1.41E-02	4.70E+00	1.10E-01	3.76E+00	3.75E-03

TABLE C-2A: ARSENIC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

Site Area (hectares) **18.41**

from dose parameters tables; calculated values; from BAF table; linked to soil or sed concentration table (VLOOKUP); linked to TRV table (VLOOKUP) - should be same for all birds or mammals

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Red Fox (Carnivorous Mammal - Terrestrial)																							
BREOT-N60+25 (0-6")	1.72E-01	1.72E-01	4.84E-01	1.19E+01	2.04E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.46E+01	1.18E-01	1.36E-02	4.54E+00	6.48E-03	4.70E+00	1.10E-01	3.76E+00	1.72E-03
BREOT-S60+25 (0-6")	1.72E-01	1.72E-01	4.84E-01	1.29E+01	2.21E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.67E+01	1.28E-01	1.36E-02	4.54E+00	7.02E-03	4.70E+00	1.10E-01	3.76E+00	1.87E-03
BREOT-S61+25 (0-6")	1.72E-01	1.72E-01	4.84E-01	3.81E+00	6.54E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	7.88E+00	3.78E-02	1.36E-02	4.54E+00	2.07E-03	4.70E+00	1.10E-01	3.76E+00	5.51E-04
BREOT-N62+25 (0-6")	1.72E-01	1.72E-01	4.84E-01	4.47E+00	7.67E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	9.24E+00	4.44E-02	1.36E-02	4.54E+00	2.43E-03	4.70E+00	1.10E-01	3.76E+00	6.47E-04
BREOT-S62+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N63+25 (0-6")	1.72E-01	1.72E-01	4.84E-01	3.57E+01	6.12E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	7.37E+01	3.54E-01	1.36E-02	4.54E+00	1.94E-02	4.70E+00	1.10E-01	3.76E+00	5.16E-03
BREOT-S63+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N64+25 (0-6")	1.72E-01	1.72E-01	4.84E-01	1.01E+01	1.73E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.09E+01	1.00E-01	1.36E-02	4.54E+00	5.49E-03	4.70E+00	1.10E-01	3.76E+00	1.46E-03
BREOT-S64+25 (0-6")	1.72E-01	1.72E-01	4.84E-01	1.23E+01	2.12E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.55E+01	1.22E-01	1.36E-02	4.54E+00	6.71E-03	4.70E+00	1.10E-01	3.76E+00	1.79E-03
BREOT-S65+25 (0-6")	1.72E-01	1.72E-01	4.84E-01	4.70E+00	8.05E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	9.71E+00	4.66E-02	1.36E-02	4.54E+00	2.55E-03	4.70E+00	1.10E-01	3.76E+00	6.79E-04
BREOT-N66+25 (0-6")	1.72E-01	1.72E-01	4.84E-01	1.44E+01	2.48E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.99E+01	1.43E-01	1.36E-02	4.54E+00	7.86E-03	4.70E+00	1.10E-01	3.76E+00	2.09E-03
BREOT-S66+25 (0-6")	1.72E-01	1.72E-01	4.84E-01	1.88E+01	3.22E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.89E+01	1.87E-01	1.36E-02	4.54E+00	1.02E-02	4.70E+00	1.10E-01	3.76E+00	2.72E-03
BREOT-N67+125 (0-6")	1.72E-01	1.72E-01	4.84E-01	2.57E+01	4.42E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.32E+01	2.56E-01	1.36E-02	4.54E+00	1.40E-02	4.70E+00	1.10E-01	3.76E+00	3.72E-03
BREOT-S67+25 (0-6")	1.72E-01	1.72E-01	4.84E-01	1.27E+01	2.17E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.62E+01	1.26E-01	1.36E-02	4.54E+00	6.88E-03	4.70E+00	1.10E-01	3.76E+00	1.83E-03
BREOT-N67+25 (0-6")	1.72E-01	1.72E-01	4.84E-01	5.05E+01	8.66E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.04E+02	5.01E-01	1.36E-02	4.54E+00	2.75E-02	4.70E+00	1.10E-01	3.76E+00	7.31E-03
																						Maximum HQ (Outside Tailings)	**4.89E-02**
Masked Shrew (Omnivorous Mammal - Terrestrial, Wetland)																							
Reference Sites																							
ACBG-1 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	2.55E+00	6.64E+01	5.63E-01	1.10E-03	2.60E+01	2.87E-02	1.00E+00	5.50E-03	1.08E+02	4.70E+00	1.10E-01	5.63E+00	1.91E+01
ACBG-2 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	2.55E+00	4.68E+01	3.96E-01	1.10E-03	1.83E+01	2.02E-02	1.00E+00	5.50E-03	7.57E+01	4.70E+00	1.10E-01	5.63E+00	1.35E+01
UBRBG-202 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	2.55E+00	3.55E+01	3.01E-01	1.10E-03	1.39E+01	1.53E-02	1.00E+00	5.50E-03	5.75E+01	4.70E+00	1.10E-01	5.63E+00	1.02E+01
UBRBG-204 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	2.55E+00	4.98E+01	4.21E-01	1.10E-03	1.95E+01	2.15E-02	1.00E+00	5.50E-03	8.05E+01	4.70E+00	1.10E-01	5.63E+00	1.43E+01
Inside Tailings																						**Minimum HQ (Reference Sites)**	**1.02E+01**
BREOT-S6-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	3.28E+03	2.78E+01	1.10E-03	1.99E+02	2.19E-01	1.00E+00	5.50E-03	5.09E+03	4.70E+00	1.10E-01	5.63E+00	9.06E+02
BREOT-S2-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	4.28E+03	3.62E+01	1.10E-03	2.59E+02	2.86E-01	1.00E+00	5.50E-03	6.64E+03	4.70E+00	1.10E-01	5.63E+00	1.18E+03
BREOT-S0-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	2.11E+03	1.78E+01	1.10E-03	1.28E+02	1.41E-01	1.00E+00	5.50E-03	3.27E+03	4.70E+00	1.10E-01	5.63E+00	5.81E+02
BREOT-S1-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	1.52E+03	1.29E+01	1.10E-03	9.25E+01	1.02E-01	1.00E+00	5.50E-03	2.37E+03	4.70E+00	1.10E-01	5.63E+00	4.21E+02
BREOT-S7-25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	1.97E+02	1.67E+00	1.10E-03	1.20E+01	1.32E-02	1.00E+00	5.50E-03	3.06E+02	4.70E+00	1.10E-01	5.63E+00	5.45E+01
BREOT-S8-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	1.74E+03	1.48E+01	1.10E-03	1.06E+02	1.16E-01	1.00E+00	5.50E-03	2.71E+03	4.70E+00	1.10E-01	5.63E+00	4.81E+02
BREOT-S9-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	1.66E+03	1.41E+01	1.10E-03	1.01E+02	1.11E-01	1.00E+00	5.50E-03	2.58E+03	4.70E+00	1.10E-01	5.63E+00	4.59E+02
BREOT-N10-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	7.91E+03	6.70E+01	1.10E-03	4.80E+02	5.28E-01	1.00E+00	5.50E-03	1.23E+04	4.70E+00	1.10E-01	5.63E+00	2.18E+03
BREOT-N11-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	4.03E+03	3.42E+01	1.10E-03	2.45E+02	2.70E-01	1.00E+00	5.50E-03	6.26E+03	4.70E+00	1.10E-01	5.63E+00	1.11E+03
BREOT-N11-125 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	2.83E+03	2.40E+01	1.10E-03	1.72E+02	1.89E-01	1.00E+00	5.50E-03	4.39E+03	4.70E+00	1.10E-01	5.63E+00	7.81E+02
BREOT-S11-12 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	4.64E+03	3.93E+01	1.10E-03	2.81E+02	3.10E-01	1.00E+00	5.50E-03	7.20E+03	4.70E+00	1.10E-01	5.63E+00	1.28E+03
BREOT-S11+63 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	2.41E+03	2.04E+01	1.10E-03	1.46E+02	1.61E-01	1.00E+00	5.50E-03	3.73E+03	4.70E+00	1.10E-01	5.63E+00	6.64E+02
UBDT-TP-6 (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	1.16E+04	9.84E+01	1.10E-03	7.05E+02	7.76E-01	1.00E+00	5.50E-03	1.80E+04	4.70E+00	1.10E-01	5.63E+00	3.20E+03
UBDT-TP-6 (2-12")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	1.05E+04	8.89E+01	1.10E-03	6.37E+02	7.01E-01	1.00E+00	5.50E-03	1.63E+04	4.70E+00	1.10E-01	5.63E+00	2.90E+03
UBDT-TP-6 (12-24")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	8.50E+03	7.20E+01	1.10E-03	5.16E+02	5.68E-01	1.00E+00	5.50E-03	1.32E+04	4.70E+00	1.10E-01	5.63E+00	2.35E+03
UBDT-TP-6 (24-36")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	2.02E+03	1.71E+01	1.10E-03	1.23E+02	1.35E-01	1.00E+00	5.50E-03	3.14E+03	4.70E+00	1.10E-01	5.63E+00	5.58E+02
UBDT-TP-6 (36-48")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	2.97E+03	2.51E+01	1.10E-03	1.80E+02	1.98E-01	1.00E+00	5.50E-03	4.61E+03	4.70E+00	1.10E-01	5.63E+00	8.19E+02
UBDT-TP-6 (48-60")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	9.87E+02	8.36E+00	1.10E-03	5.99E+01	6.59E-02	1.00E+00	5.50E-03	1.53E+03	4.70E+00	1.10E-01	5.63E+00	2.72E+02
BREOT-N12-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	1.90E+03	1.61E+01	1.10E-03	1.15E+02	1.27E-01	1.00E+00	5.50E-03	2.95E+03	4.70E+00	1.10E-01	5.63E+00	5.25E+02
BREOT-S12-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	1.83E+03	1.55E+01	1.10E-03	1.11E+02	1.22E-01	1.00E+00	5.50E-03	2.83E+03	4.70E+00	1.10E-01	5.63E+00	5.04E+02
BREOT-S13-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	3.94E+03	3.34E+01	1.10E-03	2.39E+02	2.63E-01	1.00E+00	5.50E-03	6.12E+03	4.70E+00	1.10E-01	5.63E+00	1.09E+03
BREOT-S14-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	1.11E+03	9.41E+00	1.10E-03	6.74E+01	7.42E-02	1.00E+00	5.50E-03	1.72E+03	4.70E+00	1.10E-01	5.63E+00	3.06E+02
BREOT-N15-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	4.50E+03	3.81E+01	1.10E-03	2.73E+02	3.01E-01	1.00E+00	5.50E-03	6.99E+03	4.70E+00	1.10E-01	5.63E+00	1.24E+03
BREOT-S15-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	6.17E+03	5.22E+01	1.10E-03	3.74E+02	4.12E-01	1.00E+00	5.50E-03	9.57E+03	4.70E+00	1.10E-01	5.63E+00	1.70E+03
BREOT-N16-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	3.61E+03	3.06E+01	1.10E-03	2.19E+02	2.41E-01	1.00E+00	5.50E-03	5.60E+03	4.70E+00	1.10E-01	5.63E+00	9.95E+02
BREOT-N16-25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	2.34E+02	1.99E+00	1.10E-03	1.42E+01	1.57E-02	1.00E+00	5.50E-03	3.64E+02	4.70E+00	1.10E-01	5.63E+00	6.47E+01
BREOT-S16-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	2.44E+03	2.06E+01	1.10E-03	1.48E+02	1.63E-01	1.00E+00	5.50E-03	3.78E+03	4.70E+00	1.10E-01	5.63E+00	6.73E+02
BREOT-N17-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	2.64E+03	2.24E+01	1.10E-03	1.60E+02	1.76E-01	1.00E+00	5.50E-03	4.10E+03	4.70E+00	1.10E-01	5.63E+00	7.29E+02
BREOT-S17-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	1.10E+03	9.36E+00	1.10E-03	6.70E+01	7.38E-02	1.00E+00	5.50E-03	1.71E+03	4.70E+00	1.10E-01	5.63E+00	3.05E+02
BREOT-S17-25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	9.22E+02	7.81E+00	1.10E-03	5.59E+01	6.16E-02	1.00E+00	5.50E-03	1.43E+03	4.70E+00	1.10E-01	5.63E+00	2.54E+02
UBDT-TP-4 (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	2.90E+03	2.46E+01	1.10E-03	1.76E+02	1.94E-01	1.00E+00	5.50E-03	4.50E+03	4.70E+00	1.10E-01	5.63E+00	8.00E+02
UBDT-TP-4 (2-12")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	1.96E+03	1.66E+01	1.10E-03	1.19E+02	1.31E-01	1.00E+00	5.50E-03	3.04E+03	4.70E+00	1.10E-01	5.63E+00	5.40E+02
UBDT-TP-4 (12-24")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	1.72E+03	1.46E+01	1.10E-03	1.05E+02	1.15E-01	1.00E+00	5.50E-03	2.67E+03	4.70E+00	1.10E-01	5.63E+00	4.75E+02
UBDT-TP-4 (24-36")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	1.05E+03	8.91E+00	1.10E-03	6.38E+01	7.03E-02	1.00E+00	5.50E-03	1.63E+03	4.70E+00	1.10E-01	5.63E+00	2.90E+02

TABLE C-2A: ARSENIC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

Site Area (hectares) **18.41**

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Masked Shrew (Omnivorous Mammal - Terrestrial, Wetland)																							
BREOT-N18-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	3.42E+03	2.90E+01	1.10E-03	2.08E+02	2.29E-01	1.00E+00	5.50E-03	5.31E+03	4.70E+00	1.10E-01	5.63E+00	9.45E+02
BREOT-N18-25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	3.77E+02	3.19E+00	1.10E-03	2.29E+01	2.52E-02	1.00E+00	5.50E-03	5.85E+02	4.70E+00	1.10E-01	5.63E+00	1.04E+02
BREOT-S18-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	1.73E+03	1.46E+01	1.10E-03	1.05E+02	1.16E-01	1.00E+00	5.50E-03	2.68E+03	4.70E+00	1.10E-01	5.63E+00	4.77E+02
BREOT-N19-10 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	3.05E+03	2.58E+01	1.10E-03	1.85E+02	2.04E-01	1.00E+00	5.50E-03	4.74E+03	4.70E+00	1.10E-01	5.63E+00	8.42E+02
BREOT-S19-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	1.24E+03	1.05E+01	1.10E-03	7.50E+01	8.26E-02	1.00E+00	5.50E-03	1.92E+03	4.70E+00	1.10E-01	5.63E+00	3.41E+02
UBDT-TP-5 (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	1.57E+03	1.33E+01	1.10E-03	9.52E+01	1.05E-01	1.00E+00	5.50E-03	2.44E+03	4.70E+00	1.10E-01	5.63E+00	4.33E+02
UBDT-TP-5 (2-12")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	1.52E+03	1.29E+01	1.10E-03	9.25E+01	1.02E-01	1.00E+00	5.50E-03	2.37E+03	4.70E+00	1.10E-01	5.63E+00	4.20E+02
UBDT-TP-5 (12-24")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	1.19E+03	1.00E+01	1.10E-03	7.20E+01	7.92E-02	1.00E+00	5.50E-03	1.84E+03	4.70E+00	1.10E-01	5.63E+00	3.27E+02
BREOT-N20-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	4.01E+03	3.39E+01	1.10E-03	2.43E+02	2.68E-01	1.00E+00	5.50E-03	6.22E+03	4.70E+00	1.10E-01	5.63E+00	1.11E+03
UBDT-TP-3 (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	2.81E+03	2.38E+01	1.10E-03	1.70E+02	1.88E-01	1.00E+00	5.50E-03	4.36E+03	4.70E+00	1.10E-01	5.63E+00	7.75E+02
UBDT-TP-3 (2-12")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	2.71E+03	2.29E+01	1.10E-03	1.64E+02	1.81E-01	1.00E+00	5.50E-03	4.20E+03	4.70E+00	1.10E-01	5.63E+00	7.47E+02
UBDT-TP-3 (12-24")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	2.51E+03	2.13E+01	1.10E-03	1.52E+02	1.68E-01	1.00E+00	5.50E-03	3.90E+03	4.70E+00	1.10E-01	5.63E+00	6.93E+02
UBDT-TP-3 (24-36")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	2.24E+03	1.90E+01	1.10E-03	1.36E+02	1.50E-01	1.00E+00	5.50E-03	3.48E+03	4.70E+00	1.10E-01	5.63E+00	6.19E+02
UBDT-TP-3 (36-48")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	3.68E+03	3.12E+01	1.10E-03	2.23E+02	2.46E-01	1.00E+00	5.50E-03	5.71E+03	4.70E+00	1.10E-01	5.63E+00	1.02E+03
UBDT-TP-3 (48-60")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	7.63E+02	6.46E+00	1.10E-03	4.63E+01	5.09E-02	1.00E+00	5.50E-03	1.18E+03	4.70E+00	1.10E-01	5.63E+00	2.10E+02
BREOT-N21-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	1.61E+03	1.36E+01	1.10E-03	9.77E+01	1.08E-01	1.00E+00	5.50E-03	2.50E+03	4.70E+00	1.10E-01	5.63E+00	4.44E+02
BREOT-N22-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	3.05E+03	2.58E+01	1.10E-03	1.85E+02	2.03E-01	1.00E+00	5.50E-03	4.73E+03	4.70E+00	1.10E-01	5.63E+00	8.40E+02
BREOT-N23-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	3.28E+03	2.78E+01	1.10E-03	1.99E+02	2.19E-01	1.00E+00	5.50E-03	5.09E+03	4.70E+00	1.10E-01	5.63E+00	9.06E+02
BREOT-S23-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	1.87E+03	1.59E+01	1.10E-03	1.14E+02	1.25E-01	1.00E+00	5.50E-03	2.91E+03	4.70E+00	1.10E-01	5.63E+00	5.17E+02
UBDT-TP-2 (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	3.63E+03	3.08E+01	1.10E-03	2.20E+02	2.43E-01	1.00E+00	5.50E-03	5.64E+03	4.70E+00	1.10E-01	5.63E+00	1.00E+03
UBDT-TP-2 (2-12")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	1.82E+03	1.54E+01	1.10E-03	1.10E+02	1.21E-01	1.00E+00	5.50E-03	2.82E+03	4.70E+00	1.10E-01	5.63E+00	5.01E+02
UBDT-TP-2 (12-24")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	5.05E+02	4.27E+00	1.10E-03	3.06E+01	3.37E-02	1.00E+00	5.50E-03	7.83E+02	4.70E+00	1.10E-01	5.63E+00	1.39E+02
UBDT-TP-2 (24-36")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	1.06E+03	8.96E+00	1.10E-03	6.42E+01	7.07E-02	1.00E+00	5.50E-03	1.64E+03	4.70E+00	1.10E-01	5.63E+00	2.92E+02
UBDT-TP-2 (36-48")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	1.16E+03	9.85E+00	1.10E-03	7.05E+01	7.77E-02	1.00E+00	5.50E-03	1.80E+03	4.70E+00	1.10E-01	5.63E+00	3.21E+02
BREOT-S24-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	2.33E+03	1.97E+01	1.10E-03	1.41E+02	1.56E-01	1.00E+00	5.50E-03	3.61E+03	4.70E+00	1.10E-01	5.63E+00	6.42E+02
BREOT-N25-50 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	5.57E+03	4.72E+01	1.10E-03	3.38E+02	3.72E-01	1.00E+00	5.50E-03	8.64E+03	4.70E+00	1.10E-01	5.63E+00	1.54E+03
BREOT-N25-95 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	4.53E+03	3.84E+01	1.10E-03	2.75E+02	3.03E-01	1.00E+00	5.50E-03	7.04E+03	4.70E+00	1.10E-01	5.63E+00	1.25E+03
BREOT-S25-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	2.63E+03	2.23E+01	1.10E-03	1.60E+02	1.76E-01	1.00E+00	5.50E-03	4.09E+03	4.70E+00	1.10E-01	5.63E+00	7.27E+02
BREOT-S25-40 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	1.99E+03	1.69E+01	1.10E-03	1.21E+02	1.33E-01	1.00E+00	5.50E-03	3.09E+03	4.70E+00	1.10E-01	5.63E+00	5.49E+02
BREOT-N26A-25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	3.05E+02	2.59E+00	1.10E-03	1.85E+01	2.04E-02	1.00E+00	5.50E-03	4.74E+02	4.70E+00	1.10E-01	5.63E+00	8.42E+01
BREOT-N26B-25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	1.84E+03	1.56E+01	1.10E-03	1.12E+02	1.23E-01	1.00E+00	5.50E-03	2.85E+03	4.70E+00	1.10E-01	5.63E+00	5.08E+02
BREOT-N26-50 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	4.09E+03	3.46E+01	1.10E-03	2.48E+02	2.73E-01	1.00E+00	5.50E-03	6.35E+03	4.70E+00	1.10E-01	5.63E+00	1.13E+03
BREOT-N26-75 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	3.50E+03	2.96E+01	1.10E-03	2.12E+02	2.34E-01	1.00E+00	5.50E-03	5.43E+03	4.70E+00	1.10E-01	5.63E+00	9.65E+02
BREOT-S26-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	1.68E+03	1.42E+01	1.10E-03	1.02E+02	1.12E-01	1.00E+00	5.50E-03	2.61E+03	4.70E+00	1.10E-01	5.63E+00	4.63E+02
BREOT-S26-40 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	2.42E+03	2.05E+01	1.10E-03	1.47E+02	1.62E-01	1.00E+00	5.50E-03	3.76E+03	4.70E+00	1.10E-01	5.63E+00	6.68E+02
BREOT-N27-30 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	6.84E+03	5.79E+01	1.10E-03	4.15E+02	4.57E-01	1.00E+00	5.50E-03	1.06E+04	4.70E+00	1.10E-01	5.63E+00	1.89E+03
BREOT-N27-75 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	6.79E+03	5.75E+01	1.10E-03	4.12E+02	4.53E-01	1.00E+00	5.50E-03	1.05E+04	4.70E+00	1.10E-01	5.63E+00	1.87E+03
BREOT-S27-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	2.11E+03	1.79E+01	1.10E-03	1.28E+02	1.41E-01	1.00E+00	5.50E-03	3.28E+03	4.70E+00	1.10E-01	5.63E+00	5.83E+02
BREOT-N28-110 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	1.90E+03	1.61E+01	1.10E-03	1.15E+02	1.27E-01	1.00E+00	5.50E-03	2.95E+03	4.70E+00	1.10E-01	5.63E+00	5.25E+02
BREOT-N28-55 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	2.02E+04	1.71E+02	1.10E-03	1.22E+03	1.35E+00	1.00E+00	5.50E-03	3.13E+04	4.70E+00	1.10E-01	5.63E+00	5.57E+03
BREOT-S28-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	1.31E+03	1.11E+01	1.10E-03	7.95E+01	8.75E-02	1.00E+00	5.50E-03	2.03E+03	4.70E+00	1.10E-01	5.63E+00	3.62E+02
UBDT-TP-1 (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	6.50E+03	5.51E+01	1.10E-03	3.94E+02	4.34E-01	1.00E+00	5.50E-03	1.01E+04	4.70E+00	1.10E-01	5.63E+00	1.79E+03
UBDT-TP-1 (2-12")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	1.13E+04	9.59E+01	1.10E-03	6.87E+02	7.56E-01	1.00E+00	5.50E-03	1.76E+04	4.70E+00	1.10E-01	5.63E+00	3.12E+03
UBDT-TP-1 (12-24")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	3.57E+03	3.03E+01	1.10E-03	2.17E+02	2.39E-01	1.00E+00	5.50E-03	5.54E+03	4.70E+00	1.10E-01	5.63E+00	9.85E+02
UBDT-TP-1 (24-36")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	2.73E+03	2.31E+01	1.10E-03	1.66E+02	1.82E-01	1.00E+00	5.50E-03	4.24E+03	4.70E+00	1.10E-01	5.63E+00	7.53E+02
UBDT-TP-1 (36-48")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	1.94E+02	1.64E+00	1.10E-03	1.18E+01	1.29E-02	1.00E+00	5.50E-03	3.01E+02	4.70E+00	1.10E-01	5.63E+00	5.35E+01
UBDT-TP-1 (48-60")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	2.07E+02	1.76E+00	1.10E-03	1.26E+01	1.39E-02	1.00E+00	5.50E-03	3.22E+02	4.70E+00	1.10E-01	5.63E+00	5.72E+01
BREOT-N29-30 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	1.03E+04	8.73E+01	1.10E-03	6.25E+02	6.89E-01	1.00E+00	5.50E-03	1.60E+04	4.70E+00	1.10E-01	5.63E+00	2.84E+03
BREOT-S29-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	2.51E+03	2.12E+01	1.10E-03	1.52E+02	1.67E-01	1.00E+00	5.50E-03	3.89E+03	4.70E+00	1.10E-01	5.63E+00	6.92E+02
BREOT-N30-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	1.70E+03	1.44E+01	1.10E-03	1.03E+02	1.14E-01	1.00E+00	5.50E-03	2.64E+03	4.70E+00	1.10E-01	5.63E+00	4.70E+02
BREOT-S30-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	2.42E+03	2.05E+01	1.10E-03	1.47E+02	1.62E-01	1.00E+00	5.50E-03	3.76E+03	4.70E+00	1.10E-01	5.63E+00	6.69E+02
BREOT-N31-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	2.25E+03	1.91E+01	1.10E-03	1.37E+02	1.51E-01	1.00E+00	5.50E-03	3.50E+03	4.70E+00	1.10E-01	5.63E+00	6.22E+02
BREOT-S31-25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	1.37E+03	1.16E+01	1.10E-03	8.32E+01	9.16E-02	1.00E+00	5.50E-03	2.13E+03	4.70E+00	1.10E-01	5.63E+00	3.78E+02
BREOT-S31-5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	2.79E+03	2.36E+01	1.10E-03	1.69E+02	1.86E-01	1.00E+00	5.50E-03	4.33E+03	4.70E+00	1.10E-01	5.63E+00	7.69E+02
BREOT-N32-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	5.00E+03	4.24E+01	1.10E-03	3.03E+02	3.34E-01	1.00E+00	5.50E-03	7.76E+03	4.70E+00	1.10E-01	5.63E+00	1.38E+03

TABLE C-2A: ARSENIC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

Site Area (hectares) **18.41**

from dose parameters tables; from BAF table; linked to soil or sed concentration table (VLOOKUP)

calculated values; linked to TRV table (VLOOKUP) - should be same for all birds or mammals

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Masked Shrew (Omnivorous Mammal - Terrestrial, Wetland)																							
BREOT-S32-6 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	2.92E+03	2.47E+01	1.10E-03	1.77E+02	1.95E-01	1.00E+00	5.50E-03	4.53E+03	4.70E+00	1.10E-01	5.63E+00	8.06E+02
BREOT-N33-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	4.78E+03	4.04E+01	1.10E-03	2.90E+02	3.19E-01	1.00E+00	5.50E-03	7.41E+03	4.70E+00	1.10E-01	5.63E+00	1.32E+03
BREOT-S33-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	2.41E+02	2.04E+00	1.10E-03	1.46E+01	1.61E-02	1.00E+00	5.50E-03	3.73E+02	4.70E+00	1.10E-01	5.63E+00	6.64E+01
BREOT-N35-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	1.30E+03	1.10E+01	1.10E-03	7.90E+01	8.70E-02	1.00E+00	5.50E-03	2.02E+03	4.70E+00	1.10E-01	5.63E+00	3.59E+02
BREOT-S35-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	3.09E+03	2.62E+01	1.10E-03	1.87E+02	2.06E-01	1.00E+00	5.50E-03	4.80E+03	4.70E+00	1.10E-01	5.63E+00	8.52E+02
BREOT-N36-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	2.54E+03	2.16E+01	1.10E-03	1.54E+02	1.70E-01	1.00E+00	5.50E-03	3.95E+03	4.70E+00	1.10E-01	5.63E+00	7.02E+02
BREOT-S36-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	2.45E+03	2.07E+01	1.10E-03	1.49E+02	1.64E-01	1.00E+00	5.50E-03	3.80E+03	4.70E+00	1.10E-01	5.63E+00	6.76E+02
BREOT-N37-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	3.65E+03	3.09E+01	1.10E-03	2.21E+02	2.44E-01	1.00E+00	5.50E-03	5.66E+03	4.70E+00	1.10E-01	5.63E+00	1.01E+03
BREOT-S37-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	1.77E+03	1.50E+01	1.10E-03	1.07E+02	1.18E-01	1.00E+00	5.50E-03	2.74E+03	4.70E+00	1.10E-01	5.63E+00	4.87E+02
BREOT-N38-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	1.69E+03	1.43E+01	1.10E-03	1.02E+02	1.13E-01	1.00E+00	5.50E-03	2.62E+03	4.70E+00	1.10E-01	5.63E+00	4.65E+02
BREOT-S38-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	3.32E+03	2.82E+01	1.10E-03	2.02E+02	2.22E-01	1.00E+00	5.50E-03	5.16E+03	4.70E+00	1.10E-01	5.63E+00	9.17E+02
BREOT-N39-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	4.12E+03	3.49E+01	1.10E-03	2.50E+02	2.75E-01	1.00E+00	5.50E-03	6.40E+03	4.70E+00	1.10E-01	5.63E+00	1.14E+03
BREOT-S39-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	2.61E+03	2.21E+01	1.10E-03	1.58E+02	1.74E-01	1.00E+00	5.50E-03	4.05E+03	4.70E+00	1.10E-01	5.63E+00	7.19E+02
BREOT-N40-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	2.50E+03	2.12E+01	1.10E-03	1.52E+02	1.67E-01	1.00E+00	5.50E-03	3.89E+03	4.70E+00	1.10E-01	5.63E+00	6.91E+02
BREOT-S40-14 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	4.35E+03	3.68E+01	1.10E-03	2.64E+02	2.91E-01	1.00E+00	5.50E-03	6.75E+03	4.70E+00	1.10E-01	5.63E+00	1.20E+03
BREOT-N41-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	4.64E+02	3.93E+00	1.10E-03	2.81E+01	3.10E-02	1.00E+00	5.50E-03	7.20E+02	4.70E+00	1.10E-01	5.63E+00	1.28E+02
BREOT-S41-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	5.45E+03	4.62E+01	1.10E-03	3.31E+02	3.64E-01	1.00E+00	5.50E-03	8.46E+03	4.70E+00	1.10E-01	5.63E+00	1.50E+03
BREOT-N42-35 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	1.95E+03	1.66E+01	1.10E-03	1.19E+02	1.31E-01	1.00E+00	5.50E-03	3.03E+03	4.70E+00	1.10E-01	5.63E+00	5.39E+02
BREOT-S42-25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	3.27E+03	2.77E+01	1.10E-03	1.98E+02	2.18E-01	1.00E+00	5.50E-03	5.07E+03	4.70E+00	1.10E-01	5.63E+00	9.02E+02
BREOT-N43-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	2.78E+03	2.36E+01	1.10E-03	1.69E+02	1.86E-01	1.00E+00	5.50E-03	4.32E+03	4.70E+00	1.10E-01	5.63E+00	7.68E+02
BREOT-S43-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	2.68E+03	2.27E+01	1.10E-03	1.62E+02	1.79E-01	1.00E+00	5.50E-03	4.16E+03	4.70E+00	1.10E-01	5.63E+00	7.39E+02
BREOT-N44-30 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	1.92E+03	1.62E+01	1.10E-03	1.16E+02	1.28E-01	1.00E+00	5.50E-03	2.97E+03	4.70E+00	1.10E-01	5.63E+00	5.29E+02
BREOT-S44-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	2.30E+03	1.95E+01	1.10E-03	1.40E+02	1.54E-01	1.00E+00	5.50E-03	3.58E+03	4.70E+00	1.10E-01	5.63E+00	6.36E+02
BREOT-N45-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	2.71E+03	2.30E+01	1.10E-03	1.65E+02	1.81E-01	1.00E+00	5.50E-03	4.21E+03	4.70E+00	1.10E-01	5.63E+00	7.49E+02
BREOT-N43-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	2.78E+03	2.36E+01	1.10E-03	1.69E+02	1.86E-01	1.00E+00	5.50E-03	4.32E+03	4.70E+00	1.10E-01	5.63E+00	7.68E+02
BREOT-S45-6 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	2.17E+03	1.84E+01	1.10E-03	1.32E+02	1.45E-01	1.00E+00	5.50E-03	3.37E+03	4.70E+00	1.10E-01	5.63E+00	5.98E+02
BREOT-N46-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	1.09E+03	9.22E+00	1.10E-03	6.60E+01	7.27E-02	1.00E+00	5.50E-03	1.69E+03	4.70E+00	1.10E-01	5.63E+00	3.00E+02
BREOT-S46-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	1.06E+03	8.94E+00	1.10E-03	6.40E+01	7.05E-02	1.00E+00	5.50E-03	1.64E+03	4.70E+00	1.10E-01	5.63E+00	2.91E+02
BREOT-S46-40 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	1.55E+03	1.31E+01	1.10E-03	9.38E+01	1.03E-01	1.00E+00	5.50E-03	2.40E+03	4.70E+00	1.10E-01	5.63E+00	4.27E+02
BREOT-N47-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	1.59E+03	1.35E+01	1.10E-03	9.66E+01	1.06E-01	1.00E+00	5.50E-03	2.47E+03	4.70E+00	1.10E-01	5.63E+00	4.40E+02
BREOT-S47-999 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	2.51E+03	2.13E+01	1.10E-03	1.52E+02	1.68E-01	1.00E+00	5.50E-03	3.90E+03	4.70E+00	1.10E-01	5.63E+00	6.93E+02
BREOT-S48-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	7.67E+02	6.50E+00	1.10E-03	4.65E+01	5.12E-02	1.00E+00	5.50E-03	1.19E+03	4.70E+00	1.10E-01	5.63E+00	2.12E+02
BREOT-S49-2.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	9.11E+02	7.72E+00	1.10E-03	5.53E+01	6.09E-02	1.00E+00	5.50E-03	1.41E+03	4.70E+00	1.10E-01	5.63E+00	2.51E+02
BREOT-S50-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	2.85E+02	2.41E+00	1.10E-03	1.73E+01	1.90E-02	1.00E+00	5.50E-03	4.42E+02	4.70E+00	1.10E-01	5.63E+00	7.86E+01
BREOT-S50-25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	4.29E+02	3.64E+00	1.10E-03	2.61E+01	2.87E-02	1.00E+00	5.50E-03	6.66E+02	4.70E+00	1.10E-01	5.63E+00	1.18E+02
BREOT-N52-60 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	3.53E+03	2.99E+01	1.10E-03	2.14E+02	2.36E-01	1.00E+00	5.50E-03	5.47E+03	4.70E+00	1.10E-01	5.63E+00	9.73E+02
BREOT-S52-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	1.59E+03	1.35E+01	1.10E-03	9.67E+01	1.06E-01	1.00E+00	5.50E-03	2.47E+03	4.70E+00	1.10E-01	5.63E+00	4.40E+02
BREOT-S53-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	4.73E+02	4.01E+00	1.10E-03	2.87E+01	3.16E-02	1.00E+00	5.50E-03	7.34E+02	4.70E+00	1.10E-01	5.63E+00	1.30E+02
BREOT-S54-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	3.48E+02	2.94E+00	1.10E-03	2.11E+01	2.32E-02	1.00E+00	5.50E-03	5.40E+02	4.70E+00	1.10E-01	5.63E+00	9.59E+01
BREOT-N55-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	3.08E+03	2.61E+01	1.10E-03	1.87E+02	2.06E-01	1.00E+00	5.50E-03	4.78E+03	4.70E+00	1.10E-01	5.63E+00	8.49E+02
BREOT-S55-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	1.07E+03	9.05E+00	1.10E-03	6.49E+01	7.14E-02	1.00E+00	5.50E-03	1.66E+03	4.70E+00	1.10E-01	5.63E+00	2.95E+02
BREOT-N56-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	2.09E+03	1.77E+01	1.10E-03	1.27E+02	1.40E-01	1.00E+00	5.50E-03	3.24E+03	4.70E+00	1.10E-01	5.63E+00	5.76E+02
BREOT-S56-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	4.52E+02	3.83E+00	1.10E-03	2.74E+01	3.02E-02	1.00E+00	5.50E-03	7.02E+02	4.70E+00	1.10E-01	5.63E+00	1.25E+02
BREOT-N57-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	2.03E+03	1.72E+01	1.10E-03	1.23E+02	1.36E-01	1.00E+00	5.50E-03	3.15E+03	4.70E+00	1.10E-01	5.63E+00	5.60E+02
BREOT-S57-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	1.19E+03	1.01E+01	1.10E-03	7.20E+01	7.93E-02	1.00E+00	5.50E-03	1.84E+03	4.70E+00	1.10E-01	5.63E+00	3.28E+02
BREOT-N58-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	8.65E+02	7.33E+00	1.10E-03	5.25E+01	5.78E-02	1.00E+00	5.50E-03	1.34E+03	4.70E+00	1.10E-01	5.63E+00	2.39E+02
BREOT-S58-12 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	1.36E+03	1.15E+01	1.10E-03	8.27E+01	9.10E-02	1.00E+00	5.50E-03	2.11E+03	4.70E+00	1.10E-01	5.63E+00	3.76E+02
BREOT-N59-18 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	1.51E+03	1.28E+01	1.10E-03	9.18E+01	1.01E-01	1.00E+00	5.50E-03	2.35E+03	4.70E+00	1.10E-01	5.63E+00	4.18E+02
BREOT-N60-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	4.28E+02	3.63E+00	1.10E-03	2.60E+01	2.86E-02	1.00E+00	5.50E-03	6.65E+02	4.70E+00	1.10E-01	5.63E+00	1.18E+02
BREOT-S60-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	1.31E+03	1.11E+01	1.10E-03	7.95E+01	8.75E-02	1.00E+00	5.50E-03	2.03E+03	4.70E+00	1.10E-01	5.63E+00	3.62E+02
BREOT-S61-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	7.37E+02	6.25E+00	1.10E-03	4.47E+01	4.93E-02	1.00E+00	5.50E-03	1.14E+03	4.70E+00	1.10E-01	5.63E+00	2.03E+02
BREOT-N62-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	1.49E+02	1.26E+00	1.10E-03	9.05E+00	9.96E-03	1.00E+00	5.50E-03	2.32E+02	4.70E+00	1.10E-01	5.63E+00	4.12E+01
BREOT-S62-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	1.68E+03	1.43E+01	1.10E-03	1.02E+02	1.12E-01	1.00E+00	5.50E-03	2.61E+03	4.70E+00	1.10E-01	5.63E+00	4.64E+02
BREOT-S63-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	1.04E+03	8.77E+00	1.10E-03	6.29E+01	6.92E-02	1.00E+00	5.50E-03	1.61E+03	4.70E+00	1.10E-01	5.63E+00	2.86E+02
BREOT-N64-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	6.52E+02	5.52E+00	1.10E-03	3.96E+01	4.36E-02	1.00E+00	5.50E-03	1.01E+03	4.70E+00	1.10E-01	5.63E+00	1.80E+02

TABLE C-2A: ARSENIC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

Site Area (hectares) **18.41**

from dose parameters tables; from BAF table; linked to soil or sed concentration table (VLOOKUP)

calculated values; linked to TRV table (VLOOKUP) - should be same for all birds or mammals

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Masked Shrew (Omnivorous Mammal - Terrestrial, Wetland)																							
BREOT-N64-20 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	8.06E+02	6.82E+00	1.10E-03	4.89E+01	5.38E-02	1.00E+00	5.50E-03	1.25E+03	4.70E+00	1.10E-01	5.63E+00	2.22E+02
BREOT-S64-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	1.03E+03	8.73E+00	1.10E-03	6.25E+01	6.89E-02	1.00E+00	5.50E-03	1.60E+03	4.70E+00	1.10E-01	5.63E+00	2.84E+02
BREOT-N65-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	4.63E+02	3.92E+00	1.10E-03	2.81E+01	3.09E-02	1.00E+00	5.50E-03	7.19E+02	4.70E+00	1.10E-01	5.63E+00	1.28E+02
BREOT-S65-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	2.00E+03	1.69E+01	1.10E-03	1.21E+02	1.33E-01	1.00E+00	5.50E-03	3.10E+03	4.70E+00	1.10E-01	5.63E+00	5.51E+02
BREOT-N66-5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	1.62E+03	1.38E+01	1.10E-03	9.86E+01	1.09E-01	1.00E+00	5.50E-03	2.52E+03	4.70E+00	1.10E-01	5.63E+00	4.48E+02
BREOT-S66-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	1.14E+03	9.70E+00	1.10E-03	6.95E+01	7.65E-02	1.00E+00	5.50E-03	1.78E+03	4.70E+00	1.10E-01	5.63E+00	3.16E+02
BREOT-N67-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	1.61E+03	1.36E+01	1.10E-03	9.75E+01	1.07E-01	1.00E+00	5.50E-03	2.49E+03	4.70E+00	1.10E-01	5.63E+00	4.43E+02
BREOT-S67-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	2.09E+02	1.77E+00	1.10E-03	1.27E+01	1.40E-02	1.00E+00	5.50E-03	3.24E+02	4.70E+00	1.10E-01	5.63E+00	5.76E+01
At Edge of Tailings																						**Maximum HQ (Inside Tailings)**	**5.57E+03**
BREOT-S0-0 (06)	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	1.30E+03	1.10E+01	1.10E-03	7.87E+01	8.67E-02	1.00E+00	5.50E-03	2.01E+03	4.70E+00	1.10E-01	5.63E+00	3.58E+02
BREOT-S1-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	3.94E+03	3.34E+01	1.10E-03	2.39E+02	2.63E-01	1.00E+00	5.50E-03	6.11E+03	4.70E+00	1.10E-01	5.63E+00	1.09E+03
BREOT-S2-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	1.12E+03	9.51E+00	1.10E-03	6.81E+01	7.50E-02	1.00E+00	5.50E-03	1.74E+03	4.70E+00	1.10E-01	5.63E+00	3.10E+02
BREOT-S3-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	4.40E+03	3.73E+01	1.10E-03	2.67E+02	2.94E-01	1.00E+00	5.50E-03	6.83E+03	4.70E+00	1.10E-01	5.63E+00	1.21E+03
BREOT-S4-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	4.00E+03	3.38E+01	1.10E-03	2.42E+02	2.67E-01	1.00E+00	5.50E-03	6.20E+03	4.70E+00	1.10E-01	5.63E+00	1.10E+03
BREOT-S6-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	4.79E+03	4.06E+01	1.10E-03	2.91E+02	3.20E-01	1.00E+00	5.50E-03	7.44E+03	4.70E+00	1.10E-01	5.63E+00	1.32E+03
BREOT-S7-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	2.86E+03	2.43E+01	1.10E-03	1.74E+02	1.91E-01	1.00E+00	5.50E-03	4.45E+03	4.70E+00	1.10E-01	5.63E+00	7.90E+02
BREOT-S8-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	8.57E+02	7.26E+00	1.10E-03	5.20E+01	5.72E-02	1.00E+00	5.50E-03	1.33E+03	4.70E+00	1.10E-01	5.63E+00	2.36E+02
BREOT-S9-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	1.96E+03	1.66E+01	1.10E-03	1.19E+02	1.31E-01	1.00E+00	5.50E-03	3.05E+03	4.70E+00	1.10E-01	5.63E+00	5.41E+02
BREOT-N10-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	1.76E+04	1.49E+02	1.10E-03	1.07E+03	1.17E+00	1.00E+00	5.50E-03	2.72E+04	4.70E+00	1.10E-01	5.63E+00	4.84E+03
BREOT-N11-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	4.82E+03	4.08E+01	1.10E-03	2.92E+02	3.22E-01	1.00E+00	5.50E-03	7.47E+03	4.70E+00	1.10E-01	5.63E+00	1.33E+03
BREOT-S11-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	1.66E+03	1.41E+01	1.10E-03	1.01E+02	1.11E-01	1.00E+00	5.50E-03	2.58E+03	4.70E+00	1.10E-01	5.63E+00	4.59E+02
BREOT-N12-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	1.81E+03	1.53E+01	1.10E-03	1.10E+02	1.21E-01	1.00E+00	5.50E-03	2.80E+03	4.70E+00	1.10E-01	5.63E+00	4.99E+02
BREOT-N13-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	2.07E+04	1.75E+02	1.10E-03	1.26E+03	1.38E+00	1.00E+00	5.50E-03	3.21E+04	4.70E+00	1.10E-01	5.63E+00	5.71E+03
BREOT-S13-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	2.99E+02	2.53E+00	1.10E-03	1.81E+01	2.00E-02	1.00E+00	5.50E-03	4.64E+02	4.70E+00	1.10E-01	5.63E+00	8.25E+01
BREOT-N14-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	2.71E+03	2.30E+01	1.10E-03	1.64E+02	1.81E-01	1.00E+00	5.50E-03	4.21E+03	4.70E+00	1.10E-01	5.63E+00	7.48E+02
BREOT-S14-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	1.17E+04	9.89E+01	1.10E-03	7.08E+02	7.80E-01	1.00E+00	5.50E-03	1.81E+04	4.70E+00	1.10E-01	5.63E+00	3.22E+03
BREOT-N15-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	5.32E+03	4.51E+01	1.10E-03	3.23E+02	3.56E-01	1.00E+00	5.50E-03	8.26E+03	4.70E+00	1.10E-01	5.63E+00	1.47E+03
BREOT-N16-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	3.33E+03	2.82E+01	1.10E-03	2.02E+02	2.22E-01	1.00E+00	5.50E-03	5.17E+03	4.70E+00	1.10E-01	5.63E+00	9.19E+02
BREOT-S16-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	5.34E+02	4.52E+00	1.10E-03	3.24E+01	3.57E-02	1.00E+00	5.50E-03	8.29E+02	4.70E+00	1.10E-01	5.63E+00	1.47E+02
BREOT-N17-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	3.19E+03	2.70E+01	1.10E-03	1.94E+02	2.13E-01	1.00E+00	5.50E-03	4.95E+03	4.70E+00	1.10E-01	5.63E+00	8.81E+02
BREOT-S17-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	3.62E+03	3.07E+01	1.10E-03	2.20E+02	2.42E-01	1.00E+00	5.50E-03	5.62E+03	4.70E+00	1.10E-01	5.63E+00	9.99E+02
BREOT-N18-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	2.79E+03	2.36E+01	1.10E-03	1.69E+02	1.86E-01	1.00E+00	5.50E-03	4.33E+03	4.70E+00	1.10E-01	5.63E+00	7.70E+02
BREOT-S18-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	8.17E+03	6.92E+01	1.10E-03	4.96E+02	5.46E-01	1.00E+00	5.50E-03	1.27E+04	4.70E+00	1.10E-01	5.63E+00	2.25E+03
BREOT-N19-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	3.99E+03	3.38E+01	1.10E-03	2.42E+02	2.66E-01	1.00E+00	5.50E-03	6.19E+03	4.70E+00	1.10E-01	5.63E+00	1.10E+03
BREOT-S19-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	9.94E+02	8.42E+00	1.10E-03	6.03E+01	6.64E-02	1.00E+00	5.50E-03	1.54E+03	4.70E+00	1.10E-01	5.63E+00	2.74E+02
BREOT-N20-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	2.84E+03	2.41E+01	1.10E-03	1.72E+02	1.90E-01	1.00E+00	5.50E-03	4.41E+03	4.70E+00	1.10E-01	5.63E+00	7.84E+02
BREOT-S20-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	8.86E+02	7.50E+00	1.10E-03	5.38E+01	5.92E-02	1.00E+00	5.50E-03	1.38E+03	4.70E+00	1.10E-01	5.63E+00	2.44E+02
BREOT-N21-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	7.93E+03	6.72E+01	1.10E-03	4.81E+02	5.30E-01	1.00E+00	5.50E-03	1.23E+04	4.70E+00	1.10E-01	5.63E+00	2.19E+03
BREOT-S21-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	3.04E+03	2.57E+01	1.10E-03	1.84E+02	2.03E-01	1.00E+00	5.50E-03	4.72E+03	4.70E+00	1.10E-01	5.63E+00	8.38E+02
BREOT-N22-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	3.43E+03	2.90E+01	1.10E-03	2.08E+02	2.29E-01	1.00E+00	5.50E-03	5.32E+03	4.70E+00	1.10E-01	5.63E+00	9.45E+02
BREOT-S22-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	3.06E+03	2.59E+01	1.10E-03	1.86E+02	2.05E-01	1.00E+00	5.50E-03	4.75E+03	4.70E+00	1.10E-01	5.63E+00	8.45E+02
BREOT-N23-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	3.42E+03	2.90E+01	1.10E-03	2.08E+02	2.29E-01	1.00E+00	5.50E-03	5.31E+03	4.70E+00	1.10E-01	5.63E+00	9.44E+02
BREOT-S23-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	3.89E+03	3.29E+01	1.10E-03	2.36E+02	2.60E-01	1.00E+00	5.50E-03	6.03E+03	4.70E+00	1.10E-01	5.63E+00	1.07E+03
BREOT-N24-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	3.81E+03	3.23E+01	1.10E-03	2.31E+02	2.55E-01	1.00E+00	5.50E-03	5.92E+03	4.70E+00	1.10E-01	5.63E+00	1.05E+03
BREOT-S24-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	2.42E+03	2.05E+01	1.10E-03	1.47E+02	1.62E-01	1.00E+00	5.50E-03	3.75E+03	4.70E+00	1.10E-01	5.63E+00	6.67E+02
BREOT-N25-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	3.62E+03	3.06E+01	1.10E-03	2.19E+02	2.42E-01	1.00E+00	5.50E-03	5.61E+03	4.70E+00	1.10E-01	5.63E+00	9.98E+02
BREOT-S25-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	2.13E+03	1.80E+01	1.10E-03	1.29E+02	1.42E-01	1.00E+00	5.50E-03	3.31E+03	4.70E+00	1.10E-01	5.63E+00	5.88E+02
BREOT-N26-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	7.79E+03	6.60E+01	1.10E-03	4.72E+02	5.20E-01	1.00E+00	5.50E-03	1.21E+04	4.70E+00	1.10E-01	5.63E+00	2.15E+03
BREOT-S26-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	2.32E+03	1.96E+01	1.10E-03	1.41E+02	1.55E-01	1.00E+00	5.50E-03	3.60E+03	4.70E+00	1.10E-01	5.63E+00	6.39E+02
BREOT-N27-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	7.67E+03	6.50E+01	1.10E-03	4.65E+02	5.12E-01	1.00E+00	5.50E-03	1.19E+04	4.70E+00	1.10E-01	5.63E+00	2.12E+03
BREOT-S27-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	3.45E+03	2.92E+01	1.10E-03	2.09E+02	2.30E-01	1.00E+00	5.50E-03	5.35E+03	4.70E+00	1.10E-01	5.63E+00	9.51E+02
BREOT-N28-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	2.04E+03	1.73E+01	1.10E-03	1.24E+02	1.36E-01	1.00E+00	5.50E-03	3.17E+03	4.70E+00	1.10E-01	5.63E+00	5.63E+02
BREOT-S28-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	1.90E+03	1.61E+01	1.10E-03	1.16E+02	1.27E-01	1.00E+00	5.50E-03	2.96E+03	4.70E+00	1.10E-01	5.63E+00	5.25E+02
BREOT-S29-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	2.80E+02	2.37E+00	1.10E-03	1.70E+01	1.87E-02	1.00E+00	5.50E-03	4.34E+02	4.70E+00	1.10E-01	5.63E+00	7.72E+01

TABLE C-2A: ARSENIC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **18.41**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Masked Shrew (Omnivorous Mammal - Terrestrial, Wetland)																							
BREOT-N30-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	7.27E+03	6.16E+01	1.10E-03	4.41E+02	4.86E-01	1.00E+00	5.50E-03	1.13E+04	4.70E+00	1.10E-01	5.63E+00	2.01E+03
BREOT-S30-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	2.04E+02	1.73E+00	1.10E-03	1.24E+01	1.36E-02	1.00E+00	5.50E-03	3.17E+02	4.70E+00	1.10E-01	5.63E+00	5.63E+01
BREOT-N31-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	1.78E+03	1.51E+01	1.10E-03	1.08E+02	1.19E-01	1.00E+00	5.50E-03	2.77E+03	4.70E+00	1.10E-01	5.63E+00	4.92E+02
BREOT-S31-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	1.87E+02	1.59E+00	1.10E-03	1.14E+01	1.25E-02	1.00E+00	5.50E-03	2.91E+02	4.70E+00	1.10E-01	5.63E+00	5.17E+01
BREOT-N32-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	2.32E+03	1.96E+01	1.10E-03	1.41E+02	1.55E-01	1.00E+00	5.50E-03	3.60E+03	4.70E+00	1.10E-01	5.63E+00	6.40E+02
BREOT-S32-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	1.45E+03	1.23E+01	1.10E-03	8.79E+01	9.67E-02	1.00E+00	5.50E-03	2.25E+03	4.70E+00	1.10E-01	5.63E+00	4.00E+02
BREOT-N33-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	2.71E+02	2.30E+00	1.10E-03	1.64E+01	1.81E-02	1.00E+00	5.50E-03	4.21E+02	4.70E+00	1.10E-01	5.63E+00	7.48E+01
BREOT-S33-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	1.38E+03	1.17E+01	1.10E-03	8.37E+01	9.22E-02	1.00E+00	5.50E-03	2.14E+03	4.70E+00	1.10E-01	5.63E+00	3.81E+02
BREOT-N34-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	4.10E+02	3.47E+00	1.10E-03	2.49E+01	2.74E-02	1.00E+00	5.50E-03	6.37E+02	4.70E+00	1.10E-01	5.63E+00	1.13E+02
BREOT-S34-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	2.29E+03	1.94E+01	1.10E-03	1.39E+02	1.53E-01	1.00E+00	5.50E-03	3.55E+03	4.70E+00	1.10E-01	5.63E+00	6.31E+02
BREOT-N35-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	4.08E+02	3.45E+00	1.10E-03	2.47E+01	2.72E-02	1.00E+00	5.50E-03	6.33E+02	4.70E+00	1.10E-01	5.63E+00	1.12E+02
BREOT-S35-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	1.81E+03	1.53E+01	1.10E-03	1.10E+02	1.21E-01	1.00E+00	5.50E-03	2.80E+03	4.70E+00	1.10E-01	5.63E+00	4.99E+02
BREOT-N36-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	3.56E+03	3.01E+01	1.10E-03	2.16E+02	2.38E-01	1.00E+00	5.50E-03	5.52E+03	4.70E+00	1.10E-01	5.63E+00	9.82E+02
BREOT-S36-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	2.64E+03	2.24E+01	1.10E-03	1.60E+02	1.77E-01	1.00E+00	5.50E-03	4.10E+03	4.70E+00	1.10E-01	5.63E+00	7.29E+02
BREOT-N37-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	1.40E+03	1.19E+01	1.10E-03	8.50E+01	9.36E-02	1.00E+00	5.50E-03	2.17E+03	4.70E+00	1.10E-01	5.63E+00	3.87E+02
BREOT-S37-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	2.49E+03	2.11E+01	1.10E-03	1.51E+02	1.66E-01	1.00E+00	5.50E-03	3.87E+03	4.70E+00	1.10E-01	5.63E+00	6.87E+02
BREOT-N38-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	3.01E+02	2.55E+00	1.10E-03	1.83E+01	2.01E-02	1.00E+00	5.50E-03	4.67E+02	4.70E+00	1.10E-01	5.63E+00	8.30E+01
BREOT-S38-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	5.13E+02	4.35E+00	1.10E-03	3.11E+01	3.43E-02	1.00E+00	5.50E-03	7.97E+02	4.70E+00	1.10E-01	5.63E+00	1.42E+02
BREOT-N39-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	3.27E+02	2.77E+00	1.10E-03	1.99E+01	2.19E-02	1.00E+00	5.50E-03	5.08E+02	4.70E+00	1.10E-01	5.63E+00	9.03E+01
BREOT-N40-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	6.91E+02	5.85E+00	1.10E-03	4.19E+01	4.62E-02	1.00E+00	5.50E-03	1.07E+03	4.70E+00	1.10E-01	5.63E+00	1.91E+02
BREOT-S40-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	2.80E+03	2.37E+01	1.10E-03	1.70E+02	1.87E-01	1.00E+00	5.50E-03	4.34E+03	4.70E+00	1.10E-01	5.63E+00	7.72E+02
BREOT-N41-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	4.84E+02	4.10E+00	1.10E-03	2.94E+01	3.24E-02	1.00E+00	5.50E-03	7.52E+02	4.70E+00	1.10E-01	5.63E+00	1.34E+02
BREOT-S41-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	3.42E+03	2.90E+01	1.10E-03	2.08E+02	2.29E-01	1.00E+00	5.50E-03	5.31E+03	4.70E+00	1.10E-01	5.63E+00	9.44E+02
BREOT-N42-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S42-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	3.56E+03	3.02E+01	1.10E-03	2.16E+02	2.38E-01	1.00E+00	5.50E-03	5.53E+03	4.70E+00	1.10E-01	5.63E+00	9.83E+02
BREOT-N43-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	5.79E+02	4.90E+00	1.10E-03	3.51E+01	3.87E-02	1.00E+00	5.50E-03	8.99E+02	4.70E+00	1.10E-01	5.63E+00	1.60E+02
BREOT-S43-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	3.31E+02	2.80E+00	1.10E-03	2.01E+01	2.21E-02	1.00E+00	5.50E-03	5.13E+02	4.70E+00	1.10E-01	5.63E+00	9.12E+01
BREOT-N44-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	1.08E+03	9.11E+00	1.10E-03	6.52E+01	7.18E-02	1.00E+00	5.50E-03	1.67E+03	4.70E+00	1.10E-01	5.63E+00	2.97E+02
BREOT-S44-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	1.20E+02	1.02E+00	1.10E-03	7.30E+00	8.04E-03	1.00E+00	5.50E-03	1.87E+02	4.70E+00	1.10E-01	5.63E+00	3.32E+01
BREOT-N45-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	1.63E+02	1.38E+00	1.10E-03	9.87E+00	1.09E-02	1.00E+00	5.50E-03	2.52E+02	4.70E+00	1.10E-01	5.63E+00	4.49E+01
BREOT-S45-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	3.97E+02	3.36E+00	1.10E-03	2.41E+01	2.65E-02	1.00E+00	5.50E-03	6.17E+02	4.70E+00	1.10E-01	5.63E+00	1.10E+02
BREOT-N46-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	1.58E+02	1.33E+00	1.10E-03	9.56E+00	1.05E-02	1.00E+00	5.50E-03	2.45E+02	4.70E+00	1.10E-01	5.63E+00	4.35E+01
BREOT-S46-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	7.51E+02	6.36E+00	1.10E-03	4.55E+01	5.01E-02	1.00E+00	5.50E-03	1.17E+03	4.70E+00	1.10E-01	5.63E+00	2.07E+02
BREOT-N47-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	1.44E+02	1.22E+00	1.10E-03	8.75E+00	9.63E-03	1.00E+00	5.50E-03	2.24E+02	4.70E+00	1.10E-01	5.63E+00	3.98E+01
BREOT-S47-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	3.35E+02	2.83E+00	1.10E-03	2.03E+01	2.24E-02	1.00E+00	5.50E-03	5.19E+02	4.70E+00	1.10E-01	5.63E+00	9.23E+01
BREOT-N48-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	1.86E+02	1.57E+00	1.10E-03	1.13E+01	1.24E-02	1.00E+00	5.50E-03	2.88E+02	4.70E+00	1.10E-01	5.63E+00	5.12E+01
BREOT-S48-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	1.06E+03	8.95E+00	1.10E-03	6.41E+01	7.06E-02	1.00E+00	5.50E-03	1.64E+03	4.70E+00	1.10E-01	5.63E+00	2.92E+02
BREOT-N49-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	4.98E+02	4.22E+00	1.10E-03	3.02E+01	3.33E-02	1.00E+00	5.50E-03	7.73E+02	4.70E+00	1.10E-01	5.63E+00	1.37E+02
BREOT-S49-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	1.40E+02	1.18E+00	1.10E-03	8.49E+00	9.34E-03	1.00E+00	5.50E-03	2.17E+02	4.70E+00	1.10E-01	5.63E+00	3.86E+01
BREOT-S50-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	4.15E+02	3.52E+00	1.10E-03	2.52E+01	2.77E-02	1.00E+00	5.50E-03	6.44E+02	4.70E+00	1.10E-01	5.63E+00	1.15E+02
BREOT-N51-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	9.38E+02	7.94E+00	1.10E-03	5.69E+01	6.26E-02	1.00E+00	5.50E-03	1.46E+03	4.70E+00	1.10E-01	5.63E+00	2.59E+02
BREOT-S51-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	4.05E+02	3.43E+00	1.10E-03	2.46E+01	2.71E-02	1.00E+00	5.50E-03	6.29E+02	4.70E+00	1.10E-01	5.63E+00	1.12E+02
BREOT-N52-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	1.19E+02	1.01E+00	1.10E-03	7.22E+00	7.94E-03	1.00E+00	5.50E-03	1.85E+02	4.70E+00	1.10E-01	5.63E+00	3.28E+01
BREOT-S52-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	1.16E+02	9.86E-01	1.10E-03	7.06E+00	7.77E-03	1.00E+00	5.50E-03	1.81E+02	4.70E+00	1.10E-01	5.63E+00	3.21E+01
BREOT-N53-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	1.62E+02	1.38E+00	1.10E-03	9.85E+00	1.08E-02	1.00E+00	5.50E-03	2.52E+02	4.70E+00	1.10E-01	5.63E+00	4.48E+01
BREOT-S53-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	2.88E+02	2.44E+00	1.10E-03	1.75E+01	1.93E-02	1.00E+00	5.50E-03	4.47E+02	4.70E+00	1.10E-01	5.63E+00	7.95E+01
BREOT-N54-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	1.76E+02	1.49E+00	1.10E-03	1.07E+01	1.18E-02	1.00E+00	5.50E-03	2.74E+02	4.70E+00	1.10E-01	5.63E+00	4.87E+01
BREOT-S54-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	1.31E+02	1.11E+00	1.10E-03	7.94E+00	8.74E-03	1.00E+00	5.50E-03	2.03E+02	4.70E+00	1.10E-01	5.63E+00	3.61E+01
BREOT-N55-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	1.46E+02	1.24E+00	1.10E-03	8.86E+00	9.76E-03	1.00E+00	5.50E-03	2.27E+02	4.70E+00	1.10E-01	5.63E+00	4.03E+01
BREOT-S55-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	1.48E+02	1.25E+00	1.10E-03	8.96E+00	9.87E-03	1.00E+00	5.50E-03	2.29E+02	4.70E+00	1.10E-01	5.63E+00	4.07E+01
BREOT-N56-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	1.38E+03	1.17E+01	1.10E-03	8.38E+01	9.22E-02	1.00E+00	5.50E-03	2.14E+03	4.70E+00	1.10E-01	5.63E+00	3.81E+02
BREOT-N57-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	1.77E+02	1.50E+00	1.10E-03	1.07E+01	1.18E-02	1.00E+00	5.50E-03	2.75E+02	4.70E+00	1.10E-01	5.63E+00	4.89E+01
BREOT-S57-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	6.49E+02	5.50E+00	1.10E-03	3.94E+01	4.34E-02	1.00E+00	5.50E-03	1.01E+03	4.70E+00	1.10E-01	5.63E+00	1.79E+02
BREOT-N58-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	3.43E+02	2.90E+00	1.10E-03	2.08E+01	2.29E-02	1.00E+00	5.50E-03	5.32E+02	4.70E+00	1.10E-01	5.63E+00	9.46E+01
BREOT-S58-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	3.96E+02	3.36E+00	1.10E-03	2.41E+01	2.65E-02	1.00E+00	5.50E-03	6.15E+02	4.70E+00	1.10E-01	5.63E+00	1.09E+02

TABLE C-2A: ARSENIC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **18.41**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Masked Shrew (Omnivorous Mammal - Terrestrial, Wetland)																							
BREOT-N59-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	5.73E+02	4.86E+00	1.10E-03	3.48E+01	3.83E-02	1.00E+00	5.50E-03	8.90E+02	4.70E+00	1.10E-01	5.63E+00	1.58E+02
BREOT-N60-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	3.25E+02	2.75E+00	1.10E-03	1.97E+01	2.17E-02	1.00E+00	5.50E-03	5.05E+02	4.70E+00	1.10E-01	5.63E+00	8.97E+01
BREOT-S60-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	1.34E+03	1.14E+01	1.10E-03	8.13E+01	8.95E-02	1.00E+00	5.50E-03	2.08E+03	4.70E+00	1.10E-01	5.63E+00	3.70E+02
BREOT-S61-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	1.49E+02	1.26E+00	1.10E-03	9.02E+00	9.93E-03	1.00E+00	5.50E-03	2.31E+02	4.70E+00	1.10E-01	5.63E+00	4.10E+01
BREOT-N62-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	3.01E+02	2.55E+00	1.10E-03	1.83E+01	2.01E-02	1.00E+00	5.50E-03	4.68E+02	4.70E+00	1.10E-01	5.63E+00	8.32E+01
BREOT-S62-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	1.54E+02	1.31E+00	1.10E-03	9.35E+00	1.03E-02	1.00E+00	5.50E-03	2.39E+02	4.70E+00	1.10E-01	5.63E+00	4.25E+01
BREOT-N63-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	9.18E+02	7.78E+00	1.10E-03	5.57E+01	6.13E-02	1.00E+00	5.50E-03	1.43E+03	4.70E+00	1.10E-01	5.63E+00	2.53E+02
BREOT-S63-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	4.85E+02	4.11E+00	1.10E-03	2.94E+01	3.24E-02	1.00E+00	5.50E-03	7.52E+02	4.70E+00	1.10E-01	5.63E+00	1.34E+02
BREOT-N64-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	1.43E+02	1.21E+00	1.10E-03	8.70E+00	9.57E-03	1.00E+00	5.50E-03	2.22E+02	4.70E+00	1.10E-01	5.63E+00	3.95E+01
BREOT-S64-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	1.78E+02	1.51E+00	1.10E-03	1.08E+01	1.19E-02	1.00E+00	5.50E-03	2.76E+02	4.70E+00	1.10E-01	5.63E+00	4.90E+01
BREOT-N66-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	6.11E+02	5.17E+00	1.10E-03	3.70E+01	4.08E-02	1.00E+00	5.50E-03	9.48E+02	4.70E+00	1.10E-01	5.63E+00	1.68E+02
BREOT-S66-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	3.04E+02	2.58E+00	1.10E-03	1.85E+01	2.03E-02	1.00E+00	5.50E-03	4.72E+02	4.70E+00	1.10E-01	5.63E+00	8.40E+01
BREOT-N67-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	1.40E+03	1.19E+01	1.10E-03	8.50E+01	9.36E-02	1.00E+00	5.50E-03	2.18E+03	4.70E+00	1.10E-01	5.63E+00	3.87E+02
BREOT-S67-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	1.30E+02	1.10E+00	1.10E-03	7.90E+00	8.70E-03	1.00E+00	5.50E-03	2.02E+02	4.70E+00	1.10E-01	5.63E+00	3.59E+01
Outside Tailings																						**Maximum HQ (At Edge of Tailings)**	**5.71E+03**
BREOT-S0+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	6.18E+02	5.23E+00	1.10E-03	3.75E+01	4.13E-02	1.00E+00	5.50E-03	9.59E+02	4.70E+00	1.10E-01	5.63E+00	1.70E+02
BREOT-S1+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	1.62E+02	1.37E+00	1.10E-03	9.81E+00	1.08E-02	1.00E+00	5.50E-03	2.51E+02	4.70E+00	1.10E-01	5.63E+00	4.46E+01
BREOT-S2+95 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	3.76E+02	3.18E+00	1.10E-03	2.28E+01	2.51E-02	1.00E+00	5.50E-03	5.84E+02	4.70E+00	1.10E-01	5.63E+00	1.04E+02
BREOT-S3+6 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	1.72E+02	1.46E+00	1.10E-03	1.05E+01	1.15E-02	1.00E+00	5.50E-03	2.67E+02	4.70E+00	1.10E-01	5.63E+00	4.75E+01
BREOT-S4+10 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	3.36E+02	2.85E+00	1.10E-03	2.04E+01	2.25E-02	1.00E+00	5.50E-03	5.22E+02	4.70E+00	1.10E-01	5.63E+00	9.28E+01
BREOT-S6+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	4.78E+02	4.04E+00	1.10E-03	2.90E+01	3.19E-02	1.00E+00	5.50E-03	7.41E+02	4.70E+00	1.10E-01	5.63E+00	1.32E+02
BREOT-S8+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	5.72E+02	4.85E+00	1.10E-03	3.47E+01	3.82E-02	1.00E+00	5.50E-03	8.89E+02	4.70E+00	1.10E-01	5.63E+00	1.58E+02
BREOT-N10+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	3.43E+02	2.90E+00	1.10E-03	2.08E+01	2.29E-02	1.00E+00	5.50E-03	5.32E+02	4.70E+00	1.10E-01	5.63E+00	9.46E+01
BREOT-N11+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	1.69E+02	1.44E+00	1.10E-03	1.03E+01	1.13E-02	1.00E+00	5.50E-03	2.63E+02	4.70E+00	1.10E-01	5.63E+00	4.68E+01
BREOT-N12+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	2.13E+02	1.80E+00	1.10E-03	1.29E+01	1.42E-02	1.00E+00	5.50E-03	3.30E+02	4.70E+00	1.10E-01	5.63E+00	5.87E+01
BREOT-S12+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	4.19E+03	3.55E+01	1.10E-03	2.54E+02	2.80E-01	1.00E+00	5.50E-03	6.51E+03	4.70E+00	1.10E-01	5.63E+00	1.16E+03
BREOT-S12+60 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	1.40E+03	1.19E+01	1.10E-03	8.51E+01	9.37E-02	1.00E+00	5.50E-03	2.18E+03	4.70E+00	1.10E-01	5.63E+00	3.87E+02
BREOT-N13+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	2.13E+02	1.81E+00	1.10E-03	1.30E+01	1.43E-02	1.00E+00	5.50E-03	3.31E+02	4.70E+00	1.10E-01	5.63E+00	5.89E+01
BREOT-S13+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	3.05E+03	2.59E+01	1.10E-03	1.85E+02	2.04E-01	1.00E+00	5.50E-03	4.74E+03	4.70E+00	1.10E-01	5.63E+00	8.42E+02
BREOT-S13+65 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	1.71E+03	1.44E+01	1.10E-03	1.03E+02	1.14E-01	1.00E+00	5.50E-03	2.65E+03	4.70E+00	1.10E-01	5.63E+00	4.70E+02
BREOT-N14+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	6.52E+02	5.52E+00	1.10E-03	3.95E+01	4.35E-02	1.00E+00	5.50E-03	1.01E+03	4.70E+00	1.10E-01	5.63E+00	1.80E+02
BREOT-S14+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	1.15E+04	9.75E+01	1.10E-03	6.99E+02	7.69E-01	1.00E+00	5.50E-03	1.79E+04	4.70E+00	1.10E-01	5.63E+00	3.18E+03
BREOT-S14+59 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	1.66E+03	1.40E+01	1.10E-03	1.00E+02	1.11E-01	1.00E+00	5.50E-03	2.57E+03	4.70E+00	1.10E-01	5.63E+00	4.57E+02
BREOT-N15+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	1.72E+03	1.46E+01	1.10E-03	1.04E+02	1.15E-01	1.00E+00	5.50E-03	2.67E+03	4.70E+00	1.10E-01	5.63E+00	4.75E+02
BREOT-N15+50 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	1.46E+02	1.24E+00	1.10E-03	8.85E+00	9.74E-03	1.00E+00	5.50E-03	2.26E+02	4.70E+00	1.10E-01	5.63E+00	4.02E+01
BREOT-S16+20 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	2.60E+03	2.20E+01	1.10E-03	1.58E+02	1.73E-01	1.00E+00	5.50E-03	4.03E+03	4.70E+00	1.10E-01	5.63E+00	7.16E+02
BREOT-S16+75 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	4.40E+02	3.73E+00	1.10E-03	2.67E+01	2.94E-02	1.00E+00	5.50E-03	6.83E+02	4.70E+00	1.10E-01	5.63E+00	1.21E+02
BREOT-N17+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	2.69E+03	2.28E+01	1.10E-03	1.63E+02	1.80E-01	1.00E+00	5.50E-03	4.18E+03	4.70E+00	1.10E-01	5.63E+00	7.43E+02
BREOT-S18+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	7.90E+02	6.69E+00	1.10E-03	4.80E+01	5.28E-02	1.00E+00	5.50E-03	1.23E+03	4.70E+00	1.10E-01	5.63E+00	2.18E+02
BREOT-N19+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	1.23E+02	1.05E+00	1.10E-03	7.49E+00	8.25E-03	1.00E+00	5.50E-03	1.92E+02	4.70E+00	1.10E-01	5.63E+00	3.41E+01
BREOT-S19+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	6.86E+03	5.81E+01	1.10E-03	4.16E+02	4.59E-01	1.00E+00	5.50E-03	1.07E+04	4.70E+00	1.10E-01	5.63E+00	1.89E+03
BREOT-S19+85 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	2.59E+02	2.19E+00	1.10E-03	1.57E+01	1.73E-02	1.00E+00	5.50E-03	4.02E+02	4.70E+00	1.10E-01	5.63E+00	7.14E+01
BREOT-N20+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	2.02E+02	1.71E+00	1.10E-03	1.22E+01	1.35E-02	1.00E+00	5.50E-03	3.13E+02	4.70E+00	1.10E-01	5.63E+00	5.57E+01
BREOT-S20+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	9.76E+03	8.27E+01	1.10E-03	5.92E+02	6.52E-01	1.00E+00	5.50E-03	1.52E+04	4.70E+00	1.10E-01	5.63E+00	2.69E+03
BREOT-S20+75 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N21+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	3.42E+03	2.90E+01	1.10E-03	2.08E+02	2.29E-01	1.00E+00	5.50E-03	5.31E+03	4.70E+00	1.10E-01	5.63E+00	9.44E+02
BREOT-S21+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	5.87E+03	4.97E+01	1.10E-03	3.56E+02	3.92E-01	1.00E+00	5.50E-03	9.11E+03	4.70E+00	1.10E-01	5.63E+00	1.62E+03
BREOT-N22+150 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	1.37E+02	1.16E+00	1.10E-03	8.30E+00	9.14E-03	1.00E+00	5.50E-03	2.12E+02	4.70E+00	1.10E-01	5.63E+00	3.77E+01
BREOT-N22+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	1.52E+03	1.28E+01	1.10E-03	9.20E+01	1.01E-01	1.00E+00	5.50E-03	2.35E+03	4.70E+00	1.10E-01	5.63E+00	4.18E+02
BREOT-S22+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	1.52E+03	1.28E+01	1.10E-03	9.20E+01	1.01E-01	1.00E+00	5.50E-03	2.35E+03	4.70E+00	1.10E-01	5.63E+00	4.18E+02
BREOT-N23+115 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	3.84E+02	3.25E+00	1.10E-03	2.33E+01	2.57E-02	1.00E+00	5.50E-03	5.96E+02	4.70E+00	1.10E-01	5.63E+00	1.06E+02
BREOT-N23+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	5.42E+03	4.59E+01	1.10E-03	3.29E+02	3.62E-01	1.00E+00	5.50E-03	8.41E+03	4.70E+00	1.10E-01	5.63E+00	1.50E+03
BREOT-S23+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	1.73E+03	1.47E+01	1.10E-03	1.05E+02	1.16E-01	1.00E+00	5.50E-03	2.69E+03	4.70E+00	1.10E-01	5.63E+00	4.78E+02
BREOT-S23+37.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	4.50E+02	3.81E+00	1.10E-03	2.73E+01	3.01E-02	1.00E+00	5.50E-03	6.98E+02	4.70E+00	1.10E-01	5.63E+00	1.24E+02
BREOT-N24+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	2.60E+03	2.20E+01	1.10E-03	1.58E+02	1.74E-01	1.00E+00	5.50E-03	4.03E+03	4.70E+00	1.10E-01	5.63E+00	7.17E+02

TABLE C-2A: ARSENIC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

Site Area (hectares) **18.41**

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Masked Shrew (Omnivorous Mammal - Terrestrial, Wetland)																							
BREOT-N24+75 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	3.64E+02	3.09E+00	1.10E-03	2.21E+01	2.43E-02	1.00E+00	5.50E-03	5.65E+02	4.70E+00	1.10E-01	5.63E+00	1.01E+02
BREOT-S24+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	1.36E+03	1.16E+01	1.10E-03	8.28E+01	9.11E-02	1.00E+00	5.50E-03	2.12E+03	4.70E+00	1.10E-01	5.63E+00	3.76E+02
BREOT-N25+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	1.25E+02	1.06E+00	1.10E-03	7.57E+00	8.34E-03	1.00E+00	5.50E-03	1.94E+02	4.70E+00	1.10E-01	5.63E+00	3.44E+01
BREOT-S25+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	9.43E+02	7.99E+00	1.10E-03	5.72E+01	6.30E-02	1.00E+00	5.50E-03	1.46E+03	4.70E+00	1.10E-01	5.63E+00	2.60E+02
BREOT-S25+40 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	1.55E+03	1.32E+01	1.10E-03	9.43E+01	1.04E-01	1.00E+00	5.50E-03	2.41E+03	4.70E+00	1.10E-01	5.63E+00	4.29E+02
BREOT-S26+37 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	3.73E+02	3.16E+00	1.10E-03	2.26E+01	2.49E-02	1.00E+00	5.50E-03	5.79E+02	4.70E+00	1.10E-01	5.63E+00	1.03E+02
BREOT-N27+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	1.56E+02	1.32E+00	1.10E-03	9.49E+00	1.04E-02	1.00E+00	5.50E-03	2.43E+02	4.70E+00	1.10E-01	5.63E+00	4.32E+01
BREOT-S27+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	5.81E+02	4.92E+00	1.10E-03	3.52E+01	3.88E-02	1.00E+00	5.50E-03	9.01E+02	4.70E+00	1.10E-01	5.63E+00	1.60E+02
BREOT-N28+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	1.55E+02	1.32E+00	1.10E-03	9.43E+00	1.04E-02	1.00E+00	5.50E-03	2.41E+02	4.70E+00	1.10E-01	5.63E+00	4.29E+01
BREOT-S28+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	1.58E+03	1.34E+01	1.10E-03	9.61E+01	1.06E-01	1.00E+00	5.50E-03	2.46E+03	4.70E+00	1.10E-01	5.63E+00	4.37E+02
BREOT-N29+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	2.16E+02	1.83E+00	1.10E-03	1.31E+01	1.44E-02	1.00E+00	5.50E-03	3.35E+02	4.70E+00	1.10E-01	5.63E+00	5.95E+01
BREOT-S29+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	3.49E+02	2.95E+00	1.10E-03	2.12E+01	2.33E-02	1.00E+00	5.50E-03	5.41E+02	4.70E+00	1.10E-01	5.63E+00	9.62E+01
BREOT-N30+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	2.60E+02	2.20E+00	1.10E-03	1.58E+01	1.74E-02	1.00E+00	5.50E-03	4.04E+02	4.70E+00	1.10E-01	5.63E+00	7.17E+01
BREOT-S30+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	2.94E+02	2.49E+00	1.10E-03	1.78E+01	1.96E-02	1.00E+00	5.50E-03	4.56E+02	4.70E+00	1.10E-01	5.63E+00	8.11E+01
BREOT-N31+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	4.50E+03	3.81E+01	1.10E-03	2.73E+02	3.01E-01	1.00E+00	5.50E-03	6.98E+03	4.70E+00	1.10E-01	5.63E+00	1.24E+03
BREOT-N31+75 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S31+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	1.49E+02	1.26E+00	1.10E-03	9.05E+00	9.96E-03	1.00E+00	5.50E-03	2.32E+02	4.70E+00	1.10E-01	5.63E+00	4.12E+01
BREOT-N32+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	1.49E+02	1.26E+00	1.10E-03	9.04E+00	9.95E-03	1.00E+00	5.50E-03	2.31E+02	4.70E+00	1.10E-01	5.63E+00	4.11E+01
BREOT-S32+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	2.23E+03	1.89E+01	1.10E-03	1.35E+02	1.49E-01	1.00E+00	5.50E-03	3.47E+03	4.70E+00	1.10E-01	5.63E+00	6.16E+02
BREOT-S32+300 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	1.03E+03	8.71E+00	1.10E-03	6.24E+01	6.87E-02	1.00E+00	5.50E-03	1.60E+03	4.70E+00	1.10E-01	5.63E+00	2.84E+02
BREOT-N33+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	1.44E+02	1.22E+00	1.10E-03	8.72E+00	9.60E-03	1.00E+00	5.50E-03	2.23E+02	4.70E+00	1.10E-01	5.63E+00	3.96E+01
BREOT-S33+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	5.60E+02	4.75E+00	1.10E-03	3.40E+01	3.74E-02	1.00E+00	5.50E-03	8.70E+02	4.70E+00	1.10E-01	5.63E+00	1.55E+02
BREOT-S34+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	8.48E+02	7.18E+00	1.10E-03	5.14E+01	5.66E-02	1.00E+00	5.50E-03	1.32E+03	4.70E+00	1.10E-01	5.63E+00	2.34E+02
BREOT-N35+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	3.75E+02	3.17E+00	1.10E-03	2.27E+01	2.50E-02	1.00E+00	5.50E-03	5.82E+02	4.70E+00	1.10E-01	5.63E+00	1.03E+02
BREOT-S35+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	5.34E+02	4.53E+00	1.10E-03	3.24E+01	3.57E-02	1.00E+00	5.50E-03	8.29E+02	4.70E+00	1.10E-01	5.63E+00	1.47E+02
BREOT-N36+100 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	2.67E+02	2.26E+00	1.10E-03	1.62E+01	1.78E-02	1.00E+00	5.50E-03	4.14E+02	4.70E+00	1.10E-01	5.63E+00	7.37E+01
BREOT-N36+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	3.10E+03	2.62E+01	1.10E-03	1.88E+02	2.07E-01	1.00E+00	5.50E-03	4.81E+03	4.70E+00	1.10E-01	5.63E+00	8.55E+02
BREOT-S36+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	5.85E+02	4.96E+00	1.10E-03	3.55E+01	3.91E-02	1.00E+00	5.50E-03	9.08E+02	4.70E+00	1.10E-01	5.63E+00	1.61E+02
BREOT-N37+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	1.49E+02	1.26E+00	1.10E-03	9.05E+00	9.96E-03	1.00E+00	5.50E-03	2.31E+02	4.70E+00	1.10E-01	5.63E+00	4.11E+01
BREOT-S37+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	4.80E+02	4.06E+00	1.10E-03	2.91E+01	3.21E-02	1.00E+00	5.50E-03	7.45E+02	4.70E+00	1.10E-01	5.63E+00	1.32E+02
BREOT-N38+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	4.00E+02	3.39E+00	1.10E-03	2.43E+01	2.67E-02	1.00E+00	5.50E-03	6.20E+02	4.70E+00	1.10E-01	5.63E+00	1.10E+02
BREOT-S38+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	4.64E+02	3.93E+00	1.10E-03	2.81E+01	3.10E-02	1.00E+00	5.50E-03	7.20E+02	4.70E+00	1.10E-01	5.63E+00	1.28E+02
BREOT-N39+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	3.61E+02	3.06E+00	1.10E-03	2.19E+01	2.41E-02	1.00E+00	5.50E-03	5.61E+02	4.70E+00	1.10E-01	5.63E+00	9.97E+01
BREOT-S39+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	7.81E+02	6.61E+00	1.10E-03	4.74E+01	5.22E-02	1.00E+00	5.50E-03	1.21E+03	4.70E+00	1.10E-01	5.63E+00	2.15E+02
BREOT-N40+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	5.26E+02	4.46E+00	1.10E-03	3.19E+01	3.52E-02	1.00E+00	5.50E-03	8.17E+02	4.70E+00	1.10E-01	5.63E+00	1.45E+02
BREOT-S40+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	6.39E+02	5.41E+00	1.10E-03	3.88E+01	4.27E-02	1.00E+00	5.50E-03	9.92E+02	4.70E+00	1.10E-01	5.63E+00	1.76E+02
BREOT-N41+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	1.45E+02	1.23E+00	1.10E-03	8.79E+00	9.67E-03	1.00E+00	5.50E-03	2.25E+02	4.70E+00	1.10E-01	5.63E+00	4.00E+01
BREOT-S41+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	1.07E+03	9.06E+00	1.10E-03	6.49E+01	7.15E-02	1.00E+00	5.50E-03	1.66E+03	4.70E+00	1.10E-01	5.63E+00	2.95E+02
BREOT-N42+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S42+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	1.39E+02	1.18E+00	1.10E-03	8.45E+00	9.30E-03	1.00E+00	5.50E-03	2.16E+02	4.70E+00	1.10E-01	5.63E+00	3.84E+01
BREOT-N43+12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	6.50E+02	5.50E+00	1.10E-03	3.94E+01	4.34E-02	1.00E+00	5.50E-03	1.01E+03	4.70E+00	1.10E-01	5.63E+00	1.79E+02
BREOT-N43+40 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	1.35E+02	1.15E+00	1.10E-03	8.21E+00	9.03E-03	1.00E+00	5.50E-03	2.10E+02	4.70E+00	1.10E-01	5.63E+00	3.73E+01
BREOT-S43+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	2.35E+02	1.99E+00	1.10E-03	1.43E+01	1.57E-02	1.00E+00	5.50E-03	3.65E+02	4.70E+00	1.10E-01	5.63E+00	6.48E+01
BREOT-N44+55 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	5.04E+02	4.27E+00	1.10E-03	3.06E+01	3.36E-02	1.00E+00	5.50E-03	7.82E+02	4.70E+00	1.10E-01	5.63E+00	1.39E+02
BREOT-S44+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	3.65E+02	3.09E+00	1.10E-03	2.22E+01	2.44E-02	1.00E+00	5.50E-03	5.67E+02	4.70E+00	1.10E-01	5.63E+00	1.01E+02
BREOT-N45+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	1.31E+02	1.11E+00	1.10E-03	7.97E+00	8.78E-03	1.00E+00	5.50E-03	2.04E+02	4.70E+00	1.10E-01	5.63E+00	3.62E+01
BREOT-S45+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N46+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	6.94E+02	5.88E+00	1.10E-03	4.21E+01	4.64E-02	1.00E+00	5.50E-03	1.08E+03	4.70E+00	1.10E-01	5.63E+00	1.91E+02
BREOT-S46+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N47+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	1.58E+02	1.34E+00	1.10E-03	9.62E+00	1.06E-02	1.00E+00	5.50E-03	2.46E+02	4.70E+00	1.10E-01	5.63E+00	4.37E+01
BREOT-S47+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	3.42E+02	2.90E+00	1.10E-03	2.08E+01	2.29E-02	1.00E+00	5.50E-03	5.31E+02	4.70E+00	1.10E-01	5.63E+00	9.44E+01
BREOT-N48+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	1.30E+02	1.10E+00	1.10E-03	7.87E+00	8.66E-03	1.00E+00	5.50E-03	2.01E+02	4.70E+00	1.10E-01	5.63E+00	3.58E+01
BREOT-S48+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	6.85E+02	5.80E+00	1.10E-03	4.15E+01	4.57E-02	1.00E+00	5.50E-03	1.06E+03	4.70E+00	1.10E-01	5.63E+00	1.89E+02
BREOT-N49+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	9.59E+02	8.12E+00	1.10E-03	5.82E+01	6.41E-02	1.00E+00	5.50E-03	1.49E+03	4.70E+00	1.10E-01	5.63E+00	2.65E+02

TABLE C-2A: ARSENIC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

Site Area (hectares) **18.41**

from dose parameters tables; from BAF table; linked to soil or sed concentration table (VLOOKUP)

calculated values; linked to TRV table (VLOOKUP) - should be same for all birds or mammals

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Masked Shrew (Omnivorous Mammal - Terrestrial, Wetland)																							
BREOT-S49+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	1.55E+02	1.31E+00	1.10E-03	9.40E+00	1.04E-02	1.00E+00	5.50E-03	2.40E+02	4.70E+00	1.10E-01	5.63E+00	4.28E+01
BREOT-N51+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	3.85E+02	3.26E+00	1.10E-03	2.34E+01	2.57E-02	1.00E+00	5.50E-03	5.98E+02	4.70E+00	1.10E-01	5.63E+00	1.06E+02
BREOT-S51+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	4.94E+02	4.18E+00	1.10E-03	3.00E+01	3.30E-02	1.00E+00	5.50E-03	7.67E+02	4.70E+00	1.10E-01	5.63E+00	1.36E+02
BREOT-N52+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	7.69E+02	6.52E+00	1.10E-03	4.67E+01	5.14E-02	1.00E+00	5.50E-03	1.19E+03	4.70E+00	1.10E-01	5.63E+00	2.12E+02
BREOT-S52+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	4.31E+02	3.65E+00	1.10E-03	2.62E+01	2.88E-02	1.00E+00	5.50E-03	6.70E+02	4.70E+00	1.10E-01	5.63E+00	1.19E+02
BREOT-N53+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S53+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	1.47E+02	1.25E+00	1.10E-03	8.94E+00	9.84E-03	1.00E+00	5.50E-03	2.29E+02	4.70E+00	1.10E-01	5.63E+00	4.06E+01
BREOT-S54+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N55+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	3.27E+02	2.77E+00	1.10E-03	1.98E+01	2.18E-02	1.00E+00	5.50E-03	5.07E+02	4.70E+00	1.10E-01	5.63E+00	9.02E+01
BREOT-S55+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N56+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	1.50E+02	1.27E+00	1.10E-03	9.11E+00	1.00E-02	1.00E+00	5.50E-03	2.33E+02	4.70E+00	1.10E-01	5.63E+00	4.14E+01
BREOT-S56+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	3.74E+02	3.17E+00	1.10E-03	2.27E+01	2.50E-02	1.00E+00	5.50E-03	5.81E+02	4.70E+00	1.10E-01	5.63E+00	1.03E+02
BREOT-N57+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	1.30E+02	1.10E+00	1.10E-03	7.90E+00	8.70E-03	1.00E+00	5.50E-03	2.02E+02	4.70E+00	1.10E-01	5.63E+00	3.59E+01
BREOT-S57+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	5.69E+02	4.82E+00	1.10E-03	3.45E+01	3.80E-02	1.00E+00	5.50E-03	8.83E+02	4.70E+00	1.10E-01	5.63E+00	1.57E+02
BREOT-N58+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	3.81E+02	3.23E+00	1.10E-03	2.31E+01	2.54E-02	1.00E+00	5.50E-03	5.91E+02	4.70E+00	1.10E-01	5.63E+00	1.05E+02
BREOT-S58+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	1.52E+02	1.29E+00	1.10E-03	9.24E+00	1.02E-02	1.00E+00	5.50E-03	2.36E+02	4.70E+00	1.10E-01	5.63E+00	4.20E+01
BREOT-N59+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	8.84E+02	7.48E+00	1.10E-03	5.36E+01	5.90E-02	1.00E+00	5.50E-03	1.37E+03	4.70E+00	1.10E-01	5.63E+00	2.44E+02
BREOT-N60+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	4.06E+02	3.44E+00	1.10E-03	2.46E+01	2.71E-02	1.00E+00	5.50E-03	6.30E+02	4.70E+00	1.10E-01	5.63E+00	1.12E+02
BREOT-S60+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	4.40E+02	3.72E+00	1.10E-03	2.67E+01	2.94E-02	1.00E+00	5.50E-03	6.83E+02	4.70E+00	1.10E-01	5.63E+00	1.21E+02
BREOT-S61+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	1.30E+02	1.10E+00	1.10E-03	7.88E+00	8.67E-03	1.00E+00	5.50E-03	2.01E+02	4.70E+00	1.10E-01	5.63E+00	3.58E+01
BREOT-N62+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	1.52E+02	1.29E+00	1.10E-03	9.24E+00	1.02E-02	1.00E+00	5.50E-03	2.36E+02	4.70E+00	1.10E-01	5.63E+00	4.20E+01
BREOT-S62+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N63+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	1.22E+03	1.03E+01	1.10E-03	7.37E+01	8.12E-02	1.00E+00	5.50E-03	1.89E+03	4.70E+00	1.10E-01	5.63E+00	3.35E+02
BREOT-S63+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N64+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	3.44E+02	2.91E+00	1.10E-03	2.09E+01	2.30E-02	1.00E+00	5.50E-03	5.33E+02	4.70E+00	1.10E-01	5.63E+00	9.48E+01
BREOT-S64+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	4.20E+02	3.56E+00	1.10E-03	2.55E+01	2.81E-02	1.00E+00	5.50E-03	6.52E+02	4.70E+00	1.10E-01	5.63E+00	1.16E+02
BREOT-S65+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	1.60E+02	1.35E+00	1.10E-03	9.71E+00	1.07E-02	1.00E+00	5.50E-03	2.48E+02	4.70E+00	1.10E-01	5.63E+00	4.41E+01
BREOT-N66+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	4.92E+02	4.17E+00	1.10E-03	2.99E+01	3.29E-02	1.00E+00	5.50E-03	7.64E+02	4.70E+00	1.10E-01	5.63E+00	1.36E+02
BREOT-S66+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	6.40E+02	5.42E+00	1.10E-03	3.89E+01	4.28E-02	1.00E+00	5.50E-03	9.94E+02	4.70E+00	1.10E-01	5.63E+00	1.77E+02
BREOT-N67+125 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	8.77E+02	7.43E+00	1.10E-03	5.32E+01	5.86E-02	1.00E+00	5.50E-03	1.36E+03	4.70E+00	1.10E-01	5.63E+00	2.42E+02
BREOT-S67+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	4.31E+02	3.65E+00	1.10E-03	2.62E+01	2.88E-02	1.00E+00	5.50E-03	6.69E+02	4.70E+00	1.10E-01	5.63E+00	1.19E+02
BREOT-N67+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	1.72E+03	1.46E+01	1.10E-03	1.04E+02	1.15E-01	1.00E+00	5.50E-03	2.67E+03	4.70E+00	1.10E-01	5.63E+00	4.75E+02
																						Maximum HQ (Outside Tailings)	**3.18E+03**

Notes

Results are evaluated in order of upstream to downstream.

1 See Tables 3-1 through 3-13 for ingestion rates, foraging ranges used to calculate the SUF, and body weights.

2 BAFs were calculated by dividing site-collected tissue by collocated soil concentrations. The maximum BAF calculated from the Beartrap Creek and Blackfoot River transects was used.

3 The mammal, plant, and invertebrate concentrations were calculated by multiplying the soil concentration by the BAF to generate a tissue concentration (see note 2).

4 Mammal, plant, and invertebrate daily doses were calculated by multiplying the ingestion rate (see note 1) by the tissue concentration (see note 3).

5 Soil concentration from specified depths below ground surface at point ID as measured by XRF 10. Doses were not calculated for detected and non-detected soil concentrations measured below the minimum reference site concentration, as indicated by BB. For results that were measured at less than the detection limit, doses were calculated using half of the detection limit.

6 Soil daily dose was calculated by multiplying the soil ingestion rate (see note 1) by soil concentration (see note 5).

7 Total daily dose is calculated using the following equation: total daily dose = ([mammal daily dose (if applicable) + plant daily dose (if applicable) + invertebrate daily dose (if applicable) + soil daily dose]*SUF)/receptor species body weight.

8 The derivation of TRVs is described in Navy (1998). The high TRV was used for dose calculations.

9 Allometrically adjusted TRVs for birds were calculated using the following equation: receptor species TRV = (test species TRV) x (test species body weight / receptor species body weight)$^{(1-1.2)}$.

10 Allometrically adjusted TRVs for mammals were calculated using the following equation: receptor species TRV = (test species TRV) x (test species body weight / receptor species body weight)$^{(1-0.94)}$.

11 HQs were calculated using the following equation: HQ = total daily dose/allometrically adjusted TRV.

12 Green cells indicate an HQ greater than 1.0

BAF	Bioaccumulation Factor	mg/day	Milligram per day
BB	Below minimum background reference site concentration	mg/kg	Milligram per kilogram
EE/CA	Engineering Evaluation/Cost Analysis	NA	Not applicable
EU	Exposure Unit	Navy	Department of the Navy
HQ	Hazard quotient	SUF	Site use factor
ID	Identification	TRV	Toxicity reference value
kg	Kilogram	XRF	X-ray fluorescence
kg/day	Kilogram per day	XRF 10	XRF measurements recorded following drying and seiving through a #10-mesh screen

Sources: Department of the Navy. 1998. "Development of Toxicity Reference Values for Conducting Ecological Risk Assessments at Naval Facilities in California, Interim Final." Prepared by Naval Facilities Engineering Command, Engineering Field Activity West (EFA West). San Bruno, California.

TABLE C-2B: CADMIUM DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 18.41

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Mourning Dove (Herbivorous Birds - Terrestrial)																							
Reference Sites																							
ACBG-1 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.26E+00	6.11E-01	3.52E-03	NA	NA	NA	NA	5.36E-04	4.86E-01	2.60E-04	7.11E-02	1.09E-01	2.46E-03	1.00E+00	1.13E+00	6.27E-01	3.92E-03
ACBG-2 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.26E+00	6.53E-01	3.76E-03	NA	NA	NA	NA	5.36E-04	5.20E-01	2.79E-04	7.11E-02	1.09E-01	2.63E-03	1.00E+00	1.13E+00	6.27E-01	4.20E-03
UBRBG-202 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.26E+00	3.64E+00	2.10E-02	NA	NA	NA	NA	5.36E-04	2.90E+00	1.55E-03	7.11E-02	1.09E-01	1.47E-02	1.00E+00	1.13E+00	6.27E-01	2.34E-02
UBRBG-204 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.26E+00	3.39E+00	1.95E-02	NA	NA	NA	NA	5.36E-04	2.70E+00	1.45E-03	7.11E-02	1.09E-01	1.37E-02	1.00E+00	1.13E+00	6.27E-01	2.18E-02
Inside Tailings																						**Minimum HQ (Reference Sites)**	**3.92E-03**
BREOT-S6-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S2-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S0-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S1-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S7-25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S8-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S9-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N10-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N11-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N11-125 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S11-12 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S11+63 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.59E+00	3.49E+00	2.01E-02	NA	NA	NA	NA	5.36E-04	2.20E+00	1.18E-03	7.11E-02	1.09E-01	1.39E-02	1.00E+00	1.13E+00	6.27E-01	2.21E-02
UBDT-TP-6 (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.59E+00	1.57E+02	9.03E-01	NA	NA	NA	NA	5.36E-04	9.87E+01	5.29E-02	7.11E-02	1.09E-01	6.22E-01	1.00E+00	1.13E+00	6.27E-01	9.93E-01
UBDT-TP-6 (2-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.59E+00	4.56E+01	2.63E-01	NA	NA	NA	NA	5.36E-04	2.87E+01	1.54E-02	7.11E-02	1.09E-01	1.81E-01	1.00E+00	1.13E+00	6.27E-01	2.89E-01
UBDT-TP-6 (12-24")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.59E+00	2.56E+02	1.47E+00	NA	NA	NA	NA	5.36E-04	1.61E+02	8.63E-02	7.11E-02	1.09E-01	1.02E+00	1.00E+00	1.13E+00	6.27E-01	1.62E+00
UBDT-TP-6 (24-36")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.59E+00	1.55E+01	8.92E-02	NA	NA	NA	NA	5.36E-04	9.75E+00	5.22E-03	7.11E-02	1.09E-01	6.15E-02	1.00E+00	1.13E+00	6.27E-01	9.81E-02
UBDT-TP-6 (36-48")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.59E+00	2.18E+01	1.25E-01	NA	NA	NA	NA	5.36E-04	1.37E+01	7.34E-03	7.11E-02	1.09E-01	8.64E-02	1.00E+00	1.13E+00	6.27E-01	1.38E-01
UBDT-TP-6 (48-60")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.59E+00	1.67E+01	9.61E-02	NA	NA	NA	NA	5.36E-04	1.05E+01	5.63E-03	7.11E-02	1.09E-01	6.62E-02	1.00E+00	1.13E+00	6.27E-01	1.06E-01
BREOT-N12-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.59E+00	1.45E+01	8.35E-02	NA	NA	NA	NA	5.36E-04	9.13E+00	4.89E-03	7.11E-02	1.09E-01	5.76E-02	1.00E+00	1.13E+00	6.27E-01	9.19E-02
BREOT-S12-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S13-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S14-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N15-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S15-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.59E+00	5.40E+00	3.11E-02	NA	NA	NA	NA	5.36E-04	3.40E+00	1.82E-03	7.11E-02	1.09E-01	2.14E-02	1.00E+00	1.13E+00	6.27E-01	3.42E-02
BREOT-N16-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N16-25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S16-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N17-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S17-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S17-25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UBDT-TP-4 (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.59E+00	2.89E+01	1.67E-01	NA	NA	NA	NA	5.36E-04	1.82E+01	9.75E-03	7.11E-02	1.09E-01	1.15E-01	1.00E+00	1.13E+00	6.27E-01	1.83E-01
UBDT-TP-4 (2-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.59E+00	5.67E+00	3.27E-02	NA	NA	NA	NA	5.36E-04	3.57E+00	1.91E-03	7.11E-02	1.09E-01	2.25E-02	1.00E+00	1.13E+00	6.27E-01	3.59E-02
UBDT-TP-4 (12-24")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.59E+00	5.00E+00	2.88E-02	NA	NA	NA	NA	5.36E-04	3.15E+00	1.69E-03	7.11E-02	1.09E-01	1.99E-02	1.00E+00	1.13E+00	6.27E-01	3.17E-02
UBDT-TP-4 (24-36")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.59E+00	7.61E+00	4.38E-02	NA	NA	NA	NA	5.36E-04	4.79E+00	2.57E-03	7.11E-02	1.09E-01	3.02E-02	1.00E+00	1.13E+00	6.27E-01	4.82E-02
BREOT-N18-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N18-25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S18-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N19-10 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S19-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UBDT-TP-5 (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.59E+00	1.60E+01	9.24E-02	NA	NA	NA	NA	5.36E-04	1.01E+01	5.41E-03	7.11E-02	1.09E-01	6.37E-02	1.00E+00	1.13E+00	6.27E-01	1.02E-01
UBDT-TP-5 (2-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.59E+00	9.12E+00	5.25E-02	NA	NA	NA	NA	5.36E-04	5.74E+00	3.08E-03	7.11E-02	1.09E-01	3.62E-02	1.00E+00	1.13E+00	6.27E-01	5.77E-02
UBDT-TP-5 (12-24")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.59E+00	1.20E+01	6.91E-02	NA	NA	NA	NA	5.36E-04	7.55E+00	4.05E-03	7.11E-02	1.09E-01	4.76E-02	1.00E+00	1.13E+00	6.27E-01	7.60E-02
BREOT-N20-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UBDT-TP-3 (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.59E+00	2.89E+00	1.67E-02	NA	NA	NA	NA	5.36E-04	1.82E+00	9.75E-04	7.11E-02	1.09E-01	1.15E-02	1.00E+00	1.13E+00	6.27E-01	1.83E-02
UBDT-TP-3 (2-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.59E+00	3.62E+00	2.09E-02	NA	NA	NA	NA	5.36E-04	2.28E+00	1.22E-03	7.11E-02	1.09E-01	1.44E-02	1.00E+00	1.13E+00	6.27E-01	2.29E-02
UBDT-TP-3 (12-24")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.59E+00	1.13E+00	6.53E-03	NA	NA	NA	NA	5.36E-04	7.14E-01	3.83E-04	7.11E-02	1.09E-01	4.50E-03	1.00E+00	1.13E+00	6.27E-01	7.18E-03
UBDT-TP-3 (24-36")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.59E+00	3.40E+00	1.96E-02	NA	NA	NA	NA	5.36E-04	2.14E+00	1.15E-03	7.11E-02	1.09E-01	1.35E-02	1.00E+00	1.13E+00	6.27E-01	2.15E-02
UBDT-TP-3 (36-48")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.59E+00	8.65E+00	4.99E-02	NA	NA	NA	NA	5.36E-04	5.45E+00	2.92E-03	7.11E-02	1.09E-01	3.44E-02	1.00E+00	1.13E+00	6.27E-01	5.48E-02
UBDT-TP-3 (48-60")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.59E+00	4.03E+00	2.32E-02	NA	NA	NA	NA	5.36E-04	2.54E+00	1.36E-03	7.11E-02	1.09E-01	1.60E-02	1.00E+00	1.13E+00	6.27E-01	2.56E-02

TABLE C-2B: CADMIUM DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 18.41

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Mourning Dove (Herbivorous Birds - Terrestrial)																							
BREOT-N21-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N22-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N23-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S23-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UBDT-TP-2 (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.59E+00	3.02E+01	1.74E-01	NA	NA	NA	NA	5.36E-04	1.90E+01	1.02E-02	7.11E-02	1.09E-01	1.20E-01	1.00E+00	1.13E+00	6.27E-01	1.91E-01
UBDT-TP-2 (2-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.59E+00	2.03E+01	1.17E-01	NA	NA	NA	NA	5.36E-04	1.28E+01	6.86E-03	7.11E-02	1.09E-01	8.07E-02	1.00E+00	1.13E+00	6.27E-01	1.29E-01
UBDT-TP-2 (12-24")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.59E+00	2.73E+01	1.57E-01	NA	NA	NA	NA	5.36E-04	1.72E+01	9.22E-03	7.11E-02	1.09E-01	1.08E-01	1.00E+00	1.13E+00	6.27E-01	1.73E-01
UBDT-TP-2 (24-36")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.59E+00	9.61E+00	5.54E-02	NA	NA	NA	NA	5.36E-04	6.05E+00	3.24E-03	7.11E-02	1.09E-01	3.81E-02	1.00E+00	1.13E+00	6.27E-01	6.09E-02
UBDT-TP-2 (36-48")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.59E+00	8.58E+00	4.94E-02	NA	NA	NA	NA	5.36E-04	5.40E+00	2.89E-03	7.11E-02	1.09E-01	3.40E-02	1.00E+00	1.13E+00	6.27E-01	5.43E-02
BREOT-S24-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N25-50 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N25-95 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S25-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S25-40 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N26A-25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N26B-25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N26-50 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N26-75 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S26-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S26-40 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N27-30 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N27-75 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.59E+00	1.35E+02	7.76E-01	NA	NA	NA	NA	5.36E-04	8.48E+01	4.54E-02	7.11E-02	1.09E-01	5.35E-01	1.00E+00	1.13E+00	6.27E-01	8.53E-01
BREOT-S27-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N28-110 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N28-55 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S28-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UBDT-TP-1 (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.59E+00	1.04E+02	5.98E-01	NA	NA	NA	NA	5.36E-04	6.54E+01	3.50E-02	7.11E-02	1.09E-01	4.12E-01	1.00E+00	1.13E+00	6.27E-01	6.58E-01
UBDT-TP-1 (2-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.59E+00	1.05E+02	6.08E-01	NA	NA	NA	NA	5.36E-04	6.64E+01	3.56E-02	7.11E-02	1.09E-01	4.19E-01	1.00E+00	1.13E+00	6.27E-01	6.68E-01
UBDT-TP-1 (12-24")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.59E+00	8.31E+01	4.79E-01	NA	NA	NA	NA	5.36E-04	5.23E+01	2.80E-02	7.11E-02	1.09E-01	3.30E-01	1.00E+00	1.13E+00	6.27E-01	5.26E-01
UBDT-TP-1 (24-36")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.59E+00	4.37E+01	2.52E-01	NA	NA	NA	NA	5.36E-04	2.75E+01	1.47E-02	7.11E-02	1.09E-01	1.73E-01	1.00E+00	1.13E+00	6.27E-01	2.77E-01
UBDT-TP-1 (36-48")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.59E+00	1.65E+01	9.52E-02	NA	NA	NA	NA	5.36E-04	1.04E+01	5.57E-03	7.11E-02	1.09E-01	6.56E-02	1.00E+00	1.13E+00	6.27E-01	1.05E-01
UBDT-TP-1 (48-60")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.59E+00	4.30E+00	2.48E-02	NA	NA	NA	NA	5.36E-04	2.71E+00	1.45E-03	7.11E-02	1.09E-01	1.71E-02	1.00E+00	1.13E+00	6.27E-01	2.73E-02
BREOT-N29-30 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S29-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N30-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.59E+00	7.69E+00	4.43E-02	NA	NA	NA	NA	5.36E-04	4.84E+00	2.59E-03	7.11E-02	1.09E-01	3.05E-02	1.00E+00	1.13E+00	6.27E-01	4.87E-02
BREOT-S30-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N31-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S31-25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.59E+00	4.11E+00	2.37E-02	NA	NA	NA	NA	5.36E-04	2.59E+00	1.39E-03	7.11E-02	1.09E-01	1.63E-02	1.00E+00	1.13E+00	6.27E-01	2.61E-02
BREOT-S31-5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N32-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S32-6 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N33-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.59E+00	2.05E+00	1.18E-02	NA	NA	NA	NA	5.36E-04	1.29E+00	6.91E-04	7.11E-02	1.09E-01	8.13E-03	1.00E+00	1.13E+00	6.27E-01	1.30E-02
BREOT-S33-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N35-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S35-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE

TABLE C-2B: CADMIUM DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS (Continued)

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calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 18.41

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Mourning Dove (Herbivorous Birds - Terrestrial)																							
BREOT-N36-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S36-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N37-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S37-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N38-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S38-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.59E+00	2.49E+01	1.44E-01	NA	NA	NA	NA	5.36E-04	1.57E+01	8.41E-03	7.11E-02	1.09E-01	9.90E-02	1.00E+00	1.13E+00	6.27E-01	1.58E-01
BREOT-N39-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S39-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N40-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S40-14 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N41-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.59E+00	8.11E+00	4.68E-02	NA	NA	NA	NA	5.36E-04	5.11E+00	2.74E-03	7.11E-02	1.09E-01	3.22E-02	1.00E+00	1.13E+00	6.27E-01	5.14E-02
BREOT-S41-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.59E+00	1.59E+01	9.14E-02	NA	NA	NA	NA	5.36E-04	9.99E+00	5.35E-03	7.11E-02	1.09E-01	6.30E-02	1.00E+00	1.13E+00	6.27E-01	1.01E-01
BREOT-N42-35 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S42-25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N43-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S43-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N44-30 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S44-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N45-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S45-6 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N46-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S46-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S46-40 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N47-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.59E+00	2.22E+00	1.28E-02	NA	NA	NA	NA	5.36E-04	1.40E+00	7.50E-04	7.11E-02	1.09E-01	8.83E-03	1.00E+00	1.13E+00	6.27E-01	1.41E-02
BREOT-S47-999 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S48-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S49-2.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S50-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S50-25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.59E+00	2.54E+00	1.46E-02	NA	NA	NA	NA	5.36E-04	1.60E+00	8.57E-04	7.11E-02	1.09E-01	1.01E-02	1.00E+00	1.13E+00	6.27E-01	1.61E-02
BREOT-N52-60 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S52-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S53-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S54-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N55-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S55-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.59E+00	1.72E+00	9.88E-03	NA	NA	NA	NA	5.36E-04	1.08E+00	5.79E-04	7.11E-02	1.09E-01	6.81E-03	1.00E+00	1.13E+00	6.27E-01	1.09E-02
BREOT-N56-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.59E+00	6.91E+00	3.98E-02	NA	NA	NA	NA	5.36E-04	4.35E+00	2.33E-03	7.11E-02	1.09E-01	2.74E-02	1.00E+00	1.13E+00	6.27E-01	4.38E-02
BREOT-S56-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N57-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S57-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N58-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S58-12 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N59-18 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N60-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S60-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S61-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE

TABLE C-2B: CADMIUM DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

Site Area (hectares) 18.41

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Mourning Dove (Herbivorous Birds - Terrestrial)																							
BREOT-N62-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S62-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S63-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N64-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N64-20 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S64-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N65-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S65-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N66-5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S66-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N67-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S67-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
At Edge of Tailings																						**Maximum HQ (Inside Tailings)**	**1.62E+00**
BREOT-S0-0 (06)	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S1-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S2-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S3-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S4-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S6-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S7-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S8-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S9-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N10-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N11-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S11-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N12-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S12-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N13-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S13-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N14-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S14-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N15-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N16-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S16-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N17-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S17-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N18-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S18-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N19-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S19-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N20-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S20-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N21-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S21-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N22-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S22-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N23-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.59E+00	2.73E+01	1.57E-01	NA	NA	NA	NA	5.36E-04	1.72E+01	9.22E-03	7.11E-02	1.09E-01	1.08E-01	1.00E+00	1.13E+00	6.27E-01	1.73E-01
BREOT-S23-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N24-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE

TABLE C-2B: CADMIUM DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS (Continued)

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Site Area (hectares) 18.41

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Mourning Dove (Herbivorous Birds - Terrestrial)																							
BREOT-S24-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N25-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S25-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N26-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.59E+00	4.76E+01	2.74E-01	NA	NA	NA	NA	5.36E-04	3.00E+01	1.61E-02	7.11E-02	1.09E-01	1.89E-01	1.00E+00	1.13E+00	6.27E-01	3.02E-01
BREOT-S26-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N27-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S27-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.59E+00	2.40E+00	1.38E-02	NA	NA	NA	NA	5.36E-04	1.51E+00	8.09E-04	7.11E-02	1.09E-01	9.52E-03	1.00E+00	1.13E+00	6.27E-01	1.52E-02
BREOT-N28-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S28-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S29-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N30-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S30-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N31-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S31-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N32-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S32-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N33-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S33-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N34-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S34-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N35-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S35-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N36-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S36-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N37-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.59E+00	4.00E+00	2.31E-02	NA	NA	NA	NA	5.36E-04	2.52E+00	1.35E-03	7.11E-02	1.09E-01	1.59E-02	1.00E+00	1.13E+00	6.27E-01	2.54E-02
BREOT-S37-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N38-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S38-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N39-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N40-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S40-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N41-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S41-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N42-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S42-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N43-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S43-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N44-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S44-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N45-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S45-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N46-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S46-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N47-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S47-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N48-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S48-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N49-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S49-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S50-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N51-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S51-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N52-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S52-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE

TABLE C-2B: CADMIUM DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 18.41

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Mourning Dove (Herbivorous Birds - Terrestrial)																							
BREOT-N53-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S53-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N54-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S54-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N55-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S55-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N56-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.59E+00	2.32E+00	1.34E-02	NA	NA	NA	NA	5.36E-04	1.46E+00	7.82E-04	7.11E-02	1.09E-01	9.20E-03	1.00E+00	1.13E+00	6.27E-01	1.47E-02
BREOT-N57-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S57-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N58-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S58-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N59-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N60-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.59E+00	3.80E+00	2.19E-02	NA	NA	NA	NA	5.36E-04	2.39E+00	1.28E-03	7.11E-02	1.09E-01	1.51E-02	1.00E+00	1.13E+00	6.27E-01	2.40E-02
BREOT-S60-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S61-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N62-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S62-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N63-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.59E+00	4.70E+00	2.71E-02	NA	NA	NA	NA	5.36E-04	2.96E+00	1.59E-03	7.11E-02	1.09E-01	1.87E-02	1.00E+00	1.13E+00	6.27E-01	2.98E-02
BREOT-S63-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N64-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S64-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N66-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S66-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N67-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S67-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
Outside Tailings																				**Maximum HQ (At Edge of Tailings)**			**3.02E-01**
BREOT-S0+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S1+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S2+95 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S3+6 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S4+10 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S6+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S8+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N10+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N11+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.59E+00	2.38E+00	1.37E-02	NA	NA	NA	NA	5.36E-04	1.50E+00	8.04E-04	7.11E-02	1.09E-01	9.46E-03	1.00E+00	1.13E+00	6.27E-01	1.51E-02
BREOT-N12+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S12+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S12+60 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N13+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S13+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S13+65 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N14+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S14+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S14+59 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N15+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N15+50 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S16+20 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S16+75 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.59E+00	1.11E+00	6.40E-03	NA	NA	NA	NA	5.36E-04	7.00E-01	3.75E-04	7.11E-02	1.09E-01	4.41E-03	1.00E+00	1.13E+00	6.27E-01	7.04E-03
BREOT-N17+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S18+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N19+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S19+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S19+85 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.59E+00	9.53E-01	5.49E-03	NA	NA	NA	NA	5.36E-04	6.00E-01	3.21E-04	7.11E-02	1.09E-01	3.78E-03	1.00E+00	1.13E+00	6.27E-01	6.04E-03
BREOT-N20+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE

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Mourning Dove (Herbivorous Birds - Terrestrial)																							
BREOT-S20+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S20+75 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.59E+00	1.73E+00	9.97E-03	NA	NA	NA	NA	5.36E-04	1.09E+00	5.84E-04	7.11E-02	1.09E-01	6.87E-03	1.00E+00	1.13E+00	6.27E-01	1.10E-02
BREOT-N21+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.59E+00	5.05E+00	2.91E-02	NA	NA	NA	NA	5.36E-04	3.18E+00	1.70E-03	7.11E-02	1.09E-01	2.00E-02	1.00E+00	1.13E+00	6.27E-01	3.20E-02
BREOT-S21+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.59E+00	2.29E+00	1.32E-02	NA	NA	NA	NA	5.36E-04	1.44E+00	7.72E-04	7.11E-02	1.09E-01	9.08E-03	1.00E+00	1.13E+00	6.27E-01	1.45E-02
BREOT-N22+150 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N22+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S22+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N23+115 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.59E+00	3.81E+00	2.20E-02	NA	NA	NA	NA	5.36E-04	2.40E+00	1.29E-03	7.11E-02	1.09E-01	1.51E-02	1.00E+00	1.13E+00	6.27E-01	2.41E-02
BREOT-N23+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S23+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S23+37.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N24+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N24+75 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S24+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N25+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S25+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S25+40 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S26+37 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N27+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S27+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N28+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.59E+00	2.11E+00	1.22E-02	NA	NA	NA	NA	5.36E-04	1.33E+00	7.13E-04	7.11E-02	1.09E-01	8.38E-03	1.00E+00	1.13E+00	6.27E-01	1.34E-02
BREOT-S28+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N29+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S29+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.59E+00	2.49E+00	1.44E-02	NA	NA	NA	NA	5.36E-04	1.57E+00	8.41E-04	7.11E-02	1.09E-01	9.90E-03	1.00E+00	1.13E+00	6.27E-01	1.58E-02
BREOT-N30+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S30+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N31+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N31+75 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.59E+00	1.11E+00	6.40E-03	NA	NA	NA	NA	5.36E-04	7.00E-01	3.75E-04	7.11E-02	1.09E-01	4.41E-03	1.00E+00	1.13E+00	6.27E-01	7.04E-03
BREOT-S31+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.59E+00	4.11E+00	2.37E-02	NA	NA	NA	NA	5.36E-04	2.59E+00	1.39E-03	7.11E-02	1.09E-01	1.63E-02	1.00E+00	1.13E+00	6.27E-01	2.61E-02
BREOT-N32+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S32+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S32+300 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.59E+00	2.22E+00	1.28E-02	NA	NA	NA	NA	5.36E-04	1.40E+00	7.50E-04	7.11E-02	1.09E-01	8.83E-03	1.00E+00	1.13E+00	6.27E-01	1.41E-02
BREOT-N33+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S33+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N34+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S34+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N35+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S35+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N36+100 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N36+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S36+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N37+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.59E+00	9.00E-01	5.19E-03	NA	NA	NA	NA	5.36E-04	5.67E-01	3.04E-04	7.11E-02	1.09E-01	3.57E-03	1.00E+00	1.13E+00	6.27E-01	5.70E-03
BREOT-S37+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.59E+00	8.50E+00	4.89E-02	NA	NA	NA	NA	5.36E-04	5.35E+00	2.87E-03	7.11E-02	1.09E-01	3.37E-02	1.00E+00	1.13E+00	6.27E-01	5.38E-02
BREOT-N38+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S38+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.59E+00	9.45E+00	5.44E-02	NA	NA	NA	NA	5.36E-04	5.95E+00	3.19E-03	7.11E-02	1.09E-01	3.75E-02	1.00E+00	1.13E+00	6.27E-01	5.99E-02
BREOT-N39+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S39+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N40+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S40+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N41+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S41+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N42+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S42+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE

TABLE C-2B: CADMIUM DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 18.41

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Mourning Dove (Herbivorous Birds - Terrestrial)																							
BREOT-N43+12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N43+40 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S43+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N44+55 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S44+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N45+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S45+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N46+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S46+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N47+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S47+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N48+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S48+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N49+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S49+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N51+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S51+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N52+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S52+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N53+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S53+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S54+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N55+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S55+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N56+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S56+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N57+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S57+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N58+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S58+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N59+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N60+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S60+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S61+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N62+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.59E+00	1.70E+00	9.79E-03	NA	NA	NA	NA	5.36E-04	1.07E+00	5.73E-04	7.11E-02	1.09E-01	6.75E-03	1.00E+00	1.13E+00	6.27E-01	1.08E-02
BREOT-S62+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N63+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S63+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N64+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S64+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S65+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N66+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S66+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N67+125 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.59E+00	4.45E+00	2.56E-02	NA	NA	NA	NA	5.36E-04	2.80E+00	1.50E-03	7.11E-02	1.09E-01	1.77E-02	1.00E+00	1.13E+00	6.27E-01	2.82E-02
BREOT-S67+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N67+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE

Maximum HQ (Outside Tailings) **5.99E-02**

TABLE C-2B: CADMIUM DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 18.41

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Red-Tailed Hawk (Carnivorous Birds - Terrestrial)																							
Reference Sites																							
ACBG-1 (0-6")	9.00E-02	9.00E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.86E-01	2.49E-03	2.64E-02	1.13E+00	5.81E-05	1.00E+00	1.13E+00	1.00E+00	5.80E-05
ACBG-2 (0-6")	9.00E-02	9.00E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.20E-01	2.67E-03	2.64E-02	1.13E+00	6.21E-05	1.00E+00	1.13E+00	1.00E+00	6.21E-05
UBRBG-202 (0-6")	9.00E-02	9.00E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.90E+00	1.49E-02	2.64E-02	1.13E+00	3.46E-04	1.00E+00	1.13E+00	1.00E+00	3.46E-04
UBRBG-204 (0-6")	9.00E-02	9.00E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.70E+00	1.38E-02	2.64E-02	1.13E+00	3.23E-04	1.00E+00	1.13E+00	1.00E+00	3.22E-04
Inside Tailings																						**Minimum HQ (Reference Sites)**	**5.80E-05**
BREOT-S6-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S2-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S0-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S1-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S7-25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S8-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S9-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N10-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N11-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N11-125 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S11-12 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S11+63 (0-6")	9.00E-02	9.00E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.20E+00	1.13E-02	2.64E-02	1.13E+00	2.63E-04	1.00E+00	1.13E+00	1.00E+00	2.63E-04
UBDT-TP-6 (0-2")	9.00E-02	9.00E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	9.87E+01	5.06E-01	2.64E-02	1.13E+00	1.18E-02	1.00E+00	1.13E+00	1.00E+00	1.18E-02
UBDT-TP-6 (2-12")	9.00E-02	9.00E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.87E+01	1.47E-01	2.64E-02	1.13E+00	3.43E-03	1.00E+00	1.13E+00	1.00E+00	3.43E-03
UBDT-TP-6 (12-24")	9.00E-02	9.00E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.61E+02	8.26E-01	2.64E-02	1.13E+00	1.92E-02	1.00E+00	1.13E+00	1.00E+00	1.92E-02
UBDT-TP-6 (24-36")	9.00E-02	9.00E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	9.75E+00	5.00E-02	2.64E-02	1.13E+00	1.16E-03	1.00E+00	1.13E+00	1.00E+00	1.16E-03
UBDT-TP-6 (36-48")	9.00E-02	9.00E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.37E+01	7.02E-02	2.64E-02	1.13E+00	1.64E-03	1.00E+00	1.13E+00	1.00E+00	1.64E-03
UBDT-TP-6 (48-60")	9.00E-02	9.00E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.05E+01	5.38E-02	2.64E-02	1.13E+00	1.25E-03	1.00E+00	1.13E+00	1.00E+00	1.25E-03
BREOT-N12-12.5 (0-6")	9.00E-02	9.00E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	9.13E+00	4.68E-02	2.64E-02	1.13E+00	1.09E-03	1.00E+00	1.13E+00	1.00E+00	1.09E-03
BREOT-S12-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S13-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S14-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N15-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S15-12.5 (0-6")	9.00E-02	9.00E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.40E+00	1.74E-02	2.64E-02	1.13E+00	4.06E-04	1.00E+00	1.13E+00	1.00E+00	4.06E-04
BREOT-N16-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N16-25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S16-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N17-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S17-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S17-25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UBDT-TP-4 (0-2")	9.00E-02	9.00E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.82E+01	9.33E-02	2.64E-02	1.13E+00	2.17E-03	1.00E+00	1.13E+00	1.00E+00	2.17E-03
UBDT-TP-4 (2-12")	9.00E-02	9.00E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.57E+00	1.83E-02	2.64E-02	1.13E+00	4.26E-04	1.00E+00	1.13E+00	1.00E+00	4.26E-04
UBDT-TP-4 (12-24")	9.00E-02	9.00E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.15E+00	1.62E-02	2.64E-02	1.13E+00	3.76E-04	1.00E+00	1.13E+00	1.00E+00	3.76E-04
UBDT-TP-4 (24-36")	9.00E-02	9.00E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.79E+00	2.46E-02	2.64E-02	1.13E+00	5.72E-04	1.00E+00	1.13E+00	1.00E+00	5.72E-04
BREOT-N18-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N18-25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S18-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N19-10 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S19-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UBDT-TP-5 (0-2")	9.00E-02	9.00E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.01E+01	5.18E-02	2.64E-02	1.13E+00	1.21E-03	1.00E+00	1.13E+00	1.00E+00	1.21E-03
UBDT-TP-5 (2-12")	9.00E-02	9.00E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.74E+00	2.94E-02	2.64E-02	1.13E+00	6.86E-04	1.00E+00	1.13E+00	1.00E+00	6.85E-04
UBDT-TP-5 (12-24")	9.00E-02	9.00E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	7.55E+00	3.87E-02	2.64E-02	1.13E+00	9.02E-04	1.00E+00	1.13E+00	1.00E+00	9.01E-04
BREOT-N20-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UBDT-TP-3 (0-2")	9.00E-02	9.00E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.82E+00	9.33E-03	2.64E-02	1.13E+00	2.17E-04	1.00E+00	1.13E+00	1.00E+00	2.17E-04
UBDT-TP-3 (2-12")	9.00E-02	9.00E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.28E+00	1.17E-02	2.64E-02	1.13E+00	2.72E-04	1.00E+00	1.13E+00	1.00E+00	2.72E-04
UBDT-TP-3 (12-24")	9.00E-02	9.00E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	7.14E-01	3.66E-03	2.64E-02	1.13E+00	8.53E-05	1.00E+00	1.13E+00	1.00E+00	8.52E-05
UBDT-TP-3 (24-36")	9.00E-02	9.00E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.14E+00	1.10E-02	2.64E-02	1.13E+00	2.56E-04	1.00E+00	1.13E+00	1.00E+00	2.55E-04
UBDT-TP-3 (36-48")	9.00E-02	9.00E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.45E+00	2.79E-02	2.64E-02	1.13E+00	6.51E-04	1.00E+00	1.13E+00	1.00E+00	6.51E-04
UBDT-TP-3 (48-60")	9.00E-02	9.00E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.54E+00	1.30E-02	2.64E-02	1.13E+00	3.03E-04	1.00E+00	1.13E+00	1.00E+00	3.03E-04

TABLE C-2B: CADMIUM DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 18.41

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Red-Tailed Hawk (Carnivorous Birds - Terrestrial)																							
BREOT-N21-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N22-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N23-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S23-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UBDT-TP-2 (0-2")	9.00E-02	9.00E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.90E+01	9.74E-02	2.64E-02	1.13E+00	2.27E-03	1.00E+00	1.13E+00	1.00E+00	2.27E-03
UBDT-TP-2 (2-12")	9.00E-02	9.00E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.28E+01	6.56E-02	2.64E-02	1.13E+00	1.53E-03	1.00E+00	1.13E+00	1.00E+00	1.53E-03
UBDT-TP-2 (12-24")	9.00E-02	9.00E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.72E+01	8.82E-02	2.64E-02	1.13E+00	2.05E-03	1.00E+00	1.13E+00	1.00E+00	2.05E-03
UBDT-TP-2 (24-36")	9.00E-02	9.00E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	6.05E+00	3.10E-02	2.64E-02	1.13E+00	7.23E-04	1.00E+00	1.13E+00	1.00E+00	7.22E-04
UBDT-TP-2 (36-48")	9.00E-02	9.00E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.40E+00	2.77E-02	2.64E-02	1.13E+00	6.45E-04	1.00E+00	1.13E+00	1.00E+00	6.45E-04
BREOT-S24-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N25-50 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N25-95 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S25-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S25-40 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N26A-25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N26B-25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N26-50 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N26-75 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S26-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S26-40 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N27-30 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N27-75 (0-6")	9.00E-02	9.00E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	8.48E+01	4.35E-01	2.64E-02	1.13E+00	1.01E-02	1.00E+00	1.13E+00	1.00E+00	1.01E-02
BREOT-N28-110 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N28-55 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S28-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UBDT-TP-1 (0-2")	9.00E-02	9.00E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	6.54E+01	3.35E-01	2.64E-02	1.13E+00	7.81E-03	1.00E+00	1.13E+00	1.00E+00	7.81E-03
UBDT-TP-1 (2-12")	9.00E-02	9.00E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	6.64E+01	3.40E-01	2.64E-02	1.13E+00	7.93E-03	1.00E+00	1.13E+00	1.00E+00	7.93E-03
UBDT-TP-1 (12-24")	9.00E-02	9.00E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.23E+01	2.68E-01	2.64E-02	1.13E+00	6.25E-03	1.00E+00	1.13E+00	1.00E+00	6.24E-03
UBDT-TP-1 (24-36")	9.00E-02	9.00E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.75E+01	1.41E-01	2.64E-02	1.13E+00	3.29E-03	1.00E+00	1.13E+00	1.00E+00	3.28E-03
UBDT-TP-1 (36-48")	9.00E-02	9.00E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.04E+01	5.33E-02	2.64E-02	1.13E+00	1.24E-03	1.00E+00	1.13E+00	1.00E+00	1.24E-03
UBDT-TP-1 (48-60")	9.00E-02	9.00E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.71E+00	1.39E-02	2.64E-02	1.13E+00	3.24E-04	1.00E+00	1.13E+00	1.00E+00	3.24E-04
BREOT-N29-30 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S29-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N30-12.5 (0-6")	9.00E-02	9.00E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.84E+00	2.48E-02	2.64E-02	1.13E+00	5.78E-04	1.00E+00	1.13E+00	1.00E+00	5.78E-04
BREOT-S30-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N31-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S31-25 (0-6")	9.00E-02	9.00E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.59E+00	1.33E-02	2.64E-02	1.13E+00	3.09E-04	1.00E+00	1.13E+00	1.00E+00	3.09E-04
BREOT-S31-5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N32-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S32-6 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N33-12.5 (0-6")	9.00E-02	9.00E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.29E+00	6.61E-03	2.64E-02	1.13E+00	1.54E-04	1.00E+00	1.13E+00	1.00E+00	1.54E-04
BREOT-S33-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N35-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S35-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N36-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S36-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N37-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S37-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N38-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S38-12.5 (0-6")	9.00E-02	9.00E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.57E+01	8.05E-02	2.64E-02	1.13E+00	1.88E-03	1.00E+00	1.13E+00	1.00E+00	1.87E-03
BREOT-N39-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S39-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N40-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE

TABLE C-2B: CADMIUM DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS (Continued)

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from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

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Site Area (hectares) 18.41

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Red-Tailed Hawk (Carnivorous Birds - Terrestrial)																							
BREOT-S40-14 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N41-12.5 (0-6")	9.00E-02	9.00E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.11E+00	2.62E-02	2.64E-02	1.13E+00	6.10E-04	1.00E+00	1.13E+00	1.00E+00	6.10E-04
BREOT-S41-12.5 (0-6")	9.00E-02	9.00E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	9.99E+00	5.12E-02	2.64E-02	1.13E+00	1.19E-03	1.00E+00	1.13E+00	1.00E+00	1.19E-03
BREOT-N42-35 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S42-25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N43-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S43-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N44-30 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S44-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N45-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N43-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S45-6 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N46-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S46-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S46-40 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N47-12.5 (0-6")	9.00E-02	9.00E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.40E+00	7.18E-03	2.64E-02	1.13E+00	1.67E-04	1.00E+00	1.13E+00	1.00E+00	1.67E-04
BREOT-S47-999 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S48-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S49-2.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S50-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S50-25 (0-6")	9.00E-02	9.00E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.60E+00	8.20E-03	2.64E-02	1.13E+00	1.91E-04	1.00E+00	1.13E+00	1.00E+00	1.91E-04
BREOT-N52-60 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S52-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S53-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S54-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N55-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S55-12.5 (0-6")	9.00E-02	9.00E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.08E+00	5.54E-03	2.64E-02	1.13E+00	1.29E-04	1.00E+00	1.13E+00	1.00E+00	1.29E-04
BREOT-N56-12.5 (0-6")	9.00E-02	9.00E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.35E+00	2.23E-02	2.64E-02	1.13E+00	5.20E-04	1.00E+00	1.13E+00	1.00E+00	5.19E-04
BREOT-S56-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N57-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S57-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N58-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S58-12 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N59-18 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N60-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S60-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S61-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N62-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S62-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S63-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N64-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N64-20 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S64-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N65-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S65-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N66-5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S66-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N67-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S67-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
At Edge of Tailings																					**Maximum HQ (Inside Tailings)**		**1.92E-02**
BREOT-S0-0 (06)	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S1-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S2-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S3-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE

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RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Red-Tailed Hawk (Carnivorous Birds - Terrestrial)																							
BREOT-S4-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S6-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S7-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S8-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S9-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N10-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N11-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S11-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N12-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S12-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N13-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S13-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N14-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S14-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N15-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N16-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S16-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N17-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S17-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N18-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S18-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N19-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S19-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N20-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S20-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N21-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S21-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N22-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S22-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N23-0 (0-6")	9.00E-02	9.00E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.72E+01	8.82E-02	2.64E-02	1.13E+00	2.05E-03	1.00E+00	1.13E+00	1.00E+00	2.05E-03
BREOT-S23-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N24-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S24-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N25-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S25-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N26-0 (0-6")	9.00E-02	9.00E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.00E+01	1.54E-01	2.64E-02	1.13E+00	3.58E-03	1.00E+00	1.13E+00	1.00E+00	3.58E-03
BREOT-S26-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N27-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S27-0 (0-6")	9.00E-02	9.00E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.51E+00	7.74E-03	2.64E-02	1.13E+00	1.80E-04	1.00E+00	1.13E+00	1.00E+00	1.80E-04
BREOT-N28-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S28-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S29-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N30-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S30-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N31-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S31-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N32-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S32-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N33-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S33-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N34-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S34-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N35-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S35-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE

TABLE C-2B: CADMIUM DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS (Continued)

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Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 18.41

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Red-Tailed Hawk (Carnivorous Birds - Terrestrial)																							
BREOT-N36-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S36-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N37-0 (0-6")	9.00E-02	9.00E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.52E+00	1.29E-02	2.64E-02	1.13E+00	3.01E-04	1.00E+00	1.13E+00	1.00E+00	3.01E-04
BREOT-S37-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N38-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S38-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N39-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N40-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S40-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N41-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S41-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N42-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S42-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N43-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S43-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N44-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S44-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N45-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S45-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N46-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S46-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N47-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S47-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N48-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S48-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N49-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S49-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S50-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N51-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S51-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N52-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S52-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N53-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S53-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N54-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S54-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N55-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S55-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N56-0 (0-6")	9.00E-02	9.00E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.46E+00	7.49E-03	2.64E-02	1.13E+00	1.74E-04	1.00E+00	1.13E+00	1.00E+00	1.74E-04
BREOT-N57-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S57-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N58-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S58-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N59-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N60-0 (0-6")	9.00E-02	9.00E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.39E+00	1.23E-02	2.64E-02	1.13E+00	2.86E-04	1.00E+00	1.13E+00	1.00E+00	2.85E-04
BREOT-S60-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S61-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N62-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S62-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N63-0 (0-6")	9.00E-02	9.00E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.96E+00	1.52E-02	2.64E-02	1.13E+00	3.54E-04	1.00E+00	1.13E+00	1.00E+00	3.53E-04
BREOT-S63-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N64-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S64-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N66-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE

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Site Area (hectares) 18.41

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Red-Tailed Hawk (Carnivorous Birds - Terrestrial)																							
BREOT-S66-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N67-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S67-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
Outside Tailings																					**Maximum HQ (At Edge of Tailings)**		**3.58E-03**
BREOT-S0+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S1+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S2+95 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S3+6 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S4+10 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S6+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S8+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N10+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N11+25 (0-6")	9.00E-02	9.00E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.50E+00	7.69E-03	2.64E-02	1.13E+00	1.79E-04	1.00E+00	1.13E+00	1.00E+00	1.79E-04
BREOT-N12+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S12+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S12+60 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N13+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S13+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S13+65 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N14+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S14+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S14+59 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N15+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N15+50 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S16+20 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S16+75 (0-6")	9.00E-02	9.00E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	7.00E-01	3.59E-03	2.64E-02	1.13E+00	8.36E-05	1.00E+00	1.13E+00	1.00E+00	8.36E-05
BREOT-N17+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S18+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N19+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S19+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S19+85 (0-6")	9.00E-02	9.00E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	6.00E-01	3.08E-03	2.64E-02	1.13E+00	7.17E-05	1.00E+00	1.13E+00	1.00E+00	7.16E-05
BREOT-N20+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S20+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S20+75 (0-6")	9.00E-02	9.00E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.09E+00	5.59E-03	2.64E-02	1.13E+00	1.30E-04	1.00E+00	1.13E+00	1.00E+00	1.30E-04
BREOT-N21+25 (0-6")	9.00E-02	9.00E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.18E+00	1.63E-02	2.64E-02	1.13E+00	3.80E-04	1.00E+00	1.13E+00	1.00E+00	3.80E-04
BREOT-S21+25 (0-6")	9.00E-02	9.00E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.44E+00	7.38E-03	2.64E-02	1.13E+00	1.72E-04	1.00E+00	1.13E+00	1.00E+00	1.72E-04
BREOT-N22+150 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N22+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S22+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N23+115 (0-6")	9.00E-02	9.00E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.40E+00	1.23E-02	2.64E-02	1.13E+00	2.87E-04	1.00E+00	1.13E+00	1.00E+00	2.87E-04
BREOT-N23+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S23+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S23+37.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N24+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N24+75 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S24+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N25+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S25+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S25+40 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S26+37 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N27+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S27+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N28+25 (0-6")	9.00E-02	9.00E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.33E+00	6.82E-03	2.64E-02	1.13E+00	1.59E-04	1.00E+00	1.13E+00	1.00E+00	1.59E-04
BREOT-S28+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE

TABLE C-2B: CADMIUM DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 18.41

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Red-Tailed Hawk (Carnivorous Birds - Terrestrial)																							
BREOT-N29+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S29+25 (0-6")	9.00E-02	9.00E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.57E+00	8.05E-03	2.64E-02	1.13E+00	1.88E-04	1.00E+00	1.13E+00	1.00E+00	1.87E-04
BREOT-N30+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S30+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N31+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N31+75 (0-6")	9.00E-02	9.00E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	7.00E-01	3.59E-03	2.64E-02	1.13E+00	8.36E-05	1.00E+00	1.13E+00	1.00E+00	8.36E-05
BREOT-S31+25 (0-6")	9.00E-02	9.00E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.59E+00	1.33E-02	2.64E-02	1.13E+00	3.09E-04	1.00E+00	1.13E+00	1.00E+00	3.09E-04
BREOT-N32+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S32+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S32+300 (0-6")	9.00E-02	9.00E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.40E+00	7.18E-03	2.64E-02	1.13E+00	1.67E-04	1.00E+00	1.13E+00	1.00E+00	1.67E-04
BREOT-N33+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S33+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N34+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S34+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N35+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S35+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N36+100 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N36+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S36+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N37+25 (0-6")	9.00E-02	9.00E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.67E-01	2.91E-03	2.64E-02	1.13E+00	6.77E-05	1.00E+00	1.13E+00	1.00E+00	6.77E-05
BREOT-S37+25 (0-6")	9.00E-02	9.00E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.35E+00	2.74E-02	2.64E-02	1.13E+00	6.39E-04	1.00E+00	1.13E+00	1.00E+00	6.39E-04
BREOT-N38+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S38+25 (0-6")	9.00E-02	9.00E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.95E+00	3.05E-02	2.64E-02	1.13E+00	7.11E-04	1.00E+00	1.13E+00	1.00E+00	7.10E-04
BREOT-N39+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S39+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N40+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S40+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N41+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S41+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N42+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S42+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N43+12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N43+40 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S43+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N44+55 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S44+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N45+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S45+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N46+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S46+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N47+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S47+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N48+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S48+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N49+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S49+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N51+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S51+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N52+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S52+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N53+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S53+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S54+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N55+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE

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Site Area (hectares) 18.41

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Red-Tailed Hawk (Carnivorous Birds - Terrestrial)																							
BREOT-S55+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N56+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S56+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N57+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S57+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N58+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S58+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N59+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N60+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S60+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S61+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N62+25 (0-6")	9.00E-02	9.00E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.07E+00	5.49E-03	2.64E-02	1.13E+00	1.28E-04	1.00E+00	1.13E+00	1.00E+00	1.28E-04
BREOT-S62+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N63+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S63+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N64+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S64+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S65+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N66+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S66+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N67+125 (0-6")	9.00E-02	9.00E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.80E+00	1.44E-02	2.64E-02	1.13E+00	3.35E-04	1.00E+00	1.13E+00	1.00E+00	3.34E-04
BREOT-S67+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N67+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
																					Maximum HQ (Outside Tailings)		**7.10E-04**
American Kestrel (Insectivorous Birds - Terrestrial)																							
Reference Sites																							
ACBG-1 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	7.00E+00	3.40E+00	4.68E-02	7.84E-04	4.86E-01	3.81E-04	7.04E-02	1.24E-01	2.68E-02	1.00E+00	1.13E+00	6.43E-01	4.17E-02
ACBG-2 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	7.00E+00	3.64E+00	5.01E-02	7.84E-04	5.20E-01	4.08E-04	7.04E-02	1.24E-01	2.86E-02	1.00E+00	1.13E+00	6.43E-01	4.46E-02
UBRBG-202 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	7.00E+00	2.03E+01	2.79E-01	7.84E-04	2.90E+00	2.27E-03	7.04E-02	1.24E-01	1.60E-01	1.00E+00	1.13E+00	6.43E-01	2.49E-01
UBRBG-204 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	7.00E+00	1.89E+01	2.60E-01	7.84E-04	2.70E+00	2.12E-03	7.04E-02	1.24E-01	1.49E-01	1.00E+00	1.13E+00	6.43E-01	2.31E-01
Inside Tailings																						**Minimum HQ (Reference Sites)**	**4.17E-02**
BREOT-S6-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S2-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S0-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S1-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S7-25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S8-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S9-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N10-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N11-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N11-125 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S11-12 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S11+63 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	7.00E+00	1.54E+01	2.12E-01	7.84E-04	2.20E+00	1.73E-03	7.04E-02	1.24E-01	1.21E-01	1.00E+00	1.13E+00	6.43E-01	1.89E-01
UBDT-TP-6 (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	7.00E+00	6.91E+02	9.51E+00	7.84E-04	9.87E+01	7.74E-02	7.04E-02	1.24E-01	5.44E+00	1.00E+00	1.13E+00	6.43E-01	8.46E+00
UBDT-TP-6 (2-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	7.00E+00	2.01E+02	2.76E+00	7.84E-04	2.87E+01	2.25E-02	7.04E-02	1.24E-01	1.58E+00	1.00E+00	1.13E+00	6.43E-01	2.46E+00
UBDT-TP-6 (12-24")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	7.00E+00	1.13E+03	1.55E+01	7.84E-04	1.61E+02	1.26E-01	7.04E-02	1.24E-01	8.87E+00	1.00E+00	1.13E+00	6.43E-01	1.38E+01
UBDT-TP-6 (24-36")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	7.00E+00	6.82E+01	9.39E-01	7.84E-04	9.75E+00	7.65E-03	7.04E-02	1.24E-01	5.37E-01	1.00E+00	1.13E+00	6.43E-01	8.36E-01
UBDT-TP-6 (36-48")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	7.00E+00	9.59E+01	1.32E+00	7.84E-04	1.37E+01	1.07E-02	7.04E-02	1.24E-01	7.55E-01	1.00E+00	1.13E+00	6.43E-01	1.17E+00
UBDT-TP-6 (48-60")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	7.00E+00	7.35E+01	1.01E+00	7.84E-04	1.05E+01	8.24E-03	7.04E-02	1.24E-01	5.78E-01	1.00E+00	1.13E+00	6.43E-01	9.00E-01
BREOT-N12-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	7.00E+00	6.39E+01	8.79E-01	7.84E-04	9.13E+00	7.16E-03	7.04E-02	1.24E-01	5.03E-01	1.00E+00	1.13E+00	6.43E-01	7.83E-01
BREOT-S12-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S13-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S14-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N15-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S15-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	7.00E+00	2.38E+01	3.27E-01	7.84E-04	3.40E+00	2.67E-03	7.04E-02	1.24E-01	1.87E-01	1.00E+00	1.13E+00	6.43E-01	2.91E-01
BREOT-N16-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE

TABLE C-2B: CADMIUM DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 18.41

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
American Kestrel (Insectivorous Birds - Terrestrial)																							
BREOT-N16-25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S16-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N17-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S17-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S17-25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UBDT-TP-4 (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	7.00E+00	1.27E+02	1.75E+00	7.84E-04	1.82E+01	1.43E-02	7.04E-02	1.24E-01	1.00E+00	1.00E+00	1.13E+00	6.43E-01	1.56E+00
UBDT-TP-4 (2-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	7.00E+00	2.50E+01	3.44E-01	7.84E-04	3.57E+00	2.80E-03	7.04E-02	1.24E-01	1.97E-01	1.00E+00	1.13E+00	6.43E-01	3.06E-01
UBDT-TP-4 (12-24")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	7.00E+00	2.20E+01	3.03E-01	7.84E-04	3.15E+00	2.47E-03	7.04E-02	1.24E-01	1.74E-01	1.00E+00	1.13E+00	6.43E-01	2.70E-01
UBDT-TP-4 (24-36")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	7.00E+00	3.35E+01	4.61E-01	7.84E-04	4.79E+00	3.76E-03	7.04E-02	1.24E-01	2.64E-01	1.00E+00	1.13E+00	6.43E-01	4.11E-01
BREOT-N18-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N18-25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S18-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N19-10 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S19-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UBDT-TP-5 (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	7.00E+00	7.07E+01	9.73E-01	7.84E-04	1.01E+01	7.92E-03	7.04E-02	1.24E-01	5.56E-01	1.00E+00	1.13E+00	6.43E-01	8.66E-01
UBDT-TP-5 (2-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	7.00E+00	4.02E+01	5.53E-01	7.84E-04	5.74E+00	4.50E-03	7.04E-02	1.24E-01	3.16E-01	1.00E+00	1.13E+00	6.43E-01	4.92E-01
UBDT-TP-5 (12-24")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	7.00E+00	5.28E+01	7.27E-01	7.84E-04	7.55E+00	5.92E-03	7.04E-02	1.24E-01	4.16E-01	1.00E+00	1.13E+00	6.43E-01	6.47E-01
BREOT-N20-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UBDT-TP-3 (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	7.00E+00	1.27E+01	1.75E-01	7.84E-04	1.82E+00	1.43E-03	7.04E-02	1.24E-01	1.00E-01	1.00E+00	1.13E+00	6.43E-01	1.56E-01
UBDT-TP-3 (2-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	7.00E+00	1.60E+01	2.20E-01	7.84E-04	2.28E+00	1.79E-03	7.04E-02	1.24E-01	1.26E-01	1.00E+00	1.13E+00	6.43E-01	1.95E-01
UBDT-TP-3 (12-24")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	7.00E+00	5.00E+00	6.88E-02	7.84E-04	7.14E-01	5.60E-04	7.04E-02	1.24E-01	3.93E-02	1.00E+00	1.13E+00	6.43E-01	6.12E-02
UBDT-TP-3 (24-36")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	7.00E+00	1.50E+01	2.06E-01	7.84E-04	2.14E+00	1.68E-03	7.04E-02	1.24E-01	1.18E-01	1.00E+00	1.13E+00	6.43E-01	1.83E-01
UBDT-TP-3 (36-48")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	7.00E+00	3.81E+01	5.25E-01	7.84E-04	5.45E+00	4.27E-03	7.04E-02	1.24E-01	3.00E-01	1.00E+00	1.13E+00	6.43E-01	4.67E-01
UBDT-TP-3 (48-60")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	7.00E+00	1.78E+01	2.45E-01	7.84E-04	2.54E+00	1.99E-03	7.04E-02	1.24E-01	1.40E-01	1.00E+00	1.13E+00	6.43E-01	2.18E-01
BREOT-N21-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N22-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N23-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S23-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UBDT-TP-2 (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	7.00E+00	1.33E+02	1.83E+00	7.84E-04	1.90E+01	1.49E-02	7.04E-02	1.24E-01	1.05E+00	1.00E+00	1.13E+00	6.43E-01	1.63E+00
UBDT-TP-2 (2-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	7.00E+00	8.96E+01	1.23E+00	7.84E-04	1.28E+01	1.00E-02	7.04E-02	1.24E-01	7.05E-01	1.00E+00	1.13E+00	6.43E-01	1.10E+00
UBDT-TP-2 (12-24")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	7.00E+00	1.20E+02	1.66E+00	7.84E-04	1.72E+01	1.35E-02	7.04E-02	1.24E-01	9.48E-01	1.00E+00	1.13E+00	6.43E-01	1.47E+00
UBDT-TP-2 (24-36")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	7.00E+00	4.23E+01	5.83E-01	7.84E-04	6.05E+00	4.75E-03	7.04E-02	1.24E-01	3.33E-01	1.00E+00	1.13E+00	6.43E-01	5.19E-01
UBDT-TP-2 (36-48")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	7.00E+00	3.78E+01	5.20E-01	7.84E-04	5.40E+00	4.24E-03	7.04E-02	1.24E-01	2.98E-01	1.00E+00	1.13E+00	6.43E-01	4.63E-01
BREOT-S24-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N25-50 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N25-95 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S25-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S25-40 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N26A-25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N26B-25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N26-50 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N26-75 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S26-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S26-40 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N27-30 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N27-75 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	7.00E+00	5.94E+02	8.17E+00	7.84E-04	8.48E+01	6.65E-02	7.04E-02	1.24E-01	4.67E+00	1.00E+00	1.13E+00	6.43E-01	7.27E+00
BREOT-S27-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N28-110 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N28-55 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S28-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UBDT-TP-1 (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	7.00E+00	4.58E+02	6.30E+00	7.84E-04	6.54E+01	5.13E-02	7.04E-02	1.24E-01	3.60E+00	1.00E+00	1.13E+00	6.43E-01	5.61E+00
UBDT-TP-1 (2-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	7.00E+00	4.65E+02	6.40E+00	7.84E-04	6.64E+01	5.21E-02	7.04E-02	1.24E-01	3.66E+00	1.00E+00	1.13E+00	6.43E-01	5.69E+00
UBDT-TP-1 (12-24")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	7.00E+00	3.66E+02	5.04E+00	7.84E-04	5.23E+01	4.10E-02	7.04E-02	1.24E-01	2.88E+00	1.00E+00	1.13E+00	6.43E-01	4.48E+00
UBDT-TP-1 (24-36")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	7.00E+00	1.92E+02	2.65E+00	7.84E-04	2.75E+01	2.16E-02	7.04E-02	1.24E-01	1.52E+00	1.00E+00	1.13E+00	6.43E-01	2.36E+00

TABLE C-2B: CADMIUM DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 18.41

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
American Kestrel (Insectivorous Birds - Terrestrial)																							
UBDT-TP-1 (36-48")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	7.00E+00	7.28E+01	1.00E+00	7.84E-04	1.04E+01	8.16E-03	7.04E-02	1.24E-01	5.73E-01	1.00E+00	1.13E+00	6.43E-01	8.91E-01
UBDT-TP-1 (48-60")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	7.00E+00	1.90E+01	2.61E-01	7.84E-04	2.71E+00	2.13E-03	7.04E-02	1.24E-01	1.49E-01	1.00E+00	1.13E+00	6.43E-01	2.32E-01
BREOT-N29-30 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S29-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N30-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	7.00E+00	3.39E+01	4.66E-01	7.84E-04	4.84E+00	3.80E-03	7.04E-02	1.24E-01	2.67E-01	1.00E+00	1.13E+00	6.43E-01	4.15E-01
BREOT-S30-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N31-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S31-25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	7.00E+00	1.81E+01	2.49E-01	7.84E-04	2.59E+00	2.03E-03	7.04E-02	1.24E-01	1.43E-01	1.00E+00	1.13E+00	6.43E-01	2.22E-01
BREOT-S31-5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N32-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S32-6 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N33-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	7.00E+00	9.03E+00	1.24E-01	7.84E-04	1.29E+00	1.01E-03	7.04E-02	1.24E-01	7.11E-02	1.00E+00	1.13E+00	6.43E-01	1.11E-01
BREOT-S33-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N35-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S35-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N36-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S36-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N37-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S37-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N38-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S38-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	7.00E+00	1.10E+02	1.51E+00	7.84E-04	1.57E+01	1.23E-02	7.04E-02	1.24E-01	8.65E-01	1.00E+00	1.13E+00	6.43E-01	1.35E+00
BREOT-N39-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N40-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S40-14 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N41-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	7.00E+00	3.58E+01	4.92E-01	7.84E-04	5.11E+00	4.01E-03	7.04E-02	1.24E-01	2.82E-01	1.00E+00	1.13E+00	6.43E-01	4.38E-01
BREOT-S41-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	7.00E+00	6.99E+01	9.62E-01	7.84E-04	9.99E+00	7.84E-03	7.04E-02	1.24E-01	5.50E-01	1.00E+00	1.13E+00	6.43E-01	8.56E-01
BREOT-N42-35 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S42-25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N43-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S43-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N44-30 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S44-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N45-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N43-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S45-6 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N46-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S46-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S46-40 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N47-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	7.00E+00	9.80E+00	1.35E-01	7.84E-04	1.40E+00	1.10E-03	7.04E-02	1.24E-01	7.71E-02	1.00E+00	1.13E+00	6.43E-01	1.20E-01
BREOT-S47-999 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S48-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S49-2.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S50-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S50-25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	7.00E+00	1.12E+01	1.54E-01	7.84E-04	1.60E+00	1.26E-03	7.04E-02	1.24E-01	8.81E-02	1.00E+00	1.13E+00	6.43E-01	1.37E-01
BREOT-N52-60 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S52-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S53-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S54-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N55-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S55-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	7.00E+00	7.56E+00	1.04E-01	7.84E-04	1.08E+00	8.47E-04	7.04E-02	1.24E-01	5.95E-02	1.00E+00	1.13E+00	6.43E-01	9.26E-02
BREOT-N56-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	7.00E+00	3.04E+01	4.19E-01	7.84E-04	4.35E+00	3.41E-03	7.04E-02	1.24E-01	2.40E-01	1.00E+00	1.13E+00	6.43E-01	3.73E-01
BREOT-S56-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N57-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE

TABLE C-2B: CADMIUM DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 18.41

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
American Kestrel (Insectivorous Birds - Terrestrial)																							
BREOT-S57-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N58-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S58-12 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N59-18 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N60-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S60-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S61-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N62-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S62-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S63-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N64-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N64-20 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S64-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N65-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S65-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N66-5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S66-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N67-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S67-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
At Edge of Tailings																						**Maximum HQ (Inside Tailings)**	**1.38E+01**
BREOT-S0-0 (06)	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S1-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S2-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S3-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S4-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S6-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S7-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S8-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S9-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N10-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N11-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S11-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N12-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S12-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N13-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S13-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N14-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S14-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N15-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N16-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S16-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N17-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S17-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N18-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S18-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N19-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S19-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N20-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S20-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N21-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S21-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N22-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S22-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N23-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	7.00E+00	1.20E+02	1.66E+00	7.84E-04	1.72E+01	1.35E-02	7.04E-02	1.24E-01	9.48E-01	1.00E+00	1.13E+00	6.43E-01	1.47E+00

TABLE C-2B: CADMIUM DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 18.41

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
American Kestrel (Insectivorous Birds - Terrestrial)																							
BREOT-S23-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N24-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S24-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N25-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S25-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N26-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	7.00E+00	2.10E+02	2.89E+00	7.84E-04	3.00E+01	2.35E-02	7.04E-02	1.24E-01	1.65E+00	1.00E+00	1.13E+00	6.43E-01	2.57E+00
BREOT-S26-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N27-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S27-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	7.00E+00	1.06E+01	1.45E-01	7.84E-04	1.51E+00	1.18E-03	7.04E-02	1.24E-01	8.32E-02	1.00E+00	1.13E+00	6.43E-01	1.29E-01
BREOT-N28-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S28-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S29-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N30-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S30-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N31-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S31-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N32-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S32-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N33-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S33-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N34-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S34-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N35-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S35-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N36-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S36-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N37-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	7.00E+00	1.76E+01	2.43E-01	7.84E-04	2.52E+00	1.98E-03	7.04E-02	1.24E-01	1.39E-01	1.00E+00	1.13E+00	6.43E-01	2.16E-01
BREOT-S37-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N38-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S38-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N39-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N40-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S40-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N41-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S41-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N42-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S42-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N43-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S43-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N44-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S44-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N45-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S45-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N46-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S46-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N47-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S47-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N48-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S48-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N49-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S49-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S50-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N51-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S51-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE

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American Kestrel (Insectivorous Birds - Terrestrial)																							
BREOT-N52-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S52-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N53-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S53-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N54-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S54-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N55-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S55-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N56-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	7.00E+00	1.02E+01	1.41E-01	7.84E-04	1.46E+00	1.15E-03	7.04E-02	1.24E-01	8.04E-02	1.00E+00	1.13E+00	6.43E-01	1.25E-01
BREOT-N57-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S57-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N58-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S58-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N59-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N60-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	7.00E+00	1.67E+01	2.30E-01	7.84E-04	2.39E+00	1.87E-03	7.04E-02	1.24E-01	1.32E-01	1.00E+00	1.13E+00	6.43E-01	2.05E-01
BREOT-S60-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S61-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N62-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S62-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N63-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	7.00E+00	2.07E+01	2.85E-01	7.84E-04	2.96E+00	2.32E-03	7.04E-02	1.24E-01	1.63E-01	1.00E+00	1.13E+00	6.43E-01	2.54E-01
BREOT-S63-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N64-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S64-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N66-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S66-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N67-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S67-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
Outside Tailings																						**Maximum HQ (At Edge of Tailings)**	**2.57E+00**
BREOT-S0+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S1+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S2+95 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S3+6 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S4+10 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S6+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S8+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N10+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N11+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	7.00E+00	1.05E+01	1.44E-01	7.84E-04	1.50E+00	1.18E-03	7.04E-02	1.24E-01	8.26E-02	1.00E+00	1.13E+00	6.43E-01	1.29E-01
BREOT-N12+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S12+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S12+60 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N13+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S13+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S13+65 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N14+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S14+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S14+59 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N15+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N15+50 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S16+20 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S16+75 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	7.00E+00	4.90E+00	6.74E-02	7.84E-04	7.00E-01	5.49E-04	7.04E-02	1.24E-01	3.86E-02	1.00E+00	1.13E+00	6.43E-01	6.00E-02
BREOT-N17+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S18+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N19+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S19+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE

TABLE C-2B: CADMIUM DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 18.41

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
American Kestrel (Insectivorous Birds - Terrestrial)																							
BREOT-S19+85 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	7.00E+00	4.20E+00	5.78E-02	7.84E-04	6.00E-01	4.71E-04	7.04E-02	1.24E-01	3.31E-02	1.00E+00	1.13E+00	6.43E-01	5.14E-02
BREOT-N20+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S20+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S20+75 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	7.00E+00	7.63E+00	1.05E-01	7.84E-04	1.09E+00	8.55E-04	7.04E-02	1.24E-01	6.01E-02	1.00E+00	1.13E+00	6.43E-01	9.34E-02
BREOT-N21+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	7.00E+00	2.23E+01	3.06E-01	7.84E-04	3.18E+00	2.49E-03	7.04E-02	1.24E-01	1.75E-01	1.00E+00	1.13E+00	6.43E-01	2.73E-01
BREOT-S21+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	7.00E+00	1.01E+01	1.39E-01	7.84E-04	1.44E+00	1.13E-03	7.04E-02	1.24E-01	7.93E-02	1.00E+00	1.13E+00	6.43E-01	1.23E-01
BREOT-N22+150 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N22+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S22+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N23+115 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	7.00E+00	1.68E+01	2.31E-01	7.84E-04	2.40E+00	1.88E-03	7.04E-02	1.24E-01	1.32E-01	1.00E+00	1.13E+00	6.43E-01	2.06E-01
BREOT-N23+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S23+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S23+37.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N24+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N24+75 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S24+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N25+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S25+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S25+40 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S26+37 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N27+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S27+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N28+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	7.00E+00	9.31E+00	1.28E-01	7.84E-04	1.33E+00	1.04E-03	7.04E-02	1.24E-01	7.33E-02	1.00E+00	1.13E+00	6.43E-01	1.14E-01
BREOT-S28+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N29+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S29+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	7.00E+00	1.10E+01	1.51E-01	7.84E-04	1.57E+00	1.23E-03	7.04E-02	1.24E-01	8.65E-02	1.00E+00	1.13E+00	6.43E-01	1.35E-01
BREOT-N30+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S30+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N31+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N31+75 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	7.00E+00	4.90E+00	6.74E-02	7.84E-04	7.00E-01	5.49E-04	7.04E-02	1.24E-01	3.86E-02	1.00E+00	1.13E+00	6.43E-01	6.00E-02
BREOT-S31+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	7.00E+00	1.81E+01	2.49E-01	7.84E-04	2.59E+00	2.03E-03	7.04E-02	1.24E-01	1.43E-01	1.00E+00	1.13E+00	6.43E-01	2.22E-01
BREOT-N32+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S32+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S32+300 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	7.00E+00	9.80E+00	1.35E-01	7.84E-04	1.40E+00	1.10E-03	7.04E-02	1.24E-01	7.71E-02	1.00E+00	1.13E+00	6.43E-01	1.20E-01
BREOT-N33+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S33+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N34+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S34+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N35+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S35+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N36+100 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N36+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S36+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N37+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	7.00E+00	3.97E+00	5.46E-02	7.84E-04	5.67E-01	4.45E-04	7.04E-02	1.24E-01	3.12E-02	1.00E+00	1.13E+00	6.43E-01	4.86E-02
BREOT-S37+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	7.00E+00	3.74E+01	5.15E-01	7.84E-04	5.35E+00	4.20E-03	7.04E-02	1.24E-01	2.95E-01	1.00E+00	1.13E+00	6.43E-01	4.59E-01
BREOT-N38+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S38+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	7.00E+00	4.16E+01	5.73E-01	7.84E-04	5.95E+00	4.67E-03	7.04E-02	1.24E-01	3.28E-01	1.00E+00	1.13E+00	6.43E-01	5.10E-01
BREOT-N39+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S39+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N40+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S40+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N41+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S41+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N42+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE

TABLE C-2B: CADMIUM DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS (Continued)

Baseline Ecological Risk Assessment

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from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 18.41

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
American Kestrel (Insectivorous Birds - Terrestrial)																							
BREOT-S42+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N43+12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N43+40 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S43+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N44+55 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S44+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N45+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S45+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N46+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S46+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N47+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S47+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N48+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S48+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N49+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S49+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N51+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S51+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N52+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S52+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N53+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S53+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S54+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N55+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S55+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N56+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S56+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N57+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S57+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N58+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S58+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N59+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N60+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S60+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S61+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N62+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	7.00E+00	7.49E+00	1.03E-01	7.84E-04	1.07E+00	8.39E-04	7.04E-02	1.24E-01	5.89E-02	1.00E+00	1.13E+00	6.43E-01	9.17E-02
BREOT-S62+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N63+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S63+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N64+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S64+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S65+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N66+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S66+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N67+125 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	7.00E+00	1.96E+01	2.70E-01	7.84E-04	2.80E+00	2.20E-03	7.04E-02	1.24E-01	1.54E-01	1.00E+00	1.13E+00	6.43E-01	2.40E-01
BREOT-S67+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N67+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
																					Maximum HQ (Outside Tailings)		**5.10E-01**

TABLE C-2B: CADMIUM DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 18.41

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Meadow Vole (Small Herbivorous Mammal - Terrestrial)																							
Reference Sites																							
ACBG-1 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.26E+00	6.11E-01	2.86E-03	NA	NA	NA	NA	1.13E-04	4.86E-01	5.47E-05	1.00E+00	3.06E-02	9.53E-02	2.64E+00	3.14E-02	2.64E+00	3.61E-02
ACBG-2 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.26E+00	6.53E-01	3.06E-03	NA	NA	NA	NA	1.13E-04	5.20E-01	5.85E-05	1.00E+00	3.06E-02	1.02E-01	2.64E+00	3.14E-02	2.64E+00	3.86E-02
UBRBG-202 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.26E+00	3.64E+00	1.71E-02	NA	NA	NA	NA	1.13E-04	2.90E+00	3.26E-04	1.00E+00	3.06E-02	5.69E-01	2.64E+00	3.14E-02	2.64E+00	2.15E-01
UBRBG-204 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.26E+00	3.39E+00	1.59E-02	NA	NA	NA	NA	1.13E-04	2.70E+00	3.04E-04	1.00E+00	3.06E-02	5.30E-01	2.64E+00	3.14E-02	2.64E+00	2.00E-01
Inside Tailings																						**Minimum HQ (Reference Sites)**	**3.61E-02**
BREOT-S6-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S2-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S0-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S1-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S7-25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S8-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S9-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N10-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N11-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N11-125 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S11-12 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S11+63 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.59E+00	3.49E+00	1.64E-02	NA	NA	NA	NA	1.13E-04	2.20E+00	2.48E-04	1.00E+00	3.06E-02	5.43E-01	2.64E+00	3.14E-02	2.64E+00	2.06E-01
UBDT-TP-6 (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.59E+00	1.57E+02	7.35E-01	NA	NA	NA	NA	1.13E-04	9.87E+01	1.11E-02	1.00E+00	3.06E-02	2.44E+01	2.64E+00	3.14E-02	2.64E+00	9.22E+00
UBDT-TP-6 (2-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.59E+00	4.56E+01	2.14E-01	NA	NA	NA	NA	1.13E-04	2.87E+01	3.23E-03	1.00E+00	3.06E-02	7.09E+00	2.64E+00	3.14E-02	2.64E+00	2.68E+00
UBDT-TP-6 (12-24")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.59E+00	2.56E+02	1.20E+00	NA	NA	NA	NA	1.13E-04	1.61E+02	1.81E-02	1.00E+00	3.06E-02	3.98E+01	2.64E+00	3.14E-02	2.64E+00	1.50E+01
UBDT-TP-6 (24-36")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.59E+00	1.55E+01	7.26E-02	NA	NA	NA	NA	1.13E-04	9.75E+00	1.10E-03	1.00E+00	3.06E-02	2.41E+00	2.64E+00	3.14E-02	2.64E+00	9.11E-01
UBDT-TP-6 (36-48")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.59E+00	2.18E+01	1.02E-01	NA	NA	NA	NA	1.13E-04	1.37E+01	1.54E-03	1.00E+00	3.06E-02	3.38E+00	2.64E+00	3.14E-02	2.64E+00	1.28E+00
UBDT-TP-6 (48-60")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.59E+00	1.67E+01	7.82E-02	NA	NA	NA	NA	1.13E-04	1.05E+01	1.18E-03	1.00E+00	3.06E-02	2.59E+00	2.64E+00	3.14E-02	2.64E+00	9.81E-01
BREOT-N12-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.59E+00	1.45E+01	6.80E-02	NA	NA	NA	NA	1.13E-04	9.13E+00	1.03E-03	1.00E+00	3.06E-02	2.26E+00	2.64E+00	3.14E-02	2.64E+00	8.53E-01
BREOT-S12-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S13-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S14-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N15-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S15-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.59E+00	5.40E+00	2.53E-02	NA	NA	NA	NA	1.13E-04	3.40E+00	3.83E-04	1.00E+00	3.06E-02	8.40E-01	2.64E+00	3.14E-02	2.64E+00	3.18E-01
BREOT-N16-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N16-25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S16-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N17-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S17-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S17-25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UBDT-TP-4 (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.59E+00	2.89E+01	1.36E-01	NA	NA	NA	NA	1.13E-04	1.82E+01	2.05E-03	1.00E+00	3.06E-02	4.50E+00	2.64E+00	3.14E-02	2.64E+00	1.70E+00
UBDT-TP-4 (2-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.59E+00	5.67E+00	2.66E-02	NA	NA	NA	NA	1.13E-04	3.57E+00	4.02E-04	1.00E+00	3.06E-02	8.82E-01	2.64E+00	3.14E-02	2.64E+00	3.34E-01
UBDT-TP-4 (12-24")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.59E+00	5.00E+00	2.35E-02	NA	NA	NA	NA	1.13E-04	3.15E+00	3.54E-04	1.00E+00	3.06E-02	7.78E-01	2.64E+00	3.14E-02	2.64E+00	2.94E-01
UBDT-TP-4 (24-36")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.59E+00	7.61E+00	3.57E-02	NA	NA	NA	NA	1.13E-04	4.79E+00	5.39E-04	1.00E+00	3.06E-02	1.18E+00	2.64E+00	3.14E-02	2.64E+00	4.47E-01
BREOT-N18-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N18-25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S18-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N19-10 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S19-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UBDT-TP-5 (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.59E+00	1.60E+01	7.52E-02	NA	NA	NA	NA	1.13E-04	1.01E+01	1.14E-03	1.00E+00	3.06E-02	2.49E+00	2.64E+00	3.14E-02	2.64E+00	9.44E-01
UBDT-TP-5 (2-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.59E+00	9.12E+00	4.27E-02	NA	NA	NA	NA	1.13E-04	5.74E+00	6.46E-04	1.00E+00	3.06E-02	1.42E+00	2.64E+00	3.14E-02	2.64E+00	5.36E-01
UBDT-TP-5 (12-24")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.59E+00	1.20E+01	5.62E-02	NA	NA	NA	NA	1.13E-04	7.55E+00	8.50E-04	1.00E+00	3.06E-02	1.87E+00	2.64E+00	3.14E-02	2.64E+00	7.05E-01
BREOT-N20-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UBDT-TP-3 (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.59E+00	2.89E+00	1.36E-02	NA	NA	NA	NA	1.13E-04	1.82E+00	2.05E-04	1.00E+00	3.06E-02	4.50E-01	2.64E+00	3.14E-02	2.64E+00	1.70E-01
UBDT-TP-3 (2-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.59E+00	3.62E+00	1.70E-02	NA	NA	NA	NA	1.13E-04	2.28E+00	2.57E-04	1.00E+00	3.06E-02	5.63E-01	2.64E+00	3.14E-02	2.64E+00	2.13E-01
UBDT-TP-3 (12-24")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.59E+00	1.13E+00	5.32E-03	NA	NA	NA	NA	1.13E-04	7.14E-01	8.04E-05	1.00E+00	3.06E-02	1.76E-01	2.64E+00	3.14E-02	2.64E+00	6.67E-02
UBDT-TP-3 (24-36")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.59E+00	3.40E+00	1.59E-02	NA	NA	NA	NA	1.13E-04	2.14E+00	2.41E-04	1.00E+00	3.06E-02	5.29E-01	2.64E+00	3.14E-02	2.64E+00	2.00E-01
UBDT-TP-3 (36-48")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.59E+00	8.65E+00	4.06E-02	NA	NA	NA	NA	1.13E-04	5.45E+00	6.13E-04	1.00E+00	3.06E-02	1.35E+00	2.64E+00	3.14E-02	2.64E+00	5.09E-01
UBDT-TP-3 (48-60")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.59E+00	4.03E+00	1.89E-02	NA	NA	NA	NA	1.13E-04	2.54E+00	2.86E-04	1.00E+00	3.06E-02	6.27E-01	2.64E+00	3.14E-02	2.64E+00	2.37E-01
BREOT-N21-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE

TABLE C-2B: CADMIUM DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS (Continued)

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calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 18.41

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Meadow Vole (Small Herbivorous Mammal - Terrestrial)																							
BREOT-N22-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N23-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S23-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UBDT-TP-2 (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.59E+00	3.02E+01	1.41E-01	NA	NA	NA	NA	1.13E-04	1.90E+01	2.14E-03	1.00E+00	3.06E-02	4.69E+00	2.64E+00	3.14E-02	2.64E+00	1.78E+00
UBDT-TP-2 (2-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.59E+00	2.03E+01	9.53E-02	NA	NA	NA	NA	1.13E-04	1.28E+01	1.44E-03	1.00E+00	3.06E-02	3.16E+00	2.64E+00	3.14E-02	2.64E+00	1.20E+00
UBDT-TP-2 (12-24")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.59E+00	2.73E+01	1.28E-01	NA	NA	NA	NA	1.13E-04	1.72E+01	1.94E-03	1.00E+00	3.06E-02	4.25E+00	2.64E+00	3.14E-02	2.64E+00	1.61E+00
UBDT-TP-2 (24-36")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.59E+00	9.61E+00	4.51E-02	NA	NA	NA	NA	1.13E-04	6.05E+00	6.81E-04	1.00E+00	3.06E-02	1.49E+00	2.64E+00	3.14E-02	2.64E+00	5.65E-01
UBDT-TP-2 (36-48")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.59E+00	8.58E+00	4.02E-02	NA	NA	NA	NA	1.13E-04	5.40E+00	6.08E-04	1.00E+00	3.06E-02	1.33E+00	2.64E+00	3.14E-02	2.64E+00	5.04E-01
BREOT-S24-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N25-50 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N25-95 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S25-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S25-40 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N26A-25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N26B-25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N26-50 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N26-75 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S26-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S26-40 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N27-30 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N27-75 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.59E+00	1.35E+02	6.31E-01	NA	NA	NA	NA	1.13E-04	8.48E+01	9.54E-03	1.00E+00	3.06E-02	2.09E+01	2.64E+00	3.14E-02	2.64E+00	7.92E+00
BREOT-S27-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N28-110 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N28-55 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S28-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UBDT-TP-1 (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.59E+00	1.04E+02	4.87E-01	NA	NA	NA	NA	1.13E-04	6.54E+01	7.36E-03	1.00E+00	3.06E-02	1.62E+01	2.64E+00	3.14E-02	2.64E+00	6.11E+00
UBDT-TP-1 (2-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.59E+00	1.05E+02	4.94E-01	NA	NA	NA	NA	1.13E-04	6.64E+01	7.47E-03	1.00E+00	3.06E-02	1.64E+01	2.64E+00	3.14E-02	2.64E+00	6.20E+00
UBDT-TP-1 (12-24")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.59E+00	8.31E+01	3.89E-01	NA	NA	NA	NA	1.13E-04	5.23E+01	5.89E-03	1.00E+00	3.06E-02	1.29E+01	2.64E+00	3.14E-02	2.64E+00	4.89E+00
UBDT-TP-1 (24-36")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.59E+00	4.37E+01	2.05E-01	NA	NA	NA	NA	1.13E-04	2.75E+01	3.09E-03	1.00E+00	3.06E-02	6.79E+00	2.64E+00	3.14E-02	2.64E+00	2.57E+00
UBDT-TP-1 (36-48")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.59E+00	1.65E+01	7.74E-02	NA	NA	NA	NA	1.13E-04	1.04E+01	1.17E-03	1.00E+00	3.06E-02	2.57E+00	2.64E+00	3.14E-02	2.64E+00	9.72E-01
UBDT-TP-1 (48-60")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.59E+00	4.30E+00	2.02E-02	NA	NA	NA	NA	1.13E-04	2.71E+00	3.05E-04	1.00E+00	3.06E-02	6.69E-01	2.64E+00	3.14E-02	2.64E+00	2.53E-01
BREOT-N29-30 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S29-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N30-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.59E+00	7.69E+00	3.60E-02	NA	NA	NA	NA	1.13E-04	4.84E+00	5.45E-04	1.00E+00	3.06E-02	1.20E+00	2.64E+00	3.14E-02	2.64E+00	4.52E-01
BREOT-S30-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N31-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S31-25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.59E+00	4.11E+00	1.93E-02	NA	NA	NA	NA	1.13E-04	2.59E+00	2.91E-04	1.00E+00	3.06E-02	6.40E-01	2.64E+00	3.14E-02	2.64E+00	2.42E-01
BREOT-S31-5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N32-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S32-6 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N33-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.59E+00	2.05E+00	9.61E-03	NA	NA	NA	NA	1.13E-04	1.29E+00	1.45E-04	1.00E+00	3.06E-02	3.19E-01	2.64E+00	3.14E-02	2.64E+00	1.21E-01
BREOT-S33-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N35-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S35-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N36-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S36-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N37-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S37-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N38-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S38-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.59E+00	2.49E+01	1.17E-01	NA	NA	NA	NA	1.13E-04	1.57E+01	1.77E-03	1.00E+00	3.06E-02	3.88E+00	2.64E+00	3.14E-02	2.64E+00	1.47E+00
BREOT-N39-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S39-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N40-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S40-14 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE

TABLE C-2B: CADMIUM DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 18.41

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Meadow Vole (Small Herbivorous Mammal - Terrestrial)																							
BREOT-N41-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.59E+00	8.11E+00	3.81E-02	NA	NA	NA	NA	1.13E-04	5.11E+00	5.75E-04	1.00E+00	3.06E-02	1.26E+00	2.64E+00	3.14E-02	2.64E+00	4.77E-01
BREOT-S41-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.59E+00	1.59E+01	7.44E-02	NA	NA	NA	NA	1.13E-04	9.99E+00	1.12E-03	1.00E+00	3.06E-02	2.47E+00	2.64E+00	3.14E-02	2.64E+00	9.33E-01
BREOT-N42-35 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S42-25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N43-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S43-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N44-30 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S44-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N45-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N43-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S45-6 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N46-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S46-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S46-40 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N47-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.59E+00	2.22E+00	1.04E-02	NA	NA	NA	NA	1.13E-04	1.40E+00	1.58E-04	1.00E+00	3.06E-02	3.46E-01	2.64E+00	3.14E-02	2.64E+00	1.31E-01
BREOT-S47-999 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S48-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S49-2.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S50-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S50-25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.59E+00	2.54E+00	1.19E-02	NA	NA	NA	NA	1.13E-04	1.60E+00	1.80E-04	1.00E+00	3.06E-02	3.95E-01	2.64E+00	3.14E-02	2.64E+00	1.49E-01
BREOT-N52-60 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S52-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S53-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S54-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N55-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S55-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.59E+00	1.72E+00	8.04E-03	NA	NA	NA	NA	1.13E-04	1.08E+00	1.22E-04	1.00E+00	3.06E-02	2.67E-01	2.64E+00	3.14E-02	2.64E+00	1.01E-01
BREOT-N56-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.59E+00	6.91E+00	3.24E-02	NA	NA	NA	NA	1.13E-04	4.35E+00	4.90E-04	1.00E+00	3.06E-02	1.07E+00	2.64E+00	3.14E-02	2.64E+00	4.06E-01
BREOT-S56-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N57-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S57-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N58-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S58-12 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N59-18 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N60-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S60-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S61-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N62-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S62-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S63-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N64-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N64-20 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S64-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N65-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S65-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N66-5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S66-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N67-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S67-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
At Edge of Tailings																						**Maximum HQ (Inside Tailings)**	**1.50E+01**
BREOT-S0-0 (06)	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S1-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S2-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S3-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S4-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE

TABLE C-2B: CADMIUM DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 18.41

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Meadow Vole (Small Herbivorous Mammal - Terrestrial)																							
BREOT-S6-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S7-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S8-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S9-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N10-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N11-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S11-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N12-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S12-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N13-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S13-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N14-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S14-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N15-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N16-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S16-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N17-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S17-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N18-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S18-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N19-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S19-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N20-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S20-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N21-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S21-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N22-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S22-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N23-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.59E+00	2.73E+01	1.28E-01	NA	NA	NA	NA	1.13E-04	1.72E+01	1.94E-03	1.00E+00	3.06E-02	4.25E+00	2.64E+00	3.14E-02	2.64E+00	1.61E+00
BREOT-S23-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N24-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S24-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N25-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S25-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N26-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.59E+00	4.76E+01	2.23E-01	NA	NA	NA	NA	1.13E-04	3.00E+01	3.38E-03	1.00E+00	3.06E-02	7.41E+00	2.64E+00	3.14E-02	2.64E+00	2.80E+00
BREOT-S26-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N27-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S27-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.59E+00	2.40E+00	1.12E-02	NA	NA	NA	NA	1.13E-04	1.51E+00	1.70E-04	1.00E+00	3.06E-02	3.73E-01	2.64E+00	3.14E-02	2.64E+00	1.41E-01
BREOT-N28-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S28-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S29-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N30-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S30-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N31-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S31-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N32-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S32-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N33-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S33-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N34-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S34-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N35-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S35-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N36-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE

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Site Area (hectares) 18.41

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Meadow Vole (Small Herbivorous Mammal - Terrestrial)																							
BREOT-S36-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N37-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.59E+00	4.00E+00	1.88E-02	NA	NA	NA	NA	1.13E-04	2.52E+00	2.84E-04	1.00E+00	3.06E-02	6.22E-01	2.64E+00	3.14E-02	2.64E+00	2.35E-01
BREOT-S37-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N38-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S38-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N39-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N40-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S40-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N41-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S41-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N42-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S42-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N43-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S43-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N44-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S44-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N45-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S45-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N46-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S46-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N47-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S47-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N48-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S48-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N49-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S49-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S50-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N51-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S51-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N52-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S52-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N53-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S53-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N54-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S54-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N55-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S55-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N56-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.59E+00	2.32E+00	1.09E-02	NA	NA	NA	NA	1.13E-04	1.46E+00	1.64E-04	1.00E+00	3.06E-02	3.61E-01	2.64E+00	3.14E-02	2.64E+00	1.36E-01
BREOT-N57-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S57-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N58-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S58-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N59-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N60-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.59E+00	3.80E+00	1.78E-02	NA	NA	NA	NA	1.13E-04	2.39E+00	2.69E-04	1.00E+00	3.06E-02	5.90E-01	2.64E+00	3.14E-02	2.64E+00	2.23E-01
BREOT-S60-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S61-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N62-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S62-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N63-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.59E+00	4.70E+00	2.20E-02	NA	NA	NA	NA	1.13E-04	2.96E+00	3.33E-04	1.00E+00	3.06E-02	7.31E-01	2.64E+00	3.14E-02	2.64E+00	2.77E-01
BREOT-S63-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N64-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S64-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N66-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S66-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE

TABLE C-2B: CADMIUM DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 18.41

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Meadow Vole (Small Herbivorous Mammal - Terrestrial)																							
BREOT-N67-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S67-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
Outside Tailings																				**Maximum HQ (At Edge of Tailings)**			**2.80E+00**
BREOT-S0+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S1+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S2+95 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S3+6 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S4+10 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S6+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S8+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N10+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N11+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.59E+00	2.38E+00	1.12E-02	NA	NA	NA	NA	1.13E-04	1.50E+00	1.69E-04	1.00E+00	3.06E-02	3.71E-01	2.64E+00	3.14E-02	2.64E+00	1.40E-01
BREOT-N12+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S12+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S12+60 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N13+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S13+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S13+65 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N14+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S14+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S14+59 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N15+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N15+50 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S16+20 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S16+75 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.59E+00	1.11E+00	5.21E-03	NA	NA	NA	NA	1.13E-04	7.00E-01	7.88E-05	1.00E+00	3.06E-02	1.73E-01	2.64E+00	3.14E-02	2.64E+00	6.54E-02
BREOT-N17+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S18+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N19+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S19+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S19+85 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.59E+00	9.53E-01	4.47E-03	NA	NA	NA	NA	1.13E-04	6.00E-01	6.75E-05	1.00E+00	3.06E-02	1.48E-01	2.64E+00	3.14E-02	2.64E+00	5.61E-02
BREOT-N20+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S20+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S20+75 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.59E+00	1.73E+00	8.12E-03	NA	NA	NA	NA	1.13E-04	1.09E+00	1.23E-04	1.00E+00	3.06E-02	2.69E-01	2.64E+00	3.14E-02	2.64E+00	1.02E-01
BREOT-N21+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.59E+00	5.05E+00	2.37E-02	NA	NA	NA	NA	1.13E-04	3.18E+00	3.58E-04	1.00E+00	3.06E-02	7.86E-01	2.64E+00	3.14E-02	2.64E+00	2.97E-01
BREOT-S21+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.59E+00	2.29E+00	1.07E-02	NA	NA	NA	NA	1.13E-04	1.44E+00	1.62E-04	1.00E+00	3.06E-02	3.56E-01	2.64E+00	3.14E-02	2.64E+00	1.35E-01
BREOT-N22+150 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N22+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S22+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N23+115 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.59E+00	3.81E+00	1.79E-02	NA	NA	NA	NA	1.13E-04	2.40E+00	2.70E-04	1.00E+00	3.06E-02	5.93E-01	2.64E+00	3.14E-02	2.64E+00	2.24E-01
BREOT-N23+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S23+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S23+37.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N24+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N24+75 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S24+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N25+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S25+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S25+40 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S26+37 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N27+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S27+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N28+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.59E+00	2.11E+00	9.90E-03	NA	NA	NA	NA	1.13E-04	1.33E+00	1.50E-04	1.00E+00	3.06E-02	3.29E-01	2.64E+00	3.14E-02	2.64E+00	1.24E-01
BREOT-S28+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N29+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE

TABLE C-2B: CADMIUM DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS (Continued)

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Site Area (hectares) 18.41

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Meadow Vole (Small Herbivorous Mammal - Terrestrial)																							
BREOT-S29+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.59E+00	2.49E+00	1.17E-02	NA	NA	NA	NA	1.13E-04	1.57E+00	1.77E-04	1.00E+00	3.06E-02	3.88E-01	2.64E+00	3.14E-02	2.64E+00	1.47E-01
BREOT-N30+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S30+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N31+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N31+75 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.59E+00	1.11E+00	5.21E-03	NA	NA	NA	NA	1.13E-04	7.00E-01	7.88E-05	1.00E+00	3.06E-02	1.73E-01	2.64E+00	3.14E-02	2.64E+00	6.54E-02
BREOT-S31+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.59E+00	4.11E+00	1.93E-02	NA	NA	NA	NA	1.13E-04	2.59E+00	2.91E-04	1.00E+00	3.06E-02	6.40E-01	2.64E+00	3.14E-02	2.64E+00	2.42E-01
BREOT-N32+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S32+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S32+300 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.59E+00	2.22E+00	1.04E-02	NA	NA	NA	NA	1.13E-04	1.40E+00	1.58E-04	1.00E+00	3.06E-02	3.46E-01	2.64E+00	3.14E-02	2.64E+00	1.31E-01
BREOT-N33+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S33+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N34+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S34+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N35+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S35+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N36+100 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N36+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S36+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N37+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.59E+00	9.00E-01	4.22E-03	NA	NA	NA	NA	1.13E-04	5.67E-01	6.38E-05	1.00E+00	3.06E-02	1.40E-01	2.64E+00	3.14E-02	2.64E+00	5.30E-02
BREOT-S37+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.59E+00	8.50E+00	3.98E-02	NA	NA	NA	NA	1.13E-04	5.35E+00	6.02E-04	1.00E+00	3.06E-02	1.32E+00	2.64E+00	3.14E-02	2.64E+00	5.00E-01
BREOT-N38+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S38+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.59E+00	9.45E+00	4.43E-02	NA	NA	NA	NA	1.13E-04	5.95E+00	6.70E-04	1.00E+00	3.06E-02	1.47E+00	2.64E+00	3.14E-02	2.64E+00	5.56E-01
BREOT-N39+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S39+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N40+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S40+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N41+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S41+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N42+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S42+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N43+12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N43+40 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S43+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N44+55 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S44+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N45+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S45+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N46+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S46+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N47+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S47+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N48+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S48+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N49+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S49+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N51+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S51+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N52+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S52+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N53+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S53+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S54+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N55+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S55+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE

TABLE C-2B: CADMIUM DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 18.41

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Meadow Vole (Small Herbivorous Mammal - Terrestrial)																							
BREOT-N56+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S56+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N57+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S57+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N58+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S58+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N59+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N60+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S60+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S61+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N62+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.59E+00	1.70E+00	7.97E-03	NA	NA	NA	NA	1.13E-04	1.07E+00	1.20E-04	1.00E+00	3.06E-02	2.64E-01	2.64E+00	3.14E-02	2.64E+00	1.00E-01
BREOT-S62+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N63+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S63+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N64+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S64+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S65+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N66+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S66+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N67+125 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.59E+00	4.45E+00	2.08E-02	NA	NA	NA	NA	1.13E-04	2.80E+00	3.15E-04	1.00E+00	3.06E-02	6.92E-01	2.64E+00	3.14E-02	2.64E+00	2.62E-01
BREOT-S67+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N67+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
White-Tailed Deer (Large Herbivorous Mammal - Terrestrial)																						**Maximum HQ (Outside Tailings)**	**5.56E-01**
Reference Sites																							
ACBG-1 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.26E+00	6.11E-01	8.74E-01	NA	NA	NA	NA	2.86E-02	4.86E-01	1.39E-02	1.03E-01	1.35E+02	6.77E-04	2.64E+00	3.14E-02	1.60E+00	4.24E-04
ACBG-2 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.26E+00	6.53E-01	9.35E-01	NA	NA	NA	NA	2.86E-02	5.20E-01	1.49E-02	1.03E-01	1.35E+02	7.25E-04	2.64E+00	3.14E-02	1.60E+00	4.54E-04
UBRBG-202 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.26E+00	3.64E+00	5.22E+00	NA	NA	NA	NA	2.86E-02	2.90E+00	8.30E-02	1.03E-01	1.35E+02	4.04E-03	2.64E+00	3.14E-02	1.60E+00	2.53E-03
UBRBG-204 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.26E+00	3.39E+00	4.86E+00	NA	NA	NA	NA	2.86E-02	2.70E+00	7.73E-02	1.03E-01	1.35E+02	3.76E-03	2.64E+00	3.14E-02	1.60E+00	2.36E-03
Inside Tailings																						**Minimum HQ (Reference Sites)**	**4.24E-04**
BREOT-S6-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S2-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S0-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S1-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S7-25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S8-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S9-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N10-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N11-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N11-125 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S11-12 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S11+63 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.59E+00	3.49E+00	5.00E+00	NA	NA	NA	NA	2.86E-02	2.20E+00	6.30E-02	1.03E-01	1.35E+02	3.86E-03	2.64E+00	3.14E-02	1.60E+00	2.42E-03
UBDT-TP-6 (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.59E+00	1.57E+02	2.24E+02	NA	NA	NA	NA	2.86E-02	9.87E+01	2.83E+00	1.03E-01	1.35E+02	1.73E-01	2.64E+00	3.14E-02	1.60E+00	1.08E-01
UBDT-TP-6 (2-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.59E+00	4.56E+01	6.53E+01	NA	NA	NA	NA	2.86E-02	2.87E+01	8.22E-01	1.03E-01	1.35E+02	5.04E-02	2.64E+00	3.14E-02	1.60E+00	3.15E-02
UBDT-TP-6 (12-24")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.59E+00	2.56E+02	3.66E+02	NA	NA	NA	NA	2.86E-02	1.61E+02	4.61E+00	1.03E-01	1.35E+02	2.83E-01	2.64E+00	3.14E-02	1.60E+00	1.77E-01
UBDT-TP-6 (24-36")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.59E+00	1.55E+01	2.22E+01	NA	NA	NA	NA	2.86E-02	9.75E+00	2.79E-01	1.03E-01	1.35E+02	1.71E-02	2.64E+00	3.14E-02	1.60E+00	1.07E-02
UBDT-TP-6 (36-48")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.59E+00	2.18E+01	3.11E+01	NA	NA	NA	NA	2.86E-02	1.37E+01	3.92E-01	1.03E-01	1.35E+02	2.41E-02	2.64E+00	3.14E-02	1.60E+00	1.51E-02
UBDT-TP-6 (48-60")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.59E+00	1.67E+01	2.39E+01	NA	NA	NA	NA	2.86E-02	1.05E+01	3.01E-01	1.03E-01	1.35E+02	1.84E-02	2.64E+00	3.14E-02	1.60E+00	1.15E-02
BREOT-N12-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.59E+00	1.45E+01	2.08E+01	NA	NA	NA	NA	2.86E-02	9.13E+00	2.61E-01	1.03E-01	1.35E+02	1.60E-02	2.64E+00	3.14E-02	1.60E+00	1.00E-02
BREOT-S12-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S13-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S14-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N15-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S15-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.59E+00	5.40E+00	7.73E+00	NA	NA	NA	NA	2.86E-02	3.40E+00	9.74E-02	1.03E-01	1.35E+02	5.97E-03	2.64E+00	3.14E-02	1.60E+00	3.74E-03
BREOT-N16-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N16-25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE

TABLE C-2B: CADMIUM DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

Site Area (hectares) 18.41

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
White-Tailed Deer (Large Herbivorous Mammal - Terrestrial)																							
BREOT-S16-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N17-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S17-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S17-25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UBDT-TP-4 (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.59E+00	2.89E+01	4.14E+01	NA	NA	NA	NA	2.86E-02	1.82E+01	5.21E-01	1.03E-01	1.35E+02	3.20E-02	2.64E+00	3.14E-02	1.60E+00	2.00E-02
UBDT-TP-4 (2-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.59E+00	5.67E+00	8.12E+00	NA	NA	NA	NA	2.86E-02	3.57E+00	1.02E-01	1.03E-01	1.35E+02	6.27E-03	2.64E+00	3.14E-02	1.60E+00	3.92E-03
UBDT-TP-4 (12-24")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.59E+00	5.00E+00	7.16E+00	NA	NA	NA	NA	2.86E-02	3.15E+00	9.02E-02	1.03E-01	1.35E+02	5.53E-03	2.64E+00	3.14E-02	1.60E+00	3.46E-03
UBDT-TP-4 (24-36")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.59E+00	7.61E+00	1.09E+01	NA	NA	NA	NA	2.86E-02	4.79E+00	1.37E-01	1.03E-01	1.35E+02	8.41E-03	2.64E+00	3.14E-02	1.60E+00	5.26E-03
BREOT-N18-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N18-25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S18-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N19-10 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S19-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UBDT-TP-5 (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.59E+00	1.60E+01	2.30E+01	NA	NA	NA	NA	2.86E-02	1.01E+01	2.89E-01	1.03E-01	1.35E+02	1.77E-02	2.64E+00	3.14E-02	1.60E+00	1.11E-02
UBDT-TP-5 (2-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.59E+00	9.12E+00	1.31E+01	NA	NA	NA	NA	2.86E-02	5.74E+00	1.64E-01	1.03E-01	1.35E+02	1.01E-02	2.64E+00	3.14E-02	1.60E+00	6.31E-03
UBDT-TP-5 (12-24")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.59E+00	1.20E+01	1.72E+01	NA	NA	NA	NA	2.86E-02	7.55E+00	2.16E-01	1.03E-01	1.35E+02	1.33E-02	2.64E+00	3.14E-02	1.60E+00	8.30E-03
BREOT-N20-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UBDT-TP-3 (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.59E+00	2.89E+00	4.14E+00	NA	NA	NA	NA	2.86E-02	1.82E+00	5.21E-02	1.03E-01	1.35E+02	3.20E-03	2.64E+00	3.14E-02	1.60E+00	2.00E-03
UBDT-TP-3 (2-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.59E+00	3.62E+00	5.18E+00	NA	NA	NA	NA	2.86E-02	2.28E+00	6.53E-02	1.03E-01	1.35E+02	4.00E-03	2.64E+00	3.14E-02	1.60E+00	2.51E-03
UBDT-TP-3 (12-24")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.59E+00	1.13E+00	1.62E+00	NA	NA	NA	NA	2.86E-02	7.14E-01	2.04E-02	1.03E-01	1.35E+02	1.25E-03	2.64E+00	3.14E-02	1.60E+00	7.85E-04
UBDT-TP-3 (24-36")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.59E+00	3.40E+00	4.87E+00	NA	NA	NA	NA	2.86E-02	2.14E+00	6.13E-02	1.03E-01	1.35E+02	3.76E-03	2.64E+00	3.14E-02	1.60E+00	2.35E-03
UBDT-TP-3 (36-48")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.59E+00	8.65E+00	1.24E+01	NA	NA	NA	NA	2.86E-02	5.45E+00	1.56E-01	1.03E-01	1.35E+02	9.57E-03	2.64E+00	3.14E-02	1.60E+00	5.99E-03
UBDT-TP-3 (48-60")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.59E+00	4.03E+00	5.77E+00	NA	NA	NA	NA	2.86E-02	2.54E+00	7.27E-02	1.03E-01	1.35E+02	4.46E-03	2.64E+00	3.14E-02	1.60E+00	2.79E-03
BREOT-N21-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N22-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N23-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S23-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UBDT-TP-2 (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.59E+00	3.02E+01	4.32E+01	NA	NA	NA	NA	2.86E-02	1.90E+01	5.44E-01	1.03E-01	1.35E+02	3.34E-02	2.64E+00	3.14E-02	1.60E+00	2.09E-02
UBDT-TP-2 (2-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.59E+00	2.03E+01	2.91E+01	NA	NA	NA	NA	2.86E-02	1.28E+01	3.67E-01	1.03E-01	1.35E+02	2.25E-02	2.64E+00	3.14E-02	1.60E+00	1.41E-02
UBDT-TP-2 (12-24")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.59E+00	2.73E+01	3.91E+01	NA	NA	NA	NA	2.86E-02	1.72E+01	4.92E-01	1.03E-01	1.35E+02	3.02E-02	2.64E+00	3.14E-02	1.60E+00	1.89E-02
UBDT-TP-2 (24-36")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.59E+00	9.61E+00	1.38E+01	NA	NA	NA	NA	2.86E-02	6.05E+00	1.73E-01	1.03E-01	1.35E+02	1.06E-02	2.64E+00	3.14E-02	1.60E+00	6.65E-03
UBDT-TP-2 (36-48")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.59E+00	8.58E+00	1.23E+01	NA	NA	NA	NA	2.86E-02	5.40E+00	1.55E-01	1.03E-01	1.35E+02	9.48E-03	2.64E+00	3.14E-02	1.60E+00	5.93E-03
BREOT-S24-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N25-50 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N25-95 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S25-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S25-40 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N26A-25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N26B-25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N26-50 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N26-75 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S26-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S26-40 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N27-30 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N27-75 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.59E+00	1.35E+02	1.93E+02	NA	NA	NA	NA	2.86E-02	8.48E+01	2.43E+00	1.03E-01	1.35E+02	1.49E-01	2.64E+00	3.14E-02	1.60E+00	9.32E-02
BREOT-S27-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N28-110 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N28-55 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S28-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UBDT-TP-1 (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.59E+00	1.04E+02	1.49E+02	NA	NA	NA	NA	2.86E-02	6.54E+01	1.87E+00	1.03E-01	1.35E+02	1.15E-01	2.64E+00	3.14E-02	1.60E+00	7.19E-02
UBDT-TP-1 (2-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.59E+00	1.05E+02	1.51E+02	NA	NA	NA	NA	2.86E-02	6.64E+01	1.90E+00	1.03E-01	1.35E+02	1.17E-01	2.64E+00	3.14E-02	1.60E+00	7.30E-02
UBDT-TP-1 (12-24")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.59E+00	8.31E+01	1.19E+02	NA	NA	NA	NA	2.86E-02	5.23E+01	1.50E+00	1.03E-01	1.35E+02	9.19E-02	2.64E+00	3.14E-02	1.60E+00	5.75E-02
UBDT-TP-1 (24-36")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.59E+00	4.37E+01	6.25E+01	NA	NA	NA	NA	2.86E-02	2.75E+01	7.87E-01	1.03E-01	1.35E+02	4.83E-02	2.64E+00	3.14E-02	1.60E+00	3.02E-02
UBDT-TP-1 (36-48")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.59E+00	1.65E+01	2.36E+01	NA	NA	NA	NA	2.86E-02	1.04E+01	2.98E-01	1.03E-01	1.35E+02	1.83E-02	2.64E+00	3.14E-02	1.60E+00	1.14E-02

TABLE C-2B: CADMIUM DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 18.41

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
White-Tailed Deer (Large Herbivorous Mammal - Terrestrial)																							
UBDT-TP-1 (48-60")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.59E+00	4.30E+00	6.16E+00	NA	NA	NA	NA	2.86E-02	2.71E+00	7.76E-02	1.03E-01	1.35E+02	4.76E-03	2.64E+00	3.14E-02	1.60E+00	2.98E-03
BREOT-N29-30 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S29-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N30-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.59E+00	7.69E+00	1.10E+01	NA	NA	NA	NA	2.86E-02	4.84E+00	1.39E-01	1.03E-01	1.35E+02	8.50E-03	2.64E+00	3.14E-02	1.60E+00	5.32E-03
BREOT-S30-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N31-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S31-25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.59E+00	4.11E+00	5.89E+00	NA	NA	NA	NA	2.86E-02	2.59E+00	7.42E-02	1.03E-01	1.35E+02	4.55E-03	2.64E+00	3.14E-02	1.60E+00	2.85E-03
BREOT-S31-5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N32-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S32-6 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N33-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.59E+00	2.05E+00	2.93E+00	NA	NA	NA	NA	2.86E-02	1.29E+00	3.69E-02	1.03E-01	1.35E+02	2.27E-03	2.64E+00	3.14E-02	1.60E+00	1.42E-03
BREOT-S33-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N35-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S35-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N36-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S36-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N37-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S37-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N38-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S38-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.59E+00	2.49E+01	3.57E+01	NA	NA	NA	NA	2.86E-02	1.57E+01	4.50E-01	1.03E-01	1.35E+02	2.76E-02	2.64E+00	3.14E-02	1.60E+00	1.73E-02
BREOT-N39-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S39-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N40-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S40-14 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N41-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.59E+00	8.11E+00	1.16E+01	NA	NA	NA	NA	2.86E-02	5.11E+00	1.46E-01	1.03E-01	1.35E+02	8.97E-03	2.64E+00	3.14E-02	1.60E+00	5.62E-03
BREOT-S41-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.59E+00	1.59E+01	2.27E+01	NA	NA	NA	NA	2.86E-02	9.99E+00	2.86E-01	1.03E-01	1.35E+02	1.75E-02	2.64E+00	3.14E-02	1.60E+00	1.10E-02
BREOT-N42-35 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S42-25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N43-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S43-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N44-30 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S44-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N45-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N43-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S45-6 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N46-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S46-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S46-40 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N47-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.59E+00	2.22E+00	3.18E+00	NA	NA	NA	NA	2.86E-02	1.40E+00	4.01E-02	1.03E-01	1.35E+02	2.46E-03	2.64E+00	3.14E-02	1.60E+00	1.54E-03
BREOT-S47-999 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S48-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S49-2.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S50-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S50-25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.59E+00	2.54E+00	3.64E+00	NA	NA	NA	NA	2.86E-02	1.60E+00	4.58E-02	1.03E-01	1.35E+02	2.81E-03	2.64E+00	3.14E-02	1.60E+00	1.76E-03
BREOT-N52-60 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S52-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S53-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S54-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N55-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S55-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.59E+00	1.72E+00	2.46E+00	NA	NA	NA	NA	2.86E-02	1.08E+00	3.09E-02	1.03E-01	1.35E+02	1.90E-03	2.64E+00	3.14E-02	1.60E+00	1.19E-03
BREOT-N56-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.59E+00	6.91E+00	9.89E+00	NA	NA	NA	NA	2.86E-02	4.35E+00	1.25E-01	1.03E-01	1.35E+02	7.64E-03	2.64E+00	3.14E-02	1.60E+00	4.78E-03
BREOT-S56-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N57-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S57-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE

TABLE C-2B: CADMIUM DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 18.41

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
White-Tailed Deer (Large Herbivorous Mammal - Terrestrial)																							
BREOT-N58-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S58-12 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N59-18 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N60-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S60-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S61-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N62-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S62-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S63-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N64-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N64-20 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S64-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N65-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S65-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N66-5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S66-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N67-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S67-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
At Edge of Tailings																					**Maximum HQ (Inside Tailings)**		**1.77E-01**
BREOT-S0-0 (06)	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S1-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S2-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S3-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S4-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S6-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S7-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S8-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S9-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N10-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N11-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S11-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N12-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S12-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N13-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S13-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N14-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S14-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N15-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N16-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S16-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N17-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S17-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N18-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S18-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N19-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S19-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N20-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S20-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N21-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S21-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N22-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S22-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N23-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.59E+00	2.73E+01	3.91E+01	NA	NA	NA	NA	2.86E-02	1.72E+01	4.92E-01	1.03E-01	1.35E+02	3.02E-02	2.64E+00	3.14E-02	1.60E+00	1.89E-02
BREOT-S23-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE

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White-Tailed Deer (Large Herbivorous Mammal - Terrestrial)																							
BREOT-N24-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S24-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N25-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S25-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N26-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.59E+00	4.76E+01	6.82E+01	NA	NA	NA	NA	2.86E-02	3.00E+01	8.59E-01	1.03E-01	1.35E+02	5.27E-02	2.64E+00	3.14E-02	1.60E+00	3.30E-02
BREOT-S26-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N27-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S27-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.59E+00	2.40E+00	3.43E+00	NA	NA	NA	NA	2.86E-02	1.51E+00	4.32E-02	1.03E-01	1.35E+02	2.65E-03	2.64E+00	3.14E-02	1.60E+00	1.66E-03
BREOT-N28-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S28-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S29-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N30-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S30-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N31-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S31-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N32-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S32-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N33-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S33-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N34-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S34-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N35-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S35-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N36-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S36-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N37-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.59E+00	4.00E+00	5.73E+00	NA	NA	NA	NA	2.86E-02	2.52E+00	7.22E-02	1.03E-01	1.35E+02	4.43E-03	2.64E+00	3.14E-02	1.60E+00	2.77E-03
BREOT-S37-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N38-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S38-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N39-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N40-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S40-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N41-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S41-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N42-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S42-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N43-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S43-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N44-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S44-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N45-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S45-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N46-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S46-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N47-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S47-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N48-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S48-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N49-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S49-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S50-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N51-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S51-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N52-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE

TABLE C-2B: CADMIUM DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 18.41

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
White-Tailed Deer (Large Herbivorous Mammal - Terrestrial)																							
BREOT-S52-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N53-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S53-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N54-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S54-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N55-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S55-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N56-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.59E+00	2.32E+00	3.32E+00	NA	NA	NA	NA	2.86E-02	1.46E+00	4.18E-02	1.03E-01	1.35E+02	2.56E-03	2.64E+00	3.14E-02	1.60E+00	1.60E-03
BREOT-N57-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S57-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N58-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S58-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N59-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N60-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.59E+00	3.80E+00	5.43E+00	NA	NA	NA	NA	2.86E-02	2.39E+00	6.84E-02	1.03E-01	1.35E+02	4.20E-03	2.64E+00	3.14E-02	1.60E+00	2.63E-03
BREOT-S60-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S61-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N62-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S62-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N63-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.59E+00	4.70E+00	6.73E+00	NA	NA	NA	NA	2.86E-02	2.96E+00	8.48E-02	1.03E-01	1.35E+02	5.20E-03	2.64E+00	3.14E-02	1.60E+00	3.25E-03
BREOT-S63-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N64-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S64-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N66-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S66-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N67-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S67-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
Outside Tailings																				**Maximum HQ (At Edge of Tailings)**			**3.30E-02**
BREOT-S0+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S1+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S2+95 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S3+6 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S4+10 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S6+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S8+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N10+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N11+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.59E+00	2.38E+00	3.41E+00	NA	NA	NA	NA	2.86E-02	1.50E+00	4.30E-02	1.03E-01	1.35E+02	2.63E-03	2.64E+00	3.14E-02	1.60E+00	1.65E-03
BREOT-N12+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S12+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S12+60 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N13+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S13+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S13+65 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N14+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S14+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S14+59 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N15+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N15+50 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S16+20 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S16+75 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.59E+00	1.11E+00	1.59E+00	NA	NA	NA	NA	2.86E-02	7.00E-01	2.00E-02	1.03E-01	1.35E+02	1.23E-03	2.64E+00	3.14E-02	1.60E+00	7.69E-04
BREOT-N17+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S18+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N19+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S19+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S19+85 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.59E+00	9.53E-01	1.36E+00	NA	NA	NA	NA	2.86E-02	6.00E-01	1.72E-02	1.03E-01	1.35E+02	1.05E-03	2.64E+00	3.14E-02	1.60E+00	6.59E-04
White-Tailed Deer (Large Herbivorous Mammal - Terrestrial)																							
BREOT-N20+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S20+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S20+75 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.59E+00	1.73E+00	2.48E+00	NA	NA	NA	NA	2.86E-02	1.09E+00	3.12E-02	1.03E-01	1.35E+02	1.91E-03	2.64E+00	3.14E-02	1.60E+00	1.20E-03
BREOT-N21+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.59E+00	5.05E+00	7.23E+00	NA	NA	NA	NA	2.86E-02	3.18E+00	9.11E-02	1.03E-01	1.35E+02	5.59E-03	2.64E+00	3.14E-02	1.60E+00	3.49E-03

TABLE C-2B: CADMIUM DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS (Continued)

Baseline Ecological Risk Assessment

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from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 18.41

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
BREOT-S21+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.59E+00	2.29E+00	3.27E+00	NA	NA	NA	NA	2.86E-02	1.44E+00	4.12E-02	1.03E-01	1.35E+02	2.53E-03	2.64E+00	3.14E-02	1.60E+00	1.58E-03
BREOT-N22+150 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N22+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S22+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N23+115 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.59E+00	3.81E+00	5.46E+00	NA	NA	NA	NA	2.86E-02	2.40E+00	6.87E-02	1.03E-01	1.35E+02	4.22E-03	2.64E+00	3.14E-02	1.60E+00	2.64E-03
BREOT-N23+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S23+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S23+37.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N24+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N24+75 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S24+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N25+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S25+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S25+40 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S26+37 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N27+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S27+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N28+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.59E+00	2.11E+00	3.02E+00	NA	NA	NA	NA	2.86E-02	1.33E+00	3.81E-02	1.03E-01	1.35E+02	2.34E-03	2.64E+00	3.14E-02	1.60E+00	1.46E-03
BREOT-S28+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N29+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S29+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.59E+00	2.49E+00	3.57E+00	NA	NA	NA	NA	2.86E-02	1.57E+00	4.50E-02	1.03E-01	1.35E+02	2.76E-03	2.64E+00	3.14E-02	1.60E+00	1.73E-03
BREOT-N30+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S30+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N31+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N31+75 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.59E+00	1.11E+00	1.59E+00	NA	NA	NA	NA	2.86E-02	7.00E-01	2.00E-02	1.03E-01	1.35E+02	1.23E-03	2.64E+00	3.14E-02	1.60E+00	7.69E-04
BREOT-S31+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.59E+00	4.11E+00	5.89E+00	NA	NA	NA	NA	2.86E-02	2.59E+00	7.42E-02	1.03E-01	1.35E+02	4.55E-03	2.64E+00	3.14E-02	1.60E+00	2.85E-03
BREOT-N32+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S32+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S32+300 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.59E+00	2.22E+00	3.18E+00	NA	NA	NA	NA	2.86E-02	1.40E+00	4.01E-02	1.03E-01	1.35E+02	2.46E-03	2.64E+00	3.14E-02	1.60E+00	1.54E-03
BREOT-N33+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S33+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N34+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S34+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N35+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S35+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N36+100 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N36+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S36+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N37+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.59E+00	9.00E-01	1.29E+00	NA	NA	NA	NA	2.86E-02	5.67E-01	1.62E-02	1.03E-01	1.35E+02	9.96E-04	2.64E+00	3.14E-02	1.60E+00	6.23E-04
BREOT-S37+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.59E+00	8.50E+00	1.22E+01	NA	NA	NA	NA	2.86E-02	5.35E+00	1.53E-01	1.03E-01	1.35E+02	9.40E-03	2.64E+00	3.14E-02	1.60E+00	5.88E-03
BREOT-N38+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S38+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.59E+00	9.45E+00	1.35E+01	NA	NA	NA	NA	2.86E-02	5.95E+00	1.70E-01	1.03E-01	1.35E+02	1.05E-02	2.64E+00	3.14E-02	1.60E+00	6.54E-03
BREOT-N39+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S39+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N40+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S40+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N41+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S41+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N42+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S42+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE

TABLE C-2B: CADMIUM DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 18.41

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
White-Tailed Deer (Large Herbivorous Mammal - Terrestrial)																							
BREOT-N43+12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N43+40 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S43+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N44+55 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S44+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N45+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S45+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N46+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S46+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N47+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S47+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N48+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S48+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N49+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S49+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N51+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S51+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N52+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S52+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N53+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S53+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S54+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S55+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N56+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S56+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N57+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S57+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N58+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S58+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N59+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N60+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S60+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S61+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N62+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.59E+00	1.70E+00	2.43E+00	NA	NA	NA	NA	2.86E-02	1.07E+00	3.06E-02	1.03E-01	1.35E+02	1.88E-03	2.64E+00	3.14E-02	1.60E+00	1.18E-03
BREOT-S62+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N63+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S63+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N64+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S64+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S65+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N66+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S66+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N67+125 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.59E+00	4.45E+00	6.37E+00	NA	NA	NA	NA	2.86E-02	2.80E+00	8.02E-02	1.03E-01	1.35E+02	4.92E-03	2.64E+00	3.14E-02	1.60E+00	3.08E-03
BREOT-S67+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N67+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE

Maximum HQ (Outside Tailings) **6.54E-03**

TABLE C-2B: CADMIUM DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 18.41

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Red Fox (Carnivorous Mammal - Terrestrial)																							
Reference Sites																							
ACBG-1 (0-6")	1.72E-01	1.72E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.86E-01	2.33E-03	1.36E-02	4.54E+00	7.00E-06	2.64E+00	3.14E-02	1.96E+00	3.57E-06
ACBG-2 (0-6")	1.72E-01	1.72E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.20E-01	2.50E-03	1.36E-02	4.54E+00	7.49E-06	2.64E+00	3.14E-02	1.96E+00	3.82E-06
UBRBG-202 (0-6")	1.72E-01	1.72E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.90E+00	1.39E-02	1.36E-02	4.54E+00	4.18E-05	2.64E+00	3.14E-02	1.96E+00	2.13E-05
UBRBG-204 (0-6")	1.72E-01	1.72E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.70E+00	1.30E-02	1.36E-02	4.54E+00	3.89E-05	2.64E+00	3.14E-02	1.96E+00	1.99E-05
Inside Tailings																						**Minimum HQ (Reference Sites)**	**3.57E-06**
BREOT-S6-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S2-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S0-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S1-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S7-25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S8-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S9-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N10-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N11-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N11-125 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S11-12 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S11+63 (0-6")	1.72E-01	1.72E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.20E+00	1.06E-02	1.36E-02	4.54E+00	3.17E-05	2.64E+00	3.14E-02	1.96E+00	1.62E-05
UBDT-TP-6 (0-2")	1.72E-01	1.72E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	9.87E+01	4.74E-01	1.36E-02	4.54E+00	1.42E-03	2.64E+00	3.14E-02	1.96E+00	7.26E-04
UBDT-TP-6 (2-12")	1.72E-01	1.72E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.87E+01	1.38E-01	1.36E-02	4.54E+00	4.13E-04	2.64E+00	3.14E-02	1.96E+00	2.11E-04
UBDT-TP-6 (12-24")	1.72E-01	1.72E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.61E+02	7.73E-01	1.36E-02	4.54E+00	2.32E-03	2.64E+00	3.14E-02	1.96E+00	1.18E-03
UBDT-TP-6 (24-36")	1.72E-01	1.72E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	9.75E+00	4.68E-02	1.36E-02	4.54E+00	1.40E-04	2.64E+00	3.14E-02	1.96E+00	7.17E-05
UBDT-TP-6 (36-48")	1.72E-01	1.72E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.37E+01	6.58E-02	1.36E-02	4.54E+00	1.97E-04	2.64E+00	3.14E-02	1.96E+00	1.01E-04
UBDT-TP-6 (48-60")	1.72E-01	1.72E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.05E+01	5.04E-02	1.36E-02	4.54E+00	1.51E-04	2.64E+00	3.14E-02	1.96E+00	7.72E-05
BREOT-N12-12.5 (0-6")	1.72E-01	1.72E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	9.13E+00	4.39E-02	1.36E-02	4.54E+00	1.31E-04	2.64E+00	3.14E-02	1.96E+00	6.71E-05
BREOT-S12-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S13-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S14-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N15-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S15-12.5 (0-6")	1.72E-01	1.72E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.40E+00	1.63E-02	1.36E-02	4.54E+00	4.90E-05	2.64E+00	3.14E-02	1.96E+00	2.50E-05
BREOT-N16-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N16-25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S16-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N17-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S17-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S17-25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UBDT-TP-4 (0-2")	1.72E-01	1.72E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.82E+01	8.74E-02	1.36E-02	4.54E+00	2.62E-04	2.64E+00	3.14E-02	1.96E+00	1.34E-04
UBDT-TP-4 (2-12")	1.72E-01	1.72E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.57E+00	1.71E-02	1.36E-02	4.54E+00	5.14E-05	2.64E+00	3.14E-02	1.96E+00	2.62E-05
UBDT-TP-4 (12-24")	1.72E-01	1.72E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.15E+00	1.51E-02	1.36E-02	4.54E+00	4.54E-05	2.64E+00	3.14E-02	1.96E+00	2.32E-05
UBDT-TP-4 (24-36")	1.72E-01	1.72E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.79E+00	2.30E-02	1.36E-02	4.54E+00	6.90E-05	2.64E+00	3.14E-02	1.96E+00	3.52E-05
BREOT-N18-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N18-25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S18-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N19-10 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S19-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UBDT-TP-5 (0-2")	1.72E-01	1.72E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.01E+01	4.85E-02	1.36E-02	4.54E+00	1.45E-04	2.64E+00	3.14E-02	1.96E+00	7.43E-05
UBDT-TP-5 (2-12")	1.72E-01	1.72E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.74E+00	2.76E-02	1.36E-02	4.54E+00	8.27E-05	2.64E+00	3.14E-02	1.96E+00	4.22E-05
UBDT-TP-5 (12-24")	1.72E-01	1.72E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	7.55E+00	3.63E-02	1.36E-02	4.54E+00	1.09E-04	2.64E+00	3.14E-02	1.96E+00	5.55E-05
BREOT-N20-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UBDT-TP-3 (0-2")	1.72E-01	1.72E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.82E+00	8.74E-03	1.36E-02	4.54E+00	2.62E-05	2.64E+00	3.14E-02	1.96E+00	1.34E-05
UBDT-TP-3 (2-12")	1.72E-01	1.72E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.28E+00	1.10E-02	1.36E-02	4.54E+00	3.28E-05	2.64E+00	3.14E-02	1.96E+00	1.68E-05
UBDT-TP-3 (12-24")	1.72E-01	1.72E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	7.14E-01	3.43E-03	1.36E-02	4.54E+00	1.03E-05	2.64E+00	3.14E-02	1.96E+00	5.25E-06
UBDT-TP-3 (24-36")	1.72E-01	1.72E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.14E+00	1.03E-02	1.36E-02	4.54E+00	3.08E-05	2.64E+00	3.14E-02	1.96E+00	1.57E-05
UBDT-TP-3 (36-48")	1.72E-01	1.72E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.45E+00	2.62E-02	1.36E-02	4.54E+00	7.85E-05	2.64E+00	3.14E-02	1.96E+00	4.01E-05
UBDT-TP-3 (48-60")	1.72E-01	1.72E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.54E+00	1.22E-02	1.36E-02	4.54E+00	3.66E-05	2.64E+00	3.14E-02	1.96E+00	1.87E-05
BREOT-N21-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE

TABLE C-2B: CADMIUM DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 18.41

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Red Fox (Carnivorous Mammal - Terrestrial)																							
BREOT-N22-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N23-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S23-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UBDT-TP-2 (0-2")	1.72E-01	1.72E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.90E+01	9.13E-02	1.36E-02	4.54E+00	2.74E-04	2.64E+00	3.14E-02	1.96E+00	1.40E-04
UBDT-TP-2 (2-12")	1.72E-01	1.72E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.28E+01	6.15E-02	1.36E-02	4.54E+00	1.84E-04	2.64E+00	3.14E-02	1.96E+00	9.41E-05
UBDT-TP-2 (12-24")	1.72E-01	1.72E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.72E+01	8.26E-02	1.36E-02	4.54E+00	2.48E-04	2.64E+00	3.14E-02	1.96E+00	1.26E-04
UBDT-TP-2 (24-36")	1.72E-01	1.72E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	6.05E+00	2.91E-02	1.36E-02	4.54E+00	8.71E-05	2.64E+00	3.14E-02	1.96E+00	4.45E-05
UBDT-TP-2 (36-48")	1.72E-01	1.72E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.40E+00	2.59E-02	1.36E-02	4.54E+00	7.78E-05	2.64E+00	3.14E-02	1.96E+00	3.97E-05
BREOT-S24-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N25-50 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N25-95 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S25-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S25-40 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N26A-25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N26B-25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N26-50 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N26-75 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S26-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S26-40 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N27-30 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N27-75 (0-6")	1.72E-01	1.72E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	8.48E+01	4.07E-01	1.36E-02	4.54E+00	1.22E-03	2.64E+00	3.14E-02	1.96E+00	6.23E-04
BREOT-S27-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N28-55 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S28-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UBDT-TP-1 (0-2")	1.72E-01	1.72E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	6.54E+01	3.14E-01	1.36E-02	4.54E+00	9.42E-04	2.64E+00	3.14E-02	1.96E+00	4.81E-04
UBDT-TP-1 (2-12")	1.72E-01	1.72E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	6.64E+01	3.19E-01	1.36E-02	4.54E+00	9.56E-04	2.64E+00	3.14E-02	1.96E+00	4.88E-04
UBDT-TP-1 (12-24")	1.72E-01	1.72E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.23E+01	2.51E-01	1.36E-02	4.54E+00	7.53E-04	2.64E+00	3.14E-02	1.96E+00	3.85E-04
UBDT-TP-1 (24-36")	1.72E-01	1.72E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.75E+01	1.32E-01	1.36E-02	4.54E+00	3.96E-04	2.64E+00	3.14E-02	1.96E+00	2.02E-04
UBDT-TP-1 (36-48")	1.72E-01	1.72E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.04E+01	5.00E-02	1.36E-02	4.54E+00	1.50E-04	2.64E+00	3.14E-02	1.96E+00	7.65E-05
UBDT-TP-1 (48-60")	1.72E-01	1.72E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.71E+00	1.30E-02	1.36E-02	4.54E+00	3.90E-05	2.64E+00	3.14E-02	1.96E+00	1.99E-05
BREOT-N29-30 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S29-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N30-12.5 (0-6")	1.72E-01	1.72E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.84E+00	2.32E-02	1.36E-02	4.54E+00	6.97E-05	2.64E+00	3.14E-02	1.96E+00	3.56E-05
BREOT-S30-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N31-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S31-25 (0-6")	1.72E-01	1.72E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.59E+00	1.24E-02	1.36E-02	4.54E+00	3.73E-05	2.64E+00	3.14E-02	1.96E+00	1.90E-05
BREOT-S31-5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N32-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S32-6 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N33-12.5 (0-6")	1.72E-01	1.72E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.29E+00	6.20E-03	1.36E-02	4.54E+00	1.86E-05	2.64E+00	3.14E-02	1.96E+00	9.48E-06
BREOT-S33-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N35-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S35-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N36-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S36-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N37-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S37-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N38-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S38-12.5 (0-6")	1.72E-01	1.72E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.57E+01	7.54E-02	1.36E-02	4.54E+00	2.26E-04	2.64E+00	3.14E-02	1.96E+00	1.15E-04
BREOT-N39-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S39-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N40-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S40-14 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE

TABLE C-2B: CADMIUM DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 18.41

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Red Fox (Carnivorous Mammal - Terrestrial)																							
BREOT-N41-12.5 (0-6")	1.72E-01	1.72E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.11E+00	2.45E-02	1.36E-02	4.54E+00	7.36E-05	2.64E+00	3.14E-02	1.96E+00	3.76E-05
BREOT-S41-12.5 (0-6")	1.72E-01	1.72E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	9.99E+00	4.80E-02	1.36E-02	4.54E+00	1.44E-04	2.64E+00	3.14E-02	1.96E+00	7.34E-05
BREOT-N42-35 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S42-25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N43-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S43-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N44-30 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S44-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N45-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N43-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S45-6 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N46-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S46-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S46-40 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N47-12.5 (0-6")	1.72E-01	1.72E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.40E+00	6.72E-03	1.36E-02	4.54E+00	2.02E-05	2.64E+00	3.14E-02	1.96E+00	1.03E-05
BREOT-S47-999 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S48-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S49-2.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S50-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S50-25 (0-6")	1.72E-01	1.72E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.60E+00	7.69E-03	1.36E-02	4.54E+00	2.30E-05	2.64E+00	3.14E-02	1.96E+00	1.18E-05
BREOT-N52-60 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S52-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S53-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S54-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N55-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S55-12.5 (0-6")	1.72E-01	1.72E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.08E+00	5.19E-03	1.36E-02	4.54E+00	1.56E-05	2.64E+00	3.14E-02	1.96E+00	7.94E-06
BREOT-N56-12.5 (0-6")	1.72E-01	1.72E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.35E+00	2.09E-02	1.36E-02	4.54E+00	6.26E-05	2.64E+00	3.14E-02	1.96E+00	3.20E-05
BREOT-S56-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N57-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S57-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N58-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S58-12 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N59-18 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N60-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S60-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S61-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N62-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S62-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S63-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N64-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N64-20 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S64-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N65-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S65-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N66-5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S66-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N67-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S67-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
At Edge of Tailings																					**Maximum HQ (Inside Tailings)**		**1.18E-03**
BREOT-S0-0 (06)	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S1-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S2-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S3-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S4-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE

TABLE C-2B: CADMIUM DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 18.41

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Red Fox (Carnivorous Mammal - Terrestrial)																							
BREOT-S6-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S7-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S8-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S9-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N10-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N11-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S11-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N12-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S12-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N13-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S13-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N14-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S14-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N15-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N16-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S16-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N17-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S17-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N18-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S18-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N19-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S19-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N20-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S20-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N21-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S21-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N22-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S22-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N23-0 (0-6")	1.72E-01	1.72E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.72E+01	8.26E-02	1.36E-02	4.54E+00	2.48E-04	2.64E+00	3.14E-02	1.96E+00	1.26E-04
BREOT-S23-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N24-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S24-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N25-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S25-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N26-0 (0-6")	1.72E-01	1.72E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.00E+01	1.44E-01	1.36E-02	4.54E+00	4.32E-04	2.64E+00	3.14E-02	1.96E+00	2.21E-04
BREOT-S26-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N27-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S27-0 (0-6")	1.72E-01	1.72E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.51E+00	7.25E-03	1.36E-02	4.54E+00	2.17E-05	2.64E+00	3.14E-02	1.96E+00	1.11E-05
BREOT-N28-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S28-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S29-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N30-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S30-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N31-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S31-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N32-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S32-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N33-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S33-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N34-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S34-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N35-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S35-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N36-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE

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Site Area (hectares) 18.41

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Red Fox (Carnivorous Mammal - Terrestrial)																							
BREOT-S36-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N37-0 (0-6")	1.72E-01	1.72E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.52E+00	1.21E-02	1.36E-02	4.54E+00	3.63E-05	2.64E+00	3.14E-02	1.96E+00	1.85E-05
BREOT-S37-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N38-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S38-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N39-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N40-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S40-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N41-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S41-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N42-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S42-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N43-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S43-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N44-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S44-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N45-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S45-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N46-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S46-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N47-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S47-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N48-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S48-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N49-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S49-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S50-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N51-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S51-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N52-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S52-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N53-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S53-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N54-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S54-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N55-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S55-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N56-0 (0-6")	1.72E-01	1.72E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.46E+00	7.01E-03	1.36E-02	4.54E+00	2.10E-05	2.64E+00	3.14E-02	1.96E+00	1.07E-05
BREOT-N57-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S57-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N58-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S58-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N59-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N60-0 (0-6")	1.72E-01	1.72E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.39E+00	1.15E-02	1.36E-02	4.54E+00	3.44E-05	2.64E+00	3.14E-02	1.96E+00	1.76E-05
BREOT-S60-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S61-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N62-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S62-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N63-0 (0-6")	1.72E-01	1.72E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.96E+00	1.42E-02	1.36E-02	4.54E+00	4.26E-05	2.64E+00	3.14E-02	1.96E+00	2.18E-05
BREOT-S63-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N64-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S64-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N66-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S66-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE

TABLE C-2B: CADMIUM DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 18.41

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Red Fox (Carnivorous Mammal - Terrestrial)																							
BREOT-N67-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S67-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
Outside Tailings																					**Maximum HQ (At Edge of Tailings)**		**2.21E-04**
BREOT-S0+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S1+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S2+95 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S3+6 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S4+10 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S6+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S8+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N10+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N11+25 (0-6")	1.72E-01	1.72E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.50E+00	7.21E-03	1.36E-02	4.54E+00	2.16E-05	2.64E+00	3.14E-02	1.96E+00	1.10E-05
BREOT-N12+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S12+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S12+60 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N13+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S13+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S13+65 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N14+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S14+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S14+59 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N15+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N15+50 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S16+20 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S16+75 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	7.00E-01	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N17+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S18+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N19+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S19+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S19+85 (0-6")	1.72E-01	1.72E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	6.00E-01	2.88E-03	1.36E-02	4.54E+00	8.64E-06	2.64E+00	3.14E-02	1.96E+00	4.41E-06
BREOT-N20+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S20+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S20+75 (0-6")	1.72E-01	1.72E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.09E+00	5.24E-03	1.36E-02	4.54E+00	1.57E-05	2.64E+00	3.14E-02	1.96E+00	8.01E-06
BREOT-N21+25 (0-6")	1.72E-01	1.72E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.18E+00	1.53E-02	1.36E-02	4.54E+00	4.58E-05	2.64E+00	3.14E-02	1.96E+00	2.34E-05
BREOT-S21+25 (0-6")	1.72E-01	1.72E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.44E+00	6.92E-03	1.36E-02	4.54E+00	2.07E-05	2.64E+00	3.14E-02	1.96E+00	1.06E-05
BREOT-N22+150 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N22+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S22+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N23+115 (0-6")	1.72E-01	1.72E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.40E+00	1.15E-02	1.36E-02	4.54E+00	3.46E-05	2.64E+00	3.14E-02	1.96E+00	1.76E-05
BREOT-N23+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S23+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S23+37.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N24+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N24+75 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S24+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N25+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S25+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S25+40 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S26+37 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N27+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S27+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N28+25 (0-6")	1.72E-01	1.72E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.33E+00	6.39E-03	1.36E-02	4.54E+00	1.92E-05	2.64E+00	3.14E-02	1.96E+00	9.78E-06
BREOT-S28+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N29+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE

TABLE C-2B: CADMIUM DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 18.41

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Red Fox (Carnivorous Mammal - Terrestrial)																							
BREOT-S29+25 (0-6")	1.72E-01	1.72E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.57E+00	7.54E-03	1.36E-02	4.54E+00	2.26E-05	2.64E+00	3.14E-02	1.96E+00	1.15E-05
BREOT-N30+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S30+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N31+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N31+75 (0-6")	1.72E-01	1.72E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	7.00E-01	3.36E-03	1.36E-02	4.54E+00	1.01E-05	2.64E+00	3.14E-02	1.96E+00	5.15E-06
BREOT-S31+25 (0-6")	1.72E-01	1.72E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.59E+00	1.24E-02	1.36E-02	4.54E+00	3.73E-05	2.64E+00	3.14E-02	1.96E+00	1.90E-05
BREOT-N32+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S32+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S32+300 (0-6")	1.72E-01	1.72E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.40E+00	6.72E-03	1.36E-02	4.54E+00	2.02E-05	2.64E+00	3.14E-02	1.96E+00	1.03E-05
BREOT-N33+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S33+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N34+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S34+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N35+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S35+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N36+100 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N36+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S36+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N37+25 (0-6")	1.72E-01	1.72E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.67E-01	2.72E-03	1.36E-02	4.54E+00	8.17E-06	2.64E+00	3.14E-02	1.96E+00	4.17E-06
BREOT-S37+25 (0-6")	1.72E-01	1.72E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.35E+00	2.57E-02	1.36E-02	4.54E+00	7.71E-05	2.64E+00	3.14E-02	1.96E+00	3.93E-05
BREOT-N38+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S38+25 (0-6")	1.72E-01	1.72E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.95E+00	2.86E-02	1.36E-02	4.54E+00	8.57E-05	2.64E+00	3.14E-02	1.96E+00	4.37E-05
BREOT-N39+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S39+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N40+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S40+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N41+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S41+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N42+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S42+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N43+12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N43+40 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S43+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N44+55 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S44+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N45+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S45+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N46+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S46+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N47+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S47+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N48+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S48+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N49+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S49+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N51+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S51+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N52+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S52+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N53+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S53+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S54+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N55+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S55+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE

TABLE C-2B: CADMIUM DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS (Continued)

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Site Area (hectares) 18.41

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Red Fox (Carnivorous Mammal - Terrestrial)																							
BREOT-N56+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S56+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N57+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S57+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N58+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S58+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N59+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N60+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S60+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S61+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N62+25 (0-6")	1.72E-01	1.72E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.07E+00	5.14E-03	1.36E-02	4.54E+00	1.54E-05	2.64E+00	3.14E-02	1.96E+00	7.87E-06
BREOT-S62+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N63+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S63+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N64+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S64+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S65+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N66+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S66+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N67+125 (0-6")	1.72E-01	1.72E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.80E+00	1.34E-02	1.36E-02	4.54E+00	4.03E-05	2.64E+00	3.14E-02	1.96E+00	2.06E-05
BREOT-S67+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N67+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
Masked Shrew (Omnivorous Mammal - Terrestrial, Wetland)																						**Maximum HQ (Outside Tailings)**	**4.37E-05**
Reference Sites																							
ACBG-1 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	7.00E+00	3.40E+00	2.88E-02	1.10E-03	4.86E-01	5.35E-04	1.00E+00	5.50E-03	5.34E+00	2.64E+00	3.14E-02	2.93E+00	1.82E+00
ACBG-2 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	7.00E+00	3.64E+00	3.08E-02	1.10E-03	5.20E-01	5.73E-04	1.00E+00	5.50E-03	5.71E+00	2.64E+00	3.14E-02	2.93E+00	1.95E+00
UBRBG-202 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	7.00E+00	2.03E+01	1.72E-01	1.10E-03	2.90E+00	3.19E-03	1.00E+00	5.50E-03	3.18E+01	2.64E+00	3.14E-02	2.93E+00	1.09E+01
UBRBG-204 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	7.00E+00	1.89E+01	1.60E-01	1.10E-03	2.70E+00	2.97E-03	1.00E+00	5.50E-03	2.96E+01	2.64E+00	3.14E-02	2.93E+00	1.01E+01
Inside Tailings																						**Minimum HQ (Reference Sites)**	**1.82E+00**
BREOT-S6-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S2-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S0-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S1-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S7-25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S8-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S9-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N10-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N11-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N11-125 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S11-12 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S11+63 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	7.00E+00	1.54E+01	1.30E-01	1.10E-03	2.20E+00	2.42E-03	1.00E+00	5.50E-03	2.42E+01	2.64E+00	3.14E-02	2.93E+00	8.24E+00
UBDT-TP-6 (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	7.00E+00	6.91E+02	5.85E+00	1.10E-03	9.87E+01	1.09E-01	1.00E+00	5.50E-03	1.08E+03	2.64E+00	3.14E-02	2.93E+00	3.70E+02
UBDT-TP-6 (2-12")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	7.00E+00	2.01E+02	1.70E+00	1.10E-03	2.87E+01	3.16E-02	1.00E+00	5.50E-03	3.15E+02	2.64E+00	3.14E-02	2.93E+00	1.08E+02
UBDT-TP-6 (12-24")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	7.00E+00	1.13E+03	9.54E+00	1.10E-03	1.61E+02	1.77E-01	1.00E+00	5.50E-03	1.77E+03	2.64E+00	3.14E-02	2.93E+00	6.03E+02
UBDT-TP-6 (24-36")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	7.00E+00	6.82E+01	5.78E-01	1.10E-03	9.75E+00	1.07E-02	1.00E+00	5.50E-03	1.07E+02	2.64E+00	3.14E-02	2.93E+00	3.65E+01
UBDT-TP-6 (36-48")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	7.00E+00	9.59E+01	8.12E-01	1.10E-03	1.37E+01	1.51E-02	1.00E+00	5.50E-03	1.50E+02	2.64E+00	3.14E-02	2.93E+00	5.13E+01
UBDT-TP-6 (48-60")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	7.00E+00	7.35E+01	6.22E-01	1.10E-03	1.05E+01	1.16E-02	1.00E+00	5.50E-03	1.15E+02	2.64E+00	3.14E-02	2.93E+00	3.93E+01
BREOT-N12-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	7.00E+00	6.39E+01	5.41E-01	1.10E-03	9.13E+00	1.01E-02	1.00E+00	5.50E-03	1.00E+02	2.64E+00	3.14E-02	2.93E+00	3.42E+01
BREOT-S12-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S13-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S14-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N15-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S15-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	7.00E+00	2.38E+01	2.02E-01	1.10E-03	3.40E+00	3.74E-03	1.00E+00	5.50E-03	3.73E+01	2.64E+00	3.14E-02	2.93E+00	1.27E+01
BREOT-N16-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N16-25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE

TABLE C-2B: CADMIUM DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 18.41

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Masked Shrew (Omnivorous Mammal - Terrestrial, Wetland)																							
BREOT-S16-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N17-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S17-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S17-25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UBDT-TP-4 (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	7.00E+00	1.27E+02	1.08E+00	1.10E-03	1.82E+01	2.00E-02	1.00E+00	5.50E-03	2.00E+02	2.64E+00	3.14E-02	2.93E+00	6.82E+01
UBDT-TP-4 (2-12")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	7.00E+00	2.50E+01	2.12E-01	1.10E-03	3.57E+00	3.93E-03	1.00E+00	5.50E-03	3.92E+01	2.64E+00	3.14E-02	2.93E+00	1.34E+01
UBDT-TP-4 (12-24")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	7.00E+00	2.20E+01	1.87E-01	1.10E-03	3.15E+00	3.47E-03	1.00E+00	5.50E-03	3.46E+01	2.64E+00	3.14E-02	2.93E+00	1.18E+01
UBDT-TP-4 (24-36")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	7.00E+00	3.35E+01	2.84E-01	1.10E-03	4.79E+00	5.27E-03	1.00E+00	5.50E-03	5.26E+01	2.64E+00	3.14E-02	2.93E+00	1.79E+01
BREOT-N18-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N18-25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S18-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N19-10 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S19-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UBDT-TP-5 (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	7.00E+00	7.07E+01	5.99E-01	1.10E-03	1.01E+01	1.11E-02	1.00E+00	5.50E-03	1.11E+02	2.64E+00	3.14E-02	2.93E+00	3.78E+01
UBDT-TP-5 (2-12")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	7.00E+00	4.02E+01	3.40E-01	1.10E-03	5.74E+00	6.32E-03	1.00E+00	5.50E-03	6.30E+01	2.64E+00	3.14E-02	2.93E+00	2.15E+01
UBDT-TP-5 (12-24")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	7.00E+00	5.28E+01	4.48E-01	1.10E-03	7.55E+00	8.31E-03	1.00E+00	5.50E-03	8.29E+01	2.64E+00	3.14E-02	2.93E+00	2.83E+01
BREOT-N20-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UBDT-TP-3 (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	7.00E+00	1.27E+01	1.08E-01	1.10E-03	1.82E+00	2.00E-03	1.00E+00	5.50E-03	2.00E+01	2.64E+00	3.14E-02	2.93E+00	6.82E+00
UBDT-TP-3 (2-12")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	7.00E+00	1.60E+01	1.35E-01	1.10E-03	2.28E+00	2.51E-03	1.00E+00	5.50E-03	2.50E+01	2.64E+00	3.14E-02	2.93E+00	8.54E+00
UBDT-TP-3 (12-24")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	7.00E+00	5.00E+00	4.23E-02	1.10E-03	7.14E-01	7.86E-04	1.00E+00	5.50E-03	7.84E+00	2.64E+00	3.14E-02	2.93E+00	2.67E+00
UBDT-TP-3 (24-36")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	7.00E+00	1.50E+01	1.27E-01	1.10E-03	2.14E+00	2.36E-03	1.00E+00	5.50E-03	2.35E+01	2.64E+00	3.14E-02	2.93E+00	8.02E+00
UBDT-TP-3 (36-48")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	7.00E+00	3.81E+01	3.23E-01	1.10E-03	5.45E+00	6.00E-03	1.00E+00	5.50E-03	5.98E+01	2.64E+00	3.14E-02	2.93E+00	2.04E+01
UBDT-TP-3 (48-60")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	7.00E+00	1.78E+01	1.51E-01	1.10E-03	2.54E+00	2.80E-03	1.00E+00	5.50E-03	2.79E+01	2.64E+00	3.14E-02	2.93E+00	9.51E+00
BREOT-N21-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N22-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N23-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S23-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UBDT-TP-2 (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	7.00E+00	1.33E+02	1.13E+00	1.10E-03	1.90E+01	2.09E-02	1.00E+00	5.50E-03	2.09E+02	2.64E+00	3.14E-02	2.93E+00	7.12E+01
UBDT-TP-2 (2-12")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	7.00E+00	8.96E+01	7.59E-01	1.10E-03	1.28E+01	1.41E-02	1.00E+00	5.50E-03	1.41E+02	2.64E+00	3.14E-02	2.93E+00	4.79E+01
UBDT-TP-2 (12-24")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	7.00E+00	1.20E+02	1.02E+00	1.10E-03	1.72E+01	1.89E-02	1.00E+00	5.50E-03	1.89E+02	2.64E+00	3.14E-02	2.93E+00	6.44E+01
UBDT-TP-2 (24-36")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	7.00E+00	4.23E+01	3.59E-01	1.10E-03	6.05E+00	6.66E-03	1.00E+00	5.50E-03	6.64E+01	2.64E+00	3.14E-02	2.93E+00	2.27E+01
UBDT-TP-2 (36-48")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	7.00E+00	3.78E+01	3.20E-01	1.10E-03	5.40E+00	5.95E-03	1.00E+00	5.50E-03	5.93E+01	2.64E+00	3.14E-02	2.93E+00	2.02E+01
BREOT-S24-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N25-50 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N25-95 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S25-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S25-40 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N26A-25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N26B-25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N26-50 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N26-75 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S26-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S26-40 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N27-30 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N27-75 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	7.00E+00	5.94E+02	5.03E+00	1.10E-03	8.48E+01	9.34E-02	1.00E+00	5.50E-03	9.31E+02	2.64E+00	3.14E-02	2.93E+00	3.18E+02
BREOT-S27-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N28-110 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N28-55 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S28-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UBDT-TP-1 (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	7.00E+00	4.58E+02	3.88E+00	1.10E-03	6.54E+01	7.20E-02	1.00E+00	5.50E-03	7.18E+02	2.64E+00	3.14E-02	2.93E+00	2.45E+02
UBDT-TP-1 (2-12")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	7.00E+00	4.65E+02	3.94E+00	1.10E-03	6.64E+01	7.31E-02	1.00E+00	5.50E-03	7.29E+02	2.64E+00	3.14E-02	2.93E+00	2.49E+02
UBDT-TP-1 (12-24")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	7.00E+00	3.66E+02	3.10E+00	1.10E-03	5.23E+01	5.76E-02	1.00E+00	5.50E-03	5.74E+02	2.64E+00	3.14E-02	2.93E+00	1.96E+02
UBDT-TP-1 (24-36")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	7.00E+00	1.92E+02	1.63E+00	1.10E-03	2.75E+01	3.03E-02	1.00E+00	5.50E-03	3.02E+02	2.64E+00	3.14E-02	2.93E+00	1.03E+02
UBDT-TP-1 (36-48")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	7.00E+00	7.28E+01	6.17E-01	1.10E-03	1.04E+01	1.15E-02	1.00E+00	5.50E-03	1.14E+02	2.64E+00	3.14E-02	2.93E+00	3.90E+01

TABLE C-2B: CADMIUM DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 18.41

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Masked Shrew (Omnivorous Mammal - Terrestrial, Wetland)																							
UBDT-TP-1 (48-60")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	7.00E+00	1.90E+01	1.61E-01	1.10E-03	2.71E+00	2.98E-03	1.00E+00	5.50E-03	2.98E+01	2.64E+00	3.14E-02	2.93E+00	1.02E+01
BREOT-N29-30 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S29-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N30-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	7.00E+00	3.39E+01	2.87E-01	1.10E-03	4.84E+00	5.33E-03	1.00E+00	5.50E-03	5.31E+01	2.64E+00	3.14E-02	2.93E+00	1.81E+01
BREOT-S30-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N31-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S31-25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	7.00E+00	1.81E+01	1.54E-01	1.10E-03	2.59E+00	2.85E-03	1.00E+00	5.50E-03	2.84E+01	2.64E+00	3.14E-02	2.93E+00	9.70E+00
BREOT-S31-5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N32-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S32-6 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N33-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	7.00E+00	9.03E+00	7.65E-02	1.10E-03	1.29E+00	1.42E-03	1.00E+00	5.50E-03	1.42E+01	2.64E+00	3.14E-02	2.93E+00	4.83E+00
BREOT-S33-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N35-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S35-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N36-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S36-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N37-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S37-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N38-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S38-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	7.00E+00	1.10E+02	9.31E-01	1.10E-03	1.57E+01	1.73E-02	1.00E+00	5.50E-03	1.72E+02	2.64E+00	3.14E-02	2.93E+00	5.88E+01
BREOT-N39-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S39-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N40-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S40-14 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N41-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	7.00E+00	3.58E+01	3.03E-01	1.10E-03	5.11E+00	5.63E-03	1.00E+00	5.50E-03	5.61E+01	2.64E+00	3.14E-02	2.93E+00	1.91E+01
BREOT-S41-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	7.00E+00	6.99E+01	5.92E-01	1.10E-03	9.99E+00	1.10E-02	1.00E+00	5.50E-03	1.10E+02	2.64E+00	3.14E-02	2.93E+00	3.74E+01
BREOT-N42-35 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S42-25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N43-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S43-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N44-30 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S44-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N45-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N43-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S45-6 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N46-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S46-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S46-40 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N47-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	7.00E+00	9.80E+00	8.30E-02	1.10E-03	1.40E+00	1.54E-03	1.00E+00	5.50E-03	1.54E+01	2.64E+00	3.14E-02	2.93E+00	5.24E+00
BREOT-S47-999 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S48-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S49-2.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S50-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S50-25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	7.00E+00	1.12E+01	9.49E-02	1.10E-03	1.60E+00	1.76E-03	1.00E+00	5.50E-03	1.76E+01	2.64E+00	3.14E-02	2.93E+00	5.99E+00
BREOT-N52-60 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S52-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S53-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S54-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N55-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S55-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	7.00E+00	7.56E+00	6.40E-02	1.10E-03	1.08E+00	1.19E-03	1.00E+00	5.50E-03	1.19E+01	2.64E+00	3.14E-02	2.93E+00	4.05E+00
BREOT-N56-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	7.00E+00	3.04E+01	2.58E-01	1.10E-03	4.35E+00	4.79E-03	1.00E+00	5.50E-03	4.78E+01	2.64E+00	3.14E-02	2.93E+00	1.63E+01
BREOT-S56-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N57-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S57-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE

TABLE C-2B: CADMIUM DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 18.41

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Masked Shrew (Omnivorous Mammal - Terrestrial, Wetland)																							
BREOT-N58-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S58-12 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N59-18 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N60-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S60-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S61-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N62-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S62-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S63-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N64-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N64-20 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S64-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N65-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S65-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N66-5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S66-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N67-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S67-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
At Edge of Tailings																						**Maximum HQ (Inside Tailings)**	**6.03E+02**
BREOT-S0-0 (06)	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S1-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S2-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S3-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S4-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S6-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S7-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S8-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S9-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N10-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N11-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S11-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N12-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S12-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N13-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S13-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N14-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S14-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N15-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N16-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S16-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N17-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S17-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N18-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S18-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N19-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S19-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N20-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S20-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N21-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S21-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N22-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S22-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N23-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	7.00E+00	1.20E+02	1.02E+00	1.10E-03	1.72E+01	1.89E-02	1.00E+00	5.50E-03	1.89E+02	2.64E+00	3.14E-02	2.93E+00	6.44E+01
BREOT-S23-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE

TABLE C-2B: CADMIUM DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS (Continued)

Baseline Ecological Risk Assessment

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from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

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Site Area (hectares) 18.41

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Masked Shrew (Omnivorous Mammal - Terrestrial, Wetland)																							
BREOT-N24-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S24-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N25-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S25-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N26-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	7.00E+00	2.10E+02	1.78E+00	1.10E-03	3.00E+01	3.30E-02	1.00E+00	5.50E-03	3.29E+02	2.64E+00	3.14E-02	2.93E+00	1.12E+02
BREOT-S26-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N27-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S27-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	7.00E+00	1.06E+01	8.95E-02	1.10E-03	1.51E+00	1.66E-03	1.00E+00	5.50E-03	1.66E+01	2.64E+00	3.14E-02	2.93E+00	5.66E+00
BREOT-N28-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S28-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S29-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N30-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S30-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N31-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S31-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N32-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S32-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N33-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S33-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N34-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S34-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N35-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S35-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N36-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S36-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N37-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	7.00E+00	1.76E+01	1.49E-01	1.10E-03	2.52E+00	2.77E-03	1.00E+00	5.50E-03	2.77E+01	2.64E+00	3.14E-02	2.93E+00	9.44E+00
BREOT-S37-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N38-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S38-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N39-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N40-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S40-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N41-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S41-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N42-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S42-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N43-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S43-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N44-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S44-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N45-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S45-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N46-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S46-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N47-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S47-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N48-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S48-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N49-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S49-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S50-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N51-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S51-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N52-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE

TABLE C-2B: CADMIUM DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS (Continued)

Baseline Ecological Risk Assessment

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from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 18.41

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Masked Shrew (Omnivorous Mammal - Terrestrial, Wetland)																							
BREOT-S52-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N53-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S53-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N54-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S54-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N55-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S55-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N56-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	7.00E+00	1.02E+01	8.66E-02	1.10E-03	1.46E+00	1.61E-03	1.00E+00	5.50E-03	1.60E+01	2.64E+00	3.14E-02	2.93E+00	5.47E+00
BREOT-N57-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S57-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N58-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S58-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N59-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N60-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	7.00E+00	1.67E+01	1.42E-01	1.10E-03	2.39E+00	2.63E-03	1.00E+00	5.50E-03	2.62E+01	2.64E+00	3.14E-02	2.93E+00	8.95E+00
BREOT-S60-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S61-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N62-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S62-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N63-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	7.00E+00	2.07E+01	1.75E-01	1.10E-03	2.96E+00	3.26E-03	1.00E+00	5.50E-03	3.25E+01	2.64E+00	3.14E-02	2.93E+00	1.11E+01
BREOT-S63-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N64-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S64-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N66-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S66-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N67-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S67-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
Outside Tailings																					**Maximum HQ (At Edge of Tailings)**		**1.12E+02**
BREOT-S0+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S1+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S2+95 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S3+6 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S4+10 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S6+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S8+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N10+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N11+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	7.00E+00	1.05E+01	8.89E-02	1.10E-03	1.50E+00	1.65E-03	1.00E+00	5.50E-03	1.65E+01	2.64E+00	3.14E-02	2.93E+00	5.62E+00
BREOT-N12+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S12+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S12+60 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N13+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S13+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S13+65 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N14+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S14+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S14+59 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N15+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N15+50 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S16+20 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S16+75 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	7.00E+00	4.90E+00	4.15E-02	1.10E-03	7.00E-01	7.71E-04	1.00E+00	5.50E-03	7.69E+00	2.64E+00	3.14E-02	2.93E+00	2.62E+00
BREOT-N17+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S18+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N19+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S19+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S19+85 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	7.00E+00	4.20E+00	3.56E-02	1.10E-03	6.00E-01	6.61E-04	1.00E+00	5.50E-03	6.59E+00	2.64E+00	3.14E-02	2.93E+00	2.25E+00

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Masked Shrew (Omnivorous Mammal - Terrestrial, Wetland)																							
BREOT-N20+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S20+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S20+75 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	7.00E+00	7.63E+00	6.46E-02	1.10E-03	1.09E+00	1.20E-03	1.00E+00	5.50E-03	1.20E+01	2.64E+00	3.14E-02	2.93E+00	4.08E+00
BREOT-N21+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	7.00E+00	2.23E+01	1.89E-01	1.10E-03	3.18E+00	3.50E-03	1.00E+00	5.50E-03	3.49E+01	2.64E+00	3.14E-02	2.93E+00	1.19E+01
BREOT-S21+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	7.00E+00	1.01E+01	8.54E-02	1.10E-03	1.44E+00	1.59E-03	1.00E+00	5.50E-03	1.58E+01	2.64E+00	3.14E-02	2.93E+00	5.39E+00
BREOT-N22+150 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N22+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S22+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N23+115 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	7.00E+00	1.68E+01	1.42E-01	1.10E-03	2.40E+00	2.64E-03	1.00E+00	5.50E-03	2.63E+01	2.64E+00	3.14E-02	2.93E+00	8.99E+00
BREOT-N23+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S23+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S23+37.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N24+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N24+75 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S24+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N25+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S25+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S25+40 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S26+37 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N27+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S27+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N28+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	7.00E+00	9.31E+00	7.88E-02	1.10E-03	1.33E+00	1.46E-03	1.00E+00	5.50E-03	1.46E+01	2.64E+00	3.14E-02	2.93E+00	4.98E+00
BREOT-N29+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S29+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	7.00E+00	1.10E+01	9.31E-02	1.10E-03	1.57E+00	1.73E-03	1.00E+00	5.50E-03	1.72E+01	2.64E+00	3.14E-02	2.93E+00	5.88E+00
BREOT-N30+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S30+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N31+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N31+75 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	7.00E+00	4.90E+00	4.15E-02	1.10E-03	7.00E-01	7.71E-04	1.00E+00	5.50E-03	7.69E+00	2.64E+00	3.14E-02	2.93E+00	2.62E+00
BREOT-S31+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	7.00E+00	1.81E+01	1.54E-01	1.10E-03	2.59E+00	2.85E-03	1.00E+00	5.50E-03	2.84E+01	2.64E+00	3.14E-02	2.93E+00	9.70E+00
BREOT-N32+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S32+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S32+300 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	7.00E+00	9.80E+00	8.30E-02	1.10E-03	1.40E+00	1.54E-03	1.00E+00	5.50E-03	1.54E+01	2.64E+00	3.14E-02	2.93E+00	5.24E+00
BREOT-N33+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S33+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N34+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S34+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N35+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S35+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N36+100 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N36+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S36+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N37+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	7.00E+00	3.97E+00	3.36E-02	1.10E-03	5.67E-01	6.24E-04	1.00E+00	5.50E-03	6.22E+00	2.64E+00	3.14E-02	2.93E+00	2.12E+00
BREOT-S37+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	7.00E+00	3.74E+01	3.17E-01	1.10E-03	5.35E+00	5.89E-03	1.00E+00	5.50E-03	5.87E+01	2.64E+00	3.14E-02	2.93E+00	2.00E+01
BREOT-N38+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S38+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	7.00E+00	4.16E+01	3.53E-01	1.10E-03	5.95E+00	6.55E-03	1.00E+00	5.50E-03	6.53E+01	2.64E+00	3.14E-02	2.93E+00	2.23E+01
BREOT-N39+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S39+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N40+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S40+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N41+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S41+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N42+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S42+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE

TABLE C-2B: CADMIUM DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 18.41

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Masked Shrew (Omnivorous Mammal - Terrestrial, Wetland)																							
BREOT-N43+12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N43+40 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S43+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N44+55 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S44+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N45+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S45+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N46+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S46+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N47+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S47+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N48+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S48+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N49+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S49+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N51+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S51+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N52+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S52+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N53+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S53+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S54+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S55+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N56+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S56+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N57+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S57+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N58+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S58+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N59+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N60+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S60+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S61+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N62+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	7.00E+00	7.49E+00	6.34E-02	1.10E-03	1.07E+00	1.18E-03	1.00E+00	5.50E-03	1.17E+01	2.64E+00	3.14E-02	2.93E+00	4.01E+00
BREOT-S62+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N63+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S63+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N64+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S64+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S65+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N66+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-S66+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N67+125 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	7.00E+00	1.96E+01	1.66E-01	1.10E-03	2.80E+00	3.08E-03	1.00E+00	5.50E-03	3.07E+01	2.64E+00	3.14E-02	2.93E+00	1.05E+01
BREOT-S67+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BREOT-N67+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
																						Maximum HQ (Outside Tailings)	**2.23E+01**

TABLE C-2B: CADMIUM DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS (Continued)

Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables; from BAF table; linked to soil or sed concentration table (VLOOKUP)
calculated values; linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 18.41

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Notes																							
	Results are evaluated in order of upstream to downstream.																						
1	See Tables 3-1 through 3-13 for ingestion rates, foraging ranges used to calculate the SUF, and body weights.																						
2	BAFs were calculated by dividing site-collected tissue by collocated soil concentrations. The maximum BAF calculated from the Beartrap Creek and Blackfoot River transects was used.																						
3	The mammal, plant, and invertebrate concentrations were calculated by multiplying the soil concentration by the BAF to generate a tissue concentration (see note 2).																						
4	Mammal, plant, and invertebrate daily doses were calculated by multiplying the ingestion rate (see note 1) by the tissue concentration (see note 3).																						
5	Soil concentration from specified depths below ground surface at point ID from laboratory analysis. XRF 10 data were unavailable for cadmium. Doses were not calculated for detected and non-detected soil concentrations measured below the minimum reference site concentration, as indicated by BB. For results that were measured at less than the detection limit, doses were calculated using half of the detection limit.																						
6	Soil daily dose was calculated by multiplying the soil ingestion rate (see note 1) by soil concentration (see note 5).																						
7	Total daily dose is calculated using the following equation: total daily dose = ([mammal daily dose (if applicable) + plant daily dose (if applicable) + invertebrate daily dose (if applicable) + soil daily dose]*SUF)/receptor species body weight.																						
8	The derivation of TRVs is described in Navy (1998). The high TRV was used for dose calculations.																						
9	Allometrically adjusted TRVs for birds were calculated using the following equation: receptor species TRV = (test species TRV) x (test species body weight / receptor species body weight)$^{(1-1.2)}$.																						
10	Allometrically adjusted TRVs for mammals were calculated using the following equation: receptor species TRV = (test species TRV) x (test species body weight / receptor species body weight)$^{(1-0.94)}$.																						
11	HQs were calculated using the following equation: HQ = total daily dose/allometrically adjusted TRV.																						
12	Green cells indicate an HQ greater than 1.0																						

BAF	Bioaccumulation Factor	mg/kg	Milligram per kilogram
BB	Below minimum background reference site concentration	NA	Not applicable
DTSC	California Department of Toxic Substances Control	NE	Not evaluated (no data for that point ID)
EE/CA	Engineering Evaluation/Cost Analysis	Navy	Department of the Navy
EU	Exposure Unit	SUF	Site use factor
HQ	Hazard quotient	TRV	Toxicity reference value
ID	Identification	XRF	X-ray fluorescence
kg	Kilogram	XRF 10	XRF measurements recorded following drying and seiving through a #10-mesh screen
kg/day	Kilogram per day		
mg/day	Milligram per day		

Sources:

Department of the Navy. 1998. "Development of Toxicity Reference Values for Conducting Ecological Risk Assessments at Naval Facilities in California, Interim Final." Prepared by Naval Facilities Engineering Command, Engineering Field Activity West (EFA

DTSC. 2009. HERD Ecological Risk Assessment Note 6. February. Available on-line at: http://www.dtsc.ca.gov/AssessingRisk/upload/CdEconote_Final.pdf.

TABLE C-2C: COPPER DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **18.41**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Mourning Dove (Herbivorous Birds - Terrestrial)																							
Reference Sites																							
ACBG-1 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	7.79E-01	6.20E+01	3.57E-01	NA	NA	NA	NA	5.36E-04	7.96E+01	4.26E-02	7.11E-02	1.09E-01	2.60E-01	5.23E+01	4.09E-01	4.01E+01	6.48E-03
ACBG-2 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	7.79E-01	1.95E+02	1.12E+00	NA	NA	NA	NA	5.36E-04	2.50E+02	1.34E-01	7.11E-02	1.09E-01	8.18E-01	5.23E+01	4.09E-01	4.01E+01	2.04E-02
UBRBG-202 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	7.79E-01	1.70E+02	9.81E-01	NA	NA	NA	NA	5.36E-04	2.18E+02	1.17E-01	7.11E-02	1.09E-01	7.14E-01	5.23E+01	4.09E-01	4.01E+01	1.78E-02
UBRBG-204 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	7.79E-01	8.12E+01	4.68E-01	NA	NA	NA	NA	5.36E-04	1.04E+02	5.59E-02	7.11E-02	1.09E-01	3.41E-01	5.23E+01	4.09E-01	4.01E+01	8.50E-03
Inside Tailings																						**Minimum HQ (Reference Sites)**	**6.48E-03**
BREOT-S6-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	2.76E+02	1.59E+00	NA	NA	NA	NA	5.36E-04	2.44E+02	1.31E-01	7.11E-02	1.09E-01	1.12E+00	5.23E+01	4.09E-01	4.01E+01	2.79E-02
BREOT-S2-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	8.28E+02	4.77E+00	NA	NA	NA	NA	5.36E-04	7.32E+02	3.92E-01	7.11E-02	1.09E-01	3.36E+00	5.23E+01	4.09E-01	4.01E+01	8.37E-02
BREOT-S0-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	1.57E+02	9.03E-01	NA	NA	NA	NA	5.36E-04	1.38E+02	7.42E-02	7.11E-02	1.09E-01	6.36E-01	5.23E+01	4.09E-01	4.01E+01	1.58E-02
BREOT-S1-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	1.23E+02	7.09E-01	NA	NA	NA	NA	5.36E-04	1.09E+02	5.82E-02	7.11E-02	1.09E-01	4.99E-01	5.23E+01	4.09E-01	4.01E+01	1.24E-02
BREOT-S7-25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	2.17E+02	1.25E+00	NA	NA	NA	NA	5.36E-04	1.92E+02	1.03E-01	7.11E-02	1.09E-01	8.81E-01	5.23E+01	4.09E-01	4.01E+01	2.19E-02
BREOT-S8-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	1.83E+02	1.05E+00	NA	NA	NA	NA	5.36E-04	1.61E+02	8.65E-02	7.11E-02	1.09E-01	7.42E-01	5.23E+01	4.09E-01	4.01E+01	1.85E-02
BREOT-S9-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	2.45E+02	1.41E+00	NA	NA	NA	NA	5.36E-04	2.16E+02	1.16E-01	7.11E-02	1.09E-01	9.94E-01	5.23E+01	4.09E-01	4.01E+01	2.48E-02
BREOT-N10-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	1.78E+03	1.02E+01	NA	NA	NA	NA	5.36E-04	1.57E+03	8.41E-01	7.11E-02	1.09E-01	7.21E+00	5.23E+01	4.09E-01	4.01E+01	1.80E-01
BREOT-N11-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	2.52E+02	1.45E+00	NA	NA	NA	NA	5.36E-04	2.23E+02	1.19E-01	7.11E-02	1.09E-01	1.02E+00	5.23E+01	4.09E-01	4.01E+01	2.55E-02
BREOT-N11-125 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	1.89E+02	1.09E+00	NA	NA	NA	NA	5.36E-04	1.67E+02	8.94E-02	7.11E-02	1.09E-01	7.66E-01	5.23E+01	4.09E-01	4.01E+01	1.91E-02
BREOT-S11-12 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	1.24E+03	7.15E+00	NA	NA	NA	NA	5.36E-04	1.10E+03	5.88E-01	7.11E-02	1.09E-01	5.04E+00	5.23E+01	4.09E-01	4.01E+01	1.26E-01
BREOT-S11+63 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	2.85E+02	1.64E+00	NA	NA	NA	NA	5.36E-04	2.52E+02	1.35E-01	7.11E-02	1.09E-01	1.16E+00	5.23E+01	4.09E-01	4.01E+01	2.89E-02
UBDT-TP-6 (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	2.84E+03	1.63E+01	NA	NA	NA	NA	5.36E-04	2.51E+03	1.34E+00	7.11E-02	1.09E-01	1.15E+01	5.23E+01	4.09E-01	4.01E+01	2.87E-01
UBDT-TP-6 (2-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	2.23E+03	1.28E+01	NA	NA	NA	NA	5.36E-04	1.97E+03	1.06E+00	7.11E-02	1.09E-01	9.05E+00	5.23E+01	4.09E-01	4.01E+01	2.25E-01
UBDT-TP-6 (12-24")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	4.21E+03	2.43E+01	NA	NA	NA	NA	5.36E-04	3.72E+03	1.99E+00	7.11E-02	1.09E-01	1.71E+01	5.23E+01	4.09E-01	4.01E+01	4.26E-01
UBDT-TP-6 (24-36")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	2.44E+02	1.40E+00	NA	NA	NA	NA	5.36E-04	2.15E+02	1.15E-01	7.11E-02	1.09E-01	9.88E-01	5.23E+01	4.09E-01	4.01E+01	2.46E-02
UBDT-TP-6 (36-48")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	1.79E+03	1.03E+01	NA	NA	NA	NA	5.36E-04	1.58E+03	8.46E-01	7.11E-02	1.09E-01	7.25E+00	5.23E+01	4.09E-01	4.01E+01	1.81E-01
UBDT-TP-6 (48-60")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	1.03E+03	5.95E+00	NA	NA	NA	NA	5.36E-04	9.13E+02	4.89E-01	7.11E-02	1.09E-01	4.19E+00	5.23E+01	4.09E-01	4.01E+01	1.04E-01
BREOT-N12-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	3.31E+02	1.91E+00	NA	NA	NA	NA	5.36E-04	2.92E+02	1.57E-01	7.11E-02	1.09E-01	1.34E+00	5.23E+01	4.09E-01	4.01E+01	3.35E-02
BREOT-S12-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	5.90E+02	3.40E+00	NA	NA	NA	NA	5.36E-04	5.21E+02	2.79E-01	7.11E-02	1.09E-01	2.39E+00	5.23E+01	4.09E-01	4.01E+01	5.97E-02
BREOT-S13-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	1.14E+03	6.57E+00	NA	NA	NA	NA	5.36E-04	1.01E+03	5.40E-01	7.11E-02	1.09E-01	4.62E+00	5.23E+01	4.09E-01	4.01E+01	1.15E-01
BREOT-S14-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	4.63E+02	2.67E+00	NA	NA	NA	NA	5.36E-04	4.09E+02	2.19E-01	7.11E-02	1.09E-01	1.88E+00	5.23E+01	4.09E-01	4.01E+01	4.68E-02
BREOT-N15-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	3.27E+02	1.89E+00	NA	NA	NA	NA	5.36E-04	2.89E+02	1.55E-01	7.11E-02	1.09E-01	1.33E+00	5.23E+01	4.09E-01	4.01E+01	3.31E-02
BREOT-S15-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	3.57E+02	2.06E+00	NA	NA	NA	NA	5.36E-04	3.16E+02	1.69E-01	7.11E-02	1.09E-01	1.45E+00	5.23E+01	4.09E-01	4.01E+01	3.61E-02
BREOT-N16-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	4.20E+02	2.42E+00	NA	NA	NA	NA	5.36E-04	3.71E+02	1.99E-01	7.11E-02	1.09E-01	1.70E+00	5.23E+01	4.09E-01	4.01E+01	4.25E-02
BREOT-N16-25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	2.32E+02	1.34E+00	NA	NA	NA	NA	5.36E-04	2.05E+02	1.10E-01	7.11E-02	1.09E-01	9.43E-01	5.23E+01	4.09E-01	4.01E+01	2.35E-02
BREOT-S16-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	1.74E+02	1.00E+00	NA	NA	NA	NA	5.36E-04	1.54E+02	8.24E-02	7.11E-02	1.09E-01	7.06E-01	5.23E+01	4.09E-01	4.01E+01	1.76E-02
BREOT-N17-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	1.78E+02	1.03E+00	NA	NA	NA	NA	5.36E-04	1.57E+02	8.43E-02	7.11E-02	1.09E-01	7.23E-01	5.23E+01	4.09E-01	4.01E+01	1.80E-02
BREOT-S17-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	1.55E+02	8.93E-01	NA	NA	NA	NA	5.36E-04	1.37E+02	7.34E-02	7.11E-02	1.09E-01	6.29E-01	5.23E+01	4.09E-01	4.01E+01	1.57E-02
BREOT-S17-25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	1.12E+02	6.44E-01	NA	NA	NA	NA	5.36E-04	9.88E+01	5.30E-02	7.11E-02	1.09E-01	4.54E-01	5.23E+01	4.09E-01	4.01E+01	1.13E-02
UBDT-TP-4 (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	3.90E+02	2.25E+00	NA	NA	NA	NA	5.36E-04	3.45E+02	1.85E-01	7.11E-02	1.09E-01	1.58E+00	5.23E+01	4.09E-01	4.01E+01	3.95E-02
UBDT-TP-4 (2-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	3.56E+02	2.05E+00	NA	NA	NA	NA	5.36E-04	3.15E+02	1.69E-01	7.11E-02	1.09E-01	1.45E+00	5.23E+01	4.09E-01	4.01E+01	3.60E-02
UBDT-TP-4 (12-24")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	3.44E+02	1.98E+00	NA	NA	NA	NA	5.36E-04	3.04E+02	1.63E-01	7.11E-02	1.09E-01	1.40E+00	5.23E+01	4.09E-01	4.01E+01	3.48E-02
UBDT-TP-4 (24-36")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	1.87E+02	1.08E+00	NA	NA	NA	NA	5.36E-04	1.66E+02	8.88E-02	7.11E-02	1.09E-01	7.61E-01	5.23E+01	4.09E-01	4.01E+01	1.90E-02
BREOT-N18-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	5.10E+02	2.94E+00	NA	NA	NA	NA	5.36E-04	4.50E+02	2.41E-01	7.11E-02	1.09E-01	2.07E+00	5.23E+01	4.09E-01	4.01E+01	5.16E-02
BREOT-N18-25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S18-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	2.49E+02	1.43E+00	NA	NA	NA	NA	5.36E-04	2.20E+02	1.18E-01	7.11E-02	1.09E-01	1.01E+00	5.23E+01	4.09E-01	4.01E+01	2.52E-02
BREOT-N19-10 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	2.69E+02	1.55E+00	NA	NA	NA	NA	5.36E-04	2.38E+02	1.27E-01	7.11E-02	1.09E-01	1.09E+00	5.23E+01	4.09E-01	4.01E+01	2.72E-02
BREOT-S19-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	2.90E+02	1.67E+00	NA	NA	NA	NA	5.36E-04	2.56E+02	1.37E-01	7.11E-02	1.09E-01	1.18E+00	5.23E+01	4.09E-01	4.01E+01	2.93E-02
UBDT-TP-5 (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	4.65E+02	2.68E+00	NA	NA	NA	NA	5.36E-04	4.11E+02	2.20E-01	7.11E-02	1.09E-01	1.89E+00	5.23E+01	4.09E-01	4.01E+01	4.70E-02
UBDT-TP-5 (2-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	3.68E+02	2.12E+00	NA	NA	NA	NA	5.36E-04	3.25E+02	1.74E-01	7.11E-02	1.09E-01	1.49E+00	5.23E+01	4.09E-01	4.01E+01	3.72E-02
UBDT-TP-5 (12-24")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	3.90E+02	2.25E+00	NA	NA	NA	NA	5.36E-04	3.45E+02	1.85E-01	7.11E-02	1.09E-01	1.58E+00	5.23E+01	4.09E-01	4.01E+01	3.95E-02
BREOT-N20-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	1.92E+02	1.11E+00	NA	NA	NA	NA	5.36E-04	1.70E+02	9.10E-02	7.11E-02	1.09E-01	7.80E-01	5.23E+01	4.09E-01	4.01E+01	1.94E-02
UBDT-TP-3 (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	3.20E+02	1.85E+00	NA	NA	NA	NA	5.36E-04	2.83E+02	1.52E-01	7.11E-02	1.09E-01	1.30E+00	5.23E+01	4.09E-01	4.01E+01	3.24E-02
UBDT-TP-3 (2-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	2.16E+02	1.24E+00	NA	NA	NA	NA	5.36E-04	1.91E+02	1.02E-01	7.11E-02	1.09E-01	8.76E-01	5.23E+01	4.09E-01	4.01E+01	2.18E-02
UBDT-TP-3 (12-24")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	2.36E+02	1.36E+00	NA	NA	NA	NA	5.36E-04	2.08E+02	1.12E-01	7.11E-02	1.09E-01	9.57E-01	5.23E+01	4.09E-01	4.01E+01	2.38E-02
UBDT-TP-3 (24-36")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	2.54E+02	1.46E+00	NA	NA	NA	NA	5.36E-04	2.24E+02	1.20E-01	7.11E-02	1.09E-01	1.03E+00	5.23E+01	4.09E-01	4.01E+01	2.57E-02
UBDT-TP-3 (36-48")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	3.96E+02	2.28E+00	NA	NA	NA	NA	5.36E-04	3.50E+02	1.88E-01	7.11E-02	1.09E-01	1.61E+00	5.23E+01	4.09E-01	4.01E+01	4.01E-02
UBDT-TP-3 (48-60")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	2.08E+02	1.20E+00	NA	NA	NA	NA	5.36E-04	1.84E+02	9.87E-02	7.11E-02	1.09E-01	8.46E-01	5.23E+01	4.09E-01	4.01E+01	2.11E-02
BREOT-N21-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	3.21E+02	1.85E+00	NA	NA	NA	NA	5.36E-04	2.84E+02	1.52E-01	7.11E-02	1.09E-01	1.30E+00	5.23E+01	4.09E-01	4.01E+01	3.25E-02
BREOT-N22-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	2.34E+02	1.35E+00	NA	NA	NA	NA	5.36E-04	2.06E+02	1.11E-01	7.11E-02	1.09E-01	9.48E-01	5.23E+01	4.09E-01	4.01E+01	2.36E-02

TABLE C-2C: COPPER DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 18.41

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Mourning Dove (Herbivorous Birds - Terrestrial)																							
BREOT-N23-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	2.65E+02	1.53E+00	NA	NA	NA	NA	5.36E-04	2.34E+02	1.25E-01	7.11E-02	1.09E-01	1.07E+00	5.23E+01	4.09E-01	4.01E+01	2.68E-02
BREOT-S23-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	9.00E+02	5.18E+00	NA	NA	NA	NA	5.36E-04	7.95E+02	4.26E-01	7.11E-02	1.09E-01	3.65E+00	5.23E+01	4.09E-01	4.01E+01	9.10E-02
UBDT-TP-2 (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	5.07E+02	2.92E+00	NA	NA	NA	NA	5.36E-04	4.48E+02	2.40E-01	7.11E-02	1.09E-01	2.06E+00	5.23E+01	4.09E-01	4.01E+01	5.13E-02
UBDT-TP-2 (2-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	5.08E+02	2.93E+00	NA	NA	NA	NA	5.36E-04	4.49E+02	2.40E-01	7.11E-02	1.09E-01	2.06E+00	5.23E+01	4.09E-01	4.01E+01	5.14E-02
UBDT-TP-2 (12-24")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	3.47E+02	2.00E+00	NA	NA	NA	NA	5.36E-04	3.07E+02	1.64E-01	7.11E-02	1.09E-01	1.41E+00	5.23E+01	4.09E-01	4.01E+01	3.51E-02
UBDT-TP-2 (24-36")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	2.11E+02	1.22E+00	NA	NA	NA	NA	5.36E-04	1.87E+02	1.00E-01	7.11E-02	1.09E-01	8.57E-01	5.23E+01	4.09E-01	4.01E+01	2.14E-02
UBDT-TP-2 (36-48")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	2.78E+02	1.60E+00	NA	NA	NA	NA	5.36E-04	2.46E+02	1.32E-01	7.11E-02	1.09E-01	1.13E+00	5.23E+01	4.09E-01	4.01E+01	2.81E-02
BREOT-S24-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	7.66E+02	4.42E+00	NA	NA	NA	NA	5.36E-04	6.77E+02	3.63E-01	7.11E-02	1.09E-01	3.11E+00	5.23E+01	4.09E-01	4.01E+01	7.75E-02
BREOT-N25-50 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	1.83E+03	1.06E+01	NA	NA	NA	NA	5.36E-04	1.62E+03	8.68E-01	7.11E-02	1.09E-01	7.44E+00	5.23E+01	4.09E-01	4.01E+01	1.85E-01
BREOT-N25-95 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	1.22E+02	7.01E-01	NA	NA	NA	NA	5.36E-04	1.08E+02	5.76E-02	7.11E-02	1.09E-01	4.94E-01	5.23E+01	4.09E-01	4.01E+01	1.23E-02
BREOT-S25-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	4.40E+02	2.54E+00	NA	NA	NA	NA	5.36E-04	3.89E+02	2.08E-01	7.11E-02	1.09E-01	1.79E+00	5.23E+01	4.09E-01	4.01E+01	4.45E-02
BREOT-S25-40 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	1.90E+02	1.09E+00	NA	NA	NA	NA	5.36E-04	1.68E+02	8.99E-02	7.11E-02	1.09E-01	7.71E-01	5.23E+01	4.09E-01	4.01E+01	1.92E-02
BREOT-N26A-25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	1.13E+02	6.50E-01	NA	NA	NA	NA	5.36E-04	9.96E+01	5.34E-02	7.11E-02	1.09E-01	4.58E-01	5.23E+01	4.09E-01	4.01E+01	1.14E-02
BREOT-N26B-25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	8.31E+02	4.79E+00	NA	NA	NA	NA	5.36E-04	7.35E+02	3.94E-01	7.11E-02	1.09E-01	3.37E+00	5.23E+01	4.09E-01	4.01E+01	8.41E-02
BREOT-N26-50 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	1.41E+03	8.12E+00	NA	NA	NA	NA	5.36E-04	1.25E+03	6.68E-01	7.11E-02	1.09E-01	5.72E+00	5.23E+01	4.09E-01	4.01E+01	1.43E-01
BREOT-N26-75 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	1.17E+03	6.75E+00	NA	NA	NA	NA	5.36E-04	1.04E+03	5.55E-01	7.11E-02	1.09E-01	4.76E+00	5.23E+01	4.09E-01	4.01E+01	1.19E-01
BREOT-S26-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	1.36E+02	7.83E-01	NA	NA	NA	NA	5.36E-04	1.20E+02	6.43E-02	7.11E-02	1.09E-01	5.51E-01	5.23E+01	4.09E-01	4.01E+01	1.37E-02
BREOT-S26-40 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	4.62E+02	2.66E+00	NA	NA	NA	NA	5.36E-04	4.08E+02	2.19E-01	7.11E-02	1.09E-01	1.88E+00	5.23E+01	4.09E-01	4.01E+01	4.67E-02
BREOT-N27-30 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	1.39E+03	8.02E+00	NA	NA	NA	NA	5.36E-04	1.23E+03	6.59E-01	7.11E-02	1.09E-01	5.65E+00	5.23E+01	4.09E-01	4.01E+01	1.41E-01
BREOT-N27-75 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	2.45E+03	1.41E+01	NA	NA	NA	NA	5.36E-04	2.17E+03	1.16E+00	7.11E-02	1.09E-01	9.96E+00	5.23E+01	4.09E-01	4.01E+01	2.48E-01
BREOT-S27-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	3.57E+02	2.06E+00	NA	NA	NA	NA	5.36E-04	3.16E+02	1.69E-01	7.11E-02	1.09E-01	1.45E+00	5.23E+01	4.09E-01	4.01E+01	3.61E-02
BREOT-N28-110 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	5.76E+02	3.32E+00	NA	NA	NA	NA	5.36E-04	5.09E+02	2.73E-01	7.11E-02	1.09E-01	2.34E+00	5.23E+01	4.09E-01	4.01E+01	5.83E-02
BREOT-N28-55 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	3.34E+03	1.92E+01	NA	NA	NA	NA	5.36E-04	2.95E+03	1.58E+00	7.11E-02	1.09E-01	1.36E+01	5.23E+01	4.09E-01	4.01E+01	3.38E-01
BREOT-S28-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	4.85E+02	2.80E+00	NA	NA	NA	NA	5.36E-04	4.29E+02	2.30E-01	7.11E-02	1.09E-01	1.97E+00	5.23E+01	4.09E-01	4.01E+01	4.91E-02
UBDT-TP-1 (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	1.11E+03	6.39E+00	NA	NA	NA	NA	5.36E-04	9.81E+02	5.25E-01	7.11E-02	1.09E-01	4.50E+00	5.23E+01	4.09E-01	4.01E+01	1.12E-01
UBDT-TP-1 (2-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	2.28E+03	1.31E+01	NA	NA	NA	NA	5.36E-04	2.01E+03	1.08E+00	7.11E-02	1.09E-01	9.24E+00	5.23E+01	4.09E-01	4.01E+01	2.30E-01
UBDT-TP-1 (12-24")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	2.06E+03	1.19E+01	NA	NA	NA	NA	5.36E-04	1.82E+03	9.75E-01	7.11E-02	1.09E-01	8.35E+00	5.23E+01	4.09E-01	4.01E+01	2.08E-01
UBDT-TP-1 (24-36")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	1.52E+03	8.76E+00	NA	NA	NA	NA	5.36E-04	1.34E+03	7.20E-01	7.11E-02	1.09E-01	6.17E+00	5.23E+01	4.09E-01	4.01E+01	1.54E-01
UBDT-TP-1 (36-48")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	3.30E+02	1.90E+00	NA	NA	NA	NA	5.36E-04	2.92E+02	1.56E-01	7.11E-02	1.09E-01	1.34E+00	5.23E+01	4.09E-01	4.01E+01	3.34E-02
UBDT-TP-1 (48-60")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	2.08E+02	1.20E+00	NA	NA	NA	NA	5.36E-04	1.84E+02	9.84E-02	7.11E-02	1.09E-01	8.44E-01	5.23E+01	4.09E-01	4.01E+01	2.10E-02
BREOT-N29-30 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	2.80E+03	1.61E+01	NA	NA	NA	NA	5.36E-04	2.47E+03	1.33E+00	7.11E-02	1.09E-01	1.14E+01	5.23E+01	4.09E-01	4.01E+01	2.83E-01
BREOT-S29-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	4.55E+02	2.62E+00	NA	NA	NA	NA	5.36E-04	4.02E+02	2.15E-01	7.11E-02	1.09E-01	1.85E+00	5.23E+01	4.09E-01	4.01E+01	4.60E-02
BREOT-N30-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	5.11E+02	2.95E+00	NA	NA	NA	NA	5.36E-04	4.52E+02	2.42E-01	7.11E-02	1.09E-01	2.08E+00	5.23E+01	4.09E-01	4.01E+01	5.17E-02
BREOT-S30-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	3.54E+02	2.04E+00	NA	NA	NA	NA	5.36E-04	3.13E+02	1.68E-01	7.11E-02	1.09E-01	1.44E+00	5.23E+01	4.09E-01	4.01E+01	3.58E-02
BREOT-N31-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	3.60E+02	2.08E+00	NA	NA	NA	NA	5.36E-04	3.18E+02	1.71E-01	7.11E-02	1.09E-01	1.46E+00	5.23E+01	4.09E-01	4.01E+01	3.64E-02
BREOT-S31-25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	2.24E+02	1.29E+00	NA	NA	NA	NA	5.36E-04	1.98E+02	1.06E-01	7.11E-02	1.09E-01	9.07E-01	5.23E+01	4.09E-01	4.01E+01	2.26E-02
BREOT-S31-5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	3.36E+02	1.93E+00	NA	NA	NA	NA	5.36E-04	2.97E+02	1.59E-01	7.11E-02	1.09E-01	1.36E+00	5.23E+01	4.09E-01	4.01E+01	3.40E-02
BREOT-N32-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	2.41E+02	1.39E+00	NA	NA	NA	NA	5.36E-04	2.13E+02	1.14E-01	7.11E-02	1.09E-01	9.77E-01	5.23E+01	4.09E-01	4.01E+01	2.43E-02
BREOT-S32-6 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	2.39E+02	1.38E+00	NA	NA	NA	NA	5.36E-04	2.11E+02	1.13E-01	7.11E-02	1.09E-01	9.70E-01	5.23E+01	4.09E-01	4.01E+01	2.42E-02
BREOT-N33-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	2.68E+02	1.54E+00	NA	NA	NA	NA	5.36E-04	2.37E+02	1.27E-01	7.11E-02	1.09E-01	1.09E+00	5.23E+01	4.09E-01	4.01E+01	2.71E-02
BREOT-S33-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	6.56E+02	3.78E+00	NA	NA	NA	NA	5.36E-04	5.80E+02	3.11E-01	7.11E-02	1.09E-01	2.66E+00	5.23E+01	4.09E-01	4.01E+01	6.64E-02
BREOT-N35-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	2.11E+02	1.22E+00	NA	NA	NA	NA	5.36E-04	1.87E+02	1.00E-01	7.11E-02	1.09E-01	8.58E-01	5.23E+01	4.09E-01	4.01E+01	2.14E-02
BREOT-S35-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	5.13E+02	2.95E+00	NA	NA	NA	NA	5.36E-04	4.53E+02	2.43E-01	7.11E-02	1.09E-01	2.08E+00	5.23E+01	4.09E-01	4.01E+01	5.18E-02
BREOT-N36-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	3.45E+02	1.99E+00	NA	NA	NA	NA	5.36E-04	3.05E+02	1.63E-01	7.11E-02	1.09E-01	1.40E+00	5.23E+01	4.09E-01	4.01E+01	3.49E-02
BREOT-S36-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	2.29E+02	1.32E+00	NA	NA	NA	NA	5.36E-04	2.02E+02	1.08E-01	7.11E-02	1.09E-01	9.28E-01	5.23E+01	4.09E-01	4.01E+01	2.31E-02
BREOT-N37-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	2.08E+02	1.20E+00	NA	NA	NA	NA	5.36E-04	1.84E+02	9.87E-02	7.11E-02	1.09E-01	8.46E-01	5.23E+01	4.09E-01	4.01E+01	2.11E-02
BREOT-S37-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	3.35E+02	1.93E+00	NA	NA	NA	NA	5.36E-04	2.96E+02	1.59E-01	7.11E-02	1.09E-01	1.36E+00	5.23E+01	4.09E-01	4.01E+01	3.39E-02

TABLE C-2C: COPPER DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 18.41

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Mourning Dove (Herbivorous Birds - Terrestrial)																							
BREOT-N38-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	2.36E+02	1.36E+00	NA	NA	NA	NA	5.36E-04	2.08E+02	1.12E-01	7.11E-02	1.09E-01	9.56E-01	5.23E+01	4.09E-01	4.01E+01	2.38E-02
BREOT-S38-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	7.87E+02	4.54E+00	NA	NA	NA	NA	5.36E-04	6.96E+02	3.73E-01	7.11E-02	1.09E-01	3.20E+00	5.23E+01	4.09E-01	4.01E+01	7.96E-02
BREOT-N39-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	3.43E+02	1.98E+00	NA	NA	NA	NA	5.36E-04	3.03E+02	1.63E-01	7.11E-02	1.09E-01	1.39E+00	5.23E+01	4.09E-01	4.01E+01	3.47E-02
BREOT-S39-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	5.89E+02	3.40E+00	NA	NA	NA	NA	5.36E-04	5.21E+02	2.79E-01	7.11E-02	1.09E-01	2.39E+00	5.23E+01	4.09E-01	4.01E+01	5.96E-02
BREOT-N40-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	4.57E+02	2.63E+00	NA	NA	NA	NA	5.36E-04	4.04E+02	2.16E-01	7.11E-02	1.09E-01	1.86E+00	5.23E+01	4.09E-01	4.01E+01	4.62E-02
BREOT-S40-14 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	5.60E+02	3.23E+00	NA	NA	NA	NA	5.36E-04	4.95E+02	2.65E-01	7.11E-02	1.09E-01	2.27E+00	5.23E+01	4.09E-01	4.01E+01	5.66E-02
BREOT-N41-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	3.40E+02	1.96E+00	NA	NA	NA	NA	5.36E-04	3.00E+02	1.61E-01	7.11E-02	1.09E-01	1.38E+00	5.23E+01	4.09E-01	4.01E+01	3.43E-02
BREOT-S41-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	5.11E+02	2.94E+00	NA	NA	NA	NA	5.36E-04	4.51E+02	2.42E-01	7.11E-02	1.09E-01	2.07E+00	5.23E+01	4.09E-01	4.01E+01	5.17E-02
BREOT-N42-35 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	2.76E+02	1.59E+00	NA	NA	NA	NA	5.36E-04	2.44E+02	1.31E-01	7.11E-02	1.09E-01	1.12E+00	5.23E+01	4.09E-01	4.01E+01	2.80E-02
BREOT-S42-25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	3.04E+02	1.75E+00	NA	NA	NA	NA	5.36E-04	2.69E+02	1.44E-01	7.11E-02	1.09E-01	1.23E+00	5.23E+01	4.09E-01	4.01E+01	3.07E-02
BREOT-N43-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	5.21E+02	3.00E+00	NA	NA	NA	NA	5.36E-04	4.60E+02	2.47E-01	7.11E-02	1.09E-01	2.11E+00	5.23E+01	4.09E-01	4.01E+01	5.27E-02
BREOT-S43-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	2.77E+02	1.60E+00	NA	NA	NA	NA	5.36E-04	2.45E+02	1.31E-01	7.11E-02	1.09E-01	1.12E+00	5.23E+01	4.09E-01	4.01E+01	2.80E-02
BREOT-N44-30 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	2.13E+02	1.23E+00	NA	NA	NA	NA	5.36E-04	1.88E+02	1.01E-01	7.11E-02	1.09E-01	8.64E-01	5.23E+01	4.09E-01	4.01E+01	2.15E-02
BREOT-S44-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	4.84E+02	2.79E+00	NA	NA	NA	NA	5.36E-04	4.28E+02	2.29E-01	7.11E-02	1.09E-01	1.97E+00	5.23E+01	4.09E-01	4.01E+01	4.90E-02
BREOT-N45-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	3.58E+02	2.06E+00	NA	NA	NA	NA	5.36E-04	3.16E+02	1.70E-01	7.11E-02	1.09E-01	1.45E+00	5.23E+01	4.09E-01	4.01E+01	3.62E-02
BREOT-N43-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	5.21E+02	3.00E+00	NA	NA	NA	NA	5.36E-04	4.60E+02	2.47E-01	7.11E-02	1.09E-01	2.11E+00	5.23E+01	4.09E-01	4.01E+01	5.27E-02
BREOT-S45-6 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	3.45E+02	1.99E+00	NA	NA	NA	NA	5.36E-04	3.05E+02	1.63E-01	7.11E-02	1.09E-01	1.40E+00	5.23E+01	4.09E-01	4.01E+01	3.49E-02
BREOT-N46-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	1.39E+02	8.03E-01	NA	NA	NA	NA	5.36E-04	1.23E+02	6.60E-02	7.11E-02	1.09E-01	5.65E-01	5.23E+01	4.09E-01	4.01E+01	1.41E-02
BREOT-S46-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	1.72E+02	9.92E-01	NA	NA	NA	NA	5.36E-04	1.52E+02	8.15E-02	7.11E-02	1.09E-01	6.99E-01	5.23E+01	4.09E-01	4.01E+01	1.74E-02
BREOT-S46-40 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	3.36E+02	1.94E+00	NA	NA	NA	NA	5.36E-04	2.97E+02	1.59E-01	7.11E-02	1.09E-01	1.36E+00	5.23E+01	4.09E-01	4.01E+01	3.40E-02
BREOT-N47-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	3.14E+02	1.81E+00	NA	NA	NA	NA	5.36E-04	2.78E+02	1.49E-01	7.11E-02	1.09E-01	1.28E+00	5.23E+01	4.09E-01	4.01E+01	3.18E-02
BREOT-S47-999 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	4.66E+02	2.69E+00	NA	NA	NA	NA	5.36E-04	4.12E+02	2.21E-01	7.11E-02	1.09E-01	1.89E+00	5.23E+01	4.09E-01	4.01E+01	4.72E-02
BREOT-S48-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	1.12E+02	6.45E-01	NA	NA	NA	NA	5.36E-04	9.89E+01	5.30E-02	7.11E-02	1.09E-01	4.54E-01	5.23E+01	4.09E-01	4.01E+01	1.13E-02
BREOT-S49-2.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	1.47E+02	8.47E-01	NA	NA	NA	NA	5.36E-04	1.30E+02	6.96E-02	7.11E-02	1.09E-01	5.97E-01	5.23E+01	4.09E-01	4.01E+01	1.49E-02
BREOT-S50-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	2.62E+02	1.51E+00	NA	NA	NA	NA	5.36E-04	2.31E+02	1.24E-01	7.11E-02	1.09E-01	1.06E+00	5.23E+01	4.09E-01	4.01E+01	2.65E-02
BREOT-S50-25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N52-60 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	2.40E+02	1.38E+00	NA	NA	NA	NA	5.36E-04	2.12E+02	1.14E-01	7.11E-02	1.09E-01	9.74E-01	5.23E+01	4.09E-01	4.01E+01	2.43E-02
BREOT-S52-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	1.25E+03	7.17E+00	NA	NA	NA	NA	5.36E-04	1.10E+03	5.90E-01	7.11E-02	1.09E-01	5.05E+00	5.23E+01	4.09E-01	4.01E+01	1.26E-01
BREOT-S53-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	2.89E+02	1.67E+00	NA	NA	NA	NA	5.36E-04	2.56E+02	1.37E-01	7.11E-02	1.09E-01	1.17E+00	5.23E+01	4.09E-01	4.01E+01	2.93E-02
BREOT-S54-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	1.82E+02	1.05E+00	NA	NA	NA	NA	5.36E-04	1.60E+02	8.60E-02	7.11E-02	1.09E-01	7.37E-01	5.23E+01	4.09E-01	4.01E+01	1.84E-02
BREOT-N55-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	4.91E+02	2.83E+00	NA	NA	NA	NA	5.36E-04	4.34E+02	2.32E-01	7.11E-02	1.09E-01	1.99E+00	5.23E+01	4.09E-01	4.01E+01	4.97E-02
BREOT-S55-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	1.96E+02	1.13E+00	NA	NA	NA	NA	5.36E-04	1.73E+02	9.27E-02	7.11E-02	1.09E-01	7.94E-01	5.23E+01	4.09E-01	4.01E+01	1.98E-02
BREOT-N56-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	3.64E+02	2.09E+00	NA	NA	NA	NA	5.36E-04	3.21E+02	1.72E-01	7.11E-02	1.09E-01	1.48E+00	5.23E+01	4.09E-01	4.01E+01	3.68E-02
BREOT-S56-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	1.69E+02	9.73E-01	NA	NA	NA	NA	5.36E-04	1.49E+02	8.00E-02	7.11E-02	1.09E-01	6.86E-01	5.23E+01	4.09E-01	4.01E+01	1.71E-02
BREOT-N57-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	2.67E+02	1.54E+00	NA	NA	NA	NA	5.36E-04	2.36E+02	1.26E-01	7.11E-02	1.09E-01	1.08E+00	5.23E+01	4.09E-01	4.01E+01	2.70E-02
BREOT-S57-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	1.96E+02	1.13E+00	NA	NA	NA	NA	5.36E-04	1.73E+02	9.27E-02	7.11E-02	1.09E-01	7.95E-01	5.23E+01	4.09E-01	4.01E+01	1.98E-02
BREOT-N58-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	1.73E+02	1.00E+00	NA	NA	NA	NA	5.36E-04	1.53E+02	8.21E-02	7.11E-02	1.09E-01	7.04E-01	5.23E+01	4.09E-01	4.01E+01	1.75E-02
BREOT-S58-12 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	2.91E+02	1.68E+00	NA	NA	NA	NA	5.36E-04	2.57E+02	1.38E-01	7.11E-02	1.09E-01	1.18E+00	5.23E+01	4.09E-01	4.01E+01	2.94E-02
BREOT-N59-18 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	1.19E+02	6.88E-01	NA	NA	NA	NA	5.36E-04	1.06E+02	5.66E-02	7.11E-02	1.09E-01	4.85E-01	5.23E+01	4.09E-01	4.01E+01	1.21E-02
BREOT-N60-12.5 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S60-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	2.13E+02	1.23E+00	NA	NA	NA	NA	5.36E-04	1.88E+02	1.01E-01	7.11E-02	1.09E-01	8.63E-01	5.23E+01	4.09E-01	4.01E+01	2.15E-02
BREOT-S61-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	2.92E+02	1.68E+00	NA	NA	NA	NA	5.36E-04	2.58E+02	1.38E-01	7.11E-02	1.09E-01	1.19E+00	5.23E+01	4.09E-01	4.01E+01	2.95E-02
BREOT-N62-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	9.90E+01	5.70E-01	NA	NA	NA	NA	5.36E-04	8.74E+01	4.69E-02	7.11E-02	1.09E-01	4.02E-01	5.23E+01	4.09E-01	4.01E+01	1.00E-02
BREOT-S62-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	3.95E+02	2.28E+00	NA	NA	NA	NA	5.36E-04	3.49E+02	1.87E-01	7.11E-02	1.09E-01	1.60E+00	5.23E+01	4.09E-01	4.01E+01	4.00E-02
BREOT-S63-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	1.60E+02	9.21E-01	NA	NA	NA	NA	5.36E-04	1.41E+02	7.57E-02	7.11E-02	1.09E-01	6.49E-01	5.23E+01	4.09E-01	4.01E+01	1.62E-02
BREOT-N64-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	1.07E+02	6.17E-01	NA	NA	NA	NA	5.36E-04	9.46E+01	5.07E-02	7.11E-02	1.09E-01	4.35E-01	5.23E+01	4.09E-01	4.01E+01	1.08E-02
BREOT-N64-20 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	1.30E+02	7.48E-01	NA	NA	NA	NA	5.36E-04	1.15E+02	6.15E-02	7.11E-02	1.09E-01	5.27E-01	5.23E+01	4.09E-01	4.01E+01	1.31E-02

TABLE C-2C: COPPER DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 18.41

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Mourning Dove (Herbivorous Birds - Terrestrial)																							
BREOT-S64-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	1.90E+02	1.09E+00	NA	NA	NA	NA	5.36E-04	1.68E+02	8.99E-02	7.11E-02	1.09E-01	7.70E-01	5.23E+01	4.09E-01	4.01E+01	1.92E-02
BREOT-N65-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	1.39E+02	8.01E-01	NA	NA	NA	NA	5.36E-04	1.23E+02	6.58E-02	7.11E-02	1.09E-01	5.64E-01	5.23E+01	4.09E-01	4.01E+01	1.41E-02
BREOT-S65-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	2.05E+02	1.18E+00	NA	NA	NA	NA	5.36E-04	1.81E+02	9.72E-02	7.11E-02	1.09E-01	8.33E-01	5.23E+01	4.09E-01	4.01E+01	2.08E-02
BREOT-N66-5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	1.52E+02	8.78E-01	NA	NA	NA	NA	5.36E-04	1.35E+02	7.21E-02	7.11E-02	1.09E-01	6.18E-01	5.23E+01	4.09E-01	4.01E+01	1.54E-02
BREOT-S66-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	1.67E+02	9.64E-01	NA	NA	NA	NA	5.36E-04	1.48E+02	7.92E-02	7.11E-02	1.09E-01	6.79E-01	5.23E+01	4.09E-01	4.01E+01	1.69E-02
BREOT-N67-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	6.37E+02	3.67E+00	NA	NA	NA	NA	5.36E-04	5.63E+02	3.02E-01	7.11E-02	1.09E-01	2.59E+00	5.23E+01	4.09E-01	4.01E+01	6.44E-02
BREOT-S67-12.5 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
At Edge of Tailings																						**Maximum HQ (Inside Tailings)**	**4.26E-01**
BREOT-S0-0 (06)	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	1.36E+02	7.83E-01	NA	NA	NA	NA	5.36E-04	1.20E+02	6.44E-02	7.11E-02	1.09E-01	5.52E-01	5.23E+01	4.09E-01	4.01E+01	1.37E-02
BREOT-S1-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	2.38E+02	1.37E+00	NA	NA	NA	NA	5.36E-04	2.11E+02	1.13E-01	7.11E-02	1.09E-01	9.68E-01	5.23E+01	4.09E-01	4.01E+01	2.41E-02
BREOT-S2-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	3.39E+02	1.95E+00	NA	NA	NA	NA	5.36E-04	2.99E+02	1.60E-01	7.11E-02	1.09E-01	1.37E+00	5.23E+01	4.09E-01	4.01E+01	3.42E-02
BREOT-S3-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	4.10E+02	2.36E+00	NA	NA	NA	NA	5.36E-04	3.62E+02	1.94E-01	7.11E-02	1.09E-01	1.66E+00	5.23E+01	4.09E-01	4.01E+01	4.14E-02
BREOT-S4-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	4.58E+02	2.64E+00	NA	NA	NA	NA	5.36E-04	4.05E+02	2.17E-01	7.11E-02	1.09E-01	1.86E+00	5.23E+01	4.09E-01	4.01E+01	4.64E-02
BREOT-S6-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	3.70E+02	2.13E+00	NA	NA	NA	NA	5.36E-04	3.27E+02	1.75E-01	7.11E-02	1.09E-01	1.50E+00	5.23E+01	4.09E-01	4.01E+01	3.74E-02
BREOT-S7-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	2.15E+02	1.24E+00	NA	NA	NA	NA	5.36E-04	1.90E+02	1.02E-01	7.11E-02	1.09E-01	8.72E-01	5.23E+01	4.09E-01	4.01E+01	2.17E-02
BREOT-S8-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	1.91E+02	1.10E+00	NA	NA	NA	NA	5.36E-04	1.69E+02	9.05E-02	7.11E-02	1.09E-01	7.75E-01	5.23E+01	4.09E-01	4.01E+01	1.93E-02
BREOT-S9-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	1.71E+02	9.84E-01	NA	NA	NA	NA	5.36E-04	1.51E+02	8.08E-02	7.11E-02	1.09E-01	6.93E-01	5.23E+01	4.09E-01	4.01E+01	1.73E-02
BREOT-N10-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	4.01E+03	2.31E+01	NA	NA	NA	NA	5.36E-04	3.54E+03	1.90E+00	7.11E-02	1.09E-01	1.63E+01	5.23E+01	4.09E-01	4.01E+01	4.05E-01
BREOT-N11-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	3.34E+02	1.92E+00	NA	NA	NA	NA	5.36E-04	2.95E+02	1.58E-01	7.11E-02	1.09E-01	1.35E+00	5.23E+01	4.09E-01	4.01E+01	3.38E-02
BREOT-N12-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	2.90E+02	1.67E+00	NA	NA	NA	NA	5.36E-04	2.57E+02	1.38E-01	7.11E-02	1.09E-01	1.18E+00	5.23E+01	4.09E-01	4.01E+01	2.94E-02
BREOT-S12-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	6.69E+02	3.85E+00	NA	NA	NA	NA	5.36E-04	5.91E+02	3.17E-01	7.11E-02	1.09E-01	2.71E+00	5.23E+01	4.09E-01	4.01E+01	6.76E-02
BREOT-N13-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	2.16E+03	1.25E+01	NA	NA	NA	NA	5.36E-04	1.91E+03	1.02E+00	7.11E-02	1.09E-01	8.77E+00	5.23E+01	4.09E-01	4.01E+01	2.19E-01
BREOT-S13-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	1.59E+02	9.14E-01	NA	NA	NA	NA	5.36E-04	1.40E+02	7.51E-02	7.11E-02	1.09E-01	6.44E-01	5.23E+01	4.09E-01	4.01E+01	1.60E-02
BREOT-N14-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	4.85E+02	2.79E+00	NA	NA	NA	NA	5.36E-04	4.28E+02	2.29E-01	7.11E-02	1.09E-01	1.97E+00	5.23E+01	4.09E-01	4.01E+01	4.90E-02
BREOT-S14-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	3.69E+03	2.13E+01	NA	NA	NA	NA	5.36E-04	3.26E+03	1.75E+00	7.11E-02	1.09E-01	1.50E+01	5.23E+01	4.09E-01	4.01E+01	3.73E-01
BREOT-N15-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	3.78E+02	2.18E+00	NA	NA	NA	NA	5.36E-04	3.34E+02	1.79E-01	7.11E-02	1.09E-01	1.53E+00	5.23E+01	4.09E-01	4.01E+01	3.82E-02
BREOT-N16-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	2.79E+02	1.61E+00	NA	NA	NA	NA	5.36E-04	2.46E+02	1.32E-01	7.11E-02	1.09E-01	1.13E+00	5.23E+01	4.09E-01	4.01E+01	2.82E-02
BREOT-S16-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	2.04E+02	1.18E+00	NA	NA	NA	NA	5.36E-04	1.81E+02	9.67E-02	7.11E-02	1.09E-01	8.29E-01	5.23E+01	4.09E-01	4.01E+01	2.07E-02
BREOT-N17-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	2.95E+02	1.70E+00	NA	NA	NA	NA	5.36E-04	2.60E+02	1.40E-01	7.11E-02	1.09E-01	1.20E+00	5.23E+01	4.09E-01	4.01E+01	2.98E-02
BREOT-S17-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	3.50E+02	2.02E+00	NA	NA	NA	NA	5.36E-04	3.09E+02	1.66E-01	7.11E-02	1.09E-01	1.42E+00	5.23E+01	4.09E-01	4.01E+01	3.54E-02
BREOT-N18-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	2.72E+02	1.57E+00	NA	NA	NA	NA	5.36E-04	2.40E+02	1.29E-01	7.11E-02	1.09E-01	1.10E+00	5.23E+01	4.09E-01	4.01E+01	2.75E-02
BREOT-S18-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	2.37E+03	1.37E+01	NA	NA	NA	NA	5.36E-04	2.09E+03	1.12E+00	7.11E-02	1.09E-01	9.62E+00	5.23E+01	4.09E-01	4.01E+01	2.40E-01
BREOT-N19-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	3.32E+02	1.92E+00	NA	NA	NA	NA	5.36E-04	2.94E+02	1.57E-01	7.11E-02	1.09E-01	1.35E+00	5.23E+01	4.09E-01	4.01E+01	3.36E-02
BREOT-S19-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	1.46E+02	8.38E-01	NA	NA	NA	NA	5.36E-04	1.29E+02	6.89E-02	7.11E-02	1.09E-01	5.91E-01	5.23E+01	4.09E-01	4.01E+01	1.47E-02
BREOT-N20-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	4.76E+02	2.74E+00	NA	NA	NA	NA	5.36E-04	4.20E+02	2.25E-01	7.11E-02	1.09E-01	1.93E+00	5.23E+01	4.09E-01	4.01E+01	4.81E-02
BREOT-S20-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	1.54E+02	8.87E-01	NA	NA	NA	NA	5.36E-04	1.36E+02	7.29E-02	7.11E-02	1.09E-01	6.25E-01	5.23E+01	4.09E-01	4.01E+01	1.56E-02
BREOT-N21-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	1.53E+04	8.79E+01	NA	NA	NA	NA	5.36E-04	1.35E+04	7.22E+00	7.11E-02	1.09E-01	6.19E+01	5.23E+01	4.09E-01	4.01E+01	1.54E+00
BREOT-S21-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	2.62E+02	1.51E+00	NA	NA	NA	NA	5.36E-04	2.31E+02	1.24E-01	7.11E-02	1.09E-01	1.06E+00	5.23E+01	4.09E-01	4.01E+01	2.64E-02
BREOT-N22-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	3.64E+02	2.10E+00	NA	NA	NA	NA	5.36E-04	3.21E+02	1.72E-01	7.11E-02	1.09E-01	1.48E+00	5.23E+01	4.09E-01	4.01E+01	3.68E-02
BREOT-S22-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	2.07E+02	1.19E+00	NA	NA	NA	NA	5.36E-04	1.83E+02	9.81E-02	7.11E-02	1.09E-01	8.41E-01	5.23E+01	4.09E-01	4.01E+01	2.09E-02
BREOT-N23-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	5.83E+02	3.36E+00	NA	NA	NA	NA	5.36E-04	5.15E+02	2.76E-01	7.11E-02	1.09E-01	2.37E+00	5.23E+01	4.09E-01	4.01E+01	5.90E-02
BREOT-S23-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	3.64E+02	2.10E+00	NA	NA	NA	NA	5.36E-04	3.22E+02	1.72E-01	7.11E-02	1.09E-01	1.48E+00	5.23E+01	4.09E-01	4.01E+01	3.68E-02
BREOT-N24-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	5.58E+02	3.22E+00	NA	NA	NA	NA	5.36E-04	4.93E+02	2.64E-01	7.11E-02	1.09E-01	2.27E+00	5.23E+01	4.09E-01	4.01E+01	5.65E-02
BREOT-S24-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	1.07E+03	6.18E+00	NA	NA	NA	NA	5.36E-04	9.47E+02	5.08E-01	7.11E-02	1.09E-01	4.35E+00	5.23E+01	4.09E-01	4.01E+01	1.08E-01
BREOT-N25-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	8.78E+02	5.06E+00	NA	NA	NA	NA	5.36E-04	7.75E+02	4.16E-01	7.11E-02	1.09E-01	3.56E+00	5.23E+01	4.09E-01	4.01E+01	8.88E-02
BREOT-S25-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	7.58E+02	4.37E+00	NA	NA	NA	NA	5.36E-04	6.70E+02	3.59E-01	7.11E-02	1.09E-01	3.08E+00	5.23E+01	4.09E-01	4.01E+01	7.67E-02
BREOT-N26-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	1.05E+03	6.03E+00	NA	NA	NA	NA	5.36E-04	9.25E+02	4.96E-01	7.11E-02	1.09E-01	4.25E+00	5.23E+01	4.09E-01	4.01E+01	1.06E-01
BREOT-S26-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	3.88E+02	2.23E+00	NA	NA	NA	NA	5.36E-04	3.43E+02	1.84E-01	7.11E-02	1.09E-01	1.57E+00	5.23E+01	4.09E-01	4.01E+01	3.92E-02
BREOT-N27-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	2.84E+03	1.64E+01	NA	NA	NA	NA	5.36E-04	2.51E+03	1.35E+00	7.11E-02	1.09E-01	1.15E+01	5.23E+01	4.09E-01	4.01E+01	2.87E-01
BREOT-S27-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	2.58E+02	1.49E+00	NA	NA	NA	NA	5.36E-04	2.28E+02	1.22E-01	7.11E-02	1.09E-01	1.05E+00	5.23E+01	4.09E-01	4.01E+01	2.61E-02

TABLE C-2C: COPPER DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 18.41

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Mourning Dove (Herbivorous Birds - Terrestrial)																							
BREOT-N28-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	6.20E+02	3.57E+00	NA	NA	NA	NA	5.36E-04	5.48E+02	2.94E-01	7.11E-02	1.09E-01	2.52E+00	5.23E+01	4.09E-01	4.01E+01	6.27E-02
BREOT-S28-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	1.87E+02	1.08E+00	NA	NA	NA	NA	5.36E-04	1.65E+02	8.86E-02	7.11E-02	1.09E-01	7.59E-01	5.23E+01	4.09E-01	4.01E+01	1.89E-02
BREOT-S29-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	2.00E+02	1.15E+00	NA	NA	NA	NA	5.36E-04	1.77E+02	9.46E-02	7.11E-02	1.09E-01	8.11E-01	5.23E+01	4.09E-01	4.01E+01	2.02E-02
BREOT-N30-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	1.68E+03	9.67E+00	NA	NA	NA	NA	5.36E-04	1.48E+03	7.94E-01	7.11E-02	1.09E-01	6.81E+00	5.23E+01	4.09E-01	4.01E+01	1.70E-01
BREOT-S30-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	1.47E+02	8.46E-01	NA	NA	NA	NA	5.36E-04	1.30E+02	6.95E-02	7.11E-02	1.09E-01	5.96E-01	5.23E+01	4.09E-01	4.01E+01	1.49E-02
BREOT-N31-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	1.46E+03	8.40E+00	NA	NA	NA	NA	5.36E-04	1.29E+03	6.90E-01	7.11E-02	1.09E-01	5.92E+00	5.23E+01	4.09E-01	4.01E+01	1.47E-01
BREOT-S31-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	1.21E+02	6.99E-01	NA	NA	NA	NA	5.36E-04	1.07E+02	5.75E-02	7.11E-02	1.09E-01	4.93E-01	5.23E+01	4.09E-01	4.01E+01	1.23E-02
BREOT-N32-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	6.01E+02	3.46E+00	NA	NA	NA	NA	5.36E-04	5.31E+02	2.84E-01	7.11E-02	1.09E-01	2.44E+00	5.23E+01	4.09E-01	4.01E+01	6.07E-02
BREOT-S32-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	5.85E+02	3.37E+00	NA	NA	NA	NA	5.36E-04	5.17E+02	2.77E-01	7.11E-02	1.09E-01	2.38E+00	5.23E+01	4.09E-01	4.01E+01	5.92E-02
BREOT-N33-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	2.26E+02	1.30E+00	NA	NA	NA	NA	5.36E-04	2.00E+02	1.07E-01	7.11E-02	1.09E-01	9.17E-01	5.23E+01	4.09E-01	4.01E+01	2.29E-02
BREOT-S33-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	5.56E+02	3.20E+00	NA	NA	NA	NA	5.36E-04	4.91E+02	2.63E-01	7.11E-02	1.09E-01	2.26E+00	5.23E+01	4.09E-01	4.01E+01	5.62E-02
BREOT-N34-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	5.55E+02	3.20E+00	NA	NA	NA	NA	5.36E-04	4.90E+02	2.63E-01	7.11E-02	1.09E-01	2.25E+00	5.23E+01	4.09E-01	4.01E+01	5.61E-02
BREOT-S34-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	5.43E+02	3.13E+00	NA	NA	NA	NA	5.36E-04	4.80E+02	2.57E-01	7.11E-02	1.09E-01	2.20E+00	5.23E+01	4.09E-01	4.01E+01	5.49E-02
BREOT-N35-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	3.01E+02	1.74E+00	NA	NA	NA	NA	5.36E-04	2.66E+02	1.43E-01	7.11E-02	1.09E-01	1.22E+00	5.23E+01	4.09E-01	4.01E+01	3.05E-02
BREOT-S35-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	5.01E+02	2.89E+00	NA	NA	NA	NA	5.36E-04	4.43E+02	2.37E-01	7.11E-02	1.09E-01	2.03E+00	5.23E+01	4.09E-01	4.01E+01	5.07E-02
BREOT-N36-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	4.90E+02	2.83E+00	NA	NA	NA	NA	5.36E-04	4.33E+02	2.32E-01	7.11E-02	1.09E-01	1.99E+00	5.23E+01	4.09E-01	4.01E+01	4.96E-02
BREOT-S36-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	5.40E+02	3.11E+00	NA	NA	NA	NA	5.36E-04	4.77E+02	2.56E-01	7.11E-02	1.09E-01	2.19E+00	5.23E+01	4.09E-01	4.01E+01	5.46E-02
BREOT-N37-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	2.05E+02	1.18E+00	NA	NA	NA	NA	5.36E-04	1.81E+02	9.70E-02	7.11E-02	1.09E-01	8.31E-01	5.23E+01	4.09E-01	4.01E+01	2.07E-02
BREOT-S37-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	6.03E+02	3.47E+00	NA	NA	NA	NA	5.36E-04	5.33E+02	2.85E-01	7.11E-02	1.09E-01	2.45E+00	5.23E+01	4.09E-01	4.01E+01	6.09E-02
BREOT-N38-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	2.20E+02	1.27E+00	NA	NA	NA	NA	5.36E-04	1.95E+02	1.04E-01	7.11E-02	1.09E-01	8.94E-01	5.23E+01	4.09E-01	4.01E+01	2.23E-02
BREOT-S38-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	9.52E+02	5.48E+00	NA	NA	NA	NA	5.36E-04	8.41E+02	4.51E-01	7.11E-02	1.09E-01	3.86E+00	5.23E+01	4.09E-01	4.01E+01	9.63E-02
BREOT-N39-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N40-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	2.71E+02	1.56E+00	NA	NA	NA	NA	5.36E-04	2.39E+02	1.28E-01	7.11E-02	1.09E-01	1.10E+00	5.23E+01	4.09E-01	4.01E+01	2.74E-02
BREOT-S40-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	6.37E+02	3.67E+00	NA	NA	NA	NA	5.36E-04	5.63E+02	3.02E-01	7.11E-02	1.09E-01	2.59E+00	5.23E+01	4.09E-01	4.01E+01	6.44E-02
BREOT-N41-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	1.75E+02	1.01E+00	NA	NA	NA	NA	5.36E-04	1.55E+02	8.28E-02	7.11E-02	1.09E-01	7.10E-01	5.23E+01	4.09E-01	4.01E+01	1.77E-02
BREOT-S41-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	6.24E+02	3.60E+00	NA	NA	NA	NA	5.36E-04	5.52E+02	2.96E-01	7.11E-02	1.09E-01	2.53E+00	5.23E+01	4.09E-01	4.01E+01	6.31E-02
BREOT-N42-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S42-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	9.31E+02	5.36E+00	NA	NA	NA	NA	5.36E-04	8.23E+02	4.41E-01	7.11E-02	1.09E-01	3.78E+00	5.23E+01	4.09E-01	4.01E+01	9.42E-02
BREOT-N43-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	1.44E+02	8.27E-01	NA	NA	NA	NA	5.36E-04	1.27E+02	6.80E-02	7.11E-02	1.09E-01	5.83E-01	5.23E+01	4.09E-01	4.01E+01	1.45E-02
BREOT-S43-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	1.48E+02	8.50E-01	NA	NA	NA	NA	5.36E-04	1.30E+02	6.98E-02	7.11E-02	1.09E-01	5.99E-01	5.23E+01	4.09E-01	4.01E+01	1.49E-02
BREOT-N44-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	2.73E+02	1.57E+00	NA	NA	NA	NA	5.36E-04	2.41E+02	1.29E-01	7.11E-02	1.09E-01	1.11E+00	5.23E+01	4.09E-01	4.01E+01	2.76E-02
BREOT-S44-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	1.44E+02	8.27E-01	NA	NA	NA	NA	5.36E-04	1.27E+02	6.80E-02	7.11E-02	1.09E-01	5.83E-01	5.23E+01	4.09E-01	4.01E+01	1.45E-02
BREOT-N45-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	4.28E+02	2.47E+00	NA	NA	NA	NA	5.36E-04	3.78E+02	2.03E-01	7.11E-02	1.09E-01	1.74E+00	5.23E+01	4.09E-01	4.01E+01	4.33E-02
BREOT-S45-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	1.20E+02	6.92E-01	NA	NA	NA	NA	5.36E-04	1.06E+02	5.69E-02	7.11E-02	1.09E-01	4.88E-01	5.23E+01	4.09E-01	4.01E+01	1.22E-02
BREOT-N46-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	2.99E+02	1.72E+00	NA	NA	NA	NA	5.36E-04	2.64E+02	1.42E-01	7.11E-02	1.09E-01	1.21E+00	5.23E+01	4.09E-01	4.01E+01	3.02E-02
BREOT-S46-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	1.12E+02	6.43E-01	NA	NA	NA	NA	5.36E-04	9.86E+01	5.28E-02	7.11E-02	1.09E-01	4.53E-01	5.23E+01	4.09E-01	4.01E+01	1.13E-02
BREOT-N47-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	7.29E+02	4.20E+00	NA	NA	NA	NA	5.36E-04	6.44E+02	3.45E-01	7.11E-02	1.09E-01	2.96E+00	5.23E+01	4.09E-01	4.01E+01	7.37E-02
BREOT-S47-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N48-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	1.63E+02	9.37E-01	NA	NA	NA	NA	5.36E-04	1.44E+02	7.70E-02	7.11E-02	1.09E-01	6.60E-01	5.23E+01	4.09E-01	4.01E+01	1.64E-02
BREOT-S48-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	1.02E+02	5.87E-01	NA	NA	NA	NA	5.36E-04	9.01E+01	4.83E-02	7.11E-02	1.09E-01	4.14E-01	5.23E+01	4.09E-01	4.01E+01	1.03E-02
BREOT-N49-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	1.94E+02	1.12E+00	NA	NA	NA	NA	5.36E-04	1.71E+02	9.19E-02	7.11E-02	1.09E-01	7.87E-01	5.23E+01	4.09E-01	4.01E+01	1.96E-02
BREOT-S49-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S50-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	1.20E+02	6.89E-01	NA	NA	NA	NA	5.36E-04	1.06E+02	5.66E-02	7.11E-02	1.09E-01	4.85E-01	5.23E+01	4.09E-01	4.01E+01	1.21E-02
BREOT-N51-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	1.38E+02	7.93E-01	NA	NA	NA	NA	5.36E-04	1.22E+02	6.51E-02	7.11E-02	1.09E-01	5.58E-01	5.23E+01	4.09E-01	4.01E+01	1.39E-02
BREOT-S51-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	8.72E+02	5.03E+00	NA	NA	NA	NA	5.36E-04	7.71E+02	4.13E-01	7.11E-02	1.09E-01	3.54E+00	5.23E+01	4.09E-01	4.01E+01	8.82E-02
BREOT-N52-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	1.39E+02	8.03E-01	NA	NA	NA	NA	5.36E-04	1.23E+02	6.60E-02	7.11E-02	1.09E-01	5.65E-01	5.23E+01	4.09E-01	4.01E+01	1.41E-02
BREOT-S52-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	1.05E+02	6.05E-01	NA	NA	NA	NA	5.36E-04	9.29E+01	4.98E-02	7.11E-02	1.09E-01	4.26E-01	5.23E+01	4.09E-01	4.01E+01	1.06E-02
BREOT-N53-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	1.45E+02	8.37E-01	NA	NA	NA	NA	5.36E-04	1.28E+02	6.88E-02	7.11E-02	1.09E-01	5.90E-01	5.23E+01	4.09E-01	4.01E+01	1.47E-02
BREOT-S53-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	9.75E+01	5.62E-01	NA	NA	NA	NA	5.36E-04	8.62E+01	4.62E-02	7.11E-02	1.09E-01	3.96E-01	5.23E+01	4.09E-01	4.01E+01	9.87E-03
BREOT-N54-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	1.38E+02	7.97E-01	NA	NA	NA	NA	5.36E-04	1.22E+02	6.55E-02	7.11E-02	1.09E-01	5.61E-01	5.23E+01	4.09E-01	4.01E+01	1.40E-02
BREOT-S54-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	9.28E+01	5.35E-01	NA	NA	NA	NA	5.36E-04	8.20E+01	4.39E-02	7.11E-02	1.09E-01	3.77E-01	5.23E+01	4.09E-01	4.01E+01	9.39E-03
BREOT-N55-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	1.17E+02	6.72E-01	NA	NA	NA	NA	5.36E-04	1.03E+02	5.52E-02	7.11E-02	1.09E-01	4.73E-01	5.23E+01	4.09E-01	4.01E+01	1.18E-02
BREOT-S55-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	1.63E+02	9.37E-01	NA	NA	NA	NA	5.36E-04	1.44E+02	7.70E-02	7.11E-02	1.09E-01	6.60E-01	5.23E+01	4.09E-01	4.01E+01	1.64E-02
BREOT-N56-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	1.05E+02	6.05E-01	NA	NA	NA	NA	5.36E-04	9.29E+01	4.98E-02	7.11E-02	1.09E-01	4.26E-01	5.23E+01	4.09E-01	4.01E+01	1.06E-02
BREOT-N57-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	1.38E+02	7.92E-01	NA	NA	NA	NA	5.36E-04	1.22E+02	6.51E-02	7.11E-02	1.09E-01	5.58E-01	5.23E+01	4.09E-01	4.01E+01	1.39E-02

TABLE C-2C: COPPER DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **18.41**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Mourning Dove (Herbivorous Birds - Terrestrial)																							
BREOT-S57-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	2.04E+02	1.17E+00	NA	NA	NA	NA	5.36E-04	1.80E+02	9.64E-02	7.11E-02	1.09E-01	8.26E-01	5.23E+01	4.09E-01	4.01E+01	2.06E-02
BREOT-N58-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	1.35E+02	7.77E-01	NA	NA	NA	NA	5.36E-04	1.19E+02	6.39E-02	7.11E-02	1.09E-01	5.47E-01	5.23E+01	4.09E-01	4.01E+01	1.36E-02
BREOT-S58-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	1.83E+02	1.06E+00	NA	NA	NA	NA	5.36E-04	1.62E+02	8.69E-02	7.11E-02	1.09E-01	7.45E-01	5.23E+01	4.09E-01	4.01E+01	1.86E-02
BREOT-N59-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N60-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S60-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	2.56E+02	1.47E+00	NA	NA	NA	NA	5.36E-04	2.26E+02	1.21E-01	7.11E-02	1.09E-01	1.04E+00	5.23E+01	4.09E-01	4.01E+01	2.59E-02
BREOT-S61-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	1.80E+02	1.04E+00	NA	NA	NA	NA	5.36E-04	1.59E+02	8.54E-02	7.11E-02	1.09E-01	7.32E-01	5.23E+01	4.09E-01	4.01E+01	1.82E-02
BREOT-N62-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	9.41E+01	5.42E-01	NA	NA	NA	NA	5.36E-04	8.32E+01	4.46E-02	7.11E-02	1.09E-01	3.82E-01	5.23E+01	4.09E-01	4.01E+01	9.52E-03
BREOT-S62-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	1.77E+02	1.02E+00	NA	NA	NA	NA	5.36E-04	1.56E+02	8.36E-02	7.11E-02	1.09E-01	7.17E-01	5.23E+01	4.09E-01	4.01E+01	1.79E-02
BREOT-N63-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	1.77E+02	1.02E+00	NA	NA	NA	NA	5.36E-04	1.56E+02	8.37E-02	7.11E-02	1.09E-01	7.18E-01	5.23E+01	4.09E-01	4.01E+01	1.79E-02
BREOT-S63-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	1.50E+02	8.61E-01	NA	NA	NA	NA	5.36E-04	1.32E+02	7.08E-02	7.11E-02	1.09E-01	6.07E-01	5.23E+01	4.09E-01	4.01E+01	1.51E-02
BREOT-N64-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	9.81E+01	5.65E-01	NA	NA	NA	NA	5.36E-04	8.67E+01	4.65E-02	7.11E-02	1.09E-01	3.98E-01	5.23E+01	4.09E-01	4.01E+01	9.92E-03
BREOT-S64-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	3.28E+02	1.89E+00	NA	NA	NA	NA	5.36E-04	2.90E+02	1.55E-01	7.11E-02	1.09E-01	1.33E+00	5.23E+01	4.09E-01	4.01E+01	3.31E-02
BREOT-N66-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S66-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	2.01E+02	1.16E+00	NA	NA	NA	NA	5.36E-04	1.77E+02	9.49E-02	7.11E-02	1.09E-01	8.14E-01	5.23E+01	4.09E-01	4.01E+01	2.03E-02
BREOT-N67-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	7.57E+02	4.36E+00	NA	NA	NA	NA	5.36E-04	6.69E+02	3.58E-01	7.11E-02	1.09E-01	3.07E+00	5.23E+01	4.09E-01	4.01E+01	7.66E-02
BREOT-S67-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	1.13E+02	6.48E-01	NA	NA	NA	NA	5.36E-04	9.94E+01	5.33E-02	7.11E-02	1.09E-01	4.57E-01	5.23E+01	4.09E-01	4.01E+01	1.14E-02
Outside Tailings																						**Maximum HQ (At Edge of Tailings)**	**1.54E+00**
BREOT-S0+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	1.01E+02	5.83E-01	NA	NA	NA	NA	5.36E-04	8.94E+01	4.79E-02	7.11E-02	1.09E-01	4.11E-01	5.23E+01	4.09E-01	4.01E+01	1.02E-02
BREOT-S1+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	1.64E+02	9.44E-01	NA	NA	NA	NA	5.36E-04	1.45E+02	7.75E-02	7.11E-02	1.09E-01	6.65E-01	5.23E+01	4.09E-01	4.01E+01	1.66E-02
BREOT-S2+95 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	3.83E+02	2.20E+00	NA	NA	NA	NA	5.36E-04	3.38E+02	1.81E-01	7.11E-02	1.09E-01	1.55E+00	5.23E+01	4.09E-01	4.01E+01	3.87E-02
BREOT-S3+6 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	1.85E+02	1.07E+00	NA	NA	NA	NA	5.36E-04	1.63E+02	8.76E-02	7.11E-02	1.09E-01	7.51E-01	5.23E+01	4.09E-01	4.01E+01	1.87E-02
BREOT-S4+10 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	9.18E+01	5.29E-01	NA	NA	NA	NA	5.36E-04	8.11E+01	4.35E-02	7.11E-02	1.09E-01	3.73E-01	5.23E+01	4.09E-01	4.01E+01	9.28E-03
BREOT-S6+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	1.73E+02	9.99E-01	NA	NA	NA	NA	5.36E-04	1.53E+02	8.21E-02	7.11E-02	1.09E-01	7.04E-01	5.23E+01	4.09E-01	4.01E+01	1.75E-02
BREOT-S8+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	1.94E+02	1.12E+00	NA	NA	NA	NA	5.36E-04	1.71E+02	9.17E-02	7.11E-02	1.09E-01	7.86E-01	5.23E+01	4.09E-01	4.01E+01	1.96E-02
BREOT-N10+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	1.95E+02	1.12E+00	NA	NA	NA	NA	5.36E-04	1.73E+02	9.24E-02	7.11E-02	1.09E-01	7.92E-01	5.23E+01	4.09E-01	4.01E+01	1.97E-02
BREOT-N11+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	3.42E+02	1.97E+00	NA	NA	NA	NA	5.36E-04	3.02E+02	1.62E-01	7.11E-02	1.09E-01	1.39E+00	5.23E+01	4.09E-01	4.01E+01	3.46E-02
BREOT-N12+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	1.85E+02	1.07E+00	NA	NA	NA	NA	5.36E-04	1.64E+02	8.77E-02	7.11E-02	1.09E-01	7.52E-01	5.23E+01	4.09E-01	4.01E+01	1.87E-02
BREOT-S12+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	1.56E+03	8.99E+00	NA	NA	NA	NA	5.36E-04	1.38E+03	7.38E-01	7.11E-02	1.09E-01	6.33E+00	5.23E+01	4.09E-01	4.01E+01	1.58E-01
BREOT-S12+60 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	2.31E+02	1.33E+00	NA	NA	NA	NA	5.36E-04	2.04E+02	1.10E-01	7.11E-02	1.09E-01	9.39E-01	5.23E+01	4.09E-01	4.01E+01	2.34E-02
BREOT-N13+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	2.65E+02	1.52E+00	NA	NA	NA	NA	5.36E-04	2.34E+02	1.25E-01	7.11E-02	1.09E-01	1.07E+00	5.23E+01	4.09E-01	4.01E+01	2.68E-02
BREOT-S13+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	6.89E+02	3.97E+00	NA	NA	NA	NA	5.36E-04	6.09E+02	3.26E-01	7.11E-02	1.09E-01	2.80E+00	5.23E+01	4.09E-01	4.01E+01	6.97E-02
BREOT-S13+65 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	3.42E+02	1.97E+00	NA	NA	NA	NA	5.36E-04	3.03E+02	1.62E-01	7.11E-02	1.09E-01	1.39E+00	5.23E+01	4.09E-01	4.01E+01	3.46E-02
BREOT-N14+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	2.95E+02	1.70E+00	NA	NA	NA	NA	5.36E-04	2.61E+02	1.40E-01	7.11E-02	1.09E-01	1.20E+00	5.23E+01	4.09E-01	4.01E+01	2.99E-02
BREOT-S14+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	1.86E+03	1.07E+01	NA	NA	NA	NA	5.36E-04	1.64E+03	8.81E-01	7.11E-02	1.09E-01	7.55E+00	5.23E+01	4.09E-01	4.01E+01	1.88E-01
BREOT-S14+59 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	2.20E+02	1.26E+00	NA	NA	NA	NA	5.36E-04	1.94E+02	1.04E-01	7.11E-02	1.09E-01	8.91E-01	5.23E+01	4.09E-01	4.01E+01	2.22E-02
BREOT-N15+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	1.49E+03	8.56E+00	NA	NA	NA	NA	5.36E-04	1.31E+03	7.03E-01	7.11E-02	1.09E-01	6.03E+00	5.23E+01	4.09E-01	4.01E+01	1.50E-01
BREOT-N15+50 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	3.07E+02	1.77E+00	NA	NA	NA	NA	5.36E-04	2.71E+02	1.45E-01	7.11E-02	1.09E-01	1.24E+00	5.23E+01	4.09E-01	4.01E+01	3.10E-02
BREOT-S16+20 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	9.03E+02	5.20E+00	NA	NA	NA	NA	5.36E-04	7.98E+02	4.28E-01	7.11E-02	1.09E-01	3.67E+00	5.23E+01	4.09E-01	4.01E+01	9.14E-02
BREOT-S16+75 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	1.45E+02	8.35E-01	NA	NA	NA	NA	5.36E-04	1.28E+02	6.86E-02	7.11E-02	1.09E-01	5.88E-01	5.23E+01	4.09E-01	4.01E+01	1.46E-02
BREOT-N17+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	8.96E+02	5.16E+00	NA	NA	NA	NA	5.36E-04	7.92E+02	4.24E-01	7.11E-02	1.09E-01	3.64E+00	5.23E+01	4.09E-01	4.01E+01	9.06E-02
BREOT-S18+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	1.77E+02	1.02E+00	NA	NA	NA	NA	5.36E-04	1.56E+02	8.37E-02	7.11E-02	1.09E-01	7.18E-01	5.23E+01	4.09E-01	4.01E+01	1.79E-02
BREOT-N19+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S19+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	6.79E+03	3.91E+01	NA	NA	NA	NA	5.36E-04	6.00E+03	3.21E+00	7.11E-02	1.09E-01	2.75E+01	5.23E+01	4.09E-01	4.01E+01	6.86E-01
BREOT-S19+85 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	2.70E+02	1.56E+00	NA	NA	NA	NA	5.36E-04	2.39E+02	1.28E-01	7.11E-02	1.09E-01	1.10E+00	5.23E+01	4.09E-01	4.01E+01	2.74E-02
BREOT-N20+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	5.92E+02	3.41E+00	NA	NA	NA	NA	5.36E-04	5.23E+02	2.80E-01	7.11E-02	1.09E-01	2.40E+00	5.23E+01	4.09E-01	4.01E+01	5.98E-02
BREOT-S20+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	3.72E+03	2.14E+01	NA	NA	NA	NA	5.36E-04	3.28E+03	1.76E+00	7.11E-02	1.09E-01	1.51E+01	5.23E+01	4.09E-01	4.01E+01	3.76E-01
BREOT-S20+75 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N21+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	3.56E+02	2.05E+00	NA	NA	NA	NA	5.36E-04	3.15E+02	1.69E-01	7.11E-02	1.09E-01	1.45E+00	5.23E+01	4.09E-01	4.01E+01	3.61E-02
BREOT-S21+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	9.97E+03	5.74E+01	NA	NA	NA	NA	5.36E-04	8.81E+03	4.72E+00	7.11E-02	1.09E-01	4.04E+01	5.23E+01	4.09E-01	4.01E+01	1.01E+00
BREOT-N22+150 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	2.76E+02	1.59E+00	NA	NA	NA	NA	5.36E-04	2.44E+02	1.31E-01	7.11E-02	1.09E-01	1.12E+00	5.23E+01	4.09E-01	4.01E+01	2.79E-02
BREOT-N22+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	5.44E+02	3.14E+00	NA	NA	NA	NA	5.36E-04	4.81E+02	2.58E-01	7.11E-02	1.09E-01	2.21E+00	5.23E+01	4.09E-01	4.01E+01	5.50E-02
BREOT-S22+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	2.19E+02	1.26E+00	NA	NA	NA	NA	5.36E-04	1.94E+02	1.04E-01	7.11E-02	1.09E-01	8.89E-01	5.23E+01	4.09E-01	4.01E+01	2.21E-02
BREOT-N23+115 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N23+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	1.43E+03	8.26E+00	NA	NA	NA	NA	5.36E-04	1.27E+03	6.79E-01	7.11E-02	1.09E-01	5.82E+00	5.23E+01	4.09E-01	4.01E+01	1.45E-01

TABLE C-2C: COPPER DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 18.41

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Mourning Dove (Herbivorous Birds - Terrestrial)																							
BREOT-S23+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	3.95E+02	2.27E+00	NA	NA	NA	NA	5.36E-04	3.49E+02	1.87E-01	7.11E-02	1.09E-01	1.60E+00	5.23E+01	4.09E-01	4.01E+01	3.99E-02
BREOT-S23+37.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	1.44E+02	8.28E-01	NA	NA	NA	NA	5.36E-04	1.27E+02	6.80E-02	7.11E-02	1.09E-01	5.83E-01	5.23E+01	4.09E-01	4.01E+01	1.45E-02
BREOT-N24+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	3.55E+02	2.04E+00	NA	NA	NA	NA	5.36E-04	3.13E+02	1.68E-01	7.11E-02	1.09E-01	1.44E+00	5.23E+01	4.09E-01	4.01E+01	3.59E-02
BREOT-N24+75 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	9.39E+01	5.41E-01	NA	NA	NA	NA	5.36E-04	8.30E+01	4.45E-02	7.11E-02	1.09E-01	3.81E-01	5.23E+01	4.09E-01	4.01E+01	9.50E-03
BREOT-S24+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	2.13E+02	1.22E+00	NA	NA	NA	NA	5.36E-04	1.88E+02	1.01E-01	7.11E-02	1.09E-01	8.63E-01	5.23E+01	4.09E-01	4.01E+01	2.15E-02
BREOT-N25+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	1.90E+02	1.09E+00	NA	NA	NA	NA	5.36E-04	1.68E+02	8.98E-02	7.11E-02	1.09E-01	7.70E-01	5.23E+01	4.09E-01	4.01E+01	1.92E-02
BREOT-S25+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	1.96E+02	1.13E+00	NA	NA	NA	NA	5.36E-04	1.74E+02	9.30E-02	7.11E-02	1.09E-01	7.97E-01	5.23E+01	4.09E-01	4.01E+01	1.99E-02
BREOT-S25+40 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	2.44E+02	1.41E+00	NA	NA	NA	NA	5.36E-04	2.16E+02	1.16E-01	7.11E-02	1.09E-01	9.91E-01	5.23E+01	4.09E-01	4.01E+01	2.47E-02
BREOT-S26+37 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	9.52E+01	5.49E-01	NA	NA	NA	NA	5.36E-04	8.42E+01	4.51E-02	7.11E-02	1.09E-01	3.87E-01	5.23E+01	4.09E-01	4.01E+01	9.63E-03
BREOT-N27+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	2.25E+02	1.29E+00	NA	NA	NA	NA	5.36E-04	1.98E+02	1.06E-01	7.11E-02	1.09E-01	9.11E-01	5.23E+01	4.09E-01	4.01E+01	2.27E-02
BREOT-S27+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	2.20E+02	1.26E+00	NA	NA	NA	NA	5.36E-04	1.94E+02	1.04E-01	7.11E-02	1.09E-01	8.91E-01	5.23E+01	4.09E-01	4.01E+01	2.22E-02
BREOT-N28+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S28+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	2.14E+02	1.23E+00	NA	NA	NA	NA	5.36E-04	1.89E+02	1.01E-01	7.11E-02	1.09E-01	8.69E-01	5.23E+01	4.09E-01	4.01E+01	2.17E-02
BREOT-N29+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	2.21E+02	1.27E+00	NA	NA	NA	NA	5.36E-04	1.95E+02	1.05E-01	7.11E-02	1.09E-01	8.96E-01	5.23E+01	4.09E-01	4.01E+01	2.23E-02
BREOT-S29+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	2.30E+02	1.33E+00	NA	NA	NA	NA	5.36E-04	2.03E+02	1.09E-01	7.11E-02	1.09E-01	9.34E-01	5.23E+01	4.09E-01	4.01E+01	2.33E-02
BREOT-N30+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	3.60E+02	2.07E+00	NA	NA	NA	NA	5.36E-04	3.18E+02	1.70E-01	7.11E-02	1.09E-01	1.46E+00	5.23E+01	4.09E-01	4.01E+01	3.64E-02
BREOT-S30+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	2.11E+02	1.21E+00	NA	NA	NA	NA	5.36E-04	1.86E+02	9.97E-02	7.11E-02	1.09E-01	8.55E-01	5.23E+01	4.09E-01	4.01E+01	2.13E-02
BREOT-N31+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	2.39E+03	1.38E+01	NA	NA	NA	NA	5.36E-04	2.11E+03	1.13E+00	7.11E-02	1.09E-01	9.71E+00	5.23E+01	4.09E-01	4.01E+01	2.42E-01
BREOT-N31+75 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	2.46E+02	1.41E+00	NA	NA	NA	NA	5.36E-04	2.17E+02	1.16E-01	7.11E-02	1.09E-01	9.97E-01	5.23E+01	4.09E-01	4.01E+01	2.48E-02
BREOT-S31+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	9.48E+01	5.46E-01	NA	NA	NA	NA	5.36E-04	8.37E+01	4.49E-02	7.11E-02	1.09E-01	3.85E-01	5.23E+01	4.09E-01	4.01E+01	9.58E-03
BREOT-N32+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	3.00E+02	1.73E+00	NA	NA	NA	NA	5.36E-04	2.65E+02	1.42E-01	7.11E-02	1.09E-01	1.22E+00	5.23E+01	4.09E-01	4.01E+01	3.03E-02
BREOT-S32+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	4.57E+02	2.63E+00	NA	NA	NA	NA	5.36E-04	4.04E+02	2.16E-01	7.11E-02	1.09E-01	1.85E+00	5.23E+01	4.09E-01	4.01E+01	4.62E-02
BREOT-S32+300 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	8.95E+02	5.16E+00	NA	NA	NA	NA	5.36E-04	7.91E+02	4.24E-01	7.11E-02	1.09E-01	3.63E+00	5.23E+01	4.09E-01	4.01E+01	9.05E-02
BREOT-N33+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	4.33E+02	2.50E+00	NA	NA	NA	NA	5.36E-04	3.83E+02	2.05E-01	7.11E-02	1.09E-01	1.76E+00	5.23E+01	4.09E-01	4.01E+01	4.38E-02
BREOT-S33+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	1.01E+03	5.80E+00	NA	NA	NA	NA	5.36E-04	8.90E+02	4.77E-01	7.11E-02	1.09E-01	4.09E+00	5.23E+01	4.09E-01	4.01E+01	1.02E-01
BREOT-N34+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	4.09E+02	2.36E+00	NA	NA	NA	NA	5.36E-04	3.61E+02	1.94E-01	7.11E-02	1.09E-01	1.66E+00	5.23E+01	4.09E-01	4.01E+01	4.14E-02
BREOT-S34+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	4.62E+02	2.66E+00	NA	NA	NA	NA	5.36E-04	4.08E+02	2.19E-01	7.11E-02	1.09E-01	1.87E+00	5.23E+01	4.09E-01	4.01E+01	4.67E-02
BREOT-N35+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	3.23E+02	1.86E+00	NA	NA	NA	NA	5.36E-04	2.86E+02	1.53E-01	7.11E-02	1.09E-01	1.31E+00	5.23E+01	4.09E-01	4.01E+01	3.27E-02
BREOT-S35+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	9.85E+02	5.67E+00	NA	NA	NA	NA	5.36E-04	8.70E+02	4.66E-01	7.11E-02	1.09E-01	4.00E+00	5.23E+01	4.09E-01	4.01E+01	9.96E-02
BREOT-N36+100 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	1.79E+02	1.03E+00	NA	NA	NA	NA	5.36E-04	1.58E+02	8.47E-02	7.11E-02	1.09E-01	7.26E-01	5.23E+01	4.09E-01	4.01E+01	1.81E-02
BREOT-N36+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	6.17E+02	3.55E+00	NA	NA	NA	NA	5.36E-04	5.45E+02	2.92E-01	7.11E-02	1.09E-01	2.50E+00	5.23E+01	4.09E-01	4.01E+01	6.24E-02
BREOT-S36+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	9.07E+02	5.23E+00	NA	NA	NA	NA	5.36E-04	8.02E+02	4.30E-01	7.11E-02	1.09E-01	3.68E+00	5.23E+01	4.09E-01	4.01E+01	9.18E-02
BREOT-N37+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	2.02E+02	1.16E+00	NA	NA	NA	NA	5.36E-04	1.78E+02	9.56E-02	7.11E-02	1.09E-01	8.20E-01	5.23E+01	4.09E-01	4.01E+01	2.04E-02
BREOT-S37+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	1.25E+03	7.20E+00	NA	NA	NA	NA	5.36E-04	1.10E+03	5.91E-01	7.11E-02	1.09E-01	5.07E+00	5.23E+01	4.09E-01	4.01E+01	1.26E-01
BREOT-N38+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	4.85E+02	2.80E+00	NA	NA	NA	NA	5.36E-04	4.29E+02	2.30E-01	7.11E-02	1.09E-01	1.97E+00	5.23E+01	4.09E-01	4.01E+01	4.91E-02
BREOT-S38+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	1.19E+03	6.84E+00	NA	NA	NA	NA	5.36E-04	1.05E+03	5.63E-01	7.11E-02	1.09E-01	4.82E+00	5.23E+01	4.09E-01	4.01E+01	1.20E-01
BREOT-N39+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	1.79E+02	1.03E+00	NA	NA	NA	NA	5.36E-04	1.58E+02	8.46E-02	7.11E-02	1.09E-01	7.25E-01	5.23E+01	4.09E-01	4.01E+01	1.81E-02
BREOT-S39+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	9.94E+02	5.73E+00	NA	NA	NA	NA	5.36E-04	8.78E+02	4.71E-01	7.11E-02	1.09E-01	4.03E+00	5.23E+01	4.09E-01	4.01E+01	1.01E-01
BREOT-N40+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	2.60E+02	1.50E+00	NA	NA	NA	NA	5.36E-04	2.30E+02	1.23E-01	7.11E-02	1.09E-01	1.06E+00	5.23E+01	4.09E-01	4.01E+01	2.63E-02
BREOT-S40+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	9.25E+02	5.33E+00	NA	NA	NA	NA	5.36E-04	8.17E+02	4.38E-01	7.11E-02	1.09E-01	3.75E+00	5.23E+01	4.09E-01	4.01E+01	9.35E-02
BREOT-N41+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	1.03E+02	5.93E-01	NA	NA	NA	NA	5.36E-04	9.10E+01	4.88E-02	7.11E-02	1.09E-01	4.18E-01	5.23E+01	4.09E-01	4.01E+01	1.04E-02
BREOT-S41+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	3.58E+02	2.06E+00	NA	NA	NA	NA	5.36E-04	3.16E+02	1.69E-01	7.11E-02	1.09E-01	1.45E+00	5.23E+01	4.09E-01	4.01E+01	3.62E-02
BREOT-N42+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S42+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	5.46E+02	3.14E+00	NA	NA	NA	NA	5.36E-04	4.82E+02	2.58E-01	7.11E-02	1.09E-01	2.21E+00	5.23E+01	4.09E-01	4.01E+01	5.52E-02
BREOT-N43+12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	1.72E+02	9.94E-01	NA	NA	NA	NA	5.36E-04	1.52E+02	8.17E-02	7.11E-02	1.09E-01	7.00E-01	5.23E+01	4.09E-01	4.01E+01	1.74E-02
BREOT-N43+40 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	9.02E+01	5.20E-01	NA	NA	NA	NA	5.36E-04	7.97E+01	4.27E-02	7.11E-02	1.09E-01	3.66E-01	5.23E+01	4.09E-01	4.01E+01	9.12E-03
BREOT-S43+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	2.23E+02	1.28E+00	NA	NA	NA	NA	5.36E-04	1.97E+02	1.06E-01	7.11E-02	1.09E-01	9.04E-01	5.23E+01	4.09E-01	4.01E+01	2.25E-02
BREOT-N44+55 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	2.11E+02	1.22E+00	NA	NA	NA	NA	5.36E-04	1.86E+02	9.99E-02	7.11E-02	1.09E-01	8.56E-01	5.23E+01	4.09E-01	4.01E+01	2.13E-02
BREOT-S44+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N45+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	9.72E+01	5.60E-01	NA	NA	NA	NA	5.36E-04	8.59E+01	4.60E-02	7.11E-02	1.09E-01	3.94E-01	5.23E+01	4.09E-01	4.01E+01	9.83E-03
BREOT-S45+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N46+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	3.80E+02	2.19E+00	NA	NA	NA	NA	5.36E-04	3.36E+02	1.80E-01	7.11E-02	1.09E-01	1.54E+00	5.23E+01	4.09E-01	4.01E+01	3.85E-02
BREOT-S46+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	1.73E+02	9.99E-01	NA	NA	NA	NA	5.36E-04	1.53E+02	8.21E-02	7.11E-02	1.09E-01	7.04E-01	5.23E+01	4.09E-01	4.01E+01	1.75E-02
BREOT-N47+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	2.87E+02	1.65E+00	NA	NA	NA	NA	5.36E-04	2.53E+02	1.36E-01	7.11E-02	1.09E-01	1.16E+00	5.23E+01	4.09E-01	4.01E+01	2.90E-02
BREOT-S47+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB

TABLE C-2C: COPPER DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

Site Area (hectares) **18.41**

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Mourning Dove (Herbivorous Birds - Terrestrial)																							
BREOT-N48+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	9.01E+01	5.19E-01	NA	NA	NA	NA	5.36E-04	7.96E+01	4.27E-02	7.11E-02	1.09E-01	3.66E-01	5.23E+01	4.09E-01	4.01E+01	9.11E-03
BREOT-S48+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	9.92E+01	5.72E-01	NA	NA	NA	NA	5.36E-04	8.77E+01	4.70E-02	7.11E-02	1.09E-01	4.03E-01	5.23E+01	4.09E-01	4.01E+01	1.00E-02
BREOT-N49+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	1.17E+02	6.75E-01	NA	NA	NA	NA	5.36E-04	1.03E+02	5.54E-02	7.11E-02	1.09E-01	4.75E-01	5.23E+01	4.09E-01	4.01E+01	1.18E-02
BREOT-S49+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N51+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	1.04E+02	5.97E-01	NA	NA	NA	NA	5.36E-04	9.15E+01	4.90E-02	7.11E-02	1.09E-01	4.20E-01	5.23E+01	4.09E-01	4.01E+01	1.05E-02
BREOT-S51+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N52+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	1.30E+02	7.50E-01	NA	NA	NA	NA	5.36E-04	1.15E+02	6.16E-02	7.11E-02	1.09E-01	5.28E-01	5.23E+01	4.09E-01	4.01E+01	1.32E-02
BREOT-S52+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N53+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	1.26E+02	7.27E-01	NA	NA	NA	NA	5.36E-04	1.12E+02	5.98E-02	7.11E-02	1.09E-01	5.12E-01	5.23E+01	4.09E-01	4.01E+01	1.28E-02
BREOT-S53+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S54+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N55+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S55+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	1.00E+02	5.77E-01	NA	NA	NA	NA	5.36E-04	8.85E+01	4.74E-02	7.11E-02	1.09E-01	4.06E-01	5.23E+01	4.09E-01	4.01E+01	1.01E-02
BREOT-N56+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S56+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	2.28E+02	1.31E+00	NA	NA	NA	NA	5.36E-04	2.01E+02	1.08E-01	7.11E-02	1.09E-01	9.25E-01	5.23E+01	4.09E-01	4.01E+01	2.30E-02
BREOT-N57+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S57+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	1.59E+02	9.18E-01	NA	NA	NA	NA	5.36E-04	1.41E+02	7.54E-02	7.11E-02	1.09E-01	6.47E-01	5.23E+01	4.09E-01	4.01E+01	1.61E-02
BREOT-N58+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	9.20E+01	5.30E-01	NA	NA	NA	NA	5.36E-04	8.13E+01	4.35E-02	7.11E-02	1.09E-01	3.73E-01	5.23E+01	4.09E-01	4.01E+01	9.30E-03
BREOT-S58+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	1.76E+02	1.02E+00	NA	NA	NA	NA	5.36E-04	1.56E+02	8.34E-02	7.11E-02	1.09E-01	7.15E-01	5.23E+01	4.09E-01	4.01E+01	1.78E-02
BREOT-N59+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	1.26E+02	7.24E-01	NA	NA	NA	NA	5.36E-04	1.11E+02	5.95E-02	7.11E-02	1.09E-01	5.10E-01	5.23E+01	4.09E-01	4.01E+01	1.27E-02
BREOT-N60+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S60+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	2.27E+02	1.31E+00	NA	NA	NA	NA	5.36E-04	2.01E+02	1.08E-01	7.11E-02	1.09E-01	9.23E-01	5.23E+01	4.09E-01	4.01E+01	2.30E-02
BREOT-S61+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	1.83E+02	1.06E+00	NA	NA	NA	NA	5.36E-04	1.62E+02	8.69E-02	7.11E-02	1.09E-01	7.45E-01	5.23E+01	4.09E-01	4.01E+01	1.86E-02
BREOT-N62+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	1.21E+02	6.99E-01	NA	NA	NA	NA	5.36E-04	1.07E+02	5.74E-02	7.11E-02	1.09E-01	4.92E-01	5.23E+01	4.09E-01	4.01E+01	1.23E-02
BREOT-S62+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N63+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	2.99E+02	1.72E+00	NA	NA	NA	NA	5.36E-04	2.64E+02	1.41E-01	7.11E-02	1.09E-01	1.21E+00	5.23E+01	4.09E-01	4.01E+01	3.02E-02
BREOT-S63+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	1.11E+02	6.38E-01	NA	NA	NA	NA	5.36E-04	9.79E+01	5.24E-02	7.11E-02	1.09E-01	4.49E-01	5.23E+01	4.09E-01	4.01E+01	1.12E-02
BREOT-N64+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	1.12E+02	6.47E-01	NA	NA	NA	NA	5.36E-04	9.92E+01	5.31E-02	7.11E-02	1.09E-01	4.55E-01	5.23E+01	4.09E-01	4.01E+01	1.13E-02
BREOT-S64+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	3.28E+02	1.89E+00	NA	NA	NA	NA	5.36E-04	2.89E+02	1.55E-01	7.11E-02	1.09E-01	1.33E+00	5.23E+01	4.09E-01	4.01E+01	3.31E-02
BREOT-S65+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	3.04E+02	1.75E+00	NA	NA	NA	NA	5.36E-04	2.69E+02	1.44E-01	7.11E-02	1.09E-01	1.23E+00	5.23E+01	4.09E-01	4.01E+01	3.08E-02
BREOT-N66+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S66+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	3.03E+02	1.74E+00	NA	NA	NA	NA	5.36E-04	2.67E+02	1.43E-01	7.11E-02	1.09E-01	1.23E+00	5.23E+01	4.09E-01	4.01E+01	3.06E-02
BREOT-N67+125 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	1.67E+02	9.65E-01	NA	NA	NA	NA	5.36E-04	1.48E+02	7.93E-02	7.11E-02	1.09E-01	6.80E-01	5.23E+01	4.09E-01	4.01E+01	1.69E-02
BREOT-S67+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	3.45E+02	1.99E+00	NA	NA	NA	NA	5.36E-04	3.05E+02	1.64E-01	7.11E-02	1.09E-01	1.40E+00	5.23E+01	4.09E-01	4.01E+01	3.49E-02
BREOT-N67+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	1.99E+02	1.15E+00	NA	NA	NA	NA	5.36E-04	1.76E+02	9.44E-02	7.11E-02	1.09E-01	8.09E-01	5.23E+01	4.09E-01	4.01E+01	2.02E-02
																						Maximum HQ (Outside Tailings)	**1.01E+00**
Red-Tailed Hawk (Carnivorous Birds - Terrestrial)																							
Reference Sites																							
ACBG-1 (0-6")	9.00E-02	9.00E-02	6.61E-01	5.26E+01	4.73E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	7.96E+01	4.08E-01	2.64E-02	1.13E+00	1.20E-01	5.23E+01	4.09E-01	6.41E+01	1.87E-03
ACBG-2 (0-6")	9.00E-02	9.00E-02	6.61E-01	1.65E+02	1.49E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.50E+02	1.28E+00	2.64E-02	1.13E+00	3.76E-01	5.23E+01	4.09E-01	6.41E+01	5.87E-03
UBRBG-202 (0-6")	9.00E-02	9.00E-02	6.61E-01	1.44E+02	1.30E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.18E+02	1.12E+00	2.64E-02	1.13E+00	3.29E-01	5.23E+01	4.09E-01	6.41E+01	5.13E-03
UBRBG-204 (0-6")	9.00E-02	9.00E-02	6.61E-01	6.89E+01	6.20E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.04E+02	5.35E-01	2.64E-02	1.13E+00	1.57E-01	5.23E+01	4.09E-01	6.41E+01	2.45E-03
Inside Tailings																						**Minimum HQ (Reference Sites)**	**1.87E-03**
BREOT-S6-12.5 (0-6")	9.00E-02	9.00E-02	1.01E+00	2.46E+02	2.21E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.44E+02	1.25E+00	2.64E-02	1.13E+00	5.45E-01	5.23E+01	4.09E-01	6.41E+01	8.51E-03
BREOT-S2-12.5 (0-6")	9.00E-02	9.00E-02	1.01E+00	7.39E+02	6.65E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	7.32E+02	3.75E+00	2.64E-02	1.13E+00	1.64E+00	5.23E+01	4.09E-01	6.41E+01	2.55E-02
BREOT-S0-12.5 (0-6")	9.00E-02	9.00E-02	1.01E+00	1.40E+02	1.26E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.38E+02	7.10E-01	2.64E-02	1.13E+00	3.10E-01	5.23E+01	4.09E-01	6.41E+01	4.83E-03
BREOT-S1-12.5 (0-6")	9.00E-02	9.00E-02	1.01E+00	1.10E+02	9.88E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.09E+02	5.57E-01	2.64E-02	1.13E+00	2.43E-01	5.23E+01	4.09E-01	6.41E+01	3.79E-03
BREOT-S7-25 (0-6")	9.00E-02	9.00E-02	1.01E+00	1.94E+02	1.74E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.92E+02	9.83E-01	2.64E-02	1.13E+00	4.29E-01	5.23E+01	4.09E-01	6.41E+01	6.69E-03
BREOT-S8-12.5 (0-6")	9.00E-02	9.00E-02	1.01E+00	1.63E+02	1.47E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.61E+02	8.28E-01	2.64E-02	1.13E+00	3.61E-01	5.23E+01	4.09E-01	6.41E+01	5.64E-03
BREOT-S9-12.5 (0-6")	9.00E-02	9.00E-02	1.01E+00	2.19E+02	1.97E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.16E+02	1.11E+00	2.64E-02	1.13E+00	4.84E-01	5.23E+01	4.09E-01	6.41E+01	7.56E-03
BREOT-N10-12.5 (0-6")	9.00E-02	9.00E-02	1.01E+00	1.59E+03	1.43E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.57E+03	8.05E+00	2.64E-02	1.13E+00	3.51E+00	5.23E+01	4.09E-01	6.41E+01	5.48E-02
BREOT-N11-12.5 (0-6")	9.00E-02	9.00E-02	1.01E+00	2.25E+02	2.03E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.23E+02	1.14E+00	2.64E-02	1.13E+00	4.99E-01	5.23E+01	4.09E-01	6.41E+01	7.78E-03
BREOT-N11-125 (0-6")	9.00E-02	9.00E-02	1.01E+00	1.69E+02	1.52E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.67E+02	8.55E-01	2.64E-02	1.13E+00	3.73E-01	5.23E+01	4.09E-01	6.41E+01	5.82E-03
BREOT-S11-12 (0-6")	9.00E-02	9.00E-02	1.01E+00	1.11E+03	9.97E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.10E+03	5.62E+00	2.64E-02	1.13E+00	2.45E+00	5.23E+01	4.09E-01	6.41E+01	3.83E-02
BREOT-S11+63 (0-6")	9.00E-02	9.00E-02	1.01E+00	2.55E+02	2.29E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.52E+02	1.29E+00	2.64E-02	1.13E+00	5.64E-01	5.23E+01	4.09E-01	6.41E+01	8.80E-03
UBDT-TP-6 (0-2")	9.00E-02	9.00E-02	1.01E+00	2.53E+03	2.28E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.51E+03	1.29E+01	2.64E-02	1.13E+00	5.61E+00	5.23E+01	4.09E-01	6.41E+01	8.75E-02
UBDT-TP-6 (2-12")	9.00E-02	9.00E-02	1.01E+00	1.99E+03	1.79E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.97E+03	1.01E+01	2.64E-02	1.13E+00	4.41E+00	5.23E+01	4.09E-01	6.41E+01	6.88E-02

TABLE C-2C: COPPER DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **18.41**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Red-Tailed Hawk (Carnivorous Birds - Terrestrial)																							
UBDT-TP-6 (12-24")	9.00E-02	9.00E-02	1.01E+00	3.76E+03	3.38E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.72E+03	1.91E+01	2.64E-02	1.13E+00	8.32E+00	5.23E+01	4.09E-01	6.41E+01	1.30E-01
UBDT-TP-6 (24-36")	9.00E-02	9.00E-02	1.01E+00	2.17E+02	1.96E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.15E+02	1.10E+00	2.64E-02	1.13E+00	4.81E-01	5.23E+01	4.09E-01	6.41E+01	7.51E-03
UBDT-TP-6 (36-48")	9.00E-02	9.00E-02	1.01E+00	1.59E+03	1.43E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.58E+03	8.09E+00	2.64E-02	1.13E+00	3.53E+00	5.23E+01	4.09E-01	6.41E+01	5.51E-02
UBDT-TP-6 (48-60")	9.00E-02	9.00E-02	1.01E+00	9.22E+02	8.29E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	9.13E+02	4.68E+00	2.64E-02	1.13E+00	2.04E+00	5.23E+01	4.09E-01	6.41E+01	3.19E-02
BREOT-N12-12.5 (0-6")	9.00E-02	9.00E-02	1.01E+00	2.95E+02	2.66E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.92E+02	1.50E+00	2.64E-02	1.13E+00	6.54E-01	5.23E+01	4.09E-01	6.41E+01	1.02E-02
BREOT-S12-12.5 (0-6")	9.00E-02	9.00E-02	1.01E+00	5.27E+02	4.74E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.21E+02	2.67E+00	2.64E-02	1.13E+00	1.17E+00	5.23E+01	4.09E-01	6.41E+01	1.82E-02
BREOT-S13-12.5 (0-6")	9.00E-02	9.00E-02	1.01E+00	1.02E+03	9.15E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.01E+03	5.16E+00	2.64E-02	1.13E+00	2.25E+00	5.23E+01	4.09E-01	6.41E+01	3.52E-02
BREOT-S14-12.5 (0-6")	9.00E-02	9.00E-02	1.01E+00	4.13E+02	3.72E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.09E+02	2.10E+00	2.64E-02	1.13E+00	9.15E-01	5.23E+01	4.09E-01	6.41E+01	1.43E-02
BREOT-N15-12.5 (0-6")	9.00E-02	9.00E-02	1.01E+00	2.92E+02	2.63E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.89E+02	1.48E+00	2.64E-02	1.13E+00	6.47E-01	5.23E+01	4.09E-01	6.41E+01	1.01E-02
BREOT-S15-12.5 (0-6")	9.00E-02	9.00E-02	1.01E+00	3.19E+02	2.87E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.16E+02	1.62E+00	2.64E-02	1.13E+00	7.06E-01	5.23E+01	4.09E-01	6.41E+01	1.10E-02
BREOT-N16-12.5 (0-6")	9.00E-02	9.00E-02	1.01E+00	3.75E+02	3.37E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.71E+02	1.90E+00	2.64E-02	1.13E+00	8.30E-01	5.23E+01	4.09E-01	6.41E+01	1.29E-02
BREOT-N16-25 (0-6")	9.00E-02	9.00E-02	1.01E+00	2.07E+02	1.87E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.05E+02	1.05E+00	2.64E-02	1.13E+00	4.59E-01	5.23E+01	4.09E-01	6.41E+01	7.17E-03
BREOT-S16-12.5 (0-6")	9.00E-02	9.00E-02	1.01E+00	1.55E+02	1.40E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.54E+02	7.88E-01	2.64E-02	1.13E+00	3.44E-01	5.23E+01	4.09E-01	6.41E+01	5.37E-03
BREOT-N17-12.5 (0-6")	9.00E-02	9.00E-02	1.01E+00	1.59E+02	1.43E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.57E+02	8.07E-01	2.64E-02	1.13E+00	3.52E-01	5.23E+01	4.09E-01	6.41E+01	5.49E-03
BREOT-S17-12.5 (0-6")	9.00E-02	9.00E-02	1.01E+00	1.38E+02	1.24E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.37E+02	7.02E-01	2.64E-02	1.13E+00	3.06E-01	5.23E+01	4.09E-01	6.41E+01	4.78E-03
BREOT-S17-25 (0-6")	9.00E-02	9.00E-02	1.01E+00	9.98E+01	8.98E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	9.88E+01	5.07E-01	2.64E-02	1.13E+00	2.21E-01	5.23E+01	4.09E-01	6.41E+01	3.45E-03
UBDT-TP-4 (0-2")	9.00E-02	9.00E-02	1.01E+00	3.49E+02	3.14E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.45E+02	1.77E+00	2.64E-02	1.13E+00	7.72E-01	5.23E+01	4.09E-01	6.41E+01	1.20E-02
UBDT-TP-4 (2-12")	9.00E-02	9.00E-02	1.01E+00	3.18E+02	2.86E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.15E+02	1.61E+00	2.64E-02	1.13E+00	7.04E-01	5.23E+01	4.09E-01	6.41E+01	1.10E-02
UBDT-TP-4 (12-24")	9.00E-02	9.00E-02	1.01E+00	3.07E+02	2.76E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.04E+02	1.56E+00	2.64E-02	1.13E+00	6.79E-01	5.23E+01	4.09E-01	6.41E+01	1.06E-02
UBDT-TP-4 (24-36")	9.00E-02	9.00E-02	1.01E+00	1.67E+02	1.51E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.66E+02	8.49E-01	2.64E-02	1.13E+00	3.71E-01	5.23E+01	4.09E-01	6.41E+01	5.78E-03
BREOT-N18-12.5 (0-6")	9.00E-02	9.00E-02	1.01E+00	4.55E+02	4.09E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.50E+02	2.31E+00	2.64E-02	1.13E+00	1.01E+00	5.23E+01	4.09E-01	6.41E+01	1.57E-02
BREOT-N18-25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S18-12.5 (0-6")	9.00E-02	9.00E-02	1.01E+00	2.22E+02	2.00E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.20E+02	1.13E+00	2.64E-02	1.13E+00	4.92E-01	5.23E+01	4.09E-01	6.41E+01	7.68E-03
BREOT-N19-10 (0-6")	9.00E-02	9.00E-02	1.01E+00	2.40E+02	2.16E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.38E+02	1.22E+00	2.64E-02	1.13E+00	5.31E-01	5.23E+01	4.09E-01	6.41E+01	8.29E-03
BREOT-S19-12.5 (0-6")	9.00E-02	9.00E-02	1.01E+00	2.59E+02	2.33E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.56E+02	1.31E+00	2.64E-02	1.13E+00	5.73E-01	5.23E+01	4.09E-01	6.41E+01	8.94E-03
UBDT-TP-5 (0-2")	9.00E-02	9.00E-02	1.01E+00	4.15E+02	3.73E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.11E+02	2.11E+00	2.64E-02	1.13E+00	9.19E-01	5.23E+01	4.09E-01	6.41E+01	1.43E-02
UBDT-TP-5 (2-12")	9.00E-02	9.00E-02	1.01E+00	3.29E+02	2.96E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.25E+02	1.67E+00	2.64E-02	1.13E+00	7.28E-01	5.23E+01	4.09E-01	6.41E+01	1.14E-02
UBDT-TP-5 (12-24")	9.00E-02	9.00E-02	1.01E+00	3.49E+02	3.14E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.45E+02	1.77E+00	2.64E-02	1.13E+00	7.72E-01	5.23E+01	4.09E-01	6.41E+01	1.20E-02
BREOT-N20-12.5 (0-6")	9.00E-02	9.00E-02	1.01E+00	1.72E+02	1.54E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.70E+02	8.71E-01	2.64E-02	1.13E+00	3.80E-01	5.23E+01	4.09E-01	6.41E+01	5.93E-03
UBDT-TP-3 (0-2")	9.00E-02	9.00E-02	1.01E+00	2.86E+02	2.57E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.83E+02	1.45E+00	2.64E-02	1.13E+00	6.33E-01	5.23E+01	4.09E-01	6.41E+01	9.88E-03
UBDT-TP-3 (2-12")	9.00E-02	9.00E-02	1.01E+00	1.93E+02	1.73E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.91E+02	9.78E-01	2.64E-02	1.13E+00	4.26E-01	5.23E+01	4.09E-01	6.41E+01	6.66E-03
UBDT-TP-3 (12-24")	9.00E-02	9.00E-02	1.01E+00	2.10E+02	1.89E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.08E+02	1.07E+00	2.64E-02	1.13E+00	4.66E-01	5.23E+01	4.09E-01	6.41E+01	7.27E-03
UBDT-TP-3 (24-36")	9.00E-02	9.00E-02	1.01E+00	2.27E+02	2.04E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.24E+02	1.15E+00	2.64E-02	1.13E+00	5.02E-01	5.23E+01	4.09E-01	6.41E+01	7.83E-03
UBDT-TP-3 (36-48")	9.00E-02	9.00E-02	1.01E+00	3.54E+02	3.18E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.50E+02	1.80E+00	2.64E-02	1.13E+00	7.83E-01	5.23E+01	4.09E-01	6.41E+01	1.22E-02
UBDT-TP-3 (48-60")	9.00E-02	9.00E-02	1.01E+00	1.86E+02	1.67E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.84E+02	9.44E-01	2.64E-02	1.13E+00	4.12E-01	5.23E+01	4.09E-01	6.41E+01	6.43E-03
BREOT-N21-12.5 (0-6")	9.00E-02	9.00E-02	1.01E+00	2.87E+02	2.58E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.84E+02	1.45E+00	2.64E-02	1.13E+00	6.34E-01	5.23E+01	4.09E-01	6.41E+01	9.90E-03
BREOT-N22-12.5 (0-6")	9.00E-02	9.00E-02	1.01E+00	2.08E+02	1.88E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.06E+02	1.06E+00	2.64E-02	1.13E+00	4.62E-01	5.23E+01	4.09E-01	6.41E+01	7.20E-03
BREOT-N23-12.5 (0-6")	9.00E-02	9.00E-02	1.01E+00	2.36E+02	2.13E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.34E+02	1.20E+00	2.64E-02	1.13E+00	5.24E-01	5.23E+01	4.09E-01	6.41E+01	8.17E-03
BREOT-S23-12.5 (0-6")	9.00E-02	9.00E-02	1.01E+00	8.03E+02	7.23E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	7.95E+02	4.08E+00	2.64E-02	1.13E+00	1.78E+00	5.23E+01	4.09E-01	6.41E+01	2.78E-02
UBDT-TP-2 (0-2")	9.00E-02	9.00E-02	1.01E+00	4.53E+02	4.07E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.48E+02	2.30E+00	2.64E-02	1.13E+00	1.00E+00	5.23E+01	4.09E-01	6.41E+01	1.56E-02
UBDT-TP-2 (2-12")	9.00E-02	9.00E-02	1.01E+00	4.53E+02	4.08E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.49E+02	2.30E+00	2.64E-02	1.13E+00	1.00E+00	5.23E+01	4.09E-01	6.41E+01	1.57E-02
UBDT-TP-2 (12-24")	9.00E-02	9.00E-02	1.01E+00	3.10E+02	2.79E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.07E+02	1.57E+00	2.64E-02	1.13E+00	6.87E-01	5.23E+01	4.09E-01	6.41E+01	1.07E-02
UBDT-TP-2 (24-36")	9.00E-02	9.00E-02	1.01E+00	1.88E+02	1.70E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.87E+02	9.57E-01	2.64E-02	1.13E+00	4.17E-01	5.23E+01	4.09E-01	6.41E+01	6.51E-03
UBDT-TP-2 (36-48")	9.00E-02	9.00E-02	1.01E+00	2.48E+02	2.23E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.46E+02	1.26E+00	2.64E-02	1.13E+00	5.50E-01	5.23E+01	4.09E-01	6.41E+01	8.58E-03
BREOT-S24-12.5 (0-6")	9.00E-02	9.00E-02	1.01E+00	6.84E+02	6.15E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	6.77E+02	3.47E+00	2.64E-02	1.13E+00	1.51E+00	5.23E+01	4.09E-01	6.41E+01	2.36E-02
BREOT-N25-50 (0-6")	9.00E-02	9.00E-02	1.01E+00	1.64E+03	1.47E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.62E+03	8.30E+00	2.64E-02	1.13E+00	3.62E+00	5.23E+01	4.09E-01	6.41E+01	5.65E-02
BREOT-N25-95 (0-6")	9.00E-02	9.00E-02	1.01E+00	1.09E+02	9.77E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.08E+02	5.51E-01	2.64E-02	1.13E+00	2.40E-01	5.23E+01	4.09E-01	6.41E+01	3.75E-03
BREOT-S25-12.5 (0-6")	9.00E-02	9.00E-02	1.01E+00	3.93E+02	3.54E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.89E+02	1.99E+00	2.64E-02	1.13E+00	8.70E-01	5.23E+01	4.09E-01	6.41E+01	1.36E-02
BREOT-S25-40 (0-6")	9.00E-02	9.00E-02	1.01E+00	1.70E+02	1.53E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.68E+02	8.60E-01	2.64E-02	1.13E+00	3.75E-01	5.23E+01	4.09E-01	6.41E+01	5.86E-03
BREOT-N26A-25 (0-6")	9.00E-02	9.00E-02	1.01E+00	1.01E+02	9.05E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	9.96E+01	5.11E-01	2.64E-02	1.13E+00	2.23E-01	5.23E+01	4.09E-01	6.41E+01	3.48E-03
BREOT-N26B-25 (0-6")	9.00E-02	9.00E-02	1.01E+00	7.42E+02	6.68E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	7.35E+02	3.77E+00	2.64E-02	1.13E+00	1.64E+00	5.23E+01	4.09E-01	6.41E+01	2.56E-02
BREOT-N26-50 (0-6")	9.00E-02	9.00E-02	1.01E+00	1.26E+03	1.13E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.25E+03	6.39E+00	2.64E-02	1.13E+00	2.79E+00	5.23E+01	4.09E-01	6.41E+01	4.35E-02
BREOT-N26-75 (0-6")	9.00E-02	9.00E-02	1.01E+00	1.05E+03	9.41E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.04E+03	5.31E+00	2.64E-02	1.13E+00	2.32E+00	5.23E+01	4.09E-01	6.41E+01	3.62E-02
BREOT-S26-12.5 (0-6")	9.00E-02	9.00E-02	1.01E+00	1.21E+02	1.09E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.20E+02	6.15E-01	2.64E-02	1.13E+00	2.68E-01	5.23E+01	4.09E-01	6.41E+01	4.19E-03
BREOT-S26-40 (0-6")	9.00E-02	9.00E-02	1.01E+00	4.13E+02	3.71E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.08E+02	2.09E+00	2.64E-02	1.13E+00	9.14E-01	5.23E+01	4.09E-01	6.41E+01	1.43E-02

TABLE C-2C: COPPER DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **18.41**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Red-Tailed Hawk (Carnivorous Birds - Terrestrial)																							
BREOT-N27-30 (0-6")	9.00E-02	9.00E-02	1.01E+00	1.24E+03	1.12E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.23E+03	6.31E+00	2.64E-02	1.13E+00	2.75E+00	5.23E+01	4.09E-01	6.41E+01	4.29E-02
BREOT-N27-75 (0-6")	9.00E-02	9.00E-02	1.01E+00	2.19E+03	1.97E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.17E+03	1.11E+01	2.64E-02	1.13E+00	4.85E+00	5.23E+01	4.09E-01	6.41E+01	7.57E-02
BREOT-S27-12.5 (0-6")	9.00E-02	9.00E-02	1.01E+00	3.19E+02	2.87E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.16E+02	1.62E+00	2.64E-02	1.13E+00	7.06E-01	5.23E+01	4.09E-01	6.41E+01	1.10E-02
BREOT-N28-110 (0-6")	9.00E-02	9.00E-02	1.01E+00	5.14E+02	4.63E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.09E+02	2.61E+00	2.64E-02	1.13E+00	1.14E+00	5.23E+01	4.09E-01	6.41E+01	1.78E-02
BREOT-N28-55 (0-6")	9.00E-02	9.00E-02	1.01E+00	2.98E+03	2.68E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.95E+03	1.51E+01	2.64E-02	1.13E+00	6.60E+00	5.23E+01	4.09E-01	6.41E+01	1.03E-01
BREOT-S28-12.5 (0-6")	9.00E-02	9.00E-02	1.01E+00	4.33E+02	3.90E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.29E+02	2.20E+00	2.64E-02	1.13E+00	9.59E-01	5.23E+01	4.09E-01	6.41E+01	1.50E-02
UBDT-TP-1 (0-2")	9.00E-02	9.00E-02	1.01E+00	9.91E+02	8.91E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	9.81E+02	5.03E+00	2.64E-02	1.13E+00	2.19E+00	5.23E+01	4.09E-01	6.41E+01	3.42E-02
UBDT-TP-1 (2-12")	9.00E-02	9.00E-02	1.01E+00	2.03E+03	1.83E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.01E+03	1.03E+01	2.64E-02	1.13E+00	4.50E+00	5.23E+01	4.09E-01	6.41E+01	7.02E-02
UBDT-TP-1 (12-24")	9.00E-02	9.00E-02	1.01E+00	1.84E+03	1.65E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.82E+03	9.33E+00	2.64E-02	1.13E+00	4.07E+00	5.23E+01	4.09E-01	6.41E+01	6.35E-02
UBDT-TP-1 (24-36")	9.00E-02	9.00E-02	1.01E+00	1.36E+03	1.22E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.34E+03	6.89E+00	2.64E-02	1.13E+00	3.01E+00	5.23E+01	4.09E-01	6.41E+01	4.69E-02
UBDT-TP-1 (36-48")	9.00E-02	9.00E-02	1.01E+00	2.95E+02	2.65E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.92E+02	1.49E+00	2.64E-02	1.13E+00	6.52E-01	5.23E+01	4.09E-01	6.41E+01	1.02E-02
UBDT-TP-1 (48-60")	9.00E-02	9.00E-02	1.01E+00	1.86E+02	1.67E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.84E+02	9.42E-01	2.64E-02	1.13E+00	4.11E-01	5.23E+01	4.09E-01	6.41E+01	6.41E-03
BREOT-N29-30 (0-6")	9.00E-02	9.00E-02	1.01E+00	2.50E+03	2.25E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.47E+03	1.27E+01	2.64E-02	1.13E+00	5.53E+00	5.23E+01	4.09E-01	6.41E+01	8.63E-02
BREOT-S29-12.5 (0-6")	9.00E-02	9.00E-02	1.01E+00	4.06E+02	3.65E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.02E+02	2.06E+00	2.64E-02	1.13E+00	8.99E-01	5.23E+01	4.09E-01	6.41E+01	1.40E-02
BREOT-N30-12.5 (0-6")	9.00E-02	9.00E-02	1.01E+00	4.57E+02	4.11E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.52E+02	2.32E+00	2.64E-02	1.13E+00	1.01E+00	5.23E+01	4.09E-01	6.41E+01	1.58E-02
BREOT-S30-12.5 (0-6")	9.00E-02	9.00E-02	1.01E+00	3.16E+02	2.84E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.13E+02	1.60E+00	2.64E-02	1.13E+00	7.00E-01	5.23E+01	4.09E-01	6.41E+01	1.09E-02
BREOT-N31-12.5 (0-6")	9.00E-02	9.00E-02	1.01E+00	3.22E+02	2.89E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.18E+02	1.63E+00	2.64E-02	1.13E+00	7.12E-01	5.23E+01	4.09E-01	6.41E+01	1.11E-02
BREOT-S31-25 (0-6")	9.00E-02	9.00E-02	1.01E+00	2.00E+02	1.80E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.98E+02	1.01E+00	2.64E-02	1.13E+00	4.42E-01	5.23E+01	4.09E-01	6.41E+01	6.89E-03
BREOT-S31-5 (0-6")	9.00E-02	9.00E-02	1.01E+00	3.00E+02	2.70E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.97E+02	1.52E+00	2.64E-02	1.13E+00	6.64E-01	5.23E+01	4.09E-01	6.41E+01	1.04E-02
BREOT-N32-12.5 (0-6")	9.00E-02	9.00E-02	1.01E+00	2.15E+02	1.93E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.13E+02	1.09E+00	2.64E-02	1.13E+00	4.76E-01	5.23E+01	4.09E-01	6.41E+01	7.43E-03
BREOT-S32-6 (0-6")	9.00E-02	9.00E-02	1.01E+00	2.13E+02	1.92E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.11E+02	1.08E+00	2.64E-02	1.13E+00	4.73E-01	5.23E+01	4.09E-01	6.41E+01	7.38E-03
BREOT-N33-12.5 (0-6")	9.00E-02	9.00E-02	1.01E+00	2.39E+02	2.15E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.37E+02	1.21E+00	2.64E-02	1.13E+00	5.30E-01	5.23E+01	4.09E-01	6.41E+01	8.27E-03
BREOT-S33-12.5 (0-6")	9.00E-02	9.00E-02	1.01E+00	5.86E+02	5.27E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.80E+02	2.97E+00	2.64E-02	1.13E+00	1.30E+00	5.23E+01	4.09E-01	6.41E+01	2.02E-02
BREOT-N35-12.5 (0-6")	9.00E-02	9.00E-02	1.01E+00	1.89E+02	1.70E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.87E+02	9.58E-01	2.64E-02	1.13E+00	4.18E-01	5.23E+01	4.09E-01	6.41E+01	6.52E-03
BREOT-S35-12.5 (0-6")	9.00E-02	9.00E-02	1.01E+00	4.58E+02	4.12E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.53E+02	2.32E+00	2.64E-02	1.13E+00	1.01E+00	5.23E+01	4.09E-01	6.41E+01	1.58E-02
BREOT-N36-12.5 (0-6")	9.00E-02	9.00E-02	1.01E+00	3.08E+02	2.77E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.05E+02	1.56E+00	2.64E-02	1.13E+00	6.82E-01	5.23E+01	4.09E-01	6.41E+01	1.06E-02
BREOT-S36-12.5 (0-6")	9.00E-02	9.00E-02	1.01E+00	2.04E+02	1.84E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.02E+02	1.04E+00	2.64E-02	1.13E+00	4.52E-01	5.23E+01	4.09E-01	6.41E+01	7.05E-03
BREOT-N37-12.5 (0-6")	9.00E-02	9.00E-02	1.01E+00	1.86E+02	1.67E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.84E+02	9.44E-01	2.64E-02	1.13E+00	4.12E-01	5.23E+01	4.09E-01	6.41E+01	6.43E-03
BREOT-S37-12.5 (0-6")	9.00E-02	9.00E-02	1.01E+00	2.99E+02	2.69E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.96E+02	1.52E+00	2.64E-02	1.13E+00	6.62E-01	5.23E+01	4.09E-01	6.41E+01	1.03E-02
BREOT-N38-12.5 (0-6")	9.00E-02	9.00E-02	1.01E+00	2.10E+02	1.89E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.08E+02	1.07E+00	2.64E-02	1.13E+00	4.66E-01	5.23E+01	4.09E-01	6.41E+01	7.27E-03
BREOT-S38-12.5 (0-6")	9.00E-02	9.00E-02	1.01E+00	7.03E+02	6.32E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	6.96E+02	3.57E+00	2.64E-02	1.13E+00	1.56E+00	5.23E+01	4.09E-01	6.41E+01	2.43E-02
BREOT-N39-12.5 (0-6")	9.00E-02	9.00E-02	1.01E+00	3.07E+02	2.76E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.03E+02	1.56E+00	2.64E-02	1.13E+00	6.79E-01	5.23E+01	4.09E-01	6.41E+01	1.06E-02
BREOT-S39-12.5 (0-6")	9.00E-02	9.00E-02	1.01E+00	5.26E+02	4.73E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.21E+02	2.67E+00	2.64E-02	1.13E+00	1.17E+00	5.23E+01	4.09E-01	6.41E+01	1.82E-02
BREOT-N40-12.5 (0-6")	9.00E-02	9.00E-02	1.01E+00	4.08E+02	3.67E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.04E+02	2.07E+00	2.64E-02	1.13E+00	9.04E-01	5.23E+01	4.09E-01	6.41E+01	1.41E-02
BREOT-S40-14 (0-6")	9.00E-02	9.00E-02	1.01E+00	5.00E+02	4.50E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.95E+02	2.54E+00	2.64E-02	1.13E+00	1.11E+00	5.23E+01	4.09E-01	6.41E+01	1.73E-02
BREOT-N41-12.5 (0-6")	9.00E-02	9.00E-02	1.01E+00	3.03E+02	2.73E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.00E+02	1.54E+00	2.64E-02	1.13E+00	6.71E-01	5.23E+01	4.09E-01	6.41E+01	1.05E-02
BREOT-S41-12.5 (0-6")	9.00E-02	9.00E-02	1.01E+00	4.56E+02	4.10E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.51E+02	2.31E+00	2.64E-02	1.13E+00	1.01E+00	5.23E+01	4.09E-01	6.41E+01	1.58E-02
BREOT-N42-35 (0-6")	9.00E-02	9.00E-02	1.01E+00	2.47E+02	2.22E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.44E+02	1.25E+00	2.64E-02	1.13E+00	5.46E-01	5.23E+01	4.09E-01	6.41E+01	8.53E-03
BREOT-S42-25 (0-6")	9.00E-02	9.00E-02	1.01E+00	2.71E+02	2.44E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.69E+02	1.38E+00	2.64E-02	1.13E+00	6.01E-01	5.23E+01	4.09E-01	6.41E+01	9.38E-03
BREOT-N43-12.5 (0-6")	9.00E-02	9.00E-02	1.01E+00	4.65E+02	4.18E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.60E+02	2.36E+00	2.64E-02	1.13E+00	1.03E+00	5.23E+01	4.09E-01	6.41E+01	1.61E-02
BREOT-S43-12.5 (0-6")	9.00E-02	9.00E-02	1.01E+00	2.47E+02	2.22E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.45E+02	1.25E+00	2.64E-02	1.13E+00	5.47E-01	5.23E+01	4.09E-01	6.41E+01	8.54E-03
BREOT-N44-30 (0-6")	9.00E-02	9.00E-02	1.01E+00	1.90E+02	1.71E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.88E+02	9.64E-01	2.64E-02	1.13E+00	4.21E-01	5.23E+01	4.09E-01	6.41E+01	6.57E-03
BREOT-S44-12.5 (0-6")	9.00E-02	9.00E-02	1.01E+00	4.32E+02	3.89E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.28E+02	2.19E+00	2.64E-02	1.13E+00	9.58E-01	5.23E+01	4.09E-01	6.41E+01	1.49E-02
BREOT-N45-12.5 (0-6")	9.00E-02	9.00E-02	1.01E+00	3.20E+02	2.88E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.16E+02	1.62E+00	2.64E-02	1.13E+00	7.08E-01	5.23E+01	4.09E-01	6.41E+01	1.10E-02
BREOT-N43-12.5 (0-6")	9.00E-02	9.00E-02	1.01E+00	4.65E+02	4.18E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.60E+02	2.36E+00	2.64E-02	1.13E+00	1.03E+00	5.23E+01	4.09E-01	6.41E+01	1.61E-02
BREOT-S45-6 (0-6")	9.00E-02	9.00E-02	1.01E+00	3.08E+02	2.77E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.05E+02	1.56E+00	2.64E-02	1.13E+00	6.81E-01	5.23E+01	4.09E-01	6.41E+01	1.06E-02
BREOT-N46-12.5 (0-6")	9.00E-02	9.00E-02	1.01E+00	1.24E+02	1.12E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.23E+02	6.31E-01	2.64E-02	1.13E+00	2.75E-01	5.23E+01	4.09E-01	6.41E+01	4.30E-03
BREOT-S46-12.5 (0-6")	9.00E-02	9.00E-02	1.01E+00	1.54E+02	1.38E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.52E+02	7.80E-01	2.64E-02	1.13E+00	3.40E-01	5.23E+01	4.09E-01	6.41E+01	5.31E-03
BREOT-S46-40 (0-6")	9.00E-02	9.00E-02	1.01E+00	3.00E+02	2.70E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.97E+02	1.52E+00	2.64E-02	1.13E+00	6.64E-01	5.23E+01	4.09E-01	6.41E+01	1.04E-02
BREOT-N47-12.5 (0-6")	9.00E-02	9.00E-02	1.01E+00	2.81E+02	2.53E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.78E+02	1.42E+00	2.64E-02	1.13E+00	6.21E-01	5.23E+01	4.09E-01	6.41E+01	9.70E-03
BREOT-S47-999 (0-6")	9.00E-02	9.00E-02	1.01E+00	4.16E+02	3.74E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.12E+02	2.11E+00	2.64E-02	1.13E+00	9.22E-01	5.23E+01	4.09E-01	6.41E+01	1.44E-02
BREOT-S48-12.5 (0-6")	9.00E-02	9.00E-02	1.01E+00	9.99E+01	8.99E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	9.89E+01	5.07E-01	2.64E-02	1.13E+00	2.21E-01	5.23E+01	4.09E-01	6.41E+01	3.45E-03
BREOT-S49-2.5 (0-6")	9.00E-02	9.00E-02	1.01E+00	1.31E+02	1.18E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.30E+02	6.66E-01	2.64E-02	1.13E+00	2.91E-01	5.23E+01	4.09E-01	6.41E+01	4.53E-03
BREOT-S50-12.5 (0-6")	9.00E-02	9.00E-02	1.01E+00	2.34E+02	2.10E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.31E+02	1.19E+00	2.64E-02	1.13E+00	5.18E-01	5.23E+01	4.09E-01	6.41E+01	8.08E-03
BREOT-S50-25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB

TABLE C-2C: COPPER DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **18.41**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Red-Tailed Hawk (Carnivorous Birds - Terrestrial)																							
BREOT-N52-60 (0-6")	9.00E-02	9.00E-02	1.01E+00	2.14E+02	1.93E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.12E+02	1.09E+00	2.64E-02	1.13E+00	4.74E-01	5.23E+01	4.09E-01	6.41E+01	7.40E-03
BREOT-S52-12.5 (0-6")	9.00E-02	9.00E-02	1.01E+00	1.11E+03	1.00E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.10E+03	5.64E+00	2.64E-02	1.13E+00	2.46E+00	5.23E+01	4.09E-01	6.41E+01	3.84E-02
BREOT-S53-12.5 (0-6")	9.00E-02	9.00E-02	1.01E+00	2.58E+02	2.32E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.56E+02	1.31E+00	2.64E-02	1.13E+00	5.72E-01	5.23E+01	4.09E-01	6.41E+01	8.93E-03
BREOT-S54-12.5 (0-6")	9.00E-02	9.00E-02	1.01E+00	1.62E+02	1.46E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.60E+02	8.23E-01	2.64E-02	1.13E+00	3.59E-01	5.23E+01	4.09E-01	6.41E+01	5.60E-03
BREOT-N55-12.5 (0-6")	9.00E-02	9.00E-02	1.01E+00	4.38E+02	3.94E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.34E+02	2.22E+00	2.64E-02	1.13E+00	9.71E-01	5.23E+01	4.09E-01	6.41E+01	1.51E-02
BREOT-S55-12.5 (0-6")	9.00E-02	9.00E-02	1.01E+00	1.75E+02	1.57E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.73E+02	8.87E-01	2.64E-02	1.13E+00	3.87E-01	5.23E+01	4.09E-01	6.41E+01	6.04E-03
BREOT-N56-12.5 (0-6")	9.00E-02	9.00E-02	1.01E+00	3.25E+02	2.92E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.21E+02	1.65E+00	2.64E-02	1.13E+00	7.19E-01	5.23E+01	4.09E-01	6.41E+01	1.12E-02
BREOT-S56-12.5 (0-6")	9.00E-02	9.00E-02	1.01E+00	1.51E+02	1.36E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.49E+02	7.65E-01	2.64E-02	1.13E+00	3.34E-01	5.23E+01	4.09E-01	6.41E+01	5.21E-03
BREOT-N57-12.5 (0-6")	9.00E-02	9.00E-02	1.01E+00	2.38E+02	2.15E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.36E+02	1.21E+00	2.64E-02	1.13E+00	5.28E-01	5.23E+01	4.09E-01	6.41E+01	8.24E-03
BREOT-S57-12.5 (0-6")	9.00E-02	9.00E-02	1.01E+00	1.75E+02	1.57E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.73E+02	8.87E-01	2.64E-02	1.13E+00	3.87E-01	5.23E+01	4.09E-01	6.41E+01	6.04E-03
BREOT-N58-12.5 (0-6")	9.00E-02	9.00E-02	1.01E+00	1.55E+02	1.39E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.53E+02	7.86E-01	2.64E-02	1.13E+00	3.43E-01	5.23E+01	4.09E-01	6.41E+01	5.35E-03
BREOT-S58-12 (0-6")	9.00E-02	9.00E-02	1.01E+00	2.60E+02	2.34E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.57E+02	1.32E+00	2.64E-02	1.13E+00	5.75E-01	5.23E+01	4.09E-01	6.41E+01	8.98E-03
BREOT-N59-18 (0-6")	9.00E-02	9.00E-02	1.01E+00	1.07E+02	9.60E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.06E+02	5.41E-01	2.64E-02	1.13E+00	2.36E-01	5.23E+01	4.09E-01	6.41E+01	3.69E-03
BREOT-N60-12.5 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S60-12.5 (0-6")	9.00E-02	9.00E-02	1.01E+00	1.90E+02	1.71E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.88E+02	9.64E-01	2.64E-02	1.13E+00	4.21E-01	5.23E+01	4.09E-01	6.41E+01	6.56E-03
BREOT-S61-12.5 (0-6")	9.00E-02	9.00E-02	1.01E+00	2.61E+02	2.35E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.58E+02	1.32E+00	2.64E-02	1.13E+00	5.77E-01	5.23E+01	4.09E-01	6.41E+01	9.01E-03
BREOT-N62-12.5 (0-6")	9.00E-02	9.00E-02	1.01E+00	8.83E+01	7.95E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	8.74E+01	4.48E-01	2.64E-02	1.13E+00	1.96E-01	5.23E+01	4.09E-01	6.41E+01	3.05E-03
BREOT-S62-12.5 (0-6")	9.00E-02	9.00E-02	1.01E+00	3.53E+02	3.17E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.49E+02	1.79E+00	2.64E-02	1.13E+00	7.81E-01	5.23E+01	4.09E-01	6.41E+01	1.22E-02
BREOT-S63-12.5 (0-6")	9.00E-02	9.00E-02	1.01E+00	1.43E+02	1.28E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.41E+02	7.24E-01	2.64E-02	1.13E+00	3.16E-01	5.23E+01	4.09E-01	6.41E+01	4.93E-03
BREOT-N64-12.5 (0-6")	9.00E-02	9.00E-02	1.01E+00	9.56E+01	8.60E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	9.46E+01	4.85E-01	2.64E-02	1.13E+00	2.12E-01	5.23E+01	4.09E-01	6.41E+01	3.30E-03
BREOT-N64-20 (0-6")	9.00E-02	9.00E-02	1.01E+00	1.16E+02	1.04E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.15E+02	5.88E-01	2.64E-02	1.13E+00	2.57E-01	5.23E+01	4.09E-01	6.41E+01	4.01E-03
BREOT-S64-12.5 (0-6")	9.00E-02	9.00E-02	1.01E+00	1.69E+02	1.52E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.68E+02	8.60E-01	2.64E-02	1.13E+00	3.75E-01	5.23E+01	4.09E-01	6.41E+01	5.85E-03
BREOT-N65-12.5 (0-6")	9.00E-02	9.00E-02	1.01E+00	1.24E+02	1.12E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.23E+02	6.30E-01	2.64E-02	1.13E+00	2.75E-01	5.23E+01	4.09E-01	6.41E+01	4.29E-03
BREOT-S65-12.5 (0-6")	9.00E-02	9.00E-02	1.01E+00	1.83E+02	1.65E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.81E+02	9.30E-01	2.64E-02	1.13E+00	4.06E-01	5.23E+01	4.09E-01	6.41E+01	6.33E-03
BREOT-N66-5 (0-6")	9.00E-02	9.00E-02	1.01E+00	1.36E+02	1.22E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.35E+02	6.90E-01	2.64E-02	1.13E+00	3.01E-01	5.23E+01	4.09E-01	6.41E+01	4.70E-03
BREOT-S66-12.5 (0-6")	9.00E-02	9.00E-02	1.01E+00	1.49E+02	1.34E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.48E+02	7.58E-01	2.64E-02	1.13E+00	3.31E-01	5.23E+01	4.09E-01	6.41E+01	5.16E-03
BREOT-N67-12.5 (0-6")	9.00E-02	9.00E-02	1.01E+00	5.69E+02	5.12E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.63E+02	2.89E+00	2.64E-02	1.13E+00	1.26E+00	5.23E+01	4.09E-01	6.41E+01	1.97E-02
BREOT-S67-12.5 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
At Edge of Tailings																						**Maximum HQ (Inside Tailings)**	**1.30E-01**
BREOT-S0-0 (06)	9.00E-02	9.00E-02	1.01E+00	1.21E+02	1.09E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.20E+02	6.16E-01	2.64E-02	1.13E+00	2.69E-01	5.23E+01	4.09E-01	6.41E+01	4.19E-03
BREOT-S1-0 (0-6")	9.00E-02	9.00E-02	1.01E+00	2.13E+02	1.91E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.11E+02	1.08E+00	2.64E-02	1.13E+00	4.71E-01	5.23E+01	4.09E-01	6.41E+01	7.35E-03
BREOT-S2-0 (0-6")	9.00E-02	9.00E-02	1.01E+00	3.02E+02	2.72E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.99E+02	1.53E+00	2.64E-02	1.13E+00	6.69E-01	5.23E+01	4.09E-01	6.41E+01	1.04E-02
BREOT-S3-0 (0-6")	9.00E-02	9.00E-02	1.01E+00	3.66E+02	3.29E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.62E+02	1.86E+00	2.64E-02	1.13E+00	8.10E-01	5.23E+01	4.09E-01	6.41E+01	1.26E-02
BREOT-S4-0 (0-6")	9.00E-02	9.00E-02	1.01E+00	4.09E+02	3.68E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.05E+02	2.08E+00	2.64E-02	1.13E+00	9.06E-01	5.23E+01	4.09E-01	6.41E+01	1.41E-02
BREOT-S6-0 (0-6")	9.00E-02	9.00E-02	1.01E+00	3.31E+02	2.97E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.27E+02	1.68E+00	2.64E-02	1.13E+00	7.32E-01	5.23E+01	4.09E-01	6.41E+01	1.14E-02
BREOT-S7-0 (0-6")	9.00E-02	9.00E-02	1.01E+00	1.92E+02	1.73E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.90E+02	9.74E-01	2.64E-02	1.13E+00	4.25E-01	5.23E+01	4.09E-01	6.41E+01	6.63E-03
BREOT-S8-0 (0-6")	9.00E-02	9.00E-02	1.01E+00	1.71E+02	1.53E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.69E+02	8.66E-01	2.64E-02	1.13E+00	3.78E-01	5.23E+01	4.09E-01	6.41E+01	5.89E-03
BREOT-S9-0 (0-6")	9.00E-02	9.00E-02	1.01E+00	1.52E+02	1.37E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.51E+02	7.74E-01	2.64E-02	1.13E+00	3.37E-01	5.23E+01	4.09E-01	6.41E+01	5.27E-03
BREOT-N10-0 (0-6")	9.00E-02	9.00E-02	1.01E+00	3.58E+03	3.22E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.54E+03	1.82E+01	2.64E-02	1.13E+00	7.92E+00	5.23E+01	4.09E-01	6.41E+01	1.24E-01
BREOT-N11-0 (0-6")	9.00E-02	9.00E-02	1.01E+00	2.98E+02	2.68E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.95E+02	1.51E+00	2.64E-02	1.13E+00	6.60E-01	5.23E+01	4.09E-01	6.41E+01	1.03E-02
BREOT-S11-0 (0-6")	9.00E-02	9.00E-02	1.01E+00	2.33E+02	2.10E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.31E+02	1.18E+00	2.64E-02	1.13E+00	5.17E-01	5.23E+01	4.09E-01	6.41E+01	8.06E-03
BREOT-N12-0 (0-6")	9.00E-02	9.00E-02	1.01E+00	2.59E+02	2.33E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.57E+02	1.32E+00	2.64E-02	1.13E+00	5.74E-01	5.23E+01	4.09E-01	6.41E+01	8.96E-03
BREOT-S12-0 (0-6")	9.00E-02	9.00E-02	1.01E+00	5.97E+02	5.37E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.91E+02	3.03E+00	2.64E-02	1.13E+00	1.32E+00	5.23E+01	4.09E-01	6.41E+01	2.06E-02
BREOT-N13-0 (0-6")	9.00E-02	9.00E-02	1.01E+00	1.93E+03	1.74E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.91E+03	9.80E+00	2.64E-02	1.13E+00	4.27E+00	5.23E+01	4.09E-01	6.41E+01	6.67E-02
BREOT-S13-0 (0-6")	9.00E-02	9.00E-02	1.01E+00	1.42E+02	1.27E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.40E+02	7.18E-01	2.64E-02	1.13E+00	3.13E-01	5.23E+01	4.09E-01	6.41E+01	4.89E-03
BREOT-N14-0 (0-6")	9.00E-02	9.00E-02	1.01E+00	4.33E+02	3.89E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.28E+02	2.20E+00	2.64E-02	1.13E+00	9.58E-01	5.23E+01	4.09E-01	6.41E+01	1.49E-02
BREOT-S14-0 (0-6")	9.00E-02	9.00E-02	1.01E+00	3.29E+03	2.96E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.26E+03	1.67E+01	2.64E-02	1.13E+00	7.29E+00	5.23E+01	4.09E-01	6.41E+01	1.14E-01
BREOT-N15-0 (0-6")	9.00E-02	9.00E-02	1.01E+00	3.37E+02	3.03E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.34E+02	1.71E+00	2.64E-02	1.13E+00	7.47E-01	5.23E+01	4.09E-01	6.41E+01	1.17E-02
BREOT-N16-0 (0-6")	9.00E-02	9.00E-02	1.01E+00	2.49E+02	2.24E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.46E+02	1.26E+00	2.64E-02	1.13E+00	5.51E-01	5.23E+01	4.09E-01	6.41E+01	8.59E-03
BREOT-S16-0 (0-6")	9.00E-02	9.00E-02	1.01E+00	1.82E+02	1.64E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.81E+02	9.26E-01	2.64E-02	1.13E+00	4.04E-01	5.23E+01	4.09E-01	6.41E+01	6.30E-03
BREOT-N17-0 (0-6")	9.00E-02	9.00E-02	1.01E+00	2.63E+02	2.37E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.60E+02	1.34E+00	2.64E-02	1.13E+00	5.83E-01	5.23E+01	4.09E-01	6.41E+01	9.09E-03
BREOT-S17-0 (0-6")	9.00E-02	9.00E-02	1.01E+00	3.12E+02	2.81E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.09E+02	1.58E+00	2.64E-02	1.13E+00	6.91E-01	5.23E+01	4.09E-01	6.41E+01	1.08E-02
BREOT-N18-0 (0-6")	9.00E-02	9.00E-02	1.01E+00	2.43E+02	2.18E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.40E+02	1.23E+00	2.64E-02	1.13E+00	5.37E-01	5.23E+01	4.09E-01	6.41E+01	8.39E-03
BREOT-S18-0 (0-6")	9.00E-02	9.00E-02	1.01E+00	2.12E+03	1.90E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.09E+03	1.07E+01	2.64E-02	1.13E+00	4.68E+00	5.23E+01	4.09E-01	6.41E+01	7.31E-02
BREOT-N19-0 (0-6")	9.00E-02	9.00E-02	1.01E+00	2.97E+02	2.67E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.94E+02	1.51E+00	2.64E-02	1.13E+00	6.57E-01	5.23E+01	4.09E-01	6.41E+01	1.03E-02

TABLE C-2C: COPPER DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **18.41**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Red-Tailed Hawk (Carnivorous Birds - Terrestrial)																							
BREOT-S19-0 (0-6")	9.00E-02	9.00E-02	1.01E+00	1.30E+02	1.17E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.29E+02	6.59E-01	2.64E-02	1.13E+00	2.88E-01	5.23E+01	4.09E-01	6.41E+01	4.49E-03
BREOT-N20-0 (0-6")	9.00E-02	9.00E-02	1.01E+00	4.25E+02	3.82E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.20E+02	2.16E+00	2.64E-02	1.13E+00	9.40E-01	5.23E+01	4.09E-01	6.41E+01	1.47E-02
BREOT-S20-0 (0-6")	9.00E-02	9.00E-02	1.01E+00	1.38E+02	1.24E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.36E+02	6.98E-01	2.64E-02	1.13E+00	3.04E-01	5.23E+01	4.09E-01	6.41E+01	4.75E-03
BREOT-N21-0 (0-6")	9.00E-02	9.00E-02	1.01E+00	1.36E+04	1.23E+03	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.35E+04	6.91E+01	2.64E-02	1.13E+00	3.02E+01	5.23E+01	4.09E-01	6.41E+01	4.71E-01
BREOT-S21-0 (0-6")	9.00E-02	9.00E-02	1.01E+00	2.33E+02	2.10E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.31E+02	1.18E+00	2.64E-02	1.13E+00	5.17E-01	5.23E+01	4.09E-01	6.41E+01	8.07E-03
BREOT-N22-0 (0-6")	9.00E-02	9.00E-02	1.01E+00	3.25E+02	2.92E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.21E+02	1.65E+00	2.64E-02	1.13E+00	7.19E-01	5.23E+01	4.09E-01	6.41E+01	1.12E-02
BREOT-S22-0 (0-6")	9.00E-02	9.00E-02	1.01E+00	1.85E+02	1.66E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.83E+02	9.39E-01	2.64E-02	1.13E+00	4.09E-01	5.23E+01	4.09E-01	6.41E+01	6.39E-03
BREOT-N23-0 (0-6")	9.00E-02	9.00E-02	1.01E+00	5.21E+02	4.68E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.15E+02	2.64E+00	2.64E-02	1.13E+00	1.15E+00	5.23E+01	4.09E-01	6.41E+01	1.80E-02
BREOT-S23-0 (0-6")	9.00E-02	9.00E-02	1.01E+00	3.25E+02	2.92E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.22E+02	1.65E+00	2.64E-02	1.13E+00	7.19E-01	5.23E+01	4.09E-01	6.41E+01	1.12E-02
BREOT-N24-0 (0-6")	9.00E-02	9.00E-02	1.01E+00	4.99E+02	4.48E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.93E+02	2.53E+00	2.64E-02	1.13E+00	1.10E+00	5.23E+01	4.09E-01	6.41E+01	1.72E-02
BREOT-S24-0 (0-6")	9.00E-02	9.00E-02	1.01E+00	9.57E+02	8.61E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	9.47E+02	4.86E+00	2.64E-02	1.13E+00	2.12E+00	5.23E+01	4.09E-01	6.41E+01	3.31E-02
BREOT-N25-0 (0-6")	9.00E-02	9.00E-02	1.01E+00	7.83E+02	7.05E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	7.75E+02	3.98E+00	2.64E-02	1.13E+00	1.73E+00	5.23E+01	4.09E-01	6.41E+01	2.71E-02
BREOT-S25-0 (0-6")	9.00E-02	9.00E-02	1.01E+00	6.77E+02	6.09E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	6.70E+02	3.44E+00	2.64E-02	1.13E+00	1.50E+00	5.23E+01	4.09E-01	6.41E+01	2.34E-02
BREOT-N26-0 (0-6")	9.00E-02	9.00E-02	1.01E+00	9.35E+02	8.41E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	9.25E+02	4.74E+00	2.64E-02	1.13E+00	2.07E+00	5.23E+01	4.09E-01	6.41E+01	3.23E-02
BREOT-S26-0 (0-6")	9.00E-02	9.00E-02	1.01E+00	3.46E+02	3.11E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.43E+02	1.76E+00	2.64E-02	1.13E+00	7.66E-01	5.23E+01	4.09E-01	6.41E+01	1.20E-02
BREOT-N27-0 (0-6")	9.00E-02	9.00E-02	1.01E+00	2.54E+03	2.28E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.51E+03	1.29E+01	2.64E-02	1.13E+00	5.62E+00	5.23E+01	4.09E-01	6.41E+01	8.76E-02
BREOT-S27-0 (0-6")	9.00E-02	9.00E-02	1.01E+00	2.30E+02	2.07E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.28E+02	1.17E+00	2.64E-02	1.13E+00	5.10E-01	5.23E+01	4.09E-01	6.41E+01	7.95E-03
BREOT-N28-0 (0-6")	9.00E-02	9.00E-02	1.01E+00	5.54E+02	4.98E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.48E+02	2.81E+00	2.64E-02	1.13E+00	1.23E+00	5.23E+01	4.09E-01	6.41E+01	1.91E-02
BREOT-S28-0 (0-6")	9.00E-02	9.00E-02	1.01E+00	1.67E+02	1.50E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.65E+02	8.48E-01	2.64E-02	1.13E+00	3.70E-01	5.23E+01	4.09E-01	6.41E+01	5.77E-03
BREOT-S29-0 (0-6")	9.00E-02	9.00E-02	1.01E+00	1.78E+02	1.60E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.77E+02	9.05E-01	2.64E-02	1.13E+00	3.95E-01	5.23E+01	4.09E-01	6.41E+01	6.16E-03
BREOT-N30-0 (0-6")	9.00E-02	9.00E-02	1.01E+00	1.50E+03	1.35E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.48E+03	7.60E+00	2.64E-02	1.13E+00	3.32E+00	5.23E+01	4.09E-01	6.41E+01	5.18E-02
BREOT-S30-0 (0-6")	9.00E-02	9.00E-02	1.01E+00	1.31E+02	1.18E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.30E+02	6.65E-01	2.64E-02	1.13E+00	2.90E-01	5.23E+01	4.09E-01	6.41E+01	4.53E-03
BREOT-N31-0 (0-6")	9.00E-02	9.00E-02	1.01E+00	1.30E+03	1.17E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.29E+03	6.61E+00	2.64E-02	1.13E+00	2.88E+00	5.23E+01	4.09E-01	6.41E+01	4.50E-02
BREOT-S31-0 (0-6")	9.00E-02	9.00E-02	1.01E+00	1.08E+02	9.75E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.07E+02	5.50E-01	2.64E-02	1.13E+00	2.40E-01	5.23E+01	4.09E-01	6.41E+01	3.74E-03
BREOT-N32-0 (0-6")	9.00E-02	9.00E-02	1.01E+00	5.36E+02	4.82E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.31E+02	2.72E+00	2.64E-02	1.13E+00	1.19E+00	5.23E+01	4.09E-01	6.41E+01	1.85E-02
BREOT-S32-0 (0-6")	9.00E-02	9.00E-02	1.01E+00	5.23E+02	4.70E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.17E+02	2.65E+00	2.64E-02	1.13E+00	1.16E+00	5.23E+01	4.09E-01	6.41E+01	1.81E-02
BREOT-N33-0 (0-6")	9.00E-02	9.00E-02	1.01E+00	2.02E+02	1.81E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.00E+02	1.02E+00	2.64E-02	1.13E+00	4.47E-01	5.23E+01	4.09E-01	6.41E+01	6.97E-03
BREOT-S33-0 (0-6")	9.00E-02	9.00E-02	1.01E+00	4.96E+02	4.47E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.91E+02	2.52E+00	2.64E-02	1.13E+00	1.10E+00	5.23E+01	4.09E-01	6.41E+01	1.72E-02
BREOT-N34-0 (0-6")	9.00E-02	9.00E-02	1.01E+00	4.95E+02	4.45E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.90E+02	2.51E+00	2.64E-02	1.13E+00	1.10E+00	5.23E+01	4.09E-01	6.41E+01	1.71E-02
BREOT-S34-0 (0-6")	9.00E-02	9.00E-02	1.01E+00	4.85E+02	4.36E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.80E+02	2.46E+00	2.64E-02	1.13E+00	1.07E+00	5.23E+01	4.09E-01	6.41E+01	1.67E-02
BREOT-N35-0 (0-6")	9.00E-02	9.00E-02	1.01E+00	2.69E+02	2.42E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.66E+02	1.37E+00	2.64E-02	1.13E+00	5.96E-01	5.23E+01	4.09E-01	6.41E+01	9.29E-03
BREOT-S35-0 (0-6")	9.00E-02	9.00E-02	1.01E+00	4.48E+02	4.03E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.43E+02	2.27E+00	2.64E-02	1.13E+00	9.91E-01	5.23E+01	4.09E-01	6.41E+01	1.55E-02
BREOT-N36-0 (0-6")	9.00E-02	9.00E-02	1.01E+00	4.38E+02	3.94E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.33E+02	2.22E+00	2.64E-02	1.13E+00	9.69E-01	5.23E+01	4.09E-01	6.41E+01	1.51E-02
BREOT-S36-0 (0-6")	9.00E-02	9.00E-02	1.01E+00	4.82E+02	4.34E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.77E+02	2.45E+00	2.64E-02	1.13E+00	1.07E+00	5.23E+01	4.09E-01	6.41E+01	1.67E-02
BREOT-N37-0 (0-6")	9.00E-02	9.00E-02	1.01E+00	1.83E+02	1.65E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.81E+02	9.28E-01	2.64E-02	1.13E+00	4.05E-01	5.23E+01	4.09E-01	6.41E+01	6.32E-03
BREOT-S37-0 (0-6")	9.00E-02	9.00E-02	1.01E+00	5.38E+02	4.84E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.33E+02	2.73E+00	2.64E-02	1.13E+00	1.19E+00	5.23E+01	4.09E-01	6.41E+01	1.86E-02
BREOT-N38-0 (0-6")	9.00E-02	9.00E-02	1.01E+00	1.97E+02	1.77E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.95E+02	9.98E-01	2.64E-02	1.13E+00	4.35E-01	5.23E+01	4.09E-01	6.41E+01	6.79E-03
BREOT-S38-0 (0-6")	9.00E-02	9.00E-02	1.01E+00	8.50E+02	7.64E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	8.41E+02	4.31E+00	2.64E-02	1.13E+00	1.88E+00	5.23E+01	4.09E-01	6.41E+01	2.94E-02
BREOT-N39-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N40-0 (0-6")	9.00E-02	9.00E-02	1.01E+00	2.42E+02	2.17E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.39E+02	1.23E+00	2.64E-02	1.13E+00	5.35E-01	5.23E+01	4.09E-01	6.41E+01	8.35E-03
BREOT-S40-0 (0-6")	9.00E-02	9.00E-02	1.01E+00	5.69E+02	5.12E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.63E+02	2.89E+00	2.64E-02	1.13E+00	1.26E+00	5.23E+01	4.09E-01	6.41E+01	1.97E-02
BREOT-N41-0 (0-6")	9.00E-02	9.00E-02	1.01E+00	1.56E+02	1.40E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.55E+02	7.92E-01	2.64E-02	1.13E+00	3.46E-01	5.23E+01	4.09E-01	6.41E+01	5.39E-03
BREOT-S41-0 (0-6")	9.00E-02	9.00E-02	1.01E+00	5.57E+02	5.01E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.52E+02	2.83E+00	2.64E-02	1.13E+00	1.23E+00	5.23E+01	4.09E-01	6.41E+01	1.93E-02
BREOT-N42-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S42-0 (0-6")	9.00E-02	9.00E-02	1.01E+00	8.31E+02	7.48E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	8.23E+02	4.22E+00	2.64E-02	1.13E+00	1.84E+00	5.23E+01	4.09E-01	6.41E+01	2.87E-02
BREOT-N43-0 (0-6")	9.00E-02	9.00E-02	1.01E+00	1.28E+02	1.15E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.27E+02	6.51E-01	2.64E-02	1.13E+00	2.84E-01	5.23E+01	4.09E-01	6.41E+01	4.43E-03
BREOT-S43-0 (0-6")	9.00E-02	9.00E-02	1.01E+00	1.32E+02	1.18E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.30E+02	6.68E-01	2.64E-02	1.13E+00	2.92E-01	5.23E+01	4.09E-01	6.41E+01	4.55E-03
BREOT-N44-0 (0-6")	9.00E-02	9.00E-02	1.01E+00	2.43E+02	2.19E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.41E+02	1.24E+00	2.64E-02	1.13E+00	5.39E-01	5.23E+01	4.09E-01	6.41E+01	8.41E-03
BREOT-S44-0 (0-6")	9.00E-02	9.00E-02	1.01E+00	1.28E+02	1.15E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.27E+02	6.51E-01	2.64E-02	1.13E+00	2.84E-01	5.23E+01	4.09E-01	6.41E+01	4.43E-03
BREOT-N45-0 (0-6")	9.00E-02	9.00E-02	1.01E+00	3.82E+02	3.44E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.78E+02	1.94E+00	2.64E-02	1.13E+00	8.46E-01	5.23E+01	4.09E-01	6.41E+01	1.32E-02
BREOT-S45-0 (0-6")	9.00E-02	9.00E-02	1.01E+00	1.07E+02	9.65E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.06E+02	5.44E-01	2.64E-02	1.13E+00	2.37E-01	5.23E+01	4.09E-01	6.41E+01	3.71E-03
BREOT-N46-0 (0-6")	9.00E-02	9.00E-02	1.01E+00	2.67E+02	2.40E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.64E+02	1.35E+00	2.64E-02	1.13E+00	5.91E-01	5.23E+01	4.09E-01	6.41E+01	9.22E-03
BREOT-S46-0 (0-6")	9.00E-02	9.00E-02	1.01E+00	9.96E+01	8.96E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	9.86E+01	5.05E-01	2.64E-02	1.13E+00	2.20E-01	5.23E+01	4.09E-01	6.41E+01	3.44E-03
BREOT-N47-0 (0-6")	9.00E-02	9.00E-02	1.01E+00	6.51E+02	5.86E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	6.44E+02	3.30E+00	2.64E-02	1.13E+00	1.44E+00	5.23E+01	4.09E-01	6.41E+01	2.25E-02
BREOT-S47-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB

TABLE C-2C: COPPER DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **18.41**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Red-Tailed Hawk (Carnivorous Birds - Terrestrial)																							
BREOT-N48-0 (0-6")	9.00E-02	9.00E-02	1.01E+00	1.45E+02	1.31E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.44E+02	7.37E-01	2.64E-02	1.13E+00	3.21E-01	5.23E+01	4.09E-01	6.41E+01	5.02E-03
BREOT-S48-0 (0-6")	9.00E-02	9.00E-02	1.01E+00	9.10E+01	8.19E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	9.01E+01	4.62E-01	2.64E-02	1.13E+00	2.01E-01	5.23E+01	4.09E-01	6.41E+01	3.14E-03
BREOT-N49-0 (0-6")	9.00E-02	9.00E-02	1.01E+00	1.73E+02	1.56E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.71E+02	8.79E-01	2.64E-02	1.13E+00	3.83E-01	5.23E+01	4.09E-01	6.41E+01	5.98E-03
BREOT-S49-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S50-0 (0-6")	9.00E-02	9.00E-02	1.01E+00	1.07E+02	9.60E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.06E+02	5.41E-01	2.64E-02	1.13E+00	2.36E-01	5.23E+01	4.09E-01	6.41E+01	3.69E-03
BREOT-N51-0 (0-6")	9.00E-02	9.00E-02	1.01E+00	1.23E+02	1.10E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.22E+02	6.23E-01	2.64E-02	1.13E+00	2.72E-01	5.23E+01	4.09E-01	6.41E+01	4.24E-03
BREOT-S51-0 (0-6")	9.00E-02	9.00E-02	1.01E+00	7.79E+02	7.01E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	7.71E+02	3.95E+00	2.64E-02	1.13E+00	1.72E+00	5.23E+01	4.09E-01	6.41E+01	2.69E-02
BREOT-N52-0 (0-6")	9.00E-02	9.00E-02	1.01E+00	1.24E+02	1.12E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.23E+02	6.31E-01	2.64E-02	1.13E+00	2.75E-01	5.23E+01	4.09E-01	6.41E+01	4.30E-03
BREOT-S52-0 (0-6")	9.00E-02	9.00E-02	1.01E+00	9.38E+01	8.44E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	9.29E+01	4.76E-01	2.64E-02	1.13E+00	2.08E-01	5.23E+01	4.09E-01	6.41E+01	3.24E-03
BREOT-N53-0 (0-6")	9.00E-02	9.00E-02	1.01E+00	1.30E+02	1.17E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.28E+02	6.59E-01	2.64E-02	1.13E+00	2.87E-01	5.23E+01	4.09E-01	6.41E+01	4.48E-03
BREOT-S53-0 (0-6")	9.00E-02	9.00E-02	1.01E+00	8.71E+01	7.83E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	8.62E+01	4.42E-01	2.64E-02	1.13E+00	1.93E-01	5.23E+01	4.09E-01	6.41E+01	3.01E-03
BREOT-N54-0 (0-6")	9.00E-02	9.00E-02	1.01E+00	1.23E+02	1.11E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.22E+02	6.27E-01	2.64E-02	1.13E+00	2.73E-01	5.23E+01	4.09E-01	6.41E+01	4.27E-03
BREOT-S54-0 (0-6")	9.00E-02	9.00E-02	1.01E+00	8.29E+01	7.45E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	8.20E+01	4.21E-01	2.64E-02	1.13E+00	1.83E-01	5.23E+01	4.09E-01	6.41E+01	2.86E-03
BREOT-N55-0 (0-6")	9.00E-02	9.00E-02	1.01E+00	1.04E+02	9.36E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.03E+02	5.28E-01	2.64E-02	1.13E+00	2.30E-01	5.23E+01	4.09E-01	6.41E+01	3.60E-03
BREOT-S55-0 (0-6")	9.00E-02	9.00E-02	1.01E+00	1.45E+02	1.31E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.44E+02	7.37E-01	2.64E-02	1.13E+00	3.21E-01	5.23E+01	4.09E-01	6.41E+01	5.02E-03
BREOT-N56-0 (0-6")	9.00E-02	9.00E-02	1.01E+00	9.38E+01	8.44E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	9.29E+01	4.76E-01	2.64E-02	1.13E+00	2.08E-01	5.23E+01	4.09E-01	6.41E+01	3.24E-03
BREOT-N57-0 (0-6")	9.00E-02	9.00E-02	1.01E+00	1.23E+02	1.10E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.22E+02	6.23E-01	2.64E-02	1.13E+00	2.72E-01	5.23E+01	4.09E-01	6.41E+01	4.24E-03
BREOT-S57-0 (0-6")	9.00E-02	9.00E-02	1.01E+00	1.82E+02	1.63E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.80E+02	9.22E-01	2.64E-02	1.13E+00	4.02E-01	5.23E+01	4.09E-01	6.41E+01	6.28E-03
BREOT-N58-0 (0-6")	9.00E-02	9.00E-02	1.01E+00	1.20E+02	1.08E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.19E+02	6.11E-01	2.64E-02	1.13E+00	2.67E-01	5.23E+01	4.09E-01	6.41E+01	4.16E-03
BREOT-S58-0 (0-6")	9.00E-02	9.00E-02	1.01E+00	1.64E+02	1.47E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.62E+02	8.31E-01	2.64E-02	1.13E+00	3.63E-01	5.23E+01	4.09E-01	6.41E+01	5.66E-03
BREOT-N59-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N60-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S60-0 (0-6")	9.00E-02	9.00E-02	1.01E+00	2.28E+02	2.05E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.26E+02	1.16E+00	2.64E-02	1.13E+00	5.06E-01	5.23E+01	4.09E-01	6.41E+01	7.89E-03
BREOT-S61-0 (0-6")	9.00E-02	9.00E-02	1.01E+00	1.61E+02	1.45E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.59E+02	8.17E-01	2.64E-02	1.13E+00	3.56E-01	5.23E+01	4.09E-01	6.41E+01	5.56E-03
BREOT-N62-0 (0-6")	9.00E-02	9.00E-02	1.01E+00	8.40E+01	7.56E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	8.32E+01	4.26E-01	2.64E-02	1.13E+00	1.86E-01	5.23E+01	4.09E-01	6.41E+01	2.90E-03
BREOT-S62-0 (0-6")	9.00E-02	9.00E-02	1.01E+00	1.58E+02	1.42E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.56E+02	8.00E-01	2.64E-02	1.13E+00	3.49E-01	5.23E+01	4.09E-01	6.41E+01	5.45E-03
BREOT-N63-0 (0-6")	9.00E-02	9.00E-02	1.01E+00	1.58E+02	1.42E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.56E+02	8.01E-01	2.64E-02	1.13E+00	3.50E-01	5.23E+01	4.09E-01	6.41E+01	5.45E-03
BREOT-S63-0 (0-6")	9.00E-02	9.00E-02	1.01E+00	1.33E+02	1.20E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.32E+02	6.77E-01	2.64E-02	1.13E+00	2.96E-01	5.23E+01	4.09E-01	6.41E+01	4.61E-03
BREOT-N64-0 (0-6")	9.00E-02	9.00E-02	1.01E+00	8.76E+01	7.88E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	8.67E+01	4.45E-01	2.64E-02	1.13E+00	1.94E-01	5.23E+01	4.09E-01	6.41E+01	3.03E-03
BREOT-S64-0 (0-6")	9.00E-02	9.00E-02	1.01E+00	2.93E+02	2.63E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.90E+02	1.48E+00	2.64E-02	1.13E+00	6.48E-01	5.23E+01	4.09E-01	6.41E+01	1.01E-02
BREOT-N66-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S66-0 (0-6")	9.00E-02	9.00E-02	1.01E+00	1.79E+02	1.61E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.77E+02	9.08E-01	2.64E-02	1.13E+00	3.96E-01	5.23E+01	4.09E-01	6.41E+01	6.19E-03
BREOT-N67-0 (0-6")	9.00E-02	9.00E-02	1.01E+00	6.76E+02	6.08E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	6.69E+02	3.43E+00	2.64E-02	1.13E+00	1.50E+00	5.23E+01	4.09E-01	6.41E+01	2.34E-02
BREOT-S67-0 (0-6")	9.00E-02	9.00E-02	1.01E+00	1.00E+02	9.04E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	9.94E+01	5.10E-01	2.64E-02	1.13E+00	2.22E-01	5.23E+01	4.09E-01	6.41E+01	3.47E-03
Outside Tailings																						**Maximum HQ (At Edge of Tailings)**	**4.71E-01**
BREOT-S0+25 (0-6")	9.00E-02	9.00E-02	1.01E+00	9.04E+01	8.13E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	8.94E+01	4.59E-01	2.64E-02	1.13E+00	2.00E-01	5.23E+01	4.09E-01	6.41E+01	3.12E-03
BREOT-S1+25 (0-6")	9.00E-02	9.00E-02	1.01E+00	1.46E+02	1.32E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.45E+02	7.42E-01	2.64E-02	1.13E+00	3.24E-01	5.23E+01	4.09E-01	6.41E+01	5.05E-03
BREOT-S2+95 (0-6")	9.00E-02	9.00E-02	1.01E+00	3.42E+02	3.07E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.38E+02	1.73E+00	2.64E-02	1.13E+00	7.56E-01	5.23E+01	4.09E-01	6.41E+01	1.18E-02
BREOT-S3+6 (0-6")	9.00E-02	9.00E-02	1.01E+00	1.65E+02	1.49E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.63E+02	8.38E-01	2.64E-02	1.13E+00	3.66E-01	5.23E+01	4.09E-01	6.41E+01	5.70E-03
BREOT-S4+10 (0-6")	9.00E-02	9.00E-02	1.01E+00	8.20E+01	7.37E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	8.11E+01	4.16E-01	2.64E-02	1.13E+00	1.81E-01	5.23E+01	4.09E-01	6.41E+01	2.83E-03
BREOT-S6+25 (0-6")	9.00E-02	9.00E-02	1.01E+00	1.55E+02	1.39E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.53E+02	7.86E-01	2.64E-02	1.13E+00	3.43E-01	5.23E+01	4.09E-01	6.41E+01	5.35E-03
BREOT-S8+25 (0-6")	9.00E-02	9.00E-02	1.01E+00	1.73E+02	1.56E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.71E+02	8.77E-01	2.64E-02	1.13E+00	3.83E-01	5.23E+01	4.09E-01	6.41E+01	5.97E-03
BREOT-N10+25 (0-6")	9.00E-02	9.00E-02	1.01E+00	1.74E+02	1.57E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.73E+02	8.84E-01	2.64E-02	1.13E+00	3.86E-01	5.23E+01	4.09E-01	6.41E+01	6.02E-03
BREOT-N11+25 (0-6")	9.00E-02	9.00E-02	1.01E+00	3.05E+02	2.74E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.02E+02	1.55E+00	2.64E-02	1.13E+00	6.76E-01	5.23E+01	4.09E-01	6.41E+01	1.05E-02
BREOT-N12+25 (0-6")	9.00E-02	9.00E-02	1.01E+00	1.65E+02	1.49E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.64E+02	8.39E-01	2.64E-02	1.13E+00	3.66E-01	5.23E+01	4.09E-01	6.41E+01	5.71E-03
BREOT-S12+25 (0-6")	9.00E-02	9.00E-02	1.01E+00	1.39E+03	1.25E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.38E+03	7.07E+00	2.64E-02	1.13E+00	3.08E+00	5.23E+01	4.09E-01	6.41E+01	4.81E-02
BREOT-S12+60 (0-6")	9.00E-02	9.00E-02	1.01E+00	2.07E+02	1.86E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.04E+02	1.05E+00	2.64E-02	1.13E+00	4.57E-01	5.23E+01	4.09E-01	6.41E+01	7.14E-03
BREOT-N13+25 (0-6")	9.00E-02	9.00E-02	1.01E+00	2.36E+02	2.12E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.34E+02	1.20E+00	2.64E-02	1.13E+00	5.23E-01	5.23E+01	4.09E-01	6.41E+01	8.16E-03
BREOT-S13+25 (0-6")	9.00E-02	9.00E-02	1.01E+00	6.15E+02	5.53E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	6.09E+02	3.12E+00	2.64E-02	1.13E+00	1.36E+00	5.23E+01	4.09E-01	6.41E+01	2.13E-02
BREOT-S13+65 (0-6")	9.00E-02	9.00E-02	1.01E+00	3.06E+02	2.75E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.03E+02	1.55E+00	2.64E-02	1.13E+00	6.77E-01	5.23E+01	4.09E-01	6.41E+01	1.06E-02
BREOT-N14+25 (0-6")	9.00E-02	9.00E-02	1.01E+00	2.64E+02	2.37E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.61E+02	1.34E+00	2.64E-02	1.13E+00	5.84E-01	5.23E+01	4.09E-01	6.41E+01	9.11E-03
BREOT-S14+25 (0-6")	9.00E-02	9.00E-02	1.01E+00	1.66E+03	1.49E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.64E+03	8.43E+00	2.64E-02	1.13E+00	3.68E+00	5.23E+01	4.09E-01	6.41E+01	5.74E-02
BREOT-S14+59 (0-6")	9.00E-02	9.00E-02	1.01E+00	1.96E+02	1.76E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.94E+02	9.95E-01	2.64E-02	1.13E+00	4.34E-01	5.23E+01	4.09E-01	6.41E+01	6.77E-03
BREOT-N15+25 (0-6")	9.00E-02	9.00E-02	1.01E+00	1.33E+03	1.19E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.31E+03	6.73E+00	2.64E-02	1.13E+00	2.94E+00	5.23E+01	4.09E-01	6.41E+01	4.58E-02
BREOT-N15+50 (0-6")	9.00E-02	9.00E-02	1.01E+00	2.74E+02	2.46E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.71E+02	1.39E+00	2.64E-02	1.13E+00	6.06E-01	5.23E+01	4.09E-01	6.41E+01	9.46E-03

TABLE C-2C: COPPER DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **18.41**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Red-Tailed Hawk (Carnivorous Birds - Terrestrial)																							
BREOT-S16+20 (0-6")	9.00E-02	9.00E-02	1.01E+00	8.06E+02	7.25E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	7.98E+02	4.09E+00	2.64E-02	1.13E+00	1.79E+00	5.23E+01	4.09E-01	6.41E+01	2.79E-02
BREOT-S16+75 (0-6")	9.00E-02	9.00E-02	1.01E+00	1.29E+02	1.16E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.28E+02	6.56E-01	2.64E-02	1.13E+00	2.86E-01	5.23E+01	4.09E-01	6.41E+01	4.47E-03
BREOT-N17+25 (0-6")	9.00E-02	9.00E-02	1.01E+00	8.00E+02	7.20E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	7.92E+02	4.06E+00	2.64E-02	1.13E+00	1.77E+00	5.23E+01	4.09E-01	6.41E+01	2.76E-02
BREOT-S18+25 (0-6")	9.00E-02	9.00E-02	1.01E+00	1.58E+02	1.42E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.56E+02	8.01E-01	2.64E-02	1.13E+00	3.50E-01	5.23E+01	4.09E-01	6.41E+01	5.46E-03
BREOT-N19+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S19+25 (0-6")	9.00E-02	9.00E-02	1.01E+00	6.06E+03	5.45E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	6.00E+03	3.07E+01	2.64E-02	1.13E+00	1.34E+01	5.23E+01	4.09E-01	6.41E+01	2.09E-01
BREOT-S19+85 (0-6")	9.00E-02	9.00E-02	1.01E+00	2.41E+02	2.17E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.39E+02	1.23E+00	2.64E-02	1.13E+00	5.35E-01	5.23E+01	4.09E-01	6.41E+01	8.34E-03
BREOT-N20+25 (0-6")	9.00E-02	9.00E-02	1.01E+00	5.28E+02	4.75E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.23E+02	2.68E+00	2.64E-02	1.13E+00	1.17E+00	5.23E+01	4.09E-01	6.41E+01	1.82E-02
BREOT-S20+25 (0-6")	9.00E-02	9.00E-02	1.01E+00	3.32E+03	2.98E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.28E+03	1.68E+01	2.64E-02	1.13E+00	7.35E+00	5.23E+01	4.09E-01	6.41E+01	1.15E-01
BREOT-S20+75 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N21+25 (0-6")	9.00E-02	9.00E-02	1.01E+00	3.18E+02	2.86E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.15E+02	1.62E+00	2.64E-02	1.13E+00	7.05E-01	5.23E+01	4.09E-01	6.41E+01	1.10E-02
BREOT-S21+25 (0-6")	9.00E-02	9.00E-02	1.01E+00	8.90E+03	8.00E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	8.81E+03	4.52E+01	2.64E-02	1.13E+00	1.97E+01	5.23E+01	4.09E-01	6.41E+01	3.07E-01
BREOT-N22+150 (0-6")	9.00E-02	9.00E-02	1.01E+00	2.47E+02	2.22E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.44E+02	1.25E+00	2.64E-02	1.13E+00	5.46E-01	5.23E+01	4.09E-01	6.41E+01	8.52E-03
BREOT-N22+25 (0-6")	9.00E-02	9.00E-02	1.01E+00	4.86E+02	4.37E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.81E+02	2.47E+00	2.64E-02	1.13E+00	1.08E+00	5.23E+01	4.09E-01	6.41E+01	1.68E-02
BREOT-S22+25 (0-6")	9.00E-02	9.00E-02	1.01E+00	1.95E+02	1.76E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.94E+02	9.92E-01	2.64E-02	1.13E+00	4.33E-01	5.23E+01	4.09E-01	6.41E+01	6.75E-03
BREOT-N23+115 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N23+25 (0-6")	9.00E-02	9.00E-02	1.01E+00	1.28E+03	1.15E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.27E+03	6.49E+00	2.64E-02	1.13E+00	2.83E+00	5.23E+01	4.09E-01	6.41E+01	4.42E-02
BREOT-S23+25 (0-6")	9.00E-02	9.00E-02	1.01E+00	3.52E+02	3.17E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.49E+02	1.79E+00	2.64E-02	1.13E+00	7.80E-01	5.23E+01	4.09E-01	6.41E+01	1.22E-02
BREOT-S23+37.5 (0-6")	9.00E-02	9.00E-02	1.01E+00	1.28E+02	1.15E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.27E+02	6.51E-01	2.64E-02	1.13E+00	2.84E-01	5.23E+01	4.09E-01	6.41E+01	4.43E-03
BREOT-N24+25 (0-6")	9.00E-02	9.00E-02	1.01E+00	3.17E+02	2.85E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.13E+02	1.61E+00	2.64E-02	1.13E+00	7.01E-01	5.23E+01	4.09E-01	6.41E+01	1.09E-02
BREOT-N24+75 (0-6")	9.00E-02	9.00E-02	1.01E+00	8.39E+01	7.54E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	8.30E+01	4.26E-01	2.64E-02	1.13E+00	1.86E-01	5.23E+01	4.09E-01	6.41E+01	2.90E-03
BREOT-S24+25 (0-6")	9.00E-02	9.00E-02	1.01E+00	1.90E+02	1.71E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.88E+02	9.63E-01	2.64E-02	1.13E+00	4.20E-01	5.23E+01	4.09E-01	6.41E+01	6.56E-03
BREOT-N25+25 (0-6")	9.00E-02	9.00E-02	1.01E+00	1.69E+02	1.52E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.68E+02	8.59E-01	2.64E-02	1.13E+00	3.75E-01	5.23E+01	4.09E-01	6.41E+01	5.85E-03
BREOT-S25+25 (0-6")	9.00E-02	9.00E-02	1.01E+00	1.75E+02	1.58E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.74E+02	8.90E-01	2.64E-02	1.13E+00	3.88E-01	5.23E+01	4.09E-01	6.41E+01	6.06E-03
BREOT-S25+40 (0-6")	9.00E-02	9.00E-02	1.01E+00	2.18E+02	1.96E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.16E+02	1.11E+00	2.64E-02	1.13E+00	4.83E-01	5.23E+01	4.09E-01	6.41E+01	7.54E-03
BREOT-S26+37 (0-6")	9.00E-02	9.00E-02	1.01E+00	8.50E+01	7.65E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	8.42E+01	4.32E-01	2.64E-02	1.13E+00	1.88E-01	5.23E+01	4.09E-01	6.41E+01	2.94E-03
BREOT-N27+25 (0-6")	9.00E-02	9.00E-02	1.01E+00	2.00E+02	1.80E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.98E+02	1.02E+00	2.64E-02	1.13E+00	4.44E-01	5.23E+01	4.09E-01	6.41E+01	6.93E-03
BREOT-S27+25 (0-6")	9.00E-02	9.00E-02	1.01E+00	1.96E+02	1.76E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.94E+02	9.95E-01	2.64E-02	1.13E+00	4.34E-01	5.23E+01	4.09E-01	6.41E+01	6.77E-03
BREOT-N28+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S28+25 (0-6")	9.00E-02	9.00E-02	1.01E+00	1.91E+02	1.72E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.89E+02	9.71E-01	2.64E-02	1.13E+00	4.23E-01	5.23E+01	4.09E-01	6.41E+01	6.61E-03
BREOT-N29+25 (0-6")	9.00E-02	9.00E-02	1.01E+00	1.97E+02	1.77E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.95E+02	1.00E+00	2.64E-02	1.13E+00	4.37E-01	5.23E+01	4.09E-01	6.41E+01	6.81E-03
BREOT-S29+25 (0-6")	9.00E-02	9.00E-02	1.01E+00	2.05E+02	1.85E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.03E+02	1.04E+00	2.64E-02	1.13E+00	4.55E-01	5.23E+01	4.09E-01	6.41E+01	7.10E-03
BREOT-N30+25 (0-6")	9.00E-02	9.00E-02	1.01E+00	3.21E+02	2.89E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.18E+02	1.63E+00	2.64E-02	1.13E+00	7.11E-01	5.23E+01	4.09E-01	6.41E+01	1.11E-02
BREOT-S30+25 (0-6")	9.00E-02	9.00E-02	1.01E+00	1.88E+02	1.69E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.86E+02	9.54E-01	2.64E-02	1.13E+00	4.16E-01	5.23E+01	4.09E-01	6.41E+01	6.50E-03
BREOT-N31+25 (0-6")	9.00E-02	9.00E-02	1.01E+00	2.14E+03	1.92E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.11E+03	1.08E+01	2.64E-02	1.13E+00	4.73E+00	5.23E+01	4.09E-01	6.41E+01	7.38E-02
BREOT-N31+75 (0-6")	9.00E-02	9.00E-02	1.01E+00	2.19E+02	1.97E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.17E+02	1.11E+00	2.64E-02	1.13E+00	4.85E-01	5.23E+01	4.09E-01	6.41E+01	7.58E-03
BREOT-S31+25 (0-6")	9.00E-02	9.00E-02	1.01E+00	8.46E+01	7.61E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	8.37E+01	4.29E-01	2.64E-02	1.13E+00	1.87E-01	5.23E+01	4.09E-01	6.41E+01	2.92E-03
BREOT-N32+25 (0-6")	9.00E-02	9.00E-02	1.01E+00	2.68E+02	2.41E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.65E+02	1.36E+00	2.64E-02	1.13E+00	5.93E-01	5.23E+01	4.09E-01	6.41E+01	9.25E-03
BREOT-S32+25 (0-6")	9.00E-02	9.00E-02	1.01E+00	4.08E+02	3.67E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.04E+02	2.07E+00	2.64E-02	1.13E+00	9.03E-01	5.23E+01	4.09E-01	6.41E+01	1.41E-02
BREOT-S32+300 (0-6")	9.00E-02	9.00E-02	1.01E+00	7.99E+02	7.19E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	7.91E+02	4.06E+00	2.64E-02	1.13E+00	1.77E+00	5.23E+01	4.09E-01	6.41E+01	2.76E-02
BREOT-N33+25 (0-6")	9.00E-02	9.00E-02	1.01E+00	3.87E+02	3.48E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.83E+02	1.96E+00	2.64E-02	1.13E+00	8.57E-01	5.23E+01	4.09E-01	6.41E+01	1.34E-02
BREOT-S33+25 (0-6")	9.00E-02	9.00E-02	1.01E+00	8.99E+02	8.09E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	8.90E+02	4.56E+00	2.64E-02	1.13E+00	1.99E+00	5.23E+01	4.09E-01	6.41E+01	3.11E-02
BREOT-N34+25 (0-6")	9.00E-02	9.00E-02	1.01E+00	3.65E+02	3.28E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.61E+02	1.85E+00	2.64E-02	1.13E+00	8.08E-01	5.23E+01	4.09E-01	6.41E+01	1.26E-02
BREOT-S34+25 (0-6")	9.00E-02	9.00E-02	1.01E+00	4.12E+02	3.71E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.08E+02	2.09E+00	2.64E-02	1.13E+00	9.12E-01	5.23E+01	4.09E-01	6.41E+01	1.42E-02
BREOT-N35+25 (0-6")	9.00E-02	9.00E-02	1.01E+00	2.89E+02	2.60E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.86E+02	1.47E+00	2.64E-02	1.13E+00	6.39E-01	5.23E+01	4.09E-01	6.41E+01	9.97E-03
BREOT-S35+25 (0-6")	9.00E-02	9.00E-02	1.01E+00	8.79E+02	7.91E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	8.70E+02	4.46E+00	2.64E-02	1.13E+00	1.95E+00	5.23E+01	4.09E-01	6.41E+01	3.04E-02
BREOT-N36+100 (0-6")	9.00E-02	9.00E-02	1.01E+00	1.60E+02	1.44E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.58E+02	8.10E-01	2.64E-02	1.13E+00	3.53E-01	5.23E+01	4.09E-01	6.41E+01	5.52E-03
BREOT-N36+25 (0-6")	9.00E-02	9.00E-02	1.01E+00	5.51E+02	4.95E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.45E+02	2.79E+00	2.64E-02	1.13E+00	1.22E+00	5.23E+01	4.09E-01	6.41E+01	1.90E-02
BREOT-S36+25 (0-6")	9.00E-02	9.00E-02	1.01E+00	8.10E+02	7.29E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	8.02E+02	4.11E+00	2.64E-02	1.13E+00	1.79E+00	5.23E+01	4.09E-01	6.41E+01	2.80E-02
BREOT-N37+25 (0-6")	9.00E-02	9.00E-02	1.01E+00	1.80E+02	1.62E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.78E+02	9.15E-01	2.64E-02	1.13E+00	3.99E-01	5.23E+01	4.09E-01	6.41E+01	6.23E-03
BREOT-S37+25 (0-6")	9.00E-02	9.00E-02	1.01E+00	1.12E+03	1.00E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.10E+03	5.66E+00	2.64E-02	1.13E+00	2.47E+00	5.23E+01	4.09E-01	6.41E+01	3.85E-02
BREOT-N38+25 (0-6")	9.00E-02	9.00E-02	1.01E+00	4.33E+02	3.90E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.29E+02	2.20E+00	2.64E-02	1.13E+00	9.59E-01	5.23E+01	4.09E-01	6.41E+01	1.50E-02
BREOT-S38+25 (0-6")	9.00E-02	9.00E-02	1.01E+00	1.06E+03	9.54E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.05E+03	5.38E+00	2.64E-02	1.13E+00	2.35E+00	5.23E+01	4.09E-01	6.41E+01	3.66E-02
BREOT-N39+25 (0-6")	9.00E-02	9.00E-02	1.01E+00	1.60E+02	1.43E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.58E+02	8.10E-01	2.64E-02	1.13E+00	3.53E-01	5.23E+01	4.09E-01	6.41E+01	5.51E-03
BREOT-S39+25 (0-6")	9.00E-02	9.00E-02	1.01E+00	8.87E+02	7.98E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	8.78E+02	4.50E+00	2.64E-02	1.13E+00	1.96E+00	5.23E+01	4.09E-01	6.41E+01	3.07E-02

TABLE C-2C: COPPER DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **18.41**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Red-Tailed Hawk (Carnivorous Birds - Terrestrial)																							
BREOT-N40+25 (0-6")	9.00E-02	9.00E-02	1.01E+00	2.33E+02	2.09E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.30E+02	1.18E+00	2.64E-02	1.13E+00	5.15E-01	5.23E+01	4.09E-01	6.41E+01	8.03E-03
BREOT-S40+25 (0-6")	9.00E-02	9.00E-02	1.01E+00	8.25E+02	7.43E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	8.17E+02	4.19E+00	2.64E-02	1.13E+00	1.83E+00	5.23E+01	4.09E-01	6.41E+01	2.85E-02
BREOT-N41+25 (0-6")	9.00E-02	9.00E-02	1.01E+00	9.19E+01	8.27E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	9.10E+01	4.67E-01	2.64E-02	1.13E+00	2.04E-01	5.23E+01	4.09E-01	6.41E+01	3.18E-03
BREOT-S41+25 (0-6")	9.00E-02	9.00E-02	1.01E+00	3.19E+02	2.87E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.16E+02	1.62E+00	2.64E-02	1.13E+00	7.07E-01	5.23E+01	4.09E-01	6.41E+01	1.10E-02
BREOT-N42+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S42+25 (0-6")	9.00E-02	9.00E-02	1.01E+00	4.87E+02	4.38E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.82E+02	2.47E+00	2.64E-02	1.13E+00	1.08E+00	5.23E+01	4.09E-01	6.41E+01	1.68E-02
BREOT-N43+12.5 (0-6")	9.00E-02	9.00E-02	1.01E+00	1.54E+02	1.39E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.52E+02	7.81E-01	2.64E-02	1.13E+00	3.41E-01	5.23E+01	4.09E-01	6.41E+01	5.32E-03
BREOT-N43+40 (0-6")	9.00E-02	9.00E-02	1.01E+00	8.05E+01	7.24E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	7.97E+01	4.09E-01	2.64E-02	1.13E+00	1.78E-01	5.23E+01	4.09E-01	6.41E+01	2.78E-03
BREOT-S43+25 (0-6")	9.00E-02	9.00E-02	1.01E+00	1.99E+02	1.79E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.97E+02	1.01E+00	2.64E-02	1.13E+00	4.40E-01	5.23E+01	4.09E-01	6.41E+01	6.87E-03
BREOT-N44+55 (0-6")	9.00E-02	9.00E-02	1.01E+00	1.88E+02	1.69E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.86E+02	9.56E-01	2.64E-02	1.13E+00	4.17E-01	5.23E+01	4.09E-01	6.41E+01	6.51E-03
BREOT-S44+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N45+25 (0-6")	9.00E-02	9.00E-02	1.01E+00	8.68E+01	7.80E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	8.59E+01	4.40E-01	2.64E-02	1.13E+00	1.92E-01	5.23E+01	4.09E-01	6.41E+01	3.00E-03
BREOT-S45+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N46+25 (0-6")	9.00E-02	9.00E-02	1.01E+00	3.40E+02	3.05E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.36E+02	1.72E+00	2.64E-02	1.13E+00	7.52E-01	5.23E+01	4.09E-01	6.41E+01	1.17E-02
BREOT-S46+25 (0-6")	9.00E-02	9.00E-02	1.01E+00	1.55E+02	1.39E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.53E+02	7.86E-01	2.64E-02	1.13E+00	3.43E-01	5.23E+01	4.09E-01	6.41E+01	5.35E-03
BREOT-N47+25 (0-6")	9.00E-02	9.00E-02	1.01E+00	2.56E+02	2.30E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.53E+02	1.30E+00	2.64E-02	1.13E+00	5.67E-01	5.23E+01	4.09E-01	6.41E+01	8.84E-03
BREOT-S47+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N48+25 (0-6")	9.00E-02	9.00E-02	1.01E+00	8.05E+01	7.24E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	7.96E+01	4.08E-01	2.64E-02	1.13E+00	1.78E-01	5.23E+01	4.09E-01	6.41E+01	2.78E-03
BREOT-S48+25 (0-6")	9.00E-02	9.00E-02	1.01E+00	8.86E+01	7.97E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	8.77E+01	4.50E-01	2.64E-02	1.13E+00	1.96E-01	5.23E+01	4.09E-01	6.41E+01	3.06E-03
BREOT-N49+25 (0-6")	9.00E-02	9.00E-02	1.01E+00	1.05E+02	9.40E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.03E+02	5.31E-01	2.64E-02	1.13E+00	2.31E-01	5.23E+01	4.09E-01	6.41E+01	3.61E-03
BREOT-S49+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N51+25 (0-6")	9.00E-02	9.00E-02	1.01E+00	9.24E+01	8.32E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	9.15E+01	4.69E-01	2.64E-02	1.13E+00	2.05E-01	5.23E+01	4.09E-01	6.41E+01	3.19E-03
BREOT-S51+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N52+25 (0-6")	9.00E-02	9.00E-02	1.01E+00	1.16E+02	1.04E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.15E+02	5.90E-01	2.64E-02	1.13E+00	2.57E-01	5.23E+01	4.09E-01	6.41E+01	4.01E-03
BREOT-S52+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N53+25 (0-6")	9.00E-02	9.00E-02	1.01E+00	1.13E+02	1.01E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.12E+02	5.72E-01	2.64E-02	1.13E+00	2.50E-01	5.23E+01	4.09E-01	6.41E+01	3.89E-03
BREOT-S53+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S54+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N55+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S55+25 (0-6")	9.00E-02	9.00E-02	1.01E+00	8.94E+01	8.04E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	8.85E+01	4.54E-01	2.64E-02	1.13E+00	1.98E-01	5.23E+01	4.09E-01	6.41E+01	3.09E-03
BREOT-N56+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S56+25 (0-6")	9.00E-02	9.00E-02	1.01E+00	2.03E+02	1.83E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.01E+02	1.03E+00	2.64E-02	1.13E+00	4.50E-01	5.23E+01	4.09E-01	6.41E+01	7.03E-03
BREOT-N57+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S57+25 (0-6")	9.00E-02	9.00E-02	1.01E+00	1.42E+02	1.28E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.41E+02	7.22E-01	2.64E-02	1.13E+00	3.15E-01	5.23E+01	4.09E-01	6.41E+01	4.91E-03
BREOT-N58+25 (0-6")	9.00E-02	9.00E-02	1.01E+00	8.21E+01	7.39E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	8.13E+01	4.17E-01	2.64E-02	1.13E+00	1.82E-01	5.23E+01	4.09E-01	6.41E+01	2.84E-03
BREOT-S58+25 (0-6")	9.00E-02	9.00E-02	1.01E+00	1.57E+02	1.42E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.56E+02	7.98E-01	2.64E-02	1.13E+00	3.48E-01	5.23E+01	4.09E-01	6.41E+01	5.44E-03
BREOT-N59+25 (0-6")	9.00E-02	9.00E-02	1.01E+00	1.12E+02	1.01E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.11E+02	5.70E-01	2.64E-02	1.13E+00	2.49E-01	5.23E+01	4.09E-01	6.41E+01	3.88E-03
BREOT-N60+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S60+25 (0-6")	9.00E-02	9.00E-02	1.01E+00	2.03E+02	1.83E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.01E+02	1.03E+00	2.64E-02	1.13E+00	4.49E-01	5.23E+01	4.09E-01	6.41E+01	7.01E-03
BREOT-S61+25 (0-6")	9.00E-02	9.00E-02	1.01E+00	1.64E+02	1.47E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.62E+02	8.31E-01	2.64E-02	1.13E+00	3.63E-01	5.23E+01	4.09E-01	6.41E+01	5.66E-03
BREOT-N62+25 (0-6")	9.00E-02	9.00E-02	1.01E+00	1.08E+02	9.74E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.07E+02	5.50E-01	2.64E-02	1.13E+00	2.40E-01	5.23E+01	4.09E-01	6.41E+01	3.74E-03
BREOT-S62+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N63+25 (0-6")	9.00E-02	9.00E-02	1.01E+00	2.67E+02	2.40E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.64E+02	1.35E+00	2.64E-02	1.13E+00	5.91E-01	5.23E+01	4.09E-01	6.41E+01	9.22E-03
BREOT-S63+25 (0-6")	9.00E-02	9.00E-02	1.01E+00	9.89E+01	8.89E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	9.79E+01	5.02E-01	2.64E-02	1.13E+00	2.19E-01	5.23E+01	4.09E-01	6.41E+01	3.42E-03
BREOT-N64+25 (0-6")	9.00E-02	9.00E-02	1.01E+00	1.00E+02	9.01E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	9.92E+01	5.08E-01	2.64E-02	1.13E+00	2.22E-01	5.23E+01	4.09E-01	6.41E+01	3.46E-03
BREOT-S64+25 (0-6")	9.00E-02	9.00E-02	1.01E+00	2.92E+02	2.63E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.89E+02	1.48E+00	2.64E-02	1.13E+00	6.47E-01	5.23E+01	4.09E-01	6.41E+01	1.01E-02
BREOT-S65+25 (0-6")	9.00E-02	9.00E-02	1.01E+00	2.72E+02	2.44E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.69E+02	1.38E+00	2.64E-02	1.13E+00	6.01E-01	5.23E+01	4.09E-01	6.41E+01	9.38E-03
BREOT-N66+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S66+25 (0-6")	9.00E-02	9.00E-02	1.01E+00	2.70E+02	2.43E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.67E+02	1.37E+00	2.64E-02	1.13E+00	5.98E-01	5.23E+01	4.09E-01	6.41E+01	9.34E-03
BREOT-N67+125 (0-6")	9.00E-02	9.00E-02	1.01E+00	1.50E+02	1.35E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.48E+02	7.59E-01	2.64E-02	1.13E+00	3.31E-01	5.23E+01	4.09E-01	6.41E+01	5.17E-03
BREOT-S67+25 (0-6")	9.00E-02	9.00E-02	1.01E+00	3.08E+02	2.77E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.05E+02	1.56E+00	2.64E-02	1.13E+00	6.83E-01	5.23E+01	4.09E-01	6.41E+01	1.07E-02
BREOT-N67+25 (0-6")	9.00E-02	9.00E-02	1.01E+00	1.78E+02	1.60E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.76E+02	9.04E-01	2.64E-02	1.13E+00	3.94E-01	5.23E+01	4.09E-01	6.41E+01	6.15E-03
																						Maximum HQ (Outside Tailings)	**3.07E-01**

TABLE C-2C: COPPER DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **18.41**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
American Kestrel (Insectivorous Birds - Terrestrial)																							
Reference Sites																							
ACBG-1 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	3.70E+00	2.95E+02	4.06E+00	7.84E-04	7.96E+01	6.24E-02	7.04E-02	1.24E-01	2.34E+00	5.23E+01	4.09E-01	4.12E+01	5.68E-02
ACBG-2 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	3.70E+00	9.26E+02	1.27E+01	7.84E-04	2.50E+02	1.96E-01	7.04E-02	1.24E-01	7.34E+00	5.23E+01	4.09E-01	4.12E+01	1.78E-01
UBRBG-202 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	3.70E+00	8.09E+02	1.11E+01	7.84E-04	2.18E+02	1.71E-01	7.04E-02	1.24E-01	6.42E+00	5.23E+01	4.09E-01	4.12E+01	1.56E-01
UBRBG-204 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	3.70E+00	3.86E+02	5.32E+00	7.84E-04	1.04E+02	8.18E-02	7.04E-02	1.24E-01	3.06E+00	5.23E+01	4.09E-01	4.12E+01	7.44E-02
Inside Tailings																						**Minimum HQ (Reference Sites)**	**5.68E-02**
BREOT-S6-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	1.18E+03	1.63E+01	7.84E-04	2.44E+02	1.91E-01	7.04E-02	1.24E-01	9.34E+00	5.23E+01	4.09E-01	4.12E+01	2.27E-01
BREOT-S2-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	3.55E+03	4.88E+01	7.84E-04	7.32E+02	5.74E-01	7.04E-02	1.24E-01	2.80E+01	5.23E+01	4.09E-01	4.12E+01	6.81E-01
BREOT-S0-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	6.71E+02	9.24E+00	7.84E-04	1.38E+02	1.09E-01	7.04E-02	1.24E-01	5.30E+00	5.23E+01	4.09E-01	4.12E+01	1.29E-01
BREOT-S1-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	5.27E+02	7.26E+00	7.84E-04	1.09E+02	8.53E-02	7.04E-02	1.24E-01	4.16E+00	5.23E+01	4.09E-01	4.12E+01	1.01E-01
BREOT-S7-25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	9.30E+02	1.28E+01	7.84E-04	1.92E+02	1.50E-01	7.04E-02	1.24E-01	7.35E+00	5.23E+01	4.09E-01	4.12E+01	1.78E-01
BREOT-S8-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	7.83E+02	1.08E+01	7.84E-04	1.61E+02	1.27E-01	7.04E-02	1.24E-01	6.19E+00	5.23E+01	4.09E-01	4.12E+01	1.50E-01
BREOT-S9-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	1.05E+03	1.44E+01	7.84E-04	2.16E+02	1.70E-01	7.04E-02	1.24E-01	8.29E+00	5.23E+01	4.09E-01	4.12E+01	2.02E-01
BREOT-N10-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	7.62E+03	1.05E+02	7.84E-04	1.57E+03	1.23E+00	7.04E-02	1.24E-01	6.02E+01	5.23E+01	4.09E-01	4.12E+01	1.46E+00
BREOT-N11-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	1.08E+03	1.49E+01	7.84E-04	2.23E+02	1.75E-01	7.04E-02	1.24E-01	8.54E+00	5.23E+01	4.09E-01	4.12E+01	2.07E-01
BREOT-N11-125 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	8.09E+02	1.11E+01	7.84E-04	1.67E+02	1.31E-01	7.04E-02	1.24E-01	6.39E+00	5.23E+01	4.09E-01	4.12E+01	1.55E-01
BREOT-S11-12 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	5.32E+03	7.32E+01	7.84E-04	1.10E+03	8.60E-01	7.04E-02	1.24E-01	4.20E+01	5.23E+01	4.09E-01	4.12E+01	1.02E+00
BREOT-S11+63 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	1.22E+03	1.68E+01	7.84E-04	2.52E+02	1.98E-01	7.04E-02	1.24E-01	9.66E+00	5.23E+01	4.09E-01	4.12E+01	2.35E-01
UBDT-TP-6 (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	1.22E+04	1.67E+02	7.84E-04	2.51E+03	1.97E+00	7.04E-02	1.24E-01	9.60E+01	5.23E+01	4.09E-01	4.12E+01	2.33E+00
UBDT-TP-6 (2-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	9.55E+03	1.31E+02	7.84E-04	1.97E+03	1.55E+00	7.04E-02	1.24E-01	7.55E+01	5.23E+01	4.09E-01	4.12E+01	1.83E+00
UBDT-TP-6 (12-24")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	1.81E+04	2.48E+02	7.84E-04	3.72E+03	2.92E+00	7.04E-02	1.24E-01	1.43E+02	5.23E+01	4.09E-01	4.12E+01	3.46E+00
UBDT-TP-6 (24-36")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	1.04E+03	1.44E+01	7.84E-04	2.15E+02	1.69E-01	7.04E-02	1.24E-01	8.25E+00	5.23E+01	4.09E-01	4.12E+01	2.00E-01
UBDT-TP-6 (36-48")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	7.66E+03	1.05E+02	7.84E-04	1.58E+03	1.24E+00	7.04E-02	1.24E-01	6.05E+01	5.23E+01	4.09E-01	4.12E+01	1.47E+00
UBDT-TP-6 (48-60")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	4.43E+03	6.09E+01	7.84E-04	9.13E+02	7.16E-01	7.04E-02	1.24E-01	3.50E+01	5.23E+01	4.09E-01	4.12E+01	8.49E-01
BREOT-N12-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	1.42E+03	1.95E+01	7.84E-04	2.92E+02	2.29E-01	7.04E-02	1.24E-01	1.12E+01	5.23E+01	4.09E-01	4.12E+01	2.72E-01
BREOT-S12-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	2.53E+03	3.48E+01	7.84E-04	5.21E+02	4.09E-01	7.04E-02	1.24E-01	2.00E+01	5.23E+01	4.09E-01	4.12E+01	4.85E-01
BREOT-S13-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	4.88E+03	6.72E+01	7.84E-04	1.01E+03	7.90E-01	7.04E-02	1.24E-01	3.86E+01	5.23E+01	4.09E-01	4.12E+01	9.37E-01
BREOT-S14-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	1.98E+03	2.73E+01	7.84E-04	4.09E+02	3.21E-01	7.04E-02	1.24E-01	1.57E+01	5.23E+01	4.09E-01	4.12E+01	3.81E-01
BREOT-N15-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	1.40E+03	1.93E+01	7.84E-04	2.89E+02	2.27E-01	7.04E-02	1.24E-01	1.11E+01	5.23E+01	4.09E-01	4.12E+01	2.69E-01
BREOT-S15-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	1.53E+03	2.11E+01	7.84E-04	3.16E+02	2.48E-01	7.04E-02	1.24E-01	1.21E+01	5.23E+01	4.09E-01	4.12E+01	2.94E-01
BREOT-N16-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	1.80E+03	2.48E+01	7.84E-04	3.71E+02	2.91E-01	7.04E-02	1.24E-01	1.42E+01	5.23E+01	4.09E-01	4.12E+01	3.45E-01
BREOT-N16-25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	9.96E+02	1.37E+01	7.84E-04	2.05E+02	1.61E-01	7.04E-02	1.24E-01	7.87E+00	5.23E+01	4.09E-01	4.12E+01	1.91E-01
BREOT-S16-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	7.45E+02	1.03E+01	7.84E-04	1.54E+02	1.21E-01	7.04E-02	1.24E-01	5.89E+00	5.23E+01	4.09E-01	4.12E+01	1.43E-01
BREOT-N17-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	7.63E+02	1.05E+01	7.84E-04	1.57E+02	1.23E-01	7.04E-02	1.24E-01	6.03E+00	5.23E+01	4.09E-01	4.12E+01	1.47E-01
BREOT-S17-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	6.64E+02	9.14E+00	7.84E-04	1.37E+02	1.07E-01	7.04E-02	1.24E-01	5.25E+00	5.23E+01	4.09E-01	4.12E+01	1.27E-01
BREOT-S17-25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	4.79E+02	6.60E+00	7.84E-04	9.88E+01	7.75E-02	7.04E-02	1.24E-01	3.79E+00	5.23E+01	4.09E-01	4.12E+01	9.20E-02
UBDT-TP-4 (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	1.67E+03	2.30E+01	7.84E-04	3.45E+02	2.71E-01	7.04E-02	1.24E-01	1.32E+01	5.23E+01	4.09E-01	4.12E+01	3.21E-01
UBDT-TP-4 (2-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	1.53E+03	2.10E+01	7.84E-04	3.15E+02	2.47E-01	7.04E-02	1.24E-01	1.21E+01	5.23E+01	4.09E-01	4.12E+01	2.93E-01
UBDT-TP-4 (12-24")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	1.47E+03	2.03E+01	7.84E-04	3.04E+02	2.38E-01	7.04E-02	1.24E-01	1.16E+01	5.23E+01	4.09E-01	4.12E+01	2.83E-01
UBDT-TP-4 (24-36")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	8.04E+02	1.11E+01	7.84E-04	1.66E+02	1.30E-01	7.04E-02	1.24E-01	6.35E+00	5.23E+01	4.09E-01	4.12E+01	1.54E-01
BREOT-N18-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	2.18E+03	3.01E+01	7.84E-04	4.50E+02	3.53E-01	7.04E-02	1.24E-01	1.73E+01	5.23E+01	4.09E-01	4.12E+01	4.19E-01
BREOT-N18-25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S18-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	1.07E+03	1.47E+01	7.84E-04	2.20E+02	1.73E-01	7.04E-02	1.24E-01	8.43E+00	5.23E+01	4.09E-01	4.12E+01	2.05E-01
BREOT-N19-10 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	1.15E+03	1.59E+01	7.84E-04	2.38E+02	1.86E-01	7.04E-02	1.24E-01	9.10E+00	5.23E+01	4.09E-01	4.12E+01	2.21E-01
BREOT-S19-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	1.24E+03	1.71E+01	7.84E-04	2.56E+02	2.01E-01	7.04E-02	1.24E-01	9.82E+00	5.23E+01	4.09E-01	4.12E+01	2.38E-01
UBDT-TP-5 (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	1.99E+03	2.74E+01	7.84E-04	4.11E+02	3.22E-01	7.04E-02	1.24E-01	1.57E+01	5.23E+01	4.09E-01	4.12E+01	3.82E-01
UBDT-TP-5 (2-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	1.58E+03	2.17E+01	7.84E-04	3.25E+02	2.55E-01	7.04E-02	1.24E-01	1.25E+01	5.23E+01	4.09E-01	4.12E+01	3.03E-01
UBDT-TP-5 (12-24")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	1.67E+03	2.30E+01	7.84E-04	3.45E+02	2.71E-01	7.04E-02	1.24E-01	1.32E+01	5.23E+01	4.09E-01	4.12E+01	3.21E-01
BREOT-N20-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	8.24E+02	1.13E+01	7.84E-04	1.70E+02	1.33E-01	7.04E-02	1.24E-01	6.51E+00	5.23E+01	4.09E-01	4.12E+01	1.58E-01
UBDT-TP-3 (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	1.37E+03	1.89E+01	7.84E-04	2.83E+02	2.22E-01	7.04E-02	1.24E-01	1.08E+01	5.23E+01	4.09E-01	4.12E+01	2.63E-01
UBDT-TP-3 (2-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	9.25E+02	1.27E+01	7.84E-04	1.91E+02	1.50E-01	7.04E-02	1.24E-01	7.30E+00	5.23E+01	4.09E-01	4.12E+01	1.77E-01
UBDT-TP-3 (12-24")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	1.01E+03	1.39E+01	7.84E-04	2.08E+02	1.63E-01	7.04E-02	1.24E-01	7.98E+00	5.23E+01	4.09E-01	4.12E+01	1.94E-01
UBDT-TP-3 (24-36")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	1.09E+03	1.50E+01	7.84E-04	2.24E+02	1.76E-01	7.04E-02	1.24E-01	8.59E+00	5.23E+01	4.09E-01	4.12E+01	2.09E-01
UBDT-TP-3 (36-48")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	1.70E+03	2.34E+01	7.84E-04	3.50E+02	2.75E-01	7.04E-02	1.24E-01	1.34E+01	5.23E+01	4.09E-01	4.12E+01	3.26E-01
UBDT-TP-3 (48-60")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	8.93E+02	1.23E+01	7.84E-04	1.84E+02	1.44E-01	7.04E-02	1.24E-01	7.05E+00	5.23E+01	4.09E-01	4.12E+01	1.71E-01
BREOT-N21-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	1.38E+03	1.89E+01	7.84E-04	2.84E+02	2.22E-01	7.04E-02	1.24E-01	1.09E+01	5.23E+01	4.09E-01	4.12E+01	2.64E-01
BREOT-N22-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	1.00E+03	1.38E+01	7.84E-04	2.06E+02	1.62E-01	7.04E-02	1.24E-01	7.91E+00	5.23E+01	4.09E-01	4.12E+01	1.92E-01

TABLE C-2C: COPPER DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 18.41

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
American Kestrel (Insectivorous Birds - Terrestrial)																							
BREOT-N23-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	1.14E+03	1.56E+01	7.84E-04	2.34E+02	1.84E-01	7.04E-02	1.24E-01	8.97E+00	5.23E+01	4.09E-01	4.12E+01	2.18E-01
BREOT-S23-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	3.86E+03	5.31E+01	7.84E-04	7.95E+02	6.24E-01	7.04E-02	1.24E-01	3.05E+01	5.23E+01	4.09E-01	4.12E+01	7.40E-01
UBDT-TP-2 (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	2.17E+03	2.99E+01	7.84E-04	4.48E+02	3.52E-01	7.04E-02	1.24E-01	1.72E+01	5.23E+01	4.09E-01	4.12E+01	4.17E-01
UBDT-TP-2 (2-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	2.18E+03	3.00E+01	7.84E-04	4.49E+02	3.52E-01	7.04E-02	1.24E-01	1.72E+01	5.23E+01	4.09E-01	4.12E+01	4.18E-01
UBDT-TP-2 (12-24")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	1.49E+03	2.05E+01	7.84E-04	3.07E+02	2.41E-01	7.04E-02	1.24E-01	1.18E+01	5.23E+01	4.09E-01	4.12E+01	2.86E-01
UBDT-TP-2 (24-36")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	9.05E+02	1.25E+01	7.84E-04	1.87E+02	1.46E-01	7.04E-02	1.24E-01	7.15E+00	5.23E+01	4.09E-01	4.12E+01	1.74E-01
UBDT-TP-2 (36-48")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	1.19E+03	1.64E+01	7.84E-04	2.46E+02	1.93E-01	7.04E-02	1.24E-01	9.41E+00	5.23E+01	4.09E-01	4.12E+01	2.29E-01
BREOT-S24-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	3.28E+03	4.52E+01	7.84E-04	6.77E+02	5.31E-01	7.04E-02	1.24E-01	2.59E+01	5.23E+01	4.09E-01	4.12E+01	6.30E-01
BREOT-N25-50 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	7.85E+03	1.08E+02	7.84E-04	1.62E+03	1.27E+00	7.04E-02	1.24E-01	6.20E+01	5.23E+01	4.09E-01	4.12E+01	1.51E+00
BREOT-N25-95 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	5.21E+02	7.18E+00	7.84E-04	1.08E+02	8.43E-02	7.04E-02	1.24E-01	4.12E+00	5.23E+01	4.09E-01	4.12E+01	1.00E-01
BREOT-S25-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	1.89E+03	2.60E+01	7.84E-04	3.89E+02	3.05E-01	7.04E-02	1.24E-01	1.49E+01	5.23E+01	4.09E-01	4.12E+01	3.62E-01
BREOT-S25-40 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	8.14E+02	1.12E+01	7.84E-04	1.68E+02	1.32E-01	7.04E-02	1.24E-01	6.43E+00	5.23E+01	4.09E-01	4.12E+01	1.56E-01
BREOT-N26A-25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	4.83E+02	6.65E+00	7.84E-04	9.96E+01	7.81E-02	7.04E-02	1.24E-01	3.82E+00	5.23E+01	4.09E-01	4.12E+01	9.27E-02
BREOT-N26B-25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	3.56E+03	4.90E+01	7.84E-04	7.35E+02	5.76E-01	7.04E-02	1.24E-01	2.81E+01	5.23E+01	4.09E-01	4.12E+01	6.84E-01
BREOT-N26-50 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	6.04E+03	8.31E+01	7.84E-04	1.25E+03	9.77E-01	7.04E-02	1.24E-01	4.77E+01	5.23E+01	4.09E-01	4.12E+01	1.16E+00
BREOT-N26-75 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	5.02E+03	6.91E+01	7.84E-04	1.04E+03	8.13E-01	7.04E-02	1.24E-01	3.97E+01	5.23E+01	4.09E-01	4.12E+01	9.64E-01
BREOT-S26-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	5.82E+02	8.01E+00	7.84E-04	1.20E+02	9.41E-02	7.04E-02	1.24E-01	4.60E+00	5.23E+01	4.09E-01	4.12E+01	1.12E-01
BREOT-S26-40 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	1.98E+03	2.73E+01	7.84E-04	4.08E+02	3.20E-01	7.04E-02	1.24E-01	1.57E+01	5.23E+01	4.09E-01	4.12E+01	3.80E-01
BREOT-N27-30 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	5.97E+03	8.21E+01	7.84E-04	1.23E+03	9.65E-01	7.04E-02	1.24E-01	4.71E+01	5.23E+01	4.09E-01	4.12E+01	1.15E+00
BREOT-N27-75 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	1.05E+04	1.45E+02	7.84E-04	2.17E+03	1.70E+00	7.04E-02	1.24E-01	8.31E+01	5.23E+01	4.09E-01	4.12E+01	2.02E+00
BREOT-S27-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	1.53E+03	2.11E+01	7.84E-04	3.16E+02	2.48E-01	7.04E-02	1.24E-01	1.21E+01	5.23E+01	4.09E-01	4.12E+01	2.94E-01
BREOT-N28-110 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	2.47E+03	3.40E+01	7.84E-04	5.09E+02	3.99E-01	7.04E-02	1.24E-01	1.95E+01	5.23E+01	4.09E-01	4.12E+01	4.74E-01
BREOT-N28-55 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	1.43E+04	1.97E+02	7.84E-04	2.95E+03	2.31E+00	7.04E-02	1.24E-01	1.13E+02	5.23E+01	4.09E-01	4.12E+01	2.75E+00
BREOT-S28-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	2.08E+03	2.86E+01	7.84E-04	4.29E+02	3.36E-01	7.04E-02	1.24E-01	1.64E+01	5.23E+01	4.09E-01	4.12E+01	3.99E-01
UBDT-TP-1 (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	4.76E+03	6.54E+01	7.84E-04	9.81E+02	7.69E-01	7.04E-02	1.24E-01	3.76E+01	5.23E+01	4.09E-01	4.12E+01	9.13E-01
UBDT-TP-1 (2-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	9.76E+03	1.34E+02	7.84E-04	2.01E+03	1.58E+00	7.04E-02	1.24E-01	7.71E+01	5.23E+01	4.09E-01	4.12E+01	1.87E+00
UBDT-TP-1 (12-24")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	8.82E+03	1.21E+02	7.84E-04	1.82E+03	1.43E+00	7.04E-02	1.24E-01	6.97E+01	5.23E+01	4.09E-01	4.12E+01	1.69E+00
UBDT-TP-1 (24-36")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	6.52E+03	8.97E+01	7.84E-04	1.34E+03	1.05E+00	7.04E-02	1.24E-01	5.15E+01	5.23E+01	4.09E-01	4.12E+01	1.25E+00
UBDT-TP-1 (36-48")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	1.41E+03	1.95E+01	7.84E-04	2.92E+02	2.29E-01	7.04E-02	1.24E-01	1.12E+01	5.23E+01	4.09E-01	4.12E+01	2.71E-01
UBDT-TP-1 (48-60")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	8.91E+02	1.23E+01	7.84E-04	1.84E+02	1.44E-01	7.04E-02	1.24E-01	7.04E+00	5.23E+01	4.09E-01	4.12E+01	1.71E-01
BREOT-N29-30 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	1.20E+04	1.65E+02	7.84E-04	2.47E+03	1.94E+00	7.04E-02	1.24E-01	9.48E+01	5.23E+01	4.09E-01	4.12E+01	2.30E+00
BREOT-S29-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	1.95E+03	2.68E+01	7.84E-04	4.02E+02	3.15E-01	7.04E-02	1.24E-01	1.54E+01	5.23E+01	4.09E-01	4.12E+01	3.74E-01
BREOT-N30-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	2.19E+03	3.02E+01	7.84E-04	4.52E+02	3.54E-01	7.04E-02	1.24E-01	1.73E+01	5.23E+01	4.09E-01	4.12E+01	4.21E-01
BREOT-S30-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	1.52E+03	2.09E+01	7.84E-04	3.13E+02	2.45E-01	7.04E-02	1.24E-01	1.20E+01	5.23E+01	4.09E-01	4.12E+01	2.91E-01
BREOT-N31-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	1.54E+03	2.13E+01	7.84E-04	3.18E+02	2.50E-01	7.04E-02	1.24E-01	1.22E+01	5.23E+01	4.09E-01	4.12E+01	2.96E-01
BREOT-S31-25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	9.58E+02	1.32E+01	7.84E-04	1.98E+02	1.55E-01	7.04E-02	1.24E-01	7.57E+00	5.23E+01	4.09E-01	4.12E+01	1.84E-01
BREOT-S31-5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	1.44E+03	1.98E+01	7.84E-04	2.97E+02	2.33E-01	7.04E-02	1.24E-01	1.14E+01	5.23E+01	4.09E-01	4.12E+01	2.76E-01
BREOT-N32-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	1.03E+03	1.42E+01	7.84E-04	2.13E+02	1.67E-01	7.04E-02	1.24E-01	8.15E+00	5.23E+01	4.09E-01	4.12E+01	1.98E-01
BREOT-S32-6 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	1.02E+03	1.41E+01	7.84E-04	2.11E+02	1.66E-01	7.04E-02	1.24E-01	8.10E+00	5.23E+01	4.09E-01	4.12E+01	1.97E-01
BREOT-N33-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	1.15E+03	1.58E+01	7.84E-04	2.37E+02	1.86E-01	7.04E-02	1.24E-01	9.08E+00	5.23E+01	4.09E-01	4.12E+01	2.21E-01
BREOT-S33-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	2.81E+03	3.87E+01	7.84E-04	5.80E+02	4.55E-01	7.04E-02	1.24E-01	2.22E+01	5.23E+01	4.09E-01	4.12E+01	5.40E-01
BREOT-N35-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	9.06E+02	1.25E+01	7.84E-04	1.87E+02	1.46E-01	7.04E-02	1.24E-01	7.16E+00	5.23E+01	4.09E-01	4.12E+01	1.74E-01
BREOT-S35-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	2.20E+03	3.02E+01	7.84E-04	4.53E+02	3.55E-01	7.04E-02	1.24E-01	1.74E+01	5.23E+01	4.09E-01	4.12E+01	4.22E-01
BREOT-N36-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	1.48E+03	2.04E+01	7.84E-04	3.05E+02	2.39E-01	7.04E-02	1.24E-01	1.17E+01	5.23E+01	4.09E-01	4.12E+01	2.84E-01
BREOT-S36-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	9.80E+02	1.35E+01	7.84E-04	2.02E+02	1.58E-01	7.04E-02	1.24E-01	7.74E+00	5.23E+01	4.09E-01	4.12E+01	1.88E-01
BREOT-N37-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	8.93E+02	1.23E+01	7.84E-04	1.84E+02	1.44E-01	7.04E-02	1.24E-01	7.06E+00	5.23E+01	4.09E-01	4.12E+01	1.71E-01
BREOT-S37-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	1.44E+03	1.98E+01	7.84E-04	2.96E+02	2.32E-01	7.04E-02	1.24E-01	1.13E+01	5.23E+01	4.09E-01	4.12E+01	2.75E-01
BREOT-N38-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	1.01E+03	1.39E+01	7.84E-04	2.08E+02	1.63E-01	7.04E-02	1.24E-01	7.98E+00	5.23E+01	4.09E-01	4.12E+01	1.94E-01
BREOT-S38-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	3.38E+03	4.64E+01	7.84E-04	6.96E+02	5.46E-01	7.04E-02	1.24E-01	2.67E+01	5.23E+01	4.09E-01	4.12E+01	6.48E-01
BREOT-N39-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	1.47E+03	2.03E+01	7.84E-04	3.03E+02	2.38E-01	7.04E-02	1.24E-01	1.16E+01	5.23E+01	4.09E-01	4.12E+01	2.82E-01
BREOT-S39-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	2.53E+03	3.48E+01	7.84E-04	5.21E+02	4.09E-01	7.04E-02	1.24E-01	2.00E+01	5.23E+01	4.09E-01	4.12E+01	4.85E-01
BREOT-N40-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	1.96E+03	2.70E+01	7.84E-04	4.04E+02	3.17E-01	7.04E-02	1.24E-01	1.55E+01	5.23E+01	4.09E-01	4.12E+01	3.76E-01
BREOT-S40-14 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	2.40E+03	3.30E+01	7.84E-04	4.95E+02	3.88E-01	7.04E-02	1.24E-01	1.90E+01	5.23E+01	4.09E-01	4.12E+01	4.60E-01
BREOT-N41-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	1.46E+03	2.00E+01	7.84E-04	3.00E+02	2.35E-01	7.04E-02	1.24E-01	1.15E+01	5.23E+01	4.09E-01	4.12E+01	2.79E-01
BREOT-S41-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	2.19E+03	3.01E+01	7.84E-04	4.51E+02	3.54E-01	7.04E-02	1.24E-01	1.73E+01	5.23E+01	4.09E-01	4.12E+01	4.20E-01

TABLE C-2C: COPPER DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **18.41**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
American Kestrel (Insectivorous Birds - Terrestrial)																							
BREOT-N42-35 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	1.18E+03	1.63E+01	7.84E-04	2.44E+02	1.92E-01	7.04E-02	1.24E-01	9.36E+00	5.23E+01	4.09E-01	4.12E+01	2.27E-01
BREOT-S42-25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	1.30E+03	1.79E+01	7.84E-04	2.69E+02	2.11E-01	7.04E-02	1.24E-01	1.03E+01	5.23E+01	4.09E-01	4.12E+01	2.50E-01
BREOT-N43-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	2.23E+03	3.07E+01	7.84E-04	4.60E+02	3.61E-01	7.04E-02	1.24E-01	1.76E+01	5.23E+01	4.09E-01	4.12E+01	4.28E-01
BREOT-S43-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	1.19E+03	1.63E+01	7.84E-04	2.45E+02	1.92E-01	7.04E-02	1.24E-01	9.38E+00	5.23E+01	4.09E-01	4.12E+01	2.28E-01
BREOT-N44-30 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	9.12E+02	1.26E+01	7.84E-04	1.88E+02	1.48E-01	7.04E-02	1.24E-01	7.21E+00	5.23E+01	4.09E-01	4.12E+01	1.75E-01
BREOT-S44-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	2.08E+03	2.86E+01	7.84E-04	4.28E+02	3.36E-01	7.04E-02	1.24E-01	1.64E+01	5.23E+01	4.09E-01	4.12E+01	3.98E-01
BREOT-N45-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	1.54E+03	2.11E+01	7.84E-04	3.16E+02	2.48E-01	7.04E-02	1.24E-01	1.21E+01	5.23E+01	4.09E-01	4.12E+01	2.95E-01
BREOT-N43-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	2.23E+03	3.07E+01	7.84E-04	4.60E+02	3.61E-01	7.04E-02	1.24E-01	1.76E+01	5.23E+01	4.09E-01	4.12E+01	4.28E-01
BREOT-S45-6 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	1.48E+03	2.03E+01	7.84E-04	3.05E+02	2.39E-01	7.04E-02	1.24E-01	1.17E+01	5.23E+01	4.09E-01	4.12E+01	2.84E-01
BREOT-N46-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	5.97E+02	8.22E+00	7.84E-04	1.23E+02	9.66E-02	7.04E-02	1.24E-01	4.72E+00	5.23E+01	4.09E-01	4.12E+01	1.15E-01
BREOT-S46-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	7.38E+02	1.02E+01	7.84E-04	1.52E+02	1.19E-01	7.04E-02	1.24E-01	5.83E+00	5.23E+01	4.09E-01	4.12E+01	1.42E-01
BREOT-S46-40 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	1.44E+03	1.98E+01	7.84E-04	2.97E+02	2.33E-01	7.04E-02	1.24E-01	1.14E+01	5.23E+01	4.09E-01	4.12E+01	2.76E-01
BREOT-N47-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	1.35E+03	1.85E+01	7.84E-04	2.78E+02	2.18E-01	7.04E-02	1.24E-01	1.06E+01	5.23E+01	4.09E-01	4.12E+01	2.59E-01
BREOT-S47-999 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	2.00E+03	2.75E+01	7.84E-04	4.12E+02	3.23E-01	7.04E-02	1.24E-01	1.58E+01	5.23E+01	4.09E-01	4.12E+01	3.83E-01
BREOT-S48-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	4.80E+02	6.60E+00	7.84E-04	9.89E+01	7.76E-02	7.04E-02	1.24E-01	3.79E+00	5.23E+01	4.09E-01	4.12E+01	9.20E-02
BREOT-S49-2.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	6.30E+02	8.67E+00	7.84E-04	1.30E+02	1.02E-01	7.04E-02	1.24E-01	4.98E+00	5.23E+01	4.09E-01	4.12E+01	1.21E-01
BREOT-S50-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	1.12E+03	1.54E+01	7.84E-04	2.31E+02	1.82E-01	7.04E-02	1.24E-01	8.87E+00	5.23E+01	4.09E-01	4.12E+01	2.15E-01
BREOT-S50-25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N52-60 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	1.03E+03	1.42E+01	7.84E-04	2.12E+02	1.66E-01	7.04E-02	1.24E-01	8.13E+00	5.23E+01	4.09E-01	4.12E+01	1.97E-01
BREOT-S52-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	5.34E+03	7.34E+01	7.84E-04	1.10E+03	8.63E-01	7.04E-02	1.24E-01	4.22E+01	5.23E+01	4.09E-01	4.12E+01	1.02E+00
BREOT-S53-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	1.24E+03	1.71E+01	7.84E-04	2.56E+02	2.01E-01	7.04E-02	1.24E-01	9.80E+00	5.23E+01	4.09E-01	4.12E+01	2.38E-01
BREOT-S54-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	7.78E+02	1.07E+01	7.84E-04	1.60E+02	1.26E-01	7.04E-02	1.24E-01	6.15E+00	5.23E+01	4.09E-01	4.12E+01	1.49E-01
BREOT-N55-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	2.10E+03	2.90E+01	7.84E-04	4.34E+02	3.40E-01	7.04E-02	1.24E-01	1.66E+01	5.23E+01	4.09E-01	4.12E+01	4.04E-01
BREOT-S55-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	8.39E+02	1.15E+01	7.84E-04	1.73E+02	1.36E-01	7.04E-02	1.24E-01	6.63E+00	5.23E+01	4.09E-01	4.12E+01	1.61E-01
BREOT-N56-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	1.56E+03	2.14E+01	7.84E-04	3.21E+02	2.52E-01	7.04E-02	1.24E-01	1.23E+01	5.23E+01	4.09E-01	4.12E+01	2.99E-01
BREOT-S56-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	7.24E+02	9.96E+00	7.84E-04	1.49E+02	1.17E-01	7.04E-02	1.24E-01	5.72E+00	5.23E+01	4.09E-01	4.12E+01	1.39E-01
BREOT-N57-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	1.14E+03	1.58E+01	7.84E-04	2.36E+02	1.85E-01	7.04E-02	1.24E-01	9.04E+00	5.23E+01	4.09E-01	4.12E+01	2.20E-01
BREOT-S57-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	8.39E+02	1.15E+01	7.84E-04	1.73E+02	1.36E-01	7.04E-02	1.24E-01	6.63E+00	5.23E+01	4.09E-01	4.12E+01	1.61E-01
BREOT-N58-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	7.44E+02	1.02E+01	7.84E-04	1.53E+02	1.20E-01	7.04E-02	1.24E-01	5.87E+00	5.23E+01	4.09E-01	4.12E+01	1.43E-01
BREOT-S58-12 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	1.25E+03	1.72E+01	7.84E-04	2.57E+02	2.02E-01	7.04E-02	1.24E-01	9.86E+00	5.23E+01	4.09E-01	4.12E+01	2.39E-01
BREOT-N59-18 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	5.12E+02	7.05E+00	7.84E-04	1.06E+02	8.28E-02	7.04E-02	1.24E-01	4.05E+00	5.23E+01	4.09E-01	4.12E+01	9.83E-02
BREOT-N60-12.5 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S60-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	9.12E+02	1.25E+01	7.84E-04	1.88E+02	1.47E-01	7.04E-02	1.24E-01	7.20E+00	5.23E+01	4.09E-01	4.12E+01	1.75E-01
BREOT-S61-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	1.25E+03	1.72E+01	7.84E-04	2.58E+02	2.02E-01	7.04E-02	1.24E-01	9.89E+00	5.23E+01	4.09E-01	4.12E+01	2.40E-01
BREOT-N62-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	4.24E+02	5.84E+00	7.84E-04	8.74E+01	6.86E-02	7.04E-02	1.24E-01	3.35E+00	5.23E+01	4.09E-01	4.12E+01	8.14E-02
BREOT-S62-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	1.69E+03	2.33E+01	7.84E-04	3.49E+02	2.74E-01	7.04E-02	1.24E-01	1.34E+01	5.23E+01	4.09E-01	4.12E+01	3.25E-01
BREOT-S63-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	6.85E+02	9.43E+00	7.84E-04	1.41E+02	1.11E-01	7.04E-02	1.24E-01	5.41E+00	5.23E+01	4.09E-01	4.12E+01	1.31E-01
BREOT-N64-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	4.59E+02	6.32E+00	7.84E-04	9.46E+01	7.42E-02	7.04E-02	1.24E-01	3.63E+00	5.23E+01	4.09E-01	4.12E+01	8.81E-02
BREOT-N64-20 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	5.57E+02	7.66E+00	7.84E-04	1.15E+02	9.00E-02	7.04E-02	1.24E-01	4.40E+00	5.23E+01	4.09E-01	4.12E+01	1.07E-01
BREOT-S64-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	8.13E+02	1.12E+01	7.84E-04	1.68E+02	1.32E-01	7.04E-02	1.24E-01	6.43E+00	5.23E+01	4.09E-01	4.12E+01	1.56E-01
BREOT-N65-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	5.96E+02	8.20E+00	7.84E-04	1.23E+02	9.63E-02	7.04E-02	1.24E-01	4.70E+00	5.23E+01	4.09E-01	4.12E+01	1.14E-01
BREOT-S65-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	8.80E+02	1.21E+01	7.84E-04	1.81E+02	1.42E-01	7.04E-02	1.24E-01	6.95E+00	5.23E+01	4.09E-01	4.12E+01	1.69E-01
BREOT-N66-5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	6.53E+02	8.99E+00	7.84E-04	1.35E+02	1.06E-01	7.04E-02	1.24E-01	5.16E+00	5.23E+01	4.09E-01	4.12E+01	1.25E-01
BREOT-S66-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	7.17E+02	9.87E+00	7.84E-04	1.48E+02	1.16E-01	7.04E-02	1.24E-01	5.66E+00	5.23E+01	4.09E-01	4.12E+01	1.38E-01
BREOT-N67-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	2.73E+03	3.76E+01	7.84E-04	5.63E+02	4.42E-01	7.04E-02	1.24E-01	2.16E+01	5.23E+01	4.09E-01	4.12E+01	5.24E-01
BREOT-S67-12.5 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
At Edge of Tailings																						**Maximum HQ (Inside Tailings)**	**3.46E+00**
BREOT-S0-0 (06)	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	5.83E+02	8.02E+00	7.84E-04	1.20E+02	9.42E-02	7.04E-02	1.24E-01	4.60E+00	5.23E+01	4.09E-01	4.12E+01	1.12E-01
BREOT-S1-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	1.02E+03	1.41E+01	7.84E-04	2.11E+02	1.65E-01	7.04E-02	1.24E-01	8.07E+00	5.23E+01	4.09E-01	4.12E+01	1.96E-01
BREOT-S2-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	1.45E+03	2.00E+01	7.84E-04	2.99E+02	2.35E-01	7.04E-02	1.24E-01	1.15E+01	5.23E+01	4.09E-01	4.12E+01	2.78E-01
BREOT-S3-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	1.76E+03	2.42E+01	7.84E-04	3.62E+02	2.84E-01	7.04E-02	1.24E-01	1.39E+01	5.23E+01	4.09E-01	4.12E+01	3.37E-01
BREOT-S4-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	1.96E+03	2.70E+01	7.84E-04	4.05E+02	3.18E-01	7.04E-02	1.24E-01	1.55E+01	5.23E+01	4.09E-01	4.12E+01	3.77E-01
BREOT-S6-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	1.59E+03	2.18E+01	7.84E-04	3.27E+02	2.57E-01	7.04E-02	1.24E-01	1.25E+01	5.23E+01	4.09E-01	4.12E+01	3.05E-01
BREOT-S7-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	9.21E+02	1.27E+01	7.84E-04	1.90E+02	1.49E-01	7.04E-02	1.24E-01	7.28E+00	5.23E+01	4.09E-01	4.12E+01	1.77E-01
BREOT-S8-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	8.19E+02	1.13E+01	7.84E-04	1.69E+02	1.32E-01	7.04E-02	1.24E-01	6.47E+00	5.23E+01	4.09E-01	4.12E+01	1.57E-01

TABLE C-2C: COPPER DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 18.41

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
American Kestrel (Insectivorous Birds - Terrestrial)																							
BREOT-S9-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	7.32E+02	1.01E+01	7.84E-04	1.51E+02	1.18E-01	7.04E-02	1.24E-01	5.78E+00	5.23E+01	4.09E-01	4.12E+01	1.40E-01
BREOT-N10-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	1.72E+04	2.36E+02	7.84E-04	3.54E+03	2.78E+00	7.04E-02	1.24E-01	1.36E+02	5.23E+01	4.09E-01	4.12E+01	3.29E+00
BREOT-N11-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	1.43E+03	1.97E+01	7.84E-04	2.95E+02	2.31E-01	7.04E-02	1.24E-01	1.13E+01	5.23E+01	4.09E-01	4.12E+01	2.75E-01
BREOT-S11-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	1.12E+03	1.54E+01	7.84E-04	2.31E+02	1.81E-01	7.04E-02	1.24E-01	8.85E+00	5.23E+01	4.09E-01	4.12E+01	2.15E-01
BREOT-N12-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	1.24E+03	1.71E+01	7.84E-04	2.57E+02	2.01E-01	7.04E-02	1.24E-01	9.83E+00	5.23E+01	4.09E-01	4.12E+01	2.39E-01
BREOT-S12-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	2.87E+03	3.94E+01	7.84E-04	5.91E+02	4.63E-01	7.04E-02	1.24E-01	2.26E+01	5.23E+01	4.09E-01	4.12E+01	5.50E-01
BREOT-N13-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	9.27E+03	1.28E+02	7.84E-04	1.91E+03	1.50E+00	7.04E-02	1.24E-01	7.32E+01	5.23E+01	4.09E-01	4.12E+01	1.78E+00
BREOT-S13-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	6.80E+02	9.35E+00	7.84E-04	1.40E+02	1.10E-01	7.04E-02	1.24E-01	5.37E+00	5.23E+01	4.09E-01	4.12E+01	1.30E-01
BREOT-N14-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	2.08E+03	2.86E+01	7.84E-04	4.28E+02	3.36E-01	7.04E-02	1.24E-01	1.64E+01	5.23E+01	4.09E-01	4.12E+01	3.99E-01
BREOT-S14-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	1.58E+04	2.18E+02	7.84E-04	3.26E+03	2.56E+00	7.04E-02	1.24E-01	1.25E+02	5.23E+01	4.09E-01	4.12E+01	3.04E+00
BREOT-N15-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	1.62E+03	2.23E+01	7.84E-04	3.34E+02	2.62E-01	7.04E-02	1.24E-01	1.28E+01	5.23E+01	4.09E-01	4.12E+01	3.11E-01
BREOT-N16-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	1.19E+03	1.64E+01	7.84E-04	2.46E+02	1.93E-01	7.04E-02	1.24E-01	9.43E+00	5.23E+01	4.09E-01	4.12E+01	2.29E-01
BREOT-S16-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	8.76E+02	1.20E+01	7.84E-04	1.81E+02	1.42E-01	7.04E-02	1.24E-01	6.92E+00	5.23E+01	4.09E-01	4.12E+01	1.68E-01
BREOT-N17-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	1.26E+03	1.74E+01	7.84E-04	2.60E+02	2.04E-01	7.04E-02	1.24E-01	9.98E+00	5.23E+01	4.09E-01	4.12E+01	2.42E-01
BREOT-S17-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	1.50E+03	2.06E+01	7.84E-04	3.09E+02	2.42E-01	7.04E-02	1.24E-01	1.18E+01	5.23E+01	4.09E-01	4.12E+01	2.88E-01
BREOT-N18-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	1.17E+03	1.60E+01	7.84E-04	2.40E+02	1.88E-01	7.04E-02	1.24E-01	9.20E+00	5.23E+01	4.09E-01	4.12E+01	2.24E-01
BREOT-S18-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	1.02E+04	1.40E+02	7.84E-04	2.09E+03	1.64E+00	7.04E-02	1.24E-01	8.02E+01	5.23E+01	4.09E-01	4.12E+01	1.95E+00
BREOT-N19-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	1.42E+03	1.96E+01	7.84E-04	2.94E+02	2.30E-01	7.04E-02	1.24E-01	1.13E+01	5.23E+01	4.09E-01	4.12E+01	2.73E-01
BREOT-S19-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	6.24E+02	8.58E+00	7.84E-04	1.29E+02	1.01E-01	7.04E-02	1.24E-01	4.93E+00	5.23E+01	4.09E-01	4.12E+01	1.20E-01
BREOT-N20-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	2.04E+03	2.81E+01	7.84E-04	4.20E+02	3.30E-01	7.04E-02	1.24E-01	1.61E+01	5.23E+01	4.09E-01	4.12E+01	3.91E-01
BREOT-S20-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	6.60E+02	9.08E+00	7.84E-04	1.36E+02	1.07E-01	7.04E-02	1.24E-01	5.21E+00	5.23E+01	4.09E-01	4.12E+01	1.27E-01
BREOT-N21-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	6.54E+04	9.00E+02	7.84E-04	1.35E+04	1.06E+01	7.04E-02	1.24E-01	5.17E+02	5.23E+01	4.09E-01	4.12E+01	1.26E+01
BREOT-S21-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	1.12E+03	1.54E+01	7.84E-04	2.31E+02	1.81E-01	7.04E-02	1.24E-01	8.85E+00	5.23E+01	4.09E-01	4.12E+01	2.15E-01
BREOT-N22-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	1.56E+03	2.15E+01	7.84E-04	3.21E+02	2.52E-01	7.04E-02	1.24E-01	1.23E+01	5.23E+01	4.09E-01	4.12E+01	2.99E-01
BREOT-S22-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	8.88E+02	1.22E+01	7.84E-04	1.83E+02	1.44E-01	7.04E-02	1.24E-01	7.01E+00	5.23E+01	4.09E-01	4.12E+01	1.70E-01
BREOT-N23-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	2.50E+03	3.44E+01	7.84E-04	5.15E+02	4.04E-01	7.04E-02	1.24E-01	1.97E+01	5.23E+01	4.09E-01	4.12E+01	4.80E-01
BREOT-S23-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	1.56E+03	2.15E+01	7.84E-04	3.22E+02	2.52E-01	7.04E-02	1.24E-01	1.23E+01	5.23E+01	4.09E-01	4.12E+01	2.99E-01
BREOT-N24-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	2.39E+03	3.29E+01	7.84E-04	4.93E+02	3.87E-01	7.04E-02	1.24E-01	1.89E+01	5.23E+01	4.09E-01	4.12E+01	4.59E-01
BREOT-S24-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	4.60E+03	6.32E+01	7.84E-04	9.47E+02	7.43E-01	7.04E-02	1.24E-01	3.63E+01	5.23E+01	4.09E-01	4.12E+01	8.82E-01
BREOT-N25-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	3.76E+03	5.18E+01	7.84E-04	7.75E+02	6.08E-01	7.04E-02	1.24E-01	2.97E+01	5.23E+01	4.09E-01	4.12E+01	7.22E-01
BREOT-S25-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	3.25E+03	4.47E+01	7.84E-04	6.70E+02	5.25E-01	7.04E-02	1.24E-01	2.57E+01	5.23E+01	4.09E-01	4.12E+01	6.24E-01
BREOT-N26-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	4.49E+03	6.18E+01	7.84E-04	9.25E+02	7.26E-01	7.04E-02	1.24E-01	3.55E+01	5.23E+01	4.09E-01	4.12E+01	8.61E-01
BREOT-S26-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	1.66E+03	2.29E+01	7.84E-04	3.43E+02	2.69E-01	7.04E-02	1.24E-01	1.31E+01	5.23E+01	4.09E-01	4.12E+01	3.19E-01
BREOT-N27-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	1.22E+04	1.68E+02	7.84E-04	2.51E+03	1.97E+00	7.04E-02	1.24E-01	9.62E+01	5.23E+01	4.09E-01	4.12E+01	2.34E+00
BREOT-S27-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	1.11E+03	1.52E+01	7.84E-04	2.28E+02	1.79E-01	7.04E-02	1.24E-01	8.73E+00	5.23E+01	4.09E-01	4.12E+01	2.12E-01
BREOT-N28-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	2.66E+03	3.66E+01	7.84E-04	5.48E+02	4.30E-01	7.04E-02	1.24E-01	2.10E+01	5.23E+01	4.09E-01	4.12E+01	5.10E-01
BREOT-S28-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	8.02E+02	1.10E+01	7.84E-04	1.65E+02	1.30E-01	7.04E-02	1.24E-01	6.33E+00	5.23E+01	4.09E-01	4.12E+01	1.54E-01
BREOT-S29-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	8.56E+02	1.18E+01	7.84E-04	1.77E+02	1.38E-01	7.04E-02	1.24E-01	6.77E+00	5.23E+01	4.09E-01	4.12E+01	1.64E-01
BREOT-N30-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	7.19E+03	9.90E+01	7.84E-04	1.48E+03	1.16E+00	7.04E-02	1.24E-01	5.68E+01	5.23E+01	4.09E-01	4.12E+01	1.38E+00
BREOT-S30-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	6.29E+02	8.66E+00	7.84E-04	1.30E+02	1.02E-01	7.04E-02	1.24E-01	4.97E+00	5.23E+01	4.09E-01	4.12E+01	1.21E-01
BREOT-N31-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	6.25E+03	8.60E+01	7.84E-04	1.29E+03	1.01E+00	7.04E-02	1.24E-01	4.94E+01	5.23E+01	4.09E-01	4.12E+01	1.20E+00
BREOT-S31-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	5.20E+02	7.16E+00	7.84E-04	1.07E+02	8.41E-02	7.04E-02	1.24E-01	4.11E+00	5.23E+01	4.09E-01	4.12E+01	9.98E-02
BREOT-N32-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	2.57E+03	3.54E+01	7.84E-04	5.31E+02	4.16E-01	7.04E-02	1.24E-01	2.03E+01	5.23E+01	4.09E-01	4.12E+01	4.94E-01
BREOT-S32-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	2.51E+03	3.45E+01	7.84E-04	5.17E+02	4.06E-01	7.04E-02	1.24E-01	1.98E+01	5.23E+01	4.09E-01	4.12E+01	4.81E-01
BREOT-N33-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	9.69E+02	1.33E+01	7.84E-04	2.00E+02	1.57E-01	7.04E-02	1.24E-01	7.65E+00	5.23E+01	4.09E-01	4.12E+01	1.86E-01
BREOT-S33-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	2.38E+03	3.28E+01	7.84E-04	4.91E+02	3.85E-01	7.04E-02	1.24E-01	1.88E+01	5.23E+01	4.09E-01	4.12E+01	4.57E-01
BREOT-N34-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	2.38E+03	3.27E+01	7.84E-04	4.90E+02	3.84E-01	7.04E-02	1.24E-01	1.88E+01	5.23E+01	4.09E-01	4.12E+01	4.56E-01
BREOT-S34-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	2.33E+03	3.20E+01	7.84E-04	4.80E+02	3.76E-01	7.04E-02	1.24E-01	1.84E+01	5.23E+01	4.09E-01	4.12E+01	4.46E-01
BREOT-N35-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	1.29E+03	1.78E+01	7.84E-04	2.66E+02	2.09E-01	7.04E-02	1.24E-01	1.02E+01	5.23E+01	4.09E-01	4.12E+01	2.48E-01
BREOT-S35-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	2.15E+03	2.96E+01	7.84E-04	4.43E+02	3.48E-01	7.04E-02	1.24E-01	1.70E+01	5.23E+01	4.09E-01	4.12E+01	4.12E-01
BREOT-N36-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	2.10E+03	2.89E+01	7.84E-04	4.33E+02	3.40E-01	7.04E-02	1.24E-01	1.66E+01	5.23E+01	4.09E-01	4.12E+01	4.03E-01
BREOT-S36-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	2.31E+03	3.18E+01	7.84E-04	4.77E+02	3.74E-01	7.04E-02	1.24E-01	1.83E+01	5.23E+01	4.09E-01	4.12E+01	4.44E-01
BREOT-N37-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	8.78E+02	1.21E+01	7.84E-04	1.81E+02	1.42E-01	7.04E-02	1.24E-01	6.94E+00	5.23E+01	4.09E-01	4.12E+01	1.69E-01
BREOT-S37-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	2.58E+03	3.55E+01	7.84E-04	5.33E+02	4.18E-01	7.04E-02	1.24E-01	2.04E+01	5.23E+01	4.09E-01	4.12E+01	4.96E-01
BREOT-N38-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	9.44E+02	1.30E+01	7.84E-04	1.95E+02	1.53E-01	7.04E-02	1.24E-01	7.46E+00	5.23E+01	4.09E-01	4.12E+01	1.81E-01

TABLE C-2C: COPPER DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **18.41**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
American Kestrel (Insectivorous Birds - Terrestrial)																							
BREOT-S38-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	4.08E+03	5.61E+01	7.84E-04	8.41E+02	6.60E-01	7.04E-02	1.24E-01	3.22E+01	5.23E+01	4.09E-01	4.12E+01	7.83E-01
BREOT-N39-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N40-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	1.16E+03	1.60E+01	7.84E-04	2.39E+02	1.88E-01	7.04E-02	1.24E-01	9.16E+00	5.23E+01	4.09E-01	4.12E+01	2.23E-01
BREOT-S40-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	2.73E+03	3.76E+01	7.84E-04	5.63E+02	4.42E-01	7.04E-02	1.24E-01	2.16E+01	5.23E+01	4.09E-01	4.12E+01	5.24E-01
BREOT-N41-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	7.50E+02	1.03E+01	7.84E-04	1.55E+02	1.21E-01	7.04E-02	1.24E-01	5.92E+00	5.23E+01	4.09E-01	4.12E+01	1.44E-01
BREOT-S41-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	2.68E+03	3.68E+01	7.84E-04	5.52E+02	4.33E-01	7.04E-02	1.24E-01	2.11E+01	5.23E+01	4.09E-01	4.12E+01	5.13E-01
BREOT-N42-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S42-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	3.99E+03	5.49E+01	7.84E-04	8.23E+02	6.45E-01	7.04E-02	1.24E-01	3.15E+01	5.23E+01	4.09E-01	4.12E+01	7.66E-01
BREOT-N43-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	6.15E+02	8.47E+00	7.84E-04	1.27E+02	9.95E-02	7.04E-02	1.24E-01	4.86E+00	5.23E+01	4.09E-01	4.12E+01	1.18E-01
BREOT-S43-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	6.32E+02	8.70E+00	7.84E-04	1.30E+02	1.02E-01	7.04E-02	1.24E-01	4.99E+00	5.23E+01	4.09E-01	4.12E+01	1.21E-01
BREOT-N44-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	1.17E+03	1.61E+01	7.84E-04	2.41E+02	1.89E-01	7.04E-02	1.24E-01	9.23E+00	5.23E+01	4.09E-01	4.12E+01	2.24E-01
BREOT-S44-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	6.15E+02	8.47E+00	7.84E-04	1.27E+02	9.95E-02	7.04E-02	1.24E-01	4.86E+00	5.23E+01	4.09E-01	4.12E+01	1.18E-01
BREOT-N45-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	1.83E+03	2.52E+01	7.84E-04	3.78E+02	2.97E-01	7.04E-02	1.24E-01	1.45E+01	5.23E+01	4.09E-01	4.12E+01	3.52E-01
BREOT-S45-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	5.15E+02	7.09E+00	7.84E-04	1.06E+02	8.33E-02	7.04E-02	1.24E-01	4.07E+00	5.23E+01	4.09E-01	4.12E+01	9.88E-02
BREOT-N46-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	1.28E+03	1.76E+01	7.84E-04	2.64E+02	2.07E-01	7.04E-02	1.24E-01	1.01E+01	5.23E+01	4.09E-01	4.12E+01	2.46E-01
BREOT-S46-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	4.78E+02	6.58E+00	7.84E-04	9.86E+01	7.73E-02	7.04E-02	1.24E-01	3.78E+00	5.23E+01	4.09E-01	4.12E+01	9.17E-02
BREOT-N47-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	3.12E+03	4.30E+01	7.84E-04	6.44E+02	5.05E-01	7.04E-02	1.24E-01	2.47E+01	5.23E+01	4.09E-01	4.12E+01	6.00E-01
BREOT-S47-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N48-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	6.97E+02	9.59E+00	7.84E-04	1.44E+02	1.13E-01	7.04E-02	1.24E-01	5.51E+00	5.23E+01	4.09E-01	4.12E+01	1.34E-01
BREOT-S48-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	4.37E+02	6.01E+00	7.84E-04	9.01E+01	7.06E-02	7.04E-02	1.24E-01	3.45E+00	5.23E+01	4.09E-01	4.12E+01	8.38E-02
BREOT-N49-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	8.31E+02	1.14E+01	7.84E-04	1.71E+02	1.34E-01	7.04E-02	1.24E-01	6.57E+00	5.23E+01	4.09E-01	4.12E+01	1.60E-01
BREOT-S49-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S50-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	5.12E+02	7.05E+00	7.84E-04	1.06E+02	8.28E-02	7.04E-02	1.24E-01	4.05E+00	5.23E+01	4.09E-01	4.12E+01	9.83E-02
BREOT-N51-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	5.90E+02	8.11E+00	7.84E-04	1.22E+02	9.53E-02	7.04E-02	1.24E-01	4.66E+00	5.23E+01	4.09E-01	4.12E+01	1.13E-01
BREOT-S51-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	3.74E+03	5.15E+01	7.84E-04	7.71E+02	6.05E-01	7.04E-02	1.24E-01	2.95E+01	5.23E+01	4.09E-01	4.12E+01	7.18E-01
BREOT-N52-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	5.97E+02	8.22E+00	7.84E-04	1.23E+02	9.66E-02	7.04E-02	1.24E-01	4.72E+00	5.23E+01	4.09E-01	4.12E+01	1.15E-01
BREOT-S52-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	4.50E+02	6.20E+00	7.84E-04	9.29E+01	7.28E-02	7.04E-02	1.24E-01	3.56E+00	5.23E+01	4.09E-01	4.12E+01	8.64E-02
BREOT-N53-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	6.23E+02	8.57E+00	7.84E-04	1.28E+02	1.01E-01	7.04E-02	1.24E-01	4.92E+00	5.23E+01	4.09E-01	4.12E+01	1.20E-01
BREOT-S53-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	4.18E+02	5.75E+00	7.84E-04	8.62E+01	6.76E-02	7.04E-02	1.24E-01	3.30E+00	5.23E+01	4.09E-01	4.12E+01	8.02E-02
BREOT-N54-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	5.93E+02	8.16E+00	7.84E-04	1.22E+02	9.59E-02	7.04E-02	1.24E-01	4.68E+00	5.23E+01	4.09E-01	4.12E+01	1.14E-01
BREOT-S54-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	3.98E+02	5.47E+00	7.84E-04	8.20E+01	6.43E-02	7.04E-02	1.24E-01	3.14E+00	5.23E+01	4.09E-01	4.12E+01	7.63E-02
BREOT-N55-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	5.00E+02	6.88E+00	7.84E-04	1.03E+02	8.08E-02	7.04E-02	1.24E-01	3.95E+00	5.23E+01	4.09E-01	4.12E+01	9.59E-02
BREOT-S55-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	6.97E+02	9.59E+00	7.84E-04	1.44E+02	1.13E-01	7.04E-02	1.24E-01	5.51E+00	5.23E+01	4.09E-01	4.12E+01	1.34E-01
BREOT-N56-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	4.50E+02	6.20E+00	7.84E-04	9.29E+01	7.28E-02	7.04E-02	1.24E-01	3.56E+00	5.23E+01	4.09E-01	4.12E+01	8.64E-02
BREOT-N57-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	5.89E+02	8.11E+00	7.84E-04	1.22E+02	9.53E-02	7.04E-02	1.24E-01	4.66E+00	5.23E+01	4.09E-01	4.12E+01	1.13E-01
BREOT-S57-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	8.72E+02	1.20E+01	7.84E-04	1.80E+02	1.41E-01	7.04E-02	1.24E-01	6.89E+00	5.23E+01	4.09E-01	4.12E+01	1.67E-01
BREOT-N58-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	5.78E+02	7.96E+00	7.84E-04	1.19E+02	9.35E-02	7.04E-02	1.24E-01	4.57E+00	5.23E+01	4.09E-01	4.12E+01	1.11E-01
BREOT-S58-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	7.86E+02	1.08E+01	7.84E-04	1.62E+02	1.27E-01	7.04E-02	1.24E-01	6.21E+00	5.23E+01	4.09E-01	4.12E+01	1.51E-01
BREOT-N59-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N60-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S60-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	1.10E+03	1.51E+01	7.84E-04	2.26E+02	1.77E-01	7.04E-02	1.24E-01	8.66E+00	5.23E+01	4.09E-01	4.12E+01	2.10E-01
BREOT-S61-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	7.73E+02	1.06E+01	7.84E-04	1.59E+02	1.25E-01	7.04E-02	1.24E-01	6.10E+00	5.23E+01	4.09E-01	4.12E+01	1.48E-01
BREOT-N62-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	4.03E+02	5.55E+00	7.84E-04	8.32E+01	6.52E-02	7.04E-02	1.24E-01	3.19E+00	5.23E+01	4.09E-01	4.12E+01	7.74E-02
BREOT-S62-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	7.57E+02	1.04E+01	7.84E-04	1.56E+02	1.22E-01	7.04E-02	1.24E-01	5.98E+00	5.23E+01	4.09E-01	4.12E+01	1.45E-01
BREOT-N63-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	7.58E+02	1.04E+01	7.84E-04	1.56E+02	1.23E-01	7.04E-02	1.24E-01	5.99E+00	5.23E+01	4.09E-01	4.12E+01	1.45E-01
BREOT-S63-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	6.41E+02	8.82E+00	7.84E-04	1.32E+02	1.04E-01	7.04E-02	1.24E-01	5.06E+00	5.23E+01	4.09E-01	4.12E+01	1.23E-01
BREOT-N64-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	4.21E+02	5.79E+00	7.84E-04	8.67E+01	6.80E-02	7.04E-02	1.24E-01	3.32E+00	5.23E+01	4.09E-01	4.12E+01	8.07E-02
BREOT-S64-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	1.40E+03	1.93E+01	7.84E-04	2.90E+02	2.27E-01	7.04E-02	1.24E-01	1.11E+01	5.23E+01	4.09E-01	4.12E+01	2.70E-01
BREOT-N66-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S66-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	8.59E+02	1.18E+01	7.84E-04	1.77E+02	1.39E-01	7.04E-02	1.24E-01	6.79E+00	5.23E+01	4.09E-01	4.12E+01	1.65E-01
BREOT-N67-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	3.24E+03	4.47E+01	7.84E-04	6.69E+02	5.25E-01	7.04E-02	1.24E-01	2.56E+01	5.23E+01	4.09E-01	4.12E+01	6.23E-01
BREOT-S67-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	4.82E+02	6.64E+00	7.84E-04	9.94E+01	7.80E-02	7.04E-02	1.24E-01	3.81E+00	5.23E+01	4.09E-01	4.12E+01	9.25E-02
Outside Tailings																						**Maximum HQ (At Edge of Tailings)**	**1.26E+01**
BREOT-S0+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	4.34E+02	5.97E+00	7.84E-04	8.94E+01	7.02E-02	7.04E-02	1.24E-01	3.43E+00	5.23E+01	4.09E-01	4.12E+01	8.33E-02
BREOT-S1+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	7.02E+02	9.66E+00	7.84E-04	1.45E+02	1.14E-01	7.04E-02	1.24E-01	5.55E+00	5.23E+01	4.09E-01	4.12E+01	1.35E-01

TABLE C-2C: COPPER DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 18.41

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
American Kestrel (Insectivorous Birds - Terrestrial)																							
BREOT-S2+95 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	1.64E+03	2.26E+01	7.84E-04	3.38E+02	2.65E-01	7.04E-02	1.24E-01	1.30E+01	5.23E+01	4.09E-01	4.12E+01	3.15E-01
BREOT-S3+6 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	7.93E+02	1.09E+01	7.84E-04	1.63E+02	1.28E-01	7.04E-02	1.24E-01	6.26E+00	5.23E+01	4.09E-01	4.12E+01	1.52E-01
BREOT-S4+10 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	3.93E+02	5.41E+00	7.84E-04	8.11E+01	6.36E-02	7.04E-02	1.24E-01	3.11E+00	5.23E+01	4.09E-01	4.12E+01	7.55E-02
BREOT-S6+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	7.43E+02	1.02E+01	7.84E-04	1.53E+02	1.20E-01	7.04E-02	1.24E-01	5.87E+00	5.23E+01	4.09E-01	4.12E+01	1.43E-01
BREOT-S8+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	8.30E+02	1.14E+01	7.84E-04	1.71E+02	1.34E-01	7.04E-02	1.24E-01	6.56E+00	5.23E+01	4.09E-01	4.12E+01	1.59E-01
BREOT-N10+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	8.37E+02	1.15E+01	7.84E-04	1.73E+02	1.35E-01	7.04E-02	1.24E-01	6.61E+00	5.23E+01	4.09E-01	4.12E+01	1.61E-01
BREOT-N11+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	1.46E+03	2.02E+01	7.84E-04	3.02E+02	2.37E-01	7.04E-02	1.24E-01	1.16E+01	5.23E+01	4.09E-01	4.12E+01	2.81E-01
BREOT-N12+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	7.94E+02	1.09E+01	7.84E-04	1.64E+02	1.28E-01	7.04E-02	1.24E-01	6.27E+00	5.23E+01	4.09E-01	4.12E+01	1.52E-01
BREOT-S12+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	6.68E+03	9.20E+01	7.84E-04	1.38E+03	1.08E+00	7.04E-02	1.24E-01	5.28E+01	5.23E+01	4.09E-01	4.12E+01	1.28E+00
BREOT-S12+60 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	9.92E+02	1.36E+01	7.84E-04	2.04E+02	1.60E-01	7.04E-02	1.24E-01	7.84E+00	5.23E+01	4.09E-01	4.12E+01	1.90E-01
BREOT-N13+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	1.13E+03	1.56E+01	7.84E-04	2.34E+02	1.83E-01	7.04E-02	1.24E-01	8.96E+00	5.23E+01	4.09E-01	4.12E+01	2.18E-01
BREOT-S13+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	2.95E+03	4.06E+01	7.84E-04	6.09E+02	4.78E-01	7.04E-02	1.24E-01	2.33E+01	5.23E+01	4.09E-01	4.12E+01	5.67E-01
BREOT-S13+65 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	1.47E+03	2.02E+01	7.84E-04	3.03E+02	2.37E-01	7.04E-02	1.24E-01	1.16E+01	5.23E+01	4.09E-01	4.12E+01	2.82E-01
BREOT-N14+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	1.27E+03	1.74E+01	7.84E-04	2.61E+02	2.05E-01	7.04E-02	1.24E-01	1.00E+01	5.23E+01	4.09E-01	4.12E+01	2.43E-01
BREOT-S14+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	7.98E+03	1.10E+02	7.84E-04	1.64E+03	1.29E+00	7.04E-02	1.24E-01	6.30E+01	5.23E+01	4.09E-01	4.12E+01	1.53E+00
BREOT-S14+59 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	9.41E+02	1.29E+01	7.84E-04	1.94E+02	1.52E-01	7.04E-02	1.24E-01	7.43E+00	5.23E+01	4.09E-01	4.12E+01	1.81E-01
BREOT-N15+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	6.37E+03	8.76E+01	7.84E-04	1.31E+03	1.03E+00	7.04E-02	1.24E-01	5.03E+01	5.23E+01	4.09E-01	4.12E+01	1.22E+00
BREOT-N15+50 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	1.31E+03	1.81E+01	7.84E-04	2.71E+02	2.13E-01	7.04E-02	1.24E-01	1.04E+01	5.23E+01	4.09E-01	4.12E+01	2.52E-01
BREOT-S16+20 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	3.87E+03	5.33E+01	7.84E-04	7.98E+02	6.26E-01	7.04E-02	1.24E-01	3.06E+01	5.23E+01	4.09E-01	4.12E+01	7.43E-01
BREOT-S16+75 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	6.21E+02	8.54E+00	7.84E-04	1.28E+02	1.00E-01	7.04E-02	1.24E-01	4.90E+00	5.23E+01	4.09E-01	4.12E+01	1.19E-01
BREOT-N17+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	3.84E+03	5.29E+01	7.84E-04	7.92E+02	6.21E-01	7.04E-02	1.24E-01	3.03E+01	5.23E+01	4.09E-01	4.12E+01	7.37E-01
BREOT-S18+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	7.58E+02	1.04E+01	7.84E-04	1.56E+02	1.23E-01	7.04E-02	1.24E-01	5.99E+00	5.23E+01	4.09E-01	4.12E+01	1.45E-01
BREOT-N19+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S19+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	2.91E+04	4.00E+02	7.84E-04	6.00E+03	4.70E+00	7.04E-02	1.24E-01	2.30E+02	5.23E+01	4.09E-01	4.12E+01	5.58E+00
BREOT-S19+85 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	1.16E+03	1.60E+01	7.84E-04	2.39E+02	1.87E-01	7.04E-02	1.24E-01	9.16E+00	5.23E+01	4.09E-01	4.12E+01	2.22E-01
BREOT-N20+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	2.54E+03	3.49E+01	7.84E-04	5.23E+02	4.10E-01	7.04E-02	1.24E-01	2.00E+01	5.23E+01	4.09E-01	4.12E+01	4.87E-01
BREOT-S20+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	1.59E+04	2.19E+02	7.84E-04	3.28E+03	2.58E+00	7.04E-02	1.24E-01	1.26E+02	5.23E+01	4.09E-01	4.12E+01	3.06E+00
BREOT-S20+75 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N21+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	1.53E+03	2.10E+01	7.84E-04	3.15E+02	2.47E-01	7.04E-02	1.24E-01	1.21E+01	5.23E+01	4.09E-01	4.12E+01	2.93E-01
BREOT-S21+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	4.27E+04	5.88E+02	7.84E-04	8.81E+03	6.91E+00	7.04E-02	1.24E-01	3.37E+02	5.23E+01	4.09E-01	4.12E+01	8.20E+00
BREOT-N22+150 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	1.18E+03	1.63E+01	7.84E-04	2.44E+02	1.91E-01	7.04E-02	1.24E-01	9.35E+00	5.23E+01	4.09E-01	4.12E+01	2.27E-01
BREOT-N22+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	2.33E+03	3.21E+01	7.84E-04	4.81E+02	3.77E-01	7.04E-02	1.24E-01	1.84E+01	5.23E+01	4.09E-01	4.12E+01	4.48E-01
BREOT-S22+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	9.39E+02	1.29E+01	7.84E-04	1.94E+02	1.52E-01	7.04E-02	1.24E-01	7.41E+00	5.23E+01	4.09E-01	4.12E+01	1.80E-01
BREOT-N23+115 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N23+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	6.14E+03	8.45E+01	7.84E-04	1.27E+03	9.93E-01	7.04E-02	1.24E-01	4.85E+01	5.23E+01	4.09E-01	4.12E+01	1.18E+00
BREOT-S23+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	1.69E+03	2.33E+01	7.84E-04	3.49E+02	2.74E-01	7.04E-02	1.24E-01	1.34E+01	5.23E+01	4.09E-01	4.12E+01	3.25E-01
BREOT-S23+37.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	6.16E+02	8.48E+00	7.84E-04	1.27E+02	9.96E-02	7.04E-02	1.24E-01	4.87E+00	5.23E+01	4.09E-01	4.12E+01	1.18E-01
BREOT-N24+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	1.52E+03	2.09E+01	7.84E-04	3.13E+02	2.46E-01	7.04E-02	1.24E-01	1.20E+01	5.23E+01	4.09E-01	4.12E+01	2.92E-01
BREOT-N24+75 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	4.03E+02	5.54E+00	7.84E-04	8.30E+01	6.51E-02	7.04E-02	1.24E-01	3.18E+00	5.23E+01	4.09E-01	4.12E+01	7.73E-02
BREOT-S24+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	9.11E+02	1.25E+01	7.84E-04	1.88E+02	1.47E-01	7.04E-02	1.24E-01	7.20E+00	5.23E+01	4.09E-01	4.12E+01	1.75E-01
BREOT-N25+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	8.13E+02	1.12E+01	7.84E-04	1.68E+02	1.31E-01	7.04E-02	1.24E-01	6.42E+00	5.23E+01	4.09E-01	4.12E+01	1.56E-01
BREOT-S25+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	8.42E+02	1.16E+01	7.84E-04	1.74E+02	1.36E-01	7.04E-02	1.24E-01	6.65E+00	5.23E+01	4.09E-01	4.12E+01	1.62E-01
BREOT-S25+40 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	1.05E+03	1.44E+01	7.84E-04	2.16E+02	1.69E-01	7.04E-02	1.24E-01	8.27E+00	5.23E+01	4.09E-01	4.12E+01	2.01E-01
BREOT-S26+37 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	4.08E+02	5.62E+00	7.84E-04	8.42E+01	6.60E-02	7.04E-02	1.24E-01	3.22E+00	5.23E+01	4.09E-01	4.12E+01	7.83E-02
BREOT-N27+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	9.63E+02	1.32E+01	7.84E-04	1.98E+02	1.56E-01	7.04E-02	1.24E-01	7.60E+00	5.23E+01	4.09E-01	4.12E+01	1.85E-01
BREOT-S27+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	9.41E+02	1.29E+01	7.84E-04	1.94E+02	1.52E-01	7.04E-02	1.24E-01	7.43E+00	5.23E+01	4.09E-01	4.12E+01	1.81E-01
BREOT-N28+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S28+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	9.18E+02	1.26E+01	7.84E-04	1.89E+02	1.48E-01	7.04E-02	1.24E-01	7.25E+00	5.23E+01	4.09E-01	4.12E+01	1.76E-01
BREOT-N29+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	9.47E+02	1.30E+01	7.84E-04	1.95E+02	1.53E-01	7.04E-02	1.24E-01	7.48E+00	5.23E+01	4.09E-01	4.12E+01	1.82E-01
BREOT-S29+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	9.86E+02	1.36E+01	7.84E-04	2.03E+02	1.59E-01	7.04E-02	1.24E-01	7.79E+00	5.23E+01	4.09E-01	4.12E+01	1.89E-01
BREOT-N30+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	1.54E+03	2.12E+01	7.84E-04	3.18E+02	2.49E-01	7.04E-02	1.24E-01	1.22E+01	5.23E+01	4.09E-01	4.12E+01	2.96E-01
BREOT-S30+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	9.03E+02	1.24E+01	7.84E-04	1.86E+02	1.46E-01	7.04E-02	1.24E-01	7.13E+00	5.23E+01	4.09E-01	4.12E+01	1.73E-01
BREOT-N31+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	1.03E+04	1.41E+02	7.84E-04	2.11E+03	1.66E+00	7.04E-02	1.24E-01	8.10E+01	5.23E+01	4.09E-01	4.12E+01	1.97E+00
BREOT-N31+75 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	1.05E+03	1.45E+01	7.84E-04	2.17E+02	1.70E-01	7.04E-02	1.24E-01	8.31E+00	5.23E+01	4.09E-01	4.12E+01	2.02E-01
BREOT-S31+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	4.06E+02	5.59E+00	7.84E-04	8.37E+01	6.57E-02	7.04E-02	1.24E-01	3.21E+00	5.23E+01	4.09E-01	4.12E+01	7.79E-02

TABLE C-2C: COPPER DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 18.41

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
American Kestrel (Insectivorous Birds - Terrestrial)																							
BREOT-N32+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	1.29E+03	1.77E+01	7.84E-04	2.65E+02	2.08E-01	7.04E-02	1.24E-01	1.02E+01	5.23E+01	4.09E-01	4.12E+01	2.47E-01
BREOT-S32+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	1.96E+03	2.69E+01	7.84E-04	4.04E+02	3.17E-01	7.04E-02	1.24E-01	1.55E+01	5.23E+01	4.09E-01	4.12E+01	3.76E-01
BREOT-S32+300 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	3.84E+03	5.28E+01	7.84E-04	7.91E+02	6.20E-01	7.04E-02	1.24E-01	3.03E+01	5.23E+01	4.09E-01	4.12E+01	7.36E-01
BREOT-N33+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	1.86E+03	2.56E+01	7.84E-04	3.83E+02	3.00E-01	7.04E-02	1.24E-01	1.47E+01	5.23E+01	4.09E-01	4.12E+01	3.56E-01
BREOT-S33+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	4.32E+03	5.94E+01	7.84E-04	8.90E+02	6.98E-01	7.04E-02	1.24E-01	3.41E+01	5.23E+01	4.09E-01	4.12E+01	8.29E-01
BREOT-N34+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	1.75E+03	2.41E+01	7.84E-04	3.61E+02	2.83E-01	7.04E-02	1.24E-01	1.38E+01	5.23E+01	4.09E-01	4.12E+01	3.36E-01
BREOT-S34+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	1.98E+03	2.72E+01	7.84E-04	4.08E+02	3.20E-01	7.04E-02	1.24E-01	1.56E+01	5.23E+01	4.09E-01	4.12E+01	3.80E-01
BREOT-N35+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	1.39E+03	1.91E+01	7.84E-04	2.86E+02	2.24E-01	7.04E-02	1.24E-01	1.09E+01	5.23E+01	4.09E-01	4.12E+01	2.66E-01
BREOT-S35+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	4.22E+03	5.81E+01	7.84E-04	8.70E+02	6.83E-01	7.04E-02	1.24E-01	3.33E+01	5.23E+01	4.09E-01	4.12E+01	8.10E-01
BREOT-N36+100 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	7.66E+02	1.05E+01	7.84E-04	1.58E+02	1.24E-01	7.04E-02	1.24E-01	6.05E+00	5.23E+01	4.09E-01	4.12E+01	1.47E-01
BREOT-N36+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	2.64E+03	3.64E+01	7.84E-04	5.45E+02	4.27E-01	7.04E-02	1.24E-01	2.09E+01	5.23E+01	4.09E-01	4.12E+01	5.07E-01
BREOT-S36+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	3.89E+03	5.35E+01	7.84E-04	8.02E+02	6.29E-01	7.04E-02	1.24E-01	3.07E+01	5.23E+01	4.09E-01	4.12E+01	7.46E-01
BREOT-N37+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	8.66E+02	1.19E+01	7.84E-04	1.78E+02	1.40E-01	7.04E-02	1.24E-01	6.84E+00	5.23E+01	4.09E-01	4.12E+01	1.66E-01
BREOT-S37+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	5.35E+03	7.37E+01	7.84E-04	1.10E+03	8.66E-01	7.04E-02	1.24E-01	4.23E+01	5.23E+01	4.09E-01	4.12E+01	1.03E+00
BREOT-N38+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	2.08E+03	2.86E+01	7.84E-04	4.29E+02	3.36E-01	7.04E-02	1.24E-01	1.64E+01	5.23E+01	4.09E-01	4.12E+01	3.99E-01
BREOT-S38+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	5.09E+03	7.01E+01	7.84E-04	1.05E+03	8.23E-01	7.04E-02	1.24E-01	4.02E+01	5.23E+01	4.09E-01	4.12E+01	9.77E-01
BREOT-N39+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	7.66E+02	1.05E+01	7.84E-04	1.58E+02	1.24E-01	7.04E-02	1.24E-01	6.05E+00	5.23E+01	4.09E-01	4.12E+01	1.47E-01
BREOT-S39+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	4.26E+03	5.86E+01	7.84E-04	8.78E+02	6.89E-01	7.04E-02	1.24E-01	3.36E+01	5.23E+01	4.09E-01	4.12E+01	8.17E-01
BREOT-N40+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	1.12E+03	1.54E+01	7.84E-04	2.30E+02	1.81E-01	7.04E-02	1.24E-01	8.82E+00	5.23E+01	4.09E-01	4.12E+01	2.14E-01
BREOT-S40+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	3.96E+03	5.45E+01	7.84E-04	8.17E+02	6.41E-01	7.04E-02	1.24E-01	3.13E+01	5.23E+01	4.09E-01	4.12E+01	7.61E-01
BREOT-N41+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	4.41E+02	6.07E+00	7.84E-04	9.10E+01	7.14E-02	7.04E-02	1.24E-01	3.49E+00	5.23E+01	4.09E-01	4.12E+01	8.47E-02
BREOT-S41+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	1.53E+03	2.11E+01	7.84E-04	3.16E+02	2.48E-01	7.04E-02	1.24E-01	1.21E+01	5.23E+01	4.09E-01	4.12E+01	2.94E-01
BREOT-N42+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S42+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	2.34E+03	3.22E+01	7.84E-04	4.82E+02	3.78E-01	7.04E-02	1.24E-01	1.85E+01	5.23E+01	4.09E-01	4.12E+01	4.49E-01
BREOT-N43+12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	7.39E+02	1.02E+01	7.84E-04	1.52E+02	1.20E-01	7.04E-02	1.24E-01	5.84E+00	5.23E+01	4.09E-01	4.12E+01	1.42E-01
BREOT-N43+40 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	3.87E+02	5.32E+00	7.84E-04	7.97E+01	6.25E-02	7.04E-02	1.24E-01	3.05E+00	5.23E+01	4.09E-01	4.12E+01	7.42E-02
BREOT-S43+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	9.55E+02	1.31E+01	7.84E-04	1.97E+02	1.54E-01	7.04E-02	1.24E-01	7.54E+00	5.23E+01	4.09E-01	4.12E+01	1.83E-01
BREOT-N44+55 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	9.04E+02	1.24E+01	7.84E-04	1.86E+02	1.46E-01	7.04E-02	1.24E-01	7.14E+00	5.23E+01	4.09E-01	4.12E+01	1.73E-01
BREOT-S44+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N45+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	4.16E+02	5.73E+00	7.84E-04	8.59E+01	6.74E-02	7.04E-02	1.24E-01	3.29E+00	5.23E+01	4.09E-01	4.12E+01	7.99E-02
BREOT-S45+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N46+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	1.63E+03	2.24E+01	7.84E-04	3.36E+02	2.64E-01	7.04E-02	1.24E-01	1.29E+01	5.23E+01	4.09E-01	4.12E+01	3.13E-01
BREOT-S46+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	7.43E+02	1.02E+01	7.84E-04	1.53E+02	1.20E-01	7.04E-02	1.24E-01	5.87E+00	5.23E+01	4.09E-01	4.12E+01	1.43E-01
BREOT-N47+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	1.23E+03	1.69E+01	7.84E-04	2.53E+02	1.99E-01	7.04E-02	1.24E-01	9.71E+00	5.23E+01	4.09E-01	4.12E+01	2.36E-01
BREOT-S47+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N48+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	3.86E+02	5.32E+00	7.84E-04	7.96E+01	6.25E-02	7.04E-02	1.24E-01	3.05E+00	5.23E+01	4.09E-01	4.12E+01	7.41E-02
BREOT-S48+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	4.25E+02	5.85E+00	7.84E-04	8.77E+01	6.88E-02	7.04E-02	1.24E-01	3.36E+00	5.23E+01	4.09E-01	4.12E+01	8.16E-02
BREOT-N49+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	5.02E+02	6.91E+00	7.84E-04	1.03E+02	8.12E-02	7.04E-02	1.24E-01	3.96E+00	5.23E+01	4.09E-01	4.12E+01	9.63E-02
BREOT-S49+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N51+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	4.44E+02	6.11E+00	7.84E-04	9.15E+01	7.18E-02	7.04E-02	1.24E-01	3.51E+00	5.23E+01	4.09E-01	4.12E+01	8.52E-02
BREOT-S51+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N52+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	5.58E+02	7.67E+00	7.84E-04	1.15E+02	9.02E-02	7.04E-02	1.24E-01	4.41E+00	5.23E+01	4.09E-01	4.12E+01	1.07E-01
BREOT-S52+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N53+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	5.41E+02	7.45E+00	7.84E-04	1.12E+02	8.75E-02	7.04E-02	1.24E-01	4.27E+00	5.23E+01	4.09E-01	4.12E+01	1.04E-01
BREOT-S53+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S54+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N55+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S55+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	4.29E+02	5.90E+00	7.84E-04	8.85E+01	6.94E-02	7.04E-02	1.24E-01	3.39E+00	5.23E+01	4.09E-01	4.12E+01	8.23E-02
BREOT-N56+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S56+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	9.77E+02	1.34E+01	7.84E-04	2.01E+02	1.58E-01	7.04E-02	1.24E-01	7.72E+00	5.23E+01	4.09E-01	4.12E+01	1.87E-01
BREOT-N57+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S57+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	6.83E+02	9.40E+00	7.84E-04	1.41E+02	1.10E-01	7.04E-02	1.24E-01	5.39E+00	5.23E+01	4.09E-01	4.12E+01	1.31E-01
BREOT-N58+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	3.94E+02	5.42E+00	7.84E-04	8.13E+01	6.37E-02	7.04E-02	1.24E-01	3.11E+00	5.23E+01	4.09E-01	4.12E+01	7.56E-02
BREOT-S58+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	7.55E+02	1.04E+01	7.84E-04	1.56E+02	1.22E-01	7.04E-02	1.24E-01	5.97E+00	5.23E+01	4.09E-01	4.12E+01	1.45E-01
BREOT-N59+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	5.39E+02	7.42E+00	7.84E-04	1.11E+02	8.71E-02	7.04E-02	1.24E-01	4.26E+00	5.23E+01	4.09E-01	4.12E+01	1.03E-01

TABLE C-2C: COPPER DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **18.41**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
American Kestrel (Insectivorous Birds - Terrestrial)																							
BREOT-N60+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S60+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	9.74E+02	1.34E+01	7.84E-04	2.01E+02	1.58E-01	7.04E-02	1.24E-01	7.70E+00	5.23E+01	4.09E-01	4.12E+01	1.87E-01
BREOT-S61+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	7.86E+02	1.08E+01	7.84E-04	1.62E+02	1.27E-01	7.04E-02	1.24E-01	6.21E+00	5.23E+01	4.09E-01	4.12E+01	1.51E-01
BREOT-N62+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	5.20E+02	7.15E+00	7.84E-04	1.07E+02	8.41E-02	7.04E-02	1.24E-01	4.11E+00	5.23E+01	4.09E-01	4.12E+01	9.98E-02
BREOT-S62+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N63+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	1.28E+03	1.76E+01	7.84E-04	2.64E+02	2.07E-01	7.04E-02	1.24E-01	1.01E+01	5.23E+01	4.09E-01	4.12E+01	2.46E-01
BREOT-S63+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	4.75E+02	6.53E+00	7.84E-04	9.79E+01	7.68E-02	7.04E-02	1.24E-01	3.75E+00	5.23E+01	4.09E-01	4.12E+01	9.11E-02
BREOT-N64+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	4.81E+02	6.62E+00	7.84E-04	9.92E+01	7.78E-02	7.04E-02	1.24E-01	3.80E+00	5.23E+01	4.09E-01	4.12E+01	9.23E-02
BREOT-S64+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	1.40E+03	1.93E+01	7.84E-04	2.89E+02	2.27E-01	7.04E-02	1.24E-01	1.11E+01	5.23E+01	4.09E-01	4.12E+01	2.69E-01
BREOT-S65+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	1.30E+03	1.79E+01	7.84E-04	2.69E+02	2.11E-01	7.04E-02	1.24E-01	1.03E+01	5.23E+01	4.09E-01	4.12E+01	2.50E-01
BREOT-N66+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S66+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	1.30E+03	1.79E+01	7.84E-04	2.67E+02	2.10E-01	7.04E-02	1.24E-01	1.02E+01	5.23E+01	4.09E-01	4.12E+01	2.49E-01
BREOT-N67+125 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	7.18E+02	9.88E+00	7.84E-04	1.48E+02	1.16E-01	7.04E-02	1.24E-01	5.67E+00	5.23E+01	4.09E-01	4.12E+01	1.38E-01
BREOT-S67+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	1.48E+03	2.04E+01	7.84E-04	3.05E+02	2.39E-01	7.04E-02	1.24E-01	1.17E+01	5.23E+01	4.09E-01	4.12E+01	2.84E-01
BREOT-N67+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	8.55E+02	1.18E+01	7.84E-04	1.76E+02	1.38E-01	7.04E-02	1.24E-01	6.75E+00	5.23E+01	4.09E-01	4.12E+01	1.64E-01
																						Maximum HQ (Outside Tailings)	**8.20E+00**
Meadow Vole (Small Herbivorous Mammal - Terrestrial)																							
Reference Sites																							
ACBG-1 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	7.79E-01	6.20E+01	2.91E-01	NA	NA	NA	NA	1.13E-04	7.96E+01	8.96E-03	1.00E+00	3.06E-02	9.79E+00	6.32E+02	2.47E-02	6.24E+02	1.57E-02
ACBG-2 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	7.79E-01	1.95E+02	9.13E-01	NA	NA	NA	NA	1.13E-04	2.50E+02	2.81E-02	1.00E+00	3.06E-02	3.08E+01	6.32E+02	2.47E-02	6.24E+02	4.93E-02
UBRBG-202 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	7.79E-01	1.70E+02	7.98E-01	NA	NA	NA	NA	1.13E-04	2.18E+02	2.46E-02	1.00E+00	3.06E-02	2.69E+01	6.32E+02	2.47E-02	6.24E+02	4.31E-02
UBRBG-204 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	7.79E-01	8.12E+01	3.81E-01	NA	NA	NA	NA	1.13E-04	1.04E+02	1.17E-02	1.00E+00	3.06E-02	1.28E+01	6.32E+02	2.47E-02	6.24E+02	2.06E-02
Inside Tailings																						**Minimum HQ (Reference Sites)**	**1.57E-02**
BREOT-S6-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	2.76E+02	1.29E+00	NA	NA	NA	NA	1.13E-04	2.44E+02	2.74E-02	1.00E+00	3.06E-02	4.32E+01	6.32E+02	2.47E-02	6.24E+02	6.92E-02
BREOT-S2-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	8.28E+02	3.88E+00	NA	NA	NA	NA	1.13E-04	7.32E+02	8.23E-02	1.00E+00	3.06E-02	1.30E+02	6.32E+02	2.47E-02	6.24E+02	2.08E-01
BREOT-S0-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	1.57E+02	7.35E-01	NA	NA	NA	NA	1.13E-04	1.38E+02	1.56E-02	1.00E+00	3.06E-02	2.45E+01	6.32E+02	2.47E-02	6.24E+02	3.93E-02
BREOT-S1-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	1.23E+02	5.77E-01	NA	NA	NA	NA	1.13E-04	1.09E+02	1.22E-02	1.00E+00	3.06E-02	1.92E+01	6.32E+02	2.47E-02	6.24E+02	3.09E-02
BREOT-S7-25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	2.17E+02	1.02E+00	NA	NA	NA	NA	1.13E-04	1.92E+02	2.16E-02	1.00E+00	3.06E-02	3.40E+01	6.32E+02	2.47E-02	6.24E+02	5.45E-02
BREOT-S8-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	1.83E+02	8.57E-01	NA	NA	NA	NA	1.13E-04	1.61E+02	1.82E-02	1.00E+00	3.06E-02	2.86E+01	6.32E+02	2.47E-02	6.24E+02	4.59E-02
BREOT-S9-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	2.45E+02	1.15E+00	NA	NA	NA	NA	1.13E-04	2.16E+02	2.44E-02	1.00E+00	3.06E-02	3.83E+01	6.32E+02	2.47E-02	6.24E+02	6.15E-02
BREOT-N10-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	1.78E+03	8.33E+00	NA	NA	NA	NA	1.13E-04	1.57E+03	1.77E-01	1.00E+00	3.06E-02	2.78E+02	6.32E+02	2.47E-02	6.24E+02	4.46E-01
BREOT-N11-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	2.52E+02	1.18E+00	NA	NA	NA	NA	1.13E-04	2.23E+02	2.51E-02	1.00E+00	3.06E-02	3.95E+01	6.32E+02	2.47E-02	6.24E+02	6.33E-02
BREOT-N11-125 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	1.89E+02	8.85E-01	NA	NA	NA	NA	1.13E-04	1.67E+02	1.88E-02	1.00E+00	3.06E-02	2.95E+01	6.32E+02	2.47E-02	6.24E+02	4.74E-02
BREOT-S11-12 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	1.24E+03	5.82E+00	NA	NA	NA	NA	1.13E-04	1.10E+03	1.23E-01	1.00E+00	3.06E-02	1.94E+02	6.32E+02	2.47E-02	6.24E+02	3.12E-01
BREOT-S11+63 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	2.85E+02	1.34E+00	NA	NA	NA	NA	1.13E-04	2.52E+02	2.84E-02	1.00E+00	3.06E-02	4.47E+01	6.32E+02	2.47E-02	6.24E+02	7.16E-02
UBDT-TP-6 (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	2.84E+03	1.33E+01	NA	NA	NA	NA	1.13E-04	2.51E+03	2.82E-01	1.00E+00	3.06E-02	4.44E+02	6.32E+02	2.47E-02	6.24E+02	7.12E-01
UBDT-TP-6 (2-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	2.23E+03	1.05E+01	NA	NA	NA	NA	1.13E-04	1.97E+03	2.22E-01	1.00E+00	3.06E-02	3.49E+02	6.32E+02	2.47E-02	6.24E+02	5.59E-01
UBDT-TP-6 (12-24")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	4.21E+03	1.97E+01	NA	NA	NA	NA	1.13E-04	3.72E+03	4.19E-01	1.00E+00	3.06E-02	6.59E+02	6.32E+02	2.47E-02	6.24E+02	1.06E+00
UBDT-TP-6 (24-36")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	2.44E+02	1.14E+00	NA	NA	NA	NA	1.13E-04	2.15E+02	2.42E-02	1.00E+00	3.06E-02	3.81E+01	6.32E+02	2.47E-02	6.24E+02	6.11E-02
UBDT-TP-6 (36-48")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	1.79E+03	8.37E+00	NA	NA	NA	NA	1.13E-04	1.58E+03	1.78E-01	1.00E+00	3.06E-02	2.79E+02	6.32E+02	2.47E-02	6.24E+02	4.48E-01
UBDT-TP-6 (48-60")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	1.03E+03	4.84E+00	NA	NA	NA	NA	1.13E-04	9.13E+02	1.03E-01	1.00E+00	3.06E-02	1.62E+02	6.32E+02	2.47E-02	6.24E+02	2.59E-01
BREOT-N12-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	3.31E+02	1.55E+00	NA	NA	NA	NA	1.13E-04	2.92E+02	3.29E-02	1.00E+00	3.06E-02	5.18E+01	6.32E+02	2.47E-02	6.24E+02	8.30E-02
BREOT-S12-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	5.90E+02	2.77E+00	NA	NA	NA	NA	1.13E-04	5.21E+02	5.87E-02	1.00E+00	3.06E-02	9.23E+01	6.32E+02	2.47E-02	6.24E+02	1.48E-01
BREOT-S13-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	1.14E+03	5.34E+00	NA	NA	NA	NA	1.13E-04	1.01E+03	1.13E-01	1.00E+00	3.06E-02	1.78E+02	6.32E+02	2.47E-02	6.24E+02	2.86E-01
BREOT-S14-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	4.63E+02	2.17E+00	NA	NA	NA	NA	1.13E-04	4.09E+02	4.60E-02	1.00E+00	3.06E-02	7.24E+01	6.32E+02	2.47E-02	6.24E+02	1.16E-01
BREOT-N15-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	3.27E+02	1.53E+00	NA	NA	NA	NA	1.13E-04	2.89E+02	3.26E-02	1.00E+00	3.06E-02	5.12E+01	6.32E+02	2.47E-02	6.24E+02	8.22E-02
BREOT-S15-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	3.57E+02	1.68E+00	NA	NA	NA	NA	1.13E-04	3.16E+02	3.55E-02	1.00E+00	3.06E-02	5.59E+01	6.32E+02	2.47E-02	6.24E+02	8.97E-02
BREOT-N16-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	4.20E+02	1.97E+00	NA	NA	NA	NA	1.13E-04	3.71E+02	4.17E-02	1.00E+00	3.06E-02	6.57E+01	6.32E+02	2.47E-02	6.24E+02	1.05E-01
BREOT-N16-25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	2.32E+02	1.09E+00	NA	NA	NA	NA	1.13E-04	2.05E+02	2.31E-02	1.00E+00	3.06E-02	3.64E+01	6.32E+02	2.47E-02	6.24E+02	5.83E-02
BREOT-S16-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	1.74E+02	8.16E-01	NA	NA	NA	NA	1.13E-04	1.54E+02	1.73E-02	1.00E+00	3.06E-02	2.72E+01	6.32E+02	2.47E-02	6.24E+02	4.37E-02
BREOT-N17-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	1.78E+02	8.35E-01	NA	NA	NA	NA	1.13E-04	1.57E+02	1.77E-02	1.00E+00	3.06E-02	2.79E+01	6.32E+02	2.47E-02	6.24E+02	4.47E-02
BREOT-S17-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	1.55E+02	7.27E-01	NA	NA	NA	NA	1.13E-04	1.37E+02	1.54E-02	1.00E+00	3.06E-02	2.43E+01	6.32E+02	2.47E-02	6.24E+02	3.89E-02
BREOT-S17-25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	1.12E+02	5.24E-01	NA	NA	NA	NA	1.13E-04	9.88E+01	1.11E-02	1.00E+00	3.06E-02	1.75E+01	6.32E+02	2.47E-02	6.24E+02	2.81E-02
UBDT-TP-4 (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	3.90E+02	1.83E+00	NA	NA	NA	NA	1.13E-04	3.45E+02	3.88E-02	1.00E+00	3.06E-02	6.11E+01	6.32E+02	2.47E-02	6.24E+02	9.80E-02
UBDT-TP-4 (2-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	3.56E+02	1.67E+00	NA	NA	NA	NA	1.13E-04	3.15E+02	3.54E-02	1.00E+00	3.06E-02	5.58E+01	6.32E+02	2.47E-02	6.24E+02	8.94E-02
UBDT-TP-4 (12-24")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	3.44E+02	1.61E+00	NA	NA	NA	NA	1.13E-04	3.04E+02	3.42E-02	1.00E+00	3.06E-02	5.38E+01	6.32E+02	2.47E-02	6.24E+02	8.63E-02
UBDT-TP-4 (24-36")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	1.87E+02	8.79E-01	NA	NA	NA	NA	1.13E-04	1.66E+02	1.86E-02	1.00E+00	3.06E-02	2.93E+01	6.32E+02	2.47E-02	6.24E+02	4.71E-02

TABLE C-2C: COPPER DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **18.41**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Meadow Vole (Small Herbivorous Mammal - Terrestrial)																							
BREOT-N18-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	5.10E+02	2.39E+00	NA	NA	NA	NA	1.13E-04	4.50E+02	5.07E-02	1.00E+00	3.06E-02	7.98E+01	6.32E+02	2.47E-02	6.24E+02	1.28E-01
BREOT-N18-25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S18-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	2.49E+02	1.17E+00	NA	NA	NA	NA	1.13E-04	2.20E+02	2.48E-02	1.00E+00	3.06E-02	3.90E+01	6.32E+02	2.47E-02	6.24E+02	6.25E-02
BREOT-N19-10 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	2.69E+02	1.26E+00	NA	NA	NA	NA	1.13E-04	2.38E+02	2.67E-02	1.00E+00	3.06E-02	4.21E+01	6.32E+02	2.47E-02	6.24E+02	6.75E-02
BREOT-S19-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	2.90E+02	1.36E+00	NA	NA	NA	NA	1.13E-04	2.56E+02	2.88E-02	1.00E+00	3.06E-02	4.54E+01	6.32E+02	2.47E-02	6.24E+02	7.28E-02
UBDT-TP-5 (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	4.65E+02	2.18E+00	NA	NA	NA	NA	1.13E-04	4.11E+02	4.62E-02	1.00E+00	3.06E-02	7.27E+01	6.32E+02	2.47E-02	6.24E+02	1.17E-01
UBDT-TP-5 (2-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	3.68E+02	1.73E+00	NA	NA	NA	NA	1.13E-04	3.25E+02	3.66E-02	1.00E+00	3.06E-02	5.76E+01	6.32E+02	2.47E-02	6.24E+02	9.24E-02
UBDT-TP-5 (12-24")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	3.90E+02	1.83E+00	NA	NA	NA	NA	1.13E-04	3.45E+02	3.88E-02	1.00E+00	3.06E-02	6.11E+01	6.32E+02	2.47E-02	6.24E+02	9.80E-02
BREOT-N20-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	1.92E+02	9.01E-01	NA	NA	NA	NA	1.13E-04	1.70E+02	1.91E-02	1.00E+00	3.06E-02	3.01E+01	6.32E+02	2.47E-02	6.24E+02	4.82E-02
UBDT-TP-3 (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	3.20E+02	1.50E+00	NA	NA	NA	NA	1.13E-04	2.83E+02	3.19E-02	1.00E+00	3.06E-02	5.01E+01	6.32E+02	2.47E-02	6.24E+02	8.04E-02
UBDT-TP-3 (2-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	2.16E+02	1.01E+00	NA	NA	NA	NA	1.13E-04	1.91E+02	2.15E-02	1.00E+00	3.06E-02	3.38E+01	6.32E+02	2.47E-02	6.24E+02	5.41E-02
UBDT-TP-3 (12-24")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	2.36E+02	1.11E+00	NA	NA	NA	NA	1.13E-04	2.08E+02	2.34E-02	1.00E+00	3.06E-02	3.69E+01	6.32E+02	2.47E-02	6.24E+02	5.92E-02
UBDT-TP-3 (24-36")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	2.54E+02	1.19E+00	NA	NA	NA	NA	1.13E-04	2.24E+02	2.52E-02	1.00E+00	3.06E-02	3.97E+01	6.32E+02	2.47E-02	6.24E+02	6.37E-02
UBDT-TP-3 (36-48")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	3.96E+02	1.86E+00	NA	NA	NA	NA	1.13E-04	3.50E+02	3.94E-02	1.00E+00	3.06E-02	6.20E+01	6.32E+02	2.47E-02	6.24E+02	9.94E-02
UBDT-TP-3 (48-60")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	2.08E+02	9.77E-01	NA	NA	NA	NA	1.13E-04	1.84E+02	2.07E-02	1.00E+00	3.06E-02	3.26E+01	6.32E+02	2.47E-02	6.24E+02	5.23E-02
BREOT-N21-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	3.21E+02	1.50E+00	NA	NA	NA	NA	1.13E-04	2.84E+02	3.19E-02	1.00E+00	3.06E-02	5.02E+01	6.32E+02	2.47E-02	6.24E+02	8.05E-02
BREOT-N22-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	2.34E+02	1.09E+00	NA	NA	NA	NA	1.13E-04	2.06E+02	2.32E-02	1.00E+00	3.06E-02	3.65E+01	6.32E+02	2.47E-02	6.24E+02	5.86E-02
BREOT-N23-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	2.65E+02	1.24E+00	NA	NA	NA	NA	1.13E-04	2.34E+02	2.63E-02	1.00E+00	3.06E-02	4.14E+01	6.32E+02	2.47E-02	6.24E+02	6.65E-02
BREOT-S23-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	9.00E+02	4.22E+00	NA	NA	NA	NA	1.13E-04	7.95E+02	8.95E-02	1.00E+00	3.06E-02	1.41E+02	6.32E+02	2.47E-02	6.24E+02	2.26E-01
UBDT-TP-2 (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	5.07E+02	2.38E+00	NA	NA	NA	NA	1.13E-04	4.48E+02	5.04E-02	1.00E+00	3.06E-02	7.94E+01	6.32E+02	2.47E-02	6.24E+02	1.27E-01
UBDT-TP-2 (2-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	5.08E+02	2.38E+00	NA	NA	NA	NA	1.13E-04	4.49E+02	5.05E-02	1.00E+00	3.06E-02	7.95E+01	6.32E+02	2.47E-02	6.24E+02	1.27E-01
UBDT-TP-2 (12-24")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	3.47E+02	1.63E+00	NA	NA	NA	NA	1.13E-04	3.07E+02	3.45E-02	1.00E+00	3.06E-02	5.44E+01	6.32E+02	2.47E-02	6.24E+02	8.72E-02
UBDT-TP-2 (24-36")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	2.11E+02	9.90E-01	NA	NA	NA	NA	1.13E-04	1.87E+02	2.10E-02	1.00E+00	3.06E-02	3.30E+01	6.32E+02	2.47E-02	6.24E+02	5.30E-02
UBDT-TP-2 (36-48")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	2.78E+02	1.30E+00	NA	NA	NA	NA	1.13E-04	2.46E+02	2.77E-02	1.00E+00	3.06E-02	4.35E+01	6.32E+02	2.47E-02	6.24E+02	6.98E-02
BREOT-S24-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	7.66E+02	3.59E+00	NA	NA	NA	NA	1.13E-04	6.77E+02	7.62E-02	1.00E+00	3.06E-02	1.20E+02	6.32E+02	2.47E-02	6.24E+02	1.92E-01
BREOT-N25-50 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	1.83E+03	8.59E+00	NA	NA	NA	NA	1.13E-04	1.62E+03	1.82E-01	1.00E+00	3.06E-02	2.87E+02	6.32E+02	2.47E-02	6.24E+02	4.60E-01
BREOT-N25-95 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	1.22E+02	5.70E-01	NA	NA	NA	NA	1.13E-04	1.08E+02	1.21E-02	1.00E+00	3.06E-02	1.90E+01	6.32E+02	2.47E-02	6.24E+02	3.05E-02
BREOT-S25-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	4.40E+02	2.06E+00	NA	NA	NA	NA	1.13E-04	3.89E+02	4.38E-02	1.00E+00	3.06E-02	6.89E+01	6.32E+02	2.47E-02	6.24E+02	1.10E-01
BREOT-S25-40 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	1.90E+02	8.90E-01	NA	NA	NA	NA	1.13E-04	1.68E+02	1.89E-02	1.00E+00	3.06E-02	2.97E+01	6.32E+02	2.47E-02	6.24E+02	4.77E-02
BREOT-N26A-25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	1.13E+02	5.29E-01	NA	NA	NA	NA	1.13E-04	9.96E+01	1.12E-02	1.00E+00	3.06E-02	1.76E+01	6.32E+02	2.47E-02	6.24E+02	2.83E-02
BREOT-N26B-25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	8.31E+02	3.90E+00	NA	NA	NA	NA	1.13E-04	7.35E+02	8.27E-02	1.00E+00	3.06E-02	1.30E+02	6.32E+02	2.47E-02	6.24E+02	2.09E-01
BREOT-N26-50 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	1.41E+03	6.61E+00	NA	NA	NA	NA	1.13E-04	1.25E+03	1.40E-01	1.00E+00	3.06E-02	2.21E+02	6.32E+02	2.47E-02	6.24E+02	3.54E-01
BREOT-N26-75 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	1.17E+03	5.50E+00	NA	NA	NA	NA	1.13E-04	1.04E+03	1.17E-01	1.00E+00	3.06E-02	1.83E+02	6.32E+02	2.47E-02	6.24E+02	2.94E-01
BREOT-S26-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	1.36E+02	6.37E-01	NA	NA	NA	NA	1.13E-04	1.20E+02	1.35E-02	1.00E+00	3.06E-02	2.13E+01	6.32E+02	2.47E-02	6.24E+02	3.41E-02
BREOT-S26-40 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	4.62E+02	2.17E+00	NA	NA	NA	NA	1.13E-04	4.08E+02	4.60E-02	1.00E+00	3.06E-02	7.23E+01	6.32E+02	2.47E-02	6.24E+02	1.16E-01
BREOT-N27-30 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	1.39E+03	6.53E+00	NA	NA	NA	NA	1.13E-04	1.23E+03	1.38E-01	1.00E+00	3.06E-02	2.18E+02	6.32E+02	2.47E-02	6.24E+02	3.49E-01
BREOT-N27-75 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	2.45E+03	1.15E+01	NA	NA	NA	NA	1.13E-04	2.17E+03	2.44E-01	1.00E+00	3.06E-02	3.84E+02	6.32E+02	2.47E-02	6.24E+02	6.16E-01
BREOT-S27-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	3.57E+02	1.67E+00	NA	NA	NA	NA	1.13E-04	3.16E+02	3.55E-02	1.00E+00	3.06E-02	5.59E+01	6.32E+02	2.47E-02	6.24E+02	8.96E-02
BREOT-N28-110 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	5.76E+02	2.70E+00	NA	NA	NA	NA	1.13E-04	5.09E+02	5.73E-02	1.00E+00	3.06E-02	9.02E+01	6.32E+02	2.47E-02	6.24E+02	1.45E-01
BREOT-N28-55 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	3.34E+03	1.57E+01	NA	NA	NA	NA	1.13E-04	2.95E+03	3.32E-01	1.00E+00	3.06E-02	5.22E+02	6.32E+02	2.47E-02	6.24E+02	8.38E-01
BREOT-S28-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	4.85E+02	2.27E+00	NA	NA	NA	NA	1.13E-04	4.29E+02	4.82E-02	1.00E+00	3.06E-02	7.59E+01	6.32E+02	2.47E-02	6.24E+02	1.22E-01
UBDT-TP-1 (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	1.11E+03	5.20E+00	NA	NA	NA	NA	1.13E-04	9.81E+02	1.10E-01	1.00E+00	3.06E-02	1.74E+02	6.32E+02	2.47E-02	6.24E+02	2.78E-01
UBDT-TP-1 (2-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	2.28E+03	1.07E+01	NA	NA	NA	NA	1.13E-04	2.01E+03	2.26E-01	1.00E+00	3.06E-02	3.56E+02	6.32E+02	2.47E-02	6.24E+02	5.71E-01
UBDT-TP-1 (12-24")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	2.06E+03	9.65E+00	NA	NA	NA	NA	1.13E-04	1.82E+03	2.05E-01	1.00E+00	3.06E-02	3.22E+02	6.32E+02	2.47E-02	6.24E+02	5.17E-01
UBDT-TP-1 (24-36")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	1.52E+03	7.13E+00	NA	NA	NA	NA	1.13E-04	1.34E+03	1.51E-01	1.00E+00	3.06E-02	2.38E+02	6.32E+02	2.47E-02	6.24E+02	3.82E-01
UBDT-TP-1 (36-48")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	3.30E+02	1.55E+00	NA	NA	NA	NA	1.13E-04	2.92E+02	3.28E-02	1.00E+00	3.06E-02	5.16E+01	6.32E+02	2.47E-02	6.24E+02	8.28E-02
UBDT-TP-1 (48-60")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	2.08E+02	9.75E-01	NA	NA	NA	NA	1.13E-04	1.84E+02	2.07E-02	1.00E+00	3.06E-02	3.25E+01	6.32E+02	2.47E-02	6.24E+02	5.22E-02
BREOT-N29-30 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	2.80E+03	1.31E+01	NA	NA	NA	NA	1.13E-04	2.47E+03	2.78E-01	1.00E+00	3.06E-02	4.38E+02	6.32E+02	2.47E-02	6.24E+02	7.02E-01
BREOT-S29-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	4.55E+02	2.13E+00	NA	NA	NA	NA	1.13E-04	4.02E+02	4.52E-02	1.00E+00	3.06E-02	7.12E+01	6.32E+02	2.47E-02	6.24E+02	1.14E-01
BREOT-N30-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	5.11E+02	2.40E+00	NA	NA	NA	NA	1.13E-04	4.52E+02	5.09E-02	1.00E+00	3.06E-02	8.00E+01	6.32E+02	2.47E-02	6.24E+02	1.28E-01
BREOT-S30-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	3.54E+02	1.66E+00	NA	NA	NA	NA	1.13E-04	3.13E+02	3.52E-02	1.00E+00	3.06E-02	5.54E+01	6.32E+02	2.47E-02	6.24E+02	8.89E-02
BREOT-N31-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	3.60E+02	1.69E+00	NA	NA	NA	NA	1.13E-04	3.18E+02	3.58E-02	1.00E+00	3.06E-02	5.64E+01	6.32E+02	2.47E-02	6.24E+02	9.04E-02
BREOT-S31-25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	2.24E+02	1.05E+00	NA	NA	NA	NA	1.13E-04	1.98E+02	2.22E-02	1.00E+00	3.06E-02	3.50E+01	6.32E+02	2.47E-02	6.24E+02	5.61E-02
BREOT-S31-5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	3.36E+02	1.57E+00	NA	NA	NA	NA	1.13E-04	2.97E+02	3.34E-02	1.00E+00	3.06E-02	5.25E+01	6.32E+02	2.47E-02	6.24E+02	8.43E-02
BREOT-N32-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	2.41E+02	1.13E+00	NA	NA	NA	NA	1.13E-04	2.13E+02	2.39E-02	1.00E+00	3.06E-02	3.77E+01	6.32E+02	2.47E-02	6.24E+02	6.04E-02

TABLE C-2C: COPPER DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **18.41**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Meadow Vole (Small Herbivorous Mammal - Terrestrial)																							
BREOT-S32-6 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	2.39E+02	1.12E+00	NA	NA	NA	NA	1.13E-04	2.11E+02	2.38E-02	1.00E+00	3.06E-02	3.74E+01	6.32E+02	2.47E-02	6.24E+02	6.00E-02
BREOT-N33-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	2.68E+02	1.26E+00	NA	NA	NA	NA	1.13E-04	2.37E+02	2.67E-02	1.00E+00	3.06E-02	4.20E+01	6.32E+02	2.47E-02	6.24E+02	6.73E-02
BREOT-S33-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	6.56E+02	3.08E+00	NA	NA	NA	NA	1.13E-04	5.80E+02	6.53E-02	1.00E+00	3.06E-02	1.03E+02	6.32E+02	2.47E-02	6.24E+02	1.65E-01
BREOT-N35-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	2.11E+02	9.91E-01	NA	NA	NA	NA	1.13E-04	1.87E+02	2.10E-02	1.00E+00	3.06E-02	3.31E+01	6.32E+02	2.47E-02	6.24E+02	5.30E-02
BREOT-S35-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	5.13E+02	2.40E+00	NA	NA	NA	NA	1.13E-04	4.53E+02	5.10E-02	1.00E+00	3.06E-02	8.02E+01	6.32E+02	2.47E-02	6.24E+02	1.29E-01
BREOT-N36-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	3.45E+02	1.62E+00	NA	NA	NA	NA	1.13E-04	3.05E+02	3.43E-02	1.00E+00	3.06E-02	5.40E+01	6.32E+02	2.47E-02	6.24E+02	8.66E-02
BREOT-S36-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	2.29E+02	1.07E+00	NA	NA	NA	NA	1.13E-04	2.02E+02	2.27E-02	1.00E+00	3.06E-02	3.58E+01	6.32E+02	2.47E-02	6.24E+02	5.74E-02
BREOT-N37-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	2.08E+02	9.77E-01	NA	NA	NA	NA	1.13E-04	1.84E+02	2.07E-02	1.00E+00	3.06E-02	3.26E+01	6.32E+02	2.47E-02	6.24E+02	5.23E-02
BREOT-S37-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	3.35E+02	1.57E+00	NA	NA	NA	NA	1.13E-04	2.96E+02	3.33E-02	1.00E+00	3.06E-02	5.24E+01	6.32E+02	2.47E-02	6.24E+02	8.41E-02
BREOT-N38-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	2.36E+02	1.10E+00	NA	NA	NA	NA	1.13E-04	2.08E+02	2.34E-02	1.00E+00	3.06E-02	3.69E+01	6.32E+02	2.47E-02	6.24E+02	5.91E-02
BREOT-S38-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	7.87E+02	3.69E+00	NA	NA	NA	NA	1.13E-04	6.96E+02	7.83E-02	1.00E+00	3.06E-02	1.23E+02	6.32E+02	2.47E-02	6.24E+02	1.98E-01
BREOT-N39-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	3.43E+02	1.61E+00	NA	NA	NA	NA	1.13E-04	3.03E+02	3.42E-02	1.00E+00	3.06E-02	5.37E+01	6.32E+02	2.47E-02	6.24E+02	8.62E-02
BREOT-S39-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	5.89E+02	2.76E+00	NA	NA	NA	NA	1.13E-04	5.21E+02	5.86E-02	1.00E+00	3.06E-02	9.22E+01	6.32E+02	2.47E-02	6.24E+02	1.48E-01
BREOT-N40-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	4.57E+02	2.14E+00	NA	NA	NA	NA	1.13E-04	4.04E+02	4.55E-02	1.00E+00	3.06E-02	7.15E+01	6.32E+02	2.47E-02	6.24E+02	1.15E-01
BREOT-S40-14 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	5.60E+02	2.62E+00	NA	NA	NA	NA	1.13E-04	4.95E+02	5.57E-02	1.00E+00	3.06E-02	8.76E+01	6.32E+02	2.47E-02	6.24E+02	1.40E-01
BREOT-N41-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	3.40E+02	1.59E+00	NA	NA	NA	NA	1.13E-04	3.00E+02	3.38E-02	1.00E+00	3.06E-02	5.31E+01	6.32E+02	2.47E-02	6.24E+02	8.52E-02
BREOT-S41-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	5.11E+02	2.40E+00	NA	NA	NA	NA	1.13E-04	4.51E+02	5.08E-02	1.00E+00	3.06E-02	7.99E+01	6.32E+02	2.47E-02	6.24E+02	1.28E-01
BREOT-N42-35 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	2.76E+02	1.30E+00	NA	NA	NA	NA	1.13E-04	2.44E+02	2.75E-02	1.00E+00	3.06E-02	4.33E+01	6.32E+02	2.47E-02	6.24E+02	6.94E-02
BREOT-S42-25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	3.04E+02	1.43E+00	NA	NA	NA	NA	1.13E-04	2.69E+02	3.02E-02	1.00E+00	3.06E-02	4.76E+01	6.32E+02	2.47E-02	6.24E+02	7.63E-02
BREOT-N43-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	5.21E+02	2.44E+00	NA	NA	NA	NA	1.13E-04	4.60E+02	5.18E-02	1.00E+00	3.06E-02	8.15E+01	6.32E+02	2.47E-02	6.24E+02	1.31E-01
BREOT-S43-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	2.77E+02	1.30E+00	NA	NA	NA	NA	1.13E-04	2.45E+02	2.75E-02	1.00E+00	3.06E-02	4.33E+01	6.32E+02	2.47E-02	6.24E+02	6.95E-02
BREOT-N44-30 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	2.13E+02	9.98E-01	NA	NA	NA	NA	1.13E-04	1.88E+02	2.12E-02	1.00E+00	3.06E-02	3.33E+01	6.32E+02	2.47E-02	6.24E+02	5.34E-02
BREOT-S44-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	4.84E+02	2.27E+00	NA	NA	NA	NA	1.13E-04	4.28E+02	4.82E-02	1.00E+00	3.06E-02	7.58E+01	6.32E+02	2.47E-02	6.24E+02	1.22E-01
BREOT-N45-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	3.58E+02	1.68E+00	NA	NA	NA	NA	1.13E-04	3.16E+02	3.56E-02	1.00E+00	3.06E-02	5.60E+01	6.32E+02	2.47E-02	6.24E+02	8.99E-02
BREOT-N43-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	5.21E+02	2.44E+00	NA	NA	NA	NA	1.13E-04	4.60E+02	5.18E-02	1.00E+00	3.06E-02	8.15E+01	6.32E+02	2.47E-02	6.24E+02	1.31E-01
BREOT-S45-6 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	3.45E+02	1.62E+00	NA	NA	NA	NA	1.13E-04	3.05E+02	3.43E-02	1.00E+00	3.06E-02	5.39E+01	6.32E+02	2.47E-02	6.24E+02	8.65E-02
BREOT-N46-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	1.39E+02	6.53E-01	NA	NA	NA	NA	1.13E-04	1.23E+02	1.39E-02	1.00E+00	3.06E-02	2.18E+01	6.32E+02	2.47E-02	6.24E+02	3.50E-02
BREOT-S46-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	1.72E+02	8.07E-01	NA	NA	NA	NA	1.13E-04	1.52E+02	1.71E-02	1.00E+00	3.06E-02	2.69E+01	6.32E+02	2.47E-02	6.24E+02	4.32E-02
BREOT-S46-40 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	3.36E+02	1.58E+00	NA	NA	NA	NA	1.13E-04	2.97E+02	3.34E-02	1.00E+00	3.06E-02	5.26E+01	6.32E+02	2.47E-02	6.24E+02	8.43E-02
BREOT-N47-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	3.14E+02	1.47E+00	NA	NA	NA	NA	1.13E-04	2.78E+02	3.13E-02	1.00E+00	3.06E-02	4.92E+01	6.32E+02	2.47E-02	6.24E+02	7.89E-02
BREOT-S47-999 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	4.66E+02	2.19E+00	NA	NA	NA	NA	1.13E-04	4.12E+02	4.64E-02	1.00E+00	3.06E-02	7.30E+01	6.32E+02	2.47E-02	6.24E+02	1.17E-01
BREOT-S48-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	1.12E+02	5.25E-01	NA	NA	NA	NA	1.13E-04	9.89E+01	1.11E-02	1.00E+00	3.06E-02	1.75E+01	6.32E+02	2.47E-02	6.24E+02	2.81E-02
BREOT-S49-2.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	1.47E+02	6.89E-01	NA	NA	NA	NA	1.13E-04	1.30E+02	1.46E-02	1.00E+00	3.06E-02	2.30E+01	6.32E+02	2.47E-02	6.24E+02	3.69E-02
BREOT-S50-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	2.62E+02	1.23E+00	NA	NA	NA	NA	1.13E-04	2.31E+02	2.60E-02	1.00E+00	3.06E-02	4.10E+01	6.32E+02	2.47E-02	6.24E+02	6.57E-02
BREOT-S50-25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N52-60 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	2.40E+02	1.13E+00	NA	NA	NA	NA	1.13E-04	2.12E+02	2.39E-02	1.00E+00	3.06E-02	3.76E+01	6.32E+02	2.47E-02	6.24E+02	6.02E-02
BREOT-S52-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	1.25E+03	5.84E+00	NA	NA	NA	NA	1.13E-04	1.10E+03	1.24E-01	1.00E+00	3.06E-02	1.95E+02	6.32E+02	2.47E-02	6.24E+02	3.13E-01
BREOT-S53-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	2.89E+02	1.36E+00	NA	NA	NA	NA	1.13E-04	2.56E+02	2.88E-02	1.00E+00	3.06E-02	4.53E+01	6.32E+02	2.47E-02	6.24E+02	7.26E-02
BREOT-S54-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	1.82E+02	8.52E-01	NA	NA	NA	NA	1.13E-04	1.60E+02	1.81E-02	1.00E+00	3.06E-02	2.84E+01	6.32E+02	2.47E-02	6.24E+02	4.56E-02
BREOT-N55-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	4.91E+02	2.30E+00	NA	NA	NA	NA	1.13E-04	4.34E+02	4.88E-02	1.00E+00	3.06E-02	7.68E+01	6.32E+02	2.47E-02	6.24E+02	1.23E-01
BREOT-S55-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	1.96E+02	9.18E-01	NA	NA	NA	NA	1.13E-04	1.73E+02	1.95E-02	1.00E+00	3.06E-02	3.06E+01	6.32E+02	2.47E-02	6.24E+02	4.91E-02
BREOT-N56-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	3.64E+02	1.70E+00	NA	NA	NA	NA	1.13E-04	3.21E+02	3.62E-02	1.00E+00	3.06E-02	5.69E+01	6.32E+02	2.47E-02	6.24E+02	9.13E-02
BREOT-S56-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	1.69E+02	7.92E-01	NA	NA	NA	NA	1.13E-04	1.49E+02	1.68E-02	1.00E+00	3.06E-02	2.64E+01	6.32E+02	2.47E-02	6.24E+02	4.24E-02
BREOT-N57-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	2.67E+02	1.25E+00	NA	NA	NA	NA	1.13E-04	2.36E+02	2.66E-02	1.00E+00	3.06E-02	4.18E+01	6.32E+02	2.47E-02	6.24E+02	6.70E-02
BREOT-S57-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	1.96E+02	9.18E-01	NA	NA	NA	NA	1.13E-04	1.73E+02	1.95E-02	1.00E+00	3.06E-02	3.06E+01	6.32E+02	2.47E-02	6.24E+02	4.91E-02
BREOT-N58-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	1.73E+02	8.13E-01	NA	NA	NA	NA	1.13E-04	1.53E+02	1.73E-02	1.00E+00	3.06E-02	2.71E+01	6.32E+02	2.47E-02	6.24E+02	4.35E-02
BREOT-S58-12 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	2.91E+02	1.37E+00	NA	NA	NA	NA	1.13E-04	2.57E+02	2.90E-02	1.00E+00	3.06E-02	4.56E+01	6.32E+02	2.47E-02	6.24E+02	7.31E-02
BREOT-N59-18 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	1.19E+02	5.60E-01	NA	NA	NA	NA	1.13E-04	1.06E+02	1.19E-02	1.00E+00	3.06E-02	1.87E+01	6.32E+02	2.47E-02	6.24E+02	3.00E-02
BREOT-N60-12.5 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S60-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	2.13E+02	9.97E-01	NA	NA	NA	NA	1.13E-04	1.88E+02	2.12E-02	1.00E+00	3.06E-02	3.33E+01	6.32E+02	2.47E-02	6.24E+02	5.34E-02
BREOT-S61-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	2.92E+02	1.37E+00	NA	NA	NA	NA	1.13E-04	2.58E+02	2.90E-02	1.00E+00	3.06E-02	4.57E+01	6.32E+02	2.47E-02	6.24E+02	7.33E-02
BREOT-N62-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	9.90E+01	4.64E-01	NA	NA	NA	NA	1.13E-04	8.74E+01	9.84E-03	1.00E+00	3.06E-02	1.55E+01	6.32E+02	2.47E-02	6.24E+02	2.48E-02
BREOT-S62-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	3.95E+02	1.85E+00	NA	NA	NA	NA	1.13E-04	3.49E+02	3.93E-02	1.00E+00	3.06E-02	6.19E+01	6.32E+02	2.47E-02	6.24E+02	9.92E-02
BREOT-S63-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	1.60E+02	7.49E-01	NA	NA	NA	NA	1.13E-04	1.41E+02	1.59E-02	1.00E+00	3.06E-02	2.50E+01	6.32E+02	2.47E-02	6.24E+02	4.01E-02
BREOT-N64-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	1.07E+02	5.02E-01	NA	NA	NA	NA	1.13E-04	9.46E+01	1.06E-02	1.00E+00	3.06E-02	1.68E+01	6.32E+02	2.47E-02	6.24E+02	2.69E-02

TABLE C-2C: COPPER DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **18.41**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Meadow Vole (Small Herbivorous Mammal - Terrestrial)																							
BREOT-N64-20 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	1.30E+02	6.09E-01	NA	NA	NA	NA	1.13E-04	1.15E+02	1.29E-02	1.00E+00	3.06E-02	2.03E+01	6.32E+02	2.47E-02	6.24E+02	3.26E-02
BREOT-S64-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	1.90E+02	8.90E-01	NA	NA	NA	NA	1.13E-04	1.68E+02	1.89E-02	1.00E+00	3.06E-02	2.97E+01	6.32E+02	2.47E-02	6.24E+02	4.76E-02
BREOT-N65-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	1.39E+02	6.52E-01	NA	NA	NA	NA	1.13E-04	1.23E+02	1.38E-02	1.00E+00	3.06E-02	2.17E+01	6.32E+02	2.47E-02	6.24E+02	3.49E-02
BREOT-S65-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	2.05E+02	9.63E-01	NA	NA	NA	NA	1.13E-04	1.81E+02	2.04E-02	1.00E+00	3.06E-02	3.21E+01	6.32E+02	2.47E-02	6.24E+02	5.15E-02
BREOT-N66-5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	1.52E+02	7.14E-01	NA	NA	NA	NA	1.13E-04	1.35E+02	1.52E-02	1.00E+00	3.06E-02	2.38E+01	6.32E+02	2.47E-02	6.24E+02	3.82E-02
BREOT-S66-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	1.67E+02	7.84E-01	NA	NA	NA	NA	1.13E-04	1.48E+02	1.66E-02	1.00E+00	3.06E-02	2.62E+01	6.32E+02	2.47E-02	6.24E+02	4.20E-02
BREOT-N67-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	6.37E+02	2.99E+00	NA	NA	NA	NA	1.13E-04	5.63E+02	6.34E-02	1.00E+00	3.06E-02	9.97E+01	6.32E+02	2.47E-02	6.24E+02	1.60E-01
BREOT-S67-12.5 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
At Edge of Tailings																						**Maximum HQ (Inside Tailings)**	**1.06E+00**
BREOT-S0-0 (06)	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	1.36E+02	6.37E-01	NA	NA	NA	NA	1.13E-04	1.20E+02	1.35E-02	1.00E+00	3.06E-02	2.13E+01	6.32E+02	2.47E-02	6.24E+02	3.41E-02
BREOT-S1-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	2.38E+02	1.12E+00	NA	NA	NA	NA	1.13E-04	2.11E+02	2.37E-02	1.00E+00	3.06E-02	3.73E+01	6.32E+02	2.47E-02	6.24E+02	5.98E-02
BREOT-S2-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	3.39E+02	1.59E+00	NA	NA	NA	NA	1.13E-04	2.99E+02	3.37E-02	1.00E+00	3.06E-02	5.30E+01	6.32E+02	2.47E-02	6.24E+02	8.50E-02
BREOT-S3-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	4.10E+02	1.92E+00	NA	NA	NA	NA	1.13E-04	3.62E+02	4.08E-02	1.00E+00	3.06E-02	6.41E+01	6.32E+02	2.47E-02	6.24E+02	1.03E-01
BREOT-S4-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	4.58E+02	2.15E+00	NA	NA	NA	NA	1.13E-04	4.05E+02	4.56E-02	1.00E+00	3.06E-02	7.17E+01	6.32E+02	2.47E-02	6.24E+02	1.15E-01
BREOT-S6-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	3.70E+02	1.74E+00	NA	NA	NA	NA	1.13E-04	3.27E+02	3.68E-02	1.00E+00	3.06E-02	5.79E+01	6.32E+02	2.47E-02	6.24E+02	9.29E-02
BREOT-S7-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	2.15E+02	1.01E+00	NA	NA	NA	NA	1.13E-04	1.90E+02	2.14E-02	1.00E+00	3.06E-02	3.36E+01	6.32E+02	2.47E-02	6.24E+02	5.39E-02
BREOT-S8-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	1.91E+02	8.96E-01	NA	NA	NA	NA	1.13E-04	1.69E+02	1.90E-02	1.00E+00	3.06E-02	2.99E+01	6.32E+02	2.47E-02	6.24E+02	4.80E-02
BREOT-S9-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	1.71E+02	8.01E-01	NA	NA	NA	NA	1.13E-04	1.51E+02	1.70E-02	1.00E+00	3.06E-02	2.67E+01	6.32E+02	2.47E-02	6.24E+02	4.28E-02
BREOT-N10-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	4.01E+03	1.88E+01	NA	NA	NA	NA	1.13E-04	3.54E+03	3.98E-01	1.00E+00	3.06E-02	6.27E+02	6.32E+02	2.47E-02	6.24E+02	1.01E+00
BREOT-N11-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	3.34E+02	1.57E+00	NA	NA	NA	NA	1.13E-04	2.95E+02	3.32E-02	1.00E+00	3.06E-02	5.22E+01	6.32E+02	2.47E-02	6.24E+02	8.38E-02
BREOT-S11-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	2.61E+02	1.23E+00	NA	NA	NA	NA	1.13E-04	2.31E+02	2.60E-02	1.00E+00	3.06E-02	4.09E+01	6.32E+02	2.47E-02	6.24E+02	6.56E-02
BREOT-N12-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	2.90E+02	1.36E+00	NA	NA	NA	NA	1.13E-04	2.57E+02	2.89E-02	1.00E+00	3.06E-02	4.55E+01	6.32E+02	2.47E-02	6.24E+02	7.29E-02
BREOT-S12-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	6.69E+02	3.14E+00	NA	NA	NA	NA	1.13E-04	5.91E+02	6.65E-02	1.00E+00	3.06E-02	1.05E+02	6.32E+02	2.47E-02	6.24E+02	1.68E-01
BREOT-N13-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	2.16E+03	1.01E+01	NA	NA	NA	NA	1.13E-04	1.91E+03	2.15E-01	1.00E+00	3.06E-02	3.38E+02	6.32E+02	2.47E-02	6.24E+02	5.43E-01
BREOT-S13-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	1.59E+02	7.43E-01	NA	NA	NA	NA	1.13E-04	1.40E+02	1.58E-02	1.00E+00	3.06E-02	2.48E+01	6.32E+02	2.47E-02	6.24E+02	3.98E-02
BREOT-N14-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	4.85E+02	2.27E+00	NA	NA	NA	NA	1.13E-04	4.28E+02	4.82E-02	1.00E+00	3.06E-02	7.58E+01	6.32E+02	2.47E-02	6.24E+02	1.22E-01
BREOT-S14-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	3.69E+03	1.73E+01	NA	NA	NA	NA	1.13E-04	3.26E+03	3.67E-01	1.00E+00	3.06E-02	5.77E+02	6.32E+02	2.47E-02	6.24E+02	9.26E-01
BREOT-N15-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	3.78E+02	1.77E+00	NA	NA	NA	NA	1.13E-04	3.34E+02	3.76E-02	1.00E+00	3.06E-02	5.91E+01	6.32E+02	2.47E-02	6.24E+02	9.48E-02
BREOT-N16-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	2.79E+02	1.31E+00	NA	NA	NA	NA	1.13E-04	2.46E+02	2.77E-02	1.00E+00	3.06E-02	4.36E+01	6.32E+02	2.47E-02	6.24E+02	6.99E-02
BREOT-S16-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	2.04E+02	9.58E-01	NA	NA	NA	NA	1.13E-04	1.81E+02	2.03E-02	1.00E+00	3.06E-02	3.20E+01	6.32E+02	2.47E-02	6.24E+02	5.13E-02
BREOT-N17-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	2.95E+02	1.38E+00	NA	NA	NA	NA	1.13E-04	2.60E+02	2.93E-02	1.00E+00	3.06E-02	4.61E+01	6.32E+02	2.47E-02	6.24E+02	7.40E-02
BREOT-S17-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	3.50E+02	1.64E+00	NA	NA	NA	NA	1.13E-04	3.09E+02	3.48E-02	1.00E+00	3.06E-02	5.47E+01	6.32E+02	2.47E-02	6.24E+02	8.78E-02
BREOT-N18-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	2.72E+02	1.27E+00	NA	NA	NA	NA	1.13E-04	2.40E+02	2.70E-02	1.00E+00	3.06E-02	4.25E+01	6.32E+02	2.47E-02	6.24E+02	6.82E-02
BREOT-S18-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	2.37E+03	1.11E+01	NA	NA	NA	NA	1.13E-04	2.09E+03	2.36E-01	1.00E+00	3.06E-02	3.71E+02	6.32E+02	2.47E-02	6.24E+02	5.95E-01
BREOT-N19-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	3.32E+02	1.56E+00	NA	NA	NA	NA	1.13E-04	2.94E+02	3.31E-02	1.00E+00	3.06E-02	5.20E+01	6.32E+02	2.47E-02	6.24E+02	8.34E-02
BREOT-S19-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	1.46E+02	6.82E-01	NA	NA	NA	NA	1.13E-04	1.29E+02	1.45E-02	1.00E+00	3.06E-02	2.28E+01	6.32E+02	2.47E-02	6.24E+02	3.65E-02
BREOT-N20-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	4.76E+02	2.23E+00	NA	NA	NA	NA	1.13E-04	4.20E+02	4.73E-02	1.00E+00	3.06E-02	7.44E+01	6.32E+02	2.47E-02	6.24E+02	1.19E-01
BREOT-S20-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	1.54E+02	7.22E-01	NA	NA	NA	NA	1.13E-04	1.36E+02	1.53E-02	1.00E+00	3.06E-02	2.41E+01	6.32E+02	2.47E-02	6.24E+02	3.87E-02
BREOT-N21-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	1.53E+04	7.15E+01	NA	NA	NA	NA	1.13E-04	1.35E+04	1.52E+00	1.00E+00	3.06E-02	2.39E+03	6.32E+02	2.47E-02	6.24E+02	3.83E+00
BREOT-S21-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	2.62E+02	1.23E+00	NA	NA	NA	NA	1.13E-04	2.31E+02	2.60E-02	1.00E+00	3.06E-02	4.09E+01	6.32E+02	2.47E-02	6.24E+02	6.56E-02
BREOT-N22-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	3.64E+02	1.71E+00	NA	NA	NA	NA	1.13E-04	3.21E+02	3.62E-02	1.00E+00	3.06E-02	5.69E+01	6.32E+02	2.47E-02	6.24E+02	9.13E-02
BREOT-S22-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	2.07E+02	9.71E-01	NA	NA	NA	NA	1.13E-04	1.83E+02	2.06E-02	1.00E+00	3.06E-02	3.24E+01	6.32E+02	2.47E-02	6.24E+02	5.20E-02
BREOT-N23-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	5.83E+02	2.73E+00	NA	NA	NA	NA	1.13E-04	5.15E+02	5.80E-02	1.00E+00	3.06E-02	9.13E+01	6.32E+02	2.47E-02	6.24E+02	1.46E-01
BREOT-S23-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	3.64E+02	1.71E+00	NA	NA	NA	NA	1.13E-04	3.22E+02	3.62E-02	1.00E+00	3.06E-02	5.69E+01	6.32E+02	2.47E-02	6.24E+02	9.13E-02
BREOT-N24-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	5.58E+02	2.62E+00	NA	NA	NA	NA	1.13E-04	4.93E+02	5.55E-02	1.00E+00	3.06E-02	8.74E+01	6.32E+02	2.47E-02	6.24E+02	1.40E-01
BREOT-S24-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	1.07E+03	5.03E+00	NA	NA	NA	NA	1.13E-04	9.47E+02	1.07E-01	1.00E+00	3.06E-02	1.68E+02	6.32E+02	2.47E-02	6.24E+02	2.69E-01
BREOT-N25-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	8.78E+02	4.12E+00	NA	NA	NA	NA	1.13E-04	7.75E+02	8.73E-02	1.00E+00	3.06E-02	1.37E+02	6.32E+02	2.47E-02	6.24E+02	2.20E-01
BREOT-S25-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	7.58E+02	3.55E+00	NA	NA	NA	NA	1.13E-04	6.70E+02	7.54E-02	1.00E+00	3.06E-02	1.19E+02	6.32E+02	2.47E-02	6.24E+02	1.90E-01
BREOT-N26-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	1.05E+03	4.91E+00	NA	NA	NA	NA	1.13E-04	9.25E+02	1.04E-01	1.00E+00	3.06E-02	1.64E+02	6.32E+02	2.47E-02	6.24E+02	2.63E-01
BREOT-S26-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	3.88E+02	1.82E+00	NA	NA	NA	NA	1.13E-04	3.43E+02	3.85E-02	1.00E+00	3.06E-02	6.07E+01	6.32E+02	2.47E-02	6.24E+02	9.73E-02
BREOT-N27-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	2.84E+03	1.33E+01	NA	NA	NA	NA	1.13E-04	2.51E+03	2.83E-01	1.00E+00	3.06E-02	4.45E+02	6.32E+02	2.47E-02	6.24E+02	7.13E-01
BREOT-S27-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	2.58E+02	1.21E+00	NA	NA	NA	NA	1.13E-04	2.28E+02	2.56E-02	1.00E+00	3.06E-02	4.03E+01	6.32E+02	2.47E-02	6.24E+02	6.47E-02
BREOT-N28-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	6.20E+02	2.91E+00	NA	NA	NA	NA	1.13E-04	5.48E+02	6.17E-02	1.00E+00	3.06E-02	9.71E+01	6.32E+02	2.47E-02	6.24E+02	1.56E-01
BREOT-S28-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	1.87E+02	8.77E-01	NA	NA	NA	NA	1.13E-04	1.65E+02	1.86E-02	1.00E+00	3.06E-02	2.93E+01	6.32E+02	2.47E-02	6.24E+02	4.70E-02
BREOT-S29-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	2.00E+02	9.37E-01	NA	NA	NA	NA	1.13E-04	1.77E+02	1.99E-02	1.00E+00	3.06E-02	3.13E+01	6.32E+02	2.47E-02	6.24E+02	5.01E-02

TABLE C-2C: COPPER DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **18.41**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Meadow Vole (Small Herbivorous Mammal - Terrestrial)																							
BREOT-N30-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	1.68E+03	7.87E+00	NA	NA	NA	NA	1.13E-04	1.48E+03	1.67E-01	1.00E+00	3.06E-02	2.63E+02	6.32E+02	2.47E-02	6.24E+02	4.21E-01
BREOT-S30-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	1.47E+02	6.89E-01	NA	NA	NA	NA	1.13E-04	1.30E+02	1.46E-02	1.00E+00	3.06E-02	2.30E+01	6.32E+02	2.47E-02	6.24E+02	3.69E-02
BREOT-N31-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	1.46E+03	6.84E+00	NA	NA	NA	NA	1.13E-04	1.29E+03	1.45E-01	1.00E+00	3.06E-02	2.28E+02	6.32E+02	2.47E-02	6.24E+02	3.66E-01
BREOT-S31-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	1.21E+02	5.69E-01	NA	NA	NA	NA	1.13E-04	1.07E+02	1.21E-02	1.00E+00	3.06E-02	1.90E+01	6.32E+02	2.47E-02	6.24E+02	3.05E-02
BREOT-N32-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	6.01E+02	2.82E+00	NA	NA	NA	NA	1.13E-04	5.31E+02	5.97E-02	1.00E+00	3.06E-02	9.40E+01	6.32E+02	2.47E-02	6.24E+02	1.51E-01
BREOT-S32-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	5.85E+02	2.74E+00	NA	NA	NA	NA	1.13E-04	5.17E+02	5.82E-02	1.00E+00	3.06E-02	9.16E+01	6.32E+02	2.47E-02	6.24E+02	1.47E-01
BREOT-N33-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	2.26E+02	1.06E+00	NA	NA	NA	NA	1.13E-04	2.00E+02	2.25E-02	1.00E+00	3.06E-02	3.54E+01	6.32E+02	2.47E-02	6.24E+02	5.67E-02
BREOT-S33-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	5.56E+02	2.61E+00	NA	NA	NA	NA	1.13E-04	4.91E+02	5.53E-02	1.00E+00	3.06E-02	8.70E+01	6.32E+02	2.47E-02	6.24E+02	1.40E-01
BREOT-N34-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	5.55E+02	2.60E+00	NA	NA	NA	NA	1.13E-04	4.90E+02	5.52E-02	1.00E+00	3.06E-02	8.68E+01	6.32E+02	2.47E-02	6.24E+02	1.39E-01
BREOT-S34-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	5.43E+02	2.54E+00	NA	NA	NA	NA	1.13E-04	4.80E+02	5.40E-02	1.00E+00	3.06E-02	8.49E+01	6.32E+02	2.47E-02	6.24E+02	1.36E-01
BREOT-N35-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	3.01E+02	1.41E+00	NA	NA	NA	NA	1.13E-04	2.66E+02	3.00E-02	1.00E+00	3.06E-02	4.71E+01	6.32E+02	2.47E-02	6.24E+02	7.56E-02
BREOT-S35-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	5.01E+02	2.35E+00	NA	NA	NA	NA	1.13E-04	4.43E+02	4.99E-02	1.00E+00	3.06E-02	7.85E+01	6.32E+02	2.47E-02	6.24E+02	1.26E-01
BREOT-N36-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	4.90E+02	2.30E+00	NA	NA	NA	NA	1.13E-04	4.33E+02	4.88E-02	1.00E+00	3.06E-02	7.67E+01	6.32E+02	2.47E-02	6.24E+02	1.23E-01
BREOT-S36-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	5.40E+02	2.53E+00	NA	NA	NA	NA	1.13E-04	4.77E+02	5.37E-02	1.00E+00	3.06E-02	8.45E+01	6.32E+02	2.47E-02	6.24E+02	1.36E-01
BREOT-N37-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	2.05E+02	9.61E-01	NA	NA	NA	NA	1.13E-04	1.81E+02	2.04E-02	1.00E+00	3.06E-02	3.21E+01	6.32E+02	2.47E-02	6.24E+02	5.14E-02
BREOT-S37-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	6.03E+02	2.83E+00	NA	NA	NA	NA	1.13E-04	5.33E+02	5.99E-02	1.00E+00	3.06E-02	9.43E+01	6.32E+02	2.47E-02	6.24E+02	1.51E-01
BREOT-N38-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	2.20E+02	1.03E+00	NA	NA	NA	NA	1.13E-04	1.95E+02	2.19E-02	1.00E+00	3.06E-02	3.45E+01	6.32E+02	2.47E-02	6.24E+02	5.53E-02
BREOT-S38-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	9.52E+02	4.46E+00	NA	NA	NA	NA	1.13E-04	8.41E+02	9.46E-02	1.00E+00	3.06E-02	1.49E+02	6.32E+02	2.47E-02	6.24E+02	2.39E-01
BREOT-N39-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N40-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	2.71E+02	1.27E+00	NA	NA	NA	NA	1.13E-04	2.39E+02	2.69E-02	1.00E+00	3.06E-02	4.24E+01	6.32E+02	2.47E-02	6.24E+02	6.79E-02
BREOT-S40-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	6.37E+02	2.99E+00	NA	NA	NA	NA	1.13E-04	5.63E+02	6.34E-02	1.00E+00	3.06E-02	9.97E+01	6.32E+02	2.47E-02	6.24E+02	1.60E-01
BREOT-N41-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	1.75E+02	8.20E-01	NA	NA	NA	NA	1.13E-04	1.55E+02	1.74E-02	1.00E+00	3.06E-02	2.74E+01	6.32E+02	2.47E-02	6.24E+02	4.39E-02
BREOT-S41-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	6.24E+02	2.93E+00	NA	NA	NA	NA	1.13E-04	5.52E+02	6.21E-02	1.00E+00	3.06E-02	9.77E+01	6.32E+02	2.47E-02	6.24E+02	1.57E-01
BREOT-N42-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S42-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	9.31E+02	4.37E+00	NA	NA	NA	NA	1.13E-04	8.23E+02	9.26E-02	1.00E+00	3.06E-02	1.46E+02	6.32E+02	2.47E-02	6.24E+02	2.34E-01
BREOT-N43-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	1.44E+02	6.73E-01	NA	NA	NA	NA	1.13E-04	1.27E+02	1.43E-02	1.00E+00	3.06E-02	2.25E+01	6.32E+02	2.47E-02	6.24E+02	3.60E-02
BREOT-S43-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	1.48E+02	6.92E-01	NA	NA	NA	NA	1.13E-04	1.30E+02	1.47E-02	1.00E+00	3.06E-02	2.31E+01	6.32E+02	2.47E-02	6.24E+02	3.70E-02
BREOT-N44-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	2.73E+02	1.28E+00	NA	NA	NA	NA	1.13E-04	2.41E+02	2.71E-02	1.00E+00	3.06E-02	4.27E+01	6.32E+02	2.47E-02	6.24E+02	6.84E-02
BREOT-S44-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	1.44E+02	6.73E-01	NA	NA	NA	NA	1.13E-04	1.27E+02	1.43E-02	1.00E+00	3.06E-02	2.25E+01	6.32E+02	2.47E-02	6.24E+02	3.60E-02
BREOT-N45-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	4.28E+02	2.01E+00	NA	NA	NA	NA	1.13E-04	3.78E+02	4.26E-02	1.00E+00	3.06E-02	6.70E+01	6.32E+02	2.47E-02	6.24E+02	1.07E-01
BREOT-S45-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	1.20E+02	5.63E-01	NA	NA	NA	NA	1.13E-04	1.06E+02	1.19E-02	1.00E+00	3.06E-02	1.88E+01	6.32E+02	2.47E-02	6.24E+02	3.02E-02
BREOT-N46-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	2.99E+02	1.40E+00	NA	NA	NA	NA	1.13E-04	2.64E+02	2.97E-02	1.00E+00	3.06E-02	4.68E+01	6.32E+02	2.47E-02	6.24E+02	7.50E-02
BREOT-S46-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	1.12E+02	5.23E-01	NA	NA	NA	NA	1.13E-04	9.86E+01	1.11E-02	1.00E+00	3.06E-02	1.75E+01	6.32E+02	2.47E-02	6.24E+02	2.80E-02
BREOT-N47-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	7.29E+02	3.42E+00	NA	NA	NA	NA	1.13E-04	6.44E+02	7.25E-02	1.00E+00	3.06E-02	1.14E+02	6.32E+02	2.47E-02	6.24E+02	1.83E-01
BREOT-S47-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N48-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	1.63E+02	7.62E-01	NA	NA	NA	NA	1.13E-04	1.44E+02	1.62E-02	1.00E+00	3.06E-02	2.54E+01	6.32E+02	2.47E-02	6.24E+02	4.08E-02
BREOT-S48-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	1.02E+02	4.78E-01	NA	NA	NA	NA	1.13E-04	9.01E+01	1.01E-02	1.00E+00	3.06E-02	1.59E+01	6.32E+02	2.47E-02	6.24E+02	2.56E-02
BREOT-N49-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	1.94E+02	9.10E-01	NA	NA	NA	NA	1.13E-04	1.71E+02	1.93E-02	1.00E+00	3.06E-02	3.04E+01	6.32E+02	2.47E-02	6.24E+02	4.87E-02
BREOT-S49-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S50-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	1.20E+02	5.60E-01	NA	NA	NA	NA	1.13E-04	1.06E+02	1.19E-02	1.00E+00	3.06E-02	1.87E+01	6.32E+02	2.47E-02	6.24E+02	3.00E-02
BREOT-N51-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	1.38E+02	6.45E-01	NA	NA	NA	NA	1.13E-04	1.22E+02	1.37E-02	1.00E+00	3.06E-02	2.15E+01	6.32E+02	2.47E-02	6.24E+02	3.45E-02
BREOT-S51-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	8.72E+02	4.09E+00	NA	NA	NA	NA	1.13E-04	7.71E+02	8.68E-02	1.00E+00	3.06E-02	1.37E+02	6.32E+02	2.47E-02	6.24E+02	2.19E-01
BREOT-N52-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	1.39E+02	6.53E-01	NA	NA	NA	NA	1.13E-04	1.23E+02	1.39E-02	1.00E+00	3.06E-02	2.18E+01	6.32E+02	2.47E-02	6.24E+02	3.50E-02
BREOT-S52-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	1.05E+02	4.93E-01	NA	NA	NA	NA	1.13E-04	9.29E+01	1.05E-02	1.00E+00	3.06E-02	1.64E+01	6.32E+02	2.47E-02	6.24E+02	2.64E-02
BREOT-N53-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	1.45E+02	6.81E-01	NA	NA	NA	NA	1.13E-04	1.28E+02	1.45E-02	1.00E+00	3.06E-02	2.27E+01	6.32E+02	2.47E-02	6.24E+02	3.65E-02
BREOT-S53-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	9.75E+01	4.57E-01	NA	NA	NA	NA	1.13E-04	8.62E+01	9.70E-03	1.00E+00	3.06E-02	1.53E+01	6.32E+02	2.47E-02	6.24E+02	2.45E-02
BREOT-N54-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	1.38E+02	6.49E-01	NA	NA	NA	NA	1.13E-04	1.22E+02	1.38E-02	1.00E+00	3.06E-02	2.16E+01	6.32E+02	2.47E-02	6.24E+02	3.47E-02
BREOT-S54-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	9.28E+01	4.35E-01	NA	NA	NA	NA	1.13E-04	8.20E+01	9.23E-03	1.00E+00	3.06E-02	1.45E+01	6.32E+02	2.47E-02	6.24E+02	2.33E-02
BREOT-N55-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	1.17E+02	5.47E-01	NA	NA	NA	NA	1.13E-04	1.03E+02	1.16E-02	1.00E+00	3.06E-02	1.82E+01	6.32E+02	2.47E-02	6.24E+02	2.93E-02
BREOT-S55-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	1.63E+02	7.63E-01	NA	NA	NA	NA	1.13E-04	1.44E+02	1.62E-02	1.00E+00	3.06E-02	2.55E+01	6.32E+02	2.47E-02	6.24E+02	4.08E-02
BREOT-N56-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	1.05E+02	4.93E-01	NA	NA	NA	NA	1.13E-04	9.29E+01	1.04E-02	1.00E+00	3.06E-02	1.64E+01	6.32E+02	2.47E-02	6.24E+02	2.64E-02
BREOT-N57-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	1.38E+02	6.45E-01	NA	NA	NA	NA	1.13E-04	1.22E+02	1.37E-02	1.00E+00	3.06E-02	2.15E+01	6.32E+02	2.47E-02	6.24E+02	3.45E-02
BREOT-S57-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	2.04E+02	9.55E-01	NA	NA	NA	NA	1.13E-04	1.80E+02	2.02E-02	1.00E+00	3.06E-02	3.19E+01	6.32E+02	2.47E-02	6.24E+02	5.11E-02
BREOT-N58-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	1.35E+02	6.32E-01	NA	NA	NA	NA	1.13E-04	1.19E+02	1.34E-02	1.00E+00	3.06E-02	2.11E+01	6.32E+02	2.47E-02	6.24E+02	3.39E-02
BREOT-S58-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	1.83E+02	8.60E-01	NA	NA	NA	NA	1.13E-04	1.62E+02	1.82E-02	1.00E+00	3.06E-02	2.87E+01	6.32E+02	2.47E-02	6.24E+02	4.61E-02

TABLE C-2C: COPPER DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **18.41**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Meadow Vole (Small Herbivorous Mammal - Terrestrial)																							
BREOT-N59-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N60-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S60-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	2.56E+02	1.20E+00	NA	NA	NA	NA	1.13E-04	2.26E+02	2.54E-02	1.00E+00	3.06E-02	4.00E+01	6.32E+02	2.47E-02	6.24E+02	6.42E-02
BREOT-S61-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	1.80E+02	8.45E-01	NA	NA	NA	NA	1.13E-04	1.59E+02	1.79E-02	1.00E+00	3.06E-02	2.82E+01	6.32E+02	2.47E-02	6.24E+02	4.52E-02
BREOT-N62-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	9.41E+01	4.41E-01	NA	NA	NA	NA	1.13E-04	8.32E+01	9.36E-03	1.00E+00	3.06E-02	1.47E+01	6.32E+02	2.47E-02	6.24E+02	2.36E-02
BREOT-S62-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	1.77E+02	8.28E-01	NA	NA	NA	NA	1.13E-04	1.56E+02	1.76E-02	1.00E+00	3.06E-02	2.76E+01	6.32E+02	2.47E-02	6.24E+02	4.43E-02
BREOT-N63-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	1.77E+02	8.29E-01	NA	NA	NA	NA	1.13E-04	1.56E+02	1.76E-02	1.00E+00	3.06E-02	2.77E+01	6.32E+02	2.47E-02	6.24E+02	4.44E-02
BREOT-S63-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	1.50E+02	7.01E-01	NA	NA	NA	NA	1.13E-04	1.32E+02	1.49E-02	1.00E+00	3.06E-02	2.34E+01	6.32E+02	2.47E-02	6.24E+02	3.75E-02
BREOT-N64-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	9.81E+01	4.60E-01	NA	NA	NA	NA	1.13E-04	8.67E+01	9.76E-03	1.00E+00	3.06E-02	1.54E+01	6.32E+02	2.47E-02	6.24E+02	2.46E-02
BREOT-S64-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	3.28E+02	1.54E+00	NA	NA	NA	NA	1.13E-04	2.90E+02	3.26E-02	1.00E+00	3.06E-02	5.13E+01	6.32E+02	2.47E-02	6.24E+02	8.22E-02
BREOT-N66-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S66-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	2.01E+02	9.40E-01	NA	NA	NA	NA	1.13E-04	1.77E+02	1.99E-02	1.00E+00	3.06E-02	3.14E+01	6.32E+02	2.47E-02	6.24E+02	5.03E-02
BREOT-N67-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	7.57E+02	3.55E+00	NA	NA	NA	NA	1.13E-04	6.69E+02	7.53E-02	1.00E+00	3.06E-02	1.18E+02	6.32E+02	2.47E-02	6.24E+02	1.90E-01
BREOT-S67-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	1.13E+02	5.28E-01	NA	NA	NA	NA	1.13E-04	9.94E+01	1.12E-02	1.00E+00	3.06E-02	1.76E+01	6.32E+02	2.47E-02	6.24E+02	2.82E-02
Outside Tailings																						**Maximum HQ (At Edge of Tailings)**	**3.83E+00**
BREOT-S0+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	1.01E+02	4.75E-01	NA	NA	NA	NA	1.13E-04	8.94E+01	1.01E-02	1.00E+00	3.06E-02	1.58E+01	6.32E+02	2.47E-02	6.24E+02	2.54E-02
BREOT-S1+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	1.64E+02	7.68E-01	NA	NA	NA	NA	1.13E-04	1.45E+02	1.63E-02	1.00E+00	3.06E-02	2.56E+01	6.32E+02	2.47E-02	6.24E+02	4.11E-02
BREOT-S2+95 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	3.83E+02	1.79E+00	NA	NA	NA	NA	1.13E-04	3.38E+02	3.80E-02	1.00E+00	3.06E-02	5.99E+01	6.32E+02	2.47E-02	6.24E+02	9.60E-02
BREOT-S3+6 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	1.85E+02	8.67E-01	NA	NA	NA	NA	1.13E-04	1.63E+02	1.84E-02	1.00E+00	3.06E-02	2.89E+01	6.32E+02	2.47E-02	6.24E+02	4.64E-02
BREOT-S4+10 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	9.18E+01	4.30E-01	NA	NA	NA	NA	1.13E-04	8.11E+01	9.13E-03	1.00E+00	3.06E-02	1.44E+01	6.32E+02	2.47E-02	6.24E+02	2.30E-02
BREOT-S6+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	1.73E+02	8.13E-01	NA	NA	NA	NA	1.13E-04	1.53E+02	1.72E-02	1.00E+00	3.06E-02	2.71E+01	6.32E+02	2.47E-02	6.24E+02	4.35E-02
BREOT-S8+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	1.94E+02	9.08E-01	NA	NA	NA	NA	1.13E-04	1.71E+02	1.93E-02	1.00E+00	3.06E-02	3.03E+01	6.32E+02	2.47E-02	6.24E+02	4.86E-02
BREOT-N10+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	1.95E+02	9.15E-01	NA	NA	NA	NA	1.13E-04	1.73E+02	1.94E-02	1.00E+00	3.06E-02	3.05E+01	6.32E+02	2.47E-02	6.24E+02	4.90E-02
BREOT-N11+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	3.42E+02	1.60E+00	NA	NA	NA	NA	1.13E-04	3.02E+02	3.40E-02	1.00E+00	3.06E-02	5.35E+01	6.32E+02	2.47E-02	6.24E+02	8.58E-02
BREOT-N12+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	1.85E+02	8.68E-01	NA	NA	NA	NA	1.13E-04	1.64E+02	1.84E-02	1.00E+00	3.06E-02	2.90E+01	6.32E+02	2.47E-02	6.24E+02	4.65E-02
BREOT-S12+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	1.56E+03	7.31E+00	NA	NA	NA	NA	1.13E-04	1.38E+03	1.55E-01	1.00E+00	3.06E-02	2.44E+02	6.32E+02	2.47E-02	6.24E+02	3.91E-01
BREOT-S12+60 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	2.31E+02	1.09E+00	NA	NA	NA	NA	1.13E-04	2.04E+02	2.30E-02	1.00E+00	3.06E-02	3.62E+01	6.32E+02	2.47E-02	6.24E+02	5.81E-02
BREOT-N13+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	2.65E+02	1.24E+00	NA	NA	NA	NA	1.13E-04	2.34E+02	2.63E-02	1.00E+00	3.06E-02	4.14E+01	6.32E+02	2.47E-02	6.24E+02	6.64E-02
BREOT-S13+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	6.89E+02	3.23E+00	NA	NA	NA	NA	1.13E-04	6.09E+02	6.85E-02	1.00E+00	3.06E-02	1.08E+02	6.32E+02	2.47E-02	6.24E+02	1.73E-01
BREOT-S13+65 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	3.42E+02	1.61E+00	NA	NA	NA	NA	1.13E-04	3.03E+02	3.41E-02	1.00E+00	3.06E-02	5.36E+01	6.32E+02	2.47E-02	6.24E+02	8.59E-02
BREOT-N14+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	2.95E+02	1.38E+00	NA	NA	NA	NA	1.13E-04	2.61E+02	2.94E-02	1.00E+00	3.06E-02	4.62E+01	6.32E+02	2.47E-02	6.24E+02	7.41E-02
BREOT-S14+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	1.86E+03	8.73E+00	NA	NA	NA	NA	1.13E-04	1.64E+03	1.85E-01	1.00E+00	3.06E-02	2.91E+02	6.32E+02	2.47E-02	6.24E+02	4.67E-01
BREOT-S14+59 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	2.20E+02	1.03E+00	NA	NA	NA	NA	1.13E-04	1.94E+02	2.18E-02	1.00E+00	3.06E-02	3.44E+01	6.32E+02	2.47E-02	6.24E+02	5.51E-02
BREOT-N15+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	1.49E+03	6.96E+00	NA	NA	NA	NA	1.13E-04	1.31E+03	1.48E-01	1.00E+00	3.06E-02	2.32E+02	6.32E+02	2.47E-02	6.24E+02	3.73E-01
BREOT-N15+50 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	3.07E+02	1.44E+00	NA	NA	NA	NA	1.13E-04	2.71E+02	3.05E-02	1.00E+00	3.06E-02	4.80E+01	6.32E+02	2.47E-02	6.24E+02	7.70E-02
BREOT-S16+20 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	9.03E+02	4.24E+00	NA	NA	NA	NA	1.13E-04	7.98E+02	8.98E-02	1.00E+00	3.06E-02	1.41E+02	6.32E+02	2.47E-02	6.24E+02	2.27E-01
BREOT-S16+75 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	1.45E+02	6.79E-01	NA	NA	NA	NA	1.13E-04	1.28E+02	1.44E-02	1.00E+00	3.06E-02	2.27E+01	6.32E+02	2.47E-02	6.24E+02	3.64E-02
BREOT-N17+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	8.96E+02	4.20E+00	NA	NA	NA	NA	1.13E-04	7.92E+02	8.91E-02	1.00E+00	3.06E-02	1.40E+02	6.32E+02	2.47E-02	6.24E+02	2.25E-01
BREOT-S18+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	1.77E+02	8.29E-01	NA	NA	NA	NA	1.13E-04	1.56E+02	1.76E-02	1.00E+00	3.06E-02	2.77E+01	6.32E+02	2.47E-02	6.24E+02	4.44E-02
BREOT-N19+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S19+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	6.79E+03	3.18E+01	NA	NA	NA	NA	1.13E-04	6.00E+03	6.75E-01	1.00E+00	3.06E-02	1.06E+03	6.32E+02	2.47E-02	6.24E+02	1.70E+00
BREOT-S19+85 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	2.70E+02	1.27E+00	NA	NA	NA	NA	1.13E-04	2.39E+02	2.69E-02	1.00E+00	3.06E-02	4.23E+01	6.32E+02	2.47E-02	6.24E+02	6.79E-02
BREOT-N20+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	5.92E+02	2.77E+00	NA	NA	NA	NA	1.13E-04	5.23E+02	5.88E-02	1.00E+00	3.06E-02	9.26E+01	6.32E+02	2.47E-02	6.24E+02	1.48E-01
BREOT-S20+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	3.72E+03	1.74E+01	NA	NA	NA	NA	1.13E-04	3.28E+03	3.70E-01	1.00E+00	3.06E-02	5.82E+02	6.32E+02	2.47E-02	6.24E+02	9.33E-01
BREOT-S20+75 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N21+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	3.56E+02	1.67E+00	NA	NA	NA	NA	1.13E-04	3.15E+02	3.55E-02	1.00E+00	3.06E-02	5.58E+01	6.32E+02	2.47E-02	6.24E+02	8.95E-02
BREOT-S21+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	9.97E+03	4.67E+01	NA	NA	NA	NA	1.13E-04	8.81E+03	9.91E-01	1.00E+00	3.06E-02	1.56E+03	6.32E+02	2.47E-02	6.24E+02	2.50E+00
BREOT-N22+150 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	2.76E+02	1.29E+00	NA	NA	NA	NA	1.13E-04	2.44E+02	2.75E-02	1.00E+00	3.06E-02	4.32E+01	6.32E+02	2.47E-02	6.24E+02	6.93E-02
BREOT-N22+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	5.44E+02	2.55E+00	NA	NA	NA	NA	1.13E-04	4.81E+02	5.41E-02	1.00E+00	3.06E-02	8.52E+01	6.32E+02	2.47E-02	6.24E+02	1.37E-01
BREOT-S22+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	2.19E+02	1.03E+00	NA	NA	NA	NA	1.13E-04	1.94E+02	2.18E-02	1.00E+00	3.06E-02	3.43E+01	6.32E+02	2.47E-02	6.24E+02	5.50E-02
BREOT-N23+115 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N23+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	1.43E+03	6.72E+00	NA	NA	NA	NA	1.13E-04	1.27E+03	1.43E-01	1.00E+00	3.06E-02	2.24E+02	6.32E+02	2.47E-02	6.24E+02	3.60E-01
BREOT-S23+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	3.95E+02	1.85E+00	NA	NA	NA	NA	1.13E-04	3.49E+02	3.93E-02	1.00E+00	3.06E-02	6.18E+01	6.32E+02	2.47E-02	6.24E+02	9.91E-02
BREOT-S23+37.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	1.44E+02	6.74E-01	NA	NA	NA	NA	1.13E-04	1.27E+02	1.43E-02	1.00E+00	3.06E-02	2.25E+01	6.32E+02	2.47E-02	6.24E+02	3.61E-02
BREOT-N24+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	3.55E+02	1.66E+00	NA	NA	NA	NA	1.13E-04	3.13E+02	3.53E-02	1.00E+00	3.06E-02	5.55E+01	6.32E+02	2.47E-02	6.24E+02	8.90E-02

TABLE C-2C: COPPER DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 18.41

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Meadow Vole (Small Herbivorous Mammal - Terrestrial)																							
BREOT-N24+75 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	9.39E+01	4.40E-01	NA	NA	NA	NA	1.13E-04	8.30E+01	9.34E-03	1.00E+00	3.06E-02	1.47E+01	6.32E+02	2.47E-02	6.24E+02	2.36E-02
BREOT-S24+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	2.13E+02	9.97E-01	NA	NA	NA	NA	1.13E-04	1.88E+02	2.11E-02	1.00E+00	3.06E-02	3.33E+01	6.32E+02	2.47E-02	6.24E+02	5.34E-02
BREOT-N25+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	1.90E+02	8.89E-01	NA	NA	NA	NA	1.13E-04	1.68E+02	1.89E-02	1.00E+00	3.06E-02	2.97E+01	6.32E+02	2.47E-02	6.24E+02	4.76E-02
BREOT-S25+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	1.96E+02	9.21E-01	NA	NA	NA	NA	1.13E-04	1.74E+02	1.95E-02	1.00E+00	3.06E-02	3.07E+01	6.32E+02	2.47E-02	6.24E+02	4.93E-02
BREOT-S25+40 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	2.44E+02	1.15E+00	NA	NA	NA	NA	1.13E-04	2.16E+02	2.43E-02	1.00E+00	3.06E-02	3.82E+01	6.32E+02	2.47E-02	6.24E+02	6.13E-02
BREOT-S26+37 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	9.52E+01	4.47E-01	NA	NA	NA	NA	1.13E-04	8.42E+01	9.47E-03	1.00E+00	3.06E-02	1.49E+01	6.32E+02	2.47E-02	6.24E+02	2.39E-02
BREOT-N27+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	2.25E+02	1.05E+00	NA	NA	NA	NA	1.13E-04	1.98E+02	2.23E-02	1.00E+00	3.06E-02	3.51E+01	6.32E+02	2.47E-02	6.24E+02	5.64E-02
BREOT-S27+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	2.20E+02	1.03E+00	NA	NA	NA	NA	1.13E-04	1.94E+02	2.18E-02	1.00E+00	3.06E-02	3.43E+01	6.32E+02	2.47E-02	6.24E+02	5.51E-02
BREOT-N28+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S28+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	2.14E+02	1.00E+00	NA	NA	NA	NA	1.13E-04	1.89E+02	2.13E-02	1.00E+00	3.06E-02	3.35E+01	6.32E+02	2.47E-02	6.24E+02	5.38E-02
BREOT-N29+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	2.21E+02	1.04E+00	NA	NA	NA	NA	1.13E-04	1.95E+02	2.20E-02	1.00E+00	3.06E-02	3.46E+01	6.32E+02	2.47E-02	6.24E+02	5.54E-02
BREOT-S29+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	2.30E+02	1.08E+00	NA	NA	NA	NA	1.13E-04	2.03E+02	2.29E-02	1.00E+00	3.06E-02	3.60E+01	6.32E+02	2.47E-02	6.24E+02	5.77E-02
BREOT-N30+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	3.60E+02	1.69E+00	NA	NA	NA	NA	1.13E-04	3.18E+02	3.58E-02	1.00E+00	3.06E-02	5.63E+01	6.32E+02	2.47E-02	6.24E+02	9.03E-02
BREOT-S30+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	2.11E+02	9.88E-01	NA	NA	NA	NA	1.13E-04	1.86E+02	2.09E-02	1.00E+00	3.06E-02	3.30E+01	6.32E+02	2.47E-02	6.24E+02	5.29E-02
BREOT-N31+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	2.39E+03	1.12E+01	NA	NA	NA	NA	1.13E-04	2.11E+03	2.38E-01	1.00E+00	3.06E-02	3.74E+02	6.32E+02	2.47E-02	6.24E+02	6.00E-01
BREOT-N31+75 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	2.46E+02	1.15E+00	NA	NA	NA	NA	1.13E-04	2.17E+02	2.44E-02	1.00E+00	3.06E-02	3.84E+01	6.32E+02	2.47E-02	6.24E+02	6.16E-02
BREOT-S31+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	9.48E+01	4.44E-01	NA	NA	NA	NA	1.13E-04	8.37E+01	9.42E-03	1.00E+00	3.06E-02	1.48E+01	6.32E+02	2.47E-02	6.24E+02	2.38E-02
BREOT-N32+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	3.00E+02	1.41E+00	NA	NA	NA	NA	1.13E-04	2.65E+02	2.98E-02	1.00E+00	3.06E-02	4.69E+01	6.32E+02	2.47E-02	6.24E+02	7.53E-02
BREOT-S32+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	4.57E+02	2.14E+00	NA	NA	NA	NA	1.13E-04	4.04E+02	4.54E-02	1.00E+00	3.06E-02	7.15E+01	6.32E+02	2.47E-02	6.24E+02	1.15E-01
BREOT-S32+300 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	8.95E+02	4.20E+00	NA	NA	NA	NA	1.13E-04	7.91E+02	8.90E-02	1.00E+00	3.06E-02	1.40E+02	6.32E+02	2.47E-02	6.24E+02	2.25E-01
BREOT-N33+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	4.33E+02	2.03E+00	NA	NA	NA	NA	1.13E-04	3.83E+02	4.31E-02	1.00E+00	3.06E-02	6.78E+01	6.32E+02	2.47E-02	6.24E+02	1.09E-01
BREOT-S33+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	1.01E+03	4.72E+00	NA	NA	NA	NA	1.13E-04	8.90E+02	1.00E-01	1.00E+00	3.06E-02	1.58E+02	6.32E+02	2.47E-02	6.24E+02	2.53E-01
BREOT-N34+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	4.09E+02	1.92E+00	NA	NA	NA	NA	1.13E-04	3.61E+02	4.07E-02	1.00E+00	3.06E-02	6.40E+01	6.32E+02	2.47E-02	6.24E+02	1.03E-01
BREOT-S34+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	4.62E+02	2.16E+00	NA	NA	NA	NA	1.13E-04	4.08E+02	4.59E-02	1.00E+00	3.06E-02	7.22E+01	6.32E+02	2.47E-02	6.24E+02	1.16E-01
BREOT-N35+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	3.23E+02	1.52E+00	NA	NA	NA	NA	1.13E-04	2.86E+02	3.22E-02	1.00E+00	3.06E-02	5.06E+01	6.32E+02	2.47E-02	6.24E+02	8.12E-02
BREOT-S35+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	9.85E+02	4.62E+00	NA	NA	NA	NA	1.13E-04	8.70E+02	9.79E-02	1.00E+00	3.06E-02	1.54E+02	6.32E+02	2.47E-02	6.24E+02	2.47E-01
BREOT-N36+100 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	1.79E+02	8.38E-01	NA	NA	NA	NA	1.13E-04	1.58E+02	1.78E-02	1.00E+00	3.06E-02	2.80E+01	6.32E+02	2.47E-02	6.24E+02	4.49E-02
BREOT-N36+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	6.17E+02	2.89E+00	NA	NA	NA	NA	1.13E-04	5.45E+02	6.13E-02	1.00E+00	3.06E-02	9.65E+01	6.32E+02	2.47E-02	6.24E+02	1.55E-01
BREOT-S36+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	9.07E+02	4.25E+00	NA	NA	NA	NA	1.13E-04	8.02E+02	9.02E-02	1.00E+00	3.06E-02	1.42E+02	6.32E+02	2.47E-02	6.24E+02	2.28E-01
BREOT-N37+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	2.02E+02	9.47E-01	NA	NA	NA	NA	1.13E-04	1.78E+02	2.01E-02	1.00E+00	3.06E-02	3.16E+01	6.32E+02	2.47E-02	6.24E+02	5.07E-02
BREOT-S37+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	1.25E+03	5.86E+00	NA	NA	NA	NA	1.13E-04	1.10E+03	1.24E-01	1.00E+00	3.06E-02	1.95E+02	6.32E+02	2.47E-02	6.24E+02	3.13E-01
BREOT-N38+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	4.85E+02	2.27E+00	NA	NA	NA	NA	1.13E-04	4.29E+02	4.82E-02	1.00E+00	3.06E-02	7.59E+01	6.32E+02	2.47E-02	6.24E+02	1.22E-01
BREOT-S38+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	1.19E+03	5.57E+00	NA	NA	NA	NA	1.13E-04	1.05E+03	1.18E-01	1.00E+00	3.06E-02	1.86E+02	6.32E+02	2.47E-02	6.24E+02	2.98E-01
BREOT-N39+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	1.79E+02	8.38E-01	NA	NA	NA	NA	1.13E-04	1.58E+02	1.78E-02	1.00E+00	3.06E-02	2.80E+01	6.32E+02	2.47E-02	6.24E+02	4.48E-02
BREOT-S39+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	9.94E+02	4.66E+00	NA	NA	NA	NA	1.13E-04	8.78E+02	9.88E-02	1.00E+00	3.06E-02	1.56E+02	6.32E+02	2.47E-02	6.24E+02	2.49E-01
BREOT-N40+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	2.60E+02	1.22E+00	NA	NA	NA	NA	1.13E-04	2.30E+02	2.59E-02	1.00E+00	3.06E-02	4.08E+01	6.32E+02	2.47E-02	6.24E+02	6.54E-02
BREOT-S40+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	9.25E+02	4.34E+00	NA	NA	NA	NA	1.13E-04	8.17E+02	9.19E-02	1.00E+00	3.06E-02	1.45E+02	6.32E+02	2.47E-02	6.24E+02	2.32E-01
BREOT-N41+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	1.03E+02	4.83E-01	NA	NA	NA	NA	1.13E-04	9.10E+01	1.02E-02	1.00E+00	3.06E-02	1.61E+01	6.32E+02	2.47E-02	6.24E+02	2.58E-02
BREOT-S41+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	3.58E+02	1.68E+00	NA	NA	NA	NA	1.13E-04	3.16E+02	3.56E-02	1.00E+00	3.06E-02	5.60E+01	6.32E+02	2.47E-02	6.24E+02	8.98E-02
BREOT-N42+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S42+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	5.46E+02	2.56E+00	NA	NA	NA	NA	1.13E-04	4.82E+02	5.43E-02	1.00E+00	3.06E-02	8.54E+01	6.32E+02	2.47E-02	6.24E+02	1.37E-01
BREOT-N43+12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	1.72E+02	8.09E-01	NA	NA	NA	NA	1.13E-04	1.52E+02	1.72E-02	1.00E+00	3.06E-02	2.70E+01	6.32E+02	2.47E-02	6.24E+02	4.33E-02
BREOT-N43+40 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	9.02E+01	4.23E-01	NA	NA	NA	NA	1.13E-04	7.97E+01	8.97E-03	1.00E+00	3.06E-02	1.41E+01	6.32E+02	2.47E-02	6.24E+02	2.26E-02
BREOT-S43+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	2.23E+02	1.04E+00	NA	NA	NA	NA	1.13E-04	1.97E+02	2.22E-02	1.00E+00	3.06E-02	3.49E+01	6.32E+02	2.47E-02	6.24E+02	5.59E-02
BREOT-N44+55 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	2.11E+02	9.89E-01	NA	NA	NA	NA	1.13E-04	1.86E+02	2.10E-02	1.00E+00	3.06E-02	3.30E+01	6.32E+02	2.47E-02	6.24E+02	5.29E-02
BREOT-S44+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N45+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	9.72E+01	4.56E-01	NA	NA	NA	NA	1.13E-04	8.59E+01	9.66E-03	1.00E+00	3.06E-02	1.52E+01	6.32E+02	2.47E-02	6.24E+02	2.44E-02
BREOT-S45+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N46+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	3.80E+02	1.78E+00	NA	NA	NA	NA	1.13E-04	3.36E+02	3.78E-02	1.00E+00	3.06E-02	5.95E+01	6.32E+02	2.47E-02	6.24E+02	9.54E-02
BREOT-S46+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	1.73E+02	8.13E-01	NA	NA	NA	NA	1.13E-04	1.53E+02	1.72E-02	1.00E+00	3.06E-02	2.71E+01	6.32E+02	2.47E-02	6.24E+02	4.35E-02
BREOT-N47+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	2.87E+02	1.34E+00	NA	NA	NA	NA	1.13E-04	2.53E+02	2.85E-02	1.00E+00	3.06E-02	4.49E+01	6.32E+02	2.47E-02	6.24E+02	7.19E-02
BREOT-S47+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N48+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	9.01E+01	4.23E-01	NA	NA	NA	NA	1.13E-04	7.96E+01	8.96E-03	1.00E+00	3.06E-02	1.41E+01	6.32E+02	2.47E-02	6.24E+02	2.26E-02
BREOT-S48+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	9.92E+01	4.65E-01	NA	NA	NA	NA	1.13E-04	8.77E+01	9.87E-03	1.00E+00	3.06E-02	1.55E+01	6.32E+02	2.47E-02	6.24E+02	2.49E-02
BREOT-N49+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	1.17E+02	5.49E-01	NA	NA	NA	NA	1.13E-04	1.03E+02	1.16E-02	1.00E+00	3.06E-02	1.83E+01	6.32E+02	2.47E-02	6.24E+02	2.94E-02

TABLE C-2C: COPPER DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **18.41**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Meadow Vole (Small Herbivorous Mammal - Terrestrial)																							
BREOT-S49+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N51+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	1.04E+02	4.86E-01	NA	NA	NA	NA	1.13E-04	9.15E+01	1.03E-02	1.00E+00	3.06E-02	1.62E+01	6.32E+02	2.47E-02	6.24E+02	2.60E-02
BREOT-S51+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N52+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	1.30E+02	6.10E-01	NA	NA	NA	NA	1.13E-04	1.15E+02	1.29E-02	1.00E+00	3.06E-02	2.04E+01	6.32E+02	2.47E-02	6.24E+02	3.27E-02
BREOT-S52+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N53+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	1.26E+02	5.92E-01	NA	NA	NA	NA	1.13E-04	1.12E+02	1.26E-02	1.00E+00	3.06E-02	1.98E+01	6.32E+02	2.47E-02	6.24E+02	3.17E-02
BREOT-S53+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S54+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N55+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S55+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	1.00E+02	4.69E-01	NA	NA	NA	NA	1.13E-04	8.85E+01	9.96E-03	1.00E+00	3.06E-02	1.57E+01	6.32E+02	2.47E-02	6.24E+02	2.51E-02
BREOT-N56+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S56+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	2.28E+02	1.07E+00	NA	NA	NA	NA	1.13E-04	2.01E+02	2.27E-02	1.00E+00	3.06E-02	3.57E+01	6.32E+02	2.47E-02	6.24E+02	5.72E-02
BREOT-N57+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S57+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	1.59E+02	7.47E-01	NA	NA	NA	NA	1.13E-04	1.41E+02	1.58E-02	1.00E+00	3.06E-02	2.49E+01	6.32E+02	2.47E-02	6.24E+02	4.00E-02
BREOT-N58+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	9.20E+01	4.31E-01	NA	NA	NA	NA	1.13E-04	8.13E+01	9.14E-03	1.00E+00	3.06E-02	1.44E+01	6.32E+02	2.47E-02	6.24E+02	2.31E-02
BREOT-S58+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	1.76E+02	8.26E-01	NA	NA	NA	NA	1.13E-04	1.56E+02	1.75E-02	1.00E+00	3.06E-02	2.76E+01	6.32E+02	2.47E-02	6.24E+02	4.42E-02
BREOT-N59+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	1.26E+02	5.90E-01	NA	NA	NA	NA	1.13E-04	1.11E+02	1.25E-02	1.00E+00	3.06E-02	1.97E+01	6.32E+02	2.47E-02	6.24E+02	3.16E-02
BREOT-N60+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S60+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	2.27E+02	1.07E+00	NA	NA	NA	NA	1.13E-04	2.01E+02	2.26E-02	1.00E+00	3.06E-02	3.56E+01	6.32E+02	2.47E-02	6.24E+02	5.71E-02
BREOT-S61+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	1.83E+02	8.60E-01	NA	NA	NA	NA	1.13E-04	1.62E+02	1.82E-02	1.00E+00	3.06E-02	2.87E+01	6.32E+02	2.47E-02	6.24E+02	4.60E-02
BREOT-N62+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	1.21E+02	5.69E-01	NA	NA	NA	NA	1.13E-04	1.07E+02	1.21E-02	1.00E+00	3.06E-02	1.90E+01	6.32E+02	2.47E-02	6.24E+02	3.04E-02
BREOT-S62+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N63+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	2.99E+02	1.40E+00	NA	NA	NA	NA	1.13E-04	2.64E+02	2.97E-02	1.00E+00	3.06E-02	4.68E+01	6.32E+02	2.47E-02	6.24E+02	7.50E-02
BREOT-S63+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	1.11E+02	5.19E-01	NA	NA	NA	NA	1.13E-04	9.79E+01	1.10E-02	1.00E+00	3.06E-02	1.73E+01	6.32E+02	2.47E-02	6.24E+02	2.78E-02
BREOT-N64+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	1.12E+02	5.26E-01	NA	NA	NA	NA	1.13E-04	9.92E+01	1.12E-02	1.00E+00	3.06E-02	1.76E+01	6.32E+02	2.47E-02	6.24E+02	2.82E-02
BREOT-S64+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	3.28E+02	1.54E+00	NA	NA	NA	NA	1.13E-04	2.89E+02	3.26E-02	1.00E+00	3.06E-02	5.13E+01	6.32E+02	2.47E-02	6.24E+02	8.22E-02
BREOT-S65+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	3.04E+02	1.43E+00	NA	NA	NA	NA	1.13E-04	2.69E+02	3.02E-02	1.00E+00	3.06E-02	4.76E+01	6.32E+02	2.47E-02	6.24E+02	7.63E-02
BREOT-N66+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S66+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	3.03E+02	1.42E+00	NA	NA	NA	NA	1.13E-04	2.67E+02	3.01E-02	1.00E+00	3.06E-02	4.74E+01	6.32E+02	2.47E-02	6.24E+02	7.60E-02
BREOT-N67+125 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	1.67E+02	7.85E-01	NA	NA	NA	NA	1.13E-04	1.48E+02	1.67E-02	1.00E+00	3.06E-02	2.62E+01	6.32E+02	2.47E-02	6.24E+02	4.20E-02
BREOT-S67+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	3.45E+02	1.62E+00	NA	NA	NA	NA	1.13E-04	3.05E+02	3.43E-02	1.00E+00	3.06E-02	5.40E+01	6.32E+02	2.47E-02	6.24E+02	8.67E-02
BREOT-N67+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	1.99E+02	9.35E-01	NA	NA	NA	NA	1.13E-04	1.76E+02	1.98E-02	1.00E+00	3.06E-02	3.12E+01	6.32E+02	2.47E-02	6.24E+02	5.01E-02
																						Maximum HQ (Outside Tailings)	**2.50E+00**
White-Tailed Deer (Large Herbivorous Mammal - Terrestrial)																							
Reference Sites																							
ACBG-1 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	7.79E-01	6.20E+01	8.87E+01	NA	NA	NA	NA	2.86E-02	7.96E+01	2.28E+00	1.03E-01	1.35E+02	6.94E-02	6.32E+02	2.47E-02	3.77E+02	1.84E-04
ACBG-2 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	7.79E-01	1.95E+02	2.79E+02	NA	NA	NA	NA	2.86E-02	2.50E+02	7.16E+00	1.03E-01	1.35E+02	2.18E-01	6.32E+02	2.47E-02	3.77E+02	5.79E-04
UBRBG-202 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	7.79E-01	1.70E+02	2.44E+02	NA	NA	NA	NA	2.86E-02	2.18E+02	6.26E+00	1.03E-01	1.35E+02	1.91E-01	6.32E+02	2.47E-02	3.77E+02	5.06E-04
UBRBG-204 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	7.79E-01	8.12E+01	1.16E+02	NA	NA	NA	NA	2.86E-02	1.04E+02	2.99E+00	1.03E-01	1.35E+02	9.10E-02	6.32E+02	2.47E-02	3.77E+02	2.41E-04
Inside Tailings																						**Minimum HQ (Reference Sites)**	**1.84E-04**
BREOT-S6-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	2.76E+02	3.95E+02	NA	NA	NA	NA	2.86E-02	2.44E+02	6.98E+00	1.03E-01	1.35E+02	3.07E-01	6.32E+02	2.47E-02	3.77E+02	8.13E-04
BREOT-S2-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	8.28E+02	1.19E+03	NA	NA	NA	NA	2.86E-02	7.32E+02	2.09E+01	1.03E-01	1.35E+02	9.20E-01	6.32E+02	2.47E-02	3.77E+02	2.44E-03
BREOT-S0-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	1.57E+02	2.24E+02	NA	NA	NA	NA	2.86E-02	1.38E+02	3.96E+00	1.03E-01	1.35E+02	1.74E-01	6.32E+02	2.47E-02	3.77E+02	4.62E-04
BREOT-S1-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	1.23E+02	1.76E+02	NA	NA	NA	NA	2.86E-02	1.09E+02	3.11E+00	1.03E-01	1.35E+02	1.37E-01	6.32E+02	2.47E-02	3.77E+02	3.63E-04
BREOT-S7-25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	2.17E+02	3.11E+02	NA	NA	NA	NA	2.86E-02	1.92E+02	5.49E+00	1.03E-01	1.35E+02	2.41E-01	6.32E+02	2.47E-02	3.77E+02	6.40E-04
BREOT-S8-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	1.83E+02	2.62E+02	NA	NA	NA	NA	2.86E-02	1.61E+02	4.62E+00	1.03E-01	1.35E+02	2.03E-01	6.32E+02	2.47E-02	3.77E+02	5.39E-04
BREOT-S9-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	2.45E+02	3.51E+02	NA	NA	NA	NA	2.86E-02	2.16E+02	6.20E+00	1.03E-01	1.35E+02	2.72E-01	6.32E+02	2.47E-02	3.77E+02	7.23E-04
BREOT-N10-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	1.78E+03	2.54E+03	NA	NA	NA	NA	2.86E-02	1.57E+03	4.50E+01	1.03E-01	1.35E+02	1.98E+00	6.32E+02	2.47E-02	3.77E+02	5.24E-03
BREOT-N11-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	2.52E+02	3.61E+02	NA	NA	NA	NA	2.86E-02	2.23E+02	6.38E+00	1.03E-01	1.35E+02	2.80E-01	6.32E+02	2.47E-02	3.77E+02	7.44E-04
BREOT-N11-125 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	1.89E+02	2.70E+02	NA	NA	NA	NA	2.86E-02	1.67E+02	4.78E+00	1.03E-01	1.35E+02	2.10E-01	6.32E+02	2.47E-02	3.77E+02	5.57E-04
BREOT-S11-12 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	1.24E+03	1.78E+03	NA	NA	NA	NA	2.86E-02	1.10E+03	3.14E+01	1.03E-01	1.35E+02	1.38E+00	6.32E+02	2.47E-02	3.77E+02	3.66E-03
BREOT-S11+63 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	2.85E+02	4.09E+02	NA	NA	NA	NA	2.86E-02	2.52E+02	7.22E+00	1.03E-01	1.35E+02	3.17E-01	6.32E+02	2.47E-02	3.77E+02	8.42E-04
UBDT-TP-6 (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	2.84E+03	4.06E+03	NA	NA	NA	NA	2.86E-02	2.51E+03	7.18E+01	1.03E-01	1.35E+02	3.15E+00	6.32E+02	2.47E-02	3.77E+02	8.37E-03
UBDT-TP-6 (2-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	2.23E+03	3.19E+03	NA	NA	NA	NA	2.86E-02	1.97E+03	5.64E+01	1.03E-01	1.35E+02	2.48E+00	6.32E+02	2.47E-02	3.77E+02	6.57E-03
UBDT-TP-6 (12-24")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	4.21E+03	6.03E+03	NA	NA	NA	NA	2.86E-02	3.72E+03	1.07E+02	1.03E-01	1.35E+02	4.68E+00	6.32E+02	2.47E-02	3.77E+02	1.24E-02
UBDT-TP-6 (24-36")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	2.44E+02	3.49E+02	NA	NA	NA	NA	2.86E-02	2.15E+02	6.16E+00	1.03E-01	1.35E+02	2.71E-01	6.32E+02	2.47E-02	3.77E+02	7.18E-04
UBDT-TP-6 (36-48")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	1.79E+03	2.56E+03	NA	NA	NA	NA	2.86E-02	1.58E+03	4.52E+01	1.03E-01	1.35E+02	1.99E+00	6.32E+02	2.47E-02	3.77E+02	5.27E-03

TABLE C-2C: COPPER DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 18.41

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
White-Tailed Deer (Large Herbivorous Mammal - Terrestrial)																							
UBDT-TP-6 (48-60")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	1.03E+03	1.48E+03	NA	NA	NA	NA	2.86E-02	9.13E+02	2.61E+01	1.03E-01	1.35E+02	1.15E+00	6.32E+02	2.47E-02	3.77E+02	3.05E-03
BREOT-N12-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	3.31E+02	4.74E+02	NA	NA	NA	NA	2.86E-02	2.92E+02	8.37E+00	1.03E-01	1.35E+02	3.68E-01	6.32E+02	2.47E-02	3.77E+02	9.76E-04
BREOT-S12-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	5.90E+02	8.45E+02	NA	NA	NA	NA	2.86E-02	5.21E+02	1.49E+01	1.03E-01	1.35E+02	6.56E-01	6.32E+02	2.47E-02	3.77E+02	1.74E-03
BREOT-S13-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	1.14E+03	1.63E+03	NA	NA	NA	NA	2.86E-02	1.01E+03	2.88E+01	1.03E-01	1.35E+02	1.27E+00	6.32E+02	2.47E-02	3.77E+02	3.36E-03
BREOT-S14-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	4.63E+02	6.63E+02	NA	NA	NA	NA	2.86E-02	4.09E+02	1.17E+01	1.03E-01	1.35E+02	5.15E-01	6.32E+02	2.47E-02	3.77E+02	1.37E-03
BREOT-N15-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	3.27E+02	4.69E+02	NA	NA	NA	NA	2.86E-02	2.89E+02	8.28E+00	1.03E-01	1.35E+02	3.64E-01	6.32E+02	2.47E-02	3.77E+02	9.66E-04
BREOT-S15-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	3.57E+02	5.11E+02	NA	NA	NA	NA	2.86E-02	3.16E+02	9.04E+00	1.03E-01	1.35E+02	3.97E-01	6.32E+02	2.47E-02	3.77E+02	1.05E-03
BREOT-N16-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	4.20E+02	6.01E+02	NA	NA	NA	NA	2.86E-02	3.71E+02	1.06E+01	1.03E-01	1.35E+02	4.67E-01	6.32E+02	2.47E-02	3.77E+02	1.24E-03
BREOT-N16-25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	2.32E+02	3.33E+02	NA	NA	NA	NA	2.86E-02	2.05E+02	5.88E+00	1.03E-01	1.35E+02	2.58E-01	6.32E+02	2.47E-02	3.77E+02	6.85E-04
BREOT-S16-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	1.74E+02	2.49E+02	NA	NA	NA	NA	2.86E-02	1.54E+02	4.40E+00	1.03E-01	1.35E+02	1.93E-01	6.32E+02	2.47E-02	3.77E+02	5.13E-04
BREOT-N17-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	1.78E+02	2.55E+02	NA	NA	NA	NA	2.86E-02	1.57E+02	4.51E+00	1.03E-01	1.35E+02	1.98E-01	6.32E+02	2.47E-02	3.77E+02	5.25E-04
BREOT-S17-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	1.55E+02	2.22E+02	NA	NA	NA	NA	2.86E-02	1.37E+02	3.92E+00	1.03E-01	1.35E+02	1.72E-01	6.32E+02	2.47E-02	3.77E+02	4.57E-04
BREOT-S17-25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	1.12E+02	1.60E+02	NA	NA	NA	NA	2.86E-02	9.88E+01	2.83E+00	1.03E-01	1.35E+02	1.24E-01	6.32E+02	2.47E-02	3.77E+02	3.30E-04
UBDT-TP-4 (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	3.90E+02	5.59E+02	NA	NA	NA	NA	2.86E-02	3.45E+02	9.88E+00	1.03E-01	1.35E+02	4.34E-01	6.32E+02	2.47E-02	3.77E+02	1.15E-03
UBDT-TP-4 (2-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	3.56E+02	5.10E+02	NA	NA	NA	NA	2.86E-02	3.15E+02	9.02E+00	1.03E-01	1.35E+02	3.96E-01	6.32E+02	2.47E-02	3.77E+02	1.05E-03
UBDT-TP-4 (12-24")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	3.44E+02	4.92E+02	NA	NA	NA	NA	2.86E-02	3.04E+02	8.70E+00	1.03E-01	1.35E+02	3.82E-01	6.32E+02	2.47E-02	3.77E+02	1.01E-03
UBDT-TP-4 (24-36")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	1.87E+02	2.68E+02	NA	NA	NA	NA	2.86E-02	1.66E+02	4.74E+00	1.03E-01	1.35E+02	2.08E-01	6.32E+02	2.47E-02	3.77E+02	5.53E-04
BREOT-N18-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	5.10E+02	7.30E+02	NA	NA	NA	NA	2.86E-02	4.50E+02	1.29E+01	1.03E-01	1.35E+02	5.67E-01	6.32E+02	2.47E-02	3.77E+02	1.50E-03
BREOT-N18-25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S18-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	2.49E+02	3.56E+02	NA	NA	NA	NA	2.86E-02	2.20E+02	6.30E+00	1.03E-01	1.35E+02	2.77E-01	6.32E+02	2.47E-02	3.77E+02	7.34E-04
BREOT-N19-10 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	2.69E+02	3.85E+02	NA	NA	NA	NA	2.86E-02	2.38E+02	6.80E+00	1.03E-01	1.35E+02	2.99E-01	6.32E+02	2.47E-02	3.77E+02	7.93E-04
BREOT-S19-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	2.90E+02	4.15E+02	NA	NA	NA	NA	2.86E-02	2.56E+02	7.34E+00	1.03E-01	1.35E+02	3.22E-01	6.32E+02	2.47E-02	3.77E+02	8.55E-04
UBDT-TP-5 (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	4.65E+02	6.65E+02	NA	NA	NA	NA	2.86E-02	4.11E+02	1.18E+01	1.03E-01	1.35E+02	5.17E-01	6.32E+02	2.47E-02	3.77E+02	1.37E-03
UBDT-TP-5 (2-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	3.68E+02	5.27E+02	NA	NA	NA	NA	2.86E-02	3.25E+02	9.32E+00	1.03E-01	1.35E+02	4.09E-01	6.32E+02	2.47E-02	3.77E+02	1.09E-03
UBDT-TP-5 (12-24")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	3.90E+02	5.59E+02	NA	NA	NA	NA	2.86E-02	3.45E+02	9.88E+00	1.03E-01	1.35E+02	4.34E-01	6.32E+02	2.47E-02	3.77E+02	1.15E-03
BREOT-N20-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	1.92E+02	2.75E+02	NA	NA	NA	NA	2.86E-02	1.70E+02	4.86E+00	1.03E-01	1.35E+02	2.14E-01	6.32E+02	2.47E-02	3.77E+02	5.67E-04
UBDT-TP-3 (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	3.20E+02	4.59E+02	NA	NA	NA	NA	2.86E-02	2.83E+02	8.10E+00	1.03E-01	1.35E+02	3.56E-01	6.32E+02	2.47E-02	3.77E+02	9.45E-04
UBDT-TP-3 (2-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	2.16E+02	3.09E+02	NA	NA	NA	NA	2.86E-02	1.91E+02	5.46E+00	1.03E-01	1.35E+02	2.40E-01	6.32E+02	2.47E-02	3.77E+02	6.36E-04
UBDT-TP-3 (12-24")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	2.36E+02	3.37E+02	NA	NA	NA	NA	2.86E-02	2.08E+02	5.96E+00	1.03E-01	1.35E+02	2.62E-01	6.32E+02	2.47E-02	3.77E+02	6.95E-04
UBDT-TP-3 (24-36")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	2.54E+02	3.63E+02	NA	NA	NA	NA	2.86E-02	2.24E+02	6.42E+00	1.03E-01	1.35E+02	2.82E-01	6.32E+02	2.47E-02	3.77E+02	7.49E-04
UBDT-TP-3 (36-48")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	3.96E+02	5.67E+02	NA	NA	NA	NA	2.86E-02	3.50E+02	1.00E+01	1.03E-01	1.35E+02	4.40E-01	6.32E+02	2.47E-02	3.77E+02	1.17E-03
UBDT-TP-3 (48-60")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	2.08E+02	2.98E+02	NA	NA	NA	NA	2.86E-02	1.84E+02	5.27E+00	1.03E-01	1.35E+02	2.32E-01	6.32E+02	2.47E-02	3.77E+02	6.15E-04
BREOT-N21-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	3.21E+02	4.59E+02	NA	NA	NA	NA	2.86E-02	2.84E+02	8.12E+00	1.03E-01	1.35E+02	3.57E-01	6.32E+02	2.47E-02	3.77E+02	9.47E-04
BREOT-N22-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	2.34E+02	3.34E+02	NA	NA	NA	NA	2.86E-02	2.06E+02	5.91E+00	1.03E-01	1.35E+02	2.60E-01	6.32E+02	2.47E-02	3.77E+02	6.89E-04
BREOT-N23-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	2.65E+02	3.79E+02	NA	NA	NA	NA	2.86E-02	2.34E+02	6.70E+00	1.03E-01	1.35E+02	2.94E-01	6.32E+02	2.47E-02	3.77E+02	7.81E-04
BREOT-S23-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	9.00E+02	1.29E+03	NA	NA	NA	NA	2.86E-02	7.95E+02	2.28E+01	1.03E-01	1.35E+02	1.00E+00	6.32E+02	2.47E-02	3.77E+02	2.65E-03
UBDT-TP-2 (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	5.07E+02	7.26E+02	NA	NA	NA	NA	2.86E-02	4.48E+02	1.28E+01	1.03E-01	1.35E+02	5.64E-01	6.32E+02	2.47E-02	3.77E+02	1.50E-03
UBDT-TP-2 (2-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	5.08E+02	7.27E+02	NA	NA	NA	NA	2.86E-02	4.49E+02	1.29E+01	1.03E-01	1.35E+02	5.65E-01	6.32E+02	2.47E-02	3.77E+02	1.50E-03
UBDT-TP-2 (12-24")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	3.47E+02	4.97E+02	NA	NA	NA	NA	2.86E-02	3.07E+02	8.79E+00	1.03E-01	1.35E+02	3.86E-01	6.32E+02	2.47E-02	3.77E+02	1.02E-03
UBDT-TP-2 (24-36")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	2.11E+02	3.02E+02	NA	NA	NA	NA	2.86E-02	1.87E+02	5.34E+00	1.03E-01	1.35E+02	2.35E-01	6.32E+02	2.47E-02	3.77E+02	6.23E-04
UBDT-TP-2 (36-48")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	2.78E+02	3.98E+02	NA	NA	NA	NA	2.86E-02	2.46E+02	7.04E+00	1.03E-01	1.35E+02	3.09E-01	6.32E+02	2.47E-02	3.77E+02	8.20E-04
BREOT-S24-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	7.66E+02	1.10E+03	NA	NA	NA	NA	2.86E-02	6.77E+02	1.94E+01	1.03E-01	1.35E+02	8.52E-01	6.32E+02	2.47E-02	3.77E+02	2.26E-03
BREOT-N25-50 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	1.83E+03	2.62E+03	NA	NA	NA	NA	2.86E-02	1.62E+03	4.64E+01	1.03E-01	1.35E+02	2.04E+00	6.32E+02	2.47E-02	3.77E+02	5.40E-03
BREOT-N25-95 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	1.22E+02	1.74E+02	NA	NA	NA	NA	2.86E-02	1.08E+02	3.08E+00	1.03E-01	1.35E+02	1.35E-01	6.32E+02	2.47E-02	3.77E+02	3.59E-04
BREOT-S25-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	4.40E+02	6.30E+02	NA	NA	NA	NA	2.86E-02	3.89E+02	1.11E+01	1.03E-01	1.35E+02	4.89E-01	6.32E+02	2.47E-02	3.77E+02	1.30E-03
BREOT-S25-40 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	1.90E+02	2.72E+02	NA	NA	NA	NA	2.86E-02	1.68E+02	4.80E+00	1.03E-01	1.35E+02	2.11E-01	6.32E+02	2.47E-02	3.77E+02	5.60E-04
BREOT-N26A-25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	1.13E+02	1.61E+02	NA	NA	NA	NA	2.86E-02	9.96E+01	2.85E+00	1.03E-01	1.35E+02	1.25E-01	6.32E+02	2.47E-02	3.77E+02	3.33E-04
BREOT-N26B-25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	8.31E+02	1.19E+03	NA	NA	NA	NA	2.86E-02	7.35E+02	2.10E+01	1.03E-01	1.35E+02	9.24E-01	6.32E+02	2.47E-02	3.77E+02	2.45E-03
BREOT-N26-50 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	1.41E+03	2.02E+03	NA	NA	NA	NA	2.86E-02	1.25E+03	3.57E+01	1.03E-01	1.35E+02	1.57E+00	6.32E+02	2.47E-02	3.77E+02	4.16E-03
BREOT-N26-75 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	1.17E+03	1.68E+03	NA	NA	NA	NA	2.86E-02	1.04E+03	2.97E+01	1.03E-01	1.35E+02	1.30E+00	6.32E+02	2.47E-02	3.77E+02	3.46E-03
BREOT-S26-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	1.36E+02	1.94E+02	NA	NA	NA	NA	2.86E-02	1.20E+02	3.44E+00	1.03E-01	1.35E+02	1.51E-01	6.32E+02	2.47E-02	3.77E+02	4.01E-04
BREOT-S26-40 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	4.62E+02	6.62E+02	NA	NA	NA	NA	2.86E-02	4.08E+02	1.17E+01	1.03E-01	1.35E+02	5.14E-01	6.32E+02	2.47E-02	3.77E+02	1.36E-03
BREOT-N27-30 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	1.39E+03	1.99E+03	NA	NA	NA	NA	2.86E-02	1.23E+03	3.52E+01	1.03E-01	1.35E+02	1.55E+00	6.32E+02	2.47E-02	3.77E+02	4.11E-03
BREOT-N27-75 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	2.45E+03	3.51E+03	NA	NA	NA	NA	2.86E-02	2.17E+03	6.21E+01	1.03E-01	1.35E+02	2.73E+00	6.32E+02	2.47E-02	3.77E+02	7.24E-03
BREOT-S27-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	3.57E+02	5.11E+02	NA	NA	NA	NA	2.86E-02	3.16E+02	9.04E+00	1.03E-01	1.35E+02	3.97E-01	6.32E+02	2.47E-02	3.77E+02	1.05E-03

TABLE C-2C: COPPER DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 18.41

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
White-Tailed Deer (Large Herbivorous Mammal - Terrestrial)																							
BREOT-N28-110 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	5.76E+02	8.25E+02	NA	NA	NA	NA	2.86E-02	5.09E+02	1.46E+01	1.03E-01	1.35E+02	6.40E-01	6.32E+02	2.47E-02	3.77E+02	1.70E-03
BREOT-N28-55 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	3.34E+03	4.78E+03	NA	NA	NA	NA	2.86E-02	2.95E+03	8.45E+01	1.03E-01	1.35E+02	3.71E+00	6.32E+02	2.47E-02	3.77E+02	9.85E-03
BREOT-S28-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	4.85E+02	6.95E+02	NA	NA	NA	NA	2.86E-02	4.29E+02	1.23E+01	1.03E-01	1.35E+02	5.39E-01	6.32E+02	2.47E-02	3.77E+02	1.43E-03
UBDT-TP-1 (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	1.11E+03	1.59E+03	NA	NA	NA	NA	2.86E-02	9.81E+02	2.81E+01	1.03E-01	1.35E+02	1.23E+00	6.32E+02	2.47E-02	3.77E+02	3.27E-03
UBDT-TP-1 (2-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	2.28E+03	3.26E+03	NA	NA	NA	NA	2.86E-02	2.01E+03	5.76E+01	1.03E-01	1.35E+02	2.53E+00	6.32E+02	2.47E-02	3.77E+02	6.71E-03
UBDT-TP-1 (12-24")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	2.06E+03	2.95E+03	NA	NA	NA	NA	2.86E-02	1.82E+03	5.21E+01	1.03E-01	1.35E+02	2.29E+00	6.32E+02	2.47E-02	3.77E+02	6.07E-03
UBDT-TP-1 (24-36")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	1.52E+03	2.18E+03	NA	NA	NA	NA	2.86E-02	1.34E+03	3.85E+01	1.03E-01	1.35E+02	1.69E+00	6.32E+02	2.47E-02	3.77E+02	4.49E-03
UBDT-TP-1 (36-48")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	3.30E+02	4.72E+02	NA	NA	NA	NA	2.86E-02	2.92E+02	8.35E+00	1.03E-01	1.35E+02	3.67E-01	6.32E+02	2.47E-02	3.77E+02	9.73E-04
UBDT-TP-1 (48-60")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	2.08E+02	2.98E+02	NA	NA	NA	NA	2.86E-02	1.84E+02	5.26E+00	1.03E-01	1.35E+02	2.31E-01	6.32E+02	2.47E-02	3.77E+02	6.13E-04
BREOT-N29-30 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	2.80E+03	4.01E+03	NA	NA	NA	NA	2.86E-02	2.47E+03	7.08E+01	1.03E-01	1.35E+02	3.11E+00	6.32E+02	2.47E-02	3.77E+02	8.25E-03
BREOT-S29-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	4.55E+02	6.51E+02	NA	NA	NA	NA	2.86E-02	4.02E+02	1.15E+01	1.03E-01	1.35E+02	5.06E-01	6.32E+02	2.47E-02	3.77E+02	1.34E-03
BREOT-N30-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	5.11E+02	7.32E+02	NA	NA	NA	NA	2.86E-02	4.52E+02	1.29E+01	1.03E-01	1.35E+02	5.68E-01	6.32E+02	2.47E-02	3.77E+02	1.51E-03
BREOT-S30-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	3.54E+02	5.07E+02	NA	NA	NA	NA	2.86E-02	3.13E+02	8.96E+00	1.03E-01	1.35E+02	3.94E-01	6.32E+02	2.47E-02	3.77E+02	1.04E-03
BREOT-N31-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	3.60E+02	5.16E+02	NA	NA	NA	NA	2.86E-02	3.18E+02	9.12E+00	1.03E-01	1.35E+02	4.00E-01	6.32E+02	2.47E-02	3.77E+02	1.06E-03
BREOT-S31-25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	2.24E+02	3.20E+02	NA	NA	NA	NA	2.86E-02	1.98E+02	5.66E+00	1.03E-01	1.35E+02	2.48E-01	6.32E+02	2.47E-02	3.77E+02	6.59E-04
BREOT-S31-5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	3.36E+02	4.81E+02	NA	NA	NA	NA	2.86E-02	2.97E+02	8.50E+00	1.03E-01	1.35E+02	3.73E-01	6.32E+02	2.47E-02	3.77E+02	9.90E-04
BREOT-N32-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	2.41E+02	3.45E+02	NA	NA	NA	NA	2.86E-02	2.13E+02	6.09E+00	1.03E-01	1.35E+02	2.68E-01	6.32E+02	2.47E-02	3.77E+02	7.10E-04
BREOT-S32-6 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	2.39E+02	3.42E+02	NA	NA	NA	NA	2.86E-02	2.11E+02	6.05E+00	1.03E-01	1.35E+02	2.66E-01	6.32E+02	2.47E-02	3.77E+02	7.05E-04
BREOT-N33-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	2.68E+02	3.84E+02	NA	NA	NA	NA	2.86E-02	2.37E+02	6.78E+00	1.03E-01	1.35E+02	2.98E-01	6.32E+02	2.47E-02	3.77E+02	7.91E-04
BREOT-S33-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	6.56E+02	9.39E+02	NA	NA	NA	NA	2.86E-02	5.80E+02	1.66E+01	1.03E-01	1.35E+02	7.29E-01	6.32E+02	2.47E-02	3.77E+02	1.94E-03
BREOT-N35-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	2.11E+02	3.03E+02	NA	NA	NA	NA	2.86E-02	1.87E+02	5.35E+00	1.03E-01	1.35E+02	2.35E-01	6.32E+02	2.47E-02	3.77E+02	6.23E-04
BREOT-S35-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	5.13E+02	7.34E+02	NA	NA	NA	NA	2.86E-02	4.53E+02	1.30E+01	1.03E-01	1.35E+02	5.70E-01	6.32E+02	2.47E-02	3.77E+02	1.51E-03
BREOT-N36-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	3.45E+02	4.94E+02	NA	NA	NA	NA	2.86E-02	3.05E+02	8.73E+00	1.03E-01	1.35E+02	3.84E-01	6.32E+02	2.47E-02	3.77E+02	1.02E-03
BREOT-S36-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	2.29E+02	3.27E+02	NA	NA	NA	NA	2.86E-02	2.02E+02	5.78E+00	1.03E-01	1.35E+02	2.54E-01	6.32E+02	2.47E-02	3.77E+02	6.74E-04
BREOT-N37-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	2.08E+02	2.98E+02	NA	NA	NA	NA	2.86E-02	1.84E+02	5.27E+00	1.03E-01	1.35E+02	2.32E-01	6.32E+02	2.47E-02	3.77E+02	6.15E-04
BREOT-S37-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	3.35E+02	4.79E+02	NA	NA	NA	NA	2.86E-02	2.96E+02	8.47E+00	1.03E-01	1.35E+02	3.72E-01	6.32E+02	2.47E-02	3.77E+02	9.88E-04
BREOT-N38-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	2.36E+02	3.37E+02	NA	NA	NA	NA	2.86E-02	2.08E+02	5.96E+00	1.03E-01	1.35E+02	2.62E-01	6.32E+02	2.47E-02	3.77E+02	6.95E-04
BREOT-S38-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	7.87E+02	1.13E+03	NA	NA	NA	NA	2.86E-02	6.96E+02	1.99E+01	1.03E-01	1.35E+02	8.75E-01	6.32E+02	2.47E-02	3.77E+02	2.32E-03
BREOT-N39-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	3.43E+02	4.92E+02	NA	NA	NA	NA	2.86E-02	3.03E+02	8.69E+00	1.03E-01	1.35E+02	3.82E-01	6.32E+02	2.47E-02	3.77E+02	1.01E-03
BREOT-S39-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	5.89E+02	8.44E+02	NA	NA	NA	NA	2.86E-02	5.21E+02	1.49E+01	1.03E-01	1.35E+02	6.55E-01	6.32E+02	2.47E-02	3.77E+02	1.74E-03
BREOT-N40-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	4.57E+02	6.55E+02	NA	NA	NA	NA	2.86E-02	4.04E+02	1.16E+01	1.03E-01	1.35E+02	5.08E-01	6.32E+02	2.47E-02	3.77E+02	1.35E-03
BREOT-S40-14 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	5.60E+02	8.01E+02	NA	NA	NA	NA	2.86E-02	4.95E+02	1.42E+01	1.03E-01	1.35E+02	6.22E-01	6.32E+02	2.47E-02	3.77E+02	1.65E-03
BREOT-N41-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	3.40E+02	4.86E+02	NA	NA	NA	NA	2.86E-02	3.00E+02	8.59E+00	1.03E-01	1.35E+02	3.77E-01	6.32E+02	2.47E-02	3.77E+02	1.00E-03
BREOT-S41-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	5.11E+02	7.31E+02	NA	NA	NA	NA	2.86E-02	4.51E+02	1.29E+01	1.03E-01	1.35E+02	5.68E-01	6.32E+02	2.47E-02	3.77E+02	1.51E-03
BREOT-N42-35 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	2.76E+02	3.96E+02	NA	NA	NA	NA	2.86E-02	2.44E+02	6.99E+00	1.03E-01	1.35E+02	3.07E-01	6.32E+02	2.47E-02	3.77E+02	8.15E-04
BREOT-S42-25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	3.04E+02	4.35E+02	NA	NA	NA	NA	2.86E-02	2.69E+02	7.69E+00	1.03E-01	1.35E+02	3.38E-01	6.32E+02	2.47E-02	3.77E+02	8.97E-04
BREOT-N43-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	5.21E+02	7.46E+02	NA	NA	NA	NA	2.86E-02	4.60E+02	1.32E+01	1.03E-01	1.35E+02	5.79E-01	6.32E+02	2.47E-02	3.77E+02	1.54E-03
BREOT-S43-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	2.77E+02	3.96E+02	NA	NA	NA	NA	2.86E-02	2.45E+02	7.01E+00	1.03E-01	1.35E+02	3.08E-01	6.32E+02	2.47E-02	3.77E+02	8.17E-04
BREOT-N44-30 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	2.13E+02	3.05E+02	NA	NA	NA	NA	2.86E-02	1.88E+02	5.39E+00	1.03E-01	1.35E+02	2.37E-01	6.32E+02	2.47E-02	3.77E+02	6.28E-04
BREOT-S44-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	4.84E+02	6.94E+02	NA	NA	NA	NA	2.86E-02	4.28E+02	1.23E+01	1.03E-01	1.35E+02	5.38E-01	6.32E+02	2.47E-02	3.77E+02	1.43E-03
BREOT-N45-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	3.58E+02	5.13E+02	NA	NA	NA	NA	2.86E-02	3.16E+02	9.06E+00	1.03E-01	1.35E+02	3.98E-01	6.32E+02	2.47E-02	3.77E+02	1.06E-03
BREOT-N43-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	5.21E+02	7.46E+02	NA	NA	NA	NA	2.86E-02	4.60E+02	1.32E+01	1.03E-01	1.35E+02	5.79E-01	6.32E+02	2.47E-02	3.77E+02	1.54E-03
BREOT-S45-6 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	3.45E+02	4.93E+02	NA	NA	NA	NA	2.86E-02	3.05E+02	8.72E+00	1.03E-01	1.35E+02	3.83E-01	6.32E+02	2.47E-02	3.77E+02	1.02E-03
BREOT-N46-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	1.39E+02	1.99E+02	NA	NA	NA	NA	2.86E-02	1.23E+02	3.53E+00	1.03E-01	1.35E+02	1.55E-01	6.32E+02	2.47E-02	3.77E+02	4.11E-04
BREOT-S46-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	1.72E+02	2.47E+02	NA	NA	NA	NA	2.86E-02	1.52E+02	4.36E+00	1.03E-01	1.35E+02	1.91E-01	6.32E+02	2.47E-02	3.77E+02	5.08E-04
BREOT-S46-40 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	3.36E+02	4.81E+02	NA	NA	NA	NA	2.86E-02	2.97E+02	8.50E+00	1.03E-01	1.35E+02	3.74E-01	6.32E+02	2.47E-02	3.77E+02	9.91E-04
BREOT-N47-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	3.14E+02	4.50E+02	NA	NA	NA	NA	2.86E-02	2.78E+02	7.96E+00	1.03E-01	1.35E+02	3.49E-01	6.32E+02	2.47E-02	3.77E+02	9.27E-04
BREOT-S47-999 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	4.66E+02	6.67E+02	NA	NA	NA	NA	2.86E-02	4.12E+02	1.18E+01	1.03E-01	1.35E+02	5.18E-01	6.32E+02	2.47E-02	3.77E+02	1.38E-03
BREOT-S48-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	1.12E+02	1.60E+02	NA	NA	NA	NA	2.86E-02	9.89E+01	2.83E+00	1.03E-01	1.35E+02	1.24E-01	6.32E+02	2.47E-02	3.77E+02	3.30E-04
BREOT-S49-2.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	1.47E+02	2.10E+02	NA	NA	NA	NA	2.86E-02	1.30E+02	3.72E+00	1.03E-01	1.35E+02	1.63E-01	6.32E+02	2.47E-02	3.77E+02	4.34E-04
BREOT-S50-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	2.62E+02	3.75E+02	NA	NA	NA	NA	2.86E-02	2.31E+02	6.63E+00	1.03E-01	1.35E+02	2.91E-01	6.32E+02	2.47E-02	3.77E+02	7.73E-04
BREOT-S50-25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N52-60 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	2.40E+02	3.44E+02	NA	NA	NA	NA	2.86E-02	2.12E+02	6.07E+00	1.03E-01	1.35E+02	2.67E-01	6.32E+02	2.47E-02	3.77E+02	7.08E-04
BREOT-S52-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	1.25E+03	1.78E+03	NA	NA	NA	NA	2.86E-02	1.10E+03	3.15E+01	1.03E-01	1.35E+02	1.38E+00	6.32E+02	2.47E-02	3.77E+02	3.67E-03
BREOT-S53-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	2.89E+02	4.14E+02	NA	NA	NA	NA	2.86E-02	2.56E+02	7.32E+00	1.03E-01	1.35E+02	3.22E-01	6.32E+02	2.47E-02	3.77E+02	8.54E-04

TABLE C-2C: COPPER DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **18.41**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
White-Tailed Deer (Large Herbivorous Mammal - Terrestrial)																							
BREOT-S54-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	1.82E+02	2.60E+02	NA	NA	NA	NA	2.86E-02	1.60E+02	4.60E+00	1.03E-01	1.35E+02	2.02E-01	6.32E+02	2.47E-02	3.77E+02	5.36E-04
BREOT-N55-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	4.91E+02	7.03E+02	NA	NA	NA	NA	2.86E-02	4.34E+02	1.24E+01	1.03E-01	1.35E+02	5.46E-01	6.32E+02	2.47E-02	3.77E+02	1.45E-03
BREOT-S55-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	1.96E+02	2.80E+02	NA	NA	NA	NA	2.86E-02	1.73E+02	4.95E+00	1.03E-01	1.35E+02	2.18E-01	6.32E+02	2.47E-02	3.77E+02	5.77E-04
BREOT-N56-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	3.64E+02	5.21E+02	NA	NA	NA	NA	2.86E-02	3.21E+02	9.20E+00	1.03E-01	1.35E+02	4.04E-01	6.32E+02	2.47E-02	3.77E+02	1.07E-03
BREOT-S56-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	1.69E+02	2.42E+02	NA	NA	NA	NA	2.86E-02	1.49E+02	4.27E+00	1.03E-01	1.35E+02	1.88E-01	6.32E+02	2.47E-02	3.77E+02	4.98E-04
BREOT-N57-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	2.67E+02	3.82E+02	NA	NA	NA	NA	2.86E-02	2.36E+02	6.76E+00	1.03E-01	1.35E+02	2.97E-01	6.32E+02	2.47E-02	3.77E+02	7.88E-04
BREOT-S57-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	1.96E+02	2.80E+02	NA	NA	NA	NA	2.86E-02	1.73E+02	4.95E+00	1.03E-01	1.35E+02	2.18E-01	6.32E+02	2.47E-02	3.77E+02	5.78E-04
BREOT-N58-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	1.73E+02	2.48E+02	NA	NA	NA	NA	2.86E-02	1.53E+02	4.39E+00	1.03E-01	1.35E+02	1.93E-01	6.32E+02	2.47E-02	3.77E+02	5.12E-04
BREOT-S58-12 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	2.91E+02	4.17E+02	NA	NA	NA	NA	2.86E-02	2.57E+02	7.37E+00	1.03E-01	1.35E+02	3.24E-01	6.32E+02	2.47E-02	3.77E+02	8.59E-04
BREOT-N59-18 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	1.19E+02	1.71E+02	NA	NA	NA	NA	2.86E-02	1.06E+02	3.02E+00	1.03E-01	1.35E+02	1.33E-01	6.32E+02	2.47E-02	3.77E+02	3.52E-04
BREOT-N60-12.5 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S60-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	2.13E+02	3.05E+02	NA	NA	NA	NA	2.86E-02	1.88E+02	5.38E+00	1.03E-01	1.35E+02	2.36E-01	6.32E+02	2.47E-02	3.77E+02	6.27E-04
BREOT-S61-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	2.92E+02	4.18E+02	NA	NA	NA	NA	2.86E-02	2.58E+02	7.39E+00	1.03E-01	1.35E+02	3.25E-01	6.32E+02	2.47E-02	3.77E+02	8.62E-04
BREOT-N62-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	9.90E+01	1.42E+02	NA	NA	NA	NA	2.86E-02	8.74E+01	2.50E+00	1.03E-01	1.35E+02	1.10E-01	6.32E+02	2.47E-02	3.77E+02	2.92E-04
BREOT-S62-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	3.95E+02	5.66E+02	NA	NA	NA	NA	2.86E-02	3.49E+02	1.00E+01	1.03E-01	1.35E+02	4.39E-01	6.32E+02	2.47E-02	3.77E+02	1.17E-03
BREOT-S63-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	1.60E+02	2.29E+02	NA	NA	NA	NA	2.86E-02	1.41E+02	4.04E+00	1.03E-01	1.35E+02	1.78E-01	6.32E+02	2.47E-02	3.77E+02	4.71E-04
BREOT-N64-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	1.07E+02	1.53E+02	NA	NA	NA	NA	2.86E-02	9.46E+01	2.71E+00	1.03E-01	1.35E+02	1.19E-01	6.32E+02	2.47E-02	3.77E+02	3.16E-04
BREOT-N64-20 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	1.30E+02	1.86E+02	NA	NA	NA	NA	2.86E-02	1.15E+02	3.29E+00	1.03E-01	1.35E+02	1.44E-01	6.32E+02	2.47E-02	3.77E+02	3.83E-04
BREOT-S64-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	1.90E+02	2.72E+02	NA	NA	NA	NA	2.86E-02	1.68E+02	4.80E+00	1.03E-01	1.35E+02	2.11E-01	6.32E+02	2.47E-02	3.77E+02	5.60E-04
BREOT-N65-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	1.39E+02	1.99E+02	NA	NA	NA	NA	2.86E-02	1.23E+02	3.52E+00	1.03E-01	1.35E+02	1.54E-01	6.32E+02	2.47E-02	3.77E+02	4.10E-04
BREOT-S65-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	2.05E+02	2.94E+02	NA	NA	NA	NA	2.86E-02	1.81E+02	5.20E+00	1.03E-01	1.35E+02	2.28E-01	6.32E+02	2.47E-02	3.77E+02	6.06E-04
BREOT-N66-5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	1.52E+02	2.18E+02	NA	NA	NA	NA	2.86E-02	1.35E+02	3.85E+00	1.03E-01	1.35E+02	1.69E-01	6.32E+02	2.47E-02	3.77E+02	4.49E-04
BREOT-S66-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	1.67E+02	2.40E+02	NA	NA	NA	NA	2.86E-02	1.48E+02	4.23E+00	1.03E-01	1.35E+02	1.86E-01	6.32E+02	2.47E-02	3.77E+02	4.93E-04
BREOT-N67-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	6.37E+02	9.12E+02	NA	NA	NA	NA	2.86E-02	5.63E+02	1.61E+01	1.03E-01	1.35E+02	7.08E-01	6.32E+02	2.47E-02	3.77E+02	1.88E-03
BREOT-S67-12.5 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
At Edge of Tailings																						**Maximum HQ (Inside Tailings)**	**1.24E-02**
BREOT-S0-0 (06)	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	1.36E+02	1.95E+02	NA	NA	NA	NA	2.86E-02	1.20E+02	3.44E+00	1.03E-01	1.35E+02	1.51E-01	6.32E+02	2.47E-02	3.77E+02	4.01E-04
BREOT-S1-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	2.38E+02	3.41E+02	NA	NA	NA	NA	2.86E-02	2.11E+02	6.03E+00	1.03E-01	1.35E+02	2.65E-01	6.32E+02	2.47E-02	3.77E+02	7.03E-04
BREOT-S2-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	3.39E+02	4.85E+02	NA	NA	NA	NA	2.86E-02	2.99E+02	8.57E+00	1.03E-01	1.35E+02	3.76E-01	6.32E+02	2.47E-02	3.77E+02	9.99E-04
BREOT-S3-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	4.10E+02	5.87E+02	NA	NA	NA	NA	2.86E-02	3.62E+02	1.04E+01	1.03E-01	1.35E+02	4.55E-01	6.32E+02	2.47E-02	3.77E+02	1.21E-03
BREOT-S4-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	4.58E+02	6.56E+02	NA	NA	NA	NA	2.86E-02	4.05E+02	1.16E+01	1.03E-01	1.35E+02	5.09E-01	6.32E+02	2.47E-02	3.77E+02	1.35E-03
BREOT-S6-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	3.70E+02	5.30E+02	NA	NA	NA	NA	2.86E-02	3.27E+02	9.37E+00	1.03E-01	1.35E+02	4.12E-01	6.32E+02	2.47E-02	3.77E+02	1.09E-03
BREOT-S7-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	2.15E+02	3.08E+02	NA	NA	NA	NA	2.86E-02	1.90E+02	5.44E+00	1.03E-01	1.35E+02	2.39E-01	6.32E+02	2.47E-02	3.77E+02	6.34E-04
BREOT-S8-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	1.91E+02	2.74E+02	NA	NA	NA	NA	2.86E-02	1.69E+02	4.83E+00	1.03E-01	1.35E+02	2.12E-01	6.32E+02	2.47E-02	3.77E+02	5.64E-04
BREOT-S9-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	1.71E+02	2.44E+02	NA	NA	NA	NA	2.86E-02	1.51E+02	4.32E+00	1.03E-01	1.35E+02	1.90E-01	6.32E+02	2.47E-02	3.77E+02	5.04E-04
BREOT-N10-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	4.01E+03	5.73E+03	NA	NA	NA	NA	2.86E-02	3.54E+03	1.01E+02	1.03E-01	1.35E+02	4.45E+00	6.32E+02	2.47E-02	3.77E+02	1.18E-02
BREOT-N11-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	3.34E+02	4.78E+02	NA	NA	NA	NA	2.86E-02	2.95E+02	8.45E+00	1.03E-01	1.35E+02	3.71E-01	6.32E+02	2.47E-02	3.77E+02	9.84E-04
BREOT-S11-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	2.61E+02	3.74E+02	NA	NA	NA	NA	2.86E-02	2.31E+02	6.61E+00	1.03E-01	1.35E+02	2.91E-01	6.32E+02	2.47E-02	3.77E+02	7.71E-04
BREOT-N12-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	2.90E+02	4.16E+02	NA	NA	NA	NA	2.86E-02	2.57E+02	7.35E+00	1.03E-01	1.35E+02	3.23E-01	6.32E+02	2.47E-02	3.77E+02	8.57E-04
BREOT-S12-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	6.69E+02	9.57E+02	NA	NA	NA	NA	2.86E-02	5.91E+02	1.69E+01	1.03E-01	1.35E+02	7.43E-01	6.32E+02	2.47E-02	3.77E+02	1.97E-03
BREOT-N13-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	2.16E+03	3.10E+03	NA	NA	NA	NA	2.86E-02	1.91E+03	5.47E+01	1.03E-01	1.35E+02	2.40E+00	6.32E+02	2.47E-02	3.77E+02	6.38E-03
BREOT-S13-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	1.59E+02	2.27E+02	NA	NA	NA	NA	2.86E-02	1.40E+02	4.01E+00	1.03E-01	1.35E+02	1.76E-01	6.32E+02	2.47E-02	3.77E+02	4.68E-04
BREOT-N14-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	4.85E+02	6.94E+02	NA	NA	NA	NA	2.86E-02	4.28E+02	1.23E+01	1.03E-01	1.35E+02	5.39E-01	6.32E+02	2.47E-02	3.77E+02	1.43E-03
BREOT-S14-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	3.69E+03	5.28E+03	NA	NA	NA	NA	2.86E-02	3.26E+03	9.34E+01	1.03E-01	1.35E+02	4.10E+00	6.32E+02	2.47E-02	3.77E+02	1.09E-02
BREOT-N15-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	3.78E+02	5.41E+02	NA	NA	NA	NA	2.86E-02	3.34E+02	9.56E+00	1.03E-01	1.35E+02	4.20E-01	6.32E+02	2.47E-02	3.77E+02	1.11E-03
BREOT-N16-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	2.79E+02	3.99E+02	NA	NA	NA	NA	2.86E-02	2.46E+02	7.05E+00	1.03E-01	1.35E+02	3.10E-01	6.32E+02	2.47E-02	3.77E+02	8.22E-04
BREOT-S16-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	2.04E+02	2.92E+02	NA	NA	NA	NA	2.86E-02	1.81E+02	5.17E+00	1.03E-01	1.35E+02	2.27E-01	6.32E+02	2.47E-02	3.77E+02	6.03E-04
BREOT-N17-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	2.95E+02	4.22E+02	NA	NA	NA	NA	2.86E-02	2.60E+02	7.46E+00	1.03E-01	1.35E+02	3.28E-01	6.32E+02	2.47E-02	3.77E+02	8.69E-04
BREOT-S17-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	3.50E+02	5.01E+02	NA	NA	NA	NA	2.86E-02	3.09E+02	8.85E+00	1.03E-01	1.35E+02	3.89E-01	6.32E+02	2.47E-02	3.77E+02	1.03E-03
BREOT-N18-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	2.72E+02	3.89E+02	NA	NA	NA	NA	2.86E-02	2.40E+02	6.88E+00	1.03E-01	1.35E+02	3.02E-01	6.32E+02	2.47E-02	3.77E+02	8.02E-04
BREOT-S18-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	2.37E+03	3.39E+03	NA	NA	NA	NA	2.86E-02	2.09E+03	6.00E+01	1.03E-01	1.35E+02	2.63E+00	6.32E+02	2.47E-02	3.77E+02	6.99E-03
BREOT-N19-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	3.32E+02	4.76E+02	NA	NA	NA	NA	2.86E-02	2.94E+02	8.41E+00	1.03E-01	1.35E+02	3.69E-01	6.32E+02	2.47E-02	3.77E+02	9.80E-04
BREOT-S19-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	1.46E+02	2.08E+02	NA	NA	NA	NA	2.86E-02	1.29E+02	3.68E+00	1.03E-01	1.35E+02	1.62E-01	6.32E+02	2.47E-02	3.77E+02	4.29E-04
BREOT-N20-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	4.76E+02	6.81E+02	NA	NA	NA	NA	2.86E-02	4.20E+02	1.20E+01	1.03E-01	1.35E+02	5.29E-01	6.32E+02	2.47E-02	3.77E+02	1.40E-03
BREOT-S20-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	1.54E+02	2.21E+02	NA	NA	NA	NA	2.86E-02	1.36E+02	3.90E+00	1.03E-01	1.35E+02	1.71E-01	6.32E+02	2.47E-02	3.77E+02	4.54E-04

TABLE C-2C: COPPER DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

Site Area (hectares) **18.41**

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
White-Tailed Deer (Large Herbivorous Mammal - Terrestrial)																							
BREOT-N21-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	1.53E+04	2.18E+04	NA	NA	NA	NA	2.86E-02	1.35E+04	3.86E+02	1.03E-01	1.35E+02	1.70E+01	6.32E+02	2.47E-02	3.77E+02	4.50E-02
BREOT-S21-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	2.62E+02	3.74E+02	NA	NA	NA	NA	2.86E-02	2.31E+02	6.62E+00	1.03E-01	1.35E+02	2.91E-01	6.32E+02	2.47E-02	3.77E+02	7.71E-04
BREOT-N22-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	3.64E+02	5.21E+02	NA	NA	NA	NA	2.86E-02	3.21E+02	9.20E+00	1.03E-01	1.35E+02	4.04E-01	6.32E+02	2.47E-02	3.77E+02	1.07E-03
BREOT-S22-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	2.07E+02	2.97E+02	NA	NA	NA	NA	2.86E-02	1.83E+02	5.24E+00	1.03E-01	1.35E+02	2.30E-01	6.32E+02	2.47E-02	3.77E+02	6.11E-04
BREOT-N23-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	5.83E+02	8.35E+02	NA	NA	NA	NA	2.86E-02	5.15E+02	1.48E+01	1.03E-01	1.35E+02	6.48E-01	6.32E+02	2.47E-02	3.77E+02	1.72E-03
BREOT-S23-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	3.64E+02	5.21E+02	NA	NA	NA	NA	2.86E-02	3.22E+02	9.21E+00	1.03E-01	1.35E+02	4.04E-01	6.32E+02	2.47E-02	3.77E+02	1.07E-03
BREOT-N24-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	5.58E+02	7.99E+02	NA	NA	NA	NA	2.86E-02	4.93E+02	1.41E+01	1.03E-01	1.35E+02	6.21E-01	6.32E+02	2.47E-02	3.77E+02	1.65E-03
BREOT-S24-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	1.07E+03	1.54E+03	NA	NA	NA	NA	2.86E-02	9.47E+02	2.71E+01	1.03E-01	1.35E+02	1.19E+00	6.32E+02	2.47E-02	3.77E+02	3.16E-03
BREOT-N25-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	8.78E+02	1.26E+03	NA	NA	NA	NA	2.86E-02	7.75E+02	2.22E+01	1.03E-01	1.35E+02	9.75E-01	6.32E+02	2.47E-02	3.77E+02	2.59E-03
BREOT-S25-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	7.58E+02	1.09E+03	NA	NA	NA	NA	2.86E-02	6.70E+02	1.92E+01	1.03E-01	1.35E+02	8.43E-01	6.32E+02	2.47E-02	3.77E+02	2.24E-03
BREOT-N26-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	1.05E+03	1.50E+03	NA	NA	NA	NA	2.86E-02	9.25E+02	2.65E+01	1.03E-01	1.35E+02	1.16E+00	6.32E+02	2.47E-02	3.77E+02	3.09E-03
BREOT-S26-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	3.88E+02	5.55E+02	NA	NA	NA	NA	2.86E-02	3.43E+02	9.81E+00	1.03E-01	1.35E+02	4.31E-01	6.32E+02	2.47E-02	3.77E+02	1.14E-03
BREOT-N27-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	2.84E+03	4.07E+03	NA	NA	NA	NA	2.86E-02	2.51E+03	7.19E+01	1.03E-01	1.35E+02	3.16E+00	6.32E+02	2.47E-02	3.77E+02	8.38E-03
BREOT-S27-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	2.58E+02	3.69E+02	NA	NA	NA	NA	2.86E-02	2.28E+02	6.52E+00	1.03E-01	1.35E+02	2.87E-01	6.32E+02	2.47E-02	3.77E+02	7.60E-04
BREOT-N28-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	6.20E+02	8.88E+02	NA	NA	NA	NA	2.86E-02	5.48E+02	1.57E+01	1.03E-01	1.35E+02	6.89E-01	6.32E+02	2.47E-02	3.77E+02	1.83E-03
BREOT-S28-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	1.87E+02	2.68E+02	NA	NA	NA	NA	2.86E-02	1.65E+02	4.73E+00	1.03E-01	1.35E+02	2.08E-01	6.32E+02	2.47E-02	3.77E+02	5.52E-04
BREOT-S29-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	2.00E+02	2.86E+02	NA	NA	NA	NA	2.86E-02	1.77E+02	5.06E+00	1.03E-01	1.35E+02	2.22E-01	6.32E+02	2.47E-02	3.77E+02	5.89E-04
BREOT-N30-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	1.68E+03	2.40E+03	NA	NA	NA	NA	2.86E-02	1.48E+03	4.25E+01	1.03E-01	1.35E+02	1.87E+00	6.32E+02	2.47E-02	3.77E+02	4.95E-03
BREOT-S30-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	1.47E+02	2.10E+02	NA	NA	NA	NA	2.86E-02	1.30E+02	3.72E+00	1.03E-01	1.35E+02	1.63E-01	6.32E+02	2.47E-02	3.77E+02	4.33E-04
BREOT-N31-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	1.46E+03	2.09E+03	NA	NA	NA	NA	2.86E-02	1.29E+03	3.69E+01	1.03E-01	1.35E+02	1.62E+00	6.32E+02	2.47E-02	3.77E+02	4.30E-03
BREOT-S31-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	1.21E+02	1.74E+02	NA	NA	NA	NA	2.86E-02	1.07E+02	3.07E+00	1.03E-01	1.35E+02	1.35E-01	6.32E+02	2.47E-02	3.77E+02	3.58E-04
BREOT-N32-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	6.01E+02	8.60E+02	NA	NA	NA	NA	2.86E-02	5.31E+02	1.52E+01	1.03E-01	1.35E+02	6.67E-01	6.32E+02	2.47E-02	3.77E+02	1.77E-03
BREOT-S32-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	5.85E+02	8.38E+02	NA	NA	NA	NA	2.86E-02	5.17E+02	1.48E+01	1.03E-01	1.35E+02	6.51E-01	6.32E+02	2.47E-02	3.77E+02	1.73E-03
BREOT-N33-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	2.26E+02	3.24E+02	NA	NA	NA	NA	2.86E-02	2.00E+02	5.72E+00	1.03E-01	1.35E+02	2.51E-01	6.32E+02	2.47E-02	3.77E+02	6.67E-04
BREOT-S33-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	5.56E+02	7.96E+02	NA	NA	NA	NA	2.86E-02	4.91E+02	1.41E+01	1.03E-01	1.35E+02	6.18E-01	6.32E+02	2.47E-02	3.77E+02	1.64E-03
BREOT-N34-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	5.55E+02	7.94E+02	NA	NA	NA	NA	2.86E-02	4.90E+02	1.40E+01	1.03E-01	1.35E+02	6.16E-01	6.32E+02	2.47E-02	3.77E+02	1.64E-03
BREOT-S34-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	5.43E+02	7.77E+02	NA	NA	NA	NA	2.86E-02	4.80E+02	1.37E+01	1.03E-01	1.35E+02	6.03E-01	6.32E+02	2.47E-02	3.77E+02	1.60E-03
BREOT-N35-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	3.01E+02	4.31E+02	NA	NA	NA	NA	2.86E-02	2.66E+02	7.62E+00	1.03E-01	1.35E+02	3.35E-01	6.32E+02	2.47E-02	3.77E+02	8.89E-04
BREOT-S35-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	5.01E+02	7.18E+02	NA	NA	NA	NA	2.86E-02	4.43E+02	1.27E+01	1.03E-01	1.35E+02	5.57E-01	6.32E+02	2.47E-02	3.77E+02	1.48E-03
BREOT-N36-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	4.90E+02	7.02E+02	NA	NA	NA	NA	2.86E-02	4.33E+02	1.24E+01	1.03E-01	1.35E+02	5.45E-01	6.32E+02	2.47E-02	3.77E+02	1.45E-03
BREOT-S36-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	5.40E+02	7.73E+02	NA	NA	NA	NA	2.86E-02	4.77E+02	1.37E+01	1.03E-01	1.35E+02	6.00E-01	6.32E+02	2.47E-02	3.77E+02	1.59E-03
BREOT-N37-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	2.05E+02	2.93E+02	NA	NA	NA	NA	2.86E-02	1.81E+02	5.18E+00	1.03E-01	1.35E+02	2.28E-01	6.32E+02	2.47E-02	3.77E+02	6.04E-04
BREOT-S37-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	6.03E+02	8.63E+02	NA	NA	NA	NA	2.86E-02	5.33E+02	1.52E+01	1.03E-01	1.35E+02	6.70E-01	6.32E+02	2.47E-02	3.77E+02	1.78E-03
BREOT-N38-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	2.20E+02	3.15E+02	NA	NA	NA	NA	2.86E-02	1.95E+02	5.57E+00	1.03E-01	1.35E+02	2.45E-01	6.32E+02	2.47E-02	3.77E+02	6.50E-04
BREOT-S38-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	9.52E+02	1.36E+03	NA	NA	NA	NA	2.86E-02	8.41E+02	2.41E+01	1.03E-01	1.35E+02	1.06E+00	6.32E+02	2.47E-02	3.77E+02	2.81E-03
BREOT-N39-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N40-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	2.71E+02	3.87E+02	NA	NA	NA	NA	2.86E-02	2.39E+02	6.85E+00	1.03E-01	1.35E+02	3.01E-01	6.32E+02	2.47E-02	3.77E+02	7.98E-04
BREOT-S40-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	6.37E+02	9.12E+02	NA	NA	NA	NA	2.86E-02	5.63E+02	1.61E+01	1.03E-01	1.35E+02	7.08E-01	6.32E+02	2.47E-02	3.77E+02	1.88E-03
BREOT-N41-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	1.75E+02	2.50E+02	NA	NA	NA	NA	2.86E-02	1.55E+02	4.42E+00	1.03E-01	1.35E+02	1.94E-01	6.32E+02	2.47E-02	3.77E+02	5.16E-04
BREOT-S41-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	6.24E+02	8.94E+02	NA	NA	NA	NA	2.86E-02	5.52E+02	1.58E+01	1.03E-01	1.35E+02	6.94E-01	6.32E+02	2.47E-02	3.77E+02	1.84E-03
BREOT-N42-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S42-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	9.31E+02	1.33E+03	NA	NA	NA	NA	2.86E-02	8.23E+02	2.36E+01	1.03E-01	1.35E+02	1.03E+00	6.32E+02	2.47E-02	3.77E+02	2.75E-03
BREOT-N43-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	1.44E+02	2.06E+02	NA	NA	NA	NA	2.86E-02	1.27E+02	3.63E+00	1.03E-01	1.35E+02	1.60E-01	6.32E+02	2.47E-02	3.77E+02	4.24E-04
BREOT-S43-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	1.48E+02	2.11E+02	NA	NA	NA	NA	2.86E-02	1.30E+02	3.73E+00	1.03E-01	1.35E+02	1.64E-01	6.32E+02	2.47E-02	3.77E+02	4.35E-04
BREOT-N44-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	2.73E+02	3.90E+02	NA	NA	NA	NA	2.86E-02	2.41E+02	6.90E+00	1.03E-01	1.35E+02	3.03E-01	6.32E+02	2.47E-02	3.77E+02	8.04E-04
BREOT-S44-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	1.44E+02	2.06E+02	NA	NA	NA	NA	2.86E-02	1.27E+02	3.63E+00	1.03E-01	1.35E+02	1.60E-01	6.32E+02	2.47E-02	3.77E+02	4.23E-04
BREOT-N45-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	4.28E+02	6.13E+02	NA	NA	NA	NA	2.86E-02	3.78E+02	1.08E+01	1.03E-01	1.35E+02	4.76E-01	6.32E+02	2.47E-02	3.77E+02	1.26E-03
BREOT-S45-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	1.20E+02	1.72E+02	NA	NA	NA	NA	2.86E-02	1.06E+02	3.04E+00	1.03E-01	1.35E+02	1.34E-01	6.32E+02	2.47E-02	3.77E+02	3.54E-04
BREOT-N46-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	2.99E+02	4.28E+02	NA	NA	NA	NA	2.86E-02	2.64E+02	7.56E+00	1.03E-01	1.35E+02	3.32E-01	6.32E+02	2.47E-02	3.77E+02	8.82E-04
BREOT-S46-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	1.12E+02	1.60E+02	NA	NA	NA	NA	2.86E-02	9.86E+01	2.82E+00	1.03E-01	1.35E+02	1.24E-01	6.32E+02	2.47E-02	3.77E+02	3.29E-04
BREOT-N47-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	7.29E+02	1.04E+03	NA	NA	NA	NA	2.86E-02	6.44E+02	1.84E+01	1.03E-01	1.35E+02	8.10E-01	6.32E+02	2.47E-02	3.77E+02	2.15E-03
BREOT-S47-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N48-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	1.63E+02	2.33E+02	NA	NA	NA	NA	2.86E-02	1.44E+02	4.11E+00	1.03E-01	1.35E+02	1.81E-01	6.32E+02	2.47E-02	3.77E+02	4.80E-04
BREOT-S48-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	1.02E+02	1.46E+02	NA	NA	NA	NA	2.86E-02	9.01E+01	2.58E+00	1.03E-01	1.35E+02	1.13E-01	6.32E+02	2.47E-02	3.77E+02	3.01E-04
BREOT-N49-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	1.94E+02	2.78E+02	NA	NA	NA	NA	2.86E-02	1.71E+02	4.91E+00	1.03E-01	1.35E+02	2.16E-01	6.32E+02	2.47E-02	3.77E+02	5.72E-04

TABLE C-2C: COPPER DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **18.41**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
White-Tailed Deer (Large Herbivorous Mammal - Terrestrial)																							
BREOT-S49-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S50-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	1.20E+02	1.71E+02	NA	NA	NA	NA	2.86E-02	1.06E+02	3.02E+00	1.03E-01	1.35E+02	1.33E-01	6.32E+02	2.47E-02	3.77E+02	3.52E-04
BREOT-N51-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	1.38E+02	1.97E+02	NA	NA	NA	NA	2.86E-02	1.22E+02	3.48E+00	1.03E-01	1.35E+02	1.53E-01	6.32E+02	2.47E-02	3.77E+02	4.06E-04
BREOT-S51-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	8.72E+02	1.25E+03	NA	NA	NA	NA	2.86E-02	7.71E+02	2.21E+01	1.03E-01	1.35E+02	9.70E-01	6.32E+02	2.47E-02	3.77E+02	2.57E-03
BREOT-N52-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	1.39E+02	1.99E+02	NA	NA	NA	NA	2.86E-02	1.23E+02	3.52E+00	1.03E-01	1.35E+02	1.55E-01	6.32E+02	2.47E-02	3.77E+02	4.11E-04
BREOT-S52-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	1.05E+02	1.50E+02	NA	NA	NA	NA	2.86E-02	9.29E+01	2.66E+00	1.03E-01	1.35E+02	1.17E-01	6.32E+02	2.47E-02	3.77E+02	3.10E-04
BREOT-N53-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	1.45E+02	2.08E+02	NA	NA	NA	NA	2.86E-02	1.28E+02	3.68E+00	1.03E-01	1.35E+02	1.62E-01	6.32E+02	2.47E-02	3.77E+02	4.29E-04
BREOT-S53-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	9.75E+01	1.40E+02	NA	NA	NA	NA	2.86E-02	8.62E+01	2.47E+00	1.03E-01	1.35E+02	1.08E-01	6.32E+02	2.47E-02	3.77E+02	2.88E-04
BREOT-N54-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	1.38E+02	1.98E+02	NA	NA	NA	NA	2.86E-02	1.22E+02	3.50E+00	1.03E-01	1.35E+02	1.54E-01	6.32E+02	2.47E-02	3.77E+02	4.08E-04
BREOT-S54-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	9.28E+01	1.33E+02	NA	NA	NA	NA	2.86E-02	8.20E+01	2.35E+00	1.03E-01	1.35E+02	1.03E-01	6.32E+02	2.47E-02	3.77E+02	2.74E-04
BREOT-N55-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	1.17E+02	1.67E+02	NA	NA	NA	NA	2.86E-02	1.03E+02	2.95E+00	1.03E-01	1.35E+02	1.30E-01	6.32E+02	2.47E-02	3.77E+02	3.44E-04
BREOT-S55-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	1.63E+02	2.33E+02	NA	NA	NA	NA	2.86E-02	1.44E+02	4.12E+00	1.03E-01	1.35E+02	1.81E-01	6.32E+02	2.47E-02	3.77E+02	4.80E-04
BREOT-N56-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	1.05E+02	1.50E+02	NA	NA	NA	NA	2.86E-02	9.29E+01	2.66E+00	1.03E-01	1.35E+02	1.17E-01	6.32E+02	2.47E-02	3.77E+02	3.10E-04
BREOT-N57-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	1.38E+02	1.97E+02	NA	NA	NA	NA	2.86E-02	1.22E+02	3.48E+00	1.03E-01	1.35E+02	1.53E-01	6.32E+02	2.47E-02	3.77E+02	4.06E-04
BREOT-S57-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	2.04E+02	2.91E+02	NA	NA	NA	NA	2.86E-02	1.80E+02	5.15E+00	1.03E-01	1.35E+02	2.26E-01	6.32E+02	2.47E-02	3.77E+02	6.00E-04
BREOT-N58-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	1.35E+02	1.93E+02	NA	NA	NA	NA	2.86E-02	1.19E+02	3.41E+00	1.03E-01	1.35E+02	1.50E-01	6.32E+02	2.47E-02	3.77E+02	3.98E-04
BREOT-S58-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	1.83E+02	2.63E+02	NA	NA	NA	NA	2.86E-02	1.62E+02	4.64E+00	1.03E-01	1.35E+02	2.04E-01	6.32E+02	2.47E-02	3.77E+02	5.41E-04
BREOT-N59-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N60-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S60-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	2.56E+02	3.66E+02	NA	NA	NA	NA	2.86E-02	2.26E+02	6.47E+00	1.03E-01	1.35E+02	2.84E-01	6.32E+02	2.47E-02	3.77E+02	7.54E-04
BREOT-S61-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	1.80E+02	2.58E+02	NA	NA	NA	NA	2.86E-02	1.59E+02	4.56E+00	1.03E-01	1.35E+02	2.00E-01	6.32E+02	2.47E-02	3.77E+02	5.32E-04
BREOT-N62-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	9.41E+01	1.35E+02	NA	NA	NA	NA	2.86E-02	8.32E+01	2.38E+00	1.03E-01	1.35E+02	1.05E-01	6.32E+02	2.47E-02	3.77E+02	2.78E-04
BREOT-S62-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	1.77E+02	2.53E+02	NA	NA	NA	NA	2.86E-02	1.56E+02	4.47E+00	1.03E-01	1.35E+02	1.96E-01	6.32E+02	2.47E-02	3.77E+02	5.21E-04
BREOT-N63-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	1.50E+02	2.14E+02	NA	NA	NA	NA	2.86E-02	1.32E+02	3.78E+00	1.03E-01	1.35E+02	1.66E-01	6.32E+02	2.47E-02	3.77E+02	4.41E-04
BREOT-N64-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	9.81E+01	1.40E+02	NA	NA	NA	NA	2.86E-02	8.67E+01	2.48E+00	1.03E-01	1.35E+02	1.09E-01	6.32E+02	2.47E-02	3.77E+02	2.89E-04
BREOT-S64-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	3.28E+02	4.69E+02	NA	NA	NA	NA	2.86E-02	2.90E+02	8.29E+00	1.03E-01	1.35E+02	3.64E-01	6.32E+02	2.47E-02	3.77E+02	9.67E-04
BREOT-N66-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S66-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	2.01E+02	2.87E+02	NA	NA	NA	NA	2.86E-02	1.77E+02	5.07E+00	1.03E-01	1.35E+02	2.23E-01	6.32E+02	2.47E-02	3.77E+02	5.91E-04
BREOT-N67-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	7.57E+02	1.08E+03	NA	NA	NA	NA	2.86E-02	6.69E+02	1.92E+01	1.03E-01	1.35E+02	8.42E-01	6.32E+02	2.47E-02	3.77E+02	2.23E-03
BREOT-S67-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	1.13E+02	1.61E+02	NA	NA	NA	NA	2.86E-02	9.94E+01	2.85E+00	1.03E-01	1.35E+02	1.25E-01	6.32E+02	2.47E-02	3.77E+02	3.32E-04
Outside Tailings																						**Maximum HQ (At Edge of Tailings)**	**4.50E-02**
BREOT-S0+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	1.01E+02	1.45E+02	NA	NA	NA	NA	2.86E-02	8.94E+01	2.56E+00	1.03E-01	1.35E+02	1.13E-01	6.32E+02	2.47E-02	3.77E+02	2.99E-04
BREOT-S1+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	1.64E+02	2.34E+02	NA	NA	NA	NA	2.86E-02	1.45E+02	4.14E+00	1.03E-01	1.35E+02	1.82E-01	6.32E+02	2.47E-02	3.77E+02	4.83E-04
BREOT-S2+95 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	3.83E+02	5.48E+02	NA	NA	NA	NA	2.86E-02	3.38E+02	9.68E+00	1.03E-01	1.35E+02	4.25E-01	6.32E+02	2.47E-02	3.77E+02	1.13E-03
BREOT-S3+6 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	1.85E+02	2.65E+02	NA	NA	NA	NA	2.86E-02	1.63E+02	4.68E+00	1.03E-01	1.35E+02	2.06E-01	6.32E+02	2.47E-02	3.77E+02	5.45E-04
BREOT-S4+10 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	9.18E+01	1.31E+02	NA	NA	NA	NA	2.86E-02	8.11E+01	2.32E+00	1.03E-01	1.35E+02	1.02E-01	6.32E+02	2.47E-02	3.77E+02	2.71E-04
BREOT-S6+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	1.73E+02	2.48E+02	NA	NA	NA	NA	2.86E-02	1.53E+02	4.39E+00	1.03E-01	1.35E+02	1.93E-01	6.32E+02	2.47E-02	3.77E+02	5.11E-04
BREOT-S8+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	1.94E+02	2.77E+02	NA	NA	NA	NA	2.86E-02	1.71E+02	4.90E+00	1.03E-01	1.35E+02	2.15E-01	6.32E+02	2.47E-02	3.77E+02	5.71E-04
BREOT-N10+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	1.95E+02	2.79E+02	NA	NA	NA	NA	2.86E-02	1.73E+02	4.94E+00	1.03E-01	1.35E+02	2.17E-01	6.32E+02	2.47E-02	3.77E+02	5.76E-04
BREOT-N11+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	3.42E+02	4.89E+02	NA	NA	NA	NA	2.86E-02	3.02E+02	8.65E+00	1.03E-01	1.35E+02	3.80E-01	6.32E+02	2.47E-02	3.77E+02	1.01E-03
BREOT-N12+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	1.85E+02	2.65E+02	NA	NA	NA	NA	2.86E-02	1.64E+02	4.69E+00	1.03E-01	1.35E+02	2.06E-01	6.32E+02	2.47E-02	3.77E+02	5.46E-04
BREOT-S12+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	1.56E+03	2.23E+03	NA	NA	NA	NA	2.86E-02	1.38E+03	3.95E+01	1.03E-01	1.35E+02	1.73E+00	6.32E+02	2.47E-02	3.77E+02	4.60E-03
BREOT-S12+60 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	2.31E+02	3.31E+02	NA	NA	NA	NA	2.86E-02	2.04E+02	5.86E+00	1.03E-01	1.35E+02	2.57E-01	6.32E+02	2.47E-02	3.77E+02	6.83E-04
BREOT-N13+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	2.65E+02	3.79E+02	NA	NA	NA	NA	2.86E-02	2.34E+02	6.69E+00	1.03E-01	1.35E+02	2.94E-01	6.32E+02	2.47E-02	3.77E+02	7.80E-04
BREOT-S13+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	6.89E+02	9.87E+02	NA	NA	NA	NA	2.86E-02	6.09E+02	1.74E+01	1.03E-01	1.35E+02	7.66E-01	6.32E+02	2.47E-02	3.77E+02	2.03E-03
BREOT-S13+65 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	3.42E+02	4.90E+02	NA	NA	NA	NA	2.86E-02	3.03E+02	8.66E+00	1.03E-01	1.35E+02	3.81E-01	6.32E+02	2.47E-02	3.77E+02	1.01E-03
BREOT-N14+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	2.95E+02	4.23E+02	NA	NA	NA	NA	2.86E-02	2.61E+02	7.47E+00	1.03E-01	1.35E+02	3.28E-01	6.32E+02	2.47E-02	3.77E+02	8.71E-04
BREOT-S14+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	1.86E+03	2.66E+03	NA	NA	NA	NA	2.86E-02	1.64E+03	4.71E+01	1.03E-01	1.35E+02	2.07E+00	6.32E+02	2.47E-02	3.77E+02	5.49E-03
BREOT-S14+59 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	2.20E+02	3.14E+02	NA	NA	NA	NA	2.86E-02	1.94E+02	5.56E+00	1.03E-01	1.35E+02	2.44E-01	6.32E+02	2.47E-02	3.77E+02	6.48E-04
BREOT-N15+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	1.49E+03	2.13E+03	NA	NA	NA	NA	2.86E-02	1.31E+03	3.76E+01	1.03E-01	1.35E+02	1.65E+00	6.32E+02	2.47E-02	3.77E+02	4.38E-03
BREOT-N15+50 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	3.07E+02	4.39E+02	NA	NA	NA	NA	2.86E-02	2.71E+02	7.76E+00	1.03E-01	1.35E+02	3.41E-01	6.32E+02	2.47E-02	3.77E+02	9.05E-04
BREOT-S16+20 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	9.03E+02	1.29E+03	NA	NA	NA	NA	2.86E-02	7.98E+02	2.29E+01	1.03E-01	1.35E+02	1.00E+00	6.32E+02	2.47E-02	3.77E+02	2.66E-03
BREOT-S16+75 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	1.45E+02	2.07E+02	NA	NA	NA	NA	2.86E-02	1.28E+02	3.67E+00	1.03E-01	1.35E+02	1.61E-01	6.32E+02	2.47E-02	3.77E+02	4.27E-04
BREOT-N17+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	8.96E+02	1.28E+03	NA	NA	NA	NA	2.86E-02	7.92E+02	2.27E+01	1.03E-01	1.35E+02	9.96E-01	6.32E+02	2.47E-02	3.77E+02	2.64E-03

TABLE C-2C: COPPER DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 18.41

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
White-Tailed Deer (Large Herbivorous Mammal - Terrestrial)																							
BREOT-S18+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	1.77E+02	2.53E+02	NA	NA	NA	NA	2.86E-02	1.56E+02	4.48E+00	1.03E-01	1.35E+02	1.97E-01	6.32E+02	2.47E-02	3.77E+02	5.22E-04
BREOT-N19+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S19+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	6.79E+03	9.72E+03	NA	NA	NA	NA	2.86E-02	6.00E+03	1.72E+02	1.03E-01	1.35E+02	7.54E+00	6.32E+02	2.47E-02	3.77E+02	2.00E-02
BREOT-S19+85 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	2.70E+02	3.87E+02	NA	NA	NA	NA	2.86E-02	2.39E+02	6.84E+00	1.03E-01	1.35E+02	3.01E-01	6.32E+02	2.47E-02	3.77E+02	7.98E-04
BREOT-N20+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	5.92E+02	8.47E+02	NA	NA	NA	NA	2.86E-02	5.23E+02	1.50E+01	1.03E-01	1.35E+02	6.58E-01	6.32E+02	2.47E-02	3.77E+02	1.74E-03
BREOT-S20+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	3.72E+03	5.32E+03	NA	NA	NA	NA	2.86E-02	3.28E+03	9.40E+01	1.03E-01	1.35E+02	4.13E+00	6.32E+02	2.47E-02	3.77E+02	1.10E-02
BREOT-S20+75 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N21+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	3.56E+02	5.10E+02	NA	NA	NA	NA	2.86E-02	3.15E+02	9.02E+00	1.03E-01	1.35E+02	3.96E-01	6.32E+02	2.47E-02	3.77E+02	1.05E-03
BREOT-S21+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	9.97E+03	1.43E+04	NA	NA	NA	NA	2.86E-02	8.81E+03	2.52E+02	1.03E-01	1.35E+02	1.11E+01	6.32E+02	2.47E-02	3.77E+02	2.94E-02
BREOT-N22+150 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	2.76E+02	3.95E+02	NA	NA	NA	NA	2.86E-02	2.44E+02	6.99E+00	1.03E-01	1.35E+02	3.07E-01	6.32E+02	2.47E-02	3.77E+02	8.14E-04
BREOT-N22+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	5.44E+02	7.79E+02	NA	NA	NA	NA	2.86E-02	4.81E+02	1.38E+01	1.03E-01	1.35E+02	6.05E-01	6.32E+02	2.47E-02	3.77E+02	1.61E-03
BREOT-S22+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	2.19E+02	3.13E+02	NA	NA	NA	NA	2.86E-02	1.94E+02	5.54E+00	1.03E-01	1.35E+02	2.43E-01	6.32E+02	2.47E-02	3.77E+02	6.46E-04
BREOT-N23+115 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N23+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	1.43E+03	2.05E+03	NA	NA	NA	NA	2.86E-02	1.27E+03	3.63E+01	1.03E-01	1.35E+02	1.59E+00	6.32E+02	2.47E-02	3.77E+02	4.23E-03
BREOT-S23+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	3.95E+02	5.65E+02	NA	NA	NA	NA	2.86E-02	3.49E+02	9.99E+00	1.03E-01	1.35E+02	4.39E-01	6.32E+02	2.47E-02	3.77E+02	1.16E-03
BREOT-S23+37.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	1.44E+02	2.06E+02	NA	NA	NA	NA	2.86E-02	1.27E+02	3.64E+00	1.03E-01	1.35E+02	1.60E-01	6.32E+02	2.47E-02	3.77E+02	4.24E-04
BREOT-N24+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	3.55E+02	5.08E+02	NA	NA	NA	NA	2.86E-02	3.13E+02	8.97E+00	1.03E-01	1.35E+02	3.94E-01	6.32E+02	2.47E-02	3.77E+02	1.05E-03
BREOT-N24+75 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	9.39E+01	1.34E+02	NA	NA	NA	NA	2.86E-02	8.30E+01	2.38E+00	1.03E-01	1.35E+02	1.04E-01	6.32E+02	2.47E-02	3.77E+02	2.77E-04
BREOT-S24+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	2.13E+02	3.04E+02	NA	NA	NA	NA	2.86E-02	1.88E+02	5.38E+00	1.03E-01	1.35E+02	2.36E-01	6.32E+02	2.47E-02	3.77E+02	6.27E-04
BREOT-N25+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	1.90E+02	2.71E+02	NA	NA	NA	NA	2.86E-02	1.68E+02	4.80E+00	1.03E-01	1.35E+02	2.11E-01	6.32E+02	2.47E-02	3.77E+02	5.59E-04
BREOT-S25+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	1.96E+02	2.81E+02	NA	NA	NA	NA	2.86E-02	1.74E+02	4.97E+00	1.03E-01	1.35E+02	2.18E-01	6.32E+02	2.47E-02	3.77E+02	5.79E-04
BREOT-S25+40 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	2.44E+02	3.50E+02	NA	NA	NA	NA	2.86E-02	2.16E+02	6.18E+00	1.03E-01	1.35E+02	2.72E-01	6.32E+02	2.47E-02	3.77E+02	7.20E-04
BREOT-S26+37 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	9.52E+01	1.36E+02	NA	NA	NA	NA	2.86E-02	8.42E+01	2.41E+00	1.03E-01	1.35E+02	1.06E-01	6.32E+02	2.47E-02	3.77E+02	2.81E-04
BREOT-S27+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	2.20E+02	3.14E+02	NA	NA	NA	NA	2.86E-02	1.94E+02	5.55E+00	1.03E-01	1.35E+02	2.44E-01	6.32E+02	2.47E-02	3.77E+02	6.47E-04
BREOT-N28+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S28+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	2.14E+02	3.07E+02	NA	NA	NA	NA	2.86E-02	1.89E+02	5.42E+00	1.03E-01	1.35E+02	2.38E-01	6.32E+02	2.47E-02	3.77E+02	6.32E-04
BREOT-N29+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	2.21E+02	3.16E+02	NA	NA	NA	NA	2.86E-02	1.95E+02	5.59E+00	1.03E-01	1.35E+02	2.46E-01	6.32E+02	2.47E-02	3.77E+02	6.52E-04
BREOT-S29+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	2.30E+02	3.29E+02	NA	NA	NA	NA	2.86E-02	2.03E+02	5.82E+00	1.03E-01	1.35E+02	2.56E-01	6.32E+02	2.47E-02	3.77E+02	6.79E-04
BREOT-N30+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	3.60E+02	5.15E+02	NA	NA	NA	NA	2.86E-02	3.18E+02	9.10E+00	1.03E-01	1.35E+02	4.00E-01	6.32E+02	2.47E-02	3.77E+02	1.06E-03
BREOT-S30+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	2.11E+02	3.02E+02	NA	NA	NA	NA	2.86E-02	1.86E+02	5.33E+00	1.03E-01	1.35E+02	2.34E-01	6.32E+02	2.47E-02	3.77E+02	6.21E-04
BREOT-N31+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	2.39E+03	3.42E+03	NA	NA	NA	NA	2.86E-02	2.11E+03	6.05E+01	1.03E-01	1.35E+02	2.66E+00	6.32E+02	2.47E-02	3.77E+02	7.06E-03
BREOT-N31+75 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	2.46E+02	3.52E+02	NA	NA	NA	NA	2.86E-02	2.17E+02	6.21E+00	1.03E-01	1.35E+02	2.73E-01	6.32E+02	2.47E-02	3.77E+02	7.24E-04
BREOT-S31+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	9.48E+01	1.36E+02	NA	NA	NA	NA	2.86E-02	8.37E+01	2.40E+00	1.03E-01	1.35E+02	1.05E-01	6.32E+02	2.47E-02	3.77E+02	2.80E-04
BREOT-N32+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	3.00E+02	4.29E+02	NA	NA	NA	NA	2.86E-02	2.65E+02	7.59E+00	1.03E-01	1.35E+02	3.33E-01	6.32E+02	2.47E-02	3.77E+02	8.85E-04
BREOT-S32+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	4.57E+02	6.54E+02	NA	NA	NA	NA	2.86E-02	4.04E+02	1.16E+01	1.03E-01	1.35E+02	5.08E-01	6.32E+02	2.47E-02	3.77E+02	1.35E-03
BREOT-S32+300 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	8.95E+02	1.28E+03	NA	NA	NA	NA	2.86E-02	7.91E+02	2.26E+01	1.03E-01	1.35E+02	9.95E-01	6.32E+02	2.47E-02	3.77E+02	2.64E-03
BREOT-N33+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	4.33E+02	6.20E+02	NA	NA	NA	NA	2.86E-02	3.83E+02	1.10E+01	1.03E-01	1.35E+02	4.82E-01	6.32E+02	2.47E-02	3.77E+02	1.28E-03
BREOT-S33+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	1.01E+03	1.44E+03	NA	NA	NA	NA	2.86E-02	8.90E+02	2.55E+01	1.03E-01	1.35E+02	1.12E+00	6.32E+02	2.47E-02	3.77E+02	2.97E-03
BREOT-N34+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	4.09E+02	5.85E+02	NA	NA	NA	NA	2.86E-02	3.61E+02	1.03E+01	1.03E-01	1.35E+02	4.54E-01	6.32E+02	2.47E-02	3.77E+02	1.21E-03
BREOT-S34+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	4.62E+02	6.61E+02	NA	NA	NA	NA	2.86E-02	4.08E+02	1.17E+01	1.03E-01	1.35E+02	5.13E-01	6.32E+02	2.47E-02	3.77E+02	1.36E-03
BREOT-N35+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	3.23E+02	4.63E+02	NA	NA	NA	NA	2.86E-02	2.86E+02	8.18E+00	1.03E-01	1.35E+02	3.59E-01	6.32E+02	2.47E-02	3.77E+02	9.54E-04
BREOT-S35+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	9.85E+02	1.41E+03	NA	NA	NA	NA	2.86E-02	8.70E+02	2.49E+01	1.03E-01	1.35E+02	1.09E+00	6.32E+02	2.47E-02	3.77E+02	2.91E-03
BREOT-N36+100 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	1.79E+02	2.56E+02	NA	NA	NA	NA	2.86E-02	1.58E+02	4.52E+00	1.03E-01	1.35E+02	1.99E-01	6.32E+02	2.47E-02	3.77E+02	5.27E-04
BREOT-N36+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	6.17E+02	8.83E+02	NA	NA	NA	NA	2.86E-02	5.45E+02	1.56E+01	1.03E-01	1.35E+02	6.85E-01	6.32E+02	2.47E-02	3.77E+02	1.82E-03
BREOT-S36+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	9.07E+02	1.30E+03	NA	NA	NA	NA	2.86E-02	8.02E+02	2.30E+01	1.03E-01	1.35E+02	1.01E+00	6.32E+02	2.47E-02	3.77E+02	2.68E-03
BREOT-N37+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	2.02E+02	2.89E+02	NA	NA	NA	NA	2.86E-02	1.78E+02	5.11E+00	1.03E-01	1.35E+02	2.25E-01	6.32E+02	2.47E-02	3.77E+02	5.96E-04
BREOT-S37+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	1.25E+03	1.79E+03	NA	NA	NA	NA	2.86E-02	1.10E+03	3.16E+01	1.03E-01	1.35E+02	1.39E+00	6.32E+02	2.47E-02	3.77E+02	3.68E-03
BREOT-N38+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	4.85E+02	6.95E+02	NA	NA	NA	NA	2.86E-02	4.29E+02	1.23E+01	1.03E-01	1.35E+02	5.39E-01	6.32E+02	2.47E-02	3.77E+02	1.43E-03
BREOT-S38+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	1.19E+03	1.70E+03	NA	NA	NA	NA	2.86E-02	1.05E+03	3.01E+01	1.03E-01	1.35E+02	1.32E+00	6.32E+02	2.47E-02	3.77E+02	3.50E-03
BREOT-N39+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	1.79E+02	2.56E+02	NA	NA	NA	NA	2.86E-02	1.58E+02	4.52E+00	1.03E-01	1.35E+02	1.99E-01	6.32E+02	2.47E-02	3.77E+02	5.27E-04
BREOT-S39+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	9.94E+02	1.42E+03	NA	NA	NA	NA	2.86E-02	8.78E+02	2.51E+01	1.03E-01	1.35E+02	1.10E+00	6.32E+02	2.47E-02	3.77E+02	2.93E-03
BREOT-N40+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	2.60E+02	3.73E+02	NA	NA	NA	NA	2.86E-02	2.30E+02	6.59E+00	1.03E-01	1.35E+02	2.89E-01	6.32E+02	2.47E-02	3.77E+02	7.68E-04
BREOT-S40+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	9.25E+02	1.32E+03	NA	NA	NA	NA	2.86E-02	8.17E+02	2.34E+01	1.03E-01	1.35E+02	1.03E+00	6.32E+02	2.47E-02	3.77E+02	2.73E-03
BREOT-N41+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	1.03E+02	1.47E+02	NA	NA	NA	NA	2.86E-02	9.10E+01	2.61E+00	1.03E-01	1.35E+02	1.14E-01	6.32E+02	2.47E-02	3.77E+02	3.04E-04

TABLE C-2C: COPPER DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **18.41**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
White-Tailed Deer (Large Herbivorous Mammal - Terrestrial)																							
BREOT-S41+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	3.58E+02	5.12E+02	NA	NA	NA	NA	2.86E-02	3.16E+02	9.05E+00	1.03E-01	1.35E+02	3.98E-01	6.32E+02	2.47E-02	3.77E+02	1.05E-03
BREOT-N42+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S42+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	5.46E+02	7.81E+02	NA	NA	NA	NA	2.86E-02	4.82E+02	1.38E+01	1.03E-01	1.35E+02	6.07E-01	6.32E+02	2.47E-02	3.77E+02	1.61E-03
BREOT-N43+12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	1.72E+02	2.47E+02	NA	NA	NA	NA	2.86E-02	1.52E+02	4.36E+00	1.03E-01	1.35E+02	1.92E-01	6.32E+02	2.47E-02	3.77E+02	5.09E-04
BREOT-N43+40 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	9.02E+01	1.29E+02	NA	NA	NA	NA	2.86E-02	7.97E+01	2.28E+00	1.03E-01	1.35E+02	1.00E-01	6.32E+02	2.47E-02	3.77E+02	2.66E-04
BREOT-S43+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	2.23E+02	3.19E+02	NA	NA	NA	NA	2.86E-02	1.97E+02	5.64E+00	1.03E-01	1.35E+02	2.48E-01	6.32E+02	2.47E-02	3.77E+02	6.57E-04
BREOT-N44+55 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	2.11E+02	3.02E+02	NA	NA	NA	NA	2.86E-02	1.86E+02	5.34E+00	1.03E-01	1.35E+02	2.34E-01	6.32E+02	2.47E-02	3.77E+02	6.22E-04
BREOT-S44+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N45+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	9.72E+01	1.39E+02	NA	NA	NA	NA	2.86E-02	8.59E+01	2.46E+00	1.03E-01	1.35E+02	1.08E-01	6.32E+02	2.47E-02	3.77E+02	2.87E-04
BREOT-S45+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N46+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	3.80E+02	5.44E+02	NA	NA	NA	NA	2.86E-02	3.36E+02	9.62E+00	1.03E-01	1.35E+02	4.23E-01	6.32E+02	2.47E-02	3.77E+02	1.12E-03
BREOT-S46+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	1.73E+02	2.48E+02	NA	NA	NA	NA	2.86E-02	1.53E+02	4.39E+00	1.03E-01	1.35E+02	1.93E-01	6.32E+02	2.47E-02	3.77E+02	5.11E-04
BREOT-N47+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	2.87E+02	4.10E+02	NA	NA	NA	NA	2.86E-02	2.53E+02	7.25E+00	1.03E-01	1.35E+02	3.19E-01	6.32E+02	2.47E-02	3.77E+02	8.46E-04
BREOT-S47+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N48+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	9.01E+01	1.29E+02	NA	NA	NA	NA	2.86E-02	7.96E+01	2.28E+00	1.03E-01	1.35E+02	1.00E-01	6.32E+02	2.47E-02	3.77E+02	2.66E-04
BREOT-S48+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	9.92E+01	1.42E+02	NA	NA	NA	NA	2.86E-02	8.77E+01	2.51E+00	1.03E-01	1.35E+02	1.10E-01	6.32E+02	2.47E-02	3.77E+02	2.93E-04
BREOT-N49+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	1.17E+02	1.68E+02	NA	NA	NA	NA	2.86E-02	1.03E+02	2.96E+00	1.03E-01	1.35E+02	1.30E-01	6.32E+02	2.47E-02	3.77E+02	3.45E-04
BREOT-S49+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N51+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	1.04E+02	1.48E+02	NA	NA	NA	NA	2.86E-02	9.15E+01	2.62E+00	1.03E-01	1.35E+02	1.15E-01	6.32E+02	2.47E-02	3.77E+02	3.05E-04
BREOT-S51+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N52+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	1.30E+02	1.86E+02	NA	NA	NA	NA	2.86E-02	1.15E+02	3.29E+00	1.03E-01	1.35E+02	1.45E-01	6.32E+02	2.47E-02	3.77E+02	3.84E-04
BREOT-S52+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N53+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	1.26E+02	1.81E+02	NA	NA	NA	NA	2.86E-02	1.12E+02	3.19E+00	1.03E-01	1.35E+02	1.40E-01	6.32E+02	2.47E-02	3.77E+02	3.72E-04
BREOT-S53+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S54+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N55+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S55+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	1.00E+02	1.43E+02	NA	NA	NA	NA	2.86E-02	8.85E+01	2.53E+00	1.03E-01	1.35E+02	1.11E-01	6.32E+02	2.47E-02	3.77E+02	2.95E-04
BREOT-N56+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S56+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	2.28E+02	3.26E+02	NA	NA	NA	NA	2.86E-02	2.01E+02	5.77E+00	1.03E-01	1.35E+02	2.53E-01	6.32E+02	2.47E-02	3.77E+02	6.72E-04
BREOT-N57+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S57+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	1.59E+02	2.28E+02	NA	NA	NA	NA	2.86E-02	1.41E+02	4.03E+00	1.03E-01	1.35E+02	1.77E-01	6.32E+02	2.47E-02	3.77E+02	4.70E-04
BREOT-N58+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	9.20E+01	1.32E+02	NA	NA	NA	NA	2.86E-02	8.13E+01	2.33E+00	1.03E-01	1.35E+02	1.02E-01	6.32E+02	2.47E-02	3.77E+02	2.71E-04
BREOT-S58+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	1.76E+02	2.52E+02	NA	NA	NA	NA	2.86E-02	1.56E+02	4.46E+00	1.03E-01	1.35E+02	1.96E-01	6.32E+02	2.47E-02	3.77E+02	5.20E-04
BREOT-N59+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	1.26E+02	1.80E+02	NA	NA	NA	NA	2.86E-02	1.11E+02	3.18E+00	1.03E-01	1.35E+02	1.40E-01	6.32E+02	2.47E-02	3.77E+02	3.71E-04
BREOT-N60+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S60+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	2.27E+02	3.25E+02	NA	NA	NA	NA	2.86E-02	2.01E+02	5.75E+00	1.03E-01	1.35E+02	2.53E-01	6.32E+02	2.47E-02	3.77E+02	6.70E-04
BREOT-S61+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	1.83E+02	2.63E+02	NA	NA	NA	NA	2.86E-02	1.62E+02	4.64E+00	1.03E-01	1.35E+02	2.04E-01	6.32E+02	2.47E-02	3.77E+02	5.41E-04
BREOT-N62+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	1.21E+02	1.74E+02	NA	NA	NA	NA	2.86E-02	1.07E+02	3.07E+00	1.03E-01	1.35E+02	1.35E-01	6.32E+02	2.47E-02	3.77E+02	3.58E-04
BREOT-S62+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N63+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	2.99E+02	4.28E+02	NA	NA	NA	NA	2.86E-02	2.64E+02	7.56E+00	1.03E-01	1.35E+02	3.32E-01	6.32E+02	2.47E-02	3.77E+02	8.81E-04
BREOT-S63+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	1.11E+02	1.59E+02	NA	NA	NA	NA	2.86E-02	9.79E+01	2.80E+00	1.03E-01	1.35E+02	1.23E-01	6.32E+02	2.47E-02	3.77E+02	3.27E-04
BREOT-N64+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	1.12E+02	1.61E+02	NA	NA	NA	NA	2.86E-02	9.92E+01	2.84E+00	1.03E-01	1.35E+02	1.25E-01	6.32E+02	2.47E-02	3.77E+02	3.31E-04
BREOT-S64+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	3.28E+02	4.69E+02	NA	NA	NA	NA	2.86E-02	2.89E+02	8.29E+00	1.03E-01	1.35E+02	3.64E-01	6.32E+02	2.47E-02	3.77E+02	9.66E-04
BREOT-S65+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	3.04E+02	4.35E+02	NA	NA	NA	NA	2.86E-02	2.69E+02	7.70E+00	1.03E-01	1.35E+02	3.38E-01	6.32E+02	2.47E-02	3.77E+02	8.97E-04
BREOT-N66+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S66+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	3.03E+02	4.33E+02	NA	NA	NA	NA	2.86E-02	2.67E+02	7.66E+00	1.03E-01	1.35E+02	3.36E-01	6.32E+02	2.47E-02	3.77E+02	8.93E-04
BREOT-N67+125 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	1.67E+02	2.40E+02	NA	NA	NA	NA	2.86E-02	1.48E+02	4.24E+00	1.03E-01	1.35E+02	1.86E-01	6.32E+02	2.47E-02	3.77E+02	4.94E-04
BREOT-S67+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	3.45E+02	4.94E+02	NA	NA	NA	NA	2.86E-02	3.05E+02	8.74E+00	1.03E-01	1.35E+02	3.84E-01	6.32E+02	2.47E-02	3.77E+02	1.02E-03
BREOT-N67+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	1.99E+02	2.86E+02	NA	NA	NA	NA	2.86E-02	1.76E+02	5.05E+00	1.03E-01	1.35E+02	2.22E-01	6.32E+02	2.47E-02	3.77E+02	5.88E-04
																					Maximum HQ (Outside Tailings)		**2.94E-02**

TABLE C-2C: COPPER DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **18.41**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Red Fox (Carnivorous Mammal - Terrestrial)																							
Reference Sites																							
ACBG-1 (0-6")	1.72E-01	1.72E-01	6.61E-01	5.26E+01	9.02E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	7.96E+01	3.82E-01	1.36E-02	4.54E+00	2.82E-02	6.32E+02	2.47E-02	4.62E+02	6.10E-05
ACBG-2 (0-6")	1.72E-01	1.72E-01	6.61E-01	1.65E+02	2.83E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.50E+02	1.20E+00	1.36E-02	4.54E+00	8.86E-02	6.32E+02	2.47E-02	4.62E+02	1.92E-04
UBRBG-202 (0-6")	1.72E-01	1.72E-01	6.61E-01	1.44E+02	2.48E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.18E+02	1.05E+00	1.36E-02	4.54E+00	7.74E-02	6.32E+02	2.47E-02	4.62E+02	1.68E-04
UBRBG-204 (0-6")	1.72E-01	1.72E-01	6.61E-01	6.89E+01	1.18E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.04E+02	5.01E-01	1.36E-02	4.54E+00	3.70E-02	6.32E+02	2.47E-02	4.62E+02	8.00E-05
Inside Tailings																						**Minimum HQ (Reference Sites)**	**6.10E-05**
BREOT-S6-12.5 (0-6")	1.72E-01	1.72E-01	1.01E+00	2.46E+02	4.22E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.44E+02	1.17E+00	1.36E-02	4.54E+00	1.30E-01	6.32E+02	2.47E-02	4.62E+02	2.82E-04
BREOT-S2-12.5 (0-6")	1.72E-01	1.72E-01	1.01E+00	7.39E+02	1.27E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	7.32E+02	3.51E+00	1.36E-02	4.54E+00	3.91E-01	6.32E+02	2.47E-02	4.62E+02	8.46E-04
BREOT-S0-12.5 (0-6")	1.72E-01	1.72E-01	1.01E+00	1.40E+02	2.40E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.38E+02	6.65E-01	1.36E-02	4.54E+00	7.39E-02	6.32E+02	2.47E-02	4.62E+02	1.60E-04
BREOT-S1-12.5 (0-6")	1.72E-01	1.72E-01	1.01E+00	1.10E+02	1.88E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.09E+02	5.22E-01	1.36E-02	4.54E+00	5.81E-02	6.32E+02	2.47E-02	4.62E+02	1.26E-04
BREOT-S7-25 (0-6")	1.72E-01	1.72E-01	1.01E+00	1.94E+02	3.32E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.92E+02	9.21E-01	1.36E-02	4.54E+00	1.02E-01	6.32E+02	2.47E-02	4.62E+02	2.22E-04
BREOT-S8-12.5 (0-6")	1.72E-01	1.72E-01	1.01E+00	1.63E+02	2.80E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.61E+02	7.76E-01	1.36E-02	4.54E+00	8.62E-02	6.32E+02	2.47E-02	4.62E+02	1.87E-04
BREOT-S9-12.5 (0-6")	1.72E-01	1.72E-01	1.01E+00	2.19E+02	3.75E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.16E+02	1.04E+00	1.36E-02	4.54E+00	1.16E-01	6.32E+02	2.47E-02	4.62E+02	2.50E-04
BREOT-N10-12.5 (0-6")	1.72E-01	1.72E-01	1.01E+00	1.59E+03	2.72E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.57E+03	7.54E+00	1.36E-02	4.54E+00	8.39E-01	6.32E+02	2.47E-02	4.62E+02	1.82E-03
BREOT-N11-12.5 (0-6")	1.72E-01	1.72E-01	1.01E+00	2.25E+02	3.86E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.23E+02	1.07E+00	1.36E-02	4.54E+00	1.19E-01	6.32E+02	2.47E-02	4.62E+02	2.58E-04
BREOT-N11-125 (0-6")	1.72E-01	1.72E-01	1.01E+00	1.69E+02	2.89E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.67E+02	8.01E-01	1.36E-02	4.54E+00	8.91E-02	6.32E+02	2.47E-02	4.62E+02	1.93E-04
BREOT-S11-12 (0-6")	1.72E-01	1.72E-01	1.01E+00	1.11E+03	1.90E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.10E+03	5.27E+00	1.36E-02	4.54E+00	5.86E-01	6.32E+02	2.47E-02	4.62E+02	1.27E-03
BREOT-S11+63 (0-6")	1.72E-01	1.72E-01	1.01E+00	2.55E+02	4.37E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.52E+02	1.21E+00	1.36E-02	4.54E+00	1.35E-01	6.32E+02	2.47E-02	4.62E+02	2.92E-04
UBDT-TP-6 (0-2")	1.72E-01	1.72E-01	1.01E+00	2.53E+03	4.34E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.51E+03	1.20E+01	1.36E-02	4.54E+00	1.34E+00	6.32E+02	2.47E-02	4.62E+02	2.90E-03
UBDT-TP-6 (2-12")	1.72E-01	1.72E-01	1.01E+00	1.99E+03	3.41E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.97E+03	9.46E+00	1.36E-02	4.54E+00	1.05E+00	6.32E+02	2.47E-02	4.62E+02	2.28E-03
UBDT-TP-6 (12-24")	1.72E-01	1.72E-01	1.01E+00	3.76E+03	6.45E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.72E+03	1.79E+01	1.36E-02	4.54E+00	1.99E+00	6.32E+02	2.47E-02	4.62E+02	4.30E-03
UBDT-TP-6 (24-36")	1.72E-01	1.72E-01	1.01E+00	2.17E+02	3.73E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.15E+02	1.03E+00	1.36E-02	4.54E+00	1.15E-01	6.32E+02	2.47E-02	4.62E+02	2.49E-04
UBDT-TP-6 (36-48")	1.72E-01	1.72E-01	1.01E+00	1.59E+03	2.74E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.58E+03	7.58E+00	1.36E-02	4.54E+00	8.43E-01	6.32E+02	2.47E-02	4.62E+02	1.82E-03
UBDT-TP-6 (48-60")	1.72E-01	1.72E-01	1.01E+00	9.22E+02	1.58E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	9.13E+02	4.38E+00	1.36E-02	4.54E+00	4.87E-01	6.32E+02	2.47E-02	4.62E+02	1.06E-03
BREOT-N12-12.5 (0-6")	1.72E-01	1.72E-01	1.01E+00	2.95E+02	5.07E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.92E+02	1.40E+00	1.36E-02	4.54E+00	1.56E-01	6.32E+02	2.47E-02	4.62E+02	3.38E-04
BREOT-S12-12.5 (0-6")	1.72E-01	1.72E-01	1.01E+00	5.27E+02	9.04E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.21E+02	2.50E+00	1.36E-02	4.54E+00	2.78E-01	6.32E+02	2.47E-02	4.62E+02	6.03E-04
BREOT-S13-12.5 (0-6")	1.72E-01	1.72E-01	1.01E+00	1.02E+03	1.75E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.01E+03	4.84E+00	1.36E-02	4.54E+00	5.38E-01	6.32E+02	2.47E-02	4.62E+02	1.16E-03
BREOT-S14-12.5 (0-6")	1.72E-01	1.72E-01	1.01E+00	4.13E+02	7.09E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.09E+02	1.97E+00	1.36E-02	4.54E+00	2.18E-01	6.32E+02	2.47E-02	4.62E+02	4.73E-04
BREOT-N15-12.5 (0-6")	1.72E-01	1.72E-01	1.01E+00	2.92E+02	5.01E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.89E+02	1.39E+00	1.36E-02	4.54E+00	1.54E-01	6.32E+02	2.47E-02	4.62E+02	3.34E-04
BREOT-S15-12.5 (0-6")	1.72E-01	1.72E-01	1.01E+00	3.19E+02	5.47E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.16E+02	1.52E+00	1.36E-02	4.54E+00	1.69E-01	6.32E+02	2.47E-02	4.62E+02	3.65E-04
BREOT-N16-12.5 (0-6")	1.72E-01	1.72E-01	1.01E+00	3.75E+02	6.43E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.71E+02	1.78E+00	1.36E-02	4.54E+00	1.98E-01	6.32E+02	2.47E-02	4.62E+02	4.29E-04
BREOT-N16-25 (0-6")	1.72E-01	1.72E-01	1.01E+00	2.07E+02	3.56E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.05E+02	9.86E-01	1.36E-02	4.54E+00	1.10E-01	6.32E+02	2.47E-02	4.62E+02	2.37E-04
BREOT-S16-12.5 (0-6")	1.72E-01	1.72E-01	1.01E+00	1.55E+02	2.66E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.54E+02	7.38E-01	1.36E-02	4.54E+00	8.21E-02	6.32E+02	2.47E-02	4.62E+02	1.78E-04
BREOT-N17-12.5 (0-6")	1.72E-01	1.72E-01	1.01E+00	1.59E+02	2.73E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.57E+02	7.56E-01	1.36E-02	4.54E+00	8.41E-02	6.32E+02	2.47E-02	4.62E+02	1.82E-04
BREOT-S17-12.5 (0-6")	1.72E-01	1.72E-01	1.01E+00	1.38E+02	2.37E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.37E+02	6.58E-01	1.36E-02	4.54E+00	7.31E-02	6.32E+02	2.47E-02	4.62E+02	1.58E-04
BREOT-S17-25 (0-6")	1.72E-01	1.72E-01	1.01E+00	9.98E+01	1.71E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	9.88E+01	4.75E-01	1.36E-02	4.54E+00	5.28E-02	6.32E+02	2.47E-02	4.62E+02	1.14E-04
UBDT-TP-4 (0-2")	1.72E-01	1.72E-01	1.01E+00	3.49E+02	5.98E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.45E+02	1.66E+00	1.36E-02	4.54E+00	1.84E-01	6.32E+02	2.47E-02	4.62E+02	3.99E-04
UBDT-TP-4 (2-12")	1.72E-01	1.72E-01	1.01E+00	3.18E+02	5.46E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.15E+02	1.51E+00	1.36E-02	4.54E+00	1.68E-01	6.32E+02	2.47E-02	4.62E+02	3.64E-04
UBDT-TP-4 (12-24")	1.72E-01	1.72E-01	1.01E+00	3.07E+02	5.26E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.04E+02	1.46E+00	1.36E-02	4.54E+00	1.62E-01	6.32E+02	2.47E-02	4.62E+02	3.51E-04
UBDT-TP-4 (24-36")	1.72E-01	1.72E-01	1.01E+00	1.67E+02	2.87E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.66E+02	7.96E-01	1.36E-02	4.54E+00	8.85E-02	6.32E+02	2.47E-02	4.62E+02	1.92E-04
BREOT-N18-12.5 (0-6")	1.72E-01	1.72E-01	1.01E+00	4.55E+02	7.81E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.50E+02	2.16E+00	1.36E-02	4.54E+00	2.41E-01	6.32E+02	2.47E-02	4.62E+02	5.21E-04
BREOT-N18-25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S18-12.5 (0-6")	1.72E-01	1.72E-01	1.01E+00	2.22E+02	3.81E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.20E+02	1.06E+00	1.36E-02	4.54E+00	1.17E-01	6.32E+02	2.47E-02	4.62E+02	2.54E-04
BREOT-N19-10 (0-6")	1.72E-01	1.72E-01	1.01E+00	2.40E+02	4.12E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.38E+02	1.14E+00	1.36E-02	4.54E+00	1.27E-01	6.32E+02	2.47E-02	4.62E+02	2.75E-04
BREOT-S19-12.5 (0-6")	1.72E-01	1.72E-01	1.01E+00	2.59E+02	4.44E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.56E+02	1.23E+00	1.36E-02	4.54E+00	1.37E-01	6.32E+02	2.47E-02	4.62E+02	2.96E-04
UBDT-TP-5 (0-2")	1.72E-01	1.72E-01	1.01E+00	4.15E+02	7.12E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.11E+02	1.97E+00	1.36E-02	4.54E+00	2.19E-01	6.32E+02	2.47E-02	4.62E+02	4.75E-04
UBDT-TP-5 (2-12")	1.72E-01	1.72E-01	1.01E+00	3.29E+02	5.64E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.25E+02	1.56E+00	1.36E-02	4.54E+00	1.74E-01	6.32E+02	2.47E-02	4.62E+02	3.76E-04
UBDT-TP-5 (12-24")	1.72E-01	1.72E-01	1.01E+00	3.49E+02	5.98E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.45E+02	1.66E+00	1.36E-02	4.54E+00	1.84E-01	6.32E+02	2.47E-02	4.62E+02	3.99E-04
BREOT-N20-12.5 (0-6")	1.72E-01	1.72E-01	1.01E+00	1.72E+02	2.94E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.70E+02	8.16E-01	1.36E-02	4.54E+00	9.07E-02	6.32E+02	2.47E-02	4.62E+02	1.96E-04
UBDT-TP-3 (0-2")	1.72E-01	1.72E-01	1.01E+00	2.86E+02	4.91E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.83E+02	1.36E+00	1.36E-02	4.54E+00	1.51E-01	6.32E+02	2.47E-02	4.62E+02	3.27E-04
UBDT-TP-3 (2-12")	1.72E-01	1.72E-01	1.01E+00	1.93E+02	3.30E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.91E+02	9.16E-01	1.36E-02	4.54E+00	1.02E-01	6.32E+02	2.47E-02	4.62E+02	2.20E-04
UBDT-TP-3 (12-24")	1.72E-01	1.72E-01	1.01E+00	2.10E+02	3.61E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.08E+02	1.00E+00	1.36E-02	4.54E+00	1.11E-01	6.32E+02	2.47E-02	4.62E+02	2.41E-04
UBDT-TP-3 (24-36")	1.72E-01	1.72E-01	1.01E+00	2.27E+02	3.89E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.24E+02	1.08E+00	1.36E-02	4.54E+00	1.20E-01	6.32E+02	2.47E-02	4.62E+02	2.59E-04
UBDT-TP-3 (36-48")	1.72E-01	1.72E-01	1.01E+00	3.54E+02	6.07E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.50E+02	1.68E+00	1.36E-02	4.54E+00	1.87E-01	6.32E+02	2.47E-02	4.62E+02	4.05E-04
UBDT-TP-3 (48-60")	1.72E-01	1.72E-01	1.01E+00	1.86E+02	3.19E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.84E+02	8.84E-01	1.36E-02	4.54E+00	9.83E-02	6.32E+02	2.47E-02	4.62E+02	2.13E-04
BREOT-N21-12.5 (0-6")	1.72E-01	1.72E-01	1.01E+00	2.87E+02	4.92E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.84E+02	1.36E+00	1.36E-02	4.54E+00	1.51E-01	6.32E+02	2.47E-02	4.62E+02	3.28E-04
BREOT-N22-12.5 (0-6")	1.72E-01	1.72E-01	1.01E+00	2.08E+02	3.58E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.06E+02	9.91E-01	1.36E-02	4.54E+00	1.10E-01	6.32E+02	2.47E-02	4.62E+02	2.39E-04

TABLE C-2C: COPPER DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 18.41

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Red Fox (Carnivorous Mammal - Terrestrial)																							
BREOT-N23-12.5 (0-6")	1.72E-01	1.72E-01	1.01E+00	2.36E+02	4.06E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.34E+02	1.12E+00	1.36E-02	4.54E+00	1.25E-01	6.32E+02	2.47E-02	4.62E+02	2.71E-04
BREOT-S23-12.5 (0-6")	1.72E-01	1.72E-01	1.01E+00	8.03E+02	1.38E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	7.95E+02	3.82E+00	1.36E-02	4.54E+00	4.25E-01	6.32E+02	2.47E-02	4.62E+02	9.19E-04
UBDT-TP-2 (0-2")	1.72E-01	1.72E-01	1.01E+00	4.53E+02	7.77E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.48E+02	2.15E+00	1.36E-02	4.54E+00	2.39E-01	6.32E+02	2.47E-02	4.62E+02	5.18E-04
UBDT-TP-2 (2-12")	1.72E-01	1.72E-01	1.01E+00	4.53E+02	7.78E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.49E+02	2.16E+00	1.36E-02	4.54E+00	2.40E-01	6.32E+02	2.47E-02	4.62E+02	5.19E-04
UBDT-TP-2 (12-24")	1.72E-01	1.72E-01	1.01E+00	3.10E+02	5.32E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.07E+02	1.47E+00	1.36E-02	4.54E+00	1.64E-01	6.32E+02	2.47E-02	4.62E+02	3.55E-04
UBDT-TP-2 (24-36")	1.72E-01	1.72E-01	1.01E+00	1.88E+02	3.23E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.87E+02	8.96E-01	1.36E-02	4.54E+00	9.96E-02	6.32E+02	2.47E-02	4.62E+02	2.16E-04
UBDT-TP-2 (36-48")	1.72E-01	1.72E-01	1.01E+00	2.48E+02	4.26E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.46E+02	1.18E+00	1.36E-02	4.54E+00	1.31E-01	6.32E+02	2.47E-02	4.62E+02	2.84E-04
BREOT-S24-12.5 (0-6")	1.72E-01	1.72E-01	1.01E+00	6.84E+02	1.17E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	6.77E+02	3.25E+00	1.36E-02	4.54E+00	3.62E-01	6.32E+02	2.47E-02	4.62E+02	7.83E-04
BREOT-N25-50 (0-6")	1.72E-01	1.72E-01	1.01E+00	1.64E+03	2.81E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.62E+03	7.78E+00	1.36E-02	4.54E+00	8.65E-01	6.32E+02	2.47E-02	4.62E+02	1.87E-03
BREOT-N25-95 (0-6")	1.72E-01	1.72E-01	1.01E+00	1.09E+02	1.86E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.08E+02	5.16E-01	1.36E-02	4.54E+00	5.74E-02	6.32E+02	2.47E-02	4.62E+02	1.24E-04
BREOT-S25-12.5 (0-6")	1.72E-01	1.72E-01	1.01E+00	3.93E+02	6.74E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.89E+02	1.87E+00	1.36E-02	4.54E+00	2.08E-01	6.32E+02	2.47E-02	4.62E+02	4.50E-04
BREOT-S25-40 (0-6")	1.72E-01	1.72E-01	1.01E+00	1.70E+02	2.91E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.68E+02	8.06E-01	1.36E-02	4.54E+00	8.96E-02	6.32E+02	2.47E-02	4.62E+02	1.94E-04
BREOT-N26A-25 (0-6")	1.72E-01	1.72E-01	1.01E+00	1.01E+02	1.73E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	9.96E+01	4.79E-01	1.36E-02	4.54E+00	5.32E-02	6.32E+02	2.47E-02	4.62E+02	1.15E-04
BREOT-N26B-25 (0-6")	1.72E-01	1.72E-01	1.01E+00	7.42E+02	1.27E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	7.35E+02	3.53E+00	1.36E-02	4.54E+00	3.92E-01	6.32E+02	2.47E-02	4.62E+02	8.49E-04
BREOT-N26-50 (0-6")	1.72E-01	1.72E-01	1.01E+00	1.26E+03	2.16E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.25E+03	5.98E+00	1.36E-02	4.54E+00	6.65E-01	6.32E+02	2.47E-02	4.62E+02	1.44E-03
BREOT-N26-75 (0-6")	1.72E-01	1.72E-01	1.01E+00	1.05E+03	1.80E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.04E+03	4.98E+00	1.36E-02	4.54E+00	5.53E-01	6.32E+02	2.47E-02	4.62E+02	1.20E-03
BREOT-S26-12.5 (0-6")	1.72E-01	1.72E-01	1.01E+00	1.21E+02	2.08E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.20E+02	5.77E-01	1.36E-02	4.54E+00	6.41E-02	6.32E+02	2.47E-02	4.62E+02	1.39E-04
BREOT-S26-40 (0-6")	1.72E-01	1.72E-01	1.01E+00	4.13E+02	7.08E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.08E+02	1.96E+00	1.36E-02	4.54E+00	2.18E-01	6.32E+02	2.47E-02	4.62E+02	4.72E-04
BREOT-N27-30 (0-6")	1.72E-01	1.72E-01	1.01E+00	1.24E+03	2.13E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.23E+03	5.91E+00	1.36E-02	4.54E+00	6.57E-01	6.32E+02	2.47E-02	4.62E+02	1.42E-03
BREOT-N27-75 (0-6")	1.72E-01	1.72E-01	1.01E+00	2.19E+03	3.76E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.17E+03	1.04E+01	1.36E-02	4.54E+00	1.16E+00	6.32E+02	2.47E-02	4.62E+02	2.51E-03
BREOT-S27-12.5 (0-6")	1.72E-01	1.72E-01	1.01E+00	3.19E+02	5.47E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.16E+02	1.52E+00	1.36E-02	4.54E+00	1.69E-01	6.32E+02	2.47E-02	4.62E+02	3.65E-04
BREOT-N28-110 (0-6")	1.72E-01	1.72E-01	1.01E+00	5.14E+02	8.83E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.09E+02	2.45E+00	1.36E-02	4.54E+00	2.72E-01	6.32E+02	2.47E-02	4.62E+02	5.89E-04
BREOT-N28-55 (0-6")	1.72E-01	1.72E-01	1.01E+00	2.98E+03	5.11E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.95E+03	1.42E+01	1.36E-02	4.54E+00	1.58E+00	6.32E+02	2.47E-02	4.62E+02	3.41E-03
BREOT-S28-12.5 (0-6")	1.72E-01	1.72E-01	1.01E+00	4.33E+02	7.43E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.29E+02	2.06E+00	1.36E-02	4.54E+00	2.29E-01	6.32E+02	2.47E-02	4.62E+02	4.96E-04
UBDT-TP-1 (0-2")	1.72E-01	1.72E-01	1.01E+00	9.91E+02	1.70E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	9.81E+02	4.71E+00	1.36E-02	4.54E+00	5.24E-01	6.32E+02	2.47E-02	4.62E+02	1.13E-03
UBDT-TP-1 (2-12")	1.72E-01	1.72E-01	1.01E+00	2.03E+03	3.49E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.01E+03	9.66E+00	1.36E-02	4.54E+00	1.07E+00	6.32E+02	2.47E-02	4.62E+02	2.33E-03
UBDT-TP-1 (12-24")	1.72E-01	1.72E-01	1.01E+00	1.84E+03	3.15E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.82E+03	8.74E+00	1.36E-02	4.54E+00	9.71E-01	6.32E+02	2.47E-02	4.62E+02	2.10E-03
UBDT-TP-1 (24-36")	1.72E-01	1.72E-01	1.01E+00	1.36E+03	2.33E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.34E+03	6.46E+00	1.36E-02	4.54E+00	7.18E-01	6.32E+02	2.47E-02	4.62E+02	1.55E-03
UBDT-TP-1 (36-48")	1.72E-01	1.72E-01	1.01E+00	2.95E+02	5.05E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.92E+02	1.40E+00	1.36E-02	4.54E+00	1.56E-01	6.32E+02	2.47E-02	4.62E+02	3.37E-04
UBDT-TP-1 (48-60")	1.72E-01	1.72E-01	1.01E+00	1.86E+02	3.18E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.84E+02	8.82E-01	1.36E-02	4.54E+00	9.81E-02	6.32E+02	2.47E-02	4.62E+02	2.12E-04
BREOT-N29-30 (0-6")	1.72E-01	1.72E-01	1.01E+00	2.50E+03	4.29E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.47E+03	1.19E+01	1.36E-02	4.54E+00	1.32E+00	6.32E+02	2.47E-02	4.62E+02	2.86E-03
BREOT-S29-12.5 (0-6")	1.72E-01	1.72E-01	1.01E+00	4.06E+02	6.97E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.02E+02	1.93E+00	1.36E-02	4.54E+00	2.15E-01	6.32E+02	2.47E-02	4.62E+02	4.65E-04
BREOT-N30-12.5 (0-6")	1.72E-01	1.72E-01	1.01E+00	4.57E+02	7.83E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.52E+02	2.17E+00	1.36E-02	4.54E+00	2.41E-01	6.32E+02	2.47E-02	4.62E+02	5.22E-04
BREOT-S30-12.5 (0-6")	1.72E-01	1.72E-01	1.01E+00	3.16E+02	5.42E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.13E+02	1.50E+00	1.36E-02	4.54E+00	1.67E-01	6.32E+02	2.47E-02	4.62E+02	3.62E-04
BREOT-N31-12.5 (0-6")	1.72E-01	1.72E-01	1.01E+00	3.22E+02	5.52E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.18E+02	1.53E+00	1.36E-02	4.54E+00	1.70E-01	6.32E+02	2.47E-02	4.62E+02	3.68E-04
BREOT-S31-25 (0-6")	1.72E-01	1.72E-01	1.01E+00	2.00E+02	3.42E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.98E+02	9.49E-01	1.36E-02	4.54E+00	1.05E-01	6.32E+02	2.47E-02	4.62E+02	2.28E-04
BREOT-S31-5 (0-6")	1.72E-01	1.72E-01	1.01E+00	3.00E+02	5.14E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.97E+02	1.43E+00	1.36E-02	4.54E+00	1.58E-01	6.32E+02	2.47E-02	4.62E+02	3.43E-04
BREOT-N32-12.5 (0-6")	1.72E-01	1.72E-01	1.01E+00	2.15E+02	3.69E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.13E+02	1.02E+00	1.36E-02	4.54E+00	1.14E-01	6.32E+02	2.47E-02	4.62E+02	2.46E-04
BREOT-S32-6 (0-6")	1.72E-01	1.72E-01	1.01E+00	2.13E+02	3.66E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.11E+02	1.01E+00	1.36E-02	4.54E+00	1.13E-01	6.32E+02	2.47E-02	4.62E+02	2.44E-04
BREOT-N33-12.5 (0-6")	1.72E-01	1.72E-01	1.01E+00	2.39E+02	4.11E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.37E+02	1.14E+00	1.36E-02	4.54E+00	1.27E-01	6.32E+02	2.47E-02	4.62E+02	2.74E-04
BREOT-S33-12.5 (0-6")	1.72E-01	1.72E-01	1.01E+00	5.86E+02	1.01E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.80E+02	2.79E+00	1.36E-02	4.54E+00	3.10E-01	6.32E+02	2.47E-02	4.62E+02	6.70E-04
BREOT-N35-12.5 (0-6")	1.72E-01	1.72E-01	1.01E+00	1.89E+02	3.24E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.87E+02	8.97E-01	1.36E-02	4.54E+00	9.97E-02	6.32E+02	2.47E-02	4.62E+02	2.16E-04
BREOT-S35-12.5 (0-6")	1.72E-01	1.72E-01	1.01E+00	4.58E+02	7.85E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.53E+02	2.18E+00	1.36E-02	4.54E+00	2.42E-01	6.32E+02	2.47E-02	4.62E+02	5.24E-04
BREOT-N36-12.5 (0-6")	1.72E-01	1.72E-01	1.01E+00	3.08E+02	5.29E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.05E+02	1.47E+00	1.36E-02	4.54E+00	1.63E-01	6.32E+02	2.47E-02	4.62E+02	3.53E-04
BREOT-S36-12.5 (0-6")	1.72E-01	1.72E-01	1.01E+00	2.04E+02	3.50E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.02E+02	9.70E-01	1.36E-02	4.54E+00	1.08E-01	6.32E+02	2.47E-02	4.62E+02	2.33E-04
BREOT-N37-12.5 (0-6")	1.72E-01	1.72E-01	1.01E+00	1.86E+02	3.19E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.84E+02	8.85E-01	1.36E-02	4.54E+00	9.84E-02	6.32E+02	2.47E-02	4.62E+02	2.13E-04
BREOT-S37-12.5 (0-6")	1.72E-01	1.72E-01	1.01E+00	2.99E+02	5.13E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.96E+02	1.42E+00	1.36E-02	4.54E+00	1.58E-01	6.32E+02	2.47E-02	4.62E+02	3.42E-04
BREOT-N38-12.5 (0-6")	1.72E-01	1.72E-01	1.01E+00	2.10E+02	3.61E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.08E+02	1.00E+00	1.36E-02	4.54E+00	1.11E-01	6.32E+02	2.47E-02	4.62E+02	2.41E-04
BREOT-S38-12.5 (0-6")	1.72E-01	1.72E-01	1.01E+00	7.03E+02	1.21E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	6.96E+02	3.34E+00	1.36E-02	4.54E+00	3.72E-01	6.32E+02	2.47E-02	4.62E+02	8.04E-04
BREOT-N39-12.5 (0-6")	1.72E-01	1.72E-01	1.01E+00	3.07E+02	5.26E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.03E+02	1.46E+00	1.36E-02	4.54E+00	1.62E-01	6.32E+02	2.47E-02	4.62E+02	3.51E-04
BREOT-S39-12.5 (0-6")	1.72E-01	1.72E-01	1.01E+00	5.26E+02	9.03E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.21E+02	2.50E+00	1.36E-02	4.54E+00	2.78E-01	6.32E+02	2.47E-02	4.62E+02	6.02E-04
BREOT-N40-12.5 (0-6")	1.72E-01	1.72E-01	1.01E+00	4.08E+02	7.00E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.04E+02	1.94E+00	1.36E-02	4.54E+00	2.16E-01	6.32E+02	2.47E-02	4.62E+02	4.67E-04
BREOT-S40-14 (0-6")	1.72E-01	1.72E-01	1.01E+00	5.00E+02	8.57E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.95E+02	2.38E+00	1.36E-02	4.54E+00	2.64E-01	6.32E+02	2.47E-02	4.62E+02	5.72E-04
BREOT-N41-12.5 (0-6")	1.72E-01	1.72E-01	1.01E+00	3.03E+02	5.20E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.00E+02	1.44E+00	1.36E-02	4.54E+00	1.60E-01	6.32E+02	2.47E-02	4.62E+02	3.47E-04
BREOT-S41-12.5 (0-6")	1.72E-01	1.72E-01	1.01E+00	4.56E+02	7.82E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.51E+02	2.17E+00	1.36E-02	4.54E+00	2.41E-01	6.32E+02	2.47E-02	4.62E+02	5.22E-04

TABLE C-2C: COPPER DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **18.41**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Red Fox (Carnivorous Mammal - Terrestrial)																							
BREOT-N42-35 (0-6")	1.72E-01	1.72E-01	1.01E+00	2.47E+02	4.23E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.44E+02	1.17E+00	1.36E-02	4.54E+00	1.30E-01	6.32E+02	2.47E-02	4.62E+02	2.82E-04
BREOT-S42-25 (0-6")	1.72E-01	1.72E-01	1.01E+00	2.71E+02	4.66E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.69E+02	1.29E+00	1.36E-02	4.54E+00	1.43E-01	6.32E+02	2.47E-02	4.62E+02	3.11E-04
BREOT-N43-12.5 (0-6")	1.72E-01	1.72E-01	1.01E+00	4.65E+02	7.98E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.60E+02	2.21E+00	1.36E-02	4.54E+00	2.46E-01	6.32E+02	2.47E-02	4.62E+02	5.32E-04
BREOT-S43-12.5 (0-6")	1.72E-01	1.72E-01	1.01E+00	2.47E+02	4.24E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.45E+02	1.18E+00	1.36E-02	4.54E+00	1.31E-01	6.32E+02	2.47E-02	4.62E+02	2.83E-04
BREOT-N44-30 (0-6")	1.72E-01	1.72E-01	1.01E+00	1.90E+02	3.26E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.88E+02	9.03E-01	1.36E-02	4.54E+00	1.00E-01	6.32E+02	2.47E-02	4.62E+02	2.17E-04
BREOT-S44-12.5 (0-6")	1.72E-01	1.72E-01	1.01E+00	4.32E+02	7.42E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.28E+02	2.06E+00	1.36E-02	4.54E+00	2.29E-01	6.32E+02	2.47E-02	4.62E+02	4.95E-04
BREOT-N45-12.5 (0-6")	1.72E-01	1.72E-01	1.01E+00	3.20E+02	5.49E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.16E+02	1.52E+00	1.36E-02	4.54E+00	1.69E-01	6.32E+02	2.47E-02	4.62E+02	3.66E-04
BREOT-N43-12.5 (0-6")	1.72E-01	1.72E-01	1.01E+00	4.65E+02	7.98E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.60E+02	2.21E+00	1.36E-02	4.54E+00	2.46E-01	6.32E+02	2.47E-02	4.62E+02	5.32E-04
BREOT-S45-6 (0-6")	1.72E-01	1.72E-01	1.01E+00	3.08E+02	5.28E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.05E+02	1.46E+00	1.36E-02	4.54E+00	1.63E-01	6.32E+02	2.47E-02	4.62E+02	3.52E-04
BREOT-N46-12.5 (0-6")	1.72E-01	1.72E-01	1.01E+00	1.24E+02	2.13E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.23E+02	5.91E-01	1.36E-02	4.54E+00	6.57E-02	6.32E+02	2.47E-02	4.62E+02	1.42E-04
BREOT-S46-12.5 (0-6")	1.72E-01	1.72E-01	1.01E+00	1.54E+02	2.64E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.52E+02	7.31E-01	1.36E-02	4.54E+00	8.13E-02	6.32E+02	2.47E-02	4.62E+02	1.76E-04
BREOT-S46-40 (0-6")	1.72E-01	1.72E-01	1.01E+00	3.00E+02	5.15E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.97E+02	1.43E+00	1.36E-02	4.54E+00	1.59E-01	6.32E+02	2.47E-02	4.62E+02	3.43E-04
BREOT-N47-12.5 (0-6")	1.72E-01	1.72E-01	1.01E+00	2.81E+02	4.82E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.78E+02	1.33E+00	1.36E-02	4.54E+00	1.48E-01	6.32E+02	2.47E-02	4.62E+02	3.21E-04
BREOT-S47-999 (0-6")	1.72E-01	1.72E-01	1.01E+00	4.16E+02	7.14E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.12E+02	1.98E+00	1.36E-02	4.54E+00	2.20E-01	6.32E+02	2.47E-02	4.62E+02	4.76E-04
BREOT-S48-12.5 (0-6")	1.72E-01	1.72E-01	1.01E+00	9.99E+01	1.71E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	9.89E+01	4.75E-01	1.36E-02	4.54E+00	5.28E-02	6.32E+02	2.47E-02	4.62E+02	1.14E-04
BREOT-S49-2.5 (0-6")	1.72E-01	1.72E-01	1.01E+00	1.31E+02	2.25E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.30E+02	6.24E-01	1.36E-02	4.54E+00	6.94E-02	6.32E+02	2.47E-02	4.62E+02	1.50E-04
BREOT-S50-12.5 (0-6")	1.72E-01	1.72E-01	1.01E+00	2.34E+02	4.01E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.31E+02	1.11E+00	1.36E-02	4.54E+00	1.24E-01	6.32E+02	2.47E-02	4.62E+02	2.68E-04
BREOT-S50-25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N52-60 (0-6")	1.72E-01	1.72E-01	1.01E+00	2.14E+02	3.68E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.12E+02	1.02E+00	1.36E-02	4.54E+00	1.13E-01	6.32E+02	2.47E-02	4.62E+02	2.45E-04
BREOT-S52-12.5 (0-6")	1.72E-01	1.72E-01	1.01E+00	1.11E+03	1.91E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.10E+03	5.29E+00	1.36E-02	4.54E+00	5.88E-01	6.32E+02	2.47E-02	4.62E+02	1.27E-03
BREOT-S53-12.5 (0-6")	1.72E-01	1.72E-01	1.01E+00	2.58E+02	4.43E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.56E+02	1.23E+00	1.36E-02	4.54E+00	1.37E-01	6.32E+02	2.47E-02	4.62E+02	2.96E-04
BREOT-S54-12.5 (0-6")	1.72E-01	1.72E-01	1.01E+00	1.62E+02	2.78E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.60E+02	7.71E-01	1.36E-02	4.54E+00	8.57E-02	6.32E+02	2.47E-02	4.62E+02	1.86E-04
BREOT-N55-12.5 (0-6")	1.72E-01	1.72E-01	1.01E+00	4.38E+02	7.52E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.34E+02	2.08E+00	1.36E-02	4.54E+00	2.32E-01	6.32E+02	2.47E-02	4.62E+02	5.02E-04
BREOT-S55-12.5 (0-6")	1.72E-01	1.72E-01	1.01E+00	1.75E+02	3.00E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.73E+02	8.31E-01	1.36E-02	4.54E+00	9.24E-02	6.32E+02	2.47E-02	4.62E+02	2.00E-04
BREOT-N56-12.5 (0-6")	1.72E-01	1.72E-01	1.01E+00	3.25E+02	5.57E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.21E+02	1.54E+00	1.36E-02	4.54E+00	1.72E-01	6.32E+02	2.47E-02	4.62E+02	3.71E-04
BREOT-S56-12.5 (0-6")	1.72E-01	1.72E-01	1.01E+00	1.51E+02	2.59E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.49E+02	7.17E-01	1.36E-02	4.54E+00	7.97E-02	6.32E+02	2.47E-02	4.62E+02	1.73E-04
BREOT-N57-12.5 (0-6")	1.72E-01	1.72E-01	1.01E+00	2.38E+02	4.09E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.36E+02	1.13E+00	1.36E-02	4.54E+00	1.26E-01	6.32E+02	2.47E-02	4.62E+02	2.73E-04
BREOT-S57-12.5 (0-6")	1.72E-01	1.72E-01	1.01E+00	1.75E+02	3.00E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.73E+02	8.31E-01	1.36E-02	4.54E+00	9.24E-02	6.32E+02	2.47E-02	4.62E+02	2.00E-04
BREOT-N58-12.5 (0-6")	1.72E-01	1.72E-01	1.01E+00	1.55E+02	2.66E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.53E+02	7.36E-01	1.36E-02	4.54E+00	8.19E-02	6.32E+02	2.47E-02	4.62E+02	1.77E-04
BREOT-S58-12 (0-6")	1.72E-01	1.72E-01	1.01E+00	2.60E+02	4.46E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.57E+02	1.24E+00	1.36E-02	4.54E+00	1.37E-01	6.32E+02	2.47E-02	4.62E+02	2.97E-04
BREOT-N59-18 (0-6")	1.72E-01	1.72E-01	1.01E+00	1.07E+02	1.83E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.06E+02	5.07E-01	1.36E-02	4.54E+00	5.64E-02	6.32E+02	2.47E-02	4.62E+02	1.22E-04
BREOT-N60-12.5 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S60-12.5 (0-6")	1.72E-01	1.72E-01	1.01E+00	1.90E+02	3.26E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.88E+02	9.03E-01	1.36E-02	4.54E+00	1.00E-01	6.32E+02	2.47E-02	4.62E+02	2.17E-04
BREOT-S61-12.5 (0-6")	1.72E-01	1.72E-01	1.01E+00	2.61E+02	4.47E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.58E+02	1.24E+00	1.36E-02	4.54E+00	1.38E-01	6.32E+02	2.47E-02	4.62E+02	2.98E-04
BREOT-N62-12.5 (0-6")	1.72E-01	1.72E-01	1.01E+00	8.83E+01	1.52E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	8.74E+01	4.20E-01	1.36E-02	4.54E+00	4.67E-02	6.32E+02	2.47E-02	4.62E+02	1.01E-04
BREOT-S62-12.5 (0-6")	1.72E-01	1.72E-01	1.01E+00	3.53E+02	6.05E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.49E+02	1.68E+00	1.36E-02	4.54E+00	1.87E-01	6.32E+02	2.47E-02	4.62E+02	4.04E-04
BREOT-S63-12.5 (0-6")	1.72E-01	1.72E-01	1.01E+00	1.43E+02	2.45E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.41E+02	6.78E-01	1.36E-02	4.54E+00	7.54E-02	6.32E+02	2.47E-02	4.62E+02	1.63E-04
BREOT-N64-12.5 (0-6")	1.72E-01	1.72E-01	1.01E+00	9.56E+01	1.64E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	9.46E+01	4.55E-01	1.36E-02	4.54E+00	5.05E-02	6.32E+02	2.47E-02	4.62E+02	1.09E-04
BREOT-N64-20 (0-6")	1.72E-01	1.72E-01	1.01E+00	1.16E+02	1.99E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.15E+02	5.51E-01	1.36E-02	4.54E+00	6.13E-02	6.32E+02	2.47E-02	4.62E+02	1.33E-04
BREOT-S64-12.5 (0-6")	1.72E-01	1.72E-01	1.01E+00	1.69E+02	2.91E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.68E+02	8.05E-01	1.36E-02	4.54E+00	8.96E-02	6.32E+02	2.47E-02	4.62E+02	1.94E-04
BREOT-N65-12.5 (0-6")	1.72E-01	1.72E-01	1.01E+00	1.24E+02	2.13E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.23E+02	5.90E-01	1.36E-02	4.54E+00	6.56E-02	6.32E+02	2.47E-02	4.62E+02	1.42E-04
BREOT-S65-12.5 (0-6")	1.72E-01	1.72E-01	1.01E+00	1.83E+02	3.14E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.81E+02	8.72E-01	1.36E-02	4.54E+00	9.69E-02	6.32E+02	2.47E-02	4.62E+02	2.10E-04
BREOT-N66-5 (0-6")	1.72E-01	1.72E-01	1.01E+00	1.36E+02	2.33E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.35E+02	6.47E-01	1.36E-02	4.54E+00	7.19E-02	6.32E+02	2.47E-02	4.62E+02	1.56E-04
BREOT-S66-12.5 (0-6")	1.72E-01	1.72E-01	1.01E+00	1.49E+02	2.56E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.48E+02	7.10E-01	1.36E-02	4.54E+00	7.90E-02	6.32E+02	2.47E-02	4.62E+02	1.71E-04
BREOT-N67-12.5 (0-6")	1.72E-01	1.72E-01	1.01E+00	5.69E+02	9.76E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.63E+02	2.70E+00	1.36E-02	4.54E+00	3.01E-01	6.32E+02	2.47E-02	4.62E+02	6.51E-04
BREOT-S67-12.5 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
At Edge of Tailings																						**Maximum HQ (Inside Tailings)**	**4.30E-03**
BREOT-S0-0 (06)	1.72E-01	1.72E-01	1.01E+00	1.21E+02	2.08E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.20E+02	5.77E-01	1.36E-02	4.54E+00	6.41E-02	6.32E+02	2.47E-02	4.62E+02	1.39E-04
BREOT-S1-0 (0-6")	1.72E-01	1.72E-01	1.01E+00	2.13E+02	3.65E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.11E+02	1.01E+00	1.36E-02	4.54E+00	1.13E-01	6.32E+02	2.47E-02	4.62E+02	2.44E-04
BREOT-S2-0 (0-6")	1.72E-01	1.72E-01	1.01E+00	3.02E+02	5.19E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.99E+02	1.44E+00	1.36E-02	4.54E+00	1.60E-01	6.32E+02	2.47E-02	4.62E+02	3.46E-04
BREOT-S3-0 (0-6")	1.72E-01	1.72E-01	1.01E+00	3.66E+02	6.28E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.62E+02	1.74E+00	1.36E-02	4.54E+00	1.93E-01	6.32E+02	2.47E-02	4.62E+02	4.19E-04
BREOT-S4-0 (0-6")	1.72E-01	1.72E-01	1.01E+00	4.09E+02	7.02E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.05E+02	1.95E+00	1.36E-02	4.54E+00	2.16E-01	6.32E+02	2.47E-02	4.62E+02	4.68E-04
BREOT-S6-0 (0-6")	1.72E-01	1.72E-01	1.01E+00	3.31E+02	5.67E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.27E+02	1.57E+00	1.36E-02	4.54E+00	1.75E-01	6.32E+02	2.47E-02	4.62E+02	3.78E-04
BREOT-S7-0 (0-6")	1.72E-01	1.72E-01	1.01E+00	1.92E+02	3.29E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.90E+02	9.12E-01	1.36E-02	4.54E+00	1.01E-01	6.32E+02	2.47E-02	4.62E+02	2.20E-04
BREOT-S8-0 (0-6")	1.72E-01	1.72E-01	1.01E+00	1.71E+02	2.93E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.69E+02	8.11E-01	1.36E-02	4.54E+00	9.02E-02	6.32E+02	2.47E-02	4.62E+02	1.95E-04

TABLE C-2C: COPPER DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 18.41

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Red Fox (Carnivorous Mammal - Terrestrial)																							
BREOT-S9-0 (0-6")	1.72E-01	1.72E-01	1.01E+00	1.52E+02	2.61E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.51E+02	7.25E-01	1.36E-02	4.54E+00	8.06E-02	6.32E+02	2.47E-02	4.62E+02	1.74E-04
BREOT-N10-0 (0-6")	1.72E-01	1.72E-01	1.01E+00	3.58E+03	6.14E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.54E+03	1.70E+01	1.36E-02	4.54E+00	1.89E+00	6.32E+02	2.47E-02	4.62E+02	4.09E-03
BREOT-N11-0 (0-6")	1.72E-01	1.72E-01	1.01E+00	2.98E+02	5.11E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.95E+02	1.42E+00	1.36E-02	4.54E+00	1.58E-01	6.32E+02	2.47E-02	4.62E+02	3.41E-04
BREOT-S11-0 (0-6")	1.72E-01	1.72E-01	1.01E+00	2.33E+02	4.00E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.31E+02	1.11E+00	1.36E-02	4.54E+00	1.23E-01	6.32E+02	2.47E-02	4.62E+02	2.67E-04
BREOT-N12-0 (0-6")	1.72E-01	1.72E-01	1.01E+00	2.59E+02	4.45E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.57E+02	1.23E+00	1.36E-02	4.54E+00	1.37E-01	6.32E+02	2.47E-02	4.62E+02	2.97E-04
BREOT-S12-0 (0-6")	1.72E-01	1.72E-01	1.01E+00	5.97E+02	1.02E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.91E+02	2.84E+00	1.36E-02	4.54E+00	3.16E-01	6.32E+02	2.47E-02	4.62E+02	6.83E-04
BREOT-N13-0 (0-6")	1.72E-01	1.72E-01	1.01E+00	1.93E+03	3.31E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.91E+03	9.18E+00	1.36E-02	4.54E+00	1.02E+00	6.32E+02	2.47E-02	4.62E+02	2.21E-03
BREOT-S13-0 (0-6")	1.72E-01	1.72E-01	1.01E+00	1.42E+02	2.43E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.40E+02	6.73E-01	1.36E-02	4.54E+00	7.48E-02	6.32E+02	2.47E-02	4.62E+02	1.62E-04
BREOT-N14-0 (0-6")	1.72E-01	1.72E-01	1.01E+00	4.33E+02	7.42E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.28E+02	2.06E+00	1.36E-02	4.54E+00	2.29E-01	6.32E+02	2.47E-02	4.62E+02	4.95E-04
BREOT-S14-0 (0-6")	1.72E-01	1.72E-01	1.01E+00	3.29E+03	5.65E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.26E+03	1.57E+01	1.36E-02	4.54E+00	1.74E+00	6.32E+02	2.47E-02	4.62E+02	3.77E-03
BREOT-N15-0 (0-6")	1.72E-01	1.72E-01	1.01E+00	3.37E+02	5.79E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.34E+02	1.60E+00	1.36E-02	4.54E+00	1.78E-01	6.32E+02	2.47E-02	4.62E+02	3.86E-04
BREOT-N16-0 (0-6")	1.72E-01	1.72E-01	1.01E+00	2.49E+02	4.27E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.46E+02	1.18E+00	1.36E-02	4.54E+00	1.31E-01	6.32E+02	2.47E-02	4.62E+02	2.85E-04
BREOT-S16-0 (0-6")	1.72E-01	1.72E-01	1.01E+00	1.82E+02	3.13E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.81E+02	8.67E-01	1.36E-02	4.54E+00	9.64E-02	6.32E+02	2.47E-02	4.62E+02	2.09E-04
BREOT-N17-0 (0-6")	1.72E-01	1.72E-01	1.01E+00	2.63E+02	4.51E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.60E+02	1.25E+00	1.36E-02	4.54E+00	1.39E-01	6.32E+02	2.47E-02	4.62E+02	3.01E-04
BREOT-S17-0 (0-6")	1.72E-01	1.72E-01	1.01E+00	3.12E+02	5.36E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.09E+02	1.48E+00	1.36E-02	4.54E+00	1.65E-01	6.32E+02	2.47E-02	4.62E+02	3.57E-04
BREOT-N18-0 (0-6")	1.72E-01	1.72E-01	1.01E+00	2.43E+02	4.16E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.40E+02	1.15E+00	1.36E-02	4.54E+00	1.28E-01	6.32E+02	2.47E-02	4.62E+02	2.78E-04
BREOT-S18-0 (0-6")	1.72E-01	1.72E-01	1.01E+00	2.12E+03	3.63E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.09E+03	1.01E+01	1.36E-02	4.54E+00	1.12E+00	6.32E+02	2.47E-02	4.62E+02	2.42E-03
BREOT-N19-0 (0-6")	1.72E-01	1.72E-01	1.01E+00	2.97E+02	5.09E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.94E+02	1.41E+00	1.36E-02	4.54E+00	1.57E-01	6.32E+02	2.47E-02	4.62E+02	3.40E-04
BREOT-S19-0 (0-6")	1.72E-01	1.72E-01	1.01E+00	1.30E+02	2.23E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.29E+02	6.18E-01	1.36E-02	4.54E+00	6.87E-02	6.32E+02	2.47E-02	4.62E+02	1.49E-04
BREOT-N20-0 (0-6")	1.72E-01	1.72E-01	1.01E+00	4.25E+02	7.29E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.20E+02	2.02E+00	1.36E-02	4.54E+00	2.25E-01	6.32E+02	2.47E-02	4.62E+02	4.86E-04
BREOT-S20-0 (0-6")	1.72E-01	1.72E-01	1.01E+00	1.38E+02	2.36E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.36E+02	6.54E-01	1.36E-02	4.54E+00	7.27E-02	6.32E+02	2.47E-02	4.62E+02	1.57E-04
BREOT-N21-0 (0-6")	1.72E-01	1.72E-01	1.01E+00	1.36E+04	2.34E+03	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.35E+04	6.48E+01	1.36E-02	4.54E+00	7.20E+00	6.32E+02	2.47E-02	4.62E+02	1.56E-02
BREOT-S21-0 (0-6")	1.72E-01	1.72E-01	1.01E+00	2.33E+02	4.01E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.31E+02	1.11E+00	1.36E-02	4.54E+00	1.23E-01	6.32E+02	2.47E-02	4.62E+02	2.67E-04
BREOT-N22-0 (0-6")	1.72E-01	1.72E-01	1.01E+00	3.25E+02	5.57E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.21E+02	1.54E+00	1.36E-02	4.54E+00	1.72E-01	6.32E+02	2.47E-02	4.62E+02	3.72E-04
BREOT-S22-0 (0-6")	1.72E-01	1.72E-01	1.01E+00	1.85E+02	3.17E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.83E+02	8.79E-01	1.36E-02	4.54E+00	9.78E-02	6.32E+02	2.47E-02	4.62E+02	2.12E-04
BREOT-N23-0 (0-6")	1.72E-01	1.72E-01	1.01E+00	5.21E+02	8.93E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.15E+02	2.48E+00	1.36E-02	4.54E+00	2.75E-01	6.32E+02	2.47E-02	4.62E+02	5.96E-04
BREOT-S23-0 (0-6")	1.72E-01	1.72E-01	1.01E+00	3.25E+02	5.57E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.22E+02	1.54E+00	1.36E-02	4.54E+00	1.72E-01	6.32E+02	2.47E-02	4.62E+02	3.72E-04
BREOT-N24-0 (0-6")	1.72E-01	1.72E-01	1.01E+00	4.99E+02	8.55E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.93E+02	2.37E+00	1.36E-02	4.54E+00	2.64E-01	6.32E+02	2.47E-02	4.62E+02	5.70E-04
BREOT-S24-0 (0-6")	1.72E-01	1.72E-01	1.01E+00	9.57E+02	1.64E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	9.47E+02	4.55E+00	1.36E-02	4.54E+00	5.06E-01	6.32E+02	2.47E-02	4.62E+02	1.10E-03
BREOT-N25-0 (0-6")	1.72E-01	1.72E-01	1.01E+00	7.83E+02	1.34E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	7.75E+02	3.73E+00	1.36E-02	4.54E+00	4.14E-01	6.32E+02	2.47E-02	4.62E+02	8.97E-04
BREOT-S25-0 (0-6")	1.72E-01	1.72E-01	1.01E+00	6.77E+02	1.16E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	6.70E+02	3.22E+00	1.36E-02	4.54E+00	3.58E-01	6.32E+02	2.47E-02	4.62E+02	7.75E-04
BREOT-N26-0 (0-6")	1.72E-01	1.72E-01	1.01E+00	9.35E+02	1.60E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	9.25E+02	4.44E+00	1.36E-02	4.54E+00	4.94E-01	6.32E+02	2.47E-02	4.62E+02	1.07E-03
BREOT-S26-0 (0-6")	1.72E-01	1.72E-01	1.01E+00	3.46E+02	5.94E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.43E+02	1.65E+00	1.36E-02	4.54E+00	1.83E-01	6.32E+02	2.47E-02	4.62E+02	3.96E-04
BREOT-N27-0 (0-6")	1.72E-01	1.72E-01	1.01E+00	2.54E+03	4.35E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.51E+03	1.21E+01	1.36E-02	4.54E+00	1.34E+00	6.32E+02	2.47E-02	4.62E+02	2.90E-03
BREOT-S27-0 (0-6")	1.72E-01	1.72E-01	1.01E+00	2.30E+02	3.95E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.28E+02	1.09E+00	1.36E-02	4.54E+00	1.22E-01	6.32E+02	2.47E-02	4.62E+02	2.63E-04
BREOT-N28-0 (0-6")	1.72E-01	1.72E-01	1.01E+00	5.54E+02	9.50E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.48E+02	2.63E+00	1.36E-02	4.54E+00	2.93E-01	6.32E+02	2.47E-02	4.62E+02	6.34E-04
BREOT-S28-0 (0-6")	1.72E-01	1.72E-01	1.01E+00	1.67E+02	2.87E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.65E+02	7.94E-01	1.36E-02	4.54E+00	8.83E-02	6.32E+02	2.47E-02	4.62E+02	1.91E-04
BREOT-S29-0 (0-6")	1.72E-01	1.72E-01	1.01E+00	1.78E+02	3.06E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.77E+02	8.48E-01	1.36E-02	4.54E+00	9.43E-02	6.32E+02	2.47E-02	4.62E+02	2.04E-04
BREOT-N30-0 (0-6")	1.72E-01	1.72E-01	1.01E+00	1.50E+03	2.57E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.48E+03	7.12E+00	1.36E-02	4.54E+00	7.92E-01	6.32E+02	2.47E-02	4.62E+02	1.71E-03
BREOT-S30-0 (0-6")	1.72E-01	1.72E-01	1.01E+00	1.31E+02	2.25E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.30E+02	6.23E-01	1.36E-02	4.54E+00	6.93E-02	6.32E+02	2.47E-02	4.62E+02	1.50E-04
BREOT-N31-0 (0-6")	1.72E-01	1.72E-01	1.01E+00	1.30E+03	2.23E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.29E+03	6.19E+00	1.36E-02	4.54E+00	6.88E-01	6.32E+02	2.47E-02	4.62E+02	1.49E-03
BREOT-S31-0 (0-6")	1.72E-01	1.72E-01	1.01E+00	1.08E+02	1.86E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.07E+02	5.15E-01	1.36E-02	4.54E+00	5.73E-02	6.32E+02	2.47E-02	4.62E+02	1.24E-04
BREOT-N32-0 (0-6")	1.72E-01	1.72E-01	1.01E+00	5.36E+02	9.20E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.31E+02	2.55E+00	1.36E-02	4.54E+00	2.83E-01	6.32E+02	2.47E-02	4.62E+02	6.14E-04
BREOT-S32-0 (0-6")	1.72E-01	1.72E-01	1.01E+00	5.23E+02	8.97E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.17E+02	2.48E+00	1.36E-02	4.54E+00	2.76E-01	6.32E+02	2.47E-02	4.62E+02	5.98E-04
BREOT-N33-0 (0-6")	1.72E-01	1.72E-01	1.01E+00	2.02E+02	3.46E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.00E+02	9.59E-01	1.36E-02	4.54E+00	1.07E-01	6.32E+02	2.47E-02	4.62E+02	2.31E-04
BREOT-S33-0 (0-6")	1.72E-01	1.72E-01	1.01E+00	4.96E+02	8.52E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.91E+02	2.36E+00	1.36E-02	4.54E+00	2.62E-01	6.32E+02	2.47E-02	4.62E+02	5.68E-04
BREOT-N34-0 (0-6")	1.72E-01	1.72E-01	1.01E+00	4.95E+02	8.49E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.90E+02	2.35E+00	1.36E-02	4.54E+00	2.62E-01	6.32E+02	2.47E-02	4.62E+02	5.67E-04
BREOT-S34-0 (0-6")	1.72E-01	1.72E-01	1.01E+00	4.85E+02	8.31E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.80E+02	2.30E+00	1.36E-02	4.54E+00	2.56E-01	6.32E+02	2.47E-02	4.62E+02	5.54E-04
BREOT-N35-0 (0-6")	1.72E-01	1.72E-01	1.01E+00	2.69E+02	4.61E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.66E+02	1.28E+00	1.36E-02	4.54E+00	1.42E-01	6.32E+02	2.47E-02	4.62E+02	3.08E-04
BREOT-S35-0 (0-6")	1.72E-01	1.72E-01	1.01E+00	4.48E+02	7.68E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.43E+02	2.13E+00	1.36E-02	4.54E+00	2.37E-01	6.32E+02	2.47E-02	4.62E+02	5.12E-04
BREOT-N36-0 (0-6")	1.72E-01	1.72E-01	1.01E+00	4.38E+02	7.51E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.33E+02	2.08E+00	1.36E-02	4.54E+00	2.31E-01	6.32E+02	2.47E-02	4.62E+02	5.01E-04
BREOT-S36-0 (0-6")	1.72E-01	1.72E-01	1.01E+00	4.82E+02	8.27E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.77E+02	2.29E+00	1.36E-02	4.54E+00	2.55E-01	6.32E+02	2.47E-02	4.62E+02	5.52E-04
BREOT-N37-0 (0-6")	1.72E-01	1.72E-01	1.01E+00	1.83E+02	3.14E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.81E+02	8.70E-01	1.36E-02	4.54E+00	9.67E-02	6.32E+02	2.47E-02	4.62E+02	2.09E-04
BREOT-S37-0 (0-6")	1.72E-01	1.72E-01	1.01E+00	5.38E+02	9.23E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.33E+02	2.56E+00	1.36E-02	4.54E+00	2.84E-01	6.32E+02	2.47E-02	4.62E+02	6.16E-04
BREOT-N38-0 (0-6")	1.72E-01	1.72E-01	1.01E+00	1.97E+02	3.37E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.95E+02	9.35E-01	1.36E-02	4.54E+00	1.04E-01	6.32E+02	2.47E-02	4.62E+02	2.25E-04

TABLE C-2C: COPPER DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **18.41**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Red Fox (Carnivorous Mammal - Terrestrial)																							
BREOT-S38-0 (0-6")	1.72E-01	1.72E-01	1.01E+00	8.50E+02	1.46E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	8.41E+02	4.04E+00	1.36E-02	4.54E+00	4.49E-01	6.32E+02	2.47E-02	4.62E+02	9.72E-04
BREOT-N39-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N40-0 (0-6")	1.72E-01	1.72E-01	1.01E+00	2.42E+02	4.15E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.39E+02	1.15E+00	1.36E-02	4.54E+00	1.28E-01	6.32E+02	2.47E-02	4.62E+02	2.77E-04
BREOT-S40-0 (0-6")	1.72E-01	1.72E-01	1.01E+00	5.69E+02	9.76E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.63E+02	2.70E+00	1.36E-02	4.54E+00	3.01E-01	6.32E+02	2.47E-02	4.62E+02	6.51E-04
BREOT-N41-0 (0-6")	1.72E-01	1.72E-01	1.01E+00	1.56E+02	2.68E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.55E+02	7.42E-01	1.36E-02	4.54E+00	8.25E-02	6.32E+02	2.47E-02	4.62E+02	1.79E-04
BREOT-S41-0 (0-6")	1.72E-01	1.72E-01	1.01E+00	5.57E+02	9.56E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.52E+02	2.65E+00	1.36E-02	4.54E+00	2.95E-01	6.32E+02	2.47E-02	4.62E+02	6.38E-04
BREOT-N42-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S42-0 (0-6")	1.72E-01	1.72E-01	1.01E+00	8.31E+02	1.43E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	8.23E+02	3.95E+00	1.36E-02	4.54E+00	4.39E-01	6.32E+02	2.47E-02	4.62E+02	9.51E-04
BREOT-N43-0 (0-6")	1.72E-01	1.72E-01	1.01E+00	1.28E+02	2.20E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.27E+02	6.09E-01	1.36E-02	4.54E+00	6.78E-02	6.32E+02	2.47E-02	4.62E+02	1.47E-04
BREOT-S43-0 (0-6")	1.72E-01	1.72E-01	1.01E+00	1.32E+02	2.26E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.30E+02	6.26E-01	1.36E-02	4.54E+00	6.96E-02	6.32E+02	2.47E-02	4.62E+02	1.51E-04
BREOT-N44-0 (0-6")	1.72E-01	1.72E-01	1.01E+00	2.43E+02	4.17E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.41E+02	1.16E+00	1.36E-02	4.54E+00	1.29E-01	6.32E+02	2.47E-02	4.62E+02	2.78E-04
BREOT-S44-0 (0-6")	1.72E-01	1.72E-01	1.01E+00	1.28E+02	2.20E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.27E+02	6.09E-01	1.36E-02	4.54E+00	6.78E-02	6.32E+02	2.47E-02	4.62E+02	1.47E-04
BREOT-N45-0 (0-6")	1.72E-01	1.72E-01	1.01E+00	3.82E+02	6.56E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.78E+02	1.82E+00	1.36E-02	4.54E+00	2.02E-01	6.32E+02	2.47E-02	4.62E+02	4.37E-04
BREOT-S45-0 (0-6")	1.72E-01	1.72E-01	1.01E+00	1.07E+02	1.84E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.06E+02	5.10E-01	1.36E-02	4.54E+00	5.67E-02	6.32E+02	2.47E-02	4.62E+02	1.23E-04
BREOT-N46-0 (0-6")	1.72E-01	1.72E-01	1.01E+00	2.67E+02	4.58E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.64E+02	1.27E+00	1.36E-02	4.54E+00	1.41E-01	6.32E+02	2.47E-02	4.62E+02	3.05E-04
BREOT-S46-0 (0-6")	1.72E-01	1.72E-01	1.01E+00	9.96E+01	1.71E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	9.86E+01	4.73E-01	1.36E-02	4.54E+00	5.26E-02	6.32E+02	2.47E-02	4.62E+02	1.14E-04
BREOT-N47-0 (0-6")	1.72E-01	1.72E-01	1.01E+00	6.51E+02	1.12E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	6.44E+02	3.09E+00	1.36E-02	4.54E+00	3.44E-01	6.32E+02	2.47E-02	4.62E+02	7.45E-04
BREOT-S47-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N48-0 (0-6")	1.72E-01	1.72E-01	1.01E+00	1.45E+02	2.49E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.44E+02	6.90E-01	1.36E-02	4.54E+00	7.67E-02	6.32E+02	2.47E-02	4.62E+02	1.66E-04
BREOT-S48-0 (0-6")	1.72E-01	1.72E-01	1.01E+00	9.10E+01	1.56E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	9.01E+01	4.33E-01	1.36E-02	4.54E+00	4.81E-02	6.32E+02	2.47E-02	4.62E+02	1.04E-04
BREOT-N49-0 (0-6")	1.72E-01	1.72E-01	1.01E+00	1.73E+02	2.97E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.71E+02	8.23E-01	1.36E-02	4.54E+00	9.16E-02	6.32E+02	2.47E-02	4.62E+02	1.98E-04
BREOT-S49-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S50-0 (0-6")	1.72E-01	1.72E-01	1.01E+00	1.07E+02	1.83E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.06E+02	5.07E-01	1.36E-02	4.54E+00	5.64E-02	6.32E+02	2.47E-02	4.62E+02	1.22E-04
BREOT-S51-0 (0-6")	1.72E-01	1.72E-01	1.01E+00	1.23E+02	2.11E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.22E+02	5.84E-01	1.36E-02	4.54E+00	6.49E-02	6.32E+02	2.47E-02	4.62E+02	1.41E-04
BREOT-N51-0 (0-6")	1.72E-01	1.72E-01	1.01E+00	7.79E+02	1.34E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	7.71E+02	3.70E+00	1.36E-02	4.54E+00	4.12E-01	6.32E+02	2.47E-02	4.62E+02	8.91E-04
BREOT-N52-0 (0-6")	1.72E-01	1.72E-01	1.01E+00	1.24E+02	2.13E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.23E+02	5.91E-01	1.36E-02	4.54E+00	6.57E-02	6.32E+02	2.47E-02	4.62E+02	1.42E-04
BREOT-S52-0 (0-6")	1.72E-01	1.72E-01	1.01E+00	9.38E+01	1.61E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	9.29E+01	4.46E-01	1.36E-02	4.54E+00	4.96E-02	6.32E+02	2.47E-02	4.62E+02	1.07E-04
BREOT-N53-0 (0-6")	1.72E-01	1.72E-01	1.01E+00	1.30E+02	2.23E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.28E+02	6.17E-01	1.36E-02	4.54E+00	6.86E-02	6.32E+02	2.47E-02	4.62E+02	1.48E-04
BREOT-S53-0 (0-6")	1.72E-01	1.72E-01	1.01E+00	8.71E+01	1.49E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	8.62E+01	4.14E-01	1.36E-02	4.54E+00	4.60E-02	6.32E+02	2.47E-02	4.62E+02	9.97E-05
BREOT-N54-0 (0-6")	1.72E-01	1.72E-01	1.01E+00	1.23E+02	2.12E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.22E+02	5.87E-01	1.36E-02	4.54E+00	6.53E-02	6.32E+02	2.47E-02	4.62E+02	1.41E-04
BREOT-S54-0 (0-6")	1.72E-01	1.72E-01	1.01E+00	8.29E+01	1.42E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	8.20E+01	3.94E-01	1.36E-02	4.54E+00	4.38E-02	6.32E+02	2.47E-02	4.62E+02	9.48E-05
BREOT-N55-0 (0-6")	1.72E-01	1.72E-01	1.01E+00	1.04E+02	1.79E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.03E+02	4.95E-01	1.36E-02	4.54E+00	5.50E-02	6.32E+02	2.47E-02	4.62E+02	1.19E-04
BREOT-S55-0 (0-6")	1.72E-01	1.72E-01	1.01E+00	1.45E+02	2.49E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.44E+02	6.90E-01	1.36E-02	4.54E+00	7.68E-02	6.32E+02	2.47E-02	4.62E+02	1.66E-04
BREOT-N56-0 (0-6")	1.72E-01	1.72E-01	1.01E+00	9.38E+01	1.61E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	9.29E+01	4.46E-01	1.36E-02	4.54E+00	4.96E-02	6.32E+02	2.47E-02	4.62E+02	1.07E-04
BREOT-N57-0 (0-6")	1.72E-01	1.72E-01	1.01E+00	1.23E+02	2.11E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.22E+02	5.84E-01	1.36E-02	4.54E+00	6.49E-02	6.32E+02	2.47E-02	4.62E+02	1.40E-04
BREOT-S57-0 (0-6")	1.72E-01	1.72E-01	1.01E+00	1.82E+02	3.12E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.80E+02	8.64E-01	1.36E-02	4.54E+00	9.61E-02	6.32E+02	2.47E-02	4.62E+02	2.08E-04
BREOT-N58-0 (0-6")	1.72E-01	1.72E-01	1.01E+00	1.20E+02	2.07E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.19E+02	5.73E-01	1.36E-02	4.54E+00	6.37E-02	6.32E+02	2.47E-02	4.62E+02	1.38E-04
BREOT-S58-0 (0-6")	1.72E-01	1.72E-01	1.01E+00	1.64E+02	2.81E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.62E+02	7.79E-01	1.36E-02	4.54E+00	8.66E-02	6.32E+02	2.47E-02	4.62E+02	1.87E-04
BREOT-N59-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N60-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S60-0 (0-6")	1.72E-01	1.72E-01	1.01E+00	2.28E+02	3.92E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.26E+02	1.09E+00	1.36E-02	4.54E+00	1.21E-01	6.32E+02	2.47E-02	4.62E+02	2.61E-04
BREOT-S61-0 (0-6")	1.72E-01	1.72E-01	1.01E+00	1.61E+02	2.76E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.59E+02	7.65E-01	1.36E-02	4.54E+00	8.51E-02	6.32E+02	2.47E-02	4.62E+02	1.84E-04
BREOT-N62-0 (0-6")	1.72E-01	1.72E-01	1.01E+00	8.40E+01	1.44E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	8.32E+01	4.00E-01	1.36E-02	4.54E+00	4.44E-02	6.32E+02	2.47E-02	4.62E+02	9.62E-05
BREOT-S62-0 (0-6")	1.72E-01	1.72E-01	1.01E+00	1.58E+02	2.70E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.56E+02	7.50E-01	1.36E-02	4.54E+00	8.33E-02	6.32E+02	2.47E-02	4.62E+02	1.80E-04
BREOT-N63-0 (0-6")	1.72E-01	1.72E-01	1.01E+00	1.58E+02	2.71E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.56E+02	7.51E-01	1.36E-02	4.54E+00	8.34E-02	6.32E+02	2.47E-02	4.62E+02	1.81E-04
BREOT-S63-0 (0-6")	1.72E-01	1.72E-01	1.01E+00	1.33E+02	2.29E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.32E+02	6.35E-01	1.36E-02	4.54E+00	7.06E-02	6.32E+02	2.47E-02	4.62E+02	1.53E-04
BREOT-N64-0 (0-6")	1.72E-01	1.72E-01	1.01E+00	8.76E+01	1.50E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	8.67E+01	4.17E-01	1.36E-02	4.54E+00	4.63E-02	6.32E+02	2.47E-02	4.62E+02	1.00E-04
BREOT-S64-0 (0-6")	1.72E-01	1.72E-01	1.01E+00	2.93E+02	5.02E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.90E+02	1.39E+00	1.36E-02	4.54E+00	1.55E-01	6.32E+02	2.47E-02	4.62E+02	3.35E-04
BREOT-N66-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S66-0 (0-6")	1.72E-01	1.72E-01	1.01E+00	1.79E+02	3.07E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.77E+02	8.51E-01	1.36E-02	4.54E+00	9.46E-02	6.32E+02	2.47E-02	4.62E+02	2.05E-04
BREOT-N67-0 (0-6")	1.72E-01	1.72E-01	1.01E+00	6.76E+02	1.16E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	6.69E+02	3.21E+00	1.36E-02	4.54E+00	3.57E-01	6.32E+02	2.47E-02	4.62E+02	7.73E-04
BREOT-S67-0 (0-6")	1.72E-01	1.72E-01	1.01E+00	1.00E+02	1.72E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	9.94E+01	4.78E-01	1.36E-02	4.54E+00	5.31E-02	6.32E+02	2.47E-02	4.62E+02	1.15E-04
Outside Tailings																						**Maximum HQ (At Edge of Tailings)**	**1.56E-02**
BREOT-S0+25 (0-6")	1.72E-01	1.72E-01	1.01E+00	9.04E+01	1.55E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	8.94E+01	4.30E-01	1.36E-02	4.54E+00	4.78E-02	6.32E+02	2.47E-02	4.62E+02	1.03E-04
BREOT-S1+25 (0-6")	1.72E-01	1.72E-01	1.01E+00	1.46E+02	2.51E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.45E+02	6.95E-01	1.36E-02	4.54E+00	7.73E-02	6.32E+02	2.47E-02	4.62E+02	1.67E-04

TABLE C-2C: COPPER DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 18.41

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Red Fox (Carnivorous Mammal - Terrestrial)																							
BREOT-S2+95 (0-6")	1.72E-01	1.72E-01	1.01E+00	3.42E+02	5.86E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.38E+02	1.62E+00	1.36E-02	4.54E+00	1.81E-01	6.32E+02	2.47E-02	4.62E+02	3.91E-04
BREOT-S3+6 (0-6")	1.72E-01	1.72E-01	1.01E+00	1.65E+02	2.83E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.63E+02	7.85E-01	1.36E-02	4.54E+00	8.73E-02	6.32E+02	2.47E-02	4.62E+02	1.89E-04
BREOT-S4+10 (0-6")	1.72E-01	1.72E-01	1.01E+00	8.20E+01	1.41E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	8.11E+01	3.90E-01	1.36E-02	4.54E+00	4.33E-02	6.32E+02	2.47E-02	4.62E+02	9.38E-05
BREOT-S6+25 (0-6")	1.72E-01	1.72E-01	1.01E+00	1.55E+02	2.66E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.53E+02	7.36E-01	1.36E-02	4.54E+00	8.18E-02	6.32E+02	2.47E-02	4.62E+02	1.77E-04
BREOT-S8+25 (0-6")	1.72E-01	1.72E-01	1.01E+00	1.73E+02	2.97E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.71E+02	8.22E-01	1.36E-02	4.54E+00	9.14E-02	6.32E+02	2.47E-02	4.62E+02	1.98E-04
BREOT-N10+25 (0-6")	1.72E-01	1.72E-01	1.01E+00	1.74E+02	2.99E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.73E+02	8.29E-01	1.36E-02	4.54E+00	9.21E-02	6.32E+02	2.47E-02	4.62E+02	1.99E-04
BREOT-N11+25 (0-6")	1.72E-01	1.72E-01	1.01E+00	3.05E+02	5.23E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.02E+02	1.45E+00	1.36E-02	4.54E+00	1.61E-01	6.32E+02	2.47E-02	4.62E+02	3.49E-04
BREOT-N12+25 (0-6")	1.72E-01	1.72E-01	1.01E+00	1.65E+02	2.84E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.64E+02	7.86E-01	1.36E-02	4.54E+00	8.74E-02	6.32E+02	2.47E-02	4.62E+02	1.89E-04
BREOT-S12+25 (0-6")	1.72E-01	1.72E-01	1.01E+00	1.39E+03	2.39E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.38E+03	6.62E+00	1.36E-02	4.54E+00	7.36E-01	6.32E+02	2.47E-02	4.62E+02	1.59E-03
BREOT-S12+60 (0-6")	1.72E-01	1.72E-01	1.01E+00	2.07E+02	3.54E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.04E+02	9.82E-01	1.36E-02	4.54E+00	1.09E-01	6.32E+02	2.47E-02	4.62E+02	2.36E-04
BREOT-N13+25 (0-6")	1.72E-01	1.72E-01	1.01E+00	2.36E+02	4.05E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.34E+02	1.12E+00	1.36E-02	4.54E+00	1.25E-01	6.32E+02	2.47E-02	4.62E+02	2.70E-04
BREOT-S13+25 (0-6")	1.72E-01	1.72E-01	1.01E+00	6.15E+02	1.06E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	6.09E+02	2.93E+00	1.36E-02	4.54E+00	3.25E-01	6.32E+02	2.47E-02	4.62E+02	7.04E-04
BREOT-S13+65 (0-6")	1.72E-01	1.72E-01	1.01E+00	3.06E+02	5.24E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.03E+02	1.45E+00	1.36E-02	4.54E+00	1.62E-01	6.32E+02	2.47E-02	4.62E+02	3.50E-04
BREOT-N14+25 (0-6")	1.72E-01	1.72E-01	1.01E+00	2.64E+02	4.52E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.61E+02	1.25E+00	1.36E-02	4.54E+00	1.39E-01	6.32E+02	2.47E-02	4.62E+02	3.02E-04
BREOT-S14+25 (0-6")	1.72E-01	1.72E-01	1.01E+00	1.66E+03	2.85E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.64E+03	7.90E+00	1.36E-02	4.54E+00	8.78E-01	6.32E+02	2.47E-02	4.62E+02	1.90E-03
BREOT-S14+59 (0-6")	1.72E-01	1.72E-01	1.01E+00	1.96E+02	3.36E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.94E+02	9.32E-01	1.36E-02	4.54E+00	1.04E-01	6.32E+02	2.47E-02	4.62E+02	2.24E-04
BREOT-N15+25 (0-6")	1.72E-01	1.72E-01	1.01E+00	1.33E+03	2.27E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.31E+03	6.30E+00	1.36E-02	4.54E+00	7.01E-01	6.32E+02	2.47E-02	4.62E+02	1.52E-03
BREOT-N15+50 (0-6")	1.72E-01	1.72E-01	1.01E+00	2.74E+02	4.70E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.71E+02	1.30E+00	1.36E-02	4.54E+00	1.45E-01	6.32E+02	2.47E-02	4.62E+02	3.13E-04
BREOT-S16+20 (0-6")	1.72E-01	1.72E-01	1.01E+00	8.06E+02	1.38E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	7.98E+02	3.83E+00	1.36E-02	4.54E+00	4.26E-01	6.32E+02	2.47E-02	4.62E+02	9.23E-04
BREOT-S16+75 (0-6")	1.72E-01	1.72E-01	1.01E+00	1.29E+02	2.22E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.28E+02	6.15E-01	1.36E-02	4.54E+00	6.84E-02	6.32E+02	2.47E-02	4.62E+02	1.48E-04
BREOT-N17+25 (0-6")	1.72E-01	1.72E-01	1.01E+00	8.00E+02	1.37E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	7.92E+02	3.80E+00	1.36E-02	4.54E+00	4.23E-01	6.32E+02	2.47E-02	4.62E+02	9.16E-04
BREOT-S18+25 (0-6")	1.72E-01	1.72E-01	1.01E+00	1.58E+02	2.71E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.56E+02	7.51E-01	1.36E-02	4.54E+00	8.35E-02	6.32E+02	2.47E-02	4.62E+02	1.81E-04
BREOT-N19+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S19+25 (0-6")	1.72E-01	1.72E-01	1.01E+00	6.06E+03	1.04E+03	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	6.00E+03	2.88E+01	1.36E-02	4.54E+00	3.20E+00	6.32E+02	2.47E-02	4.62E+02	6.93E-03
BREOT-S19+85 (0-6")	1.72E-01	1.72E-01	1.01E+00	2.41E+02	4.14E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.39E+02	1.15E+00	1.36E-02	4.54E+00	1.28E-01	6.32E+02	2.47E-02	4.62E+02	2.76E-04
BREOT-N20+25 (0-6")	1.72E-01	1.72E-01	1.01E+00	5.28E+02	9.06E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.23E+02	2.51E+00	1.36E-02	4.54E+00	2.79E-01	6.32E+02	2.47E-02	4.62E+02	6.04E-04
BREOT-S20+25 (0-6")	1.72E-01	1.72E-01	1.01E+00	3.32E+03	5.69E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.28E+03	1.58E+01	1.36E-02	4.54E+00	1.75E+00	6.32E+02	2.47E-02	4.62E+02	3.80E-03
BREOT-S20+75 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N21+25 (0-6")	1.72E-01	1.72E-01	1.01E+00	3.18E+02	5.46E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.15E+02	1.51E+00	1.36E-02	4.54E+00	1.68E-01	6.32E+02	2.47E-02	4.62E+02	3.64E-04
BREOT-S21+25 (0-6")	1.72E-01	1.72E-01	1.01E+00	8.90E+03	1.53E+03	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	8.81E+03	4.23E+01	1.36E-02	4.54E+00	4.70E+00	6.32E+02	2.47E-02	4.62E+02	1.02E-02
BREOT-N22+150 (0-6")	1.72E-01	1.72E-01	1.01E+00	2.47E+02	4.23E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.44E+02	1.17E+00	1.36E-02	4.54E+00	1.30E-01	6.32E+02	2.47E-02	4.62E+02	2.82E-04
BREOT-N22+25 (0-6")	1.72E-01	1.72E-01	1.01E+00	4.86E+02	8.34E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.81E+02	2.31E+00	1.36E-02	4.54E+00	2.57E-01	6.32E+02	2.47E-02	4.62E+02	5.56E-04
BREOT-S22+25 (0-6")	1.72E-01	1.72E-01	1.01E+00	1.95E+02	3.35E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.94E+02	9.29E-01	1.36E-02	4.54E+00	1.03E-01	6.32E+02	2.47E-02	4.62E+02	2.24E-04
BREOT-N23+115 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N23+25 (0-6")	1.72E-01	1.72E-01	1.01E+00	1.28E+03	2.19E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.27E+03	6.08E+00	1.36E-02	4.54E+00	6.76E-01	6.32E+02	2.47E-02	4.62E+02	1.46E-03
BREOT-S23+25 (0-6")	1.72E-01	1.72E-01	1.01E+00	3.52E+02	6.05E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.49E+02	1.68E+00	1.36E-02	4.54E+00	1.86E-01	6.32E+02	2.47E-02	4.62E+02	4.03E-04
BREOT-S23+37.5 (0-6")	1.72E-01	1.72E-01	1.01E+00	1.28E+02	2.20E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.27E+02	6.10E-01	1.36E-02	4.54E+00	6.78E-02	6.32E+02	2.47E-02	4.62E+02	1.47E-04
BREOT-N24+25 (0-6")	1.72E-01	1.72E-01	1.01E+00	3.17E+02	5.43E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.13E+02	1.50E+00	1.36E-02	4.54E+00	1.67E-01	6.32E+02	2.47E-02	4.62E+02	3.62E-04
BREOT-N24+75 (0-6")	1.72E-01	1.72E-01	1.01E+00	8.39E+01	1.44E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	8.30E+01	3.99E-01	1.36E-02	4.54E+00	4.43E-02	6.32E+02	2.47E-02	4.62E+02	9.60E-05
BREOT-S24+25 (0-6")	1.72E-01	1.72E-01	1.01E+00	1.90E+02	3.26E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.88E+02	9.02E-01	1.36E-02	4.54E+00	1.00E-01	6.32E+02	2.47E-02	4.62E+02	2.17E-04
BREOT-N25+25 (0-6")	1.72E-01	1.72E-01	1.01E+00	1.69E+02	2.90E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.68E+02	8.05E-01	1.36E-02	4.54E+00	8.95E-02	6.32E+02	2.47E-02	4.62E+02	1.94E-04
BREOT-S25+25 (0-6")	1.72E-01	1.72E-01	1.01E+00	1.75E+02	3.01E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.74E+02	8.34E-01	1.36E-02	4.54E+00	9.27E-02	6.32E+02	2.47E-02	4.62E+02	2.01E-04
BREOT-S25+40 (0-6")	1.72E-01	1.72E-01	1.01E+00	2.18E+02	3.74E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.16E+02	1.04E+00	1.36E-02	4.54E+00	1.15E-01	6.32E+02	2.47E-02	4.62E+02	2.50E-04
BREOT-S26+37 (0-6")	1.72E-01	1.72E-01	1.01E+00	8.50E+01	1.46E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	8.42E+01	4.04E-01	1.36E-02	4.54E+00	4.49E-02	6.32E+02	2.47E-02	4.62E+02	9.73E-05
BREOT-N27+25 (0-6")	1.72E-01	1.72E-01	1.01E+00	2.00E+02	3.44E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.98E+02	9.53E-01	1.36E-02	4.54E+00	1.06E-01	6.32E+02	2.47E-02	4.62E+02	2.29E-04
BREOT-S27+25 (0-6")	1.72E-01	1.72E-01	1.01E+00	1.96E+02	3.36E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.94E+02	9.32E-01	1.36E-02	4.54E+00	1.04E-01	6.32E+02	2.47E-02	4.62E+02	2.24E-04
BREOT-N28+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S28+25 (0-6")	1.72E-01	1.72E-01	1.01E+00	1.91E+02	3.28E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.89E+02	9.09E-01	1.36E-02	4.54E+00	1.01E-01	6.32E+02	2.47E-02	4.62E+02	2.19E-04
BREOT-N29+25 (0-6")	1.72E-01	1.72E-01	1.01E+00	1.97E+02	3.38E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.95E+02	9.38E-01	1.36E-02	4.54E+00	1.04E-01	6.32E+02	2.47E-02	4.62E+02	2.26E-04
BREOT-S29+25 (0-6")	1.72E-01	1.72E-01	1.01E+00	2.05E+02	3.52E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.03E+02	9.77E-01	1.36E-02	4.54E+00	1.09E-01	6.32E+02	2.47E-02	4.62E+02	2.35E-04
BREOT-N30+25 (0-6")	1.72E-01	1.72E-01	1.01E+00	3.21E+02	5.51E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.18E+02	1.53E+00	1.36E-02	4.54E+00	1.70E-01	6.32E+02	2.47E-02	4.62E+02	3.68E-04
BREOT-S30+25 (0-6")	1.72E-01	1.72E-01	1.01E+00	1.88E+02	3.23E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.86E+02	8.94E-01	1.36E-02	4.54E+00	9.94E-02	6.32E+02	2.47E-02	4.62E+02	2.15E-04
BREOT-N31+25 (0-6")	1.72E-01	1.72E-01	1.01E+00	2.14E+03	3.66E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.11E+03	1.02E+01	1.36E-02	4.54E+00	1.13E+00	6.32E+02	2.47E-02	4.62E+02	2.44E-03
BREOT-N31+75 (0-6")	1.72E-01	1.72E-01	1.01E+00	2.19E+02	3.76E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.17E+02	1.04E+00	1.36E-02	4.54E+00	1.16E-01	6.32E+02	2.47E-02	4.62E+02	2.51E-04
BREOT-S31+25 (0-6")	1.72E-01	1.72E-01	1.01E+00	8.46E+01	1.45E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	8.37E+01	4.02E-01	1.36E-02	4.54E+00	4.47E-02	6.32E+02	2.47E-02	4.62E+02	9.68E-05

TABLE C-2C: COPPER DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 18.41

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Red Fox (Carnivorous Mammal - Terrestrial)																							
BREOT-N32+25 (0-6")	1.72E-01	1.72E-01	1.01E+00	2.68E+02	4.59E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.65E+02	1.27E+00	1.36E-02	4.54E+00	1.42E-01	6.32E+02	2.47E-02	4.62E+02	3.06E-04
BREOT-S32+25 (0-6")	1.72E-01	1.72E-01	1.01E+00	4.08E+02	7.00E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.04E+02	1.94E+00	1.36E-02	4.54E+00	2.16E-01	6.32E+02	2.47E-02	4.62E+02	4.67E-04
BREOT-S32+300 (0-6")	1.72E-01	1.72E-01	1.01E+00	7.99E+02	1.37E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	7.91E+02	3.80E+00	1.36E-02	4.54E+00	4.22E-01	6.32E+02	2.47E-02	4.62E+02	9.15E-04
BREOT-N33+25 (0-6")	1.72E-01	1.72E-01	1.01E+00	3.87E+02	6.64E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.83E+02	1.84E+00	1.36E-02	4.54E+00	2.05E-01	6.32E+02	2.47E-02	4.62E+02	4.43E-04
BREOT-S33+25 (0-6")	1.72E-01	1.72E-01	1.01E+00	8.99E+02	1.54E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	8.90E+02	4.28E+00	1.36E-02	4.54E+00	4.75E-01	6.32E+02	2.47E-02	4.62E+02	1.03E-03
BREOT-N34+25 (0-6")	1.72E-01	1.72E-01	1.01E+00	3.65E+02	6.26E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.61E+02	1.74E+00	1.36E-02	4.54E+00	1.93E-01	6.32E+02	2.47E-02	4.62E+02	4.18E-04
BREOT-S34+25 (0-6")	1.72E-01	1.72E-01	1.01E+00	4.12E+02	7.07E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.08E+02	1.96E+00	1.36E-02	4.54E+00	2.18E-01	6.32E+02	2.47E-02	4.62E+02	4.72E-04
BREOT-N35+25 (0-6")	1.72E-01	1.72E-01	1.01E+00	2.89E+02	4.95E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.86E+02	1.37E+00	1.36E-02	4.54E+00	1.53E-01	6.32E+02	2.47E-02	4.62E+02	3.30E-04
BREOT-S35+25 (0-6")	1.72E-01	1.72E-01	1.01E+00	8.79E+02	1.51E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	8.70E+02	4.18E+00	1.36E-02	4.54E+00	4.65E-01	6.32E+02	2.47E-02	4.62E+02	1.01E-03
BREOT-N36+100 (0-6")	1.72E-01	1.72E-01	1.01E+00	1.60E+02	2.74E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.58E+02	7.59E-01	1.36E-02	4.54E+00	8.44E-02	6.32E+02	2.47E-02	4.62E+02	1.83E-04
BREOT-N36+25 (0-6")	1.72E-01	1.72E-01	1.01E+00	5.51E+02	9.44E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.45E+02	2.62E+00	1.36E-02	4.54E+00	2.91E-01	6.32E+02	2.47E-02	4.62E+02	6.30E-04
BREOT-S36+25 (0-6")	1.72E-01	1.72E-01	1.01E+00	8.10E+02	1.39E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	8.02E+02	3.85E+00	1.36E-02	4.54E+00	4.28E-01	6.32E+02	2.47E-02	4.62E+02	9.27E-04
BREOT-N37+25 (0-6")	1.72E-01	1.72E-01	1.01E+00	1.80E+02	3.09E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.78E+02	8.57E-01	1.36E-02	4.54E+00	9.53E-02	6.32E+02	2.47E-02	4.62E+02	2.06E-04
BREOT-S37+25 (0-6")	1.72E-01	1.72E-01	1.01E+00	1.12E+03	1.91E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.10E+03	5.30E+00	1.36E-02	4.54E+00	5.89E-01	6.32E+02	2.47E-02	4.62E+02	1.28E-03
BREOT-N38+25 (0-6")	1.72E-01	1.72E-01	1.01E+00	4.33E+02	7.43E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.29E+02	2.06E+00	1.36E-02	4.54E+00	2.29E-01	6.32E+02	2.47E-02	4.62E+02	4.96E-04
BREOT-S38+25 (0-6")	1.72E-01	1.72E-01	1.01E+00	1.06E+03	1.82E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.05E+03	5.04E+00	1.36E-02	4.54E+00	5.61E-01	6.32E+02	2.47E-02	4.62E+02	1.21E-03
BREOT-N39+25 (0-6")	1.72E-01	1.72E-01	1.01E+00	1.60E+02	2.74E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.58E+02	7.58E-01	1.36E-02	4.54E+00	8.43E-02	6.32E+02	2.47E-02	4.62E+02	1.83E-04
BREOT-S39+25 (0-6")	1.72E-01	1.72E-01	1.01E+00	8.87E+02	1.52E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	8.78E+02	4.22E+00	1.36E-02	4.54E+00	4.69E-01	6.32E+02	2.47E-02	4.62E+02	1.02E-03
BREOT-N40+25 (0-6")	1.72E-01	1.72E-01	1.01E+00	2.33E+02	3.99E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.30E+02	1.11E+00	1.36E-02	4.54E+00	1.23E-01	6.32E+02	2.47E-02	4.62E+02	2.66E-04
BREOT-S40+25 (0-6")	1.72E-01	1.72E-01	1.01E+00	8.25E+02	1.42E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	8.17E+02	3.92E+00	1.36E-02	4.54E+00	4.36E-01	6.32E+02	2.47E-02	4.62E+02	9.45E-04
BREOT-N41+25 (0-6")	1.72E-01	1.72E-01	1.01E+00	9.19E+01	1.58E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	9.10E+01	4.37E-01	1.36E-02	4.54E+00	4.86E-02	6.32E+02	2.47E-02	4.62E+02	1.05E-04
BREOT-S41+25 (0-6")	1.72E-01	1.72E-01	1.01E+00	3.19E+02	5.48E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.16E+02	1.52E+00	1.36E-02	4.54E+00	1.69E-01	6.32E+02	2.47E-02	4.62E+02	3.65E-04
BREOT-N42+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S42+25 (0-6")	1.72E-01	1.72E-01	1.01E+00	4.87E+02	8.36E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.82E+02	2.32E+00	1.36E-02	4.54E+00	2.58E-01	6.32E+02	2.47E-02	4.62E+02	5.58E-04
BREOT-N43+12.5 (0-6")	1.72E-01	1.72E-01	1.01E+00	1.54E+02	2.64E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.52E+02	7.32E-01	1.36E-02	4.54E+00	8.14E-02	6.32E+02	2.47E-02	4.62E+02	1.76E-04
BREOT-N43+40 (0-6")	1.72E-01	1.72E-01	1.01E+00	8.05E+01	1.38E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	7.97E+01	3.83E-01	1.36E-02	4.54E+00	4.26E-02	6.32E+02	2.47E-02	4.62E+02	9.21E-05
BREOT-S43+25 (0-6")	1.72E-01	1.72E-01	1.01E+00	1.99E+02	3.41E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.97E+02	9.46E-01	1.36E-02	4.54E+00	1.05E-01	6.32E+02	2.47E-02	4.62E+02	2.28E-04
BREOT-N44+55 (0-6")	1.72E-01	1.72E-01	1.01E+00	1.88E+02	3.23E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.86E+02	8.95E-01	1.36E-02	4.54E+00	9.95E-02	6.32E+02	2.47E-02	4.62E+02	2.15E-04
BREOT-S44+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N45+25 (0-6")	1.72E-01	1.72E-01	1.01E+00	8.68E+01	1.49E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	8.59E+01	4.12E-01	1.36E-02	4.54E+00	4.59E-02	6.32E+02	2.47E-02	4.62E+02	9.93E-05
BREOT-S45+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N46+25 (0-6")	1.72E-01	1.72E-01	1.01E+00	3.40E+02	5.82E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.36E+02	1.61E+00	1.36E-02	4.54E+00	1.79E-01	6.32E+02	2.47E-02	4.62E+02	3.89E-04
BREOT-S46+25 (0-6")	1.72E-01	1.72E-01	1.01E+00	1.55E+02	2.66E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.53E+02	7.36E-01	1.36E-02	4.54E+00	8.18E-02	6.32E+02	2.47E-02	4.62E+02	1.77E-04
BREOT-N47+25 (0-6")	1.72E-01	1.72E-01	1.01E+00	2.56E+02	4.39E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.53E+02	1.22E+00	1.36E-02	4.54E+00	1.35E-01	6.32E+02	2.47E-02	4.62E+02	2.93E-04
BREOT-S47+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N48+25 (0-6")	1.72E-01	1.72E-01	1.01E+00	8.05E+01	1.38E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	7.96E+01	3.83E-01	1.36E-02	4.54E+00	4.25E-02	6.32E+02	2.47E-02	4.62E+02	9.21E-05
BREOT-S48+25 (0-6")	1.72E-01	1.72E-01	1.01E+00	8.86E+01	1.52E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	8.77E+01	4.21E-01	1.36E-02	4.54E+00	4.68E-02	6.32E+02	2.47E-02	4.62E+02	1.01E-04
BREOT-N49+25 (0-6")	1.72E-01	1.72E-01	1.01E+00	1.05E+02	1.79E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.03E+02	4.97E-01	1.36E-02	4.54E+00	5.53E-02	6.32E+02	2.47E-02	4.62E+02	1.20E-04
BREOT-S49+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N51+25 (0-6")	1.72E-01	1.72E-01	1.01E+00	9.24E+01	1.59E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	9.15E+01	4.40E-01	1.36E-02	4.54E+00	4.89E-02	6.32E+02	2.47E-02	4.62E+02	1.06E-04
BREOT-S51+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N52+25 (0-6")	1.72E-01	1.72E-01	1.01E+00	1.16E+02	1.99E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.15E+02	5.52E-01	1.36E-02	4.54E+00	6.14E-02	6.32E+02	2.47E-02	4.62E+02	1.33E-04
BREOT-S52+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N53+25 (0-6")	1.72E-01	1.72E-01	1.01E+00	1.13E+02	1.93E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.12E+02	5.36E-01	1.36E-02	4.54E+00	5.96E-02	6.32E+02	2.47E-02	4.62E+02	1.29E-04
BREOT-S53+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S54+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N55+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S55+25 (0-6")	1.72E-01	1.72E-01	1.01E+00	8.94E+01	1.53E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	8.85E+01	4.25E-01	1.36E-02	4.54E+00	4.72E-02	6.32E+02	2.47E-02	4.62E+02	1.02E-04
BREOT-N56+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S56+25 (0-6")	1.72E-01	1.72E-01	1.01E+00	2.03E+02	3.49E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.01E+02	9.67E-01	1.36E-02	4.54E+00	1.08E-01	6.32E+02	2.47E-02	4.62E+02	2.33E-04
BREOT-N57+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S57+25 (0-6")	1.72E-01	1.72E-01	1.01E+00	1.42E+02	2.44E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.41E+02	6.76E-01	1.36E-02	4.54E+00	7.52E-02	6.32E+02	2.47E-02	4.62E+02	1.63E-04
BREOT-N58+25 (0-6")	1.72E-01	1.72E-01	1.01E+00	8.21E+01	1.41E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	8.13E+01	3.90E-01	1.36E-02	4.54E+00	4.34E-02	6.32E+02	2.47E-02	4.62E+02	9.39E-05
BREOT-S58+25 (0-6")	1.72E-01	1.72E-01	1.01E+00	1.57E+02	2.70E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.56E+02	7.48E-01	1.36E-02	4.54E+00	8.32E-02	6.32E+02	2.47E-02	4.62E+02	1.80E-04
BREOT-N59+25 (0-6")	1.72E-01	1.72E-01	1.01E+00	1.12E+02	1.93E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.11E+02	5.34E-01	1.36E-02	4.54E+00	5.93E-02	6.32E+02	2.47E-02	4.62E+02	1.28E-04

TABLE C-2C: COPPER DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **18.41**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Red Fox (Carnivorous Mammal - Terrestrial)																							
BREOT-N60+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S60+25 (0-6")	1.72E-01	1.72E-01	1.01E+00	2.03E+02	3.48E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.01E+02	9.65E-01	1.36E-02	4.54E+00	1.07E-01	6.32E+02	2.47E-02	4.62E+02	2.32E-04
BREOT-S61+25 (0-6")	1.72E-01	1.72E-01	1.01E+00	1.64E+02	2.81E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.62E+02	7.79E-01	1.36E-02	4.54E+00	8.66E-02	6.32E+02	2.47E-02	4.62E+02	1.87E-04
BREOT-N62+25 (0-6")	1.72E-01	1.72E-01	1.01E+00	1.08E+02	1.86E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.07E+02	5.15E-01	1.36E-02	4.54E+00	5.72E-02	6.32E+02	2.47E-02	4.62E+02	1.24E-04
BREOT-S62+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N63+25 (0-6")	1.72E-01	1.72E-01	1.01E+00	2.67E+02	4.58E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.64E+02	1.27E+00	1.36E-02	4.54E+00	1.41E-01	6.32E+02	2.47E-02	4.62E+02	3.05E-04
BREOT-S63+25 (0-6")	1.72E-01	1.72E-01	1.01E+00	9.89E+01	1.70E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	9.79E+01	4.70E-01	1.36E-02	4.54E+00	5.23E-02	6.32E+02	2.47E-02	4.62E+02	1.13E-04
BREOT-N64+25 (0-6")	1.72E-01	1.72E-01	1.01E+00	1.00E+02	1.72E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	9.92E+01	4.76E-01	1.36E-02	4.54E+00	5.30E-02	6.32E+02	2.47E-02	4.62E+02	1.15E-04
BREOT-S64+25 (0-6")	1.72E-01	1.72E-01	1.01E+00	2.92E+02	5.02E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.89E+02	1.39E+00	1.36E-02	4.54E+00	1.55E-01	6.32E+02	2.47E-02	4.62E+02	3.35E-04
BREOT-S65+25 (0-6")	1.72E-01	1.72E-01	1.01E+00	2.72E+02	4.66E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.69E+02	1.29E+00	1.36E-02	4.54E+00	1.44E-01	6.32E+02	2.47E-02	4.62E+02	3.11E-04
BREOT-N66+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S66+25 (0-6")	1.72E-01	1.72E-01	1.01E+00	2.70E+02	4.64E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.67E+02	1.28E+00	1.36E-02	4.54E+00	1.43E-01	6.32E+02	2.47E-02	4.62E+02	3.09E-04
BREOT-N67+125 (0-6")	1.72E-01	1.72E-01	1.01E+00	1.50E+02	2.57E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.48E+02	7.11E-01	1.36E-02	4.54E+00	7.90E-02	6.32E+02	2.47E-02	4.62E+02	1.71E-04
BREOT-S67+25 (0-6")	1.72E-01	1.72E-01	1.01E+00	3.08E+02	5.29E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.05E+02	1.47E+00	1.36E-02	4.54E+00	1.63E-01	6.32E+02	2.47E-02	4.62E+02	3.53E-04
BREOT-N67+25 (0-6")	1.72E-01	1.72E-01	1.01E+00	1.78E+02	3.05E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.76E+02	8.47E-01	1.36E-02	4.54E+00	9.41E-02	6.32E+02	2.47E-02	4.62E+02	2.04E-04
																						Maximum HQ (Outside Tailings)	**1.02E-02**
Masked Shrew (Omnivorous Mammal - Terrestrial, Wetland)																							
Reference Sites																							
ACBG-1 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	3.70E+00	2.95E+02	2.50E+00	1.10E-03	7.96E+01	8.76E-02	1.00E+00	5.50E-03	4.70E+02	6.32E+02	2.47E-02	6.91E+02	6.80E-01
ACBG-2 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	3.70E+00	9.26E+02	7.85E+00	1.10E-03	2.50E+02	2.75E-01	1.00E+00	5.50E-03	1.48E+03	6.32E+02	2.47E-02	6.91E+02	2.14E+00
UBRBG-202 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	3.70E+00	8.09E+02	6.86E+00	1.10E-03	2.18E+02	2.41E-01	1.00E+00	5.50E-03	1.29E+03	6.32E+02	2.47E-02	6.91E+02	1.87E+00
UBRBG-204 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	3.70E+00	3.86E+02	3.27E+00	1.10E-03	1.04E+02	1.15E-01	1.00E+00	5.50E-03	6.16E+02	6.32E+02	2.47E-02	6.91E+02	8.91E-01
Inside Tailings																						**Minimum HQ (Reference Sites)**	**6.80E-01**
BREOT-S6-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	1.18E+03	1.00E+01	1.10E-03	2.44E+02	2.68E-01	1.00E+00	5.50E-03	1.87E+03	6.32E+02	2.47E-02	6.91E+02	2.70E+00
BREOT-S2-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	3.55E+03	3.01E+01	1.10E-03	7.32E+02	8.06E-01	1.00E+00	5.50E-03	5.61E+03	6.32E+02	2.47E-02	6.91E+02	8.12E+00
BREOT-S0-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	6.71E+02	5.69E+00	1.10E-03	1.38E+02	1.52E-01	1.00E+00	5.50E-03	1.06E+03	6.32E+02	2.47E-02	6.91E+02	1.54E+00
BREOT-S1-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	5.27E+02	4.47E+00	1.10E-03	1.09E+02	1.20E-01	1.00E+00	5.50E-03	8.34E+02	6.32E+02	2.47E-02	6.91E+02	1.21E+00
BREOT-S7-25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	9.30E+02	7.88E+00	1.10E-03	1.92E+02	2.11E-01	1.00E+00	5.50E-03	1.47E+03	6.32E+02	2.47E-02	6.91E+02	2.13E+00
BREOT-S8-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	7.83E+02	6.63E+00	1.10E-03	1.61E+02	1.78E-01	1.00E+00	5.50E-03	1.24E+03	6.32E+02	2.47E-02	6.91E+02	1.79E+00
BREOT-S9-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	1.05E+03	8.89E+00	1.10E-03	2.16E+02	2.38E-01	1.00E+00	5.50E-03	1.66E+03	6.32E+02	2.47E-02	6.91E+02	2.40E+00
BREOT-N10-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	7.62E+03	6.45E+01	1.10E-03	1.57E+03	1.73E+00	1.00E+00	5.50E-03	1.20E+04	6.32E+02	2.47E-02	6.91E+02	1.74E+01
BREOT-N11-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	1.08E+03	9.16E+00	1.10E-03	2.23E+02	2.45E-01	1.00E+00	5.50E-03	1.71E+03	6.32E+02	2.47E-02	6.91E+02	2.47E+00
BREOT-N11-125 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	8.09E+02	6.85E+00	1.10E-03	1.67E+02	1.84E-01	1.00E+00	5.50E-03	1.28E+03	6.32E+02	2.47E-02	6.91E+02	1.85E+00
BREOT-S11-12 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	5.32E+03	4.51E+01	1.10E-03	1.10E+03	1.21E+00	1.00E+00	5.50E-03	8.41E+03	6.32E+02	2.47E-02	6.91E+02	1.22E+01
BREOT-S11+63 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	1.22E+03	1.04E+01	1.10E-03	2.52E+02	2.78E-01	1.00E+00	5.50E-03	1.93E+03	6.32E+02	2.47E-02	6.91E+02	2.80E+00
UBDT-TP-6 (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	1.22E+04	1.03E+02	1.10E-03	2.51E+03	2.76E+00	1.00E+00	5.50E-03	1.92E+04	6.32E+02	2.47E-02	6.91E+02	2.78E+01
UBDT-TP-6 (2-12")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	9.55E+03	8.09E+01	1.10E-03	1.97E+03	2.17E+00	1.00E+00	5.50E-03	1.51E+04	6.32E+02	2.47E-02	6.91E+02	2.19E+01
UBDT-TP-6 (12-24")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	1.81E+04	1.53E+02	1.10E-03	3.72E+03	4.10E+00	1.00E+00	5.50E-03	2.85E+04	6.32E+02	2.47E-02	6.91E+02	4.13E+01
UBDT-TP-6 (24-36")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	1.04E+03	8.84E+00	1.10E-03	2.15E+02	2.37E-01	1.00E+00	5.50E-03	1.65E+03	6.32E+02	2.47E-02	6.91E+02	2.39E+00
UBDT-TP-6 (36-48")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	7.66E+03	6.48E+01	1.10E-03	1.58E+03	1.74E+00	1.00E+00	5.50E-03	1.21E+04	6.32E+02	2.47E-02	6.91E+02	1.75E+01
UBDT-TP-6 (48-60")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	4.43E+03	3.75E+01	1.10E-03	9.13E+02	1.00E+00	1.00E+00	5.50E-03	7.00E+03	6.32E+02	2.47E-02	6.91E+02	1.01E+01
BREOT-N12-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	1.42E+03	1.20E+01	1.10E-03	2.92E+02	3.22E-01	1.00E+00	5.50E-03	2.24E+03	6.32E+02	2.47E-02	6.91E+02	3.24E+00
BREOT-S12-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	2.53E+03	2.14E+01	1.10E-03	5.21E+02	5.74E-01	1.00E+00	5.50E-03	4.00E+03	6.32E+02	2.47E-02	6.91E+02	5.79E+00
BREOT-S13-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	4.88E+03	4.14E+01	1.10E-03	1.01E+03	1.11E+00	1.00E+00	5.50E-03	7.72E+03	6.32E+02	2.47E-02	6.91E+02	1.12E+01
BREOT-S14-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	1.98E+03	1.68E+01	1.10E-03	4.09E+02	4.50E-01	1.00E+00	5.50E-03	3.14E+03	6.32E+02	2.47E-02	6.91E+02	4.54E+00
BREOT-N15-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	1.40E+03	1.19E+01	1.10E-03	2.89E+02	3.19E-01	1.00E+00	5.50E-03	2.22E+03	6.32E+02	2.47E-02	6.91E+02	3.21E+00
BREOT-S15-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	1.53E+03	1.30E+01	1.10E-03	3.16E+02	3.48E-01	1.00E+00	5.50E-03	2.42E+03	6.32E+02	2.47E-02	6.91E+02	3.50E+00
BREOT-N16-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	1.80E+03	1.52E+01	1.10E-03	3.71E+02	4.08E-01	1.00E+00	5.50E-03	2.85E+03	6.32E+02	2.47E-02	6.91E+02	4.12E+00
BREOT-N16-25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	9.96E+02	8.44E+00	1.10E-03	2.05E+02	2.26E-01	1.00E+00	5.50E-03	1.57E+03	6.32E+02	2.47E-02	6.91E+02	2.28E+00
BREOT-S16-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	7.45E+02	6.31E+00	1.10E-03	1.54E+02	1.69E-01	1.00E+00	5.50E-03	1.18E+03	6.32E+02	2.47E-02	6.91E+02	1.71E+00
BREOT-N17-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	7.63E+02	6.47E+00	1.10E-03	1.57E+02	1.73E-01	1.00E+00	5.50E-03	1.21E+03	6.32E+02	2.47E-02	6.91E+02	1.75E+00
BREOT-S17-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	6.64E+02	5.63E+00	1.10E-03	1.37E+02	1.51E-01	1.00E+00	5.50E-03	1.05E+03	6.32E+02	2.47E-02	6.91E+02	1.52E+00
BREOT-S17-25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	4.79E+02	4.06E+00	1.10E-03	9.88E+01	1.09E-01	1.00E+00	5.50E-03	7.58E+02	6.32E+02	2.47E-02	6.91E+02	1.10E+00
UBDT-TP-4 (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	1.67E+03	1.42E+01	1.10E-03	3.45E+02	3.80E-01	1.00E+00	5.50E-03	2.65E+03	6.32E+02	2.47E-02	6.91E+02	3.83E+00
UBDT-TP-4 (2-12")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	1.53E+03	1.29E+01	1.10E-03	3.15E+02	3.47E-01	1.00E+00	5.50E-03	2.42E+03	6.32E+02	2.47E-02	6.91E+02	3.49E+00
UBDT-TP-4 (12-24")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	1.47E+03	1.25E+01	1.10E-03	3.04E+02	3.34E-01	1.00E+00	5.50E-03	2.33E+03	6.32E+02	2.47E-02	6.91E+02	3.37E+00
UBDT-TP-4 (24-36")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	8.04E+02	6.81E+00	1.10E-03	1.66E+02	1.82E-01	1.00E+00	5.50E-03	1.27E+03	6.32E+02	2.47E-02	6.91E+02	1.84E+00

TABLE C-2C: COPPER DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 18.41

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Masked Shrew (Omnivorous Mammal - Terrestrial, Wetland)																							
BREOT-N18-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	2.18E+03	1.85E+01	1.10E-03	4.50E+02	4.96E-01	1.00E+00	5.50E-03	3.45E+03	6.32E+02	2.47E-02	6.91E+02	5.00E+00
BREOT-N18-25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S18-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	1.07E+03	9.04E+00	1.10E-03	2.20E+02	2.42E-01	1.00E+00	5.50E-03	1.69E+03	6.32E+02	2.47E-02	6.91E+02	2.44E+00
BREOT-N19-10 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	1.15E+03	9.76E+00	1.10E-03	2.38E+02	2.62E-01	1.00E+00	5.50E-03	1.82E+03	6.32E+02	2.47E-02	6.91E+02	2.64E+00
BREOT-S19-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	1.24E+03	1.05E+01	1.10E-03	2.56E+02	2.82E-01	1.00E+00	5.50E-03	1.96E+03	6.32E+02	2.47E-02	6.91E+02	2.84E+00
UBDT-TP-5 (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	1.99E+03	1.69E+01	1.10E-03	4.11E+02	4.52E-01	1.00E+00	5.50E-03	3.15E+03	6.32E+02	2.47E-02	6.91E+02	4.56E+00
UBDT-TP-5 (2-12")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	1.58E+03	1.34E+01	1.10E-03	3.25E+02	3.58E-01	1.00E+00	5.50E-03	2.50E+03	6.32E+02	2.47E-02	6.91E+02	3.61E+00
UBDT-TP-5 (12-24")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	1.67E+03	1.42E+01	1.10E-03	3.45E+02	3.80E-01	1.00E+00	5.50E-03	2.65E+03	6.32E+02	2.47E-02	6.91E+02	3.83E+00
BREOT-N20-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	8.24E+02	6.98E+00	1.10E-03	1.70E+02	1.87E-01	1.00E+00	5.50E-03	1.30E+03	6.32E+02	2.47E-02	6.91E+02	1.88E+00
UBDT-TP-3 (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	1.37E+03	1.16E+01	1.10E-03	2.83E+02	3.12E-01	1.00E+00	5.50E-03	2.17E+03	6.32E+02	2.47E-02	6.91E+02	3.14E+00
UBDT-TP-3 (2-12")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	9.25E+02	7.83E+00	1.10E-03	1.91E+02	2.10E-01	1.00E+00	5.50E-03	1.46E+03	6.32E+02	2.47E-02	6.91E+02	2.12E+00
UBDT-TP-3 (12-24")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	1.01E+03	8.56E+00	1.10E-03	2.08E+02	2.29E-01	1.00E+00	5.50E-03	1.60E+03	6.32E+02	2.47E-02	6.91E+02	2.31E+00
UBDT-TP-3 (24-36")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	1.09E+03	9.21E+00	1.10E-03	2.24E+02	2.47E-01	1.00E+00	5.50E-03	1.72E+03	6.32E+02	2.47E-02	6.91E+02	2.49E+00
UBDT-TP-3 (36-48")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	1.70E+03	1.44E+01	1.10E-03	3.50E+02	3.86E-01	1.00E+00	5.50E-03	2.69E+03	6.32E+02	2.47E-02	6.91E+02	3.89E+00
UBDT-TP-3 (48-60")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	8.93E+02	7.56E+00	1.10E-03	1.84E+02	2.03E-01	1.00E+00	5.50E-03	1.41E+03	6.32E+02	2.47E-02	6.91E+02	2.04E+00
BREOT-N21-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	1.38E+03	1.17E+01	1.10E-03	2.84E+02	3.12E-01	1.00E+00	5.50E-03	2.18E+03	6.32E+02	2.47E-02	6.91E+02	3.15E+00
BREOT-N22-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	1.00E+03	8.48E+00	1.10E-03	2.06E+02	2.27E-01	1.00E+00	5.50E-03	1.58E+03	6.32E+02	2.47E-02	6.91E+02	2.29E+00
BREOT-N23-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	1.14E+03	9.62E+00	1.10E-03	2.34E+02	2.58E-01	1.00E+00	5.50E-03	1.80E+03	6.32E+02	2.47E-02	6.91E+02	2.60E+00
BREOT-S23-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	3.86E+03	3.27E+01	1.10E-03	7.95E+02	8.75E-01	1.00E+00	5.50E-03	6.10E+03	6.32E+02	2.47E-02	6.91E+02	8.82E+00
UBDT-TP-2 (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	2.17E+03	1.84E+01	1.10E-03	4.48E+02	4.93E-01	1.00E+00	5.50E-03	3.44E+03	6.32E+02	2.47E-02	6.91E+02	4.97E+00
UBDT-TP-2 (2-12")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	2.18E+03	1.84E+01	1.10E-03	4.49E+02	4.94E-01	1.00E+00	5.50E-03	3.44E+03	6.32E+02	2.47E-02	6.91E+02	4.98E+00
UBDT-TP-2 (12-24")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	1.49E+03	1.26E+01	1.10E-03	3.07E+02	3.38E-01	1.00E+00	5.50E-03	2.35E+03	6.32E+02	2.47E-02	6.91E+02	3.41E+00
UBDT-TP-2 (24-36")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	9.05E+02	7.66E+00	1.10E-03	1.87E+02	2.05E-01	1.00E+00	5.50E-03	1.43E+03	6.32E+02	2.47E-02	6.91E+02	2.07E+00
UBDT-TP-2 (36-48")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	1.19E+03	1.01E+01	1.10E-03	2.46E+02	2.71E-01	1.00E+00	5.50E-03	1.88E+03	6.32E+02	2.47E-02	6.91E+02	2.73E+00
BREOT-S24-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	3.28E+03	2.78E+01	1.10E-03	6.77E+02	7.46E-01	1.00E+00	5.50E-03	5.19E+03	6.32E+02	2.47E-02	6.91E+02	7.52E+00
BREOT-N25-50 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	7.85E+03	6.65E+01	1.10E-03	1.62E+03	1.78E+00	1.00E+00	5.50E-03	1.24E+04	6.32E+02	2.47E-02	6.91E+02	1.80E+01
BREOT-N25-95 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	5.21E+02	4.42E+00	1.10E-03	1.08E+02	1.18E-01	1.00E+00	5.50E-03	8.24E+02	6.32E+02	2.47E-02	6.91E+02	1.19E+00
BREOT-S25-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	1.89E+03	1.60E+01	1.10E-03	3.89E+02	4.28E-01	1.00E+00	5.50E-03	2.98E+03	6.32E+02	2.47E-02	6.91E+02	4.32E+00
BREOT-S25-40 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	8.14E+02	6.89E+00	1.10E-03	1.68E+02	1.85E-01	1.00E+00	5.50E-03	1.29E+03	6.32E+02	2.47E-02	6.91E+02	1.86E+00
BREOT-N26A-25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	4.83E+02	4.09E+00	1.10E-03	9.96E+01	1.10E-01	1.00E+00	5.50E-03	7.64E+02	6.32E+02	2.47E-02	6.91E+02	1.11E+00
BREOT-N26B-25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	3.56E+03	3.02E+01	1.10E-03	7.35E+02	8.09E-01	1.00E+00	5.50E-03	5.63E+03	6.32E+02	2.47E-02	6.91E+02	8.15E+00
BREOT-N26-50 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	6.04E+03	5.12E+01	1.10E-03	1.25E+03	1.37E+00	1.00E+00	5.50E-03	9.55E+03	6.32E+02	2.47E-02	6.91E+02	1.38E+01
BREOT-N26-75 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	5.02E+03	4.26E+01	1.10E-03	1.04E+03	1.14E+00	1.00E+00	5.50E-03	7.95E+03	6.32E+02	2.47E-02	6.91E+02	1.15E+01
BREOT-S26-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	5.82E+02	4.93E+00	1.10E-03	1.20E+02	1.32E-01	1.00E+00	5.50E-03	9.21E+02	6.32E+02	2.47E-02	6.91E+02	1.33E+00
BREOT-S26-40 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	1.98E+03	1.68E+01	1.10E-03	4.08E+02	4.50E-01	1.00E+00	5.50E-03	3.13E+03	6.32E+02	2.47E-02	6.91E+02	4.53E+00
BREOT-N27-30 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	5.97E+03	5.05E+01	1.10E-03	1.23E+03	1.35E+00	1.00E+00	5.50E-03	9.44E+03	6.32E+02	2.47E-02	6.91E+02	1.37E+01
BREOT-N27-75 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	1.05E+04	8.91E+01	1.10E-03	2.17E+03	2.39E+00	1.00E+00	5.50E-03	1.66E+04	6.32E+02	2.47E-02	6.91E+02	2.41E+01
BREOT-S27-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	1.53E+03	1.30E+01	1.10E-03	3.16E+02	3.48E-01	1.00E+00	5.50E-03	2.42E+03	6.32E+02	2.47E-02	6.91E+02	3.50E+00
BREOT-N28-110 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	2.47E+03	2.09E+01	1.10E-03	5.09E+02	5.61E-01	1.00E+00	5.50E-03	3.91E+03	6.32E+02	2.47E-02	6.91E+02	5.65E+00
BREOT-N28-55 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	1.43E+04	1.21E+02	1.10E-03	2.95E+03	3.25E+00	1.00E+00	5.50E-03	2.26E+04	6.32E+02	2.47E-02	6.91E+02	3.27E+01
BREOT-S28-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	2.08E+03	1.76E+01	1.10E-03	4.29E+02	4.72E-01	1.00E+00	5.50E-03	3.29E+03	6.32E+02	2.47E-02	6.91E+02	4.76E+00
UBDT-TP-1 (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	4.76E+03	4.03E+01	1.10E-03	9.81E+02	1.08E+00	1.00E+00	5.50E-03	7.52E+03	6.32E+02	2.47E-02	6.91E+02	1.09E+01
UBDT-TP-1 (2-12")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	9.76E+03	8.26E+01	1.10E-03	2.01E+03	2.21E+00	1.00E+00	5.50E-03	1.54E+04	6.32E+02	2.47E-02	6.91E+02	2.23E+01
UBDT-TP-1 (12-24")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	8.82E+03	7.47E+01	1.10E-03	1.82E+03	2.00E+00	1.00E+00	5.50E-03	1.40E+04	6.32E+02	2.47E-02	6.91E+02	2.02E+01
UBDT-TP-1 (24-36")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	6.52E+03	5.52E+01	1.10E-03	1.34E+03	1.48E+00	1.00E+00	5.50E-03	1.03E+04	6.32E+02	2.47E-02	6.91E+02	1.49E+01
UBDT-TP-1 (36-48")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	1.41E+03	1.20E+01	1.10E-03	2.92E+02	3.21E-01	1.00E+00	5.50E-03	2.24E+03	6.32E+02	2.47E-02	6.91E+02	3.23E+00
UBDT-TP-1 (48-60")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	8.91E+02	7.55E+00	1.10E-03	1.84E+02	2.02E-01	1.00E+00	5.50E-03	1.41E+03	6.32E+02	2.47E-02	6.91E+02	2.04E+00
BREOT-N29-30 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	1.20E+04	1.02E+02	1.10E-03	2.47E+03	2.72E+00	1.00E+00	5.50E-03	1.90E+04	6.32E+02	2.47E-02	6.91E+02	2.74E+01
BREOT-S29-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	1.95E+03	1.65E+01	1.10E-03	4.02E+02	4.43E-01	1.00E+00	5.50E-03	3.08E+03	6.32E+02	2.47E-02	6.91E+02	4.46E+00
BREOT-N30-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	2.19E+03	1.86E+01	1.10E-03	4.52E+02	4.98E-01	1.00E+00	5.50E-03	3.47E+03	6.32E+02	2.47E-02	6.91E+02	5.01E+00
BREOT-S30-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	1.52E+03	1.29E+01	1.10E-03	3.13E+02	3.44E-01	1.00E+00	5.50E-03	2.40E+03	6.32E+02	2.47E-02	6.91E+02	3.47E+00
BREOT-N31-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	1.54E+03	1.31E+01	1.10E-03	3.18E+02	3.51E-01	1.00E+00	5.50E-03	2.44E+03	6.32E+02	2.47E-02	6.91E+02	3.53E+00
BREOT-S31-25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	9.58E+02	8.11E+00	1.10E-03	1.98E+02	2.17E-01	1.00E+00	5.50E-03	1.51E+03	6.32E+02	2.47E-02	6.91E+02	2.19E+00
BREOT-S31-5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	1.44E+03	1.22E+01	1.10E-03	2.97E+02	3.27E-01	1.00E+00	5.50E-03	2.28E+03	6.32E+02	2.47E-02	6.91E+02	3.29E+00
BREOT-N32-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	1.03E+03	8.74E+00	1.10E-03	2.13E+02	2.34E-01	1.00E+00	5.50E-03	1.63E+03	6.32E+02	2.47E-02	6.91E+02	2.36E+00

TABLE C-2C: COPPER DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 18.41

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Masked Shrew (Omnivorous Mammal - Terrestrial, Wetland)																							
BREOT-S32-6 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	1.02E+03	8.68E+00	1.10E-03	2.11E+02	2.33E-01	1.00E+00	5.50E-03	1.62E+03	6.32E+02	2.47E-02	6.91E+02	2.34E+00
BREOT-N33-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	1.15E+03	9.73E+00	1.10E-03	2.37E+02	2.61E-01	1.00E+00	5.50E-03	1.82E+03	6.32E+02	2.47E-02	6.91E+02	2.63E+00
BREOT-S33-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	2.81E+03	2.38E+01	1.10E-03	5.80E+02	6.39E-01	1.00E+00	5.50E-03	4.45E+03	6.32E+02	2.47E-02	6.91E+02	6.43E+00
BREOT-N35-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	9.06E+02	7.67E+00	1.10E-03	1.87E+02	2.06E-01	1.00E+00	5.50E-03	1.43E+03	6.32E+02	2.47E-02	6.91E+02	2.07E+00
BREOT-S35-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	2.20E+03	1.86E+01	1.10E-03	4.53E+02	4.99E-01	1.00E+00	5.50E-03	3.47E+03	6.32E+02	2.47E-02	6.91E+02	5.03E+00
BREOT-N36-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	1.48E+03	1.25E+01	1.10E-03	3.05E+02	3.36E-01	1.00E+00	5.50E-03	2.34E+03	6.32E+02	2.47E-02	6.91E+02	3.39E+00
BREOT-S36-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	9.80E+02	8.30E+00	1.10E-03	2.02E+02	2.22E-01	1.00E+00	5.50E-03	1.55E+03	6.32E+02	2.47E-02	6.91E+02	2.24E+00
BREOT-N37-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	8.93E+02	7.57E+00	1.10E-03	1.84E+02	2.03E-01	1.00E+00	5.50E-03	1.41E+03	6.32E+02	2.47E-02	6.91E+02	2.04E+00
BREOT-S37-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	1.44E+03	1.22E+01	1.10E-03	2.96E+02	3.26E-01	1.00E+00	5.50E-03	2.27E+03	6.32E+02	2.47E-02	6.91E+02	3.28E+00
BREOT-N38-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	1.01E+03	8.55E+00	1.10E-03	2.08E+02	2.29E-01	1.00E+00	5.50E-03	1.60E+03	6.32E+02	2.47E-02	6.91E+02	2.31E+00
BREOT-S38-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	3.38E+03	2.86E+01	1.10E-03	6.96E+02	7.66E-01	1.00E+00	5.50E-03	5.34E+03	6.32E+02	2.47E-02	6.91E+02	7.72E+00
BREOT-N39-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	1.47E+03	1.25E+01	1.10E-03	3.03E+02	3.34E-01	1.00E+00	5.50E-03	2.33E+03	6.32E+02	2.47E-02	6.91E+02	3.37E+00
BREOT-S39-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	2.53E+03	2.14E+01	1.10E-03	5.21E+02	5.74E-01	1.00E+00	5.50E-03	3.99E+03	6.32E+02	2.47E-02	6.91E+02	5.78E+00
BREOT-N40-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	1.96E+03	1.66E+01	1.10E-03	4.04E+02	4.45E-01	1.00E+00	5.50E-03	3.10E+03	6.32E+02	2.47E-02	6.91E+02	4.48E+00
BREOT-S40-14 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	2.40E+03	2.03E+01	1.10E-03	4.95E+02	5.45E-01	1.00E+00	5.50E-03	3.79E+03	6.32E+02	2.47E-02	6.91E+02	5.49E+00
BREOT-N41-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	1.46E+03	1.23E+01	1.10E-03	3.00E+02	3.30E-01	1.00E+00	5.50E-03	2.30E+03	6.32E+02	2.47E-02	6.91E+02	3.33E+00
BREOT-S41-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	2.19E+03	1.85E+01	1.10E-03	4.51E+02	4.97E-01	1.00E+00	5.50E-03	3.46E+03	6.32E+02	2.47E-02	6.91E+02	5.01E+00
BREOT-N42-35 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	1.18E+03	1.00E+01	1.10E-03	2.44E+02	2.69E-01	1.00E+00	5.50E-03	1.87E+03	6.32E+02	2.47E-02	6.91E+02	2.71E+00
BREOT-S42-25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	1.30E+03	1.10E+01	1.10E-03	2.69E+02	2.96E-01	1.00E+00	5.50E-03	2.06E+03	6.32E+02	2.47E-02	6.91E+02	2.98E+00
BREOT-N43-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	2.23E+03	1.89E+01	1.10E-03	4.60E+02	5.07E-01	1.00E+00	5.50E-03	3.53E+03	6.32E+02	2.47E-02	6.91E+02	5.11E+00
BREOT-S43-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	1.19E+03	1.01E+01	1.10E-03	2.45E+02	2.69E-01	1.00E+00	5.50E-03	1.88E+03	6.32E+02	2.47E-02	6.91E+02	2.72E+00
BREOT-N44-30 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	9.12E+02	7.73E+00	1.10E-03	1.88E+02	2.07E-01	1.00E+00	5.50E-03	1.44E+03	6.32E+02	2.47E-02	6.91E+02	2.09E+00
BREOT-S44-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	2.08E+03	1.76E+01	1.10E-03	4.28E+02	4.71E-01	1.00E+00	5.50E-03	3.28E+03	6.32E+02	2.47E-02	6.91E+02	4.75E+00
BREOT-N45-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	1.54E+03	1.30E+01	1.10E-03	3.16E+02	3.48E-01	1.00E+00	5.50E-03	2.43E+03	6.32E+02	2.47E-02	6.91E+02	3.51E+00
BREOT-N43-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	2.23E+03	1.89E+01	1.10E-03	4.60E+02	5.07E-01	1.00E+00	5.50E-03	3.53E+03	6.32E+02	2.47E-02	6.91E+02	5.11E+00
BREOT-S45-6 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	1.48E+03	1.25E+01	1.10E-03	3.05E+02	3.35E-01	1.00E+00	5.50E-03	2.34E+03	6.32E+02	2.47E-02	6.91E+02	3.38E+00
BREOT-N46-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	5.97E+02	5.06E+00	1.10E-03	1.23E+02	1.36E-01	1.00E+00	5.50E-03	9.44E+02	6.32E+02	2.47E-02	6.91E+02	1.37E+00
BREOT-S46-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	7.38E+02	6.25E+00	1.10E-03	1.52E+02	1.68E-01	1.00E+00	5.50E-03	1.17E+03	6.32E+02	2.47E-02	6.91E+02	1.69E+00
BREOT-S46-40 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	1.44E+03	1.22E+01	1.10E-03	2.97E+02	3.27E-01	1.00E+00	5.50E-03	2.28E+03	6.32E+02	2.47E-02	6.91E+02	3.30E+00
BREOT-N47-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	1.35E+03	1.14E+01	1.10E-03	2.78E+02	3.06E-01	1.00E+00	5.50E-03	2.13E+03	6.32E+02	2.47E-02	6.91E+02	3.08E+00
BREOT-S47-999 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	2.00E+03	1.69E+01	1.10E-03	4.12E+02	4.54E-01	1.00E+00	5.50E-03	3.16E+03	6.32E+02	2.47E-02	6.91E+02	4.57E+00
BREOT-S48-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	4.80E+02	4.06E+00	1.10E-03	9.89E+01	1.09E-01	1.00E+00	5.50E-03	7.58E+02	6.32E+02	2.47E-02	6.91E+02	1.10E+00
BREOT-S49-2.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	6.30E+02	5.34E+00	1.10E-03	1.30E+02	1.43E-01	1.00E+00	5.50E-03	9.96E+02	6.32E+02	2.47E-02	6.91E+02	1.44E+00
BREOT-S50-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	1.12E+03	9.51E+00	1.10E-03	2.31E+02	2.55E-01	1.00E+00	5.50E-03	1.78E+03	6.32E+02	2.47E-02	6.91E+02	2.57E+00
BREOT-S50-25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N52-60 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	1.03E+03	8.71E+00	1.10E-03	2.12E+02	2.33E-01	1.00E+00	5.50E-03	1.63E+03	6.32E+02	2.47E-02	6.91E+02	2.35E+00
BREOT-S52-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	5.34E+03	4.52E+01	1.10E-03	1.10E+03	1.21E+00	1.00E+00	5.50E-03	8.44E+03	6.32E+02	2.47E-02	6.91E+02	1.22E+01
BREOT-S53-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	1.24E+03	1.05E+01	1.10E-03	2.56E+02	2.82E-01	1.00E+00	5.50E-03	1.96E+03	6.32E+02	2.47E-02	6.91E+02	2.84E+00
BREOT-S54-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	7.78E+02	6.59E+00	1.10E-03	1.60E+02	1.77E-01	1.00E+00	5.50E-03	1.23E+03	6.32E+02	2.47E-02	6.91E+02	1.78E+00
BREOT-N55-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	2.10E+03	1.78E+01	1.10E-03	4.34E+02	4.78E-01	1.00E+00	5.50E-03	3.33E+03	6.32E+02	2.47E-02	6.91E+02	4.81E+00
BREOT-S55-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	8.39E+02	7.10E+00	1.10E-03	1.73E+02	1.90E-01	1.00E+00	5.50E-03	1.33E+03	6.32E+02	2.47E-02	6.91E+02	1.92E+00
BREOT-N56-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	1.56E+03	1.32E+01	1.10E-03	3.21E+02	3.54E-01	1.00E+00	5.50E-03	2.46E+03	6.32E+02	2.47E-02	6.91E+02	3.57E+00
BREOT-S56-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	7.24E+02	6.13E+00	1.10E-03	1.49E+02	1.64E-01	1.00E+00	5.50E-03	1.14E+03	6.32E+02	2.47E-02	6.91E+02	1.66E+00
BREOT-N57-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	1.14E+03	9.70E+00	1.10E-03	2.36E+02	2.60E-01	1.00E+00	5.50E-03	1.81E+03	6.32E+02	2.47E-02	6.91E+02	2.62E+00
BREOT-S57-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	8.39E+02	7.11E+00	1.10E-03	1.73E+02	1.91E-01	1.00E+00	5.50E-03	1.33E+03	6.32E+02	2.47E-02	6.91E+02	1.92E+00
BREOT-N58-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	7.44E+02	6.30E+00	1.10E-03	1.53E+02	1.69E-01	1.00E+00	5.50E-03	1.18E+03	6.32E+02	2.47E-02	6.91E+02	1.70E+00
BREOT-S58-12 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	1.25E+03	1.06E+01	1.10E-03	2.57E+02	2.83E-01	1.00E+00	5.50E-03	1.97E+03	6.32E+02	2.47E-02	6.91E+02	2.85E+00
BREOT-N59-18 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	5.12E+02	4.34E+00	1.10E-03	1.06E+02	1.16E-01	1.00E+00	5.50E-03	8.10E+02	6.32E+02	2.47E-02	6.91E+02	1.17E+00
BREOT-N60-12.5 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S60-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	9.12E+02	7.72E+00	1.10E-03	1.88E+02	2.07E-01	1.00E+00	5.50E-03	1.44E+03	6.32E+02	2.47E-02	6.91E+02	2.09E+00
BREOT-S61-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	1.25E+03	1.06E+01	1.10E-03	2.58E+02	2.84E-01	1.00E+00	5.50E-03	1.98E+03	6.32E+02	2.47E-02	6.91E+02	2.86E+00
BREOT-N62-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	4.24E+02	3.59E+00	1.10E-03	8.74E+01	9.63E-02	1.00E+00	5.50E-03	6.71E+02	6.32E+02	2.47E-02	6.91E+02	9.70E-01
BREOT-S62-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	1.69E+03	1.44E+01	1.10E-03	3.49E+02	3.85E-01	1.00E+00	5.50E-03	2.68E+03	6.32E+02	2.47E-02	6.91E+02	3.88E+00
BREOT-S63-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	6.85E+02	5.80E+00	1.10E-03	1.41E+02	1.55E-01	1.00E+00	5.50E-03	1.08E+03	6.32E+02	2.47E-02	6.91E+02	1.57E+00
BREOT-N64-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	4.59E+02	3.89E+00	1.10E-03	9.46E+01	1.04E-01	1.00E+00	5.50E-03	7.26E+02	6.32E+02	2.47E-02	6.91E+02	1.05E+00

TABLE C-2C: COPPER DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **18.41**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Masked Shrew (Omnivorous Mammal - Terrestrial, Wetland)																							
BREOT-N64-20 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	5.57E+02	4.71E+00	1.10E-03	1.15E+02	1.26E-01	1.00E+00	5.50E-03	8.80E+02	6.32E+02	2.47E-02	6.91E+02	1.27E+00
BREOT-S64-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	8.13E+02	6.89E+00	1.10E-03	1.68E+02	1.85E-01	1.00E+00	5.50E-03	1.29E+03	6.32E+02	2.47E-02	6.91E+02	1.86E+00
BREOT-N65-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	5.96E+02	5.04E+00	1.10E-03	1.23E+02	1.35E-01	1.00E+00	5.50E-03	9.42E+02	6.32E+02	2.47E-02	6.91E+02	1.36E+00
BREOT-S65-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	8.80E+02	7.45E+00	1.10E-03	1.81E+02	2.00E-01	1.00E+00	5.50E-03	1.39E+03	6.32E+02	2.47E-02	6.91E+02	2.01E+00
BREOT-N66-5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	6.53E+02	5.53E+00	1.10E-03	1.35E+02	1.48E-01	1.00E+00	5.50E-03	1.03E+03	6.32E+02	2.47E-02	6.91E+02	1.49E+00
BREOT-S66-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	7.17E+02	6.07E+00	1.10E-03	1.48E+02	1.63E-01	1.00E+00	5.50E-03	1.13E+03	6.32E+02	2.47E-02	6.91E+02	1.64E+00
BREOT-N67-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	2.73E+03	2.31E+01	1.10E-03	5.63E+02	6.20E-01	1.00E+00	5.50E-03	4.32E+03	6.32E+02	2.47E-02	6.91E+02	6.25E+00
BREOT-S67-12.5 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
At Edge of Tailings																						**Maximum HQ (Inside Tailings)**	**4.13E+01**
BREOT-S0-0 (06)	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	5.83E+02	4.93E+00	1.10E-03	1.20E+02	1.32E-01	1.00E+00	5.50E-03	9.21E+02	6.32E+02	2.47E-02	6.91E+02	1.33E+00
BREOT-S1-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	1.02E+03	8.66E+00	1.10E-03	2.11E+02	2.32E-01	1.00E+00	5.50E-03	1.62E+03	6.32E+02	2.47E-02	6.91E+02	2.34E+00
BREOT-S2-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	1.45E+03	1.23E+01	1.10E-03	2.99E+02	3.29E-01	1.00E+00	5.50E-03	2.29E+03	6.32E+02	2.47E-02	6.91E+02	3.32E+00
BREOT-S3-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	1.76E+03	1.49E+01	1.10E-03	3.62E+02	3.99E-01	1.00E+00	5.50E-03	2.78E+03	6.32E+02	2.47E-02	6.91E+02	4.02E+00
BREOT-S4-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	1.96E+03	1.66E+01	1.10E-03	4.05E+02	4.46E-01	1.00E+00	5.50E-03	3.11E+03	6.32E+02	2.47E-02	6.91E+02	4.49E+00
BREOT-S6-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	1.59E+03	1.34E+01	1.10E-03	3.27E+02	3.60E-01	1.00E+00	5.50E-03	2.51E+03	6.32E+02	2.47E-02	6.91E+02	3.63E+00
BREOT-S7-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	9.21E+02	7.80E+00	1.10E-03	1.90E+02	2.09E-01	1.00E+00	5.50E-03	1.46E+03	6.32E+02	2.47E-02	6.91E+02	2.11E+00
BREOT-S8-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	8.19E+02	6.94E+00	1.10E-03	1.69E+02	1.86E-01	1.00E+00	5.50E-03	1.29E+03	6.32E+02	2.47E-02	6.91E+02	1.87E+00
BREOT-S9-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	7.32E+02	6.20E+00	1.10E-03	1.51E+02	1.66E-01	1.00E+00	5.50E-03	1.16E+03	6.32E+02	2.47E-02	6.91E+02	1.67E+00
BREOT-N10-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	1.72E+04	1.45E+02	1.10E-03	3.54E+03	3.90E+00	1.00E+00	5.50E-03	2.71E+04	6.32E+02	2.47E-02	6.91E+02	3.93E+01
BREOT-N11-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	1.43E+03	1.21E+01	1.10E-03	2.95E+02	3.25E-01	1.00E+00	5.50E-03	2.26E+03	6.32E+02	2.47E-02	6.91E+02	3.27E+00
BREOT-S11-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	1.12E+03	9.49E+00	1.10E-03	2.31E+02	2.54E-01	1.00E+00	5.50E-03	1.77E+03	6.32E+02	2.47E-02	6.91E+02	2.56E+00
BREOT-N12-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	1.24E+03	1.05E+01	1.10E-03	2.57E+02	2.83E-01	1.00E+00	5.50E-03	1.97E+03	6.32E+02	2.47E-02	6.91E+02	2.85E+00
BREOT-S12-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	2.87E+03	2.43E+01	1.10E-03	5.91E+02	6.51E-01	1.00E+00	5.50E-03	4.53E+03	6.32E+02	2.47E-02	6.91E+02	6.56E+00
BREOT-N13-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	9.27E+03	7.85E+01	1.10E-03	1.91E+03	2.10E+00	1.00E+00	5.50E-03	1.47E+04	6.32E+02	2.47E-02	6.91E+02	2.12E+01
BREOT-S13-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	6.80E+02	5.76E+00	1.10E-03	1.40E+02	1.54E-01	1.00E+00	5.50E-03	1.07E+03	6.32E+02	2.47E-02	6.91E+02	1.55E+00
BREOT-N14-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	2.08E+03	1.76E+01	1.10E-03	4.28E+02	4.72E-01	1.00E+00	5.50E-03	3.28E+03	6.32E+02	2.47E-02	6.91E+02	4.75E+00
BREOT-S14-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	1.58E+04	1.34E+02	1.10E-03	3.26E+03	3.59E+00	1.00E+00	5.50E-03	2.50E+04	6.32E+02	2.47E-02	6.91E+02	3.62E+01
BREOT-N15-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	1.62E+03	1.37E+01	1.10E-03	3.34E+02	3.68E-01	1.00E+00	5.50E-03	2.56E+03	6.32E+02	2.47E-02	6.91E+02	3.71E+00
BREOT-N16-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	1.19E+03	1.01E+01	1.10E-03	2.46E+02	2.71E-01	1.00E+00	5.50E-03	1.89E+03	6.32E+02	2.47E-02	6.91E+02	2.73E+00
BREOT-S16-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	8.76E+02	7.42E+00	1.10E-03	1.81E+02	1.99E-01	1.00E+00	5.50E-03	1.38E+03	6.32E+02	2.47E-02	6.91E+02	2.00E+00
BREOT-N17-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	1.26E+03	1.07E+01	1.10E-03	2.60E+02	2.87E-01	1.00E+00	5.50E-03	2.00E+03	6.32E+02	2.47E-02	6.91E+02	2.89E+00
BREOT-S17-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	1.50E+03	1.27E+01	1.10E-03	3.09E+02	3.40E-01	1.00E+00	5.50E-03	2.37E+03	6.32E+02	2.47E-02	6.91E+02	3.43E+00
BREOT-N18-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	1.17E+03	9.87E+00	1.10E-03	2.40E+02	2.65E-01	1.00E+00	5.50E-03	1.84E+03	6.32E+02	2.47E-02	6.91E+02	2.67E+00
BREOT-S18-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	1.02E+04	8.60E+01	1.10E-03	2.09E+03	2.31E+00	1.00E+00	5.50E-03	1.61E+04	6.32E+02	2.47E-02	6.91E+02	2.32E+01
BREOT-N19-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	1.42E+03	1.21E+01	1.10E-03	2.94E+02	3.23E-01	1.00E+00	5.50E-03	2.25E+03	6.32E+02	2.47E-02	6.91E+02	3.26E+00
BREOT-S19-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	6.24E+02	5.28E+00	1.10E-03	1.29E+02	1.42E-01	1.00E+00	5.50E-03	9.86E+02	6.32E+02	2.47E-02	6.91E+02	1.43E+00
BREOT-N20-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	2.04E+03	1.73E+01	1.10E-03	4.20E+02	4.63E-01	1.00E+00	5.50E-03	3.22E+03	6.32E+02	2.47E-02	6.91E+02	4.67E+00
BREOT-S20-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	6.60E+02	5.59E+00	1.10E-03	1.36E+02	1.50E-01	1.00E+00	5.50E-03	1.04E+03	6.32E+02	2.47E-02	6.91E+02	1.51E+00
BREOT-N21-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	6.54E+04	5.54E+02	1.10E-03	1.35E+04	1.48E+01	1.00E+00	5.50E-03	1.03E+05	6.32E+02	2.47E-02	6.91E+02	1.50E+02
BREOT-S21-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	1.12E+03	9.49E+00	1.10E-03	2.31E+02	2.54E-01	1.00E+00	5.50E-03	1.77E+03	6.32E+02	2.47E-02	6.91E+02	2.56E+00
BREOT-N22-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	1.56E+03	1.32E+01	1.10E-03	3.21E+02	3.54E-01	1.00E+00	5.50E-03	2.46E+03	6.32E+02	2.47E-02	6.91E+02	3.57E+00
BREOT-S22-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	8.88E+02	7.52E+00	1.10E-03	1.83E+02	2.02E-01	1.00E+00	5.50E-03	1.40E+03	6.32E+02	2.47E-02	6.91E+02	2.03E+00
BREOT-N23-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	2.50E+03	2.12E+01	1.10E-03	5.15E+02	5.67E-01	1.00E+00	5.50E-03	3.95E+03	6.32E+02	2.47E-02	6.91E+02	5.72E+00
BREOT-S23-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	1.56E+03	1.32E+01	1.10E-03	3.22E+02	3.54E-01	1.00E+00	5.50E-03	2.47E+03	6.32E+02	2.47E-02	6.91E+02	3.57E+00
BREOT-N24-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	2.39E+03	2.03E+01	1.10E-03	4.93E+02	5.43E-01	1.00E+00	5.50E-03	3.78E+03	6.32E+02	2.47E-02	6.91E+02	5.48E+00
BREOT-S24-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	4.60E+03	3.89E+01	1.10E-03	9.47E+02	1.04E+00	1.00E+00	5.50E-03	7.27E+03	6.32E+02	2.47E-02	6.91E+02	1.05E+01
BREOT-N25-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	3.76E+03	3.19E+01	1.10E-03	7.75E+02	8.54E-01	1.00E+00	5.50E-03	5.95E+03	6.32E+02	2.47E-02	6.91E+02	8.61E+00
BREOT-S25-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	3.25E+03	2.75E+01	1.10E-03	6.70E+02	7.38E-01	1.00E+00	5.50E-03	5.14E+03	6.32E+02	2.47E-02	6.91E+02	7.43E+00
BREOT-N26-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	4.49E+03	3.80E+01	1.10E-03	9.25E+02	1.02E+00	1.00E+00	5.50E-03	7.10E+03	6.32E+02	2.47E-02	6.91E+02	1.03E+01
BREOT-S26-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	1.66E+03	1.41E+01	1.10E-03	3.43E+02	3.77E-01	1.00E+00	5.50E-03	2.63E+03	6.32E+02	2.47E-02	6.91E+02	3.80E+00
BREOT-N27-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	1.22E+04	1.03E+02	1.10E-03	2.51E+03	2.76E+00	1.00E+00	5.50E-03	1.93E+04	6.32E+02	2.47E-02	6.91E+02	2.79E+01
BREOT-S27-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	1.11E+03	9.36E+00	1.10E-03	2.28E+02	2.51E-01	1.00E+00	5.50E-03	1.75E+03	6.32E+02	2.47E-02	6.91E+02	2.53E+00
BREOT-N28-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	2.66E+03	2.25E+01	1.10E-03	5.48E+02	6.03E-01	1.00E+00	5.50E-03	4.20E+03	6.32E+02	2.47E-02	6.91E+02	6.08E+00
BREOT-S28-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	8.02E+02	6.79E+00	1.10E-03	1.65E+02	1.82E-01	1.00E+00	5.50E-03	1.27E+03	6.32E+02	2.47E-02	6.91E+02	1.83E+00
BREOT-S29-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	8.56E+02	7.25E+00	1.10E-03	1.77E+02	1.94E-01	1.00E+00	5.50E-03	1.35E+03	6.32E+02	2.47E-02	6.91E+02	1.96E+00

TABLE C-2C: COPPER DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 18.41

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Masked Shrew (Omnivorous Mammal - Terrestrial, Wetland)																							
BREOT-N30-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	7.19E+03	6.09E+01	1.10E-03	1.48E+03	1.63E+00	1.00E+00	5.50E-03	1.14E+04	6.32E+02	2.47E-02	6.91E+02	1.65E+01
BREOT-S30-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	6.29E+02	5.33E+00	1.10E-03	1.30E+02	1.43E-01	1.00E+00	5.50E-03	9.95E+02	6.32E+02	2.47E-02	6.91E+02	1.44E+00
BREOT-N31-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	6.25E+03	5.29E+01	1.10E-03	1.29E+03	1.42E+00	1.00E+00	5.50E-03	9.88E+03	6.32E+02	2.47E-02	6.91E+02	1.43E+01
BREOT-S31-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	5.20E+02	4.41E+00	1.10E-03	1.07E+02	1.18E-01	1.00E+00	5.50E-03	8.22E+02	6.32E+02	2.47E-02	6.91E+02	1.19E+00
BREOT-N32-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	2.57E+03	2.18E+01	1.10E-03	5.31E+02	5.84E-01	1.00E+00	5.50E-03	4.07E+03	6.32E+02	2.47E-02	6.91E+02	5.89E+00
BREOT-S32-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	2.51E+03	2.13E+01	1.10E-03	5.17E+02	5.70E-01	1.00E+00	5.50E-03	3.97E+03	6.32E+02	2.47E-02	6.91E+02	5.74E+00
BREOT-N33-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	9.69E+02	8.20E+00	1.10E-03	2.00E+02	2.20E-01	1.00E+00	5.50E-03	1.53E+03	6.32E+02	2.47E-02	6.91E+02	2.22E+00
BREOT-S33-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	2.38E+03	2.02E+01	1.10E-03	4.91E+02	5.41E-01	1.00E+00	5.50E-03	3.77E+03	6.32E+02	2.47E-02	6.91E+02	5.45E+00
BREOT-N34-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	2.38E+03	2.01E+01	1.10E-03	4.90E+02	5.40E-01	1.00E+00	5.50E-03	3.76E+03	6.32E+02	2.47E-02	6.91E+02	5.44E+00
BREOT-S34-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	2.33E+03	1.97E+01	1.10E-03	4.80E+02	5.28E-01	1.00E+00	5.50E-03	3.68E+03	6.32E+02	2.47E-02	6.91E+02	5.32E+00
BREOT-N35-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	1.29E+03	1.09E+01	1.10E-03	2.66E+02	2.93E-01	1.00E+00	5.50E-03	2.04E+03	6.32E+02	2.47E-02	6.91E+02	2.95E+00
BREOT-S35-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	2.15E+03	1.82E+01	1.10E-03	4.43E+02	4.88E-01	1.00E+00	5.50E-03	3.40E+03	6.32E+02	2.47E-02	6.91E+02	4.92E+00
BREOT-N36-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	2.10E+03	1.78E+01	1.10E-03	4.33E+02	4.77E-01	1.00E+00	5.50E-03	3.32E+03	6.32E+02	2.47E-02	6.91E+02	4.81E+00
BREOT-S36-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	2.31E+03	1.96E+01	1.10E-03	4.77E+02	5.25E-01	1.00E+00	5.50E-03	3.66E+03	6.32E+02	2.47E-02	6.91E+02	5.29E+00
BREOT-N37-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	8.78E+02	7.44E+00	1.10E-03	1.81E+02	1.99E-01	1.00E+00	5.50E-03	1.39E+03	6.32E+02	2.47E-02	6.91E+02	2.01E+00
BREOT-S37-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	2.58E+03	2.19E+01	1.10E-03	5.33E+02	5.86E-01	1.00E+00	5.50E-03	4.08E+03	6.32E+02	2.47E-02	6.91E+02	5.91E+00
BREOT-N38-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	9.44E+02	7.99E+00	1.10E-03	1.95E+02	2.14E-01	1.00E+00	5.50E-03	1.49E+03	6.32E+02	2.47E-02	6.91E+02	2.16E+00
BREOT-S38-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	4.08E+03	3.45E+01	1.10E-03	8.41E+02	9.26E-01	1.00E+00	5.50E-03	6.45E+03	6.32E+02	2.47E-02	6.91E+02	9.33E+00
BREOT-N39-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N40-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	1.16E+03	9.83E+00	1.10E-03	2.39E+02	2.63E-01	1.00E+00	5.50E-03	1.83E+03	6.32E+02	2.47E-02	6.91E+02	2.65E+00
BREOT-S40-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	2.73E+03	2.31E+01	1.10E-03	5.63E+02	6.20E-01	1.00E+00	5.50E-03	4.32E+03	6.32E+02	2.47E-02	6.91E+02	6.25E+00
BREOT-N41-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	7.50E+02	6.35E+00	1.10E-03	1.55E+02	1.70E-01	1.00E+00	5.50E-03	1.19E+03	6.32E+02	2.47E-02	6.91E+02	1.71E+00
BREOT-S41-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	2.68E+03	2.27E+01	1.10E-03	5.52E+02	6.07E-01	1.00E+00	5.50E-03	4.23E+03	6.32E+02	2.47E-02	6.91E+02	6.12E+00
BREOT-N42-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S42-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	3.99E+03	3.38E+01	1.10E-03	8.23E+02	9.06E-01	1.00E+00	5.50E-03	6.31E+03	6.32E+02	2.47E-02	6.91E+02	9.13E+00
BREOT-N43-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	6.15E+02	5.21E+00	1.10E-03	1.27E+02	1.40E-01	1.00E+00	5.50E-03	9.73E+02	6.32E+02	2.47E-02	6.91E+02	1.41E+00
BREOT-S43-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	6.32E+02	5.36E+00	1.10E-03	1.30E+02	1.44E-01	1.00E+00	5.50E-03	1.00E+03	6.32E+02	2.47E-02	6.91E+02	1.45E+00
BREOT-N44-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	1.17E+03	9.90E+00	1.10E-03	2.41E+02	2.65E-01	1.00E+00	5.50E-03	1.85E+03	6.32E+02	2.47E-02	6.91E+02	2.67E+00
BREOT-S44-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	6.15E+02	5.21E+00	1.10E-03	1.27E+02	1.40E-01	1.00E+00	5.50E-03	9.73E+02	6.32E+02	2.47E-02	6.91E+02	1.41E+00
BREOT-N45-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	1.83E+03	1.55E+01	1.10E-03	3.78E+02	4.17E-01	1.00E+00	5.50E-03	2.90E+03	6.32E+02	2.47E-02	6.91E+02	4.20E+00
BREOT-S45-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	5.15E+02	4.36E+00	1.10E-03	1.06E+02	1.17E-01	1.00E+00	5.50E-03	8.14E+02	6.32E+02	2.47E-02	6.91E+02	1.18E+00
BREOT-N46-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	1.28E+03	1.09E+01	1.10E-03	2.64E+02	2.91E-01	1.00E+00	5.50E-03	2.03E+03	6.32E+02	2.47E-02	6.91E+02	2.93E+00
BREOT-S46-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	4.78E+02	4.05E+00	1.10E-03	9.86E+01	1.09E-01	1.00E+00	5.50E-03	7.56E+02	6.32E+02	2.47E-02	6.91E+02	1.09E+00
BREOT-N47-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	3.12E+03	2.65E+01	1.10E-03	6.44E+02	7.09E-01	1.00E+00	5.50E-03	4.94E+03	6.32E+02	2.47E-02	6.91E+02	7.15E+00
BREOT-S47-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N48-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	6.97E+02	5.90E+00	1.10E-03	1.44E+02	1.58E-01	1.00E+00	5.50E-03	1.10E+03	6.32E+02	2.47E-02	6.91E+02	1.59E+00
BREOT-S48-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	4.37E+02	3.70E+00	1.10E-03	9.01E+01	9.92E-02	1.00E+00	5.50E-03	6.91E+02	6.32E+02	2.47E-02	6.91E+02	9.99E-01
BREOT-N49-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	8.31E+02	7.04E+00	1.10E-03	1.71E+02	1.89E-01	1.00E+00	5.50E-03	1.31E+03	6.32E+02	2.47E-02	6.91E+02	1.90E+00
BREOT-S49-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S50-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	5.12E+02	4.34E+00	1.10E-03	1.06E+02	1.16E-01	1.00E+00	5.50E-03	8.10E+02	6.32E+02	2.47E-02	6.91E+02	1.17E+00
BREOT-N51-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	5.90E+02	4.99E+00	1.10E-03	1.22E+02	1.34E-01	1.00E+00	5.50E-03	9.32E+02	6.32E+02	2.47E-02	6.91E+02	1.35E+00
BREOT-S51-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	3.74E+03	3.17E+01	1.10E-03	7.71E+02	8.49E-01	1.00E+00	5.50E-03	5.91E+03	6.32E+02	2.47E-02	6.91E+02	8.56E+00
BREOT-N52-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	5.97E+02	5.06E+00	1.10E-03	1.23E+02	1.36E-01	1.00E+00	5.50E-03	9.44E+02	6.32E+02	2.47E-02	6.91E+02	1.37E+00
BREOT-S52-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	4.50E+02	3.81E+00	1.10E-03	9.29E+01	1.02E-01	1.00E+00	5.50E-03	7.12E+02	6.32E+02	2.47E-02	6.91E+02	1.03E+00
BREOT-N53-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	6.23E+02	5.28E+00	1.10E-03	1.28E+02	1.41E-01	1.00E+00	5.50E-03	9.85E+02	6.32E+02	2.47E-02	6.91E+02	1.43E+00
BREOT-S53-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	4.18E+02	3.54E+00	1.10E-03	8.62E+01	9.49E-02	1.00E+00	5.50E-03	6.61E+02	6.32E+02	2.47E-02	6.91E+02	9.57E-01
BREOT-N54-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	5.93E+02	5.02E+00	1.10E-03	1.22E+02	1.35E-01	1.00E+00	5.50E-03	9.37E+02	6.32E+02	2.47E-02	6.91E+02	1.36E+00
BREOT-S54-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	3.98E+02	3.37E+00	1.10E-03	8.20E+01	9.03E-02	1.00E+00	5.50E-03	6.29E+02	6.32E+02	2.47E-02	6.91E+02	9.10E-01
BREOT-N55-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	5.00E+02	4.23E+00	1.10E-03	1.03E+02	1.13E-01	1.00E+00	5.50E-03	7.90E+02	6.32E+02	2.47E-02	6.91E+02	1.14E+00
BREOT-S55-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	6.97E+02	5.90E+00	1.10E-03	1.44E+02	1.58E-01	1.00E+00	5.50E-03	1.10E+03	6.32E+02	2.47E-02	6.91E+02	1.59E+00
BREOT-N56-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	4.50E+02	3.81E+00	1.10E-03	9.29E+01	1.02E-01	1.00E+00	5.50E-03	7.12E+02	6.32E+02	2.47E-02	6.91E+02	1.03E+00
BREOT-N57-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	5.89E+02	4.99E+00	1.10E-03	1.22E+02	1.34E-01	1.00E+00	5.50E-03	9.32E+02	6.32E+02	2.47E-02	6.91E+02	1.35E+00
BREOT-S57-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	8.72E+02	7.39E+00	1.10E-03	1.80E+02	1.98E-01	1.00E+00	5.50E-03	1.38E+03	6.32E+02	2.47E-02	6.91E+02	2.00E+00
BREOT-N58-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	5.78E+02	4.90E+00	1.10E-03	1.19E+02	1.31E-01	1.00E+00	5.50E-03	9.14E+02	6.32E+02	2.47E-02	6.91E+02	1.32E+00
BREOT-S58-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	7.86E+02	6.66E+00	1.10E-03	1.62E+02	1.79E-01	1.00E+00	5.50E-03	1.24E+03	6.32E+02	2.47E-02	6.91E+02	1.80E+00

TABLE C-2C: COPPER DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

Site Area (hectares) **18.41**

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Masked Shrew (Omnivorous Mammal - Terrestrial, Wetland)																							
BREOT-N59-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N60-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S60-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	1.10E+03	9.28E+00	1.10E-03	2.26E+02	2.49E-01	1.00E+00	5.50E-03	1.73E+03	6.32E+02	2.47E-02	6.91E+02	2.51E+00
BREOT-S61-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	7.73E+02	6.54E+00	1.10E-03	1.59E+02	1.75E-01	1.00E+00	5.50E-03	1.22E+03	6.32E+02	2.47E-02	6.91E+02	1.77E+00
BREOT-N62-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	4.03E+02	3.42E+00	1.10E-03	8.32E+01	9.16E-02	1.00E+00	5.50E-03	6.38E+02	6.32E+02	2.47E-02	6.91E+02	9.23E-01
BREOT-S62-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	7.57E+02	6.41E+00	1.10E-03	1.56E+02	1.72E-01	1.00E+00	5.50E-03	1.20E+03	6.32E+02	2.47E-02	6.91E+02	1.73E+00
BREOT-N63-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	7.58E+02	6.42E+00	1.10E-03	1.56E+02	1.72E-01	1.00E+00	5.50E-03	1.20E+03	6.32E+02	2.47E-02	6.91E+02	1.73E+00
BREOT-S63-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	6.41E+02	5.43E+00	1.10E-03	1.32E+02	1.45E-01	1.00E+00	5.50E-03	1.01E+03	6.32E+02	2.47E-02	6.91E+02	1.47E+00
BREOT-N64-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	4.21E+02	3.56E+00	1.10E-03	8.67E+01	9.55E-02	1.00E+00	5.50E-03	6.65E+02	6.32E+02	2.47E-02	6.91E+02	9.62E-01
BREOT-S64-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	1.40E+03	1.19E+01	1.10E-03	2.90E+02	3.19E-01	1.00E+00	5.50E-03	2.22E+03	6.32E+02	2.47E-02	6.91E+02	3.21E+00
BREOT-N66-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S66-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	8.59E+02	7.28E+00	1.10E-03	1.77E+02	1.95E-01	1.00E+00	5.50E-03	1.36E+03	6.32E+02	2.47E-02	6.91E+02	1.97E+00
BREOT-N67-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	3.24E+03	2.75E+01	1.10E-03	6.69E+02	7.37E-01	1.00E+00	5.50E-03	5.13E+03	6.32E+02	2.47E-02	6.91E+02	7.42E+00
BREOT-S67-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	4.82E+02	4.08E+00	1.10E-03	9.94E+01	1.09E-01	1.00E+00	5.50E-03	7.63E+02	6.32E+02	2.47E-02	6.91E+02	1.10E+00
Outside Tailings																						**Maximum HQ (At Edge of Tailings)**	**1.50E+02**
BREOT-S0+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	4.34E+02	3.67E+00	1.10E-03	8.94E+01	9.85E-02	1.00E+00	5.50E-03	6.86E+02	6.32E+02	2.47E-02	6.91E+02	9.93E-01
BREOT-S1+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	7.02E+02	5.95E+00	1.10E-03	1.45E+02	1.59E-01	1.00E+00	5.50E-03	1.11E+03	6.32E+02	2.47E-02	6.91E+02	1.61E+00
BREOT-S2+95 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	1.64E+03	1.39E+01	1.10E-03	3.38E+02	3.72E-01	1.00E+00	5.50E-03	2.59E+03	6.32E+02	2.47E-02	6.91E+02	3.75E+00
BREOT-S3+6 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	7.93E+02	6.71E+00	1.10E-03	1.63E+02	1.80E-01	1.00E+00	5.50E-03	1.25E+03	6.32E+02	2.47E-02	6.91E+02	1.81E+00
BREOT-S4+10 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	3.93E+02	3.33E+00	1.10E-03	8.11E+01	8.93E-02	1.00E+00	5.50E-03	6.22E+02	6.32E+02	2.47E-02	6.91E+02	9.00E-01
BREOT-S6+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	7.43E+02	6.29E+00	1.10E-03	1.53E+02	1.69E-01	1.00E+00	5.50E-03	1.18E+03	6.32E+02	2.47E-02	6.91E+02	1.70E+00
BREOT-S8+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	8.30E+02	7.03E+00	1.10E-03	1.71E+02	1.88E-01	1.00E+00	5.50E-03	1.31E+03	6.32E+02	2.47E-02	6.91E+02	1.90E+00
BREOT-N10+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	8.37E+02	7.09E+00	1.10E-03	1.73E+02	1.90E-01	1.00E+00	5.50E-03	1.32E+03	6.32E+02	2.47E-02	6.91E+02	1.91E+00
BREOT-N11+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	1.46E+03	1.24E+01	1.10E-03	3.02E+02	3.33E-01	1.00E+00	5.50E-03	2.32E+03	6.32E+02	2.47E-02	6.91E+02	3.35E+00
BREOT-N12+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	7.94E+02	6.72E+00	1.10E-03	1.64E+02	1.80E-01	1.00E+00	5.50E-03	1.26E+03	6.32E+02	2.47E-02	6.91E+02	1.82E+00
BREOT-S12+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	6.68E+03	5.66E+01	1.10E-03	1.38E+03	1.52E+00	1.00E+00	5.50E-03	1.06E+04	6.32E+02	2.47E-02	6.91E+02	1.53E+01
BREOT-S12+60 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	9.92E+02	8.40E+00	1.10E-03	2.04E+02	2.25E-01	1.00E+00	5.50E-03	1.57E+03	6.32E+02	2.47E-02	6.91E+02	2.27E+00
BREOT-N13+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	1.13E+03	9.60E+00	1.10E-03	2.34E+02	2.57E-01	1.00E+00	5.50E-03	1.79E+03	6.32E+02	2.47E-02	6.91E+02	2.59E+00
BREOT-S13+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	2.95E+03	2.50E+01	1.10E-03	6.09E+02	6.71E-01	1.00E+00	5.50E-03	4.67E+03	6.32E+02	2.47E-02	6.91E+02	6.76E+00
BREOT-S13+65 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	1.47E+03	1.24E+01	1.10E-03	3.03E+02	3.33E-01	1.00E+00	5.50E-03	2.32E+03	6.32E+02	2.47E-02	6.91E+02	3.36E+00
BREOT-N14+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	1.27E+03	1.07E+01	1.10E-03	2.61E+02	2.87E-01	1.00E+00	5.50E-03	2.00E+03	6.32E+02	2.47E-02	6.91E+02	2.90E+00
BREOT-S14+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	7.98E+03	6.76E+01	1.10E-03	1.64E+03	1.81E+00	1.00E+00	5.50E-03	1.26E+04	6.32E+02	2.47E-02	6.91E+02	1.82E+01
BREOT-S14+59 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	9.41E+02	7.97E+00	1.10E-03	1.94E+02	2.14E-01	1.00E+00	5.50E-03	1.49E+03	6.32E+02	2.47E-02	6.91E+02	2.15E+00
BREOT-N15+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	6.37E+03	5.39E+01	1.10E-03	1.31E+03	1.45E+00	1.00E+00	5.50E-03	1.01E+04	6.32E+02	2.47E-02	6.91E+02	1.46E+01
BREOT-N15+50 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	1.31E+03	1.11E+01	1.10E-03	2.71E+02	2.98E-01	1.00E+00	5.50E-03	2.08E+03	6.32E+02	2.47E-02	6.91E+02	3.01E+00
BREOT-S16+20 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	3.87E+03	3.28E+01	1.10E-03	7.98E+02	8.79E-01	1.00E+00	5.50E-03	6.12E+03	6.32E+02	2.47E-02	6.91E+02	8.86E+00
BREOT-S16+75 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	6.21E+02	5.26E+00	1.10E-03	1.28E+02	1.41E-01	1.00E+00	5.50E-03	9.82E+02	6.32E+02	2.47E-02	6.91E+02	1.42E+00
BREOT-N17+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	3.84E+03	3.25E+01	1.10E-03	7.92E+02	8.72E-01	1.00E+00	5.50E-03	6.07E+03	6.32E+02	2.47E-02	6.91E+02	8.79E+00
BREOT-S18+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	7.58E+02	6.42E+00	1.10E-03	1.56E+02	1.72E-01	1.00E+00	5.50E-03	1.20E+03	6.32E+02	2.47E-02	6.91E+02	1.73E+00
BREOT-N19+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S19+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	2.91E+04	2.46E+02	1.10E-03	6.00E+03	6.60E+00	1.00E+00	5.50E-03	4.60E+04	6.32E+02	2.47E-02	6.91E+02	6.65E+01
BREOT-S19+85 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	1.16E+03	9.82E+00	1.10E-03	2.39E+02	2.63E-01	1.00E+00	5.50E-03	1.83E+03	6.32E+02	2.47E-02	6.91E+02	2.65E+00
BREOT-N20+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	2.54E+03	2.15E+01	1.10E-03	5.23E+02	5.76E-01	1.00E+00	5.50E-03	4.01E+03	6.32E+02	2.47E-02	6.91E+02	5.80E+00
BREOT-S20+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	1.59E+04	1.35E+02	1.10E-03	3.28E+03	3.62E+00	1.00E+00	5.50E-03	2.52E+04	6.32E+02	2.47E-02	6.91E+02	3.64E+01
BREOT-S20+75 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N21+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	1.53E+03	1.29E+01	1.10E-03	3.15E+02	3.47E-01	1.00E+00	5.50E-03	2.42E+03	6.32E+02	2.47E-02	6.91E+02	3.50E+00
BREOT-S21+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	4.27E+04	3.62E+02	1.10E-03	8.81E+03	9.70E+00	1.00E+00	5.50E-03	6.75E+04	6.32E+02	2.47E-02	6.91E+02	9.77E+01
BREOT-N22+150 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	1.18E+03	1.00E+01	1.10E-03	2.44E+02	2.69E-01	1.00E+00	5.50E-03	1.87E+03	6.32E+02	2.47E-02	6.91E+02	2.71E+00
BREOT-N22+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	2.33E+03	1.98E+01	1.10E-03	4.81E+02	5.30E-01	1.00E+00	5.50E-03	3.69E+03	6.32E+02	2.47E-02	6.91E+02	5.34E+00
BREOT-S22+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	9.39E+02	7.95E+00	1.10E-03	1.94E+02	2.13E-01	1.00E+00	5.50E-03	1.48E+03	6.32E+02	2.47E-02	6.91E+02	2.15E+00
BREOT-N23+115 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N23+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	6.14E+03	5.20E+01	1.10E-03	1.27E+03	1.39E+00	1.00E+00	5.50E-03	9.71E+03	6.32E+02	2.47E-02	6.91E+02	1.41E+01
BREOT-S23+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	1.69E+03	1.43E+01	1.10E-03	3.49E+02	3.84E-01	1.00E+00	5.50E-03	2.68E+03	6.32E+02	2.47E-02	6.91E+02	3.87E+00
BREOT-S23+37.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	6.16E+02	5.22E+00	1.10E-03	1.27E+02	1.40E-01	1.00E+00	5.50E-03	9.74E+02	6.32E+02	2.47E-02	6.91E+02	1.41E+00
BREOT-N24+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	1.52E+03	1.29E+01	1.10E-03	3.13E+02	3.45E-01	1.00E+00	5.50E-03	2.40E+03	6.32E+02	2.47E-02	6.91E+02	3.48E+00

TABLE C-2C: COPPER DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 18.41

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Masked Shrew (Omnivorous Mammal - Terrestrial, Wetland)																							
BREOT-N24+75 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	4.03E+02	3.41E+00	1.10E-03	8.30E+01	9.14E-02	1.00E+00	5.50E-03	6.37E+02	6.32E+02	2.47E-02	6.91E+02	9.21E-01
BREOT-S24+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	9.11E+02	7.72E+00	1.10E-03	1.88E+02	2.07E-01	1.00E+00	5.50E-03	1.44E+03	6.32E+02	2.47E-02	6.91E+02	2.08E+00
BREOT-N25+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	8.13E+02	6.88E+00	1.10E-03	1.68E+02	1.84E-01	1.00E+00	5.50E-03	1.29E+03	6.32E+02	2.47E-02	6.91E+02	1.86E+00
BREOT-S25+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	8.42E+02	7.13E+00	1.10E-03	1.74E+02	1.91E-01	1.00E+00	5.50E-03	1.33E+03	6.32E+02	2.47E-02	6.91E+02	1.93E+00
BREOT-S25+40 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	1.05E+03	8.87E+00	1.10E-03	2.16E+02	2.38E-01	1.00E+00	5.50E-03	1.66E+03	6.32E+02	2.47E-02	6.91E+02	2.40E+00
BREOT-S26+37 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	4.08E+02	3.46E+00	1.10E-03	8.42E+01	9.27E-02	1.00E+00	5.50E-03	6.45E+02	6.32E+02	2.47E-02	6.91E+02	9.34E-01
BREOT-N27+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	9.63E+02	8.15E+00	1.10E-03	1.98E+02	2.19E-01	1.00E+00	5.50E-03	1.52E+03	6.32E+02	2.47E-02	6.91E+02	2.20E+00
BREOT-S27+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	9.41E+02	7.97E+00	1.10E-03	1.94E+02	2.14E-01	1.00E+00	5.50E-03	1.49E+03	6.32E+02	2.47E-02	6.91E+02	2.15E+00
BREOT-N28+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S28+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	9.18E+02	7.78E+00	1.10E-03	1.89E+02	2.08E-01	1.00E+00	5.50E-03	1.45E+03	6.32E+02	2.47E-02	6.91E+02	2.10E+00
BREOT-N29+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	9.47E+02	8.02E+00	1.10E-03	1.95E+02	2.15E-01	1.00E+00	5.50E-03	1.50E+03	6.32E+02	2.47E-02	6.91E+02	2.17E+00
BREOT-S29+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	9.86E+02	8.35E+00	1.10E-03	2.03E+02	2.24E-01	1.00E+00	5.50E-03	1.56E+03	6.32E+02	2.47E-02	6.91E+02	2.26E+00
BREOT-N30+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	1.54E+03	1.31E+01	1.10E-03	3.18E+02	3.50E-01	1.00E+00	5.50E-03	2.44E+03	6.32E+02	2.47E-02	6.91E+02	3.53E+00
BREOT-S30+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	9.03E+02	7.65E+00	1.10E-03	1.86E+02	2.05E-01	1.00E+00	5.50E-03	1.43E+03	6.32E+02	2.47E-02	6.91E+02	2.07E+00
BREOT-N31+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	1.03E+04	8.68E+01	1.10E-03	2.11E+03	2.33E+00	1.00E+00	5.50E-03	1.62E+04	6.32E+02	2.47E-02	6.91E+02	2.35E+01
BREOT-N31+75 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	1.05E+03	8.91E+00	1.10E-03	2.17E+02	2.39E-01	1.00E+00	5.50E-03	1.66E+03	6.32E+02	2.47E-02	6.91E+02	2.41E+00
BREOT-S31+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	4.06E+02	3.44E+00	1.10E-03	8.37E+01	9.22E-02	1.00E+00	5.50E-03	6.42E+02	6.32E+02	2.47E-02	6.91E+02	9.29E-01
BREOT-N32+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	1.29E+03	1.09E+01	1.10E-03	2.65E+02	2.92E-01	1.00E+00	5.50E-03	2.03E+03	6.32E+02	2.47E-02	6.91E+02	2.94E+00
BREOT-S32+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	1.96E+03	1.66E+01	1.10E-03	4.04E+02	4.45E-01	1.00E+00	5.50E-03	3.10E+03	6.32E+02	2.47E-02	6.91E+02	4.48E+00
BREOT-S32+300 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	3.84E+03	3.25E+01	1.10E-03	7.91E+02	8.71E-01	1.00E+00	5.50E-03	6.07E+03	6.32E+02	2.47E-02	6.91E+02	8.78E+00
BREOT-N33+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	1.86E+03	1.57E+01	1.10E-03	3.83E+02	4.22E-01	1.00E+00	5.50E-03	2.94E+03	6.32E+02	2.47E-02	6.91E+02	4.25E+00
BREOT-S33+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	4.32E+03	3.66E+01	1.10E-03	8.90E+02	9.80E-01	1.00E+00	5.50E-03	6.83E+03	6.32E+02	2.47E-02	6.91E+02	9.88E+00
BREOT-N34+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	1.75E+03	1.48E+01	1.10E-03	3.61E+02	3.98E-01	1.00E+00	5.50E-03	2.77E+03	6.32E+02	2.47E-02	6.91E+02	4.01E+00
BREOT-S34+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	1.98E+03	1.68E+01	1.10E-03	4.08E+02	4.49E-01	1.00E+00	5.50E-03	3.13E+03	6.32E+02	2.47E-02	6.91E+02	4.53E+00
BREOT-N35+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	1.39E+03	1.17E+01	1.10E-03	2.86E+02	3.15E-01	1.00E+00	5.50E-03	2.19E+03	6.32E+02	2.47E-02	6.91E+02	3.17E+00
BREOT-S35+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	4.22E+03	3.58E+01	1.10E-03	8.70E+02	9.58E-01	1.00E+00	5.50E-03	6.68E+03	6.32E+02	2.47E-02	6.91E+02	9.66E+00
BREOT-N36+100 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	7.66E+02	6.49E+00	1.10E-03	1.58E+02	1.74E-01	1.00E+00	5.50E-03	1.21E+03	6.32E+02	2.47E-02	6.91E+02	1.75E+00
BREOT-N36+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	2.64E+03	2.24E+01	1.10E-03	5.45E+02	6.00E-01	1.00E+00	5.50E-03	4.18E+03	6.32E+02	2.47E-02	6.91E+02	6.05E+00
BREOT-S36+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	3.89E+03	3.29E+01	1.10E-03	8.02E+02	8.83E-01	1.00E+00	5.50E-03	6.15E+03	6.32E+02	2.47E-02	6.91E+02	8.90E+00
BREOT-N37+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	8.66E+02	7.33E+00	1.10E-03	1.78E+02	1.97E-01	1.00E+00	5.50E-03	1.37E+03	6.32E+02	2.47E-02	6.91E+02	1.98E+00
BREOT-S37+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	5.35E+03	4.53E+01	1.10E-03	1.10E+03	1.22E+00	1.00E+00	5.50E-03	8.46E+03	6.32E+02	2.47E-02	6.91E+02	1.22E+01
BREOT-N38+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	2.08E+03	1.76E+01	1.10E-03	4.29E+02	4.72E-01	1.00E+00	5.50E-03	3.29E+03	6.32E+02	2.47E-02	6.91E+02	4.76E+00
BREOT-S38+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	5.09E+03	4.31E+01	1.10E-03	1.05E+03	1.16E+00	1.00E+00	5.50E-03	8.05E+03	6.32E+02	2.47E-02	6.91E+02	1.16E+01
BREOT-N39+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	7.66E+02	6.49E+00	1.10E-03	1.58E+02	1.74E-01	1.00E+00	5.50E-03	1.21E+03	6.32E+02	2.47E-02	6.91E+02	1.75E+00
BREOT-S39+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	4.26E+03	3.61E+01	1.10E-03	8.78E+02	9.67E-01	1.00E+00	5.50E-03	6.74E+03	6.32E+02	2.47E-02	6.91E+02	9.75E+00
BREOT-N40+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	1.12E+03	9.46E+00	1.10E-03	2.30E+02	2.53E-01	1.00E+00	5.50E-03	1.77E+03	6.32E+02	2.47E-02	6.91E+02	2.55E+00
BREOT-S40+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	3.96E+03	3.36E+01	1.10E-03	8.17E+02	9.00E-01	1.00E+00	5.50E-03	6.27E+03	6.32E+02	2.47E-02	6.91E+02	9.07E+00
BREOT-N41+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	4.41E+02	3.74E+00	1.10E-03	9.10E+01	1.00E-01	1.00E+00	5.50E-03	6.98E+02	6.32E+02	2.47E-02	6.91E+02	1.01E+00
BREOT-S41+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	1.53E+03	1.30E+01	1.10E-03	3.16E+02	3.48E-01	1.00E+00	5.50E-03	2.42E+03	6.32E+02	2.47E-02	6.91E+02	3.51E+00
BREOT-N42+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S42+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	2.34E+03	1.98E+01	1.10E-03	4.82E+02	5.31E-01	1.00E+00	5.50E-03	3.70E+03	6.32E+02	2.47E-02	6.91E+02	5.35E+00
BREOT-N43+12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	7.39E+02	6.26E+00	1.10E-03	1.52E+02	1.68E-01	1.00E+00	5.50E-03	1.17E+03	6.32E+02	2.47E-02	6.91E+02	1.69E+00
BREOT-N43+40 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	3.87E+02	3.27E+00	1.10E-03	7.97E+01	8.78E-02	1.00E+00	5.50E-03	6.11E+02	6.32E+02	2.47E-02	6.91E+02	8.84E-01
BREOT-S43+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	9.55E+02	8.09E+00	1.10E-03	1.97E+02	2.17E-01	1.00E+00	5.50E-03	1.51E+03	6.32E+02	2.47E-02	6.91E+02	2.19E+00
BREOT-N44+55 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	9.04E+02	7.66E+00	1.10E-03	1.86E+02	2.05E-01	1.00E+00	5.50E-03	1.43E+03	6.32E+02	2.47E-02	6.91E+02	2.07E+00
BREOT-S44+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N45+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	4.16E+02	3.53E+00	1.10E-03	8.59E+01	9.46E-02	1.00E+00	5.50E-03	6.59E+02	6.32E+02	2.47E-02	6.91E+02	9.53E-01
BREOT-S45+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N46+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	1.63E+03	1.38E+01	1.10E-03	3.36E+02	3.70E-01	1.00E+00	5.50E-03	2.58E+03	6.32E+02	2.47E-02	6.91E+02	3.73E+00
BREOT-S46+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	7.43E+02	6.30E+00	1.10E-03	1.53E+02	1.69E-01	1.00E+00	5.50E-03	1.18E+03	6.32E+02	2.47E-02	6.91E+02	1.70E+00
BREOT-N47+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	1.23E+03	1.04E+01	1.10E-03	2.53E+02	2.79E-01	1.00E+00	5.50E-03	1.94E+03	6.32E+02	2.47E-02	6.91E+02	2.81E+00
BREOT-S47+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N48+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	3.86E+02	3.27E+00	1.10E-03	7.96E+01	8.77E-02	1.00E+00	5.50E-03	6.11E+02	6.32E+02	2.47E-02	6.91E+02	8.84E-01
BREOT-S48+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	4.25E+02	3.60E+00	1.10E-03	8.77E+01	9.65E-02	1.00E+00	5.50E-03	6.72E+02	6.32E+02	2.47E-02	6.91E+02	9.73E-01
BREOT-N49+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	5.02E+02	4.25E+00	1.10E-03	1.03E+02	1.14E-01	1.00E+00	5.50E-03	7.94E+02	6.32E+02	2.47E-02	6.91E+02	1.15E+00

TABLE C-2C: COPPER DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

Site Area (hectares) **18.41**

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Masked Shrew (Omnivorous Mammal - Terrestrial, Wetland)																							
BREOT-S49+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N51+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	4.44E+02	3.76E+00	1.10E-03	9.15E+01	1.01E-01	1.00E+00	5.50E-03	7.02E+02	6.32E+02	2.47E-02	6.91E+02	1.02E+00
BREOT-S51+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N52+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	5.58E+02	4.72E+00	1.10E-03	1.15E+02	1.27E-01	1.00E+00	5.50E-03	8.82E+02	6.32E+02	2.47E-02	6.91E+02	1.28E+00
BREOT-S52+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N53+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	5.41E+02	4.58E+00	1.10E-03	1.12E+02	1.23E-01	1.00E+00	5.50E-03	8.56E+02	6.32E+02	2.47E-02	6.91E+02	1.24E+00
BREOT-S53+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S54+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N55+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S55+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	4.29E+02	3.63E+00	1.10E-03	8.85E+01	9.74E-02	1.00E+00	5.50E-03	6.78E+02	6.32E+02	2.47E-02	6.91E+02	9.82E-01
BREOT-N56+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S56+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	9.77E+02	8.27E+00	1.10E-03	2.01E+02	2.22E-01	1.00E+00	5.50E-03	1.54E+03	6.32E+02	2.47E-02	6.91E+02	2.23E+00
BREOT-N57+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S57+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	6.83E+02	5.78E+00	1.10E-03	1.41E+02	1.55E-01	1.00E+00	5.50E-03	1.08E+03	6.32E+02	2.47E-02	6.91E+02	1.56E+00
BREOT-N58+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	3.94E+02	3.34E+00	1.10E-03	8.13E+01	8.95E-02	1.00E+00	5.50E-03	6.23E+02	6.32E+02	2.47E-02	6.91E+02	9.02E-01
BREOT-S58+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	7.55E+02	6.40E+00	1.10E-03	1.56E+02	1.71E-01	1.00E+00	5.50E-03	1.19E+03	6.32E+02	2.47E-02	6.91E+02	1.73E+00
BREOT-N59+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	5.39E+02	4.56E+00	1.10E-03	1.11E+02	1.22E-01	1.00E+00	5.50E-03	8.52E+02	6.32E+02	2.47E-02	6.91E+02	1.23E+00
BREOT-N60+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S60+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	9.74E+02	8.25E+00	1.10E-03	2.01E+02	2.21E-01	1.00E+00	5.50E-03	1.54E+03	6.32E+02	2.47E-02	6.91E+02	2.23E+00
BREOT-S61+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	7.86E+02	6.66E+00	1.10E-03	1.62E+02	1.78E-01	1.00E+00	5.50E-03	1.24E+03	6.32E+02	2.47E-02	6.91E+02	1.80E+00
BREOT-N62+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	5.20E+02	4.40E+00	1.10E-03	1.07E+02	1.18E-01	1.00E+00	5.50E-03	8.22E+02	6.32E+02	2.47E-02	6.91E+02	1.19E+00
BREOT-S62+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N63+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	1.28E+03	1.08E+01	1.10E-03	2.64E+02	2.91E-01	1.00E+00	5.50E-03	2.03E+03	6.32E+02	2.47E-02	6.91E+02	2.93E+00
BREOT-S63+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	4.75E+02	4.02E+00	1.10E-03	9.79E+01	1.08E-01	1.00E+00	5.50E-03	7.50E+02	6.32E+02	2.47E-02	6.91E+02	1.09E+00
BREOT-N64+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	4.81E+02	4.07E+00	1.10E-03	9.92E+01	1.09E-01	1.00E+00	5.50E-03	7.61E+02	6.32E+02	2.47E-02	6.91E+02	1.10E+00
BREOT-S64+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	1.40E+03	1.19E+01	1.10E-03	2.89E+02	3.19E-01	1.00E+00	5.50E-03	2.22E+03	6.32E+02	2.47E-02	6.91E+02	3.21E+00
BREOT-S65+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	1.30E+03	1.10E+01	1.10E-03	2.69E+02	2.96E-01	1.00E+00	5.50E-03	2.06E+03	6.32E+02	2.47E-02	6.91E+02	2.98E+00
BREOT-N66+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S66+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	1.30E+03	1.10E+01	1.10E-03	2.67E+02	2.95E-01	1.00E+00	5.50E-03	2.05E+03	6.32E+02	2.47E-02	6.91E+02	2.97E+00
BREOT-N67+125 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	7.18E+02	6.08E+00	1.10E-03	1.48E+02	1.63E-01	1.00E+00	5.50E-03	1.14E+03	6.32E+02	2.47E-02	6.91E+02	1.64E+00
BREOT-S67+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	1.48E+03	1.25E+01	1.10E-03	3.05E+02	3.36E-01	1.00E+00	5.50E-03	2.34E+03	6.32E+02	2.47E-02	6.91E+02	3.39E+00
BREOT-N67+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	8.55E+02	7.24E+00	1.10E-03	1.76E+02	1.94E-01	1.00E+00	5.50E-03	1.35E+03	6.32E+02	2.47E-02	6.91E+02	1.96E+00
																						Maximum HQ (Outside Tailings)	**9.77E+01**

Notes

Results are evaluated in order of upstream to downstream.

1 See Tables 3-1 through 3-13 for ingestion rates, foraging ranges used to calculate the SUF, and body weights.

2 BAFs were calculated by dividing site-collected tissue by collocated soil concentrations. The maximum BAF calculated from the Beartrap Creek and Blackfoot River transects was used.

3 The mammal, plant, and invertebrate concentrations were calculated by multiplying the soil concentration by the BAF to generate a tissue concentration (see note 2).

4 Mammal, plant, and invertebrate daily doses were calculated by multiplying the ingestion rate (see note 1) by the tissue concentration (see note 3).

5 Soil concentration from specified depths below ground surface at point ID as measured by XRF 10. Doses were not calculated for detected and non-detected soil concentrations measured below the minimum reference site concentration, as indicated by BB. For results that were measured at less than the detection limit, doses were calculated using half of the detection limit.

6 Soil daily dose was calculated by multiplying the soil ingestion rate (see note 1) by soil concentration (see note 5).

7 Total daily dose is calculated using the following equation: total daily dose = ([mammal daily dose (if applicable) + plant daily dose (if applicable) + invertebrate daily dose (if applicable) + soil daily dose]*SUF)/receptor species body weight.

8 The derivation of TRVs is described in Navy (1998). The high TRV was used for dose calculations.

9 Allometrically adjusted TRVs for birds were calculated using the following equation: receptor species TRV = (test species TRV) x (test species body weight / receptor species body weight)$^{(1-1.2)}$.

10 Allometrically adjusted TRVs for mammals were calculated using the following equation: receptor species TRV = (test species TRV) x (test species body weight / receptor species body weight)$^{(1-0.94)}$.

11 HQs were calculated using the following equation: HQ = total daily dose/allometrically adjusted TRV.

12 Green cells indicate an HQ greater than 1.0

BAF	Bioaccumulation Factor	mg/kg	Milligram per kilogram
BB	Below minimum background reference site concentration	NA	Not applicable
EE/CA	Engineering Evaluation/Cost Analysis	Navy	Department of the Navy
EU	Exposure Unit	SUF	Site use factor
HQ	Hazard quotient	TRV	Toxicity reference value
ID	Identification	XRF	X-ray fluorescence
kg	Kilogram	XRF 10	XRF measurements recorded following drying and seiving through a #10-mesh screen
kg/day	Kilogram per day		
mg/day	Milligram per day		

Sources: Department of the Navy. 1998. "Development of Toxicity Reference Values for Conducting Ecological Risk Assessments at Naval Facilities in California, Interim Final." Prepared by Naval Facilities Engineering Command, Engineering Field Activity West (EFA

TABLE C-2D: LEAD DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **18.41**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Mourning Dove (Herbivorous Birds - Terrestrial)																							
Reference Sites																							
ACBG-1 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	4.35E-02	1.00E+00	5.78E-03	NA	NA	NA	NA	5.36E-04	2.31E+01	1.24E-02	7.11E-02	1.09E-01	1.18E-02	8.75E+00	8.00E-01	5.88E+00	2.01E-03
ACBG-2 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	4.35E-02	1.66E+00	9.58E-03	NA	NA	NA	NA	5.36E-04	3.83E+01	2.05E-02	7.11E-02	1.09E-01	1.96E-02	8.75E+00	8.00E-01	5.88E+00	3.33E-03
UBRBG-202 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	4.35E-02	2.36E+00	1.36E-02	NA	NA	NA	NA	5.36E-04	5.44E+01	2.91E-02	7.11E-02	1.09E-01	2.78E-02	8.75E+00	8.00E-01	5.88E+00	4.74E-03
UBRBG-204 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	4.35E-02	2.31E+00	1.33E-02	NA	NA	NA	NA	5.36E-04	5.32E+01	2.85E-02	7.11E-02	1.09E-01	2.72E-02	8.75E+00	8.00E-01	5.88E+00	4.63E-03
Inside Tailings																						**Minimum HQ (Reference Sites)**	**2.01E-03**
BREOT-S6-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	9.74E+02	5.61E+00	NA	NA	NA	NA	5.36E-04	1.55E+03	8.31E-01	7.11E-02	1.09E-01	4.19E+00	8.75E+00	8.00E-01	5.88E+00	7.14E-01
BREOT-S2-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	1.22E+03	7.04E+00	NA	NA	NA	NA	5.36E-04	1.94E+03	1.04E+00	7.11E-02	1.09E-01	5.26E+00	8.75E+00	8.00E-01	5.88E+00	8.95E-01
BREOT-S0-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	5.58E+02	3.22E+00	NA	NA	NA	NA	5.36E-04	8.89E+02	4.76E-01	7.11E-02	1.09E-01	2.40E+00	8.75E+00	8.00E-01	5.88E+00	4.09E-01
BREOT-S1-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	5.08E+02	2.93E+00	NA	NA	NA	NA	5.36E-04	8.09E+02	4.34E-01	7.11E-02	1.09E-01	2.19E+00	8.75E+00	8.00E-01	5.88E+00	3.73E-01
BREOT-S7-25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	1.07E+02	6.18E-01	NA	NA	NA	NA	5.36E-04	1.71E+02	9.14E-02	7.11E-02	1.09E-01	4.62E-01	8.75E+00	8.00E-01	5.88E+00	7.86E-02
BREOT-S8-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	4.07E+02	2.35E+00	NA	NA	NA	NA	5.36E-04	6.49E+02	3.48E-01	7.11E-02	1.09E-01	1.75E+00	8.75E+00	8.00E-01	5.88E+00	2.99E-01
BREOT-S9-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	4.26E+02	2.46E+00	NA	NA	NA	NA	5.36E-04	6.79E+02	3.64E-01	7.11E-02	1.09E-01	1.84E+00	8.75E+00	8.00E-01	5.88E+00	3.12E-01
BREOT-N10-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	6.07E+03	3.50E+01	NA	NA	NA	NA	5.36E-04	9.66E+03	5.18E+00	7.11E-02	1.09E-01	2.61E+01	8.75E+00	8.00E-01	5.88E+00	4.45E+00
BREOT-N11-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	1.69E+03	9.73E+00	NA	NA	NA	NA	5.36E-04	2.69E+03	1.44E+00	7.11E-02	1.09E-01	7.27E+00	8.75E+00	8.00E-01	5.88E+00	1.24E+00
BREOT-N11-125 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	1.40E+03	8.05E+00	NA	NA	NA	NA	5.36E-04	2.23E+03	1.19E+00	7.11E-02	1.09E-01	6.02E+00	8.75E+00	8.00E-01	5.88E+00	1.02E+00
BREOT-S11-12 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	4.10E+03	2.36E+01	NA	NA	NA	NA	5.36E-04	6.52E+03	3.49E+00	7.11E-02	1.09E-01	1.76E+01	8.75E+00	8.00E-01	5.88E+00	3.00E+00
BREOT-S11+63 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	1.29E+03	7.43E+00	NA	NA	NA	NA	5.36E-04	2.05E+03	1.10E+00	7.11E-02	1.09E-01	5.55E+00	8.75E+00	8.00E-01	5.88E+00	9.44E-01
UBDT-TP-6 (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	9.77E+03	5.63E+01	NA	NA	NA	NA	5.36E-04	1.56E+04	8.34E+00	7.11E-02	1.09E-01	4.21E+01	8.75E+00	8.00E-01	5.88E+00	7.16E+00
UBDT-TP-6 (2-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	7.46E+03	4.30E+01	NA	NA	NA	NA	5.36E-04	1.19E+04	6.36E+00	7.11E-02	1.09E-01	3.21E+01	8.75E+00	8.00E-01	5.88E+00	5.47E+00
UBDT-TP-6 (12-24")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	4.17E+03	2.40E+01	NA	NA	NA	NA	5.36E-04	6.64E+03	3.56E+00	7.11E-02	1.09E-01	1.80E+01	8.75E+00	8.00E-01	5.88E+00	3.06E+00
UBDT-TP-6 (24-36")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	3.35E+02	1.93E+00	NA	NA	NA	NA	5.36E-04	5.33E+02	2.86E-01	7.11E-02	1.09E-01	1.44E+00	8.75E+00	8.00E-01	5.88E+00	2.46E-01
UBDT-TP-6 (36-48")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	7.56E+02	4.35E+00	NA	NA	NA	NA	5.36E-04	1.20E+03	6.44E-01	7.11E-02	1.09E-01	3.25E+00	8.75E+00	8.00E-01	5.88E+00	5.54E-01
UBDT-TP-6 (48-60")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	3.44E+02	1.98E+00	NA	NA	NA	NA	5.36E-04	5.47E+02	2.93E-01	7.11E-02	1.09E-01	1.48E+00	8.75E+00	8.00E-01	5.88E+00	2.52E-01
BREOT-N12-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	9.56E+02	5.51E+00	NA	NA	NA	NA	5.36E-04	1.52E+03	8.15E-01	7.11E-02	1.09E-01	4.12E+00	8.75E+00	8.00E-01	5.88E+00	7.00E-01
BREOT-S12-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	2.12E+03	1.22E+01	NA	NA	NA	NA	5.36E-04	3.37E+03	1.80E+00	7.11E-02	1.09E-01	9.11E+00	8.75E+00	8.00E-01	5.88E+00	1.55E+00
BREOT-S13-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	3.16E+03	1.82E+01	NA	NA	NA	NA	5.36E-04	5.02E+03	2.69E+00	7.11E-02	1.09E-01	1.36E+01	8.75E+00	8.00E-01	5.88E+00	2.31E+00
BREOT-S14-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	8.75E+02	5.04E+00	NA	NA	NA	NA	5.36E-04	1.39E+03	7.46E-01	7.11E-02	1.09E-01	3.77E+00	8.75E+00	8.00E-01	5.88E+00	6.41E-01
BREOT-N15-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	1.79E+03	1.03E+01	NA	NA	NA	NA	5.36E-04	2.84E+03	1.52E+00	7.11E-02	1.09E-01	7.69E+00	8.75E+00	8.00E-01	5.88E+00	1.31E+00
BREOT-S15-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	1.62E+03	9.33E+00	NA	NA	NA	NA	5.36E-04	2.58E+03	1.38E+00	7.11E-02	1.09E-01	6.97E+00	8.75E+00	8.00E-01	5.88E+00	1.19E+00
BREOT-N16-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	1.70E+03	9.79E+00	NA	NA	NA	NA	5.36E-04	2.70E+03	1.45E+00	7.11E-02	1.09E-01	7.32E+00	8.75E+00	8.00E-01	5.88E+00	1.25E+00
BREOT-N16-25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	2.07E+02	1.19E+00	NA	NA	NA	NA	5.36E-04	3.29E+02	1.76E-01	7.11E-02	1.09E-01	8.90E-01	8.75E+00	8.00E-01	5.88E+00	1.51E-01
BREOT-S16-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	1.20E+03	6.94E+00	NA	NA	NA	NA	5.36E-04	1.92E+03	1.03E+00	7.11E-02	1.09E-01	5.19E+00	8.75E+00	8.00E-01	5.88E+00	8.83E-01
BREOT-N17-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	1.46E+03	8.44E+00	NA	NA	NA	NA	5.36E-04	2.33E+03	1.25E+00	7.11E-02	1.09E-01	6.30E+00	8.75E+00	8.00E-01	5.88E+00	1.07E+00
BREOT-S17-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	4.42E+02	2.55E+00	NA	NA	NA	NA	5.36E-04	7.03E+02	3.77E-01	7.11E-02	1.09E-01	1.90E+00	8.75E+00	8.00E-01	5.88E+00	3.24E-01
BREOT-S17-25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	3.43E+02	1.98E+00	NA	NA	NA	NA	5.36E-04	5.46E+02	2.93E-01	7.11E-02	1.09E-01	1.48E+00	8.75E+00	8.00E-01	5.88E+00	2.52E-01
UBDT-TP-4 (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	8.15E+02	4.70E+00	NA	NA	NA	NA	5.36E-04	1.30E+03	6.95E-01	7.11E-02	1.09E-01	3.51E+00	8.75E+00	8.00E-01	5.88E+00	5.97E-01
UBDT-TP-4 (2-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	7.68E+02	4.43E+00	NA	NA	NA	NA	5.36E-04	1.22E+03	6.55E-01	7.11E-02	1.09E-01	3.31E+00	8.75E+00	8.00E-01	5.88E+00	5.63E-01
UBDT-TP-4 (12-24")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	5.19E+02	2.99E+00	NA	NA	NA	NA	5.36E-04	8.26E+02	4.43E-01	7.11E-02	1.09E-01	2.23E+00	8.75E+00	8.00E-01	5.88E+00	3.80E-01
UBDT-TP-4 (24-36")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	4.21E+02	2.43E+00	NA	NA	NA	NA	5.36E-04	6.71E+02	3.59E-01	7.11E-02	1.09E-01	1.81E+00	8.75E+00	8.00E-01	5.88E+00	3.09E-01
BREOT-N18-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	1.27E+03	7.29E+00	NA	NA	NA	NA	5.36E-04	2.02E+03	1.08E+00	7.11E-02	1.09E-01	5.45E+00	8.75E+00	8.00E-01	5.88E+00	9.28E-01
BREOT-N18-25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	1.13E+02	6.53E-01	NA	NA	NA	NA	5.36E-04	1.80E+02	9.66E-02	7.11E-02	1.09E-01	4.88E-01	8.75E+00	8.00E-01	5.88E+00	8.30E-02
BREOT-S18-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	5.17E+02	2.98E+00	NA	NA	NA	NA	5.36E-04	8.22E+02	4.41E-01	7.11E-02	1.09E-01	2.22E+00	8.75E+00	8.00E-01	5.88E+00	3.79E-01
BREOT-N19-10 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	1.18E+03	6.81E+00	NA	NA	NA	NA	5.36E-04	1.88E+03	1.01E+00	7.11E-02	1.09E-01	5.09E+00	8.75E+00	8.00E-01	5.88E+00	8.66E-01
BREOT-S19-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	6.37E+02	3.67E+00	NA	NA	NA	NA	5.36E-04	1.01E+03	5.43E-01	7.11E-02	1.09E-01	2.74E+00	8.75E+00	8.00E-01	5.88E+00	4.67E-01
UBDT-TP-5 (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	6.05E+02	3.48E+00	NA	NA	NA	NA	5.36E-04	9.62E+02	5.16E-01	7.11E-02	1.09E-01	2.60E+00	8.75E+00	8.00E-01	5.88E+00	4.43E-01
UBDT-TP-5 (2-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	6.43E+02	3.70E+00	NA	NA	NA	NA	5.36E-04	1.02E+03	5.48E-01	7.11E-02	1.09E-01	2.77E+00	8.75E+00	8.00E-01	5.88E+00	4.71E-01
UBDT-TP-5 (12-24")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	6.55E+02	3.77E+00	NA	NA	NA	NA	5.36E-04	1.04E+03	5.58E-01	7.11E-02	1.09E-01	2.82E+00	8.75E+00	8.00E-01	5.88E+00	4.80E-01
BREOT-N20-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	7.32E+02	4.22E+00	NA	NA	NA	NA	5.36E-04	1.17E+03	6.25E-01	7.11E-02	1.09E-01	3.15E+00	8.75E+00	8.00E-01	5.88E+00	5.37E-01
UBDT-TP-3 (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	8.44E+02	4.86E+00	NA	NA	NA	NA	5.36E-04	1.34E+03	7.20E-01	7.11E-02	1.09E-01	3.64E+00	8.75E+00	8.00E-01	5.88E+00	6.19E-01
UBDT-TP-3 (2-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	1.14E+03	6.57E+00	NA	NA	NA	NA	5.36E-04	1.82E+03	9.73E-01	7.11E-02	1.09E-01	4.91E+00	8.75E+00	8.00E-01	5.88E+00	8.36E-01
UBDT-TP-3 (12-24")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	7.84E+02	4.52E+00	NA	NA	NA	NA	5.36E-04	1.25E+03	6.69E-01	7.11E-02	1.09E-01	3.37E+00	8.75E+00	8.00E-01	5.88E+00	5.74E-01
UBDT-TP-3 (24-36")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	9.90E+02	5.70E+00	NA	NA	NA	NA	5.36E-04	1.58E+03	8.44E-01	7.11E-02	1.09E-01	4.26E+00	8.75E+00	8.00E-01	5.88E+00	7.25E-01
UBDT-TP-3 (36-48")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	1.10E+03	6.32E+00	NA	NA	NA	NA	5.36E-04	1.74E+03	9.35E-01	7.11E-02	1.09E-01	4.72E+00	8.75E+00	8.00E-01	5.88E+00	8.03E-01
UBDT-TP-3 (48-60")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	2.24E+02	1.29E+00	NA	NA	NA	NA	5.36E-04	3.57E+02	1.91E-01	7.11E-02	1.09E-01	9.65E-01	8.75E+00	8.00E-01	5.88E+00	1.64E-01
BREOT-N21-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	7.21E+02	4.15E+00	NA	NA	NA	NA	5.36E-04	1.15E+03	6.15E-01	7.11E-02	1.09E-01	3.10E+00	8.75E+00	8.00E-01	5.88E+00	5.28E-01
BREOT-N22-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	9.28E+02	5.35E+00	NA	NA	NA	NA	5.36E-04	1.48E+03	7.92E-01	7.11E-02	1.09E-01	4.00E+00	8.75E+00	8.00E-01	5.88E+00	6.80E-01
BREOT-N23-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	7.75E+02	4.47E+00	NA	NA	NA	NA	5.36E-04	1.23E+03	6.61E-01	7.11E-02	1.09E-01	3.34E+00	8.75E+00	8.00E-01	5.88E+00	5.68E-01

TABLE C-2D: LEAD DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 18.41

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Mourning Dove (Herbivorous Birds - Terrestrial)																							
BREOT-S23-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	1.08E+03	6.24E+00	NA	NA	NA	NA	5.36E-04	1.72E+03	9.23E-01	7.11E-02	1.09E-01	4.66E+00	8.75E+00	8.00E-01	5.88E+00	7.93E-01
UBDT-TP-2 (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	7.45E+02	4.29E+00	NA	NA	NA	NA	5.36E-04	1.19E+03	6.36E-01	7.11E-02	1.09E-01	3.21E+00	8.75E+00	8.00E-01	5.88E+00	5.46E-01
UBDT-TP-2 (2-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	5.50E+02	3.17E+00	NA	NA	NA	NA	5.36E-04	8.75E+02	4.69E-01	7.11E-02	1.09E-01	2.37E+00	8.75E+00	8.00E-01	5.88E+00	4.03E-01
UBDT-TP-2 (12-24")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	7.89E+02	4.55E+00	NA	NA	NA	NA	5.36E-04	1.26E+03	6.73E-01	7.11E-02	1.09E-01	3.40E+00	8.75E+00	8.00E-01	5.88E+00	5.78E-01
UBDT-TP-2 (24-36")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	4.69E+02	2.70E+00	NA	NA	NA	NA	5.36E-04	7.47E+02	4.00E-01	7.11E-02	1.09E-01	2.02E+00	8.75E+00	8.00E-01	5.88E+00	3.44E-01
UBDT-TP-2 (36-48")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	7.70E+02	4.44E+00	NA	NA	NA	NA	5.36E-04	1.23E+03	6.57E-01	7.11E-02	1.09E-01	3.32E+00	8.75E+00	8.00E-01	5.88E+00	5.64E-01
BREOT-S24-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	1.12E+03	6.44E+00	NA	NA	NA	NA	5.36E-04	1.78E+03	9.53E-01	7.11E-02	1.09E-01	4.81E+00	8.75E+00	8.00E-01	5.88E+00	8.19E-01
BREOT-N25-50 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	5.53E+03	3.19E+01	NA	NA	NA	NA	5.36E-04	8.80E+03	4.72E+00	7.11E-02	1.09E-01	2.38E+01	8.75E+00	8.00E-01	5.88E+00	4.05E+00
BREOT-N25-95 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	8.62E+02	4.97E+00	NA	NA	NA	NA	5.36E-04	1.37E+03	7.35E-01	7.11E-02	1.09E-01	3.71E+00	8.75E+00	8.00E-01	5.88E+00	6.32E-01
BREOT-S25-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	9.87E+02	5.68E+00	NA	NA	NA	NA	5.36E-04	1.57E+03	8.41E-01	7.11E-02	1.09E-01	4.25E+00	8.75E+00	8.00E-01	5.88E+00	7.23E-01
BREOT-S25-40 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	1.26E+03	7.24E+00	NA	NA	NA	NA	5.36E-04	2.00E+03	1.07E+00	7.11E-02	1.09E-01	5.41E+00	8.75E+00	8.00E-01	5.88E+00	9.21E-01
BREOT-N26A-25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	4.73E+01	2.73E-01	NA	NA	NA	NA	5.36E-04	7.54E+01	4.04E-02	7.11E-02	1.09E-01	2.04E-01	8.75E+00	8.00E-01	5.88E+00	3.47E-02
BREOT-N26B-25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	1.22E+03	7.02E+00	NA	NA	NA	NA	5.36E-04	1.94E+03	1.04E+00	7.11E-02	1.09E-01	5.24E+00	8.75E+00	8.00E-01	5.88E+00	8.93E-01
BREOT-N26-50 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	3.99E+03	2.30E+01	NA	NA	NA	NA	5.36E-04	6.36E+03	3.41E+00	7.11E-02	1.09E-01	1.72E+01	8.75E+00	8.00E-01	5.88E+00	2.93E+00
BREOT-N26-75 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	2.64E+03	1.52E+01	NA	NA	NA	NA	5.36E-04	4.21E+03	2.25E+00	7.11E-02	1.09E-01	1.14E+01	8.75E+00	8.00E-01	5.88E+00	1.94E+00
BREOT-S26-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	7.20E+02	4.15E+00	NA	NA	NA	NA	5.36E-04	1.15E+03	6.14E-01	7.11E-02	1.09E-01	3.10E+00	8.75E+00	8.00E-01	5.88E+00	5.28E-01
BREOT-S26-40 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	8.93E+02	5.15E+00	NA	NA	NA	NA	5.36E-04	1.42E+03	7.62E-01	7.11E-02	1.09E-01	3.85E+00	8.75E+00	8.00E-01	5.88E+00	6.55E-01
BREOT-N27-30 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	5.53E+03	3.19E+01	NA	NA	NA	NA	5.36E-04	8.80E+03	4.72E+00	7.11E-02	1.09E-01	2.38E+01	8.75E+00	8.00E-01	5.88E+00	4.05E+00
BREOT-N27-75 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	6.41E+03	3.69E+01	NA	NA	NA	NA	5.36E-04	1.02E+04	5.47E+00	7.11E-02	1.09E-01	2.76E+01	8.75E+00	8.00E-01	5.88E+00	4.70E+00
BREOT-S27-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	1.51E+03	8.67E+00	NA	NA	NA	NA	5.36E-04	2.40E+03	1.28E+00	7.11E-02	1.09E-01	6.48E+00	8.75E+00	8.00E-01	5.88E+00	1.10E+00
BREOT-N28-110 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	1.48E+03	8.52E+00	NA	NA	NA	NA	5.36E-04	2.35E+03	1.26E+00	7.11E-02	1.09E-01	6.37E+00	8.75E+00	8.00E-01	5.88E+00	1.08E+00
BREOT-N28-55 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	1.37E+04	7.88E+01	NA	NA	NA	NA	5.36E-04	2.18E+04	1.17E+01	7.11E-02	1.09E-01	5.89E+01	8.75E+00	8.00E-01	5.88E+00	1.00E+01
BREOT-S28-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	6.77E+02	3.90E+00	NA	NA	NA	NA	5.36E-04	1.08E+03	5.77E-01	7.11E-02	1.09E-01	2.91E+00	8.75E+00	8.00E-01	5.88E+00	4.96E-01
UBDT-TP-1 (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	4.81E+03	2.77E+01	NA	NA	NA	NA	5.36E-04	7.65E+03	4.10E+00	7.11E-02	1.09E-01	2.07E+01	8.75E+00	8.00E-01	5.88E+00	3.52E+00
UBDT-TP-1 (2-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	6.19E+03	3.57E+01	NA	NA	NA	NA	5.36E-04	9.85E+03	5.28E+00	7.11E-02	1.09E-01	2.67E+01	8.75E+00	8.00E-01	5.88E+00	4.54E+00
UBDT-TP-1 (12-24")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	5.78E+03	3.33E+01	NA	NA	NA	NA	5.36E-04	9.20E+03	4.93E+00	7.11E-02	1.09E-01	2.49E+01	8.75E+00	8.00E-01	5.88E+00	4.24E+00
UBDT-TP-1 (24-36")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	1.80E+03	1.04E+01	NA	NA	NA	NA	5.36E-04	2.86E+03	1.53E+00	7.11E-02	1.09E-01	7.75E+00	8.75E+00	8.00E-01	5.88E+00	1.32E+00
UBDT-TP-1 (36-48")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	1.10E+02	6.31E-01	NA	NA	NA	NA	5.36E-04	1.74E+02	9.35E-02	7.11E-02	1.09E-01	4.72E-01	8.75E+00	8.00E-01	5.88E+00	8.03E-02
UBDT-TP-1 (48-60")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	1.31E+02	7.54E-01	NA	NA	NA	NA	5.36E-04	2.08E+02	1.12E-01	7.11E-02	1.09E-01	5.64E-01	8.75E+00	8.00E-01	5.88E+00	9.59E-02
BREOT-N29-30 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	7.12E+03	4.10E+01	NA	NA	NA	NA	5.36E-04	1.13E+04	6.07E+00	7.11E-02	1.09E-01	3.06E+01	8.75E+00	8.00E-01	5.88E+00	5.22E+00
BREOT-S29-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	8.31E+02	4.79E+00	NA	NA	NA	NA	5.36E-04	1.32E+03	7.09E-01	7.11E-02	1.09E-01	3.58E+00	8.75E+00	8.00E-01	5.88E+00	6.09E-01
BREOT-N30-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	2.04E+03	1.18E+01	NA	NA	NA	NA	5.36E-04	3.25E+03	1.74E+00	7.11E-02	1.09E-01	8.80E+00	8.75E+00	8.00E-01	5.88E+00	1.50E+00
BREOT-S30-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	9.70E+02	5.59E+00	NA	NA	NA	NA	5.36E-04	1.54E+03	8.27E-01	7.11E-02	1.09E-01	4.18E+00	8.75E+00	8.00E-01	5.88E+00	7.11E-01
BREOT-N31-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	2.04E+03	1.18E+01	NA	NA	NA	NA	5.36E-04	3.25E+03	1.74E+00	7.11E-02	1.09E-01	8.80E+00	8.75E+00	8.00E-01	5.88E+00	1.50E+00
BREOT-S31-25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	5.58E+02	3.22E+00	NA	NA	NA	NA	5.36E-04	8.89E+02	4.76E-01	7.11E-02	1.09E-01	2.40E+00	8.75E+00	8.00E-01	5.88E+00	4.09E-01
BREOT-S31-5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	7.11E+02	4.10E+00	NA	NA	NA	NA	5.36E-04	1.13E+03	6.07E-01	7.11E-02	1.09E-01	3.06E+00	8.75E+00	8.00E-01	5.88E+00	5.21E-01
BREOT-N32-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	7.40E+02	4.27E+00	NA	NA	NA	NA	5.36E-04	1.18E+03	6.31E-01	7.11E-02	1.09E-01	3.19E+00	8.75E+00	8.00E-01	5.88E+00	5.42E-01
BREOT-S32-6 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	7.20E+02	4.15E+00	NA	NA	NA	NA	5.36E-04	1.15E+03	6.14E-01	7.11E-02	1.09E-01	3.10E+00	8.75E+00	8.00E-01	5.88E+00	5.28E-01
BREOT-N33-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	2.16E+03	1.24E+01	NA	NA	NA	NA	5.36E-04	3.44E+03	1.84E+00	7.11E-02	1.09E-01	9.30E+00	8.75E+00	8.00E-01	5.88E+00	1.58E+00
BREOT-S33-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	2.70E+02	1.56E+00	NA	NA	NA	NA	5.36E-04	4.30E+02	2.30E-01	7.11E-02	1.09E-01	1.16E+00	8.75E+00	8.00E-01	5.88E+00	1.98E-01
BREOT-N35-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	3.75E+02	2.16E+00	NA	NA	NA	NA	5.36E-04	5.97E+02	3.20E-01	7.11E-02	1.09E-01	1.62E+00	8.75E+00	8.00E-01	5.88E+00	2.75E-01
BREOT-S35-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	9.76E+02	5.62E+00	NA	NA	NA	NA	5.36E-04	1.55E+03	8.32E-01	7.11E-02	1.09E-01	4.20E+00	8.75E+00	8.00E-01	5.88E+00	7.15E-01
BREOT-N36-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	1.02E+03	5.89E+00	NA	NA	NA	NA	5.36E-04	1.63E+03	8.71E-01	7.11E-02	1.09E-01	4.40E+00	8.75E+00	8.00E-01	5.88E+00	7.49E-01
BREOT-S36-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	9.73E+02	5.61E+00	NA	NA	NA	NA	5.36E-04	1.55E+03	8.30E-01	7.11E-02	1.09E-01	4.19E+00	8.75E+00	8.00E-01	5.88E+00	7.13E-01
BREOT-N37-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	9.61E+02	5.53E+00	NA	NA	NA	NA	5.36E-04	1.53E+03	8.19E-01	7.11E-02	1.09E-01	4.14E+00	8.75E+00	8.00E-01	5.88E+00	7.04E-01
BREOT-S37-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	4.90E+02	2.82E+00	NA	NA	NA	NA	5.36E-04	7.80E+02	4.18E-01	7.11E-02	1.09E-01	2.11E+00	8.75E+00	8.00E-01	5.88E+00	3.59E-01
BREOT-N38-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	5.00E+02	2.88E+00	NA	NA	NA	NA	5.36E-04	7.95E+02	4.26E-01	7.11E-02	1.09E-01	2.15E+00	8.75E+00	8.00E-01	5.88E+00	3.66E-01
BREOT-S38-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	8.11E+02	4.67E+00	NA	NA	NA	NA	5.36E-04	1.29E+03	6.91E-01	7.11E-02	1.09E-01	3.49E+00	8.75E+00	8.00E-01	5.88E+00	5.94E-01

TABLE C-2D: LEAD DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 18.41

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Mourning Dove (Herbivorous Birds - Terrestrial)																							
BREOT-N39-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	1.78E+03	1.02E+01	NA	NA	NA	NA	5.36E-04	2.83E+03	1.52E+00	7.11E-02	1.09E-01	7.66E+00	8.75E+00	8.00E-01	5.88E+00	1.30E+00
BREOT-S39-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	9.60E+02	5.53E+00	NA	NA	NA	NA	5.36E-04	1.53E+03	8.19E-01	7.11E-02	1.09E-01	4.14E+00	8.75E+00	8.00E-01	5.88E+00	7.04E-01
BREOT-N40-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	1.19E+03	6.86E+00	NA	NA	NA	NA	5.36E-04	1.90E+03	1.02E+00	7.11E-02	1.09E-01	5.13E+00	8.75E+00	8.00E-01	5.88E+00	8.73E-01
BREOT-S40-14 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	8.58E+02	4.94E+00	NA	NA	NA	NA	5.36E-04	1.37E+03	7.31E-01	7.11E-02	1.09E-01	3.69E+00	8.75E+00	8.00E-01	5.88E+00	6.28E-01
BREOT-N41-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	7.31E+02	4.21E+00	NA	NA	NA	NA	5.36E-04	1.16E+03	6.23E-01	7.11E-02	1.09E-01	3.15E+00	8.75E+00	8.00E-01	5.88E+00	5.36E-01
BREOT-S41-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	1.06E+03	6.11E+00	NA	NA	NA	NA	5.36E-04	1.69E+03	9.04E-01	7.11E-02	1.09E-01	4.56E+00	8.75E+00	8.00E-01	5.88E+00	7.77E-01
BREOT-N42-35 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	1.16E+03	6.71E+00	NA	NA	NA	NA	5.36E-04	1.85E+03	9.93E-01	7.11E-02	1.09E-01	5.01E+00	8.75E+00	8.00E-01	5.88E+00	8.53E-01
BREOT-S42-25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	1.44E+03	8.28E+00	NA	NA	NA	NA	5.36E-04	2.29E+03	1.23E+00	7.11E-02	1.09E-01	6.19E+00	8.75E+00	8.00E-01	5.88E+00	1.05E+00
BREOT-N43-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	1.33E+03	7.66E+00	NA	NA	NA	NA	5.36E-04	2.12E+03	1.13E+00	7.11E-02	1.09E-01	5.73E+00	8.75E+00	8.00E-01	5.88E+00	9.75E-01
BREOT-S43-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	8.07E+02	4.65E+00	NA	NA	NA	NA	5.36E-04	1.28E+03	6.88E-01	7.11E-02	1.09E-01	3.47E+00	8.75E+00	8.00E-01	5.88E+00	5.91E-01
BREOT-N44-30 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	6.15E+02	3.55E+00	NA	NA	NA	NA	5.36E-04	9.80E+02	5.25E-01	7.11E-02	1.09E-01	2.65E+00	8.75E+00	8.00E-01	5.88E+00	4.51E-01
BREOT-S44-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	1.71E+03	9.83E+00	NA	NA	NA	NA	5.36E-04	2.72E+03	1.46E+00	7.11E-02	1.09E-01	7.35E+00	8.75E+00	8.00E-01	5.88E+00	1.25E+00
BREOT-N45-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	6.81E+02	3.93E+00	NA	NA	NA	NA	5.36E-04	1.08E+03	5.81E-01	7.11E-02	1.09E-01	2.93E+00	8.75E+00	8.00E-01	5.88E+00	4.99E-01
BREOT-N43-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	1.33E+03	7.66E+00	NA	NA	NA	NA	5.36E-04	2.12E+03	1.13E+00	7.11E-02	1.09E-01	5.73E+00	8.75E+00	8.00E-01	5.88E+00	9.75E-01
BREOT-S45-6 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	1.90E+03	1.09E+01	NA	NA	NA	NA	5.36E-04	3.02E+03	1.62E+00	7.11E-02	1.09E-01	8.17E+00	8.75E+00	8.00E-01	5.88E+00	1.39E+00
BREOT-N46-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	4.89E+02	2.82E+00	NA	NA	NA	NA	5.36E-04	7.78E+02	4.17E-01	7.11E-02	1.09E-01	2.11E+00	8.75E+00	8.00E-01	5.88E+00	3.58E-01
BREOT-S46-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	8.96E+02	5.16E+00	NA	NA	NA	NA	5.36E-04	1.43E+03	7.64E-01	7.11E-02	1.09E-01	3.86E+00	8.75E+00	8.00E-01	5.88E+00	6.56E-01
BREOT-S46-40 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	1.88E+03	1.09E+01	NA	NA	NA	NA	5.36E-04	3.00E+03	1.61E+00	7.11E-02	1.09E-01	8.11E+00	8.75E+00	8.00E-01	5.88E+00	1.38E+00
BREOT-N47-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	8.05E+02	4.64E+00	NA	NA	NA	NA	5.36E-04	1.28E+03	6.87E-01	7.11E-02	1.09E-01	3.47E+00	8.75E+00	8.00E-01	5.88E+00	5.90E-01
BREOT-S47-999 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	2.52E+03	1.45E+01	NA	NA	NA	NA	5.36E-04	4.01E+03	2.15E+00	7.11E-02	1.09E-01	1.08E+01	8.75E+00	8.00E-01	5.88E+00	1.85E+00
BREOT-S48-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	7.69E+01	4.43E-01	NA	NA	NA	NA	5.36E-04	1.22E+02	6.56E-02	7.11E-02	1.09E-01	3.31E-01	8.75E+00	8.00E-01	5.88E+00	5.64E-02
BREOT-S49-2.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	7.23E+01	4.17E-01	NA	NA	NA	NA	5.36E-04	1.15E+02	6.17E-02	7.11E-02	1.09E-01	3.11E-01	8.75E+00	8.00E-01	5.88E+00	5.30E-02
BREOT-S50-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	4.19E+02	2.42E+00	NA	NA	NA	NA	5.36E-04	6.67E+02	3.58E-01	7.11E-02	1.09E-01	1.81E+00	8.75E+00	8.00E-01	5.88E+00	3.07E-01
BREOT-S50-25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	2.84E+01	1.63E-01	NA	NA	NA	NA	5.36E-04	4.52E+01	2.42E-02	7.11E-02	1.09E-01	1.22E-01	8.75E+00	8.00E-01	5.88E+00	2.08E-02
BREOT-N52-60 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	1.77E+03	1.02E+01	NA	NA	NA	NA	5.36E-04	2.82E+03	1.51E+00	7.11E-02	1.09E-01	7.63E+00	8.75E+00	8.00E-01	5.88E+00	1.30E+00
BREOT-S52-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	3.86E+01	2.22E-01	NA	NA	NA	NA	5.36E-04	6.15E+01	3.29E-02	7.11E-02	1.09E-01	1.66E-01	8.75E+00	8.00E-01	5.88E+00	2.83E-02
BREOT-S53-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	1.16E+02	6.71E-01	NA	NA	NA	NA	5.36E-04	1.85E+02	9.93E-02	7.11E-02	1.09E-01	5.01E-01	8.75E+00	8.00E-01	5.88E+00	8.54E-02
BREOT-S54-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	5.53E+01	3.19E-01	NA	NA	NA	NA	5.36E-04	8.81E+01	4.72E-02	7.11E-02	1.09E-01	2.38E-01	8.75E+00	8.00E-01	5.88E+00	4.06E-02
BREOT-N55-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	1.49E+03	8.61E+00	NA	NA	NA	NA	5.36E-04	2.38E+03	1.27E+00	7.11E-02	1.09E-01	6.44E+00	8.75E+00	8.00E-01	5.88E+00	1.10E+00
BREOT-S55-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	4.01E+02	2.31E+00	NA	NA	NA	NA	5.36E-04	6.38E+02	3.42E-01	7.11E-02	1.09E-01	1.73E+00	8.75E+00	8.00E-01	5.88E+00	2.94E-01
BREOT-N56-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	1.39E+03	8.04E+00	NA	NA	NA	NA	5.36E-04	2.22E+03	1.19E+00	7.11E-02	1.09E-01	6.01E+00	8.75E+00	8.00E-01	5.88E+00	1.02E+00
BREOT-S56-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	1.29E+02	7.45E-01	NA	NA	NA	NA	5.36E-04	2.06E+02	1.10E-01	7.11E-02	1.09E-01	5.57E-01	8.75E+00	8.00E-01	5.88E+00	9.48E-02
BREOT-N57-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	8.58E+02	4.94E+00	NA	NA	NA	NA	5.36E-04	1.37E+03	7.32E-01	7.11E-02	1.09E-01	3.69E+00	8.75E+00	8.00E-01	5.88E+00	6.29E-01
BREOT-S57-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	3.91E+02	2.25E+00	NA	NA	NA	NA	5.36E-04	6.22E+02	3.33E-01	7.11E-02	1.09E-01	1.68E+00	8.75E+00	8.00E-01	5.88E+00	2.86E-01
BREOT-N58-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	2.06E+02	1.19E+00	NA	NA	NA	NA	5.36E-04	3.28E+02	1.76E-01	7.11E-02	1.09E-01	8.87E-01	8.75E+00	8.00E-01	5.88E+00	1.51E-01
BREOT-S58-12 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	3.29E+02	1.89E+00	NA	NA	NA	NA	5.36E-04	5.23E+02	2.80E-01	7.11E-02	1.09E-01	1.41E+00	8.75E+00	8.00E-01	5.88E+00	2.41E-01
BREOT-N59-18 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	5.78E+02	3.33E+00	NA	NA	NA	NA	5.36E-04	9.20E+02	4.93E-01	7.11E-02	1.09E-01	2.49E+00	8.75E+00	8.00E-01	5.88E+00	4.23E-01
BREOT-N60-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	1.67E+02	9.64E-01	NA	NA	NA	NA	5.36E-04	2.66E+02	1.43E-01	7.11E-02	1.09E-01	7.20E-01	8.75E+00	8.00E-01	5.88E+00	1.23E-01
BREOT-S60-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	7.00E+02	4.03E+00	NA	NA	NA	NA	5.36E-04	1.11E+03	5.97E-01	7.11E-02	1.09E-01	3.01E+00	8.75E+00	8.00E-01	5.88E+00	5.13E-01
BREOT-S61-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	5.60E+02	3.22E+00	NA	NA	NA	NA	5.36E-04	8.91E+02	4.77E-01	7.11E-02	1.09E-01	2.41E+00	8.75E+00	8.00E-01	5.88E+00	4.10E-01
BREOT-N62-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	6.08E+01	3.50E-01	NA	NA	NA	NA	5.36E-04	9.68E+01	5.19E-02	7.11E-02	1.09E-01	2.62E-01	8.75E+00	8.00E-01	5.88E+00	4.46E-02
BREOT-S62-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	9.73E+02	5.61E+00	NA	NA	NA	NA	5.36E-04	1.55E+03	8.30E-01	7.11E-02	1.09E-01	4.19E+00	8.75E+00	8.00E-01	5.88E+00	7.13E-01
BREOT-S63-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	2.46E+02	1.41E+00	NA	NA	NA	NA	5.36E-04	3.91E+02	2.09E-01	7.11E-02	1.09E-01	1.06E+00	8.75E+00	8.00E-01	5.88E+00	1.80E-01
BREOT-N64-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	2.03E+02	1.17E+00	NA	NA	NA	NA	5.36E-04	3.24E+02	1.74E-01	7.11E-02	1.09E-01	8.76E-01	8.75E+00	8.00E-01	5.88E+00	1.49E-01
BREOT-N64-20 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	1.70E+02	9.79E-01	NA	NA	NA	NA	5.36E-04	2.70E+02	1.45E-01	7.11E-02	1.09E-01	7.31E-01	8.75E+00	8.00E-01	5.88E+00	1.24E-01
BREOT-S64-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	4.07E+02	2.35E+00	NA	NA	NA	NA	5.36E-04	6.49E+02	3.48E-01	7.11E-02	1.09E-01	1.75E+00	8.75E+00	8.00E-01	5.88E+00	2.99E-01
BREOT-N65-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	1.13E+02	6.50E-01	NA	NA	NA	NA	5.36E-04	1.79E+02	9.62E-02	7.11E-02	1.09E-01	4.85E-01	8.75E+00	8.00E-01	5.88E+00	8.26E-02
BREOT-S65-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	1.11E+03	6.39E+00	NA	NA	NA	NA	5.36E-04	1.76E+03	9.45E-01	7.11E-02	1.09E-01	4.77E+00	8.75E+00	8.00E-01	5.88E+00	8.12E-01

TABLE C-2D: LEAD DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 18.41

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Mourning Dove (Herbivorous Birds - Terrestrial)																							
BREOT-N66-5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	4.33E+02	2.49E+00	NA	NA	NA	NA	5.36E-04	6.89E+02	3.69E-01	7.11E-02	1.09E-01	1.86E+00	8.75E+00	8.00E-01	5.88E+00	3.17E-01
BREOT-S66-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	3.82E+02	2.20E+00	NA	NA	NA	NA	5.36E-04	6.09E+02	3.26E-01	7.11E-02	1.09E-01	1.65E+00	8.75E+00	8.00E-01	5.88E+00	2.80E-01
BREOT-N67-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	7.03E+02	4.05E+00	NA	NA	NA	NA	5.36E-04	1.12E+03	6.00E-01	7.11E-02	1.09E-01	3.03E+00	8.75E+00	8.00E-01	5.88E+00	5.15E-01
BREOT-S67-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	1.54E+02	8.85E-01	NA	NA	NA	NA	5.36E-04	2.45E+02	1.31E-01	7.11E-02	1.09E-01	6.61E-01	8.75E+00	8.00E-01	5.88E+00	1.13E-01
At Edge of Tailings																						**Maximum HQ (Inside Tailings)**	**1.00E+01**
BREOT-S0-0 (06)	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	2.94E+02	1.70E+00	NA	NA	NA	NA	5.36E-04	4.68E+02	2.51E-01	7.11E-02	1.09E-01	1.27E+00	8.75E+00	8.00E-01	5.88E+00	2.16E-01
BREOT-S1-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	1.43E+03	8.25E+00	NA	NA	NA	NA	5.36E-04	2.28E+03	1.22E+00	7.11E-02	1.09E-01	6.16E+00	8.75E+00	8.00E-01	5.88E+00	1.05E+00
BREOT-S2-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	4.19E+02	2.41E+00	NA	NA	NA	NA	5.36E-04	6.66E+02	3.57E-01	7.11E-02	1.09E-01	1.80E+00	8.75E+00	8.00E-01	5.88E+00	3.07E-01
BREOT-S3-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	9.29E+02	5.35E+00	NA	NA	NA	NA	5.36E-04	1.48E+03	7.93E-01	7.11E-02	1.09E-01	4.00E+00	8.75E+00	8.00E-01	5.88E+00	6.81E-01
BREOT-S4-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	1.10E+03	6.36E+00	NA	NA	NA	NA	5.36E-04	1.76E+03	9.42E-01	7.11E-02	1.09E-01	4.76E+00	8.75E+00	8.00E-01	5.88E+00	8.10E-01
BREOT-S6-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	1.07E+03	6.15E+00	NA	NA	NA	NA	5.36E-04	1.70E+03	9.11E-01	7.11E-02	1.09E-01	4.60E+00	8.75E+00	8.00E-01	5.88E+00	7.83E-01
BREOT-S7-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	6.37E+02	3.67E+00	NA	NA	NA	NA	5.36E-04	1.01E+03	5.44E-01	7.11E-02	1.09E-01	2.74E+00	8.75E+00	8.00E-01	5.88E+00	4.67E-01
BREOT-S8-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	2.35E+02	1.35E+00	NA	NA	NA	NA	5.36E-04	3.73E+02	2.00E-01	7.11E-02	1.09E-01	1.01E+00	8.75E+00	8.00E-01	5.88E+00	1.72E-01
BREOT-S9-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	5.06E+02	2.91E+00	NA	NA	NA	NA	5.36E-04	8.05E+02	4.31E-01	7.11E-02	1.09E-01	2.18E+00	8.75E+00	8.00E-01	5.88E+00	3.71E-01
BREOT-N10-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	1.48E+04	8.50E+01	NA	NA	NA	NA	5.36E-04	2.35E+04	1.26E+01	7.11E-02	1.09E-01	6.35E+01	8.75E+00	8.00E-01	5.88E+00	1.08E+01
BREOT-N11-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	1.80E+03	1.03E+01	NA	NA	NA	NA	5.36E-04	2.86E+03	1.53E+00	7.11E-02	1.09E-01	7.73E+00	8.75E+00	8.00E-01	5.88E+00	1.32E+00
BREOT-S11-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	6.30E+02	3.63E+00	NA	NA	NA	NA	5.36E-04	1.00E+03	5.38E-01	7.11E-02	1.09E-01	2.71E+00	8.75E+00	8.00E-01	5.88E+00	4.62E-01
BREOT-N12-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	6.49E+02	3.74E+00	NA	NA	NA	NA	5.36E-04	1.03E+03	5.54E-01	7.11E-02	1.09E-01	2.80E+00	8.75E+00	8.00E-01	5.88E+00	4.76E-01
BREOT-S12-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	2.00E+03	1.15E+01	NA	NA	NA	NA	5.36E-04	3.19E+03	1.71E+00	7.11E-02	1.09E-01	8.62E+00	8.75E+00	8.00E-01	5.88E+00	1.47E+00
BREOT-N13-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	1.66E+04	9.58E+01	NA	NA	NA	NA	5.36E-04	2.65E+04	1.42E+01	7.11E-02	1.09E-01	7.16E+01	8.75E+00	8.00E-01	5.88E+00	1.22E+01
BREOT-S13-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	3.89E+02	2.24E+00	NA	NA	NA	NA	5.36E-04	6.20E+02	3.32E-01	7.11E-02	1.09E-01	1.68E+00	8.75E+00	8.00E-01	5.88E+00	2.85E-01
BREOT-N14-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	1.83E+03	1.05E+01	NA	NA	NA	NA	5.36E-04	2.91E+03	1.56E+00	7.11E-02	1.09E-01	7.86E+00	8.75E+00	8.00E-01	5.88E+00	1.34E+00
BREOT-S14-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	9.69E+03	5.58E+01	NA	NA	NA	NA	5.36E-04	1.54E+04	8.27E+00	7.11E-02	1.09E-01	4.17E+01	8.75E+00	8.00E-01	5.88E+00	7.10E+00
BREOT-N15-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	2.26E+03	1.30E+01	NA	NA	NA	NA	5.36E-04	3.60E+03	1.93E+00	7.11E-02	1.09E-01	9.73E+00	8.75E+00	8.00E-01	5.88E+00	1.66E+00
BREOT-N16-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	1.11E+03	6.41E+00	NA	NA	NA	NA	5.36E-04	1.77E+03	9.49E-01	7.11E-02	1.09E-01	4.79E+00	8.75E+00	8.00E-01	5.88E+00	8.15E-01
BREOT-S16-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	2.10E+02	1.21E+00	NA	NA	NA	NA	5.36E-04	3.34E+02	1.79E-01	7.11E-02	1.09E-01	9.03E-01	8.75E+00	8.00E-01	5.88E+00	1.54E-01
BREOT-N17-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	1.80E+03	1.04E+01	NA	NA	NA	NA	5.36E-04	2.86E+03	1.53E+00	7.11E-02	1.09E-01	7.74E+00	8.75E+00	8.00E-01	5.88E+00	1.32E+00
BREOT-S17-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	2.11E+03	1.22E+01	NA	NA	NA	NA	5.36E-04	3.36E+03	1.80E+00	7.11E-02	1.09E-01	9.08E+00	8.75E+00	8.00E-01	5.88E+00	1.55E+00
BREOT-N18-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	1.45E+03	8.38E+00	NA	NA	NA	NA	5.36E-04	2.32E+03	1.24E+00	7.11E-02	1.09E-01	6.26E+00	8.75E+00	8.00E-01	5.88E+00	1.07E+00
BREOT-S18-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	2.29E+01	1.32E-01	NA	NA	NA	NA	5.36E-04	3.65E+01	1.96E-02	7.11E-02	1.09E-01	9.87E-02	8.75E+00	8.00E-01	5.88E+00	1.68E-02
BREOT-N19-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	9.92E+02	5.71E+00	NA	NA	NA	NA	5.36E-04	1.58E+03	8.46E-01	7.11E-02	1.09E-01	4.27E+00	8.75E+00	8.00E-01	5.88E+00	7.27E-01
BREOT-S19-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	2.85E+02	1.64E+00	NA	NA	NA	NA	5.36E-04	4.53E+02	2.43E-01	7.11E-02	1.09E-01	1.23E+00	8.75E+00	8.00E-01	5.88E+00	2.09E-01
BREOT-N20-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	8.12E+02	4.68E+00	NA	NA	NA	NA	5.36E-04	1.29E+03	6.92E-01	7.11E-02	1.09E-01	3.49E+00	8.75E+00	8.00E-01	5.88E+00	5.95E-01
BREOT-S20-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	3.91E+02	2.25E+00	NA	NA	NA	NA	5.36E-04	6.23E+02	3.34E-01	7.11E-02	1.09E-01	1.68E+00	8.75E+00	8.00E-01	5.88E+00	2.87E-01
BREOT-N21-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	3.61E+01	2.08E-01	NA	NA	NA	NA	5.36E-04	5.75E+01	3.08E-02	7.11E-02	1.09E-01	1.56E-01	8.75E+00	8.00E-01	5.88E+00	2.65E-02
BREOT-S21-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	1.09E+03	6.27E+00	NA	NA	NA	NA	5.36E-04	1.73E+03	9.28E-01	7.11E-02	1.09E-01	4.68E+00	8.75E+00	8.00E-01	5.88E+00	7.97E-01
BREOT-N22-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	9.14E+02	5.27E+00	NA	NA	NA	NA	5.36E-04	1.46E+03	7.80E-01	7.11E-02	1.09E-01	3.94E+00	8.75E+00	8.00E-01	5.88E+00	6.70E-01
BREOT-S22-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	1.10E+03	6.34E+00	NA	NA	NA	NA	5.36E-04	1.75E+03	9.39E-01	7.11E-02	1.09E-01	4.74E+00	8.75E+00	8.00E-01	5.88E+00	8.06E-01
BREOT-N23-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	7.57E+02	4.36E+00	NA	NA	NA	NA	5.36E-04	1.21E+03	6.46E-01	7.11E-02	1.09E-01	3.26E+00	8.75E+00	8.00E-01	5.88E+00	5.55E-01
BREOT-S23-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	1.68E+03	9.65E+00	NA	NA	NA	NA	5.36E-04	2.67E+03	1.43E+00	7.11E-02	1.09E-01	7.21E+00	8.75E+00	8.00E-01	5.88E+00	1.23E+00
BREOT-N24-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	1.61E+03	9.25E+00	NA	NA	NA	NA	5.36E-04	2.56E+03	1.37E+00	7.11E-02	1.09E-01	6.91E+00	8.75E+00	8.00E-01	5.88E+00	1.18E+00
BREOT-S24-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	9.42E+02	5.42E+00	NA	NA	NA	NA	5.36E-04	1.50E+03	8.03E-01	7.11E-02	1.09E-01	4.05E+00	8.75E+00	8.00E-01	5.88E+00	6.90E-01
BREOT-N25-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	3.91E+03	2.26E+01	NA	NA	NA	NA	5.36E-04	6.23E+03	3.34E+00	7.11E-02	1.09E-01	1.69E+01	8.75E+00	8.00E-01	5.88E+00	2.87E+00
BREOT-S25-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	2.19E+03	1.26E+01	NA	NA	NA	NA	5.36E-04	3.49E+03	1.87E+00	7.11E-02	1.09E-01	9.43E+00	8.75E+00	8.00E-01	5.88E+00	1.60E+00
BREOT-N26-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	7.17E+03	4.13E+01	NA	NA	NA	NA	5.36E-04	1.14E+04	6.11E+00	7.11E-02	1.09E-01	3.09E+01	8.75E+00	8.00E-01	5.88E+00	5.25E+00
BREOT-S26-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	1.00E+03	5.77E+00	NA	NA	NA	NA	5.36E-04	1.59E+03	8.54E-01	7.11E-02	1.09E-01	4.31E+00	8.75E+00	8.00E-01	5.88E+00	7.34E-01
BREOT-N27-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	7.70E+03	4.44E+01	NA	NA	NA	NA	5.36E-04	1.23E+04	6.57E+00	7.11E-02	1.09E-01	3.31E+01	8.75E+00	8.00E-01	5.88E+00	5.64E+00
BREOT-S27-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	1.74E+03	1.00E+01	NA	NA	NA	NA	5.36E-04	2.78E+03	1.49E+00	7.11E-02	1.09E-01	7.51E+00	8.75E+00	8.00E-01	5.88E+00	1.28E+00
BREOT-N28-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	2.97E+03	1.71E+01	NA	NA	NA	NA	5.36E-04	4.73E+03	2.53E+00	7.11E-02	1.09E-01	1.28E+01	8.75E+00	8.00E-01	5.88E+00	2.18E+00
BREOT-S28-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	7.31E+02	4.21E+00	NA	NA	NA	NA	5.36E-04	1.16E+03	6.24E-01	7.11E-02	1.09E-01	3.15E+00	8.75E+00	8.00E-01	5.88E+00	5.36E-01
BREOT-S29-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	3.03E+02	1.74E+00	NA	NA	NA	NA	5.36E-04	4.82E+02	2.58E-01	7.11E-02	1.09E-01	1.30E+00	8.75E+00	8.00E-01	5.88E+00	2.22E-01
BREOT-N30-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	5.39E+03	3.11E+01	NA	NA	NA	NA	5.36E-04	8.58E+03	4.60E+00	7.11E-02	1.09E-01	2.32E+01	8.75E+00	8.00E-01	5.88E+00	3.95E+00
BREOT-S30-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	1.48E+02	8.52E-01	NA	NA	NA	NA	5.36E-04	2.35E+02	1.26E-01	7.11E-02	1.09E-01	6.37E-01	8.75E+00	8.00E-01	5.88E+00	1.08E-01

TABLE C-2D: LEAD DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 18.41

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Mourning Dove (Herbivorous Birds - Terrestrial)																							
BREOT-N31-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	2.60E+03	1.50E+01	NA	NA	NA	NA	5.36E-04	4.14E+03	2.22E+00	7.11E-02	1.09E-01	1.12E+01	8.75E+00	8.00E-01	5.88E+00	1.91E+00
BREOT-S31-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	1.43E+02	8.21E-01	NA	NA	NA	NA	5.36E-04	2.27E+02	1.22E-01	7.11E-02	1.09E-01	6.14E-01	8.75E+00	8.00E-01	5.88E+00	1.04E-01
BREOT-N32-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	1.08E+03	6.21E+00	NA	NA	NA	NA	5.36E-04	1.72E+03	9.19E-01	7.11E-02	1.09E-01	4.64E+00	8.75E+00	8.00E-01	5.88E+00	7.90E-01
BREOT-S32-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	1.25E+03	7.19E+00	NA	NA	NA	NA	5.36E-04	1.99E+03	1.07E+00	7.11E-02	1.09E-01	5.38E+00	8.75E+00	8.00E-01	5.88E+00	9.15E-01
BREOT-N33-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	3.91E+01	2.26E-01	NA	NA	NA	NA	5.36E-04	6.23E+01	3.34E-02	7.11E-02	1.09E-01	1.69E-01	8.75E+00	8.00E-01	5.88E+00	2.87E-02
BREOT-S33-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	2.98E+02	1.72E+00	NA	NA	NA	NA	5.36E-04	4.75E+02	2.54E-01	7.11E-02	1.09E-01	1.28E+00	8.75E+00	8.00E-01	5.88E+00	2.19E-01
BREOT-N34-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	1.03E+02	5.96E-01	NA	NA	NA	NA	5.36E-04	1.65E+02	8.82E-02	7.11E-02	1.09E-01	4.45E-01	8.75E+00	8.00E-01	5.88E+00	7.58E-02
BREOT-S34-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	7.27E+02	4.19E+00	NA	NA	NA	NA	5.36E-04	1.16E+03	6.20E-01	7.11E-02	1.09E-01	3.13E+00	8.75E+00	8.00E-01	5.88E+00	5.33E-01
BREOT-N35-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	6.53E+01	3.76E-01	NA	NA	NA	NA	5.36E-04	1.04E+02	5.57E-02	7.11E-02	1.09E-01	2.81E-01	8.75E+00	8.00E-01	5.88E+00	4.79E-02
BREOT-S35-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	5.05E+02	2.91E+00	NA	NA	NA	NA	5.36E-04	8.04E+02	4.31E-01	7.11E-02	1.09E-01	2.17E+00	8.75E+00	8.00E-01	5.88E+00	3.70E-01
BREOT-N36-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	1.42E+03	8.20E+00	NA	NA	NA	NA	5.36E-04	2.27E+03	1.21E+00	7.11E-02	1.09E-01	6.13E+00	8.75E+00	8.00E-01	5.88E+00	1.04E+00
BREOT-S36-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	1.01E+03	5.81E+00	NA	NA	NA	NA	5.36E-04	1.61E+03	8.60E-01	7.11E-02	1.09E-01	4.34E+00	8.75E+00	8.00E-01	5.88E+00	7.39E-01
BREOT-N37-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	3.18E+02	1.83E+00	NA	NA	NA	NA	5.36E-04	5.06E+02	2.71E-01	7.11E-02	1.09E-01	1.37E+00	8.75E+00	8.00E-01	5.88E+00	2.33E-01
BREOT-S37-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	1.12E+03	6.45E+00	NA	NA	NA	NA	5.36E-04	1.78E+03	9.54E-01	7.11E-02	1.09E-01	4.82E+00	8.75E+00	8.00E-01	5.88E+00	8.20E-01
BREOT-N38-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	6.61E+01	3.81E-01	NA	NA	NA	NA	5.36E-04	1.05E+02	5.64E-02	7.11E-02	1.09E-01	2.84E-01	8.75E+00	8.00E-01	5.88E+00	4.84E-02
BREOT-S38-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	1.31E+02	7.53E-01	NA	NA	NA	NA	5.36E-04	2.08E+02	1.11E-01	7.11E-02	1.09E-01	5.63E-01	8.75E+00	8.00E-01	5.88E+00	9.58E-02
BREOT-N39-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	5.52E+01	3.18E-01	NA	NA	NA	NA	5.36E-04	8.79E+01	4.71E-02	7.11E-02	1.09E-01	2.38E-01	8.75E+00	8.00E-01	5.88E+00	4.04E-02
BREOT-N40-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	1.33E+02	7.68E-01	NA	NA	NA	NA	5.36E-04	2.12E+02	1.14E-01	7.11E-02	1.09E-01	5.74E-01	8.75E+00	8.00E-01	5.88E+00	9.77E-02
BREOT-S40-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	8.65E+02	4.98E+00	NA	NA	NA	NA	5.36E-04	1.38E+03	7.38E-01	7.11E-02	1.09E-01	3.72E+00	8.75E+00	8.00E-01	5.88E+00	6.34E-01
BREOT-N41-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	8.59E+01	4.95E-01	NA	NA	NA	NA	5.36E-04	1.37E+02	7.33E-02	7.11E-02	1.09E-01	3.70E-01	8.75E+00	8.00E-01	5.88E+00	6.30E-02
BREOT-S41-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	8.58E+02	4.94E+00	NA	NA	NA	NA	5.36E-04	1.37E+03	7.31E-01	7.11E-02	1.09E-01	3.69E+00	8.75E+00	8.00E-01	5.88E+00	6.28E-01
BREOT-N42-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	1.71E+01	9.85E-02	NA	NA	NA	NA	5.36E-04	2.72E+01	1.46E-02	7.11E-02	1.09E-01	7.36E-02	8.75E+00	8.00E-01	5.88E+00	1.25E-02
BREOT-S42-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	1.78E+03	1.03E+01	NA	NA	NA	NA	5.36E-04	2.84E+03	1.52E+00	7.11E-02	1.09E-01	7.68E+00	8.75E+00	8.00E-01	5.88E+00	1.31E+00
BREOT-N43-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	1.16E+02	6.70E-01	NA	NA	NA	NA	5.36E-04	1.85E+02	9.92E-02	7.11E-02	1.09E-01	5.01E-01	8.75E+00	8.00E-01	5.88E+00	8.52E-02
BREOT-S43-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	7.61E+01	4.39E-01	NA	NA	NA	NA	5.36E-04	1.21E+02	6.49E-02	7.11E-02	1.09E-01	3.28E-01	8.75E+00	8.00E-01	5.88E+00	5.58E-02
BREOT-N44-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	3.53E+02	2.03E+00	NA	NA	NA	NA	5.36E-04	5.62E+02	3.01E-01	7.11E-02	1.09E-01	1.52E+00	8.75E+00	8.00E-01	5.88E+00	2.59E-01
BREOT-S44-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	5.59E+01	3.22E-01	NA	NA	NA	NA	5.36E-04	8.89E+01	4.77E-02	7.11E-02	1.09E-01	2.41E-01	8.75E+00	8.00E-01	5.88E+00	4.09E-02
BREOT-N45-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	1.01E+02	5.81E-01	NA	NA	NA	NA	5.36E-04	1.61E+02	8.60E-02	7.11E-02	1.09E-01	4.34E-01	8.75E+00	8.00E-01	5.88E+00	7.39E-02
BREOT-S45-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	1.19E+02	6.86E-01	NA	NA	NA	NA	5.36E-04	1.90E+02	1.02E-01	7.11E-02	1.09E-01	5.13E-01	8.75E+00	8.00E-01	5.88E+00	8.73E-02
BREOT-N46-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	8.65E+01	4.99E-01	NA	NA	NA	NA	5.36E-04	1.38E+02	7.38E-02	7.11E-02	1.09E-01	3.73E-01	8.75E+00	8.00E-01	5.88E+00	6.34E-02
BREOT-S46-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	6.79E+02	3.91E+00	NA	NA	NA	NA	5.36E-04	1.08E+03	5.79E-01	7.11E-02	1.09E-01	2.92E+00	8.75E+00	8.00E-01	5.88E+00	4.98E-01
BREOT-N47-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	1.10E+02	6.34E-01	NA	NA	NA	NA	5.36E-04	1.75E+02	9.38E-02	7.11E-02	1.09E-01	4.74E-01	8.75E+00	8.00E-01	5.88E+00	8.06E-02
BREOT-S47-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	2.36E+01	1.36E-01	NA	NA	NA	NA	5.36E-04	3.76E+01	2.01E-02	7.11E-02	1.09E-01	1.02E-01	8.75E+00	8.00E-01	5.88E+00	1.73E-02
BREOT-N48-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	1.53E+02	8.82E-01	NA	NA	NA	NA	5.36E-04	2.44E+02	1.31E-01	7.11E-02	1.09E-01	6.59E-01	8.75E+00	8.00E-01	5.88E+00	1.12E-01
BREOT-S48-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	1.20E+02	6.93E-01	NA	NA	NA	NA	5.36E-04	1.92E+02	1.03E-01	7.11E-02	1.09E-01	5.18E-01	8.75E+00	8.00E-01	5.88E+00	8.82E-02
BREOT-N49-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	2.43E+02	1.40E+00	NA	NA	NA	NA	5.36E-04	3.87E+02	2.07E-01	7.11E-02	1.09E-01	1.05E+00	8.75E+00	8.00E-01	5.88E+00	1.78E-01
BREOT-S49-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	7.54E+01	4.34E-01	NA	NA	NA	NA	5.36E-04	1.20E+02	6.43E-02	7.11E-02	1.09E-01	3.25E-01	8.75E+00	8.00E-01	5.88E+00	5.52E-02
BREOT-S50-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	6.63E+01	3.82E-01	NA	NA	NA	NA	5.36E-04	1.06E+02	5.66E-02	7.11E-02	1.09E-01	2.86E-01	8.75E+00	8.00E-01	5.88E+00	4.86E-02
BREOT-N51-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	2.65E+02	1.53E+00	NA	NA	NA	NA	5.36E-04	4.23E+02	2.26E-01	7.11E-02	1.09E-01	1.14E+00	8.75E+00	8.00E-01	5.88E+00	1.95E-01
BREOT-S51-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	9.35E+01	5.39E-01	NA	NA	NA	NA	5.36E-04	1.49E+02	7.98E-02	7.11E-02	1.09E-01	4.03E-01	8.75E+00	8.00E-01	5.88E+00	6.85E-02
BREOT-N52-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	6.21E+01	3.58E-01	NA	NA	NA	NA	5.36E-04	9.88E+01	5.30E-02	7.11E-02	1.09E-01	2.67E-01	8.75E+00	8.00E-01	5.88E+00	4.55E-02
BREOT-S52-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	4.79E+01	2.76E-01	NA	NA	NA	NA	5.36E-04	7.63E+01	4.09E-02	7.11E-02	1.09E-01	2.06E-01	8.75E+00	8.00E-01	5.88E+00	3.51E-02
BREOT-N53-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	1.34E+02	7.73E-01	NA	NA	NA	NA	5.36E-04	2.14E+02	1.14E-01	7.11E-02	1.09E-01	5.78E-01	8.75E+00	8.00E-01	5.88E+00	9.84E-02
BREOT-S53-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	4.97E+01	2.86E-01	NA	NA	NA	NA	5.36E-04	7.91E+01	4.24E-02	7.11E-02	1.09E-01	2.14E-01	8.75E+00	8.00E-01	5.88E+00	3.64E-02
BREOT-N54-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	1.35E+02	7.80E-01	NA	NA	NA	NA	5.36E-04	2.16E+02	1.15E-01	7.11E-02	1.09E-01	5.83E-01	8.75E+00	8.00E-01	5.88E+00	9.92E-02
BREOT-S54-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	6.07E+01	3.50E-01	NA	NA	NA	NA	5.36E-04	9.66E+01	5.17E-02	7.11E-02	1.09E-01	2.61E-01	8.75E+00	8.00E-01	5.88E+00	4.45E-02
BREOT-N55-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	7.79E+01	4.49E-01	NA	NA	NA	NA	5.36E-04	1.24E+02	6.65E-02	7.11E-02	1.09E-01	3.36E-01	8.75E+00	8.00E-01	5.88E+00	5.71E-02
BREOT-S55-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	6.79E+01	3.91E-01	NA	NA	NA	NA	5.36E-04	1.08E+02	5.79E-02	7.11E-02	1.09E-01	2.92E-01	8.75E+00	8.00E-01	5.88E+00	4.98E-02
BREOT-N56-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	3.55E+02	2.05E+00	NA	NA	NA	NA	5.36E-04	5.65E+02	3.03E-01	7.11E-02	1.09E-01	1.53E+00	8.75E+00	8.00E-01	5.88E+00	2.60E-01
BREOT-N57-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	1.54E+02	8.87E-01	NA	NA	NA	NA	5.36E-04	2.45E+02	1.31E-01	7.11E-02	1.09E-01	6.63E-01	8.75E+00	8.00E-01	5.88E+00	1.13E-01
BREOT-S57-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	1.15E+02	6.63E-01	NA	NA	NA	NA	5.36E-04	1.83E+02	9.82E-02	7.11E-02	1.09E-01	4.96E-01	8.75E+00	8.00E-01	5.88E+00	8.44E-02
BREOT-N58-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	1.04E+02	5.99E-01	NA	NA	NA	NA	5.36E-04	1.66E+02	8.87E-02	7.11E-02	1.09E-01	4.48E-01	8.75E+00	8.00E-01	5.88E+00	7.62E-02
BREOT-S58-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	8.36E+01	4.82E-01	NA	NA	NA	NA	5.36E-04	1.33E+02	7.13E-02	7.11E-02	1.09E-01	3.60E-01	8.75E+00	8.00E-01	5.88E+00	6.13E-02
BREOT-N59-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	6.29E+01	3.62E-01	NA	NA	NA	NA	5.36E-04	1.00E+02	5.37E-02	7.11E-02	1.09E-01	2.71E-01	8.75E+00	8.00E-01	5.88E+00	4.61E-02
BREOT-N60-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	5.05E+01	2.91E-01	NA	NA	NA	NA	5.36E-04	8.03E+01	4.30E-02	7.11E-02	1.09E-01	2.17E-01	8.75E+00	8.00E-01	5.88E+00	3.70E-02
BREOT-S60-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	3.25E+02	1.88E+00	NA	NA	NA	NA	5.36E-04	5.18E+02	2.78E-01	7.11E-02	1.09E-01	1.40E+00	8.75E+00	8.00E-01	5.88E+00	2.38E-01
BREOT-S61-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	5.17E+01	2.98E-01	NA	NA	NA	NA	5.36E-04	8.23E+01	4.41E-02	7.11E-02	1.09E-01	2.23E-01	8.75E+00	8.00E-01	5.88E+00	3.79E-02

TABLE C-2D: LEAD DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 18.41

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Mourning Dove (Herbivorous Birds - Terrestrial)																							
BREOT-N62-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	8.10E+01	4.67E-01	NA	NA	NA	NA	5.36E-04	1.29E+02	6.91E-02	7.11E-02	1.09E-01	3.49E-01	8.75E+00	8.00E-01	5.88E+00	5.94E-02
BREOT-S62-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	6.32E+01	3.64E-01	NA	NA	NA	NA	5.36E-04	1.01E+02	5.39E-02	7.11E-02	1.09E-01	2.72E-01	8.75E+00	8.00E-01	5.88E+00	4.63E-02
BREOT-N63-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	2.14E+02	1.23E+00	NA	NA	NA	NA	5.36E-04	3.40E+02	1.82E-01	7.11E-02	1.09E-01	9.21E-01	8.75E+00	8.00E-01	5.88E+00	1.57E-01
BREOT-S63-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	1.35E+02	7.75E-01	NA	NA	NA	NA	5.36E-04	2.14E+02	1.15E-01	7.11E-02	1.09E-01	5.79E-01	8.75E+00	8.00E-01	5.88E+00	9.86E-02
BREOT-N64-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	8.35E+01	4.81E-01	NA	NA	NA	NA	5.36E-04	1.33E+02	7.12E-02	7.11E-02	1.09E-01	3.60E-01	8.75E+00	8.00E-01	5.88E+00	6.12E-02
BREOT-S64-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	6.11E+01	3.52E-01	NA	NA	NA	NA	5.36E-04	9.72E+01	5.21E-02	7.11E-02	1.09E-01	2.63E-01	8.75E+00	8.00E-01	5.88E+00	4.47E-02
BREOT-N66-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	1.11E+02	6.38E-01	NA	NA	NA	NA	5.36E-04	1.76E+02	9.45E-02	7.11E-02	1.09E-01	4.77E-01	8.75E+00	8.00E-01	5.88E+00	8.12E-02
BREOT-S66-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	5.82E+01	3.35E-01	NA	NA	NA	NA	5.36E-04	9.27E+01	4.96E-02	7.11E-02	1.09E-01	2.51E-01	8.75E+00	8.00E-01	5.88E+00	4.27E-02
BREOT-N67-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	1.17E+03	6.73E+00	NA	NA	NA	NA	5.36E-04	1.86E+03	9.96E-01	7.11E-02	1.09E-01	5.03E+00	8.75E+00	8.00E-01	5.88E+00	8.56E-01
BREOT-S67-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	5.01E+01	2.88E-01	NA	NA	NA	NA	5.36E-04	7.97E+01	4.27E-02	7.11E-02	1.09E-01	2.16E-01	8.75E+00	8.00E-01	5.88E+00	3.67E-02
Outside Tailings																						**Maximum HQ (At Edge of Tailings)**	**1.22E+01**
BREOT-S0+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	1.62E+02	9.34E-01	NA	NA	NA	NA	5.36E-04	2.58E+02	1.38E-01	7.11E-02	1.09E-01	6.98E-01	8.75E+00	8.00E-01	5.88E+00	1.19E-01
BREOT-S1+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	8.91E+01	5.13E-01	NA	NA	NA	NA	5.36E-04	1.42E+02	7.60E-02	7.11E-02	1.09E-01	3.84E-01	8.75E+00	8.00E-01	5.88E+00	6.53E-02
BREOT-S2+95 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	3.67E+01	2.12E-01	NA	NA	NA	NA	5.36E-04	5.85E+01	3.13E-02	7.11E-02	1.09E-01	1.58E-01	8.75E+00	8.00E-01	5.88E+00	2.69E-02
BREOT-S3+6 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	1.04E+02	5.97E-01	NA	NA	NA	NA	5.36E-04	1.65E+02	8.84E-02	7.11E-02	1.09E-01	4.46E-01	8.75E+00	8.00E-01	5.88E+00	7.60E-02
BREOT-S4+10 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	5.80E+01	3.34E-01	NA	NA	NA	NA	5.36E-04	9.23E+01	4.94E-02	7.11E-02	1.09E-01	2.50E-01	8.75E+00	8.00E-01	5.88E+00	4.25E-02
BREOT-S6+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	1.59E+02	9.18E-01	NA	NA	NA	NA	5.36E-04	2.54E+02	1.36E-01	7.11E-02	1.09E-01	6.86E-01	8.75E+00	8.00E-01	5.88E+00	1.17E-01
BREOT-S8+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	1.65E+02	9.48E-01	NA	NA	NA	NA	5.36E-04	2.62E+02	1.40E-01	7.11E-02	1.09E-01	7.09E-01	8.75E+00	8.00E-01	5.88E+00	1.21E-01
BREOT-N10+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	8.27E+01	4.77E-01	NA	NA	NA	NA	5.36E-04	1.32E+02	7.06E-02	7.11E-02	1.09E-01	3.56E-01	8.75E+00	8.00E-01	5.88E+00	6.06E-02
BREOT-N11+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	8.67E+01	5.00E-01	NA	NA	NA	NA	5.36E-04	1.38E+02	7.40E-02	7.11E-02	1.09E-01	3.73E-01	8.75E+00	8.00E-01	5.88E+00	6.35E-02
BREOT-N12+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	1.72E+02	9.89E-01	NA	NA	NA	NA	5.36E-04	2.73E+02	1.46E-01	7.11E-02	1.09E-01	7.39E-01	8.75E+00	8.00E-01	5.88E+00	1.26E-01
BREOT-S12+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	5.47E+03	3.15E+01	NA	NA	NA	NA	5.36E-04	8.70E+03	4.66E+00	7.11E-02	1.09E-01	2.35E+01	8.75E+00	8.00E-01	5.88E+00	4.01E+00
BREOT-S12+60 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	6.86E+02	3.95E+00	NA	NA	NA	NA	5.36E-04	1.09E+03	5.85E-01	7.11E-02	1.09E-01	2.95E+00	8.75E+00	8.00E-01	5.88E+00	5.03E-01
BREOT-N13+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	1.71E+02	9.84E-01	NA	NA	NA	NA	5.36E-04	2.72E+02	1.46E-01	7.11E-02	1.09E-01	7.35E-01	8.75E+00	8.00E-01	5.88E+00	1.25E-01
BREOT-S13+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	1.95E+03	1.12E+01	NA	NA	NA	NA	5.36E-04	3.10E+03	1.66E+00	7.11E-02	1.09E-01	8.40E+00	8.75E+00	8.00E-01	5.88E+00	1.43E+00
BREOT-S13+65 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	6.85E+02	3.95E+00	NA	NA	NA	NA	5.36E-04	1.09E+03	5.84E-01	7.11E-02	1.09E-01	2.95E+00	8.75E+00	8.00E-01	5.88E+00	5.02E-01
BREOT-N14+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	1.84E+02	1.06E+00	NA	NA	NA	NA	5.36E-04	2.94E+02	1.57E-01	7.11E-02	1.09E-01	7.94E-01	8.75E+00	8.00E-01	5.88E+00	1.35E-01
BREOT-S14+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	8.02E+03	4.62E+01	NA	NA	NA	NA	5.36E-04	1.28E+04	6.84E+00	7.11E-02	1.09E-01	3.45E+01	8.75E+00	8.00E-01	5.88E+00	5.88E+00
BREOT-S14+59 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	4.98E+02	2.87E+00	NA	NA	NA	NA	5.36E-04	7.93E+02	4.25E-01	7.11E-02	1.09E-01	2.14E+00	8.75E+00	8.00E-01	5.88E+00	3.65E-01
BREOT-N15+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	2.89E+03	1.67E+01	NA	NA	NA	NA	5.36E-04	4.60E+03	2.47E+00	7.11E-02	1.09E-01	1.24E+01	8.75E+00	8.00E-01	5.88E+00	2.12E+00
BREOT-N15+50 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	1.21E+02	6.97E-01	NA	NA	NA	NA	5.36E-04	1.93E+02	1.03E-01	7.11E-02	1.09E-01	5.21E-01	8.75E+00	8.00E-01	5.88E+00	8.87E-02
BREOT-S16+20 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	1.88E+03	1.08E+01	NA	NA	NA	NA	5.36E-04	2.99E+03	1.60E+00	7.11E-02	1.09E-01	8.08E+00	8.75E+00	8.00E-01	5.88E+00	1.38E+00
BREOT-S16+75 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	2.72E+02	1.57E+00	NA	NA	NA	NA	5.36E-04	4.33E+02	2.32E-01	7.11E-02	1.09E-01	1.17E+00	8.75E+00	8.00E-01	5.88E+00	1.99E-01
BREOT-N17+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	5.13E+03	2.96E+01	NA	NA	NA	NA	5.36E-04	8.16E+03	4.37E+00	7.11E-02	1.09E-01	2.21E+01	8.75E+00	8.00E-01	5.88E+00	3.76E+00
BREOT-S18+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	3.95E+02	2.28E+00	NA	NA	NA	NA	5.36E-04	6.29E+02	3.37E-01	7.11E-02	1.09E-01	1.70E+00	8.75E+00	8.00E-01	5.88E+00	2.90E-01
BREOT-N19+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	5.17E+01	2.98E-01	NA	NA	NA	NA	5.36E-04	8.23E+01	4.41E-02	7.11E-02	1.09E-01	2.23E-01	8.75E+00	8.00E-01	5.88E+00	3.79E-02
BREOT-S19+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	3.13E+01	1.81E-01	NA	NA	NA	NA	5.36E-04	4.99E+01	2.67E-02	7.11E-02	1.09E-01	1.35E-01	8.75E+00	8.00E-01	5.88E+00	2.30E-02
BREOT-S19+85 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	3.96E+02	2.28E+00	NA	NA	NA	NA	5.36E-04	6.31E+02	3.38E-01	7.11E-02	1.09E-01	1.71E+00	8.75E+00	8.00E-01	5.88E+00	2.90E-01
BREOT-N20+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	1.07E+02	6.17E-01	NA	NA	NA	NA	5.36E-04	1.70E+02	9.13E-02	7.11E-02	1.09E-01	4.61E-01	8.75E+00	8.00E-01	5.88E+00	7.84E-02
BREOT-S20+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	3.45E+01	1.99E-01	NA	NA	NA	NA	5.36E-04	5.49E+01	2.94E-02	7.11E-02	1.09E-01	1.48E-01	8.75E+00	8.00E-01	5.88E+00	2.53E-02
BREOT-S20+75 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	6.36E+01	3.66E-01	NA	NA	NA	NA	5.36E-04	1.01E+02	5.42E-02	7.11E-02	1.09E-01	2.74E-01	8.75E+00	8.00E-01	5.88E+00	4.66E-02
BREOT-N21+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	2.21E+03	1.28E+01	NA	NA	NA	NA	5.36E-04	3.52E+03	1.89E+00	7.11E-02	1.09E-01	9.53E+00	8.75E+00	8.00E-01	5.88E+00	1.62E+00
BREOT-S21+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	3.32E+01	1.91E-01	NA	NA	NA	NA	5.36E-04	5.29E+01	2.83E-02	7.11E-02	1.09E-01	1.43E-01	8.75E+00	8.00E-01	5.88E+00	2.44E-02
BREOT-N22+150 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	1.76E+02	1.01E+00	NA	NA	NA	NA	5.36E-04	2.80E+02	1.50E-01	7.11E-02	1.09E-01	7.58E-01	8.75E+00	8.00E-01	5.88E+00	1.29E-01
BREOT-N22+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	1.55E+03	8.93E+00	NA	NA	NA	NA	5.36E-04	2.47E+03	1.32E+00	7.11E-02	1.09E-01	6.68E+00	8.75E+00	8.00E-01	5.88E+00	1.14E+00
BREOT-S22+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	6.72E+02	3.87E+00	NA	NA	NA	NA	5.36E-04	1.07E+03	5.73E-01	7.11E-02	1.09E-01	2.89E+00	8.75E+00	8.00E-01	5.88E+00	4.93E-01
BREOT-N23+115 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	4.13E+01	2.38E-01	NA	NA	NA	NA	5.36E-04	6.58E+01	3.53E-02	7.11E-02	1.09E-01	1.78E-01	8.75E+00	8.00E-01	5.88E+00	3.03E-02
BREOT-N23+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	4.53E+03	2.61E+01	NA	NA	NA	NA	5.36E-04	7.21E+03	3.87E+00	7.11E-02	1.09E-01	1.95E+01	8.75E+00	8.00E-01	5.88E+00	3.32E+00
BREOT-S23+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	7.91E+02	4.56E+00	NA	NA	NA	NA	5.36E-04	1.26E+03	6.75E-01	7.11E-02	1.09E-01	3.41E+00	8.75E+00	8.00E-01	5.88E+00	5.80E-01
BREOT-S23+37.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	6.78E+01	3.91E-01	NA	NA	NA	NA	5.36E-04	1.08E+02	5.78E-02	7.11E-02	1.09E-01	2.92E-01	8.75E+00	8.00E-01	5.88E+00	4.97E-02
BREOT-N24+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	5.76E+02	3.32E+00	NA	NA	NA	NA	5.36E-04	9.17E+02	4.91E-01	7.11E-02	1.09E-01	2.48E+00	8.75E+00	8.00E-01	5.88E+00	4.22E-01
BREOT-N24+75 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	6.82E+01	3.93E-01	NA	NA	NA	NA	5.36E-04	1.09E+02	5.81E-02	7.11E-02	1.09E-01	2.93E-01	8.75E+00	8.00E-01	5.88E+00	5.00E-02
BREOT-S24+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	5.82E+02	3.36E+00	NA	NA	NA	NA	5.36E-04	9.27E+02	4.97E-01	7.11E-02	1.09E-01	2.51E+00	8.75E+00	8.00E-01	5.88E+00	4.27E-01
BREOT-N25+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	4.25E+01	2.45E-01	NA	NA	NA	NA	5.36E-04	6.77E+01	3.63E-02	7.11E-02	1.09E-01	1.83E-01	8.75E+00	8.00E-01	5.88E+00	3.12E-02
BREOT-S25+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	3.41E+02	1.97E+00	NA	NA	NA	NA	5.36E-04	5.43E+02	2.91E-01	7.11E-02	1.09E-01	1.47E+00	8.75E+00	8.00E-01	5.88E+00	2.50E-01
BREOT-S25+40 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	1.50E+03	8.67E+00	NA	NA	NA	NA	5.36E-04	2.40E+03	1.28E+00	7.11E-02	1.09E-01	6.48E+00	8.75E+00	8.00E-01	5.88E+00	1.10E+00
BREOT-S26+37 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	1.31E+02	7.57E-01	NA	NA	NA	NA	5.36E-04	2.09E+02	1.12E-01	7.11E-02	1.09E-01	5.66E-01	8.75E+00	8.00E-01	5.88E+00	9.63E-02

TABLE C-2D: LEAD DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables; from BAF table; linked to soil or sed concentration table (VLOOKUP)

calculated values; linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 18.41

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Mourning Dove (Herbivorous Birds - Terrestrial)																							
BREOT-N27+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	7.35E+01	4.24E-01	NA	NA	NA	NA	5.36E-04	1.17E+02	6.27E-02	7.11E-02	1.09E-01	3.17E-01	8.75E+00	8.00E-01	5.88E+00	5.39E-02
BREOT-S27+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	2.49E+02	1.43E+00	NA	NA	NA	NA	5.36E-04	3.96E+02	2.12E-01	7.11E-02	1.09E-01	1.07E+00	8.75E+00	8.00E-01	5.88E+00	1.82E-01
BREOT-N28+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	8.62E+01	4.97E-01	NA	NA	NA	NA	5.36E-04	1.37E+02	7.35E-02	7.11E-02	1.09E-01	3.71E-01	8.75E+00	8.00E-01	5.88E+00	6.32E-02
BREOT-S28+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	4.88E+02	2.81E+00	NA	NA	NA	NA	5.36E-04	7.76E+02	4.16E-01	7.11E-02	1.09E-01	2.10E+00	8.75E+00	8.00E-01	5.88E+00	3.57E-01
BREOT-N29+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	2.33E+02	1.34E+00	NA	NA	NA	NA	5.36E-04	3.71E+02	1.99E-01	7.11E-02	1.09E-01	1.00E+00	8.75E+00	8.00E-01	5.88E+00	1.71E-01
BREOT-S29+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	4.43E+02	2.55E+00	NA	NA	NA	NA	5.36E-04	7.05E+02	3.78E-01	7.11E-02	1.09E-01	1.91E+00	8.75E+00	8.00E-01	5.88E+00	3.24E-01
BREOT-N30+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	3.47E+02	2.00E+00	NA	NA	NA	NA	5.36E-04	5.52E+02	2.96E-01	7.11E-02	1.09E-01	1.49E+00	8.75E+00	8.00E-01	5.88E+00	2.54E-01
BREOT-S30+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	3.26E+02	1.88E+00	NA	NA	NA	NA	5.36E-04	5.18E+02	2.78E-01	7.11E-02	1.09E-01	1.40E+00	8.75E+00	8.00E-01	5.88E+00	2.39E-01
BREOT-N31+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	6.28E+03	3.62E+01	NA	NA	NA	NA	5.36E-04	1.00E+04	5.36E+00	7.11E-02	1.09E-01	2.70E+01	8.75E+00	8.00E-01	5.88E+00	4.60E+00
BREOT-N31+75 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	4.74E+01	2.73E-01	NA	NA	NA	NA	5.36E-04	7.54E+01	4.04E-02	7.11E-02	1.09E-01	2.04E-01	8.75E+00	8.00E-01	5.88E+00	3.47E-02
BREOT-S31+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	1.10E+02	6.34E-01	NA	NA	NA	NA	5.36E-04	1.75E+02	9.39E-02	7.11E-02	1.09E-01	4.74E-01	8.75E+00	8.00E-01	5.88E+00	8.07E-02
BREOT-N32+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	6.83E+01	3.94E-01	NA	NA	NA	NA	5.36E-04	1.09E+02	5.83E-02	7.11E-02	1.09E-01	2.94E-01	8.75E+00	8.00E-01	5.88E+00	5.01E-02
BREOT-S32+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	7.53E+02	4.34E+00	NA	NA	NA	NA	5.36E-04	1.20E+03	6.42E-01	7.11E-02	1.09E-01	3.24E+00	8.75E+00	8.00E-01	5.88E+00	5.52E-01
BREOT-S32+300 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	2.36E+02	1.36E+00	NA	NA	NA	NA	5.36E-04	3.76E+02	2.02E-01	7.11E-02	1.09E-01	1.02E+00	8.75E+00	8.00E-01	5.88E+00	1.73E-01
BREOT-N33+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	4.71E+01	2.72E-01	NA	NA	NA	NA	5.36E-04	7.50E+01	4.02E-02	7.11E-02	1.09E-01	2.03E-01	8.75E+00	8.00E-01	5.88E+00	3.45E-02
BREOT-S33+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	8.66E+01	4.99E-01	NA	NA	NA	NA	5.36E-04	1.38E+02	7.39E-02	7.11E-02	1.09E-01	3.73E-01	8.75E+00	8.00E-01	5.88E+00	6.35E-02
BREOT-N34+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	7.20E+01	4.15E-01	NA	NA	NA	NA	5.36E-04	1.15E+02	6.14E-02	7.11E-02	1.09E-01	3.10E-01	8.75E+00	8.00E-01	5.88E+00	5.27E-02
BREOT-S34+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	2.33E+02	1.34E+00	NA	NA	NA	NA	5.36E-04	3.71E+02	1.99E-01	7.11E-02	1.09E-01	1.00E+00	8.75E+00	8.00E-01	5.88E+00	1.71E-01
BREOT-N35+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	5.31E+01	3.06E-01	NA	NA	NA	NA	5.36E-04	8.46E+01	4.53E-02	7.11E-02	1.09E-01	2.29E-01	8.75E+00	8.00E-01	5.88E+00	3.89E-02
BREOT-S35+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	8.53E+01	4.92E-01	NA	NA	NA	NA	5.36E-04	1.36E+02	7.28E-02	7.11E-02	1.09E-01	3.67E-01	8.75E+00	8.00E-01	5.88E+00	6.25E-02
BREOT-N36+100 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	1.07E+02	6.18E-01	NA	NA	NA	NA	5.36E-04	1.71E+02	9.14E-02	7.11E-02	1.09E-01	4.61E-01	8.75E+00	8.00E-01	5.88E+00	7.85E-02
BREOT-N36+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	1.27E+03	7.30E+00	NA	NA	NA	NA	5.36E-04	2.02E+03	1.08E+00	7.11E-02	1.09E-01	5.46E+00	8.75E+00	8.00E-01	5.88E+00	9.29E-01
BREOT-N37+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	6.56E+01	3.78E-01	NA	NA	NA	NA	5.36E-04	1.04E+02	5.60E-02	7.11E-02	1.09E-01	2.82E-01	8.75E+00	8.00E-01	5.88E+00	4.81E-02
BREOT-S37+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	7.89E+01	4.55E-01	NA	NA	NA	NA	5.36E-04	1.26E+02	6.73E-02	7.11E-02	1.09E-01	3.40E-01	8.75E+00	8.00E-01	5.88E+00	5.78E-02
BREOT-N38+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	9.47E+01	5.46E-01	NA	NA	NA	NA	5.36E-04	1.51E+02	8.08E-02	7.11E-02	1.09E-01	4.08E-01	8.75E+00	8.00E-01	5.88E+00	6.94E-02
BREOT-S38+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	9.61E+01	5.54E-01	NA	NA	NA	NA	5.36E-04	1.53E+02	8.20E-02	7.11E-02	1.09E-01	4.14E-01	8.75E+00	8.00E-01	5.88E+00	7.04E-02
BREOT-N39+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	9.18E+01	5.29E-01	NA	NA	NA	NA	5.36E-04	1.46E+02	7.83E-02	7.11E-02	1.09E-01	3.95E-01	8.75E+00	8.00E-01	5.88E+00	6.73E-02
BREOT-S39+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	1.04E+02	5.99E-01	NA	NA	NA	NA	5.36E-04	1.65E+02	8.86E-02	7.11E-02	1.09E-01	4.47E-01	8.75E+00	8.00E-01	5.88E+00	7.62E-02
BREOT-N40+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	9.46E+01	5.45E-01	NA	NA	NA	NA	5.36E-04	1.51E+02	8.07E-02	7.11E-02	1.09E-01	4.07E-01	8.75E+00	8.00E-01	5.88E+00	6.93E-02
BREOT-S40+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	8.23E+01	4.74E-01	NA	NA	NA	NA	5.36E-04	1.31E+02	7.02E-02	7.11E-02	1.09E-01	3.54E-01	8.75E+00	8.00E-01	5.88E+00	6.03E-02
BREOT-N41+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	6.24E+01	3.60E-01	NA	NA	NA	NA	5.36E-04	9.94E+01	5.33E-02	7.11E-02	1.09E-01	2.69E-01	8.75E+00	8.00E-01	5.88E+00	4.58E-02
BREOT-S41+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	3.39E+02	1.95E+00	NA	NA	NA	NA	5.36E-04	5.39E+02	2.89E-01	7.11E-02	1.09E-01	1.46E+00	8.75E+00	8.00E-01	5.88E+00	2.48E-01
BREOT-N42+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	2.83E+01	1.63E-01	NA	NA	NA	NA	5.36E-04	4.50E+01	2.41E-02	7.11E-02	1.09E-01	1.22E-01	8.75E+00	8.00E-01	5.88E+00	2.07E-02
BREOT-S42+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	7.62E+01	4.39E-01	NA	NA	NA	NA	5.36E-04	1.21E+02	6.50E-02	7.11E-02	1.09E-01	3.28E-01	8.75E+00	8.00E-01	5.88E+00	5.59E-02
BREOT-N43+12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	1.65E+02	9.49E-01	NA	NA	NA	NA	5.36E-04	2.62E+02	1.40E-01	7.11E-02	1.09E-01	7.09E-01	8.75E+00	8.00E-01	5.88E+00	1.21E-01
BREOT-N43+40 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	7.34E+01	4.23E-01	NA	NA	NA	NA	5.36E-04	1.17E+02	6.26E-02	7.11E-02	1.09E-01	3.16E-01	8.75E+00	8.00E-01	5.88E+00	5.38E-02
BREOT-S43+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	4.63E+01	2.67E-01	NA	NA	NA	NA	5.36E-04	7.37E+01	3.95E-02	7.11E-02	1.09E-01	1.99E-01	8.75E+00	8.00E-01	5.88E+00	3.39E-02
BREOT-N44+55 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	9.68E+01	5.58E-01	NA	NA	NA	NA	5.36E-04	1.54E+02	8.26E-02	7.11E-02	1.09E-01	4.17E-01	8.75E+00	8.00E-01	5.88E+00	7.09E-02
BREOT-S44+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	4.51E+01	2.60E-01	NA	NA	NA	NA	5.36E-04	7.17E+01	3.84E-02	7.11E-02	1.09E-01	1.94E-01	8.75E+00	8.00E-01	5.88E+00	3.30E-02
BREOT-N45+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	6.94E+01	4.00E-01	NA	NA	NA	NA	5.36E-04	1.10E+02	5.92E-02	7.11E-02	1.09E-01	2.99E-01	8.75E+00	8.00E-01	5.88E+00	5.08E-02
BREOT-S45+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	3.44E+01	1.98E-01	NA	NA	NA	NA	5.36E-04	5.48E+01	2.93E-02	7.11E-02	1.09E-01	1.48E-01	8.75E+00	8.00E-01	5.88E+00	2.52E-02
BREOT-N46+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	9.93E+01	5.72E-01	NA	NA	NA	NA	5.36E-04	1.58E+02	8.47E-02	7.11E-02	1.09E-01	4.27E-01	8.75E+00	8.00E-01	5.88E+00	7.27E-02
BREOT-S46+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	3.17E+01	1.83E-01	NA	NA	NA	NA	5.36E-04	5.05E+01	2.70E-02	7.11E-02	1.09E-01	1.37E-01	8.75E+00	8.00E-01	5.88E+00	2.32E-02
BREOT-N47+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	8.09E+01	4.66E-01	NA	NA	NA	NA	5.36E-04	1.29E+02	6.90E-02	7.11E-02	1.09E-01	3.48E-01	8.75E+00	8.00E-01	5.88E+00	5.93E-02
BREOT-S47+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	2.31E+01	1.33E-01	NA	NA	NA	NA	5.36E-04	3.67E+01	1.97E-02	7.11E-02	1.09E-01	9.93E-02	8.75E+00	8.00E-01	5.88E+00	1.69E-02
BREOT-N48+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	6.89E+01	3.97E-01	NA	NA	NA	NA	5.36E-04	1.10E+02	5.88E-02	7.11E-02	1.09E-01	2.97E-01	8.75E+00	8.00E-01	5.88E+00	5.05E-02
BREOT-S48+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	8.71E+01	5.02E-01	NA	NA	NA	NA	5.36E-04	1.39E+02	7.43E-02	7.11E-02	1.09E-01	3.75E-01	8.75E+00	8.00E-01	5.88E+00	6.38E-02
BREOT-N49+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	2.56E+02	1.48E+00	NA	NA	NA	NA	5.36E-04	4.08E+02	2.19E-01	7.11E-02	1.09E-01	1.10E+00	8.75E+00	8.00E-01	5.88E+00	1.88E-01
BREOT-S49+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	8.68E+01	5.00E-01	NA	NA	NA	NA	5.36E-04	1.38E+02	7.41E-02	7.11E-02	1.09E-01	3.74E-01	8.75E+00	8.00E-01	5.88E+00	6.36E-02
BREOT-N51+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	5.94E+01	3.42E-01	NA	NA	NA	NA	5.36E-04	9.46E+01	5.07E-02	7.11E-02	1.09E-01	2.56E-01	8.75E+00	8.00E-01	5.88E+00	4.35E-02
BREOT-S51+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	1.87E+01	1.08E-01	NA	NA	NA	NA	5.36E-04	2.97E+01	1.59E-02	7.11E-02	1.09E-01	8.04E-02	8.75E+00	8.00E-01	5.88E+00	1.37E-02
BREOT-N52+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	1.35E+02	7.77E-01	NA	NA	NA	NA	5.36E-04	2.15E+02	1.15E-01	7.11E-02	1.09E-01	5.80E-01	8.75E+00	8.00E-01	5.88E+00	9.88E-02
BREOT-S52+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	3.89E+01	2.24E-01	NA	NA	NA	NA	5.36E-04	6.19E+01	3.32E-02	7.11E-02	1.09E-01	1.68E-01	8.75E+00	8.00E-01	5.88E+00	2.85E-02
BREOT-N53+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	5.12E+01	2.95E-01	NA	NA	NA	NA	5.36E-04	8.15E+01	4.37E-02	7.11E-02	1.09E-01	2.20E-01	8.75E+00	8.00E-01	5.88E+00	3.75E-02
BREOT-S53+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	7.10E+01	4.09E-01	NA	NA	NA	NA	5.36E-04	1.13E+02	6.06E-02	7.11E-02	1.09E-01	3.06E-01	8.75E+00	8.00E-01	5.88E+00	5.21E-02
BREOT-S54+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	4.05E+01	2.33E-01	NA	NA	NA	NA	5.36E-04	6.44E+01	3.45E-02	7.11E-02	1.09E-01	1.74E-01	8.75E+00	8.00E-01	5.88E+00	2.97E-02
BREOT-S36+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	1.41E+02	8.12E-01	NA	NA	NA	NA	5.36E-04	2.24E+02	1.20E-01	7.11E-02	1.09E-01	6.07E-01	8.75E+00	8.00E-01	5.88E+00	1.03E-01

TABLE C-2D: LEAD DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **18.41**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Mourning Dove (Herbivorous Birds - Terrestrial)																							
BREOT-N55+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	5.04E+01	2.91E-01	NA	NA	NA	NA	5.36E-04	8.03E+01	4.30E-02	7.11E-02	1.09E-01	2.17E-01	8.75E+00	8.00E-01	5.88E+00	3.70E-02
BREOT-S55+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	4.36E+01	2.51E-01	NA	NA	NA	NA	5.36E-04	6.95E+01	3.72E-02	7.11E-02	1.09E-01	1.88E-01	8.75E+00	8.00E-01	5.88E+00	3.20E-02
BREOT-N56+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	6.95E+01	4.00E-01	NA	NA	NA	NA	5.36E-04	1.11E+02	5.92E-02	7.11E-02	1.09E-01	2.99E-01	8.75E+00	8.00E-01	5.88E+00	5.09E-02
BREOT-S56+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	5.71E+01	3.29E-01	NA	NA	NA	NA	5.36E-04	9.09E+01	4.87E-02	7.11E-02	1.09E-01	2.46E-01	8.75E+00	8.00E-01	5.88E+00	4.18E-02
BREOT-N57+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	6.15E+01	3.55E-01	NA	NA	NA	NA	5.36E-04	9.80E+01	5.25E-02	7.11E-02	1.09E-01	2.65E-01	8.75E+00	8.00E-01	5.88E+00	4.51E-02
BREOT-S57+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	6.11E+01	3.52E-01	NA	NA	NA	NA	5.36E-04	9.72E+01	5.21E-02	7.11E-02	1.09E-01	2.63E-01	8.75E+00	8.00E-01	5.88E+00	4.47E-02
BREOT-N58+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	5.83E+01	3.36E-01	NA	NA	NA	NA	5.36E-04	9.28E+01	4.97E-02	7.11E-02	1.09E-01	2.51E-01	8.75E+00	8.00E-01	5.88E+00	4.27E-02
BREOT-S58+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	7.87E+01	4.53E-01	NA	NA	NA	NA	5.36E-04	1.25E+02	6.71E-02	7.11E-02	1.09E-01	3.39E-01	8.75E+00	8.00E-01	5.88E+00	5.77E-02
BREOT-N59+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	2.69E+02	1.55E+00	NA	NA	NA	NA	5.36E-04	4.28E+02	2.29E-01	7.11E-02	1.09E-01	1.16E+00	8.75E+00	8.00E-01	5.88E+00	1.97E-01
BREOT-N60+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	5.76E+01	3.32E-01	NA	NA	NA	NA	5.36E-04	9.16E+01	4.91E-02	7.11E-02	1.09E-01	2.48E-01	8.75E+00	8.00E-01	5.88E+00	4.22E-02
BREOT-S60+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	4.84E+01	2.79E-01	NA	NA	NA	NA	5.36E-04	7.70E+01	4.13E-02	7.11E-02	1.09E-01	2.08E-01	8.75E+00	8.00E-01	5.88E+00	3.54E-02
BREOT-S61+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	3.83E+01	2.21E-01	NA	NA	NA	NA	5.36E-04	6.09E+01	3.26E-02	7.11E-02	1.09E-01	1.65E-01	8.75E+00	8.00E-01	5.88E+00	2.80E-02
BREOT-N62+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	9.86E+01	5.68E-01	NA	NA	NA	NA	5.36E-04	1.57E+02	8.41E-02	7.11E-02	1.09E-01	4.25E-01	8.75E+00	8.00E-01	5.88E+00	7.23E-02
BREOT-S62+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	2.16E+01	1.24E-01	NA	NA	NA	NA	5.36E-04	3.44E+01	1.84E-02	7.11E-02	1.09E-01	9.30E-02	8.75E+00	8.00E-01	5.88E+00	1.58E-02
BREOT-N63+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	3.44E+02	1.98E+00	NA	NA	NA	NA	5.36E-04	5.48E+02	2.93E-01	7.11E-02	1.09E-01	1.48E+00	8.75E+00	8.00E-01	5.88E+00	2.52E-01
BREOT-S63+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	2.21E+01	1.27E-01	NA	NA	NA	NA	5.36E-04	3.52E+01	1.89E-02	7.11E-02	1.09E-01	9.52E-02	8.75E+00	8.00E-01	5.88E+00	1.62E-02
BREOT-N64+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	8.05E+01	4.64E-01	NA	NA	NA	NA	5.36E-04	1.28E+02	6.86E-02	7.11E-02	1.09E-01	3.46E-01	8.75E+00	8.00E-01	5.88E+00	5.90E-02
BREOT-S64+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	5.51E+01	3.17E-01	NA	NA	NA	NA	5.36E-04	8.77E+01	4.70E-02	7.11E-02	1.09E-01	2.37E-01	8.75E+00	8.00E-01	5.88E+00	4.04E-02
BREOT-S65+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	4.60E+01	2.65E-01	NA	NA	NA	NA	5.36E-04	7.33E+01	3.93E-02	7.11E-02	1.09E-01	1.98E-01	8.75E+00	8.00E-01	5.88E+00	3.37E-02
BREOT-N66+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	6.33E+01	3.65E-01	NA	NA	NA	NA	5.36E-04	1.01E+02	5.40E-02	7.11E-02	1.09E-01	2.73E-01	8.75E+00	8.00E-01	5.88E+00	4.64E-02
BREOT-S66+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	4.16E+01	2.40E-01	NA	NA	NA	NA	5.36E-04	6.63E+01	3.55E-02	7.11E-02	1.09E-01	1.79E-01	8.75E+00	8.00E-01	5.88E+00	3.05E-02
BREOT-N67+125 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	2.66E+02	1.53E+00	NA	NA	NA	NA	5.36E-04	4.24E+02	2.27E-01	7.11E-02	1.09E-01	1.15E+00	8.75E+00	8.00E-01	5.88E+00	1.95E-01
BREOT-S67+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	5.38E+01	3.10E-01	NA	NA	NA	NA	5.36E-04	8.56E+01	4.59E-02	7.11E-02	1.09E-01	2.32E-01	8.75E+00	8.00E-01	5.88E+00	3.94E-02
BREOT-N67+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	9.68E+02	5.58E+00	NA	NA	NA	NA	5.36E-04	1.54E+03	8.26E-01	7.11E-02	1.09E-01	4.17E+00	8.75E+00	8.00E-01	5.88E+00	7.09E-01
																						Maximum HQ (Outside Tailings)	**5.88E+00**
Red-Tailed Hawk (Carnivorous Birds - Terrestrial)																							
Reference Sites																							
ACBG-1 (0-6")	9.00E-02	9.00E-02	7.62E-02	1.76E+00	1.58E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.31E+01	1.18E-01	2.64E-02	1.13E+00	6.45E-03	8.75E+00	8.00E-01	9.38E+00	6.87E-04
ACBG-2 (0-6")	9.00E-02	9.00E-02	7.62E-02	2.92E+00	2.62E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.83E+01	1.96E-01	2.64E-02	1.13E+00	1.07E-02	8.75E+00	8.00E-01	9.38E+00	1.14E-03
UBRBG-202 (0-6")	9.00E-02	9.00E-02	7.62E-02	4.14E+00	3.73E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.44E+01	2.79E-01	2.64E-02	1.13E+00	1.52E-02	8.75E+00	8.00E-01	9.38E+00	1.62E-03
UBRBG-204 (0-6")	9.00E-02	9.00E-02	7.62E-02	4.05E+00	3.65E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.32E+01	2.73E-01	2.64E-02	1.13E+00	1.49E-02	8.75E+00	8.00E-01	9.38E+00	1.58E-03
Inside Tailings																						**Minimum HQ (Reference Sites)**	**6.87E-04**
BREOT-S6-12.5 (0-6")	9.00E-02	9.00E-02	9.28E-01	1.44E+03	1.29E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.55E+03	7.95E+00	2.64E-02	1.13E+00	3.20E+00	8.75E+00	8.00E-01	9.38E+00	3.41E-01
BREOT-S2-12.5 (0-6")	9.00E-02	9.00E-02	9.28E-01	1.80E+03	1.62E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.94E+03	9.97E+00	2.64E-02	1.13E+00	4.01E+00	8.75E+00	8.00E-01	9.38E+00	4.28E-01
BREOT-S0-12.5 (0-6")	9.00E-02	9.00E-02	9.28E-01	8.25E+02	7.42E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	8.89E+02	4.56E+00	2.64E-02	1.13E+00	1.83E+00	8.75E+00	8.00E-01	9.38E+00	1.96E-01
BREOT-S1-12.5 (0-6")	9.00E-02	9.00E-02	9.28E-01	7.51E+02	6.75E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	8.09E+02	4.15E+00	2.64E-02	1.13E+00	1.67E+00	8.75E+00	8.00E-01	9.38E+00	1.78E-01
BREOT-S7-25 (0-6")	9.00E-02	9.00E-02	9.28E-01	1.58E+02	1.42E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.71E+02	8.75E-01	2.64E-02	1.13E+00	3.52E-01	8.75E+00	8.00E-01	9.38E+00	3.75E-02
BREOT-S8-12.5 (0-6")	9.00E-02	9.00E-02	9.28E-01	6.02E+02	5.41E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	6.49E+02	3.33E+00	2.64E-02	1.13E+00	1.34E+00	8.75E+00	8.00E-01	9.38E+00	1.43E-01
BREOT-S9-12.5 (0-6")	9.00E-02	9.00E-02	9.28E-01	6.30E+02	5.67E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	6.79E+02	3.48E+00	2.64E-02	1.13E+00	1.40E+00	8.75E+00	8.00E-01	9.38E+00	1.49E-01
BREOT-N10-12.5 (0-6")	9.00E-02	9.00E-02	9.28E-01	8.96E+03	8.06E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	9.66E+03	4.95E+01	2.64E-02	1.13E+00	1.99E+01	8.75E+00	8.00E-01	9.38E+00	2.12E+00
BREOT-N11-12.5 (0-6")	9.00E-02	9.00E-02	9.28E-01	2.49E+03	2.24E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.69E+03	1.38E+01	2.64E-02	1.13E+00	5.55E+00	8.75E+00	8.00E-01	9.38E+00	5.92E-01
BREOT-N11-125 (0-6")	9.00E-02	9.00E-02	9.28E-01	2.06E+03	1.86E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.23E+03	1.14E+01	2.64E-02	1.13E+00	4.59E+00	8.75E+00	8.00E-01	9.38E+00	4.90E-01
BREOT-S11-12 (0-6")	9.00E-02	9.00E-02	9.28E-01	6.05E+03	5.44E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	6.52E+03	3.34E+01	2.64E-02	1.13E+00	1.35E+01	8.75E+00	8.00E-01	9.38E+00	1.43E+00
BREOT-S11+63 (0-6")	9.00E-02	9.00E-02	9.28E-01	1.90E+03	1.71E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.05E+03	1.05E+01	2.64E-02	1.13E+00	4.23E+00	8.75E+00	8.00E-01	9.38E+00	4.51E-01
UBDT-TP-6 (0-2")	9.00E-02	9.00E-02	9.28E-01	1.44E+04	1.30E+03	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.56E+04	7.98E+01	2.64E-02	1.13E+00	3.21E+01	8.75E+00	8.00E-01	9.38E+00	3.42E+00
UBDT-TP-6 (2-12")	9.00E-02	9.00E-02	9.28E-01	1.10E+04	9.91E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.19E+04	6.09E+01	2.64E-02	1.13E+00	2.45E+01	8.75E+00	8.00E-01	9.38E+00	2.61E+00
UBDT-TP-6 (12-24")	9.00E-02	9.00E-02	9.28E-01	6.16E+03	5.54E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	6.64E+03	3.40E+01	2.64E-02	1.13E+00	1.37E+01	8.75E+00	8.00E-01	9.38E+00	1.46E+00
UBDT-TP-6 (24-36")	9.00E-02	9.00E-02	9.28E-01	4.95E+02	4.45E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.33E+02	2.73E+00	2.64E-02	1.13E+00	1.10E+00	8.75E+00	8.00E-01	9.38E+00	1.17E-01
UBDT-TP-6 (36-48")	9.00E-02	9.00E-02	9.28E-01	1.12E+03	1.00E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.20E+03	6.17E+00	2.64E-02	1.13E+00	2.48E+00	8.75E+00	8.00E-01	9.38E+00	2.65E-01
UBDT-TP-6 (48-60")	9.00E-02	9.00E-02	9.28E-01	5.08E+02	4.57E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.47E+02	2.81E+00	2.64E-02	1.13E+00	1.13E+00	8.75E+00	8.00E-01	9.38E+00	1.20E-01
BREOT-N12-12.5 (0-6")	9.00E-02	9.00E-02	9.28E-01	1.41E+03	1.27E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.52E+03	7.80E+00	2.64E-02	1.13E+00	3.14E+00	8.75E+00	8.00E-01	9.38E+00	3.35E-01
BREOT-S12-12.5 (0-6")	9.00E-02	9.00E-02	9.28E-01	3.12E+03	2.81E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.37E+03	1.73E+01	2.64E-02	1.13E+00	6.95E+00	8.75E+00	8.00E-01	9.38E+00	7.41E-01
BREOT-S13-12.5 (0-6")	9.00E-02	9.00E-02	9.28E-01	4.66E+03	4.19E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.02E+03	2.58E+01	2.64E-02	1.13E+00	1.04E+01	8.75E+00	8.00E-01	9.38E+00	1.11E+00
BREOT-S14-12.5 (0-6")	9.00E-02	9.00E-02	9.28E-01	1.29E+03	1.16E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.39E+03	7.14E+00	2.64E-02	1.13E+00	2.88E+00	8.75E+00	8.00E-01	9.38E+00	3.06E-01
BREOT-N15-12.5 (0-6")	9.00E-02	9.00E-02	9.28E-01	2.64E+03	2.37E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.84E+03	1.46E+01	2.64E-02	1.13E+00	5.87E+00	8.75E+00	8.00E-01	9.38E+00	6.25E-01
BREOT-S15-12.5 (0-6")	9.00E-02	9.00E-02	9.28E-01	2.39E+03	2.15E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.58E+03	1.32E+01	2.64E-02	1.13E+00	5.32E+00	8.75E+00	8.00E-01	9.38E+00	5.67E-01
BREOT-N16-12.5 (0-6")	9.00E-02	9.00E-02	9.28E-01	2.51E+03	2.26E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.70E+03	1.39E+01	2.64E-02	1.13E+00	5.58E+00	8.75E+00	8.00E-01	9.38E+00	5.95E-01
BREOT-N16-25 (0-6")	9.00E-02	9.00E-02	9.28E-01	3.05E+02	2.75E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.29E+02	1.69E+00	2.64E-02	1.13E+00	6.79E-01	8.75E+00	8.00E-01	9.38E+00	7.24E-02
BREOT-S16-12.5 (0-6")	9.00E-02	9.00E-02	9.28E-01	1.78E+03	1.60E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.92E+03	9.83E+00	2.64E-02	1.13E+00	3.96E+00	8.75E+00	8.00E-01	9.38E+00	4.22E-01

TABLE C-2D: LEAD DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables; from BAF table; linked to soil or sed concentration table (VLOOKUP)

calculated values; linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 18.41

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Red-Tailed Hawk (Carnivorous Birds - Terrestrial)																							
BREOT-N17-12.5 (0-6")	9.00E-02	9.00E-02	9.28E-01	2.16E+03	1.95E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.33E+03	1.20E+01	2.64E-02	1.13E+00	4.81E+00	8.75E+00	8.00E-01	9.38E+00	5.13E-01
BREOT-S17-12.5 (0-6")	9.00E-02	9.00E-02	9.28E-01	6.53E+02	5.87E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	7.03E+02	3.61E+00	2.64E-02	1.13E+00	1.45E+00	8.75E+00	8.00E-01	9.38E+00	1.55E-01
BREOT-S17-25 (0-6")	9.00E-02	9.00E-02	9.28E-01	5.07E+02	4.56E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.46E+02	2.80E+00	2.64E-02	1.13E+00	1.13E+00	8.75E+00	8.00E-01	9.38E+00	1.20E-01
UBDT-TP-4 (0-2")	9.00E-02	9.00E-02	9.28E-01	1.20E+03	1.08E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.30E+03	6.65E+00	2.64E-02	1.13E+00	2.68E+00	8.75E+00	8.00E-01	9.38E+00	2.85E-01
UBDT-TP-4 (2-12")	9.00E-02	9.00E-02	9.28E-01	1.13E+03	1.02E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.22E+03	6.27E+00	2.64E-02	1.13E+00	2.52E+00	8.75E+00	8.00E-01	9.38E+00	2.69E-01
UBDT-TP-4 (12-24")	9.00E-02	9.00E-02	9.28E-01	7.67E+02	6.90E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	8.26E+02	4.24E+00	2.64E-02	1.13E+00	1.71E+00	8.75E+00	8.00E-01	9.38E+00	1.82E-01
UBDT-TP-4 (24-36")	9.00E-02	9.00E-02	9.28E-01	6.22E+02	5.60E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	6.71E+02	3.44E+00	2.64E-02	1.13E+00	1.38E+00	8.75E+00	8.00E-01	9.38E+00	1.48E-01
BREOT-N18-12.5 (0-6")	9.00E-02	9.00E-02	9.28E-01	1.87E+03	1.68E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.02E+03	1.03E+01	2.64E-02	1.13E+00	4.16E+00	8.75E+00	8.00E-01	9.38E+00	4.43E-01
BREOT-N18-25 (0-6")	9.00E-02	9.00E-02	9.28E-01	1.67E+02	1.50E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.80E+02	9.24E-01	2.64E-02	1.13E+00	3.72E-01	8.75E+00	8.00E-01	9.38E+00	3.97E-02
BREOT-S18-12.5 (0-6")	9.00E-02	9.00E-02	9.28E-01	7.63E+02	6.86E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	8.22E+02	4.22E+00	2.64E-02	1.13E+00	1.70E+00	8.75E+00	8.00E-01	9.38E+00	1.81E-01
BREOT-N19-10 (0-6")	9.00E-02	9.00E-02	9.28E-01	1.75E+03	1.57E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.88E+03	9.65E+00	2.64E-02	1.13E+00	3.88E+00	8.75E+00	8.00E-01	9.38E+00	4.14E-01
BREOT-S19-12.5 (0-6")	9.00E-02	9.00E-02	9.28E-01	9.41E+02	8.47E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.01E+03	5.20E+00	2.64E-02	1.13E+00	2.09E+00	8.75E+00	8.00E-01	9.38E+00	2.23E-01
UBDT-TP-5 (0-2")	9.00E-02	9.00E-02	9.28E-01	8.93E+02	8.03E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	9.62E+02	4.93E+00	2.64E-02	1.13E+00	1.99E+00	8.75E+00	8.00E-01	9.38E+00	2.12E-01
UBDT-TP-5 (2-12")	9.00E-02	9.00E-02	9.28E-01	9.49E+02	8.54E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.02E+03	5.25E+00	2.64E-02	1.13E+00	2.11E+00	8.75E+00	8.00E-01	9.38E+00	2.25E-01
UBDT-TP-5 (12-24")	9.00E-02	9.00E-02	9.28E-01	9.67E+02	8.70E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.04E+03	5.34E+00	2.64E-02	1.13E+00	2.15E+00	8.75E+00	8.00E-01	9.38E+00	2.29E-01
BREOT-N20-12.5 (0-6")	9.00E-02	9.00E-02	9.28E-01	1.08E+03	9.73E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.17E+03	5.98E+00	2.64E-02	1.13E+00	2.41E+00	8.75E+00	8.00E-01	9.38E+00	2.56E-01
UBDT-TP-3 (0-2")	9.00E-02	9.00E-02	9.28E-01	1.25E+03	1.12E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.34E+03	6.89E+00	2.64E-02	1.13E+00	2.77E+00	8.75E+00	8.00E-01	9.38E+00	2.96E-01
UBDT-TP-3 (2-12")	9.00E-02	9.00E-02	9.28E-01	1.68E+03	1.52E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.82E+03	9.31E+00	2.64E-02	1.13E+00	3.75E+00	8.75E+00	8.00E-01	9.38E+00	3.99E-01
UBDT-TP-3 (12-24")	9.00E-02	9.00E-02	9.28E-01	1.16E+03	1.04E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.25E+03	6.40E+00	2.64E-02	1.13E+00	2.58E+00	8.75E+00	8.00E-01	9.38E+00	2.75E-01
UBDT-TP-3 (24-36")	9.00E-02	9.00E-02	9.28E-01	1.46E+03	1.31E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.58E+03	8.08E+00	2.64E-02	1.13E+00	3.25E+00	8.75E+00	8.00E-01	9.38E+00	3.47E-01
UBDT-TP-3 (36-48")	9.00E-02	9.00E-02	9.28E-01	1.62E+03	1.46E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.74E+03	8.95E+00	2.64E-02	1.13E+00	3.60E+00	8.75E+00	8.00E-01	9.38E+00	3.84E-01
UBDT-TP-3 (48-60")	9.00E-02	9.00E-02	9.28E-01	3.31E+02	2.98E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.57E+02	1.83E+00	2.64E-02	1.13E+00	7.37E-01	8.75E+00	8.00E-01	9.38E+00	7.85E-02
BREOT-N21-12.5 (0-6")	9.00E-02	9.00E-02	9.28E-01	1.06E+03	9.58E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.15E+03	5.88E+00	2.64E-02	1.13E+00	2.37E+00	8.75E+00	8.00E-01	9.38E+00	2.52E-01
BREOT-N22-12.5 (0-6")	9.00E-02	9.00E-02	9.28E-01	1.37E+03	1.23E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.48E+03	7.58E+00	2.64E-02	1.13E+00	3.05E+00	8.75E+00	8.00E-01	9.38E+00	3.25E-01
BREOT-N23-12.5 (0-6")	9.00E-02	9.00E-02	9.28E-01	1.14E+03	1.03E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.23E+03	6.33E+00	2.64E-02	1.13E+00	2.55E+00	8.75E+00	8.00E-01	9.38E+00	2.71E-01
BREOT-S23-12.5 (0-6")	9.00E-02	9.00E-02	9.28E-01	1.60E+03	1.44E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.72E+03	8.83E+00	2.64E-02	1.13E+00	3.56E+00	8.75E+00	8.00E-01	9.38E+00	3.79E-01
UBDT-TP-2 (0-2")	9.00E-02	9.00E-02	9.28E-01	1.10E+03	9.90E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.19E+03	6.08E+00	2.64E-02	1.13E+00	2.45E+00	8.75E+00	8.00E-01	9.38E+00	2.61E-01
UBDT-TP-2 (2-12")	9.00E-02	9.00E-02	9.28E-01	8.12E+02	7.31E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	8.75E+02	4.49E+00	2.64E-02	1.13E+00	1.81E+00	8.75E+00	8.00E-01	9.38E+00	1.93E-01
UBDT-TP-2 (12-24")	9.00E-02	9.00E-02	9.28E-01	1.17E+03	1.05E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.26E+03	6.44E+00	2.64E-02	1.13E+00	2.59E+00	8.75E+00	8.00E-01	9.38E+00	2.76E-01
UBDT-TP-2 (24-36")	9.00E-02	9.00E-02	9.28E-01	6.93E+02	6.23E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	7.47E+02	3.83E+00	2.64E-02	1.13E+00	1.54E+00	8.75E+00	8.00E-01	9.38E+00	1.64E-01
UBDT-TP-2 (36-48")	9.00E-02	9.00E-02	9.28E-01	1.14E+03	1.02E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.23E+03	6.29E+00	2.64E-02	1.13E+00	2.53E+00	8.75E+00	8.00E-01	9.38E+00	2.70E-01
BREOT-S24-12.5 (0-6")	9.00E-02	9.00E-02	9.28E-01	1.65E+03	1.49E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.78E+03	9.12E+00	2.64E-02	1.13E+00	3.67E+00	8.75E+00	8.00E-01	9.38E+00	3.91E-01
BREOT-N25-50 (0-6")	9.00E-02	9.00E-02	9.28E-01	8.16E+03	7.34E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	8.80E+03	4.51E+01	2.64E-02	1.13E+00	1.82E+01	8.75E+00	8.00E-01	9.38E+00	1.94E+00
BREOT-N25-95 (0-6")	9.00E-02	9.00E-02	9.28E-01	1.27E+03	1.15E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.37E+03	7.04E+00	2.64E-02	1.13E+00	2.83E+00	8.75E+00	8.00E-01	9.38E+00	3.02E-01
BREOT-S25-12.5 (0-6")	9.00E-02	9.00E-02	9.28E-01	1.46E+03	1.31E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.57E+03	8.05E+00	2.64E-02	1.13E+00	3.24E+00	8.75E+00	8.00E-01	9.38E+00	3.45E-01
BREOT-S25-40 (0-6")	9.00E-02	9.00E-02	9.28E-01	1.86E+03	1.67E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.00E+03	1.03E+01	2.64E-02	1.13E+00	4.13E+00	8.75E+00	8.00E-01	9.38E+00	4.40E-01
BREOT-N26A-25 (0-6")	9.00E-02	9.00E-02	9.28E-01	6.99E+01	6.29E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	7.54E+01	3.86E-01	2.64E-02	1.13E+00	1.56E-01	8.75E+00	8.00E-01	9.38E+00	1.66E-02
BREOT-N26B-25 (0-6")	9.00E-02	9.00E-02	9.28E-01	1.80E+03	1.62E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.94E+03	9.94E+00	2.64E-02	1.13E+00	4.00E+00	8.75E+00	8.00E-01	9.38E+00	4.27E-01
BREOT-N26-50 (0-6")	9.00E-02	9.00E-02	9.28E-01	5.90E+03	5.31E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	6.36E+03	3.26E+01	2.64E-02	1.13E+00	1.31E+01	8.75E+00	8.00E-01	9.38E+00	1.40E+00
BREOT-N26-75 (0-6")	9.00E-02	9.00E-02	9.28E-01	3.90E+03	3.51E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.21E+03	2.16E+01	2.64E-02	1.13E+00	8.68E+00	8.75E+00	8.00E-01	9.38E+00	9.25E-01
BREOT-S26-12.5 (0-6")	9.00E-02	9.00E-02	9.28E-01	1.06E+03	9.57E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.15E+03	5.88E+00	2.64E-02	1.13E+00	2.37E+00	8.75E+00	8.00E-01	9.38E+00	2.52E-01
BREOT-S26-40 (0-6")	9.00E-02	9.00E-02	9.28E-01	1.32E+03	1.19E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.42E+03	7.29E+00	2.64E-02	1.13E+00	2.93E+00	8.75E+00	8.00E-01	9.38E+00	3.13E-01
BREOT-N27-30 (0-6")	9.00E-02	9.00E-02	9.28E-01	8.17E+03	7.35E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	8.80E+03	4.51E+01	2.64E-02	1.13E+00	1.82E+01	8.75E+00	8.00E-01	9.38E+00	1.94E+00
BREOT-N27-75 (0-6")	9.00E-02	9.00E-02	9.28E-01	9.47E+03	8.52E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.02E+04	5.23E+01	2.64E-02	1.13E+00	2.11E+01	8.75E+00	8.00E-01	9.38E+00	2.24E+00
BREOT-S27-12.5 (0-6")	9.00E-02	9.00E-02	9.28E-01	2.22E+03	2.00E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.40E+03	1.23E+01	2.64E-02	1.13E+00	4.95E+00	8.75E+00	8.00E-01	9.38E+00	5.27E-01
BREOT-N28-110 (0-6")	9.00E-02	9.00E-02	9.28E-01	2.18E+03	1.96E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.35E+03	1.21E+01	2.64E-02	1.13E+00	4.86E+00	8.75E+00	8.00E-01	9.38E+00	5.18E-01
BREOT-N28-55 (0-6")	9.00E-02	9.00E-02	9.28E-01	2.02E+04	1.82E+03	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.18E+04	1.12E+02	2.64E-02	1.13E+00	4.49E+01	8.75E+00	8.00E-01	9.38E+00	4.79E+00
BREOT-S28-12.5 (0-6")	9.00E-02	9.00E-02	9.28E-01	1.00E+03	8.99E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.08E+03	5.52E+00	2.64E-02	1.13E+00	2.22E+00	8.75E+00	8.00E-01	9.38E+00	2.37E-01
UBDT-TP-1 (0-2")	9.00E-02	9.00E-02	9.28E-01	7.10E+03	6.39E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	7.65E+03	3.92E+01	2.64E-02	1.13E+00	1.58E+01	8.75E+00	8.00E-01	9.38E+00	1.68E+00
UBDT-TP-1 (2-12")	9.00E-02	9.00E-02	9.28E-01	9.14E+03	8.22E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	9.85E+03	5.05E+01	2.64E-02	1.13E+00	2.03E+01	8.75E+00	8.00E-01	9.38E+00	2.17E+00
UBDT-TP-1 (12-24")	9.00E-02	9.00E-02	9.28E-01	8.54E+03	7.68E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	9.20E+03	4.72E+01	2.64E-02	1.13E+00	1.90E+01	8.75E+00	8.00E-01	9.38E+00	2.02E+00
UBDT-TP-1 (24-36")	9.00E-02	9.00E-02	9.28E-01	2.66E+03	2.39E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.86E+03	1.47E+01	2.64E-02	1.13E+00	5.91E+00	8.75E+00	8.00E-01	9.38E+00	6.30E-01
UBDT-TP-1 (36-48")	9.00E-02	9.00E-02	9.28E-01	1.62E+02	1.46E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.74E+02	8.94E-01	2.64E-02	1.13E+00	3.60E-01	8.75E+00	8.00E-01	9.38E+00	3.84E-02
UBDT-TP-1 (48-60")	9.00E-02	9.00E-02	9.28E-01	1.93E+02	1.74E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.08E+02	1.07E+00	2.64E-02	1.13E+00	4.30E-01	8.75E+00	8.00E-01	9.38E+00	4.58E-02
BREOT-N29-30 (0-6")	9.00E-02	9.00E-02	9.28E-01	1.05E+04	9.45E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.13E+04	5.81E+01	2.64E-02	1.13E+00	2.34E+01	8.75E+00	8.00E-01	9.38E+00	2.49E+00
BREOT-S29-12.5 (0-6")	9.00E-02	9.00E-02	9.28E-01	1.23E+03	1.10E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.32E+03	6.78E+00	2.64E-02	1.13E+00	2.73E+00	8.75E+00	8.00E-01	9.38E+00	2.91E-01
BREOT-N30-12.5 (0-6")	9.00E-02	9.00E-02	9.28E-01	3.02E+03	2.72E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.25E+03	1.67E+01	2.64E-02	1.13E+00	6.72E+00	8.75E+00	8.00E-01	9.38E+00	7.16E-01

TABLE C-2D: LEAD DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 18.41

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Red-Tailed Hawk (Carnivorous Birds - Terrestrial)																							
BREOT-S30-12.5 (0-6")	9.00E-02	9.00E-02	9.28E-01	1.43E+03	1.29E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.54E+03	7.92E+00	2.64E-02	1.13E+00	3.19E+00	8.75E+00	8.00E-01	9.38E+00	3.40E-01
BREOT-N31-12.5 (0-6")	9.00E-02	9.00E-02	9.28E-01	3.02E+03	2.72E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.25E+03	1.67E+01	2.64E-02	1.13E+00	6.72E+00	8.75E+00	8.00E-01	9.38E+00	7.16E-01
BREOT-S31-25 (0-6")	9.00E-02	9.00E-02	9.28E-01	8.24E+02	7.42E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	8.89E+02	4.56E+00	2.64E-02	1.13E+00	1.83E+00	8.75E+00	8.00E-01	9.38E+00	1.95E-01
BREOT-S31-5 (0-6")	9.00E-02	9.00E-02	9.28E-01	1.05E+03	9.45E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.13E+03	5.80E+00	2.64E-02	1.13E+00	2.34E+00	8.75E+00	8.00E-01	9.38E+00	2.49E-01
BREOT-N32-12.5 (0-6")	9.00E-02	9.00E-02	9.28E-01	1.09E+03	9.83E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.18E+03	6.04E+00	2.64E-02	1.13E+00	2.43E+00	8.75E+00	8.00E-01	9.38E+00	2.59E-01
BREOT-S32-6 (0-6")	9.00E-02	9.00E-02	9.28E-01	1.06E+03	9.57E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.15E+03	5.88E+00	2.64E-02	1.13E+00	2.37E+00	8.75E+00	8.00E-01	9.38E+00	2.52E-01
BREOT-N33-12.5 (0-6")	9.00E-02	9.00E-02	9.28E-01	3.19E+03	2.87E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.44E+03	1.76E+01	2.64E-02	1.13E+00	7.10E+00	8.75E+00	8.00E-01	9.38E+00	7.57E-01
BREOT-S33-12.5 (0-6")	9.00E-02	9.00E-02	9.28E-01	3.99E+02	3.59E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.30E+02	2.21E+00	2.64E-02	1.13E+00	8.88E-01	8.75E+00	8.00E-01	9.38E+00	9.46E-02
BREOT-N35-12.5 (0-6")	9.00E-02	9.00E-02	9.28E-01	5.54E+02	4.98E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.97E+02	3.06E+00	2.64E-02	1.13E+00	1.23E+00	8.75E+00	8.00E-01	9.38E+00	1.31E-01
BREOT-S35-12.5 (0-6")	9.00E-02	9.00E-02	9.28E-01	1.44E+03	1.30E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.55E+03	7.97E+00	2.64E-02	1.13E+00	3.21E+00	8.75E+00	8.00E-01	9.38E+00	3.42E-01
BREOT-N36-12.5 (0-6")	9.00E-02	9.00E-02	9.28E-01	1.51E+03	1.36E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.63E+03	8.34E+00	2.64E-02	1.13E+00	3.36E+00	8.75E+00	8.00E-01	9.38E+00	3.58E-01
BREOT-S36-12.5 (0-6")	9.00E-02	9.00E-02	9.28E-01	1.44E+03	1.29E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.55E+03	7.94E+00	2.64E-02	1.13E+00	3.20E+00	8.75E+00	8.00E-01	9.38E+00	3.41E-01
BREOT-N37-12.5 (0-6")	9.00E-02	9.00E-02	9.28E-01	1.42E+03	1.28E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.53E+03	7.84E+00	2.64E-02	1.13E+00	3.16E+00	8.75E+00	8.00E-01	9.38E+00	3.36E-01
BREOT-S37-12.5 (0-6")	9.00E-02	9.00E-02	9.28E-01	7.23E+02	6.51E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	7.80E+02	4.00E+00	2.64E-02	1.13E+00	1.61E+00	8.75E+00	8.00E-01	9.38E+00	1.72E-01
BREOT-N38-12.5 (0-6")	9.00E-02	9.00E-02	9.28E-01	7.38E+02	6.64E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	7.95E+02	4.08E+00	2.64E-02	1.13E+00	1.64E+00	8.75E+00	8.00E-01	9.38E+00	1.75E-01
BREOT-S38-12.5 (0-6")	9.00E-02	9.00E-02	9.28E-01	1.20E+03	1.08E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.29E+03	6.62E+00	2.64E-02	1.13E+00	2.66E+00	8.75E+00	8.00E-01	9.38E+00	2.84E-01
BREOT-N39-12.5 (0-6")	9.00E-02	9.00E-02	9.28E-01	2.63E+03	2.36E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.83E+03	1.45E+01	2.64E-02	1.13E+00	5.84E+00	8.75E+00	8.00E-01	9.38E+00	6.23E-01
BREOT-S39-12.5 (0-6")	9.00E-02	9.00E-02	9.28E-01	1.42E+03	1.28E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.53E+03	7.84E+00	2.64E-02	1.13E+00	3.16E+00	8.75E+00	8.00E-01	9.38E+00	3.36E-01
BREOT-N40-12.5 (0-6")	9.00E-02	9.00E-02	9.28E-01	1.76E+03	1.58E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.90E+03	9.72E+00	2.64E-02	1.13E+00	3.91E+00	8.75E+00	8.00E-01	9.38E+00	4.17E-01
BREOT-S40-14 (0-6")	9.00E-02	9.00E-02	9.28E-01	1.27E+03	1.14E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.37E+03	7.00E+00	2.64E-02	1.13E+00	2.82E+00	8.75E+00	8.00E-01	9.38E+00	3.00E-01
BREOT-N41-12.5 (0-6")	9.00E-02	9.00E-02	9.28E-01	1.08E+03	9.71E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.16E+03	5.97E+00	2.64E-02	1.13E+00	2.40E+00	8.75E+00	8.00E-01	9.38E+00	2.56E-01
BREOT-S41-12.5 (0-6")	9.00E-02	9.00E-02	9.28E-01	1.56E+03	1.41E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.69E+03	8.65E+00	2.64E-02	1.13E+00	3.48E+00	8.75E+00	8.00E-01	9.38E+00	3.71E-01
BREOT-N42-35 (0-6")	9.00E-02	9.00E-02	9.28E-01	1.72E+03	1.55E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.85E+03	9.50E+00	2.64E-02	1.13E+00	3.82E+00	8.75E+00	8.00E-01	9.38E+00	4.08E-01
BREOT-S42-25 (0-6")	9.00E-02	9.00E-02	9.28E-01	2.12E+03	1.91E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.29E+03	1.17E+01	2.64E-02	1.13E+00	4.72E+00	8.75E+00	8.00E-01	9.38E+00	5.03E-01
BREOT-N43-12.5 (0-6")	9.00E-02	9.00E-02	9.28E-01	1.96E+03	1.77E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.12E+03	1.09E+01	2.64E-02	1.13E+00	4.37E+00	8.75E+00	8.00E-01	9.38E+00	4.66E-01
BREOT-S43-12.5 (0-6")	9.00E-02	9.00E-02	9.28E-01	1.19E+03	1.07E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.28E+03	6.59E+00	2.64E-02	1.13E+00	2.65E+00	8.75E+00	8.00E-01	9.38E+00	2.83E-01
BREOT-N44-30 (0-6")	9.00E-02	9.00E-02	9.28E-01	9.09E+02	8.18E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	9.80E+02	5.02E+00	2.64E-02	1.13E+00	2.02E+00	8.75E+00	8.00E-01	9.38E+00	2.16E-01
BREOT-S44-12.5 (0-6")	9.00E-02	9.00E-02	9.28E-01	2.52E+03	2.27E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.72E+03	1.39E+01	2.64E-02	1.13E+00	5.61E+00	8.75E+00	8.00E-01	9.38E+00	5.98E-01
BREOT-N45-12.5 (0-6")	9.00E-02	9.00E-02	9.28E-01	1.01E+03	9.05E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.08E+03	5.56E+00	2.64E-02	1.13E+00	2.24E+00	8.75E+00	8.00E-01	9.38E+00	2.39E-01
BREOT-N43-12.5 (0-6")	9.00E-02	9.00E-02	9.28E-01	1.96E+03	1.77E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.12E+03	1.09E+01	2.64E-02	1.13E+00	4.37E+00	8.75E+00	8.00E-01	9.38E+00	4.66E-01
BREOT-S45-6 (0-6")	9.00E-02	9.00E-02	9.28E-01	2.80E+03	2.52E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.02E+03	1.55E+01	2.64E-02	1.13E+00	6.23E+00	8.75E+00	8.00E-01	9.38E+00	6.65E-01
BREOT-N46-12.5 (0-6")	9.00E-02	9.00E-02	9.28E-01	7.22E+02	6.50E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	7.78E+02	3.99E+00	2.64E-02	1.13E+00	1.61E+00	8.75E+00	8.00E-01	9.38E+00	1.71E-01
BREOT-S46-12.5 (0-6")	9.00E-02	9.00E-02	9.28E-01	1.32E+03	1.19E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.43E+03	7.31E+00	2.64E-02	1.13E+00	2.94E+00	8.75E+00	8.00E-01	9.38E+00	3.14E-01
BREOT-S46-40 (0-6")	9.00E-02	9.00E-02	9.28E-01	2.78E+03	2.50E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.00E+03	1.54E+01	2.64E-02	1.13E+00	6.19E+00	8.75E+00	8.00E-01	9.38E+00	6.60E-01
BREOT-N47-12.5 (0-6")	9.00E-02	9.00E-02	9.28E-01	1.19E+03	1.07E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.28E+03	6.57E+00	2.64E-02	1.13E+00	2.65E+00	8.75E+00	8.00E-01	9.38E+00	2.82E-01
BREOT-S47-999 (0-6")	9.00E-02	9.00E-02	9.28E-01	3.72E+03	3.34E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.01E+03	2.05E+01	2.64E-02	1.13E+00	8.27E+00	8.75E+00	8.00E-01	9.38E+00	8.82E-01
BREOT-S48-12.5 (0-6")	9.00E-02	9.00E-02	9.28E-01	1.14E+02	1.02E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.22E+02	6.28E-01	2.64E-02	1.13E+00	2.53E-01	8.75E+00	8.00E-01	9.38E+00	2.69E-02
BREOT-S49-2.5 (0-6")	9.00E-02	9.00E-02	9.28E-01	1.07E+02	9.61E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.15E+02	5.90E-01	2.64E-02	1.13E+00	2.38E-01	8.75E+00	8.00E-01	9.38E+00	2.53E-02
BREOT-S50-12.5 (0-6")	9.00E-02	9.00E-02	9.28E-01	6.19E+02	5.57E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	6.67E+02	3.42E+00	2.64E-02	1.13E+00	1.38E+00	8.75E+00	8.00E-01	9.38E+00	1.47E-01
BREOT-S50-25 (0-6")	9.00E-02	9.00E-02	9.28E-01	4.19E+01	3.77E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.52E+01	2.32E-01	2.64E-02	1.13E+00	9.32E-02	8.75E+00	8.00E-01	9.38E+00	9.94E-03
BREOT-N52-60 (0-6")	9.00E-02	9.00E-02	9.28E-01	2.62E+03	2.36E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.82E+03	1.45E+01	2.64E-02	1.13E+00	5.83E+00	8.75E+00	8.00E-01	9.38E+00	6.21E-01
BREOT-S52-12.5 (0-6")	9.00E-02	9.00E-02	9.28E-01	5.70E+01	5.13E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	6.15E+01	3.15E-01	2.64E-02	1.13E+00	1.27E-01	8.75E+00	8.00E-01	9.38E+00	1.35E-02
BREOT-S53-12.5 (0-6")	9.00E-02	9.00E-02	9.28E-01	1.72E+02	1.55E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.85E+02	9.51E-01	2.64E-02	1.13E+00	3.83E-01	8.75E+00	8.00E-01	9.38E+00	4.08E-02
BREOT-S54-12.5 (0-6")	9.00E-02	9.00E-02	9.28E-01	8.17E+01	7.35E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	8.81E+01	4.52E-01	2.64E-02	1.13E+00	1.82E-01	8.75E+00	8.00E-01	9.38E+00	1.94E-02
BREOT-N55-12.5 (0-6")	9.00E-02	9.00E-02	9.28E-01	2.21E+03	1.99E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.38E+03	1.22E+01	2.64E-02	1.13E+00	4.91E+00	8.75E+00	8.00E-01	9.38E+00	5.23E-01
BREOT-S55-12.5 (0-6")	9.00E-02	9.00E-02	9.28E-01	5.92E+02	5.33E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	6.38E+02	3.27E+00	2.64E-02	1.13E+00	1.32E+00	8.75E+00	8.00E-01	9.38E+00	1.40E-01
BREOT-N56-12.5 (0-6")	9.00E-02	9.00E-02	9.28E-01	2.06E+03	1.85E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.22E+03	1.14E+01	2.64E-02	1.13E+00	4.58E+00	8.75E+00	8.00E-01	9.38E+00	4.88E-01
BREOT-S56-12.5 (0-6")	9.00E-02	9.00E-02	9.28E-01	1.91E+02	1.72E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.06E+02	1.06E+00	2.64E-02	1.13E+00	4.25E-01	8.75E+00	8.00E-01	9.38E+00	4.53E-02
BREOT-N57-12.5 (0-6")	9.00E-02	9.00E-02	9.28E-01	1.27E+03	1.14E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.37E+03	7.00E+00	2.64E-02	1.13E+00	2.82E+00	8.75E+00	8.00E-01	9.38E+00	3.01E-01
BREOT-S57-12.5 (0-6")	9.00E-02	9.00E-02	9.28E-01	5.77E+02	5.19E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	6.22E+02	3.19E+00	2.64E-02	1.13E+00	1.28E+00	8.75E+00	8.00E-01	9.38E+00	1.37E-01
BREOT-N58-12.5 (0-6")	9.00E-02	9.00E-02	9.28E-01	3.04E+02	2.74E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.28E+02	1.68E+00	2.64E-02	1.13E+00	6.77E-01	8.75E+00	8.00E-01	9.38E+00	7.22E-02
BREOT-S58-12 (0-6")	9.00E-02	9.00E-02	9.28E-01	4.85E+02	4.36E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.23E+02	2.68E+00	2.64E-02	1.13E+00	1.08E+00	8.75E+00	8.00E-01	9.38E+00	1.15E-01
BREOT-N59-18 (0-6")	9.00E-02	9.00E-02	9.28E-01	8.53E+02	7.68E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	9.20E+02	4.72E+00	2.64E-02	1.13E+00	1.90E+00	8.75E+00	8.00E-01	9.38E+00	2.02E-01
BREOT-N60-12.5 (0-6")	9.00E-02	9.00E-02	9.28E-01	2.47E+02	2.22E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.66E+02	1.37E+00	2.64E-02	1.13E+00	5.50E-01	8.75E+00	8.00E-01	9.38E+00	5.86E-02
BREOT-S60-12.5 (0-6")	9.00E-02	9.00E-02	9.28E-01	1.03E+03	9.30E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.11E+03	5.71E+00	2.64E-02	1.13E+00	2.30E+00	8.75E+00	8.00E-01	9.38E+00	2.45E-01
BREOT-S61-12.5 (0-6")	9.00E-02	9.00E-02	9.28E-01	8.27E+02	7.44E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	8.91E+02	4.57E+00	2.64E-02	1.13E+00	1.84E+00	8.75E+00	8.00E-01	9.38E+00	1.96E-01
BREOT-N62-12.5 (0-6")	9.00E-02	9.00E-02	9.28E-01	8.98E+01	8.08E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	9.68E+01	4.96E-01	2.64E-02	1.13E+00	2.00E-01	8.75E+00	8.00E-01	9.38E+00	2.13E-02

TABLE C-2D: LEAD DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables; from BAF table; linked to soil or sed concentration table (VLOOKUP)

calculated values; linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **18.41**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Red-Tailed Hawk (Carnivorous Birds - Terrestrial)																							
BREOT-S62-12.5 (0-6")	9.00E-02	9.00E-02	9.28E-01	1.44E+03	1.29E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.55E+03	7.94E+00	2.64E-02	1.13E+00	3.20E+00	8.75E+00	8.00E-01	9.38E+00	3.41E-01
BREOT-S63-12.5 (0-6")	9.00E-02	9.00E-02	9.28E-01	3.63E+02	3.26E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.91E+02	2.00E+00	2.64E-02	1.13E+00	8.07E-01	8.75E+00	8.00E-01	9.38E+00	8.60E-02
BREOT-N64-12.5 (0-6")	9.00E-02	9.00E-02	9.28E-01	3.01E+02	2.70E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.24E+02	1.66E+00	2.64E-02	1.13E+00	6.69E-01	8.75E+00	8.00E-01	9.38E+00	7.13E-02
BREOT-N64-20 (0-6")	9.00E-02	9.00E-02	9.28E-01	2.51E+02	2.26E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.70E+02	1.39E+00	2.64E-02	1.13E+00	5.58E-01	8.75E+00	8.00E-01	9.38E+00	5.95E-02
BREOT-S64-12.5 (0-6")	9.00E-02	9.00E-02	9.28E-01	6.02E+02	5.41E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	6.49E+02	3.33E+00	2.64E-02	1.13E+00	1.34E+00	8.75E+00	8.00E-01	9.38E+00	1.43E-01
BREOT-N65-12.5 (0-6")	9.00E-02	9.00E-02	9.28E-01	1.66E+02	1.50E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.79E+02	9.20E-01	2.64E-02	1.13E+00	3.70E-01	8.75E+00	8.00E-01	9.38E+00	3.95E-02
BREOT-S65-12.5 (0-6")	9.00E-02	9.00E-02	9.28E-01	1.64E+03	1.47E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.76E+03	9.05E+00	2.64E-02	1.13E+00	3.64E+00	8.75E+00	8.00E-01	9.38E+00	3.88E-01
BREOT-N66-5 (0-6")	9.00E-02	9.00E-02	9.28E-01	6.39E+02	5.75E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	6.89E+02	3.53E+00	2.64E-02	1.13E+00	1.42E+00	8.75E+00	8.00E-01	9.38E+00	1.52E-01
BREOT-S66-12.5 (0-6")	9.00E-02	9.00E-02	9.28E-01	5.65E+02	5.08E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	6.09E+02	3.12E+00	2.64E-02	1.13E+00	1.26E+00	8.75E+00	8.00E-01	9.38E+00	1.34E-01
BREOT-N67-12.5 (0-6")	9.00E-02	9.00E-02	9.28E-01	1.04E+03	9.34E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.12E+03	5.74E+00	2.64E-02	1.13E+00	2.31E+00	8.75E+00	8.00E-01	9.38E+00	2.46E-01
BREOT-S67-12.5 (0-6")	9.00E-02	9.00E-02	9.28E-01	2.27E+02	2.04E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.45E+02	1.25E+00	2.64E-02	1.13E+00	5.05E-01	8.75E+00	8.00E-01	9.38E+00	5.38E-02
At Edge of Tailings																						**Maximum HQ (Inside Tailings)**	**4.79E+00**
BREOT-S0-0 (06)	9.00E-02	9.00E-02	9.28E-01	4.35E+02	3.91E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.68E+02	2.40E+00	2.64E-02	1.13E+00	9.67E-01	8.75E+00	8.00E-01	9.38E+00	1.03E-01
BREOT-S1-0 (0-6")	9.00E-02	9.00E-02	9.28E-01	2.11E+03	1.90E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.28E+03	1.17E+01	2.64E-02	1.13E+00	4.70E+00	8.75E+00	8.00E-01	9.38E+00	5.01E-01
BREOT-S2-0 (0-6")	9.00E-02	9.00E-02	9.28E-01	6.18E+02	5.56E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	6.66E+02	3.42E+00	2.64E-02	1.13E+00	1.38E+00	8.75E+00	8.00E-01	9.38E+00	1.47E-01
BREOT-S3-0 (0-6")	9.00E-02	9.00E-02	9.28E-01	1.37E+03	1.23E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.48E+03	7.59E+00	2.64E-02	1.13E+00	3.05E+00	8.75E+00	8.00E-01	9.38E+00	3.25E-01
BREOT-S4-0 (0-6")	9.00E-02	9.00E-02	9.28E-01	1.63E+03	1.47E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.76E+03	9.02E+00	2.64E-02	1.13E+00	3.63E+00	8.75E+00	8.00E-01	9.38E+00	3.87E-01
BREOT-S6-0 (0-6")	9.00E-02	9.00E-02	9.28E-01	1.58E+03	1.42E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.70E+03	8.72E+00	2.64E-02	1.13E+00	3.51E+00	8.75E+00	8.00E-01	9.38E+00	3.74E-01
BREOT-S7-0 (0-6")	9.00E-02	9.00E-02	9.28E-01	9.41E+02	8.47E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.01E+03	5.20E+00	2.64E-02	1.13E+00	2.09E+00	8.75E+00	8.00E-01	9.38E+00	2.23E-01
BREOT-S8-0 (0-6")	9.00E-02	9.00E-02	9.28E-01	3.46E+02	3.12E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.73E+02	1.91E+00	2.64E-02	1.13E+00	7.71E-01	8.75E+00	8.00E-01	9.38E+00	8.21E-02
BREOT-S9-0 (0-6")	9.00E-02	9.00E-02	9.28E-01	7.47E+02	6.72E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	8.05E+02	4.13E+00	2.64E-02	1.13E+00	1.66E+00	8.75E+00	8.00E-01	9.38E+00	1.77E-01
BREOT-N10-0 (0-6")	9.00E-02	9.00E-02	9.28E-01	2.18E+04	1.96E+03	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.35E+04	1.20E+02	2.64E-02	1.13E+00	4.85E+01	8.75E+00	8.00E-01	9.38E+00	5.17E+00
BREOT-N11-0 (0-6")	9.00E-02	9.00E-02	9.28E-01	2.65E+03	2.39E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.86E+03	1.47E+01	2.64E-02	1.13E+00	5.90E+00	8.75E+00	8.00E-01	9.38E+00	6.29E-01
BREOT-S11-0 (0-6")	9.00E-02	9.00E-02	9.28E-01	9.31E+02	8.37E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.00E+03	5.14E+00	2.64E-02	1.13E+00	2.07E+00	8.75E+00	8.00E-01	9.38E+00	2.21E-01
BREOT-N12-0 (0-6")	9.00E-02	9.00E-02	9.28E-01	9.59E+02	8.63E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.03E+03	5.30E+00	2.64E-02	1.13E+00	2.13E+00	8.75E+00	8.00E-01	9.38E+00	2.27E-01
BREOT-S12-0 (0-6")	9.00E-02	9.00E-02	9.28E-01	2.96E+03	2.66E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.19E+03	1.63E+01	2.64E-02	1.13E+00	6.58E+00	8.75E+00	8.00E-01	9.38E+00	7.01E-01
BREOT-N13-0 (0-6")	9.00E-02	9.00E-02	9.28E-01	2.46E+04	2.21E+03	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.65E+04	1.36E+02	2.64E-02	1.13E+00	5.46E+01	8.75E+00	8.00E-01	9.38E+00	5.82E+00
BREOT-S13-0 (0-6")	9.00E-02	9.00E-02	9.28E-01	5.75E+02	5.17E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	6.20E+02	3.18E+00	2.64E-02	1.13E+00	1.28E+00	8.75E+00	8.00E-01	9.38E+00	1.36E-01
BREOT-N14-0 (0-6")	9.00E-02	9.00E-02	9.28E-01	2.70E+03	2.42E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.91E+03	1.49E+01	2.64E-02	1.13E+00	6.00E+00	8.75E+00	8.00E-01	9.38E+00	6.39E-01
BREOT-S14-0 (0-6")	9.00E-02	9.00E-02	9.28E-01	1.43E+04	1.29E+03	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.54E+04	7.91E+01	2.64E-02	1.13E+00	3.18E+01	8.75E+00	8.00E-01	9.38E+00	3.39E+00
BREOT-N15-0 (0-6")	9.00E-02	9.00E-02	9.28E-01	3.34E+03	3.00E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.60E+03	1.84E+01	2.64E-02	1.13E+00	7.42E+00	8.75E+00	8.00E-01	9.38E+00	7.91E-01
BREOT-N16-0 (0-6")	9.00E-02	9.00E-02	9.28E-01	1.64E+03	1.48E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.77E+03	9.08E+00	2.64E-02	1.13E+00	3.65E+00	8.75E+00	8.00E-01	9.38E+00	3.90E-01
BREOT-S16-0 (0-6")	9.00E-02	9.00E-02	9.28E-01	3.10E+02	2.79E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.34E+02	1.71E+00	2.64E-02	1.13E+00	6.89E-01	8.75E+00	8.00E-01	9.38E+00	7.35E-02
BREOT-N17-0 (0-6")	9.00E-02	9.00E-02	9.28E-01	2.66E+03	2.39E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.86E+03	1.47E+01	2.64E-02	1.13E+00	5.91E+00	8.75E+00	8.00E-01	9.38E+00	6.30E-01
BREOT-S17-0 (0-6")	9.00E-02	9.00E-02	9.28E-01	3.11E+03	2.80E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.36E+03	1.72E+01	2.64E-02	1.13E+00	6.93E+00	8.75E+00	8.00E-01	9.38E+00	7.39E-01
BREOT-N18-0 (0-6")	9.00E-02	9.00E-02	9.28E-01	2.15E+03	1.93E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.32E+03	1.19E+01	2.64E-02	1.13E+00	4.78E+00	8.75E+00	8.00E-01	9.38E+00	5.09E-01
BREOT-S18-0 (0-6")	9.00E-02	9.00E-02	9.28E-01	3.39E+01	3.05E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.65E+01	1.87E-01	2.64E-02	1.13E+00	7.53E-02	8.75E+00	8.00E-01	9.38E+00	8.03E-03
BREOT-N19-0 (0-6")	9.00E-02	9.00E-02	9.28E-01	1.46E+03	1.32E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.58E+03	8.10E+00	2.64E-02	1.13E+00	3.26E+00	8.75E+00	8.00E-01	9.38E+00	3.47E-01
BREOT-S19-0 (0-6")	9.00E-02	9.00E-02	9.28E-01	4.20E+02	3.78E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.53E+02	2.32E+00	2.64E-02	1.13E+00	9.35E-01	8.75E+00	8.00E-01	9.38E+00	9.97E-02
BREOT-N20-0 (0-6")	9.00E-02	9.00E-02	9.28E-01	1.20E+03	1.08E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.29E+03	6.62E+00	2.64E-02	1.13E+00	2.67E+00	8.75E+00	8.00E-01	9.38E+00	2.84E-01
BREOT-S20-0 (0-6")	9.00E-02	9.00E-02	9.28E-01	5.78E+02	5.20E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	6.23E+02	3.19E+00	2.64E-02	1.13E+00	1.28E+00	8.75E+00	8.00E-01	9.38E+00	1.37E-01
BREOT-N21-0 (0-6")	9.00E-02	9.00E-02	9.28E-01	5.34E+01	4.80E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.75E+01	2.95E-01	2.64E-02	1.13E+00	1.19E-01	8.75E+00	8.00E-01	9.38E+00	1.27E-02
BREOT-S21-0 (0-6")	9.00E-02	9.00E-02	9.28E-01	1.61E+03	1.44E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.73E+03	8.88E+00	2.64E-02	1.13E+00	3.57E+00	8.75E+00	8.00E-01	9.38E+00	3.81E-01
BREOT-N22-0 (0-6")	9.00E-02	9.00E-02	9.28E-01	1.35E+03	1.21E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.46E+03	7.46E+00	2.64E-02	1.13E+00	3.00E+00	8.75E+00	8.00E-01	9.38E+00	3.20E-01
BREOT-S22-0 (0-6")	9.00E-02	9.00E-02	9.28E-01	1.63E+03	1.46E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.75E+03	8.98E+00	2.64E-02	1.13E+00	3.62E+00	8.75E+00	8.00E-01	9.38E+00	3.85E-01
BREOT-N23-0 (0-6")	9.00E-02	9.00E-02	9.28E-01	1.12E+03	1.01E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.21E+03	6.18E+00	2.64E-02	1.13E+00	2.49E+00	8.75E+00	8.00E-01	9.38E+00	2.65E-01
BREOT-S23-0 (0-6")	9.00E-02	9.00E-02	9.28E-01	2.47E+03	2.23E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.67E+03	1.37E+01	2.64E-02	1.13E+00	5.50E+00	8.75E+00	8.00E-01	9.38E+00	5.87E-01
BREOT-N24-0 (0-6")	9.00E-02	9.00E-02	9.28E-01	2.37E+03	2.13E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.56E+03	1.31E+01	2.64E-02	1.13E+00	5.27E+00	8.75E+00	8.00E-01	9.38E+00	5.62E-01
BREOT-S24-0 (0-6")	9.00E-02	9.00E-02	9.28E-01	1.39E+03	1.25E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.50E+03	7.68E+00	2.64E-02	1.13E+00	3.09E+00	8.75E+00	8.00E-01	9.38E+00	3.30E-01
BREOT-N25-0 (0-6")	9.00E-02	9.00E-02	9.28E-01	5.78E+03	5.20E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	6.23E+03	3.19E+01	2.64E-02	1.13E+00	1.29E+01	8.75E+00	8.00E-01	9.38E+00	1.37E+00
BREOT-S25-0 (0-6")	9.00E-02	9.00E-02	9.28E-01	3.23E+03	2.91E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.49E+03	1.79E+01	2.64E-02	1.13E+00	7.19E+00	8.75E+00	8.00E-01	9.38E+00	7.67E-01
BREOT-N26-0 (0-6")	9.00E-02	9.00E-02	9.28E-01	1.06E+04	9.52E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.14E+04	5.85E+01	2.64E-02	1.13E+00	2.35E+01	8.75E+00	8.00E-01	9.38E+00	2.51E+00
BREOT-S26-0 (0-6")	9.00E-02	9.00E-02	9.28E-01	1.48E+03	1.33E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.59E+03	8.17E+00	2.64E-02	1.13E+00	3.29E+00	8.75E+00	8.00E-01	9.38E+00	3.51E-01
BREOT-N27-0 (0-6")	9.00E-02	9.00E-02	9.28E-01	1.14E+04	1.02E+03	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.23E+04	6.28E+01	2.64E-02	1.13E+00	2.53E+01	8.75E+00	8.00E-01	9.38E+00	2.70E+00
BREOT-S27-0 (0-6")	9.00E-02	9.00E-02	9.28E-01	2.58E+03	2.32E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.78E+03	1.42E+01	2.64E-02	1.13E+00	5.73E+00	8.75E+00	8.00E-01	9.38E+00	6.11E-01
BREOT-N28-0 (0-6")	9.00E-02	9.00E-02	9.28E-01	4.39E+03	3.95E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.73E+03	2.42E+01	2.64E-02	1.13E+00	9.76E+00	8.75E+00	8.00E-01	9.38E+00	1.04E+00
BREOT-S28-0 (0-6")	9.00E-02	9.00E-02	9.28E-01	1.08E+03	9.72E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.16E+03	5.97E+00	2.64E-02	1.13E+00	2.40E+00	8.75E+00	8.00E-01	9.38E+00	2.56E-01

TABLE C-2D: LEAD DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 18.41

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Red-Tailed Hawk (Carnivorous Birds - Terrestrial)																							
BREOT-S29-0 (0-6")	9.00E-02	9.00E-02	9.28E-01	4.47E+02	4.02E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.82E+02	2.47E+00	2.64E-02	1.13E+00	9.94E-01	8.75E+00	8.00E-01	9.38E+00	1.06E-01
BREOT-N30-0 (0-6")	9.00E-02	9.00E-02	9.28E-01	7.96E+03	7.16E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	8.58E+03	4.40E+01	2.64E-02	1.13E+00	1.77E+01	8.75E+00	8.00E-01	9.38E+00	1.89E+00
BREOT-S30-0 (0-6")	9.00E-02	9.00E-02	9.28E-01	2.18E+02	1.96E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.35E+02	1.21E+00	2.64E-02	1.13E+00	4.86E-01	8.75E+00	8.00E-01	9.38E+00	5.18E-02
BREOT-N31-0 (0-6")	9.00E-02	9.00E-02	9.28E-01	3.84E+03	3.46E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.14E+03	2.12E+01	2.64E-02	1.13E+00	8.55E+00	8.75E+00	8.00E-01	9.38E+00	9.11E-01
BREOT-S31-0 (0-6")	9.00E-02	9.00E-02	9.28E-01	2.11E+02	1.89E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.27E+02	1.16E+00	2.64E-02	1.13E+00	4.68E-01	8.75E+00	8.00E-01	9.38E+00	4.99E-02
BREOT-N32-0 (0-6")	9.00E-02	9.00E-02	9.28E-01	1.59E+03	1.43E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.72E+03	8.79E+00	2.64E-02	1.13E+00	3.54E+00	8.75E+00	8.00E-01	9.38E+00	3.77E-01
BREOT-S32-0 (0-6")	9.00E-02	9.00E-02	9.28E-01	1.84E+03	1.66E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.99E+03	1.02E+01	2.64E-02	1.13E+00	4.10E+00	8.75E+00	8.00E-01	9.38E+00	4.37E-01
BREOT-N33-0 (0-6")	9.00E-02	9.00E-02	9.28E-01	5.78E+01	5.20E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	6.23E+01	3.19E-01	2.64E-02	1.13E+00	1.29E-01	8.75E+00	8.00E-01	9.38E+00	1.37E-02
BREOT-S33-0 (0-6")	9.00E-02	9.00E-02	9.28E-01	4.40E+02	3.96E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.75E+02	2.43E+00	2.64E-02	1.13E+00	9.80E-01	8.75E+00	8.00E-01	9.38E+00	1.04E-01
BREOT-N34-0 (0-6")	9.00E-02	9.00E-02	9.28E-01	1.53E+02	1.37E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.65E+02	8.44E-01	2.64E-02	1.13E+00	3.40E-01	8.75E+00	8.00E-01	9.38E+00	3.62E-02
BREOT-S34-0 (0-6")	9.00E-02	9.00E-02	9.28E-01	1.07E+03	9.65E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.16E+03	5.93E+00	2.64E-02	1.13E+00	2.39E+00	8.75E+00	8.00E-01	9.38E+00	2.54E-01
BREOT-N35-0 (0-6")	9.00E-02	9.00E-02	9.28E-01	9.65E+01	8.68E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.04E+02	5.33E-01	2.64E-02	1.13E+00	2.15E-01	8.75E+00	8.00E-01	9.38E+00	2.29E-02
BREOT-S35-0 (0-6")	9.00E-02	9.00E-02	9.28E-01	7.46E+02	6.71E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	8.04E+02	4.12E+00	2.64E-02	1.13E+00	1.66E+00	8.75E+00	8.00E-01	9.38E+00	1.77E-01
BREOT-N36-0 (0-6")	9.00E-02	9.00E-02	9.28E-01	2.10E+03	1.89E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.27E+03	1.16E+01	2.64E-02	1.13E+00	4.68E+00	8.75E+00	8.00E-01	9.38E+00	4.99E-01
BREOT-S36-0 (0-6")	9.00E-02	9.00E-02	9.28E-01	1.49E+03	1.34E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.61E+03	8.23E+00	2.64E-02	1.13E+00	3.31E+00	8.75E+00	8.00E-01	9.38E+00	3.53E-01
BREOT-N37-0 (0-6")	9.00E-02	9.00E-02	9.28E-01	4.70E+02	4.22E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.06E+02	2.60E+00	2.64E-02	1.13E+00	1.04E+00	8.75E+00	8.00E-01	9.38E+00	1.11E-01
BREOT-S37-0 (0-6")	9.00E-02	9.00E-02	9.28E-01	1.65E+03	1.49E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.78E+03	9.13E+00	2.64E-02	1.13E+00	3.68E+00	8.75E+00	8.00E-01	9.38E+00	3.92E-01
BREOT-N38-0 (0-6")	9.00E-02	9.00E-02	9.28E-01	9.76E+01	8.78E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.05E+02	5.39E-01	2.64E-02	1.13E+00	2.17E-01	8.75E+00	8.00E-01	9.38E+00	2.31E-02
BREOT-S38-0 (0-6")	9.00E-02	9.00E-02	9.28E-01	1.93E+02	1.74E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.08E+02	1.07E+00	2.64E-02	1.13E+00	4.29E-01	8.75E+00	8.00E-01	9.38E+00	4.58E-02
BREOT-N39-0 (0-6")	9.00E-02	9.00E-02	9.28E-01	8.15E+01	7.33E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	8.79E+01	4.50E-01	2.64E-02	1.13E+00	1.81E-01	8.75E+00	8.00E-01	9.38E+00	1.93E-02
BREOT-N40-0 (0-6")	9.00E-02	9.00E-02	9.28E-01	1.97E+02	1.77E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.12E+02	1.09E+00	2.64E-02	1.13E+00	4.38E-01	8.75E+00	8.00E-01	9.38E+00	4.67E-02
BREOT-S40-0 (0-6")	9.00E-02	9.00E-02	9.28E-01	1.28E+03	1.15E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.38E+03	7.06E+00	2.64E-02	1.13E+00	2.84E+00	8.75E+00	8.00E-01	9.38E+00	3.03E-01
BREOT-N41-0 (0-6")	9.00E-02	9.00E-02	9.28E-01	1.27E+02	1.14E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.37E+02	7.01E-01	2.64E-02	1.13E+00	2.82E-01	8.75E+00	8.00E-01	9.38E+00	3.01E-02
BREOT-S41-0 (0-6")	9.00E-02	9.00E-02	9.28E-01	1.27E+03	1.14E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.37E+03	7.00E+00	2.64E-02	1.13E+00	2.82E+00	8.75E+00	8.00E-01	9.38E+00	3.00E-01
BREOT-N42-0 (0-6")	9.00E-02	9.00E-02	9.28E-01	2.52E+01	2.27E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.72E+01	1.39E-01	2.64E-02	1.13E+00	5.61E-02	8.75E+00	8.00E-01	9.38E+00	5.98E-03
BREOT-S42-0 (0-6")	9.00E-02	9.00E-02	9.28E-01	2.64E+03	2.37E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.84E+03	1.46E+01	2.64E-02	1.13E+00	5.86E+00	8.75E+00	8.00E-01	9.38E+00	6.25E-01
BREOT-N43-0 (0-6")	9.00E-02	9.00E-02	9.28E-01	1.72E+02	1.55E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.85E+02	9.49E-01	2.64E-02	1.13E+00	3.82E-01	8.75E+00	8.00E-01	9.38E+00	4.07E-02
BREOT-S43-0 (0-6")	9.00E-02	9.00E-02	9.28E-01	1.12E+02	1.01E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.21E+02	6.21E-01	2.64E-02	1.13E+00	2.50E-01	8.75E+00	8.00E-01	9.38E+00	2.67E-02
BREOT-N44-0 (0-6")	9.00E-02	9.00E-02	9.28E-01	5.21E+02	4.69E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.62E+02	2.88E+00	2.64E-02	1.13E+00	1.16E+00	8.75E+00	8.00E-01	9.38E+00	1.24E-01
BREOT-S44-0 (0-6")	9.00E-02	9.00E-02	9.28E-01	8.25E+01	7.42E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	8.89E+01	4.56E-01	2.64E-02	1.13E+00	1.84E-01	8.75E+00	8.00E-01	9.38E+00	1.96E-02
BREOT-N45-0 (0-6")	9.00E-02	9.00E-02	9.28E-01	1.49E+02	1.34E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.61E+02	8.23E-01	2.64E-02	1.13E+00	3.31E-01	8.75E+00	8.00E-01	9.38E+00	3.53E-02
BREOT-S45-0 (0-6")	9.00E-02	9.00E-02	9.28E-01	1.76E+02	1.58E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.90E+02	9.72E-01	2.64E-02	1.13E+00	3.91E-01	8.75E+00	8.00E-01	9.38E+00	4.17E-02
BREOT-N46-0 (0-6")	9.00E-02	9.00E-02	9.28E-01	1.28E+02	1.15E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.38E+02	7.06E-01	2.64E-02	1.13E+00	2.84E-01	8.75E+00	8.00E-01	9.38E+00	3.03E-02
BREOT-S46-0 (0-6")	9.00E-02	9.00E-02	9.28E-01	1.00E+03	9.02E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.08E+03	5.54E+00	2.64E-02	1.13E+00	2.23E+00	8.75E+00	8.00E-01	9.38E+00	2.38E-01
BREOT-N47-0 (0-6")	9.00E-02	9.00E-02	9.28E-01	1.63E+02	1.46E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.75E+02	8.98E-01	2.64E-02	1.13E+00	3.62E-01	8.75E+00	8.00E-01	9.38E+00	3.85E-02
BREOT-S47-0 (0-6")	9.00E-02	9.00E-02	9.28E-01	3.48E+01	3.13E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.76E+01	1.93E-01	2.64E-02	1.13E+00	7.75E-02	8.75E+00	8.00E-01	9.38E+00	8.26E-03
BREOT-N48-0 (0-6")	9.00E-02	9.00E-02	9.28E-01	2.26E+02	2.03E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.44E+02	1.25E+00	2.64E-02	1.13E+00	5.03E-01	8.75E+00	8.00E-01	9.38E+00	5.36E-02
BREOT-S48-0 (0-6")	9.00E-02	9.00E-02	9.28E-01	1.78E+02	1.60E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.92E+02	9.82E-01	2.64E-02	1.13E+00	3.95E-01	8.75E+00	8.00E-01	9.38E+00	4.21E-02
BREOT-N49-0 (0-6")	9.00E-02	9.00E-02	9.28E-01	3.59E+02	3.23E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.87E+02	1.98E+00	2.64E-02	1.13E+00	7.98E-01	8.75E+00	8.00E-01	9.38E+00	8.50E-02
BREOT-S49-0 (0-6")	9.00E-02	9.00E-02	9.28E-01	1.11E+02	1.00E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.20E+02	6.15E-01	2.64E-02	1.13E+00	2.48E-01	8.75E+00	8.00E-01	9.38E+00	2.64E-02
BREOT-S50-0 (0-6")	9.00E-02	9.00E-02	9.28E-01	9.80E+01	8.81E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.06E+02	5.42E-01	2.64E-02	1.13E+00	2.18E-01	8.75E+00	8.00E-01	9.38E+00	2.32E-02
BREOT-N51-0 (0-6")	9.00E-02	9.00E-02	9.28E-01	3.92E+02	3.53E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.23E+02	2.17E+00	2.64E-02	1.13E+00	8.72E-01	8.75E+00	8.00E-01	9.38E+00	9.30E-02
BREOT-S51-0 (0-6")	9.00E-02	9.00E-02	9.28E-01	1.38E+02	1.24E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.49E+02	7.63E-01	2.64E-02	1.13E+00	3.07E-01	8.75E+00	8.00E-01	9.38E+00	3.28E-02
BREOT-N52-0 (0-6")	9.00E-02	9.00E-02	9.28E-01	9.17E+01	8.25E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	9.88E+01	5.07E-01	2.64E-02	1.13E+00	2.04E-01	8.75E+00	8.00E-01	9.38E+00	2.17E-02
BREOT-S52-0 (0-6")	9.00E-02	9.00E-02	9.28E-01	7.08E+01	6.36E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	7.63E+01	3.91E-01	2.64E-02	1.13E+00	1.57E-01	8.75E+00	8.00E-01	9.38E+00	1.68E-02
BREOT-N53-0 (0-6")	9.00E-02	9.00E-02	9.28E-01	1.98E+02	1.78E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.14E+02	1.10E+00	2.64E-02	1.13E+00	4.41E-01	8.75E+00	8.00E-01	9.38E+00	4.70E-02
BREOT-S53-0 (0-6")	9.00E-02	9.00E-02	9.28E-01	7.33E+01	6.60E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	7.91E+01	4.05E-01	2.64E-02	1.13E+00	1.63E-01	8.75E+00	8.00E-01	9.38E+00	1.74E-02
BREOT-N54-0 (0-6")	9.00E-02	9.00E-02	9.28E-01	2.00E+02	1.80E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.16E+02	1.11E+00	2.64E-02	1.13E+00	4.45E-01	8.75E+00	8.00E-01	9.38E+00	4.74E-02
BREOT-S54-0 (0-6")	9.00E-02	9.00E-02	9.28E-01	8.96E+01	8.06E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	9.66E+01	4.95E-01	2.64E-02	1.13E+00	1.99E-01	8.75E+00	8.00E-01	9.38E+00	2.12E-02
BREOT-N55-0 (0-6")	9.00E-02	9.00E-02	9.28E-01	1.15E+02	1.04E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.24E+02	6.36E-01	2.64E-02	1.13E+00	2.56E-01	8.75E+00	8.00E-01	9.38E+00	2.73E-02
BREOT-S55-0 (0-6")	9.00E-02	9.00E-02	9.28E-01	1.00E+02	9.02E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.08E+02	5.54E-01	2.64E-02	1.13E+00	2.23E-01	8.75E+00	8.00E-01	9.38E+00	2.38E-02
BREOT-N56-0 (0-6")	9.00E-02	9.00E-02	9.28E-01	5.24E+02	4.72E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.65E+02	2.90E+00	2.64E-02	1.13E+00	1.17E+00	8.75E+00	8.00E-01	9.38E+00	1.24E-01
BREOT-N57-0 (0-6")	9.00E-02	9.00E-02	9.28E-01	2.27E+02	2.05E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.45E+02	1.26E+00	2.64E-02	1.13E+00	5.06E-01	8.75E+00	8.00E-01	9.38E+00	5.39E-02
BREOT-S57-0 (0-6")	9.00E-02	9.00E-02	9.28E-01	1.70E+02	1.53E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.83E+02	9.40E-01	2.64E-02	1.13E+00	3.78E-01	8.75E+00	8.00E-01	9.38E+00	4.03E-02
BREOT-N58-0 (0-6")	9.00E-02	9.00E-02	9.28E-01	1.54E+02	1.38E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.66E+02	8.49E-01	2.64E-02	1.13E+00	3.42E-01	8.75E+00	8.00E-01	9.38E+00	3.64E-02
BREOT-S58-0 (0-6")	9.00E-02	9.00E-02	9.28E-01	1.23E+02	1.11E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.33E+02	6.82E-01	2.64E-02	1.13E+00	2.75E-01	8.75E+00	8.00E-01	9.38E+00	2.93E-02
BREOT-N59-0 (0-6")	9.00E-02	9.00E-02	9.28E-01	9.29E+01	8.36E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.00E+02	5.13E-01	2.64E-02	1.13E+00	2.07E-01	8.75E+00	8.00E-01	9.38E+00	2.20E-02

TABLE C-2D: LEAD DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 18.41

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Red-Tailed Hawk (Carnivorous Birds - Terrestrial)																							
BREOT-N60-0 (0-6")	9.00E-02	9.00E-02	9.28E-01	7.45E+01	6.70E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	8.03E+01	4.12E-01	2.64E-02	1.13E+00	1.66E-01	8.75E+00	8.00E-01	9.38E+00	1.77E-02
BREOT-S60-0 (0-6")	9.00E-02	9.00E-02	9.28E-01	4.81E+02	4.32E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.18E+02	2.66E+00	2.64E-02	1.13E+00	1.07E+00	8.75E+00	8.00E-01	9.38E+00	1.14E-01
BREOT-S61-0 (0-6")	9.00E-02	9.00E-02	9.28E-01	7.64E+01	6.87E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	8.23E+01	4.22E-01	2.64E-02	1.13E+00	1.70E-01	8.75E+00	8.00E-01	9.38E+00	1.81E-02
BREOT-N62-0 (0-6")	9.00E-02	9.00E-02	9.28E-01	1.20E+02	1.08E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.29E+02	6.61E-01	2.64E-02	1.13E+00	2.66E-01	8.75E+00	8.00E-01	9.38E+00	2.84E-02
BREOT-S62-0 (0-6")	9.00E-02	9.00E-02	9.28E-01	9.33E+01	8.39E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.01E+02	5.16E-01	2.64E-02	1.13E+00	2.08E-01	8.75E+00	8.00E-01	9.38E+00	2.21E-02
BREOT-N63-0 (0-6")	9.00E-02	9.00E-02	9.28E-01	3.16E+02	2.84E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.40E+02	1.75E+00	2.64E-02	1.13E+00	7.02E-01	8.75E+00	8.00E-01	9.38E+00	7.49E-02
BREOT-S63-0 (0-6")	9.00E-02	9.00E-02	9.28E-01	1.99E+02	1.79E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.14E+02	1.10E+00	2.64E-02	1.13E+00	4.42E-01	8.75E+00	8.00E-01	9.38E+00	4.71E-02
BREOT-N64-0 (0-6")	9.00E-02	9.00E-02	9.28E-01	1.23E+02	1.11E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.33E+02	6.82E-01	2.64E-02	1.13E+00	2.74E-01	8.75E+00	8.00E-01	9.38E+00	2.92E-02
BREOT-S64-0 (0-6")	9.00E-02	9.00E-02	9.28E-01	9.02E+01	8.11E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	9.72E+01	4.98E-01	2.64E-02	1.13E+00	2.01E-01	8.75E+00	8.00E-01	9.38E+00	2.14E-02
BREOT-N66-0 (0-6")	9.00E-02	9.00E-02	9.28E-01	1.64E+02	1.47E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.76E+02	9.04E-01	2.64E-02	1.13E+00	3.64E-01	8.75E+00	8.00E-01	9.38E+00	3.88E-02
BREOT-S66-0 (0-6")	9.00E-02	9.00E-02	9.28E-01	8.60E+01	7.73E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	9.27E+01	4.75E-01	2.64E-02	1.13E+00	1.91E-01	8.75E+00	8.00E-01	9.38E+00	2.04E-02
BREOT-N67-0 (0-6")	9.00E-02	9.00E-02	9.28E-01	1.72E+03	1.55E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.86E+03	9.53E+00	2.64E-02	1.13E+00	3.84E+00	8.75E+00	8.00E-01	9.38E+00	4.09E-01
BREOT-S67-0 (0-6")	9.00E-02	9.00E-02	9.28E-01	7.39E+01	6.65E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	7.97E+01	4.09E-01	2.64E-02	1.13E+00	1.64E-01	8.75E+00	8.00E-01	9.38E+00	1.75E-02
Outside Tailings																						**Maximum HQ (At Edge of Tailings)**	**5.82E+00**
BREOT-S0+25 (0-6")	9.00E-02	9.00E-02	9.28E-01	2.39E+02	2.15E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.58E+02	1.32E+00	2.64E-02	1.13E+00	5.32E-01	8.75E+00	8.00E-01	9.38E+00	5.68E-02
BREOT-S1+25 (0-6")	9.00E-02	9.00E-02	9.28E-01	1.32E+02	1.18E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.42E+02	7.27E-01	2.64E-02	1.13E+00	2.93E-01	8.75E+00	8.00E-01	9.38E+00	3.12E-02
BREOT-S2+95 (0-6")	9.00E-02	9.00E-02	9.28E-01	5.43E+01	4.88E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.85E+01	3.00E-01	2.64E-02	1.13E+00	1.21E-01	8.75E+00	8.00E-01	9.38E+00	1.29E-02
BREOT-S3+6 (0-6")	9.00E-02	9.00E-02	9.28E-01	1.53E+02	1.38E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.65E+02	8.46E-01	2.64E-02	1.13E+00	3.41E-01	8.75E+00	8.00E-01	9.38E+00	3.63E-02
BREOT-S4+10 (0-6")	9.00E-02	9.00E-02	9.28E-01	8.56E+01	7.70E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	9.23E+01	4.73E-01	2.64E-02	1.13E+00	1.90E-01	8.75E+00	8.00E-01	9.38E+00	2.03E-02
BREOT-S6+25 (0-6")	9.00E-02	9.00E-02	9.28E-01	2.35E+02	2.12E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.54E+02	1.30E+00	2.64E-02	1.13E+00	5.23E-01	8.75E+00	8.00E-01	9.38E+00	5.58E-02
BREOT-S8+25 (0-6")	9.00E-02	9.00E-02	9.28E-01	2.43E+02	2.19E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.62E+02	1.34E+00	2.64E-02	1.13E+00	5.41E-01	8.75E+00	8.00E-01	9.38E+00	5.76E-02
BREOT-N10+25 (0-6")	9.00E-02	9.00E-02	9.28E-01	1.22E+02	1.10E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.32E+02	6.75E-01	2.64E-02	1.13E+00	2.72E-01	8.75E+00	8.00E-01	9.38E+00	2.90E-02
BREOT-N11+25 (0-6")	9.00E-02	9.00E-02	9.28E-01	1.28E+02	1.15E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.38E+02	7.08E-01	2.64E-02	1.13E+00	2.85E-01	8.75E+00	8.00E-01	9.38E+00	3.04E-02
BREOT-N12+25 (0-6")	9.00E-02	9.00E-02	9.28E-01	2.53E+02	2.28E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.73E+02	1.40E+00	2.64E-02	1.13E+00	5.64E-01	8.75E+00	8.00E-01	9.38E+00	6.01E-02
BREOT-S12+25 (0-6")	9.00E-02	9.00E-02	9.28E-01	8.08E+03	7.27E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	8.70E+03	4.46E+01	2.64E-02	1.13E+00	1.80E+01	8.75E+00	8.00E-01	9.38E+00	1.92E+00
BREOT-S12+60 (0-6")	9.00E-02	9.00E-02	9.28E-01	1.01E+03	9.12E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.09E+03	5.60E+00	2.64E-02	1.13E+00	2.25E+00	8.75E+00	8.00E-01	9.38E+00	2.40E-01
BREOT-N13+25 (0-6")	9.00E-02	9.00E-02	9.28E-01	2.52E+02	2.27E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.72E+02	1.39E+00	2.64E-02	1.13E+00	5.61E-01	8.75E+00	8.00E-01	9.38E+00	5.98E-02
BREOT-S13+25 (0-6")	9.00E-02	9.00E-02	9.28E-01	2.88E+03	2.59E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.10E+03	1.59E+01	2.64E-02	1.13E+00	6.41E+00	8.75E+00	8.00E-01	9.38E+00	6.83E-01
BREOT-S13+65 (0-6")	9.00E-02	9.00E-02	9.28E-01	1.01E+03	9.10E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.09E+03	5.59E+00	2.64E-02	1.13E+00	2.25E+00	8.75E+00	8.00E-01	9.38E+00	2.40E-01
BREOT-N14+25 (0-6")	9.00E-02	9.00E-02	9.28E-01	2.72E+02	2.45E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.94E+02	1.51E+00	2.64E-02	1.13E+00	6.06E-01	8.75E+00	8.00E-01	9.38E+00	6.46E-02
BREOT-S14+25 (0-6")	9.00E-02	9.00E-02	9.28E-01	1.18E+04	1.07E+03	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.28E+04	6.55E+01	2.64E-02	1.13E+00	2.63E+01	8.75E+00	8.00E-01	9.38E+00	2.81E+00
BREOT-S14+59 (0-6")	9.00E-02	9.00E-02	9.28E-01	7.36E+02	6.62E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	7.93E+02	4.07E+00	2.64E-02	1.13E+00	1.64E+00	8.75E+00	8.00E-01	9.38E+00	1.74E-01
BREOT-N15+25 (0-6")	9.00E-02	9.00E-02	9.28E-01	4.27E+03	3.84E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.60E+03	2.36E+01	2.64E-02	1.13E+00	9.50E+00	8.75E+00	8.00E-01	9.38E+00	1.01E+00
BREOT-N15+50 (0-6")	9.00E-02	9.00E-02	9.28E-01	1.79E+02	1.61E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.93E+02	9.88E-01	2.64E-02	1.13E+00	3.98E-01	8.75E+00	8.00E-01	9.38E+00	4.24E-02
BREOT-S16+20 (0-6")	9.00E-02	9.00E-02	9.28E-01	2.77E+03	2.49E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.99E+03	1.53E+01	2.64E-02	1.13E+00	6.17E+00	8.75E+00	8.00E-01	9.38E+00	6.57E-01
BREOT-S16+75 (0-6")	9.00E-02	9.00E-02	9.28E-01	4.01E+02	3.61E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.33E+02	2.22E+00	2.64E-02	1.13E+00	8.93E-01	8.75E+00	8.00E-01	9.38E+00	9.52E-02
BREOT-N17+25 (0-6")	9.00E-02	9.00E-02	9.28E-01	7.57E+03	6.81E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	8.16E+03	4.19E+01	2.64E-02	1.13E+00	1.69E+01	8.75E+00	8.00E-01	9.38E+00	1.80E+00
BREOT-S18+25 (0-6")	9.00E-02	9.00E-02	9.28E-01	5.84E+02	5.25E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	6.29E+02	3.23E+00	2.64E-02	1.13E+00	1.30E+00	8.75E+00	8.00E-01	9.38E+00	1.38E-01
BREOT-N19+25 (0-6")	9.00E-02	9.00E-02	9.28E-01	7.63E+01	6.87E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	8.23E+01	4.22E-01	2.64E-02	1.13E+00	1.70E-01	8.75E+00	8.00E-01	9.38E+00	1.81E-02
BREOT-S19+25 (0-6")	9.00E-02	9.00E-02	9.28E-01	4.63E+01	4.16E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.99E+01	2.56E-01	2.64E-02	1.13E+00	1.03E-01	8.75E+00	8.00E-01	9.38E+00	1.10E-02
BREOT-S19+85 (0-6")	9.00E-02	9.00E-02	9.28E-01	5.85E+02	5.26E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	6.31E+02	3.23E+00	2.64E-02	1.13E+00	1.30E+00	8.75E+00	8.00E-01	9.38E+00	1.39E-01
BREOT-N20+25 (0-6")	9.00E-02	9.00E-02	9.28E-01	1.58E+02	1.42E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.70E+02	8.74E-01	2.64E-02	1.13E+00	3.52E-01	8.75E+00	8.00E-01	9.38E+00	3.75E-02
BREOT-S20+25 (0-6")	9.00E-02	9.00E-02	9.28E-01	5.09E+01	4.58E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.49E+01	2.81E-01	2.64E-02	1.13E+00	1.13E-01	8.75E+00	8.00E-01	9.38E+00	1.21E-02
BREOT-S20+75 (0-6")	9.00E-02	9.00E-02	9.28E-01	9.39E+01	8.45E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.01E+02	5.19E-01	2.64E-02	1.13E+00	2.09E-01	8.75E+00	8.00E-01	9.38E+00	2.23E-02
BREOT-N21+25 (0-6")	9.00E-02	9.00E-02	9.28E-01	3.27E+03	2.94E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.52E+03	1.81E+01	2.64E-02	1.13E+00	7.27E+00	8.75E+00	8.00E-01	9.38E+00	7.75E-01
BREOT-S21+25 (0-6")	9.00E-02	9.00E-02	9.28E-01	4.91E+01	4.42E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.29E+01	2.71E-01	2.64E-02	1.13E+00	1.09E-01	8.75E+00	8.00E-01	9.38E+00	1.16E-02
BREOT-N22+150 (0-6")	9.00E-02	9.00E-02	9.28E-01	2.60E+02	2.34E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.80E+02	1.44E+00	2.64E-02	1.13E+00	5.79E-01	8.75E+00	8.00E-01	9.38E+00	6.17E-02
BREOT-N22+25 (0-6")	9.00E-02	9.00E-02	9.28E-01	2.29E+03	2.06E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.47E+03	1.27E+01	2.64E-02	1.13E+00	5.09E+00	8.75E+00	8.00E-01	9.38E+00	5.43E-01
BREOT-S22+25 (0-6")	9.00E-02	9.00E-02	9.28E-01	9.93E+02	8.93E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.07E+03	5.49E+00	2.64E-02	1.13E+00	2.21E+00	8.75E+00	8.00E-01	9.38E+00	2.35E-01
BREOT-N23+115 (0-6")	9.00E-02	9.00E-02	9.28E-01	6.10E+01	5.49E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	6.58E+01	3.37E-01	2.64E-02	1.13E+00	1.36E-01	8.75E+00	8.00E-01	9.38E+00	1.45E-02
BREOT-N23+25 (0-6")	9.00E-02	9.00E-02	9.28E-01	6.69E+03	6.02E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	7.21E+03	3.70E+01	2.64E-02	1.13E+00	1.49E+01	8.75E+00	8.00E-01	9.38E+00	1.59E+00
BREOT-S23+25 (0-6")	9.00E-02	9.00E-02	9.28E-01	1.17E+03	1.05E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.26E+03	6.46E+00	2.64E-02	1.13E+00	2.60E+00	8.75E+00	8.00E-01	9.38E+00	2.77E-01
BREOT-S23+37.5 (0-6")	9.00E-02	9.00E-02	9.28E-01	1.00E+02	9.01E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.08E+02	5.53E-01	2.64E-02	1.13E+00	2.23E-01	8.75E+00	8.00E-01	9.38E+00	2.37E-02
BREOT-N24+25 (0-6")	9.00E-02	9.00E-02	9.28E-01	8.51E+02	7.65E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	9.17E+02	4.70E+00	2.64E-02	1.13E+00	1.89E+00	8.75E+00	8.00E-01	9.38E+00	2.02E-01
BREOT-N24+75 (0-6")	9.00E-02	9.00E-02	9.28E-01	1.01E+02	9.06E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.09E+02	5.56E-01	2.64E-02	1.13E+00	2.24E-01	8.75E+00	8.00E-01	9.38E+00	2.39E-02
BREOT-S24+25 (0-6")	9.00E-02	9.00E-02	9.28E-01	8.60E+02	7.74E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	9.27E+02	4.75E+00	2.64E-02	1.13E+00	1.91E+00	8.75E+00	8.00E-01	9.38E+00	2.04E-01
BREOT-N25+25 (0-6")	9.00E-02	9.00E-02	9.28E-01	6.28E+01	5.65E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	6.77E+01	3.47E-01	2.64E-02	1.13E+00	1.40E-01	8.75E+00	8.00E-01	9.38E+00	1.49E-02

TABLE C-2D: LEAD DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 18.41

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Red-Tailed Hawk (Carnivorous Birds - Terrestrial)																							
BREOT-S25+25 (0-6")	9.00E-02	9.00E-02	9.28E-01	5.04E+02	4.53E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.43E+02	2.78E+00	2.64E-02	1.13E+00	1.12E+00	8.75E+00	8.00E-01	9.38E+00	1.19E-01
BREOT-S25+40 (0-6")	9.00E-02	9.00E-02	9.28E-01	2.22E+03	2.00E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.40E+03	1.23E+01	2.64E-02	1.13E+00	4.94E+00	8.75E+00	8.00E-01	9.38E+00	5.27E-01
BREOT-S26+37 (0-6")	9.00E-02	9.00E-02	9.28E-01	1.94E+02	1.75E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.09E+02	1.07E+00	2.64E-02	1.13E+00	4.32E-01	8.75E+00	8.00E-01	9.38E+00	4.60E-02
BREOT-N27+25 (0-6")	9.00E-02	9.00E-02	9.28E-01	1.09E+02	9.77E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.17E+02	6.00E-01	2.64E-02	1.13E+00	2.42E-01	8.75E+00	8.00E-01	9.38E+00	2.57E-02
BREOT-S27+25 (0-6")	9.00E-02	9.00E-02	9.28E-01	3.68E+02	3.31E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.96E+02	2.03E+00	2.64E-02	1.13E+00	8.18E-01	8.75E+00	8.00E-01	9.38E+00	8.72E-02
BREOT-N28+25 (0-6")	9.00E-02	9.00E-02	9.28E-01	1.27E+02	1.15E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.37E+02	7.03E-01	2.64E-02	1.13E+00	2.83E-01	8.75E+00	8.00E-01	9.38E+00	3.02E-02
BREOT-S28+25 (0-6")	9.00E-02	9.00E-02	9.28E-01	7.20E+02	6.48E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	7.76E+02	3.98E+00	2.64E-02	1.13E+00	1.60E+00	8.75E+00	8.00E-01	9.38E+00	1.71E-01
BREOT-N29+25 (0-6")	9.00E-02	9.00E-02	9.28E-01	3.44E+02	3.10E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.71E+02	1.90E+00	2.64E-02	1.13E+00	7.66E-01	8.75E+00	8.00E-01	9.38E+00	8.16E-02
BREOT-S29+25 (0-6")	9.00E-02	9.00E-02	9.28E-01	6.54E+02	5.88E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	7.05E+02	3.61E+00	2.64E-02	1.13E+00	1.45E+00	8.75E+00	8.00E-01	9.38E+00	1.55E-01
BREOT-N30+25 (0-6")	9.00E-02	9.00E-02	9.28E-01	5.12E+02	4.61E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.52E+02	2.83E+00	2.64E-02	1.13E+00	1.14E+00	8.75E+00	8.00E-01	9.38E+00	1.21E-01
BREOT-S30+25 (0-6")	9.00E-02	9.00E-02	9.28E-01	4.81E+02	4.33E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.18E+02	2.66E+00	2.64E-02	1.13E+00	1.07E+00	8.75E+00	8.00E-01	9.38E+00	1.14E-01
BREOT-N31+25 (0-6")	9.00E-02	9.00E-02	9.28E-01	9.27E+03	8.34E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.00E+04	5.13E+01	2.64E-02	1.13E+00	2.06E+01	8.75E+00	8.00E-01	9.38E+00	2.20E+00
BREOT-N31+75 (0-6")	9.00E-02	9.00E-02	9.28E-01	7.00E+01	6.29E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	7.54E+01	3.87E-01	2.64E-02	1.13E+00	1.56E-01	8.75E+00	8.00E-01	9.38E+00	1.66E-02
BREOT-S31+25 (0-6")	9.00E-02	9.00E-02	9.28E-01	1.63E+02	1.46E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.75E+02	8.98E-01	2.64E-02	1.13E+00	3.62E-01	8.75E+00	8.00E-01	9.38E+00	3.85E-02
BREOT-N32+25 (0-6")	9.00E-02	9.00E-02	9.28E-01	1.01E+02	9.07E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.09E+02	5.57E-01	2.64E-02	1.13E+00	2.24E-01	8.75E+00	8.00E-01	9.38E+00	2.39E-02
BREOT-S32+25 (0-6")	9.00E-02	9.00E-02	9.28E-01	1.11E+03	1.00E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.20E+03	6.15E+00	2.64E-02	1.13E+00	2.47E+00	8.75E+00	8.00E-01	9.38E+00	2.64E-01
BREOT-S32+300 (0-6")	9.00E-02	9.00E-02	9.28E-01	3.49E+02	3.14E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.76E+02	1.93E+00	2.64E-02	1.13E+00	7.77E-01	8.75E+00	8.00E-01	9.38E+00	8.28E-02
BREOT-N33+25 (0-6")	9.00E-02	9.00E-02	9.28E-01	6.96E+01	6.26E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	7.50E+01	3.85E-01	2.64E-02	1.13E+00	1.55E-01	8.75E+00	8.00E-01	9.38E+00	1.65E-02
BREOT-S33+25 (0-6")	9.00E-02	9.00E-02	9.28E-01	1.28E+02	1.15E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.38E+02	7.07E-01	2.64E-02	1.13E+00	2.85E-01	8.75E+00	8.00E-01	9.38E+00	3.03E-02
BREOT-N34+25 (0-6")	9.00E-02	9.00E-02	9.28E-01	1.06E+02	9.56E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.15E+02	5.87E-01	2.64E-02	1.13E+00	2.36E-01	8.75E+00	8.00E-01	9.38E+00	2.52E-02
BREOT-S34+25 (0-6")	9.00E-02	9.00E-02	9.28E-01	3.44E+02	3.10E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.71E+02	1.90E+00	2.64E-02	1.13E+00	7.66E-01	8.75E+00	8.00E-01	9.38E+00	8.16E-02
BREOT-N35+25 (0-6")	9.00E-02	9.00E-02	9.28E-01	7.84E+01	7.06E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	8.46E+01	4.34E-01	2.64E-02	1.13E+00	1.75E-01	8.75E+00	8.00E-01	9.38E+00	1.86E-02
BREOT-S35+25 (0-6")	9.00E-02	9.00E-02	9.28E-01	1.26E+02	1.13E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.36E+02	6.96E-01	2.64E-02	1.13E+00	2.80E-01	8.75E+00	8.00E-01	9.38E+00	2.99E-02
BREOT-N36+100 (0-6")	9.00E-02	9.00E-02	9.28E-01	1.58E+02	1.42E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.71E+02	8.75E-01	2.64E-02	1.13E+00	3.52E-01	8.75E+00	8.00E-01	9.38E+00	3.75E-02
BREOT-N36+25 (0-6")	9.00E-02	9.00E-02	9.28E-01	1.87E+03	1.68E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.02E+03	1.03E+01	2.64E-02	1.13E+00	4.17E+00	8.75E+00	8.00E-01	9.38E+00	4.44E-01
BREOT-S36+25 (0-6")	9.00E-02	9.00E-02	9.28E-01	2.08E+02	1.87E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.24E+02	1.15E+00	2.64E-02	1.13E+00	4.63E-01	8.75E+00	8.00E-01	9.38E+00	4.94E-02
BREOT-N37+25 (0-6")	9.00E-02	9.00E-02	9.28E-01	9.69E+01	8.72E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.04E+02	5.35E-01	2.64E-02	1.13E+00	2.16E-01	8.75E+00	8.00E-01	9.38E+00	2.30E-02
BREOT-S37+25 (0-6")	9.00E-02	9.00E-02	9.28E-01	1.17E+02	1.05E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.26E+02	6.44E-01	2.64E-02	1.13E+00	2.59E-01	8.75E+00	8.00E-01	9.38E+00	2.76E-02
BREOT-N38+25 (0-6")	9.00E-02	9.00E-02	9.28E-01	1.40E+02	1.26E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.51E+02	7.73E-01	2.64E-02	1.13E+00	3.11E-01	8.75E+00	8.00E-01	9.38E+00	3.32E-02
BREOT-S38+25 (0-6")	9.00E-02	9.00E-02	9.28E-01	1.42E+02	1.28E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.53E+02	7.85E-01	2.64E-02	1.13E+00	3.16E-01	8.75E+00	8.00E-01	9.38E+00	3.37E-02
BREOT-N39+25 (0-6")	9.00E-02	9.00E-02	9.28E-01	1.36E+02	1.22E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.46E+02	7.49E-01	2.64E-02	1.13E+00	3.02E-01	8.75E+00	8.00E-01	9.38E+00	3.21E-02
BREOT-S39+25 (0-6")	9.00E-02	9.00E-02	9.28E-01	1.53E+02	1.38E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.65E+02	8.48E-01	2.64E-02	1.13E+00	3.41E-01	8.75E+00	8.00E-01	9.38E+00	3.64E-02
BREOT-N40+25 (0-6")	9.00E-02	9.00E-02	9.28E-01	1.40E+02	1.26E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.51E+02	7.72E-01	2.64E-02	1.13E+00	3.11E-01	8.75E+00	8.00E-01	9.38E+00	3.31E-02
BREOT-S40+25 (0-6")	9.00E-02	9.00E-02	9.28E-01	1.22E+02	1.09E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.31E+02	6.72E-01	2.64E-02	1.13E+00	2.70E-01	8.75E+00	8.00E-01	9.38E+00	2.88E-02
BREOT-N41+25 (0-6")	9.00E-02	9.00E-02	9.28E-01	9.22E+01	8.29E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	9.94E+01	5.10E-01	2.64E-02	1.13E+00	2.05E-01	8.75E+00	8.00E-01	9.38E+00	2.19E-02
BREOT-S41+25 (0-6")	9.00E-02	9.00E-02	9.28E-01	5.00E+02	4.50E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.39E+02	2.77E+00	2.64E-02	1.13E+00	1.11E+00	8.75E+00	8.00E-01	9.38E+00	1.19E-01
BREOT-N42+25 (0-6")	9.00E-02	9.00E-02	9.28E-01	4.18E+01	3.76E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.50E+01	2.31E-01	2.64E-02	1.13E+00	9.29E-02	8.75E+00	8.00E-01	9.38E+00	9.90E-03
BREOT-S42+25 (0-6")	9.00E-02	9.00E-02	9.28E-01	1.13E+02	1.01E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.21E+02	6.22E-01	2.64E-02	1.13E+00	2.50E-01	8.75E+00	8.00E-01	9.38E+00	2.67E-02
BREOT-N43+12.5 (0-6")	9.00E-02	9.00E-02	9.28E-01	2.43E+02	2.19E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.62E+02	1.34E+00	2.64E-02	1.13E+00	5.41E-01	8.75E+00	8.00E-01	9.38E+00	5.77E-02
BREOT-N43+40 (0-6")	9.00E-02	9.00E-02	9.28E-01	1.08E+02	9.76E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.17E+02	5.99E-01	2.64E-02	1.13E+00	2.41E-01	8.75E+00	8.00E-01	9.38E+00	2.57E-02
BREOT-S43+25 (0-6")	9.00E-02	9.00E-02	9.28E-01	6.84E+01	6.15E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	7.37E+01	3.78E-01	2.64E-02	1.13E+00	1.52E-01	8.75E+00	8.00E-01	9.38E+00	1.62E-02
BREOT-N44+55 (0-6")	9.00E-02	9.00E-02	9.28E-01	1.43E+02	1.29E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.54E+02	7.90E-01	2.64E-02	1.13E+00	3.18E-01	8.75E+00	8.00E-01	9.38E+00	3.39E-02
BREOT-S44+25 (0-6")	9.00E-02	9.00E-02	9.28E-01	6.66E+01	5.99E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	7.17E+01	3.68E-01	2.64E-02	1.13E+00	1.48E-01	8.75E+00	8.00E-01	9.38E+00	1.58E-02
BREOT-N45+25 (0-6")	9.00E-02	9.00E-02	9.28E-01	1.02E+02	9.21E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.10E+02	5.66E-01	2.64E-02	1.13E+00	2.28E-01	8.75E+00	8.00E-01	9.38E+00	2.43E-02
BREOT-S45+25 (0-6")	9.00E-02	9.00E-02	9.28E-01	5.08E+01	4.57E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.48E+01	2.81E-01	2.64E-02	1.13E+00	1.13E-01	8.75E+00	8.00E-01	9.38E+00	1.20E-02
BREOT-N46+25 (0-6")	9.00E-02	9.00E-02	9.28E-01	1.47E+02	1.32E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.58E+02	8.10E-01	2.64E-02	1.13E+00	3.26E-01	8.75E+00	8.00E-01	9.38E+00	3.48E-02
BREOT-S46+25 (0-6")	9.00E-02	9.00E-02	9.28E-01	4.68E+01	4.21E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.05E+01	2.59E-01	2.64E-02	1.13E+00	1.04E-01	8.75E+00	8.00E-01	9.38E+00	1.11E-02
BREOT-N47+25 (0-6")	9.00E-02	9.00E-02	9.28E-01	1.19E+02	1.07E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.29E+02	6.60E-01	2.64E-02	1.13E+00	2.66E-01	8.75E+00	8.00E-01	9.38E+00	2.83E-02
BREOT-S47+25 (0-6")	9.00E-02	9.00E-02	9.28E-01	3.41E+01	3.06E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.67E+01	1.88E-01	2.64E-02	1.13E+00	7.58E-02	8.75E+00	8.00E-01	9.38E+00	8.07E-03
BREOT-N48+25 (0-6")	9.00E-02	9.00E-02	9.28E-01	1.02E+02	9.15E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.10E+02	5.62E-01	2.64E-02	1.13E+00	2.26E-01	8.75E+00	8.00E-01	9.38E+00	2.41E-02
BREOT-S48+25 (0-6")	9.00E-02	9.00E-02	9.28E-01	1.29E+02	1.16E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.39E+02	7.11E-01	2.64E-02	1.13E+00	2.86E-01	8.75E+00	8.00E-01	9.38E+00	3.05E-02
BREOT-N49+25 (0-6")	9.00E-02	9.00E-02	9.28E-01	3.78E+02	3.40E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.08E+02	2.09E+00	2.64E-02	1.13E+00	8.42E-01	8.75E+00	8.00E-01	9.38E+00	8.97E-02
BREOT-S49+25 (0-6")	9.00E-02	9.00E-02	9.28E-01	1.28E+02	1.15E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.38E+02	7.09E-01	2.64E-02	1.13E+00	2.85E-01	8.75E+00	8.00E-01	9.38E+00	3.04E-02
BREOT-N51+25 (0-6")	9.00E-02	9.00E-02	9.28E-01	8.78E+01	7.89E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	9.46E+01	4.85E-01	2.64E-02	1.13E+00	1.95E-01	8.75E+00	8.00E-01	9.38E+00	2.08E-02
BREOT-S51+25 (0-6")	9.00E-02	9.00E-02	9.28E-01	2.76E+01	2.48E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.97E+01	1.52E-01	2.64E-02	1.13E+00	6.14E-02	8.75E+00	8.00E-01	9.38E+00	6.54E-03
BREOT-N52+25 (0-6")	9.00E-02	9.00E-02	9.28E-01	1.99E+02	1.79E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.15E+02	1.10E+00	2.64E-02	1.13E+00	4.43E-01	8.75E+00	8.00E-01	9.38E+00	4.72E-02
BREOT-S52+25 (0-6")	9.00E-02	9.00E-02	9.28E-01	5.75E+01	5.17E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	6.19E+01	3.18E-01	2.64E-02	1.13E+00	1.28E-01	8.75E+00	8.00E-01	9.38E+00	1.36E-02

TABLE C-2D: LEAD DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 18.41

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Red-Tailed Hawk (Carnivorous Birds - Terrestrial)																							
BREOT-N53+25 (0-6")	9.00E-02	9.00E-02	9.28E-01	7.56E+01	6.80E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	8.15E+01	4.18E-01	2.64E-02	1.13E+00	1.68E-01	8.75E+00	8.00E-01	9.38E+00	1.79E-02
BREOT-S53+25 (0-6")	9.00E-02	9.00E-02	9.28E-01	1.05E+02	9.44E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.13E+02	5.80E-01	2.64E-02	1.13E+00	2.33E-01	8.75E+00	8.00E-01	9.38E+00	2.49E-02
BREOT-S54+25 (0-6")	9.00E-02	9.00E-02	9.28E-01	5.98E+01	5.38E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	6.44E+01	3.30E-01	2.64E-02	1.13E+00	1.33E-01	8.75E+00	8.00E-01	9.38E+00	1.42E-02
BREOT-N55+25 (0-6")	9.00E-02	9.00E-02	9.28E-01	7.45E+01	6.70E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	8.03E+01	4.12E-01	2.64E-02	1.13E+00	1.66E-01	8.75E+00	8.00E-01	9.38E+00	1.77E-02
BREOT-S55+25 (0-6")	9.00E-02	9.00E-02	9.28E-01	6.45E+01	5.80E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	6.95E+01	3.56E-01	2.64E-02	1.13E+00	1.43E-01	8.75E+00	8.00E-01	9.38E+00	1.53E-02
BREOT-N56+25 (0-6")	9.00E-02	9.00E-02	9.28E-01	1.03E+02	9.23E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.11E+02	5.67E-01	2.64E-02	1.13E+00	2.28E-01	8.75E+00	8.00E-01	9.38E+00	2.43E-02
BREOT-S56+25 (0-6")	9.00E-02	9.00E-02	9.28E-01	8.43E+01	7.59E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	9.09E+01	4.66E-01	2.64E-02	1.13E+00	1.88E-01	8.75E+00	8.00E-01	9.38E+00	2.00E-02
BREOT-N57+25 (0-6")	9.00E-02	9.00E-02	9.28E-01	9.09E+01	8.18E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	9.80E+01	5.02E-01	2.64E-02	1.13E+00	2.02E-01	8.75E+00	8.00E-01	9.38E+00	2.16E-02
BREOT-S57+25 (0-6")	9.00E-02	9.00E-02	9.28E-01	9.02E+01	8.11E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	9.72E+01	4.98E-01	2.64E-02	1.13E+00	2.01E-01	8.75E+00	8.00E-01	9.38E+00	2.14E-02
BREOT-N58+25 (0-6")	9.00E-02	9.00E-02	9.28E-01	8.61E+01	7.75E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	9.28E+01	4.76E-01	2.64E-02	1.13E+00	1.92E-01	8.75E+00	8.00E-01	9.38E+00	2.04E-02
BREOT-S58+25 (0-6")	9.00E-02	9.00E-02	9.28E-01	1.16E+02	1.05E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.25E+02	6.42E-01	2.64E-02	1.13E+00	2.59E-01	8.75E+00	8.00E-01	9.38E+00	2.76E-02
BREOT-N59+25 (0-6")	9.00E-02	9.00E-02	9.28E-01	3.97E+02	3.57E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.28E+02	2.19E+00	2.64E-02	1.13E+00	8.83E-01	8.75E+00	8.00E-01	9.38E+00	9.41E-02
BREOT-N60+25 (0-6")	9.00E-02	9.00E-02	9.28E-01	8.50E+01	7.65E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	9.16E+01	4.70E-01	2.64E-02	1.13E+00	1.89E-01	8.75E+00	8.00E-01	9.38E+00	2.02E-02
BREOT-S60+25 (0-6")	9.00E-02	9.00E-02	9.28E-01	7.14E+01	6.43E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	7.70E+01	3.95E-01	2.64E-02	1.13E+00	1.59E-01	8.75E+00	8.00E-01	9.38E+00	1.69E-02
BREOT-S61+25 (0-6")	9.00E-02	9.00E-02	9.28E-01	5.65E+01	5.08E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	6.09E+01	3.12E-01	2.64E-02	1.13E+00	1.26E-01	8.75E+00	8.00E-01	9.38E+00	1.34E-02
BREOT-N62+25 (0-6")	9.00E-02	9.00E-02	9.28E-01	1.46E+02	1.31E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.57E+02	8.05E-01	2.64E-02	1.13E+00	3.24E-01	8.75E+00	8.00E-01	9.38E+00	3.45E-02
BREOT-S62+25 (0-6")	9.00E-02	9.00E-02	9.28E-01	3.19E+01	2.87E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.44E+01	1.76E-01	2.64E-02	1.13E+00	7.10E-02	8.75E+00	8.00E-01	9.38E+00	7.56E-03
BREOT-N63+25 (0-6")	9.00E-02	9.00E-02	9.28E-01	5.08E+02	4.57E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.48E+02	2.81E+00	2.64E-02	1.13E+00	1.13E+00	8.75E+00	8.00E-01	9.38E+00	1.20E-01
BREOT-S63+25 (0-6")	9.00E-02	9.00E-02	9.28E-01	3.26E+01	2.94E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.52E+01	1.80E-01	2.64E-02	1.13E+00	7.26E-02	8.75E+00	8.00E-01	9.38E+00	7.74E-03
BREOT-N64+25 (0-6")	9.00E-02	9.00E-02	9.28E-01	1.19E+02	1.07E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.28E+02	6.57E-01	2.64E-02	1.13E+00	2.64E-01	8.75E+00	8.00E-01	9.38E+00	2.82E-02
BREOT-S64+25 (0-6")	9.00E-02	9.00E-02	9.28E-01	8.13E+01	7.32E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	8.77E+01	4.49E-01	2.64E-02	1.13E+00	1.81E-01	8.75E+00	8.00E-01	9.38E+00	1.93E-02
BREOT-S65+25 (0-6")	9.00E-02	9.00E-02	9.28E-01	6.80E+01	6.12E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	7.33E+01	3.76E-01	2.64E-02	1.13E+00	1.51E-01	8.75E+00	8.00E-01	9.38E+00	1.61E-02
BREOT-N66+25 (0-6")	9.00E-02	9.00E-02	9.28E-01	9.35E+01	8.41E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.01E+02	5.17E-01	2.64E-02	1.13E+00	2.08E-01	8.75E+00	8.00E-01	9.38E+00	2.22E-02
BREOT-S66+25 (0-6")	9.00E-02	9.00E-02	9.28E-01	6.15E+01	5.53E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	6.63E+01	3.40E-01	2.64E-02	1.13E+00	1.37E-01	8.75E+00	8.00E-01	9.38E+00	1.46E-02
BREOT-N67+125 (0-6")	9.00E-02	9.00E-02	9.28E-01	3.93E+02	3.54E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.24E+02	2.17E+00	2.64E-02	1.13E+00	8.75E-01	8.75E+00	8.00E-01	9.38E+00	9.33E-02
BREOT-S67+25 (0-6")	9.00E-02	9.00E-02	9.28E-01	7.94E+01	7.15E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	8.56E+01	4.39E-01	2.64E-02	1.13E+00	1.77E-01	8.75E+00	8.00E-01	9.38E+00	1.88E-02
BREOT-N67+25 (0-6")	9.00E-02	9.00E-02	9.28E-01	1.43E+03	1.29E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.54E+03	7.90E+00	2.64E-02	1.13E+00	3.18E+00	8.75E+00	8.00E-01	9.38E+00	3.39E-01
																						Maximum HQ (Outside Tailings)	**2.81E+00**
American Kestrel (Insectivorous Birds - Terrestrial)																							
Reference Sites																							
ACBG-1 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	3.58E+01	4.93E-01	7.84E-04	2.31E+01	1.81E-02	7.04E-02	1.24E-01	2.90E-01	8.75E+00	8.00E-01	6.03E+00	4.81E-02
ACBG-2 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	5.94E+01	8.17E-01	7.84E-04	3.83E+01	3.00E-02	7.04E-02	1.24E-01	4.81E-01	8.75E+00	8.00E-01	6.03E+00	7.98E-02
UBRBG-202 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	8.44E+01	1.16E+00	7.84E-04	5.44E+01	4.26E-02	7.04E-02	1.24E-01	6.83E-01	8.75E+00	8.00E-01	6.03E+00	1.13E-01
UBRBG-204 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	8.26E+01	1.14E+00	7.84E-04	5.32E+01	4.17E-02	7.04E-02	1.24E-01	6.68E-01	8.75E+00	8.00E-01	6.03E+00	1.11E-01
Inside Tailings																						**Minimum HQ (Reference Sites)**	**4.81E-02**
BREOT-S6-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	2.41E+03	3.31E+01	7.84E-04	1.55E+03	1.22E+00	7.04E-02	1.24E-01	1.95E+01	8.75E+00	8.00E-01	6.03E+00	3.23E+00
BREOT-S2-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	3.02E+03	4.15E+01	7.84E-04	1.94E+03	1.53E+00	7.04E-02	1.24E-01	2.44E+01	8.75E+00	8.00E-01	6.03E+00	4.05E+00
BREOT-S0-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.38E+03	1.90E+01	7.84E-04	8.89E+02	6.97E-01	7.04E-02	1.24E-01	1.12E+01	8.75E+00	8.00E-01	6.03E+00	1.85E+00
BREOT-S1-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.26E+03	1.73E+01	7.84E-04	8.09E+02	6.35E-01	7.04E-02	1.24E-01	1.02E+01	8.75E+00	8.00E-01	6.03E+00	1.69E+00
BREOT-S7-25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	2.65E+02	3.65E+00	7.84E-04	1.71E+02	1.34E-01	7.04E-02	1.24E-01	2.14E+00	8.75E+00	8.00E-01	6.03E+00	3.56E-01
BREOT-S8-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.01E+03	1.39E+01	7.84E-04	6.49E+02	5.09E-01	7.04E-02	1.24E-01	8.15E+00	8.75E+00	8.00E-01	6.03E+00	1.35E+00
BREOT-S9-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.05E+03	1.45E+01	7.84E-04	6.79E+02	5.32E-01	7.04E-02	1.24E-01	8.53E+00	8.75E+00	8.00E-01	6.03E+00	1.41E+00
BREOT-N10-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.50E+04	2.06E+02	7.84E-04	9.66E+03	7.58E+00	7.04E-02	1.24E-01	1.21E+02	8.75E+00	8.00E-01	6.03E+00	2.01E+01
BREOT-N11-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	4.17E+03	5.74E+01	7.84E-04	2.69E+03	2.11E+00	7.04E-02	1.24E-01	3.38E+01	8.75E+00	8.00E-01	6.03E+00	5.61E+00
BREOT-N11-125 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	3.45E+03	4.75E+01	7.84E-04	2.23E+03	1.75E+00	7.04E-02	1.24E-01	2.80E+01	8.75E+00	8.00E-01	6.03E+00	4.64E+00
BREOT-S11-12 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.01E+04	1.39E+02	7.84E-04	6.52E+03	5.11E+00	7.04E-02	1.24E-01	8.19E+01	8.75E+00	8.00E-01	6.03E+00	1.36E+01
BREOT-S11+63 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	3.18E+03	4.38E+01	7.84E-04	2.05E+03	1.61E+00	7.04E-02	1.24E-01	2.58E+01	8.75E+00	8.00E-01	6.03E+00	4.28E+00
UBDT-TP-6 (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	2.41E+04	3.32E+02	7.84E-04	1.56E+04	1.22E+01	7.04E-02	1.24E-01	1.95E+02	8.75E+00	8.00E-01	6.03E+00	3.24E+01
UBDT-TP-6 (2-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.84E+04	2.54E+02	7.84E-04	1.19E+04	9.31E+00	7.04E-02	1.24E-01	1.49E+02	8.75E+00	8.00E-01	6.03E+00	2.47E+01
UBDT-TP-6 (12-24")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.03E+04	1.42E+02	7.84E-04	6.64E+03	5.21E+00	7.04E-02	1.24E-01	8.34E+01	8.75E+00	8.00E-01	6.03E+00	1.38E+01
UBDT-TP-6 (24-36")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	8.28E+02	1.14E+01	7.84E-04	5.33E+02	4.18E-01	7.04E-02	1.24E-01	6.70E+00	8.75E+00	8.00E-01	6.03E+00	1.11E+00
UBDT-TP-6 (36-48")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.87E+03	2.57E+01	7.84E-04	1.20E+03	9.43E-01	7.04E-02	1.24E-01	1.51E+01	8.75E+00	8.00E-01	6.03E+00	2.51E+00
UBDT-TP-6 (48-60")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	8.49E+02	1.17E+01	7.84E-04	5.47E+02	4.29E-01	7.04E-02	1.24E-01	6.88E+00	8.75E+00	8.00E-01	6.03E+00	1.14E+00
BREOT-N12-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	2.36E+03	3.25E+01	7.84E-04	1.52E+03	1.19E+00	7.04E-02	1.24E-01	1.91E+01	8.75E+00	8.00E-01	6.03E+00	3.17E+00
BREOT-S12-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	5.23E+03	7.19E+01	7.84E-04	3.37E+03	2.64E+00	7.04E-02	1.24E-01	4.23E+01	8.75E+00	8.00E-01	6.03E+00	7.02E+00
BREOT-S13-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	7.80E+03	1.07E+02	7.84E-04	5.02E+03	3.94E+00	7.04E-02	1.24E-01	6.31E+01	8.75E+00	8.00E-01	6.03E+00	1.05E+01
BREOT-S14-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	2.16E+03	2.98E+01	7.84E-04	1.39E+03	1.09E+00	7.04E-02	1.24E-01	1.75E+01	8.75E+00	8.00E-01	6.03E+00	2.90E+00
BREOT-N15-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	4.41E+03	6.07E+01	7.84E-04	2.84E+03	2.23E+00	7.04E-02	1.24E-01	3.57E+01	8.75E+00	8.00E-01	6.03E+00	5.93E+00
BREOT-S15-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	4.00E+03	5.51E+01	7.84E-04	2.58E+03	2.02E+00	7.04E-02	1.24E-01	3.24E+01	8.75E+00	8.00E-01	6.03E+00	5.37E+00

TABLE C-2D: LEAD DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 18.41

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
American Kestrel (Insectivorous Birds - Terrestrial)																							
BREOT-N16-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	4.20E+03	5.78E+01	7.84E-04	2.70E+03	2.12E+00	7.04E-02	1.24E-01	3.40E+01	8.75E+00	8.00E-01	6.03E+00	5.64E+00
BREOT-N16-25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	5.11E+02	7.03E+00	7.84E-04	3.29E+02	2.58E-01	7.04E-02	1.24E-01	4.13E+00	8.75E+00	8.00E-01	6.03E+00	6.86E-01
BREOT-S16-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	2.98E+03	4.09E+01	7.84E-04	1.92E+03	1.50E+00	7.04E-02	1.24E-01	2.41E+01	8.75E+00	8.00E-01	6.03E+00	4.00E+00
BREOT-N17-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	3.62E+03	4.98E+01	7.84E-04	2.33E+03	1.83E+00	7.04E-02	1.24E-01	2.93E+01	8.75E+00	8.00E-01	6.03E+00	4.86E+00
BREOT-S17-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.09E+03	1.50E+01	7.84E-04	7.03E+02	5.52E-01	7.04E-02	1.24E-01	8.84E+00	8.75E+00	8.00E-01	6.03E+00	1.47E+00
BREOT-S17-25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	8.48E+02	1.17E+01	7.84E-04	5.46E+02	4.29E-01	7.04E-02	1.24E-01	6.86E+00	8.75E+00	8.00E-01	6.03E+00	1.14E+00
UBDT-TP-4 (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	2.01E+03	2.77E+01	7.84E-04	1.30E+03	1.02E+00	7.04E-02	1.24E-01	1.63E+01	8.75E+00	8.00E-01	6.03E+00	2.70E+00
UBDT-TP-4 (2-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.90E+03	2.61E+01	7.84E-04	1.22E+03	9.59E-01	7.04E-02	1.24E-01	1.54E+01	8.75E+00	8.00E-01	6.03E+00	2.55E+00
UBDT-TP-4 (12-24")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.28E+03	1.76E+01	7.84E-04	8.26E+02	6.48E-01	7.04E-02	1.24E-01	1.04E+01	8.75E+00	8.00E-01	6.03E+00	1.72E+00
UBDT-TP-4 (24-36")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.04E+03	1.43E+01	7.84E-04	6.71E+02	5.26E-01	7.04E-02	1.24E-01	8.43E+00	8.75E+00	8.00E-01	6.03E+00	1.40E+00
BREOT-N18-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	3.13E+03	4.30E+01	7.84E-04	2.02E+03	1.58E+00	7.04E-02	1.24E-01	2.53E+01	8.75E+00	8.00E-01	6.03E+00	4.20E+00
BREOT-N18-25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	2.80E+02	3.85E+00	7.84E-04	1.80E+02	1.41E-01	7.04E-02	1.24E-01	2.27E+00	8.75E+00	8.00E-01	6.03E+00	3.76E-01
BREOT-S18-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.28E+03	1.76E+01	7.84E-04	8.22E+02	6.45E-01	7.04E-02	1.24E-01	1.03E+01	8.75E+00	8.00E-01	6.03E+00	1.71E+00
BREOT-N19-10 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	2.92E+03	4.02E+01	7.84E-04	1.88E+03	1.48E+00	7.04E-02	1.24E-01	2.36E+01	8.75E+00	8.00E-01	6.03E+00	3.92E+00
BREOT-S19-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.57E+03	2.17E+01	7.84E-04	1.01E+03	7.96E-01	7.04E-02	1.24E-01	1.27E+01	8.75E+00	8.00E-01	6.03E+00	2.11E+00
UBDT-TP-5 (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.49E+03	2.06E+01	7.84E-04	9.62E+02	7.55E-01	7.04E-02	1.24E-01	1.21E+01	8.75E+00	8.00E-01	6.03E+00	2.01E+00
UBDT-TP-5 (2-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.59E+03	2.18E+01	7.84E-04	1.02E+03	8.02E-01	7.04E-02	1.24E-01	1.29E+01	8.75E+00	8.00E-01	6.03E+00	2.13E+00
UBDT-TP-5 (12-24")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.62E+03	2.23E+01	7.84E-04	1.04E+03	8.17E-01	7.04E-02	1.24E-01	1.31E+01	8.75E+00	8.00E-01	6.03E+00	2.17E+00
BREOT-N20-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.81E+03	2.49E+01	7.84E-04	1.17E+03	9.14E-01	7.04E-02	1.24E-01	1.46E+01	8.75E+00	8.00E-01	6.03E+00	2.43E+00
UBDT-TP-3 (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	2.09E+03	2.87E+01	7.84E-04	1.34E+03	1.05E+00	7.04E-02	1.24E-01	1.69E+01	8.75E+00	8.00E-01	6.03E+00	2.80E+00
UBDT-TP-3 (2-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	2.82E+03	3.88E+01	7.84E-04	1.82E+03	1.42E+00	7.04E-02	1.24E-01	2.28E+01	8.75E+00	8.00E-01	6.03E+00	3.79E+00
UBDT-TP-3 (12-24")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.94E+03	2.66E+01	7.84E-04	1.25E+03	9.79E-01	7.04E-02	1.24E-01	1.57E+01	8.75E+00	8.00E-01	6.03E+00	2.60E+00
UBDT-TP-3 (24-36")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	2.44E+03	3.36E+01	7.84E-04	1.58E+03	1.24E+00	7.04E-02	1.24E-01	1.98E+01	8.75E+00	8.00E-01	6.03E+00	3.28E+00
UBDT-TP-3 (36-48")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	2.71E+03	3.73E+01	7.84E-04	1.74E+03	1.37E+00	7.04E-02	1.24E-01	2.19E+01	8.75E+00	8.00E-01	6.03E+00	3.64E+00
UBDT-TP-3 (48-60")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	5.54E+02	7.62E+00	7.84E-04	3.57E+02	2.80E-01	7.04E-02	1.24E-01	4.48E+00	8.75E+00	8.00E-01	6.03E+00	7.44E-01
BREOT-N21-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.78E+03	2.45E+01	7.84E-04	1.15E+03	9.00E-01	7.04E-02	1.24E-01	1.44E+01	8.75E+00	8.00E-01	6.03E+00	2.39E+00
BREOT-N22-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	2.29E+03	3.16E+01	7.84E-04	1.48E+03	1.16E+00	7.04E-02	1.24E-01	1.86E+01	8.75E+00	8.00E-01	6.03E+00	3.08E+00
BREOT-N23-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.92E+03	2.64E+01	7.84E-04	1.23E+03	9.68E-01	7.04E-02	1.24E-01	1.55E+01	8.75E+00	8.00E-01	6.03E+00	2.57E+00
BREOT-S23-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	2.67E+03	3.68E+01	7.84E-04	1.72E+03	1.35E+00	7.04E-02	1.24E-01	2.16E+01	8.75E+00	8.00E-01	6.03E+00	3.59E+00
UBDT-TP-2 (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.84E+03	2.53E+01	7.84E-04	1.19E+03	9.31E-01	7.04E-02	1.24E-01	1.49E+01	8.75E+00	8.00E-01	6.03E+00	2.47E+00
UBDT-TP-2 (2-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.36E+03	1.87E+01	7.84E-04	8.75E+02	6.87E-01	7.04E-02	1.24E-01	1.10E+01	8.75E+00	8.00E-01	6.03E+00	1.82E+00
UBDT-TP-2 (12-24")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.95E+03	2.68E+01	7.84E-04	1.26E+03	9.85E-01	7.04E-02	1.24E-01	1.58E+01	8.75E+00	8.00E-01	6.03E+00	2.62E+00
UBDT-TP-2 (24-36")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.16E+03	1.60E+01	7.84E-04	7.47E+02	5.86E-01	7.04E-02	1.24E-01	9.38E+00	8.75E+00	8.00E-01	6.03E+00	1.56E+00
UBDT-TP-2 (36-48")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.90E+03	2.62E+01	7.84E-04	1.23E+03	9.62E-01	7.04E-02	1.24E-01	1.54E+01	8.75E+00	8.00E-01	6.03E+00	2.56E+00
BREOT-S24-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	2.76E+03	3.80E+01	7.84E-04	1.78E+03	1.40E+00	7.04E-02	1.24E-01	2.24E+01	8.75E+00	8.00E-01	6.03E+00	3.71E+00
BREOT-N25-50 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.37E+04	1.88E+02	7.84E-04	8.80E+03	6.90E+00	7.04E-02	1.24E-01	1.11E+02	8.75E+00	8.00E-01	6.03E+00	1.83E+01
BREOT-N25-95 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	2.13E+03	2.93E+01	7.84E-04	1.37E+03	1.08E+00	7.04E-02	1.24E-01	1.72E+01	8.75E+00	8.00E-01	6.03E+00	2.86E+00
BREOT-S25-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	2.44E+03	3.35E+01	7.84E-04	1.57E+03	1.23E+00	7.04E-02	1.24E-01	1.97E+01	8.75E+00	8.00E-01	6.03E+00	3.27E+00
BREOT-S25-40 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	3.11E+03	4.27E+01	7.84E-04	2.00E+03	1.57E+00	7.04E-02	1.24E-01	2.51E+01	8.75E+00	8.00E-01	6.03E+00	4.17E+00
BREOT-N26A-25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.17E+02	1.61E+00	7.84E-04	7.54E+01	5.91E-02	7.04E-02	1.24E-01	9.47E-01	8.75E+00	8.00E-01	6.03E+00	1.57E-01
BREOT-N26B-25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	3.01E+03	4.14E+01	7.84E-04	1.94E+03	1.52E+00	7.04E-02	1.24E-01	2.44E+01	8.75E+00	8.00E-01	6.03E+00	4.04E+00
BREOT-N26-50 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	9.87E+03	1.36E+02	7.84E-04	6.36E+03	4.99E+00	7.04E-02	1.24E-01	7.99E+01	8.75E+00	8.00E-01	6.03E+00	1.33E+01
BREOT-N26-75 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	6.53E+03	8.98E+01	7.84E-04	4.21E+03	3.30E+00	7.04E-02	1.24E-01	5.28E+01	8.75E+00	8.00E-01	6.03E+00	8.77E+00
BREOT-S26-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.78E+03	2.45E+01	7.84E-04	1.15E+03	8.99E-01	7.04E-02	1.24E-01	1.44E+01	8.75E+00	8.00E-01	6.03E+00	2.39E+00
BREOT-S26-40 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	2.21E+03	3.04E+01	7.84E-04	1.42E+03	1.12E+00	7.04E-02	1.24E-01	1.79E+01	8.75E+00	8.00E-01	6.03E+00	2.96E+00
BREOT-N27-30 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.37E+04	1.88E+02	7.84E-04	8.80E+03	6.91E+00	7.04E-02	1.24E-01	1.11E+02	8.75E+00	8.00E-01	6.03E+00	1.84E+01
BREOT-N27-75 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.58E+04	2.18E+02	7.84E-04	1.02E+04	8.00E+00	7.04E-02	1.24E-01	1.28E+02	8.75E+00	8.00E-01	6.03E+00	2.13E+01
BREOT-S27-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	3.72E+03	5.12E+01	7.84E-04	2.40E+03	1.88E+00	7.04E-02	1.24E-01	3.01E+01	8.75E+00	8.00E-01	6.03E+00	5.00E+00
BREOT-N28-110 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	3.65E+03	5.03E+01	7.84E-04	2.35E+03	1.85E+00	7.04E-02	1.24E-01	2.96E+01	8.75E+00	8.00E-01	6.03E+00	4.91E+00
BREOT-N28-55 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	3.38E+04	4.65E+02	7.84E-04	2.18E+04	1.71E+01	7.04E-02	1.24E-01	2.73E+02	8.75E+00	8.00E-01	6.03E+00	4.54E+01
BREOT-S28-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.67E+03	2.30E+01	7.84E-04	1.08E+03	8.45E-01	7.04E-02	1.24E-01	1.35E+01	8.75E+00	8.00E-01	6.03E+00	2.25E+00
UBDT-TP-1 (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.19E+04	1.63E+02	7.84E-04	7.65E+03	6.00E+00	7.04E-02	1.24E-01	9.62E+01	8.75E+00	8.00E-01	6.03E+00	1.60E+01
UBDT-TP-1 (2-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.53E+04	2.10E+02	7.84E-04	9.85E+03	7.73E+00	7.04E-02	1.24E-01	1.24E+02	8.75E+00	8.00E-01	6.03E+00	2.05E+01
UBDT-TP-1 (12-24")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.43E+04	1.97E+02	7.84E-04	9.20E+03	7.22E+00	7.04E-02	1.24E-01	1.16E+02	8.75E+00	8.00E-01	6.03E+00	1.92E+01
UBDT-TP-1 (24-36")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	4.45E+03	6.12E+01	7.84E-04	2.86E+03	2.25E+00	7.04E-02	1.24E-01	3.60E+01	8.75E+00	8.00E-01	6.03E+00	5.97E+00
UBDT-TP-1 (36-48")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	2.71E+02	3.73E+00	7.84E-04	1.74E+02	1.37E-01	7.04E-02	1.24E-01	2.19E+00	8.75E+00	8.00E-01	6.03E+00	3.64E-01
UBDT-TP-1 (48-60")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	3.23E+02	4.45E+00	7.84E-04	2.08E+02	1.63E-01	7.04E-02	1.24E-01	2.62E+00	8.75E+00	8.00E-01	6.03E+00	4.34E-01

TABLE C-2D: LEAD DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 18.41

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
American Kestrel (Insectivorous Birds - Terrestrial)																							
BREOT-N29-30 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.76E+04	2.42E+02	7.84E-04	1.13E+04	8.89E+00	7.04E-02	1.24E-01	1.42E+02	8.75E+00	8.00E-01	6.03E+00	2.36E+01
BREOT-S29-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	2.05E+03	2.82E+01	7.84E-04	1.32E+03	1.04E+00	7.04E-02	1.24E-01	1.66E+01	8.75E+00	8.00E-01	6.03E+00	2.76E+00
BREOT-N30-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	5.05E+03	6.95E+01	7.84E-04	3.25E+03	2.55E+00	7.04E-02	1.24E-01	4.09E+01	8.75E+00	8.00E-01	6.03E+00	6.78E+00
BREOT-S30-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	2.40E+03	3.30E+01	7.84E-04	1.54E+03	1.21E+00	7.04E-02	1.24E-01	1.94E+01	8.75E+00	8.00E-01	6.03E+00	3.22E+00
BREOT-N31-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	5.05E+03	6.95E+01	7.84E-04	3.25E+03	2.55E+00	7.04E-02	1.24E-01	4.09E+01	8.75E+00	8.00E-01	6.03E+00	6.78E+00
BREOT-S31-25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.38E+03	1.90E+01	7.84E-04	8.89E+02	6.97E-01	7.04E-02	1.24E-01	1.12E+01	8.75E+00	8.00E-01	6.03E+00	1.85E+00
BREOT-S31-5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.76E+03	2.42E+01	7.84E-04	1.13E+03	8.88E-01	7.04E-02	1.24E-01	1.42E+01	8.75E+00	8.00E-01	6.03E+00	2.36E+00
BREOT-N32-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.83E+03	2.52E+01	7.84E-04	1.18E+03	9.24E-01	7.04E-02	1.24E-01	1.48E+01	8.75E+00	8.00E-01	6.03E+00	2.46E+00
BREOT-S32-6 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.78E+03	2.45E+01	7.84E-04	1.15E+03	8.99E-01	7.04E-02	1.24E-01	1.44E+01	8.75E+00	8.00E-01	6.03E+00	2.39E+00
BREOT-N33-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	5.34E+03	7.34E+01	7.84E-04	3.44E+03	2.70E+00	7.04E-02	1.24E-01	4.32E+01	8.75E+00	8.00E-01	6.03E+00	7.17E+00
BREOT-S33-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	6.67E+02	9.19E+00	7.84E-04	4.30E+02	3.37E-01	7.04E-02	1.24E-01	5.40E+00	8.75E+00	8.00E-01	6.03E+00	8.97E-01
BREOT-N35-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	9.27E+02	1.28E+01	7.84E-04	5.97E+02	4.68E-01	7.04E-02	1.24E-01	7.50E+00	8.75E+00	8.00E-01	6.03E+00	1.24E+00
BREOT-S35-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	2.41E+03	3.32E+01	7.84E-04	1.55E+03	1.22E+00	7.04E-02	1.24E-01	1.95E+01	8.75E+00	8.00E-01	6.03E+00	3.24E+00
BREOT-N36-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	2.52E+03	3.47E+01	7.84E-04	1.63E+03	1.28E+00	7.04E-02	1.24E-01	2.04E+01	8.75E+00	8.00E-01	6.03E+00	3.39E+00
BREOT-S36-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	2.40E+03	3.31E+01	7.84E-04	1.55E+03	1.21E+00	7.04E-02	1.24E-01	1.95E+01	8.75E+00	8.00E-01	6.03E+00	3.23E+00
BREOT-N37-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	2.37E+03	3.27E+01	7.84E-04	1.53E+03	1.20E+00	7.04E-02	1.24E-01	1.92E+01	8.75E+00	8.00E-01	6.03E+00	3.19E+00
BREOT-S37-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.21E+03	1.67E+01	7.84E-04	7.80E+02	6.12E-01	7.04E-02	1.24E-01	9.80E+00	8.75E+00	8.00E-01	6.03E+00	1.63E+00
BREOT-N38-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.23E+03	1.70E+01	7.84E-04	7.95E+02	6.24E-01	7.04E-02	1.24E-01	9.99E+00	8.75E+00	8.00E-01	6.03E+00	1.66E+00
BREOT-S38-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	2.00E+03	2.76E+01	7.84E-04	1.29E+03	1.01E+00	7.04E-02	1.24E-01	1.62E+01	8.75E+00	8.00E-01	6.03E+00	2.69E+00
BREOT-N39-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	4.39E+03	6.05E+01	7.84E-04	2.83E+03	2.22E+00	7.04E-02	1.24E-01	3.56E+01	8.75E+00	8.00E-01	6.03E+00	5.90E+00
BREOT-S39-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	2.37E+03	3.27E+01	7.84E-04	1.53E+03	1.20E+00	7.04E-02	1.24E-01	1.92E+01	8.75E+00	8.00E-01	6.03E+00	3.19E+00
BREOT-N40-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	2.94E+03	4.05E+01	7.84E-04	1.90E+03	1.49E+00	7.04E-02	1.24E-01	2.38E+01	8.75E+00	8.00E-01	6.03E+00	3.95E+00
BREOT-S40-14 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	2.12E+03	2.92E+01	7.84E-04	1.37E+03	1.07E+00	7.04E-02	1.24E-01	1.71E+01	8.75E+00	8.00E-01	6.03E+00	2.85E+00
BREOT-N41-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.81E+03	2.48E+01	7.84E-04	1.16E+03	9.13E-01	7.04E-02	1.24E-01	1.46E+01	8.75E+00	8.00E-01	6.03E+00	2.43E+00
BREOT-S41-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	2.62E+03	3.60E+01	7.84E-04	1.69E+03	1.32E+00	7.04E-02	1.24E-01	2.12E+01	8.75E+00	8.00E-01	6.03E+00	3.52E+00
BREOT-N42-35 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	2.88E+03	3.96E+01	7.84E-04	1.85E+03	1.45E+00	7.04E-02	1.24E-01	2.33E+01	8.75E+00	8.00E-01	6.03E+00	3.86E+00
BREOT-S42-25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	3.55E+03	4.88E+01	7.84E-04	2.29E+03	1.79E+00	7.04E-02	1.24E-01	2.87E+01	8.75E+00	8.00E-01	6.03E+00	4.77E+00
BREOT-N43-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	3.29E+03	4.52E+01	7.84E-04	2.12E+03	1.66E+00	7.04E-02	1.24E-01	2.66E+01	8.75E+00	8.00E-01	6.03E+00	4.41E+00
BREOT-S43-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.99E+03	2.74E+01	7.84E-04	1.28E+03	1.01E+00	7.04E-02	1.24E-01	1.61E+01	8.75E+00	8.00E-01	6.03E+00	2.68E+00
BREOT-N44-30 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.52E+03	2.09E+01	7.84E-04	9.80E+02	7.68E-01	7.04E-02	1.24E-01	1.23E+01	8.75E+00	8.00E-01	6.03E+00	2.04E+00
BREOT-S44-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	4.22E+03	5.80E+01	7.84E-04	2.72E+03	2.13E+00	7.04E-02	1.24E-01	3.41E+01	8.75E+00	8.00E-01	6.03E+00	5.66E+00
BREOT-N45-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.68E+03	2.32E+01	7.84E-04	1.08E+03	8.51E-01	7.04E-02	1.24E-01	1.36E+01	8.75E+00	8.00E-01	6.03E+00	2.26E+00
BREOT-N43-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	3.29E+03	4.52E+01	7.84E-04	2.12E+03	1.66E+00	7.04E-02	1.24E-01	2.66E+01	8.75E+00	8.00E-01	6.03E+00	4.41E+00
BREOT-S45-6 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	4.69E+03	6.45E+01	7.84E-04	3.02E+03	2.37E+00	7.04E-02	1.24E-01	3.79E+01	8.75E+00	8.00E-01	6.03E+00	6.30E+00
BREOT-N46-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.21E+03	1.66E+01	7.84E-04	7.78E+02	6.11E-01	7.04E-02	1.24E-01	9.78E+00	8.75E+00	8.00E-01	6.03E+00	1.62E+00
BREOT-S46-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	2.21E+03	3.04E+01	7.84E-04	1.43E+03	1.12E+00	7.04E-02	1.24E-01	1.79E+01	8.75E+00	8.00E-01	6.03E+00	2.97E+00
BREOT-S46-40 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	4.65E+03	6.40E+01	7.84E-04	3.00E+03	2.35E+00	7.04E-02	1.24E-01	3.77E+01	8.75E+00	8.00E-01	6.03E+00	6.25E+00
BREOT-N47-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.99E+03	2.74E+01	7.84E-04	1.28E+03	1.01E+00	7.04E-02	1.24E-01	1.61E+01	8.75E+00	8.00E-01	6.03E+00	2.67E+00
BREOT-S47-999 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	6.22E+03	8.56E+01	7.84E-04	4.01E+03	3.14E+00	7.04E-02	1.24E-01	5.04E+01	8.75E+00	8.00E-01	6.03E+00	8.35E+00
BREOT-S48-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.90E+02	2.62E+00	7.84E-04	1.22E+02	9.60E-02	7.04E-02	1.24E-01	1.54E+00	8.75E+00	8.00E-01	6.03E+00	2.55E-01
BREOT-S49-2.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.79E+02	2.46E+00	7.84E-04	1.15E+02	9.03E-02	7.04E-02	1.24E-01	1.45E+00	8.75E+00	8.00E-01	6.03E+00	2.40E-01
BREOT-S50-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.04E+03	1.43E+01	7.84E-04	6.67E+02	5.24E-01	7.04E-02	1.24E-01	8.38E+00	8.75E+00	8.00E-01	6.03E+00	1.39E+00
BREOT-S50-25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	7.01E+01	9.65E-01	7.84E-04	4.52E+01	3.54E-02	7.04E-02	1.24E-01	5.67E-01	8.75E+00	8.00E-01	6.03E+00	9.42E-02
BREOT-N52-60 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	4.38E+03	6.03E+01	7.84E-04	2.82E+03	2.21E+00	7.04E-02	1.24E-01	3.55E+01	8.75E+00	8.00E-01	6.03E+00	5.88E+00
BREOT-S52-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	9.54E+01	1.31E+00	7.84E-04	6.15E+01	4.82E-02	7.04E-02	1.24E-01	7.72E-01	8.75E+00	8.00E-01	6.03E+00	1.28E-01
BREOT-S53-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	2.88E+02	3.96E+00	7.84E-04	1.85E+02	1.45E-01	7.04E-02	1.24E-01	2.33E+00	8.75E+00	8.00E-01	6.03E+00	3.86E-01
BREOT-S54-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.37E+02	1.88E+00	7.84E-04	8.81E+01	6.91E-02	7.04E-02	1.24E-01	1.11E+00	8.75E+00	8.00E-01	6.03E+00	1.84E-01
BREOT-N55-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	3.69E+03	5.08E+01	7.84E-04	2.38E+03	1.87E+00	7.04E-02	1.24E-01	2.99E+01	8.75E+00	8.00E-01	6.03E+00	4.96E+00
BREOT-S55-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	9.90E+02	1.36E+01	7.84E-04	6.38E+02	5.01E-01	7.04E-02	1.24E-01	8.02E+00	8.75E+00	8.00E-01	6.03E+00	1.33E+00
BREOT-N56-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	3.45E+03	4.74E+01	7.84E-04	2.22E+03	1.74E+00	7.04E-02	1.24E-01	2.79E+01	8.75E+00	8.00E-01	6.03E+00	4.63E+00
BREOT-S56-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	3.19E+02	4.40E+00	7.84E-04	2.06E+02	1.61E-01	7.04E-02	1.24E-01	2.59E+00	8.75E+00	8.00E-01	6.03E+00	4.29E-01
BREOT-N57-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	2.12E+03	2.92E+01	7.84E-04	1.37E+03	1.07E+00	7.04E-02	1.24E-01	1.72E+01	8.75E+00	8.00E-01	6.03E+00	2.85E+00
BREOT-S57-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	9.65E+02	1.33E+01	7.84E-04	6.22E+02	4.88E-01	7.04E-02	1.24E-01	7.81E+00	8.75E+00	8.00E-01	6.03E+00	1.30E+00
BREOT-N58-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	5.09E+02	7.00E+00	7.84E-04	3.28E+02	2.57E-01	7.04E-02	1.24E-01	4.12E+00	8.75E+00	8.00E-01	6.03E+00	6.84E-01
BREOT-S58-12 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	8.12E+02	1.12E+01	7.84E-04	5.23E+02	4.10E-01	7.04E-02	1.24E-01	6.57E+00	8.75E+00	8.00E-01	6.03E+00	1.09E+00
BREOT-N59-18 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.43E+03	1.96E+01	7.84E-04	9.20E+02	7.21E-01	7.04E-02	1.24E-01	1.16E+01	8.75E+00	8.00E-01	6.03E+00	1.92E+00
BREOT-N60-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	4.13E+02	5.69E+00	7.84E-04	2.66E+02	2.09E-01	7.04E-02	1.24E-01	3.35E+00	8.75E+00	8.00E-01	6.03E+00	5.55E-01

TABLE C-2D: LEAD DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **18.41**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
American Kestrel (Insectivorous Birds - Terrestrial)																							
BREOT-S60-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.73E+03	2.38E+01	7.84E-04	1.11E+03	8.74E-01	7.04E-02	1.24E-01	1.40E+01	8.75E+00	8.00E-01	6.03E+00	2.32E+00
BREOT-S61-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.38E+03	1.90E+01	7.84E-04	8.91E+02	6.99E-01	7.04E-02	1.24E-01	1.12E+01	8.75E+00	8.00E-01	6.03E+00	1.86E+00
BREOT-N62-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.50E+02	2.07E+00	7.84E-04	9.68E+01	7.59E-02	7.04E-02	1.24E-01	1.22E+00	8.75E+00	8.00E-01	6.03E+00	2.02E-01
BREOT-S62-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	2.40E+03	3.31E+01	7.84E-04	1.55E+03	1.22E+00	7.04E-02	1.24E-01	1.95E+01	8.75E+00	8.00E-01	6.03E+00	3.23E+00
BREOT-S63-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	6.07E+02	8.35E+00	7.84E-04	3.91E+02	3.07E-01	7.04E-02	1.24E-01	4.91E+00	8.75E+00	8.00E-01	6.03E+00	8.15E-01
BREOT-N64-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	5.03E+02	6.92E+00	7.84E-04	3.24E+02	2.54E-01	7.04E-02	1.24E-01	4.07E+00	8.75E+00	8.00E-01	6.03E+00	6.75E-01
BREOT-N64-20 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	4.20E+02	5.77E+00	7.84E-04	2.70E+02	2.12E-01	7.04E-02	1.24E-01	3.40E+00	8.75E+00	8.00E-01	6.03E+00	5.64E-01
BREOT-S64-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.01E+03	1.39E+01	7.84E-04	6.49E+02	5.09E-01	7.04E-02	1.24E-01	8.15E+00	8.75E+00	8.00E-01	6.03E+00	1.35E+00
BREOT-N65-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	2.79E+02	3.83E+00	7.84E-04	1.79E+02	1.41E-01	7.04E-02	1.24E-01	2.25E+00	8.75E+00	8.00E-01	6.03E+00	3.74E-01
BREOT-S65-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	2.74E+03	3.77E+01	7.84E-04	1.76E+03	1.38E+00	7.04E-02	1.24E-01	2.22E+01	8.75E+00	8.00E-01	6.03E+00	3.68E+00
BREOT-N66-5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.07E+03	1.47E+01	7.84E-04	6.89E+02	5.40E-01	7.04E-02	1.24E-01	8.65E+00	8.75E+00	8.00E-01	6.03E+00	1.44E+00
BREOT-S66-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	9.45E+02	1.30E+01	7.84E-04	6.09E+02	4.78E-01	7.04E-02	1.24E-01	7.65E+00	8.75E+00	8.00E-01	6.03E+00	1.27E+00
BREOT-N67-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.74E+03	2.39E+01	7.84E-04	1.12E+03	8.78E-01	7.04E-02	1.24E-01	1.41E+01	8.75E+00	8.00E-01	6.03E+00	2.33E+00
BREOT-S67-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	3.79E+02	5.22E+00	7.84E-04	2.45E+02	1.92E-01	7.04E-02	1.24E-01	3.07E+00	8.75E+00	8.00E-01	6.03E+00	5.10E-01
At Edge of Tailings																						**Maximum HQ (Inside Tailings)**	**4.54E+01**
BREOT-S0-0 (06)	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	7.27E+02	1.00E+01	7.84E-04	4.68E+02	3.67E-01	7.04E-02	1.24E-01	5.88E+00	8.75E+00	8.00E-01	6.03E+00	9.76E-01
BREOT-S1-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	3.54E+03	4.87E+01	7.84E-04	2.28E+03	1.79E+00	7.04E-02	1.24E-01	2.86E+01	8.75E+00	8.00E-01	6.03E+00	4.75E+00
BREOT-S2-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.03E+03	1.42E+01	7.84E-04	6.66E+02	5.23E-01	7.04E-02	1.24E-01	8.37E+00	8.75E+00	8.00E-01	6.03E+00	1.39E+00
BREOT-S3-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	2.30E+03	3.16E+01	7.84E-04	1.48E+03	1.16E+00	7.04E-02	1.24E-01	1.86E+01	8.75E+00	8.00E-01	6.03E+00	3.08E+00
BREOT-S4-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	2.73E+03	3.76E+01	7.84E-04	1.76E+03	1.38E+00	7.04E-02	1.24E-01	2.21E+01	8.75E+00	8.00E-01	6.03E+00	3.67E+00
BREOT-S6-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	2.64E+03	3.63E+01	7.84E-04	1.70E+03	1.33E+00	7.04E-02	1.24E-01	2.14E+01	8.75E+00	8.00E-01	6.03E+00	3.54E+00
BREOT-S7-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.57E+03	2.17E+01	7.84E-04	1.01E+03	7.96E-01	7.04E-02	1.24E-01	1.27E+01	8.75E+00	8.00E-01	6.03E+00	2.11E+00
BREOT-S8-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	5.80E+02	7.97E+00	7.84E-04	3.73E+02	2.93E-01	7.04E-02	1.24E-01	4.69E+00	8.75E+00	8.00E-01	6.03E+00	7.78E-01
BREOT-S9-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.25E+03	1.72E+01	7.84E-04	8.05E+02	6.31E-01	7.04E-02	1.24E-01	1.01E+01	8.75E+00	8.00E-01	6.03E+00	1.68E+00
BREOT-N10-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	3.65E+04	5.02E+02	7.84E-04	2.35E+04	1.84E+01	7.04E-02	1.24E-01	2.95E+02	8.75E+00	8.00E-01	6.03E+00	4.90E+01
BREOT-N11-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	4.44E+03	6.11E+01	7.84E-04	2.86E+03	2.24E+00	7.04E-02	1.24E-01	3.59E+01	8.75E+00	8.00E-01	6.03E+00	5.96E+00
BREOT-S11-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.56E+03	2.14E+01	7.84E-04	1.00E+03	7.87E-01	7.04E-02	1.24E-01	1.26E+01	8.75E+00	8.00E-01	6.03E+00	2.09E+00
BREOT-N12-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.60E+03	2.21E+01	7.84E-04	1.03E+03	8.11E-01	7.04E-02	1.24E-01	1.30E+01	8.75E+00	8.00E-01	6.03E+00	2.15E+00
BREOT-S12-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	4.95E+03	6.81E+01	7.84E-04	3.19E+03	2.50E+00	7.04E-02	1.24E-01	4.01E+01	8.75E+00	8.00E-01	6.03E+00	6.65E+00
BREOT-N13-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	4.11E+04	5.65E+02	7.84E-04	2.65E+04	2.08E+01	7.04E-02	1.24E-01	3.33E+02	8.75E+00	8.00E-01	6.03E+00	5.52E+01
BREOT-S13-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	9.62E+02	1.32E+01	7.84E-04	6.20E+02	4.86E-01	7.04E-02	1.24E-01	7.79E+00	8.75E+00	8.00E-01	6.03E+00	1.29E+00
BREOT-N14-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	4.51E+03	6.21E+01	7.84E-04	2.91E+03	2.28E+00	7.04E-02	1.24E-01	3.65E+01	8.75E+00	8.00E-01	6.03E+00	6.06E+00
BREOT-S14-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	2.39E+04	3.30E+02	7.84E-04	1.54E+04	1.21E+01	7.04E-02	1.24E-01	1.94E+02	8.75E+00	8.00E-01	6.03E+00	3.22E+01
BREOT-N15-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	5.58E+03	7.68E+01	7.84E-04	3.60E+03	2.82E+00	7.04E-02	1.24E-01	4.52E+01	8.75E+00	8.00E-01	6.03E+00	7.50E+00
BREOT-N16-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	2.75E+03	3.78E+01	7.84E-04	1.77E+03	1.39E+00	7.04E-02	1.24E-01	2.22E+01	8.75E+00	8.00E-01	6.03E+00	3.69E+00
BREOT-S16-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	5.18E+02	7.13E+00	7.84E-04	3.34E+02	2.62E-01	7.04E-02	1.24E-01	4.20E+00	8.75E+00	8.00E-01	6.03E+00	6.96E-01
BREOT-N17-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	4.44E+03	6.11E+01	7.84E-04	2.86E+03	2.24E+00	7.04E-02	1.24E-01	3.60E+01	8.75E+00	8.00E-01	6.03E+00	5.97E+00
BREOT-S17-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	5.21E+03	7.17E+01	7.84E-04	3.36E+03	2.63E+00	7.04E-02	1.24E-01	4.22E+01	8.75E+00	8.00E-01	6.03E+00	7.00E+00
BREOT-N18-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	3.59E+03	4.95E+01	7.84E-04	2.32E+03	1.82E+00	7.04E-02	1.24E-01	2.91E+01	8.75E+00	8.00E-01	6.03E+00	4.83E+00
BREOT-S18-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	5.66E+01	7.79E-01	7.84E-04	3.65E+01	2.86E-02	7.04E-02	1.24E-01	4.58E-01	8.75E+00	8.00E-01	6.03E+00	7.61E-02
BREOT-N19-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	2.45E+03	3.37E+01	7.84E-04	1.58E+03	1.24E+00	7.04E-02	1.24E-01	1.98E+01	8.75E+00	8.00E-01	6.03E+00	3.29E+00
BREOT-S19-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	7.03E+02	9.68E+00	7.84E-04	4.53E+02	3.55E-01	7.04E-02	1.24E-01	5.69E+00	8.75E+00	8.00E-01	6.03E+00	9.45E-01
BREOT-N20-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	2.00E+03	2.76E+01	7.84E-04	1.29E+03	1.01E+00	7.04E-02	1.24E-01	1.62E+01	8.75E+00	8.00E-01	6.03E+00	2.69E+00
BREOT-S20-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	9.66E+02	1.33E+01	7.84E-04	6.23E+02	4.88E-01	7.04E-02	1.24E-01	7.82E+00	8.75E+00	8.00E-01	6.03E+00	1.30E+00
BREOT-N21-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	8.93E+01	1.23E+00	7.84E-04	5.75E+01	4.51E-02	7.04E-02	1.24E-01	7.23E-01	8.75E+00	8.00E-01	6.03E+00	1.20E-01
BREOT-S21-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	2.69E+03	3.70E+01	7.84E-04	1.73E+03	1.36E+00	7.04E-02	1.24E-01	2.17E+01	8.75E+00	8.00E-01	6.03E+00	3.61E+00
BREOT-N22-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	2.26E+03	3.11E+01	7.84E-04	1.46E+03	1.14E+00	7.04E-02	1.24E-01	1.83E+01	8.75E+00	8.00E-01	6.03E+00	3.03E+00
BREOT-S22-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	2.72E+03	3.74E+01	7.84E-04	1.75E+03	1.37E+00	7.04E-02	1.24E-01	2.20E+01	8.75E+00	8.00E-01	6.03E+00	3.65E+00
BREOT-N23-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.87E+03	2.57E+01	7.84E-04	1.21E+03	9.46E-01	7.04E-02	1.24E-01	1.51E+01	8.75E+00	8.00E-01	6.03E+00	2.51E+00
BREOT-S23-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	4.14E+03	5.69E+01	7.84E-04	2.67E+03	2.09E+00	7.04E-02	1.24E-01	3.35E+01	8.75E+00	8.00E-01	6.03E+00	5.56E+00
BREOT-N24-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	3.97E+03	5.46E+01	7.84E-04	2.56E+03	2.00E+00	7.04E-02	1.24E-01	3.21E+01	8.75E+00	8.00E-01	6.03E+00	5.33E+00
BREOT-S24-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	2.33E+03	3.20E+01	7.84E-04	1.50E+03	1.18E+00	7.04E-02	1.24E-01	1.88E+01	8.75E+00	8.00E-01	6.03E+00	3.12E+00
BREOT-N25-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	9.67E+03	1.33E+02	7.84E-04	6.23E+03	4.89E+00	7.04E-02	1.24E-01	7.83E+01	8.75E+00	8.00E-01	6.03E+00	1.30E+01
BREOT-S25-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	5.41E+03	7.44E+01	7.84E-04	3.49E+03	2.73E+00	7.04E-02	1.24E-01	4.38E+01	8.75E+00	8.00E-01	6.03E+00	7.27E+00
BREOT-N26-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.77E+04	2.44E+02	7.84E-04	1.14E+04	8.95E+00	7.04E-02	1.24E-01	1.43E+02	8.75E+00	8.00E-01	6.03E+00	2.38E+01
BREOT-S26-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	2.47E+03	3.40E+01	7.84E-04	1.59E+03	1.25E+00	7.04E-02	1.24E-01	2.00E+01	8.75E+00	8.00E-01	6.03E+00	3.32E+00
BREOT-N27-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.90E+04	2.62E+02	7.84E-04	1.23E+04	9.61E+00	7.04E-02	1.24E-01	1.54E+02	8.75E+00	8.00E-01	6.03E+00	2.55E+01

TABLE C-2D: LEAD DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 18.41

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
American Kestrel (Insectivorous Birds - Terrestrial)																							
BREOT-S27-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	4.31E+03	5.93E+01	7.84E-04	2.78E+03	2.18E+00	7.04E-02	1.24E-01	3.49E+01	8.75E+00	8.00E-01	6.03E+00	5.79E+00
BREOT-N28-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	7.34E+03	1.01E+02	7.84E-04	4.73E+03	3.71E+00	7.04E-02	1.24E-01	5.94E+01	8.75E+00	8.00E-01	6.03E+00	9.86E+00
BREOT-S28-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.81E+03	2.49E+01	7.84E-04	1.16E+03	9.13E-01	7.04E-02	1.24E-01	1.46E+01	8.75E+00	8.00E-01	6.03E+00	2.43E+00
BREOT-S29-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	7.47E+02	1.03E+01	7.84E-04	4.82E+02	3.78E-01	7.04E-02	1.24E-01	6.05E+00	8.75E+00	8.00E-01	6.03E+00	1.00E+00
BREOT-N30-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.33E+04	1.83E+02	7.84E-04	8.58E+03	6.73E+00	7.04E-02	1.24E-01	1.08E+02	8.75E+00	8.00E-01	6.03E+00	1.79E+01
BREOT-S30-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	3.65E+02	5.03E+00	7.84E-04	2.35E+02	1.85E-01	7.04E-02	1.24E-01	2.96E+00	8.75E+00	8.00E-01	6.03E+00	4.91E-01
BREOT-N31-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	6.43E+03	8.84E+01	7.84E-04	4.14E+03	3.25E+00	7.04E-02	1.24E-01	5.20E+01	8.75E+00	8.00E-01	6.03E+00	8.63E+00
BREOT-S31-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	3.52E+02	4.85E+00	7.84E-04	2.27E+02	1.78E-01	7.04E-02	1.24E-01	2.85E+00	8.75E+00	8.00E-01	6.03E+00	4.73E-01
BREOT-N32-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	2.66E+03	3.66E+01	7.84E-04	1.72E+03	1.35E+00	7.04E-02	1.24E-01	2.15E+01	8.75E+00	8.00E-01	6.03E+00	3.58E+00
BREOT-S32-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	3.09E+03	4.25E+01	7.84E-04	1.99E+03	1.56E+00	7.04E-02	1.24E-01	2.50E+01	8.75E+00	8.00E-01	6.03E+00	4.14E+00
BREOT-N33-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	9.67E+01	1.33E+00	7.84E-04	6.23E+01	4.89E-02	7.04E-02	1.24E-01	7.83E-01	8.75E+00	8.00E-01	6.03E+00	1.30E-01
BREOT-S33-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	7.37E+02	1.01E+01	7.84E-04	4.75E+02	3.72E-01	7.04E-02	1.24E-01	5.96E+00	8.75E+00	8.00E-01	6.03E+00	9.90E-01
BREOT-N34-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	2.56E+02	3.52E+00	7.84E-04	1.65E+02	1.29E-01	7.04E-02	1.24E-01	2.07E+00	8.75E+00	8.00E-01	6.03E+00	3.43E-01
BREOT-S34-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.80E+03	2.47E+01	7.84E-04	1.16E+03	9.07E-01	7.04E-02	1.24E-01	1.45E+01	8.75E+00	8.00E-01	6.03E+00	2.41E+00
BREOT-N35-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.61E+02	2.22E+00	7.84E-04	1.04E+02	8.16E-02	7.04E-02	1.24E-01	1.31E+00	8.75E+00	8.00E-01	6.03E+00	2.17E-01
BREOT-S35-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.25E+03	1.72E+01	7.84E-04	8.04E+02	6.30E-01	7.04E-02	1.24E-01	1.01E+01	8.75E+00	8.00E-01	6.03E+00	1.68E+00
BREOT-N36-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	3.52E+03	4.84E+01	7.84E-04	2.27E+03	1.78E+00	7.04E-02	1.24E-01	2.85E+01	8.75E+00	8.00E-01	6.03E+00	4.72E+00
BREOT-S36-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	2.49E+03	3.43E+01	7.84E-04	1.61E+03	1.26E+00	7.04E-02	1.24E-01	2.02E+01	8.75E+00	8.00E-01	6.03E+00	3.35E+00
BREOT-N37-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	7.85E+02	1.08E+01	7.84E-04	5.06E+02	3.97E-01	7.04E-02	1.24E-01	6.36E+00	8.75E+00	8.00E-01	6.03E+00	1.06E+00
BREOT-S37-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	2.76E+03	3.80E+01	7.84E-04	1.78E+03	1.40E+00	7.04E-02	1.24E-01	2.24E+01	8.75E+00	8.00E-01	6.03E+00	3.71E+00
BREOT-N38-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.63E+02	2.25E+00	7.84E-04	1.05E+02	8.25E-02	7.04E-02	1.24E-01	1.32E+00	8.75E+00	8.00E-01	6.03E+00	2.19E-01
BREOT-S38-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	3.23E+02	4.44E+00	7.84E-04	2.08E+02	1.63E-01	7.04E-02	1.24E-01	2.61E+00	8.75E+00	8.00E-01	6.03E+00	4.34E-01
BREOT-N39-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.36E+02	1.88E+00	7.84E-04	8.79E+01	6.89E-02	7.04E-02	1.24E-01	1.10E+00	8.75E+00	8.00E-01	6.03E+00	1.83E-01
BREOT-N40-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	3.29E+02	4.53E+00	7.84E-04	2.12E+02	1.66E-01	7.04E-02	1.24E-01	2.67E+00	8.75E+00	8.00E-01	6.03E+00	4.42E-01
BREOT-S40-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	2.14E+03	2.94E+01	7.84E-04	1.38E+03	1.08E+00	7.04E-02	1.24E-01	1.73E+01	8.75E+00	8.00E-01	6.03E+00	2.87E+00
BREOT-N41-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	2.12E+02	2.92E+00	7.84E-04	1.37E+02	1.07E-01	7.04E-02	1.24E-01	1.72E+00	8.75E+00	8.00E-01	6.03E+00	2.85E-01
BREOT-S41-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	2.12E+03	2.92E+01	7.84E-04	1.37E+03	1.07E+00	7.04E-02	1.24E-01	1.71E+01	8.75E+00	8.00E-01	6.03E+00	2.85E+00
BREOT-N42-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	4.22E+01	5.81E-01	7.84E-04	2.72E+01	2.13E-02	7.04E-02	1.24E-01	3.42E-01	8.75E+00	8.00E-01	6.03E+00	5.67E-02
BREOT-S42-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	4.41E+03	6.07E+01	7.84E-04	2.84E+03	2.23E+00	7.04E-02	1.24E-01	3.57E+01	8.75E+00	8.00E-01	6.03E+00	5.92E+00
BREOT-N43-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	2.87E+02	3.95E+00	7.84E-04	1.85E+02	1.45E-01	7.04E-02	1.24E-01	2.33E+00	8.75E+00	8.00E-01	6.03E+00	3.86E-01
BREOT-S43-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.88E+02	2.59E+00	7.84E-04	1.21E+02	9.51E-02	7.04E-02	1.24E-01	1.52E+00	8.75E+00	8.00E-01	6.03E+00	2.53E-01
BREOT-N44-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	8.72E+02	1.20E+01	7.84E-04	5.62E+02	4.41E-01	7.04E-02	1.24E-01	7.06E+00	8.75E+00	8.00E-01	6.03E+00	1.17E+00
BREOT-S44-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.38E+02	1.90E+00	7.84E-04	8.89E+01	6.98E-02	7.04E-02	1.24E-01	1.12E+00	8.75E+00	8.00E-01	6.03E+00	1.85E-01
BREOT-N45-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	2.49E+02	3.43E+00	7.84E-04	1.61E+02	1.26E-01	7.04E-02	1.24E-01	2.02E+00	8.75E+00	8.00E-01	6.03E+00	3.35E-01
BREOT-S45-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	2.94E+02	4.05E+00	7.84E-04	1.90E+02	1.49E-01	7.04E-02	1.24E-01	2.38E+00	8.75E+00	8.00E-01	6.03E+00	3.95E-01
BREOT-N46-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	2.14E+02	2.94E+00	7.84E-04	1.38E+02	1.08E-01	7.04E-02	1.24E-01	1.73E+00	8.75E+00	8.00E-01	6.03E+00	2.87E-01
BREOT-S46-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.68E+03	2.31E+01	7.84E-04	1.08E+03	8.48E-01	7.04E-02	1.24E-01	1.36E+01	8.75E+00	8.00E-01	6.03E+00	2.25E+00
BREOT-N47-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	2.72E+02	3.74E+00	7.84E-04	1.75E+02	1.37E-01	7.04E-02	1.24E-01	2.20E+00	8.75E+00	8.00E-01	6.03E+00	3.65E-01
BREOT-S47-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	5.83E+01	8.02E-01	7.84E-04	3.76E+01	2.95E-02	7.04E-02	1.24E-01	4.72E-01	8.75E+00	8.00E-01	6.03E+00	7.83E-02
BREOT-N48-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	3.78E+02	5.20E+00	7.84E-04	2.44E+02	1.91E-01	7.04E-02	1.24E-01	3.06E+00	8.75E+00	8.00E-01	6.03E+00	5.08E-01
BREOT-S48-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	2.97E+02	4.09E+00	7.84E-04	1.92E+02	1.50E-01	7.04E-02	1.24E-01	2.41E+00	8.75E+00	8.00E-01	6.03E+00	3.99E-01
BREOT-N49-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	6.00E+02	8.26E+00	7.84E-04	3.87E+02	3.03E-01	7.04E-02	1.24E-01	4.86E+00	8.75E+00	8.00E-01	6.03E+00	8.06E-01
BREOT-S49-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.86E+02	2.56E+00	7.84E-04	1.20E+02	9.41E-02	7.04E-02	1.24E-01	1.51E+00	8.75E+00	8.00E-01	6.03E+00	2.50E-01
BREOT-S50-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.64E+02	2.26E+00	7.84E-04	1.06E+02	8.28E-02	7.04E-02	1.24E-01	1.33E+00	8.75E+00	8.00E-01	6.03E+00	2.20E-01
BREOT-N51-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	6.56E+02	9.02E+00	7.84E-04	4.23E+02	3.31E-01	7.04E-02	1.24E-01	5.31E+00	8.75E+00	8.00E-01	6.03E+00	8.81E-01
BREOT-S51-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	2.31E+02	3.18E+00	7.84E-04	1.49E+02	1.17E-01	7.04E-02	1.24E-01	1.87E+00	8.75E+00	8.00E-01	6.03E+00	3.10E-01
BREOT-N52-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.53E+02	2.11E+00	7.84E-04	9.88E+01	7.75E-02	7.04E-02	1.24E-01	1.24E+00	8.75E+00	8.00E-01	6.03E+00	2.06E-01
BREOT-S52-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.18E+02	1.63E+00	7.84E-04	7.63E+01	5.98E-02	7.04E-02	1.24E-01	9.58E-01	8.75E+00	8.00E-01	6.03E+00	1.59E-01
BREOT-N53-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	3.32E+02	4.56E+00	7.84E-04	2.14E+02	1.68E-01	7.04E-02	1.24E-01	2.68E+00	8.75E+00	8.00E-01	6.03E+00	4.45E-01
BREOT-S53-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.23E+02	1.69E+00	7.84E-04	7.91E+01	6.20E-02	7.04E-02	1.24E-01	9.93E-01	8.75E+00	8.00E-01	6.03E+00	1.65E-01
BREOT-N54-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	3.35E+02	4.60E+00	7.84E-04	2.16E+02	1.69E-01	7.04E-02	1.24E-01	2.71E+00	8.75E+00	8.00E-01	6.03E+00	4.49E-01
BREOT-S54-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.50E+02	2.06E+00	7.84E-04	9.66E+01	7.57E-02	7.04E-02	1.24E-01	1.21E+00	8.75E+00	8.00E-01	6.03E+00	2.01E-01
BREOT-N55-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.93E+02	2.65E+00	7.84E-04	1.24E+02	9.73E-02	7.04E-02	1.24E-01	1.56E+00	8.75E+00	8.00E-01	6.03E+00	2.59E-01
BREOT-S55-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.68E+02	2.31E+00	7.84E-04	1.08E+02	8.48E-02	7.04E-02	1.24E-01	1.36E+00	8.75E+00	8.00E-01	6.03E+00	2.25E-01
BREOT-N56-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	8.77E+02	1.21E+01	7.84E-04	5.65E+02	4.43E-01	7.04E-02	1.24E-01	7.10E+00	8.75E+00	8.00E-01	6.03E+00	1.18E+00
BREOT-N57-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	3.80E+02	5.24E+00	7.84E-04	2.45E+02	1.92E-01	7.04E-02	1.24E-01	3.08E+00	8.75E+00	8.00E-01	6.03E+00	5.11E-01
BREOT-S57-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	2.84E+02	3.91E+00	7.84E-04	1.83E+02	1.44E-01	7.04E-02	1.24E-01	2.30E+00	8.75E+00	8.00E-01	6.03E+00	3.82E-01

TABLE C-2D: LEAD DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 18.41

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
American Kestrel (Insectivorous Birds - Terrestrial)																							
BREOT-N58-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	2.57E+02	3.54E+00	7.84E-04	1.66E+02	1.30E-01	7.04E-02	1.24E-01	2.08E+00	8.75E+00	8.00E-01	6.03E+00	3.45E-01
BREOT-S58-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	2.07E+02	2.84E+00	7.84E-04	1.33E+02	1.04E-01	7.04E-02	1.24E-01	1.67E+00	8.75E+00	8.00E-01	6.03E+00	2.77E-01
BREOT-N59-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.55E+02	2.14E+00	7.84E-04	1.00E+02	7.85E-02	7.04E-02	1.24E-01	1.26E+00	8.75E+00	8.00E-01	6.03E+00	2.09E-01
BREOT-N60-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.25E+02	1.72E+00	7.84E-04	8.03E+01	6.30E-02	7.04E-02	1.24E-01	1.01E+00	8.75E+00	8.00E-01	6.03E+00	1.67E-01
BREOT-S60-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	8.04E+02	1.11E+01	7.84E-04	5.18E+02	4.06E-01	7.04E-02	1.24E-01	6.51E+00	8.75E+00	8.00E-01	6.03E+00	1.08E+00
BREOT-S61-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.28E+02	1.76E+00	7.84E-04	8.23E+01	6.46E-02	7.04E-02	1.24E-01	1.03E+00	8.75E+00	8.00E-01	6.03E+00	1.72E-01
BREOT-N62-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	2.00E+02	2.76E+00	7.84E-04	1.29E+02	1.01E-01	7.04E-02	1.24E-01	1.62E+00	8.75E+00	8.00E-01	6.03E+00	2.69E-01
BREOT-S62-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.56E+02	2.15E+00	7.84E-04	1.01E+02	7.89E-02	7.04E-02	1.24E-01	1.26E+00	8.75E+00	8.00E-01	6.03E+00	2.10E-01
BREOT-N63-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	5.28E+02	7.27E+00	7.84E-04	3.40E+02	2.67E-01	7.04E-02	1.24E-01	4.28E+00	8.75E+00	8.00E-01	6.03E+00	7.09E-01
BREOT-S63-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	3.32E+02	4.57E+00	7.84E-04	2.14E+02	1.68E-01	7.04E-02	1.24E-01	2.69E+00	8.75E+00	8.00E-01	6.03E+00	4.46E-01
BREOT-N64-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	2.06E+02	2.84E+00	7.84E-04	1.33E+02	1.04E-01	7.04E-02	1.24E-01	1.67E+00	8.75E+00	8.00E-01	6.03E+00	2.77E-01
BREOT-S64-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.51E+02	2.08E+00	7.84E-04	9.72E+01	7.62E-02	7.04E-02	1.24E-01	1.22E+00	8.75E+00	8.00E-01	6.03E+00	2.03E-01
BREOT-N66-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	2.74E+02	3.77E+00	7.84E-04	1.76E+02	1.38E-01	7.04E-02	1.24E-01	2.22E+00	8.75E+00	8.00E-01	6.03E+00	3.68E-01
BREOT-S66-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.44E+02	1.98E+00	7.84E-04	9.27E+01	7.27E-02	7.04E-02	1.24E-01	1.16E+00	8.75E+00	8.00E-01	6.03E+00	1.93E-01
BREOT-N67-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	2.89E+03	3.97E+01	7.84E-04	1.86E+03	1.46E+00	7.04E-02	1.24E-01	2.34E+01	8.75E+00	8.00E-01	6.03E+00	3.88E+00
BREOT-S67-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.24E+02	1.70E+00	7.84E-04	7.97E+01	6.25E-02	7.04E-02	1.24E-01	1.00E+00	8.75E+00	8.00E-01	6.03E+00	1.66E-01
Outside Tailings																						**Maximum HQ (At Edge of Tailings)**	**5.52E+01**
BREOT-S0+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	4.00E+02	5.51E+00	7.84E-04	2.58E+02	2.02E-01	7.04E-02	1.24E-01	3.24E+00	8.75E+00	8.00E-01	6.03E+00	5.38E-01
BREOT-S1+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	2.20E+02	3.03E+00	7.84E-04	1.42E+02	1.11E-01	7.04E-02	1.24E-01	1.78E+00	8.75E+00	8.00E-01	6.03E+00	2.96E-01
BREOT-S2+95 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	9.08E+01	1.25E+00	7.84E-04	5.85E+01	4.59E-02	7.04E-02	1.24E-01	7.35E-01	8.75E+00	8.00E-01	6.03E+00	1.22E-01
BREOT-S3+6 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	2.56E+02	3.52E+00	7.84E-04	1.65E+02	1.29E-01	7.04E-02	1.24E-01	2.07E+00	8.75E+00	8.00E-01	6.03E+00	3.44E-01
BREOT-S4+10 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.43E+02	1.97E+00	7.84E-04	9.23E+01	7.24E-02	7.04E-02	1.24E-01	1.16E+00	8.75E+00	8.00E-01	6.03E+00	1.92E-01
BREOT-S6+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	3.93E+02	5.41E+00	7.84E-04	2.54E+02	1.99E-01	7.04E-02	1.24E-01	3.19E+00	8.75E+00	8.00E-01	6.03E+00	5.29E-01
BREOT-S8+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	4.07E+02	5.60E+00	7.84E-04	2.62E+02	2.06E-01	7.04E-02	1.24E-01	3.29E+00	8.75E+00	8.00E-01	6.03E+00	5.46E-01
BREOT-N10+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	2.04E+02	2.81E+00	7.84E-04	1.32E+02	1.03E-01	7.04E-02	1.24E-01	1.65E+00	8.75E+00	8.00E-01	6.03E+00	2.74E-01
BREOT-N11+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	2.14E+02	2.95E+00	7.84E-04	1.38E+02	1.08E-01	7.04E-02	1.24E-01	1.73E+00	8.75E+00	8.00E-01	6.03E+00	2.88E-01
BREOT-N12+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	4.24E+02	5.83E+00	7.84E-04	2.73E+02	2.14E-01	7.04E-02	1.24E-01	3.43E+00	8.75E+00	8.00E-01	6.03E+00	5.69E-01
BREOT-S12+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.35E+04	1.86E+02	7.84E-04	8.70E+03	6.83E+00	7.04E-02	1.24E-01	1.09E+02	8.75E+00	8.00E-01	6.03E+00	1.81E+01
BREOT-S12+60 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.70E+03	2.33E+01	7.84E-04	1.09E+03	8.57E-01	7.04E-02	1.24E-01	1.37E+01	8.75E+00	8.00E-01	6.03E+00	2.28E+00
BREOT-N13+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	4.22E+02	5.81E+00	7.84E-04	2.72E+02	2.13E-01	7.04E-02	1.24E-01	3.42E+00	8.75E+00	8.00E-01	6.03E+00	5.67E-01
BREOT-S13+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	4.82E+03	6.63E+01	7.84E-04	3.10E+03	2.44E+00	7.04E-02	1.24E-01	3.90E+01	8.75E+00	8.00E-01	6.03E+00	6.47E+00
BREOT-S13+65 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.69E+03	2.33E+01	7.84E-04	1.09E+03	8.56E-01	7.04E-02	1.24E-01	1.37E+01	8.75E+00	8.00E-01	6.03E+00	2.27E+00
BREOT-N14+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	4.56E+02	6.27E+00	7.84E-04	2.94E+02	2.30E-01	7.04E-02	1.24E-01	3.69E+00	8.75E+00	8.00E-01	6.03E+00	6.12E-01
BREOT-S14+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.98E+04	2.73E+02	7.84E-04	1.28E+04	1.00E+01	7.04E-02	1.24E-01	1.60E+02	8.75E+00	8.00E-01	6.03E+00	2.66E+01
BREOT-S14+59 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.23E+03	1.69E+01	7.84E-04	7.93E+02	6.22E-01	7.04E-02	1.24E-01	9.96E+00	8.75E+00	8.00E-01	6.03E+00	1.65E+00
BREOT-N15+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	7.14E+03	9.83E+01	7.84E-04	4.60E+03	3.61E+00	7.04E-02	1.24E-01	5.78E+01	8.75E+00	8.00E-01	6.03E+00	9.59E+00
BREOT-N15+50 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	2.99E+02	4.11E+00	7.84E-04	1.93E+02	1.51E-01	7.04E-02	1.24E-01	2.42E+00	8.75E+00	8.00E-01	6.03E+00	4.01E-01
BREOT-S16+20 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	4.64E+03	6.38E+01	7.84E-04	2.99E+03	2.34E+00	7.04E-02	1.24E-01	3.75E+01	8.75E+00	8.00E-01	6.03E+00	6.23E+00
BREOT-S16+75 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	6.71E+02	9.24E+00	7.84E-04	4.33E+02	3.39E-01	7.04E-02	1.24E-01	5.43E+00	8.75E+00	8.00E-01	6.03E+00	9.02E-01
BREOT-N17+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.27E+04	1.74E+02	7.84E-04	8.16E+03	6.40E+00	7.04E-02	1.24E-01	1.03E+02	8.75E+00	8.00E-01	6.03E+00	1.70E+01
BREOT-S18+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	9.77E+02	1.34E+01	7.84E-04	6.29E+02	4.94E-01	7.04E-02	1.24E-01	7.90E+00	8.75E+00	8.00E-01	6.03E+00	1.31E+00
BREOT-N19+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.28E+02	1.76E+00	7.84E-04	8.23E+01	6.45E-02	7.04E-02	1.24E-01	1.03E+00	8.75E+00	8.00E-01	6.03E+00	1.72E-01
BREOT-S19+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	7.74E+01	1.07E+00	7.84E-04	4.99E+01	3.91E-02	7.04E-02	1.24E-01	6.27E-01	8.75E+00	8.00E-01	6.03E+00	1.04E-01
BREOT-S19+85 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	9.79E+02	1.35E+01	7.84E-04	6.31E+02	4.95E-01	7.04E-02	1.24E-01	7.92E+00	8.75E+00	8.00E-01	6.03E+00	1.31E+00
BREOT-N20+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	2.64E+02	3.64E+00	7.84E-04	1.70E+02	1.34E-01	7.04E-02	1.24E-01	2.14E+00	8.75E+00	8.00E-01	6.03E+00	3.55E-01
BREOT-S20+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	8.52E+01	1.17E+00	7.84E-04	5.49E+01	4.31E-02	7.04E-02	1.24E-01	6.90E-01	8.75E+00	8.00E-01	6.03E+00	1.14E-01
BREOT-S20+75 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.57E+02	2.16E+00	7.84E-04	1.01E+02	7.94E-02	7.04E-02	1.24E-01	1.27E+00	8.75E+00	8.00E-01	6.03E+00	2.11E-01
BREOT-N21+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	5.47E+03	7.53E+01	7.84E-04	3.52E+03	2.76E+00	7.04E-02	1.24E-01	4.43E+01	8.75E+00	8.00E-01	6.03E+00	7.35E+00
BREOT-S21+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	8.21E+01	1.13E+00	7.84E-04	5.29E+01	4.15E-02	7.04E-02	1.24E-01	6.65E-01	8.75E+00	8.00E-01	6.03E+00	1.10E-01
BREOT-N22+150 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	4.35E+02	5.99E+00	7.84E-04	2.80E+02	2.20E-01	7.04E-02	1.24E-01	3.52E+00	8.75E+00	8.00E-01	6.03E+00	5.84E-01
BREOT-N22+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	3.83E+03	5.27E+01	7.84E-04	2.47E+03	1.94E+00	7.04E-02	1.24E-01	3.10E+01	8.75E+00	8.00E-01	6.03E+00	5.15E+00
BREOT-S22+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.66E+03	2.28E+01	7.84E-04	1.07E+03	8.39E-01	7.04E-02	1.24E-01	1.34E+01	8.75E+00	8.00E-01	6.03E+00	2.23E+00
BREOT-N23+115 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.02E+02	1.41E+00	7.84E-04	6.58E+01	5.16E-02	7.04E-02	1.24E-01	8.27E-01	8.75E+00	8.00E-01	6.03E+00	1.37E-01
BREOT-N23+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.12E+04	1.54E+02	7.84E-04	7.21E+03	5.66E+00	7.04E-02	1.24E-01	9.06E+01	8.75E+00	8.00E-01	6.03E+00	1.50E+01
BREOT-S23+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.95E+03	2.69E+01	7.84E-04	1.26E+03	9.88E-01	7.04E-02	1.24E-01	1.58E+01	8.75E+00	8.00E-01	6.03E+00	2.62E+00
BREOT-S23+37.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.67E+02	2.30E+00	7.84E-04	1.08E+02	8.46E-02	7.04E-02	1.24E-01	1.36E+00	8.75E+00	8.00E-01	6.03E+00	2.25E-01
BREOT-N24+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.42E+03	1.96E+01	7.84E-04	9.17E+02	7.19E-01	7.04E-02	1.24E-01	1.15E+01	8.75E+00	8.00E-01	6.03E+00	1.91E+00

TABLE C-2D: LEAD DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 18.41

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
American Kestrel (Insectivorous Birds - Terrestrial)																							
BREOT-N24+75 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.68E+02	2.32E+00	7.84E-04	1.09E+02	8.51E-02	7.04E-02	1.24E-01	1.36E+00	8.75E+00	8.00E-01	6.03E+00	2.26E-01
BREOT-S24+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.44E+03	1.98E+01	7.84E-04	9.27E+02	7.27E-01	7.04E-02	1.24E-01	1.16E+01	8.75E+00	8.00E-01	6.03E+00	1.93E+00
BREOT-N25+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.05E+02	1.45E+00	7.84E-04	6.77E+01	5.31E-02	7.04E-02	1.24E-01	8.50E-01	8.75E+00	8.00E-01	6.03E+00	1.41E-01
BREOT-S25+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	8.43E+02	1.16E+01	7.84E-04	5.43E+02	4.26E-01	7.04E-02	1.24E-01	6.82E+00	8.75E+00	8.00E-01	6.03E+00	1.13E+00
BREOT-S25+40 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	3.72E+03	5.12E+01	7.84E-04	2.40E+03	1.88E+00	7.04E-02	1.24E-01	3.01E+01	8.75E+00	8.00E-01	6.03E+00	4.99E+00
BREOT-S26+37 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	3.25E+02	4.47E+00	7.84E-04	2.09E+02	1.64E-01	7.04E-02	1.24E-01	2.63E+00	8.75E+00	8.00E-01	6.03E+00	4.36E-01
BREOT-N27+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.82E+02	2.50E+00	7.84E-04	1.17E+02	9.18E-02	7.04E-02	1.24E-01	1.47E+00	8.75E+00	8.00E-01	6.03E+00	2.44E-01
BREOT-S27+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	6.15E+02	8.46E+00	7.84E-04	3.96E+02	3.11E-01	7.04E-02	1.24E-01	4.98E+00	8.75E+00	8.00E-01	6.03E+00	8.26E-01
BREOT-N28+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	2.13E+02	2.93E+00	7.84E-04	1.37E+02	1.08E-01	7.04E-02	1.24E-01	1.72E+00	8.75E+00	8.00E-01	6.03E+00	2.86E-01
BREOT-S28+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.20E+03	1.66E+01	7.84E-04	7.76E+02	6.09E-01	7.04E-02	1.24E-01	9.75E+00	8.75E+00	8.00E-01	6.03E+00	1.62E+00
BREOT-N29+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	5.76E+02	7.93E+00	7.84E-04	3.71E+02	2.91E-01	7.04E-02	1.24E-01	4.66E+00	8.75E+00	8.00E-01	6.03E+00	7.74E-01
BREOT-S29+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.09E+03	1.50E+01	7.84E-04	7.05E+02	5.53E-01	7.04E-02	1.24E-01	8.85E+00	8.75E+00	8.00E-01	6.03E+00	1.47E+00
BREOT-N30+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	8.57E+02	1.18E+01	7.84E-04	5.52E+02	4.33E-01	7.04E-02	1.24E-01	6.94E+00	8.75E+00	8.00E-01	6.03E+00	1.15E+00
BREOT-S30+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	8.05E+02	1.11E+01	7.84E-04	5.18E+02	4.07E-01	7.04E-02	1.24E-01	6.51E+00	8.75E+00	8.00E-01	6.03E+00	1.08E+00
BREOT-N31+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.55E+04	2.13E+02	7.84E-04	1.00E+04	7.84E+00	7.04E-02	1.24E-01	1.26E+02	8.75E+00	8.00E-01	6.03E+00	2.08E+01
BREOT-N31+75 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.17E+02	1.61E+00	7.84E-04	7.54E+01	5.91E-02	7.04E-02	1.24E-01	9.47E-01	8.75E+00	8.00E-01	6.03E+00	1.57E-01
BREOT-S31+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	2.72E+02	3.74E+00	7.84E-04	1.75E+02	1.37E-01	7.04E-02	1.24E-01	2.20E+00	8.75E+00	8.00E-01	6.03E+00	3.65E-01
BREOT-N32+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.69E+02	2.32E+00	7.84E-04	1.09E+02	8.53E-02	7.04E-02	1.24E-01	1.37E+00	8.75E+00	8.00E-01	6.03E+00	2.27E-01
BREOT-S32+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.86E+03	2.56E+01	7.84E-04	1.20E+03	9.40E-01	7.04E-02	1.24E-01	1.51E+01	8.75E+00	8.00E-01	6.03E+00	2.50E+00
BREOT-S32+300 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	5.84E+02	8.04E+00	7.84E-04	3.76E+02	2.95E-01	7.04E-02	1.24E-01	4.73E+00	8.75E+00	8.00E-01	6.03E+00	7.85E-01
BREOT-N33+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.16E+02	1.60E+00	7.84E-04	7.50E+01	5.89E-02	7.04E-02	1.24E-01	9.43E-01	8.75E+00	8.00E-01	6.03E+00	1.56E-01
BREOT-S33+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	2.14E+02	2.94E+00	7.84E-04	1.38E+02	1.08E-01	7.04E-02	1.24E-01	1.73E+00	8.75E+00	8.00E-01	6.03E+00	2.87E-01
BREOT-N34+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.78E+02	2.45E+00	7.84E-04	1.15E+02	8.99E-02	7.04E-02	1.24E-01	1.44E+00	8.75E+00	8.00E-01	6.03E+00	2.39E-01
BREOT-S34+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	5.76E+02	7.92E+00	7.84E-04	3.71E+02	2.91E-01	7.04E-02	1.24E-01	4.66E+00	8.75E+00	8.00E-01	6.03E+00	7.73E-01
BREOT-N35+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.31E+02	1.81E+00	7.84E-04	8.46E+01	6.63E-02	7.04E-02	1.24E-01	1.06E+00	8.75E+00	8.00E-01	6.03E+00	1.76E-01
BREOT-S35+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	2.11E+02	2.90E+00	7.84E-04	1.36E+02	1.07E-01	7.04E-02	1.24E-01	1.71E+00	8.75E+00	8.00E-01	6.03E+00	2.83E-01
BREOT-N36+100 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	2.65E+02	3.64E+00	7.84E-04	1.71E+02	1.34E-01	7.04E-02	1.24E-01	2.14E+00	8.75E+00	8.00E-01	6.03E+00	3.56E-01
BREOT-N36+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	3.13E+03	4.31E+01	7.84E-04	2.02E+03	1.58E+00	7.04E-02	1.24E-01	2.54E+01	8.75E+00	8.00E-01	6.03E+00	4.21E+00
BREOT-S36+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	3.48E+02	4.79E+00	7.84E-04	2.24E+02	1.76E-01	7.04E-02	1.24E-01	2.82E+00	8.75E+00	8.00E-01	6.03E+00	4.68E-01
BREOT-N37+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.62E+02	2.23E+00	7.84E-04	1.04E+02	8.19E-02	7.04E-02	1.24E-01	1.31E+00	8.75E+00	8.00E-01	6.03E+00	2.18E-01
BREOT-S37+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.95E+02	2.68E+00	7.84E-04	1.26E+02	9.85E-02	7.04E-02	1.24E-01	1.58E+00	8.75E+00	8.00E-01	6.03E+00	2.62E-01
BREOT-N38+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	2.34E+02	3.22E+00	7.84E-04	1.51E+02	1.18E-01	7.04E-02	1.24E-01	1.89E+00	8.75E+00	8.00E-01	6.03E+00	3.14E-01
BREOT-S38+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	2.37E+02	3.27E+00	7.84E-04	1.53E+02	1.20E-01	7.04E-02	1.24E-01	1.92E+00	8.75E+00	8.00E-01	6.03E+00	3.19E-01
BREOT-N39+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	2.27E+02	3.12E+00	7.84E-04	1.46E+02	1.15E-01	7.04E-02	1.24E-01	1.84E+00	8.75E+00	8.00E-01	6.03E+00	3.05E-01
BREOT-S39+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	2.57E+02	3.53E+00	7.84E-04	1.65E+02	1.30E-01	7.04E-02	1.24E-01	2.08E+00	8.75E+00	8.00E-01	6.03E+00	3.45E-01
BREOT-N40+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	2.34E+02	3.22E+00	7.84E-04	1.51E+02	1.18E-01	7.04E-02	1.24E-01	1.89E+00	8.75E+00	8.00E-01	6.03E+00	3.14E-01
BREOT-S40+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	2.03E+02	2.80E+00	7.84E-04	1.31E+02	1.03E-01	7.04E-02	1.24E-01	1.65E+00	8.75E+00	8.00E-01	6.03E+00	2.73E-01
BREOT-N41+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.54E+02	2.12E+00	7.84E-04	9.94E+01	7.80E-02	7.04E-02	1.24E-01	1.25E+00	8.75E+00	8.00E-01	6.03E+00	2.07E-01
BREOT-S41+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	8.37E+02	1.15E+01	7.84E-04	5.39E+02	4.23E-01	7.04E-02	1.24E-01	6.78E+00	8.75E+00	8.00E-01	6.03E+00	1.12E+00
BREOT-N42+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	6.98E+01	9.61E-01	7.84E-04	4.50E+01	3.53E-02	7.04E-02	1.24E-01	5.65E-01	8.75E+00	8.00E-01	6.03E+00	9.38E-02
BREOT-S42+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.88E+02	2.59E+00	7.84E-04	1.21E+02	9.52E-02	7.04E-02	1.24E-01	1.52E+00	8.75E+00	8.00E-01	6.03E+00	2.53E-01
BREOT-N43+12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	4.07E+02	5.60E+00	7.84E-04	2.62E+02	2.06E-01	7.04E-02	1.24E-01	3.29E+00	8.75E+00	8.00E-01	6.03E+00	5.47E-01
BREOT-N43+40 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.81E+02	2.50E+00	7.84E-04	1.17E+02	9.17E-02	7.04E-02	1.24E-01	1.47E+00	8.75E+00	8.00E-01	6.03E+00	2.44E-01
BREOT-S43+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.14E+02	1.57E+00	7.84E-04	7.37E+01	5.78E-02	7.04E-02	1.24E-01	9.26E-01	8.75E+00	8.00E-01	6.03E+00	1.54E-01
BREOT-N44+55 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	2.39E+02	3.29E+00	7.84E-04	1.54E+02	1.21E-01	7.04E-02	1.24E-01	1.94E+00	8.75E+00	8.00E-01	6.03E+00	3.21E-01
BREOT-S44+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.11E+02	1.53E+00	7.84E-04	7.17E+01	5.63E-02	7.04E-02	1.24E-01	9.01E-01	8.75E+00	8.00E-01	6.03E+00	1.50E-01
BREOT-N45+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.71E+02	2.36E+00	7.84E-04	1.10E+02	8.66E-02	7.04E-02	1.24E-01	1.39E+00	8.75E+00	8.00E-01	6.03E+00	2.30E-01
BREOT-S45+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	8.50E+01	1.17E+00	7.84E-04	5.48E+01	4.30E-02	7.04E-02	1.24E-01	6.88E-01	8.75E+00	8.00E-01	6.03E+00	1.14E-01
BREOT-N46+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	2.45E+02	3.37E+00	7.84E-04	1.58E+02	1.24E-01	7.04E-02	1.24E-01	1.98E+00	8.75E+00	8.00E-01	6.03E+00	3.29E-01
BREOT-S46+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	7.83E+01	1.08E+00	7.84E-04	5.05E+01	3.96E-02	7.04E-02	1.24E-01	6.34E-01	8.75E+00	8.00E-01	6.03E+00	1.05E-01
BREOT-N47+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	2.00E+02	2.75E+00	7.84E-04	1.29E+02	1.01E-01	7.04E-02	1.24E-01	1.62E+00	8.75E+00	8.00E-01	6.03E+00	2.68E-01
BREOT-S47+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	5.70E+01	7.84E-01	7.84E-04	3.67E+01	2.88E-02	7.04E-02	1.24E-01	4.61E-01	8.75E+00	8.00E-01	6.03E+00	7.65E-02
BREOT-N48+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.70E+02	2.34E+00	7.84E-04	1.10E+02	8.60E-02	7.04E-02	1.24E-01	1.38E+00	8.75E+00	8.00E-01	6.03E+00	2.29E-01
BREOT-S48+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	2.15E+02	2.96E+00	7.84E-04	1.39E+02	1.09E-01	7.04E-02	1.24E-01	1.74E+00	8.75E+00	8.00E-01	6.03E+00	2.89E-01
BREOT-N49+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	6.33E+02	8.71E+00	7.84E-04	4.08E+02	3.20E-01	7.04E-02	1.24E-01	5.12E+00	8.75E+00	8.00E-01	6.03E+00	8.50E-01
BREOT-S49+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	2.15E+02	2.95E+00	7.84E-04	1.38E+02	1.08E-01	7.04E-02	1.24E-01	1.74E+00	8.75E+00	8.00E-01	6.03E+00	2.88E-01
BREOT-N51+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.47E+02	2.02E+00	7.84E-04	9.46E+01	7.42E-02	7.04E-02	1.24E-01	1.19E+00	8.75E+00	8.00E-01	6.03E+00	1.97E-01

TABLE C-2D: LEAD DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 18.41

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
American Kestrel (Insectivorous Birds - Terrestrial)																							
BREOT-S51+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	4.61E+01	6.35E-01	7.84E-04	2.97E+01	2.33E-02	7.04E-02	1.24E-01	3.74E-01	8.75E+00	8.00E-01	6.03E+00	6.20E-02
BREOT-N52+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	3.33E+02	4.58E+00	7.84E-04	2.15E+02	1.68E-01	7.04E-02	1.24E-01	2.70E+00	8.75E+00	8.00E-01	6.03E+00	4.47E-01
BREOT-S52+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	9.61E+01	1.32E+00	7.84E-04	6.19E+01	4.86E-02	7.04E-02	1.24E-01	7.78E-01	8.75E+00	8.00E-01	6.03E+00	1.29E-01
BREOT-N53+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.27E+02	1.74E+00	7.84E-04	8.15E+01	6.39E-02	7.04E-02	1.24E-01	1.02E+00	8.75E+00	8.00E-01	6.03E+00	1.70E-01
BREOT-S53+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.76E+02	2.42E+00	7.84E-04	1.13E+02	8.87E-02	7.04E-02	1.24E-01	1.42E+00	8.75E+00	8.00E-01	6.03E+00	2.36E-01
BREOT-S54+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.00E+02	1.38E+00	7.84E-04	6.44E+01	5.05E-02	7.04E-02	1.24E-01	8.09E-01	8.75E+00	8.00E-01	6.03E+00	1.34E-01
BREOT-N55+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.25E+02	1.71E+00	7.84E-04	8.03E+01	6.30E-02	7.04E-02	1.24E-01	1.01E+00	8.75E+00	8.00E-01	6.03E+00	1.67E-01
BREOT-S55+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.08E+02	1.48E+00	7.84E-04	6.95E+01	5.45E-02	7.04E-02	1.24E-01	8.73E-01	8.75E+00	8.00E-01	6.03E+00	1.45E-01
BREOT-N56+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.72E+02	2.36E+00	7.84E-04	1.11E+02	8.67E-02	7.04E-02	1.24E-01	1.39E+00	8.75E+00	8.00E-01	6.03E+00	2.30E-01
BREOT-S56+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.41E+02	1.94E+00	7.84E-04	9.09E+01	7.13E-02	7.04E-02	1.24E-01	1.14E+00	8.75E+00	8.00E-01	6.03E+00	1.89E-01
BREOT-N57+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.52E+02	2.09E+00	7.84E-04	9.80E+01	7.68E-02	7.04E-02	1.24E-01	1.23E+00	8.75E+00	8.00E-01	6.03E+00	2.04E-01
BREOT-S57+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.51E+02	2.08E+00	7.84E-04	9.72E+01	7.62E-02	7.04E-02	1.24E-01	1.22E+00	8.75E+00	8.00E-01	6.03E+00	2.03E-01
BREOT-N58+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.44E+02	1.98E+00	7.84E-04	9.28E+01	7.28E-02	7.04E-02	1.24E-01	1.17E+00	8.75E+00	8.00E-01	6.03E+00	1.93E-01
BREOT-S58+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.94E+02	2.68E+00	7.84E-04	1.25E+02	9.82E-02	7.04E-02	1.24E-01	1.57E+00	8.75E+00	8.00E-01	6.03E+00	2.61E-01
BREOT-N59+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	6.64E+02	9.14E+00	7.84E-04	4.28E+02	3.36E-01	7.04E-02	1.24E-01	5.37E+00	8.75E+00	8.00E-01	6.03E+00	8.92E-01
BREOT-N60+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.42E+02	1.96E+00	7.84E-04	9.16E+01	7.19E-02	7.04E-02	1.24E-01	1.15E+00	8.75E+00	8.00E-01	6.03E+00	1.91E-01
BREOT-S60+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.20E+02	1.64E+00	7.84E-04	7.70E+01	6.04E-02	7.04E-02	1.24E-01	9.67E-01	8.75E+00	8.00E-01	6.03E+00	1.61E-01
BREOT-S61+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	9.46E+01	1.30E+00	7.84E-04	6.09E+01	4.78E-02	7.04E-02	1.24E-01	7.65E-01	8.75E+00	8.00E-01	6.03E+00	1.27E-01
BREOT-N62+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	2.44E+02	3.35E+00	7.84E-04	1.57E+02	1.23E-01	7.04E-02	1.24E-01	1.97E+00	8.75E+00	8.00E-01	6.03E+00	3.27E-01
BREOT-S62+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	5.34E+01	7.34E-01	7.84E-04	3.44E+01	2.70E-02	7.04E-02	1.24E-01	4.32E-01	8.75E+00	8.00E-01	6.03E+00	7.17E-02
BREOT-N63+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	8.50E+02	1.17E+01	7.84E-04	5.48E+02	4.30E-01	7.04E-02	1.24E-01	6.88E+00	8.75E+00	8.00E-01	6.03E+00	1.14E+00
BREOT-S63+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	5.46E+01	7.52E-01	7.84E-04	3.52E+01	2.76E-02	7.04E-02	1.24E-01	4.42E-01	8.75E+00	8.00E-01	6.03E+00	7.34E-02
BREOT-N64+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.99E+02	2.74E+00	7.84E-04	1.28E+02	1.00E-01	7.04E-02	1.24E-01	1.61E+00	8.75E+00	8.00E-01	6.03E+00	2.67E-01
BREOT-S64+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.36E+02	1.87E+00	7.84E-04	8.77E+01	6.88E-02	7.04E-02	1.24E-01	1.10E+00	8.75E+00	8.00E-01	6.03E+00	1.83E-01
BREOT-S65+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.14E+02	1.57E+00	7.84E-04	7.33E+01	5.75E-02	7.04E-02	1.24E-01	9.21E-01	8.75E+00	8.00E-01	6.03E+00	1.53E-01
BREOT-N66+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.56E+02	2.15E+00	7.84E-04	1.01E+02	7.91E-02	7.04E-02	1.24E-01	1.27E+00	8.75E+00	8.00E-01	6.03E+00	2.10E-01
BREOT-S66+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.03E+02	1.42E+00	7.84E-04	6.63E+01	5.20E-02	7.04E-02	1.24E-01	8.33E-01	8.75E+00	8.00E-01	6.03E+00	1.38E-01
BREOT-N67+125 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	6.58E+02	9.05E+00	7.84E-04	4.24E+02	3.32E-01	7.04E-02	1.24E-01	5.33E+00	8.75E+00	8.00E-01	6.03E+00	8.84E-01
BREOT-S67+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.33E+02	1.83E+00	7.84E-04	8.56E+01	6.72E-02	7.04E-02	1.24E-01	1.08E+00	8.75E+00	8.00E-01	6.03E+00	1.79E-01
BREOT-N67+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	2.39E+03	3.29E+01	7.84E-04	1.54E+03	1.21E+00	7.04E-02	1.24E-01	1.94E+01	8.75E+00	8.00E-01	6.03E+00	3.21E+00
																						Maximum HQ (Outside Tailings)	**2.66E+01**
Meadow Vole (Small Herbivorous Mammal - Terrestrial)																							
Reference Sites																							
ACBG-1 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	4.35E-02	1.00E+00	4.70E-03	NA	NA	NA	NA	1.13E-04	2.31E+01	2.60E-03	1.00E+00	3.06E-02	2.39E-01	2.41E+02	1.87E-02	2.34E+02	1.02E-03
ACBG-2 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	4.35E-02	1.66E+00	7.80E-03	NA	NA	NA	NA	1.13E-04	3.83E+01	4.31E-03	1.00E+00	3.06E-02	3.95E-01	2.41E+02	1.87E-02	2.34E+02	1.69E-03
UBRBG-202 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	4.35E-02	2.36E+00	1.11E-02	NA	NA	NA	NA	1.13E-04	5.44E+01	6.12E-03	1.00E+00	3.06E-02	5.62E-01	2.41E+02	1.87E-02	2.34E+02	2.41E-03
UBRBG-204 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	4.35E-02	2.31E+00	1.08E-02	NA	NA	NA	NA	1.13E-04	5.32E+01	5.99E-03	1.00E+00	3.06E-02	5.50E-01	2.41E+02	1.87E-02	2.34E+02	2.35E-03
Inside Tailings																						**Minimum HQ (Reference Sites)**	**1.02E-03**
BREOT-S6-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	9.74E+02	4.57E+00	NA	NA	NA	NA	1.13E-04	1.55E+03	1.74E-01	1.00E+00	3.06E-02	1.55E+02	2.41E+02	1.87E-02	2.34E+02	6.63E-01
BREOT-S2-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	1.22E+03	5.73E+00	NA	NA	NA	NA	1.13E-04	1.94E+03	2.19E-01	1.00E+00	3.06E-02	1.94E+02	2.41E+02	1.87E-02	2.34E+02	8.32E-01
BREOT-S0-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	5.58E+02	2.62E+00	NA	NA	NA	NA	1.13E-04	8.89E+02	1.00E-01	1.00E+00	3.06E-02	8.88E+01	2.41E+02	1.87E-02	2.34E+02	3.80E-01
BREOT-S1-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	5.08E+02	2.38E+00	NA	NA	NA	NA	1.13E-04	8.09E+02	9.11E-02	1.00E+00	3.06E-02	8.09E+01	2.41E+02	1.87E-02	2.34E+02	3.46E-01
BREOT-S7-25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	1.07E+02	5.03E-01	NA	NA	NA	NA	1.13E-04	1.71E+02	1.92E-02	1.00E+00	3.06E-02	1.71E+01	2.41E+02	1.87E-02	2.34E+02	7.30E-02
BREOT-S8-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	4.07E+02	1.91E+00	NA	NA	NA	NA	1.13E-04	6.49E+02	7.30E-02	1.00E+00	3.06E-02	6.48E+01	2.41E+02	1.87E-02	2.34E+02	2.77E-01
BREOT-S9-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	4.26E+02	2.00E+00	NA	NA	NA	NA	1.13E-04	6.79E+02	7.64E-02	1.00E+00	3.06E-02	6.78E+01	2.41E+02	1.87E-02	2.34E+02	2.90E-01
BREOT-N10-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	6.07E+03	2.85E+01	NA	NA	NA	NA	1.13E-04	9.66E+03	1.09E+00	1.00E+00	3.06E-02	9.65E+02	2.41E+02	1.87E-02	2.34E+02	4.13E+00
BREOT-N11-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	1.69E+03	7.92E+00	NA	NA	NA	NA	1.13E-04	2.69E+03	3.03E-01	1.00E+00	3.06E-02	2.69E+02	2.41E+02	1.87E-02	2.34E+02	1.15E+00
BREOT-N11-125 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	1.40E+03	6.55E+00	NA	NA	NA	NA	1.13E-04	2.23E+03	2.50E-01	1.00E+00	3.06E-02	2.22E+02	2.41E+02	1.87E-02	2.34E+02	9.52E-01
BREOT-S11-12 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	4.10E+03	1.92E+01	NA	NA	NA	NA	1.13E-04	6.52E+03	7.34E-01	1.00E+00	3.06E-02	6.52E+02	2.41E+02	1.87E-02	2.34E+02	2.79E+00
BREOT-S11+63 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	1.29E+03	6.04E+00	NA	NA	NA	NA	1.13E-04	2.05E+03	2.31E-01	1.00E+00	3.06E-02	2.05E+02	2.41E+02	1.87E-02	2.34E+02	8.78E-01
UBDT-TP-6 (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	9.77E+03	4.58E+01	NA	NA	NA	NA	1.13E-04	1.56E+04	1.75E+00	1.00E+00	3.06E-02	1.56E+03	2.41E+02	1.87E-02	2.34E+02	6.66E+00
UBDT-TP-6 (2-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	7.46E+03	3.50E+01	NA	NA	NA	NA	1.13E-04	1.19E+04	1.34E+00	1.00E+00	3.06E-02	1.19E+03	2.41E+02	1.87E-02	2.34E+02	5.08E+00
UBDT-TP-6 (12-24")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	4.17E+03	1.96E+01	NA	NA	NA	NA	1.13E-04	6.64E+03	7.47E-01	1.00E+00	3.06E-02	6.64E+02	2.41E+02	1.87E-02	2.34E+02	2.84E+00
UBDT-TP-6 (24-36")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	3.35E+02	1.57E+00	NA	NA	NA	NA	1.13E-04	5.33E+02	6.00E-02	1.00E+00	3.06E-02	5.33E+01	2.41E+02	1.87E-02	2.34E+02	2.28E-01
UBDT-TP-6 (36-48")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	7.56E+02	3.54E+00	NA	NA	NA	NA	1.13E-04	1.20E+03	1.35E-01	1.00E+00	3.06E-02	1.20E+02	2.41E+02	1.87E-02	2.34E+02	5.15E-01
UBDT-TP-6 (48-60")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	3.44E+02	1.61E+00	NA	NA	NA	NA	1.13E-04	5.47E+02	6.16E-02	1.00E+00	3.06E-02	5.47E+01	2.41E+02	1.87E-02	2.34E+02	2.34E-01
BREOT-N12-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	9.56E+02	4.48E+00	NA	NA	NA	NA	1.13E-04	1.52E+03	1.71E-01	1.00E+00	3.06E-02	1.52E+02	2.41E+02	1.87E-02	2.34E+02	6.51E-01
BREOT-S12-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	2.12E+03	9.92E+00	NA	NA	NA	NA	1.13E-04	3.37E+03	3.79E-01	1.00E+00	3.06E-02	3.37E+02	2.41E+02	1.87E-02	2.34E+02	1.44E+00
BREOT-S13-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	3.16E+03	1.48E+01	NA	NA	NA	NA	1.13E-04	5.02E+03	5.65E-01	1.00E+00	3.06E-02	5.02E+02	2.41E+02	1.87E-02	2.34E+02	2.15E+00

TABLE C-2D: LEAD DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 18.41

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Meadow Vole (Small Herbivorous Mammal - Terrestrial)																							
BREOT-S14-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	8.75E+02	4.10E+00	NA	NA	NA	NA	1.13E-04	1.39E+03	1.57E-01	1.00E+00	3.06E-02	1.39E+02	2.41E+02	1.87E-02	2.34E+02	5.96E-01
BREOT-N15-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	1.79E+03	8.37E+00	NA	NA	NA	NA	1.13E-04	2.84E+03	3.20E-01	1.00E+00	3.06E-02	2.84E+02	2.41E+02	1.87E-02	2.34E+02	1.22E+00
BREOT-S15-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	1.62E+03	7.59E+00	NA	NA	NA	NA	1.13E-04	2.58E+03	2.90E-01	1.00E+00	3.06E-02	2.58E+02	2.41E+02	1.87E-02	2.34E+02	1.10E+00
BREOT-N16-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	1.70E+03	7.97E+00	NA	NA	NA	NA	1.13E-04	2.70E+03	3.04E-01	1.00E+00	3.06E-02	2.70E+02	2.41E+02	1.87E-02	2.34E+02	1.16E+00
BREOT-N16-25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	2.07E+02	9.69E-01	NA	NA	NA	NA	1.13E-04	3.29E+02	3.70E-02	1.00E+00	3.06E-02	3.29E+01	2.41E+02	1.87E-02	2.34E+02	1.41E-01
BREOT-S16-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	1.20E+03	5.65E+00	NA	NA	NA	NA	1.13E-04	1.92E+03	2.16E-01	1.00E+00	3.06E-02	1.92E+02	2.41E+02	1.87E-02	2.34E+02	8.20E-01
BREOT-N17-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	1.46E+03	6.87E+00	NA	NA	NA	NA	1.13E-04	2.33E+03	2.62E-01	1.00E+00	3.06E-02	2.33E+02	2.41E+02	1.87E-02	2.34E+02	9.97E-01
BREOT-S17-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	4.42E+02	2.07E+00	NA	NA	NA	NA	1.13E-04	7.03E+02	7.92E-02	1.00E+00	3.06E-02	7.03E+01	2.41E+02	1.87E-02	2.34E+02	3.01E-01
BREOT-S17-25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	3.43E+02	1.61E+00	NA	NA	NA	NA	1.13E-04	5.46E+02	6.15E-02	1.00E+00	3.06E-02	5.46E+01	2.41E+02	1.87E-02	2.34E+02	2.34E-01
UBDT-TP-4 (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	8.15E+02	3.82E+00	NA	NA	NA	NA	1.13E-04	1.30E+03	1.46E-01	1.00E+00	3.06E-02	1.30E+02	2.41E+02	1.87E-02	2.34E+02	5.55E-01
UBDT-TP-4 (2-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	7.68E+02	3.60E+00	NA	NA	NA	NA	1.13E-04	1.22E+03	1.38E-01	1.00E+00	3.06E-02	1.22E+02	2.41E+02	1.87E-02	2.34E+02	5.23E-01
UBDT-TP-4 (12-24")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	5.19E+02	2.43E+00	NA	NA	NA	NA	1.13E-04	8.26E+02	9.30E-02	1.00E+00	3.06E-02	8.26E+01	2.41E+02	1.87E-02	2.34E+02	3.53E-01
UBDT-TP-4 (24-36")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	4.21E+02	1.98E+00	NA	NA	NA	NA	1.13E-04	6.71E+02	7.55E-02	1.00E+00	3.06E-02	6.70E+01	2.41E+02	1.87E-02	2.34E+02	2.87E-01
BREOT-N18-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	1.27E+03	5.94E+00	NA	NA	NA	NA	1.13E-04	2.02E+03	2.27E-01	1.00E+00	3.06E-02	2.01E+02	2.41E+02	1.87E-02	2.34E+02	8.62E-01
BREOT-N18-25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	1.13E+02	5.31E-01	NA	NA	NA	NA	1.13E-04	1.80E+02	2.03E-02	1.00E+00	3.06E-02	1.80E+01	2.41E+02	1.87E-02	2.34E+02	7.71E-02
BREOT-S18-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	5.17E+02	2.42E+00	NA	NA	NA	NA	1.13E-04	8.22E+02	9.25E-02	1.00E+00	3.06E-02	8.22E+01	2.41E+02	1.87E-02	2.34E+02	3.52E-01
BREOT-N19-10 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	1.18E+03	5.54E+00	NA	NA	NA	NA	1.13E-04	1.88E+03	2.12E-01	1.00E+00	3.06E-02	1.88E+02	2.41E+02	1.87E-02	2.34E+02	8.05E-01
BREOT-S19-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	6.37E+02	2.99E+00	NA	NA	NA	NA	1.13E-04	1.01E+03	1.14E-01	1.00E+00	3.06E-02	1.01E+02	2.41E+02	1.87E-02	2.34E+02	4.34E-01
UBDT-TP-5 (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	6.05E+02	2.83E+00	NA	NA	NA	NA	1.13E-04	9.62E+02	1.08E-01	1.00E+00	3.06E-02	9.62E+01	2.41E+02	1.87E-02	2.34E+02	4.12E-01
UBDT-TP-5 (2-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	6.43E+02	3.01E+00	NA	NA	NA	NA	1.13E-04	1.02E+03	1.15E-01	1.00E+00	3.06E-02	1.02E+02	2.41E+02	1.87E-02	2.34E+02	4.38E-01
UBDT-TP-5 (12-24")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	6.55E+02	3.07E+00	NA	NA	NA	NA	1.13E-04	1.04E+03	1.17E-01	1.00E+00	3.06E-02	1.04E+02	2.41E+02	1.87E-02	2.34E+02	4.46E-01
BREOT-N20-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	7.32E+02	3.43E+00	NA	NA	NA	NA	1.13E-04	1.17E+03	1.31E-01	1.00E+00	3.06E-02	1.16E+02	2.41E+02	1.87E-02	2.34E+02	4.99E-01
UBDT-TP-3 (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	8.44E+02	3.96E+00	NA	NA	NA	NA	1.13E-04	1.34E+03	1.51E-01	1.00E+00	3.06E-02	1.34E+02	2.41E+02	1.87E-02	2.34E+02	5.75E-01
UBDT-TP-3 (2-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	1.14E+03	5.35E+00	NA	NA	NA	NA	1.13E-04	1.82E+03	2.04E-01	1.00E+00	3.06E-02	1.81E+02	2.41E+02	1.87E-02	2.34E+02	7.77E-01
UBDT-TP-3 (12-24")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	7.84E+02	3.68E+00	NA	NA	NA	NA	1.13E-04	1.25E+03	1.40E-01	1.00E+00	3.06E-02	1.25E+02	2.41E+02	1.87E-02	2.34E+02	5.34E-01
UBDT-TP-3 (24-36")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	9.90E+02	4.64E+00	NA	NA	NA	NA	1.13E-04	1.58E+03	1.77E-01	1.00E+00	3.06E-02	1.57E+02	2.41E+02	1.87E-02	2.34E+02	6.74E-01
UBDT-TP-3 (36-48")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	1.10E+03	5.14E+00	NA	NA	NA	NA	1.13E-04	1.74E+03	1.96E-01	1.00E+00	3.06E-02	1.74E+02	2.41E+02	1.87E-02	2.34E+02	7.46E-01
UBDT-TP-3 (48-60")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	2.24E+02	1.05E+00	NA	NA	NA	NA	1.13E-04	3.57E+02	4.02E-02	1.00E+00	3.06E-02	3.57E+01	2.41E+02	1.87E-02	2.34E+02	1.53E-01
BREOT-N21-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	7.21E+02	3.38E+00	NA	NA	NA	NA	1.13E-04	1.15E+03	1.29E-01	1.00E+00	3.06E-02	1.15E+02	2.41E+02	1.87E-02	2.34E+02	4.91E-01
BREOT-N22-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	9.28E+02	4.35E+00	NA	NA	NA	NA	1.13E-04	1.48E+03	1.66E-01	1.00E+00	3.06E-02	1.48E+02	2.41E+02	1.87E-02	2.34E+02	6.32E-01
BREOT-N23-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	7.75E+02	3.64E+00	NA	NA	NA	NA	1.13E-04	1.23E+03	1.39E-01	1.00E+00	3.06E-02	1.23E+02	2.41E+02	1.87E-02	2.34E+02	5.28E-01
BREOT-S23-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	1.08E+03	5.08E+00	NA	NA	NA	NA	1.13E-04	1.72E+03	1.94E-01	1.00E+00	3.06E-02	1.72E+02	2.41E+02	1.87E-02	2.34E+02	7.37E-01
UBDT-TP-2 (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	7.45E+02	3.50E+00	NA	NA	NA	NA	1.13E-04	1.19E+03	1.34E-01	1.00E+00	3.06E-02	1.19E+02	2.41E+02	1.87E-02	2.34E+02	5.08E-01
UBDT-TP-2 (2-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	5.50E+02	2.58E+00	NA	NA	NA	NA	1.13E-04	8.75E+02	9.85E-02	1.00E+00	3.06E-02	8.75E+01	2.41E+02	1.87E-02	2.34E+02	3.74E-01
UBDT-TP-2 (12-24")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	7.89E+02	3.70E+00	NA	NA	NA	NA	1.13E-04	1.26E+03	1.41E-01	1.00E+00	3.06E-02	1.26E+02	2.41E+02	1.87E-02	2.34E+02	5.37E-01
UBDT-TP-2 (24-36")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	4.69E+02	2.20E+00	NA	NA	NA	NA	1.13E-04	7.47E+02	8.41E-02	1.00E+00	3.06E-02	7.46E+01	2.41E+02	1.87E-02	2.34E+02	3.20E-01
UBDT-TP-2 (36-48")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	7.70E+02	3.61E+00	NA	NA	NA	NA	1.13E-04	1.23E+03	1.38E-01	1.00E+00	3.06E-02	1.23E+02	2.41E+02	1.87E-02	2.34E+02	5.25E-01
BREOT-S24-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	1.12E+03	5.24E+00	NA	NA	NA	NA	1.13E-04	1.78E+03	2.00E-01	1.00E+00	3.06E-02	1.78E+02	2.41E+02	1.87E-02	2.34E+02	7.61E-01
BREOT-N25-50 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	5.53E+03	2.59E+01	NA	NA	NA	NA	1.13E-04	8.80E+03	9.90E-01	1.00E+00	3.06E-02	8.80E+02	2.41E+02	1.87E-02	2.34E+02	3.76E+00
BREOT-N25-95 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	8.62E+02	4.04E+00	NA	NA	NA	NA	1.13E-04	1.37E+03	1.54E-01	1.00E+00	3.06E-02	1.37E+02	2.41E+02	1.87E-02	2.34E+02	5.87E-01
BREOT-S25-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	9.87E+02	4.63E+00	NA	NA	NA	NA	1.13E-04	1.57E+03	1.77E-01	1.00E+00	3.06E-02	1.57E+02	2.41E+02	1.87E-02	2.34E+02	6.72E-01
BREOT-S25-40 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	1.26E+03	5.90E+00	NA	NA	NA	NA	1.13E-04	2.00E+03	2.25E-01	1.00E+00	3.06E-02	2.00E+02	2.41E+02	1.87E-02	2.34E+02	8.56E-01
BREOT-N26A-25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	4.73E+01	2.22E-01	NA	NA	NA	NA	1.13E-04	7.54E+01	8.48E-03	1.00E+00	3.06E-02	7.53E+00	2.41E+02	1.87E-02	2.34E+02	3.22E-02
BREOT-N26B-25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	1.22E+03	5.71E+00	NA	NA	NA	NA	1.13E-04	1.94E+03	2.18E-01	1.00E+00	3.06E-02	1.94E+02	2.41E+02	1.87E-02	2.34E+02	8.29E-01
BREOT-N26-50 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	3.99E+03	1.87E+01	NA	NA	NA	NA	1.13E-04	6.36E+03	7.15E-01	1.00E+00	3.06E-02	6.35E+02	2.41E+02	1.87E-02	2.34E+02	2.72E+00
BREOT-N26-75 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	2.64E+03	1.24E+01	NA	NA	NA	NA	1.13E-04	4.21E+03	4.73E-01	1.00E+00	3.06E-02	4.20E+02	2.41E+02	1.87E-02	2.34E+02	1.80E+00
BREOT-S26-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	7.20E+02	3.38E+00	NA	NA	NA	NA	1.13E-04	1.15E+03	1.29E-01	1.00E+00	3.06E-02	1.15E+02	2.41E+02	1.87E-02	2.34E+02	4.90E-01
BREOT-S26-40 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	8.93E+02	4.19E+00	NA	NA	NA	NA	1.13E-04	1.42E+03	1.60E-01	1.00E+00	3.06E-02	1.42E+02	2.41E+02	1.87E-02	2.34E+02	6.08E-01
BREOT-N27-30 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	5.53E+03	2.59E+01	NA	NA	NA	NA	1.13E-04	8.80E+03	9.91E-01	1.00E+00	3.06E-02	8.80E+02	2.41E+02	1.87E-02	2.34E+02	3.77E+00
BREOT-N27-75 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	6.41E+03	3.01E+01	NA	NA	NA	NA	1.13E-04	1.02E+04	1.15E+00	1.00E+00	3.06E-02	1.02E+03	2.41E+02	1.87E-02	2.34E+02	4.37E+00
BREOT-S27-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	1.51E+03	7.06E+00	NA	NA	NA	NA	1.13E-04	2.40E+03	2.70E-01	1.00E+00	3.06E-02	2.39E+02	2.41E+02	1.87E-02	2.34E+02	1.03E+00
BREOT-N28-110 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	1.48E+03	6.93E+00	NA	NA	NA	NA	1.13E-04	2.35E+03	2.65E-01	1.00E+00	3.06E-02	2.35E+02	2.41E+02	1.87E-02	2.34E+02	1.01E+00
BREOT-N28-55 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	1.37E+04	6.41E+01	NA	NA	NA	NA	1.13E-04	2.18E+04	2.45E+00	1.00E+00	3.06E-02	2.17E+03	2.41E+02	1.87E-02	2.34E+02	9.31E+00
BREOT-S28-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	6.77E+02	3.17E+00	NA	NA	NA	NA	1.13E-04	1.08E+03	1.21E-01	1.00E+00	3.06E-02	1.08E+02	2.41E+02	1.87E-02	2.34E+02	4.61E-01
UBDT-TP-1 (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	4.81E+03	2.25E+01	NA	NA	NA	NA	1.13E-04	7.65E+03	8.61E-01	1.00E+00	3.06E-02	7.65E+02	2.41E+02	1.87E-02	2.34E+02	3.27E+00
UBDT-TP-1 (2-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	6.19E+03	2.90E+01	NA	NA	NA	NA	1.13E-04	9.85E+03	1.11E+00	1.00E+00	3.06E-02	9.85E+02	2.41E+02	1.87E-02	2.34E+02	4.22E+00
UBDT-TP-1 (12-24")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	5.78E+03	2.71E+01	NA	NA	NA	NA	1.13E-04	9.20E+03	1.04E+00	1.00E+00	3.06E-02	9.20E+02	2.41E+02	1.87E-02	2.34E+02	3.94E+00

TABLE C-2D: LEAD DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 18.41

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Meadow Vole (Small Herbivorous Mammal - Terrestrial)																							
UBDT-TP-1 (24-36")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	1.80E+03	8.44E+00	NA	NA	NA	NA	1.13E-04	2.86E+03	3.22E-01	1.00E+00	3.06E-02	2.86E+02	2.41E+02	1.87E-02	2.34E+02	1.23E+00
UBDT-TP-1 (36-48")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	1.10E+02	5.14E-01	NA	NA	NA	NA	1.13E-04	1.74E+02	1.96E-02	1.00E+00	3.06E-02	1.74E+01	2.41E+02	1.87E-02	2.34E+02	7.46E-02
UBDT-TP-1 (48-60")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	1.31E+02	6.14E-01	NA	NA	NA	NA	1.13E-04	2.08E+02	2.34E-02	1.00E+00	3.06E-02	2.08E+01	2.41E+02	1.87E-02	2.34E+02	8.91E-02
BREOT-N29-30 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	7.12E+03	3.34E+01	NA	NA	NA	NA	1.13E-04	1.13E+04	1.27E+00	1.00E+00	3.06E-02	1.13E+03	2.41E+02	1.87E-02	2.34E+02	4.85E+00
BREOT-S29-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	8.31E+02	3.90E+00	NA	NA	NA	NA	1.13E-04	1.32E+03	1.49E-01	1.00E+00	3.06E-02	1.32E+02	2.41E+02	1.87E-02	2.34E+02	5.66E-01
BREOT-N30-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	2.04E+03	9.59E+00	NA	NA	NA	NA	1.13E-04	3.25E+03	3.66E-01	1.00E+00	3.06E-02	3.25E+02	2.41E+02	1.87E-02	2.34E+02	1.39E+00
BREOT-S30-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	9.70E+02	4.55E+00	NA	NA	NA	NA	1.13E-04	1.54E+03	1.74E-01	1.00E+00	3.06E-02	1.54E+02	2.41E+02	1.87E-02	2.34E+02	6.61E-01
BREOT-N31-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	2.04E+03	9.59E+00	NA	NA	NA	NA	1.13E-04	3.25E+03	3.66E-01	1.00E+00	3.06E-02	3.25E+02	2.41E+02	1.87E-02	2.34E+02	1.39E+00
BREOT-S31-25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	5.58E+02	2.62E+00	NA	NA	NA	NA	1.13E-04	8.89E+02	1.00E-01	1.00E+00	3.06E-02	8.88E+01	2.41E+02	1.87E-02	2.34E+02	3.80E-01
BREOT-S31-5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	7.11E+02	3.33E+00	NA	NA	NA	NA	1.13E-04	1.13E+03	1.27E-01	1.00E+00	3.06E-02	1.13E+02	2.41E+02	1.87E-02	2.34E+02	4.84E-01
BREOT-N32-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	7.40E+02	3.47E+00	NA	NA	NA	NA	1.13E-04	1.18E+03	1.33E-01	1.00E+00	3.06E-02	1.18E+02	2.41E+02	1.87E-02	2.34E+02	5.04E-01
BREOT-S32-6 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	7.20E+02	3.38E+00	NA	NA	NA	NA	1.13E-04	1.15E+03	1.29E-01	1.00E+00	3.06E-02	1.15E+02	2.41E+02	1.87E-02	2.34E+02	4.90E-01
BREOT-N33-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	2.16E+03	1.01E+01	NA	NA	NA	NA	1.13E-04	3.44E+03	3.87E-01	1.00E+00	3.06E-02	3.44E+02	2.41E+02	1.87E-02	2.34E+02	1.47E+00
BREOT-S33-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	2.70E+02	1.27E+00	NA	NA	NA	NA	1.13E-04	4.30E+02	4.84E-02	1.00E+00	3.06E-02	4.30E+01	2.41E+02	1.87E-02	2.34E+02	1.84E-01
BREOT-N35-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	3.75E+02	1.76E+00	NA	NA	NA	NA	1.13E-04	5.97E+02	6.72E-02	1.00E+00	3.06E-02	5.97E+01	2.41E+02	1.87E-02	2.34E+02	2.55E-01
BREOT-S35-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	9.76E+02	4.58E+00	NA	NA	NA	NA	1.13E-04	1.55E+03	1.75E-01	1.00E+00	3.06E-02	1.55E+02	2.41E+02	1.87E-02	2.34E+02	6.65E-01
BREOT-N36-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	1.02E+03	4.79E+00	NA	NA	NA	NA	1.13E-04	1.63E+03	1.83E-01	1.00E+00	3.06E-02	1.63E+02	2.41E+02	1.87E-02	2.34E+02	6.96E-01
BREOT-S36-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	9.73E+02	4.56E+00	NA	NA	NA	NA	1.13E-04	1.55E+03	1.74E-01	1.00E+00	3.06E-02	1.55E+02	2.41E+02	1.87E-02	2.34E+02	6.63E-01
BREOT-N37-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	9.61E+02	4.50E+00	NA	NA	NA	NA	1.13E-04	1.53E+03	1.72E-01	1.00E+00	3.06E-02	1.53E+02	2.41E+02	1.87E-02	2.34E+02	6.54E-01
BREOT-S37-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	4.90E+02	2.30E+00	NA	NA	NA	NA	1.13E-04	7.80E+02	8.77E-02	1.00E+00	3.06E-02	7.79E+01	2.41E+02	1.87E-02	2.34E+02	3.34E-01
BREOT-N38-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	5.00E+02	2.34E+00	NA	NA	NA	NA	1.13E-04	7.95E+02	8.95E-02	1.00E+00	3.06E-02	7.95E+01	2.41E+02	1.87E-02	2.34E+02	3.40E-01
BREOT-S38-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	8.11E+02	3.80E+00	NA	NA	NA	NA	1.13E-04	1.29E+03	1.45E-01	1.00E+00	3.06E-02	1.29E+02	2.41E+02	1.87E-02	2.34E+02	5.52E-01
BREOT-N39-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	1.78E+03	8.34E+00	NA	NA	NA	NA	1.13E-04	2.83E+03	3.19E-01	1.00E+00	3.06E-02	2.83E+02	2.41E+02	1.87E-02	2.34E+02	1.21E+00
BREOT-S39-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	9.60E+02	4.50E+00	NA	NA	NA	NA	1.13E-04	1.53E+03	1.72E-01	1.00E+00	3.06E-02	1.53E+02	2.41E+02	1.87E-02	2.34E+02	6.54E-01
BREOT-N40-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	1.19E+03	5.59E+00	NA	NA	NA	NA	1.13E-04	1.90E+03	2.13E-01	1.00E+00	3.06E-02	1.89E+02	2.41E+02	1.87E-02	2.34E+02	8.11E-01
BREOT-S40-14 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	8.58E+02	4.02E+00	NA	NA	NA	NA	1.13E-04	1.37E+03	1.54E-01	1.00E+00	3.06E-02	1.36E+02	2.41E+02	1.87E-02	2.34E+02	5.84E-01
BREOT-N41-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	7.31E+02	3.43E+00	NA	NA	NA	NA	1.13E-04	1.16E+03	1.31E-01	1.00E+00	3.06E-02	1.16E+02	2.41E+02	1.87E-02	2.34E+02	4.98E-01
BREOT-S41-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	1.06E+03	4.97E+00	NA	NA	NA	NA	1.13E-04	1.69E+03	1.90E-01	1.00E+00	3.06E-02	1.69E+02	2.41E+02	1.87E-02	2.34E+02	7.22E-01
BREOT-N42-35 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	1.16E+03	5.46E+00	NA	NA	NA	NA	1.13E-04	1.85E+03	2.09E-01	1.00E+00	3.06E-02	1.85E+02	2.41E+02	1.87E-02	2.34E+02	7.93E-01
BREOT-S42-25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	1.44E+03	6.74E+00	NA	NA	NA	NA	1.13E-04	2.29E+03	2.57E-01	1.00E+00	3.06E-02	2.29E+02	2.41E+02	1.87E-02	2.34E+02	9.78E-01
BREOT-N43-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	1.33E+03	6.24E+00	NA	NA	NA	NA	1.13E-04	2.12E+03	2.38E-01	1.00E+00	3.06E-02	2.12E+02	2.41E+02	1.87E-02	2.34E+02	9.06E-01
BREOT-S43-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	8.07E+02	3.78E+00	NA	NA	NA	NA	1.13E-04	1.28E+03	1.45E-01	1.00E+00	3.06E-02	1.28E+02	2.41E+02	1.87E-02	2.34E+02	5.49E-01
BREOT-N44-30 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	6.15E+02	2.89E+00	NA	NA	NA	NA	1.13E-04	9.80E+02	1.10E-01	1.00E+00	3.06E-02	9.79E+01	2.41E+02	1.87E-02	2.34E+02	4.19E-01
BREOT-S44-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	1.71E+03	8.00E+00	NA	NA	NA	NA	1.13E-04	2.72E+03	3.06E-01	1.00E+00	3.06E-02	2.71E+02	2.41E+02	1.87E-02	2.34E+02	1.16E+00
BREOT-N45-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	6.81E+02	3.20E+00	NA	NA	NA	NA	1.13E-04	1.08E+03	1.22E-01	1.00E+00	3.06E-02	1.08E+02	2.41E+02	1.87E-02	2.34E+02	4.64E-01
BREOT-N43-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	1.33E+03	6.24E+00	NA	NA	NA	NA	1.13E-04	2.12E+03	2.38E-01	1.00E+00	3.06E-02	2.12E+02	2.41E+02	1.87E-02	2.34E+02	9.06E-01
BREOT-S45-6 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	1.90E+03	8.90E+00	NA	NA	NA	NA	1.13E-04	3.02E+03	3.40E-01	1.00E+00	3.06E-02	3.02E+02	2.41E+02	1.87E-02	2.34E+02	1.29E+00
BREOT-N46-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	4.89E+02	2.29E+00	NA	NA	NA	NA	1.13E-04	7.78E+02	8.76E-02	1.00E+00	3.06E-02	7.78E+01	2.41E+02	1.87E-02	2.34E+02	3.33E-01
BREOT-S46-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	8.96E+02	4.20E+00	NA	NA	NA	NA	1.13E-04	1.43E+03	1.60E-01	1.00E+00	3.06E-02	1.42E+02	2.41E+02	1.87E-02	2.34E+02	6.10E-01
BREOT-S46-40 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	1.88E+03	8.83E+00	NA	NA	NA	NA	1.13E-04	3.00E+03	3.37E-01	1.00E+00	3.06E-02	3.00E+02	2.41E+02	1.87E-02	2.34E+02	1.28E+00
BREOT-N47-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	8.05E+02	3.78E+00	NA	NA	NA	NA	1.13E-04	1.28E+03	1.44E-01	1.00E+00	3.06E-02	1.28E+02	2.41E+02	1.87E-02	2.34E+02	5.48E-01
BREOT-S47-999 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	2.52E+03	1.18E+01	NA	NA	NA	NA	1.13E-04	4.01E+03	4.51E-01	1.00E+00	3.06E-02	4.01E+02	2.41E+02	1.87E-02	2.34E+02	1.71E+00
BREOT-S48-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	7.69E+01	3.61E-01	NA	NA	NA	NA	1.13E-04	1.22E+02	1.38E-02	1.00E+00	3.06E-02	1.22E+01	2.41E+02	1.87E-02	2.34E+02	5.24E-02
BREOT-S49-2.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	7.23E+01	3.39E-01	NA	NA	NA	NA	1.13E-04	1.15E+02	1.30E-02	1.00E+00	3.06E-02	1.15E+01	2.41E+02	1.87E-02	2.34E+02	4.92E-02
BREOT-S50-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	4.19E+02	1.97E+00	NA	NA	NA	NA	1.13E-04	6.67E+02	7.51E-02	1.00E+00	3.06E-02	6.67E+01	2.41E+02	1.87E-02	2.34E+02	2.86E-01
BREOT-S50-25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	2.84E+01	1.33E-01	NA	NA	NA	NA	1.13E-04	4.52E+01	5.08E-03	1.00E+00	3.06E-02	4.51E+00	2.41E+02	1.87E-02	2.34E+02	1.93E-02
BREOT-N52-60 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	1.77E+03	8.31E+00	NA	NA	NA	NA	1.13E-04	2.82E+03	3.18E-01	1.00E+00	3.06E-02	2.82E+02	2.41E+02	1.87E-02	2.34E+02	1.21E+00
BREOT-S52-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	3.86E+01	1.81E-01	NA	NA	NA	NA	1.13E-04	6.15E+01	6.92E-03	1.00E+00	3.06E-02	6.14E+00	2.41E+02	1.87E-02	2.34E+02	2.63E-02
BREOT-S53-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	1.16E+02	5.46E-01	NA	NA	NA	NA	1.13E-04	1.85E+02	2.09E-02	1.00E+00	3.06E-02	1.85E+01	2.41E+02	1.87E-02	2.34E+02	7.93E-02
BREOT-S54-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	5.53E+01	2.59E-01	NA	NA	NA	NA	1.13E-04	8.81E+01	9.91E-03	1.00E+00	3.06E-02	8.80E+00	2.41E+02	1.87E-02	2.34E+02	3.77E-02
BREOT-N55-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	1.49E+03	7.01E+00	NA	NA	NA	NA	1.13E-04	2.38E+03	2.68E-01	1.00E+00	3.06E-02	2.38E+02	2.41E+02	1.87E-02	2.34E+02	1.02E+00
BREOT-S55-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	4.01E+02	1.88E+00	NA	NA	NA	NA	1.13E-04	6.38E+02	7.18E-02	1.00E+00	3.06E-02	6.38E+01	2.41E+02	1.87E-02	2.34E+02	2.73E-01
BREOT-N56-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	1.39E+03	6.54E+00	NA	NA	NA	NA	1.13E-04	2.22E+03	2.50E-01	1.00E+00	3.06E-02	2.22E+02	2.41E+02	1.87E-02	2.34E+02	9.50E-01
BREOT-S56-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	1.29E+02	6.06E-01	NA	NA	NA	NA	1.13E-04	2.06E+02	2.32E-02	1.00E+00	3.06E-02	2.06E+01	2.41E+02	1.87E-02	2.34E+02	8.80E-02
BREOT-N57-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	8.58E+02	4.02E+00	NA	NA	NA	NA	1.13E-04	1.37E+03	1.54E-01	1.00E+00	3.06E-02	1.37E+02	2.41E+02	1.87E-02	2.34E+02	5.84E-01
BREOT-S57-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	3.91E+02	1.83E+00	NA	NA	NA	NA	1.13E-04	6.22E+02	7.00E-02	1.00E+00	3.06E-02	6.21E+01	2.41E+02	1.87E-02	2.34E+02	2.66E-01
BREOT-N58-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	2.06E+02	9.66E-01	NA	NA	NA	NA	1.13E-04	3.28E+02	3.69E-02	1.00E+00	3.06E-02	3.28E+01	2.41E+02	1.87E-02	2.34E+02	1.40E-01

TABLE C-2D: LEAD DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 18.41

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Meadow Vole (Small Herbivorous Mammal - Terrestrial)																							
BREOT-S58-12 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	3.29E+02	1.54E+00	NA	NA	NA	NA	1.13E-04	5.23E+02	5.89E-02	1.00E+00	3.06E-02	5.23E+01	2.41E+02	1.87E-02	2.34E+02	2.24E-01
BREOT-N59-18 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	5.78E+02	2.71E+00	NA	NA	NA	NA	1.13E-04	9.20E+02	1.04E-01	1.00E+00	3.06E-02	9.19E+01	2.41E+02	1.87E-02	2.34E+02	3.93E-01
BREOT-N60-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	1.67E+02	7.85E-01	NA	NA	NA	NA	1.13E-04	2.66E+02	3.00E-02	1.00E+00	3.06E-02	2.66E+01	2.41E+02	1.87E-02	2.34E+02	1.14E-01
BREOT-S60-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	7.00E+02	3.28E+00	NA	NA	NA	NA	1.13E-04	1.11E+03	1.25E-01	1.00E+00	3.06E-02	1.11E+02	2.41E+02	1.87E-02	2.34E+02	4.77E-01
BREOT-S61-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	5.60E+02	2.62E+00	NA	NA	NA	NA	1.13E-04	8.91E+02	1.00E-01	1.00E+00	3.06E-02	8.90E+01	2.41E+02	1.87E-02	2.34E+02	3.81E-01
BREOT-N62-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	6.08E+01	2.85E-01	NA	NA	NA	NA	1.13E-04	9.68E+01	1.09E-02	1.00E+00	3.06E-02	9.67E+00	2.41E+02	1.87E-02	2.34E+02	4.14E-02
BREOT-S62-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	9.73E+02	4.56E+00	NA	NA	NA	NA	1.13E-04	1.55E+03	1.74E-01	1.00E+00	3.06E-02	1.55E+02	2.41E+02	1.87E-02	2.34E+02	6.63E-01
BREOT-S63-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	2.46E+02	1.15E+00	NA	NA	NA	NA	1.13E-04	3.91E+02	4.40E-02	1.00E+00	3.06E-02	3.91E+01	2.41E+02	1.87E-02	2.34E+02	1.67E-01
BREOT-N64-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	2.03E+02	9.54E-01	NA	NA	NA	NA	1.13E-04	3.24E+02	3.65E-02	1.00E+00	3.06E-02	3.24E+01	2.41E+02	1.87E-02	2.34E+02	1.39E-01
BREOT-N64-20 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	1.70E+02	7.96E-01	NA	NA	NA	NA	1.13E-04	2.70E+02	3.04E-02	1.00E+00	3.06E-02	2.70E+01	2.41E+02	1.87E-02	2.34E+02	1.16E-01
BREOT-S64-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	4.07E+02	1.91E+00	NA	NA	NA	NA	1.13E-04	6.49E+02	7.30E-02	1.00E+00	3.06E-02	6.48E+01	2.41E+02	1.87E-02	2.34E+02	2.77E-01
BREOT-N65-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	1.13E+02	5.29E-01	NA	NA	NA	NA	1.13E-04	1.79E+02	2.02E-02	1.00E+00	3.06E-02	1.79E+01	2.41E+02	1.87E-02	2.34E+02	7.68E-02
BREOT-S65-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	1.11E+03	5.20E+00	NA	NA	NA	NA	1.13E-04	1.76E+03	1.99E-01	1.00E+00	3.06E-02	1.76E+02	2.41E+02	1.87E-02	2.34E+02	7.55E-01
BREOT-N66-5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	4.33E+02	2.03E+00	NA	NA	NA	NA	1.13E-04	6.89E+02	7.75E-02	1.00E+00	3.06E-02	6.88E+01	2.41E+02	1.87E-02	2.34E+02	2.95E-01
BREOT-S66-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	3.82E+02	1.79E+00	NA	NA	NA	NA	1.13E-04	6.09E+02	6.85E-02	1.00E+00	3.06E-02	6.08E+01	2.41E+02	1.87E-02	2.34E+02	2.60E-01
BREOT-N67-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	7.03E+02	3.30E+00	NA	NA	NA	NA	1.13E-04	1.12E+03	1.26E-01	1.00E+00	3.06E-02	1.12E+02	2.41E+02	1.87E-02	2.34E+02	4.79E-01
BREOT-S67-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	1.54E+02	7.20E-01	NA	NA	NA	NA	1.13E-04	2.45E+02	2.75E-02	1.00E+00	3.06E-02	2.44E+01	2.41E+02	1.87E-02	2.34E+02	1.05E-01
At Edge of Tailings																						**Maximum HQ (Inside Tailings)**	**9.31E+00**
BREOT-S0-0 (06)	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	2.94E+02	1.38E+00	NA	NA	NA	NA	1.13E-04	4.68E+02	5.27E-02	1.00E+00	3.06E-02	4.68E+01	2.41E+02	1.87E-02	2.34E+02	2.00E-01
BREOT-S1-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	1.43E+03	6.71E+00	NA	NA	NA	NA	1.13E-04	2.28E+03	2.56E-01	1.00E+00	3.06E-02	2.28E+02	2.41E+02	1.87E-02	2.34E+02	9.75E-01
BREOT-S2-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	4.19E+02	1.96E+00	NA	NA	NA	NA	1.13E-04	6.66E+02	7.50E-02	1.00E+00	3.06E-02	6.66E+01	2.41E+02	1.87E-02	2.34E+02	2.85E-01
BREOT-S3-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	9.29E+02	4.36E+00	NA	NA	NA	NA	1.13E-04	1.48E+03	1.66E-01	1.00E+00	3.06E-02	1.48E+02	2.41E+02	1.87E-02	2.34E+02	6.33E-01
BREOT-S4-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	1.10E+03	5.18E+00	NA	NA	NA	NA	1.13E-04	1.76E+03	1.98E-01	1.00E+00	3.06E-02	1.76E+02	2.41E+02	1.87E-02	2.34E+02	7.52E-01
BREOT-S6-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	1.07E+03	5.01E+00	NA	NA	NA	NA	1.13E-04	1.70E+03	1.91E-01	1.00E+00	3.06E-02	1.70E+02	2.41E+02	1.87E-02	2.34E+02	7.27E-01
BREOT-S7-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	6.37E+02	2.99E+00	NA	NA	NA	NA	1.13E-04	1.01E+03	1.14E-01	1.00E+00	3.06E-02	1.01E+02	2.41E+02	1.87E-02	2.34E+02	4.34E-01
BREOT-S8-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	2.35E+02	1.10E+00	NA	NA	NA	NA	1.13E-04	3.73E+02	4.20E-02	1.00E+00	3.06E-02	3.73E+01	2.41E+02	1.87E-02	2.34E+02	1.60E-01
BREOT-S9-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	5.06E+02	2.37E+00	NA	NA	NA	NA	1.13E-04	8.05E+02	9.06E-02	1.00E+00	3.06E-02	8.04E+01	2.41E+02	1.87E-02	2.34E+02	3.44E-01
BREOT-N10-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	1.48E+04	6.92E+01	NA	NA	NA	NA	1.13E-04	2.35E+04	2.64E+00	1.00E+00	3.06E-02	2.35E+03	2.41E+02	1.87E-02	2.34E+02	1.00E+01
BREOT-N11-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	1.80E+03	8.42E+00	NA	NA	NA	NA	1.13E-04	2.86E+03	3.22E-01	1.00E+00	3.06E-02	2.86E+02	2.41E+02	1.87E-02	2.34E+02	1.22E+00
BREOT-S11-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	6.30E+02	2.96E+00	NA	NA	NA	NA	1.13E-04	1.00E+03	1.13E-01	1.00E+00	3.06E-02	1.00E+02	2.41E+02	1.87E-02	2.34E+02	4.29E-01
BREOT-N12-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	6.49E+02	3.05E+00	NA	NA	NA	NA	1.13E-04	1.03E+03	1.16E-01	1.00E+00	3.06E-02	1.03E+02	2.41E+02	1.87E-02	2.34E+02	4.42E-01
BREOT-S12-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	2.00E+03	9.39E+00	NA	NA	NA	NA	1.13E-04	3.19E+03	3.59E-01	1.00E+00	3.06E-02	3.19E+02	2.41E+02	1.87E-02	2.34E+02	1.36E+00
BREOT-N13-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	1.66E+04	7.80E+01	NA	NA	NA	NA	1.13E-04	2.65E+04	2.98E+00	1.00E+00	3.06E-02	2.65E+03	2.41E+02	1.87E-02	2.34E+02	1.13E+01
BREOT-S13-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	3.89E+02	1.83E+00	NA	NA	NA	NA	1.13E-04	6.20E+02	6.98E-02	1.00E+00	3.06E-02	6.20E+01	2.41E+02	1.87E-02	2.34E+02	2.65E-01
BREOT-N14-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	1.83E+03	8.56E+00	NA	NA	NA	NA	1.13E-04	2.91E+03	3.27E-01	1.00E+00	3.06E-02	2.90E+02	2.41E+02	1.87E-02	2.34E+02	1.24E+00
BREOT-S14-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	9.69E+03	4.55E+01	NA	NA	NA	NA	1.13E-04	1.54E+04	1.74E+00	1.00E+00	3.06E-02	1.54E+03	2.41E+02	1.87E-02	2.34E+02	6.60E+00
BREOT-N15-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	2.26E+03	1.06E+01	NA	NA	NA	NA	1.13E-04	3.60E+03	4.05E-01	1.00E+00	3.06E-02	3.59E+02	2.41E+02	1.87E-02	2.34E+02	1.54E+00
BREOT-N16-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	1.11E+03	5.22E+00	NA	NA	NA	NA	1.13E-04	1.77E+03	1.99E-01	1.00E+00	3.06E-02	1.77E+02	2.41E+02	1.87E-02	2.34E+02	7.57E-01
BREOT-S16-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	2.10E+02	9.84E-01	NA	NA	NA	NA	1.13E-04	3.34E+02	3.76E-02	1.00E+00	3.06E-02	3.34E+01	2.41E+02	1.87E-02	2.34E+02	1.43E-01
BREOT-N17-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	1.80E+03	8.43E+00	NA	NA	NA	NA	1.13E-04	2.86E+03	3.22E-01	1.00E+00	3.06E-02	2.86E+02	2.41E+02	1.87E-02	2.34E+02	1.22E+00
BREOT-S17-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	2.11E+03	9.89E+00	NA	NA	NA	NA	1.13E-04	3.36E+03	3.78E-01	1.00E+00	3.06E-02	3.36E+02	2.41E+02	1.87E-02	2.34E+02	1.44E+00
BREOT-N18-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	1.45E+03	6.82E+00	NA	NA	NA	NA	1.13E-04	2.32E+03	2.61E-01	1.00E+00	3.06E-02	2.31E+02	2.41E+02	1.87E-02	2.34E+02	9.91E-01
BREOT-S18-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	2.29E+01	1.07E-01	NA	NA	NA	NA	1.13E-04	3.65E+01	4.11E-03	1.00E+00	3.06E-02	3.65E+00	2.41E+02	1.87E-02	2.34E+02	1.56E-02
BREOT-N19-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	9.92E+02	4.65E+00	NA	NA	NA	NA	1.13E-04	1.58E+03	1.78E-01	1.00E+00	3.06E-02	1.58E+02	2.41E+02	1.87E-02	2.34E+02	6.75E-01
BREOT-S19-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	2.85E+02	1.33E+00	NA	NA	NA	NA	1.13E-04	4.53E+02	5.10E-02	1.00E+00	3.06E-02	4.53E+01	2.41E+02	1.87E-02	2.34E+02	1.94E-01
BREOT-N20-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	8.12E+02	3.81E+00	NA	NA	NA	NA	1.13E-04	1.29E+03	1.45E-01	1.00E+00	3.06E-02	1.29E+02	2.41E+02	1.87E-02	2.34E+02	5.53E-01
BREOT-S20-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	3.91E+02	1.83E+00	NA	NA	NA	NA	1.13E-04	6.23E+02	7.01E-02	1.00E+00	3.06E-02	6.22E+01	2.41E+02	1.87E-02	2.34E+02	2.66E-01
BREOT-N21-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	3.61E+01	1.69E-01	NA	NA	NA	NA	1.13E-04	5.75E+01	6.47E-03	1.00E+00	3.06E-02	5.75E+00	2.41E+02	1.87E-02	2.34E+02	2.46E-02
BREOT-S21-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	1.09E+03	5.10E+00	NA	NA	NA	NA	1.13E-04	1.73E+03	1.95E-01	1.00E+00	3.06E-02	1.73E+02	2.41E+02	1.87E-02	2.34E+02	7.41E-01
BREOT-N22-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	9.14E+02	4.29E+00	NA	NA	NA	NA	1.13E-04	1.46E+03	1.64E-01	1.00E+00	3.06E-02	1.45E+02	2.41E+02	1.87E-02	2.34E+02	6.23E-01
BREOT-S22-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	1.10E+03	5.16E+00	NA	NA	NA	NA	1.13E-04	1.75E+03	1.97E-01	1.00E+00	3.06E-02	1.75E+02	2.41E+02	1.87E-02	2.34E+02	7.49E-01
BREOT-N23-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	7.57E+02	3.55E+00	NA	NA	NA	NA	1.13E-04	1.21E+03	1.36E-01	1.00E+00	3.06E-02	1.20E+02	2.41E+02	1.87E-02	2.34E+02	5.16E-01
BREOT-S23-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	1.68E+03	7.85E+00	NA	NA	NA	NA	1.13E-04	2.67E+03	3.00E-01	1.00E+00	3.06E-02	2.66E+02	2.41E+02	1.87E-02	2.34E+02	1.14E+00
BREOT-N24-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	1.61E+03	7.53E+00	NA	NA	NA	NA	1.13E-04	2.56E+03	2.88E-01	1.00E+00	3.06E-02	2.55E+02	2.41E+02	1.87E-02	2.34E+02	1.09E+00
BREOT-S24-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	9.42E+02	4.42E+00	NA	NA	NA	NA	1.13E-04	1.50E+03	1.69E-01	1.00E+00	3.06E-02	1.50E+02	2.41E+02	1.87E-02	2.34E+02	6.41E-01
BREOT-N25-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	3.91E+03	1.84E+01	NA	NA	NA	NA	1.13E-04	6.23E+03	7.01E-01	1.00E+00	3.06E-02	6.23E+02	2.41E+02	1.87E-02	2.34E+02	2.67E+00
BREOT-S25-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	2.19E+03	1.03E+01	NA	NA	NA	NA	1.13E-04	3.49E+03	3.92E-01	1.00E+00	3.06E-02	3.48E+02	2.41E+02	1.87E-02	2.34E+02	1.49E+00

TABLE C-2D: LEAD DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 18.41

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Meadow Vole (Small Herbivorous Mammal - Terrestrial)																							
BREOT-N26-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	7.17E+03	3.36E+01	NA	NA	NA	NA	1.13E-04	1.14E+04	1.28E+00	1.00E+00	3.06E-02	1.14E+03	2.41E+02	1.87E-02	2.34E+02	4.88E+00
BREOT-S26-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	1.00E+03	4.69E+00	NA	NA	NA	NA	1.13E-04	1.59E+03	1.79E-01	1.00E+00	3.06E-02	1.59E+02	2.41E+02	1.87E-02	2.34E+02	6.82E-01
BREOT-N27-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	7.70E+03	3.61E+01	NA	NA	NA	NA	1.13E-04	1.23E+04	1.38E+00	1.00E+00	3.06E-02	1.22E+03	2.41E+02	1.87E-02	2.34E+02	5.24E+00
BREOT-S27-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	1.74E+03	8.18E+00	NA	NA	NA	NA	1.13E-04	2.78E+03	3.12E-01	1.00E+00	3.06E-02	2.77E+02	2.41E+02	1.87E-02	2.34E+02	1.19E+00
BREOT-N28-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	2.97E+03	1.39E+01	NA	NA	NA	NA	1.13E-04	4.73E+03	5.32E-01	1.00E+00	3.06E-02	4.73E+02	2.41E+02	1.87E-02	2.34E+02	2.02E+00
BREOT-S28-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	7.31E+02	3.43E+00	NA	NA	NA	NA	1.13E-04	1.16E+03	1.31E-01	1.00E+00	3.06E-02	1.16E+02	2.41E+02	1.87E-02	2.34E+02	4.98E-01
BREOT-S29-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	3.03E+02	1.42E+00	NA	NA	NA	NA	1.13E-04	4.82E+02	5.42E-02	1.00E+00	3.06E-02	4.81E+01	2.41E+02	1.87E-02	2.34E+02	2.06E-01
BREOT-N30-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	5.39E+03	2.53E+01	NA	NA	NA	NA	1.13E-04	8.58E+03	9.66E-01	1.00E+00	3.06E-02	8.58E+02	2.41E+02	1.87E-02	2.34E+02	3.67E+00
BREOT-S30-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	1.48E+02	6.93E-01	NA	NA	NA	NA	1.13E-04	2.35E+02	2.65E-02	1.00E+00	3.06E-02	2.35E+01	2.41E+02	1.87E-02	2.34E+02	1.01E-01
BREOT-N31-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	2.60E+03	1.22E+01	NA	NA	NA	NA	1.13E-04	4.14E+03	4.66E-01	1.00E+00	3.06E-02	4.14E+02	2.41E+02	1.87E-02	2.34E+02	1.77E+00
BREOT-S31-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	1.43E+02	6.69E-01	NA	NA	NA	NA	1.13E-04	2.27E+02	2.55E-02	1.00E+00	3.06E-02	2.27E+01	2.41E+02	1.87E-02	2.34E+02	9.71E-02
BREOT-N32-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	1.08E+03	5.05E+00	NA	NA	NA	NA	1.13E-04	1.72E+03	1.93E-01	1.00E+00	3.06E-02	1.71E+02	2.41E+02	1.87E-02	2.34E+02	7.34E-01
BREOT-S32-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	1.25E+03	5.86E+00	NA	NA	NA	NA	1.13E-04	1.99E+03	2.24E-01	1.00E+00	3.06E-02	1.99E+02	2.41E+02	1.87E-02	2.34E+02	8.50E-01
BREOT-N33-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	3.91E+01	1.84E-01	NA	NA	NA	NA	1.13E-04	6.23E+01	7.01E-03	1.00E+00	3.06E-02	6.23E+00	2.41E+02	1.87E-02	2.34E+02	2.67E-02
BREOT-S33-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	2.98E+02	1.40E+00	NA	NA	NA	NA	1.13E-04	4.75E+02	5.34E-02	1.00E+00	3.06E-02	4.75E+01	2.41E+02	1.87E-02	2.34E+02	2.03E-01
BREOT-N34-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	1.03E+02	4.85E-01	NA	NA	NA	NA	1.13E-04	1.65E+02	1.85E-02	1.00E+00	3.06E-02	1.65E+01	2.41E+02	1.87E-02	2.34E+02	7.04E-02
BREOT-S34-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	7.27E+02	3.41E+00	NA	NA	NA	NA	1.13E-04	1.16E+03	1.30E-01	1.00E+00	3.06E-02	1.16E+02	2.41E+02	1.87E-02	2.34E+02	4.95E-01
BREOT-N35-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	6.53E+01	3.06E-01	NA	NA	NA	NA	1.13E-04	1.04E+02	1.17E-02	1.00E+00	3.06E-02	1.04E+01	2.41E+02	1.87E-02	2.34E+02	4.45E-02
BREOT-S35-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	5.05E+02	2.37E+00	NA	NA	NA	NA	1.13E-04	8.04E+02	9.05E-02	1.00E+00	3.06E-02	8.03E+01	2.41E+02	1.87E-02	2.34E+02	3.44E-01
BREOT-N36-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	1.42E+03	6.68E+00	NA	NA	NA	NA	1.13E-04	2.27E+03	2.55E-01	1.00E+00	3.06E-02	2.27E+02	2.41E+02	1.87E-02	2.34E+02	9.69E-01
BREOT-S36-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	1.01E+03	4.73E+00	NA	NA	NA	NA	1.13E-04	1.61E+03	1.81E-01	1.00E+00	3.06E-02	1.60E+02	2.41E+02	1.87E-02	2.34E+02	6.87E-01
BREOT-N37-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	3.18E+02	1.49E+00	NA	NA	NA	NA	1.13E-04	5.06E+02	5.70E-02	1.00E+00	3.06E-02	5.06E+01	2.41E+02	1.87E-02	2.34E+02	2.17E-01
BREOT-S37-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	1.12E+03	5.25E+00	NA	NA	NA	NA	1.13E-04	1.78E+03	2.00E-01	1.00E+00	3.06E-02	1.78E+02	2.41E+02	1.87E-02	2.34E+02	7.62E-01
BREOT-N38-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	6.61E+01	3.10E-01	NA	NA	NA	NA	1.13E-04	1.05E+02	1.18E-02	1.00E+00	3.06E-02	1.05E+01	2.41E+02	1.87E-02	2.34E+02	4.50E-02
BREOT-S38-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	1.31E+02	6.13E-01	NA	NA	NA	NA	1.13E-04	2.08E+02	2.34E-02	1.00E+00	3.06E-02	2.08E+01	2.41E+02	1.87E-02	2.34E+02	8.90E-02
BREOT-N39-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	5.52E+01	2.59E-01	NA	NA	NA	NA	1.13E-04	8.79E+01	9.89E-03	1.00E+00	3.06E-02	8.78E+00	2.41E+02	1.87E-02	2.34E+02	3.76E-02
BREOT-N40-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	1.33E+02	6.25E-01	NA	NA	NA	NA	1.13E-04	2.12E+02	2.39E-02	1.00E+00	3.06E-02	2.12E+01	2.41E+02	1.87E-02	2.34E+02	9.08E-02
BREOT-S40-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	8.65E+02	4.06E+00	NA	NA	NA	NA	1.13E-04	1.38E+03	1.55E-01	1.00E+00	3.06E-02	1.38E+02	2.41E+02	1.87E-02	2.34E+02	5.89E-01
BREOT-N41-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	8.59E+01	4.03E-01	NA	NA	NA	NA	1.13E-04	1.37E+02	1.54E-02	1.00E+00	3.06E-02	1.37E+01	2.41E+02	1.87E-02	2.34E+02	5.85E-02
BREOT-S41-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	8.58E+02	4.02E+00	NA	NA	NA	NA	1.13E-04	1.37E+03	1.54E-01	1.00E+00	3.06E-02	1.36E+02	2.41E+02	1.87E-02	2.34E+02	5.84E-01
BREOT-N42-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	1.71E+01	8.01E-02	NA	NA	NA	NA	1.13E-04	2.72E+01	3.06E-03	1.00E+00	3.06E-02	2.72E+00	2.41E+02	1.87E-02	2.34E+02	1.16E-02
BREOT-S42-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	1.78E+03	8.37E+00	NA	NA	NA	NA	1.13E-04	2.84E+03	3.20E-01	1.00E+00	3.06E-02	2.84E+02	2.41E+02	1.87E-02	2.34E+02	1.22E+00
BREOT-N43-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	1.16E+02	5.45E-01	NA	NA	NA	NA	1.13E-04	1.85E+02	2.08E-02	1.00E+00	3.06E-02	1.85E+01	2.41E+02	1.87E-02	2.34E+02	7.92E-02
BREOT-S43-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	7.61E+01	3.57E-01	NA	NA	NA	NA	1.13E-04	1.21E+02	1.36E-02	1.00E+00	3.06E-02	1.21E+01	2.41E+02	1.87E-02	2.34E+02	5.18E-02
BREOT-N44-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	3.53E+02	1.66E+00	NA	NA	NA	NA	1.13E-04	5.62E+02	6.32E-02	1.00E+00	3.06E-02	5.62E+01	2.41E+02	1.87E-02	2.34E+02	2.40E-01
BREOT-S44-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	5.59E+01	2.62E-01	NA	NA	NA	NA	1.13E-04	8.89E+01	1.00E-02	1.00E+00	3.06E-02	8.89E+00	2.41E+02	1.87E-02	2.34E+02	3.80E-02
BREOT-N45-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	1.01E+02	4.73E-01	NA	NA	NA	NA	1.13E-04	1.61E+02	1.81E-02	1.00E+00	3.06E-02	1.60E+01	2.41E+02	1.87E-02	2.34E+02	6.87E-02
BREOT-S45-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	1.19E+02	5.59E-01	NA	NA	NA	NA	1.13E-04	1.90E+02	2.13E-02	1.00E+00	3.06E-02	1.90E+01	2.41E+02	1.87E-02	2.34E+02	8.11E-02
BREOT-N46-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	8.65E+01	4.06E-01	NA	NA	NA	NA	1.13E-04	1.38E+02	1.55E-02	1.00E+00	3.06E-02	1.38E+01	2.41E+02	1.87E-02	2.34E+02	5.89E-02
BREOT-S46-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	6.79E+02	3.18E+00	NA	NA	NA	NA	1.13E-04	1.08E+03	1.22E-01	1.00E+00	3.06E-02	1.08E+02	2.41E+02	1.87E-02	2.34E+02	4.63E-01
BREOT-N47-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	1.10E+02	5.16E-01	NA	NA	NA	NA	1.13E-04	1.75E+02	1.97E-02	1.00E+00	3.06E-02	1.75E+01	2.41E+02	1.87E-02	2.34E+02	7.49E-02
BREOT-S47-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	2.36E+01	1.11E-01	NA	NA	NA	NA	1.13E-04	3.76E+01	4.23E-03	1.00E+00	3.06E-02	3.75E+00	2.41E+02	1.87E-02	2.34E+02	1.61E-02
BREOT-N48-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	1.53E+02	7.18E-01	NA	NA	NA	NA	1.13E-04	2.44E+02	2.74E-02	1.00E+00	3.06E-02	2.44E+01	2.41E+02	1.87E-02	2.34E+02	1.04E-01
BREOT-S48-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	1.20E+02	5.64E-01	NA	NA	NA	NA	1.13E-04	1.92E+02	2.16E-02	1.00E+00	3.06E-02	1.91E+01	2.41E+02	1.87E-02	2.34E+02	8.19E-02
BREOT-N49-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	2.43E+02	1.14E+00	NA	NA	NA	NA	1.13E-04	3.87E+02	4.35E-02	1.00E+00	3.06E-02	3.86E+01	2.41E+02	1.87E-02	2.34E+02	1.65E-01
BREOT-S49-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	7.54E+01	3.54E-01	NA	NA	NA	NA	1.13E-04	1.20E+02	1.35E-02	1.00E+00	3.06E-02	1.20E+01	2.41E+02	1.87E-02	2.34E+02	5.13E-02
BREOT-S50-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	6.63E+01	3.11E-01	NA	NA	NA	NA	1.13E-04	1.06E+02	1.19E-02	1.00E+00	3.06E-02	1.06E+01	2.41E+02	1.87E-02	2.34E+02	4.52E-02
BREOT-N51-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	2.65E+02	1.24E+00	NA	NA	NA	NA	1.13E-04	4.23E+02	4.75E-02	1.00E+00	3.06E-02	4.22E+01	2.41E+02	1.87E-02	2.34E+02	1.81E-01
BREOT-S51-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	9.35E+01	4.39E-01	NA	NA	NA	NA	1.13E-04	1.49E+02	1.68E-02	1.00E+00	3.06E-02	1.49E+01	2.41E+02	1.87E-02	2.34E+02	6.37E-02
BREOT-N52-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	6.21E+01	2.91E-01	NA	NA	NA	NA	1.13E-04	9.88E+01	1.11E-02	1.00E+00	3.06E-02	9.88E+00	2.41E+02	1.87E-02	2.34E+02	4.23E-02
BREOT-S52-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	4.79E+01	2.25E-01	NA	NA	NA	NA	1.13E-04	7.63E+01	8.58E-03	1.00E+00	3.06E-02	7.62E+00	2.41E+02	1.87E-02	2.34E+02	3.26E-02
BREOT-N53-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	1.34E+02	6.29E-01	NA	NA	NA	NA	1.13E-04	2.14E+02	2.40E-02	1.00E+00	3.06E-02	2.14E+01	2.41E+02	1.87E-02	2.34E+02	9.14E-02
BREOT-S53-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	4.97E+01	2.33E-01	NA	NA	NA	NA	1.13E-04	7.91E+01	8.90E-03	1.00E+00	3.06E-02	7.90E+00	2.41E+02	1.87E-02	2.34E+02	3.38E-02
BREOT-N54-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	1.35E+02	6.35E-01	NA	NA	NA	NA	1.13E-04	2.16E+02	2.43E-02	1.00E+00	3.06E-02	2.15E+01	2.41E+02	1.87E-02	2.34E+02	9.22E-02
BREOT-S54-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	6.07E+01	2.84E-01	NA	NA	NA	NA	1.13E-04	9.66E+01	1.09E-02	1.00E+00	3.06E-02	9.65E+00	2.41E+02	1.87E-02	2.34E+02	4.13E-02
BREOT-N55-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	7.79E+01	3.65E-01	NA	NA	NA	NA	1.13E-04	1.24E+02	1.40E-02	1.00E+00	3.06E-02	1.24E+01	2.41E+02	1.87E-02	2.34E+02	5.31E-02
BREOT-S55-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	6.79E+01	3.19E-01	NA	NA	NA	NA	1.13E-04	1.08E+02	1.22E-02	1.00E+00	3.06E-02	1.08E+01	2.41E+02	1.87E-02	2.34E+02	4.63E-02

TABLE C-2D: LEAD DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **18.41**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Meadow Vole (Small Herbivorous Mammal - Terrestrial)																							
BREOT-N56-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	3.55E+02	1.66E+00	NA	NA	NA	NA	1.13E-04	5.65E+02	6.36E-02	1.00E+00	3.06E-02	5.65E+01	2.41E+02	1.87E-02	2.34E+02	2.42E-01
BREOT-N57-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	1.54E+02	7.22E-01	NA	NA	NA	NA	1.13E-04	2.45E+02	2.76E-02	1.00E+00	3.06E-02	2.45E+01	2.41E+02	1.87E-02	2.34E+02	1.05E-01
BREOT-S57-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	1.15E+02	5.40E-01	NA	NA	NA	NA	1.13E-04	1.83E+02	2.06E-02	1.00E+00	3.06E-02	1.83E+01	2.41E+02	1.87E-02	2.34E+02	7.84E-02
BREOT-N58-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	1.04E+02	4.88E-01	NA	NA	NA	NA	1.13E-04	1.66E+02	1.86E-02	1.00E+00	3.06E-02	1.66E+01	2.41E+02	1.87E-02	2.34E+02	7.08E-02
BREOT-S58-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	8.36E+01	3.92E-01	NA	NA	NA	NA	1.13E-04	1.33E+02	1.50E-02	1.00E+00	3.06E-02	1.33E+01	2.41E+02	1.87E-02	2.34E+02	5.69E-02
BREOT-N59-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	6.29E+01	2.95E-01	NA	NA	NA	NA	1.13E-04	1.00E+02	1.13E-02	1.00E+00	3.06E-02	1.00E+01	2.41E+02	1.87E-02	2.34E+02	4.28E-02
BREOT-N60-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	5.05E+01	2.37E-01	NA	NA	NA	NA	1.13E-04	8.03E+01	9.04E-03	1.00E+00	3.06E-02	8.03E+00	2.41E+02	1.87E-02	2.34E+02	3.44E-02
BREOT-S60-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	3.25E+02	1.53E+00	NA	NA	NA	NA	1.13E-04	5.18E+02	5.83E-02	1.00E+00	3.06E-02	5.18E+01	2.41E+02	1.87E-02	2.34E+02	2.22E-01
BREOT-S61-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	5.17E+01	2.42E-01	NA	NA	NA	NA	1.13E-04	8.23E+01	9.26E-03	1.00E+00	3.06E-02	8.23E+00	2.41E+02	1.87E-02	2.34E+02	3.52E-02
BREOT-N62-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	8.10E+01	3.80E-01	NA	NA	NA	NA	1.13E-04	1.29E+02	1.45E-02	1.00E+00	3.06E-02	1.29E+01	2.41E+02	1.87E-02	2.34E+02	5.52E-02
BREOT-S62-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	6.32E+01	2.96E-01	NA	NA	NA	NA	1.13E-04	1.01E+02	1.13E-02	1.00E+00	3.06E-02	1.01E+01	2.41E+02	1.87E-02	2.34E+02	4.30E-02
BREOT-N63-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	2.14E+02	1.00E+00	NA	NA	NA	NA	1.13E-04	3.40E+02	3.83E-02	1.00E+00	3.06E-02	3.40E+01	2.41E+02	1.87E-02	2.34E+02	1.46E-01
BREOT-S63-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	1.35E+02	6.31E-01	NA	NA	NA	NA	1.13E-04	2.14E+02	2.41E-02	1.00E+00	3.06E-02	2.14E+01	2.41E+02	1.87E-02	2.34E+02	9.16E-02
BREOT-N64-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	8.35E+01	3.92E-01	NA	NA	NA	NA	1.13E-04	1.33E+02	1.50E-02	1.00E+00	3.06E-02	1.33E+01	2.41E+02	1.87E-02	2.34E+02	5.69E-02
BREOT-S64-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	6.11E+01	2.86E-01	NA	NA	NA	NA	1.13E-04	9.72E+01	1.09E-02	1.00E+00	3.06E-02	9.71E+00	2.41E+02	1.87E-02	2.34E+02	4.16E-02
BREOT-N66-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	1.11E+02	5.20E-01	NA	NA	NA	NA	1.13E-04	1.76E+02	1.99E-02	1.00E+00	3.06E-02	1.76E+01	2.41E+02	1.87E-02	2.34E+02	7.55E-02
BREOT-S66-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	5.82E+01	2.73E-01	NA	NA	NA	NA	1.13E-04	9.27E+01	1.04E-02	1.00E+00	3.06E-02	9.26E+00	2.41E+02	1.87E-02	2.34E+02	3.96E-02
BREOT-N67-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	1.17E+03	5.48E+00	NA	NA	NA	NA	1.13E-04	1.86E+03	2.09E-01	1.00E+00	3.06E-02	1.86E+02	2.41E+02	1.87E-02	2.34E+02	7.95E-01
BREOT-S67-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	5.01E+01	2.35E-01	NA	NA	NA	NA	1.13E-04	7.97E+01	8.97E-03	1.00E+00	3.06E-02	7.96E+00	2.41E+02	1.87E-02	2.34E+02	3.41E-02
Outside Tailings																						**Maximum HQ (At Edge of Tailings)**	**1.13E+01**
BREOT-S0+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	1.62E+02	7.60E-01	NA	NA	NA	NA	1.13E-04	2.58E+02	2.90E-02	1.00E+00	3.06E-02	2.58E+01	2.41E+02	1.87E-02	2.34E+02	1.10E-01
BREOT-S1+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	8.91E+01	4.18E-01	NA	NA	NA	NA	1.13E-04	1.42E+02	1.60E-02	1.00E+00	3.06E-02	1.42E+01	2.41E+02	1.87E-02	2.34E+02	6.07E-02
BREOT-S2+95 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	3.67E+01	1.72E-01	NA	NA	NA	NA	1.13E-04	5.85E+01	6.58E-03	1.00E+00	3.06E-02	5.85E+00	2.41E+02	1.87E-02	2.34E+02	2.50E-02
BREOT-S3+6 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	1.04E+02	4.86E-01	NA	NA	NA	NA	1.13E-04	1.65E+02	1.86E-02	1.00E+00	3.06E-02	1.65E+01	2.41E+02	1.87E-02	2.34E+02	7.06E-02
BREOT-S4+10 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	5.80E+01	2.72E-01	NA	NA	NA	NA	1.13E-04	9.23E+01	1.04E-02	1.00E+00	3.06E-02	9.22E+00	2.41E+02	1.87E-02	2.34E+02	3.95E-02
BREOT-S6+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	1.59E+02	7.47E-01	NA	NA	NA	NA	1.13E-04	2.54E+02	2.85E-02	1.00E+00	3.06E-02	2.53E+01	2.41E+02	1.87E-02	2.34E+02	1.08E-01
BREOT-S8+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	1.65E+02	7.72E-01	NA	NA	NA	NA	1.13E-04	2.62E+02	2.95E-02	1.00E+00	3.06E-02	2.62E+01	2.41E+02	1.87E-02	2.34E+02	1.12E-01
BREOT-N10+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	8.27E+01	3.88E-01	NA	NA	NA	NA	1.13E-04	1.32E+02	1.48E-02	1.00E+00	3.06E-02	1.32E+01	2.41E+02	1.87E-02	2.34E+02	5.63E-02
BREOT-N11+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	8.67E+01	4.07E-01	NA	NA	NA	NA	1.13E-04	1.38E+02	1.55E-02	1.00E+00	3.06E-02	1.38E+01	2.41E+02	1.87E-02	2.34E+02	5.90E-02
BREOT-N12+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	1.72E+02	8.05E-01	NA	NA	NA	NA	1.13E-04	2.73E+02	3.07E-02	1.00E+00	3.06E-02	2.73E+01	2.41E+02	1.87E-02	2.34E+02	1.17E-01
BREOT-S12+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	5.47E+03	2.56E+01	NA	NA	NA	NA	1.13E-04	8.70E+03	9.80E-01	1.00E+00	3.06E-02	8.70E+02	2.41E+02	1.87E-02	2.34E+02	3.72E+00
BREOT-S12+60 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	6.86E+02	3.22E+00	NA	NA	NA	NA	1.13E-04	1.09E+03	1.23E-01	1.00E+00	3.06E-02	1.09E+02	2.41E+02	1.87E-02	2.34E+02	4.67E-01
BREOT-N13+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	1.71E+02	8.01E-01	NA	NA	NA	NA	1.13E-04	2.72E+02	3.06E-02	1.00E+00	3.06E-02	2.72E+01	2.41E+02	1.87E-02	2.34E+02	1.16E-01
BREOT-S13+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	1.95E+03	9.15E+00	NA	NA	NA	NA	1.13E-04	3.10E+03	3.49E-01	1.00E+00	3.06E-02	3.10E+02	2.41E+02	1.87E-02	2.34E+02	1.33E+00
BREOT-S13+65 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	6.85E+02	3.21E+00	NA	NA	NA	NA	1.13E-04	1.09E+03	1.23E-01	1.00E+00	3.06E-02	1.09E+02	2.41E+02	1.87E-02	2.34E+02	4.67E-01
BREOT-N14+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	1.84E+02	8.65E-01	NA	NA	NA	NA	1.13E-04	2.94E+02	3.30E-02	1.00E+00	3.06E-02	2.94E+01	2.41E+02	1.87E-02	2.34E+02	1.26E-01
BREOT-S14+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	8.02E+03	3.76E+01	NA	NA	NA	NA	1.13E-04	1.28E+04	1.44E+00	1.00E+00	3.06E-02	1.28E+03	2.41E+02	1.87E-02	2.34E+02	5.46E+00
BREOT-S14+59 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	4.98E+02	2.34E+00	NA	NA	NA	NA	1.13E-04	7.93E+02	8.92E-02	1.00E+00	3.06E-02	7.92E+01	2.41E+02	1.87E-02	2.34E+02	3.39E-01
BREOT-N15+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	2.89E+03	1.36E+01	NA	NA	NA	NA	1.13E-04	4.60E+03	5.18E-01	1.00E+00	3.06E-02	4.60E+02	2.41E+02	1.87E-02	2.34E+02	1.97E+00
BREOT-N15+50 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	1.21E+02	5.67E-01	NA	NA	NA	NA	1.13E-04	1.93E+02	2.17E-02	1.00E+00	3.06E-02	1.92E+01	2.41E+02	1.87E-02	2.34E+02	8.24E-02
BREOT-S16+20 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	1.88E+03	8.80E+00	NA	NA	NA	NA	1.13E-04	2.99E+03	3.36E-01	1.00E+00	3.06E-02	2.99E+02	2.41E+02	1.87E-02	2.34E+02	1.28E+00
BREOT-S16+75 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	2.72E+02	1.27E+00	NA	NA	NA	NA	1.13E-04	4.33E+02	4.87E-02	1.00E+00	3.06E-02	4.32E+01	2.41E+02	1.87E-02	2.34E+02	1.85E-01
BREOT-N17+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	5.13E+03	2.41E+01	NA	NA	NA	NA	1.13E-04	8.16E+03	9.19E-01	1.00E+00	3.06E-02	8.16E+02	2.41E+02	1.87E-02	2.34E+02	3.49E+00
BREOT-S18+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	3.95E+02	1.85E+00	NA	NA	NA	NA	1.13E-04	6.29E+02	7.08E-02	1.00E+00	3.06E-02	6.29E+01	2.41E+02	1.87E-02	2.34E+02	2.69E-01
BREOT-N19+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	5.17E+01	2.42E-01	NA	NA	NA	NA	1.13E-04	8.23E+01	9.26E-03	1.00E+00	3.06E-02	8.22E+00	2.41E+02	1.87E-02	2.34E+02	3.52E-02
BREOT-S19+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	3.13E+01	1.47E-01	NA	NA	NA	NA	1.13E-04	4.99E+01	5.61E-03	1.00E+00	3.06E-02	4.99E+00	2.41E+02	1.87E-02	2.34E+02	2.13E-02
BREOT-S19+85 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	3.96E+02	1.86E+00	NA	NA	NA	NA	1.13E-04	6.31E+02	7.10E-02	1.00E+00	3.06E-02	6.30E+01	2.41E+02	1.87E-02	2.34E+02	2.70E-01
BREOT-N20+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	1.07E+02	5.02E-01	NA	NA	NA	NA	1.13E-04	1.70E+02	1.92E-02	1.00E+00	3.06E-02	1.70E+01	2.41E+02	1.87E-02	2.34E+02	7.29E-02
BREOT-S20+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	3.45E+01	1.62E-01	NA	NA	NA	NA	1.13E-04	5.49E+01	6.18E-03	1.00E+00	3.06E-02	5.49E+00	2.41E+02	1.87E-02	2.34E+02	2.35E-02
BREOT-S20+75 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	6.36E+01	2.98E-01	NA	NA	NA	NA	1.13E-04	1.01E+02	1.14E-02	1.00E+00	3.06E-02	1.01E+01	2.41E+02	1.87E-02	2.34E+02	4.33E-02
BREOT-N21+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	2.21E+03	1.04E+01	NA	NA	NA	NA	1.13E-04	3.52E+03	3.97E-01	1.00E+00	3.06E-02	3.52E+02	2.41E+02	1.87E-02	2.34E+02	1.51E+00
BREOT-S21+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	3.32E+01	1.56E-01	NA	NA	NA	NA	1.13E-04	5.29E+01	5.95E-03	1.00E+00	3.06E-02	5.29E+00	2.41E+02	1.87E-02	2.34E+02	2.26E-02
BREOT-N22+150 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	1.76E+02	8.26E-01	NA	NA	NA	NA	1.13E-04	2.80E+02	3.15E-02	1.00E+00	3.06E-02	2.80E+01	2.41E+02	1.87E-02	2.34E+02	1.20E-01
BREOT-N22+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	1.55E+03	7.27E+00	NA	NA	NA	NA	1.13E-04	2.47E+03	2.78E-01	1.00E+00	3.06E-02	2.47E+02	2.41E+02	1.87E-02	2.34E+02	1.06E+00
BREOT-S22+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	6.72E+02	3.15E+00	NA	NA	NA	NA	1.13E-04	1.07E+03	1.20E-01	1.00E+00	3.06E-02	1.07E+02	2.41E+02	1.87E-02	2.34E+02	4.58E-01
BREOT-N23+115 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	4.13E+01	1.94E-01	NA	NA	NA	NA	1.13E-04	6.58E+01	7.40E-03	1.00E+00	3.06E-02	6.58E+00	2.41E+02	1.87E-02	2.34E+02	2.81E-02
BREOT-N23+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	4.53E+03	2.13E+01	NA	NA	NA	NA	1.13E-04	7.21E+03	8.12E-01	1.00E+00	3.06E-02	7.21E+02	2.41E+02	1.87E-02	2.34E+02	3.09E+00

TABLE C-2D: LEAD DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 18.41

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Meadow Vole (Small Herbivorous Mammal - Terrestrial)																							
BREOT-S23+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	7.91E+02	3.71E+00	NA	NA	NA	NA	1.13E-04	1.26E+03	1.42E-01	1.00E+00	3.06E-02	1.26E+02	2.41E+02	1.87E-02	2.34E+02	5.39E-01
BREOT-S23+37.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	6.78E+01	3.18E-01	NA	NA	NA	NA	1.13E-04	1.08E+02	1.21E-02	1.00E+00	3.06E-02	1.08E+01	2.41E+02	1.87E-02	2.34E+02	4.62E-02
BREOT-N24+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	5.76E+02	2.70E+00	NA	NA	NA	NA	1.13E-04	9.17E+02	1.03E-01	1.00E+00	3.06E-02	9.17E+01	2.41E+02	1.87E-02	2.34E+02	3.92E-01
BREOT-N24+75 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	6.82E+01	3.20E-01	NA	NA	NA	NA	1.13E-04	1.09E+02	1.22E-02	1.00E+00	3.06E-02	1.08E+01	2.41E+02	1.87E-02	2.34E+02	4.64E-02
BREOT-S24+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	5.82E+02	2.73E+00	NA	NA	NA	NA	1.13E-04	9.27E+02	1.04E-01	1.00E+00	3.06E-02	9.26E+01	2.41E+02	1.87E-02	2.34E+02	3.97E-01
BREOT-N25+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	4.25E+01	1.99E-01	NA	NA	NA	NA	1.13E-04	6.77E+01	7.62E-03	1.00E+00	3.06E-02	6.76E+00	2.41E+02	1.87E-02	2.34E+02	2.90E-02
BREOT-S25+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	3.41E+02	1.60E+00	NA	NA	NA	NA	1.13E-04	5.43E+02	6.11E-02	1.00E+00	3.06E-02	5.43E+01	2.41E+02	1.87E-02	2.34E+02	2.32E-01
BREOT-S25+40 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	1.50E+03	7.06E+00	NA	NA	NA	NA	1.13E-04	2.40E+03	2.70E-01	1.00E+00	3.06E-02	2.39E+02	2.41E+02	1.87E-02	2.34E+02	1.02E+00
BREOT-S26+37 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	1.31E+02	6.16E-01	NA	NA	NA	NA	1.13E-04	2.09E+02	2.35E-02	1.00E+00	3.06E-02	2.09E+01	2.41E+02	1.87E-02	2.34E+02	8.95E-02
BREOT-N27+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	7.35E+01	3.45E-01	NA	NA	NA	NA	1.13E-04	1.17E+02	1.32E-02	1.00E+00	3.06E-02	1.17E+01	2.41E+02	1.87E-02	2.34E+02	5.01E-02
BREOT-S27+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	2.49E+02	1.17E+00	NA	NA	NA	NA	1.13E-04	3.96E+02	4.46E-02	1.00E+00	3.06E-02	3.96E+01	2.41E+02	1.87E-02	2.34E+02	1.69E-01
BREOT-N28+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	8.62E+01	4.04E-01	NA	NA	NA	NA	1.13E-04	1.37E+02	1.54E-02	1.00E+00	3.06E-02	1.37E+01	2.41E+02	1.87E-02	2.34E+02	5.87E-02
BREOT-S28+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	4.88E+02	2.29E+00	NA	NA	NA	NA	1.13E-04	7.76E+02	8.74E-02	1.00E+00	3.06E-02	7.76E+01	2.41E+02	1.87E-02	2.34E+02	3.32E-01
BREOT-N29+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	2.33E+02	1.09E+00	NA	NA	NA	NA	1.13E-04	3.71E+02	4.18E-02	1.00E+00	3.06E-02	3.71E+01	2.41E+02	1.87E-02	2.34E+02	1.59E-01
BREOT-S29+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	4.43E+02	2.08E+00	NA	NA	NA	NA	1.13E-04	7.05E+02	7.93E-02	1.00E+00	3.06E-02	7.04E+01	2.41E+02	1.87E-02	2.34E+02	3.01E-01
BREOT-N30+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	3.47E+02	1.63E+00	NA	NA	NA	NA	1.13E-04	5.52E+02	6.21E-02	1.00E+00	3.06E-02	5.52E+01	2.41E+02	1.87E-02	2.34E+02	2.36E-01
BREOT-S30+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	3.26E+02	1.53E+00	NA	NA	NA	NA	1.13E-04	5.18E+02	5.83E-02	1.00E+00	3.06E-02	5.18E+01	2.41E+02	1.87E-02	2.34E+02	2.22E-01
BREOT-N31+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	6.28E+03	2.94E+01	NA	NA	NA	NA	1.13E-04	1.00E+04	1.12E+00	1.00E+00	3.06E-02	9.99E+02	2.41E+02	1.87E-02	2.34E+02	4.28E+00
BREOT-N31+75 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	4.74E+01	2.22E-01	NA	NA	NA	NA	1.13E-04	7.54E+01	8.49E-03	1.00E+00	3.06E-02	7.54E+00	2.41E+02	1.87E-02	2.34E+02	3.23E-02
BREOT-S31+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	1.10E+02	5.16E-01	NA	NA	NA	NA	1.13E-04	1.75E+02	1.97E-02	1.00E+00	3.06E-02	1.75E+01	2.41E+02	1.87E-02	2.34E+02	7.49E-02
BREOT-N32+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	6.83E+01	3.20E-01	NA	NA	NA	NA	1.13E-04	1.09E+02	1.22E-02	1.00E+00	3.06E-02	1.09E+01	2.41E+02	1.87E-02	2.34E+02	4.65E-02
BREOT-S32+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	7.53E+02	3.53E+00	NA	NA	NA	NA	1.13E-04	1.20E+03	1.35E-01	1.00E+00	3.06E-02	1.20E+02	2.41E+02	1.87E-02	2.34E+02	5.13E-01
BREOT-S32+300 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	2.36E+02	1.11E+00	NA	NA	NA	NA	1.13E-04	3.76E+02	4.24E-02	1.00E+00	3.06E-02	3.76E+01	2.41E+02	1.87E-02	2.34E+02	1.61E-01
BREOT-N33+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	4.71E+01	2.21E-01	NA	NA	NA	NA	1.13E-04	7.50E+01	8.44E-03	1.00E+00	3.06E-02	7.50E+00	2.41E+02	1.87E-02	2.34E+02	3.21E-02
BREOT-S33+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	8.66E+01	4.06E-01	NA	NA	NA	NA	1.13E-04	1.38E+02	1.55E-02	1.00E+00	3.06E-02	1.38E+01	2.41E+02	1.87E-02	2.34E+02	5.90E-02
BREOT-N34+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	7.20E+01	3.37E-01	NA	NA	NA	NA	1.13E-04	1.15E+02	1.29E-02	1.00E+00	3.06E-02	1.14E+01	2.41E+02	1.87E-02	2.34E+02	4.90E-02
BREOT-S34+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	2.33E+02	1.09E+00	NA	NA	NA	NA	1.13E-04	3.71E+02	4.17E-02	1.00E+00	3.06E-02	3.71E+01	2.41E+02	1.87E-02	2.34E+02	1.59E-01
BREOT-N35+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	5.31E+01	2.49E-01	NA	NA	NA	NA	1.13E-04	8.46E+01	9.52E-03	1.00E+00	3.06E-02	8.45E+00	2.41E+02	1.87E-02	2.34E+02	3.62E-02
BREOT-S35+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	8.53E+01	4.00E-01	NA	NA	NA	NA	1.13E-04	1.36E+02	1.53E-02	1.00E+00	3.06E-02	1.36E+01	2.41E+02	1.87E-02	2.34E+02	5.81E-02
BREOT-N36+100 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	1.07E+02	5.03E-01	NA	NA	NA	NA	1.13E-04	1.71E+02	1.92E-02	1.00E+00	3.06E-02	1.71E+01	2.41E+02	1.87E-02	2.34E+02	7.30E-02
BREOT-N36+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	1.27E+03	5.94E+00	NA	NA	NA	NA	1.13E-04	2.02E+03	2.27E-01	1.00E+00	3.06E-02	2.02E+02	2.41E+02	1.87E-02	2.34E+02	8.63E-01
BREOT-S36+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	1.41E+02	6.61E-01	NA	NA	NA	NA	1.13E-04	2.24E+02	2.53E-02	1.00E+00	3.06E-02	2.24E+01	2.41E+02	1.87E-02	2.34E+02	9.60E-02
BREOT-N37+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	6.56E+01	3.08E-01	NA	NA	NA	NA	1.13E-04	1.04E+02	1.18E-02	1.00E+00	3.06E-02	1.04E+01	2.41E+02	1.87E-02	2.34E+02	4.47E-02
BREOT-S37+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	7.89E+01	3.70E-01	NA	NA	NA	NA	1.13E-04	1.26E+02	1.41E-02	1.00E+00	3.06E-02	1.26E+01	2.41E+02	1.87E-02	2.34E+02	5.37E-02
BREOT-N38+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	9.47E+01	4.44E-01	NA	NA	NA	NA	1.13E-04	1.51E+02	1.70E-02	1.00E+00	3.06E-02	1.51E+01	2.41E+02	1.87E-02	2.34E+02	6.45E-02
BREOT-S38+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	9.61E+01	4.51E-01	NA	NA	NA	NA	1.13E-04	1.53E+02	1.72E-02	1.00E+00	3.06E-02	1.53E+01	2.41E+02	1.87E-02	2.34E+02	6.55E-02
BREOT-N39+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	9.18E+01	4.30E-01	NA	NA	NA	NA	1.13E-04	1.46E+02	1.64E-02	1.00E+00	3.06E-02	1.46E+01	2.41E+02	1.87E-02	2.34E+02	6.25E-02
BREOT-S39+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	1.04E+02	4.87E-01	NA	NA	NA	NA	1.13E-04	1.65E+02	1.86E-02	1.00E+00	3.06E-02	1.65E+01	2.41E+02	1.87E-02	2.34E+02	7.08E-02
BREOT-N40+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	9.46E+01	4.43E-01	NA	NA	NA	NA	1.13E-04	1.51E+02	1.69E-02	1.00E+00	3.06E-02	1.50E+01	2.41E+02	1.87E-02	2.34E+02	6.44E-02
BREOT-S40+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	8.23E+01	3.86E-01	NA	NA	NA	NA	1.13E-04	1.31E+02	1.47E-02	1.00E+00	3.06E-02	1.31E+01	2.41E+02	1.87E-02	2.34E+02	5.60E-02
BREOT-N41+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	6.24E+01	2.93E-01	NA	NA	NA	NA	1.13E-04	9.94E+01	1.12E-02	1.00E+00	3.06E-02	9.93E+00	2.41E+02	1.87E-02	2.34E+02	4.25E-02
BREOT-S41+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	3.39E+02	1.59E+00	NA	NA	NA	NA	1.13E-04	5.39E+02	6.07E-02	1.00E+00	3.06E-02	5.39E+01	2.41E+02	1.87E-02	2.34E+02	2.31E-01
BREOT-N42+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	2.83E+01	1.33E-01	NA	NA	NA	NA	1.13E-04	4.50E+01	5.06E-03	1.00E+00	3.06E-02	4.50E+00	2.41E+02	1.87E-02	2.34E+02	1.93E-02
BREOT-S42+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	7.62E+01	3.57E-01	NA	NA	NA	NA	1.13E-04	1.21E+02	1.37E-02	1.00E+00	3.06E-02	1.21E+01	2.41E+02	1.87E-02	2.34E+02	5.19E-02
BREOT-N43+12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	1.65E+02	7.72E-01	NA	NA	NA	NA	1.13E-04	2.62E+02	2.95E-02	1.00E+00	3.06E-02	2.62E+01	2.41E+02	1.87E-02	2.34E+02	1.12E-01
BREOT-N43+40 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	7.34E+01	3.44E-01	NA	NA	NA	NA	1.13E-04	1.17E+02	1.32E-02	1.00E+00	3.06E-02	1.17E+01	2.41E+02	1.87E-02	2.34E+02	5.00E-02
BREOT-S43+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	4.63E+01	2.17E-01	NA	NA	NA	NA	1.13E-04	7.37E+01	8.29E-03	1.00E+00	3.06E-02	7.36E+00	2.41E+02	1.87E-02	2.34E+02	3.15E-02
BREOT-N44+55 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	9.68E+01	4.54E-01	NA	NA	NA	NA	1.13E-04	1.54E+02	1.73E-02	1.00E+00	3.06E-02	1.54E+01	2.41E+02	1.87E-02	2.34E+02	6.59E-02
BREOT-S44+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	4.51E+01	2.11E-01	NA	NA	NA	NA	1.13E-04	7.17E+01	8.07E-03	1.00E+00	3.06E-02	7.17E+00	2.41E+02	1.87E-02	2.34E+02	3.07E-02
BREOT-N45+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	6.94E+01	3.25E-01	NA	NA	NA	NA	1.13E-04	1.10E+02	1.24E-02	1.00E+00	3.06E-02	1.10E+01	2.41E+02	1.87E-02	2.34E+02	4.72E-02
BREOT-S45+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	3.44E+01	1.61E-01	NA	NA	NA	NA	1.13E-04	5.48E+01	6.16E-03	1.00E+00	3.06E-02	5.47E+00	2.41E+02	1.87E-02	2.34E+02	2.34E-02
BREOT-N46+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	9.93E+01	4.65E-01	NA	NA	NA	NA	1.13E-04	1.58E+02	1.78E-02	1.00E+00	3.06E-02	1.58E+01	2.41E+02	1.87E-02	2.34E+02	6.76E-02
BREOT-S46+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	3.17E+01	1.49E-01	NA	NA	NA	NA	1.13E-04	5.05E+01	5.68E-03	1.00E+00	3.06E-02	5.05E+00	2.41E+02	1.87E-02	2.34E+02	2.16E-02
BREOT-N47+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	8.09E+01	3.79E-01	NA	NA	NA	NA	1.13E-04	1.29E+02	1.45E-02	1.00E+00	3.06E-02	1.29E+01	2.41E+02	1.87E-02	2.34E+02	5.51E-02
BREOT-S47+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	2.31E+01	1.08E-01	NA	NA	NA	NA	1.13E-04	3.67E+01	4.13E-03	1.00E+00	3.06E-02	3.67E+00	2.41E+02	1.87E-02	2.34E+02	1.57E-02
BREOT-N48+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	6.89E+01	3.23E-01	NA	NA	NA	NA	1.13E-04	1.10E+02	1.23E-02	1.00E+00	3.06E-02	1.10E+01	2.41E+02	1.87E-02	2.34E+02	4.69E-02
BREOT-S48+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	8.71E+01	4.08E-01	NA	NA	NA	NA	1.13E-04	1.39E+02	1.56E-02	1.00E+00	3.06E-02	1.39E+01	2.41E+02	1.87E-02	2.34E+02	5.93E-02

TABLE C-2D: LEAD DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **18.41**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Meadow Vole (Small Herbivorous Mammal - Terrestrial)																							
BREOT-N49+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	2.56E+02	1.20E+00	NA	NA	NA	NA	1.13E-04	4.08E+02	4.59E-02	1.00E+00	3.06E-02	4.08E+01	2.41E+02	1.87E-02	2.34E+02	1.74E-01
BREOT-S49+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	8.68E+01	4.07E-01	NA	NA	NA	NA	1.13E-04	1.38E+02	1.56E-02	1.00E+00	3.06E-02	1.38E+01	2.41E+02	1.87E-02	2.34E+02	5.91E-02
BREOT-N51+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	5.94E+01	2.79E-01	NA	NA	NA	NA	1.13E-04	9.46E+01	1.06E-02	1.00E+00	3.06E-02	9.45E+00	2.41E+02	1.87E-02	2.34E+02	4.05E-02
BREOT-S51+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	1.87E+01	8.76E-02	NA	NA	NA	NA	1.13E-04	2.97E+01	3.35E-03	1.00E+00	3.06E-02	2.97E+00	2.41E+02	1.87E-02	2.34E+02	1.27E-02
BREOT-N52+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	1.35E+02	6.32E-01	NA	NA	NA	NA	1.13E-04	2.15E+02	2.41E-02	1.00E+00	3.06E-02	2.14E+01	2.41E+02	1.87E-02	2.34E+02	9.18E-02
BREOT-S52+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	3.89E+01	1.82E-01	NA	NA	NA	NA	1.13E-04	6.19E+01	6.97E-03	1.00E+00	3.06E-02	6.19E+00	2.41E+02	1.87E-02	2.34E+02	2.65E-02
BREOT-N53+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	5.12E+01	2.40E-01	NA	NA	NA	NA	1.13E-04	8.15E+01	9.17E-03	1.00E+00	3.06E-02	8.15E+00	2.41E+02	1.87E-02	2.34E+02	3.49E-02
BREOT-S53+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	7.10E+01	3.33E-01	NA	NA	NA	NA	1.13E-04	1.13E+02	1.27E-02	1.00E+00	3.06E-02	1.13E+01	2.41E+02	1.87E-02	2.34E+02	4.84E-02
BREOT-S54+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	4.05E+01	1.90E-01	NA	NA	NA	NA	1.13E-04	6.44E+01	7.25E-03	1.00E+00	3.06E-02	6.44E+00	2.41E+02	1.87E-02	2.34E+02	2.76E-02
BREOT-N55+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	5.04E+01	2.36E-01	NA	NA	NA	NA	1.13E-04	8.03E+01	9.03E-03	1.00E+00	3.06E-02	8.02E+00	2.41E+02	1.87E-02	2.34E+02	3.43E-02
BREOT-S55+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	4.36E+01	2.05E-01	NA	NA	NA	NA	1.13E-04	6.95E+01	7.82E-03	1.00E+00	3.06E-02	6.94E+00	2.41E+02	1.87E-02	2.34E+02	2.97E-02
BREOT-N56+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	6.95E+01	3.26E-01	NA	NA	NA	NA	1.13E-04	1.11E+02	1.24E-02	1.00E+00	3.06E-02	1.10E+01	2.41E+02	1.87E-02	2.34E+02	4.73E-02
BREOT-S56+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	5.71E+01	2.68E-01	NA	NA	NA	NA	1.13E-04	9.09E+01	1.02E-02	1.00E+00	3.06E-02	9.08E+00	2.41E+02	1.87E-02	2.34E+02	3.89E-02
BREOT-N57+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	6.15E+01	2.89E-01	NA	NA	NA	NA	1.13E-04	9.80E+01	1.10E-02	1.00E+00	3.06E-02	9.79E+00	2.41E+02	1.87E-02	2.34E+02	4.19E-02
BREOT-S57+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	6.11E+01	2.86E-01	NA	NA	NA	NA	1.13E-04	9.72E+01	1.09E-02	1.00E+00	3.06E-02	9.71E+00	2.41E+02	1.87E-02	2.34E+02	4.16E-02
BREOT-N58+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	5.83E+01	2.73E-01	NA	NA	NA	NA	1.13E-04	9.28E+01	1.04E-02	1.00E+00	3.06E-02	9.28E+00	2.41E+02	1.87E-02	2.34E+02	3.97E-02
BREOT-S58+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	7.87E+01	3.69E-01	NA	NA	NA	NA	1.13E-04	1.25E+02	1.41E-02	1.00E+00	3.06E-02	1.25E+01	2.41E+02	1.87E-02	2.34E+02	5.36E-02
BREOT-N59+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	2.69E+02	1.26E+00	NA	NA	NA	NA	1.13E-04	4.28E+02	4.81E-02	1.00E+00	3.06E-02	4.28E+01	2.41E+02	1.87E-02	2.34E+02	1.83E-01
BREOT-N60+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	5.76E+01	2.70E-01	NA	NA	NA	NA	1.13E-04	9.16E+01	1.03E-02	1.00E+00	3.06E-02	9.16E+00	2.41E+02	1.87E-02	2.34E+02	3.92E-02
BREOT-S60+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	4.84E+01	2.27E-01	NA	NA	NA	NA	1.13E-04	7.70E+01	8.67E-03	1.00E+00	3.06E-02	7.70E+00	2.41E+02	1.87E-02	2.34E+02	3.29E-02
BREOT-S61+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	3.83E+01	1.79E-01	NA	NA	NA	NA	1.13E-04	6.09E+01	6.86E-03	1.00E+00	3.06E-02	6.09E+00	2.41E+02	1.87E-02	2.34E+02	2.61E-02
BREOT-N62+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	9.86E+01	4.62E-01	NA	NA	NA	NA	1.13E-04	1.57E+02	1.77E-02	1.00E+00	3.06E-02	1.57E+01	2.41E+02	1.87E-02	2.34E+02	6.72E-02
BREOT-N63+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	3.44E+02	1.61E+00	NA	NA	NA	NA	1.13E-04	5.48E+02	6.16E-02	1.00E+00	3.06E-02	5.47E+01	2.41E+02	1.87E-02	2.34E+02	2.34E-01
BREOT-S63+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	2.21E+01	1.04E-01	NA	NA	NA	NA	1.13E-04	3.52E+01	3.96E-03	1.00E+00	3.06E-02	3.52E+00	2.41E+02	1.87E-02	2.34E+02	1.51E-02
BREOT-N64+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	8.05E+01	3.77E-01	NA	NA	NA	NA	1.13E-04	1.28E+02	1.44E-02	1.00E+00	3.06E-02	1.28E+01	2.41E+02	1.87E-02	2.34E+02	5.48E-02
BREOT-S64+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	5.51E+01	2.58E-01	NA	NA	NA	NA	1.13E-04	8.77E+01	9.87E-03	1.00E+00	3.06E-02	8.76E+00	2.41E+02	1.87E-02	2.34E+02	3.75E-02
BREOT-S65+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	4.60E+01	2.16E-01	NA	NA	NA	NA	1.13E-04	7.33E+01	8.25E-03	1.00E+00	3.06E-02	7.32E+00	2.41E+02	1.87E-02	2.34E+02	3.13E-02
BREOT-N66+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	6.33E+01	2.97E-01	NA	NA	NA	NA	1.13E-04	1.01E+02	1.13E-02	1.00E+00	3.06E-02	1.01E+01	2.41E+02	1.87E-02	2.34E+02	4.31E-02
BREOT-S66+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	4.16E+01	1.95E-01	NA	NA	NA	NA	1.13E-04	6.63E+01	7.46E-03	1.00E+00	3.06E-02	6.63E+00	2.41E+02	1.87E-02	2.34E+02	2.84E-02
BREOT-N67+125 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	2.66E+02	1.25E+00	NA	NA	NA	NA	1.13E-04	4.24E+02	4.77E-02	1.00E+00	3.06E-02	4.24E+01	2.41E+02	1.87E-02	2.34E+02	1.81E-01
BREOT-S67+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	5.38E+01	2.52E-01	NA	NA	NA	NA	1.13E-04	8.56E+01	9.64E-03	1.00E+00	3.06E-02	8.56E+00	2.41E+02	1.87E-02	2.34E+02	3.66E-02
BREOT-N67+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	9.68E+02	4.54E+00	NA	NA	NA	NA	1.13E-04	1.54E+03	1.73E-01	1.00E+00	3.06E-02	1.54E+02	2.41E+02	1.87E-02	2.34E+02	6.59E-01
																						Maximum HQ (Outside Tailings)	**5.46E+00**
White-Tailed Deer (Large Herbivorous Mammal - Terrestrial)																							
Reference Sites																							
ACBG-1 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	4.35E-02	1.00E+00	1.44E+00	NA	NA	NA	NA	2.86E-02	2.31E+01	6.61E-01	1.03E-01	1.35E+02	1.60E-03	2.41E+02	1.87E-02	1.41E+02	1.13E-05
ACBG-2 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	4.35E-02	1.66E+00	2.38E+00	NA	NA	NA	NA	2.86E-02	3.83E+01	1.10E+00	1.03E-01	1.35E+02	2.65E-03	2.41E+02	1.87E-02	1.41E+02	1.88E-05
UBRBG-202 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	4.35E-02	2.36E+00	3.38E+00	NA	NA	NA	NA	2.86E-02	5.44E+01	1.56E+00	1.03E-01	1.35E+02	3.77E-03	2.41E+02	1.87E-02	1.41E+02	2.67E-05
UBRBG-204 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	4.35E-02	2.31E+00	3.31E+00	NA	NA	NA	NA	2.86E-02	5.32E+01	1.52E+00	1.03E-01	1.35E+02	3.69E-03	2.41E+02	1.87E-02	1.41E+02	2.61E-05
Inside Tailings																						**Minimum HQ (Reference Sites)**	**1.13E-05**
BREOT-S6-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	9.74E+02	1.39E+03	NA	NA	NA	NA	2.86E-02	1.55E+03	4.44E+01	1.03E-01	1.35E+02	1.10E+00	2.41E+02	1.87E-02	1.41E+02	7.77E-03
BREOT-S2-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	1.22E+03	1.75E+03	NA	NA	NA	NA	2.86E-02	1.94E+03	5.57E+01	1.03E-01	1.35E+02	1.38E+00	2.41E+02	1.87E-02	1.41E+02	9.75E-03
BREOT-S0-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	5.58E+02	7.99E+02	NA	NA	NA	NA	2.86E-02	8.89E+02	2.54E+01	1.03E-01	1.35E+02	6.29E-01	2.41E+02	1.87E-02	1.41E+02	4.46E-03
BREOT-S1-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	5.08E+02	7.28E+02	NA	NA	NA	NA	2.86E-02	8.09E+02	2.32E+01	1.03E-01	1.35E+02	5.73E-01	2.41E+02	1.87E-02	1.41E+02	4.06E-03
BREOT-S7-25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	1.07E+02	1.54E+02	NA	NA	NA	NA	2.86E-02	1.71E+02	4.89E+00	1.03E-01	1.35E+02	1.21E-01	2.41E+02	1.87E-02	1.41E+02	8.56E-04
BREOT-S8-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	4.07E+02	5.83E+02	NA	NA	NA	NA	2.86E-02	6.49E+02	1.86E+01	1.03E-01	1.35E+02	4.59E-01	2.41E+02	1.87E-02	1.41E+02	3.25E-03
BREOT-S9-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	4.26E+02	6.10E+02	NA	NA	NA	NA	2.86E-02	6.79E+02	1.94E+01	1.03E-01	1.35E+02	4.81E-01	2.41E+02	1.87E-02	1.41E+02	3.40E-03
BREOT-N10-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	6.07E+03	8.69E+03	NA	NA	NA	NA	2.86E-02	9.66E+03	2.77E+02	1.03E-01	1.35E+02	6.84E+00	2.41E+02	1.87E-02	1.41E+02	4.84E-02
BREOT-N11-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	1.69E+03	2.42E+03	NA	NA	NA	NA	2.86E-02	2.69E+03	7.70E+01	1.03E-01	1.35E+02	1.90E+00	2.41E+02	1.87E-02	1.41E+02	1.35E-02
BREOT-N11-125 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	1.40E+03	2.00E+03	NA	NA	NA	NA	2.86E-02	2.23E+03	6.37E+01	1.03E-01	1.35E+02	1.58E+00	2.41E+02	1.87E-02	1.41E+02	1.12E-02
BREOT-S11-12 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	4.10E+03	5.86E+03	NA	NA	NA	NA	2.86E-02	6.52E+03	1.87E+02	1.03E-01	1.35E+02	4.62E+00	2.41E+02	1.87E-02	1.41E+02	3.27E-02
BREOT-S11+63 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	1.29E+03	1.85E+03	NA	NA	NA	NA	2.86E-02	2.05E+03	5.87E+01	1.03E-01	1.35E+02	1.45E+00	2.41E+02	1.87E-02	1.41E+02	1.03E-02
UBDT-TP-6 (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	9.77E+03	1.40E+04	NA	NA	NA	NA	2.86E-02	1.56E+04	4.45E+02	1.03E-01	1.35E+02	1.10E+01	2.41E+02	1.87E-02	1.41E+02	7.80E-02
UBDT-TP-6 (2-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	7.46E+03	1.07E+04	NA	NA	NA	NA	2.86E-02	1.19E+04	3.40E+02	1.03E-01	1.35E+02	8.41E+00	2.41E+02	1.87E-02	1.41E+02	5.95E-02
UBDT-TP-6 (12-24")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	4.17E+03	5.97E+03	NA	NA	NA	NA	2.86E-02	6.64E+03	1.90E+02	1.03E-01	1.35E+02	4.70E+00	2.41E+02	1.87E-02	1.41E+02	3.33E-02
UBDT-TP-6 (24-36")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	3.35E+02	4.80E+02	NA	NA	NA	NA	2.86E-02	5.33E+02	1.53E+01	1.03E-01	1.35E+02	3.78E-01	2.41E+02	1.87E-02	1.41E+02	2.67E-03
UBDT-TP-6 (36-48")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	7.56E+02	1.08E+03	NA	NA	NA	NA	2.86E-02	1.20E+03	3.44E+01	1.03E-01	1.35E+02	8.52E-01	2.41E+02	1.87E-02	1.41E+02	6.03E-03
UBDT-TP-6 (48-60")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	3.44E+02	4.92E+02	NA	NA	NA	NA	2.86E-02	5.47E+02	1.57E+01	1.03E-01	1.35E+02	3.87E-01	2.41E+02	1.87E-02	1.41E+02	2.74E-03

TABLE C-2D: LEAD DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 18.41

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
White-Tailed Deer (Large Herbivorous Mammal - Terrestrial)																							
BREOT-N12-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	9.56E+02	1.37E+03	NA	NA	NA	NA	2.86E-02	1.52E+03	4.36E+01	1.03E-01	1.35E+02	1.08E+00	2.41E+02	1.87E-02	1.41E+02	7.63E-03
BREOT-S12-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	2.12E+03	3.03E+03	NA	NA	NA	NA	2.86E-02	3.37E+03	9.64E+01	1.03E-01	1.35E+02	2.38E+00	2.41E+02	1.87E-02	1.41E+02	1.69E-02
BREOT-S13-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	3.16E+03	4.52E+03	NA	NA	NA	NA	2.86E-02	5.02E+03	1.44E+02	1.03E-01	1.35E+02	3.56E+00	2.41E+02	1.87E-02	1.41E+02	2.52E-02
BREOT-S14-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	8.75E+02	1.25E+03	NA	NA	NA	NA	2.86E-02	1.39E+03	3.99E+01	1.03E-01	1.35E+02	9.86E-01	2.41E+02	1.87E-02	1.41E+02	6.98E-03
BREOT-N15-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	1.79E+03	2.56E+03	NA	NA	NA	NA	2.86E-02	2.84E+03	8.14E+01	1.03E-01	1.35E+02	2.01E+00	2.41E+02	1.87E-02	1.41E+02	1.43E-02
BREOT-S15-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	1.62E+03	2.32E+03	NA	NA	NA	NA	2.86E-02	2.58E+03	7.38E+01	1.03E-01	1.35E+02	1.83E+00	2.41E+02	1.87E-02	1.41E+02	1.29E-02
BREOT-N16-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	1.70E+03	2.43E+03	NA	NA	NA	NA	2.86E-02	2.70E+03	7.74E+01	1.03E-01	1.35E+02	1.92E+00	2.41E+02	1.87E-02	1.41E+02	1.36E-02
BREOT-N16-25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	2.07E+02	2.96E+02	NA	NA	NA	NA	2.86E-02	3.29E+02	9.42E+00	1.03E-01	1.35E+02	2.33E-01	2.41E+02	1.87E-02	1.41E+02	1.65E-03
BREOT-S16-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	1.20E+03	1.72E+03	NA	NA	NA	NA	2.86E-02	1.92E+03	5.49E+01	1.03E-01	1.35E+02	1.36E+00	2.41E+02	1.87E-02	1.41E+02	9.61E-03
BREOT-N17-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	1.46E+03	2.10E+03	NA	NA	NA	NA	2.86E-02	2.33E+03	6.67E+01	1.03E-01	1.35E+02	1.65E+00	2.41E+02	1.87E-02	1.41E+02	1.17E-02
BREOT-S17-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	4.42E+02	6.33E+02	NA	NA	NA	NA	2.86E-02	7.03E+02	2.01E+01	1.03E-01	1.35E+02	4.98E-01	2.41E+02	1.87E-02	1.41E+02	3.53E-03
BREOT-S17-25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	3.43E+02	4.91E+02	NA	NA	NA	NA	2.86E-02	5.46E+02	1.56E+01	1.03E-01	1.35E+02	3.87E-01	2.41E+02	1.87E-02	1.41E+02	2.74E-03
UBDT-TP-4 (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	8.15E+02	1.17E+03	NA	NA	NA	NA	2.86E-02	1.30E+03	3.72E+01	1.03E-01	1.35E+02	9.19E-01	2.41E+02	1.87E-02	1.41E+02	6.51E-03
UBDT-TP-4 (2-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	7.68E+02	1.10E+03	NA	NA	NA	NA	2.86E-02	1.22E+03	3.50E+01	1.03E-01	1.35E+02	8.66E-01	2.41E+02	1.87E-02	1.41E+02	6.13E-03
UBDT-TP-4 (12-24")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	5.19E+02	7.43E+02	NA	NA	NA	NA	2.86E-02	8.26E+02	2.37E+01	1.03E-01	1.35E+02	5.85E-01	2.41E+02	1.87E-02	1.41E+02	4.14E-03
UBDT-TP-4 (24-36")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	4.21E+02	6.03E+02	NA	NA	NA	NA	2.86E-02	6.71E+02	1.92E+01	1.03E-01	1.35E+02	4.75E-01	2.41E+02	1.87E-02	1.41E+02	3.36E-03
BREOT-N18-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	1.27E+03	1.81E+03	NA	NA	NA	NA	2.86E-02	2.02E+03	5.77E+01	1.03E-01	1.35E+02	1.43E+00	2.41E+02	1.87E-02	1.41E+02	1.01E-02
BREOT-N18-25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	1.13E+02	1.62E+02	NA	NA	NA	NA	2.86E-02	1.80E+02	5.16E+00	1.03E-01	1.35E+02	1.28E-01	2.41E+02	1.87E-02	1.41E+02	9.04E-04
BREOT-S18-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	5.17E+02	7.40E+02	NA	NA	NA	NA	2.86E-02	8.22E+02	2.35E+01	1.03E-01	1.35E+02	5.82E-01	2.41E+02	1.87E-02	1.41E+02	4.12E-03
BREOT-N19-10 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	1.18E+03	1.69E+03	NA	NA	NA	NA	2.86E-02	1.88E+03	5.39E+01	1.03E-01	1.35E+02	1.33E+00	2.41E+02	1.87E-02	1.41E+02	9.43E-03
BREOT-S19-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	6.37E+02	9.12E+02	NA	NA	NA	NA	2.86E-02	1.01E+03	2.90E+01	1.03E-01	1.35E+02	7.18E-01	2.41E+02	1.87E-02	1.41E+02	5.09E-03
UBDT-TP-5 (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	6.05E+02	8.65E+02	NA	NA	NA	NA	2.86E-02	9.62E+02	2.76E+01	1.03E-01	1.35E+02	6.81E-01	2.41E+02	1.87E-02	1.41E+02	4.82E-03
UBDT-TP-5 (2-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	6.43E+02	9.20E+02	NA	NA	NA	NA	2.86E-02	1.02E+03	2.93E+01	1.03E-01	1.35E+02	7.24E-01	2.41E+02	1.87E-02	1.41E+02	5.13E-03
UBDT-TP-5 (12-24")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	6.55E+02	9.37E+02	NA	NA	NA	NA	2.86E-02	1.04E+03	2.98E+01	1.03E-01	1.35E+02	7.38E-01	2.41E+02	1.87E-02	1.41E+02	5.22E-03
BREOT-N20-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	7.32E+02	1.05E+03	NA	NA	NA	NA	2.86E-02	1.17E+03	3.34E+01	1.03E-01	1.35E+02	8.25E-01	2.41E+02	1.87E-02	1.41E+02	5.84E-03
UBDT-TP-3 (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	8.44E+02	1.21E+03	NA	NA	NA	NA	2.86E-02	1.34E+03	3.85E+01	1.03E-01	1.35E+02	9.52E-01	2.41E+02	1.87E-02	1.41E+02	6.74E-03
UBDT-TP-3 (2-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	1.14E+03	1.63E+03	NA	NA	NA	NA	2.86E-02	1.82E+03	5.20E+01	1.03E-01	1.35E+02	1.29E+00	2.41E+02	1.87E-02	1.41E+02	9.10E-03
UBDT-TP-3 (12-24")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	7.84E+02	1.12E+03	NA	NA	NA	NA	2.86E-02	1.25E+03	3.57E+01	1.03E-01	1.35E+02	8.83E-01	2.41E+02	1.87E-02	1.41E+02	6.26E-03
UBDT-TP-3 (24-36")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	9.90E+02	1.42E+03	NA	NA	NA	NA	2.86E-02	1.58E+03	4.51E+01	1.03E-01	1.35E+02	1.12E+00	2.41E+02	1.87E-02	1.41E+02	7.90E-03
UBDT-TP-3 (36-48")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	1.10E+03	1.57E+03	NA	NA	NA	NA	2.86E-02	1.74E+03	5.00E+01	1.03E-01	1.35E+02	1.24E+00	2.41E+02	1.87E-02	1.41E+02	8.75E-03
UBDT-TP-3 (48-60")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	2.24E+02	3.21E+02	NA	NA	NA	NA	2.86E-02	3.57E+02	1.02E+01	1.03E-01	1.35E+02	2.53E-01	2.41E+02	1.87E-02	1.41E+02	1.79E-03
BREOT-N21-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	7.21E+02	1.03E+03	NA	NA	NA	NA	2.86E-02	1.15E+03	3.29E+01	1.03E-01	1.35E+02	8.12E-01	2.41E+02	1.87E-02	1.41E+02	5.75E-03
BREOT-N22-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	9.28E+02	1.33E+03	NA	NA	NA	NA	2.86E-02	1.48E+03	4.23E+01	1.03E-01	1.35E+02	1.05E+00	2.41E+02	1.87E-02	1.41E+02	7.41E-03
BREOT-N23-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	7.75E+02	1.11E+03	NA	NA	NA	NA	2.86E-02	1.23E+03	3.53E+01	1.03E-01	1.35E+02	8.74E-01	2.41E+02	1.87E-02	1.41E+02	6.19E-03
BREOT-S23-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	1.08E+03	1.55E+03	NA	NA	NA	NA	2.86E-02	1.72E+03	4.93E+01	1.03E-01	1.35E+02	1.22E+00	2.41E+02	1.87E-02	1.41E+02	8.64E-03
UBDT-TP-2 (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	7.45E+02	1.07E+03	NA	NA	NA	NA	2.86E-02	1.19E+03	3.40E+01	1.03E-01	1.35E+02	8.40E-01	2.41E+02	1.87E-02	1.41E+02	5.95E-03
UBDT-TP-2 (2-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	5.50E+02	7.87E+02	NA	NA	NA	NA	2.86E-02	8.75E+02	2.51E+01	1.03E-01	1.35E+02	6.20E-01	2.41E+02	1.87E-02	1.41E+02	4.39E-03
UBDT-TP-2 (12-24")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	7.89E+02	1.13E+03	NA	NA	NA	NA	2.86E-02	1.26E+03	3.60E+01	1.03E-01	1.35E+02	8.89E-01	2.41E+02	1.87E-02	1.41E+02	6.30E-03
UBDT-TP-2 (24-36")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	4.69E+02	6.72E+02	NA	NA	NA	NA	2.86E-02	7.47E+02	2.14E+01	1.03E-01	1.35E+02	5.29E-01	2.41E+02	1.87E-02	1.41E+02	3.74E-03
UBDT-TP-2 (36-48")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	7.70E+02	1.10E+03	NA	NA	NA	NA	2.86E-02	1.23E+03	3.51E+01	1.03E-01	1.35E+02	8.68E-01	2.41E+02	1.87E-02	1.41E+02	6.15E-03
BREOT-S24-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	1.12E+03	1.60E+03	NA	NA	NA	NA	2.86E-02	1.78E+03	5.09E+01	1.03E-01	1.35E+02	1.26E+00	2.41E+02	1.87E-02	1.41E+02	8.92E-03
BREOT-N25-50 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	5.53E+03	7.91E+03	NA	NA	NA	NA	2.86E-02	8.80E+03	2.52E+02	1.03E-01	1.35E+02	6.23E+00	2.41E+02	1.87E-02	1.41E+02	4.41E-02
BREOT-N25-95 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	8.62E+02	1.23E+03	NA	NA	NA	NA	2.86E-02	1.37E+03	3.93E+01	1.03E-01	1.35E+02	9.72E-01	2.41E+02	1.87E-02	1.41E+02	6.88E-03
BREOT-S25-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	9.87E+02	1.41E+03	NA	NA	NA	NA	2.86E-02	1.57E+03	4.50E+01	1.03E-01	1.35E+02	1.11E+00	2.41E+02	1.87E-02	1.41E+02	7.87E-03
BREOT-S25-40 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	1.26E+03	1.80E+03	NA	NA	NA	NA	2.86E-02	2.00E+03	5.73E+01	1.03E-01	1.35E+02	1.42E+00	2.41E+02	1.87E-02	1.41E+02	1.00E-02
BREOT-N26A-25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	4.73E+01	6.78E+01	NA	NA	NA	NA	2.86E-02	7.54E+01	2.16E+00	1.03E-01	1.35E+02	5.34E-02	2.41E+02	1.87E-02	1.41E+02	3.78E-04
BREOT-N26B-25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	1.22E+03	1.74E+03	NA	NA	NA	NA	2.86E-02	1.94E+03	5.55E+01	1.03E-01	1.35E+02	1.37E+00	2.41E+02	1.87E-02	1.41E+02	9.72E-03
BREOT-N26-50 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	3.99E+03	5.72E+03	NA	NA	NA	NA	2.86E-02	6.36E+03	1.82E+02	1.03E-01	1.35E+02	4.50E+00	2.41E+02	1.87E-02	1.41E+02	3.19E-02
BREOT-N26-75 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	2.64E+03	3.78E+03	NA	NA	NA	NA	2.86E-02	4.21E+03	1.20E+02	1.03E-01	1.35E+02	2.98E+00	2.41E+02	1.87E-02	1.41E+02	2.11E-02
BREOT-S26-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	7.20E+02	1.03E+03	NA	NA	NA	NA	2.86E-02	1.15E+03	3.28E+01	1.03E-01	1.35E+02	8.12E-01	2.41E+02	1.87E-02	1.41E+02	5.75E-03
BREOT-S26-40 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	8.93E+02	1.28E+03	NA	NA	NA	NA	2.86E-02	1.42E+03	4.07E+01	1.03E-01	1.35E+02	1.01E+00	2.41E+02	1.87E-02	1.41E+02	7.13E-03
BREOT-N27-30 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	5.53E+03	7.92E+03	NA	NA	NA	NA	2.86E-02	8.80E+03	2.52E+02	1.03E-01	1.35E+02	6.23E+00	2.41E+02	1.87E-02	1.41E+02	4.41E-02
BREOT-N27-75 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	6.41E+03	9.18E+03	NA	NA	NA	NA	2.86E-02	1.02E+04	2.92E+02	1.03E-01	1.35E+02	7.22E+00	2.41E+02	1.87E-02	1.41E+02	5.12E-02
BREOT-S27-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	1.51E+03	2.16E+03	NA	NA	NA	NA	2.86E-02	2.40E+03	6.86E+01	1.03E-01	1.35E+02	1.70E+00	2.41E+02	1.87E-02	1.41E+02	1.20E-02
BREOT-N28-110 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	1.48E+03	2.12E+03	NA	NA	NA	NA	2.86E-02	2.35E+03	6.74E+01	1.03E-01	1.35E+02	1.67E+00	2.41E+02	1.87E-02	1.41E+02	1.18E-02
BREOT-N28-55 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	1.37E+04	1.96E+04	NA	NA	NA	NA	2.86E-02	2.18E+04	6.23E+02	1.03E-01	1.35E+02	1.54E+01	2.41E+02	1.87E-02	1.41E+02	1.09E-01
BREOT-S28-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	6.77E+02	9.69E+02	NA	NA	NA	NA	2.86E-02	1.08E+03	3.08E+01	1.03E-01	1.35E+02	7.63E-01	2.41E+02	1.87E-02	1.41E+02	5.40E-03

TABLE C-2D: LEAD DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 18.41

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
White-Tailed Deer (Large Herbivorous Mammal - Terrestrial)																							
UBDT-TP-1 (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	4.81E+03	6.88E+03	NA	NA	NA	NA	2.86E-02	7.65E+03	2.19E+02	1.03E-01	1.35E+02	5.42E+00	2.41E+02	1.87E-02	1.41E+02	3.84E-02
UBDT-TP-1 (2-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	6.19E+03	8.86E+03	NA	NA	NA	NA	2.86E-02	9.85E+03	2.82E+02	1.03E-01	1.35E+02	6.98E+00	2.41E+02	1.87E-02	1.41E+02	4.94E-02
UBDT-TP-1 (12-24")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	5.78E+03	8.28E+03	NA	NA	NA	NA	2.86E-02	9.20E+03	2.63E+02	1.03E-01	1.35E+02	6.52E+00	2.41E+02	1.87E-02	1.41E+02	4.61E-02
UBDT-TP-1 (24-36")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	1.80E+03	2.58E+03	NA	NA	NA	NA	2.86E-02	2.86E+03	8.20E+01	1.03E-01	1.35E+02	2.03E+00	2.41E+02	1.87E-02	1.41E+02	1.44E-02
UBDT-TP-1 (36-48")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	1.10E+02	1.57E+02	NA	NA	NA	NA	2.86E-02	1.74E+02	4.99E+00	1.03E-01	1.35E+02	1.24E-01	2.41E+02	1.87E-02	1.41E+02	8.75E-04
UBDT-TP-1 (48-60")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	1.31E+02	1.87E+02	NA	NA	NA	NA	2.86E-02	2.08E+02	5.97E+00	1.03E-01	1.35E+02	1.48E-01	2.41E+02	1.87E-02	1.41E+02	1.04E-03
BREOT-N29-30 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	7.12E+03	1.02E+04	NA	NA	NA	NA	2.86E-02	1.13E+04	3.24E+02	1.03E-01	1.35E+02	8.02E+00	2.41E+02	1.87E-02	1.41E+02	5.68E-02
BREOT-S29-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	8.31E+02	1.19E+03	NA	NA	NA	NA	2.86E-02	1.32E+03	3.79E+01	1.03E-01	1.35E+02	9.36E-01	2.41E+02	1.87E-02	1.41E+02	6.63E-03
BREOT-N30-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	2.04E+03	2.93E+03	NA	NA	NA	NA	2.86E-02	3.25E+03	9.32E+01	1.03E-01	1.35E+02	2.30E+00	2.41E+02	1.87E-02	1.41E+02	1.63E-02
BREOT-S30-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	9.70E+02	1.39E+03	NA	NA	NA	NA	2.86E-02	1.54E+03	4.42E+01	1.03E-01	1.35E+02	1.09E+00	2.41E+02	1.87E-02	1.41E+02	7.74E-03
BREOT-N31-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	2.04E+03	2.93E+03	NA	NA	NA	NA	2.86E-02	3.25E+03	9.32E+01	1.03E-01	1.35E+02	2.30E+00	2.41E+02	1.87E-02	1.41E+02	1.63E-02
BREOT-S31-25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	5.58E+02	7.99E+02	NA	NA	NA	NA	2.86E-02	8.89E+02	2.54E+01	1.03E-01	1.35E+02	6.29E-01	2.41E+02	1.87E-02	1.41E+02	4.46E-03
BREOT-S31-5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	7.11E+02	1.02E+03	NA	NA	NA	NA	2.86E-02	1.13E+03	3.24E+01	1.03E-01	1.35E+02	8.02E-01	2.41E+02	1.87E-02	1.41E+02	5.68E-03
BREOT-N32-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	7.40E+02	1.06E+03	NA	NA	NA	NA	2.86E-02	1.18E+03	3.37E+01	1.03E-01	1.35E+02	8.34E-01	2.41E+02	1.87E-02	1.41E+02	5.91E-03
BREOT-S32-6 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	7.20E+02	1.03E+03	NA	NA	NA	NA	2.86E-02	1.15E+03	3.28E+01	1.03E-01	1.35E+02	8.12E-01	2.41E+02	1.87E-02	1.41E+02	5.75E-03
BREOT-N33-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	2.16E+03	3.09E+03	NA	NA	NA	NA	2.86E-02	3.44E+03	9.85E+01	1.03E-01	1.35E+02	2.43E+00	2.41E+02	1.87E-02	1.41E+02	1.72E-02
BREOT-S33-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	2.70E+02	3.87E+02	NA	NA	NA	NA	2.86E-02	4.30E+02	1.23E+01	1.03E-01	1.35E+02	3.05E-01	2.41E+02	1.87E-02	1.41E+02	2.16E-03
BREOT-N35-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	3.75E+02	5.37E+02	NA	NA	NA	NA	2.86E-02	5.97E+02	1.71E+01	1.03E-01	1.35E+02	4.23E-01	2.41E+02	1.87E-02	1.41E+02	2.99E-03
BREOT-S35-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	9.76E+02	1.40E+03	NA	NA	NA	NA	2.86E-02	1.55E+03	4.45E+01	1.03E-01	1.35E+02	1.10E+00	2.41E+02	1.87E-02	1.41E+02	7.79E-03
BREOT-N36-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	1.02E+03	1.46E+03	NA	NA	NA	NA	2.86E-02	1.63E+03	4.66E+01	1.03E-01	1.35E+02	1.15E+00	2.41E+02	1.87E-02	1.41E+02	8.15E-03
BREOT-S36-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	9.73E+02	1.39E+03	NA	NA	NA	NA	2.86E-02	1.55E+03	4.43E+01	1.03E-01	1.35E+02	1.10E+00	2.41E+02	1.87E-02	1.41E+02	7.77E-03
BREOT-N37-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	9.61E+02	1.38E+03	NA	NA	NA	NA	2.86E-02	1.53E+03	4.38E+01	1.03E-01	1.35E+02	1.08E+00	2.41E+02	1.87E-02	1.41E+02	7.67E-03
BREOT-S37-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	4.90E+02	7.01E+02	NA	NA	NA	NA	2.86E-02	7.80E+02	2.23E+01	1.03E-01	1.35E+02	5.52E-01	2.41E+02	1.87E-02	1.41E+02	3.91E-03
BREOT-N38-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	5.00E+02	7.15E+02	NA	NA	NA	NA	2.86E-02	7.95E+02	2.28E+01	1.03E-01	1.35E+02	5.63E-01	2.41E+02	1.87E-02	1.41E+02	3.99E-03
BREOT-S38-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	8.11E+02	1.16E+03	NA	NA	NA	NA	2.86E-02	1.29E+03	3.69E+01	1.03E-01	1.35E+02	9.13E-01	2.41E+02	1.87E-02	1.41E+02	6.47E-03
BREOT-N39-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	1.78E+03	2.55E+03	NA	NA	NA	NA	2.86E-02	2.83E+03	8.11E+01	1.03E-01	1.35E+02	2.00E+00	2.41E+02	1.87E-02	1.41E+02	1.42E-02
BREOT-S39-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	9.60E+02	1.38E+03	NA	NA	NA	NA	2.86E-02	1.53E+03	4.38E+01	1.03E-01	1.35E+02	1.08E+00	2.41E+02	1.87E-02	1.41E+02	7.67E-03
BREOT-N40-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	1.19E+03	1.71E+03	NA	NA	NA	NA	2.86E-02	1.90E+03	5.43E+01	1.03E-01	1.35E+02	1.34E+00	2.41E+02	1.87E-02	1.41E+02	9.51E-03
BREOT-S40-14 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	8.58E+02	1.23E+03	NA	NA	NA	NA	2.86E-02	1.37E+03	3.91E+01	1.03E-01	1.35E+02	9.66E-01	2.41E+02	1.87E-02	1.41E+02	6.84E-03
BREOT-N41-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	7.31E+02	1.05E+03	NA	NA	NA	NA	2.86E-02	1.16E+03	3.33E+01	1.03E-01	1.35E+02	8.24E-01	2.41E+02	1.87E-02	1.41E+02	5.83E-03
BREOT-S41-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	1.06E+03	1.52E+03	NA	NA	NA	NA	2.86E-02	1.69E+03	4.83E+01	1.03E-01	1.35E+02	1.19E+00	2.41E+02	1.87E-02	1.41E+02	8.46E-03
BREOT-N42-35 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	1.16E+03	1.67E+03	NA	NA	NA	NA	2.86E-02	1.85E+03	5.31E+01	1.03E-01	1.35E+02	1.31E+00	2.41E+02	1.87E-02	1.41E+02	9.29E-03
BREOT-S42-25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	1.44E+03	2.06E+03	NA	NA	NA	NA	2.86E-02	2.29E+03	6.55E+01	1.03E-01	1.35E+02	1.62E+00	2.41E+02	1.87E-02	1.41E+02	1.15E-02
BREOT-N43-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	1.33E+03	1.90E+03	NA	NA	NA	NA	2.86E-02	2.12E+03	6.06E+01	1.03E-01	1.35E+02	1.50E+00	2.41E+02	1.87E-02	1.41E+02	1.06E-02
BREOT-S43-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	8.07E+02	1.16E+03	NA	NA	NA	NA	2.86E-02	1.28E+03	3.68E+01	1.03E-01	1.35E+02	9.09E-01	2.41E+02	1.87E-02	1.41E+02	6.44E-03
BREOT-N44-30 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	6.15E+02	8.81E+02	NA	NA	NA	NA	2.86E-02	9.80E+02	2.81E+01	1.03E-01	1.35E+02	6.94E-01	2.41E+02	1.87E-02	1.41E+02	4.91E-03
BREOT-S44-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	1.71E+03	2.44E+03	NA	NA	NA	NA	2.86E-02	2.72E+03	7.78E+01	1.03E-01	1.35E+02	1.92E+00	2.41E+02	1.87E-02	1.41E+02	1.36E-02
BREOT-N45-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	6.81E+02	9.76E+02	NA	NA	NA	NA	2.86E-02	1.08E+03	3.11E+01	1.03E-01	1.35E+02	7.68E-01	2.41E+02	1.87E-02	1.41E+02	5.44E-03
BREOT-N43-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	1.33E+03	1.90E+03	NA	NA	NA	NA	2.86E-02	2.12E+03	6.06E+01	1.03E-01	1.35E+02	1.50E+00	2.41E+02	1.87E-02	1.41E+02	1.06E-02
BREOT-S45-6 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	1.90E+03	2.72E+03	NA	NA	NA	NA	2.86E-02	3.02E+03	8.65E+01	1.03E-01	1.35E+02	2.14E+00	2.41E+02	1.87E-02	1.41E+02	1.51E-02
BREOT-N46-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	4.89E+02	7.00E+02	NA	NA	NA	NA	2.86E-02	7.78E+02	2.23E+01	1.03E-01	1.35E+02	5.51E-01	2.41E+02	1.87E-02	1.41E+02	3.90E-03
BREOT-S46-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	8.96E+02	1.28E+03	NA	NA	NA	NA	2.86E-02	1.43E+03	4.08E+01	1.03E-01	1.35E+02	1.01E+00	2.41E+02	1.87E-02	1.41E+02	7.15E-03
BREOT-S46-40 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	1.88E+03	2.70E+03	NA	NA	NA	NA	2.86E-02	3.00E+03	8.58E+01	1.03E-01	1.35E+02	2.12E+00	2.41E+02	1.87E-02	1.41E+02	1.50E-02
BREOT-N47-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	8.05E+02	1.15E+03	NA	NA	NA	NA	2.86E-02	1.28E+03	3.67E+01	1.03E-01	1.35E+02	9.07E-01	2.41E+02	1.87E-02	1.41E+02	6.43E-03
BREOT-S47-999 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	2.52E+03	3.60E+03	NA	NA	NA	NA	2.86E-02	4.01E+03	1.15E+02	1.03E-01	1.35E+02	2.84E+00	2.41E+02	1.87E-02	1.41E+02	2.01E-02
BREOT-S48-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	7.69E+01	1.10E+02	NA	NA	NA	NA	2.86E-02	1.22E+02	3.51E+00	1.03E-01	1.35E+02	8.67E-02	2.41E+02	1.87E-02	1.41E+02	6.14E-04
BREOT-S49-2.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	7.23E+01	1.04E+02	NA	NA	NA	NA	2.86E-02	1.15E+02	3.30E+00	1.03E-01	1.35E+02	8.15E-02	2.41E+02	1.87E-02	1.41E+02	5.77E-04
BREOT-S50-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	4.19E+02	6.00E+02	NA	NA	NA	NA	2.86E-02	6.67E+02	1.91E+01	1.03E-01	1.35E+02	4.73E-01	2.41E+02	1.87E-02	1.41E+02	3.35E-03
BREOT-S50-25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	2.84E+01	4.06E+01	NA	NA	NA	NA	2.86E-02	4.52E+01	1.29E+00	1.03E-01	1.35E+02	3.20E-02	2.41E+02	1.87E-02	1.41E+02	2.26E-04
BREOT-N52-60 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	1.77E+03	2.54E+03	NA	NA	NA	NA	2.86E-02	2.82E+03	8.08E+01	1.03E-01	1.35E+02	2.00E+00	2.41E+02	1.87E-02	1.41E+02	1.42E-02
BREOT-S52-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	3.86E+01	5.53E+01	NA	NA	NA	NA	2.86E-02	6.15E+01	1.76E+00	1.03E-01	1.35E+02	4.35E-02	2.41E+02	1.87E-02	1.41E+02	3.08E-04
BREOT-S53-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	1.16E+02	1.67E+02	NA	NA	NA	NA	2.86E-02	1.85E+02	5.31E+00	1.03E-01	1.35E+02	1.31E-01	2.41E+02	1.87E-02	1.41E+02	9.30E-04
BREOT-S54-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	5.53E+01	7.92E+01	NA	NA	NA	NA	2.86E-02	8.81E+01	2.52E+00	1.03E-01	1.35E+02	6.24E-02	2.41E+02	1.87E-02	1.41E+02	4.42E-04
BREOT-N55-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	1.49E+03	2.14E+03	NA	NA	NA	NA	2.86E-02	2.38E+03	6.81E+01	1.03E-01	1.35E+02	1.68E+00	2.41E+02	1.87E-02	1.41E+02	1.19E-02
BREOT-S55-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	4.01E+02	5.74E+02	NA	NA	NA	NA	2.86E-02	6.38E+02	1.83E+01	1.03E-01	1.35E+02	4.52E-01	2.41E+02	1.87E-02	1.41E+02	3.20E-03
BREOT-N56-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	1.39E+03	2.00E+03	NA	NA	NA	NA	2.86E-02	2.22E+03	6.36E+01	1.03E-01	1.35E+02	1.57E+00	2.41E+02	1.87E-02	1.41E+02	1.11E-02
BREOT-S56-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	1.29E+02	1.85E+02	NA	NA	NA	NA	2.86E-02	2.06E+02	5.89E+00	1.03E-01	1.35E+02	1.46E-01	2.41E+02	1.87E-02	1.41E+02	1.03E-03

TABLE C-2D: LEAD DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **18.41**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
White-Tailed Deer (Large Herbivorous Mammal - Terrestrial)																							
BREOT-N57-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	8.58E+02	1.23E+03	NA	NA	NA	NA	2.86E-02	1.37E+03	3.91E+01	1.03E-01	1.35E+02	9.67E-01	2.41E+02	1.87E-02	1.41E+02	6.85E-03
BREOT-S57-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	3.91E+02	5.59E+02	NA	NA	NA	NA	2.86E-02	6.22E+02	1.78E+01	1.03E-01	1.35E+02	4.40E-01	2.41E+02	1.87E-02	1.41E+02	3.12E-03
BREOT-N58-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	2.06E+02	2.95E+02	NA	NA	NA	NA	2.86E-02	3.28E+02	9.39E+00	1.03E-01	1.35E+02	2.32E-01	2.41E+02	1.87E-02	1.41E+02	1.64E-03
BREOT-S58-12 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	3.29E+02	4.70E+02	NA	NA	NA	NA	2.86E-02	5.23E+02	1.50E+01	1.03E-01	1.35E+02	3.70E-01	2.41E+02	1.87E-02	1.41E+02	2.62E-03
BREOT-N59-18 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	5.78E+02	8.27E+02	NA	NA	NA	NA	2.86E-02	9.20E+02	2.63E+01	1.03E-01	1.35E+02	6.51E-01	2.41E+02	1.87E-02	1.41E+02	4.61E-03
BREOT-N60-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	1.67E+02	2.40E+02	NA	NA	NA	NA	2.86E-02	2.66E+02	7.63E+00	1.03E-01	1.35E+02	1.89E-01	2.41E+02	1.87E-02	1.41E+02	1.34E-03
BREOT-S60-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	7.00E+02	1.00E+03	NA	NA	NA	NA	2.86E-02	1.11E+03	3.19E+01	1.03E-01	1.35E+02	7.89E-01	2.41E+02	1.87E-02	1.41E+02	5.59E-03
BREOT-S61-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	5.60E+02	8.01E+02	NA	NA	NA	NA	2.86E-02	8.91E+02	2.55E+01	1.03E-01	1.35E+02	6.31E-01	2.41E+02	1.87E-02	1.41E+02	4.47E-03
BREOT-N62-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	6.08E+01	8.71E+01	NA	NA	NA	NA	2.86E-02	9.68E+01	2.77E+00	1.03E-01	1.35E+02	6.85E-02	2.41E+02	1.87E-02	1.41E+02	4.85E-04
BREOT-S62-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	9.73E+02	1.39E+03	NA	NA	NA	NA	2.86E-02	1.55E+03	4.44E+01	1.03E-01	1.35E+02	1.10E+00	2.41E+02	1.87E-02	1.41E+02	7.77E-03
BREOT-S63-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	2.46E+02	3.52E+02	NA	NA	NA	NA	2.86E-02	3.91E+02	1.12E+01	1.03E-01	1.35E+02	2.77E-01	2.41E+02	1.87E-02	1.41E+02	1.96E-03
BREOT-N64-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	2.03E+02	2.91E+02	NA	NA	NA	NA	2.86E-02	3.24E+02	9.27E+00	1.03E-01	1.35E+02	2.29E-01	2.41E+02	1.87E-02	1.41E+02	1.62E-03
BREOT-N64-20 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	1.70E+02	2.43E+02	NA	NA	NA	NA	2.86E-02	2.70E+02	7.74E+00	1.03E-01	1.35E+02	1.91E-01	2.41E+02	1.87E-02	1.41E+02	1.36E-03
BREOT-S64-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	4.07E+02	5.83E+02	NA	NA	NA	NA	2.86E-02	6.49E+02	1.86E+01	1.03E-01	1.35E+02	4.59E-01	2.41E+02	1.87E-02	1.41E+02	3.25E-03
BREOT-N65-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	1.13E+02	1.61E+02	NA	NA	NA	NA	2.86E-02	1.79E+02	5.14E+00	1.03E-01	1.35E+02	1.27E-01	2.41E+02	1.87E-02	1.41E+02	9.00E-04
BREOT-S65-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	1.11E+03	1.59E+03	NA	NA	NA	NA	2.86E-02	1.76E+03	5.05E+01	1.03E-01	1.35E+02	1.25E+00	2.41E+02	1.87E-02	1.41E+02	8.85E-03
BREOT-N66-5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	4.33E+02	6.20E+02	NA	NA	NA	NA	2.86E-02	6.89E+02	1.97E+01	1.03E-01	1.35E+02	4.88E-01	2.41E+02	1.87E-02	1.41E+02	3.45E-03
BREOT-S66-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	3.82E+02	5.48E+02	NA	NA	NA	NA	2.86E-02	6.09E+02	1.74E+01	1.03E-01	1.35E+02	4.31E-01	2.41E+02	1.87E-02	1.41E+02	3.05E-03
BREOT-N67-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	7.03E+02	1.01E+03	NA	NA	NA	NA	2.86E-02	1.12E+03	3.20E+01	1.03E-01	1.35E+02	7.92E-01	2.41E+02	1.87E-02	1.41E+02	5.61E-03
BREOT-S67-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	1.54E+02	2.20E+02	NA	NA	NA	NA	2.86E-02	2.45E+02	7.00E+00	1.03E-01	1.35E+02	1.73E-01	2.41E+02	1.87E-02	1.41E+02	1.23E-03
At Edge of Tailings																						**Maximum HQ (Inside Tailings)**	**1.09E-01**
BREOT-S0-0 (06)	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	2.94E+02	4.21E+02	NA	NA	NA	NA	2.86E-02	4.68E+02	1.34E+01	1.03E-01	1.35E+02	3.32E-01	2.41E+02	1.87E-02	1.41E+02	2.35E-03
BREOT-S1-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	1.43E+03	2.05E+03	NA	NA	NA	NA	2.86E-02	2.28E+03	6.52E+01	1.03E-01	1.35E+02	1.61E+00	2.41E+02	1.87E-02	1.41E+02	1.14E-02
BREOT-S2-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	4.19E+02	5.99E+02	NA	NA	NA	NA	2.86E-02	6.66E+02	1.91E+01	1.03E-01	1.35E+02	4.72E-01	2.41E+02	1.87E-02	1.41E+02	3.34E-03
BREOT-S3-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	9.29E+02	1.33E+03	NA	NA	NA	NA	2.86E-02	1.48E+03	4.24E+01	1.03E-01	1.35E+02	1.05E+00	2.41E+02	1.87E-02	1.41E+02	7.42E-03
BREOT-S4-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	1.10E+03	1.58E+03	NA	NA	NA	NA	2.86E-02	1.76E+03	5.04E+01	1.03E-01	1.35E+02	1.25E+00	2.41E+02	1.87E-02	1.41E+02	8.82E-03
BREOT-S6-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	1.07E+03	1.53E+03	NA	NA	NA	NA	2.86E-02	1.70E+03	4.87E+01	1.03E-01	1.35E+02	1.20E+00	2.41E+02	1.87E-02	1.41E+02	8.53E-03
BREOT-S7-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	6.37E+02	9.13E+02	NA	NA	NA	NA	2.86E-02	1.01E+03	2.91E+01	1.03E-01	1.35E+02	7.18E-01	2.41E+02	1.87E-02	1.41E+02	5.09E-03
BREOT-S8-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	2.35E+02	3.36E+02	NA	NA	NA	NA	2.86E-02	3.73E+02	1.07E+01	1.03E-01	1.35E+02	2.64E-01	2.41E+02	1.87E-02	1.41E+02	1.87E-03
BREOT-S9-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	5.06E+02	7.24E+02	NA	NA	NA	NA	2.86E-02	8.05E+02	2.30E+01	1.03E-01	1.35E+02	5.70E-01	2.41E+02	1.87E-02	1.41E+02	4.04E-03
BREOT-N10-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	1.48E+04	2.11E+04	NA	NA	NA	NA	2.86E-02	2.35E+04	6.73E+02	1.03E-01	1.35E+02	1.66E+01	2.41E+02	1.87E-02	1.41E+02	1.18E-01
BREOT-N11-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	1.80E+03	2.57E+03	NA	NA	NA	NA	2.86E-02	2.86E+03	8.18E+01	1.03E-01	1.35E+02	2.02E+00	2.41E+02	1.87E-02	1.41E+02	1.43E-02
BREOT-S11-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	6.30E+02	9.02E+02	NA	NA	NA	NA	2.86E-02	1.00E+03	2.87E+01	1.03E-01	1.35E+02	7.10E-01	2.41E+02	1.87E-02	1.41E+02	5.03E-03
BREOT-N12-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	6.49E+02	9.30E+02	NA	NA	NA	NA	2.86E-02	1.03E+03	2.96E+01	1.03E-01	1.35E+02	7.32E-01	2.41E+02	1.87E-02	1.41E+02	5.18E-03
BREOT-S12-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	2.00E+03	2.87E+03	NA	NA	NA	NA	2.86E-02	3.19E+03	9.13E+01	1.03E-01	1.35E+02	2.26E+00	2.41E+02	1.87E-02	1.41E+02	1.60E-02
BREOT-N13-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	1.66E+04	2.38E+04	NA	NA	NA	NA	2.86E-02	2.65E+04	7.58E+02	1.03E-01	1.35E+02	1.87E+01	2.41E+02	1.87E-02	1.41E+02	1.33E-01
BREOT-S13-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	3.89E+02	5.58E+02	NA	NA	NA	NA	2.86E-02	6.20E+02	1.77E+01	1.03E-01	1.35E+02	4.39E-01	2.41E+02	1.87E-02	1.41E+02	3.11E-03
BREOT-N14-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	1.83E+03	2.61E+03	NA	NA	NA	NA	2.86E-02	2.91E+03	8.32E+01	1.03E-01	1.35E+02	2.06E+00	2.41E+02	1.87E-02	1.41E+02	1.46E-02
BREOT-S14-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	9.69E+03	1.39E+04	NA	NA	NA	NA	2.86E-02	1.54E+04	4.42E+02	1.03E-01	1.35E+02	1.09E+01	2.41E+02	1.87E-02	1.41E+02	7.74E-02
BREOT-N15-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	2.26E+03	3.23E+03	NA	NA	NA	NA	2.86E-02	3.60E+03	1.03E+02	1.03E-01	1.35E+02	2.55E+00	2.41E+02	1.87E-02	1.41E+02	1.80E-02
BREOT-N16-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	1.11E+03	1.59E+03	NA	NA	NA	NA	2.86E-02	1.77E+03	5.07E+01	1.03E-01	1.35E+02	1.25E+00	2.41E+02	1.87E-02	1.41E+02	8.88E-03
BREOT-S16-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	2.10E+02	3.00E+02	NA	NA	NA	NA	2.86E-02	3.34E+02	9.56E+00	1.03E-01	1.35E+02	2.36E-01	2.41E+02	1.87E-02	1.41E+02	1.67E-03
BREOT-N17-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	1.80E+03	2.57E+03	NA	NA	NA	NA	2.86E-02	2.86E+03	8.19E+01	1.03E-01	1.35E+02	2.03E+00	2.41E+02	1.87E-02	1.41E+02	1.44E-02
BREOT-S17-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	2.11E+03	3.02E+03	NA	NA	NA	NA	2.86E-02	3.36E+03	9.61E+01	1.03E-01	1.35E+02	2.38E+00	2.41E+02	1.87E-02	1.41E+02	1.68E-02
BREOT-N18-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	1.45E+03	2.08E+03	NA	NA	NA	NA	2.86E-02	2.32E+03	6.63E+01	1.03E-01	1.35E+02	1.64E+00	2.41E+02	1.87E-02	1.41E+02	1.16E-02
BREOT-S18-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	2.29E+01	3.28E+01	NA	NA	NA	NA	2.86E-02	3.65E+01	1.04E+00	1.03E-01	1.35E+02	2.58E-02	2.41E+02	1.87E-02	1.41E+02	1.83E-04
BREOT-N19-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	9.92E+02	1.42E+03	NA	NA	NA	NA	2.86E-02	1.58E+03	4.52E+01	1.03E-01	1.35E+02	1.12E+00	2.41E+02	1.87E-02	1.41E+02	7.92E-03
BREOT-S19-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	2.85E+02	4.08E+02	NA	NA	NA	NA	2.86E-02	4.53E+02	1.30E+01	1.03E-01	1.35E+02	3.21E-01	2.41E+02	1.87E-02	1.41E+02	2.27E-03
BREOT-N20-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	8.12E+02	1.16E+03	NA	NA	NA	NA	2.86E-02	1.29E+03	3.70E+01	1.03E-01	1.35E+02	9.15E-01	2.41E+02	1.87E-02	1.41E+02	6.48E-03
BREOT-S20-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	3.91E+02	5.60E+02	NA	NA	NA	NA	2.86E-02	6.23E+02	1.78E+01	1.03E-01	1.35E+02	4.41E-01	2.41E+02	1.87E-02	1.41E+02	3.12E-03
BREOT-N21-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	3.61E+01	5.17E+01	NA	NA	NA	NA	2.86E-02	5.75E+01	1.65E+00	1.03E-01	1.35E+02	4.07E-02	2.41E+02	1.87E-02	1.41E+02	2.88E-04
BREOT-S21-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	1.09E+03	1.56E+03	NA	NA	NA	NA	2.86E-02	1.73E+03	4.96E+01	1.03E-01	1.35E+02	1.23E+00	2.41E+02	1.87E-02	1.41E+02	8.68E-03
BREOT-N22-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	9.14E+02	1.31E+03	NA	NA	NA	NA	2.86E-02	1.46E+03	4.17E+01	1.03E-01	1.35E+02	1.03E+00	2.41E+02	1.87E-02	1.41E+02	7.30E-03
BREOT-S22-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	1.10E+03	1.58E+03	NA	NA	NA	NA	2.86E-02	1.75E+03	5.02E+01	1.03E-01	1.35E+02	1.24E+00	2.41E+02	1.87E-02	1.41E+02	8.78E-03
BREOT-N23-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	7.57E+02	1.08E+03	NA	NA	NA	NA	2.86E-02	1.21E+03	3.45E+01	1.03E-01	1.35E+02	8.53E-01	2.41E+02	1.87E-02	1.41E+02	6.04E-03
BREOT-S23-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	1.68E+03	2.40E+03	NA	NA	NA	NA	2.86E-02	2.67E+03	7.63E+01	1.03E-01	1.35E+02	1.89E+00	2.41E+02	1.87E-02	1.41E+02	1.34E-02
BREOT-N24-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	1.61E+03	2.30E+03	NA	NA	NA	NA	2.86E-02	2.56E+03	7.32E+01	1.03E-01	1.35E+02	1.81E+00	2.41E+02	1.87E-02	1.41E+02	1.28E-02

TABLE C-2D: LEAD DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 18.41

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
White-Tailed Deer (Large Herbivorous Mammal - Terrestrial)																							
BREOT-S24-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	9.42E+02	1.35E+03	NA	NA	NA	NA	2.86E-02	1.50E+03	4.29E+01	1.03E-01	1.35E+02	1.06E+00	2.41E+02	1.87E-02	1.41E+02	7.51E-03
BREOT-N25-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	3.91E+03	5.60E+03	NA	NA	NA	NA	2.86E-02	6.23E+03	1.78E+02	1.03E-01	1.35E+02	4.41E+00	2.41E+02	1.87E-02	1.41E+02	3.12E-02
BREOT-S25-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	2.19E+03	3.13E+03	NA	NA	NA	NA	2.86E-02	3.49E+03	9.98E+01	1.03E-01	1.35E+02	2.47E+00	2.41E+02	1.87E-02	1.41E+02	1.75E-02
BREOT-N26-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	7.17E+03	1.03E+04	NA	NA	NA	NA	2.86E-02	1.14E+04	3.27E+02	1.03E-01	1.35E+02	8.08E+00	2.41E+02	1.87E-02	1.41E+02	5.72E-02
BREOT-S26-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	1.00E+03	1.43E+03	NA	NA	NA	NA	2.86E-02	1.59E+03	4.56E+01	1.03E-01	1.35E+02	1.13E+00	2.41E+02	1.87E-02	1.41E+02	7.99E-03
BREOT-N27-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	7.70E+03	1.10E+04	NA	NA	NA	NA	2.86E-02	1.23E+04	3.51E+02	1.03E-01	1.35E+02	8.68E+00	2.41E+02	1.87E-02	1.41E+02	6.14E-02
BREOT-S27-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	1.74E+03	2.50E+03	NA	NA	NA	NA	2.86E-02	2.78E+03	7.95E+01	1.03E-01	1.35E+02	1.97E+00	2.41E+02	1.87E-02	1.41E+02	1.39E-02
BREOT-N28-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	2.97E+03	4.25E+03	NA	NA	NA	NA	2.86E-02	4.73E+03	1.35E+02	1.03E-01	1.35E+02	3.35E+00	2.41E+02	1.87E-02	1.41E+02	2.37E-02
BREOT-S28-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	7.31E+02	1.05E+03	NA	NA	NA	NA	2.86E-02	1.16E+03	3.33E+01	1.03E-01	1.35E+02	8.24E-01	2.41E+02	1.87E-02	1.41E+02	5.84E-03
BREOT-S29-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	3.03E+02	4.33E+02	NA	NA	NA	NA	2.86E-02	4.82E+02	1.38E+01	1.03E-01	1.35E+02	3.41E-01	2.41E+02	1.87E-02	1.41E+02	2.41E-03
BREOT-N30-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	5.39E+03	7.72E+03	NA	NA	NA	NA	2.86E-02	8.58E+03	2.46E+02	1.03E-01	1.35E+02	6.08E+00	2.41E+02	1.87E-02	1.41E+02	4.30E-02
BREOT-S30-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	1.48E+02	2.12E+02	NA	NA	NA	NA	2.86E-02	2.35E+02	6.74E+00	1.03E-01	1.35E+02	1.67E-01	2.41E+02	1.87E-02	1.41E+02	1.18E-03
BREOT-N31-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	2.60E+03	3.72E+03	NA	NA	NA	NA	2.86E-02	4.14E+03	1.19E+02	1.03E-01	1.35E+02	2.93E+00	2.41E+02	1.87E-02	1.41E+02	2.08E-02
BREOT-S31-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	1.43E+02	2.04E+02	NA	NA	NA	NA	2.86E-02	2.27E+02	6.50E+00	1.03E-01	1.35E+02	1.61E-01	2.41E+02	1.87E-02	1.41E+02	1.14E-03
BREOT-N32-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	1.08E+03	1.54E+03	NA	NA	NA	NA	2.86E-02	1.72E+03	4.91E+01	1.03E-01	1.35E+02	1.21E+00	2.41E+02	1.87E-02	1.41E+02	8.60E-03
BREOT-S32-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	1.25E+03	1.79E+03	NA	NA	NA	NA	2.86E-02	1.99E+03	5.69E+01	1.03E-01	1.35E+02	1.41E+00	2.41E+02	1.87E-02	1.41E+02	9.97E-03
BREOT-N33-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	3.91E+01	5.60E+01	NA	NA	NA	NA	2.86E-02	6.23E+01	1.78E+00	1.03E-01	1.35E+02	4.41E-02	2.41E+02	1.87E-02	1.41E+02	3.12E-04
BREOT-S33-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	2.98E+02	4.27E+02	NA	NA	NA	NA	2.86E-02	4.75E+02	1.36E+01	1.03E-01	1.35E+02	3.36E-01	2.41E+02	1.87E-02	1.41E+02	2.38E-03
BREOT-N34-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	1.03E+02	1.48E+02	NA	NA	NA	NA	2.86E-02	1.65E+02	4.71E+00	1.03E-01	1.35E+02	1.17E-01	2.41E+02	1.87E-02	1.41E+02	8.26E-04
BREOT-S34-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	7.27E+02	1.04E+03	NA	NA	NA	NA	2.86E-02	1.16E+03	3.31E+01	1.03E-01	1.35E+02	8.19E-01	2.41E+02	1.87E-02	1.41E+02	5.80E-03
BREOT-N35-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	6.53E+01	9.35E+01	NA	NA	NA	NA	2.86E-02	1.04E+02	2.98E+00	1.03E-01	1.35E+02	7.36E-02	2.41E+02	1.87E-02	1.41E+02	5.21E-04
BREOT-S35-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	5.05E+02	7.23E+02	NA	NA	NA	NA	2.86E-02	8.04E+02	2.30E+01	1.03E-01	1.35E+02	5.69E-01	2.41E+02	1.87E-02	1.41E+02	4.03E-03
BREOT-N36-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	1.42E+03	2.04E+03	NA	NA	NA	NA	2.86E-02	2.27E+03	6.49E+01	1.03E-01	1.35E+02	1.60E+00	2.41E+02	1.87E-02	1.41E+02	1.14E-02
BREOT-S36-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	1.01E+03	1.44E+03	NA	NA	NA	NA	2.86E-02	1.61E+03	4.60E+01	1.03E-01	1.35E+02	1.14E+00	2.41E+02	1.87E-02	1.41E+02	8.05E-03
BREOT-N37-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	3.18E+02	4.55E+02	NA	NA	NA	NA	2.86E-02	5.06E+02	1.45E+01	1.03E-01	1.35E+02	3.58E-01	2.41E+02	1.87E-02	1.41E+02	2.54E-03
BREOT-S37-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	1.12E+03	1.60E+03	NA	NA	NA	NA	2.86E-02	1.78E+03	5.10E+01	1.03E-01	1.35E+02	1.26E+00	2.41E+02	1.87E-02	1.41E+02	8.93E-03
BREOT-N38-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	6.61E+01	9.46E+01	NA	NA	NA	NA	2.86E-02	1.05E+02	3.01E+00	1.03E-01	1.35E+02	7.45E-02	2.41E+02	1.87E-02	1.41E+02	5.27E-04
BREOT-S38-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	1.31E+02	1.87E+02	NA	NA	NA	NA	2.86E-02	2.08E+02	5.96E+00	1.03E-01	1.35E+02	1.47E-01	2.41E+02	1.87E-02	1.41E+02	1.04E-03
BREOT-N39-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	5.52E+01	7.90E+01	NA	NA	NA	NA	2.86E-02	8.79E+01	2.52E+00	1.03E-01	1.35E+02	6.22E-02	2.41E+02	1.87E-02	1.41E+02	4.40E-04
BREOT-N40-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	1.33E+02	1.91E+02	NA	NA	NA	NA	2.86E-02	2.12E+02	6.08E+00	1.03E-01	1.35E+02	1.50E-01	2.41E+02	1.87E-02	1.41E+02	1.06E-03
BREOT-S40-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	8.65E+02	1.24E+03	NA	NA	NA	NA	2.86E-02	1.38E+03	3.94E+01	1.03E-01	1.35E+02	9.75E-01	2.41E+02	1.87E-02	1.41E+02	6.90E-03
BREOT-N41-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	8.59E+01	1.23E+02	NA	NA	NA	NA	2.86E-02	1.37E+02	3.92E+00	1.03E-01	1.35E+02	9.69E-02	2.41E+02	1.87E-02	1.41E+02	6.86E-04
BREOT-S41-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	8.58E+02	1.23E+03	NA	NA	NA	NA	2.86E-02	1.37E+03	3.91E+01	1.03E-01	1.35E+02	9.67E-01	2.41E+02	1.87E-02	1.41E+02	6.84E-03
BREOT-N42-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	1.71E+01	2.45E+01	NA	NA	NA	NA	2.86E-02	2.72E+01	7.79E-01	1.03E-01	1.35E+02	1.93E-02	2.41E+02	1.87E-02	1.41E+02	1.36E-04
BREOT-S42-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	1.78E+03	2.56E+03	NA	NA	NA	NA	2.86E-02	2.84E+03	8.13E+01	1.03E-01	1.35E+02	2.01E+00	2.41E+02	1.87E-02	1.41E+02	1.42E-02
BREOT-N43-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	1.16E+02	1.67E+02	NA	NA	NA	NA	2.86E-02	1.85E+02	5.30E+00	1.03E-01	1.35E+02	1.31E-01	2.41E+02	1.87E-02	1.41E+02	9.28E-04
BREOT-S43-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	7.61E+01	1.09E+02	NA	NA	NA	NA	2.86E-02	1.21E+02	3.47E+00	1.03E-01	1.35E+02	8.58E-02	2.41E+02	1.87E-02	1.41E+02	6.08E-04
BREOT-N44-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	3.53E+02	5.05E+02	NA	NA	NA	NA	2.86E-02	5.62E+02	1.61E+01	1.03E-01	1.35E+02	3.98E-01	2.41E+02	1.87E-02	1.41E+02	2.82E-03
BREOT-S44-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	5.59E+01	8.00E+01	NA	NA	NA	NA	2.86E-02	8.89E+01	2.55E+00	1.03E-01	1.35E+02	6.30E-02	2.41E+02	1.87E-02	1.41E+02	4.46E-04
BREOT-N45-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	1.01E+02	1.44E+02	NA	NA	NA	NA	2.86E-02	1.61E+02	4.60E+00	1.03E-01	1.35E+02	1.14E-01	2.41E+02	1.87E-02	1.41E+02	8.05E-04
BREOT-S45-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	1.19E+02	1.71E+02	NA	NA	NA	NA	2.86E-02	1.90E+02	5.43E+00	1.03E-01	1.35E+02	1.34E-01	2.41E+02	1.87E-02	1.41E+02	9.51E-04
BREOT-N46-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	8.65E+01	1.24E+02	NA	NA	NA	NA	2.86E-02	1.38E+02	3.94E+00	1.03E-01	1.35E+02	9.75E-02	2.41E+02	1.87E-02	1.41E+02	6.91E-04
BREOT-S46-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	6.79E+02	9.72E+02	NA	NA	NA	NA	2.86E-02	1.08E+03	3.10E+01	1.03E-01	1.35E+02	7.65E-01	2.41E+02	1.87E-02	1.41E+02	5.42E-03
BREOT-N47-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	1.10E+02	1.58E+02	NA	NA	NA	NA	2.86E-02	1.75E+02	5.02E+00	1.03E-01	1.35E+02	1.24E-01	2.41E+02	1.87E-02	1.41E+02	8.78E-04
BREOT-S47-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	2.36E+01	3.38E+01	NA	NA	NA	NA	2.86E-02	3.76E+01	1.08E+00	1.03E-01	1.35E+02	2.66E-02	2.41E+02	1.87E-02	1.41E+02	1.88E-04
BREOT-N48-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	1.53E+02	2.19E+02	NA	NA	NA	NA	2.86E-02	2.44E+02	6.98E+00	1.03E-01	1.35E+02	1.73E-01	2.41E+02	1.87E-02	1.41E+02	1.22E-03
BREOT-S48-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	1.20E+02	1.72E+02	NA	NA	NA	NA	2.86E-02	1.92E+02	5.49E+00	1.03E-01	1.35E+02	1.36E-01	2.41E+02	1.87E-02	1.41E+02	9.60E-04
BREOT-N49-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	2.43E+02	3.48E+02	NA	NA	NA	NA	2.86E-02	3.87E+02	1.11E+01	1.03E-01	1.35E+02	2.74E-01	2.41E+02	1.87E-02	1.41E+02	1.94E-03
BREOT-S49-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	7.54E+01	1.08E+02	NA	NA	NA	NA	2.86E-02	1.20E+02	3.44E+00	1.03E-01	1.35E+02	8.50E-02	2.41E+02	1.87E-02	1.41E+02	6.02E-04
BREOT-S50-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	6.63E+01	9.50E+01	NA	NA	NA	NA	2.86E-02	1.06E+02	3.02E+00	1.03E-01	1.35E+02	7.48E-02	2.41E+02	1.87E-02	1.41E+02	5.30E-04
BREOT-N51-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	2.65E+02	3.80E+02	NA	NA	NA	NA	2.86E-02	4.23E+02	1.21E+01	1.03E-01	1.35E+02	2.99E-01	2.41E+02	1.87E-02	1.41E+02	2.12E-03
BREOT-S51-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	9.35E+01	1.34E+02	NA	NA	NA	NA	2.86E-02	1.49E+02	4.26E+00	1.03E-01	1.35E+02	1.05E-01	2.41E+02	1.87E-02	1.41E+02	7.46E-04
BREOT-N52-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	6.21E+01	8.89E+01	NA	NA	NA	NA	2.86E-02	9.88E+01	2.83E+00	1.03E-01	1.35E+02	7.00E-02	2.41E+02	1.87E-02	1.41E+02	4.95E-04
BREOT-S52-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	4.79E+01	6.86E+01	NA	NA	NA	NA	2.86E-02	7.63E+01	2.18E+00	1.03E-01	1.35E+02	5.40E-02	2.41E+02	1.87E-02	1.41E+02	3.82E-04
BREOT-N53-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	1.34E+02	1.92E+02	NA	NA	NA	NA	2.86E-02	2.14E+02	6.12E+00	1.03E-01	1.35E+02	1.51E-01	2.41E+02	1.87E-02	1.41E+02	1.07E-03
BREOT-S53-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	4.97E+01	7.11E+01	NA	NA	NA	NA	2.86E-02	7.91E+01	2.26E+00	1.03E-01	1.35E+02	5.60E-02	2.41E+02	1.87E-02	1.41E+02	3.96E-04
BREOT-N54-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	1.35E+02	1.94E+02	NA	NA	NA	NA	2.86E-02	2.16E+02	6.17E+00	1.03E-01	1.35E+02	1.53E-01	2.41E+02	1.87E-02	1.41E+02	1.08E-03

TABLE C-2D: LEAD DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **18.41**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
White-Tailed Deer (Large Herbivorous Mammal - Terrestrial)																							
BREOT-S54-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	6.07E+01	8.68E+01	NA	NA	NA	NA	2.86E-02	9.66E+01	2.76E+00	1.03E-01	1.35E+02	6.84E-02	2.41E+02	1.87E-02	1.41E+02	4.84E-04
BREOT-N55-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	7.79E+01	1.12E+02	NA	NA	NA	NA	2.86E-02	1.24E+02	3.55E+00	1.03E-01	1.35E+02	8.78E-02	2.41E+02	1.87E-02	1.41E+02	6.22E-04
BREOT-S55-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	6.79E+01	9.72E+01	NA	NA	NA	NA	2.86E-02	1.08E+02	3.10E+00	1.03E-01	1.35E+02	7.66E-02	2.41E+02	1.87E-02	1.41E+02	5.42E-04
BREOT-N56-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	3.55E+02	5.08E+02	NA	NA	NA	NA	2.86E-02	5.65E+02	1.62E+01	1.03E-01	1.35E+02	4.00E-01	2.41E+02	1.87E-02	1.41E+02	2.83E-03
BREOT-N57-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	1.54E+02	2.20E+02	NA	NA	NA	NA	2.86E-02	2.45E+02	7.02E+00	1.03E-01	1.35E+02	1.74E-01	2.41E+02	1.87E-02	1.41E+02	1.23E-03
BREOT-S57-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	1.15E+02	1.65E+02	NA	NA	NA	NA	2.86E-02	1.83E+02	5.25E+00	1.03E-01	1.35E+02	1.30E-01	2.41E+02	1.87E-02	1.41E+02	9.19E-04
BREOT-N58-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	1.04E+02	1.49E+02	NA	NA	NA	NA	2.86E-02	1.66E+02	4.74E+00	1.03E-01	1.35E+02	1.17E-01	2.41E+02	1.87E-02	1.41E+02	8.30E-04
BREOT-S58-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	8.36E+01	1.20E+02	NA	NA	NA	NA	2.86E-02	1.33E+02	3.81E+00	1.03E-01	1.35E+02	9.42E-02	2.41E+02	1.87E-02	1.41E+02	6.67E-04
BREOT-N59-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	6.29E+01	9.01E+01	NA	NA	NA	NA	2.86E-02	1.00E+02	2.87E+00	1.03E-01	1.35E+02	7.09E-02	2.41E+02	1.87E-02	1.41E+02	5.02E-04
BREOT-N60-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	5.05E+01	7.22E+01	NA	NA	NA	NA	2.86E-02	8.03E+01	2.30E+00	1.03E-01	1.35E+02	5.69E-02	2.41E+02	1.87E-02	1.41E+02	4.03E-04
BREOT-S60-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	3.25E+02	4.66E+02	NA	NA	NA	NA	2.86E-02	5.18E+02	1.48E+01	1.03E-01	1.35E+02	3.67E-01	2.41E+02	1.87E-02	1.41E+02	2.60E-03
BREOT-S61-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	5.17E+01	7.40E+01	NA	NA	NA	NA	2.86E-02	8.23E+01	2.36E+00	1.03E-01	1.35E+02	5.83E-02	2.41E+02	1.87E-02	1.41E+02	4.13E-04
BREOT-N62-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	8.10E+01	1.16E+02	NA	NA	NA	NA	2.86E-02	1.29E+02	3.69E+00	1.03E-01	1.35E+02	9.13E-02	2.41E+02	1.87E-02	1.41E+02	6.47E-04
BREOT-S62-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	6.32E+01	9.05E+01	NA	NA	NA	NA	2.86E-02	1.01E+02	2.88E+00	1.03E-01	1.35E+02	7.12E-02	2.41E+02	1.87E-02	1.41E+02	5.04E-04
BREOT-N63-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	2.14E+02	3.06E+02	NA	NA	NA	NA	2.86E-02	3.40E+02	9.74E+00	1.03E-01	1.35E+02	2.41E-01	2.41E+02	1.87E-02	1.41E+02	1.71E-03
BREOT-S63-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	1.35E+02	1.93E+02	NA	NA	NA	NA	2.86E-02	2.14E+02	6.13E+00	1.03E-01	1.35E+02	1.52E-01	2.41E+02	1.87E-02	1.41E+02	1.07E-03
BREOT-N64-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	8.35E+01	1.20E+02	NA	NA	NA	NA	2.86E-02	1.33E+02	3.81E+00	1.03E-01	1.35E+02	9.41E-02	2.41E+02	1.87E-02	1.41E+02	6.67E-04
BREOT-S64-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	6.11E+01	8.74E+01	NA	NA	NA	NA	2.86E-02	9.72E+01	2.78E+00	1.03E-01	1.35E+02	6.88E-02	2.41E+02	1.87E-02	1.41E+02	4.87E-04
BREOT-N66-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	1.11E+02	1.59E+02	NA	NA	NA	NA	2.86E-02	1.76E+02	5.05E+00	1.03E-01	1.35E+02	1.25E-01	2.41E+02	1.87E-02	1.41E+02	8.84E-04
BREOT-S66-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	5.82E+01	8.33E+01	NA	NA	NA	NA	2.86E-02	9.27E+01	2.65E+00	1.03E-01	1.35E+02	6.56E-02	2.41E+02	1.87E-02	1.41E+02	4.65E-04
BREOT-N67-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	1.17E+03	1.67E+03	NA	NA	NA	NA	2.86E-02	1.86E+03	5.32E+01	1.03E-01	1.35E+02	1.32E+00	2.41E+02	1.87E-02	1.41E+02	9.32E-03
BREOT-S67-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	5.01E+01	7.17E+01	NA	NA	NA	NA	2.86E-02	7.97E+01	2.28E+00	1.03E-01	1.35E+02	5.64E-02	2.41E+02	1.87E-02	1.41E+02	4.00E-04
Outside Tailings																						**Maximum HQ (At Edge of Tailings)**	**1.33E-01**
BREOT-S0+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	1.62E+02	2.32E+02	NA	NA	NA	NA	2.86E-02	2.58E+02	7.39E+00	1.03E-01	1.35E+02	1.83E-01	2.41E+02	1.87E-02	1.41E+02	1.29E-03
BREOT-S1+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	8.91E+01	1.28E+02	NA	NA	NA	NA	2.86E-02	1.42E+02	4.06E+00	1.03E-01	1.35E+02	1.00E-01	2.41E+02	1.87E-02	1.41E+02	7.11E-04
BREOT-S2+95 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	3.67E+01	5.26E+01	NA	NA	NA	NA	2.86E-02	5.85E+01	1.67E+00	1.03E-01	1.35E+02	4.14E-02	2.41E+02	1.87E-02	1.41E+02	2.93E-04
BREOT-S3+6 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	1.04E+02	1.48E+02	NA	NA	NA	NA	2.86E-02	1.65E+02	4.73E+00	1.03E-01	1.35E+02	1.17E-01	2.41E+02	1.87E-02	1.41E+02	8.27E-04
BREOT-S4+10 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	5.80E+01	8.30E+01	NA	NA	NA	NA	2.86E-02	9.23E+01	2.64E+00	1.03E-01	1.35E+02	6.53E-02	2.41E+02	1.87E-02	1.41E+02	4.63E-04
BREOT-S6+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	1.59E+02	2.28E+02	NA	NA	NA	NA	2.86E-02	2.54E+02	7.26E+00	1.03E-01	1.35E+02	1.80E-01	2.41E+02	1.87E-02	1.41E+02	1.27E-03
BREOT-S8+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	1.65E+02	2.36E+02	NA	NA	NA	NA	2.86E-02	2.62E+02	7.50E+00	1.03E-01	1.35E+02	1.86E-01	2.41E+02	1.87E-02	1.41E+02	1.31E-03
BREOT-N10+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	8.27E+01	1.18E+02	NA	NA	NA	NA	2.86E-02	1.32E+02	3.77E+00	1.03E-01	1.35E+02	9.32E-02	2.41E+02	1.87E-02	1.41E+02	6.60E-04
BREOT-N11+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	8.67E+01	1.24E+02	NA	NA	NA	NA	2.86E-02	1.38E+02	3.95E+00	1.03E-01	1.35E+02	9.77E-02	2.41E+02	1.87E-02	1.41E+02	6.92E-04
BREOT-N12+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	1.72E+02	2.46E+02	NA	NA	NA	NA	2.86E-02	2.73E+02	7.82E+00	1.03E-01	1.35E+02	1.93E-01	2.41E+02	1.87E-02	1.41E+02	1.37E-03
BREOT-S12+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	5.47E+03	7.83E+03	NA	NA	NA	NA	2.86E-02	8.70E+03	2.49E+02	1.03E-01	1.35E+02	6.16E+00	2.41E+02	1.87E-02	1.41E+02	4.36E-02
BREOT-S12+60 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	6.86E+02	9.82E+02	NA	NA	NA	NA	2.86E-02	1.09E+03	3.13E+01	1.03E-01	1.35E+02	7.73E-01	2.41E+02	1.87E-02	1.41E+02	5.48E-03
BREOT-N13+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	1.71E+02	2.45E+02	NA	NA	NA	NA	2.86E-02	2.72E+02	7.79E+00	1.03E-01	1.35E+02	1.93E-01	2.41E+02	1.87E-02	1.41E+02	1.36E-03
BREOT-S13+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	1.95E+03	2.79E+03	NA	NA	NA	NA	2.86E-02	3.10E+03	8.89E+01	1.03E-01	1.35E+02	2.20E+00	2.41E+02	1.87E-02	1.41E+02	1.56E-02
BREOT-S13+65 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	6.85E+02	9.81E+02	NA	NA	NA	NA	2.86E-02	1.09E+03	3.12E+01	1.03E-01	1.35E+02	7.72E-01	2.41E+02	1.87E-02	1.41E+02	5.47E-03
BREOT-N14+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	1.84E+02	2.64E+02	NA	NA	NA	NA	2.86E-02	2.94E+02	8.41E+00	1.03E-01	1.35E+02	2.08E-01	2.41E+02	1.87E-02	1.41E+02	1.47E-03
BREOT-S14+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	8.02E+03	1.15E+04	NA	NA	NA	NA	2.86E-02	1.28E+04	3.65E+02	1.03E-01	1.35E+02	9.04E+00	2.41E+02	1.87E-02	1.41E+02	6.40E-02
BREOT-S14+59 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	4.98E+02	7.13E+02	NA	NA	NA	NA	2.86E-02	7.93E+02	2.27E+01	1.03E-01	1.35E+02	5.61E-01	2.41E+02	1.87E-02	1.41E+02	3.98E-03
BREOT-N15+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	2.89E+03	4.14E+03	NA	NA	NA	NA	2.86E-02	4.60E+03	1.32E+02	1.03E-01	1.35E+02	3.26E+00	2.41E+02	1.87E-02	1.41E+02	2.31E-02
BREOT-N15+50 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	1.21E+02	1.73E+02	NA	NA	NA	NA	2.86E-02	1.93E+02	5.51E+00	1.03E-01	1.35E+02	1.36E-01	2.41E+02	1.87E-02	1.41E+02	9.66E-04
BREOT-S16+20 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	1.88E+03	2.69E+03	NA	NA	NA	NA	2.86E-02	2.99E+03	8.56E+01	1.03E-01	1.35E+02	2.12E+00	2.41E+02	1.87E-02	1.41E+02	1.50E-02
BREOT-S16+75 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	2.72E+02	3.89E+02	NA	NA	NA	NA	2.86E-02	4.33E+02	1.24E+01	1.03E-01	1.35E+02	3.06E-01	2.41E+02	1.87E-02	1.41E+02	2.17E-03
BREOT-N17+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	5.13E+03	7.34E+03	NA	NA	NA	NA	2.86E-02	8.16E+03	2.34E+02	1.03E-01	1.35E+02	5.78E+00	2.41E+02	1.87E-02	1.41E+02	4.09E-02
BREOT-S18+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	3.95E+02	5.66E+02	NA	NA	NA	NA	2.86E-02	6.29E+02	1.80E+01	1.03E-01	1.35E+02	4.45E-01	2.41E+02	1.87E-02	1.41E+02	3.15E-03
BREOT-N19+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	5.17E+01	7.40E+01	NA	NA	NA	NA	2.86E-02	8.23E+01	2.36E+00	1.03E-01	1.35E+02	5.82E-02	2.41E+02	1.87E-02	1.41E+02	4.13E-04
BREOT-S19+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	3.13E+01	4.49E+01	NA	NA	NA	NA	2.86E-02	4.99E+01	1.43E+00	1.03E-01	1.35E+02	3.53E-02	2.41E+02	1.87E-02	1.41E+02	2.50E-04
BREOT-S19+85 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	3.96E+02	5.67E+02	NA	NA	NA	NA	2.86E-02	6.31E+02	1.81E+01	1.03E-01	1.35E+02	4.47E-01	2.41E+02	1.87E-02	1.41E+02	3.16E-03
BREOT-N20+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	1.07E+02	1.53E+02	NA	NA	NA	NA	2.86E-02	1.70E+02	4.88E+00	1.03E-01	1.35E+02	1.21E-01	2.41E+02	1.87E-02	1.41E+02	8.54E-04
BREOT-S20+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	3.45E+01	4.94E+01	NA	NA	NA	NA	2.86E-02	5.49E+01	1.57E+00	1.03E-01	1.35E+02	3.89E-02	2.41E+02	1.87E-02	1.41E+02	2.75E-04
BREOT-S20+75 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	6.36E+01	9.10E+01	NA	NA	NA	NA	2.86E-02	1.01E+02	2.90E+00	1.03E-01	1.35E+02	7.17E-02	2.41E+02	1.87E-02	1.41E+02	5.07E-04
BREOT-N21+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	2.21E+03	3.17E+03	NA	NA	NA	NA	2.86E-02	3.52E+03	1.01E+02	1.03E-01	1.35E+02	2.49E+00	2.41E+02	1.87E-02	1.41E+02	1.77E-02
BREOT-S21+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	3.32E+01	4.76E+01	NA	NA	NA	NA	2.86E-02	5.29E+01	1.51E+00	1.03E-01	1.35E+02	3.75E-02	2.41E+02	1.87E-02	1.41E+02	2.65E-04
BREOT-N22+150 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	1.76E+02	2.52E+02	NA	NA	NA	NA	2.86E-02	2.80E+02	8.03E+00	1.03E-01	1.35E+02	1.98E-01	2.41E+02	1.87E-02	1.41E+02	1.41E-03
BREOT-N22+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	1.55E+03	2.22E+03	NA	NA	NA	NA	2.86E-02	2.47E+03	7.07E+01	1.03E-01	1.35E+02	1.75E+00	2.41E+02	1.87E-02	1.41E+02	1.24E-02

TABLE C-2D: LEAD DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 18.41

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
White-Tailed Deer (Large Herbivorous Mammal - Terrestrial)																							
BREOT-S22+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	6.72E+02	9.62E+02	NA	NA	NA	NA	2.86E-02	1.07E+03	3.06E+01	1.03E-01	1.35E+02	7.57E-01	2.41E+02	1.87E-02	1.41E+02	5.36E-03
BREOT-N23+115 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	4.13E+01	5.92E+01	NA	NA	NA	NA	2.86E-02	6.58E+01	1.88E+00	1.03E-01	1.35E+02	4.66E-02	2.41E+02	1.87E-02	1.41E+02	3.30E-04
BREOT-N23+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	4.53E+03	6.49E+03	NA	NA	NA	NA	2.86E-02	7.21E+03	2.07E+02	1.03E-01	1.35E+02	5.11E+00	2.41E+02	1.87E-02	1.41E+02	3.62E-02
BREOT-S23+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	7.91E+02	1.13E+03	NA	NA	NA	NA	2.86E-02	1.26E+03	3.61E+01	1.03E-01	1.35E+02	8.91E-01	2.41E+02	1.87E-02	1.41E+02	6.31E-03
BREOT-S23+37.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	6.78E+01	9.70E+01	NA	NA	NA	NA	2.86E-02	1.08E+02	3.09E+00	1.03E-01	1.35E+02	7.64E-02	2.41E+02	1.87E-02	1.41E+02	5.41E-04
BREOT-N24+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	5.76E+02	8.25E+02	NA	NA	NA	NA	2.86E-02	9.17E+02	2.63E+01	1.03E-01	1.35E+02	6.49E-01	2.41E+02	1.87E-02	1.41E+02	4.60E-03
BREOT-N24+75 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	6.82E+01	9.76E+01	NA	NA	NA	NA	2.86E-02	1.09E+02	3.11E+00	1.03E-01	1.35E+02	7.68E-02	2.41E+02	1.87E-02	1.41E+02	5.44E-04
BREOT-S24+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	5.82E+02	8.34E+02	NA	NA	NA	NA	2.86E-02	9.27E+02	2.65E+01	1.03E-01	1.35E+02	6.56E-01	2.41E+02	1.87E-02	1.41E+02	4.65E-03
BREOT-N25+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	4.25E+01	6.09E+01	NA	NA	NA	NA	2.86E-02	6.77E+01	1.94E+00	1.03E-01	1.35E+02	4.79E-02	2.41E+02	1.87E-02	1.41E+02	3.39E-04
BREOT-S25+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	3.41E+02	4.88E+02	NA	NA	NA	NA	2.86E-02	5.43E+02	1.55E+01	1.03E-01	1.35E+02	3.84E-01	2.41E+02	1.87E-02	1.41E+02	2.72E-03
BREOT-S25+40 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	1.50E+03	2.15E+03	NA	NA	NA	NA	2.86E-02	2.40E+03	6.86E+01	1.03E-01	1.35E+02	1.70E+00	2.41E+02	1.87E-02	1.41E+02	1.20E-02
BREOT-S26+37 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	1.31E+02	1.88E+02	NA	NA	NA	NA	2.86E-02	2.09E+02	5.99E+00	1.03E-01	1.35E+02	1.48E-01	2.41E+02	1.87E-02	1.41E+02	1.05E-03
BREOT-N27+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	7.35E+01	1.05E+02	NA	NA	NA	NA	2.86E-02	1.17E+02	3.35E+00	1.03E-01	1.35E+02	8.29E-02	2.41E+02	1.87E-02	1.41E+02	5.87E-04
BREOT-S27+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	2.49E+02	3.56E+02	NA	NA	NA	NA	2.86E-02	3.96E+02	1.13E+01	1.03E-01	1.35E+02	2.80E-01	2.41E+02	1.87E-02	1.41E+02	1.99E-03
BREOT-N28+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	8.62E+01	1.23E+02	NA	NA	NA	NA	2.86E-02	1.37E+02	3.93E+00	1.03E-01	1.35E+02	9.71E-02	2.41E+02	1.87E-02	1.41E+02	6.88E-04
BREOT-S28+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	4.88E+02	6.98E+02	NA	NA	NA	NA	2.86E-02	7.76E+02	2.22E+01	1.03E-01	1.35E+02	5.50E-01	2.41E+02	1.87E-02	1.41E+02	3.89E-03
BREOT-N29+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	2.33E+02	3.34E+02	NA	NA	NA	NA	2.86E-02	3.71E+02	1.06E+01	1.03E-01	1.35E+02	2.63E-01	2.41E+02	1.87E-02	1.41E+02	1.86E-03
BREOT-S29+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	4.43E+02	6.34E+02	NA	NA	NA	NA	2.86E-02	7.05E+02	2.02E+01	1.03E-01	1.35E+02	4.99E-01	2.41E+02	1.87E-02	1.41E+02	3.53E-03
BREOT-N30+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	3.47E+02	4.97E+02	NA	NA	NA	NA	2.86E-02	5.52E+02	1.58E+01	1.03E-01	1.35E+02	3.91E-01	2.41E+02	1.87E-02	1.41E+02	2.77E-03
BREOT-S30+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	3.26E+02	4.66E+02	NA	NA	NA	NA	2.86E-02	5.18E+02	1.48E+01	1.03E-01	1.35E+02	3.67E-01	2.41E+02	1.87E-02	1.41E+02	2.60E-03
BREOT-N31+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	6.28E+03	8.99E+03	NA	NA	NA	NA	2.86E-02	1.00E+04	2.86E+02	1.03E-01	1.35E+02	7.08E+00	2.41E+02	1.87E-02	1.41E+02	5.01E-02
BREOT-N31+75 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	4.74E+01	6.78E+01	NA	NA	NA	NA	2.86E-02	7.54E+01	2.16E+00	1.03E-01	1.35E+02	5.34E-02	2.41E+02	1.87E-02	1.41E+02	3.78E-04
BREOT-S31+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	1.10E+02	1.58E+02	NA	NA	NA	NA	2.86E-02	1.75E+02	5.02E+00	1.03E-01	1.35E+02	1.24E-01	2.41E+02	1.87E-02	1.41E+02	8.78E-04
BREOT-N32+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	6.83E+01	9.78E+01	NA	NA	NA	NA	2.86E-02	1.09E+02	3.11E+00	1.03E-01	1.35E+02	7.70E-02	2.41E+02	1.87E-02	1.41E+02	5.45E-04
BREOT-S32+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	7.53E+02	1.08E+03	NA	NA	NA	NA	2.86E-02	1.20E+03	3.43E+01	1.03E-01	1.35E+02	8.49E-01	2.41E+02	1.87E-02	1.41E+02	6.01E-03
BREOT-S32+300 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	2.36E+02	3.39E+02	NA	NA	NA	NA	2.86E-02	3.76E+02	1.08E+01	1.03E-01	1.35E+02	2.67E-01	2.41E+02	1.87E-02	1.41E+02	1.89E-03
BREOT-N33+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	4.71E+01	6.75E+01	NA	NA	NA	NA	2.86E-02	7.50E+01	2.15E+00	1.03E-01	1.35E+02	5.31E-02	2.41E+02	1.87E-02	1.41E+02	3.76E-04
BREOT-S33+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	8.66E+01	1.24E+02	NA	NA	NA	NA	2.86E-02	1.38E+02	3.95E+00	1.03E-01	1.35E+02	9.76E-02	2.41E+02	1.87E-02	1.41E+02	6.91E-04
BREOT-N34+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	7.20E+01	1.03E+02	NA	NA	NA	NA	2.86E-02	1.15E+02	3.28E+00	1.03E-01	1.35E+02	8.11E-02	2.41E+02	1.87E-02	1.41E+02	5.74E-04
BREOT-S34+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	2.33E+02	3.34E+02	NA	NA	NA	NA	2.86E-02	3.71E+02	1.06E+01	1.03E-01	1.35E+02	2.63E-01	2.41E+02	1.87E-02	1.41E+02	1.86E-03
BREOT-N35+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	5.31E+01	7.60E+01	NA	NA	NA	NA	2.86E-02	8.46E+01	2.42E+00	1.03E-01	1.35E+02	5.99E-02	2.41E+02	1.87E-02	1.41E+02	4.24E-04
BREOT-S35+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	8.53E+01	1.22E+02	NA	NA	NA	NA	2.86E-02	1.36E+02	3.89E+00	1.03E-01	1.35E+02	9.62E-02	2.41E+02	1.87E-02	1.41E+02	6.81E-04
BREOT-N36+100 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	1.07E+02	1.53E+02	NA	NA	NA	NA	2.86E-02	1.71E+02	4.88E+00	1.03E-01	1.35E+02	1.21E-01	2.41E+02	1.87E-02	1.41E+02	8.55E-04
BREOT-N36+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	1.27E+03	1.82E+03	NA	NA	NA	NA	2.86E-02	2.02E+03	5.78E+01	1.03E-01	1.35E+02	1.43E+00	2.41E+02	1.87E-02	1.41E+02	1.01E-02
BREOT-S36+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	1.41E+02	2.02E+02	NA	NA	NA	NA	2.86E-02	2.24E+02	6.43E+00	1.03E-01	1.35E+02	1.59E-01	2.41E+02	1.87E-02	1.41E+02	1.13E-03
BREOT-N37+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	6.56E+01	9.39E+01	NA	NA	NA	NA	2.86E-02	1.04E+02	2.99E+00	1.03E-01	1.35E+02	7.39E-02	2.41E+02	1.87E-02	1.41E+02	5.24E-04
BREOT-S37+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	7.89E+01	1.13E+02	NA	NA	NA	NA	2.86E-02	1.26E+02	3.60E+00	1.03E-01	1.35E+02	8.89E-02	2.41E+02	1.87E-02	1.41E+02	6.30E-04
BREOT-N38+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	9.47E+01	1.36E+02	NA	NA	NA	NA	2.86E-02	1.51E+02	4.32E+00	1.03E-01	1.35E+02	1.07E-01	2.41E+02	1.87E-02	1.41E+02	7.56E-04
BREOT-S38+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	9.61E+01	1.38E+02	NA	NA	NA	NA	2.86E-02	1.53E+02	4.38E+00	1.03E-01	1.35E+02	1.08E-01	2.41E+02	1.87E-02	1.41E+02	7.67E-04
BREOT-N39+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	9.18E+01	1.31E+02	NA	NA	NA	NA	2.86E-02	1.46E+02	4.18E+00	1.03E-01	1.35E+02	1.03E-01	2.41E+02	1.87E-02	1.41E+02	7.33E-04
BREOT-S39+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	1.04E+02	1.49E+02	NA	NA	NA	NA	2.86E-02	1.65E+02	4.74E+00	1.03E-01	1.35E+02	1.17E-01	2.41E+02	1.87E-02	1.41E+02	8.29E-04
BREOT-N40+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	9.46E+01	1.35E+02	NA	NA	NA	NA	2.86E-02	1.51E+02	4.31E+00	1.03E-01	1.35E+02	1.07E-01	2.41E+02	1.87E-02	1.41E+02	7.55E-04
BREOT-S40+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	8.23E+01	1.18E+02	NA	NA	NA	NA	2.86E-02	1.31E+02	3.75E+00	1.03E-01	1.35E+02	9.27E-02	2.41E+02	1.87E-02	1.41E+02	6.57E-04
BREOT-N41+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	6.24E+01	8.94E+01	NA	NA	NA	NA	2.86E-02	9.94E+01	2.85E+00	1.03E-01	1.35E+02	7.04E-02	2.41E+02	1.87E-02	1.41E+02	4.98E-04
BREOT-S41+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	3.39E+02	4.85E+02	NA	NA	NA	NA	2.86E-02	5.39E+02	1.54E+01	1.03E-01	1.35E+02	3.82E-01	2.41E+02	1.87E-02	1.41E+02	2.70E-03
BREOT-N42+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	2.83E+01	4.05E+01	NA	NA	NA	NA	2.86E-02	4.50E+01	1.29E+00	1.03E-01	1.35E+02	3.19E-02	2.41E+02	1.87E-02	1.41E+02	2.26E-04
BREOT-S42+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	7.62E+01	1.09E+02	NA	NA	NA	NA	2.86E-02	1.21E+02	3.47E+00	1.03E-01	1.35E+02	8.59E-02	2.41E+02	1.87E-02	1.41E+02	6.08E-04
BREOT-N43+12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	1.65E+02	2.36E+02	NA	NA	NA	NA	2.86E-02	2.62E+02	7.51E+00	1.03E-01	1.35E+02	1.86E-01	2.41E+02	1.87E-02	1.41E+02	1.31E-03
BREOT-N43+40 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	7.34E+01	1.05E+02	NA	NA	NA	NA	2.86E-02	1.17E+02	3.35E+00	1.03E-01	1.35E+02	8.28E-02	2.41E+02	1.87E-02	1.41E+02	5.86E-04
BREOT-S43+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	4.63E+01	6.63E+01	NA	NA	NA	NA	2.86E-02	7.37E+01	2.11E+00	1.03E-01	1.35E+02	5.22E-02	2.41E+02	1.87E-02	1.41E+02	3.69E-04
BREOT-N44+55 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	9.68E+01	1.39E+02	NA	NA	NA	NA	2.86E-02	1.54E+02	4.41E+00	1.03E-01	1.35E+02	1.09E-01	2.41E+02	1.87E-02	1.41E+02	7.73E-04
BREOT-S44+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	4.51E+01	6.45E+01	NA	NA	NA	NA	2.86E-02	7.17E+01	2.05E+00	1.03E-01	1.35E+02	5.08E-02	2.41E+02	1.87E-02	1.41E+02	3.60E-04
BREOT-N45+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	6.94E+01	9.93E+01	NA	NA	NA	NA	2.86E-02	1.10E+02	3.16E+00	1.03E-01	1.35E+02	7.82E-02	2.41E+02	1.87E-02	1.41E+02	5.54E-04
BREOT-S45+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	3.44E+01	4.93E+01	NA	NA	NA	NA	2.86E-02	5.48E+01	1.57E+00	1.03E-01	1.35E+02	3.88E-02	2.41E+02	1.87E-02	1.41E+02	2.75E-04
BREOT-N46+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	9.93E+01	1.42E+02	NA	NA	NA	NA	2.86E-02	1.58E+02	4.52E+00	1.03E-01	1.35E+02	1.12E-01	2.41E+02	1.87E-02	1.41E+02	7.92E-04
BREOT-S46+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	3.17E+01	4.54E+01	NA	NA	NA	NA	2.86E-02	5.05E+01	1.45E+00	1.03E-01	1.35E+02	3.57E-02	2.41E+02	1.87E-02	1.41E+02	2.53E-04
BREOT-N47+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	8.09E+01	1.16E+02	NA	NA	NA	NA	2.86E-02	1.29E+02	3.69E+00	1.03E-01	1.35E+02	9.11E-02	2.41E+02	1.87E-02	1.41E+02	6.45E-04

TABLE C-2D: LEAD DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables; from BAF table; linked to soil or sed concentration table (VLOOKUP)

calculated values; linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 18.41

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
White-Tailed Deer (Large Herbivorous Mammal - Terrestrial)																							
BREOT-S47+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	2.31E+01	3.30E+01	NA	NA	NA	NA	2.86E-02	3.67E+01	1.05E+00	1.03E-01	1.35E+02	2.60E-02	2.41E+02	1.87E-02	1.41E+02	1.84E-04
BREOT-N48+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	6.89E+01	9.86E+01	NA	NA	NA	NA	2.86E-02	1.10E+02	3.14E+00	1.03E-01	1.35E+02	7.76E-02	2.41E+02	1.87E-02	1.41E+02	5.50E-04
BREOT-S48+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	8.71E+01	1.25E+02	NA	NA	NA	NA	2.86E-02	1.39E+02	3.97E+00	1.03E-01	1.35E+02	9.82E-02	2.41E+02	1.87E-02	1.41E+02	6.95E-04
BREOT-N49+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	2.56E+02	3.67E+02	NA	NA	NA	NA	2.86E-02	4.08E+02	1.17E+01	1.03E-01	1.35E+02	2.89E-01	2.41E+02	1.87E-02	1.41E+02	2.05E-03
BREOT-S49+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	8.68E+01	1.24E+02	NA	NA	NA	NA	2.86E-02	1.38E+02	3.96E+00	1.03E-01	1.35E+02	9.79E-02	2.41E+02	1.87E-02	1.41E+02	6.93E-04
BREOT-N51+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	5.94E+01	8.51E+01	NA	NA	NA	NA	2.86E-02	9.46E+01	2.71E+00	1.03E-01	1.35E+02	6.70E-02	2.41E+02	1.87E-02	1.41E+02	4.74E-04
BREOT-S51+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	1.87E+01	2.67E+01	NA	NA	NA	NA	2.86E-02	2.97E+01	8.51E-01	1.03E-01	1.35E+02	2.10E-02	2.41E+02	1.87E-02	1.41E+02	1.49E-04
BREOT-N52+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	1.35E+02	1.93E+02	NA	NA	NA	NA	2.86E-02	2.15E+02	6.14E+00	1.03E-01	1.35E+02	1.52E-01	2.41E+02	1.87E-02	1.41E+02	1.08E-03
BREOT-S52+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	3.89E+01	5.57E+01	NA	NA	NA	NA	2.86E-02	6.19E+01	1.77E+00	1.03E-01	1.35E+02	4.38E-02	2.41E+02	1.87E-02	1.41E+02	3.11E-04
BREOT-N53+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	5.12E+01	7.33E+01	NA	NA	NA	NA	2.86E-02	8.15E+01	2.33E+00	1.03E-01	1.35E+02	5.77E-02	2.41E+02	1.87E-02	1.41E+02	4.09E-04
BREOT-S53+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	7.10E+01	1.02E+02	NA	NA	NA	NA	2.86E-02	1.13E+02	3.24E+00	1.03E-01	1.35E+02	8.01E-02	2.41E+02	1.87E-02	1.41E+02	5.67E-04
BREOT-S54+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	4.05E+01	5.79E+01	NA	NA	NA	NA	2.86E-02	6.44E+01	1.84E+00	1.03E-01	1.35E+02	4.56E-02	2.41E+02	1.87E-02	1.41E+02	3.23E-04
BREOT-N55+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	5.04E+01	7.22E+01	NA	NA	NA	NA	2.86E-02	8.03E+01	2.30E+00	1.03E-01	1.35E+02	5.68E-02	2.41E+02	1.87E-02	1.41E+02	4.03E-04
BREOT-S55+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	4.36E+01	6.25E+01	NA	NA	NA	NA	2.86E-02	6.95E+01	1.99E+00	1.03E-01	1.35E+02	4.92E-02	2.41E+02	1.87E-02	1.41E+02	3.48E-04
BREOT-N56+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	6.95E+01	9.94E+01	NA	NA	NA	NA	2.86E-02	1.11E+02	3.17E+00	1.03E-01	1.35E+02	7.83E-02	2.41E+02	1.87E-02	1.41E+02	5.54E-04
BREOT-S56+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	5.71E+01	8.17E+01	NA	NA	NA	NA	2.86E-02	9.09E+01	2.60E+00	1.03E-01	1.35E+02	6.43E-02	2.41E+02	1.87E-02	1.41E+02	4.56E-04
BREOT-N57+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	6.15E+01	8.81E+01	NA	NA	NA	NA	2.86E-02	9.80E+01	2.80E+00	1.03E-01	1.35E+02	6.94E-02	2.41E+02	1.87E-02	1.41E+02	4.91E-04
BREOT-S57+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	6.11E+01	8.74E+01	NA	NA	NA	NA	2.86E-02	9.72E+01	2.78E+00	1.03E-01	1.35E+02	6.88E-02	2.41E+02	1.87E-02	1.41E+02	4.87E-04
BREOT-N58+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	5.83E+01	8.35E+01	NA	NA	NA	NA	2.86E-02	9.28E+01	2.66E+00	1.03E-01	1.35E+02	6.57E-02	2.41E+02	1.87E-02	1.41E+02	4.65E-04
BREOT-S58+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	7.87E+01	1.13E+02	NA	NA	NA	NA	2.86E-02	1.25E+02	3.59E+00	1.03E-01	1.35E+02	8.87E-02	2.41E+02	1.87E-02	1.41E+02	6.28E-04
BREOT-N59+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	2.69E+02	3.85E+02	NA	NA	NA	NA	2.86E-02	4.28E+02	1.22E+01	1.03E-01	1.35E+02	3.03E-01	2.41E+02	1.87E-02	1.41E+02	2.14E-03
BREOT-N60+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	5.76E+01	8.24E+01	NA	NA	NA	NA	2.86E-02	9.16E+01	2.62E+00	1.03E-01	1.35E+02	6.49E-02	2.41E+02	1.87E-02	1.41E+02	4.59E-04
BREOT-S60+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	4.84E+01	6.93E+01	NA	NA	NA	NA	2.86E-02	7.70E+01	2.20E+00	1.03E-01	1.35E+02	5.45E-02	2.41E+02	1.87E-02	1.41E+02	3.86E-04
BREOT-S61+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	3.83E+01	5.48E+01	NA	NA	NA	NA	2.86E-02	6.09E+01	1.74E+00	1.03E-01	1.35E+02	4.31E-02	2.41E+02	1.87E-02	1.41E+02	3.05E-04
BREOT-N62+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	9.86E+01	1.41E+02	NA	NA	NA	NA	2.86E-02	1.57E+02	4.49E+00	1.03E-01	1.35E+02	1.11E-01	2.41E+02	1.87E-02	1.41E+02	7.87E-04
BREOT-S62+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	2.16E+01	3.09E+01	NA	NA	NA	NA	2.86E-02	3.44E+01	9.84E-01	1.03E-01	1.35E+02	2.43E-02	2.41E+02	1.87E-02	1.41E+02	1.72E-04
BREOT-N63+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	3.44E+02	4.93E+02	NA	NA	NA	NA	2.86E-02	5.48E+02	1.57E+01	1.03E-01	1.35E+02	3.88E-01	2.41E+02	1.87E-02	1.41E+02	2.75E-03
BREOT-S63+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	2.21E+01	3.17E+01	NA	NA	NA	NA	2.86E-02	3.52E+01	1.01E+00	1.03E-01	1.35E+02	2.49E-02	2.41E+02	1.87E-02	1.41E+02	1.76E-04
BREOT-N64+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	8.05E+01	1.15E+02	NA	NA	NA	NA	2.86E-02	1.28E+02	3.67E+00	1.03E-01	1.35E+02	9.07E-02	2.41E+02	1.87E-02	1.41E+02	6.42E-04
BREOT-S64+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	5.51E+01	7.88E+01	NA	NA	NA	NA	2.86E-02	8.77E+01	2.51E+00	1.03E-01	1.35E+02	6.21E-02	2.41E+02	1.87E-02	1.41E+02	4.40E-04
BREOT-S65+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	4.60E+01	6.59E+01	NA	NA	NA	NA	2.86E-02	7.33E+01	2.10E+00	1.03E-01	1.35E+02	5.19E-02	2.41E+02	1.87E-02	1.41E+02	3.67E-04
BREOT-N66+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	6.33E+01	9.07E+01	NA	NA	NA	NA	2.86E-02	1.01E+02	2.89E+00	1.03E-01	1.35E+02	7.14E-02	2.41E+02	1.87E-02	1.41E+02	5.05E-04
BREOT-S66+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	4.16E+01	5.96E+01	NA	NA	NA	NA	2.86E-02	6.63E+01	1.90E+00	1.03E-01	1.35E+02	4.69E-02	2.41E+02	1.87E-02	1.41E+02	3.32E-04
BREOT-N67+125 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	2.66E+02	3.81E+02	NA	NA	NA	NA	2.86E-02	4.24E+02	1.21E+01	1.03E-01	1.35E+02	3.00E-01	2.41E+02	1.87E-02	1.41E+02	2.13E-03
BREOT-S67+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	5.38E+01	7.70E+01	NA	NA	NA	NA	2.86E-02	8.56E+01	2.45E+00	1.03E-01	1.35E+02	6.06E-02	2.41E+02	1.87E-02	1.41E+02	4.29E-04
BREOT-N67+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	9.68E+02	1.39E+03	NA	NA	NA	NA	2.86E-02	1.54E+03	4.41E+01	1.03E-01	1.35E+02	1.09E+00	2.41E+02	1.87E-02	1.41E+02	7.73E-03
																						Maximum HQ (Outside Tailings)	**6.40E-02**
Red Fox (Carnivorous Mammal - Terrestrial)																							
Reference Sites																							
ACBG-1 (0-6")	1.72E-01	1.72E-01	7.62E-02	1.76E+00	3.02E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.31E+01	1.11E-01	1.36E-02	4.54E+00	1.24E-03	2.41E+02	1.87E-02	1.73E+02	7.15E-06
ACBG-2 (0-6")	1.72E-01	1.72E-01	7.62E-02	2.92E+00	5.00E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.83E+01	1.84E-01	1.36E-02	4.54E+00	2.05E-03	2.41E+02	1.87E-02	1.73E+02	1.18E-05
UBRBG-202 (0-6")	1.72E-01	1.72E-01	7.62E-02	4.14E+00	7.11E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.44E+01	2.61E-01	1.36E-02	4.54E+00	2.91E-03	2.41E+02	1.87E-02	1.73E+02	1.68E-05
UBRBG-204 (0-6")	1.72E-01	1.72E-01	7.62E-02	4.05E+00	6.96E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.32E+01	2.56E-01	1.36E-02	4.54E+00	2.85E-03	2.41E+02	1.87E-02	1.73E+02	1.65E-05
Inside Tailings																						**Minimum HQ (Reference Sites)**	**7.15E-06**
BREOT-S6-12.5 (0-6")	1.72E-01	1.72E-01	9.28E-01	1.44E+03	2.47E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.55E+03	7.45E+00	1.36E-02	4.54E+00	7.62E-01	2.41E+02	1.87E-02	1.73E+02	4.40E-03
BREOT-S2-12.5 (0-6")	1.72E-01	1.72E-01	9.28E-01	1.80E+03	3.10E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.94E+03	9.34E+00	1.36E-02	4.54E+00	9.56E-01	2.41E+02	1.87E-02	1.73E+02	5.52E-03
BREOT-S0-12.5 (0-6")	1.72E-01	1.72E-01	9.28E-01	8.25E+02	1.41E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	8.89E+02	4.27E+00	1.36E-02	4.54E+00	4.37E-01	2.41E+02	1.87E-02	1.73E+02	2.52E-03
BREOT-S1-12.5 (0-6")	1.72E-01	1.72E-01	9.28E-01	7.51E+02	1.29E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	8.09E+02	3.89E+00	1.36E-02	4.54E+00	3.98E-01	2.41E+02	1.87E-02	1.73E+02	2.30E-03
BREOT-S7-25 (0-6")	1.72E-01	1.72E-01	9.28E-01	1.58E+02	2.72E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.71E+02	8.20E-01	1.36E-02	4.54E+00	8.39E-02	2.41E+02	1.87E-02	1.73E+02	4.85E-04
BREOT-S8-12.5 (0-6")	1.72E-01	1.72E-01	9.28E-01	6.02E+02	1.03E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	6.49E+02	3.12E+00	1.36E-02	4.54E+00	3.19E-01	2.41E+02	1.87E-02	1.73E+02	1.84E-03
BREOT-S9-12.5 (0-6")	1.72E-01	1.72E-01	9.28E-01	6.30E+02	1.08E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	6.79E+02	3.26E+00	1.36E-02	4.54E+00	3.34E-01	2.41E+02	1.87E-02	1.73E+02	1.93E-03
BREOT-N10-12.5 (0-6")	1.72E-01	1.72E-01	9.28E-01	8.96E+03	1.54E+03	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	9.66E+03	4.64E+01	1.36E-02	4.54E+00	4.75E+00	2.41E+02	1.87E-02	1.73E+02	2.74E-02
BREOT-N11-12.5 (0-6")	1.72E-01	1.72E-01	9.28E-01	2.49E+03	4.28E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.69E+03	1.29E+01	1.36E-02	4.54E+00	1.32E+00	2.41E+02	1.87E-02	1.73E+02	7.64E-03
BREOT-N11-125 (0-6")	1.72E-01	1.72E-01	9.28E-01	2.06E+03	3.54E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.23E+03	1.07E+01	1.36E-02	4.54E+00	1.09E+00	2.41E+02	1.87E-02	1.73E+02	6.32E-03
BREOT-S11-12 (0-6")	1.72E-01	1.72E-01	9.28E-01	6.05E+03	1.04E+03	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	6.52E+03	3.13E+01	1.36E-02	4.54E+00	3.21E+00	2.41E+02	1.87E-02	1.73E+02	1.85E-02
BREOT-S11+63 (0-6")	1.72E-01	1.72E-01	9.28E-01	1.90E+03	3.27E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.05E+03	9.85E+00	1.36E-02	4.54E+00	1.01E+00	2.41E+02	1.87E-02	1.73E+02	5.83E-03
UBDT-TP-6 (0-2")	1.72E-01	1.72E-01	9.28E-01	1.44E+04	2.48E+03	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.56E+04	7.47E+01	1.36E-02	4.54E+00	7.65E+00	2.41E+02	1.87E-02	1.73E+02	4.42E-02
UBDT-TP-6 (2-12")	1.72E-01	1.72E-01	9.28E-01	1.10E+04	1.89E+03	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.19E+04	5.70E+01	1.36E-02	4.54E+00	5.84E+00	2.41E+02	1.87E-02	1.73E+02	3.37E-02
UBDT-TP-6 (12-24")	1.72E-01	1.72E-01	9.28E-01	6.16E+03	1.06E+03	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	6.64E+03	3.19E+01	1.36E-02	4.54E+00	3.26E+00	2.41E+02	1.87E-02	1.73E+02	1.89E-02

TABLE C-2D: LEAD DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 18.41

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Red Fox (Carnivorous Mammal - Terrestrial)																							
UBDT-TP-6 (24-36")	1.72E-01	1.72E-01	9.28E-01	4.95E+02	8.49E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.33E+02	2.56E+00	1.36E-02	4.54E+00	2.62E-01	2.41E+02	1.87E-02	1.73E+02	1.51E-03
UBDT-TP-6 (36-48")	1.72E-01	1.72E-01	9.28E-01	1.12E+03	1.91E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.20E+03	5.78E+00	1.36E-02	4.54E+00	5.91E-01	2.41E+02	1.87E-02	1.73E+02	3.42E-03
UBDT-TP-6 (48-60")	1.72E-01	1.72E-01	9.28E-01	5.08E+02	8.71E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.47E+02	2.63E+00	1.36E-02	4.54E+00	2.69E-01	2.41E+02	1.87E-02	1.73E+02	1.55E-03
BREOT-N12-12.5 (0-6")	1.72E-01	1.72E-01	9.28E-01	1.41E+03	2.42E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.52E+03	7.31E+00	1.36E-02	4.54E+00	7.48E-01	2.41E+02	1.87E-02	1.73E+02	4.32E-03
BREOT-S12-12.5 (0-6")	1.72E-01	1.72E-01	9.28E-01	3.12E+03	5.36E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.37E+03	1.62E+01	1.36E-02	4.54E+00	1.66E+00	2.41E+02	1.87E-02	1.73E+02	9.56E-03
BREOT-S13-12.5 (0-6")	1.72E-01	1.72E-01	9.28E-01	4.66E+03	8.00E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.02E+03	2.41E+01	1.36E-02	4.54E+00	2.47E+00	2.41E+02	1.87E-02	1.73E+02	1.43E-02
BREOT-S14-12.5 (0-6")	1.72E-01	1.72E-01	9.28E-01	1.29E+03	2.22E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.39E+03	6.69E+00	1.36E-02	4.54E+00	6.85E-01	2.41E+02	1.87E-02	1.73E+02	3.96E-03
BREOT-N15-12.5 (0-6")	1.72E-01	1.72E-01	9.28E-01	2.64E+03	4.52E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.84E+03	1.37E+01	1.36E-02	4.54E+00	1.40E+00	2.41E+02	1.87E-02	1.73E+02	8.07E-03
BREOT-S15-12.5 (0-6")	1.72E-01	1.72E-01	9.28E-01	2.39E+03	4.10E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.58E+03	1.24E+01	1.36E-02	4.54E+00	1.27E+00	2.41E+02	1.87E-02	1.73E+02	7.32E-03
BREOT-N16-12.5 (0-6")	1.72E-01	1.72E-01	9.28E-01	2.51E+03	4.31E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.70E+03	1.30E+01	1.36E-02	4.54E+00	1.33E+00	2.41E+02	1.87E-02	1.73E+02	7.68E-03
BREOT-N16-25 (0-6")	1.72E-01	1.72E-01	9.28E-01	3.05E+02	5.24E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.29E+02	1.58E+00	1.36E-02	4.54E+00	1.62E-01	2.41E+02	1.87E-02	1.73E+02	9.35E-04
BREOT-S16-12.5 (0-6")	1.72E-01	1.72E-01	9.28E-01	1.78E+03	3.05E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.92E+03	9.21E+00	1.36E-02	4.54E+00	9.43E-01	2.41E+02	1.87E-02	1.73E+02	5.45E-03
BREOT-N17-12.5 (0-6")	1.72E-01	1.72E-01	9.28E-01	2.16E+03	3.71E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.33E+03	1.12E+01	1.36E-02	4.54E+00	1.15E+00	2.41E+02	1.87E-02	1.73E+02	6.62E-03
BREOT-S17-12.5 (0-6")	1.72E-01	1.72E-01	9.28E-01	6.53E+02	1.12E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	7.03E+02	3.38E+00	1.36E-02	4.54E+00	3.46E-01	2.41E+02	1.87E-02	1.73E+02	2.00E-03
BREOT-S17-25 (0-6")	1.72E-01	1.72E-01	9.28E-01	5.07E+02	8.70E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.46E+02	2.62E+00	1.36E-02	4.54E+00	2.69E-01	2.41E+02	1.87E-02	1.73E+02	1.55E-03
UBDT-TP-4 (0-2")	1.72E-01	1.72E-01	9.28E-01	1.20E+03	2.07E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.30E+03	6.23E+00	1.36E-02	4.54E+00	6.38E-01	2.41E+02	1.87E-02	1.73E+02	3.69E-03
UBDT-TP-4 (2-12")	1.72E-01	1.72E-01	9.28E-01	1.13E+03	1.95E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.22E+03	5.87E+00	1.36E-02	4.54E+00	6.01E-01	2.41E+02	1.87E-02	1.73E+02	3.47E-03
UBDT-TP-4 (12-24")	1.72E-01	1.72E-01	9.28E-01	7.67E+02	1.32E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	8.26E+02	3.97E+00	1.36E-02	4.54E+00	4.06E-01	2.41E+02	1.87E-02	1.73E+02	2.35E-03
UBDT-TP-4 (24-36")	1.72E-01	1.72E-01	9.28E-01	6.22E+02	1.07E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	6.71E+02	3.22E+00	1.36E-02	4.54E+00	3.30E-01	2.41E+02	1.87E-02	1.73E+02	1.91E-03
BREOT-N18-12.5 (0-6")	1.72E-01	1.72E-01	9.28E-01	1.87E+03	3.21E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.02E+03	9.68E+00	1.36E-02	4.54E+00	9.91E-01	2.41E+02	1.87E-02	1.73E+02	5.72E-03
BREOT-N18-25 (0-6")	1.72E-01	1.72E-01	9.28E-01	1.67E+02	2.87E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.80E+02	8.66E-01	1.36E-02	4.54E+00	8.86E-02	2.41E+02	1.87E-02	1.73E+02	5.12E-04
BREOT-S18-12.5 (0-6")	1.72E-01	1.72E-01	9.28E-01	7.63E+02	1.31E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	8.22E+02	3.95E+00	1.36E-02	4.54E+00	4.04E-01	2.41E+02	1.87E-02	1.73E+02	2.34E-03
BREOT-N19-10 (0-6")	1.72E-01	1.72E-01	9.28E-01	1.75E+03	2.99E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.88E+03	9.04E+00	1.36E-02	4.54E+00	9.25E-01	2.41E+02	1.87E-02	1.73E+02	5.34E-03
BREOT-S19-12.5 (0-6")	1.72E-01	1.72E-01	9.28E-01	9.41E+02	1.61E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.01E+03	4.87E+00	1.36E-02	4.54E+00	4.99E-01	2.41E+02	1.87E-02	1.73E+02	2.88E-03
UBDT-TP-5 (0-2")	1.72E-01	1.72E-01	9.28E-01	8.93E+02	1.53E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	9.62E+02	4.62E+00	1.36E-02	4.54E+00	4.73E-01	2.41E+02	1.87E-02	1.73E+02	2.73E-03
UBDT-TP-5 (2-12")	1.72E-01	1.72E-01	9.28E-01	9.49E+02	1.63E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.02E+03	4.91E+00	1.36E-02	4.54E+00	5.03E-01	2.41E+02	1.87E-02	1.73E+02	2.91E-03
UBDT-TP-5 (12-24")	1.72E-01	1.72E-01	9.28E-01	9.67E+02	1.66E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.04E+03	5.01E+00	1.36E-02	4.54E+00	5.12E-01	2.41E+02	1.87E-02	1.73E+02	2.96E-03
BREOT-N20-12.5 (0-6")	1.72E-01	1.72E-01	9.28E-01	1.08E+03	1.86E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.17E+03	5.60E+00	1.36E-02	4.54E+00	5.73E-01	2.41E+02	1.87E-02	1.73E+02	3.31E-03
UBDT-TP-3 (0-2")	1.72E-01	1.72E-01	9.28E-01	1.25E+03	2.14E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.34E+03	6.46E+00	1.36E-02	4.54E+00	6.61E-01	2.41E+02	1.87E-02	1.73E+02	3.82E-03
UBDT-TP-3 (2-12")	1.72E-01	1.72E-01	9.28E-01	1.68E+03	2.89E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.82E+03	8.72E+00	1.36E-02	4.54E+00	8.93E-01	2.41E+02	1.87E-02	1.73E+02	5.16E-03
UBDT-TP-3 (12-24")	1.72E-01	1.72E-01	9.28E-01	1.16E+03	1.99E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.25E+03	5.99E+00	1.36E-02	4.54E+00	6.13E-01	2.41E+02	1.87E-02	1.73E+02	3.54E-03
UBDT-TP-3 (24-36")	1.72E-01	1.72E-01	9.28E-01	1.46E+03	2.51E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.58E+03	7.57E+00	1.36E-02	4.54E+00	7.74E-01	2.41E+02	1.87E-02	1.73E+02	4.47E-03
UBDT-TP-3 (36-48")	1.72E-01	1.72E-01	9.28E-01	1.62E+03	2.78E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.74E+03	8.38E+00	1.36E-02	4.54E+00	8.58E-01	2.41E+02	1.87E-02	1.73E+02	4.96E-03
UBDT-TP-3 (48-60")	1.72E-01	1.72E-01	9.28E-01	3.31E+02	5.68E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.57E+02	1.71E+00	1.36E-02	4.54E+00	1.75E-01	2.41E+02	1.87E-02	1.73E+02	1.01E-03
BREOT-N21-12.5 (0-6")	1.72E-01	1.72E-01	9.28E-01	1.06E+03	1.83E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.15E+03	5.51E+00	1.36E-02	4.54E+00	5.64E-01	2.41E+02	1.87E-02	1.73E+02	3.26E-03
BREOT-N22-12.5 (0-6")	1.72E-01	1.72E-01	9.28E-01	1.37E+03	2.35E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.48E+03	7.10E+00	1.36E-02	4.54E+00	7.26E-01	2.41E+02	1.87E-02	1.73E+02	4.20E-03
BREOT-N23-12.5 (0-6")	1.72E-01	1.72E-01	9.28E-01	1.14E+03	1.96E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.23E+03	5.93E+00	1.36E-02	4.54E+00	6.07E-01	2.41E+02	1.87E-02	1.73E+02	3.50E-03
BREOT-S23-12.5 (0-6")	1.72E-01	1.72E-01	9.28E-01	1.60E+03	2.74E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.72E+03	8.28E+00	1.36E-02	4.54E+00	8.47E-01	2.41E+02	1.87E-02	1.73E+02	4.89E-03
UBDT-TP-2 (0-2")	1.72E-01	1.72E-01	9.28E-01	1.10E+03	1.89E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.19E+03	5.70E+00	1.36E-02	4.54E+00	5.83E-01	2.41E+02	1.87E-02	1.73E+02	3.37E-03
UBDT-TP-2 (2-12")	1.72E-01	1.72E-01	9.28E-01	8.12E+02	1.39E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	8.75E+02	4.20E+00	1.36E-02	4.54E+00	4.30E-01	2.41E+02	1.87E-02	1.73E+02	2.49E-03
UBDT-TP-2 (12-24")	1.72E-01	1.72E-01	9.28E-01	1.17E+03	2.00E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.26E+03	6.03E+00	1.36E-02	4.54E+00	6.18E-01	2.41E+02	1.87E-02	1.73E+02	3.57E-03
UBDT-TP-2 (24-36")	1.72E-01	1.72E-01	9.28E-01	6.93E+02	1.19E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	7.47E+02	3.59E+00	1.36E-02	4.54E+00	3.67E-01	2.41E+02	1.87E-02	1.73E+02	2.12E-03
UBDT-TP-2 (36-48")	1.72E-01	1.72E-01	9.28E-01	1.14E+03	1.95E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.23E+03	5.89E+00	1.36E-02	4.54E+00	6.03E-01	2.41E+02	1.87E-02	1.73E+02	3.48E-03
BREOT-S24-12.5 (0-6")	1.72E-01	1.72E-01	9.28E-01	1.65E+03	2.83E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.78E+03	8.55E+00	1.36E-02	4.54E+00	8.75E-01	2.41E+02	1.87E-02	1.73E+02	5.05E-03
BREOT-N25-50 (0-6")	1.72E-01	1.72E-01	9.28E-01	8.16E+03	1.40E+03	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	8.80E+03	4.23E+01	1.36E-02	4.54E+00	4.33E+00	2.41E+02	1.87E-02	1.73E+02	2.50E-02
BREOT-N25-95 (0-6")	1.72E-01	1.72E-01	9.28E-01	1.27E+03	2.18E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.37E+03	6.59E+00	1.36E-02	4.54E+00	6.75E-01	2.41E+02	1.87E-02	1.73E+02	3.90E-03
BREOT-S25-12.5 (0-6")	1.72E-01	1.72E-01	9.28E-01	1.46E+03	2.50E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.57E+03	7.54E+00	1.36E-02	4.54E+00	7.72E-01	2.41E+02	1.87E-02	1.73E+02	4.46E-03
BREOT-S25-40 (0-6")	1.72E-01	1.72E-01	9.28E-01	1.86E+03	3.19E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.00E+03	9.61E+00	1.36E-02	4.54E+00	9.84E-01	2.41E+02	1.87E-02	1.73E+02	5.69E-03
BREOT-N26A-25 (0-6")	1.72E-01	1.72E-01	9.28E-01	6.99E+01	1.20E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	7.54E+01	3.62E-01	1.36E-02	4.54E+00	3.70E-02	2.41E+02	1.87E-02	1.73E+02	2.14E-04
BREOT-N26B-25 (0-6")	1.72E-01	1.72E-01	9.28E-01	1.80E+03	3.09E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.94E+03	9.31E+00	1.36E-02	4.54E+00	9.53E-01	2.41E+02	1.87E-02	1.73E+02	5.51E-03
BREOT-N26-50 (0-6")	1.72E-01	1.72E-01	9.28E-01	5.90E+03	1.01E+03	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	6.36E+03	3.05E+01	1.36E-02	4.54E+00	3.13E+00	2.41E+02	1.87E-02	1.73E+02	1.81E-02
BREOT-N26-75 (0-6")	1.72E-01	1.72E-01	9.28E-01	3.90E+03	6.70E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.21E+03	2.02E+01	1.36E-02	4.54E+00	2.07E+00	2.41E+02	1.87E-02	1.73E+02	1.19E-02
BREOT-S26-12.5 (0-6")	1.72E-01	1.72E-01	9.28E-01	1.06E+03	1.82E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.15E+03	5.51E+00	1.36E-02	4.54E+00	5.63E-01	2.41E+02	1.87E-02	1.73E+02	3.26E-03
BREOT-S26-40 (0-6")	1.72E-01	1.72E-01	9.28E-01	1.32E+03	2.26E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.42E+03	6.83E+00	1.36E-02	4.54E+00	6.99E-01	2.41E+02	1.87E-02	1.73E+02	4.04E-03
BREOT-N27-30 (0-6")	1.72E-01	1.72E-01	9.28E-01	8.17E+03	1.40E+03	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	8.80E+03	4.23E+01	1.36E-02	4.54E+00	4.33E+00	2.41E+02	1.87E-02	1.73E+02	2.50E-02
BREOT-N27-75 (0-6")	1.72E-01	1.72E-01	9.28E-01	9.47E+03	1.62E+03	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.02E+04	4.90E+01	1.36E-02	4.54E+00	5.02E+00	2.41E+02	1.87E-02	1.73E+02	2.90E-02
BREOT-S27-12.5 (0-6")	1.72E-01	1.72E-01	9.28E-01	2.22E+03	3.81E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.40E+03	1.15E+01	1.36E-02	4.54E+00	1.18E+00	2.41E+02	1.87E-02	1.73E+02	6.81E-03

TABLE C-2D: LEAD DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 18.41

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Red Fox (Carnivorous Mammal - Terrestrial)																							
BREOT-N28-110 (0-6")	1.72E-01	1.72E-01	9.28E-01	2.18E+03	3.75E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.35E+03	1.13E+01	1.36E-02	4.54E+00	1.16E+00	2.41E+02	1.87E-02	1.73E+02	6.68E-03
BREOT-N28-55 (0-6")	1.72E-01	1.72E-01	9.28E-01	2.02E+04	3.46E+03	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.18E+04	1.05E+02	1.36E-02	4.54E+00	1.07E+01	2.41E+02	1.87E-02	1.73E+02	6.18E-02
BREOT-S28-12.5 (0-6")	1.72E-01	1.72E-01	9.28E-01	1.00E+03	1.71E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.08E+03	5.17E+00	1.36E-02	4.54E+00	5.30E-01	2.41E+02	1.87E-02	1.73E+02	3.06E-03
UBDT-TP-1 (0-2")	1.72E-01	1.72E-01	9.28E-01	7.10E+03	1.22E+03	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	7.65E+03	3.68E+01	1.36E-02	4.54E+00	3.76E+00	2.41E+02	1.87E-02	1.73E+02	2.17E-02
UBDT-TP-1 (2-12")	1.72E-01	1.72E-01	9.28E-01	9.14E+03	1.57E+03	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	9.85E+03	4.73E+01	1.36E-02	4.54E+00	4.84E+00	2.41E+02	1.87E-02	1.73E+02	2.80E-02
UBDT-TP-1 (12-24")	1.72E-01	1.72E-01	9.28E-01	8.54E+03	1.46E+03	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	9.20E+03	4.42E+01	1.36E-02	4.54E+00	4.52E+00	2.41E+02	1.87E-02	1.73E+02	2.61E-02
UBDT-TP-1 (24-36")	1.72E-01	1.72E-01	9.28E-01	2.66E+03	4.56E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.86E+03	1.38E+01	1.36E-02	4.54E+00	1.41E+00	2.41E+02	1.87E-02	1.73E+02	8.14E-03
UBDT-TP-1 (36-48")	1.72E-01	1.72E-01	9.28E-01	1.62E+02	2.78E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.74E+02	8.38E-01	1.36E-02	4.54E+00	8.58E-02	2.41E+02	1.87E-02	1.73E+02	4.95E-04
UBDT-TP-1 (48-60")	1.72E-01	1.72E-01	9.28E-01	1.93E+02	3.32E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.08E+02	1.00E+00	1.36E-02	4.54E+00	1.02E-01	2.41E+02	1.87E-02	1.73E+02	5.92E-04
BREOT-N29-30 (0-6")	1.72E-01	1.72E-01	9.28E-01	1.05E+04	1.80E+03	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.13E+04	5.44E+01	1.36E-02	4.54E+00	5.57E+00	2.41E+02	1.87E-02	1.73E+02	3.22E-02
BREOT-S29-12.5 (0-6")	1.72E-01	1.72E-01	9.28E-01	1.23E+03	2.11E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.32E+03	6.35E+00	1.36E-02	4.54E+00	6.50E-01	2.41E+02	1.87E-02	1.73E+02	3.76E-03
BREOT-N30-12.5 (0-6")	1.72E-01	1.72E-01	9.28E-01	3.02E+03	5.18E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.25E+03	1.56E+01	1.36E-02	4.54E+00	1.60E+00	2.41E+02	1.87E-02	1.73E+02	9.24E-03
BREOT-S30-12.5 (0-6")	1.72E-01	1.72E-01	9.28E-01	1.43E+03	2.46E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.54E+03	7.42E+00	1.36E-02	4.54E+00	7.59E-01	2.41E+02	1.87E-02	1.73E+02	4.39E-03
BREOT-N31-12.5 (0-6")	1.72E-01	1.72E-01	9.28E-01	3.02E+03	5.18E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.25E+03	1.56E+01	1.36E-02	4.54E+00	1.60E+00	2.41E+02	1.87E-02	1.73E+02	9.24E-03
BREOT-S31-25 (0-6")	1.72E-01	1.72E-01	9.28E-01	8.24E+02	1.41E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	8.89E+02	4.27E+00	1.36E-02	4.54E+00	4.37E-01	2.41E+02	1.87E-02	1.73E+02	2.52E-03
BREOT-S31-5 (0-6")	1.72E-01	1.72E-01	9.28E-01	1.05E+03	1.80E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.13E+03	5.44E+00	1.36E-02	4.54E+00	5.57E-01	2.41E+02	1.87E-02	1.73E+02	3.22E-03
BREOT-N32-12.5 (0-6")	1.72E-01	1.72E-01	9.28E-01	1.09E+03	1.88E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.18E+03	5.66E+00	1.36E-02	4.54E+00	5.79E-01	2.41E+02	1.87E-02	1.73E+02	3.35E-03
BREOT-S32-6 (0-6")	1.72E-01	1.72E-01	9.28E-01	1.06E+03	1.82E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.15E+03	5.51E+00	1.36E-02	4.54E+00	5.64E-01	2.41E+02	1.87E-02	1.73E+02	3.26E-03
BREOT-N33-12.5 (0-6")	1.72E-01	1.72E-01	9.28E-01	3.19E+03	5.47E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.44E+03	1.65E+01	1.36E-02	4.54E+00	1.69E+00	2.41E+02	1.87E-02	1.73E+02	9.77E-03
BREOT-S33-12.5 (0-6")	1.72E-01	1.72E-01	9.28E-01	3.99E+02	6.85E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.30E+02	2.07E+00	1.36E-02	4.54E+00	2.11E-01	2.41E+02	1.87E-02	1.73E+02	1.22E-03
BREOT-N35-12.5 (0-6")	1.72E-01	1.72E-01	9.28E-01	5.54E+02	9.50E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.97E+02	2.87E+00	1.36E-02	4.54E+00	2.94E-01	2.41E+02	1.87E-02	1.73E+02	1.70E-03
BREOT-S35-12.5 (0-6")	1.72E-01	1.72E-01	9.28E-01	1.44E+03	2.47E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.55E+03	7.46E+00	1.36E-02	4.54E+00	7.64E-01	2.41E+02	1.87E-02	1.73E+02	4.41E-03
BREOT-N36-12.5 (0-6")	1.72E-01	1.72E-01	9.28E-01	1.51E+03	2.59E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.63E+03	7.81E+00	1.36E-02	4.54E+00	7.99E-01	2.41E+02	1.87E-02	1.73E+02	4.62E-03
BREOT-S36-12.5 (0-6")	1.72E-01	1.72E-01	9.28E-01	1.44E+03	2.47E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.55E+03	7.44E+00	1.36E-02	4.54E+00	7.61E-01	2.41E+02	1.87E-02	1.73E+02	4.40E-03
BREOT-N37-12.5 (0-6")	1.72E-01	1.72E-01	9.28E-01	1.42E+03	2.43E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.53E+03	7.34E+00	1.36E-02	4.54E+00	7.52E-01	2.41E+02	1.87E-02	1.73E+02	4.34E-03
BREOT-S37-12.5 (0-6")	1.72E-01	1.72E-01	9.28E-01	7.23E+02	1.24E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	7.80E+02	3.75E+00	1.36E-02	4.54E+00	3.83E-01	2.41E+02	1.87E-02	1.73E+02	2.21E-03
BREOT-N38-12.5 (0-6")	1.72E-01	1.72E-01	9.28E-01	7.38E+02	1.27E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	7.95E+02	3.82E+00	1.36E-02	4.54E+00	3.91E-01	2.41E+02	1.87E-02	1.73E+02	2.26E-03
BREOT-S38-12.5 (0-6")	1.72E-01	1.72E-01	9.28E-01	1.20E+03	2.05E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.29E+03	6.20E+00	1.36E-02	4.54E+00	6.34E-01	2.41E+02	1.87E-02	1.73E+02	3.66E-03
BREOT-N39-12.5 (0-6")	1.72E-01	1.72E-01	9.28E-01	2.63E+03	4.51E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.83E+03	1.36E+01	1.36E-02	4.54E+00	1.39E+00	2.41E+02	1.87E-02	1.73E+02	8.04E-03
BREOT-S39-12.5 (0-6")	1.72E-01	1.72E-01	9.28E-01	1.42E+03	2.43E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.53E+03	7.34E+00	1.36E-02	4.54E+00	7.52E-01	2.41E+02	1.87E-02	1.73E+02	4.34E-03
BREOT-N40-12.5 (0-6")	1.72E-01	1.72E-01	9.28E-01	1.76E+03	3.02E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.90E+03	9.11E+00	1.36E-02	4.54E+00	9.32E-01	2.41E+02	1.87E-02	1.73E+02	5.39E-03
BREOT-S40-14 (0-6")	1.72E-01	1.72E-01	9.28E-01	1.27E+03	2.17E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.37E+03	6.56E+00	1.36E-02	4.54E+00	6.71E-01	2.41E+02	1.87E-02	1.73E+02	3.88E-03
BREOT-N41-12.5 (0-6")	1.72E-01	1.72E-01	9.28E-01	1.08E+03	1.85E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.16E+03	5.59E+00	1.36E-02	4.54E+00	5.72E-01	2.41E+02	1.87E-02	1.73E+02	3.30E-03
BREOT-S41-12.5 (0-6")	1.72E-01	1.72E-01	9.28E-01	1.56E+03	2.68E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.69E+03	8.10E+00	1.36E-02	4.54E+00	8.29E-01	2.41E+02	1.87E-02	1.73E+02	4.79E-03
BREOT-N42-35 (0-6")	1.72E-01	1.72E-01	9.28E-01	1.72E+03	2.95E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.85E+03	8.90E+00	1.36E-02	4.54E+00	9.11E-01	2.41E+02	1.87E-02	1.73E+02	5.26E-03
BREOT-S42-25 (0-6")	1.72E-01	1.72E-01	9.28E-01	2.12E+03	3.64E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.29E+03	1.10E+01	1.36E-02	4.54E+00	1.12E+00	2.41E+02	1.87E-02	1.73E+02	6.50E-03
BREOT-N43-12.5 (0-6")	1.72E-01	1.72E-01	9.28E-01	1.96E+03	3.37E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.12E+03	1.02E+01	1.36E-02	4.54E+00	1.04E+00	2.41E+02	1.87E-02	1.73E+02	6.01E-03
BREOT-S43-12.5 (0-6")	1.72E-01	1.72E-01	9.28E-01	1.19E+03	2.04E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.28E+03	6.17E+00	1.36E-02	4.54E+00	6.31E-01	2.41E+02	1.87E-02	1.73E+02	3.65E-03
BREOT-N44-30 (0-6")	1.72E-01	1.72E-01	9.28E-01	9.09E+02	1.56E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	9.80E+02	4.71E+00	1.36E-02	4.54E+00	4.82E-01	2.41E+02	1.87E-02	1.73E+02	2.78E-03
BREOT-S44-12.5 (0-6")	1.72E-01	1.72E-01	9.28E-01	2.52E+03	4.32E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.72E+03	1.30E+01	1.36E-02	4.54E+00	1.34E+00	2.41E+02	1.87E-02	1.73E+02	7.71E-03
BREOT-N45-12.5 (0-6")	1.72E-01	1.72E-01	9.28E-01	1.01E+03	1.73E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.08E+03	5.21E+00	1.36E-02	4.54E+00	5.33E-01	2.41E+02	1.87E-02	1.73E+02	3.08E-03
BREOT-N43-12.5 (0-6")	1.72E-01	1.72E-01	9.28E-01	1.96E+03	3.37E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.12E+03	1.02E+01	1.36E-02	4.54E+00	1.04E+00	2.41E+02	1.87E-02	1.73E+02	6.01E-03
BREOT-S45-6 (0-6")	1.72E-01	1.72E-01	9.28E-01	2.80E+03	4.81E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.02E+03	1.45E+01	1.36E-02	4.54E+00	1.48E+00	2.41E+02	1.87E-02	1.73E+02	8.58E-03
BREOT-N46-12.5 (0-6")	1.72E-01	1.72E-01	9.28E-01	7.22E+02	1.24E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	7.78E+02	3.74E+00	1.36E-02	4.54E+00	3.83E-01	2.41E+02	1.87E-02	1.73E+02	2.21E-03
BREOT-S46-12.5 (0-6")	1.72E-01	1.72E-01	9.28E-01	1.32E+03	2.27E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.43E+03	6.85E+00	1.36E-02	4.54E+00	7.01E-01	2.41E+02	1.87E-02	1.73E+02	4.05E-03
BREOT-S46-40 (0-6")	1.72E-01	1.72E-01	9.28E-01	2.78E+03	4.77E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.00E+03	1.44E+01	1.36E-02	4.54E+00	1.47E+00	2.41E+02	1.87E-02	1.73E+02	8.51E-03
BREOT-N47-12.5 (0-6")	1.72E-01	1.72E-01	9.28E-01	1.19E+03	2.04E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.28E+03	6.16E+00	1.36E-02	4.54E+00	6.30E-01	2.41E+02	1.87E-02	1.73E+02	3.64E-03
BREOT-S47-999 (0-6")	1.72E-01	1.72E-01	9.28E-01	3.72E+03	6.38E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.01E+03	1.93E+01	1.36E-02	4.54E+00	1.97E+00	2.41E+02	1.87E-02	1.73E+02	1.14E-02
BREOT-S48-12.5 (0-6")	1.72E-01	1.72E-01	9.28E-01	1.14E+02	1.95E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.22E+02	5.88E-01	1.36E-02	4.54E+00	6.02E-02	2.41E+02	1.87E-02	1.73E+02	3.48E-04
BREOT-S49-2.5 (0-6")	1.72E-01	1.72E-01	9.28E-01	1.07E+02	1.83E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.15E+02	5.53E-01	1.36E-02	4.54E+00	5.66E-02	2.41E+02	1.87E-02	1.73E+02	3.27E-04
BREOT-S50-12.5 (0-6")	1.72E-01	1.72E-01	9.28E-01	6.19E+02	1.06E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	6.67E+02	3.21E+00	1.36E-02	4.54E+00	3.28E-01	2.41E+02	1.87E-02	1.73E+02	1.90E-03
BREOT-S50-25 (0-6")	1.72E-01	1.72E-01	9.28E-01	4.19E+01	7.19E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.52E+01	2.17E-01	1.36E-02	4.54E+00	2.22E-02	2.41E+02	1.87E-02	1.73E+02	1.28E-04
BREOT-N52-60 (0-6")	1.72E-01	1.72E-01	9.28E-01	2.62E+03	4.49E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.82E+03	1.36E+01	1.36E-02	4.54E+00	1.39E+00	2.41E+02	1.87E-02	1.73E+02	8.02E-03
BREOT-S52-12.5 (0-6")	1.72E-01	1.72E-01	9.28E-01	5.70E+01	9.78E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	6.15E+01	2.95E-01	1.36E-02	4.54E+00	3.02E-02	2.41E+02	1.87E-02	1.73E+02	1.75E-04
BREOT-S53-12.5 (0-6")	1.72E-01	1.72E-01	9.28E-01	1.72E+02	2.95E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.85E+02	8.91E-01	1.36E-02	4.54E+00	9.11E-02	2.41E+02	1.87E-02	1.73E+02	5.27E-04
BREOT-S54-12.5 (0-6")	1.72E-01	1.72E-01	9.28E-01	8.17E+01	1.40E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	8.81E+01	4.23E-01	1.36E-02	4.54E+00	4.33E-02	2.41E+02	1.87E-02	1.73E+02	2.50E-04
BREOT-N55-12.5 (0-6")	1.72E-01	1.72E-01	9.28E-01	2.21E+03	3.79E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.38E+03	1.14E+01	1.36E-02	4.54E+00	1.17E+00	2.41E+02	1.87E-02	1.73E+02	6.76E-03

TABLE C-2D: LEAD DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **18.41**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Red Fox (Carnivorous Mammal - Terrestrial)																							
BREOT-S55-12.5 (0-6")	1.72E-01	1.72E-01	9.28E-01	5.92E+02	1.02E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	6.38E+02	3.07E+00	1.36E-02	4.54E+00	3.14E-01	2.41E+02	1.87E-02	1.73E+02	1.81E-03
BREOT-N56-12.5 (0-6")	1.72E-01	1.72E-01	9.28E-01	2.06E+03	3.53E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.22E+03	1.07E+01	1.36E-02	4.54E+00	1.09E+00	2.41E+02	1.87E-02	1.73E+02	6.31E-03
BREOT-S56-12.5 (0-6")	1.72E-01	1.72E-01	9.28E-01	1.91E+02	3.28E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.06E+02	9.89E-01	1.36E-02	4.54E+00	1.01E-01	2.41E+02	1.87E-02	1.73E+02	5.85E-04
BREOT-N57-12.5 (0-6")	1.72E-01	1.72E-01	9.28E-01	1.27E+03	2.17E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.37E+03	6.56E+00	1.36E-02	4.54E+00	6.72E-01	2.41E+02	1.87E-02	1.73E+02	3.88E-03
BREOT-S57-12.5 (0-6")	1.72E-01	1.72E-01	9.28E-01	5.77E+02	9.90E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	6.22E+02	2.99E+00	1.36E-02	4.54E+00	3.06E-01	2.41E+02	1.87E-02	1.73E+02	1.77E-03
BREOT-N58-12.5 (0-6")	1.72E-01	1.72E-01	9.28E-01	3.04E+02	5.22E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.28E+02	1.58E+00	1.36E-02	4.54E+00	1.61E-01	2.41E+02	1.87E-02	1.73E+02	9.31E-04
BREOT-S58-12 (0-6")	1.72E-01	1.72E-01	9.28E-01	4.85E+02	8.32E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.23E+02	2.51E+00	1.36E-02	4.54E+00	2.57E-01	2.41E+02	1.87E-02	1.73E+02	1.49E-03
BREOT-N59-18 (0-6")	1.72E-01	1.72E-01	9.28E-01	8.53E+02	1.46E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	9.20E+02	4.42E+00	1.36E-02	4.54E+00	4.52E-01	2.41E+02	1.87E-02	1.73E+02	2.61E-03
BREOT-N60-12.5 (0-6")	1.72E-01	1.72E-01	9.28E-01	2.47E+02	4.24E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.66E+02	1.28E+00	1.36E-02	4.54E+00	1.31E-01	2.41E+02	1.87E-02	1.73E+02	7.57E-04
BREOT-S60-12.5 (0-6")	1.72E-01	1.72E-01	9.28E-01	1.03E+03	1.77E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.11E+03	5.35E+00	1.36E-02	4.54E+00	5.48E-01	2.41E+02	1.87E-02	1.73E+02	3.16E-03
BREOT-S61-12.5 (0-6")	1.72E-01	1.72E-01	9.28E-01	8.27E+02	1.42E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	8.91E+02	4.28E+00	1.36E-02	4.54E+00	4.38E-01	2.41E+02	1.87E-02	1.73E+02	2.53E-03
BREOT-N62-12.5 (0-6")	1.72E-01	1.72E-01	9.28E-01	8.98E+01	1.54E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	9.68E+01	4.65E-01	1.36E-02	4.54E+00	4.76E-02	2.41E+02	1.87E-02	1.73E+02	2.75E-04
BREOT-S62-12.5 (0-6")	1.72E-01	1.72E-01	9.28E-01	1.44E+03	2.47E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.55E+03	7.44E+00	1.36E-02	4.54E+00	7.62E-01	2.41E+02	1.87E-02	1.73E+02	4.40E-03
BREOT-S63-12.5 (0-6")	1.72E-01	1.72E-01	9.28E-01	3.63E+02	6.22E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.91E+02	1.88E+00	1.36E-02	4.54E+00	1.92E-01	2.41E+02	1.87E-02	1.73E+02	1.11E-03
BREOT-N64-12.5 (0-6")	1.72E-01	1.72E-01	9.28E-01	3.01E+02	5.16E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.24E+02	1.56E+00	1.36E-02	4.54E+00	1.59E-01	2.41E+02	1.87E-02	1.73E+02	9.20E-04
BREOT-N64-20 (0-6")	1.72E-01	1.72E-01	9.28E-01	2.51E+02	4.30E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.70E+02	1.30E+00	1.36E-02	4.54E+00	1.33E-01	2.41E+02	1.87E-02	1.73E+02	7.68E-04
BREOT-S64-12.5 (0-6")	1.72E-01	1.72E-01	9.28E-01	6.02E+02	1.03E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	6.49E+02	3.12E+00	1.36E-02	4.54E+00	3.19E-01	2.41E+02	1.87E-02	1.73E+02	1.84E-03
BREOT-N65-12.5 (0-6")	1.72E-01	1.72E-01	9.28E-01	1.66E+02	2.86E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.79E+02	8.62E-01	1.36E-02	4.54E+00	8.82E-02	2.41E+02	1.87E-02	1.73E+02	5.10E-04
BREOT-S65-12.5 (0-6")	1.72E-01	1.72E-01	9.28E-01	1.64E+03	2.81E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.76E+03	8.48E+00	1.36E-02	4.54E+00	8.67E-01	2.41E+02	1.87E-02	1.73E+02	5.01E-03
BREOT-N66-5 (0-6")	1.72E-01	1.72E-01	9.28E-01	6.39E+02	1.10E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	6.89E+02	3.31E+00	1.36E-02	4.54E+00	3.39E-01	2.41E+02	1.87E-02	1.73E+02	1.96E-03
BREOT-S66-12.5 (0-6")	1.72E-01	1.72E-01	9.28E-01	5.65E+02	9.69E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	6.09E+02	2.92E+00	1.36E-02	4.54E+00	2.99E-01	2.41E+02	1.87E-02	1.73E+02	1.73E-03
BREOT-N67-12.5 (0-6")	1.72E-01	1.72E-01	9.28E-01	1.04E+03	1.78E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.12E+03	5.38E+00	1.36E-02	4.54E+00	5.50E-01	2.41E+02	1.87E-02	1.73E+02	3.18E-03
BREOT-S67-12.5 (0-6")	1.72E-01	1.72E-01	9.28E-01	2.27E+02	3.89E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.45E+02	1.17E+00	1.36E-02	4.54E+00	1.20E-01	2.41E+02	1.87E-02	1.73E+02	6.94E-04
At Edge of Tailings																						**Maximum HQ (Inside Tailings)**	**6.18E-02**
BREOT-S0-0 (06)	1.72E-01	1.72E-01	9.28E-01	4.35E+02	7.46E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.68E+02	2.25E+00	1.36E-02	4.54E+00	2.30E-01	2.41E+02	1.87E-02	1.73E+02	1.33E-03
BREOT-S1-0 (0-6")	1.72E-01	1.72E-01	9.28E-01	2.11E+03	3.63E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.28E+03	1.09E+01	1.36E-02	4.54E+00	1.12E+00	2.41E+02	1.87E-02	1.73E+02	6.47E-03
BREOT-S2-0 (0-6")	1.72E-01	1.72E-01	9.28E-01	6.18E+02	1.06E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	6.66E+02	3.20E+00	1.36E-02	4.54E+00	3.28E-01	2.41E+02	1.87E-02	1.73E+02	1.89E-03
BREOT-S3-0 (0-6")	1.72E-01	1.72E-01	9.28E-01	1.37E+03	2.35E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.48E+03	7.11E+00	1.36E-02	4.54E+00	7.27E-01	2.41E+02	1.87E-02	1.73E+02	4.20E-03
BREOT-S4-0 (0-6")	1.72E-01	1.72E-01	9.28E-01	1.63E+03	2.80E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.76E+03	8.45E+00	1.36E-02	4.54E+00	8.65E-01	2.41E+02	1.87E-02	1.73E+02	4.99E-03
BREOT-S6-0 (0-6")	1.72E-01	1.72E-01	9.28E-01	1.58E+03	2.71E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.70E+03	8.17E+00	1.36E-02	4.54E+00	8.36E-01	2.41E+02	1.87E-02	1.73E+02	4.83E-03
BREOT-S7-0 (0-6")	1.72E-01	1.72E-01	9.28E-01	9.41E+02	1.61E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.01E+03	4.87E+00	1.36E-02	4.54E+00	4.99E-01	2.41E+02	1.87E-02	1.73E+02	2.88E-03
BREOT-S8-0 (0-6")	1.72E-01	1.72E-01	9.28E-01	3.46E+02	5.94E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.73E+02	1.79E+00	1.36E-02	4.54E+00	1.84E-01	2.41E+02	1.87E-02	1.73E+02	1.06E-03
BREOT-S9-0 (0-6")	1.72E-01	1.72E-01	9.28E-01	7.47E+02	1.28E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	8.05E+02	3.87E+00	1.36E-02	4.54E+00	3.96E-01	2.41E+02	1.87E-02	1.73E+02	2.29E-03
BREOT-N10-0 (0-6")	1.72E-01	1.72E-01	9.28E-01	2.18E+04	3.74E+03	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.35E+04	1.13E+02	1.36E-02	4.54E+00	1.15E+01	2.41E+02	1.87E-02	1.73E+02	6.67E-02
BREOT-N11-0 (0-6")	1.72E-01	1.72E-01	9.28E-01	2.65E+03	4.55E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.86E+03	1.37E+01	1.36E-02	4.54E+00	1.41E+00	2.41E+02	1.87E-02	1.73E+02	8.12E-03
BREOT-S11-0 (0-6")	1.72E-01	1.72E-01	9.28E-01	9.31E+02	1.60E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.00E+03	4.82E+00	1.36E-02	4.54E+00	4.93E-01	2.41E+02	1.87E-02	1.73E+02	2.85E-03
BREOT-N12-0 (0-6")	1.72E-01	1.72E-01	9.28E-01	9.59E+02	1.65E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.03E+03	4.97E+00	1.36E-02	4.54E+00	5.08E-01	2.41E+02	1.87E-02	1.73E+02	2.94E-03
BREOT-S12-0 (0-6")	1.72E-01	1.72E-01	9.28E-01	2.96E+03	5.08E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.19E+03	1.53E+01	1.36E-02	4.54E+00	1.57E+00	2.41E+02	1.87E-02	1.73E+02	9.06E-03
BREOT-N13-0 (0-6")	1.72E-01	1.72E-01	9.28E-01	2.46E+04	4.21E+03	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.65E+04	1.27E+02	1.36E-02	4.54E+00	1.30E+01	2.41E+02	1.87E-02	1.73E+02	7.52E-02
BREOT-S13-0 (0-6")	1.72E-01	1.72E-01	9.28E-01	5.75E+02	9.87E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	6.20E+02	2.98E+00	1.36E-02	4.54E+00	3.05E-01	2.41E+02	1.87E-02	1.73E+02	1.76E-03
BREOT-N14-0 (0-6")	1.72E-01	1.72E-01	9.28E-01	2.70E+03	4.62E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.91E+03	1.40E+01	1.36E-02	4.54E+00	1.43E+00	2.41E+02	1.87E-02	1.73E+02	8.25E-03
BREOT-S14-0 (0-6")	1.72E-01	1.72E-01	9.28E-01	1.43E+04	2.46E+03	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.54E+04	7.41E+01	1.36E-02	4.54E+00	7.59E+00	2.41E+02	1.87E-02	1.73E+02	4.38E-02
BREOT-N15-0 (0-6")	1.72E-01	1.72E-01	9.28E-01	3.34E+03	5.72E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.60E+03	1.73E+01	1.36E-02	4.54E+00	1.77E+00	2.41E+02	1.87E-02	1.73E+02	1.02E-02
BREOT-N16-0 (0-6")	1.72E-01	1.72E-01	9.28E-01	1.64E+03	2.82E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.77E+03	8.50E+00	1.36E-02	4.54E+00	8.70E-01	2.41E+02	1.87E-02	1.73E+02	5.03E-03
BREOT-S16-0 (0-6")	1.72E-01	1.72E-01	9.28E-01	3.10E+02	5.32E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.34E+02	1.60E+00	1.36E-02	4.54E+00	1.64E-01	2.41E+02	1.87E-02	1.73E+02	9.49E-04
BREOT-N17-0 (0-6")	1.72E-01	1.72E-01	9.28E-01	2.66E+03	4.56E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.86E+03	1.37E+01	1.36E-02	4.54E+00	1.41E+00	2.41E+02	1.87E-02	1.73E+02	8.13E-03
BREOT-S17-0 (0-6")	1.72E-01	1.72E-01	9.28E-01	3.11E+03	5.34E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.36E+03	1.61E+01	1.36E-02	4.54E+00	1.65E+00	2.41E+02	1.87E-02	1.73E+02	9.54E-03
BREOT-N18-0 (0-6")	1.72E-01	1.72E-01	9.28E-01	2.15E+03	3.69E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.32E+03	1.11E+01	1.36E-02	4.54E+00	1.14E+00	2.41E+02	1.87E-02	1.73E+02	6.58E-03
BREOT-S18-0 (0-6")	1.72E-01	1.72E-01	9.28E-01	3.39E+01	5.81E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.65E+01	1.75E-01	1.36E-02	4.54E+00	1.79E-02	2.41E+02	1.87E-02	1.73E+02	1.04E-04
BREOT-N19-0 (0-6")	1.72E-01	1.72E-01	9.28E-01	1.46E+03	2.51E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.58E+03	7.58E+00	1.36E-02	4.54E+00	7.76E-01	2.41E+02	1.87E-02	1.73E+02	4.48E-03
BREOT-S19-0 (0-6")	1.72E-01	1.72E-01	9.28E-01	4.20E+02	7.21E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.53E+02	2.18E+00	1.36E-02	4.54E+00	2.23E-01	2.41E+02	1.87E-02	1.73E+02	1.29E-03
BREOT-N20-0 (0-6")	1.72E-01	1.72E-01	9.28E-01	1.20E+03	2.06E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.29E+03	6.20E+00	1.36E-02	4.54E+00	6.35E-01	2.41E+02	1.87E-02	1.73E+02	3.67E-03
BREOT-S20-0 (0-6")	1.72E-01	1.72E-01	9.28E-01	5.78E+02	9.91E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	6.23E+02	2.99E+00	1.36E-02	4.54E+00	3.06E-01	2.41E+02	1.87E-02	1.73E+02	1.77E-03
BREOT-N21-0 (0-6")	1.72E-01	1.72E-01	9.28E-01	5.34E+01	9.15E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.75E+01	2.76E-01	1.36E-02	4.54E+00	2.83E-02	2.41E+02	1.87E-02	1.73E+02	1.63E-04
BREOT-S21-0 (0-6")	1.72E-01	1.72E-01	9.28E-01	1.61E+03	2.76E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.73E+03	8.32E+00	1.36E-02	4.54E+00	8.51E-01	2.41E+02	1.87E-02	1.73E+02	4.92E-03
BREOT-N22-0 (0-6")	1.72E-01	1.72E-01	9.28E-01	1.35E+03	2.32E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.46E+03	6.99E+00	1.36E-02	4.54E+00	7.16E-01	2.41E+02	1.87E-02	1.73E+02	4.13E-03
BREOT-S22-0 (0-6")	1.72E-01	1.72E-01	9.28E-01	1.63E+03	2.79E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.75E+03	8.41E+00	1.36E-02	4.54E+00	8.61E-01	2.41E+02	1.87E-02	1.73E+02	4.98E-03

TABLE C-2D: LEAD DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 18.41

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Red Fox (Carnivorous Mammal - Terrestrial)																							
BREOT-N23-0 (0-6")	1.72E-01	1.72E-01	9.28E-01	1.12E+03	1.92E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.21E+03	5.79E+00	1.36E-02	4.54E+00	5.93E-01	2.41E+02	1.87E-02	1.73E+02	3.42E-03
BREOT-S23-0 (0-6")	1.72E-01	1.72E-01	9.28E-01	2.47E+03	4.24E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.67E+03	1.28E+01	1.36E-02	4.54E+00	1.31E+00	2.41E+02	1.87E-02	1.73E+02	7.57E-03
BREOT-N24-0 (0-6")	1.72E-01	1.72E-01	9.28E-01	2.37E+03	4.07E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.56E+03	1.23E+01	1.36E-02	4.54E+00	1.26E+00	2.41E+02	1.87E-02	1.73E+02	7.26E-03
BREOT-S24-0 (0-6")	1.72E-01	1.72E-01	9.28E-01	1.39E+03	2.39E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.50E+03	7.20E+00	1.36E-02	4.54E+00	7.37E-01	2.41E+02	1.87E-02	1.73E+02	4.26E-03
BREOT-N25-0 (0-6")	1.72E-01	1.72E-01	9.28E-01	5.78E+03	9.92E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	6.23E+03	2.99E+01	1.36E-02	4.54E+00	3.06E+00	2.41E+02	1.87E-02	1.73E+02	1.77E-02
BREOT-S25-0 (0-6")	1.72E-01	1.72E-01	9.28E-01	3.23E+03	5.55E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.49E+03	1.67E+01	1.36E-02	4.54E+00	1.71E+00	2.41E+02	1.87E-02	1.73E+02	9.90E-03
BREOT-N26-0 (0-6")	1.72E-01	1.72E-01	9.28E-01	1.06E+04	1.82E+03	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.14E+04	5.48E+01	1.36E-02	4.54E+00	5.61E+00	2.41E+02	1.87E-02	1.73E+02	3.24E-02
BREOT-S26-0 (0-6")	1.72E-01	1.72E-01	9.28E-01	1.48E+03	2.54E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.59E+03	7.65E+00	1.36E-02	4.54E+00	7.83E-01	2.41E+02	1.87E-02	1.73E+02	4.53E-03
BREOT-N27-0 (0-6")	1.72E-01	1.72E-01	9.28E-01	1.14E+04	1.95E+03	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.23E+04	5.89E+01	1.36E-02	4.54E+00	6.02E+00	2.41E+02	1.87E-02	1.73E+02	3.48E-02
BREOT-S27-0 (0-6")	1.72E-01	1.72E-01	9.28E-01	2.58E+03	4.42E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.78E+03	1.33E+01	1.36E-02	4.54E+00	1.36E+00	2.41E+02	1.87E-02	1.73E+02	7.88E-03
BREOT-N28-0 (0-6")	1.72E-01	1.72E-01	9.28E-01	4.39E+03	7.53E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.73E+03	2.27E+01	1.36E-02	4.54E+00	2.32E+00	2.41E+02	1.87E-02	1.73E+02	1.34E-02
BREOT-S28-0 (0-6")	1.72E-01	1.72E-01	9.28E-01	1.08E+03	1.85E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.16E+03	5.59E+00	1.36E-02	4.54E+00	5.72E-01	2.41E+02	1.87E-02	1.73E+02	3.31E-03
BREOT-S29-0 (0-6")	1.72E-01	1.72E-01	9.28E-01	4.47E+02	7.66E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.82E+02	2.31E+00	1.36E-02	4.54E+00	2.37E-01	2.41E+02	1.87E-02	1.73E+02	1.37E-03
BREOT-N30-0 (0-6")	1.72E-01	1.72E-01	9.28E-01	7.96E+03	1.37E+03	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	8.58E+03	4.12E+01	1.36E-02	4.54E+00	4.22E+00	2.41E+02	1.87E-02	1.73E+02	2.44E-02
BREOT-S30-0 (0-6")	1.72E-01	1.72E-01	9.28E-01	2.18E+02	3.75E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.35E+02	1.13E+00	1.36E-02	4.54E+00	1.16E-01	2.41E+02	1.87E-02	1.73E+02	6.69E-04
BREOT-N31-0 (0-6")	1.72E-01	1.72E-01	9.28E-01	3.84E+03	6.59E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.14E+03	1.99E+01	1.36E-02	4.54E+00	2.04E+00	2.41E+02	1.87E-02	1.73E+02	1.18E-02
BREOT-S31-0 (0-6")	1.72E-01	1.72E-01	9.28E-01	2.11E+02	3.61E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.27E+02	1.09E+00	1.36E-02	4.54E+00	1.12E-01	2.41E+02	1.87E-02	1.73E+02	6.45E-04
BREOT-N32-0 (0-6")	1.72E-01	1.72E-01	9.28E-01	1.59E+03	2.73E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.72E+03	8.24E+00	1.36E-02	4.54E+00	8.43E-01	2.41E+02	1.87E-02	1.73E+02	4.87E-03
BREOT-S32-0 (0-6")	1.72E-01	1.72E-01	9.28E-01	1.84E+03	3.16E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.99E+03	9.55E+00	1.36E-02	4.54E+00	9.77E-01	2.41E+02	1.87E-02	1.73E+02	5.65E-03
BREOT-N33-0 (0-6")	1.72E-01	1.72E-01	9.28E-01	5.78E+01	9.92E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	6.23E+01	2.99E-01	1.36E-02	4.54E+00	3.06E-02	2.41E+02	1.87E-02	1.73E+02	1.77E-04
BREOT-S33-0 (0-6")	1.72E-01	1.72E-01	9.28E-01	4.40E+02	7.56E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.75E+02	2.28E+00	1.36E-02	4.54E+00	2.33E-01	2.41E+02	1.87E-02	1.73E+02	1.35E-03
BREOT-N34-0 (0-6")	1.72E-01	1.72E-01	9.28E-01	1.53E+02	2.62E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.65E+02	7.91E-01	1.36E-02	4.54E+00	8.10E-02	2.41E+02	1.87E-02	1.73E+02	4.68E-04
BREOT-S34-0 (0-6")	1.72E-01	1.72E-01	9.28E-01	1.07E+03	1.84E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.16E+03	5.56E+00	1.36E-02	4.54E+00	5.69E-01	2.41E+02	1.87E-02	1.73E+02	3.29E-03
BREOT-N35-0 (0-6")	1.72E-01	1.72E-01	9.28E-01	9.65E+01	1.66E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.04E+02	4.99E-01	1.36E-02	4.54E+00	5.11E-02	2.41E+02	1.87E-02	1.73E+02	2.95E-04
BREOT-S35-0 (0-6")	1.72E-01	1.72E-01	9.28E-01	7.46E+02	1.28E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	8.04E+02	3.86E+00	1.36E-02	4.54E+00	3.95E-01	2.41E+02	1.87E-02	1.73E+02	2.28E-03
BREOT-N36-0 (0-6")	1.72E-01	1.72E-01	9.28E-01	2.10E+03	3.61E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.27E+03	1.09E+01	1.36E-02	4.54E+00	1.11E+00	2.41E+02	1.87E-02	1.73E+02	6.44E-03
BREOT-S36-0 (0-6")	1.72E-01	1.72E-01	9.28E-01	1.49E+03	2.55E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.61E+03	7.71E+00	1.36E-02	4.54E+00	7.89E-01	2.41E+02	1.87E-02	1.73E+02	4.56E-03
BREOT-N37-0 (0-6")	1.72E-01	1.72E-01	9.28E-01	4.70E+02	8.06E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.06E+02	2.43E+00	1.36E-02	4.54E+00	2.49E-01	2.41E+02	1.87E-02	1.73E+02	1.44E-03
BREOT-S37-0 (0-6")	1.72E-01	1.72E-01	9.28E-01	1.65E+03	2.84E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.78E+03	8.56E+00	1.36E-02	4.54E+00	8.76E-01	2.41E+02	1.87E-02	1.73E+02	5.06E-03
BREOT-N38-0 (0-6")	1.72E-01	1.72E-01	9.28E-01	9.76E+01	1.67E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.05E+02	5.05E-01	1.36E-02	4.54E+00	5.17E-02	2.41E+02	1.87E-02	1.73E+02	2.99E-04
BREOT-S38-0 (0-6")	1.72E-01	1.72E-01	9.28E-01	1.93E+02	3.31E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.08E+02	9.99E-01	1.36E-02	4.54E+00	1.02E-01	2.41E+02	1.87E-02	1.73E+02	5.91E-04
BREOT-N39-0 (0-6")	1.72E-01	1.72E-01	9.28E-01	8.15E+01	1.40E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	8.79E+01	4.22E-01	1.36E-02	4.54E+00	4.32E-02	2.41E+02	1.87E-02	1.73E+02	2.50E-04
BREOT-N40-0 (0-6")	1.72E-01	1.72E-01	9.28E-01	1.97E+02	3.38E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.12E+02	1.02E+00	1.36E-02	4.54E+00	1.04E-01	2.41E+02	1.87E-02	1.73E+02	6.03E-04
BREOT-S40-0 (0-6")	1.72E-01	1.72E-01	9.28E-01	1.28E+03	2.19E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.38E+03	6.61E+00	1.36E-02	4.54E+00	6.77E-01	2.41E+02	1.87E-02	1.73E+02	3.91E-03
BREOT-N41-0 (0-6")	1.72E-01	1.72E-01	9.28E-01	1.27E+02	2.18E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.37E+02	6.57E-01	1.36E-02	4.54E+00	6.73E-02	2.41E+02	1.87E-02	1.73E+02	3.89E-04
BREOT-S41-0 (0-6")	1.72E-01	1.72E-01	9.28E-01	1.27E+03	2.17E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.37E+03	6.56E+00	1.36E-02	4.54E+00	6.71E-01	2.41E+02	1.87E-02	1.73E+02	3.88E-03
BREOT-N42-0 (0-6")	1.72E-01	1.72E-01	9.28E-01	2.52E+01	4.33E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.72E+01	1.31E-01	1.36E-02	4.54E+00	1.34E-02	2.41E+02	1.87E-02	1.73E+02	7.73E-05
BREOT-S42-0 (0-6")	1.72E-01	1.72E-01	9.28E-01	2.64E+03	4.52E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.84E+03	1.36E+01	1.36E-02	4.54E+00	1.40E+00	2.41E+02	1.87E-02	1.73E+02	8.07E-03
BREOT-N43-0 (0-6")	1.72E-01	1.72E-01	9.28E-01	1.72E+02	2.95E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.85E+02	8.89E-01	1.36E-02	4.54E+00	9.10E-02	2.41E+02	1.87E-02	1.73E+02	5.26E-04
BREOT-S43-0 (0-6")	1.72E-01	1.72E-01	9.28E-01	1.12E+02	1.93E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.21E+02	5.82E-01	1.36E-02	4.54E+00	5.96E-02	2.41E+02	1.87E-02	1.73E+02	3.44E-04
BREOT-N44-0 (0-6")	1.72E-01	1.72E-01	9.28E-01	5.21E+02	8.94E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.62E+02	2.70E+00	1.36E-02	4.54E+00	2.76E-01	2.41E+02	1.87E-02	1.73E+02	1.60E-03
BREOT-S44-0 (0-6")	1.72E-01	1.72E-01	9.28E-01	8.25E+01	1.42E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	8.89E+01	4.27E-01	1.36E-02	4.54E+00	4.37E-02	2.41E+02	1.87E-02	1.73E+02	2.53E-04
BREOT-N45-0 (0-6")	1.72E-01	1.72E-01	9.28E-01	1.49E+02	2.56E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.61E+02	7.71E-01	1.36E-02	4.54E+00	7.89E-02	2.41E+02	1.87E-02	1.73E+02	4.56E-04
BREOT-S45-0 (0-6")	1.72E-01	1.72E-01	9.28E-01	1.76E+02	3.02E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.90E+02	9.11E-01	1.36E-02	4.54E+00	9.32E-02	2.41E+02	1.87E-02	1.73E+02	5.39E-04
BREOT-N46-0 (0-6")	1.72E-01	1.72E-01	9.28E-01	1.28E+02	2.19E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.38E+02	6.62E-01	1.36E-02	4.54E+00	6.77E-02	2.41E+02	1.87E-02	1.73E+02	3.91E-04
BREOT-S46-0 (0-6")	1.72E-01	1.72E-01	9.28E-01	1.00E+03	1.72E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.08E+03	5.19E+00	1.36E-02	4.54E+00	5.32E-01	2.41E+02	1.87E-02	1.73E+02	3.07E-03
BREOT-N47-0 (0-6")	1.72E-01	1.72E-01	9.28E-01	1.63E+02	2.79E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.75E+02	8.41E-01	1.36E-02	4.54E+00	8.61E-02	2.41E+02	1.87E-02	1.73E+02	4.97E-04
BREOT-S47-0 (0-6")	1.72E-01	1.72E-01	9.28E-01	3.48E+01	5.98E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.76E+01	1.80E-01	1.36E-02	4.54E+00	1.85E-02	2.41E+02	1.87E-02	1.73E+02	1.07E-04
BREOT-N48-0 (0-6")	1.72E-01	1.72E-01	9.28E-01	2.26E+02	3.88E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.44E+02	1.17E+00	1.36E-02	4.54E+00	1.20E-01	2.41E+02	1.87E-02	1.73E+02	6.92E-04
BREOT-S48-0 (0-6")	1.72E-01	1.72E-01	9.28E-01	1.78E+02	3.05E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.92E+02	9.20E-01	1.36E-02	4.54E+00	9.42E-02	2.41E+02	1.87E-02	1.73E+02	5.44E-04
BREOT-N49-0 (0-6")	1.72E-01	1.72E-01	9.28E-01	3.59E+02	6.15E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.87E+02	1.86E+00	1.36E-02	4.54E+00	1.90E-01	2.41E+02	1.87E-02	1.73E+02	1.10E-03
BREOT-S49-0 (0-6")	1.72E-01	1.72E-01	9.28E-01	1.11E+02	1.91E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.20E+02	5.76E-01	1.36E-02	4.54E+00	5.90E-02	2.41E+02	1.87E-02	1.73E+02	3.41E-04
BREOT-S50-0 (0-6")	1.72E-01	1.72E-01	9.28E-01	9.80E+01	1.68E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.06E+02	5.07E-01	1.36E-02	4.54E+00	5.19E-02	2.41E+02	1.87E-02	1.73E+02	3.00E-04
BREOT-N51-0 (0-6")	1.72E-01	1.72E-01	9.28E-01	3.92E+02	6.73E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.23E+02	2.03E+00	1.36E-02	4.54E+00	2.08E-01	2.41E+02	1.87E-02	1.73E+02	1.20E-03
BREOT-S51-0 (0-6")	1.72E-01	1.72E-01	9.28E-01	1.38E+02	2.37E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.49E+02	7.15E-01	1.36E-02	4.54E+00	7.32E-02	2.41E+02	1.87E-02	1.73E+02	4.23E-04
BREOT-N52-0 (0-6")	1.72E-01	1.72E-01	9.28E-01	9.17E+01	1.57E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	9.88E+01	4.75E-01	1.36E-02	4.54E+00	4.86E-02	2.41E+02	1.87E-02	1.73E+02	2.81E-04
BREOT-S52-0 (0-6")	1.72E-01	1.72E-01	9.28E-01	7.08E+01	1.21E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	7.63E+01	3.66E-01	1.36E-02	4.54E+00	3.75E-02	2.41E+02	1.87E-02	1.73E+02	2.17E-04

TABLE C-2D: LEAD DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 18.41

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Red Fox (Carnivorous Mammal - Terrestrial)																							
BREOT-N53-0 (0-6")	1.72E-01	1.72E-01	9.28E-01	1.98E+02	3.40E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.14E+02	1.03E+00	1.36E-02	4.54E+00	1.05E-01	2.41E+02	1.87E-02	1.73E+02	6.07E-04
BREOT-S53-0 (0-6")	1.72E-01	1.72E-01	9.28E-01	7.33E+01	1.26E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	7.91E+01	3.80E-01	1.36E-02	4.54E+00	3.89E-02	2.41E+02	1.87E-02	1.73E+02	2.25E-04
BREOT-N54-0 (0-6")	1.72E-01	1.72E-01	9.28E-01	2.00E+02	3.43E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.16E+02	1.04E+00	1.36E-02	4.54E+00	1.06E-01	2.41E+02	1.87E-02	1.73E+02	6.12E-04
BREOT-S54-0 (0-6")	1.72E-01	1.72E-01	9.28E-01	8.96E+01	1.54E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	9.66E+01	4.64E-01	1.36E-02	4.54E+00	4.75E-02	2.41E+02	1.87E-02	1.73E+02	2.74E-04
BREOT-N55-0 (0-6")	1.72E-01	1.72E-01	9.28E-01	1.15E+02	1.97E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.24E+02	5.96E-01	1.36E-02	4.54E+00	6.10E-02	2.41E+02	1.87E-02	1.73E+02	3.52E-04
BREOT-S55-0 (0-6")	1.72E-01	1.72E-01	9.28E-01	1.00E+02	1.72E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.08E+02	5.19E-01	1.36E-02	4.54E+00	5.32E-02	2.41E+02	1.87E-02	1.73E+02	3.07E-04
BREOT-N56-0 (0-6")	1.72E-01	1.72E-01	9.28E-01	5.24E+02	9.00E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.65E+02	2.71E+00	1.36E-02	4.54E+00	2.78E-01	2.41E+02	1.87E-02	1.73E+02	1.61E-03
BREOT-N57-0 (0-6")	1.72E-01	1.72E-01	9.28E-01	2.27E+02	3.90E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.45E+02	1.18E+00	1.36E-02	4.54E+00	1.21E-01	2.41E+02	1.87E-02	1.73E+02	6.96E-04
BREOT-S57-0 (0-6")	1.72E-01	1.72E-01	9.28E-01	1.70E+02	2.92E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.83E+02	8.80E-01	1.36E-02	4.54E+00	9.01E-02	2.41E+02	1.87E-02	1.73E+02	5.21E-04
BREOT-N58-0 (0-6")	1.72E-01	1.72E-01	9.28E-01	1.54E+02	2.64E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.66E+02	7.95E-01	1.36E-02	4.54E+00	8.14E-02	2.41E+02	1.87E-02	1.73E+02	4.70E-04
BREOT-S58-0 (0-6")	1.72E-01	1.72E-01	9.28E-01	1.23E+02	2.12E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.33E+02	6.39E-01	1.36E-02	4.54E+00	6.54E-02	2.41E+02	1.87E-02	1.73E+02	3.78E-04
BREOT-N59-0 (0-6")	1.72E-01	1.72E-01	9.28E-01	9.29E+01	1.59E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.00E+02	4.81E-01	1.36E-02	4.54E+00	4.92E-02	2.41E+02	1.87E-02	1.73E+02	2.84E-04
BREOT-N60-0 (0-6")	1.72E-01	1.72E-01	9.28E-01	7.45E+01	1.28E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	8.03E+01	3.86E-01	1.36E-02	4.54E+00	3.95E-02	2.41E+02	1.87E-02	1.73E+02	2.28E-04
BREOT-S60-0 (0-6")	1.72E-01	1.72E-01	9.28E-01	4.81E+02	8.25E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.18E+02	2.49E+00	1.36E-02	4.54E+00	2.55E-01	2.41E+02	1.87E-02	1.73E+02	1.47E-03
BREOT-S61-0 (0-6")	1.72E-01	1.72E-01	9.28E-01	7.64E+01	1.31E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	8.23E+01	3.95E-01	1.36E-02	4.54E+00	4.05E-02	2.41E+02	1.87E-02	1.73E+02	2.34E-04
BREOT-N62-0 (0-6")	1.72E-01	1.72E-01	9.28E-01	1.20E+02	2.05E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.29E+02	6.20E-01	1.36E-02	4.54E+00	6.34E-02	2.41E+02	1.87E-02	1.73E+02	3.66E-04
BREOT-S62-0 (0-6")	1.72E-01	1.72E-01	9.28E-01	9.33E+01	1.60E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.01E+02	4.83E-01	1.36E-02	4.54E+00	4.94E-02	2.41E+02	1.87E-02	1.73E+02	2.86E-04
BREOT-N63-0 (0-6")	1.72E-01	1.72E-01	9.28E-01	3.16E+02	5.42E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.40E+02	1.63E+00	1.36E-02	4.54E+00	1.67E-01	2.41E+02	1.87E-02	1.73E+02	9.67E-04
BREOT-S63-0 (0-6")	1.72E-01	1.72E-01	9.28E-01	1.99E+02	3.41E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.14E+02	1.03E+00	1.36E-02	4.54E+00	1.05E-01	2.41E+02	1.87E-02	1.73E+02	6.08E-04
BREOT-N64-0 (0-6")	1.72E-01	1.72E-01	9.28E-01	1.23E+02	2.12E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.33E+02	6.39E-01	1.36E-02	4.54E+00	6.54E-02	2.41E+02	1.87E-02	1.73E+02	3.78E-04
BREOT-S64-0 (0-6")	1.72E-01	1.72E-01	9.28E-01	9.02E+01	1.55E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	9.72E+01	4.67E-01	1.36E-02	4.54E+00	4.78E-02	2.41E+02	1.87E-02	1.73E+02	2.76E-04
BREOT-N66-0 (0-6")	1.72E-01	1.72E-01	9.28E-01	1.64E+02	2.81E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.76E+02	8.47E-01	1.36E-02	4.54E+00	8.67E-02	2.41E+02	1.87E-02	1.73E+02	5.01E-04
BREOT-N67-0 (0-6")	1.72E-01	1.72E-01	9.28E-01	1.72E+03	2.96E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.86E+03	8.93E+00	1.36E-02	4.54E+00	9.14E-01	2.41E+02	1.87E-02	1.73E+02	5.28E-03
BREOT-S67-0 (0-6")	1.72E-01	1.72E-01	9.28E-01	7.39E+01	1.27E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	7.97E+01	3.83E-01	1.36E-02	4.54E+00	3.92E-02	2.41E+02	1.87E-02	1.73E+02	2.26E-04
Outside Tailings																						**Maximum HQ (At Edge of Tailings)**	**7.52E-02**
BREOT-S0+25 (0-6")	1.72E-01	1.72E-01	9.28E-01	2.39E+02	4.11E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.58E+02	1.24E+00	1.36E-02	4.54E+00	1.27E-01	2.41E+02	1.87E-02	1.73E+02	7.33E-04
BREOT-S1+25 (0-6")	1.72E-01	1.72E-01	9.28E-01	1.32E+02	2.26E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.42E+02	6.81E-01	1.36E-02	4.54E+00	6.97E-02	2.41E+02	1.87E-02	1.73E+02	4.03E-04
BREOT-S2+95 (0-6")	1.72E-01	1.72E-01	9.28E-01	5.43E+01	9.31E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.85E+01	2.81E-01	1.36E-02	4.54E+00	2.88E-02	2.41E+02	1.87E-02	1.73E+02	1.66E-04
BREOT-S3+6 (0-6")	1.72E-01	1.72E-01	9.28E-01	1.53E+02	2.63E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.65E+02	7.93E-01	1.36E-02	4.54E+00	8.11E-02	2.41E+02	1.87E-02	1.73E+02	4.69E-04
BREOT-S4+10 (0-6")	1.72E-01	1.72E-01	9.28E-01	8.56E+01	1.47E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	9.23E+01	4.43E-01	1.36E-02	4.54E+00	4.54E-02	2.41E+02	1.87E-02	1.73E+02	2.62E-04
BREOT-S6+25 (0-6")	1.72E-01	1.72E-01	9.28E-01	2.35E+02	4.04E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.54E+02	1.22E+00	1.36E-02	4.54E+00	1.25E-01	2.41E+02	1.87E-02	1.73E+02	7.20E-04
BREOT-S8+25 (0-6")	1.72E-01	1.72E-01	9.28E-01	2.43E+02	4.17E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.62E+02	1.26E+00	1.36E-02	4.54E+00	1.29E-01	2.41E+02	1.87E-02	1.73E+02	7.44E-04
BREOT-N10+25 (0-6")	1.72E-01	1.72E-01	9.28E-01	1.22E+02	2.10E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.32E+02	6.32E-01	1.36E-02	4.54E+00	6.47E-02	2.41E+02	1.87E-02	1.73E+02	3.74E-04
BREOT-N11+25 (0-6")	1.72E-01	1.72E-01	9.28E-01	1.28E+02	2.20E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.38E+02	6.63E-01	1.36E-02	4.54E+00	6.79E-02	2.41E+02	1.87E-02	1.73E+02	3.92E-04
BREOT-N12+25 (0-6")	1.72E-01	1.72E-01	9.28E-01	2.53E+02	4.35E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.73E+02	1.31E+00	1.36E-02	4.54E+00	1.34E-01	2.41E+02	1.87E-02	1.73E+02	7.76E-04
BREOT-S12+25 (0-6")	1.72E-01	1.72E-01	9.28E-01	8.08E+03	1.39E+03	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	8.70E+03	4.18E+01	1.36E-02	4.54E+00	4.28E+00	2.41E+02	1.87E-02	1.73E+02	2.47E-02
BREOT-S12+60 (0-6")	1.72E-01	1.72E-01	9.28E-01	1.01E+03	1.74E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.09E+03	5.25E+00	1.36E-02	4.54E+00	5.37E-01	2.41E+02	1.87E-02	1.73E+02	3.10E-03
BREOT-N13+25 (0-6")	1.72E-01	1.72E-01	9.28E-01	2.52E+02	4.33E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.72E+02	1.31E+00	1.36E-02	4.54E+00	1.34E-01	2.41E+02	1.87E-02	1.73E+02	7.72E-04
BREOT-S13+25 (0-6")	1.72E-01	1.72E-01	9.28E-01	2.88E+03	4.94E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.10E+03	1.49E+01	1.36E-02	4.54E+00	1.53E+00	2.41E+02	1.87E-02	1.73E+02	8.82E-03
BREOT-S13+65 (0-6")	1.72E-01	1.72E-01	9.28E-01	1.01E+03	1.74E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.09E+03	5.24E+00	1.36E-02	4.54E+00	5.36E-01	2.41E+02	1.87E-02	1.73E+02	3.10E-03
BREOT-N14+25 (0-6")	1.72E-01	1.72E-01	9.28E-01	2.72E+02	4.67E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.94E+02	1.41E+00	1.36E-02	4.54E+00	1.44E-01	2.41E+02	1.87E-02	1.73E+02	8.34E-04
BREOT-S14+25 (0-6")	1.72E-01	1.72E-01	9.28E-01	1.18E+04	2.03E+03	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.28E+04	6.13E+01	1.36E-02	4.54E+00	6.28E+00	2.41E+02	1.87E-02	1.73E+02	3.63E-02
BREOT-S14+59 (0-6")	1.72E-01	1.72E-01	9.28E-01	7.36E+02	1.26E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	7.93E+02	3.81E+00	1.36E-02	4.54E+00	3.90E-01	2.41E+02	1.87E-02	1.73E+02	2.25E-03
BREOT-N15+25 (0-6")	1.72E-01	1.72E-01	9.28E-01	4.27E+03	7.33E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.60E+03	2.21E+01	1.36E-02	4.54E+00	2.26E+00	2.41E+02	1.87E-02	1.73E+02	1.31E-02
BREOT-N15+50 (0-6")	1.72E-01	1.72E-01	9.28E-01	1.79E+02	3.07E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.93E+02	9.25E-01	1.36E-02	4.54E+00	9.47E-02	2.41E+02	1.87E-02	1.73E+02	5.47E-04
BREOT-S16+20 (0-6")	1.72E-01	1.72E-01	9.28E-01	2.77E+03	4.76E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.99E+03	1.44E+01	1.36E-02	4.54E+00	1.47E+00	2.41E+02	1.87E-02	1.73E+02	8.49E-03
BREOT-S16+75 (0-6")	1.72E-01	1.72E-01	9.28E-01	4.01E+02	6.89E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.33E+02	2.08E+00	1.36E-02	4.54E+00	2.13E-01	2.41E+02	1.87E-02	1.73E+02	1.23E-03
BREOT-N17+25 (0-6")	1.72E-01	1.72E-01	9.28E-01	7.57E+03	1.30E+03	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	8.16E+03	3.92E+01	1.36E-02	4.54E+00	4.01E+00	2.41E+02	1.87E-02	1.73E+02	2.32E-02
BREOT-S18+25 (0-6")	1.72E-01	1.72E-01	9.28E-01	5.84E+02	1.00E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	6.29E+02	3.02E+00	1.36E-02	4.54E+00	3.09E-01	2.41E+02	1.87E-02	1.73E+02	1.79E-03
BREOT-N19+25 (0-6")	1.72E-01	1.72E-01	9.28E-01	7.63E+01	1.31E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	8.23E+01	3.95E-01	1.36E-02	4.54E+00	4.04E-02	2.41E+02	1.87E-02	1.73E+02	2.34E-04
BREOT-S19+25 (0-6")	1.72E-01	1.72E-01	9.28E-01	4.63E+01	7.94E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.99E+01	2.40E-01	1.36E-02	4.54E+00	2.45E-02	2.41E+02	1.87E-02	1.73E+02	1.42E-04
BREOT-S19+85 (0-6")	1.72E-01	1.72E-01	9.28E-01	5.85E+02	1.00E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	6.31E+02	3.03E+00	1.36E-02	4.54E+00	3.10E-01	2.41E+02	1.87E-02	1.73E+02	1.79E-03
BREOT-N20+25 (0-6")	1.72E-01	1.72E-01	9.28E-01	1.58E+02	2.71E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.70E+02	8.18E-01	1.36E-02	4.54E+00	8.38E-02	2.41E+02	1.87E-02	1.73E+02	4.84E-04
BREOT-S20+25 (0-6")	1.72E-01	1.72E-01	9.28E-01	5.09E+01	8.74E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.49E+01	2.64E-01	1.36E-02	4.54E+00	2.70E-02	2.41E+02	1.87E-02	1.73E+02	1.56E-04
BREOT-S20+75 (0-6")	1.72E-01	1.72E-01	9.28E-01	9.39E+01	1.61E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.01E+02	4.86E-01	1.36E-02	4.54E+00	4.98E-02	2.41E+02	1.87E-02	1.73E+02	2.87E-04
BREOT-N21+25 (0-6")	1.72E-01	1.72E-01	9.28E-01	3.27E+03	5.61E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.52E+03	1.69E+01	1.36E-02	4.54E+00	1.73E+00	2.41E+02	1.87E-02	1.73E+02	1.00E-02

TABLE C-2D: LEAD DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 18.41

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Red Fox (Carnivorous Mammal - Terrestrial)																							
BREOT-S21+25 (0-6")	1.72E-01	1.72E-01	9.28E-01	4.91E+01	8.42E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.29E+01	2.54E-01	1.36E-02	4.54E+00	2.60E-02	2.41E+02	1.87E-02	1.73E+02	1.50E-04
BREOT-N22+150 (0-6")	1.72E-01	1.72E-01	9.28E-01	2.60E+02	4.46E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.80E+02	1.35E+00	1.36E-02	4.54E+00	1.38E-01	2.41E+02	1.87E-02	1.73E+02	7.96E-04
BREOT-N22+25 (0-6")	1.72E-01	1.72E-01	9.28E-01	2.29E+03	3.93E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.47E+03	1.19E+01	1.36E-02	4.54E+00	1.21E+00	2.41E+02	1.87E-02	1.73E+02	7.01E-03
BREOT-S22+25 (0-6")	1.72E-01	1.72E-01	9.28E-01	9.93E+02	1.70E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.07E+03	5.14E+00	1.36E-02	4.54E+00	5.26E-01	2.41E+02	1.87E-02	1.73E+02	3.04E-03
BREOT-N23+115 (0-6")	1.72E-01	1.72E-01	9.28E-01	6.10E+01	1.05E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	6.58E+01	3.16E-01	1.36E-02	4.54E+00	3.23E-02	2.41E+02	1.87E-02	1.73E+02	1.87E-04
BREOT-N23+25 (0-6")	1.72E-01	1.72E-01	9.28E-01	6.69E+03	1.15E+03	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	7.21E+03	3.47E+01	1.36E-02	4.54E+00	3.55E+00	2.41E+02	1.87E-02	1.73E+02	2.05E-02
BREOT-S23+25 (0-6")	1.72E-01	1.72E-01	9.28E-01	1.17E+03	2.00E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.26E+03	6.05E+00	1.36E-02	4.54E+00	6.19E-01	2.41E+02	1.87E-02	1.73E+02	3.58E-03
BREOT-S23+37.5 (0-6")	1.72E-01	1.72E-01	9.28E-01	1.00E+02	1.72E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.08E+02	5.18E-01	1.36E-02	4.54E+00	5.30E-02	2.41E+02	1.87E-02	1.73E+02	3.06E-04
BREOT-N24+25 (0-6")	1.72E-01	1.72E-01	9.28E-01	8.51E+02	1.46E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	9.17E+02	4.41E+00	1.36E-02	4.54E+00	4.51E-01	2.41E+02	1.87E-02	1.73E+02	2.60E-03
BREOT-N24+75 (0-6")	1.72E-01	1.72E-01	9.28E-01	1.01E+02	1.73E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.09E+02	5.21E-01	1.36E-02	4.54E+00	5.33E-02	2.41E+02	1.87E-02	1.73E+02	3.08E-04
BREOT-S24+25 (0-6")	1.72E-01	1.72E-01	9.28E-01	8.60E+02	1.48E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	9.27E+02	4.45E+00	1.36E-02	4.54E+00	4.56E-01	2.41E+02	1.87E-02	1.73E+02	2.63E-03
BREOT-N25+25 (0-6")	1.72E-01	1.72E-01	9.28E-01	6.28E+01	1.08E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	6.77E+01	3.25E-01	1.36E-02	4.54E+00	3.33E-02	2.41E+02	1.87E-02	1.73E+02	1.92E-04
BREOT-S25+25 (0-6")	1.72E-01	1.72E-01	9.28E-01	5.04E+02	8.64E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.43E+02	2.61E+00	1.36E-02	4.54E+00	2.67E-01	2.41E+02	1.87E-02	1.73E+02	1.54E-03
BREOT-S25+40 (0-6")	1.72E-01	1.72E-01	9.28E-01	2.22E+03	3.81E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.40E+03	1.15E+01	1.36E-02	4.54E+00	1.18E+00	2.41E+02	1.87E-02	1.73E+02	6.80E-03
BREOT-S26+37 (0-6")	1.72E-01	1.72E-01	9.28E-01	1.94E+02	3.33E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.09E+02	1.00E+00	1.36E-02	4.54E+00	1.03E-01	2.41E+02	1.87E-02	1.73E+02	5.94E-04
BREOT-N27+25 (0-6")	1.72E-01	1.72E-01	9.28E-01	1.09E+02	1.86E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.17E+02	5.62E-01	1.36E-02	4.54E+00	5.75E-02	2.41E+02	1.87E-02	1.73E+02	3.32E-04
BREOT-S27+25 (0-6")	1.72E-01	1.72E-01	9.28E-01	3.68E+02	6.31E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.96E+02	1.90E+00	1.36E-02	4.54E+00	1.95E-01	2.41E+02	1.87E-02	1.73E+02	1.13E-03
BREOT-N28+25 (0-6")	1.72E-01	1.72E-01	9.28E-01	1.27E+02	2.18E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.37E+02	6.59E-01	1.36E-02	4.54E+00	6.74E-02	2.41E+02	1.87E-02	1.73E+02	3.90E-04
BREOT-S28+25 (0-6")	1.72E-01	1.72E-01	9.28E-01	7.20E+02	1.24E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	7.76E+02	3.73E+00	1.36E-02	4.54E+00	3.82E-01	2.41E+02	1.87E-02	1.73E+02	2.20E-03
BREOT-N29+25 (0-6")	1.72E-01	1.72E-01	9.28E-01	3.44E+02	5.91E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.71E+02	1.78E+00	1.36E-02	4.54E+00	1.82E-01	2.41E+02	1.87E-02	1.73E+02	1.05E-03
BREOT-S29+25 (0-6")	1.72E-01	1.72E-01	9.28E-01	6.54E+02	1.12E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	7.05E+02	3.38E+00	1.36E-02	4.54E+00	3.46E-01	2.41E+02	1.87E-02	1.73E+02	2.00E-03
BREOT-N30+25 (0-6")	1.72E-01	1.72E-01	9.28E-01	5.12E+02	8.79E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.52E+02	2.65E+00	1.36E-02	4.54E+00	2.71E-01	2.41E+02	1.87E-02	1.73E+02	1.57E-03
BREOT-S30+25 (0-6")	1.72E-01	1.72E-01	9.28E-01	4.81E+02	8.25E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.18E+02	2.49E+00	1.36E-02	4.54E+00	2.55E-01	2.41E+02	1.87E-02	1.73E+02	1.47E-03
BREOT-N31+25 (0-6")	1.72E-01	1.72E-01	9.28E-01	9.27E+03	1.59E+03	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.00E+04	4.80E+01	1.36E-02	4.54E+00	4.91E+00	2.41E+02	1.87E-02	1.73E+02	2.84E-02
BREOT-N31+75 (0-6")	1.72E-01	1.72E-01	9.28E-01	7.00E+01	1.20E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	7.54E+01	3.62E-01	1.36E-02	4.54E+00	3.71E-02	2.41E+02	1.87E-02	1.73E+02	2.14E-04
BREOT-S31+25 (0-6")	1.72E-01	1.72E-01	9.28E-01	1.63E+02	2.79E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.75E+02	8.42E-01	1.36E-02	4.54E+00	8.61E-02	2.41E+02	1.87E-02	1.73E+02	4.98E-04
BREOT-N32+25 (0-6")	1.72E-01	1.72E-01	9.28E-01	1.01E+02	1.73E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.09E+02	5.22E-01	1.36E-02	4.54E+00	5.35E-02	2.41E+02	1.87E-02	1.73E+02	3.09E-04
BREOT-S32+25 (0-6")	1.72E-01	1.72E-01	9.28E-01	1.11E+03	1.91E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.20E+03	5.76E+00	1.36E-02	4.54E+00	5.89E-01	2.41E+02	1.87E-02	1.73E+02	3.40E-03
BREOT-S32+300 (0-6")	1.72E-01	1.72E-01	9.28E-01	3.49E+02	5.99E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.76E+02	1.81E+00	1.36E-02	4.54E+00	1.85E-01	2.41E+02	1.87E-02	1.73E+02	1.07E-03
BREOT-N33+25 (0-6")	1.72E-01	1.72E-01	9.28E-01	6.96E+01	1.19E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	7.50E+01	3.60E-01	1.36E-02	4.54E+00	3.69E-02	2.41E+02	1.87E-02	1.73E+02	2.13E-04
BREOT-S33+25 (0-6")	1.72E-01	1.72E-01	9.28E-01	1.28E+02	2.19E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.38E+02	6.62E-01	1.36E-02	4.54E+00	6.78E-02	2.41E+02	1.87E-02	1.73E+02	3.92E-04
BREOT-N34+25 (0-6")	1.72E-01	1.72E-01	9.28E-01	1.06E+02	1.82E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.15E+02	5.50E-01	1.36E-02	4.54E+00	5.63E-02	2.41E+02	1.87E-02	1.73E+02	3.25E-04
BREOT-S34+25 (0-6")	1.72E-01	1.72E-01	9.28E-01	3.44E+02	5.90E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.71E+02	1.78E+00	1.36E-02	4.54E+00	1.82E-01	2.41E+02	1.87E-02	1.73E+02	1.05E-03
BREOT-N35+25 (0-6")	1.72E-01	1.72E-01	9.28E-01	7.84E+01	1.35E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	8.46E+01	4.06E-01	1.36E-02	4.54E+00	4.16E-02	2.41E+02	1.87E-02	1.73E+02	2.40E-04
BREOT-S35+25 (0-6")	1.72E-01	1.72E-01	9.28E-01	1.26E+02	2.16E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.36E+02	6.52E-01	1.36E-02	4.54E+00	6.68E-02	2.41E+02	1.87E-02	1.73E+02	3.86E-04
BREOT-N36+100 (0-6")	1.72E-01	1.72E-01	9.28E-01	1.58E+02	2.72E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.71E+02	8.19E-01	1.36E-02	4.54E+00	8.39E-02	2.41E+02	1.87E-02	1.73E+02	4.85E-04
BREOT-N36+25 (0-6")	1.72E-01	1.72E-01	9.28E-01	1.87E+03	3.21E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.02E+03	9.69E+00	1.36E-02	4.54E+00	9.92E-01	2.41E+02	1.87E-02	1.73E+02	5.73E-03
BREOT-S36+25 (0-6")	1.72E-01	1.72E-01	9.28E-01	2.08E+02	3.57E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.24E+02	1.08E+00	1.36E-02	4.54E+00	1.10E-01	2.41E+02	1.87E-02	1.73E+02	6.37E-04
BREOT-N37+25 (0-6")	1.72E-01	1.72E-01	9.28E-01	9.69E+01	1.66E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.04E+02	5.02E-01	1.36E-02	4.54E+00	5.13E-02	2.41E+02	1.87E-02	1.73E+02	2.97E-04
BREOT-S37+25 (0-6")	1.72E-01	1.72E-01	9.28E-01	1.17E+02	2.00E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.26E+02	6.03E-01	1.36E-02	4.54E+00	6.17E-02	2.41E+02	1.87E-02	1.73E+02	3.57E-04
BREOT-N38+25 (0-6")	1.72E-01	1.72E-01	9.28E-01	1.40E+02	2.40E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.51E+02	7.24E-01	1.36E-02	4.54E+00	7.41E-02	2.41E+02	1.87E-02	1.73E+02	4.28E-04
BREOT-S38+25 (0-6")	1.72E-01	1.72E-01	9.28E-01	1.42E+02	2.44E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.53E+02	7.35E-01	1.36E-02	4.54E+00	7.52E-02	2.41E+02	1.87E-02	1.73E+02	4.35E-04
BREOT-N39+25 (0-6")	1.72E-01	1.72E-01	9.28E-01	1.36E+02	2.33E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.46E+02	7.02E-01	1.36E-02	4.54E+00	7.18E-02	2.41E+02	1.87E-02	1.73E+02	4.15E-04
BREOT-S39+25 (0-6")	1.72E-01	1.72E-01	9.28E-01	1.53E+02	2.63E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.65E+02	7.95E-01	1.36E-02	4.54E+00	8.13E-02	2.41E+02	1.87E-02	1.73E+02	4.70E-04
BREOT-N40+25 (0-6")	1.72E-01	1.72E-01	9.28E-01	1.40E+02	2.40E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.51E+02	7.23E-01	1.36E-02	4.54E+00	7.40E-02	2.41E+02	1.87E-02	1.73E+02	4.28E-04
BREOT-S40+25 (0-6")	1.72E-01	1.72E-01	9.28E-01	1.22E+02	2.08E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.31E+02	6.29E-01	1.36E-02	4.54E+00	6.44E-02	2.41E+02	1.87E-02	1.73E+02	3.72E-04
BREOT-N41+25 (0-6")	1.72E-01	1.72E-01	9.28E-01	9.22E+01	1.58E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	9.94E+01	4.77E-01	1.36E-02	4.54E+00	4.89E-02	2.41E+02	1.87E-02	1.73E+02	2.82E-04
BREOT-S41+25 (0-6")	1.72E-01	1.72E-01	9.28E-01	5.00E+02	8.59E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.39E+02	2.59E+00	1.36E-02	4.54E+00	2.65E-01	2.41E+02	1.87E-02	1.73E+02	1.53E-03
BREOT-N42+25 (0-6")	1.72E-01	1.72E-01	9.28E-01	4.18E+01	7.16E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.50E+01	2.16E-01	1.36E-02	4.54E+00	2.21E-02	2.41E+02	1.87E-02	1.73E+02	1.28E-04
BREOT-S42+25 (0-6")	1.72E-01	1.72E-01	9.28E-01	1.13E+02	1.93E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.21E+02	5.83E-01	1.36E-02	4.54E+00	5.97E-02	2.41E+02	1.87E-02	1.73E+02	3.45E-04
BREOT-N43+12.5 (0-6")	1.72E-01	1.72E-01	9.28E-01	2.43E+02	4.17E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.62E+02	1.26E+00	1.36E-02	4.54E+00	1.29E-01	2.41E+02	1.87E-02	1.73E+02	7.45E-04
BREOT-N43+40 (0-6")	1.72E-01	1.72E-01	9.28E-01	1.08E+02	1.86E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.17E+02	5.61E-01	1.36E-02	4.54E+00	5.75E-02	2.41E+02	1.87E-02	1.73E+02	3.32E-04
BREOT-S43+25 (0-6")	1.72E-01	1.72E-01	9.28E-01	6.84E+01	1.17E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	7.37E+01	3.54E-01	1.36E-02	4.54E+00	3.62E-02	2.41E+02	1.87E-02	1.73E+02	2.09E-04
BREOT-N44+55 (0-6")	1.72E-01	1.72E-01	9.28E-01	1.43E+02	2.45E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.54E+02	7.40E-01	1.36E-02	4.54E+00	7.58E-02	2.41E+02	1.87E-02	1.73E+02	4.38E-04
BREOT-S44+25 (0-6")	1.72E-01	1.72E-01	9.28E-01	6.66E+01	1.14E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	7.17E+01	3.45E-01	1.36E-02	4.54E+00	3.53E-02	2.41E+02	1.87E-02	1.73E+02	2.04E-04
BREOT-N45+25 (0-6")	1.72E-01	1.72E-01	9.28E-01	1.02E+02	1.76E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.10E+02	5.30E-01	1.36E-02	4.54E+00	5.43E-02	2.41E+02	1.87E-02	1.73E+02	3.14E-04
BREOT-S45+25 (0-6")	1.72E-01	1.72E-01	9.28E-01	5.08E+01	8.72E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.48E+01	2.63E-01	1.36E-02	4.54E+00	2.69E-02	2.41E+02	1.87E-02	1.73E+02	1.56E-04

TABLE C-2D: LEAD DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 18.41

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Red Fox (Carnivorous Mammal - Terrestrial)																							
BREOT-N46+25 (0-6")	1.72E-01	1.72E-01	9.28E-01	1.47E+02	2.51E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.58E+02	7.59E-01	1.36E-02	4.54E+00	7.77E-02	2.41E+02	1.87E-02	1.73E+02	4.49E-04
BREOT-S46+25 (0-6")	1.72E-01	1.72E-01	9.28E-01	4.68E+01	8.03E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.05E+01	2.42E-01	1.36E-02	4.54E+00	2.48E-02	2.41E+02	1.87E-02	1.73E+02	1.43E-04
BREOT-N47+25 (0-6")	1.72E-01	1.72E-01	9.28E-01	1.19E+02	2.05E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.29E+02	6.18E-01	1.36E-02	4.54E+00	6.33E-02	2.41E+02	1.87E-02	1.73E+02	3.66E-04
BREOT-S47+25 (0-6")	1.72E-01	1.72E-01	9.28E-01	3.41E+01	5.84E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.67E+01	1.76E-01	1.36E-02	4.54E+00	1.80E-02	2.41E+02	1.87E-02	1.73E+02	1.04E-04
BREOT-N48+25 (0-6")	1.72E-01	1.72E-01	9.28E-01	1.02E+02	1.75E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.10E+02	5.27E-01	1.36E-02	4.54E+00	5.39E-02	2.41E+02	1.87E-02	1.73E+02	3.11E-04
BREOT-S48+25 (0-6")	1.72E-01	1.72E-01	9.28E-01	1.29E+02	2.21E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.39E+02	6.66E-01	1.36E-02	4.54E+00	6.82E-02	2.41E+02	1.87E-02	1.73E+02	3.94E-04
BREOT-N49+25 (0-6")	1.72E-01	1.72E-01	9.28E-01	3.78E+02	6.49E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.08E+02	1.96E+00	1.36E-02	4.54E+00	2.01E-01	2.41E+02	1.87E-02	1.73E+02	1.16E-03
BREOT-S49+25 (0-6")	1.72E-01	1.72E-01	9.28E-01	1.28E+02	2.20E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.38E+02	6.64E-01	1.36E-02	4.54E+00	6.80E-02	2.41E+02	1.87E-02	1.73E+02	3.93E-04
BREOT-N51+25 (0-6")	1.72E-01	1.72E-01	9.28E-01	8.78E+01	1.51E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	9.46E+01	4.54E-01	1.36E-02	4.54E+00	4.65E-02	2.41E+02	1.87E-02	1.73E+02	2.69E-04
BREOT-S51+25 (0-6")	1.72E-01	1.72E-01	9.28E-01	2.76E+01	4.73E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.97E+01	1.43E-01	1.36E-02	4.54E+00	1.46E-02	2.41E+02	1.87E-02	1.73E+02	8.44E-05
BREOT-N52+25 (0-6")	1.72E-01	1.72E-01	9.28E-01	1.99E+02	3.41E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.15E+02	1.03E+00	1.36E-02	4.54E+00	1.05E-01	2.41E+02	1.87E-02	1.73E+02	6.09E-04
BREOT-S52+25 (0-6")	1.72E-01	1.72E-01	9.28E-01	5.75E+01	9.86E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	6.19E+01	2.97E-01	1.36E-02	4.54E+00	3.04E-02	2.41E+02	1.87E-02	1.73E+02	1.76E-04
BREOT-N53+25 (0-6")	1.72E-01	1.72E-01	9.28E-01	7.56E+01	1.30E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	8.15E+01	3.92E-01	1.36E-02	4.54E+00	4.01E-02	2.41E+02	1.87E-02	1.73E+02	2.32E-04
BREOT-S53+25 (0-6")	1.72E-01	1.72E-01	9.28E-01	1.05E+02	1.80E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.13E+02	5.43E-01	1.36E-02	4.54E+00	5.56E-02	2.41E+02	1.87E-02	1.73E+02	3.21E-04
BREOT-S54+25 (0-6")	1.72E-01	1.72E-01	9.28E-01	5.98E+01	1.03E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	6.44E+01	3.09E-01	1.36E-02	4.54E+00	3.17E-02	2.41E+02	1.87E-02	1.73E+02	1.83E-04
BREOT-N55+25 (0-6")	1.72E-01	1.72E-01	9.28E-01	7.45E+01	1.28E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	8.03E+01	3.86E-01	1.36E-02	4.54E+00	3.95E-02	2.41E+02	1.87E-02	1.73E+02	2.28E-04
BREOT-S55+25 (0-6")	1.72E-01	1.72E-01	9.28E-01	6.45E+01	1.11E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	6.95E+01	3.34E-01	1.36E-02	4.54E+00	3.42E-02	2.41E+02	1.87E-02	1.73E+02	1.97E-04
BREOT-N56+25 (0-6")	1.72E-01	1.72E-01	9.28E-01	1.03E+02	1.76E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.11E+02	5.31E-01	1.36E-02	4.54E+00	5.44E-02	2.41E+02	1.87E-02	1.73E+02	3.14E-04
BREOT-S56+25 (0-6")	1.72E-01	1.72E-01	9.28E-01	8.43E+01	1.45E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	9.09E+01	4.37E-01	1.36E-02	4.54E+00	4.47E-02	2.41E+02	1.87E-02	1.73E+02	2.58E-04
BREOT-N57+25 (0-6")	1.72E-01	1.72E-01	9.28E-01	9.09E+01	1.56E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	9.80E+01	4.71E-01	1.36E-02	4.54E+00	4.82E-02	2.41E+02	1.87E-02	1.73E+02	2.78E-04
BREOT-S57+25 (0-6")	1.72E-01	1.72E-01	9.28E-01	9.02E+01	1.55E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	9.72E+01	4.67E-01	1.36E-02	4.54E+00	4.78E-02	2.41E+02	1.87E-02	1.73E+02	2.76E-04
BREOT-N58+25 (0-6")	1.72E-01	1.72E-01	9.28E-01	8.61E+01	1.48E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	9.28E+01	4.46E-01	1.36E-02	4.54E+00	4.56E-02	2.41E+02	1.87E-02	1.73E+02	2.64E-04
BREOT-S58+25 (0-6")	1.72E-01	1.72E-01	9.28E-01	1.16E+02	1.99E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.25E+02	6.02E-01	1.36E-02	4.54E+00	6.16E-02	2.41E+02	1.87E-02	1.73E+02	3.56E-04
BREOT-N59+25 (0-6")	1.72E-01	1.72E-01	9.28E-01	3.97E+02	6.81E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.28E+02	2.05E+00	1.36E-02	4.54E+00	2.10E-01	2.41E+02	1.87E-02	1.73E+02	1.21E-03
BREOT-N60+25 (0-6")	1.72E-01	1.72E-01	9.28E-01	8.50E+01	1.46E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	9.16E+01	4.40E-01	1.36E-02	4.54E+00	4.51E-02	2.41E+02	1.87E-02	1.73E+02	2.60E-04
BREOT-S60+25 (0-6")	1.72E-01	1.72E-01	9.28E-01	7.14E+01	1.23E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	7.70E+01	3.70E-01	1.36E-02	4.54E+00	3.79E-02	2.41E+02	1.87E-02	1.73E+02	2.19E-04
BREOT-S61+25 (0-6")	1.72E-01	1.72E-01	9.28E-01	5.65E+01	9.70E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	6.09E+01	2.93E-01	1.36E-02	4.54E+00	3.00E-02	2.41E+02	1.87E-02	1.73E+02	1.73E-04
BREOT-N62+25 (0-6")	1.72E-01	1.72E-01	9.28E-01	1.46E+02	2.50E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.57E+02	7.54E-01	1.36E-02	4.54E+00	7.72E-02	2.41E+02	1.87E-02	1.73E+02	4.46E-04
BREOT-S62+25 (0-6")	1.72E-01	1.72E-01	9.28E-01	3.19E+01	5.47E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.44E+01	1.65E-01	1.36E-02	4.54E+00	1.69E-02	2.41E+02	1.87E-02	1.73E+02	9.77E-05
BREOT-N63+25 (0-6")	1.72E-01	1.72E-01	9.28E-01	5.08E+02	8.72E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.48E+02	2.63E+00	1.36E-02	4.54E+00	2.69E-01	2.41E+02	1.87E-02	1.73E+02	1.56E-03
BREOT-S63+25 (0-6")	1.72E-01	1.72E-01	9.28E-01	3.26E+01	5.60E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.52E+01	1.69E-01	1.36E-02	4.54E+00	1.73E-02	2.41E+02	1.87E-02	1.73E+02	1.00E-04
BREOT-N64+25 (0-6")	1.72E-01	1.72E-01	9.28E-01	1.19E+02	2.04E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.28E+02	6.15E-01	1.36E-02	4.54E+00	6.30E-02	2.41E+02	1.87E-02	1.73E+02	3.64E-04
BREOT-S64+25 (0-6")	1.72E-01	1.72E-01	9.28E-01	8.13E+01	1.40E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	8.77E+01	4.21E-01	1.36E-02	4.54E+00	4.31E-02	2.41E+02	1.87E-02	1.73E+02	2.49E-04
BREOT-S65+25 (0-6")	1.72E-01	1.72E-01	9.28E-01	6.80E+01	1.17E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	7.33E+01	3.52E-01	1.36E-02	4.54E+00	3.60E-02	2.41E+02	1.87E-02	1.73E+02	2.08E-04
BREOT-N66+25 (0-6")	1.72E-01	1.72E-01	9.28E-01	9.35E+01	1.60E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.01E+02	4.84E-01	1.36E-02	4.54E+00	4.96E-02	2.41E+02	1.87E-02	1.73E+02	2.86E-04
BREOT-S66+25 (0-6")	1.72E-01	1.72E-01	9.28E-01	6.15E+01	1.06E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	6.63E+01	3.18E-01	1.36E-02	4.54E+00	3.26E-02	2.41E+02	1.87E-02	1.73E+02	1.88E-04
BREOT-N67+125 (0-6")	1.72E-01	1.72E-01	9.28E-01	3.93E+02	6.75E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.24E+02	2.04E+00	1.36E-02	4.54E+00	2.08E-01	2.41E+02	1.87E-02	1.73E+02	1.20E-03
BREOT-S67+25 (0-6")	1.72E-01	1.72E-01	9.28E-01	7.94E+01	1.36E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	8.56E+01	4.11E-01	1.36E-02	4.54E+00	4.21E-02	2.41E+02	1.87E-02	1.73E+02	2.43E-04
BREOT-N67+25 (0-6")	1.72E-01	1.72E-01	9.28E-01	1.43E+03	2.45E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.54E+03	7.40E+00	1.36E-02	4.54E+00	7.58E-01	2.41E+02	1.87E-02	1.73E+02	4.38E-03
																						Maximum HQ (Outside Tailings)	**3.63E-02**
Masked Shrew (Omnivorous Mammal - Terrestrial, Wetland)																							
Reference Sites																							
ACBG-1 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	3.58E+01	3.04E-01	1.10E-03	2.31E+01	2.54E-02	1.00E+00	5.50E-03	5.98E+01	2.41E+02	1.87E-02	2.59E+02	2.31E-01
ACBG-2 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	5.94E+01	5.03E-01	1.10E-03	3.83E+01	4.21E-02	1.00E+00	5.50E-03	9.91E+01	2.41E+02	1.87E-02	2.59E+02	3.83E-01
UBRBG-202 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	8.44E+01	7.15E-01	1.10E-03	5.44E+01	5.99E-02	1.00E+00	5.50E-03	1.41E+02	2.41E+02	1.87E-02	2.59E+02	5.44E-01
UBRBG-204 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	8.26E+01	6.99E-01	1.10E-03	5.32E+01	5.86E-02	1.00E+00	5.50E-03	1.38E+02	2.41E+02	1.87E-02	2.59E+02	5.32E-01
Inside Tailings																						**Minimum HQ (Reference Sites)**	**2.31E-01**
BREOT-S6-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	2.41E+03	2.04E+01	1.10E-03	1.55E+03	1.71E+00	1.00E+00	5.50E-03	4.02E+03	2.41E+02	1.87E-02	2.59E+02	1.55E+01
BREOT-S2-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	3.02E+03	2.56E+01	1.10E-03	1.94E+03	2.14E+00	1.00E+00	5.50E-03	5.04E+03	2.41E+02	1.87E-02	2.59E+02	1.95E+01
BREOT-S0-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.38E+03	1.17E+01	1.10E-03	8.89E+02	9.79E-01	1.00E+00	5.50E-03	2.30E+03	2.41E+02	1.87E-02	2.59E+02	8.89E+00
BREOT-S1-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.26E+03	1.06E+01	1.10E-03	8.09E+02	8.91E-01	1.00E+00	5.50E-03	2.10E+03	2.41E+02	1.87E-02	2.59E+02	8.09E+00
BREOT-S7-25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	2.65E+02	2.24E+00	1.10E-03	1.71E+02	1.88E-01	1.00E+00	5.50E-03	4.42E+02	2.41E+02	1.87E-02	2.59E+02	1.71E+00
BREOT-S8-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.01E+03	8.53E+00	1.10E-03	6.49E+02	7.14E-01	1.00E+00	5.50E-03	1.68E+03	2.41E+02	1.87E-02	2.59E+02	6.49E+00
BREOT-S9-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.05E+03	8.92E+00	1.10E-03	6.79E+02	7.47E-01	1.00E+00	5.50E-03	1.76E+03	2.41E+02	1.87E-02	2.59E+02	6.79E+00
BREOT-N10-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.50E+04	1.27E+02	1.10E-03	9.66E+03	1.06E+01	1.00E+00	5.50E-03	2.50E+04	2.41E+02	1.87E-02	2.59E+02	9.66E+01
BREOT-N11-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	4.17E+03	3.53E+01	1.10E-03	2.69E+03	2.96E+00	1.00E+00	5.50E-03	6.97E+03	2.41E+02	1.87E-02	2.59E+02	2.69E+01
BREOT-N11-125 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	3.45E+03	2.93E+01	1.10E-03	2.23E+03	2.45E+00	1.00E+00	5.50E-03	5.76E+03	2.41E+02	1.87E-02	2.59E+02	2.23E+01
BREOT-S11-12 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.01E+04	8.57E+01	1.10E-03	6.52E+03	7.18E+00	1.00E+00	5.50E-03	1.69E+04	2.41E+02	1.87E-02	2.59E+02	6.52E+01
BREOT-S11+63 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	3.18E+03	2.70E+01	1.10E-03	2.05E+03	2.26E+00	1.00E+00	5.50E-03	5.31E+03	2.41E+02	1.87E-02	2.59E+02	2.05E+01

TABLE C-2D: LEAD DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 18.41

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Masked Shrew (Omnivorous Mammal - Terrestrial, Wetland)																							
UBDT-TP-6 (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	2.41E+04	2.05E+02	1.10E-03	1.56E+04	1.71E+01	1.00E+00	5.50E-03	4.03E+04	2.41E+02	1.87E-02	2.59E+02	1.56E+02
UBDT-TP-6 (2-12")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.84E+04	1.56E+02	1.10E-03	1.19E+04	1.31E+01	1.00E+00	5.50E-03	3.07E+04	2.41E+02	1.87E-02	2.59E+02	1.19E+02
UBDT-TP-6 (12-24")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.03E+04	8.73E+01	1.10E-03	6.64E+03	7.31E+00	1.00E+00	5.50E-03	1.72E+04	2.41E+02	1.87E-02	2.59E+02	6.64E+01
UBDT-TP-6 (24-36")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	8.28E+02	7.01E+00	1.10E-03	5.33E+02	5.87E-01	1.00E+00	5.50E-03	1.38E+03	2.41E+02	1.87E-02	2.59E+02	5.33E+00
UBDT-TP-6 (36-48")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.87E+03	1.58E+01	1.10E-03	1.20E+03	1.32E+00	1.00E+00	5.50E-03	3.12E+03	2.41E+02	1.87E-02	2.59E+02	1.20E+01
UBDT-TP-6 (48-60")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	8.49E+02	7.19E+00	1.10E-03	5.47E+02	6.03E-01	1.00E+00	5.50E-03	1.42E+03	2.41E+02	1.87E-02	2.59E+02	5.47E+00
BREOT-N12-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	2.36E+03	2.00E+01	1.10E-03	1.52E+03	1.68E+00	1.00E+00	5.50E-03	3.94E+03	2.41E+02	1.87E-02	2.59E+02	1.52E+01
BREOT-S12-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	5.23E+03	4.43E+01	1.10E-03	3.37E+03	3.71E+00	1.00E+00	5.50E-03	8.72E+03	2.41E+02	1.87E-02	2.59E+02	3.37E+01
BREOT-S13-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	7.80E+03	6.60E+01	1.10E-03	5.02E+03	5.53E+00	1.00E+00	5.50E-03	1.30E+04	2.41E+02	1.87E-02	2.59E+02	5.02E+01
BREOT-S14-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	2.16E+03	1.83E+01	1.10E-03	1.39E+03	1.53E+00	1.00E+00	5.50E-03	3.61E+03	2.41E+02	1.87E-02	2.59E+02	1.39E+01
BREOT-N15-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	4.41E+03	3.74E+01	1.10E-03	2.84E+03	3.13E+00	1.00E+00	5.50E-03	7.36E+03	2.41E+02	1.87E-02	2.59E+02	2.84E+01
BREOT-S15-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	4.00E+03	3.39E+01	1.10E-03	2.58E+03	2.84E+00	1.00E+00	5.50E-03	6.68E+03	2.41E+02	1.87E-02	2.59E+02	2.58E+01
BREOT-N16-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	4.20E+03	3.56E+01	1.10E-03	2.70E+03	2.98E+00	1.00E+00	5.50E-03	7.01E+03	2.41E+02	1.87E-02	2.59E+02	2.71E+01
BREOT-N16-25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	5.11E+02	4.33E+00	1.10E-03	3.29E+02	3.62E-01	1.00E+00	5.50E-03	8.52E+02	2.41E+02	1.87E-02	2.59E+02	3.29E+00
BREOT-S16-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	2.98E+03	2.52E+01	1.10E-03	1.92E+03	2.11E+00	1.00E+00	5.50E-03	4.97E+03	2.41E+02	1.87E-02	2.59E+02	1.92E+01
BREOT-N17-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	3.62E+03	3.06E+01	1.10E-03	2.33E+03	2.57E+00	1.00E+00	5.50E-03	6.04E+03	2.41E+02	1.87E-02	2.59E+02	2.33E+01
BREOT-S17-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.09E+03	9.25E+00	1.10E-03	7.03E+02	7.75E-01	1.00E+00	5.50E-03	1.82E+03	2.41E+02	1.87E-02	2.59E+02	7.04E+00
BREOT-S17-25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	8.48E+02	7.18E+00	1.10E-03	5.46E+02	6.02E-01	1.00E+00	5.50E-03	1.42E+03	2.41E+02	1.87E-02	2.59E+02	5.47E+00
UBDT-TP-4 (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	2.01E+03	1.71E+01	1.10E-03	1.30E+03	1.43E+00	1.00E+00	5.50E-03	3.36E+03	2.41E+02	1.87E-02	2.59E+02	1.30E+01
UBDT-TP-4 (2-12")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.90E+03	1.61E+01	1.10E-03	1.22E+03	1.35E+00	1.00E+00	5.50E-03	3.17E+03	2.41E+02	1.87E-02	2.59E+02	1.22E+01
UBDT-TP-4 (12-24")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.28E+03	1.09E+01	1.10E-03	8.26E+02	9.10E-01	1.00E+00	5.50E-03	2.14E+03	2.41E+02	1.87E-02	2.59E+02	8.26E+00
UBDT-TP-4 (24-36")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.04E+03	8.82E+00	1.10E-03	6.71E+02	7.39E-01	1.00E+00	5.50E-03	1.74E+03	2.41E+02	1.87E-02	2.59E+02	6.71E+00
BREOT-N18-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	3.13E+03	2.65E+01	1.10E-03	2.02E+03	2.22E+00	1.00E+00	5.50E-03	5.22E+03	2.41E+02	1.87E-02	2.59E+02	2.02E+01
BREOT-N18-25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	2.80E+02	2.37E+00	1.10E-03	1.80E+02	1.99E-01	1.00E+00	5.50E-03	4.67E+02	2.41E+02	1.87E-02	2.59E+02	1.80E+00
BREOT-S18-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.28E+03	1.08E+01	1.10E-03	8.22E+02	9.05E-01	1.00E+00	5.50E-03	2.13E+03	2.41E+02	1.87E-02	2.59E+02	8.22E+00
BREOT-N19-10 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	2.92E+03	2.47E+01	1.10E-03	1.88E+03	2.07E+00	1.00E+00	5.50E-03	4.87E+03	2.41E+02	1.87E-02	2.59E+02	1.88E+01
BREOT-S19-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.57E+03	1.33E+01	1.10E-03	1.01E+03	1.12E+00	1.00E+00	5.50E-03	2.63E+03	2.41E+02	1.87E-02	2.59E+02	1.01E+01
UBDT-TP-5 (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.49E+03	1.26E+01	1.10E-03	9.62E+02	1.06E+00	1.00E+00	5.50E-03	2.49E+03	2.41E+02	1.87E-02	2.59E+02	9.62E+00
UBDT-TP-5 (2-12")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.59E+03	1.34E+01	1.10E-03	1.02E+03	1.13E+00	1.00E+00	5.50E-03	2.65E+03	2.41E+02	1.87E-02	2.59E+02	1.02E+01
UBDT-TP-5 (12-24")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.62E+03	1.37E+01	1.10E-03	1.04E+03	1.15E+00	1.00E+00	5.50E-03	2.70E+03	2.41E+02	1.87E-02	2.59E+02	1.04E+01
BREOT-N20-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.81E+03	1.53E+01	1.10E-03	1.17E+03	1.28E+00	1.00E+00	5.50E-03	3.02E+03	2.41E+02	1.87E-02	2.59E+02	1.17E+01
UBDT-TP-3 (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	2.09E+03	1.77E+01	1.10E-03	1.34E+03	1.48E+00	1.00E+00	5.50E-03	3.48E+03	2.41E+02	1.87E-02	2.59E+02	1.34E+01
UBDT-TP-3 (2-12")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	2.82E+03	2.39E+01	1.10E-03	1.82E+03	2.00E+00	1.00E+00	5.50E-03	4.70E+03	2.41E+02	1.87E-02	2.59E+02	1.82E+01
UBDT-TP-3 (12-24")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.94E+03	1.64E+01	1.10E-03	1.25E+03	1.37E+00	1.00E+00	5.50E-03	3.23E+03	2.41E+02	1.87E-02	2.59E+02	1.25E+01
UBDT-TP-3 (24-36")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	2.44E+03	2.07E+01	1.10E-03	1.58E+03	1.73E+00	1.00E+00	5.50E-03	4.08E+03	2.41E+02	1.87E-02	2.59E+02	1.58E+01
UBDT-TP-3 (36-48")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	2.71E+03	2.29E+01	1.10E-03	1.74E+03	1.92E+00	1.00E+00	5.50E-03	4.52E+03	2.41E+02	1.87E-02	2.59E+02	1.75E+01
UBDT-TP-3 (48-60")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	5.54E+02	4.69E+00	1.10E-03	3.57E+02	3.93E-01	1.00E+00	5.50E-03	9.24E+02	2.41E+02	1.87E-02	2.59E+02	3.57E+00
BREOT-N21-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.78E+03	1.51E+01	1.10E-03	1.15E+03	1.26E+00	1.00E+00	5.50E-03	2.97E+03	2.41E+02	1.87E-02	2.59E+02	1.15E+01
BREOT-N22-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	2.29E+03	1.94E+01	1.10E-03	1.48E+03	1.63E+00	1.00E+00	5.50E-03	3.83E+03	2.41E+02	1.87E-02	2.59E+02	1.48E+01
BREOT-N23-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.92E+03	1.62E+01	1.10E-03	1.23E+03	1.36E+00	1.00E+00	5.50E-03	3.20E+03	2.41E+02	1.87E-02	2.59E+02	1.23E+01
BREOT-S23-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	2.67E+03	2.26E+01	1.10E-03	1.72E+03	1.90E+00	1.00E+00	5.50E-03	4.46E+03	2.41E+02	1.87E-02	2.59E+02	1.72E+01
UBDT-TP-2 (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.84E+03	1.56E+01	1.10E-03	1.19E+03	1.31E+00	1.00E+00	5.50E-03	3.07E+03	2.41E+02	1.87E-02	2.59E+02	1.19E+01
UBDT-TP-2 (2-12")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.36E+03	1.15E+01	1.10E-03	8.75E+02	9.64E-01	1.00E+00	5.50E-03	2.27E+03	2.41E+02	1.87E-02	2.59E+02	8.76E+00
UBDT-TP-2 (12-24")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.95E+03	1.65E+01	1.10E-03	1.26E+03	1.38E+00	1.00E+00	5.50E-03	3.25E+03	2.41E+02	1.87E-02	2.59E+02	1.26E+01
UBDT-TP-2 (24-36")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.16E+03	9.82E+00	1.10E-03	7.47E+02	8.22E-01	1.00E+00	5.50E-03	1.93E+03	2.41E+02	1.87E-02	2.59E+02	7.47E+00
UBDT-TP-2 (36-48")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.90E+03	1.61E+01	1.10E-03	1.23E+03	1.35E+00	1.00E+00	5.50E-03	3.18E+03	2.41E+02	1.87E-02	2.59E+02	1.23E+01
BREOT-S24-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	2.76E+03	2.34E+01	1.10E-03	1.78E+03	1.96E+00	1.00E+00	5.50E-03	4.61E+03	2.41E+02	1.87E-02	2.59E+02	1.78E+01
BREOT-N25-50 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.37E+04	1.16E+02	1.10E-03	8.80E+03	9.69E+00	1.00E+00	5.50E-03	2.28E+04	2.41E+02	1.87E-02	2.59E+02	8.80E+01
BREOT-N25-95 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	2.13E+03	1.80E+01	1.10E-03	1.37E+03	1.51E+00	1.00E+00	5.50E-03	3.55E+03	2.41E+02	1.87E-02	2.59E+02	1.37E+01
BREOT-S25-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	2.44E+03	2.06E+01	1.10E-03	1.57E+03	1.73E+00	1.00E+00	5.50E-03	4.07E+03	2.41E+02	1.87E-02	2.59E+02	1.57E+01
BREOT-S25-40 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	3.11E+03	2.63E+01	1.10E-03	2.00E+03	2.20E+00	1.00E+00	5.50E-03	5.18E+03	2.41E+02	1.87E-02	2.59E+02	2.00E+01
BREOT-N26A-25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.17E+02	9.91E-01	1.10E-03	7.54E+01	8.30E-02	1.00E+00	5.50E-03	1.95E+02	2.41E+02	1.87E-02	2.59E+02	7.54E-01
BREOT-N26B-25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	3.01E+03	2.55E+01	1.10E-03	1.94E+03	2.13E+00	1.00E+00	5.50E-03	5.02E+03	2.41E+02	1.87E-02	2.59E+02	1.94E+01
BREOT-N26-50 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	9.87E+03	8.36E+01	1.10E-03	6.36E+03	7.00E+00	1.00E+00	5.50E-03	1.65E+04	2.41E+02	1.87E-02	2.59E+02	6.36E+01
BREOT-N26-75 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	6.53E+03	5.53E+01	1.10E-03	4.21E+03	4.63E+00	1.00E+00	5.50E-03	1.09E+04	2.41E+02	1.87E-02	2.59E+02	4.21E+01
BREOT-S26-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.78E+03	1.51E+01	1.10E-03	1.15E+03	1.26E+00	1.00E+00	5.50E-03	2.97E+03	2.41E+02	1.87E-02	2.59E+02	1.15E+01
BREOT-S26-40 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	2.21E+03	1.87E+01	1.10E-03	1.42E+03	1.57E+00	1.00E+00	5.50E-03	3.68E+03	2.41E+02	1.87E-02	2.59E+02	1.42E+01

TABLE C-2D: LEAD DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 18.41

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Masked Shrew (Omnivorous Mammal - Terrestrial, Wetland)																							
BREOT-N27-30 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.37E+04	1.16E+02	1.10E-03	8.80E+03	9.69E+00	1.00E+00	5.50E-03	2.28E+04	2.41E+02	1.87E-02	2.59E+02	8.81E+01
BREOT-N27-75 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.58E+04	1.34E+02	1.10E-03	1.02E+04	1.12E+01	1.00E+00	5.50E-03	2.64E+04	2.41E+02	1.87E-02	2.59E+02	1.02E+02
BREOT-S27-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	3.72E+03	3.15E+01	1.10E-03	2.40E+03	2.64E+00	1.00E+00	5.50E-03	6.21E+03	2.41E+02	1.87E-02	2.59E+02	2.40E+01
BREOT-N28-110 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	3.65E+03	3.09E+01	1.10E-03	2.35E+03	2.59E+00	1.00E+00	5.50E-03	6.10E+03	2.41E+02	1.87E-02	2.59E+02	2.35E+01
BREOT-N28-55 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	3.38E+04	2.86E+02	1.10E-03	2.18E+04	2.40E+01	1.00E+00	5.50E-03	5.64E+04	2.41E+02	1.87E-02	2.59E+02	2.18E+02
BREOT-S28-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.67E+03	1.42E+01	1.10E-03	1.08E+03	1.19E+00	1.00E+00	5.50E-03	2.79E+03	2.41E+02	1.87E-02	2.59E+02	1.08E+01
UBDT-TP-1 (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.19E+04	1.01E+02	1.10E-03	7.65E+03	8.43E+00	1.00E+00	5.50E-03	1.98E+04	2.41E+02	1.87E-02	2.59E+02	7.66E+01
UBDT-TP-1 (2-12")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.53E+04	1.30E+02	1.10E-03	9.85E+03	1.09E+01	1.00E+00	5.50E-03	2.55E+04	2.41E+02	1.87E-02	2.59E+02	9.86E+01
UBDT-TP-1 (12-24")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.43E+04	1.21E+02	1.10E-03	9.20E+03	1.01E+01	1.00E+00	5.50E-03	2.38E+04	2.41E+02	1.87E-02	2.59E+02	9.20E+01
UBDT-TP-1 (24-36")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	4.45E+03	3.77E+01	1.10E-03	2.86E+03	3.15E+00	1.00E+00	5.50E-03	7.42E+03	2.41E+02	1.87E-02	2.59E+02	2.86E+01
UBDT-TP-1 (36-48")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	2.71E+02	2.29E+00	1.10E-03	1.74E+02	1.92E-01	1.00E+00	5.50E-03	4.52E+02	2.41E+02	1.87E-02	2.59E+02	1.74E+00
UBDT-TP-1 (48-60")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	3.23E+02	2.74E+00	1.10E-03	2.08E+02	2.29E-01	1.00E+00	5.50E-03	5.40E+02	2.41E+02	1.87E-02	2.59E+02	2.08E+00
BREOT-N29-30 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.76E+04	1.49E+02	1.10E-03	1.13E+04	1.25E+01	1.00E+00	5.50E-03	2.93E+04	2.41E+02	1.87E-02	2.59E+02	1.13E+02
BREOT-S29-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	2.05E+03	1.74E+01	1.10E-03	1.32E+03	1.46E+00	1.00E+00	5.50E-03	3.43E+03	2.41E+02	1.87E-02	2.59E+02	1.32E+01
BREOT-N30-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	5.05E+03	4.28E+01	1.10E-03	3.25E+03	3.58E+00	1.00E+00	5.50E-03	8.43E+03	2.41E+02	1.87E-02	2.59E+02	3.25E+01
BREOT-S30-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	2.40E+03	2.03E+01	1.10E-03	1.54E+03	1.70E+00	1.00E+00	5.50E-03	4.00E+03	2.41E+02	1.87E-02	2.59E+02	1.54E+01
BREOT-N31-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	5.05E+03	4.28E+01	1.10E-03	3.25E+03	3.58E+00	1.00E+00	5.50E-03	8.43E+03	2.41E+02	1.87E-02	2.59E+02	3.26E+01
BREOT-S31-25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.38E+03	1.17E+01	1.10E-03	8.89E+02	9.78E-01	1.00E+00	5.50E-03	2.30E+03	2.41E+02	1.87E-02	2.59E+02	8.89E+00
BREOT-S31-5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.76E+03	1.49E+01	1.10E-03	1.13E+03	1.25E+00	1.00E+00	5.50E-03	2.93E+03	2.41E+02	1.87E-02	2.59E+02	1.13E+01
BREOT-N32-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.83E+03	1.55E+01	1.10E-03	1.18E+03	1.30E+00	1.00E+00	5.50E-03	3.05E+03	2.41E+02	1.87E-02	2.59E+02	1.18E+01
BREOT-S32-6 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.78E+03	1.51E+01	1.10E-03	1.15E+03	1.26E+00	1.00E+00	5.50E-03	2.97E+03	2.41E+02	1.87E-02	2.59E+02	1.15E+01
BREOT-N33-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	5.34E+03	4.52E+01	1.10E-03	3.44E+03	3.79E+00	1.00E+00	5.50E-03	8.91E+03	2.41E+02	1.87E-02	2.59E+02	3.44E+01
BREOT-S33-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	6.67E+02	5.65E+00	1.10E-03	4.30E+02	4.74E-01	1.00E+00	5.50E-03	1.11E+03	2.41E+02	1.87E-02	2.59E+02	4.30E+00
BREOT-N35-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	9.27E+02	7.85E+00	1.10E-03	5.97E+02	6.57E-01	1.00E+00	5.50E-03	1.55E+03	2.41E+02	1.87E-02	2.59E+02	5.97E+00
BREOT-S35-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	2.41E+03	2.04E+01	1.10E-03	1.55E+03	1.71E+00	1.00E+00	5.50E-03	4.02E+03	2.41E+02	1.87E-02	2.59E+02	1.55E+01
BREOT-N36-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	2.52E+03	2.14E+01	1.10E-03	1.63E+03	1.79E+00	1.00E+00	5.50E-03	4.21E+03	2.41E+02	1.87E-02	2.59E+02	1.63E+01
BREOT-S36-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	2.40E+03	2.04E+01	1.10E-03	1.55E+03	1.71E+00	1.00E+00	5.50E-03	4.01E+03	2.41E+02	1.87E-02	2.59E+02	1.55E+01
BREOT-N37-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	2.37E+03	2.01E+01	1.10E-03	1.53E+03	1.68E+00	1.00E+00	5.50E-03	3.96E+03	2.41E+02	1.87E-02	2.59E+02	1.53E+01
BREOT-S37-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.21E+03	1.02E+01	1.10E-03	7.80E+02	8.59E-01	1.00E+00	5.50E-03	2.02E+03	2.41E+02	1.87E-02	2.59E+02	7.80E+00
BREOT-N38-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.23E+03	1.05E+01	1.10E-03	7.95E+02	8.76E-01	1.00E+00	5.50E-03	2.06E+03	2.41E+02	1.87E-02	2.59E+02	7.96E+00
BREOT-S38-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	2.00E+03	1.70E+01	1.10E-03	1.29E+03	1.42E+00	1.00E+00	5.50E-03	3.34E+03	2.41E+02	1.87E-02	2.59E+02	1.29E+01
BREOT-N39-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	4.39E+03	3.72E+01	1.10E-03	2.83E+03	3.12E+00	1.00E+00	5.50E-03	7.34E+03	2.41E+02	1.87E-02	2.59E+02	2.83E+01
BREOT-S39-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	2.37E+03	2.01E+01	1.10E-03	1.53E+03	1.68E+00	1.00E+00	5.50E-03	3.96E+03	2.41E+02	1.87E-02	2.59E+02	1.53E+01
BREOT-N40-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	2.94E+03	2.49E+01	1.10E-03	1.90E+03	2.09E+00	1.00E+00	5.50E-03	4.91E+03	2.41E+02	1.87E-02	2.59E+02	1.90E+01
BREOT-S40-14 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	2.12E+03	1.79E+01	1.10E-03	1.37E+03	1.50E+00	1.00E+00	5.50E-03	3.54E+03	2.41E+02	1.87E-02	2.59E+02	1.37E+01
BREOT-N41-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.81E+03	1.53E+01	1.10E-03	1.16E+03	1.28E+00	1.00E+00	5.50E-03	3.01E+03	2.41E+02	1.87E-02	2.59E+02	1.16E+01
BREOT-S41-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	2.62E+03	2.22E+01	1.10E-03	1.69E+03	1.86E+00	1.00E+00	5.50E-03	4.37E+03	2.41E+02	1.87E-02	2.59E+02	1.69E+01
BREOT-N42-35 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	2.88E+03	2.44E+01	1.10E-03	1.85E+03	2.04E+00	1.00E+00	5.50E-03	4.80E+03	2.41E+02	1.87E-02	2.59E+02	1.85E+01
BREOT-S42-25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	3.55E+03	3.01E+01	1.10E-03	2.29E+03	2.52E+00	1.00E+00	5.50E-03	5.92E+03	2.41E+02	1.87E-02	2.59E+02	2.29E+01
BREOT-N43-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	3.29E+03	2.78E+01	1.10E-03	2.12E+03	2.33E+00	1.00E+00	5.50E-03	5.48E+03	2.41E+02	1.87E-02	2.59E+02	2.12E+01
BREOT-S43-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.99E+03	1.69E+01	1.10E-03	1.28E+03	1.41E+00	1.00E+00	5.50E-03	3.33E+03	2.41E+02	1.87E-02	2.59E+02	1.28E+01
BREOT-N44-30 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.52E+03	1.29E+01	1.10E-03	9.80E+02	1.08E+00	1.00E+00	5.50E-03	2.54E+03	2.41E+02	1.87E-02	2.59E+02	9.80E+00
BREOT-S44-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	4.22E+03	3.57E+01	1.10E-03	2.72E+03	2.99E+00	1.00E+00	5.50E-03	7.04E+03	2.41E+02	1.87E-02	2.59E+02	2.72E+01
BREOT-N45-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.68E+03	1.43E+01	1.10E-03	1.08E+03	1.19E+00	1.00E+00	5.50E-03	2.81E+03	2.41E+02	1.87E-02	2.59E+02	1.08E+01
BREOT-N43-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	3.29E+03	2.78E+01	1.10E-03	2.12E+03	2.33E+00	1.00E+00	5.50E-03	5.48E+03	2.41E+02	1.87E-02	2.59E+02	2.12E+01
BREOT-S45-6 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	4.69E+03	3.97E+01	1.10E-03	3.02E+03	3.33E+00	1.00E+00	5.50E-03	7.82E+03	2.41E+02	1.87E-02	2.59E+02	3.02E+01
BREOT-N46-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.21E+03	1.02E+01	1.10E-03	7.78E+02	8.57E-01	1.00E+00	5.50E-03	2.02E+03	2.41E+02	1.87E-02	2.59E+02	7.79E+00
BREOT-S46-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	2.21E+03	1.87E+01	1.10E-03	1.43E+03	1.57E+00	1.00E+00	5.50E-03	3.69E+03	2.41E+02	1.87E-02	2.59E+02	1.43E+01
BREOT-S46-40 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	4.65E+03	3.94E+01	1.10E-03	3.00E+03	3.30E+00	1.00E+00	5.50E-03	7.77E+03	2.41E+02	1.87E-02	2.59E+02	3.00E+01
BREOT-N47-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.99E+03	1.68E+01	1.10E-03	1.28E+03	1.41E+00	1.00E+00	5.50E-03	3.32E+03	2.41E+02	1.87E-02	2.59E+02	1.28E+01
BREOT-S47-999 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	6.22E+03	5.27E+01	1.10E-03	4.01E+03	4.41E+00	1.00E+00	5.50E-03	1.04E+04	2.41E+02	1.87E-02	2.59E+02	4.01E+01
BREOT-S48-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.90E+02	1.61E+00	1.10E-03	1.22E+02	1.35E-01	1.00E+00	5.50E-03	3.17E+02	2.41E+02	1.87E-02	2.59E+02	1.22E+00
BREOT-S49-2.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.79E+02	1.51E+00	1.10E-03	1.15E+02	1.27E-01	1.00E+00	5.50E-03	2.98E+02	2.41E+02	1.87E-02	2.59E+02	1.15E+00
BREOT-S50-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.04E+03	8.77E+00	1.10E-03	6.67E+02	7.35E-01	1.00E+00	5.50E-03	1.73E+03	2.41E+02	1.87E-02	2.59E+02	6.68E+00
BREOT-S50-25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	7.01E+01	5.94E-01	1.10E-03	4.52E+01	4.97E-02	1.00E+00	5.50E-03	1.17E+02	2.41E+02	1.87E-02	2.59E+02	4.52E-01
BREOT-N52-60 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	4.38E+03	3.71E+01	1.10E-03	2.82E+03	3.11E+00	1.00E+00	5.50E-03	7.31E+03	2.41E+02	1.87E-02	2.59E+02	2.82E+01
BREOT-S52-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	9.54E+01	8.08E-01	1.10E-03	6.15E+01	6.77E-02	1.00E+00	5.50E-03	1.59E+02	2.41E+02	1.87E-02	2.59E+02	6.15E-01

TABLE C-2D: LEAD DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 18.41

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Masked Shrew (Omnivorous Mammal - Terrestrial, Wetland)																							
BREOT-S53-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	2.88E+02	2.44E+00	1.10E-03	1.85E+02	2.04E-01	1.00E+00	5.50E-03	4.80E+02	2.41E+02	1.87E-02	2.59E+02	1.85E+00
BREOT-S54-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.37E+02	1.16E+00	1.10E-03	8.81E+01	9.70E-02	1.00E+00	5.50E-03	2.28E+02	2.41E+02	1.87E-02	2.59E+02	8.81E-01
BREOT-N55-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	3.69E+03	3.13E+01	1.10E-03	2.38E+03	2.62E+00	1.00E+00	5.50E-03	6.16E+03	2.41E+02	1.87E-02	2.59E+02	2.38E+01
BREOT-S55-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	9.90E+02	8.39E+00	1.10E-03	6.38E+02	7.03E-01	1.00E+00	5.50E-03	1.65E+03	2.41E+02	1.87E-02	2.59E+02	6.38E+00
BREOT-N56-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	3.45E+03	2.92E+01	1.10E-03	2.22E+03	2.44E+00	1.00E+00	5.50E-03	5.75E+03	2.41E+02	1.87E-02	2.59E+02	2.22E+01
BREOT-S56-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	3.19E+02	2.71E+00	1.10E-03	2.06E+02	2.27E-01	1.00E+00	5.50E-03	5.33E+02	2.41E+02	1.87E-02	2.59E+02	2.06E+00
BREOT-N57-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	2.12E+03	1.80E+01	1.10E-03	1.37E+03	1.50E+00	1.00E+00	5.50E-03	3.54E+03	2.41E+02	1.87E-02	2.59E+02	1.37E+01
BREOT-S57-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	9.65E+02	8.17E+00	1.10E-03	6.22E+02	6.85E-01	1.00E+00	5.50E-03	1.61E+03	2.41E+02	1.87E-02	2.59E+02	6.22E+00
BREOT-N58-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	5.09E+02	4.31E+00	1.10E-03	3.28E+02	3.61E-01	1.00E+00	5.50E-03	8.50E+02	2.41E+02	1.87E-02	2.59E+02	3.28E+00
BREOT-S58-12 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	8.12E+02	6.87E+00	1.10E-03	5.23E+02	5.76E-01	1.00E+00	5.50E-03	1.35E+03	2.41E+02	1.87E-02	2.59E+02	5.23E+00
BREOT-N59-18 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.43E+03	1.21E+01	1.10E-03	9.20E+02	1.01E+00	1.00E+00	5.50E-03	2.38E+03	2.41E+02	1.87E-02	2.59E+02	9.20E+00
BREOT-N60-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	4.13E+02	3.50E+00	1.10E-03	2.66E+02	2.93E-01	1.00E+00	5.50E-03	6.90E+02	2.41E+02	1.87E-02	2.59E+02	2.66E+00
BREOT-S60-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.73E+03	1.46E+01	1.10E-03	1.11E+03	1.23E+00	1.00E+00	5.50E-03	2.89E+03	2.41E+02	1.87E-02	2.59E+02	1.11E+01
BREOT-S61-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.38E+03	1.17E+01	1.10E-03	8.91E+02	9.81E-01	1.00E+00	5.50E-03	2.31E+03	2.41E+02	1.87E-02	2.59E+02	8.91E+00
BREOT-N62-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.50E+02	1.27E+00	1.10E-03	9.68E+01	1.07E-01	1.00E+00	5.50E-03	2.51E+02	2.41E+02	1.87E-02	2.59E+02	9.68E-01
BREOT-S62-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	2.40E+03	2.04E+01	1.10E-03	1.55E+03	1.71E+00	1.00E+00	5.50E-03	4.01E+03	2.41E+02	1.87E-02	2.59E+02	1.55E+01
BREOT-S63-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	6.07E+02	5.14E+00	1.10E-03	3.91E+02	4.30E-01	1.00E+00	5.50E-03	1.01E+03	2.41E+02	1.87E-02	2.59E+02	3.91E+00
BREOT-N64-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	5.03E+02	4.26E+00	1.10E-03	3.24E+02	3.57E-01	1.00E+00	5.50E-03	8.39E+02	2.41E+02	1.87E-02	2.59E+02	3.24E+00
BREOT-N64-20 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	4.20E+02	3.55E+00	1.10E-03	2.70E+02	2.98E-01	1.00E+00	5.50E-03	7.00E+02	2.41E+02	1.87E-02	2.59E+02	2.70E+00
BREOT-S64-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.01E+03	8.53E+00	1.10E-03	6.49E+02	7.14E-01	1.00E+00	5.50E-03	1.68E+03	2.41E+02	1.87E-02	2.59E+02	6.49E+00
BREOT-N65-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	2.79E+02	2.36E+00	1.10E-03	1.79E+02	1.98E-01	1.00E+00	5.50E-03	4.65E+02	2.41E+02	1.87E-02	2.59E+02	1.79E+00
BREOT-S65-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	2.74E+03	2.32E+01	1.10E-03	1.76E+03	1.94E+00	1.00E+00	5.50E-03	4.57E+03	2.41E+02	1.87E-02	2.59E+02	1.76E+01
BREOT-N66-5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.07E+03	9.06E+00	1.10E-03	6.89E+02	7.59E-01	1.00E+00	5.50E-03	1.78E+03	2.41E+02	1.87E-02	2.59E+02	6.89E+00
BREOT-S66-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	9.45E+02	8.00E+00	1.10E-03	6.09E+02	6.70E-01	1.00E+00	5.50E-03	1.58E+03	2.41E+02	1.87E-02	2.59E+02	6.09E+00
BREOT-N67-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.74E+03	1.47E+01	1.10E-03	1.12E+03	1.23E+00	1.00E+00	5.50E-03	2.90E+03	2.41E+02	1.87E-02	2.59E+02	1.12E+01
BREOT-S67-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	3.79E+02	3.21E+00	1.10E-03	2.45E+02	2.69E-01	1.00E+00	5.50E-03	6.33E+02	2.41E+02	1.87E-02	2.59E+02	2.45E+00
At Edge of Tailings																						**Maximum HQ (Inside Tailings)**	**2.18E+02**
BREOT-S0-0 (06)	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	7.27E+02	6.16E+00	1.10E-03	4.68E+02	5.16E-01	1.00E+00	5.50E-03	1.21E+03	2.41E+02	1.87E-02	2.59E+02	4.69E+00
BREOT-S1-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	3.54E+03	3.00E+01	1.10E-03	2.28E+03	2.51E+00	1.00E+00	5.50E-03	5.90E+03	2.41E+02	1.87E-02	2.59E+02	2.28E+01
BREOT-S2-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.03E+03	8.76E+00	1.10E-03	6.66E+02	7.34E-01	1.00E+00	5.50E-03	1.73E+03	2.41E+02	1.87E-02	2.59E+02	6.66E+00
BREOT-S3-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	2.30E+03	1.94E+01	1.10E-03	1.48E+03	1.63E+00	1.00E+00	5.50E-03	3.83E+03	2.41E+02	1.87E-02	2.59E+02	1.48E+01
BREOT-S4-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	2.73E+03	2.31E+01	1.10E-03	1.76E+03	1.94E+00	1.00E+00	5.50E-03	4.55E+03	2.41E+02	1.87E-02	2.59E+02	1.76E+01
BREOT-S6-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	2.64E+03	2.24E+01	1.10E-03	1.70E+03	1.87E+00	1.00E+00	5.50E-03	4.40E+03	2.41E+02	1.87E-02	2.59E+02	1.70E+01
BREOT-S7-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.57E+03	1.33E+01	1.10E-03	1.01E+03	1.12E+00	1.00E+00	5.50E-03	2.63E+03	2.41E+02	1.87E-02	2.59E+02	1.01E+01
BREOT-S8-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	5.80E+02	4.91E+00	1.10E-03	3.73E+02	4.11E-01	1.00E+00	5.50E-03	9.67E+02	2.41E+02	1.87E-02	2.59E+02	3.73E+00
BREOT-S9-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.25E+03	1.06E+01	1.10E-03	8.05E+02	8.86E-01	1.00E+00	5.50E-03	2.08E+03	2.41E+02	1.87E-02	2.59E+02	8.05E+00
BREOT-N10-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	3.65E+04	3.09E+02	1.10E-03	2.35E+04	2.59E+01	1.00E+00	5.50E-03	6.08E+04	2.41E+02	1.87E-02	2.59E+02	2.35E+02
BREOT-N11-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	4.44E+03	3.76E+01	1.10E-03	2.86E+03	3.15E+00	1.00E+00	5.50E-03	7.40E+03	2.41E+02	1.87E-02	2.59E+02	2.86E+01
BREOT-S11-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.56E+03	1.32E+01	1.10E-03	1.00E+03	1.10E+00	1.00E+00	5.50E-03	2.60E+03	2.41E+02	1.87E-02	2.59E+02	1.00E+01
BREOT-N12-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.60E+03	1.36E+01	1.10E-03	1.03E+03	1.14E+00	1.00E+00	5.50E-03	2.68E+03	2.41E+02	1.87E-02	2.59E+02	1.03E+01
BREOT-S12-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	4.95E+03	4.19E+01	1.10E-03	3.19E+03	3.51E+00	1.00E+00	5.50E-03	8.26E+03	2.41E+02	1.87E-02	2.59E+02	3.19E+01
BREOT-N13-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	4.11E+04	3.48E+02	1.10E-03	2.65E+04	2.91E+01	1.00E+00	5.50E-03	6.86E+04	2.41E+02	1.87E-02	2.59E+02	2.65E+02
BREOT-S13-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	9.62E+02	8.15E+00	1.10E-03	6.20E+02	6.83E-01	1.00E+00	5.50E-03	1.61E+03	2.41E+02	1.87E-02	2.59E+02	6.20E+00
BREOT-N14-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	4.51E+03	3.82E+01	1.10E-03	2.91E+03	3.20E+00	1.00E+00	5.50E-03	7.53E+03	2.41E+02	1.87E-02	2.59E+02	2.91E+01
BREOT-S14-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	2.39E+04	2.03E+02	1.10E-03	1.54E+04	1.70E+01	1.00E+00	5.50E-03	4.00E+04	2.41E+02	1.87E-02	2.59E+02	1.54E+02
BREOT-N15-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	5.58E+03	4.73E+01	1.10E-03	3.60E+03	3.96E+00	1.00E+00	5.50E-03	9.32E+03	2.41E+02	1.87E-02	2.59E+02	3.60E+01
BREOT-N16-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	2.75E+03	2.33E+01	1.10E-03	1.77E+03	1.95E+00	1.00E+00	5.50E-03	4.59E+03	2.41E+02	1.87E-02	2.59E+02	1.77E+01
BREOT-S16-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	5.18E+02	4.39E+00	1.10E-03	3.34E+02	3.68E-01	1.00E+00	5.50E-03	8.65E+02	2.41E+02	1.87E-02	2.59E+02	3.34E+00
BREOT-N17-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	4.44E+03	3.76E+01	1.10E-03	2.86E+03	3.15E+00	1.00E+00	5.50E-03	7.41E+03	2.41E+02	1.87E-02	2.59E+02	2.86E+01
BREOT-S17-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	5.21E+03	4.41E+01	1.10E-03	3.36E+03	3.70E+00	1.00E+00	5.50E-03	8.70E+03	2.41E+02	1.87E-02	2.59E+02	3.36E+01
BREOT-N18-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	3.59E+03	3.04E+01	1.10E-03	2.32E+03	2.55E+00	1.00E+00	5.50E-03	6.00E+03	2.41E+02	1.87E-02	2.59E+02	2.32E+01
BREOT-S18-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	5.66E+01	4.80E-01	1.10E-03	3.65E+01	4.02E-02	1.00E+00	5.50E-03	9.45E+01	2.41E+02	1.87E-02	2.59E+02	3.65E-01
BREOT-N19-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	2.45E+03	2.08E+01	1.10E-03	1.58E+03	1.74E+00	1.00E+00	5.50E-03	4.09E+03	2.41E+02	1.87E-02	2.59E+02	1.58E+01
BREOT-S19-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	7.03E+02	5.96E+00	1.10E-03	4.53E+02	4.99E-01	1.00E+00	5.50E-03	1.17E+03	2.41E+02	1.87E-02	2.59E+02	4.53E+00
BREOT-N20-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	2.00E+03	1.70E+01	1.10E-03	1.29E+03	1.42E+00	1.00E+00	5.50E-03	3.35E+03	2.41E+02	1.87E-02	2.59E+02	1.29E+01
BREOT-S20-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	9.66E+02	8.18E+00	1.10E-03	6.23E+02	6.85E-01	1.00E+00	5.50E-03	1.61E+03	2.41E+02	1.87E-02	2.59E+02	6.23E+00
BREOT-N21-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	8.93E+01	7.56E-01	1.10E-03	5.75E+01	6.33E-02	1.00E+00	5.50E-03	1.49E+02	2.41E+02	1.87E-02	2.59E+02	5.75E-01

TABLE C-2D: LEAD DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 18.41

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Masked Shrew (Omnivorous Mammal - Terrestrial, Wetland)																							
BREOT-S21-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	2.69E+03	2.28E+01	1.10E-03	1.73E+03	1.91E+00	1.00E+00	5.50E-03	4.48E+03	2.41E+02	1.87E-02	2.59E+02	1.73E+01
BREOT-N22-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	2.26E+03	1.91E+01	1.10E-03	1.46E+03	1.60E+00	1.00E+00	5.50E-03	3.77E+03	2.41E+02	1.87E-02	2.59E+02	1.46E+01
BREOT-S22-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	2.72E+03	2.30E+01	1.10E-03	1.75E+03	1.93E+00	1.00E+00	5.50E-03	4.54E+03	2.41E+02	1.87E-02	2.59E+02	1.75E+01
BREOT-N23-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.87E+03	1.58E+01	1.10E-03	1.21E+03	1.33E+00	1.00E+00	5.50E-03	3.12E+03	2.41E+02	1.87E-02	2.59E+02	1.21E+01
BREOT-S23-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	4.14E+03	3.51E+01	1.10E-03	2.67E+03	2.94E+00	1.00E+00	5.50E-03	6.91E+03	2.41E+02	1.87E-02	2.59E+02	2.67E+01
BREOT-N24-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	3.97E+03	3.36E+01	1.10E-03	2.56E+03	2.81E+00	1.00E+00	5.50E-03	6.62E+03	2.41E+02	1.87E-02	2.59E+02	2.56E+01
BREOT-S24-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	2.33E+03	1.97E+01	1.10E-03	1.50E+03	1.65E+00	1.00E+00	5.50E-03	3.88E+03	2.41E+02	1.87E-02	2.59E+02	1.50E+01
BREOT-N25-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	9.67E+03	8.19E+01	1.10E-03	6.23E+03	6.86E+00	1.00E+00	5.50E-03	1.61E+04	2.41E+02	1.87E-02	2.59E+02	6.23E+01
BREOT-S25-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	5.41E+03	4.58E+01	1.10E-03	3.49E+03	3.84E+00	1.00E+00	5.50E-03	9.03E+03	2.41E+02	1.87E-02	2.59E+02	3.49E+01
BREOT-N26-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.77E+04	1.50E+02	1.10E-03	1.14E+04	1.26E+01	1.00E+00	5.50E-03	2.95E+04	2.41E+02	1.87E-02	2.59E+02	1.14E+02
BREOT-S26-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	2.47E+03	2.09E+01	1.10E-03	1.59E+03	1.75E+00	1.00E+00	5.50E-03	4.13E+03	2.41E+02	1.87E-02	2.59E+02	1.59E+01
BREOT-N27-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.90E+04	1.61E+02	1.10E-03	1.23E+04	1.35E+01	1.00E+00	5.50E-03	3.17E+04	2.41E+02	1.87E-02	2.59E+02	1.23E+02
BREOT-S27-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	4.31E+03	3.65E+01	1.10E-03	2.78E+03	3.06E+00	1.00E+00	5.50E-03	7.19E+03	2.41E+02	1.87E-02	2.59E+02	2.78E+01
BREOT-N28-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	7.34E+03	6.22E+01	1.10E-03	4.73E+03	5.21E+00	1.00E+00	5.50E-03	1.22E+04	2.41E+02	1.87E-02	2.59E+02	4.73E+01
BREOT-S28-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.81E+03	1.53E+01	1.10E-03	1.16E+03	1.28E+00	1.00E+00	5.50E-03	3.02E+03	2.41E+02	1.87E-02	2.59E+02	1.16E+01
BREOT-S29-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	7.47E+02	6.33E+00	1.10E-03	4.82E+02	5.30E-01	1.00E+00	5.50E-03	1.25E+03	2.41E+02	1.87E-02	2.59E+02	4.82E+00
BREOT-N30-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.33E+04	1.13E+02	1.10E-03	8.58E+03	9.45E+00	1.00E+00	5.50E-03	2.22E+04	2.41E+02	1.87E-02	2.59E+02	8.59E+01
BREOT-S30-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	3.65E+02	3.09E+00	1.10E-03	2.35E+02	2.59E-01	1.00E+00	5.50E-03	6.10E+02	2.41E+02	1.87E-02	2.59E+02	2.35E+00
BREOT-N31-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	6.43E+03	5.44E+01	1.10E-03	4.14E+03	4.56E+00	1.00E+00	5.50E-03	1.07E+04	2.41E+02	1.87E-02	2.59E+02	4.14E+01
BREOT-S31-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	3.52E+02	2.98E+00	1.10E-03	2.27E+02	2.50E-01	1.00E+00	5.50E-03	5.88E+02	2.41E+02	1.87E-02	2.59E+02	2.27E+00
BREOT-N32-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	2.66E+03	2.25E+01	1.10E-03	1.72E+03	1.89E+00	1.00E+00	5.50E-03	4.44E+03	2.41E+02	1.87E-02	2.59E+02	1.72E+01
BREOT-S32-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	3.09E+03	2.61E+01	1.10E-03	1.99E+03	2.19E+00	1.00E+00	5.50E-03	5.15E+03	2.41E+02	1.87E-02	2.59E+02	1.99E+01
BREOT-S33-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	7.37E+02	6.24E+00	1.10E-03	4.75E+02	5.23E-01	1.00E+00	5.50E-03	1.23E+03	2.41E+02	1.87E-02	2.59E+02	4.75E+00
BREOT-N34-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	2.56E+02	2.16E+00	1.10E-03	1.65E+02	1.81E-01	1.00E+00	5.50E-03	4.27E+02	2.41E+02	1.87E-02	2.59E+02	1.65E+00
BREOT-S34-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.80E+03	1.52E+01	1.10E-03	1.16E+03	1.27E+00	1.00E+00	5.50E-03	3.00E+03	2.41E+02	1.87E-02	2.59E+02	1.16E+01
BREOT-N35-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.61E+02	1.37E+00	1.10E-03	1.04E+02	1.14E-01	1.00E+00	5.50E-03	2.69E+02	2.41E+02	1.87E-02	2.59E+02	1.04E+00
BREOT-S35-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.25E+03	1.06E+01	1.10E-03	8.04E+02	8.85E-01	1.00E+00	5.50E-03	2.08E+03	2.41E+02	1.87E-02	2.59E+02	8.04E+00
BREOT-N36-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	3.52E+03	2.98E+01	1.10E-03	2.27E+03	2.50E+00	1.00E+00	5.50E-03	5.87E+03	2.41E+02	1.87E-02	2.59E+02	2.27E+01
BREOT-S36-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	2.49E+03	2.11E+01	1.10E-03	1.61E+03	1.77E+00	1.00E+00	5.50E-03	4.16E+03	2.41E+02	1.87E-02	2.59E+02	1.61E+01
BREOT-N37-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	7.85E+02	6.65E+00	1.10E-03	5.06E+02	5.57E-01	1.00E+00	5.50E-03	1.31E+03	2.41E+02	1.87E-02	2.59E+02	5.06E+00
BREOT-S37-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	2.76E+03	2.34E+01	1.10E-03	1.78E+03	1.96E+00	1.00E+00	5.50E-03	4.61E+03	2.41E+02	1.87E-02	2.59E+02	1.78E+01
BREOT-N38-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.63E+02	1.38E+00	1.10E-03	1.05E+02	1.16E-01	1.00E+00	5.50E-03	2.72E+02	2.41E+02	1.87E-02	2.59E+02	1.05E+00
BREOT-S38-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	3.23E+02	2.73E+00	1.10E-03	2.08E+02	2.29E-01	1.00E+00	5.50E-03	5.39E+02	2.41E+02	1.87E-02	2.59E+02	2.08E+00
BREOT-N39-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.36E+02	1.15E+00	1.10E-03	8.79E+01	9.67E-02	1.00E+00	5.50E-03	2.28E+02	2.41E+02	1.87E-02	2.59E+02	8.79E-01
BREOT-N40-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	3.29E+02	2.79E+00	1.10E-03	2.12E+02	2.34E-01	1.00E+00	5.50E-03	5.50E+02	2.41E+02	1.87E-02	2.59E+02	2.12E+00
BREOT-S40-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	2.14E+03	1.81E+01	1.10E-03	1.38E+03	1.52E+00	1.00E+00	5.50E-03	3.57E+03	2.41E+02	1.87E-02	2.59E+02	1.38E+01
BREOT-N41-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	2.12E+02	1.80E+00	1.10E-03	1.37E+02	1.51E-01	1.00E+00	5.50E-03	3.54E+02	2.41E+02	1.87E-02	2.59E+02	1.37E+00
BREOT-S41-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	2.12E+03	1.79E+01	1.10E-03	1.37E+03	1.50E+00	1.00E+00	5.50E-03	3.54E+03	2.41E+02	1.87E-02	2.59E+02	1.37E+01
BREOT-N42-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	4.22E+01	3.58E-01	1.10E-03	2.72E+01	2.99E-02	1.00E+00	5.50E-03	7.05E+01	2.41E+02	1.87E-02	2.59E+02	2.72E-01
BREOT-S42-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	4.41E+03	3.73E+01	1.10E-03	2.84E+03	3.13E+00	1.00E+00	5.50E-03	7.36E+03	2.41E+02	1.87E-02	2.59E+02	2.84E+01
BREOT-N43-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	2.87E+02	2.43E+00	1.10E-03	1.85E+02	2.04E-01	1.00E+00	5.50E-03	4.80E+02	2.41E+02	1.87E-02	2.59E+02	1.85E+00
BREOT-S43-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.88E+02	1.59E+00	1.10E-03	1.21E+02	1.33E-01	1.00E+00	5.50E-03	3.14E+02	2.41E+02	1.87E-02	2.59E+02	1.21E+00
BREOT-N44-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	8.72E+02	7.39E+00	1.10E-03	5.62E+02	6.19E-01	1.00E+00	5.50E-03	1.46E+03	2.41E+02	1.87E-02	2.59E+02	5.62E+00
BREOT-S44-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.38E+02	1.17E+00	1.10E-03	8.89E+01	9.79E-02	1.00E+00	5.50E-03	2.30E+02	2.41E+02	1.87E-02	2.59E+02	8.90E-01
BREOT-N45-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	2.49E+02	2.11E+00	1.10E-03	1.61E+02	1.77E-01	1.00E+00	5.50E-03	4.16E+02	2.41E+02	1.87E-02	2.59E+02	1.61E+00
BREOT-S45-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	2.94E+02	2.49E+00	1.10E-03	1.90E+02	2.09E-01	1.00E+00	5.50E-03	4.91E+02	2.41E+02	1.87E-02	2.59E+02	1.90E+00
BREOT-N46-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	2.14E+02	1.81E+00	1.10E-03	1.38E+02	1.52E-01	1.00E+00	5.50E-03	3.57E+02	2.41E+02	1.87E-02	2.59E+02	1.38E+00
BREOT-S46-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.68E+03	1.42E+01	1.10E-03	1.08E+03	1.19E+00	1.00E+00	5.50E-03	2.80E+03	2.41E+02	1.87E-02	2.59E+02	1.08E+01
BREOT-N47-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	2.72E+02	2.30E+00	1.10E-03	1.75E+02	1.93E-01	1.00E+00	5.50E-03	4.54E+02	2.41E+02	1.87E-02	2.59E+02	1.75E+00
BREOT-S47-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	5.83E+01	4.94E-01	1.10E-03	3.76E+01	4.14E-02	1.00E+00	5.50E-03	9.73E+01	2.41E+02	1.87E-02	2.59E+02	3.76E-01
BREOT-N48-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	3.78E+02	3.20E+00	1.10E-03	2.44E+02	2.68E-01	1.00E+00	5.50E-03	6.31E+02	2.41E+02	1.87E-02	2.59E+02	2.44E+00
BREOT-S48-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	2.97E+02	2.52E+00	1.10E-03	1.92E+02	2.11E-01	1.00E+00	5.50E-03	4.96E+02	2.41E+02	1.87E-02	2.59E+02	1.92E+00
BREOT-N49-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	6.00E+02	5.08E+00	1.10E-03	3.87E+02	4.26E-01	1.00E+00	5.50E-03	1.00E+03	2.41E+02	1.87E-02	2.59E+02	3.87E+00
BREOT-S49-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.86E+02	1.58E+00	1.10E-03	1.20E+02	1.32E-01	1.00E+00	5.50E-03	3.11E+02	2.41E+02	1.87E-02	2.59E+02	1.20E+00
BREOT-S50-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.64E+02	1.39E+00	1.10E-03	1.06E+02	1.16E-01	1.00E+00	5.50E-03	2.74E+02	2.41E+02	1.87E-02	2.59E+02	1.06E+00
BREOT-N51-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	6.56E+02	5.55E+00	1.10E-03	4.23E+02	4.65E-01	1.00E+00	5.50E-03	1.09E+03	2.41E+02	1.87E-02	2.59E+02	4.23E+00

TABLE C-2D: LEAD DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 18.41

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Masked Shrew (Omnivorous Mammal - Terrestrial, Wetland)																							
BREOT-S51-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	2.31E+02	1.96E+00	1.10E-03	1.49E+02	1.64E-01	1.00E+00	5.50E-03	3.86E+02	2.41E+02	1.87E-02	2.59E+02	1.49E+00
BREOT-N52-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.53E+02	1.30E+00	1.10E-03	9.88E+01	1.09E-01	1.00E+00	5.50E-03	2.56E+02	2.41E+02	1.87E-02	2.59E+02	9.88E-01
BREOT-S52-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.18E+02	1.00E+00	1.10E-03	7.63E+01	8.40E-02	1.00E+00	5.50E-03	1.98E+02	2.41E+02	1.87E-02	2.59E+02	7.63E-01
BREOT-N53-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	3.32E+02	2.81E+00	1.10E-03	2.14E+02	2.35E-01	1.00E+00	5.50E-03	5.53E+02	2.41E+02	1.87E-02	2.59E+02	2.14E+00
BREOT-S53-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.23E+02	1.04E+00	1.10E-03	7.91E+01	8.70E-02	1.00E+00	5.50E-03	2.05E+02	2.41E+02	1.87E-02	2.59E+02	7.91E-01
BREOT-N54-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	3.35E+02	2.83E+00	1.10E-03	2.16E+02	2.37E-01	1.00E+00	5.50E-03	5.58E+02	2.41E+02	1.87E-02	2.59E+02	2.16E+00
BREOT-S54-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.50E+02	1.27E+00	1.10E-03	9.66E+01	1.06E-01	1.00E+00	5.50E-03	2.50E+02	2.41E+02	1.87E-02	2.59E+02	9.66E-01
BREOT-N55-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.93E+02	1.63E+00	1.10E-03	1.24E+02	1.37E-01	1.00E+00	5.50E-03	3.21E+02	2.41E+02	1.87E-02	2.59E+02	1.24E+00
BREOT-S55-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.68E+02	1.42E+00	1.10E-03	1.08E+02	1.19E-01	1.00E+00	5.50E-03	2.80E+02	2.41E+02	1.87E-02	2.59E+02	1.08E+00
BREOT-N56-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	8.77E+02	7.43E+00	1.10E-03	5.65E+02	6.22E-01	1.00E+00	5.50E-03	1.46E+03	2.41E+02	1.87E-02	2.59E+02	5.65E+00
BREOT-N57-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	3.80E+02	3.22E+00	1.10E-03	2.45E+02	2.70E-01	1.00E+00	5.50E-03	6.35E+02	2.41E+02	1.87E-02	2.59E+02	2.45E+00
BREOT-S57-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	2.84E+02	2.41E+00	1.10E-03	1.83E+02	2.02E-01	1.00E+00	5.50E-03	4.75E+02	2.41E+02	1.87E-02	2.59E+02	1.83E+00
BREOT-N58-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	2.57E+02	2.18E+00	1.10E-03	1.66E+02	1.82E-01	1.00E+00	5.50E-03	4.29E+02	2.41E+02	1.87E-02	2.59E+02	1.66E+00
BREOT-S58-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	2.07E+02	1.75E+00	1.10E-03	1.33E+02	1.47E-01	1.00E+00	5.50E-03	3.45E+02	2.41E+02	1.87E-02	2.59E+02	1.33E+00
BREOT-N59-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.55E+02	1.32E+00	1.10E-03	1.00E+02	1.10E-01	1.00E+00	5.50E-03	2.59E+02	2.41E+02	1.87E-02	2.59E+02	1.00E+00
BREOT-N60-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.25E+02	1.06E+00	1.10E-03	8.03E+01	8.84E-02	1.00E+00	5.50E-03	2.08E+02	2.41E+02	1.87E-02	2.59E+02	8.03E-01
BREOT-S60-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	8.04E+02	6.81E+00	1.10E-03	5.18E+02	5.70E-01	1.00E+00	5.50E-03	1.34E+03	2.41E+02	1.87E-02	2.59E+02	5.18E+00
BREOT-S61-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.28E+02	1.08E+00	1.10E-03	8.23E+01	9.06E-02	1.00E+00	5.50E-03	2.13E+02	2.41E+02	1.87E-02	2.59E+02	8.23E-01
BREOT-N62-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	2.00E+02	1.70E+00	1.10E-03	1.29E+02	1.42E-01	1.00E+00	5.50E-03	3.34E+02	2.41E+02	1.87E-02	2.59E+02	1.29E+00
BREOT-S62-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.56E+02	1.32E+00	1.10E-03	1.01E+02	1.11E-01	1.00E+00	5.50E-03	2.61E+02	2.41E+02	1.87E-02	2.59E+02	1.01E+00
BREOT-N63-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	5.28E+02	4.47E+00	1.10E-03	3.40E+02	3.75E-01	1.00E+00	5.50E-03	8.82E+02	2.41E+02	1.87E-02	2.59E+02	3.40E+00
BREOT-S63-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	3.32E+02	2.82E+00	1.10E-03	2.14E+02	2.36E-01	1.00E+00	5.50E-03	5.55E+02	2.41E+02	1.87E-02	2.59E+02	2.14E+00
BREOT-N64-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	2.06E+02	1.75E+00	1.10E-03	1.33E+02	1.46E-01	1.00E+00	5.50E-03	3.44E+02	2.41E+02	1.87E-02	2.59E+02	1.33E+00
BREOT-S64-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.51E+02	1.28E+00	1.10E-03	9.72E+01	1.07E-01	1.00E+00	5.50E-03	2.52E+02	2.41E+02	1.87E-02	2.59E+02	9.72E-01
BREOT-N66-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	2.74E+02	2.32E+00	1.10E-03	1.76E+02	1.94E-01	1.00E+00	5.50E-03	4.57E+02	2.41E+02	1.87E-02	2.59E+02	1.76E+00
BREOT-S66-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.44E+02	1.22E+00	1.10E-03	9.27E+01	1.02E-01	1.00E+00	5.50E-03	2.40E+02	2.41E+02	1.87E-02	2.59E+02	9.27E-01
BREOT-N67-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	2.89E+03	2.44E+01	1.10E-03	1.86E+03	2.05E+00	1.00E+00	5.50E-03	4.82E+03	2.41E+02	1.87E-02	2.59E+02	1.86E+01
BREOT-S67-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.24E+02	1.05E+00	1.10E-03	7.97E+01	8.77E-02	1.00E+00	5.50E-03	2.06E+02	2.41E+02	1.87E-02	2.59E+02	7.97E-01
Outside Tailings																						**Maximum HQ (At Edge of Tailings)**	**2.65E+02**
BREOT-S0+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	4.00E+02	3.39E+00	1.10E-03	2.58E+02	2.84E-01	1.00E+00	5.50E-03	6.68E+02	2.41E+02	1.87E-02	2.59E+02	2.58E+00
BREOT-S1+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	2.20E+02	1.86E+00	1.10E-03	1.42E+02	1.56E-01	1.00E+00	5.50E-03	3.67E+02	2.41E+02	1.87E-02	2.59E+02	1.42E+00
BREOT-S2+95 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	9.08E+01	7.69E-01	1.10E-03	5.85E+01	6.44E-02	1.00E+00	5.50E-03	1.52E+02	2.41E+02	1.87E-02	2.59E+02	5.85E-01
BREOT-S3+6 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	2.56E+02	2.17E+00	1.10E-03	1.65E+02	1.82E-01	1.00E+00	5.50E-03	4.27E+02	2.41E+02	1.87E-02	2.59E+02	1.65E+00
BREOT-S4+10 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.43E+02	1.21E+00	1.10E-03	9.23E+01	1.02E-01	1.00E+00	5.50E-03	2.39E+02	2.41E+02	1.87E-02	2.59E+02	9.23E-01
BREOT-S6+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	3.93E+02	3.33E+00	1.10E-03	2.54E+02	2.79E-01	1.00E+00	5.50E-03	6.57E+02	2.41E+02	1.87E-02	2.59E+02	2.54E+00
BREOT-S8+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	4.07E+02	3.44E+00	1.10E-03	2.62E+02	2.89E-01	1.00E+00	5.50E-03	6.79E+02	2.41E+02	1.87E-02	2.59E+02	2.62E+00
BREOT-N10+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	2.04E+02	1.73E+00	1.10E-03	1.32E+02	1.45E-01	1.00E+00	5.50E-03	3.41E+02	2.41E+02	1.87E-02	2.59E+02	1.32E+00
BREOT-N11+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	2.14E+02	1.81E+00	1.10E-03	1.38E+02	1.52E-01	1.00E+00	5.50E-03	3.58E+02	2.41E+02	1.87E-02	2.59E+02	1.38E+00
BREOT-N12+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	4.24E+02	3.59E+00	1.10E-03	2.73E+02	3.01E-01	1.00E+00	5.50E-03	7.07E+02	2.41E+02	1.87E-02	2.59E+02	2.73E+00
BREOT-S12+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.35E+04	1.14E+02	1.10E-03	8.70E+03	9.58E+00	1.00E+00	5.50E-03	2.25E+04	2.41E+02	1.87E-02	2.59E+02	8.71E+01
BREOT-S12+60 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.70E+03	1.44E+01	1.10E-03	1.09E+03	1.20E+00	1.00E+00	5.50E-03	2.83E+03	2.41E+02	1.87E-02	2.59E+02	1.09E+01
BREOT-N13+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	4.22E+02	3.57E+00	1.10E-03	2.72E+02	2.99E-01	1.00E+00	5.50E-03	7.04E+02	2.41E+02	1.87E-02	2.59E+02	2.72E+00
BREOT-S13+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	4.82E+03	4.08E+01	1.10E-03	3.10E+03	3.42E+00	1.00E+00	5.50E-03	8.04E+03	2.41E+02	1.87E-02	2.59E+02	3.11E+01
BREOT-S13+65 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.69E+03	1.43E+01	1.10E-03	1.09E+03	1.20E+00	1.00E+00	5.50E-03	2.83E+03	2.41E+02	1.87E-02	2.59E+02	1.09E+01
BREOT-N14+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	4.56E+02	3.86E+00	1.10E-03	2.94E+02	3.23E-01	1.00E+00	5.50E-03	7.61E+02	2.41E+02	1.87E-02	2.59E+02	2.94E+00
BREOT-S14+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.98E+04	1.68E+02	1.10E-03	1.28E+04	1.41E+01	1.00E+00	5.50E-03	3.31E+04	2.41E+02	1.87E-02	2.59E+02	1.28E+02
BREOT-S14+59 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.23E+03	1.04E+01	1.10E-03	7.93E+02	8.73E-01	1.00E+00	5.50E-03	2.05E+03	2.41E+02	1.87E-02	2.59E+02	7.93E+00
BREOT-N15+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	7.14E+03	6.05E+01	1.10E-03	4.60E+03	5.07E+00	1.00E+00	5.50E-03	1.19E+04	2.41E+02	1.87E-02	2.59E+02	4.60E+01
BREOT-N15+50 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	2.99E+02	2.53E+00	1.10E-03	1.93E+02	2.12E-01	1.00E+00	5.50E-03	4.99E+02	2.41E+02	1.87E-02	2.59E+02	1.93E+00
BREOT-S16+20 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	4.64E+03	3.93E+01	1.10E-03	2.99E+03	3.29E+00	1.00E+00	5.50E-03	7.74E+03	2.41E+02	1.87E-02	2.59E+02	2.99E+01
BREOT-S16+75 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	6.71E+02	5.69E+00	1.10E-03	4.33E+02	4.76E-01	1.00E+00	5.50E-03	1.12E+03	2.41E+02	1.87E-02	2.59E+02	4.33E+00
BREOT-N17+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.27E+04	1.07E+02	1.10E-03	8.16E+03	8.99E+00	1.00E+00	5.50E-03	2.11E+04	2.41E+02	1.87E-02	2.59E+02	8.17E+01
BREOT-S18+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	9.77E+02	8.27E+00	1.10E-03	6.29E+02	6.93E-01	1.00E+00	5.50E-03	1.63E+03	2.41E+02	1.87E-02	2.59E+02	6.29E+00
BREOT-N19+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.28E+02	1.08E+00	1.10E-03	8.23E+01	9.06E-02	1.00E+00	5.50E-03	2.13E+02	2.41E+02	1.87E-02	2.59E+02	8.23E-01
BREOT-S19+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	7.74E+01	6.56E-01	1.10E-03	4.99E+01	5.49E-02	1.00E+00	5.50E-03	1.29E+02	2.41E+02	1.87E-02	2.59E+02	4.99E-01
BREOT-S19+85 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	9.79E+02	8.29E+00	1.10E-03	6.31E+02	6.95E-01	1.00E+00	5.50E-03	1.63E+03	2.41E+02	1.87E-02	2.59E+02	6.31E+00
BREOT-N20+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	2.64E+02	2.24E+00	1.10E-03	1.70E+02	1.88E-01	1.00E+00	5.50E-03	4.41E+02	2.41E+02	1.87E-02	2.59E+02	1.70E+00

TABLE C-2D: LEAD DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 18.41

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Masked Shrew (Omnivorous Mammal - Terrestrial, Wetland)																							
BREOT-S20+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	8.52E+01	7.22E-01	1.10E-03	5.49E+01	6.04E-02	1.00E+00	5.50E-03	1.42E+02	2.41E+02	1.87E-02	2.59E+02	5.49E-01
BREOT-S20+75 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.57E+02	1.33E+00	1.10E-03	1.01E+02	1.11E-01	1.00E+00	5.50E-03	2.62E+02	2.41E+02	1.87E-02	2.59E+02	1.01E+00
BREOT-N21+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	5.47E+03	4.63E+01	1.10E-03	3.52E+03	3.88E+00	1.00E+00	5.50E-03	9.13E+03	2.41E+02	1.87E-02	2.59E+02	3.52E+01
BREOT-S21+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	8.21E+01	6.95E-01	1.10E-03	5.29E+01	5.82E-02	1.00E+00	5.50E-03	1.37E+02	2.41E+02	1.87E-02	2.59E+02	5.29E-01
BREOT-N22+150 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	4.35E+02	3.68E+00	1.10E-03	2.80E+02	3.09E-01	1.00E+00	5.50E-03	7.26E+02	2.41E+02	1.87E-02	2.59E+02	2.80E+00
BREOT-N22+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	3.83E+03	3.24E+01	1.10E-03	2.47E+03	2.72E+00	1.00E+00	5.50E-03	6.39E+03	2.41E+02	1.87E-02	2.59E+02	2.47E+01
BREOT-S22+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.66E+03	1.41E+01	1.10E-03	1.07E+03	1.18E+00	1.00E+00	5.50E-03	2.77E+03	2.41E+02	1.87E-02	2.59E+02	1.07E+01
BREOT-N23+115 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.02E+02	8.65E-01	1.10E-03	6.58E+01	7.25E-02	1.00E+00	5.50E-03	1.70E+02	2.41E+02	1.87E-02	2.59E+02	6.58E-01
BREOT-N23+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.12E+04	9.48E+01	1.10E-03	7.21E+03	7.94E+00	1.00E+00	5.50E-03	1.87E+04	2.41E+02	1.87E-02	2.59E+02	7.22E+01
BREOT-S23+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.95E+03	1.66E+01	1.10E-03	1.26E+03	1.39E+00	1.00E+00	5.50E-03	3.26E+03	2.41E+02	1.87E-02	2.59E+02	1.26E+01
BREOT-S23+37.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.67E+02	1.42E+00	1.10E-03	1.08E+02	1.19E-01	1.00E+00	5.50E-03	2.79E+02	2.41E+02	1.87E-02	2.59E+02	1.08E+00
BREOT-N24+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.42E+03	1.21E+01	1.10E-03	9.17E+02	1.01E+00	1.00E+00	5.50E-03	2.38E+03	2.41E+02	1.87E-02	2.59E+02	9.17E+00
BREOT-N24+75 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.68E+02	1.43E+00	1.10E-03	1.09E+02	1.19E-01	1.00E+00	5.50E-03	2.81E+02	2.41E+02	1.87E-02	2.59E+02	1.09E+00
BREOT-S24+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.44E+03	1.22E+01	1.10E-03	9.27E+02	1.02E+00	1.00E+00	5.50E-03	2.40E+03	2.41E+02	1.87E-02	2.59E+02	9.27E+00
BREOT-N25+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.05E+02	8.90E-01	1.10E-03	6.77E+01	7.45E-02	1.00E+00	5.50E-03	1.75E+02	2.41E+02	1.87E-02	2.59E+02	6.77E-01
BREOT-S25+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	8.43E+02	7.14E+00	1.10E-03	5.43E+02	5.98E-01	1.00E+00	5.50E-03	1.41E+03	2.41E+02	1.87E-02	2.59E+02	5.43E+00
BREOT-S25+40 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	3.72E+03	3.15E+01	1.10E-03	2.40E+03	2.64E+00	1.00E+00	5.50E-03	6.20E+03	2.41E+02	1.87E-02	2.59E+02	2.40E+01
BREOT-S26+37 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	3.25E+02	2.75E+00	1.10E-03	2.09E+02	2.30E-01	1.00E+00	5.50E-03	5.42E+02	2.41E+02	1.87E-02	2.59E+02	2.09E+00
BREOT-N27+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.82E+02	1.54E+00	1.10E-03	1.17E+02	1.29E-01	1.00E+00	5.50E-03	3.03E+02	2.41E+02	1.87E-02	2.59E+02	1.17E+00
BREOT-S27+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	6.15E+02	5.21E+00	1.10E-03	3.96E+02	4.36E-01	1.00E+00	5.50E-03	1.03E+03	2.41E+02	1.87E-02	2.59E+02	3.96E+00
BREOT-N28+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	2.13E+02	1.80E+00	1.10E-03	1.37E+02	1.51E-01	1.00E+00	5.50E-03	3.55E+02	2.41E+02	1.87E-02	2.59E+02	1.37E+00
BREOT-S28+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.20E+03	1.02E+01	1.10E-03	7.76E+02	8.55E-01	1.00E+00	5.50E-03	2.01E+03	2.41E+02	1.87E-02	2.59E+02	7.76E+00
BREOT-S29+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.09E+03	9.26E+00	1.10E-03	7.05E+02	7.76E-01	1.00E+00	5.50E-03	1.83E+03	2.41E+02	1.87E-02	2.59E+02	7.05E+00
BREOT-N30+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	8.57E+02	7.26E+00	1.10E-03	5.52E+02	6.08E-01	1.00E+00	5.50E-03	1.43E+03	2.41E+02	1.87E-02	2.59E+02	5.52E+00
BREOT-S30+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	8.05E+02	6.82E+00	1.10E-03	5.18E+02	5.71E-01	1.00E+00	5.50E-03	1.34E+03	2.41E+02	1.87E-02	2.59E+02	5.19E+00
BREOT-N31+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.55E+04	1.31E+02	1.10E-03	1.00E+04	1.10E+01	1.00E+00	5.50E-03	2.59E+04	2.41E+02	1.87E-02	2.59E+02	1.00E+02
BREOT-N31+75 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.17E+02	9.91E-01	1.10E-03	7.54E+01	8.30E-02	1.00E+00	5.50E-03	1.95E+02	2.41E+02	1.87E-02	2.59E+02	7.54E-01
BREOT-S31+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	2.72E+02	2.30E+00	1.10E-03	1.75E+02	1.93E-01	1.00E+00	5.50E-03	4.54E+02	2.41E+02	1.87E-02	2.59E+02	1.75E+00
BREOT-N32+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.69E+02	1.43E+00	1.10E-03	1.09E+02	1.20E-01	1.00E+00	5.50E-03	2.82E+02	2.41E+02	1.87E-02	2.59E+02	1.09E+00
BREOT-S32+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.86E+03	1.58E+01	1.10E-03	1.20E+03	1.32E+00	1.00E+00	5.50E-03	3.10E+03	2.41E+02	1.87E-02	2.59E+02	1.20E+01
BREOT-S32+300 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	5.84E+02	4.95E+00	1.10E-03	3.76E+02	4.14E-01	1.00E+00	5.50E-03	9.75E+02	2.41E+02	1.87E-02	2.59E+02	3.76E+00
BREOT-N33+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.16E+02	9.86E-01	1.10E-03	7.50E+01	8.26E-02	1.00E+00	5.50E-03	1.94E+02	2.41E+02	1.87E-02	2.59E+02	7.51E-01
BREOT-S33+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	2.14E+02	1.81E+00	1.10E-03	1.38E+02	1.52E-01	1.00E+00	5.50E-03	3.57E+02	2.41E+02	1.87E-02	2.59E+02	1.38E+00
BREOT-N34+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.78E+02	1.51E+00	1.10E-03	1.15E+02	1.26E-01	1.00E+00	5.50E-03	2.97E+02	2.41E+02	1.87E-02	2.59E+02	1.15E+00
BREOT-S34+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	5.76E+02	4.88E+00	1.10E-03	3.71E+02	4.08E-01	1.00E+00	5.50E-03	9.61E+02	2.41E+02	1.87E-02	2.59E+02	3.71E+00
BREOT-N35+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.31E+02	1.11E+00	1.10E-03	8.46E+01	9.31E-02	1.00E+00	5.50E-03	2.19E+02	2.41E+02	1.87E-02	2.59E+02	8.46E-01
BREOT-S35+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	2.11E+02	1.79E+00	1.10E-03	1.36E+02	1.50E-01	1.00E+00	5.50E-03	3.52E+02	2.41E+02	1.87E-02	2.59E+02	1.36E+00
BREOT-N36+100 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	2.65E+02	2.24E+00	1.10E-03	1.71E+02	1.88E-01	1.00E+00	5.50E-03	4.42E+02	2.41E+02	1.87E-02	2.59E+02	1.71E+00
BREOT-N36+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	3.13E+03	2.65E+01	1.10E-03	2.02E+03	2.22E+00	1.00E+00	5.50E-03	5.23E+03	2.41E+02	1.87E-02	2.59E+02	2.02E+01
BREOT-S36+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	3.48E+02	2.95E+00	1.10E-03	2.24E+02	2.47E-01	1.00E+00	5.50E-03	5.81E+02	2.41E+02	1.87E-02	2.59E+02	2.24E+00
BREOT-N37+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.62E+02	1.37E+00	1.10E-03	1.04E+02	1.15E-01	1.00E+00	5.50E-03	2.71E+02	2.41E+02	1.87E-02	2.59E+02	1.04E+00
BREOT-S37+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.95E+02	1.65E+00	1.10E-03	1.26E+02	1.38E-01	1.00E+00	5.50E-03	3.25E+02	2.41E+02	1.87E-02	2.59E+02	1.26E+00
BREOT-N38+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	2.34E+02	1.98E+00	1.10E-03	1.51E+02	1.66E-01	1.00E+00	5.50E-03	3.91E+02	2.41E+02	1.87E-02	2.59E+02	1.51E+00
BREOT-S38+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	2.37E+02	2.01E+00	1.10E-03	1.53E+02	1.68E-01	1.00E+00	5.50E-03	3.96E+02	2.41E+02	1.87E-02	2.59E+02	1.53E+00
BREOT-N39+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	2.27E+02	1.92E+00	1.10E-03	1.46E+02	1.61E-01	1.00E+00	5.50E-03	3.79E+02	2.41E+02	1.87E-02	2.59E+02	1.46E+00
BREOT-S39+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	2.57E+02	2.17E+00	1.10E-03	1.65E+02	1.82E-01	1.00E+00	5.50E-03	4.28E+02	2.41E+02	1.87E-02	2.59E+02	1.65E+00
BREOT-N40+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	2.34E+02	1.98E+00	1.10E-03	1.51E+02	1.66E-01	1.00E+00	5.50E-03	3.90E+02	2.41E+02	1.87E-02	2.59E+02	1.51E+00
BREOT-S40+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	2.03E+02	1.72E+00	1.10E-03	1.31E+02	1.44E-01	1.00E+00	5.50E-03	3.39E+02	2.41E+02	1.87E-02	2.59E+02	1.31E+00
BREOT-N41+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.54E+02	1.31E+00	1.10E-03	9.94E+01	1.09E-01	1.00E+00	5.50E-03	2.57E+02	2.41E+02	1.87E-02	2.59E+02	9.94E-01
BREOT-S41+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	8.37E+02	7.09E+00	1.10E-03	5.39E+02	5.94E-01	1.00E+00	5.50E-03	1.40E+03	2.41E+02	1.87E-02	2.59E+02	5.40E+00
BREOT-N42+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	6.98E+01	5.92E-01	1.10E-03	4.50E+01	4.95E-02	1.00E+00	5.50E-03	1.17E+02	2.41E+02	1.87E-02	2.59E+02	4.50E-01
BREOT-S42+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.88E+02	1.59E+00	1.10E-03	1.21E+02	1.34E-01	1.00E+00	5.50E-03	3.14E+02	2.41E+02	1.87E-02	2.59E+02	1.21E+00
BREOT-N43+12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	4.07E+02	3.45E+00	1.10E-03	2.62E+02	2.89E-01	1.00E+00	5.50E-03	6.79E+02	2.41E+02	1.87E-02	2.59E+02	2.62E+00
BREOT-N43+40 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.81E+02	1.54E+00	1.10E-03	1.17E+02	1.29E-01	1.00E+00	5.50E-03	3.03E+02	2.41E+02	1.87E-02	2.59E+02	1.17E+00
BREOT-S43+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.14E+02	9.68E-01	1.10E-03	7.37E+01	8.11E-02	1.00E+00	5.50E-03	1.91E+02	2.41E+02	1.87E-02	2.59E+02	7.37E-01
BREOT-N44+55 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	2.39E+02	2.03E+00	1.10E-03	1.54E+02	1.70E-01	1.00E+00	5.50E-03	3.99E+02	2.41E+02	1.87E-02	2.59E+02	1.54E+00

TABLE C-2D: LEAD DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 18.41

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Masked Shrew (Omnivorous Mammal - Terrestrial, Wetland)																							
BREOT-S44+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.11E+02	9.43E-01	1.10E-03	7.17E+01	7.90E-02	1.00E+00	5.50E-03	1.86E+02	2.41E+02	1.87E-02	2.59E+02	7.17E-01
BREOT-N45+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.71E+02	1.45E+00	1.10E-03	1.10E+02	1.22E-01	1.00E+00	5.50E-03	2.86E+02	2.41E+02	1.87E-02	2.59E+02	1.10E+00
BREOT-S45+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	8.50E+01	7.20E-01	1.10E-03	5.48E+01	6.03E-02	1.00E+00	5.50E-03	1.42E+02	2.41E+02	1.87E-02	2.59E+02	5.48E-01
BREOT-N46+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	2.45E+02	2.08E+00	1.10E-03	1.58E+02	1.74E-01	1.00E+00	5.50E-03	4.09E+02	2.41E+02	1.87E-02	2.59E+02	1.58E+00
BREOT-S46+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	7.83E+01	6.64E-01	1.10E-03	5.05E+01	5.56E-02	1.00E+00	5.50E-03	1.31E+02	2.41E+02	1.87E-02	2.59E+02	5.05E-01
BREOT-N47+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	2.00E+02	1.69E+00	1.10E-03	1.29E+02	1.42E-01	1.00E+00	5.50E-03	3.33E+02	2.41E+02	1.87E-02	2.59E+02	1.29E+00
BREOT-S47+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	5.70E+01	4.82E-01	1.10E-03	3.67E+01	4.04E-02	1.00E+00	5.50E-03	9.51E+01	2.41E+02	1.87E-02	2.59E+02	3.67E-01
BREOT-N48+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.70E+02	1.44E+00	1.10E-03	1.10E+02	1.21E-01	1.00E+00	5.50E-03	2.84E+02	2.41E+02	1.87E-02	2.59E+02	1.10E+00
BREOT-S48+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	2.15E+02	1.82E+00	1.10E-03	1.39E+02	1.53E-01	1.00E+00	5.50E-03	3.59E+02	2.41E+02	1.87E-02	2.59E+02	1.39E+00
BREOT-N49+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	6.33E+02	5.36E+00	1.10E-03	4.08E+02	4.49E-01	1.00E+00	5.50E-03	1.06E+03	2.41E+02	1.87E-02	2.59E+02	4.08E+00
BREOT-S49+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	2.15E+02	1.82E+00	1.10E-03	1.38E+02	1.52E-01	1.00E+00	5.50E-03	3.58E+02	2.41E+02	1.87E-02	2.59E+02	1.38E+00
BREOT-N51+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.47E+02	1.24E+00	1.10E-03	9.46E+01	1.04E-01	1.00E+00	5.50E-03	2.45E+02	2.41E+02	1.87E-02	2.59E+02	9.46E-01
BREOT-S51+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	4.61E+01	3.91E-01	1.10E-03	2.97E+01	3.27E-02	1.00E+00	5.50E-03	7.70E+01	2.41E+02	1.87E-02	2.59E+02	2.97E-01
BREOT-N52+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	3.33E+02	2.82E+00	1.10E-03	2.15E+02	2.36E-01	1.00E+00	5.50E-03	5.56E+02	2.41E+02	1.87E-02	2.59E+02	2.15E+00
BREOT-S52+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	9.61E+01	8.14E-01	1.10E-03	6.19E+01	6.82E-02	1.00E+00	5.50E-03	1.60E+02	2.41E+02	1.87E-02	2.59E+02	6.19E-01
BREOT-N53+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.27E+02	1.07E+00	1.10E-03	8.15E+01	8.98E-02	1.00E+00	5.50E-03	2.11E+02	2.41E+02	1.87E-02	2.59E+02	8.15E-01
BREOT-S53+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.76E+02	1.49E+00	1.10E-03	1.13E+02	1.25E-01	1.00E+00	5.50E-03	2.93E+02	2.41E+02	1.87E-02	2.59E+02	1.13E+00
BREOT-S54+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.00E+02	8.47E-01	1.10E-03	6.44E+01	7.09E-02	1.00E+00	5.50E-03	1.67E+02	2.41E+02	1.87E-02	2.59E+02	6.44E-01
BREOT-N55+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.25E+02	1.06E+00	1.10E-03	8.03E+01	8.84E-02	1.00E+00	5.50E-03	2.08E+02	2.41E+02	1.87E-02	2.59E+02	8.03E-01
BREOT-S55+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.08E+02	9.13E-01	1.10E-03	6.95E+01	7.65E-02	1.00E+00	5.50E-03	1.80E+02	2.41E+02	1.87E-02	2.59E+02	6.95E-01
BREOT-N56+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.72E+02	1.45E+00	1.10E-03	1.11E+02	1.22E-01	1.00E+00	5.50E-03	2.86E+02	2.41E+02	1.87E-02	2.59E+02	1.11E+00
BREOT-S56+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.41E+02	1.19E+00	1.10E-03	9.09E+01	1.00E-01	1.00E+00	5.50E-03	2.35E+02	2.41E+02	1.87E-02	2.59E+02	9.09E-01
BREOT-S57+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.51E+02	1.28E+00	1.10E-03	9.72E+01	1.07E-01	1.00E+00	5.50E-03	2.52E+02	2.41E+02	1.87E-02	2.59E+02	9.72E-01
BREOT-N58+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.44E+02	1.22E+00	1.10E-03	9.28E+01	1.02E-01	1.00E+00	5.50E-03	2.40E+02	2.41E+02	1.87E-02	2.59E+02	9.28E-01
BREOT-S58+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.94E+02	1.65E+00	1.10E-03	1.25E+02	1.38E-01	1.00E+00	5.50E-03	3.24E+02	2.41E+02	1.87E-02	2.59E+02	1.25E+00
BREOT-N59+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	6.64E+02	5.62E+00	1.10E-03	4.28E+02	4.71E-01	1.00E+00	5.50E-03	1.11E+03	2.41E+02	1.87E-02	2.59E+02	4.28E+00
BREOT-N60+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.42E+02	1.20E+00	1.10E-03	9.16E+01	1.01E-01	1.00E+00	5.50E-03	2.37E+02	2.41E+02	1.87E-02	2.59E+02	9.17E-01
BREOT-S60+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.20E+02	1.01E+00	1.10E-03	7.70E+01	8.48E-02	1.00E+00	5.50E-03	1.99E+02	2.41E+02	1.87E-02	2.59E+02	7.70E-01
BREOT-S61+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	9.46E+01	8.01E-01	1.10E-03	6.09E+01	6.71E-02	1.00E+00	5.50E-03	1.58E+02	2.41E+02	1.87E-02	2.59E+02	6.09E-01
BREOT-N62+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	2.44E+02	2.06E+00	1.10E-03	1.57E+02	1.73E-01	1.00E+00	5.50E-03	4.07E+02	2.41E+02	1.87E-02	2.59E+02	1.57E+00
BREOT-S62+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	5.34E+01	4.52E-01	1.10E-03	3.44E+01	3.79E-02	1.00E+00	5.50E-03	8.91E+01	2.41E+02	1.87E-02	2.59E+02	3.44E-01
BREOT-N63+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	8.50E+02	7.20E+00	1.10E-03	5.48E+02	6.03E-01	1.00E+00	5.50E-03	1.42E+03	2.41E+02	1.87E-02	2.59E+02	5.48E+00
BREOT-S63+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	5.46E+01	4.63E-01	1.10E-03	3.52E+01	3.87E-02	1.00E+00	5.50E-03	9.12E+01	2.41E+02	1.87E-02	2.59E+02	3.52E-01
BREOT-N64+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.99E+02	1.68E+00	1.10E-03	1.28E+02	1.41E-01	1.00E+00	5.50E-03	3.32E+02	2.41E+02	1.87E-02	2.59E+02	1.28E+00
BREOT-S64+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.36E+02	1.15E+00	1.10E-03	8.77E+01	9.65E-02	1.00E+00	5.50E-03	2.27E+02	2.41E+02	1.87E-02	2.59E+02	8.77E-01
BREOT-S65+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.14E+02	9.63E-01	1.10E-03	7.33E+01	8.07E-02	1.00E+00	5.50E-03	1.90E+02	2.41E+02	1.87E-02	2.59E+02	7.33E-01
BREOT-N66+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.56E+02	1.33E+00	1.10E-03	1.01E+02	1.11E-01	1.00E+00	5.50E-03	2.61E+02	2.41E+02	1.87E-02	2.59E+02	1.01E+00
BREOT-S66+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.03E+02	8.71E-01	1.10E-03	6.63E+01	7.30E-02	1.00E+00	5.50E-03	1.72E+02	2.41E+02	1.87E-02	2.59E+02	6.63E-01
BREOT-N67+125 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	6.58E+02	5.57E+00	1.10E-03	4.24E+02	4.67E-01	1.00E+00	5.50E-03	1.10E+03	2.41E+02	1.87E-02	2.59E+02	4.24E+00
BREOT-S67+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.33E+02	1.13E+00	1.10E-03	8.56E+01	9.43E-02	1.00E+00	5.50E-03	2.22E+02	2.41E+02	1.87E-02	2.59E+02	8.56E-01
BREOT-N67+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	2.39E+03	2.03E+01	1.10E-03	1.54E+03	1.70E+00	1.00E+00	5.50E-03	3.99E+03	2.41E+02	1.87E-02	2.59E+02	1.54E+01
																						Maximum HQ (Outside Tailings)	**1.28E+02**

Notes

Results are evaluated in order of upstream to downstream.

1 See Tables 3-1 through 3-13 for ingestion rates, foraging ranges used to calculate the SUF, and body weights.

2 BAFs were calculated by dividing site-collected tissue by collocated soil concentrations. The maximum BAF calculated from the Beartrap Creek and Blackfoot River transects was used.

3 The mammal, plant, and invertebrate concentrations were calculated by multiplying the soil concentration by the BAF to generate a tissue concentration (see note 2).

4 Mammal, plant, and invertebrate daily doses were calculated by multiplying the ingestion rate (see note 1) by the tissue concentration (see note 3).

5 Soil concentration from specified depths below ground surface at point ID as measured by XRF 10. Doses were not calculated for detected and non-detected soil concentrations measured below the minimum reference site concentration, as indicated by BB. For results that were measured at less than the detection limit, doses were calculated using half of the detection limit.

6 Soil daily dose was calculated by multiplying the soil ingestion rate (see note 1) by soil concentration (see note 5).

7 Total daily dose is calculated using the following equation: total daily dose = ([mammal daily dose (if applicable) + plant daily dose (if applicable) + invertebrate daily dose (if applicable) + soil daily dose]*SUF)/receptor species body weight.

8 The derivation of TRVs is described in Navy (1998). The high TRV was used for dose calculations.

9 Allometrically adjusted TRVs for birds were calculated using the following equation: receptor species TRV = (test species TRV) x (test species body weight / receptor species body weight)$^{(1-1.2)}$.

10 Allometrically adjusted TRVs for mammals were calculated using the following equation: receptor species TRV = (test species TRV) x (test species body weight / receptor species body weight)$^{(1-0.94)}$.

11 HQs were calculated using the following equation: HQ = total daily dose/allometrically adjusted TRV.

12 Green cells indicate an HQ greater than 1.0

TABLE C-2D: LEAD DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **18.41**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)

Notes: (Continued)

BAF	Bioaccumulation Factor	mg/day	Milligram per day
BB	Below minimum background reference site concentration	mg/kg	Milligram per kilogram
EE/CA	Engineering Evaluation/Cost Analysis	NA	Not applicable
EU	Exposure Unit	Navy	Department of the Navy
HQ	Hazard quotient	SUF	Site use factor
ID	Identification	TRV	Toxicity reference value
kg	Kilogram	XRF	X-ray fluorescence
kg/day	Kilogram per day	XRF 10	XRF measurements recorded following drying and seiving through a #10-mesh screen

Sources: Department of the Navy. 1998. "Development of Toxicity Reference Values for Conducting Ecological Risk Assessments at Naval Facilities in California, Interim Final." Prepared by Naval Facilities Engineering Command, Engineering Field Activity West (EFA

TABLE C-2E: MANGANESE DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **18.41**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Mourning Dove (Herbivorous Birds - Terrestrial)																							
Reference Sites																							
ACBG-1 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	3.34E-01	9.85E+01	5.68E-01	NA	NA	NA	NA	5.36E-04	2.95E+02	1.58E-01	7.11E-02	1.09E-01	4.72E-01	7.76E+02	1.97E-01	6.90E+02	6.85E-04
ACBG-2 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	3.34E-01	3.33E+02	1.92E+00	NA	NA	NA	NA	5.36E-04	9.97E+02	5.34E-01	7.11E-02	1.09E-01	1.60E+00	7.76E+02	1.97E-01	6.90E+02	2.32E-03
UBRBG-202 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	3.34E-01	3.01E+02	1.74E+00	NA	NA	NA	NA	5.36E-04	9.01E+02	4.83E-01	7.11E-02	1.09E-01	1.44E+00	7.76E+02	1.97E-01	6.90E+02	2.09E-03
UBRBG-204 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	3.34E-01	2.32E+02	1.34E+00	NA	NA	NA	NA	5.36E-04	6.94E+02	3.72E-01	7.11E-02	1.09E-01	1.11E+00	7.76E+02	1.97E-01	6.90E+02	1.61E-03
Inside Tailings																						**Minimum HQ (Reference Sites)**	**6.85E-04**
BREOT-S6-12.5 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S2-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	3.88E+04	2.23E+02	NA	NA	NA	NA	5.36E-04	3.91E+03	2.10E+00	7.11E-02	1.09E-01	1.47E+02	7.76E+02	1.97E-01	6.90E+02	2.13E-01
BREOT-S0-12.5 (0-6")	5.76E-03	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S1-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	5.47E+03	3.15E+01	NA	NA	NA	NA	5.36E-04	5.52E+02	2.96E-01	7.11E-02	1.09E-01	2.07E+01	7.76E+02	1.97E-01	6.90E+02	3.00E-02
BREOT-S7-25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	1.36E+04	7.85E+01	NA	NA	NA	NA	5.36E-04	1.38E+03	7.37E-01	7.11E-02	1.09E-01	5.16E+01	7.76E+02	1.97E-01	6.90E+02	7.48E-02
BREOT-S8-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	6.20E+03	3.57E+01	NA	NA	NA	NA	5.36E-04	6.26E+02	3.35E-01	7.11E-02	1.09E-01	2.35E+01	7.76E+02	1.97E-01	6.90E+02	3.40E-02
BREOT-S9-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	7.78E+03	4.48E+01	NA	NA	NA	NA	5.36E-04	7.85E+02	4.21E-01	7.11E-02	1.09E-01	2.94E+01	7.76E+02	1.97E-01	6.90E+02	4.27E-02
BREOT-N10-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	3.53E+04	2.04E+02	NA	NA	NA	NA	5.36E-04	3.57E+03	1.91E+00	7.11E-02	1.09E-01	1.34E+02	7.76E+02	1.97E-01	6.90E+02	1.94E-01
BREOT-N11-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	4.89E+03	2.82E+01	NA	NA	NA	NA	5.36E-04	4.94E+02	2.64E-01	7.11E-02	1.09E-01	1.85E+01	7.76E+02	1.97E-01	6.90E+02	2.68E-02
BREOT-N11-125 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	3.16E+03	1.82E+01	NA	NA	NA	NA	5.36E-04	3.19E+02	1.71E-01	7.11E-02	1.09E-01	1.20E+01	7.76E+02	1.97E-01	6.90E+02	1.73E-02
BREOT-S11-12 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	3.27E+04	1.88E+02	NA	NA	NA	NA	5.36E-04	3.30E+03	1.77E+00	7.11E-02	1.09E-01	1.24E+02	7.76E+02	1.97E-01	6.90E+02	1.79E-01
BREOT-S11+63 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	3.73E+03	2.15E+01	NA	NA	NA	NA	5.36E-04	3.76E+02	2.02E-01	7.11E-02	1.09E-01	1.41E+01	7.76E+02	1.97E-01	6.90E+02	2.05E-02
UBDT-TP-6 (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	6.99E+04	4.03E+02	NA	NA	NA	NA	5.36E-04	7.05E+03	3.78E+00	7.11E-02	1.09E-01	2.65E+02	7.76E+02	1.97E-01	6.90E+02	3.83E-01
UBDT-TP-6 (2-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	5.44E+04	3.13E+02	NA	NA	NA	NA	5.36E-04	5.49E+03	2.94E+00	7.11E-02	1.09E-01	2.06E+02	7.76E+02	1.97E-01	6.90E+02	2.98E-01
UBDT-TP-6 (12-24")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	7.20E+04	4.15E+02	NA	NA	NA	NA	5.36E-04	7.27E+03	3.90E+00	7.11E-02	1.09E-01	2.73E+02	7.76E+02	1.97E-01	6.90E+02	3.95E-01
UBDT-TP-6 (24-36")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	2.78E+04	1.60E+02	NA	NA	NA	NA	5.36E-04	2.81E+03	1.50E+00	7.11E-02	1.09E-01	1.05E+02	7.76E+02	1.97E-01	6.90E+02	1.53E-01
UBDT-TP-6 (36-48")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	7.61E+04	4.38E+02	NA	NA	NA	NA	5.36E-04	7.68E+03	4.12E+00	7.11E-02	1.09E-01	2.88E+02	7.76E+02	1.97E-01	6.90E+02	4.18E-01
UBDT-TP-6 (48-60")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	4.62E+04	2.66E+02	NA	NA	NA	NA	5.36E-04	4.66E+03	2.50E+00	7.11E-02	1.09E-01	1.75E+02	7.76E+02	1.97E-01	6.90E+02	2.54E-01
BREOT-N12-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	2.22E+04	1.28E+02	NA	NA	NA	NA	5.36E-04	2.24E+03	1.20E+00	7.11E-02	1.09E-01	8.41E+01	7.76E+02	1.97E-01	6.90E+02	1.22E-01
BREOT-S12-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	1.86E+04	1.07E+02	NA	NA	NA	NA	5.36E-04	1.88E+03	1.01E+00	7.11E-02	1.09E-01	7.05E+01	7.76E+02	1.97E-01	6.90E+02	1.02E-01
BREOT-S13-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	2.59E+04	1.49E+02	NA	NA	NA	NA	5.36E-04	2.61E+03	1.40E+00	7.11E-02	1.09E-01	9.80E+01	7.76E+02	1.97E-01	6.90E+02	1.42E-01
BREOT-S14-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	1.34E+04	7.72E+01	NA	NA	NA	NA	5.36E-04	1.35E+03	7.24E-01	7.11E-02	1.09E-01	5.07E+01	7.76E+02	1.97E-01	6.90E+02	7.35E-02
BREOT-N15-12.5 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S15-12.5 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N16-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	2.14E+04	1.23E+02	NA	NA	NA	NA	5.36E-04	2.16E+03	1.16E+00	7.11E-02	1.09E-01	8.10E+01	7.76E+02	1.97E-01	6.90E+02	1.17E-01
BREOT-N16-25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	1.13E+04	6.53E+01	NA	NA	NA	NA	5.36E-04	1.14E+03	6.13E-01	7.11E-02	1.09E-01	4.29E+01	7.76E+02	1.97E-01	6.90E+02	6.22E-02
BREOT-S16-12.5 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N17-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	5.97E+03	3.44E+01	NA	NA	NA	NA	5.36E-04	6.03E+02	3.23E-01	7.11E-02	1.09E-01	2.26E+01	7.76E+02	1.97E-01	6.90E+02	3.28E-02
BREOT-S17-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	3.81E+03	2.20E+01	NA	NA	NA	NA	5.36E-04	3.85E+02	2.06E-01	7.11E-02	1.09E-01	1.44E+01	7.76E+02	1.97E-01	6.90E+02	2.09E-02
BREOT-S17-25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	9.82E+03	5.66E+01	NA	NA	NA	NA	5.36E-04	9.91E+02	5.31E-01	7.11E-02	1.09E-01	3.72E+01	7.76E+02	1.97E-01	6.90E+02	5.39E-02
UBDT-TP-4 (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	6.09E+04	3.51E+02	NA	NA	NA	NA	5.36E-04	6.15E+03	3.29E+00	7.11E-02	1.09E-01	2.31E+02	7.76E+02	1.97E-01	6.90E+02	3.34E-01
UBDT-TP-4 (2-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	3.86E+04	2.22E+02	NA	NA	NA	NA	5.36E-04	3.89E+03	2.09E+00	7.11E-02	1.09E-01	1.46E+02	7.76E+02	1.97E-01	6.90E+02	2.12E-01
UBDT-TP-4 (12-24")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	1.89E+04	1.09E+02	NA	NA	NA	NA	5.36E-04	1.91E+03	1.02E+00	7.11E-02	1.09E-01	7.16E+01	7.76E+02	1.97E-01	6.90E+02	1.04E-01
UBDT-TP-4 (24-36")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	1.76E+04	1.01E+02	NA	NA	NA	NA	5.36E-04	1.78E+03	9.53E-01	7.11E-02	1.09E-01	6.67E+01	7.76E+02	1.97E-01	6.90E+02	9.67E-02
BREOT-N18-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	5.93E+04	3.42E+02	NA	NA	NA	NA	5.36E-04	5.99E+03	3.21E+00	7.11E-02	1.09E-01	2.25E+02	7.76E+02	1.97E-01	6.90E+02	3.26E-01
BREOT-N18-25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	5.61E+03	3.23E+01	NA	NA	NA	NA	5.36E-04	5.66E+02	3.03E-01	7.11E-02	1.09E-01	2.12E+01	7.76E+02	1.97E-01	6.90E+02	3.08E-02
BREOT-S18-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	1.50E+04	8.62E+01	NA	NA	NA	NA	5.36E-04	1.51E+03	8.09E-01	7.11E-02	1.09E-01	5.66E+01	7.76E+02	1.97E-01	6.90E+02	8.21E-02
BREOT-N19-10 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	8.76E+03	5.05E+01	NA	NA	NA	NA	5.36E-04	8.84E+02	4.74E-01	7.11E-02	1.09E-01	3.32E+01	7.76E+02	1.97E-01	6.90E+02	4.81E-02
BREOT-S19-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	2.84E+04	1.64E+02	NA	NA	NA	NA	5.36E-04	2.87E+03	1.54E+00	7.11E-02	1.09E-01	1.07E+02	7.76E+02	1.97E-01	6.90E+02	1.56E-01
UBDT-TP-5 (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	4.59E+04	2.64E+02	NA	NA	NA	NA	5.36E-04	4.63E+03	2.48E+00	7.11E-02	1.09E-01	1.74E+02	7.76E+02	1.97E-01	6.90E+02	2.52E-01
UBDT-TP-5 (2-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	3.84E+04	2.21E+02	NA	NA	NA	NA	5.36E-04	3.87E+03	2.07E+00	7.11E-02	1.09E-01	1.45E+02	7.76E+02	1.97E-01	6.90E+02	2.10E-01
UBDT-TP-5 (12-24")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	3.50E+04	2.01E+02	NA	NA	NA	NA	5.36E-04	3.53E+03	1.89E+00	7.11E-02	1.09E-01	1.32E+02	7.76E+02	1.97E-01	6.90E+02	1.92E-01
BREOT-N20-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	7.59E+03	4.37E+01	NA	NA	NA	NA	5.36E-04	7.65E+02	4.10E-01	7.11E-02	1.09E-01	2.87E+01	7.76E+02	1.97E-01	6.90E+02	4.16E-02
UBDT-TP-3 (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	7.91E+03	4.56E+01	NA	NA	NA	NA	5.36E-04	7.98E+02	4.28E-01	7.11E-02	1.09E-01	2.99E+01	7.76E+02	1.97E-01	6.90E+02	4.34E-02
UBDT-TP-3 (2-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UBDT-TP-3 (12-24")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	2.98E+03	1.72E+01	NA	NA	NA	NA	5.36E-04	3.01E+02	1.61E-01	7.11E-02	1.09E-01	1.13E+01	7.76E+02	1.97E-01	6.90E+02	1.64E-02
UBDT-TP-3 (24-36")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	3.57E+03	2.06E+01	NA	NA	NA	NA	5.36E-04	3.60E+02	1.93E-01	7.11E-02	1.09E-01	1.35E+01	7.76E+02	1.97E-01	6.90E+02	1.96E-02
UBDT-TP-3 (36-48")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	5.49E+04	3.16E+02	NA	NA	NA	NA	5.36E-04	5.54E+03	2.97E+00	7.11E-02	1.09E-01	2.08E+02	7.76E+02	1.97E-01	6.90E+02	3.01E-01
UBDT-TP-3 (48-60")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	2.60E+04	1.50E+02	NA	NA	NA	NA	5.36E-04	2.63E+03	1.41E+00	7.11E-02	1.09E-01	9.86E+01	7.76E+02	1.97E-01	6.90E+02	1.43E-01
BREOT-N21-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	6.76E+04	3.90E+02	NA	NA	NA	NA	5.36E-04	6.83E+03	3.66E+00	7.11E-02	1.09E-01	2.56E+02	7.76E+02	1.97E-01	6.90E+02	3.71E-01
BREOT-N22-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	6.66E+03	3.84E+01	NA	NA	NA	NA	5.36E-04	6.72E+02	3.60E-01	7.11E-02	1.09E-01	2.52E+01	7.76E+02	1.97E-01	6.90E+02	3.65E-02

TABLE C-2E: MANGANESE DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **18.41**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Mourning Dove (Herbivorous Birds - Terrestrial)																							
BREOT-N23-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	1.45E+04	8.36E+01	NA	NA	NA	NA	5.36E-04	1.46E+03	7.85E-01	7.11E-02	1.09E-01	5.49E+01	7.76E+02	1.97E-01	6.90E+02	7.96E-02
BREOT-S23-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	1.57E+05	9.07E+02	NA	NA	NA	NA	5.36E-04	1.59E+04	8.51E+00	7.11E-02	1.09E-01	5.96E+02	7.76E+02	1.97E-01	6.90E+02	8.64E-01
UBDT-TP-2 (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	5.43E+04	3.13E+02	NA	NA	NA	NA	5.36E-04	5.48E+03	2.93E+00	7.11E-02	1.09E-01	2.05E+02	7.76E+02	1.97E-01	6.90E+02	2.98E-01
UBDT-TP-2 (2-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	7.14E+04	4.12E+02	NA	NA	NA	NA	5.36E-04	7.21E+03	3.86E+00	7.11E-02	1.09E-01	2.70E+02	7.76E+02	1.97E-01	6.90E+02	3.92E-01
UBDT-TP-2 (12-24")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	5.39E+04	3.10E+02	NA	NA	NA	NA	5.36E-04	5.44E+03	2.91E+00	7.11E-02	1.09E-01	2.04E+02	7.76E+02	1.97E-01	6.90E+02	2.96E-01
UBDT-TP-2 (24-36")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	2.74E+04	1.58E+02	NA	NA	NA	NA	5.36E-04	2.76E+03	1.48E+00	7.11E-02	1.09E-01	1.04E+02	7.76E+02	1.97E-01	6.90E+02	1.50E-01
UBDT-TP-2 (36-48")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	2.76E+04	1.59E+02	NA	NA	NA	NA	5.36E-04	2.79E+03	1.49E+00	7.11E-02	1.09E-01	1.05E+02	7.76E+02	1.97E-01	6.90E+02	1.52E-01
BREOT-S24-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	1.61E+05	9.29E+02	NA	NA	NA	NA	5.36E-04	1.63E+04	8.72E+00	7.11E-02	1.09E-01	6.10E+02	7.76E+02	1.97E-01	6.90E+02	8.85E-01
BREOT-N25-50 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	4.77E+04	2.75E+02	NA	NA	NA	NA	5.36E-04	4.82E+03	2.58E+00	7.11E-02	1.09E-01	1.81E+02	7.76E+02	1.97E-01	6.90E+02	2.62E-01
BREOT-N25-95 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S25-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	5.76E+04	3.32E+02	NA	NA	NA	NA	5.36E-04	5.81E+03	3.11E+00	7.11E-02	1.09E-01	2.18E+02	7.76E+02	1.97E-01	6.90E+02	3.16E-01
BREOT-S25-40 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N26A-25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	4.54E+03	2.61E+01	NA	NA	NA	NA	5.36E-04	4.58E+02	2.45E-01	7.11E-02	1.09E-01	1.72E+01	7.76E+02	1.97E-01	6.90E+02	2.49E-02
BREOT-N26B-25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	1.88E+04	1.09E+02	NA	NA	NA	NA	5.36E-04	1.90E+03	1.02E+00	7.11E-02	1.09E-01	7.13E+01	7.76E+02	1.97E-01	6.90E+02	1.03E-01
BREOT-N26-50 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	4.77E+04	2.75E+02	NA	NA	NA	NA	5.36E-04	4.81E+03	2.58E+00	7.11E-02	1.09E-01	1.80E+02	7.76E+02	1.97E-01	6.90E+02	2.62E-01
BREOT-N26-75 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	2.63E+04	1.52E+02	NA	NA	NA	NA	5.36E-04	2.65E+03	1.42E+00	7.11E-02	1.09E-01	9.96E+01	7.76E+02	1.97E-01	6.90E+02	1.44E-01
BREOT-S26-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	2.36E+04	1.36E+02	NA	NA	NA	NA	5.36E-04	2.38E+03	1.27E+00	7.11E-02	1.09E-01	8.92E+01	7.76E+02	1.97E-01	6.90E+02	1.29E-01
BREOT-S26-40 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	7.11E+04	4.10E+02	NA	NA	NA	NA	5.36E-04	7.17E+03	3.84E+00	7.11E-02	1.09E-01	2.69E+02	7.76E+02	1.97E-01	6.90E+02	3.90E-01
BREOT-N27-30 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	2.63E+04	1.52E+02	NA	NA	NA	NA	5.36E-04	2.66E+03	1.42E+00	7.11E-02	1.09E-01	9.97E+01	7.76E+02	1.97E-01	6.90E+02	1.44E-01
BREOT-N27-75 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	7.50E+04	4.32E+02	NA	NA	NA	NA	5.36E-04	7.57E+03	4.06E+00	7.11E-02	1.09E-01	2.84E+02	7.76E+02	1.97E-01	6.90E+02	4.12E-01
BREOT-S27-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	1.50E+04	8.67E+01	NA	NA	NA	NA	5.36E-04	1.52E+03	8.13E-01	7.11E-02	1.09E-01	5.69E+01	7.76E+02	1.97E-01	6.90E+02	8.25E-02
BREOT-N28-110 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	1.39E+04	8.01E+01	NA	NA	NA	NA	5.36E-04	1.40E+03	7.52E-01	7.11E-02	1.09E-01	5.26E+01	7.76E+02	1.97E-01	6.90E+02	7.63E-02
BREOT-N28-55 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	3.68E+04	2.12E+02	NA	NA	NA	NA	5.36E-04	3.72E+03	1.99E+00	7.11E-02	1.09E-01	1.39E+02	7.76E+02	1.97E-01	6.90E+02	2.02E-01
BREOT-S28-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	8.30E+04	4.78E+02	NA	NA	NA	NA	5.36E-04	8.38E+03	4.49E+00	7.11E-02	1.09E-01	3.14E+02	7.76E+02	1.97E-01	6.90E+02	4.56E-01
UBDT-TP-1 (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	5.50E+04	3.17E+02	NA	NA	NA	NA	5.36E-04	5.55E+03	2.97E+00	7.11E-02	1.09E-01	2.08E+02	7.76E+02	1.97E-01	6.90E+02	3.02E-01
UBDT-TP-1 (2-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	5.47E+04	3.15E+02	NA	NA	NA	NA	5.36E-04	5.52E+03	2.96E+00	7.11E-02	1.09E-01	2.07E+02	7.76E+02	1.97E-01	6.90E+02	3.00E-01
UBDT-TP-1 (12-24")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	5.62E+04	3.24E+02	NA	NA	NA	NA	5.36E-04	5.67E+03	3.04E+00	7.11E-02	1.09E-01	2.13E+02	7.76E+02	1.97E-01	6.90E+02	3.08E-01
UBDT-TP-1 (24-36")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	7.48E+04	4.31E+02	NA	NA	NA	NA	5.36E-04	7.55E+03	4.04E+00	7.11E-02	1.09E-01	2.83E+02	7.76E+02	1.97E-01	6.90E+02	4.10E-01
UBDT-TP-1 (36-48")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	1.19E+04	6.85E+01	NA	NA	NA	NA	5.36E-04	1.20E+03	6.43E-01	7.11E-02	1.09E-01	4.50E+01	7.76E+02	1.97E-01	6.90E+02	6.52E-02
UBDT-TP-1 (48-60")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	1.48E+04	8.53E+01	NA	NA	NA	NA	5.36E-04	1.49E+03	8.00E-01	7.11E-02	1.09E-01	5.60E+01	7.76E+02	1.97E-01	6.90E+02	8.12E-02
BREOT-N29-30 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	5.71E+04	3.29E+02	NA	NA	NA	NA	5.36E-04	5.76E+03	3.09E+00	7.11E-02	1.09E-01	2.16E+02	7.76E+02	1.97E-01	6.90E+02	3.13E-01
BREOT-S29-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	7.01E+04	4.04E+02	NA	NA	NA	NA	5.36E-04	7.07E+03	3.79E+00	7.11E-02	1.09E-01	2.65E+02	7.76E+02	1.97E-01	6.90E+02	3.84E-01
BREOT-N30-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	1.95E+04	1.13E+02	NA	NA	NA	NA	5.36E-04	1.97E+03	1.06E+00	7.11E-02	1.09E-01	7.39E+01	7.76E+02	1.97E-01	6.90E+02	1.07E-01
BREOT-S30-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	4.81E+04	2.77E+02	NA	NA	NA	NA	5.36E-04	4.86E+03	2.60E+00	7.11E-02	1.09E-01	1.82E+02	7.76E+02	1.97E-01	6.90E+02	2.64E-01
BREOT-N31-12.5 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S31-25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	3.88E+04	2.24E+02	NA	NA	NA	NA	5.36E-04	3.92E+03	2.10E+00	7.11E-02	1.09E-01	1.47E+02	7.76E+02	1.97E-01	6.90E+02	2.13E-01
BREOT-S31-5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	6.33E+04	3.65E+02	NA	NA	NA	NA	5.36E-04	6.38E+03	3.42E+00	7.11E-02	1.09E-01	2.40E+02	7.76E+02	1.97E-01	6.90E+02	3.47E-01
BREOT-N32-12.5 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S32-6 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	1.37E+04	7.89E+01	NA	NA	NA	NA	5.36E-04	1.38E+03	7.40E-01	7.11E-02	1.09E-01	5.18E+01	7.76E+02	1.97E-01	6.90E+02	7.51E-02
BREOT-N33-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	3.98E+03	2.29E+01	NA	NA	NA	NA	5.36E-04	4.02E+02	2.15E-01	7.11E-02	1.09E-01	1.51E+01	7.76E+02	1.97E-01	6.90E+02	2.18E-02
BREOT-S33-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	2.67E+04	1.54E+02	NA	NA	NA	NA	5.36E-04	2.70E+03	1.44E+00	7.11E-02	1.09E-01	1.01E+02	7.76E+02	1.97E-01	6.90E+02	1.47E-01
BREOT-N35-12.5 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S35-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	8.39E+04	4.84E+02	NA	NA	NA	NA	5.36E-04	8.47E+03	4.54E+00	7.11E-02	1.09E-01	3.18E+02	7.76E+02	1.97E-01	6.90E+02	4.60E-01
BREOT-N36-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	3.23E+04	1.86E+02	NA	NA	NA	NA	5.36E-04	3.26E+03	1.75E+00	7.11E-02	1.09E-01	1.22E+02	7.76E+02	1.97E-01	6.90E+02	1.77E-01
BREOT-S36-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	1.12E+04	6.44E+01	NA	NA	NA	NA	5.36E-04	1.13E+03	6.04E-01	7.11E-02	1.09E-01	4.23E+01	7.76E+02	1.97E-01	6.90E+02	6.13E-02
BREOT-N37-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	3.27E+03	1.88E+01	NA	NA	NA	NA	5.36E-04	3.30E+02	1.77E-01	7.11E-02	1.09E-01	1.24E+01	7.76E+02	1.97E-01	6.90E+02	1.79E-02
BREOT-S37-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	1.32E+04	7.61E+01	NA	NA	NA	NA	5.36E-04	1.33E+03	7.14E-01	7.11E-02	1.09E-01	5.00E+01	7.76E+02	1.97E-01	6.90E+02	7.24E-02

TABLE C-2E: MANGANESE DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 18.41

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Mourning Dove (Herbivorous Birds - Terrestrial)																							
BREOT-N38-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	6.59E+03	3.80E+01	NA	NA	NA	NA	5.36E-04	6.65E+02	3.56E-01	7.11E-02	1.09E-01	2.50E+01	7.76E+02	1.97E-01	6.90E+02	3.62E-02
BREOT-S38-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	1.17E+05	6.71E+02	NA	NA	NA	NA	5.36E-04	1.18E+04	6.30E+00	7.11E-02	1.09E-01	4.41E+02	7.76E+02	1.97E-01	6.90E+02	6.39E-01
BREOT-N39-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	9.80E+03	5.65E+01	NA	NA	NA	NA	5.36E-04	9.89E+02	5.30E-01	7.11E-02	1.09E-01	3.71E+01	7.76E+02	1.97E-01	6.90E+02	5.38E-02
BREOT-S39-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	4.56E+04	2.63E+02	NA	NA	NA	NA	5.36E-04	4.61E+03	2.47E+00	7.11E-02	1.09E-01	1.73E+02	7.76E+02	1.97E-01	6.90E+02	2.50E-01
BREOT-N40-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	4.59E+04	2.64E+02	NA	NA	NA	NA	5.36E-04	4.63E+03	2.48E+00	7.11E-02	1.09E-01	1.74E+02	7.76E+02	1.97E-01	6.90E+02	2.52E-01
BREOT-S40-14 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	4.24E+04	2.44E+02	NA	NA	NA	NA	5.36E-04	4.28E+03	2.29E+00	7.11E-02	1.09E-01	1.60E+02	7.76E+02	1.97E-01	6.90E+02	2.32E-01
BREOT-N41-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	3.38E+04	1.95E+02	NA	NA	NA	NA	5.36E-04	3.41E+03	1.83E+00	7.11E-02	1.09E-01	1.28E+02	7.76E+02	1.97E-01	6.90E+02	1.85E-01
BREOT-S41-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	4.24E+04	2.44E+02	NA	NA	NA	NA	5.36E-04	4.28E+03	2.29E+00	7.11E-02	1.09E-01	1.60E+02	7.76E+02	1.97E-01	6.90E+02	2.33E-01
BREOT-N42-35 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	7.78E+03	4.48E+01	NA	NA	NA	NA	5.36E-04	7.85E+02	4.21E-01	7.11E-02	1.09E-01	2.94E+01	7.76E+02	1.97E-01	6.90E+02	4.27E-02
BREOT-S42-25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	1.64E+04	9.48E+01	NA	NA	NA	NA	5.36E-04	1.66E+03	8.89E-01	7.11E-02	1.09E-01	6.23E+01	7.76E+02	1.97E-01	6.90E+02	9.02E-02
BREOT-N43-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	1.00E+05	5.76E+02	NA	NA	NA	NA	5.36E-04	1.01E+04	5.41E+00	7.11E-02	1.09E-01	3.79E+02	7.76E+02	1.97E-01	6.90E+02	5.49E-01
BREOT-S43-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	2.20E+04	1.27E+02	NA	NA	NA	NA	5.36E-04	2.22E+03	1.19E+00	7.11E-02	1.09E-01	8.32E+01	7.76E+02	1.97E-01	6.90E+02	1.21E-01
BREOT-N44-30 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	7.84E+03	4.52E+01	NA	NA	NA	NA	5.36E-04	7.91E+02	4.24E-01	7.11E-02	1.09E-01	2.97E+01	7.76E+02	1.97E-01	6.90E+02	4.30E-02
BREOT-S44-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	7.37E+04	4.25E+02	NA	NA	NA	NA	5.36E-04	7.44E+03	3.99E+00	7.11E-02	1.09E-01	2.79E+02	7.76E+02	1.97E-01	6.90E+02	4.04E-01
BREOT-N45-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	9.49E+03	5.47E+01	NA	NA	NA	NA	5.36E-04	9.57E+02	5.13E-01	7.11E-02	1.09E-01	3.59E+01	7.76E+02	1.97E-01	6.90E+02	5.21E-02
BREOT-N43-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	1.00E+05	5.76E+02	NA	NA	NA	NA	5.36E-04	1.01E+04	5.41E+00	7.11E-02	1.09E-01	3.79E+02	7.76E+02	1.97E-01	6.90E+02	5.49E-01
BREOT-S45-6 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	1.27E+04	7.30E+01	NA	NA	NA	NA	5.36E-04	1.28E+03	6.85E-01	7.11E-02	1.09E-01	4.79E+01	7.76E+02	1.97E-01	6.90E+02	6.95E-02
BREOT-N46-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	3.64E+03	2.10E+01	NA	NA	NA	NA	5.36E-04	3.67E+02	1.97E-01	7.11E-02	1.09E-01	1.38E+01	7.76E+02	1.97E-01	6.90E+02	2.00E-02
BREOT-S46-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	3.62E+03	2.09E+01	NA	NA	NA	NA	5.36E-04	3.65E+02	1.96E-01	7.11E-02	1.09E-01	1.37E+01	7.76E+02	1.97E-01	6.90E+02	1.99E-02
BREOT-S46-40 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	5.54E+03	3.19E+01	NA	NA	NA	NA	5.36E-04	5.59E+02	3.00E-01	7.11E-02	1.09E-01	2.10E+01	7.76E+02	1.97E-01	6.90E+02	3.04E-02
BREOT-N47-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	6.97E+03	4.02E+01	NA	NA	NA	NA	5.36E-04	7.04E+02	3.77E-01	7.11E-02	1.09E-01	2.64E+01	7.76E+02	1.97E-01	6.90E+02	3.83E-02
BREOT-S47-999 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	7.41E+03	4.27E+01	NA	NA	NA	NA	5.36E-04	7.47E+02	4.00E-01	7.11E-02	1.09E-01	2.80E+01	7.76E+02	1.97E-01	6.90E+02	4.06E-02
BREOT-S48-12.5 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S49-2.5 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S50-12.5 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S50-25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N52-60 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S52-12.5 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S53-12.5 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S54-12.5 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N55-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	3.72E+04	2.14E+02	NA	NA	NA	NA	5.36E-04	3.75E+03	2.01E+00	7.11E-02	1.09E-01	1.41E+02	7.76E+02	1.97E-01	6.90E+02	2.04E-01
BREOT-S55-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	1.53E+04	8.83E+01	NA	NA	NA	NA	5.36E-04	1.55E+03	8.29E-01	7.11E-02	1.09E-01	5.80E+01	7.76E+02	1.97E-01	6.90E+02	8.41E-02
BREOT-N56-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	1.77E+04	1.02E+02	NA	NA	NA	NA	5.36E-04	1.79E+03	9.58E-01	7.11E-02	1.09E-01	6.71E+01	7.76E+02	1.97E-01	6.90E+02	9.72E-02
BREOT-S56-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	9.43E+03	5.43E+01	NA	NA	NA	NA	5.36E-04	9.52E+02	5.10E-01	7.11E-02	1.09E-01	3.57E+01	7.76E+02	1.97E-01	6.90E+02	5.17E-02
BREOT-N57-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	1.18E+04	6.82E+01	NA	NA	NA	NA	5.36E-04	1.19E+03	6.40E-01	7.11E-02	1.09E-01	4.48E+01	7.76E+02	1.97E-01	6.90E+02	6.49E-02
BREOT-S57-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	1.23E+04	7.09E+01	NA	NA	NA	NA	5.36E-04	1.24E+03	6.66E-01	7.11E-02	1.09E-01	4.66E+01	7.76E+02	1.97E-01	6.90E+02	6.75E-02
BREOT-N58-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	2.04E+04	1.17E+02	NA	NA	NA	NA	5.36E-04	2.06E+03	1.10E+00	7.11E-02	1.09E-01	7.71E+01	7.76E+02	1.97E-01	6.90E+02	1.12E-01
BREOT-S58-12 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	1.27E+04	7.35E+01	NA	NA	NA	NA	5.36E-04	1.29E+03	6.89E-01	7.11E-02	1.09E-01	4.83E+01	7.76E+02	1.97E-01	6.90E+02	6.99E-02
BREOT-N59-18 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	6.99E+03	4.02E+01	NA	NA	NA	NA	5.36E-04	7.05E+02	3.78E-01	7.11E-02	1.09E-01	2.64E+01	7.76E+02	1.97E-01	6.90E+02	3.83E-02
BREOT-N60-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	1.19E+04	6.87E+01	NA	NA	NA	NA	5.36E-04	1.20E+03	6.45E-01	7.11E-02	1.09E-01	4.52E+01	7.76E+02	1.97E-01	6.90E+02	6.54E-02
BREOT-S60-12.5 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S61-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	6.33E+04	3.65E+02	NA	NA	NA	NA	5.36E-04	6.39E+03	3.42E+00	7.11E-02	1.09E-01	2.40E+02	7.76E+02	1.97E-01	6.90E+02	3.47E-01
BREOT-N62-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	6.15E+03	3.54E+01	NA	NA	NA	NA	5.36E-04	6.21E+02	3.33E-01	7.11E-02	1.09E-01	2.33E+01	7.76E+02	1.97E-01	6.90E+02	3.37E-02
BREOT-S62-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	7.53E+04	4.34E+02	NA	NA	NA	NA	5.36E-04	7.60E+03	4.07E+00	7.11E-02	1.09E-01	2.85E+02	7.76E+02	1.97E-01	6.90E+02	4.13E-01
BREOT-S63-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	1.08E+04	6.22E+01	NA	NA	NA	NA	5.36E-04	1.09E+03	5.84E-01	7.11E-02	1.09E-01	4.09E+01	7.76E+02	1.97E-01	6.90E+02	5.92E-02
BREOT-N64-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	1.09E+04	6.27E+01	NA	NA	NA	NA	5.36E-04	1.10E+03	5.88E-01	7.11E-02	1.09E-01	4.12E+01	7.76E+02	1.97E-01	6.90E+02	5.97E-02
BREOT-N64-20 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	1.05E+04	6.08E+01	NA	NA	NA	NA	5.36E-04	1.06E+03	5.70E-01	7.11E-02	1.09E-01	3.99E+01	7.76E+02	1.97E-01	6.90E+02	5.79E-02

TABLE C-2E: MANGANESE DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 18.41

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Mourning Dove (Herbivorous Birds - Terrestrial)																							
BREOT-S64-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	3.61E+03	2.08E+01	NA	NA	NA	NA	5.36E-04	3.64E+02	1.95E-01	7.11E-02	1.09E-01	1.37E+01	7.76E+02	1.97E-01	6.90E+02	1.98E-02
BREOT-N65-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	9.35E+03	5.39E+01	NA	NA	NA	NA	5.36E-04	9.44E+02	5.06E-01	7.11E-02	1.09E-01	3.54E+01	7.76E+02	1.97E-01	6.90E+02	5.13E-02
BREOT-S65-12.5 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N66-5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	5.28E+03	3.04E+01	NA	NA	NA	NA	5.36E-04	5.33E+02	2.86E-01	7.11E-02	1.09E-01	2.00E+01	7.76E+02	1.97E-01	6.90E+02	2.90E-02
BREOT-S66-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	8.97E+03	5.17E+01	NA	NA	NA	NA	5.36E-04	9.06E+02	4.85E-01	7.11E-02	1.09E-01	3.40E+01	7.76E+02	1.97E-01	6.90E+02	4.92E-02
BREOT-N67-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	1.04E+05	6.02E+02	NA	NA	NA	NA	5.36E-04	1.05E+04	5.65E+00	7.11E-02	1.09E-01	3.96E+02	7.76E+02	1.97E-01	6.90E+02	5.73E-01
BREOT-S67-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	5.83E+03	3.36E+01	NA	NA	NA	NA	5.36E-04	5.88E+02	3.15E-01	7.11E-02	1.09E-01	2.21E+01	7.76E+02	1.97E-01	6.90E+02	3.20E-02
At Edge of Tailings																					**Maximum HQ (Inside Tailings)**		**8.85E-01**
BREOT-S0-0 (06)	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	7.55E+03	4.35E+01	NA	NA	NA	NA	5.36E-04	7.62E+02	4.08E-01	7.11E-02	1.09E-01	2.86E+01	7.76E+02	1.97E-01	6.90E+02	4.14E-02
BREOT-S1-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	8.39E+03	4.83E+01	NA	NA	NA	NA	5.36E-04	8.47E+02	4.54E-01	7.11E-02	1.09E-01	3.18E+01	7.76E+02	1.97E-01	6.90E+02	4.60E-02
BREOT-S2-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	2.24E+04	1.29E+02	NA	NA	NA	NA	5.36E-04	2.26E+03	1.21E+00	7.11E-02	1.09E-01	8.48E+01	7.76E+02	1.97E-01	6.90E+02	1.23E-01
BREOT-S3-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	5.65E+04	3.26E+02	NA	NA	NA	NA	5.36E-04	5.70E+03	3.06E+00	7.11E-02	1.09E-01	2.14E+02	7.76E+02	1.97E-01	6.90E+02	3.10E-01
BREOT-S4-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	6.63E+04	3.82E+02	NA	NA	NA	NA	5.36E-04	6.69E+03	3.58E+00	7.11E-02	1.09E-01	2.51E+02	7.76E+02	1.97E-01	6.90E+02	3.64E-01
BREOT-S6-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S7-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S8-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	1.16E+04	6.66E+01	NA	NA	NA	NA	5.36E-04	1.17E+03	6.25E-01	7.11E-02	1.09E-01	4.38E+01	7.76E+02	1.97E-01	6.90E+02	6.34E-02
BREOT-S9-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N10-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	7.98E+04	4.60E+02	NA	NA	NA	NA	5.36E-04	8.05E+03	4.31E+00	7.11E-02	1.09E-01	3.02E+02	7.76E+02	1.97E-01	6.90E+02	4.38E-01
BREOT-N11-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	3.73E+03	2.15E+01	NA	NA	NA	NA	5.36E-04	3.76E+02	2.02E-01	7.11E-02	1.09E-01	1.41E+01	7.76E+02	1.97E-01	6.90E+02	2.05E-02
BREOT-S11-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	1.98E+04	1.14E+02	NA	NA	NA	NA	5.36E-04	1.99E+03	1.07E+00	7.11E-02	1.09E-01	7.48E+01	7.76E+02	1.97E-01	6.90E+02	1.08E-01
BREOT-N12-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	1.04E+04	5.98E+01	NA	NA	NA	NA	5.36E-04	1.05E+03	5.61E-01	7.11E-02	1.09E-01	3.93E+01	7.76E+02	1.97E-01	6.90E+02	5.69E-02
BREOT-S12-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	2.96E+04	1.71E+02	NA	NA	NA	NA	5.36E-04	2.99E+03	1.60E+00	7.11E-02	1.09E-01	1.12E+02	7.76E+02	1.97E-01	6.90E+02	1.62E-01
BREOT-N13-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	1.54E+04	8.87E+01	NA	NA	NA	NA	5.36E-04	1.55E+03	8.33E-01	7.11E-02	1.09E-01	5.83E+01	7.76E+02	1.97E-01	6.90E+02	8.45E-02
BREOT-S13-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	8.57E+03	4.94E+01	NA	NA	NA	NA	5.36E-04	8.65E+02	4.64E-01	7.11E-02	1.09E-01	3.25E+01	7.76E+02	1.97E-01	6.90E+02	4.70E-02
BREOT-N14-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	1.53E+04	8.84E+01	NA	NA	NA	NA	5.36E-04	1.55E+03	8.30E-01	7.11E-02	1.09E-01	5.81E+01	7.76E+02	1.97E-01	6.90E+02	8.42E-02
BREOT-S14-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	9.07E+04	5.23E+02	NA	NA	NA	NA	5.36E-04	9.15E+03	4.90E+00	7.11E-02	1.09E-01	3.43E+02	7.76E+02	1.97E-01	6.90E+02	4.98E-01
BREOT-N15-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	8.03E+03	4.62E+01	NA	NA	NA	NA	5.36E-04	8.10E+02	4.34E-01	7.11E-02	1.09E-01	3.04E+01	7.76E+02	1.97E-01	6.90E+02	4.40E-02
BREOT-N16-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	6.08E+03	3.50E+01	NA	NA	NA	NA	5.36E-04	6.13E+02	3.29E-01	7.11E-02	1.09E-01	2.30E+01	7.76E+02	1.97E-01	6.90E+02	3.33E-02
BREOT-S16-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	1.07E+04	6.14E+01	NA	NA	NA	NA	5.36E-04	1.08E+03	5.77E-01	7.11E-02	1.09E-01	4.04E+01	7.76E+02	1.97E-01	6.90E+02	5.85E-02
BREOT-N17-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	1.64E+04	9.46E+01	NA	NA	NA	NA	5.36E-04	1.66E+03	8.88E-01	7.11E-02	1.09E-01	6.21E+01	7.76E+02	1.97E-01	6.90E+02	9.01E-02
BREOT-S17-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	5.05E+03	2.91E+01	NA	NA	NA	NA	5.36E-04	5.10E+02	2.73E-01	7.11E-02	1.09E-01	1.91E+01	7.76E+02	1.97E-01	6.90E+02	2.77E-02
BREOT-N18-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	6.44E+03	3.71E+01	NA	NA	NA	NA	5.36E-04	6.50E+02	3.48E-01	7.11E-02	1.09E-01	2.44E+01	7.76E+02	1.97E-01	6.90E+02	3.54E-02
BREOT-S18-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	4.03E+06	2.32E+04	NA	NA	NA	NA	5.36E-04	4.07E+05	2.18E+02	7.11E-02	1.09E-01	1.53E+04	7.76E+02	1.97E-01	6.90E+02	2.21E+01
BREOT-N19-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	4.45E+04	2.57E+02	NA	NA	NA	NA	5.36E-04	4.49E+03	2.41E+00	7.11E-02	1.09E-01	1.69E+02	7.76E+02	1.97E-01	6.90E+02	2.44E-01
BREOT-S19-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	1.25E+04	7.18E+01	NA	NA	NA	NA	5.36E-04	1.26E+03	6.74E-01	7.11E-02	1.09E-01	4.72E+01	7.76E+02	1.97E-01	6.90E+02	6.84E-02
BREOT-N20-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	9.90E+04	5.70E+02	NA	NA	NA	NA	5.36E-04	9.99E+03	5.35E+00	7.11E-02	1.09E-01	3.75E+02	7.76E+02	1.97E-01	6.90E+02	5.43E-01
BREOT-S20-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	7.90E+03	4.55E+01	NA	NA	NA	NA	5.36E-04	7.97E+02	4.27E-01	7.11E-02	1.09E-01	2.99E+01	7.76E+02	1.97E-01	6.90E+02	4.33E-02
BREOT-N21-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	6.43E+06	3.70E+04	NA	NA	NA	NA	5.36E-04	6.49E+05	3.48E+02	7.11E-02	1.09E-01	2.43E+04	7.76E+02	1.97E-01	6.90E+02	3.53E+01
BREOT-S21-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	3.36E+03	1.94E+01	NA	NA	NA	NA	5.36E-04	3.39E+02	1.82E-01	7.11E-02	1.09E-01	1.27E+01	7.76E+02	1.97E-01	6.90E+02	1.84E-02
BREOT-N22-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	8.47E+03	4.88E+01	NA	NA	NA	NA	5.36E-04	8.55E+02	4.58E-01	7.11E-02	1.09E-01	3.21E+01	7.76E+02	1.97E-01	6.90E+02	4.65E-02
BREOT-S22-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N23-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	2.97E+04	1.71E+02	NA	NA	NA	NA	5.36E-04	3.00E+03	1.61E+00	7.11E-02	1.09E-01	1.12E+02	7.76E+02	1.97E-01	6.90E+02	1.63E-01
BREOT-S23-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	1.65E+04	9.48E+01	NA	NA	NA	NA	5.36E-04	1.66E+03	8.90E-01	7.11E-02	1.09E-01	6.23E+01	7.76E+02	1.97E-01	6.90E+02	9.03E-02
BREOT-N24-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	1.32E+04	7.62E+01	NA	NA	NA	NA	5.36E-04	1.33E+03	7.15E-01	7.11E-02	1.09E-01	5.01E+01	7.76E+02	1.97E-01	6.90E+02	7.26E-02
BREOT-S24-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	2.39E+05	1.38E+03	NA	NA	NA	NA	5.36E-04	2.41E+04	1.29E+01	7.11E-02	1.09E-01	9.05E+02	7.76E+02	1.97E-01	6.90E+02	1.31E+00
BREOT-N25-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	4.00E+04	2.30E+02	NA	NA	NA	NA	5.36E-04	4.04E+03	2.16E+00	7.11E-02	1.09E-01	1.51E+02	7.76E+02	1.97E-01	6.90E+02	2.19E-01
BREOT-S25-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	5.73E+04	3.30E+02	NA	NA	NA	NA	5.36E-04	5.79E+03	3.10E+00	7.11E-02	1.09E-01	2.17E+02	7.76E+02	1.97E-01	6.90E+02	3.15E-01
BREOT-N26-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	2.60E+04	1.50E+02	NA	NA	NA	NA	5.36E-04	2.63E+03	1.41E+00	7.11E-02	1.09E-01	9.86E+01	7.76E+02	1.97E-01	6.90E+02	1.43E-01
BREOT-S26-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	3.10E+04	1.79E+02	NA	NA	NA	NA	5.36E-04	3.13E+03	1.68E+00	7.11E-02	1.09E-01	1.17E+02	7.76E+02	1.97E-01	6.90E+02	1.70E-01
BREOT-N27-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	4.97E+04	2.86E+02	NA	NA	NA	NA	5.36E-04	5.02E+03	2.69E+00	7.11E-02	1.09E-01	1.88E+02	7.76E+02	1.97E-01	6.90E+02	2.73E-01
BREOT-S27-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	3.51E+04	2.02E+02	NA	NA	NA	NA	5.36E-04	3.54E+03	1.90E+00	7.11E-02	1.09E-01	1.33E+02	7.76E+02	1.97E-01	6.90E+02	1.93E-01

TABLE C-2E: MANGANESE DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **18.41**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Mourning Dove (Herbivorous Birds - Terrestrial)																							
BREOT-N28-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	2.15E+04	1.24E+02	NA	NA	NA	NA	5.36E-04	2.17E+03	1.16E+00	7.11E-02	1.09E-01	8.13E+01	7.76E+02	1.97E-01	6.90E+02	1.18E-01
BREOT-S28-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S29-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	7.27E+03	4.19E+01	NA	NA	NA	NA	5.36E-04	7.34E+02	3.93E-01	7.11E-02	1.09E-01	2.75E+01	7.76E+02	1.97E-01	6.90E+02	3.99E-02
BREOT-N30-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	3.42E+04	1.97E+02	NA	NA	NA	NA	5.36E-04	3.45E+03	1.85E+00	7.11E-02	1.09E-01	1.30E+02	7.76E+02	1.97E-01	6.90E+02	1.88E-01
BREOT-S30-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N31-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	3.37E+04	1.94E+02	NA	NA	NA	NA	5.36E-04	3.41E+03	1.82E+00	7.11E-02	1.09E-01	1.28E+02	7.76E+02	1.97E-01	6.90E+02	1.85E-01
BREOT-S31-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N32-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	1.54E+04	8.86E+01	NA	NA	NA	NA	5.36E-04	1.55E+03	8.31E-01	7.11E-02	1.09E-01	5.82E+01	7.76E+02	1.97E-01	6.90E+02	8.44E-02
BREOT-S32-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	1.20E+04	6.94E+01	NA	NA	NA	NA	5.36E-04	1.21E+03	6.51E-01	7.11E-02	1.09E-01	4.56E+01	7.76E+02	1.97E-01	6.90E+02	6.60E-02
BREOT-N33-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	9.50E+03	5.47E+01	NA	NA	NA	NA	5.36E-04	9.58E+02	5.13E-01	7.11E-02	1.09E-01	3.59E+01	7.76E+02	1.97E-01	6.90E+02	5.21E-02
BREOT-S33-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	1.82E+04	1.05E+02	NA	NA	NA	NA	5.36E-04	1.83E+03	9.82E-01	7.11E-02	1.09E-01	6.87E+01	7.76E+02	1.97E-01	6.90E+02	9.96E-02
BREOT-N34-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	1.45E+04	8.37E+01	NA	NA	NA	NA	5.36E-04	1.47E+03	7.85E-01	7.11E-02	1.09E-01	5.50E+01	7.76E+02	1.97E-01	6.90E+02	7.97E-02
BREOT-S34-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	7.17E+04	4.13E+02	NA	NA	NA	NA	5.36E-04	7.24E+03	3.88E+00	7.11E-02	1.09E-01	2.71E+02	7.76E+02	1.97E-01	6.90E+02	3.93E-01
BREOT-N35-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	7.99E+03	4.61E+01	NA	NA	NA	NA	5.36E-04	8.07E+02	4.32E-01	7.11E-02	1.09E-01	3.03E+01	7.76E+02	1.97E-01	6.90E+02	4.39E-02
BREOT-S35-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	1.23E+04	7.07E+01	NA	NA	NA	NA	5.36E-04	1.24E+03	6.64E-01	7.11E-02	1.09E-01	4.65E+01	7.76E+02	1.97E-01	6.90E+02	6.74E-02
BREOT-N36-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	8.37E+04	4.82E+02	NA	NA	NA	NA	5.36E-04	8.44E+03	4.52E+00	7.11E-02	1.09E-01	3.17E+02	7.76E+02	1.97E-01	6.90E+02	4.59E-01
BREOT-S36-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	6.31E+04	3.64E+02	NA	NA	NA	NA	5.36E-04	6.37E+03	3.41E+00	7.11E-02	1.09E-01	2.39E+02	7.76E+02	1.97E-01	6.90E+02	3.46E-01
BREOT-N37-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	1.37E+04	7.91E+01	NA	NA	NA	NA	5.36E-04	1.39E+03	7.43E-01	7.11E-02	1.09E-01	5.20E+01	7.76E+02	1.97E-01	6.90E+02	7.53E-02
BREOT-S37-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	8.05E+04	4.64E+02	NA	NA	NA	NA	5.36E-04	8.13E+03	4.35E+00	7.11E-02	1.09E-01	3.05E+02	7.76E+02	1.97E-01	6.90E+02	4.42E-01
BREOT-N38-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	7.28E+03	4.19E+01	NA	NA	NA	NA	5.36E-04	7.35E+02	3.94E-01	7.11E-02	1.09E-01	2.76E+01	7.76E+02	1.97E-01	6.90E+02	3.99E-02
BREOT-S38-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	4.63E+04	2.67E+02	NA	NA	NA	NA	5.36E-04	4.67E+03	2.50E+00	7.11E-02	1.09E-01	1.75E+02	7.76E+02	1.97E-01	6.90E+02	2.54E-01
BREOT-N39-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	8.57E+03	4.94E+01	NA	NA	NA	NA	5.36E-04	8.65E+02	4.64E-01	7.11E-02	1.09E-01	3.24E+01	7.76E+02	1.97E-01	6.90E+02	4.70E-02
BREOT-N40-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	9.22E+03	5.31E+01	NA	NA	NA	NA	5.36E-04	9.30E+02	4.99E-01	7.11E-02	1.09E-01	3.49E+01	7.76E+02	1.97E-01	6.90E+02	5.06E-02
BREOT-S40-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	8.61E+04	4.96E+02	NA	NA	NA	NA	5.36E-04	8.68E+03	4.65E+00	7.11E-02	1.09E-01	3.26E+02	7.76E+02	1.97E-01	6.90E+02	4.72E-01
BREOT-N41-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	4.84E+03	2.79E+01	NA	NA	NA	NA	5.36E-04	4.89E+02	2.62E-01	7.11E-02	1.09E-01	1.83E+01	7.76E+02	1.97E-01	6.90E+02	2.66E-02
BREOT-S41-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	9.20E+04	5.30E+02	NA	NA	NA	NA	5.36E-04	9.28E+03	4.97E+00	7.11E-02	1.09E-01	3.48E+02	7.76E+02	1.97E-01	6.90E+02	5.05E-01
BREOT-N42-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S42-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	1.05E+05	6.03E+02	NA	NA	NA	NA	5.36E-04	1.06E+04	5.66E+00	7.11E-02	1.09E-01	3.96E+02	7.76E+02	1.97E-01	6.90E+02	5.74E-01
BREOT-N43-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	6.14E+03	3.54E+01	NA	NA	NA	NA	5.36E-04	6.20E+02	3.32E-01	7.11E-02	1.09E-01	2.33E+01	7.76E+02	1.97E-01	6.90E+02	3.37E-02
BREOT-S43-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	9.75E+03	5.62E+01	NA	NA	NA	NA	5.36E-04	9.84E+02	5.27E-01	7.11E-02	1.09E-01	3.69E+01	7.76E+02	1.97E-01	6.90E+02	5.35E-02
BREOT-N44-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	1.36E+04	7.85E+01	NA	NA	NA	NA	5.36E-04	1.38E+03	7.37E-01	7.11E-02	1.09E-01	5.16E+01	7.76E+02	1.97E-01	6.90E+02	7.48E-02
BREOT-S44-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	1.15E+04	6.64E+01	NA	NA	NA	NA	5.36E-04	1.16E+03	6.23E-01	7.11E-02	1.09E-01	4.36E+01	7.76E+02	1.97E-01	6.90E+02	6.32E-02
BREOT-N45-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	9.59E+03	5.52E+01	NA	NA	NA	NA	5.36E-04	9.67E+02	5.18E-01	7.11E-02	1.09E-01	3.63E+01	7.76E+02	1.97E-01	6.90E+02	5.26E-02
BREOT-S45-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	6.52E+03	3.76E+01	NA	NA	NA	NA	5.36E-04	6.58E+02	3.53E-01	7.11E-02	1.09E-01	2.47E+01	7.76E+02	1.97E-01	6.90E+02	3.58E-02
BREOT-N46-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	6.79E+03	3.91E+01	NA	NA	NA	NA	5.36E-04	6.85E+02	3.67E-01	7.11E-02	1.09E-01	2.57E+01	7.76E+02	1.97E-01	6.90E+02	3.72E-02
BREOT-S46-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	7.96E+03	4.59E+01	NA	NA	NA	NA	5.36E-04	8.03E+02	4.30E-01	7.11E-02	1.09E-01	3.01E+01	7.76E+02	1.97E-01	6.90E+02	4.37E-02
BREOT-N47-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	8.45E+03	4.87E+01	NA	NA	NA	NA	5.36E-04	8.53E+02	4.57E-01	7.11E-02	1.09E-01	3.20E+01	7.76E+02	1.97E-01	6.90E+02	4.64E-02
BREOT-S47-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N48-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	5.53E+03	3.18E+01	NA	NA	NA	NA	5.36E-04	5.58E+02	2.99E-01	7.11E-02	1.09E-01	2.09E+01	7.76E+02	1.97E-01	6.90E+02	3.03E-02
BREOT-S48-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N49-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	1.00E+04	5.78E+01	NA	NA	NA	NA	5.36E-04	1.01E+03	5.42E-01	7.11E-02	1.09E-01	3.79E+01	7.76E+02	1.97E-01	6.90E+02	5.50E-02
BREOT-S49-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S50-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N51-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	1.66E+04	9.56E+01	NA	NA	NA	NA	5.36E-04	1.67E+03	8.97E-01	7.11E-02	1.09E-01	6.28E+01	7.76E+02	1.97E-01	6.90E+02	9.10E-02
BREOT-S51-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N52-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S52-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N53-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	5.58E+03	3.22E+01	NA	NA	NA	NA	5.36E-04	5.63E+02	3.02E-01	7.11E-02	1.09E-01	2.11E+01	7.76E+02	1.97E-01	6.90E+02	3.06E-02
BREOT-S53-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N54-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	6.73E+03	3.88E+01	NA	NA	NA	NA	5.36E-04	6.79E+02	3.64E-01	7.11E-02	1.09E-01	2.55E+01	7.76E+02	1.97E-01	6.90E+02	3.69E-02
BREOT-S54-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N55-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	1.02E+04	5.89E+01	NA	NA	NA	NA	5.36E-04	1.03E+03	5.53E-01	7.11E-02	1.09E-01	3.87E+01	7.76E+02	1.97E-01	6.90E+02	5.61E-02
BREOT-S55-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N56-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	6.49E+03	3.74E+01	NA	NA	NA	NA	5.36E-04	6.55E+02	3.51E-01	7.11E-02	1.09E-01	2.46E+01	7.76E+02	1.97E-01	6.90E+02	3.56E-02
BREOT-N57-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	9.22E+03	5.31E+01	NA	NA	NA	NA	5.36E-04	9.31E+02	4.99E-01	7.11E-02	1.09E-01	3.49E+01	7.76E+02	1.97E-01	6.90E+02	5.06E-02

TABLE C-2E: MANGANESE DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **18.41**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Mourning Dove (Herbivorous Birds - Terrestrial)																							
BREOT-S57-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	9.28E+03	5.34E+01	NA	NA	NA	NA	5.36E-04	9.36E+02	5.02E-01	7.11E-02	1.09E-01	3.51E+01	7.76E+02	1.97E-01	6.90E+02	5.09E-02
BREOT-N58-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	9.72E+03	5.60E+01	NA	NA	NA	NA	5.36E-04	9.81E+02	5.26E-01	7.11E-02	1.09E-01	3.68E+01	7.76E+02	1.97E-01	6.90E+02	5.33E-02
BREOT-S58-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	5.11E+04	2.95E+02	NA	NA	NA	NA	5.36E-04	5.16E+03	2.76E+00	7.11E-02	1.09E-01	1.94E+02	7.76E+02	1.97E-01	6.90E+02	2.81E-01
BREOT-N59-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	8.75E+03	5.04E+01	NA	NA	NA	NA	5.36E-04	8.83E+02	4.73E-01	7.11E-02	1.09E-01	3.31E+01	7.76E+02	1.97E-01	6.90E+02	4.80E-02
BREOT-N60-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	3.57E+03	2.06E+01	NA	NA	NA	NA	5.36E-04	3.60E+02	1.93E-01	7.11E-02	1.09E-01	1.35E+01	7.76E+02	1.97E-01	6.90E+02	1.96E-02
BREOT-S60-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	2.64E+04	1.52E+02	NA	NA	NA	NA	5.36E-04	2.66E+03	1.43E+00	7.11E-02	1.09E-01	9.99E+01	7.76E+02	1.97E-01	6.90E+02	1.45E-01
BREOT-S61-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N62-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	9.21E+03	5.31E+01	NA	NA	NA	NA	5.36E-04	9.29E+02	4.98E-01	7.11E-02	1.09E-01	3.49E+01	7.76E+02	1.97E-01	6.90E+02	5.05E-02
BREOT-S62-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N63-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	1.13E+04	6.49E+01	NA	NA	NA	NA	5.36E-04	1.14E+03	6.09E-01	7.11E-02	1.09E-01	4.27E+01	7.76E+02	1.97E-01	6.90E+02	6.18E-02
BREOT-S63-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	1.28E+04	7.36E+01	NA	NA	NA	NA	5.36E-04	1.29E+03	6.91E-01	7.11E-02	1.09E-01	4.84E+01	7.76E+02	1.97E-01	6.90E+02	7.01E-02
BREOT-N64-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	4.27E+03	2.46E+01	NA	NA	NA	NA	5.36E-04	4.31E+02	2.31E-01	7.11E-02	1.09E-01	1.62E+01	7.76E+02	1.97E-01	6.90E+02	2.35E-02
BREOT-S64-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	1.51E+03	8.72E+00	NA	NA	NA	NA	5.36E-04	1.53E+02	8.19E-02	7.11E-02	1.09E-01	5.73E+00	7.76E+02	1.97E-01	6.90E+02	8.31E-03
BREOT-N66-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	9.39E+03	5.41E+01	NA	NA	NA	NA	5.36E-04	9.47E+02	5.08E-01	7.11E-02	1.09E-01	3.55E+01	7.76E+02	1.97E-01	6.90E+02	5.15E-02
BREOT-S66-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	1.17E+04	6.75E+01	NA	NA	NA	NA	5.36E-04	1.18E+03	6.33E-01	7.11E-02	1.09E-01	4.43E+01	7.76E+02	1.97E-01	6.90E+02	6.42E-02
BREOT-N67-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	7.92E+04	4.56E+02	NA	NA	NA	NA	5.36E-04	7.99E+03	4.28E+00	7.11E-02	1.09E-01	3.00E+02	7.76E+02	1.97E-01	6.90E+02	4.34E-01
BREOT-S67-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	5.84E+03	3.37E+01	NA	NA	NA	NA	5.36E-04	5.90E+02	3.16E-01	7.11E-02	1.09E-01	2.21E+01	7.76E+02	1.97E-01	6.90E+02	3.21E-02
Outside Tailings																						**Maximum HQ (At Edge of Tailings)**	**3.53E+01**
BREOT-S0+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	9.49E+03	5.47E+01	NA	NA	NA	NA	5.36E-04	9.57E+02	5.13E-01	7.11E-02	1.09E-01	3.59E+01	7.76E+02	1.97E-01	6.90E+02	5.20E-02
BREOT-S1+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	1.37E+04	7.90E+01	NA	NA	NA	NA	5.36E-04	1.38E+03	7.42E-01	7.11E-02	1.09E-01	5.19E+01	7.76E+02	1.97E-01	6.90E+02	7.53E-02
BREOT-S2+95 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	8.86E+03	5.10E+01	NA	NA	NA	NA	5.36E-04	8.94E+02	4.79E-01	7.11E-02	1.09E-01	3.35E+01	7.76E+02	1.97E-01	6.90E+02	4.86E-02
BREOT-S3+6 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	5.50E+03	3.17E+01	NA	NA	NA	NA	5.36E-04	5.55E+02	2.97E-01	7.11E-02	1.09E-01	2.08E+01	7.76E+02	1.97E-01	6.90E+02	3.02E-02
BREOT-S4+10 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	1.06E+04	6.09E+01	NA	NA	NA	NA	5.36E-04	1.07E+03	5.72E-01	7.11E-02	1.09E-01	4.00E+01	7.76E+02	1.97E-01	6.90E+02	5.80E-02
BREOT-S6+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	8.36E+03	4.82E+01	NA	NA	NA	NA	5.36E-04	8.43E+02	4.52E-01	7.11E-02	1.09E-01	3.16E+01	7.76E+02	1.97E-01	6.90E+02	4.59E-02
BREOT-S8+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	8.55E+03	4.93E+01	NA	NA	NA	NA	5.36E-04	8.63E+02	4.62E-01	7.11E-02	1.09E-01	3.24E+01	7.76E+02	1.97E-01	6.90E+02	4.69E-02
BREOT-N10+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	7.79E+03	4.49E+01	NA	NA	NA	NA	5.36E-04	7.87E+02	4.21E-01	7.11E-02	1.09E-01	2.95E+01	7.76E+02	1.97E-01	6.90E+02	4.28E-02
BREOT-N11+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	8.89E+03	5.12E+01	NA	NA	NA	NA	5.36E-04	8.97E+02	4.81E-01	7.11E-02	1.09E-01	3.37E+01	7.76E+02	1.97E-01	6.90E+02	4.88E-02
BREOT-N12+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	9.72E+03	5.60E+01	NA	NA	NA	NA	5.36E-04	9.81E+02	5.26E-01	7.11E-02	1.09E-01	3.68E+01	7.76E+02	1.97E-01	6.90E+02	5.33E-02
BREOT-S12+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	3.14E+04	1.81E+02	NA	NA	NA	NA	5.36E-04	3.16E+03	1.70E+00	7.11E-02	1.09E-01	1.19E+02	7.76E+02	1.97E-01	6.90E+02	1.72E-01
BREOT-S12+60 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	7.42E+03	4.27E+01	NA	NA	NA	NA	5.36E-04	7.49E+02	4.01E-01	7.11E-02	1.09E-01	2.81E+01	7.76E+02	1.97E-01	6.90E+02	4.07E-02
BREOT-N13+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	1.30E+04	7.50E+01	NA	NA	NA	NA	5.36E-04	1.31E+03	7.04E-01	7.11E-02	1.09E-01	4.93E+01	7.76E+02	1.97E-01	6.90E+02	7.14E-02
BREOT-S13+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	2.20E+04	1.27E+02	NA	NA	NA	NA	5.36E-04	2.22E+03	1.19E+00	7.11E-02	1.09E-01	8.34E+01	7.76E+02	1.97E-01	6.90E+02	1.21E-01
BREOT-S13+65 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	1.18E+04	6.80E+01	NA	NA	NA	NA	5.36E-04	1.19E+03	6.38E-01	7.11E-02	1.09E-01	4.47E+01	7.76E+02	1.97E-01	6.90E+02	6.48E-02
BREOT-N14+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	1.52E+04	8.79E+01	NA	NA	NA	NA	5.36E-04	1.54E+03	8.25E-01	7.11E-02	1.09E-01	5.77E+01	7.76E+02	1.97E-01	6.90E+02	8.37E-02
BREOT-S14+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	3.04E+04	1.75E+02	NA	NA	NA	NA	5.36E-04	3.07E+03	1.64E+00	7.11E-02	1.09E-01	1.15E+02	7.76E+02	1.97E-01	6.90E+02	1.67E-01
BREOT-S14+59 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	3.35E+03	1.93E+01	NA	NA	NA	NA	5.36E-04	3.38E+02	1.81E-01	7.11E-02	1.09E-01	1.27E+01	7.76E+02	1.97E-01	6.90E+02	1.84E-02
BREOT-N15+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	5.02E+04	2.89E+02	NA	NA	NA	NA	5.36E-04	5.07E+03	2.71E+00	7.11E-02	1.09E-01	1.90E+02	7.76E+02	1.97E-01	6.90E+02	2.75E-01
BREOT-N15+50 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	1.26E+04	7.26E+01	NA	NA	NA	NA	5.36E-04	1.27E+03	6.81E-01	7.11E-02	1.09E-01	4.77E+01	7.76E+02	1.97E-01	6.90E+02	6.91E-02
BREOT-S16+20 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	2.70E+04	1.56E+02	NA	NA	NA	NA	5.36E-04	2.73E+03	1.46E+00	7.11E-02	1.09E-01	1.02E+02	7.76E+02	1.97E-01	6.90E+02	1.48E-01
BREOT-S16+75 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	5.93E+03	3.41E+01	NA	NA	NA	NA	5.36E-04	5.98E+02	3.20E-01	7.11E-02	1.09E-01	2.24E+01	7.76E+02	1.97E-01	6.90E+02	3.25E-02
BREOT-N17+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	1.42E+04	8.19E+01	NA	NA	NA	NA	5.36E-04	1.43E+03	7.69E-01	7.11E-02	1.09E-01	5.38E+01	7.76E+02	1.97E-01	6.90E+02	7.80E-02
BREOT-S18+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	3.13E+03	1.80E+01	NA	NA	NA	NA	5.36E-04	3.16E+02	1.69E-01	7.11E-02	1.09E-01	1.19E+01	7.76E+02	1.97E-01	6.90E+02	1.72E-02
BREOT-N19+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	7.15E+03	4.12E+01	NA	NA	NA	NA	5.36E-04	7.22E+02	3.87E-01	7.11E-02	1.09E-01	2.71E+01	7.76E+02	1.97E-01	6.90E+02	3.92E-02
BREOT-S19+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	4.71E+06	2.71E+04	NA	NA	NA	NA	5.36E-04	4.75E+05	2.55E+02	7.11E-02	1.09E-01	1.78E+04	7.76E+02	1.97E-01	6.90E+02	2.59E+01
BREOT-S19+85 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	7.21E+03	4.16E+01	NA	NA	NA	NA	5.36E-04	7.28E+02	3.90E-01	7.11E-02	1.09E-01	2.73E+01	7.76E+02	1.97E-01	6.90E+02	3.96E-02
BREOT-N20+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	9.68E+03	5.58E+01	NA	NA	NA	NA	5.36E-04	9.77E+02	5.23E-01	7.11E-02	1.09E-01	3.66E+01	7.76E+02	1.97E-01	6.90E+02	5.31E-02
BREOT-S20+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	6.70E+06	3.86E+04	NA	NA	NA	NA	5.36E-04	6.77E+05	3.63E+02	7.11E-02	1.09E-01	2.54E+04	7.76E+02	1.97E-01	6.90E+02	3.68E+01
BREOT-S20+75 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	7.56E+03	4.36E+01	NA	NA	NA	NA	5.36E-04	7.63E+02	4.09E-01	7.11E-02	1.09E-01	2.86E+01	7.76E+02	1.97E-01	6.90E+02	4.15E-02
BREOT-N21+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S21+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	3.32E+06	1.91E+04	NA	NA	NA	NA	5.36E-04	3.35E+05	1.80E+02	7.11E-02	1.09E-01	1.26E+04	7.76E+02	1.97E-01	6.90E+02	1.82E+01
BREOT-N22+150 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	8.94E+03	5.15E+01	NA	NA	NA	NA	5.36E-04	9.02E+02	4.83E-01	7.11E-02	1.09E-01	3.38E+01	7.76E+02	1.97E-01	6.90E+02	4.90E-02
BREOT-N22+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	2.56E+04	1.47E+02	NA	NA	NA	NA	5.36E-04	2.58E+03	1.38E+00	7.11E-02	1.09E-01	9.69E+01	7.76E+02	1.97E-01	6.90E+02	1.40E-01
BREOT-S22+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	1.64E+04	9.43E+01	NA	NA	NA	NA	5.36E-04	1.65E+03	8.85E-01	7.11E-02	1.09E-01	6.20E+01	7.76E+02	1.97E-01	6.90E+02	8.98E-02
BREOT-N23+115 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	6.92E+03	3.98E+01	NA	NA	NA	NA	5.36E-04	6.98E+02	3.74E-01	7.11E-02	1.09E-01	2.62E+01	7.76E+02	1.97E-01	6.90E+02	3.79E-02
BREOT-N23+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	4.74E+04	2.73E+02	NA	NA	NA	NA	5.36E-04	4.78E+03	2.56E+00	7.11E-02	1.09E-01	1.79E+02	7.76E+02	1.97E-01	6.90E+02	2.60E-01

TABLE C-2E: MANGANESE DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 18.41

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Mourning Dove (Herbivorous Birds - Terrestrial)																							
BREOT-S23+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	1.23E+04	7.11E+01	NA	NA	NA	NA	5.36E-04	1.24E+03	6.67E-01	7.11E-02	1.09E-01	4.67E+01	7.76E+02	1.97E-01	6.90E+02	6.77E-02
BREOT-S23+37.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	9.65E+03	5.56E+01	NA	NA	NA	NA	5.36E-04	9.74E+02	5.22E-01	7.11E-02	1.09E-01	3.65E+01	7.76E+02	1.97E-01	6.90E+02	5.30E-02
BREOT-N24+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	9.04E+04	5.21E+02	NA	NA	NA	NA	5.36E-04	9.13E+03	4.89E+00	7.11E-02	1.09E-01	3.42E+02	7.76E+02	1.97E-01	6.90E+02	4.96E-01
BREOT-N24+75 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	9.86E+03	5.68E+01	NA	NA	NA	NA	5.36E-04	9.95E+02	5.33E-01	7.11E-02	1.09E-01	3.73E+01	7.76E+02	1.97E-01	6.90E+02	5.41E-02
BREOT-S24+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	1.82E+04	1.05E+02	NA	NA	NA	NA	5.36E-04	1.84E+03	9.85E-01	7.11E-02	1.09E-01	6.89E+01	7.76E+02	1.97E-01	6.90E+02	9.99E-02
BREOT-N25+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	3.28E+03	1.89E+01	NA	NA	NA	NA	5.36E-04	3.31E+02	1.77E-01	7.11E-02	1.09E-01	1.24E+01	7.76E+02	1.97E-01	6.90E+02	1.80E-02
BREOT-S25+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	1.06E+04	6.13E+01	NA	NA	NA	NA	5.36E-04	1.07E+03	5.75E-01	7.11E-02	1.09E-01	4.03E+01	7.76E+02	1.97E-01	6.90E+02	5.83E-02
BREOT-S25+40 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S26+37 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	8.31E+03	4.79E+01	NA	NA	NA	NA	5.36E-04	8.39E+02	4.49E-01	7.11E-02	1.09E-01	3.15E+01	7.76E+02	1.97E-01	6.90E+02	4.56E-02
BREOT-N27+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	7.43E+03	4.28E+01	NA	NA	NA	NA	5.36E-04	7.50E+02	4.02E-01	7.11E-02	1.09E-01	2.81E+01	7.76E+02	1.97E-01	6.90E+02	4.08E-02
BREOT-S27+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	7.69E+03	4.43E+01	NA	NA	NA	NA	5.36E-04	7.76E+02	4.16E-01	7.11E-02	1.09E-01	2.91E+01	7.76E+02	1.97E-01	6.90E+02	4.22E-02
BREOT-N28+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	5.97E+03	3.44E+01	NA	NA	NA	NA	5.36E-04	6.03E+02	3.23E-01	7.11E-02	1.09E-01	2.26E+01	7.76E+02	1.97E-01	6.90E+02	3.28E-02
BREOT-S28+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	4.19E+03	2.41E+01	NA	NA	NA	NA	5.36E-04	4.22E+02	2.26E-01	7.11E-02	1.09E-01	1.58E+01	7.76E+02	1.97E-01	6.90E+02	2.30E-02
BREOT-N29+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	1.43E+04	8.25E+01	NA	NA	NA	NA	5.36E-04	1.44E+03	7.74E-01	7.11E-02	1.09E-01	5.42E+01	7.76E+02	1.97E-01	6.90E+02	7.85E-02
BREOT-S29+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	8.85E+03	5.10E+01	NA	NA	NA	NA	5.36E-04	8.94E+02	4.79E-01	7.11E-02	1.09E-01	3.35E+01	7.76E+02	1.97E-01	6.90E+02	4.86E-02
BREOT-N30+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	1.12E+04	6.45E+01	NA	NA	NA	NA	5.36E-04	1.13E+03	6.05E-01	7.11E-02	1.09E-01	4.24E+01	7.76E+02	1.97E-01	6.90E+02	6.14E-02
BREOT-S30+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	8.71E+03	5.02E+01	NA	NA	NA	NA	5.36E-04	8.79E+02	4.71E-01	7.11E-02	1.09E-01	3.30E+01	7.76E+02	1.97E-01	6.90E+02	4.78E-02
BREOT-N31+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	6.55E+04	3.77E+02	NA	NA	NA	NA	5.36E-04	6.61E+03	3.54E+00	7.11E-02	1.09E-01	2.48E+02	7.76E+02	1.97E-01	6.90E+02	3.59E-01
BREOT-N31+75 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	8.20E+03	4.73E+01	NA	NA	NA	NA	5.36E-04	8.28E+02	4.44E-01	7.11E-02	1.09E-01	3.11E+01	7.76E+02	1.97E-01	6.90E+02	4.50E-02
BREOT-S31+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	6.34E+03	3.65E+01	NA	NA	NA	NA	5.36E-04	6.40E+02	3.43E-01	7.11E-02	1.09E-01	2.40E+01	7.76E+02	1.97E-01	6.90E+02	3.48E-02
BREOT-N32+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	1.16E+04	6.68E+01	NA	NA	NA	NA	5.36E-04	1.17E+03	6.27E-01	7.11E-02	1.09E-01	4.39E+01	7.76E+02	1.97E-01	6.90E+02	6.36E-02
BREOT-S32+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	1.64E+04	9.45E+01	NA	NA	NA	NA	5.36E-04	1.66E+03	8.87E-01	7.11E-02	1.09E-01	6.21E+01	7.76E+02	1.97E-01	6.90E+02	9.00E-02
BREOT-S32+300 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	2.46E+04	1.42E+02	NA	NA	NA	NA	5.36E-04	2.49E+03	1.33E+00	7.11E-02	1.09E-01	9.33E+01	7.76E+02	1.97E-01	6.90E+02	1.35E-01
BREOT-N33+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	8.52E+03	4.91E+01	NA	NA	NA	NA	5.36E-04	8.60E+02	4.61E-01	7.11E-02	1.09E-01	3.22E+01	7.76E+02	1.97E-01	6.90E+02	4.67E-02
BREOT-S33+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	3.95E+04	2.28E+02	NA	NA	NA	NA	5.36E-04	3.99E+03	2.14E+00	7.11E-02	1.09E-01	1.50E+02	7.76E+02	1.97E-01	6.90E+02	2.17E-01
BREOT-N34+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	7.56E+03	4.35E+01	NA	NA	NA	NA	5.36E-04	7.63E+02	4.09E-01	7.11E-02	1.09E-01	2.86E+01	7.76E+02	1.97E-01	6.90E+02	4.15E-02
BREOT-S34+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	1.22E+04	7.01E+01	NA	NA	NA	NA	5.36E-04	1.23E+03	6.58E-01	7.11E-02	1.09E-01	4.60E+01	7.76E+02	1.97E-01	6.90E+02	6.67E-02
BREOT-N35+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	9.00E+03	5.18E+01	NA	NA	NA	NA	5.36E-04	9.08E+02	4.86E-01	7.11E-02	1.09E-01	3.41E+01	7.76E+02	1.97E-01	6.90E+02	4.94E-02
BREOT-S35+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	4.13E+04	2.38E+02	NA	NA	NA	NA	5.36E-04	4.17E+03	2.23E+00	7.11E-02	1.09E-01	1.56E+02	7.76E+02	1.97E-01	6.90E+02	2.27E-01
BREOT-N36+100 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	9.14E+03	5.26E+01	NA	NA	NA	NA	5.36E-04	9.22E+02	4.94E-01	7.11E-02	1.09E-01	3.46E+01	7.76E+02	1.97E-01	6.90E+02	5.01E-02
BREOT-N36+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	7.47E+04	4.30E+02	NA	NA	NA	NA	5.36E-04	7.54E+03	4.04E+00	7.11E-02	1.09E-01	2.83E+02	7.76E+02	1.97E-01	6.90E+02	4.10E-01
BREOT-S36+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	3.79E+04	2.18E+02	NA	NA	NA	NA	5.36E-04	3.82E+03	2.05E+00	7.11E-02	1.09E-01	1.43E+02	7.76E+02	1.97E-01	6.90E+02	2.08E-01
BREOT-N37+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	3.70E+03	2.13E+01	NA	NA	NA	NA	5.36E-04	3.73E+02	2.00E-01	7.11E-02	1.09E-01	1.40E+01	7.76E+02	1.97E-01	6.90E+02	2.03E-02
BREOT-S37+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	5.10E+04	2.94E+02	NA	NA	NA	NA	5.36E-04	5.15E+03	2.76E+00	7.11E-02	1.09E-01	1.93E+02	7.76E+02	1.97E-01	6.90E+02	2.80E-01
BREOT-N38+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	6.44E+03	3.71E+01	NA	NA	NA	NA	5.36E-04	6.50E+02	3.48E-01	7.11E-02	1.09E-01	2.44E+01	7.76E+02	1.97E-01	6.90E+02	3.53E-02
BREOT-S38+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	4.87E+04	2.81E+02	NA	NA	NA	NA	5.36E-04	4.92E+03	2.63E+00	7.11E-02	1.09E-01	1.84E+02	7.76E+02	1.97E-01	6.90E+02	2.67E-01
BREOT-N39+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	5.29E+03	3.05E+01	NA	NA	NA	NA	5.36E-04	5.34E+02	2.86E-01	7.11E-02	1.09E-01	2.00E+01	7.76E+02	1.97E-01	6.90E+02	2.90E-02
BREOT-S39+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	3.71E+04	2.14E+02	NA	NA	NA	NA	5.36E-04	3.74E+03	2.01E+00	7.11E-02	1.09E-01	1.40E+02	7.76E+02	1.97E-01	6.90E+02	2.04E-01
BREOT-N40+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	5.62E+03	3.24E+01	NA	NA	NA	NA	5.36E-04	5.67E+02	3.04E-01	7.11E-02	1.09E-01	2.13E+01	7.76E+02	1.97E-01	6.90E+02	3.08E-02
BREOT-S40+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	3.50E+04	2.02E+02	NA	NA	NA	NA	5.36E-04	3.53E+03	1.89E+00	7.11E-02	1.09E-01	1.33E+02	7.76E+02	1.97E-01	6.90E+02	1.92E-01
BREOT-N41+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	3.74E+03	2.16E+01	NA	NA	NA	NA	5.36E-04	3.78E+02	2.02E-01	7.11E-02	1.09E-01	1.42E+01	7.76E+02	1.97E-01	6.90E+02	2.05E-02
BREOT-S41+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	2.23E+04	1.29E+02	NA	NA	NA	NA	5.36E-04	2.26E+03	1.21E+00	7.11E-02	1.09E-01	8.46E+01	7.76E+02	1.97E-01	6.90E+02	1.23E-01
BREOT-N42+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S42+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	1.95E+04	1.12E+02	NA	NA	NA	NA	5.36E-04	1.97E+03	1.05E+00	7.11E-02	1.09E-01	7.38E+01	7.76E+02	1.97E-01	6.90E+02	1.07E-01
BREOT-N43+12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	7.37E+03	4.25E+01	NA	NA	NA	NA	5.36E-04	7.44E+02	3.99E-01	7.11E-02	1.09E-01	2.79E+01	7.76E+02	1.97E-01	6.90E+02	4.05E-02
BREOT-N43+40 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	7.43E+03	4.28E+01	NA	NA	NA	NA	5.36E-04	7.50E+02	4.02E-01	7.11E-02	1.09E-01	2.81E+01	7.76E+02	1.97E-01	6.90E+02	4.08E-02
BREOT-S43+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	9.41E+03	5.42E+01	NA	NA	NA	NA	5.36E-04	9.50E+02	5.09E-01	7.11E-02	1.09E-01	3.56E+01	7.76E+02	1.97E-01	6.90E+02	5.16E-02
BREOT-N44+55 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	6.58E+03	3.79E+01	NA	NA	NA	NA	5.36E-04	6.64E+02	3.56E-01	7.11E-02	1.09E-01	2.49E+01	7.76E+02	1.97E-01	6.90E+02	3.61E-02
BREOT-S44+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	1.25E+04	7.19E+01	NA	NA	NA	NA	5.36E-04	1.26E+03	6.74E-01	7.11E-02	1.09E-01	4.72E+01	7.76E+02	1.97E-01	6.90E+02	6.84E-02
BREOT-N45+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	6.44E+03	3.71E+01	NA	NA	NA	NA	5.36E-04	6.50E+02	3.48E-01	7.11E-02	1.09E-01	2.44E+01	7.76E+02	1.97E-01	6.90E+02	3.53E-02
BREOT-S45+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	3.01E+03	1.73E+01	NA	NA	NA	NA	5.36E-04	3.03E+02	1.63E-01	7.11E-02	1.09E-01	1.14E+01	7.76E+02	1.97E-01	6.90E+02	1.65E-02
BREOT-N46+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	9.58E+03	5.52E+01	NA	NA	NA	NA	5.36E-04	9.67E+02	5.18E-01	7.11E-02	1.09E-01	3.63E+01	7.76E+02	1.97E-01	6.90E+02	5.26E-02
BREOT-S46+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N47+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	7.72E+03	4.45E+01	NA	NA	NA	NA	5.36E-04	7.79E+02	4.18E-01	7.11E-02	1.09E-01	2.92E+01	7.76E+02	1.97E-01	6.90E+02	4.24E-02
BREOT-S47+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB

TABLE C-2E: MANGANESE DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 18.41

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Mourning Dove (Herbivorous Birds - Terrestrial)																							
BREOT-N48+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	6.12E+03	3.52E+01	NA	NA	NA	NA	5.36E-04	6.17E+02	3.31E-01	7.11E-02	1.09E-01	2.32E+01	7.76E+02	1.97E-01	6.90E+02	3.36E-02
BREOT-S48+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N49+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	9.17E+03	5.29E+01	NA	NA	NA	NA	5.36E-04	9.26E+02	4.96E-01	7.11E-02	1.09E-01	3.47E+01	7.76E+02	1.97E-01	6.90E+02	5.03E-02
BREOT-S49+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N51+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	7.77E+03	4.47E+01	NA	NA	NA	NA	5.36E-04	7.84E+02	4.20E-01	7.11E-02	1.09E-01	2.94E+01	7.76E+02	1.97E-01	6.90E+02	4.26E-02
BREOT-S51+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N52+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	3.21E+03	1.85E+01	NA	NA	NA	NA	5.36E-04	3.24E+02	1.74E-01	7.11E-02	1.09E-01	1.22E+01	7.76E+02	1.97E-01	6.90E+02	1.76E-02
BREOT-S52+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N53+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S53+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S54+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N55+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	7.07E+03	4.07E+01	NA	NA	NA	NA	5.36E-04	7.14E+02	3.82E-01	7.11E-02	1.09E-01	2.68E+01	7.76E+02	1.97E-01	6.90E+02	3.88E-02
BREOT-S55+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N56+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	6.92E+03	3.99E+01	NA	NA	NA	NA	5.36E-04	6.99E+02	3.74E-01	7.11E-02	1.09E-01	2.62E+01	7.76E+02	1.97E-01	6.90E+02	3.80E-02
BREOT-S56+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N57+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	7.29E+03	4.20E+01	NA	NA	NA	NA	5.36E-04	7.36E+02	3.94E-01	7.11E-02	1.09E-01	2.76E+01	7.76E+02	1.97E-01	6.90E+02	4.00E-02
BREOT-S57+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	2.42E+04	1.40E+02	NA	NA	NA	NA	5.36E-04	2.45E+03	1.31E+00	7.11E-02	1.09E-01	9.17E+01	7.76E+02	1.97E-01	6.90E+02	1.33E-01
BREOT-N58+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	9.64E+03	5.56E+01	NA	NA	NA	NA	5.36E-04	9.73E+02	5.22E-01	7.11E-02	1.09E-01	3.65E+01	7.76E+02	1.97E-01	6.90E+02	5.29E-02
BREOT-S58+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N59+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	1.52E+04	8.77E+01	NA	NA	NA	NA	5.36E-04	1.54E+03	8.23E-01	7.11E-02	1.09E-01	5.76E+01	7.76E+02	1.97E-01	6.90E+02	8.35E-02
BREOT-N60+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	5.19E+03	2.99E+01	NA	NA	NA	NA	5.36E-04	5.24E+02	2.81E-01	7.11E-02	1.09E-01	1.96E+01	7.76E+02	1.97E-01	6.90E+02	2.85E-02
BREOT-S60+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S61+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N62+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	8.63E+03	4.97E+01	NA	NA	NA	NA	5.36E-04	8.71E+02	4.67E-01	7.11E-02	1.09E-01	3.27E+01	7.76E+02	1.97E-01	6.90E+02	4.73E-02
BREOT-S62+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N63+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	1.36E+04	7.81E+01	NA	NA	NA	NA	5.36E-04	1.37E+03	7.33E-01	7.11E-02	1.09E-01	5.13E+01	7.76E+02	1.97E-01	6.90E+02	7.44E-02
BREOT-S63+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N64+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	4.76E+03	2.74E+01	NA	NA	NA	NA	5.36E-04	4.80E+02	2.57E-01	7.11E-02	1.09E-01	1.80E+01	7.76E+02	1.97E-01	6.90E+02	2.61E-02
BREOT-S64+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	1.88E+03	1.08E+01	NA	NA	NA	NA	5.36E-04	1.90E+02	1.02E-01	7.11E-02	1.09E-01	7.11E+00	7.76E+02	1.97E-01	6.90E+02	1.03E-02
BREOT-S65+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N66+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	7.39E+03	4.26E+01	NA	NA	NA	NA	5.36E-04	7.46E+02	4.00E-01	7.11E-02	1.09E-01	2.80E+01	7.76E+02	1.97E-01	6.90E+02	4.05E-02
BREOT-S66+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N67+125 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	3.82E+03	2.20E+01	NA	NA	NA	NA	5.36E-04	3.86E+02	2.07E-01	7.11E-02	1.09E-01	1.45E+01	7.76E+02	1.97E-01	6.90E+02	2.10E-02
BREOT-S67+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N67+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	8.97E+03	5.17E+01	NA	NA	NA	NA	5.36E-04	9.05E+02	4.85E-01	7.11E-02	1.09E-01	3.39E+01	7.76E+02	1.97E-01	6.90E+02	4.92E-02
																						Maximum HQ (Outside Tailings)	**3.68E+01**
Red-Tailed Hawk (Carnivorous Birds - Terrestrial)																							
Reference Sites																							
ACBG-1 (0-6")	9.00E-02	9.00E-02	5.93E-02	1.75E+01	1.57E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.95E+02	1.51E+00	2.64E-02	1.13E+00	7.19E-02	7.76E+02	1.97E-01	1.10E+03	6.52E-05
ACBG-2 (0-6")	9.00E-02	9.00E-02	5.93E-02	5.92E+01	5.32E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	9.97E+02	5.11E+00	2.64E-02	1.13E+00	2.43E-01	7.76E+02	1.97E-01	1.10E+03	2.21E-04
UBRBG-202 (0-6")	9.00E-02	9.00E-02	5.93E-02	5.35E+01	4.81E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	9.01E+02	4.62E+00	2.64E-02	1.13E+00	2.20E-01	7.76E+02	1.97E-01	1.10E+03	1.99E-04
UBRBG-204 (0-6")	9.00E-02	9.00E-02	5.93E-02	4.12E+01	3.70E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	6.94E+02	3.56E+00	2.64E-02	1.13E+00	1.69E-01	7.76E+02	1.97E-01	1.10E+03	1.54E-04
Inside Tailings																						**Minimum HQ (Reference Sites)**	**6.52E-05**
BREOT-S6-12.5 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S2-12.5 (0-6")	9.00E-02	9.00E-02	2.80E-02	1.10E+02	9.85E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.91E+03	2.01E+01	2.64E-02	1.13E+00	6.97E-01	7.76E+02	1.97E-01	1.10E+03	6.32E-04
BREOT-S0-12.5 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S1-12.5 (0-6")	9.00E-02	9.00E-02	2.80E-02	1.54E+01	1.39E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.52E+02	2.83E+00	2.64E-02	1.13E+00	9.83E-02	7.76E+02	1.97E-01	1.10E+03	8.92E-05
BREOT-S7-25 (0-6")	9.00E-02	9.00E-02	2.80E-02	3.85E+01	3.46E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.38E+03	7.05E+00	2.64E-02	1.13E+00	2.45E-01	7.76E+02	1.97E-01	1.10E+03	2.22E-04
BREOT-S8-12.5 (0-6")	9.00E-02	9.00E-02	2.80E-02	1.75E+01	1.58E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	6.26E+02	3.21E+00	2.64E-02	1.13E+00	1.11E-01	7.76E+02	1.97E-01	1.10E+03	1.01E-04
BREOT-S9-12.5 (0-6")	9.00E-02	9.00E-02	2.80E-02	2.20E+01	1.98E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	7.85E+02	4.03E+00	2.64E-02	1.13E+00	1.40E-01	7.76E+02	1.97E-01	1.10E+03	1.27E-04
BREOT-N10-12.5 (0-6")	9.00E-02	9.00E-02	2.80E-02	9.98E+01	8.98E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.57E+03	1.83E+01	2.64E-02	1.13E+00	6.35E-01	7.76E+02	1.97E-01	1.10E+03	5.77E-04
BREOT-N11-12.5 (0-6")	9.00E-02	9.00E-02	2.80E-02	1.38E+01	1.24E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.94E+02	2.53E+00	2.64E-02	1.13E+00	8.79E-02	7.76E+02	1.97E-01	1.10E+03	7.98E-05
BREOT-N11-125 (0-6")	9.00E-02	9.00E-02	2.80E-02	8.93E+00	8.04E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.19E+02	1.64E+00	2.64E-02	1.13E+00	5.68E-02	7.76E+02	1.97E-01	1.10E+03	5.16E-05
BREOT-S11-12 (0-6")	9.00E-02	9.00E-02	2.80E-02	9.24E+01	8.31E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.30E+03	1.69E+01	2.64E-02	1.13E+00	5.88E-01	7.76E+02	1.97E-01	1.10E+03	5.34E-04
BREOT-S11+63 (0-6")	9.00E-02	9.00E-02	2.80E-02	1.05E+01	9.48E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.76E+02	1.93E+00	2.64E-02	1.13E+00	6.71E-02	7.76E+02	1.97E-01	1.10E+03	6.09E-05
UBDT-TP-6 (0-2")	9.00E-02	9.00E-02	2.80E-02	1.97E+02	1.78E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	7.05E+03	3.62E+01	2.64E-02	1.13E+00	1.26E+00	7.76E+02	1.97E-01	1.10E+03	1.14E-03
UBDT-TP-6 (2-12")	9.00E-02	9.00E-02	2.80E-02	1.54E+02	1.38E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.49E+03	2.81E+01	2.64E-02	1.13E+00	9.78E-01	7.76E+02	1.97E-01	1.10E+03	8.88E-04

TABLE C-2E: MANGANESE DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **18.41**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Red-Tailed Hawk (Carnivorous Birds - Terrestrial)																							
UBDT-TP-6 (12-24")	9.00E-02	9.00E-02	2.80E-02	2.04E+02	1.83E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	7.27E+03	3.73E+01	2.64E-02	1.13E+00	1.30E+00	7.76E+02	1.97E-01	1.10E+03	1.18E-03
UBDT-TP-6 (24-36")	9.00E-02	9.00E-02	2.80E-02	7.85E+01	7.06E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.81E+03	1.44E+01	2.64E-02	1.13E+00	5.00E-01	7.76E+02	1.97E-01	1.10E+03	4.54E-04
UBDT-TP-6 (36-48")	9.00E-02	9.00E-02	2.80E-02	2.15E+02	1.93E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	7.68E+03	3.94E+01	2.64E-02	1.13E+00	1.37E+00	7.76E+02	1.97E-01	1.10E+03	1.24E-03
UBDT-TP-6 (48-60")	9.00E-02	9.00E-02	2.80E-02	1.31E+02	1.17E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.66E+03	2.39E+01	2.64E-02	1.13E+00	8.31E-01	7.76E+02	1.97E-01	1.10E+03	7.54E-04
BREOT-N12-12.5 (0-6")	9.00E-02	9.00E-02	2.80E-02	6.28E+01	5.65E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.24E+03	1.15E+01	2.64E-02	1.13E+00	3.99E-01	7.76E+02	1.97E-01	1.10E+03	3.62E-04
BREOT-S12-12.5 (0-6")	9.00E-02	9.00E-02	2.80E-02	5.26E+01	4.74E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.88E+03	9.64E+00	2.64E-02	1.13E+00	3.35E-01	7.76E+02	1.97E-01	1.10E+03	3.04E-04
BREOT-S13-12.5 (0-6")	9.00E-02	9.00E-02	2.80E-02	7.31E+01	6.58E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.61E+03	1.34E+01	2.64E-02	1.13E+00	4.65E-01	7.76E+02	1.97E-01	1.10E+03	4.22E-04
BREOT-S14-12.5 (0-6")	9.00E-02	9.00E-02	2.80E-02	3.78E+01	3.40E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.35E+03	6.93E+00	2.64E-02	1.13E+00	2.41E-01	7.76E+02	1.97E-01	1.10E+03	2.19E-04
BREOT-N15-12.5 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S15-12.5 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N16-12.5 (0-6")	9.00E-02	9.00E-02	2.80E-02	6.04E+01	5.44E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.16E+03	1.11E+01	2.64E-02	1.13E+00	3.85E-01	7.76E+02	1.97E-01	1.10E+03	3.49E-04
BREOT-N16-25 (0-6")	9.00E-02	9.00E-02	2.80E-02	3.20E+01	2.88E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.14E+03	5.86E+00	2.64E-02	1.13E+00	2.04E-01	7.76E+02	1.97E-01	1.10E+03	1.85E-04
BREOT-S16-12.5 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N17-12.5 (0-6")	9.00E-02	9.00E-02	2.80E-02	1.69E+01	1.52E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	6.03E+02	3.09E+00	2.64E-02	1.13E+00	1.07E-01	7.76E+02	1.97E-01	1.10E+03	9.74E-05
BREOT-S17-12.5 (0-6")	9.00E-02	9.00E-02	2.80E-02	1.08E+01	9.69E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.85E+02	1.97E+00	2.64E-02	1.13E+00	6.85E-02	7.76E+02	1.97E-01	1.10E+03	6.22E-05
BREOT-S17-25 (0-6")	9.00E-02	9.00E-02	2.80E-02	2.77E+01	2.49E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	9.91E+02	5.08E+00	2.64E-02	1.13E+00	1.76E-01	7.76E+02	1.97E-01	1.10E+03	1.60E-04
UBDT-TP-4 (0-2")	9.00E-02	9.00E-02	2.80E-02	1.72E+02	1.55E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	6.15E+03	3.15E+01	2.64E-02	1.13E+00	1.09E+00	7.76E+02	1.97E-01	1.10E+03	9.94E-04
UBDT-TP-4 (2-12")	9.00E-02	9.00E-02	2.80E-02	1.09E+02	9.80E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.89E+03	2.00E+01	2.64E-02	1.13E+00	6.93E-01	7.76E+02	1.97E-01	1.10E+03	6.29E-04
UBDT-TP-4 (12-24")	9.00E-02	9.00E-02	2.80E-02	5.35E+01	4.81E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.91E+03	9.79E+00	2.64E-02	1.13E+00	3.40E-01	7.76E+02	1.97E-01	1.10E+03	3.09E-04
UBDT-TP-4 (24-36")	9.00E-02	9.00E-02	2.80E-02	4.98E+01	4.48E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.78E+03	9.12E+00	2.64E-02	1.13E+00	3.17E-01	7.76E+02	1.97E-01	1.10E+03	2.87E-04
BREOT-N18-12.5 (0-6")	9.00E-02	9.00E-02	2.80E-02	1.68E+02	1.51E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.99E+03	3.07E+01	2.64E-02	1.13E+00	1.07E+00	7.76E+02	1.97E-01	1.10E+03	9.68E-04
BREOT-N18-25 (0-6")	9.00E-02	9.00E-02	2.80E-02	1.58E+01	1.43E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.66E+02	2.90E+00	2.64E-02	1.13E+00	1.01E-01	7.76E+02	1.97E-01	1.10E+03	9.15E-05
BREOT-S18-12.5 (0-6")	9.00E-02	9.00E-02	2.80E-02	4.23E+01	3.80E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.51E+03	7.74E+00	2.64E-02	1.13E+00	2.69E-01	7.76E+02	1.97E-01	1.10E+03	2.44E-04
BREOT-N19-10 (0-6")	9.00E-02	9.00E-02	2.80E-02	2.47E+01	2.23E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	8.84E+02	4.53E+00	2.64E-02	1.13E+00	1.57E-01	7.76E+02	1.97E-01	1.10E+03	1.43E-04
BREOT-S19-12.5 (0-6")	9.00E-02	9.00E-02	2.80E-02	8.02E+01	7.22E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.87E+03	1.47E+01	2.64E-02	1.13E+00	5.10E-01	7.76E+02	1.97E-01	1.10E+03	4.63E-04
UBDT-TP-5 (0-2")	9.00E-02	9.00E-02	2.80E-02	1.30E+02	1.17E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.63E+03	2.38E+01	2.64E-02	1.13E+00	8.25E-01	7.76E+02	1.97E-01	1.10E+03	7.49E-04
UBDT-TP-5 (2-12")	9.00E-02	9.00E-02	2.80E-02	1.08E+02	9.75E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.87E+03	1.98E+01	2.64E-02	1.13E+00	6.89E-01	7.76E+02	1.97E-01	1.10E+03	6.26E-04
UBDT-TP-5 (12-24")	9.00E-02	9.00E-02	2.80E-02	9.88E+01	8.89E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.53E+03	1.81E+01	2.64E-02	1.13E+00	6.29E-01	7.76E+02	1.97E-01	1.10E+03	5.71E-04
BREOT-N20-12.5 (0-6")	9.00E-02	9.00E-02	2.80E-02	2.14E+01	1.93E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	7.65E+02	3.93E+00	2.64E-02	1.13E+00	1.36E-01	7.76E+02	1.97E-01	1.10E+03	1.24E-04
UBDT-TP-3 (0-2")	9.00E-02	9.00E-02	2.80E-02	2.24E+01	2.01E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	7.98E+02	4.09E+00	2.64E-02	1.13E+00	1.42E-01	7.76E+02	1.97E-01	1.10E+03	1.29E-04
UBDT-TP-3 (2-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UBDT-TP-3 (12-24")	9.00E-02	9.00E-02	2.80E-02	8.43E+00	7.59E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.01E+02	1.54E+00	2.64E-02	1.13E+00	5.37E-02	7.76E+02	1.97E-01	1.10E+03	4.87E-05
UBDT-TP-3 (24-36")	9.00E-02	9.00E-02	2.80E-02	1.01E+01	9.07E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.60E+02	1.85E+00	2.64E-02	1.13E+00	6.42E-02	7.76E+02	1.97E-01	1.10E+03	5.82E-05
UBDT-TP-3 (36-48")	9.00E-02	9.00E-02	2.80E-02	1.55E+02	1.40E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.54E+03	2.84E+01	2.64E-02	1.13E+00	9.87E-01	7.76E+02	1.97E-01	1.10E+03	8.96E-04
UBDT-TP-3 (48-60")	9.00E-02	9.00E-02	2.80E-02	7.36E+01	6.62E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.63E+03	1.35E+01	2.64E-02	1.13E+00	4.68E-01	7.76E+02	1.97E-01	1.10E+03	4.25E-04
BREOT-N21-12.5 (0-6")	9.00E-02	9.00E-02	2.80E-02	1.91E+02	1.72E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	6.83E+03	3.50E+01	2.64E-02	1.13E+00	1.22E+00	7.76E+02	1.97E-01	1.10E+03	1.10E-03
BREOT-N22-12.5 (0-6")	9.00E-02	9.00E-02	2.80E-02	1.88E+01	1.69E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	6.72E+02	3.45E+00	2.64E-02	1.13E+00	1.20E-01	7.76E+02	1.97E-01	1.10E+03	1.09E-04
BREOT-N23-12.5 (0-6")	9.00E-02	9.00E-02	2.80E-02	4.10E+01	3.69E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.46E+03	7.51E+00	2.64E-02	1.13E+00	2.61E-01	7.76E+02	1.97E-01	1.10E+03	2.37E-04
BREOT-S23-12.5 (0-6")	9.00E-02	9.00E-02	2.80E-02	4.45E+02	4.00E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.59E+04	8.15E+01	2.64E-02	1.13E+00	2.83E+00	7.76E+02	1.97E-01	1.10E+03	2.57E-03
UBDT-TP-2 (0-2")	9.00E-02	9.00E-02	2.80E-02	1.53E+02	1.38E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.48E+03	2.81E+01	2.64E-02	1.13E+00	9.75E-01	7.76E+02	1.97E-01	1.10E+03	8.85E-04
UBDT-TP-2 (2-12")	9.00E-02	9.00E-02	2.80E-02	2.02E+02	1.82E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	7.21E+03	3.70E+01	2.64E-02	1.13E+00	1.28E+00	7.76E+02	1.97E-01	1.10E+03	1.17E-03
UBDT-TP-2 (12-24")	9.00E-02	9.00E-02	2.80E-02	1.52E+02	1.37E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.44E+03	2.79E+01	2.64E-02	1.13E+00	9.68E-01	7.76E+02	1.97E-01	1.10E+03	8.79E-04
UBDT-TP-2 (24-36")	9.00E-02	9.00E-02	2.80E-02	7.73E+01	6.95E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.76E+03	1.42E+01	2.64E-02	1.13E+00	4.92E-01	7.76E+02	1.97E-01	1.10E+03	4.46E-04
UBDT-TP-2 (36-48")	9.00E-02	9.00E-02	2.80E-02	7.80E+01	7.02E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.79E+03	1.43E+01	2.64E-02	1.13E+00	4.96E-01	7.76E+02	1.97E-01	1.10E+03	4.51E-04
BREOT-S24-12.5 (0-6")	9.00E-02	9.00E-02	2.80E-02	4.55E+02	4.10E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.63E+04	8.34E+01	2.64E-02	1.13E+00	2.90E+00	7.76E+02	1.97E-01	1.10E+03	2.63E-03
BREOT-N25-50 (0-6")	9.00E-02	9.00E-02	2.80E-02	1.35E+02	1.21E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.82E+03	2.47E+01	2.64E-02	1.13E+00	8.58E-01	7.76E+02	1.97E-01	1.10E+03	7.79E-04
BREOT-N25-95 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S25-12.5 (0-6")	9.00E-02	9.00E-02	2.80E-02	1.63E+02	1.46E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.81E+03	2.98E+01	2.64E-02	1.13E+00	1.03E+00	7.76E+02	1.97E-01	1.10E+03	9.39E-04
BREOT-S25-40 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N26A-25 (0-6")	9.00E-02	9.00E-02	2.80E-02	1.28E+01	1.15E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.58E+02	2.35E+00	2.64E-02	1.13E+00	8.16E-02	7.76E+02	1.97E-01	1.10E+03	7.40E-05
BREOT-N26B-25 (0-6")	9.00E-02	9.00E-02	2.80E-02	5.32E+01	4.79E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.90E+03	9.75E+00	2.64E-02	1.13E+00	3.39E-01	7.76E+02	1.97E-01	1.10E+03	3.07E-04
BREOT-N26-50 (0-6")	9.00E-02	9.00E-02	2.80E-02	1.35E+02	1.21E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.81E+03	2.47E+01	2.64E-02	1.13E+00	8.57E-01	7.76E+02	1.97E-01	1.10E+03	7.78E-04
BREOT-N26-75 (0-6")	9.00E-02	9.00E-02	2.80E-02	7.43E+01	6.69E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.65E+03	1.36E+01	2.64E-02	1.13E+00	4.73E-01	7.76E+02	1.97E-01	1.10E+03	4.29E-04
BREOT-S26-12.5 (0-6")	9.00E-02	9.00E-02	2.80E-02	6.66E+01	5.99E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.38E+03	1.22E+01	2.64E-02	1.13E+00	4.24E-01	7.76E+02	1.97E-01	1.10E+03	3.85E-04
BREOT-S26-40 (0-6")	9.00E-02	9.00E-02	2.80E-02	2.01E+02	1.81E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	7.17E+03	3.68E+01	2.64E-02	1.13E+00	1.28E+00	7.76E+02	1.97E-01	1.10E+03	1.16E-03

TABLE C-2E: MANGANESE DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **18.41**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Red-Tailed Hawk (Carnivorous Birds - Terrestrial)																							
BREOT-N27-30 (0-6")	9.00E-02	9.00E-02	2.80E-02	7.44E+01	6.69E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.66E+03	1.36E+01	2.64E-02	1.13E+00	4.73E-01	7.76E+02	1.97E-01	1.10E+03	4.30E-04
BREOT-N27-75 (0-6")	9.00E-02	9.00E-02	2.80E-02	2.12E+02	1.91E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	7.57E+03	3.88E+01	2.64E-02	1.13E+00	1.35E+00	7.76E+02	1.97E-01	1.10E+03	1.22E-03
BREOT-S27-12.5 (0-6")	9.00E-02	9.00E-02	2.80E-02	4.25E+01	3.82E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.52E+03	7.78E+00	2.64E-02	1.13E+00	2.70E-01	7.76E+02	1.97E-01	1.10E+03	2.45E-04
BREOT-N28-110 (0-6")	9.00E-02	9.00E-02	2.80E-02	3.93E+01	3.53E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.40E+03	7.20E+00	2.64E-02	1.13E+00	2.50E-01	7.76E+02	1.97E-01	1.10E+03	2.27E-04
BREOT-N28-55 (0-6")	9.00E-02	9.00E-02	2.80E-02	1.04E+02	9.36E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.72E+03	1.91E+01	2.64E-02	1.13E+00	6.62E-01	7.76E+02	1.97E-01	1.10E+03	6.01E-04
BREOT-S28-12.5 (0-6")	9.00E-02	9.00E-02	2.80E-02	2.35E+02	2.11E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	8.38E+03	4.30E+01	2.64E-02	1.13E+00	1.49E+00	7.76E+02	1.97E-01	1.10E+03	1.35E-03
UBDT-TP-1 (0-2")	9.00E-02	9.00E-02	2.80E-02	1.55E+02	1.40E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.55E+03	2.85E+01	2.64E-02	1.13E+00	9.89E-01	7.76E+02	1.97E-01	1.10E+03	8.97E-04
UBDT-TP-1 (2-12")	9.00E-02	9.00E-02	2.80E-02	1.55E+02	1.39E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.52E+03	2.83E+01	2.64E-02	1.13E+00	9.84E-01	7.76E+02	1.97E-01	1.10E+03	8.93E-04
UBDT-TP-1 (12-24")	9.00E-02	9.00E-02	2.80E-02	1.59E+02	1.43E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.67E+03	2.91E+01	2.64E-02	1.13E+00	1.01E+00	7.76E+02	1.97E-01	1.10E+03	9.17E-04
UBDT-TP-1 (24-36")	9.00E-02	9.00E-02	2.80E-02	2.11E+02	1.90E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	7.55E+03	3.87E+01	2.64E-02	1.13E+00	1.34E+00	7.76E+02	1.97E-01	1.10E+03	1.22E-03
UBDT-TP-1 (36-48")	9.00E-02	9.00E-02	2.80E-02	3.36E+01	3.02E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.20E+03	6.15E+00	2.64E-02	1.13E+00	2.14E-01	7.76E+02	1.97E-01	1.10E+03	1.94E-04
UBDT-TP-1 (48-60")	9.00E-02	9.00E-02	2.80E-02	4.18E+01	3.76E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.49E+03	7.66E+00	2.64E-02	1.13E+00	2.66E-01	7.76E+02	1.97E-01	1.10E+03	2.42E-04
BREOT-N29-30 (0-6")	9.00E-02	9.00E-02	2.80E-02	1.61E+02	1.45E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.76E+03	2.95E+01	2.64E-02	1.13E+00	1.03E+00	7.76E+02	1.97E-01	1.10E+03	9.32E-04
BREOT-S29-12.5 (0-6")	9.00E-02	9.00E-02	2.80E-02	1.98E+02	1.78E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	7.07E+03	3.63E+01	2.64E-02	1.13E+00	1.26E+00	7.76E+02	1.97E-01	1.10E+03	1.14E-03
BREOT-N30-12.5 (0-6")	9.00E-02	9.00E-02	2.80E-02	5.52E+01	4.96E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.97E+03	1.01E+01	2.64E-02	1.13E+00	3.51E-01	7.76E+02	1.97E-01	1.10E+03	3.19E-04
BREOT-S30-12.5 (0-6")	9.00E-02	9.00E-02	2.80E-02	1.36E+02	1.22E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.86E+03	2.49E+01	2.64E-02	1.13E+00	8.66E-01	7.76E+02	1.97E-01	1.10E+03	7.86E-04
BREOT-N31-12.5 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S31-25 (0-6")	9.00E-02	9.00E-02	2.80E-02	1.10E+02	9.87E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.92E+03	2.01E+01	2.64E-02	1.13E+00	6.98E-01	7.76E+02	1.97E-01	1.10E+03	6.34E-04
BREOT-S31-5 (0-6")	9.00E-02	9.00E-02	2.80E-02	1.79E+02	1.61E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	6.38E+03	3.27E+01	2.64E-02	1.13E+00	1.14E+00	7.76E+02	1.97E-01	1.10E+03	1.03E-03
BREOT-N32-12.5 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S32-6 (0-6")	9.00E-02	9.00E-02	2.80E-02	3.87E+01	3.48E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.38E+03	7.08E+00	2.64E-02	1.13E+00	2.46E-01	7.76E+02	1.97E-01	1.10E+03	2.23E-04
BREOT-N33-12.5 (0-6")	9.00E-02	9.00E-02	2.80E-02	1.13E+01	1.01E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.02E+02	2.06E+00	2.64E-02	1.13E+00	7.16E-02	7.76E+02	1.97E-01	1.10E+03	6.50E-05
BREOT-S33-12.5 (0-6")	9.00E-02	9.00E-02	2.80E-02	7.55E+01	6.79E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.70E+03	1.38E+01	2.64E-02	1.13E+00	4.80E-01	7.76E+02	1.97E-01	1.10E+03	4.36E-04
BREOT-N35-12.5 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S35-12.5 (0-6")	9.00E-02	9.00E-02	2.80E-02	2.37E+02	2.13E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	8.47E+03	4.34E+01	2.64E-02	1.13E+00	1.51E+00	7.76E+02	1.97E-01	1.10E+03	1.37E-03
BREOT-N36-12.5 (0-6")	9.00E-02	9.00E-02	2.80E-02	9.13E+01	8.21E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.26E+03	1.67E+01	2.64E-02	1.13E+00	5.81E-01	7.76E+02	1.97E-01	1.10E+03	5.27E-04
BREOT-S36-12.5 (0-6")	9.00E-02	9.00E-02	2.80E-02	3.16E+01	2.84E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.13E+03	5.78E+00	2.64E-02	1.13E+00	2.01E-01	7.76E+02	1.97E-01	1.10E+03	1.82E-04
BREOT-N37-12.5 (0-6")	9.00E-02	9.00E-02	2.80E-02	9.23E+00	8.31E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.30E+02	1.69E+00	2.64E-02	1.13E+00	5.88E-02	7.76E+02	1.97E-01	1.10E+03	5.33E-05
BREOT-S37-12.5 (0-6")	9.00E-02	9.00E-02	2.80E-02	3.73E+01	3.35E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.33E+03	6.83E+00	2.64E-02	1.13E+00	2.37E-01	7.76E+02	1.97E-01	1.10E+03	2.15E-04
BREOT-N38-12.5 (0-6")	9.00E-02	9.00E-02	2.80E-02	1.86E+01	1.68E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	6.65E+02	3.41E+00	2.64E-02	1.13E+00	1.18E-01	7.76E+02	1.97E-01	1.10E+03	1.08E-04
BREOT-S38-12.5 (0-6")	9.00E-02	9.00E-02	2.80E-02	3.29E+02	2.96E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.18E+04	6.03E+01	2.64E-02	1.13E+00	2.09E+00	7.76E+02	1.97E-01	1.10E+03	1.90E-03
BREOT-N39-12.5 (0-6")	9.00E-02	9.00E-02	2.80E-02	2.77E+01	2.49E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	9.89E+02	5.07E+00	2.64E-02	1.13E+00	1.76E-01	7.76E+02	1.97E-01	1.10E+03	1.60E-04
BREOT-S39-12.5 (0-6")	9.00E-02	9.00E-02	2.80E-02	1.29E+02	1.16E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.61E+03	2.36E+01	2.64E-02	1.13E+00	8.21E-01	7.76E+02	1.97E-01	1.10E+03	7.45E-04
BREOT-N40-12.5 (0-6")	9.00E-02	9.00E-02	2.80E-02	1.30E+02	1.17E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.63E+03	2.37E+01	2.64E-02	1.13E+00	8.25E-01	7.76E+02	1.97E-01	1.10E+03	7.49E-04
BREOT-S40-14 (0-6")	9.00E-02	9.00E-02	2.80E-02	1.20E+02	1.08E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.28E+03	2.19E+01	2.64E-02	1.13E+00	7.62E-01	7.76E+02	1.97E-01	1.10E+03	6.91E-04
BREOT-N41-12.5 (0-6")	9.00E-02	9.00E-02	2.80E-02	9.54E+01	8.58E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.41E+03	1.75E+01	2.64E-02	1.13E+00	6.07E-01	7.76E+02	1.97E-01	1.10E+03	5.51E-04
BREOT-S41-12.5 (0-6")	9.00E-02	9.00E-02	2.80E-02	1.20E+02	1.08E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.28E+03	2.19E+01	2.64E-02	1.13E+00	7.62E-01	7.76E+02	1.97E-01	1.10E+03	6.92E-04
BREOT-N42-35 (0-6")	9.00E-02	9.00E-02	2.80E-02	2.20E+01	1.98E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	7.85E+02	4.03E+00	2.64E-02	1.13E+00	1.40E-01	7.76E+02	1.97E-01	1.10E+03	1.27E-04
BREOT-S42-25 (0-6")	9.00E-02	9.00E-02	2.80E-02	4.65E+01	4.18E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.66E+03	8.51E+00	2.64E-02	1.13E+00	2.96E-01	7.76E+02	1.97E-01	1.10E+03	2.68E-04
BREOT-N43-12.5 (0-6")	9.00E-02	9.00E-02	2.80E-02	2.83E+02	2.54E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.01E+04	5.17E+01	2.64E-02	1.13E+00	1.80E+00	7.76E+02	1.97E-01	1.10E+03	1.63E-03
BREOT-S43-12.5 (0-6")	9.00E-02	9.00E-02	2.80E-02	6.21E+01	5.59E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.22E+03	1.14E+01	2.64E-02	1.13E+00	3.95E-01	7.76E+02	1.97E-01	1.10E+03	3.59E-04
BREOT-N44-30 (0-6")	9.00E-02	9.00E-02	2.80E-02	2.22E+01	1.99E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	7.91E+02	4.06E+00	2.64E-02	1.13E+00	1.41E-01	7.76E+02	1.97E-01	1.10E+03	1.28E-04
BREOT-S44-12.5 (0-6")	9.00E-02	9.00E-02	2.80E-02	2.08E+02	1.87E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	7.44E+03	3.81E+01	2.64E-02	1.13E+00	1.33E+00	7.76E+02	1.97E-01	1.10E+03	1.20E-03
BREOT-N45-12.5 (0-6")	9.00E-02	9.00E-02	2.80E-02	2.68E+01	2.41E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	9.57E+02	4.91E+00	2.64E-02	1.13E+00	1.71E-01	7.76E+02	1.97E-01	1.10E+03	1.55E-04
BREOT-N43-12.5 (0-6")	9.00E-02	9.00E-02	2.80E-02	2.83E+02	2.54E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.01E+04	5.17E+01	2.64E-02	1.13E+00	1.80E+00	7.76E+02	1.97E-01	1.10E+03	1.63E-03
BREOT-S45-6 (0-6")	9.00E-02	9.00E-02	2.80E-02	3.58E+01	3.22E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.28E+03	6.55E+00	2.64E-02	1.13E+00	2.28E-01	7.76E+02	1.97E-01	1.10E+03	2.07E-04
BREOT-N46-12.5 (0-6")	9.00E-02	9.00E-02	2.80E-02	1.03E+01	9.25E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.67E+02	1.88E+00	2.64E-02	1.13E+00	6.54E-02	7.76E+02	1.97E-01	1.10E+03	5.94E-05
BREOT-S46-12.5 (0-6")	9.00E-02	9.00E-02	2.80E-02	1.02E+01	9.20E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.65E+02	1.87E+00	2.64E-02	1.13E+00	6.51E-02	7.76E+02	1.97E-01	1.10E+03	5.91E-05
BREOT-S46-40 (0-6")	9.00E-02	9.00E-02	2.80E-02	1.57E+01	1.41E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.59E+02	2.87E+00	2.64E-02	1.13E+00	9.97E-02	7.76E+02	1.97E-01	1.10E+03	9.05E-05
BREOT-N47-12.5 (0-6")	9.00E-02	9.00E-02	2.80E-02	1.97E+01	1.77E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	7.04E+02	3.61E+00	2.64E-02	1.13E+00	1.25E-01	7.76E+02	1.97E-01	1.10E+03	1.14E-04
BREOT-S47-999 (0-6")	9.00E-02	9.00E-02	2.80E-02	2.09E+01	1.88E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	7.47E+02	3.83E+00	2.64E-02	1.13E+00	1.33E-01	7.76E+02	1.97E-01	1.10E+03	1.21E-04
BREOT-S48-12.5 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S49-2.5 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S50-12.5 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S50-25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB

TABLE C-2E: MANGANESE DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **18.41**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Red-Tailed Hawk (Carnivorous Birds - Terrestrial)																							
BREOT-N52-60 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S52-12.5 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S53-12.5 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S54-12.5 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N55-12.5 (0-6")	9.00E-02	9.00E-02	2.80E-02	1.05E+02	9.44E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.75E+03	1.92E+01	2.64E-02	1.13E+00	6.68E-01	7.76E+02	1.97E-01	1.10E+03	6.06E-04
BREOT-S55-12.5 (0-6")	9.00E-02	9.00E-02	2.80E-02	4.33E+01	3.90E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.55E+03	7.93E+00	2.64E-02	1.13E+00	2.76E-01	7.76E+02	1.97E-01	1.10E+03	2.50E-04
BREOT-N56-12.5 (0-6")	9.00E-02	9.00E-02	2.80E-02	5.01E+01	4.50E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.79E+03	9.17E+00	2.64E-02	1.13E+00	3.19E-01	7.76E+02	1.97E-01	1.10E+03	2.89E-04
BREOT-S56-12.5 (0-6")	9.00E-02	9.00E-02	2.80E-02	2.66E+01	2.40E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	9.52E+02	4.88E+00	2.64E-02	1.13E+00	1.70E-01	7.76E+02	1.97E-01	1.10E+03	1.54E-04
BREOT-N57-12.5 (0-6")	9.00E-02	9.00E-02	2.80E-02	3.34E+01	3.01E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.19E+03	6.12E+00	2.64E-02	1.13E+00	2.13E-01	7.76E+02	1.97E-01	1.10E+03	1.93E-04
BREOT-S57-12.5 (0-6")	9.00E-02	9.00E-02	2.80E-02	3.48E+01	3.13E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.24E+03	6.37E+00	2.64E-02	1.13E+00	2.21E-01	7.76E+02	1.97E-01	1.10E+03	2.01E-04
BREOT-N58-12.5 (0-6")	9.00E-02	9.00E-02	2.80E-02	5.76E+01	5.18E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.06E+03	1.05E+01	2.64E-02	1.13E+00	3.66E-01	7.76E+02	1.97E-01	1.10E+03	3.33E-04
BREOT-S58-12 (0-6")	9.00E-02	9.00E-02	2.80E-02	3.60E+01	3.24E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.29E+03	6.60E+00	2.64E-02	1.13E+00	2.29E-01	7.76E+02	1.97E-01	1.10E+03	2.08E-04
BREOT-N59-18 (0-6")	9.00E-02	9.00E-02	2.80E-02	1.97E+01	1.78E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	7.05E+02	3.61E+00	2.64E-02	1.13E+00	1.26E-01	7.76E+02	1.97E-01	1.10E+03	1.14E-04
BREOT-N60-12.5 (0-6")	9.00E-02	9.00E-02	2.80E-02	3.37E+01	3.03E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.20E+03	6.17E+00	2.64E-02	1.13E+00	2.14E-01	7.76E+02	1.97E-01	1.10E+03	1.95E-04
BREOT-S60-12.5 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S61-12.5 (0-6")	9.00E-02	9.00E-02	2.80E-02	1.79E+02	1.61E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	6.39E+03	3.28E+01	2.64E-02	1.13E+00	1.14E+00	7.76E+02	1.97E-01	1.10E+03	1.03E-03
BREOT-N62-12.5 (0-6")	9.00E-02	9.00E-02	2.80E-02	1.74E+01	1.56E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	6.21E+02	3.18E+00	2.64E-02	1.13E+00	1.11E-01	7.76E+02	1.97E-01	1.10E+03	1.00E-04
BREOT-S62-12.5 (0-6")	9.00E-02	9.00E-02	2.80E-02	2.13E+02	1.91E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	7.60E+03	3.90E+01	2.64E-02	1.13E+00	1.35E+00	7.76E+02	1.97E-01	1.10E+03	1.23E-03
BREOT-S63-12.5 (0-6")	9.00E-02	9.00E-02	2.80E-02	3.05E+01	2.74E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.09E+03	5.59E+00	2.64E-02	1.13E+00	1.94E-01	7.76E+02	1.97E-01	1.10E+03	1.76E-04
BREOT-N64-12.5 (0-6")	9.00E-02	9.00E-02	2.80E-02	3.07E+01	2.76E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.10E+03	5.63E+00	2.64E-02	1.13E+00	1.95E-01	7.76E+02	1.97E-01	1.10E+03	1.77E-04
BREOT-N64-20 (0-6")	9.00E-02	9.00E-02	2.80E-02	2.98E+01	2.68E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.06E+03	5.46E+00	2.64E-02	1.13E+00	1.90E-01	7.76E+02	1.97E-01	1.10E+03	1.72E-04
BREOT-S64-12.5 (0-6")	9.00E-02	9.00E-02	2.80E-02	1.02E+01	9.17E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.64E+02	1.87E+00	2.64E-02	1.13E+00	6.49E-02	7.76E+02	1.97E-01	1.10E+03	5.89E-05
BREOT-N65-12.5 (0-6")	9.00E-02	9.00E-02	2.80E-02	2.64E+01	2.38E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	9.44E+02	4.84E+00	2.64E-02	1.13E+00	1.68E-01	7.76E+02	1.97E-01	1.10E+03	1.53E-04
BREOT-S65-12.5 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N66-5 (0-6")	9.00E-02	9.00E-02	2.80E-02	1.49E+01	1.34E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.33E+02	2.73E+00	2.64E-02	1.13E+00	9.50E-02	7.76E+02	1.97E-01	1.10E+03	8.62E-05
BREOT-S66-12.5 (0-6")	9.00E-02	9.00E-02	2.80E-02	2.54E+01	2.28E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	9.06E+02	4.64E+00	2.64E-02	1.13E+00	1.61E-01	7.76E+02	1.97E-01	1.10E+03	1.46E-04
BREOT-N67-12.5 (0-6")	9.00E-02	9.00E-02	2.80E-02	2.95E+02	2.66E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.05E+04	5.41E+01	2.64E-02	1.13E+00	1.88E+00	7.76E+02	1.97E-01	1.10E+03	1.70E-03
BREOT-S67-12.5 (0-6")	9.00E-02	9.00E-02	2.80E-02	1.65E+01	1.48E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.88E+02	3.02E+00	2.64E-02	1.13E+00	1.05E-01	7.76E+02	1.97E-01	1.10E+03	9.51E-05
At Edge of Tailings																						**Maximum HQ (Inside Tailings)**	**2.63E-03**
BREOT-S0-0 (06)	9.00E-02	9.00E-02	2.80E-02	2.13E+01	1.92E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	7.62E+02	3.91E+00	2.64E-02	1.13E+00	1.36E-01	7.76E+02	1.97E-01	1.10E+03	1.23E-04
BREOT-S1-0 (0-6")	9.00E-02	9.00E-02	2.80E-02	2.37E+01	2.13E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	8.47E+02	4.34E+00	2.64E-02	1.13E+00	1.51E-01	7.76E+02	1.97E-01	1.10E+03	1.37E-04
BREOT-S2-0 (0-6")	9.00E-02	9.00E-02	2.80E-02	6.33E+01	5.69E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.26E+03	1.16E+01	2.64E-02	1.13E+00	4.03E-01	7.76E+02	1.97E-01	1.10E+03	3.65E-04
BREOT-S3-0 (0-6")	9.00E-02	9.00E-02	2.80E-02	1.60E+02	1.44E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.70E+03	2.92E+01	2.64E-02	1.13E+00	1.02E+00	7.76E+02	1.97E-01	1.10E+03	9.22E-04
BREOT-S4-0 (0-6")	9.00E-02	9.00E-02	2.80E-02	1.87E+02	1.68E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	6.69E+03	3.43E+01	2.64E-02	1.13E+00	1.19E+00	7.76E+02	1.97E-01	1.10E+03	1.08E-03
BREOT-S6-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S7-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S8-0 (0-6")	9.00E-02	9.00E-02	2.80E-02	3.27E+01	2.94E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.17E+03	5.98E+00	2.64E-02	1.13E+00	2.08E-01	7.76E+02	1.97E-01	1.10E+03	1.89E-04
BREOT-S9-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N10-0 (0-6")	9.00E-02	9.00E-02	2.80E-02	2.25E+02	2.03E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	8.05E+03	4.13E+01	2.64E-02	1.13E+00	1.43E+00	7.76E+02	1.97E-01	1.10E+03	1.30E-03
BREOT-N11-0 (0-6")	9.00E-02	9.00E-02	2.80E-02	1.05E+01	9.47E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.76E+02	1.93E+00	2.64E-02	1.13E+00	6.70E-02	7.76E+02	1.97E-01	1.10E+03	6.08E-05
BREOT-S11-0 (0-6")	9.00E-02	9.00E-02	2.80E-02	5.58E+01	5.02E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.99E+03	1.02E+01	2.64E-02	1.13E+00	3.55E-01	7.76E+02	1.97E-01	1.10E+03	3.22E-04
BREOT-N12-0 (0-6")	9.00E-02	9.00E-02	2.80E-02	2.93E+01	2.64E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.05E+03	5.37E+00	2.64E-02	1.13E+00	1.86E-01	7.76E+02	1.97E-01	1.10E+03	1.69E-04
BREOT-S12-0 (0-6")	9.00E-02	9.00E-02	2.80E-02	8.36E+01	7.52E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.99E+03	1.53E+01	2.64E-02	1.13E+00	5.32E-01	7.76E+02	1.97E-01	1.10E+03	4.83E-04
BREOT-N13-0 (0-6")	9.00E-02	9.00E-02	2.80E-02	4.35E+01	3.91E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.55E+03	7.97E+00	2.64E-02	1.13E+00	2.77E-01	7.76E+02	1.97E-01	1.10E+03	2.51E-04
BREOT-S13-0 (0-6")	9.00E-02	9.00E-02	2.80E-02	2.42E+01	2.18E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	8.65E+02	4.44E+00	2.64E-02	1.13E+00	1.54E-01	7.76E+02	1.97E-01	1.10E+03	1.40E-04
BREOT-N14-0 (0-6")	9.00E-02	9.00E-02	2.80E-02	4.34E+01	3.90E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.55E+03	7.94E+00	2.64E-02	1.13E+00	2.76E-01	7.76E+02	1.97E-01	1.10E+03	2.50E-04
BREOT-S14-0 (0-6")	9.00E-02	9.00E-02	2.80E-02	2.56E+02	2.31E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	9.15E+03	4.69E+01	2.64E-02	1.13E+00	1.63E+00	7.76E+02	1.97E-01	1.10E+03	1.48E-03
BREOT-N15-0 (0-6")	9.00E-02	9.00E-02	2.80E-02	2.27E+01	2.04E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	8.10E+02	4.15E+00	2.64E-02	1.13E+00	1.44E-01	7.76E+02	1.97E-01	1.10E+03	1.31E-04
BREOT-N16-0 (0-6")	9.00E-02	9.00E-02	2.80E-02	1.72E+01	1.54E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	6.13E+02	3.14E+00	2.64E-02	1.13E+00	1.09E-01	7.76E+02	1.97E-01	1.10E+03	9.91E-05
BREOT-S16-0 (0-6")	9.00E-02	9.00E-02	2.80E-02	3.01E+01	2.71E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.08E+03	5.52E+00	2.64E-02	1.13E+00	1.92E-01	7.76E+02	1.97E-01	1.10E+03	1.74E-04
BREOT-N17-0 (0-6")	9.00E-02	9.00E-02	2.80E-02	4.64E+01	4.17E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.66E+03	8.49E+00	2.64E-02	1.13E+00	2.95E-01	7.76E+02	1.97E-01	1.10E+03	2.68E-04
BREOT-S17-0 (0-6")	9.00E-02	9.00E-02	2.80E-02	1.43E+01	1.28E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.10E+02	2.61E+00	2.64E-02	1.13E+00	9.08E-02	7.76E+02	1.97E-01	1.10E+03	8.24E-05
BREOT-N18-0 (0-6")	9.00E-02	9.00E-02	2.80E-02	1.82E+01	1.64E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	6.50E+02	3.33E+00	2.64E-02	1.13E+00	1.16E-01	7.76E+02	1.97E-01	1.10E+03	1.05E-04
BREOT-S18-0 (0-6")	9.00E-02	9.00E-02	2.80E-02	1.14E+04	1.02E+03	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.07E+05	2.08E+03	2.64E-02	1.13E+00	7.24E+01	7.76E+02	1.97E-01	1.10E+03	6.57E-02
BREOT-N19-0 (0-6")	9.00E-02	9.00E-02	2.80E-02	1.26E+02	1.13E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.49E+03	2.30E+01	2.64E-02	1.13E+00	8.01E-01	7.76E+02	1.97E-01	1.10E+03	7.27E-04

TABLE C-2E: MANGANESE DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **18.41**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Red-Tailed Hawk (Carnivorous Birds - Terrestrial)																							
BREOT-S19-0 (0-6")	9.00E-02	9.00E-02	2.80E-02	3.52E+01	3.17E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.26E+03	6.45E+00	2.64E-02	1.13E+00	2.24E-01	7.76E+02	1.97E-01	1.10E+03	2.03E-04
BREOT-N20-0 (0-6")	9.00E-02	9.00E-02	2.80E-02	2.80E+02	2.52E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	9.99E+03	5.12E+01	2.64E-02	1.13E+00	1.78E+00	7.76E+02	1.97E-01	1.10E+03	1.61E-03
BREOT-S20-0 (0-6")	9.00E-02	9.00E-02	2.80E-02	2.23E+01	2.01E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	7.97E+02	4.09E+00	2.64E-02	1.13E+00	1.42E-01	7.76E+02	1.97E-01	1.10E+03	1.29E-04
BREOT-N21-0 (0-6")	9.00E-02	9.00E-02	2.80E-02	1.82E+04	1.63E+03	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	6.49E+05	3.33E+03	2.64E-02	1.13E+00	1.16E+02	7.76E+02	1.97E-01	1.10E+03	1.05E-01
BREOT-S21-0 (0-6")	9.00E-02	9.00E-02	2.80E-02	9.49E+00	8.54E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.39E+02	1.74E+00	2.64E-02	1.13E+00	6.04E-02	7.76E+02	1.97E-01	1.10E+03	5.48E-05
BREOT-N22-0 (0-6")	9.00E-02	9.00E-02	2.80E-02	2.39E+01	2.15E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	8.55E+02	4.38E+00	2.64E-02	1.13E+00	1.52E-01	7.76E+02	1.97E-01	1.10E+03	1.38E-04
BREOT-S22-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N23-0 (0-6")	9.00E-02	9.00E-02	2.80E-02	8.40E+01	7.55E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.00E+03	1.54E+01	2.64E-02	1.13E+00	5.34E-01	7.76E+02	1.97E-01	1.10E+03	4.85E-04
BREOT-S23-0 (0-6")	9.00E-02	9.00E-02	2.80E-02	4.65E+01	4.18E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.66E+03	8.51E+00	2.64E-02	1.13E+00	2.96E-01	7.76E+02	1.97E-01	1.10E+03	2.68E-04
BREOT-N24-0 (0-6")	9.00E-02	9.00E-02	2.80E-02	3.74E+01	3.36E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.33E+03	6.84E+00	2.64E-02	1.13E+00	2.38E-01	7.76E+02	1.97E-01	1.10E+03	2.16E-04
BREOT-S24-0 (0-6")	9.00E-02	9.00E-02	2.80E-02	6.75E+02	6.08E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.41E+04	1.24E+02	2.64E-02	1.13E+00	4.30E+00	7.76E+02	1.97E-01	1.10E+03	3.90E-03
BREOT-N25-0 (0-6")	9.00E-02	9.00E-02	2.80E-02	1.13E+02	1.02E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.04E+03	2.07E+01	2.64E-02	1.13E+00	7.19E-01	7.76E+02	1.97E-01	1.10E+03	6.53E-04
BREOT-S25-0 (0-6")	9.00E-02	9.00E-02	2.80E-02	1.62E+02	1.46E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.79E+03	2.97E+01	2.64E-02	1.13E+00	1.03E+00	7.76E+02	1.97E-01	1.10E+03	9.35E-04
BREOT-N26-0 (0-6")	9.00E-02	9.00E-02	2.80E-02	7.36E+01	6.62E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.63E+03	1.35E+01	2.64E-02	1.13E+00	4.68E-01	7.76E+02	1.97E-01	1.10E+03	4.25E-04
BREOT-S26-0 (0-6")	9.00E-02	9.00E-02	2.80E-02	8.76E+01	7.88E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.13E+03	1.60E+01	2.64E-02	1.13E+00	5.57E-01	7.76E+02	1.97E-01	1.10E+03	5.06E-04
BREOT-N27-0 (0-6")	9.00E-02	9.00E-02	2.80E-02	1.40E+02	1.26E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.02E+03	2.57E+01	2.64E-02	1.13E+00	8.93E-01	7.76E+02	1.97E-01	1.10E+03	8.11E-04
BREOT-S27-0 (0-6")	9.00E-02	9.00E-02	2.80E-02	9.92E+01	8.92E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.54E+03	1.82E+01	2.64E-02	1.13E+00	6.31E-01	7.76E+02	1.97E-01	1.10E+03	5.73E-04
BREOT-N28-0 (0-6")	9.00E-02	9.00E-02	2.80E-02	6.06E+01	5.46E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.17E+03	1.11E+01	2.64E-02	1.13E+00	3.86E-01	7.76E+02	1.97E-01	1.10E+03	3.50E-04
BREOT-S28-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S29-0 (0-6")	9.00E-02	9.00E-02	2.80E-02	2.05E+01	1.85E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	7.34E+02	3.76E+00	2.64E-02	1.13E+00	1.31E-01	7.76E+02	1.97E-01	1.10E+03	1.19E-04
BREOT-N30-0 (0-6")	9.00E-02	9.00E-02	2.80E-02	9.67E+01	8.70E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.45E+03	1.77E+01	2.64E-02	1.13E+00	6.15E-01	7.76E+02	1.97E-01	1.10E+03	5.58E-04
BREOT-S30-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N31-0 (0-6")	9.00E-02	9.00E-02	2.80E-02	9.53E+01	8.58E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.41E+03	1.75E+01	2.64E-02	1.13E+00	6.07E-01	7.76E+02	1.97E-01	1.10E+03	5.51E-04
BREOT-S31-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N32-0 (0-6")	9.00E-02	9.00E-02	2.80E-02	4.34E+01	3.91E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.55E+03	7.96E+00	2.64E-02	1.13E+00	2.76E-01	7.76E+02	1.97E-01	1.10E+03	2.51E-04
BREOT-S32-0 (0-6")	9.00E-02	9.00E-02	2.80E-02	3.40E+01	3.06E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.21E+03	6.23E+00	2.64E-02	1.13E+00	2.16E-01	7.76E+02	1.97E-01	1.10E+03	1.96E-04
BREOT-N33-0 (0-6")	9.00E-02	9.00E-02	2.80E-02	2.68E+01	2.41E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	9.58E+02	4.91E+00	2.64E-02	1.13E+00	1.71E-01	7.76E+02	1.97E-01	1.10E+03	1.55E-04
BREOT-S33-0 (0-6")	9.00E-02	9.00E-02	2.80E-02	5.13E+01	4.61E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.83E+03	9.39E+00	2.64E-02	1.13E+00	3.26E-01	7.76E+02	1.97E-01	1.10E+03	2.96E-04
BREOT-N34-0 (0-6")	9.00E-02	9.00E-02	2.80E-02	4.10E+01	3.69E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.47E+03	7.51E+00	2.64E-02	1.13E+00	2.61E-01	7.76E+02	1.97E-01	1.10E+03	2.37E-04
BREOT-S34-0 (0-6")	9.00E-02	9.00E-02	2.80E-02	2.03E+02	1.82E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	7.24E+03	3.71E+01	2.64E-02	1.13E+00	1.29E+00	7.76E+02	1.97E-01	1.10E+03	1.17E-03
BREOT-N35-0 (0-6")	9.00E-02	9.00E-02	2.80E-02	2.26E+01	2.03E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	8.07E+02	4.14E+00	2.64E-02	1.13E+00	1.44E-01	7.76E+02	1.97E-01	1.10E+03	1.30E-04
BREOT-S35-0 (0-6")	9.00E-02	9.00E-02	2.80E-02	3.47E+01	3.12E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.24E+03	6.35E+00	2.64E-02	1.13E+00	2.21E-01	7.76E+02	1.97E-01	1.10E+03	2.00E-04
BREOT-N36-0 (0-6")	9.00E-02	9.00E-02	2.80E-02	2.36E+02	2.13E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	8.44E+03	4.33E+01	2.64E-02	1.13E+00	1.50E+00	7.76E+02	1.97E-01	1.10E+03	1.37E-03
BREOT-S36-0 (0-6")	9.00E-02	9.00E-02	2.80E-02	1.78E+02	1.60E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	6.37E+03	3.27E+01	2.64E-02	1.13E+00	1.13E+00	7.76E+02	1.97E-01	1.10E+03	1.03E-03
BREOT-N37-0 (0-6")	9.00E-02	9.00E-02	2.80E-02	3.88E+01	3.49E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.39E+03	7.11E+00	2.64E-02	1.13E+00	2.47E-01	7.76E+02	1.97E-01	1.10E+03	2.24E-04
BREOT-S37-0 (0-6")	9.00E-02	9.00E-02	2.80E-02	2.27E+02	2.05E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	8.13E+03	4.17E+01	2.64E-02	1.13E+00	1.45E+00	7.76E+02	1.97E-01	1.10E+03	1.31E-03
BREOT-N38-0 (0-6")	9.00E-02	9.00E-02	2.80E-02	2.06E+01	1.85E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	7.35E+02	3.77E+00	2.64E-02	1.13E+00	1.31E-01	7.76E+02	1.97E-01	1.10E+03	1.19E-04
BREOT-S38-0 (0-6")	9.00E-02	9.00E-02	2.80E-02	1.31E+02	1.18E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.67E+03	2.39E+01	2.64E-02	1.13E+00	8.32E-01	7.76E+02	1.97E-01	1.10E+03	7.55E-04
BREOT-N39-0 (0-6")	9.00E-02	9.00E-02	2.80E-02	2.42E+01	2.18E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	8.65E+02	4.44E+00	2.64E-02	1.13E+00	1.54E-01	7.76E+02	1.97E-01	1.10E+03	1.40E-04
BREOT-N40-0 (0-6")	9.00E-02	9.00E-02	2.80E-02	2.60E+01	2.34E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	9.30E+02	4.77E+00	2.64E-02	1.13E+00	1.66E-01	7.76E+02	1.97E-01	1.10E+03	1.50E-04
BREOT-S40-0 (0-6")	9.00E-02	9.00E-02	2.80E-02	2.43E+02	2.19E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	8.68E+03	4.45E+01	2.64E-02	1.13E+00	1.55E+00	7.76E+02	1.97E-01	1.10E+03	1.40E-03
BREOT-N41-0 (0-6")	9.00E-02	9.00E-02	2.80E-02	1.37E+01	1.23E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.89E+02	2.51E+00	2.64E-02	1.13E+00	8.71E-02	7.76E+02	1.97E-01	1.10E+03	7.90E-05
BREOT-S41-0 (0-6")	9.00E-02	9.00E-02	2.80E-02	2.60E+02	2.34E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	9.28E+03	4.76E+01	2.64E-02	1.13E+00	1.65E+00	7.76E+02	1.97E-01	1.10E+03	1.50E-03
BREOT-N42-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S42-0 (0-6")	9.00E-02	9.00E-02	2.80E-02	2.95E+02	2.66E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.06E+04	5.41E+01	2.64E-02	1.13E+00	1.88E+00	7.76E+02	1.97E-01	1.10E+03	1.71E-03
BREOT-N43-0 (0-6")	9.00E-02	9.00E-02	2.80E-02	1.74E+01	1.56E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	6.20E+02	3.18E+00	2.64E-02	1.13E+00	1.10E-01	7.76E+02	1.97E-01	1.10E+03	1.00E-04
BREOT-S43-0 (0-6")	9.00E-02	9.00E-02	2.80E-02	2.75E+01	2.48E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	9.84E+02	5.04E+00	2.64E-02	1.13E+00	1.75E-01	7.76E+02	1.97E-01	1.10E+03	1.59E-04
BREOT-N44-0 (0-6")	9.00E-02	9.00E-02	2.80E-02	3.85E+01	3.46E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.38E+03	7.05E+00	2.64E-02	1.13E+00	2.45E-01	7.76E+02	1.97E-01	1.10E+03	2.22E-04
BREOT-S44-0 (0-6")	9.00E-02	9.00E-02	2.80E-02	3.26E+01	2.93E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.16E+03	5.97E+00	2.64E-02	1.13E+00	2.07E-01	7.76E+02	1.97E-01	1.10E+03	1.88E-04
BREOT-N45-0 (0-6")	9.00E-02	9.00E-02	2.80E-02	2.71E+01	2.44E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	9.67E+02	4.96E+00	2.64E-02	1.13E+00	1.72E-01	7.76E+02	1.97E-01	1.10E+03	1.56E-04
BREOT-S45-0 (0-6")	9.00E-02	9.00E-02	2.80E-02	1.84E+01	1.66E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	6.58E+02	3.37E+00	2.64E-02	1.13E+00	1.17E-01	7.76E+02	1.97E-01	1.10E+03	1.06E-04
BREOT-N46-0 (0-6")	9.00E-02	9.00E-02	2.80E-02	1.92E+01	1.72E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	6.85E+02	3.51E+00	2.64E-02	1.13E+00	1.22E-01	7.76E+02	1.97E-01	1.10E+03	1.11E-04
BREOT-S46-0 (0-6")	9.00E-02	9.00E-02	2.80E-02	2.25E+01	2.02E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	8.03E+02	4.12E+00	2.64E-02	1.13E+00	1.43E-01	7.76E+02	1.97E-01	1.10E+03	1.30E-04
BREOT-N47-0 (0-6")	9.00E-02	9.00E-02	2.80E-02	2.39E+01	2.15E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	8.53E+02	4.37E+00	2.64E-02	1.13E+00	1.52E-01	7.76E+02	1.97E-01	1.10E+03	1.38E-04
BREOT-S47-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB

TABLE C-2E: MANGANESE DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **18.41**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Red-Tailed Hawk (Carnivorous Birds - Terrestrial)																							
BREOT-N48-0 (0-6")	9.00E-02	9.00E-02	2.80E-02	1.56E+01	1.40E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.58E+02	2.86E+00	2.64E-02	1.13E+00	9.94E-02	7.76E+02	1.97E-01	1.10E+03	9.02E-05
BREOT-S48-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N49-0 (0-6")	9.00E-02	9.00E-02	2.80E-02	2.83E+01	2.55E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.01E+03	5.19E+00	2.64E-02	1.13E+00	1.80E-01	7.76E+02	1.97E-01	1.10E+03	1.64E-04
BREOT-S49-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S50-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N51-0 (0-6")	9.00E-02	9.00E-02	2.80E-02	4.69E+01	4.22E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.67E+03	8.58E+00	2.64E-02	1.13E+00	2.98E-01	7.76E+02	1.97E-01	1.10E+03	2.71E-04
BREOT-S51-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N52-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S52-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N53-0 (0-6")	9.00E-02	9.00E-02	2.80E-02	1.58E+01	1.42E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.63E+02	2.89E+00	2.64E-02	1.13E+00	1.00E-01	7.76E+02	1.97E-01	1.10E+03	9.11E-05
BREOT-S53-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N54-0 (0-6")	9.00E-02	9.00E-02	2.80E-02	1.90E+01	1.71E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	6.79E+02	3.48E+00	2.64E-02	1.13E+00	1.21E-01	7.76E+02	1.97E-01	1.10E+03	1.10E-04
BREOT-S54-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N55-0 (0-6")	9.00E-02	9.00E-02	2.80E-02	2.89E+01	2.60E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.03E+03	5.29E+00	2.64E-02	1.13E+00	1.84E-01	7.76E+02	1.97E-01	1.10E+03	1.67E-04
BREOT-S55-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N56-0 (0-6")	9.00E-02	9.00E-02	2.80E-02	1.83E+01	1.65E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	6.55E+02	3.36E+00	2.64E-02	1.13E+00	1.17E-01	7.76E+02	1.97E-01	1.10E+03	1.06E-04
BREOT-N57-0 (0-6")	9.00E-02	9.00E-02	2.80E-02	2.61E+01	2.34E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	9.31E+02	4.77E+00	2.64E-02	1.13E+00	1.66E-01	7.76E+02	1.97E-01	1.10E+03	1.51E-04
BREOT-S57-0 (0-6")	9.00E-02	9.00E-02	2.80E-02	2.62E+01	2.36E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	9.36E+02	4.80E+00	2.64E-02	1.13E+00	1.67E-01	7.76E+02	1.97E-01	1.10E+03	1.51E-04
BREOT-N58-0 (0-6")	9.00E-02	9.00E-02	2.80E-02	2.75E+01	2.47E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	9.81E+02	5.03E+00	2.64E-02	1.13E+00	1.75E-01	7.76E+02	1.97E-01	1.10E+03	1.59E-04
BREOT-S58-0 (0-6")	9.00E-02	9.00E-02	2.80E-02	1.44E+02	1.30E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.16E+03	2.65E+01	2.64E-02	1.13E+00	9.19E-01	7.76E+02	1.97E-01	1.10E+03	8.34E-04
BREOT-N59-0 (0-6")	9.00E-02	9.00E-02	2.80E-02	2.47E+01	2.22E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	8.83E+02	4.53E+00	2.64E-02	1.13E+00	1.57E-01	7.76E+02	1.97E-01	1.10E+03	1.43E-04
BREOT-N60-0 (0-6")	9.00E-02	9.00E-02	2.80E-02	1.01E+01	9.07E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.60E+02	1.85E+00	2.64E-02	1.13E+00	6.41E-02	7.76E+02	1.97E-01	1.10E+03	5.82E-05
BREOT-S60-0 (0-6")	9.00E-02	9.00E-02	2.80E-02	7.45E+01	6.71E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.66E+03	1.37E+01	2.64E-02	1.13E+00	4.74E-01	7.76E+02	1.97E-01	1.10E+03	4.31E-04
BREOT-S61-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N62-0 (0-6")	9.00E-02	9.00E-02	2.80E-02	2.60E+01	2.34E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	9.29E+02	4.77E+00	2.64E-02	1.13E+00	1.66E-01	7.76E+02	1.97E-01	1.10E+03	1.50E-04
BREOT-S62-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N63-0 (0-6")	9.00E-02	9.00E-02	2.80E-02	3.18E+01	2.86E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.14E+03	5.83E+00	2.64E-02	1.13E+00	2.03E-01	7.76E+02	1.97E-01	1.10E+03	1.84E-04
BREOT-S63-0 (0-6")	9.00E-02	9.00E-02	2.80E-02	3.61E+01	3.25E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.29E+03	6.61E+00	2.64E-02	1.13E+00	2.30E-01	7.76E+02	1.97E-01	1.10E+03	2.08E-04
BREOT-N64-0 (0-6")	9.00E-02	9.00E-02	2.80E-02	1.21E+01	1.09E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.31E+02	2.21E+00	2.64E-02	1.13E+00	7.69E-02	7.76E+02	1.97E-01	1.10E+03	6.98E-05
BREOT-S64-0 (0-6")	9.00E-02	9.00E-02	2.80E-02	4.28E+00	3.85E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.53E+02	7.83E-01	2.64E-02	1.13E+00	2.72E-02	7.76E+02	1.97E-01	1.10E+03	2.47E-05
BREOT-N66-0 (0-6")	9.00E-02	9.00E-02	2.80E-02	2.65E+01	2.39E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	9.47E+02	4.86E+00	2.64E-02	1.13E+00	1.69E-01	7.76E+02	1.97E-01	1.10E+03	1.53E-04
BREOT-S66-0 (0-6")	9.00E-02	9.00E-02	2.80E-02	3.31E+01	2.98E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.18E+03	6.06E+00	2.64E-02	1.13E+00	2.11E-01	7.76E+02	1.97E-01	1.10E+03	1.91E-04
BREOT-N67-0 (0-6")	9.00E-02	9.00E-02	2.80E-02	2.24E+02	2.01E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	7.99E+03	4.10E+01	2.64E-02	1.13E+00	1.42E+00	7.76E+02	1.97E-01	1.10E+03	1.29E-03
BREOT-S67-0 (0-6")	9.00E-02	9.00E-02	2.80E-02	1.65E+01	1.49E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.90E+02	3.02E+00	2.64E-02	1.13E+00	1.05E-01	7.76E+02	1.97E-01	1.10E+03	9.53E-05
Outside Tailings																						**Maximum HQ (At Edge of Tailings)**	**1.05E-01**
BREOT-S0+25 (0-6")	9.00E-02	9.00E-02	2.80E-02	2.68E+01	2.41E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	9.57E+02	4.91E+00	2.64E-02	1.13E+00	1.71E-01	7.76E+02	1.97E-01	1.10E+03	1.55E-04
BREOT-S1+25 (0-6")	9.00E-02	9.00E-02	2.80E-02	3.88E+01	3.49E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.38E+03	7.10E+00	2.64E-02	1.13E+00	2.47E-01	7.76E+02	1.97E-01	1.10E+03	2.24E-04
BREOT-S2+95 (0-6")	9.00E-02	9.00E-02	2.80E-02	2.50E+01	2.25E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	8.94E+02	4.58E+00	2.64E-02	1.13E+00	1.59E-01	7.76E+02	1.97E-01	1.10E+03	1.44E-04
BREOT-S3+6 (0-6")	9.00E-02	9.00E-02	2.80E-02	1.55E+01	1.40E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.55E+02	2.85E+00	2.64E-02	1.13E+00	9.88E-02	7.76E+02	1.97E-01	1.10E+03	8.97E-05
BREOT-S4+10 (0-6")	9.00E-02	9.00E-02	2.80E-02	2.99E+01	2.69E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.07E+03	5.47E+00	2.64E-02	1.13E+00	1.90E-01	7.76E+02	1.97E-01	1.10E+03	1.73E-04
BREOT-S6+25 (0-6")	9.00E-02	9.00E-02	2.80E-02	2.36E+01	2.12E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	8.43E+02	4.32E+00	2.64E-02	1.13E+00	1.50E-01	7.76E+02	1.97E-01	1.10E+03	1.36E-04
BREOT-S8+25 (0-6")	9.00E-02	9.00E-02	2.80E-02	2.42E+01	2.17E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	8.63E+02	4.42E+00	2.64E-02	1.13E+00	1.54E-01	7.76E+02	1.97E-01	1.10E+03	1.39E-04
BREOT-N10+25 (0-6")	9.00E-02	9.00E-02	2.80E-02	2.20E+01	1.98E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	7.87E+02	4.03E+00	2.64E-02	1.13E+00	1.40E-01	7.76E+02	1.97E-01	1.10E+03	1.27E-04
BREOT-N11+25 (0-6")	9.00E-02	9.00E-02	2.80E-02	2.51E+01	2.26E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	8.97E+02	4.60E+00	2.64E-02	1.13E+00	1.60E-01	7.76E+02	1.97E-01	1.10E+03	1.45E-04
BREOT-N12+25 (0-6")	9.00E-02	9.00E-02	2.80E-02	2.75E+01	2.47E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	9.81E+02	5.03E+00	2.64E-02	1.13E+00	1.75E-01	7.76E+02	1.97E-01	1.10E+03	1.59E-04
BREOT-S12+25 (0-6")	9.00E-02	9.00E-02	2.80E-02	8.86E+01	7.97E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.16E+03	1.62E+01	2.64E-02	1.13E+00	5.64E-01	7.76E+02	1.97E-01	1.10E+03	5.12E-04
BREOT-S12+60 (0-6")	9.00E-02	9.00E-02	2.80E-02	2.10E+01	1.89E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	7.49E+02	3.84E+00	2.64E-02	1.13E+00	1.33E-01	7.76E+02	1.97E-01	1.10E+03	1.21E-04
BREOT-N13+25 (0-6")	9.00E-02	9.00E-02	2.80E-02	3.68E+01	3.31E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.31E+03	6.74E+00	2.64E-02	1.13E+00	2.34E-01	7.76E+02	1.97E-01	1.10E+03	2.12E-04
BREOT-S13+25 (0-6")	9.00E-02	9.00E-02	2.80E-02	6.22E+01	5.60E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.22E+03	1.14E+01	2.64E-02	1.13E+00	3.96E-01	7.76E+02	1.97E-01	1.10E+03	3.59E-04
BREOT-S13+65 (0-6")	9.00E-02	9.00E-02	2.80E-02	3.33E+01	3.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.19E+03	6.11E+00	2.64E-02	1.13E+00	2.12E-01	7.76E+02	1.97E-01	1.10E+03	1.93E-04
BREOT-N14+25 (0-6")	9.00E-02	9.00E-02	2.80E-02	4.31E+01	3.88E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.54E+03	7.89E+00	2.64E-02	1.13E+00	2.74E-01	7.76E+02	1.97E-01	1.10E+03	2.49E-04
BREOT-S14+25 (0-6")	9.00E-02	9.00E-02	2.80E-02	8.59E+01	7.73E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.07E+03	1.57E+01	2.64E-02	1.13E+00	5.47E-01	7.76E+02	1.97E-01	1.10E+03	4.96E-04
BREOT-S14+59 (0-6")	9.00E-02	9.00E-02	2.80E-02	9.45E+00	8.50E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.38E+02	1.73E+00	2.64E-02	1.13E+00	6.01E-02	7.76E+02	1.97E-01	1.10E+03	5.46E-05
BREOT-N15+25 (0-6")	9.00E-02	9.00E-02	2.80E-02	1.42E+02	1.28E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.07E+03	2.60E+01	2.64E-02	1.13E+00	9.03E-01	7.76E+02	1.97E-01	1.10E+03	8.19E-04
BREOT-N15+50 (0-6")	9.00E-02	9.00E-02	2.80E-02	3.56E+01	3.20E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.27E+03	6.52E+00	2.64E-02	1.13E+00	2.26E-01	7.76E+02	1.97E-01	1.10E+03	2.06E-04

TABLE C-2E: MANGANESE DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **18.41**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Red-Tailed Hawk (Carnivorous Birds - Terrestrial)																							
BREOT-S16+20 (0-6")	9.00E-02	9.00E-02	2.80E-02	7.63E+01	6.86E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.73E+03	1.40E+01	2.64E-02	1.13E+00	4.86E-01	7.76E+02	1.97E-01	1.10E+03	4.41E-04
BREOT-S16+75 (0-6")	9.00E-02	9.00E-02	2.80E-02	1.67E+01	1.51E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.98E+02	3.07E+00	2.64E-02	1.13E+00	1.07E-01	7.76E+02	1.97E-01	1.10E+03	9.67E-05
BREOT-N17+25 (0-6")	9.00E-02	9.00E-02	2.80E-02	4.02E+01	3.61E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.43E+03	7.36E+00	2.64E-02	1.13E+00	2.56E-01	7.76E+02	1.97E-01	1.10E+03	2.32E-04
BREOT-S18+25 (0-6")	9.00E-02	9.00E-02	2.80E-02	8.85E+00	7.96E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.16E+02	1.62E+00	2.64E-02	1.13E+00	5.63E-02	7.76E+02	1.97E-01	1.10E+03	5.11E-05
BREOT-N19+25 (0-6")	9.00E-02	9.00E-02	2.80E-02	2.02E+01	1.82E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	7.22E+02	3.70E+00	2.64E-02	1.13E+00	1.29E-01	7.76E+02	1.97E-01	1.10E+03	1.17E-04
BREOT-S19+25 (0-6")	9.00E-02	9.00E-02	2.80E-02	1.33E+04	1.20E+03	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.75E+05	2.44E+03	2.64E-02	1.13E+00	8.47E+01	7.76E+02	1.97E-01	1.10E+03	7.69E-02
BREOT-S19+85 (0-6")	9.00E-02	9.00E-02	2.80E-02	2.04E+01	1.83E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	7.28E+02	3.73E+00	2.64E-02	1.13E+00	1.30E-01	7.76E+02	1.97E-01	1.10E+03	1.18E-04
BREOT-N20+25 (0-6")	9.00E-02	9.00E-02	2.80E-02	2.73E+01	2.46E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	9.77E+02	5.01E+00	2.64E-02	1.13E+00	1.74E-01	7.76E+02	1.97E-01	1.10E+03	1.58E-04
BREOT-S20+25 (0-6")	9.00E-02	9.00E-02	2.80E-02	1.89E+04	1.70E+03	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	6.77E+05	3.47E+03	2.64E-02	1.13E+00	1.21E+02	7.76E+02	1.97E-01	1.10E+03	1.09E-01
BREOT-S20+75 (0-6")	9.00E-02	9.00E-02	2.80E-02	2.14E+01	1.92E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	7.63E+02	3.91E+00	2.64E-02	1.13E+00	1.36E-01	7.76E+02	1.97E-01	1.10E+03	1.23E-04
BREOT-N21+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S21+25 (0-6")	9.00E-02	9.00E-02	2.80E-02	9.39E+03	8.45E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.35E+05	1.72E+03	2.64E-02	1.13E+00	5.97E+01	7.76E+02	1.97E-01	1.10E+03	5.42E-02
BREOT-N22+150 (0-6")	9.00E-02	9.00E-02	2.80E-02	2.53E+01	2.27E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	9.02E+02	4.63E+00	2.64E-02	1.13E+00	1.61E-01	7.76E+02	1.97E-01	1.10E+03	1.46E-04
BREOT-N22+25 (0-6")	9.00E-02	9.00E-02	2.80E-02	7.23E+01	6.50E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.58E+03	1.32E+01	2.64E-02	1.13E+00	4.60E-01	7.76E+02	1.97E-01	1.10E+03	4.18E-04
BREOT-S22+25 (0-6")	9.00E-02	9.00E-02	2.80E-02	4.62E+01	4.16E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.65E+03	8.47E+00	2.64E-02	1.13E+00	2.94E-01	7.76E+02	1.97E-01	1.10E+03	2.67E-04
BREOT-N23+115 (0-6")	9.00E-02	9.00E-02	2.80E-02	1.95E+01	1.76E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	6.98E+02	3.58E+00	2.64E-02	1.13E+00	1.24E-01	7.76E+02	1.97E-01	1.10E+03	1.13E-04
BREOT-N23+25 (0-6")	9.00E-02	9.00E-02	2.80E-02	1.34E+02	1.20E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.78E+03	2.45E+01	2.64E-02	1.13E+00	8.52E-01	7.76E+02	1.97E-01	1.10E+03	7.74E-04
BREOT-S23+25 (0-6")	9.00E-02	9.00E-02	2.80E-02	3.48E+01	3.13E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.24E+03	6.38E+00	2.64E-02	1.13E+00	2.22E-01	7.76E+02	1.97E-01	1.10E+03	2.01E-04
BREOT-S23+37.5 (0-6")	9.00E-02	9.00E-02	2.80E-02	2.73E+01	2.45E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	9.74E+02	4.99E+00	2.64E-02	1.13E+00	1.74E-01	7.76E+02	1.97E-01	1.10E+03	1.57E-04
BREOT-N24+25 (0-6")	9.00E-02	9.00E-02	2.80E-02	2.55E+02	2.30E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	9.13E+03	4.68E+01	2.64E-02	1.13E+00	1.63E+00	7.76E+02	1.97E-01	1.10E+03	1.48E-03
BREOT-N24+75 (0-6")	9.00E-02	9.00E-02	2.80E-02	2.79E+01	2.51E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	9.95E+02	5.10E+00	2.64E-02	1.13E+00	1.77E-01	7.76E+02	1.97E-01	1.10E+03	1.61E-04
BREOT-S24+25 (0-6")	9.00E-02	9.00E-02	2.80E-02	5.14E+01	4.63E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.84E+03	9.42E+00	2.64E-02	1.13E+00	3.27E-01	7.76E+02	1.97E-01	1.10E+03	2.97E-04
BREOT-N25+25 (0-6")	9.00E-02	9.00E-02	2.80E-02	9.26E+00	8.33E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.31E+02	1.70E+00	2.64E-02	1.13E+00	5.89E-02	7.76E+02	1.97E-01	1.10E+03	5.35E-05
BREOT-S25+25 (0-6")	9.00E-02	9.00E-02	2.80E-02	3.00E+01	2.70E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.07E+03	5.50E+00	2.64E-02	1.13E+00	1.91E-01	7.76E+02	1.97E-01	1.10E+03	1.74E-04
BREOT-S25+40 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	7.29E+02	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S26+37 (0-6")	9.00E-02	9.00E-02	2.80E-02	2.35E+01	2.11E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	8.39E+02	4.30E+00	2.64E-02	1.13E+00	1.49E-01	7.76E+02	1.97E-01	1.10E+03	1.36E-04
BREOT-N27+25 (0-6")	9.00E-02	9.00E-02	2.80E-02	2.10E+01	1.89E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	7.50E+02	3.84E+00	2.64E-02	1.13E+00	1.34E-01	7.76E+02	1.97E-01	1.10E+03	1.21E-04
BREOT-S27+25 (0-6")	9.00E-02	9.00E-02	2.80E-02	2.17E+01	1.95E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	7.76E+02	3.98E+00	2.64E-02	1.13E+00	1.38E-01	7.76E+02	1.97E-01	1.10E+03	1.25E-04
BREOT-N28+25 (0-6")	9.00E-02	9.00E-02	2.80E-02	1.69E+01	1.52E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	6.03E+02	3.09E+00	2.64E-02	1.13E+00	1.07E-01	7.76E+02	1.97E-01	1.10E+03	9.75E-05
BREOT-S28+25 (0-6")	9.00E-02	9.00E-02	2.80E-02	1.18E+01	1.06E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.22E+02	2.17E+00	2.64E-02	1.13E+00	7.53E-02	7.76E+02	1.97E-01	1.10E+03	6.83E-05
BREOT-N29+25 (0-6")	9.00E-02	9.00E-02	2.80E-02	4.04E+01	3.64E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.44E+03	7.41E+00	2.64E-02	1.13E+00	2.57E-01	7.76E+02	1.97E-01	1.10E+03	2.34E-04
BREOT-S29+25 (0-6")	9.00E-02	9.00E-02	2.80E-02	2.50E+01	2.25E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	8.94E+02	4.58E+00	2.64E-02	1.13E+00	1.59E-01	7.76E+02	1.97E-01	1.10E+03	1.44E-04
BREOT-N30+25 (0-6")	9.00E-02	9.00E-02	2.80E-02	3.16E+01	2.84E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.13E+03	5.79E+00	2.64E-02	1.13E+00	2.01E-01	7.76E+02	1.97E-01	1.10E+03	1.83E-04
BREOT-S30+25 (0-6")	9.00E-02	9.00E-02	2.80E-02	2.46E+01	2.21E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	8.79E+02	4.51E+00	2.64E-02	1.13E+00	1.57E-01	7.76E+02	1.97E-01	1.10E+03	1.42E-04
BREOT-N31+25 (0-6")	9.00E-02	9.00E-02	2.80E-02	1.85E+02	1.66E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	6.61E+03	3.39E+01	2.64E-02	1.13E+00	1.18E+00	7.76E+02	1.97E-01	1.10E+03	1.07E-03
BREOT-N31+75 (0-6")	9.00E-02	9.00E-02	2.80E-02	2.32E+01	2.09E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	8.28E+02	4.25E+00	2.64E-02	1.13E+00	1.48E-01	7.76E+02	1.97E-01	1.10E+03	1.34E-04
BREOT-S31+25 (0-6")	9.00E-02	9.00E-02	2.80E-02	1.79E+01	1.61E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	6.40E+02	3.28E+00	2.64E-02	1.13E+00	1.14E-01	7.76E+02	1.97E-01	1.10E+03	1.03E-04
BREOT-N32+25 (0-6")	9.00E-02	9.00E-02	2.80E-02	3.27E+01	2.95E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.17E+03	6.00E+00	2.64E-02	1.13E+00	2.08E-01	7.76E+02	1.97E-01	1.10E+03	1.89E-04
BREOT-S32+25 (0-6")	9.00E-02	9.00E-02	2.80E-02	4.63E+01	4.17E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.66E+03	8.49E+00	2.64E-02	1.13E+00	2.95E-01	7.76E+02	1.97E-01	1.10E+03	2.68E-04
BREOT-S32+300 (0-6")	9.00E-02	9.00E-02	2.80E-02	6.96E+01	6.26E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.49E+03	1.28E+01	2.64E-02	1.13E+00	4.43E-01	7.76E+02	1.97E-01	1.10E+03	4.02E-04
BREOT-N33+25 (0-6")	9.00E-02	9.00E-02	2.80E-02	2.41E+01	2.16E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	8.60E+02	4.41E+00	2.64E-02	1.13E+00	1.53E-01	7.76E+02	1.97E-01	1.10E+03	1.39E-04
BREOT-S33+25 (0-6")	9.00E-02	9.00E-02	2.80E-02	1.12E+02	1.00E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.99E+03	2.05E+01	2.64E-02	1.13E+00	7.11E-01	7.76E+02	1.97E-01	1.10E+03	6.45E-04
BREOT-N34+25 (0-6")	9.00E-02	9.00E-02	2.80E-02	2.14E+01	1.92E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	7.63E+02	3.91E+00	2.64E-02	1.13E+00	1.36E-01	7.76E+02	1.97E-01	1.10E+03	1.23E-04
BREOT-S34+25 (0-6")	9.00E-02	9.00E-02	2.80E-02	3.44E+01	3.09E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.23E+03	6.29E+00	2.64E-02	1.13E+00	2.19E-01	7.76E+02	1.97E-01	1.10E+03	1.98E-04
BREOT-N35+25 (0-6")	9.00E-02	9.00E-02	2.80E-02	2.54E+01	2.29E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	9.08E+02	4.66E+00	2.64E-02	1.13E+00	1.62E-01	7.76E+02	1.97E-01	1.10E+03	1.47E-04
BREOT-S35+25 (0-6")	9.00E-02	9.00E-02	2.80E-02	1.17E+02	1.05E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.17E+03	2.14E+01	2.64E-02	1.13E+00	7.42E-01	7.76E+02	1.97E-01	1.10E+03	6.74E-04
BREOT-N36+100 (0-6")	9.00E-02	9.00E-02	2.80E-02	2.58E+01	2.32E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	9.22E+02	4.73E+00	2.64E-02	1.13E+00	1.64E-01	7.76E+02	1.97E-01	1.10E+03	1.49E-04
BREOT-N36+25 (0-6")	9.00E-02	9.00E-02	2.80E-02	2.11E+02	1.90E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	7.54E+03	3.86E+01	2.64E-02	1.13E+00	1.34E+00	7.76E+02	1.97E-01	1.10E+03	1.22E-03
BREOT-S36+25 (0-6")	9.00E-02	9.00E-02	2.80E-02	1.07E+02	9.63E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.82E+03	1.96E+01	2.64E-02	1.13E+00	6.81E-01	7.76E+02	1.97E-01	1.10E+03	6.18E-04
BREOT-N37+25 (0-6")	9.00E-02	9.00E-02	2.80E-02	1.04E+01	9.39E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.73E+02	1.91E+00	2.64E-02	1.13E+00	6.64E-02	7.76E+02	1.97E-01	1.10E+03	6.03E-05
BREOT-S37+25 (0-6")	9.00E-02	9.00E-02	2.80E-02	1.44E+02	1.30E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.15E+03	2.64E+01	2.64E-02	1.13E+00	9.17E-01	7.76E+02	1.97E-01	1.10E+03	8.32E-04
BREOT-N38+25 (0-6")	9.00E-02	9.00E-02	2.80E-02	1.82E+01	1.64E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	6.50E+02	3.33E+00	2.64E-02	1.13E+00	1.16E-01	7.76E+02	1.97E-01	1.10E+03	1.05E-04
BREOT-S38+25 (0-6")	9.00E-02	9.00E-02	2.80E-02	1.38E+02	1.24E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.92E+03	2.52E+01	2.64E-02	1.13E+00	8.76E-01	7.76E+02	1.97E-01	1.10E+03	7.95E-04
BREOT-N39+25 (0-6")	9.00E-02	9.00E-02	2.80E-02	1.50E+01	1.35E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.34E+02	2.74E+00	2.64E-02	1.13E+00	9.52E-02	7.76E+02	1.97E-01	1.10E+03	8.64E-05
BREOT-S39+25 (0-6")	9.00E-02	9.00E-02	2.80E-02	1.05E+02	9.43E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.74E+03	1.92E+01	2.64E-02	1.13E+00	6.67E-01	7.76E+02	1.97E-01	1.10E+03	6.05E-04

TABLE C-2E: MANGANESE DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **18.41**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Red-Tailed Hawk (Carnivorous Birds - Terrestrial)																							
BREOT-N40+25 (0-6")	9.00E-02	9.00E-02	2.80E-02	1.59E+01	1.43E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.67E+02	2.91E+00	2.64E-02	1.13E+00	1.01E-01	7.76E+02	1.97E-01	1.10E+03	9.17E-05
BREOT-S40+25 (0-6")	9.00E-02	9.00E-02	2.80E-02	9.89E+01	8.90E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.53E+03	1.81E+01	2.64E-02	1.13E+00	6.29E-01	7.76E+02	1.97E-01	1.10E+03	5.71E-04
BREOT-N41+25 (0-6")	9.00E-02	9.00E-02	2.80E-02	1.06E+01	9.51E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.78E+02	1.94E+00	2.64E-02	1.13E+00	6.73E-02	7.76E+02	1.97E-01	1.10E+03	6.11E-05
BREOT-S41+25 (0-6")	9.00E-02	9.00E-02	2.80E-02	6.31E+01	5.68E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.26E+03	1.16E+01	2.64E-02	1.13E+00	4.02E-01	7.76E+02	1.97E-01	1.10E+03	3.65E-04
BREOT-N42+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S42+25 (0-6")	9.00E-02	9.00E-02	2.80E-02	5.51E+01	4.96E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.97E+03	1.01E+01	2.64E-02	1.13E+00	3.51E-01	7.76E+02	1.97E-01	1.10E+03	3.18E-04
BREOT-N43+12.5 (0-6")	9.00E-02	9.00E-02	2.80E-02	2.08E+01	1.87E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	7.44E+02	3.82E+00	2.64E-02	1.13E+00	1.33E-01	7.76E+02	1.97E-01	1.10E+03	1.20E-04
BREOT-N43+40 (0-6")	9.00E-02	9.00E-02	2.80E-02	2.10E+01	1.89E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	7.50E+02	3.84E+00	2.64E-02	1.13E+00	1.34E-01	7.76E+02	1.97E-01	1.10E+03	1.21E-04
BREOT-S43+25 (0-6")	9.00E-02	9.00E-02	2.80E-02	2.66E+01	2.39E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	9.50E+02	4.87E+00	2.64E-02	1.13E+00	1.69E-01	7.76E+02	1.97E-01	1.10E+03	1.54E-04
BREOT-N44+55 (0-6")	9.00E-02	9.00E-02	2.80E-02	1.86E+01	1.67E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	6.64E+02	3.41E+00	2.64E-02	1.13E+00	1.18E-01	7.76E+02	1.97E-01	1.10E+03	1.07E-04
BREOT-S44+25 (0-6")	9.00E-02	9.00E-02	2.80E-02	3.52E+01	3.17E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.26E+03	6.45E+00	2.64E-02	1.13E+00	2.24E-01	7.76E+02	1.97E-01	1.10E+03	2.03E-04
BREOT-N45+25 (0-6")	9.00E-02	9.00E-02	2.80E-02	1.82E+01	1.64E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	6.50E+02	3.33E+00	2.64E-02	1.13E+00	1.16E-01	7.76E+02	1.97E-01	1.10E+03	1.05E-04
BREOT-S45+25 (0-6")	9.00E-02	9.00E-02	2.80E-02	8.49E+00	7.64E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.03E+02	1.56E+00	2.64E-02	1.13E+00	5.40E-02	7.76E+02	1.97E-01	1.10E+03	4.90E-05
BREOT-N46+25 (0-6")	9.00E-02	9.00E-02	2.80E-02	2.71E+01	2.44E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	9.67E+02	4.96E+00	2.64E-02	1.13E+00	1.72E-01	7.76E+02	1.97E-01	1.10E+03	1.56E-04
BREOT-S46+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N47+25 (0-6")	9.00E-02	9.00E-02	2.80E-02	2.18E+01	1.96E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	7.79E+02	4.00E+00	2.64E-02	1.13E+00	1.39E-01	7.76E+02	1.97E-01	1.10E+03	1.26E-04
BREOT-S47+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N48+25 (0-6")	9.00E-02	9.00E-02	2.80E-02	1.73E+01	1.55E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	6.17E+02	3.17E+00	2.64E-02	1.13E+00	1.10E-01	7.76E+02	1.97E-01	1.10E+03	9.98E-05
BREOT-S48+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N49+25 (0-6")	9.00E-02	9.00E-02	2.80E-02	2.59E+01	2.33E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	9.26E+02	4.75E+00	2.64E-02	1.13E+00	1.65E-01	7.76E+02	1.97E-01	1.10E+03	1.50E-04
BREOT-S49+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N51+25 (0-6")	9.00E-02	9.00E-02	2.80E-02	2.19E+01	1.97E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	7.84E+02	4.02E+00	2.64E-02	1.13E+00	1.40E-01	7.76E+02	1.97E-01	1.10E+03	1.27E-04
BREOT-S51+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N52+25 (0-6")	9.00E-02	9.00E-02	2.80E-02	9.07E+00	8.16E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.24E+02	1.66E+00	2.64E-02	1.13E+00	5.77E-02	7.76E+02	1.97E-01	1.10E+03	5.24E-05
BREOT-S52+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N53+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S53+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S54+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N55+25 (0-6")	9.00E-02	9.00E-02	2.80E-02	2.00E+01	1.80E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	7.14E+02	3.66E+00	2.64E-02	1.13E+00	1.27E-01	7.76E+02	1.97E-01	1.10E+03	1.15E-04
BREOT-S55+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N56+25 (0-6")	9.00E-02	9.00E-02	2.80E-02	1.96E+01	1.76E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	6.99E+02	3.58E+00	2.64E-02	1.13E+00	1.24E-01	7.76E+02	1.97E-01	1.10E+03	1.13E-04
BREOT-S56+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N57+25 (0-6")	9.00E-02	9.00E-02	2.80E-02	2.06E+01	1.85E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	7.36E+02	3.77E+00	2.64E-02	1.13E+00	1.31E-01	7.76E+02	1.97E-01	1.10E+03	1.19E-04
BREOT-S57+25 (0-6")	9.00E-02	9.00E-02	2.80E-02	6.85E+01	6.16E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.45E+03	1.25E+01	2.64E-02	1.13E+00	4.36E-01	7.76E+02	1.97E-01	1.10E+03	3.95E-04
BREOT-N58+25 (0-6")	9.00E-02	9.00E-02	2.80E-02	2.72E+01	2.45E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	9.73E+02	4.99E+00	2.64E-02	1.13E+00	1.73E-01	7.76E+02	1.97E-01	1.10E+03	1.57E-04
BREOT-S58+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N59+25 (0-6")	9.00E-02	9.00E-02	2.80E-02	4.30E+01	3.87E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.54E+03	7.87E+00	2.64E-02	1.13E+00	2.73E-01	7.76E+02	1.97E-01	1.10E+03	2.48E-04
BREOT-N60+25 (0-6")	9.00E-02	9.00E-02	2.80E-02	1.47E+01	1.32E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.24E+02	2.69E+00	2.64E-02	1.13E+00	9.33E-02	7.76E+02	1.97E-01	1.10E+03	8.47E-05
BREOT-S60+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S61+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N62+25 (0-6")	9.00E-02	9.00E-02	2.80E-02	2.44E+01	2.19E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	8.71E+02	4.46E+00	2.64E-02	1.13E+00	1.55E-01	7.76E+02	1.97E-01	1.10E+03	1.41E-04
BREOT-S62+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N63+25 (0-6")	9.00E-02	9.00E-02	2.80E-02	3.83E+01	3.45E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.37E+03	7.02E+00	2.64E-02	1.13E+00	2.44E-01	7.76E+02	1.97E-01	1.10E+03	2.21E-04
BREOT-S63+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N64+25 (0-6")	9.00E-02	9.00E-02	2.80E-02	1.34E+01	1.21E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.80E+02	2.46E+00	2.64E-02	1.13E+00	8.55E-02	7.76E+02	1.97E-01	1.10E+03	7.76E-05
BREOT-S64+25 (0-6")	9.00E-02	9.00E-02	2.80E-02	5.31E+00	4.77E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.90E+02	9.72E-01	2.64E-02	1.13E+00	3.38E-02	7.76E+02	1.97E-01	1.10E+03	3.07E-05
BREOT-S65+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N66+25 (0-6")	9.00E-02	9.00E-02	2.80E-02	2.09E+01	1.88E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	7.46E+02	3.82E+00	2.64E-02	1.13E+00	1.33E-01	7.76E+02	1.97E-01	1.10E+03	1.21E-04
BREOT-S66+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N67+125 (0-6")	9.00E-02	9.00E-02	2.80E-02	1.08E+01	9.72E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.86E+02	1.98E+00	2.64E-02	1.13E+00	6.88E-02	7.76E+02	1.97E-01	1.10E+03	6.24E-05
BREOT-S67+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N67+25 (0-6")	9.00E-02	9.00E-02	2.80E-02	2.53E+01	2.28E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	9.05E+02	4.64E+00	2.64E-02	1.13E+00	1.61E-01	7.76E+02	1.97E-01	1.10E+03	1.46E-04
																						Maximum HQ (Outside Tailings)	**1.09E-01**

TABLE C-2E: MANGANESE DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **18.41**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
American Kestrel (Insectivorous Birds - Terrestrial)																							
Reference Sites																							
ACBG-1 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	4.35E+02	5.99E+00	7.84E-04	2.95E+02	2.31E-01	7.04E-02	1.24E-01	3.53E+00	7.76E+02	1.97E-01	7.08E+02	4.98E-03
ACBG-2 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.47E+03	2.03E+01	7.84E-04	9.97E+02	7.82E-01	7.04E-02	1.24E-01	1.19E+01	7.76E+02	1.97E-01	7.08E+02	1.69E-02
UBRBG-202 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.33E+03	1.83E+01	7.84E-04	9.01E+02	7.07E-01	7.04E-02	1.24E-01	1.08E+01	7.76E+02	1.97E-01	7.08E+02	1.52E-02
UBRBG-204 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.02E+03	1.41E+01	7.84E-04	6.94E+02	5.44E-01	7.04E-02	1.24E-01	8.30E+00	7.76E+02	1.97E-01	7.08E+02	1.17E-02
Inside Tailings																						**Minimum HQ (Reference Sites)**	**4.98E-03**
BREOT-S6-12.5 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S2-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	5.77E+03	7.94E+01	7.84E-04	3.91E+03	3.07E+00	7.04E-02	1.24E-01	4.68E+01	7.76E+02	1.97E-01	7.08E+02	6.62E-02
BREOT-S0-12.5 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S1-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	8.14E+02	1.12E+01	7.84E-04	5.52E+02	4.33E-01	7.04E-02	1.24E-01	6.60E+00	7.76E+02	1.97E-01	7.08E+02	9.33E-03
BREOT-S7-25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	2.03E+03	2.79E+01	7.84E-04	1.38E+03	1.08E+00	7.04E-02	1.24E-01	1.65E+01	7.76E+02	1.97E-01	7.08E+02	2.33E-02
BREOT-S8-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	9.24E+02	1.27E+01	7.84E-04	6.26E+02	4.91E-01	7.04E-02	1.24E-01	7.49E+00	7.76E+02	1.97E-01	7.08E+02	1.06E-02
BREOT-S9-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.16E+03	1.59E+01	7.84E-04	7.85E+02	6.16E-01	7.04E-02	1.24E-01	9.40E+00	7.76E+02	1.97E-01	7.08E+02	1.33E-02
BREOT-N10-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	5.26E+03	7.24E+01	7.84E-04	3.57E+03	2.80E+00	7.04E-02	1.24E-01	4.27E+01	7.76E+02	1.97E-01	7.08E+02	6.03E-02
BREOT-N11-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	7.29E+02	1.00E+01	7.84E-04	4.94E+02	3.87E-01	7.04E-02	1.24E-01	5.91E+00	7.76E+02	1.97E-01	7.08E+02	8.35E-03
BREOT-N11-125 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	4.71E+02	6.48E+00	7.84E-04	3.19E+02	2.50E-01	7.04E-02	1.24E-01	3.82E+00	7.76E+02	1.97E-01	7.08E+02	5.40E-03
BREOT-S11-12 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	4.87E+03	6.70E+01	7.84E-04	3.30E+03	2.59E+00	7.04E-02	1.24E-01	3.95E+01	7.76E+02	1.97E-01	7.08E+02	5.58E-02
BREOT-S11+63 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	5.56E+02	7.65E+00	7.84E-04	3.76E+02	2.95E-01	7.04E-02	1.24E-01	4.51E+00	7.76E+02	1.97E-01	7.08E+02	6.37E-03
UBDT-TP-6 (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.04E+04	1.43E+02	7.84E-04	7.05E+03	5.53E+00	7.04E-02	1.24E-01	8.44E+01	7.76E+02	1.97E-01	7.08E+02	1.19E-01
UBDT-TP-6 (2-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	8.10E+03	1.11E+02	7.84E-04	5.49E+03	4.31E+00	7.04E-02	1.24E-01	6.57E+01	7.76E+02	1.97E-01	7.08E+02	9.28E-02
UBDT-TP-6 (12-24")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.07E+04	1.48E+02	7.84E-04	7.27E+03	5.70E+00	7.04E-02	1.24E-01	8.70E+01	7.76E+02	1.97E-01	7.08E+02	1.23E-01
UBDT-TP-6 (24-36")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	4.14E+03	5.70E+01	7.84E-04	2.81E+03	2.20E+00	7.04E-02	1.24E-01	3.36E+01	7.76E+02	1.97E-01	7.08E+02	4.74E-02
UBDT-TP-6 (36-48")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.13E+04	1.56E+02	7.84E-04	7.68E+03	6.02E+00	7.04E-02	1.24E-01	9.19E+01	7.76E+02	1.97E-01	7.08E+02	1.30E-01
UBDT-TP-6 (48-60")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	6.88E+03	9.47E+01	7.84E-04	4.66E+03	3.66E+00	7.04E-02	1.24E-01	5.58E+01	7.76E+02	1.97E-01	7.08E+02	7.89E-02
BREOT-N12-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	3.31E+03	4.55E+01	7.84E-04	2.24E+03	1.76E+00	7.04E-02	1.24E-01	2.68E+01	7.76E+02	1.97E-01	7.08E+02	3.79E-02
BREOT-S12-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	2.78E+03	3.82E+01	7.84E-04	1.88E+03	1.47E+00	7.04E-02	1.24E-01	2.25E+01	7.76E+02	1.97E-01	7.08E+02	3.18E-02
BREOT-S13-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	3.86E+03	5.31E+01	7.84E-04	2.61E+03	2.05E+00	7.04E-02	1.24E-01	3.13E+01	7.76E+02	1.97E-01	7.08E+02	4.42E-02
BREOT-S14-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.99E+03	2.75E+01	7.84E-04	1.35E+03	1.06E+00	7.04E-02	1.24E-01	1.62E+01	7.76E+02	1.97E-01	7.08E+02	2.29E-02
BREOT-N15-12.5 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S15-12.5 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N16-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	3.19E+03	4.38E+01	7.84E-04	2.16E+03	1.69E+00	7.04E-02	1.24E-01	2.58E+01	7.76E+02	1.97E-01	7.08E+02	3.65E-02
BREOT-N16-25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.69E+03	2.32E+01	7.84E-04	1.14E+03	8.97E-01	7.04E-02	1.24E-01	1.37E+01	7.76E+02	1.97E-01	7.08E+02	1.93E-02
BREOT-S16-12.5 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N17-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	8.89E+02	1.22E+01	7.84E-04	6.03E+02	4.73E-01	7.04E-02	1.24E-01	7.21E+00	7.76E+02	1.97E-01	7.08E+02	1.02E-02
BREOT-S17-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	5.68E+02	7.81E+00	7.84E-04	3.85E+02	3.02E-01	7.04E-02	1.24E-01	4.60E+00	7.76E+02	1.97E-01	7.08E+02	6.51E-03
BREOT-S17-25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.46E+03	2.01E+01	7.84E-04	9.91E+02	7.77E-01	7.04E-02	1.24E-01	1.19E+01	7.76E+02	1.97E-01	7.08E+02	1.68E-02
UBDT-TP-4 (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	9.07E+03	1.25E+02	7.84E-04	6.15E+03	4.82E+00	7.04E-02	1.24E-01	7.36E+01	7.76E+02	1.97E-01	7.08E+02	1.04E-01
UBDT-TP-4 (2-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	5.74E+03	7.90E+01	7.84E-04	3.89E+03	3.05E+00	7.04E-02	1.24E-01	4.66E+01	7.76E+02	1.97E-01	7.08E+02	6.58E-02
UBDT-TP-4 (12-24")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	2.82E+03	3.88E+01	7.84E-04	1.91E+03	1.50E+00	7.04E-02	1.24E-01	2.29E+01	7.76E+02	1.97E-01	7.08E+02	3.23E-02
UBDT-TP-4 (24-36")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	2.62E+03	3.61E+01	7.84E-04	1.78E+03	1.39E+00	7.04E-02	1.24E-01	2.13E+01	7.76E+02	1.97E-01	7.08E+02	3.01E-02
BREOT-N18-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	8.84E+03	1.22E+02	7.84E-04	5.99E+03	4.70E+00	7.04E-02	1.24E-01	7.17E+01	7.76E+02	1.97E-01	7.08E+02	1.01E-01
BREOT-N18-25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	8.35E+02	1.15E+01	7.84E-04	5.66E+02	4.44E-01	7.04E-02	1.24E-01	6.77E+00	7.76E+02	1.97E-01	7.08E+02	9.57E-03
BREOT-S18-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	2.23E+03	3.07E+01	7.84E-04	1.51E+03	1.18E+00	7.04E-02	1.24E-01	1.81E+01	7.76E+02	1.97E-01	7.08E+02	2.55E-02
BREOT-N19-10 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.30E+03	1.80E+01	7.84E-04	8.84E+02	6.93E-01	7.04E-02	1.24E-01	1.06E+01	7.76E+02	1.97E-01	7.08E+02	1.50E-02
BREOT-S19-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	4.23E+03	5.82E+01	7.84E-04	2.87E+03	2.25E+00	7.04E-02	1.24E-01	3.43E+01	7.76E+02	1.97E-01	7.08E+02	4.85E-02
UBDT-TP-5 (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	6.84E+03	9.41E+01	7.84E-04	4.63E+03	3.63E+00	7.04E-02	1.24E-01	5.55E+01	7.76E+02	1.97E-01	7.08E+02	7.84E-02
UBDT-TP-5 (2-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	5.71E+03	7.86E+01	7.84E-04	3.87E+03	3.04E+00	7.04E-02	1.24E-01	4.63E+01	7.76E+02	1.97E-01	7.08E+02	6.55E-02
UBDT-TP-5 (12-24")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	5.21E+03	7.17E+01	7.84E-04	3.53E+03	2.77E+00	7.04E-02	1.24E-01	4.22E+01	7.76E+02	1.97E-01	7.08E+02	5.97E-02
BREOT-N20-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.13E+03	1.55E+01	7.84E-04	7.65E+02	6.00E-01	7.04E-02	1.24E-01	9.16E+00	7.76E+02	1.97E-01	7.08E+02	1.29E-02
UBDT-TP-3 (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.18E+03	1.62E+01	7.84E-04	7.98E+02	6.26E-01	7.04E-02	1.24E-01	9.56E+00	7.76E+02	1.97E-01	7.08E+02	1.35E-02
UBDT-TP-3 (2-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UBDT-TP-3 (12-24")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	4.45E+02	6.12E+00	7.84E-04	3.01E+02	2.36E-01	7.04E-02	1.24E-01	3.61E+00	7.76E+02	1.97E-01	7.08E+02	5.09E-03
UBDT-TP-3 (24-36")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	5.32E+02	7.31E+00	7.84E-04	3.60E+02	2.82E-01	7.04E-02	1.24E-01	4.31E+00	7.76E+02	1.97E-01	7.08E+02	6.09E-03
UBDT-TP-3 (36-48")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	8.18E+03	1.13E+02	7.84E-04	5.54E+03	4.35E+00	7.04E-02	1.24E-01	6.63E+01	7.76E+02	1.97E-01	7.08E+02	9.37E-02
UBDT-TP-3 (48-60")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	3.88E+03	5.34E+01	7.84E-04	2.63E+03	2.06E+00	7.04E-02	1.24E-01	3.14E+01	7.76E+02	1.97E-01	7.08E+02	4.44E-02
BREOT-N21-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.01E+04	1.39E+02	7.84E-04	6.83E+03	5.35E+00	7.04E-02	1.24E-01	8.17E+01	7.76E+02	1.97E-01	7.08E+02	1.15E-01
BREOT-N22-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	9.92E+02	1.36E+01	7.84E-04	6.72E+02	5.27E-01	7.04E-02	1.24E-01	8.04E+00	7.76E+02	1.97E-01	7.08E+02	1.14E-02

TABLE C-2E: MANGANESE DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **18.41**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
American Kestrel (Insectivorous Birds - Terrestrial)																							
BREOT-N23-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	2.16E+03	2.97E+01	7.84E-04	1.46E+03	1.15E+00	7.04E-02	1.24E-01	1.75E+01	7.76E+02	1.97E-01	7.08E+02	2.48E-02
BREOT-S23-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	2.34E+04	3.23E+02	7.84E-04	1.59E+04	1.25E+01	7.04E-02	1.24E-01	1.90E+02	7.76E+02	1.97E-01	7.08E+02	2.69E-01
UBDT-TP-2 (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	8.08E+03	1.11E+02	7.84E-04	5.48E+03	4.30E+00	7.04E-02	1.24E-01	6.55E+01	7.76E+02	1.97E-01	7.08E+02	9.26E-02
UBDT-TP-2 (2-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.06E+04	1.46E+02	7.84E-04	7.21E+03	5.65E+00	7.04E-02	1.24E-01	8.63E+01	7.76E+02	1.97E-01	7.08E+02	1.22E-01
UBDT-TP-2 (12-24")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	8.02E+03	1.10E+02	7.84E-04	5.44E+03	4.26E+00	7.04E-02	1.24E-01	6.51E+01	7.76E+02	1.97E-01	7.08E+02	9.19E-02
UBDT-TP-2 (24-36")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	4.07E+03	5.61E+01	7.84E-04	2.76E+03	2.16E+00	7.04E-02	1.24E-01	3.30E+01	7.76E+02	1.97E-01	7.08E+02	4.67E-02
UBDT-TP-2 (36-48")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	4.11E+03	5.66E+01	7.84E-04	2.79E+03	2.19E+00	7.04E-02	1.24E-01	3.34E+01	7.76E+02	1.97E-01	7.08E+02	4.71E-02
BREOT-S24-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	2.40E+04	3.30E+02	7.84E-04	1.63E+04	1.28E+01	7.04E-02	1.24E-01	1.95E+02	7.76E+02	1.97E-01	7.08E+02	2.75E-01
BREOT-N25-50 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	7.11E+03	9.79E+01	7.84E-04	4.82E+03	3.78E+00	7.04E-02	1.24E-01	5.77E+01	7.76E+02	1.97E-01	7.08E+02	8.15E-02
BREOT-N25-95 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S25-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	8.57E+03	1.18E+02	7.84E-04	5.81E+03	4.56E+00	7.04E-02	1.24E-01	6.95E+01	7.76E+02	1.97E-01	7.08E+02	9.82E-02
BREOT-S25-40 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N26A-25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	6.76E+02	9.30E+00	7.84E-04	4.58E+02	3.59E-01	7.04E-02	1.24E-01	5.48E+00	7.76E+02	1.97E-01	7.08E+02	7.74E-03
BREOT-N26B-25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	2.81E+03	3.86E+01	7.84E-04	1.90E+03	1.49E+00	7.04E-02	1.24E-01	2.28E+01	7.76E+02	1.97E-01	7.08E+02	3.22E-02
BREOT-N26-50 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	7.10E+03	9.77E+01	7.84E-04	4.81E+03	3.77E+00	7.04E-02	1.24E-01	5.76E+01	7.76E+02	1.97E-01	7.08E+02	8.14E-02
BREOT-N26-75 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	3.92E+03	5.39E+01	7.84E-04	2.65E+03	2.08E+00	7.04E-02	1.24E-01	3.18E+01	7.76E+02	1.97E-01	7.08E+02	4.49E-02
BREOT-S26-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	3.51E+03	4.83E+01	7.84E-04	2.38E+03	1.87E+00	7.04E-02	1.24E-01	2.85E+01	7.76E+02	1.97E-01	7.08E+02	4.02E-02
BREOT-S26-40 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.06E+04	1.46E+02	7.84E-04	7.17E+03	5.63E+00	7.04E-02	1.24E-01	8.59E+01	7.76E+02	1.97E-01	7.08E+02	1.21E-01
BREOT-N27-30 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	3.92E+03	5.40E+01	7.84E-04	2.66E+03	2.08E+00	7.04E-02	1.24E-01	3.18E+01	7.76E+02	1.97E-01	7.08E+02	4.49E-02
BREOT-N27-75 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.12E+04	1.54E+02	7.84E-04	7.57E+03	5.94E+00	7.04E-02	1.24E-01	9.06E+01	7.76E+02	1.97E-01	7.08E+02	1.28E-01
BREOT-S27-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	2.24E+03	3.08E+01	7.84E-04	1.52E+03	1.19E+00	7.04E-02	1.24E-01	1.82E+01	7.76E+02	1.97E-01	7.08E+02	2.57E-02
BREOT-N28-110 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	2.07E+03	2.85E+01	7.84E-04	1.40E+03	1.10E+00	7.04E-02	1.24E-01	1.68E+01	7.76E+02	1.97E-01	7.08E+02	2.37E-02
BREOT-N28-55 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	5.49E+03	7.55E+01	7.84E-04	3.72E+03	2.92E+00	7.04E-02	1.24E-01	4.45E+01	7.76E+02	1.97E-01	7.08E+02	6.29E-02
BREOT-S28-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.24E+04	1.70E+02	7.84E-04	8.38E+03	6.57E+00	7.04E-02	1.24E-01	1.00E+02	7.76E+02	1.97E-01	7.08E+02	1.42E-01
UBDT-TP-1 (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	8.19E+03	1.13E+02	7.84E-04	5.55E+03	4.35E+00	7.04E-02	1.24E-01	6.64E+01	7.76E+02	1.97E-01	7.08E+02	9.39E-02
UBDT-TP-1 (2-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	8.15E+03	1.12E+02	7.84E-04	5.52E+03	4.33E+00	7.04E-02	1.24E-01	6.61E+01	7.76E+02	1.97E-01	7.08E+02	9.34E-02
UBDT-TP-1 (12-24")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	8.37E+03	1.15E+02	7.84E-04	5.67E+03	4.45E+00	7.04E-02	1.24E-01	6.79E+01	7.76E+02	1.97E-01	7.08E+02	9.59E-02
UBDT-TP-1 (24-36")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.11E+04	1.53E+02	7.84E-04	7.55E+03	5.92E+00	7.04E-02	1.24E-01	9.03E+01	7.76E+02	1.97E-01	7.08E+02	1.28E-01
UBDT-TP-1 (36-48")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.77E+03	2.44E+01	7.84E-04	1.20E+03	9.41E-01	7.04E-02	1.24E-01	1.44E+01	7.76E+02	1.97E-01	7.08E+02	2.03E-02
UBDT-TP-1 (48-60")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	2.20E+03	3.03E+01	7.84E-04	1.49E+03	1.17E+00	7.04E-02	1.24E-01	1.79E+01	7.76E+02	1.97E-01	7.08E+02	2.53E-02
BREOT-N29-30 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	8.50E+03	1.17E+02	7.84E-04	5.76E+03	4.52E+00	7.04E-02	1.24E-01	6.90E+01	7.76E+02	1.97E-01	7.08E+02	9.74E-02
BREOT-S29-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.04E+04	1.44E+02	7.84E-04	7.07E+03	5.55E+00	7.04E-02	1.24E-01	8.46E+01	7.76E+02	1.97E-01	7.08E+02	1.20E-01
BREOT-N30-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	2.91E+03	4.00E+01	7.84E-04	1.97E+03	1.55E+00	7.04E-02	1.24E-01	2.36E+01	7.76E+02	1.97E-01	7.08E+02	3.33E-02
BREOT-S30-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	7.17E+03	9.87E+01	7.84E-04	4.86E+03	3.81E+00	7.04E-02	1.24E-01	5.82E+01	7.76E+02	1.97E-01	7.08E+02	8.22E-02
BREOT-N31-12.5 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S31-25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	5.78E+03	7.96E+01	7.84E-04	3.92E+03	3.07E+00	7.04E-02	1.24E-01	4.69E+01	7.76E+02	1.97E-01	7.08E+02	6.63E-02
BREOT-S31-5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	9.42E+03	1.30E+02	7.84E-04	6.38E+03	5.01E+00	7.04E-02	1.24E-01	7.64E+01	7.76E+02	1.97E-01	7.08E+02	1.08E-01
BREOT-N32-12.5 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S32-6 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	2.04E+03	2.81E+01	7.84E-04	1.38E+03	1.08E+00	7.04E-02	1.24E-01	1.65E+01	7.76E+02	1.97E-01	7.08E+02	2.34E-02
BREOT-N33-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	5.93E+02	8.16E+00	7.84E-04	4.02E+02	3.15E-01	7.04E-02	1.24E-01	4.81E+00	7.76E+02	1.97E-01	7.08E+02	6.80E-03
BREOT-S33-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	3.98E+03	5.48E+01	7.84E-04	2.70E+03	2.11E+00	7.04E-02	1.24E-01	3.23E+01	7.76E+02	1.97E-01	7.08E+02	4.56E-02
BREOT-N35-12.5 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S35-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.25E+04	1.72E+02	7.84E-04	8.47E+03	6.64E+00	7.04E-02	1.24E-01	1.01E+02	7.76E+02	1.97E-01	7.08E+02	1.43E-01
BREOT-N36-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	4.81E+03	6.62E+01	7.84E-04	3.26E+03	2.56E+00	7.04E-02	1.24E-01	3.90E+01	7.76E+02	1.97E-01	7.08E+02	5.52E-02
BREOT-S36-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.66E+03	2.29E+01	7.84E-04	1.13E+03	8.85E-01	7.04E-02	1.24E-01	1.35E+01	7.76E+02	1.97E-01	7.08E+02	1.91E-02
BREOT-N37-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	4.87E+02	6.70E+00	7.84E-04	3.30E+02	2.59E-01	7.04E-02	1.24E-01	3.95E+00	7.76E+02	1.97E-01	7.08E+02	5.58E-03
BREOT-S37-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.97E+03	2.71E+01	7.84E-04	1.33E+03	1.04E+00	7.04E-02	1.24E-01	1.59E+01	7.76E+02	1.97E-01	7.08E+02	2.25E-02
BREOT-N38-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	9.82E+02	1.35E+01	7.84E-04	6.65E+02	5.22E-01	7.04E-02	1.24E-01	7.96E+00	7.76E+02	1.97E-01	7.08E+02	1.12E-02
BREOT-S38-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.74E+04	2.39E+02	7.84E-04	1.18E+04	9.22E+00	7.04E-02	1.24E-01	1.41E+02	7.76E+02	1.97E-01	7.08E+02	1.99E-01
BREOT-N39-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.46E+03	2.01E+01	7.84E-04	9.89E+02	7.76E-01	7.04E-02	1.24E-01	1.18E+01	7.76E+02	1.97E-01	7.08E+02	1.67E-02
BREOT-S39-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	6.80E+03	9.36E+01	7.84E-04	4.61E+03	3.61E+00	7.04E-02	1.24E-01	5.51E+01	7.76E+02	1.97E-01	7.08E+02	7.79E-02
BREOT-N40-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	6.83E+03	9.40E+01	7.84E-04	4.63E+03	3.63E+00	7.04E-02	1.24E-01	5.54E+01	7.76E+02	1.97E-01	7.08E+02	7.83E-02
BREOT-S40-14 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	6.31E+03	8.69E+01	7.84E-04	4.28E+03	3.35E+00	7.04E-02	1.24E-01	5.12E+01	7.76E+02	1.97E-01	7.08E+02	7.23E-02
BREOT-N41-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	5.03E+03	6.92E+01	7.84E-04	3.41E+03	2.67E+00	7.04E-02	1.24E-01	4.08E+01	7.76E+02	1.97E-01	7.08E+02	5.76E-02
BREOT-S41-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	6.31E+03	8.69E+01	7.84E-04	4.28E+03	3.35E+00	7.04E-02	1.24E-01	5.12E+01	7.76E+02	1.97E-01	7.08E+02	7.23E-02

TABLE C-2E: MANGANESE DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **18.41**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
American Kestrel (Insectivorous Birds - Terrestrial)																							
BREOT-N42-35 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.16E+03	1.59E+01	7.84E-04	7.85E+02	6.16E-01	7.04E-02	1.24E-01	9.40E+00	7.76E+02	1.97E-01	7.08E+02	1.33E-02
BREOT-S42-25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	2.45E+03	3.37E+01	7.84E-04	1.66E+03	1.30E+00	7.04E-02	1.24E-01	1.99E+01	7.76E+02	1.97E-01	7.08E+02	2.81E-02
BREOT-N43-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.49E+04	2.05E+02	7.84E-04	1.01E+04	7.92E+00	7.04E-02	1.24E-01	1.21E+02	7.76E+02	1.97E-01	7.08E+02	1.71E-01
BREOT-S43-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	3.27E+03	4.51E+01	7.84E-04	2.22E+03	1.74E+00	7.04E-02	1.24E-01	2.65E+01	7.76E+02	1.97E-01	7.08E+02	3.75E-02
BREOT-N44-30 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.17E+03	1.61E+01	7.84E-04	7.91E+02	6.21E-01	7.04E-02	1.24E-01	9.47E+00	7.76E+02	1.97E-01	7.08E+02	1.34E-02
BREOT-S44-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.10E+04	1.51E+02	7.84E-04	7.44E+03	5.83E+00	7.04E-02	1.24E-01	8.90E+01	7.76E+02	1.97E-01	7.08E+02	1.26E-01
BREOT-N45-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.41E+03	1.94E+01	7.84E-04	9.57E+02	7.51E-01	7.04E-02	1.24E-01	1.15E+01	7.76E+02	1.97E-01	7.08E+02	1.62E-02
BREOT-N43-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.49E+04	2.05E+02	7.84E-04	1.01E+04	7.92E+00	7.04E-02	1.24E-01	1.21E+02	7.76E+02	1.97E-01	7.08E+02	1.71E-01
BREOT-S45-6 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.89E+03	2.60E+01	7.84E-04	1.28E+03	1.00E+00	7.04E-02	1.24E-01	1.53E+01	7.76E+02	1.97E-01	7.08E+02	2.16E-02
BREOT-N46-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	5.42E+02	7.46E+00	7.84E-04	3.67E+02	2.88E-01	7.04E-02	1.24E-01	4.40E+00	7.76E+02	1.97E-01	7.08E+02	6.21E-03
BREOT-S46-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	5.39E+02	7.42E+00	7.84E-04	3.65E+02	2.87E-01	7.04E-02	1.24E-01	4.37E+00	7.76E+02	1.97E-01	7.08E+02	6.18E-03
BREOT-S46-40 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	8.26E+02	1.14E+01	7.84E-04	5.59E+02	4.39E-01	7.04E-02	1.24E-01	6.70E+00	7.76E+02	1.97E-01	7.08E+02	9.46E-03
BREOT-N47-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.04E+03	1.43E+01	7.84E-04	7.04E+02	5.52E-01	7.04E-02	1.24E-01	8.42E+00	7.76E+02	1.97E-01	7.08E+02	1.19E-02
BREOT-S47-999 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.10E+03	1.52E+01	7.84E-04	7.47E+02	5.86E-01	7.04E-02	1.24E-01	8.94E+00	7.76E+02	1.97E-01	7.08E+02	1.26E-02
BREOT-S48-12.5 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S49-2.5 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S50-12.5 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S50-25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N52-60 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S52-12.5 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S53-12.5 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S54-12.5 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N55-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	5.53E+03	7.62E+01	7.84E-04	3.75E+03	2.94E+00	7.04E-02	1.24E-01	4.49E+01	7.76E+02	1.97E-01	7.08E+02	6.34E-02
BREOT-S55-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	2.28E+03	3.14E+01	7.84E-04	1.55E+03	1.21E+00	7.04E-02	1.24E-01	1.85E+01	7.76E+02	1.97E-01	7.08E+02	2.62E-02
BREOT-N56-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	2.64E+03	3.63E+01	7.84E-04	1.79E+03	1.40E+00	7.04E-02	1.24E-01	2.14E+01	7.76E+02	1.97E-01	7.08E+02	3.02E-02
BREOT-S56-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.40E+03	1.93E+01	7.84E-04	9.52E+02	7.46E-01	7.04E-02	1.24E-01	1.14E+01	7.76E+02	1.97E-01	7.08E+02	1.61E-02
BREOT-N57-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.76E+03	2.42E+01	7.84E-04	1.19E+03	9.36E-01	7.04E-02	1.24E-01	1.43E+01	7.76E+02	1.97E-01	7.08E+02	2.02E-02
BREOT-S57-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.83E+03	2.52E+01	7.84E-04	1.24E+03	9.75E-01	7.04E-02	1.24E-01	1.49E+01	7.76E+02	1.97E-01	7.08E+02	2.10E-02
BREOT-N58-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	3.04E+03	4.18E+01	7.84E-04	2.06E+03	1.61E+00	7.04E-02	1.24E-01	2.46E+01	7.76E+02	1.97E-01	7.08E+02	3.48E-02
BREOT-S58-12 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.90E+03	2.61E+01	7.84E-04	1.29E+03	1.01E+00	7.04E-02	1.24E-01	1.54E+01	7.76E+02	1.97E-01	7.08E+02	2.18E-02
BREOT-N59-18 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.04E+03	1.43E+01	7.84E-04	7.05E+02	5.53E-01	7.04E-02	1.24E-01	8.44E+00	7.76E+02	1.97E-01	7.08E+02	1.19E-02
BREOT-N60-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.78E+03	2.44E+01	7.84E-04	1.20E+03	9.44E-01	7.04E-02	1.24E-01	1.44E+01	7.76E+02	1.97E-01	7.08E+02	2.04E-02
BREOT-S60-12.5 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S61-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	9.43E+03	1.30E+02	7.84E-04	6.39E+03	5.01E+00	7.04E-02	1.24E-01	7.65E+01	7.76E+02	1.97E-01	7.08E+02	1.08E-01
BREOT-N62-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	9.16E+02	1.26E+01	7.84E-04	6.21E+02	4.87E-01	7.04E-02	1.24E-01	7.43E+00	7.76E+02	1.97E-01	7.08E+02	1.05E-02
BREOT-S62-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.12E+04	1.54E+02	7.84E-04	7.60E+03	5.96E+00	7.04E-02	1.24E-01	9.10E+01	7.76E+02	1.97E-01	7.08E+02	1.29E-01
BREOT-S63-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.61E+03	2.21E+01	7.84E-04	1.09E+03	8.55E-01	7.04E-02	1.24E-01	1.30E+01	7.76E+02	1.97E-01	7.08E+02	1.84E-02
BREOT-N64-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.62E+03	2.23E+01	7.84E-04	1.10E+03	8.61E-01	7.04E-02	1.24E-01	1.31E+01	7.76E+02	1.97E-01	7.08E+02	1.86E-02
BREOT-N64-20 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.57E+03	2.16E+01	7.84E-04	1.06E+03	8.35E-01	7.04E-02	1.24E-01	1.27E+01	7.76E+02	1.97E-01	7.08E+02	1.80E-02
BREOT-S64-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	5.37E+02	7.39E+00	7.84E-04	3.64E+02	2.86E-01	7.04E-02	1.24E-01	4.36E+00	7.76E+02	1.97E-01	7.08E+02	6.16E-03
BREOT-N65-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.39E+03	1.92E+01	7.84E-04	9.44E+02	7.41E-01	7.04E-02	1.24E-01	1.13E+01	7.76E+02	1.97E-01	7.08E+02	1.60E-02
BREOT-S65-12.5 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N66-5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	7.87E+02	1.08E+01	7.84E-04	5.33E+02	4.18E-01	7.04E-02	1.24E-01	6.38E+00	7.76E+02	1.97E-01	7.08E+02	9.02E-03
BREOT-S66-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.34E+03	1.84E+01	7.84E-04	9.06E+02	7.10E-01	7.04E-02	1.24E-01	1.08E+01	7.76E+02	1.97E-01	7.08E+02	1.53E-02
BREOT-N67-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.56E+04	2.14E+02	7.84E-04	1.05E+04	8.27E+00	7.04E-02	1.24E-01	1.26E+02	7.76E+02	1.97E-01	7.08E+02	1.78E-01
BREOT-S67-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	8.68E+02	1.20E+01	7.84E-04	5.88E+02	4.62E-01	7.04E-02	1.24E-01	7.04E+00	7.76E+02	1.97E-01	7.08E+02	9.95E-03
At Edge of Tailings																						**Maximum HQ (Inside Tailings)**	**2.75E-01**
BREOT-S0-0 (06)	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.13E+03	1.55E+01	7.84E-04	7.62E+02	5.98E-01	7.04E-02	1.24E-01	9.12E+00	7.76E+02	1.97E-01	7.08E+02	1.29E-02
BREOT-S1-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.25E+03	1.72E+01	7.84E-04	8.47E+02	6.64E-01	7.04E-02	1.24E-01	1.01E+01	7.76E+02	1.97E-01	7.08E+02	1.43E-02
BREOT-S2-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	3.34E+03	4.59E+01	7.84E-04	2.26E+03	1.77E+00	7.04E-02	1.24E-01	2.70E+01	7.76E+02	1.97E-01	7.08E+02	3.82E-02
BREOT-S3-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	8.42E+03	1.16E+02	7.84E-04	5.70E+03	4.47E+00	7.04E-02	1.24E-01	6.82E+01	7.76E+02	1.97E-01	7.08E+02	9.64E-02
BREOT-S4-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	9.87E+03	1.36E+02	7.84E-04	6.69E+03	5.24E+00	7.04E-02	1.24E-01	8.00E+01	7.76E+02	1.97E-01	7.08E+02	1.13E-01
BREOT-S6-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S7-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S8-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.72E+03	2.37E+01	7.84E-04	1.17E+03	9.15E-01	7.04E-02	1.24E-01	1.40E+01	7.76E+02	1.97E-01	7.08E+02	1.97E-02

TABLE C-2E: MANGANESE DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 18.41

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
American Kestrel (Insectivorous Birds - Terrestrial)																							
BREOT-S9-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N10-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.19E+04	1.64E+02	7.84E-04	8.05E+03	6.32E+00	7.04E-02	1.24E-01	9.64E+01	7.76E+02	1.97E-01	7.08E+02	1.36E-01
BREOT-N11-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	5.55E+02	7.64E+00	7.84E-04	3.76E+02	2.95E-01	7.04E-02	1.24E-01	4.50E+00	7.76E+02	1.97E-01	7.08E+02	6.36E-03
BREOT-S11-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	2.94E+03	4.05E+01	7.84E-04	1.99E+03	1.56E+00	7.04E-02	1.24E-01	2.39E+01	7.76E+02	1.97E-01	7.08E+02	3.37E-02
BREOT-N12-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.54E+03	2.13E+01	7.84E-04	1.05E+03	8.21E-01	7.04E-02	1.24E-01	1.25E+01	7.76E+02	1.97E-01	7.08E+02	1.77E-02
BREOT-S12-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	4.41E+03	6.07E+01	7.84E-04	2.99E+03	2.34E+00	7.04E-02	1.24E-01	3.58E+01	7.76E+02	1.97E-01	7.08E+02	5.05E-02
BREOT-N13-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	2.29E+03	3.16E+01	7.84E-04	1.55E+03	1.22E+00	7.04E-02	1.24E-01	1.86E+01	7.76E+02	1.97E-01	7.08E+02	2.63E-02
BREOT-S13-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.28E+03	1.76E+01	7.84E-04	8.65E+02	6.79E-01	7.04E-02	1.24E-01	1.04E+01	7.76E+02	1.97E-01	7.08E+02	1.46E-02
BREOT-N14-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	2.29E+03	3.15E+01	7.84E-04	1.55E+03	1.21E+00	7.04E-02	1.24E-01	1.85E+01	7.76E+02	1.97E-01	7.08E+02	2.62E-02
BREOT-S14-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.35E+04	1.86E+02	7.84E-04	9.15E+03	7.18E+00	7.04E-02	1.24E-01	1.10E+02	7.76E+02	1.97E-01	7.08E+02	1.55E-01
BREOT-N15-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.20E+03	1.65E+01	7.84E-04	8.10E+02	6.35E-01	7.04E-02	1.24E-01	9.70E+00	7.76E+02	1.97E-01	7.08E+02	1.37E-02
BREOT-N16-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	9.05E+02	1.25E+01	7.84E-04	6.13E+02	4.81E-01	7.04E-02	1.24E-01	7.34E+00	7.76E+02	1.97E-01	7.08E+02	1.04E-02
BREOT-S16-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.59E+03	2.19E+01	7.84E-04	1.08E+03	8.44E-01	7.04E-02	1.24E-01	1.29E+01	7.76E+02	1.97E-01	7.08E+02	1.82E-02
BREOT-N17-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	2.45E+03	3.36E+01	7.84E-04	1.66E+03	1.30E+00	7.04E-02	1.24E-01	1.98E+01	7.76E+02	1.97E-01	7.08E+02	2.80E-02
BREOT-S17-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	7.53E+02	1.04E+01	7.84E-04	5.10E+02	4.00E-01	7.04E-02	1.24E-01	6.10E+00	7.76E+02	1.97E-01	7.08E+02	8.62E-03
BREOT-N18-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	9.60E+02	1.32E+01	7.84E-04	6.50E+02	5.10E-01	7.04E-02	1.24E-01	7.78E+00	7.76E+02	1.97E-01	7.08E+02	1.10E-02
BREOT-S18-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	6.00E+05	8.26E+03	7.84E-04	4.07E+05	3.19E+02	7.04E-02	1.24E-01	4.87E+03	7.76E+02	1.97E-01	7.08E+02	6.88E+00
BREOT-N19-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	6.63E+03	9.13E+01	7.84E-04	4.49E+03	3.53E+00	7.04E-02	1.24E-01	5.38E+01	7.76E+02	1.97E-01	7.08E+02	7.60E-02
BREOT-S19-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.86E+03	2.56E+01	7.84E-04	1.26E+03	9.87E-01	7.04E-02	1.24E-01	1.51E+01	7.76E+02	1.97E-01	7.08E+02	2.13E-02
BREOT-N20-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.47E+04	2.03E+02	7.84E-04	9.99E+03	7.83E+00	7.04E-02	1.24E-01	1.20E+02	7.76E+02	1.97E-01	7.08E+02	1.69E-01
BREOT-S20-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.18E+03	1.62E+01	7.84E-04	7.97E+02	6.25E-01	7.04E-02	1.24E-01	9.54E+00	7.76E+02	1.97E-01	7.08E+02	1.35E-02
BREOT-N21-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	9.58E+05	1.32E+04	7.84E-04	6.49E+05	5.09E+02	7.04E-02	1.24E-01	7.77E+03	7.76E+02	1.97E-01	7.08E+02	1.10E+01
BREOT-S21-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	5.00E+02	6.89E+00	7.84E-04	3.39E+02	2.66E-01	7.04E-02	1.24E-01	4.06E+00	7.76E+02	1.97E-01	7.08E+02	5.73E-03
BREOT-N22-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.26E+03	1.74E+01	7.84E-04	8.55E+02	6.71E-01	7.04E-02	1.24E-01	1.02E+01	7.76E+02	1.97E-01	7.08E+02	1.45E-02
BREOT-S22-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N23-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	4.43E+03	6.09E+01	7.84E-04	3.00E+03	2.35E+00	7.04E-02	1.24E-01	3.59E+01	7.76E+02	1.97E-01	7.08E+02	5.07E-02
BREOT-S23-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	2.45E+03	3.37E+01	7.84E-04	1.66E+03	1.30E+00	7.04E-02	1.24E-01	1.99E+01	7.76E+02	1.97E-01	7.08E+02	2.81E-02
BREOT-N24-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.97E+03	2.71E+01	7.84E-04	1.33E+03	1.05E+00	7.04E-02	1.24E-01	1.60E+01	7.76E+02	1.97E-01	7.08E+02	2.26E-02
BREOT-S24-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	3.56E+04	4.90E+02	7.84E-04	2.41E+04	1.89E+01	7.04E-02	1.24E-01	2.89E+02	7.76E+02	1.97E-01	7.08E+02	4.08E-01
BREOT-N25-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	5.96E+03	8.20E+01	7.84E-04	4.04E+03	3.17E+00	7.04E-02	1.24E-01	4.83E+01	7.76E+02	1.97E-01	7.08E+02	6.83E-02
BREOT-S25-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	8.54E+03	1.18E+02	7.84E-04	5.79E+03	4.54E+00	7.04E-02	1.24E-01	6.92E+01	7.76E+02	1.97E-01	7.08E+02	9.78E-02
BREOT-N26-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	3.88E+03	5.34E+01	7.84E-04	2.63E+03	2.06E+00	7.04E-02	1.24E-01	3.15E+01	7.76E+02	1.97E-01	7.08E+02	4.45E-02
BREOT-S26-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	4.62E+03	6.35E+01	7.84E-04	3.13E+03	2.45E+00	7.04E-02	1.24E-01	3.74E+01	7.76E+02	1.97E-01	7.08E+02	5.29E-02
BREOT-N27-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	7.40E+03	1.02E+02	7.84E-04	5.02E+03	3.93E+00	7.04E-02	1.24E-01	6.00E+01	7.76E+02	1.97E-01	7.08E+02	8.48E-02
BREOT-S27-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	5.23E+03	7.19E+01	7.84E-04	3.54E+03	2.78E+00	7.04E-02	1.24E-01	4.24E+01	7.76E+02	1.97E-01	7.08E+02	5.99E-02
BREOT-N28-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	3.20E+03	4.40E+01	7.84E-04	2.17E+03	1.70E+00	7.04E-02	1.24E-01	2.59E+01	7.76E+02	1.97E-01	7.08E+02	3.66E-02
BREOT-S28-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S29-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.08E+03	1.49E+01	7.84E-04	7.34E+02	5.76E-01	7.04E-02	1.24E-01	8.79E+00	7.76E+02	1.97E-01	7.08E+02	1.24E-02
BREOT-N30-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	5.10E+03	7.02E+01	7.84E-04	3.45E+03	2.71E+00	7.04E-02	1.24E-01	4.13E+01	7.76E+02	1.97E-01	7.08E+02	5.84E-02
BREOT-S30-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N31-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	5.03E+03	6.92E+01	7.84E-04	3.41E+03	2.67E+00	7.04E-02	1.24E-01	4.08E+01	7.76E+02	1.97E-01	7.08E+02	5.76E-02
BREOT-S31-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N32-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	2.29E+03	3.15E+01	7.84E-04	1.55E+03	1.22E+00	7.04E-02	1.24E-01	1.86E+01	7.76E+02	1.97E-01	7.08E+02	2.62E-02
BREOT-S32-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.79E+03	2.47E+01	7.84E-04	1.21E+03	9.53E-01	7.04E-02	1.24E-01	1.45E+01	7.76E+02	1.97E-01	7.08E+02	2.05E-02
BREOT-N33-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.41E+03	1.95E+01	7.84E-04	9.58E+02	7.52E-01	7.04E-02	1.24E-01	1.15E+01	7.76E+02	1.97E-01	7.08E+02	1.62E-02
BREOT-S33-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	2.70E+03	3.72E+01	7.84E-04	1.83E+03	1.44E+00	7.04E-02	1.24E-01	2.19E+01	7.76E+02	1.97E-01	7.08E+02	3.10E-02
BREOT-N34-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	2.16E+03	2.98E+01	7.84E-04	1.47E+03	1.15E+00	7.04E-02	1.24E-01	1.75E+01	7.76E+02	1.97E-01	7.08E+02	2.48E-02
BREOT-S34-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.07E+04	1.47E+02	7.84E-04	7.24E+03	5.68E+00	7.04E-02	1.24E-01	8.66E+01	7.76E+02	1.97E-01	7.08E+02	1.22E-01
BREOT-N35-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.19E+03	1.64E+01	7.84E-04	8.07E+02	6.33E-01	7.04E-02	1.24E-01	9.65E+00	7.76E+02	1.97E-01	7.08E+02	1.36E-02
BREOT-S35-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.83E+03	2.52E+01	7.84E-04	1.24E+03	9.72E-01	7.04E-02	1.24E-01	1.48E+01	7.76E+02	1.97E-01	7.08E+02	2.10E-02
BREOT-N36-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.25E+04	1.71E+02	7.84E-04	8.44E+03	6.62E+00	7.04E-02	1.24E-01	1.01E+02	7.76E+02	1.97E-01	7.08E+02	1.43E-01
BREOT-S36-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	9.40E+03	1.29E+02	7.84E-04	6.37E+03	5.00E+00	7.04E-02	1.24E-01	7.62E+01	7.76E+02	1.97E-01	7.08E+02	1.08E-01
BREOT-N37-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	2.05E+03	2.81E+01	7.84E-04	1.39E+03	1.09E+00	7.04E-02	1.24E-01	1.66E+01	7.76E+02	1.97E-01	7.08E+02	2.34E-02
BREOT-S37-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.20E+04	1.65E+02	7.84E-04	8.13E+03	6.37E+00	7.04E-02	1.24E-01	9.73E+01	7.76E+02	1.97E-01	7.08E+02	1.37E-01
BREOT-N38-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.08E+03	1.49E+01	7.84E-04	7.35E+02	5.76E-01	7.04E-02	1.24E-01	8.79E+00	7.76E+02	1.97E-01	7.08E+02	1.24E-02

TABLE C-2E: MANGANESE DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **18.41**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
American Kestrel (Insectivorous Birds - Terrestrial)																							
BREOT-S38-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	6.89E+03	9.49E+01	7.84E-04	4.67E+03	3.66E+00	7.04E-02	1.24E-01	5.59E+01	7.76E+02	1.97E-01	7.08E+02	7.90E-02
BREOT-N39-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.28E+03	1.76E+01	7.84E-04	8.65E+02	6.79E-01	7.04E-02	1.24E-01	1.04E+01	7.76E+02	1.97E-01	7.08E+02	1.46E-02
BREOT-N40-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.37E+03	1.89E+01	7.84E-04	9.30E+02	7.30E-01	7.04E-02	1.24E-01	1.11E+01	7.76E+02	1.97E-01	7.08E+02	1.57E-02
BREOT-S40-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.28E+04	1.76E+02	7.84E-04	8.68E+03	6.81E+00	7.04E-02	1.24E-01	1.04E+02	7.76E+02	1.97E-01	7.08E+02	1.47E-01
BREOT-N41-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	7.21E+02	9.93E+00	7.84E-04	4.89E+02	3.83E-01	7.04E-02	1.24E-01	5.85E+00	7.76E+02	1.97E-01	7.08E+02	8.27E-03
BREOT-S41-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.37E+04	1.88E+02	7.84E-04	9.28E+03	7.28E+00	7.04E-02	1.24E-01	1.11E+02	7.76E+02	1.97E-01	7.08E+02	1.57E-01
BREOT-N42-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S42-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.56E+04	2.14E+02	7.84E-04	1.06E+04	8.28E+00	7.04E-02	1.24E-01	1.26E+02	7.76E+02	1.97E-01	7.08E+02	1.79E-01
BREOT-N43-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	9.15E+02	1.26E+01	7.84E-04	6.20E+02	4.86E-01	7.04E-02	1.24E-01	7.42E+00	7.76E+02	1.97E-01	7.08E+02	1.05E-02
BREOT-S43-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.45E+03	2.00E+01	7.84E-04	9.84E+02	7.72E-01	7.04E-02	1.24E-01	1.18E+01	7.76E+02	1.97E-01	7.08E+02	1.66E-02
BREOT-N44-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	2.03E+03	2.79E+01	7.84E-04	1.38E+03	1.08E+00	7.04E-02	1.24E-01	1.65E+01	7.76E+02	1.97E-01	7.08E+02	2.33E-02
BREOT-S44-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.72E+03	2.36E+01	7.84E-04	1.16E+03	9.13E-01	7.04E-02	1.24E-01	1.39E+01	7.76E+02	1.97E-01	7.08E+02	1.97E-02
BREOT-N45-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.43E+03	1.96E+01	7.84E-04	9.67E+02	7.59E-01	7.04E-02	1.24E-01	1.16E+01	7.76E+02	1.97E-01	7.08E+02	1.64E-02
BREOT-S45-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	9.71E+02	1.34E+01	7.84E-04	6.58E+02	5.16E-01	7.04E-02	1.24E-01	7.88E+00	7.76E+02	1.97E-01	7.08E+02	1.11E-02
BREOT-N46-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.01E+03	1.39E+01	7.84E-04	6.85E+02	5.37E-01	7.04E-02	1.24E-01	8.20E+00	7.76E+02	1.97E-01	7.08E+02	1.16E-02
BREOT-S46-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.19E+03	1.63E+01	7.84E-04	8.03E+02	6.30E-01	7.04E-02	1.24E-01	9.61E+00	7.76E+02	1.97E-01	7.08E+02	1.36E-02
BREOT-N47-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.26E+03	1.73E+01	7.84E-04	8.53E+02	6.69E-01	7.04E-02	1.24E-01	1.02E+01	7.76E+02	1.97E-01	7.08E+02	1.44E-02
BREOT-S47-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N48-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	8.23E+02	1.13E+01	7.84E-04	5.58E+02	4.38E-01	7.04E-02	1.24E-01	6.68E+00	7.76E+02	1.97E-01	7.08E+02	9.43E-03
BREOT-S48-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N49-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.49E+03	2.05E+01	7.84E-04	1.01E+03	7.94E-01	7.04E-02	1.24E-01	1.21E+01	7.76E+02	1.97E-01	7.08E+02	1.71E-02
BREOT-S49-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S50-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N51-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	2.47E+03	3.40E+01	7.84E-04	1.67E+03	1.31E+00	7.04E-02	1.24E-01	2.00E+01	7.76E+02	1.97E-01	7.08E+02	2.83E-02
BREOT-S51-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N52-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S52-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N53-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	8.31E+02	1.14E+01	7.84E-04	5.63E+02	4.42E-01	7.04E-02	1.24E-01	6.74E+00	7.76E+02	1.97E-01	7.08E+02	9.53E-03
BREOT-S53-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N54-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.00E+03	1.38E+01	7.84E-04	6.79E+02	5.33E-01	7.04E-02	1.24E-01	8.13E+00	7.76E+02	1.97E-01	7.08E+02	1.15E-02
BREOT-S54-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N55-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.52E+03	2.10E+01	7.84E-04	1.03E+03	8.09E-01	7.04E-02	1.24E-01	1.23E+01	7.76E+02	1.97E-01	7.08E+02	1.74E-02
BREOT-S55-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N56-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	9.67E+02	1.33E+01	7.84E-04	6.55E+02	5.14E-01	7.04E-02	1.24E-01	7.84E+00	7.76E+02	1.97E-01	7.08E+02	1.11E-02
BREOT-N57-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.37E+03	1.89E+01	7.84E-04	9.31E+02	7.30E-01	7.04E-02	1.24E-01	1.11E+01	7.76E+02	1.97E-01	7.08E+02	1.57E-02
BREOT-S57-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.38E+03	1.90E+01	7.84E-04	9.36E+02	7.34E-01	7.04E-02	1.24E-01	1.12E+01	7.76E+02	1.97E-01	7.08E+02	1.58E-02
BREOT-N58-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.45E+03	1.99E+01	7.84E-04	9.81E+02	7.69E-01	7.04E-02	1.24E-01	1.17E+01	7.76E+02	1.97E-01	7.08E+02	1.66E-02
BREOT-S58-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	7.62E+03	1.05E+02	7.84E-04	5.16E+03	4.05E+00	7.04E-02	1.24E-01	6.18E+01	7.76E+02	1.97E-01	7.08E+02	8.73E-02
BREOT-N59-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.30E+03	1.79E+01	7.84E-04	8.83E+02	6.93E-01	7.04E-02	1.24E-01	1.06E+01	7.76E+02	1.97E-01	7.08E+02	1.49E-02
BREOT-N60-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	5.31E+02	7.31E+00	7.84E-04	3.60E+02	2.82E-01	7.04E-02	1.24E-01	4.31E+00	7.76E+02	1.97E-01	7.08E+02	6.09E-03
BREOT-S60-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	3.93E+03	5.41E+01	7.84E-04	2.66E+03	2.09E+00	7.04E-02	1.24E-01	3.19E+01	7.76E+02	1.97E-01	7.08E+02	4.50E-02
BREOT-S61-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N62-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.37E+03	1.89E+01	7.84E-04	9.29E+02	7.29E-01	7.04E-02	1.24E-01	1.11E+01	7.76E+02	1.97E-01	7.08E+02	1.57E-02
BREOT-S62-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N63-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.68E+03	2.31E+01	7.84E-04	1.14E+03	8.92E-01	7.04E-02	1.24E-01	1.36E+01	7.76E+02	1.97E-01	7.08E+02	1.92E-02
BREOT-S63-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.90E+03	2.62E+01	7.84E-04	1.29E+03	1.01E+00	7.04E-02	1.24E-01	1.54E+01	7.76E+02	1.97E-01	7.08E+02	2.18E-02
BREOT-N64-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	6.37E+02	8.76E+00	7.84E-04	4.31E+02	3.38E-01	7.04E-02	1.24E-01	5.16E+00	7.76E+02	1.97E-01	7.08E+02	7.30E-03
BREOT-S64-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	2.25E+02	3.10E+00	7.84E-04	1.53E+02	1.20E-01	7.04E-02	1.24E-01	1.83E+00	7.76E+02	1.97E-01	7.08E+02	2.58E-03
BREOT-N66-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.40E+03	1.92E+01	7.84E-04	9.47E+02	7.43E-01	7.04E-02	1.24E-01	1.13E+01	7.76E+02	1.97E-01	7.08E+02	1.60E-02
BREOT-S66-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.74E+03	2.40E+01	7.84E-04	1.18E+03	9.27E-01	7.04E-02	1.24E-01	1.41E+01	7.76E+02	1.97E-01	7.08E+02	2.00E-02
BREOT-N67-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.18E+04	1.62E+02	7.84E-04	7.99E+03	6.27E+00	7.04E-02	1.24E-01	9.56E+01	7.76E+02	1.97E-01	7.08E+02	1.35E-01
BREOT-S67-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	8.70E+02	1.20E+01	7.84E-04	5.90E+02	4.63E-01	7.04E-02	1.24E-01	7.06E+00	7.76E+02	1.97E-01	7.08E+02	9.97E-03
Outside Tailings																						**Maximum HQ (At Edge of Tailings)**	**1.10E+01**
BREOT-S0+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.41E+03	1.94E+01	7.84E-04	9.57E+02	7.51E-01	7.04E-02	1.24E-01	1.15E+01	7.76E+02	1.97E-01	7.08E+02	1.62E-02
BREOT-S1+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	2.04E+03	2.81E+01	7.84E-04	1.38E+03	1.09E+00	7.04E-02	1.24E-01	1.66E+01	7.76E+02	1.97E-01	7.08E+02	2.34E-02

TABLE C-2E: MANGANESE DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **18.41**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
American Kestrel (Insectivorous Birds - Terrestrial)																							
BREOT-S2+95 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.32E+03	1.82E+01	7.84E-04	8.94E+02	7.01E-01	7.04E-02	1.24E-01	1.07E+01	7.76E+02	1.97E-01	7.08E+02	1.51E-02
BREOT-S3+6 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	8.19E+02	1.13E+01	7.84E-04	5.55E+02	4.35E-01	7.04E-02	1.24E-01	6.64E+00	7.76E+02	1.97E-01	7.08E+02	9.38E-03
BREOT-S4+10 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.58E+03	2.17E+01	7.84E-04	1.07E+03	8.37E-01	7.04E-02	1.24E-01	1.28E+01	7.76E+02	1.97E-01	7.08E+02	1.81E-02
BREOT-S6+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.24E+03	1.71E+01	7.84E-04	8.43E+02	6.62E-01	7.04E-02	1.24E-01	1.01E+01	7.76E+02	1.97E-01	7.08E+02	1.43E-02
BREOT-S8+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.27E+03	1.75E+01	7.84E-04	8.63E+02	6.77E-01	7.04E-02	1.24E-01	1.03E+01	7.76E+02	1.97E-01	7.08E+02	1.46E-02
BREOT-N10+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.16E+03	1.60E+01	7.84E-04	7.87E+02	6.17E-01	7.04E-02	1.24E-01	9.42E+00	7.76E+02	1.97E-01	7.08E+02	1.33E-02
BREOT-N11+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.32E+03	1.82E+01	7.84E-04	8.97E+02	7.04E-01	7.04E-02	1.24E-01	1.07E+01	7.76E+02	1.97E-01	7.08E+02	1.52E-02
BREOT-N12+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.45E+03	1.99E+01	7.84E-04	9.81E+02	7.70E-01	7.04E-02	1.24E-01	1.17E+01	7.76E+02	1.97E-01	7.08E+02	1.66E-02
BREOT-S12+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	4.67E+03	6.43E+01	7.84E-04	3.16E+03	2.48E+00	7.04E-02	1.24E-01	3.79E+01	7.76E+02	1.97E-01	7.08E+02	5.35E-02
BREOT-S12+60 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.11E+03	1.52E+01	7.84E-04	7.49E+02	5.87E-01	7.04E-02	1.24E-01	8.96E+00	7.76E+02	1.97E-01	7.08E+02	1.27E-02
BREOT-N13+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.94E+03	2.67E+01	7.84E-04	1.31E+03	1.03E+00	7.04E-02	1.24E-01	1.57E+01	7.76E+02	1.97E-01	7.08E+02	2.22E-02
BREOT-S13+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	3.28E+03	4.51E+01	7.84E-04	2.22E+03	1.74E+00	7.04E-02	1.24E-01	2.66E+01	7.76E+02	1.97E-01	7.08E+02	3.76E-02
BREOT-S13+65 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.76E+03	2.42E+01	7.84E-04	1.19E+03	9.34E-01	7.04E-02	1.24E-01	1.43E+01	7.76E+02	1.97E-01	7.08E+02	2.01E-02
BREOT-N14+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	2.27E+03	3.13E+01	7.84E-04	1.54E+03	1.21E+00	7.04E-02	1.24E-01	1.84E+01	7.76E+02	1.97E-01	7.08E+02	2.60E-02
BREOT-S14+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	4.53E+03	6.23E+01	7.84E-04	3.07E+03	2.41E+00	7.04E-02	1.24E-01	3.67E+01	7.76E+02	1.97E-01	7.08E+02	5.19E-02
BREOT-S14+59 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	4.98E+02	6.86E+00	7.84E-04	3.38E+02	2.65E-01	7.04E-02	1.24E-01	4.04E+00	7.76E+02	1.97E-01	7.08E+02	5.71E-03
BREOT-N15+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	7.48E+03	1.03E+02	7.84E-04	5.07E+03	3.97E+00	7.04E-02	1.24E-01	6.06E+01	7.76E+02	1.97E-01	7.08E+02	8.57E-02
BREOT-N15+50 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.88E+03	2.58E+01	7.84E-04	1.27E+03	9.97E-01	7.04E-02	1.24E-01	1.52E+01	7.76E+02	1.97E-01	7.08E+02	2.15E-02
BREOT-S16+20 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	4.02E+03	5.54E+01	7.84E-04	2.73E+03	2.14E+00	7.04E-02	1.24E-01	3.26E+01	7.76E+02	1.97E-01	7.08E+02	4.61E-02
BREOT-S16+75 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	8.83E+02	1.21E+01	7.84E-04	5.98E+02	4.69E-01	7.04E-02	1.24E-01	7.16E+00	7.76E+02	1.97E-01	7.08E+02	1.01E-02
BREOT-N17+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	2.12E+03	2.91E+01	7.84E-04	1.43E+03	1.13E+00	7.04E-02	1.24E-01	1.72E+01	7.76E+02	1.97E-01	7.08E+02	2.43E-02
BREOT-S18+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	4.66E+02	6.42E+00	7.84E-04	3.16E+02	2.48E-01	7.04E-02	1.24E-01	3.78E+00	7.76E+02	1.97E-01	7.08E+02	5.34E-03
BREOT-N19+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.07E+03	1.47E+01	7.84E-04	7.22E+02	5.66E-01	7.04E-02	1.24E-01	8.64E+00	7.76E+02	1.97E-01	7.08E+02	1.22E-02
BREOT-S19+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	7.02E+05	9.66E+03	7.84E-04	4.75E+05	3.73E+02	7.04E-02	1.24E-01	5.69E+03	7.76E+02	1.97E-01	7.08E+02	8.04E+00
BREOT-S19+85 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.07E+03	1.48E+01	7.84E-04	7.28E+02	5.71E-01	7.04E-02	1.24E-01	8.71E+00	7.76E+02	1.97E-01	7.08E+02	1.23E-02
BREOT-N20+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.44E+03	1.98E+01	7.84E-04	9.77E+02	7.66E-01	7.04E-02	1.24E-01	1.17E+01	7.76E+02	1.97E-01	7.08E+02	1.65E-02
BREOT-S20+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	9.99E+05	1.37E+04	7.84E-04	6.77E+05	5.31E+02	7.04E-02	1.24E-01	8.10E+03	7.76E+02	1.97E-01	7.08E+02	1.14E+01
BREOT-S20+75 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.13E+03	1.55E+01	7.84E-04	7.63E+02	5.98E-01	7.04E-02	1.24E-01	9.13E+00	7.76E+02	1.97E-01	7.08E+02	1.29E-02
BREOT-N21+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S21+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	4.95E+05	6.81E+03	7.84E-04	3.35E+05	2.63E+02	7.04E-02	1.24E-01	4.01E+03	7.76E+02	1.97E-01	7.08E+02	5.67E+00
BREOT-N22+150 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.33E+03	1.83E+01	7.84E-04	9.02E+02	7.08E-01	7.04E-02	1.24E-01	1.08E+01	7.76E+02	1.97E-01	7.08E+02	1.53E-02
BREOT-N22+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	3.81E+03	5.24E+01	7.84E-04	2.58E+03	2.03E+00	7.04E-02	1.24E-01	3.09E+01	7.76E+02	1.97E-01	7.08E+02	4.37E-02
BREOT-S22+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	2.44E+03	3.36E+01	7.84E-04	1.65E+03	1.30E+00	7.04E-02	1.24E-01	1.98E+01	7.76E+02	1.97E-01	7.08E+02	2.79E-02
BREOT-N23+115 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.03E+03	1.42E+01	7.84E-04	6.98E+02	5.47E-01	7.04E-02	1.24E-01	8.35E+00	7.76E+02	1.97E-01	7.08E+02	1.18E-02
BREOT-N23+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	7.06E+03	9.72E+01	7.84E-04	4.78E+03	3.75E+00	7.04E-02	1.24E-01	5.73E+01	7.76E+02	1.97E-01	7.08E+02	8.09E-02
BREOT-S23+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.84E+03	2.53E+01	7.84E-04	1.24E+03	9.76E-01	7.04E-02	1.24E-01	1.49E+01	7.76E+02	1.97E-01	7.08E+02	2.10E-02
BREOT-S23+37.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.44E+03	1.98E+01	7.84E-04	9.74E+02	7.64E-01	7.04E-02	1.24E-01	1.17E+01	7.76E+02	1.97E-01	7.08E+02	1.65E-02
BREOT-N24+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.35E+04	1.85E+02	7.84E-04	9.13E+03	7.16E+00	7.04E-02	1.24E-01	1.09E+02	7.76E+02	1.97E-01	7.08E+02	1.54E-01
BREOT-N24+75 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.47E+03	2.02E+01	7.84E-04	9.95E+02	7.80E-01	7.04E-02	1.24E-01	1.19E+01	7.76E+02	1.97E-01	7.08E+02	1.68E-02
BREOT-S24+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	2.71E+03	3.73E+01	7.84E-04	1.84E+03	1.44E+00	7.04E-02	1.24E-01	2.20E+01	7.76E+02	1.97E-01	7.08E+02	3.11E-02
BREOT-N25+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	4.88E+02	6.72E+00	7.84E-04	3.31E+02	2.59E-01	7.04E-02	1.24E-01	3.96E+00	7.76E+02	1.97E-01	7.08E+02	5.59E-03
BREOT-S25+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.58E+03	2.18E+01	7.84E-04	1.07E+03	8.42E-01	7.04E-02	1.24E-01	1.28E+01	7.76E+02	1.97E-01	7.08E+02	1.82E-02
BREOT-S25+40 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	7.29E+02	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S26+37 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.24E+03	1.70E+01	7.84E-04	8.39E+02	6.58E-01	7.04E-02	1.24E-01	1.00E+01	7.76E+02	1.97E-01	7.08E+02	1.42E-02
BREOT-N27+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.11E+03	1.52E+01	7.84E-04	7.50E+02	5.88E-01	7.04E-02	1.24E-01	8.97E+00	7.76E+02	1.97E-01	7.08E+02	1.27E-02
BREOT-S27+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.15E+03	1.58E+01	7.84E-04	7.76E+02	6.09E-01	7.04E-02	1.24E-01	9.29E+00	7.76E+02	1.97E-01	7.08E+02	1.31E-02
BREOT-N28+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	8.90E+02	1.22E+01	7.84E-04	6.03E+02	4.73E-01	7.04E-02	1.24E-01	7.21E+00	7.76E+02	1.97E-01	7.08E+02	1.02E-02
BREOT-S28+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	6.24E+02	8.58E+00	7.84E-04	4.22E+02	3.31E-01	7.04E-02	1.24E-01	5.06E+00	7.76E+02	1.97E-01	7.08E+02	7.14E-03
BREOT-N29+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	2.13E+03	2.93E+01	7.84E-04	1.44E+03	1.13E+00	7.04E-02	1.24E-01	1.73E+01	7.76E+02	1.97E-01	7.08E+02	2.44E-02
BREOT-S29+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.32E+03	1.81E+01	7.84E-04	8.94E+02	7.01E-01	7.04E-02	1.24E-01	1.07E+01	7.76E+02	1.97E-01	7.08E+02	1.51E-02
BREOT-N30+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.67E+03	2.29E+01	7.84E-04	1.13E+03	8.86E-01	7.04E-02	1.24E-01	1.35E+01	7.76E+02	1.97E-01	7.08E+02	1.91E-02
BREOT-S30+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.30E+03	1.78E+01	7.84E-04	8.79E+02	6.89E-01	7.04E-02	1.24E-01	1.05E+01	7.76E+02	1.97E-01	7.08E+02	1.49E-02
BREOT-N31+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	9.75E+03	1.34E+02	7.84E-04	6.61E+03	5.18E+00	7.04E-02	1.24E-01	7.91E+01	7.76E+02	1.97E-01	7.08E+02	1.12E-01
BREOT-N31+75 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.22E+03	1.68E+01	7.84E-04	8.28E+02	6.49E-01	7.04E-02	1.24E-01	9.91E+00	7.76E+02	1.97E-01	7.08E+02	1.40E-02
BREOT-S31+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	9.44E+02	1.30E+01	7.84E-04	6.40E+02	5.02E-01	7.04E-02	1.24E-01	7.65E+00	7.76E+02	1.97E-01	7.08E+02	1.08E-02

TABLE C-2E: MANGANESE DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 18.41

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
American Kestrel (Insectivorous Birds - Terrestrial)																							
BREOT-N32+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.73E+03	2.38E+01	7.84E-04	1.17E+03	9.17E-01	7.04E-02	1.24E-01	1.40E+01	7.76E+02	1.97E-01	7.08E+02	1.98E-02
BREOT-S32+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	2.44E+03	3.36E+01	7.84E-04	1.66E+03	1.30E+00	7.04E-02	1.24E-01	1.98E+01	7.76E+02	1.97E-01	7.08E+02	2.80E-02
BREOT-S32+300 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	3.67E+03	5.05E+01	7.84E-04	2.49E+03	1.95E+00	7.04E-02	1.24E-01	2.98E+01	7.76E+02	1.97E-01	7.08E+02	4.21E-02
BREOT-N33+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.27E+03	1.75E+01	7.84E-04	8.60E+02	6.74E-01	7.04E-02	1.24E-01	1.03E+01	7.76E+02	1.97E-01	7.08E+02	1.45E-02
BREOT-S33+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	5.89E+03	8.10E+01	7.84E-04	3.99E+03	3.13E+00	7.04E-02	1.24E-01	4.78E+01	7.76E+02	1.97E-01	7.08E+02	6.75E-02
BREOT-N34+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.13E+03	1.55E+01	7.84E-04	7.63E+02	5.98E-01	7.04E-02	1.24E-01	9.13E+00	7.76E+02	1.97E-01	7.08E+02	1.29E-02
BREOT-S34+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.81E+03	2.49E+01	7.84E-04	1.23E+03	9.63E-01	7.04E-02	1.24E-01	1.47E+01	7.76E+02	1.97E-01	7.08E+02	2.08E-02
BREOT-N35+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.34E+03	1.84E+01	7.84E-04	9.08E+02	7.12E-01	7.04E-02	1.24E-01	1.09E+01	7.76E+02	1.97E-01	7.08E+02	1.54E-02
BREOT-S35+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	6.15E+03	8.46E+01	7.84E-04	4.17E+03	3.27E+00	7.04E-02	1.24E-01	4.99E+01	7.76E+02	1.97E-01	7.08E+02	7.05E-02
BREOT-N36+100 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.36E+03	1.87E+01	7.84E-04	9.22E+02	7.23E-01	7.04E-02	1.24E-01	1.10E+01	7.76E+02	1.97E-01	7.08E+02	1.56E-02
BREOT-N36+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.11E+04	1.53E+02	7.84E-04	7.54E+03	5.91E+00	7.04E-02	1.24E-01	9.02E+01	7.76E+02	1.97E-01	7.08E+02	1.27E-01
BREOT-S36+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	5.64E+03	7.76E+01	7.84E-04	3.82E+03	3.00E+00	7.04E-02	1.24E-01	4.58E+01	7.76E+02	1.97E-01	7.08E+02	6.46E-02
BREOT-N37+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	5.51E+02	7.58E+00	7.84E-04	3.73E+02	2.93E-01	7.04E-02	1.24E-01	4.46E+00	7.76E+02	1.97E-01	7.08E+02	6.31E-03
BREOT-S37+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	7.59E+03	1.05E+02	7.84E-04	5.15E+03	4.04E+00	7.04E-02	1.24E-01	6.16E+01	7.76E+02	1.97E-01	7.08E+02	8.70E-02
BREOT-N38+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	9.59E+02	1.32E+01	7.84E-04	6.50E+02	5.10E-01	7.04E-02	1.24E-01	7.78E+00	7.76E+02	1.97E-01	7.08E+02	1.10E-02
BREOT-S38+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	7.26E+03	9.99E+01	7.84E-04	4.92E+03	3.86E+00	7.04E-02	1.24E-01	5.88E+01	7.76E+02	1.97E-01	7.08E+02	8.31E-02
BREOT-N39+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	7.89E+02	1.09E+01	7.84E-04	5.34E+02	4.19E-01	7.04E-02	1.24E-01	6.39E+00	7.76E+02	1.97E-01	7.08E+02	9.04E-03
BREOT-S39+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	5.53E+03	7.60E+01	7.84E-04	3.74E+03	2.94E+00	7.04E-02	1.24E-01	4.48E+01	7.76E+02	1.97E-01	7.08E+02	6.33E-02
BREOT-N40+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	8.37E+02	1.15E+01	7.84E-04	5.67E+02	4.45E-01	7.04E-02	1.24E-01	6.79E+00	7.76E+02	1.97E-01	7.08E+02	9.59E-03
BREOT-S40+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	5.21E+03	7.18E+01	7.84E-04	3.53E+03	2.77E+00	7.04E-02	1.24E-01	4.23E+01	7.76E+02	1.97E-01	7.08E+02	5.98E-02
BREOT-N41+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	5.57E+02	7.67E+00	7.84E-04	3.78E+02	2.96E-01	7.04E-02	1.24E-01	4.52E+00	7.76E+02	1.97E-01	7.08E+02	6.39E-03
BREOT-S41+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	3.33E+03	4.58E+01	7.84E-04	2.26E+03	1.77E+00	7.04E-02	1.24E-01	2.70E+01	7.76E+02	1.97E-01	7.08E+02	3.81E-02
BREOT-N42+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S42+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	2.91E+03	4.00E+01	7.84E-04	1.97E+03	1.54E+00	7.04E-02	1.24E-01	2.36E+01	7.76E+02	1.97E-01	7.08E+02	3.33E-02
BREOT-N43+12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.10E+03	1.51E+01	7.84E-04	7.44E+02	5.84E-01	7.04E-02	1.24E-01	8.91E+00	7.76E+02	1.97E-01	7.08E+02	1.26E-02
BREOT-N43+40 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.11E+03	1.52E+01	7.84E-04	7.50E+02	5.88E-01	7.04E-02	1.24E-01	8.97E+00	7.76E+02	1.97E-01	7.08E+02	1.27E-02
BREOT-S43+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.40E+03	1.93E+01	7.84E-04	9.50E+02	7.45E-01	7.04E-02	1.24E-01	1.14E+01	7.76E+02	1.97E-01	7.08E+02	1.61E-02
BREOT-N44+55 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	9.81E+02	1.35E+01	7.84E-04	6.64E+02	5.21E-01	7.04E-02	1.24E-01	7.95E+00	7.76E+02	1.97E-01	7.08E+02	1.12E-02
BREOT-S44+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.86E+03	2.56E+01	7.84E-04	1.26E+03	9.87E-01	7.04E-02	1.24E-01	1.51E+01	7.76E+02	1.97E-01	7.08E+02	2.13E-02
BREOT-N45+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	9.60E+02	1.32E+01	7.84E-04	6.50E+02	5.10E-01	7.04E-02	1.24E-01	7.78E+00	7.76E+02	1.97E-01	7.08E+02	1.10E-02
BREOT-S45+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	4.48E+02	6.16E+00	7.84E-04	3.03E+02	2.38E-01	7.04E-02	1.24E-01	3.63E+00	7.76E+02	1.97E-01	7.08E+02	5.13E-03
BREOT-N46+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.43E+03	1.96E+01	7.84E-04	9.67E+02	7.58E-01	7.04E-02	1.24E-01	1.16E+01	7.76E+02	1.97E-01	7.08E+02	1.64E-02
BREOT-S46+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N47+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.15E+03	1.58E+01	7.84E-04	7.79E+02	6.11E-01	7.04E-02	1.24E-01	9.33E+00	7.76E+02	1.97E-01	7.08E+02	1.32E-02
BREOT-S47+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N48+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	9.11E+02	1.25E+01	7.84E-04	6.17E+02	4.84E-01	7.04E-02	1.24E-01	7.39E+00	7.76E+02	1.97E-01	7.08E+02	1.04E-02
BREOT-S48+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N49+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.37E+03	1.88E+01	7.84E-04	9.26E+02	7.26E-01	7.04E-02	1.24E-01	1.11E+01	7.76E+02	1.97E-01	7.08E+02	1.57E-02
BREOT-S49+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N51+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.16E+03	1.59E+01	7.84E-04	7.84E+02	6.15E-01	7.04E-02	1.24E-01	9.38E+00	7.76E+02	1.97E-01	7.08E+02	1.33E-02
BREOT-S51+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N52+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	4.78E+02	6.58E+00	7.84E-04	3.24E+02	2.54E-01	7.04E-02	1.24E-01	3.88E+00	7.76E+02	1.97E-01	7.08E+02	5.48E-03
BREOT-S52+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N53+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S53+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S54+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N55+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.05E+03	1.45E+01	7.84E-04	7.14E+02	5.60E-01	7.04E-02	1.24E-01	8.54E+00	7.76E+02	1.97E-01	7.08E+02	1.21E-02
BREOT-S55+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N56+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.03E+03	1.42E+01	7.84E-04	6.99E+02	5.48E-01	7.04E-02	1.24E-01	8.36E+00	7.76E+02	1.97E-01	7.08E+02	1.18E-02
BREOT-S56+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N57+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.09E+03	1.49E+01	7.84E-04	7.36E+02	5.77E-01	7.04E-02	1.24E-01	8.81E+00	7.76E+02	1.97E-01	7.08E+02	1.24E-02
BREOT-S57+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	3.61E+03	4.97E+01	7.84E-04	2.45E+03	1.92E+00	7.04E-02	1.24E-01	2.93E+01	7.76E+02	1.97E-01	7.08E+02	4.14E-02
BREOT-N58+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.44E+03	1.98E+01	7.84E-04	9.73E+02	7.63E-01	7.04E-02	1.24E-01	1.16E+01	7.76E+02	1.97E-01	7.08E+02	1.65E-02
BREOT-S58+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N59+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	2.27E+03	3.12E+01	7.84E-04	1.54E+03	1.20E+00	7.04E-02	1.24E-01	1.84E+01	7.76E+02	1.97E-01	7.08E+02	2.60E-02

TABLE C-2E: MANGANESE DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **18.41**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
American Kestrel (Insectivorous Birds - Terrestrial)																							
BREOT-N60+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	7.73E+02	1.06E+01	7.84E-04	5.24E+02	4.11E-01	7.04E-02	1.24E-01	6.27E+00	7.76E+02	1.97E-01	7.08E+02	8.86E-03
BREOT-S60+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S61+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N62+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.29E+03	1.77E+01	7.84E-04	8.71E+02	6.83E-01	7.04E-02	1.24E-01	1.04E+01	7.76E+02	1.97E-01	7.08E+02	1.47E-02
BREOT-S62+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N63+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	2.02E+03	2.78E+01	7.84E-04	1.37E+03	1.07E+00	7.04E-02	1.24E-01	1.64E+01	7.76E+02	1.97E-01	7.08E+02	2.31E-02
BREOT-S63+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N64+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	7.09E+02	9.75E+00	7.84E-04	4.80E+02	3.77E-01	7.04E-02	1.24E-01	5.75E+00	7.76E+02	1.97E-01	7.08E+02	8.12E-03
BREOT-S64+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	2.80E+02	3.85E+00	7.84E-04	1.90E+02	1.49E-01	7.04E-02	1.24E-01	2.27E+00	7.76E+02	1.97E-01	7.08E+02	3.21E-03
BREOT-S65+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N66+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.10E+03	1.51E+01	7.84E-04	7.46E+02	5.85E-01	7.04E-02	1.24E-01	8.92E+00	7.76E+02	1.97E-01	7.08E+02	1.26E-02
BREOT-S66+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N67+125 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	5.70E+02	7.84E+00	7.84E-04	3.86E+02	3.03E-01	7.04E-02	1.24E-01	4.62E+00	7.76E+02	1.97E-01	7.08E+02	6.53E-03
BREOT-S67+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N67+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.34E+03	1.84E+01	7.84E-04	9.05E+02	7.10E-01	7.04E-02	1.24E-01	1.08E+01	7.76E+02	1.97E-01	7.08E+02	1.53E-02
																						Maximum HQ (Outside Tailings)	**1.14E+01**
Meadow Vole (Small Herbivorous Mammal - Terrestrial)																							
Reference Sites																							
ACBG-1 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	3.34E-01	9.85E+01	4.62E-01	NA	NA	NA	NA	1.13E-04	2.95E+02	3.32E-02	1.00E+00	3.06E-02	1.62E+01	1.59E+02	2.97E-02	1.59E+02	1.02E-01
ACBG-2 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	3.34E-01	3.33E+02	1.56E+00	NA	NA	NA	NA	1.13E-04	9.97E+02	1.12E-01	1.00E+00	3.06E-02	5.48E+01	1.59E+02	2.97E-02	1.59E+02	3.45E-01
UBRBG-202 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	3.34E-01	3.01E+02	1.41E+00	NA	NA	NA	NA	1.13E-04	9.01E+02	1.01E-01	1.00E+00	3.06E-02	4.95E+01	1.59E+02	2.97E-02	1.59E+02	3.12E-01
UBRBG-204 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	3.34E-01	2.32E+02	1.09E+00	NA	NA	NA	NA	1.13E-04	6.94E+02	7.81E-02	1.00E+00	3.06E-02	3.81E+01	1.59E+02	2.97E-02	1.59E+02	2.40E-01
Inside Tailings																						**Minimum HQ (Reference Sites)**	**1.02E-01**
BREOT-S6-12.5 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S2-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	3.88E+04	1.82E+02	NA	NA	NA	NA	1.13E-04	3.91E+03	4.40E-01	1.00E+00	3.06E-02	5.95E+03	1.59E+02	2.97E-02	1.59E+02	3.75E+01
BREOT-S0-12.5 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S1-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	5.47E+03	2.56E+01	NA	NA	NA	NA	1.13E-04	5.52E+02	6.21E-02	1.00E+00	3.06E-02	8.40E+02	1.59E+02	2.97E-02	1.59E+02	5.29E+00
BREOT-S7-25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	1.36E+04	6.39E+01	NA	NA	NA	NA	1.13E-04	1.38E+03	1.55E-01	1.00E+00	3.06E-02	2.09E+03	1.59E+02	2.97E-02	1.59E+02	1.32E+01
BREOT-S8-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	6.20E+03	2.91E+01	NA	NA	NA	NA	1.13E-04	6.26E+02	7.04E-02	1.00E+00	3.06E-02	9.53E+02	1.59E+02	2.97E-02	1.59E+02	6.00E+00
BREOT-S9-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	7.78E+03	3.65E+01	NA	NA	NA	NA	1.13E-04	7.85E+02	8.83E-02	1.00E+00	3.06E-02	1.19E+03	1.59E+02	2.97E-02	1.59E+02	7.52E+00
BREOT-N10-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	3.53E+04	1.66E+02	NA	NA	NA	NA	1.13E-04	3.57E+03	4.01E-01	1.00E+00	3.06E-02	5.43E+03	1.59E+02	2.97E-02	1.59E+02	3.42E+01
BREOT-N11-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	4.89E+03	2.29E+01	NA	NA	NA	NA	1.13E-04	4.94E+02	5.55E-02	1.00E+00	3.06E-02	7.51E+02	1.59E+02	2.97E-02	1.59E+02	4.73E+00
BREOT-N11-125 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	3.16E+03	1.48E+01	NA	NA	NA	NA	1.13E-04	3.19E+02	3.59E-02	1.00E+00	3.06E-02	4.86E+02	1.59E+02	2.97E-02	1.59E+02	3.06E+00
BREOT-S11-12 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	3.27E+04	1.53E+02	NA	NA	NA	NA	1.13E-04	3.30E+03	3.71E-01	1.00E+00	3.06E-02	5.02E+03	1.59E+02	2.97E-02	1.59E+02	3.16E+01
BREOT-S11+63 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	3.73E+03	1.75E+01	NA	NA	NA	NA	1.13E-04	3.76E+02	4.24E-02	1.00E+00	3.06E-02	5.73E+02	1.59E+02	2.97E-02	1.59E+02	3.61E+00
UBDT-TP-6 (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	6.99E+04	3.28E+02	NA	NA	NA	NA	1.13E-04	7.05E+03	7.94E-01	1.00E+00	3.06E-02	1.07E+04	1.59E+02	2.97E-02	1.59E+02	6.76E+01
UBDT-TP-6 (2-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	5.44E+04	2.55E+02	NA	NA	NA	NA	1.13E-04	5.49E+03	6.18E-01	1.00E+00	3.06E-02	8.36E+03	1.59E+02	2.97E-02	1.59E+02	5.26E+01
UBDT-TP-6 (12-24")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	7.20E+04	3.38E+02	NA	NA	NA	NA	1.13E-04	7.27E+03	8.18E-01	1.00E+00	3.06E-02	1.11E+04	1.59E+02	2.97E-02	1.59E+02	6.97E+01
UBDT-TP-6 (24-36")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	2.78E+04	1.30E+02	NA	NA	NA	NA	1.13E-04	2.81E+03	3.16E-01	1.00E+00	3.06E-02	4.27E+03	1.59E+02	2.97E-02	1.59E+02	2.69E+01
UBDT-TP-6 (36-48")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	7.61E+04	3.57E+02	NA	NA	NA	NA	1.13E-04	7.68E+03	8.64E-01	1.00E+00	3.06E-02	1.17E+04	1.59E+02	2.97E-02	1.59E+02	7.36E+01
UBDT-TP-6 (48-60")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	4.62E+04	2.17E+02	NA	NA	NA	NA	1.13E-04	4.66E+03	5.25E-01	1.00E+00	3.06E-02	7.10E+03	1.59E+02	2.97E-02	1.59E+02	4.47E+01
BREOT-N12-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	2.22E+04	1.04E+02	NA	NA	NA	NA	1.13E-04	2.24E+03	2.52E-01	1.00E+00	3.06E-02	3.41E+03	1.59E+02	2.97E-02	1.59E+02	2.15E+01
BREOT-S12-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	1.86E+04	8.74E+01	NA	NA	NA	NA	1.13E-04	1.88E+03	2.12E-01	1.00E+00	3.06E-02	2.86E+03	1.59E+02	2.97E-02	1.59E+02	1.80E+01
BREOT-S13-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	2.59E+04	1.21E+02	NA	NA	NA	NA	1.13E-04	2.61E+03	2.94E-01	1.00E+00	3.06E-02	3.98E+03	1.59E+02	2.97E-02	1.59E+02	2.50E+01
BREOT-S14-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	1.34E+04	6.28E+01	NA	NA	NA	NA	1.13E-04	1.35E+03	1.52E-01	1.00E+00	3.06E-02	2.06E+03	1.59E+02	2.97E-02	1.59E+02	1.30E+01
BREOT-N15-12.5 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S15-12.5 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N16-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	2.14E+04	1.00E+02	NA	NA	NA	NA	1.13E-04	2.16E+03	2.43E-01	1.00E+00	3.06E-02	3.29E+03	1.59E+02	2.97E-02	1.59E+02	2.07E+01
BREOT-N16-25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	1.13E+04	5.31E+01	NA	NA	NA	NA	1.13E-04	1.14E+03	1.29E-01	1.00E+00	3.06E-02	1.74E+03	1.59E+02	2.97E-02	1.59E+02	1.10E+01
BREOT-S16-12.5 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N17-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	5.97E+03	2.80E+01	NA	NA	NA	NA	1.13E-04	6.03E+02	6.78E-02	1.00E+00	3.06E-02	9.17E+02	1.59E+02	2.97E-02	1.59E+02	5.78E+00
BREOT-S17-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	3.81E+03	1.79E+01	NA	NA	NA	NA	1.13E-04	3.85E+02	4.33E-02	1.00E+00	3.06E-02	5.86E+02	1.59E+02	2.97E-02	1.59E+02	3.69E+00
BREOT-S17-25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	9.82E+03	4.60E+01	NA	NA	NA	NA	1.13E-04	9.91E+02	1.11E-01	1.00E+00	3.06E-02	1.51E+03	1.59E+02	2.97E-02	1.59E+02	9.49E+00
UBDT-TP-4 (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	6.09E+04	2.86E+02	NA	NA	NA	NA	1.13E-04	6.15E+03	6.92E-01	1.00E+00	3.06E-02	9.35E+03	1.59E+02	2.97E-02	1.59E+02	5.89E+01
UBDT-TP-4 (2-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	3.86E+04	1.81E+02	NA	NA	NA	NA	1.13E-04	3.89E+03	4.38E-01	1.00E+00	3.06E-02	5.92E+03	1.59E+02	2.97E-02	1.59E+02	3.73E+01
UBDT-TP-4 (12-24")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	1.89E+04	8.87E+01	NA	NA	NA	NA	1.13E-04	1.91E+03	2.15E-01	1.00E+00	3.06E-02	2.91E+03	1.59E+02	2.97E-02	1.59E+02	1.83E+01
UBDT-TP-4 (24-36")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	1.76E+04	8.26E+01	NA	NA	NA	NA	1.13E-04	1.78E+03	2.00E-01	1.00E+00	3.06E-02	2.71E+03	1.59E+02	2.97E-02	1.59E+02	1.70E+01

TABLE C-2E: MANGANESE DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **18.41**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Meadow Vole (Small Herbivorous Mammal - Terrestrial)																							
BREOT-N18-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	5.93E+04	2.78E+02	NA	NA	NA	NA	1.13E-04	5.99E+03	6.74E-01	1.00E+00	3.06E-02	9.11E+03	1.59E+02	2.97E-02	1.59E+02	5.74E+01
BREOT-N18-25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	5.61E+03	2.63E+01	NA	NA	NA	NA	1.13E-04	5.66E+02	6.37E-02	1.00E+00	3.06E-02	8.61E+02	1.59E+02	2.97E-02	1.59E+02	5.42E+00
BREOT-S18-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	1.50E+04	7.02E+01	NA	NA	NA	NA	1.13E-04	1.51E+03	1.70E-01	1.00E+00	3.06E-02	2.30E+03	1.59E+02	2.97E-02	1.59E+02	1.45E+01
BREOT-N19-10 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	8.76E+03	4.11E+01	NA	NA	NA	NA	1.13E-04	8.84E+02	9.95E-02	1.00E+00	3.06E-02	1.35E+03	1.59E+02	2.97E-02	1.59E+02	8.47E+00
BREOT-S19-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	2.84E+04	1.33E+02	NA	NA	NA	NA	1.13E-04	2.87E+03	3.22E-01	1.00E+00	3.06E-02	4.36E+03	1.59E+02	2.97E-02	1.59E+02	2.75E+01
UBDT-TP-5 (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	4.59E+04	2.15E+02	NA	NA	NA	NA	1.13E-04	4.63E+03	5.21E-01	1.00E+00	3.06E-02	7.05E+03	1.59E+02	2.97E-02	1.59E+02	4.44E+01
UBDT-TP-5 (2-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	3.84E+04	1.80E+02	NA	NA	NA	NA	1.13E-04	3.87E+03	4.36E-01	1.00E+00	3.06E-02	5.89E+03	1.59E+02	2.97E-02	1.59E+02	3.71E+01
UBDT-TP-5 (12-24")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	3.50E+04	1.64E+02	NA	NA	NA	NA	1.13E-04	3.53E+03	3.97E-01	1.00E+00	3.06E-02	5.37E+03	1.59E+02	2.97E-02	1.59E+02	3.38E+01
BREOT-N20-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	7.59E+03	3.56E+01	NA	NA	NA	NA	1.13E-04	7.65E+02	8.61E-02	1.00E+00	3.06E-02	1.17E+03	1.59E+02	2.97E-02	1.59E+02	7.34E+00
UBDT-TP-3 (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	7.91E+03	3.71E+01	NA	NA	NA	NA	1.13E-04	7.98E+02	8.98E-02	1.00E+00	3.06E-02	1.22E+03	1.59E+02	2.97E-02	1.59E+02	7.65E+00
UBDT-TP-3 (2-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UBDT-TP-3 (12-24")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	2.98E+03	1.40E+01	NA	NA	NA	NA	1.13E-04	3.01E+02	3.39E-02	1.00E+00	3.06E-02	4.58E+02	1.59E+02	2.97E-02	1.59E+02	2.89E+00
UBDT-TP-3 (24-36")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	3.57E+03	1.67E+01	NA	NA	NA	NA	1.13E-04	3.60E+02	4.05E-02	1.00E+00	3.06E-02	5.48E+02	1.59E+02	2.97E-02	1.59E+02	3.45E+00
UBDT-TP-3 (36-48")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	5.49E+04	2.57E+02	NA	NA	NA	NA	1.13E-04	5.54E+03	6.24E-01	1.00E+00	3.06E-02	8.44E+03	1.59E+02	2.97E-02	1.59E+02	5.31E+01
UBDT-TP-3 (48-60")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	2.60E+04	1.22E+02	NA	NA	NA	NA	1.13E-04	2.63E+03	2.96E-01	1.00E+00	3.06E-02	4.00E+03	1.59E+02	2.97E-02	1.59E+02	2.52E+01
BREOT-N21-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	6.76E+04	3.17E+02	NA	NA	NA	NA	1.13E-04	6.83E+03	7.68E-01	1.00E+00	3.06E-02	1.04E+04	1.59E+02	2.97E-02	1.59E+02	6.54E+01
BREOT-N22-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	6.66E+03	3.12E+01	NA	NA	NA	NA	1.13E-04	6.72E+02	7.56E-02	1.00E+00	3.06E-02	1.02E+03	1.59E+02	2.97E-02	1.59E+02	6.44E+00
BREOT-N23-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	1.45E+04	6.80E+01	NA	NA	NA	NA	1.13E-04	1.46E+03	1.65E-01	1.00E+00	3.06E-02	2.23E+03	1.59E+02	2.97E-02	1.59E+02	1.40E+01
BREOT-S23-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	1.57E+05	7.38E+02	NA	NA	NA	NA	1.13E-04	1.59E+04	1.79E+00	1.00E+00	3.06E-02	2.42E+04	1.59E+02	2.97E-02	1.59E+02	1.52E+02
UBDT-TP-2 (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	5.43E+04	2.54E+02	NA	NA	NA	NA	1.13E-04	5.48E+03	6.16E-01	1.00E+00	3.06E-02	8.34E+03	1.59E+02	2.97E-02	1.59E+02	5.25E+01
UBDT-TP-2 (2-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	7.14E+04	3.35E+02	NA	NA	NA	NA	1.13E-04	7.21E+03	8.11E-01	1.00E+00	3.06E-02	1.10E+04	1.59E+02	2.97E-02	1.59E+02	6.91E+01
UBDT-TP-2 (12-24")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	5.39E+04	2.53E+02	NA	NA	NA	NA	1.13E-04	5.44E+03	6.12E-01	1.00E+00	3.06E-02	8.27E+03	1.59E+02	2.97E-02	1.59E+02	5.21E+01
UBDT-TP-2 (24-36")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	2.74E+04	1.28E+02	NA	NA	NA	NA	1.13E-04	2.76E+03	3.11E-01	1.00E+00	3.06E-02	4.20E+03	1.59E+02	2.97E-02	1.59E+02	2.65E+01
UBDT-TP-2 (36-48")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	2.76E+04	1.29E+02	NA	NA	NA	NA	1.13E-04	2.79E+03	3.14E-01	1.00E+00	3.06E-02	4.24E+03	1.59E+02	2.97E-02	1.59E+02	2.67E+01
BREOT-S24-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	1.61E+05	7.56E+02	NA	NA	NA	NA	1.13E-04	1.63E+04	1.83E+00	1.00E+00	3.06E-02	2.48E+04	1.59E+02	2.97E-02	1.59E+02	1.56E+02
BREOT-N25-50 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	4.77E+04	2.24E+02	NA	NA	NA	NA	1.13E-04	4.82E+03	5.42E-01	1.00E+00	3.06E-02	7.33E+03	1.59E+02	2.97E-02	1.59E+02	4.62E+01
BREOT-N25-95 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S25-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	5.76E+04	2.70E+02	NA	NA	NA	NA	1.13E-04	5.81E+03	6.54E-01	1.00E+00	3.06E-02	8.84E+03	1.59E+02	2.97E-02	1.59E+02	5.57E+01
BREOT-S25-40 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N26A-25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	4.54E+03	2.13E+01	NA	NA	NA	NA	1.13E-04	4.58E+02	5.15E-02	1.00E+00	3.06E-02	6.97E+02	1.59E+02	2.97E-02	1.59E+02	4.39E+00
BREOT-N26B-25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	1.88E+04	8.83E+01	NA	NA	NA	NA	1.13E-04	1.90E+03	2.14E-01	1.00E+00	3.06E-02	2.89E+03	1.59E+02	2.97E-02	1.59E+02	1.82E+01
BREOT-N26-50 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	4.77E+04	2.24E+02	NA	NA	NA	NA	1.13E-04	4.81E+03	5.41E-01	1.00E+00	3.06E-02	7.32E+03	1.59E+02	2.97E-02	1.59E+02	4.61E+01
BREOT-N26-75 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	2.63E+04	1.23E+02	NA	NA	NA	NA	1.13E-04	2.65E+03	2.99E-01	1.00E+00	3.06E-02	4.04E+03	1.59E+02	2.97E-02	1.59E+02	2.54E+01
BREOT-S26-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	2.36E+04	1.11E+02	NA	NA	NA	NA	1.13E-04	2.38E+03	2.68E-01	1.00E+00	3.06E-02	3.62E+03	1.59E+02	2.97E-02	1.59E+02	2.28E+01
BREOT-S26-40 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	7.11E+04	3.33E+02	NA	NA	NA	NA	1.13E-04	7.17E+03	8.07E-01	1.00E+00	3.06E-02	1.09E+04	1.59E+02	2.97E-02	1.59E+02	6.87E+01
BREOT-N27-30 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	2.63E+04	1.23E+02	NA	NA	NA	NA	1.13E-04	2.66E+03	2.99E-01	1.00E+00	3.06E-02	4.04E+03	1.59E+02	2.97E-02	1.59E+02	2.55E+01
BREOT-N27-75 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	7.50E+04	3.52E+02	NA	NA	NA	NA	1.13E-04	7.57E+03	8.52E-01	1.00E+00	3.06E-02	1.15E+04	1.59E+02	2.97E-02	1.59E+02	7.26E+01
BREOT-S27-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	1.50E+04	7.05E+01	NA	NA	NA	NA	1.13E-04	1.52E+03	1.71E-01	1.00E+00	3.06E-02	2.31E+03	1.59E+02	2.97E-02	1.59E+02	1.46E+01
BREOT-N28-110 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	1.39E+04	6.52E+01	NA	NA	NA	NA	1.13E-04	1.40E+03	1.58E-01	1.00E+00	3.06E-02	2.14E+03	1.59E+02	2.97E-02	1.59E+02	1.35E+01
BREOT-N28-55 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	3.68E+04	1.73E+02	NA	NA	NA	NA	1.13E-04	3.72E+03	4.18E-01	1.00E+00	3.06E-02	5.66E+03	1.59E+02	2.97E-02	1.59E+02	3.56E+01
BREOT-S28-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	8.30E+04	3.89E+02	NA	NA	NA	NA	1.13E-04	8.38E+03	9.43E-01	1.00E+00	3.06E-02	1.28E+04	1.59E+02	2.97E-02	1.59E+02	8.03E+01
UBDT-TP-1 (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	5.50E+04	2.58E+02	NA	NA	NA	NA	1.13E-04	5.55E+03	6.25E-01	1.00E+00	3.06E-02	8.45E+03	1.59E+02	2.97E-02	1.59E+02	5.32E+01
UBDT-TP-1 (2-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	5.47E+04	2.57E+02	NA	NA	NA	NA	1.13E-04	5.52E+03	6.22E-01	1.00E+00	3.06E-02	8.41E+03	1.59E+02	2.97E-02	1.59E+02	5.30E+01
UBDT-TP-1 (12-24")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	5.62E+04	2.64E+02	NA	NA	NA	NA	1.13E-04	5.67E+03	6.38E-01	1.00E+00	3.06E-02	8.64E+03	1.59E+02	2.97E-02	1.59E+02	5.44E+01
UBDT-TP-1 (24-36")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	7.48E+04	3.51E+02	NA	NA	NA	NA	1.13E-04	7.55E+03	8.49E-01	1.00E+00	3.06E-02	1.15E+04	1.59E+02	2.97E-02	1.59E+02	7.23E+01
UBDT-TP-1 (36-48")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	1.19E+04	5.58E+01	NA	NA	NA	NA	1.13E-04	1.20E+03	1.35E-01	1.00E+00	3.06E-02	1.83E+03	1.59E+02	2.97E-02	1.59E+02	1.15E+01
UBDT-TP-1 (48-60")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	1.48E+04	6.94E+01	NA	NA	NA	NA	1.13E-04	1.49E+03	1.68E-01	1.00E+00	3.06E-02	2.27E+03	1.59E+02	2.97E-02	1.59E+02	1.43E+01
BREOT-N29-30 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	5.71E+04	2.68E+02	NA	NA	NA	NA	1.13E-04	5.76E+03	6.48E-01	1.00E+00	3.06E-02	8.77E+03	1.59E+02	2.97E-02	1.59E+02	5.52E+01
BREOT-S29-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	7.01E+04	3.28E+02	NA	NA	NA	NA	1.13E-04	7.07E+03	7.96E-01	1.00E+00	3.06E-02	1.08E+04	1.59E+02	2.97E-02	1.59E+02	6.78E+01
BREOT-N30-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	1.95E+04	9.16E+01	NA	NA	NA	NA	1.13E-04	1.97E+03	2.22E-01	1.00E+00	3.06E-02	3.00E+03	1.59E+02	2.97E-02	1.59E+02	1.89E+01
BREOT-S30-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	4.81E+04	2.26E+02	NA	NA	NA	NA	1.13E-04	4.86E+03	5.47E-01	1.00E+00	3.06E-02	7.40E+03	1.59E+02	2.97E-02	1.59E+02	4.66E+01
BREOT-N31-12.5 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S31-25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	3.88E+04	1.82E+02	NA	NA	NA	NA	1.13E-04	3.92E+03	4.41E-01	1.00E+00	3.06E-02	5.96E+03	1.59E+02	2.97E-02	1.59E+02	3.76E+01
BREOT-S31-5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	6.33E+04	2.97E+02	NA	NA	NA	NA	1.13E-04	6.38E+03	7.19E-01	1.00E+00	3.06E-02	9.72E+03	1.59E+02	2.97E-02	1.59E+02	6.12E+01
BREOT-N32-12.5 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB

TABLE C-2E: MANGANESE DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **18.41**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Meadow Vole (Small Herbivorous Mammal - Terrestrial)																							
BREOT-S32-6 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	1.37E+04	6.42E+01	NA	NA	NA	NA	1.13E-04	1.38E+03	1.55E-01	1.00E+00	3.06E-02	2.10E+03	1.59E+02	2.97E-02	1.59E+02	1.32E+01
BREOT-N33-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	3.98E+03	1.87E+01	NA	NA	NA	NA	1.13E-04	4.02E+02	4.52E-02	1.00E+00	3.06E-02	6.12E+02	1.59E+02	2.97E-02	1.59E+02	3.85E+00
BREOT-S33-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	2.67E+04	1.25E+02	NA	NA	NA	NA	1.13E-04	2.70E+03	3.03E-01	1.00E+00	3.06E-02	4.10E+03	1.59E+02	2.97E-02	1.59E+02	2.58E+01
BREOT-N35-12.5 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S35-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	8.39E+04	3.94E+02	NA	NA	NA	NA	1.13E-04	8.47E+03	9.53E-01	1.00E+00	3.06E-02	1.29E+04	1.59E+02	2.97E-02	1.59E+02	8.12E+01
BREOT-N36-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	3.23E+04	1.52E+02	NA	NA	NA	NA	1.13E-04	3.26E+03	3.67E-01	1.00E+00	3.06E-02	4.96E+03	1.59E+02	2.97E-02	1.59E+02	3.13E+01
BREOT-S36-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	1.12E+04	5.24E+01	NA	NA	NA	NA	1.13E-04	1.13E+03	1.27E-01	1.00E+00	3.06E-02	1.72E+03	1.59E+02	2.97E-02	1.59E+02	1.08E+01
BREOT-N37-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	3.27E+03	1.53E+01	NA	NA	NA	NA	1.13E-04	3.30E+02	3.71E-02	1.00E+00	3.06E-02	5.02E+02	1.59E+02	2.97E-02	1.59E+02	3.16E+00
BREOT-S37-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	1.32E+04	6.19E+01	NA	NA	NA	NA	1.13E-04	1.33E+03	1.50E-01	1.00E+00	3.06E-02	2.03E+03	1.59E+02	2.97E-02	1.59E+02	1.28E+01
BREOT-N38-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	6.59E+03	3.09E+01	NA	NA	NA	NA	1.13E-04	6.65E+02	7.49E-02	1.00E+00	3.06E-02	1.01E+03	1.59E+02	2.97E-02	1.59E+02	6.38E+00
BREOT-S38-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	1.17E+05	5.46E+02	NA	NA	NA	NA	1.13E-04	1.18E+04	1.32E+00	1.00E+00	3.06E-02	1.79E+04	1.59E+02	2.97E-02	1.59E+02	1.13E+02
BREOT-N39-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	9.80E+03	4.60E+01	NA	NA	NA	NA	1.13E-04	9.89E+02	1.11E-01	1.00E+00	3.06E-02	1.51E+03	1.59E+02	2.97E-02	1.59E+02	9.48E+00
BREOT-S39-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	4.56E+04	2.14E+02	NA	NA	NA	NA	1.13E-04	4.61E+03	5.18E-01	1.00E+00	3.06E-02	7.01E+03	1.59E+02	2.97E-02	1.59E+02	4.42E+01
BREOT-N40-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	4.59E+04	2.15E+02	NA	NA	NA	NA	1.13E-04	4.63E+03	5.21E-01	1.00E+00	3.06E-02	7.05E+03	1.59E+02	2.97E-02	1.59E+02	4.44E+01
BREOT-S40-14 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	4.24E+04	1.99E+02	NA	NA	NA	NA	1.13E-04	4.28E+03	4.81E-01	1.00E+00	3.06E-02	6.51E+03	1.59E+02	2.97E-02	1.59E+02	4.10E+01
BREOT-N41-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	3.38E+04	1.58E+02	NA	NA	NA	NA	1.13E-04	3.41E+03	3.84E-01	1.00E+00	3.06E-02	5.19E+03	1.59E+02	2.97E-02	1.59E+02	3.27E+01
BREOT-S41-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	4.24E+04	1.99E+02	NA	NA	NA	NA	1.13E-04	4.28E+03	4.81E-01	1.00E+00	3.06E-02	6.51E+03	1.59E+02	2.97E-02	1.59E+02	4.10E+01
BREOT-N42-35 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	7.78E+03	3.65E+01	NA	NA	NA	NA	1.13E-04	7.85E+02	8.84E-02	1.00E+00	3.06E-02	1.20E+03	1.59E+02	2.97E-02	1.59E+02	7.53E+00
BREOT-S42-25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	1.64E+04	7.71E+01	NA	NA	NA	NA	1.13E-04	1.66E+03	1.87E-01	1.00E+00	3.06E-02	2.53E+03	1.59E+02	2.97E-02	1.59E+02	1.59E+01
BREOT-N43-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	1.00E+05	4.69E+02	NA	NA	NA	NA	1.13E-04	1.01E+04	1.14E+00	1.00E+00	3.06E-02	1.54E+04	1.59E+02	2.97E-02	1.59E+02	9.67E+01
BREOT-S43-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	2.20E+04	1.03E+02	NA	NA	NA	NA	1.13E-04	2.22E+03	2.50E-01	1.00E+00	3.06E-02	3.38E+03	1.59E+02	2.97E-02	1.59E+02	2.13E+01
BREOT-N44-30 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	7.84E+03	3.68E+01	NA	NA	NA	NA	1.13E-04	7.91E+02	8.91E-02	1.00E+00	3.06E-02	1.20E+03	1.59E+02	2.97E-02	1.59E+02	7.59E+00
BREOT-S44-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	7.37E+04	3.46E+02	NA	NA	NA	NA	1.13E-04	7.44E+03	8.37E-01	1.00E+00	3.06E-02	1.13E+04	1.59E+02	2.97E-02	1.59E+02	7.13E+01
BREOT-N45-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	9.49E+03	4.45E+01	NA	NA	NA	NA	1.13E-04	9.57E+02	1.08E-01	1.00E+00	3.06E-02	1.46E+03	1.59E+02	2.97E-02	1.59E+02	9.18E+00
BREOT-N43-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	1.00E+05	4.69E+02	NA	NA	NA	NA	1.13E-04	1.01E+04	1.14E+00	1.00E+00	3.06E-02	1.54E+04	1.59E+02	2.97E-02	1.59E+02	9.67E+01
BREOT-S45-6 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	1.27E+04	5.94E+01	NA	NA	NA	NA	1.13E-04	1.28E+03	1.44E-01	1.00E+00	3.06E-02	1.95E+03	1.59E+02	2.97E-02	1.59E+02	1.22E+01
BREOT-N46-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	3.64E+03	1.71E+01	NA	NA	NA	NA	1.13E-04	3.67E+02	4.13E-02	1.00E+00	3.06E-02	5.59E+02	1.59E+02	2.97E-02	1.59E+02	3.52E+00
BREOT-S46-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	3.62E+03	1.70E+01	NA	NA	NA	NA	1.13E-04	3.65E+02	4.11E-02	1.00E+00	3.06E-02	5.56E+02	1.59E+02	2.97E-02	1.59E+02	3.50E+00
BREOT-S46-40 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	5.54E+03	2.60E+01	NA	NA	NA	NA	1.13E-04	5.59E+02	6.30E-02	1.00E+00	3.06E-02	8.52E+02	1.59E+02	2.97E-02	1.59E+02	5.36E+00
BREOT-N47-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	6.97E+03	3.27E+01	NA	NA	NA	NA	1.13E-04	7.04E+02	7.92E-02	1.00E+00	3.06E-02	1.07E+03	1.59E+02	2.97E-02	1.59E+02	6.75E+00
BREOT-S47-999 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	7.41E+03	3.47E+01	NA	NA	NA	NA	1.13E-04	7.47E+02	8.41E-02	1.00E+00	3.06E-02	1.14E+03	1.59E+02	2.97E-02	1.59E+02	7.16E+00
BREOT-S48-12.5 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S49-2.5 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S50-12.5 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S50-25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N52-60 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S52-12.5 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S53-12.5 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S54-12.5 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N55-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	3.72E+04	1.74E+02	NA	NA	NA	NA	1.13E-04	3.75E+03	4.22E-01	1.00E+00	3.06E-02	5.71E+03	1.59E+02	2.97E-02	1.59E+02	3.59E+01
BREOT-S55-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	1.53E+04	7.19E+01	NA	NA	NA	NA	1.13E-04	1.55E+03	1.74E-01	1.00E+00	3.06E-02	2.35E+03	1.59E+02	2.97E-02	1.59E+02	1.48E+01
BREOT-N56-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	1.77E+04	8.31E+01	NA	NA	NA	NA	1.13E-04	1.79E+03	2.01E-01	1.00E+00	3.06E-02	2.72E+03	1.59E+02	2.97E-02	1.59E+02	1.71E+01
BREOT-S56-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	9.43E+03	4.42E+01	NA	NA	NA	NA	1.13E-04	9.52E+02	1.07E-01	1.00E+00	3.06E-02	1.45E+03	1.59E+02	2.97E-02	1.59E+02	9.12E+00
BREOT-N57-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	1.18E+04	5.55E+01	NA	NA	NA	NA	1.13E-04	1.19E+03	1.34E-01	1.00E+00	3.06E-02	1.82E+03	1.59E+02	2.97E-02	1.59E+02	1.14E+01
BREOT-S57-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	1.23E+04	5.77E+01	NA	NA	NA	NA	1.13E-04	1.24E+03	1.40E-01	1.00E+00	3.06E-02	1.89E+03	1.59E+02	2.97E-02	1.59E+02	1.19E+01
BREOT-N58-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	2.04E+04	9.56E+01	NA	NA	NA	NA	1.13E-04	2.06E+03	2.31E-01	1.00E+00	3.06E-02	3.13E+03	1.59E+02	2.97E-02	1.59E+02	1.97E+01
BREOT-S58-12 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	1.27E+04	5.98E+01	NA	NA	NA	NA	1.13E-04	1.29E+03	1.45E-01	1.00E+00	3.06E-02	1.96E+03	1.59E+02	2.97E-02	1.59E+02	1.23E+01
BREOT-N59-18 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	6.99E+03	3.28E+01	NA	NA	NA	NA	1.13E-04	7.05E+02	7.93E-02	1.00E+00	3.06E-02	1.07E+03	1.59E+02	2.97E-02	1.59E+02	6.76E+00
BREOT-N60-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	1.19E+04	5.59E+01	NA	NA	NA	NA	1.13E-04	1.20E+03	1.35E-01	1.00E+00	3.06E-02	1.83E+03	1.59E+02	2.97E-02	1.59E+02	1.15E+01
BREOT-S60-12.5 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S61-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	6.33E+04	2.97E+02	NA	NA	NA	NA	1.13E-04	6.39E+03	7.19E-01	1.00E+00	3.06E-02	9.72E+03	1.59E+02	2.97E-02	1.59E+02	6.12E+01
BREOT-N62-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	6.15E+03	2.88E+01	NA	NA	NA	NA	1.13E-04	6.21E+02	6.99E-02	1.00E+00	3.06E-02	9.45E+02	1.59E+02	2.97E-02	1.59E+02	5.95E+00
BREOT-S62-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	7.53E+04	3.53E+02	NA	NA	NA	NA	1.13E-04	7.60E+03	8.55E-01	1.00E+00	3.06E-02	1.16E+04	1.59E+02	2.97E-02	1.59E+02	7.29E+01
BREOT-S63-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	1.08E+04	5.06E+01	NA	NA	NA	NA	1.13E-04	1.09E+03	1.23E-01	1.00E+00	3.06E-02	1.66E+03	1.59E+02	2.97E-02	1.59E+02	1.04E+01
BREOT-N64-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	1.09E+04	5.10E+01	NA	NA	NA	NA	1.13E-04	1.10E+03	1.23E-01	1.00E+00	3.06E-02	1.67E+03	1.59E+02	2.97E-02	1.59E+02	1.05E+01

TABLE C-2E: MANGANESE DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **18.41**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Meadow Vole (Small Herbivorous Mammal - Terrestrial)																							
BREOT-N64-20 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	1.05E+04	4.95E+01	NA	NA	NA	NA	1.13E-04	1.06E+03	1.20E-01	1.00E+00	3.06E-02	1.62E+03	1.59E+02	2.97E-02	1.59E+02	1.02E+01
BREOT-S64-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	3.61E+03	1.69E+01	NA	NA	NA	NA	1.13E-04	3.64E+02	4.10E-02	1.00E+00	3.06E-02	5.54E+02	1.59E+02	2.97E-02	1.59E+02	3.49E+00
BREOT-N65-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	9.35E+03	4.39E+01	NA	NA	NA	NA	1.13E-04	9.44E+02	1.06E-01	1.00E+00	3.06E-02	1.44E+03	1.59E+02	2.97E-02	1.59E+02	9.05E+00
BREOT-S65-12.5 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N66-5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	5.28E+03	2.48E+01	NA	NA	NA	NA	1.13E-04	5.33E+02	6.00E-02	1.00E+00	3.06E-02	8.12E+02	1.59E+02	2.97E-02	1.59E+02	5.11E+00
BREOT-S66-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	8.97E+03	4.21E+01	NA	NA	NA	NA	1.13E-04	9.06E+02	1.02E-01	1.00E+00	3.06E-02	1.38E+03	1.59E+02	2.97E-02	1.59E+02	8.68E+00
BREOT-N67-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	1.04E+05	4.90E+02	NA	NA	NA	NA	1.13E-04	1.05E+04	1.19E+00	1.00E+00	3.06E-02	1.61E+04	1.59E+02	2.97E-02	1.59E+02	1.01E+02
BREOT-S67-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	5.83E+03	2.73E+01	NA	NA	NA	NA	1.13E-04	5.88E+02	6.62E-02	1.00E+00	3.06E-02	8.96E+02	1.59E+02	2.97E-02	1.59E+02	5.64E+00
At Edge of Tailings																						**Maximum HQ (Inside Tailings)**	**1.56E+02**
BREOT-S0-0 (06)	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	7.55E+03	3.54E+01	NA	NA	NA	NA	1.13E-04	7.62E+02	8.58E-02	1.00E+00	3.06E-02	1.16E+03	1.59E+02	2.97E-02	1.59E+02	7.31E+00
BREOT-S1-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	8.39E+03	3.93E+01	NA	NA	NA	NA	1.13E-04	8.47E+02	9.53E-02	1.00E+00	3.06E-02	1.29E+03	1.59E+02	2.97E-02	1.59E+02	8.12E+00
BREOT-S2-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	2.24E+04	1.05E+02	NA	NA	NA	NA	1.13E-04	2.26E+03	2.54E-01	1.00E+00	3.06E-02	3.44E+03	1.59E+02	2.97E-02	1.59E+02	2.17E+01
BREOT-S3-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	5.65E+04	2.65E+02	NA	NA	NA	NA	1.13E-04	5.70E+03	6.42E-01	1.00E+00	3.06E-02	8.68E+03	1.59E+02	2.97E-02	1.59E+02	5.46E+01
BREOT-S4-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	6.63E+04	3.11E+02	NA	NA	NA	NA	1.13E-04	6.69E+03	7.52E-01	1.00E+00	3.06E-02	1.02E+04	1.59E+02	2.97E-02	1.59E+02	6.41E+01
BREOT-S6-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S7-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S8-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	1.16E+04	5.42E+01	NA	NA	NA	NA	1.13E-04	1.17E+03	1.31E-01	1.00E+00	3.06E-02	1.78E+03	1.59E+02	2.97E-02	1.59E+02	1.12E+01
BREOT-S9-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N10-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	7.98E+04	3.74E+02	NA	NA	NA	NA	1.13E-04	8.05E+03	9.06E-01	1.00E+00	3.06E-02	1.23E+04	1.59E+02	2.97E-02	1.59E+02	7.72E+01
BREOT-N11-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	3.73E+03	1.75E+01	NA	NA	NA	NA	1.13E-04	3.76E+02	4.23E-02	1.00E+00	3.06E-02	5.73E+02	1.59E+02	2.97E-02	1.59E+02	3.61E+00
BREOT-S11-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	1.98E+04	9.27E+01	NA	NA	NA	NA	1.13E-04	1.99E+03	2.24E-01	1.00E+00	3.06E-02	3.04E+03	1.59E+02	2.97E-02	1.59E+02	1.91E+01
BREOT-N12-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	1.04E+04	4.86E+01	NA	NA	NA	NA	1.13E-04	1.05E+03	1.18E-01	1.00E+00	3.06E-02	1.59E+03	1.59E+02	2.97E-02	1.59E+02	1.00E+01
BREOT-S12-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	2.96E+04	1.39E+02	NA	NA	NA	NA	1.13E-04	2.99E+03	3.36E-01	1.00E+00	3.06E-02	4.55E+03	1.59E+02	2.97E-02	1.59E+02	2.86E+01
BREOT-N13-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	1.54E+04	7.22E+01	NA	NA	NA	NA	1.13E-04	1.55E+03	1.75E-01	1.00E+00	3.06E-02	2.37E+03	1.59E+02	2.97E-02	1.59E+02	1.49E+01
BREOT-S13-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	8.57E+03	4.02E+01	NA	NA	NA	NA	1.13E-04	8.65E+02	9.74E-02	1.00E+00	3.06E-02	1.32E+03	1.59E+02	2.97E-02	1.59E+02	8.29E+00
BREOT-N14-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	1.53E+04	7.20E+01	NA	NA	NA	NA	1.13E-04	1.55E+03	1.74E-01	1.00E+00	3.06E-02	2.36E+03	1.59E+02	2.97E-02	1.59E+02	1.48E+01
BREOT-S14-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	9.07E+04	4.25E+02	NA	NA	NA	NA	1.13E-04	9.15E+03	1.03E+00	1.00E+00	3.06E-02	1.39E+04	1.59E+02	2.97E-02	1.59E+02	8.77E+01
BREOT-N15-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	8.03E+03	3.76E+01	NA	NA	NA	NA	1.13E-04	8.10E+02	9.12E-02	1.00E+00	3.06E-02	1.23E+03	1.59E+02	2.97E-02	1.59E+02	7.76E+00
BREOT-N16-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	6.08E+03	2.85E+01	NA	NA	NA	NA	1.13E-04	6.13E+02	6.90E-02	1.00E+00	3.06E-02	9.33E+02	1.59E+02	2.97E-02	1.59E+02	5.88E+00
BREOT-S16-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	1.07E+04	5.00E+01	NA	NA	NA	NA	1.13E-04	1.08E+03	1.21E-01	1.00E+00	3.06E-02	1.64E+03	1.59E+02	2.97E-02	1.59E+02	1.03E+01
BREOT-N17-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	1.64E+04	7.70E+01	NA	NA	NA	NA	1.13E-04	1.66E+03	1.86E-01	1.00E+00	3.06E-02	2.52E+03	1.59E+02	2.97E-02	1.59E+02	1.59E+01
BREOT-S17-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	5.05E+03	2.37E+01	NA	NA	NA	NA	1.13E-04	5.10E+02	5.74E-02	1.00E+00	3.06E-02	7.76E+02	1.59E+02	2.97E-02	1.59E+02	4.89E+00
BREOT-N18-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	6.44E+03	3.02E+01	NA	NA	NA	NA	1.13E-04	6.50E+02	7.32E-02	1.00E+00	3.06E-02	9.90E+02	1.59E+02	2.97E-02	1.59E+02	6.23E+00
BREOT-S18-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	4.03E+06	1.89E+04	NA	NA	NA	NA	1.13E-04	4.07E+05	4.58E+01	1.00E+00	3.06E-02	6.19E+05	1.59E+02	2.97E-02	1.59E+02	3.90E+03
BREOT-N19-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	4.45E+04	2.09E+02	NA	NA	NA	NA	1.13E-04	4.49E+03	5.06E-01	1.00E+00	3.06E-02	6.84E+03	1.59E+02	2.97E-02	1.59E+02	4.31E+01
BREOT-S19-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	1.25E+04	5.85E+01	NA	NA	NA	NA	1.13E-04	1.26E+03	1.42E-01	1.00E+00	3.06E-02	1.92E+03	1.59E+02	2.97E-02	1.59E+02	1.21E+01
BREOT-N20-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	9.90E+04	4.64E+02	NA	NA	NA	NA	1.13E-04	9.99E+03	1.12E+00	1.00E+00	3.06E-02	1.52E+04	1.59E+02	2.97E-02	1.59E+02	9.57E+01
BREOT-S20-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	7.90E+03	3.70E+01	NA	NA	NA	NA	1.13E-04	7.97E+02	8.97E-02	1.00E+00	3.06E-02	1.21E+03	1.59E+02	2.97E-02	1.59E+02	7.64E+00
BREOT-N21-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	6.43E+06	3.01E+04	NA	NA	NA	NA	1.13E-04	6.49E+05	7.30E+01	1.00E+00	3.06E-02	9.88E+05	1.59E+02	2.97E-02	1.59E+02	6.22E+03
BREOT-S21-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	3.36E+03	1.58E+01	NA	NA	NA	NA	1.13E-04	3.39E+02	3.82E-02	1.00E+00	3.06E-02	5.16E+02	1.59E+02	2.97E-02	1.59E+02	3.25E+00
BREOT-N22-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	8.47E+03	3.97E+01	NA	NA	NA	NA	1.13E-04	8.55E+02	9.62E-02	1.00E+00	3.06E-02	1.30E+03	1.59E+02	2.97E-02	1.59E+02	8.19E+00
BREOT-S22-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N23-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	2.97E+04	1.39E+02	NA	NA	NA	NA	1.13E-04	3.00E+03	3.37E-01	1.00E+00	3.06E-02	4.56E+03	1.59E+02	2.97E-02	1.59E+02	2.87E+01
BREOT-S23-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	1.65E+04	7.72E+01	NA	NA	NA	NA	1.13E-04	1.66E+03	1.87E-01	1.00E+00	3.06E-02	2.53E+03	1.59E+02	2.97E-02	1.59E+02	1.59E+01
BREOT-N24-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	1.32E+04	6.20E+01	NA	NA	NA	NA	1.13E-04	1.33E+03	1.50E-01	1.00E+00	3.06E-02	2.03E+03	1.59E+02	2.97E-02	1.59E+02	1.28E+01
BREOT-S24-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	2.39E+05	1.12E+03	NA	NA	NA	NA	1.13E-04	2.41E+04	2.72E+00	1.00E+00	3.06E-02	3.67E+04	1.59E+02	2.97E-02	1.59E+02	2.31E+02
BREOT-N25-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	4.00E+04	1.88E+02	NA	NA	NA	NA	1.13E-04	4.04E+03	4.54E-01	1.00E+00	3.06E-02	6.14E+03	1.59E+02	2.97E-02	1.59E+02	3.87E+01
BREOT-S25-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	5.73E+04	2.69E+02	NA	NA	NA	NA	1.13E-04	5.79E+03	6.51E-01	1.00E+00	3.06E-02	8.81E+03	1.59E+02	2.97E-02	1.59E+02	5.55E+01
BREOT-N26-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	2.60E+04	1.22E+02	NA	NA	NA	NA	1.13E-04	2.63E+03	2.96E-01	1.00E+00	3.06E-02	4.00E+03	1.59E+02	2.97E-02	1.59E+02	2.52E+01
BREOT-S26-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	3.10E+04	1.45E+02	NA	NA	NA	NA	1.13E-04	3.13E+03	3.52E-01	1.00E+00	3.06E-02	4.76E+03	1.59E+02	2.97E-02	1.59E+02	3.00E+01
BREOT-N27-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	4.97E+04	2.33E+02	NA	NA	NA	NA	1.13E-04	5.02E+03	5.64E-01	1.00E+00	3.06E-02	7.63E+03	1.59E+02	2.97E-02	1.59E+02	4.81E+01
BREOT-S27-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	3.51E+04	1.65E+02	NA	NA	NA	NA	1.13E-04	3.54E+03	3.99E-01	1.00E+00	3.06E-02	5.39E+03	1.59E+02	2.97E-02	1.59E+02	3.39E+01
BREOT-N28-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	2.15E+04	1.01E+02	NA	NA	NA	NA	1.13E-04	2.17E+03	2.44E-01	1.00E+00	3.06E-02	3.30E+03	1.59E+02	2.97E-02	1.59E+02	2.08E+01
BREOT-S28-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S29-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	7.27E+03	3.41E+01	NA	NA	NA	NA	1.13E-04	7.34E+02	8.26E-02	1.00E+00	3.06E-02	1.12E+03	1.59E+02	2.97E-02	1.59E+02	7.04E+00

TABLE C-2E: MANGANESE DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **18.41**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Meadow Vole (Small Herbivorous Mammal - Terrestrial)																							
BREOT-N30-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	3.42E+04	1.60E+02	NA	NA	NA	NA	1.13E-04	3.45E+03	3.89E-01	1.00E+00	3.06E-02	5.26E+03	1.59E+02	2.97E-02	1.59E+02	3.31E+01
BREOT-S30-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N31-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	3.37E+04	1.58E+02	NA	NA	NA	NA	1.13E-04	3.41E+03	3.83E-01	1.00E+00	3.06E-02	5.18E+03	1.59E+02	2.97E-02	1.59E+02	3.26E+01
BREOT-S31-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N32-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	1.54E+04	7.21E+01	NA	NA	NA	NA	1.13E-04	1.55E+03	1.75E-01	1.00E+00	3.06E-02	2.36E+03	1.59E+02	2.97E-02	1.59E+02	1.49E+01
BREOT-S32-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	1.20E+04	5.64E+01	NA	NA	NA	NA	1.13E-04	1.21E+03	1.37E-01	1.00E+00	3.06E-02	1.85E+03	1.59E+02	2.97E-02	1.59E+02	1.16E+01
BREOT-N33-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	9.50E+03	4.45E+01	NA	NA	NA	NA	1.13E-04	9.58E+02	1.08E-01	1.00E+00	3.06E-02	1.46E+03	1.59E+02	2.97E-02	1.59E+02	9.18E+00
BREOT-S33-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	1.82E+04	8.51E+01	NA	NA	NA	NA	1.13E-04	1.83E+03	2.06E-01	1.00E+00	3.06E-02	2.79E+03	1.59E+02	2.97E-02	1.59E+02	1.76E+01
BREOT-N34-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	1.45E+04	6.81E+01	NA	NA	NA	NA	1.13E-04	1.47E+03	1.65E-01	1.00E+00	3.06E-02	2.23E+03	1.59E+02	2.97E-02	1.59E+02	1.40E+01
BREOT-S34-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	7.17E+04	3.36E+02	NA	NA	NA	NA	1.13E-04	7.24E+03	8.14E-01	1.00E+00	3.06E-02	1.10E+04	1.59E+02	2.97E-02	1.59E+02	6.94E+01
BREOT-N35-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	7.99E+03	3.75E+01	NA	NA	NA	NA	1.13E-04	8.07E+02	9.08E-02	1.00E+00	3.06E-02	1.23E+03	1.59E+02	2.97E-02	1.59E+02	7.73E+00
BREOT-S35-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	1.23E+04	5.76E+01	NA	NA	NA	NA	1.13E-04	1.24E+03	1.39E-01	1.00E+00	3.06E-02	1.89E+03	1.59E+02	2.97E-02	1.59E+02	1.19E+01
BREOT-N36-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	8.37E+04	3.92E+02	NA	NA	NA	NA	1.13E-04	8.44E+03	9.50E-01	1.00E+00	3.06E-02	1.29E+04	1.59E+02	2.97E-02	1.59E+02	8.09E+01
BREOT-S36-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	6.31E+04	2.96E+02	NA	NA	NA	NA	1.13E-04	6.37E+03	7.17E-01	1.00E+00	3.06E-02	9.69E+03	1.59E+02	2.97E-02	1.59E+02	6.10E+01
BREOT-N37-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	1.37E+04	6.44E+01	NA	NA	NA	NA	1.13E-04	1.39E+03	1.56E-01	1.00E+00	3.06E-02	2.11E+03	1.59E+02	2.97E-02	1.59E+02	1.33E+01
BREOT-S37-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	8.05E+04	3.78E+02	NA	NA	NA	NA	1.13E-04	8.13E+03	9.14E-01	1.00E+00	3.06E-02	1.24E+04	1.59E+02	2.97E-02	1.59E+02	7.79E+01
BREOT-N38-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	7.28E+03	3.41E+01	NA	NA	NA	NA	1.13E-04	7.35E+02	8.27E-02	1.00E+00	3.06E-02	1.12E+03	1.59E+02	2.97E-02	1.59E+02	7.04E+00
BREOT-S38-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	4.63E+04	2.17E+02	NA	NA	NA	NA	1.13E-04	4.67E+03	5.26E-01	1.00E+00	3.06E-02	7.11E+03	1.59E+02	2.97E-02	1.59E+02	4.48E+01
BREOT-N39-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	8.57E+03	4.02E+01	NA	NA	NA	NA	1.13E-04	8.65E+02	9.73E-02	1.00E+00	3.06E-02	1.32E+03	1.59E+02	2.97E-02	1.59E+02	8.29E+00
BREOT-N40-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	9.22E+03	4.32E+01	NA	NA	NA	NA	1.13E-04	9.30E+02	1.05E-01	1.00E+00	3.06E-02	1.42E+03	1.59E+02	2.97E-02	1.59E+02	8.92E+00
BREOT-S40-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	8.61E+04	4.04E+02	NA	NA	NA	NA	1.13E-04	8.68E+03	9.77E-01	1.00E+00	3.06E-02	1.32E+04	1.59E+02	2.97E-02	1.59E+02	8.32E+01
BREOT-N41-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	4.84E+03	2.27E+01	NA	NA	NA	NA	1.13E-04	4.89E+02	5.50E-02	1.00E+00	3.06E-02	7.44E+02	1.59E+02	2.97E-02	1.59E+02	4.68E+00
BREOT-S41-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	9.20E+04	4.31E+02	NA	NA	NA	NA	1.13E-04	9.28E+03	1.04E+00	1.00E+00	3.06E-02	1.41E+04	1.59E+02	2.97E-02	1.59E+02	8.90E+01
BREOT-N42-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S42-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	1.05E+05	4.90E+02	NA	NA	NA	NA	1.13E-04	1.06E+04	1.19E+00	1.00E+00	3.06E-02	1.61E+04	1.59E+02	2.97E-02	1.59E+02	1.01E+02
BREOT-N43-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	6.14E+03	2.88E+01	NA	NA	NA	NA	1.13E-04	6.20E+02	6.98E-02	1.00E+00	3.06E-02	9.44E+02	1.59E+02	2.97E-02	1.59E+02	5.94E+00
BREOT-S43-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	9.75E+03	4.57E+01	NA	NA	NA	NA	1.13E-04	9.84E+02	1.11E-01	1.00E+00	3.06E-02	1.50E+03	1.59E+02	2.97E-02	1.59E+02	9.43E+00
BREOT-N44-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	1.36E+04	6.39E+01	NA	NA	NA	NA	1.13E-04	1.38E+03	1.55E-01	1.00E+00	3.06E-02	2.09E+03	1.59E+02	2.97E-02	1.59E+02	1.32E+01
BREOT-S44-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	1.15E+04	5.41E+01	NA	NA	NA	NA	1.13E-04	1.16E+03	1.31E-01	1.00E+00	3.06E-02	1.77E+03	1.59E+02	2.97E-02	1.59E+02	1.12E+01
BREOT-N45-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	9.59E+03	4.49E+01	NA	NA	NA	NA	1.13E-04	9.67E+02	1.09E-01	1.00E+00	3.06E-02	1.47E+03	1.59E+02	2.97E-02	1.59E+02	9.27E+00
BREOT-S45-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	6.52E+03	3.06E+01	NA	NA	NA	NA	1.13E-04	6.58E+02	7.41E-02	1.00E+00	3.06E-02	1.00E+03	1.59E+02	2.97E-02	1.59E+02	6.31E+00
BREOT-N46-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	6.79E+03	3.18E+01	NA	NA	NA	NA	1.13E-04	6.85E+02	7.71E-02	1.00E+00	3.06E-02	1.04E+03	1.59E+02	2.97E-02	1.59E+02	6.56E+00
BREOT-S46-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	7.96E+03	3.73E+01	NA	NA	NA	NA	1.13E-04	8.03E+02	9.04E-02	1.00E+00	3.06E-02	1.22E+03	1.59E+02	2.97E-02	1.59E+02	7.70E+00
BREOT-N47-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	8.45E+03	3.96E+01	NA	NA	NA	NA	1.13E-04	8.53E+02	9.60E-02	1.00E+00	3.06E-02	1.30E+03	1.59E+02	2.97E-02	1.59E+02	8.17E+00
BREOT-S47-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N48-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	5.53E+03	2.59E+01	NA	NA	NA	NA	1.13E-04	5.58E+02	6.28E-02	1.00E+00	3.06E-02	8.49E+02	1.59E+02	2.97E-02	1.59E+02	5.35E+00
BREOT-S48-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N49-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	1.00E+04	4.70E+01	NA	NA	NA	NA	1.13E-04	1.01E+03	1.14E-01	1.00E+00	3.06E-02	1.54E+03	1.59E+02	2.97E-02	1.59E+02	9.70E+00
BREOT-S49-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S50-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N51-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	1.66E+04	7.78E+01	NA	NA	NA	NA	1.13E-04	1.67E+03	1.88E-01	1.00E+00	3.06E-02	2.55E+03	1.59E+02	2.97E-02	1.59E+02	1.60E+01
BREOT-S51-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N52-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S52-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N53-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	5.58E+03	2.62E+01	NA	NA	NA	NA	1.13E-04	5.63E+02	6.34E-02	1.00E+00	3.06E-02	8.57E+02	1.59E+02	2.97E-02	1.59E+02	5.40E+00
BREOT-S53-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N54-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	6.73E+03	3.16E+01	NA	NA	NA	NA	1.13E-04	6.79E+02	7.64E-02	1.00E+00	3.06E-02	1.03E+03	1.59E+02	2.97E-02	1.59E+02	6.51E+00
BREOT-S54-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N55-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	1.02E+04	4.79E+01	NA	NA	NA	NA	1.13E-04	1.03E+03	1.16E-01	1.00E+00	3.06E-02	1.57E+03	1.59E+02	2.97E-02	1.59E+02	9.89E+00
BREOT-S55-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N56-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	6.49E+03	3.04E+01	NA	NA	NA	NA	1.13E-04	6.55E+02	7.37E-02	1.00E+00	3.06E-02	9.97E+02	1.59E+02	2.97E-02	1.59E+02	6.28E+00
BREOT-N57-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	9.22E+03	4.33E+01	NA	NA	NA	NA	1.13E-04	9.31E+02	1.05E-01	1.00E+00	3.06E-02	1.42E+03	1.59E+02	2.97E-02	1.59E+02	8.92E+00
BREOT-S57-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	9.28E+03	4.35E+01	NA	NA	NA	NA	1.13E-04	9.36E+02	1.05E-01	1.00E+00	3.06E-02	1.42E+03	1.59E+02	2.97E-02	1.59E+02	8.97E+00
BREOT-N58-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	9.72E+03	4.56E+01	NA	NA	NA	NA	1.13E-04	9.81E+02	1.10E-01	1.00E+00	3.06E-02	1.49E+03	1.59E+02	2.97E-02	1.59E+02	9.40E+00
BREOT-S58-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	5.11E+04	2.40E+02	NA	NA	NA	NA	1.13E-04	5.16E+03	5.81E-01	1.00E+00	3.06E-02	7.85E+03	1.59E+02	2.97E-02	1.59E+02	4.95E+01

TABLE C-2E: MANGANESE DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **18.41**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Meadow Vole (Small Herbivorous Mammal - Terrestrial)																							
BREOT-N59-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	8.75E+03	4.10E+01	NA	NA	NA	NA	1.13E-04	8.83E+02	9.94E-02	1.00E+00	3.06E-02	1.34E+03	1.59E+02	2.97E-02	1.59E+02	8.46E+00
BREOT-N60-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	3.57E+03	1.67E+01	NA	NA	NA	NA	1.13E-04	3.60E+02	4.05E-02	1.00E+00	3.06E-02	5.48E+02	1.59E+02	2.97E-02	1.59E+02	3.45E+00
BREOT-S60-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	2.64E+04	1.24E+02	NA	NA	NA	NA	1.13E-04	2.66E+03	3.00E-01	1.00E+00	3.06E-02	4.05E+03	1.59E+02	2.97E-02	1.59E+02	2.55E+01
BREOT-S61-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N62-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	9.21E+03	4.32E+01	NA	NA	NA	NA	1.13E-04	9.29E+02	1.05E-01	1.00E+00	3.06E-02	1.41E+03	1.59E+02	2.97E-02	1.59E+02	8.91E+00
BREOT-S62-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N63-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	1.13E+04	5.28E+01	NA	NA	NA	NA	1.13E-04	1.14E+03	1.28E-01	1.00E+00	3.06E-02	1.73E+03	1.59E+02	2.97E-02	1.59E+02	1.09E+01
BREOT-S63-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	1.28E+04	5.99E+01	NA	NA	NA	NA	1.13E-04	1.29E+03	1.45E-01	1.00E+00	3.06E-02	1.96E+03	1.59E+02	2.97E-02	1.59E+02	1.24E+01
BREOT-N64-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	4.27E+03	2.00E+01	NA	NA	NA	NA	1.13E-04	4.31E+02	4.85E-02	1.00E+00	3.06E-02	6.57E+02	1.59E+02	2.97E-02	1.59E+02	4.13E+00
BREOT-S64-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	1.51E+03	7.10E+00	NA	NA	NA	NA	1.13E-04	1.53E+02	1.72E-02	1.00E+00	3.06E-02	2.33E+02	1.59E+02	2.97E-02	1.59E+02	1.46E+00
BREOT-N66-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	9.39E+03	4.40E+01	NA	NA	NA	NA	1.13E-04	9.47E+02	1.07E-01	1.00E+00	3.06E-02	1.44E+03	1.59E+02	2.97E-02	1.59E+02	9.08E+00
BREOT-S66-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	1.17E+04	5.49E+01	NA	NA	NA	NA	1.13E-04	1.18E+03	1.33E-01	1.00E+00	3.06E-02	1.80E+03	1.59E+02	2.97E-02	1.59E+02	1.13E+01
BREOT-N67-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	7.92E+04	3.71E+02	NA	NA	NA	NA	1.13E-04	7.99E+03	8.99E-01	1.00E+00	3.06E-02	1.22E+04	1.59E+02	2.97E-02	1.59E+02	7.66E+01
BREOT-S67-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	5.84E+03	2.74E+01	NA	NA	NA	NA	1.13E-04	5.90E+02	6.64E-02	1.00E+00	3.06E-02	8.98E+02	1.59E+02	2.97E-02	1.59E+02	5.65E+00
Outside Tailings																						**Maximum HQ (At Edge of Tailings)**	**6.22E+03**
BREOT-S0+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	9.49E+03	4.45E+01	NA	NA	NA	NA	1.13E-04	9.57E+02	1.08E-01	1.00E+00	3.06E-02	1.46E+03	1.59E+02	2.97E-02	1.59E+02	9.18E+00
BREOT-S1+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	1.37E+04	6.43E+01	NA	NA	NA	NA	1.13E-04	1.38E+03	1.56E-01	1.00E+00	3.06E-02	2.11E+03	1.59E+02	2.97E-02	1.59E+02	1.33E+01
BREOT-S2+95 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	8.86E+03	4.15E+01	NA	NA	NA	NA	1.13E-04	8.94E+02	1.01E-01	1.00E+00	3.06E-02	1.36E+03	1.59E+02	2.97E-02	1.59E+02	8.57E+00
BREOT-S3+6 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	5.50E+03	2.58E+01	NA	NA	NA	NA	1.13E-04	5.55E+02	6.24E-02	1.00E+00	3.06E-02	8.45E+02	1.59E+02	2.97E-02	1.59E+02	5.32E+00
BREOT-S4+10 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	1.06E+04	4.96E+01	NA	NA	NA	NA	1.13E-04	1.07E+03	1.20E-01	1.00E+00	3.06E-02	1.62E+03	1.59E+02	2.97E-02	1.59E+02	1.02E+01
BREOT-S6+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	8.36E+03	3.92E+01	NA	NA	NA	NA	1.13E-04	8.43E+02	9.49E-02	1.00E+00	3.06E-02	1.28E+03	1.59E+02	2.97E-02	1.59E+02	8.08E+00
BREOT-S8+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	8.55E+03	4.01E+01	NA	NA	NA	NA	1.13E-04	8.63E+02	9.71E-02	1.00E+00	3.06E-02	1.31E+03	1.59E+02	2.97E-02	1.59E+02	8.27E+00
BREOT-N10+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	7.79E+03	3.65E+01	NA	NA	NA	NA	1.13E-04	7.87E+02	8.85E-02	1.00E+00	3.06E-02	1.20E+03	1.59E+02	2.97E-02	1.59E+02	7.54E+00
BREOT-N11+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	8.89E+03	4.17E+01	NA	NA	NA	NA	1.13E-04	8.97E+02	1.01E-01	1.00E+00	3.06E-02	1.37E+03	1.59E+02	2.97E-02	1.59E+02	8.60E+00
BREOT-N12+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	9.72E+03	4.56E+01	NA	NA	NA	NA	1.13E-04	9.81E+02	1.10E-01	1.00E+00	3.06E-02	1.49E+03	1.59E+02	2.97E-02	1.59E+02	9.40E+00
BREOT-S12+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	3.14E+04	1.47E+02	NA	NA	NA	NA	1.13E-04	3.16E+03	3.56E-01	1.00E+00	3.06E-02	4.82E+03	1.59E+02	2.97E-02	1.59E+02	3.03E+01
BREOT-S12+60 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	7.42E+03	3.48E+01	NA	NA	NA	NA	1.13E-04	7.49E+02	8.43E-02	1.00E+00	3.06E-02	1.14E+03	1.59E+02	2.97E-02	1.59E+02	7.18E+00
BREOT-N13+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	1.30E+04	6.10E+01	NA	NA	NA	NA	1.13E-04	1.31E+03	1.48E-01	1.00E+00	3.06E-02	2.00E+03	1.59E+02	2.97E-02	1.59E+02	1.26E+01
BREOT-S13+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	2.20E+04	1.03E+02	NA	NA	NA	NA	1.13E-04	2.22E+03	2.50E-01	1.00E+00	3.06E-02	3.38E+03	1.59E+02	2.97E-02	1.59E+02	2.13E+01
BREOT-S13+65 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	1.18E+04	5.53E+01	NA	NA	NA	NA	1.13E-04	1.19E+03	1.34E-01	1.00E+00	3.06E-02	1.81E+03	1.59E+02	2.97E-02	1.59E+02	1.14E+01
BREOT-N14+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	1.52E+04	7.15E+01	NA	NA	NA	NA	1.13E-04	1.54E+03	1.73E-01	1.00E+00	3.06E-02	2.34E+03	1.59E+02	2.97E-02	1.59E+02	1.48E+01
BREOT-S14+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	3.04E+04	1.43E+02	NA	NA	NA	NA	1.13E-04	3.07E+03	3.45E-01	1.00E+00	3.06E-02	4.67E+03	1.59E+02	2.97E-02	1.59E+02	2.94E+01
BREOT-S14+59 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	3.35E+03	1.57E+01	NA	NA	NA	NA	1.13E-04	3.38E+02	3.80E-02	1.00E+00	3.06E-02	5.14E+02	1.59E+02	2.97E-02	1.59E+02	3.24E+00
BREOT-N15+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	5.02E+04	2.35E+02	NA	NA	NA	NA	1.13E-04	5.07E+03	5.70E-01	1.00E+00	3.06E-02	7.71E+03	1.59E+02	2.97E-02	1.59E+02	4.86E+01
BREOT-N15+50 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	1.26E+04	5.91E+01	NA	NA	NA	NA	1.13E-04	1.27E+03	1.43E-01	1.00E+00	3.06E-02	1.93E+03	1.59E+02	2.97E-02	1.59E+02	1.22E+01
BREOT-S16+20 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	2.70E+04	1.27E+02	NA	NA	NA	NA	1.13E-04	2.73E+03	3.07E-01	1.00E+00	3.06E-02	4.15E+03	1.59E+02	2.97E-02	1.59E+02	2.61E+01
BREOT-S16+75 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	5.93E+03	2.78E+01	NA	NA	NA	NA	1.13E-04	5.98E+02	6.73E-02	1.00E+00	3.06E-02	9.10E+02	1.59E+02	2.97E-02	1.59E+02	5.73E+00
BREOT-N17+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	1.42E+04	6.67E+01	NA	NA	NA	NA	1.13E-04	1.43E+03	1.61E-01	1.00E+00	3.06E-02	2.18E+03	1.59E+02	2.97E-02	1.59E+02	1.38E+01
BREOT-S18+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	3.13E+03	1.47E+01	NA	NA	NA	NA	1.13E-04	3.16E+02	3.56E-02	1.00E+00	3.06E-02	4.81E+02	1.59E+02	2.97E-02	1.59E+02	3.03E+00
BREOT-N19+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	7.15E+03	3.35E+01	NA	NA	NA	NA	1.13E-04	7.22E+02	8.12E-02	1.00E+00	3.06E-02	1.10E+03	1.59E+02	2.97E-02	1.59E+02	6.92E+00
BREOT-S19+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	4.71E+06	2.21E+04	NA	NA	NA	NA	1.13E-04	4.75E+05	5.35E+01	1.00E+00	3.06E-02	7.24E+05	1.59E+02	2.97E-02	1.59E+02	4.56E+03
BREOT-S19+85 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	7.21E+03	3.38E+01	NA	NA	NA	NA	1.13E-04	7.28E+02	8.19E-02	1.00E+00	3.06E-02	1.11E+03	1.59E+02	2.97E-02	1.59E+02	6.98E+00
BREOT-N20+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	9.68E+03	4.54E+01	NA	NA	NA	NA	1.13E-04	9.77E+02	1.10E-01	1.00E+00	3.06E-02	1.49E+03	1.59E+02	2.97E-02	1.59E+02	9.36E+00
BREOT-S20+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	6.70E+06	3.14E+04	NA	NA	NA	NA	1.13E-04	6.77E+05	7.61E+01	1.00E+00	3.06E-02	1.03E+06	1.59E+02	2.97E-02	1.59E+02	6.48E+03
BREOT-S20+75 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	7.56E+03	3.55E+01	NA	NA	NA	NA	1.13E-04	7.63E+02	8.59E-02	1.00E+00	3.06E-02	1.16E+03	1.59E+02	2.97E-02	1.59E+02	7.31E+00
BREOT-N21+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S21+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	3.32E+06	1.56E+04	NA	NA	NA	NA	1.13E-04	3.35E+05	3.77E+01	1.00E+00	3.06E-02	5.10E+05	1.59E+02	2.97E-02	1.59E+02	3.21E+03
BREOT-N22+150 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	8.94E+03	4.19E+01	NA	NA	NA	NA	1.13E-04	9.02E+02	1.02E-01	1.00E+00	3.06E-02	1.37E+03	1.59E+02	2.97E-02	1.59E+02	8.65E+00
BREOT-N22+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	2.56E+04	1.20E+02	NA	NA	NA	NA	1.13E-04	2.58E+03	2.91E-01	1.00E+00	3.06E-02	3.93E+03	1.59E+02	2.97E-02	1.59E+02	2.47E+01
BREOT-S22+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	1.64E+04	7.68E+01	NA	NA	NA	NA	1.13E-04	1.65E+03	1.86E-01	1.00E+00	3.06E-02	2.51E+03	1.59E+02	2.97E-02	1.59E+02	1.58E+01
BREOT-N23+115 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	6.92E+03	3.24E+01	NA	NA	NA	NA	1.13E-04	6.98E+02	7.86E-02	1.00E+00	3.06E-02	1.06E+03	1.59E+02	2.97E-02	1.59E+02	6.69E+00
BREOT-N23+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	4.74E+04	2.22E+02	NA	NA	NA	NA	1.13E-04	4.78E+03	5.38E-01	1.00E+00	3.06E-02	7.28E+03	1.59E+02	2.97E-02	1.59E+02	4.59E+01
BREOT-S23+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	1.23E+04	5.78E+01	NA	NA	NA	NA	1.13E-04	1.24E+03	1.40E-01	1.00E+00	3.06E-02	1.89E+03	1.59E+02	2.97E-02	1.59E+02	1.19E+01
BREOT-S23+37.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	9.65E+03	4.53E+01	NA	NA	NA	NA	1.13E-04	9.74E+02	1.10E-01	1.00E+00	3.06E-02	1.48E+03	1.59E+02	2.97E-02	1.59E+02	9.34E+00
BREOT-N24+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	9.04E+04	4.24E+02	NA	NA	NA	NA	1.13E-04	9.13E+03	1.03E+00	1.00E+00	3.06E-02	1.39E+04	1.59E+02	2.97E-02	1.59E+02	8.75E+01

TABLE C-2E: MANGANESE DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **18.41**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Meadow Vole (Small Herbivorous Mammal - Terrestrial)																							
BREOT-N24+75 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	9.86E+03	4.62E+01	NA	NA	NA	NA	1.13E-04	9.95E+02	1.12E-01	1.00E+00	3.06E-02	1.51E+03	1.59E+02	2.97E-02	1.59E+02	9.54E+00
BREOT-S24+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	1.82E+04	8.54E+01	NA	NA	NA	NA	1.13E-04	1.84E+03	2.07E-01	1.00E+00	3.06E-02	2.80E+03	1.59E+02	2.97E-02	1.59E+02	1.76E+01
BREOT-N25+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	3.28E+03	1.54E+01	NA	NA	NA	NA	1.13E-04	3.31E+02	3.72E-02	1.00E+00	3.06E-02	5.03E+02	1.59E+02	2.97E-02	1.59E+02	3.17E+00
BREOT-S25+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	1.06E+04	4.99E+01	NA	NA	NA	NA	1.13E-04	1.07E+03	1.21E-01	1.00E+00	3.06E-02	1.63E+03	1.59E+02	2.97E-02	1.59E+02	1.03E+01
BREOT-S25+40 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	7.29E+02	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S26+37 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	8.31E+03	3.90E+01	NA	NA	NA	NA	1.13E-04	8.39E+02	9.44E-02	1.00E+00	3.06E-02	1.28E+03	1.59E+02	2.97E-02	1.59E+02	8.04E+00
BREOT-N27+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	7.43E+03	3.48E+01	NA	NA	NA	NA	1.13E-04	7.50E+02	8.44E-02	1.00E+00	3.06E-02	1.14E+03	1.59E+02	2.97E-02	1.59E+02	7.19E+00
BREOT-S27+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	7.69E+03	3.61E+01	NA	NA	NA	NA	1.13E-04	7.76E+02	8.73E-02	1.00E+00	3.06E-02	1.18E+03	1.59E+02	2.97E-02	1.59E+02	7.44E+00
BREOT-N28+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	5.97E+03	2.80E+01	NA	NA	NA	NA	1.13E-04	6.03E+02	6.78E-02	1.00E+00	3.06E-02	9.17E+02	1.59E+02	2.97E-02	1.59E+02	5.78E+00
BREOT-S28+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	4.19E+03	1.96E+01	NA	NA	NA	NA	1.13E-04	4.22E+02	4.75E-02	1.00E+00	3.06E-02	6.43E+02	1.59E+02	2.97E-02	1.59E+02	4.05E+00
BREOT-N29+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	1.43E+04	6.71E+01	NA	NA	NA	NA	1.13E-04	1.44E+03	1.63E-01	1.00E+00	3.06E-02	2.20E+03	1.59E+02	2.97E-02	1.59E+02	1.38E+01
BREOT-S29+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	8.85E+03	4.15E+01	NA	NA	NA	NA	1.13E-04	8.94E+02	1.01E-01	1.00E+00	3.06E-02	1.36E+03	1.59E+02	2.97E-02	1.59E+02	8.56E+00
BREOT-N30+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	1.12E+04	5.25E+01	NA	NA	NA	NA	1.13E-04	1.13E+03	1.27E-01	1.00E+00	3.06E-02	1.72E+03	1.59E+02	2.97E-02	1.59E+02	1.08E+01
BREOT-S30+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	8.71E+03	4.08E+01	NA	NA	NA	NA	1.13E-04	8.79E+02	9.89E-02	1.00E+00	3.06E-02	1.34E+03	1.59E+02	2.97E-02	1.59E+02	8.42E+00
BREOT-N31+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	6.55E+04	3.07E+02	NA	NA	NA	NA	1.13E-04	6.61E+03	7.44E-01	1.00E+00	3.06E-02	1.01E+04	1.59E+02	2.97E-02	1.59E+02	6.33E+01
BREOT-N31+75 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	8.20E+03	3.85E+01	NA	NA	NA	NA	1.13E-04	8.28E+02	9.32E-02	1.00E+00	3.06E-02	1.26E+03	1.59E+02	2.97E-02	1.59E+02	7.94E+00
BREOT-S31+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	6.34E+03	2.97E+01	NA	NA	NA	NA	1.13E-04	6.40E+02	7.20E-02	1.00E+00	3.06E-02	9.73E+02	1.59E+02	2.97E-02	1.59E+02	6.13E+00
BREOT-N32+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	1.16E+04	5.43E+01	NA	NA	NA	NA	1.13E-04	1.17E+03	1.32E-01	1.00E+00	3.06E-02	1.78E+03	1.59E+02	2.97E-02	1.59E+02	1.12E+01
BREOT-S32+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	1.64E+04	7.69E+01	NA	NA	NA	NA	1.13E-04	1.66E+03	1.86E-01	1.00E+00	3.06E-02	2.52E+03	1.59E+02	2.97E-02	1.59E+02	1.59E+01
BREOT-S32+300 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	2.46E+04	1.16E+02	NA	NA	NA	NA	1.13E-04	2.49E+03	2.80E-01	1.00E+00	3.06E-02	3.79E+03	1.59E+02	2.97E-02	1.59E+02	2.38E+01
BREOT-N33+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	8.52E+03	3.99E+01	NA	NA	NA	NA	1.13E-04	8.60E+02	9.67E-02	1.00E+00	3.06E-02	1.31E+03	1.59E+02	2.97E-02	1.59E+02	8.24E+00
BREOT-S33+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	3.95E+04	1.85E+02	NA	NA	NA	NA	1.13E-04	3.99E+03	4.49E-01	1.00E+00	3.06E-02	6.07E+03	1.59E+02	2.97E-02	1.59E+02	3.82E+01
BREOT-N34+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	7.56E+03	3.54E+01	NA	NA	NA	NA	1.13E-04	7.63E+02	8.58E-02	1.00E+00	3.06E-02	1.16E+03	1.59E+02	2.97E-02	1.59E+02	7.31E+00
BREOT-S34+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	1.22E+04	5.70E+01	NA	NA	NA	NA	1.13E-04	1.23E+03	1.38E-01	1.00E+00	3.06E-02	1.87E+03	1.59E+02	2.97E-02	1.59E+02	1.18E+01
BREOT-N35+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	9.00E+03	4.22E+01	NA	NA	NA	NA	1.13E-04	9.08E+02	1.02E-01	1.00E+00	3.06E-02	1.38E+03	1.59E+02	2.97E-02	1.59E+02	8.70E+00
BREOT-S35+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	4.13E+04	1.94E+02	NA	NA	NA	NA	1.13E-04	4.17E+03	4.69E-01	1.00E+00	3.06E-02	6.34E+03	1.59E+02	2.97E-02	1.59E+02	3.99E+01
BREOT-N36+100 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	9.14E+03	4.28E+01	NA	NA	NA	NA	1.13E-04	9.22E+02	1.04E-01	1.00E+00	3.06E-02	1.40E+03	1.59E+02	2.97E-02	1.59E+02	8.84E+00
BREOT-N36+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	7.47E+04	3.50E+02	NA	NA	NA	NA	1.13E-04	7.54E+03	8.48E-01	1.00E+00	3.06E-02	1.15E+04	1.59E+02	2.97E-02	1.59E+02	7.22E+01
BREOT-S36+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	3.79E+04	1.78E+02	NA	NA	NA	NA	1.13E-04	3.82E+03	4.30E-01	1.00E+00	3.06E-02	5.82E+03	1.59E+02	2.97E-02	1.59E+02	3.66E+01
BREOT-N37+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	3.70E+03	1.73E+01	NA	NA	NA	NA	1.13E-04	3.73E+02	4.20E-02	1.00E+00	3.06E-02	5.68E+02	1.59E+02	2.97E-02	1.59E+02	3.57E+00
BREOT-S37+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	5.10E+04	2.39E+02	NA	NA	NA	NA	1.13E-04	5.15E+03	5.79E-01	1.00E+00	3.06E-02	7.83E+03	1.59E+02	2.97E-02	1.59E+02	4.93E+01
BREOT-N38+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	6.44E+03	3.02E+01	NA	NA	NA	NA	1.13E-04	6.50E+02	7.31E-02	1.00E+00	3.06E-02	9.89E+02	1.59E+02	2.97E-02	1.59E+02	6.23E+00
BREOT-S38+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	4.87E+04	2.28E+02	NA	NA	NA	NA	1.13E-04	4.92E+03	5.53E-01	1.00E+00	3.06E-02	7.48E+03	1.59E+02	2.97E-02	1.59E+02	4.71E+01
BREOT-N39+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	5.29E+03	2.48E+01	NA	NA	NA	NA	1.13E-04	5.34E+02	6.01E-02	1.00E+00	3.06E-02	8.13E+02	1.59E+02	2.97E-02	1.59E+02	5.12E+00
BREOT-S39+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	3.71E+04	1.74E+02	NA	NA	NA	NA	1.13E-04	3.74E+03	4.21E-01	1.00E+00	3.06E-02	5.70E+03	1.59E+02	2.97E-02	1.59E+02	3.59E+01
BREOT-N40+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	5.62E+03	2.63E+01	NA	NA	NA	NA	1.13E-04	5.67E+02	6.38E-02	1.00E+00	3.06E-02	8.63E+02	1.59E+02	2.97E-02	1.59E+02	5.44E+00
BREOT-S40+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	3.50E+04	1.64E+02	NA	NA	NA	NA	1.13E-04	3.53E+03	3.98E-01	1.00E+00	3.06E-02	5.38E+03	1.59E+02	2.97E-02	1.59E+02	3.39E+01
BREOT-N41+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	3.74E+03	1.75E+01	NA	NA	NA	NA	1.13E-04	3.78E+02	4.25E-02	1.00E+00	3.06E-02	5.75E+02	1.59E+02	2.97E-02	1.59E+02	3.62E+00
BREOT-S41+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	2.23E+04	1.05E+02	NA	NA	NA	NA	1.13E-04	2.26E+03	2.54E-01	1.00E+00	3.06E-02	3.43E+03	1.59E+02	2.97E-02	1.59E+02	2.16E+01
BREOT-N42+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S42+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	1.95E+04	9.15E+01	NA	NA	NA	NA	1.13E-04	1.97E+03	2.21E-01	1.00E+00	3.06E-02	3.00E+03	1.59E+02	2.97E-02	1.59E+02	1.89E+01
BREOT-N43+12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	7.37E+03	3.46E+01	NA	NA	NA	NA	1.13E-04	7.44E+02	8.37E-02	1.00E+00	3.06E-02	1.13E+03	1.59E+02	2.97E-02	1.59E+02	7.13E+00
BREOT-N43+40 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	7.43E+03	3.48E+01	NA	NA	NA	NA	1.13E-04	7.50E+02	8.44E-02	1.00E+00	3.06E-02	1.14E+03	1.59E+02	2.97E-02	1.59E+02	7.19E+00
BREOT-S43+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	9.41E+03	4.41E+01	NA	NA	NA	NA	1.13E-04	9.50E+02	1.07E-01	1.00E+00	3.06E-02	1.45E+03	1.59E+02	2.97E-02	1.59E+02	9.10E+00
BREOT-N44+55 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	6.58E+03	3.09E+01	NA	NA	NA	NA	1.13E-04	6.64E+02	7.48E-02	1.00E+00	3.06E-02	1.01E+03	1.59E+02	2.97E-02	1.59E+02	6.37E+00
BREOT-S44+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	1.25E+04	5.85E+01	NA	NA	NA	NA	1.13E-04	1.26E+03	1.42E-01	1.00E+00	3.06E-02	1.92E+03	1.59E+02	2.97E-02	1.59E+02	1.21E+01
BREOT-N45+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	6.44E+03	3.02E+01	NA	NA	NA	NA	1.13E-04	6.50E+02	7.32E-02	1.00E+00	3.06E-02	9.90E+02	1.59E+02	2.97E-02	1.59E+02	6.23E+00
BREOT-S45+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	3.01E+03	1.41E+01	NA	NA	NA	NA	1.13E-04	3.03E+02	3.41E-02	1.00E+00	3.06E-02	4.62E+02	1.59E+02	2.97E-02	1.59E+02	2.91E+00
BREOT-N46+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	9.58E+03	4.49E+01	NA	NA	NA	NA	1.13E-04	9.67E+02	1.09E-01	1.00E+00	3.06E-02	1.47E+03	1.59E+02	2.97E-02	1.59E+02	9.27E+00
BREOT-S46+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N47+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	7.72E+03	3.62E+01	NA	NA	NA	NA	1.13E-04	7.79E+02	8.77E-02	1.00E+00	3.06E-02	1.19E+03	1.59E+02	2.97E-02	1.59E+02	7.47E+00
BREOT-S47+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N48+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	6.12E+03	2.87E+01	NA	NA	NA	NA	1.13E-04	6.17E+02	6.95E-02	1.00E+00	3.06E-02	9.40E+02	1.59E+02	2.97E-02	1.59E+02	5.92E+00
BREOT-S48+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N49+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	9.17E+03	4.30E+01	NA	NA	NA	NA	1.13E-04	9.26E+02	1.04E-01	1.00E+00	3.06E-02	1.41E+03	1.59E+02	2.97E-02	1.59E+02	8.87E+00

TABLE C-2E: MANGANESE DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 18.41

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Meadow Vole (Small Herbivorous Mammal - Terrestrial)																							
BREOT-S49+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N51+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	7.77E+03	3.64E+01	NA	NA	NA	NA	1.13E-04	7.84E+02	8.82E-02	1.00E+00	3.06E-02	1.19E+03	1.59E+02	2.97E-02	1.59E+02	7.51E+00
BREOT-S51+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N52+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	3.21E+03	1.51E+01	NA	NA	NA	NA	1.13E-04	3.24E+02	3.65E-02	1.00E+00	3.06E-02	4.93E+02	1.59E+02	2.97E-02	1.59E+02	3.11E+00
BREOT-S52+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N53+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S53+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S54+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N55+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	7.07E+03	3.32E+01	NA	NA	NA	NA	1.13E-04	7.14E+02	8.03E-02	1.00E+00	3.06E-02	1.09E+03	1.59E+02	2.97E-02	1.59E+02	6.84E+00
BREOT-S55+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N56+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	6.92E+03	3.25E+01	NA	NA	NA	NA	1.13E-04	6.99E+02	7.86E-02	1.00E+00	3.06E-02	1.06E+03	1.59E+02	2.97E-02	1.59E+02	6.70E+00
BREOT-S56+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N57+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	7.29E+03	3.42E+01	NA	NA	NA	NA	1.13E-04	7.36E+02	8.28E-02	1.00E+00	3.06E-02	1.12E+03	1.59E+02	2.97E-02	1.59E+02	7.05E+00
BREOT-S57+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	2.42E+04	1.14E+02	NA	NA	NA	NA	1.13E-04	2.45E+03	2.75E-01	1.00E+00	3.06E-02	3.72E+03	1.59E+02	2.97E-02	1.59E+02	2.34E+01
BREOT-N58+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	9.64E+03	4.52E+01	NA	NA	NA	NA	1.13E-04	9.73E+02	1.10E-01	1.00E+00	3.06E-02	1.48E+03	1.59E+02	2.97E-02	1.59E+02	9.33E+00
BREOT-S58+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N59+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	1.52E+04	7.13E+01	NA	NA	NA	NA	1.13E-04	1.54E+03	1.73E-01	1.00E+00	3.06E-02	2.34E+03	1.59E+02	2.97E-02	1.59E+02	1.47E+01
BREOT-N60+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	5.19E+03	2.43E+01	NA	NA	NA	NA	1.13E-04	5.24E+02	5.89E-02	1.00E+00	3.06E-02	7.97E+02	1.59E+02	2.97E-02	1.59E+02	5.02E+00
BREOT-S60+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S61+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N62+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	8.63E+03	4.05E+01	NA	NA	NA	NA	1.13E-04	8.71E+02	9.80E-02	1.00E+00	3.06E-02	1.33E+03	1.59E+02	2.97E-02	1.59E+02	8.35E+00
BREOT-S62+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N63+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	1.36E+04	6.36E+01	NA	NA	NA	NA	1.13E-04	1.37E+03	1.54E-01	1.00E+00	3.06E-02	2.08E+03	1.59E+02	2.97E-02	1.59E+02	1.31E+01
BREOT-S63+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N64+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	4.76E+03	2.23E+01	NA	NA	NA	NA	1.13E-04	4.80E+02	5.40E-02	1.00E+00	3.06E-02	7.31E+02	1.59E+02	2.97E-02	1.59E+02	4.60E+00
BREOT-S64+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	1.88E+03	8.81E+00	NA	NA	NA	NA	1.13E-04	1.90E+02	2.13E-02	1.00E+00	3.06E-02	2.89E+02	1.59E+02	2.97E-02	1.59E+02	1.82E+00
BREOT-S65+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N66+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	7.39E+03	3.46E+01	NA	NA	NA	NA	1.13E-04	7.46E+02	8.39E-02	1.00E+00	3.06E-02	1.13E+03	1.59E+02	2.97E-02	1.59E+02	7.15E+00
BREOT-S66+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N67+125 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	3.82E+03	1.79E+01	NA	NA	NA	NA	1.13E-04	3.86E+02	4.34E-02	1.00E+00	3.06E-02	5.88E+02	1.59E+02	2.97E-02	1.59E+02	3.70E+00
BREOT-S67+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N67+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	8.97E+03	4.20E+01	NA	NA	NA	NA	1.13E-04	9.05E+02	1.02E-01	1.00E+00	3.06E-02	1.38E+03	1.59E+02	2.97E-02	1.59E+02	8.67E+00
																						Maximum HQ (Outside Tailings)	**6.48E+03**
White-Tailed Deer (Large Herbivorous Mammal - Terrestrial)																							
Reference Sites																							
ACBG-1 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	3.34E-01	9.85E+01	1.41E+02	NA	NA	NA	NA	2.86E-02	2.95E+02	8.44E+00	1.03E-01	1.35E+02	1.14E-01	1.59E+02	2.97E-02	9.60E+01	1.19E-03
ACBG-2 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	3.34E-01	3.33E+02	4.77E+02	NA	NA	NA	NA	2.86E-02	9.97E+02	2.86E+01	1.03E-01	1.35E+02	3.86E-01	1.59E+02	2.97E-02	9.60E+01	4.02E-03
UBRBG-202 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	3.34E-01	3.01E+02	4.31E+02	NA	NA	NA	NA	2.86E-02	9.01E+02	2.58E+01	1.03E-01	1.35E+02	3.49E-01	1.59E+02	2.97E-02	9.60E+01	3.63E-03
UBRBG-204 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	3.34E-01	2.32E+02	3.32E+02	NA	NA	NA	NA	2.86E-02	6.94E+02	1.99E+01	1.03E-01	1.35E+02	2.69E-01	1.59E+02	2.97E-02	9.60E+01	2.80E-03
Inside Tailings																						**Minimum HQ (Reference Sites)**	**1.19E-03**
BREOT-S6-12.5 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S2-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	3.88E+04	5.55E+04	NA	NA	NA	NA	2.86E-02	3.91E+03	1.12E+02	1.03E-01	1.35E+02	4.24E+01	1.59E+02	2.97E-02	9.60E+01	4.42E-01
BREOT-S0-12.5 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S1-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	5.47E+03	7.83E+03	NA	NA	NA	NA	2.86E-02	5.52E+02	1.58E+01	1.03E-01	1.35E+02	5.98E+00	1.59E+02	2.97E-02	9.60E+01	6.23E-02
BREOT-S7-25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	1.36E+04	1.95E+04	NA	NA	NA	NA	2.86E-02	1.38E+03	3.94E+01	1.03E-01	1.35E+02	1.49E+01	1.59E+02	2.97E-02	9.60E+01	1.55E-01
BREOT-S8-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	6.20E+03	8.88E+03	NA	NA	NA	NA	2.86E-02	6.26E+02	1.79E+01	1.03E-01	1.35E+02	6.79E+00	1.59E+02	2.97E-02	9.60E+01	7.07E-02
BREOT-S9-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	7.78E+03	1.11E+04	NA	NA	NA	NA	2.86E-02	7.85E+02	2.25E+01	1.03E-01	1.35E+02	8.51E+00	1.59E+02	2.97E-02	9.60E+01	8.87E-02
BREOT-N10-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	3.53E+04	5.06E+04	NA	NA	NA	NA	2.86E-02	3.57E+03	1.02E+02	1.03E-01	1.35E+02	3.87E+01	1.59E+02	2.97E-02	9.60E+01	4.03E-01
BREOT-N11-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	4.89E+03	7.00E+03	NA	NA	NA	NA	2.86E-02	4.94E+02	1.41E+01	1.03E-01	1.35E+02	5.35E+00	1.59E+02	2.97E-02	9.60E+01	5.58E-02
BREOT-N11-125 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	3.16E+03	4.53E+03	NA	NA	NA	NA	2.86E-02	3.19E+02	9.14E+00	1.03E-01	1.35E+02	3.46E+00	1.59E+02	2.97E-02	9.60E+01	3.61E-02
BREOT-S11-12 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	3.27E+04	4.68E+04	NA	NA	NA	NA	2.86E-02	3.30E+03	9.45E+01	1.03E-01	1.35E+02	3.58E+01	1.59E+02	2.97E-02	9.60E+01	3.73E-01
BREOT-S11+63 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	3.73E+03	5.34E+03	NA	NA	NA	NA	2.86E-02	3.76E+02	1.08E+01	1.03E-01	1.35E+02	4.08E+00	1.59E+02	2.97E-02	9.60E+01	4.25E-02
UBDT-TP-6 (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	6.99E+04	1.00E+05	NA	NA	NA	NA	2.86E-02	7.05E+03	2.02E+02	1.03E-01	1.35E+02	7.65E+01	1.59E+02	2.97E-02	9.60E+01	7.97E-01
UBDT-TP-6 (2-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	5.44E+04	7.79E+04	NA	NA	NA	NA	2.86E-02	5.49E+03	1.57E+02	1.03E-01	1.35E+02	5.95E+01	1.59E+02	2.97E-02	9.60E+01	6.20E-01
UBDT-TP-6 (12-24")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	7.20E+04	1.03E+05	NA	NA	NA	NA	2.86E-02	7.27E+03	2.08E+02	1.03E-01	1.35E+02	7.89E+01	1.59E+02	2.97E-02	9.60E+01	8.22E-01
UBDT-TP-6 (24-36")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	2.78E+04	3.98E+04	NA	NA	NA	NA	2.86E-02	2.81E+03	8.03E+01	1.03E-01	1.35E+02	3.04E+01	1.59E+02	2.97E-02	9.60E+01	3.17E-01
UBDT-TP-6 (36-48")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	7.61E+04	1.09E+05	NA	NA	NA	NA	2.86E-02	7.68E+03	2.20E+02	1.03E-01	1.35E+02	8.33E+01	1.59E+02	2.97E-02	9.60E+01	8.68E-01

TABLE C-2E: MANGANESE DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **18.41**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
White-Tailed Deer (Large Herbivorous Mammal - Terrestrial)																							
UBDT-TP-6 (48-60")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	4.62E+04	6.62E+04	NA	NA	NA	NA	2.86E-02	4.66E+03	1.34E+02	1.03E-01	1.35E+02	5.06E+01	1.59E+02	2.97E-02	9.60E+01	5.27E-01
BREOT-N12-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	2.22E+04	3.18E+04	NA	NA	NA	NA	2.86E-02	2.24E+03	6.42E+01	1.03E-01	1.35E+02	2.43E+01	1.59E+02	2.97E-02	9.60E+01	2.53E-01
BREOT-S12-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	1.86E+04	2.67E+04	NA	NA	NA	NA	2.86E-02	1.88E+03	5.38E+01	1.03E-01	1.35E+02	2.04E+01	1.59E+02	2.97E-02	9.60E+01	2.12E-01
BREOT-S13-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	2.59E+04	3.71E+04	NA	NA	NA	NA	2.86E-02	2.61E+03	7.48E+01	1.03E-01	1.35E+02	2.83E+01	1.59E+02	2.97E-02	9.60E+01	2.95E-01
BREOT-S14-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	1.34E+04	1.92E+04	NA	NA	NA	NA	2.86E-02	1.35E+03	3.87E+01	1.03E-01	1.35E+02	1.47E+01	1.59E+02	2.97E-02	9.60E+01	1.53E-01
BREOT-N15-12.5 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S15-12.5 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N16-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	2.14E+04	3.06E+04	NA	NA	NA	NA	2.86E-02	2.16E+03	6.18E+01	1.03E-01	1.35E+02	2.34E+01	1.59E+02	2.97E-02	9.60E+01	2.44E-01
BREOT-N16-25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	1.13E+04	1.62E+04	NA	NA	NA	NA	2.86E-02	1.14E+03	3.27E+01	1.03E-01	1.35E+02	1.24E+01	1.59E+02	2.97E-02	9.60E+01	1.29E-01
BREOT-S16-12.5 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N17-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	5.97E+03	8.55E+03	NA	NA	NA	NA	2.86E-02	6.03E+02	1.73E+01	1.03E-01	1.35E+02	6.53E+00	1.59E+02	2.97E-02	9.60E+01	6.81E-02
BREOT-S17-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	3.81E+03	5.46E+03	NA	NA	NA	NA	2.86E-02	3.85E+02	1.10E+01	1.03E-01	1.35E+02	4.17E+00	1.59E+02	2.97E-02	9.60E+01	4.35E-02
BREOT-S17-25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	9.82E+03	1.41E+04	NA	NA	NA	NA	2.86E-02	9.91E+02	2.84E+01	1.03E-01	1.35E+02	1.07E+01	1.59E+02	2.97E-02	9.60E+01	1.12E-01
UBDT-TP-4 (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	6.09E+04	8.72E+04	NA	NA	NA	NA	2.86E-02	6.15E+03	1.76E+02	1.03E-01	1.35E+02	6.66E+01	1.59E+02	2.97E-02	9.60E+01	6.94E-01
UBDT-TP-4 (2-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	3.86E+04	5.52E+04	NA	NA	NA	NA	2.86E-02	3.89E+03	1.11E+02	1.03E-01	1.35E+02	4.22E+01	1.59E+02	2.97E-02	9.60E+01	4.40E-01
UBDT-TP-4 (12-24")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	1.89E+04	2.71E+04	NA	NA	NA	NA	2.86E-02	1.91E+03	5.47E+01	1.03E-01	1.35E+02	2.07E+01	1.59E+02	2.97E-02	9.60E+01	2.16E-01
UBDT-TP-4 (24-36")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	1.76E+04	2.52E+04	NA	NA	NA	NA	2.86E-02	1.78E+03	5.09E+01	1.03E-01	1.35E+02	1.93E+01	1.59E+02	2.97E-02	9.60E+01	2.01E-01
BREOT-N18-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	5.93E+04	8.49E+04	NA	NA	NA	NA	2.86E-02	5.99E+03	1.71E+02	1.03E-01	1.35E+02	6.49E+01	1.59E+02	2.97E-02	9.60E+01	6.77E-01
BREOT-N18-25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	5.61E+03	8.03E+03	NA	NA	NA	NA	2.86E-02	5.66E+02	1.62E+01	1.03E-01	1.35E+02	6.14E+00	1.59E+02	2.97E-02	9.60E+01	6.39E-02
BREOT-S18-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	1.50E+04	2.14E+04	NA	NA	NA	NA	2.86E-02	1.51E+03	4.32E+01	1.03E-01	1.35E+02	1.64E+01	1.59E+02	2.97E-02	9.60E+01	1.71E-01
BREOT-N19-10 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	8.76E+03	1.25E+04	NA	NA	NA	NA	2.86E-02	8.84E+02	2.53E+01	1.03E-01	1.35E+02	9.59E+00	1.59E+02	2.97E-02	9.60E+01	9.99E-02
BREOT-S19-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	2.84E+04	4.07E+04	NA	NA	NA	NA	2.86E-02	2.87E+03	8.21E+01	1.03E-01	1.35E+02	3.11E+01	1.59E+02	2.97E-02	9.60E+01	3.24E-01
UBDT-TP-5 (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	4.59E+04	6.57E+04	NA	NA	NA	NA	2.86E-02	4.63E+03	1.33E+02	1.03E-01	1.35E+02	5.02E+01	1.59E+02	2.97E-02	9.60E+01	5.23E-01
UBDT-TP-5 (2-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	3.84E+04	5.49E+04	NA	NA	NA	NA	2.86E-02	3.87E+03	1.11E+02	1.03E-01	1.35E+02	4.20E+01	1.59E+02	2.97E-02	9.60E+01	4.37E-01
UBDT-TP-5 (12-24")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	3.50E+04	5.01E+04	NA	NA	NA	NA	2.86E-02	3.53E+03	1.01E+02	1.03E-01	1.35E+02	3.83E+01	1.59E+02	2.97E-02	9.60E+01	3.99E-01
BREOT-N20-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	7.59E+03	1.09E+04	NA	NA	NA	NA	2.86E-02	7.65E+02	2.19E+01	1.03E-01	1.35E+02	8.30E+00	1.59E+02	2.97E-02	9.60E+01	8.65E-02
UBDT-TP-3 (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	7.91E+03	1.13E+04	NA	NA	NA	NA	2.86E-02	7.98E+02	2.29E+01	1.03E-01	1.35E+02	8.66E+00	1.59E+02	2.97E-02	9.60E+01	9.02E-02
UBDT-TP-3 (2-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UBDT-TP-3 (12-24")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	2.98E+03	4.27E+03	NA	NA	NA	NA	2.86E-02	3.01E+02	8.62E+00	1.03E-01	1.35E+02	3.27E+00	1.59E+02	2.97E-02	9.60E+01	3.40E-02
UBDT-TP-3 (24-36")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	3.57E+03	5.11E+03	NA	NA	NA	NA	2.86E-02	3.60E+02	1.03E+01	1.03E-01	1.35E+02	3.91E+00	1.59E+02	2.97E-02	9.60E+01	4.07E-02
UBDT-TP-3 (36-48")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	5.49E+04	7.86E+04	NA	NA	NA	NA	2.86E-02	5.54E+03	1.59E+02	1.03E-01	1.35E+02	6.01E+01	1.59E+02	2.97E-02	9.60E+01	6.26E-01
UBDT-TP-3 (48-60")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	2.60E+04	3.73E+04	NA	NA	NA	NA	2.86E-02	2.63E+03	7.52E+01	1.03E-01	1.35E+02	2.85E+01	1.59E+02	2.97E-02	9.60E+01	2.97E-01
BREOT-N21-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	6.76E+04	9.68E+04	NA	NA	NA	NA	2.86E-02	6.83E+03	1.95E+02	1.03E-01	1.35E+02	7.40E+01	1.59E+02	2.97E-02	9.60E+01	7.71E-01
BREOT-N22-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	6.66E+03	9.53E+03	NA	NA	NA	NA	2.86E-02	6.72E+02	1.92E+01	1.03E-01	1.35E+02	7.29E+00	1.59E+02	2.97E-02	9.60E+01	7.59E-02
BREOT-N23-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	1.45E+04	2.08E+04	NA	NA	NA	NA	2.86E-02	1.46E+03	4.19E+01	1.03E-01	1.35E+02	1.59E+01	1.59E+02	2.97E-02	9.60E+01	1.65E-01
BREOT-S23-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	1.57E+05	2.25E+05	NA	NA	NA	NA	2.86E-02	1.59E+04	4.55E+02	1.03E-01	1.35E+02	1.72E+02	1.59E+02	2.97E-02	9.60E+01	1.80E+00
UBDT-TP-2 (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	5.43E+04	7.77E+04	NA	NA	NA	NA	2.86E-02	5.48E+03	1.57E+02	1.03E-01	1.35E+02	5.94E+01	1.59E+02	2.97E-02	9.60E+01	6.19E-01
UBDT-TP-2 (2-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	7.14E+04	1.02E+05	NA	NA	NA	NA	2.86E-02	7.21E+03	2.06E+02	1.03E-01	1.35E+02	7.82E+01	1.59E+02	2.97E-02	9.60E+01	8.14E-01
UBDT-TP-2 (12-24")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	5.39E+04	7.71E+04	NA	NA	NA	NA	2.86E-02	5.44E+03	1.56E+02	1.03E-01	1.35E+02	5.89E+01	1.59E+02	2.97E-02	9.60E+01	6.14E-01
UBDT-TP-2 (24-36")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	2.74E+04	3.92E+04	NA	NA	NA	NA	2.86E-02	2.76E+03	7.90E+01	1.03E-01	1.35E+02	2.99E+01	1.59E+02	2.97E-02	9.60E+01	3.12E-01
UBDT-TP-2 (36-48")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	2.76E+04	3.95E+04	NA	NA	NA	NA	2.86E-02	2.79E+03	7.98E+01	1.03E-01	1.35E+02	3.02E+01	1.59E+02	2.97E-02	9.60E+01	3.15E-01
BREOT-S24-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	1.61E+05	2.31E+05	NA	NA	NA	NA	2.86E-02	1.63E+04	4.66E+02	1.03E-01	1.35E+02	1.76E+02	1.59E+02	2.97E-02	9.60E+01	1.84E+00
BREOT-N25-50 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	4.77E+04	6.84E+04	NA	NA	NA	NA	2.86E-02	4.82E+03	1.38E+02	1.03E-01	1.35E+02	5.23E+01	1.59E+02	2.97E-02	9.60E+01	5.44E-01
BREOT-N25-95 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S25-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	5.76E+04	8.24E+04	NA	NA	NA	NA	2.86E-02	5.81E+03	1.66E+02	1.03E-01	1.35E+02	6.30E+01	1.59E+02	2.97E-02	9.60E+01	6.56E-01
BREOT-S25-40 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N26A-25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	4.54E+03	6.50E+03	NA	NA	NA	NA	2.86E-02	4.58E+02	1.31E+01	1.03E-01	1.35E+02	4.97E+00	1.59E+02	2.97E-02	9.60E+01	5.17E-02
BREOT-N26B-25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	1.88E+04	2.70E+04	NA	NA	NA	NA	2.86E-02	1.90E+03	5.44E+01	1.03E-01	1.35E+02	2.06E+01	1.59E+02	2.97E-02	9.60E+01	2.15E-01
BREOT-N26-50 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	4.77E+04	6.82E+04	NA	NA	NA	NA	2.86E-02	4.81E+03	1.38E+02	1.03E-01	1.35E+02	5.22E+01	1.59E+02	2.97E-02	9.60E+01	5.44E-01
BREOT-N26-75 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	2.63E+04	3.77E+04	NA	NA	NA	NA	2.86E-02	2.65E+03	7.60E+01	1.03E-01	1.35E+02	2.88E+01	1.59E+02	2.97E-02	9.60E+01	3.00E-01
BREOT-S26-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	2.36E+04	3.37E+04	NA	NA	NA	NA	2.86E-02	2.38E+03	6.81E+01	1.03E-01	1.35E+02	2.58E+01	1.59E+02	2.97E-02	9.60E+01	2.69E-01
BREOT-S26-40 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	7.11E+04	1.02E+05	NA	NA	NA	NA	2.86E-02	7.17E+03	2.05E+02	1.03E-01	1.35E+02	7.78E+01	1.59E+02	2.97E-02	9.60E+01	8.10E-01
BREOT-N27-30 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	2.63E+04	3.77E+04	NA	NA	NA	NA	2.86E-02	2.66E+03	7.61E+01	1.03E-01	1.35E+02	2.88E+01	1.59E+02	2.97E-02	9.60E+01	3.00E-01
BREOT-N27-75 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	7.50E+04	1.07E+05	NA	NA	NA	NA	2.86E-02	7.57E+03	2.17E+02	1.03E-01	1.35E+02	8.21E+01	1.59E+02	2.97E-02	9.60E+01	8.55E-01
BREOT-S27-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	1.50E+04	2.15E+04	NA	NA	NA	NA	2.86E-02	1.52E+03	4.35E+01	1.03E-01	1.35E+02	1.65E+01	1.59E+02	2.97E-02	9.60E+01	1.72E-01

TABLE C-2E: MANGANESE DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **18.41**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
White-Tailed Deer (Large Herbivorous Mammal - Terrestrial)																							
BREOT-N28-110 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	1.39E+04	1.99E+04	NA	NA	NA	NA	2.86E-02	1.40E+03	4.02E+01	1.03E-01	1.35E+02	1.52E+01	1.59E+02	2.97E-02	9.60E+01	1.59E-01
BREOT-N28-55 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	3.68E+04	5.27E+04	NA	NA	NA	NA	2.86E-02	3.72E+03	1.06E+02	1.03E-01	1.35E+02	4.03E+01	1.59E+02	2.97E-02	9.60E+01	4.20E-01
BREOT-S28-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	8.30E+04	1.19E+05	NA	NA	NA	NA	2.86E-02	8.38E+03	2.40E+02	1.03E-01	1.35E+02	9.09E+01	1.59E+02	2.97E-02	9.60E+01	9.47E-01
UBDT-TP-1 (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	5.50E+04	7.87E+04	NA	NA	NA	NA	2.86E-02	5.55E+03	1.59E+02	1.03E-01	1.35E+02	6.02E+01	1.59E+02	2.97E-02	9.60E+01	6.27E-01
UBDT-TP-1 (2-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	5.47E+04	7.84E+04	NA	NA	NA	NA	2.86E-02	5.52E+03	1.58E+02	1.03E-01	1.35E+02	5.99E+01	1.59E+02	2.97E-02	9.60E+01	6.24E-01
UBDT-TP-1 (12-24")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	5.62E+04	8.05E+04	NA	NA	NA	NA	2.86E-02	5.67E+03	1.62E+02	1.03E-01	1.35E+02	6.15E+01	1.59E+02	2.97E-02	9.60E+01	6.41E-01
UBDT-TP-1 (24-36")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	7.48E+04	1.07E+05	NA	NA	NA	NA	2.86E-02	7.55E+03	2.16E+02	1.03E-01	1.35E+02	8.18E+01	1.59E+02	2.97E-02	9.60E+01	8.53E-01
UBDT-TP-1 (36-48")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	1.19E+04	1.70E+04	NA	NA	NA	NA	2.86E-02	1.20E+03	3.44E+01	1.03E-01	1.35E+02	1.30E+01	1.59E+02	2.97E-02	9.60E+01	1.36E-01
UBDT-TP-1 (48-60")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	1.48E+04	2.12E+04	NA	NA	NA	NA	2.86E-02	1.49E+03	4.28E+01	1.03E-01	1.35E+02	1.62E+01	1.59E+02	2.97E-02	9.60E+01	1.69E-01
BREOT-N29-30 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	5.71E+04	8.17E+04	NA	NA	NA	NA	2.86E-02	5.76E+03	1.65E+02	1.03E-01	1.35E+02	6.25E+01	1.59E+02	2.97E-02	9.60E+01	6.51E-01
BREOT-S29-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	7.01E+04	1.00E+05	NA	NA	NA	NA	2.86E-02	7.07E+03	2.02E+02	1.03E-01	1.35E+02	7.67E+01	1.59E+02	2.97E-02	9.60E+01	7.99E-01
BREOT-N30-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	1.95E+04	2.80E+04	NA	NA	NA	NA	2.86E-02	1.97E+03	5.64E+01	1.03E-01	1.35E+02	2.14E+01	1.59E+02	2.97E-02	9.60E+01	2.23E-01
BREOT-S30-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	4.81E+04	6.89E+04	NA	NA	NA	NA	2.86E-02	4.86E+03	1.39E+02	1.03E-01	1.35E+02	5.27E+01	1.59E+02	2.97E-02	9.60E+01	5.49E-01
BREOT-N31-12.5 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S31-25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	3.88E+04	5.56E+04	NA	NA	NA	NA	2.86E-02	3.92E+03	1.12E+02	1.03E-01	1.35E+02	4.25E+01	1.59E+02	2.97E-02	9.60E+01	4.43E-01
BREOT-S31-5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	6.33E+04	9.06E+04	NA	NA	NA	NA	2.86E-02	6.38E+03	1.83E+02	1.03E-01	1.35E+02	6.92E+01	1.59E+02	2.97E-02	9.60E+01	7.21E-01
BREOT-N32-12.5 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S32-6 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	1.37E+04	1.96E+04	NA	NA	NA	NA	2.86E-02	1.38E+03	3.96E+01	1.03E-01	1.35E+02	1.50E+01	1.59E+02	2.97E-02	9.60E+01	1.56E-01
BREOT-N33-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	3.98E+03	5.70E+03	NA	NA	NA	NA	2.86E-02	4.02E+02	1.15E+01	1.03E-01	1.35E+02	4.36E+00	1.59E+02	2.97E-02	9.60E+01	4.54E-02
BREOT-S33-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	2.67E+04	3.82E+04	NA	NA	NA	NA	2.86E-02	2.70E+03	7.72E+01	1.03E-01	1.35E+02	2.92E+01	1.59E+02	2.97E-02	9.60E+01	3.05E-01
BREOT-N35-12.5 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S35-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	8.39E+04	1.20E+05	NA	NA	NA	NA	2.86E-02	8.47E+03	2.43E+02	1.03E-01	1.35E+02	9.19E+01	1.59E+02	2.97E-02	9.60E+01	9.57E-01
BREOT-N36-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	3.23E+04	4.63E+04	NA	NA	NA	NA	2.86E-02	3.26E+03	9.34E+01	1.03E-01	1.35E+02	3.54E+01	1.59E+02	2.97E-02	9.60E+01	3.69E-01
BREOT-S36-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	1.12E+04	1.60E+04	NA	NA	NA	NA	2.86E-02	1.13E+03	3.23E+01	1.03E-01	1.35E+02	1.22E+01	1.59E+02	2.97E-02	9.60E+01	1.27E-01
BREOT-N37-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	3.27E+03	4.68E+03	NA	NA	NA	NA	2.86E-02	3.30E+02	9.44E+00	1.03E-01	1.35E+02	3.58E+00	1.59E+02	2.97E-02	9.60E+01	3.73E-02
BREOT-S37-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	1.32E+04	1.89E+04	NA	NA	NA	NA	2.86E-02	1.33E+03	3.81E+01	1.03E-01	1.35E+02	1.44E+01	1.59E+02	2.97E-02	9.60E+01	1.51E-01
BREOT-N38-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	6.59E+03	9.44E+03	NA	NA	NA	NA	2.86E-02	6.65E+02	1.90E+01	1.03E-01	1.35E+02	7.21E+00	1.59E+02	2.97E-02	9.60E+01	7.52E-02
BREOT-S38-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	1.17E+05	1.67E+05	NA	NA	NA	NA	2.86E-02	1.18E+04	3.37E+02	1.03E-01	1.35E+02	1.28E+02	1.59E+02	2.97E-02	9.60E+01	1.33E+00
BREOT-N39-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	9.80E+03	1.40E+04	NA	NA	NA	NA	2.86E-02	9.89E+02	2.83E+01	1.03E-01	1.35E+02	1.07E+01	1.59E+02	2.97E-02	9.60E+01	1.12E-01
BREOT-S39-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	4.56E+04	6.54E+04	NA	NA	NA	NA	2.86E-02	4.61E+03	1.32E+02	1.03E-01	1.35E+02	5.00E+01	1.59E+02	2.97E-02	9.60E+01	5.21E-01
BREOT-N40-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	4.59E+04	6.57E+04	NA	NA	NA	NA	2.86E-02	4.63E+03	1.33E+02	1.03E-01	1.35E+02	5.02E+01	1.59E+02	2.97E-02	9.60E+01	5.23E-01
BREOT-S40-14 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	4.24E+04	6.07E+04	NA	NA	NA	NA	2.86E-02	4.28E+03	1.22E+02	1.03E-01	1.35E+02	4.64E+01	1.59E+02	2.97E-02	9.60E+01	4.83E-01
BREOT-N41-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	3.38E+04	4.84E+04	NA	NA	NA	NA	2.86E-02	3.41E+03	9.76E+01	1.03E-01	1.35E+02	3.70E+01	1.59E+02	2.97E-02	9.60E+01	3.85E-01
BREOT-S41-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	4.24E+04	6.07E+04	NA	NA	NA	NA	2.86E-02	4.28E+03	1.22E+02	1.03E-01	1.35E+02	4.64E+01	1.59E+02	2.97E-02	9.60E+01	4.83E-01
BREOT-N42-35 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	7.78E+03	1.11E+04	NA	NA	NA	NA	2.86E-02	7.85E+02	2.25E+01	1.03E-01	1.35E+02	8.51E+00	1.59E+02	2.97E-02	9.60E+01	8.87E-02
BREOT-S42-25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	1.64E+04	2.35E+04	NA	NA	NA	NA	2.86E-02	1.66E+03	4.75E+01	1.03E-01	1.35E+02	1.80E+01	1.59E+02	2.97E-02	9.60E+01	1.88E-01
BREOT-N43-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	1.00E+05	1.43E+05	NA	NA	NA	NA	2.86E-02	1.01E+04	2.89E+02	1.03E-01	1.35E+02	1.09E+02	1.59E+02	2.97E-02	9.60E+01	1.14E+00
BREOT-S43-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	2.20E+04	3.15E+04	NA	NA	NA	NA	2.86E-02	2.22E+03	6.35E+01	1.03E-01	1.35E+02	2.41E+01	1.59E+02	2.97E-02	9.60E+01	2.51E-01
BREOT-N44-30 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	7.84E+03	1.12E+04	NA	NA	NA	NA	2.86E-02	7.91E+02	2.27E+01	1.03E-01	1.35E+02	8.58E+00	1.59E+02	2.97E-02	9.60E+01	8.94E-02
BREOT-S44-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	7.37E+04	1.06E+05	NA	NA	NA	NA	2.86E-02	7.44E+03	2.13E+02	1.03E-01	1.35E+02	8.07E+01	1.59E+02	2.97E-02	9.60E+01	8.40E-01
BREOT-N45-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	9.49E+03	1.36E+04	NA	NA	NA	NA	2.86E-02	9.57E+02	2.74E+01	1.03E-01	1.35E+02	1.04E+01	1.59E+02	2.97E-02	9.60E+01	1.08E-01
BREOT-N43-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	1.00E+05	1.43E+05	NA	NA	NA	NA	2.86E-02	1.01E+04	2.89E+02	1.03E-01	1.35E+02	1.09E+02	1.59E+02	2.97E-02	9.60E+01	1.14E+00
BREOT-S45-6 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	1.27E+04	1.81E+04	NA	NA	NA	NA	2.86E-02	1.28E+03	3.66E+01	1.03E-01	1.35E+02	1.39E+01	1.59E+02	2.97E-02	9.60E+01	1.44E-01
BREOT-N46-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	3.64E+03	5.21E+03	NA	NA	NA	NA	2.86E-02	3.67E+02	1.05E+01	1.03E-01	1.35E+02	3.98E+00	1.59E+02	2.97E-02	9.60E+01	4.15E-02
BREOT-S46-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	3.62E+03	5.18E+03	NA	NA	NA	NA	2.86E-02	3.65E+02	1.05E+01	1.03E-01	1.35E+02	3.96E+00	1.59E+02	2.97E-02	9.60E+01	4.13E-02
BREOT-S46-40 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	5.54E+03	7.94E+03	NA	NA	NA	NA	2.86E-02	5.59E+02	1.60E+01	1.03E-01	1.35E+02	6.07E+00	1.59E+02	2.97E-02	9.60E+01	6.32E-02
BREOT-N47-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	6.97E+03	9.98E+03	NA	NA	NA	NA	2.86E-02	7.04E+02	2.02E+01	1.03E-01	1.35E+02	7.63E+00	1.59E+02	2.97E-02	9.60E+01	7.95E-02
BREOT-S47-999 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	7.41E+03	1.06E+04	NA	NA	NA	NA	2.86E-02	7.47E+02	2.14E+01	1.03E-01	1.35E+02	8.10E+00	1.59E+02	2.97E-02	9.60E+01	8.44E-02
BREOT-S48-12.5 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S49-2.5 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S50-12.5 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S50-25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N52-60 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S52-12.5 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S53-12.5 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB

TABLE C-2E: MANGANESE DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 18.41

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
White-Tailed Deer (Large Herbivorous Mammal - Terrestrial)																							
BREOT-S54-12.5 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N55-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	3.72E+04	5.32E+04	NA	NA	NA	NA	2.86E-02	3.75E+03	1.07E+02	1.03E-01	1.35E+02	4.07E+01	1.59E+02	2.97E-02	9.60E+01	4.24E-01
BREOT-S55-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	1.53E+04	2.19E+04	NA	NA	NA	NA	2.86E-02	1.55E+03	4.43E+01	1.03E-01	1.35E+02	1.68E+01	1.59E+02	2.97E-02	9.60E+01	1.75E-01
BREOT-N56-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	1.77E+04	2.54E+04	NA	NA	NA	NA	2.86E-02	1.79E+03	5.12E+01	1.03E-01	1.35E+02	1.94E+01	1.59E+02	2.97E-02	9.60E+01	2.02E-01
BREOT-S56-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	9.43E+03	1.35E+04	NA	NA	NA	NA	2.86E-02	9.52E+02	2.72E+01	1.03E-01	1.35E+02	1.03E+01	1.59E+02	2.97E-02	9.60E+01	1.08E-01
BREOT-N57-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	1.18E+04	1.69E+04	NA	NA	NA	NA	2.86E-02	1.19E+03	3.42E+01	1.03E-01	1.35E+02	1.29E+01	1.59E+02	2.97E-02	9.60E+01	1.35E-01
BREOT-S57-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	1.23E+04	1.76E+04	NA	NA	NA	NA	2.86E-02	1.24E+03	3.56E+01	1.03E-01	1.35E+02	1.35E+01	1.59E+02	2.97E-02	9.60E+01	1.40E-01
BREOT-N58-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	2.04E+04	2.92E+04	NA	NA	NA	NA	2.86E-02	2.06E+03	5.89E+01	1.03E-01	1.35E+02	2.23E+01	1.59E+02	2.97E-02	9.60E+01	2.32E-01
BREOT-S58-12 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	1.27E+04	1.83E+04	NA	NA	NA	NA	2.86E-02	1.29E+03	3.68E+01	1.03E-01	1.35E+02	1.40E+01	1.59E+02	2.97E-02	9.60E+01	1.45E-01
BREOT-N59-18 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	6.99E+03	1.00E+04	NA	NA	NA	NA	2.86E-02	7.05E+02	2.02E+01	1.03E-01	1.35E+02	7.65E+00	1.59E+02	2.97E-02	9.60E+01	7.97E-02
BREOT-N60-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	1.19E+04	1.71E+04	NA	NA	NA	NA	2.86E-02	1.20E+03	3.45E+01	1.03E-01	1.35E+02	1.31E+01	1.59E+02	2.97E-02	9.60E+01	1.36E-01
BREOT-S60-12.5 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S61-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	6.33E+04	9.06E+04	NA	NA	NA	NA	2.86E-02	6.39E+03	1.83E+02	1.03E-01	1.35E+02	6.93E+01	1.59E+02	2.97E-02	9.60E+01	7.22E-01
BREOT-N62-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	6.15E+03	8.81E+03	NA	NA	NA	NA	2.86E-02	6.21E+02	1.78E+01	1.03E-01	1.35E+02	6.73E+00	1.59E+02	2.97E-02	9.60E+01	7.01E-02
BREOT-S62-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	7.53E+04	1.08E+05	NA	NA	NA	NA	2.86E-02	7.60E+03	2.18E+02	1.03E-01	1.35E+02	8.24E+01	1.59E+02	2.97E-02	9.60E+01	8.59E-01
BREOT-S63-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	1.08E+04	1.55E+04	NA	NA	NA	NA	2.86E-02	1.09E+03	3.12E+01	1.03E-01	1.35E+02	1.18E+01	1.59E+02	2.97E-02	9.60E+01	1.23E-01
BREOT-N64-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	1.09E+04	1.56E+04	NA	NA	NA	NA	2.86E-02	1.10E+03	3.14E+01	1.03E-01	1.35E+02	1.19E+01	1.59E+02	2.97E-02	9.60E+01	1.24E-01
BREOT-N64-20 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	1.05E+04	1.51E+04	NA	NA	NA	NA	2.86E-02	1.06E+03	3.05E+01	1.03E-01	1.35E+02	1.15E+01	1.59E+02	2.97E-02	9.60E+01	1.20E-01
BREOT-S64-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	3.61E+03	5.16E+03	NA	NA	NA	NA	2.86E-02	3.64E+02	1.04E+01	1.03E-01	1.35E+02	3.95E+00	1.59E+02	2.97E-02	9.60E+01	4.11E-02
BREOT-N65-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	9.35E+03	1.34E+04	NA	NA	NA	NA	2.86E-02	9.44E+02	2.70E+01	1.03E-01	1.35E+02	1.02E+01	1.59E+02	2.97E-02	9.60E+01	1.07E-01
BREOT-S65-12.5 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N66-5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	5.28E+03	7.56E+03	NA	NA	NA	NA	2.86E-02	5.33E+02	1.53E+01	1.03E-01	1.35E+02	5.78E+00	1.59E+02	2.97E-02	9.60E+01	6.02E-02
BREOT-S66-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	8.97E+03	1.28E+04	NA	NA	NA	NA	2.86E-02	9.06E+02	2.59E+01	1.03E-01	1.35E+02	9.82E+00	1.59E+02	2.97E-02	9.60E+01	1.02E-01
BREOT-N67-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	1.04E+05	1.50E+05	NA	NA	NA	NA	2.86E-02	1.05E+04	3.02E+02	1.03E-01	1.35E+02	1.14E+02	1.59E+02	2.97E-02	9.60E+01	1.19E+00
BREOT-S67-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	5.83E+03	8.35E+03	NA	NA	NA	NA	2.86E-02	5.88E+02	1.68E+01	1.03E-01	1.35E+02	6.38E+00	1.59E+02	2.97E-02	9.60E+01	6.65E-02
At Edge of Tailings																						**Maximum HQ (Inside Tailings)**	**1.84E+00**
BREOT-S0-0 (06)	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	7.55E+03	1.08E+04	NA	NA	NA	NA	2.86E-02	7.62E+02	2.18E+01	1.03E-01	1.35E+02	8.27E+00	1.59E+02	2.97E-02	9.60E+01	8.61E-02
BREOT-S1-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	8.39E+03	1.20E+04	NA	NA	NA	NA	2.86E-02	8.47E+02	2.42E+01	1.03E-01	1.35E+02	9.18E+00	1.59E+02	2.97E-02	9.60E+01	9.57E-02
BREOT-S2-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	2.24E+04	3.21E+04	NA	NA	NA	NA	2.86E-02	2.26E+03	6.47E+01	1.03E-01	1.35E+02	2.45E+01	1.59E+02	2.97E-02	9.60E+01	2.55E-01
BREOT-S3-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	5.65E+04	8.09E+04	NA	NA	NA	NA	2.86E-02	5.70E+03	1.63E+02	1.03E-01	1.35E+02	6.18E+01	1.59E+02	2.97E-02	9.60E+01	6.44E-01
BREOT-S4-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	6.63E+04	9.49E+04	NA	NA	NA	NA	2.86E-02	6.69E+03	1.91E+02	1.03E-01	1.35E+02	7.25E+01	1.59E+02	2.97E-02	9.60E+01	7.56E-01
BREOT-S6-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S7-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S8-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	1.16E+04	1.66E+04	NA	NA	NA	NA	2.86E-02	1.17E+03	3.34E+01	1.03E-01	1.35E+02	1.27E+01	1.59E+02	2.97E-02	9.60E+01	1.32E-01
BREOT-S9-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N10-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	7.98E+04	1.14E+05	NA	NA	NA	NA	2.86E-02	8.05E+03	2.31E+02	1.03E-01	1.35E+02	8.73E+01	1.59E+02	2.97E-02	9.60E+01	9.10E-01
BREOT-N11-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	3.73E+03	5.34E+03	NA	NA	NA	NA	2.86E-02	3.76E+02	1.08E+01	1.03E-01	1.35E+02	4.08E+00	1.59E+02	2.97E-02	9.60E+01	4.25E-02
BREOT-S11-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	1.98E+04	2.83E+04	NA	NA	NA	NA	2.86E-02	1.99E+03	5.71E+01	1.03E-01	1.35E+02	2.16E+01	1.59E+02	2.97E-02	9.60E+01	2.25E-01
BREOT-N12-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	1.04E+04	1.48E+04	NA	NA	NA	NA	2.86E-02	1.05E+03	3.00E+01	1.03E-01	1.35E+02	1.14E+01	1.59E+02	2.97E-02	9.60E+01	1.18E-01
BREOT-S12-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	2.96E+04	4.24E+04	NA	NA	NA	NA	2.86E-02	2.99E+03	8.55E+01	1.03E-01	1.35E+02	3.24E+01	1.59E+02	2.97E-02	9.60E+01	3.38E-01
BREOT-N13-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	1.54E+04	2.20E+04	NA	NA	NA	NA	2.86E-02	1.55E+03	4.45E+01	1.03E-01	1.35E+02	1.69E+01	1.59E+02	2.97E-02	9.60E+01	1.76E-01
BREOT-S13-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	8.57E+03	1.23E+04	NA	NA	NA	NA	2.86E-02	8.65E+02	2.48E+01	1.03E-01	1.35E+02	9.38E+00	1.59E+02	2.97E-02	9.60E+01	9.78E-02
BREOT-N14-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	1.53E+04	2.20E+04	NA	NA	NA	NA	2.86E-02	1.55E+03	4.44E+01	1.03E-01	1.35E+02	1.68E+01	1.59E+02	2.97E-02	9.60E+01	1.75E-01
BREOT-S14-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	9.07E+04	1.30E+05	NA	NA	NA	NA	2.86E-02	9.15E+03	2.62E+02	1.03E-01	1.35E+02	9.93E+01	1.59E+02	2.97E-02	9.60E+01	1.03E+00
BREOT-N15-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	8.03E+03	1.15E+04	NA	NA	NA	NA	2.86E-02	8.10E+02	2.32E+01	1.03E-01	1.35E+02	8.78E+00	1.59E+02	2.97E-02	9.60E+01	9.15E-02
BREOT-N16-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	6.08E+03	8.70E+03	NA	NA	NA	NA	2.86E-02	6.13E+02	1.76E+01	1.03E-01	1.35E+02	6.65E+00	1.59E+02	2.97E-02	9.60E+01	6.93E-02
BREOT-S16-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	1.07E+04	1.53E+04	NA	NA	NA	NA	2.86E-02	1.08E+03	3.08E+01	1.03E-01	1.35E+02	1.17E+01	1.59E+02	2.97E-02	9.60E+01	1.22E-01
BREOT-N17-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	1.64E+04	2.35E+04	NA	NA	NA	NA	2.86E-02	1.66E+03	4.74E+01	1.03E-01	1.35E+02	1.80E+01	1.59E+02	2.97E-02	9.60E+01	1.87E-01
BREOT-S17-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	5.05E+03	7.23E+03	NA	NA	NA	NA	2.86E-02	5.10E+02	1.46E+01	1.03E-01	1.35E+02	5.53E+00	1.59E+02	2.97E-02	9.60E+01	5.76E-02
BREOT-N18-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	6.44E+03	9.23E+03	NA	NA	NA	NA	2.86E-02	6.50E+02	1.86E+01	1.03E-01	1.35E+02	7.05E+00	1.59E+02	2.97E-02	9.60E+01	7.35E-02
BREOT-S18-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	4.03E+06	5.77E+06	NA	NA	NA	NA	2.86E-02	4.07E+05	1.16E+04	1.03E-01	1.35E+02	4.41E+03	1.59E+02	2.97E-02	9.60E+01	4.59E+01
BREOT-N19-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	4.45E+04	6.38E+04	NA	NA	NA	NA	2.86E-02	4.49E+03	1.29E+02	1.03E-01	1.35E+02	4.87E+01	1.59E+02	2.97E-02	9.60E+01	5.08E-01
BREOT-S19-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	1.25E+04	1.78E+04	NA	NA	NA	NA	2.86E-02	1.26E+03	3.60E+01	1.03E-01	1.35E+02	1.36E+01	1.59E+02	2.97E-02	9.60E+01	1.42E-01
BREOT-N20-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	9.90E+04	1.42E+05	NA	NA	NA	NA	2.86E-02	9.99E+03	2.86E+02	1.03E-01	1.35E+02	1.08E+02	1.59E+02	2.97E-02	9.60E+01	1.13E+00
BREOT-S20-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	7.90E+03	1.13E+04	NA	NA	NA	NA	2.86E-02	7.97E+02	2.28E+01	1.03E-01	1.35E+02	8.64E+00	1.59E+02	2.97E-02	9.60E+01	9.01E-02

TABLE C-2E: MANGANESE DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 18.41

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
White-Tailed Deer (Large Herbivorous Mammal - Terrestrial)																							
BREOT-N21-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	6.43E+06	9.20E+06	NA	NA	NA	NA	2.86E-02	6.49E+05	1.86E+04	1.03E-01	1.35E+02	7.04E+03	1.59E+02	2.97E-02	9.60E+01	7.33E+01
BREOT-S21-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	3.36E+03	4.81E+03	NA	NA	NA	NA	2.86E-02	3.39E+02	9.71E+00	1.03E-01	1.35E+02	3.68E+00	1.59E+02	2.97E-02	9.60E+01	3.83E-02
BREOT-N22-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	8.47E+03	1.21E+04	NA	NA	NA	NA	2.86E-02	8.55E+02	2.45E+01	1.03E-01	1.35E+02	9.27E+00	1.59E+02	2.97E-02	9.60E+01	9.66E-02
BREOT-S22-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N23-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	2.97E+04	4.25E+04	NA	NA	NA	NA	2.86E-02	3.00E+03	8.59E+01	1.03E-01	1.35E+02	3.25E+01	1.59E+02	2.97E-02	9.60E+01	3.39E-01
BREOT-S23-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	1.65E+04	2.36E+04	NA	NA	NA	NA	2.86E-02	1.66E+03	4.75E+01	1.03E-01	1.35E+02	1.80E+01	1.59E+02	2.97E-02	9.60E+01	1.88E-01
BREOT-N24-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	1.32E+04	1.89E+04	NA	NA	NA	NA	2.86E-02	1.33E+03	3.82E+01	1.03E-01	1.35E+02	1.45E+01	1.59E+02	2.97E-02	9.60E+01	1.51E-01
BREOT-S24-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	2.39E+05	3.42E+05	NA	NA	NA	NA	2.86E-02	2.41E+04	6.91E+02	1.03E-01	1.35E+02	2.62E+02	1.59E+02	2.97E-02	9.60E+01	2.73E+00
BREOT-N25-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	4.00E+04	5.73E+04	NA	NA	NA	NA	2.86E-02	4.04E+03	1.16E+02	1.03E-01	1.35E+02	4.38E+01	1.59E+02	2.97E-02	9.60E+01	4.56E-01
BREOT-S25-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	5.73E+04	8.21E+04	NA	NA	NA	NA	2.86E-02	5.79E+03	1.66E+02	1.03E-01	1.35E+02	6.27E+01	1.59E+02	2.97E-02	9.60E+01	6.54E-01
BREOT-N26-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	2.60E+04	3.73E+04	NA	NA	NA	NA	2.86E-02	2.63E+03	7.53E+01	1.03E-01	1.35E+02	2.85E+01	1.59E+02	2.97E-02	9.60E+01	2.97E-01
BREOT-S26-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	3.10E+04	4.44E+04	NA	NA	NA	NA	2.86E-02	3.13E+03	8.96E+01	1.03E-01	1.35E+02	3.39E+01	1.59E+02	2.97E-02	9.60E+01	3.53E-01
BREOT-N27-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	4.97E+04	7.11E+04	NA	NA	NA	NA	2.86E-02	5.02E+03	1.44E+02	1.03E-01	1.35E+02	5.44E+01	1.59E+02	2.97E-02	9.60E+01	5.67E-01
BREOT-S27-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	3.51E+04	5.02E+04	NA	NA	NA	NA	2.86E-02	3.54E+03	1.01E+02	1.03E-01	1.35E+02	3.84E+01	1.59E+02	2.97E-02	9.60E+01	4.00E-01
BREOT-N28-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	2.15E+04	3.07E+04	NA	NA	NA	NA	2.86E-02	2.17E+03	6.20E+01	1.03E-01	1.35E+02	2.35E+01	1.59E+02	2.97E-02	9.60E+01	2.45E-01
BREOT-S28-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S29-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	7.27E+03	1.04E+04	NA	NA	NA	NA	2.86E-02	7.34E+02	2.10E+01	1.03E-01	1.35E+02	7.96E+00	1.59E+02	2.97E-02	9.60E+01	8.29E-02
BREOT-N30-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	3.42E+04	4.90E+04	NA	NA	NA	NA	2.86E-02	3.45E+03	9.89E+01	1.03E-01	1.35E+02	3.75E+01	1.59E+02	2.97E-02	9.60E+01	3.90E-01
BREOT-S30-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N31-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	3.37E+04	4.83E+04	NA	NA	NA	NA	2.86E-02	3.41E+03	9.75E+01	1.03E-01	1.35E+02	3.69E+01	1.59E+02	2.97E-02	9.60E+01	3.85E-01
BREOT-S31-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N32-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	1.54E+04	2.20E+04	NA	NA	NA	NA	2.86E-02	1.55E+03	4.44E+01	1.03E-01	1.35E+02	1.68E+01	1.59E+02	2.97E-02	9.60E+01	1.75E-01
BREOT-S32-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	1.20E+04	1.72E+04	NA	NA	NA	NA	2.86E-02	1.21E+03	3.48E+01	1.03E-01	1.35E+02	1.32E+01	1.59E+02	2.97E-02	9.60E+01	1.37E-01
BREOT-N33-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	9.50E+03	1.36E+04	NA	NA	NA	NA	2.86E-02	9.58E+02	2.74E+01	1.03E-01	1.35E+02	1.04E+01	1.59E+02	2.97E-02	9.60E+01	1.08E-01
BREOT-S33-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	1.82E+04	2.60E+04	NA	NA	NA	NA	2.86E-02	1.83E+03	5.25E+01	1.03E-01	1.35E+02	1.99E+01	1.59E+02	2.97E-02	9.60E+01	2.07E-01
BREOT-N34-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	1.45E+04	2.08E+04	NA	NA	NA	NA	2.86E-02	1.47E+03	4.20E+01	1.03E-01	1.35E+02	1.59E+01	1.59E+02	2.97E-02	9.60E+01	1.66E-01
BREOT-S34-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	7.17E+04	1.03E+05	NA	NA	NA	NA	2.86E-02	7.24E+03	2.07E+02	1.03E-01	1.35E+02	7.85E+01	1.59E+02	2.97E-02	9.60E+01	8.18E-01
BREOT-N35-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	7.99E+03	1.14E+04	NA	NA	NA	NA	2.86E-02	8.07E+02	2.31E+01	1.03E-01	1.35E+02	8.75E+00	1.59E+02	2.97E-02	9.60E+01	9.11E-02
BREOT-S35-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	1.23E+04	1.76E+04	NA	NA	NA	NA	2.86E-02	1.24E+03	3.55E+01	1.03E-01	1.35E+02	1.34E+01	1.59E+02	2.97E-02	9.60E+01	1.40E-01
BREOT-N36-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	8.37E+04	1.20E+05	NA	NA	NA	NA	2.86E-02	8.44E+03	2.42E+02	1.03E-01	1.35E+02	9.16E+01	1.59E+02	2.97E-02	9.60E+01	9.54E-01
BREOT-S36-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	6.31E+04	9.03E+04	NA	NA	NA	NA	2.86E-02	6.37E+03	1.82E+02	1.03E-01	1.35E+02	6.91E+01	1.59E+02	2.97E-02	9.60E+01	7.20E-01
BREOT-N37-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	1.37E+04	1.97E+04	NA	NA	NA	NA	2.86E-02	1.39E+03	3.97E+01	1.03E-01	1.35E+02	1.50E+01	1.59E+02	2.97E-02	9.60E+01	1.57E-01
BREOT-S37-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	8.05E+04	1.15E+05	NA	NA	NA	NA	2.86E-02	8.13E+03	2.33E+02	1.03E-01	1.35E+02	8.81E+01	1.59E+02	2.97E-02	9.60E+01	9.18E-01
BREOT-N38-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	7.28E+03	1.04E+04	NA	NA	NA	NA	2.86E-02	7.35E+02	2.10E+01	1.03E-01	1.35E+02	7.97E+00	1.59E+02	2.97E-02	9.60E+01	8.30E-02
BREOT-S38-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	4.63E+04	6.63E+04	NA	NA	NA	NA	2.86E-02	4.67E+03	1.34E+02	1.03E-01	1.35E+02	5.06E+01	1.59E+02	2.97E-02	9.60E+01	5.28E-01
BREOT-N39-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	8.57E+03	1.23E+04	NA	NA	NA	NA	2.86E-02	8.65E+02	2.48E+01	1.03E-01	1.35E+02	9.38E+00	1.59E+02	2.97E-02	9.60E+01	9.77E-02
BREOT-N40-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	9.22E+03	1.32E+04	NA	NA	NA	NA	2.86E-02	9.30E+02	2.66E+01	1.03E-01	1.35E+02	1.01E+01	1.59E+02	2.97E-02	9.60E+01	1.05E-01
BREOT-S40-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	8.61E+04	1.23E+05	NA	NA	NA	NA	2.86E-02	8.68E+03	2.49E+02	1.03E-01	1.35E+02	9.42E+01	1.59E+02	2.97E-02	9.60E+01	9.81E-01
BREOT-N41-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	4.84E+03	6.93E+03	NA	NA	NA	NA	2.86E-02	4.89E+02	1.40E+01	1.03E-01	1.35E+02	5.30E+00	1.59E+02	2.97E-02	9.60E+01	5.52E-02
BREOT-S41-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	9.20E+04	1.32E+05	NA	NA	NA	NA	2.86E-02	9.28E+03	2.66E+02	1.03E-01	1.35E+02	1.01E+02	1.59E+02	2.97E-02	9.60E+01	1.05E+00
BREOT-N42-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S42-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	1.05E+05	1.50E+05	NA	NA	NA	NA	2.86E-02	1.06E+04	3.02E+02	1.03E-01	1.35E+02	1.14E+02	1.59E+02	2.97E-02	9.60E+01	1.19E+00
BREOT-N43-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	6.14E+03	8.79E+03	NA	NA	NA	NA	2.86E-02	6.20E+02	1.78E+01	1.03E-01	1.35E+02	6.72E+00	1.59E+02	2.97E-02	9.60E+01	7.00E-02
BREOT-S43-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	9.75E+03	1.40E+04	NA	NA	NA	NA	2.86E-02	9.84E+02	2.82E+01	1.03E-01	1.35E+02	1.07E+01	1.59E+02	2.97E-02	9.60E+01	1.11E-01
BREOT-N44-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	1.36E+04	1.95E+04	NA	NA	NA	NA	2.86E-02	1.38E+03	3.94E+01	1.03E-01	1.35E+02	1.49E+01	1.59E+02	2.97E-02	9.60E+01	1.55E-01
BREOT-S44-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	1.15E+04	1.65E+04	NA	NA	NA	NA	2.86E-02	1.16E+03	3.33E+01	1.03E-01	1.35E+02	1.26E+01	1.59E+02	2.97E-02	9.60E+01	1.31E-01
BREOT-N45-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	9.59E+03	1.37E+04	NA	NA	NA	NA	2.86E-02	9.67E+02	2.77E+01	1.03E-01	1.35E+02	1.05E+01	1.59E+02	2.97E-02	9.60E+01	1.09E-01
BREOT-S45-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	6.52E+03	9.34E+03	NA	NA	NA	NA	2.86E-02	6.58E+02	1.88E+01	1.03E-01	1.35E+02	7.14E+00	1.59E+02	2.97E-02	9.60E+01	7.44E-02
BREOT-N46-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	6.79E+03	9.72E+03	NA	NA	NA	NA	2.86E-02	6.85E+02	1.96E+01	1.03E-01	1.35E+02	7.43E+00	1.59E+02	2.97E-02	9.60E+01	7.74E-02
BREOT-S46-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	7.96E+03	1.14E+04	NA	NA	NA	NA	2.86E-02	8.03E+02	2.30E+01	1.03E-01	1.35E+02	8.71E+00	1.59E+02	2.97E-02	9.60E+01	9.07E-02
BREOT-N47-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	8.45E+03	1.21E+04	NA	NA	NA	NA	2.86E-02	8.53E+02	2.44E+01	1.03E-01	1.35E+02	9.25E+00	1.59E+02	2.97E-02	9.60E+01	9.63E-02
BREOT-S47-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N48-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	5.53E+03	7.91E+03	NA	NA	NA	NA	2.86E-02	5.58E+02	1.60E+01	1.03E-01	1.35E+02	6.05E+00	1.59E+02	2.97E-02	9.60E+01	6.30E-02
BREOT-S48-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N49-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	1.00E+04	1.44E+04	NA	NA	NA	NA	2.86E-02	1.01E+03	2.90E+01	1.03E-01	1.35E+02	1.10E+01	1.59E+02	2.97E-02	9.60E+01	1.14E-01

TABLE C-2E: MANGANESE DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **18.41**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
White-Tailed Deer (Large Herbivorous Mammal - Terrestrial)																							
BREOT-S49-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S50-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N51-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	1.66E+04	2.37E+04	NA	NA	NA	NA	2.86E-02	1.67E+03	4.79E+01	1.03E-01	1.35E+02	1.82E+01	1.59E+02	2.97E-02	9.60E+01	1.89E-01
BREOT-S51-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N52-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S52-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N53-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	5.58E+03	7.99E+03	NA	NA	NA	NA	2.86E-02	5.63E+02	1.61E+01	1.03E-01	1.35E+02	6.11E+00	1.59E+02	2.97E-02	9.60E+01	6.36E-02
BREOT-S53-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N54-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	6.73E+03	9.63E+03	NA	NA	NA	NA	2.86E-02	6.79E+02	1.94E+01	1.03E-01	1.35E+02	7.37E+00	1.59E+02	2.97E-02	9.60E+01	7.67E-02
BREOT-S54-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N55-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	1.02E+04	1.46E+04	NA	NA	NA	NA	2.86E-02	1.03E+03	2.95E+01	1.03E-01	1.35E+02	1.12E+01	1.59E+02	2.97E-02	9.60E+01	1.17E-01
BREOT-S55-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N56-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	6.49E+03	9.30E+03	NA	NA	NA	NA	2.86E-02	6.55E+02	1.88E+01	1.03E-01	1.35E+02	7.11E+00	1.59E+02	2.97E-02	9.60E+01	7.40E-02
BREOT-N57-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	9.22E+03	1.32E+04	NA	NA	NA	NA	2.86E-02	9.31E+02	2.67E+01	1.03E-01	1.35E+02	1.01E+01	1.59E+02	2.97E-02	9.60E+01	1.05E-01
BREOT-S57-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	9.28E+03	1.33E+04	NA	NA	NA	NA	2.86E-02	9.36E+02	2.68E+01	1.03E-01	1.35E+02	1.02E+01	1.59E+02	2.97E-02	9.60E+01	1.06E-01
BREOT-N58-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	9.72E+03	1.39E+04	NA	NA	NA	NA	2.86E-02	9.81E+02	2.81E+01	1.03E-01	1.35E+02	1.06E+01	1.59E+02	2.97E-02	9.60E+01	1.11E-01
BREOT-S58-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	5.11E+04	7.32E+04	NA	NA	NA	NA	2.86E-02	5.16E+03	1.48E+02	1.03E-01	1.35E+02	5.60E+01	1.59E+02	2.97E-02	9.60E+01	5.83E-01
BREOT-N59-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	8.75E+03	1.25E+04	NA	NA	NA	NA	2.86E-02	8.83E+02	2.53E+01	1.03E-01	1.35E+02	9.58E+00	1.59E+02	2.97E-02	9.60E+01	9.98E-02
BREOT-N60-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	3.57E+03	5.11E+03	NA	NA	NA	NA	2.86E-02	3.60E+02	1.03E+01	1.03E-01	1.35E+02	3.91E+00	1.59E+02	2.97E-02	9.60E+01	4.07E-02
BREOT-S60-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	2.64E+04	3.78E+04	NA	NA	NA	NA	2.86E-02	2.66E+03	7.62E+01	1.03E-01	1.35E+02	2.89E+01	1.59E+02	2.97E-02	9.60E+01	3.01E-01
BREOT-S61-0 (0-6")	1.43E+00	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N62-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	9.21E+03	1.32E+04	NA	NA	NA	NA	2.86E-02	9.29E+02	2.66E+01	1.03E-01	1.35E+02	1.01E+01	1.59E+02	2.97E-02	9.60E+01	1.05E-01
BREOT-S62-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N63-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	1.13E+04	1.61E+04	NA	NA	NA	NA	2.86E-02	1.14E+03	3.26E+01	1.03E-01	1.35E+02	1.23E+01	1.59E+02	2.97E-02	9.60E+01	1.28E-01
BREOT-S63-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	1.28E+04	1.83E+04	NA	NA	NA	NA	2.86E-02	1.29E+03	3.69E+01	1.03E-01	1.35E+02	1.40E+01	1.59E+02	2.97E-02	9.60E+01	1.46E-01
BREOT-N64-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	4.27E+03	6.12E+03	NA	NA	NA	NA	2.86E-02	4.31E+02	1.24E+01	1.03E-01	1.35E+02	4.68E+00	1.59E+02	2.97E-02	9.60E+01	4.87E-02
BREOT-S64-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	1.51E+03	2.17E+03	NA	NA	NA	NA	2.86E-02	1.53E+02	4.37E+00	1.03E-01	1.35E+02	1.66E+00	1.59E+02	2.97E-02	9.60E+01	1.73E-02
BREOT-N66-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	9.39E+03	1.34E+04	NA	NA	NA	NA	2.86E-02	9.47E+02	2.71E+01	1.03E-01	1.35E+02	1.03E+01	1.59E+02	2.97E-02	9.60E+01	1.07E-01
BREOT-S66-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	1.17E+04	1.68E+04	NA	NA	NA	NA	2.86E-02	1.18E+03	3.38E+01	1.03E-01	1.35E+02	1.28E+01	1.59E+02	2.97E-02	9.60E+01	1.34E-01
BREOT-N67-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	7.92E+04	1.13E+05	NA	NA	NA	NA	2.86E-02	7.99E+03	2.29E+02	1.03E-01	1.35E+02	8.66E+01	1.59E+02	2.97E-02	9.60E+01	9.03E-01
BREOT-S67-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	5.84E+03	8.37E+03	NA	NA	NA	NA	2.86E-02	5.90E+02	1.69E+01	1.03E-01	1.35E+02	6.40E+00	1.59E+02	2.97E-02	9.60E+01	6.66E-02
Outside Tailings																						**Maximum HQ (At Edge of Tailings)**	**7.33E+01**
BREOT-S0+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	9.49E+03	1.36E+04	NA	NA	NA	NA	2.86E-02	9.57E+02	2.74E+01	1.03E-01	1.35E+02	1.04E+01	1.59E+02	2.97E-02	9.60E+01	1.08E-01
BREOT-S1+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	1.37E+04	1.96E+04	NA	NA	NA	NA	2.86E-02	1.38E+03	3.96E+01	1.03E-01	1.35E+02	1.50E+01	1.59E+02	2.97E-02	9.60E+01	1.56E-01
BREOT-S2+95 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	8.86E+03	1.27E+04	NA	NA	NA	NA	2.86E-02	8.94E+02	2.56E+01	1.03E-01	1.35E+02	9.69E+00	1.59E+02	2.97E-02	9.60E+01	1.01E-01
BREOT-S3+6 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	5.50E+03	7.87E+03	NA	NA	NA	NA	2.86E-02	5.55E+02	1.59E+01	1.03E-01	1.35E+02	6.02E+00	1.59E+02	2.97E-02	9.60E+01	6.27E-02
BREOT-S4+10 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	1.06E+04	1.51E+04	NA	NA	NA	NA	2.86E-02	1.07E+03	3.06E+01	1.03E-01	1.35E+02	1.16E+01	1.59E+02	2.97E-02	9.60E+01	1.21E-01
BREOT-S6+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	8.36E+03	1.20E+04	NA	NA	NA	NA	2.86E-02	8.43E+02	2.41E+01	1.03E-01	1.35E+02	9.15E+00	1.59E+02	2.97E-02	9.60E+01	9.53E-02
BREOT-S8+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	8.55E+03	1.22E+04	NA	NA	NA	NA	2.86E-02	8.63E+02	2.47E+01	1.03E-01	1.35E+02	9.36E+00	1.59E+02	2.97E-02	9.60E+01	9.75E-02
BREOT-N10+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	7.79E+03	1.12E+04	NA	NA	NA	NA	2.86E-02	7.87E+02	2.25E+01	1.03E-01	1.35E+02	8.53E+00	1.59E+02	2.97E-02	9.60E+01	8.89E-02
BREOT-N11+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	8.89E+03	1.27E+04	NA	NA	NA	NA	2.86E-02	8.97E+02	2.57E+01	1.03E-01	1.35E+02	9.73E+00	1.59E+02	2.97E-02	9.60E+01	1.01E-01
BREOT-N12+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	9.72E+03	1.39E+04	NA	NA	NA	NA	2.86E-02	9.81E+02	2.81E+01	1.03E-01	1.35E+02	1.06E+01	1.59E+02	2.97E-02	9.60E+01	1.11E-01
BREOT-S12+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	3.14E+04	4.49E+04	NA	NA	NA	NA	2.86E-02	3.16E+03	9.06E+01	1.03E-01	1.35E+02	3.43E+01	1.59E+02	2.97E-02	9.60E+01	3.58E-01
BREOT-S12+60 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	7.42E+03	1.06E+04	NA	NA	NA	NA	2.86E-02	7.49E+02	2.14E+01	1.03E-01	1.35E+02	8.12E+00	1.59E+02	2.97E-02	9.60E+01	8.46E-02
BREOT-N13+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	1.30E+04	1.86E+04	NA	NA	NA	NA	2.86E-02	1.31E+03	3.76E+01	1.03E-01	1.35E+02	1.42E+01	1.59E+02	2.97E-02	9.60E+01	1.48E-01
BREOT-S13+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	2.20E+04	3.15E+04	NA	NA	NA	NA	2.86E-02	2.22E+03	6.36E+01	1.03E-01	1.35E+02	2.41E+01	1.59E+02	2.97E-02	9.60E+01	2.51E-01
BREOT-S13+65 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	1.18E+04	1.69E+04	NA	NA	NA	NA	2.86E-02	1.19E+03	3.41E+01	1.03E-01	1.35E+02	1.29E+01	1.59E+02	2.97E-02	9.60E+01	1.35E-01
BREOT-N14+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	1.52E+04	2.18E+04	NA	NA	NA	NA	2.86E-02	1.54E+03	4.41E+01	1.03E-01	1.35E+02	1.67E+01	1.59E+02	2.97E-02	9.60E+01	1.74E-01
BREOT-S14+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	3.04E+04	4.35E+04	NA	NA	NA	NA	2.86E-02	3.07E+03	8.79E+01	1.03E-01	1.35E+02	3.33E+01	1.59E+02	2.97E-02	9.60E+01	3.47E-01
BREOT-S14+59 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	3.35E+03	4.79E+03	NA	NA	NA	NA	2.86E-02	3.38E+02	9.67E+00	1.03E-01	1.35E+02	3.66E+00	1.59E+02	2.97E-02	9.60E+01	3.81E-02
BREOT-N15+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	5.02E+04	7.19E+04	NA	NA	NA	NA	2.86E-02	5.07E+03	1.45E+02	1.03E-01	1.35E+02	5.49E+01	1.59E+02	2.97E-02	9.60E+01	5.72E-01
BREOT-N15+50 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	1.26E+04	1.80E+04	NA	NA	NA	NA	2.86E-02	1.27E+03	3.64E+01	1.03E-01	1.35E+02	1.38E+01	1.59E+02	2.97E-02	9.60E+01	1.44E-01
BREOT-S16+20 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	2.70E+04	3.87E+04	NA	NA	NA	NA	2.86E-02	2.73E+03	7.80E+01	1.03E-01	1.35E+02	2.96E+01	1.59E+02	2.97E-02	9.60E+01	3.08E-01
BREOT-S16+75 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	5.93E+03	8.48E+03	NA	NA	NA	NA	2.86E-02	5.98E+02	1.71E+01	1.03E-01	1.35E+02	6.49E+00	1.59E+02	2.97E-02	9.60E+01	6.76E-02
BREOT-N17+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	1.42E+04	2.04E+04	NA	NA	NA	NA	2.86E-02	1.43E+03	4.11E+01	1.03E-01	1.35E+02	1.56E+01	1.59E+02	2.97E-02	9.60E+01	1.62E-01

TABLE C-2E: MANGANESE DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 18.41

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
White-Tailed Deer (Large Herbivorous Mammal - Terrestrial)																							
BREOT-S18+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	3.13E+03	4.48E+03	NA	NA	NA	NA	2.86E-02	3.16E+02	9.05E+00	1.03E-01	1.35E+02	3.43E+00	1.59E+02	2.97E-02	9.60E+01	3.57E-02
BREOT-N19+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	7.15E+03	1.02E+04	NA	NA	NA	NA	2.86E-02	7.22E+02	2.07E+01	1.03E-01	1.35E+02	7.83E+00	1.59E+02	2.97E-02	9.60E+01	8.15E-02
BREOT-S19+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	4.71E+06	6.75E+06	NA	NA	NA	NA	2.86E-02	4.75E+05	1.36E+04	1.03E-01	1.35E+02	5.16E+03	1.59E+02	2.97E-02	9.60E+01	5.37E+01
BREOT-S19+85 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	7.21E+03	1.03E+04	NA	NA	NA	NA	2.86E-02	7.28E+02	2.08E+01	1.03E-01	1.35E+02	7.90E+00	1.59E+02	2.97E-02	9.60E+01	8.23E-02
BREOT-N20+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	9.68E+03	1.39E+04	NA	NA	NA	NA	2.86E-02	9.77E+02	2.80E+01	1.03E-01	1.35E+02	1.06E+01	1.59E+02	2.97E-02	9.60E+01	1.10E-01
BREOT-S20+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	6.70E+06	9.60E+06	NA	NA	NA	NA	2.86E-02	6.77E+05	1.94E+04	1.03E-01	1.35E+02	7.34E+03	1.59E+02	2.97E-02	9.60E+01	7.64E+01
BREOT-S20+75 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	7.56E+03	1.08E+04	NA	NA	NA	NA	2.86E-02	7.63E+02	2.18E+01	1.03E-01	1.35E+02	8.27E+00	1.59E+02	2.97E-02	9.60E+01	8.62E-02
BREOT-N21+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S21+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	3.32E+06	4.76E+06	NA	NA	NA	NA	2.86E-02	3.35E+05	9.60E+03	1.03E-01	1.35E+02	3.64E+03	1.59E+02	2.97E-02	9.60E+01	3.79E+01
BREOT-N22+150 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	8.94E+03	1.28E+04	NA	NA	NA	NA	2.86E-02	9.02E+02	2.58E+01	1.03E-01	1.35E+02	9.78E+00	1.59E+02	2.97E-02	9.60E+01	1.02E-01
BREOT-N22+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	2.56E+04	3.66E+04	NA	NA	NA	NA	2.86E-02	2.58E+03	7.39E+01	1.03E-01	1.35E+02	2.80E+01	1.59E+02	2.97E-02	9.60E+01	2.92E-01
BREOT-S22+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	1.64E+04	2.34E+04	NA	NA	NA	NA	2.86E-02	1.65E+03	4.73E+01	1.03E-01	1.35E+02	1.79E+01	1.59E+02	2.97E-02	9.60E+01	1.87E-01
BREOT-N23+115 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	6.92E+03	9.90E+03	NA	NA	NA	NA	2.86E-02	6.98E+02	2.00E+01	1.03E-01	1.35E+02	7.57E+00	1.59E+02	2.97E-02	9.60E+01	7.89E-02
BREOT-N23+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	4.74E+04	6.79E+04	NA	NA	NA	NA	2.86E-02	4.78E+03	1.37E+02	1.03E-01	1.35E+02	5.19E+01	1.59E+02	2.97E-02	9.60E+01	5.41E-01
BREOT-S23+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	1.23E+04	1.77E+04	NA	NA	NA	NA	2.86E-02	1.24E+03	3.56E+01	1.03E-01	1.35E+02	1.35E+01	1.59E+02	2.97E-02	9.60E+01	1.41E-01
BREOT-S23+37.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	9.65E+03	1.38E+04	NA	NA	NA	NA	2.86E-02	9.74E+02	2.79E+01	1.03E-01	1.35E+02	1.06E+01	1.59E+02	2.97E-02	9.60E+01	1.10E-01
BREOT-N24+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	9.04E+04	1.29E+05	NA	NA	NA	NA	2.86E-02	9.13E+03	2.61E+02	1.03E-01	1.35E+02	9.90E+01	1.59E+02	2.97E-02	9.60E+01	1.03E+00
BREOT-N24+75 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	9.86E+03	1.41E+04	NA	NA	NA	NA	2.86E-02	9.95E+02	2.85E+01	1.03E-01	1.35E+02	1.08E+01	1.59E+02	2.97E-02	9.60E+01	1.12E-01
BREOT-S24+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	1.82E+04	2.61E+04	NA	NA	NA	NA	2.86E-02	1.84E+03	5.26E+01	1.03E-01	1.35E+02	1.99E+01	1.59E+02	2.97E-02	9.60E+01	2.08E-01
BREOT-N25+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	3.28E+03	4.69E+03	NA	NA	NA	NA	2.86E-02	3.31E+02	9.47E+00	1.03E-01	1.35E+02	3.59E+00	1.59E+02	2.97E-02	9.60E+01	3.74E-02
BREOT-S25+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	1.06E+04	1.52E+04	NA	NA	NA	NA	2.86E-02	1.07E+03	3.07E+01	1.03E-01	1.35E+02	1.16E+01	1.59E+02	2.97E-02	9.60E+01	1.21E-01
BREOT-S25+40 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	7.29E+02	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S26+37 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	8.31E+03	1.19E+04	NA	NA	NA	NA	2.86E-02	8.39E+02	2.40E+01	1.03E-01	1.35E+02	9.10E+00	1.59E+02	2.97E-02	9.60E+01	9.48E-02
BREOT-N27+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	7.43E+03	1.06E+04	NA	NA	NA	NA	2.86E-02	7.50E+02	2.15E+01	1.03E-01	1.35E+02	8.13E+00	1.59E+02	2.97E-02	9.60E+01	8.47E-02
BREOT-S27+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	7.69E+03	1.10E+04	NA	NA	NA	NA	2.86E-02	7.76E+02	2.22E+01	1.03E-01	1.35E+02	8.42E+00	1.59E+02	2.97E-02	9.60E+01	8.77E-02
BREOT-N28+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	5.97E+03	8.55E+03	NA	NA	NA	NA	2.86E-02	6.03E+02	1.73E+01	1.03E-01	1.35E+02	6.54E+00	1.59E+02	2.97E-02	9.60E+01	6.81E-02
BREOT-S28+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	4.19E+03	5.99E+03	NA	NA	NA	NA	2.86E-02	4.22E+02	1.21E+01	1.03E-01	1.35E+02	4.58E+00	1.59E+02	2.97E-02	9.60E+01	4.77E-02
BREOT-N29+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	1.43E+04	2.05E+04	NA	NA	NA	NA	2.86E-02	1.44E+03	4.14E+01	1.03E-01	1.35E+02	1.57E+01	1.59E+02	2.97E-02	9.60E+01	1.63E-01
BREOT-S29+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	8.85E+03	1.27E+04	NA	NA	NA	NA	2.86E-02	8.94E+02	2.56E+01	1.03E-01	1.35E+02	9.69E+00	1.59E+02	2.97E-02	9.60E+01	1.01E-01
BREOT-N30+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	1.12E+04	1.60E+04	NA	NA	NA	NA	2.86E-02	1.13E+03	3.23E+01	1.03E-01	1.35E+02	1.22E+01	1.59E+02	2.97E-02	9.60E+01	1.28E-01
BREOT-S30+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	8.71E+03	1.25E+04	NA	NA	NA	NA	2.86E-02	8.79E+02	2.52E+01	1.03E-01	1.35E+02	9.53E+00	1.59E+02	2.97E-02	9.60E+01	9.93E-02
BREOT-N31+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	6.55E+04	9.37E+04	NA	NA	NA	NA	2.86E-02	6.61E+03	1.89E+02	1.03E-01	1.35E+02	7.16E+01	1.59E+02	2.97E-02	9.60E+01	7.46E-01
BREOT-N31+75 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	8.20E+03	1.17E+04	NA	NA	NA	NA	2.86E-02	8.28E+02	2.37E+01	1.03E-01	1.35E+02	8.98E+00	1.59E+02	2.97E-02	9.60E+01	9.36E-02
BREOT-S31+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	6.34E+03	9.07E+03	NA	NA	NA	NA	2.86E-02	6.40E+02	1.83E+01	1.03E-01	1.35E+02	6.94E+00	1.59E+02	2.97E-02	9.60E+01	7.23E-02
BREOT-N32+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	1.16E+04	1.66E+04	NA	NA	NA	NA	2.86E-02	1.17E+03	3.35E+01	1.03E-01	1.35E+02	1.27E+01	1.59E+02	2.97E-02	9.60E+01	1.32E-01
BREOT-S32+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	1.64E+04	2.35E+04	NA	NA	NA	NA	2.86E-02	1.66E+03	4.74E+01	1.03E-01	1.35E+02	1.80E+01	1.59E+02	2.97E-02	9.60E+01	1.87E-01
BREOT-S32+300 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	2.46E+04	3.53E+04	NA	NA	NA	NA	2.86E-02	2.49E+03	7.12E+01	1.03E-01	1.35E+02	2.70E+01	1.59E+02	2.97E-02	9.60E+01	2.81E-01
BREOT-N33+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	8.52E+03	1.22E+04	NA	NA	NA	NA	2.86E-02	8.60E+02	2.46E+01	1.03E-01	1.35E+02	9.32E+00	1.59E+02	2.97E-02	9.60E+01	9.71E-02
BREOT-S33+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	3.95E+04	5.66E+04	NA	NA	NA	NA	2.86E-02	3.99E+03	1.14E+02	1.03E-01	1.35E+02	4.33E+01	1.59E+02	2.97E-02	9.60E+01	4.51E-01
BREOT-N34+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	7.56E+03	1.08E+04	NA	NA	NA	NA	2.86E-02	7.63E+02	2.18E+01	1.03E-01	1.35E+02	8.27E+00	1.59E+02	2.97E-02	9.60E+01	8.62E-02
BREOT-S34+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	1.22E+04	1.74E+04	NA	NA	NA	NA	2.86E-02	1.23E+03	3.51E+01	1.03E-01	1.35E+02	1.33E+01	1.59E+02	2.97E-02	9.60E+01	1.39E-01
BREOT-N35+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	9.00E+03	1.29E+04	NA	NA	NA	NA	2.86E-02	9.08E+02	2.60E+01	1.03E-01	1.35E+02	9.85E+00	1.59E+02	2.97E-02	9.60E+01	1.03E-01
BREOT-S35+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	4.13E+04	5.91E+04	NA	NA	NA	NA	2.86E-02	4.17E+03	1.19E+02	1.03E-01	1.35E+02	4.52E+01	1.59E+02	2.97E-02	9.60E+01	4.71E-01
BREOT-N36+100 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	9.14E+03	1.31E+04	NA	NA	NA	NA	2.86E-02	9.22E+02	2.64E+01	1.03E-01	1.35E+02	1.00E+01	1.59E+02	2.97E-02	9.60E+01	1.04E-01
BREOT-N36+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	7.47E+04	1.07E+05	NA	NA	NA	NA	2.86E-02	7.54E+03	2.16E+02	1.03E-01	1.35E+02	8.17E+01	1.59E+02	2.97E-02	9.60E+01	8.52E-01
BREOT-S36+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	3.79E+04	5.42E+04	NA	NA	NA	NA	2.86E-02	3.82E+03	1.09E+02	1.03E-01	1.35E+02	4.15E+01	1.59E+02	2.97E-02	9.60E+01	4.32E-01
BREOT-N37+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	3.70E+03	5.29E+03	NA	NA	NA	NA	2.86E-02	3.73E+02	1.07E+01	1.03E-01	1.35E+02	4.04E+00	1.59E+02	2.97E-02	9.60E+01	4.21E-02
BREOT-S37+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	5.10E+04	7.30E+04	NA	NA	NA	NA	2.86E-02	5.15E+03	1.47E+02	1.03E-01	1.35E+02	5.58E+01	1.59E+02	2.97E-02	9.60E+01	5.81E-01
BREOT-N38+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	6.44E+03	9.22E+03	NA	NA	NA	NA	2.86E-02	6.50E+02	1.86E+01	1.03E-01	1.35E+02	7.05E+00	1.59E+02	2.97E-02	9.60E+01	7.34E-02
BREOT-S38+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	4.87E+04	6.97E+04	NA	NA	NA	NA	2.86E-02	4.92E+03	1.41E+02	1.03E-01	1.35E+02	5.33E+01	1.59E+02	2.97E-02	9.60E+01	5.55E-01
BREOT-N39+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	5.29E+03	7.58E+03	NA	NA	NA	NA	2.86E-02	5.34E+02	1.53E+01	1.03E-01	1.35E+02	5.79E+00	1.59E+02	2.97E-02	9.60E+01	6.04E-02
BREOT-S39+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	3.71E+04	5.31E+04	NA	NA	NA	NA	2.86E-02	3.74E+03	1.07E+02	1.03E-01	1.35E+02	4.06E+01	1.59E+02	2.97E-02	9.60E+01	4.23E-01
BREOT-N40+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	5.62E+03	8.04E+03	NA	NA	NA	NA	2.86E-02	5.67E+02	1.62E+01	1.03E-01	1.35E+02	6.15E+00	1.59E+02	2.97E-02	9.60E+01	6.41E-02
BREOT-S40+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	3.50E+04	5.01E+04	NA	NA	NA	NA	2.86E-02	3.53E+03	1.01E+02	1.03E-01	1.35E+02	3.83E+01	1.59E+02	2.97E-02	9.60E+01	3.99E-01
BREOT-N41+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	3.74E+03	5.36E+03	NA	NA	NA	NA	2.86E-02	3.78E+02	1.08E+01	1.03E-01	1.35E+02	4.10E+00	1.59E+02	2.97E-02	9.60E+01	4.27E-02

TABLE C-2E: MANGANESE DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **18.41**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
White-Tailed Deer (Large Herbivorous Mammal - Terrestrial)																							
BREOT-S41+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	2.23E+04	3.20E+04	NA	NA	NA	NA	2.86E-02	2.26E+03	6.46E+01	1.03E-01	1.35E+02	2.45E+01	1.59E+02	2.97E-02	9.60E+01	2.55E-01
BREOT-N42+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S42+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	1.95E+04	2.79E+04	NA	NA	NA	NA	2.86E-02	1.97E+03	5.64E+01	1.03E-01	1.35E+02	2.13E+01	1.59E+02	2.97E-02	9.60E+01	2.22E-01
BREOT-N43+12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	7.37E+03	1.06E+04	NA	NA	NA	NA	2.86E-02	7.44E+02	2.13E+01	1.03E-01	1.35E+02	8.07E+00	1.59E+02	2.97E-02	9.60E+01	8.41E-02
BREOT-N43+40 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	7.43E+03	1.06E+04	NA	NA	NA	NA	2.86E-02	7.50E+02	2.15E+01	1.03E-01	1.35E+02	8.13E+00	1.59E+02	2.97E-02	9.60E+01	8.47E-02
BREOT-S43+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	9.41E+03	1.35E+04	NA	NA	NA	NA	2.86E-02	9.50E+02	2.72E+01	1.03E-01	1.35E+02	1.03E+01	1.59E+02	2.97E-02	9.60E+01	1.07E-01
BREOT-N44+55 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	6.58E+03	9.43E+03	NA	NA	NA	NA	2.86E-02	6.64E+02	1.90E+01	1.03E-01	1.35E+02	7.21E+00	1.59E+02	2.97E-02	9.60E+01	7.51E-02
BREOT-S44+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	1.25E+04	1.79E+04	NA	NA	NA	NA	2.86E-02	1.26E+03	3.60E+01	1.03E-01	1.35E+02	1.36E+01	1.59E+02	2.97E-02	9.60E+01	1.42E-01
BREOT-N45+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	6.44E+03	9.22E+03	NA	NA	NA	NA	2.86E-02	6.50E+02	1.86E+01	1.03E-01	1.35E+02	7.05E+00	1.59E+02	2.97E-02	9.60E+01	7.35E-02
BREOT-S45+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	3.01E+03	4.30E+03	NA	NA	NA	NA	2.86E-02	3.03E+02	8.68E+00	1.03E-01	1.35E+02	3.29E+00	1.59E+02	2.97E-02	9.60E+01	3.43E-02
BREOT-N46+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	9.58E+03	1.37E+04	NA	NA	NA	NA	2.86E-02	9.67E+02	2.77E+01	1.03E-01	1.35E+02	1.05E+01	1.59E+02	2.97E-02	9.60E+01	1.09E-01
BREOT-S46+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N47+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	7.72E+03	1.11E+04	NA	NA	NA	NA	2.86E-02	7.79E+02	2.23E+01	1.03E-01	1.35E+02	8.45E+00	1.59E+02	2.97E-02	9.60E+01	8.80E-02
BREOT-S47+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N48+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	6.12E+03	8.76E+03	NA	NA	NA	NA	2.86E-02	6.17E+02	1.77E+01	1.03E-01	1.35E+02	6.70E+00	1.59E+02	2.97E-02	9.60E+01	6.98E-02
BREOT-S48+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N49+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	9.17E+03	1.31E+04	NA	NA	NA	NA	2.86E-02	9.26E+02	2.65E+01	1.03E-01	1.35E+02	1.00E+01	1.59E+02	2.97E-02	9.60E+01	1.05E-01
BREOT-S49+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N51+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	7.77E+03	1.11E+04	NA	NA	NA	NA	2.86E-02	7.84E+02	2.24E+01	1.03E-01	1.35E+02	8.50E+00	1.59E+02	2.97E-02	9.60E+01	8.86E-02
BREOT-S51+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N52+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	3.21E+03	4.60E+03	NA	NA	NA	NA	2.86E-02	3.24E+02	9.28E+00	1.03E-01	1.35E+02	3.51E+00	1.59E+02	2.97E-02	9.60E+01	3.66E-02
BREOT-S52+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N53+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S53+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S54+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N55+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	7.07E+03	1.01E+04	NA	NA	NA	NA	2.86E-02	7.14E+02	2.04E+01	1.03E-01	1.35E+02	7.74E+00	1.59E+02	2.97E-02	9.60E+01	8.06E-02
BREOT-S55+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N56+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	6.92E+03	9.91E+03	NA	NA	NA	NA	2.86E-02	6.99E+02	2.00E+01	1.03E-01	1.35E+02	7.58E+00	1.59E+02	2.97E-02	9.60E+01	7.89E-02
BREOT-S56+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N57+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	7.29E+03	1.04E+04	NA	NA	NA	NA	2.86E-02	7.36E+02	2.11E+01	1.03E-01	1.35E+02	7.98E+00	1.59E+02	2.97E-02	9.60E+01	8.32E-02
BREOT-S57+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	2.42E+04	3.47E+04	NA	NA	NA	NA	2.86E-02	2.45E+03	7.00E+01	1.03E-01	1.35E+02	2.65E+01	1.59E+02	2.97E-02	9.60E+01	2.76E-01
BREOT-N58+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	9.64E+03	1.38E+04	NA	NA	NA	NA	2.86E-02	9.73E+02	2.79E+01	1.03E-01	1.35E+02	1.06E+01	1.59E+02	2.97E-02	9.60E+01	1.10E-01
BREOT-S58+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N59+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	1.52E+04	2.18E+04	NA	NA	NA	NA	2.86E-02	1.54E+03	4.40E+01	1.03E-01	1.35E+02	1.66E+01	1.59E+02	2.97E-02	9.60E+01	1.73E-01
BREOT-N60+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	5.19E+03	7.43E+03	NA	NA	NA	NA	2.86E-02	5.24E+02	1.50E+01	1.03E-01	1.35E+02	5.68E+00	1.59E+02	2.97E-02	9.60E+01	5.92E-02
BREOT-S60+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S61+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N62+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	8.63E+03	1.24E+04	NA	NA	NA	NA	2.86E-02	8.71E+02	2.49E+01	1.03E-01	1.35E+02	9.44E+00	1.59E+02	2.97E-02	9.60E+01	9.84E-02
BREOT-S62+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N63+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	1.36E+04	1.94E+04	NA	NA	NA	NA	2.86E-02	1.37E+03	3.92E+01	1.03E-01	1.35E+02	1.48E+01	1.59E+02	2.97E-02	9.60E+01	1.55E-01
BREOT-S63+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N64+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	4.76E+03	6.81E+03	NA	NA	NA	NA	2.86E-02	4.80E+02	1.37E+01	1.03E-01	1.35E+02	5.21E+00	1.59E+02	2.97E-02	9.60E+01	5.43E-02
BREOT-S64+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	1.88E+03	2.69E+03	NA	NA	NA	NA	2.86E-02	1.90E+02	5.43E+00	1.03E-01	1.35E+02	2.06E+00	1.59E+02	2.97E-02	9.60E+01	2.14E-02
BREOT-S65+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N66+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	7.39E+03	1.06E+04	NA	NA	NA	NA	2.86E-02	7.46E+02	2.13E+01	1.03E-01	1.35E+02	8.09E+00	1.59E+02	2.97E-02	9.60E+01	8.42E-02
BREOT-S66+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N67+125 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	3.82E+03	5.48E+03	NA	NA	NA	NA	2.86E-02	3.86E+02	1.11E+01	1.03E-01	1.35E+02	4.19E+00	1.59E+02	2.97E-02	9.60E+01	4.36E-02
BREOT-S67+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N67+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	8.97E+03	1.28E+04	NA	NA	NA	NA	2.86E-02	9.05E+02	2.59E+01	1.03E-01	1.35E+02	9.81E+00	1.59E+02	2.97E-02	9.60E+01	1.02E-01
																						Maximum HQ (Outside Tailings)	**7.64E+01**

TABLE C-2E: MANGANESE DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **18.41**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Red Fox (Carnivorous Mammal - Terrestrial)																							
Reference Sites																							
ACBG-1 (0-6")	1.72E-01	1.72E-01	5.93E-02	1.75E+01	3.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.95E+02	1.42E+00	1.36E-02	4.54E+00	1.32E-02	1.59E+02	2.97E-02	1.18E+02	1.13E-04
ACBG-2 (0-6")	1.72E-01	1.72E-01	5.93E-02	5.92E+01	1.02E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	9.97E+02	4.79E+00	1.36E-02	4.54E+00	4.48E-02	1.59E+02	2.97E-02	1.18E+02	3.81E-04
UBRBG-202 (0-6")	1.72E-01	1.72E-01	5.93E-02	5.35E+01	9.17E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	9.01E+02	4.33E+00	1.36E-02	4.54E+00	4.05E-02	1.59E+02	2.97E-02	1.18E+02	3.44E-04
UBRBG-204 (0-6")	1.72E-01	1.72E-01	5.93E-02	4.12E+01	7.06E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	6.94E+02	3.33E+00	1.36E-02	4.54E+00	3.12E-02	1.59E+02	2.97E-02	1.18E+02	2.65E-04
Inside Tailings																						**Minimum HQ (Reference Sites)**	**1.13E-04**
BREOT-S6-12.5 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S2-12.5 (0-6")	1.72E-01	1.72E-01	2.80E-02	1.10E+02	1.88E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.91E+03	1.88E+01	1.36E-02	4.54E+00	1.13E-01	1.59E+02	2.97E-02	1.18E+02	9.58E-04
BREOT-S0-12.5 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S1-12.5 (0-6")	1.72E-01	1.72E-01	2.80E-02	1.54E+01	2.65E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.52E+02	2.65E+00	1.36E-02	4.54E+00	1.59E-02	1.59E+02	2.97E-02	1.18E+02	1.35E-04
BREOT-S7-25 (0-6")	1.72E-01	1.72E-01	2.80E-02	3.85E+01	6.60E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.38E+03	6.61E+00	1.36E-02	4.54E+00	3.96E-02	1.59E+02	2.97E-02	1.18E+02	3.37E-04
BREOT-S8-12.5 (0-6")	1.72E-01	1.72E-01	2.80E-02	1.75E+01	3.01E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	6.26E+02	3.01E+00	1.36E-02	4.54E+00	1.80E-02	1.59E+02	2.97E-02	1.18E+02	1.53E-04
BREOT-S9-12.5 (0-6")	1.72E-01	1.72E-01	2.80E-02	2.20E+01	3.77E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	7.85E+02	3.77E+00	1.36E-02	4.54E+00	2.26E-02	1.59E+02	2.97E-02	1.18E+02	1.92E-04
BREOT-N10-12.5 (0-6")	1.72E-01	1.72E-01	2.80E-02	9.98E+01	1.71E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.57E+03	1.71E+01	1.36E-02	4.54E+00	1.03E-01	1.59E+02	2.97E-02	1.18E+02	8.73E-04
BREOT-N11-12.5 (0-6")	1.72E-01	1.72E-01	2.80E-02	1.38E+01	2.37E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.94E+02	2.37E+00	1.36E-02	4.54E+00	1.42E-02	1.59E+02	2.97E-02	1.18E+02	1.21E-04
BREOT-N11-125 (0-6")	1.72E-01	1.72E-01	2.80E-02	8.93E+00	1.53E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.19E+02	1.53E+00	1.36E-02	4.54E+00	9.19E-03	1.59E+02	2.97E-02	1.18E+02	7.81E-05
BREOT-S11-12 (0-6")	1.72E-01	1.72E-01	2.80E-02	9.24E+01	1.59E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.30E+03	1.59E+01	1.36E-02	4.54E+00	9.51E-02	1.59E+02	2.97E-02	1.18E+02	8.08E-04
BREOT-S11+63 (0-6")	1.72E-01	1.72E-01	2.80E-02	1.05E+01	1.81E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.76E+02	1.81E+00	1.36E-02	4.54E+00	1.08E-02	1.59E+02	2.97E-02	1.18E+02	9.22E-05
UBDT-TP-6 (0-2")	1.72E-01	1.72E-01	2.80E-02	1.97E+02	3.39E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	7.05E+03	3.39E+01	1.36E-02	4.54E+00	2.03E-01	1.59E+02	2.97E-02	1.18E+02	1.73E-03
UBDT-TP-6 (2-12")	1.72E-01	1.72E-01	2.80E-02	1.54E+02	2.64E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.49E+03	2.64E+01	1.36E-02	4.54E+00	1.58E-01	1.59E+02	2.97E-02	1.18E+02	1.34E-03
UBDT-TP-6 (12-24")	1.72E-01	1.72E-01	2.80E-02	2.04E+02	3.49E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	7.27E+03	3.49E+01	1.36E-02	4.54E+00	2.09E-01	1.59E+02	2.97E-02	1.18E+02	1.78E-03
UBDT-TP-6 (24-36")	1.72E-01	1.72E-01	2.80E-02	7.85E+01	1.35E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.81E+03	1.35E+01	1.36E-02	4.54E+00	8.08E-02	1.59E+02	2.97E-02	1.18E+02	6.87E-04
UBDT-TP-6 (36-48")	1.72E-01	1.72E-01	2.80E-02	2.15E+02	3.69E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	7.68E+03	3.69E+01	1.36E-02	4.54E+00	2.21E-01	1.59E+02	2.97E-02	1.18E+02	1.88E-03
UBDT-TP-6 (48-60")	1.72E-01	1.72E-01	2.80E-02	1.31E+02	2.24E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.66E+03	2.24E+01	1.36E-02	4.54E+00	1.34E-01	1.59E+02	2.97E-02	1.18E+02	1.14E-03
BREOT-N12-12.5 (0-6")	1.72E-01	1.72E-01	2.80E-02	6.28E+01	1.08E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.24E+03	1.08E+01	1.36E-02	4.54E+00	6.46E-02	1.59E+02	2.97E-02	1.18E+02	5.49E-04
BREOT-S12-12.5 (0-6")	1.72E-01	1.72E-01	2.80E-02	5.26E+01	9.03E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.88E+03	9.03E+00	1.36E-02	4.54E+00	5.42E-02	1.59E+02	2.97E-02	1.18E+02	4.60E-04
BREOT-S13-12.5 (0-6")	1.72E-01	1.72E-01	2.80E-02	7.31E+01	1.25E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.61E+03	1.25E+01	1.36E-02	4.54E+00	7.52E-02	1.59E+02	2.97E-02	1.18E+02	6.39E-04
BREOT-S14-12.5 (0-6")	1.72E-01	1.72E-01	2.80E-02	3.78E+01	6.49E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.35E+03	6.49E+00	1.36E-02	4.54E+00	3.89E-02	1.59E+02	2.97E-02	1.18E+02	3.31E-04
BREOT-N15-12.5 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S15-12.5 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N16-12.5 (0-6")	1.72E-01	1.72E-01	2.80E-02	6.04E+01	1.04E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.16E+03	1.04E+01	1.36E-02	4.54E+00	6.22E-02	1.59E+02	2.97E-02	1.18E+02	5.28E-04
BREOT-N16-25 (0-6")	1.72E-01	1.72E-01	2.80E-02	3.20E+01	5.49E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.14E+03	5.49E+00	1.36E-02	4.54E+00	3.29E-02	1.59E+02	2.97E-02	1.18E+02	2.80E-04
BREOT-S16-12.5 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N17-12.5 (0-6")	1.72E-01	1.72E-01	2.80E-02	1.69E+01	2.89E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	6.03E+02	2.89E+00	1.36E-02	4.54E+00	1.74E-02	1.59E+02	2.97E-02	1.18E+02	1.48E-04
BREOT-S17-12.5 (0-6")	1.72E-01	1.72E-01	2.80E-02	1.08E+01	1.85E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.85E+02	1.85E+00	1.36E-02	4.54E+00	1.11E-02	1.59E+02	2.97E-02	1.18E+02	9.42E-05
BREOT-S17-25 (0-6")	1.72E-01	1.72E-01	2.80E-02	2.77E+01	4.76E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	9.91E+02	4.76E+00	1.36E-02	4.54E+00	2.85E-02	1.59E+02	2.97E-02	1.18E+02	2.42E-04
UBDT-TP-4 (0-2")	1.72E-01	1.72E-01	2.80E-02	1.72E+02	2.95E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	6.15E+03	2.95E+01	1.36E-02	4.54E+00	1.77E-01	1.59E+02	2.97E-02	1.18E+02	1.50E-03
UBDT-TP-4 (2-12")	1.72E-01	1.72E-01	2.80E-02	1.09E+02	1.87E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.89E+03	1.87E+01	1.36E-02	4.54E+00	1.12E-01	1.59E+02	2.97E-02	1.18E+02	9.53E-04
UBDT-TP-4 (12-24")	1.72E-01	1.72E-01	2.80E-02	5.35E+01	9.17E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.91E+03	9.17E+00	1.36E-02	4.54E+00	5.50E-02	1.59E+02	2.97E-02	1.18E+02	4.68E-04
UBDT-TP-4 (24-36")	1.72E-01	1.72E-01	2.80E-02	4.98E+01	8.54E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.78E+03	8.54E+00	1.36E-02	4.54E+00	5.12E-02	1.59E+02	2.97E-02	1.18E+02	4.35E-04
BREOT-N18-12.5 (0-6")	1.72E-01	1.72E-01	2.80E-02	1.68E+02	2.88E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.99E+03	2.88E+01	1.36E-02	4.54E+00	1.72E-01	1.59E+02	2.97E-02	1.18E+02	1.47E-03
BREOT-N18-25 (0-6")	1.72E-01	1.72E-01	2.80E-02	1.58E+01	2.72E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.66E+02	2.72E+00	1.36E-02	4.54E+00	1.63E-02	1.59E+02	2.97E-02	1.18E+02	1.39E-04
BREOT-S18-12.5 (0-6")	1.72E-01	1.72E-01	2.80E-02	4.23E+01	7.25E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.51E+03	7.25E+00	1.36E-02	4.54E+00	4.35E-02	1.59E+02	2.97E-02	1.18E+02	3.70E-04
BREOT-N19-10 (0-6")	1.72E-01	1.72E-01	2.80E-02	2.47E+01	4.25E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	8.84E+02	4.25E+00	1.36E-02	4.54E+00	2.55E-02	1.59E+02	2.97E-02	1.18E+02	2.16E-04
BREOT-S19-12.5 (0-6")	1.72E-01	1.72E-01	2.80E-02	8.02E+01	1.38E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.87E+03	1.38E+01	1.36E-02	4.54E+00	8.25E-02	1.59E+02	2.97E-02	1.18E+02	7.02E-04
UBDT-TP-5 (0-2")	1.72E-01	1.72E-01	2.80E-02	1.30E+02	2.23E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.63E+03	2.23E+01	1.36E-02	4.54E+00	1.33E-01	1.59E+02	2.97E-02	1.18E+02	1.13E-03
UBDT-TP-5 (2-12")	1.72E-01	1.72E-01	2.80E-02	1.08E+02	1.86E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.87E+03	1.86E+01	1.36E-02	4.54E+00	1.11E-01	1.59E+02	2.97E-02	1.18E+02	9.47E-04
UBDT-TP-5 (12-24")	1.72E-01	1.72E-01	2.80E-02	9.88E+01	1.70E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.53E+03	1.70E+01	1.36E-02	4.54E+00	1.02E-01	1.59E+02	2.97E-02	1.18E+02	8.64E-04
BREOT-N20-12.5 (0-6")	1.72E-01	1.72E-01	2.80E-02	2.14E+01	3.68E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	7.65E+02	3.68E+00	1.36E-02	4.54E+00	2.20E-02	1.59E+02	2.97E-02	1.18E+02	1.87E-04
UBDT-TP-3 (0-2")	1.72E-01	1.72E-01	2.80E-02	2.24E+01	3.83E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	7.98E+02	3.83E+00	1.36E-02	4.54E+00	2.30E-02	1.59E+02	2.97E-02	1.18E+02	1.95E-04
UBDT-TP-3 (2-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UBDT-TP-3 (12-24")	1.72E-01	1.72E-01	2.80E-02	8.43E+00	1.45E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.01E+02	1.45E+00	1.36E-02	4.54E+00	8.68E-03	1.59E+02	2.97E-02	1.18E+02	7.37E-05
UBDT-TP-3 (24-36")	1.72E-01	1.72E-01	2.80E-02	1.01E+01	1.73E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.60E+02	1.73E+00	1.36E-02	4.54E+00	1.04E-02	1.59E+02	2.97E-02	1.18E+02	8.82E-05
UBDT-TP-3 (36-48")	1.72E-01	1.72E-01	2.80E-02	1.55E+02	2.66E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.54E+03	2.66E+01	1.36E-02	4.54E+00	1.60E-01	1.59E+02	2.97E-02	1.18E+02	1.36E-03
UBDT-TP-3 (48-60")	1.72E-01	1.72E-01	2.80E-02	7.36E+01	1.26E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.63E+03	1.26E+01	1.36E-02	4.54E+00	7.57E-02	1.59E+02	2.97E-02	1.18E+02	6.43E-04
BREOT-N21-12.5 (0-6")	1.72E-01	1.72E-01	2.80E-02	1.91E+02	3.28E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	6.83E+03	3.28E+01	1.36E-02	4.54E+00	1.97E-01	1.59E+02	2.97E-02	1.18E+02	1.67E-03
BREOT-N22-12.5 (0-6")	1.72E-01	1.72E-01	2.80E-02	1.88E+01	3.23E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	6.72E+02	3.23E+00	1.36E-02	4.54E+00	1.94E-02	1.59E+02	2.97E-02	1.18E+02	1.64E-04

TABLE C-2E: MANGANESE DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **18.41**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Red Fox (Carnivorous Mammal - Terrestrial)																							
BREOT-N23-12.5 (0-6")	1.72E-01	1.72E-01	2.80E-02	4.10E+01	7.03E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.46E+03	7.03E+00	1.36E-02	4.54E+00	4.22E-02	1.59E+02	2.97E-02	1.18E+02	3.58E-04
BREOT-S23-12.5 (0-6")	1.72E-01	1.72E-01	2.80E-02	4.45E+02	7.63E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.59E+04	7.63E+01	1.36E-02	4.54E+00	4.58E-01	1.59E+02	2.97E-02	1.18E+02	3.89E-03
UBDT-TP-2 (0-2")	1.72E-01	1.72E-01	2.80E-02	1.53E+02	2.63E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.48E+03	2.63E+01	1.36E-02	4.54E+00	1.58E-01	1.59E+02	2.97E-02	1.18E+02	1.34E-03
UBDT-TP-2 (2-12")	1.72E-01	1.72E-01	2.80E-02	2.02E+02	3.46E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	7.21E+03	3.46E+01	1.36E-02	4.54E+00	2.08E-01	1.59E+02	2.97E-02	1.18E+02	1.76E-03
UBDT-TP-2 (12-24")	1.72E-01	1.72E-01	2.80E-02	1.52E+02	2.61E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.44E+03	2.61E+01	1.36E-02	4.54E+00	1.57E-01	1.59E+02	2.97E-02	1.18E+02	1.33E-03
UBDT-TP-2 (24-36")	1.72E-01	1.72E-01	2.80E-02	7.73E+01	1.33E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.76E+03	1.33E+01	1.36E-02	4.54E+00	7.95E-02	1.59E+02	2.97E-02	1.18E+02	6.76E-04
UBDT-TP-2 (36-48")	1.72E-01	1.72E-01	2.80E-02	7.80E+01	1.34E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.79E+03	1.34E+01	1.36E-02	4.54E+00	8.03E-02	1.59E+02	2.97E-02	1.18E+02	6.82E-04
BREOT-S24-12.5 (0-6")	1.72E-01	1.72E-01	2.80E-02	4.55E+02	7.81E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.63E+04	7.82E+01	1.36E-02	4.54E+00	4.69E-01	1.59E+02	2.97E-02	1.18E+02	3.98E-03
BREOT-N25-50 (0-6")	1.72E-01	1.72E-01	2.80E-02	1.35E+02	2.31E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.82E+03	2.31E+01	1.36E-02	4.54E+00	1.39E-01	1.59E+02	2.97E-02	1.18E+02	1.18E-03
BREOT-N25-95 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S25-12.5 (0-6")	1.72E-01	1.72E-01	2.80E-02	1.63E+02	2.79E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.81E+03	2.79E+01	1.36E-02	4.54E+00	1.67E-01	1.59E+02	2.97E-02	1.18E+02	1.42E-03
BREOT-S25-40 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N26A-25 (0-6")	1.72E-01	1.72E-01	2.80E-02	1.28E+01	2.20E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.58E+02	2.20E+00	1.36E-02	4.54E+00	1.32E-02	1.59E+02	2.97E-02	1.18E+02	1.12E-04
BREOT-N26B-25 (0-6")	1.72E-01	1.72E-01	2.80E-02	5.32E+01	9.13E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.90E+03	9.13E+00	1.36E-02	4.54E+00	5.48E-02	1.59E+02	2.97E-02	1.18E+02	4.65E-04
BREOT-N26-50 (0-6")	1.72E-01	1.72E-01	2.80E-02	1.35E+02	2.31E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.81E+03	2.31E+01	1.36E-02	4.54E+00	1.39E-01	1.59E+02	2.97E-02	1.18E+02	1.18E-03
BREOT-N26-75 (0-6")	1.72E-01	1.72E-01	2.80E-02	7.43E+01	1.28E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.65E+03	1.28E+01	1.36E-02	4.54E+00	7.65E-02	1.59E+02	2.97E-02	1.18E+02	6.50E-04
BREOT-S26-12.5 (0-6")	1.72E-01	1.72E-01	2.80E-02	6.66E+01	1.14E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.38E+03	1.14E+01	1.36E-02	4.54E+00	6.85E-02	1.59E+02	2.97E-02	1.18E+02	5.82E-04
BREOT-S26-40 (0-6")	1.72E-01	1.72E-01	2.80E-02	2.01E+02	3.44E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	7.17E+03	3.45E+01	1.36E-02	4.54E+00	2.07E-01	1.59E+02	2.97E-02	1.18E+02	1.76E-03
BREOT-N27-30 (0-6")	1.72E-01	1.72E-01	2.80E-02	7.44E+01	1.28E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.66E+03	1.28E+01	1.36E-02	4.54E+00	7.65E-02	1.59E+02	2.97E-02	1.18E+02	6.51E-04
BREOT-N27-75 (0-6")	1.72E-01	1.72E-01	2.80E-02	2.12E+02	3.64E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	7.57E+03	3.64E+01	1.36E-02	4.54E+00	2.18E-01	1.59E+02	2.97E-02	1.18E+02	1.85E-03
BREOT-S27-12.5 (0-6")	1.72E-01	1.72E-01	2.80E-02	4.25E+01	7.29E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.52E+03	7.29E+00	1.36E-02	4.54E+00	4.37E-02	1.59E+02	2.97E-02	1.18E+02	3.72E-04
BREOT-N28-110 (0-6")	1.72E-01	1.72E-01	2.80E-02	3.93E+01	6.74E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.40E+03	6.74E+00	1.36E-02	4.54E+00	4.04E-02	1.59E+02	2.97E-02	1.18E+02	3.44E-04
BREOT-N28-55 (0-6")	1.72E-01	1.72E-01	2.80E-02	1.04E+02	1.79E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.72E+03	1.79E+01	1.36E-02	4.54E+00	1.07E-01	1.59E+02	2.97E-02	1.18E+02	9.10E-04
BREOT-S28-12.5 (0-6")	1.72E-01	1.72E-01	2.80E-02	2.35E+02	4.02E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	8.38E+03	4.03E+01	1.36E-02	4.54E+00	2.41E-01	1.59E+02	2.97E-02	1.18E+02	2.05E-03
UBDT-TP-1 (0-2")	1.72E-01	1.72E-01	2.80E-02	1.55E+02	2.67E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.55E+03	2.67E+01	1.36E-02	4.54E+00	1.60E-01	1.59E+02	2.97E-02	1.18E+02	1.36E-03
UBDT-TP-1 (2-12")	1.72E-01	1.72E-01	2.80E-02	1.55E+02	2.65E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.52E+03	2.65E+01	1.36E-02	4.54E+00	1.59E-01	1.59E+02	2.97E-02	1.18E+02	1.35E-03
UBDT-TP-1 (12-24")	1.72E-01	1.72E-01	2.80E-02	1.59E+02	2.72E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.67E+03	2.73E+01	1.36E-02	4.54E+00	1.63E-01	1.59E+02	2.97E-02	1.18E+02	1.39E-03
UBDT-TP-1 (24-36")	1.72E-01	1.72E-01	2.80E-02	2.11E+02	3.62E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	7.55E+03	3.63E+01	1.36E-02	4.54E+00	2.17E-01	1.59E+02	2.97E-02	1.18E+02	1.85E-03
UBDT-TP-1 (36-48")	1.72E-01	1.72E-01	2.80E-02	3.36E+01	5.76E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.20E+03	5.76E+00	1.36E-02	4.54E+00	3.46E-02	1.59E+02	2.97E-02	1.18E+02	2.94E-04
UBDT-TP-1 (48-60")	1.72E-01	1.72E-01	2.80E-02	4.18E+01	7.17E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.49E+03	7.17E+00	1.36E-02	4.54E+00	4.30E-02	1.59E+02	2.97E-02	1.18E+02	3.66E-04
BREOT-N29-30 (0-6")	1.72E-01	1.72E-01	2.80E-02	1.61E+02	2.77E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.76E+03	2.77E+01	1.36E-02	4.54E+00	1.66E-01	1.59E+02	2.97E-02	1.18E+02	1.41E-03
BREOT-S29-12.5 (0-6")	1.72E-01	1.72E-01	2.80E-02	1.98E+02	3.40E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	7.07E+03	3.40E+01	1.36E-02	4.54E+00	2.04E-01	1.59E+02	2.97E-02	1.18E+02	1.73E-03
BREOT-N30-12.5 (0-6")	1.72E-01	1.72E-01	2.80E-02	5.52E+01	9.47E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.97E+03	9.47E+00	1.36E-02	4.54E+00	5.68E-02	1.59E+02	2.97E-02	1.18E+02	4.83E-04
BREOT-S30-12.5 (0-6")	1.72E-01	1.72E-01	2.80E-02	1.36E+02	2.33E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.86E+03	2.33E+01	1.36E-02	4.54E+00	1.40E-01	1.59E+02	2.97E-02	1.18E+02	1.19E-03
BREOT-N31-12.5 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S31-25 (0-6")	1.72E-01	1.72E-01	2.80E-02	1.10E+02	1.88E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.92E+03	1.88E+01	1.36E-02	4.54E+00	1.13E-01	1.59E+02	2.97E-02	1.18E+02	9.59E-04
BREOT-S31-5 (0-6")	1.72E-01	1.72E-01	2.80E-02	1.79E+02	3.07E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	6.38E+03	3.07E+01	1.36E-02	4.54E+00	1.84E-01	1.59E+02	2.97E-02	1.18E+02	1.56E-03
BREOT-N32-12.5 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S32-6 (0-6")	1.72E-01	1.72E-01	2.80E-02	3.87E+01	6.63E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.38E+03	6.64E+00	1.36E-02	4.54E+00	3.98E-02	1.59E+02	2.97E-02	1.18E+02	3.38E-04
BREOT-N33-12.5 (0-6")	1.72E-01	1.72E-01	2.80E-02	1.13E+01	1.93E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.02E+02	1.93E+00	1.36E-02	4.54E+00	1.16E-02	1.59E+02	2.97E-02	1.18E+02	9.84E-05
BREOT-S33-12.5 (0-6")	1.72E-01	1.72E-01	2.80E-02	7.55E+01	1.29E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.70E+03	1.29E+01	1.36E-02	4.54E+00	7.76E-02	1.59E+02	2.97E-02	1.18E+02	6.60E-04
BREOT-N35-12.5 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S35-12.5 (0-6")	1.72E-01	1.72E-01	2.80E-02	2.37E+02	4.07E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	8.47E+03	4.07E+01	1.36E-02	4.54E+00	2.44E-01	1.59E+02	2.97E-02	1.18E+02	2.07E-03
BREOT-N36-12.5 (0-6")	1.72E-01	1.72E-01	2.80E-02	9.13E+01	1.57E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.26E+03	1.57E+01	1.36E-02	4.54E+00	9.39E-02	1.59E+02	2.97E-02	1.18E+02	7.98E-04
BREOT-S36-12.5 (0-6")	1.72E-01	1.72E-01	2.80E-02	3.16E+01	5.42E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.13E+03	5.42E+00	1.36E-02	4.54E+00	3.25E-02	1.59E+02	2.97E-02	1.18E+02	2.76E-04
BREOT-N37-12.5 (0-6")	1.72E-01	1.72E-01	2.80E-02	9.23E+00	1.58E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.30E+02	1.58E+00	1.36E-02	4.54E+00	9.50E-03	1.59E+02	2.97E-02	1.18E+02	8.07E-05
BREOT-S37-12.5 (0-6")	1.72E-01	1.72E-01	2.80E-02	3.73E+01	6.40E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.33E+03	6.40E+00	1.36E-02	4.54E+00	3.84E-02	1.59E+02	2.97E-02	1.18E+02	3.26E-04
BREOT-N38-12.5 (0-6")	1.72E-01	1.72E-01	2.80E-02	1.86E+01	3.19E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	6.65E+02	3.19E+00	1.36E-02	4.54E+00	1.92E-02	1.59E+02	2.97E-02	1.18E+02	1.63E-04
BREOT-S38-12.5 (0-6")	1.72E-01	1.72E-01	2.80E-02	3.29E+02	5.65E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.18E+04	5.65E+01	1.36E-02	4.54E+00	3.39E-01	1.59E+02	2.97E-02	1.18E+02	2.88E-03
BREOT-N39-12.5 (0-6")	1.72E-01	1.72E-01	2.80E-02	2.77E+01	4.75E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	9.89E+02	4.75E+00	1.36E-02	4.54E+00	2.85E-02	1.59E+02	2.97E-02	1.18E+02	2.42E-04
BREOT-S39-12.5 (0-6")	1.72E-01	1.72E-01	2.80E-02	1.29E+02	2.21E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.61E+03	2.21E+01	1.36E-02	4.54E+00	1.33E-01	1.59E+02	2.97E-02	1.18E+02	1.13E-03
BREOT-N40-12.5 (0-6")	1.72E-01	1.72E-01	2.80E-02	1.30E+02	2.22E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.63E+03	2.22E+01	1.36E-02	4.54E+00	1.33E-01	1.59E+02	2.97E-02	1.18E+02	1.13E-03
BREOT-S40-14 (0-6")	1.72E-01	1.72E-01	2.80E-02	1.20E+02	2.05E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.28E+03	2.05E+01	1.36E-02	4.54E+00	1.23E-01	1.59E+02	2.97E-02	1.18E+02	1.05E-03
BREOT-N41-12.5 (0-6")	1.72E-01	1.72E-01	2.80E-02	9.54E+01	1.64E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.41E+03	1.64E+01	1.36E-02	4.54E+00	9.82E-02	1.59E+02	2.97E-02	1.18E+02	8.34E-04
BREOT-S41-12.5 (0-6")	1.72E-01	1.72E-01	2.80E-02	1.20E+02	2.05E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.28E+03	2.05E+01	1.36E-02	4.54E+00	1.23E-01	1.59E+02	2.97E-02	1.18E+02	1.05E-03

TABLE C-2E: MANGANESE DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **18.41**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Red Fox (Carnivorous Mammal - Terrestrial)																							
BREOT-N42-35 (0-6")	1.72E-01	1.72E-01	2.80E-02	2.20E+01	3.77E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	7.85E+02	3.77E+00	1.36E-02	4.54E+00	2.26E-02	1.59E+02	2.97E-02	1.18E+02	1.92E-04
BREOT-S42-25 (0-6")	1.72E-01	1.72E-01	2.80E-02	4.65E+01	7.97E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.66E+03	7.97E+00	1.36E-02	4.54E+00	4.78E-02	1.59E+02	2.97E-02	1.18E+02	4.06E-04
BREOT-N43-12.5 (0-6")	1.72E-01	1.72E-01	2.80E-02	2.83E+02	4.85E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.01E+04	4.85E+01	1.36E-02	4.54E+00	2.91E-01	1.59E+02	2.97E-02	1.18E+02	2.47E-03
BREOT-S43-12.5 (0-6")	1.72E-01	1.72E-01	2.80E-02	6.21E+01	1.07E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.22E+03	1.07E+01	1.36E-02	4.54E+00	6.39E-02	1.59E+02	2.97E-02	1.18E+02	5.43E-04
BREOT-N44-30 (0-6")	1.72E-01	1.72E-01	2.80E-02	2.22E+01	3.80E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	7.91E+02	3.80E+00	1.36E-02	4.54E+00	2.28E-02	1.59E+02	2.97E-02	1.18E+02	1.94E-04
BREOT-S44-12.5 (0-6")	1.72E-01	1.72E-01	2.80E-02	2.08E+02	3.57E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	7.44E+03	3.57E+01	1.36E-02	4.54E+00	2.14E-01	1.59E+02	2.97E-02	1.18E+02	1.82E-03
BREOT-N45-12.5 (0-6")	1.72E-01	1.72E-01	2.80E-02	2.68E+01	4.60E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	9.57E+02	4.60E+00	1.36E-02	4.54E+00	2.76E-02	1.59E+02	2.97E-02	1.18E+02	2.34E-04
BREOT-N43-12.5 (0-6")	1.72E-01	1.72E-01	2.80E-02	2.83E+02	4.85E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.01E+04	4.85E+01	1.36E-02	4.54E+00	2.91E-01	1.59E+02	2.97E-02	1.18E+02	2.47E-03
BREOT-S45-6 (0-6")	1.72E-01	1.72E-01	2.80E-02	3.58E+01	6.14E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.28E+03	6.14E+00	1.36E-02	4.54E+00	3.68E-02	1.59E+02	2.97E-02	1.18E+02	3.13E-04
BREOT-N46-12.5 (0-6")	1.72E-01	1.72E-01	2.80E-02	1.03E+01	1.76E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.67E+02	1.76E+00	1.36E-02	4.54E+00	1.06E-02	1.59E+02	2.97E-02	1.18E+02	8.99E-05
BREOT-S46-12.5 (0-6")	1.72E-01	1.72E-01	2.80E-02	1.02E+01	1.75E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.65E+02	1.76E+00	1.36E-02	4.54E+00	1.05E-02	1.59E+02	2.97E-02	1.18E+02	8.94E-05
BREOT-S46-40 (0-6")	1.72E-01	1.72E-01	2.80E-02	1.57E+01	2.69E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.59E+02	2.69E+00	1.36E-02	4.54E+00	1.61E-02	1.59E+02	2.97E-02	1.18E+02	1.37E-04
BREOT-N47-12.5 (0-6")	1.72E-01	1.72E-01	2.80E-02	1.97E+01	3.38E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	7.04E+02	3.38E+00	1.36E-02	4.54E+00	2.03E-02	1.59E+02	2.97E-02	1.18E+02	1.72E-04
BREOT-S47-999 (0-6")	1.72E-01	1.72E-01	2.80E-02	2.09E+01	3.59E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	7.47E+02	3.59E+00	1.36E-02	4.54E+00	2.15E-02	1.59E+02	2.97E-02	1.18E+02	1.83E-04
BREOT-S48-12.5 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S49-2.5 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S50-12.5 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S50-25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N52-60 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S52-12.5 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S53-12.5 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S54-12.5 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N55-12.5 (0-6")	1.72E-01	1.72E-01	2.80E-02	1.05E+02	1.80E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.75E+03	1.80E+01	1.36E-02	4.54E+00	1.08E-01	1.59E+02	2.97E-02	1.18E+02	9.18E-04
BREOT-S55-12.5 (0-6")	1.72E-01	1.72E-01	2.80E-02	4.33E+01	7.43E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.55E+03	7.43E+00	1.36E-02	4.54E+00	4.45E-02	1.59E+02	2.97E-02	1.18E+02	3.79E-04
BREOT-N56-12.5 (0-6")	1.72E-01	1.72E-01	2.80E-02	5.01E+01	8.59E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.79E+03	8.59E+00	1.36E-02	4.54E+00	5.15E-02	1.59E+02	2.97E-02	1.18E+02	4.38E-04
BREOT-S56-12.5 (0-6")	1.72E-01	1.72E-01	2.80E-02	2.66E+01	4.57E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	9.52E+02	4.57E+00	1.36E-02	4.54E+00	2.74E-02	1.59E+02	2.97E-02	1.18E+02	2.33E-04
BREOT-N57-12.5 (0-6")	1.72E-01	1.72E-01	2.80E-02	3.34E+01	5.73E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.19E+03	5.74E+00	1.36E-02	4.54E+00	3.44E-02	1.59E+02	2.97E-02	1.18E+02	2.92E-04
BREOT-S57-12.5 (0-6")	1.72E-01	1.72E-01	2.80E-02	3.48E+01	5.97E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.24E+03	5.97E+00	1.36E-02	4.54E+00	3.58E-02	1.59E+02	2.97E-02	1.18E+02	3.04E-04
BREOT-N58-12.5 (0-6")	1.72E-01	1.72E-01	2.80E-02	5.76E+01	9.88E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.06E+03	9.88E+00	1.36E-02	4.54E+00	5.92E-02	1.59E+02	2.97E-02	1.18E+02	5.03E-04
BREOT-S58-12 (0-6")	1.72E-01	1.72E-01	2.80E-02	3.60E+01	6.18E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.29E+03	6.18E+00	1.36E-02	4.54E+00	3.71E-02	1.59E+02	2.97E-02	1.18E+02	3.15E-04
BREOT-N59-18 (0-6")	1.72E-01	1.72E-01	2.80E-02	1.97E+01	3.39E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	7.05E+02	3.39E+00	1.36E-02	4.54E+00	2.03E-02	1.59E+02	2.97E-02	1.18E+02	1.73E-04
BREOT-N60-12.5 (0-6")	1.72E-01	1.72E-01	2.80E-02	3.37E+01	5.78E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.20E+03	5.78E+00	1.36E-02	4.54E+00	3.47E-02	1.59E+02	2.97E-02	1.18E+02	2.95E-04
BREOT-S60-12.5 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S61-12.5 (0-6")	1.72E-01	1.72E-01	2.80E-02	1.79E+02	3.07E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	6.39E+03	3.07E+01	1.36E-02	4.54E+00	1.84E-01	1.59E+02	2.97E-02	1.18E+02	1.56E-03
BREOT-N62-12.5 (0-6")	1.72E-01	1.72E-01	2.80E-02	1.74E+01	2.98E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	6.21E+02	2.98E+00	1.36E-02	4.54E+00	1.79E-02	1.59E+02	2.97E-02	1.18E+02	1.52E-04
BREOT-S62-12.5 (0-6")	1.72E-01	1.72E-01	2.80E-02	2.13E+02	3.65E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	7.60E+03	3.65E+01	1.36E-02	4.54E+00	2.19E-01	1.59E+02	2.97E-02	1.18E+02	1.86E-03
BREOT-S63-12.5 (0-6")	1.72E-01	1.72E-01	2.80E-02	3.05E+01	5.23E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.09E+03	5.23E+00	1.36E-02	4.54E+00	3.14E-02	1.59E+02	2.97E-02	1.18E+02	2.67E-04
BREOT-N64-12.5 (0-6")	1.72E-01	1.72E-01	2.80E-02	3.07E+01	5.27E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.10E+03	5.27E+00	1.36E-02	4.54E+00	3.16E-02	1.59E+02	2.97E-02	1.18E+02	2.69E-04
BREOT-N64-20 (0-6")	1.72E-01	1.72E-01	2.80E-02	2.98E+01	5.11E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.06E+03	5.11E+00	1.36E-02	4.54E+00	3.07E-02	1.59E+02	2.97E-02	1.18E+02	2.61E-04
BREOT-S64-12.5 (0-6")	1.72E-01	1.72E-01	2.80E-02	1.02E+01	1.75E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.64E+02	1.75E+00	1.36E-02	4.54E+00	1.05E-02	1.59E+02	2.97E-02	1.18E+02	8.91E-05
BREOT-N65-12.5 (0-6")	1.72E-01	1.72E-01	2.80E-02	2.64E+01	4.53E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	9.44E+02	4.53E+00	1.36E-02	4.54E+00	2.72E-02	1.59E+02	2.97E-02	1.18E+02	2.31E-04
BREOT-S65-12.5 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N66-5 (0-6")	1.72E-01	1.72E-01	2.80E-02	1.49E+01	2.56E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.33E+02	2.56E+00	1.36E-02	4.54E+00	1.54E-02	1.59E+02	2.97E-02	1.18E+02	1.31E-04
BREOT-S66-12.5 (0-6")	1.72E-01	1.72E-01	2.80E-02	2.54E+01	4.35E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	9.06E+02	4.35E+00	1.36E-02	4.54E+00	2.61E-02	1.59E+02	2.97E-02	1.18E+02	2.22E-04
BREOT-N67-12.5 (0-6")	1.72E-01	1.72E-01	2.80E-02	2.95E+02	5.06E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.05E+04	5.07E+01	1.36E-02	4.54E+00	3.04E-01	1.59E+02	2.97E-02	1.18E+02	2.58E-03
BREOT-S67-12.5 (0-6")	1.72E-01	1.72E-01	2.80E-02	1.65E+01	2.83E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.88E+02	2.83E+00	1.36E-02	4.54E+00	1.69E-02	1.59E+02	2.97E-02	1.18E+02	1.44E-04
At Edge of Tailings																						**Maximum HQ (Inside Tailings)**	**3.98E-03**
BREOT-S0-0 (06)	1.72E-01	1.72E-01	2.80E-02	2.13E+01	3.66E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	7.62E+02	3.66E+00	1.36E-02	4.54E+00	2.20E-02	1.59E+02	2.97E-02	1.18E+02	1.87E-04
BREOT-S1-0 (0-6")	1.72E-01	1.72E-01	2.80E-02	2.37E+01	4.07E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	8.47E+02	4.07E+00	1.36E-02	4.54E+00	2.44E-02	1.59E+02	2.97E-02	1.18E+02	2.07E-04
BREOT-S2-0 (0-6")	1.72E-01	1.72E-01	2.80E-02	6.33E+01	1.09E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.26E+03	1.09E+01	1.36E-02	4.54E+00	6.51E-02	1.59E+02	2.97E-02	1.18E+02	5.53E-04
BREOT-S3-0 (0-6")	1.72E-01	1.72E-01	2.80E-02	1.60E+02	2.74E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.70E+03	2.74E+01	1.36E-02	4.54E+00	1.64E-01	1.59E+02	2.97E-02	1.18E+02	1.40E-03
BREOT-S4-0 (0-6")	1.72E-01	1.72E-01	2.80E-02	1.87E+02	3.21E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	6.69E+03	3.21E+01	1.36E-02	4.54E+00	1.93E-01	1.59E+02	2.97E-02	1.18E+02	1.64E-03
BREOT-S6-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S7-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S8-0 (0-6")	1.72E-01	1.72E-01	2.80E-02	3.27E+01	5.60E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.17E+03	5.61E+00	1.36E-02	4.54E+00	3.36E-02	1.59E+02	2.97E-02	1.18E+02	2.86E-04

TABLE C-2E: MANGANESE DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 18.41

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Red Fox (Carnivorous Mammal - Terrestrial)																							
BREOT-S9-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N10-0 (0-6")	1.72E-01	1.72E-01	2.80E-02	2.25E+02	3.87E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	8.05E+03	3.87E+01	1.36E-02	4.54E+00	2.32E-01	1.59E+02	2.97E-02	1.18E+02	1.97E-03
BREOT-N11-0 (0-6")	1.72E-01	1.72E-01	2.80E-02	1.05E+01	1.81E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.76E+02	1.81E+00	1.36E-02	4.54E+00	1.08E-02	1.59E+02	2.97E-02	1.18E+02	9.21E-05
BREOT-S11-0 (0-6")	1.72E-01	1.72E-01	2.80E-02	5.58E+01	9.58E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.99E+03	9.58E+00	1.36E-02	4.54E+00	5.74E-02	1.59E+02	2.97E-02	1.18E+02	4.88E-04
BREOT-N12-0 (0-6")	1.72E-01	1.72E-01	2.80E-02	2.93E+01	5.03E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.05E+03	5.03E+00	1.36E-02	4.54E+00	3.01E-02	1.59E+02	2.97E-02	1.18E+02	2.56E-04
BREOT-S12-0 (0-6")	1.72E-01	1.72E-01	2.80E-02	8.36E+01	1.43E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.99E+03	1.43E+01	1.36E-02	4.54E+00	8.60E-02	1.59E+02	2.97E-02	1.18E+02	7.31E-04
BREOT-N13-0 (0-6")	1.72E-01	1.72E-01	2.80E-02	4.35E+01	7.46E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.55E+03	7.46E+00	1.36E-02	4.54E+00	4.48E-02	1.59E+02	2.97E-02	1.18E+02	3.80E-04
BREOT-S13-0 (0-6")	1.72E-01	1.72E-01	2.80E-02	2.42E+01	4.16E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	8.65E+02	4.16E+00	1.36E-02	4.54E+00	2.49E-02	1.59E+02	2.97E-02	1.18E+02	2.12E-04
BREOT-N14-0 (0-6")	1.72E-01	1.72E-01	2.80E-02	4.34E+01	7.44E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.55E+03	7.44E+00	1.36E-02	4.54E+00	4.46E-02	1.59E+02	2.97E-02	1.18E+02	3.79E-04
BREOT-S14-0 (0-6")	1.72E-01	1.72E-01	2.80E-02	2.56E+02	4.40E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	9.15E+03	4.40E+01	1.36E-02	4.54E+00	2.64E-01	1.59E+02	2.97E-02	1.18E+02	2.24E-03
BREOT-N15-0 (0-6")	1.72E-01	1.72E-01	2.80E-02	2.27E+01	3.89E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	8.10E+02	3.89E+00	1.36E-02	4.54E+00	2.33E-02	1.59E+02	2.97E-02	1.18E+02	1.98E-04
BREOT-N16-0 (0-6")	1.72E-01	1.72E-01	2.80E-02	1.72E+01	2.94E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	6.13E+02	2.95E+00	1.36E-02	4.54E+00	1.77E-02	1.59E+02	2.97E-02	1.18E+02	1.50E-04
BREOT-S16-0 (0-6")	1.72E-01	1.72E-01	2.80E-02	3.01E+01	5.17E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.08E+03	5.17E+00	1.36E-02	4.54E+00	3.10E-02	1.59E+02	2.97E-02	1.18E+02	2.63E-04
BREOT-N17-0 (0-6")	1.72E-01	1.72E-01	2.80E-02	4.64E+01	7.96E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.66E+03	7.96E+00	1.36E-02	4.54E+00	4.77E-02	1.59E+02	2.97E-02	1.18E+02	4.06E-04
BREOT-S17-0 (0-6")	1.72E-01	1.72E-01	2.80E-02	1.43E+01	2.45E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.10E+02	2.45E+00	1.36E-02	4.54E+00	1.47E-02	1.59E+02	2.97E-02	1.18E+02	1.25E-04
BREOT-N18-0 (0-6")	1.72E-01	1.72E-01	2.80E-02	1.82E+01	3.12E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	6.50E+02	3.12E+00	1.36E-02	4.54E+00	1.87E-02	1.59E+02	2.97E-02	1.18E+02	1.59E-04
BREOT-S18-0 (0-6")	1.72E-01	1.72E-01	2.80E-02	1.14E+04	1.95E+03	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.07E+05	1.95E+03	1.36E-02	4.54E+00	1.17E+01	1.59E+02	2.97E-02	1.18E+02	9.95E-02
BREOT-N19-0 (0-6")	1.72E-01	1.72E-01	2.80E-02	1.26E+02	2.16E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.49E+03	2.16E+01	1.36E-02	4.54E+00	1.29E-01	1.59E+02	2.97E-02	1.18E+02	1.10E-03
BREOT-S19-0 (0-6")	1.72E-01	1.72E-01	2.80E-02	3.52E+01	6.04E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.26E+03	6.04E+00	1.36E-02	4.54E+00	3.62E-02	1.59E+02	2.97E-02	1.18E+02	3.08E-04
BREOT-N20-0 (0-6")	1.72E-01	1.72E-01	2.80E-02	2.80E+02	4.80E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	9.99E+03	4.80E+01	1.36E-02	4.54E+00	2.88E-01	1.59E+02	2.97E-02	1.18E+02	2.44E-03
BREOT-S20-0 (0-6")	1.72E-01	1.72E-01	2.80E-02	2.23E+01	3.83E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	7.97E+02	3.83E+00	1.36E-02	4.54E+00	2.30E-02	1.59E+02	2.97E-02	1.18E+02	1.95E-04
BREOT-N21-0 (0-6")	1.72E-01	1.72E-01	2.80E-02	1.82E+04	3.12E+03	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	6.49E+05	3.12E+03	1.36E-02	4.54E+00	1.87E+01	1.59E+02	2.97E-02	1.18E+02	1.59E-01
BREOT-S21-0 (0-6")	1.72E-01	1.72E-01	2.80E-02	9.49E+00	1.63E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.39E+02	1.63E+00	1.36E-02	4.54E+00	9.77E-03	1.59E+02	2.97E-02	1.18E+02	8.30E-05
BREOT-N22-0 (0-6")	1.72E-01	1.72E-01	2.80E-02	2.39E+01	4.11E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	8.55E+02	4.11E+00	1.36E-02	4.54E+00	2.46E-02	1.59E+02	2.97E-02	1.18E+02	2.09E-04
BREOT-S22-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N23-0 (0-6")	1.72E-01	1.72E-01	2.80E-02	8.40E+01	1.44E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.00E+03	1.44E+01	1.36E-02	4.54E+00	8.64E-02	1.59E+02	2.97E-02	1.18E+02	7.34E-04
BREOT-S23-0 (0-6")	1.72E-01	1.72E-01	2.80E-02	4.65E+01	7.97E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.66E+03	7.98E+00	1.36E-02	4.54E+00	4.78E-02	1.59E+02	2.97E-02	1.18E+02	4.07E-04
BREOT-N24-0 (0-6")	1.72E-01	1.72E-01	2.80E-02	3.74E+01	6.41E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.33E+03	6.41E+00	1.36E-02	4.54E+00	3.84E-02	1.59E+02	2.97E-02	1.18E+02	3.27E-04
BREOT-S24-0 (0-6")	1.72E-01	1.72E-01	2.80E-02	6.75E+02	1.16E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.41E+04	1.16E+02	1.36E-02	4.54E+00	6.95E-01	1.59E+02	2.97E-02	1.18E+02	5.91E-03
BREOT-N25-0 (0-6")	1.72E-01	1.72E-01	2.80E-02	1.13E+02	1.94E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.04E+03	1.94E+01	1.36E-02	4.54E+00	1.16E-01	1.59E+02	2.97E-02	1.18E+02	9.88E-04
BREOT-S25-0 (0-6")	1.72E-01	1.72E-01	2.80E-02	1.62E+02	2.78E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.79E+03	2.78E+01	1.36E-02	4.54E+00	1.67E-01	1.59E+02	2.97E-02	1.18E+02	1.42E-03
BREOT-N26-0 (0-6")	1.72E-01	1.72E-01	2.80E-02	7.36E+01	1.26E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.63E+03	1.26E+01	1.36E-02	4.54E+00	7.57E-02	1.59E+02	2.97E-02	1.18E+02	6.44E-04
BREOT-S26-0 (0-6")	1.72E-01	1.72E-01	2.80E-02	8.76E+01	1.50E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.13E+03	1.50E+01	1.36E-02	4.54E+00	9.01E-02	1.59E+02	2.97E-02	1.18E+02	7.66E-04
BREOT-N27-0 (0-6")	1.72E-01	1.72E-01	2.80E-02	1.40E+02	2.41E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.02E+03	2.41E+01	1.36E-02	4.54E+00	1.44E-01	1.59E+02	2.97E-02	1.18E+02	1.23E-03
BREOT-S27-0 (0-6")	1.72E-01	1.72E-01	2.80E-02	9.92E+01	1.70E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.54E+03	1.70E+01	1.36E-02	4.54E+00	1.02E-01	1.59E+02	2.97E-02	1.18E+02	8.67E-04
BREOT-N28-0 (0-6")	1.72E-01	1.72E-01	2.80E-02	6.06E+01	1.04E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.17E+03	1.04E+01	1.36E-02	4.54E+00	6.24E-02	1.59E+02	2.97E-02	1.18E+02	5.30E-04
BREOT-S28-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S29-0 (0-6")	1.72E-01	1.72E-01	2.80E-02	2.05E+01	3.53E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	7.34E+02	3.53E+00	1.36E-02	4.54E+00	2.11E-02	1.59E+02	2.97E-02	1.18E+02	1.80E-04
BREOT-N30-0 (0-6")	1.72E-01	1.72E-01	2.80E-02	9.67E+01	1.66E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.45E+03	1.66E+01	1.36E-02	4.54E+00	9.95E-02	1.59E+02	2.97E-02	1.18E+02	8.46E-04
BREOT-S30-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N31-0 (0-6")	1.72E-01	1.72E-01	2.80E-02	9.53E+01	1.64E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.41E+03	1.64E+01	1.36E-02	4.54E+00	9.81E-02	1.59E+02	2.97E-02	1.18E+02	8.34E-04
BREOT-S31-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N32-0 (0-6")	1.72E-01	1.72E-01	2.80E-02	4.34E+01	7.45E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.55E+03	7.45E+00	1.36E-02	4.54E+00	4.47E-02	1.59E+02	2.97E-02	1.18E+02	3.80E-04
BREOT-S32-0 (0-6")	1.72E-01	1.72E-01	2.80E-02	3.40E+01	5.83E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.21E+03	5.84E+00	1.36E-02	4.54E+00	3.50E-02	1.59E+02	2.97E-02	1.18E+02	2.97E-04
BREOT-N33-0 (0-6")	1.72E-01	1.72E-01	2.80E-02	2.68E+01	4.60E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	9.58E+02	4.60E+00	1.36E-02	4.54E+00	2.76E-02	1.59E+02	2.97E-02	1.18E+02	2.35E-04
BREOT-S33-0 (0-6")	1.72E-01	1.72E-01	2.80E-02	5.13E+01	8.80E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.83E+03	8.80E+00	1.36E-02	4.54E+00	5.28E-02	1.59E+02	2.97E-02	1.18E+02	4.48E-04
BREOT-N34-0 (0-6")	1.72E-01	1.72E-01	2.80E-02	4.10E+01	7.04E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.47E+03	7.04E+00	1.36E-02	4.54E+00	4.22E-02	1.59E+02	2.97E-02	1.18E+02	3.59E-04
BREOT-S34-0 (0-6")	1.72E-01	1.72E-01	2.80E-02	2.03E+02	3.48E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	7.24E+03	3.48E+01	1.36E-02	4.54E+00	2.08E-01	1.59E+02	2.97E-02	1.18E+02	1.77E-03
BREOT-N35-0 (0-6")	1.72E-01	1.72E-01	2.80E-02	2.26E+01	3.87E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	8.07E+02	3.87E+00	1.36E-02	4.54E+00	2.32E-02	1.59E+02	2.97E-02	1.18E+02	1.97E-04
BREOT-S35-0 (0-6")	1.72E-01	1.72E-01	2.80E-02	3.47E+01	5.95E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.24E+03	5.95E+00	1.36E-02	4.54E+00	3.57E-02	1.59E+02	2.97E-02	1.18E+02	3.03E-04
BREOT-N36-0 (0-6")	1.72E-01	1.72E-01	2.80E-02	2.36E+02	4.05E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	8.44E+03	4.06E+01	1.36E-02	4.54E+00	2.43E-01	1.59E+02	2.97E-02	1.18E+02	2.07E-03
BREOT-S36-0 (0-6")	1.72E-01	1.72E-01	2.80E-02	1.78E+02	3.06E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	6.37E+03	3.06E+01	1.36E-02	4.54E+00	1.83E-01	1.59E+02	2.97E-02	1.18E+02	1.56E-03
BREOT-N37-0 (0-6")	1.72E-01	1.72E-01	2.80E-02	3.88E+01	6.66E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.39E+03	6.66E+00	1.36E-02	4.54E+00	3.99E-02	1.59E+02	2.97E-02	1.18E+02	3.39E-04
BREOT-S37-0 (0-6")	1.72E-01	1.72E-01	2.80E-02	2.27E+02	3.90E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	8.13E+03	3.90E+01	1.36E-02	4.54E+00	2.34E-01	1.59E+02	2.97E-02	1.18E+02	1.99E-03
BREOT-N38-0 (0-6")	1.72E-01	1.72E-01	2.80E-02	2.06E+01	3.53E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	7.35E+02	3.53E+00	1.36E-02	4.54E+00	2.12E-02	1.59E+02	2.97E-02	1.18E+02	1.80E-04

TABLE C-2E: MANGANESE DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **18.41**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Red Fox (Carnivorous Mammal - Terrestrial)																							
BREOT-S38-0 (0-6")	1.72E-01	1.72E-01	2.80E-02	1.31E+02	2.24E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.67E+03	2.24E+01	1.36E-02	4.54E+00	1.35E-01	1.59E+02	2.97E-02	1.18E+02	1.14E-03
BREOT-N39-0 (0-6")	1.72E-01	1.72E-01	2.80E-02	2.42E+01	4.15E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	8.65E+02	4.16E+00	1.36E-02	4.54E+00	2.49E-02	1.59E+02	2.97E-02	1.18E+02	2.12E-04
BREOT-N40-0 (0-6")	1.72E-01	1.72E-01	2.80E-02	2.60E+01	4.47E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	9.30E+02	4.47E+00	1.36E-02	4.54E+00	2.68E-02	1.59E+02	2.97E-02	1.18E+02	2.28E-04
BREOT-S40-0 (0-6")	1.72E-01	1.72E-01	2.80E-02	2.43E+02	4.17E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	8.68E+03	4.17E+01	1.36E-02	4.54E+00	2.50E-01	1.59E+02	2.97E-02	1.18E+02	2.13E-03
BREOT-N41-0 (0-6")	1.72E-01	1.72E-01	2.80E-02	1.37E+01	2.35E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.89E+02	2.35E+00	1.36E-02	4.54E+00	1.41E-02	1.59E+02	2.97E-02	1.18E+02	1.20E-04
BREOT-S41-0 (0-6")	1.72E-01	1.72E-01	2.80E-02	2.60E+02	4.46E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	9.28E+03	4.46E+01	1.36E-02	4.54E+00	2.67E-01	1.59E+02	2.97E-02	1.18E+02	2.27E-03
BREOT-N42-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S42-0 (0-6")	1.72E-01	1.72E-01	2.80E-02	2.95E+02	5.07E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.06E+04	5.07E+01	1.36E-02	4.54E+00	3.04E-01	1.59E+02	2.97E-02	1.18E+02	2.58E-03
BREOT-N43-0 (0-6")	1.72E-01	1.72E-01	2.80E-02	1.74E+01	2.98E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	6.20E+02	2.98E+00	1.36E-02	4.54E+00	1.79E-02	1.59E+02	2.97E-02	1.18E+02	1.52E-04
BREOT-S43-0 (0-6")	1.72E-01	1.72E-01	2.80E-02	2.75E+01	4.73E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	9.84E+02	4.73E+00	1.36E-02	4.54E+00	2.83E-02	1.59E+02	2.97E-02	1.18E+02	2.41E-04
BREOT-N44-0 (0-6")	1.72E-01	1.72E-01	2.80E-02	3.85E+01	6.60E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.38E+03	6.61E+00	1.36E-02	4.54E+00	3.96E-02	1.59E+02	2.97E-02	1.18E+02	3.37E-04
BREOT-S44-0 (0-6")	1.72E-01	1.72E-01	2.80E-02	3.26E+01	5.59E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.16E+03	5.59E+00	1.36E-02	4.54E+00	3.35E-02	1.59E+02	2.97E-02	1.18E+02	2.85E-04
BREOT-N45-0 (0-6")	1.72E-01	1.72E-01	2.80E-02	2.71E+01	4.65E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	9.67E+02	4.65E+00	1.36E-02	4.54E+00	2.79E-02	1.59E+02	2.97E-02	1.18E+02	2.37E-04
BREOT-S45-0 (0-6")	1.72E-01	1.72E-01	2.80E-02	1.84E+01	3.16E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	6.58E+02	3.16E+00	1.36E-02	4.54E+00	1.90E-02	1.59E+02	2.97E-02	1.18E+02	1.61E-04
BREOT-N46-0 (0-6")	1.72E-01	1.72E-01	2.80E-02	1.92E+01	3.29E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	6.85E+02	3.29E+00	1.36E-02	4.54E+00	1.97E-02	1.59E+02	2.97E-02	1.18E+02	1.68E-04
BREOT-S46-0 (0-6")	1.72E-01	1.72E-01	2.80E-02	2.25E+01	3.86E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	8.03E+02	3.86E+00	1.36E-02	4.54E+00	2.31E-02	1.59E+02	2.97E-02	1.18E+02	1.97E-04
BREOT-N47-0 (0-6")	1.72E-01	1.72E-01	2.80E-02	2.39E+01	4.10E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	8.53E+02	4.10E+00	1.36E-02	4.54E+00	2.46E-02	1.59E+02	2.97E-02	1.18E+02	2.09E-04
BREOT-S47-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N48-0 (0-6")	1.72E-01	1.72E-01	2.80E-02	1.56E+01	2.68E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.58E+02	2.68E+00	1.36E-02	4.54E+00	1.61E-02	1.59E+02	2.97E-02	1.18E+02	1.37E-04
BREOT-S48-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N49-0 (0-6")	1.72E-01	1.72E-01	2.80E-02	2.83E+01	4.86E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.01E+03	4.86E+00	1.36E-02	4.54E+00	2.91E-02	1.59E+02	2.97E-02	1.18E+02	2.48E-04
BREOT-S49-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S50-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N51-0 (0-6")	1.72E-01	1.72E-01	2.80E-02	4.69E+01	8.04E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.67E+03	8.04E+00	1.36E-02	4.54E+00	4.82E-02	1.59E+02	2.97E-02	1.18E+02	4.10E-04
BREOT-S51-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N52-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S52-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N53-0 (0-6")	1.72E-01	1.72E-01	2.80E-02	1.58E+01	2.70E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.63E+02	2.71E+00	1.36E-02	4.54E+00	1.62E-02	1.59E+02	2.97E-02	1.18E+02	1.38E-04
BREOT-S53-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N54-0 (0-6")	1.72E-01	1.72E-01	2.80E-02	1.90E+01	3.26E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	6.79E+02	3.26E+00	1.36E-02	4.54E+00	1.96E-02	1.59E+02	2.97E-02	1.18E+02	1.66E-04
BREOT-S54-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N55-0 (0-6")	1.72E-01	1.72E-01	2.80E-02	2.89E+01	4.95E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.03E+03	4.96E+00	1.36E-02	4.54E+00	2.97E-02	1.59E+02	2.97E-02	1.18E+02	2.53E-04
BREOT-S55-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N56-0 (0-6")	1.72E-01	1.72E-01	2.80E-02	1.83E+01	3.15E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	6.55E+02	3.15E+00	1.36E-02	4.54E+00	1.89E-02	1.59E+02	2.97E-02	1.18E+02	1.60E-04
BREOT-N57-0 (0-6")	1.72E-01	1.72E-01	2.80E-02	2.61E+01	4.47E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	9.31E+02	4.47E+00	1.36E-02	4.54E+00	2.68E-02	1.59E+02	2.97E-02	1.18E+02	2.28E-04
BREOT-S57-0 (0-6")	1.72E-01	1.72E-01	2.80E-02	2.62E+01	4.50E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	9.36E+02	4.50E+00	1.36E-02	4.54E+00	2.70E-02	1.59E+02	2.97E-02	1.18E+02	2.29E-04
BREOT-N58-0 (0-6")	1.72E-01	1.72E-01	2.80E-02	2.75E+01	4.71E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	9.81E+02	4.71E+00	1.36E-02	4.54E+00	2.83E-02	1.59E+02	2.97E-02	1.18E+02	2.40E-04
BREOT-S58-0 (0-6")	1.72E-01	1.72E-01	2.80E-02	1.44E+02	2.48E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.16E+03	2.48E+01	1.36E-02	4.54E+00	1.49E-01	1.59E+02	2.97E-02	1.18E+02	1.26E-03
BREOT-N59-0 (0-6")	1.72E-01	1.72E-01	2.80E-02	2.47E+01	4.24E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	8.83E+02	4.24E+00	1.36E-02	4.54E+00	2.54E-02	1.59E+02	2.97E-02	1.18E+02	2.16E-04
BREOT-N60-0 (0-6")	1.72E-01	1.72E-01	2.80E-02	1.01E+01	1.73E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.60E+02	1.73E+00	1.36E-02	4.54E+00	1.04E-02	1.59E+02	2.97E-02	1.18E+02	8.82E-05
BREOT-S60-0 (0-6")	1.72E-01	1.72E-01	2.80E-02	7.45E+01	1.28E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.66E+03	1.28E+01	1.36E-02	4.54E+00	7.67E-02	1.59E+02	2.97E-02	1.18E+02	6.52E-04
BREOT-S61-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N62-0 (0-6")	1.72E-01	1.72E-01	2.80E-02	2.60E+01	4.46E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	9.29E+02	4.46E+00	1.36E-02	4.54E+00	2.68E-02	1.59E+02	2.97E-02	1.18E+02	2.28E-04
BREOT-S62-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N63-0 (0-6")	1.72E-01	1.72E-01	2.80E-02	3.18E+01	5.46E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.14E+03	5.46E+00	1.36E-02	4.54E+00	3.28E-02	1.59E+02	2.97E-02	1.18E+02	2.78E-04
BREOT-S63-0 (0-6")	1.72E-01	1.72E-01	2.80E-02	3.61E+01	6.19E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.29E+03	6.19E+00	1.36E-02	4.54E+00	3.71E-02	1.59E+02	2.97E-02	1.18E+02	3.16E-04
BREOT-N64-0 (0-6")	1.72E-01	1.72E-01	2.80E-02	1.21E+01	2.07E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.31E+02	2.07E+00	1.36E-02	4.54E+00	1.24E-02	1.59E+02	2.97E-02	1.18E+02	1.06E-04
BREOT-S64-0 (0-6")	1.72E-01	1.72E-01	2.80E-02	4.28E+00	7.34E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.53E+02	7.34E-01	1.36E-02	4.54E+00	4.40E-03	1.59E+02	2.97E-02	1.18E+02	3.74E-05
BREOT-N66-0 (0-6")	1.72E-01	1.72E-01	2.80E-02	2.65E+01	4.55E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	9.47E+02	4.55E+00	1.36E-02	4.54E+00	2.73E-02	1.59E+02	2.97E-02	1.18E+02	2.32E-04
BREOT-S66-0 (0-6")	1.72E-01	1.72E-01	2.80E-02	3.31E+01	5.68E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.18E+03	5.68E+00	1.36E-02	4.54E+00	3.40E-02	1.59E+02	2.97E-02	1.18E+02	2.89E-04
BREOT-N67-0 (0-6")	1.72E-01	1.72E-01	2.80E-02	2.24E+02	3.84E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	7.99E+03	3.84E+01	1.36E-02	4.54E+00	2.30E-01	1.59E+02	2.97E-02	1.18E+02	1.96E-03
BREOT-S67-0 (0-6")	1.72E-01	1.72E-01	2.80E-02	1.65E+01	2.83E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.90E+02	2.83E+00	1.36E-02	4.54E+00	1.70E-02	1.59E+02	2.97E-02	1.18E+02	1.44E-04
Outside Tailings																						**Maximum HQ (At Edge of Tailings)**	**1.59E-01**
BREOT-S0+25 (0-6")	1.72E-01	1.72E-01	2.80E-02	2.68E+01	4.60E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	9.57E+02	4.60E+00	1.36E-02	4.54E+00	2.76E-02	1.59E+02	2.97E-02	1.18E+02	2.34E-04
BREOT-S1+25 (0-6")	1.72E-01	1.72E-01	2.80E-02	3.88E+01	6.65E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.38E+03	6.65E+00	1.36E-02	4.54E+00	3.99E-02	1.59E+02	2.97E-02	1.18E+02	3.39E-04

TABLE C-2E: MANGANESE DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **18.41**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Red Fox (Carnivorous Mammal - Terrestrial)																							
BREOT-S2+95 (0-6")	1.72E-01	1.72E-01	2.80E-02	2.50E+01	4.29E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	8.94E+02	4.29E+00	1.36E-02	4.54E+00	2.57E-02	1.59E+02	2.97E-02	1.18E+02	2.19E-04
BREOT-S3+6 (0-6")	1.72E-01	1.72E-01	2.80E-02	1.55E+01	2.66E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.55E+02	2.67E+00	1.36E-02	4.54E+00	1.60E-02	1.59E+02	2.97E-02	1.18E+02	1.36E-04
BREOT-S4+10 (0-6")	1.72E-01	1.72E-01	2.80E-02	2.99E+01	5.13E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.07E+03	5.13E+00	1.36E-02	4.54E+00	3.07E-02	1.59E+02	2.97E-02	1.18E+02	2.61E-04
BREOT-S6+25 (0-6")	1.72E-01	1.72E-01	2.80E-02	2.36E+01	4.05E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	8.43E+02	4.05E+00	1.36E-02	4.54E+00	2.43E-02	1.59E+02	2.97E-02	1.18E+02	2.06E-04
BREOT-S8+25 (0-6")	1.72E-01	1.72E-01	2.80E-02	2.42E+01	4.14E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	8.63E+02	4.14E+00	1.36E-02	4.54E+00	2.48E-02	1.59E+02	2.97E-02	1.18E+02	2.11E-04
BREOT-N10+25 (0-6")	1.72E-01	1.72E-01	2.80E-02	2.20E+01	3.78E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	7.87E+02	3.78E+00	1.36E-02	4.54E+00	2.27E-02	1.59E+02	2.97E-02	1.18E+02	1.93E-04
BREOT-N11+25 (0-6")	1.72E-01	1.72E-01	2.80E-02	2.51E+01	4.31E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	8.97E+02	4.31E+00	1.36E-02	4.54E+00	2.58E-02	1.59E+02	2.97E-02	1.18E+02	2.20E-04
BREOT-N12+25 (0-6")	1.72E-01	1.72E-01	2.80E-02	2.75E+01	4.71E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	9.81E+02	4.71E+00	1.36E-02	4.54E+00	2.83E-02	1.59E+02	2.97E-02	1.18E+02	2.40E-04
BREOT-S12+25 (0-6")	1.72E-01	1.72E-01	2.80E-02	8.86E+01	1.52E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.16E+03	1.52E+01	1.36E-02	4.54E+00	9.12E-02	1.59E+02	2.97E-02	1.18E+02	7.75E-04
BREOT-S12+60 (0-6")	1.72E-01	1.72E-01	2.80E-02	2.10E+01	3.60E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	7.49E+02	3.60E+00	1.36E-02	4.54E+00	2.16E-02	1.59E+02	2.97E-02	1.18E+02	1.83E-04
BREOT-N13+25 (0-6")	1.72E-01	1.72E-01	2.80E-02	3.68E+01	6.31E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.31E+03	6.31E+00	1.36E-02	4.54E+00	3.78E-02	1.59E+02	2.97E-02	1.18E+02	3.22E-04
BREOT-S13+25 (0-6")	1.72E-01	1.72E-01	2.80E-02	6.22E+01	1.07E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.22E+03	1.07E+01	1.36E-02	4.54E+00	6.40E-02	1.59E+02	2.97E-02	1.18E+02	5.44E-04
BREOT-S13+65 (0-6")	1.72E-01	1.72E-01	2.80E-02	3.33E+01	5.72E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.19E+03	5.72E+00	1.36E-02	4.54E+00	3.43E-02	1.59E+02	2.97E-02	1.18E+02	2.92E-04
BREOT-N14+25 (0-6")	1.72E-01	1.72E-01	2.80E-02	4.31E+01	7.39E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.54E+03	7.39E+00	1.36E-02	4.54E+00	4.43E-02	1.59E+02	2.97E-02	1.18E+02	3.77E-04
BREOT-S14+25 (0-6")	1.72E-01	1.72E-01	2.80E-02	8.59E+01	1.47E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.07E+03	1.47E+01	1.36E-02	4.54E+00	8.84E-02	1.59E+02	2.97E-02	1.18E+02	7.51E-04
BREOT-S14+59 (0-6")	1.72E-01	1.72E-01	2.80E-02	9.45E+00	1.62E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.38E+02	1.62E+00	1.36E-02	4.54E+00	9.72E-03	1.59E+02	2.97E-02	1.18E+02	8.26E-05
BREOT-N15+25 (0-6")	1.72E-01	1.72E-01	2.80E-02	1.42E+02	2.43E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.07E+03	2.43E+01	1.36E-02	4.54E+00	1.46E-01	1.59E+02	2.97E-02	1.18E+02	1.24E-03
BREOT-N15+50 (0-6")	1.72E-01	1.72E-01	2.80E-02	3.56E+01	6.10E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.27E+03	6.11E+00	1.36E-02	4.54E+00	3.66E-02	1.59E+02	2.97E-02	1.18E+02	3.11E-04
BREOT-S16+20 (0-6")	1.72E-01	1.72E-01	2.80E-02	7.63E+01	1.31E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.73E+03	1.31E+01	1.36E-02	4.54E+00	7.85E-02	1.59E+02	2.97E-02	1.18E+02	6.67E-04
BREOT-S16+75 (0-6")	1.72E-01	1.72E-01	2.80E-02	1.67E+01	2.87E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.98E+02	2.87E+00	1.36E-02	4.54E+00	1.72E-02	1.59E+02	2.97E-02	1.18E+02	1.46E-04
BREOT-N17+25 (0-6")	1.72E-01	1.72E-01	2.80E-02	4.02E+01	6.89E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.43E+03	6.89E+00	1.36E-02	4.54E+00	4.13E-02	1.59E+02	2.97E-02	1.18E+02	3.51E-04
BREOT-S18+25 (0-6")	1.72E-01	1.72E-01	2.80E-02	8.85E+00	1.52E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.16E+02	1.52E+00	1.36E-02	4.54E+00	9.10E-03	1.59E+02	2.97E-02	1.18E+02	7.74E-05
BREOT-N19+25 (0-6")	1.72E-01	1.72E-01	2.80E-02	2.02E+01	3.47E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	7.22E+02	3.47E+00	1.36E-02	4.54E+00	2.08E-02	1.59E+02	2.97E-02	1.18E+02	1.77E-04
BREOT-S19+25 (0-6")	1.72E-01	1.72E-01	2.80E-02	1.33E+04	2.28E+03	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.75E+05	2.28E+03	1.36E-02	4.54E+00	1.37E+01	1.59E+02	2.97E-02	1.18E+02	1.16E-01
BREOT-S19+85 (0-6")	1.72E-01	1.72E-01	2.80E-02	2.04E+01	3.50E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	7.28E+02	3.50E+00	1.36E-02	4.54E+00	2.10E-02	1.59E+02	2.97E-02	1.18E+02	1.78E-04
BREOT-N20+25 (0-6")	1.72E-01	1.72E-01	2.80E-02	2.73E+01	4.69E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	9.77E+02	4.69E+00	1.36E-02	4.54E+00	2.81E-02	1.59E+02	2.97E-02	1.18E+02	2.39E-04
BREOT-S20+25 (0-6")	1.72E-01	1.72E-01	2.80E-02	1.89E+04	3.25E+03	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	6.77E+05	3.25E+03	1.36E-02	4.54E+00	1.95E+01	1.59E+02	2.97E-02	1.18E+02	1.66E-01
BREOT-S20+75 (0-6")	1.72E-01	1.72E-01	2.80E-02	2.14E+01	3.66E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	7.63E+02	3.67E+00	1.36E-02	4.54E+00	2.20E-02	1.59E+02	2.97E-02	1.18E+02	1.87E-04
BREOT-N21+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S21+25 (0-6")	1.72E-01	1.72E-01	2.80E-02	9.39E+03	1.61E+03	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.35E+05	1.61E+03	1.36E-02	4.54E+00	9.66E+00	1.59E+02	2.97E-02	1.18E+02	8.21E-02
BREOT-N22+150 (0-6")	1.72E-01	1.72E-01	2.80E-02	2.53E+01	4.33E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	9.02E+02	4.33E+00	1.36E-02	4.54E+00	2.60E-02	1.59E+02	2.97E-02	1.18E+02	2.21E-04
BREOT-N22+25 (0-6")	1.72E-01	1.72E-01	2.80E-02	7.23E+01	1.24E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.58E+03	1.24E+01	1.36E-02	4.54E+00	7.44E-02	1.59E+02	2.97E-02	1.18E+02	6.32E-04
BREOT-S22+25 (0-6")	1.72E-01	1.72E-01	2.80E-02	4.62E+01	7.93E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.65E+03	7.94E+00	1.36E-02	4.54E+00	4.76E-02	1.59E+02	2.97E-02	1.18E+02	4.04E-04
BREOT-N23+115 (0-6")	1.72E-01	1.72E-01	2.80E-02	1.95E+01	3.35E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	6.98E+02	3.35E+00	1.36E-02	4.54E+00	2.01E-02	1.59E+02	2.97E-02	1.18E+02	1.71E-04
BREOT-N23+25 (0-6")	1.72E-01	1.72E-01	2.80E-02	1.34E+02	2.30E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.78E+03	2.30E+01	1.36E-02	4.54E+00	1.38E-01	1.59E+02	2.97E-02	1.18E+02	1.17E-03
BREOT-S23+25 (0-6")	1.72E-01	1.72E-01	2.80E-02	3.48E+01	5.98E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.24E+03	5.98E+00	1.36E-02	4.54E+00	3.58E-02	1.59E+02	2.97E-02	1.18E+02	3.05E-04
BREOT-S23+37.5 (0-6")	1.72E-01	1.72E-01	2.80E-02	2.73E+01	4.68E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	9.74E+02	4.68E+00	1.36E-02	4.54E+00	2.81E-02	1.59E+02	2.97E-02	1.18E+02	2.38E-04
BREOT-N24+25 (0-6")	1.72E-01	1.72E-01	2.80E-02	2.55E+02	4.38E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	9.13E+03	4.38E+01	1.36E-02	4.54E+00	2.63E-01	1.59E+02	2.97E-02	1.18E+02	2.23E-03
BREOT-N24+75 (0-6")	1.72E-01	1.72E-01	2.80E-02	2.79E+01	4.78E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	9.95E+02	4.78E+00	1.36E-02	4.54E+00	2.87E-02	1.59E+02	2.97E-02	1.18E+02	2.44E-04
BREOT-S24+25 (0-6")	1.72E-01	1.72E-01	2.80E-02	5.14E+01	8.83E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.84E+03	8.83E+00	1.36E-02	4.54E+00	5.29E-02	1.59E+02	2.97E-02	1.18E+02	4.50E-04
BREOT-N25+25 (0-6")	1.72E-01	1.72E-01	2.80E-02	9.26E+00	1.59E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.31E+02	1.59E+00	1.36E-02	4.54E+00	9.53E-03	1.59E+02	2.97E-02	1.18E+02	8.10E-05
BREOT-S25+25 (0-6")	1.72E-01	1.72E-01	2.80E-02	3.00E+01	5.15E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.07E+03	5.16E+00	1.36E-02	4.54E+00	3.09E-02	1.59E+02	2.97E-02	1.18E+02	2.63E-04
BREOT-S25+40 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	7.29E+02	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S26+37 (0-6")	1.72E-01	1.72E-01	2.80E-02	2.35E+01	4.03E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	8.39E+02	4.03E+00	1.36E-02	4.54E+00	2.42E-02	1.59E+02	2.97E-02	1.18E+02	2.05E-04
BREOT-N27+25 (0-6")	1.72E-01	1.72E-01	2.80E-02	2.10E+01	3.60E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	7.50E+02	3.60E+00	1.36E-02	4.54E+00	2.16E-02	1.59E+02	2.97E-02	1.18E+02	1.84E-04
BREOT-S27+25 (0-6")	1.72E-01	1.72E-01	2.80E-02	2.17E+01	3.73E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	7.76E+02	3.73E+00	1.36E-02	4.54E+00	2.24E-02	1.59E+02	2.97E-02	1.18E+02	1.90E-04
BREOT-N28+25 (0-6")	1.72E-01	1.72E-01	2.80E-02	1.69E+01	2.89E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	6.03E+02	2.90E+00	1.36E-02	4.54E+00	1.74E-02	1.59E+02	2.97E-02	1.18E+02	1.48E-04
BREOT-S28+25 (0-6")	1.72E-01	1.72E-01	2.80E-02	1.18E+01	2.03E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.22E+02	2.03E+00	1.36E-02	4.54E+00	1.22E-02	1.59E+02	2.97E-02	1.18E+02	1.03E-04
BREOT-N29+25 (0-6")	1.72E-01	1.72E-01	2.80E-02	4.04E+01	6.94E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.44E+03	6.94E+00	1.36E-02	4.54E+00	4.16E-02	1.59E+02	2.97E-02	1.18E+02	3.54E-04
BREOT-S29+25 (0-6")	1.72E-01	1.72E-01	2.80E-02	2.50E+01	4.29E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	8.94E+02	4.29E+00	1.36E-02	4.54E+00	2.57E-02	1.59E+02	2.97E-02	1.18E+02	2.19E-04
BREOT-N30+25 (0-6")	1.72E-01	1.72E-01	2.80E-02	3.16E+01	5.42E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.13E+03	5.42E+00	1.36E-02	4.54E+00	3.25E-02	1.59E+02	2.97E-02	1.18E+02	2.76E-04
BREOT-S30+25 (0-6")	1.72E-01	1.72E-01	2.80E-02	2.46E+01	4.22E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	8.79E+02	4.22E+00	1.36E-02	4.54E+00	2.53E-02	1.59E+02	2.97E-02	1.18E+02	2.15E-04
BREOT-N31+25 (0-6")	1.72E-01	1.72E-01	2.80E-02	1.85E+02	3.17E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	6.61E+03	3.17E+01	1.36E-02	4.54E+00	1.90E-01	1.59E+02	2.97E-02	1.18E+02	1.62E-03
BREOT-N31+75 (0-6")	1.72E-01	1.72E-01	2.80E-02	2.32E+01	3.98E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	8.28E+02	3.98E+00	1.36E-02	4.54E+00	2.38E-02	1.59E+02	2.97E-02	1.18E+02	2.03E-04
BREOT-S31+25 (0-6")	1.72E-01	1.72E-01	2.80E-02	1.79E+01	3.07E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	6.40E+02	3.07E+00	1.36E-02	4.54E+00	1.84E-02	1.59E+02	2.97E-02	1.18E+02	1.57E-04

TABLE C-2E: MANGANESE DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **18.41**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Red Fox (Carnivorous Mammal - Terrestrial)																							
BREOT-N32+25 (0-6")	1.72E-01	1.72E-01	2.80E-02	3.27E+01	5.62E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.17E+03	5.62E+00	1.36E-02	4.54E+00	3.37E-02	1.59E+02	2.97E-02	1.18E+02	2.86E-04
BREOT-S32+25 (0-6")	1.72E-01	1.72E-01	2.80E-02	4.63E+01	7.95E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.66E+03	7.95E+00	1.36E-02	4.54E+00	4.77E-02	1.59E+02	2.97E-02	1.18E+02	4.05E-04
BREOT-S32+300 (0-6")	1.72E-01	1.72E-01	2.80E-02	6.96E+01	1.19E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.49E+03	1.19E+01	1.36E-02	4.54E+00	7.16E-02	1.59E+02	2.97E-02	1.18E+02	6.09E-04
BREOT-N33+25 (0-6")	1.72E-01	1.72E-01	2.80E-02	2.41E+01	4.13E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	8.60E+02	4.13E+00	1.36E-02	4.54E+00	2.48E-02	1.59E+02	2.97E-02	1.18E+02	2.10E-04
BREOT-S33+25 (0-6")	1.72E-01	1.72E-01	2.80E-02	1.12E+02	1.92E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.99E+03	1.92E+01	1.36E-02	4.54E+00	1.15E-01	1.59E+02	2.97E-02	1.18E+02	9.77E-04
BREOT-N34+25 (0-6")	1.72E-01	1.72E-01	2.80E-02	2.14E+01	3.66E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	7.63E+02	3.66E+00	1.36E-02	4.54E+00	2.20E-02	1.59E+02	2.97E-02	1.18E+02	1.87E-04
BREOT-S34+25 (0-6")	1.72E-01	1.72E-01	2.80E-02	3.44E+01	5.89E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.23E+03	5.89E+00	1.36E-02	4.54E+00	3.53E-02	1.59E+02	2.97E-02	1.18E+02	3.00E-04
BREOT-N35+25 (0-6")	1.72E-01	1.72E-01	2.80E-02	2.54E+01	4.36E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	9.08E+02	4.36E+00	1.36E-02	4.54E+00	2.62E-02	1.59E+02	2.97E-02	1.18E+02	2.22E-04
BREOT-S35+25 (0-6")	1.72E-01	1.72E-01	2.80E-02	1.17E+02	2.00E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.17E+03	2.00E+01	1.36E-02	4.54E+00	1.20E-01	1.59E+02	2.97E-02	1.18E+02	1.02E-03
BREOT-N36+100 (0-6")	1.72E-01	1.72E-01	2.80E-02	2.58E+01	4.43E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	9.22E+02	4.43E+00	1.36E-02	4.54E+00	2.66E-02	1.59E+02	2.97E-02	1.18E+02	2.26E-04
BREOT-N36+25 (0-6")	1.72E-01	1.72E-01	2.80E-02	2.11E+02	3.62E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	7.54E+03	3.62E+01	1.36E-02	4.54E+00	2.17E-01	1.59E+02	2.97E-02	1.18E+02	1.85E-03
BREOT-S36+25 (0-6")	1.72E-01	1.72E-01	2.80E-02	1.07E+02	1.84E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.82E+03	1.84E+01	1.36E-02	4.54E+00	1.10E-01	1.59E+02	2.97E-02	1.18E+02	9.36E-04
BREOT-N37+25 (0-6")	1.72E-01	1.72E-01	2.80E-02	1.04E+01	1.79E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.73E+02	1.79E+00	1.36E-02	4.54E+00	1.07E-02	1.59E+02	2.97E-02	1.18E+02	9.13E-05
BREOT-S37+25 (0-6")	1.72E-01	1.72E-01	2.80E-02	1.44E+02	2.47E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.15E+03	2.47E+01	1.36E-02	4.54E+00	1.48E-01	1.59E+02	2.97E-02	1.18E+02	1.26E-03
BREOT-N38+25 (0-6")	1.72E-01	1.72E-01	2.80E-02	1.82E+01	3.12E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	6.50E+02	3.12E+00	1.36E-02	4.54E+00	1.87E-02	1.59E+02	2.97E-02	1.18E+02	1.59E-04
BREOT-S38+25 (0-6")	1.72E-01	1.72E-01	2.80E-02	1.38E+02	2.36E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.92E+03	2.36E+01	1.36E-02	4.54E+00	1.42E-01	1.59E+02	2.97E-02	1.18E+02	1.20E-03
BREOT-N39+25 (0-6")	1.72E-01	1.72E-01	2.80E-02	1.50E+01	2.57E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.34E+02	2.57E+00	1.36E-02	4.54E+00	1.54E-02	1.59E+02	2.97E-02	1.18E+02	1.31E-04
BREOT-S39+25 (0-6")	1.72E-01	1.72E-01	2.80E-02	1.05E+02	1.80E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.74E+03	1.80E+01	1.36E-02	4.54E+00	1.08E-01	1.59E+02	2.97E-02	1.18E+02	9.16E-04
BREOT-N40+25 (0-6")	1.72E-01	1.72E-01	2.80E-02	1.59E+01	2.72E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.67E+02	2.72E+00	1.36E-02	4.54E+00	1.63E-02	1.59E+02	2.97E-02	1.18E+02	1.39E-04
BREOT-S40+25 (0-6")	1.72E-01	1.72E-01	2.80E-02	9.89E+01	1.70E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.53E+03	1.70E+01	1.36E-02	4.54E+00	1.02E-01	1.59E+02	2.97E-02	1.18E+02	8.65E-04
BREOT-N41+25 (0-6")	1.72E-01	1.72E-01	2.80E-02	1.06E+01	1.81E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.78E+02	1.81E+00	1.36E-02	4.54E+00	1.09E-02	1.59E+02	2.97E-02	1.18E+02	9.25E-05
BREOT-S41+25 (0-6")	1.72E-01	1.72E-01	2.80E-02	6.31E+01	1.08E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.26E+03	1.08E+01	1.36E-02	4.54E+00	6.50E-02	1.59E+02	2.97E-02	1.18E+02	5.52E-04
BREOT-N42+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S42+25 (0-6")	1.72E-01	1.72E-01	2.80E-02	5.51E+01	9.45E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.97E+03	9.45E+00	1.36E-02	4.54E+00	5.67E-02	1.59E+02	2.97E-02	1.18E+02	4.82E-04
BREOT-N43+12.5 (0-6")	1.72E-01	1.72E-01	2.80E-02	2.08E+01	3.57E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	7.44E+02	3.57E+00	1.36E-02	4.54E+00	2.14E-02	1.59E+02	2.97E-02	1.18E+02	1.82E-04
BREOT-N43+40 (0-6")	1.72E-01	1.72E-01	2.80E-02	2.10E+01	3.60E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	7.50E+02	3.60E+00	1.36E-02	4.54E+00	2.16E-02	1.59E+02	2.97E-02	1.18E+02	1.84E-04
BREOT-S43+25 (0-6")	1.72E-01	1.72E-01	2.80E-02	2.66E+01	4.56E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	9.50E+02	4.56E+00	1.36E-02	4.54E+00	2.74E-02	1.59E+02	2.97E-02	1.18E+02	2.33E-04
BREOT-N44+55 (0-6")	1.72E-01	1.72E-01	2.80E-02	1.86E+01	3.19E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	6.64E+02	3.19E+00	1.36E-02	4.54E+00	1.91E-02	1.59E+02	2.97E-02	1.18E+02	1.63E-04
BREOT-S44+25 (0-6")	1.72E-01	1.72E-01	2.80E-02	3.52E+01	6.04E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.26E+03	6.05E+00	1.36E-02	4.54E+00	3.62E-02	1.59E+02	2.97E-02	1.18E+02	3.08E-04
BREOT-N45+25 (0-6")	1.72E-01	1.72E-01	2.80E-02	1.82E+01	3.12E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	6.50E+02	3.12E+00	1.36E-02	4.54E+00	1.87E-02	1.59E+02	2.97E-02	1.18E+02	1.59E-04
BREOT-S45+25 (0-6")	1.72E-01	1.72E-01	2.80E-02	8.49E+00	1.46E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.03E+02	1.46E+00	1.36E-02	4.54E+00	8.74E-03	1.59E+02	2.97E-02	1.18E+02	7.42E-05
BREOT-N46+25 (0-6")	1.72E-01	1.72E-01	2.80E-02	2.71E+01	4.64E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	9.67E+02	4.64E+00	1.36E-02	4.54E+00	2.79E-02	1.59E+02	2.97E-02	1.18E+02	2.37E-04
BREOT-S46+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N47+25 (0-6")	1.72E-01	1.72E-01	2.80E-02	2.18E+01	3.74E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	7.79E+02	3.74E+00	1.36E-02	4.54E+00	2.24E-02	1.59E+02	2.97E-02	1.18E+02	1.91E-04
BREOT-S47+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N48+25 (0-6")	1.72E-01	1.72E-01	2.80E-02	1.73E+01	2.97E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	6.17E+02	2.97E+00	1.36E-02	4.54E+00	1.78E-02	1.59E+02	2.97E-02	1.18E+02	1.51E-04
BREOT-S48+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N49+25 (0-6")	1.72E-01	1.72E-01	2.80E-02	2.59E+01	4.45E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	9.26E+02	4.45E+00	1.36E-02	4.54E+00	2.67E-02	1.59E+02	2.97E-02	1.18E+02	2.27E-04
BREOT-S49+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N51+25 (0-6")	1.72E-01	1.72E-01	2.80E-02	2.19E+01	3.76E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	7.84E+02	3.77E+00	1.36E-02	4.54E+00	2.26E-02	1.59E+02	2.97E-02	1.18E+02	1.92E-04
BREOT-S51+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N52+25 (0-6")	1.72E-01	1.72E-01	2.80E-02	9.07E+00	1.56E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.24E+02	1.56E+00	1.36E-02	4.54E+00	9.34E-03	1.59E+02	2.97E-02	1.18E+02	7.93E-05
BREOT-S52+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N53+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S53+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S54+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N55+25 (0-6")	1.72E-01	1.72E-01	2.80E-02	2.00E+01	3.43E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	7.14E+02	3.43E+00	1.36E-02	4.54E+00	2.06E-02	1.59E+02	2.97E-02	1.18E+02	1.75E-04
BREOT-S55+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N56+25 (0-6")	1.72E-01	1.72E-01	2.80E-02	1.96E+01	3.36E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	6.99E+02	3.36E+00	1.36E-02	4.54E+00	2.01E-02	1.59E+02	2.97E-02	1.18E+02	1.71E-04
BREOT-S56+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N57+25 (0-6")	1.72E-01	1.72E-01	2.80E-02	2.06E+01	3.54E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	7.36E+02	3.54E+00	1.36E-02	4.54E+00	2.12E-02	1.59E+02	2.97E-02	1.18E+02	1.80E-04
BREOT-S57+25 (0-6")	1.72E-01	1.72E-01	2.80E-02	6.85E+01	1.17E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.45E+03	1.17E+01	1.36E-02	4.54E+00	7.04E-02	1.59E+02	2.97E-02	1.18E+02	5.99E-04
BREOT-N58+25 (0-6")	1.72E-01	1.72E-01	2.80E-02	2.72E+01	4.67E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	9.73E+02	4.68E+00	1.36E-02	4.54E+00	2.80E-02	1.59E+02	2.97E-02	1.18E+02	2.38E-04
BREOT-S58+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N59+25 (0-6")	1.72E-01	1.72E-01	2.80E-02	4.30E+01	7.37E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.54E+03	7.37E+00	1.36E-02	4.54E+00	4.42E-02	1.59E+02	2.97E-02	1.18E+02	3.76E-04

TABLE C-2E: MANGANESE DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **18.41**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Red Fox (Carnivorous Mammal - Terrestrial)																							
BREOT-N60+25 (0-6")	1.72E-01	1.72E-01	2.80E-02	1.47E+01	2.52E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.24E+02	2.52E+00	1.36E-02	4.54E+00	1.51E-02	1.59E+02	2.97E-02	1.18E+02	1.28E-04
BREOT-S60+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S61+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N62+25 (0-6")	1.72E-01	1.72E-01	2.80E-02	2.44E+01	4.18E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	8.71E+02	4.18E+00	1.36E-02	4.54E+00	2.51E-02	1.59E+02	2.97E-02	1.18E+02	2.13E-04
BREOT-S62+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N63+25 (0-6")	1.72E-01	1.72E-01	2.80E-02	3.83E+01	6.57E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.37E+03	6.57E+00	1.36E-02	4.54E+00	3.94E-02	1.59E+02	2.97E-02	1.18E+02	3.35E-04
BREOT-S63+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N64+25 (0-6")	1.72E-01	1.72E-01	2.80E-02	1.34E+01	2.31E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.80E+02	2.31E+00	1.36E-02	4.54E+00	1.38E-02	1.59E+02	2.97E-02	1.18E+02	1.18E-04
BREOT-S64+25 (0-6")	1.72E-01	1.72E-01	2.80E-02	5.31E+00	9.11E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.90E+02	9.11E-01	1.36E-02	4.54E+00	5.46E-03	1.59E+02	2.97E-02	1.18E+02	4.64E-05
BREOT-S65+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N66+25 (0-6")	1.72E-01	1.72E-01	2.80E-02	2.09E+01	3.58E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	7.46E+02	3.58E+00	1.36E-02	4.54E+00	2.15E-02	1.59E+02	2.97E-02	1.18E+02	1.83E-04
BREOT-S66+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N67+125 (0-6")	1.72E-01	1.72E-01	2.80E-02	1.08E+01	1.85E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.86E+02	1.85E+00	1.36E-02	4.54E+00	1.11E-02	1.59E+02	2.97E-02	1.18E+02	9.45E-05
BREOT-S67+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N67+25 (0-6")	1.72E-01	1.72E-01	2.80E-02	2.53E+01	4.35E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	9.05E+02	4.35E+00	1.36E-02	4.54E+00	2.61E-02	1.59E+02	2.97E-02	1.18E+02	2.21E-04
																						Maximum HQ (Outside Tailings)	**1.66E-01**
Masked Shrew (Omnivorous Mammal - Terrestrial, Wetland)																							
Reference Sites																							
ACBG-1 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	4.35E+02	3.68E+00	1.10E-03	2.95E+02	3.25E-01	1.00E+00	5.50E-03	7.29E+02	1.59E+02	2.97E-02	1.76E+02	4.14E+00
ACBG-2 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.47E+03	1.25E+01	1.10E-03	9.97E+02	1.10E+00	1.00E+00	5.50E-03	2.47E+03	1.59E+02	2.97E-02	1.76E+02	1.40E+01
UBRBG-202 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.33E+03	1.13E+01	1.10E-03	9.01E+02	9.92E-01	1.00E+00	5.50E-03	2.23E+03	1.59E+02	2.97E-02	1.76E+02	1.27E+01
UBRBG-204 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.02E+03	8.67E+00	1.10E-03	6.94E+02	7.64E-01	1.00E+00	5.50E-03	1.72E+03	1.59E+02	2.97E-02	1.76E+02	9.75E+00
Inside Tailings																						**Minimum HQ (Reference Sites)**	**4.14E+00**
BREOT-S6-12.5 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S2-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	5.77E+03	4.89E+01	1.10E-03	3.91E+03	4.31E+00	1.00E+00	5.50E-03	9.67E+03	1.59E+02	2.97E-02	1.76E+02	5.50E+01
BREOT-S0-12.5 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S1-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	8.14E+02	6.90E+00	1.10E-03	5.52E+02	6.07E-01	1.00E+00	5.50E-03	1.36E+03	1.59E+02	2.97E-02	1.76E+02	7.75E+00
BREOT-S7-25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	2.03E+03	1.72E+01	1.10E-03	1.38E+03	1.51E+00	1.00E+00	5.50E-03	3.40E+03	1.59E+02	2.97E-02	1.76E+02	1.93E+01
BREOT-S8-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	9.24E+02	7.82E+00	1.10E-03	6.26E+02	6.89E-01	1.00E+00	5.50E-03	1.55E+03	1.59E+02	2.97E-02	1.76E+02	8.79E+00
BREOT-S9-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.16E+03	9.81E+00	1.10E-03	7.85E+02	8.64E-01	1.00E+00	5.50E-03	1.94E+03	1.59E+02	2.97E-02	1.76E+02	1.10E+01
BREOT-N10-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	5.26E+03	4.46E+01	1.10E-03	3.57E+03	3.93E+00	1.00E+00	5.50E-03	8.82E+03	1.59E+02	2.97E-02	1.76E+02	5.01E+01
BREOT-N11-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	7.29E+02	6.17E+00	1.10E-03	4.94E+02	5.43E-01	1.00E+00	5.50E-03	1.22E+03	1.59E+02	2.97E-02	1.76E+02	6.93E+00
BREOT-N11-125 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	4.71E+02	3.99E+00	1.10E-03	3.19E+02	3.51E-01	1.00E+00	5.50E-03	7.89E+02	1.59E+02	2.97E-02	1.76E+02	4.48E+00
BREOT-S11-12 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	4.87E+03	4.13E+01	1.10E-03	3.30E+03	3.63E+00	1.00E+00	5.50E-03	8.16E+03	1.59E+02	2.97E-02	1.76E+02	4.64E+01
BREOT-S11+63 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	5.56E+02	4.71E+00	1.10E-03	3.76E+02	4.15E-01	1.00E+00	5.50E-03	9.31E+02	1.59E+02	2.97E-02	1.76E+02	5.29E+00
UBDT-TP-6 (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.04E+04	8.82E+01	1.10E-03	7.05E+03	7.76E+00	1.00E+00	5.50E-03	1.74E+04	1.59E+02	2.97E-02	1.76E+02	9.91E+01
UBDT-TP-6 (2-12")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	8.10E+03	6.86E+01	1.10E-03	5.49E+03	6.04E+00	1.00E+00	5.50E-03	1.36E+04	1.59E+02	2.97E-02	1.76E+02	7.71E+01
UBDT-TP-6 (12-24")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.07E+04	9.09E+01	1.10E-03	7.27E+03	8.01E+00	1.00E+00	5.50E-03	1.80E+04	1.59E+02	2.97E-02	1.76E+02	1.02E+02
UBDT-TP-6 (24-36")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	4.14E+03	3.51E+01	1.10E-03	2.81E+03	3.09E+00	1.00E+00	5.50E-03	6.94E+03	1.59E+02	2.97E-02	1.76E+02	3.94E+01
UBDT-TP-6 (36-48")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.13E+04	9.60E+01	1.10E-03	7.68E+03	8.46E+00	1.00E+00	5.50E-03	1.90E+04	1.59E+02	2.97E-02	1.76E+02	1.08E+02
UBDT-TP-6 (48-60")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	6.88E+03	5.83E+01	1.10E-03	4.66E+03	5.14E+00	1.00E+00	5.50E-03	1.15E+04	1.59E+02	2.97E-02	1.76E+02	6.55E+01
BREOT-N12-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	3.31E+03	2.80E+01	1.10E-03	2.24E+03	2.47E+00	1.00E+00	5.50E-03	5.54E+03	1.59E+02	2.97E-02	1.76E+02	3.15E+01
BREOT-S12-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	2.78E+03	2.35E+01	1.10E-03	1.88E+03	2.07E+00	1.00E+00	5.50E-03	4.65E+03	1.59E+02	2.97E-02	1.76E+02	2.64E+01
BREOT-S13-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	3.86E+03	3.27E+01	1.10E-03	2.61E+03	2.88E+00	1.00E+00	5.50E-03	6.46E+03	1.59E+02	2.97E-02	1.76E+02	3.67E+01
BREOT-S14-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.99E+03	1.69E+01	1.10E-03	1.35E+03	1.49E+00	1.00E+00	5.50E-03	3.34E+03	1.59E+02	2.97E-02	1.76E+02	1.90E+01
BREOT-N15-12.5 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S15-12.5 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N16-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	3.19E+03	2.70E+01	1.10E-03	2.16E+03	2.38E+00	1.00E+00	5.50E-03	5.34E+03	1.59E+02	2.97E-02	1.76E+02	3.03E+01
BREOT-N16-25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.69E+03	1.43E+01	1.10E-03	1.14E+03	1.26E+00	1.00E+00	5.50E-03	2.83E+03	1.59E+02	2.97E-02	1.76E+02	1.61E+01
BREOT-S16-12.5 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N17-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	8.89E+02	7.53E+00	1.10E-03	6.03E+02	6.63E-01	1.00E+00	5.50E-03	1.49E+03	1.59E+02	2.97E-02	1.76E+02	8.47E+00
BREOT-S17-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	5.68E+02	4.81E+00	1.10E-03	3.85E+02	4.24E-01	1.00E+00	5.50E-03	9.51E+02	1.59E+02	2.97E-02	1.76E+02	5.41E+00
BREOT-S17-25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.46E+03	1.24E+01	1.10E-03	9.91E+02	1.09E+00	1.00E+00	5.50E-03	2.45E+03	1.59E+02	2.97E-02	1.76E+02	1.39E+01
UBDT-TP-4 (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	9.07E+03	7.68E+01	1.10E-03	6.15E+03	6.77E+00	1.00E+00	5.50E-03	1.52E+04	1.59E+02	2.97E-02	1.76E+02	8.63E+01
UBDT-TP-4 (2-12")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	5.74E+03	4.86E+01	1.10E-03	3.89E+03	4.28E+00	1.00E+00	5.50E-03	9.62E+03	1.59E+02	2.97E-02	1.76E+02	5.47E+01
UBDT-TP-4 (12-24")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	2.82E+03	2.39E+01	1.10E-03	1.91E+03	2.10E+00	1.00E+00	5.50E-03	4.72E+03	1.59E+02	2.97E-02	1.76E+02	2.68E+01
UBDT-TP-4 (24-36")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	2.62E+03	2.22E+01	1.10E-03	1.78E+03	1.96E+00	1.00E+00	5.50E-03	4.40E+03	1.59E+02	2.97E-02	1.76E+02	2.50E+01

TABLE C-2E: MANGANESE DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **18.41**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Masked Shrew (Omnivorous Mammal - Terrestrial, Wetland)																							
BREOT-N18-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	8.84E+03	7.49E+01	1.10E-03	5.99E+03	6.59E+00	1.00E+00	5.50E-03	1.48E+04	1.59E+02	2.97E-02	1.76E+02	8.41E+01
BREOT-N18-25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	8.35E+02	7.07E+00	1.10E-03	5.66E+02	6.23E-01	1.00E+00	5.50E-03	1.40E+03	1.59E+02	2.97E-02	1.76E+02	7.95E+00
BREOT-S18-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	2.23E+03	1.89E+01	1.10E-03	1.51E+03	1.66E+00	1.00E+00	5.50E-03	3.73E+03	1.59E+02	2.97E-02	1.76E+02	2.12E+01
BREOT-N19-10 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.30E+03	1.11E+01	1.10E-03	8.84E+02	9.73E-01	1.00E+00	5.50E-03	2.19E+03	1.59E+02	2.97E-02	1.76E+02	1.24E+01
BREOT-S19-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	4.23E+03	3.58E+01	1.10E-03	2.87E+03	3.16E+00	1.00E+00	5.50E-03	7.09E+03	1.59E+02	2.97E-02	1.76E+02	4.03E+01
UBDT-TP-5 (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	6.84E+03	5.79E+01	1.10E-03	4.63E+03	5.10E+00	1.00E+00	5.50E-03	1.15E+04	1.59E+02	2.97E-02	1.76E+02	6.51E+01
UBDT-TP-5 (2-12")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	5.71E+03	4.84E+01	1.10E-03	3.87E+03	4.26E+00	1.00E+00	5.50E-03	9.57E+03	1.59E+02	2.97E-02	1.76E+02	5.44E+01
UBDT-TP-5 (12-24")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	5.21E+03	4.41E+01	1.10E-03	3.53E+03	3.89E+00	1.00E+00	5.50E-03	8.73E+03	1.59E+02	2.97E-02	1.76E+02	4.96E+01
BREOT-N20-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.13E+03	9.57E+00	1.10E-03	7.65E+02	8.43E-01	1.00E+00	5.50E-03	1.89E+03	1.59E+02	2.97E-02	1.76E+02	1.08E+01
UBDT-TP-3 (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.18E+03	9.98E+00	1.10E-03	7.98E+02	8.79E-01	1.00E+00	5.50E-03	1.97E+03	1.59E+02	2.97E-02	1.76E+02	1.12E+01
UBDT-TP-3 (2-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UBDT-TP-3 (12-24")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	4.45E+02	3.77E+00	1.10E-03	3.01E+02	3.32E-01	1.00E+00	5.50E-03	7.45E+02	1.59E+02	2.97E-02	1.76E+02	4.23E+00
UBDT-TP-3 (24-36")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	5.32E+02	4.50E+00	1.10E-03	3.60E+02	3.97E-01	1.00E+00	5.50E-03	8.91E+02	1.59E+02	2.97E-02	1.76E+02	5.06E+00
UBDT-TP-3 (36-48")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	8.18E+03	6.93E+01	1.10E-03	5.54E+03	6.10E+00	1.00E+00	5.50E-03	1.37E+04	1.59E+02	2.97E-02	1.76E+02	7.79E+01
UBDT-TP-3 (48-60")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	3.88E+03	3.28E+01	1.10E-03	2.63E+03	2.89E+00	1.00E+00	5.50E-03	6.50E+03	1.59E+02	2.97E-02	1.76E+02	3.69E+01
BREOT-N21-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.01E+04	8.53E+01	1.10E-03	6.83E+03	7.52E+00	1.00E+00	5.50E-03	1.69E+04	1.59E+02	2.97E-02	1.76E+02	9.59E+01
BREOT-N22-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	9.92E+02	8.40E+00	1.10E-03	6.72E+02	7.40E-01	1.00E+00	5.50E-03	1.66E+03	1.59E+02	2.97E-02	1.76E+02	9.44E+00
BREOT-N23-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	2.16E+03	1.83E+01	1.10E-03	1.46E+03	1.61E+00	1.00E+00	5.50E-03	3.62E+03	1.59E+02	2.97E-02	1.76E+02	2.06E+01
BREOT-S23-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	2.34E+04	1.99E+02	1.10E-03	1.59E+04	1.75E+01	1.00E+00	5.50E-03	3.93E+04	1.59E+02	2.97E-02	1.76E+02	2.23E+02
UBDT-TP-2 (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	8.08E+03	6.85E+01	1.10E-03	5.48E+03	6.03E+00	1.00E+00	5.50E-03	1.35E+04	1.59E+02	2.97E-02	1.76E+02	7.69E+01
UBDT-TP-2 (2-12")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.06E+04	9.01E+01	1.10E-03	7.21E+03	7.94E+00	1.00E+00	5.50E-03	1.78E+04	1.59E+02	2.97E-02	1.76E+02	1.01E+02
UBDT-TP-2 (12-24")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	8.02E+03	6.80E+01	1.10E-03	5.44E+03	5.99E+00	1.00E+00	5.50E-03	1.34E+04	1.59E+02	2.97E-02	1.76E+02	7.64E+01
UBDT-TP-2 (24-36")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	4.07E+03	3.45E+01	1.10E-03	2.76E+03	3.04E+00	1.00E+00	5.50E-03	6.83E+03	1.59E+02	2.97E-02	1.76E+02	3.88E+01
UBDT-TP-2 (36-48")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	4.11E+03	3.48E+01	1.10E-03	2.79E+03	3.07E+00	1.00E+00	5.50E-03	6.89E+03	1.59E+02	2.97E-02	1.76E+02	3.92E+01
BREOT-S24-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	2.40E+04	2.03E+02	1.10E-03	1.63E+04	1.79E+01	1.00E+00	5.50E-03	4.02E+04	1.59E+02	2.97E-02	1.76E+02	2.29E+02
BREOT-N25-50 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	7.11E+03	6.02E+01	1.10E-03	4.82E+03	5.31E+00	1.00E+00	5.50E-03	1.19E+04	1.59E+02	2.97E-02	1.76E+02	6.77E+01
BREOT-N25-95 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S25-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	8.57E+03	7.26E+01	1.10E-03	5.81E+03	6.40E+00	1.00E+00	5.50E-03	1.44E+04	1.59E+02	2.97E-02	1.76E+02	8.16E+01
BREOT-S25-40 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N26A-25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	6.76E+02	5.73E+00	1.10E-03	4.58E+02	5.04E-01	1.00E+00	5.50E-03	1.13E+03	1.59E+02	2.97E-02	1.76E+02	6.43E+00
BREOT-N26B-25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	2.81E+03	2.38E+01	1.10E-03	1.90E+03	2.09E+00	1.00E+00	5.50E-03	4.70E+03	1.59E+02	2.97E-02	1.76E+02	2.67E+01
BREOT-N26-50 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	7.10E+03	6.01E+01	1.10E-03	4.81E+03	5.30E+00	1.00E+00	5.50E-03	1.19E+04	1.59E+02	2.97E-02	1.76E+02	6.76E+01
BREOT-N26-75 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	3.92E+03	3.32E+01	1.10E-03	2.65E+03	2.92E+00	1.00E+00	5.50E-03	6.57E+03	1.59E+02	2.97E-02	1.76E+02	3.73E+01
BREOT-S26-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	3.51E+03	2.97E+01	1.10E-03	2.38E+03	2.62E+00	1.00E+00	5.50E-03	5.88E+03	1.59E+02	2.97E-02	1.76E+02	3.34E+01
BREOT-S26-40 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.06E+04	8.97E+01	1.10E-03	7.17E+03	7.90E+00	1.00E+00	5.50E-03	1.77E+04	1.59E+02	2.97E-02	1.76E+02	1.01E+02
BREOT-N27-30 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	3.92E+03	3.32E+01	1.10E-03	2.66E+03	2.93E+00	1.00E+00	5.50E-03	6.57E+03	1.59E+02	2.97E-02	1.76E+02	3.73E+01
BREOT-N27-75 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.12E+04	9.46E+01	1.10E-03	7.57E+03	8.33E+00	1.00E+00	5.50E-03	1.87E+04	1.59E+02	2.97E-02	1.76E+02	1.06E+02
BREOT-S27-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	2.24E+03	1.90E+01	1.10E-03	1.52E+03	1.67E+00	1.00E+00	5.50E-03	3.75E+03	1.59E+02	2.97E-02	1.76E+02	2.13E+01
BREOT-N28-110 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	2.07E+03	1.75E+01	1.10E-03	1.40E+03	1.55E+00	1.00E+00	5.50E-03	3.47E+03	1.59E+02	2.97E-02	1.76E+02	1.97E+01
BREOT-N28-55 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	5.49E+03	4.65E+01	1.10E-03	3.72E+03	4.09E+00	1.00E+00	5.50E-03	9.19E+03	1.59E+02	2.97E-02	1.76E+02	5.22E+01
BREOT-S28-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.24E+04	1.05E+02	1.10E-03	8.38E+03	9.23E+00	1.00E+00	5.50E-03	2.07E+04	1.59E+02	2.97E-02	1.76E+02	1.18E+02
UBDT-TP-1 (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	8.19E+03	6.94E+01	1.10E-03	5.55E+03	6.11E+00	1.00E+00	5.50E-03	1.37E+04	1.59E+02	2.97E-02	1.76E+02	7.80E+01
UBDT-TP-1 (2-12")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	8.15E+03	6.91E+01	1.10E-03	5.52E+03	6.08E+00	1.00E+00	5.50E-03	1.37E+04	1.59E+02	2.97E-02	1.76E+02	7.76E+01
UBDT-TP-1 (12-24")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	8.37E+03	7.09E+01	1.10E-03	5.67E+03	6.25E+00	1.00E+00	5.50E-03	1.40E+04	1.59E+02	2.97E-02	1.76E+02	7.97E+01
UBDT-TP-1 (24-36")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.11E+04	9.44E+01	1.10E-03	7.55E+03	8.31E+00	1.00E+00	5.50E-03	1.87E+04	1.59E+02	2.97E-02	1.76E+02	1.06E+02
UBDT-TP-1 (36-48")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.77E+03	1.50E+01	1.10E-03	1.20E+03	1.32E+00	1.00E+00	5.50E-03	2.97E+03	1.59E+02	2.97E-02	1.76E+02	1.69E+01
UBDT-TP-1 (48-60")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	2.20E+03	1.87E+01	1.10E-03	1.49E+03	1.64E+00	1.00E+00	5.50E-03	3.69E+03	1.59E+02	2.97E-02	1.76E+02	2.10E+01
BREOT-N29-30 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	8.50E+03	7.20E+01	1.10E-03	5.76E+03	6.34E+00	1.00E+00	5.50E-03	1.42E+04	1.59E+02	2.97E-02	1.76E+02	8.09E+01
BREOT-S29-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.04E+04	8.84E+01	1.10E-03	7.07E+03	7.78E+00	1.00E+00	5.50E-03	1.75E+04	1.59E+02	2.97E-02	1.76E+02	9.93E+01
BREOT-N30-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	2.91E+03	2.46E+01	1.10E-03	1.97E+03	2.17E+00	1.00E+00	5.50E-03	4.87E+03	1.59E+02	2.97E-02	1.76E+02	2.77E+01
BREOT-S30-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	7.17E+03	6.07E+01	1.10E-03	4.86E+03	5.35E+00	1.00E+00	5.50E-03	1.20E+04	1.59E+02	2.97E-02	1.76E+02	6.83E+01
BREOT-N31-12.5 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S31-25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	5.78E+03	4.90E+01	1.10E-03	3.92E+03	4.31E+00	1.00E+00	5.50E-03	9.69E+03	1.59E+02	2.97E-02	1.76E+02	5.50E+01
BREOT-S31-5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	9.42E+03	7.98E+01	1.10E-03	6.38E+03	7.03E+00	1.00E+00	5.50E-03	1.58E+04	1.59E+02	2.97E-02	1.76E+02	8.97E+01
BREOT-N32-12.5 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB

TABLE C-2E: MANGANESE DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **18.41**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Masked Shrew (Omnivorous Mammal - Terrestrial, Wetland)																							
BREOT-S32-6 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	2.04E+03	1.73E+01	1.10E-03	1.38E+03	1.52E+00	1.00E+00	5.50E-03	3.42E+03	1.59E+02	2.97E-02	1.76E+02	1.94E+01
BREOT-N33-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	5.93E+02	5.02E+00	1.10E-03	4.02E+02	4.43E-01	1.00E+00	5.50E-03	9.94E+02	1.59E+02	2.97E-02	1.76E+02	5.65E+00
BREOT-S33-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	3.98E+03	3.37E+01	1.10E-03	2.70E+03	2.97E+00	1.00E+00	5.50E-03	6.67E+03	1.59E+02	2.97E-02	1.76E+02	3.79E+01
BREOT-N35-12.5 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S35-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.25E+04	1.06E+02	1.10E-03	8.47E+03	9.33E+00	1.00E+00	5.50E-03	2.09E+04	1.59E+02	2.97E-02	1.76E+02	1.19E+02
BREOT-N36-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	4.81E+03	4.08E+01	1.10E-03	3.26E+03	3.59E+00	1.00E+00	5.50E-03	8.07E+03	1.59E+02	2.97E-02	1.76E+02	4.58E+01
BREOT-S36-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.66E+03	1.41E+01	1.10E-03	1.13E+03	1.24E+00	1.00E+00	5.50E-03	2.79E+03	1.59E+02	2.97E-02	1.76E+02	1.58E+01
BREOT-N37-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	4.87E+02	4.12E+00	1.10E-03	3.30E+02	3.63E-01	1.00E+00	5.50E-03	8.16E+02	1.59E+02	2.97E-02	1.76E+02	4.63E+00
BREOT-S37-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.97E+03	1.67E+01	1.10E-03	1.33E+03	1.47E+00	1.00E+00	5.50E-03	3.29E+03	1.59E+02	2.97E-02	1.76E+02	1.87E+01
BREOT-N38-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	9.82E+02	8.32E+00	1.10E-03	6.65E+02	7.32E-01	1.00E+00	5.50E-03	1.65E+03	1.59E+02	2.97E-02	1.76E+02	9.35E+00
BREOT-S38-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.74E+04	1.47E+02	1.10E-03	1.18E+04	1.29E+01	1.00E+00	5.50E-03	2.91E+04	1.59E+02	2.97E-02	1.76E+02	1.65E+02
BREOT-N39-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.46E+03	1.24E+01	1.10E-03	9.89E+02	1.09E+00	1.00E+00	5.50E-03	2.45E+03	1.59E+02	2.97E-02	1.76E+02	1.39E+01
BREOT-S39-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	6.80E+03	5.76E+01	1.10E-03	4.61E+03	5.07E+00	1.00E+00	5.50E-03	1.14E+04	1.59E+02	2.97E-02	1.76E+02	6.47E+01
BREOT-N40-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	6.83E+03	5.79E+01	1.10E-03	4.63E+03	5.10E+00	1.00E+00	5.50E-03	1.15E+04	1.59E+02	2.97E-02	1.76E+02	6.51E+01
BREOT-S40-14 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	6.31E+03	5.35E+01	1.10E-03	4.28E+03	4.71E+00	1.00E+00	5.50E-03	1.06E+04	1.59E+02	2.97E-02	1.76E+02	6.01E+01
BREOT-N41-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	5.03E+03	4.26E+01	1.10E-03	3.41E+03	3.75E+00	1.00E+00	5.50E-03	8.43E+03	1.59E+02	2.97E-02	1.76E+02	4.79E+01
BREOT-S41-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	6.31E+03	5.35E+01	1.10E-03	4.28E+03	4.71E+00	1.00E+00	5.50E-03	1.06E+04	1.59E+02	2.97E-02	1.76E+02	6.01E+01
BREOT-N42-35 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.16E+03	9.81E+00	1.10E-03	7.85E+02	8.64E-01	1.00E+00	5.50E-03	1.94E+03	1.59E+02	2.97E-02	1.76E+02	1.10E+01
BREOT-S42-25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	2.45E+03	2.07E+01	1.10E-03	1.66E+03	1.83E+00	1.00E+00	5.50E-03	4.10E+03	1.59E+02	2.97E-02	1.76E+02	2.33E+01
BREOT-N43-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.49E+04	1.26E+02	1.10E-03	1.01E+04	1.11E+01	1.00E+00	5.50E-03	2.50E+04	1.59E+02	2.97E-02	1.76E+02	1.42E+02
BREOT-S43-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	3.27E+03	2.77E+01	1.10E-03	2.22E+03	2.44E+00	1.00E+00	5.50E-03	5.49E+03	1.59E+02	2.97E-02	1.76E+02	3.12E+01
BREOT-N44-30 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.17E+03	9.89E+00	1.10E-03	7.91E+02	8.71E-01	1.00E+00	5.50E-03	1.96E+03	1.59E+02	2.97E-02	1.76E+02	1.11E+01
BREOT-S44-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.10E+04	9.30E+01	1.10E-03	7.44E+03	8.19E+00	1.00E+00	5.50E-03	1.84E+04	1.59E+02	2.97E-02	1.76E+02	1.05E+02
BREOT-N45-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.41E+03	1.20E+01	1.10E-03	9.57E+02	1.05E+00	1.00E+00	5.50E-03	2.37E+03	1.59E+02	2.97E-02	1.76E+02	1.35E+01
BREOT-N43-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.49E+04	1.26E+02	1.10E-03	1.01E+04	1.11E+01	1.00E+00	5.50E-03	2.50E+04	1.59E+02	2.97E-02	1.76E+02	1.42E+02
BREOT-S45-6 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.89E+03	1.60E+01	1.10E-03	1.28E+03	1.41E+00	1.00E+00	5.50E-03	3.16E+03	1.59E+02	2.97E-02	1.76E+02	1.80E+01
BREOT-N46-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	5.42E+02	4.59E+00	1.10E-03	3.67E+02	4.05E-01	1.00E+00	5.50E-03	9.09E+02	1.59E+02	2.97E-02	1.76E+02	5.16E+00
BREOT-S46-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	5.39E+02	4.57E+00	1.10E-03	3.65E+02	4.02E-01	1.00E+00	5.50E-03	9.04E+02	1.59E+02	2.97E-02	1.76E+02	5.13E+00
BREOT-S46-40 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	8.26E+02	6.99E+00	1.10E-03	5.59E+02	6.16E-01	1.00E+00	5.50E-03	1.38E+03	1.59E+02	2.97E-02	1.76E+02	7.86E+00
BREOT-N47-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.04E+03	8.80E+00	1.10E-03	7.04E+02	7.75E-01	1.00E+00	5.50E-03	1.74E+03	1.59E+02	2.97E-02	1.76E+02	9.89E+00
BREOT-S47-999 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.10E+03	9.34E+00	1.10E-03	7.47E+02	8.23E-01	1.00E+00	5.50E-03	1.85E+03	1.59E+02	2.97E-02	1.76E+02	1.05E+01
BREOT-S48-12.5 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S49-2.5 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S50-12.5 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S50-25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N52-60 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S52-12.5 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S53-12.5 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S54-12.5 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N55-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	5.53E+03	4.69E+01	1.10E-03	3.75E+03	4.13E+00	1.00E+00	5.50E-03	9.27E+03	1.59E+02	2.97E-02	1.76E+02	5.27E+01
BREOT-S55-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	2.28E+03	1.93E+01	1.10E-03	1.55E+03	1.70E+00	1.00E+00	5.50E-03	3.83E+03	1.59E+02	2.97E-02	1.76E+02	2.17E+01
BREOT-N56-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	2.64E+03	2.24E+01	1.10E-03	1.79E+03	1.97E+00	1.00E+00	5.50E-03	4.42E+03	1.59E+02	2.97E-02	1.76E+02	2.51E+01
BREOT-S56-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.40E+03	1.19E+01	1.10E-03	9.52E+02	1.05E+00	1.00E+00	5.50E-03	2.35E+03	1.59E+02	2.97E-02	1.76E+02	1.34E+01
BREOT-N57-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.76E+03	1.49E+01	1.10E-03	1.19E+03	1.31E+00	1.00E+00	5.50E-03	2.95E+03	1.59E+02	2.97E-02	1.76E+02	1.68E+01
BREOT-S57-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.83E+03	1.55E+01	1.10E-03	1.24E+03	1.37E+00	1.00E+00	5.50E-03	3.07E+03	1.59E+02	2.97E-02	1.76E+02	1.75E+01
BREOT-N58-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	3.04E+03	2.57E+01	1.10E-03	2.06E+03	2.26E+00	1.00E+00	5.50E-03	5.09E+03	1.59E+02	2.97E-02	1.76E+02	2.89E+01
BREOT-S58-12 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.90E+03	1.61E+01	1.10E-03	1.29E+03	1.42E+00	1.00E+00	5.50E-03	3.18E+03	1.59E+02	2.97E-02	1.76E+02	1.81E+01
BREOT-N59-18 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.04E+03	8.81E+00	1.10E-03	7.05E+02	7.76E-01	1.00E+00	5.50E-03	1.74E+03	1.59E+02	2.97E-02	1.76E+02	9.90E+00
BREOT-N60-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.78E+03	1.50E+01	1.10E-03	1.20E+03	1.33E+00	1.00E+00	5.50E-03	2.98E+03	1.59E+02	2.97E-02	1.76E+02	1.69E+01
BREOT-S60-12.5 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S61-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	9.43E+03	7.99E+01	1.10E-03	6.39E+03	7.03E+00	1.00E+00	5.50E-03	1.58E+04	1.59E+02	2.97E-02	1.76E+02	8.97E+01
BREOT-N62-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	9.16E+02	7.76E+00	1.10E-03	6.21E+02	6.84E-01	1.00E+00	5.50E-03	1.54E+03	1.59E+02	2.97E-02	1.76E+02	8.72E+00
BREOT-S62-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.12E+04	9.50E+01	1.10E-03	7.60E+03	8.37E+00	1.00E+00	5.50E-03	1.88E+04	1.59E+02	2.97E-02	1.76E+02	1.07E+02
BREOT-S63-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.61E+03	1.36E+01	1.10E-03	1.09E+03	1.20E+00	1.00E+00	5.50E-03	2.69E+03	1.59E+02	2.97E-02	1.76E+02	1.53E+01
BREOT-N64-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.62E+03	1.37E+01	1.10E-03	1.10E+03	1.21E+00	1.00E+00	5.50E-03	2.71E+03	1.59E+02	2.97E-02	1.76E+02	1.54E+01

TABLE C-2E: MANGANESE DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **18.41**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Masked Shrew (Omnivorous Mammal - Terrestrial, Wetland)																							
BREOT-N64-20 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.57E+03	1.33E+01	1.10E-03	1.06E+03	1.17E+00	1.00E+00	5.50E-03	2.63E+03	1.59E+02	2.97E-02	1.76E+02	1.50E+01
BREOT-S64-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	5.37E+02	4.55E+00	1.10E-03	3.64E+02	4.01E-01	1.00E+00	5.50E-03	9.00E+02	1.59E+02	2.97E-02	1.76E+02	5.12E+00
BREOT-N65-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.39E+03	1.18E+01	1.10E-03	9.44E+02	1.04E+00	1.00E+00	5.50E-03	2.33E+03	1.59E+02	2.97E-02	1.76E+02	1.33E+01
BREOT-S65-12.5 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N66-5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	7.87E+02	6.67E+00	1.10E-03	5.33E+02	5.87E-01	1.00E+00	5.50E-03	1.32E+03	1.59E+02	2.97E-02	1.76E+02	7.49E+00
BREOT-S66-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.34E+03	1.13E+01	1.10E-03	9.06E+02	9.97E-01	1.00E+00	5.50E-03	2.24E+03	1.59E+02	2.97E-02	1.76E+02	1.27E+01
BREOT-N67-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.56E+04	1.32E+02	1.10E-03	1.05E+04	1.16E+01	1.00E+00	5.50E-03	2.61E+04	1.59E+02	2.97E-02	1.76E+02	1.48E+02
BREOT-S67-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	8.68E+02	7.36E+00	1.10E-03	5.88E+02	6.48E-01	1.00E+00	5.50E-03	1.46E+03	1.59E+02	2.97E-02	1.76E+02	8.27E+00
At Edge of Tailings																						**Maximum HQ (Inside Tailings)**	**2.29E+02**
BREOT-S0-0 (06)	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.13E+03	9.53E+00	1.10E-03	7.62E+02	8.39E-01	1.00E+00	5.50E-03	1.89E+03	1.59E+02	2.97E-02	1.76E+02	1.07E+01
BREOT-S1-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.25E+03	1.06E+01	1.10E-03	8.47E+02	9.32E-01	1.00E+00	5.50E-03	2.09E+03	1.59E+02	2.97E-02	1.76E+02	1.19E+01
BREOT-S2-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	3.34E+03	2.83E+01	1.10E-03	2.26E+03	2.49E+00	1.00E+00	5.50E-03	5.59E+03	1.59E+02	2.97E-02	1.76E+02	3.18E+01
BREOT-S3-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	8.42E+03	7.13E+01	1.10E-03	5.70E+03	6.28E+00	1.00E+00	5.50E-03	1.41E+04	1.59E+02	2.97E-02	1.76E+02	8.01E+01
BREOT-S4-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	9.87E+03	8.36E+01	1.10E-03	6.69E+03	7.36E+00	1.00E+00	5.50E-03	1.65E+04	1.59E+02	2.97E-02	1.76E+02	9.39E+01
BREOT-S6-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S7-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S8-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.72E+03	1.46E+01	1.10E-03	1.17E+03	1.28E+00	1.00E+00	5.50E-03	2.89E+03	1.59E+02	2.97E-02	1.76E+02	1.64E+01
BREOT-S9-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N10-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.19E+04	1.01E+02	1.10E-03	8.05E+03	8.87E+00	1.00E+00	5.50E-03	1.99E+04	1.59E+02	2.97E-02	1.76E+02	1.13E+02
BREOT-N11-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	5.55E+02	4.70E+00	1.10E-03	3.76E+02	4.14E-01	1.00E+00	5.50E-03	9.30E+02	1.59E+02	2.97E-02	1.76E+02	5.29E+00
BREOT-S11-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	2.94E+03	2.49E+01	1.10E-03	1.99E+03	2.20E+00	1.00E+00	5.50E-03	4.93E+03	1.59E+02	2.97E-02	1.76E+02	2.80E+01
BREOT-N12-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.54E+03	1.31E+01	1.10E-03	1.05E+03	1.15E+00	1.00E+00	5.50E-03	2.59E+03	1.59E+02	2.97E-02	1.76E+02	1.47E+01
BREOT-S12-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	4.41E+03	3.73E+01	1.10E-03	2.99E+03	3.29E+00	1.00E+00	5.50E-03	7.39E+03	1.59E+02	2.97E-02	1.76E+02	4.20E+01
BREOT-N13-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	2.29E+03	1.94E+01	1.10E-03	1.55E+03	1.71E+00	1.00E+00	5.50E-03	3.84E+03	1.59E+02	2.97E-02	1.76E+02	2.18E+01
BREOT-S13-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.28E+03	1.08E+01	1.10E-03	8.65E+02	9.53E-01	1.00E+00	5.50E-03	2.14E+03	1.59E+02	2.97E-02	1.76E+02	1.22E+01
BREOT-N14-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	2.29E+03	1.94E+01	1.10E-03	1.55E+03	1.71E+00	1.00E+00	5.50E-03	3.83E+03	1.59E+02	2.97E-02	1.76E+02	2.18E+01
BREOT-S14-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.35E+04	1.14E+02	1.10E-03	9.15E+03	1.01E+01	1.00E+00	5.50E-03	2.26E+04	1.59E+02	2.97E-02	1.76E+02	1.29E+02
BREOT-N15-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.20E+03	1.01E+01	1.10E-03	8.10E+02	8.92E-01	1.00E+00	5.50E-03	2.00E+03	1.59E+02	2.97E-02	1.76E+02	1.14E+01
BREOT-N16-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	9.05E+02	7.66E+00	1.10E-03	6.13E+02	6.75E-01	1.00E+00	5.50E-03	1.52E+03	1.59E+02	2.97E-02	1.76E+02	8.61E+00
BREOT-S16-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.59E+03	1.35E+01	1.10E-03	1.08E+03	1.18E+00	1.00E+00	5.50E-03	2.66E+03	1.59E+02	2.97E-02	1.76E+02	1.51E+01
BREOT-N17-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	2.45E+03	2.07E+01	1.10E-03	1.66E+03	1.82E+00	1.00E+00	5.50E-03	4.10E+03	1.59E+02	2.97E-02	1.76E+02	2.33E+01
BREOT-S17-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	7.53E+02	6.37E+00	1.10E-03	5.10E+02	5.61E-01	1.00E+00	5.50E-03	1.26E+03	1.59E+02	2.97E-02	1.76E+02	7.16E+00
BREOT-N18-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	9.60E+02	8.13E+00	1.10E-03	6.50E+02	7.16E-01	1.00E+00	5.50E-03	1.61E+03	1.59E+02	2.97E-02	1.76E+02	9.14E+00
BREOT-S18-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	6.00E+05	5.08E+03	1.10E-03	4.07E+05	4.48E+02	1.00E+00	5.50E-03	1.01E+06	1.59E+02	2.97E-02	1.76E+02	5.71E+03
BREOT-N19-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	6.63E+03	5.62E+01	1.10E-03	4.49E+03	4.95E+00	1.00E+00	5.50E-03	1.11E+04	1.59E+02	2.97E-02	1.76E+02	6.32E+01
BREOT-S19-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.86E+03	1.57E+01	1.10E-03	1.26E+03	1.39E+00	1.00E+00	5.50E-03	3.11E+03	1.59E+02	2.97E-02	1.76E+02	1.77E+01
BREOT-N20-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.47E+04	1.25E+02	1.10E-03	9.99E+03	1.10E+01	1.00E+00	5.50E-03	2.47E+04	1.59E+02	2.97E-02	1.76E+02	1.40E+02
BREOT-S20-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.18E+03	9.97E+00	1.10E-03	7.97E+02	8.78E-01	1.00E+00	5.50E-03	1.97E+03	1.59E+02	2.97E-02	1.76E+02	1.12E+01
BREOT-N21-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	9.58E+05	8.11E+03	1.10E-03	6.49E+05	7.14E+02	1.00E+00	5.50E-03	1.60E+06	1.59E+02	2.97E-02	1.76E+02	9.12E+03
BREOT-S21-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	5.00E+02	4.24E+00	1.10E-03	3.39E+02	3.73E-01	1.00E+00	5.50E-03	8.39E+02	1.59E+02	2.97E-02	1.76E+02	4.76E+00
BREOT-N22-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.26E+03	1.07E+01	1.10E-03	8.55E+02	9.41E-01	1.00E+00	5.50E-03	2.11E+03	1.59E+02	2.97E-02	1.76E+02	1.20E+01
BREOT-S22-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N23-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	4.43E+03	3.75E+01	1.10E-03	3.00E+03	3.30E+00	1.00E+00	5.50E-03	7.42E+03	1.59E+02	2.97E-02	1.76E+02	4.21E+01
BREOT-S23-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	2.45E+03	2.08E+01	1.10E-03	1.66E+03	1.83E+00	1.00E+00	5.50E-03	4.11E+03	1.59E+02	2.97E-02	1.76E+02	2.33E+01
BREOT-N24-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.97E+03	1.67E+01	1.10E-03	1.33E+03	1.47E+00	1.00E+00	5.50E-03	3.30E+03	1.59E+02	2.97E-02	1.76E+02	1.88E+01
BREOT-S24-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	3.56E+04	3.02E+02	1.10E-03	2.41E+04	2.66E+01	1.00E+00	5.50E-03	5.97E+04	1.59E+02	2.97E-02	1.76E+02	3.39E+02
BREOT-N25-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	5.96E+03	5.05E+01	1.10E-03	4.04E+03	4.44E+00	1.00E+00	5.50E-03	9.98E+03	1.59E+02	2.97E-02	1.76E+02	5.67E+01
BREOT-S25-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	8.54E+03	7.23E+01	1.10E-03	5.79E+03	6.37E+00	1.00E+00	5.50E-03	1.43E+04	1.59E+02	2.97E-02	1.76E+02	8.13E+01
BREOT-N26-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	3.88E+03	3.29E+01	1.10E-03	2.63E+03	2.89E+00	1.00E+00	5.50E-03	6.50E+03	1.59E+02	2.97E-02	1.76E+02	3.69E+01
BREOT-S26-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	4.62E+03	3.91E+01	1.10E-03	3.13E+03	3.44E+00	1.00E+00	5.50E-03	7.74E+03	1.59E+02	2.97E-02	1.76E+02	4.40E+01
BREOT-N27-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	7.40E+03	6.27E+01	1.10E-03	5.02E+03	5.52E+00	1.00E+00	5.50E-03	1.24E+04	1.59E+02	2.97E-02	1.76E+02	7.05E+01
BREOT-S27-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	5.23E+03	4.43E+01	1.10E-03	3.54E+03	3.90E+00	1.00E+00	5.50E-03	8.76E+03	1.59E+02	2.97E-02	1.76E+02	4.98E+01
BREOT-N28-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	3.20E+03	2.71E+01	1.10E-03	2.17E+03	2.39E+00	1.00E+00	5.50E-03	5.36E+03	1.59E+02	2.97E-02	1.76E+02	3.04E+01
BREOT-S28-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S29-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.08E+03	9.18E+00	1.10E-03	7.34E+02	8.08E-01	1.00E+00	5.50E-03	1.82E+03	1.59E+02	2.97E-02	1.76E+02	1.03E+01

TABLE C-2E: MANGANESE DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **18.41**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Masked Shrew (Omnivorous Mammal - Terrestrial, Wetland)																							
BREOT-N30-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	5.10E+03	4.32E+01	1.10E-03	3.45E+03	3.80E+00	1.00E+00	5.50E-03	8.54E+03	1.59E+02	2.97E-02	1.76E+02	4.85E+01
BREOT-S30-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N31-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	5.03E+03	4.26E+01	1.10E-03	3.41E+03	3.75E+00	1.00E+00	5.50E-03	8.42E+03	1.59E+02	2.97E-02	1.76E+02	4.78E+01
BREOT-S31-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N32-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	2.29E+03	1.94E+01	1.10E-03	1.55E+03	1.71E+00	1.00E+00	5.50E-03	3.84E+03	1.59E+02	2.97E-02	1.76E+02	2.18E+01
BREOT-S32-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.79E+03	1.52E+01	1.10E-03	1.21E+03	1.34E+00	1.00E+00	5.50E-03	3.00E+03	1.59E+02	2.97E-02	1.76E+02	1.71E+01
BREOT-N33-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.41E+03	1.20E+01	1.10E-03	9.58E+02	1.06E+00	1.00E+00	5.50E-03	2.37E+03	1.59E+02	2.97E-02	1.76E+02	1.35E+01
BREOT-S33-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	2.70E+03	2.29E+01	1.10E-03	1.83E+03	2.02E+00	1.00E+00	5.50E-03	4.53E+03	1.59E+02	2.97E-02	1.76E+02	2.57E+01
BREOT-N34-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	2.16E+03	1.83E+01	1.10E-03	1.47E+03	1.61E+00	1.00E+00	5.50E-03	3.62E+03	1.59E+02	2.97E-02	1.76E+02	2.06E+01
BREOT-S34-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.07E+04	9.05E+01	1.10E-03	7.24E+03	7.97E+00	1.00E+00	5.50E-03	1.79E+04	1.59E+02	2.97E-02	1.76E+02	1.02E+02
BREOT-N35-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.19E+03	1.01E+01	1.10E-03	8.07E+02	8.88E-01	1.00E+00	5.50E-03	1.99E+03	1.59E+02	2.97E-02	1.76E+02	1.13E+01
BREOT-S35-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.83E+03	1.55E+01	1.10E-03	1.24E+03	1.36E+00	1.00E+00	5.50E-03	3.06E+03	1.59E+02	2.97E-02	1.76E+02	1.74E+01
BREOT-N36-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.25E+04	1.06E+02	1.10E-03	8.44E+03	9.30E+00	1.00E+00	5.50E-03	2.09E+04	1.59E+02	2.97E-02	1.76E+02	1.19E+02
BREOT-S36-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	9.40E+03	7.96E+01	1.10E-03	6.37E+03	7.01E+00	1.00E+00	5.50E-03	1.57E+04	1.59E+02	2.97E-02	1.76E+02	8.95E+01
BREOT-N37-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	2.05E+03	1.73E+01	1.10E-03	1.39E+03	1.53E+00	1.00E+00	5.50E-03	3.43E+03	1.59E+02	2.97E-02	1.76E+02	1.95E+01
BREOT-S37-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.20E+04	1.02E+02	1.10E-03	8.13E+03	8.95E+00	1.00E+00	5.50E-03	2.01E+04	1.59E+02	2.97E-02	1.76E+02	1.14E+02
BREOT-N38-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.08E+03	9.18E+00	1.10E-03	7.35E+02	8.09E-01	1.00E+00	5.50E-03	1.82E+03	1.59E+02	2.97E-02	1.76E+02	1.03E+01
BREOT-S38-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	6.89E+03	5.84E+01	1.10E-03	4.67E+03	5.14E+00	1.00E+00	5.50E-03	1.16E+04	1.59E+02	2.97E-02	1.76E+02	6.56E+01
BREOT-N39-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.28E+03	1.08E+01	1.10E-03	8.65E+02	9.52E-01	1.00E+00	5.50E-03	2.14E+03	1.59E+02	2.97E-02	1.76E+02	1.22E+01
BREOT-N40-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.37E+03	1.16E+01	1.10E-03	9.30E+02	1.02E+00	1.00E+00	5.50E-03	2.30E+03	1.59E+02	2.97E-02	1.76E+02	1.31E+01
BREOT-S40-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.28E+04	1.09E+02	1.10E-03	8.68E+03	9.56E+00	1.00E+00	5.50E-03	2.15E+04	1.59E+02	2.97E-02	1.76E+02	1.22E+02
BREOT-N41-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	7.21E+02	6.11E+00	1.10E-03	4.89E+02	5.38E-01	1.00E+00	5.50E-03	1.21E+03	1.59E+02	2.97E-02	1.76E+02	6.87E+00
BREOT-S41-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.37E+04	1.16E+02	1.10E-03	9.28E+03	1.02E+01	1.00E+00	5.50E-03	2.30E+04	1.59E+02	2.97E-02	1.76E+02	1.30E+02
BREOT-N42-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S42-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.56E+04	1.32E+02	1.10E-03	1.06E+04	1.16E+01	1.00E+00	5.50E-03	2.61E+04	1.59E+02	2.97E-02	1.76E+02	1.48E+02
BREOT-N43-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	9.15E+02	7.75E+00	1.10E-03	6.20E+02	6.83E-01	1.00E+00	5.50E-03	1.53E+03	1.59E+02	2.97E-02	1.76E+02	8.71E+00
BREOT-S43-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.45E+03	1.23E+01	1.10E-03	9.84E+02	1.08E+00	1.00E+00	5.50E-03	2.43E+03	1.59E+02	2.97E-02	1.76E+02	1.38E+01
BREOT-N44-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	2.03E+03	1.72E+01	1.10E-03	1.38E+03	1.51E+00	1.00E+00	5.50E-03	3.40E+03	1.59E+02	2.97E-02	1.76E+02	1.93E+01
BREOT-S44-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.72E+03	1.45E+01	1.10E-03	1.16E+03	1.28E+00	1.00E+00	5.50E-03	2.88E+03	1.59E+02	2.97E-02	1.76E+02	1.63E+01
BREOT-N45-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.43E+03	1.21E+01	1.10E-03	9.67E+02	1.07E+00	1.00E+00	5.50E-03	2.39E+03	1.59E+02	2.97E-02	1.76E+02	1.36E+01
BREOT-S45-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	9.71E+02	8.23E+00	1.10E-03	6.58E+02	7.25E-01	1.00E+00	5.50E-03	1.63E+03	1.59E+02	2.97E-02	1.76E+02	9.25E+00
BREOT-N46-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.01E+03	8.56E+00	1.10E-03	6.85E+02	7.54E-01	1.00E+00	5.50E-03	1.69E+03	1.59E+02	2.97E-02	1.76E+02	9.62E+00
BREOT-S46-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.19E+03	1.00E+01	1.10E-03	8.03E+02	8.84E-01	1.00E+00	5.50E-03	1.99E+03	1.59E+02	2.97E-02	1.76E+02	1.13E+01
BREOT-N47-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.26E+03	1.07E+01	1.10E-03	8.53E+02	9.39E-01	1.00E+00	5.50E-03	2.11E+03	1.59E+02	2.97E-02	1.76E+02	1.20E+01
BREOT-S47-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N48-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	8.23E+02	6.97E+00	1.10E-03	5.58E+02	6.14E-01	1.00E+00	5.50E-03	1.38E+03	1.59E+02	2.97E-02	1.76E+02	7.84E+00
BREOT-S48-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N49-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.49E+03	1.26E+01	1.10E-03	1.01E+03	1.11E+00	1.00E+00	5.50E-03	2.50E+03	1.59E+02	2.97E-02	1.76E+02	1.42E+01
BREOT-S49-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S50-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N51-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	2.47E+03	2.09E+01	1.10E-03	1.67E+03	1.84E+00	1.00E+00	5.50E-03	4.14E+03	1.59E+02	2.97E-02	1.76E+02	2.35E+01
BREOT-S51-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N52-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S52-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N53-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	8.31E+02	7.04E+00	1.10E-03	5.63E+02	6.20E-01	1.00E+00	5.50E-03	1.39E+03	1.59E+02	2.97E-02	1.76E+02	7.91E+00
BREOT-S53-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N54-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.00E+03	8.49E+00	1.10E-03	6.79E+02	7.48E-01	1.00E+00	5.50E-03	1.68E+03	1.59E+02	2.97E-02	1.76E+02	9.54E+00
BREOT-S54-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N55-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.52E+03	1.29E+01	1.10E-03	1.03E+03	1.14E+00	1.00E+00	5.50E-03	2.55E+03	1.59E+02	2.97E-02	1.76E+02	1.45E+01
BREOT-S55-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N56-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	9.67E+02	8.19E+00	1.10E-03	6.55E+02	7.22E-01	1.00E+00	5.50E-03	1.62E+03	1.59E+02	2.97E-02	1.76E+02	9.21E+00
BREOT-N57-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.37E+03	1.16E+01	1.10E-03	9.31E+02	1.02E+00	1.00E+00	5.50E-03	2.30E+03	1.59E+02	2.97E-02	1.76E+02	1.31E+01
BREOT-S57-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.38E+03	1.17E+01	1.10E-03	9.36E+02	1.03E+00	1.00E+00	5.50E-03	2.32E+03	1.59E+02	2.97E-02	1.76E+02	1.32E+01
BREOT-N58-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.45E+03	1.23E+01	1.10E-03	9.81E+02	1.08E+00	1.00E+00	5.50E-03	2.43E+03	1.59E+02	2.97E-02	1.76E+02	1.38E+01
BREOT-S58-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	7.62E+03	6.45E+01	1.10E-03	5.16E+03	5.68E+00	1.00E+00	5.50E-03	1.28E+04	1.59E+02	2.97E-02	1.76E+02	7.25E+01

TABLE C-2E: MANGANESE DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **18.41**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Masked Shrew (Omnivorous Mammal - Terrestrial, Wetland)																							
BREOT-N59-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.30E+03	1.10E+01	1.10E-03	8.83E+02	9.72E-01	1.00E+00	5.50E-03	2.18E+03	1.59E+02	2.97E-02	1.76E+02	1.24E+01
BREOT-N60-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	5.31E+02	4.50E+00	1.10E-03	3.60E+02	3.96E-01	1.00E+00	5.50E-03	8.91E+02	1.59E+02	2.97E-02	1.76E+02	5.06E+00
BREOT-S60-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	3.93E+03	3.33E+01	1.10E-03	2.66E+03	2.93E+00	1.00E+00	5.50E-03	6.59E+03	1.59E+02	2.97E-02	1.76E+02	3.74E+01
BREOT-S61-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N62-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.37E+03	1.16E+01	1.10E-03	9.29E+02	1.02E+00	1.00E+00	5.50E-03	2.30E+03	1.59E+02	2.97E-02	1.76E+02	1.31E+01
BREOT-S62-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N63-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.68E+03	1.42E+01	1.10E-03	1.14E+03	1.25E+00	1.00E+00	5.50E-03	2.81E+03	1.59E+02	2.97E-02	1.76E+02	1.60E+01
BREOT-S63-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.90E+03	1.61E+01	1.10E-03	1.29E+03	1.42E+00	1.00E+00	5.50E-03	3.19E+03	1.59E+02	2.97E-02	1.76E+02	1.81E+01
BREOT-N64-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	6.37E+02	5.39E+00	1.10E-03	4.31E+02	4.75E-01	1.00E+00	5.50E-03	1.07E+03	1.59E+02	2.97E-02	1.76E+02	6.06E+00
BREOT-S64-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	2.25E+02	1.91E+00	1.10E-03	1.53E+02	1.68E-01	1.00E+00	5.50E-03	3.78E+02	1.59E+02	2.97E-02	1.76E+02	2.15E+00
BREOT-N66-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.40E+03	1.18E+01	1.10E-03	9.47E+02	1.04E+00	1.00E+00	5.50E-03	2.34E+03	1.59E+02	2.97E-02	1.76E+02	1.33E+01
BREOT-S66-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.74E+03	1.48E+01	1.10E-03	1.18E+03	1.30E+00	1.00E+00	5.50E-03	2.92E+03	1.59E+02	2.97E-02	1.76E+02	1.66E+01
BREOT-N67-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.18E+04	9.99E+01	1.10E-03	7.99E+03	8.80E+00	1.00E+00	5.50E-03	1.98E+04	1.59E+02	2.97E-02	1.76E+02	1.12E+02
BREOT-S67-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	8.70E+02	7.37E+00	1.10E-03	5.90E+02	6.49E-01	1.00E+00	5.50E-03	1.46E+03	1.59E+02	2.97E-02	1.76E+02	8.29E+00
Outside Tailings																						**Maximum HQ (At Edge of Tailings)**	**9.12E+03**
BREOT-S0+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.41E+03	1.20E+01	1.10E-03	9.57E+02	1.05E+00	1.00E+00	5.50E-03	2.37E+03	1.59E+02	2.97E-02	1.76E+02	1.34E+01
BREOT-S1+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	2.04E+03	1.73E+01	1.10E-03	1.38E+03	1.52E+00	1.00E+00	5.50E-03	3.42E+03	1.59E+02	2.97E-02	1.76E+02	1.94E+01
BREOT-S2+95 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.32E+03	1.12E+01	1.10E-03	8.94E+02	9.84E-01	1.00E+00	5.50E-03	2.21E+03	1.59E+02	2.97E-02	1.76E+02	1.26E+01
BREOT-S3+6 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	8.19E+02	6.94E+00	1.10E-03	5.55E+02	6.11E-01	1.00E+00	5.50E-03	1.37E+03	1.59E+02	2.97E-02	1.76E+02	7.80E+00
BREOT-S4+10 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.58E+03	1.33E+01	1.10E-03	1.07E+03	1.18E+00	1.00E+00	5.50E-03	2.64E+03	1.59E+02	2.97E-02	1.76E+02	1.50E+01
BREOT-S6+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.24E+03	1.05E+01	1.10E-03	8.43E+02	9.29E-01	1.00E+00	5.50E-03	2.09E+03	1.59E+02	2.97E-02	1.76E+02	1.19E+01
BREOT-S8+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.27E+03	1.08E+01	1.10E-03	8.63E+02	9.50E-01	1.00E+00	5.50E-03	2.13E+03	1.59E+02	2.97E-02	1.76E+02	1.21E+01
BREOT-N10+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.16E+03	9.83E+00	1.10E-03	7.87E+02	8.66E-01	1.00E+00	5.50E-03	1.95E+03	1.59E+02	2.97E-02	1.76E+02	1.11E+01
BREOT-N11+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.32E+03	1.12E+01	1.10E-03	8.97E+02	9.88E-01	1.00E+00	5.50E-03	2.22E+03	1.59E+02	2.97E-02	1.76E+02	1.26E+01
BREOT-N12+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.45E+03	1.23E+01	1.10E-03	9.81E+02	1.08E+00	1.00E+00	5.50E-03	2.43E+03	1.59E+02	2.97E-02	1.76E+02	1.38E+01
BREOT-S12+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	4.67E+03	3.96E+01	1.10E-03	3.16E+03	3.48E+00	1.00E+00	5.50E-03	7.83E+03	1.59E+02	2.97E-02	1.76E+02	4.45E+01
BREOT-S12+60 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.11E+03	9.36E+00	1.10E-03	7.49E+02	8.24E-01	1.00E+00	5.50E-03	1.85E+03	1.59E+02	2.97E-02	1.76E+02	1.05E+01
BREOT-N13+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.94E+03	1.64E+01	1.10E-03	1.31E+03	1.45E+00	1.00E+00	5.50E-03	3.25E+03	1.59E+02	2.97E-02	1.76E+02	1.85E+01
BREOT-S13+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	3.28E+03	2.78E+01	1.10E-03	2.22E+03	2.45E+00	1.00E+00	5.50E-03	5.50E+03	1.59E+02	2.97E-02	1.76E+02	3.12E+01
BREOT-S13+65 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.76E+03	1.49E+01	1.10E-03	1.19E+03	1.31E+00	1.00E+00	5.50E-03	2.95E+03	1.59E+02	2.97E-02	1.76E+02	1.67E+01
BREOT-N14+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	2.27E+03	1.92E+01	1.10E-03	1.54E+03	1.69E+00	1.00E+00	5.50E-03	3.81E+03	1.59E+02	2.97E-02	1.76E+02	2.16E+01
BREOT-S14+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	4.53E+03	3.84E+01	1.10E-03	3.07E+03	3.38E+00	1.00E+00	5.50E-03	7.59E+03	1.59E+02	2.97E-02	1.76E+02	4.31E+01
BREOT-S14+59 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	4.98E+02	4.22E+00	1.10E-03	3.38E+02	3.72E-01	1.00E+00	5.50E-03	8.35E+02	1.59E+02	2.97E-02	1.76E+02	4.74E+00
BREOT-N15+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	7.48E+03	6.33E+01	1.10E-03	5.07E+03	5.58E+00	1.00E+00	5.50E-03	1.25E+04	1.59E+02	2.97E-02	1.76E+02	7.12E+01
BREOT-N15+50 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.88E+03	1.59E+01	1.10E-03	1.27E+03	1.40E+00	1.00E+00	5.50E-03	3.14E+03	1.59E+02	2.97E-02	1.76E+02	1.79E+01
BREOT-S16+20 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	4.02E+03	3.41E+01	1.10E-03	2.73E+03	3.00E+00	1.00E+00	5.50E-03	6.74E+03	1.59E+02	2.97E-02	1.76E+02	3.83E+01
BREOT-S16+75 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	8.83E+02	7.48E+00	1.10E-03	5.98E+02	6.58E-01	1.00E+00	5.50E-03	1.48E+03	1.59E+02	2.97E-02	1.76E+02	8.40E+00
BREOT-N17+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	2.12E+03	1.79E+01	1.10E-03	1.43E+03	1.58E+00	1.00E+00	5.50E-03	3.55E+03	1.59E+02	2.97E-02	1.76E+02	2.02E+01
BREOT-S18+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	4.66E+02	3.95E+00	1.10E-03	3.16E+02	3.48E-01	1.00E+00	5.50E-03	7.81E+02	1.59E+02	2.97E-02	1.76E+02	4.44E+00
BREOT-N19+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.07E+03	9.02E+00	1.10E-03	7.22E+02	7.95E-01	1.00E+00	5.50E-03	1.78E+03	1.59E+02	2.97E-02	1.76E+02	1.01E+01
BREOT-S19+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	7.02E+05	5.94E+03	1.10E-03	4.75E+05	5.24E+02	1.00E+00	5.50E-03	1.18E+06	1.59E+02	2.97E-02	1.76E+02	6.68E+03
BREOT-S19+85 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.07E+03	9.10E+00	1.10E-03	7.28E+02	8.02E-01	1.00E+00	5.50E-03	1.80E+03	1.59E+02	2.97E-02	1.76E+02	1.02E+01
BREOT-N20+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.44E+03	1.22E+01	1.10E-03	9.77E+02	1.08E+00	1.00E+00	5.50E-03	2.42E+03	1.59E+02	2.97E-02	1.76E+02	1.37E+01
BREOT-S20+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	9.99E+05	8.46E+03	1.10E-03	6.77E+05	7.45E+02	1.00E+00	5.50E-03	1.67E+06	1.59E+02	2.97E-02	1.76E+02	9.51E+03
BREOT-S20+75 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.13E+03	9.54E+00	1.10E-03	7.63E+02	8.40E-01	1.00E+00	5.50E-03	1.89E+03	1.59E+02	2.97E-02	1.76E+02	1.07E+01
BREOT-N21+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S21+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	4.95E+05	4.19E+03	1.10E-03	3.35E+05	3.69E+02	1.00E+00	5.50E-03	8.29E+05	1.59E+02	2.97E-02	1.76E+02	4.71E+03
BREOT-N22+150 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.33E+03	1.13E+01	1.10E-03	9.02E+02	9.93E-01	1.00E+00	5.50E-03	2.23E+03	1.59E+02	2.97E-02	1.76E+02	1.27E+01
BREOT-N22+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	3.81E+03	3.23E+01	1.10E-03	2.58E+03	2.84E+00	1.00E+00	5.50E-03	6.39E+03	1.59E+02	2.97E-02	1.76E+02	3.63E+01
BREOT-S22+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	2.44E+03	2.07E+01	1.10E-03	1.65E+03	1.82E+00	1.00E+00	5.50E-03	4.09E+03	1.59E+02	2.97E-02	1.76E+02	2.32E+01
BREOT-N23+115 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.03E+03	8.73E+00	1.10E-03	6.98E+02	7.69E-01	1.00E+00	5.50E-03	1.73E+03	1.59E+02	2.97E-02	1.76E+02	9.81E+00
BREOT-N23+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	7.06E+03	5.98E+01	1.10E-03	4.78E+03	5.27E+00	1.00E+00	5.50E-03	1.18E+04	1.59E+02	2.97E-02	1.76E+02	6.72E+01
BREOT-S23+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.84E+03	1.56E+01	1.10E-03	1.24E+03	1.37E+00	1.00E+00	5.50E-03	3.08E+03	1.59E+02	2.97E-02	1.76E+02	1.75E+01
BREOT-S23+37.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.44E+03	1.22E+01	1.10E-03	9.74E+02	1.07E+00	1.00E+00	5.50E-03	2.41E+03	1.59E+02	2.97E-02	1.76E+02	1.37E+01
BREOT-N24+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.35E+04	1.14E+02	1.10E-03	9.13E+03	1.00E+01	1.00E+00	5.50E-03	2.26E+04	1.59E+02	2.97E-02	1.76E+02	1.28E+02

TABLE C-2E: MANGANESE DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **18.41**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Masked Shrew (Omnivorous Mammal - Terrestrial, Wetland)																							
BREOT-N24+75 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.47E+03	1.24E+01	1.10E-03	9.95E+02	1.10E+00	1.00E+00	5.50E-03	2.46E+03	1.59E+02	2.97E-02	1.76E+02	1.40E+01
BREOT-S24+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	2.71E+03	2.30E+01	1.10E-03	1.84E+03	2.02E+00	1.00E+00	5.50E-03	4.54E+03	1.59E+02	2.97E-02	1.76E+02	2.58E+01
BREOT-N25+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	4.88E+02	4.14E+00	1.10E-03	3.31E+02	3.64E-01	1.00E+00	5.50E-03	8.18E+02	1.59E+02	2.97E-02	1.76E+02	4.65E+00
BREOT-S25+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.58E+03	1.34E+01	1.10E-03	1.07E+03	1.18E+00	1.00E+00	5.50E-03	2.65E+03	1.59E+02	2.97E-02	1.76E+02	1.51E+01
BREOT-S25+40 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	7.29E+02	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S26+37 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.24E+03	1.05E+01	1.10E-03	8.39E+02	9.24E-01	1.00E+00	5.50E-03	2.07E+03	1.59E+02	2.97E-02	1.76E+02	1.18E+01
BREOT-N27+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.11E+03	9.37E+00	1.10E-03	7.50E+02	8.26E-01	1.00E+00	5.50E-03	1.85E+03	1.59E+02	2.97E-02	1.76E+02	1.05E+01
BREOT-S27+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.15E+03	9.70E+00	1.10E-03	7.76E+02	8.55E-01	1.00E+00	5.50E-03	1.92E+03	1.59E+02	2.97E-02	1.76E+02	1.09E+01
BREOT-N28+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	8.90E+02	7.54E+00	1.10E-03	6.03E+02	6.64E-01	1.00E+00	5.50E-03	1.49E+03	1.59E+02	2.97E-02	1.76E+02	8.47E+00
BREOT-S28+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	6.24E+02	5.28E+00	1.10E-03	4.22E+02	4.65E-01	1.00E+00	5.50E-03	1.04E+03	1.59E+02	2.97E-02	1.76E+02	5.94E+00
BREOT-N29+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	2.13E+03	1.81E+01	1.10E-03	1.44E+03	1.59E+00	1.00E+00	5.50E-03	3.57E+03	1.59E+02	2.97E-02	1.76E+02	2.03E+01
BREOT-S29+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.32E+03	1.12E+01	1.10E-03	8.94E+02	9.84E-01	1.00E+00	5.50E-03	2.21E+03	1.59E+02	2.97E-02	1.76E+02	1.26E+01
BREOT-N30+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.67E+03	1.41E+01	1.10E-03	1.13E+03	1.24E+00	1.00E+00	5.50E-03	2.79E+03	1.59E+02	2.97E-02	1.76E+02	1.59E+01
BREOT-S30+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.30E+03	1.10E+01	1.10E-03	8.79E+02	9.68E-01	1.00E+00	5.50E-03	2.17E+03	1.59E+02	2.97E-02	1.76E+02	1.23E+01
BREOT-N31+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	9.75E+03	8.26E+01	1.10E-03	6.61E+03	7.27E+00	1.00E+00	5.50E-03	1.63E+04	1.59E+02	2.97E-02	1.76E+02	9.28E+01
BREOT-N31+75 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.22E+03	1.04E+01	1.10E-03	8.28E+02	9.12E-01	1.00E+00	5.50E-03	2.05E+03	1.59E+02	2.97E-02	1.76E+02	1.16E+01
BREOT-S31+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	9.44E+02	7.99E+00	1.10E-03	6.40E+02	7.04E-01	1.00E+00	5.50E-03	1.58E+03	1.59E+02	2.97E-02	1.76E+02	8.99E+00
BREOT-N32+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.73E+03	1.46E+01	1.10E-03	1.17E+03	1.29E+00	1.00E+00	5.50E-03	2.89E+03	1.59E+02	2.97E-02	1.76E+02	1.64E+01
BREOT-S32+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	2.44E+03	2.07E+01	1.10E-03	1.66E+03	1.82E+00	1.00E+00	5.50E-03	4.09E+03	1.59E+02	2.97E-02	1.76E+02	2.33E+01
BREOT-S32+300 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	3.67E+03	3.11E+01	1.10E-03	2.49E+03	2.74E+00	1.00E+00	5.50E-03	6.15E+03	1.59E+02	2.97E-02	1.76E+02	3.49E+01
BREOT-N33+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.27E+03	1.07E+01	1.10E-03	8.60E+02	9.46E-01	1.00E+00	5.50E-03	2.13E+03	1.59E+02	2.97E-02	1.76E+02	1.21E+01
BREOT-S33+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	5.89E+03	4.99E+01	1.10E-03	3.99E+03	4.39E+00	1.00E+00	5.50E-03	9.87E+03	1.59E+02	2.97E-02	1.76E+02	5.61E+01
BREOT-N34+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.13E+03	9.53E+00	1.10E-03	7.63E+02	8.40E-01	1.00E+00	5.50E-03	1.89E+03	1.59E+02	2.97E-02	1.76E+02	1.07E+01
BREOT-S34+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.81E+03	1.53E+01	1.10E-03	1.23E+03	1.35E+00	1.00E+00	5.50E-03	3.04E+03	1.59E+02	2.97E-02	1.76E+02	1.72E+01
BREOT-N35+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.34E+03	1.14E+01	1.10E-03	9.08E+02	1.00E+00	1.00E+00	5.50E-03	2.25E+03	1.59E+02	2.97E-02	1.76E+02	1.28E+01
BREOT-S35+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	6.15E+03	5.21E+01	1.10E-03	4.17E+03	4.59E+00	1.00E+00	5.50E-03	1.03E+04	1.59E+02	2.97E-02	1.76E+02	5.85E+01
BREOT-N36+100 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.36E+03	1.15E+01	1.10E-03	9.22E+02	1.02E+00	1.00E+00	5.50E-03	2.28E+03	1.59E+02	2.97E-02	1.76E+02	1.30E+01
BREOT-N36+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.11E+04	9.42E+01	1.10E-03	7.54E+03	8.30E+00	1.00E+00	5.50E-03	1.86E+04	1.59E+02	2.97E-02	1.76E+02	1.06E+02
BREOT-S36+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	5.64E+03	4.78E+01	1.10E-03	3.82E+03	4.21E+00	1.00E+00	5.50E-03	9.45E+03	1.59E+02	2.97E-02	1.76E+02	5.37E+01
BREOT-N37+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	5.51E+02	4.66E+00	1.10E-03	3.73E+02	4.11E-01	1.00E+00	5.50E-03	9.22E+02	1.59E+02	2.97E-02	1.76E+02	5.24E+00
BREOT-S37+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	7.59E+03	6.43E+01	1.10E-03	5.15E+03	5.67E+00	1.00E+00	5.50E-03	1.27E+04	1.59E+02	2.97E-02	1.76E+02	7.23E+01
BREOT-N38+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	9.59E+02	8.13E+00	1.10E-03	6.50E+02	7.16E-01	1.00E+00	5.50E-03	1.61E+03	1.59E+02	2.97E-02	1.76E+02	9.13E+00
BREOT-S38+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	7.26E+03	6.15E+01	1.10E-03	4.92E+03	5.41E+00	1.00E+00	5.50E-03	1.22E+04	1.59E+02	2.97E-02	1.76E+02	6.91E+01
BREOT-N39+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	7.89E+02	6.68E+00	1.10E-03	5.34E+02	5.88E-01	1.00E+00	5.50E-03	1.32E+03	1.59E+02	2.97E-02	1.76E+02	7.51E+00
BREOT-S39+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	5.53E+03	4.68E+01	1.10E-03	3.74E+03	4.12E+00	1.00E+00	5.50E-03	9.26E+03	1.59E+02	2.97E-02	1.76E+02	5.26E+01
BREOT-N40+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	8.37E+02	7.09E+00	1.10E-03	5.67E+02	6.24E-01	1.00E+00	5.50E-03	1.40E+03	1.59E+02	2.97E-02	1.76E+02	7.97E+00
BREOT-S40+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	5.21E+03	4.42E+01	1.10E-03	3.53E+03	3.89E+00	1.00E+00	5.50E-03	8.74E+03	1.59E+02	2.97E-02	1.76E+02	4.96E+01
BREOT-N41+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	5.57E+02	4.72E+00	1.10E-03	3.78E+02	4.16E-01	1.00E+00	5.50E-03	9.34E+02	1.59E+02	2.97E-02	1.76E+02	5.31E+00
BREOT-S41+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	3.33E+03	2.82E+01	1.10E-03	2.26E+03	2.48E+00	1.00E+00	5.50E-03	5.58E+03	1.59E+02	2.97E-02	1.76E+02	3.17E+01
BREOT-N42+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S42+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	2.91E+03	2.46E+01	1.10E-03	1.97E+03	2.17E+00	1.00E+00	5.50E-03	4.87E+03	1.59E+02	2.97E-02	1.76E+02	2.77E+01
BREOT-N43+12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.10E+03	9.30E+00	1.10E-03	7.44E+02	8.19E-01	1.00E+00	5.50E-03	1.84E+03	1.59E+02	2.97E-02	1.76E+02	1.05E+01
BREOT-N43+40 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.11E+03	9.37E+00	1.10E-03	7.50E+02	8.26E-01	1.00E+00	5.50E-03	1.85E+03	1.59E+02	2.97E-02	1.76E+02	1.05E+01
BREOT-S43+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.40E+03	1.19E+01	1.10E-03	9.50E+02	1.05E+00	1.00E+00	5.50E-03	2.35E+03	1.59E+02	2.97E-02	1.76E+02	1.33E+01
BREOT-N44+55 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	9.81E+02	8.31E+00	1.10E-03	6.64E+02	7.32E-01	1.00E+00	5.50E-03	1.64E+03	1.59E+02	2.97E-02	1.76E+02	9.33E+00
BREOT-S44+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.86E+03	1.57E+01	1.10E-03	1.26E+03	1.39E+00	1.00E+00	5.50E-03	3.11E+03	1.59E+02	2.97E-02	1.76E+02	1.77E+01
BREOT-N45+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	9.60E+02	8.13E+00	1.10E-03	6.50E+02	7.16E-01	1.00E+00	5.50E-03	1.61E+03	1.59E+02	2.97E-02	1.76E+02	9.13E+00
BREOT-S45+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	4.48E+02	3.79E+00	1.10E-03	3.03E+02	3.34E-01	1.00E+00	5.50E-03	7.50E+02	1.59E+02	2.97E-02	1.76E+02	4.26E+00
BREOT-N46+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.43E+03	1.21E+01	1.10E-03	9.67E+02	1.06E+00	1.00E+00	5.50E-03	2.39E+03	1.59E+02	2.97E-02	1.76E+02	1.36E+01
BREOT-S46+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N47+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.15E+03	9.74E+00	1.10E-03	7.79E+02	8.58E-01	1.00E+00	5.50E-03	1.93E+03	1.59E+02	2.97E-02	1.76E+02	1.09E+01
BREOT-S47+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N48+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	9.11E+02	7.72E+00	1.10E-03	6.17E+02	6.80E-01	1.00E+00	5.50E-03	1.53E+03	1.59E+02	2.97E-02	1.76E+02	8.67E+00
BREOT-S48+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N49+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.37E+03	1.16E+01	1.10E-03	9.26E+02	1.02E+00	1.00E+00	5.50E-03	2.29E+03	1.59E+02	2.97E-02	1.76E+02	1.30E+01

TABLE C-2E: MANGANESE DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 18.41

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Masked Shrew (Omnivorous Mammal - Terrestrial, Wetland)																							
BREOT-S49+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N51+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.16E+03	9.80E+00	1.10E-03	7.84E+02	8.63E-01	1.00E+00	5.50E-03	1.94E+03	1.59E+02	2.97E-02	1.76E+02	1.10E+01
BREOT-S51+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N52+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	4.78E+02	4.05E+00	1.10E-03	3.24E+02	3.57E-01	1.00E+00	5.50E-03	8.02E+02	1.59E+02	2.97E-02	1.76E+02	4.55E+00
BREOT-S52+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N53+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S53+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S54+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N55+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.05E+03	8.92E+00	1.10E-03	7.14E+02	7.86E-01	1.00E+00	5.50E-03	1.76E+03	1.59E+02	2.97E-02	1.76E+02	1.00E+01
BREOT-S55+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N56+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.03E+03	8.74E+00	1.10E-03	6.99E+02	7.69E-01	1.00E+00	5.50E-03	1.73E+03	1.59E+02	2.97E-02	1.76E+02	9.82E+00
BREOT-S56+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N57+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.09E+03	9.20E+00	1.10E-03	7.36E+02	8.10E-01	1.00E+00	5.50E-03	1.82E+03	1.59E+02	2.97E-02	1.76E+02	1.03E+01
BREOT-S57+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	3.61E+03	3.06E+01	1.10E-03	2.45E+03	2.69E+00	1.00E+00	5.50E-03	6.05E+03	1.59E+02	2.97E-02	1.76E+02	3.44E+01
BREOT-N58+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.44E+03	1.22E+01	1.10E-03	9.73E+02	1.07E+00	1.00E+00	5.50E-03	2.41E+03	1.59E+02	2.97E-02	1.76E+02	1.37E+01
BREOT-S58+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N59+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	2.27E+03	1.92E+01	1.10E-03	1.54E+03	1.69E+00	1.00E+00	5.50E-03	3.80E+03	1.59E+02	2.97E-02	1.76E+02	2.16E+01
BREOT-N60+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	7.73E+02	6.55E+00	1.10E-03	5.24E+02	5.77E-01	1.00E+00	5.50E-03	1.30E+03	1.59E+02	2.97E-02	1.76E+02	7.36E+00
BREOT-S60+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S61+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N62+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.29E+03	1.09E+01	1.10E-03	8.71E+02	9.59E-01	1.00E+00	5.50E-03	2.15E+03	1.59E+02	2.97E-02	1.76E+02	1.22E+01
BREOT-S62+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N63+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	2.02E+03	1.71E+01	1.10E-03	1.37E+03	1.51E+00	1.00E+00	5.50E-03	3.38E+03	1.59E+02	2.97E-02	1.76E+02	1.92E+01
BREOT-S63+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N64+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	7.09E+02	6.00E+00	1.10E-03	4.80E+02	5.29E-01	1.00E+00	5.50E-03	1.19E+03	1.59E+02	2.97E-02	1.76E+02	6.75E+00
BREOT-S64+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	2.80E+02	2.37E+00	1.10E-03	1.90E+02	2.09E-01	1.00E+00	5.50E-03	4.69E+02	1.59E+02	2.97E-02	1.76E+02	2.66E+00
BREOT-S65+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N66+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.10E+03	9.32E+00	1.10E-03	7.46E+02	8.21E-01	1.00E+00	5.50E-03	1.84E+03	1.59E+02	2.97E-02	1.76E+02	1.05E+01
BREOT-S66+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N67+125 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	5.70E+02	4.83E+00	1.10E-03	3.86E+02	4.25E-01	1.00E+00	5.50E-03	9.55E+02	1.59E+02	2.97E-02	1.76E+02	5.42E+00
BREOT-S67+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N67+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.34E+03	1.13E+01	1.10E-03	9.05E+02	9.96E-01	1.00E+00	5.50E-03	2.24E+03	1.59E+02	2.97E-02	1.76E+02	1.27E+01
																						Maximum HQ (Outside Tailings)	**9.51E+03**

Notes

Results are evaluated in order of upstream to downstream.

1 See Tables 3-1 through 3-13 for ingestion rates, foraging ranges used to calculate the SUF, and body weights.

2 BAFs were calculated by dividing site-collected tissue by collocated soil concentrations. The maximum BAF calculated from the Beartrap Creek and Blackfoot River transects was used.

3 The mammal, plant, and invertebrate concentrations were calculated by multiplying the soil concentration by the BAF to generate a tissue concentration (see note 2).

4 Mammal, plant, and invertebrate daily doses were calculated by multiplying the ingestion rate (see note 1) by the tissue concentration (see note 3).

5 Soil concentration from specified depths below ground surface at point ID as measured by XRF 10. Doses were not calculated for detected and non-detected soil concentrations measured below the minimum reference site concentration, as indicated by BB. For results that were measured at less than the detection limit, doses were calculated using half of the detection limit.

6 Soil daily dose was calculated by multiplying the soil ingestion rate (see note 1) by soil concentration (see note 5).

7 Total daily dose is calculated using the following equation: total daily dose = ([mammal daily dose (if applicable) + plant daily dose (if applicable) + invertebrate daily dose (if applicable) + soil daily dose]*SUF)/receptor species body weight.

8 The derivation of TRVs is described in Navy (1998). The high TRV was used for dose calculations.

9 Allometrically adjusted TRVs for birds were calculated using the following equation: receptor species TRV = (test species TRV) x (test species body weight / receptor species body weight)$^{(1-1.2)}$.

10 Allometrically adjusted TRVs for mammals were calculated using the following equation: receptor species TRV = (test species TRV) x (test species body weight / receptor species body weight)$^{(1-0.94)}$.

11 HQs were calculated using the following equation: HQ = total daily dose/allometrically adjusted TRV.

12 Green cells indicate an HQ greater than 1.0

BAF	Bioaccumulation Factor	mg/day	Milligram per day
BB	Below minimum background reference site concentration	mg/kg	Milligram per kilogram
EE/CA	Engineering Evaluation/Cost Analysis	NA	Not applicable
EU	Exposure Unit	Navy	Department of the Navy
HQ	Hazard quotient	SUF	Site use factor
ID	Identification	TRV	Toxicity reference value
kg	Kilogram	XRF	X-ray fluorescence
kg/day	Kilogram per day	XRF 10	XRF measurements recorded following drying and seiving through a #10-mesh screen

Sources: Department of the Navy. 1998. "Development of Toxicity Reference Values for Conducting Ecological Risk Assessments at Naval Facilities in California, Interim Final." Prepared by Naval Facilities Engineering Command, Engineering Field Activity West (EFA

TABLE C-2F: ZINC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

Site Area (hectares) 18.41

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Mourning Dove (Herbivorous Birds - Terrestrial)																							
Reference Sites																							
ACBG-1 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.41E+00	1.93E+02	1.11E+00	NA	NA	NA	NA	5.36E-04	1.37E+02	7.34E-02	7.11E-02	1.09E-01	7.72E-01	1.72E+02	9.55E-01	1.11E+02	6.93E-03
ACBG-2 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.41E+00	1.18E+02	6.82E-01	NA	NA	NA	NA	5.36E-04	8.39E+01	4.50E-02	7.11E-02	1.09E-01	4.73E-01	1.72E+02	9.55E-01	1.11E+02	4.25E-03
UBRBG-202 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.41E+00	7.58E+01	4.37E-01	NA	NA	NA	NA	5.36E-04	5.37E+01	2.88E-02	7.11E-02	1.09E-01	3.03E-01	1.72E+02	9.55E-01	1.11E+02	2.72E-03
UBRBG-204 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.41E+00	4.84E+02	2.79E+00	NA	NA	NA	NA	5.36E-04	3.43E+02	1.84E-01	7.11E-02	1.09E-01	1.93E+00	1.72E+02	9.55E-01	1.11E+02	1.73E-02
Inside Tailings																						**Minimum HQ (Reference Sites)**	**2.72E-03**
BREOT-S6-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	7.59E+02	4.37E+00	NA	NA	NA	NA	5.36E-04	3.83E+02	2.05E-01	7.11E-02	1.09E-01	2.98E+00	1.72E+02	9.55E-01	1.11E+02	2.67E-02
BREOT-S2-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	5.03E+03	2.90E+01	NA	NA	NA	NA	5.36E-04	2.54E+03	1.36E+00	7.11E-02	1.09E-01	1.98E+01	1.72E+02	9.55E-01	1.11E+02	1.77E-01
BREOT-S0-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	4.91E+02	2.83E+00	NA	NA	NA	NA	5.36E-04	2.48E+02	1.33E-01	7.11E-02	1.09E-01	1.93E+00	1.72E+02	9.55E-01	1.11E+02	1.73E-02
BREOT-S1-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	3.30E+02	1.90E+00	NA	NA	NA	NA	5.36E-04	1.66E+02	8.91E-02	7.11E-02	1.09E-01	1.29E+00	1.72E+02	9.55E-01	1.11E+02	1.16E-02
BREOT-S7-25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	4.62E+02	2.66E+00	NA	NA	NA	NA	5.36E-04	2.33E+02	1.25E-01	7.11E-02	1.09E-01	1.81E+00	1.72E+02	9.55E-01	1.11E+02	1.63E-02
BREOT-S8-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	2.86E+02	1.65E+00	NA	NA	NA	NA	5.36E-04	1.45E+02	7.75E-02	7.11E-02	1.09E-01	1.12E+00	1.72E+02	9.55E-01	1.11E+02	1.01E-02
BREOT-S9-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	6.56E+02	3.78E+00	NA	NA	NA	NA	5.36E-04	3.31E+02	1.77E-01	7.11E-02	1.09E-01	2.58E+00	1.72E+02	9.55E-01	1.11E+02	2.31E-02
BREOT-N10-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	9.17E+03	5.28E+01	NA	NA	NA	NA	5.36E-04	4.63E+03	2.48E+00	7.11E-02	1.09E-01	3.60E+01	1.72E+02	9.55E-01	1.11E+02	3.23E-01
BREOT-N11-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	9.62E+02	5.54E+00	NA	NA	NA	NA	5.36E-04	4.85E+02	2.60E-01	7.11E-02	1.09E-01	3.78E+00	1.72E+02	9.55E-01	1.11E+02	3.39E-02
BREOT-N11-125 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	7.90E+02	4.55E+00	NA	NA	NA	NA	5.36E-04	3.99E+02	2.14E-01	7.11E-02	1.09E-01	3.10E+00	1.72E+02	9.55E-01	1.11E+02	2.78E-02
BREOT-S11-12 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	1.41E+04	8.10E+01	NA	NA	NA	NA	5.36E-04	7.09E+03	3.80E+00	7.11E-02	1.09E-01	5.52E+01	1.72E+02	9.55E-01	1.11E+02	4.95E-01
BREOT-S11+63 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	7.93E+02	4.57E+00	NA	NA	NA	NA	5.36E-04	4.00E+02	2.14E-01	7.11E-02	1.09E-01	3.11E+00	1.72E+02	9.55E-01	1.11E+02	2.79E-02
UBDT-TP-6 (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	3.92E+04	2.26E+02	NA	NA	NA	NA	5.36E-04	1.98E+04	1.06E+01	7.11E-02	1.09E-01	1.54E+02	1.72E+02	9.55E-01	1.11E+02	1.38E+00
UBDT-TP-6 (2-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	2.44E+04	1.40E+02	NA	NA	NA	NA	5.36E-04	1.23E+04	6.59E+00	7.11E-02	1.09E-01	9.56E+01	1.72E+02	9.55E-01	1.11E+02	8.58E-01
UBDT-TP-6 (12-24")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	2.48E+04	1.43E+02	NA	NA	NA	NA	5.36E-04	1.25E+04	6.72E+00	7.11E-02	1.09E-01	9.76E+01	1.72E+02	9.55E-01	1.11E+02	8.75E-01
UBDT-TP-6 (24-36")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	1.81E+03	1.04E+01	NA	NA	NA	NA	5.36E-04	9.15E+02	4.90E-01	7.11E-02	1.09E-01	7.12E+00	1.72E+02	9.55E-01	1.11E+02	6.39E-02
UBDT-TP-6 (36-48")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	4.93E+03	2.84E+01	NA	NA	NA	NA	5.36E-04	2.49E+03	1.33E+00	7.11E-02	1.09E-01	1.93E+01	1.72E+02	9.55E-01	1.11E+02	1.74E-01
UBDT-TP-6 (48-60")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	3.77E+03	2.17E+01	NA	NA	NA	NA	5.36E-04	1.90E+03	1.02E+00	7.11E-02	1.09E-01	1.48E+01	1.72E+02	9.55E-01	1.11E+02	1.33E-01
BREOT-N12-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	2.33E+03	1.34E+01	NA	NA	NA	NA	5.36E-04	1.18E+03	6.30E-01	7.11E-02	1.09E-01	9.15E+00	1.72E+02	9.55E-01	1.11E+02	8.21E-02
BREOT-S12-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	5.76E+03	3.32E+01	NA	NA	NA	NA	5.36E-04	2.90E+03	1.56E+00	7.11E-02	1.09E-01	2.26E+01	1.72E+02	9.55E-01	1.11E+02	2.03E-01
BREOT-S13-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	1.02E+04	5.88E+01	NA	NA	NA	NA	5.36E-04	5.15E+03	2.76E+00	7.11E-02	1.09E-01	4.01E+01	1.72E+02	9.55E-01	1.11E+02	3.60E-01
BREOT-S14-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	5.07E+03	2.92E+01	NA	NA	NA	NA	5.36E-04	2.56E+03	1.37E+00	7.11E-02	1.09E-01	1.99E+01	1.72E+02	9.55E-01	1.11E+02	1.79E-01
BREOT-N15-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	5.37E+03	3.09E+01	NA	NA	NA	NA	5.36E-04	2.71E+03	1.45E+00	7.11E-02	1.09E-01	2.11E+01	1.72E+02	9.55E-01	1.11E+02	1.89E-01
BREOT-S15-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	6.94E+02	4.00E+00	NA	NA	NA	NA	5.36E-04	3.50E+02	1.88E-01	7.11E-02	1.09E-01	2.72E+00	1.72E+02	9.55E-01	1.11E+02	2.44E-02
BREOT-N16-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	1.77E+03	1.02E+01	NA	NA	NA	NA	5.36E-04	8.91E+02	4.78E-01	7.11E-02	1.09E-01	6.93E+00	1.72E+02	9.55E-01	1.11E+02	6.22E-02
BREOT-N16-25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	3.48E+02	2.00E+00	NA	NA	NA	NA	5.36E-04	1.75E+02	9.40E-02	7.11E-02	1.09E-01	1.36E+00	1.72E+02	9.55E-01	1.11E+02	1.22E-02
BREOT-S16-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	3.52E+02	2.03E+00	NA	NA	NA	NA	5.36E-04	1.78E+02	9.53E-02	7.11E-02	1.09E-01	1.38E+00	1.72E+02	9.55E-01	1.11E+02	1.24E-02
BREOT-N17-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	7.61E+02	4.39E+00	NA	NA	NA	NA	5.36E-04	3.84E+02	2.06E-01	7.11E-02	1.09E-01	2.99E+00	1.72E+02	9.55E-01	1.11E+02	2.68E-02
BREOT-S17-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	3.04E+02	1.75E+00	NA	NA	NA	NA	5.36E-04	1.53E+02	8.21E-02	7.11E-02	1.09E-01	1.19E+00	1.72E+02	9.55E-01	1.11E+02	1.07E-02
BREOT-S17-25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	4.63E+02	2.67E+00	NA	NA	NA	NA	5.36E-04	2.34E+02	1.25E-01	7.11E-02	1.09E-01	1.82E+00	1.72E+02	9.55E-01	1.11E+02	1.63E-02
UBDT-TP-4 (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	4.72E+03	2.72E+01	NA	NA	NA	NA	5.36E-04	2.38E+03	1.28E+00	7.11E-02	1.09E-01	1.85E+01	1.72E+02	9.55E-01	1.11E+02	1.66E-01
UBDT-TP-4 (2-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	2.83E+03	1.63E+01	NA	NA	NA	NA	5.36E-04	1.43E+03	7.66E-01	7.11E-02	1.09E-01	1.11E+01	1.72E+02	9.55E-01	1.11E+02	9.98E-02
UBDT-TP-4 (12-24")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	1.55E+03	8.93E+00	NA	NA	NA	NA	5.36E-04	7.82E+02	4.19E-01	7.11E-02	1.09E-01	6.08E+00	1.72E+02	9.55E-01	1.11E+02	5.46E-02
UBDT-TP-4 (24-36")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	2.23E+03	1.29E+01	NA	NA	NA	NA	5.36E-04	1.13E+03	6.04E-01	7.11E-02	1.09E-01	8.76E+00	1.72E+02	9.55E-01	1.11E+02	7.86E-02
BREOT-N18-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	3.17E+03	1.83E+01	NA	NA	NA	NA	5.36E-04	1.60E+03	8.57E-01	7.11E-02	1.09E-01	1.24E+01	1.72E+02	9.55E-01	1.11E+02	1.12E-01
BREOT-N18-25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	6.09E+02	3.51E+00	NA	NA	NA	NA	5.36E-04	3.07E+02	1.65E-01	7.11E-02	1.09E-01	2.39E+00	1.72E+02	9.55E-01	1.11E+02	2.14E-02
BREOT-S18-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	1.13E+03	6.52E+00	NA	NA	NA	NA	5.36E-04	5.71E+02	3.06E-01	7.11E-02	1.09E-01	4.44E+00	1.72E+02	9.55E-01	1.11E+02	3.99E-02
BREOT-N19-10 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	9.37E+02	5.40E+00	NA	NA	NA	NA	5.36E-04	4.73E+02	2.53E-01	7.11E-02	1.09E-01	3.68E+00	1.72E+02	9.55E-01	1.11E+02	3.30E-02
BREOT-S19-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	3.15E+03	1.81E+01	NA	NA	NA	NA	5.36E-04	1.59E+03	8.52E-01	7.11E-02	1.09E-01	1.24E+01	1.72E+02	9.55E-01	1.11E+02	1.11E-01
UBDT-TP-5 (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	5.21E+03	3.00E+01	NA	NA	NA	NA	5.36E-04	2.63E+03	1.41E+00	7.11E-02	1.09E-01	2.04E+01	1.72E+02	9.55E-01	1.11E+02	1.83E-01
UBDT-TP-5 (2-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	3.45E+03	1.99E+01	NA	NA	NA	NA	5.36E-04	1.74E+03	9.33E-01	7.11E-02	1.09E-01	1.35E+01	1.72E+02	9.55E-01	1.11E+02	1.22E-01
UBDT-TP-5 (12-24")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	3.07E+03	1.77E+01	NA	NA	NA	NA	5.36E-04	1.55E+03	8.31E-01	7.11E-02	1.09E-01	1.21E+01	1.72E+02	9.55E-01	1.11E+02	1.08E-01
BREOT-N20-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	6.56E+02	3.78E+00	NA	NA	NA	NA	5.36E-04	3.31E+02	1.77E-01	7.11E-02	1.09E-01	2.57E+00	1.72E+02	9.55E-01	1.11E+02	2.31E-02
UBDT-TP-3 (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	8.85E+02	5.10E+00	NA	NA	NA	NA	5.36E-04	4.47E+02	2.39E-01	7.11E-02	1.09E-01	3.47E+00	1.72E+02	9.55E-01	1.11E+02	3.12E-02
UBDT-TP-3 (2-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	5.80E+02	3.34E+00	NA	NA	NA	NA	5.36E-04	2.93E+02	1.57E-01	7.11E-02	1.09E-01	2.28E+00	1.72E+02	9.55E-01	1.11E+02	2.04E-02
UBDT-TP-3 (12-24")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	4.53E+02	2.61E+00	NA	NA	NA	NA	5.36E-04	2.28E+02	1.22E-01	7.11E-02	1.09E-01	1.78E+00	1.72E+02	9.55E-01	1.11E+02	1.59E-02
UBDT-TP-3 (24-36")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	7.26E+02	4.18E+00	NA	NA	NA	NA	5.36E-04	3.66E+02	1.96E-01	7.11E-02	1.09E-01	2.85E+00	1.72E+02	9.55E-01	1.11E+02	2.56E-02
UBDT-TP-3 (36-48")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	1.12E+03	6.43E+00	NA	NA	NA	NA	5.36E-04	5.63E+02	3.02E-01	7.11E-02	1.09E-01	4.38E+00	1.72E+02	9.55E-01	1.11E+02	3.93E-02
UBDT-TP-3 (48-60")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	1.57E+03	9.02E+00	NA	NA	NA	NA	5.36E-04	7.90E+02	4.23E-01	7.11E-02	1.09E-01	6.15E+00	1.72E+02	9.55E-01	1.11E+02	5.52E-02
BREOT-N21-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	5.09E+03	2.93E+01	NA	NA	NA	NA	5.36E-04	2.57E+03	1.38E+00	7.11E-02	1.09E-01	2.00E+01	1.72E+02	9.55E-01	1.11E+02	1.79E-01
BREOT-N22-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	8.20E+02	4.72E+00	NA	NA	NA	NA	5.36E-04	4.14E+02	2.22E-01	7.11E-02	1.09E-01	3.22E+00	1.72E+02	9.55E-01	1.11E+02	2.89E-02

TABLE C-2F: ZINC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 18.41

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Mourning Dove (Herbivorous Birds - Terrestrial)																							
BREOT-N23-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	1.35E+03	7.77E+00	NA	NA	NA	NA	5.36E-04	6.81E+02	3.65E-01	7.11E-02	1.09E-01	5.30E+00	1.72E+02	9.55E-01	1.11E+02	4.75E-02
BREOT-S23-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	1.67E+04	9.61E+01	NA	NA	NA	NA	5.36E-04	8.42E+03	4.51E+00	7.11E-02	1.09E-01	6.55E+01	1.72E+02	9.55E-01	1.11E+02	5.87E-01
UBDT-TP-2 (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	6.36E+03	3.66E+01	NA	NA	NA	NA	5.36E-04	3.21E+03	1.72E+00	7.11E-02	1.09E-01	2.50E+01	1.72E+02	9.55E-01	1.11E+02	2.24E-01
UBDT-TP-2 (2-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	3.96E+03	2.28E+01	NA	NA	NA	NA	5.36E-04	2.00E+03	1.07E+00	7.11E-02	1.09E-01	1.55E+01	1.72E+02	9.55E-01	1.11E+02	1.39E-01
UBDT-TP-2 (12-24")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	3.39E+03	1.95E+01	NA	NA	NA	NA	5.36E-04	1.71E+03	9.17E-01	7.11E-02	1.09E-01	1.33E+01	1.72E+02	9.55E-01	1.11E+02	1.19E-01
UBDT-TP-2 (24-36")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	2.88E+03	1.66E+01	NA	NA	NA	NA	5.36E-04	1.45E+03	7.77E-01	7.11E-02	1.09E-01	1.13E+01	1.72E+02	9.55E-01	1.11E+02	1.01E-01
UBDT-TP-2 (36-48")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	3.02E+03	1.74E+01	NA	NA	NA	NA	5.36E-04	1.53E+03	8.17E-01	7.11E-02	1.09E-01	1.19E+01	1.72E+02	9.55E-01	1.11E+02	1.06E-01
BREOT-S24-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	1.26E+04	7.27E+01	NA	NA	NA	NA	5.36E-04	6.37E+03	3.41E+00	7.11E-02	1.09E-01	4.95E+01	1.72E+02	9.55E-01	1.11E+02	4.44E-01
BREOT-N25-50 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	1.58E+04	9.10E+01	NA	NA	NA	NA	5.36E-04	7.97E+03	4.27E+00	7.11E-02	1.09E-01	6.20E+01	1.72E+02	9.55E-01	1.11E+02	5.56E-01
BREOT-N25-95 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	2.01E+02	1.16E+00	NA	NA	NA	NA	5.36E-04	1.01E+02	5.42E-02	7.11E-02	1.09E-01	7.87E-01	1.72E+02	9.55E-01	1.11E+02	7.06E-03
BREOT-S25-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	2.62E+03	1.51E+01	NA	NA	NA	NA	5.36E-04	1.32E+03	7.09E-01	7.11E-02	1.09E-01	1.03E+01	1.72E+02	9.55E-01	1.11E+02	9.23E-02
BREOT-S25-40 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	4.06E+02	2.34E+00	NA	NA	NA	NA	5.36E-04	2.05E+02	1.10E-01	7.11E-02	1.09E-01	1.59E+00	1.72E+02	9.55E-01	1.11E+02	1.43E-02
BREOT-N26A-25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	3.03E+02	1.75E+00	NA	NA	NA	NA	5.36E-04	1.53E+02	8.20E-02	7.11E-02	1.09E-01	1.19E+00	1.72E+02	9.55E-01	1.11E+02	1.07E-02
BREOT-N26B-25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	5.06E+03	2.91E+01	NA	NA	NA	NA	5.36E-04	2.55E+03	1.37E+00	7.11E-02	1.09E-01	1.99E+01	1.72E+02	9.55E-01	1.11E+02	1.78E-01
BREOT-N26-50 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	2.26E+04	1.30E+02	NA	NA	NA	NA	5.36E-04	1.14E+04	6.12E+00	7.11E-02	1.09E-01	8.89E+01	1.72E+02	9.55E-01	1.11E+02	7.98E-01
BREOT-N26-75 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	1.16E+04	6.66E+01	NA	NA	NA	NA	5.36E-04	5.83E+03	3.13E+00	7.11E-02	1.09E-01	4.54E+01	1.72E+02	9.55E-01	1.11E+02	4.07E-01
BREOT-S26-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	5.33E+02	3.07E+00	NA	NA	NA	NA	5.36E-04	2.69E+02	1.44E-01	7.11E-02	1.09E-01	2.09E+00	1.72E+02	9.55E-01	1.11E+02	1.88E-02
BREOT-S26-40 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	7.18E+03	4.13E+01	NA	NA	NA	NA	5.36E-04	3.62E+03	1.94E+00	7.11E-02	1.09E-01	2.82E+01	1.72E+02	9.55E-01	1.11E+02	2.53E-01
BREOT-N27-30 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	5.22E+03	3.01E+01	NA	NA	NA	NA	5.36E-04	2.64E+03	1.41E+00	7.11E-02	1.09E-01	2.05E+01	1.72E+02	9.55E-01	1.11E+02	1.84E-01
BREOT-N27-75 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	2.04E+04	1.17E+02	NA	NA	NA	NA	5.36E-04	1.03E+04	5.50E+00	7.11E-02	1.09E-01	7.99E+01	1.72E+02	9.55E-01	1.11E+02	7.17E-01
BREOT-S27-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	7.27E+02	4.19E+00	NA	NA	NA	NA	5.36E-04	3.67E+02	1.97E-01	7.11E-02	1.09E-01	2.86E+00	1.72E+02	9.55E-01	1.11E+02	2.56E-02
BREOT-N28-110 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	3.08E+03	1.77E+01	NA	NA	NA	NA	5.36E-04	1.55E+03	8.33E-01	7.11E-02	1.09E-01	1.21E+01	1.72E+02	9.55E-01	1.11E+02	1.08E-01
BREOT-N28-55 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	2.97E+04	1.71E+02	NA	NA	NA	NA	5.36E-04	1.50E+04	8.02E+00	7.11E-02	1.09E-01	1.16E+02	1.72E+02	9.55E-01	1.11E+02	1.04E+00
BREOT-S28-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	5.91E+03	3.40E+01	NA	NA	NA	NA	5.36E-04	2.98E+03	1.60E+00	7.11E-02	1.09E-01	2.32E+01	1.72E+02	9.55E-01	1.11E+02	2.08E-01
UBDT-TP-1 (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	1.77E+04	1.02E+02	NA	NA	NA	NA	5.36E-04	8.95E+03	4.80E+00	7.11E-02	1.09E-01	6.96E+01	1.72E+02	9.55E-01	1.11E+02	6.25E-01
UBDT-TP-1 (2-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	1.91E+04	1.10E+02	NA	NA	NA	NA	5.36E-04	9.63E+03	5.16E+00	7.11E-02	1.09E-01	7.49E+01	1.72E+02	9.55E-01	1.11E+02	6.72E-01
UBDT-TP-1 (12-24")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	1.80E+04	1.04E+02	NA	NA	NA	NA	5.36E-04	9.08E+03	4.87E+00	7.11E-02	1.09E-01	7.07E+01	1.72E+02	9.55E-01	1.11E+02	6.34E-01
UBDT-TP-1 (24-36")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	1.22E+04	7.05E+01	NA	NA	NA	NA	5.36E-04	6.18E+03	3.31E+00	7.11E-02	1.09E-01	4.81E+01	1.72E+02	9.55E-01	1.11E+02	4.31E-01
UBDT-TP-1 (36-48")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	3.80E+03	2.19E+01	NA	NA	NA	NA	5.36E-04	1.92E+03	1.03E+00	7.11E-02	1.09E-01	1.49E+01	1.72E+02	9.55E-01	1.11E+02	1.34E-01
UBDT-TP-1 (48-60")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	1.26E+03	7.28E+00	NA	NA	NA	NA	5.36E-04	6.38E+02	3.42E-01	7.11E-02	1.09E-01	4.96E+00	1.72E+02	9.55E-01	1.11E+02	4.45E-02
BREOT-N29-30 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	2.71E+04	1.56E+02	NA	NA	NA	NA	5.36E-04	1.37E+04	7.32E+00	7.11E-02	1.09E-01	1.06E+02	1.72E+02	9.55E-01	1.11E+02	9.54E-01
BREOT-S29-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	1.82E+03	1.05E+01	NA	NA	NA	NA	5.36E-04	9.16E+02	4.91E-01	7.11E-02	1.09E-01	7.13E+00	1.72E+02	9.55E-01	1.11E+02	6.40E-02
BREOT-N30-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	1.54E+03	8.85E+00	NA	NA	NA	NA	5.36E-04	7.76E+02	4.16E-01	7.11E-02	1.09E-01	6.03E+00	1.72E+02	9.55E-01	1.11E+02	5.41E-02
BREOT-S30-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	2.39E+03	1.38E+01	NA	NA	NA	NA	5.36E-04	1.21E+03	6.46E-01	7.11E-02	1.09E-01	9.38E+00	1.72E+02	9.55E-01	1.11E+02	8.41E-02
BREOT-N31-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	1.16E+03	6.69E+00	NA	NA	NA	NA	5.36E-04	5.86E+02	3.14E-01	7.11E-02	1.09E-01	4.56E+00	1.72E+02	9.55E-01	1.11E+02	4.09E-02
BREOT-S31-25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	8.17E+02	4.71E+00	NA	NA	NA	NA	5.36E-04	4.13E+02	2.21E-01	7.11E-02	1.09E-01	3.21E+00	1.72E+02	9.55E-01	1.11E+02	2.88E-02
BREOT-S31-5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	2.21E+03	1.27E+01	NA	NA	NA	NA	5.36E-04	1.11E+03	5.97E-01	7.11E-02	1.09E-01	8.66E+00	1.72E+02	9.55E-01	1.11E+02	7.77E-02
BREOT-N32-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	2.10E+03	1.21E+01	NA	NA	NA	NA	5.36E-04	1.06E+03	5.69E-01	7.11E-02	1.09E-01	8.26E+00	1.72E+02	9.55E-01	1.11E+02	7.41E-02
BREOT-S32-6 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	4.10E+02	2.36E+00	NA	NA	NA	NA	5.36E-04	2.07E+02	1.11E-01	7.11E-02	1.09E-01	1.61E+00	1.72E+02	9.55E-01	1.11E+02	1.44E-02
BREOT-N33-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	7.05E+02	4.06E+00	NA	NA	NA	NA	5.36E-04	3.56E+02	1.91E-01	7.11E-02	1.09E-01	2.77E+00	1.72E+02	9.55E-01	1.11E+02	2.48E-02
BREOT-S33-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	1.08E+03	6.20E+00	NA	NA	NA	NA	5.36E-04	5.43E+02	2.91E-01	7.11E-02	1.09E-01	4.23E+00	1.72E+02	9.55E-01	1.11E+02	3.79E-02
BREOT-N35-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	9.44E+02	5.44E+00	NA	NA	NA	NA	5.36E-04	4.76E+02	2.55E-01	7.11E-02	1.09E-01	3.71E+00	1.72E+02	9.55E-01	1.11E+02	3.33E-02
BREOT-S35-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	4.37E+03	2.52E+01	NA	NA	NA	NA	5.36E-04	2.21E+03	1.18E+00	7.11E-02	1.09E-01	1.72E+01	1.72E+02	9.55E-01	1.11E+02	1.54E-01
BREOT-N36-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	1.23E+03	7.07E+00	NA	NA	NA	NA	5.36E-04	6.19E+02	3.32E-01	7.11E-02	1.09E-01	4.81E+00	1.72E+02	9.55E-01	1.11E+02	4.32E-02
BREOT-S36-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	9.33E+02	5.37E+00	NA	NA	NA	NA	5.36E-04	4.71E+02	2.52E-01	7.11E-02	1.09E-01	3.66E+00	1.72E+02	9.55E-01	1.11E+02	3.28E-02
BREOT-N37-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	4.02E+02	2.32E+00	NA	NA	NA	NA	5.36E-04	2.03E+02	1.09E-01	7.11E-02	1.09E-01	1.58E+00	1.72E+02	9.55E-01	1.11E+02	1.42E-02
BREOT-S37-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	1.03E+03	5.94E+00	NA	NA	NA	NA	5.36E-04	5.21E+02	2.79E-01	7.11E-02	1.09E-01	4.05E+00	1.72E+02	9.55E-01	1.11E+02	3.63E-02

TABLE C-2F: ZINC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 18.41

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Mourning Dove (Herbivorous Birds - Terrestrial)																							
BREOT-N38-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	4.38E+02	2.52E+00	NA	NA	NA	NA	5.36E-04	2.21E+02	1.18E-01	7.11E-02	1.09E-01	1.72E+00	1.72E+02	9.55E-01	1.11E+02	1.54E-02
BREOT-S38-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	3.80E+03	2.19E+01	NA	NA	NA	NA	5.36E-04	1.92E+03	1.03E+00	7.11E-02	1.09E-01	1.49E+01	1.72E+02	9.55E-01	1.11E+02	1.34E-01
BREOT-N39-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	2.17E+03	1.25E+01	NA	NA	NA	NA	5.36E-04	1.09E+03	5.87E-01	7.11E-02	1.09E-01	8.52E+00	1.72E+02	9.55E-01	1.11E+02	7.64E-02
BREOT-S39-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	2.64E+03	1.52E+01	NA	NA	NA	NA	5.36E-04	1.33E+03	7.13E-01	7.11E-02	1.09E-01	1.04E+01	1.72E+02	9.55E-01	1.11E+02	9.29E-02
BREOT-N40-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	2.69E+03	1.55E+01	NA	NA	NA	NA	5.36E-04	1.36E+03	7.27E-01	7.11E-02	1.09E-01	1.06E+01	1.72E+02	9.55E-01	1.11E+02	9.47E-02
BREOT-S40-14 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	2.82E+03	1.62E+01	NA	NA	NA	NA	5.36E-04	1.42E+03	7.62E-01	7.11E-02	1.09E-01	1.11E+01	1.72E+02	9.55E-01	1.11E+02	9.93E-02
BREOT-N41-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	2.05E+03	1.18E+01	NA	NA	NA	NA	5.36E-04	1.03E+03	5.54E-01	7.11E-02	1.09E-01	8.05E+00	1.72E+02	9.55E-01	1.11E+02	7.22E-02
BREOT-S41-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	2.58E+03	1.49E+01	NA	NA	NA	NA	5.36E-04	1.30E+03	6.98E-01	7.11E-02	1.09E-01	1.01E+01	1.72E+02	9.55E-01	1.11E+02	9.09E-02
BREOT-N42-35 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	4.08E+02	2.35E+00	NA	NA	NA	NA	5.36E-04	2.06E+02	1.10E-01	7.11E-02	1.09E-01	1.60E+00	1.72E+02	9.55E-01	1.11E+02	1.44E-02
BREOT-S42-25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	6.44E+02	3.71E+00	NA	NA	NA	NA	5.36E-04	3.25E+02	1.74E-01	7.11E-02	1.09E-01	2.53E+00	1.72E+02	9.55E-01	1.11E+02	2.27E-02
BREOT-N43-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	5.13E+03	2.96E+01	NA	NA	NA	NA	5.36E-04	2.59E+03	1.39E+00	7.11E-02	1.09E-01	2.02E+01	1.72E+02	9.55E-01	1.11E+02	1.81E-01
BREOT-S43-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	9.45E+02	5.44E+00	NA	NA	NA	NA	5.36E-04	4.77E+02	2.55E-01	7.11E-02	1.09E-01	3.71E+00	1.72E+02	9.55E-01	1.11E+02	3.33E-02
BREOT-N44-30 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	9.55E+02	5.51E+00	NA	NA	NA	NA	5.36E-04	4.82E+02	2.58E-01	7.11E-02	1.09E-01	3.75E+00	1.72E+02	9.55E-01	1.11E+02	3.37E-02
BREOT-S44-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	1.33E+03	7.65E+00	NA	NA	NA	NA	5.36E-04	6.70E+02	3.59E-01	7.11E-02	1.09E-01	5.21E+00	1.72E+02	9.55E-01	1.11E+02	4.67E-02
BREOT-N45-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	4.71E+02	2.71E+00	NA	NA	NA	NA	5.36E-04	2.38E+02	1.27E-01	7.11E-02	1.09E-01	1.85E+00	1.72E+02	9.55E-01	1.11E+02	1.66E-02
BREOT-N43-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	5.13E+03	2.96E+01	NA	NA	NA	NA	5.36E-04	2.59E+03	1.39E+00	7.11E-02	1.09E-01	2.02E+01	1.72E+02	9.55E-01	1.11E+02	1.81E-01
BREOT-S45-6 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	7.51E+02	4.33E+00	NA	NA	NA	NA	5.36E-04	3.79E+02	2.03E-01	7.11E-02	1.09E-01	2.95E+00	1.72E+02	9.55E-01	1.11E+02	2.65E-02
BREOT-N46-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	2.53E+02	1.46E+00	NA	NA	NA	NA	5.36E-04	1.28E+02	6.84E-02	7.11E-02	1.09E-01	9.92E-01	1.72E+02	9.55E-01	1.11E+02	8.90E-03
BREOT-S46-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	7.29E+02	4.20E+00	NA	NA	NA	NA	5.36E-04	3.68E+02	1.97E-01	7.11E-02	1.09E-01	2.86E+00	1.72E+02	9.55E-01	1.11E+02	2.57E-02
BREOT-S46-40 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	1.09E+03	6.30E+00	NA	NA	NA	NA	5.36E-04	5.52E+02	2.96E-01	7.11E-02	1.09E-01	4.29E+00	1.72E+02	9.55E-01	1.11E+02	3.85E-02
BREOT-N47-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	4.99E+02	2.88E+00	NA	NA	NA	NA	5.36E-04	2.52E+02	1.35E-01	7.11E-02	1.09E-01	1.96E+00	1.72E+02	9.55E-01	1.11E+02	1.76E-02
BREOT-S47-999 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	7.93E+02	4.57E+00	NA	NA	NA	NA	5.36E-04	4.00E+02	2.14E-01	7.11E-02	1.09E-01	3.11E+00	1.72E+02	9.55E-01	1.11E+02	2.79E-02
BREOT-S48-12.5 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S49-2.5 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S50-12.5 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S50-25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N52-60 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	8.32E+02	4.79E+00	NA	NA	NA	NA	5.36E-04	4.20E+02	2.25E-01	7.11E-02	1.09E-01	3.27E+00	1.72E+02	9.55E-01	1.11E+02	2.93E-02
BREOT-S52-12.5 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S53-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	1.88E+02	1.08E+00	NA	NA	NA	NA	5.36E-04	9.49E+01	5.08E-02	7.11E-02	1.09E-01	7.38E-01	1.72E+02	9.55E-01	1.11E+02	6.62E-03
BREOT-S54-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	2.10E+02	1.21E+00	NA	NA	NA	NA	5.36E-04	1.06E+02	5.67E-02	7.11E-02	1.09E-01	8.23E-01	1.72E+02	9.55E-01	1.11E+02	7.38E-03
BREOT-N55-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	4.74E+03	2.73E+01	NA	NA	NA	NA	5.36E-04	2.39E+03	1.28E+00	7.11E-02	1.09E-01	1.86E+01	1.72E+02	9.55E-01	1.11E+02	1.67E-01
BREOT-S55-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	4.16E+02	2.40E+00	NA	NA	NA	NA	5.36E-04	2.10E+02	1.13E-01	7.11E-02	1.09E-01	1.63E+00	1.72E+02	9.55E-01	1.11E+02	1.47E-02
BREOT-N56-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	1.37E+03	7.87E+00	NA	NA	NA	NA	5.36E-04	6.90E+02	3.69E-01	7.11E-02	1.09E-01	5.36E+00	1.72E+02	9.55E-01	1.11E+02	4.81E-02
BREOT-S56-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	6.92E+02	3.99E+00	NA	NA	NA	NA	5.36E-04	3.49E+02	1.87E-01	7.11E-02	1.09E-01	2.72E+00	1.72E+02	9.55E-01	1.11E+02	2.44E-02
BREOT-N57-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	5.77E+02	3.33E+00	NA	NA	NA	NA	5.36E-04	2.91E+02	1.56E-01	7.11E-02	1.09E-01	2.27E+00	1.72E+02	9.55E-01	1.11E+02	2.03E-02
BREOT-S57-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	5.73E+02	3.30E+00	NA	NA	NA	NA	5.36E-04	2.89E+02	1.55E-01	7.11E-02	1.09E-01	2.25E+00	1.72E+02	9.55E-01	1.11E+02	2.02E-02
BREOT-N58-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	6.52E+02	3.75E+00	NA	NA	NA	NA	5.36E-04	3.29E+02	1.76E-01	7.11E-02	1.09E-01	2.56E+00	1.72E+02	9.55E-01	1.11E+02	2.30E-02
BREOT-S58-12 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	1.50E+03	8.65E+00	NA	NA	NA	NA	5.36E-04	7.58E+02	4.06E-01	7.11E-02	1.09E-01	5.89E+00	1.72E+02	9.55E-01	1.11E+02	5.29E-02
BREOT-N59-18 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	4.45E+02	2.56E+00	NA	NA	NA	NA	5.36E-04	2.24E+02	1.20E-01	7.11E-02	1.09E-01	1.75E+00	1.72E+02	9.55E-01	1.11E+02	1.57E-02
BREOT-N60-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	6.25E+02	3.60E+00	NA	NA	NA	NA	5.36E-04	3.16E+02	1.69E-01	7.11E-02	1.09E-01	2.45E+00	1.72E+02	9.55E-01	1.11E+02	2.20E-02
BREOT-S60-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	1.17E+03	6.75E+00	NA	NA	NA	NA	5.36E-04	5.91E+02	3.17E-01	7.11E-02	1.09E-01	4.60E+00	1.72E+02	9.55E-01	1.11E+02	4.13E-02
BREOT-S61-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	4.64E+03	2.67E+01	NA	NA	NA	NA	5.36E-04	2.34E+03	1.25E+00	7.11E-02	1.09E-01	1.82E+01	1.72E+02	9.55E-01	1.11E+02	1.63E-01
BREOT-N62-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	2.40E+02	1.38E+00	NA	NA	NA	NA	5.36E-04	1.21E+02	6.49E-02	7.11E-02	1.09E-01	9.42E-01	1.72E+02	9.55E-01	1.11E+02	8.45E-03
BREOT-S62-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	4.48E+03	2.58E+01	NA	NA	NA	NA	5.36E-04	2.26E+03	1.21E+00	7.11E-02	1.09E-01	1.76E+01	1.72E+02	9.55E-01	1.11E+02	1.58E-01
BREOT-S63-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	5.83E+02	3.36E+00	NA	NA	NA	NA	5.36E-04	2.94E+02	1.58E-01	7.11E-02	1.09E-01	2.29E+00	1.72E+02	9.55E-01	1.11E+02	2.05E-02
BREOT-N64-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	5.67E+02	3.27E+00	NA	NA	NA	NA	5.36E-04	2.86E+02	1.53E-01	7.11E-02	1.09E-01	2.23E+00	1.72E+02	9.55E-01	1.11E+02	2.00E-02
BREOT-N64-20 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	4.25E+02	2.45E+00	NA	NA	NA	NA	5.36E-04	2.14E+02	1.15E-01	7.11E-02	1.09E-01	1.67E+00	1.72E+02	9.55E-01	1.11E+02	1.50E-02

TABLE C-2F: ZINC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 18.41

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Mourning Dove (Herbivorous Birds - Terrestrial)																							
BREOT-S64-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	3.83E+02	2.21E+00	NA	NA	NA	NA	5.36E-04	1.94E+02	1.04E-01	7.11E-02	1.09E-01	1.51E+00	1.72E+02	9.55E-01	1.11E+02	1.35E-02
BREOT-N65-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	6.19E+02	3.56E+00	NA	NA	NA	NA	5.36E-04	3.12E+02	1.67E-01	7.11E-02	1.09E-01	2.43E+00	1.72E+02	9.55E-01	1.11E+02	2.18E-02
BREOT-S65-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	4.52E+02	2.60E+00	NA	NA	NA	NA	5.36E-04	2.28E+02	1.22E-01	7.11E-02	1.09E-01	1.78E+00	1.72E+02	9.55E-01	1.11E+02	1.59E-02
BREOT-N66-5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	3.76E+02	2.17E+00	NA	NA	NA	NA	5.36E-04	1.90E+02	1.02E-01	7.11E-02	1.09E-01	1.48E+00	1.72E+02	9.55E-01	1.11E+02	1.33E-02
BREOT-S66-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	4.56E+02	2.63E+00	NA	NA	NA	NA	5.36E-04	2.30E+02	1.23E-01	7.11E-02	1.09E-01	1.79E+00	1.72E+02	9.55E-01	1.11E+02	1.61E-02
BREOT-N67-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	6.14E+03	3.54E+01	NA	NA	NA	NA	5.36E-04	3.10E+03	1.66E+00	7.11E-02	1.09E-01	2.41E+01	1.72E+02	9.55E-01	1.11E+02	2.16E-01
BREOT-S67-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	2.66E+02	1.54E+00	NA	NA	NA	NA	5.36E-04	1.34E+02	7.21E-02	7.11E-02	1.09E-01	1.05E+00	1.72E+02	9.55E-01	1.11E+02	9.38E-03
At Edge of Tailings																						**Maximum HQ (Inside Tailings)**	**1.38E+00**
BREOT-S0-0 (06)	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	9.04E+02	5.21E+00	NA	NA	NA	NA	5.36E-04	4.56E+02	2.44E-01	7.11E-02	1.09E-01	3.55E+00	1.72E+02	9.55E-01	1.11E+02	3.18E-02
BREOT-S1-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	5.22E+02	3.01E+00	NA	NA	NA	NA	5.36E-04	2.63E+02	1.41E-01	7.11E-02	1.09E-01	2.05E+00	1.72E+02	9.55E-01	1.11E+02	1.84E-02
BREOT-S2-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	5.75E+02	3.31E+00	NA	NA	NA	NA	5.36E-04	2.90E+02	1.56E-01	7.11E-02	1.09E-01	2.26E+00	1.72E+02	9.55E-01	1.11E+02	2.03E-02
BREOT-S3-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	3.28E+03	1.89E+01	NA	NA	NA	NA	5.36E-04	1.65E+03	8.86E-01	7.11E-02	1.09E-01	1.29E+01	1.72E+02	9.55E-01	1.11E+02	1.15E-01
BREOT-S4-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	3.94E+03	2.27E+01	NA	NA	NA	NA	5.36E-04	1.99E+03	1.06E+00	7.11E-02	1.09E-01	1.55E+01	1.72E+02	9.55E-01	1.11E+02	1.39E-01
BREOT-S6-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	2.06E+03	1.19E+01	NA	NA	NA	NA	5.36E-04	1.04E+03	5.58E-01	7.11E-02	1.09E-01	8.11E+00	1.72E+02	9.55E-01	1.11E+02	7.27E-02
BREOT-S7-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	9.50E+02	5.47E+00	NA	NA	NA	NA	5.36E-04	4.79E+02	2.57E-01	7.11E-02	1.09E-01	3.73E+00	1.72E+02	9.55E-01	1.11E+02	3.35E-02
BREOT-S8-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	6.37E+02	3.67E+00	NA	NA	NA	NA	5.36E-04	3.21E+02	1.72E-01	7.11E-02	1.09E-01	2.50E+00	1.72E+02	9.55E-01	1.11E+02	2.24E-02
BREOT-S9-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	4.12E+02	2.37E+00	NA	NA	NA	NA	5.36E-04	2.08E+02	1.11E-01	7.11E-02	1.09E-01	1.62E+00	1.72E+02	9.55E-01	1.11E+02	1.45E-02
BREOT-N10-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	3.63E+04	2.09E+02	NA	NA	NA	NA	5.36E-04	1.83E+04	9.82E+00	7.11E-02	1.09E-01	1.43E+02	1.72E+02	9.55E-01	1.11E+02	1.28E+00
BREOT-N11-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	1.26E+03	7.25E+00	NA	NA	NA	NA	5.36E-04	6.35E+02	3.40E-01	7.11E-02	1.09E-01	4.94E+00	1.72E+02	9.55E-01	1.11E+02	4.43E-02
BREOT-N12-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	6.36E+02	3.66E+00	NA	NA	NA	NA	5.36E-04	3.21E+02	1.72E-01	7.11E-02	1.09E-01	2.50E+00	1.72E+02	9.55E-01	1.11E+02	2.24E-02
BREOT-S12-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	3.38E+03	1.95E+01	NA	NA	NA	NA	5.36E-04	1.71E+03	9.14E-01	7.11E-02	1.09E-01	1.33E+01	1.72E+02	9.55E-01	1.11E+02	1.19E-01
BREOT-N13-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	2.04E+04	1.17E+02	NA	NA	NA	NA	5.36E-04	1.03E+04	5.51E+00	7.11E-02	1.09E-01	8.01E+01	1.72E+02	9.55E-01	1.11E+02	7.18E-01
BREOT-S13-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	5.66E+03	3.26E+01	NA	NA	NA	NA	5.36E-04	2.86E+03	1.53E+00	7.11E-02	1.09E-01	2.22E+01	1.72E+02	9.55E-01	1.11E+02	1.99E-01
BREOT-N14-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	6.89E+02	3.97E+00	NA	NA	NA	NA	5.36E-04	3.48E+02	1.86E-01	7.11E-02	1.09E-01	2.71E+00	1.72E+02	9.55E-01	1.11E+02	2.43E-02
BREOT-S14-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	3.17E+04	1.82E+02	NA	NA	NA	NA	5.36E-04	1.60E+04	8.56E+00	7.11E-02	1.09E-01	1.24E+02	1.72E+02	9.55E-01	1.11E+02	1.12E+00
BREOT-N15-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	1.95E+03	1.12E+01	NA	NA	NA	NA	5.36E-04	9.84E+02	5.27E-01	7.11E-02	1.09E-01	7.66E+00	1.72E+02	9.55E-01	1.11E+02	6.87E-02
BREOT-N16-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	7.46E+02	4.30E+00	NA	NA	NA	NA	5.36E-04	3.77E+02	2.02E-01	7.11E-02	1.09E-01	2.93E+00	1.72E+02	9.55E-01	1.11E+02	2.63E-02
BREOT-S16-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	4.83E+02	2.78E+00	NA	NA	NA	NA	5.36E-04	2.44E+02	1.31E-01	7.11E-02	1.09E-01	1.90E+00	1.72E+02	9.55E-01	1.11E+02	1.70E-02
BREOT-N17-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	8.60E+02	4.96E+00	NA	NA	NA	NA	5.36E-04	4.34E+02	2.33E-01	7.11E-02	1.09E-01	3.38E+00	1.72E+02	9.55E-01	1.11E+02	3.03E-02
BREOT-S17-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	8.34E+02	4.80E+00	NA	NA	NA	NA	5.36E-04	4.21E+02	2.25E-01	7.11E-02	1.09E-01	3.27E+00	1.72E+02	9.55E-01	1.11E+02	2.94E-02
BREOT-N18-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	1.04E+03	5.96E+00	NA	NA	NA	NA	5.36E-04	5.22E+02	2.80E-01	7.11E-02	1.09E-01	4.06E+00	1.72E+02	9.55E-01	1.11E+02	3.65E-02
BREOT-S18-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	1.43E+03	8.26E+00	NA	NA	NA	NA	5.36E-04	7.23E+02	3.88E-01	7.11E-02	1.09E-01	5.63E+00	1.72E+02	9.55E-01	1.11E+02	5.05E-02
BREOT-N19-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	2.79E+03	1.61E+01	NA	NA	NA	NA	5.36E-04	1.41E+03	7.55E-01	7.11E-02	1.09E-01	1.10E+01	1.72E+02	9.55E-01	1.11E+02	9.84E-02
BREOT-S19-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	5.41E+02	3.11E+00	NA	NA	NA	NA	5.36E-04	2.73E+02	1.46E-01	7.11E-02	1.09E-01	2.12E+00	1.72E+02	9.55E-01	1.11E+02	1.90E-02
BREOT-N20-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	4.44E+03	2.56E+01	NA	NA	NA	NA	5.36E-04	2.24E+03	1.20E+00	7.11E-02	1.09E-01	1.75E+01	1.72E+02	9.55E-01	1.11E+02	1.57E-01
BREOT-S20-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	3.79E+02	2.18E+00	NA	NA	NA	NA	5.36E-04	1.91E+02	1.02E-01	7.11E-02	1.09E-01	1.49E+00	1.72E+02	9.55E-01	1.11E+02	1.33E-02
BREOT-N21-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	2.46E+03	1.42E+01	NA	NA	NA	NA	5.36E-04	1.24E+03	6.66E-01	7.11E-02	1.09E-01	9.66E+00	1.72E+02	9.55E-01	1.11E+02	8.67E-02
BREOT-S21-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	7.65E+02	4.41E+00	NA	NA	NA	NA	5.36E-04	3.86E+02	2.07E-01	7.11E-02	1.09E-01	3.00E+00	1.72E+02	9.55E-01	1.11E+02	2.69E-02
BREOT-N22-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	1.89E+03	1.09E+01	NA	NA	NA	NA	5.36E-04	9.52E+02	5.10E-01	7.11E-02	1.09E-01	7.41E+00	1.72E+02	9.55E-01	1.11E+02	6.64E-02
BREOT-S22-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	1.09E+03	6.31E+00	NA	NA	NA	NA	5.36E-04	5.52E+02	2.96E-01	7.11E-02	1.09E-01	4.30E+00	1.72E+02	9.55E-01	1.11E+02	3.85E-02
BREOT-N23-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	2.36E+03	1.36E+01	NA	NA	NA	NA	5.36E-04	1.19E+03	6.39E-01	7.11E-02	1.09E-01	9.28E+00	1.72E+02	9.55E-01	1.11E+02	8.32E-02
BREOT-S23-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	1.56E+03	9.01E+00	NA	NA	NA	NA	5.36E-04	7.89E+02	4.23E-01	7.11E-02	1.09E-01	6.14E+00	1.72E+02	9.55E-01	1.11E+02	5.51E-02
BREOT-N24-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	3.82E+03	2.20E+01	NA	NA	NA	NA	5.36E-04	1.93E+03	1.03E+00	7.11E-02	1.09E-01	1.50E+01	1.72E+02	9.55E-01	1.11E+02	1.34E-01
BREOT-S24-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	2.08E+04	1.20E+02	NA	NA	NA	NA	5.36E-04	1.05E+04	5.63E+00	7.11E-02	1.09E-01	8.17E+01	1.72E+02	9.55E-01	1.11E+02	7.33E-01
BREOT-N25-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	2.80E+03	1.61E+01	NA	NA	NA	NA	5.36E-04	1.41E+03	7.57E-01	7.11E-02	1.09E-01	1.10E+01	1.72E+02	9.55E-01	1.11E+02	9.86E-02
BREOT-S25-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	5.12E+03	2.95E+01	NA	NA	NA	NA	5.36E-04	2.58E+03	1.38E+00	7.11E-02	1.09E-01	2.01E+01	1.72E+02	9.55E-01	1.11E+02	1.80E-01
BREOT-N26-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	4.21E+03	2.42E+01	NA	NA	NA	NA	5.36E-04	2.12E+03	1.14E+00	7.11E-02	1.09E-01	1.65E+01	1.72E+02	9.55E-01	1.11E+02	1.48E-01
BREOT-S26-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	1.72E+03	9.94E+00	NA	NA	NA	NA	5.36E-04	8.70E+02	4.66E-01	7.11E-02	1.09E-01	6.77E+00	1.72E+02	9.55E-01	1.11E+02	6.07E-02
BREOT-N27-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	2.24E+04	1.29E+02	NA	NA	NA	NA	5.36E-04	1.13E+04	6.05E+00	7.11E-02	1.09E-01	8.78E+01	1.72E+02	9.55E-01	1.11E+02	7.88E-01
BREOT-S27-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	4.25E+02	2.45E+00	NA	NA	NA	NA	5.36E-04	2.15E+02	1.15E-01	7.11E-02	1.09E-01	1.67E+00	1.72E+02	9.55E-01	1.11E+02	1.50E-02

TABLE C-2F: ZINC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

Site Area (hectares) 18.41

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Mourning Dove (Herbivorous Birds - Terrestrial)																							
BREOT-N28-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	1.45E+03	8.33E+00	NA	NA	NA	NA	5.36E-04	7.30E+02	3.91E-01	7.11E-02	1.09E-01	5.68E+00	1.72E+02	9.55E-01	1.11E+02	5.09E-02
BREOT-S28-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	4.74E+02	2.73E+00	NA	NA	NA	NA	5.36E-04	2.39E+02	1.28E-01	7.11E-02	1.09E-01	1.86E+00	1.72E+02	9.55E-01	1.11E+02	1.67E-02
BREOT-S29-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	4.56E+02	2.63E+00	NA	NA	NA	NA	5.36E-04	2.30E+02	1.23E-01	7.11E-02	1.09E-01	1.79E+00	1.72E+02	9.55E-01	1.11E+02	1.61E-02
BREOT-N30-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	1.03E+04	5.95E+01	NA	NA	NA	NA	5.36E-04	5.21E+03	2.79E+00	7.11E-02	1.09E-01	4.05E+01	1.72E+02	9.55E-01	1.11E+02	3.64E-01
BREOT-S30-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	1.71E+02	9.85E-01	NA	NA	NA	NA	5.36E-04	8.63E+01	4.62E-02	7.11E-02	1.09E-01	6.71E-01	1.72E+02	9.55E-01	1.11E+02	6.02E-03
BREOT-N31-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	1.29E+04	7.45E+01	NA	NA	NA	NA	5.36E-04	6.52E+03	3.50E+00	7.11E-02	1.09E-01	5.08E+01	1.72E+02	9.55E-01	1.11E+02	4.55E-01
BREOT-S31-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	8.03E+02	4.63E+00	NA	NA	NA	NA	5.36E-04	4.05E+02	2.17E-01	7.11E-02	1.09E-01	3.15E+00	1.72E+02	9.55E-01	1.11E+02	2.83E-02
BREOT-N32-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	5.15E+03	2.97E+01	NA	NA	NA	NA	5.36E-04	2.60E+03	1.39E+00	7.11E-02	1.09E-01	2.02E+01	1.72E+02	9.55E-01	1.11E+02	1.81E-01
BREOT-S32-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	8.48E+02	4.89E+00	NA	NA	NA	NA	5.36E-04	4.28E+02	2.29E-01	7.11E-02	1.09E-01	3.33E+00	1.72E+02	9.55E-01	1.11E+02	2.99E-02
BREOT-N33-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	2.71E+02	1.56E+00	NA	NA	NA	NA	5.36E-04	1.37E+02	7.34E-02	7.11E-02	1.09E-01	1.07E+00	1.72E+02	9.55E-01	1.11E+02	9.56E-03
BREOT-S33-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	1.38E+03	7.96E+00	NA	NA	NA	NA	5.36E-04	6.97E+02	3.74E-01	7.11E-02	1.09E-01	5.42E+00	1.72E+02	9.55E-01	1.11E+02	4.87E-02
BREOT-N34-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	6.87E+02	3.96E+00	NA	NA	NA	NA	5.36E-04	3.47E+02	1.86E-01	7.11E-02	1.09E-01	2.70E+00	1.72E+02	9.55E-01	1.11E+02	2.42E-02
BREOT-S34-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	6.06E+03	3.49E+01	NA	NA	NA	NA	5.36E-04	3.06E+03	1.64E+00	7.11E-02	1.09E-01	2.38E+01	1.72E+02	9.55E-01	1.11E+02	2.14E-01
BREOT-N35-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	2.45E+02	1.41E+00	NA	NA	NA	NA	5.36E-04	1.23E+02	6.62E-02	7.11E-02	1.09E-01	9.61E-01	1.72E+02	9.55E-01	1.11E+02	8.62E-03
BREOT-S35-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	8.80E+02	5.07E+00	NA	NA	NA	NA	5.36E-04	4.44E+02	2.38E-01	7.11E-02	1.09E-01	3.45E+00	1.72E+02	9.55E-01	1.11E+02	3.10E-02
BREOT-N36-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	5.89E+03	3.40E+01	NA	NA	NA	NA	5.36E-04	2.97E+03	1.59E+00	7.11E-02	1.09E-01	2.31E+01	1.72E+02	9.55E-01	1.11E+02	2.08E-01
BREOT-S36-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	5.19E+03	2.99E+01	NA	NA	NA	NA	5.36E-04	2.62E+03	1.40E+00	7.11E-02	1.09E-01	2.04E+01	1.72E+02	9.55E-01	1.11E+02	1.83E-01
BREOT-N37-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	8.21E+02	4.73E+00	NA	NA	NA	NA	5.36E-04	4.14E+02	2.22E-01	7.11E-02	1.09E-01	3.22E+00	1.72E+02	9.55E-01	1.11E+02	2.89E-02
BREOT-S37-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	5.86E+03	3.38E+01	NA	NA	NA	NA	5.36E-04	2.96E+03	1.59E+00	7.11E-02	1.09E-01	2.30E+01	1.72E+02	9.55E-01	1.11E+02	2.06E-01
BREOT-N38-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	2.48E+02	1.43E+00	NA	NA	NA	NA	5.36E-04	1.25E+02	6.72E-02	7.11E-02	1.09E-01	9.76E-01	1.72E+02	9.55E-01	1.11E+02	8.75E-03
BREOT-S38-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	2.24E+03	1.29E+01	NA	NA	NA	NA	5.36E-04	1.13E+03	6.06E-01	7.11E-02	1.09E-01	8.79E+00	1.72E+02	9.55E-01	1.11E+02	7.89E-02
BREOT-N39-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	4.22E+02	2.43E+00	NA	NA	NA	NA	5.36E-04	2.13E+02	1.14E-01	7.11E-02	1.09E-01	1.66E+00	1.72E+02	9.55E-01	1.11E+02	1.49E-02
BREOT-N40-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	3.35E+02	1.93E+00	NA	NA	NA	NA	5.36E-04	1.69E+02	9.06E-02	7.11E-02	1.09E-01	1.32E+00	1.72E+02	9.55E-01	1.11E+02	1.18E-02
BREOT-S40-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	4.21E+03	2.43E+01	NA	NA	NA	NA	5.36E-04	2.13E+03	1.14E+00	7.11E-02	1.09E-01	1.65E+01	1.72E+02	9.55E-01	1.11E+02	1.48E-01
BREOT-N41-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	1.92E+02	1.11E+00	NA	NA	NA	NA	5.36E-04	9.68E+01	5.19E-02	7.11E-02	1.09E-01	7.53E-01	1.72E+02	9.55E-01	1.11E+02	6.76E-03
BREOT-S41-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	4.55E+03	2.62E+01	NA	NA	NA	NA	5.36E-04	2.30E+03	1.23E+00	7.11E-02	1.09E-01	1.79E+01	1.72E+02	9.55E-01	1.11E+02	1.60E-01
BREOT-N42-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S42-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	8.64E+03	4.98E+01	NA	NA	NA	NA	5.36E-04	4.36E+03	2.34E+00	7.11E-02	1.09E-01	3.39E+01	1.72E+02	9.55E-01	1.11E+02	3.04E-01
BREOT-N43-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	4.00E+02	2.30E+00	NA	NA	NA	NA	5.36E-04	2.02E+02	1.08E-01	7.11E-02	1.09E-01	1.57E+00	1.72E+02	9.55E-01	1.11E+02	1.41E-02
BREOT-S43-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	8.09E+02	4.66E+00	NA	NA	NA	NA	5.36E-04	4.09E+02	2.19E-01	7.11E-02	1.09E-01	3.18E+00	1.72E+02	9.55E-01	1.11E+02	2.85E-02
BREOT-N44-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	8.31E+02	4.79E+00	NA	NA	NA	NA	5.36E-04	4.19E+02	2.25E-01	7.11E-02	1.09E-01	3.26E+00	1.72E+02	9.55E-01	1.11E+02	2.93E-02
BREOT-S44-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	6.95E+02	4.00E+00	NA	NA	NA	NA	5.36E-04	3.51E+02	1.88E-01	7.11E-02	1.09E-01	2.73E+00	1.72E+02	9.55E-01	1.11E+02	2.45E-02
BREOT-N45-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	6.71E+02	3.86E+00	NA	NA	NA	NA	5.36E-04	3.39E+02	1.81E-01	7.11E-02	1.09E-01	2.63E+00	1.72E+02	9.55E-01	1.11E+02	2.36E-02
BREOT-S45-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	7.91E+02	4.56E+00	NA	NA	NA	NA	5.36E-04	3.99E+02	2.14E-01	7.11E-02	1.09E-01	3.11E+00	1.72E+02	9.55E-01	1.11E+02	2.79E-02
BREOT-N46-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	8.80E+02	5.07E+00	NA	NA	NA	NA	5.36E-04	4.44E+02	2.38E-01	7.11E-02	1.09E-01	3.46E+00	1.72E+02	9.55E-01	1.11E+02	3.10E-02
BREOT-S46-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	3.34E+02	1.93E+00	NA	NA	NA	NA	5.36E-04	1.69E+02	9.04E-02	7.11E-02	1.09E-01	1.31E+00	1.72E+02	9.55E-01	1.11E+02	1.18E-02
BREOT-N47-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	1.43E+03	8.25E+00	NA	NA	NA	NA	5.36E-04	7.23E+02	3.87E-01	7.11E-02	1.09E-01	5.62E+00	1.72E+02	9.55E-01	1.11E+02	5.05E-02
BREOT-S47-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	2.27E+02	1.31E+00	NA	NA	NA	NA	5.36E-04	1.14E+02	6.13E-02	7.11E-02	1.09E-01	8.90E-01	1.72E+02	9.55E-01	1.11E+02	7.99E-03
BREOT-N48-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	5.60E+02	3.23E+00	NA	NA	NA	NA	5.36E-04	2.83E+02	1.51E-01	7.11E-02	1.09E-01	2.20E+00	1.72E+02	9.55E-01	1.11E+02	1.97E-02
BREOT-S48-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N49-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	2.10E+03	1.21E+01	NA	NA	NA	NA	5.36E-04	1.06E+03	5.69E-01	7.11E-02	1.09E-01	8.26E+00	1.72E+02	9.55E-01	1.11E+02	7.41E-02
BREOT-S49-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S50-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N51-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	6.66E+02	3.84E+00	NA	NA	NA	NA	5.36E-04	3.36E+02	1.80E-01	7.11E-02	1.09E-01	2.62E+00	1.72E+02	9.55E-01	1.11E+02	2.35E-02
BREOT-S51-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	3.78E+02	2.18E+00	NA	NA	NA	NA	5.36E-04	1.91E+02	1.02E-01	7.11E-02	1.09E-01	1.48E+00	1.72E+02	9.55E-01	1.11E+02	1.33E-02
BREOT-N52-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S52-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N53-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	5.18E+02	2.99E+00	NA	NA	NA	NA	5.36E-04	2.61E+02	1.40E-01	7.11E-02	1.09E-01	2.03E+00	1.72E+02	9.55E-01	1.11E+02	1.82E-02
BREOT-S53-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N54-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	5.92E+02	3.41E+00	NA	NA	NA	NA	5.36E-04	2.99E+02	1.60E-01	7.11E-02	1.09E-01	2.32E+00	1.72E+02	9.55E-01	1.11E+02	2.08E-02
BREOT-S54-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N55-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	4.55E+02	2.62E+00	NA	NA	NA	NA	5.36E-04	2.29E+02	1.23E-01	7.11E-02	1.09E-01	1.78E+00	1.72E+02	9.55E-01	1.11E+02	1.60E-02
BREOT-S55-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N56-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	4.95E+02	2.85E+00	NA	NA	NA	NA	5.36E-04	2.50E+02	1.34E-01	7.11E-02	1.09E-01	1.94E+00	1.72E+02	9.55E-01	1.11E+02	1.74E-02
BREOT-N57-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	3.53E+02	2.04E+00	NA	NA	NA	NA	5.36E-04	1.78E+02	9.56E-02	7.11E-02	1.09E-01	1.39E+00	1.72E+02	9.55E-01	1.11E+02	1.25E-02

TABLE C-2F: ZINC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 18.41

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Mourning Dove (Herbivorous Birds - Terrestrial)																							
BREOT-S57-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	7.31E+02	4.21E+00	NA	NA	NA	NA	5.36E-04	3.69E+02	1.98E-01	7.11E-02	1.09E-01	2.87E+00	1.72E+02	9.55E-01	1.11E+02	2.58E-02
BREOT-N58-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	4.31E+02	2.48E+00	NA	NA	NA	NA	5.36E-04	2.17E+02	1.16E-01	7.11E-02	1.09E-01	1.69E+00	1.72E+02	9.55E-01	1.11E+02	1.52E-02
BREOT-S58-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	6.86E+02	3.96E+00	NA	NA	NA	NA	5.36E-04	3.46E+02	1.86E-01	7.11E-02	1.09E-01	2.70E+00	1.72E+02	9.55E-01	1.11E+02	2.42E-02
BREOT-N59-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	4.84E+02	2.79E+00	NA	NA	NA	NA	5.36E-04	2.44E+02	1.31E-01	7.11E-02	1.09E-01	1.90E+00	1.72E+02	9.55E-01	1.11E+02	1.70E-02
BREOT-N60-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	4.49E+02	2.59E+00	NA	NA	NA	NA	5.36E-04	2.27E+02	1.21E-01	7.11E-02	1.09E-01	1.76E+00	1.72E+02	9.55E-01	1.11E+02	1.58E-02
BREOT-S60-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	1.21E+03	6.99E+00	NA	NA	NA	NA	5.36E-04	6.12E+02	3.28E-01	7.11E-02	1.09E-01	4.76E+00	1.72E+02	9.55E-01	1.11E+02	4.27E-02
BREOT-S61-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N62-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	4.99E+02	2.87E+00	NA	NA	NA	NA	5.36E-04	2.52E+02	1.35E-01	7.11E-02	1.09E-01	1.96E+00	1.72E+02	9.55E-01	1.11E+02	1.76E-02
BREOT-S62-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	1.89E+02	1.09E+00	NA	NA	NA	NA	5.36E-04	9.52E+01	5.10E-02	7.11E-02	1.09E-01	7.41E-01	1.72E+02	9.55E-01	1.11E+02	6.64E-03
BREOT-N63-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	9.21E+02	5.30E+00	NA	NA	NA	NA	5.36E-04	4.65E+02	2.49E-01	7.11E-02	1.09E-01	3.61E+00	1.72E+02	9.55E-01	1.11E+02	3.24E-02
BREOT-S63-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	6.56E+02	3.78E+00	NA	NA	NA	NA	5.36E-04	3.31E+02	1.77E-01	7.11E-02	1.09E-01	2.57E+00	1.72E+02	9.55E-01	1.11E+02	2.31E-02
BREOT-N64-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	5.80E+02	3.34E+00	NA	NA	NA	NA	5.36E-04	2.93E+02	1.57E-01	7.11E-02	1.09E-01	2.28E+00	1.72E+02	9.55E-01	1.11E+02	2.04E-02
BREOT-S64-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N66-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	5.09E+02	2.93E+00	NA	NA	NA	NA	5.36E-04	2.57E+02	1.38E-01	7.11E-02	1.09E-01	2.00E+00	1.72E+02	9.55E-01	1.11E+02	1.79E-02
BREOT-S66-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	7.55E+02	4.35E+00	NA	NA	NA	NA	5.36E-04	3.81E+02	2.04E-01	7.11E-02	1.09E-01	2.97E+00	1.72E+02	9.55E-01	1.11E+02	2.66E-02
BREOT-N67-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	6.70E+03	3.86E+01	NA	NA	NA	NA	5.36E-04	3.38E+03	1.81E+00	7.11E-02	1.09E-01	2.63E+01	1.72E+02	9.55E-01	1.11E+02	2.36E-01
BREOT-S67-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	3.69E+02	2.12E+00	NA	NA	NA	NA	5.36E-04	1.86E+02	9.97E-02	7.11E-02	1.09E-01	1.45E+00	1.72E+02	9.55E-01	1.11E+02	1.30E-02
Outside Tailings																						**Maximum HQ (At Edge of Tailings)**	**1.28E+00**
BREOT-S0+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	6.92E+02	3.99E+00	NA	NA	NA	NA	5.36E-04	3.49E+02	1.87E-01	7.11E-02	1.09E-01	2.72E+00	1.72E+02	9.55E-01	1.11E+02	2.44E-02
BREOT-S1+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	8.88E+02	5.12E+00	NA	NA	NA	NA	5.36E-04	4.48E+02	2.40E-01	7.11E-02	1.09E-01	3.49E+00	1.72E+02	9.55E-01	1.11E+02	3.13E-02
BREOT-S2+95 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	2.92E+02	1.68E+00	NA	NA	NA	NA	5.36E-04	1.47E+02	7.90E-02	7.11E-02	1.09E-01	1.15E+00	1.72E+02	9.55E-01	1.11E+02	1.03E-02
BREOT-S3+6 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	3.83E+02	2.21E+00	NA	NA	NA	NA	5.36E-04	1.93E+02	1.03E-01	7.11E-02	1.09E-01	1.50E+00	1.72E+02	9.55E-01	1.11E+02	1.35E-02
BREOT-S4+10 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	4.52E+02	2.61E+00	NA	NA	NA	NA	5.36E-04	2.28E+02	1.22E-01	7.11E-02	1.09E-01	1.78E+00	1.72E+02	9.55E-01	1.11E+02	1.59E-02
BREOT-S6+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	4.97E+02	2.86E+00	NA	NA	NA	NA	5.36E-04	2.51E+02	1.34E-01	7.11E-02	1.09E-01	1.95E+00	1.72E+02	9.55E-01	1.11E+02	1.75E-02
BREOT-S8+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	5.66E+02	3.26E+00	NA	NA	NA	NA	5.36E-04	2.86E+02	1.53E-01	7.11E-02	1.09E-01	2.22E+00	1.72E+02	9.55E-01	1.11E+02	1.99E-02
BREOT-N10+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	4.54E+02	2.62E+00	NA	NA	NA	NA	5.36E-04	2.29E+02	1.23E-01	7.11E-02	1.09E-01	1.78E+00	1.72E+02	9.55E-01	1.11E+02	1.60E-02
BREOT-N11+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	3.62E+02	2.09E+00	NA	NA	NA	NA	5.36E-04	1.83E+02	9.80E-02	7.11E-02	1.09E-01	1.42E+00	1.72E+02	9.55E-01	1.11E+02	1.28E-02
BREOT-N12+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	5.25E+02	3.02E+00	NA	NA	NA	NA	5.36E-04	2.65E+02	1.42E-01	7.11E-02	1.09E-01	2.06E+00	1.72E+02	9.55E-01	1.11E+02	1.85E-02
BREOT-S12+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	1.28E+04	7.37E+01	NA	NA	NA	NA	5.36E-04	6.45E+03	3.46E+00	7.11E-02	1.09E-01	5.02E+01	1.72E+02	9.55E-01	1.11E+02	4.50E-01
BREOT-S12+60 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	1.25E+03	7.17E+00	NA	NA	NA	NA	5.36E-04	6.28E+02	3.37E-01	7.11E-02	1.09E-01	4.89E+00	1.72E+02	9.55E-01	1.11E+02	4.39E-02
BREOT-N13+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	5.22E+02	3.01E+00	NA	NA	NA	NA	5.36E-04	2.63E+02	1.41E-01	7.11E-02	1.09E-01	2.05E+00	1.72E+02	9.55E-01	1.11E+02	1.84E-02
BREOT-S13+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	5.72E+03	3.30E+01	NA	NA	NA	NA	5.36E-04	2.89E+03	1.55E+00	7.11E-02	1.09E-01	2.25E+01	1.72E+02	9.55E-01	1.11E+02	2.01E-01
BREOT-S13+65 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	1.88E+03	1.08E+01	NA	NA	NA	NA	5.36E-04	9.50E+02	5.09E-01	7.11E-02	1.09E-01	7.39E+00	1.72E+02	9.55E-01	1.11E+02	6.63E-02
BREOT-N14+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	8.64E+02	4.98E+00	NA	NA	NA	NA	5.36E-04	4.36E+02	2.34E-01	7.11E-02	1.09E-01	3.39E+00	1.72E+02	9.55E-01	1.11E+02	3.04E-02
BREOT-S14+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	8.81E+03	5.07E+01	NA	NA	NA	NA	5.36E-04	4.44E+03	2.38E+00	7.11E-02	1.09E-01	3.46E+01	1.72E+02	9.55E-01	1.11E+02	3.10E-01
BREOT-S14+59 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	6.69E+02	3.86E+00	NA	NA	NA	NA	5.36E-04	3.38E+02	1.81E-01	7.11E-02	1.09E-01	2.63E+00	1.72E+02	9.55E-01	1.11E+02	2.36E-02
BREOT-N15+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	1.90E+04	1.10E+02	NA	NA	NA	NA	5.36E-04	9.59E+03	5.14E+00	7.11E-02	1.09E-01	7.46E+01	1.72E+02	9.55E-01	1.11E+02	6.69E-01
BREOT-N15+50 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	5.96E+02	3.44E+00	NA	NA	NA	NA	5.36E-04	3.01E+02	1.61E-01	7.11E-02	1.09E-01	2.34E+00	1.72E+02	9.55E-01	1.11E+02	2.10E-02
BREOT-S16+20 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	7.67E+03	4.42E+01	NA	NA	NA	NA	5.36E-04	3.87E+03	2.07E+00	7.11E-02	1.09E-01	3.01E+01	1.72E+02	9.55E-01	1.11E+02	2.70E-01
BREOT-S16+75 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	9.04E+02	5.21E+00	NA	NA	NA	NA	5.36E-04	4.56E+02	2.44E-01	7.11E-02	1.09E-01	3.55E+00	1.72E+02	9.55E-01	1.11E+02	3.18E-02
BREOT-N17+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	3.81E+03	2.19E+01	NA	NA	NA	NA	5.36E-04	1.92E+03	1.03E+00	7.11E-02	1.09E-01	1.49E+01	1.72E+02	9.55E-01	1.11E+02	1.34E-01
BREOT-S18+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	4.01E+02	2.31E+00	NA	NA	NA	NA	5.36E-04	2.02E+02	1.08E-01	7.11E-02	1.09E-01	1.57E+00	1.72E+02	9.55E-01	1.11E+02	1.41E-02
BREOT-N19+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	3.96E+02	2.28E+00	NA	NA	NA	NA	5.36E-04	2.00E+02	1.07E-01	7.11E-02	1.09E-01	1.56E+00	1.72E+02	9.55E-01	1.11E+02	1.40E-02
BREOT-S19+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	1.71E+03	9.88E+00	NA	NA	NA	NA	5.36E-04	8.65E+02	4.64E-01	7.11E-02	1.09E-01	6.73E+00	1.72E+02	9.55E-01	1.11E+02	6.04E-02
BREOT-S19+85 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	2.99E+02	1.72E+00	NA	NA	NA	NA	5.36E-04	1.51E+02	8.07E-02	7.11E-02	1.09E-01	1.17E+00	1.72E+02	9.55E-01	1.11E+02	1.05E-02
BREOT-N20+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	5.68E+02	3.27E+00	NA	NA	NA	NA	5.36E-04	2.87E+02	1.54E-01	7.11E-02	1.09E-01	2.23E+00	1.72E+02	9.55E-01	1.11E+02	2.00E-02
BREOT-S20+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	2.29E+03	1.32E+01	NA	NA	NA	NA	5.36E-04	1.16E+03	6.20E-01	7.11E-02	1.09E-01	9.01E+00	1.72E+02	9.55E-01	1.11E+02	8.08E-02
BREOT-S20+75 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	4.32E+02	2.49E+00	NA	NA	NA	NA	5.36E-04	2.18E+02	1.17E-01	7.11E-02	1.09E-01	1.70E+00	1.72E+02	9.55E-01	1.11E+02	1.52E-02
BREOT-N21+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	8.48E+02	4.89E+00	NA	NA	NA	NA	5.36E-04	4.28E+02	2.29E-01	7.11E-02	1.09E-01	3.33E+00	1.72E+02	9.55E-01	1.11E+02	2.99E-02
BREOT-S21+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	1.05E+03	6.08E+00	NA	NA	NA	NA	5.36E-04	5.32E+02	2.85E-01	7.11E-02	1.09E-01	4.14E+00	1.72E+02	9.55E-01	1.11E+02	3.71E-02
BREOT-N22+150 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	4.06E+02	2.34E+00	NA	NA	NA	NA	5.36E-04	2.05E+02	1.10E-01	7.11E-02	1.09E-01	1.59E+00	1.72E+02	9.55E-01	1.11E+02	1.43E-02
BREOT-N22+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	5.93E+03	3.42E+01	NA	NA	NA	NA	5.36E-04	2.99E+03	1.60E+00	7.11E-02	1.09E-01	2.33E+01	1.72E+02	9.55E-01	1.11E+02	2.09E-01
BREOT-S22+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	6.98E+02	4.02E+00	NA	NA	NA	NA	5.36E-04	3.52E+02	1.89E-01	7.11E-02	1.09E-01	2.74E+00	1.72E+02	9.55E-01	1.11E+02	2.46E-02
BREOT-N23+115 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	7.18E+02	4.14E+00	NA	NA	NA	NA	5.36E-04	3.63E+02	1.94E-01	7.11E-02	1.09E-01	2.82E+00	1.72E+02	9.55E-01	1.11E+02	2.53E-02
BREOT-N23+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	1.46E+04	8.42E+01	NA	NA	NA	NA	5.36E-04	7.37E+03	3.95E+00	7.11E-02	1.09E-01	5.74E+01	1.72E+02	9.55E-01	1.11E+02	5.15E-01

TABLE C-2F: ZINC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 18.41

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Mourning Dove (Herbivorous Birds - Terrestrial)																							
BREOT-S23+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	3.49E+03	2.01E+01	NA	NA	NA	NA	5.36E-04	1.76E+03	9.45E-01	7.11E-02	1.09E-01	1.37E+01	1.72E+02	9.55E-01	1.11E+02	1.23E-01
BREOT-S23+37.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	9.23E+02	5.32E+00	NA	NA	NA	NA	5.36E-04	4.66E+02	2.50E-01	7.11E-02	1.09E-01	3.62E+00	1.72E+02	9.55E-01	1.11E+02	3.25E-02
BREOT-N24+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	3.62E+03	2.09E+01	NA	NA	NA	NA	5.36E-04	1.83E+03	9.79E-01	7.11E-02	1.09E-01	1.42E+01	1.72E+02	9.55E-01	1.11E+02	1.28E-01
BREOT-N24+75 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	5.76E+02	3.32E+00	NA	NA	NA	NA	5.36E-04	2.91E+02	1.56E-01	7.11E-02	1.09E-01	2.26E+00	1.72E+02	9.55E-01	1.11E+02	2.03E-02
BREOT-S24+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	8.47E+02	4.88E+00	NA	NA	NA	NA	5.36E-04	4.27E+02	2.29E-01	7.11E-02	1.09E-01	3.33E+00	1.72E+02	9.55E-01	1.11E+02	2.98E-02
BREOT-N25+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	2.07E+02	1.19E+00	NA	NA	NA	NA	5.36E-04	1.05E+02	5.61E-02	7.11E-02	1.09E-01	8.14E-01	1.72E+02	9.55E-01	1.11E+02	7.30E-03
BREOT-S25+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	5.91E+02	3.41E+00	NA	NA	NA	NA	5.36E-04	2.98E+02	1.60E-01	7.11E-02	1.09E-01	2.32E+00	1.72E+02	9.55E-01	1.11E+02	2.08E-02
BREOT-S25+40 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	6.47E+02	3.73E+00	NA	NA	NA	NA	5.36E-04	3.26E+02	1.75E-01	7.11E-02	1.09E-01	2.54E+00	1.72E+02	9.55E-01	1.11E+02	2.28E-02
BREOT-S26+37 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	4.92E+02	2.84E+00	NA	NA	NA	NA	5.36E-04	2.48E+02	1.33E-01	7.11E-02	1.09E-01	1.93E+00	1.72E+02	9.55E-01	1.11E+02	1.73E-02
BREOT-N27+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	5.31E+02	3.06E+00	NA	NA	NA	NA	5.36E-04	2.68E+02	1.44E-01	7.11E-02	1.09E-01	2.09E+00	1.72E+02	9.55E-01	1.11E+02	1.87E-02
BREOT-S27+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	3.90E+02	2.25E+00	NA	NA	NA	NA	5.36E-04	1.97E+02	1.05E-01	7.11E-02	1.09E-01	1.53E+00	1.72E+02	9.55E-01	1.11E+02	1.37E-02
BREOT-N28+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	3.68E+02	2.12E+00	NA	NA	NA	NA	5.36E-04	1.86E+02	9.96E-02	7.11E-02	1.09E-01	1.45E+00	1.72E+02	9.55E-01	1.11E+02	1.30E-02
BREOT-S28+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	4.36E+02	2.51E+00	NA	NA	NA	NA	5.36E-04	2.20E+02	1.18E-01	7.11E-02	1.09E-01	1.71E+00	1.72E+02	9.55E-01	1.11E+02	1.54E-02
BREOT-N29+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	1.39E+03	8.00E+00	NA	NA	NA	NA	5.36E-04	7.01E+02	3.76E-01	7.11E-02	1.09E-01	5.45E+00	1.72E+02	9.55E-01	1.11E+02	4.89E-02
BREOT-S29+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	3.58E+02	2.07E+00	NA	NA	NA	NA	5.36E-04	1.81E+02	9.69E-02	7.11E-02	1.09E-01	1.41E+00	1.72E+02	9.55E-01	1.11E+02	1.26E-02
BREOT-N30+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	7.84E+02	4.52E+00	NA	NA	NA	NA	5.36E-04	3.96E+02	2.12E-01	7.11E-02	1.09E-01	3.08E+00	1.72E+02	9.55E-01	1.11E+02	2.76E-02
BREOT-S30+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	6.10E+02	3.51E+00	NA	NA	NA	NA	5.36E-04	3.08E+02	1.65E-01	7.11E-02	1.09E-01	2.39E+00	1.72E+02	9.55E-01	1.11E+02	2.15E-02
BREOT-N31+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	2.00E+04	1.15E+02	NA	NA	NA	NA	5.36E-04	1.01E+04	5.42E+00	7.11E-02	1.09E-01	7.87E+01	1.72E+02	9.55E-01	1.11E+02	7.06E-01
BREOT-N31+75 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	3.92E+02	2.26E+00	NA	NA	NA	NA	5.36E-04	1.98E+02	1.06E-01	7.11E-02	1.09E-01	1.54E+00	1.72E+02	9.55E-01	1.11E+02	1.38E-02
BREOT-S31+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	5.59E+02	3.22E+00	NA	NA	NA	NA	5.36E-04	2.82E+02	1.51E-01	7.11E-02	1.09E-01	2.20E+00	1.72E+02	9.55E-01	1.11E+02	1.97E-02
BREOT-N32+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	2.95E+02	1.70E+00	NA	NA	NA	NA	5.36E-04	1.49E+02	7.98E-02	7.11E-02	1.09E-01	1.16E+00	1.72E+02	9.55E-01	1.11E+02	1.04E-02
BREOT-S32+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	8.06E+02	4.64E+00	NA	NA	NA	NA	5.36E-04	4.07E+02	2.18E-01	7.11E-02	1.09E-01	3.16E+00	1.72E+02	9.55E-01	1.11E+02	2.84E-02
BREOT-S32+300 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	1.03E+03	5.96E+00	NA	NA	NA	NA	5.36E-04	5.22E+02	2.80E-01	7.11E-02	1.09E-01	4.06E+00	1.72E+02	9.55E-01	1.11E+02	3.65E-02
BREOT-N33+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	2.12E+02	1.22E+00	NA	NA	NA	NA	5.36E-04	1.07E+02	5.74E-02	7.11E-02	1.09E-01	8.34E-01	1.72E+02	9.55E-01	1.11E+02	7.48E-03
BREOT-S33+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	2.35E+03	1.36E+01	NA	NA	NA	NA	5.36E-04	1.19E+03	6.37E-01	7.11E-02	1.09E-01	9.24E+00	1.72E+02	9.55E-01	1.11E+02	8.29E-02
BREOT-N34+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	2.75E+02	1.58E+00	NA	NA	NA	NA	5.36E-04	1.39E+02	7.43E-02	7.11E-02	1.09E-01	1.08E+00	1.72E+02	9.55E-01	1.11E+02	9.68E-03
BREOT-S34+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	4.75E+02	2.74E+00	NA	NA	NA	NA	5.36E-04	2.40E+02	1.29E-01	7.11E-02	1.09E-01	1.87E+00	1.72E+02	9.55E-01	1.11E+02	1.67E-02
BREOT-N35+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	3.10E+02	1.79E+00	NA	NA	NA	NA	5.36E-04	1.57E+02	8.39E-02	7.11E-02	1.09E-01	1.22E+00	1.72E+02	9.55E-01	1.11E+02	1.09E-02
BREOT-S35+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	2.10E+03	1.21E+01	NA	NA	NA	NA	5.36E-04	1.06E+03	5.68E-01	7.11E-02	1.09E-01	8.25E+00	1.72E+02	9.55E-01	1.11E+02	7.40E-02
BREOT-N36+100 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	4.47E+02	2.58E+00	NA	NA	NA	NA	5.36E-04	2.26E+02	1.21E-01	7.11E-02	1.09E-01	1.76E+00	1.72E+02	9.55E-01	1.11E+02	1.58E-02
BREOT-N36+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	4.69E+03	2.70E+01	NA	NA	NA	NA	5.36E-04	2.37E+03	1.27E+00	7.11E-02	1.09E-01	1.84E+01	1.72E+02	9.55E-01	1.11E+02	1.65E-01
BREOT-S36+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	1.78E+03	1.03E+01	NA	NA	NA	NA	5.36E-04	8.99E+02	4.82E-01	7.11E-02	1.09E-01	7.00E+00	1.72E+02	9.55E-01	1.11E+02	6.28E-02
BREOT-N37+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	1.56E+02	8.97E-01	NA	NA	NA	NA	5.36E-04	7.86E+01	4.21E-02	7.11E-02	1.09E-01	6.11E-01	1.72E+02	9.55E-01	1.11E+02	5.48E-03
BREOT-S37+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	2.03E+03	1.17E+01	NA	NA	NA	NA	5.36E-04	1.02E+03	5.48E-01	7.11E-02	1.09E-01	7.95E+00	1.72E+02	9.55E-01	1.11E+02	7.13E-02
BREOT-N38+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	1.67E+02	9.60E-01	NA	NA	NA	NA	5.36E-04	8.41E+01	4.50E-02	7.11E-02	1.09E-01	6.54E-01	1.72E+02	9.55E-01	1.11E+02	5.87E-03
BREOT-S38+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	2.36E+03	1.36E+01	NA	NA	NA	NA	5.36E-04	1.19E+03	6.38E-01	7.11E-02	1.09E-01	9.27E+00	1.72E+02	9.55E-01	1.11E+02	8.31E-02
BREOT-N39+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	2.28E+02	1.31E+00	NA	NA	NA	NA	5.36E-04	1.15E+02	6.17E-02	7.11E-02	1.09E-01	8.95E-01	1.72E+02	9.55E-01	1.11E+02	8.03E-03
BREOT-S39+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	2.35E+03	1.35E+01	NA	NA	NA	NA	5.36E-04	1.19E+03	6.36E-01	7.11E-02	1.09E-01	9.23E+00	1.72E+02	9.55E-01	1.11E+02	8.28E-02
BREOT-N40+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	1.29E+02	7.41E-01	NA	NA	NA	NA	5.36E-04	6.49E+01	3.48E-02	7.11E-02	1.09E-01	5.05E-01	1.72E+02	9.55E-01	1.11E+02	4.53E-03
BREOT-S40+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	2.10E+03	1.21E+01	NA	NA	NA	NA	5.36E-04	1.06E+03	5.68E-01	7.11E-02	1.09E-01	8.25E+00	1.72E+02	9.55E-01	1.11E+02	7.40E-02
BREOT-N41+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	2.28E+02	1.32E+00	NA	NA	NA	NA	5.36E-04	1.15E+02	6.18E-02	7.11E-02	1.09E-01	8.97E-01	1.72E+02	9.55E-01	1.11E+02	8.04E-03
BREOT-S41+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	1.55E+03	8.96E+00	NA	NA	NA	NA	5.36E-04	7.85E+02	4.20E-01	7.11E-02	1.09E-01	6.10E+00	1.72E+02	9.55E-01	1.11E+02	5.48E-02
BREOT-N42+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	1.14E+02	6.57E-01	NA	NA	NA	NA	5.36E-04	5.76E+01	3.09E-02	7.11E-02	1.09E-01	4.48E-01	1.72E+02	9.55E-01	1.11E+02	4.02E-03
BREOT-S42+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	2.26E+03	1.30E+01	NA	NA	NA	NA	5.36E-04	1.14E+03	6.10E-01	7.11E-02	1.09E-01	8.86E+00	1.72E+02	9.55E-01	1.11E+02	7.95E-02
BREOT-N43+12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	5.53E+02	3.18E+00	NA	NA	NA	NA	5.36E-04	2.79E+02	1.49E-01	7.11E-02	1.09E-01	2.17E+00	1.72E+02	9.55E-01	1.11E+02	1.95E-02
BREOT-N43+40 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	4.37E+02	2.52E+00	NA	NA	NA	NA	5.36E-04	2.21E+02	1.18E-01	7.11E-02	1.09E-01	1.72E+00	1.72E+02	9.55E-01	1.11E+02	1.54E-02
BREOT-S43+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	8.75E+02	5.04E+00	NA	NA	NA	NA	5.36E-04	4.42E+02	2.37E-01	7.11E-02	1.09E-01	3.44E+00	1.72E+02	9.55E-01	1.11E+02	3.08E-02
BREOT-N44+55 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	4.47E+02	2.58E+00	NA	NA	NA	NA	5.36E-04	2.26E+02	1.21E-01	7.11E-02	1.09E-01	1.76E+00	1.72E+02	9.55E-01	1.11E+02	1.57E-02
BREOT-S44+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	6.48E+02	3.74E+00	NA	NA	NA	NA	5.36E-04	3.27E+02	1.75E-01	7.11E-02	1.09E-01	2.55E+00	1.72E+02	9.55E-01	1.11E+02	2.28E-02
BREOT-N45+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	4.57E+02	2.64E+00	NA	NA	NA	NA	5.36E-04	2.31E+02	1.24E-01	7.11E-02	1.09E-01	1.80E+00	1.72E+02	9.55E-01	1.11E+02	1.61E-02
BREOT-S45+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	9.09E+02	5.23E+00	NA	NA	NA	NA	5.36E-04	4.59E+02	2.46E-01	7.11E-02	1.09E-01	3.57E+00	1.72E+02	9.55E-01	1.11E+02	3.20E-02
BREOT-N46+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	1.03E+03	5.91E+00	NA	NA	NA	NA	5.36E-04	5.18E+02	2.77E-01	7.11E-02	1.09E-01	4.03E+00	1.72E+02	9.55E-01	1.11E+02	3.61E-02
BREOT-S46+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	6.86E+02	3.95E+00	NA	NA	NA	NA	5.36E-04	3.46E+02	1.85E-01	7.11E-02	1.09E-01	2.69E+00	1.72E+02	9.55E-01	1.11E+02	2.41E-02
BREOT-N47+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	6.82E+02	3.93E+00	NA	NA	NA	NA	5.36E-04	3.44E+02	1.84E-01	7.11E-02	1.09E-01	2.68E+00	1.72E+02	9.55E-01	1.11E+02	2.40E-02
BREOT-S47+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	2.10E+02	1.21E+00	NA	NA	NA	NA	5.36E-04	1.06E+02	5.67E-02	7.11E-02	1.09E-01	8.23E-01	1.72E+02	9.55E-01	1.11E+02	7.39E-03

TABLE C-2F: ZINC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

Site Area (hectares) 18.41

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Mourning Dove (Herbivorous Birds - Terrestrial)																							
BREOT-N48+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	2.63E+02	1.52E+00	NA	NA	NA	NA	5.36E-04	1.33E+02	7.12E-02	7.11E-02	1.09E-01	1.03E+00	1.72E+02	9.55E-01	1.11E+02	9.27E-03
BREOT-S48+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N49+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	6.77E+02	3.90E+00	NA	NA	NA	NA	5.36E-04	3.42E+02	1.83E-01	7.11E-02	1.09E-01	2.66E+00	1.72E+02	9.55E-01	1.11E+02	2.38E-02
BREOT-S49+25 (0-6")	5.76E-03	NA	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N51+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	3.30E+02	1.90E+00	NA	NA	NA	NA	5.36E-04	1.66E+02	8.91E-02	7.11E-02	1.09E-01	1.29E+00	1.72E+02	9.55E-01	1.11E+02	1.16E-02
BREOT-S51+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	2.65E+02	1.53E+00	NA	NA	NA	NA	5.36E-04	1.34E+02	7.18E-02	7.11E-02	1.09E-01	1.04E+00	1.72E+02	9.55E-01	1.11E+02	9.35E-03
BREOT-N52+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	3.32E+02	1.91E+00	NA	NA	NA	NA	5.36E-04	1.68E+02	8.99E-02	7.11E-02	1.09E-01	1.30E+00	1.72E+02	9.55E-01	1.11E+02	1.17E-02
BREOT-S52+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N53+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	3.30E+02	1.90E+00	NA	NA	NA	NA	5.36E-04	1.67E+02	8.93E-02	7.11E-02	1.09E-01	1.30E+00	1.72E+02	9.55E-01	1.11E+02	1.16E-02
BREOT-S53+25 (0-6")	5.76E-03	NA	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S54+25 (0-6")	5.76E-03	NA	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N55+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	2.90E+02	1.67E+00	NA	NA	NA	NA	5.36E-04	1.47E+02	7.85E-02	7.11E-02	1.09E-01	1.14E+00	1.72E+02	9.55E-01	1.11E+02	1.02E-02
BREOT-S55+25 (0-6")	5.76E-03	NA	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N56+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	2.87E+02	1.65E+00	NA	NA	NA	NA	5.36E-04	1.45E+02	7.75E-02	7.11E-02	1.09E-01	1.13E+00	1.72E+02	9.55E-01	1.11E+02	1.01E-02
BREOT-S56+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N57+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	2.47E+02	1.42E+00	NA	NA	NA	NA	5.36E-04	1.25E+02	6.67E-02	7.11E-02	1.09E-01	9.69E-01	1.72E+02	9.55E-01	1.11E+02	8.69E-03
BREOT-S57+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	4.04E+02	2.33E+00	NA	NA	NA	NA	5.36E-04	2.04E+02	1.09E-01	7.11E-02	1.09E-01	1.59E+00	1.72E+02	9.55E-01	1.11E+02	1.42E-02
BREOT-N58+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	4.20E+02	2.42E+00	NA	NA	NA	NA	5.36E-04	2.12E+02	1.14E-01	7.11E-02	1.09E-01	1.65E+00	1.72E+02	9.55E-01	1.11E+02	1.48E-02
BREOT-S58+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	1.78E+02	1.03E+00	NA	NA	NA	NA	5.36E-04	9.00E+01	4.82E-02	7.11E-02	1.09E-01	7.00E-01	1.72E+02	9.55E-01	1.11E+02	6.28E-03
BREOT-N59+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	6.97E+02	4.01E+00	NA	NA	NA	NA	5.36E-04	3.52E+02	1.88E-01	7.11E-02	1.09E-01	2.73E+00	1.72E+02	9.55E-01	1.11E+02	2.45E-02
BREOT-N60+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	4.67E+02	2.69E+00	NA	NA	NA	NA	5.36E-04	2.36E+02	1.26E-01	7.11E-02	1.09E-01	1.84E+00	1.72E+02	9.55E-01	1.11E+02	1.65E-02
BREOT-S60+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S61+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N62+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	5.17E+02	2.98E+00	NA	NA	NA	NA	5.36E-04	2.61E+02	1.40E-01	7.11E-02	1.09E-01	2.03E+00	1.72E+02	9.55E-01	1.11E+02	1.82E-02
BREOT-S62+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	2.29E+02	1.32E+00	NA	NA	NA	NA	5.36E-04	1.16E+02	6.19E-02	7.11E-02	1.09E-01	8.99E-01	1.72E+02	9.55E-01	1.11E+02	8.06E-03
BREOT-N63+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	5.43E+02	3.13E+00	NA	NA	NA	NA	5.36E-04	2.74E+02	1.47E-01	7.11E-02	1.09E-01	2.13E+00	1.72E+02	9.55E-01	1.11E+02	1.91E-02
BREOT-S63+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	3.84E+02	2.21E+00	NA	NA	NA	NA	5.36E-04	1.94E+02	1.04E-01	7.11E-02	1.09E-01	1.51E+00	1.72E+02	9.55E-01	1.11E+02	1.35E-02
BREOT-N64+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	6.09E+02	3.51E+00	NA	NA	NA	NA	5.36E-04	3.07E+02	1.65E-01	7.11E-02	1.09E-01	2.39E+00	1.72E+02	9.55E-01	1.11E+02	2.15E-02
BREOT-S64+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S65+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N66+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	4.91E+02	2.83E+00	NA	NA	NA	NA	5.36E-04	2.48E+02	1.33E-01	7.11E-02	1.09E-01	1.93E+00	1.72E+02	9.55E-01	1.11E+02	1.73E-02
BREOT-S66+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N67+125 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	7.19E+02	4.14E+00	NA	NA	NA	NA	5.36E-04	3.63E+02	1.95E-01	7.11E-02	1.09E-01	2.82E+00	1.72E+02	9.55E-01	1.11E+02	2.53E-02
BREOT-S67+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N67+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	7.48E+02	4.31E+00	NA	NA	NA	NA	5.36E-04	3.77E+02	2.02E-01	7.11E-02	1.09E-01	2.94E+00	1.72E+02	9.55E-01	1.11E+02	2.63E-02
																					Maximum HQ (Outside Tailings)		**7.06E-01**
Red-Tailed Hawk (Carnivorous Birds - Terrestrial)																							
Reference Sites																							
ACBG-1 (0-6")	9.00E-02	9.00E-02	1.03E+01	1.42E+03	1.27E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.37E+02	7.02E-01	2.64E-02	1.13E+00	2.99E+00	1.72E+02	9.55E-01	1.78E+02	1.68E-02
ACBG-2 (0-6")	9.00E-02	9.00E-02	1.03E+01	8.68E+02	7.81E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	8.39E+01	4.30E-01	2.64E-02	1.13E+00	1.83E+00	1.72E+02	9.55E-01	1.78E+02	1.03E-02
UBRBG-202 (0-6")	9.00E-02	9.00E-02	1.03E+01	5.56E+02	5.00E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.37E+01	2.75E-01	2.64E-02	1.13E+00	1.17E+00	1.72E+02	9.55E-01	1.78E+02	6.58E-03
UBRBG-204 (0-6")	9.00E-02	9.00E-02	1.03E+01	3.55E+03	3.19E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.43E+02	1.76E+00	2.64E-02	1.13E+00	7.47E+00	1.72E+02	9.55E-01	1.78E+02	4.20E-02
Inside Tailings																						**Minimum HQ (Reference Sites)**	**6.58E-03**
BREOT-S6-12.5 (0-6")	9.00E-02	9.00E-02	6.30E+00	2.41E+03	2.17E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.83E+02	1.96E+00	2.64E-02	1.13E+00	5.10E+00	1.72E+02	9.55E-01	1.78E+02	2.86E-02
BREOT-S2-12.5 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.60E+04	1.44E+03	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.54E+03	1.30E+01	2.64E-02	1.13E+00	3.38E+01	1.72E+02	9.55E-01	1.78E+02	1.90E-01
BREOT-S0-12.5 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.56E+03	1.40E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.48E+02	1.27E+00	2.64E-02	1.13E+00	3.30E+00	1.72E+02	9.55E-01	1.78E+02	1.85E-02
BREOT-S1-12.5 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.05E+03	9.42E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.66E+02	8.53E-01	2.64E-02	1.13E+00	2.21E+00	1.72E+02	9.55E-01	1.78E+02	1.24E-02
BREOT-S7-25 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.47E+03	1.32E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.33E+02	1.20E+00	2.64E-02	1.13E+00	3.10E+00	1.72E+02	9.55E-01	1.78E+02	1.74E-02
BREOT-S8-12.5 (0-6")	9.00E-02	9.00E-02	6.30E+00	9.10E+02	8.19E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.45E+02	7.41E-01	2.64E-02	1.13E+00	1.92E+00	1.72E+02	9.55E-01	1.78E+02	1.08E-02
BREOT-S9-12.5 (0-6")	9.00E-02	9.00E-02	6.30E+00	2.08E+03	1.88E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.31E+02	1.70E+00	2.64E-02	1.13E+00	4.41E+00	1.72E+02	9.55E-01	1.78E+02	2.48E-02
BREOT-N10-12.5 (0-6")	9.00E-02	9.00E-02	6.30E+00	2.91E+04	2.62E+03	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.63E+03	2.37E+01	2.64E-02	1.13E+00	6.16E+01	1.72E+02	9.55E-01	1.78E+02	3.46E-01
BREOT-N11-12.5 (0-6")	9.00E-02	9.00E-02	6.30E+00	3.06E+03	2.75E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.85E+02	2.49E+00	2.64E-02	1.13E+00	6.46E+00	1.72E+02	9.55E-01	1.78E+02	3.63E-02
BREOT-N11-125 (0-6")	9.00E-02	9.00E-02	6.30E+00	2.51E+03	2.26E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.99E+02	2.04E+00	2.64E-02	1.13E+00	5.31E+00	1.72E+02	9.55E-01	1.78E+02	2.98E-02
BREOT-S11-12 (0-6")	9.00E-02	9.00E-02	6.30E+00	4.47E+04	4.02E+03	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	7.09E+03	3.64E+01	2.64E-02	1.13E+00	9.44E+01	1.72E+02	9.55E-01	1.78E+02	5.31E-01
BREOT-S11+63 (0-6")	9.00E-02	9.00E-02	6.30E+00	2.52E+03	2.27E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.00E+02	2.05E+00	2.64E-02	1.13E+00	5.33E+00	1.72E+02	9.55E-01	1.78E+02	2.99E-02
UBDT-TP-6 (0-2")	9.00E-02	9.00E-02	6.30E+00	1.25E+05	1.12E+04	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.98E+04	1.02E+02	2.64E-02	1.13E+00	2.64E+02	1.72E+02	9.55E-01	1.78E+02	1.48E+00
UBDT-TP-6 (2-12")	9.00E-02	9.00E-02	6.30E+00	7.74E+04	6.96E+03	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.23E+04	6.30E+01	2.64E-02	1.13E+00	1.64E+02	1.72E+02	9.55E-01	1.78E+02	9.20E-01

TABLE C-2F: ZINC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

Site Area (hectares) 18.41

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Red-Tailed Hawk (Carnivorous Birds - Terrestrial)																							
UBDT-TP-6 (12-24")	9.00E-02	9.00E-02	6.30E+00	7.90E+04	7.10E+03	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.25E+04	6.43E+01	2.64E-02	1.13E+00	1.67E+02	1.72E+02	9.55E-01	1.78E+02	9.38E-01
UBDT-TP-6 (24-36")	9.00E-02	9.00E-02	6.30E+00	5.76E+03	5.18E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	9.15E+02	4.69E+00	2.64E-02	1.13E+00	1.22E+01	1.72E+02	9.55E-01	1.78E+02	6.85E-02
UBDT-TP-6 (36-48")	9.00E-02	9.00E-02	6.30E+00	1.57E+04	1.41E+03	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.49E+03	1.27E+01	2.64E-02	1.13E+00	3.31E+01	1.72E+02	9.55E-01	1.78E+02	1.86E-01
UBDT-TP-6 (48-60")	9.00E-02	9.00E-02	6.30E+00	1.20E+04	1.08E+03	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.90E+03	9.75E+00	2.64E-02	1.13E+00	2.53E+01	1.72E+02	9.55E-01	1.78E+02	1.42E-01
BREOT-N12-12.5 (0-6")	9.00E-02	9.00E-02	6.30E+00	7.41E+03	6.66E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.18E+03	6.03E+00	2.64E-02	1.13E+00	1.57E+01	1.72E+02	9.55E-01	1.78E+02	8.80E-02
BREOT-S12-12.5 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.83E+04	1.65E+03	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.90E+03	1.49E+01	2.64E-02	1.13E+00	3.87E+01	1.72E+02	9.55E-01	1.78E+02	2.17E-01
BREOT-S13-12.5 (0-6")	9.00E-02	9.00E-02	6.30E+00	3.25E+04	2.92E+03	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.15E+03	2.64E+01	2.64E-02	1.13E+00	6.86E+01	1.72E+02	9.55E-01	1.78E+02	3.86E-01
BREOT-S14-12.5 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.61E+04	1.45E+03	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.56E+03	1.31E+01	2.64E-02	1.13E+00	3.41E+01	1.72E+02	9.55E-01	1.78E+02	1.91E-01
BREOT-N15-12.5 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.71E+04	1.53E+03	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.71E+03	1.39E+01	2.64E-02	1.13E+00	3.61E+01	1.72E+02	9.55E-01	1.78E+02	2.03E-01
BREOT-S15-12.5 (0-6")	9.00E-02	9.00E-02	6.30E+00	2.20E+03	1.98E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.50E+02	1.79E+00	2.64E-02	1.13E+00	4.66E+00	1.72E+02	9.55E-01	1.78E+02	2.62E-02
BREOT-N16-12.5 (0-6")	9.00E-02	9.00E-02	6.30E+00	5.61E+03	5.05E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	8.91E+02	4.57E+00	2.64E-02	1.13E+00	1.19E+01	1.72E+02	9.55E-01	1.78E+02	6.67E-02
BREOT-N16-25 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.10E+03	9.93E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.75E+02	8.99E-01	2.64E-02	1.13E+00	2.34E+00	1.72E+02	9.55E-01	1.78E+02	1.31E-02
BREOT-S16-12.5 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.12E+03	1.01E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.78E+02	9.12E-01	2.64E-02	1.13E+00	2.37E+00	1.72E+02	9.55E-01	1.78E+02	1.33E-02
BREOT-N17-12.5 (0-6")	9.00E-02	9.00E-02	6.30E+00	2.42E+03	2.18E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.84E+02	1.97E+00	2.64E-02	1.13E+00	5.12E+00	1.72E+02	9.55E-01	1.78E+02	2.87E-02
BREOT-S17-12.5 (0-6")	9.00E-02	9.00E-02	6.30E+00	9.65E+02	8.68E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.53E+02	7.86E-01	2.64E-02	1.13E+00	2.04E+00	1.72E+02	9.55E-01	1.78E+02	1.15E-02
BREOT-S17-25 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.47E+03	1.32E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.34E+02	1.20E+00	2.64E-02	1.13E+00	3.11E+00	1.72E+02	9.55E-01	1.78E+02	1.75E-02
UBDT-TP-4 (0-2")	9.00E-02	9.00E-02	6.30E+00	1.50E+04	1.35E+03	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.38E+03	1.22E+01	2.64E-02	1.13E+00	3.17E+01	1.72E+02	9.55E-01	1.78E+02	1.78E-01
UBDT-TP-4 (2-12")	9.00E-02	9.00E-02	6.30E+00	9.00E+03	8.10E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.43E+03	7.33E+00	2.64E-02	1.13E+00	1.90E+01	1.72E+02	9.55E-01	1.78E+02	1.07E-01
UBDT-TP-4 (12-24")	9.00E-02	9.00E-02	6.30E+00	4.92E+03	4.43E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	7.82E+02	4.01E+00	2.64E-02	1.13E+00	1.04E+01	1.72E+02	9.55E-01	1.78E+02	5.85E-02
UBDT-TP-4 (24-36")	9.00E-02	9.00E-02	6.30E+00	7.09E+03	6.38E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.13E+03	5.78E+00	2.64E-02	1.13E+00	1.50E+01	1.72E+02	9.55E-01	1.78E+02	8.43E-02
BREOT-N18-12.5 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.01E+04	9.06E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.60E+03	8.20E+00	2.64E-02	1.13E+00	2.13E+01	1.72E+02	9.55E-01	1.78E+02	1.20E-01
BREOT-N18-25 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.93E+03	1.74E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.07E+02	1.58E+00	2.64E-02	1.13E+00	4.09E+00	1.72E+02	9.55E-01	1.78E+02	2.30E-02
BREOT-S18-12.5 (0-6")	9.00E-02	9.00E-02	6.30E+00	3.60E+03	3.23E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.71E+02	2.93E+00	2.64E-02	1.13E+00	7.60E+00	1.72E+02	9.55E-01	1.78E+02	4.27E-02
BREOT-N19-10 (0-6")	9.00E-02	9.00E-02	6.30E+00	2.98E+03	2.68E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.73E+02	2.42E+00	2.64E-02	1.13E+00	6.30E+00	1.72E+02	9.55E-01	1.78E+02	3.54E-02
BREOT-S19-12.5 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.00E+04	9.00E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.59E+03	8.15E+00	2.64E-02	1.13E+00	2.12E+01	1.72E+02	9.55E-01	1.78E+02	1.19E-01
UBDT-TP-5 (0-2")	9.00E-02	9.00E-02	6.30E+00	1.65E+04	1.49E+03	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.63E+03	1.35E+01	2.64E-02	1.13E+00	3.50E+01	1.72E+02	9.55E-01	1.78E+02	1.97E-01
UBDT-TP-5 (2-12")	9.00E-02	9.00E-02	6.30E+00	1.10E+04	9.86E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.74E+03	8.93E+00	2.64E-02	1.13E+00	2.32E+01	1.72E+02	9.55E-01	1.78E+02	1.30E-01
UBDT-TP-5 (12-24")	9.00E-02	9.00E-02	6.30E+00	9.76E+03	8.78E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.55E+03	7.95E+00	2.64E-02	1.13E+00	2.06E+01	1.72E+02	9.55E-01	1.78E+02	1.16E-01
BREOT-N20-12.5 (0-6")	9.00E-02	9.00E-02	6.30E+00	2.08E+03	1.87E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.31E+02	1.70E+00	2.64E-02	1.13E+00	4.41E+00	1.72E+02	9.55E-01	1.78E+02	2.47E-02
UBDT-TP-3 (0-2")	9.00E-02	9.00E-02	6.30E+00	2.81E+03	2.53E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.47E+02	2.29E+00	2.64E-02	1.13E+00	5.95E+00	1.72E+02	9.55E-01	1.78E+02	3.34E-02
UBDT-TP-3 (2-12")	9.00E-02	9.00E-02	6.30E+00	1.84E+03	1.66E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.93E+02	1.50E+00	2.64E-02	1.13E+00	3.90E+00	1.72E+02	9.55E-01	1.78E+02	2.19E-02
UBDT-TP-3 (12-24")	9.00E-02	9.00E-02	6.30E+00	1.44E+03	1.29E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.28E+02	1.17E+00	2.64E-02	1.13E+00	3.04E+00	1.72E+02	9.55E-01	1.78E+02	1.71E-02
UBDT-TP-3 (24-36")	9.00E-02	9.00E-02	6.30E+00	2.31E+03	2.07E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.66E+02	1.88E+00	2.64E-02	1.13E+00	4.88E+00	1.72E+02	9.55E-01	1.78E+02	2.74E-02
UBDT-TP-3 (36-48")	9.00E-02	9.00E-02	6.30E+00	3.55E+03	3.19E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.63E+02	2.89E+00	2.64E-02	1.13E+00	7.50E+00	1.72E+02	9.55E-01	1.78E+02	4.21E-02
UBDT-TP-3 (48-60")	9.00E-02	9.00E-02	6.30E+00	4.98E+03	4.48E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	7.90E+02	4.05E+00	2.64E-02	1.13E+00	1.05E+01	1.72E+02	9.55E-01	1.78E+02	5.91E-02
BREOT-N21-12.5 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.62E+04	1.45E+03	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.57E+03	1.32E+01	2.64E-02	1.13E+00	3.42E+01	1.72E+02	9.55E-01	1.78E+02	1.92E-01
BREOT-N22-12.5 (0-6")	9.00E-02	9.00E-02	6.30E+00	2.61E+03	2.34E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.14E+02	2.12E+00	2.64E-02	1.13E+00	5.51E+00	1.72E+02	9.55E-01	1.78E+02	3.10E-02
BREOT-N23-12.5 (0-6")	9.00E-02	9.00E-02	6.30E+00	4.29E+03	3.86E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	6.81E+02	3.49E+00	2.64E-02	1.13E+00	9.07E+00	1.72E+02	9.55E-01	1.78E+02	5.09E-02
BREOT-S23-12.5 (0-6")	9.00E-02	9.00E-02	6.30E+00	5.30E+04	4.77E+03	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	8.42E+03	4.32E+01	2.64E-02	1.13E+00	1.12E+02	1.72E+02	9.55E-01	1.78E+02	6.30E-01
UBDT-TP-2 (0-2")	9.00E-02	9.00E-02	6.30E+00	2.02E+04	1.82E+03	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.21E+03	1.64E+01	2.64E-02	1.13E+00	4.27E+01	1.72E+02	9.55E-01	1.78E+02	2.40E-01
UBDT-TP-2 (2-12")	9.00E-02	9.00E-02	6.30E+00	1.26E+04	1.13E+03	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.00E+03	1.02E+01	2.64E-02	1.13E+00	2.66E+01	1.72E+02	9.55E-01	1.78E+02	1.49E-01
UBDT-TP-2 (12-24")	9.00E-02	9.00E-02	6.30E+00	1.08E+04	9.70E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.71E+03	8.78E+00	2.64E-02	1.13E+00	2.28E+01	1.72E+02	9.55E-01	1.78E+02	1.28E-01
UBDT-TP-2 (24-36")	9.00E-02	9.00E-02	6.30E+00	9.14E+03	8.22E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.45E+03	7.44E+00	2.64E-02	1.13E+00	1.93E+01	1.72E+02	9.55E-01	1.78E+02	1.09E-01
UBDT-TP-2 (36-48")	9.00E-02	9.00E-02	6.30E+00	9.60E+03	8.64E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.53E+03	7.82E+00	2.64E-02	1.13E+00	2.03E+01	1.72E+02	9.55E-01	1.78E+02	1.14E-01
BREOT-S24-12.5 (0-6")	9.00E-02	9.00E-02	6.30E+00	4.01E+04	3.61E+03	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	6.37E+03	3.27E+01	2.64E-02	1.13E+00	8.48E+01	1.72E+02	9.55E-01	1.78E+02	4.76E-01
BREOT-N25-50 (0-6")	9.00E-02	9.00E-02	6.30E+00	5.02E+04	4.51E+03	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	7.97E+03	4.09E+01	2.64E-02	1.13E+00	1.06E+02	1.72E+02	9.55E-01	1.78E+02	5.96E-01
BREOT-N25-95 (0-6")	9.00E-02	9.00E-02	6.30E+00	6.37E+02	5.73E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.01E+02	5.19E-01	2.64E-02	1.13E+00	1.35E+00	1.72E+02	9.55E-01	1.78E+02	7.57E-03
BREOT-S25-12.5 (0-6")	9.00E-02	9.00E-02	6.30E+00	8.33E+03	7.49E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.32E+03	6.78E+00	2.64E-02	1.13E+00	1.76E+01	1.72E+02	9.55E-01	1.78E+02	9.89E-02
BREOT-S25-40 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.29E+03	1.16E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.05E+02	1.05E+00	2.64E-02	1.13E+00	2.73E+00	1.72E+02	9.55E-01	1.78E+02	1.53E-02
BREOT-N26A-25 (0-6")	9.00E-02	9.00E-02	6.30E+00	9.63E+02	8.66E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.53E+02	7.84E-01	2.64E-02	1.13E+00	2.04E+00	1.72E+02	9.55E-01	1.78E+02	1.14E-02
BREOT-N26B-25 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.61E+04	1.45E+03	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.55E+03	1.31E+01	2.64E-02	1.13E+00	3.40E+01	1.72E+02	9.55E-01	1.78E+02	1.91E-01
BREOT-N26-50 (0-6")	9.00E-02	9.00E-02	6.30E+00	7.20E+04	6.47E+03	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.14E+04	5.86E+01	2.64E-02	1.13E+00	1.52E+02	1.72E+02	9.55E-01	1.78E+02	8.55E-01
BREOT-N26-75 (0-6")	9.00E-02	9.00E-02	6.30E+00	3.67E+04	3.30E+03	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.83E+03	2.99E+01	2.64E-02	1.13E+00	7.77E+01	1.72E+02	9.55E-01	1.78E+02	4.36E-01
BREOT-S26-12.5 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.69E+03	1.52E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.69E+02	1.38E+00	2.64E-02	1.13E+00	3.58E+00	1.72E+02	9.55E-01	1.78E+02	2.01E-02
BREOT-S26-40 (0-6")	9.00E-02	9.00E-02	6.30E+00	2.28E+04	2.05E+03	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.62E+03	1.86E+01	2.64E-02	1.13E+00	4.82E+01	1.72E+02	9.55E-01	1.78E+02	2.71E-01

TABLE C-2F: ZINC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 18.41

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Red-Tailed Hawk (Carnivorous Birds - Terrestrial)																							
BREOT-N27-30 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.66E+04	1.49E+03	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.64E+03	1.35E+01	2.64E-02	1.13E+00	3.51E+01	1.72E+02	9.55E-01	1.78E+02	1.97E-01
BREOT-N27-75 (0-6")	9.00E-02	9.00E-02	6.30E+00	6.47E+04	5.82E+03	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.03E+04	5.27E+01	2.64E-02	1.13E+00	1.37E+02	1.72E+02	9.55E-01	1.78E+02	7.68E-01
BREOT-S27-12.5 (0-6")	9.00E-02	9.00E-02	6.30E+00	2.31E+03	2.08E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.67E+02	1.88E+00	2.64E-02	1.13E+00	4.89E+00	1.72E+02	9.55E-01	1.78E+02	2.75E-02
BREOT-N28-110 (0-6")	9.00E-02	9.00E-02	6.30E+00	9.79E+03	8.80E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.55E+03	7.97E+00	2.64E-02	1.13E+00	2.07E+01	1.72E+02	9.55E-01	1.78E+02	1.16E-01
BREOT-N28-55 (0-6")	9.00E-02	9.00E-02	6.30E+00	9.42E+04	8.48E+03	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.50E+04	7.67E+01	2.64E-02	1.13E+00	1.99E+02	1.72E+02	9.55E-01	1.78E+02	1.12E+00
BREOT-S28-12.5 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.88E+04	1.69E+03	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.98E+03	1.53E+01	2.64E-02	1.13E+00	3.97E+01	1.72E+02	9.55E-01	1.78E+02	2.23E-01
UBDT-TP-1 (0-2")	9.00E-02	9.00E-02	6.30E+00	5.63E+04	5.07E+03	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	8.95E+03	4.59E+01	2.64E-02	1.13E+00	1.19E+02	1.72E+02	9.55E-01	1.78E+02	6.69E-01
UBDT-TP-1 (2-12")	9.00E-02	9.00E-02	6.30E+00	6.06E+04	5.46E+03	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	9.63E+03	4.94E+01	2.64E-02	1.13E+00	1.28E+02	1.72E+02	9.55E-01	1.78E+02	7.20E-01
UBDT-TP-1 (12-24")	9.00E-02	9.00E-02	6.30E+00	5.72E+04	5.14E+03	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	9.08E+03	4.66E+01	2.64E-02	1.13E+00	1.21E+02	1.72E+02	9.55E-01	1.78E+02	6.79E-01
UBDT-TP-1 (24-36")	9.00E-02	9.00E-02	6.30E+00	3.89E+04	3.50E+03	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	6.18E+03	3.17E+01	2.64E-02	1.13E+00	8.23E+01	1.72E+02	9.55E-01	1.78E+02	4.62E-01
UBDT-TP-1 (36-48")	9.00E-02	9.00E-02	6.30E+00	1.21E+04	1.09E+03	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.92E+03	9.83E+00	2.64E-02	1.13E+00	2.55E+01	1.72E+02	9.55E-01	1.78E+02	1.43E-01
UBDT-TP-1 (48-60")	9.00E-02	9.00E-02	6.30E+00	4.01E+03	3.61E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	6.38E+02	3.27E+00	2.64E-02	1.13E+00	8.49E+00	1.72E+02	9.55E-01	1.78E+02	4.77E-02
BREOT-N29-30 (0-6")	9.00E-02	9.00E-02	6.30E+00	8.60E+04	7.74E+03	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.37E+04	7.01E+01	2.64E-02	1.13E+00	1.82E+02	1.72E+02	9.55E-01	1.78E+02	1.02E+00
BREOT-S29-12.5 (0-6")	9.00E-02	9.00E-02	6.30E+00	5.77E+03	5.19E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	9.16E+02	4.70E+00	2.64E-02	1.13E+00	1.22E+01	1.72E+02	9.55E-01	1.78E+02	6.86E-02
BREOT-N30-12.5 (0-6")	9.00E-02	9.00E-02	6.30E+00	4.88E+03	4.39E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	7.76E+02	3.98E+00	2.64E-02	1.13E+00	1.03E+01	1.72E+02	9.55E-01	1.78E+02	5.80E-02
BREOT-S30-12.5 (0-6")	9.00E-02	9.00E-02	6.30E+00	7.59E+03	6.83E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.21E+03	6.18E+00	2.64E-02	1.13E+00	1.60E+01	1.72E+02	9.55E-01	1.78E+02	9.02E-02
BREOT-N31-12.5 (0-6")	9.00E-02	9.00E-02	6.30E+00	3.69E+03	3.32E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.86E+02	3.01E+00	2.64E-02	1.13E+00	7.81E+00	1.72E+02	9.55E-01	1.78E+02	4.38E-02
BREOT-S31-25 (0-6")	9.00E-02	9.00E-02	6.30E+00	2.60E+03	2.34E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.13E+02	2.12E+00	2.64E-02	1.13E+00	5.49E+00	1.72E+02	9.55E-01	1.78E+02	3.09E-02
BREOT-S31-5 (0-6")	9.00E-02	9.00E-02	6.30E+00	7.01E+03	6.31E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.11E+03	5.71E+00	2.64E-02	1.13E+00	1.48E+01	1.72E+02	9.55E-01	1.78E+02	8.33E-02
BREOT-N32-12.5 (0-6")	9.00E-02	9.00E-02	6.30E+00	6.69E+03	6.02E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.06E+03	5.45E+00	2.64E-02	1.13E+00	1.41E+01	1.72E+02	9.55E-01	1.78E+02	7.95E-02
BREOT-S32-6 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.30E+03	1.17E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.07E+02	1.06E+00	2.64E-02	1.13E+00	2.75E+00	1.72E+02	9.55E-01	1.78E+02	1.55E-02
BREOT-N33-12.5 (0-6")	9.00E-02	9.00E-02	6.30E+00	2.24E+03	2.02E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.56E+02	1.83E+00	2.64E-02	1.13E+00	4.74E+00	1.72E+02	9.55E-01	1.78E+02	2.66E-02
BREOT-S33-12.5 (0-6")	9.00E-02	9.00E-02	6.30E+00	3.42E+03	3.08E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.43E+02	2.78E+00	2.64E-02	1.13E+00	7.23E+00	1.72E+02	9.55E-01	1.78E+02	4.06E-02
BREOT-N35-12.5 (0-6")	9.00E-02	9.00E-02	6.30E+00	3.00E+03	2.70E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.76E+02	2.44E+00	2.64E-02	1.13E+00	6.34E+00	1.72E+02	9.55E-01	1.78E+02	3.56E-02
BREOT-S35-12.5 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.39E+04	1.25E+03	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.21E+03	1.13E+01	2.64E-02	1.13E+00	2.94E+01	1.72E+02	9.55E-01	1.78E+02	1.65E-01
BREOT-N36-12.5 (0-6")	9.00E-02	9.00E-02	6.30E+00	3.90E+03	3.51E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	6.19E+02	3.17E+00	2.64E-02	1.13E+00	8.24E+00	1.72E+02	9.55E-01	1.78E+02	4.63E-02
BREOT-S36-12.5 (0-6")	9.00E-02	9.00E-02	6.30E+00	2.96E+03	2.67E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.71E+02	2.41E+00	2.64E-02	1.13E+00	6.27E+00	1.72E+02	9.55E-01	1.78E+02	3.52E-02
BREOT-N37-12.5 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.28E+03	1.15E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.03E+02	1.04E+00	2.64E-02	1.13E+00	2.70E+00	1.72E+02	9.55E-01	1.78E+02	1.52E-02
BREOT-S37-12.5 (0-6")	9.00E-02	9.00E-02	6.30E+00	3.28E+03	2.95E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.21E+02	2.67E+00	2.64E-02	1.13E+00	6.93E+00	1.72E+02	9.55E-01	1.78E+02	3.89E-02
BREOT-N38-12.5 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.39E+03	1.25E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.21E+02	1.13E+00	2.64E-02	1.13E+00	2.94E+00	1.72E+02	9.55E-01	1.78E+02	1.65E-02
BREOT-S38-12.5 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.21E+04	1.09E+03	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.92E+03	9.83E+00	2.64E-02	1.13E+00	2.55E+01	1.72E+02	9.55E-01	1.78E+02	1.43E-01
BREOT-N39-12.5 (0-6")	9.00E-02	9.00E-02	6.30E+00	6.89E+03	6.20E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.09E+03	5.61E+00	2.64E-02	1.13E+00	1.46E+01	1.72E+02	9.55E-01	1.78E+02	8.19E-02
BREOT-S39-12.5 (0-6")	9.00E-02	9.00E-02	6.30E+00	8.38E+03	7.54E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.33E+03	6.82E+00	2.64E-02	1.13E+00	1.77E+01	1.72E+02	9.55E-01	1.78E+02	9.95E-02
BREOT-N40-12.5 (0-6")	9.00E-02	9.00E-02	6.30E+00	8.54E+03	7.68E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.36E+03	6.95E+00	2.64E-02	1.13E+00	1.81E+01	1.72E+02	9.55E-01	1.78E+02	1.01E-01
BREOT-S40-14 (0-6")	9.00E-02	9.00E-02	6.30E+00	8.95E+03	8.06E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.42E+03	7.29E+00	2.64E-02	1.13E+00	1.89E+01	1.72E+02	9.55E-01	1.78E+02	1.06E-01
BREOT-N41-12.5 (0-6")	9.00E-02	9.00E-02	6.30E+00	6.51E+03	5.86E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.03E+03	5.30E+00	2.64E-02	1.13E+00	1.38E+01	1.72E+02	9.55E-01	1.78E+02	7.74E-02
BREOT-S41-12.5 (0-6")	9.00E-02	9.00E-02	6.30E+00	8.20E+03	7.37E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.30E+03	6.68E+00	2.64E-02	1.13E+00	1.73E+01	1.72E+02	9.55E-01	1.78E+02	9.74E-02
BREOT-N42-35 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.30E+03	1.17E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.06E+02	1.06E+00	2.64E-02	1.13E+00	2.74E+00	1.72E+02	9.55E-01	1.78E+02	1.54E-02
BREOT-S42-25 (0-6")	9.00E-02	9.00E-02	6.30E+00	2.05E+03	1.84E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.25E+02	1.67E+00	2.64E-02	1.13E+00	4.33E+00	1.72E+02	9.55E-01	1.78E+02	2.43E-02
BREOT-N43-12.5 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.63E+04	1.47E+03	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.59E+03	1.33E+01	2.64E-02	1.13E+00	3.45E+01	1.72E+02	9.55E-01	1.78E+02	1.94E-01
BREOT-S43-12.5 (0-6")	9.00E-02	9.00E-02	6.30E+00	3.00E+03	2.70E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.77E+02	2.44E+00	2.64E-02	1.13E+00	6.35E+00	1.72E+02	9.55E-01	1.78E+02	3.57E-02
BREOT-N44-30 (0-6")	9.00E-02	9.00E-02	6.30E+00	3.04E+03	2.73E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.82E+02	2.47E+00	2.64E-02	1.13E+00	6.42E+00	1.72E+02	9.55E-01	1.78E+02	3.61E-02
BREOT-S44-12.5 (0-6")	9.00E-02	9.00E-02	6.30E+00	4.22E+03	3.79E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	6.70E+02	3.43E+00	2.64E-02	1.13E+00	8.92E+00	1.72E+02	9.55E-01	1.78E+02	5.01E-02
BREOT-N45-12.5 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.50E+03	1.35E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.38E+02	1.22E+00	2.64E-02	1.13E+00	3.16E+00	1.72E+02	9.55E-01	1.78E+02	1.78E-02
BREOT-N43-12.5 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.63E+04	1.47E+03	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.59E+03	1.33E+01	2.64E-02	1.13E+00	3.45E+01	1.72E+02	9.55E-01	1.78E+02	1.94E-01
BREOT-S45-6 (0-6")	9.00E-02	9.00E-02	6.30E+00	2.39E+03	2.15E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.79E+02	1.94E+00	2.64E-02	1.13E+00	5.05E+00	1.72E+02	9.55E-01	1.78E+02	2.84E-02
BREOT-N46-12.5 (0-6")	9.00E-02	9.00E-02	6.30E+00	8.03E+02	7.23E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.28E+02	6.54E-01	2.64E-02	1.13E+00	1.70E+00	1.72E+02	9.55E-01	1.78E+02	9.54E-03
BREOT-S46-12.5 (0-6")	9.00E-02	9.00E-02	6.30E+00	2.32E+03	2.08E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.68E+02	1.89E+00	2.64E-02	1.13E+00	4.90E+00	1.72E+02	9.55E-01	1.78E+02	2.75E-02
BREOT-S46-40 (0-6")	9.00E-02	9.00E-02	6.30E+00	3.47E+03	3.12E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.52E+02	2.83E+00	2.64E-02	1.13E+00	7.35E+00	1.72E+02	9.55E-01	1.78E+02	4.13E-02
BREOT-N47-12.5 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.59E+03	1.43E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.52E+02	1.29E+00	2.64E-02	1.13E+00	3.35E+00	1.72E+02	9.55E-01	1.78E+02	1.88E-02
BREOT-S47-999 (0-6")	9.00E-02	9.00E-02	6.30E+00	2.52E+03	2.27E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.00E+02	2.05E+00	2.64E-02	1.13E+00	5.33E+00	1.72E+02	9.55E-01	1.78E+02	2.99E-02
BREOT-S48-12.5 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S49-2.5 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S50-12.5 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S50-25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB

TABLE C-2F: ZINC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 18.41

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Red-Tailed Hawk (Carnivorous Birds - Terrestrial)																							
BREOT-N52-60 (0-6")	9.00E-02	9.00E-02	6.30E+00	2.64E+03	2.38E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.20E+02	2.15E+00	2.64E-02	1.13E+00	5.59E+00	1.72E+02	9.55E-01	1.78E+02	3.14E-02
BREOT-S52-12.5 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S53-12.5 (0-6")	9.00E-02	9.00E-02	6.30E+00	5.97E+02	5.37E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	9.49E+01	4.87E-01	2.64E-02	1.13E+00	1.26E+00	1.72E+02	9.55E-01	1.78E+02	7.10E-03
BREOT-S54-12.5 (0-6")	9.00E-02	9.00E-02	6.30E+00	6.66E+02	5.99E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.06E+02	5.42E-01	2.64E-02	1.13E+00	1.41E+00	1.72E+02	9.55E-01	1.78E+02	7.91E-03
BREOT-N55-12.5 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.51E+04	1.36E+03	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.39E+03	1.23E+01	2.64E-02	1.13E+00	3.19E+01	1.72E+02	9.55E-01	1.78E+02	1.79E-01
BREOT-S55-12.5 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.32E+03	1.19E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.10E+02	1.08E+00	2.64E-02	1.13E+00	2.80E+00	1.72E+02	9.55E-01	1.78E+02	1.57E-02
BREOT-N56-12.5 (0-6")	9.00E-02	9.00E-02	6.30E+00	4.34E+03	3.91E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	6.90E+02	3.54E+00	2.64E-02	1.13E+00	9.18E+00	1.72E+02	9.55E-01	1.78E+02	5.16E-02
BREOT-S56-12.5 (0-6")	9.00E-02	9.00E-02	6.30E+00	2.20E+03	1.98E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.49E+02	1.79E+00	2.64E-02	1.13E+00	4.65E+00	1.72E+02	9.55E-01	1.78E+02	2.61E-02
BREOT-N57-12.5 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.83E+03	1.65E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.91E+02	1.49E+00	2.64E-02	1.13E+00	3.88E+00	1.72E+02	9.55E-01	1.78E+02	2.18E-02
BREOT-S57-12.5 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.82E+03	1.64E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.89E+02	1.48E+00	2.64E-02	1.13E+00	3.85E+00	1.72E+02	9.55E-01	1.78E+02	2.16E-02
BREOT-N58-12.5 (0-6")	9.00E-02	9.00E-02	6.30E+00	2.07E+03	1.86E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.29E+02	1.69E+00	2.64E-02	1.13E+00	4.38E+00	1.72E+02	9.55E-01	1.78E+02	2.46E-02
BREOT-S58-12 (0-6")	9.00E-02	9.00E-02	6.30E+00	4.77E+03	4.29E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	7.58E+02	3.89E+00	2.64E-02	1.13E+00	1.01E+01	1.72E+02	9.55E-01	1.78E+02	5.67E-02
BREOT-N59-18 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.41E+03	1.27E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.24E+02	1.15E+00	2.64E-02	1.13E+00	2.99E+00	1.72E+02	9.55E-01	1.78E+02	1.68E-02
BREOT-N60-12.5 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.99E+03	1.79E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.16E+02	1.62E+00	2.64E-02	1.13E+00	4.20E+00	1.72E+02	9.55E-01	1.78E+02	2.36E-02
BREOT-S60-12.5 (0-6")	9.00E-02	9.00E-02	6.30E+00	3.72E+03	3.35E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.91E+02	3.03E+00	2.64E-02	1.13E+00	7.87E+00	1.72E+02	9.55E-01	1.78E+02	4.42E-02
BREOT-S61-12.5 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.47E+04	1.33E+03	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.34E+03	1.20E+01	2.64E-02	1.13E+00	3.12E+01	1.72E+02	9.55E-01	1.78E+02	1.75E-01
BREOT-N62-12.5 (0-6")	9.00E-02	9.00E-02	6.30E+00	7.62E+02	6.86E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.21E+02	6.21E-01	2.64E-02	1.13E+00	1.61E+00	1.72E+02	9.55E-01	1.78E+02	9.06E-03
BREOT-S62-12.5 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.42E+04	1.28E+03	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.26E+03	1.16E+01	2.64E-02	1.13E+00	3.01E+01	1.72E+02	9.55E-01	1.78E+02	1.69E-01
BREOT-S63-12.5 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.85E+03	1.67E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.94E+02	1.51E+00	2.64E-02	1.13E+00	3.92E+00	1.72E+02	9.55E-01	1.78E+02	2.20E-02
BREOT-N64-12.5 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.80E+03	1.62E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.86E+02	1.47E+00	2.64E-02	1.13E+00	3.81E+00	1.72E+02	9.55E-01	1.78E+02	2.14E-02
BREOT-N64-20 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.35E+03	1.21E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.14E+02	1.10E+00	2.64E-02	1.13E+00	2.86E+00	1.72E+02	9.55E-01	1.78E+02	1.60E-02
BREOT-S64-12.5 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.22E+03	1.10E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.94E+02	9.92E-01	2.64E-02	1.13E+00	2.58E+00	1.72E+02	9.55E-01	1.78E+02	1.45E-02
BREOT-N65-12.5 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.97E+03	1.77E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.12E+02	1.60E+00	2.64E-02	1.13E+00	4.16E+00	1.72E+02	9.55E-01	1.78E+02	2.34E-02
BREOT-S65-12.5 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.44E+03	1.29E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.28E+02	1.17E+00	2.64E-02	1.13E+00	3.04E+00	1.72E+02	9.55E-01	1.78E+02	1.71E-02
BREOT-N66-5 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.20E+03	1.08E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.90E+02	9.74E-01	2.64E-02	1.13E+00	2.53E+00	1.72E+02	9.55E-01	1.78E+02	1.42E-02
BREOT-S66-12.5 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.45E+03	1.30E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.30E+02	1.18E+00	2.64E-02	1.13E+00	3.06E+00	1.72E+02	9.55E-01	1.78E+02	1.72E-02
BREOT-N67-12.5 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.95E+04	1.76E+03	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.10E+03	1.59E+01	2.64E-02	1.13E+00	4.13E+01	1.72E+02	9.55E-01	1.78E+02	2.32E-01
BREOT-S67-12.5 (0-6")	9.00E-02	9.00E-02	6.30E+00	8.47E+02	7.62E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.34E+02	6.89E-01	2.64E-02	1.13E+00	1.79E+00	1.72E+02	9.55E-01	1.78E+02	1.01E-02
At Edge of Tailings																						**Maximum HQ (Inside Tailings)**	**1.48E+00**
BREOT-S0-0 (06)	9.00E-02	9.00E-02	6.30E+00	2.87E+03	2.58E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.56E+02	2.34E+00	2.64E-02	1.13E+00	6.07E+00	1.72E+02	9.55E-01	1.78E+02	3.41E-02
BREOT-S1-0 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.66E+03	1.49E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.63E+02	1.35E+00	2.64E-02	1.13E+00	3.51E+00	1.72E+02	9.55E-01	1.78E+02	1.97E-02
BREOT-S2-0 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.83E+03	1.64E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.90E+02	1.49E+00	2.64E-02	1.13E+00	3.87E+00	1.72E+02	9.55E-01	1.78E+02	2.17E-02
BREOT-S3-0 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.04E+04	9.37E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.65E+03	8.48E+00	2.64E-02	1.13E+00	2.20E+01	1.72E+02	9.55E-01	1.78E+02	1.24E-01
BREOT-S4-0 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.25E+04	1.13E+03	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.99E+03	1.02E+01	2.64E-02	1.13E+00	2.65E+01	1.72E+02	9.55E-01	1.78E+02	1.49E-01
BREOT-S6-0 (0-6")	9.00E-02	9.00E-02	6.30E+00	6.56E+03	5.90E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.04E+03	5.34E+00	2.64E-02	1.13E+00	1.39E+01	1.72E+02	9.55E-01	1.78E+02	7.79E-02
BREOT-S7-0 (0-6")	9.00E-02	9.00E-02	6.30E+00	3.02E+03	2.71E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.79E+02	2.46E+00	2.64E-02	1.13E+00	6.38E+00	1.72E+02	9.55E-01	1.78E+02	3.59E-02
BREOT-S8-0 (0-6")	9.00E-02	9.00E-02	6.30E+00	2.02E+03	1.82E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.21E+02	1.65E+00	2.64E-02	1.13E+00	4.28E+00	1.72E+02	9.55E-01	1.78E+02	2.40E-02
BREOT-S9-0 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.31E+03	1.18E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.08E+02	1.07E+00	2.64E-02	1.13E+00	2.77E+00	1.72E+02	9.55E-01	1.78E+02	1.56E-02
BREOT-N10-0 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.15E+05	1.04E+04	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.83E+04	9.40E+01	2.64E-02	1.13E+00	2.44E+02	1.72E+02	9.55E-01	1.78E+02	1.37E+00
BREOT-N11-0 (0-6")	9.00E-02	9.00E-02	6.30E+00	4.00E+03	3.60E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	6.35E+02	3.26E+00	2.64E-02	1.13E+00	8.46E+00	1.72E+02	9.55E-01	1.78E+02	4.75E-02
BREOT-S11-0 (0-6")	9.00E-02	9.00E-02	6.30E+00	8.19E+03	7.37E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.30E+03	6.67E+00	2.64E-02	1.13E+00	1.73E+01	1.72E+02	9.55E-01	1.78E+02	9.73E-02
BREOT-N12-0 (0-6")	9.00E-02	9.00E-02	6.30E+00	2.02E+03	1.82E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.21E+02	1.65E+00	2.64E-02	1.13E+00	4.27E+00	1.72E+02	9.55E-01	1.78E+02	2.40E-02
BREOT-S12-0 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.07E+04	9.66E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.71E+03	8.74E+00	2.64E-02	1.13E+00	2.27E+01	1.72E+02	9.55E-01	1.78E+02	1.28E-01
BREOT-N13-0 (0-6")	9.00E-02	9.00E-02	6.30E+00	6.48E+04	5.83E+03	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.03E+04	5.28E+01	2.64E-02	1.13E+00	1.37E+02	1.72E+02	9.55E-01	1.78E+02	7.70E-01
BREOT-S13-0 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.80E+04	1.62E+03	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.86E+03	1.47E+01	2.64E-02	1.13E+00	3.81E+01	1.72E+02	9.55E-01	1.78E+02	2.14E-01
BREOT-N14-0 (0-6")	9.00E-02	9.00E-02	6.30E+00	2.19E+03	1.97E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.48E+02	1.78E+00	2.64E-02	1.13E+00	4.63E+00	1.72E+02	9.55E-01	1.78E+02	2.60E-02
BREOT-S14-0 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.01E+05	9.05E+03	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.60E+04	8.19E+01	2.64E-02	1.13E+00	2.13E+02	1.72E+02	9.55E-01	1.78E+02	1.20E+00
BREOT-N15-0 (0-6")	9.00E-02	9.00E-02	6.30E+00	6.20E+03	5.57E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	9.84E+02	5.05E+00	2.64E-02	1.13E+00	1.31E+01	1.72E+02	9.55E-01	1.78E+02	7.36E-02
BREOT-N16-0 (0-6")	9.00E-02	9.00E-02	6.30E+00	2.37E+03	2.13E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.77E+02	1.93E+00	2.64E-02	1.13E+00	5.01E+00	1.72E+02	9.55E-01	1.78E+02	2.82E-02
BREOT-S16-0 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.53E+03	1.38E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.44E+02	1.25E+00	2.64E-02	1.13E+00	3.24E+00	1.72E+02	9.55E-01	1.78E+02	1.82E-02
BREOT-N17-0 (0-6")	9.00E-02	9.00E-02	6.30E+00	2.73E+03	2.46E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.34E+02	2.23E+00	2.64E-02	1.13E+00	5.78E+00	1.72E+02	9.55E-01	1.78E+02	3.25E-02
BREOT-S17-0 (0-6")	9.00E-02	9.00E-02	6.30E+00	2.65E+03	2.38E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.21E+02	2.16E+00	2.64E-02	1.13E+00	5.60E+00	1.72E+02	9.55E-01	1.78E+02	3.15E-02
BREOT-N18-0 (0-6")	9.00E-02	9.00E-02	6.30E+00	3.29E+03	2.96E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.22E+02	2.68E+00	2.64E-02	1.13E+00	6.96E+00	1.72E+02	9.55E-01	1.78E+02	3.91E-02
BREOT-S18-0 (0-6")	9.00E-02	9.00E-02	6.30E+00	4.56E+03	4.10E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	7.23E+02	3.71E+00	2.64E-02	1.13E+00	9.63E+00	1.72E+02	9.55E-01	1.78E+02	5.41E-02
BREOT-N19-0 (0-6")	9.00E-02	9.00E-02	6.30E+00	8.87E+03	7.98E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.41E+03	7.23E+00	2.64E-02	1.13E+00	1.88E+01	1.72E+02	9.55E-01	1.78E+02	1.05E-01

TABLE C-2F: ZINC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

Site Area (hectares) 18.41

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Red-Tailed Hawk (Carnivorous Birds - Terrestrial)																							
BREOT-S19-0 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.72E+03	1.55E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.73E+02	1.40E+00	2.64E-02	1.13E+00	3.63E+00	1.72E+02	9.55E-01	1.78E+02	2.04E-02
BREOT-N20-0 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.41E+04	1.27E+03	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.24E+03	1.15E+01	2.64E-02	1.13E+00	2.99E+01	1.72E+02	9.55E-01	1.78E+02	1.68E-01
BREOT-S20-0 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.20E+03	1.08E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.91E+02	9.80E-01	2.64E-02	1.13E+00	2.55E+00	1.72E+02	9.55E-01	1.78E+02	1.43E-02
BREOT-N21-0 (0-6")	9.00E-02	9.00E-02	6.30E+00	7.82E+03	7.04E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.24E+03	6.37E+00	2.64E-02	1.13E+00	1.65E+01	1.72E+02	9.55E-01	1.78E+02	9.29E-02
BREOT-S21-0 (0-6")	9.00E-02	9.00E-02	6.30E+00	2.43E+03	2.19E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.86E+02	1.98E+00	2.64E-02	1.13E+00	5.14E+00	1.72E+02	9.55E-01	1.78E+02	2.89E-02
BREOT-N22-0 (0-6")	9.00E-02	9.00E-02	6.30E+00	5.99E+03	5.39E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	9.52E+02	4.88E+00	2.64E-02	1.13E+00	1.27E+01	1.72E+02	9.55E-01	1.78E+02	7.12E-02
BREOT-S22-0 (0-6")	9.00E-02	9.00E-02	6.30E+00	3.48E+03	3.13E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.52E+02	2.83E+00	2.64E-02	1.13E+00	7.35E+00	1.72E+02	9.55E-01	1.78E+02	4.13E-02
BREOT-N23-0 (0-6")	9.00E-02	9.00E-02	6.30E+00	7.51E+03	6.75E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.19E+03	6.11E+00	2.64E-02	1.13E+00	1.59E+01	1.72E+02	9.55E-01	1.78E+02	8.92E-02
BREOT-S23-0 (0-6")	9.00E-02	9.00E-02	6.30E+00	4.97E+03	4.47E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	7.89E+02	4.05E+00	2.64E-02	1.13E+00	1.05E+01	1.72E+02	9.55E-01	1.78E+02	5.90E-02
BREOT-N24-0 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.21E+04	1.09E+03	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.93E+03	9.87E+00	2.64E-02	1.13E+00	2.56E+01	1.72E+02	9.55E-01	1.78E+02	1.44E-01
BREOT-S24-0 (0-6")	9.00E-02	9.00E-02	6.30E+00	6.61E+04	5.95E+03	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.05E+04	5.38E+01	2.64E-02	1.13E+00	1.40E+02	1.72E+02	9.55E-01	1.78E+02	7.85E-01
BREOT-N25-0 (0-6")	9.00E-02	9.00E-02	6.30E+00	8.90E+03	8.00E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.41E+03	7.25E+00	2.64E-02	1.13E+00	1.88E+01	1.72E+02	9.55E-01	1.78E+02	1.06E-01
BREOT-S25-0 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.63E+04	1.46E+03	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.58E+03	1.32E+01	2.64E-02	1.13E+00	3.44E+01	1.72E+02	9.55E-01	1.78E+02	1.93E-01
BREOT-N26-0 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.34E+04	1.20E+03	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.12E+03	1.09E+01	2.64E-02	1.13E+00	2.83E+01	1.72E+02	9.55E-01	1.78E+02	1.59E-01
BREOT-S26-0 (0-6")	9.00E-02	9.00E-02	6.30E+00	5.48E+03	4.93E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	8.70E+02	4.46E+00	2.64E-02	1.13E+00	1.16E+01	1.72E+02	9.55E-01	1.78E+02	6.51E-02
BREOT-N27-0 (0-6")	9.00E-02	9.00E-02	6.30E+00	7.11E+04	6.39E+03	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.13E+04	5.79E+01	2.64E-02	1.13E+00	1.50E+02	1.72E+02	9.55E-01	1.78E+02	8.44E-01
BREOT-S27-0 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.35E+03	1.22E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.15E+02	1.10E+00	2.64E-02	1.13E+00	2.86E+00	1.72E+02	9.55E-01	1.78E+02	1.61E-02
BREOT-N28-0 (0-6")	9.00E-02	9.00E-02	6.30E+00	4.59E+03	4.13E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	7.30E+02	3.74E+00	2.64E-02	1.13E+00	9.72E+00	1.72E+02	9.55E-01	1.78E+02	5.46E-02
BREOT-S28-0 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.51E+03	1.36E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.39E+02	1.23E+00	2.64E-02	1.13E+00	3.19E+00	1.72E+02	9.55E-01	1.78E+02	1.79E-02
BREOT-S29-0 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.45E+03	1.30E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.30E+02	1.18E+00	2.64E-02	1.13E+00	3.07E+00	1.72E+02	9.55E-01	1.78E+02	1.72E-02
BREOT-N30-0 (0-6")	9.00E-02	9.00E-02	6.30E+00	3.28E+04	2.95E+03	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.21E+03	2.67E+01	2.64E-02	1.13E+00	6.94E+01	1.72E+02	9.55E-01	1.78E+02	3.90E-01
BREOT-S30-0 (0-6")	9.00E-02	9.00E-02	6.30E+00	5.43E+02	4.89E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	8.63E+01	4.43E-01	2.64E-02	1.13E+00	1.15E+00	1.72E+02	9.55E-01	1.78E+02	6.46E-03
BREOT-N31-0 (0-6")	9.00E-02	9.00E-02	6.30E+00	4.11E+04	3.69E+03	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	6.52E+03	3.35E+01	2.64E-02	1.13E+00	8.69E+01	1.72E+02	9.55E-01	1.78E+02	4.88E-01
BREOT-S31-0 (0-6")	9.00E-02	9.00E-02	6.30E+00	2.55E+03	2.29E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.05E+02	2.08E+00	2.64E-02	1.13E+00	5.40E+00	1.72E+02	9.55E-01	1.78E+02	3.03E-02
BREOT-N32-0 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.64E+04	1.47E+03	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.60E+03	1.33E+01	2.64E-02	1.13E+00	3.46E+01	1.72E+02	9.55E-01	1.78E+02	1.94E-01
BREOT-S32-0 (0-6")	9.00E-02	9.00E-02	6.30E+00	2.70E+03	2.43E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.28E+02	2.20E+00	2.64E-02	1.13E+00	5.70E+00	1.72E+02	9.55E-01	1.78E+02	3.20E-02
BREOT-N33-0 (0-6")	9.00E-02	9.00E-02	6.30E+00	8.63E+02	7.76E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.37E+02	7.02E-01	2.64E-02	1.13E+00	1.82E+00	1.72E+02	9.55E-01	1.78E+02	1.02E-02
BREOT-S33-0 (0-6")	9.00E-02	9.00E-02	6.30E+00	4.39E+03	3.95E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	6.97E+02	3.57E+00	2.64E-02	1.13E+00	9.28E+00	1.72E+02	9.55E-01	1.78E+02	5.21E-02
BREOT-N34-0 (0-6")	9.00E-02	9.00E-02	6.30E+00	2.18E+03	1.96E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.47E+02	1.78E+00	2.64E-02	1.13E+00	4.62E+00	1.72E+02	9.55E-01	1.78E+02	2.59E-02
BREOT-S34-0 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.93E+04	1.73E+03	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.06E+03	1.57E+01	2.64E-02	1.13E+00	4.07E+01	1.72E+02	9.55E-01	1.78E+02	2.29E-01
BREOT-N35-0 (0-6")	9.00E-02	9.00E-02	6.30E+00	7.77E+02	6.99E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.23E+02	6.33E-01	2.64E-02	1.13E+00	1.64E+00	1.72E+02	9.55E-01	1.78E+02	9.24E-03
BREOT-S35-0 (0-6")	9.00E-02	9.00E-02	6.30E+00	2.80E+03	2.51E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.44E+02	2.28E+00	2.64E-02	1.13E+00	5.91E+00	1.72E+02	9.55E-01	1.78E+02	3.32E-02
BREOT-N36-0 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.87E+04	1.68E+03	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.97E+03	1.53E+01	2.64E-02	1.13E+00	3.96E+01	1.72E+02	9.55E-01	1.78E+02	2.23E-01
BREOT-S36-0 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.65E+04	1.48E+03	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.62E+03	1.34E+01	2.64E-02	1.13E+00	3.49E+01	1.72E+02	9.55E-01	1.78E+02	1.96E-01
BREOT-N37-0 (0-6")	9.00E-02	9.00E-02	6.30E+00	2.61E+03	2.35E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.14E+02	2.13E+00	2.64E-02	1.13E+00	5.52E+00	1.72E+02	9.55E-01	1.78E+02	3.10E-02
BREOT-S37-0 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.86E+04	1.68E+03	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.96E+03	1.52E+01	2.64E-02	1.13E+00	3.94E+01	1.72E+02	9.55E-01	1.78E+02	2.21E-01
BREOT-N38-0 (0-6")	9.00E-02	9.00E-02	6.30E+00	7.90E+02	7.10E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.25E+02	6.43E-01	2.64E-02	1.13E+00	1.67E+00	1.72E+02	9.55E-01	1.78E+02	9.38E-03
BREOT-S38-0 (0-6")	9.00E-02	9.00E-02	6.30E+00	7.12E+03	6.40E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.13E+03	5.79E+00	2.64E-02	1.13E+00	1.50E+01	1.72E+02	9.55E-01	1.78E+02	8.45E-02
BREOT-N39-0 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.34E+03	1.21E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.13E+02	1.09E+00	2.64E-02	1.13E+00	2.83E+00	1.72E+02	9.55E-01	1.78E+02	1.59E-02
BREOT-N40-0 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.06E+03	9.58E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.69E+02	8.67E-01	2.64E-02	1.13E+00	2.25E+00	1.72E+02	9.55E-01	1.78E+02	1.27E-02
BREOT-S40-0 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.34E+04	1.20E+03	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.13E+03	1.09E+01	2.64E-02	1.13E+00	2.83E+01	1.72E+02	9.55E-01	1.78E+02	1.59E-01
BREOT-N41-0 (0-6")	9.00E-02	9.00E-02	6.30E+00	6.09E+02	5.48E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	9.68E+01	4.96E-01	2.64E-02	1.13E+00	1.29E+00	1.72E+02	9.55E-01	1.78E+02	7.24E-03
BREOT-S41-0 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.45E+04	1.30E+03	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.30E+03	1.18E+01	2.64E-02	1.13E+00	3.06E+01	1.72E+02	9.55E-01	1.78E+02	1.72E-01
BREOT-N42-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S42-0 (0-6")	9.00E-02	9.00E-02	6.30E+00	2.74E+04	2.47E+03	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.36E+03	2.24E+01	2.64E-02	1.13E+00	5.80E+01	1.72E+02	9.55E-01	1.78E+02	3.26E-01
BREOT-N43-0 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.27E+03	1.14E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.02E+02	1.03E+00	2.64E-02	1.13E+00	2.69E+00	1.72E+02	9.55E-01	1.78E+02	1.51E-02
BREOT-S43-0 (0-6")	9.00E-02	9.00E-02	6.30E+00	2.57E+03	2.31E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.09E+02	2.09E+00	2.64E-02	1.13E+00	5.44E+00	1.72E+02	9.55E-01	1.78E+02	3.06E-02
BREOT-N44-0 (0-6")	9.00E-02	9.00E-02	6.30E+00	2.64E+03	2.38E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.19E+02	2.15E+00	2.64E-02	1.13E+00	5.58E+00	1.72E+02	9.55E-01	1.78E+02	3.14E-02
BREOT-S44-0 (0-6")	9.00E-02	9.00E-02	6.30E+00	2.21E+03	1.99E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.51E+02	1.80E+00	2.64E-02	1.13E+00	4.67E+00	1.72E+02	9.55E-01	1.78E+02	2.62E-02
BREOT-N45-0 (0-6")	9.00E-02	9.00E-02	6.30E+00	2.13E+03	1.92E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.39E+02	1.74E+00	2.64E-02	1.13E+00	4.51E+00	1.72E+02	9.55E-01	1.78E+02	2.53E-02
BREOT-S45-0 (0-6")	9.00E-02	9.00E-02	6.30E+00	2.51E+03	2.26E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.99E+02	2.05E+00	2.64E-02	1.13E+00	5.32E+00	1.72E+02	9.55E-01	1.78E+02	2.99E-02
BREOT-N46-0 (0-6")	9.00E-02	9.00E-02	6.30E+00	2.80E+03	2.52E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.44E+02	2.28E+00	2.64E-02	1.13E+00	5.92E+00	1.72E+02	9.55E-01	1.78E+02	3.32E-02
BREOT-S46-0 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.06E+03	9.56E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.69E+02	8.65E-01	2.64E-02	1.13E+00	2.25E+00	1.72E+02	9.55E-01	1.78E+02	1.26E-02
BREOT-N47-0 (0-6")	9.00E-02	9.00E-02	6.30E+00	4.55E+03	4.09E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	7.23E+02	3.71E+00	2.64E-02	1.13E+00	9.63E+00	1.72E+02	9.55E-01	1.78E+02	5.41E-02
BREOT-S47-0 (0-6")	9.00E-02	9.00E-02	6.30E+00	7.21E+02	6.48E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.14E+02	5.87E-01	2.64E-02	1.13E+00	1.52E+00	1.72E+02	9.55E-01	1.78E+02	8.56E-03

TABLE C-2F: ZINC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **18.41**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Red-Tailed Hawk (Carnivorous Birds - Terrestrial)																							
BREOT-N48-0 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.78E+03	1.60E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.83E+02	1.45E+00	2.64E-02	1.13E+00	3.76E+00	1.72E+02	9.55E-01	1.78E+02	2.11E-02
BREOT-S48-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N49-0 (0-6")	9.00E-02	9.00E-02	6.30E+00	6.68E+03	6.01E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.06E+03	5.44E+00	2.64E-02	1.13E+00	1.41E+01	1.72E+02	9.55E-01	1.78E+02	7.94E-02
BREOT-S49-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S50-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N51-0 (0-6")	9.00E-02	9.00E-02	6.30E+00	2.12E+03	1.90E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.36E+02	1.72E+00	2.64E-02	1.13E+00	4.48E+00	1.72E+02	9.55E-01	1.78E+02	2.52E-02
BREOT-S51-0 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.20E+03	1.08E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.91E+02	9.78E-01	2.64E-02	1.13E+00	2.54E+00	1.72E+02	9.55E-01	1.78E+02	1.43E-02
BREOT-N52-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S52-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N53-0 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.65E+03	1.48E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.61E+02	1.34E+00	2.64E-02	1.13E+00	3.48E+00	1.72E+02	9.55E-01	1.78E+02	1.96E-02
BREOT-S53-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N54-0 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.88E+03	1.69E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.99E+02	1.53E+00	2.64E-02	1.13E+00	3.98E+00	1.72E+02	9.55E-01	1.78E+02	2.23E-02
BREOT-S54-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N55-0 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.44E+03	1.30E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.29E+02	1.18E+00	2.64E-02	1.13E+00	3.05E+00	1.72E+02	9.55E-01	1.78E+02	1.72E-02
BREOT-S55-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N56-0 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.57E+03	1.41E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.50E+02	1.28E+00	2.64E-02	1.13E+00	3.32E+00	1.72E+02	9.55E-01	1.78E+02	1.87E-02
BREOT-N57-0 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.12E+03	1.01E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.78E+02	9.15E-01	2.64E-02	1.13E+00	2.38E+00	1.72E+02	9.55E-01	1.78E+02	1.33E-02
BREOT-S57-0 (0-6")	9.00E-02	9.00E-02	6.30E+00	2.32E+03	2.09E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.69E+02	1.89E+00	2.64E-02	1.13E+00	4.91E+00	1.72E+02	9.55E-01	1.78E+02	2.76E-02
BREOT-N58-0 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.37E+03	1.23E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.17E+02	1.11E+00	2.64E-02	1.13E+00	2.89E+00	1.72E+02	9.55E-01	1.78E+02	1.63E-02
BREOT-S58-0 (0-6")	9.00E-02	9.00E-02	6.30E+00	2.18E+03	1.96E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.46E+02	1.78E+00	2.64E-02	1.13E+00	4.61E+00	1.72E+02	9.55E-01	1.78E+02	2.59E-02
BREOT-N59-0 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.54E+03	1.38E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.44E+02	1.25E+00	2.64E-02	1.13E+00	3.25E+00	1.72E+02	9.55E-01	1.78E+02	1.83E-02
BREOT-N60-0 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.43E+03	1.28E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.27E+02	1.16E+00	2.64E-02	1.13E+00	3.02E+00	1.72E+02	9.55E-01	1.78E+02	1.70E-02
BREOT-S60-0 (0-6")	9.00E-02	9.00E-02	6.30E+00	3.86E+03	3.47E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	6.12E+02	3.14E+00	2.64E-02	1.13E+00	8.15E+00	1.72E+02	9.55E-01	1.78E+02	4.58E-02
BREOT-S61-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N62-0 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.59E+03	1.43E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.52E+02	1.29E+00	2.64E-02	1.13E+00	3.35E+00	1.72E+02	9.55E-01	1.78E+02	1.88E-02
BREOT-S62-0 (0-6")	9.00E-02	9.00E-02	6.30E+00	5.99E+02	5.39E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	9.52E+01	4.88E-01	2.64E-02	1.13E+00	1.27E+00	1.72E+02	9.55E-01	1.78E+02	7.12E-03
BREOT-N63-0 (0-6")	9.00E-02	9.00E-02	6.30E+00	2.93E+03	2.63E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.65E+02	2.38E+00	2.64E-02	1.13E+00	6.19E+00	1.72E+02	9.55E-01	1.78E+02	3.48E-02
BREOT-S63-0 (0-6")	9.00E-02	9.00E-02	6.30E+00	2.08E+03	1.87E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.31E+02	1.70E+00	2.64E-02	1.13E+00	4.41E+00	1.72E+02	9.55E-01	1.78E+02	2.48E-02
BREOT-N64-0 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.84E+03	1.66E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.93E+02	1.50E+00	2.64E-02	1.13E+00	3.90E+00	1.72E+02	9.55E-01	1.78E+02	2.19E-02
BREOT-S64-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N66-0 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.62E+03	1.46E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.57E+02	1.32E+00	2.64E-02	1.13E+00	3.42E+00	1.72E+02	9.55E-01	1.78E+02	1.92E-02
BREOT-S66-0 (0-6")	9.00E-02	9.00E-02	6.30E+00	2.40E+03	2.16E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.81E+02	1.95E+00	2.64E-02	1.13E+00	5.08E+00	1.72E+02	9.55E-01	1.78E+02	2.85E-02
BREOT-N67-0 (0-6")	9.00E-02	9.00E-02	6.30E+00	2.13E+04	1.91E+03	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.38E+03	1.73E+01	2.64E-02	1.13E+00	4.50E+01	1.72E+02	9.55E-01	1.78E+02	2.53E-01
BREOT-S67-0 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.17E+03	1.05E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.86E+02	9.54E-01	2.64E-02	1.13E+00	2.48E+00	1.72E+02	9.55E-01	1.78E+02	1.39E-02
Outside Tailings																						**Maximum HQ (At Edge of Tailings)**	**1.37E+00**
BREOT-S0+25 (0-6")	9.00E-02	9.00E-02	6.30E+00	2.20E+03	1.98E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.49E+02	1.79E+00	2.64E-02	1.13E+00	4.65E+00	1.72E+02	9.55E-01	1.78E+02	2.61E-02
BREOT-S1+25 (0-6")	9.00E-02	9.00E-02	6.30E+00	2.82E+03	2.54E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.48E+02	2.30E+00	2.64E-02	1.13E+00	5.97E+00	1.72E+02	9.55E-01	1.78E+02	3.35E-02
BREOT-S2+95 (0-6")	9.00E-02	9.00E-02	6.30E+00	9.28E+02	8.35E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.47E+02	7.56E-01	2.64E-02	1.13E+00	1.96E+00	1.72E+02	9.55E-01	1.78E+02	1.10E-02
BREOT-S3+6 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.22E+03	1.09E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.93E+02	9.90E-01	2.64E-02	1.13E+00	2.57E+00	1.72E+02	9.55E-01	1.78E+02	1.44E-02
BREOT-S4+10 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.44E+03	1.29E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.28E+02	1.17E+00	2.64E-02	1.13E+00	3.04E+00	1.72E+02	9.55E-01	1.78E+02	1.71E-02
BREOT-S6+25 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.58E+03	1.42E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.51E+02	1.29E+00	2.64E-02	1.13E+00	3.34E+00	1.72E+02	9.55E-01	1.78E+02	1.88E-02
BREOT-S8+25 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.80E+03	1.62E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.86E+02	1.47E+00	2.64E-02	1.13E+00	3.81E+00	1.72E+02	9.55E-01	1.78E+02	2.14E-02
BREOT-N10+25 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.44E+03	1.30E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.29E+02	1.18E+00	2.64E-02	1.13E+00	3.05E+00	1.72E+02	9.55E-01	1.78E+02	1.72E-02
BREOT-N11+25 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.15E+03	1.04E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.83E+02	9.38E-01	2.64E-02	1.13E+00	2.44E+00	1.72E+02	9.55E-01	1.78E+02	1.37E-02
BREOT-N12+25 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.67E+03	1.50E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.65E+02	1.36E+00	2.64E-02	1.13E+00	3.53E+00	1.72E+02	9.55E-01	1.78E+02	1.98E-02
BREOT-S12+25 (0-6")	9.00E-02	9.00E-02	6.30E+00	4.06E+04	3.65E+03	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	6.45E+03	3.31E+01	2.64E-02	1.13E+00	8.59E+01	1.72E+02	9.55E-01	1.78E+02	4.83E-01
BREOT-S12+60 (0-6")	9.00E-02	9.00E-02	6.30E+00	3.96E+03	3.56E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	6.28E+02	3.22E+00	2.64E-02	1.13E+00	8.37E+00	1.72E+02	9.55E-01	1.78E+02	4.70E-02
BREOT-N13+25 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.66E+03	1.49E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.63E+02	1.35E+00	2.64E-02	1.13E+00	3.51E+00	1.72E+02	9.55E-01	1.78E+02	1.97E-02
BREOT-S13+25 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.82E+04	1.63E+03	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.89E+03	1.48E+01	2.64E-02	1.13E+00	3.84E+01	1.72E+02	9.55E-01	1.78E+02	2.16E-01
BREOT-S13+65 (0-6")	9.00E-02	9.00E-02	6.30E+00	5.98E+03	5.38E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	9.50E+02	4.87E+00	2.64E-02	1.13E+00	1.26E+01	1.72E+02	9.55E-01	1.78E+02	7.10E-02
BREOT-N14+25 (0-6")	9.00E-02	9.00E-02	6.30E+00	2.75E+03	2.47E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.36E+02	2.24E+00	2.64E-02	1.13E+00	5.81E+00	1.72E+02	9.55E-01	1.78E+02	3.26E-02
BREOT-S14+25 (0-6")	9.00E-02	9.00E-02	6.30E+00	2.80E+04	2.52E+03	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.44E+03	2.28E+01	2.64E-02	1.13E+00	5.92E+01	1.72E+02	9.55E-01	1.78E+02	3.32E-01
BREOT-S14+59 (0-6")	9.00E-02	9.00E-02	6.30E+00	2.13E+03	1.91E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.38E+02	1.73E+00	2.64E-02	1.13E+00	4.50E+00	1.72E+02	9.55E-01	1.78E+02	2.53E-02
BREOT-N15+25 (0-6")	9.00E-02	9.00E-02	6.30E+00	6.04E+04	5.43E+03	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	9.59E+03	4.92E+01	2.64E-02	1.13E+00	1.28E+02	1.72E+02	9.55E-01	1.78E+02	7.18E-01
BREOT-N15+50 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.90E+03	1.70E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.01E+02	1.54E+00	2.64E-02	1.13E+00	4.01E+00	1.72E+02	9.55E-01	1.78E+02	2.25E-02

TABLE C-2F: ZINC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 18.41

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Red-Tailed Hawk (Carnivorous Birds - Terrestrial)																							
BREOT-S16+20 (0-6")	9.00E-02	9.00E-02	6.30E+00	2.44E+04	2.19E+03	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.87E+03	1.98E+01	2.64E-02	1.13E+00	5.15E+01	1.72E+02	9.55E-01	1.78E+02	2.89E-01
BREOT-S16+75 (0-6")	9.00E-02	9.00E-02	6.30E+00	2.87E+03	2.58E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.56E+02	2.34E+00	2.64E-02	1.13E+00	6.07E+00	1.72E+02	9.55E-01	1.78E+02	3.41E-02
BREOT-N17+25 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.21E+04	1.09E+03	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.92E+03	9.85E+00	2.64E-02	1.13E+00	2.56E+01	1.72E+02	9.55E-01	1.78E+02	1.44E-01
BREOT-S18+25 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.27E+03	1.15E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.02E+02	1.04E+00	2.64E-02	1.13E+00	2.70E+00	1.72E+02	9.55E-01	1.78E+02	1.51E-02
BREOT-N19+25 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.26E+03	1.13E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.00E+02	1.03E+00	2.64E-02	1.13E+00	2.66E+00	1.72E+02	9.55E-01	1.78E+02	1.50E-02
BREOT-S19+25 (0-6")	9.00E-02	9.00E-02	6.30E+00	5.45E+03	4.90E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	8.65E+02	4.44E+00	2.64E-02	1.13E+00	1.15E+01	1.72E+02	9.55E-01	1.78E+02	6.47E-02
BREOT-S19+85 (0-6")	9.00E-02	9.00E-02	6.30E+00	9.49E+02	8.54E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.51E+02	7.73E-01	2.64E-02	1.13E+00	2.01E+00	1.72E+02	9.55E-01	1.78E+02	1.13E-02
BREOT-N20+25 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.81E+03	1.62E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.87E+02	1.47E+00	2.64E-02	1.13E+00	3.82E+00	1.72E+02	9.55E-01	1.78E+02	2.15E-02
BREOT-S20+25 (0-6")	9.00E-02	9.00E-02	6.30E+00	7.29E+03	6.56E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.16E+03	5.94E+00	2.64E-02	1.13E+00	1.54E+01	1.72E+02	9.55E-01	1.78E+02	8.66E-02
BREOT-S20+75 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.37E+03	1.23E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.18E+02	1.12E+00	2.64E-02	1.13E+00	2.90E+00	1.72E+02	9.55E-01	1.78E+02	1.63E-02
BREOT-N21+25 (0-6")	9.00E-02	9.00E-02	6.30E+00	2.70E+03	2.42E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.28E+02	2.20E+00	2.64E-02	1.13E+00	5.70E+00	1.72E+02	9.55E-01	1.78E+02	3.20E-02
BREOT-S21+25 (0-6")	9.00E-02	9.00E-02	6.30E+00	3.35E+03	3.01E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.32E+02	2.73E+00	2.64E-02	1.13E+00	7.09E+00	1.72E+02	9.55E-01	1.78E+02	3.98E-02
BREOT-N22+150 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.29E+03	1.16E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.05E+02	1.05E+00	2.64E-02	1.13E+00	2.73E+00	1.72E+02	9.55E-01	1.78E+02	1.53E-02
BREOT-N22+25 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.88E+04	1.70E+03	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.99E+03	1.53E+01	2.64E-02	1.13E+00	3.99E+01	1.72E+02	9.55E-01	1.78E+02	2.24E-01
BREOT-S22+25 (0-6")	9.00E-02	9.00E-02	6.30E+00	2.22E+03	1.99E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.52E+02	1.81E+00	2.64E-02	1.13E+00	4.69E+00	1.72E+02	9.55E-01	1.78E+02	2.63E-02
BREOT-N23+115 (0-6")	9.00E-02	9.00E-02	6.30E+00	2.28E+03	2.05E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.63E+02	1.86E+00	2.64E-02	1.13E+00	4.83E+00	1.72E+02	9.55E-01	1.78E+02	2.71E-02
BREOT-N23+25 (0-6")	9.00E-02	9.00E-02	6.30E+00	4.64E+04	4.18E+03	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	7.37E+03	3.78E+01	2.64E-02	1.13E+00	9.82E+01	1.72E+02	9.55E-01	1.78E+02	5.52E-01
BREOT-S23+25 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.11E+04	9.99E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.76E+03	9.04E+00	2.64E-02	1.13E+00	2.35E+01	1.72E+02	9.55E-01	1.78E+02	1.32E-01
BREOT-S23+37.5 (0-6")	9.00E-02	9.00E-02	6.30E+00	2.93E+03	2.64E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.66E+02	2.39E+00	2.64E-02	1.13E+00	6.20E+00	1.72E+02	9.55E-01	1.78E+02	3.48E-02
BREOT-N24+25 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.15E+04	1.03E+03	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.83E+03	9.37E+00	2.64E-02	1.13E+00	2.43E+01	1.72E+02	9.55E-01	1.78E+02	1.37E-01
BREOT-N24+75 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.83E+03	1.65E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.91E+02	1.49E+00	2.64E-02	1.13E+00	3.87E+00	1.72E+02	9.55E-01	1.78E+02	2.17E-02
BREOT-S24+25 (0-6")	9.00E-02	9.00E-02	6.30E+00	2.69E+03	2.42E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.27E+02	2.19E+00	2.64E-02	1.13E+00	5.69E+00	1.72E+02	9.55E-01	1.78E+02	3.20E-02
BREOT-N25+25 (0-6")	9.00E-02	9.00E-02	6.30E+00	6.59E+02	5.93E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.05E+02	5.37E-01	2.64E-02	1.13E+00	1.39E+00	1.72E+02	9.55E-01	1.78E+02	7.83E-03
BREOT-S25+25 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.88E+03	1.69E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.98E+02	1.53E+00	2.64E-02	1.13E+00	3.97E+00	1.72E+02	9.55E-01	1.78E+02	2.23E-02
BREOT-S25+40 (0-6")	9.00E-02	9.00E-02	6.30E+00	2.06E+03	1.85E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.26E+02	1.67E+00	2.64E-02	1.13E+00	4.35E+00	1.72E+02	9.55E-01	1.78E+02	2.44E-02
BREOT-S26+37 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.56E+03	1.41E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.48E+02	1.27E+00	2.64E-02	1.13E+00	3.31E+00	1.72E+02	9.55E-01	1.78E+02	1.86E-02
BREOT-N27+25 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.69E+03	1.52E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.68E+02	1.37E+00	2.64E-02	1.13E+00	3.57E+00	1.72E+02	9.55E-01	1.78E+02	2.01E-02
BREOT-S27+25 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.24E+03	1.11E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.97E+02	1.01E+00	2.64E-02	1.13E+00	2.62E+00	1.72E+02	9.55E-01	1.78E+02	1.47E-02
BREOT-N28+25 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.17E+03	1.05E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.86E+02	9.54E-01	2.64E-02	1.13E+00	2.48E+00	1.72E+02	9.55E-01	1.78E+02	1.39E-02
BREOT-S28+25 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.39E+03	1.25E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.20E+02	1.13E+00	2.64E-02	1.13E+00	2.93E+00	1.72E+02	9.55E-01	1.78E+02	1.65E-02
BREOT-N29+25 (0-6")	9.00E-02	9.00E-02	6.30E+00	4.41E+03	3.97E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	7.01E+02	3.59E+00	2.64E-02	1.13E+00	9.33E+00	1.72E+02	9.55E-01	1.78E+02	5.24E-02
BREOT-S29+25 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.14E+03	1.02E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.81E+02	9.28E-01	2.64E-02	1.13E+00	2.41E+00	1.72E+02	9.55E-01	1.78E+02	1.35E-02
BREOT-N30+25 (0-6")	9.00E-02	9.00E-02	6.30E+00	2.49E+03	2.24E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.96E+02	2.03E+00	2.64E-02	1.13E+00	5.27E+00	1.72E+02	9.55E-01	1.78E+02	2.96E-02
BREOT-S30+25 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.94E+03	1.74E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.08E+02	1.58E+00	2.64E-02	1.13E+00	4.10E+00	1.72E+02	9.55E-01	1.78E+02	2.30E-02
BREOT-N31+25 (0-6")	9.00E-02	9.00E-02	6.30E+00	6.37E+04	5.73E+03	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.01E+04	5.19E+01	2.64E-02	1.13E+00	1.35E+02	1.72E+02	9.55E-01	1.78E+02	7.57E-01
BREOT-N31+75 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.25E+03	1.12E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.98E+02	1.02E+00	2.64E-02	1.13E+00	2.64E+00	1.72E+02	9.55E-01	1.78E+02	1.48E-02
BREOT-S31+25 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.78E+03	1.60E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.82E+02	1.45E+00	2.64E-02	1.13E+00	3.76E+00	1.72E+02	9.55E-01	1.78E+02	2.11E-02
BREOT-N32+25 (0-6")	9.00E-02	9.00E-02	6.30E+00	9.38E+02	8.44E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.49E+02	7.64E-01	2.64E-02	1.13E+00	1.98E+00	1.72E+02	9.55E-01	1.78E+02	1.11E-02
BREOT-S32+25 (0-6")	9.00E-02	9.00E-02	6.30E+00	2.56E+03	2.30E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.07E+02	2.09E+00	2.64E-02	1.13E+00	5.41E+00	1.72E+02	9.55E-01	1.78E+02	3.04E-02
BREOT-S32+300 (0-6")	9.00E-02	9.00E-02	6.30E+00	3.29E+03	2.96E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.22E+02	2.68E+00	2.64E-02	1.13E+00	6.95E+00	1.72E+02	9.55E-01	1.78E+02	3.91E-02
BREOT-N33+25 (0-6")	9.00E-02	9.00E-02	6.30E+00	6.75E+02	6.07E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.07E+02	5.49E-01	2.64E-02	1.13E+00	1.43E+00	1.72E+02	9.55E-01	1.78E+02	8.01E-03
BREOT-S33+25 (0-6")	9.00E-02	9.00E-02	6.30E+00	7.48E+03	6.73E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.19E+03	6.09E+00	2.64E-02	1.13E+00	1.58E+01	1.72E+02	9.55E-01	1.78E+02	8.89E-02
BREOT-N34+25 (0-6")	9.00E-02	9.00E-02	6.30E+00	8.73E+02	7.85E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.39E+02	7.11E-01	2.64E-02	1.13E+00	1.85E+00	1.72E+02	9.55E-01	1.78E+02	1.04E-02
BREOT-S34+25 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.51E+03	1.36E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.40E+02	1.23E+00	2.64E-02	1.13E+00	3.19E+00	1.72E+02	9.55E-01	1.78E+02	1.79E-02
BREOT-N35+25 (0-6")	9.00E-02	9.00E-02	6.30E+00	9.86E+02	8.87E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.57E+02	8.03E-01	2.64E-02	1.13E+00	2.09E+00	1.72E+02	9.55E-01	1.78E+02	1.17E-02
BREOT-S35+25 (0-6")	9.00E-02	9.00E-02	6.30E+00	6.68E+03	6.01E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.06E+03	5.44E+00	2.64E-02	1.13E+00	1.41E+01	1.72E+02	9.55E-01	1.78E+02	7.94E-02
BREOT-N36+100 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.42E+03	1.28E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.26E+02	1.16E+00	2.64E-02	1.13E+00	3.01E+00	1.72E+02	9.55E-01	1.78E+02	1.69E-02
BREOT-N36+25 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.49E+04	1.34E+03	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.37E+03	1.21E+01	2.64E-02	1.13E+00	3.15E+01	1.72E+02	9.55E-01	1.78E+02	1.77E-01
BREOT-S36+25 (0-6")	9.00E-02	9.00E-02	6.30E+00	5.66E+03	5.09E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	8.99E+02	4.61E+00	2.64E-02	1.13E+00	1.20E+01	1.72E+02	9.55E-01	1.78E+02	6.73E-02
BREOT-N37+25 (0-6")	9.00E-02	9.00E-02	6.30E+00	4.95E+02	4.45E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	7.86E+01	4.03E-01	2.64E-02	1.13E+00	1.05E+00	1.72E+02	9.55E-01	1.78E+02	5.88E-03
BREOT-S37+25 (0-6")	9.00E-02	9.00E-02	6.30E+00	6.43E+03	5.79E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.02E+03	5.24E+00	2.64E-02	1.13E+00	1.36E+01	1.72E+02	9.55E-01	1.78E+02	7.64E-02
BREOT-N38+25 (0-6")	9.00E-02	9.00E-02	6.30E+00	5.29E+02	4.76E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	8.41E+01	4.31E-01	2.64E-02	1.13E+00	1.12E+00	1.72E+02	9.55E-01	1.78E+02	6.29E-03
BREOT-S38+25 (0-6")	9.00E-02	9.00E-02	6.30E+00	7.50E+03	6.74E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.19E+03	6.11E+00	2.64E-02	1.13E+00	1.59E+01	1.72E+02	9.55E-01	1.78E+02	8.91E-02
BREOT-N39+25 (0-6")	9.00E-02	9.00E-02	6.30E+00	7.24E+02	6.52E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.15E+02	5.90E-01	2.64E-02	1.13E+00	1.53E+00	1.72E+02	9.55E-01	1.78E+02	8.61E-03
BREOT-S39+25 (0-6")	9.00E-02	9.00E-02	6.30E+00	7.47E+03	6.72E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.19E+03	6.09E+00	2.64E-02	1.13E+00	1.58E+01	1.72E+02	9.55E-01	1.78E+02	8.88E-02

TABLE C-2F: ZINC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 18.41

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Red-Tailed Hawk (Carnivorous Birds - Terrestrial)																							
BREOT-N40+25 (0-6")	9.00E-02	9.00E-02	6.30E+00	4.09E+02	3.68E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	6.49E+01	3.33E-01	2.64E-02	1.13E+00	8.64E-01	1.72E+02	9.55E-01	1.78E+02	4.85E-03
BREOT-S40+25 (0-6")	9.00E-02	9.00E-02	6.30E+00	6.68E+03	6.01E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.06E+03	5.44E+00	2.64E-02	1.13E+00	1.41E+01	1.72E+02	9.55E-01	1.78E+02	7.93E-02
BREOT-N41+25 (0-6")	9.00E-02	9.00E-02	6.30E+00	7.26E+02	6.53E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.15E+02	5.91E-01	2.64E-02	1.13E+00	1.53E+00	1.72E+02	9.55E-01	1.78E+02	8.62E-03
BREOT-S41+25 (0-6")	9.00E-02	9.00E-02	6.30E+00	4.94E+03	4.44E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	7.85E+02	4.02E+00	2.64E-02	1.13E+00	1.04E+01	1.72E+02	9.55E-01	1.78E+02	5.87E-02
BREOT-N42+25 (0-6")	9.00E-02	9.00E-02	6.30E+00	3.63E+02	3.26E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.76E+01	2.95E-01	2.64E-02	1.13E+00	7.67E-01	1.72E+02	9.55E-01	1.78E+02	4.31E-03
BREOT-S42+25 (0-6")	9.00E-02	9.00E-02	6.30E+00	7.17E+03	6.45E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.14E+03	5.84E+00	2.64E-02	1.13E+00	1.52E+01	1.72E+02	9.55E-01	1.78E+02	8.52E-02
BREOT-N43+12.5 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.76E+03	1.58E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.79E+02	1.43E+00	2.64E-02	1.13E+00	3.71E+00	1.72E+02	9.55E-01	1.78E+02	2.09E-02
BREOT-N43+40 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.39E+03	1.25E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.21E+02	1.13E+00	2.64E-02	1.13E+00	2.94E+00	1.72E+02	9.55E-01	1.78E+02	1.65E-02
BREOT-S43+25 (0-6")	9.00E-02	9.00E-02	6.30E+00	2.78E+03	2.50E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.42E+02	2.26E+00	2.64E-02	1.13E+00	5.88E+00	1.72E+02	9.55E-01	1.78E+02	3.30E-02
BREOT-N44+55 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.42E+03	1.28E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.26E+02	1.16E+00	2.64E-02	1.13E+00	3.00E+00	1.72E+02	9.55E-01	1.78E+02	1.69E-02
BREOT-S44+25 (0-6")	9.00E-02	9.00E-02	6.30E+00	2.06E+03	1.85E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.27E+02	1.68E+00	2.64E-02	1.13E+00	4.36E+00	1.72E+02	9.55E-01	1.78E+02	2.45E-02
BREOT-N45+25 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.45E+03	1.31E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.31E+02	1.18E+00	2.64E-02	1.13E+00	3.07E+00	1.72E+02	9.55E-01	1.78E+02	1.73E-02
BREOT-S45+25 (0-6")	9.00E-02	9.00E-02	6.30E+00	2.89E+03	2.60E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.59E+02	2.35E+00	2.64E-02	1.13E+00	6.11E+00	1.72E+02	9.55E-01	1.78E+02	3.43E-02
BREOT-N46+25 (0-6")	9.00E-02	9.00E-02	6.30E+00	3.26E+03	2.93E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.18E+02	2.65E+00	2.64E-02	1.13E+00	6.89E+00	1.72E+02	9.55E-01	1.78E+02	3.87E-02
BREOT-S46+25 (0-6")	9.00E-02	9.00E-02	6.30E+00	2.18E+03	1.96E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.46E+02	1.77E+00	2.64E-02	1.13E+00	4.61E+00	1.72E+02	9.55E-01	1.78E+02	2.59E-02
BREOT-N47+25 (0-6")	9.00E-02	9.00E-02	6.30E+00	2.17E+03	1.95E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.44E+02	1.77E+00	2.64E-02	1.13E+00	4.58E+00	1.72E+02	9.55E-01	1.78E+02	2.58E-02
BREOT-S47+25 (0-6")	9.00E-02	9.00E-02	6.30E+00	6.66E+02	5.99E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.06E+02	5.43E-01	2.64E-02	1.13E+00	1.41E+00	1.72E+02	9.55E-01	1.78E+02	7.92E-03
BREOT-N48+25 (0-6")	9.00E-02	9.00E-02	6.30E+00	8.36E+02	7.52E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.33E+02	6.81E-01	2.64E-02	1.13E+00	1.77E+00	1.72E+02	9.55E-01	1.78E+02	9.94E-03
BREOT-S48+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N49+25 (0-6")	9.00E-02	9.00E-02	6.30E+00	2.15E+03	1.94E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.42E+02	1.75E+00	2.64E-02	1.13E+00	4.55E+00	1.72E+02	9.55E-01	1.78E+02	2.56E-02
BREOT-S49+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N51+25 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.05E+03	9.42E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.66E+02	8.53E-01	2.64E-02	1.13E+00	2.21E+00	1.72E+02	9.55E-01	1.78E+02	1.24E-02
BREOT-S51+25 (0-6")	9.00E-02	9.00E-02	6.30E+00	8.43E+02	7.59E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.34E+02	6.87E-01	2.64E-02	1.13E+00	1.78E+00	1.72E+02	9.55E-01	1.78E+02	1.00E-02
BREOT-N52+25 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.06E+03	9.50E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.68E+02	8.60E-01	2.64E-02	1.13E+00	2.23E+00	1.72E+02	9.55E-01	1.78E+02	1.25E-02
BREOT-S52+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N53+25 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.05E+03	9.43E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.67E+02	8.54E-01	2.64E-02	1.13E+00	2.22E+00	1.72E+02	9.55E-01	1.78E+02	1.25E-02
BREOT-S53+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S54+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N55+25 (0-6")	9.00E-02	9.00E-02	6.30E+00	9.23E+02	8.30E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.47E+02	7.52E-01	2.64E-02	1.13E+00	1.95E+00	1.72E+02	9.55E-01	1.78E+02	1.10E-02
BREOT-S55+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N56+25 (0-6")	9.00E-02	9.00E-02	6.30E+00	9.11E+02	8.20E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.45E+02	7.42E-01	2.64E-02	1.13E+00	1.93E+00	1.72E+02	9.55E-01	1.78E+02	1.08E-02
BREOT-S56+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N57+25 (0-6")	9.00E-02	9.00E-02	6.30E+00	7.84E+02	7.05E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.25E+02	6.39E-01	2.64E-02	1.13E+00	1.66E+00	1.72E+02	9.55E-01	1.78E+02	9.32E-03
BREOT-S57+25 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.28E+03	1.16E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.04E+02	1.05E+00	2.64E-02	1.13E+00	2.72E+00	1.72E+02	9.55E-01	1.78E+02	1.53E-02
BREOT-N58+25 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.34E+03	1.20E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.12E+02	1.09E+00	2.64E-02	1.13E+00	2.83E+00	1.72E+02	9.55E-01	1.78E+02	1.59E-02
BREOT-S58+25 (0-6")	9.00E-02	9.00E-02	6.30E+00	5.66E+02	5.10E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	9.00E+01	4.61E-01	2.64E-02	1.13E+00	1.20E+00	1.72E+02	9.55E-01	1.78E+02	6.73E-03
BREOT-N59+25 (0-6")	9.00E-02	9.00E-02	6.30E+00	2.21E+03	1.99E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.52E+02	1.80E+00	2.64E-02	1.13E+00	4.68E+00	1.72E+02	9.55E-01	1.78E+02	2.63E-02
BREOT-N60+25 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.49E+03	1.34E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.36E+02	1.21E+00	2.64E-02	1.13E+00	3.14E+00	1.72E+02	9.55E-01	1.78E+02	1.76E-02
BREOT-S60+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S61+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N62+25 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.64E+03	1.48E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.61E+02	1.34E+00	2.64E-02	1.13E+00	3.48E+00	1.72E+02	9.55E-01	1.78E+02	1.95E-02
BREOT-S62+25 (0-6")	9.00E-02	9.00E-02	6.30E+00	7.28E+02	6.54E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.16E+02	5.92E-01	2.64E-02	1.13E+00	1.54E+00	1.72E+02	9.55E-01	1.78E+02	8.64E-03
BREOT-N63+25 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.73E+03	1.55E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.74E+02	1.41E+00	2.64E-02	1.13E+00	3.65E+00	1.72E+02	9.55E-01	1.78E+02	2.05E-02
BREOT-S63+25 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.22E+03	1.10E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.94E+02	9.94E-01	2.64E-02	1.13E+00	2.58E+00	1.72E+02	9.55E-01	1.78E+02	1.45E-02
BREOT-N64+25 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.94E+03	1.74E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.07E+02	1.58E+00	2.64E-02	1.13E+00	4.09E+00	1.72E+02	9.55E-01	1.78E+02	2.30E-02
BREOT-S64+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S65+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N66+25 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.56E+03	1.40E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.48E+02	1.27E+00	2.64E-02	1.13E+00	3.30E+00	1.72E+02	9.55E-01	1.78E+02	1.86E-02
BREOT-S66+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N67+125 (0-6")	9.00E-02	9.00E-02	6.30E+00	2.29E+03	2.06E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.63E+02	1.86E+00	2.64E-02	1.13E+00	4.83E+00	1.72E+02	9.55E-01	1.78E+02	2.72E-02
BREOT-S67+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N67+25 (0-6")	9.00E-02	9.00E-02	6.30E+00	2.38E+03	2.14E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.77E+02	1.93E+00	2.64E-02	1.13E+00	5.02E+00	1.72E+02	9.55E-01	1.78E+02	2.82E-02
																					Maximum HQ (Outside Tailings)		**7.57E-01**

TABLE C-2F: ZINC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **18.41**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
American Kestrel (Insectivorous Birds - Terrestrial)																							
Reference Sites																							
ACBG-1 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	8.31E+00	1.14E+03	1.57E+01	7.84E-04	1.37E+02	1.07E-01	7.04E-02	1.24E-01	8.95E+00	1.72E+02	9.55E-01	1.14E+02	7.83E-02
ACBG-2 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	8.31E+00	6.98E+02	9.60E+00	7.84E-04	8.39E+01	6.58E-02	7.04E-02	1.24E-01	5.49E+00	1.72E+02	9.55E-01	1.14E+02	4.80E-02
UBRBG-202 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	8.31E+00	4.47E+02	6.15E+00	7.84E-04	5.37E+01	4.21E-02	7.04E-02	1.24E-01	3.51E+00	1.72E+02	9.55E-01	1.14E+02	3.07E-02
UBRBG-204 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	8.31E+00	2.85E+03	3.92E+01	7.84E-04	3.43E+02	2.69E-01	7.04E-02	1.24E-01	2.24E+01	1.72E+02	9.55E-01	1.14E+02	1.96E-01
Inside Tailings																						**Minimum HQ (Reference Sites)**	**3.07E-02**
BREOT-S6-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	1.68E+03	2.31E+01	7.84E-04	3.83E+02	3.00E-01	7.04E-02	1.24E-01	1.33E+01	1.72E+02	9.55E-01	1.14E+02	1.16E-01
BREOT-S2-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	1.11E+04	1.53E+02	7.84E-04	2.54E+03	1.99E+00	7.04E-02	1.24E-01	8.80E+01	1.72E+02	9.55E-01	1.14E+02	7.69E-01
BREOT-S0-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	1.08E+03	1.49E+01	7.84E-04	2.48E+02	1.94E-01	7.04E-02	1.24E-01	8.58E+00	1.72E+02	9.55E-01	1.14E+02	7.50E-02
BREOT-S1-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	7.28E+02	1.00E+01	7.84E-04	1.66E+02	1.30E-01	7.04E-02	1.24E-01	5.76E+00	1.72E+02	9.55E-01	1.14E+02	5.04E-02
BREOT-S7-25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	1.02E+03	1.41E+01	7.84E-04	2.33E+02	1.83E-01	7.04E-02	1.24E-01	8.08E+00	1.72E+02	9.55E-01	1.14E+02	7.06E-02
BREOT-S8-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	6.33E+02	8.71E+00	7.84E-04	1.45E+02	1.13E-01	7.04E-02	1.24E-01	5.01E+00	1.72E+02	9.55E-01	1.14E+02	4.38E-02
BREOT-S9-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	1.45E+03	2.00E+01	7.84E-04	3.31E+02	2.60E-01	7.04E-02	1.24E-01	1.15E+01	1.72E+02	9.55E-01	1.14E+02	1.00E-01
BREOT-N10-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	2.03E+04	2.79E+02	7.84E-04	4.63E+03	3.63E+00	7.04E-02	1.24E-01	1.60E+02	1.72E+02	9.55E-01	1.14E+02	1.40E+00
BREOT-N11-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	2.13E+03	2.92E+01	7.84E-04	4.85E+02	3.81E-01	7.04E-02	1.24E-01	1.68E+01	1.72E+02	9.55E-01	1.14E+02	1.47E-01
BREOT-N11-125 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	1.75E+03	2.40E+01	7.84E-04	3.99E+02	3.13E-01	7.04E-02	1.24E-01	1.38E+01	1.72E+02	9.55E-01	1.14E+02	1.21E-01
BREOT-S11-12 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	3.11E+04	4.27E+02	7.84E-04	7.09E+03	5.56E+00	7.04E-02	1.24E-01	2.46E+02	1.72E+02	9.55E-01	1.14E+02	2.15E+00
BREOT-S11+63 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	1.75E+03	2.41E+01	7.84E-04	4.00E+02	3.14E-01	7.04E-02	1.24E-01	1.39E+01	1.72E+02	9.55E-01	1.14E+02	1.21E-01
UBDT-TP-6 (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	8.67E+04	1.19E+03	7.84E-04	1.98E+04	1.55E+01	7.04E-02	1.24E-01	6.86E+02	1.72E+02	9.55E-01	1.14E+02	6.00E+00
UBDT-TP-6 (2-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	5.38E+04	7.41E+02	7.84E-04	1.23E+04	9.64E+00	7.04E-02	1.24E-01	4.26E+02	1.72E+02	9.55E-01	1.14E+02	3.72E+00
UBDT-TP-6 (12-24")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	5.49E+04	7.56E+02	7.84E-04	1.25E+04	9.84E+00	7.04E-02	1.24E-01	4.34E+02	1.72E+02	9.55E-01	1.14E+02	3.80E+00
UBDT-TP-6 (24-36")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	4.01E+03	5.51E+01	7.84E-04	9.15E+02	7.18E-01	7.04E-02	1.24E-01	3.17E+01	1.72E+02	9.55E-01	1.14E+02	2.77E-01
UBDT-TP-6 (36-48")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	1.09E+04	1.50E+02	7.84E-04	2.49E+03	1.95E+00	7.04E-02	1.24E-01	8.61E+01	1.72E+02	9.55E-01	1.14E+02	7.53E-01
UBDT-TP-6 (48-60")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	8.33E+03	1.15E+02	7.84E-04	1.90E+03	1.49E+00	7.04E-02	1.24E-01	6.59E+01	1.72E+02	9.55E-01	1.14E+02	5.76E-01
BREOT-N12-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	5.15E+03	7.09E+01	7.84E-04	1.18E+03	9.23E-01	7.04E-02	1.24E-01	4.07E+01	1.72E+02	9.55E-01	1.14E+02	3.56E-01
BREOT-S12-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	1.27E+04	1.75E+02	7.84E-04	2.90E+03	2.28E+00	7.04E-02	1.24E-01	1.01E+02	1.72E+02	9.55E-01	1.14E+02	8.80E-01
BREOT-S13-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	2.26E+04	3.11E+02	7.84E-04	5.15E+03	4.04E+00	7.04E-02	1.24E-01	1.79E+02	1.72E+02	9.55E-01	1.14E+02	1.56E+00
BREOT-S14-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	1.12E+04	1.54E+02	7.84E-04	2.56E+03	2.01E+00	7.04E-02	1.24E-01	8.86E+01	1.72E+02	9.55E-01	1.14E+02	7.75E-01
BREOT-N15-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	1.19E+04	1.63E+02	7.84E-04	2.71E+03	2.12E+00	7.04E-02	1.24E-01	9.38E+01	1.72E+02	9.55E-01	1.14E+02	8.21E-01
BREOT-S15-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	1.53E+03	2.11E+01	7.84E-04	3.50E+02	2.75E-01	7.04E-02	1.24E-01	1.21E+01	1.72E+02	9.55E-01	1.14E+02	1.06E-01
BREOT-N16-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	3.90E+03	5.37E+01	7.84E-04	8.91E+02	6.99E-01	7.04E-02	1.24E-01	3.09E+01	1.72E+02	9.55E-01	1.14E+02	2.70E-01
BREOT-N16-25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	7.68E+02	1.06E+01	7.84E-04	1.75E+02	1.38E-01	7.04E-02	1.24E-01	6.07E+00	1.72E+02	9.55E-01	1.14E+02	5.31E-02
BREOT-S16-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	7.79E+02	1.07E+01	7.84E-04	1.78E+02	1.40E-01	7.04E-02	1.24E-01	6.16E+00	1.72E+02	9.55E-01	1.14E+02	5.39E-02
BREOT-N17-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	1.68E+03	2.32E+01	7.84E-04	3.84E+02	3.01E-01	7.04E-02	1.24E-01	1.33E+01	1.72E+02	9.55E-01	1.14E+02	1.16E-01
BREOT-S17-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	6.71E+02	9.24E+00	7.84E-04	1.53E+02	1.20E-01	7.04E-02	1.24E-01	5.31E+00	1.72E+02	9.55E-01	1.14E+02	4.64E-02
BREOT-S17-25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	1.02E+03	1.41E+01	7.84E-04	2.34E+02	1.83E-01	7.04E-02	1.24E-01	8.10E+00	1.72E+02	9.55E-01	1.14E+02	7.08E-02
UBDT-TP-4 (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	1.04E+04	1.43E+02	7.84E-04	2.38E+03	1.87E+00	7.04E-02	1.24E-01	8.25E+01	1.72E+02	9.55E-01	1.14E+02	7.21E-01
UBDT-TP-4 (2-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	6.26E+03	8.62E+01	7.84E-04	1.43E+03	1.12E+00	7.04E-02	1.24E-01	4.95E+01	1.72E+02	9.55E-01	1.14E+02	4.33E-01
UBDT-TP-4 (12-24")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	3.42E+03	4.71E+01	7.84E-04	7.82E+02	6.13E-01	7.04E-02	1.24E-01	2.71E+01	1.72E+02	9.55E-01	1.14E+02	2.37E-01
UBDT-TP-4 (24-36")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	4.93E+03	6.79E+01	7.84E-04	1.13E+03	8.84E-01	7.04E-02	1.24E-01	3.90E+01	1.72E+02	9.55E-01	1.14E+02	3.41E-01
BREOT-N18-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	7.01E+03	9.64E+01	7.84E-04	1.60E+03	1.25E+00	7.04E-02	1.24E-01	5.54E+01	1.72E+02	9.55E-01	1.14E+02	4.85E-01
BREOT-N18-25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	1.35E+03	1.85E+01	7.84E-04	3.07E+02	2.41E-01	7.04E-02	1.24E-01	1.06E+01	1.72E+02	9.55E-01	1.14E+02	9.31E-02
BREOT-S18-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	2.50E+03	3.44E+01	7.84E-04	5.71E+02	4.48E-01	7.04E-02	1.24E-01	1.98E+01	1.72E+02	9.55E-01	1.14E+02	1.73E-01
BREOT-N19-10 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	2.07E+03	2.85E+01	7.84E-04	4.73E+02	3.71E-01	7.04E-02	1.24E-01	1.64E+01	1.72E+02	9.55E-01	1.14E+02	1.43E-01
BREOT-S19-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	6.96E+03	9.58E+01	7.84E-04	1.59E+03	1.25E+00	7.04E-02	1.24E-01	5.51E+01	1.72E+02	9.55E-01	1.14E+02	4.82E-01
UBDT-TP-5 (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	1.15E+04	1.58E+02	7.84E-04	2.63E+03	2.06E+00	7.04E-02	1.24E-01	9.10E+01	1.72E+02	9.55E-01	1.14E+02	7.96E-01
UBDT-TP-5 (2-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	7.63E+03	1.05E+02	7.84E-04	1.74E+03	1.37E+00	7.04E-02	1.24E-01	6.03E+01	1.72E+02	9.55E-01	1.14E+02	5.28E-01
UBDT-TP-5 (12-24")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	6.79E+03	9.35E+01	7.84E-04	1.55E+03	1.22E+00	7.04E-02	1.24E-01	5.37E+01	1.72E+02	9.55E-01	1.14E+02	4.70E-01
BREOT-N20-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	1.45E+03	1.99E+01	7.84E-04	3.31E+02	2.60E-01	7.04E-02	1.24E-01	1.15E+01	1.72E+02	9.55E-01	1.14E+02	1.00E-01
UBDT-TP-3 (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	1.96E+03	2.69E+01	7.84E-04	4.47E+02	3.50E-01	7.04E-02	1.24E-01	1.55E+01	1.72E+02	9.55E-01	1.14E+02	1.35E-01
UBDT-TP-3 (2-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	1.28E+03	1.76E+01	7.84E-04	2.93E+02	2.30E-01	7.04E-02	1.24E-01	1.01E+01	1.72E+02	9.55E-01	1.14E+02	8.87E-02
UBDT-TP-3 (12-24")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	1.00E+03	1.38E+01	7.84E-04	2.28E+02	1.79E-01	7.04E-02	1.24E-01	7.91E+00	1.72E+02	9.55E-01	1.14E+02	6.92E-02
UBDT-TP-3 (24-36")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	1.60E+03	2.21E+01	7.84E-04	3.66E+02	2.87E-01	7.04E-02	1.24E-01	1.27E+01	1.72E+02	9.55E-01	1.14E+02	1.11E-01
UBDT-TP-3 (36-48")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	2.47E+03	3.39E+01	7.84E-04	5.63E+02	4.42E-01	7.04E-02	1.24E-01	1.95E+01	1.72E+02	9.55E-01	1.14E+02	1.71E-01
UBDT-TP-3 (48-60")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	3.46E+03	4.76E+01	7.84E-04	7.90E+02	6.20E-01	7.04E-02	1.24E-01	2.74E+01	1.72E+02	9.55E-01	1.14E+02	2.39E-01
BREOT-N21-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	1.12E+04	1.55E+02	7.84E-04	2.57E+03	2.01E+00	7.04E-02	1.24E-01	8.90E+01	1.72E+02	9.55E-01	1.14E+02	7.78E-01
BREOT-N22-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	1.81E+03	2.49E+01	7.84E-04	4.14E+02	3.25E-01	7.04E-02	1.24E-01	1.43E+01	1.72E+02	9.55E-01	1.14E+02	1.25E-01

TABLE C-2F: ZINC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 18.41

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
American Kestrel (Insectivorous Birds - Terrestrial)																							
BREOT-N23-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	2.98E+03	4.10E+01	7.84E-04	6.81E+02	5.34E-01	7.04E-02	1.24E-01	2.36E+01	1.72E+02	9.55E-01	1.14E+02	2.06E-01
BREOT-S23-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	3.69E+04	5.07E+02	7.84E-04	8.42E+03	6.60E+00	7.04E-02	1.24E-01	2.92E+02	1.72E+02	9.55E-01	1.14E+02	2.55E+00
UBDT-TP-2 (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	1.40E+04	1.93E+02	7.84E-04	3.21E+03	2.52E+00	7.04E-02	1.24E-01	1.11E+02	1.72E+02	9.55E-01	1.14E+02	9.72E-01
UBDT-TP-2 (2-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	8.74E+03	1.20E+02	7.84E-04	2.00E+03	1.57E+00	7.04E-02	1.24E-01	6.92E+01	1.72E+02	9.55E-01	1.14E+02	6.05E-01
UBDT-TP-2 (12-24")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	7.50E+03	1.03E+02	7.84E-04	1.71E+03	1.34E+00	7.04E-02	1.24E-01	5.93E+01	1.72E+02	9.55E-01	1.14E+02	5.19E-01
UBDT-TP-2 (24-36")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	6.35E+03	8.74E+01	7.84E-04	1.45E+03	1.14E+00	7.04E-02	1.24E-01	5.03E+01	1.72E+02	9.55E-01	1.14E+02	4.40E-01
UBDT-TP-2 (36-48")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	6.68E+03	9.19E+01	7.84E-04	1.53E+03	1.20E+00	7.04E-02	1.24E-01	5.28E+01	1.72E+02	9.55E-01	1.14E+02	4.62E-01
BREOT-S24-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	2.79E+04	3.84E+02	7.84E-04	6.37E+03	5.00E+00	7.04E-02	1.24E-01	2.21E+02	1.72E+02	9.55E-01	1.14E+02	1.93E+00
BREOT-N25-50 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	3.49E+04	4.80E+02	7.84E-04	7.97E+03	6.25E+00	7.04E-02	1.24E-01	2.76E+02	1.72E+02	9.55E-01	1.14E+02	2.41E+00
BREOT-N25-95 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	4.43E+02	6.10E+00	7.84E-04	1.01E+02	7.94E-02	7.04E-02	1.24E-01	3.51E+00	1.72E+02	9.55E-01	1.14E+02	3.07E-02
BREOT-S25-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	5.79E+03	7.97E+01	7.84E-04	1.32E+03	1.04E+00	7.04E-02	1.24E-01	4.58E+01	1.72E+02	9.55E-01	1.14E+02	4.01E-01
BREOT-S25-40 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	8.96E+02	1.23E+01	7.84E-04	2.05E+02	1.61E-01	7.04E-02	1.24E-01	7.09E+00	1.72E+02	9.55E-01	1.14E+02	6.20E-02
BREOT-N26A-25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	6.70E+02	9.22E+00	7.84E-04	1.53E+02	1.20E-01	7.04E-02	1.24E-01	5.30E+00	1.72E+02	9.55E-01	1.14E+02	4.63E-02
BREOT-N26B-25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	1.12E+04	1.54E+02	7.84E-04	2.55E+03	2.00E+00	7.04E-02	1.24E-01	8.84E+01	1.72E+02	9.55E-01	1.14E+02	7.73E-01
BREOT-N26-50 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	5.01E+04	6.89E+02	7.84E-04	1.14E+04	8.97E+00	7.04E-02	1.24E-01	3.96E+02	1.72E+02	9.55E-01	1.14E+02	3.46E+00
BREOT-N26-75 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	2.55E+04	3.52E+02	7.84E-04	5.83E+03	4.58E+00	7.04E-02	1.24E-01	2.02E+02	1.72E+02	9.55E-01	1.14E+02	1.77E+00
BREOT-S26-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	1.18E+03	1.62E+01	7.84E-04	2.69E+02	2.11E-01	7.04E-02	1.24E-01	9.32E+00	1.72E+02	9.55E-01	1.14E+02	8.15E-02
BREOT-S26-40 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	1.59E+04	2.18E+02	7.84E-04	3.62E+03	2.84E+00	7.04E-02	1.24E-01	1.25E+02	1.72E+02	9.55E-01	1.14E+02	1.10E+00
BREOT-N27-30 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	1.15E+04	1.59E+02	7.84E-04	2.64E+03	2.07E+00	7.04E-02	1.24E-01	9.13E+01	1.72E+02	9.55E-01	1.14E+02	7.98E-01
BREOT-N27-75 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	4.50E+04	6.19E+02	7.84E-04	1.03E+04	8.06E+00	7.04E-02	1.24E-01	3.56E+02	1.72E+02	9.55E-01	1.14E+02	3.11E+00
BREOT-S27-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	1.61E+03	2.21E+01	7.84E-04	3.67E+02	2.88E-01	7.04E-02	1.24E-01	1.27E+01	1.72E+02	9.55E-01	1.14E+02	1.11E-01
BREOT-N28-110 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	6.81E+03	9.37E+01	7.84E-04	1.55E+03	1.22E+00	7.04E-02	1.24E-01	5.38E+01	1.72E+02	9.55E-01	1.14E+02	4.71E-01
BREOT-N28-55 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	6.55E+04	9.02E+02	7.84E-04	1.50E+04	1.17E+01	7.04E-02	1.24E-01	5.18E+02	1.72E+02	9.55E-01	1.14E+02	4.53E+00
BREOT-S28-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	1.31E+04	1.80E+02	7.84E-04	2.98E+03	2.34E+00	7.04E-02	1.24E-01	1.03E+02	1.72E+02	9.55E-01	1.14E+02	9.03E-01
UBDT-TP-1 (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	3.92E+04	5.39E+02	7.84E-04	8.95E+03	7.02E+00	7.04E-02	1.24E-01	3.10E+02	1.72E+02	9.55E-01	1.14E+02	2.71E+00
UBDT-TP-1 (2-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	4.22E+04	5.80E+02	7.84E-04	9.63E+03	7.55E+00	7.04E-02	1.24E-01	3.34E+02	1.72E+02	9.55E-01	1.14E+02	2.92E+00
UBDT-TP-1 (12-24")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	3.98E+04	5.47E+02	7.84E-04	9.08E+03	7.12E+00	7.04E-02	1.24E-01	3.15E+02	1.72E+02	9.55E-01	1.14E+02	2.75E+00
UBDT-TP-1 (24-36")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	2.71E+04	3.72E+02	7.84E-04	6.18E+03	4.85E+00	7.04E-02	1.24E-01	2.14E+02	1.72E+02	9.55E-01	1.14E+02	1.87E+00
UBDT-TP-1 (36-48")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	8.39E+03	1.15E+02	7.84E-04	1.92E+03	1.50E+00	7.04E-02	1.24E-01	6.64E+01	1.72E+02	9.55E-01	1.14E+02	5.80E-01
UBDT-TP-1 (48-60")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	2.79E+03	3.84E+01	7.84E-04	6.38E+02	5.00E-01	7.04E-02	1.24E-01	2.21E+01	1.72E+02	9.55E-01	1.14E+02	1.93E-01
BREOT-N29-30 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	5.98E+04	8.24E+02	7.84E-04	1.37E+04	1.07E+01	7.04E-02	1.24E-01	4.73E+02	1.72E+02	9.55E-01	1.14E+02	4.14E+00
BREOT-S29-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	4.01E+03	5.52E+01	7.84E-04	9.16E+02	7.19E-01	7.04E-02	1.24E-01	3.17E+01	1.72E+02	9.55E-01	1.14E+02	2.78E-01
BREOT-N30-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	3.40E+03	4.67E+01	7.84E-04	7.76E+02	6.08E-01	7.04E-02	1.24E-01	2.69E+01	1.72E+02	9.55E-01	1.14E+02	2.35E-01
BREOT-S30-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	5.28E+03	7.26E+01	7.84E-04	1.21E+03	9.45E-01	7.04E-02	1.24E-01	4.17E+01	1.72E+02	9.55E-01	1.14E+02	3.65E-01
BREOT-N31-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	2.57E+03	3.53E+01	7.84E-04	5.86E+02	4.60E-01	7.04E-02	1.24E-01	2.03E+01	1.72E+02	9.55E-01	1.14E+02	1.78E-01
BREOT-S31-25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	1.81E+03	2.49E+01	7.84E-04	4.13E+02	3.24E-01	7.04E-02	1.24E-01	1.43E+01	1.72E+02	9.55E-01	1.14E+02	1.25E-01
BREOT-S31-5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	4.88E+03	6.71E+01	7.84E-04	1.11E+03	8.73E-01	7.04E-02	1.24E-01	3.86E+01	1.72E+02	9.55E-01	1.14E+02	3.37E-01
BREOT-N32-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	4.65E+03	6.40E+01	7.84E-04	1.06E+03	8.33E-01	7.04E-02	1.24E-01	3.68E+01	1.72E+02	9.55E-01	1.14E+02	3.22E-01
BREOT-S32-6 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	9.06E+02	1.25E+01	7.84E-04	2.07E+02	1.62E-01	7.04E-02	1.24E-01	7.17E+00	1.72E+02	9.55E-01	1.14E+02	6.27E-02
BREOT-N33-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	1.56E+03	2.15E+01	7.84E-04	3.56E+02	2.79E-01	7.04E-02	1.24E-01	1.23E+01	1.72E+02	9.55E-01	1.14E+02	1.08E-01
BREOT-S33-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	2.38E+03	3.27E+01	7.84E-04	5.43E+02	4.26E-01	7.04E-02	1.24E-01	1.88E+01	1.72E+02	9.55E-01	1.14E+02	1.65E-01
BREOT-N35-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	2.09E+03	2.87E+01	7.84E-04	4.76E+02	3.74E-01	7.04E-02	1.24E-01	1.65E+01	1.72E+02	9.55E-01	1.14E+02	1.44E-01
BREOT-S35-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	9.66E+03	1.33E+02	7.84E-04	2.21E+03	1.73E+00	7.04E-02	1.24E-01	7.64E+01	1.72E+02	9.55E-01	1.14E+02	6.68E-01
BREOT-N36-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	2.71E+03	3.73E+01	7.84E-04	6.19E+02	4.85E-01	7.04E-02	1.24E-01	2.14E+01	1.72E+02	9.55E-01	1.14E+02	1.87E-01
BREOT-S36-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	2.06E+03	2.84E+01	7.84E-04	4.71E+02	3.69E-01	7.04E-02	1.24E-01	1.63E+01	1.72E+02	9.55E-01	1.14E+02	1.43E-01
BREOT-N37-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	8.88E+02	1.22E+01	7.84E-04	2.03E+02	1.59E-01	7.04E-02	1.24E-01	7.02E+00	1.72E+02	9.55E-01	1.14E+02	6.14E-02
BREOT-S37-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	2.28E+03	3.14E+01	7.84E-04	5.21E+02	4.08E-01	7.04E-02	1.24E-01	1.80E+01	1.72E+02	9.55E-01	1.14E+02	1.58E-01
BREOT-N38-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	9.67E+02	1.33E+01	7.84E-04	2.21E+02	1.73E-01	7.04E-02	1.24E-01	7.65E+00	1.72E+02	9.55E-01	1.14E+02	6.69E-02
BREOT-S38-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	8.40E+03	1.16E+02	7.84E-04	1.92E+03	1.50E+00	7.04E-02	1.24E-01	6.64E+01	1.72E+02	9.55E-01	1.14E+02	5.81E-01
BREOT-N39-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	4.79E+03	6.60E+01	7.84E-04	1.09E+03	8.59E-01	7.04E-02	1.24E-01	3.79E+01	1.72E+02	9.55E-01	1.14E+02	3.32E-01
BREOT-S39-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	5.83E+03	8.02E+01	7.84E-04	1.33E+03	1.04E+00	7.04E-02	1.24E-01	4.61E+01	1.72E+02	9.55E-01	1.14E+02	4.03E-01
BREOT-N40-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	5.94E+03	8.17E+01	7.84E-04	1.36E+03	1.06E+00	7.04E-02	1.24E-01	4.70E+01	1.72E+02	9.55E-01	1.14E+02	4.11E-01
BREOT-S40-14 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	6.23E+03	8.57E+01	7.84E-04	1.42E+03	1.12E+00	7.04E-02	1.24E-01	4.93E+01	1.72E+02	9.55E-01	1.14E+02	4.31E-01
BREOT-N41-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	4.53E+03	6.23E+01	7.84E-04	1.03E+03	8.11E-01	7.04E-02	1.24E-01	3.58E+01	1.72E+02	9.55E-01	1.14E+02	3.13E-01
BREOT-S41-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	5.70E+03	7.85E+01	7.84E-04	1.30E+03	1.02E+00	7.04E-02	1.24E-01	4.51E+01	1.72E+02	9.55E-01	1.14E+02	3.94E-01

TABLE C-2F: ZINC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 18.41

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
American Kestrel (Insectivorous Birds - Terrestrial)																							
BREOT-N42-35 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	9.01E+02	1.24E+01	7.84E-04	2.06E+02	1.61E-01	7.04E-02	1.24E-01	7.13E+00	1.72E+02	9.55E-01	1.14E+02	6.23E-02
BREOT-S42-25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	1.42E+03	1.96E+01	7.84E-04	3.25E+02	2.55E-01	7.04E-02	1.24E-01	1.13E+01	1.72E+02	9.55E-01	1.14E+02	9.85E-02
BREOT-N43-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	1.13E+04	1.56E+02	7.84E-04	2.59E+03	2.03E+00	7.04E-02	1.24E-01	8.97E+01	1.72E+02	9.55E-01	1.14E+02	7.85E-01
BREOT-S43-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	2.09E+03	2.87E+01	7.84E-04	4.77E+02	3.74E-01	7.04E-02	1.24E-01	1.65E+01	1.72E+02	9.55E-01	1.14E+02	1.44E-01
BREOT-N44-30 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	2.11E+03	2.91E+01	7.84E-04	4.82E+02	3.78E-01	7.04E-02	1.24E-01	1.67E+01	1.72E+02	9.55E-01	1.14E+02	1.46E-01
BREOT-S44-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	2.93E+03	4.04E+01	7.84E-04	6.70E+02	5.25E-01	7.04E-02	1.24E-01	2.32E+01	1.72E+02	9.55E-01	1.14E+02	2.03E-01
BREOT-N45-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	1.04E+03	1.43E+01	7.84E-04	2.38E+02	1.86E-01	7.04E-02	1.24E-01	8.23E+00	1.72E+02	9.55E-01	1.14E+02	7.20E-02
BREOT-N43-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	1.13E+04	1.56E+02	7.84E-04	2.59E+03	2.03E+00	7.04E-02	1.24E-01	8.97E+01	1.72E+02	9.55E-01	1.14E+02	7.85E-01
BREOT-S45-6 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	1.66E+03	2.28E+01	7.84E-04	3.79E+02	2.97E-01	7.04E-02	1.24E-01	1.31E+01	1.72E+02	9.55E-01	1.14E+02	1.15E-01
BREOT-N46-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	5.59E+02	7.69E+00	7.84E-04	1.28E+02	1.00E-01	7.04E-02	1.24E-01	4.42E+00	1.72E+02	9.55E-01	1.14E+02	3.86E-02
BREOT-S46-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	1.61E+03	2.22E+01	7.84E-04	3.68E+02	2.89E-01	7.04E-02	1.24E-01	1.27E+01	1.72E+02	9.55E-01	1.14E+02	1.11E-01
BREOT-S46-40 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	2.42E+03	3.32E+01	7.84E-04	5.52E+02	4.33E-01	7.04E-02	1.24E-01	1.91E+01	1.72E+02	9.55E-01	1.14E+02	1.67E-01
BREOT-N47-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	1.10E+03	1.52E+01	7.84E-04	2.52E+02	1.98E-01	7.04E-02	1.24E-01	8.72E+00	1.72E+02	9.55E-01	1.14E+02	7.63E-02
BREOT-S47-999 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	1.75E+03	2.41E+01	7.84E-04	4.00E+02	3.14E-01	7.04E-02	1.24E-01	1.39E+01	1.72E+02	9.55E-01	1.14E+02	1.21E-01
BREOT-S48-12.5 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S49-2.5 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S50-12.5 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S50-25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N52-60 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	1.84E+03	2.53E+01	7.84E-04	4.20E+02	3.29E-01	7.04E-02	1.24E-01	1.45E+01	1.72E+02	9.55E-01	1.14E+02	1.27E-01
BREOT-S52-12.5 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S53-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	4.16E+02	5.72E+00	7.84E-04	9.49E+01	7.44E-02	7.04E-02	1.24E-01	3.29E+00	1.72E+02	9.55E-01	1.14E+02	2.87E-02
BREOT-S54-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	4.63E+02	6.37E+00	7.84E-04	1.06E+02	8.29E-02	7.04E-02	1.24E-01	3.66E+00	1.72E+02	9.55E-01	1.14E+02	3.20E-02
BREOT-N55-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	1.05E+04	1.44E+02	7.84E-04	2.39E+03	1.88E+00	7.04E-02	1.24E-01	8.29E+01	1.72E+02	9.55E-01	1.14E+02	7.25E-01
BREOT-S55-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	9.20E+02	1.27E+01	7.84E-04	2.10E+02	1.65E-01	7.04E-02	1.24E-01	7.28E+00	1.72E+02	9.55E-01	1.14E+02	6.36E-02
BREOT-N56-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	3.02E+03	4.16E+01	7.84E-04	6.90E+02	5.41E-01	7.04E-02	1.24E-01	2.39E+01	1.72E+02	9.55E-01	1.14E+02	2.09E-01
BREOT-S56-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	1.53E+03	2.11E+01	7.84E-04	3.49E+02	2.74E-01	7.04E-02	1.24E-01	1.21E+01	1.72E+02	9.55E-01	1.14E+02	1.06E-01
BREOT-N57-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	1.28E+03	1.76E+01	7.84E-04	2.91E+02	2.29E-01	7.04E-02	1.24E-01	1.01E+01	1.72E+02	9.55E-01	1.14E+02	8.83E-02
BREOT-S57-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	1.27E+03	1.74E+01	7.84E-04	2.89E+02	2.27E-01	7.04E-02	1.24E-01	1.00E+01	1.72E+02	9.55E-01	1.14E+02	8.76E-02
BREOT-N58-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	1.44E+03	1.98E+01	7.84E-04	3.29E+02	2.58E-01	7.04E-02	1.24E-01	1.14E+01	1.72E+02	9.55E-01	1.14E+02	9.96E-02
BREOT-S58-12 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	3.32E+03	4.57E+01	7.84E-04	7.58E+02	5.94E-01	7.04E-02	1.24E-01	2.62E+01	1.72E+02	9.55E-01	1.14E+02	2.30E-01
BREOT-N59-18 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	9.83E+02	1.35E+01	7.84E-04	2.24E+02	1.76E-01	7.04E-02	1.24E-01	7.77E+00	1.72E+02	9.55E-01	1.14E+02	6.80E-02
BREOT-N60-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	1.38E+03	1.90E+01	7.84E-04	3.16E+02	2.47E-01	7.04E-02	1.24E-01	1.09E+01	1.72E+02	9.55E-01	1.14E+02	9.56E-02
BREOT-S60-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	2.59E+03	3.56E+01	7.84E-04	5.91E+02	4.64E-01	7.04E-02	1.24E-01	2.05E+01	1.72E+02	9.55E-01	1.14E+02	1.79E-01
BREOT-S61-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	1.02E+04	1.41E+02	7.84E-04	2.34E+03	1.84E+00	7.04E-02	1.24E-01	8.10E+01	1.72E+02	9.55E-01	1.14E+02	7.09E-01
BREOT-N62-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	5.30E+02	7.30E+00	7.84E-04	1.21E+02	9.50E-02	7.04E-02	1.24E-01	4.19E+00	1.72E+02	9.55E-01	1.14E+02	3.67E-02
BREOT-S62-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	9.89E+03	1.36E+02	7.84E-04	2.26E+03	1.77E+00	7.04E-02	1.24E-01	7.83E+01	1.72E+02	9.55E-01	1.14E+02	6.84E-01
BREOT-S63-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	1.29E+03	1.77E+01	7.84E-04	2.94E+02	2.31E-01	7.04E-02	1.24E-01	1.02E+01	1.72E+02	9.55E-01	1.14E+02	8.91E-02
BREOT-N64-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	1.25E+03	1.73E+01	7.84E-04	2.86E+02	2.25E-01	7.04E-02	1.24E-01	9.92E+00	1.72E+02	9.55E-01	1.14E+02	8.67E-02
BREOT-N64-20 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	9.39E+02	1.29E+01	7.84E-04	2.14E+02	1.68E-01	7.04E-02	1.24E-01	7.43E+00	1.72E+02	9.55E-01	1.14E+02	6.50E-02
BREOT-S64-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	8.48E+02	1.17E+01	7.84E-04	1.94E+02	1.52E-01	7.04E-02	1.24E-01	6.70E+00	1.72E+02	9.55E-01	1.14E+02	5.86E-02
BREOT-N65-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	1.37E+03	1.88E+01	7.84E-04	3.12E+02	2.45E-01	7.04E-02	1.24E-01	1.08E+01	1.72E+02	9.55E-01	1.14E+02	9.46E-02
BREOT-S65-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	9.99E+02	1.38E+01	7.84E-04	2.28E+02	1.79E-01	7.04E-02	1.24E-01	7.90E+00	1.72E+02	9.55E-01	1.14E+02	6.91E-02
BREOT-N66-5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	8.32E+02	1.14E+01	7.84E-04	1.90E+02	1.49E-01	7.04E-02	1.24E-01	6.58E+00	1.72E+02	9.55E-01	1.14E+02	5.75E-02
BREOT-S66-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	1.01E+03	1.39E+01	7.84E-04	2.30E+02	1.80E-01	7.04E-02	1.24E-01	7.97E+00	1.72E+02	9.55E-01	1.14E+02	6.97E-02
BREOT-N67-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	1.36E+04	1.87E+02	7.84E-04	3.10E+03	2.43E+00	7.04E-02	1.24E-01	1.07E+02	1.72E+02	9.55E-01	1.14E+02	9.39E-01
BREOT-S67-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	5.89E+02	8.10E+00	7.84E-04	1.34E+02	1.05E-01	7.04E-02	1.24E-01	4.66E+00	1.72E+02	9.55E-01	1.14E+02	4.07E-02
At Edge of Tailings																						**Maximum HQ (Inside Tailings)**	**6.00E+00**
BREOT-S0-0 (06)	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	2.00E+03	2.75E+01	7.84E-04	4.56E+02	3.58E-01	7.04E-02	1.24E-01	1.58E+01	1.72E+02	9.55E-01	1.14E+02	1.38E-01
BREOT-S1-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	1.15E+03	1.59E+01	7.84E-04	2.63E+02	2.07E-01	7.04E-02	1.24E-01	9.13E+00	1.72E+02	9.55E-01	1.14E+02	7.98E-02
BREOT-S2-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	1.27E+03	1.75E+01	7.84E-04	2.90E+02	2.28E-01	7.04E-02	1.24E-01	1.01E+01	1.72E+02	9.55E-01	1.14E+02	8.80E-02
BREOT-S3-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	7.24E+03	9.96E+01	7.84E-04	1.65E+03	1.30E+00	7.04E-02	1.24E-01	5.73E+01	1.72E+02	9.55E-01	1.14E+02	5.01E-01
BREOT-S4-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	8.70E+03	1.20E+02	7.84E-04	1.99E+03	1.56E+00	7.04E-02	1.24E-01	6.88E+01	1.72E+02	9.55E-01	1.14E+02	6.02E-01
BREOT-S6-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	4.56E+03	6.28E+01	7.84E-04	1.04E+03	8.17E-01	7.04E-02	1.24E-01	3.61E+01	1.72E+02	9.55E-01	1.14E+02	3.16E-01
BREOT-S7-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	2.10E+03	2.89E+01	7.84E-04	4.79E+02	3.76E-01	7.04E-02	1.24E-01	1.66E+01	1.72E+02	9.55E-01	1.14E+02	1.45E-01
BREOT-S8-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	1.41E+03	1.94E+01	7.84E-04	3.21E+02	2.52E-01	7.04E-02	1.24E-01	1.11E+01	1.72E+02	9.55E-01	1.14E+02	9.73E-02

TABLE C-2F: ZINC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 18.41

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
American Kestrel (Insectivorous Birds - Terrestrial)																							
BREOT-S9-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	9.11E+02	1.25E+01	7.84E-04	2.08E+02	1.63E-01	7.04E-02	1.24E-01	7.20E+00	1.72E+02	9.55E-01	1.14E+02	6.30E-02
BREOT-N10-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	8.03E+04	1.10E+03	7.84E-04	1.83E+04	1.44E+01	7.04E-02	1.24E-01	6.35E+02	1.72E+02	9.55E-01	1.14E+02	5.55E+00
BREOT-N11-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	2.78E+03	3.83E+01	7.84E-04	6.35E+02	4.98E-01	7.04E-02	1.24E-01	2.20E+01	1.72E+02	9.55E-01	1.14E+02	1.92E-01
BREOT-S11-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	5.69E+03	7.84E+01	7.84E-04	1.30E+03	1.02E+00	7.04E-02	1.24E-01	4.50E+01	1.72E+02	9.55E-01	1.14E+02	3.94E-01
BREOT-N12-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	1.41E+03	1.93E+01	7.84E-04	3.21E+02	2.52E-01	7.04E-02	1.24E-01	1.11E+01	1.72E+02	9.55E-01	1.14E+02	9.72E-02
BREOT-S12-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	7.47E+03	1.03E+02	7.84E-04	1.71E+03	1.34E+00	7.04E-02	1.24E-01	5.91E+01	1.72E+02	9.55E-01	1.14E+02	5.17E-01
BREOT-N13-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	4.51E+04	6.20E+02	7.84E-04	1.03E+04	8.07E+00	7.04E-02	1.24E-01	3.56E+02	1.72E+02	9.55E-01	1.14E+02	3.12E+00
BREOT-S13-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	1.25E+04	1.72E+02	7.84E-04	2.86E+03	2.24E+00	7.04E-02	1.24E-01	9.90E+01	1.72E+02	9.55E-01	1.14E+02	8.66E-01
BREOT-N14-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	1.52E+03	2.10E+01	7.84E-04	3.48E+02	2.73E-01	7.04E-02	1.24E-01	1.20E+01	1.72E+02	9.55E-01	1.14E+02	1.05E-01
BREOT-S14-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	7.00E+04	9.63E+02	7.84E-04	1.60E+04	1.25E+01	7.04E-02	1.24E-01	5.54E+02	1.72E+02	9.55E-01	1.14E+02	4.84E+00
BREOT-N15-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	4.31E+03	5.93E+01	7.84E-04	9.84E+02	7.72E-01	7.04E-02	1.24E-01	3.41E+01	1.72E+02	9.55E-01	1.14E+02	2.98E-01
BREOT-N16-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	1.65E+03	2.27E+01	7.84E-04	3.77E+02	2.95E-01	7.04E-02	1.24E-01	1.30E+01	1.72E+02	9.55E-01	1.14E+02	1.14E-01
BREOT-S16-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	1.07E+03	1.47E+01	7.84E-04	2.44E+02	1.91E-01	7.04E-02	1.24E-01	8.44E+00	1.72E+02	9.55E-01	1.14E+02	7.38E-02
BREOT-N17-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	1.90E+03	2.62E+01	7.84E-04	4.34E+02	3.41E-01	7.04E-02	1.24E-01	1.50E+01	1.72E+02	9.55E-01	1.14E+02	1.32E-01
BREOT-S17-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	1.84E+03	2.54E+01	7.84E-04	4.21E+02	3.30E-01	7.04E-02	1.24E-01	1.46E+01	1.72E+02	9.55E-01	1.14E+02	1.27E-01
BREOT-N18-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	2.29E+03	3.15E+01	7.84E-04	5.22E+02	4.10E-01	7.04E-02	1.24E-01	1.81E+01	1.72E+02	9.55E-01	1.14E+02	1.58E-01
BREOT-S18-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	3.17E+03	4.36E+01	7.84E-04	7.23E+02	5.67E-01	7.04E-02	1.24E-01	2.51E+01	1.72E+02	9.55E-01	1.14E+02	2.19E-01
BREOT-N19-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	6.17E+03	8.49E+01	7.84E-04	1.41E+03	1.11E+00	7.04E-02	1.24E-01	4.88E+01	1.72E+02	9.55E-01	1.14E+02	4.27E-01
BREOT-S19-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	1.19E+03	1.64E+01	7.84E-04	2.73E+02	2.14E-01	7.04E-02	1.24E-01	9.45E+00	1.72E+02	9.55E-01	1.14E+02	8.27E-02
BREOT-N20-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	9.82E+03	1.35E+02	7.84E-04	2.24E+03	1.76E+00	7.04E-02	1.24E-01	7.77E+01	1.72E+02	9.55E-01	1.14E+02	6.79E-01
BREOT-S20-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	8.37E+02	1.15E+01	7.84E-04	1.91E+02	1.50E-01	7.04E-02	1.24E-01	6.62E+00	1.72E+02	9.55E-01	1.14E+02	5.79E-02
BREOT-N21-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	5.44E+03	7.49E+01	7.84E-04	1.24E+03	9.74E-01	7.04E-02	1.24E-01	4.30E+01	1.72E+02	9.55E-01	1.14E+02	3.76E-01
BREOT-S21-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	1.69E+03	2.33E+01	7.84E-04	3.86E+02	3.03E-01	7.04E-02	1.24E-01	1.34E+01	1.72E+02	9.55E-01	1.14E+02	1.17E-01
BREOT-N22-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	4.17E+03	5.74E+01	7.84E-04	9.52E+02	7.47E-01	7.04E-02	1.24E-01	3.30E+01	1.72E+02	9.55E-01	1.14E+02	2.88E-01
BREOT-S22-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	2.42E+03	3.33E+01	7.84E-04	5.52E+02	4.33E-01	7.04E-02	1.24E-01	1.91E+01	1.72E+02	9.55E-01	1.14E+02	1.67E-01
BREOT-N23-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	5.22E+03	7.19E+01	7.84E-04	1.19E+03	9.35E-01	7.04E-02	1.24E-01	4.13E+01	1.72E+02	9.55E-01	1.14E+02	3.61E-01
BREOT-S23-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	3.46E+03	4.76E+01	7.84E-04	7.89E+02	6.19E-01	7.04E-02	1.24E-01	2.73E+01	1.72E+02	9.55E-01	1.14E+02	2.39E-01
BREOT-N24-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	8.43E+03	1.16E+02	7.84E-04	1.93E+03	1.51E+00	7.04E-02	1.24E-01	6.67E+01	1.72E+02	9.55E-01	1.14E+02	5.83E-01
BREOT-S24-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	4.60E+04	6.33E+02	7.84E-04	1.05E+04	8.23E+00	7.04E-02	1.24E-01	3.64E+02	1.72E+02	9.55E-01	1.14E+02	3.18E+00
BREOT-N25-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	6.19E+03	8.52E+01	7.84E-04	1.41E+03	1.11E+00	7.04E-02	1.24E-01	4.89E+01	1.72E+02	9.55E-01	1.14E+02	4.28E-01
BREOT-S25-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	1.13E+04	1.56E+02	7.84E-04	2.58E+03	2.03E+00	7.04E-02	1.24E-01	8.95E+01	1.72E+02	9.55E-01	1.14E+02	7.83E-01
BREOT-N26-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	9.30E+03	1.28E+02	7.84E-04	2.12E+03	1.67E+00	7.04E-02	1.24E-01	7.36E+01	1.72E+02	9.55E-01	1.14E+02	6.43E-01
BREOT-S26-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	3.81E+03	5.24E+01	7.84E-04	8.70E+02	6.83E-01	7.04E-02	1.24E-01	3.01E+01	1.72E+02	9.55E-01	1.14E+02	2.64E-01
BREOT-N27-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	4.94E+04	6.80E+02	7.84E-04	1.13E+04	8.85E+00	7.04E-02	1.24E-01	3.91E+02	1.72E+02	9.55E-01	1.14E+02	3.42E+00
BREOT-S27-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	9.40E+02	1.29E+01	7.84E-04	2.15E+02	1.68E-01	7.04E-02	1.24E-01	7.44E+00	1.72E+02	9.55E-01	1.14E+02	6.50E-02
BREOT-N28-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	3.20E+03	4.40E+01	7.84E-04	7.30E+02	5.72E-01	7.04E-02	1.24E-01	2.53E+01	1.72E+02	9.55E-01	1.14E+02	2.21E-01
BREOT-S28-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	1.05E+03	1.44E+01	7.84E-04	2.39E+02	1.88E-01	7.04E-02	1.24E-01	8.29E+00	1.72E+02	9.55E-01	1.14E+02	7.25E-02
BREOT-S29-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	1.01E+03	1.39E+01	7.84E-04	2.30E+02	1.81E-01	7.04E-02	1.24E-01	7.98E+00	1.72E+02	9.55E-01	1.14E+02	6.98E-02
BREOT-N30-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	2.28E+04	3.14E+02	7.84E-04	5.21E+03	4.09E+00	7.04E-02	1.24E-01	1.80E+02	1.72E+02	9.55E-01	1.14E+02	1.58E+00
BREOT-S30-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	3.78E+02	5.20E+00	7.84E-04	8.63E+01	6.77E-02	7.04E-02	1.24E-01	2.99E+00	1.72E+02	9.55E-01	1.14E+02	2.61E-02
BREOT-N31-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	2.86E+04	3.93E+02	7.84E-04	6.52E+03	5.12E+00	7.04E-02	1.24E-01	2.26E+02	1.72E+02	9.55E-01	1.14E+02	1.98E+00
BREOT-S31-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	1.77E+03	2.44E+01	7.84E-04	4.05E+02	3.18E-01	7.04E-02	1.24E-01	1.40E+01	1.72E+02	9.55E-01	1.14E+02	1.23E-01
BREOT-N32-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	1.14E+04	1.57E+02	7.84E-04	2.60E+03	2.04E+00	7.04E-02	1.24E-01	9.00E+01	1.72E+02	9.55E-01	1.14E+02	7.87E-01
BREOT-S32-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	1.88E+03	2.58E+01	7.84E-04	4.28E+02	3.36E-01	7.04E-02	1.24E-01	1.48E+01	1.72E+02	9.55E-01	1.14E+02	1.30E-01
BREOT-N33-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	6.00E+02	8.26E+00	7.84E-04	1.37E+02	1.07E-01	7.04E-02	1.24E-01	4.75E+00	1.72E+02	9.55E-01	1.14E+02	4.15E-02
BREOT-S33-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	3.05E+03	4.20E+01	7.84E-04	6.97E+02	5.47E-01	7.04E-02	1.24E-01	2.41E+01	1.72E+02	9.55E-01	1.14E+02	2.11E-01
BREOT-N34-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	1.52E+03	2.09E+01	7.84E-04	3.47E+02	2.72E-01	7.04E-02	1.24E-01	1.20E+01	1.72E+02	9.55E-01	1.14E+02	1.05E-01
BREOT-S34-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	1.34E+04	1.84E+02	7.84E-04	3.06E+03	2.40E+00	7.04E-02	1.24E-01	1.06E+02	1.72E+02	9.55E-01	1.14E+02	9.27E-01
BREOT-N35-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	5.41E+02	7.44E+00	7.84E-04	1.23E+02	9.68E-02	7.04E-02	1.24E-01	4.28E+00	1.72E+02	9.55E-01	1.14E+02	3.74E-02
BREOT-S35-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	1.94E+03	2.68E+01	7.84E-04	4.44E+02	3.48E-01	7.04E-02	1.24E-01	1.54E+01	1.72E+02	9.55E-01	1.14E+02	1.34E-01
BREOT-N36-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	1.30E+04	1.79E+02	7.84E-04	2.97E+03	2.33E+00	7.04E-02	1.24E-01	1.03E+02	1.72E+02	9.55E-01	1.14E+02	9.01E-01
BREOT-S36-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	1.15E+04	1.58E+02	7.84E-04	2.62E+03	2.05E+00	7.04E-02	1.24E-01	9.07E+01	1.72E+02	9.55E-01	1.14E+02	7.94E-01
BREOT-N37-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	1.82E+03	2.50E+01	7.84E-04	4.14E+02	3.25E-01	7.04E-02	1.24E-01	1.44E+01	1.72E+02	9.55E-01	1.14E+02	1.26E-01
BREOT-S37-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	1.30E+04	1.78E+02	7.84E-04	2.96E+03	2.32E+00	7.04E-02	1.24E-01	1.02E+02	1.72E+02	9.55E-01	1.14E+02	8.96E-01
BREOT-N38-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	5.49E+02	7.56E+00	7.84E-04	1.25E+02	9.84E-02	7.04E-02	1.24E-01	4.34E+00	1.72E+02	9.55E-01	1.14E+02	3.80E-02

TABLE C-2F: ZINC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

Site Area (hectares) 18.41

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
American Kestrel (Insectivorous Birds - Terrestrial)																							
BREOT-S38-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	4.95E+03	6.81E+01	7.84E-04	1.13E+03	8.86E-01	7.04E-02	1.24E-01	3.91E+01	1.72E+02	9.55E-01	1.14E+02	3.42E-01
BREOT-N39-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	9.32E+02	1.28E+01	7.84E-04	2.13E+02	1.67E-01	7.04E-02	1.24E-01	7.37E+00	1.72E+02	9.55E-01	1.14E+02	6.45E-02
BREOT-N40-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	7.41E+02	1.02E+01	7.84E-04	1.69E+02	1.33E-01	7.04E-02	1.24E-01	5.86E+00	1.72E+02	9.55E-01	1.14E+02	5.12E-02
BREOT-S40-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	9.31E+03	1.28E+02	7.84E-04	2.13E+03	1.67E+00	7.04E-02	1.24E-01	7.36E+01	1.72E+02	9.55E-01	1.14E+02	6.44E-01
BREOT-N41-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	4.24E+02	5.83E+00	7.84E-04	9.68E+01	7.59E-02	7.04E-02	1.24E-01	3.35E+00	1.72E+02	9.55E-01	1.14E+02	2.93E-02
BREOT-S41-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	1.01E+04	1.38E+02	7.84E-04	2.30E+03	1.80E+00	7.04E-02	1.24E-01	7.96E+01	1.72E+02	9.55E-01	1.14E+02	6.96E-01
BREOT-N42-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S42-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	1.91E+04	2.63E+02	7.84E-04	4.36E+03	3.42E+00	7.04E-02	1.24E-01	1.51E+02	1.72E+02	9.55E-01	1.14E+02	1.32E+00
BREOT-N43-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	8.84E+02	1.22E+01	7.84E-04	2.02E+02	1.58E-01	7.04E-02	1.24E-01	6.99E+00	1.72E+02	9.55E-01	1.14E+02	6.11E-02
BREOT-S43-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	1.79E+03	2.46E+01	7.84E-04	4.09E+02	3.20E-01	7.04E-02	1.24E-01	1.41E+01	1.72E+02	9.55E-01	1.14E+02	1.24E-01
BREOT-N44-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	1.84E+03	2.53E+01	7.84E-04	4.19E+02	3.29E-01	7.04E-02	1.24E-01	1.45E+01	1.72E+02	9.55E-01	1.14E+02	1.27E-01
BREOT-S44-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	1.54E+03	2.11E+01	7.84E-04	3.51E+02	2.75E-01	7.04E-02	1.24E-01	1.21E+01	1.72E+02	9.55E-01	1.14E+02	1.06E-01
BREOT-N45-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	1.48E+03	2.04E+01	7.84E-04	3.39E+02	2.66E-01	7.04E-02	1.24E-01	1.17E+01	1.72E+02	9.55E-01	1.14E+02	1.03E-01
BREOT-S45-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	1.75E+03	2.41E+01	7.84E-04	3.99E+02	3.13E-01	7.04E-02	1.24E-01	1.38E+01	1.72E+02	9.55E-01	1.14E+02	1.21E-01
BREOT-N46-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	1.95E+03	2.68E+01	7.84E-04	4.44E+02	3.48E-01	7.04E-02	1.24E-01	1.54E+01	1.72E+02	9.55E-01	1.14E+02	1.35E-01
BREOT-S46-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	7.39E+02	1.02E+01	7.84E-04	1.69E+02	1.32E-01	7.04E-02	1.24E-01	5.85E+00	1.72E+02	9.55E-01	1.14E+02	5.11E-02
BREOT-N47-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	3.17E+03	4.36E+01	7.84E-04	7.23E+02	5.67E-01	7.04E-02	1.24E-01	2.50E+01	1.72E+02	9.55E-01	1.14E+02	2.19E-01
BREOT-S47-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	5.01E+02	6.90E+00	7.84E-04	1.14E+02	8.98E-02	7.04E-02	1.24E-01	3.96E+00	1.72E+02	9.55E-01	1.14E+02	3.47E-02
BREOT-N48-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	1.24E+03	1.70E+01	7.84E-04	2.83E+02	2.22E-01	7.04E-02	1.24E-01	9.79E+00	1.72E+02	9.55E-01	1.14E+02	8.56E-02
BREOT-S48-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N49-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	4.65E+03	6.39E+01	7.84E-04	1.06E+03	8.32E-01	7.04E-02	1.24E-01	3.68E+01	1.72E+02	9.55E-01	1.14E+02	3.21E-01
BREOT-S49-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S50-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N51-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	1.47E+03	2.03E+01	7.84E-04	3.36E+02	2.64E-01	7.04E-02	1.24E-01	1.16E+01	1.72E+02	9.55E-01	1.14E+02	1.02E-01
BREOT-S51-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	8.35E+02	1.15E+01	7.84E-04	1.91E+02	1.50E-01	7.04E-02	1.24E-01	6.60E+00	1.72E+02	9.55E-01	1.14E+02	5.78E-02
BREOT-N52-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S52-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N53-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	1.15E+03	1.58E+01	7.84E-04	2.61E+02	2.05E-01	7.04E-02	1.24E-01	9.06E+00	1.72E+02	9.55E-01	1.14E+02	7.92E-02
BREOT-S53-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N54-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	1.31E+03	1.80E+01	7.84E-04	2.99E+02	2.34E-01	7.04E-02	1.24E-01	1.03E+01	1.72E+02	9.55E-01	1.14E+02	9.05E-02
BREOT-S54-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N55-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	1.00E+03	1.38E+01	7.84E-04	2.29E+02	1.80E-01	7.04E-02	1.24E-01	7.95E+00	1.72E+02	9.55E-01	1.14E+02	6.95E-02
BREOT-S55-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N56-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	1.09E+03	1.50E+01	7.84E-04	2.50E+02	1.96E-01	7.04E-02	1.24E-01	8.65E+00	1.72E+02	9.55E-01	1.14E+02	7.56E-02
BREOT-N57-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	7.81E+02	1.08E+01	7.84E-04	1.78E+02	1.40E-01	7.04E-02	1.24E-01	6.18E+00	1.72E+02	9.55E-01	1.14E+02	5.40E-02
BREOT-S57-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	1.62E+03	2.22E+01	7.84E-04	3.69E+02	2.89E-01	7.04E-02	1.24E-01	1.28E+01	1.72E+02	9.55E-01	1.14E+02	1.12E-01
BREOT-N58-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	9.52E+02	1.31E+01	7.84E-04	2.17E+02	1.70E-01	7.04E-02	1.24E-01	7.53E+00	1.72E+02	9.55E-01	1.14E+02	6.58E-02
BREOT-S58-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	1.52E+03	2.09E+01	7.84E-04	3.46E+02	2.72E-01	7.04E-02	1.24E-01	1.20E+01	1.72E+02	9.55E-01	1.14E+02	1.05E-01
BREOT-N59-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	1.07E+03	1.47E+01	7.84E-04	2.44E+02	1.91E-01	7.04E-02	1.24E-01	8.46E+00	1.72E+02	9.55E-01	1.14E+02	7.40E-02
BREOT-N60-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	9.93E+02	1.37E+01	7.84E-04	2.27E+02	1.78E-01	7.04E-02	1.24E-01	7.85E+00	1.72E+02	9.55E-01	1.14E+02	6.87E-02
BREOT-S60-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	2.68E+03	3.69E+01	7.84E-04	6.12E+02	4.80E-01	7.04E-02	1.24E-01	2.12E+01	1.72E+02	9.55E-01	1.14E+02	1.85E-01
BREOT-S61-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N62-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	1.10E+03	1.52E+01	7.84E-04	2.52E+02	1.98E-01	7.04E-02	1.24E-01	8.72E+00	1.72E+02	9.55E-01	1.14E+02	7.63E-02
BREOT-S62-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	4.17E+02	5.74E+00	7.84E-04	9.52E+01	7.47E-02	7.04E-02	1.24E-01	3.30E+00	1.72E+02	9.55E-01	1.14E+02	2.88E-02
BREOT-N63-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	2.03E+03	2.80E+01	7.84E-04	4.65E+02	3.64E-01	7.04E-02	1.24E-01	1.61E+01	1.72E+02	9.55E-01	1.14E+02	1.41E-01
BREOT-S63-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	1.45E+03	1.99E+01	7.84E-04	3.31E+02	2.60E-01	7.04E-02	1.24E-01	1.15E+01	1.72E+02	9.55E-01	1.14E+02	1.00E-01
BREOT-N64-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	1.28E+03	1.76E+01	7.84E-04	2.93E+02	2.30E-01	7.04E-02	1.24E-01	1.01E+01	1.72E+02	9.55E-01	1.14E+02	8.86E-02
BREOT-S64-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N66-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	1.13E+03	1.55E+01	7.84E-04	2.57E+02	2.02E-01	7.04E-02	1.24E-01	8.90E+00	1.72E+02	9.55E-01	1.14E+02	7.78E-02
BREOT-S66-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	1.67E+03	2.30E+01	7.84E-04	3.81E+02	2.99E-01	7.04E-02	1.24E-01	1.32E+01	1.72E+02	9.55E-01	1.14E+02	1.15E-01
BREOT-N67-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	1.48E+04	2.04E+02	7.84E-04	3.38E+03	2.65E+00	7.04E-02	1.24E-01	1.17E+02	1.72E+02	9.55E-01	1.14E+02	1.02E+00
BREOT-S67-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	8.15E+02	1.12E+01	7.84E-04	1.86E+02	1.46E-01	7.04E-02	1.24E-01	6.44E+00	1.72E+02	9.55E-01	1.14E+02	5.63E-02
Outside Tailings																						**Maximum HQ (At Edge of Tailings)**	**5.55E+00**
BREOT-S0+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	1.53E+03	2.10E+01	7.84E-04	3.49E+02	2.74E-01	7.04E-02	1.24E-01	1.21E+01	1.72E+02	9.55E-01	1.14E+02	1.06E-01
BREOT-S1+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	1.96E+03	2.70E+01	7.84E-04	4.48E+02	3.52E-01	7.04E-02	1.24E-01	1.55E+01	1.72E+02	9.55E-01	1.14E+02	1.36E-01

TABLE C-2F: ZINC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 18.41

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
American Kestrel (Insectivorous Birds - Terrestrial)																							
BREOT-S2+95 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	6.46E+02	8.88E+00	7.84E-04	1.47E+02	1.16E-01	7.04E-02	1.24E-01	5.11E+00	1.72E+02	9.55E-01	1.14E+02	4.47E-02
BREOT-S3+6 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	8.46E+02	1.16E+01	7.84E-04	1.93E+02	1.52E-01	7.04E-02	1.24E-01	6.69E+00	1.72E+02	9.55E-01	1.14E+02	5.85E-02
BREOT-S4+10 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	1.00E+03	1.38E+01	7.84E-04	2.28E+02	1.79E-01	7.04E-02	1.24E-01	7.91E+00	1.72E+02	9.55E-01	1.14E+02	6.92E-02
BREOT-S6+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	1.10E+03	1.51E+01	7.84E-04	2.51E+02	1.97E-01	7.04E-02	1.24E-01	8.68E+00	1.72E+02	9.55E-01	1.14E+02	7.60E-02
BREOT-S8+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	1.25E+03	1.72E+01	7.84E-04	2.86E+02	2.24E-01	7.04E-02	1.24E-01	9.90E+00	1.72E+02	9.55E-01	1.14E+02	8.66E-02
BREOT-N10+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	1.00E+03	1.38E+01	7.84E-04	2.29E+02	1.80E-01	7.04E-02	1.24E-01	7.94E+00	1.72E+02	9.55E-01	1.14E+02	6.95E-02
BREOT-N11+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	8.01E+02	1.10E+01	7.84E-04	1.83E+02	1.43E-01	7.04E-02	1.24E-01	6.34E+00	1.72E+02	9.55E-01	1.14E+02	5.54E-02
BREOT-N12+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	1.16E+03	1.60E+01	7.84E-04	2.65E+02	2.08E-01	7.04E-02	1.24E-01	9.17E+00	1.72E+02	9.55E-01	1.14E+02	8.02E-02
BREOT-S12+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	2.83E+04	3.89E+02	7.84E-04	6.45E+03	5.06E+00	7.04E-02	1.24E-01	2.24E+02	1.72E+02	9.55E-01	1.14E+02	1.95E+00
BREOT-S12+60 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	2.75E+03	3.79E+01	7.84E-04	6.28E+02	4.93E-01	7.04E-02	1.24E-01	2.18E+01	1.72E+02	9.55E-01	1.14E+02	1.90E-01
BREOT-N13+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	1.15E+03	1.59E+01	7.84E-04	2.63E+02	2.07E-01	7.04E-02	1.24E-01	9.13E+00	1.72E+02	9.55E-01	1.14E+02	7.98E-02
BREOT-S13+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	1.26E+04	1.74E+02	7.84E-04	2.89E+03	2.26E+00	7.04E-02	1.24E-01	1.00E+02	1.72E+02	9.55E-01	1.14E+02	8.74E-01
BREOT-S13+65 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	4.16E+03	5.72E+01	7.84E-04	9.50E+02	7.45E-01	7.04E-02	1.24E-01	3.29E+01	1.72E+02	9.55E-01	1.14E+02	2.88E-01
BREOT-N14+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	1.91E+03	2.63E+01	7.84E-04	4.36E+02	3.42E-01	7.04E-02	1.24E-01	1.51E+01	1.72E+02	9.55E-01	1.14E+02	1.32E-01
BREOT-S14+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	1.95E+04	2.68E+02	7.84E-04	4.44E+03	3.49E+00	7.04E-02	1.24E-01	1.54E+02	1.72E+02	9.55E-01	1.14E+02	1.35E+00
BREOT-S14+59 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	1.48E+03	2.04E+01	7.84E-04	3.38E+02	2.65E-01	7.04E-02	1.24E-01	1.17E+01	1.72E+02	9.55E-01	1.14E+02	1.02E-01
BREOT-N15+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	4.20E+04	5.78E+02	7.84E-04	9.59E+03	7.52E+00	7.04E-02	1.24E-01	3.32E+02	1.72E+02	9.55E-01	1.14E+02	2.91E+00
BREOT-N15+50 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	1.32E+03	1.81E+01	7.84E-04	3.01E+02	2.36E-01	7.04E-02	1.24E-01	1.04E+01	1.72E+02	9.55E-01	1.14E+02	9.12E-02
BREOT-S16+20 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	1.69E+04	2.33E+02	7.84E-04	3.87E+03	3.04E+00	7.04E-02	1.24E-01	1.34E+02	1.72E+02	9.55E-01	1.14E+02	1.17E+00
BREOT-S16+75 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	2.00E+03	2.75E+01	7.84E-04	4.56E+02	3.58E-01	7.04E-02	1.24E-01	1.58E+01	1.72E+02	9.55E-01	1.14E+02	1.38E-01
BREOT-N17+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	8.42E+03	1.16E+02	7.84E-04	1.92E+03	1.51E+00	7.04E-02	1.24E-01	6.66E+01	1.72E+02	9.55E-01	1.14E+02	5.82E-01
BREOT-S18+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	8.86E+02	1.22E+01	7.84E-04	2.02E+02	1.59E-01	7.04E-02	1.24E-01	7.01E+00	1.72E+02	9.55E-01	1.14E+02	6.13E-02
BREOT-N19+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	8.76E+02	1.21E+01	7.84E-04	2.00E+02	1.57E-01	7.04E-02	1.24E-01	6.93E+00	1.72E+02	9.55E-01	1.14E+02	6.06E-02
BREOT-S19+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	3.79E+03	5.22E+01	7.84E-04	8.65E+02	6.79E-01	7.04E-02	1.24E-01	3.00E+01	1.72E+02	9.55E-01	1.14E+02	2.62E-01
BREOT-S19+85 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	6.60E+02	9.08E+00	7.84E-04	1.51E+02	1.18E-01	7.04E-02	1.24E-01	5.22E+00	1.72E+02	9.55E-01	1.14E+02	4.57E-02
BREOT-N20+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	1.26E+03	1.73E+01	7.84E-04	2.87E+02	2.25E-01	7.04E-02	1.24E-01	9.93E+00	1.72E+02	9.55E-01	1.14E+02	8.69E-02
BREOT-S20+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	5.07E+03	6.98E+01	7.84E-04	1.16E+03	9.08E-01	7.04E-02	1.24E-01	4.01E+01	1.72E+02	9.55E-01	1.14E+02	3.51E-01
BREOT-S20+75 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	9.55E+02	1.31E+01	7.84E-04	2.18E+02	1.71E-01	7.04E-02	1.24E-01	7.55E+00	1.72E+02	9.55E-01	1.14E+02	6.60E-02
BREOT-N21+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	1.88E+03	2.58E+01	7.84E-04	4.28E+02	3.36E-01	7.04E-02	1.24E-01	1.48E+01	1.72E+02	9.55E-01	1.14E+02	1.30E-01
BREOT-S21+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	2.33E+03	3.21E+01	7.84E-04	5.32E+02	4.17E-01	7.04E-02	1.24E-01	1.84E+01	1.72E+02	9.55E-01	1.14E+02	1.61E-01
BREOT-N22+150 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	8.96E+02	1.23E+01	7.84E-04	2.05E+02	1.61E-01	7.04E-02	1.24E-01	7.09E+00	1.72E+02	9.55E-01	1.14E+02	6.20E-02
BREOT-N22+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	1.31E+04	1.80E+02	7.84E-04	2.99E+03	2.35E+00	7.04E-02	1.24E-01	1.04E+02	1.72E+02	9.55E-01	1.14E+02	9.07E-01
BREOT-S22+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	1.54E+03	2.12E+01	7.84E-04	3.52E+02	2.76E-01	7.04E-02	1.24E-01	1.22E+01	1.72E+02	9.55E-01	1.14E+02	1.07E-01
BREOT-N23+115 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	1.59E+03	2.18E+01	7.84E-04	3.63E+02	2.84E-01	7.04E-02	1.24E-01	1.26E+01	1.72E+02	9.55E-01	1.14E+02	1.10E-01
BREOT-N23+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	3.23E+04	4.44E+02	7.84E-04	7.37E+03	5.78E+00	7.04E-02	1.24E-01	2.55E+02	1.72E+02	9.55E-01	1.14E+02	2.23E+00
BREOT-S23+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	7.72E+03	1.06E+02	7.84E-04	1.76E+03	1.38E+00	7.04E-02	1.24E-01	6.11E+01	1.72E+02	9.55E-01	1.14E+02	5.34E-01
BREOT-S23+37.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	2.04E+03	2.81E+01	7.84E-04	4.66E+02	3.65E-01	7.04E-02	1.24E-01	1.61E+01	1.72E+02	9.55E-01	1.14E+02	1.41E-01
BREOT-N24+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	8.00E+03	1.10E+02	7.84E-04	1.83E+03	1.43E+00	7.04E-02	1.24E-01	6.33E+01	1.72E+02	9.55E-01	1.14E+02	5.54E-01
BREOT-N24+75 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	1.27E+03	1.75E+01	7.84E-04	2.91E+02	2.28E-01	7.04E-02	1.24E-01	1.01E+01	1.72E+02	9.55E-01	1.14E+02	8.81E-02
BREOT-S24+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	1.87E+03	2.58E+01	7.84E-04	4.27E+02	3.35E-01	7.04E-02	1.24E-01	1.48E+01	1.72E+02	9.55E-01	1.14E+02	1.29E-01
BREOT-N25+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	4.58E+02	6.31E+00	7.84E-04	1.05E+02	8.21E-02	7.04E-02	1.24E-01	3.62E+00	1.72E+02	9.55E-01	1.14E+02	3.17E-02
BREOT-S25+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	1.31E+03	1.80E+01	7.84E-04	2.98E+02	2.34E-01	7.04E-02	1.24E-01	1.03E+01	1.72E+02	9.55E-01	1.14E+02	9.04E-02
BREOT-S25+40 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	1.43E+03	1.97E+01	7.84E-04	3.26E+02	2.56E-01	7.04E-02	1.24E-01	1.13E+01	1.72E+02	9.55E-01	1.14E+02	9.89E-02
BREOT-S26+37 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	1.09E+03	1.50E+01	7.84E-04	2.48E+02	1.95E-01	7.04E-02	1.24E-01	8.60E+00	1.72E+02	9.55E-01	1.14E+02	7.53E-02
BREOT-N27+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	1.17E+03	1.62E+01	7.84E-04	2.68E+02	2.10E-01	7.04E-02	1.24E-01	9.29E+00	1.72E+02	9.55E-01	1.14E+02	8.12E-02
BREOT-S27+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	8.61E+02	1.19E+01	7.84E-04	1.97E+02	1.54E-01	7.04E-02	1.24E-01	6.81E+00	1.72E+02	9.55E-01	1.14E+02	5.96E-02
BREOT-N28+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	8.14E+02	1.12E+01	7.84E-04	1.86E+02	1.46E-01	7.04E-02	1.24E-01	6.44E+00	1.72E+02	9.55E-01	1.14E+02	5.63E-02
BREOT-S28+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	9.64E+02	1.33E+01	7.84E-04	2.20E+02	1.73E-01	7.04E-02	1.24E-01	7.62E+00	1.72E+02	9.55E-01	1.14E+02	6.67E-02
BREOT-N29+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	3.07E+03	4.22E+01	7.84E-04	7.01E+02	5.50E-01	7.04E-02	1.24E-01	2.43E+01	1.72E+02	9.55E-01	1.14E+02	2.12E-01
BREOT-S29+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	7.92E+02	1.09E+01	7.84E-04	1.81E+02	1.42E-01	7.04E-02	1.24E-01	6.27E+00	1.72E+02	9.55E-01	1.14E+02	5.48E-02
BREOT-N30+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	1.73E+03	2.39E+01	7.84E-04	3.96E+02	3.11E-01	7.04E-02	1.24E-01	1.37E+01	1.72E+02	9.55E-01	1.14E+02	1.20E-01
BREOT-S30+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	1.35E+03	1.85E+01	7.84E-04	3.08E+02	2.41E-01	7.04E-02	1.24E-01	1.07E+01	1.72E+02	9.55E-01	1.14E+02	9.32E-02
BREOT-N31+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	4.43E+04	6.10E+02	7.84E-04	1.01E+04	7.93E+00	7.04E-02	1.24E-01	3.50E+02	1.72E+02	9.55E-01	1.14E+02	3.06E+00
BREOT-N31+75 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	8.67E+02	1.19E+01	7.84E-04	1.98E+02	1.55E-01	7.04E-02	1.24E-01	6.86E+00	1.72E+02	9.55E-01	1.14E+02	6.00E-02
BREOT-S31+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	1.24E+03	1.70E+01	7.84E-04	2.82E+02	2.21E-01	7.04E-02	1.24E-01	9.78E+00	1.72E+02	9.55E-01	1.14E+02	8.55E-02

TABLE C-2F: ZINC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 18.41

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
American Kestrel (Insectivorous Birds - Terrestrial)																							
BREOT-N32+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	6.52E+02	8.98E+00	7.84E-04	1.49E+02	1.17E-01	7.04E-02	1.24E-01	5.16E+00	1.72E+02	9.55E-01	1.14E+02	4.51E-02
BREOT-S32+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	1.78E+03	2.45E+01	7.84E-04	4.07E+02	3.19E-01	7.04E-02	1.24E-01	1.41E+01	1.72E+02	9.55E-01	1.14E+02	1.23E-01
BREOT-S32+300 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	2.29E+03	3.15E+01	7.84E-04	5.22E+02	4.10E-01	7.04E-02	1.24E-01	1.81E+01	1.72E+02	9.55E-01	1.14E+02	1.58E-01
BREOT-N33+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	4.69E+02	6.46E+00	7.84E-04	1.07E+02	8.40E-02	7.04E-02	1.24E-01	3.71E+00	1.72E+02	9.55E-01	1.14E+02	3.25E-02
BREOT-S33+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	5.20E+03	7.16E+01	7.84E-04	1.19E+03	9.32E-01	7.04E-02	1.24E-01	4.12E+01	1.72E+02	9.55E-01	1.14E+02	3.60E-01
BREOT-N34+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	6.07E+02	8.35E+00	7.84E-04	1.39E+02	1.09E-01	7.04E-02	1.24E-01	4.80E+00	1.72E+02	9.55E-01	1.14E+02	4.20E-02
BREOT-S34+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	1.05E+03	1.45E+01	7.84E-04	2.40E+02	1.88E-01	7.04E-02	1.24E-01	8.31E+00	1.72E+02	9.55E-01	1.14E+02	7.26E-02
BREOT-N35+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	6.86E+02	9.44E+00	7.84E-04	1.57E+02	1.23E-01	7.04E-02	1.24E-01	5.42E+00	1.72E+02	9.55E-01	1.14E+02	4.74E-02
BREOT-S35+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	4.65E+03	6.39E+01	7.84E-04	1.06E+03	8.32E-01	7.04E-02	1.24E-01	3.67E+01	1.72E+02	9.55E-01	1.14E+02	3.21E-01
BREOT-N36+100 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	9.89E+02	1.36E+01	7.84E-04	2.26E+02	1.77E-01	7.04E-02	1.24E-01	7.82E+00	1.72E+02	9.55E-01	1.14E+02	6.84E-02
BREOT-N36+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	1.04E+04	1.43E+02	7.84E-04	2.37E+03	1.86E+00	7.04E-02	1.24E-01	8.20E+01	1.72E+02	9.55E-01	1.14E+02	7.17E-01
BREOT-S36+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	3.94E+03	5.42E+01	7.84E-04	8.99E+02	7.05E-01	7.04E-02	1.24E-01	3.11E+01	1.72E+02	9.55E-01	1.14E+02	2.72E-01
BREOT-N37+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	3.44E+02	4.74E+00	7.84E-04	7.86E+01	6.16E-02	7.04E-02	1.24E-01	2.72E+00	1.72E+02	9.55E-01	1.14E+02	2.38E-02
BREOT-S37+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	4.48E+03	6.16E+01	7.84E-04	1.02E+03	8.02E-01	7.04E-02	1.24E-01	3.54E+01	1.72E+02	9.55E-01	1.14E+02	3.10E-01
BREOT-N38+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	3.68E+02	5.07E+00	7.84E-04	8.41E+01	6.59E-02	7.04E-02	1.24E-01	2.91E+00	1.72E+02	9.55E-01	1.14E+02	2.55E-02
BREOT-S38+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	5.22E+03	7.18E+01	7.84E-04	1.19E+03	9.34E-01	7.04E-02	1.24E-01	4.13E+01	1.72E+02	9.55E-01	1.14E+02	3.61E-01
BREOT-N39+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	5.04E+02	6.93E+00	7.84E-04	1.15E+02	9.03E-02	7.04E-02	1.24E-01	3.99E+00	1.72E+02	9.55E-01	1.14E+02	3.49E-02
BREOT-S39+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	5.20E+03	7.15E+01	7.84E-04	1.19E+03	9.31E-01	7.04E-02	1.24E-01	4.11E+01	1.72E+02	9.55E-01	1.14E+02	3.60E-01
BREOT-N40+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	2.84E+02	3.91E+00	7.84E-04	6.49E+01	5.09E-02	7.04E-02	1.24E-01	2.25E+00	1.72E+02	9.55E-01	1.14E+02	1.97E-02
BREOT-S40+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	4.64E+03	6.39E+01	7.84E-04	1.06E+03	8.32E-01	7.04E-02	1.24E-01	3.67E+01	1.72E+02	9.55E-01	1.14E+02	3.21E-01
BREOT-N41+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	5.05E+02	6.95E+00	7.84E-04	1.15E+02	9.04E-02	7.04E-02	1.24E-01	3.99E+00	1.72E+02	9.55E-01	1.14E+02	3.49E-02
BREOT-S41+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	3.44E+03	4.73E+01	7.84E-04	7.85E+02	6.15E-01	7.04E-02	1.24E-01	2.72E+01	1.72E+02	9.55E-01	1.14E+02	2.38E-01
BREOT-N42+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	2.52E+02	3.47E+00	7.84E-04	5.76E+01	4.52E-02	7.04E-02	1.24E-01	1.99E+00	1.72E+02	9.55E-01	1.14E+02	1.74E-02
BREOT-S42+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	4.99E+03	6.86E+01	7.84E-04	1.14E+03	8.93E-01	7.04E-02	1.24E-01	3.95E+01	1.72E+02	9.55E-01	1.14E+02	3.45E-01
BREOT-N43+12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	1.22E+03	1.68E+01	7.84E-04	2.79E+02	2.19E-01	7.04E-02	1.24E-01	9.66E+00	1.72E+02	9.55E-01	1.14E+02	8.45E-02
BREOT-N43+40 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	9.66E+02	1.33E+01	7.84E-04	2.21E+02	1.73E-01	7.04E-02	1.24E-01	7.64E+00	1.72E+02	9.55E-01	1.14E+02	6.68E-02
BREOT-S43+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	1.93E+03	2.66E+01	7.84E-04	4.42E+02	3.46E-01	7.04E-02	1.24E-01	1.53E+01	1.72E+02	9.55E-01	1.14E+02	1.34E-01
BREOT-N44+55 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	9.88E+02	1.36E+01	7.84E-04	2.26E+02	1.77E-01	7.04E-02	1.24E-01	7.82E+00	1.72E+02	9.55E-01	1.14E+02	6.83E-02
BREOT-S44+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	1.43E+03	1.97E+01	7.84E-04	3.27E+02	2.57E-01	7.04E-02	1.24E-01	1.13E+01	1.72E+02	9.55E-01	1.14E+02	9.91E-02
BREOT-N45+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	1.01E+03	1.39E+01	7.84E-04	2.31E+02	1.81E-01	7.04E-02	1.24E-01	8.00E+00	1.72E+02	9.55E-01	1.14E+02	6.99E-02
BREOT-S45+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	2.01E+03	2.76E+01	7.84E-04	4.59E+02	3.60E-01	7.04E-02	1.24E-01	1.59E+01	1.72E+02	9.55E-01	1.14E+02	1.39E-01
BREOT-N46+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	2.27E+03	3.12E+01	7.84E-04	5.18E+02	4.06E-01	7.04E-02	1.24E-01	1.79E+01	1.72E+02	9.55E-01	1.14E+02	1.57E-01
BREOT-S46+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	1.52E+03	2.09E+01	7.84E-04	3.46E+02	2.71E-01	7.04E-02	1.24E-01	1.20E+01	1.72E+02	9.55E-01	1.14E+02	1.05E-01
BREOT-N47+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	1.51E+03	2.07E+01	7.84E-04	3.44E+02	2.70E-01	7.04E-02	1.24E-01	1.19E+01	1.72E+02	9.55E-01	1.14E+02	1.04E-01
BREOT-S47+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	4.63E+02	6.38E+00	7.84E-04	1.06E+02	8.30E-02	7.04E-02	1.24E-01	3.67E+00	1.72E+02	9.55E-01	1.14E+02	3.21E-02
BREOT-N48+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	5.82E+02	8.01E+00	7.84E-04	1.33E+02	1.04E-01	7.04E-02	1.24E-01	4.60E+00	1.72E+02	9.55E-01	1.14E+02	4.02E-02
BREOT-S48+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N49+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	1.50E+03	2.06E+01	7.84E-04	3.42E+02	2.68E-01	7.04E-02	1.24E-01	1.18E+01	1.72E+02	9.55E-01	1.14E+02	1.04E-01
BREOT-S49+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N51+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	7.28E+02	1.00E+01	7.84E-04	1.66E+02	1.30E-01	7.04E-02	1.24E-01	5.76E+00	1.72E+02	9.55E-01	1.14E+02	5.04E-02
BREOT-S51+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	5.87E+02	8.07E+00	7.84E-04	1.34E+02	1.05E-01	7.04E-02	1.24E-01	4.64E+00	1.72E+02	9.55E-01	1.14E+02	4.06E-02
BREOT-N52+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	7.34E+02	1.01E+01	7.84E-04	1.68E+02	1.32E-01	7.04E-02	1.24E-01	5.81E+00	1.72E+02	9.55E-01	1.14E+02	5.08E-02
BREOT-S52+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N53+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	7.29E+02	1.00E+01	7.84E-04	1.67E+02	1.31E-01	7.04E-02	1.24E-01	5.77E+00	1.72E+02	9.55E-01	1.14E+02	5.05E-02
BREOT-S53+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S54+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N55+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	6.42E+02	8.83E+00	7.84E-04	1.47E+02	1.15E-01	7.04E-02	1.24E-01	5.08E+00	1.72E+02	9.55E-01	1.14E+02	4.44E-02
BREOT-S55+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N56+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	6.34E+02	8.72E+00	7.84E-04	1.45E+02	1.14E-01	7.04E-02	1.24E-01	5.01E+00	1.72E+02	9.55E-01	1.14E+02	4.38E-02
BREOT-S56+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N57+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	5.45E+02	7.51E+00	7.84E-04	1.25E+02	9.77E-02	7.04E-02	1.24E-01	4.31E+00	1.72E+02	9.55E-01	1.14E+02	3.77E-02
BREOT-S57+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	8.93E+02	1.23E+01	7.84E-04	2.04E+02	1.60E-01	7.04E-02	1.24E-01	7.06E+00	1.72E+02	9.55E-01	1.14E+02	6.18E-02
BREOT-N58+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	9.29E+02	1.28E+01	7.84E-04	2.12E+02	1.66E-01	7.04E-02	1.24E-01	7.35E+00	1.72E+02	9.55E-01	1.14E+02	6.43E-02
BREOT-S58+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	3.94E+02	5.42E+00	7.84E-04	9.00E+01	7.06E-02	7.04E-02	1.24E-01	3.12E+00	1.72E+02	9.55E-01	1.14E+02	2.73E-02
BREOT-N59+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	1.54E+03	2.12E+01	7.84E-04	3.52E+02	2.76E-01	7.04E-02	1.24E-01	1.22E+01	1.72E+02	9.55E-01	1.14E+02	1.06E-01

TABLE C-2F: ZINC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 18.41

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
American Kestrel (Insectivorous Birds - Terrestrial)																							
BREOT-N60+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	1.03E+03	1.42E+01	7.84E-04	2.36E+02	1.85E-01	7.04E-02	1.24E-01	8.17E+00	1.72E+02	9.55E-01	1.14E+02	7.15E-02
BREOT-S60+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S61+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N62+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	1.14E+03	1.57E+01	7.84E-04	2.61E+02	2.05E-01	7.04E-02	1.24E-01	9.04E+00	1.72E+02	9.55E-01	1.14E+02	7.91E-02
BREOT-S62+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	5.06E+02	6.96E+00	7.84E-04	1.16E+02	9.06E-02	7.04E-02	1.24E-01	4.00E+00	1.72E+02	9.55E-01	1.14E+02	3.50E-02
BREOT-N63+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	1.20E+03	1.65E+01	7.84E-04	2.74E+02	2.15E-01	7.04E-02	1.24E-01	9.50E+00	1.72E+02	9.55E-01	1.14E+02	8.31E-02
BREOT-S63+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	8.49E+02	1.17E+01	7.84E-04	1.94E+02	1.52E-01	7.04E-02	1.24E-01	6.72E+00	1.72E+02	9.55E-01	1.14E+02	5.87E-02
BREOT-N64+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	1.35E+03	1.85E+01	7.84E-04	3.07E+02	2.41E-01	7.04E-02	1.24E-01	1.06E+01	1.72E+02	9.55E-01	1.14E+02	9.31E-02
BREOT-S64+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S65+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N66+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	1.09E+03	1.49E+01	7.84E-04	2.48E+02	1.95E-01	7.04E-02	1.24E-01	8.59E+00	1.72E+02	9.55E-01	1.14E+02	7.51E-02
BREOT-S66+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N67+125 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	1.59E+03	2.19E+01	7.84E-04	3.63E+02	2.85E-01	7.04E-02	1.24E-01	1.26E+01	1.72E+02	9.55E-01	1.14E+02	1.10E-01
BREOT-S67+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N67+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	1.65E+03	2.27E+01	7.84E-04	3.77E+02	2.96E-01	7.04E-02	1.24E-01	1.31E+01	1.72E+02	9.55E-01	1.14E+02	1.14E-01
																						Maximum HQ (Outside Tailings)	**3.06E+00**
Meadow Vole (Small Herbivorous Mammal - Terrestrial)																							
Reference Sites																							
ACBG-1 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.41E+00	1.93E+02	9.06E-01	NA	NA	NA	NA	1.13E-04	1.37E+02	1.54E-02	1.00E+00	3.06E-02	3.01E+01	4.11E+02	1.75E-01	4.57E+02	6.59E-02
ACBG-2 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.41E+00	1.18E+02	5.55E-01	NA	NA	NA	NA	1.13E-04	8.39E+01	9.45E-03	1.00E+00	3.06E-02	1.85E+01	4.11E+02	1.75E-01	4.57E+02	4.04E-02
UBRBG-202 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.41E+00	7.58E+01	3.55E-01	NA	NA	NA	NA	1.13E-04	5.37E+01	6.05E-03	1.00E+00	3.06E-02	1.18E+01	4.11E+02	1.75E-01	4.57E+02	2.59E-02
UBRBG-204 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.41E+00	4.84E+02	2.27E+00	NA	NA	NA	NA	1.13E-04	3.43E+02	3.86E-02	1.00E+00	3.06E-02	7.54E+01	4.11E+02	1.75E-01	4.57E+02	1.65E-01
Inside Tailings																						**Minimum HQ (Reference Sites)**	**2.59E-02**
BREOT-S6-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	7.59E+02	3.56E+00	NA	NA	NA	NA	1.13E-04	3.83E+02	4.31E-02	1.00E+00	3.06E-02	1.18E+02	4.11E+02	1.75E-01	4.57E+02	2.58E-01
BREOT-S2-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	5.03E+03	2.36E+01	NA	NA	NA	NA	1.13E-04	2.54E+03	2.86E-01	1.00E+00	3.06E-02	7.80E+02	4.11E+02	1.75E-01	4.57E+02	1.71E+00
BREOT-S0-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	4.91E+02	2.30E+00	NA	NA	NA	NA	1.13E-04	2.48E+02	2.79E-02	1.00E+00	3.06E-02	7.61E+01	4.11E+02	1.75E-01	4.57E+02	1.67E-01
BREOT-S1-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	3.30E+02	1.55E+00	NA	NA	NA	NA	1.13E-04	1.66E+02	1.87E-02	1.00E+00	3.06E-02	5.11E+01	4.11E+02	1.75E-01	4.57E+02	1.12E-01
BREOT-S7-25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	4.62E+02	2.17E+00	NA	NA	NA	NA	1.13E-04	2.33E+02	2.62E-02	1.00E+00	3.06E-02	7.17E+01	4.11E+02	1.75E-01	4.57E+02	1.57E-01
BREOT-S8-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	2.86E+02	1.34E+00	NA	NA	NA	NA	1.13E-04	1.45E+02	1.63E-02	1.00E+00	3.06E-02	4.44E+01	4.11E+02	1.75E-01	4.57E+02	9.72E-02
BREOT-S9-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	6.56E+02	3.08E+00	NA	NA	NA	NA	1.13E-04	3.31E+02	3.73E-02	1.00E+00	3.06E-02	1.02E+02	4.11E+02	1.75E-01	4.57E+02	2.23E-01
BREOT-N10-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	9.17E+03	4.30E+01	NA	NA	NA	NA	1.13E-04	4.63E+03	5.21E-01	1.00E+00	3.06E-02	1.42E+03	4.11E+02	1.75E-01	4.57E+02	3.11E+00
BREOT-N11-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	9.62E+02	4.51E+00	NA	NA	NA	NA	1.13E-04	4.85E+02	5.46E-02	1.00E+00	3.06E-02	1.49E+02	4.11E+02	1.75E-01	4.57E+02	3.26E-01
BREOT-N11-125 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	7.90E+02	3.71E+00	NA	NA	NA	NA	1.13E-04	3.99E+02	4.49E-02	1.00E+00	3.06E-02	1.23E+02	4.11E+02	1.75E-01	4.57E+02	2.68E-01
BREOT-S11-12 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	1.41E+04	6.59E+01	NA	NA	NA	NA	1.13E-04	7.09E+03	7.98E-01	1.00E+00	3.06E-02	2.18E+03	4.11E+02	1.75E-01	4.57E+02	4.77E+00
BREOT-S11+63 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	7.93E+02	3.72E+00	NA	NA	NA	NA	1.13E-04	4.00E+02	4.50E-02	1.00E+00	3.06E-02	1.23E+02	4.11E+02	1.75E-01	4.57E+02	2.69E-01
UBDT-TP-6 (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	3.92E+04	1.84E+02	NA	NA	NA	NA	1.13E-04	1.98E+04	2.23E+00	1.00E+00	3.06E-02	6.09E+03	4.11E+02	1.75E-01	4.57E+02	1.33E+01
UBDT-TP-6 (2-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	2.44E+04	1.14E+02	NA	NA	NA	NA	1.13E-04	1.23E+04	1.38E+00	1.00E+00	3.06E-02	3.78E+03	4.11E+02	1.75E-01	4.57E+02	8.27E+00
UBDT-TP-6 (12-24")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	2.48E+04	1.17E+02	NA	NA	NA	NA	1.13E-04	1.25E+04	1.41E+00	1.00E+00	3.06E-02	3.85E+03	4.11E+02	1.75E-01	4.57E+02	8.44E+00
UBDT-TP-6 (24-36")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	1.81E+03	8.50E+00	NA	NA	NA	NA	1.13E-04	9.15E+02	1.03E-01	1.00E+00	3.06E-02	2.81E+02	4.11E+02	1.75E-01	4.57E+02	6.16E-01
UBDT-TP-6 (36-48")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	4.93E+03	2.31E+01	NA	NA	NA	NA	1.13E-04	2.49E+03	2.80E-01	1.00E+00	3.06E-02	7.64E+02	4.11E+02	1.75E-01	4.57E+02	1.67E+00
UBDT-TP-6 (48-60")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	3.77E+03	1.77E+01	NA	NA	NA	NA	1.13E-04	1.90E+03	2.14E-01	1.00E+00	3.06E-02	5.84E+02	4.11E+02	1.75E-01	4.57E+02	1.28E+00
BREOT-N12-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	2.33E+03	1.09E+01	NA	NA	NA	NA	1.13E-04	1.18E+03	1.32E-01	1.00E+00	3.06E-02	3.62E+02	4.11E+02	1.75E-01	4.57E+02	7.91E-01
BREOT-S12-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	5.76E+03	2.70E+01	NA	NA	NA	NA	1.13E-04	2.90E+03	3.27E-01	1.00E+00	3.06E-02	8.93E+02	4.11E+02	1.75E-01	4.57E+02	1.95E+00
BREOT-S13-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	1.02E+04	4.79E+01	NA	NA	NA	NA	1.13E-04	5.15E+03	5.80E-01	1.00E+00	3.06E-02	1.58E+03	4.11E+02	1.75E-01	4.57E+02	3.47E+00
BREOT-S14-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	5.07E+03	2.38E+01	NA	NA	NA	NA	1.13E-04	2.56E+03	2.88E-01	1.00E+00	3.06E-02	7.86E+02	4.11E+02	1.75E-01	4.57E+02	1.72E+00
BREOT-N15-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	5.37E+03	2.52E+01	NA	NA	NA	NA	1.13E-04	2.71E+03	3.05E-01	1.00E+00	3.06E-02	8.33E+02	4.11E+02	1.75E-01	4.57E+02	1.82E+00
BREOT-S15-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	6.94E+02	3.25E+00	NA	NA	NA	NA	1.13E-04	3.50E+02	3.94E-02	1.00E+00	3.06E-02	1.08E+02	4.11E+02	1.75E-01	4.57E+02	2.35E-01
BREOT-N16-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	1.77E+03	8.28E+00	NA	NA	NA	NA	1.13E-04	8.91E+02	1.00E-01	1.00E+00	3.06E-02	2.74E+02	4.11E+02	1.75E-01	4.57E+02	6.00E-01
BREOT-N16-25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	3.48E+02	1.63E+00	NA	NA	NA	NA	1.13E-04	1.75E+02	1.97E-02	1.00E+00	3.06E-02	5.39E+01	4.11E+02	1.75E-01	4.57E+02	1.18E-01
BREOT-S16-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	3.52E+02	1.65E+00	NA	NA	NA	NA	1.13E-04	1.78E+02	2.00E-02	1.00E+00	3.06E-02	5.47E+01	4.11E+02	1.75E-01	4.57E+02	1.20E-01
BREOT-N17-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	7.61E+02	3.57E+00	NA	NA	NA	NA	1.13E-04	3.84E+02	4.32E-02	1.00E+00	3.06E-02	1.18E+02	4.11E+02	1.75E-01	4.57E+02	2.58E-01
BREOT-S17-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	3.04E+02	1.42E+00	NA	NA	NA	NA	1.13E-04	1.53E+02	1.72E-02	1.00E+00	3.06E-02	4.71E+01	4.11E+02	1.75E-01	4.57E+02	1.03E-01
BREOT-S17-25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	4.63E+02	2.17E+00	NA	NA	NA	NA	1.13E-04	2.34E+02	2.63E-02	1.00E+00	3.06E-02	7.18E+01	4.11E+02	1.75E-01	4.57E+02	1.57E-01
UBDT-TP-4 (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	4.72E+03	2.21E+01	NA	NA	NA	NA	1.13E-04	2.38E+03	2.68E-01	1.00E+00	3.06E-02	7.32E+02	4.11E+02	1.75E-01	4.57E+02	1.60E+00
UBDT-TP-4 (2-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	2.83E+03	1.33E+01	NA	NA	NA	NA	1.13E-04	1.43E+03	1.61E-01	1.00E+00	3.06E-02	4.40E+02	4.11E+02	1.75E-01	4.57E+02	9.62E-01
UBDT-TP-4 (12-24")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	1.55E+03	7.26E+00	NA	NA	NA	NA	1.13E-04	7.82E+02	8.80E-02	1.00E+00	3.06E-02	2.40E+02	4.11E+02	1.75E-01	4.57E+02	5.26E-01
UBDT-TP-4 (24-36")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	2.23E+03	1.05E+01	NA	NA	NA	NA	1.13E-04	1.13E+03	1.27E-01	1.00E+00	3.06E-02	3.46E+02	4.11E+02	1.75E-01	4.57E+02	7.58E-01

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from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 18.41

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Meadow Vole (Small Herbivorous Mammal - Terrestrial)																							
BREOT-N18-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	3.17E+03	1.49E+01	NA	NA	NA	NA	1.13E-04	1.60E+03	1.80E-01	1.00E+00	3.06E-02	4.92E+02	4.11E+02	1.75E-01	4.57E+02	1.08E+00
BREOT-N18-25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	6.09E+02	2.86E+00	NA	NA	NA	NA	1.13E-04	3.07E+02	3.46E-02	1.00E+00	3.06E-02	9.44E+01	4.11E+02	1.75E-01	4.57E+02	2.07E-01
BREOT-S18-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	1.13E+03	5.31E+00	NA	NA	NA	NA	1.13E-04	5.71E+02	6.43E-02	1.00E+00	3.06E-02	1.75E+02	4.11E+02	1.75E-01	4.57E+02	3.84E-01
BREOT-N19-10 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	9.37E+02	4.39E+00	NA	NA	NA	NA	1.13E-04	4.73E+02	5.32E-02	1.00E+00	3.06E-02	1.45E+02	4.11E+02	1.75E-01	4.57E+02	3.18E-01
BREOT-S19-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	3.15E+03	1.48E+01	NA	NA	NA	NA	1.13E-04	1.59E+03	1.79E-01	1.00E+00	3.06E-02	4.88E+02	4.11E+02	1.75E-01	4.57E+02	1.07E+00
UBDT-TP-5 (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	5.21E+03	2.44E+01	NA	NA	NA	NA	1.13E-04	2.63E+03	2.96E-01	1.00E+00	3.06E-02	8.07E+02	4.11E+02	1.75E-01	4.57E+02	1.77E+00
UBDT-TP-5 (2-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	3.45E+03	1.62E+01	NA	NA	NA	NA	1.13E-04	1.74E+03	1.96E-01	1.00E+00	3.06E-02	5.35E+02	4.11E+02	1.75E-01	4.57E+02	1.17E+00
UBDT-TP-5 (12-24")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	3.07E+03	1.44E+01	NA	NA	NA	NA	1.13E-04	1.55E+03	1.75E-01	1.00E+00	3.06E-02	4.77E+02	4.11E+02	1.75E-01	4.57E+02	1.04E+00
BREOT-N20-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	6.56E+02	3.07E+00	NA	NA	NA	NA	1.13E-04	3.31E+02	3.72E-02	1.00E+00	3.06E-02	1.02E+02	4.11E+02	1.75E-01	4.57E+02	2.23E-01
UBDT-TP-3 (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	8.85E+02	4.15E+00	NA	NA	NA	NA	1.13E-04	4.47E+02	5.03E-02	1.00E+00	3.06E-02	1.37E+02	4.11E+02	1.75E-01	4.57E+02	3.00E-01
UBDT-TP-3 (2-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	5.80E+02	2.72E+00	NA	NA	NA	NA	1.13E-04	2.93E+02	3.30E-02	1.00E+00	3.06E-02	9.00E+01	4.11E+02	1.75E-01	4.57E+02	1.97E-01
UBDT-TP-3 (12-24")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	4.53E+02	2.12E+00	NA	NA	NA	NA	1.13E-04	2.28E+02	2.57E-02	1.00E+00	3.06E-02	7.02E+01	4.11E+02	1.75E-01	4.57E+02	1.54E-01
UBDT-TP-3 (24-36")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	7.26E+02	3.40E+00	NA	NA	NA	NA	1.13E-04	3.66E+02	4.12E-02	1.00E+00	3.06E-02	1.13E+02	4.11E+02	1.75E-01	4.57E+02	2.46E-01
UBDT-TP-3 (36-48")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	1.12E+03	5.23E+00	NA	NA	NA	NA	1.13E-04	5.63E+02	6.34E-02	1.00E+00	3.06E-02	1.73E+02	4.11E+02	1.75E-01	4.57E+02	3.79E-01
UBDT-TP-3 (48-60")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	1.57E+03	7.34E+00	NA	NA	NA	NA	1.13E-04	7.90E+02	8.89E-02	1.00E+00	3.06E-02	2.43E+02	4.11E+02	1.75E-01	4.57E+02	5.32E-01
BREOT-N21-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	5.09E+03	2.39E+01	NA	NA	NA	NA	1.13E-04	2.57E+03	2.89E-01	1.00E+00	3.06E-02	7.89E+02	4.11E+02	1.75E-01	4.57E+02	1.73E+00
BREOT-N22-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	8.20E+02	3.85E+00	NA	NA	NA	NA	1.13E-04	4.14E+02	4.66E-02	1.00E+00	3.06E-02	1.27E+02	4.11E+02	1.75E-01	4.57E+02	2.78E-01
BREOT-N23-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	1.35E+03	6.33E+00	NA	NA	NA	NA	1.13E-04	6.81E+02	7.66E-02	1.00E+00	3.06E-02	2.09E+02	4.11E+02	1.75E-01	4.57E+02	4.58E-01
BREOT-S23-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	1.67E+04	7.82E+01	NA	NA	NA	NA	1.13E-04	8.42E+03	9.47E-01	1.00E+00	3.06E-02	2.59E+03	4.11E+02	1.75E-01	4.57E+02	5.66E+00
UBDT-TP-2 (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	6.36E+03	2.98E+01	NA	NA	NA	NA	1.13E-04	3.21E+03	3.61E-01	1.00E+00	3.06E-02	9.86E+02	4.11E+02	1.75E-01	4.57E+02	2.16E+00
UBDT-TP-2 (2-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	3.96E+03	1.86E+01	NA	NA	NA	NA	1.13E-04	2.00E+03	2.25E-01	1.00E+00	3.06E-02	6.14E+02	4.11E+02	1.75E-01	4.57E+02	1.34E+00
UBDT-TP-2 (12-24")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	3.39E+03	1.59E+01	NA	NA	NA	NA	1.13E-04	1.71E+03	1.93E-01	1.00E+00	3.06E-02	5.26E+02	4.11E+02	1.75E-01	4.57E+02	1.15E+00
UBDT-TP-2 (24-36")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	2.88E+03	1.35E+01	NA	NA	NA	NA	1.13E-04	1.45E+03	1.63E-01	1.00E+00	3.06E-02	4.46E+02	4.11E+02	1.75E-01	4.57E+02	9.76E-01
UBDT-TP-2 (36-48")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	3.02E+03	1.42E+01	NA	NA	NA	NA	1.13E-04	1.53E+03	1.72E-01	1.00E+00	3.06E-02	4.69E+02	4.11E+02	1.75E-01	4.57E+02	1.03E+00
BREOT-S24-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	1.26E+04	5.92E+01	NA	NA	NA	NA	1.13E-04	6.37E+03	7.17E-01	1.00E+00	3.06E-02	1.96E+03	4.11E+02	1.75E-01	4.57E+02	4.28E+00
BREOT-N25-50 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	1.58E+04	7.41E+01	NA	NA	NA	NA	1.13E-04	7.97E+03	8.97E-01	1.00E+00	3.06E-02	2.45E+03	4.11E+02	1.75E-01	4.57E+02	5.36E+00
BREOT-N25-95 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	2.01E+02	9.40E-01	NA	NA	NA	NA	1.13E-04	1.01E+02	1.14E-02	1.00E+00	3.06E-02	3.11E+01	4.11E+02	1.75E-01	4.57E+02	6.81E-02
BREOT-S25-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	2.62E+03	1.23E+01	NA	NA	NA	NA	1.13E-04	1.32E+03	1.49E-01	1.00E+00	3.06E-02	4.06E+02	4.11E+02	1.75E-01	4.57E+02	8.90E-01
BREOT-S25-40 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	4.06E+02	1.90E+00	NA	NA	NA	NA	1.13E-04	2.05E+02	2.30E-02	1.00E+00	3.06E-02	6.29E+01	4.11E+02	1.75E-01	4.57E+02	1.38E-01
BREOT-N26A-25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	3.03E+02	1.42E+00	NA	NA	NA	NA	1.13E-04	1.53E+02	1.72E-02	1.00E+00	3.06E-02	4.70E+01	4.11E+02	1.75E-01	4.57E+02	1.03E-01
BREOT-N26B-25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	5.06E+03	2.37E+01	NA	NA	NA	NA	1.13E-04	2.55E+03	2.87E-01	1.00E+00	3.06E-02	7.84E+02	4.11E+02	1.75E-01	4.57E+02	1.72E+00
BREOT-N26-50 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	2.26E+04	1.06E+02	NA	NA	NA	NA	1.13E-04	1.14E+04	1.29E+00	1.00E+00	3.06E-02	3.51E+03	4.11E+02	1.75E-01	4.57E+02	7.69E+00
BREOT-N26-75 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	1.16E+04	5.42E+01	NA	NA	NA	NA	1.13E-04	5.83E+03	6.56E-01	1.00E+00	3.06E-02	1.79E+03	4.11E+02	1.75E-01	4.57E+02	3.92E+00
BREOT-S26-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	5.33E+02	2.50E+00	NA	NA	NA	NA	1.13E-04	2.69E+02	3.03E-02	1.00E+00	3.06E-02	8.27E+01	4.11E+02	1.75E-01	4.57E+02	1.81E-01
BREOT-S26-40 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	7.18E+03	3.37E+01	NA	NA	NA	NA	1.13E-04	3.62E+03	4.08E-01	1.00E+00	3.06E-02	1.11E+03	4.11E+02	1.75E-01	4.57E+02	2.44E+00
BREOT-N27-30 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	5.22E+03	2.45E+01	NA	NA	NA	NA	1.13E-04	2.64E+03	2.97E-01	1.00E+00	3.06E-02	8.10E+02	4.11E+02	1.75E-01	4.57E+02	1.77E+00
BREOT-N27-75 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	2.04E+04	9.55E+01	NA	NA	NA	NA	1.13E-04	1.03E+04	1.16E+00	1.00E+00	3.06E-02	3.16E+03	4.11E+02	1.75E-01	4.57E+02	6.91E+00
BREOT-S27-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	7.27E+02	3.41E+00	NA	NA	NA	NA	1.13E-04	3.67E+02	4.13E-02	1.00E+00	3.06E-02	1.13E+02	4.11E+02	1.75E-01	4.57E+02	2.47E-01
BREOT-N28-110 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	3.08E+03	1.44E+01	NA	NA	NA	NA	1.13E-04	1.55E+03	1.75E-01	1.00E+00	3.06E-02	4.78E+02	4.11E+02	1.75E-01	4.57E+02	1.05E+00
BREOT-N28-55 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	2.97E+04	1.39E+02	NA	NA	NA	NA	1.13E-04	1.50E+04	1.68E+00	1.00E+00	3.06E-02	4.60E+03	4.11E+02	1.75E-01	4.57E+02	1.01E+01
BREOT-S28-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	5.91E+03	2.77E+01	NA	NA	NA	NA	1.13E-04	2.98E+03	3.35E-01	1.00E+00	3.06E-02	9.16E+02	4.11E+02	1.75E-01	4.57E+02	2.01E+00
UBDT-TP-1 (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	1.77E+04	8.32E+01	NA	NA	NA	NA	1.13E-04	8.95E+03	1.01E+00	1.00E+00	3.06E-02	2.75E+03	4.11E+02	1.75E-01	4.57E+02	6.02E+00
UBDT-TP-1 (2-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	1.91E+04	8.95E+01	NA	NA	NA	NA	1.13E-04	9.63E+03	1.08E+00	1.00E+00	3.06E-02	2.96E+03	4.11E+02	1.75E-01	4.57E+02	6.48E+00
UBDT-TP-1 (12-24")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	1.80E+04	8.44E+01	NA	NA	NA	NA	1.13E-04	9.08E+03	1.02E+00	1.00E+00	3.06E-02	2.79E+03	4.11E+02	1.75E-01	4.57E+02	6.11E+00
UBDT-TP-1 (24-36")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	1.22E+04	5.74E+01	NA	NA	NA	NA	1.13E-04	6.18E+03	6.95E-01	1.00E+00	3.06E-02	1.90E+03	4.11E+02	1.75E-01	4.57E+02	4.16E+00
UBDT-TP-1 (36-48")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	3.80E+03	1.78E+01	NA	NA	NA	NA	1.13E-04	1.92E+03	2.16E-01	1.00E+00	3.06E-02	5.89E+02	4.11E+02	1.75E-01	4.57E+02	1.29E+00
UBDT-TP-1 (48-60")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	1.26E+03	5.92E+00	NA	NA	NA	NA	1.13E-04	6.38E+02	7.17E-02	1.00E+00	3.06E-02	1.96E+02	4.11E+02	1.75E-01	4.57E+02	4.29E-01
BREOT-N29-30 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	2.71E+04	1.27E+02	NA	NA	NA	NA	1.13E-04	1.37E+04	1.54E+00	1.00E+00	3.06E-02	4.20E+03	4.11E+02	1.75E-01	4.57E+02	9.19E+00
BREOT-S29-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	1.82E+03	8.51E+00	NA	NA	NA	NA	1.13E-04	9.16E+02	1.03E-01	1.00E+00	3.06E-02	2.82E+02	4.11E+02	1.75E-01	4.57E+02	6.17E-01
BREOT-N30-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	1.54E+03	7.21E+00	NA	NA	NA	NA	1.13E-04	7.76E+02	8.73E-02	1.00E+00	3.06E-02	2.38E+02	4.11E+02	1.75E-01	4.57E+02	5.22E-01
BREOT-S30-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	2.39E+03	1.12E+01	NA	NA	NA	NA	1.13E-04	1.21E+03	1.36E-01	1.00E+00	3.06E-02	3.70E+02	4.11E+02	1.75E-01	4.57E+02	8.11E-01
BREOT-N31-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	1.16E+03	5.45E+00	NA	NA	NA	NA	1.13E-04	5.86E+02	6.60E-02	1.00E+00	3.06E-02	1.80E+02	4.11E+02	1.75E-01	4.57E+02	3.94E-01
BREOT-S31-25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	8.17E+02	3.83E+00	NA	NA	NA	NA	1.13E-04	4.13E+02	4.64E-02	1.00E+00	3.06E-02	1.27E+02	4.11E+02	1.75E-01	4.57E+02	2.78E-01
BREOT-S31-5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	2.21E+03	1.03E+01	NA	NA	NA	NA	1.13E-04	1.11E+03	1.25E-01	1.00E+00	3.06E-02	3.42E+02	4.11E+02	1.75E-01	4.57E+02	7.49E-01
BREOT-N32-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	2.10E+03	9.87E+00	NA	NA	NA	NA	1.13E-04	1.06E+03	1.20E-01	1.00E+00	3.06E-02	3.26E+02	4.11E+02	1.75E-01	4.57E+02	7.15E-01

TABLE C-2F: ZINC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 18.41

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Meadow Vole (Small Herbivorous Mammal - Terrestrial)																							
BREOT-S32-6 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	4.10E+02	1.92E+00	NA	NA	NA	NA	1.13E-04	2.07E+02	2.33E-02	1.00E+00	3.06E-02	6.36E+01	4.11E+02	1.75E-01	4.57E+02	1.39E-01
BREOT-N33-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	7.05E+02	3.31E+00	NA	NA	NA	NA	1.13E-04	3.56E+02	4.01E-02	1.00E+00	3.06E-02	1.09E+02	4.11E+02	1.75E-01	4.57E+02	2.39E-01
BREOT-S33-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	1.08E+03	5.05E+00	NA	NA	NA	NA	1.13E-04	5.43E+02	6.11E-02	1.00E+00	3.06E-02	1.67E+02	4.11E+02	1.75E-01	4.57E+02	3.65E-01
BREOT-N35-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	9.44E+02	4.43E+00	NA	NA	NA	NA	1.13E-04	4.76E+02	5.36E-02	1.00E+00	3.06E-02	1.46E+02	4.11E+02	1.75E-01	4.57E+02	3.21E-01
BREOT-S35-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	4.37E+03	2.05E+01	NA	NA	NA	NA	1.13E-04	2.21E+03	2.48E-01	1.00E+00	3.06E-02	6.78E+02	4.11E+02	1.75E-01	4.57E+02	1.48E+00
BREOT-N36-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	1.23E+03	5.75E+00	NA	NA	NA	NA	1.13E-04	6.19E+02	6.96E-02	1.00E+00	3.06E-02	1.90E+02	4.11E+02	1.75E-01	4.57E+02	4.16E-01
BREOT-S36-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	9.33E+02	4.37E+00	NA	NA	NA	NA	1.13E-04	4.71E+02	5.30E-02	1.00E+00	3.06E-02	1.45E+02	4.11E+02	1.75E-01	4.57E+02	3.17E-01
BREOT-N37-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	4.02E+02	1.88E+00	NA	NA	NA	NA	1.13E-04	2.03E+02	2.28E-02	1.00E+00	3.06E-02	6.23E+01	4.11E+02	1.75E-01	4.57E+02	1.36E-01
BREOT-S37-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	1.03E+03	4.84E+00	NA	NA	NA	NA	1.13E-04	5.21E+02	5.86E-02	1.00E+00	3.06E-02	1.60E+02	4.11E+02	1.75E-01	4.57E+02	3.50E-01
BREOT-N38-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	4.38E+02	2.05E+00	NA	NA	NA	NA	1.13E-04	2.21E+02	2.49E-02	1.00E+00	3.06E-02	6.79E+01	4.11E+02	1.75E-01	4.57E+02	1.49E-01
BREOT-S38-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	3.80E+03	1.78E+01	NA	NA	NA	NA	1.13E-04	1.92E+03	2.16E-01	1.00E+00	3.06E-02	5.89E+02	4.11E+02	1.75E-01	4.57E+02	1.29E+00
BREOT-N39-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	2.17E+03	1.02E+01	NA	NA	NA	NA	1.13E-04	1.09E+03	1.23E-01	1.00E+00	3.06E-02	3.36E+02	4.11E+02	1.75E-01	4.57E+02	7.36E-01
BREOT-S39-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	2.64E+03	1.24E+01	NA	NA	NA	NA	1.13E-04	1.33E+03	1.50E-01	1.00E+00	3.06E-02	4.09E+02	4.11E+02	1.75E-01	4.57E+02	8.95E-01
BREOT-N40-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	2.69E+03	1.26E+01	NA	NA	NA	NA	1.13E-04	1.36E+03	1.53E-01	1.00E+00	3.06E-02	4.17E+02	4.11E+02	1.75E-01	4.57E+02	9.12E-01
BREOT-S40-14 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	2.82E+03	1.32E+01	NA	NA	NA	NA	1.13E-04	1.42E+03	1.60E-01	1.00E+00	3.06E-02	4.37E+02	4.11E+02	1.75E-01	4.57E+02	9.57E-01
BREOT-N41-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	2.05E+03	9.61E+00	NA	NA	NA	NA	1.13E-04	1.03E+03	1.16E-01	1.00E+00	3.06E-02	3.18E+02	4.11E+02	1.75E-01	4.57E+02	6.96E-01
BREOT-S41-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	2.58E+03	1.21E+01	NA	NA	NA	NA	1.13E-04	1.30E+03	1.47E-01	1.00E+00	3.06E-02	4.00E+02	4.11E+02	1.75E-01	4.57E+02	8.76E-01
BREOT-N42-35 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	4.08E+02	1.91E+00	NA	NA	NA	NA	1.13E-04	2.06E+02	2.32E-02	1.00E+00	3.06E-02	6.32E+01	4.11E+02	1.75E-01	4.57E+02	1.38E-01
BREOT-S42-25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	6.44E+02	3.02E+00	NA	NA	NA	NA	1.13E-04	3.25E+02	3.66E-02	1.00E+00	3.06E-02	9.99E+01	4.11E+02	1.75E-01	4.57E+02	2.19E-01
BREOT-N43-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	5.13E+03	2.41E+01	NA	NA	NA	NA	1.13E-04	2.59E+03	2.92E-01	1.00E+00	3.06E-02	7.96E+02	4.11E+02	1.75E-01	4.57E+02	1.74E+00
BREOT-S43-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	9.45E+02	4.43E+00	NA	NA	NA	NA	1.13E-04	4.77E+02	5.37E-02	1.00E+00	3.06E-02	1.47E+02	4.11E+02	1.75E-01	4.57E+02	3.21E-01
BREOT-N44-30 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	9.55E+02	4.48E+00	NA	NA	NA	NA	1.13E-04	4.82E+02	5.43E-02	1.00E+00	3.06E-02	1.48E+02	4.11E+02	1.75E-01	4.57E+02	3.24E-01
BREOT-S44-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	1.33E+03	6.22E+00	NA	NA	NA	NA	1.13E-04	6.70E+02	7.54E-02	1.00E+00	3.06E-02	2.06E+02	4.11E+02	1.75E-01	4.57E+02	4.51E-01
BREOT-N45-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	4.71E+02	2.21E+00	NA	NA	NA	NA	1.13E-04	2.38E+02	2.67E-02	1.00E+00	3.06E-02	7.30E+01	4.11E+02	1.75E-01	4.57E+02	1.60E-01
BREOT-N43-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	5.13E+03	2.41E+01	NA	NA	NA	NA	1.13E-04	2.59E+03	2.92E-01	1.00E+00	3.06E-02	7.96E+02	4.11E+02	1.75E-01	4.57E+02	1.74E+00
BREOT-S45-6 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	7.51E+02	3.52E+00	NA	NA	NA	NA	1.13E-04	3.79E+02	4.27E-02	1.00E+00	3.06E-02	1.16E+02	4.11E+02	1.75E-01	4.57E+02	2.55E-01
BREOT-N46-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	2.53E+02	1.19E+00	NA	NA	NA	NA	1.13E-04	1.28E+02	1.44E-02	1.00E+00	3.06E-02	3.92E+01	4.11E+02	1.75E-01	4.57E+02	8.58E-02
BREOT-S46-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	7.29E+02	3.42E+00	NA	NA	NA	NA	1.13E-04	3.68E+02	4.14E-02	1.00E+00	3.06E-02	1.13E+02	4.11E+02	1.75E-01	4.57E+02	2.48E-01
BREOT-S46-40 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	1.09E+03	5.13E+00	NA	NA	NA	NA	1.13E-04	5.52E+02	6.21E-02	1.00E+00	3.06E-02	1.70E+02	4.11E+02	1.75E-01	4.57E+02	3.71E-01
BREOT-N47-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	4.99E+02	2.34E+00	NA	NA	NA	NA	1.13E-04	2.52E+02	2.83E-02	1.00E+00	3.06E-02	7.74E+01	4.11E+02	1.75E-01	4.57E+02	1.69E-01
BREOT-S47-999 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	7.93E+02	3.72E+00	NA	NA	NA	NA	1.13E-04	4.00E+02	4.50E-02	1.00E+00	3.06E-02	1.23E+02	4.11E+02	1.75E-01	4.57E+02	2.69E-01
BREOT-S48-12.5 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S49-2.5 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S50-12.5 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S50-25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N52-60 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	8.32E+02	3.90E+00	NA	NA	NA	NA	1.13E-04	4.20E+02	4.72E-02	1.00E+00	3.06E-02	1.29E+02	4.11E+02	1.75E-01	4.57E+02	2.82E-01
BREOT-S52-12.5 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S53-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	1.88E+02	8.82E-01	NA	NA	NA	NA	1.13E-04	9.49E+01	1.07E-02	1.00E+00	3.06E-02	2.92E+01	4.11E+02	1.75E-01	4.57E+02	6.38E-02
BREOT-S54-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	2.10E+02	9.83E-01	NA	NA	NA	NA	1.13E-04	1.06E+02	1.19E-02	1.00E+00	3.06E-02	3.25E+01	4.11E+02	1.75E-01	4.57E+02	7.11E-02
BREOT-N55-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	4.74E+03	2.22E+01	NA	NA	NA	NA	1.13E-04	2.39E+03	2.69E-01	1.00E+00	3.06E-02	7.36E+02	4.11E+02	1.75E-01	4.57E+02	1.61E+00
BREOT-S55-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	4.16E+02	1.95E+00	NA	NA	NA	NA	1.13E-04	2.10E+02	2.36E-02	1.00E+00	3.06E-02	6.46E+01	4.11E+02	1.75E-01	4.57E+02	1.41E-01
BREOT-N56-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	1.37E+03	6.41E+00	NA	NA	NA	NA	1.13E-04	6.90E+02	7.76E-02	1.00E+00	3.06E-02	2.12E+02	4.11E+02	1.75E-01	4.57E+02	4.64E-01
BREOT-S56-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	6.92E+02	3.25E+00	NA	NA	NA	NA	1.13E-04	3.49E+02	3.93E-02	1.00E+00	3.06E-02	1.07E+02	4.11E+02	1.75E-01	4.57E+02	2.35E-01
BREOT-N57-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	5.77E+02	2.71E+00	NA	NA	NA	NA	1.13E-04	2.91E+02	3.28E-02	1.00E+00	3.06E-02	8.95E+01	4.11E+02	1.75E-01	4.57E+02	1.96E-01
BREOT-S57-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	5.73E+02	2.69E+00	NA	NA	NA	NA	1.13E-04	2.89E+02	3.26E-02	1.00E+00	3.06E-02	8.89E+01	4.11E+02	1.75E-01	4.57E+02	1.95E-01
BREOT-N58-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	6.52E+02	3.06E+00	NA	NA	NA	NA	1.13E-04	3.29E+02	3.70E-02	1.00E+00	3.06E-02	1.01E+02	4.11E+02	1.75E-01	4.57E+02	2.21E-01
BREOT-S58-12 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	1.50E+03	7.04E+00	NA	NA	NA	NA	1.13E-04	7.58E+02	8.53E-02	1.00E+00	3.06E-02	2.33E+02	4.11E+02	1.75E-01	4.57E+02	5.10E-01
BREOT-N59-18 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	4.45E+02	2.08E+00	NA	NA	NA	NA	1.13E-04	2.24E+02	2.53E-02	1.00E+00	3.06E-02	6.90E+01	4.11E+02	1.75E-01	4.57E+02	1.51E-01
BREOT-N60-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	6.25E+02	2.93E+00	NA	NA	NA	NA	1.13E-04	3.16E+02	3.55E-02	1.00E+00	3.06E-02	9.70E+01	4.11E+02	1.75E-01	4.57E+02	2.12E-01
BREOT-S60-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	1.17E+03	5.49E+00	NA	NA	NA	NA	1.13E-04	5.91E+02	6.65E-02	1.00E+00	3.06E-02	1.82E+02	4.11E+02	1.75E-01	4.57E+02	3.98E-01
BREOT-S61-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	4.64E+03	2.17E+01	NA	NA	NA	NA	1.13E-04	2.34E+03	2.63E-01	1.00E+00	3.06E-02	7.19E+02	4.11E+02	1.75E-01	4.57E+02	1.57E+00
BREOT-N62-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	2.40E+02	1.12E+00	NA	NA	NA	NA	1.13E-04	1.21E+02	1.36E-02	1.00E+00	3.06E-02	3.72E+01	4.11E+02	1.75E-01	4.57E+02	8.15E-02
BREOT-S62-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	4.48E+03	2.10E+01	NA	NA	NA	NA	1.13E-04	2.26E+03	2.54E-01	1.00E+00	3.06E-02	6.94E+02	4.11E+02	1.75E-01	4.57E+02	1.52E+00
BREOT-S63-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	5.83E+02	2.73E+00	NA	NA	NA	NA	1.13E-04	2.94E+02	3.31E-02	1.00E+00	3.06E-02	9.04E+01	4.11E+02	1.75E-01	4.57E+02	1.98E-01
BREOT-N64-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	5.67E+02	2.66E+00	NA	NA	NA	NA	1.13E-04	2.86E+02	3.22E-02	1.00E+00	3.06E-02	8.80E+01	4.11E+02	1.75E-01	4.57E+02	1.93E-01

TABLE C-2F: ZINC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

Site Area (hectares) 18.41

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Meadow Vole (Small Herbivorous Mammal - Terrestrial)																							
BREOT-N64-20 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	4.25E+02	1.99E+00	NA	NA	NA	NA	1.13E-04	2.14E+02	2.41E-02	1.00E+00	3.06E-02	6.59E+01	4.11E+02	1.75E-01	4.57E+02	1.44E-01
BREOT-S64-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	3.83E+02	1.80E+00	NA	NA	NA	NA	1.13E-04	1.94E+02	2.18E-02	1.00E+00	3.06E-02	5.95E+01	4.11E+02	1.75E-01	4.57E+02	1.30E-01
BREOT-N65-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	6.19E+02	2.90E+00	NA	NA	NA	NA	1.13E-04	3.12E+02	3.51E-02	1.00E+00	3.06E-02	9.59E+01	4.11E+02	1.75E-01	4.57E+02	2.10E-01
BREOT-S65-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	4.52E+02	2.12E+00	NA	NA	NA	NA	1.13E-04	2.28E+02	2.57E-02	1.00E+00	3.06E-02	7.01E+01	4.11E+02	1.75E-01	4.57E+02	1.53E-01
BREOT-N66-5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	3.76E+02	1.76E+00	NA	NA	NA	NA	1.13E-04	1.90E+02	2.14E-02	1.00E+00	3.06E-02	5.84E+01	4.11E+02	1.75E-01	4.57E+02	1.28E-01
BREOT-S66-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	4.56E+02	2.14E+00	NA	NA	NA	NA	1.13E-04	2.30E+02	2.59E-02	1.00E+00	3.06E-02	7.07E+01	4.11E+02	1.75E-01	4.57E+02	1.55E-01
BREOT-N67-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	6.14E+03	2.88E+01	NA	NA	NA	NA	1.13E-04	3.10E+03	3.49E-01	1.00E+00	3.06E-02	9.52E+02	4.11E+02	1.75E-01	4.57E+02	2.08E+00
BREOT-S67-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	2.66E+02	1.25E+00	NA	NA	NA	NA	1.13E-04	1.34E+02	1.51E-02	1.00E+00	3.06E-02	4.13E+01	4.11E+02	1.75E-01	4.57E+02	9.05E-02
At Edge of Tailings																						**Maximum HQ (Inside Tailings)**	**1.33E+01**
BREOT-S0-0 (06)	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	9.04E+02	4.24E+00	NA	NA	NA	NA	1.13E-04	4.56E+02	5.13E-02	1.00E+00	3.06E-02	1.40E+02	4.11E+02	1.75E-01	4.57E+02	3.07E-01
BREOT-S1-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	5.22E+02	2.45E+00	NA	NA	NA	NA	1.13E-04	2.63E+02	2.97E-02	1.00E+00	3.06E-02	8.10E+01	4.11E+02	1.75E-01	4.57E+02	1.77E-01
BREOT-S2-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	5.75E+02	2.70E+00	NA	NA	NA	NA	1.13E-04	2.90E+02	3.27E-02	1.00E+00	3.06E-02	8.92E+01	4.11E+02	1.75E-01	4.57E+02	1.95E-01
BREOT-S3-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	3.28E+03	1.54E+01	NA	NA	NA	NA	1.13E-04	1.65E+03	1.86E-01	1.00E+00	3.06E-02	5.08E+02	4.11E+02	1.75E-01	4.57E+02	1.11E+00
BREOT-S4-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	3.94E+03	1.85E+01	NA	NA	NA	NA	1.13E-04	1.99E+03	2.24E-01	1.00E+00	3.06E-02	6.11E+02	4.11E+02	1.75E-01	4.57E+02	1.34E+00
BREOT-S6-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	2.06E+03	9.68E+00	NA	NA	NA	NA	1.13E-04	1.04E+03	1.17E-01	1.00E+00	3.06E-02	3.20E+02	4.11E+02	1.75E-01	4.57E+02	7.01E-01
BREOT-S7-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	9.50E+02	4.45E+00	NA	NA	NA	NA	1.13E-04	4.79E+02	5.39E-02	1.00E+00	3.06E-02	1.47E+02	4.11E+02	1.75E-01	4.57E+02	3.22E-01
BREOT-S8-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	6.37E+02	2.98E+00	NA	NA	NA	NA	1.13E-04	3.21E+02	3.62E-02	1.00E+00	3.06E-02	9.87E+01	4.11E+02	1.75E-01	4.57E+02	2.16E-01
BREOT-S9-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	4.12E+02	1.93E+00	NA	NA	NA	NA	1.13E-04	2.08E+02	2.34E-02	1.00E+00	3.06E-02	6.39E+01	4.11E+02	1.75E-01	4.57E+02	1.40E-01
BREOT-N10-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	3.63E+04	1.70E+02	NA	NA	NA	NA	1.13E-04	1.83E+04	2.06E+00	1.00E+00	3.06E-02	5.63E+03	4.11E+02	1.75E-01	4.57E+02	1.23E+01
BREOT-N11-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	1.26E+03	5.90E+00	NA	NA	NA	NA	1.13E-04	6.35E+02	7.15E-02	1.00E+00	3.06E-02	1.95E+02	4.11E+02	1.75E-01	4.57E+02	4.27E-01
BREOT-S11-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	2.58E+03	1.21E+01	NA	NA	NA	NA	1.13E-04	1.30E+03	1.46E-01	1.00E+00	3.06E-02	4.00E+02	4.11E+02	1.75E-01	4.57E+02	8.75E-01
BREOT-N12-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	6.36E+02	2.98E+00	NA	NA	NA	NA	1.13E-04	3.21E+02	3.61E-02	1.00E+00	3.06E-02	9.86E+01	4.11E+02	1.75E-01	4.57E+02	2.16E-01
BREOT-S12-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	3.38E+03	1.58E+01	NA	NA	NA	NA	1.13E-04	1.71E+03	1.92E-01	1.00E+00	3.06E-02	5.24E+02	4.11E+02	1.75E-01	4.57E+02	1.15E+00
BREOT-N13-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	2.04E+04	9.56E+01	NA	NA	NA	NA	1.13E-04	1.03E+04	1.16E+00	1.00E+00	3.06E-02	3.16E+03	4.11E+02	1.75E-01	4.57E+02	6.92E+00
BREOT-S13-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	5.66E+03	2.66E+01	NA	NA	NA	NA	1.13E-04	2.86E+03	3.22E-01	1.00E+00	3.06E-02	8.78E+02	4.11E+02	1.75E-01	4.57E+02	1.92E+00
BREOT-N14-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	6.89E+02	3.23E+00	NA	NA	NA	NA	1.13E-04	3.48E+02	3.91E-02	1.00E+00	3.06E-02	1.07E+02	4.11E+02	1.75E-01	4.57E+02	2.34E-01
BREOT-S14-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	3.17E+04	1.48E+02	NA	NA	NA	NA	1.13E-04	1.60E+04	1.80E+00	1.00E+00	3.06E-02	4.91E+03	4.11E+02	1.75E-01	4.57E+02	1.08E+01
BREOT-N15-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	1.95E+03	9.14E+00	NA	NA	NA	NA	1.13E-04	9.84E+02	1.11E-01	1.00E+00	3.06E-02	3.02E+02	4.11E+02	1.75E-01	4.57E+02	6.62E-01
BREOT-N16-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	7.46E+02	3.50E+00	NA	NA	NA	NA	1.13E-04	3.77E+02	4.24E-02	1.00E+00	3.06E-02	1.16E+02	4.11E+02	1.75E-01	4.57E+02	2.53E-01
BREOT-S16-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	4.83E+02	2.26E+00	NA	NA	NA	NA	1.13E-04	2.44E+02	2.74E-02	1.00E+00	3.06E-02	7.49E+01	4.11E+02	1.75E-01	4.57E+02	1.64E-01
BREOT-N17-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	8.60E+02	4.03E+00	NA	NA	NA	NA	1.13E-04	4.34E+02	4.89E-02	1.00E+00	3.06E-02	1.33E+02	4.11E+02	1.75E-01	4.57E+02	2.92E-01
BREOT-S17-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	8.34E+02	3.91E+00	NA	NA	NA	NA	1.13E-04	4.21E+02	4.73E-02	1.00E+00	3.06E-02	1.29E+02	4.11E+02	1.75E-01	4.57E+02	2.83E-01
BREOT-N18-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	1.04E+03	4.85E+00	NA	NA	NA	NA	1.13E-04	5.22E+02	5.88E-02	1.00E+00	3.06E-02	1.61E+02	4.11E+02	1.75E-01	4.57E+02	3.51E-01
BREOT-S18-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	1.43E+03	6.72E+00	NA	NA	NA	NA	1.13E-04	7.23E+02	8.14E-02	1.00E+00	3.06E-02	2.22E+02	4.11E+02	1.75E-01	4.57E+02	4.87E-01
BREOT-N19-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	2.79E+03	1.31E+01	NA	NA	NA	NA	1.13E-04	1.41E+03	1.59E-01	1.00E+00	3.06E-02	4.33E+02	4.11E+02	1.75E-01	4.57E+02	9.48E-01
BREOT-S19-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	5.41E+02	2.54E+00	NA	NA	NA	NA	1.13E-04	2.73E+02	3.07E-02	1.00E+00	3.06E-02	8.38E+01	4.11E+02	1.75E-01	4.57E+02	1.84E-01
BREOT-N20-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	4.44E+03	2.08E+01	NA	NA	NA	NA	1.13E-04	2.24E+03	2.52E-01	1.00E+00	3.06E-02	6.89E+02	4.11E+02	1.75E-01	4.57E+02	1.51E+00
BREOT-S20-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	3.79E+02	1.78E+00	NA	NA	NA	NA	1.13E-04	1.91E+02	2.15E-02	1.00E+00	3.06E-02	5.88E+01	4.11E+02	1.75E-01	4.57E+02	1.29E-01
BREOT-N21-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	2.46E+03	1.15E+01	NA	NA	NA	NA	1.13E-04	1.24E+03	1.40E-01	1.00E+00	3.06E-02	3.82E+02	4.11E+02	1.75E-01	4.57E+02	8.36E-01
BREOT-S21-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	7.65E+02	3.59E+00	NA	NA	NA	NA	1.13E-04	3.86E+02	4.34E-02	1.00E+00	3.06E-02	1.19E+02	4.11E+02	1.75E-01	4.57E+02	2.60E-01
BREOT-N22-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	1.89E+03	8.85E+00	NA	NA	NA	NA	1.13E-04	9.52E+02	1.07E-01	1.00E+00	3.06E-02	2.93E+02	4.11E+02	1.75E-01	4.57E+02	6.41E-01
BREOT-S22-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	1.09E+03	5.13E+00	NA	NA	NA	NA	1.13E-04	5.52E+02	6.22E-02	1.00E+00	3.06E-02	1.70E+02	4.11E+02	1.75E-01	4.57E+02	3.72E-01
BREOT-N23-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	2.36E+03	1.11E+01	NA	NA	NA	NA	1.13E-04	1.19E+03	1.34E-01	1.00E+00	3.06E-02	3.66E+02	4.11E+02	1.75E-01	4.57E+02	8.02E-01
BREOT-S23-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	1.56E+03	7.33E+00	NA	NA	NA	NA	1.13E-04	7.89E+02	8.88E-02	1.00E+00	3.06E-02	2.43E+02	4.11E+02	1.75E-01	4.57E+02	5.31E-01
BREOT-N24-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	3.82E+03	1.79E+01	NA	NA	NA	NA	1.13E-04	1.93E+03	2.17E-01	1.00E+00	3.06E-02	5.92E+02	4.11E+02	1.75E-01	4.57E+02	1.30E+00
BREOT-S24-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	2.08E+04	9.75E+01	NA	NA	NA	NA	1.13E-04	1.05E+04	1.18E+00	1.00E+00	3.06E-02	3.23E+03	4.11E+02	1.75E-01	4.57E+02	7.06E+00
BREOT-N25-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	2.80E+03	1.31E+01	NA	NA	NA	NA	1.13E-04	1.41E+03	1.59E-01	1.00E+00	3.06E-02	4.34E+02	4.11E+02	1.75E-01	4.57E+02	9.51E-01
BREOT-S25-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	5.12E+03	2.40E+01	NA	NA	NA	NA	1.13E-04	2.58E+03	2.91E-01	1.00E+00	3.06E-02	7.94E+02	4.11E+02	1.75E-01	4.57E+02	1.74E+00
BREOT-N26-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	4.21E+03	1.97E+01	NA	NA	NA	NA	1.13E-04	2.12E+03	2.39E-01	1.00E+00	3.06E-02	6.53E+02	4.11E+02	1.75E-01	4.57E+02	1.43E+00
BREOT-S26-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	1.72E+03	8.09E+00	NA	NA	NA	NA	1.13E-04	8.70E+02	9.79E-02	1.00E+00	3.06E-02	2.67E+02	4.11E+02	1.75E-01	4.57E+02	5.85E-01
BREOT-N27-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	2.24E+04	1.05E+02	NA	NA	NA	NA	1.13E-04	1.13E+04	1.27E+00	1.00E+00	3.06E-02	3.47E+03	4.11E+02	1.75E-01	4.57E+02	7.59E+00
BREOT-S27-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	4.25E+02	1.99E+00	NA	NA	NA	NA	1.13E-04	2.15E+02	2.42E-02	1.00E+00	3.06E-02	6.60E+01	4.11E+02	1.75E-01	4.57E+02	1.44E-01
BREOT-N28-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	1.45E+03	6.78E+00	NA	NA	NA	NA	1.13E-04	7.30E+02	8.21E-02	1.00E+00	3.06E-02	2.24E+02	4.11E+02	1.75E-01	4.57E+02	4.91E-01
BREOT-S28-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	4.74E+02	2.22E+00	NA	NA	NA	NA	1.13E-04	2.39E+02	2.69E-02	1.00E+00	3.06E-02	7.36E+01	4.11E+02	1.75E-01	4.57E+02	1.61E-01
BREOT-S29-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	4.56E+02	2.14E+00	NA	NA	NA	NA	1.13E-04	2.30E+02	2.59E-02	1.00E+00	3.06E-02	7.08E+01	4.11E+02	1.75E-01	4.57E+02	1.55E-01

TABLE C-2F: ZINC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 18.41

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Meadow Vole (Small Herbivorous Mammal - Terrestrial)																							
BREOT-N30-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	1.03E+04	4.84E+01	NA	NA	NA	NA	1.13E-04	5.21E+03	5.86E-01	1.00E+00	3.06E-02	1.60E+03	4.11E+02	1.75E-01	4.57E+02	3.50E+00
BREOT-S30-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	1.71E+02	8.02E-01	NA	NA	NA	NA	1.13E-04	8.63E+01	9.71E-03	1.00E+00	3.06E-02	2.65E+01	4.11E+02	1.75E-01	4.57E+02	5.81E-02
BREOT-N31-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	1.29E+04	6.06E+01	NA	NA	NA	NA	1.13E-04	6.52E+03	7.34E-01	1.00E+00	3.06E-02	2.00E+03	4.11E+02	1.75E-01	4.57E+02	4.39E+00
BREOT-S31-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	8.03E+02	3.76E+00	NA	NA	NA	NA	1.13E-04	4.05E+02	4.56E-02	1.00E+00	3.06E-02	1.25E+02	4.11E+02	1.75E-01	4.57E+02	2.73E-01
BREOT-N32-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	5.15E+03	2.41E+01	NA	NA	NA	NA	1.13E-04	2.60E+03	2.92E-01	1.00E+00	3.06E-02	7.99E+02	4.11E+02	1.75E-01	4.57E+02	1.75E+00
BREOT-S32-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	8.48E+02	3.98E+00	NA	NA	NA	NA	1.13E-04	4.28E+02	4.82E-02	1.00E+00	3.06E-02	1.32E+02	4.11E+02	1.75E-01	4.57E+02	2.88E-01
BREOT-N33-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	2.71E+02	1.27E+00	NA	NA	NA	NA	1.13E-04	1.37E+02	1.54E-02	1.00E+00	3.06E-02	4.21E+01	4.11E+02	1.75E-01	4.57E+02	9.22E-02
BREOT-S33-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	1.38E+03	6.48E+00	NA	NA	NA	NA	1.13E-04	6.97E+02	7.85E-02	1.00E+00	3.06E-02	2.14E+02	4.11E+02	1.75E-01	4.57E+02	4.69E-01
BREOT-N34-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	6.87E+02	3.22E+00	NA	NA	NA	NA	1.13E-04	3.47E+02	3.90E-02	1.00E+00	3.06E-02	1.07E+02	4.11E+02	1.75E-01	4.57E+02	2.33E-01
BREOT-S34-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	6.06E+03	2.84E+01	NA	NA	NA	NA	1.13E-04	3.06E+03	3.44E-01	1.00E+00	3.06E-02	9.40E+02	4.11E+02	1.75E-01	4.57E+02	2.06E+00
BREOT-N35-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	2.45E+02	1.15E+00	NA	NA	NA	NA	1.13E-04	1.23E+02	1.39E-02	1.00E+00	3.06E-02	3.79E+01	4.11E+02	1.75E-01	4.57E+02	8.31E-02
BREOT-S35-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	8.80E+02	4.13E+00	NA	NA	NA	NA	1.13E-04	4.44E+02	5.00E-02	1.00E+00	3.06E-02	1.36E+02	4.11E+02	1.75E-01	4.57E+02	2.99E-01
BREOT-N36-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	5.89E+03	2.76E+01	NA	NA	NA	NA	1.13E-04	2.97E+03	3.35E-01	1.00E+00	3.06E-02	9.14E+02	4.11E+02	1.75E-01	4.57E+02	2.00E+00
BREOT-S36-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	5.19E+03	2.43E+01	NA	NA	NA	NA	1.13E-04	2.62E+03	2.95E-01	1.00E+00	3.06E-02	8.05E+02	4.11E+02	1.75E-01	4.57E+02	1.76E+00
BREOT-N37-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	8.21E+02	3.85E+00	NA	NA	NA	NA	1.13E-04	4.14E+02	4.66E-02	1.00E+00	3.06E-02	1.27E+02	4.11E+02	1.75E-01	4.57E+02	2.79E-01
BREOT-S37-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	5.86E+03	2.75E+01	NA	NA	NA	NA	1.13E-04	2.96E+03	3.33E-01	1.00E+00	3.06E-02	9.09E+02	4.11E+02	1.75E-01	4.57E+02	1.99E+00
BREOT-N38-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	2.48E+02	1.17E+00	NA	NA	NA	NA	1.13E-04	1.25E+02	1.41E-02	1.00E+00	3.06E-02	3.85E+01	4.11E+02	1.75E-01	4.57E+02	8.44E-02
BREOT-S38-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	2.24E+03	1.05E+01	NA	NA	NA	NA	1.13E-04	1.13E+03	1.27E-01	1.00E+00	3.06E-02	3.47E+02	4.11E+02	1.75E-01	4.57E+02	7.60E-01
BREOT-N39-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	4.22E+02	1.98E+00	NA	NA	NA	NA	1.13E-04	2.13E+02	2.40E-02	1.00E+00	3.06E-02	6.54E+01	4.11E+02	1.75E-01	4.57E+02	1.43E-01
BREOT-N40-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	3.35E+02	1.57E+00	NA	NA	NA	NA	1.13E-04	1.69E+02	1.90E-02	1.00E+00	3.06E-02	5.20E+01	4.11E+02	1.75E-01	4.57E+02	1.14E-01
BREOT-S40-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	4.21E+03	1.97E+01	NA	NA	NA	NA	1.13E-04	2.13E+03	2.39E-01	1.00E+00	3.06E-02	6.53E+02	4.11E+02	1.75E-01	4.57E+02	1.43E+00
BREOT-N41-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	1.92E+02	8.99E-01	NA	NA	NA	NA	1.13E-04	9.68E+01	1.09E-02	1.00E+00	3.06E-02	2.97E+01	4.11E+02	1.75E-01	4.57E+02	6.51E-02
BREOT-S41-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	4.55E+03	2.13E+01	NA	NA	NA	NA	1.13E-04	2.30E+03	2.58E-01	1.00E+00	3.06E-02	7.06E+02	4.11E+02	1.75E-01	4.57E+02	1.55E+00
BREOT-N42-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S42-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	8.64E+03	4.05E+01	NA	NA	NA	NA	1.13E-04	4.36E+03	4.91E-01	1.00E+00	3.06E-02	1.34E+03	4.11E+02	1.75E-01	4.57E+02	2.93E+00
BREOT-N43-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	4.00E+02	1.87E+00	NA	NA	NA	NA	1.13E-04	2.02E+02	2.27E-02	1.00E+00	3.06E-02	6.20E+01	4.11E+02	1.75E-01	4.57E+02	1.36E-01
BREOT-S43-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	8.09E+02	3.80E+00	NA	NA	NA	NA	1.13E-04	4.09E+02	4.60E-02	1.00E+00	3.06E-02	1.26E+02	4.11E+02	1.75E-01	4.57E+02	2.75E-01
BREOT-N44-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	8.31E+02	3.90E+00	NA	NA	NA	NA	1.13E-04	4.19E+02	4.72E-02	1.00E+00	3.06E-02	1.29E+02	4.11E+02	1.75E-01	4.57E+02	2.82E-01
BREOT-S44-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	6.95E+02	3.26E+00	NA	NA	NA	NA	1.13E-04	3.51E+02	3.95E-02	1.00E+00	3.06E-02	1.08E+02	4.11E+02	1.75E-01	4.57E+02	2.36E-01
BREOT-N45-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	6.71E+02	3.15E+00	NA	NA	NA	NA	1.13E-04	3.39E+02	3.81E-02	1.00E+00	3.06E-02	1.04E+02	4.11E+02	1.75E-01	4.57E+02	2.28E-01
BREOT-S45-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	7.91E+02	3.71E+00	NA	NA	NA	NA	1.13E-04	3.99E+02	4.49E-02	1.00E+00	3.06E-02	1.23E+02	4.11E+02	1.75E-01	4.57E+02	2.69E-01
BREOT-N46-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	8.80E+02	4.13E+00	NA	NA	NA	NA	1.13E-04	4.44E+02	5.00E-02	1.00E+00	3.06E-02	1.37E+02	4.11E+02	1.75E-01	4.57E+02	2.99E-01
BREOT-S46-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	3.34E+02	1.57E+00	NA	NA	NA	NA	1.13E-04	1.69E+02	1.90E-02	1.00E+00	3.06E-02	5.19E+01	4.11E+02	1.75E-01	4.57E+02	1.14E-01
BREOT-N47-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	1.43E+03	6.72E+00	NA	NA	NA	NA	1.13E-04	7.23E+02	8.14E-02	1.00E+00	3.06E-02	2.22E+02	4.11E+02	1.75E-01	4.57E+02	4.86E-01
BREOT-S47-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	2.27E+02	1.06E+00	NA	NA	NA	NA	1.13E-04	1.14E+02	1.29E-02	1.00E+00	3.06E-02	3.52E+01	4.11E+02	1.75E-01	4.57E+02	7.70E-02
BREOT-N48-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	5.60E+02	2.63E+00	NA	NA	NA	NA	1.13E-04	2.83E+02	3.18E-02	1.00E+00	3.06E-02	8.69E+01	4.11E+02	1.75E-01	4.57E+02	1.90E-01
BREOT-S48-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N49-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	2.10E+03	9.86E+00	NA	NA	NA	NA	1.13E-04	1.06E+03	1.19E-01	1.00E+00	3.06E-02	3.26E+02	4.11E+02	1.75E-01	4.57E+02	7.14E-01
BREOT-S49-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S50-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N51-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	6.66E+02	3.12E+00	NA	NA	NA	NA	1.13E-04	3.36E+02	3.78E-02	1.00E+00	3.06E-02	1.03E+02	4.11E+02	1.75E-01	4.57E+02	2.26E-01
BREOT-S51-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	3.78E+02	1.77E+00	NA	NA	NA	NA	1.13E-04	1.91E+02	2.15E-02	1.00E+00	3.06E-02	5.86E+01	4.11E+02	1.75E-01	4.57E+02	1.28E-01
BREOT-N52-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S52-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N53-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	5.18E+02	2.43E+00	NA	NA	NA	NA	1.13E-04	2.61E+02	2.94E-02	1.00E+00	3.06E-02	8.04E+01	4.11E+02	1.75E-01	4.57E+02	1.76E-01
BREOT-S53-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N54-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	5.92E+02	2.78E+00	NA	NA	NA	NA	1.13E-04	2.99E+02	3.36E-02	1.00E+00	3.06E-02	9.18E+01	4.11E+02	1.75E-01	4.57E+02	2.01E-01
BREOT-S54-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N55-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	4.55E+02	2.13E+00	NA	NA	NA	NA	1.13E-04	2.29E+02	2.58E-02	1.00E+00	3.06E-02	7.05E+01	4.11E+02	1.75E-01	4.57E+02	1.54E-01
BREOT-S55-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N56-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	4.95E+02	2.32E+00	NA	NA	NA	NA	1.13E-04	2.50E+02	2.81E-02	1.00E+00	3.06E-02	7.67E+01	4.11E+02	1.75E-01	4.57E+02	1.68E-01
BREOT-N57-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	3.53E+02	1.66E+00	NA	NA	NA	NA	1.13E-04	1.78E+02	2.01E-02	1.00E+00	3.06E-02	5.48E+01	4.11E+02	1.75E-01	4.57E+02	1.20E-01
BREOT-S57-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	7.31E+02	3.43E+00	NA	NA	NA	NA	1.13E-04	3.69E+02	4.15E-02	1.00E+00	3.06E-02	1.13E+02	4.11E+02	1.75E-01	4.57E+02	2.48E-01
BREOT-N58-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	4.31E+02	2.02E+00	NA	NA	NA	NA	1.13E-04	2.17E+02	2.45E-02	1.00E+00	3.06E-02	6.68E+01	4.11E+02	1.75E-01	4.57E+02	1.46E-01
BREOT-S58-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	6.86E+02	3.22E+00	NA	NA	NA	NA	1.13E-04	3.46E+02	3.90E-02	1.00E+00	3.06E-02	1.06E+02	4.11E+02	1.75E-01	4.57E+02	2.33E-01

TABLE C-2F: ZINC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 18.41

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Meadow Vole (Small Herbivorous Mammal - Terrestrial)																							
BREOT-N59-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	4.84E+02	2.27E+00	NA	NA	NA	NA	1.13E-04	2.44E+02	2.75E-02	1.00E+00	3.06E-02	7.50E+01	4.11E+02	1.75E-01	4.57E+02	1.64E-01
BREOT-N60-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	4.49E+02	2.11E+00	NA	NA	NA	NA	1.13E-04	2.27E+02	2.55E-02	1.00E+00	3.06E-02	6.97E+01	4.11E+02	1.75E-01	4.57E+02	1.53E-01
BREOT-S60-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	1.21E+03	5.69E+00	NA	NA	NA	NA	1.13E-04	6.12E+02	6.89E-02	1.00E+00	3.06E-02	1.88E+02	4.11E+02	1.75E-01	4.57E+02	4.12E-01
BREOT-S61-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N62-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	4.99E+02	2.34E+00	NA	NA	NA	NA	1.13E-04	2.52E+02	2.83E-02	1.00E+00	3.06E-02	7.74E+01	4.11E+02	1.75E-01	4.57E+02	1.69E-01
BREOT-S62-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	1.89E+02	8.85E-01	NA	NA	NA	NA	1.13E-04	9.52E+01	1.07E-02	1.00E+00	3.06E-02	2.93E+01	4.11E+02	1.75E-01	4.57E+02	6.41E-02
BREOT-N63-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	9.21E+02	4.32E+00	NA	NA	NA	NA	1.13E-04	4.65E+02	5.23E-02	1.00E+00	3.06E-02	1.43E+02	4.11E+02	1.75E-01	4.57E+02	3.13E-01
BREOT-S63-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	6.56E+02	3.07E+00	NA	NA	NA	NA	1.13E-04	3.31E+02	3.72E-02	1.00E+00	3.06E-02	1.02E+02	4.11E+02	1.75E-01	4.57E+02	2.23E-01
BREOT-N64-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	5.80E+02	2.72E+00	NA	NA	NA	NA	1.13E-04	2.93E+02	3.29E-02	1.00E+00	3.06E-02	8.99E+01	4.11E+02	1.75E-01	4.57E+02	1.97E-01
BREOT-S64-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N66-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	5.09E+02	2.39E+00	NA	NA	NA	NA	1.13E-04	2.57E+02	2.89E-02	1.00E+00	3.06E-02	7.89E+01	4.11E+02	1.75E-01	4.57E+02	1.73E-01
BREOT-S66-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	7.55E+02	3.54E+00	NA	NA	NA	NA	1.13E-04	3.81E+02	4.29E-02	1.00E+00	3.06E-02	1.17E+02	4.11E+02	1.75E-01	4.57E+02	2.56E-01
BREOT-N67-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	6.70E+03	3.14E+01	NA	NA	NA	NA	1.13E-04	3.38E+03	3.80E-01	1.00E+00	3.06E-02	1.04E+03	4.11E+02	1.75E-01	4.57E+02	2.27E+00
BREOT-S67-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	3.69E+02	1.73E+00	NA	NA	NA	NA	1.13E-04	1.86E+02	2.09E-02	1.00E+00	3.06E-02	5.72E+01	4.11E+02	1.75E-01	4.57E+02	1.25E-01
Outside Tailings																						**Maximum HQ (At Edge of Tailings)**	**1.23E+01**
BREOT-S0+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	6.92E+02	3.24E+00	NA	NA	NA	NA	1.13E-04	3.49E+02	3.93E-02	1.00E+00	3.06E-02	1.07E+02	4.11E+02	1.75E-01	4.57E+02	2.35E-01
BREOT-S1+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	8.88E+02	4.17E+00	NA	NA	NA	NA	1.13E-04	4.48E+02	5.05E-02	1.00E+00	3.06E-02	1.38E+02	4.11E+02	1.75E-01	4.57E+02	3.02E-01
BREOT-S2+95 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	2.92E+02	1.37E+00	NA	NA	NA	NA	1.13E-04	1.47E+02	1.66E-02	1.00E+00	3.06E-02	4.53E+01	4.11E+02	1.75E-01	4.57E+02	9.92E-02
BREOT-S3+6 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	3.83E+02	1.79E+00	NA	NA	NA	NA	1.13E-04	1.93E+02	2.17E-02	1.00E+00	3.06E-02	5.94E+01	4.11E+02	1.75E-01	4.57E+02	1.30E-01
BREOT-S4+10 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	4.52E+02	2.12E+00	NA	NA	NA	NA	1.13E-04	2.28E+02	2.57E-02	1.00E+00	3.06E-02	7.02E+01	4.11E+02	1.75E-01	4.57E+02	1.54E-01
BREOT-S6+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	4.97E+02	2.33E+00	NA	NA	NA	NA	1.13E-04	2.51E+02	2.82E-02	1.00E+00	3.06E-02	7.70E+01	4.11E+02	1.75E-01	4.57E+02	1.69E-01
BREOT-S8+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	5.66E+02	2.66E+00	NA	NA	NA	NA	1.13E-04	2.86E+02	3.22E-02	1.00E+00	3.06E-02	8.78E+01	4.11E+02	1.75E-01	4.57E+02	1.92E-01
BREOT-N10+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	4.54E+02	2.13E+00	NA	NA	NA	NA	1.13E-04	2.29E+02	2.58E-02	1.00E+00	3.06E-02	7.05E+01	4.11E+02	1.75E-01	4.57E+02	1.54E-01
BREOT-N11+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	3.62E+02	1.70E+00	NA	NA	NA	NA	1.13E-04	1.83E+02	2.06E-02	1.00E+00	3.06E-02	5.62E+01	4.11E+02	1.75E-01	4.57E+02	1.23E-01
BREOT-N12+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	5.25E+02	2.46E+00	NA	NA	NA	NA	1.13E-04	2.65E+02	2.98E-02	1.00E+00	3.06E-02	8.14E+01	4.11E+02	1.75E-01	4.57E+02	1.78E-01
BREOT-S12+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	1.28E+04	6.00E+01	NA	NA	NA	NA	1.13E-04	6.45E+03	7.26E-01	1.00E+00	3.06E-02	1.98E+03	4.11E+02	1.75E-01	4.57E+02	4.34E+00
BREOT-S12+60 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	1.25E+03	5.84E+00	NA	NA	NA	NA	1.13E-04	6.28E+02	7.07E-02	1.00E+00	3.06E-02	1.93E+02	4.11E+02	1.75E-01	4.57E+02	4.23E-01
BREOT-N13+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	5.22E+02	2.45E+00	NA	NA	NA	NA	1.13E-04	2.63E+02	2.97E-02	1.00E+00	3.06E-02	8.10E+01	4.11E+02	1.75E-01	4.57E+02	1.77E-01
BREOT-S13+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	5.72E+03	2.68E+01	NA	NA	NA	NA	1.13E-04	2.89E+03	3.25E-01	1.00E+00	3.06E-02	8.87E+02	4.11E+02	1.75E-01	4.57E+02	1.94E+00
BREOT-S13+65 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	1.88E+03	8.82E+00	NA	NA	NA	NA	1.13E-04	9.50E+02	1.07E-01	1.00E+00	3.06E-02	2.92E+02	4.11E+02	1.75E-01	4.57E+02	6.39E-01
BREOT-N14+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	8.64E+02	4.05E+00	NA	NA	NA	NA	1.13E-04	4.36E+02	4.91E-02	1.00E+00	3.06E-02	1.34E+02	4.11E+02	1.75E-01	4.57E+02	2.93E-01
BREOT-S14+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	8.81E+03	4.13E+01	NA	NA	NA	NA	1.13E-04	4.44E+03	5.00E-01	1.00E+00	3.06E-02	1.37E+03	4.11E+02	1.75E-01	4.57E+02	2.99E+00
BREOT-S14+59 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	6.69E+02	3.14E+00	NA	NA	NA	NA	1.13E-04	3.38E+02	3.80E-02	1.00E+00	3.06E-02	1.04E+02	4.11E+02	1.75E-01	4.57E+02	2.27E-01
BREOT-N15+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	1.90E+04	8.91E+01	NA	NA	NA	NA	1.13E-04	9.59E+03	1.08E+00	1.00E+00	3.06E-02	2.95E+03	4.11E+02	1.75E-01	4.57E+02	6.45E+00
BREOT-N15+50 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	5.96E+02	2.80E+00	NA	NA	NA	NA	1.13E-04	3.01E+02	3.39E-02	1.00E+00	3.06E-02	9.25E+01	4.11E+02	1.75E-01	4.57E+02	2.02E-01
BREOT-S16+20 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	7.67E+03	3.60E+01	NA	NA	NA	NA	1.13E-04	3.87E+03	4.36E-01	1.00E+00	3.06E-02	1.19E+03	4.11E+02	1.75E-01	4.57E+02	2.60E+00
BREOT-S16+75 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	9.04E+02	4.24E+00	NA	NA	NA	NA	1.13E-04	4.56E+02	5.13E-02	1.00E+00	3.06E-02	1.40E+02	4.11E+02	1.75E-01	4.57E+02	3.07E-01
BREOT-N17+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	3.81E+03	1.79E+01	NA	NA	NA	NA	1.13E-04	1.92E+03	2.16E-01	1.00E+00	3.06E-02	5.91E+02	4.11E+02	1.75E-01	4.57E+02	1.29E+00
BREOT-S18+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	4.01E+02	1.88E+00	NA	NA	NA	NA	1.13E-04	2.02E+02	2.28E-02	1.00E+00	3.06E-02	6.22E+01	4.11E+02	1.75E-01	4.57E+02	1.36E-01
BREOT-N19+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	3.96E+02	1.86E+00	NA	NA	NA	NA	1.13E-04	2.00E+02	2.25E-02	1.00E+00	3.06E-02	6.15E+01	4.11E+02	1.75E-01	4.57E+02	1.35E-01
BREOT-S19+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	1.71E+03	8.04E+00	NA	NA	NA	NA	1.13E-04	8.65E+02	9.74E-02	1.00E+00	3.06E-02	2.66E+02	4.11E+02	1.75E-01	4.57E+02	5.82E-01
BREOT-S19+85 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	2.99E+02	1.40E+00	NA	NA	NA	NA	1.13E-04	1.51E+02	1.70E-02	1.00E+00	3.06E-02	4.63E+01	4.11E+02	1.75E-01	4.57E+02	1.01E-01
BREOT-N20+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	5.68E+02	2.66E+00	NA	NA	NA	NA	1.13E-04	2.87E+02	3.23E-02	1.00E+00	3.06E-02	8.81E+01	4.11E+02	1.75E-01	4.57E+02	1.93E-01
BREOT-S20+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	2.29E+03	1.08E+01	NA	NA	NA	NA	1.13E-04	1.16E+03	1.30E-01	1.00E+00	3.06E-02	3.56E+02	4.11E+02	1.75E-01	4.57E+02	7.79E-01
BREOT-S20+75 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	4.32E+02	2.03E+00	NA	NA	NA	NA	1.13E-04	2.18E+02	2.45E-02	1.00E+00	3.06E-02	6.70E+01	4.11E+02	1.75E-01	4.57E+02	1.47E-01
BREOT-N21+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	8.48E+02	3.98E+00	NA	NA	NA	NA	1.13E-04	4.28E+02	4.82E-02	1.00E+00	3.06E-02	1.32E+02	4.11E+02	1.75E-01	4.57E+02	2.88E-01
BREOT-S21+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	1.05E+03	4.94E+00	NA	NA	NA	NA	1.13E-04	5.32E+02	5.99E-02	1.00E+00	3.06E-02	1.64E+02	4.11E+02	1.75E-01	4.57E+02	3.58E-01
BREOT-N22+150 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	4.06E+02	1.90E+00	NA	NA	NA	NA	1.13E-04	2.05E+02	2.30E-02	1.00E+00	3.06E-02	6.29E+01	4.11E+02	1.75E-01	4.57E+02	1.38E-01
BREOT-N22+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	5.93E+03	2.78E+01	NA	NA	NA	NA	1.13E-04	2.99E+03	3.37E-01	1.00E+00	3.06E-02	9.20E+02	4.11E+02	1.75E-01	4.57E+02	2.01E+00
BREOT-S22+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	6.98E+02	3.27E+00	NA	NA	NA	NA	1.13E-04	3.52E+02	3.96E-02	1.00E+00	3.06E-02	1.08E+02	4.11E+02	1.75E-01	4.57E+02	2.37E-01
BREOT-N23+115 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	7.18E+02	3.37E+00	NA	NA	NA	NA	1.13E-04	3.63E+02	4.08E-02	1.00E+00	3.06E-02	1.11E+02	4.11E+02	1.75E-01	4.57E+02	2.44E-01
BREOT-N23+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	1.46E+04	6.85E+01	NA	NA	NA	NA	1.13E-04	7.37E+03	8.30E-01	1.00E+00	3.06E-02	2.27E+03	4.11E+02	1.75E-01	4.57E+02	4.96E+00
BREOT-S23+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	3.49E+03	1.64E+01	NA	NA	NA	NA	1.13E-04	1.76E+03	1.98E-01	1.00E+00	3.06E-02	5.42E+02	4.11E+02	1.75E-01	4.57E+02	1.19E+00
BREOT-S23+37.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	9.23E+02	4.33E+00	NA	NA	NA	NA	1.13E-04	4.66E+02	5.24E-02	1.00E+00	3.06E-02	1.43E+02	4.11E+02	1.75E-01	4.57E+02	3.13E-01
BREOT-N24+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	3.62E+03	1.70E+01	NA	NA	NA	NA	1.13E-04	1.83E+03	2.06E-01	1.00E+00	3.06E-02	5.62E+02	4.11E+02	1.75E-01	4.57E+02	1.23E+00

TABLE C-2F: ZINC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 18.41

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Meadow Vole (Small Herbivorous Mammal - Terrestrial)																							
BREOT-N24+75 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	5.76E+02	2.70E+00	NA	NA	NA	NA	1.13E-04	2.91E+02	3.27E-02	1.00E+00	3.06E-02	8.93E+01	4.11E+02	1.75E-01	4.57E+02	1.96E-01
BREOT-S24+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	8.47E+02	3.97E+00	NA	NA	NA	NA	1.13E-04	4.27E+02	4.81E-02	1.00E+00	3.06E-02	1.31E+02	4.11E+02	1.75E-01	4.57E+02	2.88E-01
BREOT-N25+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	2.07E+02	9.72E-01	NA	NA	NA	NA	1.13E-04	1.05E+02	1.18E-02	1.00E+00	3.06E-02	3.22E+01	4.11E+02	1.75E-01	4.57E+02	7.04E-02
BREOT-S25+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	5.91E+02	2.77E+00	NA	NA	NA	NA	1.13E-04	2.98E+02	3.36E-02	1.00E+00	3.06E-02	9.17E+01	4.11E+02	1.75E-01	4.57E+02	2.01E-01
BREOT-S25+40 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	6.47E+02	3.03E+00	NA	NA	NA	NA	1.13E-04	3.26E+02	3.67E-02	1.00E+00	3.06E-02	1.00E+02	4.11E+02	1.75E-01	4.57E+02	2.20E-01
BREOT-S26+37 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	4.92E+02	2.31E+00	NA	NA	NA	NA	1.13E-04	2.48E+02	2.80E-02	1.00E+00	3.06E-02	7.63E+01	4.11E+02	1.75E-01	4.57E+02	1.67E-01
BREOT-N27+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	5.31E+02	2.49E+00	NA	NA	NA	NA	1.13E-04	2.68E+02	3.02E-02	1.00E+00	3.06E-02	8.24E+01	4.11E+02	1.75E-01	4.57E+02	1.80E-01
BREOT-S27+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	3.90E+02	1.83E+00	NA	NA	NA	NA	1.13E-04	1.97E+02	2.21E-02	1.00E+00	3.06E-02	6.04E+01	4.11E+02	1.75E-01	4.57E+02	1.32E-01
BREOT-N28+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	3.68E+02	1.73E+00	NA	NA	NA	NA	1.13E-04	1.86E+02	2.09E-02	1.00E+00	3.06E-02	5.71E+01	4.11E+02	1.75E-01	4.57E+02	1.25E-01
BREOT-S28+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	4.36E+02	2.04E+00	NA	NA	NA	NA	1.13E-04	2.20E+02	2.48E-02	1.00E+00	3.06E-02	6.76E+01	4.11E+02	1.75E-01	4.57E+02	1.48E-01
BREOT-N29+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	1.39E+03	6.51E+00	NA	NA	NA	NA	1.13E-04	7.01E+02	7.89E-02	1.00E+00	3.06E-02	2.15E+02	4.11E+02	1.75E-01	4.57E+02	4.71E-01
BREOT-S29+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	3.58E+02	1.68E+00	NA	NA	NA	NA	1.13E-04	1.81E+02	2.04E-02	1.00E+00	3.06E-02	5.56E+01	4.11E+02	1.75E-01	4.57E+02	1.22E-01
BREOT-N30+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	7.84E+02	3.68E+00	NA	NA	NA	NA	1.13E-04	3.96E+02	4.46E-02	1.00E+00	3.06E-02	1.22E+02	4.11E+02	1.75E-01	4.57E+02	2.66E-01
BREOT-S30+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	6.10E+02	2.86E+00	NA	NA	NA	NA	1.13E-04	3.08E+02	3.46E-02	1.00E+00	3.06E-02	9.46E+01	4.11E+02	1.75E-01	4.57E+02	2.07E-01
BREOT-N31+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	2.00E+04	9.40E+01	NA	NA	NA	NA	1.13E-04	1.01E+04	1.14E+00	1.00E+00	3.06E-02	3.11E+03	4.11E+02	1.75E-01	4.57E+02	6.80E+00
BREOT-N31+75 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	3.92E+02	1.84E+00	NA	NA	NA	NA	1.13E-04	1.98E+02	2.23E-02	1.00E+00	3.06E-02	6.08E+01	4.11E+02	1.75E-01	4.57E+02	1.33E-01
BREOT-S31+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	5.59E+02	2.62E+00	NA	NA	NA	NA	1.13E-04	2.82E+02	3.18E-02	1.00E+00	3.06E-02	8.67E+01	4.11E+02	1.75E-01	4.57E+02	1.90E-01
BREOT-N32+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	2.95E+02	1.38E+00	NA	NA	NA	NA	1.13E-04	1.49E+02	1.68E-02	1.00E+00	3.06E-02	4.58E+01	4.11E+02	1.75E-01	4.57E+02	1.00E-01
BREOT-S32+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	8.06E+02	3.78E+00	NA	NA	NA	NA	1.13E-04	4.07E+02	4.58E-02	1.00E+00	3.06E-02	1.25E+02	4.11E+02	1.75E-01	4.57E+02	2.74E-01
BREOT-S32+300 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	1.03E+03	4.85E+00	NA	NA	NA	NA	1.13E-04	5.22E+02	5.88E-02	1.00E+00	3.06E-02	1.61E+02	4.11E+02	1.75E-01	4.57E+02	3.51E-01
BREOT-N33+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	2.12E+02	9.95E-01	NA	NA	NA	NA	1.13E-04	1.07E+02	1.21E-02	1.00E+00	3.06E-02	3.29E+01	4.11E+02	1.75E-01	4.57E+02	7.21E-02
BREOT-S33+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	2.35E+03	1.10E+01	NA	NA	NA	NA	1.13E-04	1.19E+03	1.34E-01	1.00E+00	3.06E-02	3.65E+02	4.11E+02	1.75E-01	4.57E+02	7.99E-01
BREOT-N34+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	2.75E+02	1.29E+00	NA	NA	NA	NA	1.13E-04	1.39E+02	1.56E-02	1.00E+00	3.06E-02	4.26E+01	4.11E+02	1.75E-01	4.57E+02	9.33E-02
BREOT-S34+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	4.75E+02	2.23E+00	NA	NA	NA	NA	1.13E-04	2.40E+02	2.70E-02	1.00E+00	3.06E-02	7.37E+01	4.11E+02	1.75E-01	4.57E+02	1.61E-01
BREOT-N35+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	3.10E+02	1.45E+00	NA	NA	NA	NA	1.13E-04	1.57E+02	1.76E-02	1.00E+00	3.06E-02	4.81E+01	4.11E+02	1.75E-01	4.57E+02	1.05E-01
BREOT-S35+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	2.10E+03	9.86E+00	NA	NA	NA	NA	1.13E-04	1.06E+03	1.19E-01	1.00E+00	3.06E-02	3.26E+02	4.11E+02	1.75E-01	4.57E+02	7.14E-01
BREOT-N36+100 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	4.47E+02	2.10E+00	NA	NA	NA	NA	1.13E-04	2.26E+02	2.54E-02	1.00E+00	3.06E-02	6.94E+01	4.11E+02	1.75E-01	4.57E+02	1.52E-01
BREOT-N36+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	4.69E+03	2.20E+01	NA	NA	NA	NA	1.13E-04	2.37E+03	2.66E-01	1.00E+00	3.06E-02	7.27E+02	4.11E+02	1.75E-01	4.57E+02	1.59E+00
BREOT-S36+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	1.78E+03	8.35E+00	NA	NA	NA	NA	1.13E-04	8.99E+02	1.01E-01	1.00E+00	3.06E-02	2.76E+02	4.11E+02	1.75E-01	4.57E+02	6.05E-01
BREOT-N37+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	1.56E+02	7.30E-01	NA	NA	NA	NA	1.13E-04	7.86E+01	8.84E-03	1.00E+00	3.06E-02	2.42E+01	4.11E+02	1.75E-01	4.57E+02	5.29E-02
BREOT-S37+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	2.03E+03	9.50E+00	NA	NA	NA	NA	1.13E-04	1.02E+03	1.15E-01	1.00E+00	3.06E-02	3.14E+02	4.11E+02	1.75E-01	4.57E+02	6.88E-01
BREOT-N38+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	1.67E+02	7.81E-01	NA	NA	NA	NA	1.13E-04	8.41E+01	9.46E-03	1.00E+00	3.06E-02	2.58E+01	4.11E+02	1.75E-01	4.57E+02	5.65E-02
BREOT-S38+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	2.36E+03	1.11E+01	NA	NA	NA	NA	1.13E-04	1.19E+03	1.34E-01	1.00E+00	3.06E-02	3.66E+02	4.11E+02	1.75E-01	4.57E+02	8.01E-01
BREOT-N39+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	2.28E+02	1.07E+00	NA	NA	NA	NA	1.13E-04	1.15E+02	1.29E-02	1.00E+00	3.06E-02	3.54E+01	4.11E+02	1.75E-01	4.57E+02	7.74E-02
BREOT-S39+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	2.35E+03	1.10E+01	NA	NA	NA	NA	1.13E-04	1.19E+03	1.34E-01	1.00E+00	3.06E-02	3.65E+02	4.11E+02	1.75E-01	4.57E+02	7.98E-01
BREOT-N40+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	1.29E+02	6.03E-01	NA	NA	NA	NA	1.13E-04	6.49E+01	7.30E-03	1.00E+00	3.06E-02	1.99E+01	4.11E+02	1.75E-01	4.57E+02	4.37E-02
BREOT-S40+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	2.10E+03	9.85E+00	NA	NA	NA	NA	1.13E-04	1.06E+03	1.19E-01	1.00E+00	3.06E-02	3.26E+02	4.11E+02	1.75E-01	4.57E+02	7.14E-01
BREOT-N41+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	2.28E+02	1.07E+00	NA	NA	NA	NA	1.13E-04	1.15E+02	1.30E-02	1.00E+00	3.06E-02	3.54E+01	4.11E+02	1.75E-01	4.57E+02	7.75E-02
BREOT-S41+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	1.55E+03	7.29E+00	NA	NA	NA	NA	1.13E-04	7.85E+02	8.83E-02	1.00E+00	3.06E-02	2.41E+02	4.11E+02	1.75E-01	4.57E+02	5.28E-01
BREOT-N42+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	1.14E+02	5.35E-01	NA	NA	NA	NA	1.13E-04	5.76E+01	6.48E-03	1.00E+00	3.06E-02	1.77E+01	4.11E+02	1.75E-01	4.57E+02	3.87E-02
BREOT-S42+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	2.26E+03	1.06E+01	NA	NA	NA	NA	1.13E-04	1.14E+03	1.28E-01	1.00E+00	3.06E-02	3.50E+02	4.11E+02	1.75E-01	4.57E+02	7.66E-01
BREOT-N43+12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	5.53E+02	2.59E+00	NA	NA	NA	NA	1.13E-04	2.79E+02	3.14E-02	1.00E+00	3.06E-02	8.57E+01	4.11E+02	1.75E-01	4.57E+02	1.88E-01
BREOT-N43+40 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	4.37E+02	2.05E+00	NA	NA	NA	NA	1.13E-04	2.21E+02	2.48E-02	1.00E+00	3.06E-02	6.78E+01	4.11E+02	1.75E-01	4.57E+02	1.48E-01
BREOT-S43+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	8.75E+02	4.10E+00	NA	NA	NA	NA	1.13E-04	4.42E+02	4.97E-02	1.00E+00	3.06E-02	1.36E+02	4.11E+02	1.75E-01	4.57E+02	2.97E-01
BREOT-N44+55 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	4.47E+02	2.10E+00	NA	NA	NA	NA	1.13E-04	2.26E+02	2.54E-02	1.00E+00	3.06E-02	6.93E+01	4.11E+02	1.75E-01	4.57E+02	1.52E-01
BREOT-S44+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	6.48E+02	3.04E+00	NA	NA	NA	NA	1.13E-04	3.27E+02	3.68E-02	1.00E+00	3.06E-02	1.01E+02	4.11E+02	1.75E-01	4.57E+02	2.20E-01
BREOT-N45+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	4.57E+02	2.15E+00	NA	NA	NA	NA	1.13E-04	2.31E+02	2.60E-02	1.00E+00	3.06E-02	7.10E+01	4.11E+02	1.75E-01	4.57E+02	1.55E-01
BREOT-S45+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	9.09E+02	4.26E+00	NA	NA	NA	NA	1.13E-04	4.59E+02	5.16E-02	1.00E+00	3.06E-02	1.41E+02	4.11E+02	1.75E-01	4.57E+02	3.08E-01
BREOT-N46+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	1.03E+03	4.81E+00	NA	NA	NA	NA	1.13E-04	5.18E+02	5.83E-02	1.00E+00	3.06E-02	1.59E+02	4.11E+02	1.75E-01	4.57E+02	3.48E-01
BREOT-S46+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	6.86E+02	3.21E+00	NA	NA	NA	NA	1.13E-04	3.46E+02	3.89E-02	1.00E+00	3.06E-02	1.06E+02	4.11E+02	1.75E-01	4.57E+02	2.33E-01
BREOT-N47+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	6.82E+02	3.20E+00	NA	NA	NA	NA	1.13E-04	3.44E+02	3.87E-02	1.00E+00	3.06E-02	1.06E+02	4.11E+02	1.75E-01	4.57E+02	2.32E-01
BREOT-S47+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	2.10E+02	9.83E-01	NA	NA	NA	NA	1.13E-04	1.06E+02	1.19E-02	1.00E+00	3.06E-02	3.25E+01	4.11E+02	1.75E-01	4.57E+02	7.12E-02
BREOT-N48+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	2.63E+02	1.23E+00	NA	NA	NA	NA	1.13E-04	1.33E+02	1.50E-02	1.00E+00	3.06E-02	4.08E+01	4.11E+02	1.75E-01	4.57E+02	8.94E-02
BREOT-S48+25 (0-6")	4.69E-03	NA	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N49+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	6.77E+02	3.17E+00	NA	NA	NA	NA	1.13E-04	3.42E+02	3.85E-02	1.00E+00	3.06E-02	1.05E+02	4.11E+02	1.75E-01	4.57E+02	2.30E-01

TABLE C-2F: ZINC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 18.41

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Meadow Vole (Small Herbivorous Mammal - Terrestrial)																							
BREOT-S49+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N51+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	3.30E+02	1.55E+00	NA	NA	NA	NA	1.13E-04	1.66E+02	1.87E-02	1.00E+00	3.06E-02	5.11E+01	4.11E+02	1.75E-01	4.57E+02	1.12E-01
BREOT-S51+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	2.65E+02	1.24E+00	NA	NA	NA	NA	1.13E-04	1.34E+02	1.51E-02	1.00E+00	3.06E-02	4.12E+01	4.11E+02	1.75E-01	4.57E+02	9.01E-02
BREOT-N52+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	3.32E+02	1.56E+00	NA	NA	NA	NA	1.13E-04	1.68E+02	1.89E-02	1.00E+00	3.06E-02	5.15E+01	4.11E+02	1.75E-01	4.57E+02	1.13E-01
BREOT-S52+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N53+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	3.30E+02	1.55E+00	NA	NA	NA	NA	1.13E-04	1.67E+02	1.87E-02	1.00E+00	3.06E-02	5.12E+01	4.11E+02	1.75E-01	4.57E+02	1.12E-01
BREOT-S53+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S54+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N55+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	2.90E+02	1.36E+00	NA	NA	NA	NA	1.13E-04	1.47E+02	1.65E-02	1.00E+00	3.06E-02	4.50E+01	4.11E+02	1.75E-01	4.57E+02	9.86E-02
BREOT-S55+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N56+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	2.87E+02	1.34E+00	NA	NA	NA	NA	1.13E-04	1.45E+02	1.63E-02	1.00E+00	3.06E-02	4.45E+01	4.11E+02	1.75E-01	4.57E+02	9.74E-02
BREOT-S56+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N57+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	2.47E+02	1.16E+00	NA	NA	NA	NA	1.13E-04	1.25E+02	1.40E-02	1.00E+00	3.06E-02	3.83E+01	4.11E+02	1.75E-01	4.57E+02	8.38E-02
BREOT-S57+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	4.04E+02	1.89E+00	NA	NA	NA	NA	1.13E-04	2.04E+02	2.30E-02	1.00E+00	3.06E-02	6.27E+01	4.11E+02	1.75E-01	4.57E+02	1.37E-01
BREOT-N58+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	4.20E+02	1.97E+00	NA	NA	NA	NA	1.13E-04	2.12E+02	2.39E-02	1.00E+00	3.06E-02	6.52E+01	4.11E+02	1.75E-01	4.57E+02	1.43E-01
BREOT-S58+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	1.78E+02	8.36E-01	NA	NA	NA	NA	1.13E-04	9.00E+01	1.01E-02	1.00E+00	3.06E-02	2.76E+01	4.11E+02	1.75E-01	4.57E+02	6.05E-02
BREOT-N59+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	6.97E+02	3.27E+00	NA	NA	NA	NA	1.13E-04	3.52E+02	3.96E-02	1.00E+00	3.06E-02	1.08E+02	4.11E+02	1.75E-01	4.57E+02	2.36E-01
BREOT-N60+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	4.67E+02	2.19E+00	NA	NA	NA	NA	1.13E-04	2.36E+02	2.66E-02	1.00E+00	3.06E-02	7.25E+01	4.11E+02	1.75E-01	4.57E+02	1.59E-01
BREOT-S60+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S61+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N62+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	5.17E+02	2.43E+00	NA	NA	NA	NA	1.13E-04	2.61E+02	2.94E-02	1.00E+00	3.06E-02	8.02E+01	4.11E+02	1.75E-01	4.57E+02	1.76E-01
BREOT-S62+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	2.29E+02	1.07E+00	NA	NA	NA	NA	1.13E-04	1.16E+02	1.30E-02	1.00E+00	3.06E-02	3.55E+01	4.11E+02	1.75E-01	4.57E+02	7.77E-02
BREOT-N63+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	5.43E+02	2.55E+00	NA	NA	NA	NA	1.13E-04	2.74E+02	3.09E-02	1.00E+00	3.06E-02	8.43E+01	4.11E+02	1.75E-01	4.57E+02	1.85E-01
BREOT-S63+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	3.84E+02	1.80E+00	NA	NA	NA	NA	1.13E-04	1.94E+02	2.18E-02	1.00E+00	3.06E-02	5.96E+01	4.11E+02	1.75E-01	4.57E+02	1.30E-01
BREOT-N64+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	6.09E+02	2.86E+00	NA	NA	NA	NA	1.13E-04	3.07E+02	3.46E-02	1.00E+00	3.06E-02	9.45E+01	4.11E+02	1.75E-01	4.57E+02	2.07E-01
BREOT-S64+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S65+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N66+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	4.91E+02	2.30E+00	NA	NA	NA	NA	1.13E-04	2.48E+02	2.79E-02	1.00E+00	3.06E-02	7.62E+01	4.11E+02	1.75E-01	4.57E+02	1.67E-01
BREOT-S66+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N67+125 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	7.19E+02	3.37E+00	NA	NA	NA	NA	1.13E-04	3.63E+02	4.09E-02	1.00E+00	3.06E-02	1.12E+02	4.11E+02	1.75E-01	4.57E+02	2.44E-01
BREOT-S67+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N67+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	7.48E+02	3.51E+00	NA	NA	NA	NA	1.13E-04	3.77E+02	4.25E-02	1.00E+00	3.06E-02	1.16E+02	4.11E+02	1.75E-01	4.57E+02	2.54E-01
																						Maximum HQ (Outside Tailings)	**6.80E+00**
White-Tailed Deer (Large Herbivorous Mammal - Terrestrial)																							
Reference Sites																							
ACBG-1 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.41E+00	1.93E+02	2.77E+02	NA	NA	NA	NA	2.86E-02	1.37E+02	3.92E+00	1.03E-01	1.35E+02	2.14E-01	4.11E+02	1.75E-01	2.76E+02	7.75E-04
ACBG-2 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.41E+00	1.18E+02	1.70E+02	NA	NA	NA	NA	2.86E-02	8.39E+01	2.40E+00	1.03E-01	1.35E+02	1.31E-01	4.11E+02	1.75E-01	2.76E+02	4.75E-04
UBRBG-202 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.41E+00	7.58E+01	1.09E+02	NA	NA	NA	NA	2.86E-02	5.37E+01	1.54E+00	1.03E-01	1.35E+02	8.40E-02	4.11E+02	1.75E-01	2.76E+02	3.04E-04
UBRBG-204 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.41E+00	4.84E+02	6.92E+02	NA	NA	NA	NA	2.86E-02	3.43E+02	9.81E+00	1.03E-01	1.35E+02	5.36E-01	4.11E+02	1.75E-01	2.76E+02	1.94E-03
Inside Tailings																						**Minimum HQ (Reference Sites)**	**3.04E-04**
BREOT-S6-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	7.59E+02	1.09E+03	NA	NA	NA	NA	2.86E-02	3.83E+02	1.10E+01	1.03E-01	1.35E+02	8.37E-01	4.11E+02	1.75E-01	2.76E+02	3.03E-03
BREOT-S2-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	5.03E+03	7.20E+03	NA	NA	NA	NA	2.86E-02	2.54E+03	7.27E+01	1.03E-01	1.35E+02	5.55E+00	4.11E+02	1.75E-01	2.76E+02	2.01E-02
BREOT-S0-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	4.91E+02	7.02E+02	NA	NA	NA	NA	2.86E-02	2.48E+02	7.09E+00	1.03E-01	1.35E+02	5.41E-01	4.11E+02	1.75E-01	2.76E+02	1.96E-03
BREOT-S1-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	3.30E+02	4.72E+02	NA	NA	NA	NA	2.86E-02	1.66E+02	4.76E+00	1.03E-01	1.35E+02	3.64E-01	4.11E+02	1.75E-01	2.76E+02	1.32E-03
BREOT-S7-25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	4.62E+02	6.61E+02	NA	NA	NA	NA	2.86E-02	2.33E+02	6.68E+00	1.03E-01	1.35E+02	5.10E-01	4.11E+02	1.75E-01	2.76E+02	1.85E-03
BREOT-S8-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	2.86E+02	4.10E+02	NA	NA	NA	NA	2.86E-02	1.45E+02	4.14E+00	1.03E-01	1.35E+02	3.16E-01	4.11E+02	1.75E-01	2.76E+02	1.14E-03
BREOT-S9-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	6.56E+02	9.39E+02	NA	NA	NA	NA	2.86E-02	3.31E+02	9.48E+00	1.03E-01	1.35E+02	7.24E-01	4.11E+02	1.75E-01	2.76E+02	2.62E-03
BREOT-N10-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	9.17E+03	1.31E+04	NA	NA	NA	NA	2.86E-02	4.63E+03	1.32E+02	1.03E-01	1.35E+02	1.01E+01	4.11E+02	1.75E-01	2.76E+02	3.66E-02
BREOT-N11-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	9.62E+02	1.38E+03	NA	NA	NA	NA	2.86E-02	4.85E+02	1.39E+01	1.03E-01	1.35E+02	1.06E+00	4.11E+02	1.75E-01	2.76E+02	3.84E-03
BREOT-N11-125 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	7.90E+02	1.13E+03	NA	NA	NA	NA	2.86E-02	3.99E+02	1.14E+01	1.03E-01	1.35E+02	8.72E-01	4.11E+02	1.75E-01	2.76E+02	3.16E-03
BREOT-S11-12 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	1.41E+04	2.01E+04	NA	NA	NA	NA	2.86E-02	7.09E+03	2.03E+02	1.03E-01	1.35E+02	1.55E+01	4.11E+02	1.75E-01	2.76E+02	5.62E-02
BREOT-S11+63 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	7.93E+02	1.14E+03	NA	NA	NA	NA	2.86E-02	4.00E+02	1.15E+01	1.03E-01	1.35E+02	8.75E-01	4.11E+02	1.75E-01	2.76E+02	3.17E-03
UBDT-TP-6 (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	3.92E+04	5.62E+04	NA	NA	NA	NA	2.86E-02	1.98E+04	5.67E+02	1.03E-01	1.35E+02	4.33E+01	4.11E+02	1.75E-01	2.76E+02	1.57E-01
UBDT-TP-6 (2-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	2.44E+04	3.49E+04	NA	NA	NA	NA	2.86E-02	1.23E+04	3.52E+02	1.03E-01	1.35E+02	2.69E+01	4.11E+02	1.75E-01	2.76E+02	9.73E-02
UBDT-TP-6 (12-24")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	2.48E+04	3.56E+04	NA	NA	NA	NA	2.86E-02	1.25E+04	3.59E+02	1.03E-01	1.35E+02	2.74E+01	4.11E+02	1.75E-01	2.76E+02	9.93E-02
UBDT-TP-6 (24-36")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	1.81E+03	2.60E+03	NA	NA	NA	NA	2.86E-02	9.15E+02	2.62E+01	1.03E-01	1.35E+02	2.00E+00	4.11E+02	1.75E-01	2.76E+02	7.25E-03
UBDT-TP-6 (36-48")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	4.93E+03	7.05E+03	NA	NA	NA	NA	2.86E-02	2.49E+03	7.12E+01	1.03E-01	1.35E+02	5.44E+00	4.11E+02	1.75E-01	2.76E+02	1.97E-02

TABLE C-2F: ZINC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 18.41

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
White-Tailed Deer (Large Herbivorous Mammal - Terrestrial)																							
UBDT-TP-6 (48-60")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	3.77E+03	5.40E+03	NA	NA	NA	NA	2.86E-02	1.90E+03	5.45E+01	1.03E-01	1.35E+02	4.16E+00	4.11E+02	1.75E-01	2.76E+02	1.51E-02
BREOT-N12-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	2.33E+03	3.34E+03	NA	NA	NA	NA	2.86E-02	1.18E+03	3.37E+01	1.03E-01	1.35E+02	2.57E+00	4.11E+02	1.75E-01	2.76E+02	9.31E-03
BREOT-S12-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	5.76E+03	8.24E+03	NA	NA	NA	NA	2.86E-02	2.90E+03	8.32E+01	1.03E-01	1.35E+02	6.35E+00	4.11E+02	1.75E-01	2.76E+02	2.30E-02
BREOT-S13-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	1.02E+04	1.46E+04	NA	NA	NA	NA	2.86E-02	5.15E+03	1.48E+02	1.03E-01	1.35E+02	1.13E+01	4.11E+02	1.75E-01	2.76E+02	4.08E-02
BREOT-S14-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	5.07E+03	7.26E+03	NA	NA	NA	NA	2.86E-02	2.56E+03	7.32E+01	1.03E-01	1.35E+02	5.59E+00	4.11E+02	1.75E-01	2.76E+02	2.03E-02
BREOT-N15-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	5.37E+03	7.69E+03	NA	NA	NA	NA	2.86E-02	2.71E+03	7.76E+01	1.03E-01	1.35E+02	5.92E+00	4.11E+02	1.75E-01	2.76E+02	2.14E-02
BREOT-S15-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	6.94E+02	9.93E+02	NA	NA	NA	NA	2.86E-02	3.50E+02	1.00E+01	1.03E-01	1.35E+02	7.65E-01	4.11E+02	1.75E-01	2.76E+02	2.77E-03
BREOT-N16-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	1.77E+03	2.53E+03	NA	NA	NA	NA	2.86E-02	8.91E+02	2.55E+01	1.03E-01	1.35E+02	1.95E+00	4.11E+02	1.75E-01	2.76E+02	7.06E-03
BREOT-N16-25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	3.48E+02	4.98E+02	NA	NA	NA	NA	2.86E-02	1.75E+02	5.02E+00	1.03E-01	1.35E+02	3.83E-01	4.11E+02	1.75E-01	2.76E+02	1.39E-03
BREOT-S16-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	3.52E+02	5.05E+02	NA	NA	NA	NA	2.86E-02	1.78E+02	5.09E+00	1.03E-01	1.35E+02	3.89E-01	4.11E+02	1.75E-01	2.76E+02	1.41E-03
BREOT-N17-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	7.61E+02	1.09E+03	NA	NA	NA	NA	2.86E-02	3.84E+02	1.10E+01	1.03E-01	1.35E+02	8.40E-01	4.11E+02	1.75E-01	2.76E+02	3.04E-03
BREOT-S17-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	3.04E+02	4.35E+02	NA	NA	NA	NA	2.86E-02	1.53E+02	4.39E+00	1.03E-01	1.35E+02	3.35E-01	4.11E+02	1.75E-01	2.76E+02	1.21E-03
BREOT-S17-25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	4.63E+02	6.63E+02	NA	NA	NA	NA	2.86E-02	2.34E+02	6.69E+00	1.03E-01	1.35E+02	5.11E-01	4.11E+02	1.75E-01	2.76E+02	1.85E-03
UBDT-TP-4 (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	4.72E+03	6.75E+03	NA	NA	NA	NA	2.86E-02	2.38E+03	6.82E+01	1.03E-01	1.35E+02	5.20E+00	4.11E+02	1.75E-01	2.76E+02	1.89E-02
UBDT-TP-4 (2-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	2.83E+03	4.06E+03	NA	NA	NA	NA	2.86E-02	1.43E+03	4.10E+01	1.03E-01	1.35E+02	3.13E+00	4.11E+02	1.75E-01	2.76E+02	1.13E-02
UBDT-TP-4 (12-24")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	1.55E+03	2.22E+03	NA	NA	NA	NA	2.86E-02	7.82E+02	2.24E+01	1.03E-01	1.35E+02	1.71E+00	4.11E+02	1.75E-01	2.76E+02	6.19E-03
UBDT-TP-4 (24-36")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	2.23E+03	3.20E+03	NA	NA	NA	NA	2.86E-02	1.13E+03	3.23E+01	1.03E-01	1.35E+02	2.46E+00	4.11E+02	1.75E-01	2.76E+02	8.92E-03
BREOT-N18-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	3.17E+03	4.54E+03	NA	NA	NA	NA	2.86E-02	1.60E+03	4.58E+01	1.03E-01	1.35E+02	3.50E+00	4.11E+02	1.75E-01	2.76E+02	1.27E-02
BREOT-N18-25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	6.09E+02	8.72E+02	NA	NA	NA	NA	2.86E-02	3.07E+02	8.80E+00	1.03E-01	1.35E+02	6.72E-01	4.11E+02	1.75E-01	2.76E+02	2.43E-03
BREOT-S18-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	1.13E+03	1.62E+03	NA	NA	NA	NA	2.86E-02	5.71E+02	1.63E+01	1.03E-01	1.35E+02	1.25E+00	4.11E+02	1.75E-01	2.76E+02	4.52E-03
BREOT-N19-10 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	9.37E+02	1.34E+03	NA	NA	NA	NA	2.86E-02	4.73E+02	1.35E+01	1.03E-01	1.35E+02	1.03E+00	4.11E+02	1.75E-01	2.76E+02	3.74E-03
BREOT-S19-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	3.15E+03	4.51E+03	NA	NA	NA	NA	2.86E-02	1.59E+03	4.55E+01	1.03E-01	1.35E+02	3.47E+00	4.11E+02	1.75E-01	2.76E+02	1.26E-02
UBDT-TP-5 (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	5.21E+03	7.45E+03	NA	NA	NA	NA	2.86E-02	2.63E+03	7.52E+01	1.03E-01	1.35E+02	5.74E+00	4.11E+02	1.75E-01	2.76E+02	2.08E-02
UBDT-TP-5 (2-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	3.45E+03	4.94E+03	NA	NA	NA	NA	2.86E-02	1.74E+03	4.99E+01	1.03E-01	1.35E+02	3.81E+00	4.11E+02	1.75E-01	2.76E+02	1.38E-02
UBDT-TP-5 (12-24")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	3.07E+03	4.40E+03	NA	NA	NA	NA	2.86E-02	1.55E+03	4.44E+01	1.03E-01	1.35E+02	3.39E+00	4.11E+02	1.75E-01	2.76E+02	1.23E-02
BREOT-N20-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	6.56E+02	9.39E+02	NA	NA	NA	NA	2.86E-02	3.31E+02	9.47E+00	1.03E-01	1.35E+02	7.23E-01	4.11E+02	1.75E-01	2.76E+02	2.62E-03
UBDT-TP-3 (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	8.85E+02	1.27E+03	NA	NA	NA	NA	2.86E-02	4.47E+02	1.28E+01	1.03E-01	1.35E+02	9.76E-01	4.11E+02	1.75E-01	2.76E+02	3.54E-03
UBDT-TP-3 (2-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	5.80E+02	8.31E+02	NA	NA	NA	NA	2.86E-02	2.93E+02	8.38E+00	1.03E-01	1.35E+02	6.40E-01	4.11E+02	1.75E-01	2.76E+02	2.32E-03
UBDT-TP-3 (12-24")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	4.53E+02	6.48E+02	NA	NA	NA	NA	2.86E-02	2.28E+02	6.54E+00	1.03E-01	1.35E+02	4.99E-01	4.11E+02	1.75E-01	2.76E+02	1.81E-03
UBDT-TP-3 (24-36")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	7.26E+02	1.04E+03	NA	NA	NA	NA	2.86E-02	3.66E+02	1.05E+01	1.03E-01	1.35E+02	8.01E-01	4.11E+02	1.75E-01	2.76E+02	2.90E-03
UBDT-TP-3 (36-48")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	1.12E+03	1.60E+03	NA	NA	NA	NA	2.86E-02	5.63E+02	1.61E+01	1.03E-01	1.35E+02	1.23E+00	4.11E+02	1.75E-01	2.76E+02	4.46E-03
UBDT-TP-3 (48-60")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	1.57E+03	2.24E+03	NA	NA	NA	NA	2.86E-02	7.90E+02	2.26E+01	1.03E-01	1.35E+02	1.73E+00	4.11E+02	1.75E-01	2.76E+02	6.26E-03
BREOT-N21-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	5.09E+03	7.28E+03	NA	NA	NA	NA	2.86E-02	2.57E+03	7.35E+01	1.03E-01	1.35E+02	5.61E+00	4.11E+02	1.75E-01	2.76E+02	2.03E-02
BREOT-N22-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	8.20E+02	1.17E+03	NA	NA	NA	NA	2.86E-02	4.14E+02	1.18E+01	1.03E-01	1.35E+02	9.05E-01	4.11E+02	1.75E-01	2.76E+02	3.28E-03
BREOT-N23-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	1.35E+03	1.93E+03	NA	NA	NA	NA	2.86E-02	6.81E+02	1.95E+01	1.03E-01	1.35E+02	1.49E+00	4.11E+02	1.75E-01	2.76E+02	5.39E-03
BREOT-S23-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	1.67E+04	2.39E+04	NA	NA	NA	NA	2.86E-02	8.42E+03	2.41E+02	1.03E-01	1.35E+02	1.84E+01	4.11E+02	1.75E-01	2.76E+02	6.66E-02
UBDT-TP-2 (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	6.36E+03	9.10E+03	NA	NA	NA	NA	2.86E-02	3.21E+03	9.18E+01	1.03E-01	1.35E+02	7.01E+00	4.11E+02	1.75E-01	2.76E+02	2.54E-02
UBDT-TP-2 (2-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	3.96E+03	5.66E+03	NA	NA	NA	NA	2.86E-02	2.00E+03	5.72E+01	1.03E-01	1.35E+02	4.36E+00	4.11E+02	1.75E-01	2.76E+02	1.58E-02
UBDT-TP-2 (12-24")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	3.39E+03	4.86E+03	NA	NA	NA	NA	2.86E-02	1.71E+03	4.90E+01	1.03E-01	1.35E+02	3.74E+00	4.11E+02	1.75E-01	2.76E+02	1.36E-02
UBDT-TP-2 (24-36")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	2.88E+03	4.12E+03	NA	NA	NA	NA	2.86E-02	1.45E+03	4.15E+01	1.03E-01	1.35E+02	3.17E+00	4.11E+02	1.75E-01	2.76E+02	1.15E-02
UBDT-TP-2 (36-48")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	3.02E+03	4.33E+03	NA	NA	NA	NA	2.86E-02	1.53E+03	4.37E+01	1.03E-01	1.35E+02	3.33E+00	4.11E+02	1.75E-01	2.76E+02	1.21E-02
BREOT-S24-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	1.26E+04	1.81E+04	NA	NA	NA	NA	2.86E-02	6.37E+03	1.82E+02	1.03E-01	1.35E+02	1.39E+01	4.11E+02	1.75E-01	2.76E+02	5.04E-02
BREOT-N25-50 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	1.58E+04	2.26E+04	NA	NA	NA	NA	2.86E-02	7.97E+03	2.28E+02	1.03E-01	1.35E+02	1.74E+01	4.11E+02	1.75E-01	2.76E+02	6.31E-02
BREOT-N25-95 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	2.01E+02	2.87E+02	NA	NA	NA	NA	2.86E-02	1.01E+02	2.90E+00	1.03E-01	1.35E+02	2.21E-01	4.11E+02	1.75E-01	2.76E+02	8.01E-04
BREOT-S25-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	2.62E+03	3.75E+03	NA	NA	NA	NA	2.86E-02	1.32E+03	3.79E+01	1.03E-01	1.35E+02	2.89E+00	4.11E+02	1.75E-01	2.76E+02	1.05E-02
BREOT-S25-40 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	4.06E+02	5.81E+02	NA	NA	NA	NA	2.86E-02	2.05E+02	5.86E+00	1.03E-01	1.35E+02	4.47E-01	4.11E+02	1.75E-01	2.76E+02	1.62E-03
BREOT-N26A-25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	3.03E+02	4.34E+02	NA	NA	NA	NA	2.86E-02	1.53E+02	4.38E+00	1.03E-01	1.35E+02	3.34E-01	4.11E+02	1.75E-01	2.76E+02	1.21E-03
BREOT-N26B-25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	5.06E+03	7.24E+03	NA	NA	NA	NA	2.86E-02	2.55E+03	7.31E+01	1.03E-01	1.35E+02	5.58E+00	4.11E+02	1.75E-01	2.76E+02	2.02E-02
BREOT-N26-50 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	2.26E+04	3.24E+04	NA	NA	NA	NA	2.86E-02	1.14E+04	3.27E+02	1.03E-01	1.35E+02	2.50E+01	4.11E+02	1.75E-01	2.76E+02	9.05E-02
BREOT-N26-75 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	1.16E+04	1.65E+04	NA	NA	NA	NA	2.86E-02	5.83E+03	1.67E+02	1.03E-01	1.35E+02	1.28E+01	4.11E+02	1.75E-01	2.76E+02	4.62E-02
BREOT-S26-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	5.33E+02	7.63E+02	NA	NA	NA	NA	2.86E-02	2.69E+02	7.71E+00	1.03E-01	1.35E+02	5.88E-01	4.11E+02	1.75E-01	2.76E+02	2.13E-03
BREOT-S26-40 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	7.18E+03	1.03E+04	NA	NA	NA	NA	2.86E-02	3.62E+03	1.04E+02	1.03E-01	1.35E+02	7.92E+00	4.11E+02	1.75E-01	2.76E+02	2.87E-02
BREOT-N27-30 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	5.22E+03	7.48E+03	NA	NA	NA	NA	2.86E-02	2.64E+03	7.55E+01	1.03E-01	1.35E+02	5.76E+00	4.11E+02	1.75E-01	2.76E+02	2.09E-02
BREOT-N27-75 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	2.04E+04	2.91E+04	NA	NA	NA	NA	2.86E-02	1.03E+04	2.94E+02	1.03E-01	1.35E+02	2.25E+01	4.11E+02	1.75E-01	2.76E+02	8.13E-02
BREOT-S27-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	7.27E+02	1.04E+03	NA	NA	NA	NA	2.86E-02	3.67E+02	1.05E+01	1.03E-01	1.35E+02	8.03E-01	4.11E+02	1.75E-01	2.76E+02	2.91E-03

TABLE C-2F: ZINC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 18.41

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
White-Tailed Deer (Large Herbivorous Mammal - Terrestrial)																							
BREOT-N28-110 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	3.08E+03	4.41E+03	NA	NA	NA	NA	2.86E-02	1.55E+03	4.45E+01	1.03E-01	1.35E+02	3.40E+00	4.11E+02	1.75E-01	2.76E+02	1.23E-02
BREOT-N28-55 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	2.97E+04	4.25E+04	NA	NA	NA	NA	2.86E-02	1.50E+04	4.28E+02	1.03E-01	1.35E+02	3.27E+01	4.11E+02	1.75E-01	2.76E+02	1.18E-01
BREOT-S28-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	5.91E+03	8.46E+03	NA	NA	NA	NA	2.86E-02	2.98E+03	8.54E+01	1.03E-01	1.35E+02	6.52E+00	4.11E+02	1.75E-01	2.76E+02	2.36E-02
UBDT-TP-1 (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	1.77E+04	2.54E+04	NA	NA	NA	NA	2.86E-02	8.95E+03	2.56E+02	1.03E-01	1.35E+02	1.96E+01	4.11E+02	1.75E-01	2.76E+02	7.09E-02
UBDT-TP-1 (2-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	1.91E+04	2.73E+04	NA	NA	NA	NA	2.86E-02	9.63E+03	2.76E+02	1.03E-01	1.35E+02	2.11E+01	4.11E+02	1.75E-01	2.76E+02	7.63E-02
UBDT-TP-1 (12-24")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	1.80E+04	2.58E+04	NA	NA	NA	NA	2.86E-02	9.08E+03	2.60E+02	1.03E-01	1.35E+02	1.99E+01	4.11E+02	1.75E-01	2.76E+02	7.19E-02
UBDT-TP-1 (24-36")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	1.22E+04	1.75E+04	NA	NA	NA	NA	2.86E-02	6.18E+03	1.77E+02	1.03E-01	1.35E+02	1.35E+01	4.11E+02	1.75E-01	2.76E+02	4.89E-02
UBDT-TP-1 (36-48")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	3.80E+03	5.44E+03	NA	NA	NA	NA	2.86E-02	1.92E+03	5.49E+01	1.03E-01	1.35E+02	4.19E+00	4.11E+02	1.75E-01	2.76E+02	1.52E-02
UBDT-TP-1 (48-60")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	1.26E+03	1.81E+03	NA	NA	NA	NA	2.86E-02	6.38E+02	1.83E+01	1.03E-01	1.35E+02	1.39E+00	4.11E+02	1.75E-01	2.76E+02	5.05E-03
BREOT-N29-30 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	2.71E+04	3.88E+04	NA	NA	NA	NA	2.86E-02	1.37E+04	3.91E+02	1.03E-01	1.35E+02	2.99E+01	4.11E+02	1.75E-01	2.76E+02	1.08E-01
BREOT-S29-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	1.82E+03	2.60E+03	NA	NA	NA	NA	2.86E-02	9.16E+02	2.62E+01	1.03E-01	1.35E+02	2.00E+00	4.11E+02	1.75E-01	2.76E+02	7.26E-03
BREOT-N30-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	1.54E+03	2.20E+03	NA	NA	NA	NA	2.86E-02	7.76E+02	2.22E+01	1.03E-01	1.35E+02	1.70E+00	4.11E+02	1.75E-01	2.76E+02	6.14E-03
BREOT-S30-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	2.39E+03	3.42E+03	NA	NA	NA	NA	2.86E-02	1.21E+03	3.45E+01	1.03E-01	1.35E+02	2.63E+00	4.11E+02	1.75E-01	2.76E+02	9.54E-03
BREOT-N31-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	1.16E+03	1.66E+03	NA	NA	NA	NA	2.86E-02	5.86E+02	1.68E+01	1.03E-01	1.35E+02	1.28E+00	4.11E+02	1.75E-01	2.76E+02	4.64E-03
BREOT-S31-25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	8.17E+02	1.17E+03	NA	NA	NA	NA	2.86E-02	4.13E+02	1.18E+01	1.03E-01	1.35E+02	9.02E-01	4.11E+02	1.75E-01	2.76E+02	3.27E-03
BREOT-S31-5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	2.21E+03	3.16E+03	NA	NA	NA	NA	2.86E-02	1.11E+03	3.19E+01	1.03E-01	1.35E+02	2.43E+00	4.11E+02	1.75E-01	2.76E+02	8.82E-03
BREOT-N32-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	2.10E+03	3.01E+03	NA	NA	NA	NA	2.86E-02	1.06E+03	3.04E+01	1.03E-01	1.35E+02	2.32E+00	4.11E+02	1.75E-01	2.76E+02	8.41E-03
BREOT-S32-6 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	4.10E+02	5.87E+02	NA	NA	NA	NA	2.86E-02	2.07E+02	5.92E+00	1.03E-01	1.35E+02	4.52E-01	4.11E+02	1.75E-01	2.76E+02	1.64E-03
BREOT-N33-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	7.05E+02	1.01E+03	NA	NA	NA	NA	2.86E-02	3.56E+02	1.02E+01	1.03E-01	1.35E+02	7.78E-01	4.11E+02	1.75E-01	2.76E+02	2.82E-03
BREOT-S33-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	1.08E+03	1.54E+03	NA	NA	NA	NA	2.86E-02	5.43E+02	1.56E+01	1.03E-01	1.35E+02	1.19E+00	4.11E+02	1.75E-01	2.76E+02	4.30E-03
BREOT-N35-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	9.44E+02	1.35E+03	NA	NA	NA	NA	2.86E-02	4.76E+02	1.36E+01	1.03E-01	1.35E+02	1.04E+00	4.11E+02	1.75E-01	2.76E+02	3.77E-03
BREOT-S35-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	4.37E+03	6.26E+03	NA	NA	NA	NA	2.86E-02	2.21E+03	6.32E+01	1.03E-01	1.35E+02	4.82E+00	4.11E+02	1.75E-01	2.76E+02	1.75E-02
BREOT-N36-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	1.23E+03	1.76E+03	NA	NA	NA	NA	2.86E-02	6.19E+02	1.77E+01	1.03E-01	1.35E+02	1.35E+00	4.11E+02	1.75E-01	2.76E+02	4.90E-03
BREOT-S36-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	9.33E+02	1.34E+03	NA	NA	NA	NA	2.86E-02	4.71E+02	1.35E+01	1.03E-01	1.35E+02	1.03E+00	4.11E+02	1.75E-01	2.76E+02	3.73E-03
BREOT-N37-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	4.02E+02	5.75E+02	NA	NA	NA	NA	2.86E-02	2.03E+02	5.81E+00	1.03E-01	1.35E+02	4.43E-01	4.11E+02	1.75E-01	2.76E+02	1.61E-03
BREOT-S37-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	1.03E+03	1.48E+03	NA	NA	NA	NA	2.86E-02	5.21E+02	1.49E+01	1.03E-01	1.35E+02	1.14E+00	4.11E+02	1.75E-01	2.76E+02	4.12E-03
BREOT-N38-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	4.38E+02	6.26E+02	NA	NA	NA	NA	2.86E-02	2.21E+02	6.32E+00	1.03E-01	1.35E+02	4.83E-01	4.11E+02	1.75E-01	2.76E+02	1.75E-03
BREOT-S38-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	3.80E+03	5.44E+03	NA	NA	NA	NA	2.86E-02	1.92E+03	5.49E+01	1.03E-01	1.35E+02	4.19E+00	4.11E+02	1.75E-01	2.76E+02	1.52E-02
BREOT-N39-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	2.17E+03	3.11E+03	NA	NA	NA	NA	2.86E-02	1.09E+03	3.13E+01	1.03E-01	1.35E+02	2.39E+00	4.11E+02	1.75E-01	2.76E+02	8.67E-03
BREOT-S39-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	2.64E+03	3.77E+03	NA	NA	NA	NA	2.86E-02	1.33E+03	3.81E+01	1.03E-01	1.35E+02	2.91E+00	4.11E+02	1.75E-01	2.76E+02	1.05E-02
BREOT-N40-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	2.69E+03	3.85E+03	NA	NA	NA	NA	2.86E-02	1.36E+03	3.88E+01	1.03E-01	1.35E+02	2.96E+00	4.11E+02	1.75E-01	2.76E+02	1.07E-02
BREOT-S40-14 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	2.82E+03	4.03E+03	NA	NA	NA	NA	2.86E-02	1.42E+03	4.07E+01	1.03E-01	1.35E+02	3.11E+00	4.11E+02	1.75E-01	2.76E+02	1.13E-02
BREOT-N41-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	2.05E+03	2.93E+03	NA	NA	NA	NA	2.86E-02	1.03E+03	2.96E+01	1.03E-01	1.35E+02	2.26E+00	4.11E+02	1.75E-01	2.76E+02	8.19E-03
BREOT-S41-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	2.58E+03	3.69E+03	NA	NA	NA	NA	2.86E-02	1.30E+03	3.73E+01	1.03E-01	1.35E+02	2.85E+00	4.11E+02	1.75E-01	2.76E+02	1.03E-02
BREOT-N42-35 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	4.08E+02	5.84E+02	NA	NA	NA	NA	2.86E-02	2.06E+02	5.89E+00	1.03E-01	1.35E+02	4.50E-01	4.11E+02	1.75E-01	2.76E+02	1.63E-03
BREOT-S42-25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	6.44E+02	9.22E+02	NA	NA	NA	NA	2.86E-02	3.25E+02	9.31E+00	1.03E-01	1.35E+02	7.11E-01	4.11E+02	1.75E-01	2.76E+02	2.57E-03
BREOT-N43-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	5.13E+03	7.35E+03	NA	NA	NA	NA	2.86E-02	2.59E+03	7.42E+01	1.03E-01	1.35E+02	5.66E+00	4.11E+02	1.75E-01	2.76E+02	2.05E-02
BREOT-S43-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	9.45E+02	1.35E+03	NA	NA	NA	NA	2.86E-02	4.77E+02	1.37E+01	1.03E-01	1.35E+02	1.04E+00	4.11E+02	1.75E-01	2.76E+02	3.77E-03
BREOT-N44-30 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	9.55E+02	1.37E+03	NA	NA	NA	NA	2.86E-02	4.82E+02	1.38E+01	1.03E-01	1.35E+02	1.05E+00	4.11E+02	1.75E-01	2.76E+02	3.82E-03
BREOT-S44-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	1.33E+03	1.90E+03	NA	NA	NA	NA	2.86E-02	6.70E+02	1.92E+01	1.03E-01	1.35E+02	1.46E+00	4.11E+02	1.75E-01	2.76E+02	5.30E-03
BREOT-N45-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	4.71E+02	6.74E+02	NA	NA	NA	NA	2.86E-02	2.38E+02	6.80E+00	1.03E-01	1.35E+02	5.19E-01	4.11E+02	1.75E-01	2.76E+02	1.88E-03
BREOT-N43-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	5.13E+03	7.35E+03	NA	NA	NA	NA	2.86E-02	2.59E+03	7.42E+01	1.03E-01	1.35E+02	5.66E+00	4.11E+02	1.75E-01	2.76E+02	2.05E-02
BREOT-S45-6 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	7.51E+02	1.08E+03	NA	NA	NA	NA	2.86E-02	3.79E+02	1.09E+01	1.03E-01	1.35E+02	8.29E-01	4.11E+02	1.75E-01	2.76E+02	3.00E-03
BREOT-N46-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	2.53E+02	3.62E+02	NA	NA	NA	NA	2.86E-02	1.28E+02	3.65E+00	1.03E-01	1.35E+02	2.79E-01	4.11E+02	1.75E-01	2.76E+02	1.01E-03
BREOT-S46-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	7.29E+02	1.04E+03	NA	NA	NA	NA	2.86E-02	3.68E+02	1.05E+01	1.03E-01	1.35E+02	8.05E-01	4.11E+02	1.75E-01	2.76E+02	2.91E-03
BREOT-S46-40 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	1.09E+03	1.56E+03	NA	NA	NA	NA	2.86E-02	5.52E+02	1.58E+01	1.03E-01	1.35E+02	1.21E+00	4.11E+02	1.75E-01	2.76E+02	4.37E-03
BREOT-N47-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	4.99E+02	7.14E+02	NA	NA	NA	NA	2.86E-02	2.52E+02	7.21E+00	1.03E-01	1.35E+02	5.51E-01	4.11E+02	1.75E-01	2.76E+02	1.99E-03
BREOT-S47-999 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	7.93E+02	1.14E+03	NA	NA	NA	NA	2.86E-02	4.00E+02	1.15E+01	1.03E-01	1.35E+02	8.75E-01	4.11E+02	1.75E-01	2.76E+02	3.17E-03
BREOT-S48-12.5 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S49-2.5 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S50-12.5 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S50-25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N52-60 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	8.32E+02	1.19E+03	NA	NA	NA	NA	2.86E-02	4.20E+02	1.20E+01	1.03E-01	1.35E+02	9.18E-01	4.11E+02	1.75E-01	2.76E+02	3.32E-03
BREOT-S52-12.5 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S53-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	1.88E+02	2.69E+02	NA	NA	NA	NA	2.86E-02	9.49E+01	2.72E+00	1.03E-01	1.35E+02	2.07E-01	4.11E+02	1.75E-01	2.76E+02	7.51E-04

TABLE C-2F: ZINC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 18.41

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
White-Tailed Deer (Large Herbivorous Mammal - Terrestrial)																							
BREOT-S54-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	2.10E+02	3.00E+02	NA	NA	NA	NA	2.86E-02	1.06E+02	3.03E+00	1.03E-01	1.35E+02	2.31E-01	4.11E+02	1.75E-01	2.76E+02	8.37E-04
BREOT-N55-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	4.74E+03	6.79E+03	NA	NA	NA	NA	2.86E-02	2.39E+03	6.86E+01	1.03E-01	1.35E+02	5.23E+00	4.11E+02	1.75E-01	2.76E+02	1.90E-02
BREOT-S55-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	4.16E+02	5.96E+02	NA	NA	NA	NA	2.86E-02	2.10E+02	6.02E+00	1.03E-01	1.35E+02	4.59E-01	4.11E+02	1.75E-01	2.76E+02	1.66E-03
BREOT-N56-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	1.37E+03	1.96E+03	NA	NA	NA	NA	2.86E-02	6.90E+02	1.97E+01	1.03E-01	1.35E+02	1.51E+00	4.11E+02	1.75E-01	2.76E+02	5.46E-03
BREOT-S56-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	6.92E+02	9.91E+02	NA	NA	NA	NA	2.86E-02	3.49E+02	1.00E+01	1.03E-01	1.35E+02	7.64E-01	4.11E+02	1.75E-01	2.76E+02	2.77E-03
BREOT-N57-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	5.77E+02	8.27E+02	NA	NA	NA	NA	2.86E-02	2.91E+02	8.34E+00	1.03E-01	1.35E+02	6.37E-01	4.11E+02	1.75E-01	2.76E+02	2.31E-03
BREOT-S57-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	5.73E+02	8.21E+02	NA	NA	NA	NA	2.86E-02	2.89E+02	8.28E+00	1.03E-01	1.35E+02	6.32E-01	4.11E+02	1.75E-01	2.76E+02	2.29E-03
BREOT-N58-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	6.52E+02	9.33E+02	NA	NA	NA	NA	2.86E-02	3.29E+02	9.42E+00	1.03E-01	1.35E+02	7.19E-01	4.11E+02	1.75E-01	2.76E+02	2.60E-03
BREOT-S58-12 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	1.50E+03	2.15E+03	NA	NA	NA	NA	2.86E-02	7.58E+02	2.17E+01	1.03E-01	1.35E+02	1.66E+00	4.11E+02	1.75E-01	2.76E+02	6.00E-03
BREOT-N59-18 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	4.45E+02	6.37E+02	NA	NA	NA	NA	2.86E-02	2.24E+02	6.43E+00	1.03E-01	1.35E+02	4.91E-01	4.11E+02	1.75E-01	2.76E+02	1.78E-03
BREOT-N60-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	6.25E+02	8.95E+02	NA	NA	NA	NA	2.86E-02	3.16E+02	9.03E+00	1.03E-01	1.35E+02	6.90E-01	4.11E+02	1.75E-01	2.76E+02	2.50E-03
BREOT-S60-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	1.17E+03	1.68E+03	NA	NA	NA	NA	2.86E-02	5.91E+02	1.69E+01	1.03E-01	1.35E+02	1.29E+00	4.11E+02	1.75E-01	2.76E+02	4.68E-03
BREOT-S61-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	4.64E+03	6.64E+03	NA	NA	NA	NA	2.86E-02	2.34E+03	6.70E+01	1.03E-01	1.35E+02	5.11E+00	4.11E+02	1.75E-01	2.76E+02	1.85E-02
BREOT-N62-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	2.40E+02	3.43E+02	NA	NA	NA	NA	2.86E-02	1.21E+02	3.47E+00	1.03E-01	1.35E+02	2.65E-01	4.11E+02	1.75E-01	2.76E+02	9.59E-04
BREOT-S62-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	4.48E+03	6.41E+03	NA	NA	NA	NA	2.86E-02	2.26E+03	6.47E+01	1.03E-01	1.35E+02	4.94E+00	4.11E+02	1.75E-01	2.76E+02	1.79E-02
BREOT-S63-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	5.83E+02	8.35E+02	NA	NA	NA	NA	2.86E-02	2.94E+02	8.42E+00	1.03E-01	1.35E+02	6.43E-01	4.11E+02	1.75E-01	2.76E+02	2.33E-03
BREOT-N64-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	5.67E+02	8.12E+02	NA	NA	NA	NA	2.86E-02	2.86E+02	8.20E+00	1.03E-01	1.35E+02	6.26E-01	4.11E+02	1.75E-01	2.76E+02	2.27E-03
BREOT-N64-20 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	4.25E+02	6.08E+02	NA	NA	NA	NA	2.86E-02	2.14E+02	6.14E+00	1.03E-01	1.35E+02	4.69E-01	4.11E+02	1.75E-01	2.76E+02	1.70E-03
BREOT-S64-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	3.83E+02	5.49E+02	NA	NA	NA	NA	2.86E-02	1.94E+02	5.54E+00	1.03E-01	1.35E+02	4.23E-01	4.11E+02	1.75E-01	2.76E+02	1.53E-03
BREOT-N65-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	6.19E+02	8.86E+02	NA	NA	NA	NA	2.86E-02	3.12E+02	8.94E+00	1.03E-01	1.35E+02	6.82E-01	4.11E+02	1.75E-01	2.76E+02	2.47E-03
BREOT-S65-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	4.52E+02	6.47E+02	NA	NA	NA	NA	2.86E-02	2.28E+02	6.53E+00	1.03E-01	1.35E+02	4.99E-01	4.11E+02	1.75E-01	2.76E+02	1.81E-03
BREOT-N66-5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	3.76E+02	5.39E+02	NA	NA	NA	NA	2.86E-02	1.90E+02	5.44E+00	1.03E-01	1.35E+02	4.15E-01	4.11E+02	1.75E-01	2.76E+02	1.50E-03
BREOT-S66-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	4.56E+02	6.53E+02	NA	NA	NA	NA	2.86E-02	2.30E+02	6.59E+00	1.03E-01	1.35E+02	5.03E-01	4.11E+02	1.75E-01	2.76E+02	1.82E-03
BREOT-N67-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	6.14E+03	8.79E+03	NA	NA	NA	NA	2.86E-02	3.10E+03	8.87E+01	1.03E-01	1.35E+02	6.77E+00	4.11E+02	1.75E-01	2.76E+02	2.45E-02
BREOT-S67-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	2.66E+02	3.81E+02	NA	NA	NA	NA	2.86E-02	1.34E+02	3.85E+00	1.03E-01	1.35E+02	2.94E-01	4.11E+02	1.75E-01	2.76E+02	1.06E-03
At Edge of Tailings																						**Maximum HQ (Inside Tailings)**	**1.57E-01**
BREOT-S0-0 (06)	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	9.04E+02	1.29E+03	NA	NA	NA	NA	2.86E-02	4.56E+02	1.31E+01	1.03E-01	1.35E+02	9.97E-01	4.11E+02	1.75E-01	2.76E+02	3.61E-03
BREOT-S1-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	5.22E+02	7.47E+02	NA	NA	NA	NA	2.86E-02	2.63E+02	7.54E+00	1.03E-01	1.35E+02	5.76E-01	4.11E+02	1.75E-01	2.76E+02	2.09E-03
BREOT-S2-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	5.75E+02	8.24E+02	NA	NA	NA	NA	2.86E-02	2.90E+02	8.31E+00	1.03E-01	1.35E+02	6.35E-01	4.11E+02	1.75E-01	2.76E+02	2.30E-03
BREOT-S3-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	3.28E+03	4.69E+03	NA	NA	NA	NA	2.86E-02	1.65E+03	4.73E+01	1.03E-01	1.35E+02	3.61E+00	4.11E+02	1.75E-01	2.76E+02	1.31E-02
BREOT-S4-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	3.94E+03	5.64E+03	NA	NA	NA	NA	2.86E-02	1.99E+03	5.69E+01	1.03E-01	1.35E+02	4.34E+00	4.11E+02	1.75E-01	2.76E+02	1.57E-02
BREOT-S6-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	2.06E+03	2.96E+03	NA	NA	NA	NA	2.86E-02	1.04E+03	2.98E+01	1.03E-01	1.35E+02	2.28E+00	4.11E+02	1.75E-01	2.76E+02	8.25E-03
BREOT-S7-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	9.50E+02	1.36E+03	NA	NA	NA	NA	2.86E-02	4.79E+02	1.37E+01	1.03E-01	1.35E+02	1.05E+00	4.11E+02	1.75E-01	2.76E+02	3.80E-03
BREOT-S8-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	6.37E+02	9.11E+02	NA	NA	NA	NA	2.86E-02	3.21E+02	9.20E+00	1.03E-01	1.35E+02	7.02E-01	4.11E+02	1.75E-01	2.76E+02	2.54E-03
BREOT-S9-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	4.12E+02	5.90E+02	NA	NA	NA	NA	2.86E-02	2.08E+02	5.95E+00	1.03E-01	1.35E+02	4.55E-01	4.11E+02	1.75E-01	2.76E+02	1.65E-03
BREOT-N10-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	3.63E+04	5.20E+04	NA	NA	NA	NA	2.86E-02	1.83E+04	5.25E+02	1.03E-01	1.35E+02	4.01E+01	4.11E+02	1.75E-01	2.76E+02	1.45E-01
BREOT-N11-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	1.26E+03	1.80E+03	NA	NA	NA	NA	2.86E-02	6.35E+02	1.82E+01	1.03E-01	1.35E+02	1.39E+00	4.11E+02	1.75E-01	2.76E+02	5.03E-03
BREOT-S11-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	2.58E+03	3.69E+03	NA	NA	NA	NA	2.86E-02	1.30E+03	3.72E+01	1.03E-01	1.35E+02	2.84E+00	4.11E+02	1.75E-01	2.76E+02	1.03E-02
BREOT-N12-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	6.36E+02	9.10E+02	NA	NA	NA	NA	2.86E-02	3.21E+02	9.19E+00	1.03E-01	1.35E+02	7.01E-01	4.11E+02	1.75E-01	2.76E+02	2.54E-03
BREOT-S12-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	3.38E+03	4.84E+03	NA	NA	NA	NA	2.86E-02	1.71E+03	4.88E+01	1.03E-01	1.35E+02	3.73E+00	4.11E+02	1.75E-01	2.76E+02	1.35E-02
BREOT-N13-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	2.04E+04	2.92E+04	NA	NA	NA	NA	2.86E-02	1.03E+04	2.95E+02	1.03E-01	1.35E+02	2.25E+01	4.11E+02	1.75E-01	2.76E+02	8.15E-02
BREOT-S13-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	5.66E+03	8.11E+03	NA	NA	NA	NA	2.86E-02	2.86E+03	8.18E+01	1.03E-01	1.35E+02	6.25E+00	4.11E+02	1.75E-01	2.76E+02	2.26E-02
BREOT-N14-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	6.89E+02	9.86E+02	NA	NA	NA	NA	2.86E-02	3.48E+02	9.96E+00	1.03E-01	1.35E+02	7.60E-01	4.11E+02	1.75E-01	2.76E+02	2.75E-03
BREOT-S14-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	3.17E+04	4.53E+04	NA	NA	NA	NA	2.86E-02	1.60E+04	4.58E+02	1.03E-01	1.35E+02	3.49E+01	4.11E+02	1.75E-01	2.76E+02	1.27E-01
BREOT-N15-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	1.95E+03	2.79E+03	NA	NA	NA	NA	2.86E-02	9.84E+02	2.82E+01	1.03E-01	1.35E+02	2.15E+00	4.11E+02	1.75E-01	2.76E+02	7.79E-03
BREOT-N16-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	7.46E+02	1.07E+03	NA	NA	NA	NA	2.86E-02	3.77E+02	1.08E+01	1.03E-01	1.35E+02	8.23E-01	4.11E+02	1.75E-01	2.76E+02	2.98E-03
BREOT-S16-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	4.83E+02	6.91E+02	NA	NA	NA	NA	2.86E-02	2.44E+02	6.98E+00	1.03E-01	1.35E+02	5.33E-01	4.11E+02	1.75E-01	2.76E+02	1.93E-03
BREOT-N17-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	8.60E+02	1.23E+03	NA	NA	NA	NA	2.86E-02	4.34E+02	1.24E+01	1.03E-01	1.35E+02	9.49E-01	4.11E+02	1.75E-01	2.76E+02	3.44E-03
BREOT-S17-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	8.34E+02	1.19E+03	NA	NA	NA	NA	2.86E-02	4.21E+02	1.20E+01	1.03E-01	1.35E+02	9.20E-01	4.11E+02	1.75E-01	2.76E+02	3.33E-03
BREOT-N18-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	1.04E+03	1.48E+03	NA	NA	NA	NA	2.86E-02	5.22E+02	1.50E+01	1.03E-01	1.35E+02	1.14E+00	4.11E+02	1.75E-01	2.76E+02	4.14E-03
BREOT-S18-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	1.43E+03	2.05E+03	NA	NA	NA	NA	2.86E-02	7.23E+02	2.07E+01	1.03E-01	1.35E+02	1.58E+00	4.11E+02	1.75E-01	2.76E+02	5.73E-03
BREOT-N19-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	2.79E+03	4.00E+03	NA	NA	NA	NA	2.86E-02	1.41E+03	4.04E+01	1.03E-01	1.35E+02	3.08E+00	4.11E+02	1.75E-01	2.76E+02	1.12E-02
BREOT-S19-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	5.41E+02	7.74E+02	NA	NA	NA	NA	2.86E-02	2.73E+02	7.81E+00	1.03E-01	1.35E+02	5.96E-01	4.11E+02	1.75E-01	2.76E+02	2.16E-03
BREOT-N20-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	4.44E+03	6.36E+03	NA	NA	NA	NA	2.86E-02	2.24E+03	6.42E+01	1.03E-01	1.35E+02	4.90E+00	4.11E+02	1.75E-01	2.76E+02	1.78E-02
BREOT-S20-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	3.79E+02	5.42E+02	NA	NA	NA	NA	2.86E-02	1.91E+02	5.47E+00	1.03E-01	1.35E+02	4.18E-01	4.11E+02	1.75E-01	2.76E+02	1.51E-03

TABLE C-2F: ZINC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 18.41

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
White-Tailed Deer (Large Herbivorous Mammal - Terrestrial)																							
BREOT-N21-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	2.46E+03	3.52E+03	NA	NA	NA	NA	2.86E-02	1.24E+03	3.56E+01	1.03E-01	1.35E+02	2.72E+00	4.11E+02	1.75E-01	2.76E+02	9.84E-03
BREOT-S21-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	7.65E+02	1.10E+03	NA	NA	NA	NA	2.86E-02	3.86E+02	1.11E+01	1.03E-01	1.35E+02	8.44E-01	4.11E+02	1.75E-01	2.76E+02	3.06E-03
BREOT-N22-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	1.89E+03	2.70E+03	NA	NA	NA	NA	2.86E-02	9.52E+02	2.73E+01	1.03E-01	1.35E+02	2.08E+00	4.11E+02	1.75E-01	2.76E+02	7.54E-03
BREOT-S22-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	1.09E+03	1.57E+03	NA	NA	NA	NA	2.86E-02	5.52E+02	1.58E+01	1.03E-01	1.35E+02	1.21E+00	4.11E+02	1.75E-01	2.76E+02	4.37E-03
BREOT-N23-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	2.36E+03	3.38E+03	NA	NA	NA	NA	2.86E-02	1.19E+03	3.41E+01	1.03E-01	1.35E+02	2.61E+00	4.11E+02	1.75E-01	2.76E+02	9.44E-03
BREOT-S23-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	1.56E+03	2.24E+03	NA	NA	NA	NA	2.86E-02	7.89E+02	2.26E+01	1.03E-01	1.35E+02	1.73E+00	4.11E+02	1.75E-01	2.76E+02	6.25E-03
BREOT-N24-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	3.82E+03	5.46E+03	NA	NA	NA	NA	2.86E-02	1.93E+03	5.51E+01	1.03E-01	1.35E+02	4.21E+00	4.11E+02	1.75E-01	2.76E+02	1.52E-02
BREOT-S24-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	2.08E+04	2.98E+04	NA	NA	NA	NA	2.86E-02	1.05E+04	3.01E+02	1.03E-01	1.35E+02	2.30E+01	4.11E+02	1.75E-01	2.76E+02	8.31E-02
BREOT-N25-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	2.80E+03	4.01E+03	NA	NA	NA	NA	2.86E-02	1.41E+03	4.05E+01	1.03E-01	1.35E+02	3.09E+00	4.11E+02	1.75E-01	2.76E+02	1.12E-02
BREOT-S25-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	5.12E+03	7.33E+03	NA	NA	NA	NA	2.86E-02	2.58E+03	7.40E+01	1.03E-01	1.35E+02	5.65E+00	4.11E+02	1.75E-01	2.76E+02	2.05E-02
BREOT-N26-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	4.21E+03	6.02E+03	NA	NA	NA	NA	2.86E-02	2.12E+03	6.08E+01	1.03E-01	1.35E+02	4.64E+00	4.11E+02	1.75E-01	2.76E+02	1.68E-02
BREOT-S26-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	1.72E+03	2.47E+03	NA	NA	NA	NA	2.86E-02	8.70E+02	2.49E+01	1.03E-01	1.35E+02	1.90E+00	4.11E+02	1.75E-01	2.76E+02	6.89E-03
BREOT-N27-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	2.24E+04	3.20E+04	NA	NA	NA	NA	2.86E-02	1.13E+04	3.23E+02	1.03E-01	1.35E+02	2.47E+01	4.11E+02	1.75E-01	2.76E+02	8.94E-02
BREOT-S27-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	4.25E+02	6.09E+02	NA	NA	NA	NA	2.86E-02	2.15E+02	6.15E+00	1.03E-01	1.35E+02	4.69E-01	4.11E+02	1.75E-01	2.76E+02	1.70E-03
BREOT-N28-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	1.45E+03	2.07E+03	NA	NA	NA	NA	2.86E-02	7.30E+02	2.09E+01	1.03E-01	1.35E+02	1.60E+00	4.11E+02	1.75E-01	2.76E+02	5.78E-03
BREOT-S28-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	4.74E+02	6.79E+02	NA	NA	NA	NA	2.86E-02	2.39E+02	6.86E+00	1.03E-01	1.35E+02	5.23E-01	4.11E+02	1.75E-01	2.76E+02	1.90E-03
BREOT-S29-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	4.56E+02	6.54E+02	NA	NA	NA	NA	2.86E-02	2.30E+02	6.60E+00	1.03E-01	1.35E+02	5.04E-01	4.11E+02	1.75E-01	2.76E+02	1.82E-03
BREOT-N30-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	1.03E+04	1.48E+04	NA	NA	NA	NA	2.86E-02	5.21E+03	1.49E+02	1.03E-01	1.35E+02	1.14E+01	4.11E+02	1.75E-01	2.76E+02	4.12E-02
BREOT-S30-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	1.71E+02	2.45E+02	NA	NA	NA	NA	2.86E-02	8.63E+01	2.47E+00	1.03E-01	1.35E+02	1.89E-01	4.11E+02	1.75E-01	2.76E+02	6.83E-04
BREOT-N31-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	1.29E+04	1.85E+04	NA	NA	NA	NA	2.86E-02	6.52E+03	1.87E+02	1.03E-01	1.35E+02	1.43E+01	4.11E+02	1.75E-01	2.76E+02	5.17E-02
BREOT-S31-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	8.03E+02	1.15E+03	NA	NA	NA	NA	2.86E-02	4.05E+02	1.16E+01	1.03E-01	1.35E+02	8.86E-01	4.11E+02	1.75E-01	2.76E+02	3.21E-03
BREOT-N32-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	5.15E+03	7.37E+03	NA	NA	NA	NA	2.86E-02	2.60E+03	7.44E+01	1.03E-01	1.35E+02	5.68E+00	4.11E+02	1.75E-01	2.76E+02	2.06E-02
BREOT-S32-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	8.48E+02	1.21E+03	NA	NA	NA	NA	2.86E-02	4.28E+02	1.23E+01	1.03E-01	1.35E+02	9.36E-01	4.11E+02	1.75E-01	2.76E+02	3.39E-03
BREOT-N33-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	2.71E+02	3.89E+02	NA	NA	NA	NA	2.86E-02	1.37E+02	3.92E+00	1.03E-01	1.35E+02	2.99E-01	4.11E+02	1.75E-01	2.76E+02	1.08E-03
BREOT-S33-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	1.38E+03	1.98E+03	NA	NA	NA	NA	2.86E-02	6.97E+02	2.00E+01	1.03E-01	1.35E+02	1.52E+00	4.11E+02	1.75E-01	2.76E+02	5.52E-03
BREOT-N34-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	6.87E+02	9.84E+02	NA	NA	NA	NA	2.86E-02	3.47E+02	9.93E+00	1.03E-01	1.35E+02	7.58E-01	4.11E+02	1.75E-01	2.76E+02	2.75E-03
BREOT-S34-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	6.06E+03	8.68E+03	NA	NA	NA	NA	2.86E-02	3.06E+03	8.76E+01	1.03E-01	1.35E+02	6.69E+00	4.11E+02	1.75E-01	2.76E+02	2.42E-02
BREOT-N35-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	2.45E+02	3.50E+02	NA	NA	NA	NA	2.86E-02	1.23E+02	3.54E+00	1.03E-01	1.35E+02	2.70E-01	4.11E+02	1.75E-01	2.76E+02	9.78E-04
BREOT-S35-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	8.80E+02	1.26E+03	NA	NA	NA	NA	2.86E-02	4.44E+02	1.27E+01	1.03E-01	1.35E+02	9.71E-01	4.11E+02	1.75E-01	2.76E+02	3.52E-03
BREOT-N36-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	5.89E+03	8.44E+03	NA	NA	NA	NA	2.86E-02	2.97E+03	8.52E+01	1.03E-01	1.35E+02	6.50E+00	4.11E+02	1.75E-01	2.76E+02	2.36E-02
BREOT-S36-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	5.19E+03	7.43E+03	NA	NA	NA	NA	2.86E-02	2.62E+03	7.50E+01	1.03E-01	1.35E+02	5.73E+00	4.11E+02	1.75E-01	2.76E+02	2.07E-02
BREOT-N37-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	8.21E+02	1.18E+03	NA	NA	NA	NA	2.86E-02	4.14E+02	1.19E+01	1.03E-01	1.35E+02	9.06E-01	4.11E+02	1.75E-01	2.76E+02	3.28E-03
BREOT-S37-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	5.86E+03	8.39E+03	NA	NA	NA	NA	2.86E-02	2.96E+03	8.47E+01	1.03E-01	1.35E+02	6.47E+00	4.11E+02	1.75E-01	2.76E+02	2.34E-02
BREOT-N38-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	2.48E+02	3.56E+02	NA	NA	NA	NA	2.86E-02	1.25E+02	3.59E+00	1.03E-01	1.35E+02	2.74E-01	4.11E+02	1.75E-01	2.76E+02	9.93E-04
BREOT-S38-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	2.24E+03	3.21E+03	NA	NA	NA	NA	2.86E-02	1.13E+03	3.24E+01	1.03E-01	1.35E+02	2.47E+00	4.11E+02	1.75E-01	2.76E+02	8.95E-03
BREOT-N39-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	4.22E+02	6.04E+02	NA	NA	NA	NA	2.86E-02	2.13E+02	6.10E+00	1.03E-01	1.35E+02	4.65E-01	4.11E+02	1.75E-01	2.76E+02	1.69E-03
BREOT-N40-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	3.35E+02	4.80E+02	NA	NA	NA	NA	2.86E-02	1.69E+02	4.84E+00	1.03E-01	1.35E+02	3.70E-01	4.11E+02	1.75E-01	2.76E+02	1.34E-03
BREOT-S40-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	4.21E+03	6.03E+03	NA	NA	NA	NA	2.86E-02	2.13E+03	6.08E+01	1.03E-01	1.35E+02	4.65E+00	4.11E+02	1.75E-01	2.76E+02	1.68E-02
BREOT-N41-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	1.92E+02	2.75E+02	NA	NA	NA	NA	2.86E-02	9.68E+01	2.77E+00	1.03E-01	1.35E+02	2.12E-01	4.11E+02	1.75E-01	2.76E+02	7.66E-04
BREOT-S41-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	4.55E+03	6.52E+03	NA	NA	NA	NA	2.86E-02	2.30E+03	6.58E+01	1.03E-01	1.35E+02	5.02E+00	4.11E+02	1.75E-01	2.76E+02	1.82E-02
BREOT-N42-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S42-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	8.64E+03	1.24E+04	NA	NA	NA	NA	2.86E-02	4.36E+03	1.25E+02	1.03E-01	1.35E+02	9.53E+00	4.11E+02	1.75E-01	2.76E+02	3.45E-02
BREOT-N43-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	4.00E+02	5.72E+02	NA	NA	NA	NA	2.86E-02	2.02E+02	5.78E+00	1.03E-01	1.35E+02	4.41E-01	4.11E+02	1.75E-01	2.76E+02	1.60E-03
BREOT-S43-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	8.09E+02	1.16E+03	NA	NA	NA	NA	2.86E-02	4.09E+02	1.17E+01	1.03E-01	1.35E+02	8.93E-01	4.11E+02	1.75E-01	2.76E+02	3.23E-03
BREOT-N44-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	8.31E+02	1.19E+03	NA	NA	NA	NA	2.86E-02	4.19E+02	1.20E+01	1.03E-01	1.35E+02	9.17E-01	4.11E+02	1.75E-01	2.76E+02	3.32E-03
BREOT-S44-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	6.95E+02	9.95E+02	NA	NA	NA	NA	2.86E-02	3.51E+02	1.00E+01	1.03E-01	1.35E+02	7.67E-01	4.11E+02	1.75E-01	2.76E+02	2.78E-03
BREOT-N45-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	6.71E+02	9.60E+02	NA	NA	NA	NA	2.86E-02	3.39E+02	9.69E+00	1.03E-01	1.35E+02	7.40E-01	4.11E+02	1.75E-01	2.76E+02	2.68E-03
BREOT-S45-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	7.91E+02	1.13E+03	NA	NA	NA	NA	2.86E-02	3.99E+02	1.14E+01	1.03E-01	1.35E+02	8.73E-01	4.11E+02	1.75E-01	2.76E+02	3.16E-03
BREOT-N46-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	8.80E+02	1.26E+03	NA	NA	NA	NA	2.86E-02	4.44E+02	1.27E+01	1.03E-01	1.35E+02	9.71E-01	4.11E+02	1.75E-01	2.76E+02	3.52E-03
BREOT-S46-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	3.34E+02	4.79E+02	NA	NA	NA	NA	2.86E-02	1.69E+02	4.83E+00	1.03E-01	1.35E+02	3.69E-01	4.11E+02	1.75E-01	2.76E+02	1.34E-03
BREOT-N47-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	1.43E+03	2.05E+03	NA	NA	NA	NA	2.86E-02	7.23E+02	2.07E+01	1.03E-01	1.35E+02	1.58E+00	4.11E+02	1.75E-01	2.76E+02	5.72E-03
BREOT-S47-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	2.27E+02	3.25E+02	NA	NA	NA	NA	2.86E-02	1.14E+02	3.28E+00	1.03E-01	1.35E+02	2.50E-01	4.11E+02	1.75E-01	2.76E+02	9.06E-04
BREOT-N48-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	5.60E+02	8.02E+02	NA	NA	NA	NA	2.86E-02	2.83E+02	8.09E+00	1.03E-01	1.35E+02	6.18E-01	4.11E+02	1.75E-01	2.76E+02	2.24E-03
BREOT-S48-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N49-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	2.10E+03	3.01E+03	NA	NA	NA	NA	2.86E-02	1.06E+03	3.04E+01	1.03E-01	1.35E+02	2.32E+00	4.11E+02	1.75E-01	2.76E+02	8.40E-03

TABLE C-2F: ZINC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 18.41

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
White-Tailed Deer (Large Herbivorous Mammal - Terrestrial)																							
BREOT-S49-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S50-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N51-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	6.66E+02	9.54E+02	NA	NA	NA	NA	2.86E-02	3.36E+02	9.63E+00	1.03E-01	1.35E+02	7.35E-01	4.11E+02	1.75E-01	2.76E+02	2.66E-03
BREOT-S51-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	3.78E+02	5.41E+02	NA	NA	NA	NA	2.86E-02	1.91E+02	5.46E+00	1.03E-01	1.35E+02	4.17E-01	4.11E+02	1.75E-01	2.76E+02	1.51E-03
BREOT-N52-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S52-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N53-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	5.18E+02	7.42E+02	NA	NA	NA	NA	2.86E-02	2.61E+02	7.49E+00	1.03E-01	1.35E+02	5.72E-01	4.11E+02	1.75E-01	2.76E+02	2.07E-03
BREOT-S53-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N54-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	5.92E+02	8.47E+02	NA	NA	NA	NA	2.86E-02	2.99E+02	8.55E+00	1.03E-01	1.35E+02	6.53E-01	4.11E+02	1.75E-01	2.76E+02	2.37E-03
BREOT-S54-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N55-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	4.55E+02	6.51E+02	NA	NA	NA	NA	2.86E-02	2.29E+02	6.57E+00	1.03E-01	1.35E+02	5.02E-01	4.11E+02	1.75E-01	2.76E+02	1.82E-03
BREOT-S55-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N56-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	4.95E+02	7.08E+02	NA	NA	NA	NA	2.86E-02	2.50E+02	7.15E+00	1.03E-01	1.35E+02	5.46E-01	4.11E+02	1.75E-01	2.76E+02	1.98E-03
BREOT-N57-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	3.53E+02	5.06E+02	NA	NA	NA	NA	2.86E-02	1.78E+02	5.11E+00	1.03E-01	1.35E+02	3.90E-01	4.11E+02	1.75E-01	2.76E+02	1.41E-03
BREOT-S57-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	7.31E+02	1.05E+03	NA	NA	NA	NA	2.86E-02	3.69E+02	1.06E+01	1.03E-01	1.35E+02	8.07E-01	4.11E+02	1.75E-01	2.76E+02	2.92E-03
BREOT-N58-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	4.31E+02	6.17E+02	NA	NA	NA	NA	2.86E-02	2.17E+02	6.22E+00	1.03E-01	1.35E+02	4.75E-01	4.11E+02	1.75E-01	2.76E+02	1.72E-03
BREOT-S58-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	6.86E+02	9.83E+02	NA	NA	NA	NA	2.86E-02	3.46E+02	9.92E+00	1.03E-01	1.35E+02	7.57E-01	4.11E+02	1.75E-01	2.76E+02	2.74E-03
BREOT-N59-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	4.84E+02	6.93E+02	NA	NA	NA	NA	2.86E-02	2.44E+02	6.99E+00	1.03E-01	1.35E+02	5.34E-01	4.11E+02	1.75E-01	2.76E+02	1.93E-03
BREOT-N60-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	4.49E+02	6.43E+02	NA	NA	NA	NA	2.86E-02	2.27E+02	6.49E+00	1.03E-01	1.35E+02	4.96E-01	4.11E+02	1.75E-01	2.76E+02	1.80E-03
BREOT-S60-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	1.21E+03	1.74E+03	NA	NA	NA	NA	2.86E-02	6.12E+02	1.75E+01	1.03E-01	1.35E+02	1.34E+00	4.11E+02	1.75E-01	2.76E+02	4.85E-03
BREOT-S61-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N62-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	4.99E+02	7.14E+02	NA	NA	NA	NA	2.86E-02	2.52E+02	7.21E+00	1.03E-01	1.35E+02	5.51E-01	4.11E+02	1.75E-01	2.76E+02	1.99E-03
BREOT-S62-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	1.89E+02	2.70E+02	NA	NA	NA	NA	2.86E-02	9.52E+01	2.73E+00	1.03E-01	1.35E+02	2.08E-01	4.11E+02	1.75E-01	2.76E+02	7.54E-04
BREOT-N63-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	9.21E+02	1.32E+03	NA	NA	NA	NA	2.86E-02	4.65E+02	1.33E+01	1.03E-01	1.35E+02	1.02E+00	4.11E+02	1.75E-01	2.76E+02	3.68E-03
BREOT-S63-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	6.56E+02	9.39E+02	NA	NA	NA	NA	2.86E-02	3.31E+02	9.48E+00	1.03E-01	1.35E+02	7.23E-01	4.11E+02	1.75E-01	2.76E+02	2.62E-03
BREOT-N64-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	5.80E+02	8.30E+02	NA	NA	NA	NA	2.86E-02	2.93E+02	8.38E+00	1.03E-01	1.35E+02	6.40E-01	4.11E+02	1.75E-01	2.76E+02	2.32E-03
BREOT-S64-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N66-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	5.09E+02	7.29E+02	NA	NA	NA	NA	2.86E-02	2.57E+02	7.36E+00	1.03E-01	1.35E+02	5.62E-01	4.11E+02	1.75E-01	2.76E+02	2.03E-03
BREOT-S66-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	7.55E+02	1.08E+03	NA	NA	NA	NA	2.86E-02	3.81E+02	1.09E+01	1.03E-01	1.35E+02	8.33E-01	4.11E+02	1.75E-01	2.76E+02	3.02E-03
BREOT-N67-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	6.70E+03	9.59E+03	NA	NA	NA	NA	2.86E-02	3.38E+03	9.68E+01	1.03E-01	1.35E+02	7.39E+00	4.11E+02	1.75E-01	2.76E+02	2.68E-02
BREOT-S67-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	3.69E+02	5.28E+02	NA	NA	NA	NA	2.86E-02	1.86E+02	5.33E+00	1.03E-01	1.35E+02	4.07E-01	4.11E+02	1.75E-01	2.76E+02	1.47E-03
Outside Tailings																						**Maximum HQ (At Edge of Tailings)**	**1.45E-01**
BREOT-S0+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	6.92E+02	9.90E+02	NA	NA	NA	NA	2.86E-02	3.49E+02	1.00E+01	1.03E-01	1.35E+02	7.63E-01	4.11E+02	1.75E-01	2.76E+02	2.76E-03
BREOT-S1+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	8.88E+02	1.27E+03	NA	NA	NA	NA	2.86E-02	4.48E+02	1.28E+01	1.03E-01	1.35E+02	9.80E-01	4.11E+02	1.75E-01	2.76E+02	3.55E-03
BREOT-S2+95 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	2.92E+02	4.18E+02	NA	NA	NA	NA	2.86E-02	1.47E+02	4.22E+00	1.03E-01	1.35E+02	3.22E-01	4.11E+02	1.75E-01	2.76E+02	1.17E-03
BREOT-S3+6 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	3.83E+02	5.48E+02	NA	NA	NA	NA	2.86E-02	1.93E+02	5.53E+00	1.03E-01	1.35E+02	4.22E-01	4.11E+02	1.75E-01	2.76E+02	1.53E-03
BREOT-S4+10 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	4.52E+02	6.48E+02	NA	NA	NA	NA	2.86E-02	2.28E+02	6.54E+00	1.03E-01	1.35E+02	4.99E-01	4.11E+02	1.75E-01	2.76E+02	1.81E-03
BREOT-S6+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	4.97E+02	7.11E+02	NA	NA	NA	NA	2.86E-02	2.51E+02	7.18E+00	1.03E-01	1.35E+02	5.48E-01	4.11E+02	1.75E-01	2.76E+02	1.99E-03
BREOT-S8+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	5.66E+02	8.11E+02	NA	NA	NA	NA	2.86E-02	2.86E+02	8.18E+00	1.03E-01	1.35E+02	6.25E-01	4.11E+02	1.75E-01	2.76E+02	2.26E-03
BREOT-N10+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	4.54E+02	6.50E+02	NA	NA	NA	NA	2.86E-02	2.29E+02	6.56E+00	1.03E-01	1.35E+02	5.01E-01	4.11E+02	1.75E-01	2.76E+02	1.82E-03
BREOT-N11+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	3.62E+02	5.19E+02	NA	NA	NA	NA	2.86E-02	1.83E+02	5.24E+00	1.03E-01	1.35E+02	4.00E-01	4.11E+02	1.75E-01	2.76E+02	1.45E-03
BREOT-N12+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	5.25E+02	7.51E+02	NA	NA	NA	NA	2.86E-02	2.65E+02	7.58E+00	1.03E-01	1.35E+02	5.79E-01	4.11E+02	1.75E-01	2.76E+02	2.10E-03
BREOT-S12+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	1.28E+04	1.83E+04	NA	NA	NA	NA	2.86E-02	6.45E+03	1.85E+02	1.03E-01	1.35E+02	1.41E+01	4.11E+02	1.75E-01	2.76E+02	5.11E-02
BREOT-S12+60 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	1.25E+03	1.78E+03	NA	NA	NA	NA	2.86E-02	6.28E+02	1.80E+01	1.03E-01	1.35E+02	1.37E+00	4.11E+02	1.75E-01	2.76E+02	4.98E-03
BREOT-N13+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	5.22E+02	7.47E+02	NA	NA	NA	NA	2.86E-02	2.63E+02	7.54E+00	1.03E-01	1.35E+02	5.76E-01	4.11E+02	1.75E-01	2.76E+02	2.09E-03
BREOT-S13+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	5.72E+03	8.19E+03	NA	NA	NA	NA	2.86E-02	2.89E+03	8.27E+01	1.03E-01	1.35E+02	6.31E+00	4.11E+02	1.75E-01	2.76E+02	2.29E-02
BREOT-S13+65 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	1.88E+03	2.69E+03	NA	NA	NA	NA	2.86E-02	9.50E+02	2.72E+01	1.03E-01	1.35E+02	2.08E+00	4.11E+02	1.75E-01	2.76E+02	7.52E-03
BREOT-N14+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	8.64E+02	1.24E+03	NA	NA	NA	NA	2.86E-02	4.36E+02	1.25E+01	1.03E-01	1.35E+02	9.54E-01	4.11E+02	1.75E-01	2.76E+02	3.45E-03
BREOT-S14+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	8.81E+03	1.26E+04	NA	NA	NA	NA	2.86E-02	4.44E+03	1.27E+02	1.03E-01	1.35E+02	9.71E+00	4.11E+02	1.75E-01	2.76E+02	3.52E-02
BREOT-S14+59 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	6.69E+02	9.58E+02	NA	NA	NA	NA	2.86E-02	3.38E+02	9.67E+00	1.03E-01	1.35E+02	7.39E-01	4.11E+02	1.75E-01	2.76E+02	2.67E-03
BREOT-N15+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	1.90E+04	2.72E+04	NA	NA	NA	NA	2.86E-02	9.59E+03	2.75E+02	1.03E-01	1.35E+02	2.10E+01	4.11E+02	1.75E-01	2.76E+02	7.59E-02
BREOT-N15+50 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	5.96E+02	8.54E+02	NA	NA	NA	NA	2.86E-02	3.01E+02	8.62E+00	1.03E-01	1.35E+02	6.58E-01	4.11E+02	1.75E-01	2.76E+02	2.38E-03
BREOT-S16+20 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	7.67E+03	1.10E+04	NA	NA	NA	NA	2.86E-02	3.87E+03	1.11E+02	1.03E-01	1.35E+02	8.46E+00	4.11E+02	1.75E-01	2.76E+02	3.06E-02
BREOT-S16+75 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	9.04E+02	1.29E+03	NA	NA	NA	NA	2.86E-02	4.56E+02	1.31E+01	1.03E-01	1.35E+02	9.97E-01	4.11E+02	1.75E-01	2.76E+02	3.61E-03
BREOT-N17+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	3.81E+03	5.45E+03	NA	NA	NA	NA	2.86E-02	1.92E+03	5.50E+01	1.03E-01	1.35E+02	4.20E+00	4.11E+02	1.75E-01	2.76E+02	1.52E-02

TABLE C-2F: ZINC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 18.41

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
White-Tailed Deer (Large Herbivorous Mammal - Terrestrial)																							
BREOT-S18+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	4.01E+02	5.74E+02	NA	NA	NA	NA	2.86E-02	2.02E+02	5.80E+00	1.03E-01	1.35E+02	4.42E-01	4.11E+02	1.75E-01	2.76E+02	1.60E-03
BREOT-N19+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	3.96E+02	5.67E+02	NA	NA	NA	NA	2.86E-02	2.00E+02	5.73E+00	1.03E-01	1.35E+02	4.37E-01	4.11E+02	1.75E-01	2.76E+02	1.58E-03
BREOT-S19+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	1.71E+03	2.46E+03	NA	NA	NA	NA	2.86E-02	8.65E+02	2.48E+01	1.03E-01	1.35E+02	1.89E+00	4.11E+02	1.75E-01	2.76E+02	6.85E-03
BREOT-S19+85 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	2.99E+02	4.28E+02	NA	NA	NA	NA	2.86E-02	1.51E+02	4.32E+00	1.03E-01	1.35E+02	3.29E-01	4.11E+02	1.75E-01	2.76E+02	1.19E-03
BREOT-N20+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	5.68E+02	8.14E+02	NA	NA	NA	NA	2.86E-02	2.87E+02	8.21E+00	1.03E-01	1.35E+02	6.27E-01	4.11E+02	1.75E-01	2.76E+02	2.27E-03
BREOT-S20+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	2.29E+03	3.29E+03	NA	NA	NA	NA	2.86E-02	1.16E+03	3.32E+01	1.03E-01	1.35E+02	2.53E+00	4.11E+02	1.75E-01	2.76E+02	9.17E-03
BREOT-S20+75 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	4.32E+02	6.18E+02	NA	NA	NA	NA	2.86E-02	2.18E+02	6.24E+00	1.03E-01	1.35E+02	4.77E-01	4.11E+02	1.75E-01	2.76E+02	1.73E-03
BREOT-N21+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	8.48E+02	1.21E+03	NA	NA	NA	NA	2.86E-02	4.28E+02	1.23E+01	1.03E-01	1.35E+02	9.36E-01	4.11E+02	1.75E-01	2.76E+02	3.39E-03
BREOT-S21+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	1.05E+03	1.51E+03	NA	NA	NA	NA	2.86E-02	5.32E+02	1.52E+01	1.03E-01	1.35E+02	1.16E+00	4.11E+02	1.75E-01	2.76E+02	4.21E-03
BREOT-N22+150 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	4.06E+02	5.81E+02	NA	NA	NA	NA	2.86E-02	2.05E+02	5.86E+00	1.03E-01	1.35E+02	4.47E-01	4.11E+02	1.75E-01	2.76E+02	1.62E-03
BREOT-N22+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	5.93E+03	8.49E+03	NA	NA	NA	NA	2.86E-02	2.99E+03	8.57E+01	1.03E-01	1.35E+02	6.54E+00	4.11E+02	1.75E-01	2.76E+02	2.37E-02
BREOT-S22+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	6.98E+02	9.99E+02	NA	NA	NA	NA	2.86E-02	3.52E+02	1.01E+01	1.03E-01	1.35E+02	7.70E-01	4.11E+02	1.75E-01	2.76E+02	2.79E-03
BREOT-N23+115 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	7.18E+02	1.03E+03	NA	NA	NA	NA	2.86E-02	3.63E+02	1.04E+01	1.03E-01	1.35E+02	7.92E-01	4.11E+02	1.75E-01	2.76E+02	2.87E-03
BREOT-N23+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	1.46E+04	2.09E+04	NA	NA	NA	NA	2.86E-02	7.37E+03	2.11E+02	1.03E-01	1.35E+02	1.61E+01	4.11E+02	1.75E-01	2.76E+02	5.84E-02
BREOT-S23+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	3.49E+03	5.00E+03	NA	NA	NA	NA	2.86E-02	1.76E+03	5.05E+01	1.03E-01	1.35E+02	3.85E+00	4.11E+02	1.75E-01	2.76E+02	1.40E-02
BREOT-S23+37.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	9.23E+02	1.32E+03	NA	NA	NA	NA	2.86E-02	4.66E+02	1.33E+01	1.03E-01	1.35E+02	1.02E+00	4.11E+02	1.75E-01	2.76E+02	3.69E-03
BREOT-N24+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	3.62E+03	5.18E+03	NA	NA	NA	NA	2.86E-02	1.83E+03	5.23E+01	1.03E-01	1.35E+02	3.99E+00	4.11E+02	1.75E-01	2.76E+02	1.45E-02
BREOT-N24+75 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	5.76E+02	8.25E+02	NA	NA	NA	NA	2.86E-02	2.91E+02	8.32E+00	1.03E-01	1.35E+02	6.35E-01	4.11E+02	1.75E-01	2.76E+02	2.30E-03
BREOT-S24+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	8.47E+02	1.21E+03	NA	NA	NA	NA	2.86E-02	4.27E+02	1.22E+01	1.03E-01	1.35E+02	9.34E-01	4.11E+02	1.75E-01	2.76E+02	3.38E-03
BREOT-N25+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	2.07E+02	2.97E+02	NA	NA	NA	NA	2.86E-02	1.05E+02	3.00E+00	1.03E-01	1.35E+02	2.29E-01	4.11E+02	1.75E-01	2.76E+02	8.29E-04
BREOT-S25+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	5.91E+02	8.46E+02	NA	NA	NA	NA	2.86E-02	2.98E+02	8.54E+00	1.03E-01	1.35E+02	6.52E-01	4.11E+02	1.75E-01	2.76E+02	2.36E-03
BREOT-S25+40 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	6.47E+02	9.26E+02	NA	NA	NA	NA	2.86E-02	3.26E+02	9.35E+00	1.03E-01	1.35E+02	7.14E-01	4.11E+02	1.75E-01	2.76E+02	2.58E-03
BREOT-S26+37 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	4.92E+02	7.05E+02	NA	NA	NA	NA	2.86E-02	2.48E+02	7.11E+00	1.03E-01	1.35E+02	5.43E-01	4.11E+02	1.75E-01	2.76E+02	1.97E-03
BREOT-N27+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	5.31E+02	7.60E+02	NA	NA	NA	NA	2.86E-02	2.68E+02	7.68E+00	1.03E-01	1.35E+02	5.86E-01	4.11E+02	1.75E-01	2.76E+02	2.12E-03
BREOT-S27+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	3.90E+02	5.58E+02	NA	NA	NA	NA	2.86E-02	1.97E+02	5.63E+00	1.03E-01	1.35E+02	4.30E-01	4.11E+02	1.75E-01	2.76E+02	1.56E-03
BREOT-N28+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	3.68E+02	5.28E+02	NA	NA	NA	NA	2.86E-02	1.86E+02	5.32E+00	1.03E-01	1.35E+02	4.07E-01	4.11E+02	1.75E-01	2.76E+02	1.47E-03
BREOT-S28+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	4.36E+02	6.24E+02	NA	NA	NA	NA	2.86E-02	2.20E+02	6.30E+00	1.03E-01	1.35E+02	4.81E-01	4.11E+02	1.75E-01	2.76E+02	1.74E-03
BREOT-N29+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	1.39E+03	1.99E+03	NA	NA	NA	NA	2.86E-02	7.01E+02	2.01E+01	1.03E-01	1.35E+02	1.53E+00	4.11E+02	1.75E-01	2.76E+02	5.55E-03
BREOT-S29+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	3.58E+02	5.13E+02	NA	NA	NA	NA	2.86E-02	1.81E+02	5.18E+00	1.03E-01	1.35E+02	3.96E-01	4.11E+02	1.75E-01	2.76E+02	1.43E-03
BREOT-N30+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	7.84E+02	1.12E+03	NA	NA	NA	NA	2.86E-02	3.96E+02	1.13E+01	1.03E-01	1.35E+02	8.65E-01	4.11E+02	1.75E-01	2.76E+02	3.13E-03
BREOT-S30+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	6.10E+02	8.73E+02	NA	NA	NA	NA	2.86E-02	3.08E+02	8.81E+00	1.03E-01	1.35E+02	6.73E-01	4.11E+02	1.75E-01	2.76E+02	2.44E-03
BREOT-N31+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	2.00E+04	2.87E+04	NA	NA	NA	NA	2.86E-02	1.01E+04	2.90E+02	1.03E-01	1.35E+02	2.21E+01	4.11E+02	1.75E-01	2.76E+02	8.01E-02
BREOT-N31+75 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	3.92E+02	5.62E+02	NA	NA	NA	NA	2.86E-02	1.98E+02	5.67E+00	1.03E-01	1.35E+02	4.33E-01	4.11E+02	1.75E-01	2.76E+02	1.57E-03
BREOT-S31+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	5.59E+02	8.01E+02	NA	NA	NA	NA	2.86E-02	2.82E+02	8.08E+00	1.03E-01	1.35E+02	6.17E-01	4.11E+02	1.75E-01	2.76E+02	2.24E-03
BREOT-N32+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	2.95E+02	4.23E+02	NA	NA	NA	NA	2.86E-02	1.49E+02	4.27E+00	1.03E-01	1.35E+02	3.26E-01	4.11E+02	1.75E-01	2.76E+02	1.18E-03
BREOT-S32+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	8.06E+02	1.15E+03	NA	NA	NA	NA	2.86E-02	4.07E+02	1.16E+01	1.03E-01	1.35E+02	8.89E-01	4.11E+02	1.75E-01	2.76E+02	3.22E-03
BREOT-S32+300 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	1.03E+03	1.48E+03	NA	NA	NA	NA	2.86E-02	5.22E+02	1.50E+01	1.03E-01	1.35E+02	1.14E+00	4.11E+02	1.75E-01	2.76E+02	4.14E-03
BREOT-N33+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	2.12E+02	3.04E+02	NA	NA	NA	NA	2.86E-02	1.07E+02	3.07E+00	1.03E-01	1.35E+02	2.34E-01	4.11E+02	1.75E-01	2.76E+02	8.48E-04
BREOT-S33+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	2.35E+03	3.37E+03	NA	NA	NA	NA	2.86E-02	1.19E+03	3.40E+01	1.03E-01	1.35E+02	2.60E+00	4.11E+02	1.75E-01	2.76E+02	9.41E-03
BREOT-N34+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	2.75E+02	3.93E+02	NA	NA	NA	NA	2.86E-02	1.39E+02	3.97E+00	1.03E-01	1.35E+02	3.03E-01	4.11E+02	1.75E-01	2.76E+02	1.10E-03
BREOT-S34+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	4.75E+02	6.80E+02	NA	NA	NA	NA	2.86E-02	2.40E+02	6.87E+00	1.03E-01	1.35E+02	5.24E-01	4.11E+02	1.75E-01	2.76E+02	1.90E-03
BREOT-N35+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	3.10E+02	4.44E+02	NA	NA	NA	NA	2.86E-02	1.57E+02	4.48E+00	1.03E-01	1.35E+02	3.42E-01	4.11E+02	1.75E-01	2.76E+02	1.24E-03
BREOT-S35+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	2.10E+03	3.01E+03	NA	NA	NA	NA	2.86E-02	1.06E+03	3.04E+01	1.03E-01	1.35E+02	2.32E+00	4.11E+02	1.75E-01	2.76E+02	8.40E-03
BREOT-N36+100 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	4.47E+02	6.41E+02	NA	NA	NA	NA	2.86E-02	2.26E+02	6.47E+00	1.03E-01	1.35E+02	4.94E-01	4.11E+02	1.75E-01	2.76E+02	1.79E-03
BREOT-N36+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	4.69E+03	6.71E+03	NA	NA	NA	NA	2.86E-02	2.37E+03	6.78E+01	1.03E-01	1.35E+02	5.17E+00	4.11E+02	1.75E-01	2.76E+02	1.87E-02
BREOT-S36+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	1.78E+03	2.55E+03	NA	NA	NA	NA	2.86E-02	8.99E+02	2.57E+01	1.03E-01	1.35E+02	1.97E+00	4.11E+02	1.75E-01	2.76E+02	7.12E-03
BREOT-N37+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	1.56E+02	2.23E+02	NA	NA	NA	NA	2.86E-02	7.86E+01	2.25E+00	1.03E-01	1.35E+02	1.72E-01	4.11E+02	1.75E-01	2.76E+02	6.22E-04
BREOT-S37+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	2.03E+03	2.90E+03	NA	NA	NA	NA	2.86E-02	1.02E+03	2.93E+01	1.03E-01	1.35E+02	2.23E+00	4.11E+02	1.75E-01	2.76E+02	8.09E-03
BREOT-N38+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	1.67E+02	2.38E+02	NA	NA	NA	NA	2.86E-02	8.41E+01	2.41E+00	1.03E-01	1.35E+02	1.84E-01	4.11E+02	1.75E-01	2.76E+02	6.65E-04
BREOT-S38+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	2.36E+03	3.38E+03	NA	NA	NA	NA	2.86E-02	1.19E+03	3.41E+01	1.03E-01	1.35E+02	2.60E+00	4.11E+02	1.75E-01	2.76E+02	9.43E-03
BREOT-N39+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	2.28E+02	3.26E+02	NA	NA	NA	NA	2.86E-02	1.15E+02	3.29E+00	1.03E-01	1.35E+02	2.52E-01	4.11E+02	1.75E-01	2.76E+02	9.11E-04
BREOT-S39+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	2.35E+03	3.37E+03	NA	NA	NA	NA	2.86E-02	1.19E+03	3.40E+01	1.03E-01	1.35E+02	2.59E+00	4.11E+02	1.75E-01	2.76E+02	9.40E-03
BREOT-N40+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	1.29E+02	1.84E+02	NA	NA	NA	NA	2.86E-02	6.49E+01	1.86E+00	1.03E-01	1.35E+02	1.42E-01	4.11E+02	1.75E-01	2.76E+02	5.14E-04
BREOT-S40+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	2.10E+03	3.01E+03	NA	NA	NA	NA	2.86E-02	1.06E+03	3.04E+01	1.03E-01	1.35E+02	2.32E+00	4.11E+02	1.75E-01	2.76E+02	8.40E-03
BREOT-N41+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	2.28E+02	3.27E+02	NA	NA	NA	NA	2.86E-02	1.15E+02	3.30E+00	1.03E-01	1.35E+02	2.52E-01	4.11E+02	1.75E-01	2.76E+02	9.13E-04

TABLE C-2F: ZINC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 18.41

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
White-Tailed Deer (Large Herbivorous Mammal - Terrestrial)																							
BREOT-S41+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	1.55E+03	2.23E+03	NA	NA	NA	NA	2.86E-02	7.85E+02	2.25E+01	1.03E-01	1.35E+02	1.72E+00	4.11E+02	1.75E-01	2.76E+02	6.21E-03
BREOT-N42+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	1.14E+02	1.63E+02	NA	NA	NA	NA	2.86E-02	5.76E+01	1.65E+00	1.03E-01	1.35E+02	1.26E-01	4.11E+02	1.75E-01	2.76E+02	4.56E-04
BREOT-S42+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	2.26E+03	3.23E+03	NA	NA	NA	NA	2.86E-02	1.14E+03	3.26E+01	1.03E-01	1.35E+02	2.49E+00	4.11E+02	1.75E-01	2.76E+02	9.02E-03
BREOT-N43+12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	5.53E+02	7.91E+02	NA	NA	NA	NA	2.86E-02	2.79E+02	7.99E+00	1.03E-01	1.35E+02	6.10E-01	4.11E+02	1.75E-01	2.76E+02	2.21E-03
BREOT-N43+40 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	4.37E+02	6.26E+02	NA	NA	NA	NA	2.86E-02	2.21E+02	6.32E+00	1.03E-01	1.35E+02	4.82E-01	4.11E+02	1.75E-01	2.76E+02	1.75E-03
BREOT-S43+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	8.75E+02	1.25E+03	NA	NA	NA	NA	2.86E-02	4.42E+02	1.26E+01	1.03E-01	1.35E+02	9.66E-01	4.11E+02	1.75E-01	2.76E+02	3.50E-03
BREOT-N44+55 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	4.47E+02	6.40E+02	NA	NA	NA	NA	2.86E-02	2.26E+02	6.46E+00	1.03E-01	1.35E+02	4.93E-01	4.11E+02	1.75E-01	2.76E+02	1.79E-03
BREOT-S44+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	6.48E+02	9.28E+02	NA	NA	NA	NA	2.86E-02	3.27E+02	9.37E+00	1.03E-01	1.35E+02	7.15E-01	4.11E+02	1.75E-01	2.76E+02	2.59E-03
BREOT-N45+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	4.57E+02	6.55E+02	NA	NA	NA	NA	2.86E-02	2.31E+02	6.61E+00	1.03E-01	1.35E+02	5.05E-01	4.11E+02	1.75E-01	2.76E+02	1.83E-03
BREOT-S45+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	9.09E+02	1.30E+03	NA	NA	NA	NA	2.86E-02	4.59E+02	1.31E+01	1.03E-01	1.35E+02	1.00E+00	4.11E+02	1.75E-01	2.76E+02	3.63E-03
BREOT-N46+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	1.03E+03	1.47E+03	NA	NA	NA	NA	2.86E-02	5.18E+02	1.48E+01	1.03E-01	1.35E+02	1.13E+00	4.11E+02	1.75E-01	2.76E+02	4.10E-03
BREOT-S46+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	6.86E+02	9.82E+02	NA	NA	NA	NA	2.86E-02	3.46E+02	9.91E+00	1.03E-01	1.35E+02	7.56E-01	4.11E+02	1.75E-01	2.76E+02	2.74E-03
BREOT-N47+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	6.82E+02	9.77E+02	NA	NA	NA	NA	2.86E-02	3.44E+02	9.86E+00	1.03E-01	1.35E+02	7.53E-01	4.11E+02	1.75E-01	2.76E+02	2.73E-03
BREOT-S47+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	2.10E+02	3.00E+02	NA	NA	NA	NA	2.86E-02	1.06E+02	3.03E+00	1.03E-01	1.35E+02	2.31E-01	4.11E+02	1.75E-01	2.76E+02	8.38E-04
BREOT-N48+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	2.63E+02	3.77E+02	NA	NA	NA	NA	2.86E-02	1.33E+02	3.80E+00	1.03E-01	1.35E+02	2.90E-01	4.11E+02	1.75E-01	2.76E+02	1.05E-03
BREOT-S48+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N49+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	6.77E+02	9.69E+02	NA	NA	NA	NA	2.86E-02	3.42E+02	9.78E+00	1.03E-01	1.35E+02	7.47E-01	4.11E+02	1.75E-01	2.76E+02	2.71E-03
BREOT-S49+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N51+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	3.30E+02	4.72E+02	NA	NA	NA	NA	2.86E-02	1.66E+02	4.76E+00	1.03E-01	1.35E+02	3.64E-01	4.11E+02	1.75E-01	2.76E+02	1.32E-03
BREOT-S51+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	2.65E+02	3.80E+02	NA	NA	NA	NA	2.86E-02	1.34E+02	3.84E+00	1.03E-01	1.35E+02	2.93E-01	4.11E+02	1.75E-01	2.76E+02	1.06E-03
BREOT-N52+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	3.32E+02	4.76E+02	NA	NA	NA	NA	2.86E-02	1.68E+02	4.80E+00	1.03E-01	1.35E+02	3.67E-01	4.11E+02	1.75E-01	2.76E+02	1.33E-03
BREOT-S52+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N53+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	3.30E+02	4.73E+02	NA	NA	NA	NA	2.86E-02	1.67E+02	4.77E+00	1.03E-01	1.35E+02	3.64E-01	4.11E+02	1.75E-01	2.76E+02	1.32E-03
BREOT-S53+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S54+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N55+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	2.90E+02	4.16E+02	NA	NA	NA	NA	2.86E-02	1.47E+02	4.20E+00	1.03E-01	1.35E+02	3.20E-01	4.11E+02	1.75E-01	2.76E+02	1.16E-03
BREOT-S55+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N56+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	2.87E+02	4.11E+02	NA	NA	NA	NA	2.86E-02	1.45E+02	4.14E+00	1.03E-01	1.35E+02	3.16E-01	4.11E+02	1.75E-01	2.76E+02	1.15E-03
BREOT-S56+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N57+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	2.47E+02	3.53E+02	NA	NA	NA	NA	2.86E-02	1.25E+02	3.57E+00	1.03E-01	1.35E+02	2.72E-01	4.11E+02	1.75E-01	2.76E+02	9.86E-04
BREOT-S57+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	4.04E+02	5.79E+02	NA	NA	NA	NA	2.86E-02	2.04E+02	5.84E+00	1.03E-01	1.35E+02	4.46E-01	4.11E+02	1.75E-01	2.76E+02	1.61E-03
BREOT-N58+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	4.20E+02	6.02E+02	NA	NA	NA	NA	2.86E-02	2.12E+02	6.08E+00	1.03E-01	1.35E+02	4.64E-01	4.11E+02	1.75E-01	2.76E+02	1.68E-03
BREOT-S58+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	1.78E+02	2.55E+02	NA	NA	NA	NA	2.86E-02	9.00E+01	2.58E+00	1.03E-01	1.35E+02	1.97E-01	4.11E+02	1.75E-01	2.76E+02	7.12E-04
BREOT-N59+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	6.97E+02	9.97E+02	NA	NA	NA	NA	2.86E-02	3.52E+02	1.01E+01	1.03E-01	1.35E+02	7.68E-01	4.11E+02	1.75E-01	2.76E+02	2.78E-03
BREOT-N60+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	4.67E+02	6.69E+02	NA	NA	NA	NA	2.86E-02	2.36E+02	6.76E+00	1.03E-01	1.35E+02	5.16E-01	4.11E+02	1.75E-01	2.76E+02	1.87E-03
BREOT-S60+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S61+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N62+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	5.17E+02	7.40E+02	NA	NA	NA	NA	2.86E-02	2.61E+02	7.47E+00	1.03E-01	1.35E+02	5.71E-01	4.11E+02	1.75E-01	2.76E+02	2.07E-03
BREOT-S62+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	2.29E+02	3.28E+02	NA	NA	NA	NA	2.86E-02	1.16E+02	3.31E+00	1.03E-01	1.35E+02	2.53E-01	4.11E+02	1.75E-01	2.76E+02	9.15E-04
BREOT-N63+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	5.43E+02	7.78E+02	NA	NA	NA	NA	2.86E-02	2.74E+02	7.85E+00	1.03E-01	1.35E+02	6.00E-01	4.11E+02	1.75E-01	2.76E+02	2.17E-03
BREOT-S63+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	3.84E+02	5.50E+02	NA	NA	NA	NA	2.86E-02	1.94E+02	5.55E+00	1.03E-01	1.35E+02	4.24E-01	4.11E+02	1.75E-01	2.76E+02	1.54E-03
BREOT-N64+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	6.09E+02	8.72E+02	NA	NA	NA	NA	2.86E-02	3.07E+02	8.80E+00	1.03E-01	1.35E+02	6.72E-01	4.11E+02	1.75E-01	2.76E+02	2.43E-03
BREOT-S64+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S65+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N66+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	4.91E+02	7.04E+02	NA	NA	NA	NA	2.86E-02	2.48E+02	7.10E+00	1.03E-01	1.35E+02	5.42E-01	4.11E+02	1.75E-01	2.76E+02	1.96E-03
BREOT-S66+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N67+125 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	7.19E+02	1.03E+03	NA	NA	NA	NA	2.86E-02	3.63E+02	1.04E+01	1.03E-01	1.35E+02	7.94E-01	4.11E+02	1.75E-01	2.76E+02	2.87E-03
BREOT-S67+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N67+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	7.48E+02	1.07E+03	NA	NA	NA	NA	2.86E-02	3.77E+02	1.08E+01	1.03E-01	1.35E+02	8.25E-01	4.11E+02	1.75E-01	2.76E+02	2.99E-03
																						Maximum HQ (Outside Tailings)	**8.01E-02**

TABLE C-2F: ZINC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 18.41

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Red Fox (Carnivorous Mammal - Terrestrial)																							
Reference Sites																							
ACBG-1 (0-6")	1.72E-01	1.72E-01	1.03E+01	1.42E+03	2.43E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.37E+02	6.58E-01	1.36E-02	4.54E+00	7.31E-01	4.11E+02	1.75E-01	3.38E+02	2.16E-03
ACBG-2 (0-6")	1.72E-01	1.72E-01	1.03E+01	8.68E+02	1.49E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	8.39E+01	4.03E-01	1.36E-02	4.54E+00	4.48E-01	4.11E+02	1.75E-01	3.38E+02	1.32E-03
UBRBG-202 (0-6")	1.72E-01	1.72E-01	1.03E+01	5.56E+02	9.54E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.37E+01	2.58E-01	1.36E-02	4.54E+00	2.87E-01	4.11E+02	1.75E-01	3.38E+02	8.47E-04
UBRBG-204 (0-6")	1.72E-01	1.72E-01	1.03E+01	3.55E+03	6.08E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.43E+02	1.65E+00	1.36E-02	4.54E+00	1.83E+00	4.11E+02	1.75E-01	3.38E+02	5.40E-03
Inside Tailings																						**Minimum HQ (Reference Sites)**	**8.47E-04**
BREOT-S6-12.5 (0-6")	1.72E-01	1.72E-01	6.30E+00	2.41E+03	4.14E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.83E+02	1.84E+00	1.36E-02	4.54E+00	1.25E+00	4.11E+02	1.75E-01	3.38E+02	3.68E-03
BREOT-S2-12.5 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.60E+04	2.74E+03	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.54E+03	1.22E+01	1.36E-02	4.54E+00	8.26E+00	4.11E+02	1.75E-01	3.38E+02	2.44E-02
BREOT-S0-12.5 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.56E+03	2.67E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.48E+02	1.19E+00	1.36E-02	4.54E+00	8.05E-01	4.11E+02	1.75E-01	3.38E+02	2.38E-03
BREOT-S1-12.5 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.05E+03	1.80E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.66E+02	7.99E-01	1.36E-02	4.54E+00	5.41E-01	4.11E+02	1.75E-01	3.38E+02	1.60E-03
BREOT-S7-25 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.47E+03	2.52E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.33E+02	1.12E+00	1.36E-02	4.54E+00	7.58E-01	4.11E+02	1.75E-01	3.38E+02	2.24E-03
BREOT-S8-12.5 (0-6")	1.72E-01	1.72E-01	6.30E+00	9.10E+02	1.56E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.45E+02	6.94E-01	1.36E-02	4.54E+00	4.70E-01	4.11E+02	1.75E-01	3.38E+02	1.39E-03
BREOT-S9-12.5 (0-6")	1.72E-01	1.72E-01	6.30E+00	2.08E+03	3.58E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.31E+02	1.59E+00	1.36E-02	4.54E+00	1.08E+00	4.11E+02	1.75E-01	3.38E+02	3.18E-03
BREOT-N10-12.5 (0-6")	1.72E-01	1.72E-01	6.30E+00	2.91E+04	5.00E+03	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.63E+03	2.22E+01	1.36E-02	4.54E+00	1.50E+01	4.11E+02	1.75E-01	3.38E+02	4.45E-02
BREOT-N11-12.5 (0-6")	1.72E-01	1.72E-01	6.30E+00	3.06E+03	5.24E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.85E+02	2.33E+00	1.36E-02	4.54E+00	1.58E+00	4.11E+02	1.75E-01	3.38E+02	4.66E-03
BREOT-N11-125 (0-6")	1.72E-01	1.72E-01	6.30E+00	2.51E+03	4.31E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.99E+02	1.92E+00	1.36E-02	4.54E+00	1.30E+00	4.11E+02	1.75E-01	3.38E+02	3.83E-03
BREOT-S11-12 (0-6")	1.72E-01	1.72E-01	6.30E+00	4.47E+04	7.66E+03	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	7.09E+03	3.41E+01	1.36E-02	4.54E+00	2.31E+01	4.11E+02	1.75E-01	3.38E+02	6.82E-02
BREOT-S11+63 (0-6")	1.72E-01	1.72E-01	6.30E+00	2.52E+03	4.32E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.00E+02	1.92E+00	1.36E-02	4.54E+00	1.30E+00	4.11E+02	1.75E-01	3.38E+02	3.85E-03
UBDT-TP-6 (0-2")	1.72E-01	1.72E-01	6.30E+00	1.25E+05	2.14E+04	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.98E+04	9.51E+01	1.36E-02	4.54E+00	6.44E+01	4.11E+02	1.75E-01	3.38E+02	1.90E-01
UBDT-TP-6 (2-12")	1.72E-01	1.72E-01	6.30E+00	7.74E+04	1.33E+04	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.23E+04	5.91E+01	1.36E-02	4.54E+00	4.00E+01	4.11E+02	1.75E-01	3.38E+02	1.18E-01
UBDT-TP-6 (12-24")	1.72E-01	1.72E-01	6.30E+00	7.90E+04	1.35E+04	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.25E+04	6.02E+01	1.36E-02	4.54E+00	4.08E+01	4.11E+02	1.75E-01	3.38E+02	1.21E-01
UBDT-TP-6 (24-36")	1.72E-01	1.72E-01	6.30E+00	5.76E+03	9.88E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	9.15E+02	4.40E+00	1.36E-02	4.54E+00	2.98E+00	4.11E+02	1.75E-01	3.38E+02	8.80E-03
UBDT-TP-6 (36-48")	1.72E-01	1.72E-01	6.30E+00	1.57E+04	2.69E+03	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.49E+03	1.19E+01	1.36E-02	4.54E+00	8.09E+00	4.11E+02	1.75E-01	3.38E+02	2.39E-02
UBDT-TP-6 (48-60")	1.72E-01	1.72E-01	6.30E+00	1.20E+04	2.05E+03	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.90E+03	9.14E+00	1.36E-02	4.54E+00	6.19E+00	4.11E+02	1.75E-01	3.38E+02	1.83E-02
BREOT-N12-12.5 (0-6")	1.72E-01	1.72E-01	6.30E+00	7.41E+03	1.27E+03	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.18E+03	5.65E+00	1.36E-02	4.54E+00	3.83E+00	4.11E+02	1.75E-01	3.38E+02	1.13E-02
BREOT-S12-12.5 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.83E+04	3.14E+03	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.90E+03	1.40E+01	1.36E-02	4.54E+00	9.45E+00	4.11E+02	1.75E-01	3.38E+02	2.79E-02
BREOT-S13-12.5 (0-6")	1.72E-01	1.72E-01	6.30E+00	3.25E+04	5.57E+03	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.15E+03	2.48E+01	1.36E-02	4.54E+00	1.68E+01	4.11E+02	1.75E-01	3.38E+02	4.95E-02
BREOT-S14-12.5 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.61E+04	2.76E+03	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.56E+03	1.23E+01	1.36E-02	4.54E+00	8.32E+00	4.11E+02	1.75E-01	3.38E+02	2.46E-02
BREOT-N15-12.5 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.71E+04	2.93E+03	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.71E+03	1.30E+01	1.36E-02	4.54E+00	8.81E+00	4.11E+02	1.75E-01	3.38E+02	2.60E-02
BREOT-S15-12.5 (0-6")	1.72E-01	1.72E-01	6.30E+00	2.20E+03	3.78E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.50E+02	1.68E+00	1.36E-02	4.54E+00	1.14E+00	4.11E+02	1.75E-01	3.38E+02	3.36E-03
BREOT-N16-12.5 (0-6")	1.72E-01	1.72E-01	6.30E+00	5.61E+03	9.63E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	8.91E+02	4.28E+00	1.36E-02	4.54E+00	2.90E+00	4.11E+02	1.75E-01	3.38E+02	8.57E-03
BREOT-N16-25 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.10E+03	1.89E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.75E+02	8.42E-01	1.36E-02	4.54E+00	5.70E-01	4.11E+02	1.75E-01	3.38E+02	1.69E-03
BREOT-S16-12.5 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.12E+03	1.92E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.78E+02	8.54E-01	1.36E-02	4.54E+00	5.79E-01	4.11E+02	1.75E-01	3.38E+02	1.71E-03
BREOT-N17-12.5 (0-6")	1.72E-01	1.72E-01	6.30E+00	2.42E+03	4.15E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.84E+02	1.85E+00	1.36E-02	4.54E+00	1.25E+00	4.11E+02	1.75E-01	3.38E+02	3.69E-03
BREOT-S17-12.5 (0-6")	1.72E-01	1.72E-01	6.30E+00	9.65E+02	1.66E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.53E+02	7.36E-01	1.36E-02	4.54E+00	4.99E-01	4.11E+02	1.75E-01	3.38E+02	1.47E-03
BREOT-S17-25 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.47E+03	2.52E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.34E+02	1.12E+00	1.36E-02	4.54E+00	7.60E-01	4.11E+02	1.75E-01	3.38E+02	2.25E-03
UBDT-TP-4 (0-2")	1.72E-01	1.72E-01	6.30E+00	1.50E+04	2.57E+03	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.38E+03	1.14E+01	1.36E-02	4.54E+00	7.74E+00	4.11E+02	1.75E-01	3.38E+02	2.29E-02
UBDT-TP-4 (2-12")	1.72E-01	1.72E-01	6.30E+00	9.00E+03	1.54E+03	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.43E+03	6.87E+00	1.36E-02	4.54E+00	4.65E+00	4.11E+02	1.75E-01	3.38E+02	1.37E-02
UBDT-TP-4 (12-24")	1.72E-01	1.72E-01	6.30E+00	4.92E+03	8.44E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	7.82E+02	3.76E+00	1.36E-02	4.54E+00	2.54E+00	4.11E+02	1.75E-01	3.38E+02	7.51E-03
UBDT-TP-4 (24-36")	1.72E-01	1.72E-01	6.30E+00	7.09E+03	1.22E+03	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.13E+03	5.41E+00	1.36E-02	4.54E+00	3.66E+00	4.11E+02	1.75E-01	3.38E+02	1.08E-02
BREOT-N18-12.5 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.01E+04	1.73E+03	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.60E+03	7.68E+00	1.36E-02	4.54E+00	5.20E+00	4.11E+02	1.75E-01	3.38E+02	1.54E-02
BREOT-N18-25 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.93E+03	3.32E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.07E+02	1.48E+00	1.36E-02	4.54E+00	1.00E+00	4.11E+02	1.75E-01	3.38E+02	2.95E-03
BREOT-S18-12.5 (0-6")	1.72E-01	1.72E-01	6.30E+00	3.60E+03	6.17E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.71E+02	2.74E+00	1.36E-02	4.54E+00	1.86E+00	4.11E+02	1.75E-01	3.38E+02	5.49E-03
BREOT-N19-10 (0-6")	1.72E-01	1.72E-01	6.30E+00	2.98E+03	5.11E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.73E+02	2.27E+00	1.36E-02	4.54E+00	1.54E+00	4.11E+02	1.75E-01	3.38E+02	4.54E-03
BREOT-S19-12.5 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.00E+04	1.72E+03	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.59E+03	7.64E+00	1.36E-02	4.54E+00	5.17E+00	4.11E+02	1.75E-01	3.38E+02	1.53E-02
UBDT-TP-5 (0-2")	1.72E-01	1.72E-01	6.30E+00	1.65E+04	2.84E+03	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.63E+03	1.26E+01	1.36E-02	4.54E+00	8.55E+00	4.11E+02	1.75E-01	3.38E+02	2.53E-02
UBDT-TP-5 (2-12")	1.72E-01	1.72E-01	6.30E+00	1.10E+04	1.88E+03	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.74E+03	8.36E+00	1.36E-02	4.54E+00	5.66E+00	4.11E+02	1.75E-01	3.38E+02	1.67E-02
UBDT-TP-5 (12-24")	1.72E-01	1.72E-01	6.30E+00	9.76E+03	1.67E+03	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.55E+03	7.45E+00	1.36E-02	4.54E+00	5.04E+00	4.11E+02	1.75E-01	3.38E+02	1.49E-02
BREOT-N20-12.5 (0-6")	1.72E-01	1.72E-01	6.30E+00	2.08E+03	3.57E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.31E+02	1.59E+00	1.36E-02	4.54E+00	1.08E+00	4.11E+02	1.75E-01	3.38E+02	3.18E-03
UBDT-TP-3 (0-2")	1.72E-01	1.72E-01	6.30E+00	2.81E+03	4.82E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.47E+02	2.14E+00	1.36E-02	4.54E+00	1.45E+00	4.11E+02	1.75E-01	3.38E+02	4.29E-03
UBDT-TP-3 (2-12")	1.72E-01	1.72E-01	6.30E+00	1.84E+03	3.16E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.93E+02	1.41E+00	1.36E-02	4.54E+00	9.52E-01	4.11E+02	1.75E-01	3.38E+02	2.81E-03
UBDT-TP-3 (12-24")	1.72E-01	1.72E-01	6.30E+00	1.44E+03	2.47E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.28E+02	1.10E+00	1.36E-02	4.54E+00	7.43E-01	4.11E+02	1.75E-01	3.38E+02	2.20E-03
UBDT-TP-3 (24-36")	1.72E-01	1.72E-01	6.30E+00	2.31E+03	3.96E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.66E+02	1.76E+00	1.36E-02	4.54E+00	1.19E+00	4.11E+02	1.75E-01	3.38E+02	3.52E-03
UBDT-TP-3 (36-48")	1.72E-01	1.72E-01	6.30E+00	3.55E+03	6.08E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.63E+02	2.71E+00	1.36E-02	4.54E+00	1.83E+00	4.11E+02	1.75E-01	3.38E+02	5.41E-03
UBDT-TP-3 (48-60")	1.72E-01	1.72E-01	6.30E+00	4.98E+03	8.54E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	7.90E+02	3.80E+00	1.36E-02	4.54E+00	2.57E+00	4.11E+02	1.75E-01	3.38E+02	7.60E-03
BREOT-N21-12.5 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.62E+04	2.77E+03	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.57E+03	1.23E+01	1.36E-02	4.54E+00	8.35E+00	4.11E+02	1.75E-01	3.38E+02	2.47E-02
BREOT-N22-12.5 (0-6")	1.72E-01	1.72E-01	6.30E+00	2.61E+03	4.47E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.14E+02	1.99E+00	1.36E-02	4.54E+00	1.35E+00	4.11E+02	1.75E-01	3.38E+02	3.98E-03

TABLE C-2F: ZINC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

Site Area (hectares) 18.41

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Red Fox (Carnivorous Mammal - Terrestrial)																							
BREOT-N23-12.5 (0-6")	1.72E-01	1.72E-01	6.30E+00	4.29E+03	7.35E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	6.81E+02	3.27E+00	1.36E-02	4.54E+00	2.21E+00	4.11E+02	1.75E-01	3.38E+02	6.54E-03
BREOT-S23-12.5 (0-6")	1.72E-01	1.72E-01	6.30E+00	5.30E+04	9.09E+03	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	8.42E+03	4.04E+01	1.36E-02	4.54E+00	2.74E+01	4.11E+02	1.75E-01	3.38E+02	8.09E-02
UBDT-TP-2 (0-2")	1.72E-01	1.72E-01	6.30E+00	2.02E+04	3.46E+03	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.21E+03	1.54E+01	1.36E-02	4.54E+00	1.04E+01	4.11E+02	1.75E-01	3.38E+02	3.08E-02
UBDT-TP-2 (2-12")	1.72E-01	1.72E-01	6.30E+00	1.26E+04	2.16E+03	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.00E+03	9.59E+00	1.36E-02	4.54E+00	6.49E+00	4.11E+02	1.75E-01	3.38E+02	1.92E-02
UBDT-TP-2 (12-24")	1.72E-01	1.72E-01	6.30E+00	1.08E+04	1.85E+03	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.71E+03	8.22E+00	1.36E-02	4.54E+00	5.57E+00	4.11E+02	1.75E-01	3.38E+02	1.65E-02
UBDT-TP-2 (24-36")	1.72E-01	1.72E-01	6.30E+00	9.14E+03	1.57E+03	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.45E+03	6.97E+00	1.36E-02	4.54E+00	4.72E+00	4.11E+02	1.75E-01	3.38E+02	1.39E-02
UBDT-TP-2 (36-48")	1.72E-01	1.72E-01	6.30E+00	9.60E+03	1.65E+03	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.53E+03	7.33E+00	1.36E-02	4.54E+00	4.96E+00	4.11E+02	1.75E-01	3.38E+02	1.47E-02
BREOT-S24-12.5 (0-6")	1.72E-01	1.72E-01	6.30E+00	4.01E+04	6.88E+03	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	6.37E+03	3.06E+01	1.36E-02	4.54E+00	2.07E+01	4.11E+02	1.75E-01	3.38E+02	6.12E-02
BREOT-N25-50 (0-6")	1.72E-01	1.72E-01	6.30E+00	5.02E+04	8.61E+03	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	7.97E+03	3.83E+01	1.36E-02	4.54E+00	2.59E+01	4.11E+02	1.75E-01	3.38E+02	7.66E-02
BREOT-N25-95 (0-6")	1.72E-01	1.72E-01	6.30E+00	6.37E+02	1.09E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.01E+02	4.86E-01	1.36E-02	4.54E+00	3.29E-01	4.11E+02	1.75E-01	3.38E+02	9.73E-04
BREOT-S25-12.5 (0-6")	1.72E-01	1.72E-01	6.30E+00	8.33E+03	1.43E+03	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.32E+03	6.35E+00	1.36E-02	4.54E+00	4.30E+00	4.11E+02	1.75E-01	3.38E+02	1.27E-02
BREOT-S25-40 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.29E+03	2.21E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.05E+02	9.83E-01	1.36E-02	4.54E+00	6.66E-01	4.11E+02	1.75E-01	3.38E+02	1.97E-03
BREOT-N26A-25 (0-6")	1.72E-01	1.72E-01	6.30E+00	9.63E+02	1.65E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.53E+02	7.35E-01	1.36E-02	4.54E+00	4.98E-01	4.11E+02	1.75E-01	3.38E+02	1.47E-03
BREOT-N26B-25 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.61E+04	2.76E+03	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.55E+03	1.23E+01	1.36E-02	4.54E+00	8.30E+00	4.11E+02	1.75E-01	3.38E+02	2.45E-02
BREOT-N26-50 (0-6")	1.72E-01	1.72E-01	6.30E+00	7.20E+04	1.23E+04	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.14E+04	5.49E+01	1.36E-02	4.54E+00	3.72E+01	4.11E+02	1.75E-01	3.38E+02	1.10E-01
BREOT-N26-75 (0-6")	1.72E-01	1.72E-01	6.30E+00	3.67E+04	6.30E+03	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.83E+03	2.80E+01	1.36E-02	4.54E+00	1.90E+01	4.11E+02	1.75E-01	3.38E+02	5.61E-02
BREOT-S26-12.5 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.69E+03	2.91E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.69E+02	1.29E+00	1.36E-02	4.54E+00	8.75E-01	4.11E+02	1.75E-01	3.38E+02	2.59E-03
BREOT-S26-40 (0-6")	1.72E-01	1.72E-01	6.30E+00	2.28E+04	3.91E+03	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.62E+03	1.74E+01	1.36E-02	4.54E+00	1.18E+01	4.11E+02	1.75E-01	3.38E+02	3.48E-02
BREOT-N27-30 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.66E+04	2.85E+03	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.64E+03	1.27E+01	1.36E-02	4.54E+00	8.57E+00	4.11E+02	1.75E-01	3.38E+02	2.53E-02
BREOT-N27-75 (0-6")	1.72E-01	1.72E-01	6.30E+00	6.47E+04	1.11E+04	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.03E+04	4.93E+01	1.36E-02	4.54E+00	3.34E+01	4.11E+02	1.75E-01	3.38E+02	9.87E-02
BREOT-S27-12.5 (0-6")	1.72E-01	1.72E-01	6.30E+00	2.31E+03	3.97E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.67E+02	1.76E+00	1.36E-02	4.54E+00	1.19E+00	4.11E+02	1.75E-01	3.38E+02	3.53E-03
BREOT-N28-110 (0-6")	1.72E-01	1.72E-01	6.30E+00	9.79E+03	1.68E+03	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.55E+03	7.47E+00	1.36E-02	4.54E+00	5.06E+00	4.11E+02	1.75E-01	3.38E+02	1.49E-02
BREOT-N28-55 (0-6")	1.72E-01	1.72E-01	6.30E+00	9.42E+04	1.62E+04	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.50E+04	7.19E+01	1.36E-02	4.54E+00	4.87E+01	4.11E+02	1.75E-01	3.38E+02	1.44E-01
BREOT-S28-12.5 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.88E+04	3.22E+03	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.98E+03	1.43E+01	1.36E-02	4.54E+00	9.70E+00	4.11E+02	1.75E-01	3.38E+02	2.87E-02
UBDT-TP-1 (0-2")	1.72E-01	1.72E-01	6.30E+00	5.63E+04	9.67E+03	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	8.95E+03	4.30E+01	1.36E-02	4.54E+00	2.91E+01	4.11E+02	1.75E-01	3.38E+02	8.60E-02
UBDT-TP-1 (2-12")	1.72E-01	1.72E-01	6.30E+00	6.06E+04	1.04E+04	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	9.63E+03	4.63E+01	1.36E-02	4.54E+00	3.13E+01	4.11E+02	1.75E-01	3.38E+02	9.26E-02
UBDT-TP-1 (12-24")	1.72E-01	1.72E-01	6.30E+00	5.72E+04	9.81E+03	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	9.08E+03	4.36E+01	1.36E-02	4.54E+00	2.95E+01	4.11E+02	1.75E-01	3.38E+02	8.73E-02
UBDT-TP-1 (24-36")	1.72E-01	1.72E-01	6.30E+00	3.89E+04	6.67E+03	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	6.18E+03	2.97E+01	1.36E-02	4.54E+00	2.01E+01	4.11E+02	1.75E-01	3.38E+02	5.94E-02
UBDT-TP-1 (36-48")	1.72E-01	1.72E-01	6.30E+00	1.21E+04	2.07E+03	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.92E+03	9.20E+00	1.36E-02	4.54E+00	6.23E+00	4.11E+02	1.75E-01	3.38E+02	1.84E-02
UBDT-TP-1 (48-60")	1.72E-01	1.72E-01	6.30E+00	4.01E+03	6.89E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	6.38E+02	3.06E+00	1.36E-02	4.54E+00	2.07E+00	4.11E+02	1.75E-01	3.38E+02	6.13E-03
BREOT-N29-30 (0-6")	1.72E-01	1.72E-01	6.30E+00	8.60E+04	1.48E+04	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.37E+04	6.56E+01	1.36E-02	4.54E+00	4.45E+01	4.11E+02	1.75E-01	3.38E+02	1.31E-01
BREOT-S29-12.5 (0-6")	1.72E-01	1.72E-01	6.30E+00	5.77E+03	9.90E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	9.16E+02	4.40E+00	1.36E-02	4.54E+00	2.98E+00	4.11E+02	1.75E-01	3.38E+02	8.81E-03
BREOT-N30-12.5 (0-6")	1.72E-01	1.72E-01	6.30E+00	4.88E+03	8.38E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	7.76E+02	3.73E+00	1.36E-02	4.54E+00	2.52E+00	4.11E+02	1.75E-01	3.38E+02	7.45E-03
BREOT-S30-12.5 (0-6")	1.72E-01	1.72E-01	6.30E+00	7.59E+03	1.30E+03	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.21E+03	5.79E+00	1.36E-02	4.54E+00	3.92E+00	4.11E+02	1.75E-01	3.38E+02	1.16E-02
BREOT-N31-12.5 (0-6")	1.72E-01	1.72E-01	6.30E+00	3.69E+03	6.33E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.86E+02	2.82E+00	1.36E-02	4.54E+00	1.91E+00	4.11E+02	1.75E-01	3.38E+02	5.63E-03
BREOT-S31-25 (0-6")	1.72E-01	1.72E-01	6.30E+00	2.60E+03	4.46E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.13E+02	1.98E+00	1.36E-02	4.54E+00	1.34E+00	4.11E+02	1.75E-01	3.38E+02	3.96E-03
BREOT-S31-5 (0-6")	1.72E-01	1.72E-01	6.30E+00	7.01E+03	1.20E+03	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.11E+03	5.35E+00	1.36E-02	4.54E+00	3.62E+00	4.11E+02	1.75E-01	3.38E+02	1.07E-02
BREOT-N32-12.5 (0-6")	1.72E-01	1.72E-01	6.30E+00	6.69E+03	1.15E+03	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.06E+03	5.10E+00	1.36E-02	4.54E+00	3.46E+00	4.11E+02	1.75E-01	3.38E+02	1.02E-02
BREOT-S32-6 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.30E+03	2.23E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.07E+02	9.94E-01	1.36E-02	4.54E+00	6.73E-01	4.11E+02	1.75E-01	3.38E+02	1.99E-03
BREOT-N33-12.5 (0-6")	1.72E-01	1.72E-01	6.30E+00	2.24E+03	3.85E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.56E+02	1.71E+00	1.36E-02	4.54E+00	1.16E+00	4.11E+02	1.75E-01	3.38E+02	3.42E-03
BREOT-S33-12.5 (0-6")	1.72E-01	1.72E-01	6.30E+00	3.42E+03	5.87E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.43E+02	2.61E+00	1.36E-02	4.54E+00	1.77E+00	4.11E+02	1.75E-01	3.38E+02	5.22E-03
BREOT-N35-12.5 (0-6")	1.72E-01	1.72E-01	6.30E+00	3.00E+03	5.15E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.76E+02	2.29E+00	1.36E-02	4.54E+00	1.55E+00	4.11E+02	1.75E-01	3.38E+02	4.58E-03
BREOT-S35-12.5 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.39E+04	2.38E+03	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.21E+03	1.06E+01	1.36E-02	4.54E+00	7.17E+00	4.11E+02	1.75E-01	3.38E+02	2.12E-02
BREOT-N36-12.5 (0-6")	1.72E-01	1.72E-01	6.30E+00	3.90E+03	6.68E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	6.19E+02	2.97E+00	1.36E-02	4.54E+00	2.01E+00	4.11E+02	1.75E-01	3.38E+02	5.95E-03
BREOT-S36-12.5 (0-6")	1.72E-01	1.72E-01	6.30E+00	2.96E+03	5.08E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.71E+02	2.26E+00	1.36E-02	4.54E+00	1.53E+00	4.11E+02	1.75E-01	3.38E+02	4.52E-03
BREOT-N37-12.5 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.28E+03	2.19E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.03E+02	9.74E-01	1.36E-02	4.54E+00	6.60E-01	4.11E+02	1.75E-01	3.38E+02	1.95E-03
BREOT-S37-12.5 (0-6")	1.72E-01	1.72E-01	6.30E+00	3.28E+03	5.62E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.21E+02	2.50E+00	1.36E-02	4.54E+00	1.69E+00	4.11E+02	1.75E-01	3.38E+02	5.00E-03
BREOT-N38-12.5 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.39E+03	2.39E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.21E+02	1.06E+00	1.36E-02	4.54E+00	7.18E-01	4.11E+02	1.75E-01	3.38E+02	2.12E-03
BREOT-S38-12.5 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.21E+04	2.07E+03	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.92E+03	9.21E+00	1.36E-02	4.54E+00	6.24E+00	4.11E+02	1.75E-01	3.38E+02	1.84E-02
BREOT-N39-12.5 (0-6")	1.72E-01	1.72E-01	6.30E+00	6.89E+03	1.18E+03	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.09E+03	5.26E+00	1.36E-02	4.54E+00	3.56E+00	4.11E+02	1.75E-01	3.38E+02	1.05E-02
BREOT-S39-12.5 (0-6")	1.72E-01	1.72E-01	6.30E+00	8.38E+03	1.44E+03	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.33E+03	6.39E+00	1.36E-02	4.54E+00	4.33E+00	4.11E+02	1.75E-01	3.38E+02	1.28E-02
BREOT-N40-12.5 (0-6")	1.72E-01	1.72E-01	6.30E+00	8.54E+03	1.46E+03	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.36E+03	6.51E+00	1.36E-02	4.54E+00	4.41E+00	4.11E+02	1.75E-01	3.38E+02	1.30E-02
BREOT-S40-14 (0-6")	1.72E-01	1.72E-01	6.30E+00	8.95E+03	1.54E+03	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.42E+03	6.83E+00	1.36E-02	4.54E+00	4.63E+00	4.11E+02	1.75E-01	3.38E+02	1.37E-02
BREOT-N41-12.5 (0-6")	1.72E-01	1.72E-01	6.30E+00	6.51E+03	1.12E+03	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.03E+03	4.97E+00	1.36E-02	4.54E+00	3.37E+00	4.11E+02	1.75E-01	3.38E+02	9.94E-03
BREOT-S41-12.5 (0-6")	1.72E-01	1.72E-01	6.30E+00	8.20E+03	1.41E+03	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.30E+03	6.25E+00	1.36E-02	4.54E+00	4.24E+00	4.11E+02	1.75E-01	3.38E+02	1.25E-02

TABLE C-2F: ZINC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 18.41

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Red Fox (Carnivorous Mammal - Terrestrial)																							
BREOT-N42-35 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.30E+03	2.22E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.06E+02	9.88E-01	1.36E-02	4.54E+00	6.69E-01	4.11E+02	1.75E-01	3.38E+02	1.98E-03
BREOT-S42-25 (0-6")	1.72E-01	1.72E-01	6.30E+00	2.05E+03	3.51E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.25E+02	1.56E+00	1.36E-02	4.54E+00	1.06E+00	4.11E+02	1.75E-01	3.38E+02	3.12E-03
BREOT-N43-12.5 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.63E+04	2.80E+03	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.59E+03	1.24E+01	1.36E-02	4.54E+00	8.43E+00	4.11E+02	1.75E-01	3.38E+02	2.49E-02
BREOT-S43-12.5 (0-6")	1.72E-01	1.72E-01	6.30E+00	3.00E+03	5.15E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.77E+02	2.29E+00	1.36E-02	4.54E+00	1.55E+00	4.11E+02	1.75E-01	3.38E+02	4.58E-03
BREOT-N44-30 (0-6")	1.72E-01	1.72E-01	6.30E+00	3.04E+03	5.21E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.82E+02	2.32E+00	1.36E-02	4.54E+00	1.57E+00	4.11E+02	1.75E-01	3.38E+02	4.63E-03
BREOT-S44-12.5 (0-6")	1.72E-01	1.72E-01	6.30E+00	4.22E+03	7.23E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	6.70E+02	3.22E+00	1.36E-02	4.54E+00	2.18E+00	4.11E+02	1.75E-01	3.38E+02	6.44E-03
BREOT-N45-12.5 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.50E+03	2.57E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.38E+02	1.14E+00	1.36E-02	4.54E+00	7.73E-01	4.11E+02	1.75E-01	3.38E+02	2.28E-03
BREOT-N43-12.5 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.63E+04	2.80E+03	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.59E+03	1.24E+01	1.36E-02	4.54E+00	8.43E+00	4.11E+02	1.75E-01	3.38E+02	2.49E-02
BREOT-S45-6 (0-6")	1.72E-01	1.72E-01	6.30E+00	2.39E+03	4.09E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.79E+02	1.82E+00	1.36E-02	4.54E+00	1.23E+00	4.11E+02	1.75E-01	3.38E+02	3.64E-03
BREOT-N46-12.5 (0-6")	1.72E-01	1.72E-01	6.30E+00	8.03E+02	1.38E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.28E+02	6.13E-01	1.36E-02	4.54E+00	4.15E-01	4.11E+02	1.75E-01	3.38E+02	1.23E-03
BREOT-S46-12.5 (0-6")	1.72E-01	1.72E-01	6.30E+00	2.32E+03	3.98E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.68E+02	1.77E+00	1.36E-02	4.54E+00	1.20E+00	4.11E+02	1.75E-01	3.38E+02	3.54E-03
BREOT-S46-40 (0-6")	1.72E-01	1.72E-01	6.30E+00	3.47E+03	5.96E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.52E+02	2.65E+00	1.36E-02	4.54E+00	1.79E+00	4.11E+02	1.75E-01	3.38E+02	5.30E-03
BREOT-N47-12.5 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.59E+03	2.72E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.52E+02	1.21E+00	1.36E-02	4.54E+00	8.19E-01	4.11E+02	1.75E-01	3.38E+02	2.42E-03
BREOT-S47-999 (0-6")	1.72E-01	1.72E-01	6.30E+00	2.52E+03	4.32E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.00E+02	1.92E+00	1.36E-02	4.54E+00	1.30E+00	4.11E+02	1.75E-01	3.38E+02	3.85E-03
BREOT-S48-12.5 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S49-2.5 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S50-12.5 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S50-25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N52-60 (0-6")	1.72E-01	1.72E-01	6.30E+00	2.64E+03	4.53E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.20E+02	2.02E+00	1.36E-02	4.54E+00	1.37E+00	4.11E+02	1.75E-01	3.38E+02	4.03E-03
BREOT-S52-12.5 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S53-12.5 (0-6")	1.72E-01	1.72E-01	6.30E+00	5.97E+02	1.02E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	9.49E+01	4.56E-01	1.36E-02	4.54E+00	3.09E-01	4.11E+02	1.75E-01	3.38E+02	9.12E-04
BREOT-S54-12.5 (0-6")	1.72E-01	1.72E-01	6.30E+00	6.66E+02	1.14E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.06E+02	5.08E-01	1.36E-02	4.54E+00	3.44E-01	4.11E+02	1.75E-01	3.38E+02	1.02E-03
BREOT-N55-12.5 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.51E+04	2.59E+03	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.39E+03	1.15E+01	1.36E-02	4.54E+00	7.79E+00	4.11E+02	1.75E-01	3.38E+02	2.30E-02
BREOT-S55-12.5 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.32E+03	2.27E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.10E+02	1.01E+00	1.36E-02	4.54E+00	6.83E-01	4.11E+02	1.75E-01	3.38E+02	2.02E-03
BREOT-N56-12.5 (0-6")	1.72E-01	1.72E-01	6.30E+00	4.34E+03	7.45E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	6.90E+02	3.31E+00	1.36E-02	4.54E+00	2.24E+00	4.11E+02	1.75E-01	3.38E+02	6.63E-03
BREOT-S56-12.5 (0-6")	1.72E-01	1.72E-01	6.30E+00	2.20E+03	3.77E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.49E+02	1.68E+00	1.36E-02	4.54E+00	1.14E+00	4.11E+02	1.75E-01	3.38E+02	3.36E-03
BREOT-N57-12.5 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.83E+03	3.15E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.91E+02	1.40E+00	1.36E-02	4.54E+00	9.48E-01	4.11E+02	1.75E-01	3.38E+02	2.80E-03
BREOT-S57-12.5 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.82E+03	3.12E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.89E+02	1.39E+00	1.36E-02	4.54E+00	9.41E-01	4.11E+02	1.75E-01	3.38E+02	2.78E-03
BREOT-N58-12.5 (0-6")	1.72E-01	1.72E-01	6.30E+00	2.07E+03	3.55E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.29E+02	1.58E+00	1.36E-02	4.54E+00	1.07E+00	4.11E+02	1.75E-01	3.38E+02	3.16E-03
BREOT-S58-12 (0-6")	1.72E-01	1.72E-01	6.30E+00	4.77E+03	8.18E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	7.58E+02	3.64E+00	1.36E-02	4.54E+00	2.46E+00	4.11E+02	1.75E-01	3.38E+02	7.28E-03
BREOT-N59-18 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.41E+03	2.42E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.24E+02	1.08E+00	1.36E-02	4.54E+00	7.30E-01	4.11E+02	1.75E-01	3.38E+02	2.16E-03
BREOT-N60-12.5 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.99E+03	3.41E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.16E+02	1.52E+00	1.36E-02	4.54E+00	1.03E+00	4.11E+02	1.75E-01	3.38E+02	3.03E-03
BREOT-S60-12.5 (0-6")	1.72E-01	1.72E-01	6.30E+00	3.72E+03	6.39E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.91E+02	2.84E+00	1.36E-02	4.54E+00	1.92E+00	4.11E+02	1.75E-01	3.38E+02	5.68E-03
BREOT-S61-12.5 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.47E+04	2.53E+03	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.34E+03	1.12E+01	1.36E-02	4.54E+00	7.61E+00	4.11E+02	1.75E-01	3.38E+02	2.25E-02
BREOT-N62-12.5 (0-6")	1.72E-01	1.72E-01	6.30E+00	7.62E+02	1.31E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.21E+02	5.82E-01	1.36E-02	4.54E+00	3.94E-01	4.11E+02	1.75E-01	3.38E+02	1.16E-03
BREOT-S62-12.5 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.42E+04	2.44E+03	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.26E+03	1.09E+01	1.36E-02	4.54E+00	7.35E+00	4.11E+02	1.75E-01	3.38E+02	2.17E-02
BREOT-S63-12.5 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.85E+03	3.18E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.94E+02	1.41E+00	1.36E-02	4.54E+00	9.57E-01	4.11E+02	1.75E-01	3.38E+02	2.83E-03
BREOT-N64-12.5 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.80E+03	3.09E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.86E+02	1.38E+00	1.36E-02	4.54E+00	9.32E-01	4.11E+02	1.75E-01	3.38E+02	2.75E-03
BREOT-N64-20 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.35E+03	2.32E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.14E+02	1.03E+00	1.36E-02	4.54E+00	6.98E-01	4.11E+02	1.75E-01	3.38E+02	2.06E-03
BREOT-S64-12.5 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.22E+03	2.09E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.94E+02	9.30E-01	1.36E-02	4.54E+00	6.30E-01	4.11E+02	1.75E-01	3.38E+02	1.86E-03
BREOT-N65-12.5 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.97E+03	3.37E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.12E+02	1.50E+00	1.36E-02	4.54E+00	1.02E+00	4.11E+02	1.75E-01	3.38E+02	3.00E-03
BREOT-S65-12.5 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.44E+03	2.46E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.28E+02	1.10E+00	1.36E-02	4.54E+00	7.42E-01	4.11E+02	1.75E-01	3.38E+02	2.19E-03
BREOT-N66-5 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.20E+03	2.05E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.90E+02	9.12E-01	1.36E-02	4.54E+00	6.18E-01	4.11E+02	1.75E-01	3.38E+02	1.83E-03
BREOT-S66-12.5 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.45E+03	2.49E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.30E+02	1.11E+00	1.36E-02	4.54E+00	7.48E-01	4.11E+02	1.75E-01	3.38E+02	2.21E-03
BREOT-N67-12.5 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.95E+04	3.35E+03	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.10E+03	1.49E+01	1.36E-02	4.54E+00	1.01E+01	4.11E+02	1.75E-01	3.38E+02	2.98E-02
BREOT-S67-12.5 (0-6")	1.72E-01	1.72E-01	6.30E+00	8.47E+02	1.45E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.34E+02	6.46E-01	1.36E-02	4.54E+00	4.37E-01	4.11E+02	1.75E-01	3.38E+02	1.29E-03
At Edge of Tailings																						**Maximum HQ (Inside Tailings)**	**1.90E-01**
BREOT-S0-0 (06)	1.72E-01	1.72E-01	6.30E+00	2.87E+03	4.93E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.56E+02	2.19E+00	1.36E-02	4.54E+00	1.48E+00	4.11E+02	1.75E-01	3.38E+02	4.38E-03
BREOT-S1-0 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.66E+03	2.85E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.63E+02	1.27E+00	1.36E-02	4.54E+00	8.57E-01	4.11E+02	1.75E-01	3.38E+02	2.53E-03
BREOT-S2-0 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.83E+03	3.14E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.90E+02	1.39E+00	1.36E-02	4.54E+00	9.45E-01	4.11E+02	1.75E-01	3.38E+02	2.79E-03
BREOT-S3-0 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.04E+04	1.79E+03	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.65E+03	7.94E+00	1.36E-02	4.54E+00	5.38E+00	4.11E+02	1.75E-01	3.38E+02	1.59E-02
BREOT-S4-0 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.25E+04	2.15E+03	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.99E+03	9.54E+00	1.36E-02	4.54E+00	6.46E+00	4.11E+02	1.75E-01	3.38E+02	1.91E-02
BREOT-S6-0 (0-6")	1.72E-01	1.72E-01	6.30E+00	6.56E+03	1.13E+03	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.04E+03	5.01E+00	1.36E-02	4.54E+00	3.39E+00	4.11E+02	1.75E-01	3.38E+02	1.00E-02
BREOT-S7-0 (0-6")	1.72E-01	1.72E-01	6.30E+00	3.02E+03	5.18E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.79E+02	2.30E+00	1.36E-02	4.54E+00	1.56E+00	4.11E+02	1.75E-01	3.38E+02	4.61E-03
BREOT-S8-0 (0-6")	1.72E-01	1.72E-01	6.30E+00	2.02E+03	3.47E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.21E+02	1.54E+00	1.36E-02	4.54E+00	1.05E+00	4.11E+02	1.75E-01	3.38E+02	3.09E-03

TABLE C-2F: ZINC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 18.41

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Red Fox (Carnivorous Mammal - Terrestrial)																							
BREOT-S9-0 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.31E+03	2.25E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.08E+02	9.99E-01	1.36E-02	4.54E+00	6.77E-01	4.11E+02	1.75E-01	3.38E+02	2.00E-03
BREOT-N10-0 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.15E+05	1.98E+04	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.83E+04	8.80E+01	1.36E-02	4.54E+00	5.96E+01	4.11E+02	1.75E-01	3.38E+02	1.76E-01
BREOT-N11-0 (0-6")	1.72E-01	1.72E-01	6.30E+00	4.00E+03	6.86E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	6.35E+02	3.05E+00	1.36E-02	4.54E+00	2.07E+00	4.11E+02	1.75E-01	3.38E+02	6.11E-03
BREOT-S11-0 (0-6")	1.72E-01	1.72E-01	6.30E+00	8.19E+03	1.40E+03	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.30E+03	6.25E+00	1.36E-02	4.54E+00	4.23E+00	4.11E+02	1.75E-01	3.38E+02	1.25E-02
BREOT-N12-0 (0-6")	1.72E-01	1.72E-01	6.30E+00	2.02E+03	3.47E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.21E+02	1.54E+00	1.36E-02	4.54E+00	1.04E+00	4.11E+02	1.75E-01	3.38E+02	3.08E-03
BREOT-S12-0 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.07E+04	1.84E+03	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.71E+03	8.19E+00	1.36E-02	4.54E+00	5.55E+00	4.11E+02	1.75E-01	3.38E+02	1.64E-02
BREOT-N13-0 (0-6")	1.72E-01	1.72E-01	6.30E+00	6.48E+04	1.11E+04	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.03E+04	4.94E+01	1.36E-02	4.54E+00	3.35E+01	4.11E+02	1.75E-01	3.38E+02	9.89E-02
BREOT-S13-0 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.80E+04	3.09E+03	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.86E+03	1.37E+01	1.36E-02	4.54E+00	9.30E+00	4.11E+02	1.75E-01	3.38E+02	2.75E-02
BREOT-N14-0 (0-6")	1.72E-01	1.72E-01	6.30E+00	2.19E+03	3.76E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.48E+02	1.67E+00	1.36E-02	4.54E+00	1.13E+00	4.11E+02	1.75E-01	3.38E+02	3.34E-03
BREOT-S14-0 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.01E+05	1.73E+04	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.60E+04	7.68E+01	1.36E-02	4.54E+00	5.20E+01	4.11E+02	1.75E-01	3.38E+02	1.54E-01
BREOT-N15-0 (0-6")	1.72E-01	1.72E-01	6.30E+00	6.20E+03	1.06E+03	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	9.84E+02	4.73E+00	1.36E-02	4.54E+00	3.20E+00	4.11E+02	1.75E-01	3.38E+02	9.46E-03
BREOT-N16-0 (0-6")	1.72E-01	1.72E-01	6.30E+00	2.37E+03	4.07E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.77E+02	1.81E+00	1.36E-02	4.54E+00	1.23E+00	4.11E+02	1.75E-01	3.38E+02	3.62E-03
BREOT-S16-0 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.53E+03	2.63E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.44E+02	1.17E+00	1.36E-02	4.54E+00	7.92E-01	4.11E+02	1.75E-01	3.38E+02	2.34E-03
BREOT-N17-0 (0-6")	1.72E-01	1.72E-01	6.30E+00	2.73E+03	4.69E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.34E+02	2.09E+00	1.36E-02	4.54E+00	1.41E+00	4.11E+02	1.75E-01	3.38E+02	4.17E-03
BREOT-S17-0 (0-6")	1.72E-01	1.72E-01	6.30E+00	2.65E+03	4.54E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.21E+02	2.02E+00	1.36E-02	4.54E+00	1.37E+00	4.11E+02	1.75E-01	3.38E+02	4.04E-03
BREOT-N18-0 (0-6")	1.72E-01	1.72E-01	6.30E+00	3.29E+03	5.64E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.22E+02	2.51E+00	1.36E-02	4.54E+00	1.70E+00	4.11E+02	1.75E-01	3.38E+02	5.02E-03
BREOT-S18-0 (0-6")	1.72E-01	1.72E-01	6.30E+00	4.56E+03	7.81E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	7.23E+02	3.48E+00	1.36E-02	4.54E+00	2.35E+00	4.11E+02	1.75E-01	3.38E+02	6.95E-03
BREOT-N19-0 (0-6")	1.72E-01	1.72E-01	6.30E+00	8.87E+03	1.52E+03	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.41E+03	6.77E+00	1.36E-02	4.54E+00	4.58E+00	4.11E+02	1.75E-01	3.38E+02	1.35E-02
BREOT-S19-0 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.72E+03	2.95E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.73E+02	1.31E+00	1.36E-02	4.54E+00	8.88E-01	4.11E+02	1.75E-01	3.38E+02	2.62E-03
BREOT-N20-0 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.41E+04	2.42E+03	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.24E+03	1.08E+01	1.36E-02	4.54E+00	7.30E+00	4.11E+02	1.75E-01	3.38E+02	2.16E-02
BREOT-S20-0 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.20E+03	2.07E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.91E+02	9.18E-01	1.36E-02	4.54E+00	6.22E-01	4.11E+02	1.75E-01	3.38E+02	1.84E-03
BREOT-N21-0 (0-6")	1.72E-01	1.72E-01	6.30E+00	7.82E+03	1.34E+03	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.24E+03	5.97E+00	1.36E-02	4.54E+00	4.04E+00	4.11E+02	1.75E-01	3.38E+02	1.19E-02
BREOT-S21-0 (0-6")	1.72E-01	1.72E-01	6.30E+00	2.43E+03	4.17E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.86E+02	1.85E+00	1.36E-02	4.54E+00	1.26E+00	4.11E+02	1.75E-01	3.38E+02	3.71E-03
BREOT-S22-0 (0-6")	1.72E-01	1.72E-01	6.30E+00	3.48E+03	5.97E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.52E+02	2.65E+00	1.36E-02	4.54E+00	1.80E+00	4.11E+02	1.75E-01	3.38E+02	5.31E-03
BREOT-N22-0 (0-6")	1.72E-01	1.72E-01	6.30E+00	5.99E+03	1.03E+03	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	9.52E+02	4.57E+00	1.36E-02	4.54E+00	3.10E+00	4.11E+02	1.75E-01	3.38E+02	9.15E-03
BREOT-N23-0 (0-6")	1.72E-01	1.72E-01	6.30E+00	7.51E+03	1.29E+03	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.19E+03	5.73E+00	1.36E-02	4.54E+00	3.88E+00	4.11E+02	1.75E-01	3.38E+02	1.15E-02
BREOT-S23-0 (0-6")	1.72E-01	1.72E-01	6.30E+00	4.97E+03	8.53E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	7.89E+02	3.79E+00	1.36E-02	4.54E+00	2.57E+00	4.11E+02	1.75E-01	3.38E+02	7.59E-03
BREOT-N24-0 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.21E+04	2.08E+03	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.93E+03	9.25E+00	1.36E-02	4.54E+00	6.26E+00	4.11E+02	1.75E-01	3.38E+02	1.85E-02
BREOT-S24-0 (0-6")	1.72E-01	1.72E-01	6.30E+00	6.61E+04	1.13E+04	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.05E+04	5.04E+01	1.36E-02	4.54E+00	3.42E+01	4.11E+02	1.75E-01	3.38E+02	1.01E-01
BREOT-N25-0 (0-6")	1.72E-01	1.72E-01	6.30E+00	8.90E+03	1.53E+03	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.41E+03	6.79E+00	1.36E-02	4.54E+00	4.60E+00	4.11E+02	1.75E-01	3.38E+02	1.36E-02
BREOT-S25-0 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.63E+04	2.79E+03	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.58E+03	1.24E+01	1.36E-02	4.54E+00	8.40E+00	4.11E+02	1.75E-01	3.38E+02	2.48E-02
BREOT-N26-0 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.34E+04	2.29E+03	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.12E+03	1.02E+01	1.36E-02	4.54E+00	6.91E+00	4.11E+02	1.75E-01	3.38E+02	2.04E-02
BREOT-S26-0 (0-6")	1.72E-01	1.72E-01	6.30E+00	5.48E+03	9.40E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	8.70E+02	4.18E+00	1.36E-02	4.54E+00	2.83E+00	4.11E+02	1.75E-01	3.38E+02	8.37E-03
BREOT-N27-0 (0-6")	1.72E-01	1.72E-01	6.30E+00	7.11E+04	1.22E+04	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.13E+04	5.42E+01	1.36E-02	4.54E+00	3.67E+01	4.11E+02	1.75E-01	3.38E+02	1.08E-01
BREOT-S27-0 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.35E+03	2.32E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.15E+02	1.03E+00	1.36E-02	4.54E+00	6.98E-01	4.11E+02	1.75E-01	3.38E+02	2.06E-03
BREOT-N28-0 (0-6")	1.72E-01	1.72E-01	6.30E+00	4.59E+03	7.88E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	7.30E+02	3.51E+00	1.36E-02	4.54E+00	2.37E+00	4.11E+02	1.75E-01	3.38E+02	7.01E-03
BREOT-S28-0 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.51E+03	2.59E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.39E+02	1.15E+00	1.36E-02	4.54E+00	7.79E-01	4.11E+02	1.75E-01	3.38E+02	2.30E-03
BREOT-S29-0 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.45E+03	2.49E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.30E+02	1.11E+00	1.36E-02	4.54E+00	7.49E-01	4.11E+02	1.75E-01	3.38E+02	2.21E-03
BREOT-N30-0 (0-6")	1.72E-01	1.72E-01	6.30E+00	3.28E+04	5.63E+03	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.21E+03	2.50E+01	1.36E-02	4.54E+00	1.69E+01	4.11E+02	1.75E-01	3.38E+02	5.01E-02
BREOT-S30-0 (0-6")	1.72E-01	1.72E-01	6.30E+00	5.43E+02	9.32E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	8.63E+01	4.15E-01	1.36E-02	4.54E+00	2.81E-01	4.11E+02	1.75E-01	3.38E+02	8.29E-04
BREOT-N31-0 (0-6")	1.72E-01	1.72E-01	6.30E+00	4.11E+04	7.05E+03	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	6.52E+03	3.13E+01	1.36E-02	4.54E+00	2.12E+01	4.11E+02	1.75E-01	3.38E+02	6.27E-02
BREOT-S31-0 (0-6")	1.72E-01	1.72E-01	6.30E+00	2.55E+03	4.38E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.05E+02	1.95E+00	1.36E-02	4.54E+00	1.32E+00	4.11E+02	1.75E-01	3.38E+02	3.89E-03
BREOT-N32-0 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.64E+04	2.81E+03	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.60E+03	1.25E+01	1.36E-02	4.54E+00	8.45E+00	4.11E+02	1.75E-01	3.38E+02	2.50E-02
BREOT-S32-0 (0-6")	1.72E-01	1.72E-01	6.30E+00	2.70E+03	4.62E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.28E+02	2.06E+00	1.36E-02	4.54E+00	1.39E+00	4.11E+02	1.75E-01	3.38E+02	4.12E-03
BREOT-N33-0 (0-6")	1.72E-01	1.72E-01	6.30E+00	8.63E+02	1.48E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.37E+02	6.58E-01	1.36E-02	4.54E+00	4.46E-01	4.11E+02	1.75E-01	3.38E+02	1.32E-03
BREOT-S33-0 (0-6")	1.72E-01	1.72E-01	6.30E+00	4.39E+03	7.53E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	6.97E+02	3.35E+00	1.36E-02	4.54E+00	2.27E+00	4.11E+02	1.75E-01	3.38E+02	6.70E-03
BREOT-N34-0 (0-6")	1.72E-01	1.72E-01	6.30E+00	2.18E+03	3.75E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.47E+02	1.67E+00	1.36E-02	4.54E+00	1.13E+00	4.11E+02	1.75E-01	3.38E+02	3.33E-03
BREOT-S34-0 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.93E+04	3.31E+03	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.06E+03	1.47E+01	1.36E-02	4.54E+00	9.95E+00	4.11E+02	1.75E-01	3.38E+02	2.94E-02
BREOT-N35-0 (0-6")	1.72E-01	1.72E-01	6.30E+00	7.77E+02	1.33E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.23E+02	5.93E-01	1.36E-02	4.54E+00	4.02E-01	4.11E+02	1.75E-01	3.38E+02	1.19E-03
BREOT-S35-0 (0-6")	1.72E-01	1.72E-01	6.30E+00	2.80E+03	4.80E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.44E+02	2.13E+00	1.36E-02	4.54E+00	1.44E+00	4.11E+02	1.75E-01	3.38E+02	4.27E-03
BREOT-N36-0 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.87E+04	3.21E+03	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.97E+03	1.43E+01	1.36E-02	4.54E+00	9.68E+00	4.11E+02	1.75E-01	3.38E+02	2.86E-02
BREOT-S36-0 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.65E+04	2.83E+03	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.62E+03	1.26E+01	1.36E-02	4.54E+00	8.52E+00	4.11E+02	1.75E-01	3.38E+02	2.52E-02
BREOT-N37-0 (0-6")	1.72E-01	1.72E-01	6.30E+00	2.61E+03	4.48E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.14E+02	1.99E+00	1.36E-02	4.54E+00	1.35E+00	4.11E+02	1.75E-01	3.38E+02	3.98E-03
BREOT-S37-0 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.86E+04	3.20E+03	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.96E+03	1.42E+01	1.36E-02	4.54E+00	9.62E+00	4.11E+02	1.75E-01	3.38E+02	2.84E-02
BREOT-N38-0 (0-6")	1.72E-01	1.72E-01	6.30E+00	7.90E+02	1.35E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.25E+02	6.02E-01	1.36E-02	4.54E+00	4.08E-01	4.11E+02	1.75E-01	3.38E+02	1.21E-03

TABLE C-2F: ZINC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 18.41

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Red Fox (Carnivorous Mammal - Terrestrial)																							
BREOT-S38-0 (0-6")	1.72E-01	1.72E-01	6.30E+00	7.12E+03	1.22E+03	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.13E+03	5.43E+00	1.36E-02	4.54E+00	3.68E+00	4.11E+02	1.75E-01	3.38E+02	1.09E-02
BREOT-N39-0 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.34E+03	2.30E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.13E+02	1.02E+00	1.36E-02	4.54E+00	6.93E-01	4.11E+02	1.75E-01	3.38E+02	2.05E-03
BREOT-N40-0 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.06E+03	1.83E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.69E+02	8.12E-01	1.36E-02	4.54E+00	5.50E-01	4.11E+02	1.75E-01	3.38E+02	1.63E-03
BREOT-S40-0 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.34E+04	2.30E+03	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.13E+03	1.02E+01	1.36E-02	4.54E+00	6.91E+00	4.11E+02	1.75E-01	3.38E+02	2.04E-02
BREOT-N41-0 (0-6")	1.72E-01	1.72E-01	6.30E+00	6.09E+02	1.05E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	9.68E+01	4.65E-01	1.36E-02	4.54E+00	3.15E-01	4.11E+02	1.75E-01	3.38E+02	9.30E-04
BREOT-S41-0 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.45E+04	2.48E+03	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.30E+03	1.10E+01	1.36E-02	4.54E+00	7.47E+00	4.11E+02	1.75E-01	3.38E+02	2.21E-02
BREOT-N42-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S42-0 (0-6")	1.72E-01	1.72E-01	6.30E+00	2.74E+04	4.71E+03	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.36E+03	2.09E+01	1.36E-02	4.54E+00	1.42E+01	4.11E+02	1.75E-01	3.38E+02	4.19E-02
BREOT-N43-0 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.27E+03	2.18E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.02E+02	9.69E-01	1.36E-02	4.54E+00	6.56E-01	4.11E+02	1.75E-01	3.38E+02	1.94E-03
BREOT-S43-0 (0-6")	1.72E-01	1.72E-01	6.30E+00	2.57E+03	4.41E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.09E+02	1.96E+00	1.36E-02	4.54E+00	1.33E+00	4.11E+02	1.75E-01	3.38E+02	3.93E-03
BREOT-N44-0 (0-6")	1.72E-01	1.72E-01	6.30E+00	2.64E+03	4.53E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.19E+02	2.01E+00	1.36E-02	4.54E+00	1.36E+00	4.11E+02	1.75E-01	3.38E+02	4.03E-03
BREOT-S44-0 (0-6")	1.72E-01	1.72E-01	6.30E+00	2.21E+03	3.79E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.51E+02	1.68E+00	1.36E-02	4.54E+00	1.14E+00	4.11E+02	1.75E-01	3.38E+02	3.37E-03
BREOT-N45-0 (0-6")	1.72E-01	1.72E-01	6.30E+00	2.13E+03	3.66E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.39E+02	1.63E+00	1.36E-02	4.54E+00	1.10E+00	4.11E+02	1.75E-01	3.38E+02	3.25E-03
BREOT-S45-0 (0-6")	1.72E-01	1.72E-01	6.30E+00	2.51E+03	4.31E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.99E+02	1.92E+00	1.36E-02	4.54E+00	1.30E+00	4.11E+02	1.75E-01	3.38E+02	3.84E-03
BREOT-N46-0 (0-6")	1.72E-01	1.72E-01	6.30E+00	2.80E+03	4.80E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.44E+02	2.13E+00	1.36E-02	4.54E+00	1.45E+00	4.11E+02	1.75E-01	3.38E+02	4.27E-03
BREOT-S46-0 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.06E+03	1.82E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.69E+02	8.11E-01	1.36E-02	4.54E+00	5.49E-01	4.11E+02	1.75E-01	3.38E+02	1.62E-03
BREOT-N47-0 (0-6")	1.72E-01	1.72E-01	6.30E+00	4.55E+03	7.81E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	7.23E+02	3.47E+00	1.36E-02	4.54E+00	2.35E+00	4.11E+02	1.75E-01	3.38E+02	6.95E-03
BREOT-S47-0 (0-6")	1.72E-01	1.72E-01	6.30E+00	7.21E+02	1.24E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.14E+02	5.50E-01	1.36E-02	4.54E+00	3.72E-01	4.11E+02	1.75E-01	3.38E+02	1.10E-03
BREOT-N48-0 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.78E+03	3.05E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.83E+02	1.36E+00	1.36E-02	4.54E+00	9.19E-01	4.11E+02	1.75E-01	3.38E+02	2.72E-03
BREOT-S48-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N49-0 (0-6")	1.72E-01	1.72E-01	6.30E+00	6.68E+03	1.15E+03	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.06E+03	5.10E+00	1.36E-02	4.54E+00	3.45E+00	4.11E+02	1.75E-01	3.38E+02	1.02E-02
BREOT-S49-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S50-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N51-0 (0-6")	1.72E-01	1.72E-01	6.30E+00	2.12E+03	3.63E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.36E+02	1.62E+00	1.36E-02	4.54E+00	1.09E+00	4.11E+02	1.75E-01	3.38E+02	3.23E-03
BREOT-S51-0 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.20E+03	2.06E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.91E+02	9.16E-01	1.36E-02	4.54E+00	6.20E-01	4.11E+02	1.75E-01	3.38E+02	1.83E-03
BREOT-N52-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S52-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N53-0 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.65E+03	2.82E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.61E+02	1.26E+00	1.36E-02	4.54E+00	8.51E-01	4.11E+02	1.75E-01	3.38E+02	2.51E-03
BREOT-S53-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N54-0 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.88E+03	3.23E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.99E+02	1.43E+00	1.36E-02	4.54E+00	9.72E-01	4.11E+02	1.75E-01	3.38E+02	2.87E-03
BREOT-S54-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N55-0 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.44E+03	2.48E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.29E+02	1.10E+00	1.36E-02	4.54E+00	7.46E-01	4.11E+02	1.75E-01	3.38E+02	2.20E-03
BREOT-S55-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N56-0 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.57E+03	2.70E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.50E+02	1.20E+00	1.36E-02	4.54E+00	8.12E-01	4.11E+02	1.75E-01	3.38E+02	2.40E-03
BREOT-N57-0 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.12E+03	1.93E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.78E+02	8.57E-01	1.36E-02	4.54E+00	5.80E-01	4.11E+02	1.75E-01	3.38E+02	1.71E-03
BREOT-S57-0 (0-6")	1.72E-01	1.72E-01	6.30E+00	2.32E+03	3.99E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.69E+02	1.77E+00	1.36E-02	4.54E+00	1.20E+00	4.11E+02	1.75E-01	3.38E+02	3.55E-03
BREOT-N58-0 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.37E+03	2.35E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.17E+02	1.04E+00	1.36E-02	4.54E+00	7.07E-01	4.11E+02	1.75E-01	3.38E+02	2.09E-03
BREOT-S58-0 (0-6")	1.72E-01	1.72E-01	6.30E+00	2.18E+03	3.74E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.46E+02	1.66E+00	1.36E-02	4.54E+00	1.13E+00	4.11E+02	1.75E-01	3.38E+02	3.33E-03
BREOT-N59-0 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.54E+03	2.64E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.44E+02	1.17E+00	1.36E-02	4.54E+00	7.94E-01	4.11E+02	1.75E-01	3.38E+02	2.35E-03
BREOT-N60-0 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.43E+03	2.45E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.27E+02	1.09E+00	1.36E-02	4.54E+00	7.38E-01	4.11E+02	1.75E-01	3.38E+02	2.18E-03
BREOT-S60-0 (0-6")	1.72E-01	1.72E-01	6.30E+00	3.86E+03	6.61E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	6.12E+02	2.94E+00	1.36E-02	4.54E+00	1.99E+00	4.11E+02	1.75E-01	3.38E+02	5.89E-03
BREOT-S61-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N62-0 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.59E+03	2.72E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.52E+02	1.21E+00	1.36E-02	4.54E+00	8.19E-01	4.11E+02	1.75E-01	3.38E+02	2.42E-03
BREOT-S62-0 (0-6")	1.72E-01	1.72E-01	6.30E+00	5.99E+02	1.03E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	9.52E+01	4.57E-01	1.36E-02	4.54E+00	3.10E-01	4.11E+02	1.75E-01	3.38E+02	9.15E-04
BREOT-N63-0 (0-6")	1.72E-01	1.72E-01	6.30E+00	2.93E+03	5.02E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.65E+02	2.23E+00	1.36E-02	4.54E+00	1.51E+00	4.11E+02	1.75E-01	3.38E+02	4.47E-03
BREOT-S63-0 (0-6")	1.72E-01	1.72E-01	6.30E+00	2.08E+03	3.57E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.31E+02	1.59E+00	1.36E-02	4.54E+00	1.08E+00	4.11E+02	1.75E-01	3.38E+02	3.18E-03
BREOT-N64-0 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.84E+03	3.16E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.93E+02	1.41E+00	1.36E-02	4.54E+00	9.52E-01	4.11E+02	1.75E-01	3.38E+02	2.81E-03
BREOT-S64-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N66-0 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.62E+03	2.77E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.57E+02	1.23E+00	1.36E-02	4.54E+00	8.36E-01	4.11E+02	1.75E-01	3.38E+02	2.47E-03
BREOT-S66-0 (0-6")	1.72E-01	1.72E-01	6.30E+00	2.40E+03	4.12E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.81E+02	1.83E+00	1.36E-02	4.54E+00	1.24E+00	4.11E+02	1.75E-01	3.38E+02	3.66E-03
BREOT-N67-0 (0-6")	1.72E-01	1.72E-01	6.30E+00	2.13E+04	3.65E+03	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.38E+03	1.62E+01	1.36E-02	4.54E+00	1.10E+01	4.11E+02	1.75E-01	3.38E+02	3.25E-02
BREOT-S67-0 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.17E+03	2.01E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.86E+02	8.93E-01	1.36E-02	4.54E+00	6.05E-01	4.11E+02	1.75E-01	3.38E+02	1.79E-03
Outside Tailings																						**Maximum HQ (At Edge of Tailings)**	**1.76E-01**
BREOT-S0+25 (0-6")	1.72E-01	1.72E-01	6.30E+00	2.20E+03	3.77E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.49E+02	1.68E+00	1.36E-02	4.54E+00	1.14E+00	4.11E+02	1.75E-01	3.38E+02	3.36E-03
BREOT-S1+25 (0-6")	1.72E-01	1.72E-01	6.30E+00	2.82E+03	4.84E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.48E+02	2.15E+00	1.36E-02	4.54E+00	1.46E+00	4.11E+02	1.75E-01	3.38E+02	4.31E-03

TABLE C-2F: ZINC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 18.41

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Red Fox (Carnivorous Mammal - Terrestrial)																							
BREOT-S2+95 (0-6")	1.72E-01	1.72E-01	6.30E+00	9.28E+02	1.59E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.47E+02	7.08E-01	1.36E-02	4.54E+00	4.79E-01	4.11E+02	1.75E-01	3.38E+02	1.42E-03
BREOT-S3+6 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.22E+03	2.09E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.93E+02	9.28E-01	1.36E-02	4.54E+00	6.28E-01	4.11E+02	1.75E-01	3.38E+02	1.86E-03
BREOT-S4+10 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.44E+03	2.47E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.28E+02	1.10E+00	1.36E-02	4.54E+00	7.43E-01	4.11E+02	1.75E-01	3.38E+02	2.19E-03
BREOT-S6+25 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.58E+03	2.71E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.51E+02	1.20E+00	1.36E-02	4.54E+00	8.16E-01	4.11E+02	1.75E-01	3.38E+02	2.41E-03
BREOT-S8+25 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.80E+03	3.09E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.86E+02	1.37E+00	1.36E-02	4.54E+00	9.30E-01	4.11E+02	1.75E-01	3.38E+02	2.75E-03
BREOT-N10+25 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.44E+03	2.48E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.29E+02	1.10E+00	1.36E-02	4.54E+00	7.46E-01	4.11E+02	1.75E-01	3.38E+02	2.20E-03
BREOT-N11+25 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.15E+03	1.98E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.83E+02	8.79E-01	1.36E-02	4.54E+00	5.95E-01	4.11E+02	1.75E-01	3.38E+02	1.76E-03
BREOT-N12+25 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.67E+03	2.86E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.65E+02	1.27E+00	1.36E-02	4.54E+00	8.62E-01	4.11E+02	1.75E-01	3.38E+02	2.55E-03
BREOT-S12+25 (0-6")	1.72E-01	1.72E-01	6.30E+00	4.06E+04	6.97E+03	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	6.45E+03	3.10E+01	1.36E-02	4.54E+00	2.10E+01	4.11E+02	1.75E-01	3.38E+02	6.20E-02
BREOT-S12+60 (0-6")	1.72E-01	1.72E-01	6.30E+00	3.96E+03	6.79E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	6.28E+02	3.02E+00	1.36E-02	4.54E+00	2.04E+00	4.11E+02	1.75E-01	3.38E+02	6.04E-03
BREOT-N13+25 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.66E+03	2.85E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.63E+02	1.27E+00	1.36E-02	4.54E+00	8.57E-01	4.11E+02	1.75E-01	3.38E+02	2.53E-03
BREOT-S13+25 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.82E+04	3.12E+03	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.89E+03	1.39E+01	1.36E-02	4.54E+00	9.39E+00	4.11E+02	1.75E-01	3.38E+02	2.77E-02
BREOT-S13+65 (0-6")	1.72E-01	1.72E-01	6.30E+00	5.98E+03	1.03E+03	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	9.50E+02	4.56E+00	1.36E-02	4.54E+00	3.09E+00	4.11E+02	1.75E-01	3.38E+02	9.13E-03
BREOT-N14+25 (0-6")	1.72E-01	1.72E-01	6.30E+00	2.75E+03	4.71E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.36E+02	2.10E+00	1.36E-02	4.54E+00	1.42E+00	4.11E+02	1.75E-01	3.38E+02	4.19E-03
BREOT-S14+25 (0-6")	1.72E-01	1.72E-01	6.30E+00	2.80E+04	4.80E+03	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.44E+03	2.13E+01	1.36E-02	4.54E+00	1.45E+01	4.11E+02	1.75E-01	3.38E+02	4.27E-02
BREOT-S14+59 (0-6")	1.72E-01	1.72E-01	6.30E+00	2.13E+03	3.65E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.38E+02	1.62E+00	1.36E-02	4.54E+00	1.10E+00	4.11E+02	1.75E-01	3.38E+02	3.25E-03
BREOT-N15+25 (0-6")	1.72E-01	1.72E-01	6.30E+00	6.04E+04	1.04E+04	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	9.59E+03	4.61E+01	1.36E-02	4.54E+00	3.12E+01	4.11E+02	1.75E-01	3.38E+02	9.22E-02
BREOT-N15+50 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.90E+03	3.25E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.01E+02	1.45E+00	1.36E-02	4.54E+00	9.79E-01	4.11E+02	1.75E-01	3.38E+02	2.89E-03
BREOT-S16+20 (0-6")	1.72E-01	1.72E-01	6.30E+00	2.44E+04	4.18E+03	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.87E+03	1.86E+01	1.36E-02	4.54E+00	1.26E+01	4.11E+02	1.75E-01	3.38E+02	3.72E-02
BREOT-S16+75 (0-6")	1.72E-01	1.72E-01	6.30E+00	2.87E+03	4.93E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.56E+02	2.19E+00	1.36E-02	4.54E+00	1.48E+00	4.11E+02	1.75E-01	3.38E+02	4.38E-03
BREOT-N17+25 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.21E+04	2.08E+03	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.92E+03	9.23E+00	1.36E-02	4.54E+00	6.25E+00	4.11E+02	1.75E-01	3.38E+02	1.85E-02
BREOT-S18+25 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.27E+03	2.19E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.02E+02	9.72E-01	1.36E-02	4.54E+00	6.58E-01	4.11E+02	1.75E-01	3.38E+02	1.95E-03
BREOT-N19+25 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.26E+03	2.16E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.00E+02	9.61E-01	1.36E-02	4.54E+00	6.51E-01	4.11E+02	1.75E-01	3.38E+02	1.92E-03
BREOT-S19+25 (0-6")	1.72E-01	1.72E-01	6.30E+00	5.45E+03	9.35E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	8.65E+02	4.16E+00	1.36E-02	4.54E+00	2.82E+00	4.11E+02	1.75E-01	3.38E+02	8.32E-03
BREOT-S19+85 (0-6")	1.72E-01	1.72E-01	6.30E+00	9.49E+02	1.63E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.51E+02	7.24E-01	1.36E-02	4.54E+00	4.90E-01	4.11E+02	1.75E-01	3.38E+02	1.45E-03
BREOT-N20+25 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.81E+03	3.10E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.87E+02	1.38E+00	1.36E-02	4.54E+00	9.33E-01	4.11E+02	1.75E-01	3.38E+02	2.76E-03
BREOT-S20+25 (0-6")	1.72E-01	1.72E-01	6.30E+00	7.29E+03	1.25E+03	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.16E+03	5.56E+00	1.36E-02	4.54E+00	3.77E+00	4.11E+02	1.75E-01	3.38E+02	1.11E-02
BREOT-S20+75 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.37E+03	2.35E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.18E+02	1.05E+00	1.36E-02	4.54E+00	7.09E-01	4.11E+02	1.75E-01	3.38E+02	2.10E-03
BREOT-N21+25 (0-6")	1.72E-01	1.72E-01	6.30E+00	2.70E+03	4.62E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.28E+02	2.06E+00	1.36E-02	4.54E+00	1.39E+00	4.11E+02	1.75E-01	3.38E+02	4.12E-03
BREOT-S21+25 (0-6")	1.72E-01	1.72E-01	6.30E+00	3.35E+03	5.75E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.32E+02	2.56E+00	1.36E-02	4.54E+00	1.73E+00	4.11E+02	1.75E-01	3.38E+02	5.12E-03
BREOT-N22+150 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.29E+03	2.21E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.05E+02	9.83E-01	1.36E-02	4.54E+00	6.66E-01	4.11E+02	1.75E-01	3.38E+02	1.97E-03
BREOT-N22+25 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.88E+04	3.23E+03	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.99E+03	1.44E+01	1.36E-02	4.54E+00	9.74E+00	4.11E+02	1.75E-01	3.38E+02	2.88E-02
BREOT-S22+25 (0-6")	1.72E-01	1.72E-01	6.30E+00	2.22E+03	3.80E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.52E+02	1.69E+00	1.36E-02	4.54E+00	1.15E+00	4.11E+02	1.75E-01	3.38E+02	3.38E-03
BREOT-N23+115 (0-6")	1.72E-01	1.72E-01	6.30E+00	2.28E+03	3.92E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.63E+02	1.74E+00	1.36E-02	4.54E+00	1.18E+00	4.11E+02	1.75E-01	3.38E+02	3.48E-03
BREOT-N23+25 (0-6")	1.72E-01	1.72E-01	6.30E+00	4.64E+04	7.97E+03	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	7.37E+03	3.54E+01	1.36E-02	4.54E+00	2.40E+01	4.11E+02	1.75E-01	3.38E+02	7.09E-02
BREOT-S23+25 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.11E+04	1.90E+03	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.76E+03	8.47E+00	1.36E-02	4.54E+00	5.73E+00	4.11E+02	1.75E-01	3.38E+02	1.69E-02
BREOT-S23+37.5 (0-6")	1.72E-01	1.72E-01	6.30E+00	2.93E+03	5.03E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.66E+02	2.24E+00	1.36E-02	4.54E+00	1.51E+00	4.11E+02	1.75E-01	3.38E+02	4.48E-03
BREOT-N24+25 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.15E+04	1.97E+03	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.83E+03	8.78E+00	1.36E-02	4.54E+00	5.94E+00	4.11E+02	1.75E-01	3.38E+02	1.76E-02
BREOT-N24+75 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.83E+03	3.14E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.91E+02	1.40E+00	1.36E-02	4.54E+00	9.46E-01	4.11E+02	1.75E-01	3.38E+02	2.79E-03
BREOT-S24+25 (0-6")	1.72E-01	1.72E-01	6.30E+00	2.69E+03	4.62E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.27E+02	2.05E+00	1.36E-02	4.54E+00	1.39E+00	4.11E+02	1.75E-01	3.38E+02	4.11E-03
BREOT-N25+25 (0-6")	1.72E-01	1.72E-01	6.30E+00	6.59E+02	1.13E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.05E+02	5.03E-01	1.36E-02	4.54E+00	3.40E-01	4.11E+02	1.75E-01	3.38E+02	1.01E-03
BREOT-S25+25 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.88E+03	3.22E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.98E+02	1.43E+00	1.36E-02	4.54E+00	9.71E-01	4.11E+02	1.75E-01	3.38E+02	2.87E-03
BREOT-S25+40 (0-6")	1.72E-01	1.72E-01	6.30E+00	2.06E+03	3.53E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.26E+02	1.57E+00	1.36E-02	4.54E+00	1.06E+00	4.11E+02	1.75E-01	3.38E+02	3.14E-03
BREOT-S26+37 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.56E+03	2.68E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.48E+02	1.19E+00	1.36E-02	4.54E+00	8.08E-01	4.11E+02	1.75E-01	3.38E+02	2.39E-03
BREOT-N27+25 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.69E+03	2.90E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.68E+02	1.29E+00	1.36E-02	4.54E+00	8.72E-01	4.11E+02	1.75E-01	3.38E+02	2.58E-03
BREOT-S27+25 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.24E+03	2.12E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.97E+02	9.45E-01	1.36E-02	4.54E+00	6.40E-01	4.11E+02	1.75E-01	3.38E+02	1.89E-03
BREOT-N28+25 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.17E+03	2.01E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.86E+02	8.93E-01	1.36E-02	4.54E+00	6.05E-01	4.11E+02	1.75E-01	3.38E+02	1.79E-03
BREOT-S28+25 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.39E+03	2.38E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.20E+02	1.06E+00	1.36E-02	4.54E+00	7.16E-01	4.11E+02	1.75E-01	3.38E+02	2.12E-03
BREOT-N29+25 (0-6")	1.72E-01	1.72E-01	6.30E+00	4.41E+03	7.57E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	7.01E+02	3.37E+00	1.36E-02	4.54E+00	2.28E+00	4.11E+02	1.75E-01	3.38E+02	6.74E-03
BREOT-S29+25 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.14E+03	1.95E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.81E+02	8.69E-01	1.36E-02	4.54E+00	5.89E-01	4.11E+02	1.75E-01	3.38E+02	1.74E-03
BREOT-N30+25 (0-6")	1.72E-01	1.72E-01	6.30E+00	2.49E+03	4.28E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.96E+02	1.90E+00	1.36E-02	4.54E+00	1.29E+00	4.11E+02	1.75E-01	3.38E+02	3.81E-03
BREOT-S30+25 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.94E+03	3.32E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.08E+02	1.48E+00	1.36E-02	4.54E+00	1.00E+00	4.11E+02	1.75E-01	3.38E+02	2.96E-03
BREOT-N31+25 (0-6")	1.72E-01	1.72E-01	6.30E+00	6.37E+04	1.09E+04	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.01E+04	4.86E+01	1.36E-02	4.54E+00	3.29E+01	4.11E+02	1.75E-01	3.38E+02	9.72E-02
BREOT-N31+75 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.25E+03	2.14E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.98E+02	9.51E-01	1.36E-02	4.54E+00	6.44E-01	4.11E+02	1.75E-01	3.38E+02	1.90E-03
BREOT-S31+25 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.78E+03	3.05E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.82E+02	1.36E+00	1.36E-02	4.54E+00	9.18E-01	4.11E+02	1.75E-01	3.38E+02	2.71E-03

TABLE C-2F: ZINC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 18.41

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Red Fox (Carnivorous Mammal - Terrestrial)																							
BREOT-N32+25 (0-6")	1.72E-01	1.72E-01	6.30E+00	9.38E+02	1.61E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.49E+02	7.16E-01	1.36E-02	4.54E+00	4.85E-01	4.11E+02	1.75E-01	3.38E+02	1.43E-03
BREOT-S32+25 (0-6")	1.72E-01	1.72E-01	6.30E+00	2.56E+03	4.39E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.07E+02	1.95E+00	1.36E-02	4.54E+00	1.32E+00	4.11E+02	1.75E-01	3.38E+02	3.91E-03
BREOT-S32+300 (0-6")	1.72E-01	1.72E-01	6.30E+00	3.29E+03	5.64E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.22E+02	2.51E+00	1.36E-02	4.54E+00	1.70E+00	4.11E+02	1.75E-01	3.38E+02	5.02E-03
BREOT-N33+25 (0-6")	1.72E-01	1.72E-01	6.30E+00	6.75E+02	1.16E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.07E+02	5.15E-01	1.36E-02	4.54E+00	3.49E-01	4.11E+02	1.75E-01	3.38E+02	1.03E-03
BREOT-S33+25 (0-6")	1.72E-01	1.72E-01	6.30E+00	7.48E+03	1.28E+03	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.19E+03	5.71E+00	1.36E-02	4.54E+00	3.86E+00	4.11E+02	1.75E-01	3.38E+02	1.14E-02
BREOT-N34+25 (0-6")	1.72E-01	1.72E-01	6.30E+00	8.73E+02	1.50E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.39E+02	6.66E-01	1.36E-02	4.54E+00	4.51E-01	4.11E+02	1.75E-01	3.38E+02	1.33E-03
BREOT-S34+25 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.51E+03	2.59E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.40E+02	1.15E+00	1.36E-02	4.54E+00	7.80E-01	4.11E+02	1.75E-01	3.38E+02	2.31E-03
BREOT-N35+25 (0-6")	1.72E-01	1.72E-01	6.30E+00	9.86E+02	1.69E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.57E+02	7.52E-01	1.36E-02	4.54E+00	5.09E-01	4.11E+02	1.75E-01	3.38E+02	1.51E-03
BREOT-S35+25 (0-6")	1.72E-01	1.72E-01	6.30E+00	6.68E+03	1.15E+03	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.06E+03	5.10E+00	1.36E-02	4.54E+00	3.45E+00	4.11E+02	1.75E-01	3.38E+02	1.02E-02
BREOT-N36+100 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.42E+03	2.44E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.26E+02	1.08E+00	1.36E-02	4.54E+00	7.35E-01	4.11E+02	1.75E-01	3.38E+02	2.17E-03
BREOT-N36+25 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.49E+04	2.56E+03	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.37E+03	1.14E+01	1.36E-02	4.54E+00	7.70E+00	4.11E+02	1.75E-01	3.38E+02	2.27E-02
BREOT-S36+25 (0-6")	1.72E-01	1.72E-01	6.30E+00	5.66E+03	9.71E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	8.99E+02	4.32E+00	1.36E-02	4.54E+00	2.93E+00	4.11E+02	1.75E-01	3.38E+02	8.64E-03
BREOT-N37+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	1.56E+02	2.23E+02	NA	NA	NA	NA	2.86E-02	7.86E+01	2.25E+00	1.03E-01	1.35E+02	1.72E-01	4.11E+02	1.75E-01	2.76E+02	6.22E-04
BREOT-S37+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	2.03E+03	2.90E+03	NA	NA	NA	NA	2.86E-02	1.02E+03	2.93E+01	1.03E-01	1.35E+02	2.23E+00	4.11E+02	1.75E-01	2.76E+02	8.09E-03
BREOT-N38+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	1.67E+02	2.38E+02	NA	NA	NA	NA	2.86E-02	8.41E+01	2.41E+00	1.03E-01	1.35E+02	1.84E-01	4.11E+02	1.75E-01	2.76E+02	6.65E-04
BREOT-S38+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	2.36E+03	3.38E+03	NA	NA	NA	NA	2.86E-02	1.19E+03	3.41E+01	1.03E-01	1.35E+02	2.60E+00	4.11E+02	1.75E-01	2.76E+02	9.43E-03
BREOT-N39+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	2.28E+02	3.26E+02	NA	NA	NA	NA	2.86E-02	1.15E+02	3.29E+00	1.03E-01	1.35E+02	2.52E-01	4.11E+02	1.75E-01	2.76E+02	9.11E-04
BREOT-S39+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	2.35E+03	3.37E+03	NA	NA	NA	NA	2.86E-02	1.19E+03	3.40E+01	1.03E-01	1.35E+02	2.59E+00	4.11E+02	1.75E-01	2.76E+02	9.40E-03
BREOT-N40+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	1.29E+02	1.84E+02	NA	NA	NA	NA	2.86E-02	6.49E+01	1.86E+00	1.03E-01	1.35E+02	1.42E-01	4.11E+02	1.75E-01	2.76E+02	5.14E-04
BREOT-S40+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	2.10E+03	3.01E+03	NA	NA	NA	NA	2.86E-02	1.06E+03	3.04E+01	1.03E-01	1.35E+02	2.32E+00	4.11E+02	1.75E-01	2.76E+02	8.40E-03
BREOT-N41+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	2.28E+02	3.27E+02	NA	NA	NA	NA	2.86E-02	1.15E+02	3.30E+00	1.03E-01	1.35E+02	2.52E-01	4.11E+02	1.75E-01	2.76E+02	9.13E-04
BREOT-S41+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	1.55E+03	2.23E+03	NA	NA	NA	NA	2.86E-02	7.85E+02	2.25E+01	1.03E-01	1.35E+02	1.72E+00	4.11E+02	1.75E-01	2.76E+02	6.21E-03
BREOT-N42+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	1.14E+02	1.63E+02	NA	NA	NA	NA	2.86E-02	5.76E+01	1.65E+00	1.03E-01	1.35E+02	1.26E-01	4.11E+02	1.75E-01	2.76E+02	4.56E-04
BREOT-S42+25 (0-6")	1.72E-01	1.72E-01	6.30E+00	7.17E+03	1.23E+03	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.14E+03	5.47E+00	1.36E-02	4.54E+00	3.70E+00	4.11E+02	1.75E-01	3.38E+02	1.09E-02
BREOT-N43+12.5 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.76E+03	3.01E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.79E+02	1.34E+00	1.36E-02	4.54E+00	9.07E-01	4.11E+02	1.75E-01	3.38E+02	2.68E-03
BREOT-N43+40 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.39E+03	2.38E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.21E+02	1.06E+00	1.36E-02	4.54E+00	7.18E-01	4.11E+02	1.75E-01	3.38E+02	2.12E-03
BREOT-S43+25 (0-6")	1.72E-01	1.72E-01	6.30E+00	2.78E+03	4.77E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.42E+02	2.12E+00	1.36E-02	4.54E+00	1.44E+00	4.11E+02	1.75E-01	3.38E+02	4.25E-03
BREOT-N44+55 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.42E+03	2.44E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.26E+02	1.08E+00	1.36E-02	4.54E+00	7.34E-01	4.11E+02	1.75E-01	3.38E+02	2.17E-03
BREOT-S44+25 (0-6")	1.72E-01	1.72E-01	6.30E+00	2.06E+03	3.53E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.27E+02	1.57E+00	1.36E-02	4.54E+00	1.06E+00	4.11E+02	1.75E-01	3.38E+02	3.15E-03
BREOT-N45+25 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.45E+03	2.49E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.31E+02	1.11E+00	1.36E-02	4.54E+00	7.51E-01	4.11E+02	1.75E-01	3.38E+02	2.22E-03
BREOT-S45+25 (0-6")	1.72E-01	1.72E-01	6.30E+00	2.89E+03	4.95E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.59E+02	2.20E+00	1.36E-02	4.54E+00	1.49E+00	4.11E+02	1.75E-01	3.38E+02	4.41E-03
BREOT-N46+25 (0-6")	1.72E-01	1.72E-01	6.30E+00	3.26E+03	5.59E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.18E+02	2.49E+00	1.36E-02	4.54E+00	1.68E+00	4.11E+02	1.75E-01	3.38E+02	4.98E-03
BREOT-S46+25 (0-6")	1.72E-01	1.72E-01	6.30E+00	2.18E+03	3.74E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.46E+02	1.66E+00	1.36E-02	4.54E+00	1.13E+00	4.11E+02	1.75E-01	3.38E+02	3.33E-03
BREOT-N47+25 (0-6")	1.72E-01	1.72E-01	6.30E+00	2.17E+03	3.72E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.44E+02	1.65E+00	1.36E-02	4.54E+00	1.12E+00	4.11E+02	1.75E-01	3.38E+02	3.31E-03
BREOT-S47+25 (0-6")	1.72E-01	1.72E-01	6.30E+00	6.66E+02	1.14E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.06E+02	5.08E-01	1.36E-02	4.54E+00	3.44E-01	4.11E+02	1.75E-01	3.38E+02	1.02E-03
BREOT-N48+25 (0-6")	1.72E-01	1.72E-01	6.30E+00	8.36E+02	1.43E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.33E+02	6.38E-01	1.36E-02	4.54E+00	4.32E-01	4.11E+02	1.75E-01	3.38E+02	1.28E-03
BREOT-S48+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N49+25 (0-6")	1.72E-01	1.72E-01	6.30E+00	2.15E+03	3.69E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.42E+02	1.64E+00	1.36E-02	4.54E+00	1.11E+00	4.11E+02	1.75E-01	3.38E+02	3.28E-03
BREOT-S49+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N51+25 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.05E+03	1.80E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.66E+02	7.99E-01	1.36E-02	4.54E+00	5.41E-01	4.11E+02	1.75E-01	3.38E+02	1.60E-03
BREOT-S51+25 (0-6")	1.72E-01	1.72E-01	6.30E+00	8.43E+02	1.45E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.34E+02	6.43E-01	1.36E-02	4.54E+00	4.36E-01	4.11E+02	1.75E-01	3.38E+02	1.29E-03
BREOT-N52+25 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.06E+03	1.81E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.68E+02	8.06E-01	1.36E-02	4.54E+00	5.46E-01	4.11E+02	1.75E-01	3.38E+02	1.61E-03
BREOT-S52+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N53+25 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.05E+03	1.80E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.67E+02	8.00E-01	1.36E-02	4.54E+00	5.42E-01	4.11E+02	1.75E-01	3.38E+02	1.60E-03
BREOT-S53+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S54+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N55+25 (0-6")	1.72E-01	1.72E-01	6.30E+00	9.23E+02	1.58E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.47E+02	7.04E-01	1.36E-02	4.54E+00	4.77E-01	4.11E+02	1.75E-01	3.38E+02	1.41E-03
BREOT-S55+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N56+25 (0-6")	1.72E-01	1.72E-01	6.30E+00	9.11E+02	1.56E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.45E+02	6.95E-01	1.36E-02	4.54E+00	4.71E-01	4.11E+02	1.75E-01	3.38E+02	1.39E-03
BREOT-S56+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N57+25 (0-6")	1.72E-01	1.72E-01	6.30E+00	7.84E+02	1.35E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.25E+02	5.98E-01	1.36E-02	4.54E+00	4.05E-01	4.11E+02	1.75E-01	3.38E+02	1.20E-03
BREOT-S57+25 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.28E+03	2.20E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.04E+02	9.80E-01	1.36E-02	4.54E+00	6.63E-01	4.11E+02	1.75E-01	3.38E+02	1.96E-03
BREOT-N58+25 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.34E+03	2.29E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.12E+02	1.02E+00	1.36E-02	4.54E+00	6.90E-01	4.11E+02	1.75E-01	3.38E+02	2.04E-03
BREOT-S58+25 (0-6")	1.72E-01	1.72E-01	6.30E+00	5.66E+02	9.72E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	9.00E+01	4.32E-01	1.36E-02	4.54E+00	2.93E-01	4.11E+02	1.75E-01	3.38E+02	8.65E-04
BREOT-N59+25 (0-6")	1.72E-01	1.72E-01	6.30E+00	2.21E+03	3.80E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.52E+02	1.69E+00	1.36E-02	4.54E+00	1.14E+00	4.11E+02	1.75E-01	3.38E+02	3.38E-03

TABLE C-2F: ZINC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 18.41

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Red Fox (Carnivorous Mammal - Terrestrial)																							
BREOT-N60+25 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.49E+03	2.55E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.36E+02	1.13E+00	1.36E-02	4.54E+00	7.67E-01	4.11E+02	1.75E-01	3.38E+02	2.27E-03
BREOT-S60+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S61+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N62+25 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.64E+03	2.82E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.61E+02	1.25E+00	1.36E-02	4.54E+00	8.49E-01	4.11E+02	1.75E-01	3.38E+02	2.51E-03
BREOT-S62+25 (0-6")	1.72E-01	1.72E-01	6.30E+00	7.28E+02	1.25E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.16E+02	5.55E-01	1.36E-02	4.54E+00	3.76E-01	4.11E+02	1.75E-01	3.38E+02	1.11E-03
BREOT-N63+25 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.73E+03	2.96E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.74E+02	1.32E+00	1.36E-02	4.54E+00	8.92E-01	4.11E+02	1.75E-01	3.38E+02	2.64E-03
BREOT-S63+25 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.22E+03	2.09E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.94E+02	9.31E-01	1.36E-02	4.54E+00	6.31E-01	4.11E+02	1.75E-01	3.38E+02	1.86E-03
BREOT-N64+25 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.94E+03	3.32E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.07E+02	1.48E+00	1.36E-02	4.54E+00	1.00E+00	4.11E+02	1.75E-01	3.38E+02	2.95E-03
BREOT-S64+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S65+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N66+25 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.56E+03	2.68E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.48E+02	1.19E+00	1.36E-02	4.54E+00	8.07E-01	4.11E+02	1.75E-01	3.38E+02	2.38E-03
BREOT-S66+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N67+125 (0-6")	1.72E-01	1.72E-01	6.30E+00	2.29E+03	3.92E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.63E+02	1.74E+00	1.36E-02	4.54E+00	1.18E+00	4.11E+02	1.75E-01	3.38E+02	3.49E-03
BREOT-S67+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N67+25 (0-6")	1.72E-01	1.72E-01	6.30E+00	2.38E+03	4.08E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.77E+02	1.81E+00	1.36E-02	4.54E+00	1.23E+00	4.11E+02	1.75E-01	3.38E+02	3.63E-03
																						Maximum HQ (Outside Tailings)	**9.72E-02**
Masked Shrew (Omnivorous Mammal - Terrestrial, Wetland)																							
Reference Sites																							
ACBG-1 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	8.31E+00	1.14E+03	9.64E+00	1.10E-03	1.37E+02	1.51E-01	1.00E+00	5.50E-03	1.78E+03	4.11E+02	1.75E-01	5.06E+02	3.52E+00
ACBG-2 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	8.31E+00	6.98E+02	5.91E+00	1.10E-03	8.39E+01	9.24E-02	1.00E+00	5.50E-03	1.09E+03	4.11E+02	1.75E-01	5.06E+02	2.16E+00
UBRBG-202 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	8.31E+00	4.47E+02	3.78E+00	1.10E-03	5.37E+01	5.92E-02	1.00E+00	5.50E-03	6.99E+02	4.11E+02	1.75E-01	5.06E+02	1.38E+00
UBRBG-204 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	8.31E+00	2.85E+03	2.41E+01	1.10E-03	3.43E+02	3.77E-01	1.00E+00	5.50E-03	4.46E+03	4.11E+02	1.75E-01	5.06E+02	8.80E+00
Inside Tailings																						**Minimum HQ (Reference Sites)**	**1.38E+00**
BREOT-S6-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	1.68E+03	1.42E+01	1.10E-03	3.83E+02	4.22E-01	1.00E+00	5.50E-03	2.66E+03	4.11E+02	1.75E-01	5.06E+02	5.25E+00
BREOT-S2-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	1.11E+04	9.42E+01	1.10E-03	2.54E+03	2.80E+00	1.00E+00	5.50E-03	1.76E+04	4.11E+02	1.75E-01	5.06E+02	3.48E+01
BREOT-S0-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	1.08E+03	9.18E+00	1.10E-03	2.48E+02	2.73E-01	1.00E+00	5.50E-03	1.72E+03	4.11E+02	1.75E-01	5.06E+02	3.40E+00
BREOT-S1-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	7.28E+02	6.17E+00	1.10E-03	1.66E+02	1.83E-01	1.00E+00	5.50E-03	1.15E+03	4.11E+02	1.75E-01	5.06E+02	2.28E+00
BREOT-S7-25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	1.02E+03	8.65E+00	1.10E-03	2.33E+02	2.57E-01	1.00E+00	5.50E-03	1.62E+03	4.11E+02	1.75E-01	5.06E+02	3.20E+00
BREOT-S8-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	6.33E+02	5.36E+00	1.10E-03	1.45E+02	1.59E-01	1.00E+00	5.50E-03	1.00E+03	4.11E+02	1.75E-01	5.06E+02	1.98E+00
BREOT-S9-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	1.45E+03	1.23E+01	1.10E-03	3.31E+02	3.65E-01	1.00E+00	5.50E-03	2.30E+03	4.11E+02	1.75E-01	5.06E+02	4.54E+00
BREOT-N10-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	2.03E+04	1.72E+02	1.10E-03	4.63E+03	5.09E+00	1.00E+00	5.50E-03	3.21E+04	4.11E+02	1.75E-01	5.06E+02	6.34E+01
BREOT-N11-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	2.13E+03	1.80E+01	1.10E-03	4.85E+02	5.34E-01	1.00E+00	5.50E-03	3.37E+03	4.11E+02	1.75E-01	5.06E+02	6.66E+00
BREOT-N11-125 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	1.75E+03	1.48E+01	1.10E-03	3.99E+02	4.39E-01	1.00E+00	5.50E-03	2.77E+03	4.11E+02	1.75E-01	5.06E+02	5.47E+00
BREOT-S11-12 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	3.11E+04	2.63E+02	1.10E-03	7.09E+03	7.81E+00	1.00E+00	5.50E-03	4.93E+04	4.11E+02	1.75E-01	5.06E+02	9.73E+01
BREOT-S11+63 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	1.75E+03	1.48E+01	1.10E-03	4.00E+02	4.41E-01	1.00E+00	5.50E-03	2.78E+03	4.11E+02	1.75E-01	5.06E+02	5.49E+00
UBDT-TP-6 (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	8.67E+04	7.35E+02	1.10E-03	1.98E+04	2.18E+01	1.00E+00	5.50E-03	1.38E+05	4.11E+02	1.75E-01	5.06E+02	2.72E+02
UBDT-TP-6 (2-12")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	5.38E+04	4.56E+02	1.10E-03	1.23E+04	1.35E+01	1.00E+00	5.50E-03	8.54E+04	4.11E+02	1.75E-01	5.06E+02	1.69E+02
UBDT-TP-6 (12-24")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	5.49E+04	4.65E+02	1.10E-03	1.25E+04	1.38E+01	1.00E+00	5.50E-03	8.71E+04	4.11E+02	1.75E-01	5.06E+02	1.72E+02
UBDT-TP-6 (24-36")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	4.01E+03	3.39E+01	1.10E-03	9.15E+02	1.01E+00	1.00E+00	5.50E-03	6.35E+03	4.11E+02	1.75E-01	5.06E+02	1.25E+01
UBDT-TP-6 (36-48")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	1.09E+04	9.22E+01	1.10E-03	2.49E+03	2.74E+00	1.00E+00	5.50E-03	1.73E+04	4.11E+02	1.75E-01	5.06E+02	3.41E+01
UBDT-TP-6 (48-60")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	8.33E+03	7.05E+01	1.10E-03	1.90E+03	2.09E+00	1.00E+00	5.50E-03	1.32E+04	4.11E+02	1.75E-01	5.06E+02	2.61E+01
BREOT-N12-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	5.15E+03	4.36E+01	1.10E-03	1.18E+03	1.30E+00	1.00E+00	5.50E-03	8.17E+03	4.11E+02	1.75E-01	5.06E+02	1.61E+01
BREOT-S12-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	1.27E+04	1.08E+02	1.10E-03	2.90E+03	3.20E+00	1.00E+00	5.50E-03	2.02E+04	4.11E+02	1.75E-01	5.06E+02	3.98E+01
BREOT-S13-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	2.26E+04	1.91E+02	1.10E-03	5.15E+03	5.68E+00	1.00E+00	5.50E-03	3.58E+04	4.11E+02	1.75E-01	5.06E+02	7.07E+01
BREOT-S14-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	1.12E+04	9.49E+01	1.10E-03	2.56E+03	2.82E+00	1.00E+00	5.50E-03	1.78E+04	4.11E+02	1.75E-01	5.06E+02	3.51E+01
BREOT-N15-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	1.19E+04	1.00E+02	1.10E-03	2.71E+03	2.98E+00	1.00E+00	5.50E-03	1.88E+04	4.11E+02	1.75E-01	5.06E+02	3.72E+01
BREOT-S15-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	1.53E+03	1.30E+01	1.10E-03	3.50E+02	3.85E-01	1.00E+00	5.50E-03	2.43E+03	4.11E+02	1.75E-01	5.06E+02	4.80E+00
BREOT-N16-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	3.90E+03	3.31E+01	1.10E-03	8.91E+02	9.81E-01	1.00E+00	5.50E-03	6.19E+03	4.11E+02	1.75E-01	5.06E+02	1.22E+01
BREOT-N16-25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	7.68E+02	6.51E+00	1.10E-03	1.75E+02	1.93E-01	1.00E+00	5.50E-03	1.22E+03	4.11E+02	1.75E-01	5.06E+02	2.41E+00
BREOT-S16-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	7.79E+02	6.60E+00	1.10E-03	1.78E+02	1.96E-01	1.00E+00	5.50E-03	1.24E+03	4.11E+02	1.75E-01	5.06E+02	2.44E+00
BREOT-N17-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	1.68E+03	1.42E+01	1.10E-03	3.84E+02	4.23E-01	1.00E+00	5.50E-03	2.67E+03	4.11E+02	1.75E-01	5.06E+02	5.27E+00
BREOT-S17-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	6.71E+02	5.69E+00	1.10E-03	1.53E+02	1.69E-01	1.00E+00	5.50E-03	1.06E+03	4.11E+02	1.75E-01	5.06E+02	2.10E+00
BREOT-S17-25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	1.02E+03	8.67E+00	1.10E-03	2.34E+02	2.57E-01	1.00E+00	5.50E-03	1.62E+03	4.11E+02	1.75E-01	5.06E+02	3.21E+00
UBDT-TP-4 (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	1.04E+04	8.83E+01	1.10E-03	2.38E+03	2.62E+00	1.00E+00	5.50E-03	1.65E+04	4.11E+02	1.75E-01	5.06E+02	3.27E+01
UBDT-TP-4 (2-12")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	6.26E+03	5.31E+01	1.10E-03	1.43E+03	1.57E+00	1.00E+00	5.50E-03	9.93E+03	4.11E+02	1.75E-01	5.06E+02	1.96E+01
UBDT-TP-4 (12-24")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	3.42E+03	2.90E+01	1.10E-03	7.82E+02	8.61E-01	1.00E+00	5.50E-03	5.43E+03	4.11E+02	1.75E-01	5.06E+02	1.07E+01
UBDT-TP-4 (24-36")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	4.93E+03	4.18E+01	1.10E-03	1.13E+03	1.24E+00	1.00E+00	5.50E-03	7.82E+03	4.11E+02	1.75E-01	5.06E+02	1.54E+01

TABLE C-2F: ZINC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

Site Area (hectares) 18.41

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Masked Shrew (Omnivorous Mammal - Terrestrial, Wetland)																							
BREOT-N18-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	7.01E+03	5.93E+01	1.10E-03	1.60E+03	1.76E+00	1.00E+00	5.50E-03	1.11E+04	4.11E+02	1.75E-01	5.06E+02	2.19E+01
BREOT-N18-25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	1.35E+03	1.14E+01	1.10E-03	3.07E+02	3.38E-01	1.00E+00	5.50E-03	2.13E+03	4.11E+02	1.75E-01	5.06E+02	4.21E+00
BREOT-S18-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	2.50E+03	2.12E+01	1.10E-03	5.71E+02	6.29E-01	1.00E+00	5.50E-03	3.97E+03	4.11E+02	1.75E-01	5.06E+02	7.83E+00
BREOT-N19-10 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	2.07E+03	1.75E+01	1.10E-03	4.73E+02	5.21E-01	1.00E+00	5.50E-03	3.28E+03	4.11E+02	1.75E-01	5.06E+02	6.48E+00
BREOT-S19-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	6.96E+03	5.90E+01	1.10E-03	1.59E+03	1.75E+00	1.00E+00	5.50E-03	1.10E+04	4.11E+02	1.75E-01	5.06E+02	2.18E+01
UBDT-TP-5 (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	1.15E+04	9.75E+01	1.10E-03	2.63E+03	2.89E+00	1.00E+00	5.50E-03	1.82E+04	4.11E+02	1.75E-01	5.06E+02	3.60E+01
UBDT-TP-5 (2-12")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	7.63E+03	6.46E+01	1.10E-03	1.74E+03	1.92E+00	1.00E+00	5.50E-03	1.21E+04	4.11E+02	1.75E-01	5.06E+02	2.39E+01
UBDT-TP-5 (12-24")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	6.79E+03	5.75E+01	1.10E-03	1.55E+03	1.71E+00	1.00E+00	5.50E-03	1.08E+04	4.11E+02	1.75E-01	5.06E+02	2.13E+01
BREOT-N20-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	1.45E+03	1.23E+01	1.10E-03	3.31E+02	3.64E-01	1.00E+00	5.50E-03	2.30E+03	4.11E+02	1.75E-01	5.06E+02	4.54E+00
UBDT-TP-3 (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	1.96E+03	1.66E+01	1.10E-03	4.47E+02	4.92E-01	1.00E+00	5.50E-03	3.10E+03	4.11E+02	1.75E-01	5.06E+02	6.12E+00
UBDT-TP-3 (2-12")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	1.28E+03	1.09E+01	1.10E-03	2.93E+02	3.22E-01	1.00E+00	5.50E-03	2.03E+03	4.11E+02	1.75E-01	5.06E+02	4.02E+00
UBDT-TP-3 (12-24")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	1.00E+03	8.47E+00	1.10E-03	2.28E+02	2.51E-01	1.00E+00	5.50E-03	1.59E+03	4.11E+02	1.75E-01	5.06E+02	3.13E+00
UBDT-TP-3 (24-36")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	1.60E+03	1.36E+01	1.10E-03	3.66E+02	4.03E-01	1.00E+00	5.50E-03	2.54E+03	4.11E+02	1.75E-01	5.06E+02	5.02E+00
UBDT-TP-3 (36-48")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	2.47E+03	2.09E+01	1.10E-03	5.63E+02	6.20E-01	1.00E+00	5.50E-03	3.91E+03	4.11E+02	1.75E-01	5.06E+02	7.73E+00
UBDT-TP-3 (48-60")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	3.46E+03	2.93E+01	1.10E-03	7.90E+02	8.70E-01	1.00E+00	5.50E-03	5.49E+03	4.11E+02	1.75E-01	5.06E+02	1.08E+01
BREOT-N21-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	1.12E+04	9.53E+01	1.10E-03	2.57E+03	2.83E+00	1.00E+00	5.50E-03	1.78E+04	4.11E+02	1.75E-01	5.06E+02	3.52E+01
BREOT-N22-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	1.81E+03	1.54E+01	1.10E-03	4.14E+02	4.56E-01	1.00E+00	5.50E-03	2.87E+03	4.11E+02	1.75E-01	5.06E+02	5.68E+00
BREOT-N23-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	2.98E+03	2.53E+01	1.10E-03	6.81E+02	7.50E-01	1.00E+00	5.50E-03	4.73E+03	4.11E+02	1.75E-01	5.06E+02	9.34E+00
BREOT-S23-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	3.69E+04	3.12E+02	1.10E-03	8.42E+03	9.27E+00	1.00E+00	5.50E-03	5.84E+04	4.11E+02	1.75E-01	5.06E+02	1.15E+02
UBDT-TP-2 (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	1.40E+04	1.19E+02	1.10E-03	3.21E+03	3.53E+00	1.00E+00	5.50E-03	2.23E+04	4.11E+02	1.75E-01	5.06E+02	4.40E+01
UBDT-TP-2 (2-12")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	8.74E+03	7.41E+01	1.10E-03	2.00E+03	2.20E+00	1.00E+00	5.50E-03	1.39E+04	4.11E+02	1.75E-01	5.06E+02	2.74E+01
UBDT-TP-2 (12-24")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	7.50E+03	6.35E+01	1.10E-03	1.71E+03	1.89E+00	1.00E+00	5.50E-03	1.19E+04	4.11E+02	1.75E-01	5.06E+02	2.35E+01
UBDT-TP-2 (24-36")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	6.35E+03	5.38E+01	1.10E-03	1.45E+03	1.60E+00	1.00E+00	5.50E-03	1.01E+04	4.11E+02	1.75E-01	5.06E+02	1.99E+01
UBDT-TP-2 (36-48")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	6.68E+03	5.66E+01	1.10E-03	1.53E+03	1.68E+00	1.00E+00	5.50E-03	1.06E+04	4.11E+02	1.75E-01	5.06E+02	2.09E+01
BREOT-S24-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	2.79E+04	2.36E+02	1.10E-03	6.37E+03	7.01E+00	1.00E+00	5.50E-03	4.42E+04	4.11E+02	1.75E-01	5.06E+02	8.73E+01
BREOT-N25-50 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	3.49E+04	2.96E+02	1.10E-03	7.97E+03	8.78E+00	1.00E+00	5.50E-03	5.54E+04	4.11E+02	1.75E-01	5.06E+02	1.09E+02
BREOT-N25-95 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	4.43E+02	3.75E+00	1.10E-03	1.01E+02	1.11E-01	1.00E+00	5.50E-03	7.03E+02	4.11E+02	1.75E-01	5.06E+02	1.39E+00
BREOT-S25-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	5.79E+03	4.91E+01	1.10E-03	1.32E+03	1.46E+00	1.00E+00	5.50E-03	9.18E+03	4.11E+02	1.75E-01	5.06E+02	1.81E+01
BREOT-S25-40 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	8.96E+02	7.59E+00	1.10E-03	2.05E+02	2.25E-01	1.00E+00	5.50E-03	1.42E+03	4.11E+02	1.75E-01	5.06E+02	2.81E+00
BREOT-N26A-25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	6.70E+02	5.67E+00	1.10E-03	1.53E+02	1.68E-01	1.00E+00	5.50E-03	1.06E+03	4.11E+02	1.75E-01	5.06E+02	2.10E+00
BREOT-N26B-25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	1.12E+04	9.47E+01	1.10E-03	2.55E+03	2.81E+00	1.00E+00	5.50E-03	1.77E+04	4.11E+02	1.75E-01	5.06E+02	3.50E+01
BREOT-N26-50 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	5.01E+04	4.24E+02	1.10E-03	1.14E+04	1.26E+01	1.00E+00	5.50E-03	7.94E+04	4.11E+02	1.75E-01	5.06E+02	1.57E+02
BREOT-N26-75 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	2.55E+04	2.16E+02	1.10E-03	5.83E+03	6.42E+00	1.00E+00	5.50E-03	4.05E+04	4.11E+02	1.75E-01	5.06E+02	8.00E+01
BREOT-S26-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	1.18E+03	9.98E+00	1.10E-03	2.69E+02	2.96E-01	1.00E+00	5.50E-03	1.87E+03	4.11E+02	1.75E-01	5.06E+02	3.69E+00
BREOT-S26-40 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	1.59E+04	1.34E+02	1.10E-03	3.62E+03	3.99E+00	1.00E+00	5.50E-03	2.52E+04	4.11E+02	1.75E-01	5.06E+02	4.97E+01
BREOT-N27-30 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	1.15E+04	9.78E+01	1.10E-03	2.64E+03	2.90E+00	1.00E+00	5.50E-03	1.83E+04	4.11E+02	1.75E-01	5.06E+02	3.61E+01
BREOT-N27-75 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	4.50E+04	3.81E+02	1.10E-03	1.03E+04	1.13E+01	1.00E+00	5.50E-03	7.13E+04	4.11E+02	1.75E-01	5.06E+02	1.41E+02
BREOT-S27-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	1.61E+03	1.36E+01	1.10E-03	3.67E+02	4.04E-01	1.00E+00	5.50E-03	2.55E+03	4.11E+02	1.75E-01	5.06E+02	5.03E+00
BREOT-N28-110 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	6.81E+03	5.77E+01	1.10E-03	1.55E+03	1.71E+00	1.00E+00	5.50E-03	1.08E+04	4.11E+02	1.75E-01	5.06E+02	2.13E+01
BREOT-N28-55 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	6.55E+04	5.55E+02	1.10E-03	1.50E+04	1.65E+01	1.00E+00	5.50E-03	1.04E+05	4.11E+02	1.75E-01	5.06E+02	2.05E+02
BREOT-S28-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	1.31E+04	1.11E+02	1.10E-03	2.98E+03	3.28E+00	1.00E+00	5.50E-03	2.07E+04	4.11E+02	1.75E-01	5.06E+02	4.09E+01
UBDT-TP-1 (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	3.92E+04	3.32E+02	1.10E-03	8.95E+03	9.85E+00	1.00E+00	5.50E-03	6.21E+04	4.11E+02	1.75E-01	5.06E+02	1.23E+02
UBDT-TP-1 (2-12")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	4.22E+04	3.57E+02	1.10E-03	9.63E+03	1.06E+01	1.00E+00	5.50E-03	6.69E+04	4.11E+02	1.75E-01	5.06E+02	1.32E+02
UBDT-TP-1 (12-24")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	3.98E+04	3.37E+02	1.10E-03	9.08E+03	1.00E+01	1.00E+00	5.50E-03	6.31E+04	4.11E+02	1.75E-01	5.06E+02	1.25E+02
UBDT-TP-1 (24-36")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	2.71E+04	2.29E+02	1.10E-03	6.18E+03	6.80E+00	1.00E+00	5.50E-03	4.29E+04	4.11E+02	1.75E-01	5.06E+02	8.47E+01
UBDT-TP-1 (36-48")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	8.39E+03	7.11E+01	1.10E-03	1.92E+03	2.11E+00	1.00E+00	5.50E-03	1.33E+04	4.11E+02	1.75E-01	5.06E+02	2.63E+01
UBDT-TP-1 (48-60")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	2.79E+03	2.36E+01	1.10E-03	6.38E+02	7.02E-01	1.00E+00	5.50E-03	4.43E+03	4.11E+02	1.75E-01	5.06E+02	8.74E+00
BREOT-N29-30 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	5.98E+04	5.07E+02	1.10E-03	1.37E+04	1.50E+01	1.00E+00	5.50E-03	9.49E+04	4.11E+02	1.75E-01	5.06E+02	1.87E+02
BREOT-S29-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	4.01E+03	3.40E+01	1.10E-03	9.16E+02	1.01E+00	1.00E+00	5.50E-03	6.36E+03	4.11E+02	1.75E-01	5.06E+02	1.26E+01
BREOT-N30-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	3.40E+03	2.88E+01	1.10E-03	7.76E+02	8.54E-01	1.00E+00	5.50E-03	5.39E+03	4.11E+02	1.75E-01	5.06E+02	1.06E+01
BREOT-S30-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	5.28E+03	4.47E+01	1.10E-03	1.21E+03	1.33E+00	1.00E+00	5.50E-03	8.37E+03	4.11E+02	1.75E-01	5.06E+02	1.65E+01
BREOT-N31-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	2.57E+03	2.17E+01	1.10E-03	5.86E+02	6.45E-01	1.00E+00	5.50E-03	4.07E+03	4.11E+02	1.75E-01	5.06E+02	8.04E+00
BREOT-S31-25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	1.81E+03	1.53E+01	1.10E-03	4.13E+02	4.54E-01	1.00E+00	5.50E-03	2.86E+03	4.11E+02	1.75E-01	5.06E+02	5.66E+00
BREOT-S31-5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	4.88E+03	4.13E+01	1.10E-03	1.11E+03	1.23E+00	1.00E+00	5.50E-03	7.73E+03	4.11E+02	1.75E-01	5.06E+02	1.53E+01
BREOT-N32-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	4.65E+03	3.94E+01	1.10E-03	1.06E+03	1.17E+00	1.00E+00	5.50E-03	7.38E+03	4.11E+02	1.75E-01	5.06E+02	1.46E+01

TABLE C-2F: ZINC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

Site Area (hectares) 18.41

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Masked Shrew (Omnivorous Mammal - Terrestrial, Wetland)																							
BREOT-S32-6 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	9.06E+02	7.67E+00	1.10E-03	2.07E+02	2.28E-01	1.00E+00	5.50E-03	1.44E+03	4.11E+02	1.75E-01	5.06E+02	2.84E+00
BREOT-N33-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	1.56E+03	1.32E+01	1.10E-03	3.56E+02	3.92E-01	1.00E+00	5.50E-03	2.47E+03	4.11E+02	1.75E-01	5.06E+02	4.88E+00
BREOT-S33-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	2.38E+03	2.01E+01	1.10E-03	5.43E+02	5.98E-01	1.00E+00	5.50E-03	3.77E+03	4.11E+02	1.75E-01	5.06E+02	7.45E+00
BREOT-N35-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	2.09E+03	1.77E+01	1.10E-03	4.76E+02	5.25E-01	1.00E+00	5.50E-03	3.31E+03	4.11E+02	1.75E-01	5.06E+02	6.53E+00
BREOT-S35-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	9.66E+03	8.18E+01	1.10E-03	2.21E+03	2.43E+00	1.00E+00	5.50E-03	1.53E+04	4.11E+02	1.75E-01	5.06E+02	3.02E+01
BREOT-N36-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	2.71E+03	2.30E+01	1.10E-03	6.19E+02	6.81E-01	1.00E+00	5.50E-03	4.30E+03	4.11E+02	1.75E-01	5.06E+02	8.49E+00
BREOT-S36-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	2.06E+03	1.75E+01	1.10E-03	4.71E+02	5.18E-01	1.00E+00	5.50E-03	3.27E+03	4.11E+02	1.75E-01	5.06E+02	6.45E+00
BREOT-N37-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	8.88E+02	7.52E+00	1.10E-03	2.03E+02	2.23E-01	1.00E+00	5.50E-03	1.41E+03	4.11E+02	1.75E-01	5.06E+02	2.78E+00
BREOT-S37-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	2.28E+03	1.93E+01	1.10E-03	5.21E+02	5.73E-01	1.00E+00	5.50E-03	3.62E+03	4.11E+02	1.75E-01	5.06E+02	7.14E+00
BREOT-N38-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	9.67E+02	8.19E+00	1.10E-03	2.21E+02	2.43E-01	1.00E+00	5.50E-03	1.53E+03	4.11E+02	1.75E-01	5.06E+02	3.03E+00
BREOT-S38-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	8.40E+03	7.11E+01	1.10E-03	1.92E+03	2.11E+00	1.00E+00	5.50E-03	1.33E+04	4.11E+02	1.75E-01	5.06E+02	2.63E+01
BREOT-N39-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	4.79E+03	4.06E+01	1.10E-03	1.09E+03	1.21E+00	1.00E+00	5.50E-03	7.60E+03	4.11E+02	1.75E-01	5.06E+02	1.50E+01
BREOT-S39-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	5.83E+03	4.94E+01	1.10E-03	1.33E+03	1.46E+00	1.00E+00	5.50E-03	9.24E+03	4.11E+02	1.75E-01	5.06E+02	1.82E+01
BREOT-N40-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	5.94E+03	5.03E+01	1.10E-03	1.36E+03	1.49E+00	1.00E+00	5.50E-03	9.42E+03	4.11E+02	1.75E-01	5.06E+02	1.86E+01
BREOT-S40-14 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	6.23E+03	5.28E+01	1.10E-03	1.42E+03	1.57E+00	1.00E+00	5.50E-03	9.88E+03	4.11E+02	1.75E-01	5.06E+02	1.95E+01
BREOT-N41-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	4.53E+03	3.84E+01	1.10E-03	1.03E+03	1.14E+00	1.00E+00	5.50E-03	7.18E+03	4.11E+02	1.75E-01	5.06E+02	1.42E+01
BREOT-S41-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	5.70E+03	4.83E+01	1.10E-03	1.30E+03	1.43E+00	1.00E+00	5.50E-03	9.04E+03	4.11E+02	1.75E-01	5.06E+02	1.79E+01
BREOT-N42-35 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	9.01E+02	7.63E+00	1.10E-03	2.06E+02	2.27E-01	1.00E+00	5.50E-03	1.43E+03	4.11E+02	1.75E-01	5.06E+02	2.82E+00
BREOT-S42-25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	1.42E+03	1.21E+01	1.10E-03	3.25E+02	3.58E-01	1.00E+00	5.50E-03	2.26E+03	4.11E+02	1.75E-01	5.06E+02	4.46E+00
BREOT-N43-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	1.13E+04	9.61E+01	1.10E-03	2.59E+03	2.85E+00	1.00E+00	5.50E-03	1.80E+04	4.11E+02	1.75E-01	5.06E+02	3.55E+01
BREOT-S43-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	2.09E+03	1.77E+01	1.10E-03	4.77E+02	5.25E-01	1.00E+00	5.50E-03	3.31E+03	4.11E+02	1.75E-01	5.06E+02	6.54E+00
BREOT-N44-30 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	2.11E+03	1.79E+01	1.10E-03	4.82E+02	5.31E-01	1.00E+00	5.50E-03	3.35E+03	4.11E+02	1.75E-01	5.06E+02	6.61E+00
BREOT-S44-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	2.93E+03	2.48E+01	1.10E-03	6.70E+02	7.37E-01	1.00E+00	5.50E-03	4.65E+03	4.11E+02	1.75E-01	5.06E+02	9.18E+00
BREOT-N45-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	1.04E+03	8.81E+00	1.10E-03	2.38E+02	2.62E-01	1.00E+00	5.50E-03	1.65E+03	4.11E+02	1.75E-01	5.06E+02	3.26E+00
BREOT-N43-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	1.13E+04	9.61E+01	1.10E-03	2.59E+03	2.85E+00	1.00E+00	5.50E-03	1.80E+04	4.11E+02	1.75E-01	5.06E+02	3.55E+01
BREOT-S45-6 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	1.66E+03	1.41E+01	1.10E-03	3.79E+02	4.17E-01	1.00E+00	5.50E-03	2.63E+03	4.11E+02	1.75E-01	5.06E+02	5.20E+00
BREOT-N46-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	5.59E+02	4.73E+00	1.10E-03	1.28E+02	1.40E-01	1.00E+00	5.50E-03	8.86E+02	4.11E+02	1.75E-01	5.06E+02	1.75E+00
BREOT-S46-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	1.61E+03	1.37E+01	1.10E-03	3.68E+02	4.05E-01	1.00E+00	5.50E-03	2.56E+03	4.11E+02	1.75E-01	5.06E+02	5.05E+00
BREOT-S46-40 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	2.42E+03	2.05E+01	1.10E-03	5.52E+02	6.07E-01	1.00E+00	5.50E-03	3.83E+03	4.11E+02	1.75E-01	5.06E+02	7.57E+00
BREOT-N47-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	1.10E+03	9.34E+00	1.10E-03	2.52E+02	2.77E-01	1.00E+00	5.50E-03	1.75E+03	4.11E+02	1.75E-01	5.06E+02	3.45E+00
BREOT-S47-999 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	1.75E+03	1.48E+01	1.10E-03	4.00E+02	4.41E-01	1.00E+00	5.50E-03	2.78E+03	4.11E+02	1.75E-01	5.06E+02	5.49E+00
BREOT-S48-12.5 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S49-2.5 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S50-12.5 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S50-25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N52-60 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	1.84E+03	1.56E+01	1.10E-03	4.20E+02	4.62E-01	1.00E+00	5.50E-03	2.91E+03	4.11E+02	1.75E-01	5.06E+02	5.76E+00
BREOT-S52-12.5 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S53-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	4.16E+02	3.52E+00	1.10E-03	9.49E+01	1.04E-01	1.00E+00	5.50E-03	6.59E+02	4.11E+02	1.75E-01	5.06E+02	1.30E+00
BREOT-S54-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	4.63E+02	3.92E+00	1.10E-03	1.06E+02	1.16E-01	1.00E+00	5.50E-03	7.34E+02	4.11E+02	1.75E-01	5.06E+02	1.45E+00
BREOT-N55-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	1.05E+04	8.88E+01	1.10E-03	2.39E+03	2.64E+00	1.00E+00	5.50E-03	1.66E+04	4.11E+02	1.75E-01	5.06E+02	3.28E+01
BREOT-S55-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	9.20E+02	7.79E+00	1.10E-03	2.10E+02	2.31E-01	1.00E+00	5.50E-03	1.46E+03	4.11E+02	1.75E-01	5.06E+02	2.88E+00
BREOT-N56-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	3.02E+03	2.56E+01	1.10E-03	6.90E+02	7.59E-01	1.00E+00	5.50E-03	4.79E+03	4.11E+02	1.75E-01	5.06E+02	9.46E+00
BREOT-S56-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	1.53E+03	1.30E+01	1.10E-03	3.49E+02	3.85E-01	1.00E+00	5.50E-03	2.43E+03	4.11E+02	1.75E-01	5.06E+02	4.79E+00
BREOT-N57-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	1.28E+03	1.08E+01	1.10E-03	2.91E+02	3.21E-01	1.00E+00	5.50E-03	2.02E+03	4.11E+02	1.75E-01	5.06E+02	4.00E+00
BREOT-S57-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	1.27E+03	1.07E+01	1.10E-03	2.89E+02	3.19E-01	1.00E+00	5.50E-03	2.01E+03	4.11E+02	1.75E-01	5.06E+02	3.97E+00
BREOT-N58-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	1.44E+03	1.22E+01	1.10E-03	3.29E+02	3.62E-01	1.00E+00	5.50E-03	2.28E+03	4.11E+02	1.75E-01	5.06E+02	4.51E+00
BREOT-S58-12 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	3.32E+03	2.81E+01	1.10E-03	7.58E+02	8.34E-01	1.00E+00	5.50E-03	5.26E+03	4.11E+02	1.75E-01	5.06E+02	1.04E+01
BREOT-N59-18 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	9.83E+02	8.32E+00	1.10E-03	2.24E+02	2.47E-01	1.00E+00	5.50E-03	1.56E+03	4.11E+02	1.75E-01	5.06E+02	3.08E+00
BREOT-N60-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	1.38E+03	1.17E+01	1.10E-03	3.16E+02	3.47E-01	1.00E+00	5.50E-03	2.19E+03	4.11E+02	1.75E-01	5.06E+02	4.33E+00
BREOT-S60-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	2.59E+03	2.19E+01	1.10E-03	5.91E+02	6.51E-01	1.00E+00	5.50E-03	4.11E+03	4.11E+02	1.75E-01	5.06E+02	8.11E+00
BREOT-S61-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	1.02E+04	8.68E+01	1.10E-03	2.34E+03	2.58E+00	1.00E+00	5.50E-03	1.62E+04	4.11E+02	1.75E-01	5.06E+02	3.21E+01
BREOT-N62-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	5.30E+02	4.49E+00	1.10E-03	1.21E+02	1.33E-01	1.00E+00	5.50E-03	8.41E+02	4.11E+02	1.75E-01	5.06E+02	1.66E+00
BREOT-S62-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	9.89E+03	8.38E+01	1.10E-03	2.26E+03	2.49E+00	1.00E+00	5.50E-03	1.57E+04	4.11E+02	1.75E-01	5.06E+02	3.10E+01
BREOT-S63-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	1.29E+03	1.09E+01	1.10E-03	2.94E+02	3.24E-01	1.00E+00	5.50E-03	2.04E+03	4.11E+02	1.75E-01	5.06E+02	4.03E+00
BREOT-N64-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	1.25E+03	1.06E+01	1.10E-03	2.86E+02	3.15E-01	1.00E+00	5.50E-03	1.99E+03	4.11E+02	1.75E-01	5.06E+02	3.93E+00

TABLE C-2F: ZINC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

Site Area (hectares) 18.41

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Masked Shrew (Omnivorous Mammal - Terrestrial, Wetland)																							
BREOT-N64-20 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	9.39E+02	7.95E+00	1.10E-03	2.14E+02	2.36E-01	1.00E+00	5.50E-03	1.49E+03	4.11E+02	1.75E-01	5.06E+02	2.94E+00
BREOT-S64-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	8.48E+02	7.18E+00	1.10E-03	1.94E+02	2.13E-01	1.00E+00	5.50E-03	1.34E+03	4.11E+02	1.75E-01	5.06E+02	2.65E+00
BREOT-N65-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	1.37E+03	1.16E+01	1.10E-03	3.12E+02	3.44E-01	1.00E+00	5.50E-03	2.17E+03	4.11E+02	1.75E-01	5.06E+02	4.28E+00
BREOT-S65-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	9.99E+02	8.46E+00	1.10E-03	2.28E+02	2.51E-01	1.00E+00	5.50E-03	1.58E+03	4.11E+02	1.75E-01	5.06E+02	3.13E+00
BREOT-N66-5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	8.32E+02	7.04E+00	1.10E-03	1.90E+02	2.09E-01	1.00E+00	5.50E-03	1.32E+03	4.11E+02	1.75E-01	5.06E+02	2.60E+00
BREOT-S66-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	1.01E+03	8.53E+00	1.10E-03	2.30E+02	2.53E-01	1.00E+00	5.50E-03	1.60E+03	4.11E+02	1.75E-01	5.06E+02	3.16E+00
BREOT-N67-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	1.36E+04	1.15E+02	1.10E-03	3.10E+03	3.41E+00	1.00E+00	5.50E-03	2.15E+04	4.11E+02	1.75E-01	5.06E+02	4.25E+01
BREOT-S67-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	5.89E+02	4.99E+00	1.10E-03	1.34E+02	1.48E-01	1.00E+00	5.50E-03	9.34E+02	4.11E+02	1.75E-01	5.06E+02	1.84E+00
At Edge of Tailings																						**Maximum HQ (Inside Tailings)**	**2.72E+02**
BREOT-S0-0 (06)	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	2.00E+03	1.69E+01	1.10E-03	4.56E+02	5.02E-01	1.00E+00	5.50E-03	3.17E+03	4.11E+02	1.75E-01	5.06E+02	6.25E+00
BREOT-S1-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	1.15E+03	9.77E+00	1.10E-03	2.63E+02	2.90E-01	1.00E+00	5.50E-03	1.83E+03	4.11E+02	1.75E-01	5.06E+02	3.61E+00
BREOT-S2-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	1.27E+03	1.08E+01	1.10E-03	2.90E+02	3.20E-01	1.00E+00	5.50E-03	2.02E+03	4.11E+02	1.75E-01	5.06E+02	3.98E+00
BREOT-S3-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	7.24E+03	6.13E+01	1.10E-03	1.65E+03	1.82E+00	1.00E+00	5.50E-03	1.15E+04	4.11E+02	1.75E-01	5.06E+02	2.27E+01
BREOT-S4-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	8.70E+03	7.37E+01	1.10E-03	1.99E+03	2.19E+00	1.00E+00	5.50E-03	1.38E+04	4.11E+02	1.75E-01	5.06E+02	2.73E+01
BREOT-S6-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	4.56E+03	3.87E+01	1.10E-03	1.04E+03	1.15E+00	1.00E+00	5.50E-03	7.24E+03	4.11E+02	1.75E-01	5.06E+02	1.43E+01
BREOT-S7-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	2.10E+03	1.78E+01	1.10E-03	4.79E+02	5.28E-01	1.00E+00	5.50E-03	3.33E+03	4.11E+02	1.75E-01	5.06E+02	6.57E+00
BREOT-S8-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	1.41E+03	1.19E+01	1.10E-03	3.21E+02	3.54E-01	1.00E+00	5.50E-03	2.23E+03	4.11E+02	1.75E-01	5.06E+02	4.41E+00
BREOT-S9-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	9.11E+02	7.71E+00	1.10E-03	2.08E+02	2.29E-01	1.00E+00	5.50E-03	1.44E+03	4.11E+02	1.75E-01	5.06E+02	2.85E+00
BREOT-N10-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	8.03E+04	6.80E+02	1.10E-03	1.83E+04	2.02E+01	1.00E+00	5.50E-03	1.27E+05	4.11E+02	1.75E-01	5.06E+02	2.51E+02
BREOT-N11-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	2.78E+03	2.36E+01	1.10E-03	6.35E+02	7.00E-01	1.00E+00	5.50E-03	4.41E+03	4.11E+02	1.75E-01	5.06E+02	8.71E+00
BREOT-S11-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	5.69E+03	4.82E+01	1.10E-03	1.30E+03	1.43E+00	1.00E+00	5.50E-03	9.03E+03	4.11E+02	1.75E-01	5.06E+02	1.78E+01
BREOT-N12-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	1.41E+03	1.19E+01	1.10E-03	3.21E+02	3.53E-01	1.00E+00	5.50E-03	2.23E+03	4.11E+02	1.75E-01	5.06E+02	4.40E+00
BREOT-S12-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	7.47E+03	6.33E+01	1.10E-03	1.71E+03	1.88E+00	1.00E+00	5.50E-03	1.18E+04	4.11E+02	1.75E-01	5.06E+02	2.34E+01
BREOT-N13-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	4.51E+04	3.82E+02	1.10E-03	1.03E+04	1.13E+01	1.00E+00	5.50E-03	7.15E+04	4.11E+02	1.75E-01	5.06E+02	1.41E+02
BREOT-S13-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	1.25E+04	1.06E+02	1.10E-03	2.86E+03	3.15E+00	1.00E+00	5.50E-03	1.98E+04	4.11E+02	1.75E-01	5.06E+02	3.92E+01
BREOT-N14-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	1.52E+03	1.29E+01	1.10E-03	3.48E+02	3.83E-01	1.00E+00	5.50E-03	2.41E+03	4.11E+02	1.75E-01	5.06E+02	4.77E+00
BREOT-S14-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	7.00E+04	5.93E+02	1.10E-03	1.60E+04	1.76E+01	1.00E+00	5.50E-03	1.11E+05	4.11E+02	1.75E-01	5.06E+02	2.19E+02
BREOT-N15-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	4.31E+03	3.65E+01	1.10E-03	9.84E+02	1.08E+00	1.00E+00	5.50E-03	6.83E+03	4.11E+02	1.75E-01	5.06E+02	1.35E+01
BREOT-N16-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	1.65E+03	1.40E+01	1.10E-03	3.77E+02	4.15E-01	1.00E+00	5.50E-03	2.62E+03	4.11E+02	1.75E-01	5.06E+02	5.16E+00
BREOT-S16-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	1.07E+03	9.04E+00	1.10E-03	2.44E+02	2.68E-01	1.00E+00	5.50E-03	1.69E+03	4.11E+02	1.75E-01	5.06E+02	3.34E+00
BREOT-N17-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	1.90E+03	1.61E+01	1.10E-03	4.34E+02	4.78E-01	1.00E+00	5.50E-03	3.02E+03	4.11E+02	1.75E-01	5.06E+02	5.96E+00
BREOT-S17-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	1.84E+03	1.56E+01	1.10E-03	4.21E+02	4.63E-01	1.00E+00	5.50E-03	2.92E+03	4.11E+02	1.75E-01	5.06E+02	5.77E+00
BREOT-N18-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	2.29E+03	1.94E+01	1.10E-03	5.22E+02	5.75E-01	1.00E+00	5.50E-03	3.63E+03	4.11E+02	1.75E-01	5.06E+02	7.16E+00
BREOT-S18-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	3.17E+03	2.68E+01	1.10E-03	7.23E+02	7.97E-01	1.00E+00	5.50E-03	5.02E+03	4.11E+02	1.75E-01	5.06E+02	9.92E+00
BREOT-N19-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	6.17E+03	5.23E+01	1.10E-03	1.41E+03	1.55E+00	1.00E+00	5.50E-03	9.79E+03	4.11E+02	1.75E-01	5.06E+02	1.93E+01
BREOT-S19-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	1.19E+03	1.01E+01	1.10E-03	2.73E+02	3.00E-01	1.00E+00	5.50E-03	1.89E+03	4.11E+02	1.75E-01	5.06E+02	3.74E+00
BREOT-N20-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	9.82E+03	8.32E+01	1.10E-03	2.24E+03	2.47E+00	1.00E+00	5.50E-03	1.56E+04	4.11E+02	1.75E-01	5.06E+02	3.08E+01
BREOT-S20-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	8.37E+02	7.09E+00	1.10E-03	1.91E+02	2.11E-01	1.00E+00	5.50E-03	1.33E+03	4.11E+02	1.75E-01	5.06E+02	2.62E+00
BREOT-N21-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	5.44E+03	4.61E+01	1.10E-03	1.24E+03	1.37E+00	1.00E+00	5.50E-03	8.63E+03	4.11E+02	1.75E-01	5.06E+02	1.70E+01
BREOT-S21-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	1.69E+03	1.43E+01	1.10E-03	3.86E+02	4.25E-01	1.00E+00	5.50E-03	2.68E+03	4.11E+02	1.75E-01	5.06E+02	5.29E+00
BREOT-N22-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	4.17E+03	3.53E+01	1.10E-03	9.52E+02	1.05E+00	1.00E+00	5.50E-03	6.61E+03	4.11E+02	1.75E-01	5.06E+02	1.31E+01
BREOT-S22-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	2.42E+03	2.05E+01	1.10E-03	5.52E+02	6.08E-01	1.00E+00	5.50E-03	3.84E+03	4.11E+02	1.75E-01	5.06E+02	7.57E+00
BREOT-N23-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	5.22E+03	4.42E+01	1.10E-03	1.19E+03	1.31E+00	1.00E+00	5.50E-03	8.28E+03	4.11E+02	1.75E-01	5.06E+02	1.64E+01
BREOT-S23-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	3.46E+03	2.93E+01	1.10E-03	7.89E+02	8.69E-01	1.00E+00	5.50E-03	5.48E+03	4.11E+02	1.75E-01	5.06E+02	1.08E+01
BREOT-N24-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	8.43E+03	7.14E+01	1.10E-03	1.93E+03	2.12E+00	1.00E+00	5.50E-03	1.34E+04	4.11E+02	1.75E-01	5.06E+02	2.64E+01
BREOT-S24-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	4.60E+04	3.89E+02	1.10E-03	1.05E+04	1.16E+01	1.00E+00	5.50E-03	7.29E+04	4.11E+02	1.75E-01	5.06E+02	1.44E+02
BREOT-N25-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	6.19E+03	5.24E+01	1.10E-03	1.41E+03	1.56E+00	1.00E+00	5.50E-03	9.81E+03	4.11E+02	1.75E-01	5.06E+02	1.94E+01
BREOT-S25-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	1.13E+04	9.58E+01	1.10E-03	2.58E+03	2.84E+00	1.00E+00	5.50E-03	1.79E+04	4.11E+02	1.75E-01	5.06E+02	3.54E+01
BREOT-N26-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	9.30E+03	7.88E+01	1.10E-03	2.12E+03	2.34E+00	1.00E+00	5.50E-03	1.47E+04	4.11E+02	1.75E-01	5.06E+02	2.91E+01
BREOT-S26-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	3.81E+03	3.23E+01	1.10E-03	8.70E+02	9.58E-01	1.00E+00	5.50E-03	6.04E+03	4.11E+02	1.75E-01	5.06E+02	1.19E+01
BREOT-N27-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	4.94E+04	4.19E+02	1.10E-03	1.13E+04	1.24E+01	1.00E+00	5.50E-03	7.84E+04	4.11E+02	1.75E-01	5.06E+02	1.55E+02
BREOT-S27-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	9.40E+02	7.96E+00	1.10E-03	2.15E+02	2.36E-01	1.00E+00	5.50E-03	1.49E+03	4.11E+02	1.75E-01	5.06E+02	2.94E+00
BREOT-N28-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	3.20E+03	2.71E+01	1.10E-03	7.30E+02	8.04E-01	1.00E+00	5.50E-03	5.07E+03	4.11E+02	1.75E-01	5.06E+02	1.00E+01
BREOT-S28-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	1.05E+03	8.88E+00	1.10E-03	2.39E+02	2.64E-01	1.00E+00	5.50E-03	1.66E+03	4.11E+02	1.75E-01	5.06E+02	3.28E+00
BREOT-S29-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	1.01E+03	8.54E+00	1.10E-03	2.30E+02	2.54E-01	1.00E+00	5.50E-03	1.60E+03	4.11E+02	1.75E-01	5.06E+02	3.16E+00

TABLE C-2F: ZINC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 18.41

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Masked Shrew (Omnivorous Mammal - Terrestrial, Wetland)																							
BREOT-N30-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	2.28E+04	1.93E+02	1.10E-03	5.21E+03	5.74E+00	1.00E+00	5.50E-03	3.62E+04	4.11E+02	1.75E-01	5.06E+02	7.14E+01
BREOT-S30-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	3.78E+02	3.20E+00	1.10E-03	8.63E+01	9.50E-02	1.00E+00	5.50E-03	5.99E+02	4.11E+02	1.75E-01	5.06E+02	1.18E+00
BREOT-N31-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	2.86E+04	2.42E+02	1.10E-03	6.52E+03	7.18E+00	1.00E+00	5.50E-03	4.53E+04	4.11E+02	1.75E-01	5.06E+02	8.95E+01
BREOT-S31-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	1.77E+03	1.50E+01	1.10E-03	4.05E+02	4.46E-01	1.00E+00	5.50E-03	2.81E+03	4.11E+02	1.75E-01	5.06E+02	5.56E+00
BREOT-N32-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	1.14E+04	9.64E+01	1.10E-03	2.60E+03	2.86E+00	1.00E+00	5.50E-03	1.80E+04	4.11E+02	1.75E-01	5.06E+02	3.56E+01
BREOT-S32-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	1.88E+03	1.59E+01	1.10E-03	4.28E+02	4.71E-01	1.00E+00	5.50E-03	2.97E+03	4.11E+02	1.75E-01	5.06E+02	5.87E+00
BREOT-N33-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	6.00E+02	5.08E+00	1.10E-03	1.37E+02	1.51E-01	1.00E+00	5.50E-03	9.51E+02	4.11E+02	1.75E-01	5.06E+02	1.88E+00
BREOT-S33-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	3.05E+03	2.59E+01	1.10E-03	6.97E+02	7.68E-01	1.00E+00	5.50E-03	4.84E+03	4.11E+02	1.75E-01	5.06E+02	9.56E+00
BREOT-N34-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	1.52E+03	1.29E+01	1.10E-03	3.47E+02	3.82E-01	1.00E+00	5.50E-03	2.41E+03	4.11E+02	1.75E-01	5.06E+02	4.76E+00
BREOT-S34-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	1.34E+04	1.14E+02	1.10E-03	3.06E+03	3.37E+00	1.00E+00	5.50E-03	2.12E+04	4.11E+02	1.75E-01	5.06E+02	4.20E+01
BREOT-N35-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	5.41E+02	4.58E+00	1.10E-03	1.23E+02	1.36E-01	1.00E+00	5.50E-03	8.57E+02	4.11E+02	1.75E-01	5.06E+02	1.69E+00
BREOT-S35-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	1.94E+03	1.65E+01	1.10E-03	4.44E+02	4.89E-01	1.00E+00	5.50E-03	3.08E+03	4.11E+02	1.75E-01	5.06E+02	6.09E+00
BREOT-N36-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	1.30E+04	1.10E+02	1.10E-03	2.97E+03	3.28E+00	1.00E+00	5.50E-03	2.07E+04	4.11E+02	1.75E-01	5.06E+02	4.08E+01
BREOT-S36-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	1.15E+04	9.72E+01	1.10E-03	2.62E+03	2.88E+00	1.00E+00	5.50E-03	1.82E+04	4.11E+02	1.75E-01	5.06E+02	3.59E+01
BREOT-N37-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	1.82E+03	1.54E+01	1.10E-03	4.14E+02	4.56E-01	1.00E+00	5.50E-03	2.88E+03	4.11E+02	1.75E-01	5.06E+02	5.68E+00
BREOT-S37-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	1.30E+04	1.10E+02	1.10E-03	2.96E+03	3.26E+00	1.00E+00	5.50E-03	2.05E+04	4.11E+02	1.75E-01	5.06E+02	4.06E+01
BREOT-N38-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	5.49E+02	4.65E+00	1.10E-03	1.25E+02	1.38E-01	1.00E+00	5.50E-03	8.71E+02	4.11E+02	1.75E-01	5.06E+02	1.72E+00
BREOT-S38-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	4.95E+03	4.19E+01	1.10E-03	1.13E+03	1.24E+00	1.00E+00	5.50E-03	7.85E+03	4.11E+02	1.75E-01	5.06E+02	1.55E+01
BREOT-N39-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	9.32E+02	7.90E+00	1.10E-03	2.13E+02	2.34E-01	1.00E+00	5.50E-03	1.48E+03	4.11E+02	1.75E-01	5.06E+02	2.92E+00
BREOT-N40-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	7.41E+02	6.27E+00	1.10E-03	1.69E+02	1.86E-01	1.00E+00	5.50E-03	1.17E+03	4.11E+02	1.75E-01	5.06E+02	2.32E+00
BREOT-S40-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	9.31E+03	7.88E+01	1.10E-03	2.13E+03	2.34E+00	1.00E+00	5.50E-03	1.48E+04	4.11E+02	1.75E-01	5.06E+02	2.91E+01
BREOT-N41-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	4.24E+02	3.59E+00	1.10E-03	9.68E+01	1.07E-01	1.00E+00	5.50E-03	6.72E+02	4.11E+02	1.75E-01	5.06E+02	1.33E+00
BREOT-S41-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	1.01E+04	8.52E+01	1.10E-03	2.30E+03	2.53E+00	1.00E+00	5.50E-03	1.60E+04	4.11E+02	1.75E-01	5.06E+02	3.15E+01
BREOT-N42-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S42-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	1.91E+04	1.62E+02	1.10E-03	4.36E+03	4.80E+00	1.00E+00	5.50E-03	3.03E+04	4.11E+02	1.75E-01	5.06E+02	5.98E+01
BREOT-N43-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	8.84E+02	7.48E+00	1.10E-03	2.02E+02	2.22E-01	1.00E+00	5.50E-03	1.40E+03	4.11E+02	1.75E-01	5.06E+02	2.77E+00
BREOT-S43-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	1.79E+03	1.52E+01	1.10E-03	4.09E+02	4.50E-01	1.00E+00	5.50E-03	2.84E+03	4.11E+02	1.75E-01	5.06E+02	5.60E+00
BREOT-N44-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	1.84E+03	1.56E+01	1.10E-03	4.19E+02	4.62E-01	1.00E+00	5.50E-03	2.91E+03	4.11E+02	1.75E-01	5.06E+02	5.75E+00
BREOT-S44-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	1.54E+03	1.30E+01	1.10E-03	3.51E+02	3.86E-01	1.00E+00	5.50E-03	2.43E+03	4.11E+02	1.75E-01	5.06E+02	4.81E+00
BREOT-N45-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	1.48E+03	1.26E+01	1.10E-03	3.39E+02	3.73E-01	1.00E+00	5.50E-03	2.35E+03	4.11E+02	1.75E-01	5.06E+02	4.64E+00
BREOT-S45-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	1.75E+03	1.48E+01	1.10E-03	3.99E+02	4.40E-01	1.00E+00	5.50E-03	2.77E+03	4.11E+02	1.75E-01	5.06E+02	5.48E+00
BREOT-N46-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	1.95E+03	1.65E+01	1.10E-03	4.44E+02	4.89E-01	1.00E+00	5.50E-03	3.09E+03	4.11E+02	1.75E-01	5.06E+02	6.09E+00
BREOT-S46-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	7.39E+02	6.26E+00	1.10E-03	1.69E+02	1.86E-01	1.00E+00	5.50E-03	1.17E+03	4.11E+02	1.75E-01	5.06E+02	2.31E+00
BREOT-N47-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	3.17E+03	2.68E+01	1.10E-03	7.23E+02	7.96E-01	1.00E+00	5.50E-03	5.02E+03	4.11E+02	1.75E-01	5.06E+02	9.92E+00
BREOT-S47-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	5.01E+02	4.25E+00	1.10E-03	1.14E+02	1.26E-01	1.00E+00	5.50E-03	7.95E+02	4.11E+02	1.75E-01	5.06E+02	1.57E+00
BREOT-N48-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	1.24E+03	1.05E+01	1.10E-03	2.83E+02	3.11E-01	1.00E+00	5.50E-03	1.96E+03	4.11E+02	1.75E-01	5.06E+02	3.88E+00
BREOT-S48-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N49-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	4.65E+03	3.94E+01	1.10E-03	1.06E+03	1.17E+00	1.00E+00	5.50E-03	7.37E+03	4.11E+02	1.75E-01	5.06E+02	1.46E+01
BREOT-S49-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S50-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N51-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	1.47E+03	1.25E+01	1.10E-03	3.36E+02	3.70E-01	1.00E+00	5.50E-03	2.33E+03	4.11E+02	1.75E-01	5.06E+02	4.61E+00
BREOT-S51-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	8.35E+02	7.07E+00	1.10E-03	1.91E+02	2.10E-01	1.00E+00	5.50E-03	1.32E+03	4.11E+02	1.75E-01	5.06E+02	2.61E+00
BREOT-N52-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S52-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N53-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	1.15E+03	9.70E+00	1.10E-03	2.61E+02	2.88E-01	1.00E+00	5.50E-03	1.82E+03	4.11E+02	1.75E-01	5.06E+02	3.59E+00
BREOT-S53-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N54-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	1.31E+03	1.11E+01	1.10E-03	2.99E+02	3.29E-01	1.00E+00	5.50E-03	2.07E+03	4.11E+02	1.75E-01	5.06E+02	4.10E+00
BREOT-S54-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N55-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	1.00E+03	8.51E+00	1.10E-03	2.29E+02	2.53E-01	1.00E+00	5.50E-03	1.59E+03	4.11E+02	1.75E-01	5.06E+02	3.15E+00
BREOT-S55-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N56-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	1.09E+03	9.26E+00	1.10E-03	2.50E+02	2.75E-01	1.00E+00	5.50E-03	1.73E+03	4.11E+02	1.75E-01	5.06E+02	3.42E+00
BREOT-N57-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	7.81E+02	6.62E+00	1.10E-03	1.78E+02	1.96E-01	1.00E+00	5.50E-03	1.24E+03	4.11E+02	1.75E-01	5.06E+02	2.45E+00
BREOT-S57-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	1.62E+03	1.37E+01	1.10E-03	3.69E+02	4.06E-01	1.00E+00	5.50E-03	2.56E+03	4.11E+02	1.75E-01	5.06E+02	5.06E+00
BREOT-N58-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	9.52E+02	8.06E+00	1.10E-03	2.17E+02	2.39E-01	1.00E+00	5.50E-03	1.51E+03	4.11E+02	1.75E-01	5.06E+02	2.98E+00
BREOT-S58-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	1.52E+03	1.29E+01	1.10E-03	3.46E+02	3.81E-01	1.00E+00	5.50E-03	2.41E+03	4.11E+02	1.75E-01	5.06E+02	4.75E+00

TABLE C-2F: ZINC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

Site Area (hectares) 18.41

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Masked Shrew (Omnivorous Mammal - Terrestrial, Wetland)																							
BREOT-N59-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	1.07E+03	9.06E+00	1.10E-03	2.44E+02	2.69E-01	1.00E+00	5.50E-03	1.70E+03	4.11E+02	1.75E-01	5.06E+02	3.35E+00
BREOT-N60-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	9.93E+02	8.41E+00	1.10E-03	2.27E+02	2.50E-01	1.00E+00	5.50E-03	1.57E+03	4.11E+02	1.75E-01	5.06E+02	3.11E+00
BREOT-S60-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	2.68E+03	2.27E+01	1.10E-03	6.12E+02	6.74E-01	1.00E+00	5.50E-03	4.25E+03	4.11E+02	1.75E-01	5.06E+02	8.40E+00
BREOT-S61-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N62-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	1.10E+03	9.34E+00	1.10E-03	2.52E+02	2.77E-01	1.00E+00	5.50E-03	1.75E+03	4.11E+02	1.75E-01	5.06E+02	3.45E+00
BREOT-S62-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	4.17E+02	3.53E+00	1.10E-03	9.52E+01	1.05E-01	1.00E+00	5.50E-03	6.61E+02	4.11E+02	1.75E-01	5.06E+02	1.31E+00
BREOT-N63-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	2.03E+03	1.72E+01	1.10E-03	4.65E+02	5.12E-01	1.00E+00	5.50E-03	3.23E+03	4.11E+02	1.75E-01	5.06E+02	6.37E+00
BREOT-S63-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	1.45E+03	1.23E+01	1.10E-03	3.31E+02	3.64E-01	1.00E+00	5.50E-03	2.30E+03	4.11E+02	1.75E-01	5.06E+02	4.54E+00
BREOT-N64-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	1.28E+03	1.09E+01	1.10E-03	2.93E+02	3.22E-01	1.00E+00	5.50E-03	2.03E+03	4.11E+02	1.75E-01	5.06E+02	4.01E+00
BREOT-S64-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N66-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	1.13E+03	9.53E+00	1.10E-03	2.57E+02	2.83E-01	1.00E+00	5.50E-03	1.78E+03	4.11E+02	1.75E-01	5.06E+02	3.52E+00
BREOT-S66-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	1.67E+03	1.41E+01	1.10E-03	3.81E+02	4.20E-01	1.00E+00	5.50E-03	2.65E+03	4.11E+02	1.75E-01	5.06E+02	5.23E+00
BREOT-N67-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	1.48E+04	1.25E+02	1.10E-03	3.38E+03	3.72E+00	1.00E+00	5.50E-03	2.35E+04	4.11E+02	1.75E-01	5.06E+02	4.63E+01
BREOT-S67-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	8.15E+02	6.90E+00	1.10E-03	1.86E+02	2.05E-01	1.00E+00	5.50E-03	1.29E+03	4.11E+02	1.75E-01	5.06E+02	2.55E+00
Outside Tailings																						**Maximum HQ (At Edge of Tailings)**	**2.51E+02**
BREOT-S0+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	1.53E+03	1.30E+01	1.10E-03	3.49E+02	3.84E-01	1.00E+00	5.50E-03	2.42E+03	4.11E+02	1.75E-01	5.06E+02	4.79E+00
BREOT-S1+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	1.96E+03	1.66E+01	1.10E-03	4.48E+02	4.94E-01	1.00E+00	5.50E-03	3.11E+03	4.11E+02	1.75E-01	5.06E+02	6.15E+00
BREOT-S2+95 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	6.46E+02	5.47E+00	1.10E-03	1.47E+02	1.62E-01	1.00E+00	5.50E-03	1.02E+03	4.11E+02	1.75E-01	5.06E+02	2.02E+00
BREOT-S3+6 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	8.46E+02	7.16E+00	1.10E-03	1.93E+02	2.13E-01	1.00E+00	5.50E-03	1.34E+03	4.11E+02	1.75E-01	5.06E+02	2.65E+00
BREOT-S4+10 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	1.00E+03	8.47E+00	1.10E-03	2.28E+02	2.51E-01	1.00E+00	5.50E-03	1.59E+03	4.11E+02	1.75E-01	5.06E+02	3.13E+00
BREOT-S6+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	1.10E+03	9.30E+00	1.10E-03	2.51E+02	2.76E-01	1.00E+00	5.50E-03	1.74E+03	4.11E+02	1.75E-01	5.06E+02	3.44E+00
BREOT-S8+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	1.25E+03	1.06E+01	1.10E-03	2.86E+02	3.15E-01	1.00E+00	5.50E-03	1.98E+03	4.11E+02	1.75E-01	5.06E+02	3.92E+00
BREOT-N10+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	1.00E+03	8.50E+00	1.10E-03	2.29E+02	2.52E-01	1.00E+00	5.50E-03	1.59E+03	4.11E+02	1.75E-01	5.06E+02	3.14E+00
BREOT-N11+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	8.01E+02	6.78E+00	1.10E-03	1.83E+02	2.01E-01	1.00E+00	5.50E-03	1.27E+03	4.11E+02	1.75E-01	5.06E+02	2.51E+00
BREOT-N12+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	1.16E+03	9.82E+00	1.10E-03	2.65E+02	2.92E-01	1.00E+00	5.50E-03	1.84E+03	4.11E+02	1.75E-01	5.06E+02	3.63E+00
BREOT-S12+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	2.83E+04	2.39E+02	1.10E-03	6.45E+03	7.11E+00	1.00E+00	5.50E-03	4.48E+04	4.11E+02	1.75E-01	5.06E+02	8.85E+01
BREOT-S12+60 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	2.75E+03	2.33E+01	1.10E-03	6.28E+02	6.92E-01	1.00E+00	5.50E-03	4.36E+03	4.11E+02	1.75E-01	5.06E+02	8.62E+00
BREOT-N13+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	1.15E+03	9.77E+00	1.10E-03	2.63E+02	2.90E-01	1.00E+00	5.50E-03	1.83E+03	4.11E+02	1.75E-01	5.06E+02	3.61E+00
BREOT-S13+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	1.26E+04	1.07E+02	1.10E-03	2.89E+03	3.18E+00	1.00E+00	5.50E-03	2.00E+04	4.11E+02	1.75E-01	5.06E+02	3.96E+01
BREOT-S13+65 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	4.16E+03	3.52E+01	1.10E-03	9.50E+02	1.05E+00	1.00E+00	5.50E-03	6.60E+03	4.11E+02	1.75E-01	5.06E+02	1.30E+01
BREOT-N14+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	1.91E+03	1.62E+01	1.10E-03	4.36E+02	4.80E-01	1.00E+00	5.50E-03	3.03E+03	4.11E+02	1.75E-01	5.06E+02	5.98E+00
BREOT-S14+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	1.95E+04	1.65E+02	1.10E-03	4.44E+03	4.89E+00	1.00E+00	5.50E-03	3.09E+04	4.11E+02	1.75E-01	5.06E+02	6.09E+01
BREOT-S14+59 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	1.48E+03	1.25E+01	1.10E-03	3.38E+02	3.72E-01	1.00E+00	5.50E-03	2.35E+03	4.11E+02	1.75E-01	5.06E+02	4.63E+00
BREOT-N15+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	4.20E+04	3.56E+02	1.10E-03	9.59E+03	1.06E+01	1.00E+00	5.50E-03	6.66E+04	4.11E+02	1.75E-01	5.06E+02	1.32E+02
BREOT-N15+50 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	1.32E+03	1.12E+01	1.10E-03	3.01E+02	3.31E-01	1.00E+00	5.50E-03	2.09E+03	4.11E+02	1.75E-01	5.06E+02	4.13E+00
BREOT-S16+20 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	1.69E+04	1.44E+02	1.10E-03	3.87E+03	4.26E+00	1.00E+00	5.50E-03	2.69E+04	4.11E+02	1.75E-01	5.06E+02	5.31E+01
BREOT-S16+75 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	2.00E+03	1.69E+01	1.10E-03	4.56E+02	5.02E-01	1.00E+00	5.50E-03	3.17E+03	4.11E+02	1.75E-01	5.06E+02	6.26E+00
BREOT-N17+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	8.42E+03	7.13E+01	1.10E-03	1.92E+03	2.12E+00	1.00E+00	5.50E-03	1.33E+04	4.11E+02	1.75E-01	5.06E+02	2.64E+01
BREOT-S18+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	8.86E+02	7.51E+00	1.10E-03	2.02E+02	2.23E-01	1.00E+00	5.50E-03	1.41E+03	4.11E+02	1.75E-01	5.06E+02	2.78E+00
BREOT-N19+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	8.76E+02	7.42E+00	1.10E-03	2.00E+02	2.20E-01	1.00E+00	5.50E-03	1.39E+03	4.11E+02	1.75E-01	5.06E+02	2.74E+00
BREOT-S19+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	3.79E+03	3.21E+01	1.10E-03	8.65E+02	9.53E-01	1.00E+00	5.50E-03	6.01E+03	4.11E+02	1.75E-01	5.06E+02	1.19E+01
BREOT-S19+85 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	6.60E+02	5.59E+00	1.10E-03	1.51E+02	1.66E-01	1.00E+00	5.50E-03	1.05E+03	4.11E+02	1.75E-01	5.06E+02	2.07E+00
BREOT-N20+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	1.26E+03	1.06E+01	1.10E-03	2.87E+02	3.16E-01	1.00E+00	5.50E-03	1.99E+03	4.11E+02	1.75E-01	5.06E+02	3.93E+00
BREOT-S20+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	5.07E+03	4.30E+01	1.10E-03	1.16E+03	1.28E+00	1.00E+00	5.50E-03	8.04E+03	4.11E+02	1.75E-01	5.06E+02	1.59E+01
BREOT-S20+75 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	9.55E+02	8.09E+00	1.10E-03	2.18E+02	2.40E-01	1.00E+00	5.50E-03	1.51E+03	4.11E+02	1.75E-01	5.06E+02	2.99E+00
BREOT-N21+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	1.88E+03	1.59E+01	1.10E-03	4.28E+02	4.71E-01	1.00E+00	5.50E-03	2.97E+03	4.11E+02	1.75E-01	5.06E+02	5.87E+00
BREOT-S21+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	2.33E+03	1.97E+01	1.10E-03	5.32E+02	5.86E-01	1.00E+00	5.50E-03	3.70E+03	4.11E+02	1.75E-01	5.06E+02	7.30E+00
BREOT-N22+150 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	8.96E+02	7.59E+00	1.10E-03	2.05E+02	2.25E-01	1.00E+00	5.50E-03	1.42E+03	4.11E+02	1.75E-01	5.06E+02	2.81E+00
BREOT-N22+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	1.31E+04	1.11E+02	1.10E-03	2.99E+03	3.30E+00	1.00E+00	5.50E-03	2.08E+04	4.11E+02	1.75E-01	5.06E+02	4.11E+01
BREOT-S22+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	1.54E+03	1.31E+01	1.10E-03	3.52E+02	3.88E-01	1.00E+00	5.50E-03	2.45E+03	4.11E+02	1.75E-01	5.06E+02	4.83E+00
BREOT-N23+115 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	1.59E+03	1.34E+01	1.10E-03	3.63E+02	3.99E-01	1.00E+00	5.50E-03	2.52E+03	4.11E+02	1.75E-01	5.06E+02	4.97E+00
BREOT-N23+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	3.23E+04	2.74E+02	1.10E-03	7.37E+03	8.12E+00	1.00E+00	5.50E-03	5.12E+04	4.11E+02	1.75E-01	5.06E+02	1.01E+02
BREOT-S23+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	7.72E+03	6.54E+01	1.10E-03	1.76E+03	1.94E+00	1.00E+00	5.50E-03	1.22E+04	4.11E+02	1.75E-01	5.06E+02	2.42E+01
BREOT-S23+37.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	2.04E+03	1.73E+01	1.10E-03	4.66E+02	5.13E-01	1.00E+00	5.50E-03	3.23E+03	4.11E+02	1.75E-01	5.06E+02	6.39E+00
BREOT-N24+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	8.00E+03	6.78E+01	1.10E-03	1.83E+03	2.01E+00	1.00E+00	5.50E-03	1.27E+04	4.11E+02	1.75E-01	5.06E+02	2.51E+01

TABLE C-2F: ZINC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

Site Area (hectares) 18.41

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Masked Shrew (Omnivorous Mammal - Terrestrial, Wetland)																							
BREOT-N24+75 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	1.27E+03	1.08E+01	1.10E-03	2.91E+02	3.20E-01	1.00E+00	5.50E-03	2.02E+03	4.11E+02	1.75E-01	5.06E+02	3.99E+00
BREOT-S24+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	1.87E+03	1.59E+01	1.10E-03	4.27E+02	4.71E-01	1.00E+00	5.50E-03	2.97E+03	4.11E+02	1.75E-01	5.06E+02	5.86E+00
BREOT-N25+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	4.58E+02	3.88E+00	1.10E-03	1.05E+02	1.15E-01	1.00E+00	5.50E-03	7.27E+02	4.11E+02	1.75E-01	5.06E+02	1.44E+00
BREOT-S25+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	1.31E+03	1.11E+01	1.10E-03	2.98E+02	3.29E-01	1.00E+00	5.50E-03	2.07E+03	4.11E+02	1.75E-01	5.06E+02	4.09E+00
BREOT-S25+40 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	1.43E+03	1.21E+01	1.10E-03	3.26E+02	3.59E-01	1.00E+00	5.50E-03	2.27E+03	4.11E+02	1.75E-01	5.06E+02	4.48E+00
BREOT-S26+37 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	1.09E+03	9.21E+00	1.10E-03	2.48E+02	2.74E-01	1.00E+00	5.50E-03	1.73E+03	4.11E+02	1.75E-01	5.06E+02	3.41E+00
BREOT-N27+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	1.17E+03	9.94E+00	1.10E-03	2.68E+02	2.95E-01	1.00E+00	5.50E-03	1.86E+03	4.11E+02	1.75E-01	5.06E+02	3.68E+00
BREOT-S27+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	8.61E+02	7.30E+00	1.10E-03	1.97E+02	2.17E-01	1.00E+00	5.50E-03	1.37E+03	4.11E+02	1.75E-01	5.06E+02	2.70E+00
BREOT-N28+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	8.14E+02	6.90E+00	1.10E-03	1.86E+02	2.05E-01	1.00E+00	5.50E-03	1.29E+03	4.11E+02	1.75E-01	5.06E+02	2.55E+00
BREOT-S28+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	9.64E+02	8.16E+00	1.10E-03	2.20E+02	2.42E-01	1.00E+00	5.50E-03	1.53E+03	4.11E+02	1.75E-01	5.06E+02	3.02E+00
BREOT-N29+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	3.07E+03	2.60E+01	1.10E-03	7.01E+02	7.72E-01	1.00E+00	5.50E-03	4.87E+03	4.11E+02	1.75E-01	5.06E+02	9.61E+00
BREOT-S29+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	7.92E+02	6.71E+00	1.10E-03	1.81E+02	1.99E-01	1.00E+00	5.50E-03	1.26E+03	4.11E+02	1.75E-01	5.06E+02	2.48E+00
BREOT-N30+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	1.73E+03	1.47E+01	1.10E-03	3.96E+02	4.36E-01	1.00E+00	5.50E-03	2.75E+03	4.11E+02	1.75E-01	5.06E+02	5.43E+00
BREOT-S30+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	1.35E+03	1.14E+01	1.10E-03	3.08E+02	3.39E-01	1.00E+00	5.50E-03	2.14E+03	4.11E+02	1.75E-01	5.06E+02	4.22E+00
BREOT-N31+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	4.43E+04	3.75E+02	1.10E-03	1.01E+04	1.11E+01	1.00E+00	5.50E-03	7.02E+04	4.11E+02	1.75E-01	5.06E+02	1.39E+02
BREOT-N31+75 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	8.67E+02	7.34E+00	1.10E-03	1.98E+02	2.18E-01	1.00E+00	5.50E-03	1.37E+03	4.11E+02	1.75E-01	5.06E+02	2.72E+00
BREOT-S31+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	1.24E+03	1.05E+01	1.10E-03	2.82E+02	3.11E-01	1.00E+00	5.50E-03	1.96E+03	4.11E+02	1.75E-01	5.06E+02	3.87E+00
BREOT-N32+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	6.52E+02	5.53E+00	1.10E-03	1.49E+02	1.64E-01	1.00E+00	5.50E-03	1.03E+03	4.11E+02	1.75E-01	5.06E+02	2.04E+00
BREOT-S32+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	1.78E+03	1.51E+01	1.10E-03	4.07E+02	4.48E-01	1.00E+00	5.50E-03	2.82E+03	4.11E+02	1.75E-01	5.06E+02	5.58E+00
BREOT-S32+300 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	2.29E+03	1.94E+01	1.10E-03	5.22E+02	5.75E-01	1.00E+00	5.50E-03	3.63E+03	4.11E+02	1.75E-01	5.06E+02	7.16E+00
BREOT-N33+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	4.69E+02	3.97E+00	1.10E-03	1.07E+02	1.18E-01	1.00E+00	5.50E-03	7.44E+02	4.11E+02	1.75E-01	5.06E+02	1.47E+00
BREOT-S33+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	5.20E+03	4.41E+01	1.10E-03	1.19E+03	1.31E+00	1.00E+00	5.50E-03	8.25E+03	4.11E+02	1.75E-01	5.06E+02	1.63E+01
BREOT-N34+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	6.07E+02	5.14E+00	1.10E-03	1.39E+02	1.53E-01	1.00E+00	5.50E-03	9.63E+02	4.11E+02	1.75E-01	5.06E+02	1.90E+00
BREOT-S34+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	1.05E+03	8.90E+00	1.10E-03	2.40E+02	2.64E-01	1.00E+00	5.50E-03	1.67E+03	4.11E+02	1.75E-01	5.06E+02	3.29E+00
BREOT-N35+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	6.86E+02	5.81E+00	1.10E-03	1.57E+02	1.72E-01	1.00E+00	5.50E-03	1.09E+03	4.11E+02	1.75E-01	5.06E+02	2.15E+00
BREOT-S35+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	4.65E+03	3.93E+01	1.10E-03	1.06E+03	1.17E+00	1.00E+00	5.50E-03	7.37E+03	4.11E+02	1.75E-01	5.06E+02	1.45E+01
BREOT-N36+100 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	9.89E+02	8.38E+00	1.10E-03	2.26E+02	2.49E-01	1.00E+00	5.50E-03	1.57E+03	4.11E+02	1.75E-01	5.06E+02	3.10E+00
BREOT-N36+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	1.04E+04	8.78E+01	1.10E-03	2.37E+03	2.61E+00	1.00E+00	5.50E-03	1.64E+04	4.11E+02	1.75E-01	5.06E+02	3.25E+01
BREOT-S36+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	3.94E+03	3.34E+01	1.10E-03	8.99E+02	9.90E-01	1.00E+00	5.50E-03	6.24E+03	4.11E+02	1.75E-01	5.06E+02	1.23E+01
BREOT-N37+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	3.44E+02	2.92E+00	1.10E-03	7.86E+01	8.65E-02	1.00E+00	5.50E-03	5.46E+02	4.11E+02	1.75E-01	5.06E+02	1.08E+00
BREOT-S37+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	4.48E+03	3.79E+01	1.10E-03	1.02E+03	1.13E+00	1.00E+00	5.50E-03	7.10E+03	4.11E+02	1.75E-01	5.06E+02	1.40E+01
BREOT-N38+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	3.68E+02	3.12E+00	1.10E-03	8.41E+01	9.25E-02	1.00E+00	5.50E-03	5.84E+02	4.11E+02	1.75E-01	5.06E+02	1.15E+00
BREOT-S38+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	5.22E+03	4.42E+01	1.10E-03	1.19E+03	1.31E+00	1.00E+00	5.50E-03	8.27E+03	4.11E+02	1.75E-01	5.06E+02	1.63E+01
BREOT-N39+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	5.04E+02	4.27E+00	1.10E-03	1.15E+02	1.27E-01	1.00E+00	5.50E-03	7.99E+02	4.11E+02	1.75E-01	5.06E+02	1.58E+00
BREOT-S39+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	5.20E+03	4.40E+01	1.10E-03	1.19E+03	1.31E+00	1.00E+00	5.50E-03	8.24E+03	4.11E+02	1.75E-01	5.06E+02	1.63E+01
BREOT-N40+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	2.84E+02	2.41E+00	1.10E-03	6.49E+01	7.15E-02	1.00E+00	5.50E-03	4.51E+02	4.11E+02	1.75E-01	5.06E+02	8.90E-01
BREOT-S40+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	4.64E+03	3.93E+01	1.10E-03	1.06E+03	1.17E+00	1.00E+00	5.50E-03	7.37E+03	4.11E+02	1.75E-01	5.06E+02	1.45E+01
BREOT-N41+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	5.05E+02	4.27E+00	1.10E-03	1.15E+02	1.27E-01	1.00E+00	5.50E-03	8.00E+02	4.11E+02	1.75E-01	5.06E+02	1.58E+00
BREOT-S41+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	3.44E+03	2.91E+01	1.10E-03	7.85E+02	8.64E-01	1.00E+00	5.50E-03	5.45E+03	4.11E+02	1.75E-01	5.06E+02	1.08E+01
BREOT-N42+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	2.52E+02	2.14E+00	1.10E-03	5.76E+01	6.34E-02	1.00E+00	5.50E-03	4.00E+02	4.11E+02	1.75E-01	5.06E+02	7.90E-01
BREOT-S42+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	4.99E+03	4.22E+01	1.10E-03	1.14E+03	1.25E+00	1.00E+00	5.50E-03	7.91E+03	4.11E+02	1.75E-01	5.06E+02	1.56E+01
BREOT-N43+12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	1.22E+03	1.03E+01	1.10E-03	2.79E+02	3.07E-01	1.00E+00	5.50E-03	1.94E+03	4.11E+02	1.75E-01	5.06E+02	3.83E+00
BREOT-N43+40 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	9.66E+02	8.18E+00	1.10E-03	2.21E+02	2.43E-01	1.00E+00	5.50E-03	1.53E+03	4.11E+02	1.75E-01	5.06E+02	3.03E+00
BREOT-S43+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	1.93E+03	1.64E+01	1.10E-03	4.42E+02	4.86E-01	1.00E+00	5.50E-03	3.07E+03	4.11E+02	1.75E-01	5.06E+02	6.06E+00
BREOT-N44+55 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	9.88E+02	8.37E+00	1.10E-03	2.26E+02	2.48E-01	1.00E+00	5.50E-03	1.57E+03	4.11E+02	1.75E-01	5.06E+02	3.09E+00
BREOT-S44+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	1.43E+03	1.21E+01	1.10E-03	3.27E+02	3.60E-01	1.00E+00	5.50E-03	2.27E+03	4.11E+02	1.75E-01	5.06E+02	4.49E+00
BREOT-N45+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	1.01E+03	8.56E+00	1.10E-03	2.31E+02	2.54E-01	1.00E+00	5.50E-03	1.60E+03	4.11E+02	1.75E-01	5.06E+02	3.17E+00
BREOT-S45+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	2.01E+03	1.70E+01	1.10E-03	4.59E+02	5.05E-01	1.00E+00	5.50E-03	3.18E+03	4.11E+02	1.75E-01	5.06E+02	6.29E+00
BREOT-N46+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	2.27E+03	1.92E+01	1.10E-03	5.18E+02	5.70E-01	1.00E+00	5.50E-03	3.60E+03	4.11E+02	1.75E-01	5.06E+02	7.10E+00
BREOT-S46+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	1.52E+03	1.28E+01	1.10E-03	3.46E+02	3.81E-01	1.00E+00	5.50E-03	2.40E+03	4.11E+02	1.75E-01	5.06E+02	4.75E+00
BREOT-N47+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	1.51E+03	1.28E+01	1.10E-03	3.44E+02	3.79E-01	1.00E+00	5.50E-03	2.39E+03	4.11E+02	1.75E-01	5.06E+02	4.72E+00
BREOT-S47+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	4.63E+02	3.93E+00	1.10E-03	1.06E+02	1.17E-01	1.00E+00	5.50E-03	7.35E+02	4.11E+02	1.75E-01	5.06E+02	1.45E+00
BREOT-N48+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	5.82E+02	4.93E+00	1.10E-03	1.33E+02	1.46E-01	1.00E+00	5.50E-03	9.23E+02	4.11E+02	1.75E-01	5.06E+02	1.82E+00
BREOT-S48+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N49+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	1.50E+03	1.27E+01	1.10E-03	3.42E+02	3.76E-01	1.00E+00	5.50E-03	2.37E+03	4.11E+02	1.75E-01	5.06E+02	4.69E+00

TABLE C-2F: ZINC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

Site Area (hectares) 18.41

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Masked Shrew (Omnivorous Mammal - Terrestrial, Wetland)																							
BREOT-S49+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N51+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	7.28E+02	6.17E+00	1.10E-03	1.66E+02	1.83E-01	1.00E+00	5.50E-03	1.16E+03	4.11E+02	1.75E-01	5.06E+02	2.28E+00
BREOT-S51+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	5.87E+02	4.97E+00	1.10E-03	1.34E+02	1.47E-01	1.00E+00	5.50E-03	9.30E+02	4.11E+02	1.75E-01	5.06E+02	1.84E+00
BREOT-N52+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	7.34E+02	6.22E+00	1.10E-03	1.68E+02	1.85E-01	1.00E+00	5.50E-03	1.16E+03	4.11E+02	1.75E-01	5.06E+02	2.30E+00
BREOT-S52+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N53+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	7.29E+02	6.18E+00	1.10E-03	1.67E+02	1.83E-01	1.00E+00	5.50E-03	1.16E+03	4.11E+02	1.75E-01	5.06E+02	2.28E+00
BREOT-S53+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S54+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N55+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	6.42E+02	5.44E+00	1.10E-03	1.47E+02	1.61E-01	1.00E+00	5.50E-03	1.02E+03	4.11E+02	1.75E-01	5.06E+02	2.01E+00
BREOT-S55+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N56+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	6.34E+02	5.37E+00	1.10E-03	1.45E+02	1.59E-01	1.00E+00	5.50E-03	1.00E+03	4.11E+02	1.75E-01	5.06E+02	1.98E+00
BREOT-S56+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N57+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	5.45E+02	4.62E+00	1.10E-03	1.25E+02	1.37E-01	1.00E+00	5.50E-03	8.65E+02	4.11E+02	1.75E-01	5.06E+02	1.71E+00
BREOT-S57+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	8.93E+02	7.57E+00	1.10E-03	2.04E+02	2.25E-01	1.00E+00	5.50E-03	1.42E+03	4.11E+02	1.75E-01	5.06E+02	2.80E+00
BREOT-N58+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	9.29E+02	7.87E+00	1.10E-03	2.12E+02	2.34E-01	1.00E+00	5.50E-03	1.47E+03	4.11E+02	1.75E-01	5.06E+02	2.91E+00
BREOT-S58+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	3.94E+02	3.34E+00	1.10E-03	9.00E+01	9.91E-02	1.00E+00	5.50E-03	6.25E+02	4.11E+02	1.75E-01	5.06E+02	1.23E+00
BREOT-N59+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	1.54E+03	1.30E+01	1.10E-03	3.52E+02	3.87E-01	1.00E+00	5.50E-03	2.44E+03	4.11E+02	1.75E-01	5.06E+02	4.82E+00
BREOT-N60+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	1.03E+03	8.75E+00	1.10E-03	2.36E+02	2.60E-01	1.00E+00	5.50E-03	1.64E+03	4.11E+02	1.75E-01	5.06E+02	3.24E+00
BREOT-S60+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S61+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N62+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	1.14E+03	9.68E+00	1.10E-03	2.61E+02	2.87E-01	1.00E+00	5.50E-03	1.81E+03	4.11E+02	1.75E-01	5.06E+02	3.58E+00
BREOT-S62+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	5.06E+02	4.29E+00	1.10E-03	1.16E+02	1.27E-01	1.00E+00	5.50E-03	8.02E+02	4.11E+02	1.75E-01	5.06E+02	1.58E+00
BREOT-N63+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	1.20E+03	1.02E+01	1.10E-03	2.74E+02	3.02E-01	1.00E+00	5.50E-03	1.90E+03	4.11E+02	1.75E-01	5.06E+02	3.76E+00
BREOT-S63+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	8.49E+02	7.19E+00	1.10E-03	1.94E+02	2.14E-01	1.00E+00	5.50E-03	1.35E+03	4.11E+02	1.75E-01	5.06E+02	2.66E+00
BREOT-N64+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	1.35E+03	1.14E+01	1.10E-03	3.07E+02	3.38E-01	1.00E+00	5.50E-03	2.13E+03	4.11E+02	1.75E-01	5.06E+02	4.22E+00
BREOT-S64+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-S65+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N66+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	1.09E+03	9.20E+00	1.10E-03	2.48E+02	2.73E-01	1.00E+00	5.50E-03	1.72E+03	4.11E+02	1.75E-01	5.06E+02	3.40E+00
BREOT-S66+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N67+125 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	1.59E+03	1.35E+01	1.10E-03	3.63E+02	4.00E-01	1.00E+00	5.50E-03	2.52E+03	4.11E+02	1.75E-01	5.06E+02	4.98E+00
BREOT-S67+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BREOT-N67+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	1.65E+03	1.40E+01	1.10E-03	3.77E+02	4.16E-01	1.00E+00	5.50E-03	2.62E+03	4.11E+02	1.75E-01	5.06E+02	5.18E+00
																						Maximum HQ (Outside Tailings)	**1.39E+02**

Notes

Results are evaluated in order of upstream to downstream.

1 See Tables 3-1 through 3-13 for ingestion rates, foraging ranges used to calculate the SUF, and body weights.

2 BAFs were calculated by dividing site-collected tissue by collocated soil concentrations. The maximum BAF calculated from the Beartrap Creek and Blackfoot River transects was used.

3 The mammal, plant, and invertebrate concentrations were calculated by multiplying the soil concentration by the BAF to generate a tissue concentration (see note 2).

4 Mammal, plant, and invertebrate daily doses were calculated by multiplying the ingestion rate (see note 1) by the tissue concentration (see note 3).

5 Soil concentration from specified depths below ground surface at point ID as measured by XRF 10. Doses were not calculated for detected and non-detected soil concentrations measured below the minimum reference site concentration, as indicated by BB. For results that were measured at less than the detection limit, doses were calculated using half of the detection limit.

6 Soil daily dose was calculated by multiplying the soil ingestion rate (see note 1) by soil concentration (see note 5).

7 Total daily dose is calculated using the following equation: total daily dose = ([mammal daily dose (if applicable) + plant daily dose (if applicable) + invertebrate daily dose (if applicable) + soil daily dose]*SUF)/receptor species body weight.

8 The derivation of TRVs is described in Navy (1998). The high TRV was used for dose calculations.

9 Allometrically adjusted TRVs for birds were calculated using the following equation: receptor species TRV = (test species TRV) x (test species body weight / receptor species body weight)$^{(1-1.2)}$.

10 Allometrically adjusted TRVs for mammals were calculated using the following equation: receptor species TRV = (test species TRV) x (test species body weight / receptor species body weight)$^{(1-0.94)}$.

11 HQs were calculated using the following equation: HQ = total daily dose/allometrically adjusted TRV.

12 Green cells indicate an HQ greater than 1.0

BAF	Bioaccumulation Factor	mg/day	Milligram per day
BB	Below minimum background reference site concentration	mg/kg	Milligram per kilogram
EE/CA	Engineering Evaluation/Cost Analysis	NA	Not applicable
EU	Exposure Unit	Navy	Department of the Navy
HQ	Hazard quotient	SUF	Site use factor
ID	Identification	TRV	Toxicity reference value
kg	Kilogram	XRF	X-ray fluorescence
kg/day	Kilogram per day	XRF 10	XRF measurements recorded following drying and seiving through a #10-mesh screen

Sources: Department of the Navy. 1998. "Development of Toxicity Reference Values for Conducting Ecological Risk Assessments at Naval Facilities in California, Interim Final." Prepared by Naval Facilities Engineering Command, Engineering Field Activity West (EFA

TABLE C-3A: ARSENIC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 3 - CAPITOL MINE WASTE AREA

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 0.13

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Mourning Dove (Herbivorous Birds - Terrestrial)																							
Reference Site																							
SGBG-1 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	5.36E-04	3.46E+01	1.85E-02	5.02E-04	1.09E-01	8.51E-05	2.20E+01	1.17E+00	1.37E+01	6.22E-06
SGBG-201 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	5.36E-04	1.66E+01	8.87E-03	5.02E-04	1.09E-01	4.08E-05	2.20E+01	1.17E+00	1.37E+01	2.98E-06
Capitol Mine																						**Minimum HQ (Reference Site)**	**2.98E-06**
CMWA-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	9.25E+01	5.33E-01	NA	NA	NA	NA	5.36E-04	1.54E+02	8.25E-02	5.02E-04	1.09E-01	2.83E-03	2.20E+01	1.17E+00	1.37E+01	2.07E-04
CMWA-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	9.25E+01	5.33E-01	NA	NA	NA	NA	5.36E-04	1.54E+02	8.25E-02	5.02E-04	1.09E-01	2.83E-03	2.20E+01	1.17E+00	1.37E+01	2.07E-04
CMWA-0+12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	3.90E+01	2.25E-01	NA	NA	NA	NA	5.36E-04	6.49E+01	3.48E-02	5.02E-04	1.09E-01	1.19E-03	2.20E+01	1.17E+00	1.37E+01	8.71E-05
CMWA-100 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	3.47E+02	2.00E+00	NA	NA	NA	NA	5.36E-04	5.77E+02	3.09E-01	5.02E-04	1.09E-01	1.06E-02	2.20E+01	1.17E+00	1.37E+01	7.75E-04
CMWA-100+12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.48E+01	8.52E-02	NA	NA	NA	NA	5.36E-04	2.46E+01	1.32E-02	5.02E-04	1.09E-01	4.52E-04	2.20E+01	1.17E+00	1.37E+01	3.30E-05
CMWA-150 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	2.09E+02	1.21E+00	NA	NA	NA	NA	5.36E-04	3.48E+02	1.87E-01	5.02E-04	1.09E-01	6.40E-03	2.20E+01	1.17E+00	1.37E+01	4.68E-04
CMWA-150+12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.15E+01	6.65E-02	NA	NA	NA	NA	5.36E-04	1.92E+01	1.03E-02	5.02E-04	1.09E-01	3.53E-04	2.20E+01	1.17E+00	1.37E+01	2.58E-05
CMWA-200 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	7.52E+02	4.33E+00	NA	NA	NA	NA	5.36E-04	1.25E+03	6.70E-01	5.02E-04	1.09E-01	2.30E-02	2.20E+01	1.17E+00	1.37E+01	1.68E-03
CMWA2-250 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.43E+01	8.26E-02	NA	NA	NA	NA	5.36E-04	2.38E+01	1.28E-02	5.02E-04	1.09E-01	4.38E-04	2.20E+01	1.17E+00	1.37E+01	3.20E-05
CMWA-250 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	7.13E+01	4.11E-01	NA	NA	NA	NA	5.36E-04	1.19E+02	6.35E-02	5.02E-04	1.09E-01	2.18E-03	2.20E+01	1.17E+00	1.37E+01	1.59E-04
CMWA-250+50 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CMWA-300 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	2.91E+01	1.68E-01	NA	NA	NA	NA	5.36E-04	4.84E+01	2.59E-02	5.02E-04	1.09E-01	8.90E-04	2.20E+01	1.17E+00	1.37E+01	6.50E-05
CMWA-300+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	BB	BB	BB	2.92E+01	BB	BB	BB	BB	BB	BB	BB	BB
CMWA-350 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	2.23E+01	1.29E-01	NA	NA	NA	NA	5.36E-04	3.72E+01	1.99E-02	5.02E-04	1.09E-01	6.83E-04	2.20E+01	1.17E+00	1.37E+01	4.99E-05
CMWA-350+0 (0-6")	5.76E-03	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CMWA-50 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	6.64E+01	3.82E-01	NA	NA	NA	NA	5.36E-04	1.10E+02	5.92E-02	5.02E-04	1.09E-01	2.03E-03	2.20E+01	1.17E+00	1.37E+01	1.48E-04
CMWA-50+12.5 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CMWA-Comp 1 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.11E+02	6.37E-01	NA	NA	NA	NA	5.36E-04	1.84E+02	9.86E-02	5.02E-04	1.09E-01	3.38E-03	2.20E+01	1.17E+00	1.37E+01	2.47E-04
CMWA-Comp 2 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	6.63E+02	3.82E+00	NA	NA	NA	NA	5.36E-04	1.10E+03	5.91E-01	5.02E-04	1.09E-01	2.03E-02	2.20E+01	1.17E+00	1.37E+01	1.48E-03
																						Maximum HQ (Capitol Mine)	**1.68E-03**
Red-Tailed Hawk (Carnivorous Birds - Terrestrial)																							
Reference Site																							
SGBG-1 (0-6")	9.00E-02	9.00E-02	4.84E-01	1.67E+01	1.50E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.46E+01	1.77E-01	1.87E-04	1.13E+00	2.77E-04	2.20E+01	1.17E+00	2.19E+01	1.27E-05
SGBG-201 (0-6")	9.00E-02	9.00E-02	4.84E-01	8.01E+00	7.21E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.66E+01	8.49E-02	1.87E-04	1.13E+00	1.33E-04	2.20E+01	1.17E+00	2.19E+01	6.06E-06
Capitol Mine																						**Minimum HQ (Reference Site)**	**6.06E-06**
CMWA-0 (0-6")	9.00E-02	9.00E-02	4.84E-01	7.45E+01	6.70E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.54E+02	7.90E-01	1.87E-04	1.13E+00	1.23E-03	2.20E+01	1.17E+00	2.19E+01	5.64E-05
CMWA-0 (0-6")	9.00E-02	9.00E-02	4.84E-01	7.45E+01	6.70E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.54E+02	7.90E-01	1.87E-04	1.13E+00	1.23E-03	2.20E+01	1.17E+00	2.19E+01	5.64E-05
CMWA-0+12.5 (0-6")	9.00E-02	9.00E-02	4.84E-01	3.14E+01	2.82E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	6.49E+01	3.33E-01	1.87E-04	1.13E+00	5.19E-04	2.20E+01	1.17E+00	2.19E+01	2.38E-05
CMWA-100 (0-6")	9.00E-02	9.00E-02	4.84E-01	2.79E+02	2.51E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.77E+02	2.96E+00	1.87E-04	1.13E+00	4.62E-03	2.20E+01	1.17E+00	2.19E+01	2.11E-04
CMWA-100+12.5 (0-6")	9.00E-02	9.00E-02	4.84E-01	1.19E+01	1.07E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.46E+01	1.26E-01	1.87E-04	1.13E+00	1.97E-04	2.20E+01	1.17E+00	2.19E+01	9.01E-06
CMWA-150 (0-6")	9.00E-02	9.00E-02	4.84E-01	1.69E+02	1.52E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.48E+02	1.79E+00	1.87E-04	1.13E+00	2.79E-03	2.20E+01	1.17E+00	2.19E+01	1.28E-04
CMWA-150+12.5 (0-6")	9.00E-02	9.00E-02	4.84E-01	9.29E+00	8.36E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.92E+01	9.84E-02	1.87E-04	1.13E+00	1.54E-04	2.20E+01	1.17E+00	2.19E+01	7.03E-06
CMWA-200 (0-6")	9.00E-02	9.00E-02	4.84E-01	6.05E+02	5.44E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.25E+03	6.41E+00	1.87E-04	1.13E+00	1.00E-02	2.20E+01	1.17E+00	2.19E+01	4.58E-04
CMWA2-250 (0-6")	9.00E-02	9.00E-02	4.84E-01	1.15E+01	1.04E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.38E+01	1.22E-01	1.87E-04	1.13E+00	1.91E-04	2.20E+01	1.17E+00	2.19E+01	8.73E-06
CMWA-250 (0-6")	9.00E-02	9.00E-02	4.84E-01	5.74E+01	5.16E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.19E+02	6.08E-01	1.87E-04	1.13E+00	9.49E-04	2.20E+01	1.17E+00	2.19E+01	4.34E-05
CMWA-250+50 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CMWA-300 (0-6")	9.00E-02	9.00E-02	4.84E-01	2.34E+01	2.11E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.84E+01	2.48E-01	1.87E-04	1.13E+00	3.87E-04	2.20E+01	1.17E+00	2.19E+01	1.77E-05
CMWA-300+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	2.92E+01	BB	BB	BB	BB	BB	BB	BB	BB
CMWA-350 (0-6")	9.00E-02	9.00E-02	4.84E-01	1.80E+01	1.62E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.72E+01	1.91E-01	1.87E-04	1.13E+00	2.97E-04	2.20E+01	1.17E+00	2.19E+01	1.36E-05
CMWA-350+0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CMWA-50 (0-6")	9.00E-02	9.00E-02	4.84E-01	5.34E+01	4.81E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.10E+02	5.66E-01	1.87E-04	1.13E+00	8.84E-04	2.20E+01	1.17E+00	2.19E+01	4.04E-05
CMWA-50+12.5 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CMWA-Comp 1 (0-6")	9.00E-02	9.00E-02	4.84E-01	8.90E+01	8.01E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.84E+02	9.43E-01	1.87E-04	1.13E+00	1.47E-03	2.20E+01	1.17E+00	2.19E+01	6.74E-05
CMWA-Comp 2 (0-6")	9.00E-02	9.00E-02	4.84E-01	5.34E+02	4.80E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.10E+03	5.66E+00	1.87E-04	1.13E+00	8.83E-03	2.20E+01	1.17E+00	2.19E+01	4.04E-04
																						Maximum HQ (Capitol Mine)	**4.58E-04**

TABLE C-3A: ARSENIC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 3 - CAPITOL MINE WASTE AREA (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **0.13**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
American Kestrel (Insectivorous Birds - Terrestrial)																							
Reference Site																							
SGBG-1 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	2.55E+00	8.82E+01	1.21E+00	7.84E-04	3.46E+01	2.71E-02	4.97E-04	1.24E-01	4.97E-03	2.20E+01	1.17E+00	1.40E+01	3.54E-04
SGBG-201 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	2.55E+00	4.23E+01	5.82E-01	7.84E-04	1.66E+01	1.30E-02	4.97E-04	1.24E-01	2.38E-03	2.20E+01	1.17E+00	1.40E+01	1.70E-04
Capitol Mine																						**Minimum HQ (Reference Site)**	**1.70E-04**
CMWA-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	2.54E+03	3.49E+01	7.84E-04	1.54E+02	1.21E-01	4.97E-04	1.24E-01	1.40E-01	2.20E+01	1.17E+00	1.40E+01	1.00E-02
CMWA-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	2.54E+03	3.49E+01	7.84E-04	1.54E+02	1.21E-01	4.97E-04	1.24E-01	1.40E-01	2.20E+01	1.17E+00	1.40E+01	1.00E-02
CMWA-0+12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	1.07E+03	1.47E+01	7.84E-04	6.49E+01	5.09E-02	4.97E-04	1.24E-01	5.92E-02	2.20E+01	1.17E+00	1.40E+01	4.21E-03
CMWA-100 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	9.52E+03	1.31E+02	7.84E-04	5.77E+02	4.53E-01	4.97E-04	1.24E-01	5.27E-01	2.20E+01	1.17E+00	1.40E+01	3.75E-02
CMWA-100+12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	4.05E+02	5.58E+00	7.84E-04	2.46E+01	1.93E-02	4.97E-04	1.24E-01	2.24E-02	2.20E+01	1.17E+00	1.40E+01	1.60E-03
CMWA-150 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	5.74E+03	7.90E+01	7.84E-04	3.48E+02	2.73E-01	4.97E-04	1.24E-01	3.18E-01	2.20E+01	1.17E+00	1.40E+01	2.26E-02
CMWA-150+12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	3.16E+02	4.36E+00	7.84E-04	1.92E+01	1.51E-02	4.97E-04	1.24E-01	1.75E-02	2.20E+01	1.17E+00	1.40E+01	1.25E-03
CMWA-200 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	2.06E+04	2.84E+02	7.84E-04	1.25E+03	9.81E-01	4.97E-04	1.24E-01	1.14E+00	2.20E+01	1.17E+00	1.40E+01	8.12E-02
CMWA2-250 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	3.93E+02	5.41E+00	7.84E-04	2.38E+01	1.87E-02	4.97E-04	1.24E-01	2.17E-02	2.20E+01	1.17E+00	1.40E+01	1.55E-03
CMWA-250 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	1.95E+03	2.69E+01	7.84E-04	1.19E+02	9.30E-02	4.97E-04	1.24E-01	1.08E-01	2.20E+01	1.17E+00	1.40E+01	7.70E-03
CMWA-250+50 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CMWA-300 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	7.98E+02	1.10E+01	7.84E-04	4.84E+01	3.80E-02	4.97E-04	1.24E-01	4.41E-02	2.20E+01	1.17E+00	1.40E+01	3.14E-03
CMWA-300+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	2.92E+01	BB	BB	BB	BB	BB	BB	BB	BB
CMWA-350 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	6.13E+02	8.43E+00	7.84E-04	3.72E+01	2.92E-02	4.97E-04	1.24E-01	3.39E-02	2.20E+01	1.17E+00	1.40E+01	2.41E-03
CMWA-350+0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CMWA-50 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	1.82E+03	2.51E+01	7.84E-04	1.10E+02	8.66E-02	4.97E-04	1.24E-01	1.01E-01	2.20E+01	1.17E+00	1.40E+01	7.17E-03
CMWA-50+12.5 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	1.84E+02	BB	BB	BB	BB	BB	BB	BB	BB
CMWA-Comp 1 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	3.03E+03	4.17E+01	7.84E-04	1.84E+02	1.44E-01	4.97E-04	1.24E-01	1.68E-01	2.20E+01	1.17E+00	1.40E+01	1.19E-02
CMWA-Comp 2 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	1.82E+04	2.50E+02	7.84E-04	1.10E+03	8.65E-01	4.97E-04	1.24E-01	1.01E+00	2.20E+01	1.17E+00	1.40E+01	7.16E-02
																						Maximum HQ (Capitol Mine)	**8.12E-02**
Meadow Vole (Small Herbivorous Mammal - Terrestrial)																							
Reference Site																							
SGBG-1 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	1.13E-04	3.46E+01	3.89E-03	1.00E+00	3.06E-02	1.27E-01	4.70E+00	1.10E-01	5.08E+00	2.51E-02
SGBG-201 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	1.13E-04	1.66E+01	1.86E-03	1.00E+00	3.06E-02	6.09E-02	4.70E+00	1.10E-01	5.08E+00	1.20E-02
Capitol Mine																						**Minimum HQ (Reference Site)**	**1.20E-02**
CMWA-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	9.25E+01	4.34E-01	NA	NA	NA	NA	1.13E-04	1.54E+02	1.73E-02	1.00E+00	3.06E-02	1.47E+01	4.70E+00	1.10E-01	5.08E+00	2.91E+00
CMWA-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	9.25E+01	4.34E-01	NA	NA	NA	NA	1.13E-04	1.54E+02	1.73E-02	1.00E+00	3.06E-02	1.47E+01	4.70E+00	1.10E-01	5.08E+00	2.91E+00
CMWA-0+12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	3.90E+01	1.83E-01	NA	NA	NA	NA	1.13E-04	6.49E+01	7.30E-03	1.00E+00	3.06E-02	6.22E+00	4.70E+00	1.10E-01	5.08E+00	1.22E+00
CMWA-100 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	3.47E+02	1.63E+00	NA	NA	NA	NA	1.13E-04	5.77E+02	6.50E-02	1.00E+00	3.06E-02	5.53E+01	4.70E+00	1.10E-01	5.08E+00	1.09E+01
CMWA-100+12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.48E+01	6.93E-02	NA	NA	NA	NA	1.13E-04	2.46E+01	2.77E-03	1.00E+00	3.06E-02	2.36E+00	4.70E+00	1.10E-01	5.08E+00	4.64E-01
CMWA-150 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	2.09E+02	9.82E-01	NA	NA	NA	NA	1.13E-04	3.48E+02	3.92E-02	1.00E+00	3.06E-02	3.34E+01	4.70E+00	1.10E-01	5.08E+00	6.57E+00
CMWA-150+12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.15E+01	5.41E-02	NA	NA	NA	NA	1.13E-04	1.92E+01	2.16E-03	1.00E+00	3.06E-02	1.84E+00	4.70E+00	1.10E-01	5.08E+00	3.62E-01
CMWA-200 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	7.52E+02	3.52E+00	NA	NA	NA	NA	1.13E-04	1.25E+03	1.41E-01	1.00E+00	3.06E-02	1.20E+02	4.70E+00	1.10E-01	5.08E+00	2.36E+01
CMWA2-250 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.43E+01	6.72E-02	NA	NA	NA	NA	1.13E-04	2.38E+01	2.68E-03	1.00E+00	3.06E-02	2.28E+00	4.70E+00	1.10E-01	5.08E+00	4.50E-01
CMWA-250 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	7.13E+01	3.34E-01	NA	NA	NA	NA	1.13E-04	1.19E+02	1.33E-02	1.00E+00	3.06E-02	1.14E+01	4.70E+00	1.10E-01	5.08E+00	2.24E+00
CMWA-250+50 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CMWA-300 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	2.91E+01	1.36E-01	NA	NA	NA	NA	1.13E-04	4.84E+01	5.45E-03	1.00E+00	3.06E-02	4.64E+00	4.70E+00	1.10E-01	5.08E+00	9.13E-01
CMWA-300+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	2.92E+01	BB	BB	BB	BB	BB	BB	BB	BB
CMWA-350 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	2.23E+01	1.05E-01	NA	NA	NA	NA	1.13E-04	3.72E+01	4.18E-03	1.00E+00	3.06E-02	3.56E+00	4.70E+00	1.10E-01	5.08E+00	7.01E-01
CMWA-350+0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CMWA-50 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	6.64E+01	3.11E-01	NA	NA	NA	NA	1.13E-04	1.10E+02	1.24E-02	1.00E+00	3.06E-02	1.06E+01	4.70E+00	1.10E-01	5.08E+00	2.08E+00
CMWA-50+12.5 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CMWA-Comp 1 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.11E+02	5.19E-01	NA	NA	NA	NA	1.13E-04	1.84E+02	2.07E-02	1.00E+00	3.06E-02	1.76E+01	4.70E+00	1.10E-01	5.08E+00	3.47E+00
CMWA-Comp 2 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	6.63E+02	3.11E+00	NA	NA	NA	NA	1.13E-04	1.10E+03	1.24E-01	1.00E+00	3.06E-02	1.06E+02	4.70E+00	1.10E-01	5.08E+00	2.08E+01
																						Maximum HQ (Capitol Mine)	**2.36E+01**

TABLE C-3A: ARSENIC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 3 - CAPITOL MINE WASTE AREA (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 0.13

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
White-Tailed Deer (Large Herbivorous Mammal - Terrestrial)																							
Reference Site																							
SGBG-1 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	2.86E-02	3.46E+01	9.90E-01	7.27E-04	1.35E+02	5.33E-06	4.70E+00	1.10E-01	3.07E+00	1.74E-06
SGBG-201 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	2.86E-02	1.66E+01	4.74E-01	7.27E-04	1.35E+02	2.55E-06	4.70E+00	1.10E-01	3.07E+00	8.33E-07
Capitol Mine																						**Minimum HQ (Reference Site)**	**8.33E-07**
CMWA-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	9.25E+01	1.32E+02	NA	NA	NA	NA	2.86E-02	1.54E+02	4.41E+00	7.27E-04	1.35E+02	7.38E-04	4.70E+00	1.10E-01	3.07E+00	2.40E-04
CMWA-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	9.25E+01	1.32E+02	NA	NA	NA	NA	2.86E-02	1.54E+02	4.41E+00	7.27E-04	1.35E+02	7.38E-04	4.70E+00	1.10E-01	3.07E+00	2.40E-04
CMWA-0+12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	3.90E+01	5.58E+01	NA	NA	NA	NA	2.86E-02	6.49E+01	1.86E+00	7.27E-04	1.35E+02	3.11E-04	4.70E+00	1.10E-01	3.07E+00	1.01E-04
CMWA-100 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	3.47E+02	4.97E+02	NA	NA	NA	NA	2.86E-02	5.77E+02	1.65E+01	7.27E-04	1.35E+02	2.77E-03	4.70E+00	1.10E-01	3.07E+00	9.02E-04
CMWA-100+12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.48E+01	2.12E+01	NA	NA	NA	NA	2.86E-02	2.46E+01	7.04E-01	7.27E-04	1.35E+02	1.18E-04	4.70E+00	1.10E-01	3.07E+00	3.84E-05
CMWA-150 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	2.09E+02	3.00E+02	NA	NA	NA	NA	2.86E-02	3.48E+02	9.97E+00	7.27E-04	1.35E+02	1.67E-03	4.70E+00	1.10E-01	3.07E+00	5.44E-04
CMWA-150+12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.15E+01	1.65E+01	NA	NA	NA	NA	2.86E-02	1.92E+01	5.50E-01	7.27E-04	1.35E+02	9.20E-05	4.70E+00	1.10E-01	3.07E+00	3.00E-05
CMWA-200 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	7.52E+02	1.08E+03	NA	NA	NA	NA	2.86E-02	1.25E+03	3.58E+01	7.27E-04	1.35E+02	5.99E-03	4.70E+00	1.10E-01	3.07E+00	1.95E-03
CMWA2-250 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.43E+01	2.05E+01	NA	NA	NA	NA	2.86E-02	2.38E+01	6.83E-01	7.27E-04	1.35E+02	1.14E-04	4.70E+00	1.10E-01	3.07E+00	3.72E-05
CMWA-250 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	7.13E+01	1.02E+02	NA	NA	NA	NA	2.86E-02	1.19E+02	3.40E+00	7.27E-04	1.35E+02	5.68E-04	4.70E+00	1.10E-01	3.07E+00	1.85E-04
CMWA-250+50 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CMWA-300 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	2.91E+01	4.16E+01	NA	NA	NA	NA	2.86E-02	4.84E+01	1.39E+00	7.27E-04	1.35E+02	2.32E-04	4.70E+00	1.10E-01	3.07E+00	7.56E-05
CMWA-300+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	2.92E+01	BB	BB	BB	BB	BB	BB	BB	BB
CMWA-350 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	2.23E+01	3.20E+01	NA	NA	NA	NA	2.86E-02	3.72E+01	1.06E+00	7.27E-04	1.35E+02	1.78E-04	4.70E+00	1.10E-01	3.07E+00	5.80E-05
CMWA-350+0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CMWA-50 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	6.64E+01	9.50E+01	NA	NA	NA	NA	2.86E-02	1.10E+02	3.16E+00	7.27E-04	1.35E+02	5.29E-04	4.70E+00	1.10E-01	3.07E+00	1.72E-04
CMWA-50+12.5 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CMWA-Comp 1 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.11E+02	1.58E+02	NA	NA	NA	NA	2.86E-02	1.84E+02	5.27E+00	7.27E-04	1.35E+02	8.81E-04	4.70E+00	1.10E-01	3.07E+00	2.87E-04
CMWA-Comp 2 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	6.63E+02	9.49E+02	NA	NA	NA	NA	2.86E-02	1.10E+03	3.16E+01	7.27E-04	1.35E+02	5.28E-03	4.70E+00	1.10E-01	3.07E+00	1.72E-03
																						Maximum HQ (Capitol Mine)	**1.95E-03**
Red Fox (Carnivorous Mammal - Terrestrial)																							
Reference Site																							
SGBG-1 (0-6")	1.72E-01	1.72E-01	4.84E-01	1.67E+01	2.87E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.46E+01	1.66E-01	9.60E-05	4.54E+00	6.43E-05	4.70E+00	1.10E-01	3.76E+00	1.71E-05
SGBG-201 (0-6")	1.72E-01	1.72E-01	4.84E-01	8.01E+00	1.37E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.66E+01	7.95E-02	9.60E-05	4.54E+00	3.08E-05	4.70E+00	1.10E-01	3.76E+00	8.19E-06
Capitol Mine																						**Minimum HQ (Reference Site)**	**8.19E-06**
CMWA-0 (0-6")	1.72E-01	1.72E-01	4.84E-01	7.45E+01	1.28E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.54E+02	7.40E-01	9.60E-05	4.54E+00	2.86E-04	4.70E+00	1.10E-01	3.76E+00	7.61E-05
CMWA-0 (0-6")	1.72E-01	1.72E-01	4.84E-01	7.45E+01	1.28E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.54E+02	7.40E-01	9.60E-05	4.54E+00	2.86E-04	4.70E+00	1.10E-01	3.76E+00	7.61E-05
CMWA-0+12.5 (0-6")	1.72E-01	1.72E-01	4.84E-01	3.14E+01	5.39E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	6.49E+01	3.12E-01	9.60E-05	4.54E+00	1.21E-04	4.70E+00	1.10E-01	3.76E+00	3.21E-05
CMWA-100 (0-6")	1.72E-01	1.72E-01	4.84E-01	2.79E+02	4.79E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.77E+02	2.77E+00	9.60E-05	4.54E+00	1.07E-03	4.70E+00	1.10E-01	3.76E+00	2.86E-04
CMWA-100+12.5 (0-6")	1.72E-01	1.72E-01	4.84E-01	1.19E+01	2.04E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.46E+01	1.18E-01	9.60E-05	4.54E+00	4.57E-05	4.70E+00	1.10E-01	3.76E+00	1.22E-05
CMWA-150 (0-6")	1.72E-01	1.72E-01	4.84E-01	1.69E+02	2.89E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.48E+02	1.67E+00	9.60E-05	4.54E+00	6.47E-04	4.70E+00	1.10E-01	3.76E+00	1.72E-04
CMWA-150+12.5 (0-6")	1.72E-01	1.72E-01	4.84E-01	9.29E+00	1.59E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.92E+01	9.22E-02	9.60E-05	4.54E+00	3.57E-05	4.70E+00	1.10E-01	3.76E+00	9.49E-06
CMWA-200 (0-6")	1.72E-01	1.72E-01	4.84E-01	6.05E+02	1.04E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.25E+03	6.01E+00	9.60E-05	4.54E+00	2.32E-03	4.70E+00	1.10E-01	3.76E+00	6.18E-04
CMWA2-250 (0-6")	1.72E-01	1.72E-01	4.84E-01	1.15E+01	1.98E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.38E+01	1.15E-01	9.60E-05	4.54E+00	4.43E-05	4.70E+00	1.10E-01	3.76E+00	1.18E-05
CMWA-250 (0-6")	1.72E-01	1.72E-01	4.84E-01	5.74E+01	9.84E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.19E+02	5.70E-01	9.60E-05	4.54E+00	2.20E-04	4.70E+00	1.10E-01	3.76E+00	5.86E-05
CMWA-250+50 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CMWA-300 (0-6")	1.72E-01	1.72E-01	4.84E-01	2.34E+01	4.02E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.84E+01	2.32E-01	9.60E-05	4.54E+00	9.00E-05	4.70E+00	1.10E-01	3.76E+00	2.39E-05
CMWA-300+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	2.92E+01	BB	BB	BB	BB	BB	BB	BB	BB
CMWA-350 (0-6")	1.72E-01	1.72E-01	4.84E-01	1.80E+01	3.08E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.72E+01	1.79E-01	9.60E-05	4.54E+00	6.91E-05	4.70E+00	1.10E-01	3.76E+00	1.84E-05
CMWA-350+0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CMWA-50 (0-6")	1.72E-01	1.72E-01	4.84E-01	5.34E+01	9.17E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.10E+02	5.31E-01	9.60E-05	4.54E+00	2.05E-04	4.70E+00	1.10E-01	3.76E+00	5.46E-05
CMWA-50+12.5 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CMWA-Comp 1 (0-6")	1.72E-01	1.72E-01	4.84E-01	8.90E+01	1.53E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.84E+02	8.84E-01	9.60E-05	4.54E+00	3.42E-04	4.70E+00	1.10E-01	3.76E+00	9.10E-05
CMWA-Comp 2 (0-6")	1.72E-01	1.72E-01	4.84E-01	5.34E+02	9.16E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.10E+03	5.30E+00	9.60E-05	4.54E+00	2.05E-03	4.70E+00	1.10E-01	3.76E+00	5.45E-04
																						Maximum HQ (Capitol Mine)	**6.18E-04**

TABLE C-3A: ARSENIC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 3 - CAPITOL MINE WASTE AREA (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **0.13**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Masked Shrew (Omnivorous Mammal - Terrestrial, Wetland)																							
Reference Site																							
SGBG-1 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	2.55E+00	8.82E+01	7.47E-01	1.10E-03	3.46E+01	3.81E-02	3.25E-01	5.50E-03	4.64E+01	4.70E+00	1.10E-01	5.63E+00	8.25E+00
SGBG-201 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	2.55E+00	4.23E+01	3.58E-01	1.10E-03	1.66E+01	1.82E-02	3.25E-01	5.50E-03	2.22E+01	4.70E+00	1.10E-01	5.63E+00	3.95E+00
Capitol Mine																						**Minimum HQ (Reference Site)**	**3.95E+00**
CMWA-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	2.54E+03	2.15E+01	1.10E-03	1.54E+02	1.70E-01	3.25E-01	5.50E-03	1.28E+03	4.70E+00	1.10E-01	5.63E+00	2.28E+02
CMWA-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	2.54E+03	2.15E+01	1.10E-03	1.54E+02	1.70E-01	3.25E-01	5.50E-03	1.28E+03	4.70E+00	1.10E-01	5.63E+00	2.28E+02
CMWA-0+12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	1.07E+03	9.06E+00	1.10E-03	6.49E+01	7.15E-02	3.25E-01	5.50E-03	5.40E+02	4.70E+00	1.10E-01	5.63E+00	9.59E+01
CMWA-100 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	9.52E+03	8.06E+01	1.10E-03	5.77E+02	6.36E-01	3.25E-01	5.50E-03	4.80E+03	4.70E+00	1.10E-01	5.63E+00	8.54E+02
CMWA-100+12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	4.05E+02	3.43E+00	1.10E-03	2.46E+01	2.71E-02	3.25E-01	5.50E-03	2.05E+02	4.70E+00	1.10E-01	5.63E+00	3.64E+01
CMWA-150 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	5.74E+03	4.86E+01	1.10E-03	3.48E+02	3.84E-01	3.25E-01	5.50E-03	2.90E+03	4.70E+00	1.10E-01	5.63E+00	5.15E+02
CMWA-150+12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	3.16E+02	2.68E+00	1.10E-03	1.92E+01	2.11E-02	3.25E-01	5.50E-03	1.60E+02	4.70E+00	1.10E-01	5.63E+00	2.84E+01
CMWA-200 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	2.06E+04	1.75E+02	1.10E-03	1.25E+03	1.38E+00	3.25E-01	5.50E-03	1.04E+04	4.70E+00	1.10E-01	5.63E+00	1.85E+03
CMWA2-250 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	3.93E+02	3.33E+00	1.10E-03	2.38E+01	2.63E-02	3.25E-01	5.50E-03	1.98E+02	4.70E+00	1.10E-01	5.63E+00	3.52E+01
CMWA-250 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	1.95E+03	1.66E+01	1.10E-03	1.19E+02	1.31E-01	3.25E-01	5.50E-03	9.86E+02	4.70E+00	1.10E-01	5.63E+00	1.75E+02
CMWA-250+50 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CMWA-300 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	7.98E+02	6.76E+00	1.10E-03	4.84E+01	5.33E-02	3.25E-01	5.50E-03	4.02E+02	4.70E+00	1.10E-01	5.63E+00	7.15E+01
CMWA-300+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	2.92E+01	BB	BB	BB	BB	BB	BB	BB	BB
CMWA-350 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	6.13E+02	5.19E+00	1.10E-03	3.72E+01	4.09E-02	3.25E-01	5.50E-03	3.09E+02	4.70E+00	1.10E-01	5.63E+00	5.49E+01
CMWA-350+0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CMWA-50 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	1.82E+03	1.54E+01	1.10E-03	1.10E+02	1.22E-01	3.25E-01	5.50E-03	9.18E+02	4.70E+00	1.10E-01	5.63E+00	1.63E+02
CMWA-50+12.5 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CMWA-Comp 1 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	3.03E+03	2.57E+01	1.10E-03	1.84E+02	2.03E-01	3.25E-01	5.50E-03	1.53E+03	4.70E+00	1.10E-01	5.63E+00	2.72E+02
CMWA-Comp 2 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	1.82E+04	1.54E+02	1.10E-03	1.10E+03	1.21E+00	3.25E-01	5.50E-03	9.17E+03	4.70E+00	1.10E-01	5.63E+00	1.63E+03
																						Maximum HQ (Capitol Mine)	**1.85E+03**

Notes

1 See Tables 3-1 through 3-13 for ingestion rates, foraging ranges used to calculate the SUF, and body weights.

2 BAFs were calculated by dividing site-collected tissue by collocated soil concentrations (BAFs are in dry weight). The maximum BAF calculated from the Beartrap Creek and Blackfoot River transects was used for site dose calculations. The maximum BAF from the terrestrial reference site was used for reference site dose calculations.

3 The mammal, plant, and invertebrate concentrations were calculated by multiplying the soil concentration by the BAF to generate a tissue concentration (see note 2).

4 Mammal, plant, and invertebrate daily doses were calculated by multiplying the ingestion rate (see note 1) by the tissue concentration (see note 3).

5 Soil concentration from 0 to 6 inches below ground surface at point ID as measured by XRF 10. Doses were not calculated for detected and non-detected soil concentrations measured below the minimum reference site concentration, as indicated by BB. For results that were measured at less than the detection limit, doses were calculated using half of the detection limit.

6 Soil daily dose was calculated by multiplying the soil ingestion rate (see note 1) by soil concentration (see note 5).

7 Total daily dose is calculated using the following equation: total daily dose = ([mammal daily dose (if applicable) + plant daily dose (if applicable) + invertebrate daily dose (if applicable) + soil daily dose]*SUF)/receptor species body weight.

8 The TRVs used in this risk assessment represent a mid-range effects level. The derivation of TRVs is described in Navy (1998).

9 Allometrically adjusted TRVs for birds were calculated using the following equation: receptor species TRV = (test species TRV) x (test species body weight / receptor species body weight)$^{(1-1.2)}$.

10 Allometrically adjusted TRVs for mammals were calculated using the following equation: receptor species TRV = (test species TRV) x (test species body weight / receptor species body weight)$^{(1-0.94)}$.

11 HQs were calculated using the following equation: HQ = total daily dose/allometrically adjusted TRV.

12 Highlighted cells indicate an HQ greater than 1.0.

BAF	Bioaccumulation Factor	mg/kg	Milligram per kilogram
BB	Below minimum background reference site concentration	NA	Not applicable
EE/CA	Engineering Evaluation/Cost Analysis	NE	Not evaluated (no data for that point ID)
EU	Exposure Unit	Navy	Department of the Navy
HQ	Hazard quotient	SUF	Site use factor
ID	Identification	TRV	Toxicity reference value
kg	Kilogram	XRF	X-ray fluorescence
kg/day	Kilogram per day	XRF 10	XRF measurements recorded following drying and seiving through a #10-mesh screen
mg/day	Milligram per day		

Sources: Department of the Navy. 1998. "Development of Toxicity Reference Values for Conducting Ecological Risk Assessments at Naval Facilities in California, Interim Final." Prepared by Naval Facilities Engineering Command, Engineering Field Activity West (EFA West). San Bruno, California.

TABLE C-3B: CADMIUM DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 3 - CAPITOL MINE WASTE AREA

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 0.13

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Mourning Dove (Herbivorous Birds - Terrestrial)																							
Reference Site																							
SGBG-1 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.26E+00	3.57E-01	2.06E-03	NA	NA	NA	NA	5.36E-04	2.84E-01	1.52E-04	5.02E-04	1.09E-01	1.01E-05	1.00E+00	1.13E+00	6.27E-01	1.62E-05
SGBG-201 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.26E+00	2.76E+00	1.59E-02	NA	NA	NA	NA	5.36E-04	2.20E+00	1.18E-03	5.02E-04	1.09E-01	7.86E-05	1.00E+00	1.13E+00	6.27E-01	1.25E-04
Capitol Mine																					**Minimum HQ (Reference Site)**		**1.62E-05**
CMWA-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CMWA-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CMWA-0+12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.59E+00	4.29E+00	2.47E-02	NA	NA	NA	NA	5.36E-04	2.70E+00	1.45E-03	5.02E-04	1.09E-01	1.20E-04	1.00E+00	1.13E+00	6.27E-01	1.92E-04
CMWA-100 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CMWA-100+12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.59E+00	1.75E+00	1.01E-02	NA	NA	NA	NA	5.36E-04	1.10E+00	5.89E-04	5.02E-04	1.09E-01	4.90E-05	1.00E+00	1.13E+00	6.27E-01	7.81E-05
CMWA-150 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CMWA-150+12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CMWA-200 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CMWA2-250 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CMWA-250 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.59E+00	1.54E+00	8.86E-03	NA	NA	NA	NA	5.36E-04	9.68E-01	5.19E-04	5.02E-04	1.09E-01	4.31E-05	1.00E+00	1.13E+00	6.27E-01	6.88E-05
CMWA-250+50 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.59E+00	9.70E-01	5.59E-03	NA	NA	NA	NA	5.36E-04	6.11E-01	3.27E-04	5.02E-04	1.09E-01	2.72E-05	1.00E+00	1.13E+00	6.27E-01	4.34E-05
CMWA-300 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CMWA-300+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.59E+00	3.97E-01	2.29E-03	NA	NA	NA	NA	5.36E-04	2.50E-01	1.34E-04	5.02E-04	1.09E-01	1.11E-05	1.00E+00	1.13E+00	6.27E-01	1.78E-05
CMWA-350 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CMWA-350+0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CMWA-50 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CMWA-50+12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CMWA-Comp 1 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.59E+00	4.83E+00	2.78E-02	NA	NA	NA	NA	5.36E-04	3.04E+00	1.63E-03	5.02E-04	1.09E-01	1.35E-04	1.00E+00	1.13E+00	6.27E-01	2.16E-04
CMWA-Comp 2 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.59E+00	4.73E+00	2.73E-02	NA	NA	NA	NA	5.36E-04	2.98E+00	1.60E-03	5.02E-04	1.09E-01	1.33E-04	1.00E+00	1.13E+00	6.27E-01	2.12E-04
																					Maximum HQ (Capitol Mine)		**2.16E-04**
Red-Tailed Hawk (Carnivorous Birds - Terrestrial)																							
Reference Site																							
SGBG-1 (0-6")	9.00E-02	9.00E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.84E-01	1.46E-03	1.87E-04	1.13E+00	2.40E-07	1.00E+00	1.13E+00	1.00E+00	2.39E-07
SGBG-201 (0-6")	9.00E-02	9.00E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.20E+00	1.13E-02	1.87E-04	1.13E+00	1.86E-06	1.00E+00	1.13E+00	1.00E+00	1.85E-06
Capitol Mine																					**Minimum HQ (Reference Site)**		**2.39E-07**
CMWA-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CMWA-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CMWA-0+12.5 (0-6")	9.00E-02	9.00E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.70E+00	1.38E-02	1.87E-04	1.13E+00	2.28E-06	1.00E+00	1.13E+00	1.00E+00	2.28E-06
CMWA-100 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CMWA-100+12.5 (0-6")	9.00E-02	9.00E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.10E+00	5.64E-03	1.87E-04	1.13E+00	9.28E-07	1.00E+00	1.13E+00	1.00E+00	9.27E-07
CMWA-150 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CMWA-150+12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CMWA-200 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CMWA2-250 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CMWA-250 (0-6")	9.00E-02	9.00E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	9.68E-01	4.96E-03	1.87E-04	1.13E+00	8.17E-07	1.00E+00	1.13E+00	1.00E+00	8.16E-07
CMWA-250+50 (0-6")	9.00E-02	9.00E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	6.11E-01	3.13E-03	1.87E-04	1.13E+00	5.15E-07	1.00E+00	1.13E+00	1.00E+00	5.15E-07
CMWA-300 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CMWA-300+25 (0-6")	9.00E-02	9.00E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.50E-01	1.28E-03	1.87E-04	1.13E+00	2.11E-07	1.00E+00	1.13E+00	1.00E+00	2.11E-07
CMWA-350 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CMWA-350+0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CMWA-50 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CMWA-50+12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CMWA-Comp 1 (0-6")	9.00E-02	9.00E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.04E+00	1.56E-02	1.87E-04	1.13E+00	2.56E-06	1.00E+00	1.13E+00	1.00E+00	2.56E-06
CMWA-Comp 2 (0-6")	9.00E-02	9.00E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.98E+00	1.53E-02	1.87E-04	1.13E+00	2.51E-06	1.00E+00	1.13E+00	1.00E+00	2.51E-06
																					Maximum HQ (Capitol Mine)		**2.56E-06**

TABLE C-3B: CADMIUM DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 3 - CAPITOL MINE WASTE AREA (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 0.13

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
American Kestrel (Insectivorous Birds - Terrestrial)																							
Reference Site																							
SGBG-1 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	7.00E+00	1.99E+00	2.74E-02	7.84E-04	2.84E-01	2.23E-04	4.97E-04	1.24E-01	1.10E-04	1.00E+00	1.13E+00	6.43E-01	1.72E-04
SGBG-201 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	7.00E+00	1.54E+01	2.12E-01	7.84E-04	2.20E+00	1.73E-03	4.97E-04	1.24E-01	8.56E-04	1.00E+00	1.13E+00	6.43E-01	1.33E-03
Capitol Mine																						**Minimum HQ (Reference Site)**	**1.72E-04**
CMWA-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CMWA-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CMWA-0+12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	7.00E+00	1.89E+01	2.60E-01	7.84E-04	2.70E+00	2.12E-03	4.97E-04	1.24E-01	1.05E-03	1.00E+00	1.13E+00	6.43E-01	1.63E-03
CMWA-100 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CMWA-100+12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	7.00E+00	7.70E+00	1.06E-01	7.84E-04	1.10E+00	8.63E-04	4.97E-04	1.24E-01	4.28E-04	1.00E+00	1.13E+00	6.43E-01	6.66E-04
CMWA-150 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CMWA-150+12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CMWA-200 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CMWA2-250 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CMWA-250 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	7.00E+00	6.78E+00	9.32E-02	7.84E-04	9.68E-01	7.59E-04	4.97E-04	1.24E-01	3.77E-04	1.00E+00	1.13E+00	6.43E-01	5.86E-04
CMWA-250+50 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	7.00E+00	4.28E+00	5.88E-02	7.84E-04	6.11E-01	4.79E-04	4.97E-04	1.24E-01	2.38E-04	1.00E+00	1.13E+00	6.43E-01	3.70E-04
CMWA-300 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CMWA-300+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	7.00E+00	1.75E+00	2.41E-02	7.84E-04	2.50E-01	1.96E-04	4.97E-04	1.24E-01	9.73E-05	1.00E+00	1.13E+00	6.43E-01	1.51E-04
CMWA-350 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CMWA-350+0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CMWA-50 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CMWA-50+12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CMWA-Comp 1 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	7.00E+00	2.13E+01	2.93E-01	7.84E-04	3.04E+00	2.38E-03	4.97E-04	1.24E-01	1.18E-03	1.00E+00	1.13E+00	6.43E-01	1.84E-03
CMWA-Comp 2 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	7.00E+00	2.09E+01	2.87E-01	7.84E-04	2.98E+00	2.34E-03	4.97E-04	1.24E-01	1.16E-03	1.00E+00	1.13E+00	6.43E-01	1.80E-03
																						Maximum HQ (Capitol Mine)	**1.84E-03**
Meadow Vole (Small Herbivorous Mammal - Terrestrial)																							
Reference Site																							
SGBG-1 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.26E+00	3.57E-01	1.67E-03	NA	NA	NA	NA	1.13E-04	2.84E-01	3.20E-05	1.00E+00	3.06E-02	5.57E-02	2.64E+00	3.14E-02	2.64E+00	2.11E-02
SGBG-201 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.26E+00	2.76E+00	1.30E-02	NA	NA	NA	NA	1.13E-04	2.20E+00	2.48E-04	1.00E+00	3.06E-02	4.32E-01	2.64E+00	3.14E-02	2.64E+00	1.63E-01
Capitol Mine																						**Minimum HQ (Reference Site)**	**2.11E-02**
CMWA-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CMWA-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CMWA-0+12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.59E+00	4.29E+00	2.01E-02	NA	NA	NA	NA	1.13E-04	2.70E+00	3.04E-04	1.00E+00	3.06E-02	6.67E-01	2.64E+00	3.14E-02	2.64E+00	2.52E-01
CMWA-100 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CMWA-100+12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.59E+00	1.75E+00	8.19E-03	NA	NA	NA	NA	1.13E-04	1.10E+00	1.24E-04	1.00E+00	3.06E-02	2.72E-01	2.64E+00	3.14E-02	2.64E+00	1.03E-01
CMWA-150 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CMWA-150+12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CMWA-200 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CMWA2-250 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CMWA-250 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.59E+00	1.54E+00	7.21E-03	NA	NA	NA	NA	1.13E-04	9.68E-01	1.09E-04	1.00E+00	3.06E-02	2.39E-01	2.64E+00	3.14E-02	2.64E+00	9.04E-02
CMWA-250+50 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.59E+00	9.70E-01	4.55E-03	NA	NA	NA	NA	1.13E-04	6.11E-01	6.88E-05	1.00E+00	3.06E-02	1.51E-01	2.64E+00	3.14E-02	2.64E+00	5.71E-02
CMWA-300 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CMWA-300+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.59E+00	3.97E-01	1.86E-03	NA	NA	NA	NA	1.13E-04	2.50E-01	2.81E-05	1.00E+00	3.06E-02	6.18E-02	2.64E+00	3.14E-02	2.64E+00	2.34E-02
CMWA-350 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CMWA-350+0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CMWA-50 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CMWA-50+12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CMWA-Comp 1 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.59E+00	4.83E+00	2.26E-02	NA	NA	NA	NA	1.13E-04	3.04E+00	3.42E-04	1.00E+00	3.06E-02	7.51E-01	2.64E+00	3.14E-02	2.64E+00	2.84E-01
CMWA-Comp 2 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.59E+00	4.73E+00	2.22E-02	NA	NA	NA	NA	1.13E-04	2.98E+00	3.35E-04	1.00E+00	3.06E-02	7.36E-01	2.64E+00	3.14E-02	2.64E+00	2.78E-01
																						Maximum HQ (Capitol Mine)	**2.84E-01**

TABLE C-3B: CADMIUM DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 3 - CAPITOL MINE WASTE AREA (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 0.13

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
White-Tailed Deer (Large Herbivorous Mammal - Terrestrial)																							
Reference Site																							
SGBG-1 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.26E+00	3.57E-01	5.11E-01	NA	NA	NA	NA	2.86E-02	2.84E-01	8.13E-03	7.27E-04	1.35E+02	2.80E-06	2.64E+00	3.14E-02	1.60E+00	1.75E-06
SGBG-201 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.26E+00	2.76E+00	3.96E+00	NA	NA	NA	NA	2.86E-02	2.20E+00	6.30E-02	7.27E-04	1.35E+02	2.17E-05	2.64E+00	3.14E-02	1.60E+00	1.36E-05
Capitol Mine																						**Minimum HQ (Reference Site)**	**1.75E-06**
CMWA-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CMWA-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CMWA-0+12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.59E+00	4.29E+00	6.14E+00	NA	NA	NA	NA	2.86E-02	2.70E+00	7.73E-02	7.27E-04	1.35E+02	3.35E-05	2.64E+00	3.14E-02	1.60E+00	2.10E-05
CMWA-100 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CMWA-100+12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.59E+00	1.75E+00	2.50E+00	NA	NA	NA	NA	2.86E-02	1.10E+00	3.15E-02	7.27E-04	1.35E+02	1.36E-05	2.64E+00	3.14E-02	1.60E+00	8.54E-06
CMWA-150 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CMWA-150+12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CMWA-200 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CMWA2-250 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CMWA-250 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.59E+00	1.54E+00	2.20E+00	NA	NA	NA	NA	2.86E-02	9.68E-01	2.77E-02	7.27E-04	1.35E+02	1.20E-05	2.64E+00	3.14E-02	1.60E+00	7.51E-06
CMWA-250+50 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.59E+00	9.70E-01	1.39E+00	NA	NA	NA	NA	2.86E-02	6.11E-01	1.75E-02	7.27E-04	1.35E+02	7.58E-06	2.64E+00	3.14E-02	1.60E+00	4.74E-06
CMWA-300 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CMWA-300+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.59E+00	3.97E-01	5.68E-01	NA	NA	NA	NA	2.86E-02	2.50E-01	7.16E-03	7.27E-04	1.35E+02	3.10E-06	2.64E+00	3.14E-02	1.60E+00	1.94E-06
CMWA-350 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CMWA-350+0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CMWA-50 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CMWA-50+12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CMWA-Comp 1 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.59E+00	4.83E+00	6.91E+00	NA	NA	NA	NA	2.86E-02	3.04E+00	8.70E-02	7.27E-04	1.35E+02	3.77E-05	2.64E+00	3.14E-02	1.60E+00	2.36E-05
CMWA-Comp 2 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.59E+00	4.73E+00	6.78E+00	NA	NA	NA	NA	2.86E-02	2.98E+00	8.53E-02	7.27E-04	1.35E+02	3.70E-05	2.64E+00	3.14E-02	1.60E+00	2.31E-05
																						Maximum HQ (Capitol Mine)	**2.36E-05**
Red Fox (Carnivorous Mammal - Terrestrial)																							
Reference Site																							
SGBG-1 (0-6")	1.72E-01	1.72E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.84E-01	1.36E-03	9.60E-05	4.54E+00	2.89E-08	2.64E+00	3.14E-02	1.96E+00	1.47E-08
SGBG-201 (0-6")	1.72E-01	1.72E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.20E+00	1.06E-02	9.60E-05	4.54E+00	2.24E-07	2.64E+00	3.14E-02	1.96E+00	1.14E-07
Capitol Mine																						**Minimum HQ (Reference Site)**	**1.47E-08**
CMWA-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CMWA-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CMWA-0+12.5 (0-6")	1.72E-01	1.72E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.70E+00	1.30E-02	9.60E-05	4.54E+00	2.75E-07	2.64E+00	3.14E-02	1.96E+00	1.40E-07
CMWA-100 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CMWA-100+12.5 (0-6")	1.72E-01	1.72E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.10E+00	5.28E-03	9.60E-05	4.54E+00	1.12E-07	2.64E+00	3.14E-02	1.96E+00	5.71E-08
CMWA-150 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CMWA-150+12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CMWA-200 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CMWA2-250 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CMWA-250 (0-6")	1.72E-01	1.72E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	9.68E-01	4.65E-03	9.60E-05	4.54E+00	9.84E-08	2.64E+00	3.14E-02	1.96E+00	5.03E-08
CMWA-250+50 (0-6")	1.72E-01	1.72E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	6.11E-01	2.93E-03	9.60E-05	4.54E+00	6.21E-08	2.64E+00	3.14E-02	1.96E+00	3.17E-08
CMWA-300 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CMWA-300+25 (0-6")	1.72E-01	1.72E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.50E-01	1.20E-03	9.60E-05	4.54E+00	2.54E-08	2.64E+00	3.14E-02	1.96E+00	1.30E-08
CMWA-350 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CMWA-350+0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CMWA-50 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CMWA-50+12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CMWA-Comp 1 (0-6")	1.72E-01	1.72E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.04E+00	1.46E-02	9.60E-05	4.54E+00	3.09E-07	2.64E+00	3.14E-02	1.96E+00	1.58E-07
CMWA-Comp 2 (0-6")	1.72E-01	1.72E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.98E+00	1.43E-02	9.60E-05	4.54E+00	3.03E-07	2.64E+00	3.14E-02	1.96E+00	1.55E-07
																						Maximum HQ (Capitol Mine)	**1.58E-07**

TABLE C-3B: CADMIUM DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 3 - CAPITOL MINE WASTE AREA (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 0.13

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Masked Shrew (Omnivorous Mammal - Terrestrial, Wetland)																							
Reference Site																							
SGBG-1 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	7.00E+00	1.99E+00	1.68E-02	1.10E-03	2.84E-01	3.13E-04	3.25E-01	5.50E-03	1.01E+00	2.64E+00	3.14E-02	2.93E+00	3.46E-01
SGBG-201 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	7.00E+00	1.54E+01	1.30E-01	1.10E-03	2.20E+00	2.42E-03	3.25E-01	5.50E-03	7.85E+00	2.64E+00	3.14E-02	2.93E+00	2.68E+00
Capitol Mine																						**Minimum HQ (Reference Site)**	**3.46E-01**
CMWA-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CMWA-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CMWA-0+12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	7.00E+00	1.89E+01	1.60E-01	1.10E-03	2.70E+00	2.97E-03	3.25E-01	5.50E-03	9.63E+00	2.64E+00	3.14E-02	2.93E+00	3.29E+00
CMWA-100 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CMWA-100+12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	7.00E+00	7.70E+00	6.52E-02	1.10E-03	1.10E+00	1.21E-03	3.25E-01	5.50E-03	3.92E+00	2.64E+00	3.14E-02	2.93E+00	1.34E+00
CMWA-150 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CMWA-150+12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CMWA-200 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CMWA2-250 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CMWA-250 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	7.00E+00	6.78E+00	5.74E-02	1.10E-03	9.68E-01	1.07E-03	3.25E-01	5.50E-03	3.45E+00	2.64E+00	3.14E-02	2.93E+00	1.18E+00
CMWA-250+50 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	7.00E+00	4.28E+00	3.62E-02	1.10E-03	6.11E-01	6.73E-04	3.25E-01	5.50E-03	2.18E+00	2.64E+00	3.14E-02	2.93E+00	7.44E-01
CMWA-300 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CMWA-300+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	7.00E+00	1.75E+00	1.48E-02	1.10E-03	2.50E-01	2.75E-04	3.25E-01	5.50E-03	8.92E-01	2.64E+00	3.14E-02	2.93E+00	3.04E-01
CMWA-350 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CMWA-350+0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CMWA-50 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CMWA-50+12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CMWA-Comp 1 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	7.00E+00	2.13E+01	1.80E-01	1.10E-03	3.04E+00	3.35E-03	3.25E-01	5.50E-03	1.08E+01	2.64E+00	3.14E-02	2.93E+00	3.70E+00
CMWA-Comp 2 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	7.00E+00	2.09E+01	1.77E-01	1.10E-03	2.98E+00	3.28E-03	3.25E-01	5.50E-03	1.06E+01	2.64E+00	3.14E-02	2.93E+00	3.63E+00
																						Maximum HQ (Capitol Mine)	**3.70E+00**

Notes

1 See Tables 3-1 through 3-13 for ingestion rates, foraging ranges used to calculate the SUF, and body weights.

2 BAFs were calculated by dividing site-collected tissue by collocated soil concentrations (BAFs are in dry weight). The maximum BAF calculated from the Beartrap Creek and Blackfoot River transects was used for site dose calculations. The maximum BAF from the terrestrial reference site was used for reference site dose calculations.

3 The mammal, plant, and invertebrate concentrations were calculated by multiplying the soil concentration by the BAF to generate a tissue concentration (see note 2).

4 Mammal, plant, and invertebrate daily doses were calculated by multiplying the ingestion rate (see note 1) by the tissue concentration (see note 3).

5 Soil concentration from 0 to 6 inches below ground surface at point ID from laboratory analysis. XRF 10 data were unavailable for cadmium. Doses were not calculated for detected and non-detected soil concentrations measured below the minimum reference site concentration, as indicated by BB. For results that were measured at less than the detection limit, doses were calculated using half of the detection limit.

6 Soil daily dose was calculated by multiplying the soil ingestion rate (see note 1) by soil concentration (see note 5).

7 Total daily dose is calculated using the following equation: total daily dose = ([mammal daily dose (if applicable) + plant daily dose (if applicable) + invertebrate daily dose (if applicable) + soil daily dose]*SUF)/receptor species body weight.

8 The TRVs used in this risk assessment represent a mid-range effects level. The derivation of TRVs is described in Navy (1998) and DTSC (2009).

9 Allometrically adjusted TRVs for birds were calculated using the following equation: receptor species TRV = (test species TRV) x (test species body weight / receptor species body weight)$^{(1-1.2)}$.

10 Allometrically adjusted TRVs for mammals were calculated using the following equation: receptor species TRV = (test species TRV) x (test species body weight / receptor species body weight)$^{(1-0.94)}$.

11 HQs were calculated using the following equation: HQ = total daily dose/allometrically adjusted TRV.

12 Highlighted cells indicate an HQ greater than 1.0.

BAF	Bioaccumulation Factor	mg/day	Milligram per day
BB	Below minimum background reference site concentration	mg/kg	Milligram per kilogram
DTSC	California Department of Toxic Substances Control	NA	Not applicable
EE/CA	Engineering Evaluation/Cost Analysis	Navy	Department of the Navy
EU	Exposure Unit	NE	Not evaluated (no data for that point ID)
HQ	Hazard quotient	SUF	Site use factor
ID	Identification	TRV	Toxicity reference value
kg	Kilogram	XRF	X-ray fluorescence
kg/day	Kilogram per day	XRF 10	XRF measurements recorded following drying and seiving through a #10-mesh screen

Sources:

Department of the Navy. 1998. "Development of Toxicity Reference Values for Conducting Ecological Risk Assessments at Naval Facilities in California, Interim Final." Prepared by Naval Facilities Engineering Command, Engineering Field Activity West (EFA West). San Bruno, California.

DTSC. 2009. HERD Ecological Risk Assessment Note 6. February. Available on-line at: http://www.dtsc.ca.gov/AssessingRisk/upload/CdEconote_Final.pdf.

TABLE C-3C: COPPER DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 3 - CAPITOL MINE WASTE AREA

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 0.13

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Mourning Dove (Herbivorous Birds - Terrestrial)																							
Reference Site																							
SGBG-1 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	7.79E-01	7.21E+01	4.15E-01	NA	NA	NA	NA	5.36E-04	9.25E+01	4.96E-02	5.02E-04	1.09E-01	2.14E-03	5.23E+01	4.09E-01	4.01E+01	5.32E-05
SGBG-201 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	7.79E-01	5.60E+01	3.22E-01	NA	NA	NA	NA	5.36E-04	7.19E+01	3.85E-02	5.02E-04	1.09E-01	1.66E-03	5.23E+01	4.09E-01	4.01E+01	4.13E-05
Capitol Mine																						**Minimum HQ (Reference Site)**	**4.13E-05**
CMWA-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	5.17E+02	2.98E+00	NA	NA	NA	NA	5.36E-04	4.57E+02	2.45E-01	5.02E-04	1.09E-01	1.48E-02	5.23E+01	4.09E-01	4.01E+01	3.70E-04
CMWA-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	5.17E+02	2.98E+00	NA	NA	NA	NA	5.36E-04	4.57E+02	2.45E-01	5.02E-04	1.09E-01	1.48E-02	5.23E+01	4.09E-01	4.01E+01	3.70E-04
CMWA-0+12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	4.41E+02	2.54E+00	NA	NA	NA	NA	5.36E-04	3.90E+02	2.09E-01	5.02E-04	1.09E-01	1.26E-02	5.23E+01	4.09E-01	4.01E+01	3.15E-04
CMWA-100 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	5.30E+02	3.05E+00	NA	NA	NA	NA	5.36E-04	4.68E+02	2.51E-01	5.02E-04	1.09E-01	1.52E-02	5.23E+01	4.09E-01	4.01E+01	3.78E-04
CMWA-100+12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	1.20E+02	6.91E-01	NA	NA	NA	NA	5.36E-04	1.06E+02	5.68E-02	5.02E-04	1.09E-01	3.44E-03	5.23E+01	4.09E-01	4.01E+01	8.57E-05
CMWA-150 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	4.60E+02	2.65E+00	NA	NA	NA	NA	5.36E-04	4.07E+02	2.18E-01	5.02E-04	1.09E-01	1.32E-02	5.23E+01	4.09E-01	4.01E+01	3.29E-04
CMWA-150+12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	1.75E+02	1.01E+00	NA	NA	NA	NA	5.36E-04	1.55E+02	8.31E-02	5.02E-04	1.09E-01	5.03E-03	5.23E+01	4.09E-01	4.01E+01	1.25E-04
CMWA-200 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CMWA2-250 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	3.86E+02	2.22E+00	NA	NA	NA	NA	5.36E-04	3.41E+02	1.83E-01	5.02E-04	1.09E-01	1.11E-02	5.23E+01	4.09E-01	4.01E+01	2.75E-04
CMWA-250 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	1.27E+02	7.34E-01	NA	NA	NA	NA	5.36E-04	1.13E+02	6.03E-02	5.02E-04	1.09E-01	3.65E-03	5.23E+01	4.09E-01	4.01E+01	9.10E-05
CMWA-250+50 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	1.56E+02	8.96E-01	NA	NA	NA	NA	5.36E-04	1.37E+02	7.37E-02	5.02E-04	1.09E-01	4.46E-03	5.23E+01	4.09E-01	4.01E+01	1.11E-04
CMWA-300 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	4.69E+02	2.70E+00	NA	NA	NA	NA	5.36E-04	4.15E+02	2.22E-01	5.02E-04	1.09E-01	1.34E-02	5.23E+01	4.09E-01	4.01E+01	3.35E-04
CMWA-300+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	1.12E+02	6.45E-01	NA	NA	NA	NA	5.36E-04	9.90E+01	5.30E-02	5.02E-04	1.09E-01	3.21E-03	5.23E+01	4.09E-01	4.01E+01	8.00E-05
CMWA-350 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	2.10E+02	1.21E+00	NA	NA	NA	NA	5.36E-04	1.86E+02	9.95E-02	5.02E-04	1.09E-01	6.02E-03	5.23E+01	4.09E-01	4.01E+01	1.50E-04
CMWA-350+0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	1.03E+02	5.95E-01	NA	NA	NA	NA	5.36E-04	9.13E+01	4.89E-02	5.02E-04	1.09E-01	2.96E-03	5.23E+01	4.09E-01	4.01E+01	7.38E-05
CMWA-50 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	8.49E+02	4.89E+00	NA	NA	NA	NA	5.36E-04	7.50E+02	4.02E-01	5.02E-04	1.09E-01	2.43E-02	5.23E+01	4.09E-01	4.01E+01	6.06E-04
CMWA-50+12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	1.36E+02	7.82E-01	NA	NA	NA	NA	5.36E-04	1.20E+02	6.43E-02	5.02E-04	1.09E-01	3.89E-03	5.23E+01	4.09E-01	4.01E+01	9.70E-05
CMWA-Comp 1 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	3.27E+02	1.88E+00	NA	NA	NA	NA	5.36E-04	2.89E+02	1.55E-01	5.02E-04	1.09E-01	9.37E-03	5.23E+01	4.09E-01	4.01E+01	2.33E-04
CMWA-Comp 2 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	3.05E+02	1.76E+00	NA	NA	NA	NA	5.36E-04	2.70E+02	1.44E-01	5.02E-04	1.09E-01	8.74E-03	5.23E+01	4.09E-01	4.01E+01	2.18E-04
																						Maximum HQ (Capitol Mine)	**6.06E-04**
Red-Tailed Hawk (Carnivorous Birds - Terrestrial)																							
Reference Site																							
SGBG-1 (0-6")	9.00E-02	9.00E-02	6.61E-01	6.11E+01	5.50E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	9.25E+01	4.74E-01	1.87E-04	1.13E+00	9.83E-04	5.23E+01	4.09E-01	6.41E+01	1.53E-05
SGBG-201 (0-6")	9.00E-02	9.00E-02	6.61E-01	4.75E+01	4.27E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	7.19E+01	3.68E-01	1.87E-04	1.13E+00	7.63E-04	5.23E+01	4.09E-01	6.41E+01	1.19E-05
Capitol Mine																						**Minimum HQ (Reference Site)**	**1.19E-05**
CMWA-0 (0-6")	9.00E-02	9.00E-02	1.01E+00	4.62E+02	4.16E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.57E+02	2.34E+00	1.87E-04	1.13E+00	7.22E-03	5.23E+01	4.09E-01	6.41E+01	1.13E-04
CMWA-0 (0-6")	9.00E-02	9.00E-02	1.01E+00	4.62E+02	4.16E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.57E+02	2.34E+00	1.87E-04	1.13E+00	7.22E-03	5.23E+01	4.09E-01	6.41E+01	1.13E-04
CMWA-0+12.5 (0-6")	9.00E-02	9.00E-02	1.01E+00	3.94E+02	3.54E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.90E+02	2.00E+00	1.87E-04	1.13E+00	6.16E-03	5.23E+01	4.09E-01	6.41E+01	9.61E-05
CMWA-100 (0-6")	9.00E-02	9.00E-02	1.01E+00	4.73E+02	4.25E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.68E+02	2.40E+00	1.87E-04	1.13E+00	7.39E-03	5.23E+01	4.09E-01	6.41E+01	1.15E-04
CMWA-100+12.5 (0-6")	9.00E-02	9.00E-02	1.01E+00	1.07E+02	9.63E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.06E+02	5.44E-01	1.87E-04	1.13E+00	1.67E-03	5.23E+01	4.09E-01	6.41E+01	2.61E-05
CMWA-150 (0-6")	9.00E-02	9.00E-02	1.01E+00	4.11E+02	3.70E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.07E+02	2.09E+00	1.87E-04	1.13E+00	6.43E-03	5.23E+01	4.09E-01	6.41E+01	1.00E-04
CMWA-150+12.5 (0-6")	9.00E-02	9.00E-02	1.01E+00	1.57E+02	1.41E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.55E+02	7.95E-01	1.87E-04	1.13E+00	2.45E-03	5.23E+01	4.09E-01	6.41E+01	3.82E-05
CMWA-200 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CMWA2-250 (0-6")	9.00E-02	9.00E-02	1.01E+00	3.44E+02	3.10E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.41E+02	1.75E+00	1.87E-04	1.13E+00	5.38E-03	5.23E+01	4.09E-01	6.41E+01	8.40E-05
CMWA-250 (0-6")	9.00E-02	9.00E-02	1.01E+00	1.14E+02	1.02E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.13E+02	5.77E-01	1.87E-04	1.13E+00	1.78E-03	5.23E+01	4.09E-01	6.41E+01	2.77E-05
CMWA-250+50 (0-6")	9.00E-02	9.00E-02	1.01E+00	1.39E+02	1.25E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.37E+02	7.05E-01	1.87E-04	1.13E+00	2.17E-03	5.23E+01	4.09E-01	6.41E+01	3.39E-05
CMWA-300 (0-6")	9.00E-02	9.00E-02	1.01E+00	4.19E+02	3.77E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.15E+02	2.13E+00	1.87E-04	1.13E+00	6.55E-03	5.23E+01	4.09E-01	6.41E+01	1.02E-04
CMWA-300+25 (0-6")	9.00E-02	9.00E-02	1.01E+00	1.00E+02	9.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	9.90E+01	5.08E-01	1.87E-04	1.13E+00	1.56E-03	5.23E+01	4.09E-01	6.41E+01	2.44E-05
CMWA-350 (0-6")	9.00E-02	9.00E-02	1.01E+00	1.88E+02	1.69E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.86E+02	9.52E-01	1.87E-04	1.13E+00	2.93E-03	5.23E+01	4.09E-01	6.41E+01	4.58E-05
CMWA-350+0 (0-6")	9.00E-02	9.00E-02	1.01E+00	9.23E+01	8.30E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	9.13E+01	4.68E-01	1.87E-04	1.13E+00	1.44E-03	5.23E+01	4.09E-01	6.41E+01	2.25E-05
CMWA-50 (0-6")	9.00E-02	9.00E-02	1.01E+00	7.58E+02	6.82E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	7.50E+02	3.85E+00	1.87E-04	1.13E+00	1.18E-02	5.23E+01	4.09E-01	6.41E+01	1.85E-04
CMWA-50+12.5 (0-6")	9.00E-02	9.00E-02	1.01E+00	1.21E+02	1.09E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.20E+02	6.15E-01	1.87E-04	1.13E+00	1.90E-03	5.23E+01	4.09E-01	6.41E+01	2.96E-05
CMWA-Comp 1 (0-6")	9.00E-02	9.00E-02	1.01E+00	2.92E+02	2.63E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.89E+02	1.48E+00	1.87E-04	1.13E+00	4.56E-03	5.23E+01	4.09E-01	6.41E+01	7.12E-05
CMWA-Comp 2 (0-6")	9.00E-02	9.00E-02	1.01E+00	2.72E+02	2.45E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.70E+02	1.38E+00	1.87E-04	1.13E+00	4.26E-03	5.23E+01	4.09E-01	6.41E+01	6.64E-05
																						Maximum HQ (Capitol Mine)	**1.85E-04**

TABLE C-3C: COPPER DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 3 - CAPITOL MINE WASTE AREA (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 0.13

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
American Kestrel (Insectivorous Birds - Terrestrial)																							
Reference Site																							
SGBG-1 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	3.70E+00	3.43E+02	4.72E+00	7.84E-04	9.25E+01	7.26E-02	4.97E-04	1.24E-01	1.92E-02	5.23E+01	4.09E-01	4.12E+01	4.66E-04
SGBG-201 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	3.70E+00	2.66E+02	3.66E+00	7.84E-04	7.19E+01	5.64E-02	4.97E-04	1.24E-01	1.49E-02	5.23E+01	4.09E-01	4.12E+01	3.62E-04
Capitol Mine																						**Minimum HQ (Reference Site)**	**3.62E-04**
CMWA-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	2.22E+03	3.05E+01	7.84E-04	4.57E+02	3.59E-01	4.97E-04	1.24E-01	1.24E-01	5.23E+01	4.09E-01	4.12E+01	3.01E-03
CMWA-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	2.22E+03	3.05E+01	7.84E-04	4.57E+02	3.59E-01	4.97E-04	1.24E-01	1.24E-01	5.23E+01	4.09E-01	4.12E+01	3.01E-03
CMWA-0+12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	1.89E+03	2.60E+01	7.84E-04	3.90E+02	3.06E-01	4.97E-04	1.24E-01	1.06E-01	5.23E+01	4.09E-01	4.12E+01	2.56E-03
CMWA-100 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	2.27E+03	3.12E+01	7.84E-04	4.68E+02	3.67E-01	4.97E-04	1.24E-01	1.27E-01	5.23E+01	4.09E-01	4.12E+01	3.08E-03
CMWA-100+12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	5.14E+02	7.07E+00	7.84E-04	1.06E+02	8.31E-02	4.97E-04	1.24E-01	2.87E-02	5.23E+01	4.09E-01	4.12E+01	6.97E-04
CMWA-150 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	1.97E+03	2.72E+01	7.84E-04	4.07E+02	3.19E-01	4.97E-04	1.24E-01	1.10E-01	5.23E+01	4.09E-01	4.12E+01	2.67E-03
CMWA-150+12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	7.52E+02	1.03E+01	7.84E-04	1.55E+02	1.22E-01	4.97E-04	1.24E-01	4.19E-02	5.23E+01	4.09E-01	4.12E+01	1.02E-03
CMWA-200 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CMWA2-250 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	1.65E+03	2.28E+01	7.84E-04	3.41E+02	2.67E-01	4.97E-04	1.24E-01	9.22E-02	5.23E+01	4.09E-01	4.12E+01	2.24E-03
CMWA-250 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	5.46E+02	7.51E+00	7.84E-04	1.13E+02	8.83E-02	4.97E-04	1.24E-01	3.05E-02	5.23E+01	4.09E-01	4.12E+01	7.40E-04
CMWA-250+50 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	6.67E+02	9.18E+00	7.84E-04	1.37E+02	1.08E-01	4.97E-04	1.24E-01	3.72E-02	5.23E+01	4.09E-01	4.12E+01	9.04E-04
CMWA-300 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	2.01E+03	2.77E+01	7.84E-04	4.15E+02	3.25E-01	4.97E-04	1.24E-01	1.12E-01	5.23E+01	4.09E-01	4.12E+01	2.73E-03
CMWA-300+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	4.80E+02	6.61E+00	7.84E-04	9.90E+01	7.77E-02	4.97E-04	1.24E-01	2.68E-02	5.23E+01	4.09E-01	4.12E+01	6.51E-04
CMWA-350 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	9.01E+02	1.24E+01	7.84E-04	1.86E+02	1.46E-01	4.97E-04	1.24E-01	5.02E-02	5.23E+01	4.09E-01	4.12E+01	1.22E-03
CMWA-350+0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	4.43E+02	6.10E+00	7.84E-04	9.13E+01	7.16E-02	4.97E-04	1.24E-01	2.47E-02	5.23E+01	4.09E-01	4.12E+01	6.00E-04
CMWA-50 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	3.64E+03	5.01E+01	7.84E-04	7.50E+02	5.88E-01	4.97E-04	1.24E-01	2.03E-01	5.23E+01	4.09E-01	4.12E+01	4.93E-03
CMWA-50+12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	5.82E+02	8.01E+00	7.84E-04	1.20E+02	9.41E-02	4.97E-04	1.24E-01	3.25E-02	5.23E+01	4.09E-01	4.12E+01	7.89E-04
CMWA-Comp 1 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	1.40E+03	1.93E+01	7.84E-04	2.89E+02	2.27E-01	4.97E-04	1.24E-01	7.82E-02	5.23E+01	4.09E-01	4.12E+01	1.90E-03
CMWA-Comp 2 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	1.31E+03	1.80E+01	7.84E-04	2.70E+02	2.11E-01	4.97E-04	1.24E-01	7.29E-02	5.23E+01	4.09E-01	4.12E+01	1.77E-03
																						Maximum HQ (Capitol Mine)	**4.93E-03**
Meadow Vole (Small Herbivorous Mammal - Terrestrial)																							
Reference Site																							
SGBG-1 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	7.79E-01	7.21E+01	3.38E-01	NA	NA	NA	NA	1.13E-04	9.25E+01	1.04E-02	1.00E+00	3.06E-02	1.14E+01	6.32E+02	2.47E-02	6.24E+02	1.83E-02
SGBG-201 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	7.79E-01	5.60E+01	2.62E-01	NA	NA	NA	NA	1.13E-04	7.19E+01	8.09E-03	1.00E+00	3.06E-02	8.84E+00	6.32E+02	2.47E-02	6.24E+02	1.42E-02
Capitol Mine																						**Minimum HQ (Reference Site)**	**1.42E-02**
CMWA-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	5.17E+02	2.43E+00	NA	NA	NA	NA	1.13E-04	4.57E+02	5.15E-02	1.00E+00	3.06E-02	8.10E+01	6.32E+02	2.47E-02	6.24E+02	1.30E-01
CMWA-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	5.17E+02	2.43E+00	NA	NA	NA	NA	1.13E-04	4.57E+02	5.15E-02	1.00E+00	3.06E-02	8.10E+01	6.32E+02	2.47E-02	6.24E+02	1.30E-01
CMWA-0+12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	4.41E+02	2.07E+00	NA	NA	NA	NA	1.13E-04	3.90E+02	4.39E-02	1.00E+00	3.06E-02	6.91E+01	6.32E+02	2.47E-02	6.24E+02	1.11E-01
CMWA-100 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	5.30E+02	2.48E+00	NA	NA	NA	NA	1.13E-04	4.68E+02	5.27E-02	1.00E+00	3.06E-02	8.29E+01	6.32E+02	2.47E-02	6.24E+02	1.33E-01
CMWA-100+12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	1.20E+02	5.62E-01	NA	NA	NA	NA	1.13E-04	1.06E+02	1.19E-02	1.00E+00	3.06E-02	1.88E+01	6.32E+02	2.47E-02	6.24E+02	3.01E-02
CMWA-150 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	4.60E+02	2.16E+00	NA	NA	NA	NA	1.13E-04	4.07E+02	4.58E-02	1.00E+00	3.06E-02	7.21E+01	6.32E+02	2.47E-02	6.24E+02	1.16E-01
CMWA-150+12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	1.75E+02	8.22E-01	NA	NA	NA	NA	1.13E-04	1.55E+02	1.74E-02	1.00E+00	3.06E-02	2.74E+01	6.32E+02	2.47E-02	6.24E+02	4.40E-02
CMWA-200 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CMWA2-250 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	3.86E+02	1.81E+00	NA	NA	NA	NA	1.13E-04	3.41E+02	3.84E-02	1.00E+00	3.06E-02	6.04E+01	6.32E+02	2.47E-02	6.24E+02	9.68E-02
CMWA-250 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	1.27E+02	5.97E-01	NA	NA	NA	NA	1.13E-04	1.13E+02	1.27E-02	1.00E+00	3.06E-02	1.99E+01	6.32E+02	2.47E-02	6.24E+02	3.20E-02
CMWA-250+50 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	1.56E+02	7.30E-01	NA	NA	NA	NA	1.13E-04	1.37E+02	1.55E-02	1.00E+00	3.06E-02	2.43E+01	6.32E+02	2.47E-02	6.24E+02	3.90E-02
CMWA-300 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	4.69E+02	2.20E+00	NA	NA	NA	NA	1.13E-04	4.15E+02	4.67E-02	1.00E+00	3.06E-02	7.34E+01	6.32E+02	2.47E-02	6.24E+02	1.18E-01
CMWA-300+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	1.12E+02	5.25E-01	NA	NA	NA	NA	1.13E-04	9.90E+01	1.11E-02	1.00E+00	3.06E-02	1.75E+01	6.32E+02	2.47E-02	6.24E+02	2.81E-02
CMWA-350 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	2.10E+02	9.85E-01	NA	NA	NA	NA	1.13E-04	1.86E+02	2.09E-02	1.00E+00	3.06E-02	3.29E+01	6.32E+02	2.47E-02	6.24E+02	5.27E-02
CMWA-350+0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	1.03E+02	4.85E-01	NA	NA	NA	NA	1.13E-04	9.13E+01	1.03E-02	1.00E+00	3.06E-02	1.62E+01	6.32E+02	2.47E-02	6.24E+02	2.59E-02
CMWA-50 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	8.49E+02	3.98E+00	NA	NA	NA	NA	1.13E-04	7.50E+02	8.44E-02	1.00E+00	3.06E-02	1.33E+02	6.32E+02	2.47E-02	6.24E+02	2.13E-01
CMWA-50+12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	1.36E+02	6.37E-01	NA	NA	NA	NA	1.13E-04	1.20E+02	1.35E-02	1.00E+00	3.06E-02	2.13E+01	6.32E+02	2.47E-02	6.24E+02	3.41E-02
CMWA-Comp 1 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	3.27E+02	1.53E+00	NA	NA	NA	NA	1.13E-04	2.89E+02	3.25E-02	1.00E+00	3.06E-02	5.12E+01	6.32E+02	2.47E-02	6.24E+02	8.20E-02
CMWA-Comp 2 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	3.05E+02	1.43E+00	NA	NA	NA	NA	1.13E-04	2.70E+02	3.03E-02	1.00E+00	3.06E-02	4.77E+01	6.32E+02	2.47E-02	6.24E+02	7.66E-02
																						Maximum HQ (Capitol Mine)	**2.13E-01**

TABLE C-3C: COPPER DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 3 - CAPITOL MINE WASTE AREA (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 0.13

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
White-Tailed Deer (Large Herbivorous Mammal - Terrestrial)																							
Reference Site																							
SGBG-1 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	7.79E-01	7.21E+01	1.03E+02	NA	NA	NA	NA	2.86E-02	9.25E+01	2.65E+00	7.27E-04	1.35E+02	5.70E-04	6.32E+02	2.47E-02	3.77E+02	1.51E-06
SGBG-201 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	7.79E-01	5.60E+01	8.01E+01	NA	NA	NA	NA	2.86E-02	7.19E+01	2.06E+00	7.27E-04	1.35E+02	4.43E-04	6.32E+02	2.47E-02	3.77E+02	1.17E-06
Capitol Mine																						**Minimum HQ (Reference Site)**	**1.17E-06**
CMWA-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	5.17E+02	7.41E+02	NA	NA	NA	NA	2.86E-02	4.57E+02	1.31E+01	7.27E-04	1.35E+02	4.06E-03	6.32E+02	2.47E-02	3.77E+02	1.08E-05
CMWA-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	5.17E+02	7.41E+02	NA	NA	NA	NA	2.86E-02	4.57E+02	1.31E+01	7.27E-04	1.35E+02	4.06E-03	6.32E+02	2.47E-02	3.77E+02	1.08E-05
CMWA-0+12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	4.41E+02	6.32E+02	NA	NA	NA	NA	2.86E-02	3.90E+02	1.12E+01	7.27E-04	1.35E+02	3.46E-03	6.32E+02	2.47E-02	3.77E+02	9.19E-06
CMWA-100 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	5.30E+02	7.58E+02	NA	NA	NA	NA	2.86E-02	4.68E+02	1.34E+01	7.27E-04	1.35E+02	4.16E-03	6.32E+02	2.47E-02	3.77E+02	1.10E-05
CMWA-100+12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	1.20E+02	1.72E+02	NA	NA	NA	NA	2.86E-02	1.06E+02	3.04E+00	7.27E-04	1.35E+02	9.42E-04	6.32E+02	2.47E-02	3.77E+02	2.50E-06
CMWA-150 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	4.60E+02	6.59E+02	NA	NA	NA	NA	2.86E-02	4.07E+02	1.17E+01	7.27E-04	1.35E+02	3.61E-03	6.32E+02	2.47E-02	3.77E+02	9.59E-06
CMWA-150+12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	1.75E+02	2.51E+02	NA	NA	NA	NA	2.86E-02	1.55E+02	4.44E+00	7.27E-04	1.35E+02	1.38E-03	6.32E+02	2.47E-02	3.77E+02	3.65E-06
CMWA-200 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CMWA2-250 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	3.86E+02	5.52E+02	NA	NA	NA	NA	2.86E-02	3.41E+02	9.76E+00	7.27E-04	1.35E+02	3.03E-03	6.32E+02	2.47E-02	3.77E+02	8.03E-06
CMWA-250 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	1.27E+02	1.82E+02	NA	NA	NA	NA	2.86E-02	1.13E+02	3.22E+00	7.27E-04	1.35E+02	1.00E-03	6.32E+02	2.47E-02	3.77E+02	2.65E-06
CMWA-250+50 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	1.56E+02	2.23E+02	NA	NA	NA	NA	2.86E-02	1.37E+02	3.94E+00	7.27E-04	1.35E+02	1.22E-03	6.32E+02	2.47E-02	3.77E+02	3.24E-06
CMWA-300 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	4.69E+02	6.72E+02	NA	NA	NA	NA	2.86E-02	4.15E+02	1.19E+01	7.27E-04	1.35E+02	3.68E-03	6.32E+02	2.47E-02	3.77E+02	9.77E-06
CMWA-300+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	1.12E+02	1.60E+02	NA	NA	NA	NA	2.86E-02	9.90E+01	2.83E+00	7.27E-04	1.35E+02	8.79E-04	6.32E+02	2.47E-02	3.77E+02	2.33E-06
CMWA-350 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	2.10E+02	3.01E+02	NA	NA	NA	NA	2.86E-02	1.86E+02	5.32E+00	7.27E-04	1.35E+02	1.65E-03	6.32E+02	2.47E-02	3.77E+02	4.38E-06
CMWA-350+0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	1.03E+02	1.48E+02	NA	NA	NA	NA	2.86E-02	9.13E+01	2.62E+00	7.27E-04	1.35E+02	8.11E-04	6.32E+02	2.47E-02	3.77E+02	2.15E-06
CMWA-50 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	8.49E+02	1.22E+03	NA	NA	NA	NA	2.86E-02	7.50E+02	2.15E+01	7.27E-04	1.35E+02	6.66E-03	6.32E+02	2.47E-02	3.77E+02	1.77E-05
CMWA-50+12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	1.36E+02	1.94E+02	NA	NA	NA	NA	2.86E-02	1.20E+02	3.44E+00	7.27E-04	1.35E+02	1.07E-03	6.32E+02	2.47E-02	3.77E+02	2.83E-06
CMWA-Comp 1 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	3.27E+02	4.68E+02	NA	NA	NA	NA	2.86E-02	2.89E+02	8.27E+00	7.27E-04	1.35E+02	2.57E-03	6.32E+02	2.47E-02	3.77E+02	6.81E-06
CMWA-Comp 2 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	3.05E+02	4.37E+02	NA	NA	NA	NA	2.86E-02	2.70E+02	7.72E+00	7.27E-04	1.35E+02	2.39E-03	6.32E+02	2.47E-02	3.77E+02	6.35E-06
																						Maximum HQ (Capitol Mine)	**1.77E-05**
Red Fox (Carnivorous Mammal - Terrestrial)																							
Reference Site																							
SGBG-1 (0-6")	1.72E-01	1.72E-01	6.61E-01	6.11E+01	1.05E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	9.25E+01	4.44E-01	9.60E-05	4.54E+00	2.31E-04	6.32E+02	2.47E-02	4.62E+02	5.01E-07
SGBG-201 (0-6")	1.72E-01	1.72E-01	6.61E-01	4.75E+01	8.15E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	7.19E+01	3.45E-01	9.60E-05	4.54E+00	1.80E-04	6.32E+02	2.47E-02	4.62E+02	3.89E-07
Capitol Mine																						**Minimum HQ (Reference Site)**	**3.89E-07**
CMWA-0 (0-6")	1.72E-01	1.72E-01	1.01E+00	4.62E+02	7.92E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.57E+02	2.20E+00	9.60E-05	4.54E+00	1.72E-03	6.32E+02	2.47E-02	4.62E+02	3.73E-06
CMWA-0 (0-6")	1.72E-01	1.72E-01	1.01E+00	4.62E+02	7.92E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.57E+02	2.20E+00	9.60E-05	4.54E+00	1.72E-03	6.32E+02	2.47E-02	4.62E+02	3.73E-06
CMWA-0+12.5 (0-6")	1.72E-01	1.72E-01	1.01E+00	3.94E+02	6.76E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.90E+02	1.87E+00	9.60E-05	4.54E+00	1.47E-03	6.32E+02	2.47E-02	4.62E+02	3.18E-06
CMWA-100 (0-6")	1.72E-01	1.72E-01	1.01E+00	4.73E+02	8.11E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.68E+02	2.25E+00	9.60E-05	4.54E+00	1.76E-03	6.32E+02	2.47E-02	4.62E+02	3.82E-06
CMWA-100+12.5 (0-6")	1.72E-01	1.72E-01	1.01E+00	1.07E+02	1.84E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.06E+02	5.09E-01	9.60E-05	4.54E+00	4.00E-04	6.32E+02	2.47E-02	4.62E+02	8.65E-07
CMWA-150 (0-6")	1.72E-01	1.72E-01	1.01E+00	4.11E+02	7.05E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.07E+02	1.95E+00	9.60E-05	4.54E+00	1.53E-03	6.32E+02	2.47E-02	4.62E+02	3.32E-06
CMWA-150+12.5 (0-6")	1.72E-01	1.72E-01	1.01E+00	1.57E+02	2.69E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.55E+02	7.45E-01	9.60E-05	4.54E+00	5.85E-04	6.32E+02	2.47E-02	4.62E+02	1.27E-06
CMWA-200 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CMWA2-250 (0-6")	1.72E-01	1.72E-01	1.01E+00	3.44E+02	5.91E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.41E+02	1.64E+00	9.60E-05	4.54E+00	1.29E-03	6.32E+02	2.47E-02	4.62E+02	2.78E-06
CMWA-250 (0-6")	1.72E-01	1.72E-01	1.01E+00	1.14E+02	1.95E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.13E+02	5.41E-01	9.60E-05	4.54E+00	4.25E-04	6.32E+02	2.47E-02	4.62E+02	9.19E-07
CMWA-250+50 (0-6")	1.72E-01	1.72E-01	1.01E+00	1.39E+02	2.38E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.37E+02	6.60E-01	9.60E-05	4.54E+00	5.18E-04	6.32E+02	2.47E-02	4.62E+02	1.12E-06
CMWA-300 (0-6")	1.72E-01	1.72E-01	1.01E+00	4.19E+02	7.19E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.15E+02	1.99E+00	9.60E-05	4.54E+00	1.56E-03	6.32E+02	2.47E-02	4.62E+02	3.39E-06
CMWA-300+25 (0-6")	1.72E-01	1.72E-01	1.01E+00	1.00E+02	1.72E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	9.90E+01	4.76E-01	9.60E-05	4.54E+00	3.73E-04	6.32E+02	2.47E-02	4.62E+02	8.08E-07
CMWA-350 (0-6")	1.72E-01	1.72E-01	1.01E+00	1.88E+02	3.22E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.86E+02	8.92E-01	9.60E-05	4.54E+00	7.00E-04	6.32E+02	2.47E-02	4.62E+02	1.52E-06
CMWA-350+0 (0-6")	1.72E-01	1.72E-01	1.01E+00	9.23E+01	1.58E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	9.13E+01	4.39E-01	9.60E-05	4.54E+00	3.44E-04	6.32E+02	2.47E-02	4.62E+02	7.46E-07
CMWA-50 (0-6")	1.72E-01	1.72E-01	1.01E+00	7.58E+02	1.30E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	7.50E+02	3.60E+00	9.60E-05	4.54E+00	2.83E-03	6.32E+02	2.47E-02	4.62E+02	6.12E-06
CMWA-50+12.5 (0-6")	1.72E-01	1.72E-01	1.01E+00	1.21E+02	2.08E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.20E+02	5.76E-01	9.60E-05	4.54E+00	4.53E-04	6.32E+02	2.47E-02	4.62E+02	9.80E-07
CMWA-Comp 1 (0-6")	1.72E-01	1.72E-01	1.01E+00	2.92E+02	5.01E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.89E+02	1.39E+00	9.60E-05	4.54E+00	1.09E-03	6.32E+02	2.47E-02	4.62E+02	2.36E-06
CMWA-Comp 2 (0-6")	1.72E-01	1.72E-01	1.01E+00	2.72E+02	4.67E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.70E+02	1.29E+00	9.60E-05	4.54E+00	1.02E-03	6.32E+02	2.47E-02	4.62E+02	2.20E-06
																						Maximum HQ (Capitol Mine)	**6.12E-06**

TABLE C-3C: COPPER DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 3 - CAPITOL MINE WASTE AREA (Continued)

Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)
calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 0.13

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Masked Shrew (Omnivorous Mammal - Terrestrial, Wetland)																							
Reference Site																							
SGBG-1 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	3.70E+00	3.43E+02	2.90E+00	1.10E-03	9.25E+01	1.02E-01	3.25E-01	5.50E-03	1.78E+02	6.32E+02	2.47E-02	6.91E+02	2.57E-01
SGBG-201 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	3.70E+00	2.66E+02	2.25E+00	1.10E-03	7.19E+01	7.91E-02	3.25E-01	5.50E-03	1.38E+02	6.32E+02	2.47E-02	6.91E+02	2.00E-01
Capitol Mine																						**Minimum HQ (Reference Site)**	**2.00E-01**
CMWA-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	2.22E+03	1.88E+01	1.10E-03	4.57E+02	5.03E-01	3.25E-01	5.50E-03	1.14E+03	6.32E+02	2.47E-02	6.91E+02	1.65E+00
CMWA-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	2.22E+03	1.88E+01	1.10E-03	4.57E+02	5.03E-01	3.25E-01	5.50E-03	1.14E+03	6.32E+02	2.47E-02	6.91E+02	1.65E+00
CMWA-0+12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	1.89E+03	1.60E+01	1.10E-03	3.90E+02	4.29E-01	3.25E-01	5.50E-03	9.72E+02	6.32E+02	2.47E-02	6.91E+02	1.41E+00
CMWA-100 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	2.27E+03	1.92E+01	1.10E-03	4.68E+02	5.15E-01	3.25E-01	5.50E-03	1.17E+03	6.32E+02	2.47E-02	6.91E+02	1.69E+00
CMWA-100+12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	5.14E+02	4.35E+00	1.10E-03	1.06E+02	1.17E-01	3.25E-01	5.50E-03	2.64E+02	6.32E+02	2.47E-02	6.91E+02	3.82E-01
CMWA-150 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	1.97E+03	1.67E+01	1.10E-03	4.07E+02	4.48E-01	3.25E-01	5.50E-03	1.01E+03	6.32E+02	2.47E-02	6.91E+02	1.47E+00
CMWA-150+12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	7.52E+02	6.37E+00	1.10E-03	1.55E+02	1.71E-01	3.25E-01	5.50E-03	3.86E+02	6.32E+02	2.47E-02	6.91E+02	5.59E-01
CMWA-200 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CMWA2-250 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	1.65E+03	1.40E+01	1.10E-03	3.41E+02	3.75E-01	3.25E-01	5.50E-03	8.50E+02	6.32E+02	2.47E-02	6.91E+02	1.23E+00
CMWA-250 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	5.46E+02	4.62E+00	1.10E-03	1.13E+02	1.24E-01	3.25E-01	5.50E-03	2.81E+02	6.32E+02	2.47E-02	6.91E+02	4.06E-01
CMWA-250+50 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	6.67E+02	5.65E+00	1.10E-03	1.37E+02	1.51E-01	3.25E-01	5.50E-03	3.43E+02	6.32E+02	2.47E-02	6.91E+02	4.96E-01
CMWA-300 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	2.01E+03	1.70E+01	1.10E-03	4.15E+02	4.57E-01	3.25E-01	5.50E-03	1.03E+03	6.32E+02	2.47E-02	6.91E+02	1.50E+00
CMWA-300+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	4.80E+02	4.07E+00	1.10E-03	9.90E+01	1.09E-01	3.25E-01	5.50E-03	2.47E+02	6.32E+02	2.47E-02	6.91E+02	3.57E-01
CMWA-350 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	9.01E+02	7.63E+00	1.10E-03	1.86E+02	2.04E-01	3.25E-01	5.50E-03	4.63E+02	6.32E+02	2.47E-02	6.91E+02	6.70E-01
CMWA-350+0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	4.43E+02	3.75E+00	1.10E-03	9.13E+01	1.01E-01	3.25E-01	5.50E-03	2.28E+02	6.32E+02	2.47E-02	6.91E+02	3.29E-01
CMWA-50 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	3.64E+03	3.08E+01	1.10E-03	7.50E+02	8.26E-01	3.25E-01	5.50E-03	1.87E+03	6.32E+02	2.47E-02	6.91E+02	2.71E+00
CMWA-50+12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	5.82E+02	4.93E+00	1.10E-03	1.20E+02	1.32E-01	3.25E-01	5.50E-03	2.99E+02	6.32E+02	2.47E-02	6.91E+02	4.33E-01
CMWA-Comp 1 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	1.40E+03	1.19E+01	1.10E-03	2.89E+02	3.18E-01	3.25E-01	5.50E-03	7.20E+02	6.32E+02	2.47E-02	6.91E+02	1.04E+00
CMWA-Comp 2 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	1.31E+03	1.11E+01	1.10E-03	2.70E+02	2.97E-01	3.25E-01	5.50E-03	6.72E+02	6.32E+02	2.47E-02	6.91E+02	9.72E-01
																						Maximum HQ (Capitol Mine)	**2.71E+00**

Notes

1 See Tables 3-1 through 3-13 for ingestion rates, foraging ranges used to calculate the SUF, and body weights.
2 BAFs were calculated by dividing site-collected tissue by collocated soil concentrations (BAFs are in dry weight). The maximum BAF calculated from the Beartrap Creek and Blackfoot River transects was used for site dose calculations. The maximum BAF from the terrestrial reference site was used for reference site dose calculations.
3 The mammal, plant, and invertebrate concentrations were calculated by multiplying the soil concentration by the BAF to generate a tissue concentration (see note 2).
4 Mammal, plant, and invertebrate daily doses were calculated by multiplying the ingestion rate (see note 1) by the tissue concentration (see note 3).
5 Soil concentration from 0 to 6 inches below ground surface at point ID as measured by XRF 10. Doses were not calculated for detected and non-detected soil concentrations measured below the minimum reference site concentration, as indicated by BB. For results that were measured at less than the detection limit, doses were calculated using half of the detection limit.
6 Soil daily dose was calculated by multiplying the soil ingestion rate (see note 1) by soil concentration (see note 5).
7 Total daily dose is calculated using the following equation: total daily dose = ([mammal daily dose (if applicable) + plant daily dose (if applicable) + invertebrate daily dose (if applicable) + soil daily dose]*SUF)/receptor species body weight.
8 The TRVs used in this risk assessment represent a mid-range effects level. The derivation of TRVs is described in Navy (1998).
9 Allometrically adjusted TRVs for birds were calculated using the following equation: receptor species TRV = (test species TRV) x (test species body weight / receptor species body weight)$^{(1-1.2)}$.
10 Allometrically adjusted TRVs for mammals were calculated using the following equation: receptor species TRV = (test species TRV) x (test species body weight / receptor species body weight)$^{(1-0.94)}$.
11 HQs were calculated using the following equation: HQ = total daily dose/allometrically adjusted TRV.
12 Highlighted cells indicate an HQ greater than 1.0.

BAF	Bioaccumulation Factor	mg/day	Milligram per day
BB	Below minimum background reference site concentration	mg/kg	Milligram per kilogram
EE/CA	Engineering Evaluation/Cost Analysis	NA	Not applicable
EU	Exposure Unit	Navy	Department of the Navy
HQ	Hazard quotient	SUF	Site use factor
ID	Identification	TRV	Toxicity reference value
kg	Kilogram	XRF	X-ray fluorescence
kg/day	Kilogram per day	XRF 10	XRF measurements recorded following drying and seiving through a #10-mesh screen

Sources: Department of the Navy. 1998. "Development of Toxicity Reference Values for Conducting Ecological Risk Assessments at Naval Facilities in California, Interim Final." Prepared by Naval Facilities Engineering Command, Engineering Field Activity West (EFA West). San Bruno, California.

TABLE C-3D: LEAD DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 3 - CAPITOL MINE WASTE AREA

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 0.13

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Mourning Dove (Herbivorous Birds - Terrestrial)																							
Reference Site																							
SGBG-1 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	4.35E-02	5.00E+00	2.88E-02	NA	NA	NA	NA	5.36E-04	1.15E+02	6.17E-02	5.02E-04	1.09E-01	4.16E-04	8.75E+00	8.00E-01	5.88E+00	7.08E-05
SGBG-201 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	4.35E-02	2.70E+00	1.56E-02	NA	NA	NA	NA	5.36E-04	6.22E+01	3.33E-02	5.02E-04	1.09E-01	2.25E-04	8.75E+00	8.00E-01	5.88E+00	3.83E-05
Capitol Mine																						**Minimum HQ (Reference Site)**	**3.83E-05**
CMWA-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	7.98E+02	4.60E+00	NA	NA	NA	NA	5.36E-04	1.27E+03	6.80E-01	5.02E-04	1.09E-01	2.43E-02	8.75E+00	8.00E-01	5.88E+00	4.13E-03
CMWA-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	7.98E+02	4.60E+00	NA	NA	NA	NA	5.36E-04	1.27E+03	6.80E-01	5.02E-04	1.09E-01	2.43E-02	8.75E+00	8.00E-01	5.88E+00	4.13E-03
CMWA-0+12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	3.73E+02	2.15E+00	NA	NA	NA	NA	5.36E-04	5.94E+02	3.18E-01	5.02E-04	1.09E-01	1.13E-02	8.75E+00	8.00E-01	5.88E+00	1.93E-03
CMWA-100 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	1.12E+03	6.45E+00	NA	NA	NA	NA	5.36E-04	1.78E+03	9.54E-01	5.02E-04	1.09E-01	3.40E-02	8.75E+00	8.00E-01	5.88E+00	5.79E-03
CMWA-100+12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	9.06E+01	5.22E-01	NA	NA	NA	NA	5.36E-04	1.44E+02	7.73E-02	5.02E-04	1.09E-01	2.75E-03	8.75E+00	8.00E-01	5.88E+00	4.69E-04
CMWA-150 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	1.60E+03	9.25E+00	NA	NA	NA	NA	5.36E-04	2.55E+03	1.37E+00	5.02E-04	1.09E-01	4.88E-02	8.75E+00	8.00E-01	5.88E+00	8.30E-03
CMWA-150+12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	1.50E+02	8.64E-01	NA	NA	NA	NA	5.36E-04	2.39E+02	1.28E-01	5.02E-04	1.09E-01	4.56E-03	8.75E+00	8.00E-01	5.88E+00	7.76E-04
CMWA-200 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	2.25E+02	1.30E+00	NA	NA	NA	NA	5.36E-04	3.59E+02	1.92E-01	5.02E-04	1.09E-01	6.85E-03	8.75E+00	8.00E-01	5.88E+00	1.17E-03
CMWA2-250 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	5.08E+02	2.93E+00	NA	NA	NA	NA	5.36E-04	8.09E+02	4.33E-01	5.02E-04	1.09E-01	1.55E-02	8.75E+00	8.00E-01	5.88E+00	2.63E-03
CMWA-250 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	2.52E+02	1.45E+00	NA	NA	NA	NA	5.36E-04	4.02E+02	2.15E-01	5.02E-04	1.09E-01	7.67E-03	8.75E+00	8.00E-01	5.88E+00	1.31E-03
CMWA-250+50 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	1.98E+02	1.14E+00	NA	NA	NA	NA	5.36E-04	3.15E+02	1.69E-01	5.02E-04	1.09E-01	6.01E-03	8.75E+00	8.00E-01	5.88E+00	1.02E-03
CMWA-300 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	2.52E+02	1.45E+00	NA	NA	NA	NA	5.36E-04	4.01E+02	2.15E-01	5.02E-04	1.09E-01	7.67E-03	8.75E+00	8.00E-01	5.88E+00	1.30E-03
CMWA-300+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	1.84E+02	1.06E+00	NA	NA	NA	NA	5.36E-04	2.92E+02	1.57E-01	5.02E-04	1.09E-01	5.58E-03	8.75E+00	8.00E-01	5.88E+00	9.50E-04
CMWA-350 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	2.55E+02	1.47E+00	NA	NA	NA	NA	5.36E-04	4.05E+02	2.17E-01	5.02E-04	1.09E-01	7.74E-03	8.75E+00	8.00E-01	5.88E+00	1.32E-03
CMWA-350+0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	9.55E+01	5.50E-01	NA	NA	NA	NA	5.36E-04	1.52E+02	8.14E-02	5.02E-04	1.09E-01	2.90E-03	8.75E+00	8.00E-01	5.88E+00	4.94E-04
CMWA-50 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	5.97E+02	3.44E+00	NA	NA	NA	NA	5.36E-04	9.51E+02	5.09E-01	5.02E-04	1.09E-01	1.82E-02	8.75E+00	8.00E-01	5.88E+00	3.09E-03
CMWA-50+12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	1.30E+02	7.49E-01	NA	NA	NA	NA	5.36E-04	2.07E+02	1.11E-01	5.02E-04	1.09E-01	3.95E-03	8.75E+00	8.00E-01	5.88E+00	6.72E-04
CMWA-Comp 1 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	9.87E+02	5.69E+00	NA	NA	NA	NA	5.36E-04	1.57E+03	8.42E-01	5.02E-04	1.09E-01	3.00E-02	8.75E+00	8.00E-01	5.88E+00	5.11E-03
CMWA-Comp 2 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	1.25E+03	7.19E+00	NA	NA	NA	NA	5.36E-04	1.99E+03	1.06E+00	5.02E-04	1.09E-01	3.79E-02	8.75E+00	8.00E-01	5.88E+00	6.46E-03
																						Maximum HQ (Capitol Mine)	**8.30E-03**
Red-Tailed Hawk (Carnivorous Birds - Terrestrial)																							
Reference Site																							
SGBG-1 (0-6")	9.00E-02	9.00E-02	7.62E-02	8.78E+00	7.89E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.15E+02	5.90E-01	1.87E-04	1.13E+00	2.27E-04	8.75E+00	8.00E-01	9.38E+00	2.42E-05
SGBG-201 (0-6")	9.00E-02	9.00E-02	7.62E-02	4.74E+00	4.26E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	6.22E+01	3.19E-01	1.87E-04	1.13E+00	1.23E-04	8.75E+00	8.00E-01	9.38E+00	1.31E-05
Capitol Mine																						**Minimum HQ (Reference Site)**	**1.31E-05**
CMWA-0 (0-6")	9.00E-02	9.00E-02	9.28E-01	1.18E+03	1.06E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.27E+03	6.51E+00	1.87E-04	1.13E+00	1.85E-02	8.75E+00	8.00E-01	9.38E+00	1.97E-03
CMWA-0 (0-6")	9.00E-02	9.00E-02	9.28E-01	1.18E+03	1.06E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.27E+03	6.51E+00	1.87E-04	1.13E+00	1.85E-02	8.75E+00	8.00E-01	9.38E+00	1.97E-03
CMWA-0+12.5 (0-6")	9.00E-02	9.00E-02	9.28E-01	5.51E+02	4.96E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.94E+02	3.04E+00	1.87E-04	1.13E+00	8.65E-03	8.75E+00	8.00E-01	9.38E+00	9.22E-04
CMWA-100 (0-6")	9.00E-02	9.00E-02	9.28E-01	1.65E+03	1.49E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.78E+03	9.13E+00	1.87E-04	1.13E+00	2.60E-02	8.75E+00	8.00E-01	9.38E+00	2.77E-03
CMWA-100+12.5 (0-6")	9.00E-02	9.00E-02	9.28E-01	1.34E+02	1.20E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.44E+02	7.39E-01	1.87E-04	1.13E+00	2.10E-03	8.75E+00	8.00E-01	9.38E+00	2.24E-04
CMWA-150 (0-6")	9.00E-02	9.00E-02	9.28E-01	2.37E+03	2.13E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.55E+03	1.31E+01	1.87E-04	1.13E+00	3.72E-02	8.75E+00	8.00E-01	9.38E+00	3.97E-03
CMWA-150+12.5 (0-6")	9.00E-02	9.00E-02	9.28E-01	2.21E+02	1.99E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.39E+02	1.22E+00	1.87E-04	1.13E+00	3.48E-03	8.75E+00	8.00E-01	9.38E+00	3.71E-04
CMWA-200 (0-6")	9.00E-02	9.00E-02	9.28E-01	3.33E+02	2.99E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.59E+02	1.84E+00	1.87E-04	1.13E+00	5.23E-03	8.75E+00	8.00E-01	9.38E+00	5.57E-04
CMWA2-250 (0-6")	9.00E-02	9.00E-02	9.28E-01	7.51E+02	6.75E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	8.09E+02	4.15E+00	1.87E-04	1.13E+00	1.18E-02	8.75E+00	8.00E-01	9.38E+00	1.26E-03
CMWA-250 (0-6")	9.00E-02	9.00E-02	9.28E-01	3.73E+02	3.35E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.02E+02	2.06E+00	1.87E-04	1.13E+00	5.86E-03	8.75E+00	8.00E-01	9.38E+00	6.24E-04
CMWA-250+50 (0-6")	9.00E-02	9.00E-02	9.28E-01	2.92E+02	2.63E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.15E+02	1.61E+00	1.87E-04	1.13E+00	4.59E-03	8.75E+00	8.00E-01	9.38E+00	4.89E-04
CMWA-300 (0-6")	9.00E-02	9.00E-02	9.28E-01	3.72E+02	3.35E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.01E+02	2.06E+00	1.87E-04	1.13E+00	5.85E-03	8.75E+00	8.00E-01	9.38E+00	6.24E-04
CMWA-300+25 (0-6")	9.00E-02	9.00E-02	9.28E-01	2.71E+02	2.44E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.92E+02	1.50E+00	1.87E-04	1.13E+00	4.26E-03	8.75E+00	8.00E-01	9.38E+00	4.54E-04
CMWA-350 (0-6")	9.00E-02	9.00E-02	9.28E-01	3.76E+02	3.38E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.05E+02	2.08E+00	1.87E-04	1.13E+00	5.91E-03	8.75E+00	8.00E-01	9.38E+00	6.30E-04
CMWA-350+0 (0-6")	9.00E-02	9.00E-02	9.28E-01	1.41E+02	1.27E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.52E+02	7.79E-01	1.87E-04	1.13E+00	2.21E-03	8.75E+00	8.00E-01	9.38E+00	2.36E-04
CMWA-50 (0-6")	9.00E-02	9.00E-02	9.28E-01	8.82E+02	7.94E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	9.51E+02	4.87E+00	1.87E-04	1.13E+00	1.39E-02	8.75E+00	8.00E-01	9.38E+00	1.48E-03
CMWA-50+12.5 (0-6")	9.00E-02	9.00E-02	9.28E-01	1.92E+02	1.73E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.07E+02	1.06E+00	1.87E-04	1.13E+00	3.01E-03	8.75E+00	8.00E-01	9.38E+00	3.21E-04
CMWA-Comp 1 (0-6")	9.00E-02	9.00E-02	9.28E-01	1.46E+03	1.31E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.57E+03	8.06E+00	1.87E-04	1.13E+00	2.29E-02	8.75E+00	8.00E-01	9.38E+00	2.44E-03
CMWA-Comp 2 (0-6")	9.00E-02	9.00E-02	9.28E-01	1.84E+03	1.66E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.99E+03	1.02E+01	1.87E-04	1.13E+00	2.90E-02	8.75E+00	8.00E-01	9.38E+00	3.09E-03
																						Maximum HQ (Capitol Mine)	**3.97E-03**

TABLE C-3D: LEAD DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 3 - CAPITOL MINE WASTE AREA (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **0.13**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
American Kestrel (Insectivorous Birds - Terrestrial)																							
Reference Site																							
SGBG-1 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.79E+02	2.46E+00	7.84E-04	1.15E+02	9.03E-02	4.97E-04	1.24E-01	1.02E-02	8.75E+00	8.00E-01	6.03E+00	1.70E-03
SGBG-201 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	9.66E+01	1.33E+00	7.84E-04	6.22E+01	4.88E-02	4.97E-04	1.24E-01	5.52E-03	8.75E+00	8.00E-01	6.03E+00	9.16E-04
Capitol Mine																						**Minimum HQ (Reference Site)**	**9.16E-04**
CMWA-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.97E+03	2.71E+01	7.84E-04	1.27E+03	9.96E-01	4.97E-04	1.24E-01	1.13E-01	8.75E+00	8.00E-01	6.03E+00	1.87E-02
CMWA-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.97E+03	2.71E+01	7.84E-04	1.27E+03	9.96E-01	4.97E-04	1.24E-01	1.13E-01	8.75E+00	8.00E-01	6.03E+00	1.87E-02
CMWA-0+12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	9.22E+02	1.27E+01	7.84E-04	5.94E+02	4.66E-01	4.97E-04	1.24E-01	5.27E-02	8.75E+00	8.00E-01	6.03E+00	8.74E-03
CMWA-100 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	2.76E+03	3.80E+01	7.84E-04	1.78E+03	1.40E+00	4.97E-04	1.24E-01	1.58E-01	8.75E+00	8.00E-01	6.03E+00	2.62E-02
CMWA-100+12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	2.24E+02	3.08E+00	7.84E-04	1.44E+02	1.13E-01	4.97E-04	1.24E-01	1.28E-02	8.75E+00	8.00E-01	6.03E+00	2.12E-03
CMWA-150 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	3.96E+03	5.46E+01	7.84E-04	2.55E+03	2.00E+00	4.97E-04	1.24E-01	2.27E-01	8.75E+00	8.00E-01	6.03E+00	3.76E-02
CMWA-150+12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	3.70E+02	5.10E+00	7.84E-04	2.39E+02	1.87E-01	4.97E-04	1.24E-01	2.12E-02	8.75E+00	8.00E-01	6.03E+00	3.51E-03
CMWA-200 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	5.56E+02	7.66E+00	7.84E-04	3.59E+02	2.81E-01	4.97E-04	1.24E-01	3.18E-02	8.75E+00	8.00E-01	6.03E+00	5.28E-03
CMWA2-250 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.26E+03	1.73E+01	7.84E-04	8.09E+02	6.35E-01	4.97E-04	1.24E-01	7.18E-02	8.75E+00	8.00E-01	6.03E+00	1.19E-02
CMWA-250 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	6.24E+02	8.58E+00	7.84E-04	4.02E+02	3.15E-01	4.97E-04	1.24E-01	3.56E-02	8.75E+00	8.00E-01	6.03E+00	5.91E-03
CMWA-250+50 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	4.88E+02	6.72E+00	7.84E-04	3.15E+02	2.47E-01	4.97E-04	1.24E-01	2.79E-02	8.75E+00	8.00E-01	6.03E+00	4.63E-03
CMWA-300 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	6.23E+02	8.57E+00	7.84E-04	4.01E+02	3.15E-01	4.97E-04	1.24E-01	3.56E-02	8.75E+00	8.00E-01	6.03E+00	5.91E-03
CMWA-300+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	4.53E+02	6.24E+00	7.84E-04	2.92E+02	2.29E-01	4.97E-04	1.24E-01	2.59E-02	8.75E+00	8.00E-01	6.03E+00	4.30E-03
CMWA-350 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	6.29E+02	8.66E+00	7.84E-04	4.05E+02	3.18E-01	4.97E-04	1.24E-01	3.60E-02	8.75E+00	8.00E-01	6.03E+00	5.97E-03
CMWA-350+0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	2.36E+02	3.25E+00	7.84E-04	1.52E+02	1.19E-01	4.97E-04	1.24E-01	1.35E-02	8.75E+00	8.00E-01	6.03E+00	2.24E-03
CMWA-50 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.48E+03	2.03E+01	7.84E-04	9.51E+02	7.46E-01	4.97E-04	1.24E-01	8.43E-02	8.75E+00	8.00E-01	6.03E+00	1.40E-02
CMWA-50+12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	3.21E+02	4.42E+00	7.84E-04	2.07E+02	1.62E-01	4.97E-04	1.24E-01	1.83E-02	8.75E+00	8.00E-01	6.03E+00	3.04E-03
CMWA-Comp 1 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	2.44E+03	3.36E+01	7.84E-04	1.57E+03	1.23E+00	4.97E-04	1.24E-01	1.39E-01	8.75E+00	8.00E-01	6.03E+00	2.31E-02
CMWA-Comp 2 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	3.08E+03	4.24E+01	7.84E-04	1.99E+03	1.56E+00	4.97E-04	1.24E-01	1.76E-01	8.75E+00	8.00E-01	6.03E+00	2.92E-02
																						Maximum HQ (Capitol Mine)	**3.76E-02**
Meadow Vole (Small Herbivorous Mammal - Terrestrial)																							
Reference Site																							
SGBG-1 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	4.35E-02	5.00E+00	2.35E-02	NA	NA	NA	NA	1.13E-04	1.15E+02	1.30E-02	1.00E+00	3.06E-02	1.19E+00	2.41E+02	1.87E-02	2.34E+02	5.09E-03
SGBG-201 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	4.35E-02	2.70E+00	1.27E-02	NA	NA	NA	NA	1.13E-04	6.22E+01	7.00E-03	1.00E+00	3.06E-02	6.43E-01	2.41E+02	1.87E-02	2.34E+02	2.75E-03
Capitol Mine																						**Minimum HQ (Reference Site)**	**2.75E-03**
CMWA-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	7.98E+02	3.74E+00	NA	NA	NA	NA	1.13E-04	1.27E+03	1.43E-01	1.00E+00	3.06E-02	1.27E+02	2.41E+02	1.87E-02	2.34E+02	5.43E-01
CMWA-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	7.98E+02	3.74E+00	NA	NA	NA	NA	1.13E-04	1.27E+03	1.43E-01	1.00E+00	3.06E-02	1.27E+02	2.41E+02	1.87E-02	2.34E+02	5.43E-01
CMWA-0+12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	3.73E+02	1.75E+00	NA	NA	NA	NA	1.13E-04	5.94E+02	6.68E-02	1.00E+00	3.06E-02	5.93E+01	2.41E+02	1.87E-02	2.34E+02	2.54E-01
CMWA-100 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	1.12E+03	5.25E+00	NA	NA	NA	NA	1.13E-04	1.78E+03	2.00E-01	1.00E+00	3.06E-02	1.78E+02	2.41E+02	1.87E-02	2.34E+02	7.62E-01
CMWA-100+12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	9.06E+01	4.25E-01	NA	NA	NA	NA	1.13E-04	1.44E+02	1.62E-02	1.00E+00	3.06E-02	1.44E+01	2.41E+02	1.87E-02	2.34E+02	6.17E-02
CMWA-150 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	1.60E+03	7.53E+00	NA	NA	NA	NA	1.13E-04	2.55E+03	2.87E-01	1.00E+00	3.06E-02	2.55E+02	2.41E+02	1.87E-02	2.34E+02	1.09E+00
CMWA-150+12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	1.50E+02	7.03E-01	NA	NA	NA	NA	1.13E-04	2.39E+02	2.69E-02	1.00E+00	3.06E-02	2.39E+01	2.41E+02	1.87E-02	2.34E+02	1.02E-01
CMWA-200 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	2.25E+02	1.06E+00	NA	NA	NA	NA	1.13E-04	3.59E+02	4.03E-02	1.00E+00	3.06E-02	3.58E+01	2.41E+02	1.87E-02	2.34E+02	1.53E-01
CMWA2-250 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	5.08E+02	2.38E+00	NA	NA	NA	NA	1.13E-04	8.09E+02	9.10E-02	1.00E+00	3.06E-02	8.09E+01	2.41E+02	1.87E-02	2.34E+02	3.46E-01
CMWA-250 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	2.52E+02	1.18E+00	NA	NA	NA	NA	1.13E-04	4.02E+02	4.52E-02	1.00E+00	3.06E-02	4.02E+01	2.41E+02	1.87E-02	2.34E+02	1.72E-01
CMWA-250+50 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	1.98E+02	9.27E-01	NA	NA	NA	NA	1.13E-04	3.15E+02	3.54E-02	1.00E+00	3.06E-02	3.15E+01	2.41E+02	1.87E-02	2.34E+02	1.35E-01
CMWA-300 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	2.52E+02	1.18E+00	NA	NA	NA	NA	1.13E-04	4.01E+02	4.52E-02	1.00E+00	3.06E-02	4.01E+01	2.41E+02	1.87E-02	2.34E+02	1.72E-01
CMWA-300+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	1.84E+02	8.60E-01	NA	NA	NA	NA	1.13E-04	2.92E+02	3.29E-02	1.00E+00	3.06E-02	2.92E+01	2.41E+02	1.87E-02	2.34E+02	1.25E-01
CMWA-350 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	2.55E+02	1.19E+00	NA	NA	NA	NA	1.13E-04	4.05E+02	4.56E-02	1.00E+00	3.06E-02	4.05E+01	2.41E+02	1.87E-02	2.34E+02	1.73E-01
CMWA-350+0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	9.55E+01	4.48E-01	NA	NA	NA	NA	1.13E-04	1.52E+02	1.71E-02	1.00E+00	3.06E-02	1.52E+01	2.41E+02	1.87E-02	2.34E+02	6.50E-02
CMWA-50 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	5.97E+02	2.80E+00	NA	NA	NA	NA	1.13E-04	9.51E+02	1.07E-01	1.00E+00	3.06E-02	9.50E+01	2.41E+02	1.87E-02	2.34E+02	4.07E-01
CMWA-50+12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	1.30E+02	6.09E-01	NA	NA	NA	NA	1.13E-04	2.07E+02	2.33E-02	1.00E+00	3.06E-02	2.07E+01	2.41E+02	1.87E-02	2.34E+02	8.85E-02
CMWA-Comp 1 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	9.87E+02	4.63E+00	NA	NA	NA	NA	1.13E-04	1.57E+03	1.77E-01	1.00E+00	3.06E-02	1.57E+02	2.41E+02	1.87E-02	2.34E+02	6.72E-01
CMWA-Comp 2 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	1.25E+03	5.85E+00	NA	NA	NA	NA	1.13E-04	1.99E+03	2.24E-01	1.00E+00	3.06E-02	1.99E+02	2.41E+02	1.87E-02	2.34E+02	8.50E-01
																						Maximum HQ (Capitol Mine)	**1.09E+00**

TABLE C-3D: LEAD DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 3 - CAPITOL MINE WASTE AREA (Continued)
Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)
calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 0.13

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
White-Tailed Deer (Large Herbivorous Mammal - Terrestrial)																							
Reference Site																							
SGBG-1 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	4.35E-02	5.00E+00	7.16E+00	NA	NA	NA	NA	2.86E-02	1.15E+02	3.30E+00	7.27E-04	1.35E+02	5.64E-05	2.41E+02	1.87E-02	1.41E+02	3.99E-07
SGBG-201 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	4.35E-02	2.70E+00	3.87E+00	NA	NA	NA	NA	2.86E-02	6.22E+01	1.78E+00	7.27E-04	1.35E+02	3.04E-05	2.41E+02	1.87E-02	1.41E+02	2.16E-07
Capitol Mine																						**Minimum HQ (Reference Site)**	**2.16E-07**
CMWA-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	7.98E+02	1.14E+03	NA	NA	NA	NA	2.86E-02	1.27E+03	3.64E+01	7.27E-04	1.35E+02	6.35E-03	2.41E+02	1.87E-02	1.41E+02	4.50E-05
CMWA-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	7.98E+02	1.14E+03	NA	NA	NA	NA	2.86E-02	1.27E+03	3.64E+01	7.27E-04	1.35E+02	6.35E-03	2.41E+02	1.87E-02	1.41E+02	4.50E-05
CMWA-0+12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	3.73E+02	5.34E+02	NA	NA	NA	NA	2.86E-02	5.94E+02	1.70E+01	7.27E-04	1.35E+02	2.97E-03	2.41E+02	1.87E-02	1.41E+02	2.10E-05
CMWA-100 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	1.12E+03	1.60E+03	NA	NA	NA	NA	2.86E-02	1.78E+03	5.10E+01	7.27E-04	1.35E+02	8.90E-03	2.41E+02	1.87E-02	1.41E+02	6.30E-05
CMWA-100+12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	9.06E+01	1.30E+02	NA	NA	NA	NA	2.86E-02	1.44E+02	4.13E+00	7.27E-04	1.35E+02	7.21E-04	2.41E+02	1.87E-02	1.41E+02	5.11E-06
CMWA-150 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	1.60E+03	2.30E+03	NA	NA	NA	NA	2.86E-02	2.55E+03	7.31E+01	7.27E-04	1.35E+02	1.28E-02	2.41E+02	1.87E-02	1.41E+02	9.05E-05
CMWA-150+12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	1.50E+02	2.15E+02	NA	NA	NA	NA	2.86E-02	2.39E+02	6.83E+00	7.27E-04	1.35E+02	1.19E-03	2.41E+02	1.87E-02	1.41E+02	8.45E-06
CMWA-200 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	2.25E+02	3.22E+02	NA	NA	NA	NA	2.86E-02	3.59E+02	1.03E+01	7.27E-04	1.35E+02	1.79E-03	2.41E+02	1.87E-02	1.41E+02	1.27E-05
CMWA2-250 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	5.08E+02	7.28E+02	NA	NA	NA	NA	2.86E-02	8.09E+02	2.32E+01	7.27E-04	1.35E+02	4.04E-03	2.41E+02	1.87E-02	1.41E+02	2.86E-05
CMWA-250 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	2.52E+02	3.61E+02	NA	NA	NA	NA	2.86E-02	4.02E+02	1.15E+01	7.27E-04	1.35E+02	2.01E-03	2.41E+02	1.87E-02	1.41E+02	1.42E-05
CMWA-250+50 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	1.98E+02	2.83E+02	NA	NA	NA	NA	2.86E-02	3.15E+02	9.01E+00	7.27E-04	1.35E+02	1.57E-03	2.41E+02	1.87E-02	1.41E+02	1.11E-05
CMWA-300 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	2.52E+02	3.61E+02	NA	NA	NA	NA	2.86E-02	4.01E+02	1.15E+01	7.27E-04	1.35E+02	2.01E-03	2.41E+02	1.87E-02	1.41E+02	1.42E-05
CMWA-300+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	1.84E+02	2.63E+02	NA	NA	NA	NA	2.86E-02	2.92E+02	8.36E+00	7.27E-04	1.35E+02	1.46E-03	2.41E+02	1.87E-02	1.41E+02	1.03E-05
CMWA-350 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	2.55E+02	3.65E+02	NA	NA	NA	NA	2.86E-02	4.05E+02	1.16E+01	7.27E-04	1.35E+02	2.03E-03	2.41E+02	1.87E-02	1.41E+02	1.43E-05
CMWA-350+0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	9.55E+01	1.37E+02	NA	NA	NA	NA	2.86E-02	1.52E+02	4.35E+00	7.27E-04	1.35E+02	7.60E-04	2.41E+02	1.87E-02	1.41E+02	5.38E-06
CMWA-50 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	5.97E+02	8.55E+02	NA	NA	NA	NA	2.86E-02	9.51E+02	2.72E+01	7.27E-04	1.35E+02	4.75E-03	2.41E+02	1.87E-02	1.41E+02	3.37E-05
CMWA-50+12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	1.30E+02	1.86E+02	NA	NA	NA	NA	2.86E-02	2.07E+02	5.92E+00	7.27E-04	1.35E+02	1.03E-03	2.41E+02	1.87E-02	1.41E+02	7.32E-06
CMWA-Comp 1 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	9.87E+02	1.41E+03	NA	NA	NA	NA	2.86E-02	1.57E+03	4.50E+01	7.27E-04	1.35E+02	7.85E-03	2.41E+02	1.87E-02	1.41E+02	5.56E-05
CMWA-Comp 2 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	1.25E+03	1.79E+03	NA	NA	NA	NA	2.86E-02	1.99E+03	5.69E+01	7.27E-04	1.35E+02	9.93E-03	2.41E+02	1.87E-02	1.41E+02	7.03E-05
																						Maximum HQ (Capitol Mine)	**9.05E-05**
Red Fox (Carnivorous Mammal - Terrestrial)																							
Reference Site																							
SGBG-1 (0-6")	1.72E-01	1.72E-01	7.62E-02	8.78E+00	1.51E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.15E+02	5.53E-01	9.60E-05	4.54E+00	4.36E-05	2.41E+02	1.87E-02	1.73E+02	2.52E-07
SGBG-201 (0-6")	1.72E-01	1.72E-01	7.62E-02	4.74E+00	8.13E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	6.22E+01	2.99E-01	9.60E-05	4.54E+00	2.35E-05	2.41E+02	1.87E-02	1.73E+02	1.36E-07
Capitol Mine																						**Minimum HQ (Reference Site)**	**1.36E-07**
CMWA-0 (0-6")	1.72E-01	1.72E-01	9.28E-01	1.18E+03	2.02E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.27E+03	6.10E+00	9.60E-05	4.54E+00	4.41E-03	2.41E+02	1.87E-02	1.73E+02	2.55E-05
CMWA-0 (0-6")	1.72E-01	1.72E-01	9.28E-01	1.18E+03	2.02E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.27E+03	6.10E+00	9.60E-05	4.54E+00	4.41E-03	2.41E+02	1.87E-02	1.73E+02	2.55E-05
CMWA-0+12.5 (0-6")	1.72E-01	1.72E-01	9.28E-01	5.51E+02	9.45E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.94E+02	2.85E+00	9.60E-05	4.54E+00	2.06E-03	2.41E+02	1.87E-02	1.73E+02	1.19E-05
CMWA-100 (0-6")	1.72E-01	1.72E-01	9.28E-01	1.65E+03	2.83E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.78E+03	8.55E+00	9.60E-05	4.54E+00	6.18E-03	2.41E+02	1.87E-02	1.73E+02	3.57E-05
CMWA-100+12.5 (0-6")	1.72E-01	1.72E-01	9.28E-01	1.34E+02	2.30E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.44E+02	6.93E-01	9.60E-05	4.54E+00	5.01E-04	2.41E+02	1.87E-02	1.73E+02	2.89E-06
CMWA-150 (0-6")	1.72E-01	1.72E-01	9.28E-01	2.37E+03	4.07E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.55E+03	1.23E+01	9.60E-05	4.54E+00	8.87E-03	2.41E+02	1.87E-02	1.73E+02	5.12E-05
CMWA-150+12.5 (0-6")	1.72E-01	1.72E-01	9.28E-01	2.21E+02	3.80E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.39E+02	1.15E+00	9.60E-05	4.54E+00	8.29E-04	2.41E+02	1.87E-02	1.73E+02	4.79E-06
CMWA-200 (0-6")	1.72E-01	1.72E-01	9.28E-01	3.33E+02	5.71E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.59E+02	1.72E+00	9.60E-05	4.54E+00	1.24E-03	2.41E+02	1.87E-02	1.73E+02	7.19E-06
CMWA2-250 (0-6")	1.72E-01	1.72E-01	9.28E-01	7.51E+02	1.29E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	8.09E+02	3.89E+00	9.60E-05	4.54E+00	2.81E-03	2.41E+02	1.87E-02	1.73E+02	1.62E-05
CMWA-250 (0-6")	1.72E-01	1.72E-01	9.28E-01	3.73E+02	6.39E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.02E+02	1.93E+00	9.60E-05	4.54E+00	1.39E-03	2.41E+02	1.87E-02	1.73E+02	8.06E-06
CMWA-250+50 (0-6")	1.72E-01	1.72E-01	9.28E-01	2.92E+02	5.01E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.15E+02	1.51E+00	9.60E-05	4.54E+00	1.09E-03	2.41E+02	1.87E-02	1.73E+02	6.31E-06
CMWA-300 (0-6")	1.72E-01	1.72E-01	9.28E-01	3.72E+02	6.39E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.01E+02	1.93E+00	9.60E-05	4.54E+00	1.39E-03	2.41E+02	1.87E-02	1.73E+02	8.05E-06
CMWA-300+25 (0-6")	1.72E-01	1.72E-01	9.28E-01	2.71E+02	4.65E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.92E+02	1.40E+00	9.60E-05	4.54E+00	1.01E-03	2.41E+02	1.87E-02	1.73E+02	5.86E-06
CMWA-350 (0-6")	1.72E-01	1.72E-01	9.28E-01	3.76E+02	6.45E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.05E+02	1.95E+00	9.60E-05	4.54E+00	1.41E-03	2.41E+02	1.87E-02	1.73E+02	8.13E-06
CMWA-350+0 (0-6")	1.72E-01	1.72E-01	9.28E-01	1.41E+02	2.42E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.52E+02	7.30E-01	9.60E-05	4.54E+00	5.27E-04	2.41E+02	1.87E-02	1.73E+02	3.05E-06
CMWA-50 (0-6")	1.72E-01	1.72E-01	9.28E-01	8.82E+02	1.51E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	9.51E+02	4.57E+00	9.60E-05	4.54E+00	3.30E-03	2.41E+02	1.87E-02	1.73E+02	1.91E-05
CMWA-50+12.5 (0-6")	1.72E-01	1.72E-01	9.28E-01	1.92E+02	3.29E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.07E+02	9.93E-01	9.60E-05	4.54E+00	7.18E-04	2.41E+02	1.87E-02	1.73E+02	4.15E-06
CMWA-Comp 1 (0-6")	1.72E-01	1.72E-01	9.28E-01	1.46E+03	2.50E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.57E+03	7.55E+00	9.60E-05	4.54E+00	5.45E-03	2.41E+02	1.87E-02	1.73E+02	3.15E-05
CMWA-Comp 2 (0-6")	1.72E-01	1.72E-01	9.28E-01	1.84E+03	3.16E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.99E+03	9.54E+00	9.60E-05	4.54E+00	6.90E-03	2.41E+02	1.87E-02	1.73E+02	3.98E-05
																						Maximum HQ (Capitol Mine)	**5.12E-05**

TABLE C-3D: LEAD DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 3 - CAPITOL MINE WASTE AREA (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **0.13**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Masked Shrew (Omnivorous Mammal - Terrestrial, Wetland)																							
Reference Site																							
SGBG-1 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.79E+02	1.51E+00	1.10E-03	1.15E+02	1.27E-01	3.25E-01	5.50E-03	9.69E+01	2.41E+02	1.87E-02	2.59E+02	3.74E-01
SGBG-201 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	9.66E+01	8.18E-01	1.10E-03	6.22E+01	6.85E-02	3.25E-01	5.50E-03	5.24E+01	2.41E+02	1.87E-02	2.59E+02	2.02E-01
Capitol Mine																						**Minimum HQ (Reference Site)**	**2.02E-01**
CMWA-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.97E+03	1.67E+01	1.10E-03	1.27E+03	1.40E+00	3.25E-01	5.50E-03	1.07E+03	2.41E+02	1.87E-02	2.59E+02	4.13E+00
CMWA-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.97E+03	1.67E+01	1.10E-03	1.27E+03	1.40E+00	3.25E-01	5.50E-03	1.07E+03	2.41E+02	1.87E-02	2.59E+02	4.13E+00
CMWA-0+12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	9.22E+02	7.81E+00	1.10E-03	5.94E+02	6.54E-01	3.25E-01	5.50E-03	5.00E+02	2.41E+02	1.87E-02	2.59E+02	1.93E+00
CMWA-100 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	2.76E+03	2.34E+01	1.10E-03	1.78E+03	1.96E+00	3.25E-01	5.50E-03	1.50E+03	2.41E+02	1.87E-02	2.59E+02	5.79E+00
CMWA-100+12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	2.24E+02	1.90E+00	1.10E-03	1.44E+02	1.59E-01	3.25E-01	5.50E-03	1.21E+02	2.41E+02	1.87E-02	2.59E+02	4.69E-01
CMWA-150 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	3.96E+03	3.36E+01	1.10E-03	2.55E+03	2.81E+00	3.25E-01	5.50E-03	2.15E+03	2.41E+02	1.87E-02	2.59E+02	8.30E+00
CMWA-150+12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	3.70E+02	3.14E+00	1.10E-03	2.39E+02	2.63E-01	3.25E-01	5.50E-03	2.01E+02	2.41E+02	1.87E-02	2.59E+02	7.76E-01
CMWA-200 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	5.56E+02	4.71E+00	1.10E-03	3.59E+02	3.95E-01	3.25E-01	5.50E-03	3.02E+02	2.41E+02	1.87E-02	2.59E+02	1.17E+00
CMWA2-250 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.26E+03	1.06E+01	1.10E-03	8.09E+02	8.91E-01	3.25E-01	5.50E-03	6.81E+02	2.41E+02	1.87E-02	2.59E+02	2.63E+00
CMWA-250 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	6.24E+02	5.28E+00	1.10E-03	4.02E+02	4.42E-01	3.25E-01	5.50E-03	3.38E+02	2.41E+02	1.87E-02	2.59E+02	1.31E+00
CMWA-250+50 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	4.88E+02	4.14E+00	1.10E-03	3.15E+02	3.47E-01	3.25E-01	5.50E-03	2.65E+02	2.41E+02	1.87E-02	2.59E+02	1.02E+00
CMWA-300 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	6.23E+02	5.28E+00	1.10E-03	4.01E+02	4.42E-01	3.25E-01	5.50E-03	3.38E+02	2.41E+02	1.87E-02	2.59E+02	1.30E+00
CMWA-300+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	4.53E+02	3.84E+00	1.10E-03	2.92E+02	3.22E-01	3.25E-01	5.50E-03	2.46E+02	2.41E+02	1.87E-02	2.59E+02	9.50E-01
CMWA-350 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	6.29E+02	5.33E+00	1.10E-03	4.05E+02	4.46E-01	3.25E-01	5.50E-03	3.41E+02	2.41E+02	1.87E-02	2.59E+02	1.32E+00
CMWA-350+0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	2.36E+02	2.00E+00	1.10E-03	1.52E+02	1.67E-01	3.25E-01	5.50E-03	1.28E+02	2.41E+02	1.87E-02	2.59E+02	4.94E-01
CMWA-50 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.48E+03	1.25E+01	1.10E-03	9.51E+02	1.05E+00	3.25E-01	5.50E-03	8.00E+02	2.41E+02	1.87E-02	2.59E+02	3.09E+00
CMWA-50+12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	3.21E+02	2.72E+00	1.10E-03	2.07E+02	2.28E-01	3.25E-01	5.50E-03	1.74E+02	2.41E+02	1.87E-02	2.59E+02	6.72E-01
CMWA-Comp 1 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	2.44E+03	2.07E+01	1.10E-03	1.57E+03	1.73E+00	3.25E-01	5.50E-03	1.32E+03	2.41E+02	1.87E-02	2.59E+02	5.11E+00
CMWA-Comp 2 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	3.08E+03	2.61E+01	1.10E-03	1.99E+03	2.19E+00	3.25E-01	5.50E-03	1.67E+03	2.41E+02	1.87E-02	2.59E+02	6.46E+00
																						Maximum HQ (Capitol Mine)	**8.30E+00**

Notes

1 See Tables 3-1 through 3-13 for ingestion rates, foraging ranges used to calculate the SUF, and body weights.

2 BAFs were calculated by dividing site-collected tissue by collocated soil concentrations (BAFs are in dry weight). The maximum BAF calculated from the Beartrap Creek and Blackfoot River transects was used for site dose calculations. The maximum BAF from the terrestrial reference site was used for reference site dose calculations.

3 The mammal, plant, and invertebrate concentrations were calculated by multiplying the soil concentration by the BAF to generate a tissue concentration (see note 2).

4 Mammal, plant, and invertebrate daily doses were calculated by multiplying the ingestion rate (see note 1) by the tissue concentration (see note 3).

5 Soil concentration from 0 to 6 inches below ground surface at point ID as measured by XRF 10. Doses were not calculated for detected and non-detected soil concentrations measured below the minimum reference site concentration, as indicated by BB. For results that were measured at less than the detection limit, doses were calculated using half of the detection limit.

6 Soil daily dose was calculated by multiplying the soil ingestion rate (see note 1) by soil concentration (see note 5).

7 Total daily dose is calculated using the following equation: total daily dose = ([mammal daily dose (if applicable) + plant daily dose (if applicable) + invertebrate daily dose (if applicable) + soil daily dose]*SUF)/receptor species body weight.

8 The TRVs used in this risk assessment represent a mid-range effects level. The derivation of TRVs is described in Navy (1998).

9 Allometrically adjusted TRVs for birds were calculated using the following equation: receptor species TRV = (test species TRV) x (test species body weight / receptor species body weight)$^{(1-1.2)}$.

10 Allometrically adjusted TRVs for mammals were calculated using the following equation: receptor species TRV = (test species TRV) x (test species body weight / receptor species body weight)$^{(1-0.94)}$.

11 HQs were calculated using the following equation: HQ = total daily dose/allometrically adjusted TRV.

12 Highlighted cells indicate an HQ greater than 1.0.

BAF	Bioaccumulation Factor	mg/day	Milligram per day
BB	Below minimum background reference site concentration	mg/kg	Milligram per kilogram
EE/CA	Engineering Evaluation/Cost Analysis	NA	Not applicable
EU	Exposure Unit	Navy	Department of the Navy
HQ	Hazard quotient	SUF	Site use factor
ID	Identification	TRV	Toxicity reference value
kg	Kilogram	XRF	X-ray fluorescence
kg/day	Kilogram per day	XRF 10	XRF measurements recorded following drying and seiving through a #10-mesh screen

Sources: Department of the Navy. 1998. "Development of Toxicity Reference Values for Conducting Ecological Risk Assessments at Naval Facilities in California, Interim Final." Prepared by Naval Facilities Engineering Command, Engineering Field Activity West (EFA West). San Bruno, California.

TABLE C-3E: MANGANESE DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 3 - CAPITOL MINE WASTE AREA

Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)
calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 0.13

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Mourning Dove (Herbivorous Birds - Terrestrial)																							
Reference Site																							
SGBG-1 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	3.34E-01	4.72E+01	2.72E-01	NA	NA	NA	NA	5.36E-04	1.41E+02	7.56E-02	5.02E-04	1.09E-01	1.60E-03	7.76E+02	1.97E-01	6.90E+02	2.31E-06
SGBG-201 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	3.34E-01	4.38E+01	2.52E-01	NA	NA	NA	NA	5.36E-04	1.31E+02	7.01E-02	5.02E-04	1.09E-01	1.48E-03	7.76E+02	1.97E-01	6.90E+02	2.15E-06
Capitol Mine																						**Minimum HQ (Reference Site)**	**2.15E-06**
CMWA-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	6.05E+03	3.48E+01	NA	NA	NA	NA	5.36E-04	6.10E+02	3.27E-01	5.02E-04	1.09E-01	1.62E-01	7.76E+02	1.97E-01	6.90E+02	2.34E-04
CMWA-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	6.05E+03	3.48E+01	NA	NA	NA	NA	5.36E-04	6.10E+02	3.27E-01	5.02E-04	1.09E-01	1.62E-01	7.76E+02	1.97E-01	6.90E+02	2.34E-04
CMWA-0+12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	1.20E+04	6.94E+01	NA	NA	NA	NA	5.36E-04	1.22E+03	6.52E-01	5.02E-04	1.09E-01	3.22E-01	7.76E+02	1.97E-01	6.90E+02	4.67E-04
CMWA-100 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	2.65E+03	1.53E+01	NA	NA	NA	NA	5.36E-04	2.67E+02	1.43E-01	5.02E-04	1.09E-01	7.08E-02	7.76E+02	1.97E-01	6.90E+02	1.03E-04
CMWA-100+12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	9.31E+03	5.37E+01	NA	NA	NA	NA	5.36E-04	9.40E+02	5.04E-01	5.02E-04	1.09E-01	2.49E-01	7.76E+02	1.97E-01	6.90E+02	3.61E-04
CMWA-150 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	1.02E+03	5.86E+00	NA	NA	NA	NA	5.36E-04	1.03E+02	5.50E-02	5.02E-04	1.09E-01	2.72E-02	7.76E+02	1.97E-01	6.90E+02	3.94E-05
CMWA-150+12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	7.96E+03	4.58E+01	NA	NA	NA	NA	5.36E-04	8.03E+02	4.30E-01	5.02E-04	1.09E-01	2.13E-01	7.76E+02	1.97E-01	6.90E+02	3.08E-04
CMWA-200 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	1.44E+03	8.31E+00	NA	NA	NA	NA	5.36E-04	1.46E+02	7.80E-02	5.02E-04	1.09E-01	3.85E-02	7.76E+02	1.97E-01	6.90E+02	5.59E-05
CMWA2-250 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	2.34E+03	1.35E+01	NA	NA	NA	NA	5.36E-04	2.36E+02	1.27E-01	5.02E-04	1.09E-01	6.26E-02	7.76E+02	1.97E-01	6.90E+02	9.07E-05
CMWA-250 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	7.38E+03	4.25E+01	NA	NA	NA	NA	5.36E-04	7.44E+02	3.99E-01	5.02E-04	1.09E-01	1.97E-01	7.76E+02	1.97E-01	6.90E+02	2.86E-04
CMWA-250+50 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	3.28E+03	1.89E+01	NA	NA	NA	NA	5.36E-04	3.31E+02	1.77E-01	5.02E-04	1.09E-01	8.76E-02	7.76E+02	1.97E-01	6.90E+02	1.27E-04
CMWA-300 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	4.05E+03	2.33E+01	NA	NA	NA	NA	5.36E-04	4.08E+02	2.19E-01	5.02E-04	1.09E-01	1.08E-01	7.76E+02	1.97E-01	6.90E+02	1.57E-04
CMWA-300+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	4.14E+03	2.39E+01	NA	NA	NA	NA	5.36E-04	4.18E+02	2.24E-01	5.02E-04	1.09E-01	1.11E-01	7.76E+02	1.97E-01	6.90E+02	1.60E-04
CMWA-350 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	2.22E+03	1.28E+01	NA	NA	NA	NA	5.36E-04	2.24E+02	1.20E-01	5.02E-04	1.09E-01	5.94E-02	7.76E+02	1.97E-01	6.90E+02	8.61E-05
CMWA-350+0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	2.76E+03	1.59E+01	NA	NA	NA	NA	5.36E-04	2.78E+02	1.49E-01	5.02E-04	1.09E-01	7.37E-02	7.76E+02	1.97E-01	6.90E+02	1.07E-04
CMWA-50 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	1.74E+04	1.00E+02	NA	NA	NA	NA	5.36E-04	1.75E+03	9.39E-01	5.02E-04	1.09E-01	4.64E-01	7.76E+02	1.97E-01	6.90E+02	6.73E-04
CMWA-50+12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	1.15E+04	6.65E+01	NA	NA	NA	NA	5.36E-04	1.17E+03	6.24E-01	5.02E-04	1.09E-01	3.09E-01	7.76E+02	1.97E-01	6.90E+02	4.47E-04
CMWA-Comp 1 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	3.31E+03	1.91E+01	NA	NA	NA	NA	5.36E-04	3.34E+02	1.79E-01	5.02E-04	1.09E-01	8.85E-02	7.76E+02	1.97E-01	6.90E+02	1.28E-04
CMWA-Comp 2 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	1.68E+03	9.66E+00	NA	NA	NA	NA	5.36E-04	1.69E+02	9.06E-02	5.02E-04	1.09E-01	4.48E-02	7.76E+02	1.97E-01	6.90E+02	6.49E-05
																						Maximum HQ (Capitol Mine)	**6.73E-04**
Red-Tailed Hawk (Carnivorous Birds - Terrestrial)																							
Reference Site																							
SGBG-1 (0-6")	9.00E-02	9.00E-02	5.93E-02	8.37E+00	7.53E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.41E+02	7.23E-01	1.87E-04	1.13E+00	2.43E-04	7.76E+02	1.97E-01	1.10E+03	2.20E-07
SGBG-201 (0-6")	9.00E-02	9.00E-02	5.93E-02	7.77E+00	6.99E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.31E+02	6.71E-01	1.87E-04	1.13E+00	2.25E-04	7.76E+02	1.97E-01	1.10E+03	2.05E-07
Capitol Mine																						**Minimum HQ (Reference Site)**	**2.05E-07**
CMWA-0 (0-6")	9.00E-02	9.00E-02	2.80E-02	1.71E+01	1.54E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	6.10E+02	3.13E+00	1.87E-04	1.13E+00	7.68E-04	7.76E+02	1.97E-01	1.10E+03	6.97E-07
CMWA-0 (0-6")	9.00E-02	9.00E-02	2.80E-02	1.71E+01	1.54E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	6.10E+02	3.13E+00	1.87E-04	1.13E+00	7.68E-04	7.76E+02	1.97E-01	1.10E+03	6.97E-07
CMWA-0+12.5 (0-6")	9.00E-02	9.00E-02	2.80E-02	3.40E+01	3.06E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.22E+03	6.24E+00	1.87E-04	1.13E+00	1.53E-03	7.76E+02	1.97E-01	1.10E+03	1.39E-06
CMWA-100 (0-6")	9.00E-02	9.00E-02	2.80E-02	7.49E+00	6.73E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.67E+02	1.37E+00	1.87E-04	1.13E+00	3.36E-04	7.76E+02	1.97E-01	1.10E+03	3.05E-07
CMWA-100+12.5 (0-6")	9.00E-02	9.00E-02	2.80E-02	2.63E+01	2.37E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	9.40E+02	4.82E+00	1.87E-04	1.13E+00	1.18E-03	7.76E+02	1.97E-01	1.10E+03	1.07E-06
CMWA-150 (0-6")	9.00E-02	9.00E-02	2.80E-02	2.87E+00	2.58E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.03E+02	5.26E-01	1.87E-04	1.13E+00	1.29E-04	7.76E+02	1.97E-01	1.10E+03	1.17E-07
CMWA-150+12.5 (0-6")	9.00E-02	9.00E-02	2.80E-02	2.25E+01	2.02E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	8.03E+02	4.12E+00	1.87E-04	1.13E+00	1.01E-03	7.76E+02	1.97E-01	1.10E+03	9.17E-07
CMWA-200 (0-6")	9.00E-02	9.00E-02	2.80E-02	4.07E+00	3.66E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.46E+02	7.46E-01	1.87E-04	1.13E+00	1.83E-04	7.76E+02	1.97E-01	1.10E+03	1.66E-07
CMWA2-250 (0-6")	9.00E-02	9.00E-02	2.80E-02	6.61E+00	5.95E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.36E+02	1.21E+00	1.87E-04	1.13E+00	2.97E-04	7.76E+02	1.97E-01	1.10E+03	2.70E-07
CMWA-250 (0-6")	9.00E-02	9.00E-02	2.80E-02	2.08E+01	1.87E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	7.44E+02	3.82E+00	1.87E-04	1.13E+00	9.36E-04	7.76E+02	1.97E-01	1.10E+03	8.50E-07
CMWA-250+50 (0-6")	9.00E-02	9.00E-02	2.80E-02	9.26E+00	8.33E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.31E+02	1.70E+00	1.87E-04	1.13E+00	4.16E-04	7.76E+02	1.97E-01	1.10E+03	3.78E-07
CMWA-300 (0-6")	9.00E-02	9.00E-02	2.80E-02	1.14E+01	1.03E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.08E+02	2.09E+00	1.87E-04	1.13E+00	5.14E-04	7.76E+02	1.97E-01	1.10E+03	4.66E-07
CMWA-300+25 (0-6")	9.00E-02	9.00E-02	2.80E-02	1.17E+01	1.05E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.18E+02	2.14E+00	1.87E-04	1.13E+00	5.26E-04	7.76E+02	1.97E-01	1.10E+03	4.77E-07
CMWA-350 (0-6")	9.00E-02	9.00E-02	2.80E-02	6.28E+00	5.65E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.24E+02	1.15E+00	1.87E-04	1.13E+00	2.82E-04	7.76E+02	1.97E-01	1.10E+03	2.56E-07
CMWA-350+0 (0-6")	9.00E-02	9.00E-02	2.80E-02	7.79E+00	7.00E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.78E+02	1.43E+00	1.87E-04	1.13E+00	3.50E-04	7.76E+02	1.97E-01	1.10E+03	3.18E-07
CMWA-50 (0-6")	9.00E-02	9.00E-02	2.80E-02	4.91E+01	4.41E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.75E+03	8.99E+00	1.87E-04	1.13E+00	2.20E-03	7.76E+02	1.97E-01	1.10E+03	2.00E-06
CMWA-50+12.5 (0-6")	9.00E-02	9.00E-02	2.80E-02	3.26E+01	2.93E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.17E+03	5.97E+00	1.87E-04	1.13E+00	1.47E-03	7.76E+02	1.97E-01	1.10E+03	1.33E-06
CMWA-Comp 1 (0-6")	9.00E-02	9.00E-02	2.80E-02	9.36E+00	8.42E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.34E+02	1.71E+00	1.87E-04	1.13E+00	4.20E-04	7.76E+02	1.97E-01	1.10E+03	3.82E-07
CMWA-Comp 2 (0-6")	9.00E-02	9.00E-02	2.80E-02	4.73E+00	4.26E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.69E+02	8.67E-01	1.87E-04	1.13E+00	2.13E-04	7.76E+02	1.97E-01	1.10E+03	1.93E-07
																						Maximum HQ (Capitol Mine)	**2.00E-06**

TABLE C-3E: MANGANESE DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 3 - CAPITOL MINE WASTE AREA (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 0.13

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
American Kestrel (Insectivorous Birds - Terrestrial)																							
Reference Site																							
SGBG-1 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	2.08E+02	2.86E+00	7.84E-04	1.41E+02	1.11E-01	4.97E-04	1.24E-01	1.19E-02	7.76E+02	1.97E-01	7.08E+02	1.68E-05
SGBG-201 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.93E+02	2.66E+00	7.84E-04	1.31E+02	1.03E-01	4.97E-04	1.24E-01	1.11E-02	7.76E+02	1.97E-01	7.08E+02	1.56E-05
Capitol Mine																						**Minimum HQ (Reference Site)**	**1.56E-05**
CMWA-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	9.01E+02	1.24E+01	7.84E-04	6.10E+02	4.79E-01	4.97E-04	1.24E-01	5.16E-02	7.76E+02	1.97E-01	7.08E+02	7.29E-05
CMWA-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	9.01E+02	1.24E+01	7.84E-04	6.10E+02	4.79E-01	4.97E-04	1.24E-01	5.16E-02	7.76E+02	1.97E-01	7.08E+02	7.29E-05
CMWA-0+12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.79E+03	2.47E+01	7.84E-04	1.22E+03	9.54E-01	4.97E-04	1.24E-01	1.03E-01	7.76E+02	1.97E-01	7.08E+02	1.45E-04
CMWA-100 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	3.95E+02	5.43E+00	7.84E-04	2.67E+02	2.10E-01	4.97E-04	1.24E-01	2.26E-02	7.76E+02	1.97E-01	7.08E+02	3.19E-05
CMWA-100+12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.39E+03	1.91E+01	7.84E-04	9.40E+02	7.37E-01	4.97E-04	1.24E-01	7.94E-02	7.76E+02	1.97E-01	7.08E+02	1.12E-04
CMWA-150 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.51E+02	2.08E+00	7.84E-04	1.03E+02	8.05E-02	4.97E-04	1.24E-01	8.67E-03	7.76E+02	1.97E-01	7.08E+02	1.23E-05
CMWA-150+12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.19E+03	1.63E+01	7.84E-04	8.03E+02	6.30E-01	4.97E-04	1.24E-01	6.79E-02	7.76E+02	1.97E-01	7.08E+02	9.59E-05
CMWA-200 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	2.15E+02	2.96E+00	7.84E-04	1.46E+02	1.14E-01	4.97E-04	1.24E-01	1.23E-02	7.76E+02	1.97E-01	7.08E+02	1.74E-05
CMWA2-250 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	3.49E+02	4.80E+00	7.84E-04	2.36E+02	1.85E-01	4.97E-04	1.24E-01	2.00E-02	7.76E+02	1.97E-01	7.08E+02	2.82E-05
CMWA-250 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.10E+03	1.51E+01	7.84E-04	7.44E+02	5.84E-01	4.97E-04	1.24E-01	6.29E-02	7.76E+02	1.97E-01	7.08E+02	8.89E-05
CMWA-250+50 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	4.88E+02	6.72E+00	7.84E-04	3.31E+02	2.59E-01	4.97E-04	1.24E-01	2.80E-02	7.76E+02	1.97E-01	7.08E+02	3.95E-05
CMWA-300 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	6.03E+02	8.29E+00	7.84E-04	4.08E+02	3.20E-01	4.97E-04	1.24E-01	3.45E-02	7.76E+02	1.97E-01	7.08E+02	4.88E-05
CMWA-300+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	6.17E+02	8.49E+00	7.84E-04	4.18E+02	3.28E-01	4.97E-04	1.24E-01	3.53E-02	7.76E+02	1.97E-01	7.08E+02	4.99E-05
CMWA-350 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	3.31E+02	4.56E+00	7.84E-04	2.24E+02	1.76E-01	4.97E-04	1.24E-01	1.90E-02	7.76E+02	1.97E-01	7.08E+02	2.68E-05
CMWA-350+0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	4.10E+02	5.65E+00	7.84E-04	2.78E+02	2.18E-01	4.97E-04	1.24E-01	2.35E-02	7.76E+02	1.97E-01	7.08E+02	3.32E-05
CMWA-50 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	2.59E+03	3.56E+01	7.84E-04	1.75E+03	1.37E+00	4.97E-04	1.24E-01	1.48E-01	7.76E+02	1.97E-01	7.08E+02	2.09E-04
CMWA-50+12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.72E+03	2.37E+01	7.84E-04	1.17E+03	9.14E-01	4.97E-04	1.24E-01	9.85E-02	7.76E+02	1.97E-01	7.08E+02	1.39E-04
CMWA-Comp 1 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	4.93E+02	6.79E+00	7.84E-04	3.34E+02	2.62E-01	4.97E-04	1.24E-01	2.82E-02	7.76E+02	1.97E-01	7.08E+02	3.99E-05
CMWA-Comp 2 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	2.50E+02	3.43E+00	7.84E-04	1.69E+02	1.33E-01	4.97E-04	1.24E-01	1.43E-02	7.76E+02	1.97E-01	7.08E+02	2.02E-05
																						Maximum HQ (Capitol Mine)	**2.09E-04**
Meadow Vole (Small Herbivorous Mammal - Terrestrial)																							
Reference Site																							
SGBG-1 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	3.34E-01	4.72E+01	2.21E-01	NA	NA	NA	NA	1.13E-04	1.41E+02	1.59E-02	1.00E+00	3.06E-02	7.74E+00	1.59E+02	2.97E-02	1.59E+02	4.88E-02
SGBG-201 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	3.34E-01	4.38E+01	2.05E-01	NA	NA	NA	NA	1.13E-04	1.31E+02	1.47E-02	1.00E+00	3.06E-02	7.19E+00	1.59E+02	2.97E-02	1.59E+02	4.52E-02
Capitol Mine																						**Minimum HQ (Reference Site)**	**4.52E-02**
CMWA-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	6.05E+03	2.84E+01	NA	NA	NA	NA	1.13E-04	6.10E+02	6.87E-02	1.00E+00	3.06E-02	9.29E+02	1.59E+02	2.97E-02	1.59E+02	5.85E+00
CMWA-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	6.05E+03	2.84E+01	NA	NA	NA	NA	1.13E-04	6.10E+02	6.87E-02	1.00E+00	3.06E-02	9.29E+02	1.59E+02	2.97E-02	1.59E+02	5.85E+00
CMWA-0+12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	1.20E+04	5.65E+01	NA	NA	NA	NA	1.13E-04	1.22E+03	1.37E-01	1.00E+00	3.06E-02	1.85E+03	1.59E+02	2.97E-02	1.59E+02	1.17E+01
CMWA-100 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	2.65E+03	1.24E+01	NA	NA	NA	NA	1.13E-04	2.67E+02	3.01E-02	1.00E+00	3.06E-02	4.07E+02	1.59E+02	2.97E-02	1.59E+02	2.56E+00
CMWA-100+12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	9.31E+03	4.37E+01	NA	NA	NA	NA	1.13E-04	9.40E+02	1.06E-01	1.00E+00	3.06E-02	1.43E+03	1.59E+02	2.97E-02	1.59E+02	9.01E+00
CMWA-150 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	1.02E+03	4.77E+00	NA	NA	NA	NA	1.13E-04	1.03E+02	1.15E-02	1.00E+00	3.06E-02	1.56E+02	1.59E+02	2.97E-02	1.59E+02	9.83E-01
CMWA-150+12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	7.96E+03	3.73E+01	NA	NA	NA	NA	1.13E-04	8.03E+02	9.04E-02	1.00E+00	3.06E-02	1.22E+03	1.59E+02	2.97E-02	1.59E+02	7.70E+00
CMWA-200 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	1.44E+03	6.76E+00	NA	NA	NA	NA	1.13E-04	1.46E+02	1.64E-02	1.00E+00	3.06E-02	2.21E+02	1.59E+02	2.97E-02	1.59E+02	1.39E+00
CMWA2-250 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	2.34E+03	1.10E+01	NA	NA	NA	NA	1.13E-04	2.36E+02	2.66E-02	1.00E+00	3.06E-02	3.60E+02	1.59E+02	2.97E-02	1.59E+02	2.26E+00
CMWA-250 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	7.38E+03	3.46E+01	NA	NA	NA	NA	1.13E-04	7.44E+02	8.38E-02	1.00E+00	3.06E-02	1.13E+03	1.59E+02	2.97E-02	1.59E+02	7.14E+00
CMWA-250+50 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	3.28E+03	1.54E+01	NA	NA	NA	NA	1.13E-04	3.31E+02	3.72E-02	1.00E+00	3.06E-02	5.04E+02	1.59E+02	2.97E-02	1.59E+02	3.17E+00
CMWA-300 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	4.05E+03	1.90E+01	NA	NA	NA	NA	1.13E-04	4.08E+02	4.60E-02	1.00E+00	3.06E-02	6.22E+02	1.59E+02	2.97E-02	1.59E+02	3.91E+00
CMWA-300+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	4.14E+03	1.94E+01	NA	NA	NA	NA	1.13E-04	4.18E+02	4.70E-02	1.00E+00	3.06E-02	6.36E+02	1.59E+02	2.97E-02	1.59E+02	4.01E+00
CMWA-350 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	2.22E+03	1.04E+01	NA	NA	NA	NA	1.13E-04	2.24E+02	2.53E-02	1.00E+00	3.06E-02	3.42E+02	1.59E+02	2.97E-02	1.59E+02	2.15E+00
CMWA-350+0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	2.76E+03	1.29E+01	NA	NA	NA	NA	1.13E-04	2.78E+02	3.13E-02	1.00E+00	3.06E-02	4.23E+02	1.59E+02	2.97E-02	1.59E+02	2.67E+00
CMWA-50 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	1.74E+04	8.14E+01	NA	NA	NA	NA	1.13E-04	1.75E+03	1.97E-01	1.00E+00	3.06E-02	2.67E+03	1.59E+02	2.97E-02	1.59E+02	1.68E+01
CMWA-50+12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	1.15E+04	5.41E+01	NA	NA	NA	NA	1.13E-04	1.17E+03	1.31E-01	1.00E+00	3.06E-02	1.77E+03	1.59E+02	2.97E-02	1.59E+02	1.12E+01
CMWA-Comp 1 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	3.31E+03	1.55E+01	NA	NA	NA	NA	1.13E-04	3.34E+02	3.76E-02	1.00E+00	3.06E-02	5.09E+02	1.59E+02	2.97E-02	1.59E+02	3.20E+00
CMWA-Comp 2 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	1.68E+03	7.86E+00	NA	NA	NA	NA	1.13E-04	1.69E+02	1.90E-02	1.00E+00	3.06E-02	2.57E+02	1.59E+02	2.97E-02	1.59E+02	1.62E+00
																						Maximum HQ (Capitol Mine)	**1.68E+01**

TABLE C-3E: MANGANESE DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 3 - CAPITOL MINE WASTE AREA (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 0.13

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
White-Tailed Deer (Large Herbivorous Mammal - Terrestrial)																							
Reference Site																							
SGBG-1 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	3.34E-01	4.72E+01	6.75E+01	NA	NA	NA	NA	2.86E-02	1.41E+02	4.04E+00	7.27E-04	1.35E+02	3.85E-04	1.59E+02	2.97E-02	9.60E+01	4.02E-06
SGBG-201 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	3.34E-01	4.38E+01	6.26E+01	NA	NA	NA	NA	2.86E-02	1.31E+02	3.75E+00	7.27E-04	1.35E+02	3.58E-04	1.59E+02	2.97E-02	9.60E+01	3.73E-06
Capitol Mine																						**Minimum HQ (Reference Site)**	**3.73E-06**
CMWA-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	6.05E+03	8.66E+03	NA	NA	NA	NA	2.86E-02	6.10E+02	1.75E+01	7.27E-04	1.35E+02	4.67E-02	1.59E+02	2.97E-02	9.60E+01	4.87E-04
CMWA-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	6.05E+03	8.66E+03	NA	NA	NA	NA	2.86E-02	6.10E+02	1.75E+01	7.27E-04	1.35E+02	4.67E-02	1.59E+02	2.97E-02	9.60E+01	4.87E-04
CMWA-0+12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	1.20E+04	1.73E+04	NA	NA	NA	NA	2.86E-02	1.22E+03	3.48E+01	7.27E-04	1.35E+02	9.31E-02	1.59E+02	2.97E-02	9.60E+01	9.70E-04
CMWA-100 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	2.65E+03	3.79E+03	NA	NA	NA	NA	2.86E-02	2.67E+02	7.66E+00	7.27E-04	1.35E+02	2.05E-02	1.59E+02	2.97E-02	9.60E+01	2.13E-04
CMWA-100+12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	9.31E+03	1.33E+04	NA	NA	NA	NA	2.86E-02	9.40E+02	2.69E+01	7.27E-04	1.35E+02	7.20E-02	1.59E+02	2.97E-02	9.60E+01	7.50E-04
CMWA-150 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	1.02E+03	1.46E+03	NA	NA	NA	NA	2.86E-02	1.03E+02	2.94E+00	7.27E-04	1.35E+02	7.86E-03	1.59E+02	2.97E-02	9.60E+01	8.19E-05
CMWA-150+12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	7.96E+03	1.14E+04	NA	NA	NA	NA	2.86E-02	8.03E+02	2.30E+01	7.27E-04	1.35E+02	6.15E-02	1.59E+02	2.97E-02	9.60E+01	6.41E-04
CMWA-200 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	1.44E+03	2.06E+03	NA	NA	NA	NA	2.86E-02	1.46E+02	4.17E+00	7.27E-04	1.35E+02	1.11E-02	1.59E+02	2.97E-02	9.60E+01	1.16E-04
CMWA2-250 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	2.34E+03	3.35E+03	NA	NA	NA	NA	2.86E-02	2.36E+02	6.76E+00	7.27E-04	1.35E+02	1.81E-02	1.59E+02	2.97E-02	9.60E+01	1.88E-04
CMWA-250 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	7.38E+03	1.06E+04	NA	NA	NA	NA	2.86E-02	7.44E+02	2.13E+01	7.27E-04	1.35E+02	5.70E-02	1.59E+02	2.97E-02	9.60E+01	5.94E-04
CMWA-250+50 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	3.28E+03	4.69E+03	NA	NA	NA	NA	2.86E-02	3.31E+02	9.47E+00	7.27E-04	1.35E+02	2.53E-02	1.59E+02	2.97E-02	9.60E+01	2.64E-04
CMWA-300 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	4.05E+03	5.79E+03	NA	NA	NA	NA	2.86E-02	4.08E+02	1.17E+01	7.27E-04	1.35E+02	3.13E-02	1.59E+02	2.97E-02	9.60E+01	3.26E-04
CMWA-300+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	4.14E+03	5.93E+03	NA	NA	NA	NA	2.86E-02	4.18E+02	1.20E+01	7.27E-04	1.35E+02	3.20E-02	1.59E+02	2.97E-02	9.60E+01	3.34E-04
CMWA-350 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	2.22E+03	3.18E+03	NA	NA	NA	NA	2.86E-02	2.24E+02	6.43E+00	7.27E-04	1.35E+02	1.72E-02	1.59E+02	2.97E-02	9.60E+01	1.79E-04
CMWA-350+0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	2.76E+03	3.95E+03	NA	NA	NA	NA	2.86E-02	2.78E+02	7.96E+00	7.27E-04	1.35E+02	2.13E-02	1.59E+02	2.97E-02	9.60E+01	2.22E-04
CMWA-50 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	1.74E+04	2.49E+04	NA	NA	NA	NA	2.86E-02	1.75E+03	5.02E+01	7.27E-04	1.35E+02	1.34E-01	1.59E+02	2.97E-02	9.60E+01	1.40E-03
CMWA-50+12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	1.15E+04	1.65E+04	NA	NA	NA	NA	2.86E-02	1.17E+03	3.34E+01	7.27E-04	1.35E+02	8.92E-02	1.59E+02	2.97E-02	9.60E+01	9.30E-04
CMWA-Comp 1 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	3.31E+03	4.74E+03	NA	NA	NA	NA	2.86E-02	3.34E+02	9.57E+00	7.27E-04	1.35E+02	2.56E-02	1.59E+02	2.97E-02	9.60E+01	2.67E-04
CMWA-Comp 2 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	1.68E+03	2.40E+03	NA	NA	NA	NA	2.86E-02	1.69E+02	4.84E+00	7.27E-04	1.35E+02	1.30E-02	1.59E+02	2.97E-02	9.60E+01	1.35E-04
																						Maximum HQ (Capitol Mine)	**1.40E-03**
Red Fox (Carnivorous Mammal - Terrestrial)																							
Reference Site																							
SGBG-1 (0-6")	1.72E-01	1.72E-01	5.93E-02	8.37E+00	1.44E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.41E+02	6.78E-01	9.60E-05	4.54E+00	4.47E-05	1.59E+02	2.97E-02	1.18E+02	3.80E-07
SGBG-201 (0-6")	1.72E-01	1.72E-01	5.93E-02	7.77E+00	1.33E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.31E+02	6.29E-01	9.60E-05	4.54E+00	4.15E-05	1.59E+02	2.97E-02	1.18E+02	3.53E-07
Capitol Mine																						**Minimum HQ (Reference Site)**	**3.53E-07**
CMWA-0 (0-6")	1.72E-01	1.72E-01	2.80E-02	1.71E+01	2.93E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	6.10E+02	2.93E+00	9.60E-05	4.54E+00	1.24E-04	1.59E+02	2.97E-02	1.18E+02	1.06E-06
CMWA-0 (0-6")	1.72E-01	1.72E-01	2.80E-02	1.71E+01	2.93E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	6.10E+02	2.93E+00	9.60E-05	4.54E+00	1.24E-04	1.59E+02	2.97E-02	1.18E+02	1.06E-06
CMWA-0+12.5 (0-6")	1.72E-01	1.72E-01	2.80E-02	3.40E+01	5.84E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.22E+03	5.84E+00	9.60E-05	4.54E+00	2.47E-04	1.59E+02	2.97E-02	1.18E+02	2.10E-06
CMWA-100 (0-6")	1.72E-01	1.72E-01	2.80E-02	7.49E+00	1.28E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.67E+02	1.28E+00	9.60E-05	4.54E+00	5.44E-05	1.59E+02	2.97E-02	1.18E+02	4.62E-07
CMWA-100+12.5 (0-6")	1.72E-01	1.72E-01	2.80E-02	2.63E+01	4.51E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	9.40E+02	4.52E+00	9.60E-05	4.54E+00	1.91E-04	1.59E+02	2.97E-02	1.18E+02	1.62E-06
CMWA-150 (0-6")	1.72E-01	1.72E-01	2.80E-02	2.87E+00	4.93E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.03E+02	4.93E-01	9.60E-05	4.54E+00	2.09E-05	1.59E+02	2.97E-02	1.18E+02	1.77E-07
CMWA-150+12.5 (0-6")	1.72E-01	1.72E-01	2.80E-02	2.25E+01	3.86E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	8.03E+02	3.86E+00	9.60E-05	4.54E+00	1.63E-04	1.59E+02	2.97E-02	1.18E+02	1.39E-06
CMWA-200 (0-6")	1.72E-01	1.72E-01	2.80E-02	4.07E+00	6.99E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.46E+02	6.99E-01	9.60E-05	4.54E+00	2.96E-05	1.59E+02	2.97E-02	1.18E+02	2.52E-07
CMWA2-250 (0-6")	1.72E-01	1.72E-01	2.80E-02	6.61E+00	1.13E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.36E+02	1.13E+00	9.60E-05	4.54E+00	4.80E-05	1.59E+02	2.97E-02	1.18E+02	4.08E-07
CMWA-250 (0-6")	1.72E-01	1.72E-01	2.80E-02	2.08E+01	3.58E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	7.44E+02	3.58E+00	9.60E-05	4.54E+00	1.51E-04	1.59E+02	2.97E-02	1.18E+02	1.29E-06
CMWA-250+50 (0-6")	1.72E-01	1.72E-01	2.80E-02	9.26E+00	1.59E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.31E+02	1.59E+00	9.60E-05	4.54E+00	6.73E-05	1.59E+02	2.97E-02	1.18E+02	5.72E-07
CMWA-300 (0-6")	1.72E-01	1.72E-01	2.80E-02	1.14E+01	1.96E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.08E+02	1.96E+00	9.60E-05	4.54E+00	8.31E-05	1.59E+02	2.97E-02	1.18E+02	7.06E-07
CMWA-300+25 (0-6")	1.72E-01	1.72E-01	2.80E-02	1.17E+01	2.01E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.18E+02	2.01E+00	9.60E-05	4.54E+00	8.50E-05	1.59E+02	2.97E-02	1.18E+02	7.23E-07
CMWA-350 (0-6")	1.72E-01	1.72E-01	2.80E-02	6.28E+00	1.08E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.24E+02	1.08E+00	9.60E-05	4.54E+00	4.56E-05	1.59E+02	2.97E-02	1.18E+02	3.88E-07
CMWA-350+0 (0-6")	1.72E-01	1.72E-01	2.80E-02	7.79E+00	1.34E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.78E+02	1.34E+00	9.60E-05	4.54E+00	5.66E-05	1.59E+02	2.97E-02	1.18E+02	4.81E-07
CMWA-50 (0-6")	1.72E-01	1.72E-01	2.80E-02	4.91E+01	8.42E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.75E+03	8.42E+00	9.60E-05	4.54E+00	3.56E-04	1.59E+02	2.97E-02	1.18E+02	3.03E-06
CMWA-50+12.5 (0-6")	1.72E-01	1.72E-01	2.80E-02	3.26E+01	5.60E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.17E+03	5.60E+00	9.60E-05	4.54E+00	2.37E-04	1.59E+02	2.97E-02	1.18E+02	2.01E-06
CMWA-Comp 1 (0-6")	1.72E-01	1.72E-01	2.80E-02	9.36E+00	1.61E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.34E+02	1.61E+00	9.60E-05	4.54E+00	6.80E-05	1.59E+02	2.97E-02	1.18E+02	5.78E-07
CMWA-Comp 2 (0-6")	1.72E-01	1.72E-01	2.80E-02	4.73E+00	8.12E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.69E+02	8.12E-01	9.60E-05	4.54E+00	3.44E-05	1.59E+02	2.97E-02	1.18E+02	2.92E-07
																						Maximum HQ (Capitol Mine)	**3.03E-06**

TABLE C-3E: MANGANESE DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 3 - CAPITOL MINE WASTE AREA (Continued)
Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)
calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **0.13**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Masked Shrew (Omnivorous Mammal - Terrestrial, Wetland)																							
Reference Site																							
SGBG-1 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	2.08E+02	1.76E+00	1.10E-03	1.41E+02	1.55E-01	3.25E-01	5.50E-03	1.13E+02	1.59E+02	2.97E-02	1.76E+02	6.44E-01
SGBG-201 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.93E+02	1.64E+00	1.10E-03	1.31E+02	1.44E-01	3.25E-01	5.50E-03	1.05E+02	1.59E+02	2.97E-02	1.76E+02	5.98E-01
Capitol Mine																					**Minimum HQ (Reference Site)**		**5.98E-01**
CMWA-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	9.01E+02	7.63E+00	1.10E-03	6.10E+02	6.72E-01	3.25E-01	5.50E-03	4.91E+02	1.59E+02	2.97E-02	1.76E+02	2.79E+00
CMWA-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	9.01E+02	7.63E+00	1.10E-03	6.10E+02	6.72E-01	3.25E-01	5.50E-03	4.91E+02	1.59E+02	2.97E-02	1.76E+02	2.79E+00
CMWA-0+12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.79E+03	1.52E+01	1.10E-03	1.22E+03	1.34E+00	3.25E-01	5.50E-03	9.77E+02	1.59E+02	2.97E-02	1.76E+02	5.55E+00
CMWA-100 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	3.95E+02	3.34E+00	1.10E-03	2.67E+02	2.94E-01	3.25E-01	5.50E-03	2.15E+02	1.59E+02	2.97E-02	1.76E+02	1.22E+00
CMWA-100+12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.39E+03	1.18E+01	1.10E-03	9.40E+02	1.04E+00	3.25E-01	5.50E-03	7.56E+02	1.59E+02	2.97E-02	1.76E+02	4.29E+00
CMWA-150 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.51E+02	1.28E+00	1.10E-03	1.03E+02	1.13E-01	3.25E-01	5.50E-03	8.25E+01	1.59E+02	2.97E-02	1.76E+02	4.68E-01
CMWA-150+12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.19E+03	1.00E+01	1.10E-03	8.03E+02	8.84E-01	3.25E-01	5.50E-03	6.45E+02	1.59E+02	2.97E-02	1.76E+02	3.67E+00
CMWA-200 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	2.15E+02	1.82E+00	1.10E-03	1.46E+02	1.60E-01	3.25E-01	5.50E-03	1.17E+02	1.59E+02	2.97E-02	1.76E+02	6.64E-01
CMWA2-250 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	3.49E+02	2.95E+00	1.10E-03	2.36E+02	2.60E-01	3.25E-01	5.50E-03	1.90E+02	1.59E+02	2.97E-02	1.76E+02	1.08E+00
CMWA-250 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.10E+03	9.31E+00	1.10E-03	7.44E+02	8.20E-01	3.25E-01	5.50E-03	5.98E+02	1.59E+02	2.97E-02	1.76E+02	3.40E+00
CMWA-250+50 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	4.88E+02	4.14E+00	1.10E-03	3.31E+02	3.64E-01	3.25E-01	5.50E-03	2.66E+02	1.59E+02	2.97E-02	1.76E+02	1.51E+00
CMWA-300 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	6.03E+02	5.11E+00	1.10E-03	4.08E+02	4.50E-01	3.25E-01	5.50E-03	3.28E+02	1.59E+02	2.97E-02	1.76E+02	1.86E+00
CMWA-300+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	6.17E+02	5.23E+00	1.10E-03	4.18E+02	4.60E-01	3.25E-01	5.50E-03	3.36E+02	1.59E+02	2.97E-02	1.76E+02	1.91E+00
CMWA-350 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	3.31E+02	2.81E+00	1.10E-03	2.24E+02	2.47E-01	3.25E-01	5.50E-03	1.80E+02	1.59E+02	2.97E-02	1.76E+02	1.02E+00
CMWA-350+0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	4.10E+02	3.48E+00	1.10E-03	2.78E+02	3.06E-01	3.25E-01	5.50E-03	2.24E+02	1.59E+02	2.97E-02	1.76E+02	1.27E+00
CMWA-50 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	2.59E+03	2.19E+01	1.10E-03	1.75E+03	1.93E+00	3.25E-01	5.50E-03	1.41E+03	1.59E+02	2.97E-02	1.76E+02	8.00E+00
CMWA-50+12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.72E+03	1.46E+01	1.10E-03	1.17E+03	1.28E+00	3.25E-01	5.50E-03	9.36E+02	1.59E+02	2.97E-02	1.76E+02	5.32E+00
CMWA-Comp 1 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	4.93E+02	4.18E+00	1.10E-03	3.34E+02	3.68E-01	3.25E-01	5.50E-03	2.69E+02	1.59E+02	2.97E-02	1.76E+02	1.53E+00
CMWA-Comp 2 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	2.50E+02	2.11E+00	1.10E-03	1.69E+02	1.86E-01	3.25E-01	5.50E-03	1.36E+02	1.59E+02	2.97E-02	1.76E+02	7.72E-01
																					Maximum HQ (Capitol Mine)		**8.00E+00**

Notes

1 See Tables 3-1 through 3-13 for ingestion rates, foraging ranges used to calculate the SUF, and body weights.
2 BAFs were calculated by dividing site-collected tissue by collocated soil concentrations (BAFs are in dry weight). The maximum BAF calculated from the Beartrap Creek and Blackfoot River transects was used for site dose calculations. The maximum BAF from the terrestrial reference site was used for reference site dose calculations.
3 The mammal, plant, and invertebrate concentrations were calculated by multiplying the soil concentration by the BAF to generate a tissue concentration (see note 2).
4 Mammal, plant, and invertebrate daily doses were calculated by multiplying the ingestion rate (see note 1) by the tissue concentration (see note 3).
5 Soil concentration from 0 to 6 inches below ground surface at point ID as measured by XRF 10. Doses were not calculated for detected and non-detected soil concentrations measured below the minimum reference site concentration, as indicated by BB. For results that were measured at less than the detection limit, doses were calculated using half of the detection limit.
6 Soil daily dose was calculated by multiplying the soil ingestion rate (see note 1) by soil concentration (see note 5).
7 Total daily dose is calculated using the following equation: total daily dose = ([mammal daily dose (if applicable) + plant daily dose (if applicable) + invertebrate daily dose (if applicable) + soil daily dose]*SUF)/receptor species body weight.
8 The TRVs used in this risk assessment represent a mid-range effects level. The derivation of TRVs is described in Navy (1998).
9 Allometrically adjusted TRVs for birds were calculated using the following equation: receptor species TRV = (test species TRV) x (test species body weight / receptor species body weight)$^{(1-1.2)}$.
10 Allometrically adjusted TRVs for mammals were calculated using the following equation: receptor species TRV = (test species TRV) x (test species body weight / receptor species body weight)$^{(1-0.94)}$.
11 HQs were calculated using the following equation: HQ = total daily dose/allometrically adjusted TRV.
12 Highlighted cells indicate an HQ greater than 1.0.

BAF	Bioaccumulation Factor	mg/day	Milligram per day
BB	Below minimum background reference site concentration	mg/kg	Milligram per kilogram
EE/CA	Engineering Evaluation/Cost Analysis	NA	Not applicable
EU	Exposure Unit	Navy	Department of the Navy
HQ	Hazard quotient	SUF	Site use factor
ID	Identification	TRV	Toxicity reference value
kg	Kilogram	XRF	X-ray fluorescence
kg/day	Kilogram per day	XRF 10	XRF measurements recorded following drying and seiving through a #10-mesh screen

Sources: Department of the Navy. 1998. "Development of Toxicity Reference Values for Conducting Ecological Risk Assessments at Naval Facilities in California, Interim Final." Prepared by Naval Facilities Engineering Command, Engineering Field Activity West (EFA West). San Bruno, California.

TABLE C-3F: ZINC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 3 - CAPITOL MINE WASTE AREA

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 0.13

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Mourning Dove (Herbivorous Birds - Terrestrial)																							
Reference Site																							
SGBG-1 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.41E+00	5.78E+01	3.33E-01	NA	NA	NA	NA	5.36E-04	4.09E+01	2.19E-02	5.02E-04	1.09E-01	1.63E-03	1.72E+02	9.55E-01	1.11E+02	1.46E-05
SGBG-201 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.41E+00	4.70E+02	2.71E+00	NA	NA	NA	NA	5.36E-04	3.33E+02	1.78E-01	5.02E-04	1.09E-01	1.33E-02	1.72E+02	9.55E-01	1.11E+02	1.19E-04
Capitol Mine																						**Minimum HQ (Reference Site)**	**1.46E-05**
CMWA-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	1.41E+03	8.14E+00	NA	NA	NA	NA	5.36E-04	7.13E+02	3.82E-01	5.02E-04	1.09E-01	3.92E-02	1.72E+02	9.55E-01	1.11E+02	3.51E-04
CMWA-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	1.41E+03	8.14E+00	NA	NA	NA	NA	5.36E-04	7.13E+02	3.82E-01	5.02E-04	1.09E-01	3.92E-02	1.72E+02	9.55E-01	1.11E+02	3.51E-04
CMWA-0+12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	8.64E+02	4.98E+00	NA	NA	NA	NA	5.36E-04	4.36E+02	2.34E-01	5.02E-04	1.09E-01	2.39E-02	1.72E+02	9.55E-01	1.11E+02	2.15E-04
CMWA-100 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	3.64E+03	2.09E+01	NA	NA	NA	NA	5.36E-04	1.83E+03	9.83E-01	5.02E-04	1.09E-01	1.01E-01	1.72E+02	9.55E-01	1.11E+02	9.04E-04
CMWA-100+12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	4.80E+02	2.77E+00	NA	NA	NA	NA	5.36E-04	2.42E+02	1.30E-01	5.02E-04	1.09E-01	1.33E-02	1.72E+02	9.55E-01	1.11E+02	1.19E-04
CMWA-150 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	1.28E+03	7.40E+00	NA	NA	NA	NA	5.36E-04	6.48E+02	3.47E-01	5.02E-04	1.09E-01	3.56E-02	1.72E+02	9.55E-01	1.11E+02	3.19E-04
CMWA-150+12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	6.79E+02	3.91E+00	NA	NA	NA	NA	5.36E-04	3.43E+02	1.84E-01	5.02E-04	1.09E-01	1.88E-02	1.72E+02	9.55E-01	1.11E+02	1.69E-04
CMWA-200 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	9.01E+01	5.19E-01	NA	NA	NA	NA	5.36E-04	4.55E+01	2.44E-02	5.02E-04	1.09E-01	2.50E-03	1.72E+02	9.55E-01	1.11E+02	2.24E-05
CMWA2-250 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	2.41E+02	1.39E+00	NA	NA	NA	NA	5.36E-04	1.22E+02	6.52E-02	5.02E-04	1.09E-01	6.69E-03	1.72E+02	9.55E-01	1.11E+02	6.00E-05
CMWA-250 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	5.27E+02	3.04E+00	NA	NA	NA	NA	5.36E-04	2.66E+02	1.43E-01	5.02E-04	1.09E-01	1.46E-02	1.72E+02	9.55E-01	1.11E+02	1.31E-04
CMWA-250+50 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	3.00E+02	1.73E+00	NA	NA	NA	NA	5.36E-04	1.52E+02	8.13E-02	5.02E-04	1.09E-01	8.33E-03	1.72E+02	9.55E-01	1.11E+02	7.47E-05
CMWA-300 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	1.14E+03	6.57E+00	NA	NA	NA	NA	5.36E-04	5.76E+02	3.08E-01	5.02E-04	1.09E-01	3.16E-02	1.72E+02	9.55E-01	1.11E+02	2.84E-04
CMWA-300+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	2.47E+02	1.42E+00	NA	NA	NA	NA	5.36E-04	1.25E+02	6.68E-02	5.02E-04	1.09E-01	6.85E-03	1.72E+02	9.55E-01	1.11E+02	6.15E-05
CMWA-350 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	2.04E+02	1.17E+00	NA	NA	NA	NA	5.36E-04	1.03E+02	5.51E-02	5.02E-04	1.09E-01	5.65E-03	1.72E+02	9.55E-01	1.11E+02	5.07E-05
CMWA-350+0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	3.47E+02	2.00E+00	NA	NA	NA	NA	5.36E-04	1.75E+02	9.38E-02	5.02E-04	1.09E-01	9.62E-03	1.72E+02	9.55E-01	1.11E+02	8.63E-05
CMWA-50 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	2.38E+03	1.37E+01	NA	NA	NA	NA	5.36E-04	1.20E+03	6.43E-01	5.02E-04	1.09E-01	6.59E-02	1.72E+02	9.55E-01	1.11E+02	5.91E-04
CMWA-50+12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	4.18E+02	2.41E+00	NA	NA	NA	NA	5.36E-04	2.11E+02	1.13E-01	5.02E-04	1.09E-01	1.16E-02	1.72E+02	9.55E-01	1.11E+02	1.04E-04
CMWA-Comp 1 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	2.11E+03	1.22E+01	NA	NA	NA	NA	5.36E-04	1.07E+03	5.71E-01	5.02E-04	1.09E-01	5.86E-02	1.72E+02	9.55E-01	1.11E+02	5.26E-04
CMWA-Comp 2 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	7.19E+02	4.14E+00	NA	NA	NA	NA	5.36E-04	3.63E+02	1.94E-01	5.02E-04	1.09E-01	1.99E-02	1.72E+02	9.55E-01	1.11E+02	1.79E-04
																						Maximum HQ (Capitol Mine)	**9.04E-04**
Red-Tailed Hawk (Carnivorous Birds - Terrestrial)																							
Reference Site																							
SGBG-1 (0-6")	9.00E-02	9.00E-02	1.03E+01	4.24E+02	3.81E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.09E+01	2.10E-01	1.87E-04	1.13E+00	6.30E-03	1.72E+02	9.55E-01	1.78E+02	3.54E-05
SGBG-201 (0-6")	9.00E-02	9.00E-02	1.03E+01	3.45E+03	3.10E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.33E+02	1.71E+00	1.87E-04	1.13E+00	5.13E-02	1.72E+02	9.55E-01	1.78E+02	2.88E-04
Capitol Mine																						**Minimum HQ (Reference Site)**	**3.54E-05**
CMWA-0 (0-6")	9.00E-02	9.00E-02	6.30E+00	4.49E+03	4.04E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	7.13E+02	3.66E+00	1.87E-04	1.13E+00	6.70E-02	1.72E+02	9.55E-01	1.78E+02	3.77E-04
CMWA-0 (0-6")	9.00E-02	9.00E-02	6.30E+00	4.49E+03	4.04E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	7.13E+02	3.66E+00	1.87E-04	1.13E+00	6.70E-02	1.72E+02	9.55E-01	1.78E+02	3.77E-04
CMWA-0+12.5 (0-6")	9.00E-02	9.00E-02	6.30E+00	2.74E+03	2.47E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.36E+02	2.24E+00	1.87E-04	1.13E+00	4.10E-02	1.72E+02	9.55E-01	1.78E+02	2.30E-04
CMWA-100 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.16E+04	1.04E+03	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.83E+03	9.41E+00	1.87E-04	1.13E+00	1.72E-01	1.72E+02	9.55E-01	1.78E+02	9.69E-04
CMWA-100+12.5 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.52E+03	1.37E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.42E+02	1.24E+00	1.87E-04	1.13E+00	2.28E-02	1.72E+02	9.55E-01	1.78E+02	1.28E-04
CMWA-150 (0-6")	9.00E-02	9.00E-02	6.30E+00	4.08E+03	3.67E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	6.48E+02	3.32E+00	1.87E-04	1.13E+00	6.09E-02	1.72E+02	9.55E-01	1.78E+02	3.42E-04
CMWA-150+12.5 (0-6")	9.00E-02	9.00E-02	6.30E+00	2.16E+03	1.94E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.43E+02	1.76E+00	1.87E-04	1.13E+00	3.22E-02	1.72E+02	9.55E-01	1.78E+02	1.81E-04
CMWA-200 (0-6")	9.00E-02	9.00E-02	6.30E+00	2.86E+02	2.58E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.55E+01	2.33E-01	1.87E-04	1.13E+00	4.28E-03	1.72E+02	9.55E-01	1.78E+02	2.40E-05
CMWA2-250 (0-6")	9.00E-02	9.00E-02	6.30E+00	7.66E+02	6.89E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.22E+02	6.24E-01	1.87E-04	1.13E+00	1.14E-02	1.72E+02	9.55E-01	1.78E+02	6.43E-05
CMWA-250 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.67E+03	1.51E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.66E+02	1.36E+00	1.87E-04	1.13E+00	2.50E-02	1.72E+02	9.55E-01	1.78E+02	1.40E-04
CMWA-250+50 (0-6")	9.00E-02	9.00E-02	6.30E+00	9.55E+02	8.59E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.52E+02	7.78E-01	1.87E-04	1.13E+00	1.43E-02	1.72E+02	9.55E-01	1.78E+02	8.01E-05
CMWA-300 (0-6")	9.00E-02	9.00E-02	6.30E+00	3.62E+03	3.26E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.76E+02	2.95E+00	1.87E-04	1.13E+00	5.41E-02	1.72E+02	9.55E-01	1.78E+02	3.04E-04
CMWA-300+25 (0-6")	9.00E-02	9.00E-02	6.30E+00	7.85E+02	7.06E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.25E+02	6.39E-01	1.87E-04	1.13E+00	1.17E-02	1.72E+02	9.55E-01	1.78E+02	6.59E-05
CMWA-350 (0-6")	9.00E-02	9.00E-02	6.30E+00	6.48E+02	5.83E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.03E+02	5.27E-01	1.87E-04	1.13E+00	9.67E-03	1.72E+02	9.55E-01	1.78E+02	5.43E-05
CMWA-350+0 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.10E+03	9.92E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.75E+02	8.98E-01	1.87E-04	1.13E+00	1.65E-02	1.72E+02	9.55E-01	1.78E+02	9.25E-05
CMWA-50 (0-6")	9.00E-02	9.00E-02	6.30E+00	7.56E+03	6.80E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.20E+03	6.15E+00	1.87E-04	1.13E+00	1.13E-01	1.72E+02	9.55E-01	1.78E+02	6.34E-04
CMWA-50+12.5 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.33E+03	1.20E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.11E+02	1.08E+00	1.87E-04	1.13E+00	1.98E-02	1.72E+02	9.55E-01	1.78E+02	1.12E-04
CMWA-Comp 1 (0-6")	9.00E-02	9.00E-02	6.30E+00	6.71E+03	6.04E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.07E+03	5.47E+00	1.87E-04	1.13E+00	1.00E-01	1.72E+02	9.55E-01	1.78E+02	5.63E-04
CMWA-Comp 2 (0-6")	9.00E-02	9.00E-02	6.30E+00	2.28E+03	2.05E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.63E+02	1.86E+00	1.87E-04	1.13E+00	3.41E-02	1.72E+02	9.55E-01	1.78E+02	1.92E-04
																						Maximum HQ (Capitol Mine)	**9.69E-04**

TABLE C-3F: ZINC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 3 - CAPITOL MINE WASTE AREA (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **0.13**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
American Kestrel (Insectivorous Birds - Terrestrial)																							
Reference Site																							
SGBG-1 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	8.31E+00	3.40E+02	4.68E+00	7.84E-04	4.09E+01	3.21E-02	4.97E-04	1.24E-01	1.89E-02	1.72E+02	9.55E-01	1.14E+02	1.65E-04
SGBG-201 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	8.31E+00	2.77E+03	3.81E+01	7.84E-04	3.33E+02	2.61E-01	4.97E-04	1.24E-01	1.54E-01	1.72E+02	9.55E-01	1.14E+02	1.34E-03
Capitol Mine																						**Minimum HQ (Reference Site)**	**1.65E-04**
CMWA-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	3.12E+03	4.30E+01	7.84E-04	7.13E+02	5.59E-01	4.97E-04	1.24E-01	1.74E-01	1.72E+02	9.55E-01	1.14E+02	1.53E-03
CMWA-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	3.12E+03	4.30E+01	7.84E-04	7.13E+02	5.59E-01	4.97E-04	1.24E-01	1.74E-01	1.72E+02	9.55E-01	1.14E+02	1.53E-03
CMWA-0+12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	1.91E+03	2.63E+01	7.84E-04	4.36E+02	3.42E-01	4.97E-04	1.24E-01	1.07E-01	1.72E+02	9.55E-01	1.14E+02	9.32E-04
CMWA-100 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	8.03E+03	1.11E+02	7.84E-04	1.83E+03	1.44E+00	4.97E-04	1.24E-01	4.49E-01	1.72E+02	9.55E-01	1.14E+02	3.92E-03
CMWA-100+12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	1.06E+03	1.46E+01	7.84E-04	2.42E+02	1.90E-01	4.97E-04	1.24E-01	5.92E-02	1.72E+02	9.55E-01	1.14E+02	5.18E-04
CMWA-150 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	2.84E+03	3.90E+01	7.84E-04	6.48E+02	5.08E-01	4.97E-04	1.24E-01	1.58E-01	1.72E+02	9.55E-01	1.14E+02	1.39E-03
CMWA-150+12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	1.50E+03	2.07E+01	7.84E-04	3.43E+02	2.69E-01	4.97E-04	1.24E-01	8.38E-02	1.72E+02	9.55E-01	1.14E+02	7.33E-04
CMWA-200 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	1.99E+02	2.74E+00	7.84E-04	4.55E+01	3.57E-02	4.97E-04	1.24E-01	1.11E-02	1.72E+02	9.55E-01	1.14E+02	9.73E-05
CMWA2-250 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	5.33E+02	7.33E+00	7.84E-04	1.22E+02	9.55E-02	4.97E-04	1.24E-01	2.98E-02	1.72E+02	9.55E-01	1.14E+02	2.60E-04
CMWA-250 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	1.16E+03	1.60E+01	7.84E-04	2.66E+02	2.09E-01	4.97E-04	1.24E-01	6.51E-02	1.72E+02	9.55E-01	1.14E+02	5.69E-04
CMWA-250+50 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	6.64E+02	9.14E+00	7.84E-04	1.52E+02	1.19E-01	4.97E-04	1.24E-01	3.71E-02	1.72E+02	9.55E-01	1.14E+02	3.24E-04
CMWA-300 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	2.52E+03	3.47E+01	7.84E-04	5.76E+02	4.52E-01	4.97E-04	1.24E-01	1.41E-01	1.72E+02	9.55E-01	1.14E+02	1.23E-03
CMWA-300+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	5.46E+02	7.51E+00	7.84E-04	1.25E+02	9.78E-02	4.97E-04	1.24E-01	3.05E-02	1.72E+02	9.55E-01	1.14E+02	2.67E-04
CMWA-350 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	4.50E+02	6.20E+00	7.84E-04	1.03E+02	8.07E-02	4.97E-04	1.24E-01	2.52E-02	1.72E+02	9.55E-01	1.14E+02	2.20E-04
CMWA-350+0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	7.67E+02	1.06E+01	7.84E-04	1.75E+02	1.37E-01	4.97E-04	1.24E-01	4.28E-02	1.72E+02	9.55E-01	1.14E+02	3.75E-04
CMWA-50 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	5.26E+03	7.23E+01	7.84E-04	1.20E+03	9.41E-01	4.97E-04	1.24E-01	2.94E-01	1.72E+02	9.55E-01	1.14E+02	2.57E-03
CMWA-50+12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	9.24E+02	1.27E+01	7.84E-04	2.11E+02	1.66E-01	4.97E-04	1.24E-01	5.16E-02	1.72E+02	9.55E-01	1.14E+02	4.52E-04
CMWA-Comp 1 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	4.67E+03	6.43E+01	7.84E-04	1.07E+03	8.37E-01	4.97E-04	1.24E-01	2.61E-01	1.72E+02	9.55E-01	1.14E+02	2.28E-03
CMWA-Comp 2 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	1.59E+03	2.19E+01	7.84E-04	3.63E+02	2.84E-01	4.97E-04	1.24E-01	8.87E-02	1.72E+02	9.55E-01	1.14E+02	7.76E-04
																						Maximum HQ (Capitol Mine)	**3.92E-03**
Meadow Vole (Small Herbivorous Mammal - Terrestrial)																							
Reference Site																							
SGBG-1 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.41E+00	5.78E+01	2.71E-01	NA	NA	NA	NA	1.13E-04	4.09E+01	4.61E-03	1.00E+00	3.06E-02	9.00E+00	4.11E+02	1.75E-01	4.57E+02	1.97E-02
SGBG-201 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.41E+00	4.70E+02	2.20E+00	NA	NA	NA	NA	1.13E-04	3.33E+02	3.75E-02	1.00E+00	3.06E-02	7.32E+01	4.11E+02	1.75E-01	4.57E+02	1.60E-01
Capitol Mine																						**Minimum HQ (Reference Site)**	**1.97E-02**
CMWA-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	1.41E+03	6.63E+00	NA	NA	NA	NA	1.13E-04	7.13E+02	8.02E-02	1.00E+00	3.06E-02	2.19E+02	4.11E+02	1.75E-01	4.57E+02	4.80E-01
CMWA-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	1.41E+03	6.63E+00	NA	NA	NA	NA	1.13E-04	7.13E+02	8.02E-02	1.00E+00	3.06E-02	2.19E+02	4.11E+02	1.75E-01	4.57E+02	4.80E-01
CMWA-0+12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	8.64E+02	4.05E+00	NA	NA	NA	NA	1.13E-04	4.36E+02	4.91E-02	1.00E+00	3.06E-02	1.34E+02	4.11E+02	1.75E-01	4.57E+02	2.93E-01
CMWA-100 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	3.64E+03	1.70E+01	NA	NA	NA	NA	1.13E-04	1.83E+03	2.06E-01	1.00E+00	3.06E-02	5.64E+02	4.11E+02	1.75E-01	4.57E+02	1.23E+00
CMWA-100+12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	4.80E+02	2.25E+00	NA	NA	NA	NA	1.13E-04	2.42E+02	2.73E-02	1.00E+00	3.06E-02	7.44E+01	4.11E+02	1.75E-01	4.57E+02	1.63E-01
CMWA-150 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	1.28E+03	6.02E+00	NA	NA	NA	NA	1.13E-04	6.48E+02	7.29E-02	1.00E+00	3.06E-02	1.99E+02	4.11E+02	1.75E-01	4.57E+02	4.36E-01
CMWA-150+12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	6.79E+02	3.19E+00	NA	NA	NA	NA	1.13E-04	3.43E+02	3.86E-02	1.00E+00	3.06E-02	1.05E+02	4.11E+02	1.75E-01	4.57E+02	2.31E-01
CMWA-200 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	9.01E+01	4.23E-01	NA	NA	NA	NA	1.13E-04	4.55E+01	5.12E-03	1.00E+00	3.06E-02	1.40E+01	4.11E+02	1.75E-01	4.57E+02	3.06E-02
CMWA2-250 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	2.41E+02	1.13E+00	NA	NA	NA	NA	1.13E-04	1.22E+02	1.37E-02	1.00E+00	3.06E-02	3.74E+01	4.11E+02	1.75E-01	4.57E+02	8.19E-02
CMWA-250 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	5.27E+02	2.47E+00	NA	NA	NA	NA	1.13E-04	2.66E+02	2.99E-02	1.00E+00	3.06E-02	8.17E+01	4.11E+02	1.75E-01	4.57E+02	1.79E-01
CMWA-250+50 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	3.00E+02	1.41E+00	NA	NA	NA	NA	1.13E-04	1.52E+02	1.71E-02	1.00E+00	3.06E-02	4.66E+01	4.11E+02	1.75E-01	4.57E+02	1.02E-01
CMWA-300 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	1.14E+03	5.35E+00	NA	NA	NA	NA	1.13E-04	5.76E+02	6.48E-02	1.00E+00	3.06E-02	1.77E+02	4.11E+02	1.75E-01	4.57E+02	3.87E-01
CMWA-300+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	2.47E+02	1.16E+00	NA	NA	NA	NA	1.13E-04	1.25E+02	1.40E-02	1.00E+00	3.06E-02	3.83E+01	4.11E+02	1.75E-01	4.57E+02	8.39E-02
CMWA-350 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	2.04E+02	9.56E-01	NA	NA	NA	NA	1.13E-04	1.03E+02	1.16E-02	1.00E+00	3.06E-02	3.16E+01	4.11E+02	1.75E-01	4.57E+02	6.92E-02
CMWA-350+0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	3.47E+02	1.63E+00	NA	NA	NA	NA	1.13E-04	1.75E+02	1.97E-02	1.00E+00	3.06E-02	5.38E+01	4.11E+02	1.75E-01	4.57E+02	1.18E-01
CMWA-50 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	2.38E+03	1.12E+01	NA	NA	NA	NA	1.13E-04	1.20E+03	1.35E-01	1.00E+00	3.06E-02	3.69E+02	4.11E+02	1.75E-01	4.57E+02	8.07E-01
CMWA-50+12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	4.18E+02	1.96E+00	NA	NA	NA	NA	1.13E-04	2.11E+02	2.38E-02	1.00E+00	3.06E-02	6.49E+01	4.11E+02	1.75E-01	4.57E+02	1.42E-01
CMWA-Comp 1 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	2.11E+03	9.91E+00	NA	NA	NA	NA	1.13E-04	1.07E+03	1.20E-01	1.00E+00	3.06E-02	3.28E+02	4.11E+02	1.75E-01	4.57E+02	7.17E-01
CMWA-Comp 2 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	7.19E+02	3.37E+00	NA	NA	NA	NA	1.13E-04	3.63E+02	4.08E-02	1.00E+00	3.06E-02	1.11E+02	4.11E+02	1.75E-01	4.57E+02	2.44E-01
																						Maximum HQ (Capitol Mine)	**1.23E+00**

TABLE C-3F: ZINC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 3 - CAPITOL MINE WASTE AREA (Continued)
Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)
calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 0.13

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
White-Tailed Deer (Large Herbivorous Mammal - Terrestrial)																							
Reference Site																							
SGBG-1 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.41E+00	5.78E+01	8.27E+01	NA	NA	NA	NA	2.86E-02	4.09E+01	1.17E+00	7.27E-04	1.35E+02	4.52E-04	4.11E+02	1.75E-01	2.76E+02	1.64E-06
SGBG-201 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.41E+00	4.70E+02	6.73E+02	NA	NA	NA	NA	2.86E-02	3.33E+02	9.54E+00	7.27E-04	1.35E+02	3.68E-03	4.11E+02	1.75E-01	2.76E+02	1.33E-05
Capitol Mine																						**Minimum HQ (Reference Site)**	**1.64E-06**
CMWA-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	1.41E+03	2.02E+03	NA	NA	NA	NA	2.86E-02	7.13E+02	2.04E+01	7.27E-04	1.35E+02	1.10E-02	4.11E+02	1.75E-01	2.76E+02	3.99E-05
CMWA-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	1.41E+03	2.02E+03	NA	NA	NA	NA	2.86E-02	7.13E+02	2.04E+01	7.27E-04	1.35E+02	1.10E-02	4.11E+02	1.75E-01	2.76E+02	3.99E-05
CMWA-0+12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	8.64E+02	1.24E+03	NA	NA	NA	NA	2.86E-02	4.36E+02	1.25E+01	7.27E-04	1.35E+02	6.73E-03	4.11E+02	1.75E-01	2.76E+02	2.44E-05
CMWA-100 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	3.64E+03	5.20E+03	NA	NA	NA	NA	2.86E-02	1.83E+03	5.25E+01	7.27E-04	1.35E+02	2.83E-02	4.11E+02	1.75E-01	2.76E+02	1.03E-04
CMWA-100+12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	4.80E+02	6.87E+02	NA	NA	NA	NA	2.86E-02	2.42E+02	6.94E+00	7.27E-04	1.35E+02	3.74E-03	4.11E+02	1.75E-01	2.76E+02	1.35E-05
CMWA-150 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	1.28E+03	1.84E+03	NA	NA	NA	NA	2.86E-02	6.48E+02	1.86E+01	7.27E-04	1.35E+02	1.00E-02	4.11E+02	1.75E-01	2.76E+02	3.62E-05
CMWA-150+12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	6.79E+02	9.72E+02	NA	NA	NA	NA	2.86E-02	3.43E+02	9.82E+00	7.27E-04	1.35E+02	5.29E-03	4.11E+02	1.75E-01	2.76E+02	1.92E-05
CMWA-200 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	9.01E+01	1.29E+02	NA	NA	NA	NA	2.86E-02	4.55E+01	1.30E+00	7.27E-04	1.35E+02	7.02E-04	4.11E+02	1.75E-01	2.76E+02	2.54E-06
CMWA2-250 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	2.41E+02	3.45E+02	NA	NA	NA	NA	2.86E-02	1.22E+02	3.48E+00	7.27E-04	1.35E+02	1.88E-03	4.11E+02	1.75E-01	2.76E+02	6.80E-06
CMWA-250 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	5.27E+02	7.55E+02	NA	NA	NA	NA	2.86E-02	2.66E+02	7.62E+00	7.27E-04	1.35E+02	4.11E-03	4.11E+02	1.75E-01	2.76E+02	1.49E-05
CMWA-250+50 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	3.00E+02	4.30E+02	NA	NA	NA	NA	2.86E-02	1.52E+02	4.34E+00	7.27E-04	1.35E+02	2.34E-03	4.11E+02	1.75E-01	2.76E+02	8.48E-06
CMWA-300 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	1.14E+03	1.63E+03	NA	NA	NA	NA	2.86E-02	5.76E+02	1.65E+01	7.27E-04	1.35E+02	8.89E-03	4.11E+02	1.75E-01	2.76E+02	3.22E-05
CMWA-300+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	2.47E+02	3.54E+02	NA	NA	NA	NA	2.86E-02	1.25E+02	3.57E+00	7.27E-04	1.35E+02	1.92E-03	4.11E+02	1.75E-01	2.76E+02	6.97E-06
CMWA-350 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	2.04E+02	2.92E+02	NA	NA	NA	NA	2.86E-02	1.03E+02	2.94E+00	7.27E-04	1.35E+02	1.59E-03	4.11E+02	1.75E-01	2.76E+02	5.75E-06
CMWA-350+0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	3.47E+02	4.97E+02	NA	NA	NA	NA	2.86E-02	1.75E+02	5.01E+00	7.27E-04	1.35E+02	2.70E-03	4.11E+02	1.75E-01	2.76E+02	9.79E-06
CMWA-50 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	2.38E+03	3.40E+03	NA	NA	NA	NA	2.86E-02	1.20E+03	3.44E+01	7.27E-04	1.35E+02	1.85E-02	4.11E+02	1.75E-01	2.76E+02	6.71E-05
CMWA-50+12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	4.18E+02	5.99E+02	NA	NA	NA	NA	2.86E-02	2.11E+02	6.04E+00	7.27E-04	1.35E+02	3.26E-03	4.11E+02	1.75E-01	2.76E+02	1.18E-05
CMWA-Comp 1 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	2.11E+03	3.03E+03	NA	NA	NA	NA	2.86E-02	1.07E+03	3.05E+01	7.27E-04	1.35E+02	1.65E-02	4.11E+02	1.75E-01	2.76E+02	5.96E-05
CMWA-Comp 2 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	7.19E+02	1.03E+03	NA	NA	NA	NA	2.86E-02	3.63E+02	1.04E+01	7.27E-04	1.35E+02	5.60E-03	4.11E+02	1.75E-01	2.76E+02	2.03E-05
																						Maximum HQ (Capitol Mine)	**1.03E-04**
Red Fox (Carnivorous Mammal - Terrestrial)																							
Reference Site																							
SGBG-1 (0-6")	1.72E-01	1.72E-01	1.03E+01	4.24E+02	7.27E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.09E+01	1.97E-01	9.60E-05	4.54E+00	1.54E-03	4.11E+02	1.75E-01	3.38E+02	4.56E-06
SGBG-201 (0-6")	1.72E-01	1.72E-01	1.03E+01	3.45E+03	5.91E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.33E+02	1.60E+00	9.60E-05	4.54E+00	1.26E-02	4.11E+02	1.75E-01	3.38E+02	3.71E-05
Capitol Mine																						**Minimum HQ (Reference Site)**	**4.56E-06**
CMWA-0 (0-6")	1.72E-01	1.72E-01	6.30E+00	4.49E+03	7.70E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	7.13E+02	3.43E+00	9.60E-05	4.54E+00	1.64E-02	4.11E+02	1.75E-01	3.38E+02	4.84E-05
CMWA-0 (0-6")	1.72E-01	1.72E-01	6.30E+00	4.49E+03	7.70E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	7.13E+02	3.43E+00	9.60E-05	4.54E+00	1.64E-02	4.11E+02	1.75E-01	3.38E+02	4.84E-05
CMWA-0+12.5 (0-6")	1.72E-01	1.72E-01	6.30E+00	2.74E+03	4.71E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.36E+02	2.09E+00	9.60E-05	4.54E+00	1.00E-02	4.11E+02	1.75E-01	3.38E+02	2.96E-05
CMWA-100 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.16E+04	1.98E+03	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.83E+03	8.81E+00	9.60E-05	4.54E+00	4.21E-02	4.11E+02	1.75E-01	3.38E+02	1.25E-04
CMWA-100+12.5 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.52E+03	2.62E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.42E+02	1.16E+00	9.60E-05	4.54E+00	5.56E-03	4.11E+02	1.75E-01	3.38E+02	1.64E-05
CMWA-150 (0-6")	1.72E-01	1.72E-01	6.30E+00	4.08E+03	7.00E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	6.48E+02	3.11E+00	9.60E-05	4.54E+00	1.49E-02	4.11E+02	1.75E-01	3.38E+02	4.40E-05
CMWA-150+12.5 (0-6")	1.72E-01	1.72E-01	6.30E+00	2.16E+03	3.70E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.43E+02	1.65E+00	9.60E-05	4.54E+00	7.87E-03	4.11E+02	1.75E-01	3.38E+02	2.33E-05
CMWA-200 (0-6")	1.72E-01	1.72E-01	6.30E+00	2.86E+02	4.91E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.55E+01	2.18E-01	9.60E-05	4.54E+00	1.04E-03	4.11E+02	1.75E-01	3.38E+02	3.09E-06
CMWA2-250 (0-6")	1.72E-01	1.72E-01	6.30E+00	7.66E+02	1.31E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.22E+02	5.85E-01	9.60E-05	4.54E+00	2.80E-03	4.11E+02	1.75E-01	3.38E+02	8.26E-06
CMWA-250 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.67E+03	2.87E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.66E+02	1.28E+00	9.60E-05	4.54E+00	6.11E-03	4.11E+02	1.75E-01	3.38E+02	1.81E-05
CMWA-250+50 (0-6")	1.72E-01	1.72E-01	6.30E+00	9.55E+02	1.64E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.52E+02	7.28E-01	9.60E-05	4.54E+00	3.48E-03	4.11E+02	1.75E-01	3.38E+02	1.03E-05
CMWA-300 (0-6")	1.72E-01	1.72E-01	6.30E+00	3.62E+03	6.22E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.76E+02	2.77E+00	9.60E-05	4.54E+00	1.32E-02	4.11E+02	1.75E-01	3.38E+02	3.91E-05
CMWA-300+25 (0-6")	1.72E-01	1.72E-01	6.30E+00	7.85E+02	1.35E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.25E+02	5.99E-01	9.60E-05	4.54E+00	2.86E-03	4.11E+02	1.75E-01	3.38E+02	8.46E-06
CMWA-350 (0-6")	1.72E-01	1.72E-01	6.30E+00	6.48E+02	1.11E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.03E+02	4.94E-01	9.60E-05	4.54E+00	2.36E-03	4.11E+02	1.75E-01	3.38E+02	6.98E-06
CMWA-350+0 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.10E+03	1.89E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.75E+02	8.41E-01	9.60E-05	4.54E+00	4.02E-03	4.11E+02	1.75E-01	3.38E+02	1.19E-05
CMWA-50 (0-6")	1.72E-01	1.72E-01	6.30E+00	7.56E+03	1.30E+03	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.20E+03	5.76E+00	9.60E-05	4.54E+00	2.76E-02	4.11E+02	1.75E-01	3.38E+02	8.14E-05
CMWA-50+12.5 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.33E+03	2.28E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.11E+02	1.01E+00	9.60E-05	4.54E+00	4.85E-03	4.11E+02	1.75E-01	3.38E+02	1.43E-05
CMWA-Comp 1 (0-6")	1.72E-01	1.72E-01	6.30E+00	6.71E+03	1.15E+03	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.07E+03	5.12E+00	9.60E-05	4.54E+00	2.45E-02	4.11E+02	1.75E-01	3.38E+02	7.24E-05
CMWA-Comp 2 (0-6")	1.72E-01	1.72E-01	6.30E+00	2.28E+03	3.92E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.63E+02	1.74E+00	9.60E-05	4.54E+00	8.33E-03	4.11E+02	1.75E-01	3.38E+02	2.46E-05
																						Maximum HQ (Capitol Mine)	**1.25E-04**

TABLE C-3F: ZINC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 3 - CAPITOL MINE WASTE AREA (Continued)
Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)
calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 0.13

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Masked Shrew (Omnivorous Mammal - Terrestrial, Wetland)																							
Reference Site																							
SGBG-1 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	8.31E+00	3.40E+02	2.88E+00	1.10E-03	4.09E+01	4.51E-02	3.25E-01	5.50E-03	1.73E+02	4.11E+02	1.75E-01	5.06E+02	3.42E-01
SGBG-201 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	8.31E+00	2.77E+03	2.35E+01	1.10E-03	3.33E+02	3.67E-01	3.25E-01	5.50E-03	1.41E+03	4.11E+02	1.75E-01	5.06E+02	2.78E+00
Capitol Mine																						**Minimum HQ (Reference Site)**	**3.42E-01**
CMWA-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	3.12E+03	2.64E+01	1.10E-03	7.13E+02	7.85E-01	3.25E-01	5.50E-03	1.61E+03	4.11E+02	1.75E-01	5.06E+02	3.18E+00
CMWA-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	3.12E+03	2.64E+01	1.10E-03	7.13E+02	7.85E-01	3.25E-01	5.50E-03	1.61E+03	4.11E+02	1.75E-01	5.06E+02	3.18E+00
CMWA-0+12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	1.91E+03	1.62E+01	1.10E-03	4.36E+02	4.80E-01	3.25E-01	5.50E-03	9.84E+02	4.11E+02	1.75E-01	5.06E+02	1.94E+00
CMWA-100 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	8.03E+03	6.80E+01	1.10E-03	1.83E+03	2.02E+00	3.25E-01	5.50E-03	4.14E+03	4.11E+02	1.75E-01	5.06E+02	8.18E+00
CMWA-100+12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	1.06E+03	8.98E+00	1.10E-03	2.42E+02	2.67E-01	3.25E-01	5.50E-03	5.47E+02	4.11E+02	1.75E-01	5.06E+02	1.08E+00
CMWA-150 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	2.84E+03	2.40E+01	1.10E-03	6.48E+02	7.13E-01	3.25E-01	5.50E-03	1.46E+03	4.11E+02	1.75E-01	5.06E+02	2.89E+00
CMWA-150+12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	1.50E+03	1.27E+01	1.10E-03	3.43E+02	3.77E-01	3.25E-01	5.50E-03	7.74E+02	4.11E+02	1.75E-01	5.06E+02	1.53E+00
CMWA-200 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	1.99E+02	1.69E+00	1.10E-03	4.55E+01	5.01E-02	3.25E-01	5.50E-03	1.03E+02	4.11E+02	1.75E-01	5.06E+02	2.03E-01
CMWA2-250 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	5.33E+02	4.51E+00	1.10E-03	1.22E+02	1.34E-01	3.25E-01	5.50E-03	2.75E+02	4.11E+02	1.75E-01	5.06E+02	5.42E-01
CMWA-250 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	1.16E+03	9.87E+00	1.10E-03	2.66E+02	2.93E-01	3.25E-01	5.50E-03	6.00E+02	4.11E+02	1.75E-01	5.06E+02	1.19E+00
CMWA-250+50 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	6.64E+02	5.62E+00	1.10E-03	1.52E+02	1.67E-01	3.25E-01	5.50E-03	3.42E+02	4.11E+02	1.75E-01	5.06E+02	6.76E-01
CMWA-300 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	2.52E+03	2.14E+01	1.10E-03	5.76E+02	6.34E-01	3.25E-01	5.50E-03	1.30E+03	4.11E+02	1.75E-01	5.06E+02	2.57E+00
CMWA-300+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	5.46E+02	4.63E+00	1.10E-03	1.25E+02	1.37E-01	3.25E-01	5.50E-03	2.81E+02	4.11E+02	1.75E-01	5.06E+02	5.56E-01
CMWA-350 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	4.50E+02	3.81E+00	1.10E-03	1.03E+02	1.13E-01	3.25E-01	5.50E-03	2.32E+02	4.11E+02	1.75E-01	5.06E+02	4.58E-01
CMWA-350+0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	7.67E+02	6.50E+00	1.10E-03	1.75E+02	1.93E-01	3.25E-01	5.50E-03	3.95E+02	4.11E+02	1.75E-01	5.06E+02	7.81E-01
CMWA-50 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	5.26E+03	4.45E+01	1.10E-03	1.20E+03	1.32E+00	3.25E-01	5.50E-03	2.71E+03	4.11E+02	1.75E-01	5.06E+02	5.35E+00
CMWA-50+12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	9.24E+02	7.83E+00	1.10E-03	2.11E+02	2.32E-01	3.25E-01	5.50E-03	4.76E+02	4.11E+02	1.75E-01	5.06E+02	9.41E-01
CMWA-Comp 1 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	4.67E+03	3.96E+01	1.10E-03	1.07E+03	1.17E+00	3.25E-01	5.50E-03	2.41E+03	4.11E+02	1.75E-01	5.06E+02	4.75E+00
CMWA-Comp 2 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	1.59E+03	1.35E+01	1.10E-03	3.63E+02	3.99E-01	3.25E-01	5.50E-03	8.19E+02	4.11E+02	1.75E-01	5.06E+02	1.62E+00
																						Maximum HQ (Capitol Mine)	**8.18E+00**

Notes

1 See Tables 3-1 through 3-13 for ingestion rates, foraging ranges used to calculate the SUF, and body weights.
2 BAFs were calculated by dividing site-collected tissue by collocated soil concentrations (BAFs are in dry weight). The maximum BAF calculated from the Beartrap Creek and Blackfoot River transects was used for site dose calculations. The maximum BAF from the terrestrial reference site was used for reference site dose calculations.
3 The mammal, plant, and invertebrate concentrations were calculated by multiplying the soil concentration by the BAF to generate a tissue concentration (see note 2).
4 Mammal, plant, and invertebrate daily doses were calculated by multiplying the ingestion rate (see note 1) by the tissue concentration (see note 3).
5 Soil concentration from 0 to 6 inches below ground surface at point ID as measured by XRF 10. Doses were not calculated for detected and non-detected soil concentrations measured below the minimum reference site concentration, as indicated by BB. For results that were measured at less than the detection limit, doses were calculated using half of the detection limit.
6 Soil daily dose was calculated by multiplying the soil ingestion rate (see note 1) by soil concentration (see note 5).
7 Total daily dose is calculated using the following equation: total daily dose = ([mammal daily dose (if applicable) + plant daily dose (if applicable) + invertebrate daily dose (if applicable) + soil daily dose]*SUF)/receptor species body weight.
8 The TRVs used in this risk assessment represent a mid-range effects level. The derivation of TRVs is described in Navy (1998).
9 Allometrically adjusted TRVs for birds were calculated using the following equation: receptor species TRV = (test species TRV) x (test species body weight / receptor species body weight)$^{(1-1.2)}$.
10 Allometrically adjusted TRVs for mammals were calculated using the following equation: receptor species TRV = (test species TRV) x (test species body weight / receptor species body weight)$^{(1-0.94)}$.
11 HQs were calculated using the following equation: HQ = total daily dose/allometrically adjusted TRV.
12 Highlighted cells indicate an HQ greater than 1.0.

BAF	Bioaccumulation Factor	mg/day	Milligram per day
BB	Below minimum background reference site concentration	mg/kg	Milligram per kilogram
EE/CA	Engineering Evaluation/Cost Analysis	NA	Not applicable
EU	Exposure Unit	Navy	Department of the Navy
HQ	Hazard quotient	SUF	Site use factor
ID	Identification	TRV	Toxicity reference value
kg	Kilogram	XRF	X-ray fluorescence
kg/day	Kilogram per day	XRF 10	XRF measurements recorded following drying and seiving through a #10-mesh screen

Sources: Department of the Navy. 1998. "Development of Toxicity Reference Values for Conducting Ecological Risk Assessments at Naval Facilities in California, Interim Final." Prepared by Naval Facilities Engineering Command, Engineering Field Activity West (EFA West). San Bruno, California.

TABLE C-4A: ARSENIC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 4 - CARBONATE MINE WASTE AREA

Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)
calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 1.09

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Mourning Dove (Herbivorous Birds - Terrestrial)																							
Reference Site																							
SWGBG-1	5.76E-03	NA	NA	NA	NA	5.76E-03	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	5.36E-04	1.33E+01	7.14E-03	4.21E-03	1.09E-01	2.75E-04	2.20E+01	1.17E+00	1.37E+01	2.01E-05
SWGBG-2	5.76E-03	NA	NA	NA	NA	5.76E-03	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	5.36E-04	1.75E+01	9.37E-03	4.21E-03	1.09E-01	3.61E-04	2.20E+01	1.17E+00	1.37E+01	2.64E-05
Carbonate Mine																						**Minimum HQ (Reference Sites)**	**2.01E-05**
CARM-00 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.58E+01	9.11E-02	NA	NA	NA	NA	5.36E-04	2.63E+01	1.41E-02	4.21E-03	1.09E-01	4.05E-03	2.20E+01	1.17E+00	1.37E+01	2.96E-04
CARM-50 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.09E+01	6.30E-02	NA	NA	NA	NA	5.36E-04	1.82E+01	9.75E-03	4.21E-03	1.09E-01	2.80E-03	2.20E+01	1.17E+00	1.37E+01	2.05E-04
CARM-50+12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	9.58E+00	5.52E-02	NA	NA	NA	NA	5.36E-04	1.59E+01	8.54E-03	4.21E-03	1.09E-01	2.46E-03	2.20E+01	1.17E+00	1.37E+01	1.79E-04
CARM-100 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.23E+01	7.09E-02	NA	NA	NA	NA	5.36E-04	2.05E+01	1.10E-02	4.21E-03	1.09E-01	3.16E-03	2.20E+01	1.17E+00	1.37E+01	2.31E-04
CARM-100+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.02E+01	5.90E-02	NA	NA	NA	NA	5.36E-04	1.71E+01	9.14E-03	4.21E-03	1.09E-01	2.63E-03	2.20E+01	1.17E+00	1.37E+01	1.92E-04
CARM-110 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	9.36E+00	5.39E-02	NA	NA	NA	NA	5.36E-04	1.56E+01	8.35E-03	4.21E-03	1.09E-01	2.40E-03	2.20E+01	1.17E+00	1.37E+01	1.75E-04
CARM-150 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.07E+01	6.18E-02	NA	NA	NA	NA	5.36E-04	1.79E+01	9.57E-03	4.21E-03	1.09E-01	2.75E-03	2.20E+01	1.17E+00	1.37E+01	2.01E-04
CARM-150+50 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	7.63E+00	4.40E-02	NA	NA	NA	NA	5.36E-04	1.27E+01	6.80E-03	4.21E-03	1.09E-01	1.96E-03	2.20E+01	1.17E+00	1.37E+01	1.43E-04
CARM-200 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.06E+01	6.09E-02	NA	NA	NA	NA	5.36E-04	1.76E+01	9.42E-03	4.21E-03	1.09E-01	2.71E-03	2.20E+01	1.17E+00	1.37E+01	1.98E-04
CARM-200+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.63E+01	9.38E-02	NA	NA	NA	NA	5.36E-04	2.71E+01	1.45E-02	4.21E-03	1.09E-01	4.18E-03	2.20E+01	1.17E+00	1.37E+01	3.05E-04
CARM-250 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.01E+01	5.82E-02	NA	NA	NA	NA	5.36E-04	1.68E+01	9.01E-03	4.21E-03	1.09E-01	2.59E-03	2.20E+01	1.17E+00	1.37E+01	1.89E-04
CARM-300 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	9.96E+00	5.74E-02	NA	NA	NA	NA	5.36E-04	1.66E+01	8.88E-03	4.21E-03	1.09E-01	2.55E-03	2.20E+01	1.17E+00	1.37E+01	1.87E-04
CARM-350 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	2.30E+01	1.33E-01	NA	NA	NA	NA	5.36E-04	3.83E+01	2.05E-02	4.21E-03	1.09E-01	5.90E-03	2.20E+01	1.17E+00	1.37E+01	4.31E-04
CARM-400 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	9.71E+00	5.59E-02	NA	NA	NA	NA	5.36E-04	1.62E+01	8.65E-03	4.21E-03	1.09E-01	2.49E-03	2.20E+01	1.17E+00	1.37E+01	1.82E-04
CARM-500 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CARM-550 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.06E+01	6.13E-02	NA	NA	NA	NA	5.36E-04	1.77E+01	9.49E-03	4.21E-03	1.09E-01	2.73E-03	2.20E+01	1.17E+00	1.37E+01	1.99E-04
CARM-600 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	9.42E+00	5.42E-02	NA	NA	NA	NA	5.36E-04	1.57E+01	8.39E-03	4.21E-03	1.09E-01	2.41E-03	2.20E+01	1.17E+00	1.37E+01	1.76E-04
CARM-650 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CARM-700 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	5.11E+00	2.95E-02	NA	NA	NA	NA	5.36E-04	8.51E+00	4.56E-03	4.21E-03	1.09E-01	1.31E-03	2.20E+01	1.17E+00	1.37E+01	9.57E-05
CARM-750 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	9.80E+00	5.64E-02	NA	NA	NA	NA	5.36E-04	1.63E+01	8.73E-03	4.21E-03	1.09E-01	2.51E-03	2.20E+01	1.17E+00	1.37E+01	1.83E-04
CARM-800 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	7.75E+00	4.47E-02	NA	NA	NA	NA	5.36E-04	1.29E+01	6.91E-03	4.21E-03	1.09E-01	1.99E-03	2.20E+01	1.17E+00	1.37E+01	1.45E-04
CARM-850 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CARM-950 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CARM-1000 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.38E+01	7.93E-02	NA	NA	NA	NA	5.36E-04	2.29E+01	1.23E-02	4.21E-03	1.09E-01	3.53E-03	2.20E+01	1.17E+00	1.37E+01	2.58E-04
CARM-1050 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.99E+01	1.15E-01	NA	NA	NA	NA	5.36E-04	3.32E+01	1.78E-02	4.21E-03	1.09E-01	5.11E-03	2.20E+01	1.17E+00	1.37E+01	3.73E-04
CARM-1050+6.25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	5.44E+00	3.13E-02	NA	NA	NA	NA	5.36E-04	9.05E+00	4.85E-03	4.21E-03	1.09E-01	1.39E-03	2.20E+01	1.17E+00	1.37E+01	1.02E-04
CARM-1150 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	2.95E+01	1.70E-01	NA	NA	NA	NA	5.36E-04	4.90E+01	2.63E-02	4.21E-03	1.09E-01	7.55E-03	2.20E+01	1.17E+00	1.37E+01	5.52E-04
CARM-1150+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	9.60E+00	5.53E-02	NA	NA	NA	NA	5.36E-04	1.60E+01	8.56E-03	4.21E-03	1.09E-01	2.46E-03	2.20E+01	1.17E+00	1.37E+01	1.80E-04
CARM-Comp 1 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	9.73E+00	5.61E-02	NA	NA	NA	NA	5.36E-04	1.62E+01	8.67E-03	4.21E-03	1.09E-01	2.49E-03	2.20E+01	1.17E+00	1.37E+01	1.82E-04
																						Maximum HQ (Carbonate Mine)	**5.52E-04**
Red-Tailed Hawk (Carnivorous Birds - Terrestrial)																							
Reference Site																							
SWGBG-1	9.00E-02	9.00E-02	4.84E-01	6.44E+00	5.80E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.33E+01	6.83E-02	1.56E-03	1.13E+00	8.94E-04	2.20E+01	1.17E+00	2.19E+01	4.09E-05
SWGBG-2	9.00E-02	9.00E-02	4.84E-01	8.46E+00	7.61E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.75E+01	8.97E-02	1.56E-03	1.13E+00	1.17E-03	2.20E+01	1.17E+00	2.19E+01	5.37E-05
Carbonate Mine																						**Minimum HQ (Reference Sites)**	**4.09E-05**
CARM-00 (0-6")	9.00E-02	9.00E-02	4.84E-01	1.27E+01	1.15E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.63E+01	1.35E-01	1.56E-03	1.13E+00	1.77E-03	2.20E+01	1.17E+00	2.19E+01	8.08E-05
CARM-50 (0-6")	9.00E-02	9.00E-02	4.84E-01	8.80E+00	7.92E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.82E+01	9.33E-02	1.56E-03	1.13E+00	1.22E-03	2.20E+01	1.17E+00	2.19E+01	5.58E-05
CARM-50+12.5 (0-6")	9.00E-02	9.00E-02	4.84E-01	7.71E+00	6.93E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.59E+01	8.17E-02	1.56E-03	1.13E+00	1.07E-03	2.20E+01	1.17E+00	2.19E+01	4.89E-05
CARM-100 (0-6")	9.00E-02	9.00E-02	4.84E-01	9.91E+00	8.91E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.05E+01	1.05E-01	1.56E-03	1.13E+00	1.37E-03	2.20E+01	1.17E+00	2.19E+01	6.29E-05
CARM-100+25 (0-6")	9.00E-02	9.00E-02	4.84E-01	8.25E+00	7.42E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.71E+01	8.74E-02	1.56E-03	1.13E+00	1.14E-03	2.20E+01	1.17E+00	2.19E+01	5.23E-05
CARM-110 (0-6")	9.00E-02	9.00E-02	4.84E-01	7.53E+00	6.78E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.56E+01	7.99E-02	1.56E-03	1.13E+00	1.05E-03	2.20E+01	1.17E+00	2.19E+01	4.78E-05
CARM-150 (0-6")	9.00E-02	9.00E-02	4.84E-01	8.64E+00	7.77E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.79E+01	9.16E-02	1.56E-03	1.13E+00	1.20E-03	2.20E+01	1.17E+00	2.19E+01	5.48E-05
CARM-150+50 (0-6")	9.00E-02	9.00E-02	4.84E-01	6.14E+00	5.53E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.27E+01	6.51E-02	1.56E-03	1.13E+00	8.52E-04	2.20E+01	1.17E+00	2.19E+01	3.90E-05
CARM-200 (0-6")	9.00E-02	9.00E-02	4.84E-01	8.50E+00	7.65E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.76E+01	9.01E-02	1.56E-03	1.13E+00	1.18E-03	2.20E+01	1.17E+00	2.19E+01	5.39E-05
CARM-200+25 (0-6")	9.00E-02	9.00E-02	4.84E-01	1.31E+01	1.18E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.71E+01	1.39E-01	1.56E-03	1.13E+00	1.82E-03	2.20E+01	1.17E+00	2.19E+01	8.32E-05
CARM-250 (0-6")	9.00E-02	9.00E-02	4.84E-01	8.13E+00	7.32E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.68E+01	8.62E-02	1.56E-03	1.13E+00	1.13E-03	2.20E+01	1.17E+00	2.19E+01	5.16E-05
CARM-300 (0-6")	9.00E-02	9.00E-02	4.84E-01	8.02E+00	7.21E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.66E+01	8.50E-02	1.56E-03	1.13E+00	1.11E-03	2.20E+01	1.17E+00	2.19E+01	5.09E-05
CARM-350 (0-6")	9.00E-02	9.00E-02	4.84E-01	1.85E+01	1.67E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.83E+01	1.96E-01	1.56E-03	1.13E+00	2.57E-03	2.20E+01	1.17E+00	2.19E+01	1.17E-04
CARM-400 (0-6")	9.00E-02	9.00E-02	4.84E-01	7.81E+00	7.03E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.62E+01	8.28E-02	1.56E-03	1.13E+00	1.08E-03	2.20E+01	1.17E+00	2.19E+01	4.96E-05
CARM-500 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB

TABLE C-4A: ARSENIC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 4 - CARBONATE MINE WASTE AREA (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 1.09

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Red-Tailed Hawk (Carnivorous Birds - Terrestrial)																							
CARM-550 (0-6")	9.00E-02	9.00E-02	4.84E-01	8.57E+00	7.71E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.77E+01	9.08E-02	1.56E-03	1.13E+00	1.19E-03	2.20E+01	1.17E+00	2.19E+01	5.44E-05
CARM-600 (0-6")	9.00E-02	9.00E-02	4.84E-01	7.58E+00	6.82E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.57E+01	8.03E-02	1.56E-03	1.13E+00	1.05E-03	2.20E+01	1.17E+00	2.19E+01	4.81E-05
CARM-650 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CARM-700 (0-6")	9.00E-02	9.00E-02	4.84E-01	4.11E+00	3.70E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	8.51E+00	4.36E-02	1.56E-03	1.13E+00	5.71E-04	2.20E+01	1.17E+00	2.19E+01	2.61E-05
CARM-750 (0-6")	9.00E-02	9.00E-02	4.84E-01	7.89E+00	7.09E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.63E+01	8.36E-02	1.56E-03	1.13E+00	1.09E-03	2.20E+01	1.17E+00	2.19E+01	5.00E-05
CARM-800 (0-6")	9.00E-02	9.00E-02	4.84E-01	6.24E+00	5.61E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.29E+01	6.61E-02	1.56E-03	1.13E+00	8.66E-04	2.20E+01	1.17E+00	2.19E+01	3.96E-05
CARM-850 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CARM-950 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CARM-1000 (0-6")	9.00E-02	9.00E-02	4.84E-01	1.11E+01	9.97E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.29E+01	1.17E-01	1.56E-03	1.13E+00	1.54E-03	2.20E+01	1.17E+00	2.19E+01	7.03E-05
CARM-1050 (0-6")	9.00E-02	9.00E-02	4.84E-01	1.60E+01	1.44E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.32E+01	1.70E-01	1.56E-03	1.13E+00	2.23E-03	2.20E+01	1.17E+00	2.19E+01	1.02E-04
CARM-1050+6.25 (0-6")	9.00E-02	9.00E-02	4.84E-01	4.38E+00	3.94E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	9.05E+00	4.64E-02	1.56E-03	1.13E+00	6.07E-04	2.20E+01	1.17E+00	2.19E+01	2.78E-05
CARM-1150 (0-6")	9.00E-02	9.00E-02	4.84E-01	2.37E+01	2.13E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.90E+01	2.51E-01	1.56E-03	1.13E+00	3.29E-03	2.20E+01	1.17E+00	2.19E+01	1.50E-04
CARM-1150+25 (0-6")	9.00E-02	9.00E-02	4.84E-01	7.73E+00	6.95E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.60E+01	8.19E-02	1.56E-03	1.13E+00	1.07E-03	2.20E+01	1.17E+00	2.19E+01	4.90E-05
CARM-Comp 1 (0-6")	9.00E-02	9.00E-02	4.84E-01	7.83E+00	7.05E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.62E+01	8.30E-02	1.56E-03	1.13E+00	1.09E-03	2.20E+01	1.17E+00	2.19E+01	4.97E-05
																						Maximum HQ (Carbonate Mine)	**1.50E-04**
American Kestral (Insectivorous Birds - Terrestrial)																							
Reference Site																							
SWGBG-1	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	2.55E+00	3.40E+01	4.68E-01	7.84E-04	1.33E+01	1.04E-02	4.17E-03	1.24E-01	1.61E-02	2.20E+01	1.17E+00	1.40E+01	1.14E-03
SWGBG-2	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	2.55E+00	4.46E+01	6.14E-01	7.84E-04	1.75E+01	1.37E-02	4.17E-03	1.24E-01	2.11E-02	2.20E+01	1.17E+00	1.40E+01	1.50E-03
Carbonate Mine																						**Minimum HQ (Reference Sites)**	**1.14E-03**
CARM-00 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	4.34E+02	5.97E+00	7.84E-04	2.63E+01	2.06E-02	4.17E-03	1.24E-01	2.01E-01	2.20E+01	1.17E+00	1.40E+01	1.43E-02
CARM-50 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	3.00E+02	4.13E+00	7.84E-04	1.82E+01	1.43E-02	4.17E-03	1.24E-01	1.39E-01	2.20E+01	1.17E+00	1.40E+01	9.91E-03
CARM-50+12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	2.63E+02	3.61E+00	7.84E-04	1.59E+01	1.25E-02	4.17E-03	1.24E-01	1.22E-01	2.20E+01	1.17E+00	1.40E+01	8.68E-03
CARM-100 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	3.38E+02	4.65E+00	7.84E-04	2.05E+01	1.61E-02	4.17E-03	1.24E-01	1.57E-01	2.20E+01	1.17E+00	1.40E+01	1.12E-02
CARM-100+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	2.81E+02	3.87E+00	7.84E-04	1.71E+01	1.34E-02	4.17E-03	1.24E-01	1.30E-01	2.20E+01	1.17E+00	1.40E+01	9.28E-03
CARM-110 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	2.57E+02	3.53E+00	7.84E-04	1.56E+01	1.22E-02	4.17E-03	1.24E-01	1.19E-01	2.20E+01	1.17E+00	1.40E+01	8.48E-03
CARM-150 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	2.94E+02	4.05E+00	7.84E-04	1.79E+01	1.40E-02	4.17E-03	1.24E-01	1.37E-01	2.20E+01	1.17E+00	1.40E+01	9.72E-03
CARM-150+50 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	2.09E+02	2.88E+00	7.84E-04	1.27E+01	9.96E-03	4.17E-03	1.24E-01	9.71E-02	2.20E+01	1.17E+00	1.40E+01	6.91E-03
CARM-200 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	2.90E+02	3.99E+00	7.84E-04	1.76E+01	1.38E-02	4.17E-03	1.24E-01	1.34E-01	2.20E+01	1.17E+00	1.40E+01	9.57E-03
CARM-200+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	4.47E+02	6.15E+00	7.84E-04	2.71E+01	2.13E-02	4.17E-03	1.24E-01	2.07E-01	2.20E+01	1.17E+00	1.40E+01	1.48E-02
CARM-250 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	2.77E+02	3.81E+00	7.84E-04	1.68E+01	1.32E-02	4.17E-03	1.24E-01	1.29E-01	2.20E+01	1.17E+00	1.40E+01	9.15E-03
CARM-300 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	2.73E+02	3.76E+00	7.84E-04	1.66E+01	1.30E-02	4.17E-03	1.24E-01	1.27E-01	2.20E+01	1.17E+00	1.40E+01	9.02E-03
CARM-350 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	6.31E+02	8.68E+00	7.84E-04	3.83E+01	3.00E-02	4.17E-03	1.24E-01	2.93E-01	2.20E+01	1.17E+00	1.40E+01	2.08E-02
CARM-400 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	2.66E+02	3.66E+00	7.84E-04	1.62E+01	1.27E-02	4.17E-03	1.24E-01	1.23E-01	2.20E+01	1.17E+00	1.40E+01	8.79E-03
CARM-500 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CARM-550 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	2.92E+02	4.02E+00	7.84E-04	1.77E+01	1.39E-02	4.17E-03	1.24E-01	1.35E-01	2.20E+01	1.17E+00	1.40E+01	9.64E-03
CARM-600 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	2.58E+02	3.55E+00	7.84E-04	1.57E+01	1.23E-02	4.17E-03	1.24E-01	1.20E-01	2.20E+01	1.17E+00	1.40E+01	8.53E-03
CARM-650 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CARM-700 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	1.40E+02	1.93E+00	7.84E-04	8.51E+00	6.67E-03	4.17E-03	1.24E-01	6.50E-02	2.20E+01	1.17E+00	1.40E+01	4.63E-03
CARM-750 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	2.69E+02	3.70E+00	7.84E-04	1.63E+01	1.28E-02	4.17E-03	1.24E-01	1.25E-01	2.20E+01	1.17E+00	1.40E+01	8.87E-03
CARM-800 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	2.13E+02	2.93E+00	7.84E-04	1.29E+01	1.01E-02	4.17E-03	1.24E-01	9.86E-02	2.20E+01	1.17E+00	1.40E+01	7.02E-03
CARM-850 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CARM-950 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CARM-1000 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	3.78E+02	5.20E+00	7.84E-04	2.29E+01	1.80E-02	4.17E-03	1.24E-01	1.75E-01	2.20E+01	1.17E+00	1.40E+01	1.25E-02
CARM-1050 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	5.47E+02	7.52E+00	7.84E-04	3.32E+01	2.60E-02	4.17E-03	1.24E-01	2.54E-01	2.20E+01	1.17E+00	1.40E+01	1.81E-02
CARM-1050+6.25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	1.49E+02	2.05E+00	7.84E-04	9.05E+00	7.10E-03	4.17E-03	1.24E-01	6.92E-02	2.20E+01	1.17E+00	1.40E+01	4.93E-03
CARM-1150 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	8.08E+02	1.11E+01	7.84E-04	4.90E+01	3.85E-02	4.17E-03	1.24E-01	3.75E-01	2.20E+01	1.17E+00	1.40E+01	2.67E-02
CARM-1150+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	2.63E+02	3.62E+00	7.84E-04	1.60E+01	1.25E-02	4.17E-03	1.24E-01	1.22E-01	2.20E+01	1.17E+00	1.40E+01	8.69E-03
CARM-Comp 1 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	2.67E+02	3.67E+00	7.84E-04	1.62E+01	1.27E-02	4.17E-03	1.24E-01	1.24E-01	2.20E+01	1.17E+00	1.40E+01	8.81E-03
																						Maximum HQ (Carbonate Mine)	**2.67E-02**

TABLE C-4A: ARSENIC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 4 - CARBONATE MINE WASTE AREA (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 1.09

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Meadow Vole (Small Herbivorous Mammal - Terrestrial)																							
Reference Site																							
SWGBG-1	4.69E-03	NA	NA	NA	NA	4.69E-03	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	1.13E-04	1.33E+01	1.50E-03	1.00E+00	3.06E-02	4.90E-02	4.70E+00	1.10E-01	5.08E+00	9.65E-03
SWGBG-2	4.69E-03	NA	NA	NA	NA	4.69E-03	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	1.13E-04	1.75E+01	1.97E-03	1.00E+00	3.06E-02	6.43E-02	4.70E+00	1.10E-01	5.08E+00	1.27E-02
Carbonate Mine																						**Minimum HQ (Reference Sites)**	**9.65E-03**
CARM-00 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.58E+01	7.41E-02	NA	NA	NA	NA	1.13E-04	2.63E+01	2.96E-03	1.00E+00	3.06E-02	2.52E+00	4.70E+00	1.10E-01	5.08E+00	4.97E-01
CARM-50 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.09E+01	5.13E-02	NA	NA	NA	NA	1.13E-04	1.82E+01	2.05E-03	1.00E+00	3.06E-02	1.74E+00	4.70E+00	1.10E-01	5.08E+00	3.43E-01
CARM-50+12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	9.58E+00	4.49E-02	NA	NA	NA	NA	1.13E-04	1.59E+01	1.79E-03	1.00E+00	3.06E-02	1.53E+00	4.70E+00	1.10E-01	5.08E+00	3.01E-01
CARM-100 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.23E+01	5.77E-02	NA	NA	NA	NA	1.13E-04	2.05E+01	2.31E-03	1.00E+00	3.06E-02	1.96E+00	4.70E+00	1.10E-01	5.08E+00	3.87E-01
CARM-100+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.02E+01	4.81E-02	NA	NA	NA	NA	1.13E-04	1.71E+01	1.92E-03	1.00E+00	3.06E-02	1.63E+00	4.70E+00	1.10E-01	5.08E+00	3.22E-01
CARM-110 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	9.36E+00	4.39E-02	NA	NA	NA	NA	1.13E-04	1.56E+01	1.75E-03	1.00E+00	3.06E-02	1.49E+00	4.70E+00	1.10E-01	5.08E+00	2.94E-01
CARM-150 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.07E+01	5.03E-02	NA	NA	NA	NA	1.13E-04	1.79E+01	2.01E-03	1.00E+00	3.06E-02	1.71E+00	4.70E+00	1.10E-01	5.08E+00	3.37E-01
CARM-150+50 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	7.63E+00	3.58E-02	NA	NA	NA	NA	1.13E-04	1.27E+01	1.43E-03	1.00E+00	3.06E-02	1.22E+00	4.70E+00	1.10E-01	5.08E+00	2.40E-01
CARM-200 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.06E+01	4.95E-02	NA	NA	NA	NA	1.13E-04	1.76E+01	1.98E-03	1.00E+00	3.06E-02	1.68E+00	4.70E+00	1.10E-01	5.08E+00	3.32E-01
CARM-200+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.63E+01	7.64E-02	NA	NA	NA	NA	1.13E-04	2.71E+01	3.05E-03	1.00E+00	3.06E-02	2.60E+00	4.70E+00	1.10E-01	5.08E+00	5.11E-01
CARM-250 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.01E+01	4.74E-02	NA	NA	NA	NA	1.13E-04	1.68E+01	1.89E-03	1.00E+00	3.06E-02	1.61E+00	4.70E+00	1.10E-01	5.08E+00	3.17E-01
CARM-300 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	9.96E+00	4.67E-02	NA	NA	NA	NA	1.13E-04	1.66E+01	1.86E-03	1.00E+00	3.06E-02	1.59E+00	4.70E+00	1.10E-01	5.08E+00	3.13E-01
CARM-350 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	2.30E+01	1.08E-01	NA	NA	NA	NA	1.13E-04	3.83E+01	4.31E-03	1.00E+00	3.06E-02	3.67E+00	4.70E+00	1.10E-01	5.08E+00	7.22E-01
CARM-400 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	9.71E+00	4.55E-02	NA	NA	NA	NA	1.13E-04	1.62E+01	1.82E-03	1.00E+00	3.06E-02	1.55E+00	4.70E+00	1.10E-01	5.08E+00	3.05E-01
CARM-500 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CARM-550 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.06E+01	4.99E-02	NA	NA	NA	NA	1.13E-04	1.77E+01	1.99E-03	1.00E+00	3.06E-02	1.70E+00	4.70E+00	1.10E-01	5.08E+00	3.34E-01
CARM-600 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	9.42E+00	4.41E-02	NA	NA	NA	NA	1.13E-04	1.57E+01	1.76E-03	1.00E+00	3.06E-02	1.50E+00	4.70E+00	1.10E-01	5.08E+00	2.96E-01
CARM-650 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CARM-700 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	5.11E+00	2.40E-02	NA	NA	NA	NA	1.13E-04	8.51E+00	9.57E-04	1.00E+00	3.06E-02	8.15E-01	4.70E+00	1.10E-01	5.08E+00	1.61E-01
CARM-750 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	9.80E+00	4.59E-02	NA	NA	NA	NA	1.13E-04	1.63E+01	1.83E-03	1.00E+00	3.06E-02	1.56E+00	4.70E+00	1.10E-01	5.08E+00	3.08E-01
CARM-800 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	7.75E+00	3.64E-02	NA	NA	NA	NA	1.13E-04	1.29E+01	1.45E-03	1.00E+00	3.06E-02	1.24E+00	4.70E+00	1.10E-01	5.08E+00	2.43E-01
CARM-850 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CARM-950 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CARM-1000 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.38E+01	6.46E-02	NA	NA	NA	NA	1.13E-04	2.29E+01	2.58E-03	1.00E+00	3.06E-02	2.19E+00	4.70E+00	1.10E-01	5.08E+00	4.32E-01
CARM-1050 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.99E+01	9.35E-02	NA	NA	NA	NA	1.13E-04	3.32E+01	3.73E-03	1.00E+00	3.06E-02	3.18E+00	4.70E+00	1.10E-01	5.08E+00	6.26E-01
CARM-1050+6.25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	5.44E+00	2.55E-02	NA	NA	NA	NA	1.13E-04	9.05E+00	1.02E-03	1.00E+00	3.06E-02	8.67E-01	4.70E+00	1.10E-01	5.08E+00	1.71E-01
CARM-1150 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	2.95E+01	1.38E-01	NA	NA	NA	NA	1.13E-04	4.90E+01	5.52E-03	1.00E+00	3.06E-02	4.70E+00	4.70E+00	1.10E-01	5.08E+00	9.25E-01
CARM-1150+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	9.60E+00	4.50E-02	NA	NA	NA	NA	1.13E-04	1.60E+01	1.80E-03	1.00E+00	3.06E-02	1.53E+00	4.70E+00	1.10E-01	5.08E+00	3.01E-01
CARM-Comp 1 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	9.73E+00	4.56E-02	NA	NA	NA	NA	1.13E-04	1.62E+01	1.82E-03	1.00E+00	3.06E-02	1.55E+00	4.70E+00	1.10E-01	5.08E+00	3.06E-01
																						Maximum HQ (Carbonate Mine)	**9.25E-01**
White-Tailed Deer (Large Herbivorous Mammal - Terrestrial)																							
Reference Site																							
SWGBG-1	1.43E+00	NA	NA	NA	NA	1.43E+00	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	2.86E-02	1.33E+01	3.81E-01	6.10E-03	1.35E+02	1.72E-05	4.70E+00	1.10E-01	3.07E+00	5.62E-06
SWGBG-2	1.43E+00	NA	NA	NA	NA	1.43E+00	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	2.86E-02	1.75E+01	5.01E-01	6.10E-03	1.35E+02	2.26E-05	4.70E+00	1.10E-01	3.07E+00	7.37E-06
Carbonate Mine																						**Minimum HQ (Reference Sites)**	**5.62E-06**
CARM-00 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.58E+01	2.26E+01	NA	NA	NA	NA	2.86E-02	2.63E+01	7.53E-01	6.10E-03	1.35E+02	1.06E-03	4.70E+00	1.10E-01	3.07E+00	3.44E-04
CARM-50 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.09E+01	1.57E+01	NA	NA	NA	NA	2.86E-02	1.82E+01	5.21E-01	6.10E-03	1.35E+02	7.31E-04	4.70E+00	1.10E-01	3.07E+00	2.38E-04
CARM-50+12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	9.58E+00	1.37E+01	NA	NA	NA	NA	2.86E-02	1.59E+01	4.56E-01	6.10E-03	1.35E+02	6.40E-04	4.70E+00	1.10E-01	3.07E+00	2.09E-04
CARM-100 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.23E+01	1.76E+01	NA	NA	NA	NA	2.86E-02	2.05E+01	5.87E-01	6.10E-03	1.35E+02	8.23E-04	4.70E+00	1.10E-01	3.07E+00	2.68E-04
CARM-100+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.02E+01	1.47E+01	NA	NA	NA	NA	2.86E-02	1.71E+01	4.88E-01	6.10E-03	1.35E+02	6.85E-04	4.70E+00	1.10E-01	3.07E+00	2.23E-04
CARM-110 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	9.36E+00	1.34E+01	NA	NA	NA	NA	2.86E-02	1.56E+01	4.46E-01	6.10E-03	1.35E+02	6.26E-04	4.70E+00	1.10E-01	3.07E+00	2.04E-04
CARM-150 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.07E+01	1.54E+01	NA	NA	NA	NA	2.86E-02	1.79E+01	5.11E-01	6.10E-03	1.35E+02	7.17E-04	4.70E+00	1.10E-01	3.07E+00	2.34E-04
CARM-150+50 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	7.63E+00	1.09E+01	NA	NA	NA	NA	2.86E-02	1.27E+01	3.64E-01	6.10E-03	1.35E+02	5.10E-04	4.70E+00	1.10E-01	3.07E+00	1.66E-04
CARM-200 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.06E+01	1.51E+01	NA	NA	NA	NA	2.86E-02	1.76E+01	5.03E-01	6.10E-03	1.35E+02	7.06E-04	4.70E+00	1.10E-01	3.07E+00	2.30E-04
CARM-200+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.63E+01	2.33E+01	NA	NA	NA	NA	2.86E-02	2.71E+01	7.76E-01	6.10E-03	1.35E+02	1.09E-03	4.70E+00	1.10E-01	3.07E+00	3.55E-04
CARM-250 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.01E+01	1.45E+01	NA	NA	NA	NA	2.86E-02	1.68E+01	4.81E-01	6.10E-03	1.35E+02	6.75E-04	4.70E+00	1.10E-01	3.07E+00	2.20E-04
CARM-300 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	9.96E+00	1.43E+01	NA	NA	NA	NA	2.86E-02	1.66E+01	4.74E-01	6.10E-03	1.35E+02	6.65E-04	4.70E+00	1.10E-01	3.07E+00	2.17E-04
CARM-350 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	2.30E+01	3.29E+01	NA	NA	NA	NA	2.86E-02	3.83E+01	1.10E+00	6.10E-03	1.35E+02	1.54E-03	4.70E+00	1.10E-01	3.07E+00	5.01E-04
CARM-400 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	9.71E+00	1.39E+01	NA	NA	NA	NA	2.86E-02	1.62E+01	4.62E-01	6.10E-03	1.35E+02	6.49E-04	4.70E+00	1.10E-01	3.07E+00	2.11E-04
CARM-500 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB

TABLE C-4A: ARSENIC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 4 - CARBONATE MINE WASTE AREA (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **1.09**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
White-Tailed Deer (Large Herbivorous Mammal - Terrestrial)																							
CARM-550 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.06E+01	1.52E+01	NA	NA	NA	NA	2.86E-02	1.77E+01	5.07E-01	6.10E-03	1.35E+02	7.11E-04	4.70E+00	1.10E-01	3.07E+00	2.32E-04
CARM-600 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	9.42E+00	1.35E+01	NA	NA	NA	NA	2.86E-02	1.57E+01	4.49E-01	6.10E-03	1.35E+02	6.29E-04	4.70E+00	1.10E-01	3.07E+00	2.05E-04
CARM-650 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CARM-700 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	5.11E+00	7.32E+00	NA	NA	NA	NA	2.86E-02	8.51E+00	2.44E-01	6.10E-03	1.35E+02	3.42E-04	4.70E+00	1.10E-01	3.07E+00	1.11E-04
CARM-750 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	9.80E+00	1.40E+01	NA	NA	NA	NA	2.86E-02	1.63E+01	4.67E-01	6.10E-03	1.35E+02	6.55E-04	4.70E+00	1.10E-01	3.07E+00	2.13E-04
CARM-800 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	7.75E+00	1.11E+01	NA	NA	NA	NA	2.86E-02	1.29E+01	3.69E-01	6.10E-03	1.35E+02	5.18E-04	4.70E+00	1.10E-01	3.07E+00	1.69E-04
CARM-850 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CARM-950 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CARM-1000 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.38E+01	1.97E+01	NA	NA	NA	NA	2.86E-02	2.29E+01	6.56E-01	6.10E-03	1.35E+02	9.20E-04	4.70E+00	1.10E-01	3.07E+00	3.00E-04
CARM-1050 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.99E+01	2.85E+01	NA	NA	NA	NA	2.86E-02	3.32E+01	9.50E-01	6.10E-03	1.35E+02	1.33E-03	4.70E+00	1.10E-01	3.07E+00	4.34E-04
CARM-1050+6.25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	5.44E+00	7.79E+00	NA	NA	NA	NA	2.86E-02	9.05E+00	2.59E-01	6.10E-03	1.35E+02	3.63E-04	4.70E+00	1.10E-01	3.07E+00	1.18E-04
CARM-1150 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	2.95E+01	4.22E+01	NA	NA	NA	NA	2.86E-02	4.90E+01	1.40E+00	6.10E-03	1.35E+02	1.97E-03	4.70E+00	1.10E-01	3.07E+00	6.42E-04
CARM-1150+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	9.60E+00	1.37E+01	NA	NA	NA	NA	2.86E-02	1.60E+01	4.57E-01	6.10E-03	1.35E+02	6.41E-04	4.70E+00	1.10E-01	3.07E+00	2.09E-04
CARM-Comp 1 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	9.73E+00	1.39E+01	NA	NA	NA	NA	2.86E-02	1.62E+01	4.64E-01	6.10E-03	1.35E+02	6.50E-04	4.70E+00	1.10E-01	3.07E+00	2.12E-04
																						Maximum HQ (Carbonate Mine)	**6.42E-04**
Red Fox (Carnivorous Mammal - Terrestrial)																							
Reference Site																							
SWGBG-1	1.72E-01	1.72E-01	4.84E-01	6.44E+00	1.11E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.33E+01	6.40E-02	8.05E-04	4.54E+00	2.08E-04	4.70E+00	1.10E-01	3.76E+00	5.52E-05
SWGBG-2	1.72E-01	1.72E-01	4.84E-01	8.46E+00	1.45E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.75E+01	8.40E-02	8.05E-04	4.54E+00	2.73E-04	4.70E+00	1.10E-01	3.76E+00	7.25E-05
Carbonate Mine																						**Minimum HQ (Reference Sites)**	**5.52E-05**
CARM-00 (0-6")	1.72E-01	1.72E-01	4.84E-01	1.27E+01	2.18E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.63E+01	1.26E-01	8.05E-04	4.54E+00	4.10E-04	4.70E+00	1.10E-01	3.76E+00	1.09E-04
CARM-50 (0-6")	1.72E-01	1.72E-01	4.84E-01	8.80E+00	1.51E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.82E+01	8.74E-02	8.05E-04	4.54E+00	2.84E-04	4.70E+00	1.10E-01	3.76E+00	7.54E-05
CARM-50+12.5 (0-6")	1.72E-01	1.72E-01	4.84E-01	7.71E+00	1.32E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.59E+01	7.65E-02	8.05E-04	4.54E+00	2.48E-04	4.70E+00	1.10E-01	3.76E+00	6.61E-05
CARM-100 (0-6")	1.72E-01	1.72E-01	4.84E-01	9.91E+00	1.70E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.05E+01	9.84E-02	8.05E-04	4.54E+00	3.19E-04	4.70E+00	1.10E-01	3.76E+00	8.49E-05
CARM-100+25 (0-6")	1.72E-01	1.72E-01	4.84E-01	8.25E+00	1.42E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.71E+01	8.19E-02	8.05E-04	4.54E+00	2.66E-04	4.70E+00	1.10E-01	3.76E+00	7.07E-05
CARM-110 (0-6")	1.72E-01	1.72E-01	4.84E-01	7.53E+00	1.29E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.56E+01	7.48E-02	8.05E-04	4.54E+00	2.43E-04	4.70E+00	1.10E-01	3.76E+00	6.46E-05
CARM-150 (0-6")	1.72E-01	1.72E-01	4.84E-01	8.64E+00	1.48E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.79E+01	8.58E-02	8.05E-04	4.54E+00	2.78E-04	4.70E+00	1.10E-01	3.76E+00	7.40E-05
CARM-150+50 (0-6")	1.72E-01	1.72E-01	4.84E-01	6.14E+00	1.05E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.27E+01	6.10E-02	8.05E-04	4.54E+00	1.98E-04	4.70E+00	1.10E-01	3.76E+00	5.26E-05
CARM-200 (0-6")	1.72E-01	1.72E-01	4.84E-01	8.50E+00	1.46E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.76E+01	8.44E-02	8.05E-04	4.54E+00	2.74E-04	4.70E+00	1.10E-01	3.76E+00	7.29E-05
CARM-200+25 (0-6")	1.72E-01	1.72E-01	4.84E-01	1.31E+01	2.25E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.71E+01	1.30E-01	8.05E-04	4.54E+00	4.22E-04	4.70E+00	1.10E-01	3.76E+00	1.12E-04
CARM-250 (0-6")	1.72E-01	1.72E-01	4.84E-01	8.13E+00	1.40E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.68E+01	8.07E-02	8.05E-04	4.54E+00	2.62E-04	4.70E+00	1.10E-01	3.76E+00	6.97E-05
CARM-300 (0-6")	1.72E-01	1.72E-01	4.84E-01	8.02E+00	1.38E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.66E+01	7.96E-02	8.05E-04	4.54E+00	2.58E-04	4.70E+00	1.10E-01	3.76E+00	6.87E-05
CARM-350 (0-6")	1.72E-01	1.72E-01	4.84E-01	1.85E+01	3.18E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.83E+01	1.84E-01	8.05E-04	4.54E+00	5.97E-04	4.70E+00	1.10E-01	3.76E+00	1.59E-04
CARM-400 (0-6")	1.72E-01	1.72E-01	4.84E-01	7.81E+00	1.34E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.62E+01	7.76E-02	8.05E-04	4.54E+00	2.52E-04	4.70E+00	1.10E-01	3.76E+00	6.69E-05
CARM-500 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CARM-550 (0-6")	1.72E-01	1.72E-01	4.84E-01	8.57E+00	1.47E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.77E+01	8.51E-02	8.05E-04	4.54E+00	2.76E-04	4.70E+00	1.10E-01	3.76E+00	7.34E-05
CARM-600 (0-6")	1.72E-01	1.72E-01	4.84E-01	7.58E+00	1.30E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.57E+01	7.52E-02	8.05E-04	4.54E+00	2.44E-04	4.70E+00	1.10E-01	3.76E+00	6.49E-05
CARM-650 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CARM-700 (0-6")	1.72E-01	1.72E-01	4.84E-01	4.11E+00	7.06E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	8.51E+00	4.09E-02	8.05E-04	4.54E+00	1.33E-04	4.70E+00	1.10E-01	3.76E+00	3.53E-05
CARM-750 (0-6")	1.72E-01	1.72E-01	4.84E-01	7.89E+00	1.35E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.63E+01	7.83E-02	8.05E-04	4.54E+00	2.54E-04	4.70E+00	1.10E-01	3.76E+00	6.76E-05
CARM-800 (0-6")	1.72E-01	1.72E-01	4.84E-01	6.24E+00	1.07E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.29E+01	6.20E-02	8.05E-04	4.54E+00	2.01E-04	4.70E+00	1.10E-01	3.76E+00	5.35E-05
CARM-850 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CARM-950 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CARM-1000 (0-6")	1.72E-01	1.72E-01	4.84E-01	1.11E+01	1.90E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.29E+01	1.10E-01	8.05E-04	4.54E+00	3.57E-04	4.70E+00	1.10E-01	3.76E+00	9.50E-05
CARM-1050 (0-6")	1.72E-01	1.72E-01	4.84E-01	1.60E+01	2.75E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.32E+01	1.59E-01	8.05E-04	4.54E+00	5.17E-04	4.70E+00	1.10E-01	3.76E+00	1.37E-04
CARM-1050+6.25 (0-6")	1.72E-01	1.72E-01	4.84E-01	4.38E+00	7.51E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	9.05E+00	4.35E-02	8.05E-04	4.54E+00	1.41E-04	4.70E+00	1.10E-01	3.76E+00	3.75E-05
CARM-1150 (0-6")	1.72E-01	1.72E-01	4.84E-01	2.37E+01	4.07E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.90E+01	2.35E-01	8.05E-04	4.54E+00	7.64E-04	4.70E+00	1.10E-01	3.76E+00	2.03E-04
CARM-1150+25 (0-6")	1.72E-01	1.72E-01	4.84E-01	7.73E+00	1.33E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.60E+01	7.67E-02	8.05E-04	4.54E+00	2.49E-04	4.70E+00	1.10E-01	3.76E+00	6.62E-05
CARM-Comp 1 (0-6")	1.72E-01	1.72E-01	4.84E-01	7.83E+00	1.34E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.62E+01	7.78E-02	8.05E-04	4.54E+00	2.52E-04	4.70E+00	1.10E-01	3.76E+00	6.71E-05
																						Maximum HQ (Carbonate Mine)	**2.03E-04**

TABLE C-4A: ARSENIC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 4 - CARBONATE MINE WASTE AREA (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 1.09

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Masked Shrew (Omnivorous Mammal - Terrestrial, Wetland)																							
Reference Site																							
SWGBG-1	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	2.55E+00	3.40E+01	2.88E-01	1.10E-03	1.33E+01	1.47E-02	1.00E+00	5.50E-03	5.50E+01	4.70E+00	1.10E-01	5.63E+00	9.78E+00
SWGBG-2	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	2.55E+00	4.46E+01	3.78E-01	1.10E-03	1.75E+01	1.93E-02	1.00E+00	5.50E-03	7.22E+01	4.70E+00	1.10E-01	5.63E+00	1.28E+01
Carbonate Mine																						**Minimum HQ (Reference Sites)**	**9.78E+00**
CARM-00 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	4.34E+02	3.67E+00	1.10E-03	2.63E+01	2.90E-02	1.00E+00	5.50E-03	6.73E+02	4.70E+00	1.10E-01	5.63E+00	1.20E+02
CARM-50 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	3.00E+02	2.54E+00	1.10E-03	1.82E+01	2.00E-02	1.00E+00	5.50E-03	4.66E+02	4.70E+00	1.10E-01	5.63E+00	8.27E+01
CARM-50+12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	2.63E+02	2.22E+00	1.10E-03	1.59E+01	1.75E-02	1.00E+00	5.50E-03	4.08E+02	4.70E+00	1.10E-01	5.63E+00	7.25E+01
CARM-100 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	3.38E+02	2.86E+00	1.10E-03	2.05E+01	2.26E-02	1.00E+00	5.50E-03	5.24E+02	4.70E+00	1.10E-01	5.63E+00	9.32E+01
CARM-100+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	2.81E+02	2.38E+00	1.10E-03	1.71E+01	1.88E-02	1.00E+00	5.50E-03	4.36E+02	4.70E+00	1.10E-01	5.63E+00	7.75E+01
CARM-110 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	2.57E+02	2.17E+00	1.10E-03	1.56E+01	1.71E-02	1.00E+00	5.50E-03	3.98E+02	4.70E+00	1.10E-01	5.63E+00	7.08E+01
CARM-150 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	2.94E+02	2.49E+00	1.10E-03	1.79E+01	1.97E-02	1.00E+00	5.50E-03	4.57E+02	4.70E+00	1.10E-01	5.63E+00	8.12E+01
CARM-150+50 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	2.09E+02	1.77E+00	1.10E-03	1.27E+01	1.40E-02	1.00E+00	5.50E-03	3.25E+02	4.70E+00	1.10E-01	5.63E+00	5.78E+01
CARM-200 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	2.90E+02	2.45E+00	1.10E-03	1.76E+01	1.94E-02	1.00E+00	5.50E-03	4.50E+02	4.70E+00	1.10E-01	5.63E+00	7.99E+01
CARM-200+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	4.47E+02	3.78E+00	1.10E-03	2.71E+01	2.98E-02	1.00E+00	5.50E-03	6.93E+02	4.70E+00	1.10E-01	5.63E+00	1.23E+02
CARM-250 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	2.77E+02	2.35E+00	1.10E-03	1.68E+01	1.85E-02	1.00E+00	5.50E-03	4.30E+02	4.70E+00	1.10E-01	5.63E+00	7.65E+01
CARM-300 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	2.73E+02	2.31E+00	1.10E-03	1.66E+01	1.82E-02	1.00E+00	5.50E-03	4.24E+02	4.70E+00	1.10E-01	5.63E+00	7.54E+01
CARM-350 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	6.31E+02	5.34E+00	1.10E-03	3.83E+01	4.22E-02	1.00E+00	5.50E-03	9.79E+02	4.70E+00	1.10E-01	5.63E+00	1.74E+02
CARM-400 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	2.66E+02	2.25E+00	1.10E-03	1.62E+01	1.78E-02	1.00E+00	5.50E-03	4.13E+02	4.70E+00	1.10E-01	5.63E+00	7.34E+01
CARM-500 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CARM-550 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	2.92E+02	2.47E+00	1.10E-03	1.77E+01	1.95E-02	1.00E+00	5.50E-03	4.53E+02	4.70E+00	1.10E-01	5.63E+00	8.06E+01
CARM-600 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	2.58E+02	2.19E+00	1.10E-03	1.57E+01	1.72E-02	1.00E+00	5.50E-03	4.01E+02	4.70E+00	1.10E-01	5.63E+00	7.12E+01
CARM-650 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CARM-700 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	1.40E+02	1.19E+00	1.10E-03	8.51E+00	9.36E-03	1.00E+00	5.50E-03	2.18E+02	4.70E+00	1.10E-01	5.63E+00	3.87E+01
CARM-750 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	2.69E+02	2.28E+00	1.10E-03	1.63E+01	1.79E-02	1.00E+00	5.50E-03	4.17E+02	4.70E+00	1.10E-01	5.63E+00	7.41E+01
CARM-800 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	2.13E+02	1.80E+00	1.10E-03	1.29E+01	1.42E-02	1.00E+00	5.50E-03	3.30E+02	4.70E+00	1.10E-01	5.63E+00	5.87E+01
CARM-850 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CARM-950 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CARM-1000 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	3.78E+02	3.20E+00	1.10E-03	2.29E+01	2.52E-02	1.00E+00	5.50E-03	5.86E+02	4.70E+00	1.10E-01	5.63E+00	1.04E+02
CARM-1050 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	5.47E+02	4.63E+00	1.10E-03	3.32E+01	3.65E-02	1.00E+00	5.50E-03	8.48E+02	4.70E+00	1.10E-01	5.63E+00	1.51E+02
CARM-1050+6.25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	1.49E+02	1.26E+00	1.10E-03	9.05E+00	9.96E-03	1.00E+00	5.50E-03	2.32E+02	4.70E+00	1.10E-01	5.63E+00	4.12E+01
CARM-1150 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	8.08E+02	6.84E+00	1.10E-03	4.90E+01	5.40E-02	1.00E+00	5.50E-03	1.25E+03	4.70E+00	1.10E-01	5.63E+00	2.23E+02
CARM-1150+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	2.63E+02	2.23E+00	1.10E-03	1.60E+01	1.76E-02	1.00E+00	5.50E-03	4.09E+02	4.70E+00	1.10E-01	5.63E+00	7.26E+01
CARM-Comp 1 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	2.67E+02	2.26E+00	1.10E-03	1.62E+01	1.78E-02	1.00E+00	5.50E-03	4.14E+02	4.70E+00	1.10E-01	5.63E+00	7.36E+01
																						Maximum HQ (Carbonate Mine)	**2.23E+02**

Notes

1 See Tables 3-1 through 3-13 for ingestion rates, foraging ranges used to calculate the SUF, and body weights.

2 BAFs were calculated by dividing site-collected tissue by collocated soil concentrations (BAFs are in dry weight). The maximum BAF calculated from the Beartrap Creek and Blackfoot River transects was used for site dose calculations. The maximum BAF from the terrestrial reference site was used for reference site dose calculations.

3 The mammal, plant, and invertebrate concentrations were calculated by multiplying the soil concentration by the BAF to generate a tissue concentration (see note 2).

4 Mammal, plant, and invertebrate daily doses were calculated by multiplying the ingestion rate (see note 1) by the tissue concentration (see note 3).

5 Soil concentration from 0 to 6 inches below ground surface at point ID as measured by XRF 10. Doses were not calculated for detected and non-detected soil concentrations measured below the minimum reference site concentration, as indicated by BB. For results that were measured at less than the detection limit, doses were calculated using half of the detection limit.

6 Soil daily dose was calculated by multiplying the soil ingestion rate (see note 1) by soil concentration (see note 5).

7 Total daily dose is calculated using the following equation: total daily dose = ([mammal daily dose (if applicable) + plant daily dose (if applicable) + invertebrate daily dose (if applicable) + soil daily dose]*SUF)/receptor species body weight.

8 The TRVs used in this risk assessment represent a mid-range effects level. The derivation of TRVs is described in Navy (1998).

9 Allometrically adjusted TRVs for birds were calculated using the following equation: receptor species TRV = (test species TRV) x (test species body weight / receptor species body weight)$^{(1-1.2)}$.

10 Allometrically adjusted TRVs for mammals were calculated using the following equation: receptor species TRV = (test species TRV) x (test species body weight / receptor species body weight)$^{(1-0.94)}$.

11 HQs were calculated using the following equation: HQ = total daily dose/allometrically adjusted TRV.

12 Highlighted cells indicate an HQ greater than 1.0.

BAF	Bioaccumulation Factor	mg/day	Milligram per day
BB	Below minimum background reference site concentration	mg/kg	Milligram per kilogram
EE/CA	Engineering Evaluation/Cost Analysis	NA	Not applicable
EU	Exposure Unit	Navy	Department of the Navy
HQ	Hazard quotient	SUF	Site use factor
ID	Identification	TRV	Toxicity reference value
kg	Kilogram	XRF	X-ray fluorescence
kg/day	Kilogram per day	XRF 10	XRF measurements recorded following drying and seiving through a #10-mesh screen

Sources: Department of the Navy. 1998. "Development of Toxicity Reference Values for Conducting Ecological Risk Assessments at Naval Facilities in California, Interim Final." Prepared by Naval Facilities Engineering Command, Engineering Field Activity West (EFA West). San Bruno, California.

TABLE C-4B: CADMIUM DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 4 - CARBONATE MINE WASTE AREA

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 1.09

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[5] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Mourning Dove (Herbivorous Birds - Terrestrial)																							
Reference Site																							
SWGBG-1	5.76E-03	NA	NA	NA	NA	5.76E-03	1.26E+00	1.04E+00	6.01E-03	NA	NA	NA	NA	5.36E-04	8.30E-01	4.45E-04	4.21E-03	1.09E-01	2.49E-04	1.00E+00	1.13E+00	6.27E-01	3.97E-04
SWGBG-2	5.76E-03	NA	NA	NA	NA	5.76E-03	1.26E+00	2.25E+00	1.30E-02	NA	NA	NA	NA	5.36E-04	1.79E+00	9.59E-04	4.21E-03	1.09E-01	5.36E-04	1.00E+00	1.13E+00	6.27E-01	8.56E-04
Carbonate Mine																						**Minimum HQ (Reference Sites)**	**3.97E-04**
CARM-00 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CARM-50 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CARM-50+12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CARM-100 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CARM-100+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.59E+00	1.30E+01	7.50E-02	NA	NA	NA	NA	5.36E-04	8.20E+00	4.39E-03	4.21E-03	1.09E-01	3.06E-03	1.00E+00	1.13E+00	6.27E-01	4.88E-03
CARM-110 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CARM-150 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CARM-150+50 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CARM-200 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CARM-200+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.59E+00	1.51E+01	8.69E-02	NA	NA	NA	NA	5.36E-04	9.50E+00	5.09E-03	4.21E-03	1.09E-01	3.55E-03	1.00E+00	1.13E+00	6.27E-01	5.66E-03
CARM-250 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.59E+00	1.22E+01	7.05E-02	NA	NA	NA	NA	5.36E-04	7.71E+00	4.13E-03	4.21E-03	1.09E-01	2.88E-03	1.00E+00	1.13E+00	6.27E-01	4.59E-03
CARM-300 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CARM-350 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CARM-400 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.59E+00	1.76E+01	1.02E-01	NA	NA	NA	NA	5.36E-04	1.11E+01	5.95E-03	4.21E-03	1.09E-01	4.14E-03	1.00E+00	1.13E+00	6.27E-01	6.61E-03
CARM-500 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CARM-550 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CARM-600 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CARM-650 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CARM-700 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CARM-750 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CARM-800 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CARM-850 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CARM-950 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CARM-1000 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CARM-1050 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CARM-1050+6.25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.59E+00	1.41E+01	8.14E-02	NA	NA	NA	NA	5.36E-04	8.90E+00	4.77E-03	4.21E-03	1.09E-01	3.32E-03	1.00E+00	1.13E+00	6.27E-01	5.30E-03
CARM-1150 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.59E+00	5.45E+00	3.14E-02	NA	NA	NA	NA	5.36E-04	3.43E+00	1.84E-03	4.21E-03	1.09E-01	1.28E-03	1.00E+00	1.13E+00	6.27E-01	2.04E-03
CARM-1150+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CARM-Comp 1 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
																						Maximum HQ (Carbonate Mine)	**6.61E-03**
Red-Tailed Hawk (Carnivorous Birds - Terrestrial)																							
Reference Site																							
SWGBG-1	9.00E-02	9.00E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	8.30E-01	4.26E-03	1.56E-03	1.13E+00	5.87E-06	1.00E+00	1.13E+00	1.00E+00	5.87E-06
SWGBG-2	9.00E-02	9.00E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.79E+00	9.18E-03	1.56E-03	1.13E+00	1.27E-05	1.00E+00	1.13E+00	1.00E+00	1.27E-05
Carbonate Mine																						**Minimum HQ (Reference Sites)**	**5.87E-06**
CARM-00 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CARM-50 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CARM-50+12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CARM-100 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CARM-100+25 (0-6")	9.00E-02	9.00E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	8.20E+00	4.20E-02	1.56E-03	1.13E+00	5.80E-05	1.00E+00	1.13E+00	1.00E+00	5.80E-05
CARM-110 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CARM-150 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CARM-150+50 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CARM-200 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CARM-200+25 (0-6")	9.00E-02	9.00E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	9.50E+00	4.87E-02	1.56E-03	1.13E+00	6.72E-05	1.00E+00	1.13E+00	1.00E+00	6.72E-05
CARM-250 (0-6")	9.00E-02	9.00E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	7.71E+00	3.95E-02	1.56E-03	1.13E+00	5.45E-05	1.00E+00	1.13E+00	1.00E+00	5.45E-05
CARM-300 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CARM-350 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CARM-400 (0-6")	9.00E-02	9.00E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.11E+01	5.69E-02	1.56E-03	1.13E+00	7.85E-05	1.00E+00	1.13E+00	1.00E+00	7.85E-05
CARM-500 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE

TABLE C-4B: CADMIUM DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 4 - CARBONATE MINE WASTE AREA (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 1.09

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[5] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Red-Tailed Hawk (Carnivorous Birds - Terrestrial)																							
CARM-550 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CARM-600 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CARM-650 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CARM-700 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CARM-750 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CARM-800 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CARM-850 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CARM-950 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CARM-1000 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CARM-1050 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CARM-1050+6.25 (0-6")	9.00E-02	9.00E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	8.90E+00	4.56E-02	1.56E-03	1.13E+00	6.30E-05	1.00E+00	1.13E+00	1.00E+00	6.29E-05
CARM-1150 (0-6")	9.00E-02	9.00E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.43E+00	1.76E-02	1.56E-03	1.13E+00	2.43E-05	1.00E+00	1.13E+00	1.00E+00	2.42E-05
CARM-1150+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CARM-Comp 1 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
																					Maximum HQ (Carbonate Mine)		**7.85E-05**
American Kestral (Insectivorous Birds - Terrestrial)																							
Reference Site																							
SWGBG-1	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	7.00E+00	5.81E+00	7.99E-02	7.84E-04	8.30E-01	6.51E-04	4.17E-03	1.24E-01	2.71E-03	1.00E+00	1.13E+00	6.43E-01	4.21E-03
SWGBG-2	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	7.00E+00	1.25E+01	1.72E-01	7.84E-04	1.79E+00	1.40E-03	4.17E-03	1.24E-01	5.84E-03	1.00E+00	1.13E+00	6.43E-01	9.08E-03
Carbonate Mine																						**Minimum HQ (Reference Sites)**	**4.21E-03**
CARM-00 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CARM-50 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CARM-50+12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CARM-100 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CARM-100+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	7.00E+00	5.74E+01	7.90E-01	7.84E-04	8.20E+00	6.43E-03	4.17E-03	1.24E-01	2.67E-02	1.00E+00	1.13E+00	6.43E-01	4.16E-02
CARM-110 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CARM-150 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CARM-150+50 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CARM-200 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CARM-200+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	7.00E+00	6.65E+01	9.15E-01	7.84E-04	9.50E+00	7.45E-03	4.17E-03	1.24E-01	3.10E-02	1.00E+00	1.13E+00	6.43E-01	4.82E-02
CARM-250 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	7.00E+00	5.40E+01	7.43E-01	7.84E-04	7.71E+00	6.05E-03	4.17E-03	1.24E-01	2.51E-02	1.00E+00	1.13E+00	6.43E-01	3.91E-02
CARM-300 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CARM-350 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CARM-400 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	7.00E+00	7.77E+01	1.07E+00	7.84E-04	1.11E+01	8.71E-03	4.17E-03	1.24E-01	3.62E-02	1.00E+00	1.13E+00	6.43E-01	5.63E-02
CARM-500 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CARM-550 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CARM-600 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CARM-650 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CARM-700 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CARM-750 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CARM-800 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CARM-850 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CARM-950 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CARM-1000 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CARM-1050 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CARM-1050+6.25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	7.00E+00	6.23E+01	8.57E-01	7.84E-04	8.90E+00	6.98E-03	4.17E-03	1.24E-01	2.90E-02	1.00E+00	1.13E+00	6.43E-01	4.52E-02
CARM-1150 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	7.00E+00	2.40E+01	3.30E-01	7.84E-04	3.43E+00	2.69E-03	4.17E-03	1.24E-01	1.12E-02	1.00E+00	1.13E+00	6.43E-01	1.74E-02
CARM-1150+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CARM-Comp 1 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
																					Maximum HQ (Carbonate Mine)		**5.63E-02**

TABLE C-4B: CADMIUM DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 4 - CARBONATE MINE WASTE AREA (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 1.09

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[5] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Meadow Vole (Small Herbivorous Mammal - Terrestrial)																							
Reference Site																							
SWGBG-1	4.69E-03	NA	NA	NA	NA	4.69E-03	1.26E+00	1.04E+00	4.89E-03	NA	NA	NA	NA	1.13E-04	8.30E-01	9.34E-05	1.00E+00	3.06E-02	1.63E-01	2.64E+00	3.14E-02	2.64E+00	6.16E-02
SWGBG-2	4.69E-03	NA	NA	NA	NA	4.69E-03	1.26E+00	2.25E+00	1.05E-02	NA	NA	NA	NA	1.13E-04	1.79E+00	2.01E-04	1.00E+00	3.06E-02	3.51E-01	2.64E+00	3.14E-02	2.64E+00	1.33E-01
Carbonate Mine																						**Minimum HQ (Reference Sites)**	**6.16E-02**
CARM-00 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CARM-50 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CARM-50+12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CARM-100 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CARM-100+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.59E+00	1.30E+01	6.11E-02	NA	NA	NA	NA	1.13E-04	8.20E+00	9.23E-04	1.00E+00	3.06E-02	2.03E+00	2.64E+00	3.14E-02	2.64E+00	7.66E-01
CARM-110 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CARM-150 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CARM-150+50 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CARM-200 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CARM-200+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.59E+00	1.51E+01	7.07E-02	NA	NA	NA	NA	1.13E-04	9.50E+00	1.07E-03	1.00E+00	3.06E-02	2.35E+00	2.64E+00	3.14E-02	2.64E+00	8.88E-01
CARM-250 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.59E+00	1.22E+01	5.74E-02	NA	NA	NA	NA	1.13E-04	7.71E+00	8.68E-04	1.00E+00	3.06E-02	1.90E+00	2.64E+00	3.14E-02	2.64E+00	7.20E-01
CARM-300 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CARM-350 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CARM-400 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.59E+00	1.76E+01	8.27E-02	NA	NA	NA	NA	1.13E-04	1.11E+01	1.25E-03	1.00E+00	3.06E-02	2.74E+00	2.64E+00	3.14E-02	2.64E+00	1.04E+00
CARM-500 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CARM-550 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CARM-600 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CARM-650 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CARM-700 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CARM-750 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CARM-800 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CARM-850 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CARM-950 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CARM-1000 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CARM-1050 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CARM-1050+6.25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.59E+00	1.41E+01	6.63E-02	NA	NA	NA	NA	1.13E-04	8.90E+00	1.00E-03	1.00E+00	3.06E-02	2.20E+00	2.64E+00	3.14E-02	2.64E+00	8.31E-01
CARM-1150 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.59E+00	5.45E+00	2.55E-02	NA	NA	NA	NA	1.13E-04	3.43E+00	3.86E-04	1.00E+00	3.06E-02	8.47E-01	2.64E+00	3.14E-02	2.64E+00	3.20E-01
CARM-1150+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CARM-Comp 1 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
																						Maximum HQ (Carbonate Mine)	**1.04E+00**
White-Tailed Deer (Large Herbivorous Mammal - Terrestrial)																							
Reference Site																							
SWGBG-1	1.43E+00	NA	NA	NA	NA	1.43E+00	1.26E+00	1.04E+00	1.49E+00	NA	NA	NA	NA	2.86E-02	8.30E-01	2.38E-02	6.10E-03	1.35E+02	6.85E-05	2.64E+00	3.14E-02	1.60E+00	4.29E-05
SWGBG-2	1.43E+00	NA	NA	NA	NA	1.43E+00	1.26E+00	2.25E+00	3.22E+00	NA	NA	NA	NA	2.86E-02	1.79E+00	5.13E-02	6.10E-03	1.35E+02	1.48E-04	2.64E+00	3.14E-02	1.60E+00	9.24E-05
Carbonate Mine																						**Minimum HQ (Reference Sites)**	**4.29E-05**
CARM-00 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CARM-50 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CARM-50+12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CARM-100 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CARM-100+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.59E+00	1.30E+01	1.86E+01	NA	NA	NA	NA	2.86E-02	8.20E+00	2.35E-01	6.10E-03	1.35E+02	8.53E-04	2.64E+00	3.14E-02	1.60E+00	5.34E-04
CARM-110 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CARM-150 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CARM-150+50 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CARM-200 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CARM-200+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.59E+00	1.51E+01	2.16E+01	NA	NA	NA	NA	2.86E-02	9.50E+00	2.72E-01	6.10E-03	1.35E+02	9.88E-04	2.64E+00	3.14E-02	1.60E+00	6.18E-04
CARM-250 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.59E+00	1.22E+01	1.75E+01	NA	NA	NA	NA	2.86E-02	7.71E+00	2.21E-01	6.10E-03	1.35E+02	8.02E-04	2.64E+00	3.14E-02	1.60E+00	5.02E-04
CARM-300 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CARM-350 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CARM-400 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.59E+00	1.76E+01	2.52E+01	NA	NA	NA	NA	2.86E-02	1.11E+01	3.18E-01	6.10E-03	1.35E+02	1.15E-03	2.64E+00	3.14E-02	1.60E+00	7.22E-04
CARM-500 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE

TABLE C-4B: CADMIUM DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 4 - CARBONATE MINE WASTE AREA (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 1.09

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[5] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
White-Tailed Deer (Large Herbivorous Mammal - Terrestrial)																							
CARM-550 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CARM-600 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CARM-650 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CARM-700 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CARM-750 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CARM-800 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CARM-850 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CARM-950 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CARM-1000 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CARM-1050 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CARM-1050+6.25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.59E+00	1.41E+01	2.02E+01	NA	NA	NA	NA	2.86E-02	8.90E+00	2.55E-01	6.10E-03	1.35E+02	9.25E-04	2.64E+00	3.14E-02	1.60E+00	5.79E-04
CARM-1150 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.59E+00	5.45E+00	7.80E+00	NA	NA	NA	NA	2.86E-02	3.43E+00	9.82E-02	6.10E-03	1.35E+02	3.57E-04	2.64E+00	3.14E-02	1.60E+00	2.23E-04
CARM-1150+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CARM-Comp 1 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
																					Maximum HQ (Carbonate Mine)		**7.22E-04**
Red Fox (Carnivorous Mammal - Terrestrial)																							
Reference Site																							
SWGBG-1	1.72E-01	1.72E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	8.30E-01	3.99E-03	8.05E-04	4.54E+00	7.08E-07	2.64E+00	3.14E-02	1.96E+00	3.61E-07
SWGBG-2	1.72E-01	1.72E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.79E+00	8.60E-03	8.05E-04	4.54E+00	1.53E-06	2.64E+00	3.14E-02	1.96E+00	7.79E-07
Carbonate Mine																						**Minimum HQ (Reference Sites)**	**3.61E-07**
CARM-00 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CARM-50 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CARM-50+12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CARM-100 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CARM-100+25 (0-6")	1.72E-01	1.72E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	8.20E+00	3.94E-02	8.05E-04	4.54E+00	6.99E-06	2.64E+00	3.14E-02	1.96E+00	3.57E-06
CARM-110 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CARM-150 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CARM-150+50 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CARM-200 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CARM-200+25 (0-6")	1.72E-01	1.72E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	9.50E+00	4.56E-02	8.05E-04	4.54E+00	8.10E-06	2.64E+00	3.14E-02	1.96E+00	4.14E-06
CARM-250 (0-6")	1.72E-01	1.72E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	7.71E+00	3.70E-02	8.05E-04	4.54E+00	6.57E-06	2.64E+00	3.14E-02	1.96E+00	3.36E-06
CARM-300 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CARM-350 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CARM-400 (0-6")	1.72E-01	1.72E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.11E+01	5.33E-02	8.05E-04	4.54E+00	9.47E-06	2.64E+00	3.14E-02	1.96E+00	4.83E-06
CARM-500 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CARM-550 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CARM-600 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CARM-650 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CARM-700 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CARM-750 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CARM-800 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CARM-850 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CARM-950 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CARM-1000 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CARM-1050 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CARM-1050+6.25 (0-6")	1.72E-01	1.72E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	8.90E+00	4.28E-02	8.05E-04	4.54E+00	7.59E-06	2.64E+00	3.14E-02	1.96E+00	3.87E-06
CARM-1150 (0-6")	1.72E-01	1.72E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.43E+00	1.65E-02	8.05E-04	4.54E+00	2.92E-06	2.64E+00	3.14E-02	1.96E+00	1.49E-06
CARM-1150+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CARM-Comp 1 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
																					Maximum HQ (Carbonate Mine)		**4.83E-06**

TABLE C-4B: CADMIUM DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 4 - CARBONATE MINE WASTE AREA (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 1.09

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[5] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Masked Shrew (Omnivorous Mammal - Terrestrial, Wetland)																							
Reference Site																							
SWGBG-1	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	7.00E+00	5.81E+00	4.92E-02	1.10E-03	8.30E-01	9.14E-04	1.00E+00	5.50E-03	9.11E+00	2.64E+00	3.14E-02	2.93E+00	3.11E+00
SWGBG-2	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	7.00E+00	1.25E+01	1.06E-01	1.10E-03	1.79E+00	1.97E-03	1.00E+00	5.50E-03	1.97E+01	2.64E+00	3.14E-02	2.93E+00	6.71E+00
Carbonate Mine																						**Minimum HQ (Reference Sites)**	**3.11E+00**
CARM-00 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CARM-50 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CARM-50+12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CARM-100 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CARM-100+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	7.00E+00	5.74E+01	4.86E-01	1.10E-03	8.20E+00	9.03E-03	1.00E+00	5.50E-03	9.00E+01	2.64E+00	3.14E-02	2.93E+00	3.07E+01
CARM-110 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CARM-150 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CARM-150+50 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CARM-200 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CARM-200+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	7.00E+00	6.65E+01	5.63E-01	1.10E-03	9.50E+00	1.05E-02	1.00E+00	5.50E-03	1.04E+02	2.64E+00	3.14E-02	2.93E+00	3.56E+01
CARM-250 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	7.00E+00	5.40E+01	4.57E-01	1.10E-03	7.71E+00	8.49E-03	1.00E+00	5.50E-03	8.46E+01	2.64E+00	3.14E-02	2.93E+00	2.89E+01
CARM-300 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CARM-350 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CARM-400 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	7.00E+00	7.77E+01	6.58E-01	1.10E-03	1.11E+01	1.22E-02	1.00E+00	5.50E-03	1.22E+02	2.64E+00	3.14E-02	2.93E+00	4.16E+01
CARM-500 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CARM-550 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CARM-600 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CARM-650 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CARM-700 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CARM-750 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CARM-800 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CARM-850 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CARM-950 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CARM-1000 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CARM-1050 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CARM-1050+6.25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	7.00E+00	6.23E+01	5.28E-01	1.10E-03	8.90E+00	9.80E-03	1.00E+00	5.50E-03	9.77E+01	2.64E+00	3.14E-02	2.93E+00	3.33E+01
CARM-1150 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	7.00E+00	2.40E+01	2.03E-01	1.10E-03	3.43E+00	3.78E-03	1.00E+00	5.50E-03	3.77E+01	2.64E+00	3.14E-02	2.93E+00	1.28E+01
CARM-1150+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CARM-Comp 1 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
																						Maximum HQ (Carbonate Mine)	**4.16E+01**

Notes

1 See Tables 3-1 through 3-13 for ingestion rates, foraging ranges used to calculate the SUF, and body weights.

2 BAFs were calculated by dividing site-collected tissue by collocated soil concentrations (BAFs are in dry weight). The maximum BAF calculated from the Beartrap Creek and Blackfoot River transects was used for site dose calculations. The maximum BAF from the terrestrial reference site was used for reference site dose calculations.

3 The mammal, plant, and invertebrate concentrations were calculated by multiplying the soil concentration by the BAF to generate a tissue concentration (see note 2).

4 Mammal, plant, and invertebrate daily doses were calculated by multiplying the ingestion rate (see note 1) by the tissue concentration (see note 3).

5 Soil concentration from 0 to 6 inches below ground surface at point ID from laboratory analysis. XRF 10 data were unavailable for cadmium. Doses were not calculated for detected and non-detected soil concentrations measured below the minimum reference site concentration, as indicated by BB. For results that were measured at less than the detection limit, doses were calculated using half of the detection limit.

6 Soil daily dose was calculated by multiplying the soil ingestion rate (see note 1) by soil concentration (see note 5).

7 Total daily dose is calculated using the following equation: total daily dose = ([mammal daily dose (if applicable) + plant daily dose (if applicable) + invertebrate daily dose (if applicable) + soil daily dose]*SUF)/receptor species body weight.

8 The TRVs used in this risk assessment represent a mid-range effects level. The derivation of TRVs is described in Navy (1998) and DTSC (2009).

9 Allometrically adjusted TRVs for birds were calculated using the following equation: receptor species TRV = (test species TRV) x (test species body weight / receptor species body weight)$^{(1-1.2)}$.

10 Allometrically adjusted TRVs for mammals were calculated using the following equation: receptor species TRV = (test species TRV) x (test species body weight / receptor species body weight)$^{(1-0.94)}$.

11 HQs were calculated using the following equation: HQ = total daily dose/allometrically adjusted TRV.

12 Highlighted cells indicate an HQ greater than 1.0.

BAF	Bioaccumulation Factor	mg/day	Milligram per day
BB	Below minimum background reference site concentration	mg/kg	Milligram per kilogram
DTSC	California Department of Toxic Substances Control	NA	Not applicable
EE/CA	Engineering Evaluation/Cost Analysis	Navy	Department of the Navy
EU	Exposure Unit	NE	Not evaluated (no data for that point ID)
HQ	Hazard quotient	SUF	Site use factor
ID	Identification	TRV	Toxicity reference value
kg	Kilogram	XRF	X-ray fluorescence
kg/day	Kilogram per day	XRF 10	XRF measurements recorded following drying and seiving through a #10-mesh screen

Sources: Department of the Navy. 1998. "Development of Toxicity Reference Values for Conducting Ecological Risk Assessments at Naval Facilities in California, Interim Final." Prepared by Naval Facilities Engineering Command, Engineering Field Activity West (EFA West). San Bruno, California.

DTSC. 2009. HERD Ecological Risk Assessment Note 6. February. Available on-line at: http://www.dtsc.ca.gov/AssessingRisk/upload/CdEconote_Final.pdf.

TABLE C-4C: COPPER DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 4 - CARBONATE MINE WASTE AREA

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 1.09

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Mourning Dove (Herbivorous Birds - Terrestrial)																							
Reference Site																							
SWGBG-1	5.76E-03	NA	NA	NA	NA	5.76E-03	7.79E-01	2.30E+01	1.32E-01	NA	NA	NA	NA	5.36E-04	2.95E+01	1.58E-02	4.21E-03	1.09E-01	5.72E-03	5.23E+01	4.09E-01	4.01E+01	1.42E-04
SWGBG-2	5.76E-03	NA	NA	NA	NA	5.76E-03	7.79E-01	3.74E+01	2.16E-01	NA	NA	NA	NA	5.36E-04	4.80E+01	2.57E-02	4.21E-03	1.09E-01	9.30E-03	5.23E+01	4.09E-01	4.01E+01	2.32E-04
Carbonate Mine																						**Minimum HQ (Reference Sites)**	**1.42E-04**
CARM-00 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	1.30E+02	7.47E-01	NA	NA	NA	NA	5.36E-04	1.15E+02	6.14E-02	4.21E-03	1.09E-01	3.11E-02	5.23E+01	4.09E-01	4.01E+01	7.76E-04
CARM-50 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	3.74E+02	2.15E+00	NA	NA	NA	NA	5.36E-04	3.30E+02	1.77E-01	4.21E-03	1.09E-01	8.98E-02	5.23E+01	4.09E-01	4.01E+01	2.24E-03
CARM-50+12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	4.37E+02	2.52E+00	NA	NA	NA	NA	5.36E-04	3.86E+02	2.07E-01	4.21E-03	1.09E-01	1.05E-01	5.23E+01	4.09E-01	4.01E+01	2.62E-03
CARM-100 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	4.67E+02	2.69E+00	NA	NA	NA	NA	5.36E-04	4.13E+02	2.21E-01	4.21E-03	1.09E-01	1.12E-01	5.23E+01	4.09E-01	4.01E+01	2.80E-03
CARM-100+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	4.88E+02	2.81E+00	NA	NA	NA	NA	5.36E-04	4.31E+02	2.31E-01	4.21E-03	1.09E-01	1.17E-01	5.23E+01	4.09E-01	4.01E+01	2.92E-03
CARM-110 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	5.53E+02	3.19E+00	NA	NA	NA	NA	5.36E-04	4.89E+02	2.62E-01	4.21E-03	1.09E-01	1.33E-01	5.23E+01	4.09E-01	4.01E+01	3.31E-03
CARM-150 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	4.27E+02	2.46E+00	NA	NA	NA	NA	5.36E-04	3.77E+02	2.02E-01	4.21E-03	1.09E-01	1.02E-01	5.23E+01	4.09E-01	4.01E+01	2.55E-03
CARM-150+50 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	3.29E+02	1.90E+00	NA	NA	NA	NA	5.36E-04	2.91E+02	1.56E-01	4.21E-03	1.09E-01	7.91E-02	5.23E+01	4.09E-01	4.01E+01	1.97E-03
CARM-200 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	4.43E+02	2.55E+00	NA	NA	NA	NA	5.36E-04	3.91E+02	2.10E-01	4.21E-03	1.09E-01	1.06E-01	5.23E+01	4.09E-01	4.01E+01	2.65E-03
CARM-200+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	6.16E+02	3.55E+00	NA	NA	NA	NA	5.36E-04	5.44E+02	2.91E-01	4.21E-03	1.09E-01	1.48E-01	5.23E+01	4.09E-01	4.01E+01	3.69E-03
CARM-250 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	3.72E+02	2.15E+00	NA	NA	NA	NA	5.36E-04	3.29E+02	1.76E-01	4.21E-03	1.09E-01	8.95E-02	5.23E+01	4.09E-01	4.01E+01	2.23E-03
CARM-300 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	5.56E+02	3.20E+00	NA	NA	NA	NA	5.36E-04	4.91E+02	2.63E-01	4.21E-03	1.09E-01	1.34E-01	5.23E+01	4.09E-01	4.01E+01	3.33E-03
CARM-350 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	5.51E+02	3.17E+00	NA	NA	NA	NA	5.36E-04	4.87E+02	2.61E-01	4.21E-03	1.09E-01	1.32E-01	5.23E+01	4.09E-01	4.01E+01	3.30E-03
CARM-400 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	6.21E+02	3.58E+00	NA	NA	NA	NA	5.36E-04	5.49E+02	2.94E-01	4.21E-03	1.09E-01	1.49E-01	5.23E+01	4.09E-01	4.01E+01	3.72E-03
CARM-500 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CARM-550 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	2.44E+02	1.41E+00	NA	NA	NA	NA	5.36E-04	2.16E+02	1.16E-01	4.21E-03	1.09E-01	5.87E-02	5.23E+01	4.09E-01	4.01E+01	1.46E-03
CARM-600 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	5.62E+02	3.24E+00	NA	NA	NA	NA	5.36E-04	4.97E+02	2.66E-01	4.21E-03	1.09E-01	1.35E-01	5.23E+01	4.09E-01	4.01E+01	3.36E-03
CARM-650 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	1.85E+01	1.06E-01	NA	NA	NA	NA	5.36E-04	1.63E+01	8.74E-03	4.21E-03	1.09E-01	4.44E-03	5.23E+01	4.09E-01	4.01E+01	1.11E-04
CARM-700 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	9.11E+01	5.25E-01	NA	NA	NA	NA	5.36E-04	8.05E+01	4.31E-02	4.21E-03	1.09E-01	2.19E-02	5.23E+01	4.09E-01	4.01E+01	5.45E-04
CARM-750 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	1.08E+02	6.22E-01	NA	NA	NA	NA	5.36E-04	9.54E+01	5.11E-02	4.21E-03	1.09E-01	2.59E-02	5.23E+01	4.09E-01	4.01E+01	6.47E-04
CARM-800 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	7.25E+02	4.18E+00	NA	NA	NA	NA	5.36E-04	6.41E+02	3.43E-01	4.21E-03	1.09E-01	1.74E-01	5.23E+01	4.09E-01	4.01E+01	4.34E-03
CARM-850 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	1.06E+02	6.11E-01	NA	NA	NA	NA	5.36E-04	9.37E+01	5.02E-02	4.21E-03	1.09E-01	2.55E-02	5.23E+01	4.09E-01	4.01E+01	6.35E-04
CARM-950 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	1.51E+02	8.71E-01	NA	NA	NA	NA	5.36E-04	1.34E+02	7.16E-02	4.21E-03	1.09E-01	3.63E-02	5.23E+01	4.09E-01	4.01E+01	9.05E-04
CARM-1000 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	1.92E+02	1.11E+00	NA	NA	NA	NA	5.36E-04	1.70E+02	9.09E-02	4.21E-03	1.09E-01	4.61E-02	5.23E+01	4.09E-01	4.01E+01	1.15E-03
CARM-1050 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	3.39E+02	1.95E+00	NA	NA	NA	NA	5.36E-04	2.99E+02	1.60E-01	4.21E-03	1.09E-01	8.14E-02	5.23E+01	4.09E-01	4.01E+01	2.03E-03
CARM-1050+6.25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	3.03E+02	1.75E+00	NA	NA	NA	NA	5.36E-04	2.68E+02	1.44E-01	4.21E-03	1.09E-01	7.29E-02	5.23E+01	4.09E-01	4.01E+01	1.82E-03
CARM-1150 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	5.12E+02	2.95E+00	NA	NA	NA	NA	5.36E-04	4.52E+02	2.42E-01	4.21E-03	1.09E-01	1.23E-01	5.23E+01	4.09E-01	4.01E+01	3.06E-03
CARM-1150+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	6.50E+02	3.74E+00	NA	NA	NA	NA	5.36E-04	5.74E+02	3.08E-01	4.21E-03	1.09E-01	1.56E-01	5.23E+01	4.09E-01	4.01E+01	3.89E-03
CARM-Comp 1 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	6.46E+02	3.72E+00	NA	NA	NA	NA	5.36E-04	5.71E+02	3.06E-01	4.21E-03	1.09E-01	1.55E-01	5.23E+01	4.09E-01	4.01E+01	3.87E-03
																						Maximum HQ (Carbonate Mine)	**4.34E-03**
Red-Tailed Hawk (Carnivorous Birds - Terrestrial)																							
Reference Site																							
SWGBG-1	9.00E-02	9.00E-02	6.61E-01	1.95E+01	1.76E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.95E+01	1.51E-01	1.56E-03	1.13E+00	2.63E-03	5.23E+01	4.09E-01	6.41E+01	4.10E-05
SWGBG-2	9.00E-02	9.00E-02	6.61E-01	3.17E+01	2.85E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.80E+01	2.46E-01	1.56E-03	1.13E+00	4.28E-03	5.23E+01	4.09E-01	6.41E+01	6.68E-05
Carbonate Mine																						**Minimum HQ (Reference Sites)**	**4.10E-05**
CARM-00 (0-6")	9.00E-02	9.00E-02	1.01E+00	1.16E+02	1.04E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.15E+02	5.87E-01	1.56E-03	1.13E+00	1.52E-02	5.23E+01	4.09E-01	6.41E+01	2.37E-04
CARM-50 (0-6")	9.00E-02	9.00E-02	1.01E+00	3.33E+02	3.00E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.30E+02	1.69E+00	1.56E-03	1.13E+00	4.37E-02	5.23E+01	4.09E-01	6.41E+01	6.82E-04
CARM-50+12.5 (0-6")	9.00E-02	9.00E-02	1.01E+00	3.90E+02	3.51E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.86E+02	1.98E+00	1.56E-03	1.13E+00	5.12E-02	5.23E+01	4.09E-01	6.41E+01	7.99E-04
CARM-100 (0-6")	9.00E-02	9.00E-02	1.01E+00	4.17E+02	3.75E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.13E+02	2.12E+00	1.56E-03	1.13E+00	5.47E-02	5.23E+01	4.09E-01	6.41E+01	8.53E-04
CARM-100+25 (0-6")	9.00E-02	9.00E-02	1.01E+00	4.35E+02	3.92E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.31E+02	2.21E+00	1.56E-03	1.13E+00	5.71E-02	5.23E+01	4.09E-01	6.41E+01	8.91E-04
CARM-110 (0-6")	9.00E-02	9.00E-02	1.01E+00	4.94E+02	4.44E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.89E+02	2.51E+00	1.56E-03	1.13E+00	6.47E-02	5.23E+01	4.09E-01	6.41E+01	1.01E-03
CARM-150 (0-6")	9.00E-02	9.00E-02	1.01E+00	3.81E+02	3.43E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.77E+02	1.93E+00	1.56E-03	1.13E+00	4.99E-02	5.23E+01	4.09E-01	6.41E+01	7.79E-04
CARM-150+50 (0-6")	9.00E-02	9.00E-02	1.01E+00	2.94E+02	2.64E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.91E+02	1.49E+00	1.56E-03	1.13E+00	3.85E-02	5.23E+01	4.09E-01	6.41E+01	6.01E-04
CARM-200 (0-6")	9.00E-02	9.00E-02	1.01E+00	3.95E+02	3.56E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.91E+02	2.01E+00	1.56E-03	1.13E+00	5.18E-02	5.23E+01	4.09E-01	6.41E+01	8.09E-04
CARM-200+25 (0-6")	9.00E-02	9.00E-02	1.01E+00	5.50E+02	4.94E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.44E+02	2.79E+00	1.56E-03	1.13E+00	7.20E-02	5.23E+01	4.09E-01	6.41E+01	1.12E-03
CARM-250 (0-6")	9.00E-02	9.00E-02	1.01E+00	3.32E+02	2.99E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.29E+02	1.69E+00	1.56E-03	1.13E+00	4.36E-02	5.23E+01	4.09E-01	6.41E+01	6.80E-04
CARM-300 (0-6")	9.00E-02	9.00E-02	1.01E+00	4.96E+02	4.46E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.91E+02	2.52E+00	1.56E-03	1.13E+00	6.51E-02	5.23E+01	4.09E-01	6.41E+01	1.02E-03
CARM-350 (0-6")	9.00E-02	9.00E-02	1.01E+00	4.92E+02	4.42E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.87E+02	2.50E+00	1.56E-03	1.13E+00	6.45E-02	5.23E+01	4.09E-01	6.41E+01	1.01E-03
CARM-400 (0-6")	9.00E-02	9.00E-02	1.01E+00	5.54E+02	4.98E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.49E+02	2.81E+00	1.56E-03	1.13E+00	7.26E-02	5.23E+01	4.09E-01	6.41E+01	1.13E-03
CARM-500 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB

TABLE C-4C: COPPER DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 4 - CARBONATE MINE WASTE AREA (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 1.09

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Red-Tailed Hawk (Carnivorous Birds - Terrestrial)																							
CARM-550 (0-6")	9.00E-02	9.00E-02	1.01E+00	2.18E+02	1.96E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.16E+02	1.11E+00	1.56E-03	1.13E+00	2.86E-02	5.23E+01	4.09E-01	6.41E+01	4.46E-04
CARM-600 (0-6")	9.00E-02	9.00E-02	1.01E+00	5.02E+02	4.51E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.97E+02	2.55E+00	1.56E-03	1.13E+00	6.58E-02	5.23E+01	4.09E-01	6.41E+01	1.03E-03
CARM-650 (0-6")	9.00E-02	9.00E-02	1.01E+00	1.65E+01	1.48E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.63E+01	8.36E-02	1.56E-03	1.13E+00	2.16E-03	5.23E+01	4.09E-01	6.41E+01	3.37E-05
CARM-700 (0-6")	9.00E-02	9.00E-02	1.01E+00	8.13E+01	7.32E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	8.05E+01	4.13E-01	1.56E-03	1.13E+00	1.07E-02	5.23E+01	4.09E-01	6.41E+01	1.66E-04
CARM-750 (0-6")	9.00E-02	9.00E-02	1.01E+00	9.64E+01	8.67E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	9.54E+01	4.89E-01	1.56E-03	1.13E+00	1.26E-02	5.23E+01	4.09E-01	6.41E+01	1.97E-04
CARM-800 (0-6")	9.00E-02	9.00E-02	1.01E+00	6.48E+02	5.83E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	6.41E+02	3.29E+00	1.56E-03	1.13E+00	8.49E-02	5.23E+01	4.09E-01	6.41E+01	1.32E-03
CARM-850 (0-6")	9.00E-02	9.00E-02	1.01E+00	9.46E+01	8.51E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	9.37E+01	4.80E-01	1.56E-03	1.13E+00	1.24E-02	5.23E+01	4.09E-01	6.41E+01	1.94E-04
CARM-950 (0-6")	9.00E-02	9.00E-02	1.01E+00	1.35E+02	1.21E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.34E+02	6.85E-01	1.56E-03	1.13E+00	1.77E-02	5.23E+01	4.09E-01	6.41E+01	2.76E-04
CARM-1000 (0-6")	9.00E-02	9.00E-02	1.01E+00	1.71E+02	1.54E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.70E+02	8.70E-01	1.56E-03	1.13E+00	2.25E-02	5.23E+01	4.09E-01	6.41E+01	3.51E-04
CARM-1050 (0-6")	9.00E-02	9.00E-02	1.01E+00	3.02E+02	2.72E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.99E+02	1.53E+00	1.56E-03	1.13E+00	3.96E-02	5.23E+01	4.09E-01	6.41E+01	6.18E-04
CARM-1050+6.25 (0-6")	9.00E-02	9.00E-02	1.01E+00	2.71E+02	2.44E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.68E+02	1.37E+00	1.56E-03	1.13E+00	3.55E-02	5.23E+01	4.09E-01	6.41E+01	5.54E-04
CARM-1150 (0-6")	9.00E-02	9.00E-02	1.01E+00	4.57E+02	4.11E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.52E+02	2.32E+00	1.56E-03	1.13E+00	5.99E-02	5.23E+01	4.09E-01	6.41E+01	9.35E-04
CARM-1150+25 (0-6")	9.00E-02	9.00E-02	1.01E+00	5.80E+02	5.22E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.74E+02	2.94E+00	1.56E-03	1.13E+00	7.61E-02	5.23E+01	4.09E-01	6.41E+01	1.19E-03
CARM-Comp 1 (0-6")	9.00E-02	9.00E-02	1.01E+00	5.77E+02	5.19E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.71E+02	2.93E+00	1.56E-03	1.13E+00	7.56E-02	5.23E+01	4.09E-01	6.41E+01	1.18E-03
																						Maximum HQ (Carbonate Mine)	**1.32E-03**
American Kestral (Insectivorous Birds - Terrestrial)																							
Reference Site																							
SWGBG-1	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	3.70E+00	1.09E+02	1.51E+00	7.84E-04	2.95E+01	2.32E-02	4.17E-03	1.24E-01	5.13E-02	5.23E+01	4.09E-01	4.12E+01	1.25E-03
SWGBG-2	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	3.70E+00	1.78E+02	2.45E+00	7.84E-04	4.80E+01	3.77E-02	4.17E-03	1.24E-01	8.35E-02	5.23E+01	4.09E-01	4.12E+01	2.03E-03
Carbonate Mine																						**Minimum HQ (Reference Sites)**	**1.25E-03**
CARM-00 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	5.55E+02	7.64E+00	7.84E-04	1.15E+02	8.98E-02	4.17E-03	1.24E-01	2.60E-01	5.23E+01	4.09E-01	4.12E+01	6.31E-03
CARM-50 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	1.60E+03	2.20E+01	7.84E-04	3.30E+02	2.59E-01	4.17E-03	1.24E-01	7.49E-01	5.23E+01	4.09E-01	4.12E+01	1.82E-02
CARM-50+12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	1.87E+03	2.58E+01	7.84E-04	3.86E+02	3.03E-01	4.17E-03	1.24E-01	8.76E-01	5.23E+01	4.09E-01	4.12E+01	2.13E-02
CARM-100 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	2.00E+03	2.75E+01	7.84E-04	4.13E+02	3.24E-01	4.17E-03	1.24E-01	9.36E-01	5.23E+01	4.09E-01	4.12E+01	2.27E-02
CARM-100+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	2.09E+03	2.88E+01	7.84E-04	4.31E+02	3.38E-01	4.17E-03	1.24E-01	9.78E-01	5.23E+01	4.09E-01	4.12E+01	2.38E-02
CARM-110 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	2.37E+03	3.26E+01	7.84E-04	4.89E+02	3.83E-01	4.17E-03	1.24E-01	1.11E+00	5.23E+01	4.09E-01	4.12E+01	2.69E-02
CARM-150 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	1.83E+03	2.52E+01	7.84E-04	3.77E+02	2.96E-01	4.17E-03	1.24E-01	8.55E-01	5.23E+01	4.09E-01	4.12E+01	2.08E-02
CARM-150+50 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	1.41E+03	1.94E+01	7.84E-04	2.91E+02	2.28E-01	4.17E-03	1.24E-01	6.60E-01	5.23E+01	4.09E-01	4.12E+01	1.60E-02
CARM-200 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	1.90E+03	2.61E+01	7.84E-04	3.91E+02	3.07E-01	4.17E-03	1.24E-01	8.88E-01	5.23E+01	4.09E-01	4.12E+01	2.16E-02
CARM-200+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	2.64E+03	3.63E+01	7.84E-04	5.44E+02	4.27E-01	4.17E-03	1.24E-01	1.23E+00	5.23E+01	4.09E-01	4.12E+01	3.00E-02
CARM-250 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	1.60E+03	2.20E+01	7.84E-04	3.29E+02	2.58E-01	4.17E-03	1.24E-01	7.46E-01	5.23E+01	4.09E-01	4.12E+01	1.81E-02
CARM-300 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	2.38E+03	3.28E+01	7.84E-04	4.91E+02	3.85E-01	4.17E-03	1.24E-01	1.11E+00	5.23E+01	4.09E-01	4.12E+01	2.71E-02
CARM-350 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	2.36E+03	3.25E+01	7.84E-04	4.87E+02	3.82E-01	4.17E-03	1.24E-01	1.10E+00	5.23E+01	4.09E-01	4.12E+01	2.68E-02
CARM-400 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	2.66E+03	3.66E+01	7.84E-04	5.49E+02	4.30E-01	4.17E-03	1.24E-01	1.24E+00	5.23E+01	4.09E-01	4.12E+01	3.02E-02
CARM-500 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CARM-550 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	1.05E+03	1.44E+01	7.84E-04	2.16E+02	1.69E-01	4.17E-03	1.24E-01	4.90E-01	5.23E+01	4.09E-01	4.12E+01	1.19E-02
CARM-600 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	2.41E+03	3.31E+01	7.84E-04	4.97E+02	3.89E-01	4.17E-03	1.24E-01	1.13E+00	5.23E+01	4.09E-01	4.12E+01	2.74E-02
CARM-650 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	7.91E+01	1.09E+00	7.84E-04	1.63E+01	1.28E-02	4.17E-03	1.24E-01	3.70E-02	5.23E+01	4.09E-01	4.12E+01	8.99E-04
CARM-700 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	3.90E+02	5.37E+00	7.84E-04	8.05E+01	6.31E-02	4.17E-03	1.24E-01	1.83E-01	5.23E+01	4.09E-01	4.12E+01	4.44E-03
CARM-750 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	4.63E+02	6.37E+00	7.84E-04	9.54E+01	7.48E-02	4.17E-03	1.24E-01	2.16E-01	5.23E+01	4.09E-01	4.12E+01	5.26E-03
CARM-800 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	3.11E+03	4.28E+01	7.84E-04	6.41E+02	5.03E-01	4.17E-03	1.24E-01	1.45E+00	5.23E+01	4.09E-01	4.12E+01	3.53E-02
CARM-850 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	4.54E+02	6.25E+00	7.84E-04	9.37E+01	7.35E-02	4.17E-03	1.24E-01	2.13E-01	5.23E+01	4.09E-01	4.12E+01	5.16E-03
CARM-950 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	6.48E+02	8.91E+00	7.84E-04	1.34E+02	1.05E-01	4.17E-03	1.24E-01	3.03E-01	5.23E+01	4.09E-01	4.12E+01	7.36E-03
CARM-1000 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	8.23E+02	1.13E+01	7.84E-04	1.70E+02	1.33E-01	4.17E-03	1.24E-01	3.85E-01	5.23E+01	4.09E-01	4.12E+01	9.35E-03
CARM-1050 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	1.45E+03	2.00E+01	7.84E-04	2.99E+02	2.35E-01	4.17E-03	1.24E-01	6.79E-01	5.23E+01	4.09E-01	4.12E+01	1.65E-02
CARM-1050+6.25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	1.30E+03	1.79E+01	7.84E-04	2.68E+02	2.10E-01	4.17E-03	1.24E-01	6.08E-01	5.23E+01	4.09E-01	4.12E+01	1.48E-02
CARM-1150 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	2.19E+03	3.02E+01	7.84E-04	4.52E+02	3.55E-01	4.17E-03	1.24E-01	1.03E+00	5.23E+01	4.09E-01	4.12E+01	2.49E-02
CARM-1150+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	2.79E+03	3.83E+01	7.84E-04	5.74E+02	4.50E-01	4.17E-03	1.24E-01	1.30E+00	5.23E+01	4.09E-01	4.12E+01	3.16E-02
CARM-Comp 1 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	2.77E+03	3.81E+01	7.84E-04	5.71E+02	4.48E-01	4.17E-03	1.24E-01	1.30E+00	5.23E+01	4.09E-01	4.12E+01	3.15E-02
																						Maximum HQ (Carbonate Mine)	**3.53E-02**

TABLE C-4C: COPPER DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 4 - CARBONATE MINE WASTE AREA (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 1.09

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Meadow Vole (Small Herbivorous Mammal - Terrestrial)																							
Reference Site																							
SWGBG-1	4.69E-03	NA	NA	NA	NA	4.69E-03	7.79E-01	2.30E+01	1.08E-01	NA	NA	NA	NA	1.13E-04	2.95E+01	3.32E-03	1.00E+00	3.06E-02	3.63E+00	6.32E+02	2.47E-02	6.24E+02	5.83E-03
SWGBG-2	4.69E-03	NA	NA	NA	NA	4.69E-03	7.79E-01	3.74E+01	1.75E-01	NA	NA	NA	NA	1.13E-04	4.80E+01	5.40E-03	1.00E+00	3.06E-02	5.91E+00	6.32E+02	2.47E-02	6.24E+02	9.48E-03
Carbonate Mine																						**Minimum HQ (Reference Sites)**	**5.83E-03**
CARM-00 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	1.30E+02	6.08E-01	NA	NA	NA	NA	1.13E-04	1.15E+02	1.29E-02	1.00E+00	3.06E-02	2.03E+01	6.32E+02	2.47E-02	6.24E+02	3.25E-02
CARM-50 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	3.74E+02	1.75E+00	NA	NA	NA	NA	1.13E-04	3.30E+02	3.71E-02	1.00E+00	3.06E-02	5.85E+01	6.32E+02	2.47E-02	6.24E+02	9.37E-02
CARM-50+12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	4.37E+02	2.05E+00	NA	NA	NA	NA	1.13E-04	3.86E+02	4.35E-02	1.00E+00	3.06E-02	6.84E+01	6.32E+02	2.47E-02	6.24E+02	1.10E-01
CARM-100 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	4.67E+02	2.19E+00	NA	NA	NA	NA	1.13E-04	4.13E+02	4.64E-02	1.00E+00	3.06E-02	7.31E+01	6.32E+02	2.47E-02	6.24E+02	1.17E-01
CARM-100+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	4.88E+02	2.29E+00	NA	NA	NA	NA	1.13E-04	4.31E+02	4.85E-02	1.00E+00	3.06E-02	7.63E+01	6.32E+02	2.47E-02	6.24E+02	1.22E-01
CARM-110 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	5.53E+02	2.59E+00	NA	NA	NA	NA	1.13E-04	4.89E+02	5.50E-02	1.00E+00	3.06E-02	8.66E+01	6.32E+02	2.47E-02	6.24E+02	1.39E-01
CARM-150 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	4.27E+02	2.00E+00	NA	NA	NA	NA	1.13E-04	3.77E+02	4.24E-02	1.00E+00	3.06E-02	6.67E+01	6.32E+02	2.47E-02	6.24E+02	1.07E-01
CARM-150+50 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	3.29E+02	1.54E+00	NA	NA	NA	NA	1.13E-04	2.91E+02	3.27E-02	1.00E+00	3.06E-02	5.15E+01	6.32E+02	2.47E-02	6.24E+02	8.26E-02
CARM-200 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	4.43E+02	2.08E+00	NA	NA	NA	NA	1.13E-04	3.91E+02	4.40E-02	1.00E+00	3.06E-02	6.93E+01	6.32E+02	2.47E-02	6.24E+02	1.11E-01
CARM-200+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	6.16E+02	2.89E+00	NA	NA	NA	NA	1.13E-04	5.44E+02	6.12E-02	1.00E+00	3.06E-02	9.63E+01	6.32E+02	2.47E-02	6.24E+02	1.55E-01
CARM-250 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	3.72E+02	1.75E+00	NA	NA	NA	NA	1.13E-04	3.29E+02	3.70E-02	1.00E+00	3.06E-02	5.83E+01	6.32E+02	2.47E-02	6.24E+02	9.34E-02
CARM-300 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	5.56E+02	2.61E+00	NA	NA	NA	NA	1.13E-04	4.91E+02	5.53E-02	1.00E+00	3.06E-02	8.70E+01	6.32E+02	2.47E-02	6.24E+02	1.40E-01
CARM-350 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	5.51E+02	2.58E+00	NA	NA	NA	NA	1.13E-04	4.87E+02	5.48E-02	1.00E+00	3.06E-02	8.62E+01	6.32E+02	2.47E-02	6.24E+02	1.38E-01
CARM-400 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	6.21E+02	2.91E+00	NA	NA	NA	NA	1.13E-04	5.49E+02	6.17E-02	1.00E+00	3.06E-02	9.71E+01	6.32E+02	2.47E-02	6.24E+02	1.56E-01
CARM-500 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CARM-550 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	2.44E+02	1.15E+00	NA	NA	NA	NA	1.13E-04	2.16E+02	2.43E-02	1.00E+00	3.06E-02	3.82E+01	6.32E+02	2.47E-02	6.24E+02	6.13E-02
CARM-600 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	5.62E+02	2.63E+00	NA	NA	NA	NA	1.13E-04	4.97E+02	5.59E-02	1.00E+00	3.06E-02	8.79E+01	6.32E+02	2.47E-02	6.24E+02	1.41E-01
CARM-650 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	1.85E+01	8.65E-02	NA	NA	NA	NA	1.13E-04	1.63E+01	1.84E-03	1.00E+00	3.06E-02	2.89E+00	6.32E+02	2.47E-02	6.24E+02	4.63E-03
CARM-700 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	9.11E+01	4.27E-01	NA	NA	NA	NA	1.13E-04	8.05E+01	9.06E-03	1.00E+00	3.06E-02	1.43E+01	6.32E+02	2.47E-02	6.24E+02	2.29E-02
CARM-750 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	1.08E+02	5.06E-01	NA	NA	NA	NA	1.13E-04	9.54E+01	1.07E-02	1.00E+00	3.06E-02	1.69E+01	6.32E+02	2.47E-02	6.24E+02	2.71E-02
CARM-800 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	7.25E+02	3.40E+00	NA	NA	NA	NA	1.13E-04	6.41E+02	7.21E-02	1.00E+00	3.06E-02	1.14E+02	6.32E+02	2.47E-02	6.24E+02	1.82E-01
CARM-850 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	1.06E+02	4.97E-01	NA	NA	NA	NA	1.13E-04	9.37E+01	1.05E-02	1.00E+00	3.06E-02	1.66E+01	6.32E+02	2.47E-02	6.24E+02	2.66E-02
CARM-950 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	1.51E+02	7.09E-01	NA	NA	NA	NA	1.13E-04	1.34E+02	1.50E-02	1.00E+00	3.06E-02	2.37E+01	6.32E+02	2.47E-02	6.24E+02	3.79E-02
CARM-1000 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	1.92E+02	9.00E-01	NA	NA	NA	NA	1.13E-04	1.70E+02	1.91E-02	1.00E+00	3.06E-02	3.00E+01	6.32E+02	2.47E-02	6.24E+02	4.82E-02
CARM-1050 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	3.39E+02	1.59E+00	NA	NA	NA	NA	1.13E-04	2.99E+02	3.37E-02	1.00E+00	3.06E-02	5.30E+01	6.32E+02	2.47E-02	6.24E+02	8.50E-02
CARM-1050+6.25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	3.03E+02	1.42E+00	NA	NA	NA	NA	1.13E-04	2.68E+02	3.02E-02	1.00E+00	3.06E-02	4.75E+01	6.32E+02	2.47E-02	6.24E+02	7.61E-02
CARM-1150 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	5.12E+02	2.40E+00	NA	NA	NA	NA	1.13E-04	4.52E+02	5.09E-02	1.00E+00	3.06E-02	8.01E+01	6.32E+02	2.47E-02	6.24E+02	1.28E-01
CARM-1150+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	6.50E+02	3.05E+00	NA	NA	NA	NA	1.13E-04	5.74E+02	6.46E-02	1.00E+00	3.06E-02	1.02E+02	6.32E+02	2.47E-02	6.24E+02	1.63E-01
CARM-Comp 1 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	6.46E+02	3.03E+00	NA	NA	NA	NA	1.13E-04	5.71E+02	6.43E-02	1.00E+00	3.06E-02	1.01E+02	6.32E+02	2.47E-02	6.24E+02	1.62E-01
																						Maximum HQ (Carbonate Mine)	**1.82E-01**
White-Tailed Deer (Large Herbivorous Mammal - Terrestrial)																							
Reference Site																							
SWGBG-1	1.43E+00	NA	NA	NA	NA	1.43E+00	7.79E-01	2.30E+01	3.29E+01	NA	NA	NA	NA	2.86E-02	2.95E+01	8.45E-01	6.10E-03	1.35E+02	1.53E-03	6.32E+02	2.47E-02	3.77E+02	4.05E-06
SWGBG-2	1.43E+00	NA	NA	NA	NA	1.43E+00	7.79E-01	3.74E+01	5.36E+01	NA	NA	NA	NA	2.86E-02	4.80E+01	1.37E+00	6.10E-03	1.35E+02	2.48E-03	6.32E+02	2.47E-02	3.77E+02	6.58E-06
Carbonate Mine																						**Minimum HQ (Reference Sites)**	**4.05E-06**
CARM-00 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	1.30E+02	1.86E+02	NA	NA	NA	NA	2.86E-02	1.15E+02	3.28E+00	6.10E-03	1.35E+02	8.53E-03	6.32E+02	2.47E-02	3.77E+02	2.26E-05
CARM-50 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	3.74E+02	5.35E+02	NA	NA	NA	NA	2.86E-02	3.30E+02	9.45E+00	6.10E-03	1.35E+02	2.46E-02	6.32E+02	2.47E-02	3.77E+02	6.52E-05
CARM-50+12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	4.37E+02	6.26E+02	NA	NA	NA	NA	2.86E-02	3.86E+02	1.11E+01	6.10E-03	1.35E+02	2.88E-02	6.32E+02	2.47E-02	3.77E+02	7.63E-05
CARM-100 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	4.67E+02	6.69E+02	NA	NA	NA	NA	2.86E-02	4.13E+02	1.18E+01	6.10E-03	1.35E+02	3.07E-02	6.32E+02	2.47E-02	3.77E+02	8.16E-05
CARM-100+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	4.88E+02	6.98E+02	NA	NA	NA	NA	2.86E-02	4.31E+02	1.23E+01	6.10E-03	1.35E+02	3.21E-02	6.32E+02	2.47E-02	3.77E+02	8.52E-05
CARM-110 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	5.53E+02	7.92E+02	NA	NA	NA	NA	2.86E-02	4.89E+02	1.40E+01	6.10E-03	1.35E+02	3.64E-02	6.32E+02	2.47E-02	3.77E+02	9.66E-05
CARM-150 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	4.27E+02	6.11E+02	NA	NA	NA	NA	2.86E-02	3.77E+02	1.08E+01	6.10E-03	1.35E+02	2.81E-02	6.32E+02	2.47E-02	3.77E+02	7.45E-05
CARM-150+50 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	3.29E+02	4.71E+02	NA	NA	NA	NA	2.86E-02	2.91E+02	8.33E+00	6.10E-03	1.35E+02	2.17E-02	6.32E+02	2.47E-02	3.77E+02	5.75E-05
CARM-200 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	4.43E+02	6.34E+02	NA	NA	NA	NA	2.86E-02	3.91E+02	1.12E+01	6.10E-03	1.35E+02	2.91E-02	6.32E+02	2.47E-02	3.77E+02	7.73E-05
CARM-200+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	6.16E+02	8.81E+02	NA	NA	NA	NA	2.86E-02	5.44E+02	1.56E+01	6.10E-03	1.35E+02	4.05E-02	6.32E+02	2.47E-02	3.77E+02	1.08E-04
CARM-250 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	3.72E+02	5.33E+02	NA	NA	NA	NA	2.86E-02	3.29E+02	9.42E+00	6.10E-03	1.35E+02	2.45E-02	6.32E+02	2.47E-02	3.77E+02	6.50E-05
CARM-300 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	5.56E+02	7.96E+02	NA	NA	NA	NA	2.86E-02	4.91E+02	1.41E+01	6.10E-03	1.35E+02	3.66E-02	6.32E+02	2.47E-02	3.77E+02	9.71E-05
CARM-350 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	5.51E+02	7.89E+02	NA	NA	NA	NA	2.86E-02	4.87E+02	1.39E+01	6.10E-03	1.35E+02	3.63E-02	6.32E+02	2.47E-02	3.77E+02	9.62E-05
CARM-400 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	6.21E+02	8.89E+02	NA	NA	NA	NA	2.86E-02	5.49E+02	1.57E+01	6.10E-03	1.35E+02	4.08E-02	6.32E+02	2.47E-02	3.77E+02	1.08E-04
CARM-500 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB

TABLE C-4C: COPPER DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 4 - CARBONATE MINE WASTE AREA (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 1.09

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
White-Tailed Deer (Large Herbivorous Mammal - Terrestrial)																							
CARM-550 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	2.44E+02	3.50E+02	NA	NA	NA	NA	2.86E-02	2.16E+02	6.18E+00	6.10E-03	1.35E+02	1.61E-02	6.32E+02	2.47E-02	3.77E+02	4.27E-05
CARM-600 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	5.62E+02	8.04E+02	NA	NA	NA	NA	2.86E-02	4.97E+02	1.42E+01	6.10E-03	1.35E+02	3.70E-02	6.32E+02	2.47E-02	3.77E+02	9.81E-05
CARM-650 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	1.85E+01	2.64E+01	NA	NA	NA	NA	2.86E-02	1.63E+01	4.67E-01	6.10E-03	1.35E+02	1.21E-03	6.32E+02	2.47E-02	3.77E+02	3.22E-06
CARM-700 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	9.11E+01	1.30E+02	NA	NA	NA	NA	2.86E-02	8.05E+01	2.30E+00	6.10E-03	1.35E+02	5.99E-03	6.32E+02	2.47E-02	3.77E+02	1.59E-05
CARM-750 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	1.08E+02	1.55E+02	NA	NA	NA	NA	2.86E-02	9.54E+01	2.73E+00	6.10E-03	1.35E+02	7.11E-03	6.32E+02	2.47E-02	3.77E+02	1.89E-05
CARM-800 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	7.25E+02	1.04E+03	NA	NA	NA	NA	2.86E-02	6.41E+02	1.84E+01	6.10E-03	1.35E+02	4.77E-02	6.32E+02	2.47E-02	3.77E+02	1.27E-04
CARM-850 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	1.06E+02	1.52E+02	NA	NA	NA	NA	2.86E-02	9.37E+01	2.68E+00	6.10E-03	1.35E+02	6.98E-03	6.32E+02	2.47E-02	3.77E+02	1.85E-05
CARM-950 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	1.51E+02	2.16E+02	NA	NA	NA	NA	2.86E-02	1.34E+02	3.82E+00	6.10E-03	1.35E+02	9.95E-03	6.32E+02	2.47E-02	3.77E+02	2.64E-05
CARM-1000 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	1.92E+02	2.75E+02	NA	NA	NA	NA	2.86E-02	1.70E+02	4.86E+00	6.10E-03	1.35E+02	1.26E-02	6.32E+02	2.47E-02	3.77E+02	3.35E-05
CARM-1050 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	3.39E+02	4.85E+02	NA	NA	NA	NA	2.86E-02	2.99E+02	8.57E+00	6.10E-03	1.35E+02	2.23E-02	6.32E+02	2.47E-02	3.77E+02	5.91E-05
CARM-1050+6.25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	3.03E+02	4.34E+02	NA	NA	NA	NA	2.86E-02	2.68E+02	7.67E+00	6.10E-03	1.35E+02	2.00E-02	6.32E+02	2.47E-02	3.77E+02	5.30E-05
CARM-1150 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	5.12E+02	7.33E+02	NA	NA	NA	NA	2.86E-02	4.52E+02	1.29E+01	6.10E-03	1.35E+02	3.37E-02	6.32E+02	2.47E-02	3.77E+02	8.94E-05
CARM-1150+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	6.50E+02	9.30E+02	NA	NA	NA	NA	2.86E-02	5.74E+02	1.64E+01	6.10E-03	1.35E+02	4.28E-02	6.32E+02	2.47E-02	3.77E+02	1.13E-04
CARM-Comp 1 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	6.46E+02	9.25E+02	NA	NA	NA	NA	2.86E-02	5.71E+02	1.63E+01	6.10E-03	1.35E+02	4.25E-02	6.32E+02	2.47E-02	3.77E+02	1.13E-04
																						Maximum HQ (Carbonate Mine)	**1.27E-04**
Red Fox (Carnivorous Mammal - Terrestrial)																							
Reference Site																							
SWGBG-1	1.72E-01	1.72E-01	6.61E-01	1.95E+01	3.35E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.95E+01	1.42E-01	8.05E-04	4.54E+00	6.19E-04	6.32E+02	2.47E-02	4.62E+02	1.34E-06
SWGBG-2	1.72E-01	1.72E-01	6.61E-01	3.17E+01	5.44E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.80E+01	2.31E-01	8.05E-04	4.54E+00	1.01E-03	6.32E+02	2.47E-02	4.62E+02	2.18E-06
Carbonate Mine																						**Minimum HQ (Reference Sites)**	**1.34E-06**
CARM-00 (0-6")	1.72E-01	1.72E-01	1.01E+00	1.16E+02	1.98E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.15E+02	5.50E-01	8.05E-04	4.54E+00	3.62E-03	6.32E+02	2.47E-02	4.62E+02	7.84E-06
CARM-50 (0-6")	1.72E-01	1.72E-01	1.01E+00	3.33E+02	5.72E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.30E+02	1.59E+00	8.05E-04	4.54E+00	1.04E-02	6.32E+02	2.47E-02	4.62E+02	2.26E-05
CARM-50+12.5 (0-6")	1.72E-01	1.72E-01	1.01E+00	3.90E+02	6.70E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.86E+02	1.86E+00	8.05E-04	4.54E+00	1.22E-02	6.32E+02	2.47E-02	4.62E+02	2.64E-05
CARM-100 (0-6")	1.72E-01	1.72E-01	1.01E+00	4.17E+02	7.15E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.13E+02	1.98E+00	8.05E-04	4.54E+00	1.31E-02	6.32E+02	2.47E-02	4.62E+02	2.83E-05
CARM-100+25 (0-6")	1.72E-01	1.72E-01	1.01E+00	4.35E+02	7.47E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.31E+02	2.07E+00	8.05E-04	4.54E+00	1.36E-02	6.32E+02	2.47E-02	4.62E+02	2.95E-05
CARM-110 (0-6")	1.72E-01	1.72E-01	1.01E+00	4.94E+02	8.47E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.89E+02	2.35E+00	8.05E-04	4.54E+00	1.55E-02	6.32E+02	2.47E-02	4.62E+02	3.35E-05
CARM-150 (0-6")	1.72E-01	1.72E-01	1.01E+00	3.81E+02	6.53E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.77E+02	1.81E+00	8.05E-04	4.54E+00	1.19E-02	6.32E+02	2.47E-02	4.62E+02	2.58E-05
CARM-150+50 (0-6")	1.72E-01	1.72E-01	1.01E+00	2.94E+02	5.04E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.91E+02	1.40E+00	8.05E-04	4.54E+00	9.20E-03	6.32E+02	2.47E-02	4.62E+02	1.99E-05
CARM-200 (0-6")	1.72E-01	1.72E-01	1.01E+00	3.95E+02	6.78E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.91E+02	1.88E+00	8.05E-04	4.54E+00	1.24E-02	6.32E+02	2.47E-02	4.62E+02	2.68E-05
CARM-200+25 (0-6")	1.72E-01	1.72E-01	1.01E+00	5.50E+02	9.43E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.44E+02	2.61E+00	8.05E-04	4.54E+00	1.72E-02	6.32E+02	2.47E-02	4.62E+02	3.72E-05
CARM-250 (0-6")	1.72E-01	1.72E-01	1.01E+00	3.32E+02	5.70E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.29E+02	1.58E+00	8.05E-04	4.54E+00	1.04E-02	6.32E+02	2.47E-02	4.62E+02	2.25E-05
CARM-300 (0-6")	1.72E-01	1.72E-01	1.01E+00	4.96E+02	8.51E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.91E+02	2.36E+00	8.05E-04	4.54E+00	1.55E-02	6.32E+02	2.47E-02	4.62E+02	3.36E-05
CARM-350 (0-6")	1.72E-01	1.72E-01	1.01E+00	4.92E+02	8.44E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.87E+02	2.34E+00	8.05E-04	4.54E+00	1.54E-02	6.32E+02	2.47E-02	4.62E+02	3.33E-05
CARM-400 (0-6")	1.72E-01	1.72E-01	1.01E+00	5.54E+02	9.51E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.49E+02	2.63E+00	8.05E-04	4.54E+00	1.73E-02	6.32E+02	2.47E-02	4.62E+02	3.75E-05
CARM-500 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CARM-550 (0-6")	1.72E-01	1.72E-01	1.01E+00	2.18E+02	3.74E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.16E+02	1.04E+00	8.05E-04	4.54E+00	6.83E-03	6.32E+02	2.47E-02	4.62E+02	1.48E-05
CARM-600 (0-6")	1.72E-01	1.72E-01	1.01E+00	5.02E+02	8.61E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.97E+02	2.39E+00	8.05E-04	4.54E+00	1.57E-02	6.32E+02	2.47E-02	4.62E+02	3.40E-05
CARM-650 (0-6")	1.72E-01	1.72E-01	1.01E+00	1.65E+01	2.83E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.63E+01	7.83E-02	8.05E-04	4.54E+00	5.16E-04	6.32E+02	2.47E-02	4.62E+02	1.12E-06
CARM-700 (0-6")	1.72E-01	1.72E-01	1.01E+00	8.13E+01	1.40E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	8.05E+01	3.87E-01	8.05E-04	4.54E+00	2.55E-03	6.32E+02	2.47E-02	4.62E+02	5.51E-06
CARM-750 (0-6")	1.72E-01	1.72E-01	1.01E+00	9.64E+01	1.65E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	9.54E+01	4.58E-01	8.05E-04	4.54E+00	3.02E-03	6.32E+02	2.47E-02	4.62E+02	6.53E-06
CARM-800 (0-6")	1.72E-01	1.72E-01	1.01E+00	6.48E+02	1.11E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	6.41E+02	3.08E+00	8.05E-04	4.54E+00	2.03E-02	6.32E+02	2.47E-02	4.62E+02	4.39E-05
CARM-850 (0-6")	1.72E-01	1.72E-01	1.01E+00	9.46E+01	1.62E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	9.37E+01	4.50E-01	8.05E-04	4.54E+00	2.96E-03	6.32E+02	2.47E-02	4.62E+02	6.41E-06
CARM-950 (0-6")	1.72E-01	1.72E-01	1.01E+00	1.35E+02	2.31E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.34E+02	6.42E-01	8.05E-04	4.54E+00	4.22E-03	6.32E+02	2.47E-02	4.62E+02	9.14E-06
CARM-1000 (0-6")	1.72E-01	1.72E-01	1.01E+00	1.71E+02	2.94E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.70E+02	8.15E-01	8.05E-04	4.54E+00	5.36E-03	6.32E+02	2.47E-02	4.62E+02	1.16E-05
CARM-1050 (0-6")	1.72E-01	1.72E-01	1.01E+00	3.02E+02	5.19E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.99E+02	1.44E+00	8.05E-04	4.54E+00	9.46E-03	6.32E+02	2.47E-02	4.62E+02	2.05E-05
CARM-1050+6.25 (0-6")	1.72E-01	1.72E-01	1.01E+00	2.71E+02	4.65E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.68E+02	1.29E+00	8.05E-04	4.54E+00	8.47E-03	6.32E+02	2.47E-02	4.62E+02	1.83E-05
CARM-1150 (0-6")	1.72E-01	1.72E-01	1.01E+00	4.57E+02	7.84E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.52E+02	2.17E+00	8.05E-04	4.54E+00	1.43E-02	6.32E+02	2.47E-02	4.62E+02	3.10E-05
CARM-1150+25 (0-6")	1.72E-01	1.72E-01	1.01E+00	5.80E+02	9.95E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.74E+02	2.76E+00	8.05E-04	4.54E+00	1.82E-02	6.32E+02	2.47E-02	4.62E+02	3.93E-05
CARM-Comp 1 (0-6")	1.72E-01	1.72E-01	1.01E+00	5.77E+02	9.90E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.71E+02	2.74E+00	8.05E-04	4.54E+00	1.81E-02	6.32E+02	2.47E-02	4.62E+02	3.91E-05
																						Maximum HQ (Carbonate Mine)	**4.39E-05**

TABLE C-4C: COPPER DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 4 - CARBONATE MINE WASTE AREA (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 1.09

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Masked Shrew (Omnivorous Mammal - Terrestrial, Wetland)																							
Reference Site																							
SWGBG-1	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	3.70E+00	1.09E+02	9.26E-01	1.10E-03	2.95E+01	3.25E-02	1.00E+00	5.50E-03	1.74E+02	6.32E+02	2.47E-02	6.91E+02	2.52E-01
SWGBG-2	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	3.70E+00	1.78E+02	1.51E+00	1.10E-03	4.80E+01	5.29E-02	1.00E+00	5.50E-03	2.84E+02	6.32E+02	2.47E-02	6.91E+02	4.10E-01
Carbonate Mine																						**Minimum HQ (Reference Sites)**	**2.52E-01**
CARM-00 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	5.55E+02	4.70E+00	1.10E-03	1.15E+02	1.26E-01	1.00E+00	5.50E-03	8.78E+02	6.32E+02	2.47E-02	6.91E+02	1.27E+00
CARM-50 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	1.60E+03	1.36E+01	1.10E-03	3.30E+02	3.63E-01	1.00E+00	5.50E-03	2.53E+03	6.32E+02	2.47E-02	6.91E+02	3.66E+00
CARM-50+12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	1.87E+03	1.59E+01	1.10E-03	3.86E+02	4.25E-01	1.00E+00	5.50E-03	2.96E+03	6.32E+02	2.47E-02	6.91E+02	4.29E+00
CARM-100 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	2.00E+03	1.70E+01	1.10E-03	4.13E+02	4.54E-01	1.00E+00	5.50E-03	3.17E+03	6.32E+02	2.47E-02	6.91E+02	4.58E+00
CARM-100+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	2.09E+03	1.77E+01	1.10E-03	4.31E+02	4.75E-01	1.00E+00	5.50E-03	3.31E+03	6.32E+02	2.47E-02	6.91E+02	4.78E+00
CARM-110 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	2.37E+03	2.01E+01	1.10E-03	4.89E+02	5.38E-01	1.00E+00	5.50E-03	3.75E+03	6.32E+02	2.47E-02	6.91E+02	5.42E+00
CARM-150 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	1.83E+03	1.55E+01	1.10E-03	3.77E+02	4.15E-01	1.00E+00	5.50E-03	2.89E+03	6.32E+02	2.47E-02	6.91E+02	4.18E+00
CARM-150+50 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	1.41E+03	1.20E+01	1.10E-03	2.91E+02	3.20E-01	1.00E+00	5.50E-03	2.23E+03	6.32E+02	2.47E-02	6.91E+02	3.23E+00
CARM-200 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	1.90E+03	1.61E+01	1.10E-03	3.91E+02	4.31E-01	1.00E+00	5.50E-03	3.00E+03	6.32E+02	2.47E-02	6.91E+02	4.34E+00
CARM-200+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	2.64E+03	2.23E+01	1.10E-03	5.44E+02	5.99E-01	1.00E+00	5.50E-03	4.17E+03	6.32E+02	2.47E-02	6.91E+02	6.04E+00
CARM-250 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	1.60E+03	1.35E+01	1.10E-03	3.29E+02	3.62E-01	1.00E+00	5.50E-03	2.52E+03	6.32E+02	2.47E-02	6.91E+02	3.65E+00
CARM-300 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	2.38E+03	2.02E+01	1.10E-03	4.91E+02	5.41E-01	1.00E+00	5.50E-03	3.77E+03	6.32E+02	2.47E-02	6.91E+02	5.45E+00
CARM-350 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	2.36E+03	2.00E+01	1.10E-03	4.87E+02	5.36E-01	1.00E+00	5.50E-03	3.73E+03	6.32E+02	2.47E-02	6.91E+02	5.40E+00
CARM-400 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	2.66E+03	2.25E+01	1.10E-03	5.49E+02	6.04E-01	1.00E+00	5.50E-03	4.21E+03	6.32E+02	2.47E-02	6.91E+02	6.09E+00
CARM-500 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CARM-550 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	1.05E+03	8.87E+00	1.10E-03	2.16E+02	2.38E-01	1.00E+00	5.50E-03	1.66E+03	6.32E+02	2.47E-02	6.91E+02	2.40E+00
CARM-600 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	2.41E+03	2.04E+01	1.10E-03	4.97E+02	5.47E-01	1.00E+00	5.50E-03	3.81E+03	6.32E+02	2.47E-02	6.91E+02	5.51E+00
CARM-650 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	7.91E+01	6.70E-01	1.10E-03	1.63E+01	1.80E-02	1.00E+00	5.50E-03	1.25E+02	6.32E+02	2.47E-02	6.91E+02	1.81E-01
CARM-700 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	3.90E+02	3.31E+00	1.10E-03	8.05E+01	8.86E-02	1.00E+00	5.50E-03	6.17E+02	6.32E+02	2.47E-02	6.91E+02	8.93E-01
CARM-750 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	4.63E+02	3.92E+00	1.10E-03	9.54E+01	1.05E-01	1.00E+00	5.50E-03	7.32E+02	6.32E+02	2.47E-02	6.91E+02	1.06E+00
CARM-800 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	3.11E+03	2.63E+01	1.10E-03	6.41E+02	7.06E-01	1.00E+00	5.50E-03	4.92E+03	6.32E+02	2.47E-02	6.91E+02	7.11E+00
CARM-850 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	4.54E+02	3.85E+00	1.10E-03	9.37E+01	1.03E-01	1.00E+00	5.50E-03	7.18E+02	6.32E+02	2.47E-02	6.91E+02	1.04E+00
CARM-950 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	6.48E+02	5.49E+00	1.10E-03	1.34E+02	1.47E-01	1.00E+00	5.50E-03	1.02E+03	6.32E+02	2.47E-02	6.91E+02	1.48E+00
CARM-1000 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	8.23E+02	6.97E+00	1.10E-03	1.70E+02	1.87E-01	1.00E+00	5.50E-03	1.30E+03	6.32E+02	2.47E-02	6.91E+02	1.88E+00
CARM-1050 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	1.45E+03	1.23E+01	1.10E-03	2.99E+02	3.29E-01	1.00E+00	5.50E-03	2.29E+03	6.32E+02	2.47E-02	6.91E+02	3.32E+00
CARM-1050+6.25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	1.30E+03	1.10E+01	1.10E-03	2.68E+02	2.95E-01	1.00E+00	5.50E-03	2.06E+03	6.32E+02	2.47E-02	6.91E+02	2.97E+00
CARM-1150 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	2.19E+03	1.86E+01	1.10E-03	4.52E+02	4.98E-01	1.00E+00	5.50E-03	3.47E+03	6.32E+02	2.47E-02	6.91E+02	5.02E+00
CARM-1150+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	2.79E+03	2.36E+01	1.10E-03	5.74E+02	6.32E-01	1.00E+00	5.50E-03	4.40E+03	6.32E+02	2.47E-02	6.91E+02	6.37E+00
CARM-Comp 1 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	2.77E+03	2.35E+01	1.10E-03	5.71E+02	6.29E-01	1.00E+00	5.50E-03	4.38E+03	6.32E+02	2.47E-02	6.91E+02	6.34E+00
																						Maximum HQ (Carbonate Mine)	**7.11E+00**

Notes

1 See Tables 3-1 through 3-13 for ingestion rates, foraging ranges used to calculate the SUF, and body weights.

2 BAFs were calculated by dividing site-collected tissue by collocated soil concentrations (BAFs are in dry weight). The maximum BAF calculated from the Beartrap Creek and Blackfoot River transects was used for site dose calculations. The maximum BAF from the terrestrial reference site was used for reference site dose calculations.

3 The mammal, plant, and invertebrate concentrations were calculated by multiplying the soil concentration by the BAF to generate a tissue concentration (see note 2).

4 Mammal, plant, and invertebrate daily doses were calculated by multiplying the ingestion rate (see note 1) by the tissue concentration (see note 3).

5 Soil concentration from 0 to 6 inches below ground surface at point ID as measured by XRF 10. Doses were not calculated for detected and non-detected soil concentrations measured below the minimum reference site concentration, as indicated by BB. For results that were measured at less than the detection limit, doses were

6 Soil daily dose was calculated by multiplying the soil ingestion rate (see note 1) by soil concentration (see note 5).

7 Total daily dose is calculated using the following equation: total daily dose = ([mammal daily dose (if applicable) + plant daily dose (if applicable) + invertebrate daily dose (if applicable) + soil daily dose]*SUF)/receptor species body weight.

8 The TRVs used in this risk assessment represent a mid-range effects level. The derivation of TRVs is described in Navy (1998).

9 Allometrically adjusted TRVs for birds were calculated using the following equation: receptor species TRV = (test species TRV) x (test species body weight / receptor species body weight)$^{(1-1.2)}$.

10 Allometrically adjusted TRVs for mammals were calculated using the following equation: receptor species TRV = (test species TRV) x (test species body weight / receptor species body weight)$^{(1-0.94)}$.

11 HQs were calculated using the following equation: HQ = total daily dose/allometrically adjusted TRV.

12 Highlighted cells indicate an HQ greater than 1.0.

BAF	Bioaccumulation Factor	mg/day	Milligram per day
BB	Below minimum background reference site concentration	mg/kg	Milligram per kilogram
EE/CA	Engineering Evaluation/Cost Analysis	NA	Not applicable
EU	Exposure Unit	Navy	Department of the Navy
HQ	Hazard quotient	SUF	Site use factor
ID	Identification	TRV	Toxicity reference value
kg	Kilogram	XRF	X-ray fluorescence
kg/day	Kilogram per day	XRF 10	XRF measurements recorded following drying and seiving through a #10-mesh screen

Sources: Department of the Navy. 1998. "Development of Toxicity Reference Values for Conducting Ecological Risk Assessments at Naval Facilities in California, Interim Final." Prepared by Naval Facilities Engineering Command, Engineering Field Activity West (EFA West). San Bruno, California.

TABLE C-4D: LEAD DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 4 - CARBONATE MINE WASTE AREA

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 1.09

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Mourning Dove (Herbivorous Birds - Terrestrial)																							
Reference Site																							
SWGBG-1	5.76E-03	NA	NA	NA	NA	5.76E-03	4.35E-02	2.64E+00	1.52E-02	NA	NA	NA	NA	5.36E-04	6.08E+01	3.26E-02	4.21E-03	1.09E-01	1.84E-03	8.75E+00	8.00E-01	5.88E+00	3.14E-04
SWGBG-2	5.76E-03	NA	NA	NA	NA	5.76E-03	4.35E-02	5.44E+00	3.13E-02	NA	NA	NA	NA	5.36E-04	1.25E+02	6.70E-02	4.21E-03	1.09E-01	3.79E-03	8.75E+00	8.00E-01	5.88E+00	6.45E-04
Carbonate Mine																						**Minimum HQ (Reference Sites)**	**3.14E-04**
CARM-00 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	9.18E+01	5.29E-01	NA	NA	NA	NA	5.36E-04	1.46E+02	7.83E-02	4.21E-03	1.09E-01	2.34E-02	8.75E+00	8.00E-01	5.88E+00	3.98E-03
CARM-50 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	2.71E+02	1.56E+00	NA	NA	NA	NA	5.36E-04	4.31E+02	2.31E-01	4.21E-03	1.09E-01	6.90E-02	8.75E+00	8.00E-01	5.88E+00	1.17E-02
CARM-50+12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	3.64E+02	2.10E+00	NA	NA	NA	NA	5.36E-04	5.79E+02	3.10E-01	4.21E-03	1.09E-01	9.27E-02	8.75E+00	8.00E-01	5.88E+00	1.58E-02
CARM-100 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	3.31E+02	1.90E+00	NA	NA	NA	NA	5.36E-04	5.26E+02	2.82E-01	4.21E-03	1.09E-01	8.43E-02	8.75E+00	8.00E-01	5.88E+00	1.43E-02
CARM-100+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	3.89E+02	2.24E+00	NA	NA	NA	NA	5.36E-04	6.19E+02	3.32E-01	4.21E-03	1.09E-01	9.91E-02	8.75E+00	8.00E-01	5.88E+00	1.69E-02
CARM-110 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	2.05E+02	1.18E+00	NA	NA	NA	NA	5.36E-04	3.27E+02	1.75E-01	4.21E-03	1.09E-01	5.23E-02	8.75E+00	8.00E-01	5.88E+00	8.91E-03
CARM-150 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	2.59E+02	1.49E+00	NA	NA	NA	NA	5.36E-04	4.12E+02	2.21E-01	4.21E-03	1.09E-01	6.60E-02	8.75E+00	8.00E-01	5.88E+00	1.12E-02
CARM-150+50 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	2.62E+02	1.51E+00	NA	NA	NA	NA	5.36E-04	4.18E+02	2.24E-01	4.21E-03	1.09E-01	6.69E-02	8.75E+00	8.00E-01	5.88E+00	1.14E-02
CARM-200 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	2.59E+02	1.49E+00	NA	NA	NA	NA	5.36E-04	4.12E+02	2.21E-01	4.21E-03	1.09E-01	6.59E-02	8.75E+00	8.00E-01	5.88E+00	1.12E-02
CARM-200+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	1.71E+02	9.84E-01	NA	NA	NA	NA	5.36E-04	2.72E+02	1.46E-01	4.21E-03	1.09E-01	4.35E-02	8.75E+00	8.00E-01	5.88E+00	7.41E-03
CARM-250 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	2.07E+02	1.19E+00	NA	NA	NA	NA	5.36E-04	3.30E+02	1.77E-01	4.21E-03	1.09E-01	5.28E-02	8.75E+00	8.00E-01	5.88E+00	8.98E-03
CARM-300 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	1.96E+02	1.13E+00	NA	NA	NA	NA	5.36E-04	3.12E+02	1.67E-01	4.21E-03	1.09E-01	5.00E-02	8.75E+00	8.00E-01	5.88E+00	8.50E-03
CARM-350 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	1.64E+02	9.42E-01	NA	NA	NA	NA	5.36E-04	2.60E+02	1.40E-01	4.21E-03	1.09E-01	4.17E-02	8.75E+00	8.00E-01	5.88E+00	7.10E-03
CARM-400 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	1.64E+02	9.42E-01	NA	NA	NA	NA	5.36E-04	2.60E+02	1.39E-01	4.21E-03	1.09E-01	4.17E-02	8.75E+00	8.00E-01	5.88E+00	7.10E-03
CARM-500 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CARM-550 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	2.95E+02	1.70E+00	NA	NA	NA	NA	5.36E-04	4.69E+02	2.51E-01	4.21E-03	1.09E-01	7.51E-02	8.75E+00	8.00E-01	5.88E+00	1.28E-02
CARM-600 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	2.16E+02	1.24E+00	NA	NA	NA	NA	5.36E-04	3.43E+02	1.84E-01	4.21E-03	1.09E-01	5.50E-02	8.75E+00	8.00E-01	5.88E+00	9.36E-03
CARM-650 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CARM-700 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	6.80E+01	3.92E-01	NA	NA	NA	NA	5.36E-04	1.08E+02	5.80E-02	4.21E-03	1.09E-01	1.73E-02	8.75E+00	8.00E-01	5.88E+00	2.95E-03
CARM-750 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	4.00E+01	2.31E-01	NA	NA	NA	NA	5.36E-04	6.37E+01	3.41E-02	4.21E-03	1.09E-01	1.02E-02	8.75E+00	8.00E-01	5.88E+00	1.74E-03
CARM-800 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	1.06E+02	6.13E-01	NA	NA	NA	NA	5.36E-04	1.69E+02	9.07E-02	4.21E-03	1.09E-01	2.71E-02	8.75E+00	8.00E-01	5.88E+00	4.61E-03
CARM-850 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	4.07E+01	2.35E-01	NA	NA	NA	NA	5.36E-04	6.49E+01	3.48E-02	4.21E-03	1.09E-01	1.04E-02	8.75E+00	8.00E-01	5.88E+00	1.77E-03
CARM-950 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	6.53E+01	3.76E-01	NA	NA	NA	NA	5.36E-04	1.04E+02	5.57E-02	4.21E-03	1.09E-01	1.67E-02	8.75E+00	8.00E-01	5.88E+00	2.84E-03
CARM-1000 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	4.86E+01	2.80E-01	NA	NA	NA	NA	5.36E-04	7.74E+01	4.15E-02	4.21E-03	1.09E-01	1.24E-02	8.75E+00	8.00E-01	5.88E+00	2.11E-03
CARM-1050 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	1.60E+03	9.25E+00	NA	NA	NA	NA	5.36E-04	2.55E+03	1.37E+00	4.21E-03	1.09E-01	4.09E-01	8.75E+00	8.00E-01	5.88E+00	6.96E-02
CARM-1050+6.25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	1.72E+02	9.93E-01	NA	NA	NA	NA	5.36E-04	2.74E+02	1.47E-01	4.21E-03	1.09E-01	4.39E-02	8.75E+00	8.00E-01	5.88E+00	7.48E-03
CARM-1150 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	3.12E+02	1.80E+00	NA	NA	NA	NA	5.36E-04	4.96E+02	2.66E-01	4.21E-03	1.09E-01	7.95E-02	8.75E+00	8.00E-01	5.88E+00	1.35E-02
CARM-1150+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	6.40E+01	3.69E-01	NA	NA	NA	NA	5.36E-04	1.02E+02	5.46E-02	4.21E-03	1.09E-01	1.63E-02	8.75E+00	8.00E-01	5.88E+00	2.78E-03
CARM-Comp 1 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	2.21E+02	1.27E+00	NA	NA	NA	NA	5.36E-04	3.51E+02	1.88E-01	4.21E-03	1.09E-01	5.63E-02	8.75E+00	8.00E-01	5.88E+00	9.58E-03
																						Maximum HQ (Carbonate Mine)	**6.96E-02**
Red-Tailed Hawk (Carnivorous Birds - Terrestrial)																							
Reference Site																							
SWGBG-1	9.00E-02	9.00E-02	7.62E-02	4.64E+00	4.17E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	6.08E+01	3.12E-01	1.56E-03	1.13E+00	1.01E-03	8.75E+00	8.00E-01	9.38E+00	1.07E-04
SWGBG-2	9.00E-02	9.00E-02	7.62E-02	9.53E+00	8.58E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.25E+02	6.41E-01	1.56E-03	1.13E+00	2.07E-03	8.75E+00	8.00E-01	9.38E+00	2.20E-04
Carbonate Mine																						**Minimum HQ (Reference Sites)**	**1.07E-04**
CARM-00 (0-6")	9.00E-02	9.00E-02	9.28E-01	1.36E+02	1.22E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.46E+02	7.49E-01	1.56E-03	1.13E+00	1.79E-02	8.75E+00	8.00E-01	9.38E+00	1.90E-03
CARM-50 (0-6")	9.00E-02	9.00E-02	9.28E-01	4.00E+02	3.59E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.31E+02	2.21E+00	1.56E-03	1.13E+00	5.26E-02	8.75E+00	8.00E-01	9.38E+00	5.61E-03
CARM-50+12.5 (0-6")	9.00E-02	9.00E-02	9.28E-01	5.37E+02	4.83E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.79E+02	2.97E+00	1.56E-03	1.13E+00	7.08E-02	8.75E+00	8.00E-01	9.38E+00	7.54E-03
CARM-100 (0-6")	9.00E-02	9.00E-02	9.28E-01	4.88E+02	4.39E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.26E+02	2.70E+00	1.56E-03	1.13E+00	6.43E-02	8.75E+00	8.00E-01	9.38E+00	6.86E-03
CARM-100+25 (0-6")	9.00E-02	9.00E-02	9.28E-01	5.74E+02	5.17E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	6.19E+02	3.17E+00	1.56E-03	1.13E+00	7.57E-02	8.75E+00	8.00E-01	9.38E+00	8.06E-03
CARM-110 (0-6")	9.00E-02	9.00E-02	9.28E-01	3.03E+02	2.73E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.27E+02	1.68E+00	1.56E-03	1.13E+00	3.99E-02	8.75E+00	8.00E-01	9.38E+00	4.26E-03
CARM-150 (0-6")	9.00E-02	9.00E-02	9.28E-01	3.82E+02	3.44E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.12E+02	2.11E+00	1.56E-03	1.13E+00	5.03E-02	8.75E+00	8.00E-01	9.38E+00	5.36E-03
CARM-150+50 (0-6")	9.00E-02	9.00E-02	9.28E-01	3.88E+02	3.49E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.18E+02	2.14E+00	1.56E-03	1.13E+00	5.11E-02	8.75E+00	8.00E-01	9.38E+00	5.44E-03
CARM-200 (0-6")	9.00E-02	9.00E-02	9.28E-01	3.82E+02	3.44E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.12E+02	2.11E+00	1.56E-03	1.13E+00	5.03E-02	8.75E+00	8.00E-01	9.38E+00	5.36E-03
CARM-200+25 (0-6")	9.00E-02	9.00E-02	9.28E-01	2.52E+02	2.27E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.72E+02	1.39E+00	1.56E-03	1.13E+00	3.32E-02	8.75E+00	8.00E-01	9.38E+00	3.54E-03
CARM-250 (0-6")	9.00E-02	9.00E-02	9.28E-01	3.06E+02	2.75E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.30E+02	1.69E+00	1.56E-03	1.13E+00	4.03E-02	8.75E+00	8.00E-01	9.38E+00	4.29E-03
CARM-300 (0-6")	9.00E-02	9.00E-02	9.28E-01	2.89E+02	2.60E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.12E+02	1.60E+00	1.56E-03	1.13E+00	3.81E-02	8.75E+00	8.00E-01	9.38E+00	4.06E-03
CARM-350 (0-6")	9.00E-02	9.00E-02	9.28E-01	2.42E+02	2.17E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.60E+02	1.33E+00	1.56E-03	1.13E+00	3.18E-02	8.75E+00	8.00E-01	9.38E+00	3.39E-03
CARM-400 (0-6")	9.00E-02	9.00E-02	9.28E-01	2.42E+02	2.17E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.60E+02	1.33E+00	1.56E-03	1.13E+00	3.18E-02	8.75E+00	8.00E-01	9.38E+00	3.39E-03
CARM-500 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB

TABLE C-4D: LEAD DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 4 - CARBONATE MINE WASTE AREA (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **1.09**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Red-Tailed Hawk (Carnivorous Birds - Terrestrial)																							
CARM-550 (0-6")	9.00E-02	9.00E-02	9.28E-01	4.35E+02	3.91E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.69E+02	2.40E+00	1.56E-03	1.13E+00	5.73E-02	8.75E+00	8.00E-01	9.38E+00	6.11E-03
CARM-600 (0-6")	9.00E-02	9.00E-02	9.28E-01	3.19E+02	2.87E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.43E+02	1.76E+00	1.56E-03	1.13E+00	4.20E-02	8.75E+00	8.00E-01	9.38E+00	4.47E-03
CARM-650 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CARM-700 (0-6")	9.00E-02	9.00E-02	9.28E-01	1.00E+02	9.03E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.08E+02	5.55E-01	1.56E-03	1.13E+00	1.32E-02	8.75E+00	8.00E-01	9.38E+00	1.41E-03
CARM-750 (0-6")	9.00E-02	9.00E-02	9.28E-01	5.91E+01	5.32E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	6.37E+01	3.27E-01	1.56E-03	1.13E+00	7.79E-03	8.75E+00	8.00E-01	9.38E+00	8.30E-04
CARM-800 (0-6")	9.00E-02	9.00E-02	9.28E-01	1.57E+02	1.41E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.69E+02	8.68E-01	1.56E-03	1.13E+00	2.07E-02	8.75E+00	8.00E-01	9.38E+00	2.20E-03
CARM-850 (0-6")	9.00E-02	9.00E-02	9.28E-01	6.02E+01	5.41E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	6.49E+01	3.33E-01	1.56E-03	1.13E+00	7.93E-03	8.75E+00	8.00E-01	9.38E+00	8.45E-04
CARM-950 (0-6")	9.00E-02	9.00E-02	9.28E-01	9.65E+01	8.68E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.04E+02	5.33E-01	1.56E-03	1.13E+00	1.27E-02	8.75E+00	8.00E-01	9.38E+00	1.35E-03
CARM-1000 (0-6")	9.00E-02	9.00E-02	9.28E-01	7.18E+01	6.46E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	7.74E+01	3.97E-01	1.56E-03	1.13E+00	9.46E-03	8.75E+00	8.00E-01	9.38E+00	1.01E-03
CARM-1050 (0-6")	9.00E-02	9.00E-02	9.28E-01	2.37E+03	2.13E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.55E+03	1.31E+01	1.56E-03	1.13E+00	3.12E-01	8.75E+00	8.00E-01	9.38E+00	3.33E-02
CARM-1050+6.25 (0-6")	9.00E-02	9.00E-02	9.28E-01	2.55E+02	2.29E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.74E+02	1.41E+00	1.56E-03	1.13E+00	3.35E-02	8.75E+00	8.00E-01	9.38E+00	3.57E-03
CARM-1150 (0-6")	9.00E-02	9.00E-02	9.28E-01	4.61E+02	4.14E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.96E+02	2.55E+00	1.56E-03	1.13E+00	6.07E-02	8.75E+00	8.00E-01	9.38E+00	6.47E-03
CARM-1150+25 (0-6")	9.00E-02	9.00E-02	9.28E-01	9.45E+01	8.50E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.02E+02	5.22E-01	1.56E-03	1.13E+00	1.25E-02	8.75E+00	8.00E-01	9.38E+00	1.33E-03
CARM-Comp 1 (0-6")	9.00E-02	9.00E-02	9.28E-01	3.26E+02	2.93E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.51E+02	1.80E+00	1.56E-03	1.13E+00	4.29E-02	8.75E+00	8.00E-01	9.38E+00	4.58E-03
																						Maximum HQ (Carbonate Mine)	**3.33E-02**
American Kestral (Insectivorous Birds - Terrestrial)																							
Reference Site																							
SWGBG-1	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	9.44E+01	1.30E+00	7.84E-04	6.08E+01	4.77E-02	4.17E-03	1.24E-01	4.52E-02	8.75E+00	8.00E-01	6.03E+00	7.51E-03
SWGBG-2	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.94E+02	2.67E+00	7.84E-04	1.25E+02	9.81E-02	4.17E-03	1.24E-01	9.30E-02	8.75E+00	8.00E-01	6.03E+00	1.54E-02
Carbonate Mine																						**Minimum HQ (Reference Sites)**	**7.51E-03**
CARM-00 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	2.27E+02	3.12E+00	7.84E-04	1.46E+02	1.15E-01	4.17E-03	1.24E-01	1.09E-01	8.75E+00	8.00E-01	6.03E+00	1.80E-02
CARM-50 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	6.68E+02	9.20E+00	7.84E-04	4.31E+02	3.38E-01	4.17E-03	1.24E-01	3.20E-01	8.75E+00	8.00E-01	6.03E+00	5.32E-02
CARM-50+12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	8.99E+02	1.24E+01	7.84E-04	5.79E+02	4.54E-01	4.17E-03	1.24E-01	4.31E-01	8.75E+00	8.00E-01	6.03E+00	7.15E-02
CARM-100 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	8.17E+02	1.12E+01	7.84E-04	5.26E+02	4.13E-01	4.17E-03	1.24E-01	3.91E-01	8.75E+00	8.00E-01	6.03E+00	6.50E-02
CARM-100+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	9.61E+02	1.32E+01	7.84E-04	6.19E+02	4.86E-01	4.17E-03	1.24E-01	4.61E-01	8.75E+00	8.00E-01	6.03E+00	7.64E-02
CARM-110 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	5.07E+02	6.98E+00	7.84E-04	3.27E+02	2.56E-01	4.17E-03	1.24E-01	2.43E-01	8.75E+00	8.00E-01	6.03E+00	4.03E-02
CARM-150 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	6.39E+02	8.80E+00	7.84E-04	4.12E+02	3.23E-01	4.17E-03	1.24E-01	3.06E-01	8.75E+00	8.00E-01	6.03E+00	5.08E-02
CARM-150+50 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	6.48E+02	8.92E+00	7.84E-04	4.18E+02	3.28E-01	4.17E-03	1.24E-01	3.11E-01	8.75E+00	8.00E-01	6.03E+00	5.16E-02
CARM-200 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	6.39E+02	8.79E+00	7.84E-04	4.12E+02	3.23E-01	4.17E-03	1.24E-01	3.06E-01	8.75E+00	8.00E-01	6.03E+00	5.08E-02
CARM-200+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	4.22E+02	5.81E+00	7.84E-04	2.72E+02	2.13E-01	4.17E-03	1.24E-01	2.02E-01	8.75E+00	8.00E-01	6.03E+00	3.35E-02
CARM-250 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	5.12E+02	7.04E+00	7.84E-04	3.30E+02	2.59E-01	4.17E-03	1.24E-01	2.45E-01	8.75E+00	8.00E-01	6.03E+00	4.07E-02
CARM-300 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	4.84E+02	6.66E+00	7.84E-04	3.12E+02	2.45E-01	4.17E-03	1.24E-01	2.32E-01	8.75E+00	8.00E-01	6.03E+00	3.85E-02
CARM-350 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	4.04E+02	5.56E+00	7.84E-04	2.60E+02	2.04E-01	4.17E-03	1.24E-01	1.94E-01	8.75E+00	8.00E-01	6.03E+00	3.21E-02
CARM-400 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	4.04E+02	5.56E+00	7.84E-04	2.60E+02	2.04E-01	4.17E-03	1.24E-01	1.94E-01	8.75E+00	8.00E-01	6.03E+00	3.21E-02
CARM-500 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CARM-550 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	7.28E+02	1.00E+01	7.84E-04	4.69E+02	3.68E-01	4.17E-03	1.24E-01	3.49E-01	8.75E+00	8.00E-01	6.03E+00	5.79E-02
CARM-600 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	5.33E+02	7.34E+00	7.84E-04	3.43E+02	2.69E-01	4.17E-03	1.24E-01	2.55E-01	8.75E+00	8.00E-01	6.03E+00	4.24E-02
CARM-650 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CARM-700 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.68E+02	2.31E+00	7.84E-04	1.08E+02	8.49E-02	4.17E-03	1.24E-01	8.05E-02	8.75E+00	8.00E-01	6.03E+00	1.34E-02
CARM-750 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	9.89E+01	1.36E+00	7.84E-04	6.37E+01	5.00E-02	4.17E-03	1.24E-01	4.74E-02	8.75E+00	8.00E-01	6.03E+00	7.86E-03
CARM-800 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	2.63E+02	3.61E+00	7.84E-04	1.69E+02	1.33E-01	4.17E-03	1.24E-01	1.26E-01	8.75E+00	8.00E-01	6.03E+00	2.09E-02
CARM-850 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.01E+02	1.39E+00	7.84E-04	6.49E+01	5.09E-02	4.17E-03	1.24E-01	4.82E-02	8.75E+00	8.00E-01	6.03E+00	8.01E-03
CARM-950 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.61E+02	2.22E+00	7.84E-04	1.04E+02	8.16E-02	4.17E-03	1.24E-01	7.74E-02	8.75E+00	8.00E-01	6.03E+00	1.28E-02
CARM-1000 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.20E+02	1.65E+00	7.84E-04	7.74E+01	6.07E-02	4.17E-03	1.24E-01	5.76E-02	8.75E+00	8.00E-01	6.03E+00	9.56E-03
CARM-1050 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	3.96E+03	5.46E+01	7.84E-04	2.55E+03	2.00E+00	4.17E-03	1.24E-01	1.90E+00	8.75E+00	8.00E-01	6.03E+00	3.15E-01
CARM-1050+6.25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	4.26E+02	5.86E+00	7.84E-04	2.74E+02	2.15E-01	4.17E-03	1.24E-01	2.04E-01	8.75E+00	8.00E-01	6.03E+00	3.39E-02
CARM-1150 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	7.70E+02	1.06E+01	7.84E-04	4.96E+02	3.89E-01	4.17E-03	1.24E-01	3.69E-01	8.75E+00	8.00E-01	6.03E+00	6.13E-02
CARM-1150+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.58E+02	2.18E+00	7.84E-04	1.02E+02	7.99E-02	4.17E-03	1.24E-01	7.58E-02	8.75E+00	8.00E-01	6.03E+00	1.26E-02
CARM-Comp 1 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	5.45E+02	7.50E+00	7.84E-04	3.51E+02	2.76E-01	4.17E-03	1.24E-01	2.61E-01	8.75E+00	8.00E-01	6.03E+00	4.34E-02
																						Maximum HQ (Carbonate Mine)	**3.15E-01**

TABLE C-4D: LEAD DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 4 - CARBONATE MINE WASTE AREA (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 1.09

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Meadow Vole (Small Herbivorous Mammal - Terrestrial)																							
Reference Site																							
SWGBG-1	4.69E-03	NA	NA	NA	NA	4.69E-03	4.35E-02	2.64E+00	1.24E-02	NA	NA	NA	NA	1.13E-04	6.08E+01	6.84E-03	1.00E+00	3.06E-02	6.29E-01	2.41E+02	1.87E-02	2.34E+02	2.69E-03
SWGBG-2	4.69E-03	NA	NA	NA	NA	4.69E-03	4.35E-02	5.44E+00	2.55E-02	NA	NA	NA	NA	1.13E-04	1.25E+02	1.41E-02	1.00E+00	3.06E-02	1.29E+00	2.41E+02	1.87E-02	2.34E+02	5.53E-03
Carbonate Mine																						**Minimum HQ (Reference Sites)**	**2.69E-03**
CARM-00 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	9.18E+01	4.30E-01	NA	NA	NA	NA	1.13E-04	1.46E+02	1.64E-02	1.00E+00	3.06E-02	1.46E+01	2.41E+02	1.87E-02	2.34E+02	6.25E-02
CARM-50 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	2.71E+02	1.27E+00	NA	NA	NA	NA	1.13E-04	4.31E+02	4.85E-02	1.00E+00	3.06E-02	4.30E+01	2.41E+02	1.87E-02	2.34E+02	1.84E-01
CARM-50+12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	3.64E+02	1.71E+00	NA	NA	NA	NA	1.13E-04	5.79E+02	6.52E-02	1.00E+00	3.06E-02	5.79E+01	2.41E+02	1.87E-02	2.34E+02	2.48E-01
CARM-100 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	3.31E+02	1.55E+00	NA	NA	NA	NA	1.13E-04	5.26E+02	5.92E-02	1.00E+00	3.06E-02	5.26E+01	2.41E+02	1.87E-02	2.34E+02	2.25E-01
CARM-100+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	3.89E+02	1.82E+00	NA	NA	NA	NA	1.13E-04	6.19E+02	6.97E-02	1.00E+00	3.06E-02	6.19E+01	2.41E+02	1.87E-02	2.34E+02	2.65E-01
CARM-110 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	2.05E+02	9.63E-01	NA	NA	NA	NA	1.13E-04	3.27E+02	3.68E-02	1.00E+00	3.06E-02	3.27E+01	2.41E+02	1.87E-02	2.34E+02	1.40E-01
CARM-150 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	2.59E+02	1.21E+00	NA	NA	NA	NA	1.13E-04	4.12E+02	4.64E-02	1.00E+00	3.06E-02	4.12E+01	2.41E+02	1.87E-02	2.34E+02	1.76E-01
CARM-150+50 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	2.62E+02	1.23E+00	NA	NA	NA	NA	1.13E-04	4.18E+02	4.70E-02	1.00E+00	3.06E-02	4.18E+01	2.41E+02	1.87E-02	2.34E+02	1.79E-01
CARM-200 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	2.59E+02	1.21E+00	NA	NA	NA	NA	1.13E-04	4.12E+02	4.63E-02	1.00E+00	3.06E-02	4.11E+01	2.41E+02	1.87E-02	2.34E+02	1.76E-01
CARM-200+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	1.71E+02	8.01E-01	NA	NA	NA	NA	1.13E-04	2.72E+02	3.06E-02	1.00E+00	3.06E-02	2.72E+01	2.41E+02	1.87E-02	2.34E+02	1.16E-01
CARM-250 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	2.07E+02	9.71E-01	NA	NA	NA	NA	1.13E-04	3.30E+02	3.71E-02	1.00E+00	3.06E-02	3.29E+01	2.41E+02	1.87E-02	2.34E+02	1.41E-01
CARM-300 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	1.96E+02	9.19E-01	NA	NA	NA	NA	1.13E-04	3.12E+02	3.51E-02	1.00E+00	3.06E-02	3.12E+01	2.41E+02	1.87E-02	2.34E+02	1.33E-01
CARM-350 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	1.64E+02	7.67E-01	NA	NA	NA	NA	1.13E-04	2.60E+02	2.93E-02	1.00E+00	3.06E-02	2.60E+01	2.41E+02	1.87E-02	2.34E+02	1.11E-01
CARM-400 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	1.64E+02	7.67E-01	NA	NA	NA	NA	1.13E-04	2.60E+02	2.93E-02	1.00E+00	3.06E-02	2.60E+01	2.41E+02	1.87E-02	2.34E+02	1.11E-01
CARM-500 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CARM-550 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	2.95E+02	1.38E+00	NA	NA	NA	NA	1.13E-04	4.69E+02	5.28E-02	1.00E+00	3.06E-02	4.69E+01	2.41E+02	1.87E-02	2.34E+02	2.01E-01
CARM-600 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	2.16E+02	1.01E+00	NA	NA	NA	NA	1.13E-04	3.43E+02	3.87E-02	1.00E+00	3.06E-02	3.43E+01	2.41E+02	1.87E-02	2.34E+02	1.47E-01
CARM-650 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CARM-700 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	6.80E+01	3.19E-01	NA	NA	NA	NA	1.13E-04	1.08E+02	1.22E-02	1.00E+00	3.06E-02	1.08E+01	2.41E+02	1.87E-02	2.34E+02	4.63E-02
CARM-750 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	4.00E+01	1.88E-01	NA	NA	NA	NA	1.13E-04	6.37E+01	7.17E-03	1.00E+00	3.06E-02	6.37E+00	2.41E+02	1.87E-02	2.34E+02	2.73E-02
CARM-800 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	1.06E+02	4.98E-01	NA	NA	NA	NA	1.13E-04	1.69E+02	1.90E-02	1.00E+00	3.06E-02	1.69E+01	2.41E+02	1.87E-02	2.34E+02	7.24E-02
CARM-850 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	4.07E+01	1.91E-01	NA	NA	NA	NA	1.13E-04	6.49E+01	7.30E-03	1.00E+00	3.06E-02	6.48E+00	2.41E+02	1.87E-02	2.34E+02	2.77E-02
CARM-950 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	6.53E+01	3.06E-01	NA	NA	NA	NA	1.13E-04	1.04E+02	1.17E-02	1.00E+00	3.06E-02	1.04E+01	2.41E+02	1.87E-02	2.34E+02	4.45E-02
CARM-1000 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	4.86E+01	2.28E-01	NA	NA	NA	NA	1.13E-04	7.74E+01	8.71E-03	1.00E+00	3.06E-02	7.74E+00	2.41E+02	1.87E-02	2.34E+02	3.31E-02
CARM-1050 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	1.60E+03	7.53E+00	NA	NA	NA	NA	1.13E-04	2.55E+03	2.87E-01	1.00E+00	3.06E-02	2.55E+02	2.41E+02	1.87E-02	2.34E+02	1.09E+00
CARM-1050+6.25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	1.72E+02	8.08E-01	NA	NA	NA	NA	1.13E-04	2.74E+02	3.09E-02	1.00E+00	3.06E-02	2.74E+01	2.41E+02	1.87E-02	2.34E+02	1.17E-01
CARM-1150 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	3.12E+02	1.46E+00	NA	NA	NA	NA	1.13E-04	4.96E+02	5.59E-02	1.00E+00	3.06E-02	4.96E+01	2.41E+02	1.87E-02	2.34E+02	2.12E-01
CARM-1150+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	6.40E+01	3.00E-01	NA	NA	NA	NA	1.13E-04	1.02E+02	1.15E-02	1.00E+00	3.06E-02	1.02E+01	2.41E+02	1.87E-02	2.34E+02	4.36E-02
CARM-Comp 1 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	2.21E+02	1.03E+00	NA	NA	NA	NA	1.13E-04	3.51E+02	3.95E-02	1.00E+00	3.06E-02	3.51E+01	2.41E+02	1.87E-02	2.34E+02	1.50E-01
																						Maximum HQ (Carbonate Mine)	**1.09E+00**
White-Tailed Deer (Large Herbivorous Mammal - Terrestrial)																							
Reference Site																							
SWGBG-1	1.43E+00	NA	NA	NA	NA	1.43E+00	4.35E-02	2.64E+00	3.78E+00	NA	NA	NA	NA	2.86E-02	6.08E+01	1.74E+00	6.10E-03	1.35E+02	2.50E-04	2.41E+02	1.87E-02	1.41E+02	1.77E-06
SWGBG-2	1.43E+00	NA	NA	NA	NA	1.43E+00	4.35E-02	5.44E+00	7.78E+00	NA	NA	NA	NA	2.86E-02	1.25E+02	3.58E+00	6.10E-03	1.35E+02	5.13E-04	2.41E+02	1.87E-02	1.41E+02	3.63E-06
Carbonate Mine																						**Minimum HQ (Reference Sites)**	**1.77E-06**
CARM-00 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	9.18E+01	1.31E+02	NA	NA	NA	NA	2.86E-02	1.46E+02	4.18E+00	6.10E-03	1.35E+02	6.12E-03	2.41E+02	1.87E-02	1.41E+02	4.34E-05
CARM-50 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	2.71E+02	3.87E+02	NA	NA	NA	NA	2.86E-02	4.31E+02	1.23E+01	6.10E-03	1.35E+02	1.81E-02	2.41E+02	1.87E-02	1.41E+02	1.28E-04
CARM-50+12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	3.64E+02	5.21E+02	NA	NA	NA	NA	2.86E-02	5.79E+02	1.66E+01	6.10E-03	1.35E+02	2.43E-02	2.41E+02	1.87E-02	1.41E+02	1.72E-04
CARM-100 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	3.31E+02	4.73E+02	NA	NA	NA	NA	2.86E-02	5.26E+02	1.51E+01	6.10E-03	1.35E+02	2.21E-02	2.41E+02	1.87E-02	1.41E+02	1.56E-04
CARM-100+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	3.89E+02	5.57E+02	NA	NA	NA	NA	2.86E-02	6.19E+02	1.77E+01	6.10E-03	1.35E+02	2.60E-02	2.41E+02	1.87E-02	1.41E+02	1.84E-04
CARM-110 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	2.05E+02	2.94E+02	NA	NA	NA	NA	2.86E-02	3.27E+02	9.36E+00	6.10E-03	1.35E+02	1.37E-02	2.41E+02	1.87E-02	1.41E+02	9.70E-05
CARM-150 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	2.59E+02	3.70E+02	NA	NA	NA	NA	2.86E-02	4.12E+02	1.18E+01	6.10E-03	1.35E+02	1.73E-02	2.41E+02	1.87E-02	1.41E+02	1.22E-04
CARM-150+50 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	2.62E+02	3.76E+02	NA	NA	NA	NA	2.86E-02	4.18E+02	1.20E+01	6.10E-03	1.35E+02	1.75E-02	2.41E+02	1.87E-02	1.41E+02	1.24E-04
CARM-200 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	2.59E+02	3.70E+02	NA	NA	NA	NA	2.86E-02	4.12E+02	1.18E+01	6.10E-03	1.35E+02	1.73E-02	2.41E+02	1.87E-02	1.41E+02	1.22E-04
CARM-200+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	1.71E+02	2.44E+02	NA	NA	NA	NA	2.86E-02	2.72E+02	7.78E+00	6.10E-03	1.35E+02	1.14E-02	2.41E+02	1.87E-02	1.41E+02	8.07E-05
CARM-250 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	2.07E+02	2.96E+02	NA	NA	NA	NA	2.86E-02	3.30E+02	9.44E+00	6.10E-03	1.35E+02	1.38E-02	2.41E+02	1.87E-02	1.41E+02	9.78E-05
CARM-300 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	1.96E+02	2.81E+02	NA	NA	NA	NA	2.86E-02	3.12E+02	8.93E+00	6.10E-03	1.35E+02	1.31E-02	2.41E+02	1.87E-02	1.41E+02	9.26E-05
CARM-350 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	1.64E+02	2.34E+02	NA	NA	NA	NA	2.86E-02	2.60E+02	7.45E+00	6.10E-03	1.35E+02	1.09E-02	2.41E+02	1.87E-02	1.41E+02	7.73E-05
CARM-400 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	1.64E+02	2.34E+02	NA	NA	NA	NA	2.86E-02	2.60E+02	7.45E+00	6.10E-03	1.35E+02	1.09E-02	2.41E+02	1.87E-02	1.41E+02	7.73E-05
CARM-500 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB

TABLE C-4D: LEAD DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 4 - CARBONATE MINE WASTE AREA (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **1.09**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
White-Tailed Deer (Large Herbivorous Mammal - Terrestrial)																							
CARM-550 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	2.95E+02	4.22E+02	NA	NA	NA	NA	2.86E-02	4.69E+02	1.34E+01	6.10E-03	1.35E+02	1.97E-02	2.41E+02	1.87E-02	1.41E+02	1.39E-04
CARM-600 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	2.16E+02	3.09E+02	NA	NA	NA	NA	2.86E-02	3.43E+02	9.83E+00	6.10E-03	1.35E+02	1.44E-02	2.41E+02	1.87E-02	1.41E+02	1.02E-04
CARM-650 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CARM-700 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	6.80E+01	9.74E+01	NA	NA	NA	NA	2.86E-02	1.08E+02	3.10E+00	6.10E-03	1.35E+02	4.54E-03	2.41E+02	1.87E-02	1.41E+02	3.21E-05
CARM-750 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	4.00E+01	5.73E+01	NA	NA	NA	NA	2.86E-02	6.37E+01	1.82E+00	6.10E-03	1.35E+02	2.67E-03	2.41E+02	1.87E-02	1.41E+02	1.89E-05
CARM-800 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	1.06E+02	1.52E+02	NA	NA	NA	NA	2.86E-02	1.69E+02	4.85E+00	6.10E-03	1.35E+02	7.09E-03	2.41E+02	1.87E-02	1.41E+02	5.02E-05
CARM-850 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	4.07E+01	5.83E+01	NA	NA	NA	NA	2.86E-02	6.49E+01	1.86E+00	6.10E-03	1.35E+02	2.72E-03	2.41E+02	1.87E-02	1.41E+02	1.93E-05
CARM-950 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	6.53E+01	9.35E+01	NA	NA	NA	NA	2.86E-02	1.04E+02	2.98E+00	6.10E-03	1.35E+02	4.36E-03	2.41E+02	1.87E-02	1.41E+02	3.09E-05
CARM-1000 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	4.86E+01	6.96E+01	NA	NA	NA	NA	2.86E-02	7.74E+01	2.22E+00	6.10E-03	1.35E+02	3.25E-03	2.41E+02	1.87E-02	1.41E+02	2.30E-05
CARM-1050 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	1.60E+03	2.30E+03	NA	NA	NA	NA	2.86E-02	2.55E+03	7.31E+01	6.10E-03	1.35E+02	1.07E-01	2.41E+02	1.87E-02	1.41E+02	7.58E-04
CARM-1050+6.25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	1.72E+02	2.47E+02	NA	NA	NA	NA	2.86E-02	2.74E+02	7.86E+00	6.10E-03	1.35E+02	1.15E-02	2.41E+02	1.87E-02	1.41E+02	8.15E-05
CARM-1150 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	3.12E+02	4.46E+02	NA	NA	NA	NA	2.86E-02	4.96E+02	1.42E+01	6.10E-03	1.35E+02	2.08E-02	2.41E+02	1.87E-02	1.41E+02	1.47E-04
CARM-1150+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	6.40E+01	9.17E+01	NA	NA	NA	NA	2.86E-02	1.02E+02	2.92E+00	6.10E-03	1.35E+02	4.27E-03	2.41E+02	1.87E-02	1.41E+02	3.03E-05
CARM-Comp 1 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	2.21E+02	3.16E+02	NA	NA	NA	NA	2.86E-02	3.51E+02	1.01E+01	6.10E-03	1.35E+02	1.47E-02	2.41E+02	1.87E-02	1.41E+02	1.04E-04
																						Maximum HQ (Carbonate Mine)	**7.58E-04**
Red Fox (Carnivorous Mammal - Terrestrial)																							
Reference Site																							
SWGBG-1	1.72E-01	1.72E-01	7.62E-02	4.64E+00	7.95E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	6.08E+01	2.92E-01	8.05E-04	4.54E+00	1.93E-04	2.41E+02	1.87E-02	1.73E+02	1.12E-06
SWGBG-2	1.72E-01	1.72E-01	7.62E-02	9.53E+00	1.64E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.25E+02	6.01E-01	8.05E-04	4.54E+00	3.97E-04	2.41E+02	1.87E-02	1.73E+02	2.29E-06
Carbonate Mine																						**Minimum HQ (Reference Sites)**	**1.12E-06**
CARM-00 (0-6")	1.72E-01	1.72E-01	9.28E-01	1.36E+02	2.33E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.46E+02	7.02E-01	8.05E-04	4.54E+00	4.25E-03	2.41E+02	1.87E-02	1.73E+02	2.46E-05
CARM-50 (0-6")	1.72E-01	1.72E-01	9.28E-01	4.00E+02	6.85E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.31E+02	2.07E+00	8.05E-04	4.54E+00	1.25E-02	2.41E+02	1.87E-02	1.73E+02	7.24E-05
CARM-50+12.5 (0-6")	1.72E-01	1.72E-01	9.28E-01	5.37E+02	9.22E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.79E+02	2.78E+00	8.05E-04	4.54E+00	1.69E-02	2.41E+02	1.87E-02	1.73E+02	9.74E-05
CARM-100 (0-6")	1.72E-01	1.72E-01	9.28E-01	4.88E+02	8.38E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.26E+02	2.53E+00	8.05E-04	4.54E+00	1.53E-02	2.41E+02	1.87E-02	1.73E+02	8.85E-05
CARM-100+25 (0-6")	1.72E-01	1.72E-01	9.28E-01	5.74E+02	9.85E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	6.19E+02	2.97E+00	8.05E-04	4.54E+00	1.80E-02	2.41E+02	1.87E-02	1.73E+02	1.04E-04
CARM-110 (0-6")	1.72E-01	1.72E-01	9.28E-01	3.03E+02	5.20E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.27E+02	1.57E+00	8.05E-04	4.54E+00	9.51E-03	2.41E+02	1.87E-02	1.73E+02	5.49E-05
CARM-150 (0-6")	1.72E-01	1.72E-01	9.28E-01	3.82E+02	6.56E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.12E+02	1.98E+00	8.05E-04	4.54E+00	1.20E-02	2.41E+02	1.87E-02	1.73E+02	6.93E-05
CARM-150+50 (0-6")	1.72E-01	1.72E-01	9.28E-01	3.88E+02	6.65E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.18E+02	2.01E+00	8.05E-04	4.54E+00	1.22E-02	2.41E+02	1.87E-02	1.73E+02	7.03E-05
CARM-200 (0-6")	1.72E-01	1.72E-01	9.28E-01	3.82E+02	6.55E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.12E+02	1.98E+00	8.05E-04	4.54E+00	1.20E-02	2.41E+02	1.87E-02	1.73E+02	6.92E-05
CARM-200+25 (0-6")	1.72E-01	1.72E-01	9.28E-01	2.52E+02	4.33E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.72E+02	1.31E+00	8.05E-04	4.54E+00	7.91E-03	2.41E+02	1.87E-02	1.73E+02	4.57E-05
CARM-250 (0-6")	1.72E-01	1.72E-01	9.28E-01	3.06E+02	5.25E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.30E+02	1.58E+00	8.05E-04	4.54E+00	9.59E-03	2.41E+02	1.87E-02	1.73E+02	5.54E-05
CARM-300 (0-6")	1.72E-01	1.72E-01	9.28E-01	2.89E+02	4.96E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.12E+02	1.50E+00	8.05E-04	4.54E+00	9.08E-03	2.41E+02	1.87E-02	1.73E+02	5.25E-05
CARM-350 (0-6")	1.72E-01	1.72E-01	9.28E-01	2.42E+02	4.14E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.60E+02	1.25E+00	8.05E-04	4.54E+00	7.58E-03	2.41E+02	1.87E-02	1.73E+02	4.38E-05
CARM-400 (0-6")	1.72E-01	1.72E-01	9.28E-01	2.42E+02	4.14E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.60E+02	1.25E+00	8.05E-04	4.54E+00	7.58E-03	2.41E+02	1.87E-02	1.73E+02	4.38E-05
CARM-500 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CARM-550 (0-6")	1.72E-01	1.72E-01	9.28E-01	4.35E+02	7.46E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.69E+02	2.25E+00	8.05E-04	4.54E+00	1.36E-02	2.41E+02	1.87E-02	1.73E+02	7.88E-05
CARM-600 (0-6")	1.72E-01	1.72E-01	9.28E-01	3.19E+02	5.47E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.43E+02	1.65E+00	8.05E-04	4.54E+00	1.00E-02	2.41E+02	1.87E-02	1.73E+02	5.78E-05
CARM-650 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CARM-700 (0-6")	1.72E-01	1.72E-01	9.28E-01	1.00E+02	1.72E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.08E+02	5.20E-01	8.05E-04	4.54E+00	3.15E-03	2.41E+02	1.87E-02	1.73E+02	1.82E-05
CARM-750 (0-6")	1.72E-01	1.72E-01	9.28E-01	5.91E+01	1.01E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	6.37E+01	3.06E-01	8.05E-04	4.54E+00	1.85E-03	2.41E+02	1.87E-02	1.73E+02	1.07E-05
CARM-800 (0-6")	1.72E-01	1.72E-01	9.28E-01	1.57E+02	2.69E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.69E+02	8.13E-01	8.05E-04	4.54E+00	4.93E-03	2.41E+02	1.87E-02	1.73E+02	2.85E-05
CARM-850 (0-6")	1.72E-01	1.72E-01	9.28E-01	6.02E+01	1.03E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	6.49E+01	3.12E-01	8.05E-04	4.54E+00	1.89E-03	2.41E+02	1.87E-02	1.73E+02	1.09E-05
CARM-950 (0-6")	1.72E-01	1.72E-01	9.28E-01	9.65E+01	1.66E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.04E+02	5.00E-01	8.05E-04	4.54E+00	3.03E-03	2.41E+02	1.87E-02	1.73E+02	1.75E-05
CARM-1000 (0-6")	1.72E-01	1.72E-01	9.28E-01	7.18E+01	1.23E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	7.74E+01	3.72E-01	8.05E-04	4.54E+00	2.25E-03	2.41E+02	1.87E-02	1.73E+02	1.30E-05
CARM-1050 (0-6")	1.72E-01	1.72E-01	9.28E-01	2.37E+03	4.07E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.55E+03	1.23E+01	8.05E-04	4.54E+00	7.44E-02	2.41E+02	1.87E-02	1.73E+02	4.30E-04
CARM-1050+6.25 (0-6")	1.72E-01	1.72E-01	9.28E-01	2.55E+02	4.37E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.74E+02	1.32E+00	8.05E-04	4.54E+00	7.99E-03	2.41E+02	1.87E-02	1.73E+02	4.61E-05
CARM-1150 (0-6")	1.72E-01	1.72E-01	9.28E-01	4.61E+02	7.90E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.96E+02	2.38E+00	8.05E-04	4.54E+00	1.44E-02	2.41E+02	1.87E-02	1.73E+02	8.35E-05
CARM-1150+25 (0-6")	1.72E-01	1.72E-01	9.28E-01	9.45E+01	1.62E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.02E+02	4.89E-01	8.05E-04	4.54E+00	2.97E-03	2.41E+02	1.87E-02	1.73E+02	1.71E-05
CARM-Comp 1 (0-6")	1.72E-01	1.72E-01	9.28E-01	3.26E+02	5.59E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.51E+02	1.69E+00	8.05E-04	4.54E+00	1.02E-02	2.41E+02	1.87E-02	1.73E+02	5.91E-05
																						Maximum HQ (Carbonate Mine)	**4.30E-04**

TABLE C-4D: LEAD DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 4 - CARBONATE MINE WASTE AREA (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 1.09

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Masked Shrew (Omnivorous Mammal - Terrestrial, Wetland)																							
Reference Site																							
SWGBG-1	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	9.44E+01	8.00E-01	1.10E-03	6.08E+01	6.70E-02	1.00E+00	5.50E-03	1.58E+02	2.41E+02	1.87E-02	2.59E+02	6.08E-01
SWGBG-2	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.94E+02	1.64E+00	1.10E-03	1.25E+02	1.38E-01	1.00E+00	5.50E-03	3.24E+02	2.41E+02	1.87E-02	2.59E+02	1.25E+00
Carbonate Mine																						**Minimum HQ (Reference Sites)**	**6.08E-01**
CARM-00 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	2.27E+02	1.92E+00	1.10E-03	1.46E+02	1.61E-01	1.00E+00	5.50E-03	3.78E+02	2.41E+02	1.87E-02	2.59E+02	1.46E+00
CARM-50 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	6.68E+02	5.66E+00	1.10E-03	4.31E+02	4.74E-01	1.00E+00	5.50E-03	1.12E+03	2.41E+02	1.87E-02	2.59E+02	4.31E+00
CARM-50+12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	8.99E+02	7.61E+00	1.10E-03	5.79E+02	6.38E-01	1.00E+00	5.50E-03	1.50E+03	2.41E+02	1.87E-02	2.59E+02	5.79E+00
CARM-100 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	8.17E+02	6.92E+00	1.10E-03	5.26E+02	5.79E-01	1.00E+00	5.50E-03	1.36E+03	2.41E+02	1.87E-02	2.59E+02	5.26E+00
CARM-100+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	9.61E+02	8.14E+00	1.10E-03	6.19E+02	6.82E-01	1.00E+00	5.50E-03	1.60E+03	2.41E+02	1.87E-02	2.59E+02	6.19E+00
CARM-110 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	5.07E+02	4.30E+00	1.10E-03	3.27E+02	3.60E-01	1.00E+00	5.50E-03	8.46E+02	2.41E+02	1.87E-02	2.59E+02	3.27E+00
CARM-150 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	6.39E+02	5.41E+00	1.10E-03	4.12E+02	4.54E-01	1.00E+00	5.50E-03	1.07E+03	2.41E+02	1.87E-02	2.59E+02	4.12E+00
CARM-150+50 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	6.48E+02	5.49E+00	1.10E-03	4.18E+02	4.60E-01	1.00E+00	5.50E-03	1.08E+03	2.41E+02	1.87E-02	2.59E+02	4.18E+00
CARM-200 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	6.39E+02	5.41E+00	1.10E-03	4.12E+02	4.53E-01	1.00E+00	5.50E-03	1.07E+03	2.41E+02	1.87E-02	2.59E+02	4.12E+00
CARM-200+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	4.22E+02	3.57E+00	1.10E-03	2.72E+02	2.99E-01	1.00E+00	5.50E-03	7.04E+02	2.41E+02	1.87E-02	2.59E+02	2.72E+00
CARM-250 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	5.12E+02	4.33E+00	1.10E-03	3.30E+02	3.63E-01	1.00E+00	5.50E-03	8.54E+02	2.41E+02	1.87E-02	2.59E+02	3.30E+00
CARM-300 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	4.84E+02	4.10E+00	1.10E-03	3.12E+02	3.43E-01	1.00E+00	5.50E-03	8.08E+02	2.41E+02	1.87E-02	2.59E+02	3.12E+00
CARM-350 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	4.04E+02	3.42E+00	1.10E-03	2.60E+02	2.87E-01	1.00E+00	5.50E-03	6.74E+02	2.41E+02	1.87E-02	2.59E+02	2.60E+00
CARM-400 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	4.04E+02	3.42E+00	1.10E-03	2.60E+02	2.87E-01	1.00E+00	5.50E-03	6.74E+02	2.41E+02	1.87E-02	2.59E+02	2.60E+00
CARM-500 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CARM-550 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	7.28E+02	6.16E+00	1.10E-03	4.69E+02	5.16E-01	1.00E+00	5.50E-03	1.21E+03	2.41E+02	1.87E-02	2.59E+02	4.69E+00
CARM-600 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	5.33E+02	4.51E+00	1.10E-03	3.43E+02	3.78E-01	1.00E+00	5.50E-03	8.90E+02	2.41E+02	1.87E-02	2.59E+02	3.44E+00
CARM-650 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CARM-700 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.68E+02	1.42E+00	1.10E-03	1.08E+02	1.19E-01	1.00E+00	5.50E-03	2.80E+02	2.41E+02	1.87E-02	2.59E+02	1.08E+00
CARM-750 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	9.89E+01	8.38E-01	1.10E-03	6.37E+01	7.02E-02	1.00E+00	5.50E-03	1.65E+02	2.41E+02	1.87E-02	2.59E+02	6.37E-01
CARM-800 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	2.63E+02	2.22E+00	1.10E-03	1.69E+02	1.86E-01	1.00E+00	5.50E-03	4.38E+02	2.41E+02	1.87E-02	2.59E+02	1.69E+00
CARM-850 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.01E+02	8.53E-01	1.10E-03	6.49E+01	7.14E-02	1.00E+00	5.50E-03	1.68E+02	2.41E+02	1.87E-02	2.59E+02	6.49E-01
CARM-950 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.61E+02	1.37E+00	1.10E-03	1.04E+02	1.15E-01	1.00E+00	5.50E-03	2.69E+02	2.41E+02	1.87E-02	2.59E+02	1.04E+00
CARM-1000 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.20E+02	1.02E+00	1.10E-03	7.74E+01	8.53E-02	1.00E+00	5.50E-03	2.01E+02	2.41E+02	1.87E-02	2.59E+02	7.74E-01
CARM-1050 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	3.96E+03	3.36E+01	1.10E-03	2.55E+03	2.81E+00	1.00E+00	5.50E-03	6.62E+03	2.41E+02	1.87E-02	2.59E+02	2.56E+01
CARM-1050+6.25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	4.26E+02	3.61E+00	1.10E-03	2.74E+02	3.02E-01	1.00E+00	5.50E-03	7.11E+02	2.41E+02	1.87E-02	2.59E+02	2.74E+00
CARM-1150 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	7.70E+02	6.53E+00	1.10E-03	4.96E+02	5.47E-01	1.00E+00	5.50E-03	1.29E+03	2.41E+02	1.87E-02	2.59E+02	4.96E+00
CARM-1150+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.58E+02	1.34E+00	1.10E-03	1.02E+02	1.12E-01	1.00E+00	5.50E-03	2.64E+02	2.41E+02	1.87E-02	2.59E+02	1.02E+00
CARM-Comp 1 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	5.45E+02	4.62E+00	1.10E-03	3.51E+02	3.87E-01	1.00E+00	5.50E-03	9.10E+02	2.41E+02	1.87E-02	2.59E+02	3.51E+00
																						Maximum HQ (Carbonate Mine)	**2.56E+01**

Notes

1 See Tables 3-1 through 3-13 for ingestion rates, foraging ranges used to calculate the SUF, and body weights.

2 BAFs were calculated by dividing site-collected tissue by collocated soil concentrations (BAFs are in dry weight). The maximum BAF calculated from the Beartrap Creek and Blackfoot River transects was used for site dose calculations. The maximum BAF from the terrestrial reference site was used for reference site dose calculations.

3 The mammal, plant, and invertebrate concentrations were calculated by multiplying the soil concentration by the BAF to generate a tissue concentration (see note 2).

4 Mammal, plant, and invertebrate daily doses were calculated by multiplying the ingestion rate (see note 1) by the tissue concentration (see note 3).

5 Soil concentration from 0 to 6 inches below ground surface at point ID as measured by XRF 10. Doses were not calculated for detected and non-detected soil concentrations measured below the minimum reference site concentration, as indicated by BB. For results that were measured at less than the detection limit, doses were calculated using half of the detection limit.

6 Soil daily dose was calculated by multiplying the soil ingestion rate (see note 1) by soil concentration (see note 5).

7 Total daily dose is calculated using the following equation: total daily dose = ([mammal daily dose (if applicable) + plant daily dose (if applicable) + invertebrate daily dose (if applicable) + soil daily dose]*SUF)/receptor species body weight.

8 The TRVs used in this risk assessment represent a mid-range effects level. The derivation of TRVs is described in Navy (1998).

9 Allometrically adjusted TRVs for birds were calculated using the following equation: receptor species TRV = (test species TRV) x (test species body weight / receptor species body weight)$^{(1-1.2)}$.

10 Allometrically adjusted TRVs for mammals were calculated using the following equation: receptor species TRV = (test species TRV) x (test species body weight / receptor species body weight)$^{(1-0.94)}$.

11 HQs were calculated using the following equation: HQ = total daily dose/allometrically adjusted TRV.

12 Highlighted cells indicate an HQ greater than 1.0.

BAF	Bioaccumulation Factor	mg/day	Milligram per day
BB	Below minimum background reference site concentration	mg/kg	Milligram per kilogram
EE/CA	Engineering Evaluation/Cost Analysis	NA	Not applicable
EU	Exposure Unit	Navy	Department of the Navy
HQ	Hazard quotient	SUF	Site use factor
ID	Identification	TRV	Toxicity reference value
kg	Kilogram	XRF	X-ray fluorescence
kg/day	Kilogram per day	XRF 10	XRF measurements recorded following drying and seiving through a #10-mesh screen

Sources: Department of the Navy. 1998. "Development of Toxicity Reference Values for Conducting Ecological Risk Assessments at Naval Facilities in California, Interim Final." Prepared by Naval Facilities Engineering Command, Engineering Field Activity West (EFA West). San Bruno, California.

TABLE C-4E: MANGANESE DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 4 - CARBONATE MINE WASTE AREA

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **1.09**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Mourning Dove (Herbivorous Birds - Terrestrial)																							
Reference Site																							
SWGBG-1	5.76E-03	NA	NA	NA	NA	5.76E-03	3.34E-01	1.90E+02	1.10E+00	NA	NA	NA	NA	5.36E-04	5.69E+02	3.05E-01	4.21E-03	1.09E-01	5.40E-02	7.76E+02	1.97E-01	6.90E+02	7.82E-05
SWGBG-2	5.76E-03	NA	NA	NA	NA	5.76E-03	3.34E-01	2.53E+02	1.46E+00	NA	NA	NA	NA	5.36E-04	7.56E+02	4.05E-01	4.21E-03	1.09E-01	7.17E-02	7.76E+02	1.97E-01	6.90E+02	1.04E-04
Carbonate Mine																						**Minimum HQ (Reference Sites)**	**7.82E-05**
CARM-00 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	9.35E+03	5.39E+01	NA	NA	NA	NA	5.36E-04	9.44E+02	5.06E-01	4.21E-03	1.09E-01	2.10E+00	7.76E+02	1.97E-01	6.90E+02	3.04E-03
CARM-50 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	9.58E+03	5.52E+01	NA	NA	NA	NA	5.36E-04	9.67E+02	5.18E-01	4.21E-03	1.09E-01	2.15E+00	7.76E+02	1.97E-01	6.90E+02	3.11E-03
CARM-50+12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	1.58E+04	9.10E+01	NA	NA	NA	NA	5.36E-04	1.59E+03	8.54E-01	4.21E-03	1.09E-01	3.54E+00	7.76E+02	1.97E-01	6.90E+02	5.13E-03
CARM-100 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	1.33E+04	7.67E+01	NA	NA	NA	NA	5.36E-04	1.34E+03	7.20E-01	4.21E-03	1.09E-01	2.98E+00	7.76E+02	1.97E-01	6.90E+02	4.33E-03
CARM-100+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	1.58E+04	9.08E+01	NA	NA	NA	NA	5.36E-04	1.59E+03	8.52E-01	4.21E-03	1.09E-01	3.53E+00	7.76E+02	1.97E-01	6.90E+02	5.12E-03
CARM-110 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	1.20E+04	6.94E+01	NA	NA	NA	NA	5.36E-04	1.22E+03	6.51E-01	4.21E-03	1.09E-01	2.70E+00	7.76E+02	1.97E-01	6.90E+02	3.91E-03
CARM-150 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	8.55E+03	4.93E+01	NA	NA	NA	NA	5.36E-04	8.63E+02	4.63E-01	4.21E-03	1.09E-01	1.92E+00	7.76E+02	1.97E-01	6.90E+02	2.78E-03
CARM-150+50 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	1.27E+04	7.31E+01	NA	NA	NA	NA	5.36E-04	1.28E+03	6.86E-01	4.21E-03	1.09E-01	2.84E+00	7.76E+02	1.97E-01	6.90E+02	4.12E-03
CARM-200 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	9.20E+03	5.30E+01	NA	NA	NA	NA	5.36E-04	9.28E+02	4.97E-01	4.21E-03	1.09E-01	2.06E+00	7.76E+02	1.97E-01	6.90E+02	2.99E-03
CARM-200+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	1.51E+04	8.69E+01	NA	NA	NA	NA	5.36E-04	1.52E+03	8.16E-01	4.21E-03	1.09E-01	3.38E+00	7.76E+02	1.97E-01	6.90E+02	4.90E-03
CARM-250 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	1.08E+04	6.25E+01	NA	NA	NA	NA	5.36E-04	1.09E+03	5.87E-01	4.21E-03	1.09E-01	2.43E+00	7.76E+02	1.97E-01	6.90E+02	3.52E-03
CARM-300 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	1.42E+04	8.19E+01	NA	NA	NA	NA	5.36E-04	1.43E+03	7.69E-01	4.21E-03	1.09E-01	3.19E+00	7.76E+02	1.97E-01	6.90E+02	4.62E-03
CARM-350 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	2.20E+04	1.27E+02	NA	NA	NA	NA	5.36E-04	2.22E+03	1.19E+00	4.21E-03	1.09E-01	4.92E+00	7.76E+02	1.97E-01	6.90E+02	7.14E-03
CARM-400 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	2.55E+04	1.47E+02	NA	NA	NA	NA	5.36E-04	2.58E+03	1.38E+00	4.21E-03	1.09E-01	5.72E+00	7.76E+02	1.97E-01	6.90E+02	8.29E-03
CARM-500 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CARM-550 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	6.05E+03	3.48E+01	NA	NA	NA	NA	5.36E-04	6.10E+02	3.27E-01	4.21E-03	1.09E-01	1.36E+00	7.76E+02	1.97E-01	6.90E+02	1.96E-03
CARM-600 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	1.50E+04	8.64E+01	NA	NA	NA	NA	5.36E-04	1.51E+03	8.11E-01	4.21E-03	1.09E-01	3.36E+00	7.76E+02	1.97E-01	6.90E+02	4.87E-03
CARM-650 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CARM-700 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CARM-750 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CARM-800 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	7.54E+03	4.34E+01	NA	NA	NA	NA	5.36E-04	7.61E+02	4.08E-01	4.21E-03	1.09E-01	1.69E+00	7.76E+02	1.97E-01	6.90E+02	2.45E-03
CARM-850 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CARM-950 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CARM-1000 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	1.69E+05	9.71E+02	NA	NA	NA	NA	5.36E-04	1.70E+04	9.11E+00	4.21E-03	1.09E-01	3.78E+01	7.76E+02	1.97E-01	6.90E+02	5.47E-02
CARM-1050 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	9.96E+03	5.74E+01	NA	NA	NA	NA	5.36E-04	1.01E+03	5.39E-01	4.21E-03	1.09E-01	2.23E+00	7.76E+02	1.97E-01	6.90E+02	3.24E-03
CARM-1050+6.25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	1.37E+05	7.88E+02	NA	NA	NA	NA	5.36E-04	1.38E+04	7.40E+00	4.21E-03	1.09E-01	3.07E+01	7.76E+02	1.97E-01	6.90E+02	4.44E-02
CARM-1150 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	1.03E+04	5.94E+01	NA	NA	NA	NA	5.36E-04	1.04E+03	5.58E-01	4.21E-03	1.09E-01	2.31E+00	7.76E+02	1.97E-01	6.90E+02	3.35E-03
CARM-1150+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	1.73E+04	9.96E+01	NA	NA	NA	NA	5.36E-04	1.74E+03	9.35E-01	4.21E-03	1.09E-01	3.87E+00	7.76E+02	1.97E-01	6.90E+02	5.62E-03
CARM-Comp 1 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	1.37E+04	7.87E+01	NA	NA	NA	NA	5.36E-04	1.38E+03	7.39E-01	4.21E-03	1.09E-01	3.06E+00	7.76E+02	1.97E-01	6.90E+02	4.44E-03
																						Maximum HQ (Carbonate Mine)	**5.47E-02**
Red-Tailed Hawk (Carnivorous Birds - Terrestrial)																							
Reference Site																							
SWGBG-1	9.00E-02	9.00E-02	5.93E-02	3.38E+01	3.04E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.69E+02	2.92E+00	1.56E-03	1.13E+00	8.21E-03	7.76E+02	1.97E-01	1.10E+03	7.46E-06
SWGBG-2	9.00E-02	9.00E-02	5.93E-02	4.48E+01	4.03E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	7.56E+02	3.87E+00	1.56E-03	1.13E+00	1.09E-02	7.76E+02	1.97E-01	1.10E+03	9.90E-06
Carbonate Mine																						**Minimum HQ (Reference Sites)**	**7.46E-06**
CARM-00 (0-6")	9.00E-02	9.00E-02	2.80E-02	2.64E+01	2.38E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	9.44E+02	4.84E+00	1.56E-03	1.13E+00	9.95E-03	7.76E+02	1.97E-01	1.10E+03	9.03E-06
CARM-50 (0-6")	9.00E-02	9.00E-02	2.80E-02	2.71E+01	2.43E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	9.67E+02	4.96E+00	1.56E-03	1.13E+00	1.02E-02	7.76E+02	1.97E-01	1.10E+03	9.26E-06
CARM-50+12.5 (0-6")	9.00E-02	9.00E-02	2.80E-02	4.46E+01	4.02E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.59E+03	8.18E+00	1.56E-03	1.13E+00	1.68E-02	7.76E+02	1.97E-01	1.10E+03	1.53E-05
CARM-100 (0-6")	9.00E-02	9.00E-02	2.80E-02	3.76E+01	3.38E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.34E+03	6.89E+00	1.56E-03	1.13E+00	1.42E-02	7.76E+02	1.97E-01	1.10E+03	1.29E-05
CARM-100+25 (0-6")	9.00E-02	9.00E-02	2.80E-02	4.45E+01	4.01E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.59E+03	8.16E+00	1.56E-03	1.13E+00	1.68E-02	7.76E+02	1.97E-01	1.10E+03	1.52E-05
CARM-110 (0-6")	9.00E-02	9.00E-02	2.80E-02	3.40E+01	3.06E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.22E+03	6.23E+00	1.56E-03	1.13E+00	1.28E-02	7.76E+02	1.97E-01	1.10E+03	1.16E-05
CARM-150 (0-6")	9.00E-02	9.00E-02	2.80E-02	2.42E+01	2.17E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	8.63E+02	4.43E+00	1.56E-03	1.13E+00	9.10E-03	7.76E+02	1.97E-01	1.10E+03	8.26E-06
CARM-150+50 (0-6")	9.00E-02	9.00E-02	2.80E-02	3.58E+01	3.22E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.28E+03	6.56E+00	1.56E-03	1.13E+00	1.35E-02	7.76E+02	1.97E-01	1.10E+03	1.23E-05
CARM-200 (0-6")	9.00E-02	9.00E-02	2.80E-02	2.60E+01	2.34E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	9.28E+02	4.76E+00	1.56E-03	1.13E+00	9.79E-03	7.76E+02	1.97E-01	1.10E+03	8.89E-06
CARM-200+25 (0-6")	9.00E-02	9.00E-02	2.80E-02	4.26E+01	3.83E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.52E+03	7.80E+00	1.56E-03	1.13E+00	1.61E-02	7.76E+02	1.97E-01	1.10E+03	1.46E-05
CARM-250 (0-6")	9.00E-02	9.00E-02	2.80E-02	3.07E+01	2.76E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.09E+03	5.61E+00	1.56E-03	1.13E+00	1.15E-02	7.76E+02	1.97E-01	1.10E+03	1.05E-05
CARM-300 (0-6")	9.00E-02	9.00E-02	2.80E-02	4.02E+01	3.61E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.43E+03	7.36E+00	1.56E-03	1.13E+00	1.51E-02	7.76E+02	1.97E-01	1.10E+03	1.37E-05
CARM-350 (0-6")	9.00E-02	9.00E-02	2.80E-02	6.21E+01	5.58E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.22E+03	1.14E+01	1.56E-03	1.13E+00	2.34E-02	7.76E+02	1.97E-01	1.10E+03	2.12E-05
CARM-400 (0-6")	9.00E-02	9.00E-02	2.80E-02	7.21E+01	6.49E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.58E+03	1.32E+01	1.56E-03	1.13E+00	2.72E-02	7.76E+02	1.97E-01	1.10E+03	2.47E-05
CARM-500 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB

TABLE C-4E: MANGANESE DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 4 - CARBONATE MINE WASTE AREA (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **1.09**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Red-Tailed Hawk (Carnivorous Birds - Terrestrial)																							
CARM-550 (0-6")	9.00E-02	9.00E-02	2.80E-02	1.71E+01	1.54E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	6.10E+02	3.13E+00	1.56E-03	1.13E+00	6.44E-03	7.76E+02	1.97E-01	1.10E+03	5.84E-06
CARM-600 (0-6")	9.00E-02	9.00E-02	2.80E-02	4.24E+01	3.81E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.51E+03	7.76E+00	1.56E-03	1.13E+00	1.60E-02	7.76E+02	1.97E-01	1.10E+03	1.45E-05
CARM-650 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CARM-700 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CARM-750 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CARM-800 (0-6")	9.00E-02	9.00E-02	2.80E-02	2.13E+01	1.92E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	7.61E+02	3.90E+00	1.56E-03	1.13E+00	8.02E-03	7.76E+02	1.97E-01	1.10E+03	7.28E-06
CARM-850 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CARM-950 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CARM-1000 (0-6")	9.00E-02	9.00E-02	2.80E-02	4.76E+02	4.28E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.70E+04	8.72E+01	1.56E-03	1.13E+00	1.79E-01	7.76E+02	1.97E-01	1.10E+03	1.63E-04
CARM-1050 (0-6")	9.00E-02	9.00E-02	2.80E-02	2.82E+01	2.53E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.01E+03	5.16E+00	1.56E-03	1.13E+00	1.06E-02	7.76E+02	1.97E-01	1.10E+03	9.63E-06
CARM-1050+6.25 (0-6")	9.00E-02	9.00E-02	2.80E-02	3.87E+02	3.48E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.38E+04	7.08E+01	1.56E-03	1.13E+00	1.46E-01	7.76E+02	1.97E-01	1.10E+03	1.32E-04
CARM-1150 (0-6")	9.00E-02	9.00E-02	2.80E-02	2.91E+01	2.62E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.04E+03	5.34E+00	1.56E-03	1.13E+00	1.10E-02	7.76E+02	1.97E-01	1.10E+03	9.96E-06
CARM-1150+25 (0-6")	9.00E-02	9.00E-02	2.80E-02	4.88E+01	4.39E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.74E+03	8.95E+00	1.56E-03	1.13E+00	1.84E-02	7.76E+02	1.97E-01	1.10E+03	1.67E-05
CARM-Comp 1 (0-6")	9.00E-02	9.00E-02	2.80E-02	3.86E+01	3.47E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.38E+03	7.07E+00	1.56E-03	1.13E+00	1.45E-02	7.76E+02	1.97E-01	1.10E+03	1.32E-05
																						Maximum HQ (Carbonate Mine)	**1.63E-04**
American Kestral (Insectivorous Birds - Terrestrial)																							
Reference Site																							
SWGBG-1	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	8.40E+02	1.16E+01	7.84E-04	5.69E+02	4.46E-01	4.17E-03	1.24E-01	4.03E-01	7.76E+02	1.97E-01	7.08E+02	5.70E-04
SWGBG-2	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.12E+03	1.53E+01	7.84E-04	7.56E+02	5.93E-01	4.17E-03	1.24E-01	5.36E-01	7.76E+02	1.97E-01	7.08E+02	7.57E-04
Carbonate Mine																						**Minimum HQ (Reference Sites)**	**5.70E-04**
CARM-00 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.39E+03	1.92E+01	7.84E-04	9.44E+02	7.40E-01	4.17E-03	1.24E-01	6.69E-01	7.76E+02	1.97E-01	7.08E+02	9.45E-04
CARM-50 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.43E+03	1.96E+01	7.84E-04	9.67E+02	7.58E-01	4.17E-03	1.24E-01	6.85E-01	7.76E+02	1.97E-01	7.08E+02	9.68E-04
CARM-50+12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	2.35E+03	3.24E+01	7.84E-04	1.59E+03	1.25E+00	4.17E-03	1.24E-01	1.13E+00	7.76E+02	1.97E-01	7.08E+02	1.60E-03
CARM-100 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.98E+03	2.73E+01	7.84E-04	1.34E+03	1.05E+00	4.17E-03	1.24E-01	9.52E-01	7.76E+02	1.97E-01	7.08E+02	1.35E-03
CARM-100+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	2.35E+03	3.23E+01	7.84E-04	1.59E+03	1.25E+00	4.17E-03	1.24E-01	1.13E+00	7.76E+02	1.97E-01	7.08E+02	1.59E-03
CARM-110 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.79E+03	2.47E+01	7.84E-04	1.22E+03	9.54E-01	4.17E-03	1.24E-01	8.62E-01	7.76E+02	1.97E-01	7.08E+02	1.22E-03
CARM-150 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.27E+03	1.75E+01	7.84E-04	8.63E+02	6.77E-01	4.17E-03	1.24E-01	6.12E-01	7.76E+02	1.97E-01	7.08E+02	8.64E-04
CARM-150+50 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.89E+03	2.60E+01	7.84E-04	1.28E+03	1.00E+00	4.17E-03	1.24E-01	9.07E-01	7.76E+02	1.97E-01	7.08E+02	1.28E-03
CARM-200 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.37E+03	1.89E+01	7.84E-04	9.28E+02	7.28E-01	4.17E-03	1.24E-01	6.58E-01	7.76E+02	1.97E-01	7.08E+02	9.29E-04
CARM-200+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	2.25E+03	3.09E+01	7.84E-04	1.52E+03	1.19E+00	4.17E-03	1.24E-01	1.08E+00	7.76E+02	1.97E-01	7.08E+02	1.52E-03
CARM-250 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.62E+03	2.22E+01	7.84E-04	1.09E+03	8.59E-01	4.17E-03	1.24E-01	7.76E-01	7.76E+02	1.97E-01	7.08E+02	1.10E-03
CARM-300 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	2.12E+03	2.91E+01	7.84E-04	1.43E+03	1.13E+00	4.17E-03	1.24E-01	1.02E+00	7.76E+02	1.97E-01	7.08E+02	1.44E-03
CARM-350 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	3.27E+03	4.50E+01	7.84E-04	2.22E+03	1.74E+00	4.17E-03	1.24E-01	1.57E+00	7.76E+02	1.97E-01	7.08E+02	2.22E-03
CARM-400 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	3.80E+03	5.23E+01	7.84E-04	2.58E+03	2.02E+00	4.17E-03	1.24E-01	1.83E+00	7.76E+02	1.97E-01	7.08E+02	2.58E-03
CARM-500 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CARM-550 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	9.01E+02	1.24E+01	7.84E-04	6.10E+02	4.79E-01	4.17E-03	1.24E-01	4.33E-01	7.76E+02	1.97E-01	7.08E+02	6.11E-04
CARM-600 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	2.23E+03	3.07E+01	7.84E-04	1.51E+03	1.19E+00	4.17E-03	1.24E-01	1.07E+00	7.76E+02	1.97E-01	7.08E+02	1.52E-03
CARM-650 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CARM-700 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CARM-750 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CARM-800 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.12E+03	1.55E+01	7.84E-04	7.61E+02	5.97E-01	4.17E-03	1.24E-01	5.39E-01	7.76E+02	1.97E-01	7.08E+02	7.62E-04
CARM-850 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CARM-950 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CARM-1000 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	2.51E+04	3.45E+02	7.84E-04	1.70E+04	1.33E+01	4.17E-03	1.24E-01	1.21E+01	7.76E+02	1.97E-01	7.08E+02	1.70E-02
CARM-1050 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.48E+03	2.04E+01	7.84E-04	1.01E+03	7.89E-01	4.17E-03	1.24E-01	7.13E-01	7.76E+02	1.97E-01	7.08E+02	1.01E-03
CARM-1050+6.25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	2.04E+04	2.80E+02	7.84E-04	1.38E+04	1.08E+01	4.17E-03	1.24E-01	9.79E+00	7.76E+02	1.97E-01	7.08E+02	1.38E-02
CARM-1150 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.54E+03	2.11E+01	7.84E-04	1.04E+03	8.16E-01	4.17E-03	1.24E-01	7.37E-01	7.76E+02	1.97E-01	7.08E+02	1.04E-03
CARM-1150+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	2.58E+03	3.54E+01	7.84E-04	1.74E+03	1.37E+00	4.17E-03	1.24E-01	1.24E+00	7.76E+02	1.97E-01	7.08E+02	1.75E-03
CARM-Comp 1 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	2.03E+03	2.80E+01	7.84E-04	1.38E+03	1.08E+00	4.17E-03	1.24E-01	9.77E-01	7.76E+02	1.97E-01	7.08E+02	1.38E-03
																						Maximum HQ (Carbonate Mine)	**1.70E-02**

TABLE C-4E: MANGANESE DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 4 - CARBONATE MINE WASTE AREA (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **1.09**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Meadow Vole (Small Herbivorous Mammal - Terrestrial)																							
Reference Site																							
SWGBG-1	4.69E-03	NA	NA	NA	NA	4.69E-03	3.34E-01	1.90E+02	8.92E-01	NA	NA	NA	NA	1.13E-04	5.69E+02	6.40E-02	1.00E+00	3.06E-02	3.12E+01	1.59E+02	2.97E-02	1.59E+02	1.97E-01
SWGBG-2	4.69E-03	NA	NA	NA	NA	4.69E-03	3.34E-01	2.53E+02	1.18E+00	NA	NA	NA	NA	1.13E-04	7.56E+02	8.50E-02	1.00E+00	3.06E-02	4.15E+01	1.59E+02	2.97E-02	1.59E+02	2.61E-01
Carbonate Mine																						**Minimum HQ (Reference Sites)**	**1.97E-01**
CARM-00 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	9.35E+03	4.38E+01	NA	NA	NA	NA	1.13E-04	9.44E+02	1.06E-01	1.00E+00	3.06E-02	1.44E+03	1.59E+02	2.97E-02	1.59E+02	9.05E+00
CARM-50 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	9.58E+03	4.49E+01	NA	NA	NA	NA	1.13E-04	9.67E+02	1.09E-01	1.00E+00	3.06E-02	1.47E+03	1.59E+02	2.97E-02	1.59E+02	9.27E+00
CARM-50+12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	1.58E+04	7.41E+01	NA	NA	NA	NA	1.13E-04	1.59E+03	1.79E-01	1.00E+00	3.06E-02	2.43E+03	1.59E+02	2.97E-02	1.59E+02	1.53E+01
CARM-100 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	1.33E+04	6.24E+01	NA	NA	NA	NA	1.13E-04	1.34E+03	1.51E-01	1.00E+00	3.06E-02	2.05E+03	1.59E+02	2.97E-02	1.59E+02	1.29E+01
CARM-100+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	1.58E+04	7.39E+01	NA	NA	NA	NA	1.13E-04	1.59E+03	1.79E-01	1.00E+00	3.06E-02	2.42E+03	1.59E+02	2.97E-02	1.59E+02	1.52E+01
CARM-110 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	1.20E+04	5.65E+01	NA	NA	NA	NA	1.13E-04	1.22E+03	1.37E-01	1.00E+00	3.06E-02	1.85E+03	1.59E+02	2.97E-02	1.59E+02	1.17E+01
CARM-150 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	8.55E+03	4.01E+01	NA	NA	NA	NA	1.13E-04	8.63E+02	9.71E-02	1.00E+00	3.06E-02	1.31E+03	1.59E+02	2.97E-02	1.59E+02	8.27E+00
CARM-150+50 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	1.27E+04	5.95E+01	NA	NA	NA	NA	1.13E-04	1.28E+03	1.44E-01	1.00E+00	3.06E-02	1.95E+03	1.59E+02	2.97E-02	1.59E+02	1.23E+01
CARM-200 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	9.20E+03	4.31E+01	NA	NA	NA	NA	1.13E-04	9.28E+02	1.04E-01	1.00E+00	3.06E-02	1.41E+03	1.59E+02	2.97E-02	1.59E+02	8.90E+00
CARM-200+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	1.51E+04	7.07E+01	NA	NA	NA	NA	1.13E-04	1.52E+03	1.71E-01	1.00E+00	3.06E-02	2.32E+03	1.59E+02	2.97E-02	1.59E+02	1.46E+01
CARM-250 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	1.08E+04	5.09E+01	NA	NA	NA	NA	1.13E-04	1.09E+03	1.23E-01	1.00E+00	3.06E-02	1.67E+03	1.59E+02	2.97E-02	1.59E+02	1.05E+01
CARM-300 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	1.42E+04	6.67E+01	NA	NA	NA	NA	1.13E-04	1.43E+03	1.61E-01	1.00E+00	3.06E-02	2.18E+03	1.59E+02	2.97E-02	1.59E+02	1.38E+01
CARM-350 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	2.20E+04	1.03E+02	NA	NA	NA	NA	1.13E-04	2.22E+03	2.49E-01	1.00E+00	3.06E-02	3.37E+03	1.59E+02	2.97E-02	1.59E+02	2.12E+01
CARM-400 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	2.55E+04	1.20E+02	NA	NA	NA	NA	1.13E-04	2.58E+03	2.90E-01	1.00E+00	3.06E-02	3.92E+03	1.59E+02	2.97E-02	1.59E+02	2.47E+01
CARM-500 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CARM-550 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	6.05E+03	2.84E+01	NA	NA	NA	NA	1.13E-04	6.10E+02	6.87E-02	1.00E+00	3.06E-02	9.29E+02	1.59E+02	2.97E-02	1.59E+02	5.85E+00
CARM-600 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	1.50E+04	7.03E+01	NA	NA	NA	NA	1.13E-04	1.51E+03	1.70E-01	1.00E+00	3.06E-02	2.30E+03	1.59E+02	2.97E-02	1.59E+02	1.45E+01
CARM-650 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CARM-700 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CARM-750 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CARM-800 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	7.54E+03	3.54E+01	NA	NA	NA	NA	1.13E-04	7.61E+02	8.56E-02	1.00E+00	3.06E-02	1.16E+03	1.59E+02	2.97E-02	1.59E+02	7.29E+00
CARM-850 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CARM-950 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CARM-1000 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	1.69E+05	7.90E+02	NA	NA	NA	NA	1.13E-04	1.70E+04	1.91E+00	1.00E+00	3.06E-02	2.59E+04	1.59E+02	2.97E-02	1.59E+02	1.63E+02
CARM-1050 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	9.96E+03	4.67E+01	NA	NA	NA	NA	1.13E-04	1.01E+03	1.13E-01	1.00E+00	3.06E-02	1.53E+03	1.59E+02	2.97E-02	1.59E+02	9.64E+00
CARM-1050+6.25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	1.37E+05	6.42E+02	NA	NA	NA	NA	1.13E-04	1.38E+04	1.55E+00	1.00E+00	3.06E-02	2.10E+04	1.59E+02	2.97E-02	1.59E+02	1.32E+02
CARM-1150 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	1.03E+04	4.84E+01	NA	NA	NA	NA	1.13E-04	1.04E+03	1.17E-01	1.00E+00	3.06E-02	1.58E+03	1.59E+02	2.97E-02	1.59E+02	9.97E+00
CARM-1150+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	1.73E+04	8.11E+01	NA	NA	NA	NA	1.13E-04	1.74E+03	1.96E-01	1.00E+00	3.06E-02	2.66E+03	1.59E+02	2.97E-02	1.59E+02	1.67E+01
CARM-Comp 1 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	1.37E+04	6.41E+01	NA	NA	NA	NA	1.13E-04	1.38E+03	1.55E-01	1.00E+00	3.06E-02	2.10E+03	1.59E+02	2.97E-02	1.59E+02	1.32E+01
																						Maximum HQ (Carbonate Mine)	**1.63E+02**
White-Tailed Deer (Large Herbivorous Mammal - Terrestrial)																							
Reference Site																							
SWGBG-1	1.43E+00	NA	NA	NA	NA	1.43E+00	3.34E-01	1.90E+02	2.72E+02	NA	NA	NA	NA	2.86E-02	5.69E+02	1.63E+01	6.10E-03	1.35E+02	1.30E-02	1.59E+02	2.97E-02	9.60E+01	1.36E-04
SWGBG-2	1.43E+00	NA	NA	NA	NA	1.43E+00	3.34E-01	2.53E+02	3.62E+02	NA	NA	NA	NA	2.86E-02	7.56E+02	2.16E+01	6.10E-03	1.35E+02	1.73E-02	1.59E+02	2.97E-02	9.60E+01	1.80E-04
Carbonate Mine																						**Minimum HQ (Reference Sites)**	**1.36E-04**
CARM-00 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	9.35E+03	1.34E+04	NA	NA	NA	NA	2.86E-02	9.44E+02	2.70E+01	6.10E-03	1.35E+02	6.06E-01	1.59E+02	2.97E-02	9.60E+01	6.31E-03
CARM-50 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	9.58E+03	1.37E+04	NA	NA	NA	NA	2.86E-02	9.67E+02	2.77E+01	6.10E-03	1.35E+02	6.21E-01	1.59E+02	2.97E-02	9.60E+01	6.47E-03
CARM-50+12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	1.58E+04	2.26E+04	NA	NA	NA	NA	2.86E-02	1.59E+03	4.57E+01	6.10E-03	1.35E+02	1.02E+00	1.59E+02	2.97E-02	9.60E+01	1.07E-02
CARM-100 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	1.33E+04	1.91E+04	NA	NA	NA	NA	2.86E-02	1.34E+03	3.85E+01	6.10E-03	1.35E+02	8.63E-01	1.59E+02	2.97E-02	9.60E+01	8.99E-03
CARM-100+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	1.58E+04	2.26E+04	NA	NA	NA	NA	2.86E-02	1.59E+03	4.56E+01	6.10E-03	1.35E+02	1.02E+00	1.59E+02	2.97E-02	9.60E+01	1.06E-02
CARM-110 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	1.20E+04	1.72E+04	NA	NA	NA	NA	2.86E-02	1.22E+03	3.48E+01	6.10E-03	1.35E+02	7.81E-01	1.59E+02	2.97E-02	9.60E+01	8.13E-03
CARM-150 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	8.55E+03	1.22E+04	NA	NA	NA	NA	2.86E-02	8.63E+02	2.47E+01	6.10E-03	1.35E+02	5.54E-01	1.59E+02	2.97E-02	9.60E+01	5.77E-03
CARM-150+50 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	1.27E+04	1.82E+04	NA	NA	NA	NA	2.86E-02	1.28E+03	3.67E+01	6.10E-03	1.35E+02	8.22E-01	1.59E+02	2.97E-02	9.60E+01	8.56E-03
CARM-200 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	9.20E+03	1.32E+04	NA	NA	NA	NA	2.86E-02	9.28E+02	2.66E+01	6.10E-03	1.35E+02	5.96E-01	1.59E+02	2.97E-02	9.60E+01	6.21E-03
CARM-200+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	1.51E+04	2.16E+04	NA	NA	NA	NA	2.86E-02	1.52E+03	4.36E+01	6.10E-03	1.35E+02	9.77E-01	1.59E+02	2.97E-02	9.60E+01	1.02E-02
CARM-250 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	1.08E+04	1.55E+04	NA	NA	NA	NA	2.86E-02	1.09E+03	3.14E+01	6.10E-03	1.35E+02	7.03E-01	1.59E+02	2.97E-02	9.60E+01	7.32E-03
CARM-300 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	1.42E+04	2.04E+04	NA	NA	NA	NA	2.86E-02	1.43E+03	4.11E+01	6.10E-03	1.35E+02	9.21E-01	1.59E+02	2.97E-02	9.60E+01	9.60E-03
CARM-350 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	2.20E+04	3.15E+04	NA	NA	NA	NA	2.86E-02	2.22E+03	6.35E+01	6.10E-03	1.35E+02	1.42E+00	1.59E+02	2.97E-02	9.60E+01	1.48E-02
CARM-400 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	2.55E+04	3.65E+04	NA	NA	NA	NA	2.86E-02	2.58E+03	7.38E+01	6.10E-03	1.35E+02	1.65E+00	1.59E+02	2.97E-02	9.60E+01	1.72E-02
CARM-500 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB

TABLE C-4E: MANGANESE DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 4 - CARBONATE MINE WASTE AREA (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **1.09**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
White-Tailed Deer (Large Herbivorous Mammal - Terrestrial)																							
CARM-550 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	6.05E+03	8.66E+03	NA	NA	NA	NA	2.86E-02	6.10E+02	1.75E+01	6.10E-03	1.35E+02	3.92E-01	1.59E+02	2.97E-02	9.60E+01	4.08E-03
CARM-600 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	1.50E+04	2.15E+04	NA	NA	NA	NA	2.86E-02	1.51E+03	4.33E+01	6.10E-03	1.35E+02	9.72E-01	1.59E+02	2.97E-02	9.60E+01	1.01E-02
CARM-650 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CARM-700 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CARM-750 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CARM-800 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	7.54E+03	1.08E+04	NA	NA	NA	NA	2.86E-02	7.61E+02	2.18E+01	6.10E-03	1.35E+02	4.89E-01	1.59E+02	2.97E-02	9.60E+01	5.09E-03
CARM-850 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CARM-950 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CARM-1000 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	1.69E+05	2.41E+05	NA	NA	NA	NA	2.86E-02	1.70E+04	4.87E+02	6.10E-03	1.35E+02	1.09E+01	1.59E+02	2.97E-02	9.60E+01	1.14E-01
CARM-1050 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	9.96E+03	1.43E+04	NA	NA	NA	NA	2.86E-02	1.01E+03	2.88E+01	6.10E-03	1.35E+02	6.46E-01	1.59E+02	2.97E-02	9.60E+01	6.73E-03
CARM-1050+6.25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	1.37E+05	1.96E+05	NA	NA	NA	NA	2.86E-02	1.38E+04	3.95E+02	6.10E-03	1.35E+02	8.87E+00	1.59E+02	2.97E-02	9.60E+01	9.24E-02
CARM-1150 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	1.03E+04	1.48E+04	NA	NA	NA	NA	2.86E-02	1.04E+03	2.98E+01	6.10E-03	1.35E+02	6.68E-01	1.59E+02	2.97E-02	9.60E+01	6.96E-03
CARM-1150+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	1.73E+04	2.48E+04	NA	NA	NA	NA	2.86E-02	1.74E+03	5.00E+01	6.10E-03	1.35E+02	1.12E+00	1.59E+02	2.97E-02	9.60E+01	1.17E-02
CARM-Comp 1 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	1.37E+04	1.96E+04	NA	NA	NA	NA	2.86E-02	1.38E+03	3.95E+01	6.10E-03	1.35E+02	8.85E-01	1.59E+02	2.97E-02	9.60E+01	9.22E-03
																						Maximum HQ (Carbonate Mine)	**1.14E-01**
Red Fox (Carnivorous Mammal - Terrestrial)																							
Reference Site																							
SWGBG-1	1.72E-01	1.72E-01	5.93E-02	3.38E+01	5.79E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.69E+02	2.73E+00	8.05E-04	4.54E+00	1.51E-03	1.59E+02	2.97E-02	1.18E+02	1.29E-05
SWGBG-2	1.72E-01	1.72E-01	5.93E-02	4.48E+01	7.69E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	7.56E+02	3.63E+00	8.05E-04	4.54E+00	2.01E-03	1.59E+02	2.97E-02	1.18E+02	1.71E-05
Carbonate Mine																						**Minimum HQ (Reference Sites)**	**1.29E-05**
CARM-00 (0-6")	1.72E-01	1.72E-01	2.80E-02	2.64E+01	4.53E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	9.44E+02	4.53E+00	8.05E-04	4.54E+00	1.61E-03	1.59E+02	2.97E-02	1.18E+02	1.37E-05
CARM-50 (0-6")	1.72E-01	1.72E-01	2.80E-02	2.71E+01	4.64E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	9.67E+02	4.64E+00	8.05E-04	4.54E+00	1.65E-03	1.59E+02	2.97E-02	1.18E+02	1.40E-05
CARM-50+12.5 (0-6")	1.72E-01	1.72E-01	2.80E-02	4.46E+01	7.66E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.59E+03	7.66E+00	8.05E-04	4.54E+00	2.72E-03	1.59E+02	2.97E-02	1.18E+02	2.31E-05
CARM-100 (0-6")	1.72E-01	1.72E-01	2.80E-02	3.76E+01	6.45E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.34E+03	6.46E+00	8.05E-04	4.54E+00	2.29E-03	1.59E+02	2.97E-02	1.18E+02	1.95E-05
CARM-100+25 (0-6")	1.72E-01	1.72E-01	2.80E-02	4.45E+01	7.64E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.59E+03	7.64E+00	8.05E-04	4.54E+00	2.71E-03	1.59E+02	2.97E-02	1.18E+02	2.31E-05
CARM-110 (0-6")	1.72E-01	1.72E-01	2.80E-02	3.40E+01	5.84E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.22E+03	5.84E+00	8.05E-04	4.54E+00	2.07E-03	1.59E+02	2.97E-02	1.18E+02	1.76E-05
CARM-150 (0-6")	1.72E-01	1.72E-01	2.80E-02	2.42E+01	4.15E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	8.63E+02	4.15E+00	8.05E-04	4.54E+00	1.47E-03	1.59E+02	2.97E-02	1.18E+02	1.25E-05
CARM-150+50 (0-6")	1.72E-01	1.72E-01	2.80E-02	3.58E+01	6.15E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.28E+03	6.15E+00	8.05E-04	4.54E+00	2.18E-03	1.59E+02	2.97E-02	1.18E+02	1.86E-05
CARM-200 (0-6")	1.72E-01	1.72E-01	2.80E-02	2.60E+01	4.46E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	9.28E+02	4.46E+00	8.05E-04	4.54E+00	1.58E-03	1.59E+02	2.97E-02	1.18E+02	1.35E-05
CARM-200+25 (0-6")	1.72E-01	1.72E-01	2.80E-02	4.26E+01	7.31E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.52E+03	7.31E+00	8.05E-04	4.54E+00	2.60E-03	1.59E+02	2.97E-02	1.18E+02	2.21E-05
CARM-250 (0-6")	1.72E-01	1.72E-01	2.80E-02	3.07E+01	5.26E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.09E+03	5.26E+00	8.05E-04	4.54E+00	1.87E-03	1.59E+02	2.97E-02	1.18E+02	1.59E-05
CARM-300 (0-6")	1.72E-01	1.72E-01	2.80E-02	4.02E+01	6.89E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.43E+03	6.89E+00	8.05E-04	4.54E+00	2.45E-03	1.59E+02	2.97E-02	1.18E+02	2.08E-05
CARM-350 (0-6")	1.72E-01	1.72E-01	2.80E-02	6.21E+01	1.06E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.22E+03	1.06E+01	8.05E-04	4.54E+00	3.78E-03	1.59E+02	2.97E-02	1.18E+02	3.21E-05
CARM-400 (0-6")	1.72E-01	1.72E-01	2.80E-02	7.21E+01	1.24E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.58E+03	1.24E+01	8.05E-04	4.54E+00	4.39E-03	1.59E+02	2.97E-02	1.18E+02	3.73E-05
CARM-500 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CARM-550 (0-6")	1.72E-01	1.72E-01	2.80E-02	1.71E+01	2.93E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	6.10E+02	2.93E+00	8.05E-04	4.54E+00	1.04E-03	1.59E+02	2.97E-02	1.18E+02	8.85E-06
CARM-600 (0-6")	1.72E-01	1.72E-01	2.80E-02	4.24E+01	7.27E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.51E+03	7.27E+00	8.05E-04	4.54E+00	2.58E-03	1.59E+02	2.97E-02	1.18E+02	2.19E-05
CARM-650 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CARM-700 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CARM-750 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CARM-800 (0-6")	1.72E-01	1.72E-01	2.80E-02	2.13E+01	3.65E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	7.61E+02	3.65E+00	8.05E-04	4.54E+00	1.30E-03	1.59E+02	2.97E-02	1.18E+02	1.10E-05
CARM-850 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CARM-950 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CARM-1000 (0-6")	1.72E-01	1.72E-01	2.80E-02	4.76E+02	8.17E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.70E+04	8.17E+01	8.05E-04	4.54E+00	2.90E-02	1.59E+02	2.97E-02	1.18E+02	2.46E-04
CARM-1050 (0-6")	1.72E-01	1.72E-01	2.80E-02	2.82E+01	4.83E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.01E+03	4.83E+00	8.05E-04	4.54E+00	1.71E-03	1.59E+02	2.97E-02	1.18E+02	1.46E-05
CARM-1050+6.25 (0-6")	1.72E-01	1.72E-01	2.80E-02	3.87E+02	6.63E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.38E+04	6.63E+01	8.05E-04	4.54E+00	2.35E-02	1.59E+02	2.97E-02	1.18E+02	2.00E-04
CARM-1150 (0-6")	1.72E-01	1.72E-01	2.80E-02	2.91E+01	5.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.04E+03	5.00E+00	8.05E-04	4.54E+00	1.77E-03	1.59E+02	2.97E-02	1.18E+02	1.51E-05
CARM-1150+25 (0-6")	1.72E-01	1.72E-01	2.80E-02	4.88E+01	8.38E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.74E+03	8.38E+00	8.05E-04	4.54E+00	2.98E-03	1.59E+02	2.97E-02	1.18E+02	2.53E-05
CARM-Comp 1 (0-6")	1.72E-01	1.72E-01	2.80E-02	3.86E+01	6.62E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.38E+03	6.62E+00	8.05E-04	4.54E+00	2.35E-03	1.59E+02	2.97E-02	1.18E+02	2.00E-05
																						Maximum HQ (Carbonate Mine)	**2.46E-04**

TABLE C-4E: MANGANESE DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 4 - CARBONATE MINE WASTE AREA (Continued)
Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)
calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **1.09**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Masked Shrew (Omnivorous Mammal - Terrestrial, Wetland)																							
Reference Site																							
SWGBG-1	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	8.40E+02	7.11E+00	1.10E-03	5.69E+02	6.26E-01	1.00E+00	5.50E-03	1.41E+03	1.59E+02	2.97E-02	1.76E+02	7.99E+00
SWGBG-2	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.12E+03	9.45E+00	1.10E-03	7.56E+02	8.32E-01	1.00E+00	5.50E-03	1.87E+03	1.59E+02	2.97E-02	1.76E+02	1.06E+01
Carbonate Mine																						**Minimum HQ (Reference Sites)**	**7.99E+00**
CARM-00 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.39E+03	1.18E+01	1.10E-03	9.44E+02	1.04E+00	1.00E+00	5.50E-03	2.33E+03	1.59E+02	2.97E-02	1.76E+02	1.33E+01
CARM-50 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.43E+03	1.21E+01	1.10E-03	9.67E+02	1.06E+00	1.00E+00	5.50E-03	2.39E+03	1.59E+02	2.97E-02	1.76E+02	1.36E+01
CARM-50+12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	2.35E+03	1.99E+01	1.10E-03	1.59E+03	1.76E+00	1.00E+00	5.50E-03	3.94E+03	1.59E+02	2.97E-02	1.76E+02	2.24E+01
CARM-100 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.98E+03	1.68E+01	1.10E-03	1.34E+03	1.48E+00	1.00E+00	5.50E-03	3.32E+03	1.59E+02	2.97E-02	1.76E+02	1.89E+01
CARM-100+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	2.35E+03	1.99E+01	1.10E-03	1.59E+03	1.75E+00	1.00E+00	5.50E-03	3.93E+03	1.59E+02	2.97E-02	1.76E+02	2.24E+01
CARM-110 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.79E+03	1.52E+01	1.10E-03	1.22E+03	1.34E+00	1.00E+00	5.50E-03	3.01E+03	1.59E+02	2.97E-02	1.76E+02	1.71E+01
CARM-150 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.27E+03	1.08E+01	1.10E-03	8.63E+02	9.51E-01	1.00E+00	5.50E-03	2.13E+03	1.59E+02	2.97E-02	1.76E+02	1.21E+01
CARM-150+50 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.89E+03	1.60E+01	1.10E-03	1.28E+03	1.41E+00	1.00E+00	5.50E-03	3.17E+03	1.59E+02	2.97E-02	1.76E+02	1.80E+01
CARM-200 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.37E+03	1.16E+01	1.10E-03	9.28E+02	1.02E+00	1.00E+00	5.50E-03	2.30E+03	1.59E+02	2.97E-02	1.76E+02	1.30E+01
CARM-200+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	2.25E+03	1.90E+01	1.10E-03	1.52E+03	1.68E+00	1.00E+00	5.50E-03	3.76E+03	1.59E+02	2.97E-02	1.76E+02	2.14E+01
CARM-250 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.62E+03	1.37E+01	1.10E-03	1.09E+03	1.21E+00	1.00E+00	5.50E-03	2.71E+03	1.59E+02	2.97E-02	1.76E+02	1.54E+01
CARM-300 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	2.12E+03	1.79E+01	1.10E-03	1.43E+03	1.58E+00	1.00E+00	5.50E-03	3.55E+03	1.59E+02	2.97E-02	1.76E+02	2.02E+01
CARM-350 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	3.27E+03	2.77E+01	1.10E-03	2.22E+03	2.44E+00	1.00E+00	5.50E-03	5.48E+03	1.59E+02	2.97E-02	1.76E+02	3.11E+01
CARM-400 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	3.80E+03	3.22E+01	1.10E-03	2.58E+03	2.84E+00	1.00E+00	5.50E-03	6.37E+03	1.59E+02	2.97E-02	1.76E+02	3.62E+01
CARM-500 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CARM-550 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	9.01E+02	7.63E+00	1.10E-03	6.10E+02	6.72E-01	1.00E+00	5.50E-03	1.51E+03	1.59E+02	2.97E-02	1.76E+02	8.58E+00
CARM-600 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	2.23E+03	1.89E+01	1.10E-03	1.51E+03	1.67E+00	1.00E+00	5.50E-03	3.74E+03	1.59E+02	2.97E-02	1.76E+02	2.13E+01
CARM-650 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CARM-700 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CARM-750 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CARM-800 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.12E+03	9.51E+00	1.10E-03	7.61E+02	8.38E-01	1.00E+00	5.50E-03	1.88E+03	1.59E+02	2.97E-02	1.76E+02	1.07E+01
CARM-850 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CARM-950 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CARM-1000 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	2.51E+04	2.13E+02	1.10E-03	1.70E+04	1.87E+01	1.00E+00	5.50E-03	4.21E+04	1.59E+02	2.97E-02	1.76E+02	2.39E+02
CARM-1050 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.48E+03	1.26E+01	1.10E-03	1.01E+03	1.11E+00	1.00E+00	5.50E-03	2.49E+03	1.59E+02	2.97E-02	1.76E+02	1.41E+01
CARM-1050+6.25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	2.04E+04	1.73E+02	1.10E-03	1.38E+04	1.52E+01	1.00E+00	5.50E-03	3.42E+04	1.59E+02	2.97E-02	1.76E+02	1.94E+02
CARM-1150 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.54E+03	1.30E+01	1.10E-03	1.04E+03	1.15E+00	1.00E+00	5.50E-03	2.57E+03	1.59E+02	2.97E-02	1.76E+02	1.46E+01
CARM-1150+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	2.58E+03	2.18E+01	1.10E-03	1.74E+03	1.92E+00	1.00E+00	5.50E-03	4.32E+03	1.59E+02	2.97E-02	1.76E+02	2.45E+01
CARM-Comp 1 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	2.03E+03	1.72E+01	1.10E-03	1.38E+03	1.52E+00	1.00E+00	5.50E-03	3.41E+03	1.59E+02	2.97E-02	1.76E+02	1.94E+01
																						Maximum HQ (Carbonate Mine)	**2.39E+02**

Notes

1 See Tables 3-1 through 3-13 for ingestion rates, foraging ranges used to calculate the SUF, and body weights.
2 BAFs were calculated by dividing site-collected tissue by collocated soil concentrations (BAFs are in dry weight). The maximum BAF calculated from the Beartrap Creek and Blackfoot River transects was used for site dose calculations. The maximum BAF from the terrestrial reference site was used for reference site dose calculations.
3 The mammal, plant, and invertebrate concentrations were calculated by multiplying the soil concentration by the BAF to generate a tissue concentration (see note 2).
4 Mammal, plant, and invertebrate daily doses were calculated by multiplying the ingestion rate (see note 1) by the tissue concentration (see note 3).
5 Soil concentration from 0 to 6 inches below ground surface at point ID as measured by XRF 10. Doses were not calculated for detected and non-detected soil concentrations measured below the minimum reference site concentration, as indicated by BB. For results that were measured at less than the detection limit, doses were calculated using half of the detection limit.
6 Soil daily dose was calculated by multiplying the soil ingestion rate (see note 1) by soil concentration (see note 5).
7 Total daily dose is calculated using the following equation: total daily dose = ([mammal daily dose (if applicable) + plant daily dose (if applicable) + invertebrate daily dose (if applicable) + soil daily dose]*SUF)/receptor species body weight.
8 The TRVs used in this risk assessment represent a mid-range effects level. The derivation of TRVs is described in Navy (1998).
9 Allometrically adjusted TRVs for birds were calculated using the following equation: receptor species TRV = (test species TRV) x (test species body weight / receptor species body weight)$^{(1-1.2)}$.
10 Allometrically adjusted TRVs for mammals were calculated using the following equation: receptor species TRV = (test species TRV) x (test species body weight / receptor species body weight)$^{(1-0.94)}$.
11 HQs were calculated using the following equation: HQ = total daily dose/allometrically adjusted TRV.
12 Highlighted cells indicate an HQ greater than 1.0.

BAF	Bioaccumulation Factor	mg/day	Milligram per day
BB	Below minimum background reference site concentration	mg/kg	Milligram per kilogram
EE/CA	Engineering Evaluation/Cost Analysis	NA	Not applicable
EU	Exposure Unit	Navy	Department of the Navy
HQ	Hazard quotient	SUF	Site use factor
ID	Identification	TRV	Toxicity reference value
kg	Kilogram	XRF	X-ray fluorescence
kg/day	Kilogram per day	XRF 10	XRF measurements recorded following drying and seiving through a #10-mesh screen

Sources: Department of the Navy. 1998. "Development of Toxicity Reference Values for Conducting Ecological Risk Assessments at Naval Facilities in California, Interim Final." Prepared by Naval Facilities Engineering Command, Engineering Field Activity West (EFA West). San Bruno, California.

TABLE C-4F: ZINC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 4 - CARBONATE MINE WASTE AREA

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 1.09

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Mourning Dove (Herbivorous Birds - Terrestrial)																							
Reference Site																							
SWGBG-1	5.76E-03	NA	NA	NA	NA	5.76E-03	1.41E+00	1.60E+02	9.25E-01	NA	NA	NA	NA	5.36E-04	1.14E+02	6.09E-02	4.21E-03	1.09E-01	3.80E-02	1.72E+02	9.55E-01	1.11E+02	3.41E-04
SWGBG-2	5.76E-03	NA	NA	NA	NA	5.76E-03	1.41E+00	3.42E+02	1.97E+00	NA	NA	NA	NA	5.36E-04	2.42E+02	1.30E-01	4.21E-03	1.09E-01	8.09E-02	1.72E+02	9.55E-01	1.11E+02	7.26E-04
Carbonate Mine																						**Minimum HQ (Reference Sites)**	**3.41E-04**
CARM-00 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	6.06E+02	3.49E+00	NA	NA	NA	NA	5.36E-04	3.06E+02	1.64E-01	4.21E-03	1.09E-01	1.41E-01	1.72E+02	9.55E-01	1.11E+02	1.26E-03
CARM-50 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	1.35E+03	7.80E+00	NA	NA	NA	NA	5.36E-04	6.83E+02	3.66E-01	4.21E-03	1.09E-01	3.15E-01	1.72E+02	9.55E-01	1.11E+02	2.82E-03
CARM-50+12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	1.60E+03	9.24E+00	NA	NA	NA	NA	5.36E-04	8.10E+02	4.34E-01	4.21E-03	1.09E-01	3.73E-01	1.72E+02	9.55E-01	1.11E+02	3.35E-03
CARM-100 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	1.19E+03	6.84E+00	NA	NA	NA	NA	5.36E-04	6.00E+02	3.21E-01	4.21E-03	1.09E-01	2.76E-01	1.72E+02	9.55E-01	1.11E+02	2.48E-03
CARM-100+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	1.51E+03	8.71E+00	NA	NA	NA	NA	5.36E-04	7.63E+02	4.09E-01	4.21E-03	1.09E-01	3.51E-01	1.72E+02	9.55E-01	1.11E+02	3.15E-03
CARM-110 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	5.84E+02	3.36E+00	NA	NA	NA	NA	5.36E-04	2.95E+02	1.58E-01	4.21E-03	1.09E-01	1.36E-01	1.72E+02	9.55E-01	1.11E+02	1.22E-03
CARM-150 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	1.07E+03	6.17E+00	NA	NA	NA	NA	5.36E-04	5.40E+02	2.90E-01	4.21E-03	1.09E-01	2.49E-01	1.72E+02	9.55E-01	1.11E+02	2.23E-03
CARM-150+50 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	9.88E+02	5.69E+00	NA	NA	NA	NA	5.36E-04	4.99E+02	2.67E-01	4.21E-03	1.09E-01	2.30E-01	1.72E+02	9.55E-01	1.11E+02	2.06E-03
CARM-200 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	7.38E+02	4.25E+00	NA	NA	NA	NA	5.36E-04	3.72E+02	2.00E-01	4.21E-03	1.09E-01	1.72E-01	1.72E+02	9.55E-01	1.11E+02	1.54E-03
CARM-200+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	1.11E+03	6.41E+00	NA	NA	NA	NA	5.36E-04	5.62E+02	3.01E-01	4.21E-03	1.09E-01	2.59E-01	1.72E+02	9.55E-01	1.11E+02	2.32E-03
CARM-250 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	8.91E+02	5.13E+00	NA	NA	NA	NA	5.36E-04	4.50E+02	2.41E-01	4.21E-03	1.09E-01	2.07E-01	1.72E+02	9.55E-01	1.11E+02	1.86E-03
CARM-300 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	1.08E+03	6.23E+00	NA	NA	NA	NA	5.36E-04	5.46E+02	2.93E-01	4.21E-03	1.09E-01	2.51E-01	1.72E+02	9.55E-01	1.11E+02	2.26E-03
CARM-350 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	9.10E+02	5.24E+00	NA	NA	NA	NA	5.36E-04	4.59E+02	2.46E-01	4.21E-03	1.09E-01	2.11E-01	1.72E+02	9.55E-01	1.11E+02	1.90E-03
CARM-400 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	1.02E+03	5.87E+00	NA	NA	NA	NA	5.36E-04	5.15E+02	2.76E-01	4.21E-03	1.09E-01	2.37E-01	1.72E+02	9.55E-01	1.11E+02	2.13E-03
CARM-500 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CARM-550 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	3.84E+02	2.21E+00	NA	NA	NA	NA	5.36E-04	1.94E+02	1.04E-01	4.21E-03	1.09E-01	8.93E-02	1.72E+02	9.55E-01	1.11E+02	8.01E-04
CARM-600 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	7.89E+02	4.55E+00	NA	NA	NA	NA	5.36E-04	3.98E+02	2.13E-01	4.21E-03	1.09E-01	1.83E-01	1.72E+02	9.55E-01	1.11E+02	1.65E-03
CARM-650 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CARM-700 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	3.39E+02	1.96E+00	NA	NA	NA	NA	5.36E-04	1.71E+02	9.18E-02	4.21E-03	1.09E-01	7.89E-02	1.72E+02	9.55E-01	1.11E+02	7.08E-04
CARM-750 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CARM-800 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	2.48E+02	1.43E+00	NA	NA	NA	NA	5.36E-04	1.25E+02	6.71E-02	4.21E-03	1.09E-01	5.77E-02	1.72E+02	9.55E-01	1.11E+02	5.17E-04
CARM-850 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CARM-950 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CARM-1000 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	6.26E+02	3.61E+00	NA	NA	NA	NA	5.36E-04	3.16E+02	1.69E-01	4.21E-03	1.09E-01	1.46E-01	1.72E+02	9.55E-01	1.11E+02	1.31E-03
CARM-1050 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	5.42E+02	3.12E+00	NA	NA	NA	NA	5.36E-04	2.74E+02	1.47E-01	4.21E-03	1.09E-01	1.26E-01	1.72E+02	9.55E-01	1.11E+02	1.13E-03
CARM-1050+6.25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	1.61E+03	9.30E+00	NA	NA	NA	NA	5.36E-04	8.15E+02	4.37E-01	4.21E-03	1.09E-01	3.75E-01	1.72E+02	9.55E-01	1.11E+02	3.37E-03
CARM-1150 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	5.52E+02	3.18E+00	NA	NA	NA	NA	5.36E-04	2.79E+02	1.49E-01	4.21E-03	1.09E-01	1.28E-01	1.72E+02	9.55E-01	1.11E+02	1.15E-03
CARM-1150+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	6.24E+02	3.60E+00	NA	NA	NA	NA	5.36E-04	3.15E+02	1.69E-01	4.21E-03	1.09E-01	1.45E-01	1.72E+02	9.55E-01	1.11E+02	1.30E-03
CARM-Comp 1 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	9.24E+02	5.32E+00	NA	NA	NA	NA	5.36E-04	4.66E+02	2.50E-01	4.21E-03	1.09E-01	2.15E-01	1.72E+02	9.55E-01	1.11E+02	1.93E-03
																						Maximum HQ (Carbonate Mine)	**3.37E-03**
Red-Tailed Hawk (Carnivorous Birds - Terrestrial)																							
Reference Site																							
SWGBG-1	9.00E-02	9.00E-02	1.03E+01	1.18E+03	1.06E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.14E+02	5.83E-01	1.56E-03	1.13E+00	1.47E-01	1.72E+02	9.55E-01	1.78E+02	8.25E-04
SWGBG-2	9.00E-02	9.00E-02	1.03E+01	2.51E+03	2.26E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.42E+02	1.24E+00	1.56E-03	1.13E+00	3.13E-01	1.72E+02	9.55E-01	1.78E+02	1.76E-03
Carbonate Mine																						**Minimum HQ (Reference Sites)**	**8.25E-04**
CARM-00 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.92E+03	1.73E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.06E+02	1.57E+00	1.56E-03	1.13E+00	2.41E-01	1.72E+02	9.55E-01	1.78E+02	1.35E-03
CARM-50 (0-6")	9.00E-02	9.00E-02	6.30E+00	4.30E+03	3.87E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	6.83E+02	3.50E+00	1.56E-03	1.13E+00	5.39E-01	1.72E+02	9.55E-01	1.78E+02	3.03E-03
CARM-50+12.5 (0-6")	9.00E-02	9.00E-02	6.30E+00	5.10E+03	4.59E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	8.10E+02	4.15E+00	1.56E-03	1.13E+00	6.38E-01	1.72E+02	9.55E-01	1.78E+02	3.59E-03
CARM-100 (0-6")	9.00E-02	9.00E-02	6.30E+00	3.77E+03	3.40E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	6.00E+02	3.07E+00	1.56E-03	1.13E+00	4.73E-01	1.72E+02	9.55E-01	1.78E+02	2.66E-03
CARM-100+25 (0-6")	9.00E-02	9.00E-02	6.30E+00	4.80E+03	4.32E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	7.63E+02	3.91E+00	1.56E-03	1.13E+00	6.01E-01	1.72E+02	9.55E-01	1.78E+02	3.38E-03
CARM-110 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.86E+03	1.67E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.95E+02	1.51E+00	1.56E-03	1.13E+00	2.32E-01	1.72E+02	9.55E-01	1.78E+02	1.31E-03
CARM-150 (0-6")	9.00E-02	9.00E-02	6.30E+00	3.40E+03	3.06E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.40E+02	2.77E+00	1.56E-03	1.13E+00	4.26E-01	1.72E+02	9.55E-01	1.78E+02	2.39E-03
CARM-150+50 (0-6")	9.00E-02	9.00E-02	6.30E+00	3.14E+03	2.82E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.99E+02	2.56E+00	1.56E-03	1.13E+00	3.93E-01	1.72E+02	9.55E-01	1.78E+02	2.21E-03
CARM-200 (0-6")	9.00E-02	9.00E-02	6.30E+00	2.34E+03	2.11E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.72E+02	1.91E+00	1.56E-03	1.13E+00	2.94E-01	1.72E+02	9.55E-01	1.78E+02	1.65E-03
CARM-200+25 (0-6")	9.00E-02	9.00E-02	6.30E+00	3.54E+03	3.18E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.62E+02	2.88E+00	1.56E-03	1.13E+00	4.43E-01	1.72E+02	9.55E-01	1.78E+02	2.49E-03
CARM-250 (0-6")	9.00E-02	9.00E-02	6.30E+00	2.83E+03	2.55E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.50E+02	2.31E+00	1.56E-03	1.13E+00	3.55E-01	1.72E+02	9.55E-01	1.78E+02	1.99E-03
CARM-300 (0-6")	9.00E-02	9.00E-02	6.30E+00	3.44E+03	3.09E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.46E+02	2.80E+00	1.56E-03	1.13E+00	4.30E-01	1.72E+02	9.55E-01	1.78E+02	2.42E-03
CARM-350 (0-6")	9.00E-02	9.00E-02	6.30E+00	2.89E+03	2.60E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.59E+02	2.35E+00	1.56E-03	1.13E+00	3.62E-01	1.72E+02	9.55E-01	1.78E+02	2.03E-03
CARM-400 (0-6")	9.00E-02	9.00E-02	6.30E+00	3.24E+03	2.91E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.15E+02	2.64E+00	1.56E-03	1.13E+00	4.06E-01	1.72E+02	9.55E-01	1.78E+02	2.28E-03
CARM-500 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB

TABLE C-4F: ZINC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 4 - CARBONATE MINE WASTE AREA (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 1.09

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Red-Tailed Hawk (Carnivorous Birds - Terrestrial)																							
CARM-550 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.22E+03	1.10E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.94E+02	9.94E-01	1.56E-03	1.13E+00	1.53E-01	1.72E+02	9.55E-01	1.78E+02	8.59E-04
CARM-600 (0-6")	9.00E-02	9.00E-02	6.30E+00	2.51E+03	2.26E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.98E+02	2.04E+00	1.56E-03	1.13E+00	3.14E-01	1.72E+02	9.55E-01	1.78E+02	1.76E-03
CARM-650 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CARM-700 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.08E+03	9.70E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.71E+02	8.78E-01	1.56E-03	1.13E+00	1.35E-01	1.72E+02	9.55E-01	1.78E+02	7.59E-04
CARM-750 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CARM-800 (0-6")	9.00E-02	9.00E-02	6.30E+00	7.88E+02	7.09E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.25E+02	6.42E-01	1.56E-03	1.13E+00	9.87E-02	1.72E+02	9.55E-01	1.78E+02	5.54E-04
CARM-850 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CARM-950 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CARM-1000 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.99E+03	1.79E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.16E+02	1.62E+00	1.56E-03	1.13E+00	2.49E-01	1.72E+02	9.55E-01	1.78E+02	1.40E-03
CARM-1050 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.72E+03	1.55E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.74E+02	1.40E+00	1.56E-03	1.13E+00	2.16E-01	1.72E+02	9.55E-01	1.78E+02	1.21E-03
CARM-1050+6.25 (0-6")	9.00E-02	9.00E-02	6.30E+00	5.13E+03	4.62E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	8.15E+02	4.18E+00	1.56E-03	1.13E+00	6.42E-01	1.72E+02	9.55E-01	1.78E+02	3.61E-03
CARM-1150 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.75E+03	1.58E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.79E+02	1.43E+00	1.56E-03	1.13E+00	2.20E-01	1.72E+02	9.55E-01	1.78E+02	1.23E-03
CARM-1150+25 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.98E+03	1.78E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.15E+02	1.62E+00	1.56E-03	1.13E+00	2.48E-01	1.72E+02	9.55E-01	1.78E+02	1.40E-03
CARM-Comp 1 (0-6")	9.00E-02	9.00E-02	6.30E+00	2.93E+03	2.64E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.66E+02	2.39E+00	1.56E-03	1.13E+00	3.67E-01	1.72E+02	9.55E-01	1.78E+02	2.06E-03
																						Maximum HQ (Carbonate Mine)	**3.61E-03**
American Kestral (Insectivorous Birds - Terrestrial)																							
Reference Site																							
SWGBG-1	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	8.31E+00	9.45E+02	1.30E+01	7.84E-04	1.14E+02	8.92E-02	4.17E-03	1.24E-01	4.40E-01	1.72E+02	9.55E-01	1.14E+02	3.85E-03
SWGBG-2	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	8.31E+00	2.01E+03	2.77E+01	7.84E-04	2.42E+02	1.90E-01	4.17E-03	1.24E-01	9.38E-01	1.72E+02	9.55E-01	1.14E+02	8.20E-03
Carbonate Mine																						**Minimum HQ (Reference Sites)**	**3.85E-03**
CARM-00 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	1.34E+03	1.84E+01	7.84E-04	3.06E+02	2.40E-01	4.17E-03	1.24E-01	6.27E-01	1.72E+02	9.55E-01	1.14E+02	5.48E-03
CARM-50 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	2.99E+03	4.12E+01	7.84E-04	6.83E+02	5.36E-01	4.17E-03	1.24E-01	1.40E+00	1.72E+02	9.55E-01	1.14E+02	1.23E-02
CARM-50+12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	3.55E+03	4.88E+01	7.84E-04	8.10E+02	6.35E-01	4.17E-03	1.24E-01	1.66E+00	1.72E+02	9.55E-01	1.14E+02	1.45E-02
CARM-100 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	2.63E+03	3.61E+01	7.84E-04	6.00E+02	4.70E-01	4.17E-03	1.24E-01	1.23E+00	1.72E+02	9.55E-01	1.14E+02	1.08E-02
CARM-100+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	3.34E+03	4.60E+01	7.84E-04	7.63E+02	5.98E-01	4.17E-03	1.24E-01	1.56E+00	1.72E+02	9.55E-01	1.14E+02	1.37E-02
CARM-110 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	1.29E+03	1.78E+01	7.84E-04	2.95E+02	2.31E-01	4.17E-03	1.24E-01	6.04E-01	1.72E+02	9.55E-01	1.14E+02	5.29E-03
CARM-150 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	2.37E+03	3.26E+01	7.84E-04	5.40E+02	4.24E-01	4.17E-03	1.24E-01	1.11E+00	1.72E+02	9.55E-01	1.14E+02	9.69E-03
CARM-150+50 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	2.18E+03	3.00E+01	7.84E-04	4.99E+02	3.91E-01	4.17E-03	1.24E-01	1.02E+00	1.72E+02	9.55E-01	1.14E+02	8.94E-03
CARM-200 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	1.63E+03	2.24E+01	7.84E-04	3.72E+02	2.92E-01	4.17E-03	1.24E-01	7.64E-01	1.72E+02	9.55E-01	1.14E+02	6.68E-03
CARM-200+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	2.46E+03	3.38E+01	7.84E-04	5.62E+02	4.41E-01	4.17E-03	1.24E-01	1.15E+00	1.72E+02	9.55E-01	1.14E+02	1.01E-02
CARM-250 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	1.97E+03	2.71E+01	7.84E-04	4.50E+02	3.53E-01	4.17E-03	1.24E-01	9.22E-01	1.72E+02	9.55E-01	1.14E+02	8.07E-03
CARM-300 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	2.39E+03	3.29E+01	7.84E-04	5.46E+02	4.28E-01	4.17E-03	1.24E-01	1.12E+00	1.72E+02	9.55E-01	1.14E+02	9.79E-03
CARM-350 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	2.01E+03	2.77E+01	7.84E-04	4.59E+02	3.60E-01	4.17E-03	1.24E-01	9.41E-01	1.72E+02	9.55E-01	1.14E+02	8.23E-03
CARM-400 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	2.25E+03	3.10E+01	7.84E-04	5.15E+02	4.04E-01	4.17E-03	1.24E-01	1.06E+00	1.72E+02	9.55E-01	1.14E+02	9.23E-03
CARM-500 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CARM-550 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	8.49E+02	1.17E+01	7.84E-04	1.94E+02	1.52E-01	4.17E-03	1.24E-01	3.98E-01	1.72E+02	9.55E-01	1.14E+02	3.48E-03
CARM-600 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	1.74E+03	2.40E+01	7.84E-04	3.98E+02	3.12E-01	4.17E-03	1.24E-01	8.17E-01	1.72E+02	9.55E-01	1.14E+02	7.14E-03
CARM-650 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CARM-700 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	7.50E+02	1.03E+01	7.84E-04	1.71E+02	1.34E-01	4.17E-03	1.24E-01	3.51E-01	1.72E+02	9.55E-01	1.14E+02	3.07E-03
CARM-750 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CARM-800 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	5.48E+02	7.54E+00	7.84E-04	1.25E+02	9.82E-02	4.17E-03	1.24E-01	2.57E-01	1.72E+02	9.55E-01	1.14E+02	2.24E-03
CARM-850 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CARM-950 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CARM-1000 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	1.38E+03	1.91E+01	7.84E-04	3.16E+02	2.48E-01	4.17E-03	1.24E-01	6.48E-01	1.72E+02	9.55E-01	1.14E+02	5.67E-03
CARM-1050 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	1.20E+03	1.65E+01	7.84E-04	2.74E+02	2.15E-01	4.17E-03	1.24E-01	5.61E-01	1.72E+02	9.55E-01	1.14E+02	4.91E-03
CARM-1050+6.25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	3.57E+03	4.91E+01	7.84E-04	8.15E+02	6.39E-01	4.17E-03	1.24E-01	1.67E+00	1.72E+02	9.55E-01	1.14E+02	1.46E-02
CARM-1150 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	1.22E+03	1.68E+01	7.84E-04	2.79E+02	2.19E-01	4.17E-03	1.24E-01	5.71E-01	1.72E+02	9.55E-01	1.14E+02	5.00E-03
CARM-1150+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	1.38E+03	1.90E+01	7.84E-04	3.15E+02	2.47E-01	4.17E-03	1.24E-01	6.46E-01	1.72E+02	9.55E-01	1.14E+02	5.65E-03
CARM-Comp 1 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	2.04E+03	2.81E+01	7.84E-04	4.66E+02	3.66E-01	4.17E-03	1.24E-01	9.56E-01	1.72E+02	9.55E-01	1.14E+02	8.36E-03
																						Maximum HQ (Carbonate Mine)	**1.46E-02**

TABLE C-4F: ZINC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 4 - CARBONATE MINE WASTE AREA (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 1.09

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Meadow Vole (Small Herbivorous Mammal - Terrestrial)																							
Reference Site																							
SWGBG-1	4.69E-03	NA	NA	NA	NA	4.69E-03	1.41E+00	1.60E+02	7.52E-01	NA	NA	NA	NA	1.13E-04	1.14E+02	1.28E-02	1.00E+00	3.06E-02	2.50E+01	4.11E+02	1.75E-01	4.57E+02	5.47E-02
SWGBG-2	4.69E-03	NA	NA	NA	NA	4.69E-03	1.41E+00	3.42E+02	1.60E+00	NA	NA	NA	NA	1.13E-04	2.42E+02	2.73E-02	1.00E+00	3.06E-02	5.33E+01	4.11E+02	1.75E-01	4.57E+02	1.17E-01
Carbonate Mine																						**Minimum HQ (Reference Sites)**	**5.47E-02**
CARM-00 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	6.06E+02	2.84E+00	NA	NA	NA	NA	1.13E-04	3.06E+02	3.44E-02	1.00E+00	3.06E-02	9.40E+01	4.11E+02	1.75E-01	4.57E+02	2.06E-01
CARM-50 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	1.35E+03	6.35E+00	NA	NA	NA	NA	1.13E-04	6.83E+02	7.69E-02	1.00E+00	3.06E-02	2.10E+02	4.11E+02	1.75E-01	4.57E+02	4.60E-01
CARM-50+12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	1.60E+03	7.52E+00	NA	NA	NA	NA	1.13E-04	8.10E+02	9.11E-02	1.00E+00	3.06E-02	2.49E+02	4.11E+02	1.75E-01	4.57E+02	5.45E-01
CARM-100 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	1.19E+03	5.57E+00	NA	NA	NA	NA	1.13E-04	6.00E+02	6.75E-02	1.00E+00	3.06E-02	1.84E+02	4.11E+02	1.75E-01	4.57E+02	4.03E-01
CARM-100+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	1.51E+03	7.09E+00	NA	NA	NA	NA	1.13E-04	7.63E+02	8.58E-02	1.00E+00	3.06E-02	2.34E+02	4.11E+02	1.75E-01	4.57E+02	5.13E-01
CARM-110 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	5.84E+02	2.74E+00	NA	NA	NA	NA	1.13E-04	2.95E+02	3.32E-02	1.00E+00	3.06E-02	9.06E+01	4.11E+02	1.75E-01	4.57E+02	1.98E-01
CARM-150 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	1.07E+03	5.02E+00	NA	NA	NA	NA	1.13E-04	5.40E+02	6.08E-02	1.00E+00	3.06E-02	1.66E+02	4.11E+02	1.75E-01	4.57E+02	3.63E-01
CARM-150+50 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	9.88E+02	4.63E+00	NA	NA	NA	NA	1.13E-04	4.99E+02	5.61E-02	1.00E+00	3.06E-02	1.53E+02	4.11E+02	1.75E-01	4.57E+02	3.35E-01
CARM-200 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	7.38E+02	3.46E+00	NA	NA	NA	NA	1.13E-04	3.72E+02	4.19E-02	1.00E+00	3.06E-02	1.14E+02	4.11E+02	1.75E-01	4.57E+02	2.50E-01
CARM-200+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	1.11E+03	5.22E+00	NA	NA	NA	NA	1.13E-04	5.62E+02	6.32E-02	1.00E+00	3.06E-02	1.73E+02	4.11E+02	1.75E-01	4.57E+02	3.78E-01
CARM-250 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	8.91E+02	4.18E+00	NA	NA	NA	NA	1.13E-04	4.50E+02	5.06E-02	1.00E+00	3.06E-02	1.38E+02	4.11E+02	1.75E-01	4.57E+02	3.03E-01
CARM-300 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	1.08E+03	5.07E+00	NA	NA	NA	NA	1.13E-04	5.46E+02	6.14E-02	1.00E+00	3.06E-02	1.68E+02	4.11E+02	1.75E-01	4.57E+02	3.67E-01
CARM-350 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	9.10E+02	4.27E+00	NA	NA	NA	NA	1.13E-04	4.59E+02	5.17E-02	1.00E+00	3.06E-02	1.41E+02	4.11E+02	1.75E-01	4.57E+02	3.09E-01
CARM-400 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	1.02E+03	4.78E+00	NA	NA	NA	NA	1.13E-04	5.15E+02	5.79E-02	1.00E+00	3.06E-02	1.58E+02	4.11E+02	1.75E-01	4.57E+02	3.46E-01
CARM-500 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CARM-550 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	3.84E+02	1.80E+00	NA	NA	NA	NA	1.13E-04	1.94E+02	2.18E-02	1.00E+00	3.06E-02	5.96E+01	4.11E+02	1.75E-01	4.57E+02	1.30E-01
CARM-600 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	7.89E+02	3.70E+00	NA	NA	NA	NA	1.13E-04	3.98E+02	4.48E-02	1.00E+00	3.06E-02	1.22E+02	4.11E+02	1.75E-01	4.57E+02	2.68E-01
CARM-650 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CARM-700 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	3.39E+02	1.59E+00	NA	NA	NA	NA	1.13E-04	1.71E+02	1.93E-02	1.00E+00	3.06E-02	5.26E+01	4.11E+02	1.75E-01	4.57E+02	1.15E-01
CARM-750 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CARM-800 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	2.48E+02	1.16E+00	NA	NA	NA	NA	1.13E-04	1.25E+02	1.41E-02	1.00E+00	3.06E-02	3.85E+01	4.11E+02	1.75E-01	4.57E+02	8.42E-02
CARM-850 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CARM-950 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CARM-1000 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	6.26E+02	2.94E+00	NA	NA	NA	NA	1.13E-04	3.16E+02	3.56E-02	1.00E+00	3.06E-02	9.72E+01	4.11E+02	1.75E-01	4.57E+02	2.13E-01
CARM-1050 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	5.42E+02	2.54E+00	NA	NA	NA	NA	1.13E-04	2.74E+02	3.08E-02	1.00E+00	3.06E-02	8.41E+01	4.11E+02	1.75E-01	4.57E+02	1.84E-01
CARM-1050+6.25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	1.61E+03	7.57E+00	NA	NA	NA	NA	1.13E-04	8.15E+02	9.17E-02	1.00E+00	3.06E-02	2.50E+02	4.11E+02	1.75E-01	4.57E+02	5.48E-01
CARM-1150 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	5.52E+02	2.59E+00	NA	NA	NA	NA	1.13E-04	2.79E+02	3.14E-02	1.00E+00	3.06E-02	8.56E+01	4.11E+02	1.75E-01	4.57E+02	1.87E-01
CARM-1150+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	6.24E+02	2.93E+00	NA	NA	NA	NA	1.13E-04	3.15E+02	3.55E-02	1.00E+00	3.06E-02	9.68E+01	4.11E+02	1.75E-01	4.57E+02	2.12E-01
CARM-Comp 1 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	9.24E+02	4.33E+00	NA	NA	NA	NA	1.13E-04	4.66E+02	5.25E-02	1.00E+00	3.06E-02	1.43E+02	4.11E+02	1.75E-01	4.57E+02	3.14E-01
																						Maximum HQ (Carbonate Mine)	**5.48E-01**
White-Tailed Deer (Large Herbivorous Mammal - Terrestrial)																							
Reference Site																							
SWGBG-1	1.43E+00	NA	NA	NA	NA	1.43E+00	1.41E+00	1.60E+02	2.30E+02	NA	NA	NA	NA	2.86E-02	1.14E+02	3.26E+00	6.10E-03	1.35E+02	1.05E-02	4.11E+02	1.75E-01	2.76E+02	3.81E-05
SWGBG-2	1.43E+00	NA	NA	NA	NA	1.43E+00	1.41E+00	3.42E+02	4.90E+02	NA	NA	NA	NA	2.86E-02	2.42E+02	6.94E+00	6.10E-03	1.35E+02	2.24E-02	4.11E+02	1.75E-01	2.76E+02	8.12E-05
Carbonate Mine																						**Minimum HQ (Reference Sites)**	**3.81E-05**
CARM-00 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	6.06E+02	8.67E+02	NA	NA	NA	NA	2.86E-02	3.06E+02	8.75E+00	6.10E-03	1.35E+02	3.96E-02	4.11E+02	1.75E-01	2.76E+02	1.43E-04
CARM-50 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	1.35E+03	1.94E+03	NA	NA	NA	NA	2.86E-02	6.83E+02	1.96E+01	6.10E-03	1.35E+02	8.85E-02	4.11E+02	1.75E-01	2.76E+02	3.20E-04
CARM-50+12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	1.60E+03	2.30E+03	NA	NA	NA	NA	2.86E-02	8.10E+02	2.32E+01	6.10E-03	1.35E+02	1.05E-01	4.11E+02	1.75E-01	2.76E+02	3.80E-04
CARM-100 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	1.19E+03	1.70E+03	NA	NA	NA	NA	2.86E-02	6.00E+02	1.72E+01	6.10E-03	1.35E+02	7.76E-02	4.11E+02	1.75E-01	2.76E+02	2.81E-04
CARM-100+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	1.51E+03	2.16E+03	NA	NA	NA	NA	2.86E-02	7.63E+02	2.18E+01	6.10E-03	1.35E+02	9.87E-02	4.11E+02	1.75E-01	2.76E+02	3.57E-04
CARM-110 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	5.84E+02	8.36E+02	NA	NA	NA	NA	2.86E-02	2.95E+02	8.44E+00	6.10E-03	1.35E+02	3.81E-02	4.11E+02	1.75E-01	2.76E+02	1.38E-04
CARM-150 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	1.07E+03	1.53E+03	NA	NA	NA	NA	2.86E-02	5.40E+02	1.55E+01	6.10E-03	1.35E+02	6.99E-02	4.11E+02	1.75E-01	2.76E+02	2.53E-04
CARM-150+50 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	9.88E+02	1.41E+03	NA	NA	NA	NA	2.86E-02	4.99E+02	1.43E+01	6.10E-03	1.35E+02	6.45E-02	4.11E+02	1.75E-01	2.76E+02	2.34E-04
CARM-200 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	7.38E+02	1.06E+03	NA	NA	NA	NA	2.86E-02	3.72E+02	1.07E+01	6.10E-03	1.35E+02	4.82E-02	4.11E+02	1.75E-01	2.76E+02	1.75E-04
CARM-200+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	1.11E+03	1.59E+03	NA	NA	NA	NA	2.86E-02	5.62E+02	1.61E+01	6.10E-03	1.35E+02	7.27E-02	4.11E+02	1.75E-01	2.76E+02	2.63E-04
CARM-250 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	8.91E+02	1.28E+03	NA	NA	NA	NA	2.86E-02	4.50E+02	1.29E+01	6.10E-03	1.35E+02	5.82E-02	4.11E+02	1.75E-01	2.76E+02	2.11E-04
CARM-300 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	1.08E+03	1.55E+03	NA	NA	NA	NA	2.86E-02	5.46E+02	1.56E+01	6.10E-03	1.35E+02	7.07E-02	4.11E+02	1.75E-01	2.76E+02	2.56E-04
CARM-350 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	9.10E+02	1.30E+03	NA	NA	NA	NA	2.86E-02	4.59E+02	1.31E+01	6.10E-03	1.35E+02	5.94E-02	4.11E+02	1.75E-01	2.76E+02	2.15E-04
CARM-400 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	1.02E+03	1.46E+03	NA	NA	NA	NA	2.86E-02	5.15E+02	1.47E+01	6.10E-03	1.35E+02	6.66E-02	4.11E+02	1.75E-01	2.76E+02	2.41E-04
CARM-500 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB

TABLE C-4F: ZINC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 4 - CARBONATE MINE WASTE AREA (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 1.09

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
White-Tailed Deer (Large Herbivorous Mammal - Terrestrial)																							
CARM-550 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	3.84E+02	5.50E+02	NA	NA	NA	NA	2.86E-02	1.94E+02	5.55E+00	6.10E-03	1.35E+02	2.51E-02	4.11E+02	1.75E-01	2.76E+02	9.09E-05
CARM-600 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	7.89E+02	1.13E+03	NA	NA	NA	NA	2.86E-02	3.98E+02	1.14E+01	6.10E-03	1.35E+02	5.16E-02	4.11E+02	1.75E-01	2.76E+02	1.87E-04
CARM-650 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CARM-700 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	3.39E+02	4.86E+02	NA	NA	NA	NA	2.86E-02	1.71E+02	4.91E+00	6.10E-03	1.35E+02	2.22E-02	4.11E+02	1.75E-01	2.76E+02	8.03E-05
CARM-750 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CARM-800 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	2.48E+02	3.55E+02	NA	NA	NA	NA	2.86E-02	1.25E+02	3.58E+00	6.10E-03	1.35E+02	1.62E-02	4.11E+02	1.75E-01	2.76E+02	5.87E-05
CARM-850 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CARM-950 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CARM-1000 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	6.26E+02	8.97E+02	NA	NA	NA	NA	2.86E-02	3.16E+02	9.05E+00	6.10E-03	1.35E+02	4.09E-02	4.11E+02	1.75E-01	2.76E+02	1.48E-04
CARM-1050 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	5.42E+02	7.76E+02	NA	NA	NA	NA	2.86E-02	2.74E+02	7.83E+00	6.10E-03	1.35E+02	3.54E-02	4.11E+02	1.75E-01	2.76E+02	1.28E-04
CARM-1050+6.25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	1.61E+03	2.31E+03	NA	NA	NA	NA	2.86E-02	8.15E+02	2.33E+01	6.10E-03	1.35E+02	1.05E-01	4.11E+02	1.75E-01	2.76E+02	3.82E-04
CARM-1150 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	5.52E+02	7.90E+02	NA	NA	NA	NA	2.86E-02	2.79E+02	7.98E+00	6.10E-03	1.35E+02	3.61E-02	4.11E+02	1.75E-01	2.76E+02	1.31E-04
CARM-1150+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	6.24E+02	8.94E+02	NA	NA	NA	NA	2.86E-02	3.15E+02	9.02E+00	6.10E-03	1.35E+02	4.08E-02	4.11E+02	1.75E-01	2.76E+02	1.48E-04
CARM-Comp 1 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	9.24E+02	1.32E+03	NA	NA	NA	NA	2.86E-02	4.66E+02	1.33E+01	6.10E-03	1.35E+02	6.03E-02	4.11E+02	1.75E-01	2.76E+02	2.19E-04
																						Maximum HQ (Carbonate Mine)	**3.82E-04**
Red Fox (Carnivorous Mammal - Terrestrial)																							
Reference Site																							
SWGBG-1	1.72E-01	1.72E-01	1.03E+01	1.18E+03	2.02E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.14E+02	5.46E-01	8.05E-04	4.54E+00	3.59E-02	4.11E+02	1.75E-01	3.38E+02	1.06E-04
SWGBG-2	1.72E-01	1.72E-01	1.03E+01	2.51E+03	4.30E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.42E+02	1.16E+00	8.05E-04	4.54E+00	7.66E-02	4.11E+02	1.75E-01	3.38E+02	2.26E-04
Carbonate Mine																						**Minimum HQ (Reference Sites)**	**1.06E-04**
CARM-00 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.92E+03	3.30E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.06E+02	1.47E+00	8.05E-04	4.54E+00	5.89E-02	4.11E+02	1.75E-01	3.38E+02	1.74E-04
CARM-50 (0-6")	1.72E-01	1.72E-01	6.30E+00	4.30E+03	7.38E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	6.83E+02	3.28E+00	8.05E-04	4.54E+00	1.32E-01	4.11E+02	1.75E-01	3.38E+02	3.89E-04
CARM-50+12.5 (0-6")	1.72E-01	1.72E-01	6.30E+00	5.10E+03	8.74E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	8.10E+02	3.89E+00	8.05E-04	4.54E+00	1.56E-01	4.11E+02	1.75E-01	3.38E+02	4.61E-04
CARM-100 (0-6")	1.72E-01	1.72E-01	6.30E+00	3.77E+03	6.48E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	6.00E+02	2.88E+00	8.05E-04	4.54E+00	1.15E-01	4.11E+02	1.75E-01	3.38E+02	3.41E-04
CARM-100+25 (0-6")	1.72E-01	1.72E-01	6.30E+00	4.80E+03	8.24E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	7.63E+02	3.66E+00	8.05E-04	4.54E+00	1.47E-01	4.11E+02	1.75E-01	3.38E+02	4.34E-04
CARM-110 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.86E+03	3.18E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.95E+02	1.42E+00	8.05E-04	4.54E+00	5.68E-02	4.11E+02	1.75E-01	3.38E+02	1.68E-04
CARM-150 (0-6")	1.72E-01	1.72E-01	6.30E+00	3.40E+03	5.84E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.40E+02	2.60E+00	8.05E-04	4.54E+00	1.04E-01	4.11E+02	1.75E-01	3.38E+02	3.07E-04
CARM-150+50 (0-6")	1.72E-01	1.72E-01	6.30E+00	3.14E+03	5.38E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.99E+02	2.39E+00	8.05E-04	4.54E+00	9.60E-02	4.11E+02	1.75E-01	3.38E+02	2.84E-04
CARM-200 (0-6")	1.72E-01	1.72E-01	6.30E+00	2.34E+03	4.02E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.72E+02	1.79E+00	8.05E-04	4.54E+00	7.17E-02	4.11E+02	1.75E-01	3.38E+02	2.12E-04
CARM-200+25 (0-6")	1.72E-01	1.72E-01	6.30E+00	3.54E+03	6.07E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.62E+02	2.70E+00	8.05E-04	4.54E+00	1.08E-01	4.11E+02	1.75E-01	3.38E+02	3.20E-04
CARM-250 (0-6")	1.72E-01	1.72E-01	6.30E+00	2.83E+03	4.86E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.50E+02	2.16E+00	8.05E-04	4.54E+00	8.66E-02	4.11E+02	1.75E-01	3.38E+02	2.56E-04
CARM-300 (0-6")	1.72E-01	1.72E-01	6.30E+00	3.44E+03	5.90E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.46E+02	2.62E+00	8.05E-04	4.54E+00	1.05E-01	4.11E+02	1.75E-01	3.38E+02	3.11E-04
CARM-350 (0-6")	1.72E-01	1.72E-01	6.30E+00	2.89E+03	4.96E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.59E+02	2.21E+00	8.05E-04	4.54E+00	8.84E-02	4.11E+02	1.75E-01	3.38E+02	2.61E-04
CARM-400 (0-6")	1.72E-01	1.72E-01	6.30E+00	3.24E+03	5.56E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.15E+02	2.47E+00	8.05E-04	4.54E+00	9.91E-02	4.11E+02	1.75E-01	3.38E+02	2.93E-04
CARM-500 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CARM-550 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.22E+03	2.09E+02	NA	NA	NA	NA	NA	NA	NA	BB	4.80E-03	1.94E+02	9.31E-01	8.05E-04	4.54E+00	3.73E-02	4.11E+02	1.75E-01	3.38E+02	1.10E-04
CARM-600 (0-6")	1.72E-01	1.72E-01	6.30E+00	2.51E+03	4.30E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.98E+02	1.91E+00	8.05E-04	4.54E+00	7.67E-02	4.11E+02	1.75E-01	3.38E+02	2.27E-04
CARM-650 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CARM-700 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.08E+03	1.85E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.71E+02	8.23E-01	8.05E-04	4.54E+00	3.30E-02	4.11E+02	1.75E-01	3.38E+02	9.75E-05
CARM-750 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CARM-800 (0-6")	1.72E-01	1.72E-01	6.30E+00	7.88E+02	1.35E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.25E+02	6.01E-01	8.05E-04	4.54E+00	2.41E-02	4.11E+02	1.75E-01	3.38E+02	7.12E-05
CARM-850 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CARM-950 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CARM-1000 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.99E+03	3.41E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.16E+02	1.52E+00	8.05E-04	4.54E+00	6.09E-02	4.11E+02	1.75E-01	3.38E+02	1.80E-04
CARM-1050 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.72E+03	2.96E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.74E+02	1.31E+00	8.05E-04	4.54E+00	5.27E-02	4.11E+02	1.75E-01	3.38E+02	1.56E-04
CARM-1050+6.25 (0-6")	1.72E-01	1.72E-01	6.30E+00	5.13E+03	8.80E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	8.15E+02	3.91E+00	8.05E-04	4.54E+00	1.57E-01	4.11E+02	1.75E-01	3.38E+02	4.64E-04
CARM-1150 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.75E+03	3.01E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.79E+02	1.34E+00	8.05E-04	4.54E+00	5.37E-02	4.11E+02	1.75E-01	3.38E+02	1.59E-04
CARM-1150+25 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.98E+03	3.40E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.15E+02	1.51E+00	8.05E-04	4.54E+00	6.07E-02	4.11E+02	1.75E-01	3.38E+02	1.79E-04
CARM-Comp 1 (0-6")	1.72E-01	1.72E-01	6.30E+00	2.93E+03	5.03E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.66E+02	2.24E+00	8.05E-04	4.54E+00	8.98E-02	4.11E+02	1.75E-01	3.38E+02	2.65E-04
																						Maximum HQ (Carbonate Mine)	**4.64E-04**

TABLE C-4F: ZINC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 4 - CARBONATE MINE WASTE AREA (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 1.09

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Masked Shrew (Omnivorous Mammal - Terrestrial, Wetland)																							
Reference Site																							
SWGBG-1	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	8.31E+00	9.45E+02	8.01E+00	1.10E-03	1.14E+02	1.25E-01	1.00E+00	5.50E-03	1.48E+03	4.11E+02	1.75E-01	5.06E+02	2.92E+00
SWGBG-2	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	8.31E+00	2.01E+03	1.71E+01	1.10E-03	2.42E+02	2.67E-01	1.00E+00	5.50E-03	3.15E+03	4.11E+02	1.75E-01	5.06E+02	6.22E+00
Carbonate Mine																						**Minimum HQ (Reference Sites)**	**2.92E+00**
CARM-00 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	1.34E+03	1.13E+01	1.10E-03	3.06E+02	3.37E-01	1.00E+00	5.50E-03	2.12E+03	4.11E+02	1.75E-01	5.06E+02	4.19E+00
CARM-50 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	2.99E+03	2.54E+01	1.10E-03	6.83E+02	7.53E-01	1.00E+00	5.50E-03	4.75E+03	4.11E+02	1.75E-01	5.06E+02	9.37E+00
CARM-50+12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	3.55E+03	3.00E+01	1.10E-03	8.10E+02	8.91E-01	1.00E+00	5.50E-03	5.62E+03	4.11E+02	1.75E-01	5.06E+02	1.11E+01
CARM-100 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	2.63E+03	2.22E+01	1.10E-03	6.00E+02	6.60E-01	1.00E+00	5.50E-03	4.16E+03	4.11E+02	1.75E-01	5.06E+02	8.22E+00
CARM-100+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	3.34E+03	2.83E+01	1.10E-03	7.63E+02	8.40E-01	1.00E+00	5.50E-03	5.30E+03	4.11E+02	1.75E-01	5.06E+02	1.05E+01
CARM-110 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	1.29E+03	1.09E+01	1.10E-03	2.95E+02	3.25E-01	1.00E+00	5.50E-03	2.05E+03	4.11E+02	1.75E-01	5.06E+02	4.04E+00
CARM-150 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	2.37E+03	2.00E+01	1.10E-03	5.40E+02	5.95E-01	1.00E+00	5.50E-03	3.75E+03	4.11E+02	1.75E-01	5.06E+02	7.41E+00
CARM-150+50 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	2.18E+03	1.85E+01	1.10E-03	4.99E+02	5.49E-01	1.00E+00	5.50E-03	3.46E+03	4.11E+02	1.75E-01	5.06E+02	6.84E+00
CARM-200 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	1.63E+03	1.38E+01	1.10E-03	3.72E+02	4.10E-01	1.00E+00	5.50E-03	2.59E+03	4.11E+02	1.75E-01	5.06E+02	5.11E+00
CARM-200+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	2.46E+03	2.08E+01	1.10E-03	5.62E+02	6.18E-01	1.00E+00	5.50E-03	3.90E+03	4.11E+02	1.75E-01	5.06E+02	7.70E+00
CARM-250 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	1.97E+03	1.67E+01	1.10E-03	4.50E+02	4.95E-01	1.00E+00	5.50E-03	3.12E+03	4.11E+02	1.75E-01	5.06E+02	6.17E+00
CARM-300 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	2.39E+03	2.03E+01	1.10E-03	5.46E+02	6.01E-01	1.00E+00	5.50E-03	3.79E+03	4.11E+02	1.75E-01	5.06E+02	7.49E+00
CARM-350 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	2.01E+03	1.70E+01	1.10E-03	4.59E+02	5.05E-01	1.00E+00	5.50E-03	3.19E+03	4.11E+02	1.75E-01	5.06E+02	6.30E+00
CARM-400 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	2.25E+03	1.91E+01	1.10E-03	5.15E+02	5.67E-01	1.00E+00	5.50E-03	3.57E+03	4.11E+02	1.75E-01	5.06E+02	7.06E+00
CARM-500 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CARM-550 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	8.49E+02	7.19E+00	1.10E-03	1.94E+02	2.13E-01	1.00E+00	5.50E-03	1.35E+03	4.11E+02	1.75E-01	5.06E+02	2.66E+00
CARM-600 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	1.74E+03	1.48E+01	1.10E-03	3.98E+02	4.39E-01	1.00E+00	5.50E-03	2.77E+03	4.11E+02	1.75E-01	5.06E+02	5.46E+00
CARM-650 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CARM-700 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	7.50E+02	6.35E+00	1.10E-03	1.71E+02	1.89E-01	1.00E+00	5.50E-03	1.19E+03	4.11E+02	1.75E-01	5.06E+02	2.35E+00
CARM-750 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CARM-800 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	5.48E+02	4.64E+00	1.10E-03	1.25E+02	1.38E-01	1.00E+00	5.50E-03	8.69E+02	4.11E+02	1.75E-01	5.06E+02	1.72E+00
CARM-850 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CARM-950 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CARM-1000 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	1.38E+03	1.17E+01	1.10E-03	3.16E+02	3.48E-01	1.00E+00	5.50E-03	2.20E+03	4.11E+02	1.75E-01	5.06E+02	4.34E+00
CARM-1050 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	1.20E+03	1.01E+01	1.10E-03	2.74E+02	3.01E-01	1.00E+00	5.50E-03	1.90E+03	4.11E+02	1.75E-01	5.06E+02	3.75E+00
CARM-1050+6.25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	3.57E+03	3.02E+01	1.10E-03	8.15E+02	8.97E-01	1.00E+00	5.50E-03	5.66E+03	4.11E+02	1.75E-01	5.06E+02	1.12E+01
CARM-1150 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	1.22E+03	1.03E+01	1.10E-03	2.79E+02	3.07E-01	1.00E+00	5.50E-03	1.93E+03	4.11E+02	1.75E-01	5.06E+02	3.82E+00
CARM-1150+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	1.38E+03	1.17E+01	1.10E-03	3.15E+02	3.47E-01	1.00E+00	5.50E-03	2.19E+03	4.11E+02	1.75E-01	5.06E+02	4.32E+00
CARM-Comp 1 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	2.04E+03	1.73E+01	1.10E-03	4.66E+02	5.13E-01	1.00E+00	5.50E-03	3.24E+03	4.11E+02	1.75E-01	5.06E+02	6.39E+00
																						Maximum HQ (Carbonate Mine)	**1.12E+01**

Notes

1 See Tables 3-1 through 3-13 for ingestion rates, foraging ranges used to calculate the SUF, and body weights.

2 BAFs were calculated by dividing site-collected tissue by collocated soil concentrations (BAFs are in dry weight). The maximum BAF calculated from the Beartrap Creek and Blackfoot River transects was used for site dose calculations. The maximum BAF from the terrestrial reference site was used for reference site dose calculations.

3 The mammal, plant, and invertebrate concentrations were calculated by multiplying the soil concentration by the BAF to generate a tissue concentration (see note 2).

4 Mammal, plant, and invertebrate daily doses were calculated by multiplying the ingestion rate (see note 1) by the tissue concentration (see note 3).

5 Soil concentration from 0 to 6 inches below ground surface at point ID as measured by XRF 10. Doses were not calculated for detected and non-detected soil concentrations measured below the minimum reference site concentration, as indicated by BB. For results that were measured at less than the detection limit, doses were calculated using half of the detection limit.

6 Soil daily dose was calculated by multiplying the soil ingestion rate (see note 1) by soil concentration (see note 5).

7 Total daily dose is calculated using the following equation: total daily dose = ([mammal daily dose (if applicable) + plant daily dose (if applicable) + invertebrate daily dose (if applicable) + soil daily dose]*SUF)/receptor species body weight.

8 The TRVs used in this risk assessment represent a mid-range effects level. The derivation of TRVs is described in Navy (1998).

9 Allometrically adjusted TRVs for birds were calculated using the following equation: receptor species TRV = (test species TRV) x (test species body weight / receptor species body weight)$^{(1-1.2)}$.

10 Allometrically adjusted TRVs for mammals were calculated using the following equation: receptor species TRV = (test species TRV) x (test species body weight / receptor species body weight)$^{(1-0.94)}$.

11 HQs were calculated using the following equation: HQ = total daily dose/allometrically adjusted TRV.

12 Highlighted cells indicate an HQ greater than 1.0.

BAF	Bioaccumulation Factor	mg/day	Milligram per day
BB	Below minimum background reference site concentration	mg/kg	Milligram per kilogram
EE/CA	Engineering Evaluation/Cost Analysis	NA	Not applicable
EU	Exposure Unit	Navy	Department of the Navy
HQ	Hazard quotient	SUF	Site use factor
ID	Identification	TRV	Toxicity reference value
kg	Kilogram	XRF	X-ray fluorescence
kg/day	Kilogram per day	XRF 10	XRF measurements recorded following drying and seiving through a #10-mesh screen

Sources:

Department of the Navy. 1998. "Development of Toxicity Reference Values for Conducting Ecological Risk Assessments at Naval Facilities in California, Interim Final." Prepared by Naval Facilities Engineering Command, Engineering Field Activity West (EFA West). San Bruno, California.

TABLE C-5A: ARSENIC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 5 - EDITH MINE WASTE AREAS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **1.29**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Mourning Dove (Herbivorous Birds - Terrestrial)																							
Reference Sites																							
SHGBG-1 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	5.36E-04	2.74E+01	1.47E-02	4.98E-03	1.09E-01	6.69E-04	2.20E+01	1.17E+00	1.37E+01	4.89E-05
SHGBG-2 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	5.36E-04	1.61E+01	8.61E-03	4.98E-03	1.09E-01	3.92E-04	2.20E+01	1.17E+00	1.37E+01	2.87E-05
SHGBG-201 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	5.36E-04	2.60E+01	1.39E-02	4.98E-03	1.09E-01	6.36E-04	2.20E+01	1.17E+00	1.37E+01	4.64E-05
SHGBG-202 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	5.36E-04	1.15E+01	6.16E-03	4.98E-03	1.09E-01	2.81E-04	2.20E+01	1.17E+00	1.37E+01	2.05E-05
West Edith Mine Waste Area																						**Minimum HQ (Reference Sites)**	**2.05E-05**
WEA1-00 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	6.96E+00	4.01E-02	NA	NA	NA	NA	5.36E-04	1.16E+01	6.20E-03	4.98E-03	1.09E-01	2.11E-03	2.20E+01	1.17E+00	1.37E+01	1.54E-04
WEA1-100 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	4.75E+00	2.74E-02	NA	NA	NA	NA	5.36E-04	7.91E+00	4.24E-03	4.98E-03	1.09E-01	1.44E-03	2.20E+01	1.17E+00	1.37E+01	1.05E-04
WEA1-150 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.40E+01	8.07E-02	NA	NA	NA	NA	5.36E-04	2.33E+01	1.25E-02	4.98E-03	1.09E-01	4.25E-03	2.20E+01	1.17E+00	1.37E+01	3.11E-04
WEA1-200 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	5.93E+00	3.42E-02	NA	NA	NA	NA	5.36E-04	9.87E+00	5.29E-03	4.98E-03	1.09E-01	1.80E-03	2.20E+01	1.17E+00	1.37E+01	1.31E-04
WEA1-250 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.58E+01	9.13E-02	NA	NA	NA	NA	5.36E-04	2.64E+01	1.41E-02	4.98E-03	1.09E-01	4.81E-03	2.20E+01	1.17E+00	1.37E+01	3.51E-04
WEA1-300 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.60E+01	9.22E-02	NA	NA	NA	NA	5.36E-04	2.66E+01	1.43E-02	4.98E-03	1.09E-01	4.86E-03	2.20E+01	1.17E+00	1.37E+01	3.55E-04
WEA1-350 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.67E+01	9.60E-02	NA	NA	NA	NA	5.36E-04	2.77E+01	1.49E-02	4.98E-03	1.09E-01	5.06E-03	2.20E+01	1.17E+00	1.37E+01	3.69E-04
WEA1-400 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	6.82E+00	3.93E-02	NA	NA	NA	NA	5.36E-04	1.13E+01	6.08E-03	4.98E-03	1.09E-01	2.07E-03	2.20E+01	1.17E+00	1.37E+01	1.51E-04
WEA1-450 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	6.49E+00	3.74E-02	NA	NA	NA	NA	5.36E-04	1.08E+01	5.78E-03	4.98E-03	1.09E-01	1.97E-03	2.20E+01	1.17E+00	1.37E+01	1.44E-04
WEA1-550 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	5.50E+00	3.17E-02	NA	NA	NA	NA	5.36E-04	9.15E+00	4.90E-03	4.98E-03	1.09E-01	1.67E-03	2.20E+01	1.17E+00	1.37E+01	1.22E-04
WEA1-Comp 1 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.19E+01	6.88E-02	NA	NA	NA	NA	5.36E-04	1.99E+01	1.07E-02	4.98E-03	1.09E-01	3.63E-03	2.20E+01	1.17E+00	1.37E+01	2.65E-04
WEA1-Comp 2 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	5.90E+00	3.40E-02	NA	NA	NA	NA	5.36E-04	9.82E+00	5.26E-03	4.98E-03	1.09E-01	1.79E-03	2.20E+01	1.17E+00	1.37E+01	1.31E-04
Central Edith Mine Waste Area																						**Maximum HQ (West Edith Mine Waste Area)**	**3.69E-04**
CEA1-3-00 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	2.24E+01	1.29E-01	NA	NA	NA	NA	5.36E-04	3.73E+01	2.00E-02	4.98E-03	1.09E-01	6.81E-03	2.20E+01	1.17E+00	1.37E+01	4.97E-04
CEA1-3-100 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.40E+01	8.09E-02	NA	NA	NA	NA	5.36E-04	2.34E+01	1.25E-02	4.98E-03	1.09E-01	4.26E-03	2.20E+01	1.17E+00	1.37E+01	3.11E-04
CEA1-3-200 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.55E+01	8.96E-02	NA	NA	NA	NA	5.36E-04	2.59E+01	1.39E-02	4.98E-03	1.09E-01	4.72E-03	2.20E+01	1.17E+00	1.37E+01	3.45E-04
CEA1-3-250 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.65E+01	9.51E-02	NA	NA	NA	NA	5.36E-04	2.75E+01	1.47E-02	4.98E-03	1.09E-01	5.01E-03	2.20E+01	1.17E+00	1.37E+01	3.66E-04
CEA1-3-300 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.12E+01	6.43E-02	NA	NA	NA	NA	5.36E-04	1.86E+01	9.96E-03	4.98E-03	1.09E-01	3.39E-03	2.20E+01	1.17E+00	1.37E+01	2.47E-04
CEA1-3-350 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	2.13E+01	1.23E-01	NA	NA	NA	NA	5.36E-04	3.55E+01	1.90E-02	4.98E-03	1.09E-01	6.47E-03	2.20E+01	1.17E+00	1.37E+01	4.73E-04
CEA1-3-400 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	2.26E+01	1.30E-01	NA	NA	NA	NA	5.36E-04	3.76E+01	2.01E-02	4.98E-03	1.09E-01	6.85E-03	2.20E+01	1.17E+00	1.37E+01	5.01E-04
CEA1-3-450 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	4.73E+00	2.73E-02	NA	NA	NA	NA	5.36E-04	7.87E+00	4.22E-03	4.98E-03	1.09E-01	1.44E-03	2.20E+01	1.17E+00	1.37E+01	1.05E-04
CEA1-3-50 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.44E+01	8.32E-02	NA	NA	NA	NA	5.36E-04	2.40E+01	1.29E-02	4.98E-03	1.09E-01	4.38E-03	2.20E+01	1.17E+00	1.37E+01	3.20E-04
CEA1-3-500 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	8.80E+00	5.07E-02	NA	NA	NA	NA	5.36E-04	1.46E+01	7.84E-03	4.98E-03	1.09E-01	2.67E-03	2.20E+01	1.17E+00	1.37E+01	1.95E-04
CEA1-3-550 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.51E+01	8.67E-02	NA	NA	NA	NA	5.36E-04	2.51E+01	1.34E-02	4.98E-03	1.09E-01	4.57E-03	2.20E+01	1.17E+00	1.37E+01	3.34E-04
CEA1-3-600 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.00E+01	5.78E-02	NA	NA	NA	NA	5.36E-04	1.67E+01	8.95E-03	4.98E-03	1.09E-01	3.05E-03	2.20E+01	1.17E+00	1.37E+01	2.22E-04
CEA1-3-650 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.30E+01	7.49E-02	NA	NA	NA	NA	5.36E-04	2.16E+01	1.16E-02	4.98E-03	1.09E-01	3.94E-03	2.20E+01	1.17E+00	1.37E+01	2.88E-04
CEA1-3-700 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	5.66E+00	3.26E-02	NA	NA	NA	NA	5.36E-04	9.42E+00	5.05E-03	4.98E-03	1.09E-01	1.72E-03	2.20E+01	1.17E+00	1.37E+01	1.25E-04
CEA1-3-750 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	7.10E+00	4.09E-02	NA	NA	NA	NA	5.36E-04	1.18E+01	6.33E-03	4.98E-03	1.09E-01	2.15E-03	2.20E+01	1.17E+00	1.37E+01	1.57E-04
CEA1-3-800 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	6.06E+00	3.49E-02	NA	NA	NA	NA	5.36E-04	1.01E+01	5.40E-03	4.98E-03	1.09E-01	1.84E-03	2.20E+01	1.17E+00	1.37E+01	1.34E-04
CEA1-3-850 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	7.47E+00	4.30E-02	NA	NA	NA	NA	5.36E-04	1.24E+01	6.66E-03	4.98E-03	1.09E-01	2.27E-03	2.20E+01	1.17E+00	1.37E+01	1.66E-04
CEA1-3-Comp 1 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	8.27E+00	4.77E-02	NA	NA	NA	NA	5.36E-04	1.38E+01	7.38E-03	4.98E-03	1.09E-01	2.51E-03	2.20E+01	1.17E+00	1.37E+01	1.83E-04
CEA1-3-Comp 2 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	6.33E+00	3.64E-02	NA	NA	NA	NA	5.36E-04	1.05E+01	5.64E-03	4.98E-03	1.09E-01	1.92E-03	2.20E+01	1.17E+00	1.37E+01	1.40E-04
CEA1-3-Comp 3 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	5.20E+01	3.00E-01	NA	NA	NA	NA	5.36E-04	8.65E+01	4.64E-02	4.98E-03	1.09E-01	1.58E-02	2.20E+01	1.17E+00	1.37E+01	1.15E-03
CEA4-00 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	8.90E+00	5.13E-02	NA	NA	NA	NA	5.36E-04	1.48E+01	7.93E-03	4.98E-03	1.09E-01	2.70E-03	2.20E+01	1.17E+00	1.37E+01	1.97E-04
CEA4-20 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.60E+01	9.20E-02	NA	NA	NA	NA	5.36E-04	2.66E+01	1.42E-02	4.98E-03	1.09E-01	4.85E-03	2.20E+01	1.17E+00	1.37E+01	3.54E-04
CEA4-40 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.56E+01	8.99E-02	NA	NA	NA	NA	5.36E-04	2.60E+01	1.39E-02	4.98E-03	1.09E-01	4.73E-03	2.20E+01	1.17E+00	1.37E+01	3.46E-04
CEA4-Comp (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	2.21E+01	1.27E-01	NA	NA	NA	NA	5.36E-04	3.67E+01	1.97E-02	4.98E-03	1.09E-01	6.70E-03	2.20E+01	1.17E+00	1.37E+01	4.89E-04
East Edith Mine Waste Area																						**Maximum HQ (Central Edith Mine Waste Area)**	**1.15E-03**
EEA1-00 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	9.90E+00	5.71E-02	NA	NA	NA	NA	5.36E-04	1.65E+01	8.83E-03	4.98E-03	1.09E-01	3.01E-03	2.20E+01	1.17E+00	1.37E+01	2.20E-04
EEA1-100 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	3.82E+00	2.20E-02	NA	NA	NA	NA	5.36E-04	6.36E+00	3.41E-03	4.98E-03	1.09E-01	1.16E-03	2.20E+01	1.17E+00	1.37E+01	8.47E-05
EEA1-150 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	8.97E+00	5.17E-02	NA	NA	NA	NA	5.36E-04	1.49E+01	8.00E-03	4.98E-03	1.09E-01	2.72E-03	2.20E+01	1.17E+00	1.37E+01	1.99E-04
EEA1-200 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
EEA1-250 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	7.96E+00	4.58E-02	NA	NA	NA	NA	5.36E-04	1.32E+01	7.09E-03	4.98E-03	1.09E-01	2.41E-03	2.20E+01	1.17E+00	1.37E+01	1.76E-04
EEA1-300 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	9.53E+00	5.49E-02	NA	NA	NA	NA	5.36E-04	1.59E+01	8.49E-03	4.98E-03	1.09E-01	2.89E-03	2.20E+01	1.17E+00	1.37E+01	2.11E-04
EEA1-350 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.14E+01	6.59E-02	NA	NA	NA	NA	5.36E-04	1.90E+01	1.02E-02	4.98E-03	1.09E-01	3.47E-03	2.20E+01	1.17E+00	1.37E+01	2.53E-04
EEA1-400 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	6.82E+00	3.93E-02	NA	NA	NA	NA	5.36E-04	1.13E+01	6.08E-03	4.98E-03	1.09E-01	2.07E-03	2.20E+01	1.17E+00	1.37E+01	1.51E-04
EEA1-450 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	6.16E+00	3.55E-02	NA	NA	NA	NA	5.36E-04	1.03E+01	5.49E-03	4.98E-03	1.09E-01	1.87E-03	2.20E+01	1.17E+00	1.37E+01	1.37E-04
EEA1-50 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.26E+01	7.26E-02	NA	NA	NA	NA	5.36E-04	2.10E+01	1.12E-02	4.98E-03	1.09E-01	3.82E-03	2.20E+01	1.17E+00	1.37E+01	2.79E-04
EEA1-500 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	6.79E+00	3.91E-02	NA	NA	NA	NA	5.36E-04	1.13E+01	6.06E-03	4.98E-03	1.09E-01	2.06E-03	2.20E+01	1.17E+00	1.37E+01	1.51E-04
EEA1-Comp 1 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	3.54E+00	2.04E-02	NA	NA	NA	NA	5.36E-04	5.89E+00	3.15E-03	4.98E-03	1.09E-01	1.07E-03	2.20E+01	1.17E+00	1.37E+01	7.84E-05

TABLE C-5A: ARSENIC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 5 - EDITH MINE WASTE AREAS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **1.29**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Mourning Dove (Herbivorous Birds - Terrestrial)																							
EEA2-00 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
EEA2-50 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	7.26E+00	4.18E-02	NA	NA	NA	NA	5.36E-04	1.21E+01	6.48E-03	4.98E-03	1.09E-01	2.20E-03	2.20E+01	1.17E+00	1.37E+01	1.61E-04
EEA2-100 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	5.00E+00	2.88E-02	NA	NA	NA	NA	5.36E-04	8.32E+00	4.46E-03	4.98E-03	1.09E-01	1.52E-03	2.20E+01	1.17E+00	1.37E+01	1.11E-04
EEA2-150 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	3.82E+00	2.20E-02	NA	NA	NA	NA	5.36E-04	6.35E+00	3.40E-03	4.98E-03	1.09E-01	1.16E-03	2.20E+01	1.17E+00	1.37E+01	8.46E-05
EEA2-200 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	5.83E+00	3.36E-02	NA	NA	NA	NA	5.36E-04	9.71E+00	5.20E-03	4.98E-03	1.09E-01	1.77E-03	2.20E+01	1.17E+00	1.37E+01	1.29E-04
EEA2-250 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
EEA2-300 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.44E+01	8.30E-02	NA	NA	NA	NA	5.36E-04	2.40E+01	1.28E-02	4.98E-03	1.09E-01	4.37E-03	2.20E+01	1.17E+00	1.37E+01	3.19E-04
EEA2-Comp 1 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.12E+01	6.45E-02	NA	NA	NA	NA	5.36E-04	1.86E+01	9.98E-03	4.98E-03	1.09E-01	3.40E-03	2.20E+01	1.17E+00	1.37E+01	2.48E-04
																						Maximum HQ (East Edith Mine Waste Area)	**3.19E-04**
Red-Tailed Hawk (Carnivorous Birds - Terrestrial)																							
Reference Sites																							
SHGBG-1 (0-6")	9.00E-02	9.00E-02	4.84E-01	1.32E+01	1.19E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.74E+01	1.40E-01	1.85E-03	1.13E+00	2.17E-03	2.20E+01	1.17E+00	2.19E+01	9.95E-05
SHGBG-2 (0-6")	9.00E-02	9.00E-02	4.84E-01	7.77E+00	6.99E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.61E+01	8.23E-02	1.85E-03	1.13E+00	1.28E-03	2.20E+01	1.17E+00	2.19E+01	5.83E-05
SHGBG-201 (0-6")	9.00E-02	9.00E-02	4.84E-01	1.26E+01	1.13E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.60E+01	1.33E-01	1.85E-03	1.13E+00	2.07E-03	2.20E+01	1.17E+00	2.19E+01	9.45E-05
SHGBG-202 (0-6")	9.00E-02	9.00E-02	4.84E-01	5.56E+00	5.00E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.15E+01	5.90E-02	1.85E-03	1.13E+00	9.13E-04	2.20E+01	1.17E+00	2.19E+01	4.18E-05
West Edith Mine Waste Area																						**Minimum HQ (Reference Sites)**	**4.18E-05**
WEA1-00 (0-6")	9.00E-02	9.00E-02	4.84E-01	5.60E+00	5.04E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.16E+01	5.94E-02	1.85E-03	1.13E+00	9.20E-04	2.20E+01	1.17E+00	2.19E+01	4.21E-05
WEA1-100 (0-6")	9.00E-02	9.00E-02	4.84E-01	3.82E+00	3.44E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	7.91E+00	4.05E-02	1.85E-03	1.13E+00	6.28E-04	2.20E+01	1.17E+00	2.19E+01	2.87E-05
WEA1-150 (0-6")	9.00E-02	9.00E-02	4.84E-01	1.13E+01	1.01E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.33E+01	1.20E-01	1.85E-03	1.13E+00	1.85E-03	2.20E+01	1.17E+00	2.19E+01	8.47E-05
WEA1-200 (0-6")	9.00E-02	9.00E-02	4.84E-01	4.77E+00	4.30E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	9.87E+00	5.06E-02	1.85E-03	1.13E+00	7.84E-04	2.20E+01	1.17E+00	2.19E+01	3.59E-05
WEA1-250 (0-6")	9.00E-02	9.00E-02	4.84E-01	1.28E+01	1.15E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.64E+01	1.35E-01	1.85E-03	1.13E+00	2.09E-03	2.20E+01	1.17E+00	2.19E+01	9.58E-05
WEA1-300 (0-6")	9.00E-02	9.00E-02	4.84E-01	1.29E+01	1.16E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.66E+01	1.36E-01	1.85E-03	1.13E+00	2.11E-03	2.20E+01	1.17E+00	2.19E+01	9.67E-05
WEA1-350 (0-6")	9.00E-02	9.00E-02	4.84E-01	1.34E+01	1.21E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.77E+01	1.42E-01	1.85E-03	1.13E+00	2.20E-03	2.20E+01	1.17E+00	2.19E+01	1.01E-04
WEA1-400 (0-6")	9.00E-02	9.00E-02	4.84E-01	5.49E+00	4.94E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.13E+01	5.81E-02	1.85E-03	1.13E+00	9.01E-04	2.20E+01	1.17E+00	2.19E+01	4.12E-05
WEA1-450 (0-6")	9.00E-02	9.00E-02	4.84E-01	5.22E+00	4.70E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.08E+01	5.53E-02	1.85E-03	1.13E+00	8.57E-04	2.20E+01	1.17E+00	2.19E+01	3.92E-05
WEA1-550 (0-6")	9.00E-02	9.00E-02	4.84E-01	4.43E+00	3.98E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	9.15E+00	4.69E-02	1.85E-03	1.13E+00	7.27E-04	2.20E+01	1.17E+00	2.19E+01	3.32E-05
WEA1-Comp 1 (0-6")	9.00E-02	9.00E-02	4.84E-01	9.62E+00	8.65E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.99E+01	1.02E-01	1.85E-03	1.13E+00	1.58E-03	2.20E+01	1.17E+00	2.19E+01	7.22E-05
WEA1-Comp 2 (0-6")	9.00E-02	9.00E-02	4.84E-01	4.75E+00	4.27E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	9.82E+00	5.04E-02	1.85E-03	1.13E+00	7.80E-04	2.20E+01	1.17E+00	2.19E+01	3.57E-05
Central Edith Mine Waste Area																						**Maximum HQ (West Edith Mine Waste Area)**	**1.01E-04**
CEA1-3-00 (0-6")	9.00E-02	9.00E-02	4.84E-01	1.81E+01	1.62E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.73E+01	1.91E-01	1.85E-03	1.13E+00	2.96E-03	2.20E+01	1.17E+00	2.19E+01	1.36E-04
CEA1-3-100 (0-6")	9.00E-02	9.00E-02	4.84E-01	1.13E+01	1.02E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.34E+01	1.20E-01	1.85E-03	1.13E+00	1.86E-03	2.20E+01	1.17E+00	2.19E+01	8.49E-05
CEA1-3-150 (0-6")	9.00E-02	9.00E-02	4.84E-01	5.17E+00	4.65E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.07E+01	5.48E-02	1.85E-03	1.13E+00	8.49E-04	2.20E+01	1.17E+00	2.19E+01	3.88E-05
CEA1-3-200 (0-6")	9.00E-02	9.00E-02	4.84E-01	1.25E+01	1.13E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.59E+01	1.33E-01	1.85E-03	1.13E+00	2.05E-03	2.20E+01	1.17E+00	2.19E+01	9.40E-05
CEA1-3-250 (0-6")	9.00E-02	9.00E-02	4.84E-01	1.33E+01	1.20E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.75E+01	1.41E-01	1.85E-03	1.13E+00	2.18E-03	2.20E+01	1.17E+00	2.19E+01	9.98E-05
CEA1-3-300 (0-6")	9.00E-02	9.00E-02	4.84E-01	8.99E+00	8.09E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.86E+01	9.53E-02	1.85E-03	1.13E+00	1.48E-03	2.20E+01	1.17E+00	2.19E+01	6.75E-05
CEA1-3-350 (0-6")	9.00E-02	9.00E-02	4.84E-01	1.72E+01	1.54E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.55E+01	1.82E-01	1.85E-03	1.13E+00	2.82E-03	2.20E+01	1.17E+00	2.19E+01	1.29E-04
CEA1-3-400 (0-6")	9.00E-02	9.00E-02	4.84E-01	1.82E+01	1.64E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.76E+01	1.93E-01	1.85E-03	1.13E+00	2.98E-03	2.20E+01	1.17E+00	2.19E+01	1.37E-04
CEA1-3-450 (0-6")	9.00E-02	9.00E-02	4.84E-01	3.81E+00	3.42E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	7.87E+00	4.04E-02	1.85E-03	1.13E+00	6.25E-04	2.20E+01	1.17E+00	2.19E+01	2.86E-05
CEA1-3-50 (0-6")	9.00E-02	9.00E-02	4.84E-01	1.16E+01	1.05E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.40E+01	1.23E-01	1.85E-03	1.13E+00	1.91E-03	2.20E+01	1.17E+00	2.19E+01	8.73E-05
CEA1-3-500 (0-6")	9.00E-02	9.00E-02	4.84E-01	7.08E+00	6.37E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.46E+01	7.51E-02	1.85E-03	1.13E+00	1.16E-03	2.20E+01	1.17E+00	2.19E+01	5.32E-05
CEA1-3-550 (0-6")	9.00E-02	9.00E-02	4.84E-01	1.21E+01	1.09E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.51E+01	1.28E-01	1.85E-03	1.13E+00	1.99E-03	2.20E+01	1.17E+00	2.19E+01	9.10E-05
CEA1-3-600 (0-6")	9.00E-02	9.00E-02	4.84E-01	8.08E+00	7.27E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.67E+01	8.56E-02	1.85E-03	1.13E+00	1.33E-03	2.20E+01	1.17E+00	2.19E+01	6.07E-05
CEA1-3-650 (0-6")	9.00E-02	9.00E-02	4.84E-01	1.05E+01	9.41E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.16E+01	1.11E-01	1.85E-03	1.13E+00	1.72E-03	2.20E+01	1.17E+00	2.19E+01	7.85E-05
CEA1-3-700 (0-6")	9.00E-02	9.00E-02	4.84E-01	4.56E+00	4.10E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	9.42E+00	4.83E-02	1.85E-03	1.13E+00	7.48E-04	2.20E+01	1.17E+00	2.19E+01	3.42E-05
CEA1-3-750 (0-6")	9.00E-02	9.00E-02	4.84E-01	5.72E+00	5.14E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.18E+01	6.06E-02	1.85E-03	1.13E+00	9.38E-04	2.20E+01	1.17E+00	2.19E+01	4.29E-05
CEA1-3-800 (0-6")	9.00E-02	9.00E-02	4.84E-01	4.88E+00	4.39E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.01E+01	5.17E-02	1.85E-03	1.13E+00	8.01E-04	2.20E+01	1.17E+00	2.19E+01	3.66E-05
CEA1-3-850 (0-6")	9.00E-02	9.00E-02	4.84E-01	6.01E+00	5.41E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.24E+01	6.37E-02	1.85E-03	1.13E+00	9.87E-04	2.20E+01	1.17E+00	2.19E+01	4.51E-05
CEA1-3-Comp 1 (0-6")	9.00E-02	9.00E-02	4.84E-01	6.66E+00	5.99E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.38E+01	7.06E-02	1.85E-03	1.13E+00	1.09E-03	2.20E+01	1.17E+00	2.19E+01	5.00E-05
CEA1-3-Comp 2 (0-6")	9.00E-02	9.00E-02	4.84E-01	5.09E+00	4.58E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.05E+01	5.40E-02	1.85E-03	1.13E+00	8.36E-04	2.20E+01	1.17E+00	2.19E+01	3.82E-05

TABLE C-5A: ARSENIC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 5 - EDITH MINE WASTE AREAS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **1.29**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Red-Tailed Hawk (Carnivorous Birds - Terrestrial)																							
CEA1-3-Comp 3 (0-6")	9.00E-02	9.00E-02	4.84E-01	4.19E+01	3.76E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	8.65E+01	4.44E-01	1.85E-03	1.13E+00	6.87E-03	2.20E+01	1.17E+00	2.19E+01	3.14E-04
CEA4-00 (0-6")	9.00E-02	9.00E-02	4.84E-01	7.16E+00	6.44E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.48E+01	7.59E-02	1.85E-03	1.13E+00	1.18E-03	2.20E+01	1.17E+00	2.19E+01	5.38E-05
CEA4-20 (0-6")	9.00E-02	9.00E-02	4.84E-01	1.29E+01	1.16E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.66E+01	1.36E-01	1.85E-03	1.13E+00	2.11E-03	2.20E+01	1.17E+00	2.19E+01	9.66E-05
CEA4-40 (0-6")	9.00E-02	9.00E-02	4.84E-01	1.26E+01	1.13E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.60E+01	1.33E-01	1.85E-03	1.13E+00	2.06E-03	2.20E+01	1.17E+00	2.19E+01	9.43E-05
CEA4-Comp (0-6")	9.00E-02	9.00E-02	4.84E-01	1.78E+01	1.60E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.67E+01	1.88E-01	1.85E-03	1.13E+00	2.92E-03	2.20E+01	1.17E+00	2.19E+01	1.33E-04
East Edith Mine Waste Area																						**Maximum HQ (Central Edith Mine Waste Area)**	**3.14E-04**
EEA1-00 (0-6")	9.00E-02	9.00E-02	4.84E-01	7.97E+00	7.17E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.65E+01	8.45E-02	1.85E-03	1.13E+00	1.31E-03	2.20E+01	1.17E+00	2.19E+01	5.99E-05
EEA1-100 (0-6")	9.00E-02	9.00E-02	4.84E-01	3.08E+00	2.77E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	6.36E+00	3.26E-02	1.85E-03	1.13E+00	5.05E-04	2.20E+01	1.17E+00	2.19E+01	2.31E-05
EEA1-150 (0-6")	9.00E-02	9.00E-02	4.84E-01	7.22E+00	6.50E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.49E+01	7.66E-02	1.85E-03	1.13E+00	1.19E-03	2.20E+01	1.17E+00	2.19E+01	5.42E-05
EEA1-200 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
EEA1-250 (0-6")	9.00E-02	9.00E-02	4.84E-01	6.41E+00	5.76E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.32E+01	6.79E-02	1.85E-03	1.13E+00	1.05E-03	2.20E+01	1.17E+00	2.19E+01	4.81E-05
EEA1-300 (0-6")	9.00E-02	9.00E-02	4.84E-01	7.67E+00	6.90E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.59E+01	8.13E-02	1.85E-03	1.13E+00	1.26E-03	2.20E+01	1.17E+00	2.19E+01	5.76E-05
EEA1-350 (0-6")	9.00E-02	9.00E-02	4.84E-01	9.20E+00	8.28E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.90E+01	9.75E-02	1.85E-03	1.13E+00	1.51E-03	2.20E+01	1.17E+00	2.19E+01	6.91E-05
EEA1-400 (0-6")	9.00E-02	9.00E-02	4.84E-01	5.49E+00	4.94E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.13E+01	5.82E-02	1.85E-03	1.13E+00	9.01E-04	2.20E+01	1.17E+00	2.19E+01	4.12E-05
EEA1-450 (0-6")	9.00E-02	9.00E-02	4.84E-01	4.96E+00	4.46E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.03E+01	5.26E-02	1.85E-03	1.13E+00	8.14E-04	2.20E+01	1.17E+00	2.19E+01	3.72E-05
EEA1-50 (0-6")	9.00E-02	9.00E-02	4.84E-01	1.01E+01	9.12E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.10E+01	1.07E-01	1.85E-03	1.13E+00	1.66E-03	2.20E+01	1.17E+00	2.19E+01	7.61E-05
EEA1-500 (0-6")	9.00E-02	9.00E-02	4.84E-01	5.47E+00	4.92E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.13E+01	5.80E-02	1.85E-03	1.13E+00	8.98E-04	2.20E+01	1.17E+00	2.19E+01	4.11E-05
EEA1-Comp 1 (0-6")	9.00E-02	9.00E-02	4.84E-01	2.85E+00	2.56E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.89E+00	3.02E-02	1.85E-03	1.13E+00	4.67E-04	2.20E+01	1.17E+00	2.19E+01	2.14E-05
EEA2-00 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
EEA2-50 (0-6")	9.00E-02	9.00E-02	4.84E-01	5.85E+00	5.26E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.21E+01	6.20E-02	1.85E-03	1.13E+00	9.60E-04	2.20E+01	1.17E+00	2.19E+01	4.39E-05
EEA2-100 (0-6")	9.00E-02	9.00E-02	4.84E-01	4.02E+00	3.62E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	8.32E+00	4.26E-02	1.85E-03	1.13E+00	6.60E-04	2.20E+01	1.17E+00	2.19E+01	3.02E-05
EEA2-150 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	6.35E+00	BB	BB	BB	BB	BB	BB	BB	BB
EEA2-200 (0-6")	9.00E-02	9.00E-02	4.84E-01	4.70E+00	4.22E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	9.71E+00	4.98E-02	1.85E-03	1.13E+00	7.71E-04	2.20E+01	1.17E+00	2.19E+01	3.53E-05
EEA2-250 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
EEA2-300 (0-6")	9.00E-02	9.00E-02	4.84E-01	1.16E+01	1.04E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.40E+01	1.23E-01	1.85E-03	1.13E+00	1.90E-03	2.20E+01	1.17E+00	2.19E+01	8.71E-05
EEA2-Comp 1 (0-6")	9.00E-02	9.00E-02	4.84E-01	9.01E+00	8.10E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.86E+01	9.55E-02	1.85E-03	1.13E+00	1.48E-03	2.20E+01	1.17E+00	2.19E+01	6.76E-05
																						Maximum HQ (East Edith Mine Waste Area)	**8.71E-05**
American Kestrel (Insectivorous Birds - Terrestrial)																							
Reference Sites																							
SHGBG-1 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	2.55E+00	6.99E+01	9.61E-01	7.84E-04	2.74E+01	2.15E-02	4.93E-03	1.24E-01	3.91E-02	2.20E+01	1.17E+00	1.40E+01	2.78E-03
SHGBG-2 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	2.55E+00	4.10E+01	5.64E-01	7.84E-04	1.61E+01	1.26E-02	4.93E-03	1.24E-01	2.29E-02	2.20E+01	1.17E+00	1.40E+01	1.63E-03
SHGBG-201 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	2.55E+00	6.64E+01	9.14E-01	7.84E-04	2.60E+01	2.04E-02	4.93E-03	1.24E-01	3.71E-02	2.20E+01	1.17E+00	1.40E+01	2.64E-03
SHGBG-202 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	2.55E+00	2.93E+01	4.04E-01	7.84E-04	1.15E+01	9.02E-03	4.93E-03	1.24E-01	1.64E-02	2.20E+01	1.17E+00	1.40E+01	1.17E-03
West Edith Mine Waste Area																						**Minimum HQ (Reference Sites)**	**1.17E-03**
WEA1-00 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	1.91E+02	2.63E+00	7.84E-04	1.16E+01	9.08E-03	4.93E-03	1.24E-01	1.05E-01	2.20E+01	1.17E+00	1.40E+01	7.46E-03
WEA1-100 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	1.30E+02	1.79E+00	7.84E-04	7.91E+00	6.20E-03	4.93E-03	1.24E-01	7.15E-02	2.20E+01	1.17E+00	1.40E+01	5.09E-03
WEA1-150 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	3.84E+02	5.29E+00	7.84E-04	2.33E+01	1.83E-02	4.93E-03	1.24E-01	2.11E-01	2.20E+01	1.17E+00	1.40E+01	1.50E-02
WEA1-200 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	1.63E+02	2.24E+00	7.84E-04	9.87E+00	7.74E-03	4.93E-03	1.24E-01	8.93E-02	2.20E+01	1.17E+00	1.40E+01	6.36E-03
WEA1-250 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	4.34E+02	5.98E+00	7.84E-04	2.64E+01	2.07E-02	4.93E-03	1.24E-01	2.39E-01	2.20E+01	1.17E+00	1.40E+01	1.70E-02
WEA1-300 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	4.39E+02	6.04E+00	7.84E-04	2.66E+01	2.09E-02	4.93E-03	1.24E-01	2.41E-01	2.20E+01	1.17E+00	1.40E+01	1.72E-02
WEA1-350 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	4.57E+02	6.29E+00	7.84E-04	2.77E+01	2.18E-02	4.93E-03	1.24E-01	2.51E-01	2.20E+01	1.17E+00	1.40E+01	1.79E-02
WEA1-400 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	1.87E+02	2.57E+00	7.84E-04	1.13E+01	8.89E-03	4.93E-03	1.24E-01	1.03E-01	2.20E+01	1.17E+00	1.40E+01	7.31E-03
WEA1-450 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	1.78E+02	2.45E+00	7.84E-04	1.08E+01	8.46E-03	4.93E-03	1.24E-01	9.76E-02	2.20E+01	1.17E+00	1.40E+01	6.95E-03
WEA1-550 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	1.51E+02	2.08E+00	7.84E-04	9.15E+00	7.18E-03	4.93E-03	1.24E-01	8.28E-02	2.20E+01	1.17E+00	1.40E+01	5.90E-03
WEA1-Comp 1 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	3.28E+02	4.51E+00	7.84E-04	1.99E+01	1.56E-02	4.93E-03	1.24E-01	1.80E-01	2.20E+01	1.17E+00	1.40E+01	1.28E-02
WEA1-Comp 2 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	1.62E+02	2.23E+00	7.84E-04	9.82E+00	7.70E-03	4.93E-03	1.24E-01	8.89E-02	2.20E+01	1.17E+00	1.40E+01	6.33E-03
Central Edith Mine Waste Area																						**Maximum HQ (West Edith Mine Waste Area)**	**1.79E-02**
CEA1-3-00 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	6.15E+02	8.47E+00	7.84E-04	3.73E+01	2.93E-02	4.93E-03	1.24E-01	3.38E-01	2.20E+01	1.17E+00	1.40E+01	2.41E-02
CEA1-3-100 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	3.85E+02	5.30E+00	7.84E-04	2.34E+01	1.83E-02	4.93E-03	1.24E-01	2.11E-01	2.20E+01	1.17E+00	1.40E+01	1.51E-02
CEA1-3-150 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	1.76E+02	2.42E+00	7.84E-04	1.07E+01	8.38E-03	4.93E-03	1.24E-01	9.67E-02	2.20E+01	1.17E+00	1.40E+01	6.89E-03
CEA1-3-200 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	4.26E+02	5.87E+00	7.84E-04	2.59E+01	2.03E-02	4.93E-03	1.24E-01	2.34E-01	2.20E+01	1.17E+00	1.40E+01	1.67E-02
CEA1-3-250 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	4.53E+02	6.23E+00	7.84E-04	2.75E+01	2.15E-02	4.93E-03	1.24E-01	2.49E-01	2.20E+01	1.17E+00	1.40E+01	1.77E-02
CEA1-3-300 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	3.06E+02	4.21E+00	7.84E-04	1.86E+01	1.46E-02	4.93E-03	1.24E-01	1.68E-01	2.20E+01	1.17E+00	1.40E+01	1.20E-02
CEA1-3-350 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	5.85E+02	8.05E+00	7.84E-04	3.55E+01	2.78E-02	4.93E-03	1.24E-01	3.21E-01	2.20E+01	1.17E+00	1.40E+01	2.29E-02
CEA1-3-400 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	6.19E+02	8.52E+00	7.84E-04	3.76E+01	2.95E-02	4.93E-03	1.24E-01	3.40E-01	2.20E+01	1.17E+00	1.40E+01	2.42E-02
CEA1-3-450 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	1.30E+02	1.79E+00	7.84E-04	7.87E+00	6.17E-03	4.93E-03	1.24E-01	7.12E-02	2.20E+01	1.17E+00	1.40E+01	5.07E-03

TABLE C-5A: ARSENIC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 5 - EDITH MINE WASTE AREAS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **1.29**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
American Kestrel (Insectivorous Birds - Terrestrial)																							
CEA1-3-50 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	3.96E+02	5.45E+00	7.84E-04	2.40E+01	1.89E-02	4.93E-03	1.24E-01	2.18E-01	2.20E+01	1.17E+00	1.40E+01	1.55E-02
CEA1-3-500 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	2.41E+02	3.32E+00	7.84E-04	1.46E+01	1.15E-02	4.93E-03	1.24E-01	1.32E-01	2.20E+01	1.17E+00	1.40E+01	9.43E-03
CEA1-3-550 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	4.13E+02	5.68E+00	7.84E-04	2.51E+01	1.96E-02	4.93E-03	1.24E-01	2.27E-01	2.20E+01	1.17E+00	1.40E+01	1.61E-02
CEA1-3-600 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	2.75E+02	3.79E+00	7.84E-04	1.67E+01	1.31E-02	4.93E-03	1.24E-01	1.51E-01	2.20E+01	1.17E+00	1.40E+01	1.08E-02
CEA1-3-650 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	3.56E+02	4.90E+00	7.84E-04	2.16E+01	1.70E-02	4.93E-03	1.24E-01	1.96E-01	2.20E+01	1.17E+00	1.40E+01	1.39E-02
CEA1-3-700 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	1.55E+02	2.14E+00	7.84E-04	9.42E+00	7.39E-03	4.93E-03	1.24E-01	8.52E-02	2.20E+01	1.17E+00	1.40E+01	6.07E-03
CEA1-3-750 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	1.95E+02	2.68E+00	7.84E-04	1.18E+01	9.27E-03	4.93E-03	1.24E-01	1.07E-01	2.20E+01	1.17E+00	1.40E+01	7.61E-03
CEA1-3-800 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	1.66E+02	2.29E+00	7.84E-04	1.01E+01	7.91E-03	4.93E-03	1.24E-01	9.13E-02	2.20E+01	1.17E+00	1.40E+01	6.50E-03
CEA1-3-850 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	2.05E+02	2.82E+00	7.84E-04	1.24E+01	9.75E-03	4.93E-03	1.24E-01	1.12E-01	2.20E+01	1.17E+00	1.40E+01	8.01E-03
CEA1-3-Comp 1 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	2.27E+02	3.12E+00	7.84E-04	1.38E+01	1.08E-02	4.93E-03	1.24E-01	1.25E-01	2.20E+01	1.17E+00	1.40E+01	8.87E-03
CEA1-3-Comp 2 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	1.73E+02	2.39E+00	7.84E-04	1.05E+01	8.26E-03	4.93E-03	1.24E-01	9.52E-02	2.20E+01	1.17E+00	1.40E+01	6.78E-03
CEA1-3-Comp 3 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	1.43E+03	1.96E+01	7.84E-04	8.65E+01	6.79E-02	4.93E-03	1.24E-01	7.83E-01	2.20E+01	1.17E+00	1.40E+01	5.57E-02
CEA4-00 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	2.44E+02	3.36E+00	7.84E-04	1.48E+01	1.16E-02	4.93E-03	1.24E-01	1.34E-01	2.20E+01	1.17E+00	1.40E+01	9.54E-03
CEA4-20 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	4.38E+02	6.03E+00	7.84E-04	2.66E+01	2.08E-02	4.93E-03	1.24E-01	2.41E-01	2.20E+01	1.17E+00	1.40E+01	1.71E-02
CEA4-40 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	4.28E+02	5.89E+00	7.84E-04	2.60E+01	2.04E-02	4.93E-03	1.24E-01	2.35E-01	2.20E+01	1.17E+00	1.40E+01	1.67E-02
CEA4-Comp (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	6.05E+02	8.33E+00	7.84E-04	3.67E+01	2.88E-02	4.93E-03	1.24E-01	3.32E-01	2.20E+01	1.17E+00	1.40E+01	2.37E-02
East Edith Mine Waste Area																						**Maximum HQ (Central Edith Mine Waste Area)**	**5.57E-02**
EEA1-00 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	2.72E+02	3.74E+00	7.84E-04	1.65E+01	1.29E-02	4.93E-03	1.24E-01	1.49E-01	2.20E+01	1.17E+00	1.40E+01	1.06E-02
EEA1-100 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	1.05E+02	1.44E+00	7.84E-04	6.36E+00	4.99E-03	4.93E-03	1.24E-01	5.76E-02	2.20E+01	1.17E+00	1.40E+01	4.10E-03
EEA1-150 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	2.46E+02	3.39E+00	7.84E-04	1.49E+01	1.17E-02	4.93E-03	1.24E-01	1.35E-01	2.20E+01	1.17E+00	1.40E+01	9.62E-03
EEA1-200 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
EEA1-250 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	2.18E+02	3.00E+00	7.84E-04	1.32E+01	1.04E-02	4.93E-03	1.24E-01	1.20E-01	2.20E+01	1.17E+00	1.40E+01	8.53E-03
EEA1-300 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	2.61E+02	3.60E+00	7.84E-04	1.59E+01	1.24E-02	4.93E-03	1.24E-01	1.43E-01	2.20E+01	1.17E+00	1.40E+01	1.02E-02
EEA1-350 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	3.14E+02	4.31E+00	7.84E-04	1.90E+01	1.49E-02	4.93E-03	1.24E-01	1.72E-01	2.20E+01	1.17E+00	1.40E+01	1.23E-02
EEA1-400 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	1.87E+02	2.57E+00	7.84E-04	1.13E+01	8.90E-03	4.93E-03	1.24E-01	1.03E-01	2.20E+01	1.17E+00	1.40E+01	7.31E-03
EEA1-450 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	1.69E+02	2.32E+00	7.84E-04	1.03E+01	8.04E-03	4.93E-03	1.24E-01	9.28E-02	2.20E+01	1.17E+00	1.40E+01	6.60E-03
EEA1-50 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	3.45E+02	4.75E+00	7.84E-04	2.10E+01	1.64E-02	4.93E-03	1.24E-01	1.90E-01	2.20E+01	1.17E+00	1.40E+01	1.35E-02
EEA1-500 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	1.86E+02	2.56E+00	7.84E-04	1.13E+01	8.87E-03	4.93E-03	1.24E-01	1.02E-01	2.20E+01	1.17E+00	1.40E+01	7.28E-03
EEA1-Comp 1 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	9.70E+01	1.33E+00	7.84E-04	5.89E+00	4.62E-03	4.93E-03	1.24E-01	5.33E-02	2.20E+01	1.17E+00	1.40E+01	3.79E-03
EEA2-00 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
EEA2-50 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	1.99E+02	2.74E+00	7.84E-04	1.21E+01	9.48E-03	4.93E-03	1.24E-01	1.09E-01	2.20E+01	1.17E+00	1.40E+01	7.79E-03
EEA2-100 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	1.37E+02	1.89E+00	7.84E-04	8.32E+00	6.52E-03	4.93E-03	1.24E-01	7.52E-02	2.20E+01	1.17E+00	1.40E+01	5.36E-03
EEA2-150 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	6.35E+00	BB	BB	BB	BB	BB	BB	BB	BB
EEA2-200 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	1.60E+02	2.20E+00	7.84E-04	9.71E+00	7.61E-03	4.93E-03	1.24E-01	8.78E-02	2.20E+01	1.17E+00	1.40E+01	6.25E-03
EEA2-250 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
EEA2-300 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	3.95E+02	5.44E+00	7.84E-04	2.40E+01	1.88E-02	4.93E-03	1.24E-01	2.17E-01	2.20E+01	1.17E+00	1.40E+01	1.55E-02
EEA2-Comp 1 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	3.07E+02	4.22E+00	7.84E-04	1.86E+01	1.46E-02	4.93E-03	1.24E-01	1.68E-01	2.20E+01	1.17E+00	1.40E+01	1.20E-02
																						Maximum HQ (East Edith Mine Waste Area)	**1.55E-02**
Meadow Vole (Small Herbivorous Mammal - Terrestrial)																							
Reference Sites																							
SHGBG-1 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	1.13E-04	2.74E+01	3.08E-03	1.00E+00	3.06E-02	1.01E-01	4.70E+00	1.10E-01	5.08E+00	1.98E-02
SHGBG-2 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	1.13E-04	1.61E+01	1.81E-03	1.00E+00	3.06E-02	5.91E-02	4.70E+00	1.10E-01	5.08E+00	1.16E-02
SHGBG-201 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	1.13E-04	2.60E+01	2.93E-03	1.00E+00	3.06E-02	9.57E-02	4.70E+00	1.10E-01	5.08E+00	1.89E-02
SHGBG-202 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	1.13E-04	1.15E+01	1.29E-03	1.00E+00	3.06E-02	4.23E-02	4.70E+00	1.10E-01	5.08E+00	8.33E-03
West Edith Mine Waste Area																						**Minimum HQ (Reference Sites)**	**8.33E-03**
WEA1-00 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	6.96E+00	3.26E-02	NA	NA	NA	NA	1.13E-04	1.16E+01	1.30E-03	1.00E+00	3.06E-02	1.11E+00	4.70E+00	1.10E-01	5.08E+00	2.19E-01
WEA1-100 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	4.75E+00	2.23E-02	NA	NA	NA	NA	1.13E-04	7.91E+00	8.90E-04	1.00E+00	3.06E-02	7.57E-01	4.70E+00	1.10E-01	5.08E+00	1.49E-01
WEA1-150 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.40E+01	6.57E-02	NA	NA	NA	NA	1.13E-04	2.33E+01	2.62E-03	1.00E+00	3.06E-02	2.23E+00	4.70E+00	1.10E-01	5.08E+00	4.40E-01
WEA1-200 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	5.93E+00	2.78E-02	NA	NA	NA	NA	1.13E-04	9.87E+00	1.11E-03	1.00E+00	3.06E-02	9.45E-01	4.70E+00	1.10E-01	5.08E+00	1.86E-01
WEA1-250 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.58E+01	7.43E-02	NA	NA	NA	NA	1.13E-04	2.64E+01	2.97E-03	1.00E+00	3.06E-02	2.52E+00	4.70E+00	1.10E-01	5.08E+00	4.97E-01
WEA1-300 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.60E+01	7.50E-02	NA	NA	NA	NA	1.13E-04	2.66E+01	3.00E-03	1.00E+00	3.06E-02	2.55E+00	4.70E+00	1.10E-01	5.08E+00	5.02E-01
WEA1-350 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.67E+01	7.82E-02	NA	NA	NA	NA	1.13E-04	2.77E+01	3.12E-03	1.00E+00	3.06E-02	2.66E+00	4.70E+00	1.10E-01	5.08E+00	5.23E-01
WEA1-400 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	6.82E+00	3.20E-02	NA	NA	NA	NA	1.13E-04	1.13E+01	1.28E-03	1.00E+00	3.06E-02	1.09E+00	4.70E+00	1.10E-01	5.08E+00	2.14E-01
WEA1-450 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	6.49E+00	3.04E-02	NA	NA	NA	NA	1.13E-04	1.08E+01	1.21E-03	1.00E+00	3.06E-02	1.03E+00	4.70E+00	1.10E-01	5.08E+00	2.04E-01

TABLE C-5A: ARSENIC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 5 - EDITH MINE WASTE AREAS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **1.29**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Meadow Vole (Small Herbivorous Mammal - Terrestrial)																							
WEA1-550 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	5.50E+00	2.58E-02	NA	NA	NA	NA	1.13E-04	9.15E+00	1.03E-03	1.00E+00	3.06E-02	8.76E-01	4.70E+00	1.10E-01	5.08E+00	1.73E-01
WEA1-Comp 1 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.19E+01	5.60E-02	NA	NA	NA	NA	1.13E-04	1.99E+01	2.24E-03	1.00E+00	3.06E-02	1.90E+00	4.70E+00	1.10E-01	5.08E+00	3.75E-01
WEA1-Comp 2 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	5.90E+00	2.77E-02	NA	NA	NA	NA	1.13E-04	9.82E+00	1.11E-03	1.00E+00	3.06E-02	9.41E-01	4.70E+00	1.10E-01	5.08E+00	1.85E-01
Central Edith Mine Waste Area																						**Maximum HQ (West Edith Mine Waste Area)**	**5.23E-01**
CEA1-3-00 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	2.24E+01	1.05E-01	NA	NA	NA	NA	1.13E-04	3.73E+01	4.20E-03	1.00E+00	3.06E-02	3.58E+00	4.70E+00	1.10E-01	5.08E+00	7.05E-01
CEA1-3-100 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.40E+01	6.58E-02	NA	NA	NA	NA	1.13E-04	2.34E+01	2.63E-03	1.00E+00	3.06E-02	2.24E+00	4.70E+00	1.10E-01	5.08E+00	4.41E-01
CEA1-3-150 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	6.43E+00	3.01E-02	NA	NA	NA	NA	1.13E-04	1.07E+01	1.20E-03	1.00E+00	3.06E-02	1.02E+00	4.70E+00	1.10E-01	5.08E+00	2.02E-01
CEA1-3-200 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.55E+01	7.29E-02	NA	NA	NA	NA	1.13E-04	2.59E+01	2.91E-03	1.00E+00	3.06E-02	2.48E+00	4.70E+00	1.10E-01	5.08E+00	4.88E-01
CEA1-3-250 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.65E+01	7.74E-02	NA	NA	NA	NA	1.13E-04	2.75E+01	3.09E-03	1.00E+00	3.06E-02	2.63E+00	4.70E+00	1.10E-01	5.08E+00	5.18E-01
CEA1-3-300 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.12E+01	5.24E-02	NA	NA	NA	NA	1.13E-04	1.86E+01	2.09E-03	1.00E+00	3.06E-02	1.78E+00	4.70E+00	1.10E-01	5.08E+00	3.51E-01
CEA1-3-350 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	2.13E+01	1.00E-01	NA	NA	NA	NA	1.13E-04	3.55E+01	4.00E-03	1.00E+00	3.06E-02	3.40E+00	4.70E+00	1.10E-01	5.08E+00	6.70E-01
CEA1-3-400 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	2.26E+01	1.06E-01	NA	NA	NA	NA	1.13E-04	3.76E+01	4.23E-03	1.00E+00	3.06E-02	3.60E+00	4.70E+00	1.10E-01	5.08E+00	7.09E-01
CEA1-3-450 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	4.73E+00	2.22E-02	NA	NA	NA	NA	1.13E-04	7.87E+00	8.86E-04	1.00E+00	3.06E-02	7.54E-01	4.70E+00	1.10E-01	5.08E+00	1.49E-01
CEA1-3-50 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.44E+01	6.78E-02	NA	NA	NA	NA	1.13E-04	2.40E+01	2.71E-03	1.00E+00	3.06E-02	2.30E+00	4.70E+00	1.10E-01	5.08E+00	4.54E-01
CEA1-3-500 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	8.80E+00	4.13E-02	NA	NA	NA	NA	1.13E-04	1.46E+01	1.65E-03	1.00E+00	3.06E-02	1.40E+00	4.70E+00	1.10E-01	5.08E+00	2.76E-01
CEA1-3-550 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.51E+01	7.06E-02	NA	NA	NA	NA	1.13E-04	2.51E+01	2.82E-03	1.00E+00	3.06E-02	2.40E+00	4.70E+00	1.10E-01	5.08E+00	4.73E-01
CEA1-3-600 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.00E+01	4.71E-02	NA	NA	NA	NA	1.13E-04	1.67E+01	1.88E-03	1.00E+00	3.06E-02	1.60E+00	4.70E+00	1.10E-01	5.08E+00	3.15E-01
CEA1-3-650 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.30E+01	6.09E-02	NA	NA	NA	NA	1.13E-04	2.16E+01	2.43E-03	1.00E+00	3.06E-02	2.07E+00	4.70E+00	1.10E-01	5.08E+00	4.08E-01
CEA1-3-700 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	5.66E+00	2.65E-02	NA	NA	NA	NA	1.13E-04	9.42E+00	1.06E-03	1.00E+00	3.06E-02	9.02E-01	4.70E+00	1.10E-01	5.08E+00	1.78E-01
CEA1-3-750 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	7.10E+00	3.33E-02	NA	NA	NA	NA	1.13E-04	1.18E+01	1.33E-03	1.00E+00	3.06E-02	1.13E+00	4.70E+00	1.10E-01	5.08E+00	2.23E-01
CEA1-3-800 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	6.06E+00	2.84E-02	NA	NA	NA	NA	1.13E-04	1.01E+01	1.13E-03	1.00E+00	3.06E-02	9.66E-01	4.70E+00	1.10E-01	5.08E+00	1.90E-01
CEA1-3-850 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	7.47E+00	3.50E-02	NA	NA	NA	NA	1.13E-04	1.24E+01	1.40E-03	1.00E+00	3.06E-02	1.19E+00	4.70E+00	1.10E-01	5.08E+00	2.34E-01
CEA1-3-Comp 1 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	8.27E+00	3.88E-02	NA	NA	NA	NA	1.13E-04	1.38E+01	1.55E-03	1.00E+00	3.06E-02	1.32E+00	4.70E+00	1.10E-01	5.08E+00	2.60E-01
CEA1-3-Comp 2 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	6.33E+00	2.97E-02	NA	NA	NA	NA	1.13E-04	1.05E+01	1.18E-03	1.00E+00	3.06E-02	1.01E+00	4.70E+00	1.10E-01	5.08E+00	1.99E-01
CEA1-3-Comp 3 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	5.20E+01	2.44E-01	NA	NA	NA	NA	1.13E-04	8.65E+01	9.74E-03	1.00E+00	3.06E-02	8.29E+00	4.70E+00	1.10E-01	5.08E+00	1.63E+00
CEA4-00 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	8.90E+00	4.17E-02	NA	NA	NA	NA	1.13E-04	1.48E+01	1.67E-03	1.00E+00	3.06E-02	1.42E+00	4.70E+00	1.10E-01	5.08E+00	2.79E-01
CEA4-20 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.60E+01	7.49E-02	NA	NA	NA	NA	1.13E-04	2.66E+01	2.99E-03	1.00E+00	3.06E-02	2.55E+00	4.70E+00	1.10E-01	5.08E+00	5.02E-01
CEA4-40 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.56E+01	7.32E-02	NA	NA	NA	NA	1.13E-04	2.60E+01	2.92E-03	1.00E+00	3.06E-02	2.49E+00	4.70E+00	1.10E-01	5.08E+00	4.90E-01
CEA4-Comp (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	2.21E+01	1.03E-01	NA	NA	NA	NA	1.13E-04	3.67E+01	4.13E-03	1.00E+00	3.06E-02	3.52E+00	4.70E+00	1.10E-01	5.08E+00	6.93E-01
East Edith Mine Waste Area																						**Maximum HQ (Central Edith Mine Waste Area)**	**1.63E+00**
EEA1-00 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	9.90E+00	4.64E-02	NA	NA	NA	NA	1.13E-04	1.65E+01	1.85E-03	1.00E+00	3.06E-02	1.58E+00	4.70E+00	1.10E-01	5.08E+00	3.11E-01
EEA1-100 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	3.82E+00	1.79E-02	NA	NA	NA	NA	1.13E-04	6.36E+00	7.16E-04	1.00E+00	3.06E-02	6.09E-01	4.70E+00	1.10E-01	5.08E+00	1.20E-01
EEA1-150 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	8.97E+00	4.21E-02	NA	NA	NA	NA	1.13E-04	1.49E+01	1.68E-03	1.00E+00	3.06E-02	1.43E+00	4.70E+00	1.10E-01	5.08E+00	2.82E-01
EEA1-200 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
EEA1-250 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	7.96E+00	3.73E-02	NA	NA	NA	NA	1.13E-04	1.32E+01	1.49E-03	1.00E+00	3.06E-02	1.27E+00	4.70E+00	1.10E-01	5.08E+00	2.50E-01
EEA1-300 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	9.53E+00	4.47E-02	NA	NA	NA	NA	1.13E-04	1.59E+01	1.78E-03	1.00E+00	3.06E-02	1.52E+00	4.70E+00	1.10E-01	5.08E+00	2.99E-01
EEA1-350 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.14E+01	5.36E-02	NA	NA	NA	NA	1.13E-04	1.90E+01	2.14E-03	1.00E+00	3.06E-02	1.82E+00	4.70E+00	1.10E-01	5.08E+00	3.59E-01
EEA1-400 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	6.82E+00	3.20E-02	NA	NA	NA	NA	1.13E-04	1.13E+01	1.28E-03	1.00E+00	3.06E-02	1.09E+00	4.70E+00	1.10E-01	5.08E+00	2.14E-01
EEA1-450 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	6.16E+00	2.89E-02	NA	NA	NA	NA	1.13E-04	1.03E+01	1.15E-03	1.00E+00	3.06E-02	9.82E-01	4.70E+00	1.10E-01	5.08E+00	1.93E-01
EEA1-50 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.26E+01	5.91E-02	NA	NA	NA	NA	1.13E-04	2.10E+01	2.36E-03	1.00E+00	3.06E-02	2.01E+00	4.70E+00	1.10E-01	5.08E+00	3.96E-01
EEA1-500 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	6.79E+00	3.19E-02	NA	NA	NA	NA	1.13E-04	1.13E+01	1.27E-03	1.00E+00	3.06E-02	1.08E+00	4.70E+00	1.10E-01	5.08E+00	2.13E-01
EEA1-Comp 1 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	3.54E+00	1.66E-02	NA	NA	NA	NA	1.13E-04	5.89E+00	6.62E-04	1.00E+00	3.06E-02	5.64E-01	4.70E+00	1.10E-01	5.08E+00	1.11E-01
EEA2-00 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
EEA2-50 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	7.26E+00	3.41E-02	NA	NA	NA	NA	1.13E-04	1.21E+01	1.36E-03	1.00E+00	3.06E-02	1.16E+00	4.70E+00	1.10E-01	5.08E+00	2.28E-01
EEA2-100 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	5.00E+00	2.34E-02	NA	NA	NA	NA	1.13E-04	8.32E+00	9.36E-04	1.00E+00	3.06E-02	7.96E-01	4.70E+00	1.10E-01	5.08E+00	1.57E-01
EEA2-150 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	3.82E+00	1.79E-02	NA	NA	NA	NA	1.13E-04	6.35E+00	7.15E-04	1.00E+00	3.06E-02	6.08E-01	4.70E+00	1.10E-01	5.08E+00	1.20E-01
EEA2-200 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	5.83E+00	2.74E-02	NA	NA	NA	NA	1.13E-04	9.71E+00	1.09E-03	1.00E+00	3.06E-02	9.30E-01	4.70E+00	1.10E-01	5.08E+00	1.83E-01
EEA2-250 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
EEA2-300 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.44E+01	6.76E-02	NA	NA	NA	NA	1.13E-04	2.40E+01	2.70E-03	1.00E+00	3.06E-02	2.30E+00	4.70E+00	1.10E-01	5.08E+00	4.53E-01
EEA2-Comp 1 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.12E+01	5.25E-02	NA	NA	NA	NA	1.13E-04	1.86E+01	2.10E-03	1.00E+00	3.06E-02	1.78E+00	4.70E+00	1.10E-01	5.08E+00	3.51E-01
																						Maximum HQ (East Edith Mine Waste Area)	**4.53E-01**

TABLE C-5A: ARSENIC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 5 - EDITH MINE WASTE AREAS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **1.29**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
White-Tailed Deer (Large Herbivorous Mammal - Terrestrial)																							
Reference Sites																							
SHGBG-1 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	2.86E-02	2.74E+01	7.84E-01	7.22E-03	1.35E+02	4.19E-05	4.70E+00	1.10E-01	3.07E+00	1.37E-05
SHGBG-2 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	2.86E-02	1.61E+01	4.60E-01	7.22E-03	1.35E+02	2.46E-05	4.70E+00	1.10E-01	3.07E+00	8.01E-06
SHGBG-201 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	2.86E-02	2.60E+01	7.45E-01	7.22E-03	1.35E+02	3.98E-05	4.70E+00	1.10E-01	3.07E+00	1.30E-05
SHGBG-202 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	2.86E-02	1.15E+01	3.29E-01	7.22E-03	1.35E+02	1.76E-05	4.70E+00	1.10E-01	3.07E+00	5.74E-06
West Edith Mine Waste Area																						**Minimum HQ (Reference Sites)**	**5.74E-06**
WEA1-00 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	6.96E+00	9.96E+00	NA	NA	NA	NA	2.86E-02	1.16E+01	3.32E-01	7.22E-03	1.35E+02	5.50E-04	4.70E+00	1.10E-01	3.07E+00	1.79E-04
WEA1-100 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	4.75E+00	6.80E+00	NA	NA	NA	NA	2.86E-02	7.91E+00	2.26E-01	7.22E-03	1.35E+02	3.76E-04	4.70E+00	1.10E-01	3.07E+00	1.22E-04
WEA1-150 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.40E+01	2.01E+01	NA	NA	NA	NA	2.86E-02	2.33E+01	6.67E-01	7.22E-03	1.35E+02	1.11E-03	4.70E+00	1.10E-01	3.07E+00	3.61E-04
WEA1-200 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	5.93E+00	8.49E+00	NA	NA	NA	NA	2.86E-02	9.87E+00	2.83E-01	7.22E-03	1.35E+02	4.69E-04	4.70E+00	1.10E-01	3.07E+00	1.53E-04
WEA1-250 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.58E+01	2.27E+01	NA	NA	NA	NA	2.86E-02	2.64E+01	7.55E-01	7.22E-03	1.35E+02	1.25E-03	4.70E+00	1.10E-01	3.07E+00	4.08E-04
WEA1-300 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.60E+01	2.29E+01	NA	NA	NA	NA	2.86E-02	2.66E+01	7.62E-01	7.22E-03	1.35E+02	1.27E-03	4.70E+00	1.10E-01	3.07E+00	4.12E-04
WEA1-350 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.67E+01	2.39E+01	NA	NA	NA	NA	2.86E-02	2.77E+01	7.94E-01	7.22E-03	1.35E+02	1.32E-03	4.70E+00	1.10E-01	3.07E+00	4.30E-04
WEA1-400 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	6.82E+00	9.76E+00	NA	NA	NA	NA	2.86E-02	1.13E+01	3.25E-01	7.22E-03	1.35E+02	5.39E-04	4.70E+00	1.10E-01	3.07E+00	1.76E-04
WEA1-450 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	6.49E+00	9.28E+00	NA	NA	NA	NA	2.86E-02	1.08E+01	3.09E-01	7.22E-03	1.35E+02	5.13E-04	4.70E+00	1.10E-01	3.07E+00	1.67E-04
WEA1-550 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	5.50E+00	7.87E+00	NA	NA	NA	NA	2.86E-02	9.15E+00	2.62E-01	7.22E-03	1.35E+02	4.35E-04	4.70E+00	1.10E-01	3.07E+00	1.42E-04
WEA1-Comp 1 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.19E+01	1.71E+01	NA	NA	NA	NA	2.86E-02	1.99E+01	5.69E-01	7.22E-03	1.35E+02	9.45E-04	4.70E+00	1.10E-01	3.07E+00	3.08E-04
WEA1-Comp 2 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	5.90E+00	8.45E+00	NA	NA	NA	NA	2.86E-02	9.82E+00	2.81E-01	7.22E-03	1.35E+02	4.67E-04	4.70E+00	1.10E-01	3.07E+00	1.52E-04
Central Edith Mine Waste Area																						**Maximum HQ (West Edith Mine Waste Area)**	**4.30E-04**
CEA1-3-00 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	2.24E+01	3.21E+01	NA	NA	NA	NA	2.86E-02	3.73E+01	1.07E+00	7.22E-03	1.35E+02	1.77E-03	4.70E+00	1.10E-01	3.07E+00	5.78E-04
CEA1-3-100 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.40E+01	2.01E+01	NA	NA	NA	NA	2.86E-02	2.34E+01	6.69E-01	7.22E-03	1.35E+02	1.11E-03	4.70E+00	1.10E-01	3.07E+00	3.62E-04
CEA1-3-150 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	6.43E+00	9.20E+00	NA	NA	NA	NA	2.86E-02	1.07E+01	3.06E-01	7.22E-03	1.35E+02	5.08E-04	4.70E+00	1.10E-01	3.07E+00	1.66E-04
CEA1-3-200 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.55E+01	2.23E+01	NA	NA	NA	NA	2.86E-02	2.59E+01	7.41E-01	7.22E-03	1.35E+02	1.23E-03	4.70E+00	1.10E-01	3.07E+00	4.01E-04
CEA1-3-250 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.65E+01	2.36E+01	NA	NA	NA	NA	2.86E-02	2.75E+01	7.87E-01	7.22E-03	1.35E+02	1.31E-03	4.70E+00	1.10E-01	3.07E+00	4.26E-04
CEA1-3-300 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.12E+01	1.60E+01	NA	NA	NA	NA	2.86E-02	1.86E+01	5.32E-01	7.22E-03	1.35E+02	8.83E-04	4.70E+00	1.10E-01	3.07E+00	2.88E-04
CEA1-3-350 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	2.13E+01	3.05E+01	NA	NA	NA	NA	2.86E-02	3.55E+01	1.02E+00	7.22E-03	1.35E+02	1.69E-03	4.70E+00	1.10E-01	3.07E+00	5.50E-04
CEA1-3-400 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	2.26E+01	3.23E+01	NA	NA	NA	NA	2.86E-02	3.76E+01	1.08E+00	7.22E-03	1.35E+02	1.79E-03	4.70E+00	1.10E-01	3.07E+00	5.82E-04
CEA1-3-450 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	4.73E+00	6.77E+00	NA	NA	NA	NA	2.86E-02	7.87E+00	2.25E-01	7.22E-03	1.35E+02	3.74E-04	4.70E+00	1.10E-01	3.07E+00	1.22E-04
CEA1-3-50 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.44E+01	2.07E+01	NA	NA	NA	NA	2.86E-02	2.40E+01	6.88E-01	7.22E-03	1.35E+02	1.14E-03	4.70E+00	1.10E-01	3.07E+00	3.73E-04
CEA1-3-500 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	8.80E+00	1.26E+01	NA	NA	NA	NA	2.86E-02	1.46E+01	4.19E-01	7.22E-03	1.35E+02	6.96E-04	4.70E+00	1.10E-01	3.07E+00	2.27E-04
CEA1-3-550 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.51E+01	2.16E+01	NA	NA	NA	NA	2.86E-02	2.51E+01	7.17E-01	7.22E-03	1.35E+02	1.19E-03	4.70E+00	1.10E-01	3.07E+00	3.88E-04
CEA1-3-600 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.00E+01	1.44E+01	NA	NA	NA	NA	2.86E-02	1.67E+01	4.78E-01	7.22E-03	1.35E+02	7.94E-04	4.70E+00	1.10E-01	3.07E+00	2.59E-04
CEA1-3-650 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.30E+01	1.86E+01	NA	NA	NA	NA	2.86E-02	2.16E+01	6.19E-01	7.22E-03	1.35E+02	1.03E-03	4.70E+00	1.10E-01	3.07E+00	3.35E-04
CEA1-3-700 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	5.66E+00	8.11E+00	NA	NA	NA	NA	2.86E-02	9.42E+00	2.70E-01	7.22E-03	1.35E+02	4.48E-04	4.70E+00	1.10E-01	3.07E+00	1.46E-04
CEA1-3-750 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	7.10E+00	1.02E+01	NA	NA	NA	NA	2.86E-02	1.18E+01	3.38E-01	7.22E-03	1.35E+02	5.62E-04	4.70E+00	1.10E-01	3.07E+00	1.83E-04
CEA1-3-800 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	6.06E+00	8.68E+00	NA	NA	NA	NA	2.86E-02	1.01E+01	2.89E-01	7.22E-03	1.35E+02	4.79E-04	4.70E+00	1.10E-01	3.07E+00	1.56E-04
CEA1-3-850 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	7.47E+00	1.07E+01	NA	NA	NA	NA	2.86E-02	1.24E+01	3.56E-01	7.22E-03	1.35E+02	5.91E-04	4.70E+00	1.10E-01	3.07E+00	1.93E-04
CEA1-3-Comp 1 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	8.27E+00	1.18E+01	NA	NA	NA	NA	2.86E-02	1.38E+01	3.94E-01	7.22E-03	1.35E+02	6.54E-04	4.70E+00	1.10E-01	3.07E+00	2.13E-04
CEA1-3-Comp 2 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	6.33E+00	9.06E+00	NA	NA	NA	NA	2.86E-02	1.05E+01	3.01E-01	7.22E-03	1.35E+02	5.00E-04	4.70E+00	1.10E-01	3.07E+00	1.63E-04
CEA1-3-Comp 3 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	5.20E+01	7.44E+01	NA	NA	NA	NA	2.86E-02	8.65E+01	2.48E+00	7.22E-03	1.35E+02	4.11E-03	4.70E+00	1.10E-01	3.07E+00	1.34E-03
CEA4-00 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	8.90E+00	1.27E+01	NA	NA	NA	NA	2.86E-02	1.48E+01	4.24E-01	7.22E-03	1.35E+02	7.03E-04	4.70E+00	1.10E-01	3.07E+00	2.29E-04
CEA4-20 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.60E+01	2.29E+01	NA	NA	NA	NA	2.86E-02	2.66E+01	7.61E-01	7.22E-03	1.35E+02	1.26E-03	4.70E+00	1.10E-01	3.07E+00	4.12E-04
CEA4-40 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.56E+01	2.23E+01	NA	NA	NA	NA	2.86E-02	2.60E+01	7.43E-01	7.22E-03	1.35E+02	1.23E-03	4.70E+00	1.10E-01	3.07E+00	4.02E-04
CEA4-Comp (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	2.21E+01	3.16E+01	NA	NA	NA	NA	2.86E-02	3.67E+01	1.05E+00	7.22E-03	1.35E+02	1.74E-03	4.70E+00	1.10E-01	3.07E+00	5.69E-04
East Edith Mine Waste Area																						**Maximum HQ (Central Edith Mine Waste Area)**	**1.34E-03**
EEA1-00 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	9.90E+00	1.42E+01	NA	NA	NA	NA	2.86E-02	1.65E+01	4.72E-01	7.22E-03	1.35E+02	7.83E-04	4.70E+00	1.10E-01	3.07E+00	2.55E-04
EEA1-100 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	3.82E+00	5.47E+00	NA	NA	NA	NA	2.86E-02	6.36E+00	1.82E-01	7.22E-03	1.35E+02	3.02E-04	4.70E+00	1.10E-01	3.07E+00	9.86E-05
EEA1-150 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	8.97E+00	1.28E+01	NA	NA	NA	NA	2.86E-02	1.49E+01	4.27E-01	7.22E-03	1.35E+02	7.10E-04	4.70E+00	1.10E-01	3.07E+00	2.31E-04
EEA1-200 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
EEA1-250 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	7.96E+00	1.14E+01	NA	NA	NA	NA	2.86E-02	1.32E+01	3.79E-01	7.22E-03	1.35E+02	6.29E-04	4.70E+00	1.10E-01	3.07E+00	2.05E-04
EEA1-300 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	9.53E+00	1.36E+01	NA	NA	NA	NA	2.86E-02	1.59E+01	4.54E-01	7.22E-03	1.35E+02	7.53E-04	4.70E+00	1.10E-01	3.07E+00	2.46E-04
EEA1-350 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.14E+01	1.64E+01	NA	NA	NA	NA	2.86E-02	1.90E+01	5.45E-01	7.22E-03	1.35E+02	9.04E-04	4.70E+00	1.10E-01	3.07E+00	2.95E-04
EEA1-400 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	6.82E+00	9.76E+00	NA	NA	NA	NA	2.86E-02	1.13E+01	3.25E-01	7.22E-03	1.35E+02	5.39E-04	4.70E+00	1.10E-01	3.07E+00	1.76E-04
EEA1-450 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	6.16E+00	8.82E+00	NA	NA	NA	NA	2.86E-02	1.03E+01	2.93E-01	7.22E-03	1.35E+02	4.87E-04	4.70E+00	1.10E-01	3.07E+00	1.59E-04
EEA1-50 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.26E+01	1.80E+01	NA	NA	NA	NA	2.86E-02	2.10E+01	6.00E-01	7.22E-03	1.35E+02	9.96E-04	4.70E+00	1.10E-01	3.07E+00	3.25E-04
EEA1-500 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	6.79E+00	9.73E+00	NA	NA	NA	NA	2.86E-02	1.13E+01	3.24E-01	7.22E-03	1.35E+02	5.37E-04	4.70E+00	1.10E-01	3.07E+00	1.75E-04
EEA1-Comp 1 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	3.54E+00	5.06E+00	NA	NA	NA	NA	2.86E-02	5.89E+00	1.69E-01	7.22E-03	1.35E+02	2.80E-04	4.70E+00	1.10E-01	3.07E+00	9.12E-05

TABLE C-5A: ARSENIC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 5 - EDITH MINE WASTE AREAS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **1.29**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
White-Tailed Deer (Large Herbivorous Mammal - Terrestrial)																							
EEA2-00 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
EEA2-50 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	7.26E+00	1.04E+01	NA	NA	NA	NA	2.86E-02	1.21E+01	3.46E-01	7.22E-03	1.35E+02	5.74E-04	4.70E+00	1.10E-01	3.07E+00	1.87E-04
EEA2-100 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	5.00E+00	7.15E+00	NA	NA	NA	NA	2.86E-02	8.32E+00	2.38E-01	7.22E-03	1.35E+02	3.95E-04	4.70E+00	1.10E-01	3.07E+00	1.29E-04
EEA2-150 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	3.82E+00	5.46E+00	NA	NA	NA	NA	2.86E-02	6.35E+00	1.82E-01	7.22E-03	1.35E+02	3.02E-04	4.70E+00	1.10E-01	3.07E+00	9.84E-05
EEA2-200 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	5.83E+00	8.35E+00	NA	NA	NA	NA	2.86E-02	9.71E+00	2.78E-01	7.22E-03	1.35E+02	4.61E-04	4.70E+00	1.10E-01	3.07E+00	1.50E-04
EEA2-250 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
EEA2-300 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.44E+01	2.06E+01	NA	NA	NA	NA	2.86E-02	2.40E+01	6.87E-01	7.22E-03	1.35E+02	1.14E-03	4.70E+00	1.10E-01	3.07E+00	3.72E-04
EEA2-Comp 1 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.12E+01	1.60E+01	NA	NA	NA	NA	2.86E-02	1.86E+01	5.33E-01	7.22E-03	1.35E+02	8.85E-04	4.70E+00	1.10E-01	3.07E+00	2.89E-04
																						Maximum HQ (East Edith Mine Waste Area)	**3.72E-04**
Red Fox (Carnivorous Mammal - Terrestrial)																							
Reference Sites																							
SHGBG-1 (0-6")	1.72E-01	1.72E-01	4.84E-01	1.32E+01	2.27E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.74E+01	1.32E-01	9.53E-04	4.54E+00	5.05E-04	4.70E+00	1.10E-01	3.76E+00	1.34E-04
SHGBG-2 (0-6")	1.72E-01	1.72E-01	4.84E-01	7.77E+00	1.33E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.61E+01	7.71E-02	9.53E-04	4.54E+00	2.96E-04	4.70E+00	1.10E-01	3.76E+00	7.88E-05
SHGBG-201 (0-6")	1.72E-01	1.72E-01	4.84E-01	1.26E+01	2.16E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.60E+01	1.25E-01	9.53E-04	4.54E+00	4.80E-04	4.70E+00	1.10E-01	3.76E+00	1.28E-04
SHGBG-202 (0-6")	1.72E-01	1.72E-01	4.84E-01	5.56E+00	9.54E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.15E+01	5.52E-02	9.53E-04	4.54E+00	2.12E-04	4.70E+00	1.10E-01	3.76E+00	5.64E-05
West Edith Mine Waste Area																						**Minimum HQ (Reference Sites)**	**5.64E-05**
WEA1-00 (0-6")	1.72E-01	1.72E-01	4.84E-01	5.60E+00	9.61E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.16E+01	5.56E-02	9.53E-04	4.54E+00	2.14E-04	4.70E+00	1.10E-01	3.76E+00	5.68E-05
WEA1-100 (0-6")	1.72E-01	1.72E-01	4.84E-01	3.82E+00	6.56E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	7.91E+00	3.80E-02	9.53E-04	4.54E+00	1.46E-04	4.70E+00	1.10E-01	3.76E+00	3.88E-05
WEA1-150 (0-6")	1.72E-01	1.72E-01	4.84E-01	1.13E+01	1.93E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.33E+01	1.12E-01	9.53E-04	4.54E+00	4.30E-04	4.70E+00	1.10E-01	3.76E+00	1.14E-04
WEA1-200 (0-6")	1.72E-01	1.72E-01	4.84E-01	4.77E+00	8.19E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	9.87E+00	4.74E-02	9.53E-04	4.54E+00	1.82E-04	4.70E+00	1.10E-01	3.76E+00	4.84E-05
WEA1-250 (0-6")	1.72E-01	1.72E-01	4.84E-01	1.28E+01	2.19E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.64E+01	1.27E-01	9.53E-04	4.54E+00	4.86E-04	4.70E+00	1.10E-01	3.76E+00	1.29E-04
WEA1-300 (0-6")	1.72E-01	1.72E-01	4.84E-01	1.29E+01	2.21E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.66E+01	1.28E-01	9.53E-04	4.54E+00	4.91E-04	4.70E+00	1.10E-01	3.76E+00	1.31E-04
WEA1-350 (0-6")	1.72E-01	1.72E-01	4.84E-01	1.34E+01	2.30E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.77E+01	1.33E-01	9.53E-04	4.54E+00	5.12E-04	4.70E+00	1.10E-01	3.76E+00	1.36E-04
WEA1-400 (0-6")	1.72E-01	1.72E-01	4.84E-01	5.49E+00	9.41E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.13E+01	5.45E-02	9.53E-04	4.54E+00	2.09E-04	4.70E+00	1.10E-01	3.76E+00	5.56E-05
WEA1-450 (0-6")	1.72E-01	1.72E-01	4.84E-01	5.22E+00	8.96E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.08E+01	5.18E-02	9.53E-04	4.54E+00	1.99E-04	4.70E+00	1.10E-01	3.76E+00	5.29E-05
WEA1-550 (0-6")	1.72E-01	1.72E-01	4.84E-01	4.43E+00	7.59E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	9.15E+00	4.40E-02	9.53E-04	4.54E+00	1.69E-04	4.70E+00	1.10E-01	3.76E+00	4.49E-05
WEA1-Comp 1 (0-6")	1.72E-01	1.72E-01	4.84E-01	9.62E+00	1.65E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.99E+01	9.55E-02	9.53E-04	4.54E+00	3.67E-04	4.70E+00	1.10E-01	3.76E+00	9.75E-05
WEA1-Comp 2 (0-6")	1.72E-01	1.72E-01	4.84E-01	4.75E+00	8.15E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	9.82E+00	4.72E-02	9.53E-04	4.54E+00	1.81E-04	4.70E+00	1.10E-01	3.76E+00	4.82E-05
Central Edith Mine Waste Area																						**Maximum HQ (West Edith Mine Waste Area)**	**1.36E-04**
CEA1-3-00 (0-6")	1.72E-01	1.72E-01	4.84E-01	1.81E+01	3.10E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.73E+01	1.79E-01	9.53E-04	4.54E+00	6.89E-04	4.70E+00	1.10E-01	3.76E+00	1.83E-04
CEA1-3-100 (0-6")	1.72E-01	1.72E-01	4.84E-01	1.13E+01	1.94E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.34E+01	1.12E-01	9.53E-04	4.54E+00	4.31E-04	4.70E+00	1.10E-01	3.76E+00	1.15E-04
CEA1-3-150 (0-6")	1.72E-01	1.72E-01	4.84E-01	5.17E+00	8.87E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.07E+01	5.13E-02	9.53E-04	4.54E+00	1.97E-04	4.70E+00	1.10E-01	3.76E+00	5.24E-05
CEA1-3-200 (0-6")	1.72E-01	1.72E-01	4.84E-01	1.25E+01	2.15E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.59E+01	1.24E-01	9.53E-04	4.54E+00	4.77E-04	4.70E+00	1.10E-01	3.76E+00	1.27E-04
CEA1-3-250 (0-6")	1.72E-01	1.72E-01	4.84E-01	1.33E+01	2.28E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.75E+01	1.32E-01	9.53E-04	4.54E+00	5.07E-04	4.70E+00	1.10E-01	3.76E+00	1.35E-04
CEA1-3-300 (0-6")	1.72E-01	1.72E-01	4.84E-01	8.99E+00	1.54E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.86E+01	8.92E-02	9.53E-04	4.54E+00	3.43E-04	4.70E+00	1.10E-01	3.76E+00	9.12E-05
CEA1-3-350 (0-6")	1.72E-01	1.72E-01	4.84E-01	1.72E+01	2.95E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.55E+01	1.71E-01	9.53E-04	4.54E+00	6.55E-04	4.70E+00	1.10E-01	3.76E+00	1.74E-04
CEA1-3-400 (0-6")	1.72E-01	1.72E-01	4.84E-01	1.82E+01	3.12E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.76E+01	1.81E-01	9.53E-04	4.54E+00	6.93E-04	4.70E+00	1.10E-01	3.76E+00	1.84E-04
CEA1-3-450 (0-6")	1.72E-01	1.72E-01	4.84E-01	3.81E+00	6.53E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	7.87E+00	3.78E-02	9.53E-04	4.54E+00	1.45E-04	4.70E+00	1.10E-01	3.76E+00	3.86E-05
CEA1-3-50 (0-6")	1.72E-01	1.72E-01	4.84E-01	1.16E+01	2.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.40E+01	1.15E-01	9.53E-04	4.54E+00	4.43E-04	4.70E+00	1.10E-01	3.76E+00	1.18E-04
CEA1-3-500 (0-6")	1.72E-01	1.72E-01	4.84E-01	7.08E+00	1.22E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.46E+01	7.03E-02	9.53E-04	4.54E+00	2.70E-04	4.70E+00	1.10E-01	3.76E+00	7.18E-05
CEA1-3-550 (0-6")	1.72E-01	1.72E-01	4.84E-01	1.21E+01	2.08E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.51E+01	1.20E-01	9.53E-04	4.54E+00	4.62E-04	4.70E+00	1.10E-01	3.76E+00	1.23E-04
CEA1-3-600 (0-6")	1.72E-01	1.72E-01	4.84E-01	8.08E+00	1.39E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.67E+01	8.02E-02	9.53E-04	4.54E+00	3.08E-04	4.70E+00	1.10E-01	3.76E+00	8.19E-05
CEA1-3-650 (0-6")	1.72E-01	1.72E-01	4.84E-01	1.05E+01	1.79E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.16E+01	1.04E-01	9.53E-04	4.54E+00	3.99E-04	4.70E+00	1.10E-01	3.76E+00	1.06E-04
CEA1-3-700 (0-6")	1.72E-01	1.72E-01	4.84E-01	4.56E+00	7.82E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	9.42E+00	4.52E-02	9.53E-04	4.54E+00	1.74E-04	4.70E+00	1.10E-01	3.76E+00	4.62E-05
CEA1-3-750 (0-6")	1.72E-01	1.72E-01	4.84E-01	5.72E+00	9.81E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.18E+01	5.68E-02	9.53E-04	4.54E+00	2.18E-04	4.70E+00	1.10E-01	3.76E+00	5.80E-05
CEA1-3-800 (0-6")	1.72E-01	1.72E-01	4.84E-01	4.88E+00	8.37E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.01E+01	4.84E-02	9.53E-04	4.54E+00	1.86E-04	4.70E+00	1.10E-01	3.76E+00	4.95E-05
CEA1-3-850 (0-6")	1.72E-01	1.72E-01	4.84E-01	6.01E+00	1.03E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.24E+01	5.97E-02	9.53E-04	4.54E+00	2.29E-04	4.70E+00	1.10E-01	3.76E+00	6.10E-05
CEA1-3-Comp 1 (0-6")	1.72E-01	1.72E-01	4.84E-01	6.66E+00	1.14E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.38E+01	6.61E-02	9.53E-04	4.54E+00	2.54E-04	4.70E+00	1.10E-01	3.76E+00	6.75E-05
CEA1-3-Comp 2 (0-6")	1.72E-01	1.72E-01	4.84E-01	5.09E+00	8.74E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.05E+01	5.06E-02	9.53E-04	4.54E+00	1.94E-04	4.70E+00	1.10E-01	3.76E+00	5.16E-05
CEA1-3-Comp 3 (0-6")	1.72E-01	1.72E-01	4.84E-01	4.19E+01	7.18E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	8.65E+01	4.16E-01	9.53E-04	4.54E+00	1.60E-03	4.70E+00	1.10E-01	3.76E+00	4.24E-04
CEA4-00 (0-6")	1.72E-01	1.72E-01	4.84E-01	7.16E+00	1.23E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.48E+01	7.11E-02	9.53E-04	4.54E+00	2.73E-04	4.70E+00	1.10E-01	3.76E+00	7.26E-05

TABLE C-5A: ARSENIC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 5 - EDITH MINE WASTE AREAS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **1.29**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Red Fox (Carnivorous Mammal - Terrestrial)																							
CEA4-20 (0-6")	1.72E-01	1.72E-01	4.84E-01	1.29E+01	2.21E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.66E+01	1.28E-01	9.53E-04	4.54E+00	4.90E-04	4.70E+00	1.10E-01	3.76E+00	1.30E-04
CEA4-40 (0-6")	1.72E-01	1.72E-01	4.84E-01	1.26E+01	2.15E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.60E+01	1.25E-01	9.53E-04	4.54E+00	4.79E-04	4.70E+00	1.10E-01	3.76E+00	1.27E-04
CEA4-Comp (0-6")	1.72E-01	1.72E-01	4.84E-01	1.78E+01	3.05E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.67E+01	1.76E-01	9.53E-04	4.54E+00	6.77E-04	4.70E+00	1.10E-01	3.76E+00	1.80E-04
East Edith Mine Waste Area																			**Maximum HQ (Central Edith Mine Waste Area)**				**4.24E-04**
EEA1-00 (0-6")	1.72E-01	1.72E-01	4.84E-01	7.97E+00	1.37E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.65E+01	7.92E-02	9.53E-04	4.54E+00	3.04E-04	4.70E+00	1.10E-01	3.76E+00	8.08E-05
EEA1-100 (0-6")	1.72E-01	1.72E-01	4.84E-01	3.08E+00	5.28E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	6.36E+00	3.06E-02	9.53E-04	4.54E+00	1.17E-04	4.70E+00	1.10E-01	3.76E+00	3.12E-05
EEA1-150 (0-6")	1.72E-01	1.72E-01	4.84E-01	7.22E+00	1.24E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.49E+01	7.17E-02	9.53E-04	4.54E+00	2.75E-04	4.70E+00	1.10E-01	3.76E+00	7.32E-05
EEA1-200 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
EEA1-250 (0-6")	1.72E-01	1.72E-01	4.84E-01	6.41E+00	1.10E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.32E+01	6.36E-02	9.53E-04	4.54E+00	2.44E-04	4.70E+00	1.10E-01	3.76E+00	6.50E-05
EEA1-300 (0-6")	1.72E-01	1.72E-01	4.84E-01	7.67E+00	1.32E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.59E+01	7.61E-02	9.53E-04	4.54E+00	2.92E-04	4.70E+00	1.10E-01	3.76E+00	7.78E-05
EEA1-350 (0-6")	1.72E-01	1.72E-01	4.84E-01	9.20E+00	1.58E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.90E+01	9.14E-02	9.53E-04	4.54E+00	3.51E-04	4.70E+00	1.10E-01	3.76E+00	9.33E-05
EEA1-400 (0-6")	1.72E-01	1.72E-01	4.84E-01	5.49E+00	9.42E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.13E+01	5.45E-02	9.53E-04	4.54E+00	2.09E-04	4.70E+00	1.10E-01	3.76E+00	5.57E-05
EEA1-450 (0-6")	1.72E-01	1.72E-01	4.84E-01	4.96E+00	8.51E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.03E+01	4.92E-02	9.53E-04	4.54E+00	1.89E-04	4.70E+00	1.10E-01	3.76E+00	5.03E-05
EEA1-50 (0-6")	1.72E-01	1.72E-01	4.84E-01	1.01E+01	1.74E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.10E+01	1.01E-01	9.53E-04	4.54E+00	3.87E-04	4.70E+00	1.10E-01	3.76E+00	1.03E-04
EEA1-500 (0-6")	1.72E-01	1.72E-01	4.84E-01	5.47E+00	9.38E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.13E+01	5.43E-02	9.53E-04	4.54E+00	2.09E-04	4.70E+00	1.10E-01	3.76E+00	5.55E-05
EEA1-Comp 1 (0-6")	1.72E-01	1.72E-01	4.84E-01	2.85E+00	4.88E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.89E+00	2.83E-02	9.53E-04	4.54E+00	1.09E-04	4.70E+00	1.10E-01	3.76E+00	2.89E-05
EEA2-00 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
EEA2-50 (0-6")	1.72E-01	1.72E-01	4.84E-01	5.85E+00	1.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.21E+01	5.80E-02	9.53E-04	4.54E+00	2.23E-04	4.70E+00	1.10E-01	3.76E+00	5.93E-05
EEA2-100 (0-6")	1.72E-01	1.72E-01	4.84E-01	4.02E+00	6.90E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	8.32E+00	3.99E-02	9.53E-04	4.54E+00	1.53E-04	4.70E+00	1.10E-01	3.76E+00	4.08E-05
EEA2-150 (0-6")	1.72E-01	1.72E-01	4.84E-01	3.07E+00	5.27E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	6.35E+00	3.05E-02	9.53E-04	4.54E+00	1.17E-04	4.70E+00	1.10E-01	3.76E+00	3.12E-05
EEA2-200 (0-6")	1.72E-01	1.72E-01	4.84E-01	4.70E+00	8.05E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	9.71E+00	4.66E-02	9.53E-04	4.54E+00	1.79E-04	4.70E+00	1.10E-01	3.76E+00	4.76E-05
EEA2-250 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
EEA2-300 (0-6")	1.72E-01	1.72E-01	4.84E-01	1.16E+01	1.99E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.40E+01	1.15E-01	9.53E-04	4.54E+00	4.42E-04	4.70E+00	1.10E-01	3.76E+00	1.18E-04
EEA2-Comp 1 (0-6")	1.72E-01	1.72E-01	4.84E-01	9.01E+00	1.55E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.86E+01	8.94E-02	9.53E-04	4.54E+00	3.43E-04	4.70E+00	1.10E-01	3.76E+00	9.13E-05
																			Maximum HQ (East Edith Mine Waste Area)				**1.18E-04**
Masked Shrew (Omnivorous Mammal - Terrestrial, Wetland)																							
Reference Sites																							
SHGBG-1 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	2.55E+00	6.99E+01	5.92E-01	1.10E-03	2.74E+01	3.01E-02	1.00E+00	5.50E-03	1.13E+02	4.70E+00	1.10E-01	5.63E+00	2.01E+01
SHGBG-2 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	2.55E+00	4.10E+01	3.47E-01	1.10E-03	1.61E+01	1.77E-02	1.00E+00	5.50E-03	6.63E+01	4.70E+00	1.10E-01	5.63E+00	1.18E+01
SHGBG-201 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	2.55E+00	6.64E+01	5.62E-01	1.10E-03	2.60E+01	2.87E-02	1.00E+00	5.50E-03	1.07E+02	4.70E+00	1.10E-01	5.63E+00	1.91E+01
SHGBG-202 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	2.55E+00	2.93E+01	2.49E-01	1.10E-03	1.15E+01	1.27E-02	1.00E+00	5.50E-03	4.75E+01	4.70E+00	1.10E-01	5.63E+00	8.44E+00
West Edith Mine Waste Area																					**Minimum HQ (Reference Sites)**		**8.44E+00**
WEA1-00 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	1.91E+02	1.62E+00	1.10E-03	1.16E+01	1.28E-02	1.00E+00	5.50E-03	2.96E+02	4.70E+00	1.10E-01	5.63E+00	5.27E+01
WEA1-100 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	1.30E+02	1.10E+00	1.10E-03	7.91E+00	8.70E-03	1.00E+00	5.50E-03	2.02E+02	4.70E+00	1.10E-01	5.63E+00	3.60E+01
WEA1-150 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	3.84E+02	3.25E+00	1.10E-03	2.33E+01	2.57E-02	1.00E+00	5.50E-03	5.96E+02	4.70E+00	1.10E-01	5.63E+00	1.06E+02
WEA1-200 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	1.63E+02	1.38E+00	1.10E-03	9.87E+00	1.09E-02	1.00E+00	5.50E-03	2.53E+02	4.70E+00	1.10E-01	5.63E+00	4.49E+01
WEA1-250 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	4.34E+02	3.68E+00	1.10E-03	2.64E+01	2.90E-02	1.00E+00	5.50E-03	6.74E+02	4.70E+00	1.10E-01	5.63E+00	1.20E+02
WEA1-300 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	4.39E+02	3.72E+00	1.10E-03	2.66E+01	2.93E-02	1.00E+00	5.50E-03	6.81E+02	4.70E+00	1.10E-01	5.63E+00	1.21E+02
WEA1-350 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	4.57E+02	3.87E+00	1.10E-03	2.77E+01	3.05E-02	1.00E+00	5.50E-03	7.09E+02	4.70E+00	1.10E-01	5.63E+00	1.26E+02
WEA1-400 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	1.87E+02	1.58E+00	1.10E-03	1.13E+01	1.25E-02	1.00E+00	5.50E-03	2.90E+02	4.70E+00	1.10E-01	5.63E+00	5.16E+01
WEA1-450 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	1.78E+02	1.51E+00	1.10E-03	1.08E+01	1.19E-02	1.00E+00	5.50E-03	2.76E+02	4.70E+00	1.10E-01	5.63E+00	4.91E+01
WEA1-550 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	1.51E+02	1.28E+00	1.10E-03	9.15E+00	1.01E-02	1.00E+00	5.50E-03	2.34E+02	4.70E+00	1.10E-01	5.63E+00	4.16E+01
WEA1-Comp 1 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	3.28E+02	2.78E+00	1.10E-03	1.99E+01	2.19E-02	1.00E+00	5.50E-03	5.09E+02	4.70E+00	1.10E-01	5.63E+00	9.04E+01
WEA1-Comp 2 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	1.62E+02	1.37E+00	1.10E-03	9.82E+00	1.08E-02	1.00E+00	5.50E-03	2.51E+02	4.70E+00	1.10E-01	5.63E+00	4.47E+01
Central Edith Mine Waste Area																					**Maximum HQ (West Edith Mine Waste Area)**		**1.26E+02**
CEA1-3-00 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	6.15E+02	5.21E+00	1.10E-03	3.73E+01	4.11E-02	1.00E+00	5.50E-03	9.55E+02	4.70E+00	1.10E-01	5.63E+00	1.70E+02
CEA1-3-100 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	3.85E+02	3.26E+00	1.10E-03	2.34E+01	2.57E-02	1.00E+00	5.50E-03	5.98E+02	4.70E+00	1.10E-01	5.63E+00	1.06E+02
CEA1-3-150 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	1.76E+02	1.49E+00	1.10E-03	1.07E+01	1.18E-02	1.00E+00	5.50E-03	2.73E+02	4.70E+00	1.10E-01	5.63E+00	4.86E+01
CEA1-3-200 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	4.26E+02	3.61E+00	1.10E-03	2.59E+01	2.85E-02	1.00E+00	5.50E-03	6.62E+02	4.70E+00	1.10E-01	5.63E+00	1.18E+02
CEA1-3-250 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	4.53E+02	3.84E+00	1.10E-03	2.75E+01	3.02E-02	1.00E+00	5.50E-03	7.03E+02	4.70E+00	1.10E-01	5.63E+00	1.25E+02
CEA1-3-300 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	3.06E+02	2.59E+00	1.10E-03	1.86E+01	2.05E-02	1.00E+00	5.50E-03	4.75E+02	4.70E+00	1.10E-01	5.63E+00	8.45E+01
CEA1-3-350 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	5.85E+02	4.96E+00	1.10E-03	3.55E+01	3.91E-02	1.00E+00	5.50E-03	9.08E+02	4.70E+00	1.10E-01	5.63E+00	1.61E+02
CEA1-3-400 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	6.19E+02	5.25E+00	1.10E-03	3.76E+01	4.14E-02	1.00E+00	5.50E-03	9.61E+02	4.70E+00	1.10E-01	5.63E+00	1.71E+02
CEA1-3-450 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	1.30E+02	1.10E+00	1.10E-03	7.87E+00	8.67E-03	1.00E+00	5.50E-03	2.01E+02	4.70E+00	1.10E-01	5.63E+00	3.58E+01
CEA1-3-50 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	3.96E+02	3.36E+00	1.10E-03	2.40E+01	2.65E-02	1.00E+00	5.50E-03	6.15E+02	4.70E+00	1.10E-01	5.63E+00	1.09E+02
CEA1-3-500 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	2.41E+02	2.04E+00	1.10E-03	1.46E+01	1.61E-02	1.00E+00	5.50E-03	3.75E+02	4.70E+00	1.10E-01	5.63E+00	6.66E+01

TABLE C-5A: ARSENIC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 5 - EDITH MINE WASTE AREAS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **1.29**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Masked Shrew (Omnivorous Mammal - Terrestrial, Wetland)																							
CEA1-3-550 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	3.14E+02	2.66E+00	1.10E-03	1.90E+01	2.09E-02	1.00E+00	5.50E-03	4.87E+02	4.70E+00	1.10E-01	5.63E+00	8.65E+01
CEA1-3-600 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	4.13E+02	3.50E+00	1.10E-03	2.51E+01	2.76E-02	1.00E+00	5.50E-03	6.41E+02	4.70E+00	1.10E-01	5.63E+00	1.14E+02
CEA1-3-650 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	2.75E+02	2.33E+00	1.10E-03	1.67E+01	1.84E-02	1.00E+00	5.50E-03	4.27E+02	4.70E+00	1.10E-01	5.63E+00	7.60E+01
CEA1-3-700 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	3.56E+02	3.02E+00	1.10E-03	2.16E+01	2.38E-02	1.00E+00	5.50E-03	5.53E+02	4.70E+00	1.10E-01	5.63E+00	9.83E+01
CEA1-3-750 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	1.55E+02	1.32E+00	1.10E-03	9.42E+00	1.04E-02	1.00E+00	5.50E-03	2.41E+02	4.70E+00	1.10E-01	5.63E+00	4.28E+01
CEA1-3-800 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	1.95E+02	1.65E+00	1.10E-03	1.18E+01	1.30E-02	1.00E+00	5.50E-03	3.02E+02	4.70E+00	1.10E-01	5.63E+00	5.37E+01
CEA1-3-850 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	1.66E+02	1.41E+00	1.10E-03	1.01E+01	1.11E-02	1.00E+00	5.50E-03	2.58E+02	4.70E+00	1.10E-01	5.63E+00	4.59E+01
CEA1-3-Comp 1 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	2.05E+02	1.73E+00	1.10E-03	1.24E+01	1.37E-02	1.00E+00	5.50E-03	3.18E+02	4.70E+00	1.10E-01	5.63E+00	5.65E+01
CEA1-3-Comp 2 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	2.27E+02	1.92E+00	1.10E-03	1.38E+01	1.52E-02	1.00E+00	5.50E-03	3.52E+02	4.70E+00	1.10E-01	5.63E+00	6.26E+01
CEA1-3-Comp 3 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	1.73E+02	1.47E+00	1.10E-03	1.05E+01	1.16E-02	1.00E+00	5.50E-03	2.69E+02	4.70E+00	1.10E-01	5.63E+00	4.79E+01
CEA4-00 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	1.43E+03	1.21E+01	1.10E-03	8.65E+01	9.53E-02	1.00E+00	5.50E-03	2.21E+03	4.70E+00	1.10E-01	5.63E+00	3.93E+02
CEA4-20 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	2.44E+02	2.07E+00	1.10E-03	1.48E+01	1.63E-02	1.00E+00	5.50E-03	3.79E+02	4.70E+00	1.10E-01	5.63E+00	6.73E+01
CEA4-40 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	4.38E+02	3.71E+00	1.10E-03	2.66E+01	2.93E-02	1.00E+00	5.50E-03	6.80E+02	4.70E+00	1.10E-01	5.63E+00	1.21E+02
CEA4-Comp (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	4.28E+02	3.62E+00	1.10E-03	2.60E+01	2.86E-02	1.00E+00	5.50E-03	6.64E+02	4.70E+00	1.10E-01	5.63E+00	1.18E+02
East Edith Mine Waste Area																			6.05E+02	5.13E+00	1.10E-03	3.67E+01	4.04E-02	1.00E+00	5.50E-03	9.39E+02	4.70E+00	1.10E-01	5.63E+00	1.67E+02
Maximum HQ (Central Edith Mine Waste Area)																														**3.93E+02**
EEA1-00 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	2.72E+02	2.30E+00	1.10E-03	1.65E+01	1.81E-02	1.00E+00	5.50E-03	4.22E+02	4.70E+00	1.10E-01	5.63E+00	7.49E+01
EEA1-100 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	1.05E+02	8.88E-01	1.10E-03	6.36E+00	7.00E-03	1.00E+00	5.50E-03	1.63E+02	4.70E+00	1.10E-01	5.63E+00	2.89E+01
EEA1-150 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	2.46E+02	2.08E+00	1.10E-03	1.49E+01	1.64E-02	1.00E+00	5.50E-03	3.82E+02	4.70E+00	1.10E-01	5.63E+00	6.79E+01
EEA1-200 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
EEA1-250 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	2.18E+02	1.85E+00	1.10E-03	1.32E+01	1.46E-02	1.00E+00	5.50E-03	3.39E+02	4.70E+00	1.10E-01	5.63E+00	6.02E+01
EEA1-300 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	2.61E+02	2.21E+00	1.10E-03	1.59E+01	1.75E-02	1.00E+00	5.50E-03	4.06E+02	4.70E+00	1.10E-01	5.63E+00	7.21E+01
EEA1-350 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	3.14E+02	2.66E+00	1.10E-03	1.90E+01	2.09E-02	1.00E+00	5.50E-03	4.87E+02	4.70E+00	1.10E-01	5.63E+00	8.65E+01
EEA1-400 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	1.87E+02	1.58E+00	1.10E-03	1.13E+01	1.25E-02	1.00E+00	5.50E-03	2.90E+02	4.70E+00	1.10E-01	5.63E+00	5.16E+01
EEA1-450 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	1.69E+02	1.43E+00	1.10E-03	1.03E+01	1.13E-02	1.00E+00	5.50E-03	2.62E+02	4.70E+00	1.10E-01	5.63E+00	4.66E+01
EEA1-50 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	3.45E+02	2.93E+00	1.10E-03	2.10E+01	2.31E-02	1.00E+00	5.50E-03	5.36E+02	4.70E+00	1.10E-01	5.63E+00	9.53E+01
EEA1-500 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	1.86E+02	1.58E+00	1.10E-03	1.13E+01	1.24E-02	1.00E+00	5.50E-03	2.89E+02	4.70E+00	1.10E-01	5.63E+00	5.14E+01
EEA1-Comp 1 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	9.70E+01	8.22E-01	1.10E-03	5.89E+00	6.48E-03	1.00E+00	5.50E-03	1.51E+02	4.70E+00	1.10E-01	5.63E+00	2.68E+01
EEA2-00 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
EEA2-50 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	1.99E+02	1.69E+00	1.10E-03	1.21E+01	1.33E-02	1.00E+00	5.50E-03	3.09E+02	4.70E+00	1.10E-01	5.63E+00	5.50E+01
EEA2-100 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	1.37E+02	1.16E+00	1.10E-03	8.32E+00	9.16E-03	1.00E+00	5.50E-03	2.13E+02	4.70E+00	1.10E-01	5.63E+00	3.78E+01
EEA2-150 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	6.35E+00	BB	BB	BB	BB	BB	BB	BB	BB	BB
EEA2-200 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	1.60E+02	1.35E+00	1.10E-03	9.71E+00	1.07E-02	1.00E+00	5.50E-03	2.48E+02	4.70E+00	1.10E-01	5.63E+00	4.41E+01
EEA2-250 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
EEA2-300 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	3.95E+02	3.35E+00	1.10E-03	2.40E+01	2.64E-02	1.00E+00	5.50E-03	6.14E+02	4.70E+00	1.10E-01	5.63E+00	1.09E+02
EEA2-Comp 1 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	3.07E+02	2.60E+00	1.10E-03	1.86E+01	2.05E-02	1.00E+00	5.50E-03	4.76E+02	4.70E+00	1.10E-01	5.63E+00	8.47E+01
Maximum HQ (East Edith Mine Waste Area)																														**1.09E+02**

Notes

1 See Tables 3-1 through 3-13 for ingestion rates, foraging ranges used to calculate the SUF, and body weights.

2 BAFs were calculated by dividing site-collected tissue by collocated soil concentrations (BAFs are in dry weight). The maximum BAF calculated from the Beartrap Creek and Blackfoot River transects was used for site dose calculations. The maximum BAF from the terrestrial reference site was used for reference site dose calculations.

3 The mammal, plant, and invertebrate concentrations were calculated by multiplying the soil concentration by the BAF to generate a tissue concentration (see note 2).

4 Mammal, plant, and invertebrate daily doses were calculated by multiplying the ingestion rate (see note 1) by the tissue concentration (see note 3).

5 Soil concentration from 0 to 6 inches below ground surface at point ID as measured by XRF 10. Doses were not calculated for detected and non-detected soil concentrations measured below the minimum reference site concentration, as indicated by BB. For results that were measured at less than the detection limit, doses were calculated using half of the detection limit.

6 Soil daily dose was calculated by multiplying the soil ingestion rate (see note 1) by soil concentration (see note 5).

7 Total daily dose is calculated using the following equation: total daily dose = ([mammal daily dose (if applicable) + plant daily dose (if applicable) + invertebrate daily dose (if applicable) + soil daily dose]*SUF)/receptor species body weight.

8 The TRVs used in this risk assessment represent a mid-range effects level. The derivation of TRVs is described in Navy (1998).

9 Allometrically adjusted TRVs for birds were calculated using the following equation: receptor species TRV = (test species TRV) x (test species body weight / receptor species body weight)$^{(1-1.2)}$.

10 Allometrically adjusted TRVs for mammals were calculated using the following equation: receptor species TRV = (test species TRV) x (test species body weight / receptor species body weight)$^{(1-0.94)}$.

11 HQs were calculated using the following equation: HQ = total daily dose/allometrically adjusted TRV.

12 Highlighted cells indicate an HQ greater than 1.0.

BAF	Bioaccumulation Factor	mg/day	Milligram per day
BB	Below minimum background reference site concentration	mg/kg	Milligram per kilogram
EE/CA	Engineering Evaluation/Cost Analysis	NA	Not applicable
EU	Exposure Unit	Navy	Department of the Navy
HQ	Hazard quotient	SUF	Site use factor
ID	Identification	TRV	Toxicity reference value
kg	Kilogram	XRF	X-ray fluorescence
kg/day	Kilogram per day	XRF 10	XRF measurements recorded following drying and seiving through a #10-mesh screen

Sources: Department of the Navy. 1998. "Development of Toxicity Reference Values for Conducting Ecological Risk Assessments at Naval Facilities in California, Interim Final." Prepared by Naval Facilities Engineering Command, Engineering Field Activity West (EFA West). San Bruno, California.

TABLEC-5B: CADMIUM DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 5 - EDITH MINE WASTE AREAS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **1.29**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Mourning Dove (Herbivorous Birds - Terrestrial)																							
Reference Sites																							
SHGBG-1 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.26E+00	4.17E+00	2.40E-02	NA	NA	NA	NA	5.36E-04	3.32E+00	1.78E-03	4.98E-03	1.09E-01	1.18E-03	1.00E+00	1.13E+00	6.27E-01	1.88E-03
SHGBG-2 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.26E+00	3.09E+00	1.78E-02	NA	NA	NA	NA	5.36E-04	2.46E+00	1.32E-03	4.98E-03	1.09E-01	8.72E-04	1.00E+00	1.13E+00	6.27E-01	1.39E-03
SHGBG-201 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.26E+00	3.14E+00	1.81E-02	NA	NA	NA	NA	5.36E-04	2.50E+00	1.34E-03	4.98E-03	1.09E-01	8.86E-04	1.00E+00	1.13E+00	6.27E-01	1.41E-03
SHGBG-202 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.26E+00	3.02E+00	1.74E-02	NA	NA	NA	NA	5.36E-04	2.40E+00	1.29E-03	4.98E-03	1.09E-01	8.51E-04	1.00E+00	1.13E+00	6.27E-01	1.36E-03
West Edith Mine Waste Area																						**Minimum HQ (Reference Sites)**	**1.36E-03**
WEA1-00 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
WEA1-100 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
WEA1-150 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
WEA1-200 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
WEA1-250 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
WEA1-300 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
WEA1-350 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
WEA1-400 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
WEA1-450 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
WEA1-550 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
WEA1-Comp 1 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
WEA1-Comp 2 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
Central Edith Mine Waste Area																						**Maximum HQ (West Edith Mine Waste Area)**	**0.00E+00**
CEA1-3-00 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CEA1-3-100 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CEA1-3-150 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CEA1-3-200 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CEA1-3-250 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CEA1-3-300 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CEA1-3-350 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CEA1-3-400 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CEA1-3-450 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CEA1-3-50 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CEA1-3-500 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CEA1-3-550 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CEA1-3-600 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CEA1-3-650 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CEA1-3-700 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CEA1-3-750 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CEA1-3-800 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CEA1-3-850 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CEA1-3-Comp 1 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CEA1-3-Comp 2 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CEA1-3-Comp 3 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.59E+00	6.84E+00	3.94E-02	NA	NA	NA	NA	5.36E-04	4.31E+00	2.31E-03	4.98E-03	1.09E-01	1.90E-03	1.00E+00	1.13E+00	6.27E-01	3.04E-03
CEA4-00 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CEA4-20 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CEA4-40 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CEA4-Comp (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
East Edith Mine Waste Area																						**Maximum HQ (Central Edith Mine Waste Area)**	**3.04E-03**
EEA1-00 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
EEA1-100 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
EEA1-150 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
EEA1-200 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
EEA1-250 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
EEA1-300 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
EEA1-350 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
EEA1-400 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
EEA1-450 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
EEA1-50 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
EEA1-500 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
EEA1-Comp 1 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE

TABLEC-5B: CADMIUM DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 5 - EDITH MINE WASTE AREAS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **1.29**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Mourning Dove (Herbivorous Birds - Terrestrial)																							
EEA2-00 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
EEA2-50 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
EEA2-100 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
EEA2-150 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
EEA2-200 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
EEA2-250 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
EEA2-300 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
EEA2-Comp 1 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
																						Maximum HQ (East Edith Mine Waste Area)	**0.00E+00**
Red-Tailed Hawk (Carnivorous Birds - Terrestrial)																							
Reference Sites																							
SHGBG-1 (0-6")	9.00E-02	9.00E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.32E+00	1.70E-02	1.85E-03	1.13E+00	2.78E-05	1.00E+00	1.13E+00	1.00E+00	2.78E-05
SHGBG-2 (0-6")	9.00E-02	9.00E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.46E+00	1.26E-02	1.85E-03	1.13E+00	2.06E-05	1.00E+00	1.13E+00	1.00E+00	2.06E-05
SHGBG-201 (0-6")	9.00E-02	9.00E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.50E+00	1.28E-02	1.85E-03	1.13E+00	2.09E-05	1.00E+00	1.13E+00	1.00E+00	2.09E-05
SHGBG-202 (0-6")	9.00E-02	9.00E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.40E+00	1.23E-02	1.85E-03	1.13E+00	2.01E-05	1.00E+00	1.13E+00	1.00E+00	2.01E-05
West Edith Mine Waste Area																						**Minimum HQ (Reference Sites)**	**2.01E-05**
WEA1-00 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
WEA1-100 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
WEA1-150 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
WEA1-200 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
WEA1-250 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
WEA1-300 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
WEA1-350 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
WEA1-400 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
WEA1-450 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
WEA1-550 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
WEA1-Comp 1 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
WEA1-Comp 2 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
Central Edith Mine Waste Area																						**Maximum HQ (West Edith Mine Waste Area)**	**0.00E+00**
CEA1-3-00 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CEA1-3-100 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CEA1-3-150 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CEA1-3-200 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CEA1-3-250 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CEA1-3-300 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CEA1-3-350 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CEA1-3-400 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CEA1-3-450 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CEA1-3-50 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CEA1-3-500 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CEA1-3-550 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CEA1-3-600 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CEA1-3-650 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CEA1-3-700 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CEA1-3-750 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CEA1-3-800 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CEA1-3-850 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CEA1-3-Comp 1 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CEA1-3-Comp 2 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CEA1-3-Comp 3 (0-6")	9.00E-02	9.00E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.31E+00	2.21E-02	1.85E-03	1.13E+00	3.61E-05	1.00E+00	1.13E+00	1.00E+00	3.61E-05
CEA4-00 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE

TABLEC-5B: CADMIUM DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 5 - EDITH MINE WASTE AREAS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 1.29

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Red-Tailed Hawk (Carnivorous Birds - Terrestrial)																							
CEA4-20 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CEA4-40 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CEA4-Comp (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
East Edith Mine Waste Area																				**Maximum HQ (Central Edith Mine Waste Area)**			**3.61E-05**
EEA1-00 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
EEA1-100 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
EEA1-150 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
EEA1-200 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
EEA1-250 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
EEA1-300 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
EEA1-350 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
EEA1-400 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
EEA1-450 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
EEA1-50 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
EEA1-500 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
EEA1-Comp 1 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
EEA2-00 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
EEA2-50 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
EEA2-100 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
EEA2-150 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
EEA2-200 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
EEA2-250 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
EEA2-300 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
EEA2-Comp 1 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
																				Maximum HQ (East Edith Mine Waste Area)			**0.00E+00**
American Kestrel (Insectivorous Birds - Terrestrial)																							
Reference Sites																							
SHGBG-1 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	7.00E+00	2.32E+01	3.20E-01	7.84E-04	3.32E+00	2.60E-03	4.93E-03	1.24E-01	1.28E-02	1.00E+00	1.13E+00	6.43E-01	1.99E-02
SHGBG-2 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	7.00E+00	1.72E+01	2.37E-01	7.84E-04	2.46E+00	1.93E-03	4.93E-03	1.24E-01	9.50E-03	1.00E+00	1.13E+00	6.43E-01	1.48E-02
SHGBG-201 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	7.00E+00	1.75E+01	2.41E-01	7.84E-04	2.50E+00	1.96E-03	4.93E-03	1.24E-01	9.65E-03	1.00E+00	1.13E+00	6.43E-01	1.50E-02
SHGBG-202 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	7.00E+00	1.68E+01	2.31E-01	7.84E-04	2.40E+00	1.88E-03	4.93E-03	1.24E-01	9.27E-03	1.00E+00	1.13E+00	6.43E-01	1.44E-02
West Edith Mine Waste Area																						**Minimum HQ (Reference Sites)**	**1.44E-02**
WEA1-00 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
WEA1-100 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
WEA1-150 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
WEA1-200 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
WEA1-250 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
WEA1-300 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
WEA1-350 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
WEA1-400 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
WEA1-450 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
WEA1-550 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
WEA1-Comp 1 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
WEA1-Comp 2 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
Central Edith Mine Waste Area																				**Maximum HQ (West Edith Mine Waste Area)**			**0.00E+00**
CEA1-3-00 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CEA1-3-100 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CEA1-3-150 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CEA1-3-200 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CEA1-3-250 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CEA1-3-300 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CEA1-3-350 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CEA1-3-400 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CEA1-3-450 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CEA1-3-50 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CEA1-3-500 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE

TABLEC-5B: CADMIUM DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 5 - EDITH MINE WASTE AREAS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 1.29

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
American Kestrel (Insectivorous Birds - Terrestrial)																							
CEA1-3-550 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CEA1-3-600 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CEA1-3-650 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CEA1-3-700 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CEA1-3-750 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CEA1-3-800 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CEA1-3-850 (0-6")	NE	NE	NE	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CEA1-3-Comp 1 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CEA1-3-Comp 2 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CEA1-3-Comp 3 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	7.00E+00	3.02E+01	4.15E-01	7.84E-04	4.31E+00	3.38E-03	4.93E-03	1.24E-01	1.66E-02	1.00E+00	1.13E+00	6.43E-01	2.59E-02
CEA4-00 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CEA4-20 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CEA4-40 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CEA4-Comp (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
East Edith Mine Waste Area																				**Maximum HQ (Central Edith Mine Waste Area)**			**2.59E-02**
EEA1-00 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
EEA1-100 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
EEA1-150 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
EEA1-200 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
EEA1-250 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
EEA1-300 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
EEA1-350 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
EEA1-400 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
EEA1-450 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
EEA1-50 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
EEA1-500 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
EEA1-Comp 1 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
EEA2-00 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
EEA2-50 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
EEA2-100 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
EEA2-150 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
EEA2-200 (0-6")	NE	NE	NE	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
EEA2-250 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
EEA2-300 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
EEA2-Comp 1 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
																				Maximum HQ (East Edith Mine Waste Area)			**0.00E+00**
Meadow Vole (Small Herbivorous Mammal - Terrestrial)																							
Reference Sites																							
SHGBG-1 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.26E+00	4.17E+00	1.96E-02	NA	NA	NA	NA	1.13E-04	3.32E+00	3.74E-04	1.00E+00	3.06E-02	6.51E-01	2.64E+00	3.14E-02	2.64E+00	2.46E-01
SHGBG-2 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.26E+00	3.09E+00	1.45E-02	NA	NA	NA	NA	1.13E-04	2.46E+00	2.77E-04	1.00E+00	3.06E-02	4.83E-01	2.64E+00	3.14E-02	2.64E+00	1.83E-01
SHGBG-201 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.26E+00	3.14E+00	1.47E-02	NA	NA	NA	NA	1.13E-04	2.50E+00	2.81E-04	1.00E+00	3.06E-02	4.90E-01	2.64E+00	3.14E-02	2.64E+00	1.85E-01
SHGBG-202 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.26E+00	3.02E+00	1.41E-02	NA	NA	NA	NA	1.13E-04	2.40E+00	2.70E-04	1.00E+00	3.06E-02	4.71E-01	2.64E+00	3.14E-02	2.64E+00	1.78E-01
West Edith Mine Waste Area																						**Minimum HQ (Reference Sites)**	**1.78E-01**
WEA1-00 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
WEA1-100 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
WEA1-150 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
WEA1-200 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
WEA1-250 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
WEA1-300 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
WEA1-350 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
WEA1-400 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
WEA1-450 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE

TABLEC-5B: CADMIUM DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 5 - EDITH MINE WASTE AREAS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 1.29

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Meadow Vole (Small Herbivorous Mammal - Terrestrial)																							
WEA1-550 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
WEA1-Comp 1 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
WEA1-Comp 2 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
Central Edith Mine Waste Area																				**Maximum HQ (West Edith Mine Waste Area)**			**0.00E+00**
CEA1-3-00 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CEA1-3-100 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CEA1-3-150 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CEA1-3-200 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CEA1-3-250 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CEA1-3-300 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CEA1-3-350 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CEA1-3-400 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CEA1-3-450 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CEA1-3-50 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CEA1-3-500 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CEA1-3-550 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CEA1-3-600 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CEA1-3-650 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CEA1-3-700 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CEA1-3-750 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CEA1-3-800 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CEA1-3-850 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CEA1-3-Comp 1 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CEA1-3-Comp 2 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CEA1-3-Comp 3 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.59E+00	6.84E+00	3.21E-02	NA	NA	NA	NA	1.13E-04	4.31E+00	4.85E-04	1.00E+00	3.06E-02	1.06E+00	2.64E+00	3.14E-02	2.64E+00	4.03E-01
CEA4-00 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CEA4-20 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CEA4-40 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CEA4-Comp (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
East Edith Mine Waste Area																				**Maximum HQ (Central Edith Mine Waste Area)**			**4.03E-01**
EEA1-00 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
EEA1-100 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
EEA1-150 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
EEA1-200 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
EEA1-250 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
EEA1-300 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
EEA1-350 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
EEA1-400 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
EEA1-450 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
EEA1-50 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
EEA1-500 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
EEA1-Comp 1 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
EEA2-00 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
EEA2-50 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
EEA2-100 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
EEA2-150 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
EEA2-200 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
EEA2-250 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
EEA2-300 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
EEA2-Comp 1 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
																				Maximum HQ (East Edith Mine Waste Area)			**0.00E+00**

TABLEC-5B: CADMIUM DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 5 - EDITH MINE WASTE AREAS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **1.29**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
White-Tailed Deer (Large Herbivorous Mammal - Terrestrial)																							
Reference Sites																							
SHGBG-1 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.26E+00	4.17E+00	5.97E+00	NA	NA	NA	NA	2.86E-02	3.32E+00	9.51E-02	7.22E-03	1.35E+02	3.24E-04	2.64E+00	3.14E-02	1.60E+00	2.03E-04
SHGBG-2 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.26E+00	3.09E+00	4.42E+00	NA	NA	NA	NA	2.86E-02	2.46E+00	7.04E-02	7.22E-03	1.35E+02	2.40E-04	2.64E+00	3.14E-02	1.60E+00	1.50E-04
SHGBG-201 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.26E+00	3.14E+00	4.50E+00	NA	NA	NA	NA	2.86E-02	2.50E+00	7.16E-02	7.22E-03	1.35E+02	2.44E-04	2.64E+00	3.14E-02	1.60E+00	1.53E-04
SHGBG-202 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.26E+00	3.02E+00	4.32E+00	NA	NA	NA	NA	2.86E-02	2.40E+00	6.87E-02	7.22E-03	1.35E+02	2.34E-04	2.64E+00	3.14E-02	1.60E+00	1.47E-04
West Edith Mine Waste Area																						**Minimum HQ (Reference Sites)**	**1.47E-04**
WEA1-00 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
WEA1-100 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
WEA1-150 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
WEA1-200 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
WEA1-250 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
WEA1-300 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
WEA1-350 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
WEA1-400 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
WEA1-450 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
WEA1-550 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
WEA1-Comp 1 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
WEA1-Comp 2 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
Central Edith Mine Waste Area																						**Maximum HQ (West Edith Mine Waste Area)**	**0.00E+00**
CEA1-3-00 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CEA1-3-100 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CEA1-3-150 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CEA1-3-200 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CEA1-3-250 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CEA1-3-300 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CEA1-3-350 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CEA1-3-400 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CEA1-3-450 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CEA1-3-50 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CEA1-3-500 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CEA1-3-550 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CEA1-3-600 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CEA1-3-650 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CEA1-3-700 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CEA1-3-750 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CEA1-3-800 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CEA1-3-850 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CEA1-3-Comp 1 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CEA1-3-Comp 2 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CEA1-3-Comp 3 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.59E+00	6.84E+00	9.80E+00	NA	NA	NA	NA	2.86E-02	4.31E+00	1.23E-01	7.22E-03	1.35E+02	5.30E-04	2.64E+00	3.14E-02	1.60E+00	3.32E-04
CEA4-00 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CEA4-20 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CEA4-40 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CEA4-Comp (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
East Edith Mine Waste Area																						**Maximum HQ (Central Edith Mine Waste Area)**	**3.32E-04**
EEA1-00 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
EEA1-100 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
EEA1-150 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
EEA1-200 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
EEA1-250 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
EEA1-300 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
EEA1-350 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
EEA1-400 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
EEA1-450 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
EEA1-50 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
EEA1-500 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
EEA1-Comp 1 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE

TABLEC-5B: CADMIUM DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 5 - EDITH MINE WASTE AREAS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **1.29**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
White-Tailed Deer (Large Herbivorous Mammal - Terrestrial)																							
EEA2-00 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
EEA2-50 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
EEA2-100 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
EEA2-150 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
EEA2-200 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
EEA2-250 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
EEA2-300 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
EEA2-Comp 1 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
																						Maximum HQ (East Edith Mine Waste Area)	**0.00E+00**
Red Fox (Carnivorous Mammal - Terrestrial)																							
Reference Sites																							
SHGBG-1 (0-6")	1.72E-01	1.72E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.32E+00	1.59E-02	9.53E-04	4.54E+00	3.35E-06	2.64E+00	3.14E-02	1.96E+00	1.71E-06
SHGBG-2 (0-6")	1.72E-01	1.72E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.46E+00	1.18E-02	9.53E-04	4.54E+00	2.48E-06	2.64E+00	3.14E-02	1.96E+00	1.27E-06
SHGBG-201 (0-6")	1.72E-01	1.72E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.50E+00	1.20E-02	9.53E-04	4.54E+00	2.52E-06	2.64E+00	3.14E-02	1.96E+00	1.29E-06
SHGBG-202 (0-6")	1.72E-01	1.72E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.40E+00	1.15E-02	9.53E-04	4.54E+00	2.42E-06	2.64E+00	3.14E-02	1.96E+00	1.24E-06
West Edith Mine Waste Area																						**Minimum HQ (Reference Sites)**	**1.24E-06**
WEA1-00 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
WEA1-100 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
WEA1-150 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
WEA1-200 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
WEA1-250 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
WEA1-300 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
WEA1-350 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
WEA1-400 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
WEA1-450 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
WEA1-550 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
WEA1-Comp 1 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
WEA1-Comp 2 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
Central Edith Mine Waste Area																						**Maximum HQ (West Edith Mine Waste Area)**	**0.00E+00**
CEA1-3-00 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CEA1-3-100 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CEA1-3-150 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CEA1-3-200 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CEA1-3-250 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CEA1-3-300 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CEA1-3-350 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CEA1-3-400 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CEA1-3-450 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CEA1-3-50 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CEA1-3-500 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CEA1-3-550 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CEA1-3-600 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CEA1-3-650 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CEA1-3-700 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CEA1-3-750 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CEA1-3-800 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CEA1-3-850 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CEA1-3-Comp 1 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CEA1-3-Comp 2 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CEA1-3-Comp 3 (0-6")	1.72E-01	1.72E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.31E+00	2.07E-02	9.53E-04	4.54E+00	4.35E-06	2.64E+00	3.14E-02	1.96E+00	2.22E-06

TABLEC-5B: CADMIUM DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 5 - EDITH MINE WASTE AREAS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **1.29**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Red Fox (Carnivorous Mammal - Terrestrial)																							
CEA4-00 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CEA4-20 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CEA4-40 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CEA4-Comp (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
East Edith Mine Waste Area																						**Maximum HQ (Central Edith Mine Waste Area)**	**2.22E-06**
EEA1-00 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
EEA1-100 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
EEA1-150 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
EEA1-200 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
EEA1-250 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
EEA1-300 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
EEA1-350 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
EEA1-400 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
EEA1-450 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
EEA1-50 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
EEA1-500 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
EEA1-Comp 1 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
EEA2-00 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
EEA2-50 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
EEA2-100 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
EEA2-150 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
EEA2-200 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
EEA2-250 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
EEA2-300 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
EEA2-Comp 1 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
																						Maximum HQ (East Edith Mine Waste Area)	**0.00E+00**
Masked Shrew (Omnivorous Mammal - Terrestrial, Wetland)																							
Reference Sites																							
SHGBG-1 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	7.00E+00	2.32E+01	1.97E-01	1.10E-03	3.32E+00	3.66E-03	1.00E+00	5.50E-03	3.64E+01	2.64E+00	3.14E-02	2.93E+00	1.24E+01
SHGBG-2 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	7.00E+00	1.72E+01	1.46E-01	1.10E-03	2.46E+00	2.71E-03	1.00E+00	5.50E-03	2.70E+01	2.64E+00	3.14E-02	2.93E+00	9.21E+00
SHGBG-201 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	7.00E+00	1.75E+01	1.48E-01	1.10E-03	2.50E+00	2.75E-03	1.00E+00	5.50E-03	2.74E+01	2.64E+00	3.14E-02	2.93E+00	9.36E+00
SHGBG-202 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	7.00E+00	1.68E+01	1.42E-01	1.10E-03	2.40E+00	2.64E-03	1.00E+00	5.50E-03	2.63E+01	2.64E+00	3.14E-02	2.93E+00	8.99E+00
West Edith Mine Waste Area																						**Minimum HQ (Reference Sites)**	**8.99E+00**
WEA1-00 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
WEA1-100 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
WEA1-150 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
WEA1-200 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
WEA1-250 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
WEA1-300 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
WEA1-350 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
WEA1-400 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
WEA1-450 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
WEA1-550 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
WEA1-Comp 1 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
WEA1-Comp 2 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
Central Edith Mine Waste Area																						**Maximum HQ (West Edith Mine Waste Area)**	**0.00E+00**
CEA1-3-00 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CEA1-3-100 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CEA1-3-150 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CEA1-3-200 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CEA1-3-250 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CEA1-3-300 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CEA1-3-350 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CEA1-3-400 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CEA1-3-450 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE

TABLEC-5B: CADMIUM DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 5 - EDITH MINE WASTE AREAS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **1.29**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Masked Shrew (Omnivorous Mammal - Terrestrial, Wetland)																							
CEA1-3-50 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CEA1-3-500 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CEA1-3-550 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CEA1-3-600 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CEA1-3-650 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CEA1-3-700 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CEA1-3-750 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CEA1-3-800 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CEA1-3-850 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CEA1-3-Comp 1 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CEA1-3-Comp 2 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CEA1-3-Comp 3 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	7.00E+00	3.02E+01	2.56E-01	1.10E-03	4.31E+00	4.75E-03	1.00E+00	5.50E-03	4.73E+01	2.64E+00	3.14E-02	2.93E+00	1.61E+01
CEA4-00 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CEA4-20 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CEA4-40 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CEA4-Comp (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
East Edith Mine Waste Area																						**Maximum HQ (Central Edith Mine Waste Area)**	**1.61E+01**
EEA1-00 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
EEA1-100 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
EEA1-150 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
EEA1-200 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
EEA1-250 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
EEA1-300 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
EEA1-350 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
EEA1-400 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
EEA1-450 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
EEA1-50 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
EEA1-500 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
EEA1-Comp 1 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
EEA2-00 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
EEA2-50 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
EEA2-100 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
EEA2-150 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
EEA2-200 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
EEA2-250 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
EEA2-300 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
EEA2-Comp 1 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
																						Maximum HQ (East Edith Mine Waste Area)	**0.00E+00**

Notes

1 See Tables 3-1 through 3-13 for ingestion rates, foraging ranges used to calculate the SUF, and body weights.

2 BAFs were calculated by dividing site-collected tissue by collocated soil concentrations (BAFs are in dry weight). The maximum BAF calculated from the Beartrap Creek and Blackfoot River transects was used for site dose calculations. The maximum BAF from the terrestrial reference site was used for reference site dose calculations.

3 The mammal, plant, and invertebrate concentrations were calculated by multiplying the soil concentration by the BAF to generate a tissue concentration (see note 2).

4 Mammal, plant, and invertebrate daily doses were calculated by multiplying the ingestion rate (see note 1) by the tissue concentration (see note 3).

5 Soil concentration from 0 to 6 inches below ground surface at point ID from laboratory analysis. XRF 10 data were unavailable for cadmium. Doses were not calculated for detected and non-detected soil concentrations measured below the minimum reference site concentration, as indicated by BB. For results that were measured at less than the detection limit, doses were calculated using half of the detection limit.

6 Soil daily dose was calculated by multiplying the soil ingestion rate (see note 1) by soil concentration (see note 5).

7 Total daily dose is calculated using the following equation: total daily dose = ([mammal daily dose (if applicable) + plant daily dose (if applicable) + invertebrate daily dose (if applicable) + soil daily dose]*SUF)/receptor species body weight.

8 The TRVs used in this risk assessment represent a mid-range effects level. The derivation of TRVs is described in Navy (1998).

9 Allometrically adjusted TRVs for birds were calculated using the following equation: receptor species TRV = (test species TRV) x (test species body weight / receptor species body weight)$^{(1-1.2)}$.

10 Allometrically adjusted TRVs for mammals were calculated using the following equation: receptor species TRV = (test species TRV) x (test species body weight / receptor species body weight)$^{(1-0.94)}$.

11 HQs were calculated using the following equation: HQ = total daily dose/allometrically adjusted TRV.

12 Highlighted cells indicate an HQ greater than 1.0.

BAF	Bioaccumulation Factor	mg/day	Milligram per day
BB	Below minimum background reference site concentration	mg/kg	Milligram per kilogram
DTSC	California Department of Toxic Substances Control	NA	Not applicable
EE/CA	Engineering Evaluation/Cost Analysis	Navy	Department of the Navy
EU	Exposure Unit	SUF	Site use factor
HQ	Hazard quotient	TRV	Toxicity reference value
ID	Identification	XRF	X-ray fluorescence
kg	Kilogram	XRF 10	XRF measurements recorded following drying and seiving through a #10-mesh screen
kg/day	Kilogram per day		

Sources: Department of the Navy. 1998. "Development of Toxicity Reference Values for Conducting Ecological Risk Assessments at Naval Facilities in California, Interim Final." Prepared by Naval Facilities Engineering Command, Engineering Field Activity West (EFA West). San Bruno, California.

DTSC. 2009. HERD Ecological Risk Assessment Note 6. February. Available on-line at: http://www.dtsc.ca.gov/AssessingRisk/upload/CdEconote_Final.pdf.

TABLE C-5C: COPPER DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 5 - EDITH MINE WASTE AREAS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 1.29

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Mourning Dove (Herbivorous Birds - Terrestrial)																							
Reference Sites																							
SHGBG-1 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	7.79E-01	3.08E+01	1.77E-01	NA	NA	NA	NA	5.36E-04	3.96E+01	2.12E-02	4.98E-03	1.09E-01	9.06E-03	5.23E+01	4.09E-01	4.01E+01	2.26E-04
SHGBG-2 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	7.79E-01	4.57E+01	2.63E-01	NA	NA	NA	NA	5.36E-04	5.86E+01	3.14E-02	4.98E-03	1.09E-01	1.34E-02	5.23E+01	4.09E-01	4.01E+01	3.35E-04
SHGBG-201 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	7.79E-01	6.57E+01	3.78E-01	NA	NA	NA	NA	5.36E-04	8.43E+01	4.52E-02	4.98E-03	1.09E-01	1.93E-02	5.23E+01	4.09E-01	4.01E+01	4.82E-04
SHGBG-202 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	7.79E-01	6.14E+01	3.54E-01	NA	NA	NA	NA	5.36E-04	7.89E+01	4.22E-02	4.98E-03	1.09E-01	1.81E-02	5.23E+01	4.09E-01	4.01E+01	4.50E-04
West Edith Mine Waste Area																						**Minimum HQ (Reference Sites)**	**2.26E-04**
WEA1-00 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
WEA1-100 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	6.34E+01	3.65E-01	NA	NA	NA	NA	5.36E-04	5.60E+01	3.00E-02	4.98E-03	1.09E-01	1.80E-02	5.23E+01	4.09E-01	4.01E+01	4.49E-04
WEA1-150 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	3.95E+02	2.28E+00	NA	NA	NA	NA	5.36E-04	3.49E+02	1.87E-01	4.98E-03	1.09E-01	1.12E-01	5.23E+01	4.09E-01	4.01E+01	2.80E-03
WEA1-200 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	2.13E+02	1.23E+00	NA	NA	NA	NA	5.36E-04	1.88E+02	1.01E-01	4.98E-03	1.09E-01	6.05E-02	5.23E+01	4.09E-01	4.01E+01	1.51E-03
WEA1-250 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	7.77E+01	4.48E-01	NA	NA	NA	NA	5.36E-04	6.87E+01	3.68E-02	4.98E-03	1.09E-01	2.21E-02	5.23E+01	4.09E-01	4.01E+01	5.51E-04
WEA1-300 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	8.74E+01	5.03E-01	NA	NA	NA	NA	5.36E-04	7.72E+01	4.14E-02	4.98E-03	1.09E-01	2.48E-02	5.23E+01	4.09E-01	4.01E+01	6.19E-04
WEA1-350 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	5.06E+02	2.92E+00	NA	NA	NA	NA	5.36E-04	4.47E+02	2.40E-01	4.98E-03	1.09E-01	1.44E-01	5.23E+01	4.09E-01	4.01E+01	3.59E-03
WEA1-400 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	1.35E+02	7.76E-01	NA	NA	NA	NA	5.36E-04	1.19E+02	6.38E-02	4.98E-03	1.09E-01	3.83E-02	5.23E+01	4.09E-01	4.01E+01	9.55E-04
WEA1-450 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	1.35E+02	7.80E-01	NA	NA	NA	NA	5.36E-04	1.20E+02	6.41E-02	4.98E-03	1.09E-01	3.85E-02	5.23E+01	4.09E-01	4.01E+01	9.60E-04
WEA1-550 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	1.28E+02	7.36E-01	NA	NA	NA	NA	5.36E-04	1.13E+02	6.05E-02	4.98E-03	1.09E-01	3.63E-02	5.23E+01	4.09E-01	4.01E+01	9.05E-04
WEA1-Comp 1 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	4.86E+02	2.80E+00	NA	NA	NA	NA	5.36E-04	4.30E+02	2.30E-01	4.98E-03	1.09E-01	1.38E-01	5.23E+01	4.09E-01	4.01E+01	3.45E-03
WEA1-Comp 2 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	2.22E+02	1.28E+00	NA	NA	NA	NA	5.36E-04	1.97E+02	1.05E-01	4.98E-03	1.09E-01	6.32E-02	5.23E+01	4.09E-01	4.01E+01	1.58E-03
Central Edith Mine Waste Area																						**Maximum HQ (West Edith Mine Waste Area)**	**3.59E-03**
CEA1-3-00 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	2.76E+02	1.59E+00	NA	NA	NA	NA	5.36E-04	2.44E+02	1.31E-01	4.98E-03	1.09E-01	7.84E-02	5.23E+01	4.09E-01	4.01E+01	1.95E-03
CEA1-3-100 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	1.47E+02	8.49E-01	NA	NA	NA	NA	5.36E-04	1.30E+02	6.98E-02	4.98E-03	1.09E-01	4.19E-02	5.23E+01	4.09E-01	4.01E+01	1.04E-03
CEA1-3-150 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	5.54E+02	3.19E+00	NA	NA	NA	NA	5.36E-04	4.90E+02	2.62E-01	4.98E-03	1.09E-01	1.58E-01	5.23E+01	4.09E-01	4.01E+01	3.93E-03
CEA1-3-200 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	1.26E+02	7.24E-01	NA	NA	NA	NA	5.36E-04	1.11E+02	5.95E-02	4.98E-03	1.09E-01	3.57E-02	5.23E+01	4.09E-01	4.01E+01	8.90E-04
CEA1-3-250 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	1.43E+02	8.24E-01	NA	NA	NA	NA	5.36E-04	1.26E+02	6.77E-02	4.98E-03	1.09E-01	4.07E-02	5.23E+01	4.09E-01	4.01E+01	1.01E-03
CEA1-3-300 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	1.86E+02	1.07E+00	NA	NA	NA	NA	5.36E-04	1.64E+02	8.79E-02	4.98E-03	1.09E-01	5.28E-02	5.23E+01	4.09E-01	4.01E+01	1.32E-03
CEA1-3-350 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	7.96E+01	4.58E-01	NA	NA	NA	NA	5.36E-04	7.03E+01	3.77E-02	4.98E-03	1.09E-01	2.26E-02	5.23E+01	4.09E-01	4.01E+01	5.64E-04
CEA1-3-400 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	1.59E+02	9.14E-01	NA	NA	NA	NA	5.36E-04	1.40E+02	7.51E-02	4.98E-03	1.09E-01	4.51E-02	5.23E+01	4.09E-01	4.01E+01	1.12E-03
CEA1-3-450 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	1.06E+02	6.11E-01	NA	NA	NA	NA	5.36E-04	9.38E+01	5.02E-02	4.98E-03	1.09E-01	3.02E-02	5.23E+01	4.09E-01	4.01E+01	7.52E-04
CEA1-3-50 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	1.31E+03	7.55E+00	NA	NA	NA	NA	5.36E-04	1.16E+03	6.21E-01	4.98E-03	1.09E-01	3.73E-01	5.23E+01	4.09E-01	4.01E+01	9.29E-03
CEA1-3-500 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	1.06E+02	6.13E-01	NA	NA	NA	NA	5.36E-04	9.41E+01	5.04E-02	4.98E-03	1.09E-01	3.03E-02	5.23E+01	4.09E-01	4.01E+01	7.54E-04
CEA1-3-550 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	9.00E+01	5.19E-01	NA	NA	NA	NA	5.36E-04	7.96E+01	4.26E-02	4.98E-03	1.09E-01	2.56E-02	5.23E+01	4.09E-01	4.01E+01	6.38E-04
CEA1-3-600 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	1.51E+03	8.73E+00	NA	NA	NA	NA	5.36E-04	1.34E+03	7.17E-01	4.98E-03	1.09E-01	4.31E-01	5.23E+01	4.09E-01	4.01E+01	1.07E-02
CEA1-3-650 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	8.73E+01	5.03E-01	NA	NA	NA	NA	5.36E-04	7.71E+01	4.13E-02	4.98E-03	1.09E-01	2.48E-02	5.23E+01	4.09E-01	4.01E+01	6.18E-04
CEA1-3-700 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	1.12E+02	6.48E-01	NA	NA	NA	NA	5.36E-04	9.93E+01	5.32E-02	4.98E-03	1.09E-01	3.20E-02	5.23E+01	4.09E-01	4.01E+01	7.97E-04
CEA1-3-750 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	1.04E+02	6.00E-01	NA	NA	NA	NA	5.36E-04	9.21E+01	4.93E-02	4.98E-03	1.09E-01	2.96E-02	5.23E+01	4.09E-01	4.01E+01	7.38E-04
CEA1-3-800 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	2.07E+02	1.19E+00	NA	NA	NA	NA	5.36E-04	1.83E+02	9.80E-02	4.98E-03	1.09E-01	5.89E-02	5.23E+01	4.09E-01	4.01E+01	1.47E-03
CEA1-3-850 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	1.27E+02	7.32E-01	NA	NA	NA	NA	5.36E-04	1.12E+02	6.01E-02	4.98E-03	1.09E-01	3.61E-02	5.23E+01	4.09E-01	4.01E+01	9.00E-04
CEA1-3-Comp 1 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	1.88E+02	1.08E+00	NA	NA	NA	NA	5.36E-04	1.66E+02	8.90E-02	4.98E-03	1.09E-01	5.34E-02	5.23E+01	4.09E-01	4.01E+01	1.33E-03
CEA1-3-Comp 2 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	1.23E+02	7.07E-01	NA	NA	NA	NA	5.36E-04	1.09E+02	5.81E-02	4.98E-03	1.09E-01	3.49E-02	5.23E+01	4.09E-01	4.01E+01	8.70E-04
CEA1-3-Comp 3 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	2.69E+02	1.55E+00	NA	NA	NA	NA	5.36E-04	2.37E+02	1.27E-01	4.98E-03	1.09E-01	7.64E-02	5.23E+01	4.09E-01	4.01E+01	1.90E-03
CEA4-00 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	3.05E+02	1.76E+00	NA	NA	NA	NA	5.36E-04	2.69E+02	1.44E-01	4.98E-03	1.09E-01	8.67E-02	5.23E+01	4.09E-01	4.01E+01	2.16E-03
CEA4-20 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	4.33E+02	2.50E+00	NA	NA	NA	NA	5.36E-04	3.83E+02	2.05E-01	4.98E-03	1.09E-01	1.23E-01	5.23E+01	4.09E-01	4.01E+01	3.07E-03
CEA4-40 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	1.48E+02	8.51E-01	NA	NA	NA	NA	5.36E-04	1.30E+02	6.99E-02	4.98E-03	1.09E-01	4.20E-02	5.23E+01	4.09E-01	4.01E+01	1.05E-03
CEA4-Comp (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	1.90E+02	1.10E+00	NA	NA	NA	NA	5.36E-04	1.68E+02	9.01E-02	4.98E-03	1.09E-01	5.41E-02	5.23E+01	4.09E-01	4.01E+01	1.35E-03
East Edith Mine Waste Area																						**Maximum HQ (Central Edith Mine Waste Area)**	**1.07E-02**
EEA1-00 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	1.02E+02	5.90E-01	NA	NA	NA	NA	5.36E-04	9.05E+01	4.85E-02	4.98E-03	1.09E-01	2.91E-02	5.23E+01	4.09E-01	4.01E+01	7.25E-04
EEA1-100 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	8.75E+01	5.04E-01	NA	NA	NA	NA	5.36E-04	7.73E+01	4.14E-02	4.98E-03	1.09E-01	2.49E-02	5.23E+01	4.09E-01	4.01E+01	6.20E-04
EEA1-150 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	4.66E+01	2.69E-01	NA	NA	NA	NA	5.36E-04	4.12E+01	2.21E-02	4.98E-03	1.09E-01	1.33E-02	5.23E+01	4.09E-01	4.01E+01	3.30E-04
EEA1-200 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	7.34E+01	4.23E-01	NA	NA	NA	NA	5.36E-04	6.48E+01	3.47E-02	4.98E-03	1.09E-01	2.09E-02	5.23E+01	4.09E-01	4.01E+01	5.20E-04
EEA1-250 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
EEA1-300 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	8.74E+01	5.03E-01	NA	NA	NA	NA	5.36E-04	7.72E+01	4.14E-02	4.98E-03	1.09E-01	2.49E-02	5.23E+01	4.09E-01	4.01E+01	6.19E-04
EEA1-350 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	1.55E+02	8.92E-01	NA	NA	NA	NA	5.36E-04	1.37E+02	7.33E-02	4.98E-03	1.09E-01	4.40E-02	5.23E+01	4.09E-01	4.01E+01	1.10E-03
EEA1-400 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	1.53E+02	8.80E-01	NA	NA	NA	NA	5.36E-04	1.35E+02	7.23E-02	4.98E-03	1.09E-01	4.34E-02	5.23E+01	4.09E-01	4.01E+01	1.08E-03
EEA1-450 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	9.75E+01	5.62E-01	NA	NA	NA	NA	5.36E-04	8.61E+01	4.61E-02	4.98E-03	1.09E-01	2.77E-02	5.23E+01	4.09E-01	4.01E+01	6.91E-04
EEA1-50 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	1.27E+02	7.33E-01	NA	NA	NA	NA	5.36E-04	1.12E+02	6.02E-02	4.98E-03	1.09E-01	3.62E-02	5.23E+01	4.09E-01	4.01E+01	9.01E-04
EEA1-500 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	1.16E+02	6.69E-01	NA	NA	NA	NA	5.36E-04	1.03E+02	5.50E-02	4.98E-03	1.09E-01	3.30E-02	5.23E+01	4.09E-01	4.01E+01	8.23E-04
EEA1-Comp 1 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	6.41E+01	3.70E-01	NA	NA	NA	NA	5.36E-04	5.67E+01	3.04E-02	4.98E-03	1.09E-01	1.82E-02	5.23E+01	4.09E-01	4.01E+01	4.55E-04

TABLE C-5C: COPPER DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 5 - EDITH MINE WASTE AREAS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 1.29

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Mourning Dove (Herbivorous Birds - Terrestrial)																							
EEA2-00 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
EEA2-50 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	1.21E+02	6.98E-01	NA	NA	NA	NA	5.36E-04	1.07E+02	5.74E-02	4.98E-03	1.09E-01	3.45E-02	5.23E+01	4.09E-01	4.01E+01	8.59E-04
EEA2-100 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	9.23E+01	5.32E-01	NA	NA	NA	NA	5.36E-04	8.15E+01	4.37E-02	4.98E-03	1.09E-01	2.62E-02	5.23E+01	4.09E-01	4.01E+01	6.54E-04
EEA2-150 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	8.59E+01	4.95E-01	NA	NA	NA	NA	5.36E-04	7.59E+01	4.07E-02	4.98E-03	1.09E-01	2.44E-02	5.23E+01	4.09E-01	4.01E+01	6.09E-04
EEA2-200 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	9.18E+01	5.29E-01	NA	NA	NA	NA	5.36E-04	8.12E+01	4.35E-02	4.98E-03	1.09E-01	2.61E-02	5.23E+01	4.09E-01	4.01E+01	6.51E-04
EEA2-250 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
EEA2-300 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	1.87E+02	1.08E+00	NA	NA	NA	NA	5.36E-04	1.65E+02	8.85E-02	4.98E-03	1.09E-01	5.32E-02	5.23E+01	4.09E-01	4.01E+01	1.32E-03
EEA2-Comp 1 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	1.51E+02	8.70E-01	NA	NA	NA	NA	5.36E-04	1.34E+02	7.15E-02	4.98E-03	1.09E-01	4.30E-02	5.23E+01	4.09E-01	4.01E+01	1.07E-03
																						Maximum HQ (East Edith Mine Waste Area)	**1.32E-03**
Red-Tailed Hawk (Carnivorous Birds - Terrestrial)																							
Reference Sites																							
SHGBG-1 (0-6")	9.00E-02	9.00E-02	6.61E-01	2.61E+01	2.35E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.96E+01	2.03E-01	1.85E-03	1.13E+00	4.17E-03	5.23E+01	4.09E-01	6.41E+01	6.51E-05
SHGBG-2 (0-6")	9.00E-02	9.00E-02	6.61E-01	3.87E+01	3.48E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.86E+01	3.01E-01	1.85E-03	1.13E+00	6.18E-03	5.23E+01	4.09E-01	6.41E+01	9.64E-05
SHGBG-201 (0-6")	9.00E-02	9.00E-02	6.61E-01	5.57E+01	5.01E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	8.43E+01	4.32E-01	1.85E-03	1.13E+00	8.89E-03	5.23E+01	4.09E-01	6.41E+01	1.39E-04
SHGBG-202 (0-6")	9.00E-02	9.00E-02	6.61E-01	5.21E+01	4.69E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	7.89E+01	4.04E-01	1.85E-03	1.13E+00	8.31E-03	5.23E+01	4.09E-01	6.41E+01	1.30E-04
West Edith Mine Waste Area																						**Minimum HQ (Reference Sites)**	**6.51E-05**
WEA1-00 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
WEA1-100 (0-6")	9.00E-02	9.00E-02	1.01E+00	5.66E+01	5.09E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.60E+01	2.87E-01	1.85E-03	1.13E+00	8.78E-03	5.23E+01	4.09E-01	6.41E+01	1.37E-04
WEA1-150 (0-6")	9.00E-02	9.00E-02	1.01E+00	3.53E+02	3.18E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.49E+02	1.79E+00	1.85E-03	1.13E+00	5.48E-02	5.23E+01	4.09E-01	6.41E+01	8.55E-04
WEA1-200 (0-6")	9.00E-02	9.00E-02	1.01E+00	1.90E+02	1.71E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.88E+02	9.64E-01	1.85E-03	1.13E+00	2.95E-02	5.23E+01	4.09E-01	6.41E+01	4.60E-04
WEA1-250 (0-6")	9.00E-02	9.00E-02	1.01E+00	6.94E+01	6.24E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	6.87E+01	3.52E-01	1.85E-03	1.13E+00	1.08E-02	5.23E+01	4.09E-01	6.41E+01	1.68E-04
WEA1-300 (0-6")	9.00E-02	9.00E-02	1.01E+00	7.80E+01	7.02E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	7.72E+01	3.96E-01	1.85E-03	1.13E+00	1.21E-02	5.23E+01	4.09E-01	6.41E+01	1.89E-04
WEA1-350 (0-6")	9.00E-02	9.00E-02	1.01E+00	4.52E+02	4.07E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.47E+02	2.29E+00	1.85E-03	1.13E+00	7.01E-02	5.23E+01	4.09E-01	6.41E+01	1.09E-03
WEA1-400 (0-6")	9.00E-02	9.00E-02	1.01E+00	1.20E+02	1.08E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.19E+02	6.10E-01	1.85E-03	1.13E+00	1.87E-02	5.23E+01	4.09E-01	6.41E+01	2.91E-04
WEA1-450 (0-6")	9.00E-02	9.00E-02	1.01E+00	1.21E+02	1.09E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.20E+02	6.14E-01	1.85E-03	1.13E+00	1.88E-02	5.23E+01	4.09E-01	6.41E+01	2.93E-04
WEA1-550 (0-6")	9.00E-02	9.00E-02	1.01E+00	1.14E+02	1.03E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.13E+02	5.79E-01	1.85E-03	1.13E+00	1.77E-02	5.23E+01	4.09E-01	6.41E+01	2.76E-04
WEA1-Comp 1 (0-6")	9.00E-02	9.00E-02	1.01E+00	4.34E+02	3.90E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.30E+02	2.20E+00	1.85E-03	1.13E+00	6.73E-02	5.23E+01	4.09E-01	6.41E+01	1.05E-03
WEA1-Comp 2 (0-6")	9.00E-02	9.00E-02	1.01E+00	1.99E+02	1.79E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.97E+02	1.01E+00	1.85E-03	1.13E+00	3.08E-02	5.23E+01	4.09E-01	6.41E+01	4.81E-04
Central Edith Mine Waste Area																						**Maximum HQ (West Edith Mine Waste Area)**	**1.09E-03**
CEA1-3-00 (0-6")	9.00E-02	9.00E-02	1.01E+00	2.46E+02	2.21E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.44E+02	1.25E+00	1.85E-03	1.13E+00	3.82E-02	5.23E+01	4.09E-01	6.41E+01	5.96E-04
CEA1-3-100 (0-6")	9.00E-02	9.00E-02	1.01E+00	1.32E+02	1.18E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.30E+02	6.68E-01	1.85E-03	1.13E+00	2.04E-02	5.23E+01	4.09E-01	6.41E+01	3.19E-04
CEA1-3-150 (0-6")	9.00E-02	9.00E-02	1.01E+00	4.95E+02	4.45E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.90E+02	2.51E+00	1.85E-03	1.13E+00	7.68E-02	5.23E+01	4.09E-01	6.41E+01	1.20E-03
CEA1-3-200 (0-6")	9.00E-02	9.00E-02	1.01E+00	1.12E+02	1.01E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.11E+02	5.69E-01	1.85E-03	1.13E+00	1.74E-02	5.23E+01	4.09E-01	6.41E+01	2.72E-04
CEA1-3-250 (0-6")	9.00E-02	9.00E-02	1.01E+00	1.28E+02	1.15E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.26E+02	6.48E-01	1.85E-03	1.13E+00	1.98E-02	5.23E+01	4.09E-01	6.41E+01	3.09E-04
CEA1-3-300 (0-6")	9.00E-02	9.00E-02	1.01E+00	1.66E+02	1.49E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.64E+02	8.41E-01	1.85E-03	1.13E+00	2.57E-02	5.23E+01	4.09E-01	6.41E+01	4.01E-04
CEA1-3-350 (0-6")	9.00E-02	9.00E-02	1.01E+00	7.10E+01	6.39E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	7.03E+01	3.61E-01	1.85E-03	1.13E+00	1.10E-02	5.23E+01	4.09E-01	6.41E+01	1.72E-04
CEA1-3-400 (0-6")	9.00E-02	9.00E-02	1.01E+00	1.42E+02	1.27E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.40E+02	7.19E-01	1.85E-03	1.13E+00	2.20E-02	5.23E+01	4.09E-01	6.41E+01	3.43E-04
CEA1-3-450 (0-6")	9.00E-02	9.00E-02	1.01E+00	9.47E+01	8.52E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	9.38E+01	4.81E-01	1.85E-03	1.13E+00	1.47E-02	5.23E+01	4.09E-01	6.41E+01	2.29E-04
CEA1-3-50 (0-6")	9.00E-02	9.00E-02	1.01E+00	1.17E+03	1.05E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.16E+03	5.94E+00	1.85E-03	1.13E+00	1.82E-01	5.23E+01	4.09E-01	6.41E+01	2.83E-03
CEA1-3-500 (0-6")	9.00E-02	9.00E-02	1.01E+00	9.50E+01	8.55E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	9.41E+01	4.82E-01	1.85E-03	1.13E+00	1.47E-02	5.23E+01	4.09E-01	6.41E+01	2.30E-04
CEA1-3-550 (0-6")	9.00E-02	9.00E-02	1.01E+00	8.04E+01	7.23E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	7.96E+01	4.08E-01	1.85E-03	1.13E+00	1.25E-02	5.23E+01	4.09E-01	6.41E+01	1.95E-04
CEA1-3-600 (0-6")	9.00E-02	9.00E-02	1.01E+00	1.35E+03	1.22E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.34E+03	6.86E+00	1.85E-03	1.13E+00	2.10E-01	5.23E+01	4.09E-01	6.41E+01	3.27E-03
CEA1-3-650 (0-6")	9.00E-02	9.00E-02	1.01E+00	7.79E+01	7.01E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	7.71E+01	3.95E-01	1.85E-03	1.13E+00	1.21E-02	5.23E+01	4.09E-01	6.41E+01	1.89E-04
CEA1-3-700 (0-6")	9.00E-02	9.00E-02	1.01E+00	1.00E+02	9.03E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	9.93E+01	5.09E-01	1.85E-03	1.13E+00	1.56E-02	5.23E+01	4.09E-01	6.41E+01	2.43E-04
CEA1-3-750 (0-6")	9.00E-02	9.00E-02	1.01E+00	9.30E+01	8.37E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	9.21E+01	4.72E-01	1.85E-03	1.13E+00	1.44E-02	5.23E+01	4.09E-01	6.41E+01	2.25E-04
CEA1-3-800 (0-6")	9.00E-02	9.00E-02	1.01E+00	1.85E+02	1.66E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.83E+02	9.38E-01	1.85E-03	1.13E+00	2.87E-02	5.23E+01	4.09E-01	6.41E+01	4.48E-04
CEA1-3-850 (0-6")	9.00E-02	9.00E-02	1.01E+00	1.13E+02	1.02E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.12E+02	5.75E-01	1.85E-03	1.13E+00	1.76E-02	5.23E+01	4.09E-01	6.41E+01	2.75E-04
CEA1-3-Comp 1 (0-6")	9.00E-02	9.00E-02	1.01E+00	1.68E+02	1.51E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.66E+02	8.51E-01	1.85E-03	1.13E+00	2.60E-02	5.23E+01	4.09E-01	6.41E+01	4.06E-04
CEA1-3-Comp 2 (0-6")	9.00E-02	9.00E-02	1.01E+00	1.10E+02	9.86E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.09E+02	5.56E-01	1.85E-03	1.13E+00	1.70E-02	5.23E+01	4.09E-01	6.41E+01	2.65E-04
CEA1-3-Comp 3 (0-6")	9.00E-02	9.00E-02	1.01E+00	2.40E+02	2.16E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.37E+02	1.22E+00	1.85E-03	1.13E+00	3.72E-02	5.23E+01	4.09E-01	6.41E+01	5.81E-04
CEA4-00 (0-6")	9.00E-02	9.00E-02	1.01E+00	2.72E+02	2.45E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.69E+02	1.38E+00	1.85E-03	1.13E+00	4.22E-02	5.23E+01	4.09E-01	6.41E+01	6.59E-04

TABLE C-5C: COPPER DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 5 - EDITH MINE WASTE AREAS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 1.29

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Red-Tailed Hawk (Carnivorous Birds - Terrestrial)																							
CEA4-20 (0-6")	9.00E-02	9.00E-02	1.01E+00	3.87E+02	3.48E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.83E+02	1.96E+00	1.85E-03	1.13E+00	6.00E-02	5.23E+01	4.09E-01	6.41E+01	9.37E-04
CEA4-40 (0-6")	9.00E-02	9.00E-02	1.01E+00	1.32E+02	1.19E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.30E+02	6.69E-01	1.85E-03	1.13E+00	2.04E-02	5.23E+01	4.09E-01	6.41E+01	3.19E-04
CEA4-Comp (0-6")	9.00E-02	9.00E-02	1.01E+00	1.70E+02	1.53E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.68E+02	8.62E-01	1.85E-03	1.13E+00	2.64E-02	5.23E+01	4.09E-01	6.41E+01	4.11E-04
East Edith Mine Waste Area																						**Maximum HQ (Central Edith Mine Waste Area)**	**3.27E-03**
EEA1-00 (0-6")	9.00E-02	9.00E-02	1.01E+00	9.14E+01	8.22E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	9.05E+01	4.64E-01	1.85E-03	1.13E+00	1.42E-02	5.23E+01	4.09E-01	6.41E+01	2.21E-04
EEA1-100 (0-6")	9.00E-02	9.00E-02	1.01E+00	7.81E+01	7.02E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	7.73E+01	3.96E-01	1.85E-03	1.13E+00	1.21E-02	5.23E+01	4.09E-01	6.41E+01	1.89E-04
EEA1-150 (0-6")	9.00E-02	9.00E-02	1.01E+00	4.16E+01	3.74E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.12E+01	2.11E-01	1.85E-03	1.13E+00	6.46E-03	5.23E+01	4.09E-01	6.41E+01	1.01E-04
EEA1-200 (0-6")	9.00E-02	9.00E-02	1.01E+00	6.55E+01	5.89E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	6.48E+01	3.32E-01	1.85E-03	1.13E+00	1.02E-02	5.23E+01	4.09E-01	6.41E+01	1.59E-04
EEA1-250 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
EEA1-300 (0-6")	9.00E-02	9.00E-02	1.01E+00	7.80E+01	7.02E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	7.72E+01	3.96E-01	1.85E-03	1.13E+00	1.21E-02	5.23E+01	4.09E-01	6.41E+01	1.89E-04
EEA1-350 (0-6")	9.00E-02	9.00E-02	1.01E+00	1.38E+02	1.24E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.37E+02	7.01E-01	1.85E-03	1.13E+00	2.14E-02	5.23E+01	4.09E-01	6.41E+01	3.35E-04
EEA1-400 (0-6")	9.00E-02	9.00E-02	1.01E+00	1.36E+02	1.23E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.35E+02	6.92E-01	1.85E-03	1.13E+00	2.12E-02	5.23E+01	4.09E-01	6.41E+01	3.30E-04
EEA1-450 (0-6")	9.00E-02	9.00E-02	1.01E+00	8.70E+01	7.83E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	8.61E+01	4.42E-01	1.85E-03	1.13E+00	1.35E-02	5.23E+01	4.09E-01	6.41E+01	2.11E-04
EEA1-50 (0-6")	9.00E-02	9.00E-02	1.01E+00	1.14E+02	1.02E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.12E+02	5.76E-01	1.85E-03	1.13E+00	1.76E-02	5.23E+01	4.09E-01	6.41E+01	2.75E-04
EEA1-500 (0-6")	9.00E-02	9.00E-02	1.01E+00	1.04E+02	9.33E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.03E+02	5.26E-01	1.85E-03	1.13E+00	1.61E-02	5.23E+01	4.09E-01	6.41E+01	2.51E-04
EEA1-Comp 1 (0-6")	9.00E-02	9.00E-02	1.01E+00	5.73E+01	5.15E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.67E+01	2.91E-01	1.85E-03	1.13E+00	8.88E-03	5.23E+01	4.09E-01	6.41E+01	1.39E-04
EEA2-00 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
EEA2-50 (0-6")	9.00E-02	9.00E-02	1.01E+00	1.08E+02	9.73E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.07E+02	5.49E-01	1.85E-03	1.13E+00	1.68E-02	5.23E+01	4.09E-01	6.41E+01	2.62E-04
EEA2-100 (0-6")	9.00E-02	9.00E-02	1.01E+00	8.24E+01	7.41E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	8.15E+01	4.18E-01	1.85E-03	1.13E+00	1.28E-02	5.23E+01	4.09E-01	6.41E+01	1.99E-04
EEA2-150 (0-6")	9.00E-02	9.00E-02	1.01E+00	7.67E+01	6.90E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	7.59E+01	3.89E-01	1.85E-03	1.13E+00	1.19E-02	5.23E+01	4.09E-01	6.41E+01	1.86E-04
EEA2-200 (0-6")	9.00E-02	9.00E-02	1.01E+00	8.20E+01	7.38E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	8.12E+01	4.16E-01	1.85E-03	1.13E+00	1.27E-02	5.23E+01	4.09E-01	6.41E+01	1.99E-04
EEA2-250 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
EEA2-300 (0-6")	9.00E-02	9.00E-02	1.01E+00	1.67E+02	1.50E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.65E+02	8.47E-01	1.85E-03	1.13E+00	2.59E-02	5.23E+01	4.09E-01	6.41E+01	4.04E-04
EEA2-Comp 1 (0-6")	9.00E-02	9.00E-02	1.01E+00	1.35E+02	1.21E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.34E+02	6.85E-01	1.85E-03	1.13E+00	2.09E-02	5.23E+01	4.09E-01	6.41E+01	3.27E-04
																						Maximum HQ (East Edith Mine Waste Area)	**4.04E-04**
American Kestrel (Insectivorous Birds - Terrestrial)																							
Reference Sites																							
SHGBG-1 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	3.70E+00	1.47E+02	2.02E+00	7.84E-04	3.96E+01	3.10E-02	4.93E-03	1.24E-01	8.14E-02	5.23E+01	4.09E-01	4.12E+01	1.98E-03
SHGBG-2 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	3.70E+00	2.17E+02	2.99E+00	7.84E-04	5.86E+01	4.60E-02	4.93E-03	1.24E-01	1.21E-01	5.23E+01	4.09E-01	4.12E+01	2.93E-03
SHGBG-201 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	3.70E+00	3.12E+02	4.30E+00	7.84E-04	8.43E+01	6.61E-02	4.93E-03	1.24E-01	1.74E-01	5.23E+01	4.09E-01	4.12E+01	4.22E-03
SHGBG-202 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	3.70E+00	2.92E+02	4.02E+00	7.84E-04	7.89E+01	6.18E-02	4.93E-03	1.24E-01	1.62E-01	5.23E+01	4.09E-01	4.12E+01	3.94E-03
West Edith Mine Waste Area																						**Minimum HQ (Reference Sites)**	**1.98E-03**
WEA1-00 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
WEA1-100 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	2.72E+02	3.74E+00	7.84E-04	5.60E+01	4.39E-02	4.93E-03	1.24E-01	1.50E-01	5.23E+01	4.09E-01	4.12E+01	3.65E-03
WEA1-150 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	1.69E+03	2.33E+01	7.84E-04	3.49E+02	2.74E-01	4.93E-03	1.24E-01	9.38E-01	5.23E+01	4.09E-01	4.12E+01	2.28E-02
WEA1-200 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	9.12E+02	1.25E+01	7.84E-04	1.88E+02	1.47E-01	4.93E-03	1.24E-01	5.05E-01	5.23E+01	4.09E-01	4.12E+01	1.23E-02
WEA1-250 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	3.33E+02	4.59E+00	7.84E-04	6.87E+01	5.39E-02	4.93E-03	1.24E-01	1.84E-01	5.23E+01	4.09E-01	4.12E+01	4.48E-03
WEA1-300 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	3.74E+02	5.15E+00	7.84E-04	7.72E+01	6.05E-02	4.93E-03	1.24E-01	2.07E-01	5.23E+01	4.09E-01	4.12E+01	5.03E-03
WEA1-350 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	2.17E+03	2.99E+01	7.84E-04	4.47E+02	3.51E-01	4.93E-03	1.24E-01	1.20E+00	5.23E+01	4.09E-01	4.12E+01	2.92E-02
WEA1-400 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	5.77E+02	7.94E+00	7.84E-04	1.19E+02	9.34E-02	4.93E-03	1.24E-01	3.20E-01	5.23E+01	4.09E-01	4.12E+01	7.76E-03
WEA1-450 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	5.81E+02	7.99E+00	7.84E-04	1.20E+02	9.39E-02	4.93E-03	1.24E-01	3.21E-01	5.23E+01	4.09E-01	4.12E+01	7.81E-03
WEA1-550 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	5.47E+02	7.53E+00	7.84E-04	1.13E+02	8.85E-02	4.93E-03	1.24E-01	3.03E-01	5.23E+01	4.09E-01	4.12E+01	7.36E-03
WEA1-Comp 1 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	2.08E+03	2.87E+01	7.84E-04	4.30E+02	3.37E-01	4.93E-03	1.24E-01	1.15E+00	5.23E+01	4.09E-01	4.12E+01	2.80E-02
WEA1-Comp 2 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	9.53E+02	1.31E+01	7.84E-04	1.97E+02	1.54E-01	4.93E-03	1.24E-01	5.28E-01	5.23E+01	4.09E-01	4.12E+01	1.28E-02
Central Edith Mine Waste Area																						**Maximum HQ (West Edith Mine Waste Area)**	**2.92E-02**
CEA1-3-00 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	1.18E+03	1.63E+01	7.84E-04	2.44E+02	1.91E-01	4.93E-03	1.24E-01	6.54E-01	5.23E+01	4.09E-01	4.12E+01	1.59E-02
CEA1-3-100 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	6.32E+02	8.69E+00	7.84E-04	1.30E+02	1.02E-01	4.93E-03	1.24E-01	3.50E-01	5.23E+01	4.09E-01	4.12E+01	8.50E-03
CEA1-3-150 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	2.38E+03	3.27E+01	7.84E-04	4.90E+02	3.84E-01	4.93E-03	1.24E-01	1.32E+00	5.23E+01	4.09E-01	4.12E+01	3.20E-02
CEA1-3-200 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	5.38E+02	7.41E+00	7.84E-04	1.11E+02	8.71E-02	4.93E-03	1.24E-01	2.98E-01	5.23E+01	4.09E-01	4.12E+01	7.24E-03
CEA1-3-250 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	6.13E+02	8.43E+00	7.84E-04	1.26E+02	9.91E-02	4.93E-03	1.24E-01	3.39E-01	5.23E+01	4.09E-01	4.12E+01	8.24E-03
CEA1-3-300 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	7.96E+02	1.09E+01	7.84E-04	1.64E+02	1.29E-01	4.93E-03	1.24E-01	4.40E-01	5.23E+01	4.09E-01	4.12E+01	1.07E-02
CEA1-3-350 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	3.41E+02	4.69E+00	7.84E-04	7.03E+01	5.51E-02	4.93E-03	1.24E-01	1.89E-01	5.23E+01	4.09E-01	4.12E+01	4.59E-03
CEA1-3-400 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	6.80E+02	9.35E+00	7.84E-04	1.40E+02	1.10E-01	4.93E-03	1.24E-01	3.76E-01	5.23E+01	4.09E-01	4.12E+01	9.14E-03
CEA1-3-450 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	4.55E+02	6.26E+00	7.84E-04	9.38E+01	7.36E-02	4.93E-03	1.24E-01	2.52E-01	5.23E+01	4.09E-01	4.12E+01	6.12E-03
CEA1-3-50 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	5.62E+03	7.73E+01	7.84E-04	1.16E+03	9.08E-01	4.93E-03	1.24E-01	3.11E+00	5.23E+01	4.09E-01	4.12E+01	7.55E-02
CEA1-3-500 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	4.56E+02	6.28E+00	7.84E-04	9.41E+01	7.38E-02	4.93E-03	1.24E-01	2.53E-01	5.23E+01	4.09E-01	4.12E+01	6.13E-03

TABLE C-5C: COPPER DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 5 - EDITH MINE WASTE AREAS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 1.29

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
American Kestrel (Insectivorous Birds - Terrestrial)																							
CEA1-3-550 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	3.86E+02	5.31E+00	7.84E-04	7.96E+01	6.24E-02	4.93E-03	1.24E-01	2.14E-01	5.23E+01	4.09E-01	4.12E+01	5.19E-03
CEA1-3-600 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	6.49E+03	8.93E+01	7.84E-04	1.34E+03	1.05E+00	4.93E-03	1.24E-01	3.59E+00	5.23E+01	4.09E-01	4.12E+01	8.73E-02
CEA1-3-650 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	3.74E+02	5.15E+00	7.84E-04	7.71E+01	6.05E-02	4.93E-03	1.24E-01	2.07E-01	5.23E+01	4.09E-01	4.12E+01	5.03E-03
CEA1-3-700 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	4.82E+02	6.63E+00	7.84E-04	9.93E+01	7.79E-02	4.93E-03	1.24E-01	2.67E-01	5.23E+01	4.09E-01	4.12E+01	6.48E-03
CEA1-3-750 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	4.46E+02	6.14E+00	7.84E-04	9.21E+01	7.22E-02	4.93E-03	1.24E-01	2.47E-01	5.23E+01	4.09E-01	4.12E+01	6.00E-03
CEA1-3-800 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	8.87E+02	1.22E+01	7.84E-04	1.83E+02	1.44E-01	4.93E-03	1.24E-01	4.91E-01	5.23E+01	4.09E-01	4.12E+01	1.19E-02
CEA1-3-850 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	5.44E+02	7.49E+00	7.84E-04	1.12E+02	8.80E-02	4.93E-03	1.24E-01	3.01E-01	5.23E+01	4.09E-01	4.12E+01	7.32E-03
CEA1-3-Comp 1 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	8.05E+02	1.11E+01	7.84E-04	1.66E+02	1.30E-01	4.93E-03	1.24E-01	4.46E-01	5.23E+01	4.09E-01	4.12E+01	1.08E-02
CEA1-3-Comp 2 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	5.26E+02	7.24E+00	7.84E-04	1.09E+02	8.51E-02	4.93E-03	1.24E-01	2.91E-01	5.23E+01	4.09E-01	4.12E+01	7.08E-03
CEA1-3-Comp 3 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	1.15E+03	1.58E+01	7.84E-04	2.37E+02	1.86E-01	4.93E-03	1.24E-01	6.37E-01	5.23E+01	4.09E-01	4.12E+01	1.55E-02
CEA4-00 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	1.31E+03	1.80E+01	7.84E-04	2.69E+02	2.11E-01	4.93E-03	1.24E-01	7.23E-01	5.23E+01	4.09E-01	4.12E+01	1.76E-02
CEA4-20 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	1.86E+03	2.56E+01	7.84E-04	3.83E+02	3.00E-01	4.93E-03	1.24E-01	1.03E+00	5.23E+01	4.09E-01	4.12E+01	2.50E-02
CEA4-40 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	6.33E+02	8.71E+00	7.84E-04	1.30E+02	1.02E-01	4.93E-03	1.24E-01	3.50E-01	5.23E+01	4.09E-01	4.12E+01	8.51E-03
CEA4-Comp (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	8.16E+02	1.12E+01	7.84E-04	1.68E+02	1.32E-01	4.93E-03	1.24E-01	4.51E-01	5.23E+01	4.09E-01	4.12E+01	1.10E-02
East Edith Mine Waste Area																						**Maximum HQ (Central Edith Mine Waste Area)**	**7.33E-02**
EEA1-00 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	4.39E+02	6.04E+00	7.84E-04	9.05E+01	7.09E-02	4.93E-03	1.24E-01	2.43E-01	5.23E+01	4.09E-01	4.12E+01	5.90E-03
EEA1-100 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	3.75E+02	5.16E+00	7.84E-04	7.73E+01	6.06E-02	4.93E-03	1.24E-01	2.08E-01	5.23E+01	4.09E-01	4.12E+01	5.04E-03
EEA1-150 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	2.00E+02	2.75E+00	7.84E-04	4.12E+01	3.23E-02	4.93E-03	1.24E-01	1.11E-01	5.23E+01	4.09E-01	4.12E+01	2.69E-03
EEA1-200 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	3.14E+02	4.33E+00	7.84E-04	6.48E+01	5.09E-02	4.93E-03	1.24E-01	1.74E-01	5.23E+01	4.09E-01	4.12E+01	4.23E-03
EEA1-250 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
EEA1-300 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	3.75E+02	5.15E+00	7.84E-04	7.72E+01	6.06E-02	4.93E-03	1.24E-01	2.07E-01	5.23E+01	4.09E-01	4.12E+01	5.04E-03
EEA1-350 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	6.63E+02	9.13E+00	7.84E-04	1.37E+02	1.07E-01	4.93E-03	1.24E-01	3.67E-01	5.23E+01	4.09E-01	4.12E+01	8.92E-03
EEA1-400 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	6.55E+02	9.01E+00	7.84E-04	1.35E+02	1.06E-01	4.93E-03	1.24E-01	3.62E-01	5.23E+01	4.09E-01	4.12E+01	8.80E-03
EEA1-450 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	4.18E+02	5.75E+00	7.84E-04	8.61E+01	6.76E-02	4.93E-03	1.24E-01	2.31E-01	5.23E+01	4.09E-01	4.12E+01	5.62E-03
EEA1-50 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	5.45E+02	7.50E+00	7.84E-04	1.12E+02	8.81E-02	4.93E-03	1.24E-01	3.02E-01	5.23E+01	4.09E-01	4.12E+01	7.33E-03
EEA1-500 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	4.98E+02	6.85E+00	7.84E-04	1.03E+02	8.05E-02	4.93E-03	1.24E-01	2.76E-01	5.23E+01	4.09E-01	4.12E+01	6.70E-03
EEA1-Comp 1 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	2.75E+02	3.78E+00	7.84E-04	5.67E+01	4.45E-02	4.93E-03	1.24E-01	1.52E-01	5.23E+01	4.09E-01	4.12E+01	3.70E-03
EEA2-00 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
EEA2-50 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	5.19E+02	7.15E+00	7.84E-04	1.07E+02	8.40E-02	4.93E-03	1.24E-01	2.88E-01	5.23E+01	4.09E-01	4.12E+01	6.98E-03
EEA2-100 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	3.95E+02	5.44E+00	7.84E-04	8.15E+01	6.40E-02	4.93E-03	1.24E-01	2.19E-01	5.23E+01	4.09E-01	4.12E+01	5.32E-03
EEA2-150 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	3.68E+02	5.07E+00	7.84E-04	7.59E+01	5.96E-02	4.93E-03	1.24E-01	2.04E-01	5.23E+01	4.09E-01	4.12E+01	4.95E-03
EEA2-200 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	3.94E+02	5.42E+00	7.84E-04	8.12E+01	6.37E-02	4.93E-03	1.24E-01	2.18E-01	5.23E+01	4.09E-01	4.12E+01	5.29E-03
EEA2-250 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
EEA2-300 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	8.01E+02	1.10E+01	7.84E-04	1.65E+02	1.30E-01	4.93E-03	1.24E-01	4.43E-01	5.23E+01	4.09E-01	4.12E+01	1.08E-02
EEA2-Comp 1 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	6.48E+02	8.91E+00	7.84E-04	1.34E+02	1.05E-01	4.93E-03	1.24E-01	3.58E-01	5.23E+01	4.09E-01	4.12E+01	8.71E-03
																						Maximum HQ (East Edith Mine Waste Area)	**1.08E-02**
Meadow Vole (Small Herbivorous Mammal - Terrestrial)																							
Reference Sites																							
SHGBG-1 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	7.79E-01	3.08E+01	1.44E-01	NA	NA	NA	NA	1.13E-04	3.96E+01	4.45E-03	1.00E+00	3.06E-02	4.87E+00	6.32E+02	2.47E-02	6.24E+02	7.80E-03
SHGBG-2 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	7.79E-01	4.57E+01	2.14E-01	NA	NA	NA	NA	1.13E-04	5.86E+01	6.60E-03	1.00E+00	3.06E-02	7.21E+00	6.32E+02	2.47E-02	6.24E+02	1.16E-02
SHGBG-201 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	7.79E-01	6.57E+01	3.08E-01	NA	NA	NA	NA	1.13E-04	8.43E+01	9.49E-03	1.00E+00	3.06E-02	1.04E+01	6.32E+02	2.47E-02	6.24E+02	1.66E-02
SHGBG-202 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	7.79E-01	6.14E+01	2.88E-01	NA	NA	NA	NA	1.13E-04	7.89E+01	8.87E-03	1.00E+00	3.06E-02	9.70E+00	6.32E+02	2.47E-02	6.24E+02	1.56E-02
West Edith Mine Waste Area																						**Minimum HQ (Reference Sites)**	**7.80E-03**
WEA1-00 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
WEA1-100 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	6.34E+01	2.97E-01	NA	NA	NA	NA	1.13E-04	5.60E+01	6.31E-03	1.00E+00	3.06E-02	9.92E+00	6.32E+02	2.47E-02	6.24E+02	1.59E-02
WEA1-150 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	3.95E+02	1.85E+00	NA	NA	NA	NA	1.13E-04	3.49E+02	3.93E-02	1.00E+00	3.06E-02	6.19E+01	6.32E+02	2.47E-02	6.24E+02	9.92E-02
WEA1-200 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	2.13E+02	9.98E-01	NA	NA	NA	NA	1.13E-04	1.88E+02	2.12E-02	1.00E+00	3.06E-02	3.33E+01	6.32E+02	2.47E-02	6.24E+02	5.34E-02
WEA1-250 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	7.77E+01	3.65E-01	NA	NA	NA	NA	1.13E-04	6.87E+01	7.73E-03	1.00E+00	3.06E-02	1.22E+01	6.32E+02	2.47E-02	6.24E+02	1.95E-02
WEA1-300 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	8.74E+01	4.10E-01	NA	NA	NA	NA	1.13E-04	7.72E+01	8.69E-03	1.00E+00	3.06E-02	1.37E+01	6.32E+02	2.47E-02	6.24E+02	2.19E-02
WEA1-350 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	5.06E+02	2.37E+00	NA	NA	NA	NA	1.13E-04	4.47E+02	5.04E-02	1.00E+00	3.06E-02	7.92E+01	6.32E+02	2.47E-02	6.24E+02	1.27E-01
WEA1-400 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	1.35E+02	6.32E-01	NA	NA	NA	NA	1.13E-04	1.19E+02	1.34E-02	1.00E+00	3.06E-02	2.11E+01	6.32E+02	2.47E-02	6.24E+02	3.38E-02
WEA1-450 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	1.35E+02	6.35E-01	NA	NA	NA	NA	1.13E-04	1.20E+02	1.35E-02	1.00E+00	3.06E-02	2.12E+01	6.32E+02	2.47E-02	6.24E+02	3.40E-02

TABLE C-5C: COPPER DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 5 - EDITH MINE WASTE AREAS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 1.29

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Meadow Vole (Small Herbivorous Mammal - Terrestrial)																							
WEA1-550 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	1.28E+02	5.99E-01	NA	NA	NA	NA	1.13E-04	1.13E+02	1.27E-02	1.00E+00	3.06E-02	2.00E+01	6.32E+02	2.47E-02	6.24E+02	3.21E-02
WEA1-Comp 1 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	4.86E+02	2.28E+00	NA	NA	NA	NA	1.13E-04	4.30E+02	4.83E-02	1.00E+00	3.06E-02	7.61E+01	6.32E+02	2.47E-02	6.24E+02	1.22E-01
WEA1-Comp 2 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	2.22E+02	1.04E+00	NA	NA	NA	NA	1.13E-04	1.97E+02	2.21E-02	1.00E+00	3.06E-02	3.48E+01	6.32E+02	2.47E-02	6.24E+02	5.58E-02
Central Edith Mine Waste Area																						**Maximum HQ (West Edith Mine Waste Area)**	**1.27E-01**
CEA1-3-00 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	2.76E+02	1.29E+00	NA	NA	NA	NA	1.13E-04	2.44E+02	2.74E-02	1.00E+00	3.06E-02	4.31E+01	6.32E+02	2.47E-02	6.24E+02	6.92E-02
CEA1-3-100 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	1.47E+02	6.91E-01	NA	NA	NA	NA	1.13E-04	1.30E+02	1.47E-02	1.00E+00	3.06E-02	2.31E+01	6.32E+02	2.47E-02	6.24E+02	3.70E-02
CEA1-3-150 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	5.54E+02	2.60E+00	NA	NA	NA	NA	1.13E-04	4.90E+02	5.51E-02	1.00E+00	3.06E-02	8.68E+01	6.32E+02	2.47E-02	6.24E+02	1.39E-01
CEA1-3-200 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	1.26E+02	5.89E-01	NA	NA	NA	NA	1.13E-04	1.11E+02	1.25E-02	1.00E+00	3.06E-02	1.97E+01	6.32E+02	2.47E-02	6.24E+02	3.15E-02
CEA1-3-250 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	1.43E+02	6.71E-01	NA	NA	NA	NA	1.13E-04	1.26E+02	1.42E-02	1.00E+00	3.06E-02	2.24E+01	6.32E+02	2.47E-02	6.24E+02	3.59E-02
CEA1-3-300 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	1.86E+02	8.70E-01	NA	NA	NA	NA	1.13E-04	1.64E+02	1.85E-02	1.00E+00	3.06E-02	2.90E+01	6.32E+02	2.47E-02	6.24E+02	4.66E-02
CEA1-3-350 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	7.96E+01	3.73E-01	NA	NA	NA	NA	1.13E-04	7.03E+01	7.91E-03	1.00E+00	3.06E-02	1.25E+01	6.32E+02	2.47E-02	6.24E+02	2.00E-02
CEA1-3-400 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	1.59E+02	7.44E-01	NA	NA	NA	NA	1.13E-04	1.40E+02	1.58E-02	1.00E+00	3.06E-02	2.48E+01	6.32E+02	2.47E-02	6.24E+02	3.98E-02
CEA1-3-450 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	1.06E+02	4.98E-01	NA	NA	NA	NA	1.13E-04	9.38E+01	1.06E-02	1.00E+00	3.06E-02	1.66E+01	6.32E+02	2.47E-02	6.24E+02	2.66E-02
CEA1-3-50 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	1.31E+03	6.15E+00	NA	NA	NA	NA	1.13E-04	1.16E+03	1.30E-01	1.00E+00	3.06E-02	2.05E+02	6.32E+02	2.47E-02	6.24E+02	3.29E-01
CEA1-3-500 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	1.06E+02	4.99E-01	NA	NA	NA	NA	1.13E-04	9.41E+01	1.06E-02	1.00E+00	3.06E-02	1.67E+01	6.32E+02	2.47E-02	6.24E+02	2.67E-02
CEA1-3-550 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	9.00E+01	4.22E-01	NA	NA	NA	NA	1.13E-04	7.96E+01	8.95E-03	1.00E+00	3.06E-02	1.41E+01	6.32E+02	2.47E-02	6.24E+02	2.26E-02
CEA1-3-600 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	1.51E+03	7.10E+00	NA	NA	NA	NA	1.13E-04	1.34E+03	1.51E-01	1.00E+00	3.06E-02	2.37E+02	6.32E+02	2.47E-02	6.24E+02	3.80E-01
CEA1-3-650 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	8.73E+01	4.09E-01	NA	NA	NA	NA	1.13E-04	7.71E+01	8.68E-03	1.00E+00	3.06E-02	1.37E+01	6.32E+02	2.47E-02	6.24E+02	2.19E-02
CEA1-3-700 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	1.12E+02	5.27E-01	NA	NA	NA	NA	1.13E-04	9.93E+01	1.12E-02	1.00E+00	3.06E-02	1.76E+01	6.32E+02	2.47E-02	6.24E+02	2.82E-02
CEA1-3-750 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	1.04E+02	4.88E-01	NA	NA	NA	NA	1.13E-04	9.21E+01	1.04E-02	1.00E+00	3.06E-02	1.63E+01	6.32E+02	2.47E-02	6.24E+02	2.61E-02
CEA1-3-800 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	2.07E+02	9.71E-01	NA	NA	NA	NA	1.13E-04	1.83E+02	2.06E-02	1.00E+00	3.06E-02	3.24E+01	6.32E+02	2.47E-02	6.24E+02	5.20E-02
CEA1-3-850 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	1.27E+02	5.95E-01	NA	NA	NA	NA	1.13E-04	1.12E+02	1.26E-02	1.00E+00	3.06E-02	1.99E+01	6.32E+02	2.47E-02	6.24E+02	3.19E-02
CEA1-3-Comp 1 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	1.88E+02	8.81E-01	NA	NA	NA	NA	1.13E-04	1.66E+02	1.87E-02	1.00E+00	3.06E-02	2.94E+01	6.32E+02	2.47E-02	6.24E+02	4.72E-02
CEA1-3-Comp 2 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	1.23E+02	5.76E-01	NA	NA	NA	NA	1.13E-04	1.09E+02	1.22E-02	1.00E+00	3.06E-02	1.92E+01	6.32E+02	2.47E-02	6.24E+02	3.08E-02
CEA1-3-Comp 3 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	2.69E+02	1.26E+00	NA	NA	NA	NA	1.13E-04	2.37E+02	2.67E-02	1.00E+00	3.06E-02	4.20E+01	6.32E+02	2.47E-02	6.24E+02	6.74E-02
CEA4-00 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	3.05E+02	1.43E+00	NA	NA	NA	NA	1.13E-04	2.69E+02	3.03E-02	1.00E+00	3.06E-02	4.77E+01	6.32E+02	2.47E-02	6.24E+02	7.65E-02
CEA4-20 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	4.33E+02	2.03E+00	NA	NA	NA	NA	1.13E-04	3.83E+02	4.31E-02	1.00E+00	3.06E-02	6.78E+01	6.32E+02	2.47E-02	6.24E+02	1.09E-01
CEA4-40 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	1.48E+02	6.92E-01	NA	NA	NA	NA	1.13E-04	1.30E+02	1.47E-02	1.00E+00	3.06E-02	2.31E+01	6.32E+02	2.47E-02	6.24E+02	3.71E-02
CEA4-Comp (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	1.90E+02	8.92E-01	NA	NA	NA	NA	1.13E-04	1.68E+02	1.89E-02	1.00E+00	3.06E-02	2.98E+01	6.32E+02	2.47E-02	6.24E+02	4.78E-02
East Edith Mine Waste Area																						**Maximum HQ (Central Edith Mine Waste Area)**	**3.80E-01**
EEA1-00 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	1.02E+02	4.80E-01	NA	NA	NA	NA	1.13E-04	9.05E+01	1.02E-02	1.00E+00	3.06E-02	1.60E+01	6.32E+02	2.47E-02	6.24E+02	2.57E-02
EEA1-100 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	8.75E+01	4.10E-01	NA	NA	NA	NA	1.13E-04	7.73E+01	8.70E-03	1.00E+00	3.06E-02	1.37E+01	6.32E+02	2.47E-02	6.24E+02	2.20E-02
EEA1-150 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	4.66E+01	2.19E-01	NA	NA	NA	NA	1.13E-04	4.12E+01	4.64E-03	1.00E+00	3.06E-02	7.30E+00	6.32E+02	2.47E-02	6.24E+02	1.17E-02
EEA1-200 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	7.34E+01	3.44E-01	NA	NA	NA	NA	1.13E-04	6.48E+01	7.30E-03	1.00E+00	3.06E-02	1.15E+01	6.32E+02	2.47E-02	6.24E+02	1.84E-02
EEA1-250 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
EEA1-300 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	8.74E+01	4.10E-01	NA	NA	NA	NA	1.13E-04	7.72E+01	8.69E-03	1.00E+00	3.06E-02	1.37E+01	6.32E+02	2.47E-02	6.24E+02	2.19E-02
EEA1-350 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	1.55E+02	7.26E-01	NA	NA	NA	NA	1.13E-04	1.37E+02	1.54E-02	1.00E+00	3.06E-02	2.42E+01	6.32E+02	2.47E-02	6.24E+02	3.88E-02
EEA1-400 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	1.53E+02	7.16E-01	NA	NA	NA	NA	1.13E-04	1.35E+02	1.52E-02	1.00E+00	3.06E-02	2.39E+01	6.32E+02	2.47E-02	6.24E+02	3.83E-02
EEA1-450 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	9.75E+01	4.57E-01	NA	NA	NA	NA	1.13E-04	8.61E+01	9.69E-03	1.00E+00	3.06E-02	1.53E+01	6.32E+02	2.47E-02	6.24E+02	2.45E-02
EEA1-50 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	1.27E+02	5.96E-01	NA	NA	NA	NA	1.13E-04	1.12E+02	1.26E-02	1.00E+00	3.06E-02	1.99E+01	6.32E+02	2.47E-02	6.24E+02	3.19E-02
EEA1-500 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	1.16E+02	5.45E-01	NA	NA	NA	NA	1.13E-04	1.03E+02	1.16E-02	1.00E+00	3.06E-02	1.82E+01	6.32E+02	2.47E-02	6.24E+02	2.92E-02
EEA1-Comp 1 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	6.41E+01	3.01E-01	NA	NA	NA	NA	1.13E-04	5.67E+01	6.38E-03	1.00E+00	3.06E-02	1.00E+01	6.32E+02	2.47E-02	6.24E+02	1.61E-02
EEA2-00 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
EEA2-50 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	1.21E+02	5.68E-01	NA	NA	NA	NA	1.13E-04	1.07E+02	1.21E-02	1.00E+00	3.06E-02	1.90E+01	6.32E+02	2.47E-02	6.24E+02	3.04E-02
EEA2-100 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	9.23E+01	4.33E-01	NA	NA	NA	NA	1.13E-04	8.15E+01	9.18E-03	1.00E+00	3.06E-02	1.44E+01	6.32E+02	2.47E-02	6.24E+02	2.32E-02
EEA2-150 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	8.59E+01	4.03E-01	NA	NA	NA	NA	1.13E-04	7.59E+01	8.55E-03	1.00E+00	3.06E-02	1.34E+01	6.32E+02	2.47E-02	6.24E+02	2.16E-02
EEA2-200 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	9.18E+01	4.31E-01	NA	NA	NA	NA	1.13E-04	8.12E+01	9.13E-03	1.00E+00	3.06E-02	1.44E+01	6.32E+02	2.47E-02	6.24E+02	2.30E-02
EEA2-250 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
EEA2-300 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	1.87E+02	8.76E-01	NA	NA	NA	NA	1.13E-04	1.65E+02	1.86E-02	1.00E+00	3.06E-02	2.92E+01	6.32E+02	2.47E-02	6.24E+02	4.69E-02
EEA2-Comp 1 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	1.51E+02	7.08E-01	NA	NA	NA	NA	1.13E-04	1.34E+02	1.50E-02	1.00E+00	3.06E-02	2.36E+01	6.32E+02	2.47E-02	6.24E+02	3.79E-02
																						Maximum HQ (East Edith Mine Waste Area)	**4.69E-02**

TABLE C-5C: COPPER DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 5 - EDITH MINE WASTE AREAS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 1.29

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
White-Tailed Deer (Large Herbivorous Mammal - Terrestrial)																							
Reference Sites																							
SHGBG-1 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	7.79E-01	3.08E+01	4.41E+01	NA	NA	NA	NA	2.86E-02	3.96E+01	1.13E+00	7.22E-03	1.35E+02	2.42E-03	6.32E+02	2.47E-02	3.77E+02	6.42E-06
SHGBG-2 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	7.79E-01	4.57E+01	6.54E+01	NA	NA	NA	NA	2.86E-02	5.86E+01	1.68E+00	7.22E-03	1.35E+02	3.58E-03	6.32E+02	2.47E-02	3.77E+02	9.51E-06
SHGBG-201 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	7.79E-01	6.57E+01	9.40E+01	NA	NA	NA	NA	2.86E-02	8.43E+01	2.41E+00	7.22E-03	1.35E+02	5.16E-03	6.32E+02	2.47E-02	3.77E+02	1.37E-05
SHGBG-202 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	7.79E-01	6.14E+01	8.79E+01	NA	NA	NA	NA	2.86E-02	7.89E+01	2.26E+00	7.22E-03	1.35E+02	4.82E-03	6.32E+02	2.47E-02	3.77E+02	1.28E-05
West Edith Mine Waste Area																						**Minimum HQ (Reference Sites)**	**6.42E-06**
WEA1-00 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
WEA1-100 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	6.34E+01	9.08E+01	NA	NA	NA	NA	2.86E-02	5.60E+01	1.60E+00	7.22E-03	1.35E+02	4.94E-03	6.32E+02	2.47E-02	3.77E+02	1.31E-05
WEA1-150 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	3.95E+02	5.66E+02	NA	NA	NA	NA	2.86E-02	3.49E+02	1.00E+01	7.22E-03	1.35E+02	3.08E-02	6.32E+02	2.47E-02	3.77E+02	8.17E-05
WEA1-200 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	2.13E+02	3.05E+02	NA	NA	NA	NA	2.86E-02	1.88E+02	5.38E+00	7.22E-03	1.35E+02	1.66E-02	6.32E+02	2.47E-02	3.77E+02	4.40E-05
WEA1-250 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	7.77E+01	1.11E+02	NA	NA	NA	NA	2.86E-02	6.87E+01	1.97E+00	7.22E-03	1.35E+02	6.06E-03	6.32E+02	2.47E-02	3.77E+02	1.61E-05
WEA1-300 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	8.74E+01	1.25E+02	NA	NA	NA	NA	2.86E-02	7.72E+01	2.21E+00	7.22E-03	1.35E+02	6.80E-03	6.32E+02	2.47E-02	3.77E+02	1.81E-05
WEA1-350 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	5.06E+02	7.25E+02	NA	NA	NA	NA	2.86E-02	4.47E+02	1.28E+01	7.22E-03	1.35E+02	3.94E-02	6.32E+02	2.47E-02	3.77E+02	1.05E-04
WEA1-400 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	1.35E+02	1.93E+02	NA	NA	NA	NA	2.86E-02	1.19E+02	3.41E+00	7.22E-03	1.35E+02	1.05E-02	6.32E+02	2.47E-02	3.77E+02	2.78E-05
WEA1-450 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	1.35E+02	1.94E+02	NA	NA	NA	NA	2.86E-02	1.20E+02	3.43E+00	7.22E-03	1.35E+02	1.06E-02	6.32E+02	2.47E-02	3.77E+02	2.80E-05
WEA1-550 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	1.28E+02	1.83E+02	NA	NA	NA	NA	2.86E-02	1.13E+02	3.23E+00	7.22E-03	1.35E+02	9.95E-03	6.32E+02	2.47E-02	3.77E+02	2.64E-05
WEA1-Comp 1 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	4.86E+02	6.96E+02	NA	NA	NA	NA	2.86E-02	4.30E+02	1.23E+01	7.22E-03	1.35E+02	3.79E-02	6.32E+02	2.47E-02	3.77E+02	1.00E-04
WEA1-Comp 2 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	2.22E+02	3.18E+02	NA	NA	NA	NA	2.86E-02	1.97E+02	5.63E+00	7.22E-03	1.35E+02	1.73E-02	6.32E+02	2.47E-02	3.77E+02	4.60E-05
Central Edith Mine Waste Area																						**Maximum HQ (West Edith Mine Waste Area)**	**1.05E-04**
CEA1-3-00 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	2.76E+02	3.95E+02	NA	NA	NA	NA	2.86E-02	2.44E+02	6.98E+00	7.22E-03	1.35E+02	2.15E-02	6.32E+02	2.47E-02	3.77E+02	5.70E-05
CEA1-3-100 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	1.47E+02	2.11E+02	NA	NA	NA	NA	2.86E-02	1.30E+02	3.73E+00	7.22E-03	1.35E+02	1.15E-02	6.32E+02	2.47E-02	3.77E+02	3.05E-05
CEA1-3-150 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	5.54E+02	7.94E+02	NA	NA	NA	NA	2.86E-02	4.90E+02	1.40E+01	7.22E-03	1.35E+02	4.32E-02	6.32E+02	2.47E-02	3.77E+02	1.15E-04
CEA1-3-200 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	1.26E+02	1.80E+02	NA	NA	NA	NA	2.86E-02	1.11E+02	3.18E+00	7.22E-03	1.35E+02	9.79E-03	6.32E+02	2.47E-02	3.77E+02	2.60E-05
CEA1-3-250 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	1.43E+02	2.05E+02	NA	NA	NA	NA	2.86E-02	1.26E+02	3.62E+00	7.22E-03	1.35E+02	1.11E-02	6.32E+02	2.47E-02	3.77E+02	2.96E-05
CEA1-3-300 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	1.86E+02	2.66E+02	NA	NA	NA	NA	2.86E-02	1.64E+02	4.70E+00	7.22E-03	1.35E+02	1.45E-02	6.32E+02	2.47E-02	3.77E+02	3.84E-05
CEA1-3-350 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	7.96E+01	1.14E+02	NA	NA	NA	NA	2.86E-02	7.03E+01	2.01E+00	7.22E-03	1.35E+02	6.20E-03	6.32E+02	2.47E-02	3.77E+02	1.64E-05
CEA1-3-400 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	1.59E+02	2.27E+02	NA	NA	NA	NA	2.86E-02	1.40E+02	4.01E+00	7.22E-03	1.35E+02	1.24E-02	6.32E+02	2.47E-02	3.77E+02	3.28E-05
CEA1-3-450 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	1.06E+02	1.52E+02	NA	NA	NA	NA	2.86E-02	9.38E+01	2.68E+00	7.22E-03	1.35E+02	8.26E-03	6.32E+02	2.47E-02	3.77E+02	2.19E-05
CEA1-3-50 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	1.31E+03	1.88E+03	NA	NA	NA	NA	2.86E-02	1.16E+03	3.32E+01	7.22E-03	1.35E+02	1.02E-01	6.32E+02	2.47E-02	3.77E+02	2.71E-04
CEA1-3-500 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	1.06E+02	1.52E+02	NA	NA	NA	NA	2.86E-02	9.41E+01	2.69E+00	7.22E-03	1.35E+02	8.29E-03	6.32E+02	2.47E-02	3.77E+02	2.20E-05
CEA1-3-550 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	9.00E+01	1.29E+02	NA	NA	NA	NA	2.86E-02	7.96E+01	2.28E+00	7.22E-03	1.35E+02	7.01E-03	6.32E+02	2.47E-02	3.77E+02	1.86E-05
CEA1-3-600 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	1.51E+03	2.17E+03	NA	NA	NA	NA	2.86E-02	1.34E+03	3.83E+01	7.22E-03	1.35E+02	1.18E-01	6.32E+02	2.47E-02	3.77E+02	3.13E-04
CEA1-3-650 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	8.73E+01	1.25E+02	NA	NA	NA	NA	2.86E-02	7.71E+01	2.21E+00	7.22E-03	1.35E+02	6.80E-03	6.32E+02	2.47E-02	3.77E+02	1.80E-05
CEA1-3-700 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	1.12E+02	1.61E+02	NA	NA	NA	NA	2.86E-02	9.93E+01	2.84E+00	7.22E-03	1.35E+02	8.76E-03	6.32E+02	2.47E-02	3.77E+02	2.32E-05
CEA1-3-750 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	1.04E+02	1.49E+02	NA	NA	NA	NA	2.86E-02	9.21E+01	2.64E+00	7.22E-03	1.35E+02	8.11E-03	6.32E+02	2.47E-02	3.77E+02	2.15E-05
CEA1-3-800 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	2.07E+02	2.96E+02	NA	NA	NA	NA	2.86E-02	1.83E+02	5.24E+00	7.22E-03	1.35E+02	1.61E-02	6.32E+02	2.47E-02	3.77E+02	4.28E-05
CEA1-3-850 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	1.27E+02	1.82E+02	NA	NA	NA	NA	2.86E-02	1.12E+02	3.21E+00	7.22E-03	1.35E+02	9.89E-03	6.32E+02	2.47E-02	3.77E+02	2.62E-05
CEA1-3-Comp 1 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	1.88E+02	2.69E+02	NA	NA	NA	NA	2.86E-02	1.66E+02	4.75E+00	7.22E-03	1.35E+02	1.46E-02	6.32E+02	2.47E-02	3.77E+02	3.88E-05
CEA1-3-Comp 2 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	1.23E+02	1.76E+02	NA	NA	NA	NA	2.86E-02	1.09E+02	3.11E+00	7.22E-03	1.35E+02	9.56E-03	6.32E+02	2.47E-02	3.77E+02	2.54E-05
CEA1-3-Comp 3 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	2.69E+02	3.85E+02	NA	NA	NA	NA	2.86E-02	2.37E+02	6.80E+00	7.22E-03	1.35E+02	2.09E-02	6.32E+02	2.47E-02	3.77E+02	5.55E-05
CEA4-00 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	3.05E+02	4.36E+02	NA	NA	NA	NA	2.86E-02	2.69E+02	7.71E+00	7.22E-03	1.35E+02	2.37E-02	6.32E+02	2.47E-02	3.77E+02	6.30E-05
CEA4-20 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	4.33E+02	6.20E+02	NA	NA	NA	NA	2.86E-02	3.83E+02	1.10E+01	7.22E-03	1.35E+02	3.37E-02	6.32E+02	2.47E-02	3.77E+02	8.95E-05
CEA4-40 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	1.48E+02	2.11E+02	NA	NA	NA	NA	2.86E-02	1.30E+02	3.74E+00	7.22E-03	1.35E+02	1.15E-02	6.32E+02	2.47E-02	3.77E+02	3.05E-05
CEA4-Comp (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	1.90E+02	2.72E+02	NA	NA	NA	NA	2.86E-02	1.68E+02	4.81E+00	7.22E-03	1.35E+02	1.48E-02	6.32E+02	2.47E-02	3.77E+02	3.93E-05
East Edith Mine Waste Area																						**Maximum HQ (Central Edith Mine Waste Area)**	**3.13E-04**
EEA1-00 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	1.02E+02	1.47E+02	NA	NA	NA	NA	2.86E-02	9.05E+01	2.59E+00	7.22E-03	1.35E+02	7.97E-03	6.32E+02	2.47E-02	3.77E+02	2.12E-05
EEA1-100 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	8.75E+01	1.25E+02	NA	NA	NA	NA	2.86E-02	7.73E+01	2.21E+00	7.22E-03	1.35E+02	6.81E-03	6.32E+02	2.47E-02	3.77E+02	1.81E-05
EEA1-150 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	4.66E+01	6.67E+01	NA	NA	NA	NA	2.86E-02	4.12E+01	1.18E+00	7.22E-03	1.35E+02	3.63E-03	6.32E+02	2.47E-02	3.77E+02	9.64E-06
EEA1-200 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	7.34E+01	1.05E+02	NA	NA	NA	NA	2.86E-02	6.48E+01	1.86E+00	7.22E-03	1.35E+02	5.71E-03	6.32E+02	2.47E-02	3.77E+02	1.52E-05
EEA1-250 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
EEA1-300 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	8.74E+01	1.25E+02	NA	NA	NA	NA	2.86E-02	7.72E+01	2.21E+00	7.22E-03	1.35E+02	6.81E-03	6.32E+02	2.47E-02	3.77E+02	1.81E-05
EEA1-350 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	1.55E+02	2.22E+02	NA	NA	NA	NA	2.86E-02	1.37E+02	3.92E+00	7.22E-03	1.35E+02	1.21E-02	6.32E+02	2.47E-02	3.77E+02	3.20E-05
EEA1-400 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	1.53E+02	2.19E+02	NA	NA	NA	NA	2.86E-02	1.35E+02	3.86E+00	7.22E-03	1.35E+02	1.19E-02	6.32E+02	2.47E-02	3.77E+02	3.16E-05
EEA1-450 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	9.75E+01	1.40E+02	NA	NA	NA	NA	2.86E-02	8.61E+01	2.47E+00	7.22E-03	1.35E+02	7.59E-03	6.32E+02	2.47E-02	3.77E+02	2.01E-05
EEA1-50 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	1.27E+02	1.82E+02	NA	NA	NA	NA	2.86E-02	1.12E+02	3.22E+00	7.22E-03	1.35E+02	9.90E-03	6.32E+02	2.47E-02	3.77E+02	2.63E-05
EEA1-500 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	1.16E+02	1.66E+02	NA	NA	NA	NA	2.86E-02	1.03E+02	2.94E+00	7.22E-03	1.35E+02	9.05E-03	6.32E+02	2.47E-02	3.77E+02	2.40E-05
EEA1-Comp 1 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	6.41E+01	9.18E+01	NA	NA	NA	NA	2.86E-02	5.67E+01	1.62E+00	7.22E-03	1.35E+02	5.00E-03	6.32E+02	2.47E-02	3.77E+02	1.33E-05

TABLE C-5C: COPPER DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 5 - EDITH MINE WASTE AREAS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 1.29

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
White-Tailed Deer (Large Herbivorous Mammal - Terrestrial)																							
EEA2-00 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
EEA2-50 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	1.21E+02	1.74E+02	NA	NA	NA	NA	2.86E-02	1.07E+02	3.07E+00	7.22E-03	1.35E+02	9.44E-03	6.32E+02	2.47E-02	3.77E+02	2.50E-05
EEA2-100 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	9.23E+01	1.32E+02	NA	NA	NA	NA	2.86E-02	8.15E+01	2.33E+00	7.22E-03	1.35E+02	7.19E-03	6.32E+02	2.47E-02	3.77E+02	1.91E-05
EEA2-150 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	8.59E+01	1.23E+02	NA	NA	NA	NA	2.86E-02	7.59E+01	2.17E+00	7.22E-03	1.35E+02	6.69E-03	6.32E+02	2.47E-02	3.77E+02	1.78E-05
EEA2-200 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	9.18E+01	1.31E+02	NA	NA	NA	NA	2.86E-02	8.12E+01	2.32E+00	7.22E-03	1.35E+02	7.15E-03	6.32E+02	2.47E-02	3.77E+02	1.90E-05
EEA2-250 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
EEA2-300 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	1.87E+02	2.68E+02	NA	NA	NA	NA	2.86E-02	1.65E+02	4.73E+00	7.22E-03	1.35E+02	1.46E-02	6.32E+02	2.47E-02	3.77E+02	3.86E-05
EEA2-Comp 1 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	1.51E+02	2.16E+02	NA	NA	NA	NA	2.86E-02	1.34E+02	3.82E+00	7.22E-03	1.35E+02	1.18E-02	6.32E+02	2.47E-02	3.77E+02	3.12E-05
																						Maximum HQ (East Edith Mine Waste Area)	**3.86E-05**
Red Fox (Carnivorous Mammal - Terrestrial)																							
Reference Sites																							
SHGBG-1 (0-6")	1.72E-01	1.72E-01	6.61E-01	2.61E+01	4.48E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.96E+01	1.90E-01	9.53E-04	4.54E+00	9.82E-04	6.32E+02	2.47E-02	4.62E+02	2.13E-06
SHGBG-2 (0-6")	1.72E-01	1.72E-01	6.61E-01	3.87E+01	6.65E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.86E+01	2.82E-01	9.53E-04	4.54E+00	1.46E-03	6.32E+02	2.47E-02	4.62E+02	3.15E-06
SHGBG-201 (0-6")	1.72E-01	1.72E-01	6.61E-01	5.57E+01	9.56E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	8.43E+01	4.05E-01	9.53E-04	4.54E+00	2.09E-03	6.32E+02	2.47E-02	4.62E+02	4.53E-06
SHGBG-202 (0-6")	1.72E-01	1.72E-01	6.61E-01	5.21E+01	8.94E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	7.89E+01	3.79E-01	9.53E-04	4.54E+00	1.96E-03	6.32E+02	2.47E-02	4.62E+02	4.24E-06
West Edith Mine Waste Area																						**Minimum HQ (Reference Sites)**	**2.13E-06**
WEA1-00 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
WEA1-100 (0-6")	1.72E-01	1.72E-01	1.01E+00	5.66E+01	9.71E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.60E+01	2.69E-01	9.53E-04	4.54E+00	2.10E-03	6.32E+02	2.47E-02	4.62E+02	4.54E-06
WEA1-150 (0-6")	1.72E-01	1.72E-01	1.01E+00	3.53E+02	6.06E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.49E+02	1.68E+00	9.53E-04	4.54E+00	1.31E-02	6.32E+02	2.47E-02	4.62E+02	2.83E-05
WEA1-200 (0-6")	1.72E-01	1.72E-01	1.01E+00	1.90E+02	3.26E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.88E+02	9.03E-01	9.53E-04	4.54E+00	7.04E-03	6.32E+02	2.47E-02	4.62E+02	1.52E-05
WEA1-250 (0-6")	1.72E-01	1.72E-01	1.01E+00	6.94E+01	1.19E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	6.87E+01	3.30E-01	9.53E-04	4.54E+00	2.57E-03	6.32E+02	2.47E-02	4.62E+02	5.57E-06
WEA1-300 (0-6")	1.72E-01	1.72E-01	1.01E+00	7.80E+01	1.34E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	7.72E+01	3.71E-01	9.53E-04	4.54E+00	2.89E-03	6.32E+02	2.47E-02	4.62E+02	6.25E-06
WEA1-350 (0-6")	1.72E-01	1.72E-01	1.01E+00	4.52E+02	7.76E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.47E+02	2.15E+00	9.53E-04	4.54E+00	1.67E-02	6.32E+02	2.47E-02	4.62E+02	3.62E-05
WEA1-400 (0-6")	1.72E-01	1.72E-01	1.01E+00	1.20E+02	2.06E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.19E+02	5.72E-01	9.53E-04	4.54E+00	4.45E-03	6.32E+02	2.47E-02	4.62E+02	9.64E-06
WEA1-450 (0-6")	1.72E-01	1.72E-01	1.01E+00	1.21E+02	2.07E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.20E+02	5.75E-01	9.53E-04	4.54E+00	4.48E-03	6.32E+02	2.47E-02	4.62E+02	9.70E-06
WEA1-550 (0-6")	1.72E-01	1.72E-01	1.01E+00	1.14E+02	1.96E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.13E+02	5.42E-01	9.53E-04	4.54E+00	4.22E-03	6.32E+02	2.47E-02	4.62E+02	9.14E-06
WEA1-Comp 1 (0-6")	1.72E-01	1.72E-01	1.01E+00	4.34E+02	7.45E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.30E+02	2.06E+00	9.53E-04	4.54E+00	1.61E-02	6.32E+02	2.47E-02	4.62E+02	3.48E-05
WEA1-Comp 2 (0-6")	1.72E-01	1.72E-01	1.01E+00	1.99E+02	3.41E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.97E+02	9.44E-01	9.53E-04	4.54E+00	7.35E-03	6.32E+02	2.47E-02	4.62E+02	1.59E-05
Central Edith Mine Waste Area																						**Maximum HQ (West Edith Mine Waste Area)**	**3.62E-05**
CEA1-3-00 (0-6")	1.72E-01	1.72E-01	1.01E+00	2.46E+02	4.22E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.44E+02	1.17E+00	9.53E-04	4.54E+00	9.12E-03	6.32E+02	2.47E-02	4.62E+02	1.97E-05
CEA1-3-100 (0-6")	1.72E-01	1.72E-01	1.01E+00	1.32E+02	2.26E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.30E+02	6.26E-01	9.53E-04	4.54E+00	4.87E-03	6.32E+02	2.47E-02	4.62E+02	1.06E-05
CEA1-3-150 (0-6")	1.72E-01	1.72E-01	1.01E+00	4.95E+02	8.49E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.90E+02	2.35E+00	9.53E-04	4.54E+00	1.83E-02	6.32E+02	2.47E-02	4.62E+02	3.97E-05
CEA1-3-200 (0-6")	1.72E-01	1.72E-01	1.01E+00	1.12E+02	1.92E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.11E+02	5.33E-01	9.53E-04	4.54E+00	4.15E-03	6.32E+02	2.47E-02	4.62E+02	8.99E-06
CEA1-3-250 (0-6")	1.72E-01	1.72E-01	1.01E+00	1.28E+02	2.19E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.26E+02	6.07E-01	9.53E-04	4.54E+00	4.73E-03	6.32E+02	2.47E-02	4.62E+02	1.02E-05
CEA1-3-300 (0-6")	1.72E-01	1.72E-01	1.01E+00	1.66E+02	2.84E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.64E+02	7.88E-01	9.53E-04	4.54E+00	6.14E-03	6.32E+02	2.47E-02	4.62E+02	1.33E-05
CEA1-3-350 (0-6")	1.72E-01	1.72E-01	1.01E+00	7.10E+01	1.22E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	7.03E+01	3.38E-01	9.53E-04	4.54E+00	2.63E-03	6.32E+02	2.47E-02	4.62E+02	5.70E-06
CEA1-3-400 (0-6")	1.72E-01	1.72E-01	1.01E+00	1.42E+02	2.43E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.40E+02	6.73E-01	9.53E-04	4.54E+00	5.24E-03	6.32E+02	2.47E-02	4.62E+02	1.14E-05
CEA1-3-450 (0-6")	1.72E-01	1.72E-01	1.01E+00	9.47E+01	1.63E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	9.38E+01	4.50E-01	9.53E-04	4.54E+00	3.51E-03	6.32E+02	2.47E-02	4.62E+02	7.60E-06
CEA1-3-50 (0-6")	1.72E-01	1.72E-01	1.01E+00	1.17E+03	2.01E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.16E+03	5.56E+00	9.53E-04	4.54E+00	4.33E-02	6.32E+02	2.47E-02	4.62E+02	9.38E-05
CEA1-3-500 (0-6")	1.72E-01	1.72E-01	1.01E+00	9.50E+01	1.63E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	9.41E+01	4.52E-01	9.53E-04	4.54E+00	3.52E-03	6.32E+02	2.47E-02	4.62E+02	7.62E-06
CEA1-3-550 (0-6")	1.72E-01	1.72E-01	1.01E+00	8.04E+01	1.38E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	7.96E+01	3.82E-01	9.53E-04	4.54E+00	2.98E-03	6.32E+02	2.47E-02	4.62E+02	6.44E-06
CEA1-3-600 (0-6")	1.72E-01	1.72E-01	1.01E+00	1.35E+03	2.32E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.34E+03	6.43E+00	9.53E-04	4.54E+00	5.01E-02	6.32E+02	2.47E-02	4.62E+02	1.08E-04
CEA1-3-650 (0-6")	1.72E-01	1.72E-01	1.01E+00	7.79E+01	1.34E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	7.71E+01	3.70E-01	9.53E-04	4.54E+00	2.89E-03	6.32E+02	2.47E-02	4.62E+02	6.25E-06
CEA1-3-700 (0-6")	1.72E-01	1.72E-01	1.01E+00	1.00E+02	1.72E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	9.93E+01	4.77E-01	9.53E-04	4.54E+00	3.72E-03	6.32E+02	2.47E-02	4.62E+02	8.05E-06
CEA1-3-750 (0-6")	1.72E-01	1.72E-01	1.01E+00	9.30E+01	1.60E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	9.21E+01	4.42E-01	9.53E-04	4.54E+00	3.44E-03	6.32E+02	2.47E-02	4.62E+02	7.46E-06
CEA1-3-800 (0-6")	1.72E-01	1.72E-01	1.01E+00	1.85E+02	3.17E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.83E+02	8.79E-01	9.53E-04	4.54E+00	6.85E-03	6.32E+02	2.47E-02	4.62E+02	1.48E-05
CEA1-3-850 (0-6")	1.72E-01	1.72E-01	1.01E+00	1.13E+02	1.95E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.12E+02	5.39E-01	9.53E-04	4.54E+00	4.20E-03	6.32E+02	2.47E-02	4.62E+02	9.09E-06
CEA1-3-Comp 1 (0-6")	1.72E-01	1.72E-01	1.01E+00	1.68E+02	2.88E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.66E+02	7.97E-01	9.53E-04	4.54E+00	6.21E-03	6.32E+02	2.47E-02	4.62E+02	1.34E-05
CEA1-3-Comp 2 (0-6")	1.72E-01	1.72E-01	1.01E+00	1.10E+02	1.88E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.09E+02	5.21E-01	9.53E-04	4.54E+00	4.06E-03	6.32E+02	2.47E-02	4.62E+02	8.79E-06
CEA1-3-Comp 3 (0-6")	1.72E-01	1.72E-01	1.01E+00	2.40E+02	4.12E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.37E+02	1.14E+00	9.53E-04	4.54E+00	8.89E-03	6.32E+02	2.47E-02	4.62E+02	1.92E-05

TABLE C-5C: COPPER DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 5 - EDITH MINE WASTE AREAS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **1.29**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Red Fox (Carnivorous Mammal - Terrestria	1.72E-01	1.72E-01	1.01E+00	#N/A	#N/A	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	#N/A	#N/A	9.53E-04	4.54E+00	#N/A	6.32E+02	2.47E-02	4.62E+02	#N/A
CEA4-00 (0-6")																							
CEA4-20 (0-6")	1.72E-01	1.72E-01	1.01E+00	3.87E+02	6.64E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.83E+02	1.84E+00	9.53E-04	4.54E+00	1.43E-02	6.32E+02	2.47E-02	4.62E+02	3.10E-05
CEA4-40 (0-6")	1.72E-01	1.72E-01	1.01E+00	1.32E+02	2.26E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.30E+02	6.27E-01	9.53E-04	4.54E+00	4.88E-03	6.32E+02	2.47E-02	4.62E+02	1.06E-05
CEA4-Comp (0-6")	1.72E-01	1.72E-01	1.01E+00	1.70E+02	2.91E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.68E+02	8.08E-01	9.53E-04	4.54E+00	6.29E-03	6.32E+02	2.47E-02	4.62E+02	1.36E-05
East Edith Mine Waste Area																						**Maximum HQ (Central Edith Mine Waste Area)**	**#N/A**
EEA1-00 (0-6")	1.72E-01	1.72E-01	1.01E+00	9.14E+01	1.57E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	9.05E+01	4.34E-01	9.53E-04	4.54E+00	3.38E-03	6.32E+02	2.47E-02	4.62E+02	7.33E-06
EEA1-100 (0-6")	1.72E-01	1.72E-01	1.01E+00	7.81E+01	1.34E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	7.73E+01	3.71E-01	9.53E-04	4.54E+00	2.89E-03	6.32E+02	2.47E-02	4.62E+02	6.26E-06
EEA1-150 (0-6")	1.72E-01	1.72E-01	1.01E+00	4.16E+01	7.14E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.12E+01	1.98E-01	9.53E-04	4.54E+00	1.54E-03	6.32E+02	2.47E-02	4.62E+02	3.34E-06
EEA1-200 (0-6")	1.72E-01	1.72E-01	1.01E+00	6.55E+01	1.12E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	6.48E+01	3.11E-01	9.53E-04	4.54E+00	2.43E-03	6.32E+02	2.47E-02	4.62E+02	5.25E-06
EEA1-250 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
EEA1-300 (0-6")	1.72E-01	1.72E-01	1.01E+00	7.80E+01	1.34E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	7.72E+01	3.71E-01	9.53E-04	4.54E+00	2.89E-03	6.32E+02	2.47E-02	4.62E+02	6.26E-06
EEA1-350 (0-6")	1.72E-01	1.72E-01	1.01E+00	1.38E+02	2.37E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.37E+02	6.57E-01	9.53E-04	4.54E+00	5.12E-03	6.32E+02	2.47E-02	4.62E+02	1.11E-05
EEA1-400 (0-6")	1.72E-01	1.72E-01	1.01E+00	1.36E+02	2.34E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.35E+02	6.48E-01	9.53E-04	4.54E+00	5.05E-03	6.32E+02	2.47E-02	4.62E+02	1.09E-05
EEA1-450 (0-6")	1.72E-01	1.72E-01	1.01E+00	8.70E+01	1.49E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	8.61E+01	4.14E-01	9.53E-04	4.54E+00	3.22E-03	6.32E+02	2.47E-02	4.62E+02	6.98E-06
EEA1-50 (0-6")	1.72E-01	1.72E-01	1.01E+00	1.14E+02	1.95E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.12E+02	5.40E-01	9.53E-04	4.54E+00	4.21E-03	6.32E+02	2.47E-02	4.62E+02	9.10E-06
EEA1-500 (0-6")	1.72E-01	1.72E-01	1.01E+00	1.04E+02	1.78E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.03E+02	4.93E-01	9.53E-04	4.54E+00	3.84E-03	6.32E+02	2.47E-02	4.62E+02	8.32E-06
EEA1-Comp 1 (0-6")	1.72E-01	1.72E-01	1.01E+00	5.73E+01	9.82E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.67E+01	2.72E-01	9.53E-04	4.54E+00	2.12E-03	6.32E+02	2.47E-02	4.62E+02	4.59E-06
EEA2-00 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
EEA2-50 (0-6")	1.72E-01	1.72E-01	1.01E+00	1.08E+02	1.86E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.07E+02	5.14E-01	9.53E-04	4.54E+00	4.01E-03	6.32E+02	2.47E-02	4.62E+02	8.68E-06
EEA2-100 (0-6")	1.72E-01	1.72E-01	1.01E+00	8.24E+01	1.41E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	8.15E+01	3.92E-01	9.53E-04	4.54E+00	3.05E-03	6.32E+02	2.47E-02	4.62E+02	6.60E-06
EEA2-150 (0-6")	1.72E-01	1.72E-01	1.01E+00	7.67E+01	1.32E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	7.59E+01	3.65E-01	9.53E-04	4.54E+00	2.84E-03	6.32E+02	2.47E-02	4.62E+02	6.15E-06
EEA2-200 (0-6")	1.72E-01	1.72E-01	1.01E+00	8.20E+01	1.41E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	8.12E+01	3.90E-01	9.53E-04	4.54E+00	3.04E-03	6.32E+02	2.47E-02	4.62E+02	6.57E-06
EEA2-250 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
EEA2-300 (0-6")	1.72E-01	1.72E-01	1.01E+00	1.67E+02	2.86E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.65E+02	7.93E-01	9.53E-04	4.54E+00	6.18E-03	6.32E+02	2.47E-02	4.62E+02	1.34E-05
EEA2-Comp 1 (0-6")	1.72E-01	1.72E-01	1.01E+00	1.35E+02	2.31E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.34E+02	6.41E-01	9.53E-04	4.54E+00	5.00E-03	6.32E+02	2.47E-02	4.62E+02	1.08E-05
																						Maximum HQ (East Edith Mine Waste Area)	**1.34E-05**
Masked Shrew (Omnivorous Mammal - Terrestrial, Wetland)																							
Reference Sites																							
SHGBG-1 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	3.70E+00	1.47E+02	1.24E+00	1.10E-03	3.96E+01	4.35E-02	1.00E+00	5.50E-03	2.34E+02	6.32E+02	2.47E-02	6.91E+02	3.38E-01
SHGBG-2 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	3.70E+00	2.17E+02	1.84E+00	1.10E-03	5.86E+01	6.45E-02	1.00E+00	5.50E-03	3.46E+02	6.32E+02	2.47E-02	6.91E+02	5.01E-01
SHGBG-201 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	3.70E+00	3.12E+02	2.65E+00	1.10E-03	8.43E+01	9.29E-02	1.00E+00	5.50E-03	4.98E+02	6.32E+02	2.47E-02	6.91E+02	7.21E-01
SHGBG-202 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	3.70E+00	2.92E+02	2.47E+00	1.10E-03	7.89E+01	8.68E-02	1.00E+00	5.50E-03	4.66E+02	6.32E+02	2.47E-02	6.91E+02	6.74E-01
West Edith Mine Waste Area																						**Minimum HQ (Reference Sites)**	**3.38E-01**
WEA1-00 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
WEA1-100 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	2.72E+02	2.30E+00	1.10E-03	5.60E+01	6.17E-02	1.00E+00	5.50E-03	4.30E+02	6.32E+02	2.47E-02	6.91E+02	6.22E-01
WEA1-150 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	1.69E+03	1.44E+01	1.10E-03	3.49E+02	3.85E-01	1.00E+00	5.50E-03	2.68E+03	6.32E+02	2.47E-02	6.91E+02	3.88E+00
WEA1-200 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	9.12E+02	7.72E+00	1.10E-03	1.88E+02	2.07E-01	1.00E+00	5.50E-03	1.44E+03	6.32E+02	2.47E-02	6.91E+02	2.09E+00
WEA1-250 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	3.33E+02	2.82E+00	1.10E-03	6.87E+01	7.56E-02	1.00E+00	5.50E-03	5.27E+02	6.32E+02	2.47E-02	6.91E+02	7.62E-01
WEA1-300 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	3.74E+02	3.17E+00	1.10E-03	7.72E+01	8.50E-02	1.00E+00	5.50E-03	5.92E+02	6.32E+02	2.47E-02	6.91E+02	8.57E-01
WEA1-350 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	2.17E+03	1.84E+01	1.10E-03	4.47E+02	4.93E-01	1.00E+00	5.50E-03	3.43E+03	6.32E+02	2.47E-02	6.91E+02	4.97E+00
WEA1-400 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	5.77E+02	4.89E+00	1.10E-03	1.19E+02	1.31E-01	1.00E+00	5.50E-03	9.13E+02	6.32E+02	2.47E-02	6.91E+02	1.32E+00
WEA1-450 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	5.81E+02	4.92E+00	1.10E-03	1.20E+02	1.32E-01	1.00E+00	5.50E-03	9.18E+02	6.32E+02	2.47E-02	6.91E+02	1.33E+00
WEA1-550 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	5.47E+02	4.64E+00	1.10E-03	1.13E+02	1.24E-01	1.00E+00	5.50E-03	8.66E+02	6.32E+02	2.47E-02	6.91E+02	1.25E+00
WEA1-Comp 1 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	2.08E+03	1.76E+01	1.10E-03	4.30E+02	4.73E-01	1.00E+00	5.50E-03	3.29E+03	6.32E+02	2.47E-02	6.91E+02	4.77E+00
WEA1-Comp 2 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	9.53E+02	8.07E+00	1.10E-03	1.97E+02	2.16E-01	1.00E+00	5.50E-03	1.51E+03	6.32E+02	2.47E-02	6.91E+02	2.18E+00
Central Edith Mine Waste Area																						**Maximum HQ (West Edith Mine Waste Area)**	**4.97E+00**
CEA1-3-00 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	1.18E+03	1.00E+01	1.10E-03	2.44E+02	2.68E-01	1.00E+00	5.50E-03	1.87E+03	6.32E+02	2.47E-02	6.91E+02	2.70E+00
CEA1-3-100 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	6.32E+02	5.35E+00	1.10E-03	1.30E+02	1.43E-01	1.00E+00	5.50E-03	9.99E+02	6.32E+02	2.47E-02	6.91E+02	1.45E+00
CEA1-3-150 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	2.38E+03	2.01E+01	1.10E-03	4.90E+02	5.39E-01	1.00E+00	5.50E-03	3.76E+03	6.32E+02	2.47E-02	6.91E+02	5.44E+00
CEA1-3-200 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	5.38E+02	4.56E+00	1.10E-03	1.11E+02	1.22E-01	1.00E+00	5.50E-03	8.51E+02	6.32E+02	2.47E-02	6.91E+02	1.23E+00
CEA1-3-250 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	6.13E+02	5.19E+00	1.10E-03	1.26E+02	1.39E-01	1.00E+00	5.50E-03	9.69E+02	6.32E+02	2.47E-02	6.91E+02	1.40E+00
CEA1-3-300 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	7.96E+02	6.74E+00	1.10E-03	1.64E+02	1.81E-01	1.00E+00	5.50E-03	1.26E+03	6.32E+02	2.47E-02	6.91E+02	1.82E+00
CEA1-3-350 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	3.41E+02	2.89E+00	1.10E-03	7.03E+01	7.74E-02	1.00E+00	5.50E-03	5.39E+02	6.32E+02	2.47E-02	6.91E+02	7.80E-01
CEA1-3-400 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	6.80E+02	5.76E+00	1.10E-03	1.40E+02	1.54E-01	1.00E+00	5.50E-03	1.07E+03	6.32E+02	2.47E-02	6.91E+02	1.56E+00
CEA1-3-450 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	4.55E+02	3.85E+00	1.10E-03	9.38E+01	1.03E-01	1.00E+00	5.50E-03	7.19E+02	6.32E+02	2.47E-02	6.91E+02	1.04E+00
CEA1-3-50 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	5.62E+03	4.76E+01	1.10E-03	1.16E+03	1.28E+00	1.00E+00	5.50E-03	8.88E+03	6.32E+02	2.47E-02	6.91E+02	1.29E+01

TABLE C-5C: COPPER DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 5 - EDITH MINE WASTE AREAS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 1.29

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Masked Shrew (Omnivorous Mammal - Terrestrial, Wetland)																							
CEA1-3-500 (0-6")																							
CEA1-3-550 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	3.86E+02	3.27E+00	1.10E-03	7.96E+01	8.76E-02	1.00E+00	5.50E-03	6.10E+02	6.32E+02	2.47E-02	6.91E+02	8.83E-01
CEA1-3-600 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	6.49E+03	5.50E+01	1.10E-03	1.34E+03	1.47E+00	1.00E+00	5.50E-03	1.03E+04	6.32E+02	2.47E-02	6.91E+02	1.49E+01
CEA1-3-650 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	3.74E+02	3.17E+00	1.10E-03	7.71E+01	8.49E-02	1.00E+00	5.50E-03	5.91E+02	6.32E+02	2.47E-02	6.91E+02	8.56E-01
CEA1-3-700 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	4.82E+02	4.08E+00	1.10E-03	9.93E+01	1.09E-01	1.00E+00	5.50E-03	7.62E+02	6.32E+02	2.47E-02	6.91E+02	1.10E+00
CEA1-3-750 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	4.46E+02	3.78E+00	1.10E-03	9.21E+01	1.01E-01	1.00E+00	5.50E-03	7.06E+02	6.32E+02	2.47E-02	6.91E+02	1.02E+00
CEA1-3-800 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	8.87E+02	7.52E+00	1.10E-03	1.83E+02	2.01E-01	1.00E+00	5.50E-03	1.40E+03	6.32E+02	2.47E-02	6.91E+02	2.03E+00
CEA1-3-850 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	5.44E+02	4.61E+00	1.10E-03	1.12E+02	1.24E-01	1.00E+00	5.50E-03	8.61E+02	6.32E+02	2.47E-02	6.91E+02	1.25E+00
CEA1-3-Comp 1 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	8.05E+02	6.82E+00	1.10E-03	1.66E+02	1.83E-01	1.00E+00	5.50E-03	1.27E+03	6.32E+02	2.47E-02	6.91E+02	1.84E+00
CEA1-3-Comp 2 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	5.26E+02	4.46E+00	1.10E-03	1.09E+02	1.19E-01	1.00E+00	5.50E-03	8.32E+02	6.32E+02	2.47E-02	6.91E+02	1.20E+00
CEA1-3-Comp 3 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	1.15E+03	9.75E+00	1.10E-03	2.37E+02	2.61E-01	1.00E+00	5.50E-03	1.82E+03	6.32E+02	2.47E-02	6.91E+02	2.63E+00
CEA4-00 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	1.31E+03	1.11E+01	1.10E-03	2.69E+02	2.97E-01	1.00E+00	5.50E-03	2.07E+03	6.32E+02	2.47E-02	6.91E+02	2.99E+00
CEA4-20 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	1.86E+03	1.57E+01	1.10E-03	3.83E+02	4.22E-01	1.00E+00	5.50E-03	2.94E+03	6.32E+02	2.47E-02	6.91E+02	4.25E+00
CEA4-40 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	6.33E+02	5.36E+00	1.10E-03	1.30E+02	1.44E-01	1.00E+00	5.50E-03	1.00E+03	6.32E+02	2.47E-02	6.91E+02	1.45E+00
CEA4-Comp (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	8.16E+02	6.91E+00	1.10E-03	1.68E+02	1.85E-01	1.00E+00	5.50E-03	1.29E+03	6.32E+02	2.47E-02	6.91E+02	1.87E+00
East Edith Mine Waste Area																						**Maximum HQ (Central Edith Mine Waste Area)**	**1.49E+01**
EEA1-00 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	4.39E+02	3.72E+00	1.10E-03	9.05E+01	9.96E-02	1.00E+00	5.50E-03	6.94E+02	6.32E+02	2.47E-02	6.91E+02	1.00E+00
EEA1-100 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	3.75E+02	3.18E+00	1.10E-03	7.73E+01	8.51E-02	1.00E+00	5.50E-03	5.93E+02	6.32E+02	2.47E-02	6.91E+02	8.58E-01
EEA1-150 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	2.00E+02	1.69E+00	1.10E-03	4.12E+01	4.54E-02	1.00E+00	5.50E-03	3.16E+02	6.32E+02	2.47E-02	6.91E+02	4.57E-01
EEA1-200 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	3.14E+02	2.66E+00	1.10E-03	6.48E+01	7.14E-02	1.00E+00	5.50E-03	4.97E+02	6.32E+02	2.47E-02	6.91E+02	7.20E-01
EEA1-250 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
EEA1-300 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	3.75E+02	3.17E+00	1.10E-03	7.72E+01	8.50E-02	1.00E+00	5.50E-03	5.92E+02	6.32E+02	2.47E-02	6.91E+02	8.57E-01
EEA1-350 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	6.63E+02	5.62E+00	1.10E-03	1.37E+02	1.51E-01	1.00E+00	5.50E-03	1.05E+03	6.32E+02	2.47E-02	6.91E+02	1.52E+00
EEA1-400 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	6.55E+02	5.54E+00	1.10E-03	1.35E+02	1.49E-01	1.00E+00	5.50E-03	1.04E+03	6.32E+02	2.47E-02	6.91E+02	1.50E+00
EEA1-450 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	4.18E+02	3.54E+00	1.10E-03	8.61E+01	9.48E-02	1.00E+00	5.50E-03	6.61E+02	6.32E+02	2.47E-02	6.91E+02	9.56E-01
EEA1-50 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	5.45E+02	4.62E+00	1.10E-03	1.12E+02	1.24E-01	1.00E+00	5.50E-03	8.62E+02	6.32E+02	2.47E-02	6.91E+02	1.25E+00
EEA1-500 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	4.98E+02	4.22E+00	1.10E-03	1.03E+02	1.13E-01	1.00E+00	5.50E-03	7.88E+02	6.32E+02	2.47E-02	6.91E+02	1.14E+00
EEA1-Comp 1 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	2.75E+02	2.33E+00	1.10E-03	5.67E+01	6.24E-02	1.00E+00	5.50E-03	4.35E+02	6.32E+02	2.47E-02	6.91E+02	6.29E-01
EEA2-00 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
EEA2-50 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	5.19E+02	4.40E+00	1.10E-03	1.07E+02	1.18E-01	1.00E+00	5.50E-03	8.21E+02	6.32E+02	2.47E-02	6.91E+02	1.19E+00
EEA2-100 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	3.95E+02	3.35E+00	1.10E-03	8.15E+01	8.98E-02	1.00E+00	5.50E-03	6.25E+02	6.32E+02	2.47E-02	6.91E+02	9.05E-01
EEA2-150 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	3.68E+02	3.12E+00	1.10E-03	7.59E+01	8.36E-02	1.00E+00	5.50E-03	5.82E+02	6.32E+02	2.47E-02	6.91E+02	8.43E-01
EEA2-200 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	3.94E+02	3.33E+00	1.10E-03	8.12E+01	8.94E-02	1.00E+00	5.50E-03	6.22E+02	6.32E+02	2.47E-02	6.91E+02	9.01E-01
EEA2-250 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
EEA2-300 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	8.01E+02	6.79E+00	1.10E-03	1.65E+02	1.82E-01	1.00E+00	5.50E-03	1.27E+03	6.32E+02	2.47E-02	6.91E+02	1.83E+00
EEA2-Comp 1 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	6.48E+02	5.48E+00	1.10E-03	1.34E+02	1.47E-01	1.00E+00	5.50E-03	1.02E+03	6.32E+02	2.47E-02	6.91E+02	1.48E+00
																						Maximum HQ (East Edith Mine Waste Area)	**1.83E+00**

Notes

1 See Tables 3-1 through 3-13 for ingestion rates, foraging ranges used to calculate the SUF, and body weights.

2 BAFs were calculated by dividing site-collected tissue by collocated soil concentrations (BAFs are in dry weight). The maximum BAF calculated from the Beartrap Creek and Blackfoot River transects was used for site dose calculations. The maximum BAF from the terrestrial reference site was used for reference site dose calculations.

3 The mammal, plant, and invertebrate concentrations were calculated by multiplying the soil concentration by the BAF to generate a tissue concentration (see note 2).

4 Mammal, plant, and invertebrate daily doses were calculated by multiplying the ingestion rate (see note 1) by the tissue concentration (see note 3).

5 Soil concentration from 0 to 6 inches below ground surface at point ID as measured by XRF 10. Doses were not calculated for detected and non-detected soil concentrations measured below the minimum reference site concentration, as indicated by BB. For results that were measured at less than the detection limit, doses were calculated using half of the detection limit.

6 Soil daily dose was calculated by multiplying the soil ingestion rate (see note 1) by soil concentration (see note 5).

7 Total daily dose is calculated using the following equation: total daily dose = ([mammal daily dose (if applicable) + plant daily dose (if applicable) + invertebrate daily dose (if applicable) + soil daily dose]*SUF)/receptor species body weight.

8 The TRVs used in this risk assessment represent a mid-range effects level. The derivation of TRVs is described in Navy (1998).

9 Allometrically adjusted TRVs for birds were calculated using the following equation: receptor species TRV = (test species TRV) x (test species body weight / receptor species body weight)$^{(1-1.2)}$.

10 Allometrically adjusted TRVs for mammals were calculated using the following equation: receptor species TRV = (test species TRV) x (test species body weight / receptor species body weight)$^{(1-0.94)}$.

11 HQs were calculated using the following equation: HQ = total daily dose/allometrically adjusted TRV.

12 Highlighted cells indicate an HQ greater than 1.0.

BAF	Bioaccumulation Factor	mg/day	Milligram per day
BB	Below minimum background reference site concentration	mg/kg	Milligram per kilogram
EE/CA	Engineering Evaluation/Cost Analysis	NA	Not applicable
EU	Exposure Unit	Navy	Department of the Navy
HQ	Hazard quotient	SUF	Site use factor
ID	Identification	TRV	Toxicity reference value
kg	Kilogram	XRF	X-ray fluorescence
kg/day	Kilogram per day	XRF 10	XRF measurements recorded following drying and seiving through a #10-mesh screen

Sources:

Department of the Navy. 1998. "Development of Toxicity Reference Values for Conducting Ecological Risk Assessments at Naval Facilities in California, Interim Final." Prepared by Naval Facilities Engineering Command, Engineering Field Activity West (EFA West). San Bruno, California.

TABLE C-5D: LEAD DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 5 - EDITH MINE WASTE AREAS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **1.29**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Mourning Dove (Herbivorous Birds - Terrestrial)																							
Reference Sites																							
SHGBG-1 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	4.35E-02	1.40E+01	8.05E-02	NA	NA	NA	NA	5.36E-04	3.22E+02	1.72E-01	4.98E-03	1.09E-01	1.15E-02	8.75E+00	8.00E-01	5.88E+00	1.96E-03
SHGBG-2 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	4.35E-02	1.42E+00	8.18E-03	NA	NA	NA	NA	5.36E-04	3.27E+01	1.75E-02	4.98E-03	1.09E-01	1.17E-03	8.75E+00	8.00E-01	5.88E+00	2.00E-04
SHGBG-201 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	4.35E-02	1.97E+00	1.13E-02	NA	NA	NA	NA	5.36E-04	4.53E+01	2.43E-02	4.98E-03	1.09E-01	1.62E-03	8.75E+00	8.00E-01	5.88E+00	2.76E-04
SHGBG-202 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	4.35E-02	1.58E+00	9.09E-03	NA	NA	NA	NA	5.36E-04	3.63E+01	1.95E-02	4.98E-03	1.09E-01	1.30E-03	8.75E+00	8.00E-01	5.88E+00	2.22E-04
West Edith Mine Waste Area																						**Minimum HQ (Reference Sites)**	**2.00E-04**
WEA1-00 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
WEA1-100 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	6.52E+01	3.76E-01	NA	NA	NA	NA	5.36E-04	1.04E+02	5.56E-02	4.98E-03	1.09E-01	1.97E-02	8.75E+00	8.00E-01	5.88E+00	3.35E-03
WEA1-150 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	7.37E+01	4.24E-01	NA	NA	NA	NA	5.36E-04	1.17E+02	6.28E-02	4.98E-03	1.09E-01	2.22E-02	8.75E+00	8.00E-01	5.88E+00	3.78E-03
WEA1-200 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	8.21E+01	4.73E-01	NA	NA	NA	NA	5.36E-04	1.31E+02	7.00E-02	4.98E-03	1.09E-01	2.48E-02	8.75E+00	8.00E-01	5.88E+00	4.22E-03
WEA1-250 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	7.16E+01	4.13E-01	NA	NA	NA	NA	5.36E-04	1.14E+02	6.11E-02	4.98E-03	1.09E-01	2.16E-02	8.75E+00	8.00E-01	5.88E+00	3.68E-03
WEA1-300 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	7.03E+01	4.05E-01	NA	NA	NA	NA	5.36E-04	1.12E+02	6.00E-02	4.98E-03	1.09E-01	2.12E-02	8.75E+00	8.00E-01	5.88E+00	3.61E-03
WEA1-350 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	1.04E+02	5.97E-01	NA	NA	NA	NA	5.36E-04	1.65E+02	8.84E-02	4.98E-03	1.09E-01	3.13E-02	8.75E+00	8.00E-01	5.88E+00	5.32E-03
WEA1-400 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	1.33E+02	7.64E-01	NA	NA	NA	NA	5.36E-04	2.11E+02	1.13E-01	4.98E-03	1.09E-01	4.00E-02	8.75E+00	8.00E-01	5.88E+00	6.81E-03
WEA1-450 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	1.14E+02	6.57E-01	NA	NA	NA	NA	5.36E-04	1.82E+02	9.73E-02	4.98E-03	1.09E-01	3.44E-02	8.75E+00	8.00E-01	5.88E+00	5.86E-03
WEA1-550 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	8.72E+01	5.02E-01	NA	NA	NA	NA	5.36E-04	1.39E+02	7.44E-02	4.98E-03	1.09E-01	2.63E-02	8.75E+00	8.00E-01	5.88E+00	4.48E-03
WEA1-Comp 1 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	7.11E+01	4.10E-01	NA	NA	NA	NA	5.36E-04	1.13E+02	6.06E-02	4.98E-03	1.09E-01	2.15E-02	8.75E+00	8.00E-01	5.88E+00	3.65E-03
WEA1-Comp 2 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	8.43E+01	4.86E-01	NA	NA	NA	NA	5.36E-04	1.34E+02	7.19E-02	4.98E-03	1.09E-01	2.54E-02	8.75E+00	8.00E-01	5.88E+00	4.33E-03
Central Edith Mine Waste Area																						**Maximum HQ (West Edith Mine Waste Area)**	**6.81E-03**
CEA1-3-00 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	8.75E+01	5.04E-01	NA	NA	NA	NA	5.36E-04	1.39E+02	7.46E-02	4.98E-03	1.09E-01	2.64E-02	8.75E+00	8.00E-01	5.88E+00	4.49E-03
CEA1-3-100 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	7.94E+01	4.57E-01	NA	NA	NA	NA	5.36E-04	1.26E+02	6.77E-02	4.98E-03	1.09E-01	2.39E-02	8.75E+00	8.00E-01	5.88E+00	4.08E-03
CEA1-3-150 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	1.11E+02	6.37E-01	NA	NA	NA	NA	5.36E-04	1.76E+02	9.43E-02	4.98E-03	1.09E-01	3.33E-02	8.75E+00	8.00E-01	5.88E+00	5.68E-03
CEA1-3-200 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	7.27E+01	4.19E-01	NA	NA	NA	NA	5.36E-04	1.16E+02	6.20E-02	4.98E-03	1.09E-01	2.19E-02	8.75E+00	8.00E-01	5.88E+00	3.73E-03
CEA1-3-250 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	9.71E+01	5.60E-01	NA	NA	NA	NA	5.36E-04	1.55E+02	8.28E-02	4.98E-03	1.09E-01	2.93E-02	8.75E+00	8.00E-01	5.88E+00	4.99E-03
CEA1-3-300 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	5.91E+01	3.40E-01	NA	NA	NA	NA	5.36E-04	9.40E+01	5.04E-02	4.98E-03	1.09E-01	1.78E-02	8.75E+00	8.00E-01	5.88E+00	3.03E-03
CEA1-3-350 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	5.97E+01	3.44E-01	NA	NA	NA	NA	5.36E-04	9.51E+01	5.10E-02	4.98E-03	1.09E-01	1.80E-02	8.75E+00	8.00E-01	5.88E+00	3.07E-03
CEA1-3-400 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	2.34E+02	1.35E+00	NA	NA	NA	NA	5.36E-04	3.72E+02	1.99E-01	4.98E-03	1.09E-01	7.05E-02	8.75E+00	8.00E-01	5.88E+00	1.20E-02
CEA1-3-450 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	6.30E+01	3.63E-01	NA	NA	NA	NA	5.36E-04	1.00E+02	5.37E-02	4.98E-03	1.09E-01	1.90E-02	8.75E+00	8.00E-01	5.88E+00	3.23E-03
CEA1-3-50 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	6.81E+01	3.92E-01	NA	NA	NA	NA	5.36E-04	1.08E+02	5.81E-02	4.98E-03	1.09E-01	2.05E-02	8.75E+00	8.00E-01	5.88E+00	3.50E-03
CEA1-3-500 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	4.63E+01	2.67E-01	NA	NA	NA	NA	5.36E-04	7.37E+01	3.95E-02	4.98E-03	1.09E-01	1.40E-02	8.75E+00	8.00E-01	5.88E+00	2.38E-03
CEA1-3-550 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	5.50E+01	3.17E-01	NA	NA	NA	NA	5.36E-04	8.76E+01	4.69E-02	4.98E-03	1.09E-01	1.66E-02	8.75E+00	8.00E-01	5.88E+00	2.83E-03
CEA1-3-600 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	5.56E+01	3.20E-01	NA	NA	NA	NA	5.36E-04	8.85E+01	4.74E-02	4.98E-03	1.09E-01	1.68E-02	8.75E+00	8.00E-01	5.88E+00	2.85E-03
CEA1-3-650 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	5.41E+01	3.11E-01	NA	NA	NA	NA	5.36E-04	8.60E+01	4.61E-02	4.98E-03	1.09E-01	1.63E-02	8.75E+00	8.00E-01	5.88E+00	2.78E-03
CEA1-3-700 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	8.81E+01	5.08E-01	NA	NA	NA	NA	5.36E-04	1.40E+02	7.51E-02	4.98E-03	1.09E-01	2.66E-02	8.75E+00	8.00E-01	5.88E+00	4.52E-03
CEA1-3-750 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	1.46E+02	8.40E-01	NA	NA	NA	NA	5.36E-04	2.32E+02	1.24E-01	4.98E-03	1.09E-01	4.40E-02	8.75E+00	8.00E-01	5.88E+00	7.49E-03
CEA1-3-800 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	9.83E+01	5.66E-01	NA	NA	NA	NA	5.36E-04	1.56E+02	8.38E-02	4.98E-03	1.09E-01	2.96E-02	8.75E+00	8.00E-01	5.88E+00	5.05E-03
CEA1-3-850 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	1.64E+02	9.47E-01	NA	NA	NA	NA	5.36E-04	2.62E+02	1.40E-01	4.98E-03	1.09E-01	4.96E-02	8.75E+00	8.00E-01	5.88E+00	8.44E-03
CEA1-3-Comp 1 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	1.78E+02	1.03E+00	NA	NA	NA	NA	5.36E-04	2.83E+02	1.52E-01	4.98E-03	1.09E-01	5.37E-02	8.75E+00	8.00E-01	5.88E+00	9.14E-03
CEA1-3-Comp 2 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	1.02E+02	5.90E-01	NA	NA	NA	NA	5.36E-04	1.63E+02	8.74E-02	4.98E-03	1.09E-01	3.09E-02	8.75E+00	8.00E-01	5.88E+00	5.26E-03
CEA1-3-Comp 3 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	7.12E+02	4.10E+00	NA	NA	NA	NA	5.36E-04	1.13E+03	6.07E-01	4.98E-03	1.09E-01	2.15E-01	8.75E+00	8.00E-01	5.88E+00	3.65E-02
CEA4-00 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	1.19E+02	6.88E-01	NA	NA	NA	NA	5.36E-04	1.90E+02	1.02E-01	4.98E-03	1.09E-01	3.60E-02	8.75E+00	8.00E-01	5.88E+00	6.13E-03
CEA4-20 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	6.56E+01	3.78E-01	NA	NA	NA	NA	5.36E-04	1.04E+02	5.59E-02	4.98E-03	1.09E-01	1.98E-02	8.75E+00	8.00E-01	5.88E+00	3.37E-03
CEA4-40 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	1.47E+02	8.49E-01	NA	NA	NA	NA	5.36E-04	2.34E+02	1.26E-01	4.98E-03	1.09E-01	4.44E-02	8.75E+00	8.00E-01	5.88E+00	7.56E-03
CEA4-Comp (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	2.67E+02	1.54E+00	NA	NA	NA	NA	5.36E-04	4.25E+02	2.28E-01	4.98E-03	1.09E-01	8.05E-02	8.75E+00	8.00E-01	5.88E+00	1.37E-02
East Edith Mine Waste Area																						**Maximum HQ (Central Edith Mine Waste Area)**	**3.65E-02**
EEA1-00 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	5.54E+01	3.19E-01	NA	NA	NA	NA	5.36E-04	8.82E+01	4.72E-02	4.98E-03	1.09E-01	1.67E-02	8.75E+00	8.00E-01	5.88E+00	2.84E-03
EEA1-100 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	2.52E+01	1.45E-01	NA	NA	NA	NA	5.36E-04	4.02E+01	2.15E-02	4.98E-03	1.09E-01	7.61E-03	8.75E+00	8.00E-01	5.88E+00	1.30E-03
EEA1-150 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
EEA1-200 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
EEA1-250 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	2.27E+01	1.31E-01	NA	NA	NA	NA	5.36E-04	3.62E+01	1.94E-02	4.98E-03	1.09E-01	6.86E-03	8.75E+00	8.00E-01	5.88E+00	1.17E-03
EEA1-300 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	3.90E+01	2.24E-01	NA	NA	NA	NA	5.36E-04	6.20E+01	3.32E-02	4.98E-03	1.09E-01	1.18E-02	8.75E+00	8.00E-01	5.88E+00	2.00E-03
EEA1-350 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	6.24E+01	3.60E-01	NA	NA	NA	NA	5.36E-04	9.94E+01	5.33E-02	4.98E-03	1.09E-01	1.88E-02	8.75E+00	8.00E-01	5.88E+00	3.21E-03
EEA1-400 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	1.19E+02	6.83E-01	NA	NA	NA	NA	5.36E-04	1.89E+02	1.01E-01	4.98E-03	1.09E-01	3.58E-02	8.75E+00	8.00E-01	5.88E+00	6.09E-03
EEA1-450 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	9.56E+01	5.51E-01	NA	NA	NA	NA	5.36E-04	1.52E+02	8.15E-02	4.98E-03	1.09E-01	2.88E-02	8.75E+00	8.00E-01	5.88E+00	4.91E-03
EEA1-50 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	5.64E+01	3.25E-01	NA	NA	NA	NA	5.36E-04	8.97E+01	4.81E-02	4.98E-03	1.09E-01	1.70E-02	8.75E+00	8.00E-01	5.88E+00	2.89E-03
EEA1-500 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	1.09E+02	6.26E-01	NA	NA	NA	NA	5.36E-04	1.73E+02	9.26E-02	4.98E-03	1.09E-01	3.28E-02	8.75E+00	8.00E-01	5.88E+00	5.58E-03
EEA1-Comp 1 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	2.61E+01	1.50E-01	NA	NA	NA	NA	5.36E-04	4.15E+01	2.22E-02	4.98E-03	1.09E-01	7.86E-03	8.75E+00	8.00E-01	5.88E+00	1.34E-03

TABLE C-5D: LEAD DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 5 - EDITH MINE WASTE AREAS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **1.29**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Mourning Dove (Herbivorous Birds - Terrestrial)																							
EEA2-00 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
EEA2-50 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	1.54E+02	8.84E-01	NA	NA	NA	NA	5.36E-04	2.44E+02	1.31E-01	4.98E-03	1.09E-01	4.63E-02	8.75E+00	8.00E-01	5.88E+00	7.88E-03
EEA2-100 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	6.59E+01	3.80E-01	NA	NA	NA	NA	5.36E-04	1.05E+02	5.62E-02	4.98E-03	1.09E-01	1.99E-02	8.75E+00	8.00E-01	5.88E+00	3.38E-03
EEA2-150 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	3.29E+01	1.90E-01	NA	NA	NA	NA	5.36E-04	5.24E+01	2.81E-02	4.98E-03	1.09E-01	9.94E-03	8.75E+00	8.00E-01	5.88E+00	1.69E-03
EEA2-200 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	9.88E+01	5.69E-01	NA	NA	NA	NA	5.36E-04	1.57E+02	8.43E-02	4.98E-03	1.09E-01	2.98E-02	8.75E+00	8.00E-01	5.88E+00	5.07E-03
EEA2-250 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	2.13E+01	1.23E-01	NA	NA	NA	NA	5.36E-04	3.39E+01	1.82E-02	4.98E-03	1.09E-01	6.42E-03	8.75E+00	8.00E-01	5.88E+00	1.09E-03
EEA2-300 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	8.37E+01	4.82E-01	NA	NA	NA	NA	5.36E-04	1.33E+02	7.14E-02	4.98E-03	1.09E-01	2.53E-02	8.75E+00	8.00E-01	5.88E+00	4.30E-03
EEA2-Comp 1 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	6.86E+01	3.95E-01	NA	NA	NA	NA	5.36E-04	1.09E+02	5.85E-02	4.98E-03	1.09E-01	2.07E-02	8.75E+00	8.00E-01	5.88E+00	3.52E-03
																						Maximum HQ (East Edith Mine Waste Area)	**7.88E-03**
Red-Tailed Hawk (Carnivorous Birds - Terrestrial)																							
Reference Sites																							
SHGBG-1 (0-6")	9.00E-02	9.00E-02	7.62E-02	2.45E+01	2.20E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.22E+02	1.65E+00	1.85E-03	1.13E+00	6.29E-03	8.75E+00	8.00E-01	9.38E+00	6.70E-04
SHGBG-2 (0-6")	9.00E-02	9.00E-02	7.62E-02	2.49E+00	2.24E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.27E+01	1.68E-01	1.85E-03	1.13E+00	6.40E-04	8.75E+00	8.00E-01	9.38E+00	6.82E-05
SHGBG-201 (0-6")	9.00E-02	9.00E-02	7.62E-02	3.45E+00	3.11E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.53E+01	2.32E-01	1.85E-03	1.13E+00	8.86E-04	8.75E+00	8.00E-01	9.38E+00	9.45E-05
SHGBG-202 (0-6")	9.00E-02	9.00E-02	7.62E-02	2.77E+00	2.49E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.63E+01	1.86E-01	1.85E-03	1.13E+00	7.10E-04	8.75E+00	8.00E-01	9.38E+00	7.57E-05
West Edith Mine Waste Area																						**Minimum HQ (Reference Sites)**	**6.82E-05**
WEA1-00 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
WEA1-100 (0-6")	9.00E-02	9.00E-02	9.28E-01	9.63E+01	8.67E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.04E+02	5.32E-01	1.85E-03	1.13E+00	1.50E-02	8.75E+00	8.00E-01	9.38E+00	1.60E-03
WEA1-150 (0-6")	9.00E-02	9.00E-02	9.28E-01	1.09E+02	9.79E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.17E+02	6.01E-01	1.85E-03	1.13E+00	1.70E-02	8.75E+00	8.00E-01	9.38E+00	1.81E-03
WEA1-200 (0-6")	9.00E-02	9.00E-02	9.28E-01	1.21E+02	1.09E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.31E+02	6.70E-01	1.85E-03	1.13E+00	1.89E-02	8.75E+00	8.00E-01	9.38E+00	2.01E-03
WEA1-250 (0-6")	9.00E-02	9.00E-02	9.28E-01	1.06E+02	9.51E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.14E+02	5.84E-01	1.85E-03	1.13E+00	1.65E-02	8.75E+00	8.00E-01	9.38E+00	1.76E-03
WEA1-300 (0-6")	9.00E-02	9.00E-02	9.28E-01	1.04E+02	9.34E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.12E+02	5.74E-01	1.85E-03	1.13E+00	1.62E-02	8.75E+00	8.00E-01	9.38E+00	1.73E-03
WEA1-350 (0-6")	9.00E-02	9.00E-02	9.28E-01	1.53E+02	1.38E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.65E+02	8.45E-01	1.85E-03	1.13E+00	2.38E-02	8.75E+00	8.00E-01	9.38E+00	2.54E-03
WEA1-400 (0-6")	9.00E-02	9.00E-02	9.28E-01	1.96E+02	1.76E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.11E+02	1.08E+00	1.85E-03	1.13E+00	3.05E-02	8.75E+00	8.00E-01	9.38E+00	3.26E-03
WEA1-450 (0-6")	9.00E-02	9.00E-02	9.28E-01	1.69E+02	1.52E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.82E+02	9.31E-01	1.85E-03	1.13E+00	2.63E-02	8.75E+00	8.00E-01	9.38E+00	2.80E-03
WEA1-550 (0-6")	9.00E-02	9.00E-02	9.28E-01	1.29E+02	1.16E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.39E+02	7.11E-01	1.85E-03	1.13E+00	2.01E-02	8.75E+00	8.00E-01	9.38E+00	2.14E-03
WEA1-Comp 1 (0-6")	9.00E-02	9.00E-02	9.28E-01	1.05E+02	9.45E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.13E+02	5.80E-01	1.85E-03	1.13E+00	1.64E-02	8.75E+00	8.00E-01	9.38E+00	1.74E-03
WEA1-Comp 2 (0-6")	9.00E-02	9.00E-02	9.28E-01	1.25E+02	1.12E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.34E+02	6.88E-01	1.85E-03	1.13E+00	1.94E-02	8.75E+00	8.00E-01	9.38E+00	2.07E-03
Central Edith Mine Waste Area																						**Maximum HQ (West Edith Mine Waste Area)**	**3.26E-03**
CEA1-3-00 (0-6")	9.00E-02	9.00E-02	9.28E-01	1.29E+02	1.16E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.39E+02	7.14E-01	1.85E-03	1.13E+00	2.01E-02	8.75E+00	8.00E-01	9.38E+00	2.15E-03
CEA1-3-100 (0-6")	9.00E-02	9.00E-02	9.28E-01	1.17E+02	1.05E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.26E+02	6.48E-01	1.85E-03	1.13E+00	1.83E-02	8.75E+00	8.00E-01	9.38E+00	1.95E-03
CEA1-3-150 (0-6")	9.00E-02	9.00E-02	9.28E-01	1.63E+02	1.47E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.76E+02	9.02E-01	1.85E-03	1.13E+00	2.54E-02	8.75E+00	8.00E-01	9.38E+00	2.71E-03
CEA1-3-200 (0-6")	9.00E-02	9.00E-02	9.28E-01	1.07E+02	9.66E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.16E+02	5.93E-01	1.85E-03	1.13E+00	1.67E-02	8.75E+00	8.00E-01	9.38E+00	1.78E-03
CEA1-3-250 (0-6")	9.00E-02	9.00E-02	9.28E-01	1.43E+02	1.29E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.55E+02	7.93E-01	1.85E-03	1.13E+00	2.24E-02	8.75E+00	8.00E-01	9.38E+00	2.38E-03
CEA1-3-300 (0-6")	9.00E-02	9.00E-02	9.28E-01	8.72E+01	7.85E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	9.40E+01	4.82E-01	1.85E-03	1.13E+00	1.36E-02	8.75E+00	8.00E-01	9.38E+00	1.45E-03
CEA1-3-350 (0-6")	9.00E-02	9.00E-02	9.28E-01	8.82E+01	7.94E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	9.51E+01	4.88E-01	1.85E-03	1.13E+00	1.38E-02	8.75E+00	8.00E-01	9.38E+00	1.47E-03
CEA1-3-400 (0-6")	9.00E-02	9.00E-02	9.28E-01	3.45E+02	3.11E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.72E+02	1.91E+00	1.85E-03	1.13E+00	5.38E-02	8.75E+00	8.00E-01	9.38E+00	5.74E-03
CEA1-3-450 (0-6")	9.00E-02	9.00E-02	9.28E-01	9.30E+01	8.37E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.00E+02	5.14E-01	1.85E-03	1.13E+00	1.45E-02	8.75E+00	8.00E-01	9.38E+00	1.55E-03
CEA1-3-50 (0-6")	9.00E-02	9.00E-02	9.28E-01	1.01E+02	9.05E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.08E+02	5.56E-01	1.85E-03	1.13E+00	1.57E-02	8.75E+00	8.00E-01	9.38E+00	1.67E-03
CEA1-3-500 (0-6")	9.00E-02	9.00E-02	9.28E-01	6.84E+01	6.15E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	7.37E+01	3.78E-01	1.85E-03	1.13E+00	1.07E-02	8.75E+00	8.00E-01	9.38E+00	1.14E-03
CEA1-3-550 (0-6")	9.00E-02	9.00E-02	9.28E-01	8.13E+01	7.31E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	8.76E+01	4.49E-01	1.85E-03	1.13E+00	1.27E-02	8.75E+00	8.00E-01	9.38E+00	1.35E-03
CEA1-3-600 (0-6")	9.00E-02	9.00E-02	9.28E-01	8.21E+01	7.38E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	8.85E+01	4.54E-01	1.85E-03	1.13E+00	1.28E-02	8.75E+00	8.00E-01	9.38E+00	1.36E-03
CEA1-3-650 (0-6")	9.00E-02	9.00E-02	9.28E-01	7.98E+01	7.18E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	8.60E+01	4.41E-01	1.85E-03	1.13E+00	1.24E-02	8.75E+00	8.00E-01	9.38E+00	1.33E-03
CEA1-3-700 (0-6")	9.00E-02	9.00E-02	9.28E-01	1.30E+02	1.17E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.40E+02	7.19E-01	1.85E-03	1.13E+00	2.03E-02	8.75E+00	8.00E-01	9.38E+00	2.16E-03
CEA1-3-750 (0-6")	9.00E-02	9.00E-02	9.28E-01	2.15E+02	1.94E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.32E+02	1.19E+00	1.85E-03	1.13E+00	3.36E-02	8.75E+00	8.00E-01	9.38E+00	3.58E-03
CEA1-3-800 (0-6")	9.00E-02	9.00E-02	9.28E-01	1.45E+02	1.31E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.56E+02	8.02E-01	1.85E-03	1.13E+00	2.26E-02	8.75E+00	8.00E-01	9.38E+00	2.41E-03
CEA1-3-850 (0-6")	9.00E-02	9.00E-02	9.28E-01	2.43E+02	2.18E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.62E+02	1.34E+00	1.85E-03	1.13E+00	3.78E-02	8.75E+00	8.00E-01	9.38E+00	4.03E-03
CEA1-3-Comp 1 (0-6")	9.00E-02	9.00E-02	9.28E-01	2.63E+02	2.36E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.83E+02	1.45E+00	1.85E-03	1.13E+00	4.10E-02	8.75E+00	8.00E-01	9.38E+00	4.37E-03
CEA1-3-Comp 2 (0-6")	9.00E-02	9.00E-02	9.28E-01	1.51E+02	1.36E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.63E+02	8.36E-01	1.85E-03	1.13E+00	2.36E-02	8.75E+00	8.00E-01	9.38E+00	2.51E-03
CEA1-3-Comp 3 (0-6")	9.00E-02	9.00E-02	9.28E-01	1.05E+03	9.46E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.13E+03	5.81E+00	1.85E-03	1.13E+00	1.64E-01	8.75E+00	8.00E-01	9.38E+00	1.75E-02
CEA4-00 (0-6")	9.00E-02	9.00E-02	9.28E-01	1.76E+02	1.59E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.90E+02	9.75E-01	1.85E-03	1.13E+00	2.75E-02	8.75E+00	8.00E-01	9.38E+00	2.93E-03

TABLE C-5D: LEAD DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 5 - EDITH MINE WASTE AREAS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **1.29**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Red-Tailed Hawk (Carnivorous Birds - Terrestrial)																							
CEA4-20 (0-6")	9.00E-02	9.00E-02	9.28E-01	9.68E+01	8.71E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.04E+02	5.35E-01	1.85E-03	1.13E+00	1.51E-02	8.75E+00	8.00E-01	9.38E+00	1.61E-03
CEA4-40 (0-6")	9.00E-02	9.00E-02	9.28E-01	2.18E+02	1.96E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.34E+02	1.20E+00	1.85E-03	1.13E+00	3.39E-02	8.75E+00	8.00E-01	9.38E+00	3.61E-03
CEA4-Comp (0-6")	9.00E-02	9.00E-02	9.28E-01	3.94E+02	3.54E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.25E+02	2.18E+00	1.85E-03	1.13E+00	6.14E-02	8.75E+00	8.00E-01	9.38E+00	6.55E-03
East Edith Mine Waste Area																						**Maximum HQ (Central Edith Mine Waste Area)**	**1.75E-02**
EEA1-00 (0-6")	9.00E-02	9.00E-02	9.28E-01	8.18E+01	7.36E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	8.82E+01	4.52E-01	1.85E-03	1.13E+00	1.27E-02	8.75E+00	8.00E-01	9.38E+00	1.36E-03
EEA1-100 (0-6")	9.00E-02	9.00E-02	9.28E-01	3.73E+01	3.35E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.02E+01	2.06E-01	1.85E-03	1.13E+00	5.81E-03	8.75E+00	8.00E-01	9.38E+00	6.19E-04
EEA1-150 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
EEA1-200 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
EEA1-250 (0-6")	9.00E-02	9.00E-02	9.28E-01	3.36E+01	3.02E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.62E+01	1.86E-01	1.85E-03	1.13E+00	5.23E-03	8.75E+00	8.00E-01	9.38E+00	5.58E-04
EEA1-300 (0-6")	9.00E-02	9.00E-02	9.28E-01	5.75E+01	5.18E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	6.20E+01	3.18E-01	1.85E-03	1.13E+00	8.97E-03	8.75E+00	8.00E-01	9.38E+00	9.56E-04
EEA1-350 (0-6")	9.00E-02	9.00E-02	9.28E-01	9.22E+01	8.30E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	9.94E+01	5.10E-01	1.85E-03	1.13E+00	1.44E-02	8.75E+00	8.00E-01	9.38E+00	1.53E-03
EEA1-400 (0-6")	9.00E-02	9.00E-02	9.28E-01	1.75E+02	1.58E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.89E+02	9.68E-01	1.85E-03	1.13E+00	2.73E-02	8.75E+00	8.00E-01	9.38E+00	2.91E-03
EEA1-450 (0-6")	9.00E-02	9.00E-02	9.28E-01	1.41E+02	1.27E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.52E+02	7.80E-01	1.85E-03	1.13E+00	2.20E-02	8.75E+00	8.00E-01	9.38E+00	2.35E-03
EEA1-50 (0-6")	9.00E-02	9.00E-02	9.28E-01	8.33E+01	7.49E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	8.97E+01	4.60E-01	1.85E-03	1.13E+00	1.30E-02	8.75E+00	8.00E-01	9.38E+00	1.38E-03
EEA1-500 (0-6")	9.00E-02	9.00E-02	9.28E-01	1.60E+02	1.44E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.73E+02	8.87E-01	1.85E-03	1.13E+00	2.50E-02	8.75E+00	8.00E-01	9.38E+00	2.67E-03
EEA1-Comp 1 (0-6")	9.00E-02	9.00E-02	9.28E-01	3.85E+01	3.46E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.15E+01	2.13E-01	1.85E-03	1.13E+00	6.00E-03	8.75E+00	8.00E-01	9.38E+00	6.39E-04
EEA2-00 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
EEA2-50 (0-6")	9.00E-02	9.00E-02	9.28E-01	2.27E+02	2.04E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.44E+02	1.25E+00	1.85E-03	1.13E+00	3.53E-02	8.75E+00	8.00E-01	9.38E+00	3.77E-03
EEA2-100 (0-6")	9.00E-02	9.00E-02	9.28E-01	9.73E+01	8.75E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.05E+02	5.38E-01	1.85E-03	1.13E+00	1.52E-02	8.75E+00	8.00E-01	9.38E+00	1.62E-03
EEA2-150 (0-6")	9.00E-02	9.00E-02	9.28E-01	4.86E+01	4.38E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.24E+01	2.69E-01	1.85E-03	1.13E+00	7.58E-03	8.75E+00	8.00E-01	9.38E+00	8.08E-04
EEA2-200 (0-6")	9.00E-02	9.00E-02	9.28E-01	1.46E+02	1.31E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.57E+02	8.07E-01	1.85E-03	1.13E+00	2.28E-02	8.75E+00	8.00E-01	9.38E+00	2.43E-03
EEA2-250 (0-6")	9.00E-02	9.00E-02	9.28E-01	3.14E+01	2.83E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.39E+01	1.74E-01	1.85E-03	1.13E+00	4.90E-03	8.75E+00	8.00E-01	9.38E+00	5.22E-04
EEA2-300 (0-6")	9.00E-02	9.00E-02	9.28E-01	1.24E+02	1.11E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.33E+02	6.83E-01	1.85E-03	1.13E+00	1.93E-02	8.75E+00	8.00E-01	9.38E+00	2.05E-03
EEA2-Comp 1 (0-6")	9.00E-02	9.00E-02	9.28E-01	1.01E+02	9.11E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.09E+02	5.60E-01	1.85E-03	1.13E+00	1.58E-02	8.75E+00	8.00E-01	9.38E+00	1.68E-03
																						Maximum HQ (East Edith Mine Waste Area)	**3.77E-03**
American Kestrel (Insectivorous Birds - Terrestrial)																							
Reference Sites																							
SHGBG-1 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	4.99E+02	6.87E+00	7.84E-04	3.22E+02	2.52E-01	4.93E-03	1.24E-01	2.83E-01	8.75E+00	8.00E-01	6.03E+00	4.70E-02
SHGBG-2 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	5.07E+01	6.98E-01	7.84E-04	3.27E+01	2.56E-02	4.93E-03	1.24E-01	2.88E-02	8.75E+00	8.00E-01	6.03E+00	4.78E-03
SHGBG-201 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	7.03E+01	9.68E-01	7.84E-04	4.53E+01	3.55E-02	4.93E-03	1.24E-01	3.99E-02	8.75E+00	8.00E-01	6.03E+00	6.62E-03
SHGBG-202 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	5.64E+01	7.75E-01	7.84E-04	3.63E+01	2.85E-02	4.93E-03	1.24E-01	3.20E-02	8.75E+00	8.00E-01	6.03E+00	5.30E-03
West Edith Mine Waste Area																						**Minimum HQ (Reference Sites)**	**4.78E-03**
WEA1-00 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
WEA1-100 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.61E+02	2.22E+00	7.84E-04	1.04E+02	8.14E-02	4.93E-03	1.24E-01	9.14E-02	8.75E+00	8.00E-01	6.03E+00	1.52E-02
WEA1-150 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.82E+02	2.50E+00	7.84E-04	1.17E+02	9.20E-02	4.93E-03	1.24E-01	1.03E-01	8.75E+00	8.00E-01	6.03E+00	1.71E-02
WEA1-200 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	2.03E+02	2.79E+00	7.84E-04	1.31E+02	1.03E-01	4.93E-03	1.24E-01	1.15E-01	8.75E+00	8.00E-01	6.03E+00	1.91E-02
WEA1-250 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.77E+02	2.43E+00	7.84E-04	1.14E+02	8.94E-02	4.93E-03	1.24E-01	1.00E-01	8.75E+00	8.00E-01	6.03E+00	1.67E-02
WEA1-300 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.74E+02	2.39E+00	7.84E-04	1.12E+02	8.78E-02	4.93E-03	1.24E-01	9.85E-02	8.75E+00	8.00E-01	6.03E+00	1.63E-02
WEA1-350 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	2.56E+02	3.52E+00	7.84E-04	1.65E+02	1.29E-01	4.93E-03	1.24E-01	1.45E-01	8.75E+00	8.00E-01	6.03E+00	2.41E-02
WEA1-400 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	3.28E+02	4.51E+00	7.84E-04	2.11E+02	1.66E-01	4.93E-03	1.24E-01	1.86E-01	8.75E+00	8.00E-01	6.03E+00	3.08E-02
WEA1-450 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	2.82E+02	3.88E+00	7.84E-04	1.82E+02	1.42E-01	4.93E-03	1.24E-01	1.60E-01	8.75E+00	8.00E-01	6.03E+00	2.65E-02
WEA1-550 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	2.15E+02	2.96E+00	7.84E-04	1.39E+02	1.09E-01	4.93E-03	1.24E-01	1.22E-01	8.75E+00	8.00E-01	6.03E+00	2.03E-02
WEA1-Comp 1 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.76E+02	2.42E+00	7.84E-04	1.13E+02	8.88E-02	4.93E-03	1.24E-01	9.96E-02	8.75E+00	8.00E-01	6.03E+00	1.65E-02
WEA1-Comp 2 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	2.08E+02	2.87E+00	7.84E-04	1.34E+02	1.05E-01	4.93E-03	1.24E-01	1.18E-01	8.75E+00	8.00E-01	6.03E+00	1.96E-02
Central Edith Mine Waste Area																						**Maximum HQ (West Edith Mine Waste Area)**	**3.08E-02**
CEA1-3-00 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	2.16E+02	2.97E+00	7.84E-04	1.39E+02	1.09E-01	4.93E-03	1.24E-01	1.23E-01	8.75E+00	8.00E-01	6.03E+00	2.03E-02
CEA1-3-100 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.96E+02	2.70E+00	7.84E-04	1.26E+02	9.91E-02	4.93E-03	1.24E-01	1.11E-01	8.75E+00	8.00E-01	6.03E+00	1.85E-02
CEA1-3-150 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	2.73E+02	3.76E+00	7.84E-04	1.76E+02	1.38E-01	4.93E-03	1.24E-01	1.55E-01	8.75E+00	8.00E-01	6.03E+00	2.57E-02
CEA1-3-200 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.80E+02	2.47E+00	7.84E-04	1.16E+02	9.08E-02	4.93E-03	1.24E-01	1.02E-01	8.75E+00	8.00E-01	6.03E+00	1.69E-02
CEA1-3-250 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	2.40E+02	3.30E+00	7.84E-04	1.55E+02	1.21E-01	4.93E-03	1.24E-01	1.36E-01	8.75E+00	8.00E-01	6.03E+00	2.26E-02
CEA1-3-300 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.46E+02	2.01E+00	7.84E-04	9.40E+01	7.38E-02	4.93E-03	1.24E-01	8.28E-02	8.75E+00	8.00E-01	6.03E+00	1.37E-02
CEA1-3-350 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.48E+02	2.03E+00	7.84E-04	9.51E+01	7.46E-02	4.93E-03	1.24E-01	8.37E-02	8.75E+00	8.00E-01	6.03E+00	1.39E-02
CEA1-3-400 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	5.78E+02	7.95E+00	7.84E-04	3.72E+02	2.92E-01	4.93E-03	1.24E-01	3.28E-01	8.75E+00	8.00E-01	6.03E+00	5.44E-02
CEA1-3-450 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.56E+02	2.14E+00	7.84E-04	1.00E+02	7.86E-02	4.93E-03	1.24E-01	8.83E-02	8.75E+00	8.00E-01	6.03E+00	1.46E-02
CEA1-3-50 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.68E+02	2.32E+00	7.84E-04	1.08E+02	8.50E-02	4.93E-03	1.24E-01	9.54E-02	8.75E+00	8.00E-01	6.03E+00	1.58E-02
CEA1-3-500 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.14E+02	1.57E+00	7.84E-04	7.37E+01	5.78E-02	4.93E-03	1.24E-01	6.49E-02	8.75E+00	8.00E-01	6.03E+00	1.08E-02

TABLE C-5D: LEAD DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 5 - EDITH MINE WASTE AREAS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **1.29**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
American Kestrel (Insectivorous Birds - Terrestrial)																							
CEA1-3-550 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.36E+02	1.87E+00	7.84E-04	8.76E+01	6.87E-02	4.93E-03	1.24E-01	7.71E-02	8.75E+00	8.00E-01	6.03E+00	1.28E-02
CEA1-3-600 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.37E+02	1.89E+00	7.84E-04	8.85E+01	6.94E-02	4.93E-03	1.24E-01	7.79E-02	8.75E+00	8.00E-01	6.03E+00	1.29E-02
CEA1-3-650 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.34E+02	1.84E+00	7.84E-04	8.60E+01	6.75E-02	4.93E-03	1.24E-01	7.57E-02	8.75E+00	8.00E-01	6.03E+00	1.26E-02
CEA1-3-700 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	2.18E+02	2.99E+00	7.84E-04	1.40E+02	1.10E-01	4.93E-03	1.24E-01	1.23E-01	8.75E+00	8.00E-01	6.03E+00	2.05E-02
CEA1-3-750 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	3.60E+02	4.96E+00	7.84E-04	2.32E+02	1.82E-01	4.93E-03	1.24E-01	2.04E-01	8.75E+00	8.00E-01	6.03E+00	3.39E-02
CEA1-3-800 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	2.43E+02	3.34E+00	7.84E-04	1.56E+02	1.23E-01	4.93E-03	1.24E-01	1.38E-01	8.75E+00	8.00E-01	6.03E+00	2.28E-02
CEA1-3-850 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	4.06E+02	5.59E+00	7.84E-04	2.62E+02	2.05E-01	4.93E-03	1.24E-01	2.30E-01	8.75E+00	8.00E-01	6.03E+00	3.82E-02
CEA1-3-Comp 1 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	4.40E+02	6.05E+00	7.84E-04	2.83E+02	2.22E-01	4.93E-03	1.24E-01	2.49E-01	8.75E+00	8.00E-01	6.03E+00	4.14E-02
CEA1-3-Comp 2 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	2.53E+02	3.48E+00	7.84E-04	1.63E+02	1.28E-01	4.93E-03	1.24E-01	1.44E-01	8.75E+00	8.00E-01	6.03E+00	2.38E-02
CEA1-3-Comp 3 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.76E+03	2.42E+01	7.84E-04	1.13E+03	8.89E-01	4.93E-03	1.24E-01	9.97E-01	8.75E+00	8.00E-01	6.03E+00	1.65E-01
CEA4-00 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	2.95E+02	4.06E+00	7.84E-04	1.90E+02	1.49E-01	4.93E-03	1.24E-01	1.67E-01	8.75E+00	8.00E-01	6.03E+00	2.78E-02
CEA4-20 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.62E+02	2.23E+00	7.84E-04	1.04E+02	8.19E-02	4.93E-03	1.24E-01	9.19E-02	8.75E+00	8.00E-01	6.03E+00	1.52E-02
CEA4-40 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	3.64E+02	5.01E+00	7.84E-04	2.34E+02	1.84E-01	4.93E-03	1.24E-01	2.06E-01	8.75E+00	8.00E-01	6.03E+00	3.42E-02
CEA4-Comp (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	6.59E+02	9.07E+00	7.84E-04	4.25E+02	3.33E-01	4.93E-03	1.24E-01	3.74E-01	8.75E+00	8.00E-01	6.03E+00	6.20E-02
East Edith Mine Waste Area																						**Maximum HQ (Central Edith Mine Waste Area)**	**1.65E-01**
EEA1-00 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.37E+02	1.88E+00	7.84E-04	8.82E+01	6.91E-02	4.93E-03	1.24E-01	7.76E-02	8.75E+00	8.00E-01	6.03E+00	1.29E-02
EEA1-100 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	6.23E+01	8.58E-01	7.84E-04	4.02E+01	3.15E-02	4.93E-03	1.24E-01	3.54E-02	8.75E+00	8.00E-01	6.03E+00	5.87E-03
EEA1-150 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
EEA1-200 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
EEA1-250 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	5.62E+01	7.73E-01	7.84E-04	3.62E+01	2.84E-02	4.93E-03	1.24E-01	3.18E-02	8.75E+00	8.00E-01	6.03E+00	5.28E-03
EEA1-300 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	9.63E+01	1.32E+00	7.84E-04	6.20E+01	4.86E-02	4.93E-03	1.24E-01	5.46E-02	8.75E+00	8.00E-01	6.03E+00	9.06E-03
EEA1-350 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.54E+02	2.12E+00	7.84E-04	9.94E+01	7.80E-02	4.93E-03	1.24E-01	8.75E-02	8.75E+00	8.00E-01	6.03E+00	1.45E-02
EEA1-400 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	2.93E+02	4.03E+00	7.84E-04	1.89E+02	1.48E-01	4.93E-03	1.24E-01	1.66E-01	8.75E+00	8.00E-01	6.03E+00	2.76E-02
EEA1-450 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	2.36E+02	3.25E+00	7.84E-04	1.52E+02	1.19E-01	4.93E-03	1.24E-01	1.34E-01	8.75E+00	8.00E-01	6.03E+00	2.22E-02
EEA1-50 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.39E+02	1.92E+00	7.84E-04	8.97E+01	7.04E-02	4.93E-03	1.24E-01	7.90E-02	8.75E+00	8.00E-01	6.03E+00	1.31E-02
EEA1-500 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	2.68E+02	3.69E+00	7.84E-04	1.73E+02	1.36E-01	4.93E-03	1.24E-01	1.52E-01	8.75E+00	8.00E-01	6.03E+00	2.53E-02
EEA1-Comp 1 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	6.44E+01	8.86E-01	7.84E-04	4.15E+01	3.25E-02	4.93E-03	1.24E-01	3.65E-02	8.75E+00	8.00E-01	6.03E+00	6.06E-03
EEA2-00 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
EEA2-50 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	3.79E+02	5.22E+00	7.84E-04	2.44E+02	1.92E-01	4.93E-03	1.24E-01	2.15E-01	8.75E+00	8.00E-01	6.03E+00	3.57E-02
EEA2-100 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.63E+02	2.24E+00	7.84E-04	1.05E+02	8.23E-02	4.93E-03	1.24E-01	9.23E-02	8.75E+00	8.00E-01	6.03E+00	1.53E-02
EEA2-150 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	8.14E+01	1.12E+00	7.84E-04	5.24E+01	4.11E-02	4.93E-03	1.24E-01	4.61E-02	8.75E+00	8.00E-01	6.03E+00	7.66E-03
EEA2-200 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	2.44E+02	3.36E+00	7.84E-04	1.57E+02	1.23E-01	4.93E-03	1.24E-01	1.38E-01	8.75E+00	8.00E-01	6.03E+00	2.30E-02
EEA2-250 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	5.26E+01	7.24E-01	7.84E-04	3.39E+01	2.66E-02	4.93E-03	1.24E-01	2.98E-02	8.75E+00	8.00E-01	6.03E+00	4.95E-03
EEA2-300 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	2.07E+02	2.85E+00	7.84E-04	1.33E+02	1.05E-01	4.93E-03	1.24E-01	1.17E-01	8.75E+00	8.00E-01	6.03E+00	1.95E-02
EEA2-Comp 1 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.69E+02	2.33E+00	7.84E-04	1.09E+02	8.56E-02	4.93E-03	1.24E-01	9.61E-02	8.75E+00	8.00E-01	6.03E+00	1.59E-02
																						Maximum HQ (East Edith Mine Waste Area)	**3.57E-02**
Meadow Vole (Small Herbivorous Mammal - Terrestrial)																							
Reference Sites																							
SHGBG-1 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	4.35E-02	1.40E+01	6.55E-02	NA	NA	NA	NA	1.13E-04	3.22E+02	3.62E-02	1.00E+00	3.06E-02	3.32E+00	2.41E+02	1.87E-02	2.34E+02	1.42E-02
SHGBG-2 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	4.35E-02	1.42E+00	6.66E-03	NA	NA	NA	NA	1.13E-04	3.27E+01	3.68E-03	1.00E+00	3.06E-02	3.38E-01	2.41E+02	1.87E-02	2.34E+02	1.45E-03
SHGBG-201 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	4.35E-02	1.97E+00	9.23E-03	NA	NA	NA	NA	1.13E-04	4.53E+01	5.10E-03	1.00E+00	3.06E-02	4.68E-01	2.41E+02	1.87E-02	2.34E+02	2.00E-03
SHGBG-202 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	4.35E-02	1.58E+00	7.40E-03	NA	NA	NA	NA	1.13E-04	3.63E+01	4.09E-03	1.00E+00	3.06E-02	3.75E-01	2.41E+02	1.87E-02	2.34E+02	1.61E-03
West Edith Mine Waste Area																						**Minimum HQ (Reference Sites)**	**1.45E-03**
WEA1-00 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
WEA1-100 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	6.52E+01	3.06E-01	NA	NA	NA	NA	1.13E-04	1.04E+02	1.17E-02	1.00E+00	3.06E-02	1.04E+01	2.41E+02	1.87E-02	2.34E+02	4.44E-02
WEA1-150 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	7.37E+01	3.45E-01	NA	NA	NA	NA	1.13E-04	1.17E+02	1.32E-02	1.00E+00	3.06E-02	1.17E+01	2.41E+02	1.87E-02	2.34E+02	5.02E-02
WEA1-200 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	8.21E+01	3.85E-01	NA	NA	NA	NA	1.13E-04	1.31E+02	1.47E-02	1.00E+00	3.06E-02	1.31E+01	2.41E+02	1.87E-02	2.34E+02	5.59E-02
WEA1-250 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	7.16E+01	3.36E-01	NA	NA	NA	NA	1.13E-04	1.14E+02	1.28E-02	1.00E+00	3.06E-02	1.14E+01	2.41E+02	1.87E-02	2.34E+02	4.88E-02
WEA1-300 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	7.03E+01	3.30E-01	NA	NA	NA	NA	1.13E-04	1.12E+02	1.26E-02	1.00E+00	3.06E-02	1.12E+01	2.41E+02	1.87E-02	2.34E+02	4.79E-02
WEA1-350 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	1.04E+02	4.86E-01	NA	NA	NA	NA	1.13E-04	1.65E+02	1.86E-02	1.00E+00	3.06E-02	1.65E+01	2.41E+02	1.87E-02	2.34E+02	7.05E-02
WEA1-400 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	1.33E+02	6.22E-01	NA	NA	NA	NA	1.13E-04	2.11E+02	2.38E-02	1.00E+00	3.06E-02	2.11E+01	2.41E+02	1.87E-02	2.34E+02	9.03E-02
WEA1-450 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	1.14E+02	5.35E-01	NA	NA	NA	NA	1.13E-04	1.82E+02	2.04E-02	1.00E+00	3.06E-02	1.82E+01	2.41E+02	1.87E-02	2.34E+02	7.77E-02

TABLE C-5D: LEAD DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 5 - EDITH MINE WASTE AREAS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **1.29**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Meadow Vole (Small Herbivorous Mammal - Terrestrial)																							
WEA1-550 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	8.72E+01	4.09E-01	NA	NA	NA	NA	1.13E-04	1.39E+02	1.56E-02	1.00E+00	3.06E-02	1.39E+01	2.41E+02	1.87E-02	2.34E+02	5.94E-02
WEA1-Comp 1 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	7.11E+01	3.33E-01	NA	NA	NA	NA	1.13E-04	1.13E+02	1.27E-02	1.00E+00	3.06E-02	1.13E+01	2.41E+02	1.87E-02	2.34E+02	4.84E-02
WEA1-Comp 2 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	8.43E+01	3.95E-01	NA	NA	NA	NA	1.13E-04	1.34E+02	1.51E-02	1.00E+00	3.06E-02	1.34E+01	2.41E+02	1.87E-02	2.34E+02	5.74E-02
Central Edith Mine Waste Area																						**Maximum HQ (West Edith Mine Waste Area)**	**9.03E-02**
CEA1-3-00 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	8.75E+01	4.10E-01	NA	NA	NA	NA	1.13E-04	1.39E+02	1.57E-02	1.00E+00	3.06E-02	1.39E+01	2.41E+02	1.87E-02	2.34E+02	5.96E-02
CEA1-3-100 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	7.94E+01	3.72E-01	NA	NA	NA	NA	1.13E-04	1.26E+02	1.42E-02	1.00E+00	3.06E-02	1.26E+01	2.41E+02	1.87E-02	2.34E+02	5.40E-02
CEA1-3-150 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	1.11E+02	5.18E-01	NA	NA	NA	NA	1.13E-04	1.76E+02	1.98E-02	1.00E+00	3.06E-02	1.76E+01	2.41E+02	1.87E-02	2.34E+02	7.53E-02
CEA1-3-200 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	7.27E+01	3.41E-01	NA	NA	NA	NA	1.13E-04	1.16E+02	1.30E-02	1.00E+00	3.06E-02	1.16E+01	2.41E+02	1.87E-02	2.34E+02	4.95E-02
CEA1-3-250 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	9.71E+01	4.55E-01	NA	NA	NA	NA	1.13E-04	1.55E+02	1.74E-02	1.00E+00	3.06E-02	1.54E+01	2.41E+02	1.87E-02	2.34E+02	6.61E-02
CEA1-3-300 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	5.91E+01	2.77E-01	NA	NA	NA	NA	1.13E-04	9.40E+01	1.06E-02	1.00E+00	3.06E-02	9.40E+00	2.41E+02	1.87E-02	2.34E+02	4.02E-02
CEA1-3-350 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	5.97E+01	2.80E-01	NA	NA	NA	NA	1.13E-04	9.51E+01	1.07E-02	1.00E+00	3.06E-02	9.50E+00	2.41E+02	1.87E-02	2.34E+02	4.07E-02
CEA1-3-400 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	2.34E+02	1.10E+00	NA	NA	NA	NA	1.13E-04	3.72E+02	4.19E-02	1.00E+00	3.06E-02	3.72E+01	2.41E+02	1.87E-02	2.34E+02	1.59E-01
CEA1-3-450 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	6.30E+01	2.95E-01	NA	NA	NA	NA	1.13E-04	1.00E+02	1.13E-02	1.00E+00	3.06E-02	1.00E+01	2.41E+02	1.87E-02	2.34E+02	4.29E-02
CEA1-3-50 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	6.81E+01	3.19E-01	NA	NA	NA	NA	1.13E-04	1.08E+02	1.22E-02	1.00E+00	3.06E-02	1.08E+01	2.41E+02	1.87E-02	2.34E+02	4.64E-02
CEA1-3-500 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	4.63E+01	2.17E-01	NA	NA	NA	NA	1.13E-04	7.37E+01	8.30E-03	1.00E+00	3.06E-02	7.37E+00	2.41E+02	1.87E-02	2.34E+02	3.15E-02
CEA1-3-550 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	5.50E+01	2.58E-01	NA	NA	NA	NA	1.13E-04	8.76E+01	9.86E-03	1.00E+00	3.06E-02	8.75E+00	2.41E+02	1.87E-02	2.34E+02	3.75E-02
CEA1-3-600 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	5.56E+01	2.61E-01	NA	NA	NA	NA	1.13E-04	8.85E+01	9.96E-03	1.00E+00	3.06E-02	8.84E+00	2.41E+02	1.87E-02	2.34E+02	3.79E-02
CEA1-3-650 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	5.41E+01	2.53E-01	NA	NA	NA	NA	1.13E-04	8.60E+01	9.68E-03	1.00E+00	3.06E-02	8.60E+00	2.41E+02	1.87E-02	2.34E+02	3.68E-02
CEA1-3-700 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	8.81E+01	4.13E-01	NA	NA	NA	NA	1.13E-04	1.40E+02	1.58E-02	1.00E+00	3.06E-02	1.40E+01	2.41E+02	1.87E-02	2.34E+02	6.00E-02
CEA1-3-750 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	1.46E+02	6.84E-01	NA	NA	NA	NA	1.13E-04	2.32E+02	2.61E-02	1.00E+00	3.06E-02	2.32E+01	2.41E+02	1.87E-02	2.34E+02	9.93E-02
CEA1-3-800 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	9.83E+01	4.61E-01	NA	NA	NA	NA	1.13E-04	1.56E+02	1.76E-02	1.00E+00	3.06E-02	1.56E+01	2.41E+02	1.87E-02	2.34E+02	6.69E-02
CEA1-3-850 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	1.64E+02	7.71E-01	NA	NA	NA	NA	1.13E-04	2.62E+02	2.94E-02	1.00E+00	3.06E-02	2.62E+01	2.41E+02	1.87E-02	2.34E+02	1.12E-01
CEA1-3-Comp 1 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	1.78E+02	8.34E-01	NA	NA	NA	NA	1.13E-04	2.83E+02	3.19E-02	1.00E+00	3.06E-02	2.83E+01	2.41E+02	1.87E-02	2.34E+02	1.21E-01
CEA1-3-Comp 2 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	1.02E+02	4.80E-01	NA	NA	NA	NA	1.13E-04	1.63E+02	1.83E-02	1.00E+00	3.06E-02	1.63E+01	2.41E+02	1.87E-02	2.34E+02	6.98E-02
CEA1-3-Comp 3 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	7.12E+02	3.34E+00	NA	NA	NA	NA	1.13E-04	1.13E+03	1.28E-01	1.00E+00	3.06E-02	1.13E+02	2.41E+02	1.87E-02	2.34E+02	4.85E-01
CEA4-00 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	1.19E+02	5.60E-01	NA	NA	NA	NA	1.13E-04	1.90E+02	2.14E-02	1.00E+00	3.06E-02	1.90E+01	2.41E+02	1.87E-02	2.34E+02	8.13E-02
CEA4-20 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	6.56E+01	3.07E-01	NA	NA	NA	NA	1.13E-04	1.04E+02	1.17E-02	1.00E+00	3.06E-02	1.04E+01	2.41E+02	1.87E-02	2.34E+02	4.46E-02
CEA4-40 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	1.47E+02	6.91E-01	NA	NA	NA	NA	1.13E-04	2.34E+02	2.64E-02	1.00E+00	3.06E-02	2.34E+01	2.41E+02	1.87E-02	2.34E+02	1.00E-01
CEA4-Comp (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	2.67E+02	1.25E+00	NA	NA	NA	NA	1.13E-04	4.25E+02	4.78E-02	1.00E+00	3.06E-02	4.24E+01	2.41E+02	1.87E-02	2.34E+02	1.82E-01
East Edith Mine Waste Area																						**Maximum HQ (Central Edith Mine Waste Area)**	**4.85E-01**
EEA1-00 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	5.54E+01	2.60E-01	NA	NA	NA	NA	1.13E-04	8.82E+01	9.92E-03	1.00E+00	3.06E-02	8.81E+00	2.41E+02	1.87E-02	2.34E+02	3.77E-02
EEA1-100 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	2.52E+01	1.18E-01	NA	NA	NA	NA	1.13E-04	4.02E+01	4.52E-03	1.00E+00	3.06E-02	4.01E+00	2.41E+02	1.87E-02	2.34E+02	1.72E-02
EEA1-150 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
EEA1-200 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
EEA1-250 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	2.27E+01	1.07E-01	NA	NA	NA	NA	1.13E-04	3.62E+01	4.07E-03	1.00E+00	3.06E-02	3.62E+00	2.41E+02	1.87E-02	2.34E+02	1.55E-02
EEA1-300 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	3.90E+01	1.83E-01	NA	NA	NA	NA	1.13E-04	6.20E+01	6.98E-03	1.00E+00	3.06E-02	6.20E+00	2.41E+02	1.87E-02	2.34E+02	2.65E-02
EEA1-350 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	6.24E+01	2.93E-01	NA	NA	NA	NA	1.13E-04	9.94E+01	1.12E-02	1.00E+00	3.06E-02	9.93E+00	2.41E+02	1.87E-02	2.34E+02	4.25E-02
EEA1-400 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	1.19E+02	5.56E-01	NA	NA	NA	NA	1.13E-04	1.89E+02	2.12E-02	1.00E+00	3.06E-02	1.89E+01	2.41E+02	1.87E-02	2.34E+02	8.08E-02
EEA1-450 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	9.56E+01	4.48E-01	NA	NA	NA	NA	1.13E-04	1.52E+02	1.71E-02	1.00E+00	3.06E-02	1.52E+01	2.41E+02	1.87E-02	2.34E+02	6.51E-02
EEA1-50 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	5.64E+01	2.64E-01	NA	NA	NA	NA	1.13E-04	8.97E+01	1.01E-02	1.00E+00	3.06E-02	8.97E+00	2.41E+02	1.87E-02	2.34E+02	3.84E-02
EEA1-500 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	1.09E+02	5.09E-01	NA	NA	NA	NA	1.13E-04	1.73E+02	1.95E-02	1.00E+00	3.06E-02	1.73E+01	2.41E+02	1.87E-02	2.34E+02	7.40E-02
EEA1-Comp 1 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	2.61E+01	1.22E-01	NA	NA	NA	NA	1.13E-04	4.15E+01	4.67E-03	1.00E+00	3.06E-02	4.14E+00	2.41E+02	1.87E-02	2.34E+02	1.77E-02
EEA2-00 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
EEA2-50 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	1.54E+02	7.20E-01	NA	NA	NA	NA	1.13E-04	2.44E+02	2.75E-02	1.00E+00	3.06E-02	2.44E+01	2.41E+02	1.87E-02	2.34E+02	1.05E-01
EEA2-100 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	6.59E+01	3.09E-01	NA	NA	NA	NA	1.13E-04	1.05E+02	1.18E-02	1.00E+00	3.06E-02	1.05E+01	2.41E+02	1.87E-02	2.34E+02	4.49E-02
EEA2-150 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	3.29E+01	1.54E-01	NA	NA	NA	NA	1.13E-04	5.24E+01	5.90E-03	1.00E+00	3.06E-02	5.24E+00	2.41E+02	1.87E-02	2.34E+02	2.24E-02
EEA2-200 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	9.88E+01	4.63E-01	NA	NA	NA	NA	1.13E-04	1.57E+02	1.77E-02	1.00E+00	3.06E-02	1.57E+01	2.41E+02	1.87E-02	2.34E+02	6.73E-02
EEA2-250 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	2.13E+01	9.98E-02	NA	NA	NA	NA	1.13E-04	3.39E+01	3.81E-03	1.00E+00	3.06E-02	3.39E+00	2.41E+02	1.87E-02	2.34E+02	1.45E-02
EEA2-300 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	8.37E+01	3.93E-01	NA	NA	NA	NA	1.13E-04	1.33E+02	1.50E-02	1.00E+00	3.06E-02	1.33E+01	2.41E+02	1.87E-02	2.34E+02	5.70E-02
EEA2-Comp 1 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	6.86E+01	3.21E-01	NA	NA	NA	NA	1.13E-04	1.09E+02	1.23E-02	1.00E+00	3.06E-02	1.09E+01	2.41E+02	1.87E-02	2.34E+02	4.67E-02
																						Maximum HQ (East Edith Mine Waste Area)	**1.05E-01**

TABLE C-5D: LEAD DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 5 - EDITH MINE WASTE AREAS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **1.29**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
White-Tailed Deer (Large Herbivorous Mammal - Terrestrial)																							
Reference Sites																							
SHGBG-1 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	4.35E-02	1.40E+01	2.00E+01	NA	NA	NA	NA	2.86E-02	3.22E+02	9.21E+00	7.22E-03	1.35E+02	1.56E-03	2.41E+02	1.87E-02	1.41E+02	1.11E-05
SHGBG-2 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	4.35E-02	1.42E+00	2.03E+00	NA	NA	NA	NA	2.86E-02	3.27E+01	9.36E-01	7.22E-03	1.35E+02	1.59E-04	2.41E+02	1.87E-02	1.41E+02	1.12E-06
SHGBG-201 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	4.35E-02	1.97E+00	2.82E+00	NA	NA	NA	NA	2.86E-02	4.53E+01	1.30E+00	7.22E-03	1.35E+02	2.20E-04	2.41E+02	1.87E-02	1.41E+02	1.56E-06
SHGBG-202 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	4.35E-02	1.58E+00	2.26E+00	NA	NA	NA	NA	2.86E-02	3.63E+01	1.04E+00	7.22E-03	1.35E+02	1.76E-04	2.41E+02	1.87E-02	1.41E+02	1.25E-06
West Edith Mine Waste Area																						**Minimum HQ (Reference Sites)**	**1.12E-06**
WEA1-00 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
WEA1-100 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	6.52E+01	9.34E+01	NA	NA	NA	NA	2.86E-02	1.04E+02	2.97E+00	7.22E-03	1.35E+02	5.15E-03	2.41E+02	1.87E-02	1.41E+02	3.65E-05
WEA1-150 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	7.37E+01	1.05E+02	NA	NA	NA	NA	2.86E-02	1.17E+02	3.36E+00	7.22E-03	1.35E+02	5.82E-03	2.41E+02	1.87E-02	1.41E+02	4.12E-05
WEA1-200 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	8.21E+01	1.18E+02	NA	NA	NA	NA	2.86E-02	1.31E+02	3.74E+00	7.22E-03	1.35E+02	6.48E-03	2.41E+02	1.87E-02	1.41E+02	4.59E-05
WEA1-250 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	7.16E+01	1.03E+02	NA	NA	NA	NA	2.86E-02	1.14E+02	3.26E+00	7.22E-03	1.35E+02	5.66E-03	2.41E+02	1.87E-02	1.41E+02	4.00E-05
WEA1-300 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	7.03E+01	1.01E+02	NA	NA	NA	NA	2.86E-02	1.12E+02	3.20E+00	7.22E-03	1.35E+02	5.55E-03	2.41E+02	1.87E-02	1.41E+02	3.93E-05
WEA1-350 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	1.04E+02	1.48E+02	NA	NA	NA	NA	2.86E-02	1.65E+02	4.72E+00	7.22E-03	1.35E+02	8.18E-03	2.41E+02	1.87E-02	1.41E+02	5.79E-05
WEA1-400 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	1.33E+02	1.90E+02	NA	NA	NA	NA	2.86E-02	2.11E+02	6.05E+00	7.22E-03	1.35E+02	1.05E-02	2.41E+02	1.87E-02	1.41E+02	7.42E-05
WEA1-450 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	1.14E+02	1.63E+02	NA	NA	NA	NA	2.86E-02	1.82E+02	5.20E+00	7.22E-03	1.35E+02	9.01E-03	2.41E+02	1.87E-02	1.41E+02	6.38E-05
WEA1-550 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	8.72E+01	1.25E+02	NA	NA	NA	NA	2.86E-02	1.39E+02	3.97E+00	7.22E-03	1.35E+02	6.88E-03	2.41E+02	1.87E-02	1.41E+02	4.88E-05
WEA1-Comp 1 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	7.11E+01	1.02E+02	NA	NA	NA	NA	2.86E-02	1.13E+02	3.24E+00	7.22E-03	1.35E+02	5.62E-03	2.41E+02	1.87E-02	1.41E+02	3.98E-05
WEA1-Comp 2 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	8.43E+01	1.21E+02	NA	NA	NA	NA	2.86E-02	1.34E+02	3.84E+00	7.22E-03	1.35E+02	6.66E-03	2.41E+02	1.87E-02	1.41E+02	4.72E-05
Central Edith Mine Waste Area																						**Maximum HQ (West Edith Mine Waste Area)**	**7.42E-05**
CEA1-3-00 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	8.75E+01	1.25E+02	NA	NA	NA	NA	2.86E-02	1.39E+02	3.99E+00	7.22E-03	1.35E+02	6.91E-03	2.41E+02	1.87E-02	1.41E+02	4.89E-05
CEA1-3-100 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	7.94E+01	1.14E+02	NA	NA	NA	NA	2.86E-02	1.26E+02	3.62E+00	7.22E-03	1.35E+02	6.27E-03	2.41E+02	1.87E-02	1.41E+02	4.44E-05
CEA1-3-150 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	1.11E+02	1.58E+02	NA	NA	NA	NA	2.86E-02	1.76E+02	5.04E+00	7.22E-03	1.35E+02	8.73E-03	2.41E+02	1.87E-02	1.41E+02	6.18E-05
CEA1-3-200 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	7.27E+01	1.04E+02	NA	NA	NA	NA	2.86E-02	1.16E+02	3.31E+00	7.22E-03	1.35E+02	5.74E-03	2.41E+02	1.87E-02	1.41E+02	4.07E-05
CEA1-3-250 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	9.71E+01	1.39E+02	NA	NA	NA	NA	2.86E-02	1.55E+02	4.43E+00	7.22E-03	1.35E+02	7.67E-03	2.41E+02	1.87E-02	1.41E+02	5.43E-05
CEA1-3-300 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	5.91E+01	8.46E+01	NA	NA	NA	NA	2.86E-02	9.40E+01	2.69E+00	7.22E-03	1.35E+02	4.67E-03	2.41E+02	1.87E-02	1.41E+02	3.30E-05
CEA1-3-350 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	5.97E+01	8.55E+01	NA	NA	NA	NA	2.86E-02	9.51E+01	2.72E+00	7.22E-03	1.35E+02	4.72E-03	2.41E+02	1.87E-02	1.41E+02	3.34E-05
CEA1-3-400 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	2.34E+02	3.35E+02	NA	NA	NA	NA	2.86E-02	3.72E+02	1.07E+01	7.22E-03	1.35E+02	1.85E-02	2.41E+02	1.87E-02	1.41E+02	1.31E-04
CEA1-3-450 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	6.30E+01	9.02E+01	NA	NA	NA	NA	2.86E-02	1.00E+02	2.87E+00	7.22E-03	1.35E+02	4.97E-03	2.41E+02	1.87E-02	1.41E+02	3.52E-05
CEA1-3-50 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	6.81E+01	9.75E+01	NA	NA	NA	NA	2.86E-02	1.08E+02	3.10E+00	7.22E-03	1.35E+02	5.38E-03	2.41E+02	1.87E-02	1.41E+02	3.81E-05
CEA1-3-500 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	4.63E+01	6.63E+01	NA	NA	NA	NA	2.86E-02	7.37E+01	2.11E+00	7.22E-03	1.35E+02	3.66E-03	2.41E+02	1.87E-02	1.41E+02	2.59E-05
CEA1-3-550 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	5.50E+01	7.88E+01	NA	NA	NA	NA	2.86E-02	8.76E+01	2.51E+00	7.22E-03	1.35E+02	4.35E-03	2.41E+02	1.87E-02	1.41E+02	3.08E-05
CEA1-3-600 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	5.56E+01	7.96E+01	NA	NA	NA	NA	2.86E-02	8.85E+01	2.53E+00	7.22E-03	1.35E+02	4.39E-03	2.41E+02	1.87E-02	1.41E+02	3.11E-05
CEA1-3-650 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	5.41E+01	7.74E+01	NA	NA	NA	NA	2.86E-02	8.60E+01	2.46E+00	7.22E-03	1.35E+02	4.27E-03	2.41E+02	1.87E-02	1.41E+02	3.02E-05
CEA1-3-700 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	8.81E+01	1.26E+02	NA	NA	NA	NA	2.86E-02	1.40E+02	4.02E+00	7.22E-03	1.35E+02	6.96E-03	2.41E+02	1.87E-02	1.41E+02	4.93E-05
CEA1-3-750 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	1.46E+02	2.09E+02	NA	NA	NA	NA	2.86E-02	2.32E+02	6.65E+00	7.22E-03	1.35E+02	1.15E-02	2.41E+02	1.87E-02	1.41E+02	8.15E-05
CEA1-3-800 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	9.83E+01	1.41E+02	NA	NA	NA	NA	2.86E-02	1.56E+02	4.48E+00	7.22E-03	1.35E+02	7.76E-03	2.41E+02	1.87E-02	1.41E+02	5.49E-05
CEA1-3-850 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	1.64E+02	2.35E+02	NA	NA	NA	NA	2.86E-02	2.62E+02	7.49E+00	7.22E-03	1.35E+02	1.30E-02	2.41E+02	1.87E-02	1.41E+02	9.19E-05
CEA1-3-Comp 1 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	1.78E+02	2.55E+02	NA	NA	NA	NA	2.86E-02	2.83E+02	8.11E+00	7.22E-03	1.35E+02	1.41E-02	2.41E+02	1.87E-02	1.41E+02	9.95E-05
CEA1-3-Comp 2 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	1.02E+02	1.47E+02	NA	NA	NA	NA	2.86E-02	1.63E+02	4.67E+00	7.22E-03	1.35E+02	8.09E-03	2.41E+02	1.87E-02	1.41E+02	5.73E-05
CEA1-3-Comp 3 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	7.12E+02	1.02E+03	NA	NA	NA	NA	2.86E-02	1.13E+03	3.24E+01	7.22E-03	1.35E+02	5.62E-02	2.41E+02	1.87E-02	1.41E+02	3.98E-04
CEA4-00 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	1.19E+02	1.71E+02	NA	NA	NA	NA	2.86E-02	1.90E+02	5.44E+00	7.22E-03	1.35E+02	9.43E-03	2.41E+02	1.87E-02	1.41E+02	6.68E-05
CEA4-20 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	6.56E+01	9.39E+01	NA	NA	NA	NA	2.86E-02	1.04E+02	2.99E+00	7.22E-03	1.35E+02	5.18E-03	2.41E+02	1.87E-02	1.41E+02	3.67E-05
CEA4-40 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	1.47E+02	2.11E+02	NA	NA	NA	NA	2.86E-02	2.34E+02	6.71E+00	7.22E-03	1.35E+02	1.16E-02	2.41E+02	1.87E-02	1.41E+02	8.24E-05
CEA4-Comp (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	2.67E+02	3.82E+02	NA	NA	NA	NA	2.86E-02	4.25E+02	1.22E+01	7.22E-03	1.35E+02	2.11E-02	2.41E+02	1.87E-02	1.41E+02	1.49E-04
East Edith Mine Waste Area																						**Maximum HQ (Central Edith Mine Waste Area)**	**3.98E-04**
EEA1-00 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	5.54E+01	7.93E+01	NA	NA	NA	NA	2.86E-02	8.82E+01	2.52E+00	7.22E-03	1.35E+02	4.37E-03	2.41E+02	1.87E-02	1.41E+02	3.10E-05
EEA1-100 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	2.52E+01	3.61E+01	NA	NA	NA	NA	2.86E-02	4.02E+01	1.15E+00	7.22E-03	1.35E+02	1.99E-03	2.41E+02	1.87E-02	1.41E+02	1.41E-05
EEA1-150 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
EEA1-200 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
EEA1-250 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	2.27E+01	3.25E+01	NA	NA	NA	NA	2.86E-02	3.62E+01	1.04E+00	7.22E-03	1.35E+02	1.79E-03	2.41E+02	1.87E-02	1.41E+02	1.27E-05
EEA1-300 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	3.90E+01	5.58E+01	NA	NA	NA	NA	2.86E-02	6.20E+01	1.78E+00	7.22E-03	1.35E+02	3.08E-03	2.41E+02	1.87E-02	1.41E+02	2.18E-05
EEA1-350 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	6.24E+01	8.94E+01	NA	NA	NA	NA	2.86E-02	9.94E+01	2.85E+00	7.22E-03	1.35E+02	4.93E-03	2.41E+02	1.87E-02	1.41E+02	3.49E-05
EEA1-400 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	1.19E+02	1.70E+02	NA	NA	NA	NA	2.86E-02	1.89E+02	5.41E+00	7.22E-03	1.35E+02	9.37E-03	2.41E+02	1.87E-02	1.41E+02	6.63E-05
EEA1-450 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	9.56E+01	1.37E+02	NA	NA	NA	NA	2.86E-02	1.52E+02	4.36E+00	7.22E-03	1.35E+02	7.55E-03	2.41E+02	1.87E-02	1.41E+02	5.34E-05
EEA1-50 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	5.64E+01	8.07E+01	NA	NA	NA	NA	2.86E-02	8.97E+01	2.57E+00	7.22E-03	1.35E+02	4.45E-03	2.41E+02	1.87E-02	1.41E+02	3.15E-05
EEA1-500 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	1.09E+02	1.56E+02	NA	NA	NA	NA	2.86E-02	1.73E+02	4.95E+00	7.22E-03	1.35E+02	8.58E-03	2.41E+02	1.87E-02	1.41E+02	6.08E-05

TABLE C-5D: LEAD DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 5 - EDITH MINE WASTE AREAS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **1.29**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
White-Tailed Deer (Large Herbivorous Mammal - Terrestrial)																							
EEA1-Comp 1 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	2.61E+01	3.73E+01	NA	NA	NA	NA	2.86E-02	4.15E+01	1.19E+00	7.22E-03	1.35E+02	2.06E-03	2.41E+02	1.87E-02	1.41E+02	1.46E-05
EEA2-00 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
EEA2-50 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	1.54E+02	2.20E+02	NA	NA	NA	NA	2.86E-02	2.44E+02	7.00E+00	7.22E-03	1.35E+02	1.21E-02	2.41E+02	1.87E-02	1.41E+02	8.59E-05
EEA2-100 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	6.59E+01	9.43E+01	NA	NA	NA	NA	2.86E-02	1.05E+02	3.00E+00	7.22E-03	1.35E+02	5.20E-03	2.41E+02	1.87E-02	1.41E+02	3.68E-05
EEA2-150 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	3.29E+01	4.71E+01	NA	NA	NA	NA	2.86E-02	5.24E+01	1.50E+00	7.22E-03	1.35E+02	2.60E-03	2.41E+02	1.87E-02	1.41E+02	1.84E-05
EEA2-200 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	9.88E+01	1.41E+02	NA	NA	NA	NA	2.86E-02	1.57E+02	4.50E+00	7.22E-03	1.35E+02	7.80E-03	2.41E+02	1.87E-02	1.41E+02	5.53E-05
EEA2-250 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	2.13E+01	3.05E+01	NA	NA	NA	NA	2.86E-02	3.39E+01	9.70E-01	7.22E-03	1.35E+02	1.68E-03	2.41E+02	1.87E-02	1.41E+02	1.19E-05
EEA2-300 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	8.37E+01	1.20E+02	NA	NA	NA	NA	2.86E-02	1.33E+02	3.82E+00	7.22E-03	1.35E+02	6.61E-03	2.41E+02	1.87E-02	1.41E+02	4.68E-05
EEA2-Comp 1 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	6.86E+01	9.82E+01	NA	NA	NA	NA	2.86E-02	1.09E+02	3.12E+00	7.22E-03	1.35E+02	5.41E-03	2.41E+02	1.87E-02	1.41E+02	3.83E-05
																				Maximum HQ (East Edith Mine Waste Area)			**8.59E-05**
Red Fox (Carnivorous Mammal - Terrestrial)																							
Reference Sites																							
SHGBG-1 (0-6")	1.72E-01	1.72E-01	7.62E-02	2.45E+01	4.20E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.22E+02	1.54E+00	9.53E-04	4.54E+00	1.21E-03	2.41E+02	1.87E-02	1.73E+02	6.98E-06
SHGBG-2 (0-6")	1.72E-01	1.72E-01	7.62E-02	2.49E+00	4.27E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.27E+01	1.57E-01	9.53E-04	4.54E+00	1.23E-04	2.41E+02	1.87E-02	1.73E+02	7.09E-07
SHGBG-201 (0-6")	1.72E-01	1.72E-01	7.62E-02	3.45E+00	5.92E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.53E+01	2.18E-01	9.53E-04	4.54E+00	1.70E-04	2.41E+02	1.87E-02	1.73E+02	9.83E-07
SHGBG-202 (0-6")	1.72E-01	1.72E-01	7.62E-02	2.77E+00	4.75E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.63E+01	1.74E-01	9.53E-04	4.54E+00	1.36E-04	2.41E+02	1.87E-02	1.73E+02	7.88E-07
West Edith Mine Waste Area																						**Minimum HQ (Reference Sites)**	**7.09E-07**
WEA1-00 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
WEA1-100 (0-6")	1.72E-01	1.72E-01	9.28E-01	9.63E+01	1.65E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.04E+02	4.99E-01	9.53E-04	4.54E+00	3.58E-03	2.41E+02	1.87E-02	1.73E+02	2.07E-05
WEA1-150 (0-6")	1.72E-01	1.72E-01	9.28E-01	1.09E+02	1.87E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.17E+02	5.63E-01	9.53E-04	4.54E+00	4.04E-03	2.41E+02	1.87E-02	1.73E+02	2.33E-05
WEA1-200 (0-6")	1.72E-01	1.72E-01	9.28E-01	1.21E+02	2.08E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.31E+02	6.28E-01	9.53E-04	4.54E+00	4.50E-03	2.41E+02	1.87E-02	1.73E+02	2.60E-05
WEA1-250 (0-6")	1.72E-01	1.72E-01	9.28E-01	1.06E+02	1.81E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.14E+02	5.48E-01	9.53E-04	4.54E+00	3.93E-03	2.41E+02	1.87E-02	1.73E+02	2.27E-05
WEA1-300 (0-6")	1.72E-01	1.72E-01	9.28E-01	1.04E+02	1.78E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.12E+02	5.38E-01	9.53E-04	4.54E+00	3.86E-03	2.41E+02	1.87E-02	1.73E+02	2.23E-05
WEA1-350 (0-6")	1.72E-01	1.72E-01	9.28E-01	1.53E+02	2.62E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.65E+02	7.92E-01	9.53E-04	4.54E+00	5.68E-03	2.41E+02	1.87E-02	1.73E+02	3.28E-05
WEA1-400 (0-6")	1.72E-01	1.72E-01	9.28E-01	1.96E+02	3.36E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.11E+02	1.01E+00	9.53E-04	4.54E+00	7.28E-03	2.41E+02	1.87E-02	1.73E+02	4.20E-05
WEA1-450 (0-6")	1.72E-01	1.72E-01	9.28E-01	1.69E+02	2.89E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.82E+02	8.73E-01	9.53E-04	4.54E+00	6.26E-03	2.41E+02	1.87E-02	1.73E+02	3.62E-05
WEA1-550 (0-6")	1.72E-01	1.72E-01	9.28E-01	1.29E+02	2.21E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.39E+02	6.67E-01	9.53E-04	4.54E+00	4.78E-03	2.41E+02	1.87E-02	1.73E+02	2.76E-05
WEA1-Comp 1 (0-6")	1.72E-01	1.72E-01	9.28E-01	1.05E+02	1.80E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.13E+02	5.44E-01	9.53E-04	4.54E+00	3.90E-03	2.41E+02	1.87E-02	1.73E+02	2.25E-05
WEA1-Comp 2 (0-6")	1.72E-01	1.72E-01	9.28E-01	1.25E+02	2.14E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.34E+02	6.45E-01	9.53E-04	4.54E+00	4.62E-03	2.41E+02	1.87E-02	1.73E+02	2.67E-05
Central Edith Mine Waste Area																						**Maximum HQ (West Edith Mine Waste Area)**	**4.20E-05**
CEA1-3-00 (0-6")	1.72E-01	1.72E-01	9.28E-01	1.29E+02	2.22E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.39E+02	6.69E-01	9.53E-04	4.54E+00	4.80E-03	2.41E+02	1.87E-02	1.73E+02	2.77E-05
CEA1-3-100 (0-6")	1.72E-01	1.72E-01	9.28E-01	1.17E+02	2.01E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.26E+02	6.07E-01	9.53E-04	4.54E+00	4.35E-03	2.41E+02	1.87E-02	1.73E+02	2.51E-05
CEA1-3-150 (0-6")	1.72E-01	1.72E-01	9.28E-01	1.63E+02	2.80E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.76E+02	8.45E-01	9.53E-04	4.54E+00	6.06E-03	2.41E+02	1.87E-02	1.73E+02	3.50E-05
CEA1-3-200 (0-6")	1.72E-01	1.72E-01	9.28E-01	1.07E+02	1.84E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.16E+02	5.56E-01	9.53E-04	4.54E+00	3.99E-03	2.41E+02	1.87E-02	1.73E+02	2.30E-05
CEA1-3-250 (0-6")	1.72E-01	1.72E-01	9.28E-01	1.43E+02	2.46E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.55E+02	7.43E-01	9.53E-04	4.54E+00	5.33E-03	2.41E+02	1.87E-02	1.73E+02	3.08E-05
CEA1-3-300 (0-6")	1.72E-01	1.72E-01	9.28E-01	8.72E+01	1.50E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	9.40E+01	4.52E-01	9.53E-04	4.54E+00	3.24E-03	2.41E+02	1.87E-02	1.73E+02	1.87E-05
CEA1-3-350 (0-6")	1.72E-01	1.72E-01	9.28E-01	8.82E+01	1.51E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	9.51E+01	4.57E-01	9.53E-04	4.54E+00	3.28E-03	2.41E+02	1.87E-02	1.73E+02	1.89E-05
CEA1-3-400 (0-6")	1.72E-01	1.72E-01	9.28E-01	3.45E+02	5.92E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.72E+02	1.79E+00	9.53E-04	4.54E+00	1.28E-02	2.41E+02	1.87E-02	1.73E+02	7.41E-05
CEA1-3-450 (0-6")	1.72E-01	1.72E-01	9.28E-01	9.30E+01	1.60E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.00E+02	4.82E-01	9.53E-04	4.54E+00	3.45E-03	2.41E+02	1.87E-02	1.73E+02	2.00E-05
CEA1-3-50 (0-6")	1.72E-01	1.72E-01	9.28E-01	1.01E+02	1.73E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.08E+02	5.21E-01	9.53E-04	4.54E+00	3.73E-03	2.41E+02	1.87E-02	1.73E+02	2.16E-05
CEA1-3-500 (0-6")	1.72E-01	1.72E-01	9.28E-01	6.84E+01	1.17E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	7.37E+01	3.54E-01	9.53E-04	4.54E+00	2.54E-03	2.41E+02	1.87E-02	1.73E+02	1.47E-05
CEA1-3-550 (0-6")	1.72E-01	1.72E-01	9.28E-01	8.13E+01	1.39E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	8.76E+01	4.21E-01	9.53E-04	4.54E+00	3.02E-03	2.41E+02	1.87E-02	1.73E+02	1.74E-05
CEA1-3-600 (0-6")	1.72E-01	1.72E-01	9.28E-01	8.21E+01	1.41E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	8.85E+01	4.25E-01	9.53E-04	4.54E+00	3.05E-03	2.41E+02	1.87E-02	1.73E+02	1.76E-05
CEA1-3-650 (0-6")	1.72E-01	1.72E-01	9.28E-01	7.98E+01	1.37E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	8.60E+01	4.13E-01	9.53E-04	4.54E+00	2.96E-03	2.41E+02	1.87E-02	1.73E+02	1.71E-05
CEA1-3-700 (0-6")	1.72E-01	1.72E-01	9.28E-01	1.30E+02	2.23E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.40E+02	6.74E-01	9.53E-04	4.54E+00	4.83E-03	2.41E+02	1.87E-02	1.73E+02	2.79E-05
CEA1-3-750 (0-6")	1.72E-01	1.72E-01	9.28E-01	2.15E+02	3.69E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.32E+02	1.11E+00	9.53E-04	4.54E+00	8.00E-03	2.41E+02	1.87E-02	1.73E+02	4.62E-05
CEA1-3-800 (0-6")	1.72E-01	1.72E-01	9.28E-01	1.45E+02	2.49E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.56E+02	7.51E-01	9.53E-04	4.54E+00	5.39E-03	2.41E+02	1.87E-02	1.73E+02	3.11E-05
CEA1-3-850 (0-6")	1.72E-01	1.72E-01	9.28E-01	2.43E+02	4.16E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.62E+02	1.26E+00	9.53E-04	4.54E+00	9.01E-03	2.41E+02	1.87E-02	1.73E+02	5.21E-05
CEA1-3-Comp 1 (0-6")	1.72E-01	1.72E-01	9.28E-01	2.63E+02	4.51E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.83E+02	1.36E+00	9.53E-04	4.54E+00	9.76E-03	2.41E+02	1.87E-02	1.73E+02	5.64E-05
CEA1-3-Comp 2 (0-6")	1.72E-01	1.72E-01	9.28E-01	1.51E+02	2.60E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.63E+02	7.83E-01	9.53E-04	4.54E+00	5.62E-03	2.41E+02	1.87E-02	1.73E+02	3.25E-05
CEA1-3-Comp 3 (0-6")	1.72E-01	1.72E-01	9.28E-01	1.05E+03	1.80E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.13E+03	5.44E+00	9.53E-04	4.54E+00	3.90E-02	2.41E+02	1.87E-02	1.73E+02	2.25E-04

TABLE C-5D: LEAD DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 5 - EDITH MINE WASTE AREAS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **1.29**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Red Fox (Carnivorous Mammal - Terrestrial)																							
CEA4-00 (0-6")	1.72E-01	1.72E-01	9.28E-01	1.76E+02	3.03E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.90E+02	9.13E-01	9.53E-04	4.54E+00	6.55E-03	2.41E+02	1.87E-02	1.73E+02	3.78E-05
CEA4-20 (0-6")	1.72E-01	1.72E-01	9.28E-01	9.68E+01	1.66E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.04E+02	5.01E-01	9.53E-04	4.54E+00	3.60E-03	2.41E+02	1.87E-02	1.73E+02	2.08E-05
CEA4-40 (0-6")	1.72E-01	1.72E-01	9.28E-01	2.18E+02	3.73E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.34E+02	1.13E+00	9.53E-04	4.54E+00	8.08E-03	2.41E+02	1.87E-02	1.73E+02	4.67E-05
CEA4-Comp (0-6")	1.72E-01	1.72E-01	9.28E-01	3.94E+02	6.76E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.25E+02	2.04E+00	9.53E-04	4.54E+00	1.46E-02	2.41E+02	1.87E-02	1.73E+02	8.45E-05
East Edith Mine Waste Area																						**Maximum HQ (Central Edith Mine Waste Area)**	**2.25E-04**
EEA1-00 (0-6")	1.72E-01	1.72E-01	9.28E-01	8.18E+01	1.40E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	8.82E+01	4.23E-01	9.53E-04	4.54E+00	3.04E-03	2.41E+02	1.87E-02	1.73E+02	1.75E-05
EEA1-100 (0-6")	1.72E-01	1.72E-01	9.28E-01	3.73E+01	6.39E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.02E+01	1.93E-01	9.53E-04	4.54E+00	1.38E-03	2.41E+02	1.87E-02	1.73E+02	7.99E-06
EEA1-150 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
EEA1-200 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
EEA1-250 (0-6")	1.72E-01	1.72E-01	9.28E-01	3.36E+01	5.76E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.62E+01	1.74E-01	9.53E-04	4.54E+00	1.25E-03	2.41E+02	1.87E-02	1.73E+02	7.20E-06
EEA1-300 (0-6")	1.72E-01	1.72E-01	9.28E-01	5.75E+01	9.87E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	6.20E+01	2.98E-01	9.53E-04	4.54E+00	2.14E-03	2.41E+02	1.87E-02	1.73E+02	1.23E-05
EEA1-350 (0-6")	1.72E-01	1.72E-01	9.28E-01	9.22E+01	1.58E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	9.94E+01	4.77E-01	9.53E-04	4.54E+00	3.42E-03	2.41E+02	1.87E-02	1.73E+02	1.98E-05
EEA1-400 (0-6")	1.72E-01	1.72E-01	9.28E-01	1.75E+02	3.00E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.89E+02	9.07E-01	9.53E-04	4.54E+00	6.50E-03	2.41E+02	1.87E-02	1.73E+02	3.76E-05
EEA1-450 (0-6")	1.72E-01	1.72E-01	9.28E-01	1.41E+02	2.42E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.52E+02	7.31E-01	9.53E-04	4.54E+00	5.24E-03	2.41E+02	1.87E-02	1.73E+02	3.03E-05
EEA1-50 (0-6")	1.72E-01	1.72E-01	9.28E-01	8.33E+01	1.43E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	8.97E+01	4.31E-01	9.53E-04	4.54E+00	3.09E-03	2.41E+02	1.87E-02	1.73E+02	1.79E-05
EEA1-500 (0-6")	1.72E-01	1.72E-01	9.28E-01	1.60E+02	2.75E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.73E+02	8.31E-01	9.53E-04	4.54E+00	5.96E-03	2.41E+02	1.87E-02	1.73E+02	3.44E-05
EEA1-Comp 1 (0-6")	1.72E-01	1.72E-01	9.28E-01	3.85E+01	6.60E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.15E+01	1.99E-01	9.53E-04	4.54E+00	1.43E-03	2.41E+02	1.87E-02	1.73E+02	8.25E-06
EEA2-00 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
EEA2-50 (0-6")	1.72E-01	1.72E-01	9.28E-01	2.27E+02	3.89E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.44E+02	1.17E+00	9.53E-04	4.54E+00	8.42E-03	2.41E+02	1.87E-02	1.73E+02	4.86E-05
EEA2-100 (0-6")	1.72E-01	1.72E-01	9.28E-01	9.73E+01	1.67E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.05E+02	5.04E-01	9.53E-04	4.54E+00	3.61E-03	2.41E+02	1.87E-02	1.73E+02	2.09E-05
EEA2-150 (0-6")	1.72E-01	1.72E-01	9.28E-01	4.86E+01	8.34E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.24E+01	2.52E-01	9.53E-04	4.54E+00	1.81E-03	2.41E+02	1.87E-02	1.73E+02	1.04E-05
EEA2-200 (0-6")	1.72E-01	1.72E-01	9.28E-01	1.46E+02	2.50E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.57E+02	7.56E-01	9.53E-04	4.54E+00	5.42E-03	2.41E+02	1.87E-02	1.73E+02	3.13E-05
EEA2-250 (0-6")	1.72E-01	1.72E-01	9.28E-01	3.14E+01	5.39E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.39E+01	1.63E-01	9.53E-04	4.54E+00	1.17E-03	2.41E+02	1.87E-02	1.73E+02	6.74E-06
EEA2-300 (0-6")	1.72E-01	1.72E-01	9.28E-01	1.24E+02	2.12E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.33E+02	6.40E-01	9.53E-04	4.54E+00	4.59E-03	2.41E+02	1.87E-02	1.73E+02	2.65E-05
EEA2-Comp 1 (0-6")	1.72E-01	1.72E-01	9.28E-01	1.01E+02	1.74E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.09E+02	5.24E-01	9.53E-04	4.54E+00	3.76E-03	2.41E+02	1.87E-02	1.73E+02	2.17E-05
																						Maximum HQ (East Edith Mine Waste Area)	**4.86E-05**
Masked Shrew (Omnivorous Mammal - Terrestrial, Wetland)																							
Reference Sites																							
SHGBG-1 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	4.99E+02	4.23E+00	1.10E-03	3.22E+02	3.54E-01	1.00E+00	5.50E-03	8.33E+02	2.41E+02	1.87E-02	2.59E+02	3.22E+00
SHGBG-2 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	5.07E+01	4.30E-01	1.10E-03	3.27E+01	3.60E-02	1.00E+00	5.50E-03	8.47E+01	2.41E+02	1.87E-02	2.59E+02	3.27E-01
SHGBG-201 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	7.03E+01	5.96E-01	1.10E-03	4.53E+01	4.99E-02	1.00E+00	5.50E-03	1.17E+02	2.41E+02	1.87E-02	2.59E+02	4.53E-01
SHGBG-202 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	5.64E+01	4.77E-01	1.10E-03	3.63E+01	4.00E-02	1.00E+00	5.50E-03	9.41E+01	2.41E+02	1.87E-02	2.59E+02	3.63E-01
West Edith Mine Waste Area																						**Minimum HQ (Reference Sites)**	**3.27E-01**
WEA1-00 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
WEA1-100 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.61E+02	1.37E+00	1.10E-03	1.04E+02	1.14E-01	1.00E+00	5.50E-03	2.69E+02	2.41E+02	1.87E-02	2.59E+02	1.04E+00
WEA1-150 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.82E+02	1.54E+00	1.10E-03	1.17E+02	1.29E-01	1.00E+00	5.50E-03	3.04E+02	2.41E+02	1.87E-02	2.59E+02	1.17E+00
WEA1-200 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	2.03E+02	1.72E+00	1.10E-03	1.31E+02	1.44E-01	1.00E+00	5.50E-03	3.39E+02	2.41E+02	1.87E-02	2.59E+02	1.31E+00
WEA1-250 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.77E+02	1.50E+00	1.10E-03	1.14E+02	1.26E-01	1.00E+00	5.50E-03	2.95E+02	2.41E+02	1.87E-02	2.59E+02	1.14E+00
WEA1-300 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.74E+02	1.47E+00	1.10E-03	1.12E+02	1.23E-01	1.00E+00	5.50E-03	2.90E+02	2.41E+02	1.87E-02	2.59E+02	1.12E+00
WEA1-350 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	2.56E+02	2.17E+00	1.10E-03	1.65E+02	1.82E-01	1.00E+00	5.50E-03	4.27E+02	2.41E+02	1.87E-02	2.59E+02	1.65E+00
WEA1-400 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	3.28E+02	2.78E+00	1.10E-03	2.11E+02	2.33E-01	1.00E+00	5.50E-03	5.47E+02	2.41E+02	1.87E-02	2.59E+02	2.11E+00
WEA1-450 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	2.82E+02	2.39E+00	1.10E-03	1.82E+02	2.00E-01	1.00E+00	5.50E-03	4.71E+02	2.41E+02	1.87E-02	2.59E+02	1.82E+00
WEA1-550 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	2.15E+02	1.82E+00	1.10E-03	1.39E+02	1.53E-01	1.00E+00	5.50E-03	3.59E+02	2.41E+02	1.87E-02	2.59E+02	1.39E+00
WEA1-Comp 1 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.76E+02	1.49E+00	1.10E-03	1.13E+02	1.25E-01	1.00E+00	5.50E-03	2.93E+02	2.41E+02	1.87E-02	2.59E+02	1.13E+00
WEA1-Comp 2 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	2.08E+02	1.76E+00	1.10E-03	1.34E+02	1.48E-01	1.00E+00	5.50E-03	3.48E+02	2.41E+02	1.87E-02	2.59E+02	1.34E+00
Central Edith Mine Waste Area																						**Maximum HQ (West Edith Mine Waste Area)**	**2.11E+00**
CEA1-3-00 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	2.16E+02	1.83E+00	1.10E-03	1.39E+02	1.53E-01	1.00E+00	5.50E-03	3.61E+02	2.41E+02	1.87E-02	2.59E+02	1.39E+00
CEA1-3-100 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.96E+02	1.66E+00	1.10E-03	1.26E+02	1.39E-01	1.00E+00	5.50E-03	3.27E+02	2.41E+02	1.87E-02	2.59E+02	1.26E+00
CEA1-3-150 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	2.73E+02	2.31E+00	1.10E-03	1.76E+02	1.94E-01	1.00E+00	5.50E-03	4.56E+02	2.41E+02	1.87E-02	2.59E+02	1.76E+00
CEA1-3-200 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.80E+02	1.52E+00	1.10E-03	1.16E+02	1.27E-01	1.00E+00	5.50E-03	3.00E+02	2.41E+02	1.87E-02	2.59E+02	1.16E+00
CEA1-3-250 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	2.40E+02	2.03E+00	1.10E-03	1.55E+02	1.70E-01	1.00E+00	5.50E-03	4.00E+02	2.41E+02	1.87E-02	2.59E+02	1.55E+00
CEA1-3-300 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.46E+02	1.24E+00	1.10E-03	9.40E+01	1.04E-01	1.00E+00	5.50E-03	2.44E+02	2.41E+02	1.87E-02	2.59E+02	9.41E-01
CEA1-3-350 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.48E+02	1.25E+00	1.10E-03	9.51E+01	1.05E-01	1.00E+00	5.50E-03	2.46E+02	2.41E+02	1.87E-02	2.59E+02	9.51E-01
CEA1-3-400 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	5.78E+02	4.89E+00	1.10E-03	3.72E+02	4.10E-01	1.00E+00	5.50E-03	9.64E+02	2.41E+02	1.87E-02	2.59E+02	3.72E+00
CEA1-3-450 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.56E+02	1.32E+00	1.10E-03	1.00E+02	1.10E-01	1.00E+00	5.50E-03	2.60E+02	2.41E+02	1.87E-02	2.59E+02	1.00E+00

TABLE C-5D: LEAD DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 5 - EDITH MINE WASTE AREAS (Continued)
Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)
calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 1.29

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Masked Shrew (Omnivorous Mammal - Terrestrial, Wetland)																							
CEA1-3-50 (0-6")																							
CEA1-3-500 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.14E+02	9.69E-01	1.10E-03	7.37E+01	8.12E-02	1.00E+00	5.50E-03	1.91E+02	2.41E+02	1.87E-02	2.59E+02	7.37E-01
CEA1-3-550 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.36E+02	1.15E+00	1.10E-03	8.76E+01	9.64E-02	1.00E+00	5.50E-03	2.27E+02	2.41E+02	1.87E-02	2.59E+02	8.76E-01
CEA1-3-600 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.37E+02	1.16E+00	1.10E-03	8.85E+01	9.74E-02	1.00E+00	5.50E-03	2.29E+02	2.41E+02	1.87E-02	2.59E+02	8.85E-01
CEA1-3-650 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.34E+02	1.13E+00	1.10E-03	8.60E+01	9.47E-02	1.00E+00	5.50E-03	2.23E+02	2.41E+02	1.87E-02	2.59E+02	8.61E-01
CEA1-3-700 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	2.18E+02	1.84E+00	1.10E-03	1.40E+02	1.54E-01	1.00E+00	5.50E-03	3.63E+02	2.41E+02	1.87E-02	2.59E+02	1.40E+00
CEA1-3-750 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	3.60E+02	3.05E+00	1.10E-03	2.32E+02	2.56E-01	1.00E+00	5.50E-03	6.01E+02	2.41E+02	1.87E-02	2.59E+02	2.32E+00
CEA1-3-800 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	2.43E+02	2.06E+00	1.10E-03	1.56E+02	1.72E-01	1.00E+00	5.50E-03	4.05E+02	2.41E+02	1.87E-02	2.59E+02	1.56E+00
CEA1-3-850 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	4.06E+02	3.44E+00	1.10E-03	2.62E+02	2.88E-01	1.00E+00	5.50E-03	6.78E+02	2.41E+02	1.87E-02	2.59E+02	2.62E+00
CEA1-3-Comp 1 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	4.40E+02	3.72E+00	1.10E-03	2.83E+02	3.12E-01	1.00E+00	5.50E-03	7.34E+02	2.41E+02	1.87E-02	2.59E+02	2.83E+00
CEA1-3-Comp 2 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	2.53E+02	2.14E+00	1.10E-03	1.63E+02	1.80E-01	1.00E+00	5.50E-03	4.22E+02	2.41E+02	1.87E-02	2.59E+02	1.63E+00
CEA1-3-Comp 3 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.76E+03	1.49E+01	1.10E-03	1.13E+03	1.25E+00	1.00E+00	5.50E-03	2.93E+03	2.41E+02	1.87E-02	2.59E+02	1.13E+01
CEA4-00 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	2.95E+02	2.50E+00	1.10E-03	1.90E+02	2.09E-01	1.00E+00	5.50E-03	4.92E+02	2.41E+02	1.87E-02	2.59E+02	1.90E+00
CEA4-20 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.62E+02	1.37E+00	1.10E-03	1.04E+02	1.15E-01	1.00E+00	5.50E-03	2.70E+02	2.41E+02	1.87E-02	2.59E+02	1.04E+00
CEA4-40 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	3.64E+02	3.08E+00	1.10E-03	2.34E+02	2.58E-01	1.00E+00	5.50E-03	6.07E+02	2.41E+02	1.87E-02	2.59E+02	2.35E+00
CEA4-Comp (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	6.59E+02	5.58E+00	1.10E-03	4.25E+02	4.68E-01	1.00E+00	5.50E-03	1.10E+03	2.41E+02	1.87E-02	2.59E+02	4.25E+00
East Edith Mine Waste Area																						**Maximum HQ (Central Edith Mine Waste Area)**	**1.13E+01**
EEA1-00 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.37E+02	1.16E+00	1.10E-03	8.82E+01	9.71E-02	1.00E+00	5.50E-03	2.28E+02	2.41E+02	1.87E-02	2.59E+02	8.82E-01
EEA1-100 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	6.23E+01	5.28E-01	1.10E-03	4.02E+01	4.42E-02	1.00E+00	5.50E-03	1.04E+02	2.41E+02	1.87E-02	2.59E+02	4.02E-01
EEA1-150 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
EEA1-200 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
EEA1-250 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	5.62E+01	4.76E-01	1.10E-03	3.62E+01	3.98E-02	1.00E+00	5.50E-03	9.37E+01	2.41E+02	1.87E-02	2.59E+02	3.62E-01
EEA1-300 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	9.63E+01	8.15E-01	1.10E-03	6.20E+01	6.83E-02	1.00E+00	5.50E-03	1.61E+02	2.41E+02	1.87E-02	2.59E+02	6.20E-01
EEA1-350 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.54E+02	1.31E+00	1.10E-03	9.94E+01	1.09E-01	1.00E+00	5.50E-03	2.57E+02	2.41E+02	1.87E-02	2.59E+02	9.94E-01
EEA1-400 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	2.93E+02	2.48E+00	1.10E-03	1.89E+02	2.08E-01	1.00E+00	5.50E-03	4.89E+02	2.41E+02	1.87E-02	2.59E+02	1.89E+00
EEA1-450 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	2.36E+02	2.00E+00	1.10E-03	1.52E+02	1.67E-01	1.00E+00	5.50E-03	3.94E+02	2.41E+02	1.87E-02	2.59E+02	1.52E+00
EEA1-50 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.39E+02	1.18E+00	1.10E-03	8.97E+01	9.88E-02	1.00E+00	5.50E-03	2.32E+02	2.41E+02	1.87E-02	2.59E+02	8.98E-01
EEA1-500 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	2.68E+02	2.27E+00	1.10E-03	1.73E+02	1.90E-01	1.00E+00	5.50E-03	4.48E+02	2.41E+02	1.87E-02	2.59E+02	1.73E+00
EEA1-Comp 1 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	6.44E+01	5.45E-01	1.10E-03	4.15E+01	4.57E-02	1.00E+00	5.50E-03	1.07E+02	2.41E+02	1.87E-02	2.59E+02	4.15E-01
EEA2-00 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
EEA2-50 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	3.79E+02	3.21E+00	1.10E-03	2.44E+02	2.69E-01	1.00E+00	5.50E-03	6.33E+02	2.41E+02	1.87E-02	2.59E+02	2.44E+00
EEA2-100 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.63E+02	1.38E+00	1.10E-03	1.05E+02	1.15E-01	1.00E+00	5.50E-03	2.72E+02	2.41E+02	1.87E-02	2.59E+02	1.05E+00
EEA2-150 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	8.14E+01	6.89E-01	1.10E-03	5.24E+01	5.77E-02	1.00E+00	5.50E-03	1.36E+02	2.41E+02	1.87E-02	2.59E+02	5.24E-01
EEA2-200 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	2.44E+02	2.07E+00	1.10E-03	1.57E+02	1.73E-01	1.00E+00	5.50E-03	4.08E+02	2.41E+02	1.87E-02	2.59E+02	1.57E+00
EEA2-250 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	5.26E+01	4.46E-01	1.10E-03	3.39E+01	3.73E-02	1.00E+00	5.50E-03	8.78E+01	2.41E+02	1.87E-02	2.59E+02	3.39E-01
EEA2-300 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	2.07E+02	1.75E+00	1.10E-03	1.33E+02	1.47E-01	1.00E+00	5.50E-03	3.45E+02	2.41E+02	1.87E-02	2.59E+02	1.33E+00
EEA2-Comp 1 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.69E+02	1.43E+00	1.10E-03	1.09E+02	1.20E-01	1.00E+00	5.50E-03	2.83E+02	2.41E+02	1.87E-02	2.59E+02	1.09E+00
																						Maximum HQ (East Edith Mine Waste Area)	**2.44E+00**

Notes

1 See Tables 3-1 through 3-13 f for ingestion rates, foraging ranges used to calculate the SUF, and body weights.
2 BAFs were calculated by dividing site-collected tissue by collocated soil concentrations (BAFs are in dry weight). The maximum BAF calculated from the Beartrap Creek and Blackfoot River transects was used for site dose calculations. The maximum BAF from the terrestrial reference site was used for reference site dose calculations.
3 The mammal, plant, and invertebrate concentrations were calculated by multiplying the soil concentration by the BAF to generate a tissue concentration (see note 2).
4 Mammal, plant, and invertebrate daily doses were calculated by multiplying the ingestion rate (see note 1) by the tissue concentration (see note 3).
5 Soil concentration from 0 to 6 inches below ground surface at point ID as measured by XRF 10. Doses were not calculated for detected and non-detected soil concentrations measured below the minimum reference site concentration, as indicated by BB. For results that were measured at less than the detection limit, doses were calculated using half of the detection limit.
6 Soil daily dose was calculated by multiplying the soil ingestion rate (see note 1) by soil concentration (see note 5).
7 Total daily dose is calculated using the following equation: total daily dose = ([mammal daily dose (if applicable) + plant daily dose (if applicable) + invertebrate daily dose (if applicable) + soil daily dose]*SUF)/receptor species body weight.
8 The TRVs used in this risk assessment represent a mid-range effects level. The derivation of TRVs is described in Navy (1998).
9 Allometrically adjusted TRVs for birds were calculated using the following equation: receptor species TRV = (test species TRV) x (test species body weight / receptor species body weight)$^{(1-1.2)}$.
10 Allometrically adjusted TRVs for mammals were calculated using the following equation: receptor species TRV = (test species TRV) x (test species body weight / receptor species body weight)$^{(1-0.94)}$.
11 HQs were calculated using the following equation: HQ = total daily dose/allometrically adjusted TRV.
12 Highlighted cells indicate an HQ greater than 1.0.

BAF	Bioaccumulation Factor	mg/day	Milligram per day
BB	Below minimum background reference site concentration	mg/kg	Milligram per kilogram
EE/CA	Engineering Evaluation/Cost Analysis	NA	Not applicable
EU	Exposure Unit	Navy	Department of the Navy
HQ	Hazard quotient	SUF	Site use factor
ID	Identification	TRV	Toxicity reference value
kg	Kilogram	XRF	X-ray fluorescence
kg/day	Kilogram per day	XRF 10	XRF measurements recorded following drying and seiving through a #10-mesh screen

Sources: Department of the Navy. 1998. "Development of Toxicity Reference Values for Conducting Ecological Risk Assessments at Naval Facilities in California, Interim Final." Prepared by Naval Facilities Engineering Command, Engineering Field Activity West (EFA West). San Bruno, California.

TABLE C-5E: MANGANESE DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 5 - EDITH MINE WASTE AREAS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **1.29**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Mourning Dove (Herbivorous Birds - Terrestrial)																							
Reference Sites																							
SHGBG-1 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	3.34E-01	4.91E+02	2.83E+00	NA	NA	NA	NA	5.36E-04	1.47E+03	7.88E-01	4.98E-03	1.09E-01	1.65E-01	7.76E+02	1.97E-01	6.90E+02	2.39E-04
SHGBG-2 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	3.34E-01	3.37E+02	1.94E+00	NA	NA	NA	NA	5.36E-04	1.01E+03	5.40E-01	4.98E-03	1.09E-01	1.13E-01	7.76E+02	1.97E-01	6.90E+02	1.64E-04
SHGBG-201 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	3.34E-01	7.58E+01	4.37E-01	NA	NA	NA	NA	5.36E-04	2.27E+02	1.21E-01	4.98E-03	1.09E-01	2.55E-02	7.76E+02	1.97E-01	6.90E+02	3.69E-05
SHGBG-202 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	3.34E-01	6.74E+01	3.88E-01	NA	NA	NA	NA	5.36E-04	2.01E+02	1.08E-01	4.98E-03	1.09E-01	2.26E-02	7.76E+02	1.97E-01	6.90E+02	3.28E-05
West Edith Mine Waste Area																						**Minimum HQ (Reference Sites)**	**3.28E-05**
WEA1-00 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	4.48E+03	2.58E+01	NA	NA	NA	NA	5.36E-04	4.53E+02	2.42E-01	4.98E-03	1.09E-01	1.19E+00	7.76E+02	1.97E-01	6.90E+02	1.72E-03
WEA1-100 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	8.42E+03	4.85E+01	NA	NA	NA	NA	5.36E-04	8.49E+02	4.55E-01	4.98E-03	1.09E-01	2.23E+00	7.76E+02	1.97E-01	6.90E+02	3.24E-03
WEA1-150 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	1.91E+04	1.10E+02	NA	NA	NA	NA	5.36E-04	1.93E+03	1.03E+00	4.98E-03	1.09E-01	5.07E+00	7.76E+02	1.97E-01	6.90E+02	7.35E-03
WEA1-200 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	1.50E+04	8.64E+01	NA	NA	NA	NA	5.36E-04	1.51E+03	8.11E-01	4.98E-03	1.09E-01	3.98E+00	7.76E+02	1.97E-01	6.90E+02	5.76E-03
WEA1-250 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	1.36E+04	7.84E+01	NA	NA	NA	NA	5.36E-04	1.37E+03	7.35E-01	4.98E-03	1.09E-01	3.61E+00	7.76E+02	1.97E-01	6.90E+02	5.23E-03
WEA1-300 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	1.38E+04	7.94E+01	NA	NA	NA	NA	5.36E-04	1.39E+03	7.45E-01	4.98E-03	1.09E-01	3.65E+00	7.76E+02	1.97E-01	6.90E+02	5.29E-03
WEA1-350 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	6.29E+03	3.62E+01	NA	NA	NA	NA	5.36E-04	6.34E+02	3.40E-01	4.98E-03	1.09E-01	1.67E+00	7.76E+02	1.97E-01	6.90E+02	2.42E-03
WEA1-400 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	2.37E+03	1.37E+01	NA	NA	NA	NA	5.36E-04	2.39E+02	1.28E-01	4.98E-03	1.09E-01	6.29E-01	7.76E+02	1.97E-01	6.90E+02	9.12E-04
WEA1-450 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
WEA1-550 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
WEA1-Comp 1 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	2.56E+04	1.47E+02	NA	NA	NA	NA	5.36E-04	2.58E+03	1.38E+00	4.98E-03	1.09E-01	6.78E+00	7.76E+02	1.97E-01	6.90E+02	9.83E-03
WEA1-Comp 2 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	3.32E+04	1.91E+02	NA	NA	NA	NA	5.36E-04	3.35E+03	1.79E+00	4.98E-03	1.09E-01	8.80E+00	7.76E+02	1.97E-01	6.90E+02	1.28E-02
Central Edith Mine Waste Area																						**Maximum HQ (West Edith Mine Waste Area)**	**1.28E-02**
CEA1-3-00 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	1.25E+04	7.20E+01	NA	NA	NA	NA	5.36E-04	1.26E+03	6.75E-01	4.98E-03	1.09E-01	3.31E+00	7.76E+02	1.97E-01	6.90E+02	4.80E-03
CEA1-3-100 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	1.21E+04	6.98E+01	NA	NA	NA	NA	5.36E-04	1.22E+03	6.55E-01	4.98E-03	1.09E-01	3.21E+00	7.76E+02	1.97E-01	6.90E+02	4.66E-03
CEA1-3-150 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	2.12E+03	1.22E+01	NA	NA	NA	NA	5.36E-04	2.14E+02	1.14E-01	4.98E-03	1.09E-01	5.61E-01	7.76E+02	1.97E-01	6.90E+02	8.14E-04
CEA1-3-200 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	5.89E+03	3.39E+01	NA	NA	NA	NA	5.36E-04	5.94E+02	3.18E-01	4.98E-03	1.09E-01	1.56E+00	7.76E+02	1.97E-01	6.90E+02	2.26E-03
CEA1-3-250 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	2.62E+03	1.51E+01	NA	NA	NA	NA	5.36E-04	2.64E+02	1.41E-01	4.98E-03	1.09E-01	6.94E-01	7.76E+02	1.97E-01	6.90E+02	1.01E-03
CEA1-3-300 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	4.89E+03	2.82E+01	NA	NA	NA	NA	5.36E-04	4.93E+02	2.64E-01	4.98E-03	1.09E-01	1.30E+00	7.76E+02	1.97E-01	6.90E+02	1.88E-03
CEA1-3-350 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	1.04E+04	5.99E+01	NA	NA	NA	NA	5.36E-04	1.05E+03	5.63E-01	4.98E-03	1.09E-01	2.76E+00	7.76E+02	1.97E-01	6.90E+02	4.00E-03
CEA1-3-400 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	8.29E+03	4.78E+01	NA	NA	NA	NA	5.36E-04	8.37E+02	4.48E-01	4.98E-03	1.09E-01	2.20E+00	7.76E+02	1.97E-01	6.90E+02	3.19E-03
CEA1-3-450 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CEA1-3-50 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	4.03E+03	2.32E+01	NA	NA	NA	NA	5.36E-04	4.06E+02	2.18E-01	4.98E-03	1.09E-01	1.07E+00	7.76E+02	1.97E-01	6.90E+02	1.55E-03
CEA1-3-500 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	6.89E+03	3.97E+01	NA	NA	NA	NA	5.36E-04	6.95E+02	3.73E-01	4.98E-03	1.09E-01	1.83E+00	7.76E+02	1.97E-01	6.90E+02	2.65E-03
CEA1-3-550 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	4.56E+03	2.62E+01	NA	NA	NA	NA	5.36E-04	4.60E+02	2.46E-01	4.98E-03	1.09E-01	1.21E+00	7.76E+02	1.97E-01	6.90E+02	1.75E-03
CEA1-3-600 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	1.37E+04	7.92E+01	NA	NA	NA	NA	5.36E-04	1.39E+03	7.43E-01	4.98E-03	1.09E-01	3.65E+00	7.76E+02	1.97E-01	6.90E+02	5.28E-03
CEA1-3-650 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	4.00E+03	2.31E+01	NA	NA	NA	NA	5.36E-04	4.04E+02	2.16E-01	4.98E-03	1.09E-01	1.06E+00	7.76E+02	1.97E-01	6.90E+02	1.54E-03
CEA1-3-700 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	4.11E+03	2.37E+01	NA	NA	NA	NA	5.36E-04	4.15E+02	2.22E-01	4.98E-03	1.09E-01	1.09E+00	7.76E+02	1.97E-01	6.90E+02	1.58E-03
CEA1-3-750 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CEA1-3-800 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CEA1-3-850 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	2.01E+03	1.16E+01	NA	NA	NA	NA	5.36E-04	2.02E+02	1.08E-01	4.98E-03	1.09E-01	5.32E-01	7.76E+02	1.97E-01	6.90E+02	7.71E-04
CEA1-3-Comp 1 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	2.97E+03	1.71E+01	NA	NA	NA	NA	5.36E-04	3.00E+02	1.61E-01	4.98E-03	1.09E-01	7.88E-01	7.76E+02	1.97E-01	6.90E+02	1.14E-03
CEA1-3-Comp 2 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	2.30E+03	1.32E+01	NA	NA	NA	NA	5.36E-04	2.32E+02	1.24E-01	4.98E-03	1.09E-01	6.10E-01	7.76E+02	1.97E-01	6.90E+02	8.84E-04
CEA1-3-Comp 3 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	2.40E+03	1.38E+01	NA	NA	NA	NA	5.36E-04	2.42E+02	1.30E-01	4.98E-03	1.09E-01	6.37E-01	7.76E+02	1.97E-01	6.90E+02	9.24E-04
CEA4-00 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	1.58E+03	9.10E+00	NA	NA	NA	NA	5.36E-04	1.59E+02	8.54E-02	4.98E-03	1.09E-01	4.19E-01	7.76E+02	1.97E-01	6.90E+02	6.07E-04
CEA4-20 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	1.55E+03	8.91E+00	NA	NA	NA	NA	5.36E-04	1.56E+02	8.36E-02	4.98E-03	1.09E-01	4.10E-01	7.76E+02	1.97E-01	6.90E+02	5.94E-04
CEA4-40 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	5.01E+03	2.88E+01	NA	NA	NA	NA	5.36E-04	5.05E+02	2.71E-01	4.98E-03	1.09E-01	1.33E+00	7.76E+02	1.97E-01	6.90E+02	1.92E-03
CEA4-Comp (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	2.29E+03	1.32E+01	NA	NA	NA	NA	5.36E-04	2.31E+02	1.24E-01	4.98E-03	1.09E-01	6.08E-01	7.76E+02	1.97E-01	6.90E+02	8.81E-04
East Edith Mine Waste Area																						**Maximum HQ (Central Edith Mine Waste Area)**	**5.28E-03**
EEA1-00 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	2.47E+03	1.42E+01	NA	NA	NA	NA	5.36E-04	2.50E+02	1.34E-01	4.98E-03	1.09E-01	6.56E-01	7.76E+02	1.97E-01	6.90E+02	9.51E-04
EEA1-100 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	4.43E+03	2.55E+01	NA	NA	NA	NA	5.36E-04	4.47E+02	2.39E-01	4.98E-03	1.09E-01	1.17E+00	7.76E+02	1.97E-01	6.90E+02	1.70E-03
EEA1-150 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	3.37E+03	1.94E+01	NA	NA	NA	NA	5.36E-04	3.41E+02	1.82E-01	4.98E-03	1.09E-01	8.95E-01	7.76E+02	1.97E-01	6.90E+02	1.30E-03
EEA1-200 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	4.43E+03	2.55E+01	NA	NA	NA	NA	5.36E-04	4.47E+02	2.40E-01	4.98E-03	1.09E-01	1.18E+00	7.76E+02	1.97E-01	6.90E+02	1.70E-03
EEA1-250 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	3.98E+03	2.29E+01	NA	NA	NA	NA	5.36E-04	4.02E+02	2.15E-01	4.98E-03	1.09E-01	1.06E+00	7.76E+02	1.97E-01	6.90E+02	1.53E-03
EEA1-300 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	5.10E+03	2.94E+01	NA	NA	NA	NA	5.36E-04	5.15E+02	2.76E-01	4.98E-03	1.09E-01	1.35E+00	7.76E+02	1.97E-01	6.90E+02	1.96E-03
EEA1-350 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	5.94E+03	3.43E+01	NA	NA	NA	NA	5.36E-04	6.00E+02	3.21E-01	4.98E-03	1.09E-01	1.58E+00	7.76E+02	1.97E-01	6.90E+02	2.29E-03
EEA1-400 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	6.98E+03	4.02E+01	NA	NA	NA	NA	5.36E-04	7.05E+02	3.78E-01	4.98E-03	1.09E-01	1.85E+00	7.76E+02	1.97E-01	6.90E+02	2.69E-03
EEA1-450 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	4.47E+03	2.58E+01	NA	NA	NA	NA	5.36E-04	4.51E+02	2.42E-01	4.98E-03	1.09E-01	1.19E+00	7.76E+02	1.97E-01	6.90E+02	1.72E-03
EEA1-50 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	2.36E+03	1.36E+01	NA	NA	NA	NA	5.36E-04	2.38E+02	1.28E-01	4.98E-03	1.09E-01	6.26E-01	7.76E+02	1.97E-01	6.90E+02	9.08E-04
EEA1-500 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	9.49E+03	5.47E+01	NA	NA	NA	NA	5.36E-04	9.58E+02	5.13E-01	4.98E-03	1.09E-01	2.52E+00	7.76E+02	1.97E-01	6.90E+02	3.65E-03
EEA1-Comp 1 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	4.27E+03	2.46E+01	NA	NA	NA	NA	5.36E-04	4.31E+02	2.31E-01	4.98E-03	1.09E-01	1.13E+00	7.76E+02	1.97E-01	6.90E+02	1.64E-03

TABLE C-5E: MANGANESE DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 5 - EDITH MINE WASTE AREAS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **1.29**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Mourning Dove (Herbivorous Birds - Terrestrial)																							
EEA2-00 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	3.73E+03	2.15E+01	NA	NA	NA	NA	5.36E-04	3.76E+02	2.02E-01	4.98E-03	1.09E-01	9.89E-01	7.76E+02	1.97E-01	6.90E+02	1.43E-03
EEA2-50 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	8.16E+03	4.70E+01	NA	NA	NA	NA	5.36E-04	8.23E+02	4.41E-01	4.98E-03	1.09E-01	2.16E+00	7.76E+02	1.97E-01	6.90E+02	3.14E-03
EEA2-100 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	1.28E+04	7.35E+01	NA	NA	NA	NA	5.36E-04	1.29E+03	6.90E-01	4.98E-03	1.09E-01	3.38E+00	7.76E+02	1.97E-01	6.90E+02	4.90E-03
EEA2-150 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	4.35E+03	2.51E+01	NA	NA	NA	NA	5.36E-04	4.39E+02	2.35E-01	4.98E-03	1.09E-01	1.15E+00	7.76E+02	1.97E-01	6.90E+02	1.67E-03
EEA2-200 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	5.04E+03	2.91E+01	NA	NA	NA	NA	5.36E-04	5.09E+02	2.73E-01	4.98E-03	1.09E-01	1.34E+00	7.76E+02	1.97E-01	6.90E+02	1.94E-03
EEA2-250 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	5.55E+03	3.20E+01	NA	NA	NA	NA	5.36E-04	5.60E+02	3.00E-01	4.98E-03	1.09E-01	1.47E+00	7.76E+02	1.97E-01	6.90E+02	2.13E-03
EEA2-300 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	1.17E+04	6.76E+01	NA	NA	NA	NA	5.36E-04	1.18E+03	6.34E-01	4.98E-03	1.09E-01	3.11E+00	7.76E+02	1.97E-01	6.90E+02	4.51E-03
EEA2-Comp 1 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	5.19E+03	2.99E+01	NA	NA	NA	NA	5.36E-04	5.23E+02	2.80E-01	4.98E-03	1.09E-01	1.38E+00	7.76E+02	1.97E-01	6.90E+02	1.99E-03
																						Maximum HQ (East Edith Mine Waste Area)	**4.90E-03**
Red-Tailed Hawk (Carnivorous Birds - Terrestrial)																							
Reference Sites																							
SHGBG-1 (0-6")	9.00E-02	9.00E-02	5.93E-02	8.72E+01	7.85E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.47E+03	7.54E+00	1.85E-03	1.13E+00	2.51E-02	7.76E+02	1.97E-01	1.10E+03	2.28E-05
SHGBG-2 (0-6")	9.00E-02	9.00E-02	5.93E-02	5.98E+01	5.38E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.01E+03	5.17E+00	1.85E-03	1.13E+00	1.72E-02	7.76E+02	1.97E-01	1.10E+03	1.56E-05
SHGBG-201 (0-6")	9.00E-02	9.00E-02	5.93E-02	1.35E+01	1.21E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.27E+02	1.16E+00	1.85E-03	1.13E+00	3.87E-03	7.76E+02	1.97E-01	1.10E+03	3.52E-06
SHGBG-202 (0-6")	9.00E-02	9.00E-02	5.93E-02	1.20E+01	1.08E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.01E+02	1.03E+00	1.85E-03	1.13E+00	3.44E-03	7.76E+02	1.97E-01	1.10E+03	3.12E-06
West Edith Mine Waste Area																						**Minimum HQ (Reference Sites)**	**3.12E-06**
WEA1-00 (0-6")	9.00E-02	9.00E-02	2.80E-02	1.27E+01	1.14E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.53E+02	2.32E+00	1.85E-03	1.13E+00	5.65E-03	7.76E+02	1.97E-01	1.10E+03	5.13E-06
WEA1-100 (0-6")	9.00E-02	9.00E-02	2.80E-02	2.38E+01	2.14E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	8.49E+02	4.35E+00	1.85E-03	1.13E+00	1.06E-02	7.76E+02	1.97E-01	1.10E+03	9.62E-06
WEA1-150 (0-6")	9.00E-02	9.00E-02	2.80E-02	5.40E+01	4.86E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.93E+03	9.90E+00	1.85E-03	1.13E+00	2.41E-02	7.76E+02	1.97E-01	1.10E+03	2.19E-05
WEA1-200 (0-6")	9.00E-02	9.00E-02	2.80E-02	4.23E+01	3.81E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.51E+03	7.76E+00	1.85E-03	1.13E+00	1.89E-02	7.76E+02	1.97E-01	1.10E+03	1.71E-05
WEA1-250 (0-6")	9.00E-02	9.00E-02	2.80E-02	3.84E+01	3.46E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.37E+03	7.04E+00	1.85E-03	1.13E+00	1.71E-02	7.76E+02	1.97E-01	1.10E+03	1.55E-05
WEA1-300 (0-6")	9.00E-02	9.00E-02	2.80E-02	3.89E+01	3.50E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.39E+03	7.13E+00	1.85E-03	1.13E+00	1.73E-02	7.76E+02	1.97E-01	1.10E+03	1.57E-05
WEA1-350 (0-6")	9.00E-02	9.00E-02	2.80E-02	1.78E+01	1.60E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	6.34E+02	3.25E+00	1.85E-03	1.13E+00	7.92E-03	7.76E+02	1.97E-01	1.10E+03	7.19E-06
WEA1-400 (0-6")	9.00E-02	9.00E-02	2.80E-02	6.70E+00	6.03E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.39E+02	1.23E+00	1.85E-03	1.13E+00	2.99E-03	7.76E+02	1.97E-01	1.10E+03	2.71E-06
WEA1-450 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
WEA1-550 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
WEA1-Comp 1 (0-6")	9.00E-02	9.00E-02	2.80E-02	7.23E+01	6.50E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.58E+03	1.32E+01	1.85E-03	1.13E+00	3.22E-02	7.76E+02	1.97E-01	1.10E+03	2.92E-05
WEA1-Comp 2 (0-6")	9.00E-02	9.00E-02	2.80E-02	9.37E+01	8.43E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.35E+03	1.72E+01	1.85E-03	1.13E+00	4.18E-02	7.76E+02	1.97E-01	1.10E+03	3.79E-05
Central Edith Mine Waste Area																						**Maximum HQ (West Edith Mine Waste Area)**	**3.79E-05**
CEA1-3-00 (0-6")	9.00E-02	9.00E-02	2.80E-02	3.53E+01	3.17E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.26E+03	6.46E+00	1.85E-03	1.13E+00	1.57E-02	7.76E+02	1.97E-01	1.10E+03	1.43E-05
CEA1-3-100 (0-6")	9.00E-02	9.00E-02	2.80E-02	3.42E+01	3.08E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.22E+03	6.27E+00	1.85E-03	1.13E+00	1.53E-02	7.76E+02	1.97E-01	1.10E+03	1.38E-05
CEA1-3-150 (0-6")	9.00E-02	9.00E-02	2.80E-02	5.98E+00	5.38E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.14E+02	1.09E+00	1.85E-03	1.13E+00	2.67E-03	7.76E+02	1.97E-01	1.10E+03	2.42E-06
CEA1-3-200 (0-6")	9.00E-02	9.00E-02	2.80E-02	1.66E+01	1.50E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.94E+02	3.05E+00	1.85E-03	1.13E+00	7.42E-03	7.76E+02	1.97E-01	1.10E+03	6.73E-06
CEA1-3-250 (0-6")	9.00E-02	9.00E-02	2.80E-02	7.39E+00	6.65E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.64E+02	1.35E+00	1.85E-03	1.13E+00	3.29E-03	7.76E+02	1.97E-01	1.10E+03	2.99E-06
CEA1-3-300 (0-6")	9.00E-02	9.00E-02	2.80E-02	1.38E+01	1.24E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.93E+02	2.53E+00	1.85E-03	1.13E+00	6.16E-03	7.76E+02	1.97E-01	1.10E+03	5.59E-06
CEA1-3-350 (0-6")	9.00E-02	9.00E-02	2.80E-02	2.94E+01	2.64E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.05E+03	5.38E+00	1.85E-03	1.13E+00	1.31E-02	7.76E+02	1.97E-01	1.10E+03	1.19E-05
CEA1-3-400 (0-6")	9.00E-02	9.00E-02	2.80E-02	2.34E+01	2.11E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	8.37E+02	4.29E+00	1.85E-03	1.13E+00	1.04E-02	7.76E+02	1.97E-01	1.10E+03	9.48E-06
CEA1-3-450 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CEA1-3-50 (0-6")	9.00E-02	9.00E-02	2.80E-02	1.14E+01	1.02E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.06E+02	2.08E+00	1.85E-03	1.13E+00	5.07E-03	7.76E+02	1.97E-01	1.10E+03	4.61E-06
CEA1-3-500 (0-6")	9.00E-02	9.00E-02	2.80E-02	1.95E+01	1.75E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	6.95E+02	3.57E+00	1.85E-03	1.13E+00	8.68E-03	7.76E+02	1.97E-01	1.10E+03	7.88E-06
CEA1-3-550 (0-6")	9.00E-02	9.00E-02	2.80E-02	1.29E+01	1.16E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.60E+02	2.36E+00	1.85E-03	1.13E+00	5.74E-03	7.76E+02	1.97E-01	1.10E+03	5.21E-06
CEA1-3-600 (0-6")	9.00E-02	9.00E-02	2.80E-02	3.88E+01	3.49E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.39E+03	7.11E+00	1.85E-03	1.13E+00	1.73E-02	7.76E+02	1.97E-01	1.10E+03	1.57E-05
CEA1-3-650 (0-6")	9.00E-02	9.00E-02	2.80E-02	1.13E+01	1.02E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.04E+02	2.07E+00	1.85E-03	1.13E+00	5.04E-03	7.76E+02	1.97E-01	1.10E+03	4.58E-06
CEA1-3-700 (0-6")	9.00E-02	9.00E-02	2.80E-02	1.16E+01	1.04E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.15E+02	2.13E+00	1.85E-03	1.13E+00	5.18E-03	7.76E+02	1.97E-01	1.10E+03	4.70E-06
CEA1-3-750 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CEA1-3-800 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CEA1-3-850 (0-6")	9.00E-02	9.00E-02	2.80E-02	5.67E+00	5.10E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.02E+02	1.04E+00	1.85E-03	1.13E+00	2.53E-03	7.76E+02	1.97E-01	1.10E+03	2.29E-06
CEA1-3-Comp 1 (0-6")	9.00E-02	9.00E-02	2.80E-02	8.39E+00	7.55E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.00E+02	1.54E+00	1.85E-03	1.13E+00	3.74E-03	7.76E+02	1.97E-01	1.10E+03	3.40E-06
CEA1-3-Comp 2 (0-6")	9.00E-02	9.00E-02	2.80E-02	6.50E+00	5.84E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.32E+02	1.19E+00	1.85E-03	1.13E+00	2.90E-03	7.76E+02	1.97E-01	1.10E+03	2.63E-06
CEA1-3-Comp 3 (0-6")	9.00E-02	9.00E-02	2.80E-02	6.79E+00	6.11E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.42E+02	1.24E+00	1.85E-03	1.13E+00	3.03E-03	7.76E+02	1.97E-01	1.10E+03	2.75E-06

TABLE C-5E: MANGANESE DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 5 - EDITH MINE WASTE AREAS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **1.29**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Red-Tailed Hawk (Carnivorous Birds - Terrestrial)																							
CEA4-00 (0-6")	9.00E-02	9.00E-02	2.80E-02	4.46E+00	4.01E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.59E+02	8.17E-01	1.85E-03	1.13E+00	1.99E-03	7.76E+02	1.97E-01	1.10E+03	1.81E-06
CEA4-20 (0-6")	9.00E-02	9.00E-02	2.80E-02	4.37E+00	3.93E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.56E+02	8.00E-01	1.85E-03	1.13E+00	1.95E-03	7.76E+02	1.97E-01	1.10E+03	1.77E-06
CEA4-40 (0-6")	9.00E-02	9.00E-02	2.80E-02	1.41E+01	1.27E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.05E+02	2.59E+00	1.85E-03	1.13E+00	6.31E-03	7.76E+02	1.97E-01	1.10E+03	5.72E-06
CEA4-Comp (0-6")	9.00E-02	9.00E-02	2.80E-02	6.47E+00	5.82E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.31E+02	1.19E+00	1.85E-03	1.13E+00	2.89E-03	7.76E+02	1.97E-01	1.10E+03	2.62E-06
East Edith Mine Waste Area																						**Maximum HQ (Central Edith Mine Waste Area)**	**1.57E-05**
EEA1-00 (0-6")	9.00E-02	9.00E-02	2.80E-02	6.99E+00	6.29E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.50E+02	1.28E+00	1.85E-03	1.13E+00	3.12E-03	7.76E+02	1.97E-01	1.10E+03	2.83E-06
EEA1-100 (0-6")	9.00E-02	9.00E-02	2.80E-02	1.25E+01	1.12E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.47E+02	2.29E+00	1.85E-03	1.13E+00	5.58E-03	7.76E+02	1.97E-01	1.10E+03	5.06E-06
EEA1-150 (0-6")	9.00E-02	9.00E-02	2.80E-02	9.53E+00	8.58E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.41E+02	1.75E+00	1.85E-03	1.13E+00	4.25E-03	7.76E+02	1.97E-01	1.10E+03	3.86E-06
EEA1-200 (0-6")	9.00E-02	9.00E-02	2.80E-02	1.25E+01	1.13E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.47E+02	2.29E+00	1.85E-03	1.13E+00	5.58E-03	7.76E+02	1.97E-01	1.10E+03	5.07E-06
EEA1-250 (0-6")	9.00E-02	9.00E-02	2.80E-02	1.13E+01	1.01E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.02E+02	2.06E+00	1.85E-03	1.13E+00	5.02E-03	7.76E+02	1.97E-01	1.10E+03	4.55E-06
EEA1-300 (0-6")	9.00E-02	9.00E-02	2.80E-02	1.44E+01	1.30E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.15E+02	2.64E+00	1.85E-03	1.13E+00	6.42E-03	7.76E+02	1.97E-01	1.10E+03	5.83E-06
EEA1-350 (0-6")	9.00E-02	9.00E-02	2.80E-02	1.68E+01	1.51E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	6.00E+02	3.08E+00	1.85E-03	1.13E+00	7.49E-03	7.76E+02	1.97E-01	1.10E+03	6.80E-06
EEA1-400 (0-6")	9.00E-02	9.00E-02	2.80E-02	1.97E+01	1.78E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	7.05E+02	3.61E+00	1.85E-03	1.13E+00	8.80E-03	7.76E+02	1.97E-01	1.10E+03	7.99E-06
EEA1-450 (0-6")	9.00E-02	9.00E-02	2.80E-02	1.26E+01	1.14E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.51E+02	2.31E+00	1.85E-03	1.13E+00	5.63E-03	7.76E+02	1.97E-01	1.10E+03	5.11E-06
EEA1-50 (0-6")	9.00E-02	9.00E-02	2.80E-02	6.67E+00	6.00E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.38E+02	1.22E+00	1.85E-03	1.13E+00	2.97E-03	7.76E+02	1.97E-01	1.10E+03	2.70E-06
EEA1-500 (0-6")	9.00E-02	9.00E-02	2.80E-02	2.68E+01	2.41E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	9.58E+02	4.91E+00	1.85E-03	1.13E+00	1.20E-02	7.76E+02	1.97E-01	1.10E+03	1.09E-05
EEA1-Comp 1 (0-6")	9.00E-02	9.00E-02	2.80E-02	1.21E+01	1.08E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.31E+02	2.21E+00	1.85E-03	1.13E+00	5.38E-03	7.76E+02	1.97E-01	1.10E+03	4.88E-06
EEA2-00 (0-6")	9.00E-02	9.00E-02	2.80E-02	1.05E+01	9.48E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.76E+02	1.93E+00	1.85E-03	1.13E+00	4.70E-03	7.76E+02	1.97E-01	1.10E+03	4.26E-06
EEA2-50 (0-6")	9.00E-02	9.00E-02	2.80E-02	2.30E+01	2.07E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	8.23E+02	4.22E+00	1.85E-03	1.13E+00	1.03E-02	7.76E+02	1.97E-01	1.10E+03	9.33E-06
EEA2-100 (0-6")	9.00E-02	9.00E-02	2.80E-02	3.60E+01	3.24E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.29E+03	6.60E+00	1.85E-03	1.13E+00	1.61E-02	7.76E+02	1.97E-01	1.10E+03	1.46E-05
EEA2-150 (0-6")	9.00E-02	9.00E-02	2.80E-02	1.23E+01	1.11E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.39E+02	2.25E+00	1.85E-03	1.13E+00	5.48E-03	7.76E+02	1.97E-01	1.10E+03	4.98E-06
EEA2-200 (0-6")	9.00E-02	9.00E-02	2.80E-02	1.42E+01	1.28E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.09E+02	2.61E+00	1.85E-03	1.13E+00	6.35E-03	7.76E+02	1.97E-01	1.10E+03	5.77E-06
EEA2-250 (0-6")	9.00E-02	9.00E-02	2.80E-02	1.57E+01	1.41E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.60E+02	2.87E+00	1.85E-03	1.13E+00	6.99E-03	7.76E+02	1.97E-01	1.10E+03	6.34E-06
EEA2-300 (0-6")	9.00E-02	9.00E-02	2.80E-02	3.31E+01	2.98E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.18E+03	6.07E+00	1.85E-03	1.13E+00	1.48E-02	7.76E+02	1.97E-01	1.10E+03	1.34E-05
EEA2-Comp 1 (0-6")	9.00E-02	9.00E-02	2.80E-02	1.47E+01	1.32E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.23E+02	2.68E+00	1.85E-03	1.13E+00	6.53E-03	7.76E+02	1.97E-01	1.10E+03	5.93E-06
																						Maximum HQ (East Edith Mine Waste Area)	**1.46E-05**
American Kestrel (Insectivorous Birds - Terrestrial)																							
Reference Sites																							
SHGBG-1 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	2.17E+03	2.99E+01	7.84E-04	1.47E+03	1.15E+00	4.93E-03	1.24E-01	1.23E+00	7.76E+02	1.97E-01	7.08E+02	1.74E-03
SHGBG-2 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.49E+03	2.05E+01	7.84E-04	1.01E+03	7.91E-01	4.93E-03	1.24E-01	8.46E-01	7.76E+02	1.97E-01	7.08E+02	1.19E-03
SHGBG-201 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	3.35E+02	4.61E+00	7.84E-04	2.27E+02	1.78E-01	4.93E-03	1.24E-01	1.90E-01	7.76E+02	1.97E-01	7.08E+02	2.69E-04
SHGBG-202 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	2.97E+02	4.09E+00	7.84E-04	2.01E+02	1.58E-01	4.93E-03	1.24E-01	1.69E-01	7.76E+02	1.97E-01	7.08E+02	2.39E-04
West Edith Mine Waste Area																						**Minimum HQ (Reference Sites)**	**2.39E-04**
WEA1-00 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	6.68E+02	9.19E+00	7.84E-04	4.53E+02	3.55E-01	4.93E-03	1.24E-01	3.80E-01	7.76E+02	1.97E-01	7.08E+02	5.36E-04
WEA1-100 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.25E+03	1.73E+01	7.84E-04	8.49E+02	6.66E-01	4.93E-03	1.24E-01	7.12E-01	7.76E+02	1.97E-01	7.08E+02	1.01E-03
WEA1-150 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	2.85E+03	3.92E+01	7.84E-04	1.93E+03	1.51E+00	4.93E-03	1.24E-01	1.62E+00	7.76E+02	1.97E-01	7.08E+02	2.29E-03
WEA1-200 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	2.23E+03	3.07E+01	7.84E-04	1.51E+03	1.19E+00	4.93E-03	1.24E-01	1.27E+00	7.76E+02	1.97E-01	7.08E+02	1.79E-03
WEA1-250 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	2.03E+03	2.79E+01	7.84E-04	1.37E+03	1.08E+00	4.93E-03	1.24E-01	1.15E+00	7.76E+02	1.97E-01	7.08E+02	1.63E-03
WEA1-300 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	2.05E+03	2.82E+01	7.84E-04	1.39E+03	1.09E+00	4.93E-03	1.24E-01	1.17E+00	7.76E+02	1.97E-01	7.08E+02	1.65E-03
WEA1-350 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	9.36E+02	1.29E+01	7.84E-04	6.34E+02	4.98E-01	4.93E-03	1.24E-01	5.32E-01	7.76E+02	1.97E-01	7.08E+02	7.52E-04
WEA1-400 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	3.53E+02	4.86E+00	7.84E-04	2.39E+02	1.88E-01	4.93E-03	1.24E-01	2.01E-01	7.76E+02	1.97E-01	7.08E+02	2.84E-04
WEA1-450 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
WEA1-550 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
WEA1-Comp 1 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	3.81E+03	5.24E+01	7.84E-04	2.58E+03	2.02E+00	4.93E-03	1.24E-01	2.16E+00	7.76E+02	1.97E-01	7.08E+02	3.06E-03
WEA1-Comp 2 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	4.94E+03	6.80E+01	7.84E-04	3.35E+03	2.63E+00	4.93E-03	1.24E-01	2.81E+00	7.76E+02	1.97E-01	7.08E+02	3.97E-03
Central Edith Mine Waste Area																						**Maximum HQ (West Edith Mine Waste Area)**	**3.97E-03**
CEA1-3-00 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.86E+03	2.56E+01	7.84E-04	1.26E+03	9.89E-01	4.93E-03	1.24E-01	1.06E+00	7.76E+02	1.97E-01	7.08E+02	1.49E-03
CEA1-3-100 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.80E+03	2.48E+01	7.84E-04	1.22E+03	9.59E-01	4.93E-03	1.24E-01	1.03E+00	7.76E+02	1.97E-01	7.08E+02	1.45E-03
CEA1-3-150 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	3.15E+02	4.34E+00	7.84E-04	2.14E+02	1.68E-01	4.93E-03	1.24E-01	1.79E-01	7.76E+02	1.97E-01	7.08E+02	2.53E-04
CEA1-3-200 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	8.77E+02	1.21E+01	7.84E-04	5.94E+02	4.66E-01	4.93E-03	1.24E-01	4.98E-01	7.76E+02	1.97E-01	7.08E+02	7.04E-04
CEA1-3-250 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	3.90E+02	5.36E+00	7.84E-04	2.64E+02	2.07E-01	4.93E-03	1.24E-01	2.21E-01	7.76E+02	1.97E-01	7.08E+02	3.13E-04
CEA1-3-300 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	7.28E+02	1.00E+01	7.84E-04	4.93E+02	3.87E-01	4.93E-03	1.24E-01	4.14E-01	7.76E+02	1.97E-01	7.08E+02	5.84E-04
CEA1-3-350 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.55E+03	2.13E+01	7.84E-04	1.05E+03	8.24E-01	4.93E-03	1.24E-01	8.81E-01	7.76E+02	1.97E-01	7.08E+02	1.24E-03
CEA1-3-400 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.23E+03	1.70E+01	7.84E-04	8.37E+02	6.56E-01	4.93E-03	1.24E-01	7.02E-01	7.76E+02	1.97E-01	7.08E+02	9.92E-04
CEA1-3-450 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CEA1-3-50 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	6.00E+02	8.26E+00	7.84E-04	4.06E+02	3.19E-01	4.93E-03	1.24E-01	3.41E-01	7.76E+02	1.97E-01	7.08E+02	4.82E-04

TABLE C-5E: MANGANESE DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 5 - EDITH MINE WASTE AREAS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares)	1.29																					
RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
American Kestrel (Insectivorous Birds - Terrestrial)																							
CEA1-3-500 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	6.95E+02	BB	BB	BB	BB	BB	BB	BB	BB
CEA1-3-550 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	6.79E+02	9.34E+00	7.84E-04	4.60E+02	3.61E-01	4.93E-03	1.24E-01	3.86E-01	7.76E+02	1.97E-01	7.08E+02	5.45E-04
CEA1-3-600 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	2.05E+03	2.82E+01	7.84E-04	1.39E+03	1.09E+00	4.93E-03	1.24E-01	1.16E+00	7.76E+02	1.97E-01	7.08E+02	1.64E-03
CEA1-3-650 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	5.96E+02	8.20E+00	7.84E-04	4.04E+02	3.17E-01	4.93E-03	1.24E-01	3.39E-01	7.76E+02	1.97E-01	7.08E+02	4.79E-04
CEA1-3-700 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	6.12E+02	8.42E+00	7.84E-04	4.15E+02	3.25E-01	4.93E-03	1.24E-01	3.48E-01	7.76E+02	1.97E-01	7.08E+02	4.91E-04
CEA1-3-750 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CEA1-3-800 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CEA1-3-850 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	2.99E+02	4.11E+00	7.84E-04	2.02E+02	1.59E-01	4.93E-03	1.24E-01	1.70E-01	7.76E+02	1.97E-01	7.08E+02	2.40E-04
CEA1-3-Comp 1 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	4.42E+02	6.09E+00	7.84E-04	3.00E+02	2.35E-01	4.93E-03	1.24E-01	2.51E-01	7.76E+02	1.97E-01	7.08E+02	3.55E-04
CEA1-3-Comp 2 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	3.42E+02	4.71E+00	7.84E-04	2.32E+02	1.82E-01	4.93E-03	1.24E-01	1.95E-01	7.76E+02	1.97E-01	7.08E+02	2.75E-04
CEA1-3-Comp 3 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	3.58E+02	4.93E+00	7.84E-04	2.42E+02	1.90E-01	4.93E-03	1.24E-01	2.03E-01	7.76E+02	1.97E-01	7.08E+02	2.87E-04
CEA4-00 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	2.35E+02	3.24E+00	7.84E-04	1.59E+02	1.25E-01	4.93E-03	1.24E-01	1.34E-01	7.76E+02	1.97E-01	7.08E+02	1.89E-04
CEA4-20 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	2.30E+02	3.17E+00	7.84E-04	1.56E+02	1.22E-01	4.93E-03	1.24E-01	1.31E-01	7.76E+02	1.97E-01	7.08E+02	1.85E-04
CEA4-40 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	7.46E+02	1.03E+01	7.84E-04	5.05E+02	3.96E-01	4.93E-03	1.24E-01	4.24E-01	7.76E+02	1.97E-01	7.08E+02	5.99E-04
CEA4-Comp (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	3.41E+02	4.70E+00	7.84E-04	2.31E+02	1.81E-01	4.93E-03	1.24E-01	1.94E-01	7.76E+02	1.97E-01	7.08E+02	2.74E-04
East Edith Mine Waste Area																					**Maximum HQ (Central Edith Mine Waste Area)**		**1.64E-03**
EEA1-00 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	3.68E+02	5.07E+00	7.84E-04	2.50E+02	1.96E-01	4.93E-03	1.24E-01	2.09E-01	7.76E+02	1.97E-01	7.08E+02	2.96E-04
EEA1-100 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	6.59E+02	9.07E+00	7.84E-04	4.47E+02	3.50E-01	4.93E-03	1.24E-01	3.75E-01	7.76E+02	1.97E-01	7.08E+02	5.29E-04
EEA1-150 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	5.03E+02	6.92E+00	7.84E-04	3.41E+02	2.67E-01	4.93E-03	1.24E-01	2.86E-01	7.76E+02	1.97E-01	7.08E+02	4.04E-04
EEA1-200 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	6.60E+02	9.09E+00	7.84E-04	4.47E+02	3.51E-01	4.93E-03	1.24E-01	3.75E-01	7.76E+02	1.97E-01	7.08E+02	5.30E-04
EEA1-250 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	5.93E+02	8.16E+00	7.84E-04	4.02E+02	3.15E-01	4.93E-03	1.24E-01	3.37E-01	7.76E+02	1.97E-01	7.08E+02	4.76E-04
EEA1-300 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	7.60E+02	1.05E+01	7.84E-04	5.15E+02	4.04E-01	4.93E-03	1.24E-01	4.32E-01	7.76E+02	1.97E-01	7.08E+02	6.10E-04
EEA1-350 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	8.85E+02	1.22E+01	7.84E-04	6.00E+02	4.71E-01	4.93E-03	1.24E-01	5.03E-01	7.76E+02	1.97E-01	7.08E+02	7.11E-04
EEA1-400 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.04E+03	1.43E+01	7.84E-04	7.05E+02	5.53E-01	4.93E-03	1.24E-01	5.91E-01	7.76E+02	1.97E-01	7.08E+02	8.35E-04
EEA1-450 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	6.66E+02	9.17E+00	7.84E-04	4.51E+02	3.54E-01	4.93E-03	1.24E-01	3.79E-01	7.76E+02	1.97E-01	7.08E+02	5.35E-04
EEA1-50 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	3.52E+02	4.84E+00	7.84E-04	2.38E+02	1.87E-01	4.93E-03	1.24E-01	2.00E-01	7.76E+02	1.97E-01	7.08E+02	2.82E-04
EEA1-500 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.41E+03	1.95E+01	7.84E-04	9.58E+02	7.51E-01	4.93E-03	1.24E-01	8.03E-01	7.76E+02	1.97E-01	7.08E+02	1.13E-03
EEA1-Comp 1 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	6.36E+02	8.75E+00	7.84E-04	4.31E+02	3.38E-01	4.93E-03	1.24E-01	3.61E-01	7.76E+02	1.97E-01	7.08E+02	5.10E-04
EEA2-00 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	5.55E+02	7.64E+00	7.84E-04	3.76E+02	2.95E-01	4.93E-03	1.24E-01	3.16E-01	7.76E+02	1.97E-01	7.08E+02	4.46E-04
EEA2-50 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.22E+03	1.67E+01	7.84E-04	8.23E+02	6.46E-01	4.93E-03	1.24E-01	6.91E-01	7.76E+02	1.97E-01	7.08E+02	9.76E-04
EEA2-100 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.90E+03	2.61E+01	7.84E-04	1.29E+03	1.01E+00	4.93E-03	1.24E-01	1.08E+00	7.76E+02	1.97E-01	7.08E+02	1.53E-03
EEA2-150 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	6.48E+02	8.92E+00	7.84E-04	4.39E+02	3.45E-01	4.93E-03	1.24E-01	3.68E-01	7.76E+02	1.97E-01	7.08E+02	5.21E-04
EEA2-200 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	7.51E+02	1.03E+01	7.84E-04	5.09E+02	3.99E-01	4.93E-03	1.24E-01	4.27E-01	7.76E+02	1.97E-01	7.08E+02	6.03E-04
EEA2-250 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	8.26E+02	1.14E+01	7.84E-04	5.60E+02	4.39E-01	4.93E-03	1.24E-01	4.70E-01	7.76E+02	1.97E-01	7.08E+02	6.63E-04
EEA2-300 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.75E+03	2.40E+01	7.84E-04	1.18E+03	9.29E-01	4.93E-03	1.24E-01	9.93E-01	7.76E+02	1.97E-01	7.08E+02	1.40E-03
EEA2-Comp 1 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	7.72E+02	1.06E+01	7.84E-04	5.23E+02	4.11E-01	4.93E-03	1.24E-01	4.39E-01	7.76E+02	1.97E-01	7.08E+02	6.20E-04
																					Maximum HQ (East Edith Mine Waste Area)		**1.53E-03**
Meadow Vole (Small Herbivorous Mammal - Terrestrial)																							
Reference Sites																							
SHGBG-1 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	3.34E-01	4.91E+02	2.30E+00	NA	NA	NA	NA	1.13E-04	1.47E+03	1.65E-01	1.00E+00	3.06E-02	8.07E+01	1.59E+02	2.97E-02	1.59E+02	5.08E-01
SHGBG-2 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	3.34E-01	3.37E+02	1.58E+00	NA	NA	NA	NA	1.13E-04	1.01E+03	1.13E-01	1.00E+00	3.06E-02	5.54E+01	1.59E+02	2.97E-02	1.59E+02	3.49E-01
SHGBG-201 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	3.34E-01	7.58E+01	3.55E-01	NA	NA	NA	NA	1.13E-04	2.27E+02	2.55E-02	1.00E+00	3.06E-02	1.24E+01	1.59E+02	2.97E-02	1.59E+02	7.84E-02
SHGBG-202 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	3.34E-01	6.74E+01	3.16E-01	NA	NA	NA	NA	1.13E-04	2.01E+02	2.27E-02	1.00E+00	3.06E-02	1.11E+01	1.59E+02	2.97E-02	1.59E+02	6.97E-02
West Edith Mine Waste Area																					**Minimum HQ (Reference Sites)**		**6.97E-02**
WEA1-00 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	4.48E+03	2.10E+01	NA	NA	NA	NA	1.13E-04	4.53E+02	5.09E-02	1.00E+00	3.06E-02	6.89E+02	1.59E+02	2.97E-02	1.59E+02	4.34E+00
WEA1-100 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	8.42E+03	3.95E+01	NA	NA	NA	NA	1.13E-04	8.49E+02	9.56E-02	1.00E+00	3.06E-02	1.29E+03	1.59E+02	2.97E-02	1.59E+02	8.14E+00
WEA1-150 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	1.91E+04	8.97E+01	NA	NA	NA	NA	1.13E-04	1.93E+03	2.17E-01	1.00E+00	3.06E-02	2.94E+03	1.59E+02	2.97E-02	1.59E+02	1.85E+01
WEA1-200 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	1.50E+04	7.03E+01	NA	NA	NA	NA	1.13E-04	1.51E+03	1.70E-01	1.00E+00	3.06E-02	2.30E+03	1.59E+02	2.97E-02	1.59E+02	1.45E+01
WEA1-250 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	1.36E+04	6.38E+01	NA	NA	NA	NA	1.13E-04	1.37E+03	1.54E-01	1.00E+00	3.06E-02	2.09E+03	1.59E+02	2.97E-02	1.59E+02	1.32E+01
WEA1-300 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	1.38E+04	6.46E+01	NA	NA	NA	NA	1.13E-04	1.39E+03	1.56E-01	1.00E+00	3.06E-02	2.12E+03	1.59E+02	2.97E-02	1.59E+02	1.33E+01
WEA1-350 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	6.29E+03	2.95E+01	NA	NA	NA	NA	1.13E-04	6.34E+02	7.14E-02	1.00E+00	3.06E-02	9.66E+02	1.59E+02	2.97E-02	1.59E+02	6.08E+00
WEA1-400 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	2.37E+03	1.11E+01	NA	NA	NA	NA	1.13E-04	2.39E+02	2.69E-02	1.00E+00	3.06E-02	3.64E+02	1.59E+02	2.97E-02	1.59E+02	2.29E+00
WEA1-450 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB

TABLE C-5E: MANGANESE DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 5 - EDITH MINE WASTE AREAS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables; from BAF table; linked to soil or sed concentration table (VLOOKUP)

calculated values; linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **1.29**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Meadow Vole (Small Herbivorous Mammal - Terrestrial)																							
WEA1-550 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
WEA1-Comp 1 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	2.56E+04	1.20E+02	NA	NA	NA	NA	1.13E-04	2.58E+03	2.90E-01	1.00E+00	3.06E-02	3.93E+03	1.59E+02	2.97E-02	1.59E+02	2.47E+01
WEA1-Comp 2 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	3.32E+04	1.56E+02	NA	NA	NA	NA	1.13E-04	3.35E+03	3.77E-01	1.00E+00	3.06E-02	5.09E+03	1.59E+02	2.97E-02	1.59E+02	3.21E+01
Central Edith Mine Waste Area																						**Maximum HQ (West Edith Mine Waste Area)**	**3.21E+01**
CEA1-3-00 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	1.25E+04	5.86E+01	NA	NA	NA	NA	1.13E-04	1.26E+03	1.42E-01	1.00E+00	3.06E-02	1.92E+03	1.59E+02	2.97E-02	1.59E+02	1.21E+01
CEA1-3-100 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	1.21E+04	5.68E+01	NA	NA	NA	NA	1.13E-04	1.22E+03	1.38E-01	1.00E+00	3.06E-02	1.86E+03	1.59E+02	2.97E-02	1.59E+02	1.17E+01
CEA1-3-150 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	2.12E+03	9.92E+00	NA	NA	NA	NA	1.13E-04	2.14E+02	2.40E-02	1.00E+00	3.06E-02	3.25E+02	1.59E+02	2.97E-02	1.59E+02	2.05E+00
CEA1-3-200 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	5.89E+03	2.76E+01	NA	NA	NA	NA	1.13E-04	5.94E+02	6.69E-02	1.00E+00	3.06E-02	9.05E+02	1.59E+02	2.97E-02	1.59E+02	5.70E+00
CEA1-3-250 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	2.62E+03	1.23E+01	NA	NA	NA	NA	1.13E-04	2.64E+02	2.97E-02	1.00E+00	3.06E-02	4.02E+02	1.59E+02	2.97E-02	1.59E+02	2.53E+00
CEA1-3-300 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	4.89E+03	2.29E+01	NA	NA	NA	NA	1.13E-04	4.93E+02	5.55E-02	1.00E+00	3.06E-02	7.51E+02	1.59E+02	2.97E-02	1.59E+02	4.73E+00
CEA1-3-350 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	1.04E+04	4.88E+01	NA	NA	NA	NA	1.13E-04	1.05E+03	1.18E-01	1.00E+00	3.06E-02	1.60E+03	1.59E+02	2.97E-02	1.59E+02	1.01E+01
CEA1-3-400 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	8.29E+03	3.89E+01	NA	NA	NA	NA	1.13E-04	8.37E+02	9.42E-02	1.00E+00	3.06E-02	1.27E+03	1.59E+02	2.97E-02	1.59E+02	8.02E+00
CEA1-3-450 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CEA1-3-50 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	4.03E+03	1.89E+01	NA	NA	NA	NA	1.13E-04	4.06E+02	4.57E-02	1.00E+00	3.06E-02	6.19E+02	1.59E+02	2.97E-02	1.59E+02	3.90E+00
CEA1-3-500 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	6.89E+03	3.23E+01	NA	NA	NA	NA	1.13E-04	6.95E+02	7.83E-02	1.00E+00	3.06E-02	1.06E+03	1.59E+02	2.97E-02	1.59E+02	6.66E+00
CEA1-3-550 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	4.56E+03	2.14E+01	NA	NA	NA	NA	1.13E-04	4.60E+02	5.17E-02	1.00E+00	3.06E-02	7.00E+02	1.59E+02	2.97E-02	1.59E+02	4.41E+00
CEA1-3-600 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	1.37E+04	6.44E+01	NA	NA	NA	NA	1.13E-04	1.39E+03	1.56E-01	1.00E+00	3.06E-02	2.11E+03	1.59E+02	2.97E-02	1.59E+02	1.33E+01
CEA1-3-650 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	4.00E+03	1.88E+01	NA	NA	NA	NA	1.13E-04	4.04E+02	4.55E-02	1.00E+00	3.06E-02	6.15E+02	1.59E+02	2.97E-02	1.59E+02	3.87E+00
CEA1-3-700 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	4.11E+03	1.93E+01	NA	NA	NA	NA	1.13E-04	4.15E+02	4.67E-02	1.00E+00	3.06E-02	6.31E+02	1.59E+02	2.97E-02	1.59E+02	3.97E+00
CEA1-3-750 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CEA1-3-800 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CEA1-3-850 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	2.01E+03	9.41E+00	NA	NA	NA	NA	1.13E-04	2.02E+02	2.28E-02	1.00E+00	3.06E-02	3.08E+02	1.59E+02	2.97E-02	1.59E+02	1.94E+00
CEA1-3-Comp 1 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	2.97E+03	1.39E+01	NA	NA	NA	NA	1.13E-04	3.00E+02	3.37E-02	1.00E+00	3.06E-02	4.56E+02	1.59E+02	2.97E-02	1.59E+02	2.87E+00
CEA1-3-Comp 2 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	2.30E+03	1.08E+01	NA	NA	NA	NA	1.13E-04	2.32E+02	2.61E-02	1.00E+00	3.06E-02	3.53E+02	1.59E+02	2.97E-02	1.59E+02	2.22E+00
CEA1-3-Comp 3 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	2.40E+03	1.13E+01	NA	NA	NA	NA	1.13E-04	2.42E+02	2.73E-02	1.00E+00	3.06E-02	3.69E+02	1.59E+02	2.97E-02	1.59E+02	2.32E+00
CEA4-00 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	1.58E+03	7.41E+00	NA	NA	NA	NA	1.13E-04	1.59E+02	1.79E-02	1.00E+00	3.06E-02	2.43E+02	1.59E+02	2.97E-02	1.59E+02	1.53E+00
CEA4-20 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	1.55E+03	7.25E+00	NA	NA	NA	NA	1.13E-04	1.56E+02	1.76E-02	1.00E+00	3.06E-02	2.38E+02	1.59E+02	2.97E-02	1.59E+02	1.50E+00
CEA4-40 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	5.01E+03	2.35E+01	NA	NA	NA	NA	1.13E-04	5.05E+02	5.69E-02	1.00E+00	3.06E-02	7.69E+02	1.59E+02	2.97E-02	1.59E+02	4.84E+00
CEA4-Comp (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	2.29E+03	1.07E+01	NA	NA	NA	NA	1.13E-04	2.31E+02	2.60E-02	1.00E+00	3.06E-02	3.52E+02	1.59E+02	2.97E-02	1.59E+02	2.22E+00
East Edith Mine Waste Area																						**Maximum HQ (Central Edith Mine Waste Area)**	**1.33E+01**
EEA1-00 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	2.47E+03	1.16E+01	NA	NA	NA	NA	1.13E-04	2.50E+02	2.81E-02	1.00E+00	3.06E-02	3.80E+02	1.59E+02	2.97E-02	1.59E+02	2.39E+00
EEA1-100 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	4.43E+03	2.08E+01	NA	NA	NA	NA	1.13E-04	4.47E+02	5.03E-02	1.00E+00	3.06E-02	6.80E+02	1.59E+02	2.97E-02	1.59E+02	4.28E+00
EEA1-150 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	3.37E+03	1.58E+01	NA	NA	NA	NA	1.13E-04	3.41E+02	3.83E-02	1.00E+00	3.06E-02	5.18E+02	1.59E+02	2.97E-02	1.59E+02	3.26E+00
EEA1-200 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	4.43E+03	2.08E+01	NA	NA	NA	NA	1.13E-04	4.47E+02	5.03E-02	1.00E+00	3.06E-02	6.81E+02	1.59E+02	2.97E-02	1.59E+02	4.29E+00
EEA1-250 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	3.98E+03	1.87E+01	NA	NA	NA	NA	1.13E-04	4.02E+02	4.52E-02	1.00E+00	3.06E-02	6.12E+02	1.59E+02	2.97E-02	1.59E+02	3.85E+00
EEA1-300 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	5.10E+03	2.39E+01	NA	NA	NA	NA	1.13E-04	5.15E+02	5.79E-02	1.00E+00	3.06E-02	7.83E+02	1.59E+02	2.97E-02	1.59E+02	4.93E+00
EEA1-350 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	5.94E+03	2.79E+01	NA	NA	NA	NA	1.13E-04	6.00E+02	6.75E-02	1.00E+00	3.06E-02	9.13E+02	1.59E+02	2.97E-02	1.59E+02	5.75E+00
EEA1-400 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	6.98E+03	3.28E+01	NA	NA	NA	NA	1.13E-04	7.05E+02	7.93E-02	1.00E+00	3.06E-02	1.07E+03	1.59E+02	2.97E-02	1.59E+02	6.76E+00
EEA1-450 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	4.47E+03	2.10E+01	NA	NA	NA	NA	1.13E-04	4.51E+02	5.08E-02	1.00E+00	3.06E-02	6.87E+02	1.59E+02	2.97E-02	1.59E+02	4.33E+00
EEA1-50 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	2.36E+03	1.11E+01	NA	NA	NA	NA	1.13E-04	2.38E+02	2.68E-02	1.00E+00	3.06E-02	3.63E+02	1.59E+02	2.97E-02	1.59E+02	2.28E+00
EEA1-500 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	9.49E+03	4.45E+01	NA	NA	NA	NA	1.13E-04	9.58E+02	1.08E-01	1.00E+00	3.06E-02	1.46E+03	1.59E+02	2.97E-02	1.59E+02	9.18E+00
EEA1-Comp 1 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	4.27E+03	2.00E+01	NA	NA	NA	NA	1.13E-04	4.31E+02	4.85E-02	1.00E+00	3.06E-02	6.56E+02	1.59E+02	2.97E-02	1.59E+02	4.13E+00
EEA2-00 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	3.73E+03	1.75E+01	NA	NA	NA	NA	1.13E-04	3.76E+02	4.23E-02	1.00E+00	3.06E-02	5.73E+02	1.59E+02	2.97E-02	1.59E+02	3.61E+00
EEA2-50 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	8.16E+03	3.83E+01	NA	NA	NA	NA	1.13E-04	8.23E+02	9.27E-02	1.00E+00	3.06E-02	1.25E+03	1.59E+02	2.97E-02	1.59E+02	7.89E+00
EEA2-100 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	1.28E+04	5.98E+01	NA	NA	NA	NA	1.13E-04	1.29E+03	1.45E-01	1.00E+00	3.06E-02	1.96E+03	1.59E+02	2.97E-02	1.59E+02	1.23E+01
EEA2-150 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	4.35E+03	2.04E+01	NA	NA	NA	NA	1.13E-04	4.39E+02	4.94E-02	1.00E+00	3.06E-02	6.69E+02	1.59E+02	2.97E-02	1.59E+02	4.21E+00
EEA2-200 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	5.04E+03	2.36E+01	NA	NA	NA	NA	1.13E-04	5.09E+02	5.73E-02	1.00E+00	3.06E-02	7.75E+02	1.59E+02	2.97E-02	1.59E+02	4.88E+00
EEA2-250 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	5.55E+03	2.60E+01	NA	NA	NA	NA	1.13E-04	5.60E+02	6.30E-02	1.00E+00	3.06E-02	8.52E+02	1.59E+02	2.97E-02	1.59E+02	5.37E+00
EEA2-300 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	1.17E+04	5.50E+01	NA	NA	NA	NA	1.13E-04	1.18E+03	1.33E-01	1.00E+00	3.06E-02	1.80E+03	1.59E+02	2.97E-02	1.59E+02	1.13E+01
EEA2-Comp 1 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	5.19E+03	2.43E+01	NA	NA	NA	NA	1.13E-04	5.23E+02	5.89E-02	1.00E+00	3.06E-02	7.97E+02	1.59E+02	2.97E-02	1.59E+02	5.02E+00
																						Maximum HQ (East Edith Mine Waste Area)	**1.23E+01**

TABLE C-5E: MANGANESE DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 5 - EDITH MINE WASTE AREAS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **1.29**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
White-Tailed Deer (Large Herbivorous Mammal - Terrestrial)																							
Reference Sites																							
SHGBG-1 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	3.34E-01	4.91E+02	7.04E+02	NA	NA	NA	NA	2.86E-02	1.47E+03	4.21E+01	7.22E-03	1.35E+02	3.99E-02	1.59E+02	2.97E-02	9.60E+01	4.15E-04
SHGBG-2 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	3.34E-01	3.37E+02	4.83E+02	NA	NA	NA	NA	2.86E-02	1.01E+03	2.89E+01	7.22E-03	1.35E+02	2.73E-02	1.59E+02	2.97E-02	9.60E+01	2.85E-04
SHGBG-201 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	3.34E-01	7.58E+01	1.09E+02	NA	NA	NA	NA	2.86E-02	2.27E+02	6.49E+00	7.22E-03	1.35E+02	6.15E-03	1.59E+02	2.97E-02	9.60E+01	6.41E-05
SHGBG-202 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	3.34E-01	6.74E+01	9.64E+01	NA	NA	NA	NA	2.86E-02	2.01E+02	5.77E+00	7.22E-03	1.35E+02	5.46E-03	1.59E+02	2.97E-02	9.60E+01	5.69E-05
West Edith Mine Waste Area																						**Minimum HQ (Reference Sites)**	**5.69E-05**
WEA1-00 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	4.48E+03	6.42E+03	NA	NA	NA	NA	2.86E-02	4.53E+02	1.30E+01	7.22E-03	1.35E+02	3.44E-01	1.59E+02	2.97E-02	9.60E+01	3.58E-03
WEA1-100 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	8.42E+03	1.20E+04	NA	NA	NA	NA	2.86E-02	8.49E+02	2.43E+01	7.22E-03	1.35E+02	6.45E-01	1.59E+02	2.97E-02	9.60E+01	6.72E-03
WEA1-150 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	1.91E+04	2.74E+04	NA	NA	NA	NA	2.86E-02	1.93E+03	5.53E+01	7.22E-03	1.35E+02	1.47E+00	1.59E+02	2.97E-02	9.60E+01	1.53E-02
WEA1-200 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	1.50E+04	2.15E+04	NA	NA	NA	NA	2.86E-02	1.51E+03	4.33E+01	7.22E-03	1.35E+02	1.15E+00	1.59E+02	2.97E-02	9.60E+01	1.20E-02
WEA1-250 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	1.36E+04	1.95E+04	NA	NA	NA	NA	2.86E-02	1.37E+03	3.93E+01	7.22E-03	1.35E+02	1.04E+00	1.59E+02	2.97E-02	9.60E+01	1.09E-02
WEA1-300 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	1.38E+04	1.97E+04	NA	NA	NA	NA	2.86E-02	1.39E+03	3.98E+01	7.22E-03	1.35E+02	1.06E+00	1.59E+02	2.97E-02	9.60E+01	1.10E-02
WEA1-350 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	6.29E+03	9.00E+03	NA	NA	NA	NA	2.86E-02	6.34E+02	1.82E+01	7.22E-03	1.35E+02	4.82E-01	1.59E+02	2.97E-02	9.60E+01	5.02E-03
WEA1-400 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	2.37E+03	3.40E+03	NA	NA	NA	NA	2.86E-02	2.39E+02	6.85E+00	7.22E-03	1.35E+02	1.82E-01	1.59E+02	2.97E-02	9.60E+01	1.90E-03
WEA1-450 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
WEA1-550 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
WEA1-Comp 1 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	2.56E+04	3.66E+04	NA	NA	NA	NA	2.86E-02	2.58E+03	7.39E+01	7.22E-03	1.35E+02	1.96E+00	1.59E+02	2.97E-02	9.60E+01	2.04E-02
WEA1-Comp 2 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	3.32E+04	4.75E+04	NA	NA	NA	NA	2.86E-02	3.35E+03	9.58E+01	7.22E-03	1.35E+02	2.54E+00	1.59E+02	2.97E-02	9.60E+01	2.65E-02
Central Edith Mine Waste Area																						**Maximum HQ (West Edith Mine Waste Area)**	**2.65E-02**
CEA1-3-00 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	1.25E+04	1.79E+04	NA	NA	NA	NA	2.86E-02	1.26E+03	3.61E+01	7.22E-03	1.35E+02	9.58E-01	1.59E+02	2.97E-02	9.60E+01	9.98E-03
CEA1-3-100 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	1.21E+04	1.73E+04	NA	NA	NA	NA	2.86E-02	1.22E+03	3.50E+01	7.22E-03	1.35E+02	9.29E-01	1.59E+02	2.97E-02	9.60E+01	9.68E-03
CEA1-3-150 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	2.12E+03	3.03E+03	NA	NA	NA	NA	2.86E-02	2.14E+02	6.11E+00	7.22E-03	1.35E+02	1.62E-01	1.59E+02	2.97E-02	9.60E+01	1.69E-03
CEA1-3-200 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	5.89E+03	8.43E+03	NA	NA	NA	NA	2.86E-02	5.94E+02	1.70E+01	7.22E-03	1.35E+02	4.52E-01	1.59E+02	2.97E-02	9.60E+01	4.71E-03
CEA1-3-250 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	2.62E+03	3.74E+03	NA	NA	NA	NA	2.86E-02	2.64E+02	7.56E+00	7.22E-03	1.35E+02	2.01E-01	1.59E+02	2.97E-02	9.60E+01	2.09E-03
CEA1-3-300 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	4.89E+03	7.00E+03	NA	NA	NA	NA	2.86E-02	4.93E+02	1.41E+01	7.22E-03	1.35E+02	3.75E-01	1.59E+02	2.97E-02	9.60E+01	3.90E-03
CEA1-3-350 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	1.04E+04	1.49E+04	NA	NA	NA	NA	2.86E-02	1.05E+03	3.01E+01	7.22E-03	1.35E+02	7.98E-01	1.59E+02	2.97E-02	9.60E+01	8.31E-03
CEA1-3-400 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	8.29E+03	1.19E+04	NA	NA	NA	NA	2.86E-02	8.37E+02	2.40E+01	7.22E-03	1.35E+02	6.36E-01	1.59E+02	2.97E-02	9.60E+01	6.62E-03
CEA1-3-450 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CEA1-3-50 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	4.03E+03	5.77E+03	NA	NA	NA	NA	2.86E-02	4.06E+02	1.16E+01	7.22E-03	1.35E+02	3.09E-01	1.59E+02	2.97E-02	9.60E+01	3.22E-03
CEA1-3-500 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	6.89E+03	9.86E+03	NA	NA	NA	NA	2.86E-02	6.95E+02	1.99E+01	7.22E-03	1.35E+02	5.28E-01	1.59E+02	2.97E-02	9.60E+01	5.51E-03
CEA1-3-550 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	4.56E+03	6.52E+03	NA	NA	NA	NA	2.86E-02	4.60E+02	1.32E+01	7.22E-03	1.35E+02	3.49E-01	1.59E+02	2.97E-02	9.60E+01	3.64E-03
CEA1-3-600 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	1.37E+04	1.97E+04	NA	NA	NA	NA	2.86E-02	1.39E+03	3.97E+01	7.22E-03	1.35E+02	1.05E+00	1.59E+02	2.97E-02	9.60E+01	1.10E-02
CEA1-3-650 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	4.00E+03	5.73E+03	NA	NA	NA	NA	2.86E-02	4.04E+02	1.16E+01	7.22E-03	1.35E+02	3.07E-01	1.59E+02	2.97E-02	9.60E+01	3.20E-03
CEA1-3-700 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	4.11E+03	5.88E+03	NA	NA	NA	NA	2.86E-02	4.15E+02	1.19E+01	7.22E-03	1.35E+02	3.15E-01	1.59E+02	2.97E-02	9.60E+01	3.28E-03
CEA1-3-750 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CEA1-3-800 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CEA1-3-850 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	2.01E+03	2.87E+03	NA	NA	NA	NA	2.86E-02	2.02E+02	5.80E+00	7.22E-03	1.35E+02	1.54E-01	1.59E+02	2.97E-02	9.60E+01	1.60E-03
CEA1-3-Comp 1 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	2.97E+03	4.25E+03	NA	NA	NA	NA	2.86E-02	3.00E+02	8.58E+00	7.22E-03	1.35E+02	2.28E-01	1.59E+02	2.97E-02	9.60E+01	2.37E-03
CEA1-3-Comp 2 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	2.30E+03	3.29E+03	NA	NA	NA	NA	2.86E-02	2.32E+02	6.64E+00	7.22E-03	1.35E+02	1.76E-01	1.59E+02	2.97E-02	9.60E+01	1.84E-03
CEA1-3-Comp 3 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	2.40E+03	3.44E+03	NA	NA	NA	NA	2.86E-02	2.42E+02	6.94E+00	7.22E-03	1.35E+02	1.84E-01	1.59E+02	2.97E-02	9.60E+01	1.92E-03
CEA4-00 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	1.58E+03	2.26E+03	NA	NA	NA	NA	2.86E-02	1.59E+02	4.56E+00	7.22E-03	1.35E+02	1.21E-01	1.59E+02	2.97E-02	9.60E+01	1.26E-03
CEA4-20 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	1.55E+03	2.21E+03	NA	NA	NA	NA	2.86E-02	1.56E+02	4.47E+00	7.22E-03	1.35E+02	1.19E-01	1.59E+02	2.97E-02	9.60E+01	1.24E-03
CEA4-40 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	5.01E+03	7.17E+03	NA	NA	NA	NA	2.86E-02	5.05E+02	1.45E+01	7.22E-03	1.35E+02	3.84E-01	1.59E+02	2.97E-02	9.60E+01	4.00E-03
CEA4-Comp (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	2.29E+03	3.28E+03	NA	NA	NA	NA	2.86E-02	2.31E+02	6.62E+00	7.22E-03	1.35E+02	1.76E-01	1.59E+02	2.97E-02	9.60E+01	1.83E-03
East Edith Mine Waste Area																						**Maximum HQ (Central Edith Mine Waste Area)**	**1.10E-02**
EEA1-00 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	2.47E+03	3.54E+03	NA	NA	NA	NA	2.86E-02	2.50E+02	7.15E+00	7.22E-03	1.35E+02	1.90E-01	1.59E+02	2.97E-02	9.60E+01	1.98E-03
EEA1-100 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	4.43E+03	6.34E+03	NA	NA	NA	NA	2.86E-02	4.47E+02	1.28E+01	7.22E-03	1.35E+02	3.39E-01	1.59E+02	2.97E-02	9.60E+01	3.54E-03
EEA1-150 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	3.37E+03	4.83E+03	NA	NA	NA	NA	2.86E-02	3.41E+02	9.75E+00	7.22E-03	1.35E+02	2.59E-01	1.59E+02	2.97E-02	9.60E+01	2.70E-03
EEA1-200 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	4.43E+03	6.35E+03	NA	NA	NA	NA	2.86E-02	4.47E+02	1.28E+01	7.22E-03	1.35E+02	3.40E-01	1.59E+02	2.97E-02	9.60E+01	3.54E-03
EEA1-250 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	3.98E+03	5.70E+03	NA	NA	NA	NA	2.86E-02	4.02E+02	1.15E+01	7.22E-03	1.35E+02	3.05E-01	1.59E+02	2.97E-02	9.60E+01	3.18E-03
EEA1-300 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	5.10E+03	7.30E+03	NA	NA	NA	NA	2.86E-02	5.15E+02	1.47E+01	7.22E-03	1.35E+02	3.91E-01	1.59E+02	2.97E-02	9.60E+01	4.07E-03
EEA1-350 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	5.94E+03	8.51E+03	NA	NA	NA	NA	2.86E-02	6.00E+02	1.72E+01	7.22E-03	1.35E+02	4.56E-01	1.59E+02	2.97E-02	9.60E+01	4.75E-03
EEA1-400 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	6.98E+03	1.00E+04	NA	NA	NA	NA	2.86E-02	7.05E+02	2.02E+01	7.22E-03	1.35E+02	5.36E-01	1.59E+02	2.97E-02	9.60E+01	5.58E-03
EEA1-450 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	4.47E+03	6.40E+03	NA	NA	NA	NA	2.86E-02	4.51E+02	1.29E+01	7.22E-03	1.35E+02	3.43E-01	1.59E+02	2.97E-02	9.60E+01	3.57E-03
EEA1-50 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	2.36E+03	3.38E+03	NA	NA	NA	NA	2.86E-02	2.38E+02	6.82E+00	7.22E-03	1.35E+02	1.81E-01	1.59E+02	2.97E-02	9.60E+01	1.89E-03
EEA1-500 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	9.49E+03	1.36E+04	NA	NA	NA	NA	2.86E-02	9.58E+02	2.74E+01	7.22E-03	1.35E+02	7.28E-01	1.59E+02	2.97E-02	9.60E+01	7.58E-03
EEA1-Comp 1 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	4.27E+03	6.11E+03	NA	NA	NA	NA	2.86E-02	4.31E+02	1.23E+01	7.22E-03	1.35E+02	3.27E-01	1.59E+02	2.97E-02	9.60E+01	3.41E-03

TABLE C-5E: MANGANESE DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 5 - EDITH MINE WASTE AREAS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares)	1.29																					
RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
White-Tailed Deer (Large Herbivorous Mammal - Terrestrial)																							
EEA2-00 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	3.73E+03	5.34E+03	NA	NA	NA	NA	2.86E-02	3.76E+02	1.08E+01	7.22E-03	1.35E+02	2.86E-01	1.59E+02	2.97E-02	9.60E+01	2.98E-03
EEA2-50 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	8.16E+03	1.17E+04	NA	NA	NA	NA	2.86E-02	8.23E+02	2.36E+01	7.22E-03	1.35E+02	6.26E-01	1.59E+02	2.97E-02	9.60E+01	6.52E-03
EEA2-100 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	1.28E+04	1.83E+04	NA	NA	NA	NA	2.86E-02	1.29E+03	3.69E+01	7.22E-03	1.35E+02	9.78E-01	1.59E+02	2.97E-02	9.60E+01	1.02E-02
EEA2-150 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	4.35E+03	6.23E+03	NA	NA	NA	NA	2.86E-02	4.39E+02	1.26E+01	7.22E-03	1.35E+02	3.34E-01	1.59E+02	2.97E-02	9.60E+01	3.48E-03
EEA2-200 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	5.04E+03	7.22E+03	NA	NA	NA	NA	2.86E-02	5.09E+02	1.46E+01	7.22E-03	1.35E+02	3.87E-01	1.59E+02	2.97E-02	9.60E+01	4.03E-03
EEA2-250 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	5.55E+03	7.94E+03	NA	NA	NA	NA	2.86E-02	5.60E+02	1.60E+01	7.22E-03	1.35E+02	4.25E-01	1.59E+02	2.97E-02	9.60E+01	4.43E-03
EEA2-300 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	1.17E+04	1.68E+04	NA	NA	NA	NA	2.86E-02	1.18E+03	3.39E+01	7.22E-03	1.35E+02	9.00E-01	1.59E+02	2.97E-02	9.60E+01	9.37E-03
EEA2-Comp 1 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	5.19E+03	7.42E+03	NA	NA	NA	NA	2.86E-02	5.23E+02	1.50E+01	7.22E-03	1.35E+02	3.98E-01	1.59E+02	2.97E-02	9.60E+01	4.14E-03
																			Maximum HQ (East Edith Mine Waste Area)				**1.02E-02**
Red Fox (Carnivorous Mammal - Terrestrial)																							
Reference Sites																							
SHGBG-1 (0-6")	1.72E-01	1.72E-01	5.93E-02	8.72E+01	1.50E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.47E+03	7.06E+00	9.53E-04	4.54E+00	4.63E-03	1.59E+02	2.97E-02	1.18E+02	3.93E-05
SHGBG-2 (0-6")	1.72E-01	1.72E-01	5.93E-02	5.98E+01	1.03E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.01E+03	4.84E+00	9.53E-04	4.54E+00	3.17E-03	1.59E+02	2.97E-02	1.18E+02	2.70E-05
SHGBG-201 (0-6")	1.72E-01	1.72E-01	5.93E-02	1.35E+01	2.31E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.27E+02	1.09E+00	9.53E-04	4.54E+00	7.14E-04	1.59E+02	2.97E-02	1.18E+02	6.07E-06
SHGBG-202 (0-6")	1.72E-01	1.72E-01	5.93E-02	1.20E+01	2.05E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.01E+02	9.68E-01	9.53E-04	4.54E+00	6.34E-04	1.59E+02	2.97E-02	1.18E+02	5.39E-06
West Edith Mine Waste Area																						**Minimum HQ (Reference Sites)**	**5.39E-06**
WEA1-00 (0-6")	1.72E-01	1.72E-01	2.80E-02	1.27E+01	2.17E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.53E+02	2.17E+00	9.53E-04	4.54E+00	9.13E-04	1.59E+02	2.97E-02	1.18E+02	7.76E-06
WEA1-100 (0-6")	1.72E-01	1.72E-01	2.80E-02	2.38E+01	4.08E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	8.49E+02	4.08E+00	9.53E-04	4.54E+00	1.71E-03	1.59E+02	2.97E-02	1.18E+02	1.46E-05
WEA1-150 (0-6")	1.72E-01	1.72E-01	2.80E-02	5.40E+01	9.27E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.93E+03	9.27E+00	9.53E-04	4.54E+00	3.90E-03	1.59E+02	2.97E-02	1.18E+02	3.31E-05
WEA1-200 (0-6")	1.72E-01	1.72E-01	2.80E-02	4.23E+01	7.26E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.51E+03	7.27E+00	9.53E-04	4.54E+00	3.05E-03	1.59E+02	2.97E-02	1.18E+02	2.59E-05
WEA1-250 (0-6")	1.72E-01	1.72E-01	2.80E-02	3.84E+01	6.59E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.37E+03	6.59E+00	9.53E-04	4.54E+00	2.77E-03	1.59E+02	2.97E-02	1.18E+02	2.35E-05
WEA1-300 (0-6")	1.72E-01	1.72E-01	2.80E-02	3.89E+01	6.68E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.39E+03	6.68E+00	9.53E-04	4.54E+00	2.81E-03	1.59E+02	2.97E-02	1.18E+02	2.38E-05
WEA1-350 (0-6")	1.72E-01	1.72E-01	2.80E-02	1.78E+01	3.05E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	6.34E+02	3.05E+00	9.53E-04	4.54E+00	1.28E-03	1.59E+02	2.97E-02	1.18E+02	1.09E-05
WEA1-400 (0-6")	1.72E-01	1.72E-01	2.80E-02	6.70E+00	1.15E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.39E+02	1.15E+00	9.53E-04	4.54E+00	4.83E-04	1.59E+02	2.97E-02	1.18E+02	4.11E-06
WEA1-450 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
WEA1-550 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
WEA1-Comp 1 (0-6")	1.72E-01	1.72E-01	2.80E-02	7.23E+01	1.24E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.58E+03	1.24E+01	9.53E-04	4.54E+00	5.21E-03	1.59E+02	2.97E-02	1.18E+02	4.43E-05
WEA1-Comp 2 (0-6")	1.72E-01	1.72E-01	2.80E-02	9.37E+01	1.61E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.35E+03	1.61E+01	9.53E-04	4.54E+00	6.76E-03	1.59E+02	2.97E-02	1.18E+02	5.74E-05
Central Edith Mine Waste Area																						**Maximum HQ (West Edith Mine Waste Area)**	**5.74E-05**
CEA1-3-00 (0-6")	1.72E-01	1.72E-01	2.80E-02	3.53E+01	6.05E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.26E+03	6.05E+00	9.53E-04	4.54E+00	2.54E-03	1.59E+02	2.97E-02	1.18E+02	2.16E-05
CEA1-3-100 (0-6")	1.72E-01	1.72E-01	2.80E-02	3.42E+01	5.87E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.22E+03	5.87E+00	9.53E-04	4.54E+00	2.47E-03	1.59E+02	2.97E-02	1.18E+02	2.10E-05
CEA1-3-150 (0-6")	1.72E-01	1.72E-01	2.80E-02	5.98E+00	1.03E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.14E+02	1.03E+00	9.53E-04	4.54E+00	4.31E-04	1.59E+02	2.97E-02	1.18E+02	3.66E-06
CEA1-3-200 (0-6")	1.72E-01	1.72E-01	2.80E-02	1.66E+01	2.85E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.94E+02	2.85E+00	9.53E-04	4.54E+00	1.20E-03	1.59E+02	2.97E-02	1.18E+02	1.02E-05
CEA1-3-250 (0-6")	1.72E-01	1.72E-01	2.80E-02	7.39E+00	1.27E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.64E+02	1.27E+00	9.53E-04	4.54E+00	5.33E-04	1.59E+02	2.97E-02	1.18E+02	4.53E-06
CEA1-3-300 (0-6")	1.72E-01	1.72E-01	2.80E-02	1.38E+01	2.37E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.93E+02	2.37E+00	9.53E-04	4.54E+00	9.95E-04	1.59E+02	2.97E-02	1.18E+02	8.46E-06
CEA1-3-350 (0-6")	1.72E-01	1.72E-01	2.80E-02	2.94E+01	5.04E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.05E+03	5.04E+00	9.53E-04	4.54E+00	2.12E-03	1.59E+02	2.97E-02	1.18E+02	1.80E-05
CEA1-3-400 (0-6")	1.72E-01	1.72E-01	2.80E-02	2.34E+01	4.02E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	8.37E+02	4.02E+00	9.53E-04	4.54E+00	1.69E-03	1.59E+02	2.97E-02	1.18E+02	1.44E-05
CEA1-3-450 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CEA1-3-50 (0-6")	1.72E-01	1.72E-01	2.80E-02	1.14E+01	1.95E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.06E+02	1.95E+00	9.53E-04	4.54E+00	8.20E-04	1.59E+02	2.97E-02	1.18E+02	6.97E-06
CEA1-3-500 (0-6")	1.72E-01	1.72E-01	2.80E-02	1.95E+01	3.34E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	6.95E+02	3.34E+00	9.53E-04	4.54E+00	1.40E-03	1.59E+02	2.97E-02	1.18E+02	1.19E-05
CEA1-3-550 (0-6")	1.72E-01	1.72E-01	2.80E-02	1.29E+01	2.21E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.60E+02	2.21E+00	9.53E-04	4.54E+00	9.28E-04	1.59E+02	2.97E-02	1.18E+02	7.89E-06
CEA1-3-600 (0-6")	1.72E-01	1.72E-01	2.80E-02	3.88E+01	6.66E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.39E+03	6.66E+00	9.53E-04	4.54E+00	2.80E-03	1.59E+02	2.97E-02	1.18E+02	2.38E-05
CEA1-3-650 (0-6")	1.72E-01	1.72E-01	2.80E-02	1.13E+01	1.94E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.04E+02	1.94E+00	9.53E-04	4.54E+00	8.15E-04	1.59E+02	2.97E-02	1.18E+02	6.93E-06
CEA1-3-700 (0-6")	1.72E-01	1.72E-01	2.80E-02	1.16E+01	1.99E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.15E+02	1.99E+00	9.53E-04	4.54E+00	8.37E-04	1.59E+02	2.97E-02	1.18E+02	7.11E-06
CEA1-3-750 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CEA1-3-800 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CEA1-3-850 (0-6")	1.72E-01	1.72E-01	2.80E-02	5.67E+00	9.72E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.02E+02	9.73E-01	9.53E-04	4.54E+00	4.09E-04	1.59E+02	2.97E-02	1.18E+02	3.47E-06
CEA1-3-Comp 1 (0-6")	1.72E-01	1.72E-01	2.80E-02	8.39E+00	1.44E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.00E+02	1.44E+00	9.53E-04	4.54E+00	6.05E-04	1.59E+02	2.97E-02	1.18E+02	5.14E-06
CEA1-3-Comp 2 (0-6")	1.72E-01	1.72E-01	2.80E-02	6.50E+00	1.11E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.32E+02	1.11E+00	9.53E-04	4.54E+00	4.68E-04	1.59E+02	2.97E-02	1.18E+02	3.98E-06
CEA1-3-Comp 3 (0-6")	1.72E-01	1.72E-01	2.80E-02	6.79E+00	1.16E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.42E+02	1.16E+00	9.53E-04	4.54E+00	4.89E-04	1.59E+02	2.97E-02	1.18E+02	4.16E-06
CEA4-00 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	1.59E+02	BB	BB	BB	BB	BB	BB	BB	BB

TABLE C-5E: MANGANESE DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 5 - EDITH MINE WASTE AREAS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares)	1.29																					
RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Red Fox (Carnivorous Mammal - Terrestrial)																							
CEA4-20 (0-6")	1.72E-01	1.72E-01	2.80E-02	4.37E+00	7.49E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.56E+02	7.50E-01	9.53E-04	4.54E+00	3.15E-04	1.59E+02	2.97E-02	1.18E+02	2.68E-06
CEA4-40 (0-6")	1.72E-01	1.72E-01	2.80E-02	1.41E+01	2.43E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.05E+02	2.43E+00	9.53E-04	4.54E+00	1.02E-03	1.59E+02	2.97E-02	1.18E+02	8.67E-06
CEA4-Comp (0-6")	1.72E-01	1.72E-01	2.80E-02	6.47E+00	1.11E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.31E+02	1.11E+00	9.53E-04	4.54E+00	4.67E-04	1.59E+02	2.97E-02	1.18E+02	3.97E-06
East Edith Mine Waste Area																						**Maximum HQ (Central Edith Mine Waste Area)**	**2.38E-05**
EEA1-00 (0-6")	1.72E-01	1.72E-01	2.80E-02	6.99E+00	1.20E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.50E+02	1.20E+00	9.53E-04	4.54E+00	5.04E-04	1.59E+02	2.97E-02	1.18E+02	4.28E-06
EEA1-100 (0-6")	1.72E-01	1.72E-01	2.80E-02	1.25E+01	2.15E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.47E+02	2.15E+00	9.53E-04	4.54E+00	9.02E-04	1.59E+02	2.97E-02	1.18E+02	7.66E-06
EEA1-150 (0-6")	1.72E-01	1.72E-01	2.80E-02	9.53E+00	1.64E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.41E+02	1.64E+00	9.53E-04	4.54E+00	6.87E-04	1.59E+02	2.97E-02	1.18E+02	5.84E-06
EEA1-200 (0-6")	1.72E-01	1.72E-01	2.80E-02	1.25E+01	2.15E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.47E+02	2.15E+00	9.53E-04	4.54E+00	9.03E-04	1.59E+02	2.97E-02	1.18E+02	7.67E-06
EEA1-250 (0-6")	1.72E-01	1.72E-01	2.80E-02	1.13E+01	1.93E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.02E+02	1.93E+00	9.53E-04	4.54E+00	8.11E-04	1.59E+02	2.97E-02	1.18E+02	6.90E-06
EEA1-300 (0-6")	1.72E-01	1.72E-01	2.80E-02	1.44E+01	2.47E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.15E+02	2.47E+00	9.53E-04	4.54E+00	1.04E-03	1.59E+02	2.97E-02	1.18E+02	8.83E-06
EEA1-350 (0-6")	1.72E-01	1.72E-01	2.80E-02	1.68E+01	2.88E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	6.00E+02	2.88E+00	9.53E-04	4.54E+00	1.21E-03	1.59E+02	2.97E-02	1.18E+02	1.03E-05
EEA1-400 (0-6")	1.72E-01	1.72E-01	2.80E-02	1.97E+01	3.39E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	7.05E+02	3.39E+00	9.53E-04	4.54E+00	1.42E-03	1.59E+02	2.97E-02	1.18E+02	1.21E-05
EEA1-450 (0-6")	1.72E-01	1.72E-01	2.80E-02	1.26E+01	2.17E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.51E+02	2.17E+00	9.53E-04	4.54E+00	9.11E-04	1.59E+02	2.97E-02	1.18E+02	7.74E-06
EEA1-50 (0-6")	1.72E-01	1.72E-01	2.80E-02	6.67E+00	1.14E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.38E+02	1.14E+00	9.53E-04	4.54E+00	4.81E-04	1.59E+02	2.97E-02	1.18E+02	4.09E-06
EEA1-500 (0-6")	1.72E-01	1.72E-01	2.80E-02	2.68E+01	4.60E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	9.58E+02	4.60E+00	9.53E-04	4.54E+00	1.93E-03	1.59E+02	2.97E-02	1.18E+02	1.64E-05
EEA1-Comp 1 (0-6")	1.72E-01	1.72E-01	2.80E-02	1.21E+01	2.07E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.31E+02	2.07E+00	9.53E-04	4.54E+00	8.69E-04	1.59E+02	2.97E-02	1.18E+02	7.39E-06
EEA2-00 (0-6")	1.72E-01	1.72E-01	2.80E-02	1.05E+01	1.81E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.76E+02	1.81E+00	9.53E-04	4.54E+00	7.59E-04	1.59E+02	2.97E-02	1.18E+02	6.45E-06
EEA2-50 (0-6")	1.72E-01	1.72E-01	2.80E-02	2.30E+01	3.95E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	8.23E+02	3.95E+00	9.53E-04	4.54E+00	1.66E-03	1.59E+02	2.97E-02	1.18E+02	1.41E-05
EEA2-100 (0-6")	1.72E-01	1.72E-01	2.80E-02	3.60E+01	6.18E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.29E+03	6.18E+00	9.53E-04	4.54E+00	2.60E-03	1.59E+02	2.97E-02	1.18E+02	2.21E-05
EEA2-150 (0-6")	1.72E-01	1.72E-01	2.80E-02	1.23E+01	2.11E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.39E+02	2.11E+00	9.53E-04	4.54E+00	8.87E-04	1.59E+02	2.97E-02	1.18E+02	7.54E-06
EEA2-200 (0-6")	1.72E-01	1.72E-01	2.80E-02	1.42E+01	2.44E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.09E+02	2.44E+00	9.53E-04	4.54E+00	1.03E-03	1.59E+02	2.97E-02	1.18E+02	8.73E-06
EEA2-250 (0-6")	1.72E-01	1.72E-01	2.80E-02	1.57E+01	2.69E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.60E+02	2.69E+00	9.53E-04	4.54E+00	1.13E-03	1.59E+02	2.97E-02	1.18E+02	9.60E-06
EEA2-300 (0-6")	1.72E-01	1.72E-01	2.80E-02	3.31E+01	5.69E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.18E+03	5.69E+00	9.53E-04	4.54E+00	2.39E-03	1.59E+02	2.97E-02	1.18E+02	2.03E-05
EEA2-Comp 1 (0-6")	1.72E-01	1.72E-01	2.80E-02	1.47E+01	2.51E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.23E+02	2.51E+00	9.53E-04	4.54E+00	1.06E-03	1.59E+02	2.97E-02	1.18E+02	8.98E-06
																						Maximum HQ (East Edith Mine Waste Area)	**2.21E-05**
Masked Shrew (Omnivorous Mammal - Terrestrial, Wetland)																							
Reference Sites																							
SHGBG-1 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	2.17E+03	1.84E+01	1.10E-03	1.47E+03	1.62E+00	1.00E+00	5.50E-03	3.64E+03	1.59E+02	2.97E-02	1.76E+02	2.07E+01
SHGBG-2 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.49E+03	1.26E+01	1.10E-03	1.01E+03	1.11E+00	1.00E+00	5.50E-03	2.49E+03	1.59E+02	2.97E-02	1.76E+02	1.42E+01
SHGBG-201 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	3.35E+02	2.83E+00	1.10E-03	2.27E+02	2.50E-01	1.00E+00	5.50E-03	5.61E+02	1.59E+02	2.97E-02	1.76E+02	3.19E+00
SHGBG-202 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	2.97E+02	2.52E+00	1.10E-03	2.01E+02	2.22E-01	1.00E+00	5.50E-03	4.98E+02	1.59E+02	2.97E-02	1.76E+02	2.83E+00
West Edith Mine Waste Area																						**Minimum HQ (Reference Sites)**	**2.83E+00**
WEA1-00 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	6.68E+02	5.66E+00	1.10E-03	4.53E+02	4.98E-01	1.00E+00	5.50E-03	1.12E+03	1.59E+02	2.97E-02	1.76E+02	6.36E+00
WEA1-100 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.25E+03	1.06E+01	1.10E-03	8.49E+02	9.35E-01	1.00E+00	5.50E-03	2.10E+03	1.59E+02	2.97E-02	1.76E+02	1.19E+01
WEA1-150 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	2.85E+03	2.41E+01	1.10E-03	1.93E+03	2.13E+00	1.00E+00	5.50E-03	4.77E+03	1.59E+02	2.97E-02	1.76E+02	2.71E+01
WEA1-200 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	2.23E+03	1.89E+01	1.10E-03	1.51E+03	1.67E+00	1.00E+00	5.50E-03	3.74E+03	1.59E+02	2.97E-02	1.76E+02	2.13E+01
WEA1-250 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	2.03E+03	1.72E+01	1.10E-03	1.37E+03	1.51E+00	1.00E+00	5.50E-03	3.39E+03	1.59E+02	2.97E-02	1.76E+02	1.93E+01
WEA1-300 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	2.05E+03	1.74E+01	1.10E-03	1.39E+03	1.53E+00	1.00E+00	5.50E-03	3.44E+03	1.59E+02	2.97E-02	1.76E+02	1.95E+01
WEA1-350 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	9.36E+02	7.93E+00	1.10E-03	6.34E+02	6.99E-01	1.00E+00	5.50E-03	1.57E+03	1.59E+02	2.97E-02	1.76E+02	8.91E+00
WEA1-400 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	3.53E+02	2.99E+00	1.10E-03	2.39E+02	2.64E-01	1.00E+00	5.50E-03	5.92E+02	1.59E+02	2.97E-02	1.76E+02	3.36E+00
WEA1-450 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
WEA1-550 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
WEA1-Comp 1 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	3.81E+03	3.23E+01	1.10E-03	2.58E+03	2.84E+00	1.00E+00	5.50E-03	6.38E+03	1.59E+02	2.97E-02	1.76E+02	3.63E+01
WEA1-Comp 2 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	4.94E+03	4.18E+01	1.10E-03	3.35E+03	3.69E+00	1.00E+00	5.50E-03	8.28E+03	1.59E+02	2.97E-02	1.76E+02	4.70E+01
Central Edith Mine Waste Area																						**Maximum HQ (West Edith Mine Waste Area)**	**4.70E+01**
CEA1-3-00 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.86E+03	1.58E+01	1.10E-03	1.26E+03	1.39E+00	1.00E+00	5.50E-03	3.12E+03	1.59E+02	2.97E-02	1.76E+02	1.77E+01
CEA1-3-100 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.80E+03	1.53E+01	1.10E-03	1.22E+03	1.35E+00	1.00E+00	5.50E-03	3.02E+03	1.59E+02	2.97E-02	1.76E+02	1.72E+01
CEA1-3-150 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	3.15E+02	2.67E+00	1.10E-03	2.14E+02	2.35E-01	1.00E+00	5.50E-03	5.28E+02	1.59E+02	2.97E-02	1.76E+02	3.00E+00
CEA1-3-200 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	8.77E+02	7.43E+00	1.10E-03	5.94E+02	6.54E-01	1.00E+00	5.50E-03	1.47E+03	1.59E+02	2.97E-02	1.76E+02	8.35E+00
CEA1-3-250 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	3.90E+02	3.30E+00	1.10E-03	2.64E+02	2.91E-01	1.00E+00	5.50E-03	6.53E+02	1.59E+02	2.97E-02	1.76E+02	3.71E+00
CEA1-3-300 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	7.28E+02	6.17E+00	1.10E-03	4.93E+02	5.43E-01	1.00E+00	5.50E-03	1.22E+03	1.59E+02	2.97E-02	1.76E+02	6.93E+00
CEA1-3-350 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.55E+03	1.31E+01	1.10E-03	1.05E+03	1.16E+00	1.00E+00	5.50E-03	2.60E+03	1.59E+02	2.97E-02	1.76E+02	1.48E+01
CEA1-3-400 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.23E+03	1.05E+01	1.10E-03	8.37E+02	9.21E-01	1.00E+00	5.50E-03	2.07E+03	1.59E+02	2.97E-02	1.76E+02	1.18E+01
CEA1-3-450 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CEA1-3-50 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	6.00E+02	5.08E+00	1.10E-03	4.06E+02	4.48E-01	1.00E+00	5.50E-03	1.01E+03	1.59E+02	2.97E-02	1.76E+02	5.71E+00

TABLE C-5E: MANGANESE DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 5 - EDITH MINE WASTE AREAS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares)	1.29																					
RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Masked Shrew (Omnivorous Mammal - Terrestrial, Wetland)																							
CEA1-3-500 (0-6")																							
CEA1-3-550 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	6.79E+02	5.75E+00	1.10E-03	4.60E+02	5.06E-01	1.00E+00	5.50E-03	1.14E+03	1.59E+02	2.97E-02	1.76E+02	6.46E+00
CEA1-3-600 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	2.05E+03	1.73E+01	1.10E-03	1.39E+03	1.53E+00	1.00E+00	5.50E-03	3.43E+03	1.59E+02	2.97E-02	1.76E+02	1.95E+01
CEA1-3-650 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	5.96E+02	5.05E+00	1.10E-03	4.04E+02	4.45E-01	1.00E+00	5.50E-03	9.99E+02	1.59E+02	2.97E-02	1.76E+02	5.68E+00
CEA1-3-700 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	6.12E+02	5.18E+00	1.10E-03	4.15E+02	4.57E-01	1.00E+00	5.50E-03	1.03E+03	1.59E+02	2.97E-02	1.76E+02	5.83E+00
CEA1-3-750 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CEA1-3-800 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CEA1-3-850 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	2.99E+02	2.53E+00	1.10E-03	2.02E+02	2.23E-01	1.00E+00	5.50E-03	5.01E+02	1.59E+02	2.97E-02	1.76E+02	2.84E+00
CEA1-3-Comp 1 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	4.42E+02	3.75E+00	1.10E-03	3.00E+02	3.30E-01	1.00E+00	5.50E-03	7.41E+02	1.59E+02	2.97E-02	1.76E+02	4.21E+00
CEA1-3-Comp 2 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	3.42E+02	2.90E+00	1.10E-03	2.32E+02	2.55E-01	1.00E+00	5.50E-03	5.74E+02	1.59E+02	2.97E-02	1.76E+02	3.26E+00
CEA1-3-Comp 3 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	3.58E+02	3.03E+00	1.10E-03	2.42E+02	2.67E-01	1.00E+00	5.50E-03	6.00E+02	1.59E+02	2.97E-02	1.76E+02	3.41E+00
CEA4-00 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	2.35E+02	1.99E+00	1.10E-03	1.59E+02	1.76E-01	1.00E+00	5.50E-03	3.94E+02	1.59E+02	2.97E-02	1.76E+02	2.24E+00
CEA4-20 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	2.30E+02	1.95E+00	1.10E-03	1.56E+02	1.72E-01	1.00E+00	5.50E-03	3.86E+02	1.59E+02	2.97E-02	1.76E+02	2.19E+00
CEA4-40 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	7.46E+02	6.32E+00	1.10E-03	5.05E+02	5.56E-01	1.00E+00	5.50E-03	1.25E+03	1.59E+02	2.97E-02	1.76E+02	7.10E+00
CEA4-Comp (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	3.41E+02	2.89E+00	1.10E-03	2.31E+02	2.55E-01	1.00E+00	5.50E-03	5.72E+02	1.59E+02	2.97E-02	1.76E+02	3.25E+00
East Edith Mine Waste Area																					**Maximum HQ (Central Edith Mine Waste Area)**		**1.95E+01**
EEA1-00 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	3.68E+02	3.12E+00	1.10E-03	2.50E+02	2.75E-01	1.00E+00	5.50E-03	6.17E+02	1.59E+02	2.97E-02	1.76E+02	3.51E+00
EEA1-100 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	6.59E+02	5.58E+00	1.10E-03	4.47E+02	4.92E-01	1.00E+00	5.50E-03	1.10E+03	1.59E+02	2.97E-02	1.76E+02	6.28E+00
EEA1-150 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	5.03E+02	4.26E+00	1.10E-03	3.41E+02	3.75E-01	1.00E+00	5.50E-03	8.42E+02	1.59E+02	2.97E-02	1.76E+02	4.78E+00
EEA1-200 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	6.60E+02	5.59E+00	1.10E-03	4.47E+02	4.93E-01	1.00E+00	5.50E-03	1.11E+03	1.59E+02	2.97E-02	1.76E+02	6.29E+00
EEA1-250 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	5.93E+02	5.03E+00	1.10E-03	4.02E+02	4.43E-01	1.00E+00	5.50E-03	9.94E+02	1.59E+02	2.97E-02	1.76E+02	5.65E+00
EEA1-300 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	7.60E+02	6.43E+00	1.10E-03	5.15E+02	5.67E-01	1.00E+00	5.50E-03	1.27E+03	1.59E+02	2.97E-02	1.76E+02	7.23E+00
EEA1-350 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	8.85E+02	7.50E+00	1.10E-03	6.00E+02	6.61E-01	1.00E+00	5.50E-03	1.48E+03	1.59E+02	2.97E-02	1.76E+02	8.43E+00
EEA1-400 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.04E+03	8.81E+00	1.10E-03	7.05E+02	7.76E-01	1.00E+00	5.50E-03	1.74E+03	1.59E+02	2.97E-02	1.76E+02	9.90E+00
EEA1-450 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	6.66E+02	5.64E+00	1.10E-03	4.51E+02	4.97E-01	1.00E+00	5.50E-03	1.12E+03	1.59E+02	2.97E-02	1.76E+02	6.34E+00
EEA1-50 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	3.52E+02	2.98E+00	1.10E-03	2.38E+02	2.62E-01	1.00E+00	5.50E-03	5.89E+02	1.59E+02	2.97E-02	1.76E+02	3.35E+00
EEA1-500 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.41E+03	1.20E+01	1.10E-03	9.58E+02	1.05E+00	1.00E+00	5.50E-03	2.37E+03	1.59E+02	2.97E-02	1.76E+02	1.35E+01
EEA1-Comp 1 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	6.36E+02	5.38E+00	1.10E-03	4.31E+02	4.74E-01	1.00E+00	5.50E-03	1.07E+03	1.59E+02	2.97E-02	1.76E+02	6.05E+00
EEA2-00 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	5.55E+02	4.70E+00	1.10E-03	3.76E+02	4.14E-01	1.00E+00	5.50E-03	9.31E+02	1.59E+02	2.97E-02	1.76E+02	5.29E+00
EEA2-50 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.22E+03	1.03E+01	1.10E-03	8.23E+02	9.07E-01	1.00E+00	5.50E-03	2.04E+03	1.59E+02	2.97E-02	1.76E+02	1.16E+01
EEA2-100 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.90E+03	1.61E+01	1.10E-03	1.29E+03	1.42E+00	1.00E+00	5.50E-03	3.18E+03	1.59E+02	2.97E-02	1.76E+02	1.81E+01
EEA2-150 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	6.48E+02	5.49E+00	1.10E-03	4.39E+02	4.84E-01	1.00E+00	5.50E-03	1.09E+03	1.59E+02	2.97E-02	1.76E+02	6.17E+00
EEA2-200 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	7.51E+02	6.36E+00	1.10E-03	5.09E+02	5.60E-01	1.00E+00	5.50E-03	1.26E+03	1.59E+02	2.97E-02	1.76E+02	7.15E+00
EEA2-250 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	8.26E+02	7.00E+00	1.10E-03	5.60E+02	6.16E-01	1.00E+00	5.50E-03	1.38E+03	1.59E+02	2.97E-02	1.76E+02	7.87E+00
EEA2-300 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.75E+03	1.48E+01	1.10E-03	1.18E+03	1.30E+00	1.00E+00	5.50E-03	2.93E+03	1.59E+02	2.97E-02	1.76E+02	1.66E+01
EEA2-Comp 1 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	7.72E+02	6.54E+00	1.10E-03	5.23E+02	5.76E-01	1.00E+00	5.50E-03	1.29E+03	1.59E+02	2.97E-02	1.76E+02	7.35E+00
																					Maximum HQ (East Edith Mine Waste Area)		**1.81E+01**

Notes

1 See Tables 3-1 through 3-13 for ingestion rates, foraging ranges used to calculate the SUF, and body weights.

2 BAFs were calculated by dividing site-collected tissue by collocated soil concentrations (BAFs are in dry weight). The maximum BAF calculated from the Beartrap Creek and Blackfoot River transects was used for site dose calculations. The maximum BAF from the terrestrial reference site was used for reference site dose calculations.

3 The mammal, plant, and invertebrate concentrations were calculated by multiplying the soil concentration by the BAF to generate a tissue concentration (see note 2).

4 Mammal, plant, and invertebrate daily doses were calculated by multiplying the ingestion rate (see note 1) by the tissue concentration (see note 3).

5 Soil concentration from 0 to 6 inches below ground surface at point ID as measured by XRF 10. Doses were not calculated for detected and non-detected soil concentrations measured below the minimum reference site concentration, as indicated by BB. For results that were measured at less than the detection limit, doses were calculated using half of the detection limit.

6 Soil daily dose was calculated by multiplying the soil ingestion rate (see note 1) by soil concentration (see note 5).

7 Total daily dose is calculated using the following equation: total daily dose = ([mammal daily dose (if applicable) + plant daily dose (if applicable) + invertebrate daily dose (if applicable) + soil daily dose]*SUF)/receptor species body weight.

8 The TRVs used in this risk assessment represent a mid-range effects level. The derivation of TRVs is described in Navy (1998).

9 Allometrically adjusted TRVs for birds were calculated using the following equation: receptor species TRV = (test species TRV) x (test species body weight / receptor species body weight)$^{(1-1.2)}$.

10 Allometrically adjusted TRVs for mammals were calculated using the following equation: receptor species TRV = (test species TRV) x (test species body weight / receptor species body weight)$^{(1-0.94)}$.

11 HQs were calculated using the following equation: HQ = total daily dose/allometrically adjusted TRV.

12 Highlighted cells indicate an HQ greater than 1.0.

BAF	Bioaccumulation Factor	mg/day	Milligram per day
BB	Below minimum background reference site concentration	mg/kg	Milligram per kilogram
EE/CA	Engineering Evaluation/Cost Analysis	NA	Not applicable
EU	Exposure Unit	Navy	Department of the Navy
HQ	Hazard quotient	SUF	Site use factor
ID	Identification	TRV	Toxicity reference value
kg	Kilogram	XRF	X-ray fluorescence
kg/day	Kilogram per day	XRF 10	XRF measurements recorded following drying and seiving through a #10-mesh screen

Sources: Department of the Navy. 1998. "Development of Toxicity Reference Values for Conducting Ecological Risk Assessments at Naval Facilities in California, Interim Final." Prepared by Naval Facilities Engineering Command, Engineering Field Activity West (EFA West). San Bruno, California.

TABLE C-5F: ZINC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 5 - EDITH MINE WASTE AREAS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 1.29

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Mourning Dove (Herbivorous Birds - Terrestrial)																							
Reference Sites																							
SHGBG-1 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.41E+00	4.10E+02	2.36E+00	NA	NA	NA	NA	5.36E-04	2.91E+02	1.56E-01	4.98E-03	1.09E-01	1.15E-01	1.72E+02	9.55E-01	1.11E+02	1.03E-03
SHGBG-2 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.41E+00	1.40E+02	8.07E-01	NA	NA	NA	NA	5.36E-04	9.92E+01	5.32E-02	4.98E-03	1.09E-01	3.92E-02	1.72E+02	9.55E-01	1.11E+02	3.52E-04
SHGBG-201 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.41E+00	1.85E+02	1.07E+00	NA	NA	NA	NA	5.36E-04	1.31E+02	7.02E-02	4.98E-03	1.09E-01	5.18E-02	1.72E+02	9.55E-01	1.11E+02	4.65E-04
SHGBG-202 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.41E+00	4.55E+02	2.62E+00	NA	NA	NA	NA	5.36E-04	3.23E+02	1.73E-01	4.98E-03	1.09E-01	1.28E-01	1.72E+02	9.55E-01	1.11E+02	1.14E-03
West Edith Mine Waste Area																						**Minimum HQ (Reference Sites)**	**3.52E-04**
WEA1-00 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	2.55E+02	1.47E+00	NA	NA	NA	NA	5.36E-04	1.29E+02	6.89E-02	4.98E-03	1.09E-01	7.01E-02	1.72E+02	9.55E-01	1.11E+02	6.28E-04
WEA1-100 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	6.08E+02	3.50E+00	NA	NA	NA	NA	5.36E-04	3.07E+02	1.64E-01	4.98E-03	1.09E-01	1.67E-01	1.72E+02	9.55E-01	1.11E+02	1.50E-03
WEA1-150 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	3.96E+02	2.28E+00	NA	NA	NA	NA	5.36E-04	2.00E+02	1.07E-01	4.98E-03	1.09E-01	1.09E-01	1.72E+02	9.55E-01	1.11E+02	9.78E-04
WEA1-200 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	5.08E+02	2.93E+00	NA	NA	NA	NA	5.36E-04	2.57E+02	1.37E-01	4.98E-03	1.09E-01	1.40E-01	1.72E+02	9.55E-01	1.11E+02	1.25E-03
WEA1-250 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	5.57E+02	3.21E+00	NA	NA	NA	NA	5.36E-04	2.81E+02	1.51E-01	4.98E-03	1.09E-01	1.53E-01	1.72E+02	9.55E-01	1.11E+02	1.37E-03
WEA1-300 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	4.69E+02	2.70E+00	NA	NA	NA	NA	5.36E-04	2.37E+02	1.27E-01	4.98E-03	1.09E-01	1.29E-01	1.72E+02	9.55E-01	1.11E+02	1.16E-03
WEA1-350 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	3.07E+02	1.77E+00	NA	NA	NA	NA	5.36E-04	1.55E+02	8.30E-02	4.98E-03	1.09E-01	8.45E-02	1.72E+02	9.55E-01	1.11E+02	7.58E-04
WEA1-400 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
WEA1-450 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	6.04E+02	3.48E+00	NA	NA	NA	NA	5.36E-04	3.05E+02	1.63E-01	4.98E-03	1.09E-01	1.66E-01	1.72E+02	9.55E-01	1.11E+02	1.49E-03
WEA1-550 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	4.50E+02	2.59E+00	NA	NA	NA	NA	5.36E-04	2.27E+02	1.22E-01	4.98E-03	1.09E-01	1.24E-01	1.72E+02	9.55E-01	1.11E+02	1.11E-03
WEA1-Comp 1 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	2.94E+02	1.69E+00	NA	NA	NA	NA	5.36E-04	1.48E+02	7.95E-02	4.98E-03	1.09E-01	8.09E-02	1.72E+02	9.55E-01	1.11E+02	7.25E-04
WEA1-Comp 2 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	3.54E+02	2.04E+00	NA	NA	NA	NA	5.36E-04	1.79E+02	9.58E-02	4.98E-03	1.09E-01	9.75E-02	1.72E+02	9.55E-01	1.11E+02	8.75E-04
Central Edith Mine Waste Area																						**Maximum HQ (West Edith Mine Waste Area)**	**1.50E-03**
CEA1-3-00 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	2.81E+02	1.62E+00	NA	NA	NA	NA	5.36E-04	1.42E+02	7.60E-02	4.98E-03	1.09E-01	7.73E-02	1.72E+02	9.55E-01	1.11E+02	6.94E-04
CEA1-3-100 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	3.80E+02	2.19E+00	NA	NA	NA	NA	5.36E-04	1.92E+02	1.03E-01	4.98E-03	1.09E-01	1.05E-01	1.72E+02	9.55E-01	1.11E+02	9.39E-04
CEA1-3-150 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	3.29E+02	1.90E+00	NA	NA	NA	NA	5.36E-04	1.66E+02	8.90E-02	4.98E-03	1.09E-01	9.05E-02	1.72E+02	9.55E-01	1.11E+02	8.12E-04
CEA1-3-200 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	2.00E+02	1.15E+00	NA	NA	NA	NA	5.36E-04	1.01E+02	5.41E-02	4.98E-03	1.09E-01	5.50E-02	1.72E+02	9.55E-01	1.11E+02	4.94E-04
CEA1-3-250 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CEA1-3-300 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	4.43E+02	2.55E+00	NA	NA	NA	NA	5.36E-04	2.24E+02	1.20E-01	4.98E-03	1.09E-01	1.22E-01	1.72E+02	9.55E-01	1.11E+02	1.09E-03
CEA1-3-350 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	5.57E+02	3.21E+00	NA	NA	NA	NA	5.36E-04	2.81E+02	1.50E-01	4.98E-03	1.09E-01	1.53E-01	1.72E+02	9.55E-01	1.11E+02	1.37E-03
CEA1-3-400 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	4.26E+02	2.45E+00	NA	NA	NA	NA	5.36E-04	2.15E+02	1.15E-01	4.98E-03	1.09E-01	1.17E-01	1.72E+02	9.55E-01	1.11E+02	1.05E-03
CEA1-3-450 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	3.44E+02	1.98E+00	NA	NA	NA	NA	5.36E-04	1.74E+02	9.30E-02	4.98E-03	1.09E-01	9.46E-02	1.72E+02	9.55E-01	1.11E+02	8.49E-04
CEA1-3-50 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	2.66E+02	1.53E+00	NA	NA	NA	NA	5.36E-04	1.34E+02	7.19E-02	4.98E-03	1.09E-01	7.31E-02	1.72E+02	9.55E-01	1.11E+02	6.56E-04
CEA1-3-500 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	6.41E+02	3.69E+00	NA	NA	NA	NA	5.36E-04	3.23E+02	1.73E-01	4.98E-03	1.09E-01	1.76E-01	1.72E+02	9.55E-01	1.11E+02	1.58E-03
CEA1-3-550 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	4.76E+02	2.74E+00	NA	NA	NA	NA	5.36E-04	2.40E+02	1.29E-01	4.98E-03	1.09E-01	1.31E-01	1.72E+02	9.55E-01	1.11E+02	1.18E-03
CEA1-3-600 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	3.25E+02	1.87E+00	NA	NA	NA	NA	5.36E-04	1.64E+02	8.78E-02	4.98E-03	1.09E-01	8.93E-02	1.72E+02	9.55E-01	1.11E+02	8.01E-04
CEA1-3-650 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	4.70E+02	2.71E+00	NA	NA	NA	NA	5.36E-04	2.37E+02	1.27E-01	4.98E-03	1.09E-01	1.29E-01	1.72E+02	9.55E-01	1.11E+02	1.16E-03
CEA1-3-700 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	2.18E+02	1.26E+00	NA	NA	NA	NA	5.36E-04	1.10E+02	5.90E-02	4.98E-03	1.09E-01	6.01E-02	1.72E+02	9.55E-01	1.11E+02	5.39E-04
CEA1-3-750 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CEA1-3-800 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CEA1-3-850 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	2.46E+02	1.42E+00	NA	NA	NA	NA	5.36E-04	1.24E+02	6.65E-02	4.98E-03	1.09E-01	6.77E-02	1.72E+02	9.55E-01	1.11E+02	6.07E-04
CEA1-3-Comp 1 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CEA1-3-Comp 2 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CEA1-3-Comp 3 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	3.73E+02	2.15E+00	NA	NA	NA	NA	5.36E-04	1.88E+02	1.01E-01	4.98E-03	1.09E-01	1.03E-01	1.72E+02	9.55E-01	1.11E+02	9.21E-04
CEA4-00 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CEA4-20 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CEA4-40 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	4.22E+02	2.43E+00	NA	NA	NA	NA	5.36E-04	2.13E+02	1.14E-01	4.98E-03	1.09E-01	1.16E-01	1.72E+02	9.55E-01	1.11E+02	1.04E-03
CEA4-Comp (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	2.02E+02	1.16E+00	NA	NA	NA	NA	5.36E-04	1.02E+02	5.45E-02	4.98E-03	1.09E-01	5.55E-02	1.72E+02	9.55E-01	1.11E+02	4.98E-04
East Edith Mine Waste Area																						**Maximum HQ (Central Edith Mine Waste Area)**	**1.58E-03**
EEA1-00 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
EEA1-100 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
EEA1-150 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
EEA1-200 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
EEA1-250 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
EEA1-300 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
EEA1-350 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	2.40E+02	1.38E+00	NA	NA	NA	NA	5.36E-04	1.21E+02	6.49E-02	4.98E-03	1.09E-01	6.60E-02	1.72E+02	9.55E-01	1.11E+02	5.92E-04
EEA1-400 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	3.91E+02	2.25E+00	NA	NA	NA	NA	5.36E-04	1.97E+02	1.06E-01	4.98E-03	1.09E-01	1.07E-01	1.72E+02	9.55E-01	1.11E+02	9.64E-04
EEA1-450 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
EEA1-50 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
EEA1-500 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	3.54E+02	2.04E+00	NA	NA	NA	NA	5.36E-04	1.79E+02	9.59E-02	4.98E-03	1.09E-01	9.75E-02	1.72E+02	9.55E-01	1.11E+02	8.75E-04
EEA1-Comp 1 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB

TABLE C-5F: ZINC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 5 - EDITH MINE WASTE AREAS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 1.29

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Mourning Dove (Herbivorous Birds - Terrestrial)																							
EEA2-00 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
EEA2-50 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	4.11E+02	2.37E+00	NA	NA	NA	NA	5.36E-04	2.07E+02	1.11E-01	4.98E-03	1.09E-01	1.13E-01	1.72E+02	9.55E-01	1.11E+02	1.01E-03
EEA2-100 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	2.74E+02	1.58E+00	NA	NA	NA	NA	5.36E-04	1.38E+02	7.41E-02	4.98E-03	1.09E-01	7.54E-02	1.72E+02	9.55E-01	1.11E+02	6.77E-04
EEA2-150 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
EEA2-200 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
EEA2-250 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
EEA2-300 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	2.69E+02	1.55E+00	NA	NA	NA	NA	5.36E-04	1.36E+02	7.27E-02	4.98E-03	1.09E-01	7.39E-02	1.72E+02	9.55E-01	1.11E+02	6.63E-04
EEA2-Comp 1 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
																						Maximum HQ (East Edith Mine Waste Area)	**1.01E-03**
Red-Tailed Hawk (Carnivorous Birds - Terrestrial)																							
Reference Sites																							
SHGBG-1 (0-6")	9.00E-02	9.00E-02	1.03E+01	3.01E+03	2.70E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.91E+02	1.49E+00	1.85E-03	1.13E+00	4.44E-01	1.72E+02	9.55E-01	1.78E+02	2.49E-03
SHGBG-2 (0-6")	9.00E-02	9.00E-02	1.03E+01	1.03E+03	9.24E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	9.92E+01	5.09E-01	1.85E-03	1.13E+00	1.52E-01	1.72E+02	9.55E-01	1.78E+02	8.52E-04
SHGBG-201 (0-6")	9.00E-02	9.00E-02	1.03E+01	1.36E+03	1.22E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.31E+02	6.72E-01	1.85E-03	1.13E+00	2.00E-01	1.72E+02	9.55E-01	1.78E+02	1.12E-03
SHGBG-202 (0-6")	9.00E-02	9.00E-02	1.03E+01	3.34E+03	3.00E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.23E+02	1.65E+00	1.85E-03	1.13E+00	4.93E-01	1.72E+02	9.55E-01	1.78E+02	2.77E-03
West Edith Mine Waste Area																						**Minimum HQ (Reference Sites)**	**8.52E-04**
WEA1-00 (0-6")	9.00E-02	9.00E-02	6.30E+00	8.09E+02	7.28E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.29E+02	6.59E-01	1.85E-03	1.13E+00	1.20E-01	1.72E+02	9.55E-01	1.78E+02	6.74E-04
WEA1-100 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.93E+03	1.74E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.07E+02	1.57E+00	1.85E-03	1.13E+00	2.86E-01	1.72E+02	9.55E-01	1.78E+02	1.61E-03
WEA1-150 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.26E+03	1.13E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.00E+02	1.03E+00	1.85E-03	1.13E+00	1.87E-01	1.72E+02	9.55E-01	1.78E+02	1.05E-03
WEA1-200 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.62E+03	1.45E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.57E+02	1.32E+00	1.85E-03	1.13E+00	2.39E-01	1.72E+02	9.55E-01	1.78E+02	1.34E-03
WEA1-250 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.77E+03	1.59E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.81E+02	1.44E+00	1.85E-03	1.13E+00	2.62E-01	1.72E+02	9.55E-01	1.78E+02	1.47E-03
WEA1-300 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.49E+03	1.34E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.37E+02	1.21E+00	1.85E-03	1.13E+00	2.21E-01	1.72E+02	9.55E-01	1.78E+02	1.24E-03
WEA1-350 (0-6")	9.00E-02	9.00E-02	6.30E+00	9.76E+02	8.78E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.55E+02	7.95E-01	1.85E-03	1.13E+00	1.45E-01	1.72E+02	9.55E-01	1.78E+02	8.12E-04
WEA1-400 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
WEA1-450 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.92E+03	1.73E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.05E+02	1.56E+00	1.85E-03	1.13E+00	2.85E-01	1.72E+02	9.55E-01	1.78E+02	1.60E-03
WEA1-550 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.43E+03	1.29E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.27E+02	1.17E+00	1.85E-03	1.13E+00	2.12E-01	1.72E+02	9.55E-01	1.78E+02	1.19E-03
WEA1-Comp 1 (0-6")	9.00E-02	9.00E-02	6.30E+00	9.34E+02	8.40E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.48E+02	7.61E-01	1.85E-03	1.13E+00	1.38E-01	1.72E+02	9.55E-01	1.78E+02	7.77E-04
WEA1-Comp 2 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.13E+03	1.01E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.79E+02	9.17E-01	1.85E-03	1.13E+00	1.67E-01	1.72E+02	9.55E-01	1.78E+02	9.38E-04
Central Edith Mine Waste Area																						**Maximum HQ (West Edith Mine Waste Area)**	**1.61E-03**
CEA1-3-00 (0-6")	9.00E-02	9.00E-02	6.30E+00	8.93E+02	8.04E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.42E+02	7.27E-01	1.85E-03	1.13E+00	1.32E-01	1.72E+02	9.55E-01	1.78E+02	7.44E-04
CEA1-3-100 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.21E+03	1.09E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.92E+02	9.84E-01	1.85E-03	1.13E+00	1.79E-01	1.72E+02	9.55E-01	1.78E+02	1.01E-03
CEA1-3-150 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.05E+03	9.41E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.66E+02	8.52E-01	1.85E-03	1.13E+00	1.55E-01	1.72E+02	9.55E-01	1.78E+02	8.71E-04
CEA1-3-200 (0-6")	9.00E-02	9.00E-02	6.30E+00	6.36E+02	5.72E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.01E+02	5.18E-01	1.85E-03	1.13E+00	9.42E-02	1.72E+02	9.55E-01	1.78E+02	5.29E-04
CEA1-3-250 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CEA1-3-300 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.41E+03	1.27E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.24E+02	1.15E+00	1.85E-03	1.13E+00	2.09E-01	1.72E+02	9.55E-01	1.78E+02	1.17E-03
CEA1-3-350 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.77E+03	1.59E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.81E+02	1.44E+00	1.85E-03	1.13E+00	2.62E-01	1.72E+02	9.55E-01	1.78E+02	1.47E-03
CEA1-3-400 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.35E+03	1.22E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.15E+02	1.10E+00	1.85E-03	1.13E+00	2.00E-01	1.72E+02	9.55E-01	1.78E+02	1.13E-03
CEA1-3-450 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.09E+03	9.83E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.74E+02	8.90E-01	1.85E-03	1.13E+00	1.62E-01	1.72E+02	9.55E-01	1.78E+02	9.10E-04
CEA1-3-50 (0-6")	9.00E-02	9.00E-02	6.30E+00	8.45E+02	7.60E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.34E+02	6.88E-01	1.85E-03	1.13E+00	1.25E-01	1.72E+02	9.55E-01	1.78E+02	7.03E-04
CEA1-3-500 (0-6")	9.00E-02	9.00E-02	6.30E+00	2.04E+03	1.83E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.23E+02	1.66E+00	1.85E-03	1.13E+00	3.02E-01	1.72E+02	9.55E-01	1.78E+02	1.69E-03
CEA1-3-550 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.51E+03	1.36E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.40E+02	1.23E+00	1.85E-03	1.13E+00	2.24E-01	1.72E+02	9.55E-01	1.78E+02	1.26E-03
CEA1-3-600 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.03E+03	9.28E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.64E+02	8.40E-01	1.85E-03	1.13E+00	1.53E-01	1.72E+02	9.55E-01	1.78E+02	8.59E-04
CEA1-3-650 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.49E+03	1.34E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.37E+02	1.22E+00	1.85E-03	1.13E+00	2.21E-01	1.72E+02	9.55E-01	1.78E+02	1.24E-03
CEA1-3-700 (0-6")	9.00E-02	9.00E-02	6.30E+00	6.94E+02	6.24E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.10E+02	5.65E-01	1.85E-03	1.13E+00	1.03E-01	1.72E+02	9.55E-01	1.78E+02	5.78E-04
CEA1-3-750 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CEA1-3-800 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CEA1-3-850 (0-6")	9.00E-02	9.00E-02	6.30E+00	7.81E+02	7.03E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.24E+02	6.36E-01	1.85E-03	1.13E+00	1.16E-01	1.72E+02	9.55E-01	1.78E+02	6.50E-04
CEA1-3-Comp 1 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CEA1-3-Comp 2 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CEA1-3-Comp 3 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.19E+03	1.07E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.88E+02	9.65E-01	1.85E-03	1.13E+00	1.76E-01	1.72E+02	9.55E-01	1.78E+02	9.87E-04
CEA4-00 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB

TABLE C-5F: ZINC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 5 - EDITH MINE WASTE AREAS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables; from BAF table; linked to soil or sed concentration table (VLOOKUP)

calculated values; linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 1.29

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Red-Tailed Hawk (Carnivorous Birds - Terrestrial)																							
CEA4-20 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CEA4-40 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.34E+03	1.21E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.13E+02	1.09E+00	1.85E-03	1.13E+00	1.99E-01	1.72E+02	9.55E-01	1.78E+02	1.12E-03
CEA4-Comp (0-6")	9.00E-02	9.00E-02	6.30E+00	6.41E+02	5.76E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.02E+02	5.22E-01	1.85E-03	1.13E+00	9.50E-02	1.72E+02	9.55E-01	1.78E+02	5.33E-04
East Edith Mine Waste Area																						**Maximum HQ (Central Edith Mine Waste Area)**	**1.69E-03**
EEA1-00 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
EEA1-100 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
EEA1-150 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
EEA1-200 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
EEA1-250 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
EEA1-300 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
EEA1-350 (0-6")	9.00E-02	9.00E-02	6.30E+00	7.62E+02	6.86E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.21E+02	6.21E-01	1.85E-03	1.13E+00	1.13E-01	1.72E+02	9.55E-01	1.78E+02	6.35E-04
EEA1-400 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.24E+03	1.12E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.97E+02	1.01E+00	1.85E-03	1.13E+00	1.84E-01	1.72E+02	9.55E-01	1.78E+02	1.03E-03
EEA1-450 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
EEA1-50 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
EEA1-500 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.13E+03	1.01E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.79E+02	9.17E-01	1.85E-03	1.13E+00	1.67E-01	1.72E+02	9.55E-01	1.78E+02	9.38E-04
EEA1-Comp 1 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
EEA2-00 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
EEA2-50 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.31E+03	1.17E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.07E+02	1.06E+00	1.85E-03	1.13E+00	1.93E-01	1.72E+02	9.55E-01	1.78E+02	1.09E-03
EEA2-100 (0-6")	9.00E-02	9.00E-02	6.30E+00	8.71E+02	7.84E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.38E+02	7.10E-01	1.85E-03	1.13E+00	1.29E-01	1.72E+02	9.55E-01	1.78E+02	7.25E-04
EEA2-150 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
EEA2-200 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
EEA2-250 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
EEA2-300 (0-6")	9.00E-02	9.00E-02	6.30E+00	8.54E+02	7.68E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.36E+02	6.96E-01	1.85E-03	1.13E+00	1.27E-01	1.72E+02	9.55E-01	1.78E+02	7.11E-04
EEA2-Comp 1 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
																						Maximum HQ (East Edith Mine Waste Area)	**1.09E-03**
American Kestrel (Insectivorous Birds - Terrestrial)																							
Reference Sites																							
SHGBG-1 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	8.31E+00	2.42E+03	3.32E+01	7.84E-04	2.91E+02	2.28E-01	4.93E-03	1.24E-01	1.33E+00	1.72E+02	9.55E-01	1.14E+02	1.16E-02
SHGBG-2 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	8.31E+00	8.25E+02	1.14E+01	7.84E-04	9.92E+01	7.78E-02	4.93E-03	1.24E-01	4.54E-01	1.72E+02	9.55E-01	1.14E+02	3.97E-03
SHGBG-201 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	8.31E+00	1.09E+03	1.50E+01	7.84E-04	1.31E+02	1.03E-01	4.93E-03	1.24E-01	6.00E-01	1.72E+02	9.55E-01	1.14E+02	5.25E-03
SHGBG-202 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	8.31E+00	2.68E+03	3.69E+01	7.84E-04	3.23E+02	2.53E-01	4.93E-03	1.24E-01	1.48E+00	1.72E+02	9.55E-01	1.14E+02	1.29E-02
West Edith Mine Waste Area																						**Minimum HQ (Reference Sites)**	**3.97E-03**
WEA1-00 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	5.63E+02	7.74E+00	7.84E-04	1.29E+02	1.01E-01	4.93E-03	1.24E-01	3.12E-01	1.72E+02	9.55E-01	1.14E+02	2.73E-03
WEA1-100 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	1.34E+03	1.85E+01	7.84E-04	3.07E+02	2.41E-01	4.93E-03	1.24E-01	7.45E-01	1.72E+02	9.55E-01	1.14E+02	6.51E-03
WEA1-150 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	8.76E+02	1.20E+01	7.84E-04	2.00E+02	1.57E-01	4.93E-03	1.24E-01	4.85E-01	1.72E+02	9.55E-01	1.14E+02	4.24E-03
WEA1-200 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	1.12E+03	1.55E+01	7.84E-04	2.57E+02	2.01E-01	4.93E-03	1.24E-01	6.23E-01	1.72E+02	9.55E-01	1.14E+02	5.45E-03
WEA1-250 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	1.23E+03	1.69E+01	7.84E-04	2.81E+02	2.20E-01	4.93E-03	1.24E-01	6.82E-01	1.72E+02	9.55E-01	1.14E+02	5.96E-03
WEA1-300 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	1.04E+03	1.43E+01	7.84E-04	2.37E+02	1.86E-01	4.93E-03	1.24E-01	5.75E-01	1.72E+02	9.55E-01	1.14E+02	5.03E-03
WEA1-350 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	6.79E+02	9.34E+00	7.84E-04	1.55E+02	1.22E-01	4.93E-03	1.24E-01	3.76E-01	1.72E+02	9.55E-01	1.14E+02	3.29E-03
WEA1-400 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
WEA1-450 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	1.34E+03	1.84E+01	7.84E-04	3.05E+02	2.39E-01	4.93E-03	1.24E-01	7.40E-01	1.72E+02	9.55E-01	1.14E+02	6.47E-03
WEA1-550 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	9.95E+02	1.37E+01	7.84E-04	2.27E+02	1.78E-01	4.93E-03	1.24E-01	5.52E-01	1.72E+02	9.55E-01	1.14E+02	4.82E-03
WEA1-Comp 1 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	6.50E+02	8.94E+00	7.84E-04	1.48E+02	1.16E-01	4.93E-03	1.24E-01	3.60E-01	1.72E+02	9.55E-01	1.14E+02	3.15E-03
WEA1-Comp 2 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	7.83E+02	1.08E+01	7.84E-04	1.79E+02	1.40E-01	4.93E-03	1.24E-01	4.34E-01	1.72E+02	9.55E-01	1.14E+02	3.80E-03
Central Edith Mine Waste Area																						**Maximum HQ (West Edith Mine Waste Area)**	**6.51E-03**
CEA1-3-00 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	6.21E+02	8.55E+00	7.84E-04	1.42E+02	1.11E-01	4.93E-03	1.24E-01	3.44E-01	1.72E+02	9.55E-01	1.14E+02	3.01E-03
CEA1-3-100 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	8.40E+02	1.16E+01	7.84E-04	1.92E+02	1.51E-01	4.93E-03	1.24E-01	4.66E-01	1.72E+02	9.55E-01	1.14E+02	4.07E-03
CEA1-3-150 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	7.27E+02	1.00E+01	7.84E-04	1.66E+02	1.30E-01	4.93E-03	1.24E-01	4.03E-01	1.72E+02	9.55E-01	1.14E+02	3.53E-03
CEA1-3-200 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	4.42E+02	6.09E+00	7.84E-04	1.01E+02	7.92E-02	4.93E-03	1.24E-01	2.45E-01	1.72E+02	9.55E-01	1.14E+02	2.14E-03
CEA1-3-250 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CEA1-3-300 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	9.79E+02	1.35E+01	7.84E-04	2.24E+02	1.75E-01	4.93E-03	1.24E-01	5.43E-01	1.72E+02	9.55E-01	1.14E+02	4.75E-03
CEA1-3-350 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	1.23E+03	1.69E+01	7.84E-04	2.81E+02	2.20E-01	4.93E-03	1.24E-01	6.82E-01	1.72E+02	9.55E-01	1.14E+02	5.96E-03
CEA1-3-400 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	9.41E+02	1.29E+01	7.84E-04	2.15E+02	1.68E-01	4.93E-03	1.24E-01	5.21E-01	1.72E+02	9.55E-01	1.14E+02	4.56E-03
CEA1-3-450 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	7.60E+02	1.05E+01	7.84E-04	1.74E+02	1.36E-01	4.93E-03	1.24E-01	4.21E-01	1.72E+02	9.55E-01	1.14E+02	3.69E-03
CEA1-3-50 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	5.87E+02	8.08E+00	7.84E-04	1.34E+02	1.05E-01	4.93E-03	1.24E-01	3.26E-01	1.72E+02	9.55E-01	1.14E+02	2.85E-03
CEA1-3-500 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	1.42E+03	1.95E+01	7.84E-04	3.23E+02	2.54E-01	4.93E-03	1.24E-01	7.85E-01	1.72E+02	9.55E-01	1.14E+02	6.86E-03

TABLE C-5F: ZINC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 5 - EDITH MINE WASTE AREAS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 1.29

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
American Kestrel (Insectivorous Birds - Terrestrial)																							
CEA1-3-550 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	1.05E+03	1.45E+01	7.84E-04	2.40E+02	1.89E-01	4.93E-03	1.24E-01	5.83E-01	1.72E+02	9.55E-01	1.14E+02	5.10E-03
CEA1-3-600 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	7.18E+02	9.88E+00	7.84E-04	1.64E+02	1.29E-01	4.93E-03	1.24E-01	3.98E-01	1.72E+02	9.55E-01	1.14E+02	3.48E-03
CEA1-3-650 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	1.04E+03	1.43E+01	7.84E-04	2.37E+02	1.86E-01	4.93E-03	1.24E-01	5.75E-01	1.72E+02	9.55E-01	1.14E+02	5.03E-03
CEA1-3-700 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	4.83E+02	6.64E+00	7.84E-04	1.10E+02	8.64E-02	4.93E-03	1.24E-01	2.67E-01	1.72E+02	9.55E-01	1.14E+02	2.34E-03
CEA1-3-750 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CEA1-3-800 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CEA1-3-850 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	5.43E+02	7.48E+00	7.84E-04	1.24E+02	9.73E-02	4.93E-03	1.24E-01	3.01E-01	1.72E+02	9.55E-01	1.14E+02	2.63E-03
CEA1-3-Comp 1 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CEA1-3-Comp 2 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CEA1-3-Comp 3 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	8.24E+02	1.13E+01	7.84E-04	1.88E+02	1.48E-01	4.93E-03	1.24E-01	4.57E-01	1.72E+02	9.55E-01	1.14E+02	4.00E-03
CEA4-00 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CEA4-20 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CEA4-40 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	9.32E+02	1.28E+01	7.84E-04	2.13E+02	1.67E-01	4.93E-03	1.24E-01	5.17E-01	1.72E+02	9.55E-01	1.14E+02	4.52E-03
CEA4-Comp (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	4.46E+02	6.13E+00	7.84E-04	1.02E+02	7.98E-02	4.93E-03	1.24E-01	2.47E-01	1.72E+02	9.55E-01	1.14E+02	2.16E-03
East Edith Mine Waste Area																						**Maximum HQ (Central Edith Mine Waste Area)**		**6.86E-03**
EEA1-00 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
EEA1-100 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
EEA1-150 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
EEA1-200 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
EEA1-250 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
EEA1-300 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
EEA1-350 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	5.30E+02	7.30E+00	7.84E-04	1.21E+02	9.50E-02	4.93E-03	1.24E-01	2.94E-01	1.72E+02	9.55E-01	1.14E+02	2.57E-03
EEA1-400 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	8.63E+02	1.19E+01	7.84E-04	1.97E+02	1.55E-01	4.93E-03	1.24E-01	4.78E-01	1.72E+02	9.55E-01	1.14E+02	4.18E-03
EEA1-450 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
EEA1-50 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
EEA1-500 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	7.83E+02	1.08E+01	7.84E-04	1.79E+02	1.40E-01	4.93E-03	1.24E-01	4.34E-01	1.72E+02	9.55E-01	1.14E+02	3.80E-03
EEA1-Comp 1 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
EEA2-00 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
EEA2-50 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	9.08E+02	1.25E+01	7.84E-04	2.07E+02	1.63E-01	4.93E-03	1.24E-01	5.03E-01	1.72E+02	9.55E-01	1.14E+02	4.40E-03
EEA2-100 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	6.06E+02	8.34E+00	7.84E-04	1.38E+02	1.09E-01	4.93E-03	1.24E-01	3.36E-01	1.72E+02	9.55E-01	1.14E+02	2.94E-03
EEA2-150 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
EEA2-200 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
EEA2-250 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
EEA2-300 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	5.94E+02	8.17E+00	7.84E-04	1.36E+02	1.06E-01	4.93E-03	1.24E-01	3.29E-01	1.72E+02	9.55E-01	1.14E+02	2.88E-03
EEA2-Comp 1 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
																						Maximum HQ (East Edith Mine Waste Area)		**4.40E-03**
Meadow Vole (Small Herbivorous Mammal - Terrestrial)																							
Reference Sites																							
SHGBG-1 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.41E+00	4.10E+02	1.92E+00	NA	NA	NA	NA	1.13E-04	2.91E+02	3.27E-02	1.00E+00	3.06E-02	6.39E+01	4.11E+02	1.75E-01	4.57E+02	1.40E-01
SHGBG-2 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.41E+00	1.40E+02	6.57E-01	NA	NA	NA	NA	1.13E-04	9.92E+01	1.12E-02	1.00E+00	3.06E-02	2.18E+01	4.11E+02	1.75E-01	4.57E+02	4.78E-02
SHGBG-201 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.41E+00	1.85E+02	8.67E-01	NA	NA	NA	NA	1.13E-04	1.31E+02	1.47E-02	1.00E+00	3.06E-02	2.88E+01	4.11E+02	1.75E-01	4.57E+02	6.31E-02
SHGBG-202 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.41E+00	4.55E+02	2.13E+00	NA	NA	NA	NA	1.13E-04	3.23E+02	3.63E-02	1.00E+00	3.06E-02	7.10E+01	4.11E+02	1.75E-01	4.57E+02	1.55E-01
West Edith Mine Waste Area																						**Minimum HQ (Reference Sites)**		**4.78E-02**
WEA1-00 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	2.55E+02	1.19E+00	NA	NA	NA	NA	1.13E-04	1.29E+02	1.45E-02	1.00E+00	3.06E-02	3.95E+01	4.11E+02	1.75E-01	4.57E+02	8.65E-02
WEA1-100 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	6.08E+02	2.85E+00	NA	NA	NA	NA	1.13E-04	3.07E+02	3.45E-02	1.00E+00	3.06E-02	9.43E+01	4.11E+02	1.75E-01	4.57E+02	2.06E-01
WEA1-150 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	3.96E+02	1.86E+00	NA	NA	NA	NA	1.13E-04	2.00E+02	2.25E-02	1.00E+00	3.06E-02	6.14E+01	4.11E+02	1.75E-01	4.57E+02	1.34E-01
WEA1-200 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	5.08E+02	2.38E+00	NA	NA	NA	NA	1.13E-04	2.57E+02	2.89E-02	1.00E+00	3.06E-02	7.88E+01	4.11E+02	1.75E-01	4.57E+02	1.73E-01
WEA1-250 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	5.57E+02	2.61E+00	NA	NA	NA	NA	1.13E-04	2.81E+02	3.16E-02	1.00E+00	3.06E-02	8.63E+01	4.11E+02	1.75E-01	4.57E+02	1.89E-01
WEA1-300 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	4.69E+02	2.20E+00	NA	NA	NA	NA	1.13E-04	2.37E+02	2.67E-02	1.00E+00	3.06E-02	7.28E+01	4.11E+02	1.75E-01	4.57E+02	1.59E-01
WEA1-350 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	3.07E+02	1.44E+00	NA	NA	NA	NA	1.13E-04	1.55E+02	1.74E-02	1.00E+00	3.06E-02	4.76E+01	4.11E+02	1.75E-01	4.57E+02	1.04E-01
WEA1-400 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
WEA1-450 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	6.04E+02	2.83E+00	NA	NA	NA	NA	1.13E-04	3.05E+02	3.43E-02	1.00E+00	3.06E-02	9.37E+01	4.11E+02	1.75E-01	4.57E+02	2.05E-01

TABLE C-5F: ZINC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 5 - EDITH MINE WASTE AREAS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables; from BAF table; linked to soil or sed concentration table (VLOOKUP)

calculated values; linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 1.29

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Meadow Vole (Small Herbivorous Mammal - Terrestrial)																							
WEA1-550 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	4.50E+02	2.11E+00	NA	NA	NA	NA	1.13E-04	2.27E+02	2.56E-02	1.00E+00	3.06E-02	6.98E+01	4.11E+02	1.75E-01	4.57E+02	1.53E-01
WEA1-Comp 1 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	2.94E+02	1.38E+00	NA	NA	NA	NA	1.13E-04	1.48E+02	1.67E-02	1.00E+00	3.06E-02	4.56E+01	4.11E+02	1.75E-01	4.57E+02	9.98E-02
WEA1-Comp 2 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	3.54E+02	1.66E+00	NA	NA	NA	NA	1.13E-04	1.79E+02	2.01E-02	1.00E+00	3.06E-02	5.50E+01	4.11E+02	1.75E-01	4.57E+02	1.20E-01
Central Edith Mine Waste Area																						**Maximum HQ (West Edith Mine Waste Area)**	**2.06E-01**
CEA1-3-00 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	2.81E+02	1.32E+00	NA	NA	NA	NA	1.13E-04	1.42E+02	1.60E-02	1.00E+00	3.06E-02	4.36E+01	4.11E+02	1.75E-01	4.57E+02	9.54E-02
CEA1-3-100 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	3.80E+02	1.78E+00	NA	NA	NA	NA	1.13E-04	1.92E+02	2.16E-02	1.00E+00	3.06E-02	5.90E+01	4.11E+02	1.75E-01	4.57E+02	1.29E-01
CEA1-3-150 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	3.29E+02	1.54E+00	NA	NA	NA	NA	1.13E-04	1.66E+02	1.87E-02	1.00E+00	3.06E-02	5.10E+01	4.11E+02	1.75E-01	4.57E+02	1.12E-01
CEA1-3-200 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	2.00E+02	9.38E-01	NA	NA	NA	NA	1.13E-04	1.01E+02	1.14E-02	1.00E+00	3.06E-02	3.10E+01	4.11E+02	1.75E-01	4.57E+02	6.79E-02
CEA1-3-250 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CEA1-3-300 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	4.43E+02	2.08E+00	NA	NA	NA	NA	1.13E-04	2.24E+02	2.52E-02	1.00E+00	3.06E-02	6.87E+01	4.11E+02	1.75E-01	4.57E+02	1.50E-01
CEA1-3-350 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	5.57E+02	2.61E+00	NA	NA	NA	NA	1.13E-04	2.81E+02	3.16E-02	1.00E+00	3.06E-02	8.63E+01	4.11E+02	1.75E-01	4.57E+02	1.89E-01
CEA1-3-400 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	4.26E+02	2.00E+00	NA	NA	NA	NA	1.13E-04	2.15E+02	2.42E-02	1.00E+00	3.06E-02	6.60E+01	4.11E+02	1.75E-01	4.57E+02	1.44E-01
CEA1-3-450 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	3.44E+02	1.61E+00	NA	NA	NA	NA	1.13E-04	1.74E+02	1.95E-02	1.00E+00	3.06E-02	5.34E+01	4.11E+02	1.75E-01	4.57E+02	1.17E-01
CEA1-3-50 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	2.66E+02	1.25E+00	NA	NA	NA	NA	1.13E-04	1.34E+02	1.51E-02	1.00E+00	3.06E-02	4.12E+01	4.11E+02	1.75E-01	4.57E+02	9.02E-02
CEA1-3-500 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	6.41E+02	3.00E+00	NA	NA	NA	NA	1.13E-04	3.23E+02	3.64E-02	1.00E+00	3.06E-02	9.94E+01	4.11E+02	1.75E-01	4.57E+02	2.17E-01
CEA1-3-550 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	4.76E+02	2.23E+00	NA	NA	NA	NA	1.13E-04	2.40E+02	2.71E-02	1.00E+00	3.06E-02	7.39E+01	4.11E+02	1.75E-01	4.57E+02	1.62E-01
CEA1-3-600 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	3.25E+02	1.52E+00	NA	NA	NA	NA	1.13E-04	1.64E+02	1.84E-02	1.00E+00	3.06E-02	5.04E+01	4.11E+02	1.75E-01	4.57E+02	1.10E-01
CEA1-3-650 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	4.70E+02	2.20E+00	NA	NA	NA	NA	1.13E-04	2.37E+02	2.67E-02	1.00E+00	3.06E-02	7.28E+01	4.11E+02	1.75E-01	4.57E+02	1.59E-01
CEA1-3-700 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	2.18E+02	1.02E+00	NA	NA	NA	NA	1.13E-04	1.10E+02	1.24E-02	1.00E+00	3.06E-02	3.39E+01	4.11E+02	1.75E-01	4.57E+02	7.41E-02
CEA1-3-750 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CEA1-3-800 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CEA1-3-850 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	2.46E+02	1.15E+00	NA	NA	NA	NA	1.13E-04	1.24E+02	1.40E-02	1.00E+00	3.06E-02	3.81E+01	4.11E+02	1.75E-01	4.57E+02	8.35E-02
CEA1-3-Comp 1 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CEA1-3-Comp 2 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CEA1-3-Comp 3 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	3.73E+02	1.75E+00	NA	NA	NA	NA	1.13E-04	1.88E+02	2.12E-02	1.00E+00	3.06E-02	5.79E+01	4.11E+02	1.75E-01	4.57E+02	1.27E-01
CEA4-00 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CEA4-20 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CEA4-40 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	4.22E+02	1.98E+00	NA	NA	NA	NA	1.13E-04	2.13E+02	2.40E-02	1.00E+00	3.06E-02	6.54E+01	4.11E+02	1.75E-01	4.57E+02	1.43E-01
CEA4-Comp (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	2.02E+02	9.46E-01	NA	NA	NA	NA	1.13E-04	1.02E+02	1.15E-02	1.00E+00	3.06E-02	3.13E+01	4.11E+02	1.75E-01	4.57E+02	6.85E-02
East Edith Mine Waste Area																						**Maximum HQ (Central Edith Mine Waste Area)**	**2.17E-01**
EEA1-00 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
EEA1-100 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
EEA1-150 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
EEA1-200 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
EEA1-250 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
EEA1-300 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
EEA1-350 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	2.40E+02	1.13E+00	NA	NA	NA	NA	1.13E-04	1.21E+02	1.36E-02	1.00E+00	3.06E-02	3.72E+01	4.11E+02	1.75E-01	4.57E+02	8.15E-02
EEA1-400 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	3.91E+02	1.83E+00	NA	NA	NA	NA	1.13E-04	1.97E+02	2.22E-02	1.00E+00	3.06E-02	6.06E+01	4.11E+02	1.75E-01	4.57E+02	1.33E-01
EEA1-450 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
EEA1-50 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
EEA1-500 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	3.54E+02	1.66E+00	NA	NA	NA	NA	1.13E-04	1.79E+02	2.01E-02	1.00E+00	3.06E-02	5.50E+01	4.11E+02	1.75E-01	4.57E+02	1.20E-01
EEA1-Comp 1 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
EEA2-00 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
EEA2-50 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	4.11E+02	1.93E+00	NA	NA	NA	NA	1.13E-04	2.07E+02	2.33E-02	1.00E+00	3.06E-02	6.37E+01	4.11E+02	1.75E-01	4.57E+02	1.39E-01
EEA2-100 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	2.74E+02	1.29E+00	NA	NA	NA	NA	1.13E-04	1.38E+02	1.56E-02	1.00E+00	3.06E-02	4.25E+01	4.11E+02	1.75E-01	4.57E+02	9.31E-02
EEA2-150 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
EEA2-200 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
EEA2-250 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
EEA2-300 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	2.69E+02	1.26E+00	NA	NA	NA	NA	1.13E-04	1.36E+02	1.53E-02	1.00E+00	3.06E-02	4.17E+01	4.11E+02	1.75E-01	4.57E+02	9.13E-02
EEA2-Comp 1 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
																						Maximum HQ (East Edith Mine Waste Area)	**1.39E-01**

TABLE C-5F: ZINC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 5 - EDITH MINE WASTE AREAS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 1.29

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
White-Tailed Deer (Large Herbivorous Mammal - Terrestrial)																							
Reference Sites																							
SHGBG-1 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.41E+00	4.10E+02	5.87E+02	NA	NA	NA	NA	2.86E-02	2.91E+02	8.32E+00	7.22E-03	1.35E+02	3.18E-02	4.11E+02	1.75E-01	2.76E+02	1.15E-04
SHGBG-2 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.41E+00	1.40E+02	2.00E+02	NA	NA	NA	NA	2.86E-02	9.92E+01	2.84E+00	7.22E-03	1.35E+02	1.09E-02	4.11E+02	1.75E-01	2.76E+02	3.94E-05
SHGBG-201 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.41E+00	1.85E+02	2.65E+02	NA	NA	NA	NA	2.86E-02	1.31E+02	3.75E+00	7.22E-03	1.35E+02	1.44E-02	4.11E+02	1.75E-01	2.76E+02	5.20E-05
SHGBG-202 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.41E+00	4.55E+02	6.52E+02	NA	NA	NA	NA	2.86E-02	3.23E+02	9.24E+00	7.22E-03	1.35E+02	3.53E-02	4.11E+02	1.75E-01	2.76E+02	1.28E-04
West Edith Mine Waste Area																						**Minimum HQ (Reference Sites)**	**3.94E-05**
WEA1-00 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	2.55E+02	3.65E+02	NA	NA	NA	NA	2.86E-02	1.29E+02	3.68E+00	7.22E-03	1.35E+02	1.97E-02	4.11E+02	1.75E-01	2.76E+02	7.13E-05
WEA1-100 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	6.08E+02	8.70E+02	NA	NA	NA	NA	2.86E-02	3.07E+02	8.79E+00	7.22E-03	1.35E+02	4.70E-02	4.11E+02	1.75E-01	2.76E+02	1.70E-04
WEA1-150 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	3.96E+02	5.67E+02	NA	NA	NA	NA	2.86E-02	2.00E+02	5.72E+00	7.22E-03	1.35E+02	3.06E-02	4.11E+02	1.75E-01	2.76E+02	1.11E-04
WEA1-200 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	5.08E+02	7.28E+02	NA	NA	NA	NA	2.86E-02	2.57E+02	7.35E+00	7.22E-03	1.35E+02	3.93E-02	4.11E+02	1.75E-01	2.76E+02	1.42E-04
WEA1-250 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	5.57E+02	7.97E+02	NA	NA	NA	NA	2.86E-02	2.81E+02	8.04E+00	7.22E-03	1.35E+02	4.30E-02	4.11E+02	1.75E-01	2.76E+02	1.56E-04
WEA1-300 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	4.69E+02	6.72E+02	NA	NA	NA	NA	2.86E-02	2.37E+02	6.78E+00	7.22E-03	1.35E+02	3.63E-02	4.11E+02	1.75E-01	2.76E+02	1.31E-04
WEA1-350 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	3.07E+02	4.40E+02	NA	NA	NA	NA	2.86E-02	1.55E+02	4.44E+00	7.22E-03	1.35E+02	2.37E-02	4.11E+02	1.75E-01	2.76E+02	8.60E-05
WEA1-400 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
WEA1-450 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	6.04E+02	8.65E+02	NA	NA	NA	NA	2.86E-02	3.05E+02	8.73E+00	7.22E-03	1.35E+02	4.67E-02	4.11E+02	1.75E-01	2.76E+02	1.69E-04
WEA1-550 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	4.50E+02	6.45E+02	NA	NA	NA	NA	2.86E-02	2.27E+02	6.51E+00	7.22E-03	1.35E+02	3.48E-02	4.11E+02	1.75E-01	2.76E+02	1.26E-04
WEA1-Comp 1 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	2.94E+02	4.21E+02	NA	NA	NA	NA	2.86E-02	1.48E+02	4.25E+00	7.22E-03	1.35E+02	2.27E-02	4.11E+02	1.75E-01	2.76E+02	8.23E-05
WEA1-Comp 2 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	3.54E+02	5.07E+02	NA	NA	NA	NA	2.86E-02	1.79E+02	5.12E+00	7.22E-03	1.35E+02	2.74E-02	4.11E+02	1.75E-01	2.76E+02	9.92E-05
Central Edith Mine Waste Area																						**Maximum HQ (West Edith Mine Waste Area)**	**1.70E-04**
CEA1-3-00 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	2.81E+02	4.02E+02	NA	NA	NA	NA	2.86E-02	1.42E+02	4.06E+00	7.22E-03	1.35E+02	2.17E-02	4.11E+02	1.75E-01	2.76E+02	7.87E-05
CEA1-3-100 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	3.80E+02	5.44E+02	NA	NA	NA	NA	2.86E-02	1.92E+02	5.50E+00	7.22E-03	1.35E+02	2.94E-02	4.11E+02	1.75E-01	2.76E+02	1.06E-04
CEA1-3-150 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	3.29E+02	4.71E+02	NA	NA	NA	NA	2.86E-02	1.66E+02	4.76E+00	7.22E-03	1.35E+02	2.54E-02	4.11E+02	1.75E-01	2.76E+02	9.22E-05
CEA1-3-200 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	2.00E+02	2.86E+02	NA	NA	NA	NA	2.86E-02	1.01E+02	2.89E+00	7.22E-03	1.35E+02	1.55E-02	4.11E+02	1.75E-01	2.76E+02	5.60E-05
CEA1-3-250 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CEA1-3-300 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	4.43E+02	6.34E+02	NA	NA	NA	NA	2.86E-02	2.24E+02	6.40E+00	7.22E-03	1.35E+02	3.42E-02	4.11E+02	1.75E-01	2.76E+02	1.24E-04
CEA1-3-350 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	5.57E+02	7.97E+02	NA	NA	NA	NA	2.86E-02	2.81E+02	8.04E+00	7.22E-03	1.35E+02	4.30E-02	4.11E+02	1.75E-01	2.76E+02	1.56E-04
CEA1-3-400 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	4.26E+02	6.09E+02	NA	NA	NA	NA	2.86E-02	2.15E+02	6.15E+00	7.22E-03	1.35E+02	3.29E-02	4.11E+02	1.75E-01	2.76E+02	1.19E-04
CEA1-3-450 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	3.44E+02	4.93E+02	NA	NA	NA	NA	2.86E-02	1.74E+02	4.97E+00	7.22E-03	1.35E+02	2.66E-02	4.11E+02	1.75E-01	2.76E+02	9.63E-05
CEA1-3-50 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	2.66E+02	3.81E+02	NA	NA	NA	NA	2.86E-02	1.34E+02	3.84E+00	7.22E-03	1.35E+02	2.05E-02	4.11E+02	1.75E-01	2.76E+02	7.44E-05
CEA1-3-500 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	6.41E+02	9.17E+02	NA	NA	NA	NA	2.86E-02	3.23E+02	9.26E+00	7.22E-03	1.35E+02	4.95E-02	4.11E+02	1.75E-01	2.76E+02	1.79E-04
CEA1-3-550 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	4.76E+02	6.82E+02	NA	NA	NA	NA	2.86E-02	2.40E+02	6.88E+00	7.22E-03	1.35E+02	3.68E-02	4.11E+02	1.75E-01	2.76E+02	1.33E-04
CEA1-3-600 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	3.25E+02	4.65E+02	NA	NA	NA	NA	2.86E-02	1.64E+02	4.69E+00	7.22E-03	1.35E+02	2.51E-02	4.11E+02	1.75E-01	2.76E+02	9.09E-05
CEA1-3-650 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	4.70E+02	6.72E+02	NA	NA	NA	NA	2.86E-02	2.37E+02	6.79E+00	7.22E-03	1.35E+02	3.63E-02	4.11E+02	1.75E-01	2.76E+02	1.31E-04
CEA1-3-700 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	2.18E+02	3.13E+02	NA	NA	NA	NA	2.86E-02	1.10E+02	3.16E+00	7.22E-03	1.35E+02	1.69E-02	4.11E+02	1.75E-01	2.76E+02	6.11E-05
CEA1-3-750 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CEA1-3-800 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CEA1-3-850 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	2.46E+02	3.52E+02	NA	NA	NA	NA	2.86E-02	1.24E+02	3.55E+00	7.22E-03	1.35E+02	1.90E-02	4.11E+02	1.75E-01	2.76E+02	6.89E-05
CEA1-3-Comp 1 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CEA1-3-Comp 2 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CEA1-3-Comp 3 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	3.73E+02	5.34E+02	NA	NA	NA	NA	2.86E-02	1.88E+02	5.39E+00	7.22E-03	1.35E+02	2.88E-02	4.11E+02	1.75E-01	2.76E+02	1.04E-04
CEA4-00 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CEA4-20 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CEA4-40 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	4.22E+02	6.04E+02	NA	NA	NA	NA	2.86E-02	2.13E+02	6.10E+00	7.22E-03	1.35E+02	3.26E-02	4.11E+02	1.75E-01	2.76E+02	1.18E-04
CEA4-Comp (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	2.02E+02	2.89E+02	NA	NA	NA	NA	2.86E-02	1.02E+02	2.91E+00	7.22E-03	1.35E+02	1.56E-02	4.11E+02	1.75E-01	2.76E+02	5.65E-05
East Edith Mine Waste Area																						**Maximum HQ (Central Edith Mine Waste Area)**	**1.79E-04**
EEA1-00 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
EEA1-100 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
EEA1-150 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
EEA1-200 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
EEA1-250 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
EEA1-300 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
EEA1-350 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	2.40E+02	3.44E+02	NA	NA	NA	NA	2.86E-02	1.21E+02	3.47E+00	7.22E-03	1.35E+02	1.85E-02	4.11E+02	1.75E-01	2.76E+02	6.72E-05
EEA1-400 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	3.91E+02	5.59E+02	NA	NA	NA	NA	2.86E-02	1.97E+02	5.64E+00	7.22E-03	1.35E+02	3.02E-02	4.11E+02	1.75E-01	2.76E+02	1.09E-04
EEA1-450 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
EEA1-50 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
EEA1-500 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	3.54E+02	5.07E+02	NA	NA	NA	NA	2.86E-02	1.79E+02	5.12E+00	7.22E-03	1.35E+02	2.74E-02	4.11E+02	1.75E-01	2.76E+02	9.92E-05
EEA1-Comp 1 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB

TABLE C-5F: ZINC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 5 - EDITH MINE WASTE AREAS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables; from BAF table; linked to soil or sed concentration table (VLOOKUP)

calculated values; linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 1.29

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
White-Tailed Deer (Large Herbivorous Mammal - Terrestrial)																							
EEA2-00 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
EEA2-50 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	4.11E+02	5.88E+02	NA	NA	NA	NA	2.86E-02	2.07E+02	5.94E+00	7.22E-03	1.35E+02	3.18E-02	4.11E+02	1.75E-01	2.76E+02	1.15E-04
EEA2-100 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	2.74E+02	3.93E+02	NA	NA	NA	NA	2.86E-02	1.38E+02	3.96E+00	7.22E-03	1.35E+02	2.12E-02	4.11E+02	1.75E-01	2.76E+02	7.68E-05
EEA2-150 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
EEA2-200 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
EEA2-250 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
EEA2-300 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	2.69E+02	3.85E+02	NA	NA	NA	NA	2.86E-02	1.36E+02	3.88E+00	7.22E-03	1.35E+02	2.08E-02	4.11E+02	1.75E-01	2.76E+02	7.53E-05
EEA2-Comp 1 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
																						Maximum HQ (East Edith Mine Waste Area)	**1.15E-04**
Red Fox (Carnivorous Mammal - Terrestrial)																							
Reference Sites																							
SHGBG-1 (0-6")	1.72E-01	1.72E-01	1.03E+01	3.01E+03	5.16E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.91E+02	1.40E+00	9.53E-04	4.54E+00	1.09E-01	4.11E+02	1.75E-01	3.38E+02	3.21E-04
SHGBG-2 (0-6")	1.72E-01	1.72E-01	1.03E+01	1.03E+03	1.76E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	9.92E+01	4.77E-01	9.53E-04	4.54E+00	3.71E-02	4.11E+02	1.75E-01	3.38E+02	1.10E-04
SHGBG-201 (0-6")	1.72E-01	1.72E-01	1.03E+01	1.36E+03	2.33E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.31E+02	6.29E-01	9.53E-04	4.54E+00	4.90E-02	4.11E+02	1.75E-01	3.38E+02	1.45E-04
SHGBG-202 (0-6")	1.72E-01	1.72E-01	1.03E+01	3.34E+03	5.73E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.23E+02	1.55E+00	9.53E-04	4.54E+00	1.21E-01	4.11E+02	1.75E-01	3.38E+02	3.56E-04
West Edith Mine Waste Area																						**Minimum HQ (Reference Sites)**	**1.10E-04**
WEA1-00 (0-6")	1.72E-01	1.72E-01	6.30E+00	8.09E+02	1.39E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.29E+02	6.17E-01	9.53E-04	4.54E+00	2.93E-02	4.11E+02	1.75E-01	3.38E+02	8.65E-05
WEA1-100 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.93E+03	3.31E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.07E+02	1.47E+00	9.53E-04	4.54E+00	6.99E-02	4.11E+02	1.75E-01	3.38E+02	2.07E-04
WEA1-150 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.26E+03	2.16E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.00E+02	9.60E-01	9.53E-04	4.54E+00	4.56E-02	4.11E+02	1.75E-01	3.38E+02	1.35E-04
WEA1-200 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.62E+03	2.77E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.57E+02	1.23E+00	9.53E-04	4.54E+00	5.85E-02	4.11E+02	1.75E-01	3.38E+02	1.73E-04
WEA1-250 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.77E+03	3.03E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.81E+02	1.35E+00	9.53E-04	4.54E+00	6.40E-02	4.11E+02	1.75E-01	3.38E+02	1.89E-04
WEA1-300 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.49E+03	2.56E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.37E+02	1.14E+00	9.53E-04	4.54E+00	5.40E-02	4.11E+02	1.75E-01	3.38E+02	1.60E-04
WEA1-350 (0-6")	1.72E-01	1.72E-01	6.30E+00	9.76E+02	1.67E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.55E+02	7.44E-01	9.53E-04	4.54E+00	3.53E-02	4.11E+02	1.75E-01	3.38E+02	1.04E-04
WEA1-400 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
WEA1-450 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.92E+03	3.29E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.05E+02	1.46E+00	9.53E-04	4.54E+00	6.95E-02	4.11E+02	1.75E-01	3.38E+02	2.05E-04
WEA1-550 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.43E+03	2.45E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.27E+02	1.09E+00	9.53E-04	4.54E+00	5.18E-02	4.11E+02	1.75E-01	3.38E+02	1.53E-04
WEA1-Comp 1 (0-6")	1.72E-01	1.72E-01	6.30E+00	9.34E+02	1.60E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.48E+02	7.12E-01	9.53E-04	4.54E+00	3.38E-02	4.11E+02	1.75E-01	3.38E+02	9.99E-05
WEA1-Comp 2 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.13E+03	1.93E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.79E+02	8.59E-01	9.53E-04	4.54E+00	4.08E-02	4.11E+02	1.75E-01	3.38E+02	1.20E-04
Central Edith Mine Waste Area																						**Maximum HQ (West Edith Mine Waste Area)**	**2.07E-04**
CEA1-3-00 (0-6")	1.72E-01	1.72E-01	6.30E+00	8.93E+02	1.53E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.42E+02	6.82E-01	9.53E-04	4.54E+00	3.23E-02	4.11E+02	1.75E-01	3.38E+02	9.56E-05
CEA1-3-100 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.21E+03	2.07E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.92E+02	9.22E-01	9.53E-04	4.54E+00	4.37E-02	4.11E+02	1.75E-01	3.38E+02	1.29E-04
CEA1-3-150 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.05E+03	1.79E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.66E+02	7.98E-01	9.53E-04	4.54E+00	3.79E-02	4.11E+02	1.75E-01	3.38E+02	1.12E-04
CEA1-3-200 (0-6")	1.72E-01	1.72E-01	6.30E+00	6.36E+02	1.09E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.01E+02	4.85E-01	9.53E-04	4.54E+00	2.30E-02	4.11E+02	1.75E-01	3.38E+02	6.80E-05
CEA1-3-250 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CEA1-3-300 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.41E+03	2.41E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.24E+02	1.07E+00	9.53E-04	4.54E+00	5.10E-02	4.11E+02	1.75E-01	3.38E+02	1.51E-04
CEA1-3-350 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.77E+03	3.03E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.81E+02	1.35E+00	9.53E-04	4.54E+00	6.40E-02	4.11E+02	1.75E-01	3.38E+02	1.89E-04
CEA1-3-400 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.35E+03	2.32E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.15E+02	1.03E+00	9.53E-04	4.54E+00	4.90E-02	4.11E+02	1.75E-01	3.38E+02	1.45E-04
CEA1-3-450 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.09E+03	1.88E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.74E+02	8.34E-01	9.53E-04	4.54E+00	3.96E-02	4.11E+02	1.75E-01	3.38E+02	1.17E-04
CEA1-3-50 (0-6")	1.72E-01	1.72E-01	6.30E+00	8.45E+02	1.45E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.34E+02	6.44E-01	9.53E-04	4.54E+00	3.06E-02	4.11E+02	1.75E-01	3.38E+02	9.03E-05
CEA1-3-500 (0-6")	1.72E-01	1.72E-01	6.30E+00	2.04E+03	3.49E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.23E+02	1.55E+00	9.53E-04	4.54E+00	7.37E-02	4.11E+02	1.75E-01	3.38E+02	2.18E-04
CEA1-3-550 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.51E+03	2.60E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.40E+02	1.15E+00	9.53E-04	4.54E+00	5.48E-02	4.11E+02	1.75E-01	3.38E+02	1.62E-04
CEA1-3-600 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.03E+03	1.77E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.64E+02	7.87E-01	9.53E-04	4.54E+00	3.74E-02	4.11E+02	1.75E-01	3.38E+02	1.10E-04
CEA1-3-650 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.49E+03	2.56E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.37E+02	1.14E+00	9.53E-04	4.54E+00	5.40E-02	4.11E+02	1.75E-01	3.38E+02	1.60E-04
CEA1-3-700 (0-6")	1.72E-01	1.72E-01	6.30E+00	6.94E+02	1.19E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.10E+02	5.29E-01	9.53E-04	4.54E+00	2.51E-02	4.11E+02	1.75E-01	3.38E+02	7.42E-05
CEA1-3-750 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CEA1-3-800 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CEA1-3-850 (0-6")	1.72E-01	1.72E-01	6.30E+00	7.81E+02	1.34E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.24E+02	5.96E-01	9.53E-04	4.54E+00	2.83E-02	4.11E+02	1.75E-01	3.38E+02	8.36E-05
CEA1-3-Comp 1 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CEA1-3-Comp 2 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CEA1-3-Comp 3 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.19E+03	2.03E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.88E+02	9.04E-01	9.53E-04	4.54E+00	4.29E-02	4.11E+02	1.75E-01	3.38E+02	1.27E-04

TABLE C-5F: ZINC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 5 - EDITH MINE WASTE AREAS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

Site Area (hectares) 1.29

from dose parameters tables; from BAF table; linked to soil or sed concentration table (VLOOKUP)

calculated values; linked to TRV table (VLOOKUP) - should be same for all birds or mammals

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Red Fox (Carnivorous Mammal - Terrestrial)																							
CEA4-00 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CEA4-20 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CEA4-40 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.34E+03	2.30E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.13E+02	1.02E+00	9.53E-04	4.54E+00	4.85E-02	4.11E+02	1.75E-01	3.38E+02	1.43E-04
CEA4-Comp (0-6")	1.72E-01	1.72E-01	6.30E+00	6.41E+02	1.10E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.02E+02	4.89E-01	9.53E-04	4.54E+00	2.32E-02	4.11E+02	1.75E-01	3.38E+02	6.85E-05
East Edith Mine Waste Area																						**Maximum HQ (Central Edith Mine Waste Area)**	**2.18E-04**
EEA1-00 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
EEA1-100 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
EEA1-150 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
EEA1-200 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
EEA1-250 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
EEA1-300 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
EEA1-350 (0-6")	1.72E-01	1.72E-01	6.30E+00	7.62E+02	1.31E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.21E+02	5.82E-01	9.53E-04	4.54E+00	2.76E-02	4.11E+02	1.75E-01	3.38E+02	8.16E-05
EEA1-400 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.24E+03	2.13E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.97E+02	9.47E-01	9.53E-04	4.54E+00	4.49E-02	4.11E+02	1.75E-01	3.38E+02	1.33E-04
EEA1-450 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
EEA1-50 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
EEA1-500 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.13E+03	1.93E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.79E+02	8.59E-01	9.53E-04	4.54E+00	4.08E-02	4.11E+02	1.75E-01	3.38E+02	1.20E-04
EEA1-Comp 1 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
EEA2-00 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
EEA2-50 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.31E+03	2.24E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.07E+02	9.96E-01	9.53E-04	4.54E+00	4.72E-02	4.11E+02	1.75E-01	3.38E+02	1.40E-04
EEA2-100 (0-6")	1.72E-01	1.72E-01	6.30E+00	8.71E+02	1.49E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.38E+02	6.65E-01	9.53E-04	4.54E+00	3.15E-02	4.11E+02	1.75E-01	3.38E+02	9.32E-05
EEA2-150 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
EEA2-200 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
EEA2-250 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
EEA2-300 (0-6")	1.72E-01	1.72E-01	6.30E+00	8.54E+02	1.47E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.36E+02	6.52E-01	9.53E-04	4.54E+00	3.09E-02	4.11E+02	1.75E-01	3.38E+02	9.14E-05
EEA2-Comp 1 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
																						Maximum HQ (East Edith Mine Waste Area)	**1.40E-04**
Masked Shrew (Omnivorous Mammal - Terrestrial, Wetland)																							
Reference Sites																							
SHGBG-1 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	8.31E+00	2.42E+03	2.05E+01	1.10E-03	2.91E+02	3.20E-01	1.00E+00	5.50E-03	3.78E+03	4.11E+02	1.75E-01	5.06E+02	7.46E+00
SHGBG-2 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	8.31E+00	8.25E+02	6.99E+00	1.10E-03	9.92E+01	1.09E-01	1.00E+00	5.50E-03	1.29E+03	4.11E+02	1.75E-01	5.06E+02	2.55E+00
SHGBG-201 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	8.31E+00	1.09E+03	9.23E+00	1.10E-03	1.31E+02	1.44E-01	1.00E+00	5.50E-03	1.70E+03	4.11E+02	1.75E-01	5.06E+02	3.37E+00
SHGBG-202 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	8.31E+00	2.68E+03	2.27E+01	1.10E-03	3.23E+02	3.55E-01	1.00E+00	5.50E-03	4.20E+03	4.11E+02	1.75E-01	5.06E+02	8.29E+00
West Edith Mine Waste Area																						**Minimum HQ (Reference Sites)**	**2.55E+00**
WEA1-00 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	5.63E+02	4.77E+00	1.10E-03	1.29E+02	1.42E-01	1.00E+00	5.50E-03	8.92E+02	4.11E+02	1.75E-01	5.06E+02	1.76E+00
WEA1-100 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	1.34E+03	1.14E+01	1.10E-03	3.07E+02	3.38E-01	1.00E+00	5.50E-03	2.13E+03	4.11E+02	1.75E-01	5.06E+02	4.21E+00
WEA1-150 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	8.76E+02	7.42E+00	1.10E-03	2.00E+02	2.20E-01	1.00E+00	5.50E-03	1.39E+03	4.11E+02	1.75E-01	5.06E+02	2.74E+00
WEA1-200 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	1.12E+03	9.52E+00	1.10E-03	2.57E+02	2.82E-01	1.00E+00	5.50E-03	1.78E+03	4.11E+02	1.75E-01	5.06E+02	3.52E+00
WEA1-250 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	1.23E+03	1.04E+01	1.10E-03	2.81E+02	3.09E-01	1.00E+00	5.50E-03	1.95E+03	4.11E+02	1.75E-01	5.06E+02	3.85E+00
WEA1-300 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	1.04E+03	8.79E+00	1.10E-03	2.37E+02	2.61E-01	1.00E+00	5.50E-03	1.65E+03	4.11E+02	1.75E-01	5.06E+02	3.25E+00
WEA1-350 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	6.79E+02	5.75E+00	1.10E-03	1.55E+02	1.71E-01	1.00E+00	5.50E-03	1.08E+03	4.11E+02	1.75E-01	5.06E+02	2.13E+00
WEA1-400 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
WEA1-450 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	1.34E+03	1.13E+01	1.10E-03	3.05E+02	3.36E-01	1.00E+00	5.50E-03	2.12E+03	4.11E+02	1.75E-01	5.06E+02	4.18E+00
WEA1-550 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	9.95E+02	8.43E+00	1.10E-03	2.27E+02	2.50E-01	1.00E+00	5.50E-03	1.58E+03	4.11E+02	1.75E-01	5.06E+02	3.12E+00
WEA1-Comp 1 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	6.50E+02	5.50E+00	1.10E-03	1.48E+02	1.63E-01	1.00E+00	5.50E-03	1.03E+03	4.11E+02	1.75E-01	5.06E+02	2.03E+00
WEA1-Comp 2 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	7.83E+02	6.63E+00	1.10E-03	1.79E+02	1.97E-01	1.00E+00	5.50E-03	1.24E+03	4.11E+02	1.75E-01	5.06E+02	2.45E+00
Central Edith Mine Waste Area																						**Maximum HQ (West Edith Mine Waste Area)**	**4.21E+00**
CEA1-3-00 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	6.21E+02	5.26E+00	1.10E-03	1.42E+02	1.56E-01	1.00E+00	5.50E-03	9.85E+02	4.11E+02	1.75E-01	5.06E+02	1.95E+00
CEA1-3-100 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	8.40E+02	7.12E+00	1.10E-03	1.92E+02	2.11E-01	1.00E+00	5.50E-03	1.33E+03	4.11E+02	1.75E-01	5.06E+02	2.63E+00
CEA1-3-150 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	7.27E+02	6.16E+00	1.10E-03	1.66E+02	1.83E-01	1.00E+00	5.50E-03	1.15E+03	4.11E+02	1.75E-01	5.06E+02	2.28E+00
CEA1-3-200 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	4.42E+02	3.75E+00	1.10E-03	1.01E+02	1.11E-01	1.00E+00	5.50E-03	7.01E+02	4.11E+02	1.75E-01	5.06E+02	1.38E+00
CEA1-3-250 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CEA1-3-300 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	9.79E+02	8.29E+00	1.10E-03	2.24E+02	2.46E-01	1.00E+00	5.50E-03	1.55E+03	4.11E+02	1.75E-01	5.06E+02	3.07E+00
CEA1-3-350 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	1.23E+03	1.04E+01	1.10E-03	2.81E+02	3.09E-01	1.00E+00	5.50E-03	1.95E+03	4.11E+02	1.75E-01	5.06E+02	3.85E+00
CEA1-3-400 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	9.41E+02	7.97E+00	1.10E-03	2.15E+02	2.36E-01	1.00E+00	5.50E-03	1.49E+03	4.11E+02	1.75E-01	5.06E+02	2.95E+00
CEA1-3-450 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	7.60E+02	6.44E+00	1.10E-03	1.74E+02	1.91E-01	1.00E+00	5.50E-03	1.21E+03	4.11E+02	1.75E-01	5.06E+02	2.38E+00
CEA1-3-50 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	5.87E+02	4.98E+00	1.10E-03	1.34E+02	1.48E-01	1.00E+00	5.50E-03	9.32E+02	4.11E+02	1.75E-01	5.06E+02	1.84E+00

TABLE C-5F: ZINC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 5 - EDITH MINE WASTE AREAS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

Site Area (hectares) 1.29

from dose parameters tables; from BAF table; linked to soil or sed concentration table (VLOOKUP)

calculated values; linked to TRV table (VLOOKUP) - should be same for all birds or mammals

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Masked Shrew (Omnivorous Mammal - Terrestrial, Wetland)																							
CEA1-3-500 (0-6")																							
CEA1-3-550 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	1.05E+03	8.92E+00	1.10E-03	2.40E+02	2.65E-01	1.00E+00	5.50E-03	1.67E+03	4.11E+02	1.75E-01	5.06E+02	3.30E+00
CEA1-3-600 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	7.18E+02	6.08E+00	1.10E-03	1.64E+02	1.80E-01	1.00E+00	5.50E-03	1.14E+03	4.11E+02	1.75E-01	5.06E+02	2.25E+00
CEA1-3-650 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	1.04E+03	8.79E+00	1.10E-03	2.37E+02	2.61E-01	1.00E+00	5.50E-03	1.65E+03	4.11E+02	1.75E-01	5.06E+02	3.25E+00
CEA1-3-700 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	4.83E+02	4.09E+00	1.10E-03	1.10E+02	1.21E-01	1.00E+00	5.50E-03	7.65E+02	4.11E+02	1.75E-01	5.06E+02	1.51E+00
CEA1-3-750 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CEA1-3-800 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CEA1-3-850 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	5.43E+02	4.60E+00	1.10E-03	1.24E+02	1.37E-01	1.00E+00	5.50E-03	8.62E+02	4.11E+02	1.75E-01	5.06E+02	1.70E+00
CEA1-3-Comp 1 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CEA1-3-Comp 2 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CEA1-3-Comp 3 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	8.24E+02	6.98E+00	1.10E-03	1.88E+02	2.07E-01	1.00E+00	5.50E-03	1.31E+03	4.11E+02	1.75E-01	5.06E+02	2.58E+00
CEA4-00 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CEA4-20 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CEA4-40 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	9.32E+02	7.90E+00	1.10E-03	2.13E+02	2.34E-01	1.00E+00	5.50E-03	1.48E+03	4.11E+02	1.75E-01	5.06E+02	2.92E+00
CEA4-Comp (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	4.46E+02	3.78E+00	1.10E-03	1.02E+02	1.12E-01	1.00E+00	5.50E-03	7.07E+02	4.11E+02	1.75E-01	5.06E+02	1.40E+00
East Edith Mine Waste Area																						**Maximum HQ (Central Edith Mine Waste Area)**	**3.85E+00**
EEA1-00 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
EEA1-100 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
EEA1-150 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
EEA1-200 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
EEA1-250 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
EEA1-300 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
EEA1-350 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	5.30E+02	4.49E+00	1.10E-03	1.21E+02	1.33E-01	1.00E+00	5.50E-03	8.41E+02	4.11E+02	1.75E-01	5.06E+02	1.66E+00
EEA1-400 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	8.63E+02	7.31E+00	1.10E-03	1.97E+02	2.17E-01	1.00E+00	5.50E-03	1.37E+03	4.11E+02	1.75E-01	5.06E+02	2.70E+00
EEA1-450 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
EEA1-50 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
EEA1-500 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	7.83E+02	6.64E+00	1.10E-03	1.79E+02	1.97E-01	1.00E+00	5.50E-03	1.24E+03	4.11E+02	1.75E-01	5.06E+02	2.45E+00
EEA1-Comp 1 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
EEA2-00 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
EEA2-50 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	9.08E+02	7.69E+00	1.10E-03	2.07E+02	2.28E-01	1.00E+00	5.50E-03	1.44E+03	4.11E+02	1.75E-01	5.06E+02	2.84E+00
EEA2-100 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	6.06E+02	5.13E+00	1.10E-03	1.38E+02	1.52E-01	1.00E+00	5.50E-03	9.61E+02	4.11E+02	1.75E-01	5.06E+02	1.90E+00
EEA2-150 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
EEA2-200 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
EEA2-250 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
EEA2-300 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	5.94E+02	5.03E+00	1.10E-03	1.36E+02	1.49E-01	1.00E+00	5.50E-03	9.42E+02	4.11E+02	1.75E-01	5.06E+02	1.86E+00
EEA2-Comp 1 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
																						Maximum HQ (East Edith Mine Waste Area)	**2.84E+00**

Notes

1 See Tables 3-1 through 3-13 for ingestion rates, foraging ranges used to calculate the SUF, and body weights.

2 BAFs were calculated by dividing site-collected tissue by collocated soil concentrations (BAFs are in dry weight). The maximum BAF calculated from the Beartrap Creek and Blackfoot River transects was used for site dose calculations. The maximum BAF from the terrestrial reference site was used for reference site dose calculations.

3 The mammal, plant, and invertebrate concentrations were calculated by multiplying the soil concentration by the BAF to generate a tissue concentration (see note 2).

4 Mammal, plant, and invertebrate daily doses were calculated by multiplying the ingestion rate (see note 1) by the tissue concentration (see note 3).

5 Soil concentration from 0 to 6 inches below ground surface at point ID as measured by XRF 10. Doses were not calculated for detected and non-detected soil concentrations measured below the minimum reference site concentration, as indicated by BB. For results that were measured at less than the detection limit, doses were calculated using half of the detection limit.

6 Soil daily dose was calculated by multiplying the soil ingestion rate (see note 1) by soil concentration (see note 5).

7 Total daily dose is calculated using the following equation: total daily dose = ([mammal daily dose (if applicable) + plant daily dose (if applicable) + invertebrate daily dose (if applicable) + soil daily dose]*SUF)/receptor species body weight.

8 The TRVs used in this risk assessment represent a mid-range effects level. The derivation of TRVs is described in Navy (1998).

9 Allometrically adjusted TRVs for birds were calculated using the following equation: receptor species TRV = (test species TRV) x (test species body weight / receptor species body weight)$^{(1-1.2)}$.

10 Allometrically adjusted TRVs for mammals were calculated using the following equation: receptor species TRV = (test species TRV) x (test species body weight / receptor species body weight)$^{(1-0.94)}$.

11 HQs were calculated using the following equation: HQ = total daily dose/allometrically adjusted TRV.

12 Highlighted cells indicate an HQ greater than 1.0.

BAF	Bioaccumulation Factor	mg/day	Milligram per day
BB	Below minimum background reference site concentration	mg/kg	Milligram per kilogram
EE/CA	Engineering Evaluation/Cost Analysis	NA	Not applicable
EU	Exposure Unit	Navy	Department of the Navy
HQ	Hazard quotient	SUF	Site use factor
ID	Identification	TRV	Toxicity reference value
kg	Kilogram	XRF	X-ray fluorescence
kg/day	Kilogram per day	XRF 10	XRF measurements recorded following drying and seiving through a #10-mesh screen

Sources: Department of the Navy. 1998. "Development of Toxicity Reference Values for Conducting Ecological Risk Assessments at Naval Facilities in California, Interim Final." Prepared by Naval Facilities Engineering Command, Engineering Field Activity West (EFA West). San Bruno, California.

TABLE C-6A: ARSENIC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 6 - CONSOLATION MINE WASTE AREA

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 0.7

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Mourning Dove (Herbivorous Birds - Terrestrial)																							
Reference Sites																							
SHGBG-1	5.76E-03	NA	NA	NA	NA	5.76E-03	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	5.36E-04	2.74E+01	1.47E-02	2.70E-03	1.09E-01	3.63E-04	2.20E+01	1.17E+00	1.37E+01	2.65E-05
SHGBG-2	5.76E-03	NA	NA	NA	NA	5.76E-03	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	5.36E-04	1.61E+01	8.61E-03	2.70E-03	1.09E-01	2.13E-04	2.20E+01	1.17E+00	1.37E+01	1.56E-05
Consolation Mine																						**Minimum HQ (Reference Sites)**	**1.56E-05**
CONM-000 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.85E+01	1.07E-01	NA	NA	NA	NA	5.36E-04	3.08E+01	1.65E-02	2.70E-03	1.09E-01	3.05E-03	2.20E+01	1.17E+00	1.37E+01	2.23E-04
CONM-100 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.03E+01	5.91E-02	NA	NA	NA	NA	5.36E-04	1.71E+01	9.15E-03	2.70E-03	1.09E-01	1.69E-03	2.20E+01	1.17E+00	1.37E+01	1.23E-04
CONM-100+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.59E+01	9.14E-02	NA	NA	NA	NA	5.36E-04	2.64E+01	1.41E-02	2.70E-03	1.09E-01	2.61E-03	2.20E+01	1.17E+00	1.37E+01	1.91E-04
CONM-1000 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	4.32E+01	2.49E-01	NA	NA	NA	NA	5.36E-04	7.19E+01	3.85E-02	2.70E-03	1.09E-01	7.12E-03	2.20E+01	1.17E+00	1.37E+01	5.20E-04
CONM-1000+35 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.74E+01	1.00E-01	NA	NA	NA	NA	5.36E-04	2.90E+01	1.55E-02	2.70E-03	1.09E-01	2.87E-03	2.20E+01	1.17E+00	1.37E+01	2.10E-04
CONM-150 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	2.13E+01	1.22E-01	NA	NA	NA	NA	5.36E-04	3.54E+01	1.90E-02	2.70E-03	1.09E-01	3.50E-03	2.20E+01	1.17E+00	1.37E+01	2.56E-04
CONM-200 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.98E+01	1.14E-01	NA	NA	NA	NA	5.36E-04	3.30E+01	1.77E-02	2.70E-03	1.09E-01	3.27E-03	2.20E+01	1.17E+00	1.37E+01	2.39E-04
CONM-250 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	6.54E+02	3.77E+00	NA	NA	NA	NA	5.36E-04	1.09E+03	5.83E-01	2.70E-03	1.09E-01	1.08E-01	2.20E+01	1.17E+00	1.37E+01	7.86E-03
CONM-250+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	4.41E+01	2.54E-01	NA	NA	NA	NA	5.36E-04	7.33E+01	3.93E-02	2.70E-03	1.09E-01	7.25E-03	2.20E+01	1.17E+00	1.37E+01	5.30E-04
CONM-300 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.25E+01	7.18E-02	NA	NA	NA	NA	5.36E-04	2.07E+01	1.11E-02	2.70E-03	1.09E-01	2.05E-03	2.20E+01	1.17E+00	1.37E+01	1.50E-04
CONM-300+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.59E+01	9.18E-02	NA	NA	NA	NA	5.36E-04	2.65E+01	1.42E-02	2.70E-03	1.09E-01	2.62E-03	2.20E+01	1.17E+00	1.37E+01	1.92E-04
CONM-350 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.14E+01	6.55E-02	NA	NA	NA	NA	5.36E-04	1.89E+01	1.01E-02	2.70E-03	1.09E-01	1.87E-03	2.20E+01	1.17E+00	1.37E+01	1.37E-04
CONM-350+50 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.80E+01	1.04E-01	NA	NA	NA	NA	5.36E-04	2.99E+01	1.60E-02	2.70E-03	1.09E-01	2.96E-03	2.20E+01	1.17E+00	1.37E+01	2.16E-04
CONM-400 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	2.23E+01	1.28E-01	NA	NA	NA	NA	5.36E-04	3.70E+01	1.98E-02	2.70E-03	1.09E-01	3.67E-03	2.20E+01	1.17E+00	1.37E+01	2.68E-04
CONM-400+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	6.28E+00	3.62E-02	NA	NA	NA	NA	5.36E-04	1.05E+01	5.60E-03	2.70E-03	1.09E-01	1.03E-03	2.20E+01	1.17E+00	1.37E+01	7.55E-05
CONM-450 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	2.73E+01	1.57E-01	NA	NA	NA	NA	5.36E-04	4.54E+01	2.43E-02	2.70E-03	1.09E-01	4.49E-03	2.20E+01	1.17E+00	1.37E+01	3.28E-04
CONM-450+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.79E+01	1.03E-01	NA	NA	NA	NA	5.36E-04	2.97E+01	1.59E-02	2.70E-03	1.09E-01	2.94E-03	2.20E+01	1.17E+00	1.37E+01	2.15E-04
CONM-50 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	2.73E+01	1.57E-01	NA	NA	NA	NA	5.36E-04	4.54E+01	2.43E-02	2.70E-03	1.09E-01	4.49E-03	2.20E+01	1.17E+00	1.37E+01	3.28E-04
CONM-50+50 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	2.26E+01	1.30E-01	NA	NA	NA	NA	5.36E-04	3.76E+01	2.01E-02	2.70E-03	1.09E-01	3.72E-03	2.20E+01	1.17E+00	1.37E+01	2.72E-04
CONM-500 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.31E+01	7.52E-02	NA	NA	NA	NA	5.36E-04	2.17E+01	1.16E-02	2.70E-03	1.09E-01	2.15E-03	2.20E+01	1.17E+00	1.37E+01	1.57E-04
CONM-550 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	7.80E+00	4.50E-02	NA	NA	NA	NA	5.36E-04	1.30E+01	6.96E-03	2.70E-03	1.09E-01	1.29E-03	2.20E+01	1.17E+00	1.37E+01	9.39E-05
CONM-600 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.48E+01	8.55E-02	NA	NA	NA	NA	5.36E-04	2.47E+01	1.32E-02	2.70E-03	1.09E-01	2.44E-03	2.20E+01	1.17E+00	1.37E+01	1.79E-04
CONM-600+12.5 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-650 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.30E+01	7.50E-02	NA	NA	NA	NA	5.36E-04	2.17E+01	1.16E-02	2.70E-03	1.09E-01	2.14E-03	2.20E+01	1.17E+00	1.37E+01	1.56E-04
CONM-700 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	7.20E+00	4.15E-02	NA	NA	NA	NA	5.36E-04	1.20E+01	6.42E-03	2.70E-03	1.09E-01	1.19E-03	2.20E+01	1.17E+00	1.37E+01	8.66E-05
CONM-750 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	5.56E+01	3.21E-01	NA	NA	NA	NA	5.36E-04	9.26E+01	4.96E-02	2.70E-03	1.09E-01	9.16E-03	2.20E+01	1.17E+00	1.37E+01	6.69E-04
CONM-750+6 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	8.51E+00	4.90E-02	NA	NA	NA	NA	5.36E-04	1.42E+01	7.59E-03	2.70E-03	1.09E-01	1.40E-03	2.20E+01	1.17E+00	1.37E+01	1.02E-04
CONM-800 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	3.16E+02	1.82E+00	NA	NA	NA	NA	5.36E-04	5.26E+02	2.82E-01	2.70E-03	1.09E-01	5.20E-02	2.20E+01	1.17E+00	1.37E+01	3.80E-03
CONM-800+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.39E+01	8.03E-02	NA	NA	NA	NA	5.36E-04	2.32E+01	1.24E-02	2.70E-03	1.09E-01	2.30E-03	2.20E+01	1.17E+00	1.37E+01	1.68E-04
CONM-850 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	3.79E+01	2.18E-01	NA	NA	NA	NA	5.36E-04	6.31E+01	3.38E-02	2.70E-03	1.09E-01	6.24E-03	2.20E+01	1.17E+00	1.37E+01	4.56E-04
CONM-900 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	2.75E+01	1.58E-01	NA	NA	NA	NA	5.36E-04	4.57E+01	2.45E-02	2.70E-03	1.09E-01	4.53E-03	2.20E+01	1.17E+00	1.37E+01	3.31E-04
CONM-900+12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	6.28E+00	3.62E-02	NA	NA	NA	NA	5.36E-04	1.05E+01	5.60E-03	2.70E-03	1.09E-01	1.03E-03	2.20E+01	1.17E+00	1.37E+01	7.55E-05
CONM-950 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	3.18E+01	1.83E-01	NA	NA	NA	NA	5.36E-04	5.29E+01	2.83E-02	2.70E-03	1.09E-01	5.24E-03	2.20E+01	1.17E+00	1.37E+01	3.82E-04
CONM-Comp 1 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.39E+01	8.02E-02	NA	NA	NA	NA	5.36E-04	2.32E+01	1.24E-02	2.70E-03	1.09E-01	2.29E-03	2.20E+01	1.17E+00	1.37E+01	1.67E-04
CONM-Comp 2 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	3.64E+01	2.10E-01	NA	NA	NA	NA	5.36E-04	6.06E+01	3.25E-02	2.70E-03	1.09E-01	6.00E-03	2.20E+01	1.17E+00	1.37E+01	4.38E-04
CONM-Pile 1 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	2.92E+02	1.68E+00	NA	NA	NA	NA	5.36E-04	4.86E+02	2.61E-01	2.70E-03	1.09E-01	4.81E-02	2.20E+01	1.17E+00	1.37E+01	3.52E-03
																						Maximum HQ (Consolation Mine)	**7.86E-03**
Red-Tailed Hawk (Carnivorous Birds - Terrestrial)																							
Reference Sites																							
SHGBG-1	9.00E-02	9.00E-02	4.84E-01	1.32E+01	1.19E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.74E+01	1.40E-01	1.00E-03	1.13E+00	1.18E-03	2.20E+01	1.17E+00	2.19E+01	5.40E-05
SHGBG-2	9.00E-02	9.00E-02	4.84E-01	7.77E+00	6.99E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.61E+01	8.23E-02	1.00E-03	1.13E+00	6.92E-04	2.20E+01	1.17E+00	2.19E+01	3.17E-05
Consolation Mine																						**Minimum HQ (Reference Sites)**	**3.17E-05**
CONM-000 (0-6")	9.00E-02	9.00E-02	4.84E-01	1.49E+01	1.34E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.08E+01	1.58E-01	1.00E-03	1.13E+00	1.33E-03	2.20E+01	1.17E+00	2.19E+01	6.08E-05
CONM-100 (0-6")	9.00E-02	9.00E-02	4.84E-01	8.26E+00	7.43E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.71E+01	8.76E-02	1.00E-03	1.13E+00	7.36E-04	2.20E+01	1.17E+00	2.19E+01	3.37E-05
CONM-100+25 (0-6")	9.00E-02	9.00E-02	4.84E-01	1.28E+01	1.15E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.64E+01	1.35E-01	1.00E-03	1.13E+00	1.14E-03	2.20E+01	1.17E+00	2.19E+01	5.20E-05
CONM-1000 (0-6")	9.00E-02	9.00E-02	4.84E-01	3.48E+01	3.13E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	7.19E+01	3.69E-01	1.00E-03	1.13E+00	3.10E-03	2.20E+01	1.17E+00	2.19E+01	1.42E-04
CONM-1000+35 (0-6")	9.00E-02	9.00E-02	4.84E-01	1.40E+01	1.26E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.90E+01	1.49E-01	1.00E-03	1.13E+00	1.25E-03	2.20E+01	1.17E+00	2.19E+01	5.72E-05
CONM-150 (0-6")	9.00E-02	9.00E-02	4.84E-01	1.71E+01	1.54E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.54E+01	1.81E-01	1.00E-03	1.13E+00	1.52E-03	2.20E+01	1.17E+00	2.19E+01	6.97E-05
CONM-200 (0-6")	9.00E-02	9.00E-02	4.84E-01	1.60E+01	1.44E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.30E+01	1.69E-01	1.00E-03	1.13E+00	1.42E-03	2.20E+01	1.17E+00	2.19E+01	6.51E-05
CONM-250 (0-6")	9.00E-02	9.00E-02	4.84E-01	5.26E+02	4.73E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.09E+03	5.58E+00	1.00E-03	1.13E+00	4.69E-02	2.20E+01	1.17E+00	2.19E+01	2.14E-03
CONM-250+25 (0-6")	9.00E-02	9.00E-02	4.84E-01	3.55E+01	3.19E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	7.33E+01	3.76E-01	1.00E-03	1.13E+00	3.16E-03	2.20E+01	1.17E+00	2.19E+01	1.44E-04

TABLE C-6A: ARSENIC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 6 - CONSOLATION MINE WASTE AREA (Continued)
Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)
calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 0.7

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Red-Tailed Hawk (Carnivorous Birds - Terrestrial)																							
CONM-300 (0-6")	9.00E-02	9.00E-02	4.84E-01	1.00E+01	9.02E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.07E+01	1.06E-01	1.00E-03	1.13E+00	8.94E-04	2.20E+01	1.17E+00	2.19E+01	4.09E-05
CONM-300+25 (0-6")	9.00E-02	9.00E-02	4.84E-01	1.28E+01	1.15E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.65E+01	1.36E-01	1.00E-03	1.13E+00	1.14E-03	2.20E+01	1.17E+00	2.19E+01	5.22E-05
CONM-350 (0-6")	9.00E-02	9.00E-02	4.84E-01	9.15E+00	8.23E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.89E+01	9.69E-02	1.00E-03	1.13E+00	8.15E-04	2.20E+01	1.17E+00	2.19E+01	3.73E-05
CONM-350+50 (0-6")	9.00E-02	9.00E-02	4.84E-01	1.45E+01	1.30E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.99E+01	1.53E-01	1.00E-03	1.13E+00	1.29E-03	2.20E+01	1.17E+00	2.19E+01	5.89E-05
CONM-400 (0-6")	9.00E-02	9.00E-02	4.84E-01	1.79E+01	1.61E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.70E+01	1.90E-01	1.00E-03	1.13E+00	1.60E-03	2.20E+01	1.17E+00	2.19E+01	7.30E-05
CONM-400+25 (0-6")	9.00E-02	9.00E-02	4.84E-01	5.06E+00	4.55E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.05E+01	5.36E-02	1.00E-03	1.13E+00	4.50E-04	2.20E+01	1.17E+00	2.19E+01	2.06E-05
CONM-450 (0-6")	9.00E-02	9.00E-02	4.84E-01	2.19E+01	1.97E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.54E+01	2.33E-01	1.00E-03	1.13E+00	1.95E-03	2.20E+01	1.17E+00	2.19E+01	8.94E-05
CONM-450+25 (0-6")	9.00E-02	9.00E-02	4.84E-01	1.44E+01	1.29E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.97E+01	1.52E-01	1.00E-03	1.13E+00	1.28E-03	2.20E+01	1.17E+00	2.19E+01	5.85E-05
CONM-50 (0-6")	9.00E-02	9.00E-02	4.84E-01	2.19E+01	1.97E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.54E+01	2.33E-01	1.00E-03	1.13E+00	1.95E-03	2.20E+01	1.17E+00	2.19E+01	8.94E-05
CONM-50+50 (0-6")	9.00E-02	9.00E-02	4.84E-01	1.82E+01	1.64E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.76E+01	1.93E-01	1.00E-03	1.13E+00	1.62E-03	2.20E+01	1.17E+00	2.19E+01	7.41E-05
CONM-500 (0-6")	9.00E-02	9.00E-02	4.84E-01	1.05E+01	9.46E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.17E+01	1.11E-01	1.00E-03	1.13E+00	9.36E-04	2.20E+01	1.17E+00	2.19E+01	4.28E-05
CONM-550 (0-6")	9.00E-02	9.00E-02	4.84E-01	6.28E+00	5.65E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.30E+01	6.66E-02	1.00E-03	1.13E+00	5.60E-04	2.20E+01	1.17E+00	2.19E+01	2.56E-05
CONM-600 (0-6")	9.00E-02	9.00E-02	4.84E-01	1.19E+01	1.07E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.47E+01	1.27E-01	1.00E-03	1.13E+00	1.06E-03	2.20E+01	1.17E+00	2.19E+01	4.87E-05
CONM-600+12.5 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-650 (0-6")	9.00E-02	9.00E-02	4.84E-01	1.05E+01	9.42E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.17E+01	1.11E-01	1.00E-03	1.13E+00	9.33E-04	2.20E+01	1.17E+00	2.19E+01	4.27E-05
CONM-700 (0-6")	9.00E-02	9.00E-02	4.84E-01	5.79E+00	5.21E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.20E+01	6.14E-02	1.00E-03	1.13E+00	5.16E-04	2.20E+01	1.17E+00	2.19E+01	2.36E-05
CONM-750 (0-6")	9.00E-02	9.00E-02	4.84E-01	4.48E+01	4.03E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	9.26E+01	4.75E-01	1.00E-03	1.13E+00	3.99E-03	2.20E+01	1.17E+00	2.19E+01	1.82E-04
CONM-750+6 (0-6")	9.00E-02	9.00E-02	4.84E-01	6.85E+00	6.16E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.42E+01	7.26E-02	1.00E-03	1.13E+00	6.10E-04	2.20E+01	1.17E+00	2.19E+01	2.79E-05
CONM-800 (0-6")	9.00E-02	9.00E-02	4.84E-01	2.54E+02	2.29E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.26E+02	2.70E+00	1.00E-03	1.13E+00	2.27E-02	2.20E+01	1.17E+00	2.19E+01	1.04E-03
CONM-800+25 (0-6")	9.00E-02	9.00E-02	4.84E-01	1.12E+01	1.01E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.32E+01	1.19E-01	1.00E-03	1.13E+00	1.00E-03	2.20E+01	1.17E+00	2.19E+01	4.57E-05
CONM-850 (0-6")	9.00E-02	9.00E-02	4.84E-01	3.05E+01	2.75E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	6.31E+01	3.23E-01	1.00E-03	1.13E+00	2.72E-03	2.20E+01	1.17E+00	2.19E+01	1.24E-04
CONM-900 (0-6")	9.00E-02	9.00E-02	4.84E-01	2.21E+01	1.99E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.57E+01	2.34E-01	1.00E-03	1.13E+00	1.97E-03	2.20E+01	1.17E+00	2.19E+01	9.01E-05
CONM-900+12.5 (0-6")	9.00E-02	9.00E-02	4.84E-01	5.06E+00	4.55E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.05E+01	5.36E-02	1.00E-03	1.13E+00	4.50E-04	2.20E+01	1.17E+00	2.19E+01	2.06E-05
CONM-950 (0-6")	9.00E-02	9.00E-02	4.84E-01	2.56E+01	2.30E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.29E+01	2.71E-01	1.00E-03	1.13E+00	2.28E-03	2.20E+01	1.17E+00	2.19E+01	1.04E-04
CONM-Comp 1 (0-6")	9.00E-02	9.00E-02	4.84E-01	1.12E+01	1.01E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.32E+01	1.19E-01	1.00E-03	1.13E+00	9.98E-04	2.20E+01	1.17E+00	2.19E+01	4.57E-05
CONM-Comp 2 (0-6")	9.00E-02	9.00E-02	4.84E-01	2.93E+01	2.64E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	6.06E+01	3.11E-01	1.00E-03	1.13E+00	2.61E-03	2.20E+01	1.17E+00	2.19E+01	1.19E-04
CONM-Pile 1 (0-6")	9.00E-02	9.00E-02	4.84E-01	2.35E+02	2.12E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.86E+02	2.49E+00	1.00E-03	1.13E+00	2.10E-02	2.20E+01	1.17E+00	2.19E+01	9.59E-04
																						Maximum HQ (Consolation Mine)	**2.14E-03**
American Kestrel (Insectivorous Birds - Terrestrial)																							
Reference Sites																							
SHGBG-1	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	2.55E+00	6.99E+01	9.61E-01	7.84E-04	2.74E+01	2.15E-02	2.68E-03	1.24E-01	2.12E-02	2.20E+01	1.17E+00	1.40E+01	1.51E-03
SHGBG-2	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	2.55E+00	4.10E+01	5.64E-01	7.84E-04	1.61E+01	1.26E-02	2.68E-03	1.24E-01	1.24E-02	2.20E+01	1.17E+00	1.40E+01	8.86E-04
Consolation Mine																						**Minimum HQ (Reference Sites)**	**8.86E-04**
CONM-000 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	5.08E+02	7.00E+00	7.84E-04	3.08E+01	2.42E-02	2.68E-03	1.24E-01	1.51E-01	2.20E+01	1.17E+00	1.40E+01	1.08E-02
CONM-100 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	2.81E+02	3.87E+00	7.84E-04	1.71E+01	1.34E-02	2.68E-03	1.24E-01	8.38E-02	2.20E+01	1.17E+00	1.40E+01	5.97E-03
CONM-100+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	4.35E+02	5.99E+00	7.84E-04	2.64E+01	2.07E-02	2.68E-03	1.24E-01	1.30E-01	2.20E+01	1.17E+00	1.40E+01	9.23E-03
CONM-1000 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	1.19E+03	1.63E+01	7.84E-04	7.19E+01	5.64E-02	2.68E-03	1.24E-01	3.53E-01	2.20E+01	1.17E+00	1.40E+01	2.51E-02
CONM-1000+35 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	4.78E+02	6.58E+00	7.84E-04	2.90E+01	2.27E-02	2.68E-03	1.24E-01	1.42E-01	2.20E+01	1.17E+00	1.40E+01	1.01E-02
CONM-150 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	5.83E+02	8.02E+00	7.84E-04	3.54E+01	2.77E-02	2.68E-03	1.24E-01	1.74E-01	2.20E+01	1.17E+00	1.40E+01	1.24E-02
CONM-200 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	5.44E+02	7.49E+00	7.84E-04	3.30E+01	2.59E-02	2.68E-03	1.24E-01	1.62E-01	2.20E+01	1.17E+00	1.40E+01	1.15E-02
CONM-250 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	1.79E+04	2.47E+02	7.84E-04	1.09E+03	8.53E-01	2.68E-03	1.24E-01	5.34E+00	2.20E+01	1.17E+00	1.40E+01	3.80E-01
CONM-250+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	1.21E+03	1.66E+01	7.84E-04	7.33E+01	5.75E-02	2.68E-03	1.24E-01	3.60E-01	2.20E+01	1.17E+00	1.40E+01	2.56E-02
CONM-300 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	3.42E+02	4.70E+00	7.84E-04	2.07E+01	1.63E-02	2.68E-03	1.24E-01	1.02E-01	2.20E+01	1.17E+00	1.40E+01	7.25E-03
CONM-300+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	4.37E+02	6.01E+00	7.84E-04	2.65E+01	2.08E-02	2.68E-03	1.24E-01	1.30E-01	2.20E+01	1.17E+00	1.40E+01	9.27E-03
CONM-350 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	3.12E+02	4.29E+00	7.84E-04	1.89E+01	1.48E-02	2.68E-03	1.24E-01	9.28E-02	2.20E+01	1.17E+00	1.40E+01	6.61E-03
CONM-350+50 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	4.93E+02	6.78E+00	7.84E-04	2.99E+01	2.35E-02	2.68E-03	1.24E-01	1.47E-01	2.20E+01	1.17E+00	1.40E+01	1.05E-02
CONM-400 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	6.11E+02	8.40E+00	7.84E-04	3.70E+01	2.91E-02	2.68E-03	1.24E-01	1.82E-01	2.20E+01	1.17E+00	1.40E+01	1.30E-02
CONM-400+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	1.72E+02	2.37E+00	7.84E-04	1.05E+01	8.20E-03	2.68E-03	1.24E-01	5.13E-02	2.20E+01	1.17E+00	1.40E+01	3.65E-03
CONM-450 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	7.48E+02	1.03E+01	7.84E-04	4.54E+01	3.56E-02	2.68E-03	1.24E-01	2.23E-01	2.20E+01	1.17E+00	1.40E+01	1.59E-02
CONM-450+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	4.90E+02	6.74E+00	7.84E-04	2.97E+01	2.33E-02	2.68E-03	1.24E-01	1.46E-01	2.20E+01	1.17E+00	1.40E+01	1.04E-02
CONM-50 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	7.48E+02	1.03E+01	7.84E-04	4.54E+01	3.56E-02	2.68E-03	1.24E-01	2.23E-01	2.20E+01	1.17E+00	1.40E+01	1.59E-02
CONM-50+50 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	6.20E+02	8.53E+00	7.84E-04	3.76E+01	2.95E-02	2.68E-03	1.24E-01	1.85E-01	2.20E+01	1.17E+00	1.40E+01	1.31E-02
CONM-500 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	3.58E+02	4.93E+00	7.84E-04	2.17E+01	1.70E-02	2.68E-03	1.24E-01	1.07E-01	2.20E+01	1.17E+00	1.40E+01	7.60E-03
CONM-550 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	2.14E+02	2.95E+00	7.84E-04	1.30E+01	1.02E-02	2.68E-03	1.24E-01	6.38E-02	2.20E+01	1.17E+00	1.40E+01	4.54E-03
CONM-600 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	4.07E+02	5.60E+00	7.84E-04	2.47E+01	1.94E-02	2.68E-03	1.24E-01	1.21E-01	2.20E+01	1.17E+00	1.40E+01	8.64E-03

TABLE C-6A: ARSENIC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 6 - CONSOLATION MINE WASTE AREA (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 0.7

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
American Kestrel (Insectivorous Birds - Terrestrial)																							
CONM-600+12.5 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-650 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	3.57E+02	4.91E+00	7.84E-04	2.17E+01	1.70E-02	2.68E-03	1.24E-01	1.06E-01	2.20E+01	1.17E+00	1.40E+01	7.57E-03
CONM-700 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	1.97E+02	2.72E+00	7.84E-04	1.20E+01	9.39E-03	2.68E-03	1.24E-01	5.88E-02	2.20E+01	1.17E+00	1.40E+01	4.19E-03
CONM-750 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	1.53E+03	2.10E+01	7.84E-04	9.26E+01	7.26E-02	2.68E-03	1.24E-01	4.55E-01	2.20E+01	1.17E+00	1.40E+01	3.24E-02
CONM-750+6 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	2.33E+02	3.21E+00	7.84E-04	1.42E+01	1.11E-02	2.68E-03	1.24E-01	6.95E-02	2.20E+01	1.17E+00	1.40E+01	4.95E-03
CONM-800 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	8.67E+03	1.19E+02	7.84E-04	5.26E+02	4.13E-01	2.68E-03	1.24E-01	2.58E+00	2.20E+01	1.17E+00	1.40E+01	1.84E-01
CONM-800+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	3.82E+02	5.26E+00	7.84E-04	2.32E+01	1.82E-02	2.68E-03	1.24E-01	1.14E-01	2.20E+01	1.17E+00	1.40E+01	8.11E-03
CONM-850 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	1.04E+03	1.43E+01	7.84E-04	6.31E+01	4.95E-02	2.68E-03	1.24E-01	3.10E-01	2.20E+01	1.17E+00	1.40E+01	2.21E-02
CONM-900 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	7.54E+02	1.04E+01	7.84E-04	4.57E+01	3.59E-02	2.68E-03	1.24E-01	2.25E-01	2.20E+01	1.17E+00	1.40E+01	1.60E-02
CONM-900+12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	1.72E+02	2.37E+00	7.84E-04	1.05E+01	8.20E-03	2.68E-03	1.24E-01	5.13E-02	2.20E+01	1.17E+00	1.40E+01	3.65E-03
CONM-950 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	8.72E+02	1.20E+01	7.84E-04	5.29E+01	4.15E-02	2.68E-03	1.24E-01	2.60E-01	2.20E+01	1.17E+00	1.40E+01	1.85E-02
CONM-Comp 1 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	3.82E+02	5.25E+00	7.84E-04	2.32E+01	1.82E-02	2.68E-03	1.24E-01	1.14E-01	2.20E+01	1.17E+00	1.40E+01	8.10E-03
CONM-Comp 2 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	9.99E+02	1.37E+01	7.84E-04	6.06E+01	4.75E-02	2.68E-03	1.24E-01	2.98E-01	2.20E+01	1.17E+00	1.40E+01	2.12E-02
CONM-Pile 1 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	8.02E+03	1.10E+02	7.84E-04	4.86E+02	3.82E-01	2.68E-03	1.24E-01	2.39E+00	2.20E+01	1.17E+00	1.40E+01	1.70E-01
																						Maximum HQ (Consolation Mine)	**3.80E-01**
Meadow Vole (Small Herbivorous Mammal - Terrestrial)																							
Reference Sites																							
SHGBG-1	4.69E-03	NA	NA	NA	NA	4.69E-03	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	1.13E-04	2.74E+01	3.08E-03	1.00E+00	3.06E-02	1.01E-01	4.70E+00	1.10E-01	5.08E+00	1.98E-02
SHGBG-2	4.69E-03	NA	NA	NA	NA	4.69E-03	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	1.13E-04	1.61E+01	1.81E-03	1.00E+00	3.06E-02	5.91E-02	4.70E+00	1.10E-01	5.08E+00	1.16E-02
Consolation Mine																						**Minimum HQ (Reference Sites)**	**1.16E-02**
CONM-000 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.85E+01	8.69E-02	NA	NA	NA	NA	1.13E-04	3.08E+01	3.47E-03	1.00E+00	3.06E-02	2.95E+00	4.70E+00	1.10E-01	5.08E+00	5.82E-01
CONM-100 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.03E+01	4.81E-02	NA	NA	NA	NA	1.13E-04	1.71E+01	1.92E-03	1.00E+00	3.06E-02	1.64E+00	4.70E+00	1.10E-01	5.08E+00	3.22E-01
CONM-100+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.59E+01	7.44E-02	NA	NA	NA	NA	1.13E-04	2.64E+01	2.97E-03	1.00E+00	3.06E-02	2.53E+00	4.70E+00	1.10E-01	5.08E+00	4.98E-01
CONM-1000 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	4.32E+01	2.03E-01	NA	NA	NA	NA	1.13E-04	7.19E+01	8.09E-03	1.00E+00	3.06E-02	6.89E+00	4.70E+00	1.10E-01	5.08E+00	1.36E+00
CONM-1000+35 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.74E+01	8.17E-02	NA	NA	NA	NA	1.13E-04	2.90E+01	3.26E-03	1.00E+00	3.06E-02	2.78E+00	4.70E+00	1.10E-01	5.08E+00	5.47E-01
CONM-150 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	2.13E+01	9.97E-02	NA	NA	NA	NA	1.13E-04	3.54E+01	3.98E-03	1.00E+00	3.06E-02	3.39E+00	4.70E+00	1.10E-01	5.08E+00	6.68E-01
CONM-200 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.98E+01	9.30E-02	NA	NA	NA	NA	1.13E-04	3.30E+01	3.71E-03	1.00E+00	3.06E-02	3.16E+00	4.70E+00	1.10E-01	5.08E+00	6.23E-01
CONM-250 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	6.54E+02	3.07E+00	NA	NA	NA	NA	1.13E-04	1.09E+03	1.22E-01	1.00E+00	3.06E-02	1.04E+02	4.70E+00	1.10E-01	5.08E+00	2.05E+01
CONM-250+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	4.41E+01	2.07E-01	NA	NA	NA	NA	1.13E-04	7.33E+01	8.25E-03	1.00E+00	3.06E-02	7.02E+00	4.70E+00	1.10E-01	5.08E+00	1.38E+00
CONM-300 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.25E+01	5.84E-02	NA	NA	NA	NA	1.13E-04	2.07E+01	2.33E-03	1.00E+00	3.06E-02	1.99E+00	4.70E+00	1.10E-01	5.08E+00	3.91E-01
CONM-300+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.59E+01	7.47E-02	NA	NA	NA	NA	1.13E-04	2.65E+01	2.98E-03	1.00E+00	3.06E-02	2.54E+00	4.70E+00	1.10E-01	5.08E+00	5.00E-01
CONM-350 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.14E+01	5.33E-02	NA	NA	NA	NA	1.13E-04	1.89E+01	2.13E-03	1.00E+00	3.06E-02	1.81E+00	4.70E+00	1.10E-01	5.08E+00	3.57E-01
CONM-350+50 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.80E+01	8.43E-02	NA	NA	NA	NA	1.13E-04	2.99E+01	3.36E-03	1.00E+00	3.06E-02	2.86E+00	4.70E+00	1.10E-01	5.08E+00	5.64E-01
CONM-400 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	2.23E+01	1.04E-01	NA	NA	NA	NA	1.13E-04	3.70E+01	4.17E-03	1.00E+00	3.06E-02	3.55E+00	4.70E+00	1.10E-01	5.08E+00	6.99E-01
CONM-400+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	6.28E+00	2.95E-02	NA	NA	NA	NA	1.13E-04	1.05E+01	1.18E-03	1.00E+00	3.06E-02	1.00E+00	4.70E+00	1.10E-01	5.08E+00	1.97E-01
CONM-450 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	2.73E+01	1.28E-01	NA	NA	NA	NA	1.13E-04	4.54E+01	5.10E-03	1.00E+00	3.06E-02	4.34E+00	4.70E+00	1.10E-01	5.08E+00	8.56E-01
CONM-450+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.79E+01	8.37E-02	NA	NA	NA	NA	1.13E-04	2.97E+01	3.34E-03	1.00E+00	3.06E-02	2.84E+00	4.70E+00	1.10E-01	5.08E+00	5.61E-01
CONM-50 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	2.73E+01	1.28E-01	NA	NA	NA	NA	1.13E-04	4.54E+01	5.10E-03	1.00E+00	3.06E-02	4.34E+00	4.70E+00	1.10E-01	5.08E+00	8.56E-01
CONM-50+50 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	2.26E+01	1.06E-01	NA	NA	NA	NA	1.13E-04	3.76E+01	4.23E-03	1.00E+00	3.06E-02	3.60E+00	4.70E+00	1.10E-01	5.08E+00	7.10E-01
CONM-500 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.31E+01	6.12E-02	NA	NA	NA	NA	1.13E-04	2.17E+01	2.45E-03	1.00E+00	3.06E-02	2.08E+00	4.70E+00	1.10E-01	5.08E+00	4.10E-01
CONM-550 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	7.80E+00	3.66E-02	NA	NA	NA	NA	1.13E-04	1.30E+01	1.46E-03	1.00E+00	3.06E-02	1.24E+00	4.70E+00	1.10E-01	5.08E+00	2.45E-01
CONM-600 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.48E+01	6.96E-02	NA	NA	NA	NA	1.13E-04	2.47E+01	2.78E-03	1.00E+00	3.06E-02	2.37E+00	4.70E+00	1.10E-01	5.08E+00	4.66E-01
CONM-600+12.5 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-650 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.30E+01	6.10E-02	NA	NA	NA	NA	1.13E-04	2.17E+01	2.44E-03	1.00E+00	3.06E-02	2.07E+00	4.70E+00	1.10E-01	5.08E+00	4.09E-01
CONM-700 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	7.20E+00	3.37E-02	NA	NA	NA	NA	1.13E-04	1.20E+01	1.35E-03	1.00E+00	3.06E-02	1.15E+00	4.70E+00	1.10E-01	5.08E+00	2.26E-01
CONM-750 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	5.56E+01	2.61E-01	NA	NA	NA	NA	1.13E-04	9.26E+01	1.04E-02	1.00E+00	3.06E-02	8.87E+00	4.70E+00	1.10E-01	5.08E+00	1.75E+00
CONM-750+6 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	8.51E+00	3.99E-02	NA	NA	NA	NA	1.13E-04	1.42E+01	1.59E-03	1.00E+00	3.06E-02	1.36E+00	4.70E+00	1.10E-01	5.08E+00	2.67E-01
CONM-800 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	3.16E+02	1.48E+00	NA	NA	NA	NA	1.13E-04	5.26E+02	5.92E-02	1.00E+00	3.06E-02	5.04E+01	4.70E+00	1.10E-01	5.08E+00	9.93E+00
CONM-800+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.39E+01	6.54E-02	NA	NA	NA	NA	1.13E-04	2.32E+01	2.61E-03	1.00E+00	3.06E-02	2.22E+00	4.70E+00	1.10E-01	5.08E+00	4.38E-01
CONM-850 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	3.79E+01	1.78E-01	NA	NA	NA	NA	1.13E-04	6.31E+01	7.10E-03	1.00E+00	3.06E-02	6.04E+00	4.70E+00	1.10E-01	5.08E+00	1.19E+00
CONM-900 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	2.75E+01	1.29E-01	NA	NA	NA	NA	1.13E-04	4.57E+01	5.15E-03	1.00E+00	3.06E-02	4.38E+00	4.70E+00	1.10E-01	5.08E+00	8.63E-01
CONM-900+12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	6.28E+00	2.95E-02	NA	NA	NA	NA	1.13E-04	1.05E+01	1.18E-03	1.00E+00	3.06E-02	1.00E+00	4.70E+00	1.10E-01	5.08E+00	1.97E-01

TABLE C-6A: ARSENIC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 6 - CONSOLATION MINE WASTE AREA (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 0.7

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Meadow Vole (Small Herbivorous Mammal - Terrestrial)																							
CONM-950 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	3.18E+01	1.49E-01	NA	NA	NA	NA	1.13E-04	5.29E+01	5.95E-03	1.00E+00	3.06E-02	5.07E+00	4.70E+00	1.10E-01	5.08E+00	9.98E-01
CONM-Comp 1 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.39E+01	6.53E-02	NA	NA	NA	NA	1.13E-04	2.32E+01	2.61E-03	1.00E+00	3.06E-02	2.22E+00	4.70E+00	1.10E-01	5.08E+00	4.37E-01
CONM-Comp 2 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	3.64E+01	1.71E-01	NA	NA	NA	NA	1.13E-04	6.06E+01	6.82E-03	1.00E+00	3.06E-02	5.80E+00	4.70E+00	1.10E-01	5.08E+00	1.14E+00
CONM-Pile 1 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	2.92E+02	1.37E+00	NA	NA	NA	NA	1.13E-04	4.86E+02	5.47E-02	1.00E+00	3.06E-02	4.66E+01	4.70E+00	1.10E-01	5.08E+00	9.18E+00
																						Maximum HQ (Consolation Mine)	**2.05E+01**
White-Tailed Deer (Large Herbivorous Mammal - Terrestrial)																							
Reference Sites																							
SHGBG-1	1.43E+00	NA	NA	NA	NA	1.43E+00	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	2.86E-02	2.74E+01	7.84E-01	3.92E-03	1.35E+02	2.27E-05	4.70E+00	1.10E-01	3.07E+00	7.41E-06
SHGBG-2	1.43E+00	NA	NA	NA	NA	1.43E+00	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	2.86E-02	1.61E+01	4.60E-01	3.92E-03	1.35E+02	1.33E-05	4.70E+00	1.10E-01	3.07E+00	4.35E-06
Consolation Mine																						**Minimum HQ (Reference Sites)**	**4.35E-06**
CONM-000 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.85E+01	2.65E+01	NA	NA	NA	NA	2.86E-02	3.08E+01	8.83E-01	3.92E-03	1.35E+02	7.95E-04	4.70E+00	1.10E-01	3.07E+00	2.59E-04
CONM-100 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.03E+01	1.47E+01	NA	NA	NA	NA	2.86E-02	1.71E+01	4.89E-01	3.92E-03	1.35E+02	4.40E-04	4.70E+00	1.10E-01	3.07E+00	1.44E-04
CONM-100+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.59E+01	2.27E+01	NA	NA	NA	NA	2.86E-02	2.64E+01	7.56E-01	3.92E-03	1.35E+02	6.81E-04	4.70E+00	1.10E-01	3.07E+00	2.22E-04
CONM-1000 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	4.32E+01	6.19E+01	NA	NA	NA	NA	2.86E-02	7.19E+01	2.06E+00	3.92E-03	1.35E+02	1.85E-03	4.70E+00	1.10E-01	3.07E+00	6.05E-04
CONM-1000+35 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.74E+01	2.50E+01	NA	NA	NA	NA	2.86E-02	2.90E+01	8.30E-01	3.92E-03	1.35E+02	7.48E-04	4.70E+00	1.10E-01	3.07E+00	2.44E-04
CONM-150 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	2.13E+01	3.04E+01	NA	NA	NA	NA	2.86E-02	3.54E+01	1.01E+00	3.92E-03	1.35E+02	9.12E-04	4.70E+00	1.10E-01	3.07E+00	2.97E-04
CONM-200 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.98E+01	2.84E+01	NA	NA	NA	NA	2.86E-02	3.30E+01	9.45E-01	3.92E-03	1.35E+02	8.51E-04	4.70E+00	1.10E-01	3.07E+00	2.78E-04
CONM-250 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	6.54E+02	9.36E+02	NA	NA	NA	NA	2.86E-02	1.09E+03	3.11E+01	3.92E-03	1.35E+02	2.80E-02	4.70E+00	1.10E-01	3.07E+00	9.14E-03
CONM-250+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	4.41E+01	6.31E+01	NA	NA	NA	NA	2.86E-02	7.33E+01	2.10E+00	3.92E-03	1.35E+02	1.89E-03	4.70E+00	1.10E-01	3.07E+00	6.16E-04
CONM-300 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.25E+01	1.78E+01	NA	NA	NA	NA	2.86E-02	2.07E+01	5.94E-01	3.92E-03	1.35E+02	5.35E-04	4.70E+00	1.10E-01	3.07E+00	1.74E-04
CONM-300+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.59E+01	2.28E+01	NA	NA	NA	NA	2.86E-02	2.65E+01	7.59E-01	3.92E-03	1.35E+02	6.83E-04	4.70E+00	1.10E-01	3.07E+00	2.23E-04
CONM-350 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.14E+01	1.63E+01	NA	NA	NA	NA	2.86E-02	1.89E+01	5.41E-01	3.92E-03	1.35E+02	4.88E-04	4.70E+00	1.10E-01	3.07E+00	1.59E-04
CONM-350+50 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.80E+01	2.57E+01	NA	NA	NA	NA	2.86E-02	2.99E+01	8.56E-01	3.92E-03	1.35E+02	7.71E-04	4.70E+00	1.10E-01	3.07E+00	2.51E-04
CONM-400 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	2.23E+01	3.19E+01	NA	NA	NA	NA	2.86E-02	3.70E+01	1.06E+00	3.92E-03	1.35E+02	9.55E-04	4.70E+00	1.10E-01	3.07E+00	3.11E-04
CONM-400+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	6.28E+00	8.99E+00	NA	NA	NA	NA	2.86E-02	1.05E+01	2.99E-01	3.92E-03	1.35E+02	2.70E-04	4.70E+00	1.10E-01	3.07E+00	8.79E-05
CONM-450 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	2.73E+01	3.90E+01	NA	NA	NA	NA	2.86E-02	4.54E+01	1.30E+00	3.92E-03	1.35E+02	1.17E-03	4.70E+00	1.10E-01	3.07E+00	3.81E-04
CONM-450+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.79E+01	2.56E+01	NA	NA	NA	NA	2.86E-02	2.97E+01	8.50E-01	3.92E-03	1.35E+02	7.66E-04	4.70E+00	1.10E-01	3.07E+00	2.50E-04
CONM-50 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	2.73E+01	3.90E+01	NA	NA	NA	NA	2.86E-02	4.54E+01	1.30E+00	3.92E-03	1.35E+02	1.17E-03	4.70E+00	1.10E-01	3.07E+00	3.81E-04
CONM-50+50 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	2.26E+01	3.24E+01	NA	NA	NA	NA	2.86E-02	3.76E+01	1.08E+00	3.92E-03	1.35E+02	9.70E-04	4.70E+00	1.10E-01	3.07E+00	3.16E-04
CONM-500 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.31E+01	1.87E+01	NA	NA	NA	NA	2.86E-02	2.17E+01	6.22E-01	3.92E-03	1.35E+02	5.60E-04	4.70E+00	1.10E-01	3.07E+00	1.83E-04
CONM-550 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	7.80E+00	1.12E+01	NA	NA	NA	NA	2.86E-02	1.30E+01	3.72E-01	3.92E-03	1.35E+02	3.35E-04	4.70E+00	1.10E-01	3.07E+00	1.09E-04
CONM-600 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.48E+01	2.13E+01	NA	NA	NA	NA	2.86E-02	2.47E+01	7.07E-01	3.92E-03	1.35E+02	6.37E-04	4.70E+00	1.10E-01	3.07E+00	2.08E-04
CONM-600+12.5 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-650 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.30E+01	1.86E+01	NA	NA	NA	NA	2.86E-02	2.17E+01	6.20E-01	3.92E-03	1.35E+02	5.58E-04	4.70E+00	1.10E-01	3.07E+00	1.82E-04
CONM-700 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	7.20E+00	1.03E+01	NA	NA	NA	NA	2.86E-02	1.20E+01	3.43E-01	3.92E-03	1.35E+02	3.09E-04	4.70E+00	1.10E-01	3.07E+00	1.01E-04
CONM-750 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	5.56E+01	7.96E+01	NA	NA	NA	NA	2.86E-02	9.26E+01	2.65E+00	3.92E-03	1.35E+02	2.39E-03	4.70E+00	1.10E-01	3.07E+00	7.78E-04
CONM-750+6 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	8.51E+00	1.22E+01	NA	NA	NA	NA	2.86E-02	1.42E+01	4.05E-01	3.92E-03	1.35E+02	3.65E-04	4.70E+00	1.10E-01	3.07E+00	1.19E-04
CONM-800 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	3.16E+02	4.53E+02	NA	NA	NA	NA	2.86E-02	5.26E+02	1.51E+01	3.92E-03	1.35E+02	1.36E-02	4.70E+00	1.10E-01	3.07E+00	4.42E-03
CONM-800+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.39E+01	2.00E+01	NA	NA	NA	NA	2.86E-02	2.32E+01	6.64E-01	3.92E-03	1.35E+02	5.98E-04	4.70E+00	1.10E-01	3.07E+00	1.95E-04
CONM-850 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	3.79E+01	5.43E+01	NA	NA	NA	NA	2.86E-02	6.31E+01	1.81E+00	3.92E-03	1.35E+02	1.63E-03	4.70E+00	1.10E-01	3.07E+00	5.30E-04
CONM-900 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	2.75E+01	3.93E+01	NA	NA	NA	NA	2.86E-02	4.57E+01	1.31E+00	3.92E-03	1.35E+02	1.18E-03	4.70E+00	1.10E-01	3.07E+00	3.84E-04
CONM-900+12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	6.28E+00	8.99E+00	NA	NA	NA	NA	2.86E-02	1.05E+01	2.99E-01	3.92E-03	1.35E+02	2.70E-04	4.70E+00	1.10E-01	3.07E+00	8.79E-05
CONM-950 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	3.18E+01	4.55E+01	NA	NA	NA	NA	2.86E-02	5.29E+01	1.51E+00	3.92E-03	1.35E+02	1.36E-03	4.70E+00	1.10E-01	3.07E+00	4.45E-04
CONM-Comp 1 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.39E+01	1.99E+01	NA	NA	NA	NA	2.86E-02	2.32E+01	6.63E-01	3.92E-03	1.35E+02	5.97E-04	4.70E+00	1.10E-01	3.07E+00	1.95E-04
CONM-Comp 2 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	3.64E+01	5.21E+01	NA	NA	NA	NA	2.86E-02	6.06E+01	1.74E+00	3.92E-03	1.35E+02	1.56E-03	4.70E+00	1.10E-01	3.07E+00	5.10E-04
CONM-Pile 1 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	2.92E+02	4.19E+02	NA	NA	NA	NA	2.86E-02	4.86E+02	1.39E+01	3.92E-03	1.35E+02	1.25E-02	4.70E+00	1.10E-01	3.07E+00	4.09E-03
																						Maximum HQ (Consolation Mine)	**9.14E-03**

TABLE C-6A: ARSENIC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 6 - CONSOLATION MINE WASTE AREA (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 0.7

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Red Fox (Carnivorous Mammal - Terrestrial)																							
Reference Sites																							
SHGBG-1	1.72E-01	1.72E-01	4.84E-01	1.32E+01	2.27E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.74E+01	1.32E-01	5.17E-04	4.54E+00	2.74E-04	4.70E+00	1.10E-01	3.76E+00	7.29E-05
SHGBG-2	1.72E-01	1.72E-01	4.84E-01	7.77E+00	1.33E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.61E+01	7.71E-02	5.17E-04	4.54E+00	1.61E-04	4.70E+00	1.10E-01	3.76E+00	4.28E-05
Consolation Mine																					**Minimum HQ (Reference Sites)**		**4.28E-05**
CONM-000 (0-6")	1.72E-01	1.72E-01	4.84E-01	1.49E+01	2.56E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.08E+01	1.48E-01	5.17E-04	4.54E+00	3.09E-04	4.70E+00	1.10E-01	3.76E+00	8.21E-05
CONM-100 (0-6")	1.72E-01	1.72E-01	4.84E-01	8.26E+00	1.42E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.71E+01	8.20E-02	5.17E-04	4.54E+00	1.71E-04	4.70E+00	1.10E-01	3.76E+00	4.55E-05
CONM-100+25 (0-6")	1.72E-01	1.72E-01	4.84E-01	1.28E+01	2.19E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.64E+01	1.27E-01	5.17E-04	4.54E+00	2.64E-04	4.70E+00	1.10E-01	3.76E+00	7.03E-05
CONM-1000 (0-6")	1.72E-01	1.72E-01	4.84E-01	3.48E+01	5.97E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	7.19E+01	3.45E-01	5.17E-04	4.54E+00	7.20E-04	4.70E+00	1.10E-01	3.76E+00	1.91E-04
CONM-1000+35 (0-6")	1.72E-01	1.72E-01	4.84E-01	1.40E+01	2.41E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.90E+01	1.39E-01	5.17E-04	4.54E+00	2.90E-04	4.70E+00	1.10E-01	3.76E+00	7.72E-05
CONM-150 (0-6")	1.72E-01	1.72E-01	4.84E-01	1.71E+01	2.94E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.54E+01	1.70E-01	5.17E-04	4.54E+00	3.54E-04	4.70E+00	1.10E-01	3.76E+00	9.42E-05
CONM-200 (0-6")	1.72E-01	1.72E-01	4.84E-01	1.60E+01	2.74E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.30E+01	1.59E-01	5.17E-04	4.54E+00	3.30E-04	4.70E+00	1.10E-01	3.76E+00	8.79E-05
CONM-250 (0-6")	1.72E-01	1.72E-01	4.84E-01	5.26E+02	9.03E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.09E+03	5.22E+00	5.17E-04	4.54E+00	1.09E-02	4.70E+00	1.10E-01	3.76E+00	2.90E-03
CONM-250+25 (0-6")	1.72E-01	1.72E-01	4.84E-01	3.55E+01	6.08E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	7.33E+01	3.52E-01	5.17E-04	4.54E+00	7.34E-04	4.70E+00	1.10E-01	3.76E+00	1.95E-04
CONM-300 (0-6")	1.72E-01	1.72E-01	4.84E-01	1.00E+01	1.72E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.07E+01	9.96E-02	5.17E-04	4.54E+00	2.08E-04	4.70E+00	1.10E-01	3.76E+00	5.52E-05
CONM-300+25 (0-6")	1.72E-01	1.72E-01	4.84E-01	1.28E+01	2.20E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.65E+01	1.27E-01	5.17E-04	4.54E+00	2.65E-04	4.70E+00	1.10E-01	3.76E+00	7.05E-05
CONM-350 (0-6")	1.72E-01	1.72E-01	4.84E-01	9.15E+00	1.57E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.89E+01	9.08E-02	5.17E-04	4.54E+00	1.89E-04	4.70E+00	1.10E-01	3.76E+00	5.03E-05
CONM-350+50 (0-6")	1.72E-01	1.72E-01	4.84E-01	1.45E+01	2.48E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.99E+01	1.44E-01	5.17E-04	4.54E+00	2.99E-04	4.70E+00	1.10E-01	3.76E+00	7.96E-05
CONM-400 (0-6")	1.72E-01	1.72E-01	4.84E-01	1.79E+01	3.07E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.70E+01	1.78E-01	5.17E-04	4.54E+00	3.71E-04	4.70E+00	1.10E-01	3.76E+00	9.86E-05
CONM-400+25 (0-6")	1.72E-01	1.72E-01	4.84E-01	5.06E+00	8.67E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.05E+01	5.02E-02	5.17E-04	4.54E+00	1.05E-04	4.70E+00	1.10E-01	3.76E+00	2.78E-05
CONM-450 (0-6")	1.72E-01	1.72E-01	4.84E-01	2.19E+01	3.76E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.54E+01	2.18E-01	5.17E-04	4.54E+00	4.54E-04	4.70E+00	1.10E-01	3.76E+00	1.21E-04
CONM-450+25 (0-6")	1.72E-01	1.72E-01	4.84E-01	1.44E+01	2.46E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.97E+01	1.43E-01	5.17E-04	4.54E+00	2.97E-04	4.70E+00	1.10E-01	3.76E+00	7.91E-05
CONM-50 (0-6")	1.72E-01	1.72E-01	4.84E-01	2.19E+01	3.76E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.54E+01	2.18E-01	5.17E-04	4.54E+00	4.54E-04	4.70E+00	1.10E-01	3.76E+00	1.21E-04
CONM-50+50 (0-6")	1.72E-01	1.72E-01	4.84E-01	1.82E+01	3.12E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.76E+01	1.81E-01	5.17E-04	4.54E+00	3.76E-04	4.70E+00	1.10E-01	3.76E+00	1.00E-04
CONM-500 (0-6")	1.72E-01	1.72E-01	4.84E-01	1.05E+01	1.80E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.17E+01	1.04E-01	5.17E-04	4.54E+00	2.18E-04	4.70E+00	1.10E-01	3.76E+00	5.78E-05
CONM-550 (0-6")	1.72E-01	1.72E-01	4.84E-01	6.28E+00	1.08E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.30E+01	6.24E-02	5.17E-04	4.54E+00	1.30E-04	4.70E+00	1.10E-01	3.76E+00	3.46E-05
CONM-600 (0-6")	1.72E-01	1.72E-01	4.84E-01	1.19E+01	2.05E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.47E+01	1.19E-01	5.17E-04	4.54E+00	2.47E-04	4.70E+00	1.10E-01	3.76E+00	6.58E-05
CONM-600+12.5 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-650 (0-6")	1.72E-01	1.72E-01	4.84E-01	1.05E+01	1.80E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.17E+01	1.04E-01	5.17E-04	4.54E+00	2.17E-04	4.70E+00	1.10E-01	3.76E+00	5.76E-05
CONM-700 (0-6")	1.72E-01	1.72E-01	4.84E-01	5.79E+00	9.94E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.20E+01	5.75E-02	5.17E-04	4.54E+00	1.20E-04	4.70E+00	1.10E-01	3.76E+00	3.19E-05
CONM-750 (0-6")	1.72E-01	1.72E-01	4.84E-01	4.48E+01	7.68E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	9.26E+01	4.45E-01	5.17E-04	4.54E+00	9.26E-04	4.70E+00	1.10E-01	3.76E+00	2.46E-04
CONM-750+6 (0-6")																							
CONM-800 (0-6")	1.72E-01	1.72E-01	4.84E-01	2.54E+02	4.36E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.26E+02	2.53E+00	5.17E-04	4.54E+00	5.26E-03	4.70E+00	1.10E-01	3.76E+00	1.40E-03
CONM-800+25 (0-6")	1.72E-01	1.72E-01	4.84E-01	1.12E+01	1.93E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.32E+01	1.11E-01	5.17E-04	4.54E+00	2.32E-04	4.70E+00	1.10E-01	3.76E+00	6.18E-05
CONM-850 (0-6")	1.72E-01	1.72E-01	4.84E-01	3.05E+01	5.24E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	6.31E+01	3.03E-01	5.17E-04	4.54E+00	6.31E-04	4.70E+00	1.10E-01	3.76E+00	1.68E-04
CONM-900 (0-6")	1.72E-01	1.72E-01	4.84E-01	2.21E+01	3.79E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.57E+01	2.20E-01	5.17E-04	4.54E+00	4.58E-04	4.70E+00	1.10E-01	3.76E+00	1.22E-04
CONM-900+12.5 (0-6")	1.72E-01	1.72E-01	4.84E-01	5.06E+00	8.67E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.05E+01	5.02E-02	5.17E-04	4.54E+00	1.05E-04	4.70E+00	1.10E-01	3.76E+00	2.78E-05
CONM-950 (0-6")	1.72E-01	1.72E-01	4.84E-01	2.56E+01	4.39E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.29E+01	2.54E-01	5.17E-04	4.54E+00	5.29E-04	4.70E+00	1.10E-01	3.76E+00	1.41E-04
CONM-Comp 1 (0-6")	1.72E-01	1.72E-01	4.84E-01	1.12E+01	1.92E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.32E+01	1.11E-01	5.17E-04	4.54E+00	2.32E-04	4.70E+00	1.10E-01	3.76E+00	6.17E-05
CONM-Comp 2 (0-6")	1.72E-01	1.72E-01	4.84E-01	2.93E+01	5.03E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	6.06E+01	2.91E-01	5.17E-04	4.54E+00	6.07E-04	4.70E+00	1.10E-01	3.76E+00	1.61E-04
CONM-Pile 1 (0-6")	1.72E-01	1.72E-01	4.84E-01	2.35E+02	4.04E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.86E+02	2.34E+00	5.17E-04	4.54E+00	4.87E-03	4.70E+00	1.10E-01	3.76E+00	1.30E-03
																						Maximum HQ (Consolation Mine)	**2.90E-03**
Masked Shrew (Omnivorous Mammal - Terrestrial, Wetland)																							
Reference Sites																							
SHGBG-1	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	2.55E+00	6.99E+01	5.92E-01	1.10E-03	2.74E+01	3.01E-02	1.00E+00	5.50E-03	1.13E+02	4.70E+00	1.10E-01	5.63E+00	2.01E+01
SHGBG-2	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	2.55E+00	4.10E+01	3.47E-01	1.10E-03	1.61E+01	1.77E-02	1.00E+00	5.50E-03	6.63E+01	4.70E+00	1.10E-01	5.63E+00	1.18E+01
Consolation Mine																						**Minimum HQ (Reference Sites)**	**1.18E+01**
CONM-000 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	5.08E+02	4.31E+00	1.10E-03	3.08E+01	3.40E-02	1.00E+00	5.50E-03	7.89E+02	4.70E+00	1.10E-01	5.63E+00	1.40E+02
CONM-100 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	2.81E+02	2.38E+00	1.10E-03	1.71E+01	1.88E-02	1.00E+00	5.50E-03	4.37E+02	4.70E+00	1.10E-01	5.63E+00	7.77E+01
CONM-100+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	4.35E+02	3.69E+00	1.10E-03	2.64E+01	2.91E-02	1.00E+00	5.50E-03	6.75E+02	4.70E+00	1.10E-01	5.63E+00	1.20E+02
CONM-1000 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	1.19E+03	1.00E+01	1.10E-03	7.19E+01	7.92E-02	1.00E+00	5.50E-03	1.84E+03	4.70E+00	1.10E-01	5.63E+00	3.27E+02
CONM-1000+35 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	4.78E+02	4.05E+00	1.10E-03	2.90E+01	3.19E-02	1.00E+00	5.50E-03	7.42E+02	4.70E+00	1.10E-01	5.63E+00	1.32E+02
CONM-150 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	5.83E+02	4.94E+00	1.10E-03	3.54E+01	3.89E-02	1.00E+00	5.50E-03	9.05E+02	4.70E+00	1.10E-01	5.63E+00	1.61E+02
CONM-200 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	5.44E+02	4.61E+00	1.10E-03	3.30E+01	3.63E-02	1.00E+00	5.50E-03	8.45E+02	4.70E+00	1.10E-01	5.63E+00	1.50E+02
CONM-250 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	1.79E+04	1.52E+02	1.10E-03	1.09E+03	1.20E+00	1.00E+00	5.50E-03	2.78E+04	4.70E+00	1.10E-01	5.63E+00	4.95E+03
CONM-250+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	1.21E+03	1.02E+01	1.10E-03	7.33E+01	8.07E-02	1.00E+00	5.50E-03	1.88E+03	4.70E+00	1.10E-01	5.63E+00	3.33E+02

TABLE C-6A: ARSENIC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 6 - CONSOLATION MINE WASTE AREA (Continued)
Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)
calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 0.7

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Masked Shrew (Omnivorous Mammal - Terrestrial, Wetland)																							
CONM-300 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	3.42E+02	2.89E+00	1.10E-03	2.07E+01	2.28E-02	1.00E+00	5.50E-03	5.30E+02	4.70E+00	1.10E-01	5.63E+00	9.43E+01
CONM-300+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	4.37E+02	3.70E+00	1.10E-03	2.65E+01	2.92E-02	1.00E+00	5.50E-03	6.78E+02	4.70E+00	1.10E-01	5.63E+00	1.21E+02
CONM-350 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	3.12E+02	2.64E+00	1.10E-03	1.89E+01	2.08E-02	1.00E+00	5.50E-03	4.84E+02	4.70E+00	1.10E-01	5.63E+00	8.60E+01
CONM-350+50 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	4.93E+02	4.17E+00	1.10E-03	2.99E+01	3.29E-02	1.00E+00	5.50E-03	7.65E+02	4.70E+00	1.10E-01	5.63E+00	1.36E+02
CONM-400 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	6.11E+02	5.17E+00	1.10E-03	3.70E+01	4.08E-02	1.00E+00	5.50E-03	9.48E+02	4.70E+00	1.10E-01	5.63E+00	1.68E+02
CONM-400+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	1.72E+02	1.46E+00	1.10E-03	1.05E+01	1.15E-02	1.00E+00	5.50E-03	2.67E+02	4.70E+00	1.10E-01	5.63E+00	4.75E+01
CONM-450 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	7.48E+02	6.33E+00	1.10E-03	4.54E+01	4.99E-02	1.00E+00	5.50E-03	1.16E+03	4.70E+00	1.10E-01	5.63E+00	2.06E+02
CONM-450+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	4.90E+02	4.15E+00	1.10E-03	2.97E+01	3.27E-02	1.00E+00	5.50E-03	7.60E+02	4.70E+00	1.10E-01	5.63E+00	1.35E+02
CONM-50 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	7.48E+02	6.33E+00	1.10E-03	4.54E+01	4.99E-02	1.00E+00	5.50E-03	1.16E+03	4.70E+00	1.10E-01	5.63E+00	2.06E+02
CONM-50+50 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	6.20E+02	5.25E+00	1.10E-03	3.76E+01	4.14E-02	1.00E+00	5.50E-03	9.62E+02	4.70E+00	1.10E-01	5.63E+00	1.71E+02
CONM-500 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	3.58E+02	3.03E+00	1.10E-03	2.17E+01	2.39E-02	1.00E+00	5.50E-03	5.56E+02	4.70E+00	1.10E-01	5.63E+00	9.88E+01
CONM-550 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	2.14E+02	1.81E+00	1.10E-03	1.30E+01	1.43E-02	1.00E+00	5.50E-03	3.32E+02	4.70E+00	1.10E-01	5.63E+00	5.91E+01
CONM-600 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	4.07E+02	3.45E+00	1.10E-03	2.47E+01	2.72E-02	1.00E+00	5.50E-03	6.32E+02	4.70E+00	1.10E-01	5.63E+00	1.12E+02
CONM-600+12.5 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-650 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	3.57E+02	3.02E+00	1.10E-03	2.17E+01	2.38E-02	1.00E+00	5.50E-03	5.54E+02	4.70E+00	1.10E-01	5.63E+00	9.85E+01
CONM-700 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	1.97E+02	1.67E+00	1.10E-03	1.20E+01	1.32E-02	1.00E+00	5.50E-03	3.06E+02	4.70E+00	1.10E-01	5.63E+00	5.45E+01
CONM-750 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	1.53E+03	1.29E+01	1.10E-03	9.26E+01	1.02E-01	1.00E+00	5.50E-03	2.37E+03	4.70E+00	1.10E-01	5.63E+00	4.21E+02
CONM-750+6 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	2.33E+02	1.98E+00	1.10E-03	1.42E+01	1.56E-02	1.00E+00	5.50E-03	3.62E+02	4.70E+00	1.10E-01	5.63E+00	6.44E+01
CONM-800 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	8.67E+03	7.34E+01	1.10E-03	5.26E+02	5.79E-01	1.00E+00	5.50E-03	1.35E+04	4.70E+00	1.10E-01	5.63E+00	2.39E+03
CONM-800+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	3.82E+02	3.24E+00	1.10E-03	2.32E+01	2.55E-02	1.00E+00	5.50E-03	5.94E+02	4.70E+00	1.10E-01	5.63E+00	1.06E+02
CONM-850 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	1.04E+03	8.81E+00	1.10E-03	6.31E+01	6.95E-02	1.00E+00	5.50E-03	1.61E+03	4.70E+00	1.10E-01	5.63E+00	2.87E+02
CONM-900 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	7.54E+02	6.38E+00	1.10E-03	4.57E+01	5.03E-02	1.00E+00	5.50E-03	1.17E+03	4.70E+00	1.10E-01	5.63E+00	2.08E+02
CONM-900+12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	1.72E+02	1.46E+00	1.10E-03	1.05E+01	1.15E-02	1.00E+00	5.50E-03	2.67E+02	4.70E+00	1.10E-01	5.63E+00	4.75E+01
CONM-950 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	8.72E+02	7.39E+00	1.10E-03	5.29E+01	5.82E-02	1.00E+00	5.50E-03	1.35E+03	4.70E+00	1.10E-01	5.63E+00	2.41E+02
CONM-Comp 1 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	3.82E+02	3.23E+00	1.10E-03	2.32E+01	2.55E-02	1.00E+00	5.50E-03	5.93E+02	4.70E+00	1.10E-01	5.63E+00	1.05E+02
CONM-Comp 2 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	9.99E+02	8.46E+00	1.10E-03	6.06E+01	6.67E-02	1.00E+00	5.50E-03	1.55E+03	4.70E+00	1.10E-01	5.63E+00	2.76E+02
CONM-Pile 1 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	8.02E+03	6.79E+01	1.10E-03	4.86E+02	5.36E-01	1.00E+00	5.50E-03	1.24E+04	4.70E+00	1.10E-01	5.63E+00	2.21E+03
																						Maximum HQ (Consolation Mine)	**4.95E+03**

Notes

1 See Tables 3-1 through 3-13 for ingestion rates, foraging ranges used to calculate the SUF, and body weights.
2 BAFs were calculated by dividing site-collected tissue by collocated soil concentrations (BAFs are in dry weight). The maximum BAF calculated from the Beartrap Creek and Blackfoot River transects was used for site dose calculations. The maximum BAF from the terrestrial reference site was used for reference site dose calculations.
3 The mammal, plant, and invertebrate concentrations were calculated by multiplying the soil concentration by the BAF to generate a tissue concentration (see note 2).
4 Mammal, plant, and invertebrate daily doses were calculated by multiplying the ingestion rate (see note 1) by the tissue concentration (see note 3).
5 Soil concentration from 0 to 6 inches below ground surface at point ID as measured by XRF 10. Doses were not calculated for detected and non-detected soil concentrations measured below the minimum reference site concentration, as indicated by BB. For results that were measured at less than the detection limit, doses were calculated using half of the detection limit.
6 Soil daily dose was calculated by multiplying the soil ingestion rate (see note 1) by soil concentration (see note 5).
7 Total daily dose is calculated using the following equation: total daily dose = ([mammal daily dose (if applicable) + plant daily dose (if applicable) + invertebrate daily dose (if applicable) + soil daily dose]*SUF)/receptor species body weight.
8 The TRVs used in this risk assessment represent a mid-range effects level. The derivation of TRVs is described in Navy (1998).
9 Allometrically adjusted TRVs for birds were calculated using the following equation: receptor species TRV = (test species TRV) x (test species body weight / receptor species body weight) $^{(1-1.2)}$.
10 Allometrically adjusted TRVs for mammals were calculated using the following equation: receptor species TRV = (test species TRV) x (test species body weight / receptor species body weight) $^{(1-0.94)}$.
11 HQs were calculated using the following equation: HQ = total daily dose/allometrically adjusted TRV.
12 Highlighted cells indicate an HQ greater than 1.0.

BAF	Bioaccumulation Factor	mg/day	Milligram per day
BB	Below minimum background reference site concentration	mg/kg	Milligram per kilogram
EE/CA	Engineering Evaluation/Cost Analysis	NA	Not applicable
EU	Exposure Unit	Navy	Department of the Navy
HQ	Hazard quotient	SUF	Site use factor
ID	Identification	TRV	Toxicity reference value
kg	Kilogram	XRF	X-ray fluorescence
kg/day	Kilogram per day	XRF 10	XRF measurements recorded following drying and seiving through a #10-mesh screen

Sources: Department of the Navy. 1998. "Development of Toxicity Reference Values for Conducting Ecological Risk Assessments at Naval Facilities in California, Interim Final." Prepared by Naval Facilities Engineering Command, Engineering Field Activity West (EFA West). San Bruno, California.

TABLE C-6B: CADMIUM DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 6 - CONSOLATION MINE WASTE AREA
Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)
calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 0.7

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Mourning Dove (Herbivorous Birds - Terrestrial)																							
Reference Sites																							
SHGBG-1	5.76E-03	NA	NA	NA	NA	5.76E-03	1.26E+00	4.17E+00	2.40E-02	NA	NA	NA	NA	5.36E-04	3.32E+00	1.78E-03	2.70E-03	1.09E-01	6.39E-04	1.00E+00	1.13E+00	6.27E-01	1.02E-03
SHGBG-2	5.76E-03	NA	NA	NA	NA	5.76E-03	1.26E+00	3.09E+00	1.78E-02	NA	NA	NA	NA	5.36E-04	2.46E+00	1.32E-03	2.70E-03	1.09E-01	4.73E-04	1.00E+00	1.13E+00	6.27E-01	7.55E-04
Consolation Mine																						**Minimum HQ (Reference Sites)**	**7.55E-04**
CONM-000 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CONM-100 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CONM-100+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CONM-1000 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CONM-1000+35 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CONM-150 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CONM-200 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CONM-250 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-250+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.59E+00	5.08E+00	2.93E-02	NA	NA	NA	NA	5.36E-04	3.20E+00	1.71E-03	2.70E-03	1.09E-01	7.67E-04	1.00E+00	1.13E+00	6.27E-01	1.22E-03
CONM-300 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CONM-300+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CONM-350 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CONM-350+50 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CONM-400 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CONM-400+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-450 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CONM-450+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CONM-50 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CONM-50+50 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-500 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CONM-550 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CONM-600 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CONM-600+12.5 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-650 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CONM-700 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-750 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.59E+00	1.07E+01	6.15E-02	NA	NA	NA	NA	5.36E-04	6.72E+00	3.60E-03	2.70E-03	1.09E-01	1.61E-03	1.00E+00	1.13E+00	6.27E-01	2.57E-03
CONM-750+6 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-800 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CONM-800+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CONM-850 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CONM-900 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CONM-900+12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CONM-950 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CONM-Comp 1 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-Comp 2 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.59E+00	5.37E+00	3.09E-02	NA	NA	NA	NA	5.36E-04	3.38E+00	1.81E-03	2.70E-03	1.09E-01	8.10E-04	1.00E+00	1.13E+00	6.27E-01	1.29E-03
CONM-Pile 1 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
																						Maximum HQ (Consolation Mine)	**2.57E-03**
Red-Tailed Hawk (Carnivorous Birds - Terrestrial)																							
Reference Sites																							
SHGBG-1	9.00E-02	9.00E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.32E+00	1.70E-02	1.00E-03	1.13E+00	1.51E-05	1.00E+00	1.13E+00	1.00E+00	1.51E-05
SHGBG-2	9.00E-02	9.00E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.46E+00	1.26E-02	1.00E-03	1.13E+00	1.12E-05	1.00E+00	1.13E+00	1.00E+00	1.12E-05
Consolation Mine																						**Minimum HQ (Reference Sites)**	**1.12E-05**
CONM-000 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CONM-100 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CONM-100+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CONM-1000 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CONM-1000+35 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CONM-150 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CONM-200 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CONM-250 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-250+25 (0-6")	9.00E-02	9.00E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	6.72E+00	3.45E-02	1.00E-03	1.13E+00	3.05E-05	1.00E+00	1.13E+00	1.00E+00	3.05E-05

TABLE C-6B: CADMIUM DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 6 - CONSOLATION MINE WASTE AREA (Continued)
Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)
calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **0.7**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Red-Tailed Hawk (Carnivorous Birds - Terrestrial)																							
CONM-300 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CONM-300+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CONM-350 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CONM-350+50 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CONM-400 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CONM-400+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-450 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CONM-450+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CONM-50 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CONM-50+50 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-500 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CONM-550 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CONM-600 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CONM-600+12.5 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-650 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CONM-700 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-750 (0-6")																							
CONM-750+6 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-800 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CONM-800+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CONM-850 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CONM-900 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CONM-900+12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CONM-950 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CONM-Comp 1 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-Comp 2 (0-6")	9.00E-02	9.00E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.38E+00	1.73E-02	1.00E-03	1.13E+00	1.54E-05	1.00E+00	1.13E+00	1.00E+00	1.53E-05
CONM-Pile 1 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
																					Maximum HQ (Consolation Mine)		**3.05E-05**
American Kestrel (Insectivorous Birds - Terrestrial)																							
Reference Sites																							
SHGBG-1	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	7.00E+00	2.32E+01	3.20E-01	7.84E-04	3.32E+00	2.60E-03	2.68E-03	1.24E-01	6.95E-03	1.00E+00	1.13E+00	6.43E-01	1.08E-02
SHGBG-2	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	7.00E+00	1.72E+01	2.37E-01	7.84E-04	2.46E+00	1.93E-03	2.68E-03	1.24E-01	5.15E-03	1.00E+00	1.13E+00	6.43E-01	8.02E-03
Consolation Mine																						**Minimum HQ (Reference Sites)**	**8.02E-03**
CONM-000 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CONM-100 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CONM-100+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CONM-1000 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CONM-1000+35 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CONM-150 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CONM-200 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CONM-250 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-250+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	7.00E+00	2.24E+01	3.08E-01	7.84E-04	3.20E+00	2.51E-03	2.68E-03	1.24E-01	6.70E-03	1.00E+00	1.13E+00	6.43E-01	1.04E-02
CONM-300 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CONM-300+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CONM-350 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CONM-350+50 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CONM-400 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CONM-400+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-450 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CONM-450+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CONM-50 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CONM-50+50 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-500 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CONM-550 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CONM-600 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE

TABLE C-6B: CADMIUM DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 6 - CONSOLATION MINE WASTE AREA (Continued)
Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)
calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **0.7**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
American Kestrel (Insectivorous Birds - Terrestrial)																							
CONM-600+12.5 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-650 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CONM-700 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-750 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	7.00E+00	4.70E+01	6.47E-01	7.84E-04	6.72E+00	5.27E-03	2.68E-03	1.24E-01	1.41E-02	1.00E+00	1.13E+00	6.43E-01	2.19E-02
CONM-750+6 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-800 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CONM-800+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CONM-850 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CONM-900 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CONM-900+12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CONM-950 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CONM-Comp 1 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-Comp 2 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	7.00E+00	2.37E+01	3.26E-01	7.84E-04	3.38E+00	2.65E-03	2.68E-03	1.24E-01	7.08E-03	1.00E+00	1.13E+00	6.43E-01	1.10E-02
CONM-Pile 1 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
																					Maximum HQ (Consolation Mine)		**2.19E-02**
Meadow Vole (Small Herbivorous Mammal - Terrestrial)																							
Reference Sites																							
SHGBG-1	4.69E-03	NA	NA	NA	NA	4.69E-03	1.26E+00	4.17E+00	1.96E-02	NA	NA	NA	NA	1.13E-04	3.32E+00	3.74E-04	1.00E+00	3.06E-02	6.51E-01	2.64E+00	3.14E-02	2.64E+00	2.46E-01
SHGBG-2	4.69E-03	NA	NA	NA	NA	4.69E-03	1.26E+00	3.09E+00	1.45E-02	NA	NA	NA	NA	1.13E-04	2.46E+00	2.77E-04	1.00E+00	3.06E-02	4.83E-01	2.64E+00	3.14E-02	2.64E+00	1.83E-01
Consolation Mine																						**Minimum HQ (Reference Sites)**	**1.83E-01**
CONM-000 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CONM-100 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CONM-100+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CONM-1000 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CONM-1000+35 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CONM-150 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CONM-200 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CONM-250 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-250+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.59E+00	5.08E+00	2.38E-02	NA	NA	NA	NA	1.13E-04	3.20E+00	3.60E-04	1.00E+00	3.06E-02	7.90E-01	2.64E+00	3.14E-02	2.64E+00	2.99E-01
CONM-300 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CONM-300+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CONM-350 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CONM-350+50 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CONM-400 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CONM-400+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-450 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CONM-450+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CONM-50 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CONM-50+50 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-500 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CONM-550 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CONM-600 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CONM-600+12.5 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-650 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CONM-700 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-750 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.59E+00	1.07E+01	5.00E-02	NA	NA	NA	NA	1.13E-04	6.72E+00	7.56E-04	1.00E+00	3.06E-02	1.66E+00	2.64E+00	3.14E-02	2.64E+00	6.28E-01
CONM-750+6 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-800 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CONM-800+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CONM-850 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CONM-900 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CONM-900+12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE

TABLE C-6B: CADMIUM DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 6 - CONSOLATION MINE WASTE AREA (Continued)
Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)
calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **0.7**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Meadow Vole (Small Herbivorous Mammal - Terrestrial)																							
CONM-950 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CONM-Comp 1 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-Comp 2 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.59E+00	5.37E+00	2.52E-02	NA	NA	NA	NA	1.13E-04	3.38E+00	3.80E-04	1.00E+00	3.06E-02	8.35E-01	2.64E+00	3.14E-02	2.64E+00	3.16E-01
CONM-Pile 1 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
																						Maximum HQ (Consolation Mine)	**6.28E-01**
White-Tailed Deer (Large Herbivorous Mammal - Terrestrial)																							
Reference Sites																							
SHGBG-1	1.43E+00	NA	NA	NA	NA	1.43E+00	1.26E+00	4.17E+00	5.97E+00	NA	NA	NA	NA	2.86E-02	3.32E+00	9.51E-02	3.92E-03	1.35E+02	1.76E-04	2.64E+00	3.14E-02	1.60E+00	1.10E-04
SHGBG-2	1.43E+00	NA	NA	NA	NA	1.43E+00	1.26E+00	3.09E+00	4.42E+00	NA	NA	NA	NA	2.86E-02	2.46E+00	7.04E-02	3.92E-03	1.35E+02	1.30E-04	2.64E+00	3.14E-02	1.60E+00	8.16E-05
Consolation Mine																						**Minimum HQ (Reference Sites)**	**8.16E-05**
CONM-000 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CONM-100 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CONM-100+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CONM-1000 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CONM-1000+35 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CONM-150 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CONM-200 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CONM-250 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-250+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.59E+00	5.08E+00	7.28E+00	NA	NA	NA	NA	2.86E-02	3.20E+00	9.16E-02	3.92E-03	1.35E+02	2.14E-04	2.64E+00	3.14E-02	1.60E+00	1.34E-04
CONM-300 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CONM-300+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CONM-350 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CONM-350+50 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CONM-400 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CONM-400+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-450 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CONM-450+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CONM-50 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CONM-50+50 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-500 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CONM-550 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CONM-600 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CONM-600+12.5 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-650 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CONM-700 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-750 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.59E+00	1.07E+01	1.53E+01	NA	NA	NA	NA	2.86E-02	6.72E+00	1.92E-01	3.92E-03	1.35E+02	4.49E-04	2.64E+00	3.14E-02	1.60E+00	2.81E-04
CONM-750+6 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-800 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CONM-800+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CONM-850 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CONM-900 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CONM-900+12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CONM-950 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CONM-Comp 1 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-Comp 2 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.59E+00	5.37E+00	7.68E+00	NA	NA	NA	NA	2.86E-02	3.38E+00	9.68E-02	3.92E-03	1.35E+02	2.26E-04	2.64E+00	3.14E-02	1.60E+00	1.41E-04
CONM-Pile 1 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
																						Maximum HQ (Consolation Mine)	**2.81E-04**

TABLE C-6B: CADMIUM DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 6 - CONSOLATION MINE WASTE AREA (Continued)
Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)
calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 0.7

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Red Fox (Carnivorous Mammal - Terrestrial)																							
Reference Sites																							
SHGBG-1	1.72E-01	1.72E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.32E+00	1.59E-02	5.17E-04	4.54E+00	1.82E-06	2.64E+00	3.14E-02	1.96E+00	9.28E-07
SHGBG-2	1.72E-01	1.72E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.46E+00	1.18E-02	5.17E-04	4.54E+00	1.35E-06	2.64E+00	3.14E-02	1.96E+00	6.88E-07
Consolation Mine																						**Minimum HQ (Reference Sites)**	**6.88E-07**
CONM-000 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CONM-100 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CONM-100+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CONM-1000 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CONM-1000+35 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CONM-150 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CONM-200 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CONM-250 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-250+25 (0-6")	1.72E-01	1.72E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.20E+00	1.54E-02	5.17E-04	4.54E+00	1.75E-06	2.64E+00	3.14E-02	1.96E+00	8.95E-07
CONM-300 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CONM-300+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CONM-350 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CONM-350+50 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CONM-400 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CONM-400+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-450 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CONM-450+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CONM-50 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CONM-50+50 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-500 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CONM-550 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CONM-600 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CONM-600+12.5 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-650 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CONM-700 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-750 (0-6")	1.72E-01	1.72E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	6.72E+00	3.23E-02	5.17E-04	4.54E+00	3.68E-06	2.64E+00	3.14E-02	1.96E+00	1.88E-06
CONM-750+6 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-800 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CONM-800+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CONM-850 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CONM-900 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CONM-900+12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CONM-950 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CONM-Comp 1 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-Comp 2 (0-6")	1.72E-01	1.72E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.38E+00	1.62E-02	5.17E-04	4.54E+00	1.85E-06	2.64E+00	3.14E-02	1.96E+00	9.45E-07
CONM-Pile 1 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
																						Maximum HQ (Consolation Mine)	**1.88E-06**
Masked Shrew (Omnivorous Mammal - Terrestrial, Wetland)																							
Reference Sites																							
SHGBG-1	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	7.00E+00	2.32E+01	1.97E-01	1.10E-03	3.32E+00	3.66E-03	1.00E+00	5.50E-03	3.64E+01	2.64E+00	3.14E-02	2.93E+00	1.24E+01
SHGBG-2	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	7.00E+00	1.72E+01	1.46E-01	1.10E-03	2.46E+00	2.71E-03	1.00E+00	5.50E-03	2.70E+01	2.64E+00	3.14E-02	2.93E+00	9.21E+00
Consolation Mine																						**Minimum HQ (Reference Sites)**	**9.21E+00**
CONM-000 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CONM-100 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CONM-100+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CONM-1000 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CONM-1000+35 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CONM-150 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CONM-200 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CONM-250 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-250+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	7.00E+00	2.24E+01	1.90E-01	1.10E-03	3.20E+00	3.52E-03	1.00E+00	5.50E-03	3.51E+01	2.64E+00	3.14E-02	2.93E+00	1.20E+01

TABLE C-6B: CADMIUM DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 6 - CONSOLATION MINE WASTE AREA (Continued)
Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)
calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 0.7

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Masked Shrew (Omnivorous Mammal - Terrestrial, Wetland)																							
CONM-300 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CONM-300+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CONM-350 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CONM-350+50 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CONM-400 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CONM-400+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-450 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CONM-450+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CONM-50 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CONM-50+50 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-500 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CONM-550 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CONM-600 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CONM-600+12.5 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-650 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CONM-700 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-750 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	7.00E+00	4.70E+01	3.98E-01	1.10E-03	6.72E+00	7.40E-03	1.00E+00	5.50E-03	7.38E+01	2.64E+00	3.14E-02	2.93E+00	2.52E+01
CONM-750+6 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-800 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CONM-800+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CONM-850 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CONM-900 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CONM-900+12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CONM-950 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CONM-Comp 1 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-Comp 2 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	7.00E+00	2.37E+01	2.00E-01	1.10E-03	3.38E+00	3.72E-03	1.00E+00	5.50E-03	3.71E+01	2.64E+00	3.14E-02	2.93E+00	1.27E+01
CONM-Pile 1 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB

Maximum HQ (Consolation Mine) **2.52E+01**

Notes

1 See Tables 3-1 through 3-13 for ingestion rates, foraging ranges used to calculate the SUF, and body weights.

2 BAFs were calculated by dividing site-collected tissue by collocated soil concentrations (BAFs are in dry weight). The maximum BAF calculated from the Beartrap Creek and Blackfoot River transects was used for site dose calculations. The maximum BAF from the terrestrial reference site was used for reference site dose calculations.

3 The mammal, plant, and invertebrate concentrations were calculated by multiplying the soil concentration by the BAF to generate a tissue concentration (see note 2).

4 Mammal, plant, and invertebrate daily doses were calculated by multiplying the ingestion rate (see note 1) by the tissue concentration (see note 3).

5 Soil concentration from 0 to 6 inches below ground surface at point ID from laboratory analysis. XRF 10 data was unavailable for cadmium. Doses were not calculated for detected and non-detected soil concentrations measured below the minimum reference site concentration, as indicated by BB. For results that were measured at less than the detection limit, doses were calculated using half of the detection limit.

6 Soil daily dose was calculated by multiplying the soil ingestion rate (see note 1) by soil concentration (see note 5).

7 Total daily dose is calculated using the following equation: total daily dose = ([mammal daily dose (if applicable) + plant daily dose (if applicable) + invertebrate daily dose (if applicable) + soil daily dose]*SUF)/receptor species body weight.

8 The TRVs used in this risk assessment represent a mid-range effects level. The derivation of TRVs is described in Navy (1998) and DTSC (2009).

9 Allometrically adjusted TRVs for birds were calculated using the following equation: receptor species TRV = (test species TRV) x (test species body weight / receptor species body weight)$^{(1-1.2)}$.

10 Allometrically adjusted TRVs for mammals were calculated using the following equation: receptor species TRV = (test species TRV) x (test species body weight / receptor species body weight)$^{(1-0.94)}$.

11 HQs were calculated using the following equation: HQ = total daily dose/allometrically adjusted TRV.

12 Highlighted cells indicate an HQ greater than 1.0.

BAF	Bioaccumulation Factor	mg/day	Milligram per day
BB	Below minimum background reference site concentration	mg/kg	Milligram per kilogram
DTSC	California Department of Toxic Substances Control	NA	Not applicable
EE/CA	Engineering Evaluation/Cost Analysis	Navy	Department of the Navy
EU	Exposure Unit	NE	Not evaluated (no data for that point ID)
HQ	Hazard quotient	SUF	Site use factor
ID	Identification	TRV	Toxicity reference value
kg	Kilogram	XRF	X-ray fluorescence
kg/day	Kilogram per day	XRF 10	XRF measurements recorded following drying and seiving through a #10-mesh screen

Sources:

DTSC. 2009. HERD Ecological Risk Assessment Note 6. February. Available online at: http://www.dtsc.ca.gov/AssessingRisk/upload/CdEconote_Final.pdf.

Department of the Navy. 1998. "Development of Toxicity Reference Values for Conducting Ecological Risk Assessments at Naval Facilities in California, Interim Final." Prepared by Naval Facilities Engineering Command, Engineering Field Activity West (EFA West). San Bruno, California.

TABLE C-6C: COPPER DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 6 - CONSOLATION MINE WASTE AREA

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **0.7**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Mourning Dove (Herbivorous Birds - Terrestrial)																							
Reference Sites																							
SHGBG-1	5.76E-03	NA	NA	NA	NA	5.76E-03	7.79E-01	3.08E+01	1.77E-01	NA	NA	NA	NA	5.36E-04	3.96E+01	2.12E-02	2.70E-03	1.09E-01	4.92E-03	5.23E+01	4.09E-01	4.01E+01	1.23E-04
SHGBG-2	5.76E-03	NA	NA	NA	NA	5.76E-03	7.79E-01	4.57E+01	2.63E-01	NA	NA	NA	NA	5.36E-04	5.86E+01	3.14E-02	2.70E-03	1.09E-01	7.29E-03	5.23E+01	4.09E-01	4.01E+01	1.82E-04
Consolation Mine																						**Minimum HQ (Reference Sites)**	**1.23E-04**
CONM-000 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	4.59E+01	2.65E-01	NA	NA	NA	NA	5.36E-04	4.06E+01	2.17E-02	2.70E-03	1.09E-01	7.09E-03	5.23E+01	4.09E-01	4.01E+01	1.77E-04
CONM-100 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	1.60E+02	9.23E-01	NA	NA	NA	NA	5.36E-04	1.42E+02	7.58E-02	2.70E-03	1.09E-01	2.47E-02	5.23E+01	4.09E-01	4.01E+01	6.16E-04
CONM-100+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	5.77E+01	3.33E-01	NA	NA	NA	NA	5.36E-04	5.10E+01	2.73E-02	2.70E-03	1.09E-01	8.91E-03	5.23E+01	4.09E-01	4.01E+01	2.22E-04
CONM-1000 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	2.12E+02	1.22E+00	NA	NA	NA	NA	5.36E-04	1.87E+02	1.00E-01	2.70E-03	1.09E-01	3.26E-02	5.23E+01	4.09E-01	4.01E+01	8.13E-04
CONM-1000+35 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	2.64E+02	1.52E+00	NA	NA	NA	NA	5.36E-04	2.33E+02	1.25E-01	2.70E-03	1.09E-01	4.07E-02	5.23E+01	4.09E-01	4.01E+01	1.01E-03
CONM-150 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	6.56E+01	3.78E-01	NA	NA	NA	NA	5.36E-04	5.80E+01	3.11E-02	2.70E-03	1.09E-01	1.01E-02	5.23E+01	4.09E-01	4.01E+01	2.52E-04
CONM-200 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	4.74E+01	2.73E-01	NA	NA	NA	NA	5.36E-04	4.19E+01	2.25E-02	2.70E-03	1.09E-01	7.32E-03	5.23E+01	4.09E-01	4.01E+01	1.82E-04
CONM-250 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	3.60E+02	2.08E+00	NA	NA	NA	NA	5.36E-04	3.18E+02	1.71E-01	2.70E-03	1.09E-01	5.56E-02	5.23E+01	4.09E-01	4.01E+01	1.39E-03
CONM-250+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	2.01E+02	1.16E+00	NA	NA	NA	NA	5.36E-04	1.78E+02	9.54E-02	2.70E-03	1.09E-01	3.11E-02	5.23E+01	4.09E-01	4.01E+01	7.75E-04
CONM-300 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	1.46E+02	8.43E-01	NA	NA	NA	NA	5.36E-04	1.29E+02	6.93E-02	2.70E-03	1.09E-01	2.26E-02	5.23E+01	4.09E-01	4.01E+01	5.63E-04
CONM-300+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-350 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	2.45E+02	1.41E+00	NA	NA	NA	NA	5.36E-04	2.17E+02	1.16E-01	2.70E-03	1.09E-01	3.79E-02	5.23E+01	4.09E-01	4.01E+01	9.44E-04
CONM-350+50 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	6.90E+01	3.98E-01	NA	NA	NA	NA	5.36E-04	6.10E+01	3.27E-02	2.70E-03	1.09E-01	1.07E-02	5.23E+01	4.09E-01	4.01E+01	2.65E-04
CONM-400 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	1.64E+02	9.46E-01	NA	NA	NA	NA	5.36E-04	1.45E+02	7.78E-02	2.70E-03	1.09E-01	2.53E-02	5.23E+01	4.09E-01	4.01E+01	6.31E-04
CONM-400+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	7.24E+01	4.17E-01	NA	NA	NA	NA	5.36E-04	6.40E+01	3.43E-02	2.70E-03	1.09E-01	1.12E-02	5.23E+01	4.09E-01	4.01E+01	2.79E-04
CONM-450 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	1.23E+02	7.10E-01	NA	NA	NA	NA	5.36E-04	1.09E+02	5.84E-02	2.70E-03	1.09E-01	1.90E-02	5.23E+01	4.09E-01	4.01E+01	4.74E-04
CONM-450+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	8.83E+01	5.09E-01	NA	NA	NA	NA	5.36E-04	7.80E+01	4.18E-02	2.70E-03	1.09E-01	1.36E-02	5.23E+01	4.09E-01	4.01E+01	3.39E-04
CONM-50 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	2.30E+02	1.32E+00	NA	NA	NA	NA	5.36E-04	2.03E+02	1.09E-01	2.70E-03	1.09E-01	3.54E-02	5.23E+01	4.09E-01	4.01E+01	8.83E-04
CONM-50+50 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	1.05E+02	6.06E-01	NA	NA	NA	NA	5.36E-04	9.30E+01	4.98E-02	2.70E-03	1.09E-01	1.62E-02	5.23E+01	4.09E-01	4.01E+01	4.05E-04
CONM-500 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-550 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	6.56E+01	3.78E-01	NA	NA	NA	NA	5.36E-04	5.80E+01	3.11E-02	2.70E-03	1.09E-01	1.01E-02	5.23E+01	4.09E-01	4.01E+01	2.52E-04
CONM-600 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	2.51E+02	1.45E+00	NA	NA	NA	NA	5.36E-04	2.22E+02	1.19E-01	2.70E-03	1.09E-01	3.87E-02	5.23E+01	4.09E-01	4.01E+01	9.65E-04
CONM-600+12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	7.58E+01	4.37E-01	NA	NA	NA	NA	5.36E-04	6.70E+01	3.59E-02	2.70E-03	1.09E-01	1.17E-02	5.23E+01	4.09E-01	4.01E+01	2.92E-04
CONM-650 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	4.98E+01	2.87E-01	NA	NA	NA	NA	5.36E-04	4.40E+01	2.36E-02	2.70E-03	1.09E-01	7.68E-03	5.23E+01	4.09E-01	4.01E+01	1.91E-04
CONM-700 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	8.76E+01	5.05E-01	NA	NA	NA	NA	5.36E-04	7.74E+01	4.15E-02	2.70E-03	1.09E-01	1.35E-02	5.23E+01	4.09E-01	4.01E+01	3.37E-04
CONM-750 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	3.57E+02	2.06E+00	NA	NA	NA	NA	5.36E-04	3.15E+02	1.69E-01	2.70E-03	1.09E-01	5.51E-02	5.23E+01	4.09E-01	4.01E+01	1.37E-03
CONM-750+6 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CONM-800 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	1.17E+02	6.76E-01	NA	NA	NA	NA	5.36E-04	1.04E+02	5.56E-02	2.70E-03	1.09E-01	1.81E-02	5.23E+01	4.09E-01	4.01E+01	4.51E-04
CONM-800+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	1.14E+02	6.59E-01	NA	NA	NA	NA	5.36E-04	1.01E+02	5.41E-02	2.70E-03	1.09E-01	1.76E-02	5.23E+01	4.09E-01	4.01E+01	4.40E-04
CONM-850 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	3.36E+02	1.94E+00	NA	NA	NA	NA	5.36E-04	2.97E+02	1.59E-01	2.70E-03	1.09E-01	5.19E-02	5.23E+01	4.09E-01	4.01E+01	1.29E-03
CONM-900 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	2.65E+02	1.53E+00	NA	NA	NA	NA	5.36E-04	2.34E+02	1.25E-01	2.70E-03	1.09E-01	4.09E-02	5.23E+01	4.09E-01	4.01E+01	1.02E-03
CONM-900+12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	1.65E+02	9.52E-01	NA	NA	NA	NA	5.36E-04	1.46E+02	7.82E-02	2.70E-03	1.09E-01	2.55E-02	5.23E+01	4.09E-01	4.01E+01	6.35E-04
CONM-950 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	1.86E+02	1.07E+00	NA	NA	NA	NA	5.36E-04	1.64E+02	8.81E-02	2.70E-03	1.09E-01	2.87E-02	5.23E+01	4.09E-01	4.01E+01	7.16E-04
CONM-Comp 1 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	2.45E+02	1.41E+00	NA	NA	NA	NA	5.36E-04	2.17E+02	1.16E-01	2.70E-03	1.09E-01	3.79E-02	5.23E+01	4.09E-01	4.01E+01	9.43E-04
CONM-Comp 2 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	1.53E+02	8.82E-01	NA	NA	NA	NA	5.36E-04	1.35E+02	7.25E-02	2.70E-03	1.09E-01	2.36E-02	5.23E+01	4.09E-01	4.01E+01	5.89E-04
CONM-Pile 1 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	3.13E+02	1.80E+00	NA	NA	NA	NA	5.36E-04	2.76E+02	1.48E-01	2.70E-03	1.09E-01	4.83E-02	5.23E+01	4.09E-01	4.01E+01	1.20E-03
																						Maximum HQ (Consolation Mine)	**1.39E-03**
Red-Tailed Hawk (Carnivorous Birds - Terrestrial)																							
Reference Sites																							
SHGBG-1	9.00E-02	9.00E-02	6.61E-01	2.61E+01	2.35E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.96E+01	2.03E-01	1.00E-03	1.13E+00	2.26E-03	5.23E+01	4.09E-01	6.41E+01	3.53E-05
SHGBG-2	9.00E-02	9.00E-02	6.61E-01	3.87E+01	3.48E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.86E+01	3.01E-01	1.00E-03	1.13E+00	3.35E-03	5.23E+01	4.09E-01	6.41E+01	5.23E-05
Consolation Mine																						**Minimum HQ (Reference Sites)**	**3.53E-05**
CONM-000 (0-6")	9.00E-02	9.00E-02	1.01E+00	4.10E+01	3.69E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.06E+01	2.08E-01	1.00E-03	1.13E+00	3.45E-03	5.23E+01	4.09E-01	6.41E+01	5.39E-05
CONM-100 (0-6")	9.00E-02	9.00E-02	1.01E+00	1.43E+02	1.29E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.42E+02	7.26E-01	1.00E-03	1.13E+00	1.20E-02	5.23E+01	4.09E-01	6.41E+01	1.88E-04
CONM-100+25 (0-6")	9.00E-02	9.00E-02	1.01E+00	5.15E+01	4.64E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.10E+01	2.62E-01	1.00E-03	1.13E+00	4.34E-03	5.23E+01	4.09E-01	6.41E+01	6.77E-05
CONM-1000 (0-6")	9.00E-02	9.00E-02	1.01E+00	1.89E+02	1.70E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.87E+02	9.58E-01	1.00E-03	1.13E+00	1.59E-02	5.23E+01	4.09E-01	6.41E+01	2.48E-04
CONM-1000+35 (0-6")	9.00E-02	9.00E-02	1.01E+00	2.35E+02	2.12E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.33E+02	1.19E+00	1.00E-03	1.13E+00	1.98E-02	5.23E+01	4.09E-01	6.41E+01	3.09E-04
CONM-150 (0-6")	9.00E-02	9.00E-02	1.01E+00	5.86E+01	5.27E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.80E+01	2.97E-01	1.00E-03	1.13E+00	4.93E-03	5.23E+01	4.09E-01	6.41E+01	7.69E-05
CONM-200 (0-6")	9.00E-02	9.00E-02	1.01E+00	4.24E+01	3.81E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.19E+01	2.15E-01	1.00E-03	1.13E+00	3.57E-03	5.23E+01	4.09E-01	6.41E+01	5.57E-05
CONM-250 (0-6")	9.00E-02	9.00E-02	1.01E+00	3.22E+02	2.89E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.18E+02	1.63E+00	1.00E-03	1.13E+00	2.71E-02	5.23E+01	4.09E-01	6.41E+01	4.23E-04
CONM-250+25 (0-6")	9.00E-02	9.00E-02	1.01E+00	1.80E+02	1.62E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.78E+02	9.13E-01	1.00E-03	1.13E+00	1.51E-02	5.23E+01	4.09E-01	6.41E+01	2.36E-04

TABLE C-6C: COPPER DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 6 - CONSOLATION MINE WASTE AREA (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 0.7

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Red-Tailed Hawk (Carnivorous Birds - Terrestrial)																							
CONM-300 (0-6")	9.00E-02	9.00E-02	1.01E+00	1.31E+02	1.18E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.29E+02	6.63E-01	1.00E-03	1.13E+00	1.10E-02	5.23E+01	4.09E-01	6.41E+01	1.72E-04
CONM-300+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-350 (0-6")	9.00E-02	9.00E-02	1.01E+00	2.19E+02	1.97E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.17E+02	1.11E+00	1.00E-03	1.13E+00	1.84E-02	5.23E+01	4.09E-01	6.41E+01	2.88E-04
CONM-350+50 (0-6")	9.00E-02	9.00E-02	1.01E+00	6.16E+01	5.54E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	6.10E+01	3.13E-01	1.00E-03	1.13E+00	5.19E-03	5.23E+01	4.09E-01	6.41E+01	8.10E-05
CONM-400 (0-6")	9.00E-02	9.00E-02	1.01E+00	1.47E+02	1.32E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.45E+02	7.44E-01	1.00E-03	1.13E+00	1.23E-02	5.23E+01	4.09E-01	6.41E+01	1.93E-04
CONM-400+25 (0-6")	9.00E-02	9.00E-02	1.01E+00	6.47E+01	5.82E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	6.40E+01	3.28E-01	1.00E-03	1.13E+00	5.44E-03	5.23E+01	4.09E-01	6.41E+01	8.49E-05
CONM-450 (0-6")	9.00E-02	9.00E-02	1.01E+00	1.10E+02	9.90E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.09E+02	5.58E-01	1.00E-03	1.13E+00	9.26E-03	5.23E+01	4.09E-01	6.41E+01	1.45E-04
CONM-450+25 (0-6")	9.00E-02	9.00E-02	1.01E+00	7.88E+01	7.09E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	7.80E+01	4.00E-01	1.00E-03	1.13E+00	6.63E-03	5.23E+01	4.09E-01	6.41E+01	1.04E-04
CONM-50 (0-6")	9.00E-02	9.00E-02	1.01E+00	2.05E+02	1.84E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.03E+02	1.04E+00	1.00E-03	1.13E+00	1.73E-02	5.23E+01	4.09E-01	6.41E+01	2.69E-04
CONM-50+50 (0-6")	9.00E-02	9.00E-02	1.01E+00	9.40E+01	8.45E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	9.30E+01	4.77E-01	1.00E-03	1.13E+00	7.91E-03	5.23E+01	4.09E-01	6.41E+01	1.23E-04
CONM-500 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-550 (0-6")	9.00E-02	9.00E-02	1.01E+00	5.86E+01	5.27E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.80E+01	2.97E-01	1.00E-03	1.13E+00	4.93E-03	5.23E+01	4.09E-01	6.41E+01	7.70E-05
CONM-600 (0-6")	9.00E-02	9.00E-02	1.01E+00	2.24E+02	2.01E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.22E+02	1.14E+00	1.00E-03	1.13E+00	1.89E-02	5.23E+01	4.09E-01	6.41E+01	2.94E-04
CONM-600+12.5 (0-6")	9.00E-02	9.00E-02	1.01E+00	6.77E+01	6.09E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	6.70E+01	3.44E-01	1.00E-03	1.13E+00	5.70E-03	5.23E+01	4.09E-01	6.41E+01	8.89E-05
CONM-650 (0-6")	9.00E-02	9.00E-02	1.01E+00	4.44E+01	4.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.40E+01	2.26E-01	1.00E-03	1.13E+00	3.74E-03	5.23E+01	4.09E-01	6.41E+01	5.84E-05
CONM-700 (0-6")	9.00E-02	9.00E-02	1.01E+00	7.82E+01	7.04E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	7.74E+01	3.97E-01	1.00E-03	1.13E+00	6.59E-03	5.23E+01	4.09E-01	6.41E+01	1.03E-04
CONM-750 (0-6")	9.00E-02	9.00E-02	1.01E+00	3.19E+02	2.87E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.15E+02	1.62E+00	1.00E-03	1.13E+00	2.68E-02	5.23E+01	4.09E-01	6.41E+01	4.19E-04
CONM-750+6 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CONM-800 (0-6")	9.00E-02	9.00E-02	1.01E+00	1.05E+02	9.43E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.04E+02	5.32E-01	1.00E-03	1.13E+00	8.82E-03	5.23E+01	4.09E-01	6.41E+01	1.38E-04
CONM-800+25 (0-6")	9.00E-02	9.00E-02	1.01E+00	1.02E+02	9.18E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.01E+02	5.18E-01	1.00E-03	1.13E+00	8.59E-03	5.23E+01	4.09E-01	6.41E+01	1.34E-04
CONM-850 (0-6")	9.00E-02	9.00E-02	1.01E+00	3.00E+02	2.70E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.97E+02	1.52E+00	1.00E-03	1.13E+00	2.53E-02	5.23E+01	4.09E-01	6.41E+01	3.95E-04
CONM-900 (0-6")	9.00E-02	9.00E-02	1.01E+00	2.37E+02	2.13E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.34E+02	1.20E+00	1.00E-03	1.13E+00	1.99E-02	5.23E+01	4.09E-01	6.41E+01	3.11E-04
CONM-900+12.5 (0-6")	9.00E-02	9.00E-02	1.01E+00	1.48E+02	1.33E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.46E+02	7.49E-01	1.00E-03	1.13E+00	1.24E-02	5.23E+01	4.09E-01	6.41E+01	1.94E-04
CONM-950 (0-6")	9.00E-02	9.00E-02	1.01E+00	1.66E+02	1.49E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.64E+02	8.43E-01	1.00E-03	1.13E+00	1.40E-02	5.23E+01	4.09E-01	6.41E+01	2.18E-04
CONM-Comp 1 (0-6")	9.00E-02	9.00E-02	1.01E+00	2.19E+02	1.97E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.17E+02	1.11E+00	1.00E-03	1.13E+00	1.84E-02	5.23E+01	4.09E-01	6.41E+01	2.88E-04
CONM-Comp 2 (0-6")	9.00E-02	9.00E-02	1.01E+00	1.37E+02	1.23E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.35E+02	6.93E-01	1.00E-03	1.13E+00	1.15E-02	5.23E+01	4.09E-01	6.41E+01	1.80E-04
CONM-Pile 1 (0-6")	9.00E-02	9.00E-02	1.01E+00	2.79E+02	2.51E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.76E+02	1.42E+00	1.00E-03	1.13E+00	2.35E-02	5.23E+01	4.09E-01	6.41E+01	3.67E-04
																						Maximum HQ (Consolation Mine)	**4.23E-04**
American Kestrel (Insectivorous Birds - Terrestrial)																							
Reference Sites																							
SHGBG-1	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	3.70E+00	1.47E+02	2.02E+00	7.84E-04	3.96E+01	3.10E-02	2.68E-03	1.24E-01	4.42E-02	5.23E+01	4.09E-01	4.12E+01	1.07E-03
SHGBG-2	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	3.70E+00	2.17E+02	2.99E+00	7.84E-04	5.86E+01	4.60E-02	2.68E-03	1.24E-01	6.55E-02	5.23E+01	4.09E-01	4.12E+01	1.59E-03
Consolation Mine																						**Minimum HQ (Reference Sites)**	**1.07E-03**
CONM-000 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	1.97E+02	2.71E+00	7.84E-04	4.06E+01	3.18E-02	2.68E-03	1.24E-01	5.91E-02	5.23E+01	4.09E-01	4.12E+01	1.44E-03
CONM-100 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	6.86E+02	9.44E+00	7.84E-04	1.42E+02	1.11E-01	2.68E-03	1.24E-01	2.06E-01	5.23E+01	4.09E-01	4.12E+01	5.01E-03
CONM-100+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	2.47E+02	3.40E+00	7.84E-04	5.10E+01	4.00E-02	2.68E-03	1.24E-01	7.43E-02	5.23E+01	4.09E-01	4.12E+01	1.81E-03
CONM-1000 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	9.07E+02	1.25E+01	7.84E-04	1.87E+02	1.47E-01	2.68E-03	1.24E-01	2.72E-01	5.23E+01	4.09E-01	4.12E+01	6.62E-03
CONM-1000+35 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	1.13E+03	1.56E+01	7.84E-04	2.33E+02	1.83E-01	2.68E-03	1.24E-01	3.39E-01	5.23E+01	4.09E-01	4.12E+01	8.25E-03
CONM-150 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	2.81E+02	3.87E+00	7.84E-04	5.80E+01	4.55E-02	2.68E-03	1.24E-01	8.45E-02	5.23E+01	4.09E-01	4.12E+01	2.05E-03
CONM-200 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	2.03E+02	2.80E+00	7.84E-04	4.19E+01	3.29E-02	2.68E-03	1.24E-01	6.11E-02	5.23E+01	4.09E-01	4.12E+01	1.48E-03
CONM-250 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	1.54E+03	2.13E+01	7.84E-04	3.18E+02	2.50E-01	2.68E-03	1.24E-01	4.64E-01	5.23E+01	4.09E-01	4.12E+01	1.13E-02
CONM-250+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	8.63E+02	1.19E+01	7.84E-04	1.78E+02	1.40E-01	2.68E-03	1.24E-01	2.59E-01	5.23E+01	4.09E-01	4.12E+01	6.30E-03
CONM-300 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	6.27E+02	8.63E+00	7.84E-04	1.29E+02	1.01E-01	2.68E-03	1.24E-01	1.88E-01	5.23E+01	4.09E-01	4.12E+01	4.58E-03
CONM-300+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-350 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	1.05E+03	1.45E+01	7.84E-04	2.17E+02	1.70E-01	2.68E-03	1.24E-01	3.16E-01	5.23E+01	4.09E-01	4.12E+01	7.68E-03
CONM-350+50 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	2.96E+02	4.07E+00	7.84E-04	6.10E+01	4.78E-02	2.68E-03	1.24E-01	8.89E-02	5.23E+01	4.09E-01	4.12E+01	2.16E-03
CONM-400 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	7.04E+02	9.69E+00	7.84E-04	1.45E+02	1.14E-01	2.68E-03	1.24E-01	2.11E-01	5.23E+01	4.09E-01	4.12E+01	5.14E-03
CONM-400+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	3.10E+02	4.27E+00	7.84E-04	6.40E+01	5.02E-02	2.68E-03	1.24E-01	9.32E-02	5.23E+01	4.09E-01	4.12E+01	2.27E-03
CONM-450 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	5.28E+02	7.27E+00	7.84E-04	1.09E+02	8.54E-02	2.68E-03	1.24E-01	1.59E-01	5.23E+01	4.09E-01	4.12E+01	3.85E-03
CONM-450+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	3.78E+02	5.21E+00	7.84E-04	7.80E+01	6.12E-02	2.68E-03	1.24E-01	1.14E-01	5.23E+01	4.09E-01	4.12E+01	2.76E-03
CONM-50 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	9.84E+02	1.35E+01	7.84E-04	2.03E+02	1.59E-01	2.68E-03	1.24E-01	2.96E-01	5.23E+01	4.09E-01	4.12E+01	7.18E-03
CONM-50+50 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	4.51E+02	6.21E+00	7.84E-04	9.30E+01	7.29E-02	2.68E-03	1.24E-01	1.35E-01	5.23E+01	4.09E-01	4.12E+01	3.29E-03
CONM-500 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-550 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	2.81E+02	3.87E+00	7.84E-04	5.80E+01	4.55E-02	2.68E-03	1.24E-01	8.45E-02	5.23E+01	4.09E-01	4.12E+01	2.05E-03
CONM-600 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	1.08E+03	1.48E+01	7.84E-04	2.22E+02	1.74E-01	2.68E-03	1.24E-01	3.23E-01	5.23E+01	4.09E-01	4.12E+01	7.85E-03

TABLE C-6C: COPPER DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 6 - CONSOLATION MINE WASTE AREA (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 0.7

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
American Kestrel (Insectivorous Birds - Terrestrial)																							
CONM-600+12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	3.25E+02	4.47E+00	7.84E-04	6.70E+01	5.26E-02	2.68E-03	1.24E-01	9.76E-02	5.23E+01	4.09E-01	4.12E+01	2.37E-03
CONM-650 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	2.13E+02	2.94E+00	7.84E-04	4.40E+01	3.45E-02	2.68E-03	1.24E-01	6.41E-02	5.23E+01	4.09E-01	4.12E+01	1.56E-03
CONM-700 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	3.76E+02	5.17E+00	7.84E-04	7.74E+01	6.07E-02	2.68E-03	1.24E-01	1.13E-01	5.23E+01	4.09E-01	4.12E+01	2.74E-03
CONM-750 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	1.53E+03	2.11E+01	7.84E-04	3.15E+02	2.47E-01	2.68E-03	1.24E-01	4.59E-01	5.23E+01	4.09E-01	4.12E+01	1.12E-02
CONM-750+6 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CONM-800 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	5.03E+02	6.92E+00	7.84E-04	1.04E+02	8.14E-02	2.68E-03	1.24E-01	1.51E-01	5.23E+01	4.09E-01	4.12E+01	3.67E-03
CONM-800+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	4.90E+02	6.74E+00	7.84E-04	1.01E+02	7.92E-02	2.68E-03	1.24E-01	1.47E-01	5.23E+01	4.09E-01	4.12E+01	3.57E-03
CONM-850 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	1.44E+03	1.98E+01	7.84E-04	2.97E+02	2.33E-01	2.68E-03	1.24E-01	4.33E-01	5.23E+01	4.09E-01	4.12E+01	1.05E-02
CONM-900 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	1.14E+03	1.56E+01	7.84E-04	2.34E+02	1.84E-01	2.68E-03	1.24E-01	3.41E-01	5.23E+01	4.09E-01	4.12E+01	8.29E-03
CONM-900+12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	7.08E+02	9.74E+00	7.84E-04	1.46E+02	1.15E-01	2.68E-03	1.24E-01	2.13E-01	5.23E+01	4.09E-01	4.12E+01	5.17E-03
CONM-950 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	7.98E+02	1.10E+01	7.84E-04	1.64E+02	1.29E-01	2.68E-03	1.24E-01	2.40E-01	5.23E+01	4.09E-01	4.12E+01	5.82E-03
CONM-Comp 1 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	1.05E+03	1.45E+01	7.84E-04	2.17E+02	1.70E-01	2.68E-03	1.24E-01	3.16E-01	5.23E+01	4.09E-01	4.12E+01	7.67E-03
CONM-Comp 2 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	6.56E+02	9.03E+00	7.84E-04	1.35E+02	1.06E-01	2.68E-03	1.24E-01	1.97E-01	5.23E+01	4.09E-01	4.12E+01	4.79E-03
CONM-Pile 1 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	1.34E+03	1.84E+01	7.84E-04	2.76E+02	2.17E-01	2.68E-03	1.24E-01	4.03E-01	5.23E+01	4.09E-01	4.12E+01	9.78E-03
																						Maximum HQ (Consolation Mine)	**1.13E-02**
Meadow Vole (Small Herbivorous Mammal - Terrestrial)																							
Reference Sites																							
SHGBG-1	4.69E-03	NA	NA	NA	NA	4.69E-03	7.79E-01	3.08E+01	1.44E-01	NA	NA	NA	NA	1.13E-04	3.96E+01	4.45E-03	1.00E+00	3.06E-02	4.87E+00	6.32E+02	2.47E-02	6.24E+02	7.80E-03
SHGBG-2	4.69E-03	NA	NA	NA	NA	4.69E-03	7.79E-01	4.57E+01	2.14E-01	NA	NA	NA	NA	1.13E-04	5.86E+01	6.60E-03	1.00E+00	3.06E-02	7.21E+00	6.32E+02	2.47E-02	6.24E+02	1.16E-02
Consolation Mine																						**Minimum HQ (Reference Sites)**	**7.80E-03**
CONM-000 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	4.59E+01	2.15E-01	NA	NA	NA	NA	1.13E-04	4.06E+01	4.57E-03	1.00E+00	3.06E-02	7.19E+00	6.32E+02	2.47E-02	6.24E+02	1.15E-02
CONM-100 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	1.60E+02	7.51E-01	NA	NA	NA	NA	1.13E-04	1.42E+02	1.59E-02	1.00E+00	3.06E-02	2.51E+01	6.32E+02	2.47E-02	6.24E+02	4.02E-02
CONM-100+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	5.77E+01	2.71E-01	NA	NA	NA	NA	1.13E-04	5.10E+01	5.74E-03	1.00E+00	3.06E-02	9.03E+00	6.32E+02	2.47E-02	6.24E+02	1.45E-02
CONM-1000 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	2.12E+02	9.92E-01	NA	NA	NA	NA	1.13E-04	1.87E+02	2.10E-02	1.00E+00	3.06E-02	3.31E+01	6.32E+02	2.47E-02	6.24E+02	5.31E-02
CONM-1000+35 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	2.64E+02	1.24E+00	NA	NA	NA	NA	1.13E-04	2.33E+02	2.62E-02	1.00E+00	3.06E-02	4.13E+01	6.32E+02	2.47E-02	6.24E+02	6.62E-02
CONM-150 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	6.56E+01	3.08E-01	NA	NA	NA	NA	1.13E-04	5.80E+01	6.52E-03	1.00E+00	3.06E-02	1.03E+01	6.32E+02	2.47E-02	6.24E+02	1.65E-02
CONM-200 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	4.74E+01	2.22E-01	NA	NA	NA	NA	1.13E-04	4.19E+01	4.72E-03	1.00E+00	3.06E-02	7.43E+00	6.32E+02	2.47E-02	6.24E+02	1.19E-02
CONM-250 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	3.60E+02	1.69E+00	NA	NA	NA	NA	1.13E-04	3.18E+02	3.58E-02	1.00E+00	3.06E-02	5.64E+01	6.32E+02	2.47E-02	6.24E+02	9.04E-02
CONM-250+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	2.01E+02	9.45E-01	NA	NA	NA	NA	1.13E-04	1.78E+02	2.00E-02	1.00E+00	3.06E-02	3.15E+01	6.32E+02	2.47E-02	6.24E+02	5.06E-02
CONM-300 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	1.46E+02	6.86E-01	NA	NA	NA	NA	1.13E-04	1.29E+02	1.46E-02	1.00E+00	3.06E-02	2.29E+01	6.32E+02	2.47E-02	6.24E+02	3.67E-02
CONM-300+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-350 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	2.45E+02	1.15E+00	NA	NA	NA	NA	1.13E-04	2.17E+02	2.44E-02	1.00E+00	3.06E-02	3.84E+01	6.32E+02	2.47E-02	6.24E+02	6.16E-02
CONM-350+50 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	6.90E+01	3.24E-01	NA	NA	NA	NA	1.13E-04	6.10E+01	6.86E-03	1.00E+00	3.06E-02	1.08E+01	6.32E+02	2.47E-02	6.24E+02	1.73E-02
CONM-400 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	1.64E+02	7.70E-01	NA	NA	NA	NA	1.13E-04	1.45E+02	1.63E-02	1.00E+00	3.06E-02	2.57E+01	6.32E+02	2.47E-02	6.24E+02	4.12E-02
CONM-400+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	7.24E+01	3.40E-01	NA	NA	NA	NA	1.13E-04	6.40E+01	7.20E-03	1.00E+00	3.06E-02	1.13E+01	6.32E+02	2.47E-02	6.24E+02	1.82E-02
CONM-450 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	1.23E+02	5.78E-01	NA	NA	NA	NA	1.13E-04	1.09E+02	1.23E-02	1.00E+00	3.06E-02	1.93E+01	6.32E+02	2.47E-02	6.24E+02	3.09E-02
CONM-450+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	8.83E+01	4.14E-01	NA	NA	NA	NA	1.13E-04	7.80E+01	8.78E-03	1.00E+00	3.06E-02	1.38E+01	6.32E+02	2.47E-02	6.24E+02	2.22E-02
CONM-50 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	2.30E+02	1.08E+00	NA	NA	NA	NA	1.13E-04	2.03E+02	2.28E-02	1.00E+00	3.06E-02	3.59E+01	6.32E+02	2.47E-02	6.24E+02	5.76E-02
CONM-50+50 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	1.05E+02	4.93E-01	NA	NA	NA	NA	1.13E-04	9.30E+01	1.05E-02	1.00E+00	3.06E-02	1.65E+01	6.32E+02	2.47E-02	6.24E+02	2.64E-02
CONM-500 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-550 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	6.56E+01	3.08E-01	NA	NA	NA	NA	1.13E-04	5.80E+01	6.53E-03	1.00E+00	3.06E-02	1.03E+01	6.32E+02	2.47E-02	6.24E+02	1.65E-02
CONM-600 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	2.51E+02	1.18E+00	NA	NA	NA	NA	1.13E-04	2.22E+02	2.49E-02	1.00E+00	3.06E-02	3.93E+01	6.32E+02	2.47E-02	6.24E+02	6.30E-02
CONM-600+12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	7.58E+01	3.56E-01	NA	NA	NA	NA	1.13E-04	6.70E+01	7.54E-03	1.00E+00	3.06E-02	1.19E+01	6.32E+02	2.47E-02	6.24E+02	1.90E-02
CONM-650 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	4.98E+01	2.33E-01	NA	NA	NA	NA	1.13E-04	4.40E+01	4.95E-03	1.00E+00	3.06E-02	7.79E+00	6.32E+02	2.47E-02	6.24E+02	1.25E-02
CONM-700 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	8.76E+01	4.11E-01	NA	NA	NA	NA	1.13E-04	7.74E+01	8.71E-03	1.00E+00	3.06E-02	1.37E+01	6.32E+02	2.47E-02	6.24E+02	2.20E-02
CONM-750 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	3.57E+02	1.67E+00	NA	NA	NA	NA	1.13E-04	3.15E+02	3.55E-02	1.00E+00	3.06E-02	5.58E+01	6.32E+02	2.47E-02	6.24E+02	8.96E-02
CONM-750+6 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CONM-800 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	1.17E+02	5.50E-01	NA	NA	NA	NA	1.13E-04	1.04E+02	1.17E-02	1.00E+00	3.06E-02	1.84E+01	6.32E+02	2.47E-02	6.24E+02	2.95E-02
CONM-800+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	1.14E+02	5.36E-01	NA	NA	NA	NA	1.13E-04	1.01E+02	1.14E-02	1.00E+00	3.06E-02	1.79E+01	6.32E+02	2.47E-02	6.24E+02	2.87E-02
CONM-850 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	3.36E+02	1.58E+00	NA	NA	NA	NA	1.13E-04	2.97E+02	3.35E-02	1.00E+00	3.06E-02	5.26E+01	6.32E+02	2.47E-02	6.24E+02	8.44E-02
CONM-900 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	2.65E+02	1.24E+00	NA	NA	NA	NA	1.13E-04	2.34E+02	2.64E-02	1.00E+00	3.06E-02	4.15E+01	6.32E+02	2.47E-02	6.24E+02	6.65E-02
CONM-900+12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	1.65E+02	7.75E-01	NA	NA	NA	NA	1.13E-04	1.46E+02	1.64E-02	1.00E+00	3.06E-02	2.59E+01	6.32E+02	2.47E-02	6.24E+02	4.15E-02

TABLE C-6C: COPPER DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 6 - CONSOLATION MINE WASTE AREA (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 0.7

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Meadow Vole (Small Herbivorous Mammal - Terrestrial)																							
CONM-950 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	1.86E+02	8.73E-01	NA	NA	NA	NA	1.13E-04	1.64E+02	1.85E-02	1.00E+00	3.06E-02	2.91E+01	6.32E+02	2.47E-02	6.24E+02	4.67E-02
CONM-Comp 1 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	2.45E+02	1.15E+00	NA	NA	NA	NA	1.13E-04	2.17E+02	2.44E-02	1.00E+00	3.06E-02	3.84E+01	6.32E+02	2.47E-02	6.24E+02	6.16E-02
CONM-Comp 2 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	1.53E+02	7.18E-01	NA	NA	NA	NA	1.13E-04	1.35E+02	1.52E-02	1.00E+00	3.06E-02	2.40E+01	6.32E+02	2.47E-02	6.24E+02	3.84E-02
CONM-Pile 1 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	3.13E+02	1.47E+00	NA	NA	NA	NA	1.13E-04	2.76E+02	3.11E-02	1.00E+00	3.06E-02	4.89E+01	6.32E+02	2.47E-02	6.24E+02	7.85E-02
																						Maximum HQ (Consolation Mine)	**9.04E-02**
White-Tailed Deer (Large Herbivorous Mammal - Terrestrial)																							
Reference Sites																							
SHGBG-1	1.43E+00	NA	NA	NA	NA	1.43E+00	7.79E-01	3.08E+01	4.41E+01	NA	NA	NA	NA	2.86E-02	3.96E+01	1.13E+00	3.92E-03	1.35E+02	1.31E-03	6.32E+02	2.47E-02	3.77E+02	3.48E-06
SHGBG-2	1.43E+00	NA	NA	NA	NA	1.43E+00	7.79E-01	4.57E+01	6.54E+01	NA	NA	NA	NA	2.86E-02	5.86E+01	1.68E+00	3.92E-03	1.35E+02	1.94E-03	6.32E+02	2.47E-02	3.77E+02	5.16E-06
Consolation Mine																						**Minimum HQ (Reference Sites)**	**3.48E-06**
CONM-000 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	4.59E+01	6.58E+01	NA	NA	NA	NA	2.86E-02	4.06E+01	1.16E+00	3.92E-03	1.35E+02	1.94E-03	6.32E+02	2.47E-02	3.77E+02	5.15E-06
CONM-100 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	1.60E+02	2.29E+02	NA	NA	NA	NA	2.86E-02	1.42E+02	4.05E+00	3.92E-03	1.35E+02	6.77E-03	6.32E+02	2.47E-02	3.77E+02	1.80E-05
CONM-100+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	5.77E+01	8.26E+01	NA	NA	NA	NA	2.86E-02	5.10E+01	1.46E+00	3.92E-03	1.35E+02	2.44E-03	6.32E+02	2.47E-02	3.77E+02	6.47E-06
CONM-1000 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	2.12E+02	3.03E+02	NA	NA	NA	NA	2.86E-02	1.87E+02	5.35E+00	3.92E-03	1.35E+02	8.94E-03	6.32E+02	2.47E-02	3.77E+02	2.37E-05
CONM-1000+35 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	2.64E+02	3.77E+02	NA	NA	NA	NA	2.86E-02	2.33E+02	6.67E+00	3.92E-03	1.35E+02	1.11E-02	6.32E+02	2.47E-02	3.77E+02	2.96E-05
CONM-150 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	6.56E+01	9.39E+01	NA	NA	NA	NA	2.86E-02	5.80E+01	1.66E+00	3.92E-03	1.35E+02	2.77E-03	6.32E+02	2.47E-02	3.77E+02	7.36E-06
CONM-200 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	4.74E+01	6.79E+01	NA	NA	NA	NA	2.86E-02	4.19E+01	1.20E+00	3.92E-03	1.35E+02	2.01E-03	6.32E+02	2.47E-02	3.77E+02	5.32E-06
CONM-250 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	3.60E+02	5.16E+02	NA	NA	NA	NA	2.86E-02	3.18E+02	9.12E+00	3.92E-03	1.35E+02	1.52E-02	6.32E+02	2.47E-02	3.77E+02	4.04E-05
CONM-250+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	2.01E+02	2.88E+02	NA	NA	NA	NA	2.86E-02	1.78E+02	5.10E+00	3.92E-03	1.35E+02	8.51E-03	6.32E+02	2.47E-02	3.77E+02	2.26E-05
CONM-300 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	1.46E+02	2.10E+02	NA	NA	NA	NA	2.86E-02	1.29E+02	3.70E+00	3.92E-03	1.35E+02	6.19E-03	6.32E+02	2.47E-02	3.77E+02	1.64E-05
CONM-300+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-350 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	2.45E+02	3.51E+02	NA	NA	NA	NA	2.86E-02	2.17E+02	6.21E+00	3.92E-03	1.35E+02	1.04E-02	6.32E+02	2.47E-02	3.77E+02	2.75E-05
CONM-350+50 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	6.90E+01	9.88E+01	NA	NA	NA	NA	2.86E-02	6.10E+01	1.75E+00	3.92E-03	1.35E+02	2.92E-03	6.32E+02	2.47E-02	3.77E+02	7.74E-06
CONM-400 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	1.64E+02	2.35E+02	NA	NA	NA	NA	2.86E-02	1.45E+02	4.15E+00	3.92E-03	1.35E+02	6.94E-03	6.32E+02	2.47E-02	3.77E+02	1.84E-05
CONM-400+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	7.24E+01	1.04E+02	NA	NA	NA	NA	2.86E-02	6.40E+01	1.83E+00	3.92E-03	1.35E+02	3.06E-03	6.32E+02	2.47E-02	3.77E+02	8.12E-06
CONM-450 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	1.23E+02	1.76E+02	NA	NA	NA	NA	2.86E-02	1.09E+02	3.12E+00	3.92E-03	1.35E+02	5.21E-03	6.32E+02	2.47E-02	3.77E+02	1.38E-05
CONM-450+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	8.83E+01	1.26E+02	NA	NA	NA	NA	2.86E-02	7.80E+01	2.23E+00	3.92E-03	1.35E+02	3.73E-03	6.32E+02	2.47E-02	3.77E+02	9.90E-06
CONM-50 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	2.30E+02	3.29E+02	NA	NA	NA	NA	2.86E-02	2.03E+02	5.81E+00	3.92E-03	1.35E+02	9.71E-03	6.32E+02	2.47E-02	3.77E+02	2.58E-05
CONM-50+50 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	1.05E+02	1.51E+02	NA	NA	NA	NA	2.86E-02	9.30E+01	2.66E+00	3.92E-03	1.35E+02	4.45E-03	6.32E+02	2.47E-02	3.77E+02	1.18E-05
CONM-500 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-550 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	6.56E+01	9.40E+01	NA	NA	NA	NA	2.86E-02	5.80E+01	1.66E+00	3.92E-03	1.35E+02	2.77E-03	6.32E+02	2.47E-02	3.77E+02	7.36E-06
CONM-600 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	2.51E+02	3.59E+02	NA	NA	NA	NA	2.86E-02	2.22E+02	6.35E+00	3.92E-03	1.35E+02	1.06E-02	6.32E+02	2.47E-02	3.77E+02	2.81E-05
CONM-600+12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	7.58E+01	1.09E+02	NA	NA	NA	NA	2.86E-02	6.70E+01	1.92E+00	3.92E-03	1.35E+02	3.20E-03	6.32E+02	2.47E-02	3.77E+02	8.50E-06
CONM-650 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	4.98E+01	7.13E+01	NA	NA	NA	NA	2.86E-02	4.40E+01	1.26E+00	3.92E-03	1.35E+02	2.10E-03	6.32E+02	2.47E-02	3.77E+02	5.58E-06
CONM-700 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	8.76E+01	1.25E+02	NA	NA	NA	NA	2.86E-02	7.74E+01	2.22E+00	3.92E-03	1.35E+02	3.70E-03	6.32E+02	2.47E-02	3.77E+02	9.83E-06
CONM-750 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	3.57E+02	5.11E+02	NA	NA	NA	NA	2.86E-02	3.15E+02	9.03E+00	3.92E-03	1.35E+02	1.51E-02	6.32E+02	2.47E-02	3.77E+02	4.00E-05
CONM-750+6 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CONM-800 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	1.17E+02	1.68E+02	NA	NA	NA	NA	2.86E-02	1.04E+02	2.97E+00	3.92E-03	1.35E+02	4.96E-03	6.32E+02	2.47E-02	3.77E+02	1.32E-05
CONM-800+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	1.14E+02	1.64E+02	NA	NA	NA	NA	2.86E-02	1.01E+02	2.89E+00	3.92E-03	1.35E+02	4.83E-03	6.32E+02	2.47E-02	3.77E+02	1.28E-05
CONM-850 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	3.36E+02	4.82E+02	NA	NA	NA	NA	2.86E-02	2.97E+02	8.51E+00	3.92E-03	1.35E+02	1.42E-02	6.32E+02	2.47E-02	3.77E+02	3.77E-05
CONM-900 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	2.65E+02	3.79E+02	NA	NA	NA	NA	2.86E-02	2.34E+02	6.71E+00	3.92E-03	1.35E+02	1.12E-02	6.32E+02	2.47E-02	3.77E+02	2.97E-05
CONM-900+12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	1.65E+02	2.37E+02	NA	NA	NA	NA	2.86E-02	1.46E+02	4.18E+00	3.92E-03	1.35E+02	6.98E-03	6.32E+02	2.47E-02	3.77E+02	1.85E-05
CONM-950 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	1.86E+02	2.66E+02	NA	NA	NA	NA	2.86E-02	1.64E+02	4.71E+00	3.92E-03	1.35E+02	7.87E-03	6.32E+02	2.47E-02	3.77E+02	2.09E-05
CONM-Comp 1 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	2.45E+02	3.51E+02	NA	NA	NA	NA	2.86E-02	2.17E+02	6.21E+00	3.92E-03	1.35E+02	1.04E-02	6.32E+02	2.47E-02	3.77E+02	2.75E-05
CONM-Comp 2 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	1.53E+02	2.19E+02	NA	NA	NA	NA	2.86E-02	1.35E+02	3.87E+00	3.92E-03	1.35E+02	6.47E-03	6.32E+02	2.47E-02	3.77E+02	1.72E-05
CONM-Pile 1 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	3.13E+02	4.48E+02	NA	NA	NA	NA	2.86E-02	2.76E+02	7.91E+00	3.92E-03	1.35E+02	1.32E-02	6.32E+02	2.47E-02	3.77E+02	3.51E-05
																						Maximum HQ (Consolation Mine)	**4.04E-05**

TABLE C-6C: COPPER DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 6 - CONSOLATION MINE WASTE AREA (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 0.7

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Red Fox (Carnivorous Mammal - Terrestrial)																							
Reference Sites																							
SHGBG-1	1.72E-01	1.72E-01	6.61E-01	2.61E+01	4.48E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.96E+01	1.90E-01	5.17E-04	4.54E+00	5.33E-04	6.32E+02	2.47E-02	4.62E+02	1.15E-06
SHGBG-2	1.72E-01	1.72E-01	6.61E-01	3.87E+01	6.65E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.86E+01	2.82E-01	5.17E-04	4.54E+00	7.90E-04	6.32E+02	2.47E-02	4.62E+02	1.71E-06
Consolation Mine																						**Minimum HQ (Reference Sites)**	**1.15E-06**
CONM-000 (0-6")	1.72E-01	1.72E-01	1.01E+00	4.10E+01	7.04E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.06E+01	1.95E-01	5.17E-04	4.54E+00	8.24E-04	6.32E+02	2.47E-02	4.62E+02	1.78E-06
CONM-100 (0-6")	1.72E-01	1.72E-01	1.01E+00	1.43E+02	2.45E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.42E+02	6.80E-01	5.17E-04	4.54E+00	2.87E-03	6.32E+02	2.47E-02	4.62E+02	6.22E-06
CONM-100+25 (0-6")	1.72E-01	1.72E-01	1.01E+00	5.15E+01	8.84E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.10E+01	2.45E-01	5.17E-04	4.54E+00	1.04E-03	6.32E+02	2.47E-02	4.62E+02	2.24E-06
CONM-1000 (0-6")	1.72E-01	1.72E-01	1.01E+00	1.89E+02	3.24E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.87E+02	8.98E-01	5.17E-04	4.54E+00	3.80E-03	6.32E+02	2.47E-02	4.62E+02	8.22E-06
CONM-1000+35 (0-6")	1.72E-01	1.72E-01	1.01E+00	2.35E+02	4.04E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.33E+02	1.12E+00	5.17E-04	4.54E+00	4.73E-03	6.32E+02	2.47E-02	4.62E+02	1.02E-05
CONM-150 (0-6")	1.72E-01	1.72E-01	1.01E+00	5.86E+01	1.00E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.80E+01	2.78E-01	5.17E-04	4.54E+00	1.18E-03	6.32E+02	2.47E-02	4.62E+02	2.55E-06
CONM-200 (0-6")	1.72E-01	1.72E-01	1.01E+00	4.24E+01	7.27E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.19E+01	2.01E-01	5.17E-04	4.54E+00	8.51E-04	6.32E+02	2.47E-02	4.62E+02	1.84E-06
CONM-250 (0-6")	1.72E-01	1.72E-01	1.01E+00	3.22E+02	5.52E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.18E+02	1.53E+00	5.17E-04	4.54E+00	6.47E-03	6.32E+02	2.47E-02	4.62E+02	1.40E-05
CONM-250+25 (0-6")	1.72E-01	1.72E-01	1.01E+00	1.80E+02	3.09E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.78E+02	8.55E-01	5.17E-04	4.54E+00	3.61E-03	6.32E+02	2.47E-02	4.62E+02	7.82E-06
CONM-300 (0-6")	1.72E-01	1.72E-01	1.01E+00	1.31E+02	2.24E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.29E+02	6.21E-01	5.17E-04	4.54E+00	2.63E-03	6.32E+02	2.47E-02	4.62E+02	5.69E-06
CONM-300+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-350 (0-6")	1.72E-01	1.72E-01	1.01E+00	2.19E+02	3.76E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.17E+02	1.04E+00	5.17E-04	4.54E+00	4.40E-03	6.32E+02	2.47E-02	4.62E+02	9.53E-06
CONM-350+50 (0-6")	1.72E-01	1.72E-01	1.01E+00	6.16E+01	1.06E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	6.10E+01	2.93E-01	5.17E-04	4.54E+00	1.24E-03	6.32E+02	2.47E-02	4.62E+02	2.68E-06
CONM-400 (0-6")	1.72E-01	1.72E-01	1.01E+00	1.47E+02	2.52E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.45E+02	6.97E-01	5.17E-04	4.54E+00	2.95E-03	6.32E+02	2.47E-02	4.62E+02	6.38E-06
CONM-400+25 (0-6")	1.72E-01	1.72E-01	1.01E+00	6.47E+01	1.11E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	6.40E+01	3.07E-01	5.17E-04	4.54E+00	1.30E-03	6.32E+02	2.47E-02	4.62E+02	2.81E-06
CONM-450 (0-6")	1.72E-01	1.72E-01	1.01E+00	1.10E+02	1.89E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.09E+02	5.23E-01	5.17E-04	4.54E+00	2.21E-03	6.32E+02	2.47E-02	4.62E+02	4.79E-06
CONM-450+25 (0-6")	1.72E-01	1.72E-01	1.01E+00	7.88E+01	1.35E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	7.80E+01	3.75E-01	5.17E-04	4.54E+00	1.58E-03	6.32E+02	2.47E-02	4.62E+02	3.43E-06
CONM-50 (0-6")	1.72E-01	1.72E-01	1.01E+00	2.05E+02	3.52E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.03E+02	9.75E-01	5.17E-04	4.54E+00	4.12E-03	6.32E+02	2.47E-02	4.62E+02	8.92E-06
CONM-50+50 (0-6")	1.72E-01	1.72E-01	1.01E+00	9.40E+01	1.61E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	9.30E+01	4.47E-01	5.17E-04	4.54E+00	1.89E-03	6.32E+02	2.47E-02	4.62E+02	4.09E-06
CONM-500 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-550 (0-6")	1.72E-01	1.72E-01	1.01E+00	5.86E+01	1.01E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.80E+01	2.79E-01	5.17E-04	4.54E+00	1.18E-03	6.32E+02	2.47E-02	4.62E+02	2.55E-06
CONM-600 (0-6")	1.72E-01	1.72E-01	1.01E+00	2.24E+02	3.84E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.22E+02	1.06E+00	5.17E-04	4.54E+00	4.50E-03	6.32E+02	2.47E-02	4.62E+02	9.74E-06
CONM-600+12.5 (0-6")	1.72E-01	1.72E-01	1.01E+00	6.77E+01	1.16E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	6.70E+01	3.22E-01	5.17E-04	4.54E+00	1.36E-03	6.32E+02	2.47E-02	4.62E+02	2.95E-06
CONM-650 (0-6")	1.72E-01	1.72E-01	1.01E+00	4.44E+01	7.62E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.40E+01	2.11E-01	5.17E-04	4.54E+00	8.93E-04	6.32E+02	2.47E-02	4.62E+02	1.93E-06
CONM-700 (0-6")	1.72E-01	1.72E-01	1.01E+00	7.82E+01	1.34E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	7.74E+01	3.72E-01	5.17E-04	4.54E+00	1.57E-03	6.32E+02	2.47E-02	4.62E+02	3.40E-06
CONM-750 (0-6")	1.72E-01	1.72E-01	1.01E+00	3.19E+02	5.47E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.15E+02	1.51E+00	5.17E-04	4.54E+00	6.40E-03	6.32E+02	2.47E-02	4.62E+02	1.39E-05
CONM-750+6 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CONM-800 (0-6")	1.72E-01	1.72E-01	1.01E+00	1.05E+02	1.80E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.04E+02	4.98E-01	5.17E-04	4.54E+00	2.11E-03	6.32E+02	2.47E-02	4.62E+02	4.56E-06
CONM-800+25 (0-6")	1.72E-01	1.72E-01	1.01E+00	1.02E+02	1.75E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.01E+02	4.85E-01	5.17E-04	4.54E+00	2.05E-03	6.32E+02	2.47E-02	4.62E+02	4.44E-06
CONM-850 (0-6")	1.72E-01	1.72E-01	1.01E+00	3.00E+02	5.15E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.97E+02	1.43E+00	5.17E-04	4.54E+00	6.04E-03	6.32E+02	2.47E-02	4.62E+02	1.31E-05
CONM-900 (0-6")	1.72E-01	1.72E-01	1.01E+00	2.37E+02	4.06E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.34E+02	1.13E+00	5.17E-04	4.54E+00	4.76E-03	6.32E+02	2.47E-02	4.62E+02	1.03E-05
CONM-900+12.5 (0-6")	1.72E-01	1.72E-01	1.01E+00	1.48E+02	2.53E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.46E+02	7.01E-01	5.17E-04	4.54E+00	2.96E-03	6.32E+02	2.47E-02	4.62E+02	6.42E-06
CONM-950 (0-6")	1.72E-01	1.72E-01	1.01E+00	1.66E+02	2.85E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.64E+02	7.90E-01	5.17E-04	4.54E+00	3.34E-03	6.32E+02	2.47E-02	4.62E+02	7.23E-06
CONM-Comp 1 (0-6")	1.72E-01	1.72E-01	1.01E+00	2.19E+02	3.76E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.17E+02	1.04E+00	5.17E-04	4.54E+00	4.40E-03	6.32E+02	2.47E-02	4.62E+02	9.53E-06
CONM-Comp 2 (0-6")	1.72E-01	1.72E-01	1.01E+00	1.37E+02	2.34E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.35E+02	6.50E-01	5.17E-04	4.54E+00	2.75E-03	6.32E+02	2.47E-02	4.62E+02	5.95E-06
CONM-Pile 1 (0-6")	1.72E-01	1.72E-01	1.01E+00	2.79E+02	4.79E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.76E+02	1.33E+00	5.17E-04	4.54E+00	5.61E-03	6.32E+02	2.47E-02	4.62E+02	1.21E-05
																						Maximum HQ (Consolation Mine)	**1.40E-05**
Masked Shrew (Omnivorous Mammal - Terrestrial, Wetland)																							
Reference Sites																							
SHGBG-1	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	3.70E+00	1.47E+02	1.24E+00	1.10E-03	3.96E+01	4.35E-02	1.00E+00	5.50E-03	2.34E+02	6.32E+02	2.47E-02	6.91E+02	3.38E-01
SHGBG-2	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	3.70E+00	2.17E+02	1.84E+00	1.10E-03	5.86E+01	6.45E-02	1.00E+00	5.50E-03	3.46E+02	6.32E+02	2.47E-02	6.91E+02	5.01E-01
Consolation Mine																						**Minimum HQ (Reference Sites)**	**3.38E-01**
CONM-000 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	1.97E+02	1.67E+00	1.10E-03	4.06E+01	4.47E-02	1.00E+00	5.50E-03	3.11E+02	6.32E+02	2.47E-02	6.91E+02	4.50E-01
CONM-100 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	6.86E+02	5.81E+00	1.10E-03	1.42E+02	1.56E-01	1.00E+00	5.50E-03	1.09E+03	6.32E+02	2.47E-02	6.91E+02	1.57E+00
CONM-100+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	2.47E+02	2.10E+00	1.10E-03	5.10E+01	5.62E-02	1.00E+00	5.50E-03	3.91E+02	6.32E+02	2.47E-02	6.91E+02	5.66E-01
CONM-1000 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	9.07E+02	7.68E+00	1.10E-03	1.87E+02	2.06E-01	1.00E+00	5.50E-03	1.43E+03	6.32E+02	2.47E-02	6.91E+02	2.07E+00
CONM-1000+35 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	1.13E+03	9.57E+00	1.10E-03	2.33E+02	2.57E-01	1.00E+00	5.50E-03	1.79E+03	6.32E+02	2.47E-02	6.91E+02	2.59E+00
CONM-150 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	2.81E+02	2.38E+00	1.10E-03	5.80E+01	6.38E-02	1.00E+00	5.50E-03	4.45E+02	6.32E+02	2.47E-02	6.91E+02	6.43E-01
CONM-200 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	2.03E+02	1.72E+00	1.10E-03	4.19E+01	4.62E-02	1.00E+00	5.50E-03	3.22E+02	6.32E+02	2.47E-02	6.91E+02	4.65E-01
CONM-250 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	1.54E+03	1.31E+01	1.10E-03	3.18E+02	3.51E-01	1.00E+00	5.50E-03	2.44E+03	6.32E+02	2.47E-02	6.91E+02	3.53E+00
CONM-250+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	8.63E+02	7.31E+00	1.10E-03	1.78E+02	1.96E-01	1.00E+00	5.50E-03	1.37E+03	6.32E+02	2.47E-02	6.91E+02	1.98E+00

TABLE C-6C: COPPER DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 6 - CONSOLATION MINE WASTE AREA (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

Site Area (hectares) 0.7

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Masked Shrew (Omnivorous Mammal - Terrestrial, Wetland)																							
CONM-300 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	6.27E+02	5.31E+00	1.10E-03	1.29E+02	1.42E-01	1.00E+00	5.50E-03	9.92E+02	6.32E+02	2.47E-02	6.91E+02	1.44E+00
CONM-300+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-350 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	1.05E+03	8.91E+00	1.10E-03	2.17E+02	2.39E-01	1.00E+00	5.50E-03	1.66E+03	6.32E+02	2.47E-02	6.91E+02	2.41E+00
CONM-350+50 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	2.96E+02	2.51E+00	1.10E-03	6.10E+01	6.72E-02	1.00E+00	5.50E-03	4.68E+02	6.32E+02	2.47E-02	6.91E+02	6.77E-01
CONM-400 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	7.04E+02	5.96E+00	1.10E-03	1.45E+02	1.60E-01	1.00E+00	5.50E-03	1.11E+03	6.32E+02	2.47E-02	6.91E+02	1.61E+00
CONM-400+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	3.10E+02	2.63E+00	1.10E-03	6.40E+01	7.05E-02	1.00E+00	5.50E-03	4.91E+02	6.32E+02	2.47E-02	6.91E+02	7.10E-01
CONM-450 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	5.28E+02	4.47E+00	1.10E-03	1.09E+02	1.20E-01	1.00E+00	5.50E-03	8.35E+02	6.32E+02	2.47E-02	6.91E+02	1.21E+00
CONM-450+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	3.78E+02	3.20E+00	1.10E-03	7.80E+01	8.59E-02	1.00E+00	5.50E-03	5.98E+02	6.32E+02	2.47E-02	6.91E+02	8.66E-01
CONM-50 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	9.84E+02	8.34E+00	1.10E-03	2.03E+02	2.23E-01	1.00E+00	5.50E-03	1.56E+03	6.32E+02	2.47E-02	6.91E+02	2.25E+00
CONM-50+50 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	4.51E+02	3.82E+00	1.10E-03	9.30E+01	1.02E-01	1.00E+00	5.50E-03	7.13E+02	6.32E+02	2.47E-02	6.91E+02	1.03E+00
CONM-500 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-550 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	2.81E+02	2.38E+00	1.10E-03	5.80E+01	6.39E-02	1.00E+00	5.50E-03	4.45E+02	6.32E+02	2.47E-02	6.91E+02	6.44E-01
CONM-600 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	1.08E+03	9.11E+00	1.10E-03	2.22E+02	2.44E-01	1.00E+00	5.50E-03	1.70E+03	6.32E+02	2.47E-02	6.91E+02	2.46E+00
CONM-600+12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	3.25E+02	2.75E+00	1.10E-03	6.70E+01	7.38E-02	1.00E+00	5.50E-03	5.14E+02	6.32E+02	2.47E-02	6.91E+02	7.44E-01
CONM-650 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	2.13E+02	1.81E+00	1.10E-03	4.40E+01	4.84E-02	1.00E+00	5.50E-03	3.37E+02	6.32E+02	2.47E-02	6.91E+02	4.88E-01
CONM-700 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	3.76E+02	3.18E+00	1.10E-03	7.74E+01	8.53E-02	1.00E+00	5.50E-03	5.94E+02	6.32E+02	2.47E-02	6.91E+02	8.59E-01
CONM-750 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	1.53E+03	1.30E+01	1.10E-03	3.15E+02	3.47E-01	1.00E+00	5.50E-03	2.42E+03	6.32E+02	2.47E-02	6.91E+02	3.50E+00
CONM-750+6 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CONM-800 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	5.03E+02	4.26E+00	1.10E-03	1.04E+02	1.14E-01	1.00E+00	5.50E-03	7.96E+02	6.32E+02	2.47E-02	6.91E+02	1.15E+00
CONM-800+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	4.90E+02	4.15E+00	1.10E-03	1.01E+02	1.11E-01	1.00E+00	5.50E-03	7.75E+02	6.32E+02	2.47E-02	6.91E+02	1.12E+00
CONM-850 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	1.44E+03	1.22E+01	1.10E-03	2.97E+02	3.27E-01	1.00E+00	5.50E-03	2.28E+03	6.32E+02	2.47E-02	6.91E+02	3.30E+00
CONM-900 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	1.14E+03	9.62E+00	1.10E-03	2.34E+02	2.58E-01	1.00E+00	5.50E-03	1.80E+03	6.32E+02	2.47E-02	6.91E+02	2.60E+00
CONM-900+12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	7.08E+02	6.00E+00	1.10E-03	1.46E+02	1.61E-01	1.00E+00	5.50E-03	1.12E+03	6.32E+02	2.47E-02	6.91E+02	1.62E+00
CONM-950 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	7.98E+02	6.76E+00	1.10E-03	1.64E+02	1.81E-01	1.00E+00	5.50E-03	1.26E+03	6.32E+02	2.47E-02	6.91E+02	1.83E+00
CONM-Comp 1 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	1.05E+03	8.91E+00	1.10E-03	2.17E+02	2.39E-01	1.00E+00	5.50E-03	1.66E+03	6.32E+02	2.47E-02	6.91E+02	2.41E+00
CONM-Comp 2 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	6.56E+02	5.56E+00	1.10E-03	1.35E+02	1.49E-01	1.00E+00	5.50E-03	1.04E+03	6.32E+02	2.47E-02	6.91E+02	1.50E+00
CONM-Pile 1 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	1.34E+03	1.14E+01	1.10E-03	2.76E+02	3.04E-01	1.00E+00	5.50E-03	2.12E+03	6.32E+02	2.47E-02	6.91E+02	3.07E+00
																						Maximum HQ (Consolation Mine)	**3.53E+00**

Notes

1 See Tables 3-1 through 3-13 for ingestion rates, foraging ranges used to calculate the SUF, and body weights.

2 BAFs were calculated by dividing site-collected tissue by collocated soil concentrations (BAFs are in dry weight). The maximum BAF calculated from the Beartrap Creek and Blackfoot River transects was used for site dose calculations. The maximum BAF from the terrestrial reference site was used for reference site dose calculations.

3 The mammal, plant, and invertebrate concentrations were calculated by multiplying the soil concentration by the BAF to generate a tissue concentration (see note 2).

4 Mammal, plant, and invertebrate daily doses were calculated by multiplying the ingestion rate (see note 1) by the tissue concentration (see note 3).

5 Soil concentration from 0 to 6 inches below ground surface at point ID as measured by XRF 10. Doses were not calculated for detected and non-detected soil concentrations measured below the minimum reference site concentration, as indicated by BB. For results that were measured at less than the detection limit, doses were calculated using half of the detection limit.

6 Soil daily dose was calculated by multiplying the soil ingestion rate (see note 1) by soil concentration (see note 5).

7 Total daily dose is calculated using the following equation: total daily dose = ([mammal daily dose (if applicable) + plant daily dose (if applicable) + invertebrate daily dose (if applicable) + soil daily dose]*SUF)/receptor species body weight.

8 The TRVs used in this risk assessment represent a mid-range effects level. The derivation of TRVs is described in Navy (1998).

9 Allometrically adjusted TRVs for birds were calculated using the following equation: receptor species TRV = (test species TRV) x (test species body weight / receptor species body weight)$^{(1-1.2)}$.

10 Allometrically adjusted TRVs for mammals were calculated using the following equation: receptor species TRV = (test species TRV) x (test species body weight / receptor species body weight)$^{(1-0.94)}$.

11 HQs were calculated using the following equation: HQ = total daily dose/allometrically adjusted TRV.

12 Highlighted cells indicate an HQ greater than 1.0.

BAF	Bioaccumulation Factor	mg/day	Milligram per day
BB	Below minimum background reference site concentration	mg/kg	Milligram per kilogram
EE/CA	Engineering Evaluation/Cost Analysis	NA	Not applicable
EU	Exposure Unit	Navy	Department of the Navy
HQ	Hazard quotient	SUF	Site use factor
ID	Identification	TRV	Toxicity reference value
kg	Kilogram	XRF	X-ray fluorescence
kg/day	Kilogram per day	XRF 10	XRF measurements recorded following drying and seiving through a #10-mesh screen

Sources: Department of the Navy. 1998. "Development of Toxicity Reference Values for Conducting Ecological Risk Assessments at Naval Facilities in California, Interim Final." Prepared by Naval Facilities Engineering Command, Engineering Field Activity West (EFA West). San Bruno, California.

TABLE C-6D: LEAD DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 6 - CONSOLATION MINE WASTE AREA
Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)
calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 0.7

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Mourning Dove (Herbivorous Birds - Terrestrial)																							
Reference Sites																							
SHGBG-1	5.76E-03	NA	NA	NA	NA	5.76E-03	4.35E-02	1.40E+01	8.05E-02	NA	NA	NA	NA	5.36E-04	3.22E+02	1.72E-01	2.70E-03	1.09E-01	6.26E-03	8.75E+00	8.00E-01	5.88E+00	1.06E-03
SHGBG-2	5.76E-03	NA	NA	NA	NA	5.76E-03	4.35E-02	1.42E+00	8.18E-03	NA	NA	NA	NA	5.36E-04	3.27E+01	1.75E-02	2.70E-03	1.09E-01	6.36E-04	8.75E+00	8.00E-01	5.88E+00	1.08E-04
Consolation Mine																						**Minimum HQ (Reference Sites)**	**1.08E-04**
CONM-000 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	1.29E+02	7.46E-01	NA	NA	NA	NA	5.36E-04	2.06E+02	1.10E-01	2.70E-03	1.09E-01	2.12E-02	8.75E+00	8.00E-01	5.88E+00	3.61E-03
CONM-100 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	3.47E+02	2.00E+00	NA	NA	NA	NA	5.36E-04	5.52E+02	2.96E-01	2.70E-03	1.09E-01	5.68E-02	8.75E+00	8.00E-01	5.88E+00	9.67E-03
CONM-100+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	2.17E+02	1.25E+00	NA	NA	NA	NA	5.36E-04	3.46E+02	1.85E-01	2.70E-03	1.09E-01	3.56E-02	8.75E+00	8.00E-01	5.88E+00	6.06E-03
CONM-1000 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	7.58E+02	4.37E+00	NA	NA	NA	NA	5.36E-04	1.21E+03	6.46E-01	2.70E-03	1.09E-01	1.24E-01	8.75E+00	8.00E-01	5.88E+00	2.11E-02
CONM-1000+35 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	2.56E+02	1.47E+00	NA	NA	NA	NA	5.36E-04	4.07E+02	2.18E-01	2.70E-03	1.09E-01	4.19E-02	8.75E+00	8.00E-01	5.88E+00	7.13E-03
CONM-150 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-200 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-250 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	2.95E+03	1.70E+01	NA	NA	NA	NA	5.36E-04	4.70E+03	2.52E+00	2.70E-03	1.09E-01	4.83E-01	8.75E+00	8.00E-01	5.88E+00	8.22E-02
CONM-250+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	5.48E+02	3.16E+00	NA	NA	NA	NA	5.36E-04	8.73E+02	4.68E-01	2.70E-03	1.09E-01	8.97E-02	8.75E+00	8.00E-01	5.88E+00	1.53E-02
CONM-300 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	4.54E+02	2.61E+00	NA	NA	NA	NA	5.36E-04	7.22E+02	3.87E-01	2.70E-03	1.09E-01	7.43E-02	8.75E+00	8.00E-01	5.88E+00	1.26E-02
CONM-300+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-350 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	3.43E+02	1.98E+00	NA	NA	NA	NA	5.36E-04	5.46E+02	2.93E-01	2.70E-03	1.09E-01	5.62E-02	8.75E+00	8.00E-01	5.88E+00	9.56E-03
CONM-350+50 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-400 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	3.55E+02	2.05E+00	NA	NA	NA	NA	5.36E-04	5.66E+02	3.03E-01	2.70E-03	1.09E-01	5.82E-02	8.75E+00	8.00E-01	5.88E+00	9.90E-03
CONM-400+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	2.19E+02	1.26E+00	NA	NA	NA	NA	5.36E-04	3.49E+02	1.87E-01	2.70E-03	1.09E-01	3.59E-02	8.75E+00	8.00E-01	5.88E+00	6.10E-03
CONM-450 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	2.60E+02	1.50E+00	NA	NA	NA	NA	5.36E-04	4.14E+02	2.22E-01	2.70E-03	1.09E-01	4.25E-02	8.75E+00	8.00E-01	5.88E+00	7.24E-03
CONM-450+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	3.57E+02	2.05E+00	NA	NA	NA	NA	5.36E-04	5.68E+02	3.04E-01	2.70E-03	1.09E-01	5.84E-02	8.75E+00	8.00E-01	5.88E+00	9.94E-03
CONM-50 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	4.00E+02	2.31E+00	NA	NA	NA	NA	5.36E-04	6.37E+02	3.41E-01	2.70E-03	1.09E-01	6.55E-02	8.75E+00	8.00E-01	5.88E+00	1.12E-02
CONM-50+50 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	2.42E+02	1.39E+00	NA	NA	NA	NA	5.36E-04	3.85E+02	2.06E-01	2.70E-03	1.09E-01	3.96E-02	8.75E+00	8.00E-01	5.88E+00	6.74E-03
CONM-500 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-550 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	2.11E+02	1.22E+00	NA	NA	NA	NA	5.36E-04	3.36E+02	1.80E-01	2.70E-03	1.09E-01	3.46E-02	8.75E+00	8.00E-01	5.88E+00	5.89E-03
CONM-600 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	6.08E+02	3.50E+00	NA	NA	NA	NA	5.36E-04	9.68E+02	5.19E-01	2.70E-03	1.09E-01	9.96E-02	8.75E+00	8.00E-01	5.88E+00	1.70E-02
CONM-600+12.5 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-650 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-700 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-750 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	1.06E+03	6.12E+00	NA	NA	NA	NA	5.36E-04	1.69E+03	9.06E-01	2.70E-03	1.09E-01	1.74E-01	8.75E+00	8.00E-01	5.88E+00	2.96E-02
CONM-750+6 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CONM-800 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	1.19E+03	6.87E+00	NA	NA	NA	NA	5.36E-04	1.90E+03	1.02E+00	2.70E-03	1.09E-01	1.95E-01	8.75E+00	8.00E-01	5.88E+00	3.32E-02
CONM-800+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-850 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	2.50E+02	1.44E+00	NA	NA	NA	NA	5.36E-04	3.98E+02	2.13E-01	2.70E-03	1.09E-01	4.09E-02	8.75E+00	8.00E-01	5.88E+00	6.97E-03
CONM-900 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	2.25E+03	1.30E+01	NA	NA	NA	NA	5.36E-04	3.58E+03	1.92E+00	2.70E-03	1.09E-01	3.68E-01	8.75E+00	8.00E-01	5.88E+00	6.27E-02
CONM-900+12.5 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-950 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	2.12E+02	1.22E+00	NA	NA	NA	NA	5.36E-04	3.38E+02	1.81E-01	2.70E-03	1.09E-01	3.48E-02	8.75E+00	8.00E-01	5.88E+00	5.92E-03
CONM-Comp 1 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	5.66E+02	3.26E+00	NA	NA	NA	NA	5.36E-04	9.01E+02	4.83E-01	2.70E-03	1.09E-01	9.26E-02	8.75E+00	8.00E-01	5.88E+00	1.58E-02
CONM-Comp 2 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	4.48E+02	2.58E+00	NA	NA	NA	NA	5.36E-04	7.13E+02	3.82E-01	2.70E-03	1.09E-01	7.33E-02	8.75E+00	8.00E-01	5.88E+00	1.25E-02
CONM-Pile 1 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	3.73E+03	2.15E+01	NA	NA	NA	NA	5.36E-04	5.93E+03	3.18E+00	2.70E-03	1.09E-01	6.10E-01	8.75E+00	8.00E-01	5.88E+00	1.04E-01
																						Maximum HQ (Consolation Mine)	**1.04E-01**
Red-Tailed Hawk (Carnivorous Birds - Terrestrial)																							
Reference Sites																							
SHGBG-1	9.00E-02	9.00E-02	7.62E-02	2.45E+01	2.20E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.22E+02	1.65E+00	1.00E-03	1.13E+00	3.41E-03	8.75E+00	8.00E-01	9.38E+00	3.64E-04
SHGBG-2	9.00E-02	9.00E-02	7.62E-02	2.49E+00	2.24E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.27E+01	1.68E-01	1.00E-03	1.13E+00	3.47E-04	8.75E+00	8.00E-01	9.38E+00	3.70E-05
Consolation Mine																						**Minimum HQ (Reference Sites)**	**3.70E-05**
CONM-000 (0-6")	9.00E-02	9.00E-02	9.28E-01	1.91E+02	1.72E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.06E+02	1.06E+00	1.00E-03	1.13E+00	1.62E-02	8.75E+00	8.00E-01	9.38E+00	1.72E-03
CONM-100 (0-6")	9.00E-02	9.00E-02	9.28E-01	5.13E+02	4.61E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.52E+02	2.83E+00	1.00E-03	1.13E+00	4.34E-02	8.75E+00	8.00E-01	9.38E+00	4.62E-03
CONM-100+25 (0-6")	9.00E-02	9.00E-02	9.28E-01	3.21E+02	2.89E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.46E+02	1.77E+00	1.00E-03	1.13E+00	2.72E-02	8.75E+00	8.00E-01	9.38E+00	2.90E-03
CONM-1000 (0-6")	9.00E-02	9.00E-02	9.28E-01	1.12E+03	1.01E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.21E+03	6.18E+00	1.00E-03	1.13E+00	9.47E-02	8.75E+00	8.00E-01	9.38E+00	1.01E-02
CONM-1000+35 (0-6")	9.00E-02	9.00E-02	9.28E-01	3.78E+02	3.40E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.07E+02	2.09E+00	1.00E-03	1.13E+00	3.19E-02	8.75E+00	8.00E-01	9.38E+00	3.41E-03
CONM-150 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-200 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-250 (0-6")	9.00E-02	9.00E-02	9.28E-01	4.36E+03	3.92E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.70E+03	2.41E+01	1.00E-03	1.13E+00	3.69E-01	8.75E+00	8.00E-01	9.38E+00	3.93E-02
CONM-250+25 (0-6")	9.00E-02	9.00E-02	9.28E-01	8.10E+02	7.28E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	8.73E+02	4.47E+00	1.00E-03	1.13E+00	6.85E-02	8.75E+00	8.00E-01	9.38E+00	7.30E-03

TABLE C-6D: LEAD DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 6 - CONSOLATION MINE WASTE AREA (Continued)
Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables; from BAF table; linked to soil or sed concentration table (VLOOKUP)
calculated values; linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 0.7

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Red-Tailed Hawk (Carnivorous Birds - Terrestrial)																							
CONM-300 (0-6")	9.00E-02	9.00E-02	9.28E-01	6.70E+02	6.03E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	7.22E+02	3.70E+00	1.00E-03	1.13E+00	5.67E-02	8.75E+00	8.00E-01	9.38E+00	6.04E-03
CONM-300+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-350 (0-6")	9.00E-02	9.00E-02	9.28E-01	5.07E+02	4.56E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.46E+02	2.80E+00	1.00E-03	1.13E+00	4.29E-02	8.75E+00	8.00E-01	9.38E+00	4.57E-03
CONM-350+50 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-400 (0-6")	9.00E-02	9.00E-02	9.28E-01	5.25E+02	4.72E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.66E+02	2.90E+00	1.00E-03	1.13E+00	4.44E-02	8.75E+00	8.00E-01	9.38E+00	4.73E-03
CONM-400+25 (0-6")	9.00E-02	9.00E-02	9.28E-01	3.24E+02	2.91E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.49E+02	1.79E+00	1.00E-03	1.13E+00	2.74E-02	8.75E+00	8.00E-01	9.38E+00	2.92E-03
CONM-450 (0-6")	9.00E-02	9.00E-02	9.28E-01	3.84E+02	3.45E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.14E+02	2.12E+00	1.00E-03	1.13E+00	3.25E-02	8.75E+00	8.00E-01	9.38E+00	3.46E-03
CONM-450+25 (0-6")	9.00E-02	9.00E-02	9.28E-01	5.27E+02	4.74E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.68E+02	2.91E+00	1.00E-03	1.13E+00	4.46E-02	8.75E+00	8.00E-01	9.38E+00	4.75E-03
CONM-50 (0-6")	9.00E-02	9.00E-02	9.28E-01	5.91E+02	5.32E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	6.37E+02	3.27E+00	1.00E-03	1.13E+00	5.00E-02	8.75E+00	8.00E-01	9.38E+00	5.33E-03
CONM-50+50 (0-6")	9.00E-02	9.00E-02	9.28E-01	3.57E+02	3.21E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.85E+02	1.97E+00	1.00E-03	1.13E+00	3.02E-02	8.75E+00	8.00E-01	9.38E+00	3.22E-03
CONM-500 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-550 (0-6")	9.00E-02	9.00E-02	9.28E-01	3.12E+02	2.81E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.36E+02	1.72E+00	1.00E-03	1.13E+00	2.64E-02	8.75E+00	8.00E-01	9.38E+00	2.81E-03
CONM-600 (0-6")	9.00E-02	9.00E-02	9.28E-01	8.98E+02	8.08E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	9.68E+02	4.97E+00	1.00E-03	1.13E+00	7.60E-02	8.75E+00	8.00E-01	9.38E+00	8.10E-03
CONM-600+12.5 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-650 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-700 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-750 (0-6")	9.00E-02	9.00E-02	9.28E-01	1.57E+03	1.41E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.69E+03	8.67E+00	1.00E-03	1.13E+00	1.33E-01	8.75E+00	8.00E-01	9.38E+00	1.42E-02
CONM-750+6 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CONM-800 (0-6")	9.00E-02	9.00E-02	9.28E-01	1.76E+03	1.58E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.90E+03	9.74E+00	1.00E-03	1.13E+00	1.49E-01	8.75E+00	8.00E-01	9.38E+00	1.59E-02
CONM-800+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-850 (0-6")	9.00E-02	9.00E-02	9.28E-01	3.69E+02	3.32E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.98E+02	2.04E+00	1.00E-03	1.13E+00	3.12E-02	8.75E+00	8.00E-01	9.38E+00	3.33E-03
CONM-900 (0-6")	9.00E-02	9.00E-02	9.28E-01	3.32E+03	2.99E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.58E+03	1.84E+01	1.00E-03	1.13E+00	2.81E-01	8.75E+00	8.00E-01	9.38E+00	3.00E-02
CONM-900+12.5 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-950 (0-6")	9.00E-02	9.00E-02	9.28E-01	3.14E+02	2.82E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.38E+02	1.73E+00	1.00E-03	1.13E+00	2.65E-02	8.75E+00	8.00E-01	9.38E+00	2.83E-03
CONM-Comp 1 (0-6")	9.00E-02	9.00E-02	9.28E-01	8.36E+02	7.52E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	9.01E+02	4.62E+00	1.00E-03	1.13E+00	7.07E-02	8.75E+00	8.00E-01	9.38E+00	7.54E-03
CONM-Comp 2 (0-6")	9.00E-02	9.00E-02	9.28E-01	6.62E+02	5.95E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	7.13E+02	3.66E+00	1.00E-03	1.13E+00	5.60E-02	8.75E+00	8.00E-01	9.38E+00	5.97E-03
CONM-Pile 1 (0-6")	9.00E-02	9.00E-02	9.28E-01	5.51E+03	4.95E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.93E+03	3.04E+01	1.00E-03	1.13E+00	4.66E-01	8.75E+00	8.00E-01	9.38E+00	4.96E-02
																						Maximum HQ (Consolation Mine)	**4.96E-02**
American Kestrel (Insectivorous Birds - Terrestrial)																							
Reference Sites																							
SHGBG-1	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	4.99E+02	6.87E+00	7.84E-04	3.22E+02	2.52E-01	2.68E-03	1.24E-01	1.54E-01	8.75E+00	8.00E-01	6.03E+00	2.55E-02
SHGBG-2	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	5.07E+01	6.98E-01	7.84E-04	3.27E+01	2.56E-02	2.68E-03	1.24E-01	1.56E-02	8.75E+00	8.00E-01	6.03E+00	2.59E-03
Consolation Mine																						**Minimum HQ (Reference Sites)**	**2.59E-03**
CONM-000 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	3.20E+02	4.40E+00	7.84E-04	2.06E+02	1.62E-01	2.68E-03	1.24E-01	9.84E-02	8.75E+00	8.00E-01	6.03E+00	1.63E-02
CONM-100 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	8.57E+02	1.18E+01	7.84E-04	5.52E+02	4.33E-01	2.68E-03	1.24E-01	2.64E-01	8.75E+00	8.00E-01	6.03E+00	4.38E-02
CONM-100+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	5.37E+02	7.39E+00	7.84E-04	3.46E+02	2.71E-01	2.68E-03	1.24E-01	1.65E-01	8.75E+00	8.00E-01	6.03E+00	2.74E-02
CONM-1000 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.87E+03	2.58E+01	7.84E-04	1.21E+03	9.46E-01	2.68E-03	1.24E-01	5.76E-01	8.75E+00	8.00E-01	6.03E+00	9.56E-02
CONM-1000+35 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	6.32E+02	8.69E+00	7.84E-04	4.07E+02	3.19E-01	2.68E-03	1.24E-01	1.94E-01	8.75E+00	8.00E-01	6.03E+00	3.23E-02
CONM-150 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-200 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-250 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	7.29E+03	1.00E+02	7.84E-04	4.70E+03	3.68E+00	2.68E-03	1.24E-01	2.24E+00	8.75E+00	8.00E-01	6.03E+00	3.72E-01
CONM-250+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.35E+03	1.86E+01	7.84E-04	8.73E+02	6.84E-01	2.68E-03	1.24E-01	4.17E-01	8.75E+00	8.00E-01	6.03E+00	6.92E-02
CONM-300 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.12E+03	1.54E+01	7.84E-04	7.22E+02	5.67E-01	2.68E-03	1.24E-01	3.45E-01	8.75E+00	8.00E-01	6.03E+00	5.72E-02
CONM-300+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-350 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	8.47E+02	1.17E+01	7.84E-04	5.46E+02	4.28E-01	2.68E-03	1.24E-01	2.61E-01	8.75E+00	8.00E-01	6.03E+00	4.33E-02
CONM-350+50 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-400 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	8.78E+02	1.21E+01	7.84E-04	5.66E+02	4.44E-01	2.68E-03	1.24E-01	2.70E-01	8.75E+00	8.00E-01	6.03E+00	4.48E-02
CONM-400+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	5.41E+02	7.45E+00	7.84E-04	3.49E+02	2.74E-01	2.68E-03	1.24E-01	1.67E-01	8.75E+00	8.00E-01	6.03E+00	2.76E-02
CONM-450 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	6.42E+02	8.83E+00	7.84E-04	4.14E+02	3.24E-01	2.68E-03	1.24E-01	1.98E-01	8.75E+00	8.00E-01	6.03E+00	3.28E-02
CONM-450+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	8.81E+02	1.21E+01	7.84E-04	5.68E+02	4.45E-01	2.68E-03	1.24E-01	2.71E-01	8.75E+00	8.00E-01	6.03E+00	4.50E-02
CONM-50 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	9.89E+02	1.36E+01	7.84E-04	6.37E+02	5.00E-01	2.68E-03	1.24E-01	3.04E-01	8.75E+00	8.00E-01	6.03E+00	5.05E-02
CONM-50+50 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	5.98E+02	8.22E+00	7.84E-04	3.85E+02	3.02E-01	2.68E-03	1.24E-01	1.84E-01	8.75E+00	8.00E-01	6.03E+00	3.05E-02
CONM-500 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-550 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	5.22E+02	7.18E+00	7.84E-04	3.36E+02	2.64E-01	2.68E-03	1.24E-01	1.61E-01	8.75E+00	8.00E-01	6.03E+00	2.67E-02
CONM-600 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.50E+03	2.07E+01	7.84E-04	9.68E+02	7.60E-01	2.68E-03	1.24E-01	4.63E-01	8.75E+00	8.00E-01	6.03E+00	7.68E-02

TABLE C-6D: LEAD DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 6 - CONSOLATION MINE WASTE AREA (Continued)
Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables; from BAF table; linked to soil or sed concentration table (VLOOKUP)
calculated values; linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 0.7

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
American Kestrel (Insectivorous Birds - Terrestrial)																							
CONM-600+12.5 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-650 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-700 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-750 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	2.63E+03	3.61E+01	7.84E-04	1.69E+03	1.33E+00	2.68E-03	1.24E-01	8.08E-01	8.75E+00	8.00E-01	6.03E+00	1.34E-01
CONM-750+6 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CONM-800 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	2.95E+03	4.06E+01	7.84E-04	1.90E+03	1.49E+00	2.68E-03	1.24E-01	9.07E-01	8.75E+00	8.00E-01	6.03E+00	1.50E-01
CONM-800+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-850 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	6.18E+02	8.50E+00	7.84E-04	3.98E+02	3.12E-01	2.68E-03	1.24E-01	1.90E-01	8.75E+00	8.00E-01	6.03E+00	3.15E-02
CONM-900 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	5.56E+03	7.65E+01	7.84E-04	3.58E+03	2.81E+00	2.68E-03	1.24E-01	1.71E+00	8.75E+00	8.00E-01	6.03E+00	2.84E-01
CONM-900+12.5 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-950 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	5.25E+02	7.22E+00	7.84E-04	3.38E+02	2.65E-01	2.68E-03	1.24E-01	1.62E-01	8.75E+00	8.00E-01	6.03E+00	2.68E-02
CONM-Comp 1 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.40E+03	1.92E+01	7.84E-04	9.01E+02	7.07E-01	2.68E-03	1.24E-01	4.30E-01	8.75E+00	8.00E-01	6.03E+00	7.14E-02
CONM-Comp 2 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.11E+03	1.52E+01	7.84E-04	7.13E+02	5.59E-01	2.68E-03	1.24E-01	3.41E-01	8.75E+00	8.00E-01	6.03E+00	5.65E-02
CONM-Pile 1 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	9.21E+03	1.27E+02	7.84E-04	5.93E+03	4.66E+00	2.68E-03	1.24E-01	2.84E+00	8.75E+00	8.00E-01	6.03E+00	4.70E-01
																						Maximum HQ (Consolation Mine)	**4.70E-01**
Meadow Vole (Small Herbivorous Mammal - Terrestrial)																							
Reference Sites																							
SHGBG-1	4.69E-03	NA	NA	NA	NA	4.69E-03	4.35E-02	1.40E+01	6.55E-02	NA	NA	NA	NA	1.13E-04	3.22E+02	3.62E-02	1.00E+00	3.06E-02	3.32E+00	2.41E+02	1.87E-02	2.34E+02	1.42E-02
SHGBG-2	4.69E-03	NA	NA	NA	NA	4.69E-03	4.35E-02	1.42E+00	6.66E-03	NA	NA	NA	NA	1.13E-04	3.27E+01	3.68E-03	1.00E+00	3.06E-02	3.38E-01	2.41E+02	1.87E-02	2.34E+02	1.45E-03
Consolation Mine																						**Minimum HQ (Reference Sites)**	**1.45E-03**
CONM-000 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	1.29E+02	6.07E-01	NA	NA	NA	NA	1.13E-04	2.06E+02	2.32E-02	1.00E+00	3.06E-02	2.06E+01	2.41E+02	1.87E-02	2.34E+02	8.82E-02
CONM-100 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	3.47E+02	1.63E+00	NA	NA	NA	NA	1.13E-04	5.52E+02	6.22E-02	1.00E+00	3.06E-02	5.52E+01	2.41E+02	1.87E-02	2.34E+02	2.36E-01
CONM-100+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	2.17E+02	1.02E+00	NA	NA	NA	NA	1.13E-04	3.46E+02	3.89E-02	1.00E+00	3.06E-02	3.46E+01	2.41E+02	1.87E-02	2.34E+02	1.48E-01
CONM-1000 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	7.58E+02	3.55E+00	NA	NA	NA	NA	1.13E-04	1.21E+03	1.36E-01	1.00E+00	3.06E-02	1.21E+02	2.41E+02	1.87E-02	2.34E+02	5.16E-01
CONM-1000+35 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	2.56E+02	1.20E+00	NA	NA	NA	NA	1.13E-04	4.07E+02	4.58E-02	1.00E+00	3.06E-02	4.07E+01	2.41E+02	1.87E-02	2.34E+02	1.74E-01
CONM-150 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-200 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-250 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	2.95E+03	1.38E+01	NA	NA	NA	NA	1.13E-04	4.70E+03	5.29E-01	1.00E+00	3.06E-02	4.69E+02	2.41E+02	1.87E-02	2.34E+02	2.01E+00
CONM-250+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	5.48E+02	2.57E+00	NA	NA	NA	NA	1.13E-04	8.73E+02	9.82E-02	1.00E+00	3.06E-02	8.72E+01	2.41E+02	1.87E-02	2.34E+02	3.73E-01
CONM-300 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	4.54E+02	2.13E+00	NA	NA	NA	NA	1.13E-04	7.22E+02	8.13E-02	1.00E+00	3.06E-02	7.22E+01	2.41E+02	1.87E-02	2.34E+02	3.09E-01
CONM-300+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-350 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	3.43E+02	1.61E+00	NA	NA	NA	NA	1.13E-04	5.46E+02	6.14E-02	1.00E+00	3.06E-02	5.46E+01	2.41E+02	1.87E-02	2.34E+02	2.34E-01
CONM-350+50 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-400 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	3.55E+02	1.67E+00	NA	NA	NA	NA	1.13E-04	5.66E+02	6.37E-02	1.00E+00	3.06E-02	5.65E+01	2.41E+02	1.87E-02	2.34E+02	2.42E-01
CONM-400+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	2.19E+02	1.03E+00	NA	NA	NA	NA	1.13E-04	3.49E+02	3.92E-02	1.00E+00	3.06E-02	3.49E+01	2.41E+02	1.87E-02	2.34E+02	1.49E-01
CONM-450 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	2.60E+02	1.22E+00	NA	NA	NA	NA	1.13E-04	4.14E+02	4.65E-02	1.00E+00	3.06E-02	4.13E+01	2.41E+02	1.87E-02	2.34E+02	1.77E-01
CONM-450+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	3.57E+02	1.67E+00	NA	NA	NA	NA	1.13E-04	5.68E+02	6.39E-02	1.00E+00	3.06E-02	5.67E+01	2.41E+02	1.87E-02	2.34E+02	2.43E-01
CONM-50 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	4.00E+02	1.88E+00	NA	NA	NA	NA	1.13E-04	6.37E+02	7.17E-02	1.00E+00	3.06E-02	6.37E+01	2.41E+02	1.87E-02	2.34E+02	2.73E-01
CONM-50+50 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	2.42E+02	1.13E+00	NA	NA	NA	NA	1.13E-04	3.85E+02	4.33E-02	1.00E+00	3.06E-02	3.85E+01	2.41E+02	1.87E-02	2.34E+02	1.65E-01
CONM-500 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-550 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	2.11E+02	9.91E-01	NA	NA	NA	NA	1.13E-04	3.36E+02	3.79E-02	1.00E+00	3.06E-02	3.36E+01	2.41E+02	1.87E-02	2.34E+02	1.44E-01
CONM-600 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	6.08E+02	2.85E+00	NA	NA	NA	NA	1.13E-04	9.68E+02	1.09E-01	1.00E+00	3.06E-02	9.68E+01	2.41E+02	1.87E-02	2.34E+02	4.14E-01
CONM-600+12.5 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-650 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-700 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-750 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	1.06E+03	4.98E+00	NA	NA	NA	NA	1.13E-04	1.69E+03	1.90E-01	1.00E+00	3.06E-02	1.69E+02	2.41E+02	1.87E-02	2.34E+02	7.24E-01
CONM-750+6 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CONM-800 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	1.19E+03	5.59E+00	NA	NA	NA	NA	1.13E-04	1.90E+03	2.14E-01	1.00E+00	3.06E-02	1.90E+02	2.41E+02	1.87E-02	2.34E+02	8.12E-01
CONM-800+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-850 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	2.50E+02	1.17E+00	NA	NA	NA	NA	1.13E-04	3.98E+02	4.48E-02	1.00E+00	3.06E-02	3.98E+01	2.41E+02	1.87E-02	2.34E+02	1.70E-01
CONM-900 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	2.25E+03	1.05E+01	NA	NA	NA	NA	1.13E-04	3.58E+03	4.03E-01	1.00E+00	3.06E-02	3.58E+02	2.41E+02	1.87E-02	2.34E+02	1.53E+00

TABLE C-6D: LEAD DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 6 - CONSOLATION MINE WASTE AREA (Continued)
Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)
calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 0.7

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Meadow Vole (Small Herbivorous Mammal - Terrestrial)																							
CONM-900+12.5 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-950 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	2.12E+02	9.96E-01	NA	NA	NA	NA	1.13E-04	3.38E+02	3.81E-02	1.00E+00	3.06E-02	3.38E+01	2.41E+02	1.87E-02	2.34E+02	1.45E-01
CONM-Comp 1 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	5.66E+02	2.65E+00	NA	NA	NA	NA	1.13E-04	9.01E+02	1.01E-01	1.00E+00	3.06E-02	9.00E+01	2.41E+02	1.87E-02	2.34E+02	3.85E-01
CONM-Comp 2 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	4.48E+02	2.10E+00	NA	NA	NA	NA	1.13E-04	7.13E+02	8.03E-02	1.00E+00	3.06E-02	7.13E+01	2.41E+02	1.87E-02	2.34E+02	3.05E-01
CONM-Pile 1 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	3.73E+03	1.75E+01	NA	NA	NA	NA	1.13E-04	5.93E+03	6.68E-01	1.00E+00	3.06E-02	5.93E+02	2.41E+02	1.87E-02	2.34E+02	2.54E+00
																						Maximum HQ (Consolation Mine)	**2.54E+00**
White-Tailed Deer (Large Herbivorous Mammal - Terrestrial)																							
Reference Sites																							
SHGBG-1	1.43E+00	NA	NA	NA	NA	1.43E+00	4.35E-02	1.40E+01	2.00E+01	NA	NA	NA	NA	2.86E-02	3.22E+02	9.21E+00	3.92E-03	1.35E+02	8.47E-04	2.41E+02	1.87E-02	1.41E+02	6.00E-06
SHGBG-2	1.43E+00	NA	NA	NA	NA	1.43E+00	4.35E-02	1.42E+00	2.03E+00	NA	NA	NA	NA	2.86E-02	3.27E+01	9.36E-01	3.92E-03	1.35E+02	8.61E-05	2.41E+02	1.87E-02	1.41E+02	6.10E-07
Consolation Mine																						**Minimum HQ (Reference Sites)**	**6.10E-07**
CONM-000 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	1.29E+02	1.85E+02	NA	NA	NA	NA	2.86E-02	2.06E+02	5.90E+00	3.92E-03	1.35E+02	5.55E-03	2.41E+02	1.87E-02	1.41E+02	3.93E-05
CONM-100 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	3.47E+02	4.97E+02	NA	NA	NA	NA	2.86E-02	5.52E+02	1.58E+01	3.92E-03	1.35E+02	1.49E-02	2.41E+02	1.87E-02	1.41E+02	1.05E-04
CONM-100+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	2.17E+02	3.11E+02	NA	NA	NA	NA	2.86E-02	3.46E+02	9.91E+00	3.92E-03	1.35E+02	9.32E-03	2.41E+02	1.87E-02	1.41E+02	6.60E-05
CONM-1000 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	7.58E+02	1.08E+03	NA	NA	NA	NA	2.86E-02	1.21E+03	3.45E+01	3.92E-03	1.35E+02	3.25E-02	2.41E+02	1.87E-02	1.41E+02	2.30E-04
CONM-1000+35 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	2.56E+02	3.66E+02	NA	NA	NA	NA	2.86E-02	4.07E+02	1.17E+01	3.92E-03	1.35E+02	1.10E-02	2.41E+02	1.87E-02	1.41E+02	7.76E-05
CONM-150 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-200 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-250 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	2.95E+03	4.22E+03	NA	NA	NA	NA	2.86E-02	4.70E+03	1.34E+02	3.92E-03	1.35E+02	1.26E-01	2.41E+02	1.87E-02	1.41E+02	8.95E-04
CONM-250+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	5.48E+02	7.85E+02	NA	NA	NA	NA	2.86E-02	8.73E+02	2.50E+01	3.92E-03	1.35E+02	2.35E-02	2.41E+02	1.87E-02	1.41E+02	1.66E-04
CONM-300 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	4.54E+02	6.50E+02	NA	NA	NA	NA	2.86E-02	7.22E+02	2.07E+01	3.92E-03	1.35E+02	1.94E-02	2.41E+02	1.87E-02	1.41E+02	1.38E-04
CONM-300+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-350 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	3.43E+02	4.91E+02	NA	NA	NA	NA	2.86E-02	5.46E+02	1.56E+01	3.92E-03	1.35E+02	1.47E-02	2.41E+02	1.87E-02	1.41E+02	1.04E-04
CONM-350+50 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-400 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	3.55E+02	5.09E+02	NA	NA	NA	NA	2.86E-02	5.66E+02	1.62E+01	3.92E-03	1.35E+02	1.52E-02	2.41E+02	1.87E-02	1.41E+02	1.08E-04
CONM-400+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	2.19E+02	3.14E+02	NA	NA	NA	NA	2.86E-02	3.49E+02	9.98E+00	3.92E-03	1.35E+02	9.39E-03	2.41E+02	1.87E-02	1.41E+02	6.65E-05
CONM-450 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	2.60E+02	3.72E+02	NA	NA	NA	NA	2.86E-02	4.14E+02	1.18E+01	3.92E-03	1.35E+02	1.11E-02	2.41E+02	1.87E-02	1.41E+02	7.88E-05
CONM-450+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	3.57E+02	5.11E+02	NA	NA	NA	NA	2.86E-02	5.68E+02	1.63E+01	3.92E-03	1.35E+02	1.53E-02	2.41E+02	1.87E-02	1.41E+02	1.08E-04
CONM-50 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	4.00E+02	5.73E+02	NA	NA	NA	NA	2.86E-02	6.37E+02	1.82E+01	3.92E-03	1.35E+02	1.71E-02	2.41E+02	1.87E-02	1.41E+02	1.21E-04
CONM-50+50 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	2.42E+02	3.46E+02	NA	NA	NA	NA	2.86E-02	3.85E+02	1.10E+01	3.92E-03	1.35E+02	1.04E-02	2.41E+02	1.87E-02	1.41E+02	7.34E-05
CONM-500 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-550 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	2.11E+02	3.03E+02	NA	NA	NA	NA	2.86E-02	3.36E+02	9.63E+00	3.92E-03	1.35E+02	9.06E-03	2.41E+02	1.87E-02	1.41E+02	6.41E-05
CONM-600 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	6.08E+02	8.71E+02	NA	NA	NA	NA	2.86E-02	9.68E+02	2.77E+01	3.92E-03	1.35E+02	2.61E-02	2.41E+02	1.87E-02	1.41E+02	1.85E-04
CONM-600+12.5 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-650 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-700 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-750 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	1.06E+03	1.52E+03	NA	NA	NA	NA	2.86E-02	1.69E+03	4.84E+01	3.92E-03	1.35E+02	4.55E-02	2.41E+02	1.87E-02	1.41E+02	3.23E-04
CONM-750+6 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CONM-800 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	1.19E+03	1.71E+03	NA	NA	NA	NA	2.86E-02	1.90E+03	5.44E+01	3.92E-03	1.35E+02	5.11E-02	2.41E+02	1.87E-02	1.41E+02	3.62E-04
CONM-800+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-850 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	2.50E+02	3.58E+02	NA	NA	NA	NA	2.86E-02	3.98E+02	1.14E+01	3.92E-03	1.35E+02	1.07E-02	2.41E+02	1.87E-02	1.41E+02	7.59E-05
CONM-900 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	2.25E+03	3.22E+03	NA	NA	NA	NA	2.86E-02	3.58E+03	1.03E+02	3.92E-03	1.35E+02	9.64E-02	2.41E+02	1.87E-02	1.41E+02	6.83E-04
CONM-900+12.5 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-950 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	2.12E+02	3.04E+02	NA	NA	NA	NA	2.86E-02	3.38E+02	9.68E+00	3.92E-03	1.35E+02	9.10E-03	2.41E+02	1.87E-02	1.41E+02	6.45E-05
CONM-Comp 1 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	5.66E+02	8.10E+02	NA	NA	NA	NA	2.86E-02	9.01E+02	2.58E+01	3.92E-03	1.35E+02	2.43E-02	2.41E+02	1.87E-02	1.41E+02	1.72E-04
CONM-Comp 2 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	4.48E+02	6.41E+02	NA	NA	NA	NA	2.86E-02	7.13E+02	2.04E+01	3.92E-03	1.35E+02	1.92E-02	2.41E+02	1.87E-02	1.41E+02	1.36E-04
CONM-Pile 1 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	3.73E+03	5.34E+03	NA	NA	NA	NA	2.86E-02	5.93E+03	1.70E+02	3.92E-03	1.35E+02	1.60E-01	2.41E+02	1.87E-02	1.41E+02	1.13E-03
																						Maximum HQ (Consolation Mine)	**1.13E-03**

TABLE C-6D: LEAD DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 6 - CONSOLATION MINE WASTE AREA (Continued)
Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)
calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 0.7

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Red Fox (Carnivorous Mammal - Terrestrial)																							
Reference Sites																							
SHGBG-1	1.72E-01	1.72E-01	7.62E-02	2.45E+01	4.20E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.22E+02	1.54E+00	5.17E-04	4.54E+00	6.55E-04	2.41E+02	1.87E-02	1.73E+02	3.79E-06
SHGBG-2	1.72E-01	1.72E-01	7.62E-02	2.49E+00	4.27E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.27E+01	1.57E-01	5.17E-04	4.54E+00	6.66E-05	2.41E+02	1.87E-02	1.73E+02	3.85E-07
Consolation Mine																						**Minimum HQ (Reference Sites)**	**3.85E-07**
CONM-000 (0-6")	1.72E-01	1.72E-01	9.28E-01	1.91E+02	3.28E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.06E+02	9.90E-01	5.17E-04	4.54E+00	3.85E-03	2.41E+02	1.87E-02	1.73E+02	2.23E-05
CONM-100 (0-6")	1.72E-01	1.72E-01	9.28E-01	5.13E+02	8.79E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.52E+02	2.65E+00	5.17E-04	4.54E+00	1.03E-02	2.41E+02	1.87E-02	1.73E+02	5.97E-05
CONM-100+25 (0-6")	1.72E-01	1.72E-01	9.28E-01	3.21E+02	5.51E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.46E+02	1.66E+00	5.17E-04	4.54E+00	6.47E-03	2.41E+02	1.87E-02	1.73E+02	3.74E-05
CONM-1000 (0-6")	1.72E-01	1.72E-01	9.28E-01	1.12E+03	1.92E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.21E+03	5.79E+00	5.17E-04	4.54E+00	2.25E-02	2.41E+02	1.87E-02	1.73E+02	1.30E-04
CONM-1000+35 (0-6")	1.72E-01	1.72E-01	9.28E-01	3.78E+02	6.48E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.07E+02	1.96E+00	5.17E-04	4.54E+00	7.61E-03	2.41E+02	1.87E-02	1.73E+02	4.40E-05
CONM-150 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-200 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-250 (0-6")	1.72E-01	1.72E-01	9.28E-01	4.36E+03	7.48E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.70E+03	2.26E+01	5.17E-04	4.54E+00	8.78E-02	2.41E+02	1.87E-02	1.73E+02	5.07E-04
CONM-250+25 (0-6")	1.72E-01	1.72E-01	9.28E-01	8.10E+02	1.39E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	8.73E+02	4.19E+00	5.17E-04	4.54E+00	1.63E-02	2.41E+02	1.87E-02	1.73E+02	9.42E-05
CONM-300 (0-6")	1.72E-01	1.72E-01	9.28E-01	6.70E+02	1.15E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	7.22E+02	3.47E+00	5.17E-04	4.54E+00	1.35E-02	2.41E+02	1.87E-02	1.73E+02	7.80E-05
CONM-300+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-350 (0-6")	1.72E-01	1.72E-01	9.28E-01	5.07E+02	8.69E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.46E+02	2.62E+00	5.17E-04	4.54E+00	1.02E-02	2.41E+02	1.87E-02	1.73E+02	5.90E-05
CONM-350+50 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-400 (0-6")	1.72E-01	1.72E-01	9.28E-01	5.25E+02	9.01E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.66E+02	2.72E+00	5.17E-04	4.54E+00	1.06E-02	2.41E+02	1.87E-02	1.73E+02	6.11E-05
CONM-400+25 (0-6")	1.72E-01	1.72E-01	9.28E-01	3.24E+02	5.55E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.49E+02	1.67E+00	5.17E-04	4.54E+00	6.52E-03	2.41E+02	1.87E-02	1.73E+02	3.77E-05
CONM-450 (0-6")	1.72E-01	1.72E-01	9.28E-01	3.84E+02	6.58E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.14E+02	1.99E+00	5.17E-04	4.54E+00	7.73E-03	2.41E+02	1.87E-02	1.73E+02	4.47E-05
CONM-450+25 (0-6")	1.72E-01	1.72E-01	9.28E-01	5.27E+02	9.04E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.68E+02	2.73E+00	5.17E-04	4.54E+00	1.06E-02	2.41E+02	1.87E-02	1.73E+02	6.13E-05
CONM-50 (0-6")	1.72E-01	1.72E-01	9.28E-01	5.91E+02	1.01E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	6.37E+02	3.06E+00	5.17E-04	4.54E+00	1.19E-02	2.41E+02	1.87E-02	1.73E+02	6.88E-05
CONM-50+50 (0-6")	1.72E-01	1.72E-01	9.28E-01	3.57E+02	6.13E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.85E+02	1.85E+00	5.17E-04	4.54E+00	7.20E-03	2.41E+02	1.87E-02	1.73E+02	4.16E-05
CONM-500 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-550 (0-6")	1.72E-01	1.72E-01	9.28E-01	3.12E+02	5.35E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.36E+02	1.62E+00	5.17E-04	4.54E+00	6.29E-03	2.41E+02	1.87E-02	1.73E+02	3.63E-05
CONM-600 (0-6")	1.72E-01	1.72E-01	9.28E-01	8.98E+02	1.54E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	9.68E+02	4.65E+00	5.17E-04	4.54E+00	1.81E-02	2.41E+02	1.87E-02	1.73E+02	1.05E-04
CONM-600+12.5 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-650 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-700 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-750 (0-6")	1.72E-01	1.72E-01	9.28E-01	1.57E+03	2.69E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.69E+03	8.13E+00	5.17E-04	4.54E+00	3.16E-02	2.41E+02	1.87E-02	1.73E+02	1.83E-04
CONM-750+6 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CONM-800 (0-6")	1.72E-01	1.72E-01	9.28E-01	1.76E+03	3.02E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.90E+03	9.12E+00	5.17E-04	4.54E+00	3.55E-02	2.41E+02	1.87E-02	1.73E+02	2.05E-04
CONM-800+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-850 (0-6")	1.72E-01	1.72E-01	9.28E-01	3.69E+02	6.33E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.98E+02	1.91E+00	5.17E-04	4.54E+00	7.44E-03	2.41E+02	1.87E-02	1.73E+02	4.30E-05
CONM-900 (0-6")	1.72E-01	1.72E-01	9.28E-01	3.32E+03	5.70E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.58E+03	1.72E+01	5.17E-04	4.54E+00	6.69E-02	2.41E+02	1.87E-02	1.73E+02	3.87E-04
CONM-900+12.5 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-950 (0-6")	1.72E-01	1.72E-01	9.28E-01	3.14E+02	5.38E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.38E+02	1.62E+00	5.17E-04	4.54E+00	6.32E-03	2.41E+02	1.87E-02	1.73E+02	3.65E-05
CONM-Comp 1 (0-6")	1.72E-01	1.72E-01	9.28E-01	8.36E+02	1.43E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	9.01E+02	4.33E+00	5.17E-04	4.54E+00	1.68E-02	2.41E+02	1.87E-02	1.73E+02	9.73E-05
CONM-Comp 2 (0-6")	1.72E-01	1.72E-01	9.28E-01	6.62E+02	1.14E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	7.13E+02	3.43E+00	5.17E-04	4.54E+00	1.33E-02	2.41E+02	1.87E-02	1.73E+02	7.70E-05
CONM-Pile 1 (0-6")	1.72E-01	1.72E-01	9.28E-01	5.51E+03	9.45E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.93E+03	2.85E+01	5.17E-04	4.54E+00	1.11E-01	2.41E+02	1.87E-02	1.73E+02	6.41E-04
																						Maximum HQ (Consolation Mine)	**6.41E-04**
Masked Shrew (Omnivorous Mammal - Terrestrial, Wetland)																							
Reference Sites																							
SHGBG-1	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	4.99E+02	4.23E+00	1.10E-03	3.22E+02	3.54E-01	1.00E+00	5.50E-03	8.33E+02	2.41E+02	1.87E-02	2.59E+02	3.22E+00
SHGBG-2	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	5.07E+01	4.30E-01	1.10E-03	3.27E+01	3.60E-02	1.00E+00	5.50E-03	8.47E+01	2.41E+02	1.87E-02	2.59E+02	3.27E-01
Consolation Mine																						**Minimum HQ (Reference Sites)**	**3.27E-01**
CONM-000 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	3.20E+02	2.71E+00	1.10E-03	2.06E+02	2.27E-01	1.00E+00	5.50E-03	5.34E+02	2.41E+02	1.87E-02	2.59E+02	2.06E+00
CONM-100 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	8.57E+02	7.26E+00	1.10E-03	5.52E+02	6.08E-01	1.00E+00	5.50E-03	1.43E+03	2.41E+02	1.87E-02	2.59E+02	5.53E+00
CONM-100+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	5.37E+02	4.55E+00	1.10E-03	3.46E+02	3.81E-01	1.00E+00	5.50E-03	8.97E+02	2.41E+02	1.87E-02	2.59E+02	3.46E+00
CONM-1000 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.87E+03	1.59E+01	1.10E-03	1.21E+03	1.33E+00	1.00E+00	5.50E-03	3.12E+03	2.41E+02	1.87E-02	2.59E+02	1.21E+01
CONM-1000+35 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	6.32E+02	5.35E+00	1.10E-03	4.07E+02	4.48E-01	1.00E+00	5.50E-03	1.05E+03	2.41E+02	1.87E-02	2.59E+02	4.07E+00
CONM-150 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-200 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-250 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	7.29E+03	6.17E+01	1.10E-03	4.70E+03	5.17E+00	1.00E+00	5.50E-03	1.22E+04	2.41E+02	1.87E-02	2.59E+02	4.70E+01
CONM-250+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.35E+03	1.15E+01	1.10E-03	8.73E+02	9.61E-01	1.00E+00	5.50E-03	2.26E+03	2.41E+02	1.87E-02	2.59E+02	8.73E+00

TABLE C-6D: LEAD DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 6 - CONSOLATION MINE WASTE AREA (Continued)
Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables; from BAF table; linked to soil or sed concentration table (VLOOKUP)
calculated values; linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 0.7

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Masked Shrew (Omnivorous Mammal - Terrestrial, Wetland)																							
CONM-300 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.12E+03	9.49E+00	1.10E-03	7.22E+02	7.95E-01	1.00E+00	5.50E-03	1.87E+03	2.41E+02	1.87E-02	2.59E+02	7.22E+00
CONM-300+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-350 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	8.47E+02	7.18E+00	1.10E-03	5.46E+02	6.01E-01	1.00E+00	5.50E-03	1.41E+03	2.41E+02	1.87E-02	2.59E+02	5.46E+00
CONM-350+50 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-400 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	8.78E+02	7.44E+00	1.10E-03	5.66E+02	6.23E-01	1.00E+00	5.50E-03	1.47E+03	2.41E+02	1.87E-02	2.59E+02	5.66E+00
CONM-400+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	5.41E+02	4.58E+00	1.10E-03	3.49E+02	3.84E-01	1.00E+00	5.50E-03	9.03E+02	2.41E+02	1.87E-02	2.59E+02	3.49E+00
CONM-450 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	6.42E+02	5.44E+00	1.10E-03	4.14E+02	4.55E-01	1.00E+00	5.50E-03	1.07E+03	2.41E+02	1.87E-02	2.59E+02	4.14E+00
CONM-450+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	8.81E+02	7.46E+00	1.10E-03	5.68E+02	6.25E-01	1.00E+00	5.50E-03	1.47E+03	2.41E+02	1.87E-02	2.59E+02	5.68E+00
CONM-50 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	9.89E+02	8.37E+00	1.10E-03	6.37E+02	7.01E-01	1.00E+00	5.50E-03	1.65E+03	2.41E+02	1.87E-02	2.59E+02	6.37E+00
CONM-50+50 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	5.98E+02	5.06E+00	1.10E-03	3.85E+02	4.24E-01	1.00E+00	5.50E-03	9.98E+02	2.41E+02	1.87E-02	2.59E+02	3.85E+00
CONM-500 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-550 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	5.22E+02	4.42E+00	1.10E-03	3.36E+02	3.70E-01	1.00E+00	5.50E-03	8.71E+02	2.41E+02	1.87E-02	2.59E+02	3.36E+00
CONM-600 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.50E+03	1.27E+01	1.10E-03	9.68E+02	1.07E+00	1.00E+00	5.50E-03	2.51E+03	2.41E+02	1.87E-02	2.59E+02	9.69E+00
CONM-600+12.5 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-650 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-700 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-750 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	2.63E+03	2.22E+01	1.10E-03	1.69E+03	1.86E+00	1.00E+00	5.50E-03	4.38E+03	2.41E+02	1.87E-02	2.59E+02	1.69E+01
CONM-750+6 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CONM-800 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	2.95E+03	2.50E+01	1.10E-03	1.90E+03	2.09E+00	1.00E+00	5.50E-03	4.92E+03	2.41E+02	1.87E-02	2.59E+02	1.90E+01
CONM-800+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-850 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	6.18E+02	5.23E+00	1.10E-03	3.98E+02	4.38E-01	1.00E+00	5.50E-03	1.03E+03	2.41E+02	1.87E-02	2.59E+02	3.98E+00
CONM-900 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	5.56E+03	4.71E+01	1.10E-03	3.58E+03	3.94E+00	1.00E+00	5.50E-03	9.27E+03	2.41E+02	1.87E-02	2.59E+02	3.58E+01
CONM-900+12.5 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-950 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	5.25E+02	4.45E+00	1.10E-03	3.38E+02	3.72E-01	1.00E+00	5.50E-03	8.76E+02	2.41E+02	1.87E-02	2.59E+02	3.38E+00
CONM-Comp 1 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.40E+03	1.18E+01	1.10E-03	9.01E+02	9.92E-01	1.00E+00	5.50E-03	2.33E+03	2.41E+02	1.87E-02	2.59E+02	9.01E+00
CONM-Comp 2 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.11E+03	9.38E+00	1.10E-03	7.13E+02	7.85E-01	1.00E+00	5.50E-03	1.85E+03	2.41E+02	1.87E-02	2.59E+02	7.13E+00
CONM-Pile 1 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	9.21E+03	7.80E+01	1.10E-03	5.93E+03	6.53E+00	1.00E+00	5.50E-03	1.54E+04	2.41E+02	1.87E-02	2.59E+02	5.94E+01
																						Maximum HQ (Consolation Mine)	**5.94E+01**

Notes

1 See Tables 3-1 through 3-13 for ingestion rates, foraging ranges used to calculate the SUF, and body weights.
2 BAFs were calculated by dividing site-collected tissue by collocated soil concentrations (BAFs are in dry weight). The maximum BAF calculated from the Beartrap Creek and Blackfoot River transects was used for site dose calculations. The maximum BAF from the terrestrial reference site was used for reference site dose calculations.
3 The mammal, plant, and invertebrate concentrations were calculated by multiplying the soil concentration by the BAF to generate a tissue concentration (see note 2).
4 Mammal, plant, and invertebrate daily doses were calculated by multiplying the ingestion rate (see note 1) by the tissue concentration (see note 3).
5 Soil concentration from 0 to 6 inches below ground surface at point ID as measured by XRF 10. Doses were not calculated for detected and non-detected soil concentrations measured below the minimum reference site concentration, as indicated by BB. For results that were measured at less than the detection limit, doses were calculated using half of the detection limit.
6 Soil daily dose was calculated by multiplying the soil ingestion rate (see note 1) by soil concentration (see note 5).
7 Total daily dose is calculated using the following equation: total daily dose = ([mammal daily dose (if applicable) + plant daily dose (if applicable) + invertebrate daily dose (if applicable) + soil daily dose]*SUF)/receptor species body weight.
8 The TRVs used in this risk assessment represent a mid-range effects level. The derivation of TRVs is described in Navy (1998).
9 Allometrically adjusted TRVs for birds were calculated using the following equation: receptor species TRV = (test species TRV) x (test species body weight / receptor species body weight)$^{(1-1.2)}$.
10 Allometrically adjusted TRVs for mammals were calculated using the following equation: receptor species TRV = (test species TRV) x (test species body weight / receptor species body weight)$^{(1-0.94)}$.
11 HQs were calculated using the following equation: HQ = total daily dose/allometrically adjusted TRV.
12 Highlighted cells indicate an HQ greater than 1.0.

BAF	Bioaccumulation Factor	mg/day	Milligram per day
BB	Below minimum background reference site concentration	mg/kg	Milligram per kilogram
EE/CA	Engineering Evaluation/Cost Analysis	NA	Not applicable
EU	Exposure Unit	Navy	Department of the Navy
HQ	Hazard quotient	SUF	Site use factor
ID	Identification	TRV	Toxicity reference value
kg	Kilogram	XRF	X-ray fluorescence
kg/day	Kilogram per day	XRF 10	XRF measurements recorded following drying and seiving through a #10-mesh screen

Sources: Department of the Navy. 1998. "Development of Toxicity Reference Values for Conducting Ecological Risk Assessments at Naval Facilities in California, Interim Final." Prepared by Naval Facilities Engineering Command, Engineering Field Activity West (EFA West). San Bruno, California.

TABLE C-6E: MANGANESE DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 6 - CONSOLATION MINE WASTE AREA

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 0.7

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Mourning Dove (Herbivorous Birds - Terrestrial)																							
Reference Sites																							
SHGBG-1	5.76E-03	NA	NA	NA	NA	5.76E-03	3.34E-01	4.91E+02	2.83E+00	NA	NA	NA	NA	5.36E-04	1.47E+03	7.88E-01	2.70E-03	1.09E-01	8.96E-02	7.76E+02	1.97E-01	6.90E+02	1.30E-04
SHGBG-2	5.76E-03	NA	NA	NA	NA	5.76E-03	3.34E-01	3.37E+02	1.94E+00	NA	NA	NA	NA	5.36E-04	1.01E+03	5.40E-01	2.70E-03	1.09E-01	6.14E-02	7.76E+02	1.97E-01	6.90E+02	8.91E-05
Consolation Mine																						**Minimum HQ (Reference Sites)**	**8.91E-05**
CONM-000 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-100 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-100+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	1.43E+04	8.23E+01	NA	NA	NA	NA	5.36E-04	1.44E+03	7.72E-01	2.70E-03	1.09E-01	2.06E+00	7.76E+02	1.97E-01	6.90E+02	2.98E-03
CONM-1000 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-1000+35 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-150 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-200 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-250 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-250+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	1.37E+04	7.91E+01	NA	NA	NA	NA	5.36E-04	1.39E+03	7.42E-01	2.70E-03	1.09E-01	1.98E+00	7.76E+02	1.97E-01	6.90E+02	2.86E-03
CONM-300 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-300+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	1.17E+04	6.74E+01	NA	NA	NA	NA	5.36E-04	1.18E+03	6.32E-01	2.70E-03	1.09E-01	1.68E+00	7.76E+02	1.97E-01	6.90E+02	2.44E-03
CONM-350 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-350+50 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	2.38E+04	1.37E+02	NA	NA	NA	NA	5.36E-04	2.40E+03	1.29E+00	2.70E-03	1.09E-01	3.42E+00	7.76E+02	1.97E-01	6.90E+02	4.96E-03
CONM-400 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-400+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-450 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-450+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-50 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-50+50 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	1.51E+04	8.71E+01	NA	NA	NA	NA	5.36E-04	1.53E+03	8.17E-01	2.70E-03	1.09E-01	2.18E+00	7.76E+02	1.97E-01	6.90E+02	3.15E-03
CONM-500 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-550 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-600 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-600+12.5 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-650 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-700 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-750 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-750+6 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CONM-800 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-800+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-850 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	1.67E+04	9.63E+01	NA	NA	NA	NA	5.36E-04	1.69E+03	9.04E-01	2.70E-03	1.09E-01	2.41E+00	7.76E+02	1.97E-01	6.90E+02	3.49E-03
CONM-900 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-900+12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	1.32E+04	7.59E+01	NA	NA	NA	NA	5.36E-04	1.33E+03	7.13E-01	2.70E-03	1.09E-01	1.90E+00	7.76E+02	1.97E-01	6.90E+02	2.75E-03
CONM-950 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-Comp 1 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-Comp 2 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-Pile 1 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
																						Maximum HQ (Consolation Mine)	**4.96E-03**
Red-Tailed Hawk (Carnivorous Birds - Terrestrial)																							
Reference Sites																							
SHGBG-1	9.00E-02	9.00E-02	5.93E-02	8.72E+01	7.85E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.47E+03	7.54E+00	1.00E-03	1.13E+00	1.36E-02	7.76E+02	1.97E-01	1.10E+03	1.24E-05
SHGBG-2	9.00E-02	9.00E-02	5.93E-02	5.98E+01	5.38E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.01E+03	5.17E+00	1.00E-03	1.13E+00	9.35E-03	7.76E+02	1.97E-01	1.10E+03	8.49E-06
Consolation Mine																						**Minimum HQ (Reference Sites)**	**8.49E-06**
CONM-000 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-100 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-100+25 (0-6")	9.00E-02	9.00E-02	2.80E-02	4.03E+01	3.63E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.44E+03	7.39E+00	1.00E-03	1.13E+00	9.76E-03	7.76E+02	1.97E-01	1.10E+03	8.86E-06
CONM-1000 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-1000+35 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-150 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-200 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-250 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-250+25 (0-6")	9.00E-02	9.00E-02	2.80E-02	3.88E+01	3.49E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.39E+03	7.10E+00	1.00E-03	1.13E+00	9.38E-03	7.76E+02	1.97E-01	1.10E+03	8.51E-06

TABLE C-6E: MANGANESE DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 6 - CONSOLATION MINE WASTE AREA (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 0.7

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Red-Tailed Hawk (Carnivorous Birds - Terrestrial)																							
CONM-300 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-300+25 (0-6")	9.00E-02	9.00E-02	2.80E-02	3.30E+01	2.97E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.18E+03	6.05E+00	1.00E-03	1.13E+00	7.99E-03	7.76E+02	1.97E-01	1.10E+03	7.25E-06
CONM-350 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-350+50 (0-6")	9.00E-02	9.00E-02	2.80E-02	6.72E+01	6.04E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.40E+03	1.23E+01	1.00E-03	1.13E+00	1.63E-02	7.76E+02	1.97E-01	1.10E+03	1.48E-05
CONM-400 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-400+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-450 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-450+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-50 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-50+50 (0-6")	9.00E-02	9.00E-02	2.80E-02	4.27E+01	3.84E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.53E+03	7.82E+00	1.00E-03	1.13E+00	1.03E-02	7.76E+02	1.97E-01	1.10E+03	9.38E-06
CONM-500 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-550 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-600 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-600+12.5 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-650 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-700 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-750 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-750+6 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CONM-800 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-800+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-850 (0-6")	9.00E-02	9.00E-02	2.80E-02	4.72E+01	4.25E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.69E+03	8.65E+00	1.00E-03	1.13E+00	1.14E-02	7.76E+02	1.97E-01	1.10E+03	1.04E-05
CONM-900 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-900+12.5 (0-6")	9.00E-02	9.00E-02	2.80E-02	3.72E+01	3.35E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.33E+03	6.82E+00	1.00E-03	1.13E+00	9.01E-03	7.76E+02	1.97E-01	1.10E+03	8.18E-06
CONM-950 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-Comp 1 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-Comp 2 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-Pile 1 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
																					Maximum HQ (Consolation Mine)		**1.48E-05**
American Kestrel (Insectivorous Birds - Terrestrial)																							
Reference Sites																							
SHGBG-1	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	2.17E+03	2.99E+01	7.84E-04	1.47E+03	1.15E+00	2.68E-03	1.24E-01	6.69E-01	7.76E+02	1.97E-01	7.08E+02	9.45E-04
SHGBG-2	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.49E+03	2.05E+01	7.84E-04	1.01E+03	7.91E-01	2.68E-03	1.24E-01	4.59E-01	7.76E+02	1.97E-01	7.08E+02	6.48E-04
Consolation Mine																						**Minimum HQ (Reference Sites)**	**6.48E-04**
CONM-000 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-100 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-100+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	2.13E+03	2.93E+01	7.84E-04	1.44E+03	1.13E+00	2.68E-03	1.24E-01	6.56E-01	7.76E+02	1.97E-01	7.08E+02	9.27E-04
CONM-1000 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-1000+35 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-150 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-200 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-250 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-250+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	2.04E+03	2.81E+01	7.84E-04	1.39E+03	1.09E+00	2.68E-03	1.24E-01	6.30E-01	7.76E+02	1.97E-01	7.08E+02	8.91E-04
CONM-300 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-300+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.74E+03	2.40E+01	7.84E-04	1.18E+03	9.26E-01	2.68E-03	1.24E-01	5.37E-01	7.76E+02	1.97E-01	7.08E+02	7.59E-04
CONM-350 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-350+50 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	3.54E+03	4.87E+01	7.84E-04	2.40E+03	1.88E+00	2.68E-03	1.24E-01	1.09E+00	7.76E+02	1.97E-01	7.08E+02	1.54E-03
CONM-400 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-400+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-450 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-450+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-50 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-50+50 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	2.25E+03	3.10E+01	7.84E-04	1.53E+03	1.20E+00	2.68E-03	1.24E-01	6.94E-01	7.76E+02	1.97E-01	7.08E+02	9.81E-04
CONM-500 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-550 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-600 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB

TABLE C-6E: MANGANESE DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 6 - CONSOLATION MINE WASTE AREA (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **0.7**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
American Kestrel (Insectivorous Birds - Terrestrial)																							
CONM-600+12.5 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-650 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-700 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-750 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-750+6 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CONM-800 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-800+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-850 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	2.49E+03	3.43E+01	7.84E-04	1.69E+03	1.32E+00	2.68E-03	1.24E-01	7.68E-01	7.76E+02	1.97E-01	7.08E+02	1.08E-03
CONM-900 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-900+12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.96E+03	2.70E+01	7.84E-04	1.33E+03	1.04E+00	2.68E-03	1.24E-01	6.05E-01	7.76E+02	1.97E-01	7.08E+02	8.55E-04
CONM-950 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-Comp 1 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-Comp 2 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-Pile 1 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
																			Maximum HQ (Consolation Mine)				**1.54E-03**
Meadow Vole (Small Herbivorous Mammal - Terrestrial)																							
Reference Sites																							
SHGBG-1	4.69E-03	NA	NA	NA	NA	4.69E-03	3.34E-01	4.91E+02	2.30E+00	NA	NA	NA	NA	1.13E-04	1.47E+03	1.65E-01	1.00E+00	3.06E-02	8.07E+01	1.59E+02	2.97E-02	1.59E+02	5.08E-01
SHGBG-2	4.69E-03	NA	NA	NA	NA	4.69E-03	3.34E-01	3.37E+02	1.58E+00	NA	NA	NA	NA	1.13E-04	1.01E+03	1.13E-01	1.00E+00	3.06E-02	5.54E+01	1.59E+02	2.97E-02	1.59E+02	3.49E-01
Consolation Mine																						**Minimum HQ (Reference Sites)**	**3.49E-01**
CONM-000 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-100 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-100+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	1.43E+04	6.70E+01	NA	NA	NA	NA	1.13E-04	1.44E+03	1.62E-01	1.00E+00	3.06E-02	2.19E+03	1.59E+02	2.97E-02	1.59E+02	1.38E+01
CONM-1000 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-1000+35 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-150 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-200 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-250 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-250+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	1.37E+04	6.44E+01	NA	NA	NA	NA	1.13E-04	1.39E+03	1.56E-01	1.00E+00	3.06E-02	2.11E+03	1.59E+02	2.97E-02	1.59E+02	1.33E+01
CONM-300 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-300+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	1.17E+04	5.48E+01	NA	NA	NA	NA	1.13E-04	1.18E+03	1.33E-01	1.00E+00	3.06E-02	1.80E+03	1.59E+02	2.97E-02	1.59E+02	1.13E+01
CONM-350 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-350+50 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	2.38E+04	1.12E+02	NA	NA	NA	NA	1.13E-04	2.40E+03	2.70E-01	1.00E+00	3.06E-02	3.65E+03	1.59E+02	2.97E-02	1.59E+02	2.30E+01
CONM-400 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-400+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-450 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-450+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-50 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-50+50 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	1.51E+04	7.09E+01	NA	NA	NA	NA	1.13E-04	1.53E+03	1.72E-01	1.00E+00	3.06E-02	2.32E+03	1.59E+02	2.97E-02	1.59E+02	1.46E+01
CONM-500 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-550 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-600 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-600+12.5 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-650 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-700 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-750 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-750+6 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CONM-800 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-800+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-850 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	1.67E+04	7.84E+01	NA	NA	NA	NA	1.13E-04	1.69E+03	1.90E-01	1.00E+00	3.06E-02	2.57E+03	1.59E+02	2.97E-02	1.59E+02	1.62E+01
CONM-900 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB

TABLE C-6E: MANGANESE DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 6 - CONSOLATION MINE WASTE AREA (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **0.7**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Meadow Vole (Small Herbivorous Mammal - Terrestrial)																							
CONM-900+12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	1.32E+04	6.18E+01	NA	NA	NA	NA	1.13E-04	1.33E+03	1.50E-01	1.00E+00	3.06E-02	2.02E+03	1.59E+02	2.97E-02	1.59E+02	1.27E+01
CONM-950 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-Comp 1 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-Comp 2 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-Pile 1 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
																						Maximum HQ (Consolation Mine)	**2.30E+01**
White-Tailed Deer (Large Herbivorous Mammal - Terrestrial)																							
Reference Sites																							
SHGBG-1	1.43E+00	NA	NA	NA	NA	1.43E+00	3.34E-01	4.91E+02	7.04E+02	NA	NA	NA	NA	2.86E-02	1.47E+03	4.21E+01	3.92E-03	1.35E+02	2.16E-02	1.59E+02	2.97E-02	9.60E+01	2.25E-04
SHGBG-2	1.43E+00	NA	NA	NA	NA	1.43E+00	3.34E-01	3.37E+02	4.83E+02	NA	NA	NA	NA	2.86E-02	1.01E+03	2.89E+01	3.92E-03	1.35E+02	1.48E-02	1.59E+02	2.97E-02	9.60E+01	1.55E-04
Consolation Mine																						**Minimum HQ (Reference Sites)**	**1.55E-04**
CONM-000 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-100 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-100+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	1.43E+04	2.04E+04	NA	NA	NA	NA	2.86E-02	1.44E+03	4.13E+01	3.92E-03	1.35E+02	5.94E-01	1.59E+02	2.97E-02	9.60E+01	6.19E-03
CONM-1000 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-1000+35 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-150 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-200 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-250 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-250+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	1.37E+04	1.96E+04	NA	NA	NA	NA	2.86E-02	1.39E+03	3.97E+01	3.92E-03	1.35E+02	5.71E-01	1.59E+02	2.97E-02	9.60E+01	5.95E-03
CONM-300 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-300+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	1.17E+04	1.67E+04	NA	NA	NA	NA	2.86E-02	1.18E+03	3.38E+01	3.92E-03	1.35E+02	4.87E-01	1.59E+02	2.97E-02	9.60E+01	5.07E-03
CONM-350 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-350+50 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	2.38E+04	3.40E+04	NA	NA	NA	NA	2.86E-02	2.40E+03	6.87E+01	3.92E-03	1.35E+02	9.90E-01	1.59E+02	2.97E-02	9.60E+01	1.03E-02
CONM-400 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-400+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-450 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-450+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-50 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-50+50 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	1.51E+04	2.16E+04	NA	NA	NA	NA	2.86E-02	1.53E+03	4.37E+01	3.92E-03	1.35E+02	6.29E-01	1.59E+02	2.97E-02	9.60E+01	6.55E-03
CONM-500 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-550 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-600 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-600+12.5 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-650 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-700 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-750 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-750+6 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CONM-800 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-800+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-850 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	1.67E+04	2.39E+04	NA	NA	NA	NA	2.86E-02	1.69E+03	4.83E+01	3.92E-03	1.35E+02	6.96E-01	1.59E+02	2.97E-02	9.60E+01	7.25E-03
CONM-900 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-900+12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	1.32E+04	1.89E+04	NA	NA	NA	NA	2.86E-02	1.33E+03	3.81E+01	3.92E-03	1.35E+02	5.48E-01	1.59E+02	2.97E-02	9.60E+01	5.71E-03
CONM-950 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-Comp 1 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-Comp 2 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-Pile 1 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
																						Maximum HQ (Consolation Mine)	**1.03E-02**

TABLE C-6E: MANGANESE DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 6 - CONSOLATION MINE WASTE AREA (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **0.7**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Red Fox (Carnivorous Mammal - Terrestrial)																							
Reference Sites																							
SHGBG-1	1.72E-01	1.72E-01	5.93E-02	8.72E+01	1.50E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.47E+03	7.06E+00	5.17E-04	4.54E+00	2.51E-03	1.59E+02	2.97E-02	1.18E+02	2.13E-05
SHGBG-2	1.72E-01	1.72E-01	5.93E-02	5.98E+01	1.03E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.01E+03	4.84E+00	5.17E-04	4.54E+00	1.72E-03	1.59E+02	2.97E-02	1.18E+02	1.46E-05
Consolation Mine																						**Minimum HQ (Reference Sites)**	**1.46E-05**
CONM-000 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-100 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-100+25 (0-6")	1.72E-01	1.72E-01	2.80E-02	4.03E+01	6.92E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.44E+03	6.92E+00	5.17E-04	4.54E+00	1.58E-03	1.59E+02	2.97E-02	1.18E+02	1.34E-05
CONM-1000 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-1000+35 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-150 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-200 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-250 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-250+25 (0-6")	1.72E-01	1.72E-01	2.80E-02	3.88E+01	6.65E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.39E+03	6.65E+00	5.17E-04	4.54E+00	1.52E-03	1.59E+02	2.97E-02	1.18E+02	1.29E-05
CONM-300 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-300+25 (0-6")	1.72E-01	1.72E-01	2.80E-02	3.30E+01	5.67E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.18E+03	5.67E+00	5.17E-04	4.54E+00	1.29E-03	1.59E+02	2.97E-02	1.18E+02	1.10E-05
CONM-350 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-350+50 (0-6")	1.72E-01	1.72E-01	2.80E-02	6.72E+01	1.15E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.40E+03	1.15E+01	5.17E-04	4.54E+00	2.63E-03	1.59E+02	2.97E-02	1.18E+02	2.23E-05
CONM-400 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-400+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-450 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-450+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-50 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-50+50 (0-6")	1.72E-01	1.72E-01	2.80E-02	4.27E+01	7.32E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.53E+03	7.33E+00	5.17E-04	4.54E+00	1.67E-03	1.59E+02	2.97E-02	1.18E+02	1.42E-05
CONM-500 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-550 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-600 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-600+12.5 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-650 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-700 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-750 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-750+6 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CONM-800 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-800+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-850 (0-6")	1.72E-01	1.72E-01	2.80E-02	4.72E+01	8.10E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.69E+03	8.10E+00	5.17E-04	4.54E+00	1.85E-03	1.59E+02	2.97E-02	1.18E+02	1.57E-05
CONM-900 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-900+12.5 (0-6")	1.72E-01	1.72E-01	2.80E-02	3.72E+01	6.39E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.33E+03	6.39E+00	5.17E-04	4.54E+00	1.46E-03	1.59E+02	2.97E-02	1.18E+02	1.24E-05
CONM-950 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-Comp 1 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-Comp 2 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-Pile 1 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
																						Maximum HQ (Consolation Mine)	**2.23E-05**
Masked Shrew (Omnivorous Mammal - Terrestrial, Wetland)																							
Reference Sites																							
SHGBG-1	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	2.17E+03	1.84E+01	1.10E-03	1.47E+03	1.62E+00	1.00E+00	5.50E-03	3.64E+03	1.59E+02	2.97E-02	1.76E+02	2.07E+01
SHGBG-2	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.49E+03	1.26E+01	1.10E-03	1.01E+03	1.11E+00	1.00E+00	5.50E-03	2.49E+03	1.59E+02	2.97E-02	1.76E+02	1.42E+01
Consolation Mine																						**Minimum HQ (Reference Sites)**	**1.42E+01**
CONM-000 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-100 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-100+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	2.13E+03	1.80E+01	1.10E-03	1.44E+03	1.59E+00	1.00E+00	5.50E-03	3.56E+03	1.59E+02	2.97E-02	1.76E+02	2.02E+01
CONM-1000 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-1000+35 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-150 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-200 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-250 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-250+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	2.04E+03	1.73E+01	1.10E-03	1.39E+03	1.53E+00	1.00E+00	5.50E-03	3.43E+03	1.59E+02	2.97E-02	1.76E+02	1.95E+01

TABLE C-6E: MANGANESE DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 6 - CONSOLATION MINE WASTE AREA (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 0.7

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Masked Shrew (Omnivorous Mammal - Terrestrial, Wetland)																							
CONM-300 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-300+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.74E+03	1.48E+01	1.10E-03	1.18E+03	1.30E+00	1.00E+00	5.50E-03	2.92E+03	1.59E+02	2.97E-02	1.76E+02	1.66E+01
CONM-350 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-350+50 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	3.54E+03	3.00E+01	1.10E-03	2.40E+03	2.64E+00	1.00E+00	5.50E-03	5.94E+03	1.59E+02	2.97E-02	1.76E+02	3.37E+01
CONM-400 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-400+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-450 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-450+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-50 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-50+50 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	2.25E+03	1.91E+01	1.10E-03	1.53E+03	1.68E+00	1.00E+00	5.50E-03	3.77E+03	1.59E+02	2.97E-02	1.76E+02	2.14E+01
CONM-500 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-550 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-600 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-600+12.5 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-650 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-700 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-750 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-750+6 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CONM-800 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-800+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-850 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	2.49E+03	2.11E+01	1.10E-03	1.69E+03	1.86E+00	1.00E+00	5.50E-03	4.17E+03	1.59E+02	2.97E-02	1.76E+02	2.37E+01
CONM-900 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-900+12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.96E+03	1.66E+01	1.10E-03	1.33E+03	1.46E+00	1.00E+00	5.50E-03	3.29E+03	1.59E+02	2.97E-02	1.76E+02	1.87E+01
CONM-950 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-Comp 1 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-Comp 2 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
CONM-Pile 1 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB

Maximum HQ (Consolation Mine) **3.37E+01**

Notes

1 See Tables 3-1 through 3-13 for ingestion rates, foraging ranges used to calculate the SUF, and body weights.

2 BAFs were calculated by dividing site-collected tissue by collocated soil concentrations (BAFs are in dry weight). The maximum BAF calculated from the Beartrap Creek and Blackfoot River transects was used for site dose calculations. The maximum BAF from the terrestrial reference site was used for reference site dose calculations.

3 The mammal, plant, and invertebrate concentrations were calculated by multiplying the soil concentration by the BAF to generate a tissue concentration (see note 2).

4 Mammal, plant, and invertebrate daily doses were calculated by multiplying the ingestion rate (see note 1) by the tissue concentration (see note 3).

5 Soil concentration from 0 to 6 inches below ground surface at point ID as measured by XRF 10. Doses were not calculated for detected and non-detected soil concentrations measured below the minimum reference site concentration, as indicated by BB. For results that were measured at less than the detection limit, doses were calculated using half of the detection limit.

6 Soil daily dose was calculated by multiplying the soil ingestion rate (see note 1) by soil concentration (see note 5).

7 Total daily dose is calculated using the following equation: total daily dose = ([mammal daily dose (if applicable) + plant daily dose (if applicable) + invertebrate daily dose (if applicable) + soil daily dose]*SUF)/receptor species body weight.

8 The TRVs used in this risk assessment represent a mid-range effects level. The derivation of TRVs is described in Navy (1998).

9 Allometrically adjusted TRVs for birds were calculated using the following equation: receptor species TRV = (test species TRV) x (test species body weight / receptor species body weight)$^{(1-1.2)}$.

10 Allometrically adjusted TRVs for mammals were calculated using the following equation: receptor species TRV = (test species TRV) x (test species body weight / receptor species body weight)$^{(1-0.94)}$.

11 HQs were calculated using the following equation: HQ = total daily dose/allometrically adjusted TRV.

12 Highlighted cells indicate an HQ greater than 1.0.

BAF	Bioaccumulation Factor	mg/day	Milligram per day
BB	Below minimum background reference site concentration	mg/kg	Milligram per kilogram
EE/CA	Engineering Evaluation/Cost Analysis	NA	Not applicable
EU	Exposure Unit	Navy	Department of the Navy
HQ	Hazard quotient	SUF	Site use factor
ID	Identification	TRV	Toxicity reference value
kg	Kilogram	XRF	X-ray fluorescence
kg/day	Kilogram per day	XRF 10	XRF measurements recorded following drying and seiving through a #10-mesh screen

Sources: Department of the Navy. 1998. "Development of Toxicity Reference Values for Conducting Ecological Risk Assessments at Naval Facilities in California, Interim Final." Prepared by Naval Facilities Engineering Command, Engineering Field Activity West (EFA West). San Bruno, California.

TABLE C-6F: ZINC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 6 - CONSOLATION MINE WASTE AREA

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **0.7**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Mourning Dove (Herbivorous Birds - Terrestrial)																							
Reference Sites																							
SHGBG-1	5.76E-03	NA	NA	NA	NA	5.76E-03	1.41E+00	4.10E+02	2.36E+00	NA	NA	NA	NA	5.36E-04	2.91E+02	1.56E-01	2.70E-03	1.09E-01	6.23E-02	1.72E+02	9.55E-01	1.11E+02	5.59E-04
SHGBG-2	5.76E-03	NA	NA	NA	NA	5.76E-03	1.41E+00	1.40E+02	8.07E-01	NA	NA	NA	NA	5.36E-04	9.92E+01	5.32E-02	2.70E-03	1.09E-01	2.13E-02	1.72E+02	9.55E-01	1.11E+02	1.91E-04
Consolation Mine																						**Minimum HQ (Reference Sites)**	**1.91E-04**
CONM-000 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	4.45E+02	2.56E+00	NA	NA	NA	NA	5.36E-04	2.25E+02	1.20E-01	2.70E-03	1.09E-01	6.64E-02	1.72E+02	9.55E-01	1.11E+02	5.96E-04
CONM-100 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	6.56E+02	3.78E+00	NA	NA	NA	NA	5.36E-04	3.31E+02	1.77E-01	2.70E-03	1.09E-01	9.79E-02	1.72E+02	9.55E-01	1.11E+02	8.78E-04
CONM-100+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	8.27E+02	4.77E+00	NA	NA	NA	NA	5.36E-04	4.18E+02	2.24E-01	2.70E-03	1.09E-01	1.24E-01	1.72E+02	9.55E-01	1.11E+02	1.11E-03
CONM-1000 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	5.00E+02	2.88E+00	NA	NA	NA	NA	5.36E-04	2.52E+02	1.35E-01	2.70E-03	1.09E-01	7.46E-02	1.72E+02	9.55E-01	1.11E+02	6.69E-04
CONM-1000+35 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	6.26E+02	3.61E+00	NA	NA	NA	NA	5.36E-04	3.16E+02	1.69E-01	2.70E-03	1.09E-01	9.34E-02	1.72E+02	9.55E-01	1.11E+02	8.38E-04
CONM-150 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	6.65E+02	3.83E+00	NA	NA	NA	NA	5.36E-04	3.35E+02	1.80E-01	2.70E-03	1.09E-01	9.92E-02	1.72E+02	9.55E-01	1.11E+02	8.90E-04
CONM-200 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	6.93E+02	3.99E+00	NA	NA	NA	NA	5.36E-04	3.50E+02	1.87E-01	2.70E-03	1.09E-01	1.04E-01	1.72E+02	9.55E-01	1.11E+02	9.29E-04
CONM-250 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	9.80E+02	5.64E+00	NA	NA	NA	NA	5.36E-04	4.94E+02	2.65E-01	2.70E-03	1.09E-01	1.46E-01	1.72E+02	9.55E-01	1.11E+02	1.31E-03
CONM-250+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	1.20E+03	6.93E+00	NA	NA	NA	NA	5.36E-04	6.07E+02	3.25E-01	2.70E-03	1.09E-01	1.80E-01	1.72E+02	9.55E-01	1.11E+02	1.61E-03
CONM-300 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	9.13E+02	5.26E+00	NA	NA	NA	NA	5.36E-04	4.61E+02	2.47E-01	2.70E-03	1.09E-01	1.36E-01	1.72E+02	9.55E-01	1.11E+02	1.22E-03
CONM-300+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	7.50E+02	4.32E+00	NA	NA	NA	NA	5.36E-04	3.79E+02	2.03E-01	2.70E-03	1.09E-01	1.12E-01	1.72E+02	9.55E-01	1.11E+02	1.00E-03
CONM-350 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	4.94E+02	2.84E+00	NA	NA	NA	NA	5.36E-04	2.49E+02	1.33E-01	2.70E-03	1.09E-01	7.37E-02	1.72E+02	9.55E-01	1.11E+02	6.61E-04
CONM-350+50 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	7.98E+02	4.60E+00	NA	NA	NA	NA	5.36E-04	4.03E+02	2.16E-01	2.70E-03	1.09E-01	1.19E-01	1.72E+02	9.55E-01	1.11E+02	1.07E-03
CONM-400 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	4.06E+02	2.34E+00	NA	NA	NA	NA	5.36E-04	2.05E+02	1.10E-01	2.70E-03	1.09E-01	6.06E-02	1.72E+02	9.55E-01	1.11E+02	5.44E-04
CONM-400+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	6.69E+02	3.85E+00	NA	NA	NA	NA	5.36E-04	3.38E+02	1.81E-01	2.70E-03	1.09E-01	9.99E-02	1.72E+02	9.55E-01	1.11E+02	8.96E-04
CONM-450 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	1.01E+03	5.84E+00	NA	NA	NA	NA	5.36E-04	5.11E+02	2.74E-01	2.70E-03	1.09E-01	1.51E-01	1.72E+02	9.55E-01	1.11E+02	1.36E-03
CONM-450+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	6.51E+02	3.75E+00	NA	NA	NA	NA	5.36E-04	3.29E+02	1.76E-01	2.70E-03	1.09E-01	9.72E-02	1.72E+02	9.55E-01	1.11E+02	8.72E-04
CONM-50 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	5.07E+02	2.92E+00	NA	NA	NA	NA	5.36E-04	2.56E+02	1.37E-01	2.70E-03	1.09E-01	7.56E-02	1.72E+02	9.55E-01	1.11E+02	6.78E-04
CONM-50+50 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	9.51E+02	5.48E+00	NA	NA	NA	NA	5.36E-04	4.80E+02	2.57E-01	2.70E-03	1.09E-01	1.42E-01	1.72E+02	9.55E-01	1.11E+02	1.27E-03
CONM-500 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	2.84E+02	1.64E+00	NA	NA	NA	NA	5.36E-04	1.43E+02	7.68E-02	2.70E-03	1.09E-01	4.24E-02	1.72E+02	9.55E-01	1.11E+02	3.80E-04
CONM-550 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	7.69E+02	4.43E+00	NA	NA	NA	NA	5.36E-04	3.88E+02	2.08E-01	2.70E-03	1.09E-01	1.15E-01	1.72E+02	9.55E-01	1.11E+02	1.03E-03
CONM-600 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	5.59E+02	3.22E+00	NA	NA	NA	NA	5.36E-04	2.82E+02	1.51E-01	2.70E-03	1.09E-01	8.34E-02	1.72E+02	9.55E-01	1.11E+02	7.48E-04
CONM-600+12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	8.46E+02	4.88E+00	NA	NA	NA	NA	5.36E-04	4.27E+02	2.29E-01	2.70E-03	1.09E-01	1.26E-01	1.72E+02	9.55E-01	1.11E+02	1.13E-03
CONM-650 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	7.14E+02	4.11E+00	NA	NA	NA	NA	5.36E-04	3.60E+02	1.93E-01	2.70E-03	1.09E-01	1.07E-01	1.72E+02	9.55E-01	1.11E+02	9.56E-04
CONM-700 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	4.75E+02	2.74E+00	NA	NA	NA	NA	5.36E-04	2.40E+02	1.28E-01	2.70E-03	1.09E-01	7.09E-02	1.72E+02	9.55E-01	1.11E+02	6.36E-04
CONM-750 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	1.48E+03	8.51E+00	NA	NA	NA	NA	5.36E-04	7.46E+02	4.00E-01	2.70E-03	1.09E-01	2.21E-01	1.72E+02	9.55E-01	1.11E+02	1.98E-03
CONM-750+6 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CONM-800 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	2.11E+02	1.22E+00	NA	NA	NA	NA	5.36E-04	1.07E+02	5.71E-02	2.70E-03	1.09E-01	3.15E-02	1.72E+02	9.55E-01	1.11E+02	2.83E-04
CONM-800+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	6.45E+02	3.71E+00	NA	NA	NA	NA	5.36E-04	3.25E+02	1.74E-01	2.70E-03	1.09E-01	9.63E-02	1.72E+02	9.55E-01	1.11E+02	8.64E-04
CONM-850 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	1.14E+03	6.60E+00	NA	NA	NA	NA	5.36E-04	5.78E+02	3.10E-01	2.70E-03	1.09E-01	1.71E-01	1.72E+02	9.55E-01	1.11E+02	1.53E-03
CONM-900 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	1.61E+03	9.30E+00	NA	NA	NA	NA	5.36E-04	8.15E+02	4.37E-01	2.70E-03	1.09E-01	2.41E-01	1.72E+02	9.55E-01	1.11E+02	2.16E-03
CONM-900+12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	5.01E+02	2.89E+00	NA	NA	NA	NA	5.36E-04	2.53E+02	1.35E-01	2.70E-03	1.09E-01	7.48E-02	1.72E+02	9.55E-01	1.11E+02	6.71E-04
CONM-950 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	4.26E+02	2.45E+00	NA	NA	NA	NA	5.36E-04	2.15E+02	1.15E-01	2.70E-03	1.09E-01	6.36E-02	1.72E+02	9.55E-01	1.11E+02	5.70E-04
CONM-Comp 1 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	4.61E+02	2.66E+00	NA	NA	NA	NA	5.36E-04	2.33E+02	1.25E-01	2.70E-03	1.09E-01	6.89E-02	1.72E+02	9.55E-01	1.11E+02	6.18E-04
CONM-Comp 2 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	1.55E+03	8.93E+00	NA	NA	NA	NA	5.36E-04	7.82E+02	4.19E-01	2.70E-03	1.09E-01	2.31E-01	1.72E+02	9.55E-01	1.11E+02	2.08E-03
CONM-Pile 1 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	5.13E+02	2.95E+00	NA	NA	NA	NA	5.36E-04	2.59E+02	1.39E-01	2.70E-03	1.09E-01	7.65E-02	1.72E+02	9.55E-01	1.11E+02	6.86E-04
																						Maximum HQ (Consolation Mine)	**2.16E-03**
Red-Tailed Hawk (Carnivorous Birds - Terrestrial)																							
Reference Sites																							
SHGBG-1	9.00E-02	9.00E-02	1.03E+01	3.01E+03	2.70E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.91E+02	1.49E+00	1.00E-03	1.13E+00	2.41E-01	1.72E+02	9.55E-01	1.78E+02	1.35E-03
SHGBG-2	9.00E-02	9.00E-02	1.03E+01	1.03E+03	9.24E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	9.92E+01	5.09E-01	1.00E-03	1.13E+00	8.23E-02	1.72E+02	9.55E-01	1.78E+02	4.62E-04
Consolation Mine																						**Minimum HQ (Reference Sites)**	**4.62E-04**
CONM-000 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.41E+03	1.27E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.25E+02	1.15E+00	1.00E-03	1.13E+00	1.14E-01	1.72E+02	9.55E-01	1.78E+02	6.39E-04
CONM-100 (0-6")	9.00E-02	9.00E-02	6.30E+00	2.08E+03	1.87E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.31E+02	1.70E+00	1.00E-03	1.13E+00	1.68E-01	1.72E+02	9.55E-01	1.78E+02	9.41E-04
CONM-100+25 (0-6")	9.00E-02	9.00E-02	6.30E+00	2.63E+03	2.36E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.18E+02	2.14E+00	1.00E-03	1.13E+00	2.11E-01	1.72E+02	9.55E-01	1.78E+02	1.19E-03
CONM-1000 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.59E+03	1.43E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.52E+02	1.29E+00	1.00E-03	1.13E+00	1.28E-01	1.72E+02	9.55E-01	1.78E+02	7.17E-04
CONM-1000+35 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.99E+03	1.79E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.16E+02	1.62E+00	1.00E-03	1.13E+00	1.60E-01	1.72E+02	9.55E-01	1.78E+02	8.98E-04
CONM-150 (0-6")	9.00E-02	9.00E-02	6.30E+00	2.11E+03	1.90E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.35E+02	1.72E+00	1.00E-03	1.13E+00	1.70E-01	1.72E+02	9.55E-01	1.78E+02	9.54E-04
CONM-200 (0-6")	9.00E-02	9.00E-02	6.30E+00	2.20E+03	1.98E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.50E+02	1.79E+00	1.00E-03	1.13E+00	1.77E-01	1.72E+02	9.55E-01	1.78E+02	9.95E-04
CONM-250 (0-6")	9.00E-02	9.00E-02	6.30E+00	3.11E+03	2.80E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.94E+02	2.54E+00	1.00E-03	1.13E+00	2.50E-01	1.72E+02	9.55E-01	1.78E+02	1.41E-03
CONM-250+25 (0-6")	9.00E-02	9.00E-02	6.30E+00	3.82E+03	3.44E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	6.07E+02	3.11E+00	1.00E-03	1.13E+00	3.08E-01	1.72E+02	9.55E-01	1.78E+02	1.73E-03
CONM-300 (0-6")	9.00E-02	9.00E-02	6.30E+00	2.90E+03	2.61E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.61E+02	2.36E+00	1.00E-03	1.13E+00	2.33E-01	1.72E+02	9.55E-01	1.78E+02	1.31E-03

TABLE C-6F: ZINC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 6 - CONSOLATION MINE WASTE AREA (Continued)
Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)
calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 0.7

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Red-Tailed Hawk (Carnivorous Birds - Terrestrial)																							
CONM-300+25 (0-6")	9.00E-02	9.00E-02	6.30E+00	2.38E+03	2.14E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.79E+02	1.94E+00	1.00E-03	1.13E+00	1.92E-01	1.72E+02	9.55E-01	1.78E+02	1.08E-03
CONM-350 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.57E+03	1.41E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.49E+02	1.28E+00	1.00E-03	1.13E+00	1.26E-01	1.72E+02	9.55E-01	1.78E+02	7.09E-04
CONM-350+50 (0-6")	9.00E-02	9.00E-02	6.30E+00	2.54E+03	2.28E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.03E+02	2.06E+00	1.00E-03	1.13E+00	2.04E-01	1.72E+02	9.55E-01	1.78E+02	1.15E-03
CONM-400 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.29E+03	1.16E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.05E+02	1.05E+00	1.00E-03	1.13E+00	1.04E-01	1.72E+02	9.55E-01	1.78E+02	5.83E-04
CONM-400+25 (0-6")	9.00E-02	9.00E-02	6.30E+00	2.13E+03	1.91E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.38E+02	1.73E+00	1.00E-03	1.13E+00	1.71E-01	1.72E+02	9.55E-01	1.78E+02	9.60E-04
CONM-450 (0-6")	9.00E-02	9.00E-02	6.30E+00	3.22E+03	2.90E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.11E+02	2.62E+00	1.00E-03	1.13E+00	2.59E-01	1.72E+02	9.55E-01	1.78E+02	1.45E-03
CONM-450+25 (0-6")	9.00E-02	9.00E-02	6.30E+00	2.07E+03	1.86E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.29E+02	1.69E+00	1.00E-03	1.13E+00	1.66E-01	1.72E+02	9.55E-01	1.78E+02	9.35E-04
CONM-50 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.61E+03	1.45E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.56E+02	1.31E+00	1.00E-03	1.13E+00	1.29E-01	1.72E+02	9.55E-01	1.78E+02	7.27E-04
CONM-50+50 (0-6")	9.00E-02	9.00E-02	6.30E+00	3.02E+03	2.72E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.80E+02	2.46E+00	1.00E-03	1.13E+00	2.43E-01	1.72E+02	9.55E-01	1.78E+02	1.36E-03
CONM-500 (0-6")	9.00E-02	9.00E-02	6.30E+00	9.02E+02	8.11E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.43E+02	7.35E-01	1.00E-03	1.13E+00	7.25E-02	1.72E+02	9.55E-01	1.78E+02	4.08E-04
CONM-550 (0-6")	9.00E-02	9.00E-02	6.30E+00	2.44E+03	2.20E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.88E+02	1.99E+00	1.00E-03	1.13E+00	1.97E-01	1.72E+02	9.55E-01	1.78E+02	1.10E-03
CONM-600 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.77E+03	1.60E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.82E+02	1.45E+00	1.00E-03	1.13E+00	1.43E-01	1.72E+02	9.55E-01	1.78E+02	8.02E-04
CONM-600+12.5 (0-6")	9.00E-02	9.00E-02	6.30E+00	2.69E+03	2.42E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.27E+02	2.19E+00	1.00E-03	1.13E+00	2.16E-01	1.72E+02	9.55E-01	1.78E+02	1.21E-03
CONM-650 (0-6")	9.00E-02	9.00E-02	6.30E+00	2.27E+03	2.04E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.60E+02	1.85E+00	1.00E-03	1.13E+00	1.82E-01	1.72E+02	9.55E-01	1.78E+02	1.03E-03
CONM-700 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.51E+03	1.36E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.40E+02	1.23E+00	1.00E-03	1.13E+00	1.21E-01	1.72E+02	9.55E-01	1.78E+02	6.82E-04
CONM-750 (0-6")	9.00E-02	9.00E-02	6.30E+00	4.70E+03	4.22E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	7.46E+02	3.82E+00	1.00E-03	1.13E+00	3.78E-01	1.72E+02	9.55E-01	1.78E+02	2.12E-03
CONM-750+6 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CONM-800 (0-6")	9.00E-02	9.00E-02	6.30E+00	6.71E+02	6.04E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.07E+02	5.47E-01	1.00E-03	1.13E+00	5.40E-02	1.72E+02	9.55E-01	1.78E+02	3.03E-04
CONM-800+25 (0-6")	9.00E-02	9.00E-02	6.30E+00	2.05E+03	1.84E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.25E+02	1.67E+00	1.00E-03	1.13E+00	1.65E-01	1.72E+02	9.55E-01	1.78E+02	9.26E-04
CONM-850 (0-6")	9.00E-02	9.00E-02	6.30E+00	3.64E+03	3.27E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.78E+02	2.96E+00	1.00E-03	1.13E+00	2.93E-01	1.72E+02	9.55E-01	1.78E+02	1.64E-03
CONM-900 (0-6")	9.00E-02	9.00E-02	6.30E+00	5.13E+03	4.61E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	8.15E+02	4.18E+00	1.00E-03	1.13E+00	4.12E-01	1.72E+02	9.55E-01	1.78E+02	2.32E-03
CONM-900+12.5 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.59E+03	1.43E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.53E+02	1.30E+00	1.00E-03	1.13E+00	1.28E-01	1.72E+02	9.55E-01	1.78E+02	7.19E-04
CONM-950 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.35E+03	1.22E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.15E+02	1.10E+00	1.00E-03	1.13E+00	1.09E-01	1.72E+02	9.55E-01	1.78E+02	6.11E-04
CONM-Comp 1 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.47E+03	1.32E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.33E+02	1.19E+00	1.00E-03	1.13E+00	1.18E-01	1.72E+02	9.55E-01	1.78E+02	6.62E-04
CONM-Comp 2 (0-6")	9.00E-02	9.00E-02	6.30E+00	4.93E+03	4.43E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	7.82E+02	4.01E+00	1.00E-03	1.13E+00	3.96E-01	1.72E+02	9.55E-01	1.78E+02	2.23E-03
CONM-Pile 1 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.63E+03	1.46E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.59E+02	1.33E+00	1.00E-03	1.13E+00	1.31E-01	1.72E+02	9.55E-01	1.78E+02	7.36E-04
																						Maximum HQ (Consolation Mine)	**2.32E-03**
American Kestrel (Insectivorous Birds - Terrestrial)																							
Reference Sites																							
SHGBG-1	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	8.31E+00	2.42E+03	3.32E+01	7.84E-04	2.91E+02	2.28E-01	2.68E-03	1.24E-01	7.22E-01	1.72E+02	9.55E-01	1.14E+02	6.31E-03
SHGBG-2	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	8.31E+00	8.25E+02	1.14E+01	7.84E-04	9.92E+01	7.78E-02	2.68E-03	1.24E-01	2.47E-01	1.72E+02	9.55E-01	1.14E+02	2.16E-03
Consolation Mine																						**Minimum HQ (Reference Sites)**	**2.16E-03**
CONM-000 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	9.83E+02	1.35E+01	7.84E-04	2.25E+02	1.76E-01	2.68E-03	1.24E-01	2.96E-01	1.72E+02	9.55E-01	1.14E+02	2.59E-03
CONM-100 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	1.45E+03	1.99E+01	7.84E-04	3.31E+02	2.60E-01	2.68E-03	1.24E-01	4.36E-01	1.72E+02	9.55E-01	1.14E+02	3.81E-03
CONM-100+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	1.83E+03	2.52E+01	7.84E-04	4.18E+02	3.27E-01	2.68E-03	1.24E-01	5.50E-01	1.72E+02	9.55E-01	1.14E+02	4.81E-03
CONM-1000 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	1.10E+03	1.52E+01	7.84E-04	2.52E+02	1.98E-01	2.68E-03	1.24E-01	3.32E-01	1.72E+02	9.55E-01	1.14E+02	2.91E-03
CONM-1000+35 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	1.38E+03	1.90E+01	7.84E-04	3.16E+02	2.48E-01	2.68E-03	1.24E-01	4.16E-01	1.72E+02	9.55E-01	1.14E+02	3.64E-03
CONM-150 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	1.47E+03	2.02E+01	7.84E-04	3.35E+02	2.63E-01	2.68E-03	1.24E-01	4.42E-01	1.72E+02	9.55E-01	1.14E+02	3.86E-03
CONM-200 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	1.53E+03	2.11E+01	7.84E-04	3.50E+02	2.74E-01	2.68E-03	1.24E-01	4.61E-01	1.72E+02	9.55E-01	1.14E+02	4.03E-03
CONM-250 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	2.17E+03	2.98E+01	7.84E-04	4.94E+02	3.88E-01	2.68E-03	1.24E-01	6.51E-01	1.72E+02	9.55E-01	1.14E+02	5.69E-03
CONM-250+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	2.66E+03	3.66E+01	7.84E-04	6.07E+02	4.76E-01	2.68E-03	1.24E-01	8.00E-01	1.72E+02	9.55E-01	1.14E+02	7.00E-03
CONM-300 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	2.02E+03	2.78E+01	7.84E-04	4.61E+02	3.62E-01	2.68E-03	1.24E-01	6.07E-01	1.72E+02	9.55E-01	1.14E+02	5.31E-03
CONM-300+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	1.66E+03	2.28E+01	7.84E-04	3.79E+02	2.97E-01	2.68E-03	1.24E-01	4.99E-01	1.72E+02	9.55E-01	1.14E+02	4.36E-03
CONM-350 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	1.09E+03	1.50E+01	7.84E-04	2.49E+02	1.95E-01	2.68E-03	1.24E-01	3.28E-01	1.72E+02	9.55E-01	1.14E+02	2.87E-03
CONM-350+50 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	1.76E+03	2.43E+01	7.84E-04	4.03E+02	3.16E-01	2.68E-03	1.24E-01	5.30E-01	1.72E+02	9.55E-01	1.14E+02	4.64E-03
CONM-400 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	8.98E+02	1.24E+01	7.84E-04	2.05E+02	1.61E-01	2.68E-03	1.24E-01	2.70E-01	1.72E+02	9.55E-01	1.14E+02	2.36E-03
CONM-400+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	1.48E+03	2.03E+01	7.84E-04	3.38E+02	2.65E-01	2.68E-03	1.24E-01	4.45E-01	1.72E+02	9.55E-01	1.14E+02	3.89E-03
CONM-450 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	2.24E+03	3.08E+01	7.84E-04	5.11E+02	4.01E-01	2.68E-03	1.24E-01	6.73E-01	1.72E+02	9.55E-01	1.14E+02	5.89E-03
CONM-450+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	1.44E+03	1.98E+01	7.84E-04	3.29E+02	2.58E-01	2.68E-03	1.24E-01	4.33E-01	1.72E+02	9.55E-01	1.14E+02	3.79E-03
CONM-50 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	1.12E+03	1.54E+01	7.84E-04	2.56E+02	2.01E-01	2.68E-03	1.24E-01	3.37E-01	1.72E+02	9.55E-01	1.14E+02	2.94E-03
CONM-50+50 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	2.10E+03	2.89E+01	7.84E-04	4.80E+02	3.76E-01	2.68E-03	1.24E-01	6.32E-01	1.72E+02	9.55E-01	1.14E+02	5.53E-03
CONM-500 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	6.27E+02	8.63E+00	7.84E-04	1.43E+02	1.12E-01	2.68E-03	1.24E-01	1.89E-01	1.72E+02	9.55E-01	1.14E+02	1.65E-03
CONM-550 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	1.70E+03	2.34E+01	7.84E-04	3.88E+02	3.04E-01	2.68E-03	1.24E-01	5.11E-01	1.72E+02	9.55E-01	1.14E+02	4.47E-03
CONM-600 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	1.23E+03	1.70E+01	7.84E-04	2.82E+02	2.21E-01	2.68E-03	1.24E-01	3.71E-01	1.72E+02	9.55E-01	1.14E+02	3.25E-03
CONM-600+12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	1.87E+03	2.57E+01	7.84E-04	4.27E+02	3.35E-01	2.68E-03	1.24E-01	5.63E-01	1.72E+02	9.55E-01	1.14E+02	4.92E-03
CONM-650 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	1.58E+03	2.17E+01	7.84E-04	3.60E+02	2.83E-01	2.68E-03	1.24E-01	4.75E-01	1.72E+02	9.55E-01	1.14E+02	4.15E-03

TABLE C-6F: ZINC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 6 - CONSOLATION MINE WASTE AREA (Continued)
Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)
calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 0.7

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
American Kestrel (Insectivorous Birds - Terrestrial)																							
CONM-700 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	1.05E+03	1.44E+01	7.84E-04	2.40E+02	1.88E-01	2.68E-03	1.24E-01	3.16E-01	1.72E+02	9.55E-01	1.14E+02	2.76E-03
CONM-750 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	3.27E+03	4.49E+01	7.84E-04	7.46E+02	5.85E-01	2.68E-03	1.24E-01	9.82E-01	1.72E+02	9.55E-01	1.14E+02	8.59E-03
CONM-750+6 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CONM-800 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	4.67E+02	6.43E+00	7.84E-04	1.07E+02	8.37E-02	2.68E-03	1.24E-01	1.40E-01	1.72E+02	9.55E-01	1.14E+02	1.23E-03
CONM-800+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	1.43E+03	1.96E+01	7.84E-04	3.25E+02	2.55E-01	2.68E-03	1.24E-01	4.29E-01	1.72E+02	9.55E-01	1.14E+02	3.75E-03
CONM-850 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	2.53E+03	3.48E+01	7.84E-04	5.78E+02	4.53E-01	2.68E-03	1.24E-01	7.61E-01	1.72E+02	9.55E-01	1.14E+02	6.66E-03
CONM-900 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	3.57E+03	4.91E+01	7.84E-04	8.15E+02	6.39E-01	2.68E-03	1.24E-01	1.07E+00	1.72E+02	9.55E-01	1.14E+02	9.38E-03
CONM-900+12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	1.11E+03	1.52E+01	7.84E-04	2.53E+02	1.98E-01	2.68E-03	1.24E-01	3.33E-01	1.72E+02	9.55E-01	1.14E+02	2.91E-03
CONM-950 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	9.41E+02	1.29E+01	7.84E-04	2.15E+02	1.69E-01	2.68E-03	1.24E-01	2.83E-01	1.72E+02	9.55E-01	1.14E+02	2.47E-03
CONM-Comp 1 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	1.02E+03	1.40E+01	7.84E-04	2.33E+02	1.83E-01	2.68E-03	1.24E-01	3.07E-01	1.72E+02	9.55E-01	1.14E+02	2.68E-03
CONM-Comp 2 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	3.43E+03	4.71E+01	7.84E-04	7.82E+02	6.14E-01	2.68E-03	1.24E-01	1.03E+00	1.72E+02	9.55E-01	1.14E+02	9.01E-03
CONM-Pile 1 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	1.13E+03	1.56E+01	7.84E-04	2.59E+02	2.03E-01	2.68E-03	1.24E-01	3.41E-01	1.72E+02	9.55E-01	1.14E+02	2.98E-03
																						Maximum HQ (Consolation Mine)	**9.38E-03**
Meadow Vole (Small Herbivorous Mammal - Terrestrial)																							
Reference Sites																							
SHGBG-1	4.69E-03	NA	NA	NA	NA	4.69E-03	1.41E+00	4.10E+02	1.92E+00	NA	NA	NA	NA	1.13E-04	2.91E+02	3.27E-02	1.00E+00	3.06E-02	6.39E+01	4.11E+02	1.75E-01	4.57E+02	1.40E-01
SHGBG-2	4.69E-03	NA	NA	NA	NA	4.69E-03	1.41E+00	1.40E+02	6.57E-01	NA	NA	NA	NA	1.13E-04	9.92E+01	1.12E-02	1.00E+00	3.06E-02	2.18E+01	4.11E+02	1.75E-01	4.57E+02	4.78E-02
Consolation Mine																						**Minimum HQ (Reference Sites)**	**4.78E-02**
CONM-000 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	4.45E+02	2.09E+00	NA	NA	NA	NA	1.13E-04	2.25E+02	2.53E-02	1.00E+00	3.06E-02	6.90E+01	4.11E+02	1.75E-01	4.57E+02	1.51E-01
CONM-100 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	6.56E+02	3.07E+00	NA	NA	NA	NA	1.13E-04	3.31E+02	3.72E-02	1.00E+00	3.06E-02	1.02E+02	4.11E+02	1.75E-01	4.57E+02	2.23E-01
CONM-100+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	8.27E+02	3.88E+00	NA	NA	NA	NA	1.13E-04	4.18E+02	4.70E-02	1.00E+00	3.06E-02	1.28E+02	4.11E+02	1.75E-01	4.57E+02	2.81E-01
CONM-1000 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	5.00E+02	2.34E+00	NA	NA	NA	NA	1.13E-04	2.52E+02	2.84E-02	1.00E+00	3.06E-02	7.75E+01	4.11E+02	1.75E-01	4.57E+02	1.70E-01
CONM-1000+35 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	6.26E+02	2.93E+00	NA	NA	NA	NA	1.13E-04	3.16E+02	3.55E-02	1.00E+00	3.06E-02	9.70E+01	4.11E+02	1.75E-01	4.57E+02	2.12E-01
CONM-150 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	6.65E+02	3.12E+00	NA	NA	NA	NA	1.13E-04	3.35E+02	3.77E-02	1.00E+00	3.06E-02	1.03E+02	4.11E+02	1.75E-01	4.57E+02	2.26E-01
CONM-200 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	6.93E+02	3.25E+00	NA	NA	NA	NA	1.13E-04	3.50E+02	3.94E-02	1.00E+00	3.06E-02	1.08E+02	4.11E+02	1.75E-01	4.57E+02	2.35E-01
CONM-250 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	9.80E+02	4.59E+00	NA	NA	NA	NA	1.13E-04	4.94E+02	5.56E-02	1.00E+00	3.06E-02	1.52E+02	4.11E+02	1.75E-01	4.57E+02	3.33E-01
CONM-250+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	1.20E+03	5.64E+00	NA	NA	NA	NA	1.13E-04	6.07E+02	6.84E-02	1.00E+00	3.06E-02	1.87E+02	4.11E+02	1.75E-01	4.57E+02	4.09E-01
CONM-300 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	9.13E+02	4.28E+00	NA	NA	NA	NA	1.13E-04	4.61E+02	5.19E-02	1.00E+00	3.06E-02	1.42E+02	4.11E+02	1.75E-01	4.57E+02	3.10E-01
CONM-300+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	7.50E+02	3.52E+00	NA	NA	NA	NA	1.13E-04	3.79E+02	4.26E-02	1.00E+00	3.06E-02	1.16E+02	4.11E+02	1.75E-01	4.57E+02	2.55E-01
CONM-350 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	4.94E+02	2.31E+00	NA	NA	NA	NA	1.13E-04	2.49E+02	2.80E-02	1.00E+00	3.06E-02	7.66E+01	4.11E+02	1.75E-01	4.57E+02	1.68E-01
CONM-350+50 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	7.98E+02	3.74E+00	NA	NA	NA	NA	1.13E-04	4.03E+02	4.53E-02	1.00E+00	3.06E-02	1.24E+02	4.11E+02	1.75E-01	4.57E+02	2.71E-01
CONM-400 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	4.06E+02	1.90E+00	NA	NA	NA	NA	1.13E-04	2.05E+02	2.31E-02	1.00E+00	3.06E-02	6.30E+01	4.11E+02	1.75E-01	4.57E+02	1.38E-01
CONM-400+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	6.69E+02	3.14E+00	NA	NA	NA	NA	1.13E-04	3.38E+02	3.80E-02	1.00E+00	3.06E-02	1.04E+02	4.11E+02	1.75E-01	4.57E+02	2.27E-01
CONM-450 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	1.01E+03	4.75E+00	NA	NA	NA	NA	1.13E-04	5.11E+02	5.75E-02	1.00E+00	3.06E-02	1.57E+02	4.11E+02	1.75E-01	4.57E+02	3.44E-01
CONM-450+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	6.51E+02	3.05E+00	NA	NA	NA	NA	1.13E-04	3.29E+02	3.70E-02	1.00E+00	3.06E-02	1.01E+02	4.11E+02	1.75E-01	4.57E+02	2.21E-01
CONM-50 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	5.07E+02	2.38E+00	NA	NA	NA	NA	1.13E-04	2.56E+02	2.88E-02	1.00E+00	3.06E-02	7.86E+01	4.11E+02	1.75E-01	4.57E+02	1.72E-01
CONM-50+50 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	9.51E+02	4.46E+00	NA	NA	NA	NA	1.13E-04	4.80E+02	5.40E-02	1.00E+00	3.06E-02	1.47E+02	4.11E+02	1.75E-01	4.57E+02	3.23E-01
CONM-500 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	2.84E+02	1.33E+00	NA	NA	NA	NA	1.13E-04	1.43E+02	1.61E-02	1.00E+00	3.06E-02	4.40E+01	4.11E+02	1.75E-01	4.57E+02	9.64E-02
CONM-550 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	7.69E+02	3.61E+00	NA	NA	NA	NA	1.13E-04	3.88E+02	4.37E-02	1.00E+00	3.06E-02	1.19E+02	4.11E+02	1.75E-01	4.57E+02	2.61E-01
CONM-600 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	5.59E+02	2.62E+00	NA	NA	NA	NA	1.13E-04	2.82E+02	3.17E-02	1.00E+00	3.06E-02	8.66E+01	4.11E+02	1.75E-01	4.57E+02	1.90E-01
CONM-600+12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	8.46E+02	3.97E+00	NA	NA	NA	NA	1.13E-04	4.27E+02	4.81E-02	1.00E+00	3.06E-02	1.31E+02	4.11E+02	1.75E-01	4.57E+02	2.87E-01
CONM-650 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	7.14E+02	3.35E+00	NA	NA	NA	NA	1.13E-04	3.60E+02	4.06E-02	1.00E+00	3.06E-02	1.11E+02	4.11E+02	1.75E-01	4.57E+02	2.42E-01
CONM-700 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	4.75E+02	2.23E+00	NA	NA	NA	NA	1.13E-04	2.40E+02	2.70E-02	1.00E+00	3.06E-02	7.37E+01	4.11E+02	1.75E-01	4.57E+02	1.61E-01
CONM-750 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	1.48E+03	6.93E+00	NA	NA	NA	NA	1.13E-04	7.46E+02	8.39E-02	1.00E+00	3.06E-02	2.29E+02	4.11E+02	1.75E-01	4.57E+02	5.02E-01
CONM-750+6 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CONM-800 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	2.11E+02	9.91E-01	NA	NA	NA	NA	1.13E-04	1.07E+02	1.20E-02	1.00E+00	3.06E-02	3.28E+01	4.11E+02	1.75E-01	4.57E+02	7.17E-02
CONM-800+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	6.45E+02	3.02E+00	NA	NA	NA	NA	1.13E-04	3.25E+02	3.66E-02	1.00E+00	3.06E-02	1.00E+02	4.11E+02	1.75E-01	4.57E+02	2.19E-01
CONM-850 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	1.14E+03	5.37E+00	NA	NA	NA	NA	1.13E-04	5.78E+02	6.50E-02	1.00E+00	3.06E-02	1.78E+02	4.11E+02	1.75E-01	4.57E+02	3.89E-01
CONM-900 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	1.61E+03	7.57E+00	NA	NA	NA	NA	1.13E-04	8.15E+02	9.17E-02	1.00E+00	3.06E-02	2.50E+02	4.11E+02	1.75E-01	4.57E+02	5.48E-01
CONM-900+12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	5.01E+02	2.35E+00	NA	NA	NA	NA	1.13E-04	2.53E+02	2.84E-02	1.00E+00	3.06E-02	7.77E+01	4.11E+02	1.75E-01	4.57E+02	1.70E-01
CONM-950 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	4.26E+02	2.00E+00	NA	NA	NA	NA	1.13E-04	2.15E+02	2.42E-02	1.00E+00	3.06E-02	6.60E+01	4.11E+02	1.75E-01	4.57E+02	1.45E-01
CONM-Comp 1 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	4.61E+02	2.16E+00	NA	NA	NA	NA	1.13E-04	2.33E+02	2.62E-02	1.00E+00	3.06E-02	7.16E+01	4.11E+02	1.75E-01	4.57E+02	1.57E-01
CONM-Comp 2 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	1.55E+03	7.27E+00	NA	NA	NA	NA	1.13E-04	7.82E+02	8.80E-02	1.00E+00	3.06E-02	2.40E+02	4.11E+02	1.75E-01	4.57E+02	5.26E-01
CONM-Pile 1 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	5.13E+02	2.40E+00	NA	NA	NA	NA	1.13E-04	2.59E+02	2.91E-02	1.00E+00	3.06E-02	7.95E+01	4.11E+02	1.75E-01	4.57E+02	1.74E-01
																						Maximum HQ (Consolation Mine)	**5.48E-01**

TABLE C-6F: ZINC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 6 - CONSOLATION MINE WASTE AREA (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 0.7

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
White-Tailed Deer (Large Herbivorous Mammal - Terrestrial)																							
Reference Sites																							
SHGBG-1	1.43E+00	NA	NA	NA	NA	1.43E+00	1.41E+00	4.10E+02	5.87E+02	NA	NA	NA	NA	2.86E-02	2.91E+02	8.32E+00	3.92E-03	1.35E+02	1.73E-02	4.11E+02	1.75E-01	2.76E+02	6.25E-05
SHGBG-2	1.43E+00	NA	NA	NA	NA	1.43E+00	1.41E+00	1.40E+02	2.00E+02	NA	NA	NA	NA	2.86E-02	9.92E+01	2.84E+00	3.92E-03	1.35E+02	5.90E-03	4.11E+02	1.75E-01	2.76E+02	2.14E-05
Consolation Mine																						**Minimum HQ (Reference Sites)**	**2.14E-05**
CONM-000 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	4.45E+02	6.37E+02	NA	NA	NA	NA	2.86E-02	2.25E+02	6.43E+00	3.92E-03	1.35E+02	1.87E-02	4.11E+02	1.75E-01	2.76E+02	6.76E-05
CONM-100 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	6.56E+02	9.39E+02	NA	NA	NA	NA	2.86E-02	3.31E+02	9.47E+00	3.92E-03	1.35E+02	2.75E-02	4.11E+02	1.75E-01	2.76E+02	9.96E-05
CONM-100+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	8.27E+02	1.18E+03	NA	NA	NA	NA	2.86E-02	4.18E+02	1.20E+01	3.92E-03	1.35E+02	3.47E-02	4.11E+02	1.75E-01	2.76E+02	1.26E-04
CONM-1000 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	5.00E+02	7.16E+02	NA	NA	NA	NA	2.86E-02	2.52E+02	7.22E+00	3.92E-03	1.35E+02	2.10E-02	4.11E+02	1.75E-01	2.76E+02	7.59E-05
CONM-1000+35 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	6.26E+02	8.96E+02	NA	NA	NA	NA	2.86E-02	3.16E+02	9.04E+00	3.92E-03	1.35E+02	2.62E-02	4.11E+02	1.75E-01	2.76E+02	9.51E-05
CONM-150 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	6.65E+02	9.52E+02	NA	NA	NA	NA	2.86E-02	3.35E+02	9.60E+00	3.92E-03	1.35E+02	2.79E-02	4.11E+02	1.75E-01	2.76E+02	1.01E-04
CONM-200 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	6.93E+02	9.93E+02	NA	NA	NA	NA	2.86E-02	3.50E+02	1.00E+01	3.92E-03	1.35E+02	2.91E-02	4.11E+02	1.75E-01	2.76E+02	1.05E-04
CONM-250 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	9.80E+02	1.40E+03	NA	NA	NA	NA	2.86E-02	4.94E+02	1.42E+01	3.92E-03	1.35E+02	4.11E-02	4.11E+02	1.75E-01	2.76E+02	1.49E-04
CONM-250+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	1.20E+03	1.72E+03	NA	NA	NA	NA	2.86E-02	6.07E+02	1.74E+01	3.92E-03	1.35E+02	5.05E-02	4.11E+02	1.75E-01	2.76E+02	1.83E-04
CONM-300 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	9.13E+02	1.31E+03	NA	NA	NA	NA	2.86E-02	4.61E+02	1.32E+01	3.92E-03	1.35E+02	3.83E-02	4.11E+02	1.75E-01	2.76E+02	1.39E-04
CONM-300+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	7.50E+02	1.07E+03	NA	NA	NA	NA	2.86E-02	3.79E+02	1.08E+01	3.92E-03	1.35E+02	3.15E-02	4.11E+02	1.75E-01	2.76E+02	1.14E-04
CONM-350 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	4.94E+02	7.07E+02	NA	NA	NA	NA	2.86E-02	2.49E+02	7.13E+00	3.92E-03	1.35E+02	2.07E-02	4.11E+02	1.75E-01	2.76E+02	7.50E-05
CONM-350+50 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	7.98E+02	1.14E+03	NA	NA	NA	NA	2.86E-02	4.03E+02	1.15E+01	3.92E-03	1.35E+02	3.35E-02	4.11E+02	1.75E-01	2.76E+02	1.21E-04
CONM-400 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	4.06E+02	5.82E+02	NA	NA	NA	NA	2.86E-02	2.05E+02	5.87E+00	3.92E-03	1.35E+02	1.70E-02	4.11E+02	1.75E-01	2.76E+02	6.17E-05
CONM-400+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	6.69E+02	9.58E+02	NA	NA	NA	NA	2.86E-02	3.38E+02	9.67E+00	3.92E-03	1.35E+02	2.81E-02	4.11E+02	1.75E-01	2.76E+02	1.02E-04
CONM-450 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	1.01E+03	1.45E+03	NA	NA	NA	NA	2.86E-02	5.11E+02	1.46E+01	3.92E-03	1.35E+02	4.25E-02	4.11E+02	1.75E-01	2.76E+02	1.54E-04
CONM-450+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	6.51E+02	9.32E+02	NA	NA	NA	NA	2.86E-02	3.29E+02	9.41E+00	3.92E-03	1.35E+02	2.73E-02	4.11E+02	1.75E-01	2.76E+02	9.90E-05
CONM-50 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	5.07E+02	7.25E+02	NA	NA	NA	NA	2.86E-02	2.56E+02	7.32E+00	3.92E-03	1.35E+02	2.13E-02	4.11E+02	1.75E-01	2.76E+02	7.70E-05
CONM-50+50 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	9.51E+02	1.36E+03	NA	NA	NA	NA	2.86E-02	4.80E+02	1.37E+01	3.92E-03	1.35E+02	3.99E-02	4.11E+02	1.75E-01	2.76E+02	1.44E-04
CONM-500 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	2.84E+02	4.06E+02	NA	NA	NA	NA	2.86E-02	1.43E+02	4.10E+00	3.92E-03	1.35E+02	1.19E-02	4.11E+02	1.75E-01	2.76E+02	4.31E-05
CONM-550 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	7.69E+02	1.10E+03	NA	NA	NA	NA	2.86E-02	3.88E+02	1.11E+01	3.92E-03	1.35E+02	3.23E-02	4.11E+02	1.75E-01	2.76E+02	1.17E-04
CONM-600 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	5.59E+02	8.00E+02	NA	NA	NA	NA	2.86E-02	2.82E+02	8.07E+00	3.92E-03	1.35E+02	2.34E-02	4.11E+02	1.75E-01	2.76E+02	8.49E-05
CONM-600+12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	8.46E+02	1.21E+03	NA	NA	NA	NA	2.86E-02	4.27E+02	1.22E+01	3.92E-03	1.35E+02	3.55E-02	4.11E+02	1.75E-01	2.76E+02	1.29E-04
CONM-650 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	7.14E+02	1.02E+03	NA	NA	NA	NA	2.86E-02	3.60E+02	1.03E+01	3.92E-03	1.35E+02	3.00E-02	4.11E+02	1.75E-01	2.76E+02	1.09E-04
CONM-700 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	4.75E+02	6.80E+02	NA	NA	NA	NA	2.86E-02	2.40E+02	6.87E+00	3.92E-03	1.35E+02	1.99E-02	4.11E+02	1.75E-01	2.76E+02	7.22E-05
CONM-750 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	1.48E+03	2.12E+03	NA	NA	NA	NA	2.86E-02	7.46E+02	2.14E+01	3.92E-03	1.35E+02	6.20E-02	4.11E+02	1.75E-01	2.76E+02	2.25E-04
CONM-800 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	2.11E+02	3.03E+02	NA	NA	NA	NA	2.86E-02	1.07E+02	3.05E+00	3.92E-03	1.35E+02	8.86E-03	4.11E+02	1.75E-01	2.76E+02	3.21E-05
CONM-750+6 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CONM-800+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	6.45E+02	9.23E+02	NA	NA	NA	NA	2.86E-02	3.25E+02	9.32E+00	3.92E-03	1.35E+02	2.70E-02	4.11E+02	1.75E-01	2.76E+02	9.80E-05
CONM-850 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	1.14E+03	1.64E+03	NA	NA	NA	NA	2.86E-02	5.78E+02	1.65E+01	3.92E-03	1.35E+02	4.80E-02	4.11E+02	1.75E-01	2.76E+02	1.74E-04
CONM-900 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	1.61E+03	2.31E+03	NA	NA	NA	NA	2.86E-02	8.15E+02	2.33E+01	3.92E-03	1.35E+02	6.77E-02	4.11E+02	1.75E-01	2.76E+02	2.45E-04
CONM-900+12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	5.01E+02	7.17E+02	NA	NA	NA	NA	2.86E-02	2.53E+02	7.24E+00	3.92E-03	1.35E+02	2.10E-02	4.11E+02	1.75E-01	2.76E+02	7.61E-05
CONM-950 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	4.26E+02	6.10E+02	NA	NA	NA	NA	2.86E-02	2.15E+02	6.15E+00	3.92E-03	1.35E+02	1.79E-02	4.11E+02	1.75E-01	2.76E+02	6.47E-05
CONM-Comp 1 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	4.61E+02	6.60E+02	NA	NA	NA	NA	2.86E-02	2.33E+02	6.67E+00	3.92E-03	1.35E+02	1.94E-02	4.11E+02	1.75E-01	2.76E+02	7.01E-05
CONM-Comp 2 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	1.55E+03	2.22E+03	NA	NA	NA	NA	2.86E-02	7.82E+02	2.24E+01	3.92E-03	1.35E+02	6.50E-02	4.11E+02	1.75E-01	2.76E+02	2.36E-04
CONM-Pile 1 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	5.13E+02	7.34E+02	NA	NA	NA	NA	2.86E-02	2.59E+02	7.41E+00	3.92E-03	1.35E+02	2.15E-02	4.11E+02	1.75E-01	2.76E+02	7.79E-05
																						Maximum HQ (Consolation Mine)	**2.45E-04**
Red Fox (Carnivorous Mammal - Terrestrial)																							
Reference Sites																							
SHGBG-1	1.72E-01	1.72E-01	1.03E+01	3.01E+03	5.16E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.91E+02	1.40E+00	5.17E-04	4.54E+00	5.90E-02	4.11E+02	1.75E-01	3.38E+02	1.74E-04
SHGBG-2	1.72E-01	1.72E-01	1.03E+01	1.03E+03	1.76E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	9.92E+01	4.77E-01	5.17E-04	4.54E+00	2.01E-02	4.11E+02	1.75E-01	3.38E+02	5.95E-05
Consolation Mine																						**Minimum HQ (Reference Sites)**	**5.95E-05**
CONM-000 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.41E+03	2.43E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.25E+02	1.08E+00	5.17E-04	4.54E+00	2.78E-02	4.11E+02	1.75E-01	3.38E+02	8.21E-05
CONM-100 (0-6")	1.72E-01	1.72E-01	6.30E+00	2.08E+03	3.57E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.31E+02	1.59E+00	5.17E-04	4.54E+00	4.09E-02	4.11E+02	1.75E-01	3.38E+02	1.21E-04
CONM-100+25 (0-6")	1.72E-01	1.72E-01	6.30E+00	2.63E+03	4.51E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.18E+02	2.01E+00	5.17E-04	4.54E+00	5.16E-02	4.11E+02	1.75E-01	3.38E+02	1.53E-04
CONM-1000 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.59E+03	2.72E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.52E+02	1.21E+00	5.17E-04	4.54E+00	3.12E-02	4.11E+02	1.75E-01	3.38E+02	9.22E-05
CONM-1000+35 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.99E+03	3.41E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.16E+02	1.52E+00	5.17E-04	4.54E+00	3.91E-02	4.11E+02	1.75E-01	3.38E+02	1.15E-04
CONM-150 (0-6")	1.72E-01	1.72E-01	6.30E+00	2.11E+03	3.62E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.35E+02	1.61E+00	5.17E-04	4.54E+00	4.15E-02	4.11E+02	1.75E-01	3.38E+02	1.23E-04
CONM-200 (0-6")	1.72E-01	1.72E-01	6.30E+00	2.20E+03	3.78E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.50E+02	1.68E+00	5.17E-04	4.54E+00	4.33E-02	4.11E+02	1.75E-01	3.38E+02	1.28E-04
CONM-250 (0-6")	1.72E-01	1.72E-01	6.30E+00	3.11E+03	5.34E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.94E+02	2.37E+00	5.17E-04	4.54E+00	6.12E-02	4.11E+02	1.75E-01	3.38E+02	1.81E-04
CONM-250+25 (0-6")	1.72E-01	1.72E-01	6.30E+00	3.82E+03	6.56E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	6.07E+02	2.92E+00	5.17E-04	4.54E+00	7.51E-02	4.11E+02	1.75E-01	3.38E+02	2.22E-04
CONM-300 (0-6")	1.72E-01	1.72E-01	6.30E+00	2.90E+03	4.98E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.61E+02	2.21E+00	5.17E-04	4.54E+00	5.70E-02	4.11E+02	1.75E-01	3.38E+02	1.68E-04

TABLE C-6F: ZINC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 6 - CONSOLATION MINE WASTE AREA (Continued)
Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables; from BAF table; linked to soil or sed concentration table (VLOOKUP)
calculated values; linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 0.7

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Red Fox (Carnivorous Mammal - Terrestrial)																							
CONM-300+25 (0-6")	1.72E-01	1.72E-01	6.30E+00	2.38E+03	4.09E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.79E+02	1.82E+00	5.17E-04	4.54E+00	4.68E-02	4.11E+02	1.75E-01	3.38E+02	1.38E-04
CONM-350 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.57E+03	2.69E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.49E+02	1.20E+00	5.17E-04	4.54E+00	3.08E-02	4.11E+02	1.75E-01	3.38E+02	9.10E-05
CONM-350+50 (0-6")	1.72E-01	1.72E-01	6.30E+00	2.54E+03	4.35E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.03E+02	1.93E+00	5.17E-04	4.54E+00	4.98E-02	4.11E+02	1.75E-01	3.38E+02	1.47E-04
CONM-400 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.29E+03	2.21E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.05E+02	9.85E-01	5.17E-04	4.54E+00	2.54E-02	4.11E+02	1.75E-01	3.38E+02	7.49E-05
CONM-400+25 (0-6")	1.72E-01	1.72E-01	6.30E+00	2.13E+03	3.65E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.38E+02	1.62E+00	5.17E-04	4.54E+00	4.18E-02	4.11E+02	1.75E-01	3.38E+02	1.23E-04
CONM-450 (0-6")	1.72E-01	1.72E-01	6.30E+00	3.22E+03	5.52E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.11E+02	2.46E+00	5.17E-04	4.54E+00	6.32E-02	4.11E+02	1.75E-01	3.38E+02	1.87E-04
CONM-450+25 (0-6")	1.72E-01	1.72E-01	6.30E+00	2.07E+03	3.55E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.29E+02	1.58E+00	5.17E-04	4.54E+00	4.07E-02	4.11E+02	1.75E-01	3.38E+02	1.20E-04
CONM-50 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.61E+03	2.76E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.56E+02	1.23E+00	5.17E-04	4.54E+00	3.16E-02	4.11E+02	1.75E-01	3.38E+02	9.34E-05
CONM-50+50 (0-6")	1.72E-01	1.72E-01	6.30E+00	3.02E+03	5.18E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.80E+02	2.31E+00	5.17E-04	4.54E+00	5.94E-02	4.11E+02	1.75E-01	3.38E+02	1.75E-04
CONM-500 (0-6")	1.72E-01	1.72E-01	6.30E+00	9.02E+02	1.55E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.43E+02	6.88E-01	5.17E-04	4.54E+00	1.77E-02	4.11E+02	1.75E-01	3.38E+02	5.24E-05
CONM-550 (0-6")	1.72E-01	1.72E-01	6.30E+00	2.44E+03	4.19E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.88E+02	1.86E+00	5.17E-04	4.54E+00	4.80E-02	4.11E+02	1.75E-01	3.38E+02	1.42E-04
CONM-600 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.77E+03	3.05E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.82E+02	1.35E+00	5.17E-04	4.54E+00	3.49E-02	4.11E+02	1.75E-01	3.38E+02	1.03E-04
CONM-600+12.5 (0-6")	1.72E-01	1.72E-01	6.30E+00	2.69E+03	4.61E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.27E+02	2.05E+00	5.17E-04	4.54E+00	5.28E-02	4.11E+02	1.75E-01	3.38E+02	1.56E-04
CONM-650 (0-6")	1.72E-01	1.72E-01	6.30E+00	2.27E+03	3.89E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.60E+02	1.73E+00	5.17E-04	4.54E+00	4.46E-02	4.11E+02	1.75E-01	3.38E+02	1.32E-04
CONM-700 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.51E+03	2.59E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.40E+02	1.15E+00	5.17E-04	4.54E+00	2.97E-02	4.11E+02	1.75E-01	3.38E+02	8.76E-05
CONM-750 (0-6")	1.72E-01	1.72E-01	6.30E+00	4.70E+03	8.06E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	7.46E+02	3.58E+00	5.17E-04	4.54E+00	9.23E-02	4.11E+02	1.75E-01	3.38E+02	2.73E-04
CONM-750+6 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
CONM-800 (0-6")	1.72E-01	1.72E-01	6.30E+00	6.71E+02	1.15E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.07E+02	5.12E-01	5.17E-04	4.54E+00	1.32E-02	4.11E+02	1.75E-01	3.38E+02	3.90E-05
CONM-800+25 (0-6")	1.72E-01	1.72E-01	6.30E+00	2.05E+03	3.51E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.25E+02	1.56E+00	5.17E-04	4.54E+00	4.02E-02	4.11E+02	1.75E-01	3.38E+02	1.19E-04
CONM-850 (0-6")	1.72E-01	1.72E-01	6.30E+00	3.64E+03	6.24E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.78E+02	2.78E+00	5.17E-04	4.54E+00	7.15E-02	4.11E+02	1.75E-01	3.38E+02	2.11E-04
CONM-900 (0-6")	1.72E-01	1.72E-01	6.30E+00	5.13E+03	8.80E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	8.15E+02	3.91E+00	5.17E-04	4.54E+00	1.01E-01	4.11E+02	1.75E-01	3.38E+02	2.98E-04
CONM-900+12.5 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.59E+03	2.73E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.53E+02	1.21E+00	5.17E-04	4.54E+00	3.13E-02	4.11E+02	1.75E-01	3.38E+02	9.24E-05
CONM-950 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.35E+03	2.32E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.15E+02	1.03E+00	5.17E-04	4.54E+00	2.66E-02	4.11E+02	1.75E-01	3.38E+02	7.85E-05
CONM-Comp 1 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.47E+03	2.51E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.33E+02	1.12E+00	5.17E-04	4.54E+00	2.88E-02	4.11E+02	1.75E-01	3.38E+02	8.51E-05
CONM-Comp 2 (0-6")	1.72E-01	1.72E-01	6.30E+00	4.93E+03	8.45E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	7.82E+02	3.76E+00	5.17E-04	4.54E+00	9.68E-02	4.11E+02	1.75E-01	3.38E+02	2.86E-04
CONM-Pile 1 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.63E+03	2.79E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.59E+02	1.24E+00	5.17E-04	4.54E+00	3.20E-02	4.11E+02	1.75E-01	3.38E+02	9.45E-05
																						Maximum HQ (Consolation Mine)	**2.98E-04**
Masked Shrew (Omnivorous Mammal - Terrestrial, Wetland)																							
Reference Sites																							
SHGBG-1	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	8.31E+00	2.42E+03	2.05E+01	1.10E-03	2.91E+02	3.20E-01	1.00E+00	5.50E-03	3.78E+03	4.11E+02	1.75E-01	5.06E+02	7.46E+00
SHGBG-2	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	8.31E+00	8.25E+02	6.99E+00	1.10E-03	9.92E+01	1.09E-01	1.00E+00	5.50E-03	1.29E+03	4.11E+02	1.75E-01	5.06E+02	2.55E+00
Consolation Mine																						**Minimum HQ (Reference Sites)**	**2.55E+00**
CONM-000 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	9.83E+02	8.33E+00	1.10E-03	2.25E+02	2.47E-01	1.00E+00	5.50E-03	1.56E+03	4.11E+02	1.75E-01	5.06E+02	3.08E+00
CONM-100 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	1.45E+03	1.23E+01	1.10E-03	3.31E+02	3.64E-01	1.00E+00	5.50E-03	2.30E+03	4.11E+02	1.75E-01	5.06E+02	4.54E+00
CONM-100+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	1.83E+03	1.55E+01	1.10E-03	4.18E+02	4.60E-01	1.00E+00	5.50E-03	2.90E+03	4.11E+02	1.75E-01	5.06E+02	5.73E+00
CONM-1000 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	1.10E+03	9.36E+00	1.10E-03	2.52E+02	2.78E-01	1.00E+00	5.50E-03	1.75E+03	4.11E+02	1.75E-01	5.06E+02	3.46E+00
CONM-1000+35 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	1.38E+03	1.17E+01	1.10E-03	3.16E+02	3.48E-01	1.00E+00	5.50E-03	2.19E+03	4.11E+02	1.75E-01	5.06E+02	4.33E+00
CONM-150 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	1.47E+03	1.24E+01	1.10E-03	3.35E+02	3.69E-01	1.00E+00	5.50E-03	2.33E+03	4.11E+02	1.75E-01	5.06E+02	4.60E+00
CONM-200 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	1.53E+03	1.30E+01	1.10E-03	3.50E+02	3.85E-01	1.00E+00	5.50E-03	2.43E+03	4.11E+02	1.75E-01	5.06E+02	4.80E+00
CONM-250 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	2.17E+03	1.83E+01	1.10E-03	4.94E+02	5.44E-01	1.00E+00	5.50E-03	3.43E+03	4.11E+02	1.75E-01	5.06E+02	6.78E+00
CONM-250+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	2.66E+03	2.25E+01	1.10E-03	6.07E+02	6.69E-01	1.00E+00	5.50E-03	4.22E+03	4.11E+02	1.75E-01	5.06E+02	8.33E+00
CONM-300 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	2.02E+03	1.71E+01	1.10E-03	4.61E+02	5.08E-01	1.00E+00	5.50E-03	3.20E+03	4.11E+02	1.75E-01	5.06E+02	6.32E+00
CONM-300+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	1.66E+03	1.40E+01	1.10E-03	3.79E+02	4.17E-01	1.00E+00	5.50E-03	2.63E+03	4.11E+02	1.75E-01	5.06E+02	5.19E+00
CONM-350 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	1.09E+03	9.24E+00	1.10E-03	2.49E+02	2.74E-01	1.00E+00	5.50E-03	1.73E+03	4.11E+02	1.75E-01	5.06E+02	3.42E+00
CONM-350+50 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	1.76E+03	1.49E+01	1.10E-03	4.03E+02	4.43E-01	1.00E+00	5.50E-03	2.80E+03	4.11E+02	1.75E-01	5.06E+02	5.52E+00
CONM-400 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	8.98E+02	7.60E+00	1.10E-03	2.05E+02	2.26E-01	1.00E+00	5.50E-03	1.42E+03	4.11E+02	1.75E-01	5.06E+02	2.81E+00
CONM-400+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	1.48E+03	1.25E+01	1.10E-03	3.38E+02	3.72E-01	1.00E+00	5.50E-03	2.34E+03	4.11E+02	1.75E-01	5.06E+02	4.63E+00
CONM-450 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	2.24E+03	1.90E+01	1.10E-03	5.11E+02	5.63E-01	1.00E+00	5.50E-03	3.55E+03	4.11E+02	1.75E-01	5.06E+02	7.01E+00
CONM-450+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	1.44E+03	1.22E+01	1.10E-03	3.29E+02	3.62E-01	1.00E+00	5.50E-03	2.28E+03	4.11E+02	1.75E-01	5.06E+02	4.51E+00
CONM-50 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	1.12E+03	9.48E+00	1.10E-03	2.56E+02	2.82E-01	1.00E+00	5.50E-03	1.78E+03	4.11E+02	1.75E-01	5.06E+02	3.51E+00
CONM-50+50 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	2.10E+03	1.78E+01	1.10E-03	4.80E+02	5.28E-01	1.00E+00	5.50E-03	3.33E+03	4.11E+02	1.75E-01	5.06E+02	6.58E+00
CONM-500 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	6.27E+02	5.31E+00	1.10E-03	1.43E+02	1.58E-01	1.00E+00	5.50E-03	9.95E+02	4.11E+02	1.75E-01	5.06E+02	1.96E+00
CONM-550 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	1.70E+03	1.44E+01	1.10E-03	3.88E+02	4.27E-01	1.00E+00	5.50E-03	2.70E+03	4.11E+02	1.75E-01	5.06E+02	5.32E+00
CONM-600 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	1.23E+03	1.05E+01	1.10E-03	2.82E+02	3.10E-01	1.00E+00	5.50E-03	1.96E+03	4.11E+02	1.75E-01	5.06E+02	3.87E+00
CONM-600+12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	1.87E+03	1.58E+01	1.10E-03	4.27E+02	4.70E-01	1.00E+00	5.50E-03	2.97E+03	4.11E+02	1.75E-01	5.06E+02	5.86E+00
CONM-650 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	1.58E+03	1.34E+01	1.10E-03	3.60E+02	3.97E-01	1.00E+00	5.50E-03	2.50E+03	4.11E+02	1.75E-01	5.06E+02	4.94E+00

TABLE C-6F: ZINC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 6 - CONSOLATION MINE WASTE AREA (Continued)
Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)
calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 0.7

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Masked Shrew (Omnivorous Mammal - Terrestrial, Wetland)																							
CONM-700 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	1.05E+03	8.89E+00	1.10E-03	2.40E+02	2.64E-01	1.00E+00	5.50E-03	1.67E+03	4.11E+02	1.75E-01	5.06E+02	3.29E+00
CONM-750 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	3.27E+03	2.77E+01	1.10E-03	7.46E+02	8.21E-01	1.00E+00	5.50E-03	5.18E+03	4.11E+02	1.75E-01	5.06E+02	1.02E+01
CONM-750+6 (0-6")																							
CONM-800 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	4.67E+02	3.96E+00	1.10E-03	1.07E+02	1.17E-01	1.00E+00	5.50E-03	7.41E+02	4.11E+02	1.75E-01	5.06E+02	1.46E+00
CONM-800+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	1.43E+03	1.21E+01	1.10E-03	3.25E+02	3.58E-01	1.00E+00	5.50E-03	2.26E+03	4.11E+02	1.75E-01	5.06E+02	4.46E+00
CONM-850 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	2.53E+03	2.14E+01	1.10E-03	5.78E+02	6.36E-01	1.00E+00	5.50E-03	4.01E+03	4.11E+02	1.75E-01	5.06E+02	7.92E+00
CONM-900 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	3.57E+03	3.02E+01	1.10E-03	8.15E+02	8.97E-01	1.00E+00	5.50E-03	5.66E+03	4.11E+02	1.75E-01	5.06E+02	1.12E+01
CONM-900+12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	1.11E+03	9.38E+00	1.10E-03	2.53E+02	2.78E-01	1.00E+00	5.50E-03	1.76E+03	4.11E+02	1.75E-01	5.06E+02	3.47E+00
CONM-950 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	9.41E+02	7.97E+00	1.10E-03	2.15E+02	2.37E-01	1.00E+00	5.50E-03	1.49E+03	4.11E+02	1.75E-01	5.06E+02	2.95E+00
CONM-Comp 1 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	1.02E+03	8.64E+00	1.10E-03	2.33E+02	2.56E-01	1.00E+00	5.50E-03	1.62E+03	4.11E+02	1.75E-01	5.06E+02	3.19E+00
CONM-Comp 2 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	3.43E+03	2.90E+01	1.10E-03	7.82E+02	8.61E-01	1.00E+00	5.50E-03	5.43E+03	4.11E+02	1.75E-01	5.06E+02	1.07E+01
CONM-Pile 1 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	1.13E+03	9.59E+00	1.10E-03	2.59E+02	2.85E-01	1.00E+00	5.50E-03	1.80E+03	4.11E+02	1.75E-01	5.06E+02	3.55E+00
																						Maximum HQ (Consolation Mine)	**1.12E+01**

Notes

1 See Tables 3-1 through 3-13 for ingestion rates, foraging ranges used to calculate the SUF, and body weights.
2 BAFs were calculated by dividing site-collected tissue by collocated soil concentrations (BAFs are in dry weight). The maximum BAF calculated from the Beartrap Creek and Blackfoot River transects was used for site dose calculations. The maximum BAF from the terrestrial reference site was used for reference site dose calculations.
3 The mammal, plant, and invertebrate concentrations were calculated by multiplying the soil concentration by the BAF to generate a tissue concentration (see note 2).
4 Mammal, plant, and invertebrate daily doses were calculated by multiplying the ingestion rate (see note 1) by the tissue concentration (see note 3).
5 Soil concentration from 0 to 6 inches below ground surface at point ID as measured by XRF 10. Doses were not calculated for detected and non-detected soil concentrations measured below the minimum reference site concentration, as indicated by BB. For results that were measured at less than the detection limit, doses were calculated using half of the detection limit.
6 Soil daily dose was calculated by multiplying the soil ingestion rate (see note 1) by soil concentration (see note 5).
7 Total daily dose is calculated using the following equation: total daily dose = ([mammal daily dose (if applicable) + plant daily dose (if applicable) + invertebrate daily dose (if applicable) + soil daily dose]*SUF)/receptor species body weight.
8 The TRVs used in this risk assessment represent a mid-range effects level. The derivation of TRVs is described in Navy (1998).
9 Allometrically adjusted TRVs for birds were calculated using the following equation: receptor species TRV = (test species TRV) x (test species body weight / receptor species body weight)$^{(1-1.2)}$.
10 Allometrically adjusted TRVs for mammals were calculated using the following equation: receptor species TRV = (test species TRV) x (test species body weight / receptor species body weight)$^{(1-0.94)}$.
11 HQs were calculated using the following equation: HQ = total daily dose/allometrically adjusted TRV.
12 Highlighted cells indicate an HQ greater than 1.0.

BAF	Bioaccumulation Factor	mg/day	Milligram per day
BB	Below minimum background reference site concentration	mg/kg	Milligram per kilogram
EE/CA	Engineering Evaluation/Cost Analysis	NA	Not applicable
EU	Exposure Unit	Navy	Department of the Navy
HQ	Hazard quotient	SUF	Site use factor
ID	Identification	TRV	Toxicity reference value
kg	Kilogram	XRF	X-ray fluorescence
kg/day	Kilogram per day	XRF 10	XRF measurements recorded following drying and seiving through a #10-mesh screen

Sources: Department of the Navy. 1998. "Development of Toxicity Reference Values for Conducting Ecological Risk Assessments at Naval Facilities in California, Interim Final." Prepared by Naval Facilities Engineering Command, Engineering Field Activity West (EFA West). San Bruno, California.

TABLE C-7A: ARSENIC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 7 - MARY P. MINE WASTE PILE
Remedial Investigation Report
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)
calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **0.11**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Mourning Dove (Herbivorous Birds - Terrestrial)																							
Reference Site																							
SGBG-1 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	5.36E-04	3.46E+01	1.85E-02	4.25E-04	1.09E-01	7.20E-05	2.20E+01	1.17E+00	1.37E+01	5.26E-06
UBRBG-204 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	5.36E-04	1.95E+01	1.04E-02	4.25E-04	1.09E-01	4.06E-05	2.20E+01	1.17E+00	1.37E+01	2.97E-06
Mary P. Mine Waste Pile																					**Minimum HQ (Reference Site)**		**2.97E-06**
MPWA-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	2.48E+01	1.43E-01	NA	NA	NA	NA	5.36E-04	4.12E+01	2.21E-02	4.25E-04	1.09E-01	6.41E-04	2.20E+01	1.17E+00	1.37E+01	4.68E-05
MPWA-50+39 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	2.68E+01	1.55E-01	NA	NA	NA	NA	5.36E-04	4.46E+01	2.39E-02	4.25E-04	1.09E-01	6.94E-04	2.20E+01	1.17E+00	1.37E+01	5.07E-05
MPWA-75+20 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	9.41E+01	5.42E-01	NA	NA	NA	NA	5.36E-04	1.57E+02	8.39E-02	4.25E-04	1.09E-01	2.44E-03	2.20E+01	1.17E+00	1.37E+01	1.78E-04
MPWA-100+15 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	3.59E+01	2.07E-01	NA	NA	NA	NA	5.36E-04	5.97E+01	3.20E-02	4.25E-04	1.09E-01	9.28E-04	2.20E+01	1.17E+00	1.37E+01	6.78E-05
MPWA-100+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	7.01E+00	4.04E-02	NA	NA	NA	NA	5.36E-04	1.17E+01	6.25E-03	4.25E-04	1.09E-01	1.81E-04	2.20E+01	1.17E+00	1.37E+01	1.32E-05
MPWA-200+0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.39E+01	8.01E-02	NA	NA	NA	NA	5.36E-04	2.31E+01	1.24E-02	4.25E-04	1.09E-01	3.60E-04	2.20E+01	1.17E+00	1.37E+01	2.63E-05
MPWA-200+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	2.16E+01	1.24E-01	NA	NA	NA	NA	5.36E-04	3.60E+01	1.93E-02	4.25E-04	1.09E-01	5.59E-04	2.20E+01	1.17E+00	1.37E+01	4.08E-05
MPWA-230+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
																					Maximum HQ (Mary P. Mine Waste Pile)		**1.78E-04**
Red-Tailed Hawk (Carnivorous Birds - Terrestrial)																							
Reference Site																							
SGBG-1 (0-6")	9.00E-02	9.00E-02	4.84E-01	1.67E+01	1.50E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.46E+01	1.77E-01	1.58E-04	1.13E+00	2.34E-04	2.20E+01	1.17E+00	2.19E+01	1.07E-05
UBRBG-204 (0-6")	9.00E-02	9.00E-02	4.84E-01	9.43E+00	8.49E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.95E+01	1.00E-01	1.58E-04	1.13E+00	1.32E-04	2.20E+01	1.17E+00	2.19E+01	6.04E-06
Mary P. Mine Waste Pile																					**Minimum HQ (Reference Site)**		**6.04E-06**
MPWA-0 (0-6")	9.00E-02	9.00E-02	4.84E-01	1.99E+01	1.79E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.12E+01	2.11E-01	1.58E-04	1.13E+00	2.79E-04	2.20E+01	1.17E+00	2.19E+01	1.28E-05
MPWA-50+39 (0-6")	9.00E-02	9.00E-02	4.84E-01	2.16E+01	1.94E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.46E+01	2.29E-01	1.58E-04	1.13E+00	3.02E-04	2.20E+01	1.17E+00	2.19E+01	1.38E-05
MPWA-75+20 (0-6")	9.00E-02	9.00E-02	4.84E-01	7.58E+01	6.82E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.57E+02	8.03E-01	1.58E-04	1.13E+00	1.06E-03	2.20E+01	1.17E+00	2.19E+01	4.85E-05
MPWA-100+15 (0-6")	9.00E-02	9.00E-02	4.84E-01	2.89E+01	2.60E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.97E+01	3.06E-01	1.58E-04	1.13E+00	4.04E-04	2.20E+01	1.17E+00	2.19E+01	1.85E-05
MPWA-100+25 (0-6")	9.00E-02	9.00E-02	4.84E-01	5.64E+00	5.07E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.17E+01	5.98E-02	1.58E-04	1.13E+00	7.90E-05	2.20E+01	1.17E+00	2.19E+01	3.61E-06
MPWA-200+0 (0-6")	9.00E-02	9.00E-02	4.84E-01	1.12E+01	1.01E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.31E+01	1.19E-01	1.58E-04	1.13E+00	1.57E-04	2.20E+01	1.17E+00	2.19E+01	7.16E-06
MPWA-200+25 (0-6")	9.00E-02	9.00E-02	4.84E-01	1.74E+01	1.56E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.60E+01	1.84E-01	1.58E-04	1.13E+00	2.43E-04	2.20E+01	1.17E+00	2.19E+01	1.11E-05
MPWA-230+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
																					Maximum HQ (Mary P. Mine Waste Pile)		**4.85E-05**
American Kestrel (Insectivorous Birds - Terrestrial)																							
Reference Site																							
SGBG-1 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	2.55E+00	8.82E+01	1.21E+00	7.84E-04	3.46E+01	2.71E-02	4.20E-04	1.24E-01	4.21E-03	2.20E+01	1.17E+00	1.40E+01	3.00E-04
UBRBG-204 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	2.55E+00	4.98E+01	6.85E-01	7.84E-04	1.95E+01	1.53E-02	4.20E-04	1.24E-01	2.37E-03	2.20E+01	1.17E+00	1.40E+01	1.69E-04
Mary P. Mine Waste Pile																					**Minimum HQ (Reference Site)**		**1.69E-04**
MPWA-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	6.79E+02	9.35E+00	7.84E-04	4.12E+01	3.23E-02	4.20E-04	1.24E-01	3.18E-02	2.20E+01	1.17E+00	1.40E+01	2.26E-03
MPWA-50+39 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	7.36E+02	1.01E+01	7.84E-04	4.46E+01	3.50E-02	4.20E-04	1.24E-01	3.44E-02	2.20E+01	1.17E+00	1.40E+01	2.45E-03
MPWA-75+20 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	2.58E+03	3.55E+01	7.84E-04	1.57E+02	1.23E-01	4.20E-04	1.24E-01	1.21E-01	2.20E+01	1.17E+00	1.40E+01	8.60E-03
MPWA-100+15 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	9.84E+02	1.35E+01	7.84E-04	5.97E+01	4.68E-02	4.20E-04	1.24E-01	4.61E-02	2.20E+01	1.17E+00	1.40E+01	3.28E-03
MPWA-100+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	1.92E+02	2.64E+00	7.84E-04	1.17E+01	9.15E-03	4.20E-04	1.24E-01	9.00E-03	2.20E+01	1.17E+00	1.40E+01	6.41E-04
MPWA-200+0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	3.81E+02	5.24E+00	7.84E-04	2.31E+01	1.81E-02	4.20E-04	1.24E-01	1.78E-02	2.20E+01	1.17E+00	1.40E+01	1.27E-03
MPWA-200+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	5.93E+02	8.15E+00	7.84E-04	3.60E+01	2.82E-02	4.20E-04	1.24E-01	2.77E-02	2.20E+01	1.17E+00	1.40E+01	1.98E-03
MPWA-230+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
																					Maximum HQ (Mary P. Mine Waste Pile)		**8.60E-03**
Meadow Vole (Small Herbivorous Mammal - Terrestrial)																							
Reference Site																							
SGBG-1 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	1.13E-04	3.46E+01	3.89E-03	1.00E+00	3.06E-02	1.27E-01	4.70E+00	1.10E-01	5.08E+00	2.51E-02
UBRBG-204 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	1.13E-04	1.95E+01	2.19E-03	1.00E+00	3.06E-02	7.17E-02	4.70E+00	1.10E-01	5.08E+00	1.41E-02
Mary P. Mine Waste Pile																					**Minimum HQ (Reference Site)**		**1.41E-02**
MPWA-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	2.48E+01	1.16E-01	NA	NA	NA	NA	1.13E-04	4.12E+01	4.64E-03	1.00E+00	3.06E-02	3.95E+00	4.70E+00	1.10E-01	5.08E+00	7.78E-01
MPWA-50+39 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	2.68E+01	1.26E-01	NA	NA	NA	NA	1.13E-04	4.46E+01	5.02E-03	1.00E+00	3.06E-02	4.28E+00	4.70E+00	1.10E-01	5.08E+00	8.42E-01
MPWA-75+20 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	9.41E+01	4.41E-01	NA	NA	NA	NA	1.13E-04	1.57E+02	1.76E-02	1.00E+00	3.06E-02	1.50E+01	4.70E+00	1.10E-01	5.08E+00	2.96E+00
MPWA-100+15 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	3.59E+01	1.68E-01	NA	NA	NA	NA	1.13E-04	5.97E+01	6.72E-03	1.00E+00	3.06E-02	5.72E+00	4.70E+00	1.10E-01	5.08E+00	1.13E+00
MPWA-100+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	7.01E+00	3.29E-02	NA	NA	NA	NA	1.13E-04	1.17E+01	1.31E-03	1.00E+00	3.06E-02	1.12E+00	4.70E+00	1.10E-01	5.08E+00	2.20E-01
MPWA-200+0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.39E+01	6.52E-02	NA	NA	NA	NA	1.13E-04	2.31E+01	2.60E-03	1.00E+00	3.06E-02	2.21E+00	4.70E+00	1.10E-01	5.08E+00	4.36E-01
MPWA-200+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	2.16E+01	1.01E-01	NA	NA	NA	NA	1.13E-04	3.60E+01	4.05E-03	1.00E+00	3.06E-02	3.44E+00	4.70E+00	1.10E-01	5.08E+00	6.78E-01
MPWA-230+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
																					Maximum HQ (Mary P. Mine Waste Pile)		**2.96E+00**

TABLE C-7A: ARSENIC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 7 - MARY P. MINE WASTE PILE (Continued)
Remedial Investigation Report
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)
calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **0.11**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
White-Tailed Deer (Large Herbivorous Mammal - Terrestrial)																							
Reference Site																							
SGBG-1 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	2.86E-02	3.46E+01	9.90E-01	6.15E-04	1.35E+02	4.51E-06	4.70E+00	1.10E-01	3.07E+00	1.47E-06
UBRBG-204 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	2.86E-02	1.95E+01	5.58E-01	6.15E-04	1.35E+02	2.55E-06	4.70E+00	1.10E-01	3.07E+00	8.30E-07
Mary P. Mine Waste Pile																					**Minimum HQ (Reference Site)**		**8.30E-07**
MPWA-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	2.48E+01	3.55E+01	NA	NA	NA	NA	2.86E-02	4.12E+01	1.18E+00	6.15E-04	1.35E+02	1.67E-04	4.70E+00	1.10E-01	3.07E+00	5.45E-05
MPWA-50+39 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	2.68E+01	3.84E+01	NA	NA	NA	NA	2.86E-02	4.46E+01	1.28E+00	6.15E-04	1.35E+02	1.81E-04	4.70E+00	1.10E-01	3.07E+00	5.90E-05
MPWA-75+20 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	9.41E+01	1.35E+02	NA	NA	NA	NA	2.86E-02	1.57E+02	4.48E+00	6.15E-04	1.35E+02	6.35E-04	4.70E+00	1.10E-01	3.07E+00	2.07E-04
MPWA-100+15 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	3.59E+01	5.14E+01	NA	NA	NA	NA	2.86E-02	5.97E+01	1.71E+00	6.15E-04	1.35E+02	2.42E-04	4.70E+00	1.10E-01	3.07E+00	7.89E-05
MPWA-100+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	7.01E+00	1.00E+01	NA	NA	NA	NA	2.86E-02	1.17E+01	3.34E-01	6.15E-04	1.35E+02	4.73E-05	4.70E+00	1.10E-01	3.07E+00	1.54E-05
MPWA-200+0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.39E+01	1.99E+01	NA	NA	NA	NA	2.86E-02	2.31E+01	6.62E-01	6.15E-04	1.35E+02	9.37E-05	4.70E+00	1.10E-01	3.07E+00	3.05E-05
MPWA-200+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	2.16E+01	3.09E+01	NA	NA	NA	NA	2.86E-02	3.60E+01	1.03E+00	6.15E-04	1.35E+02	1.46E-04	4.70E+00	1.10E-01	3.07E+00	4.75E-05
MPWA-230+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
																					Maximum HQ (Mary P. Mine Waste Pile)		**2.07E-04**
Red Fox (Carnivorous Mammal - Terrestrial)																							
Reference Site																							
SGBG-1 (0-6")	1.72E-01	1.72E-01	4.84E-01	1.67E+01	2.87E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.46E+01	1.66E-01	8.13E-05	4.54E+00	5.44E-05	4.70E+00	1.10E-01	3.76E+00	1.45E-05
UBRBG-204 (0-6")	1.72E-01	1.72E-01	4.84E-01	9.43E+00	1.62E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.95E+01	9.37E-02	8.13E-05	4.54E+00	3.07E-05	4.70E+00	1.10E-01	3.76E+00	8.16E-06
Mary P. Mine Waste Pile																					**Minimum HQ (Reference Site)**		**8.16E-06**
MPWA-0 (0-6")	1.72E-01	1.72E-01	4.84E-01	1.99E+01	3.42E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.12E+01	1.98E-01	8.13E-05	4.54E+00	6.48E-05	4.70E+00	1.10E-01	3.76E+00	1.72E-05
MPWA-50+39 (0-6")	1.72E-01	1.72E-01	4.84E-01	2.16E+01	3.70E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.46E+01	2.14E-01	8.13E-05	4.54E+00	7.02E-05	4.70E+00	1.10E-01	3.76E+00	1.87E-05
MPWA-75+20 (0-6")	1.72E-01	1.72E-01	4.84E-01	7.58E+01	1.30E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.57E+02	7.52E-01	8.13E-05	4.54E+00	2.46E-04	4.70E+00	1.10E-01	3.76E+00	6.55E-05
MPWA-100+15 (0-6")	1.72E-01	1.72E-01	4.84E-01	2.89E+01	4.95E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.97E+01	2.87E-01	8.13E-05	4.54E+00	9.39E-05	4.70E+00	1.10E-01	3.76E+00	2.50E-05
MPWA-100+25 (0-6")	1.72E-01	1.72E-01	4.84E-01	5.64E+00	9.68E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.17E+01	5.60E-02	8.13E-05	4.54E+00	1.83E-05	4.70E+00	1.10E-01	3.76E+00	4.88E-06
MPWA-200+0 (0-6")	1.72E-01	1.72E-01	4.84E-01	1.12E+01	1.92E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.31E+01	1.11E-01	8.13E-05	4.54E+00	3.64E-05	4.70E+00	1.10E-01	3.76E+00	9.67E-06
MPWA-200+25 (0-6")	1.72E-01	1.72E-01	4.84E-01	1.74E+01	2.98E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.60E+01	1.73E-01	8.13E-05	4.54E+00	5.65E-05	4.70E+00	1.10E-01	3.76E+00	1.50E-05
MPWA-230+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
																					Maximum HQ (Mary P. Mine Waste Pile)		**6.55E-05**
Masked Shrew (Omnivorous Mammal - Terrestrial, Wetland)																							
Reference Site																							
SGBG-1 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	2.55E+00	8.82E+01	7.47E-01	1.10E-03	3.46E+01	3.81E-02	2.75E-01	5.50E-03	3.93E+01	4.70E+00	1.10E-01	5.63E+00	6.98E+00
UBRBG-204 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	2.55E+00	4.98E+01	4.21E-01	1.10E-03	1.95E+01	2.15E-02	2.75E-01	5.50E-03	2.21E+01	4.70E+00	1.10E-01	5.63E+00	3.94E+00
Mary P. Mine Waste Pile																					**Minimum HQ (Reference Site)**		**3.94E+00**
MPWA-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	6.79E+02	5.75E+00	1.10E-03	4.12E+01	4.54E-02	2.75E-01	5.50E-03	2.90E+02	4.70E+00	1.10E-01	5.63E+00	5.15E+01
MPWA-50+39 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	7.36E+02	6.23E+00	1.10E-03	4.46E+01	4.92E-02	2.75E-01	5.50E-03	3.14E+02	4.70E+00	1.10E-01	5.63E+00	5.58E+01
MPWA-75+20 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	2.58E+03	2.19E+01	1.10E-03	1.57E+02	1.72E-01	2.75E-01	5.50E-03	1.10E+03	4.70E+00	1.10E-01	5.63E+00	1.96E+02
MPWA-100+15 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	9.84E+02	8.33E+00	1.10E-03	5.97E+01	6.57E-02	2.75E-01	5.50E-03	4.20E+02	4.70E+00	1.10E-01	5.63E+00	7.46E+01
MPWA-100+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	1.92E+02	1.63E+00	1.10E-03	1.17E+01	1.28E-02	2.75E-01	5.50E-03	8.20E+01	4.70E+00	1.10E-01	5.63E+00	1.46E+01
MPWA-200+0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	3.81E+02	3.23E+00	1.10E-03	2.31E+01	2.55E-02	2.75E-01	5.50E-03	1.63E+02	4.70E+00	1.10E-01	5.63E+00	2.89E+01
MPWA-200+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	5.93E+02	5.02E+00	1.10E-03	3.60E+01	3.96E-02	2.75E-01	5.50E-03	2.53E+02	4.70E+00	1.10E-01	5.63E+00	4.50E+01
MPWA-230+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
																					Maximum HQ (Mary P. Mine Waste Pile)		**1.96E+02**

Notes

1 See Tables 3-1 through 3-13 for ingestion rates, foraging ranges used to calculate the SUF, and body weights.
2 BAFs were calculated by dividing site-collected tissue by collocated soil concentrations (BAFs are in dry weight). The maximum BAF calculated from the Beartrap Creek and Blackfoot River transects was used for site dose calculations. The maximum BAF from the terrestrial reference site was used for reference site dose calculations.
3 The mammal, plant, and invertebrate concentrations were calculated by multiplying the soil concentration by the BAF to generate a tissue concentration (see note 2).
4 Mammal, plant, and invertebrate daily doses were calculated by multiplying the ingestion rate (see note 1) by the tissue concentration (see note 3).
5 Soil concentration from 0 to 6 inches below ground surface at point ID as measured by XRF 10. Doses were not calculated for detected and non-detected soil concentrations measured below the minimum reference site concentration, as indicated by BB. For results that were measured at less than the detection limit, doses were calculated using half of the detection limit.
6 Soil daily dose was calculated by multiplying the soil ingestion rate (see note 1) by soil concentration (see note 5).
7 Total daily dose is calculated using the following equation: total daily dose = ([mammal daily dose (if applicable) + plant daily dose (if applicable) + invertebrate daily dose (if applicable) + soil daily dose]*SUF)/receptor species body weight.
8 The TRVs used in this risk assessment represent a mid-range effects level. The derivation of TRVs is described in Navy (1998).
9 Allometrically adjusted TRVs for birds were calculated using the following equation: receptor species TRV = (test species TRV) x (test species body weight / receptor species body weight)$^{(1-1.2)}$.
10 Allometrically adjusted TRVs for mammals were calculated using the following equation: receptor species TRV = (test species TRV) x (test species body weight / receptor species body weight)$^{(1-0.94)}$.
11 HQs were calculated using the following equation: HQ = total daily dose/allometrically adjusted TRV.
12 Highlighted cells indicate an HQ greater than 1.0.

TABLE C-7A: ARSENIC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 7 - MARY P. MINE WASTE PILE (Continued)

Remedial Investigation Report

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **0.11**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)

BAF	Bioaccumulation Factor	mg/day	Milligram per day
BB	Below minimum background reference site concentration	mg/kg	Milligram per kilogram
EE/CA	Engineering Evaluation/Cost Analysis	NA	Not applicable
EU	Exposure Unit	Navy	Department of the Navy
HQ	Hazard quotient	SUF	Site use factor
ID	Identification	TRV	Toxicity reference value
kg	Kilogram	XRF	X-ray fluorescence
kg/day	Kilogram per day	XRF 10	XRF measurements recorded following drying and seiving through a #10-mesh screen

Sources: Department of the Navy. 1998. "Development of Toxicity Reference Values for Conducting Ecological Risk Assessments at Naval Facilities in California, Interim Final." Prepared by Naval Facilities Engineering Command, Engineering Field Activity West (EFA West). San Bruno, California.

TABLE C-7B: CADMIUM DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 7 - MARY P. MINE WASTE PILE
Remedial Investigation Report
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)
calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 0.11

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Mourning Dove (Herbivorous Birds - Terrestrial)																							
Reference Site																							
SGBG-1 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.26E+00	3.57E-01	2.06E-03	NA	NA	NA	NA	5.36E-04	2.84E-01	1.52E-04	4.25E-04	1.09E-01	8.59E-06	1.00E+00	1.13E+00	6.27E-01	1.37E-05
UBRBG-204 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.26E+00	3.39E+00	1.95E-02	NA	NA	NA	NA	5.36E-04	2.70E+00	1.45E-03	4.25E-04	1.09E-01	8.16E-05	1.00E+00	1.13E+00	6.27E-01	1.30E-04
Mary P. Mine Waste Pile																						**Minimum HQ (Reference Site)**	**1.37E-05**
MPWA-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.59E+00	1.43E+00	8.23E-03	NA	NA	NA	NA	5.36E-04	9.00E-01	4.82E-04	4.25E-04	1.09E-01	3.39E-05	1.00E+00	1.13E+00	6.27E-01	5.41E-05
MPWA-50+39 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
MPWA-75+20 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.59E+00	3.97E-01	2.29E-03	NA	NA	NA	NA	5.36E-04	2.50E-01	1.34E-04	4.25E-04	1.09E-01	9.42E-06	1.00E+00	1.13E+00	6.27E-01	1.50E-05
MPWA-100+15 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
MPWA-100+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
MPWA-200+0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.59E+00	9.18E-01	5.29E-03	NA	NA	NA	NA	5.36E-04	5.78E-01	3.10E-04	4.25E-04	1.09E-01	2.18E-05	1.00E+00	1.13E+00	6.27E-01	3.47E-05
MPWA-200+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
MPWA-230+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
																						Maximum HQ (Mary P. Mine Waste Pile)	**5.41E-05**
Red-Tailed Hawk (Carnivorous Birds - Terrestrial)																							
Reference Site																							
SGBG-1 (0-6")	9.00E-02	9.00E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.84E-01	1.46E-03	1.58E-04	1.13E+00	2.03E-07	1.00E+00	1.13E+00	1.00E+00	2.03E-07
UBRBG-204 (0-6")	9.00E-02	9.00E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.70E+00	1.38E-02	1.58E-04	1.13E+00	1.93E-06	1.00E+00	1.13E+00	1.00E+00	1.93E-06
Mary P. Mine Waste Pile																						**Minimum HQ (Reference Site)**	**2.03E-07**
MPWA-0 (0-6")	9.00E-02	9.00E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	9.00E-01	4.61E-03	1.58E-04	1.13E+00	6.42E-07	1.00E+00	1.13E+00	1.00E+00	6.42E-07
MPWA-50+39 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
MPWA-75+20 (0-6")	9.00E-02	9.00E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.50E-01	1.28E-03	1.58E-04	1.13E+00	1.78E-07	1.00E+00	1.13E+00	1.00E+00	1.78E-07
MPWA-100+15 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
MPWA-100+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
MPWA-200+0 (0-6")	9.00E-02	9.00E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.78E-01	2.96E-03	1.58E-04	1.13E+00	4.13E-07	1.00E+00	1.13E+00	1.00E+00	4.12E-07
MPWA-200+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
MPWA-230+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
																						Maximum HQ (Mary P. Mine Waste Pile)	**6.42E-07**
American Kestrel (Insectivorous Birds - Terrestrial)																							
Reference Site																							
SGBG-1 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	7.00E+00	1.99E+00	2.74E-02	7.84E-04	2.84E-01	2.23E-04	4.20E-04	1.24E-01	9.35E-05	1.00E+00	1.13E+00	6.43E-01	1.45E-04
UBRBG-204 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	7.00E+00	1.89E+01	2.60E-01	7.84E-04	2.70E+00	2.12E-03	4.20E-04	1.24E-01	8.89E-04	1.00E+00	1.13E+00	6.43E-01	1.38E-03
Mary P. Mine Waste Pile																						**Minimum HQ (Reference Site)**	**1.45E-04**
MPWA-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	7.00E+00	6.30E+00	8.67E-02	7.84E-04	9.00E-01	7.06E-04	4.20E-04	1.24E-01	2.96E-04	1.00E+00	1.13E+00	6.43E-01	4.61E-04
MPWA-50+39 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
MPWA-75+20 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	7.00E+00	1.75E+00	2.41E-02	7.84E-04	2.50E-01	1.96E-04	4.20E-04	1.24E-01	8.23E-05	1.00E+00	1.13E+00	6.43E-01	1.28E-04
MPWA-100+15 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
MPWA-100+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
MPWA-200+0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	7.00E+00	4.05E+00	5.57E-02	7.84E-04	5.78E-01	4.53E-04	4.20E-04	1.24E-01	1.90E-04	1.00E+00	1.13E+00	6.43E-01	2.96E-04
MPWA-200+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
MPWA-230+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
																						Maximum HQ (Mary P. Mine Waste Pile)	**4.61E-04**
Meadow Vole (Small Herbivorous Mammal - Terrestrial)																							
Reference Site																							
SGBG-1 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.26E+00	3.57E-01	1.67E-03	NA	NA	NA	NA	1.13E-04	2.84E-01	3.20E-05	1.00E+00	3.06E-02	5.57E-02	2.64E+00	3.14E-02	2.64E+00	2.11E-02
UBRBG-204 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.26E+00	3.39E+00	1.59E-02	NA	NA	NA	NA	1.13E-04	2.70E+00	3.04E-04	1.00E+00	3.06E-02	5.30E-01	2.64E+00	3.14E-02	2.64E+00	2.00E-01
Mary P. Mine Waste Pile																						**Minimum HQ (Reference Site)**	**2.00E-01**
MPWA-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.59E+00	1.43E+00	6.70E-03	NA	NA	NA	NA	1.13E-04	9.00E-01	1.01E-04	1.00E+00	3.06E-02	2.22E-01	2.64E+00	3.14E-02	2.64E+00	8.41E-02
MPWA-50+39 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
MPWA-75+20 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.59E+00	3.97E-01	1.86E-03	NA	NA	NA	NA	1.13E-04	2.50E-01	2.81E-05	1.00E+00	3.06E-02	6.18E-02	2.64E+00	3.14E-02	2.64E+00	2.34E-02
MPWA-100+15 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
MPWA-100+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
MPWA-200+0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.59E+00	9.18E-01	4.30E-03	NA	NA	NA	NA	1.13E-04	5.78E-01	6.50E-05	1.00E+00	3.06E-02	1.43E-01	2.64E+00	3.14E-02	2.64E+00	5.40E-02
MPWA-200+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
MPWA-230+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
																						Maximum HQ (Mary P. Mine Waste Pile)	**8.41E-02**

TABLE C-7B: CADMIUM DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 7 - MARY P. MINE WASTE PILE (Continued)
Remedial Investigation Report
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)
calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **0.11**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
White-Tailed Deer (Large Herbivorous Mammal - Terrestrial)																							
Reference Site																							
SGBG-1 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.26E+00	3.57E-01	5.11E-01	NA	NA	NA	NA	2.86E-02	2.84E-01	8.13E-03	6.15E-04	1.35E+02	2.37E-06	2.64E+00	3.14E-02	1.60E+00	1.48E-06
UBRBG-204 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.26E+00	3.39E+00	4.86E+00	NA	NA	NA	NA	2.86E-02	2.70E+00	7.73E-02	6.15E-04	1.35E+02	2.25E-05	2.64E+00	3.14E-02	1.60E+00	1.41E-05
Mary P. Mine Waste Pile																						**Minimum HQ (Reference Site)**	**1.48E-06**
MPWA-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.59E+00	1.43E+00	2.05E+00	NA	NA	NA	NA	2.86E-02	9.00E-01	2.58E-02	6.15E-04	1.35E+02	9.44E-06	2.64E+00	3.14E-02	1.60E+00	5.91E-06
MPWA-50+39 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
MPWA-75+20 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.59E+00	3.97E-01	5.68E-01	NA	NA	NA	NA	2.86E-02	2.50E-01	7.16E-03	6.15E-04	1.35E+02	2.62E-06	2.64E+00	3.14E-02	1.60E+00	1.64E-06
MPWA-100+15 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
MPWA-100+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
MPWA-200+0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.59E+00	9.18E-01	1.31E+00	NA	NA	NA	NA	2.86E-02	5.78E-01	1.66E-02	6.15E-04	1.35E+02	6.07E-06	2.64E+00	3.14E-02	1.60E+00	3.80E-06
MPWA-200+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
MPWA-230+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
																						Maximum HQ (Mary P. Mine Waste Pile)	**5.91E-06**
Red Fox (Carnivorous Mammal - Terrestrial)																							
Reference Site																							
SGBG-1 (0-6")	1.72E-01	1.72E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.84E-01	1.36E-03	8.13E-05	4.54E+00	2.44E-08	2.64E+00	3.14E-02	1.96E+00	1.25E-08
UBRBG-204 (0-6")	1.72E-01	1.72E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.70E+00	1.30E-02	8.13E-05	4.54E+00	2.32E-07	2.64E+00	3.14E-02	1.96E+00	1.19E-07
Mary P. Mine Waste Pile																						**Minimum HQ (Reference Site)**	**1.25E-08**
MPWA-0 (0-6")	1.72E-01	1.72E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	9.00E-01	4.32E-03	8.13E-05	4.54E+00	7.74E-08	2.64E+00	3.14E-02	1.96E+00	3.95E-08
MPWA-50+39 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
MPWA-75+20 (0-6")	1.72E-01	1.72E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.50E-01	1.20E-03	8.13E-05	4.54E+00	2.15E-08	2.64E+00	3.14E-02	1.96E+00	1.10E-08
MPWA-100+15 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
MPWA-100+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
MPWA-200+0 (0-6")	1.72E-01	1.72E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.78E-01	2.78E-03	8.13E-05	4.54E+00	4.97E-08	2.64E+00	3.14E-02	1.96E+00	2.54E-08
MPWA-200+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
MPWA-230+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
																						Maximum HQ (Mary P. Mine Waste Pile)	**3.95E-08**
Masked Shrew (Omnivorous Mammal - Terrestrial, Wetland)																							
Reference Site																							
SGBG-1 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	7.00E+00	1.99E+00	1.68E-02	1.10E-03	2.84E-01	3.13E-04	2.75E-01	5.50E-03	8.57E-01	2.64E+00	3.14E-02	2.93E+00	2.93E-01
UBRBG-204 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	7.00E+00	1.89E+01	1.60E-01	1.10E-03	2.70E+00	2.97E-03	2.75E-01	5.50E-03	8.15E+00	2.64E+00	3.14E-02	2.93E+00	2.78E+00
Mary P. Mine Waste Pile																						**Minimum HQ (Reference Site)**	**2.93E-01**
MPWA-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	7.00E+00	6.30E+00	5.34E-02	1.10E-03	9.00E-01	9.91E-04	2.75E-01	5.50E-03	2.72E+00	2.64E+00	3.14E-02	2.93E+00	9.27E-01
MPWA-50+39 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
MPWA-75+20 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	7.00E+00	1.75E+00	1.48E-02	1.10E-03	2.50E-01	2.75E-04	2.75E-01	5.50E-03	7.55E-01	2.64E+00	3.14E-02	2.93E+00	2.58E-01
MPWA-100+15 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
MPWA-100+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
MPWA-200+0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	7.00E+00	4.05E+00	3.43E-02	1.10E-03	5.78E-01	6.36E-04	2.75E-01	5.50E-03	1.75E+00	2.64E+00	3.14E-02	2.93E+00	5.95E-01
MPWA-200+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
MPWA-230+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
																						Maximum HQ (Mary P. Mine Waste Pile)	**9.27E-01**

Notes

1 See Tables 3-1 through 3-13 for ingestion rates, foraging ranges used to calculate the SUF, and body weights.

2 BAFs were calculated by dividing site-collected tissue by collocated soil concentrations (BAFs are in dry weight). The maximum BAF calculated from the Beartrap Creek and Blackfoot River transects was used for site dose calculations. The maximum BAF from the terrestrial reference site was used for reference site dose calculations.

3 The mammal, plant, and invertebrate concentrations were calculated by multiplying the soil concentration by the BAF to generate a tissue concentration (see note 2).

4 Mammal, plant, and invertebrate daily doses were calculated by multiplying the ingestion rate (see note 1) by the tissue concentration (see note 3).

5 Soil concentration from 0 to 6 inches below ground surface at point ID from laboratory analysis. XRF 10 data were unavailable for cadmium. Doses were not calculated for detected and non-detected soil concentrations measured below the minimum reference site concentration, as indicated by BB. For results that were measured at less than the detection limit, doses were calculated using half of the detection limit.

6 Soil daily dose was calculated by multiplying the soil ingestion rate (see note 1) by soil concentration (see note 5).

7 Total daily dose is calculated using the following equation: total daily dose = ([mammal daily dose (if applicable) + plant daily dose (if applicable) + invertebrate daily dose (if applicable) + soil daily dose]*SUF)/receptor species body weight.

8 The TRVs used in this risk assessment represent a mid-range effects level. The derivation of TRVs is described in Navy (1998) and DTSC (2009).

9 Allometrically adjusted TRVs for birds were calculated using the following equation: receptor species TRV = (test species TRV) x (test species body weight / receptor species body weight)$^{(1-1.2)}$.

10 Allometrically adjusted TRVs for mammals were calculated using the following equation: receptor species TRV = (test species TRV) x (test species body weight / receptor species body weight)$^{(1-0.94)}$.

11 HQs were calculated using the following equation: HQ = total daily dose/allometrically adjusted TRV.

12 Highlighted cells indicate an HQ greater than 1.0.

TABLE C-7B: CADMIUM DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 7 - MARY P. MINE WASTE PILE (Continued)
Remedial Investigation Report
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)
calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **0.11**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)

BAF	Bioaccumulation Factor	mg/day	Milligram per day
BB	Below minimum background reference site concentration	mg/kg	Milligram per kilogram
DTSC	California Department of Toxic Substances Control	NA	Not applicable
EE/CA	Engineering Evaluation/Cost Analysis	Navy	Department of the Navy
EU	Exposure Unit	NE	Not evaluated (no data for that point ID)
HQ	Hazard quotient	SUF	Site use factor
ID	Identification	TRV	Toxicity reference value
kg	Kilogram	XRF	X-ray fluorescence
kg/day	Kilogram per day	XRF 10	XRF measurements recorded following drying and seiving through a #10-mesh screen

Sources:
Department of the Navy. 1998. "Development of Toxicity Reference Values for Conducting Ecological Risk Assessments at Naval Facilities in California, Interim Final." Prepared by Naval Facilities Engineering Command, Engineering Field Activity West (EFA West). San Bruno, California.
DTSC. 2009. HERD Ecological Risk Assessment Note 6. February. Available on-line at: http://www.dtsc.ca.gov/AssessingRisk/upload/CdEconote_Final.pdf.

TABLE C-7C: COPPER DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 7 - MARY P. MINE WASTE PILE
Remedial Investigation Report
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

Site Area (hectares) 0.11

from dose parameters tables; from BAF table; linked to soil or sed concentration table (VLOOKUP)
calculated values; linked to TRV table (VLOOKUP) - should be same for all birds or mammals

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Mourning Dove (Herbivorous Birds - Terrestrial)																							
Reference Site																							
SGBG-1 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	7.79E-01	7.21E+01	4.15E-01	NA	NA	NA	NA	5.36E-04	9.25E+01	4.96E-02	4.25E-04	1.09E-01	1.81E-03	5.23E+01	4.09E-01	4.01E+01	4.50E-05
UBRBG-204 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	7.79E-01	8.12E+01	4.68E-01	NA	NA	NA	NA	5.36E-04	1.04E+02	5.59E-02	4.25E-04	1.09E-01	2.04E-03	5.23E+01	4.09E-01	4.01E+01	5.08E-05
Mary P. Mine Waste Pile																						**Minimum HQ (Reference Site)**	**4.50E-05**
MPWA-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	6.48E+02	3.74E+00	NA	NA	NA	NA	5.36E-04	5.73E+02	3.07E-01	4.25E-04	1.09E-01	1.57E-02	5.23E+01	4.09E-01	4.01E+01	3.92E-04
MPWA-50+39 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	4.44E+02	2.56E+00	NA	NA	NA	NA	5.36E-04	3.92E+02	2.10E-01	4.25E-04	1.09E-01	1.08E-02	5.23E+01	4.09E-01	4.01E+01	2.68E-04
MPWA-75+20 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	1.66E+02	9.58E-01	NA	NA	NA	NA	5.36E-04	1.47E+02	7.87E-02	4.25E-04	1.09E-01	4.03E-03	5.23E+01	4.09E-01	4.01E+01	1.00E-04
MPWA-100+15 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	4.80E+02	2.77E+00	NA	NA	NA	NA	5.36E-04	4.24E+02	2.27E-01	4.25E-04	1.09E-01	1.16E-02	5.23E+01	4.09E-01	4.01E+01	2.90E-04
MPWA-100+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	3.16E+02	1.82E+00	NA	NA	NA	NA	5.36E-04	2.79E+02	1.50E-01	4.25E-04	1.09E-01	7.66E-03	5.23E+01	4.09E-01	4.01E+01	1.91E-04
MPWA-200+0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	5.43E+02	3.13E+00	NA	NA	NA	NA	5.36E-04	4.80E+02	2.57E-01	4.25E-04	1.09E-01	1.32E-02	5.23E+01	4.09E-01	4.01E+01	3.28E-04
MPWA-200+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	9.88E+01	5.69E-01	NA	NA	NA	NA	5.36E-04	8.73E+01	4.68E-02	4.25E-04	1.09E-01	2.40E-03	5.23E+01	4.09E-01	4.01E+01	5.97E-05
MPWA-230+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	5.45E+02	3.14E+00	NA	NA	NA	NA	5.36E-04	4.81E+02	2.58E-01	4.25E-04	1.09E-01	1.32E-02	5.23E+01	4.09E-01	4.01E+01	3.29E-04
																						Maximum HQ (Mary P. Mine Waste Pile)	**3.92E-04**
Red-Tailed Hawk (Carnivorous Birds - Terrestrial)																							
Reference Site																							
SGBG-1 (0-6")	9.00E-02	9.00E-02	6.61E-01	6.11E+01	5.50E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	9.25E+01	4.74E-01	1.58E-04	1.13E+00	8.32E-04	5.23E+01	4.09E-01	6.41E+01	1.30E-05
UBRBG-204 (0-6")	9.00E-02	9.00E-02	6.61E-01	6.89E+01	6.20E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.04E+02	5.35E-01	1.58E-04	1.13E+00	9.37E-04	5.23E+01	4.09E-01	6.41E+01	1.46E-05
Mary P. Mine Waste Pile																						**Minimum HQ (Reference Site)**	**1.30E-05**
MPWA-0 (0-6")	9.00E-02	9.00E-02	1.01E+00	5.79E+02	5.21E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.73E+02	2.94E+00	1.58E-04	1.13E+00	7.66E-03	5.23E+01	4.09E-01	6.41E+01	1.19E-04
MPWA-50+39 (0-6")	9.00E-02	9.00E-02	1.01E+00	3.96E+02	3.57E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.92E+02	2.01E+00	1.58E-04	1.13E+00	5.25E-03	5.23E+01	4.09E-01	6.41E+01	8.19E-05
MPWA-75+20 (0-6")	9.00E-02	9.00E-02	1.01E+00	1.48E+02	1.34E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.47E+02	7.53E-01	1.58E-04	1.13E+00	1.96E-03	5.23E+01	4.09E-01	6.41E+01	3.06E-05
MPWA-100+15 (0-6")	9.00E-02	9.00E-02	1.01E+00	4.29E+02	3.86E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.24E+02	2.18E+00	1.58E-04	1.13E+00	5.67E-03	5.23E+01	4.09E-01	6.41E+01	8.85E-05
MPWA-100+25 (0-6")	9.00E-02	9.00E-02	1.01E+00	2.82E+02	2.54E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.79E+02	1.43E+00	1.58E-04	1.13E+00	3.73E-03	5.23E+01	4.09E-01	6.41E+01	5.82E-05
MPWA-200+0 (0-6")	9.00E-02	9.00E-02	1.01E+00	4.85E+02	4.36E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.80E+02	2.46E+00	1.58E-04	1.13E+00	6.41E-03	5.23E+01	4.09E-01	6.41E+01	1.00E-04
MPWA-200+25 (0-6")	9.00E-02	9.00E-02	1.01E+00	8.82E+01	7.94E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	8.73E+01	4.48E-01	1.58E-04	1.13E+00	1.17E-03	5.23E+01	4.09E-01	6.41E+01	1.82E-05
MPWA-230+25 (0-6")	9.00E-02	9.00E-02	1.01E+00	4.86E+02	4.38E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.81E+02	2.47E+00	1.58E-04	1.13E+00	6.43E-03	5.23E+01	4.09E-01	6.41E+01	1.00E-04
																						Maximum HQ (Mary P. Mine Waste Pile)	**1.19E-04**
American Kestrel (Insectivorous Birds - Terrestrial)																							
Reference Site																							
SGBG-1 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	3.70E+00	3.43E+02	4.72E+00	7.84E-04	9.25E+01	7.26E-02	4.20E-04	1.24E-01	1.62E-02	5.23E+01	4.09E-01	4.12E+01	3.94E-04
UBRBG-204 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	3.70E+00	3.86E+02	5.32E+00	7.84E-04	1.04E+02	8.18E-02	4.20E-04	1.24E-01	1.83E-02	5.23E+01	4.09E-01	4.12E+01	4.45E-04
Mary P. Mine Waste Pile																						**Minimum HQ (Reference Site)**	**3.94E-04**
MPWA-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	2.78E+03	3.82E+01	7.84E-04	5.73E+02	4.49E-01	4.20E-04	1.24E-01	1.31E-01	5.23E+01	4.09E-01	4.12E+01	3.19E-03
MPWA-50+39 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	1.90E+03	2.62E+01	7.84E-04	3.92E+02	3.08E-01	4.20E-04	1.24E-01	8.98E-02	5.23E+01	4.09E-01	4.12E+01	2.18E-03
MPWA-75+20 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	7.13E+02	9.81E+00	7.84E-04	1.47E+02	1.15E-01	4.20E-04	1.24E-01	3.36E-02	5.23E+01	4.09E-01	4.12E+01	8.17E-04
MPWA-100+15 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	2.06E+03	2.83E+01	7.84E-04	4.24E+02	3.33E-01	4.20E-04	1.24E-01	9.71E-02	5.23E+01	4.09E-01	4.12E+01	2.36E-03
MPWA-100+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	1.35E+03	1.86E+01	7.84E-04	2.79E+02	2.19E-01	4.20E-04	1.24E-01	6.39E-02	5.23E+01	4.09E-01	4.12E+01	1.55E-03
MPWA-200+0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	2.33E+03	3.20E+01	7.84E-04	4.80E+02	3.76E-01	4.20E-04	1.24E-01	1.10E-01	5.23E+01	4.09E-01	4.12E+01	2.67E-03
MPWA-200+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	4.24E+02	5.83E+00	7.84E-04	8.73E+01	6.85E-02	4.20E-04	1.24E-01	2.00E-02	5.23E+01	4.09E-01	4.12E+01	4.86E-04
MPWA-230+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	2.33E+03	3.21E+01	7.84E-04	4.81E+02	3.78E-01	4.20E-04	1.24E-01	1.10E-01	5.23E+01	4.09E-01	4.12E+01	2.68E-03
																						Maximum HQ (Mary P. Mine Waste Pile)	**3.19E-03**
Meadow Vole (Small Herbivorous Mammal - Terrestrial)																							
Reference Site																							
SGBG-1 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	7.79E-01	7.21E+01	3.38E-01	NA	NA	NA	NA	1.13E-04	9.25E+01	1.04E-02	1.00E+00	3.06E-02	1.14E+01	6.32E+02	2.47E-02	6.24E+02	1.83E-02
UBRBG-204 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	7.79E-01	8.12E+01	3.81E-01	NA	NA	NA	NA	1.13E-04	1.04E+02	1.17E-02	1.00E+00	3.06E-02	1.28E+01	6.32E+02	2.47E-02	6.24E+02	2.06E-02
Mary P. Mine Waste Pile																						**Minimum HQ (Reference Site)**	**2.06E-02**
MPWA-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	6.48E+02	3.04E+00	NA	NA	NA	NA	1.13E-04	5.73E+02	6.45E-02	1.00E+00	3.06E-02	1.01E+02	6.32E+02	2.47E-02	6.24E+02	1.63E-01
MPWA-50+39 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	4.44E+02	2.08E+00	NA	NA	NA	NA	1.13E-04	3.92E+02	4.42E-02	1.00E+00	3.06E-02	6.95E+01	6.32E+02	2.47E-02	6.24E+02	1.11E-01
MPWA-75+20 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	1.66E+02	7.80E-01	NA	NA	NA	NA	1.13E-04	1.47E+02	1.65E-02	1.00E+00	3.06E-02	2.60E+01	6.32E+02	2.47E-02	6.24E+02	4.17E-02
MPWA-100+15 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	4.80E+02	2.25E+00	NA	NA	NA	NA	1.13E-04	4.24E+02	4.77E-02	1.00E+00	3.06E-02	7.51E+01	6.32E+02	2.47E-02	6.24E+02	1.20E-01
MPWA-100+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	3.16E+02	1.48E+00	NA	NA	NA	NA	1.13E-04	2.79E+02	3.14E-02	1.00E+00	3.06E-02	4.94E+01	6.32E+02	2.47E-02	6.24E+02	7.93E-02
MPWA-200+0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	5.43E+02	2.55E+00	NA	NA	NA	NA	1.13E-04	4.80E+02	5.40E-02	1.00E+00	3.06E-02	8.50E+01	6.32E+02	2.47E-02	6.24E+02	1.36E-01
MPWA-200+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	9.88E+01	4.63E-01	NA	NA	NA	NA	1.13E-04	8.73E+01	9.83E-03	1.00E+00	3.06E-02	1.55E+01	6.32E+02	2.47E-02	6.24E+02	2.48E-02
MPWA-230+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	5.45E+02	2.55E+00	NA	NA	NA	NA	1.13E-04	4.81E+02	5.42E-02	1.00E+00	3.06E-02	8.53E+01	6.32E+02	2.47E-02	6.24E+02	1.37E-01
																						Maximum HQ (Mary P. Mine Waste Pile)	**1.63E-01**

TABLE C-7C: COPPER DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 7 - MARY P. MINE WASTE PILE (Continued)
Remedial Investigation Report
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables; from BAF table; linked to soil or sed concentration table (VLOOKUP)
calculated values; linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 0.11

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
White-Tailed Deer (Large Herbivorous Mammal - Terrestrial)																							
Reference Site																							
SGBG-1 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	7.79E-01	7.21E+01	1.03E+02	NA	NA	NA	NA	2.86E-02	9.25E+01	2.65E+00	6.15E-04	1.35E+02	4.82E-04	6.32E+02	2.47E-02	3.77E+02	1.28E-06
UBRBG-204 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	7.79E-01	8.12E+01	1.16E+02	NA	NA	NA	NA	2.86E-02	1.04E+02	2.99E+00	6.15E-04	1.35E+02	5.44E-04	6.32E+02	2.47E-02	3.77E+02	1.44E-06
Mary P. Mine Waste Pile																						**Minimum HQ (Reference Site)**	**1.28E-06**
MPWA-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	6.48E+02	9.28E+02	NA	NA	NA	NA	2.86E-02	5.73E+02	1.64E+01	6.15E-04	1.35E+02	4.31E-03	6.32E+02	2.47E-02	3.77E+02	1.14E-05
MPWA-50+39 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	4.44E+02	6.36E+02	NA	NA	NA	NA	2.86E-02	3.92E+02	1.12E+01	6.15E-04	1.35E+02	2.95E-03	6.32E+02	2.47E-02	3.77E+02	7.83E-06
MPWA-75+20 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	1.66E+02	2.38E+02	NA	NA	NA	NA	2.86E-02	1.47E+02	4.21E+00	6.15E-04	1.35E+02	1.10E-03	6.32E+02	2.47E-02	3.77E+02	2.93E-06
MPWA-100+15 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	4.80E+02	6.87E+02	NA	NA	NA	NA	2.86E-02	4.24E+02	1.21E+01	6.15E-04	1.35E+02	3.19E-03	6.32E+02	2.47E-02	3.77E+02	8.46E-06
MPWA-100+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	3.16E+02	4.52E+02	NA	NA	NA	NA	2.86E-02	2.79E+02	8.00E+00	6.15E-04	1.35E+02	2.10E-03	6.32E+02	2.47E-02	3.77E+02	5.57E-06
MPWA-200+0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	5.43E+02	7.77E+02	NA	NA	NA	NA	2.86E-02	4.80E+02	1.37E+01	6.15E-04	1.35E+02	3.61E-03	6.32E+02	2.47E-02	3.77E+02	9.57E-06
MPWA-200+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	9.88E+01	1.42E+02	NA	NA	NA	NA	2.86E-02	8.73E+01	2.50E+00	6.15E-04	1.35E+02	6.56E-04	6.32E+02	2.47E-02	3.77E+02	1.74E-06
MPWA-230+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	5.45E+02	7.80E+02	NA	NA	NA	NA	2.86E-02	4.81E+02	1.38E+01	6.15E-04	1.35E+02	3.62E-03	6.32E+02	2.47E-02	3.77E+02	9.60E-06
																						Maximum HQ (Mary P. Mine Waste Pile)	**1.14E-05**
Red Fox (Carnivorous Mammal - Terrestrial)																							
Reference Site																							
SGBG-1 (0-6")	1.72E-01	1.72E-01	6.61E-01	6.11E+01	1.05E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	9.25E+01	4.44E-01	8.13E-05	4.54E+00	1.96E-04	6.32E+02	2.47E-02	4.62E+02	4.24E-07
UBRBG-204 (0-6")	1.72E-01	1.72E-01	6.61E-01	6.89E+01	1.18E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.04E+02	5.01E-01	8.13E-05	4.54E+00	2.21E-04	6.32E+02	2.47E-02	4.62E+02	4.78E-07
Mary P. Mine Waste Pile																						**Minimum HQ (Reference Site)**	**4.24E-07**
MPWA-0 (0-6")	1.72E-01	1.72E-01	1.01E+00	5.79E+02	9.93E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.73E+02	2.75E+00	8.13E-05	4.54E+00	1.83E-03	6.32E+02	2.47E-02	4.62E+02	3.96E-06
MPWA-50+39 (0-6")	1.72E-01	1.72E-01	1.01E+00	3.96E+02	6.80E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.92E+02	1.89E+00	8.13E-05	4.54E+00	1.25E-03	6.32E+02	2.47E-02	4.62E+02	2.71E-06
MPWA-75+20 (0-6")	1.72E-01	1.72E-01	1.01E+00	1.48E+02	2.55E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.47E+02	7.06E-01	8.13E-05	4.54E+00	4.69E-04	6.32E+02	2.47E-02	4.62E+02	1.02E-06
MPWA-100+15 (0-6")	1.72E-01	1.72E-01	1.01E+00	4.29E+02	7.35E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.24E+02	2.04E+00	8.13E-05	4.54E+00	1.35E-03	6.32E+02	2.47E-02	4.62E+02	2.93E-06
MPWA-100+25 (0-6")	1.72E-01	1.72E-01	1.01E+00	2.82E+02	4.84E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.79E+02	1.34E+00	8.13E-05	4.54E+00	8.91E-04	6.32E+02	2.47E-02	4.62E+02	1.93E-06
MPWA-200+0 (0-6")	1.72E-01	1.72E-01	1.01E+00	4.85E+02	8.32E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.80E+02	2.30E+00	8.13E-05	4.54E+00	1.53E-03	6.32E+02	2.47E-02	4.62E+02	3.31E-06
MPWA-200+25 (0-6")	1.72E-01	1.72E-01	1.01E+00	8.82E+01	1.51E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	8.73E+01	4.20E-01	8.13E-05	4.54E+00	2.79E-04	6.32E+02	2.47E-02	4.62E+02	6.03E-07
MPWA-230+25 (0-6")	1.72E-01	1.72E-01	1.01E+00	4.86E+02	8.34E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.81E+02	2.31E+00	8.13E-05	4.54E+00	1.54E-03	6.32E+02	2.47E-02	4.62E+02	3.33E-06
																						Maximum HQ (Mary P. Mine Waste Pile)	**3.96E-06**
Masked Shrew (Omnivorous Mammal - Terrestrial, Wetland)																							
Reference Site																							
SGBG-1 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	3.70E+00	3.43E+02	2.90E+00	1.10E-03	9.25E+01	1.02E-01	2.75E-01	5.50E-03	1.50E+02	6.32E+02	2.47E-02	6.91E+02	2.17E-01
UBRBG-204 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	3.70E+00	3.86E+02	3.27E+00	1.10E-03	1.04E+02	1.15E-01	2.75E-01	5.50E-03	1.69E+02	6.32E+02	2.47E-02	6.91E+02	2.45E-01
Mary P. Mine Waste Pile																						**Minimum HQ (Reference Site)**	**2.17E-01**
MPWA-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	2.78E+03	2.35E+01	1.10E-03	5.73E+02	6.31E-01	2.75E-01	5.50E-03	1.21E+03	6.32E+02	2.47E-02	6.91E+02	1.75E+00
MPWA-50+39 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	1.90E+03	1.61E+01	1.10E-03	3.92E+02	4.32E-01	2.75E-01	5.50E-03	8.28E+02	6.32E+02	2.47E-02	6.91E+02	1.20E+00
MPWA-75+20 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	7.13E+02	6.04E+00	1.10E-03	1.47E+02	1.62E-01	2.75E-01	5.50E-03	3.10E+02	6.32E+02	2.47E-02	6.91E+02	4.48E-01
MPWA-100+15 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	2.06E+03	1.74E+01	1.10E-03	4.24E+02	4.67E-01	2.75E-01	5.50E-03	8.95E+02	6.32E+02	2.47E-02	6.91E+02	1.29E+00
MPWA-100+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	1.35E+03	1.15E+01	1.10E-03	2.79E+02	3.07E-01	2.75E-01	5.50E-03	5.89E+02	6.32E+02	2.47E-02	6.91E+02	8.52E-01
MPWA-200+0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	2.33E+03	1.97E+01	1.10E-03	4.80E+02	5.28E-01	2.75E-01	5.50E-03	1.01E+03	6.32E+02	2.47E-02	6.91E+02	1.46E+00
MPWA-200+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	4.24E+02	3.59E+00	1.10E-03	8.73E+01	9.62E-02	2.75E-01	5.50E-03	1.84E+02	6.32E+02	2.47E-02	6.91E+02	2.67E-01
MPWA-230+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	2.33E+03	1.98E+01	1.10E-03	4.81E+02	5.30E-01	2.75E-01	5.50E-03	1.02E+03	6.32E+02	2.47E-02	6.91E+02	1.47E+00
																						Maximum HQ (Mary P. Mine Waste Pile)	**1.75E+00**

Notes

1 See Tables 3-1 through 3-13 for ingestion rates, foraging ranges used to calculate the SUF, and body weights.
2 BAFs were calculated by dividing site-collected tissue by collocated soil concentrations (BAFs are in dry weight). The maximum BAF calculated from the Beartrap Creek and Blackfoot River transects was used for site dose calculations. The maximum BAF from the terrestrial reference site was used for reference site dose calculations.
3 The mammal, plant, and invertebrate concentrations were calculated by multiplying the soil concentration by the BAF to generate a tissue concentration (see note 2).
4 Mammal, plant, and invertebrate daily doses were calculated by multiplying the ingestion rate (see note 1) by the tissue concentration (see note 3).
5 Soil concentration from 0 to 6 inches below ground surface at point ID as measured by XRF 10. Doses were not calculated for detected and non-detected soil concentrations measured below the minimum reference site concentration, as indicated by BB. For results that were measured at less than the detection limit, doses were calculated using half of the detection limit.
6 Soil daily dose was calculated by multiplying the soil ingestion rate (see note 1) by soil concentration (see note 5).
7 Total daily dose is calculated using the following equation: total daily dose = ([mammal daily dose (if applicable) + plant daily dose (if applicable) + invertebrate daily dose (if applicable) + soil daily dose]*SUF)/receptor species body weight.
8 The TRVs used in this risk assessment represent a mid-range effects level. The derivation of TRVs is described in Navy (1998).
9 Allometrically adjusted TRVs for birds were calculated using the following equation: receptor species TRV = (test species TRV) x (test species body weight / receptor species body weight)$^{(1-1.2)}$.
10 Allometrically adjusted TRVs for mammals were calculated using the following equation: receptor species TRV = (test species TRV) x (test species body weight / receptor species body weight)$^{(1-0.94)}$.
11 HQs were calculated using the following equation: HQ = total daily dose/allometrically adjusted TRV.
12 Highlighted cells indicate an HQ greater than 1.0.

TABLE C-7C: COPPER DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 7 - MARY P. MINE WASTE PILE (Continued)
Remedial Investigation Report
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)
calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **0.11**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)

BAF	Bioaccumulation Factor	mg/day	Milligram per day
BB	Below minimum background reference site concentration	mg/kg	Milligram per kilogram
EE/CA	Engineering Evaluation/Cost Analysis	NA	Not applicable
EU	Exposure Unit	Navy	Department of the Navy
HQ	Hazard quotient	SUF	Site use factor
ID	Identification	TRV	Toxicity reference value
kg	Kilogram	XRF	X-ray fluorescence
kg/day	Kilogram per day	XRF 10	XRF measurements recorded following drying and seiving through a #10-mesh screen

Sources: Department of the Navy. 1998. "Development of Toxicity Reference Values for Conducting Ecological Risk Assessments at Naval Facilities in California, Interim Final." Prepared by Naval Facilities Engineering Command, Engineering Field Activity West (EFA West). San Bruno, California.

TABLE C-7D: LEAD DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 7 - MARY P. MINE WASTE PILE

Remedial Investigation Report

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **0.11**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Mourning Dove (Herbivorous Birds - Terrestrial)																							
Reference Site																							
SGBG-1 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	4.35E-02	5.00E+00	2.88E-02	NA	NA	NA	NA	5.36E-04	1.15E+02	6.17E-02	4.25E-04	1.09E-01	3.52E-04	8.75E+00	8.00E-01	5.88E+00	5.99E-05
UBRBG-204 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	4.35E-02	2.31E+00	1.33E-02	NA	NA	NA	NA	5.36E-04	5.32E+01	2.85E-02	4.25E-04	1.09E-01	1.63E-04	8.75E+00	8.00E-01	5.88E+00	2.77E-05
Mary P. Mine Waste Pile																						**Minimum HQ (Reference Site)**	**2.77E-05**
MPWA-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	2.51E+03	1.45E+01	NA	NA	NA	NA	5.36E-04	4.00E+03	2.14E+00	4.25E-04	1.09E-01	6.46E-02	8.75E+00	8.00E-01	5.88E+00	1.10E-02
MPWA-50+39 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	3.72E+02	2.14E+00	NA	NA	NA	NA	5.36E-04	5.91E+02	3.17E-01	4.25E-04	1.09E-01	9.56E-03	8.75E+00	8.00E-01	5.88E+00	1.63E-03
MPWA-75+20 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	2.05E+02	1.18E+00	NA	NA	NA	NA	5.36E-04	3.26E+02	1.75E-01	4.25E-04	1.09E-01	5.27E-03	8.75E+00	8.00E-01	5.88E+00	8.97E-04
MPWA-100+15 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	3.58E+02	2.06E+00	NA	NA	NA	NA	5.36E-04	5.70E+02	3.05E-01	4.25E-04	1.09E-01	9.21E-03	8.75E+00	8.00E-01	5.88E+00	1.57E-03
MPWA-100+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	2.09E+02	1.20E+00	NA	NA	NA	NA	5.36E-04	3.33E+02	1.78E-01	4.25E-04	1.09E-01	5.38E-03	8.75E+00	8.00E-01	5.88E+00	9.15E-04
MPWA-200+0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
MPWA-200+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	8.91E+01	5.13E-01	NA	NA	NA	NA	5.36E-04	1.42E+02	7.60E-02	4.25E-04	1.09E-01	2.29E-03	8.75E+00	8.00E-01	5.88E+00	3.90E-04
MPWA-230+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	1.55E+02	8.93E-01	NA	NA	NA	NA	5.36E-04	2.47E+02	1.32E-01	4.25E-04	1.09E-01	3.99E-03	8.75E+00	8.00E-01	5.88E+00	6.78E-04
																						Maximum HQ (Mary P. Mine Waste Pile)	**1.10E-02**
Red-Tailed Hawk (Carnivorous Birds - Terrestrial)																							
Reference Site																							
SGBG-1 (0-6")	9.00E-02	9.00E-02	7.62E-02	8.78E+00	7.89E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.15E+02	5.90E-01	1.58E-04	1.13E+00	1.92E-04	8.75E+00	8.00E-01	9.38E+00	2.05E-05
UBRBG-204 (0-6")	9.00E-02	9.00E-02	7.62E-02	4.05E+00	3.65E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.32E+01	2.73E-01	1.58E-04	1.13E+00	8.87E-05	8.75E+00	8.00E-01	9.38E+00	9.46E-06
Mary P. Mine Waste Pile																						**Minimum HQ (Reference Site)**	**9.46E-06**
MPWA-0 (0-6")	9.00E-02	9.00E-02	9.28E-01	3.71E+03	3.34E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.00E+03	2.05E+01	1.58E-04	1.13E+00	4.93E-02	8.75E+00	8.00E-01	9.38E+00	5.26E-03
MPWA-50+39 (0-6")	9.00E-02	9.00E-02	9.28E-01	5.49E+02	4.94E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.91E+02	3.03E+00	1.58E-04	1.13E+00	7.29E-03	8.75E+00	8.00E-01	9.38E+00	7.77E-04
MPWA-75+20 (0-6")	9.00E-02	9.00E-02	9.28E-01	3.03E+02	2.72E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.26E+02	1.67E+00	1.58E-04	1.13E+00	4.02E-03	8.75E+00	8.00E-01	9.38E+00	4.29E-04
MPWA-100+15 (0-6")	9.00E-02	9.00E-02	9.28E-01	5.29E+02	4.76E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.70E+02	2.92E+00	1.58E-04	1.13E+00	7.03E-03	8.75E+00	8.00E-01	9.38E+00	7.49E-04
MPWA-100+25 (0-6")	9.00E-02	9.00E-02	9.28E-01	3.09E+02	2.78E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.33E+02	1.71E+00	1.58E-04	1.13E+00	4.10E-03	8.75E+00	8.00E-01	9.38E+00	4.37E-04
MPWA-200+0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
MPWA-200+25 (0-6")	9.00E-02	9.00E-02	9.28E-01	1.32E+02	1.18E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.42E+02	7.27E-01	1.58E-04	1.13E+00	1.75E-03	8.75E+00	8.00E-01	9.38E+00	1.86E-04
MPWA-230+25 (0-6")	9.00E-02	9.00E-02	9.28E-01	2.29E+02	2.06E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.47E+02	1.26E+00	1.58E-04	1.13E+00	3.04E-03	8.75E+00	8.00E-01	9.38E+00	3.24E-04
																						Maximum HQ (Mary P. Mine Waste Pile)	**5.26E-03**
American Kestrel (Insectivorous Birds - Terrestrial)																							
Reference Site																							
SGBG-1 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.79E+02	2.46E+00	7.84E-04	1.15E+02	9.03E-02	4.20E-04	1.24E-01	8.64E-03	8.75E+00	8.00E-01	6.03E+00	1.43E-03
UBRBG-204 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	8.26E+01	1.14E+00	7.84E-04	5.32E+01	4.17E-02	4.20E-04	1.24E-01	3.99E-03	8.75E+00	8.00E-01	6.03E+00	6.63E-04
Mary P. Mine Waste Pile																						**Minimum HQ (Reference Site)**	**6.63E-04**
MPWA-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	6.21E+03	8.54E+01	7.84E-04	4.00E+03	3.14E+00	4.20E-04	1.24E-01	3.00E-01	8.75E+00	8.00E-01	6.03E+00	4.98E-02
MPWA-50+39 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	9.18E+02	1.26E+01	7.84E-04	5.91E+02	4.64E-01	4.20E-04	1.24E-01	4.44E-02	8.75E+00	8.00E-01	6.03E+00	7.37E-03
MPWA-75+20 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	5.06E+02	6.96E+00	7.84E-04	3.26E+02	2.56E-01	4.20E-04	1.24E-01	2.45E-02	8.75E+00	8.00E-01	6.03E+00	4.06E-03
MPWA-100+15 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	8.84E+02	1.22E+01	7.84E-04	5.70E+02	4.47E-01	4.20E-04	1.24E-01	4.28E-02	8.75E+00	8.00E-01	6.03E+00	7.10E-03
MPWA-100+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	5.16E+02	7.11E+00	7.84E-04	3.33E+02	2.61E-01	4.20E-04	1.24E-01	2.50E-02	8.75E+00	8.00E-01	6.03E+00	4.14E-03
MPWA-200+0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
MPWA-200+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	2.20E+02	3.03E+00	7.84E-04	1.42E+02	1.11E-01	4.20E-04	1.24E-01	1.06E-02	8.75E+00	8.00E-01	6.03E+00	1.77E-03
MPWA-230+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	3.83E+02	5.27E+00	7.84E-04	2.47E+02	1.93E-01	4.20E-04	1.24E-01	1.85E-02	8.75E+00	8.00E-01	6.03E+00	3.07E-03
																						Maximum HQ (Mary P. Mine Waste Pile)	**4.98E-02**
Meadow Vole (Small Herbivorous Mammal - Terrestrial)																							
Reference Site																							
SGBG-1 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	4.35E-02	5.00E+00	2.35E-02	NA	NA	NA	NA	1.13E-04	1.15E+02	1.30E-02	1.00E+00	3.06E-02	1.19E+00	2.41E+02	1.87E-02	2.34E+02	5.09E-03
UBRBG-204 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	4.35E-02	2.31E+00	1.08E-02	NA	NA	NA	NA	1.13E-04	5.32E+01	5.99E-03	1.00E+00	3.06E-02	5.50E-01	2.41E+02	1.87E-02	2.34E+02	2.35E-03
Mary P. Mine Waste Pile																						**Minimum HQ (Reference Site)**	**2.35E-03**
MPWA-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	2.51E+03	1.18E+01	NA	NA	NA	NA	1.13E-04	4.00E+03	4.50E-01	1.00E+00	3.06E-02	4.00E+02	2.41E+02	1.87E-02	2.34E+02	1.71E+00
MPWA-50+39 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	3.72E+02	1.74E+00	NA	NA	NA	NA	1.13E-04	5.91E+02	6.66E-02	1.00E+00	3.06E-02	5.91E+01	2.41E+02	1.87E-02	2.34E+02	2.53E-01
MPWA-75+20 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	2.05E+02	9.61E-01	NA	NA	NA	NA	1.13E-04	3.26E+02	3.67E-02	1.00E+00	3.06E-02	3.26E+01	2.41E+02	1.87E-02	2.34E+02	1.39E-01
MPWA-100+15 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	3.58E+02	1.68E+00	NA	NA	NA	NA	1.13E-04	5.70E+02	6.41E-02	1.00E+00	3.06E-02	5.70E+01	2.41E+02	1.87E-02	2.34E+02	2.44E-01
MPWA-100+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	2.09E+02	9.80E-01	NA	NA	NA	NA	1.13E-04	3.33E+02	3.74E-02	1.00E+00	3.06E-02	3.33E+01	2.41E+02	1.87E-02	2.34E+02	1.42E-01
MPWA-200+0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
MPWA-200+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	8.91E+01	4.18E-01	NA	NA	NA	NA	1.13E-04	1.42E+02	1.60E-02	1.00E+00	3.06E-02	1.42E+01	2.41E+02	1.87E-02	2.34E+02	6.07E-02
MPWA-230+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	1.55E+02	7.26E-01	NA	NA	NA	NA	1.13E-04	2.47E+02	2.78E-02	1.00E+00	3.06E-02	2.46E+01	2.41E+02	1.87E-02	2.34E+02	1.05E-01
																						Maximum HQ (Mary P. Mine Waste Pile)	**1.71E+00**

TABLE C-7D: LEAD DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 7 - MARY P. MINE WASTE PILE (Continued)
Remedial Investigation Report
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)
calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **0.11**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
White-Tailed Deer (Large Herbivorous Mammal - Terrestrial)																							
Reference Site																							
SGBG-1 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	4.35E-02	5.00E+00	7.16E+00	NA	NA	NA	NA	2.86E-02	1.15E+02	3.30E+00	6.15E-04	1.35E+02	4.77E-05	2.41E+02	1.87E-02	1.41E+02	3.38E-07
UBRBG-204 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	4.35E-02	2.31E+00	3.31E+00	NA	NA	NA	NA	2.86E-02	5.32E+01	1.52E+00	6.15E-04	1.35E+02	2.20E-05	2.41E+02	1.87E-02	1.41E+02	1.56E-07
Mary P. Mine Waste Pile																						**Minimum HQ (Reference Site)**	**1.56E-07**
MPWA-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	2.51E+03	3.60E+03	NA	NA	NA	NA	2.86E-02	4.00E+03	1.15E+02	6.15E-04	1.35E+02	1.69E-02	2.41E+02	1.87E-02	1.41E+02	1.20E-04
MPWA-50+39 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	3.72E+02	5.32E+02	NA	NA	NA	NA	2.86E-02	5.91E+02	1.69E+01	6.15E-04	1.35E+02	2.50E-03	2.41E+02	1.87E-02	1.41E+02	1.77E-05
MPWA-75+20 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	2.05E+02	2.93E+02	NA	NA	NA	NA	2.86E-02	3.26E+02	9.34E+00	6.15E-04	1.35E+02	1.38E-03	2.41E+02	1.87E-02	1.41E+02	9.77E-06
MPWA-100+15 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	3.58E+02	5.13E+02	NA	NA	NA	NA	2.86E-02	5.70E+02	1.63E+01	6.15E-04	1.35E+02	2.41E-03	2.41E+02	1.87E-02	1.41E+02	1.71E-05
MPWA-100+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	2.09E+02	2.99E+02	NA	NA	NA	NA	2.86E-02	3.33E+02	9.53E+00	6.15E-04	1.35E+02	1.41E-03	2.41E+02	1.87E-02	1.41E+02	9.97E-06
MPWA-200+0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
MPWA-200+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	8.91E+01	1.28E+02	NA	NA	NA	NA	2.86E-02	1.42E+02	4.06E+00	6.15E-04	1.35E+02	6.00E-04	2.41E+02	1.87E-02	1.41E+02	4.25E-06
MPWA-230+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	1.55E+02	2.22E+02	NA	NA	NA	NA	2.86E-02	2.47E+02	7.06E+00	6.15E-04	1.35E+02	1.04E-03	2.41E+02	1.87E-02	1.41E+02	7.39E-06
																						Maximum HQ (Mary P. Mine Waste Pile)	**1.20E-04**
Red Fox (Carnivorous Mammal - Terrestrial)																							
Reference Site																							
SGBG-1 (0-6")	1.72E-01	1.72E-01	7.62E-02	8.78E+00	1.51E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.15E+02	5.53E-01	8.13E-05	4.54E+00	3.69E-05	2.41E+02	1.87E-02	1.73E+02	2.13E-07
UBRBG-204 (0-6")	1.72E-01	1.72E-01	7.62E-02	4.05E+00	6.96E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.32E+01	2.56E-01	8.13E-05	4.54E+00	1.70E-05	2.41E+02	1.87E-02	1.73E+02	9.84E-08
Mary P. Mine Waste Pile																						**Minimum HQ (Reference Site)**	**9.84E-08**
MPWA-0 (0-6")	1.72E-01	1.72E-01	9.28E-01	3.71E+03	6.37E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.00E+03	1.92E+01	8.13E-05	4.54E+00	1.17E-02	2.41E+02	1.87E-02	1.73E+02	6.79E-05
MPWA-50+39 (0-6")	1.72E-01	1.72E-01	9.28E-01	5.49E+02	9.41E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.91E+02	2.84E+00	8.13E-05	4.54E+00	1.74E-03	2.41E+02	1.87E-02	1.73E+02	1.00E-05
MPWA-75+20 (0-6")	1.72E-01	1.72E-01	9.28E-01	3.03E+02	5.19E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.26E+02	1.57E+00	8.13E-05	4.54E+00	9.58E-04	2.41E+02	1.87E-02	1.73E+02	5.53E-06
MPWA-100+15 (0-6")	1.72E-01	1.72E-01	9.28E-01	5.29E+02	9.07E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.70E+02	2.74E+00	8.13E-05	4.54E+00	1.67E-03	2.41E+02	1.87E-02	1.73E+02	9.67E-06
MPWA-100+25 (0-6")	1.72E-01	1.72E-01	9.28E-01	3.09E+02	5.30E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.33E+02	1.60E+00	8.13E-05	4.54E+00	9.77E-04	2.41E+02	1.87E-02	1.73E+02	5.65E-06
MPWA-200+0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
MPWA-200+25 (0-6")	1.72E-01	1.72E-01	9.28E-01	1.32E+02	2.26E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.42E+02	6.81E-01	8.13E-05	4.54E+00	4.17E-04	2.41E+02	1.87E-02	1.73E+02	2.41E-06
MPWA-230+25 (0-6")	1.72E-01	1.72E-01	9.28E-01	2.29E+02	3.93E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.47E+02	1.18E+00	8.13E-05	4.54E+00	7.24E-04	2.41E+02	1.87E-02	1.73E+02	4.19E-06
																						Maximum HQ (Mary P. Mine Waste Pile)	**6.79E-05**
Masked Shrew (Omnivorous Mammal - Terrestrial, Wetland)																							
Reference Site																							
SGBG-1 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.79E+02	1.51E+00	1.10E-03	1.15E+02	1.27E-01	2.75E-01	5.50E-03	8.20E+01	2.41E+02	1.87E-02	2.59E+02	3.17E-01
UBRBG-204 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	8.26E+01	6.99E-01	1.10E-03	5.32E+01	5.86E-02	2.75E-01	5.50E-03	3.79E+01	2.41E+02	1.87E-02	2.59E+02	1.46E-01
Mary P. Mine Waste Pile																						**Minimum HQ (Reference Site)**	**1.46E-01**
MPWA-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	6.21E+03	5.26E+01	1.10E-03	4.00E+03	4.40E+00	2.75E-01	5.50E-03	2.85E+03	2.41E+02	1.87E-02	2.59E+02	1.10E+01
MPWA-50+39 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	9.18E+02	7.77E+00	1.10E-03	5.91E+02	6.51E-01	2.75E-01	5.50E-03	4.21E+02	2.41E+02	1.87E-02	2.59E+02	1.63E+00
MPWA-75+20 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	5.06E+02	4.29E+00	1.10E-03	3.26E+02	3.59E-01	2.75E-01	5.50E-03	2.32E+02	2.41E+02	1.87E-02	2.59E+02	8.97E-01
MPWA-100+15 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	8.84E+02	7.49E+00	1.10E-03	5.70E+02	6.27E-01	2.75E-01	5.50E-03	4.06E+02	2.41E+02	1.87E-02	2.59E+02	1.57E+00
MPWA-100+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	5.16E+02	4.37E+00	1.10E-03	3.33E+02	3.66E-01	2.75E-01	5.50E-03	2.37E+02	2.41E+02	1.87E-02	2.59E+02	9.15E-01
MPWA-200+0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
MPWA-200+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	2.20E+02	1.86E+00	1.10E-03	1.42E+02	1.56E-01	2.75E-01	5.50E-03	1.01E+02	2.41E+02	1.87E-02	2.59E+02	3.90E-01
MPWA-230+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	3.83E+02	3.24E+00	1.10E-03	2.47E+02	2.72E-01	2.75E-01	5.50E-03	1.76E+02	2.41E+02	1.87E-02	2.59E+02	6.78E-01
																						Maximum HQ (Mary P. Mine Waste Pile)	**1.10E+01**

Notes

1 See Tables 3-1 through 3-13 for ingestion rates, foraging ranges used to calculate the SUF, and body weights.

2 BAFs were calculated by dividing site-collected tissue by collocated soil concentrations (BAFs are in dry weight). The maximum BAF calculated from the Beartrap Creek and Blackfoot River transects was used for site dose calculations. The maximum BAF from the terrestrial reference site was used for reference site dose calculations.

3 The mammal, plant, and invertebrate concentrations were calculated by multiplying the soil concentration by the BAF to generate a tissue concentration (see note 2).

4 Mammal, plant, and invertebrate daily doses were calculated by multiplying the ingestion rate (see note 1) by the tissue concentration (see note 3).

5 Soil concentration from 0 to 6 inches below ground surface at point ID as measured by XRF 10. Doses were not calculated for detected and non-detected soil concentrations measured below the minimum reference site concentration, as indicated by BB. For results that were measured at less than the detection limit, doses were calculated using half of the detection limit.

6 Soil daily dose was calculated by multiplying the soil ingestion rate (see note 1) by soil concentration (see note 5).

7 Total daily dose is calculated using the following equation: total daily dose = ([mammal daily dose (if applicable) + plant daily dose (if applicable) + invertebrate daily dose (if applicable) + soil daily dose]*SUF)/receptor species body weight.

8 The TRVs used in this risk assessment represent a mid-range effects level. The derivation of TRVs is described in Navy (1998).

9 Allometrically adjusted TRVs for birds were calculated using the following equation: receptor species TRV = (test species TRV) x (test species body weight / receptor species body weight)$^{(1-1.2)}$.

10 Allometrically adjusted TRVs for mammals were calculated using the following equation: receptor species TRV = (test species TRV) x (test species body weight / receptor species body weight)$^{(1-0.94)}$.

11 HQs were calculated using the following equation: HQ = total daily dose/allometrically adjusted TRV.

12 Highlighted cells indicate an HQ greater than 1.0.

TABLE C-7D: LEAD DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 7 - MARY P. MINE WASTE PILE (Continued)

Remedial Investigation Report

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **0.11**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentra-tion[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)

BAF	Bioaccumulation Factor	mg/day	Milligram per day
BB	Below minimum background reference site concentration	mg/kg	Milligram per kilogram
EE/CA	Engineering Evaluation/Cost Analysis	NA	Not applicable
EU	Exposure Unit	Navy	Department of the Navy
HQ	Hazard quotient	SUF	Site use factor
ID	Identification	TRV	Toxicity reference value
kg	Kilogram	XRF	X-ray fluorescence
kg/day	Kilogram per day	XRF 10	XRF measurements recorded following drying and seiving through a #10-mesh screen

Sources: Department of the Navy. 1998. "Development of Toxicity Reference Values for Conducting Ecological Risk Assessments at Naval Facilities in California, Interim Final." Prepared by Naval Facilities Engineering Command, Engineering Field Activity West (EFA West). San Bruno, California.

TABLE C-7E: MANGANESE DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 7 - MARY P. MINE WASTE PILE

Remedial Investigation Report

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **0.11**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Mourning Dove (Herbivorous Birds - Terrestrial)																							
Reference Site																							
SGBG-1 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	3.34E-01	4.72E+01	2.72E-01	NA	NA	NA	NA	5.36E-04	1.41E+02	7.56E-02	4.25E-04	1.09E-01	1.35E-03	7.76E+02	1.97E-01	6.90E+02	1.96E-06
UBRBG-204 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	3.34E-01	2.32E+02	1.34E+00	NA	NA	NA	NA	5.36E-04	6.94E+02	3.72E-01	4.25E-04	1.09E-01	6.64E-03	7.76E+02	1.97E-01	6.90E+02	9.63E-06
Mary P. Mine Waste Pile																						**Minimum HQ (Reference Site)**	**1.96E-06**
MPWA-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	5.96E+03	3.44E+01	NA	NA	NA	NA	5.36E-04	6.02E+02	3.23E-01	4.25E-04	1.09E-01	1.35E-01	7.76E+02	1.97E-01	6.90E+02	1.96E-04
MPWA-50+39 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	9.52E+03	5.49E+01	NA	NA	NA	NA	5.36E-04	9.61E+02	5.15E-01	4.25E-04	1.09E-01	2.15E-01	7.76E+02	1.97E-01	6.90E+02	3.12E-04
MPWA-75+20 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	6.29E+03	3.62E+01	NA	NA	NA	NA	5.36E-04	6.35E+02	3.40E-01	4.25E-04	1.09E-01	1.42E-01	7.76E+02	1.97E-01	6.90E+02	2.06E-04
MPWA-100+15 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	5.08E+03	2.93E+01	NA	NA	NA	NA	5.36E-04	5.12E+02	2.75E-01	4.25E-04	1.09E-01	1.15E-01	7.76E+02	1.97E-01	6.90E+02	1.66E-04
MPWA-100+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	8.70E+03	5.01E+01	NA	NA	NA	NA	5.36E-04	8.78E+02	4.70E-01	4.25E-04	1.09E-01	1.97E-01	7.76E+02	1.97E-01	6.90E+02	2.85E-04
MPWA-200+0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	2.80E+03	1.61E+01	NA	NA	NA	NA	5.36E-04	2.83E+02	1.51E-01	4.25E-04	1.09E-01	6.33E-02	7.76E+02	1.97E-01	6.90E+02	9.18E-05
MPWA-200+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	8.64E+03	4.98E+01	NA	NA	NA	NA	5.36E-04	8.72E+02	4.67E-01	4.25E-04	1.09E-01	1.95E-01	7.76E+02	1.97E-01	6.90E+02	2.83E-04
MPWA-230+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	1.07E+04	6.19E+01	NA	NA	NA	NA	5.36E-04	1.08E+03	5.81E-01	4.25E-04	1.09E-01	2.43E-01	7.76E+02	1.97E-01	6.90E+02	3.52E-04
																						Maximum HQ (Mary P. Mine Waste Pile)	**3.52E-04**
Red-Tailed Hawk (Carnivorous Birds - Terrestrial)																							
Reference Site																							
SGBG-1 (0-6")	9.00E-02	9.00E-02	5.93E-02	8.37E+00	7.53E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.41E+02	7.23E-01	1.58E-04	1.13E+00	2.06E-04	7.76E+02	1.97E-01	1.10E+03	1.87E-07
UBRBG-204 (0-6")	9.00E-02	9.00E-02	5.93E-02	4.12E+01	3.70E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	6.94E+02	3.56E+00	1.58E-04	1.13E+00	1.01E-03	7.76E+02	1.97E-01	1.10E+03	9.18E-07
Mary P. Mine Waste Pile																						**Minimum HQ (Reference Site)**	**1.87E-07**
MPWA-0 (0-6")	9.00E-02	9.00E-02	2.80E-02	1.69E+01	1.52E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	6.02E+02	3.09E+00	1.58E-04	1.13E+00	6.41E-04	7.76E+02	1.97E-01	1.10E+03	5.82E-07
MPWA-50+39 (0-6")	9.00E-02	9.00E-02	2.80E-02	2.69E+01	2.42E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	9.61E+02	4.93E+00	1.58E-04	1.13E+00	1.02E-03	7.76E+02	1.97E-01	1.10E+03	9.28E-07
MPWA-75+20 (0-6")	9.00E-02	9.00E-02	2.80E-02	1.78E+01	1.60E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	6.35E+02	3.26E+00	1.58E-04	1.13E+00	6.76E-04	7.76E+02	1.97E-01	1.10E+03	6.13E-07
MPWA-100+15 (0-6")	9.00E-02	9.00E-02	2.80E-02	1.43E+01	1.29E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.12E+02	2.63E+00	1.58E-04	1.13E+00	5.45E-04	7.76E+02	1.97E-01	1.10E+03	4.95E-07
MPWA-100+25 (0-6")	9.00E-02	9.00E-02	2.80E-02	2.46E+01	2.21E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	8.78E+02	4.50E+00	1.58E-04	1.13E+00	9.34E-04	7.76E+02	1.97E-01	1.10E+03	8.48E-07
MPWA-200+0 (0-6")	9.00E-02	9.00E-02	2.80E-02	7.91E+00	7.12E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.83E+02	1.45E+00	1.58E-04	1.13E+00	3.01E-04	7.76E+02	1.97E-01	1.10E+03	2.73E-07
MPWA-200+25 (0-6")	9.00E-02	9.00E-02	2.80E-02	2.44E+01	2.19E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	8.72E+02	4.47E+00	1.58E-04	1.13E+00	9.28E-04	7.76E+02	1.97E-01	1.10E+03	8.42E-07
MPWA-230+25 (0-6")	9.00E-02	9.00E-02	2.80E-02	3.04E+01	2.73E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.08E+03	5.56E+00	1.58E-04	1.13E+00	1.15E-03	7.76E+02	1.97E-01	1.10E+03	1.05E-06
																						Maximum HQ (Mary P. Mine Waste Pile)	**1.05E-06**
American Kestrel (Insectivorous Birds - Terrestrial)																							
Reference Site																							
SGBG-1 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	2.08E+02	2.86E+00	7.84E-04	1.41E+02	1.11E-01	4.20E-04	1.24E-01	1.01E-02	7.76E+02	1.97E-01	7.08E+02	1.43E-05
UBRBG-204 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.02E+03	1.41E+01	7.84E-04	6.94E+02	5.44E-01	4.20E-04	1.24E-01	4.96E-02	7.76E+02	1.97E-01	7.08E+02	7.01E-05
Mary P. Mine Waste Pile																						**Minimum HQ (Reference Site)**	**1.43E-05**
MPWA-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	8.88E+02	1.22E+01	7.84E-04	6.02E+02	4.72E-01	4.20E-04	1.24E-01	4.31E-02	7.76E+02	1.97E-01	7.08E+02	6.08E-05
MPWA-50+39 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.42E+03	1.95E+01	7.84E-04	9.61E+02	7.54E-01	4.20E-04	1.24E-01	6.87E-02	7.76E+02	1.97E-01	7.08E+02	9.71E-05
MPWA-75+20 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	9.37E+02	1.29E+01	7.84E-04	6.35E+02	4.98E-01	4.20E-04	1.24E-01	4.54E-02	7.76E+02	1.97E-01	7.08E+02	6.42E-05
MPWA-100+15 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	7.56E+02	1.04E+01	7.84E-04	5.12E+02	4.02E-01	4.20E-04	1.24E-01	3.66E-02	7.76E+02	1.97E-01	7.08E+02	5.18E-05
MPWA-100+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.30E+03	1.78E+01	7.84E-04	8.78E+02	6.88E-01	4.20E-04	1.24E-01	6.28E-02	7.76E+02	1.97E-01	7.08E+02	8.87E-05
MPWA-200+0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	4.17E+02	5.74E+00	7.84E-04	2.83E+02	2.22E-01	4.20E-04	1.24E-01	2.02E-02	7.76E+02	1.97E-01	7.08E+02	2.86E-05
MPWA-200+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.29E+03	1.77E+01	7.84E-04	8.72E+02	6.84E-01	4.20E-04	1.24E-01	6.23E-02	7.76E+02	1.97E-01	7.08E+02	8.81E-05
MPWA-230+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.60E+03	2.20E+01	7.84E-04	1.08E+03	8.51E-01	4.20E-04	1.24E-01	7.76E-02	7.76E+02	1.97E-01	7.08E+02	1.10E-04
																						Maximum HQ (Mary P. Mine Waste Pile)	**1.10E-04**
Meadow Vole (Small Herbivorous Mammal - Terrestrial)																							
Reference Site																							
SGBG-1 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	3.34E-01	4.72E+01	2.21E-01	NA	NA	NA	NA	1.13E-04	1.41E+02	1.59E-02	1.00E+00	3.06E-02	7.74E+00	1.59E+02	2.97E-02	1.59E+02	4.88E-02
UBRBG-204 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	3.34E-01	2.32E+02	1.09E+00	NA	NA	NA	NA	1.13E-04	6.94E+02	7.81E-02	1.00E+00	3.06E-02	3.81E+01	1.59E+02	2.97E-02	1.59E+02	2.40E-01
Mary P. Mine Waste Pile																						**Minimum HQ (Reference Site)**	**2.40E-01**
MPWA-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	5.96E+03	2.80E+01	NA	NA	NA	NA	1.13E-04	6.02E+02	6.77E-02	1.00E+00	3.06E-02	9.16E+02	1.59E+02	2.97E-02	1.59E+02	5.77E+00
MPWA-50+39 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	9.52E+03	4.46E+01	NA	NA	NA	NA	1.13E-04	9.61E+02	1.08E-01	1.00E+00	3.06E-02	1.46E+03	1.59E+02	2.97E-02	1.59E+02	9.21E+00
MPWA-75+20 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	6.29E+03	2.95E+01	NA	NA	NA	NA	1.13E-04	6.35E+02	7.14E-02	1.00E+00	3.06E-02	9.66E+02	1.59E+02	2.97E-02	1.59E+02	6.08E+00
MPWA-100+15 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	5.08E+03	2.38E+01	NA	NA	NA	NA	1.13E-04	5.12E+02	5.77E-02	1.00E+00	3.06E-02	7.80E+02	1.59E+02	2.97E-02	1.59E+02	4.91E+00
MPWA-100+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	8.70E+03	4.08E+01	NA	NA	NA	NA	1.13E-04	8.78E+02	9.88E-02	1.00E+00	3.06E-02	1.34E+03	1.59E+02	2.97E-02	1.59E+02	8.41E+00
MPWA-200+0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	2.80E+03	1.31E+01	NA	NA	NA	NA	1.13E-04	2.83E+02	3.18E-02	1.00E+00	3.06E-02	4.30E+02	1.59E+02	2.97E-02	1.59E+02	2.71E+00
MPWA-200+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	8.64E+03	4.05E+01	NA	NA	NA	NA	1.13E-04	8.72E+02	9.81E-02	1.00E+00	3.06E-02	1.33E+03	1.59E+02	2.97E-02	1.59E+02	8.35E+00
MPWA-230+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	1.07E+04	5.04E+01	NA	NA	NA	NA	1.13E-04	1.08E+03	1.22E-01	1.00E+00	3.06E-02	1.65E+03	1.59E+02	2.97E-02	1.59E+02	1.04E+01
																						Maximum HQ (Mary P. Mine Waste Pile)	**1.04E+01**

TABLE C-7E: MANGANESE DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 7 - MARY P. MINE WASTE PILE (Continued)
Remedial Investigation Report
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)
calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 0.11

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
White-Tailed Deer (Large Herbivorous Mammal - Terrestrial)																							
Reference Site																							
SGBG-1 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	3.34E-01	4.72E+01	6.75E+01	NA	NA	NA	NA	2.86E-02	1.41E+02	4.04E+00	6.15E-04	1.35E+02	3.26E-04	1.59E+02	2.97E-02	9.60E+01	3.40E-06
UBRBG-204 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	3.34E-01	2.32E+02	3.32E+02	NA	NA	NA	NA	2.86E-02	6.94E+02	1.99E+01	6.15E-04	1.35E+02	1.60E-03	1.59E+02	2.97E-02	9.60E+01	1.67E-05
Mary P. Mine Waste Pile																						**Minimum HQ (Reference Site)**	**3.40E-06**
MPWA-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	5.96E+03	8.54E+03	NA	NA	NA	NA	2.86E-02	6.02E+02	1.72E+01	6.15E-04	1.35E+02	3.90E-02	1.59E+02	2.97E-02	9.60E+01	4.06E-04
MPWA-50+39 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	9.52E+03	1.36E+04	NA	NA	NA	NA	2.86E-02	9.61E+02	2.75E+01	6.15E-04	1.35E+02	6.23E-02	1.59E+02	2.97E-02	9.60E+01	6.49E-04
MPWA-75+20 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	6.29E+03	9.01E+03	NA	NA	NA	NA	2.86E-02	6.35E+02	1.82E+01	6.15E-04	1.35E+02	4.11E-02	1.59E+02	2.97E-02	9.60E+01	4.29E-04
MPWA-100+15 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	5.08E+03	7.27E+03	NA	NA	NA	NA	2.86E-02	5.12E+02	1.47E+01	6.15E-04	1.35E+02	3.32E-02	1.59E+02	2.97E-02	9.60E+01	3.46E-04
MPWA-100+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	8.70E+03	1.25E+04	NA	NA	NA	NA	2.86E-02	8.78E+02	2.51E+01	6.15E-04	1.35E+02	5.69E-02	1.59E+02	2.97E-02	9.60E+01	5.93E-04
MPWA-200+0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	2.80E+03	4.01E+03	NA	NA	NA	NA	2.86E-02	2.83E+02	8.09E+00	6.15E-04	1.35E+02	1.83E-02	1.59E+02	2.97E-02	9.60E+01	1.91E-04
MPWA-200+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	8.64E+03	1.24E+04	NA	NA	NA	NA	2.86E-02	8.72E+02	2.50E+01	6.15E-04	1.35E+02	5.65E-02	1.59E+02	2.97E-02	9.60E+01	5.88E-04
MPWA-230+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	1.07E+04	1.54E+04	NA	NA	NA	NA	2.86E-02	1.08E+03	3.11E+01	6.15E-04	1.35E+02	7.03E-02	1.59E+02	2.97E-02	9.60E+01	7.32E-04
																						Maximum HQ (Mary P. Mine Waste Pile)	**7.32E-04**
Red Fox (Carnivorous Mammal - Terrestrial)																							
Reference Site																							
SGBG-1 (0-6")	1.72E-01	1.72E-01	5.93E-02	8.37E+00	1.44E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.41E+02	6.78E-01	8.13E-05	4.54E+00	3.79E-05	1.59E+02	2.97E-02	1.18E+02	3.22E-07
UBRBG-204 (0-6")	1.72E-01	1.72E-01	5.93E-02	4.12E+01	7.06E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	6.94E+02	3.33E+00	8.13E-05	4.54E+00	1.86E-04	1.59E+02	2.97E-02	1.18E+02	1.58E-06
Mary P. Mine Waste Pile																						**Minimum HQ (Reference Site)**	**3.22E-07**
MPWA-0 (0-6")	1.72E-01	1.72E-01	2.80E-02	1.69E+01	2.89E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	6.02E+02	2.89E+00	8.13E-05	4.54E+00	1.04E-04	1.59E+02	2.97E-02	1.18E+02	8.80E-07
MPWA-50+39 (0-6")	1.72E-01	1.72E-01	2.80E-02	2.69E+01	4.61E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	9.61E+02	4.62E+00	8.13E-05	4.54E+00	1.65E-04	1.59E+02	2.97E-02	1.18E+02	1.41E-06
MPWA-75+20 (0-6")	1.72E-01	1.72E-01	2.80E-02	1.78E+01	3.05E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	6.35E+02	3.05E+00	8.13E-05	4.54E+00	1.09E-04	1.59E+02	2.97E-02	1.18E+02	9.29E-07
MPWA-100+15 (0-6")	1.72E-01	1.72E-01	2.80E-02	1.43E+01	2.46E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.12E+02	2.46E+00	8.13E-05	4.54E+00	8.82E-05	1.59E+02	2.97E-02	1.18E+02	7.49E-07
MPWA-100+25 (0-6")	1.72E-01	1.72E-01	2.80E-02	2.46E+01	4.22E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	8.78E+02	4.22E+00	8.13E-05	4.54E+00	1.51E-04	1.59E+02	2.97E-02	1.18E+02	1.28E-06
MPWA-200+0 (0-6")	1.72E-01	1.72E-01	2.80E-02	7.91E+00	1.36E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.83E+02	1.36E+00	8.13E-05	4.54E+00	4.86E-05	1.59E+02	2.97E-02	1.18E+02	4.13E-07
MPWA-200+25 (0-6")	1.72E-01	1.72E-01	2.80E-02	2.44E+01	4.19E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	8.72E+02	4.19E+00	8.13E-05	4.54E+00	1.50E-04	1.59E+02	2.97E-02	1.18E+02	1.27E-06
MPWA-230+25 (0-6")	1.72E-01	1.72E-01	2.80E-02	3.04E+01	5.21E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.08E+03	5.21E+00	8.13E-05	4.54E+00	1.87E-04	1.59E+02	2.97E-02	1.18E+02	1.59E-06
																						Maximum HQ (Mary P. Mine Waste Pile)	**1.59E-06**
Masked Shrew (Omnivorous Mammal - Terrestrial, Wetland)																							
Reference Site																							
SGBG-1 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	2.08E+02	1.76E+00	1.10E-03	1.41E+02	1.55E-01	2.75E-01	5.50E-03	9.59E+01	1.59E+02	2.97E-02	1.76E+02	5.45E-01
UBRBG-204 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.02E+03	8.67E+00	1.10E-03	6.94E+02	7.64E-01	2.75E-01	5.50E-03	4.72E+02	1.59E+02	2.97E-02	1.76E+02	2.68E+00
Mary P. Mine Waste Pile																						**Minimum HQ (Reference Site)**	**5.45E-01**
MPWA-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	8.88E+02	7.53E+00	1.10E-03	6.02E+02	6.63E-01	2.75E-01	5.50E-03	4.09E+02	1.59E+02	2.97E-02	1.76E+02	2.33E+00
MPWA-50+39 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.42E+03	1.20E+01	1.10E-03	9.61E+02	1.06E+00	2.75E-01	5.50E-03	6.53E+02	1.59E+02	2.97E-02	1.76E+02	3.71E+00
MPWA-75+20 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	9.37E+02	7.94E+00	1.10E-03	6.35E+02	6.99E-01	2.75E-01	5.50E-03	4.32E+02	1.59E+02	2.97E-02	1.76E+02	2.45E+00
MPWA-100+15 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	7.56E+02	6.41E+00	1.10E-03	5.12E+02	5.64E-01	2.75E-01	5.50E-03	3.48E+02	1.59E+02	2.97E-02	1.76E+02	1.98E+00
MPWA-100+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.30E+03	1.10E+01	1.10E-03	8.78E+02	9.66E-01	2.75E-01	5.50E-03	5.97E+02	1.59E+02	2.97E-02	1.76E+02	3.39E+00
MPWA-200+0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	4.17E+02	3.53E+00	1.10E-03	2.83E+02	3.11E-01	2.75E-01	5.50E-03	1.92E+02	1.59E+02	2.97E-02	1.76E+02	1.09E+00
MPWA-200+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.29E+03	1.09E+01	1.10E-03	8.72E+02	9.60E-01	2.75E-01	5.50E-03	5.93E+02	1.59E+02	2.97E-02	1.76E+02	3.37E+00
MPWA-230+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.60E+03	1.36E+01	1.10E-03	1.08E+03	1.19E+00	2.75E-01	5.50E-03	7.38E+02	1.59E+02	2.97E-02	1.76E+02	4.19E+00
																						Maximum HQ (Mary P. Mine Waste Pile)	**4.19E+00**

Notes

1 See Tables A-1 through A-13 for ingestion rates, foraging ranges used to calculate the SUF, and body weights.

2 BAFs were calculated by dividing site-collected tissue by collocated soil concentrations (BAFs are in dry weight). The maximum BAF calculated from the Beartrap Creek and Blackfoot River transects was used for site dose calculations. The maximum BAF from the terrestrial reference site was used for reference site dose calculations.

3 The mammal, plant, and invertebrate concentrations were calculated by multiplying the soil concentration by the BAF to generate a tissue concentration (see note 2).

4 Mammal, plant, and invertebrate daily doses were calculated by multiplying the ingestion rate (see note 1) by the tissue concentration (see note 3).

5 Soil concentration from 0 to 6 inches below ground surface at point ID as measured by XRF 10. Doses were not calculated for detected and non-detected soil concentrations measured below the minimum reference site concentration, as indicated by BB. For results that were measured at less than the detection limit, doses were calculated using half of the detection limit.

6 Soil daily dose was calculated by multiplying the soil ingestion rate (see note 1) by soil concentration (see note 5).

7 Total daily dose is calculated using the following equation: total daily dose = ([mammal daily dose (if applicable) + plant daily dose (if applicable) + invertebrate daily dose (if applicable) + soil daily dose]*SUF)/receptor species body weight.

8 The TRVs used in this risk assessment represent a mid-range effects level. The derivation of TRVs is described in Navy (1998).

9 Allometrically adjusted TRVs for birds were calculated using the following equation: receptor species TRV = (test species TRV) x (test species body weight / receptor species body weight)$^{(1-1.2)}$.

10 Allometrically adjusted TRVs for mammals were calculated using the following equation: receptor species TRV = (test species TRV) x (test species body weight / receptor species body weight)$^{(1-0.94)}$.

11 HQs were calculated using the following equation: HQ = total daily dose/allometrically adjusted TRV.

12 Highlighted cells indicate an HQ greater than 1.0.

TABLE C-7E: MANGANESE DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 7 - MARY P. MINE WASTE PILE (Continued)

Remedial Investigation Report

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **0.11**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)

BAF	Bioaccumulation Factor	mg/day	Milligram per day
BB	Below minimum background reference site concentration	mg/kg	Milligram per kilogram
EE/CA	Engineering Evaluation/Cost Analysis	NA	Not applicable
EU	Exposure Unit	Navy	Department of the Navy
HQ	Hazard quotient	SUF	Site use factor
ID	Identification	TRV	Toxicity reference value
kg	Kilogram	XRF	X-ray fluorescence
kg/day	Kilogram per day	XRF 10	XRF measurements recorded following drying and seiving through a #10-mesh screen

Sources: Department of the Navy. 1998. "Development of Toxicity Reference Values for Conducting Ecological Risk Assessments at Naval Facilities in California, Interim Final." Prepared by Naval Facilities Engineering Command, Engineering Field Activity West (EFA West). San Bruno, California.

TABLE C-7F: ZINC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 7 - MARY P. MINE WASTE PILE
Remedial Investigation Report
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)
calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **0.11**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Mourning Dove (Herbivorous Birds - Terrestrial)																							
Reference Site																							
SGBG-1 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.41E+00	5.78E+01	3.33E-01	NA	NA	NA	NA	5.36E-04	4.09E+01	2.19E-02	4.25E-04	1.09E-01	1.38E-03	1.72E+02	9.55E-01	1.11E+02	1.24E-05
UBRBG-204 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.41E+00	4.84E+02	2.79E+00	NA	NA	NA	NA	5.36E-04	3.43E+02	1.84E-01	4.25E-04	1.09E-01	1.16E-02	1.72E+02	9.55E-01	1.11E+02	1.04E-04
Mary P. Mine Waste Pile																						**Minimum HQ (Reference Site)**	**1.24E-05**
MPWA-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	5.46E+02	3.15E+00	NA	NA	NA	NA	5.36E-04	2.76E+02	1.48E-01	4.25E-04	1.09E-01	1.28E-02	1.72E+02	9.55E-01	1.11E+02	1.15E-04
MPWA-50+39 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	1.02E+03	5.86E+00	NA	NA	NA	NA	5.36E-04	5.14E+02	2.75E-01	4.25E-04	1.09E-01	2.39E-02	1.72E+02	9.55E-01	1.11E+02	2.14E-04
MPWA-75+20 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	1.62E+02	9.34E-01	NA	NA	NA	NA	5.36E-04	8.18E+01	4.39E-02	4.25E-04	1.09E-01	3.80E-03	1.72E+02	9.55E-01	1.11E+02	3.41E-05
MPWA-100+15 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	2.95E+02	1.70E+00	NA	NA	NA	NA	5.36E-04	1.49E+02	7.98E-02	4.25E-04	1.09E-01	6.92E-03	1.72E+02	9.55E-01	1.11E+02	6.21E-05
MPWA-100+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	5.16E+02	2.97E+00	NA	NA	NA	NA	5.36E-04	2.60E+02	1.39E-01	4.25E-04	1.09E-01	1.21E-02	1.72E+02	9.55E-01	1.11E+02	1.09E-04
MPWA-200+0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	2.89E+02	1.66E+00	NA	NA	NA	NA	5.36E-04	1.46E+02	7.81E-02	4.25E-04	1.09E-01	6.78E-03	1.72E+02	9.55E-01	1.11E+02	6.08E-05
MPWA-200+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	3.86E+02	2.22E+00	NA	NA	NA	NA	5.36E-04	1.95E+02	1.04E-01	4.25E-04	1.09E-01	9.05E-03	1.72E+02	9.55E-01	1.11E+02	8.12E-05
MPWA-230+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	3.22E+02	1.86E+00	NA	NA	NA	NA	5.36E-04	1.63E+02	8.71E-02	4.25E-04	1.09E-01	7.56E-03	1.72E+02	9.55E-01	1.11E+02	6.78E-05
																						Maximum HQ (Mary P. Mine Waste Pile)	**2.14E-04**
Red-Tailed Hawk (Carnivorous Birds - Terrestrial)																							
Reference Site																							
SGBG-1 (0-6")	9.00E-02	9.00E-02	1.03E+01	4.24E+02	3.81E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.09E+01	2.10E-01	1.58E-04	1.13E+00	5.33E-03	1.72E+02	9.55E-01	1.78E+02	3.00E-05
UBRBG-204 (0-6")	9.00E-02	9.00E-02	1.03E+01	3.55E+03	3.19E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.43E+02	1.76E+00	1.58E-04	1.13E+00	4.46E-02	1.72E+02	9.55E-01	1.78E+02	2.51E-04
Mary P. Mine Waste Pile																						**Minimum HQ (Reference Site)**	**2.51E-04**
MPWA-0 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.74E+03	1.56E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.76E+02	1.41E+00	1.58E-04	1.13E+00	2.19E-02	1.72E+02	9.55E-01	1.78E+02	1.23E-04
MPWA-50+39 (0-6")	9.00E-02	9.00E-02	6.30E+00	3.23E+03	2.91E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.14E+02	2.63E+00	1.58E-04	1.13E+00	4.09E-02	1.72E+02	9.55E-01	1.78E+02	2.30E-04
MPWA-75+20 (0-6")	9.00E-02	9.00E-02	6.30E+00	5.15E+02	4.64E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	8.18E+01	4.20E-01	1.58E-04	1.13E+00	6.51E-03	1.72E+02	9.55E-01	1.78E+02	3.66E-05
MPWA-100+15 (0-6")	9.00E-02	9.00E-02	6.30E+00	9.37E+02	8.43E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.49E+02	7.63E-01	1.58E-04	1.13E+00	1.18E-02	1.72E+02	9.55E-01	1.78E+02	6.65E-05
MPWA-100+25 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.64E+03	1.47E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.60E+02	1.33E+00	1.58E-04	1.13E+00	2.07E-02	1.72E+02	9.55E-01	1.78E+02	1.16E-04
MPWA-200+0 (0-6")	9.00E-02	9.00E-02	6.30E+00	9.18E+02	8.25E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.46E+02	7.47E-01	1.58E-04	1.13E+00	1.16E-02	1.72E+02	9.55E-01	1.78E+02	6.51E-05
MPWA-200+25 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.23E+03	1.10E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.95E+02	9.98E-01	1.58E-04	1.13E+00	1.55E-02	1.72E+02	9.55E-01	1.78E+02	8.70E-05
MPWA-230+25 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.02E+03	9.21E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.63E+02	8.33E-01	1.58E-04	1.13E+00	1.29E-02	1.72E+02	9.55E-01	1.78E+02	7.27E-05
																						Maximum HQ (Mary P. Mine Waste Pile)	**3.66E-05**
American Kestrel (Insectivorous Birds - Terrestrial)																							
Reference Site																							
SGBG-1 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	8.31E+00	3.40E+02	4.68E+00	7.84E-04	4.09E+01	3.21E-02	4.20E-04	1.24E-01	1.60E-02	1.72E+02	9.55E-01	1.14E+02	1.40E-04
UBRBG-204 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	8.31E+00	2.85E+03	3.92E+01	7.84E-04	3.43E+02	2.69E-01	4.20E-04	1.24E-01	1.34E-01	1.72E+02	9.55E-01	1.14E+02	1.17E-03
Mary P. Mine Waste Pile																						**Minimum HQ (Reference Site)**	**1.40E-04**
MPWA-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	1.21E+03	1.66E+01	7.84E-04	2.76E+02	2.16E-01	4.20E-04	1.24E-01	5.70E-02	1.72E+02	9.55E-01	1.14E+02	4.99E-04
MPWA-50+39 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	2.25E+03	3.10E+01	7.84E-04	5.14E+02	4.03E-01	4.20E-04	1.24E-01	1.06E-01	1.72E+02	9.55E-01	1.14E+02	9.30E-04
MPWA-75+20 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	3.58E+02	4.93E+00	7.84E-04	8.18E+01	6.42E-02	4.20E-04	1.24E-01	1.69E-02	1.72E+02	9.55E-01	1.14E+02	1.48E-04
MPWA-100+15 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	6.52E+02	8.97E+00	7.84E-04	1.49E+02	1.17E-01	4.20E-04	1.24E-01	3.08E-02	1.72E+02	9.55E-01	1.14E+02	2.69E-04
MPWA-100+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	1.14E+03	1.57E+01	7.84E-04	2.60E+02	2.04E-01	4.20E-04	1.24E-01	5.39E-02	1.72E+02	9.55E-01	1.14E+02	4.71E-04
MPWA-200+0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	6.38E+02	8.78E+00	7.84E-04	1.46E+02	1.14E-01	4.20E-04	1.24E-01	3.02E-02	1.72E+02	9.55E-01	1.14E+02	2.64E-04
MPWA-200+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	8.52E+02	1.17E+01	7.84E-04	1.95E+02	1.53E-01	4.20E-04	1.24E-01	4.03E-02	1.72E+02	9.55E-01	1.14E+02	3.52E-04
MPWA-230+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	7.12E+02	9.80E+00	7.84E-04	1.63E+02	1.28E-01	4.20E-04	1.24E-01	3.36E-02	1.72E+02	9.55E-01	1.14E+02	2.94E-04
																						Maximum HQ (Mary P. Mine Waste Pile)	**9.30E-04**
Meadow Vole (Small Herbivorous Mammal - Terrestrial)																							
Reference Site																							
SGBG-1 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.41E+00	5.78E+01	2.71E-01	NA	NA	NA	NA	1.13E-04	4.09E+01	4.61E-03	1.00E+00	3.06E-02	9.00E+00	4.11E+02	1.75E-01	4.57E+02	1.97E-02
UBRBG-204 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.41E+00	4.84E+02	2.27E+00	NA	NA	NA	NA	1.13E-04	3.43E+02	3.86E-02	1.00E+00	3.06E-02	7.54E+01	4.11E+02	1.75E-01	4.57E+02	1.65E-01
Mary P. Mine Waste Pile																						**Minimum HQ (Reference Site)**	**1.65E-01**
MPWA-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	5.46E+02	2.56E+00	NA	NA	NA	NA	1.13E-04	2.76E+02	3.10E-02	1.00E+00	3.06E-02	8.47E+01	4.11E+02	1.75E-01	4.57E+02	1.85E-01
MPWA-50+39 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	1.02E+03	4.77E+00	NA	NA	NA	NA	1.13E-04	5.14E+02	5.78E-02	1.00E+00	3.06E-02	1.58E+02	4.11E+02	1.75E-01	4.57E+02	3.46E-01
MPWA-75+20 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	1.62E+02	7.60E-01	NA	NA	NA	NA	1.13E-04	8.18E+01	9.21E-03	1.00E+00	3.06E-02	2.52E+01	4.11E+02	1.75E-01	4.57E+02	5.51E-02
MPWA-100+15 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	2.95E+02	1.38E+00	NA	NA	NA	NA	1.13E-04	1.49E+02	1.68E-02	1.00E+00	3.06E-02	4.57E+01	4.11E+02	1.75E-01	4.57E+02	1.00E-01
MPWA-100+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	5.16E+02	2.42E+00	NA	NA	NA	NA	1.13E-04	2.60E+02	2.93E-02	1.00E+00	3.06E-02	8.00E+01	4.11E+02	1.75E-01	4.57E+02	1.75E-01
MPWA-200+0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	2.89E+02	1.35E+00	NA	NA	NA	NA	1.13E-04	1.46E+02	1.64E-02	1.00E+00	3.06E-02	4.48E+01	4.11E+02	1.75E-01	4.57E+02	9.81E-02
MPWA-200+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	3.86E+02	1.81E+00	NA	NA	NA	NA	1.13E-04	1.95E+02	2.19E-02	1.00E+00	3.06E-02	5.98E+01	4.11E+02	1.75E-01	4.57E+02	1.31E-01
MPWA-230+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	3.22E+02	1.51E+00	NA	NA	NA	NA	1.13E-04	1.63E+02	1.83E-02	1.00E+00	3.06E-02	5.00E+01	4.11E+02	1.75E-01	4.57E+02	1.09E-01
																						Maximum HQ (Mary P. Mine Waste Pile)	**3.46E-01**

TABLE C-7F: ZINC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 7 - MARY P. MINE WASTE PILE (Continued)
Remedial Investigation Report
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)
calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 0.11

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
White-Tailed Deer (Large Herbivorous Mammal - Terrestrial)																							
Reference Site																							
SGBG-1 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.41E+00	5.78E+01	8.27E+01	NA	NA	NA	NA	2.86E-02	4.09E+01	1.17E+00	6.15E-04	1.35E+02	3.82E-04	4.11E+02	1.75E-01	2.76E+02	1.39E-06
UBRBG-204 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.41E+00	4.84E+02	6.92E+02	NA	NA	NA	NA	2.86E-02	3.43E+02	9.81E+00	6.15E-04	1.35E+02	3.20E-03	4.11E+02	1.75E-01	2.76E+02	1.16E-05
Mary P. Mine Waste Pile																						**Minimum HQ (Reference Site)**	**1.39E-06**
MPWA-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	5.46E+02	7.82E+02	NA	NA	NA	NA	2.86E-02	2.76E+02	7.89E+00	6.15E-04	1.35E+02	3.60E-03	4.11E+02	1.75E-01	2.76E+02	1.30E-05
MPWA-50+39 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	1.02E+03	1.46E+03	NA	NA	NA	NA	2.86E-02	5.14E+02	1.47E+01	6.15E-04	1.35E+02	6.71E-03	4.11E+02	1.75E-01	2.76E+02	2.43E-05
MPWA-75+20 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	1.62E+02	2.32E+02	NA	NA	NA	NA	2.86E-02	8.18E+01	2.34E+00	6.15E-04	1.35E+02	1.07E-03	4.11E+02	1.75E-01	2.76E+02	3.87E-06
MPWA-100+15 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	2.95E+02	4.22E+02	NA	NA	NA	NA	2.86E-02	1.49E+02	4.26E+00	6.15E-04	1.35E+02	1.94E-03	4.11E+02	1.75E-01	2.76E+02	7.04E-06
MPWA-100+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	5.16E+02	7.38E+02	NA	NA	NA	NA	2.86E-02	2.60E+02	7.45E+00	6.15E-04	1.35E+02	3.40E-03	4.11E+02	1.75E-01	2.76E+02	1.23E-05
MPWA-200+0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	2.89E+02	4.13E+02	NA	NA	NA	NA	2.86E-02	1.46E+02	4.17E+00	6.15E-04	1.35E+02	1.90E-03	4.11E+02	1.75E-01	2.76E+02	6.90E-06
MPWA-200+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	3.86E+02	5.52E+02	NA	NA	NA	NA	2.86E-02	1.95E+02	5.57E+00	6.15E-04	1.35E+02	2.54E-03	4.11E+02	1.75E-01	2.76E+02	9.21E-06
MPWA-230+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	3.22E+02	4.61E+02	NA	NA	NA	NA	2.86E-02	1.63E+02	4.65E+00	6.15E-04	1.35E+02	2.12E-03	4.11E+02	1.75E-01	2.76E+02	7.69E-06
																						Maximum HQ (Mary P. Mine Waste Pile)	**2.43E-05**
Red Fox (Carnivorous Mammal - Terrestrial)																							
Reference Site																							
SGBG-1 (0-6")	1.72E-01	1.72E-01	1.03E+01	4.24E+02	7.27E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.09E+01	1.97E-01	8.13E-05	4.54E+00	1.31E-03	4.11E+02	1.75E-01	3.38E+02	3.86E-06
UBRBG-204 (0-6")	1.72E-01	1.72E-01	1.03E+01	3.55E+03	6.08E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.43E+02	1.65E+00	8.13E-05	4.54E+00	1.09E-02	4.11E+02	1.75E-01	3.38E+02	3.23E-05
Mary P. Mine Waste Pile																						**Minimum HQ (Reference Site)**	**3.86E-06**
MPWA-0 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.74E+03	2.98E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.76E+02	1.32E+00	8.13E-05	4.54E+00	5.36E-03	4.11E+02	1.75E-01	3.38E+02	1.58E-05
MPWA-50+39 (0-6")	1.72E-01	1.72E-01	6.30E+00	3.23E+03	5.55E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.14E+02	2.47E+00	8.13E-05	4.54E+00	9.98E-03	4.11E+02	1.75E-01	3.38E+02	2.95E-05
MPWA-75+20 (0-6")	1.72E-01	1.72E-01	6.30E+00	5.15E+02	8.84E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	8.18E+01	3.93E-01	8.13E-05	4.54E+00	1.59E-03	4.11E+02	1.75E-01	3.38E+02	4.70E-06
MPWA-100+15 (0-6")	1.72E-01	1.72E-01	6.30E+00	9.37E+02	1.61E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.49E+02	7.15E-01	8.13E-05	4.54E+00	2.89E-03	4.11E+02	1.75E-01	3.38E+02	8.55E-06
MPWA-100+25 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.64E+03	2.81E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.60E+02	1.25E+00	8.13E-05	4.54E+00	5.06E-03	4.11E+02	1.75E-01	3.38E+02	1.49E-05
MPWA-200+0 (0-6")	1.72E-01	1.72E-01	6.30E+00	9.18E+02	1.57E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.46E+02	7.00E-01	8.13E-05	4.54E+00	2.83E-03	4.11E+02	1.75E-01	3.38E+02	8.37E-06
MPWA-200+25 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.23E+03	2.10E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.95E+02	9.35E-01	8.13E-05	4.54E+00	3.78E-03	4.11E+02	1.75E-01	3.38E+02	1.12E-05
MPWA-230+25 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.02E+03	1.76E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.63E+02	7.81E-01	8.13E-05	4.54E+00	3.16E-03	4.11E+02	1.75E-01	3.38E+02	9.34E-06
																						Maximum HQ (Mary P. Mine Waste Pile)	**2.95E-05**
Masked Shrew (Omnivorous Mammal - Terrestrial, Wetland)																							
Reference Site																							
SGBG-1 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	8.31E+00	3.40E+02	2.88E+00	1.10E-03	4.09E+01	4.51E-02	2.75E-01	5.50E-03	1.46E+02	4.11E+02	1.75E-01	5.06E+02	2.89E-01
UBRBG-204 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	8.31E+00	2.85E+03	2.41E+01	1.10E-03	3.43E+02	3.77E-01	2.75E-01	5.50E-03	1.23E+03	4.11E+02	1.75E-01	5.06E+02	2.42E+00
Mary P. Mine Waste Pile																						**Minimum HQ (Reference Site)**	**2.89E-01**
MPWA-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	1.21E+03	1.02E+01	1.10E-03	2.76E+02	3.03E-01	2.75E-01	5.50E-03	5.26E+02	4.11E+02	1.75E-01	5.06E+02	1.04E+00
MPWA-50+39 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	2.25E+03	1.91E+01	1.10E-03	5.14E+02	5.66E-01	2.75E-01	5.50E-03	9.81E+02	4.11E+02	1.75E-01	5.06E+02	1.94E+00
MPWA-75+20 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	3.58E+02	3.04E+00	1.10E-03	8.18E+01	9.01E-02	2.75E-01	5.50E-03	1.56E+02	4.11E+02	1.75E-01	5.06E+02	3.09E-01
MPWA-100+15 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	6.52E+02	5.52E+00	1.10E-03	1.49E+02	1.64E-01	2.75E-01	5.50E-03	2.84E+02	4.11E+02	1.75E-01	5.06E+02	5.61E-01
MPWA-100+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	1.14E+03	9.66E+00	1.10E-03	2.60E+02	2.87E-01	2.75E-01	5.50E-03	4.97E+02	4.11E+02	1.75E-01	5.06E+02	9.82E-01
MPWA-200+0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	6.38E+02	5.41E+00	1.10E-03	1.46E+02	1.60E-01	2.75E-01	5.50E-03	2.78E+02	4.11E+02	1.75E-01	5.06E+02	5.50E-01
MPWA-200+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	8.52E+02	7.22E+00	1.10E-03	1.95E+02	2.14E-01	2.75E-01	5.50E-03	3.72E+02	4.11E+02	1.75E-01	5.06E+02	7.34E-01
MPWA-230+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	7.12E+02	6.03E+00	1.10E-03	1.63E+02	1.79E-01	2.75E-01	5.50E-03	3.10E+02	4.11E+02	1.75E-01	5.06E+02	6.13E-01
																						Maximum HQ (Mary P. Mine Waste Pile)	**1.94E+00**

Notes

1 See Tables 3-1 through 3-13 for ingestion rates, foraging ranges used to calculate the SUF, and body weights.

2 BAFs were calculated by dividing site-collected tissue by collocated soil concentrations (BAFs are in dry weight). The maximum BAF calculated from the Beartrap Creek and Blackfoot River transects was used for site dose calculations. The maximum BAF from the terrestrial reference site was used for reference site dose calculations.

3 The mammal, plant, and invertebrate concentrations were calculated by multiplying the soil concentration by the BAF to generate a tissue concentration (see note 2).

4 Mammal, plant, and invertebrate daily doses were calculated by multiplying the ingestion rate (see note 1) by the tissue concentration (see note 3).

5 Soil concentration from 0 to 6 inches below ground surface at point ID as measured by XRF 10. Doses were not calculated for detected and non-detected soil concentrations measured below the minimum reference site concentration, as indicated by BB. For results that were measured at less than the detection limit, doses were calculated using half of the detection limit.

6 Soil daily dose was calculated by multiplying the soil ingestion rate (see note 1) by soil concentration (see note 5).

7 Total daily dose is calculated using the following equation: total daily dose = ([mammal daily dose (if applicable) + plant daily dose (if applicable) + invertebrate daily dose (if applicable) + soil daily dose]*SUF)/receptor species body weight.

8 The TRVs used in this risk assessment represent a mid-range effects level. The derivation of TRVs is described in Navy (1998).

9 Allometrically adjusted TRVs for birds were calculated using the following equation: receptor species TRV = (test species TRV) x (test species body weight / receptor species body weight)$^{(1-1.2)}$.

10 Allometrically adjusted TRVs for mammals were calculated using the following equation: receptor species TRV = (test species TRV) x (test species body weight / receptor species body weight)$^{(1-0.94)}$.

11 HQs were calculated using the following equation: HQ = total daily dose/allometrically adjusted TRV.

12 Highlighted cells indicate an HQ greater than 1.0.

TABLE C-7F: ZINC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 7 - MARY P. MINE WASTE PILE (Continued)
Remedial Investigation Report
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables; from BAF table; linked to soil or sed concentration table (VLOOKUP)
calculated values; linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 0.11

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)

BAF	Bioaccumulation Factor	mg/day	Milligram per day
BB	Below minimum background reference site concentration	mg/kg	Milligram per kilogram
EE/CA	Engineering Evaluation/Cost Analysis	NA	Not applicable
EU	Exposure Unit	Navy	Department of the Navy
HQ	Hazard quotient	SUF	Site use factor
ID	Identification	TRV	Toxicity reference value
kg	Kilogram	XRF	X-ray fluorescence
kg/day	Kilogram per day	XRF 10	XRF measurements recorded following drying and seiving through a #10-mesh screen

Sources: Department of the Navy. 1998. "Development of Toxicity Reference Values for Conducting Ecological Risk Assessments at Naval Facilities in California, Interim Final." Prepared by Naval Facilities Engineering Command, Engineering Field Activity West (EFA West). San Bruno, California.

TABLE C-8A: ARSENIC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 8 - MIKE HORSE MINE WASTE PILES

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **1.73**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Mourning Dove (Herbivorous Birds - Terrestrial)																							
Reference Sites																							
BCBG-1 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	5.36E-04	1.53E+01	8.21E-03	6.68E-03	1.09E-01	5.02E-04	2.20E+01	1.17E+00	1.37E+01	3.67E-05
MHBG-201 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	5.36E-04	1.56E+01	8.34E-03	6.68E-03	1.09E-01	5.10E-04	2.20E+01	1.17E+00	1.37E+01	3.72E-05
MHBG-202 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	5.36E-04	1.52E+01	8.14E-03	6.68E-03	1.09E-01	4.98E-04	2.20E+01	1.17E+00	1.37E+01	3.64E-05
Mike Horse Creek Channel Area Deposits																						**Minimum HQ (Reference Site)**	**3.64E-05**
AMHR-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	5.37E+00	3.09E-02	NA	NA	NA	NA	5.36E-04	8.93E+00	4.78E-03	6.68E-03	1.09E-01	2.18E-03	2.20E+01	1.17E+00	1.37E+01	1.60E-04
AMHR-200 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	5.28E+00	3.04E-02	NA	NA	NA	NA	5.36E-04	8.79E+00	4.71E-03	6.68E-03	1.09E-01	2.15E-03	2.20E+01	1.17E+00	1.37E+01	1.57E-04
AMHR-400 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.13E+01	6.49E-02	NA	NA	NA	NA	5.36E-04	1.87E+01	1.00E-02	6.68E-03	1.09E-01	4.58E-03	2.20E+01	1.17E+00	1.37E+01	3.35E-04
AMHR-600 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.15E+01	6.60E-02	NA	NA	NA	NA	5.36E-04	1.91E+01	1.02E-02	6.68E-03	1.09E-01	4.66E-03	2.20E+01	1.17E+00	1.37E+01	3.41E-04
MHCS-00-E25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	8.62E+01	4.97E-01	NA	NA	NA	NA	5.36E-04	1.43E+02	7.69E-02	6.68E-03	1.09E-01	3.51E-02	2.20E+01	1.17E+00	1.37E+01	2.56E-03
MHCS-0-W25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	9.46E+00	5.45E-02	NA	NA	NA	NA	5.36E-04	1.57E+01	8.43E-03	6.68E-03	1.09E-01	3.85E-03	2.20E+01	1.17E+00	1.37E+01	2.81E-04
MHCS-0-W5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	2.46E+01	1.42E-01	NA	NA	NA	NA	5.36E-04	4.10E+01	2.20E-02	6.68E-03	1.09E-01	1.00E-02	2.20E+01	1.17E+00	1.37E+01	7.32E-04
MHCS-100-E25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	2.47E+02	1.43E+00	NA	NA	NA	NA	5.36E-04	4.12E+02	2.21E-01	6.68E-03	1.09E-01	1.01E-01	2.20E+01	1.17E+00	1.37E+01	7.35E-03
MHCS-100-W1 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.16E+02	6.66E-01	NA	NA	NA	NA	5.36E-04	1.92E+02	1.03E-01	6.68E-03	1.09E-01	4.70E-02	2.20E+01	1.17E+00	1.37E+01	3.43E-03
MHCS-100-W25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	8.67E+00	5.00E-02	NA	NA	NA	NA	5.36E-04	1.44E+01	7.73E-03	6.68E-03	1.09E-01	3.53E-03	2.20E+01	1.17E+00	1.37E+01	2.58E-04
MHCS-200-E10 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	6.76E+01	3.90E-01	NA	NA	NA	NA	5.36E-04	1.13E+02	6.03E-02	6.68E-03	1.09E-01	2.75E-02	2.20E+01	1.17E+00	1.37E+01	2.01E-03
MHCS-200-E25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.36E+01	7.83E-02	NA	NA	NA	NA	5.36E-04	2.26E+01	1.21E-02	6.68E-03	1.09E-01	5.53E-03	2.20E+01	1.17E+00	1.37E+01	4.04E-04
MHCS-200-W10 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	7.66E+00	4.42E-02	NA	NA	NA	NA	5.36E-04	1.28E+01	6.83E-03	6.68E-03	1.09E-01	3.12E-03	2.20E+01	1.17E+00	1.37E+01	2.28E-04
MHCS-525-E5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.04E+02	5.99E-01	NA	NA	NA	NA	5.36E-04	1.73E+02	9.27E-02	6.68E-03	1.09E-01	4.23E-02	2.20E+01	1.17E+00	1.37E+01	3.09E-03
MHCS-525-W15 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.47E+02	8.45E-01	NA	NA	NA	NA	5.36E-04	2.44E+02	1.31E-01	6.68E-03	1.09E-01	5.97E-02	2.20E+01	1.17E+00	1.37E+01	4.36E-03
MHCS-600-E10 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	8.14E+01	4.69E-01	NA	NA	NA	NA	5.36E-04	1.35E+02	7.26E-02	6.68E-03	1.09E-01	3.31E-02	2.20E+01	1.17E+00	1.37E+01	2.42E-03
MHCS-600-W10 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.29E+02	7.46E-01	NA	NA	NA	NA	5.36E-04	2.15E+02	1.15E-01	6.68E-03	1.09E-01	5.27E-02	2.20E+01	1.17E+00	1.37E+01	3.85E-03
MHCS-700-E10 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	8.85E+01	5.10E-01	NA	NA	NA	NA	5.36E-04	1.47E+02	7.89E-02	6.68E-03	1.09E-01	3.60E-02	2.20E+01	1.17E+00	1.37E+01	2.63E-03
MHCS-700-E25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.95E+01	1.13E-01	NA	NA	NA	NA	5.36E-04	3.25E+01	1.74E-02	6.68E-03	1.09E-01	7.95E-03	2.20E+01	1.17E+00	1.37E+01	5.81E-04
MHCS-700-W10 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	9.03E+01	5.20E-01	NA	NA	NA	NA	5.36E-04	1.50E+02	8.05E-02	6.68E-03	1.09E-01	3.68E-02	2.20E+01	1.17E+00	1.37E+01	2.68E-03
MHCS-800-E15 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.11E+01	6.41E-02	NA	NA	NA	NA	5.36E-04	1.85E+01	9.91E-03	6.68E-03	1.09E-01	4.52E-03	2.20E+01	1.17E+00	1.37E+01	3.30E-04
MHCS-800-E5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	7.80E+01	4.49E-01	NA	NA	NA	NA	5.36E-04	1.30E+02	6.95E-02	6.68E-03	1.09E-01	3.17E-02	2.20E+01	1.17E+00	1.37E+01	2.32E-03
MHCS-800-W5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	5.12E+01	2.95E-01	NA	NA	NA	NA	5.36E-04	8.51E+01	4.56E-02	6.68E-03	1.09E-01	2.08E-02	2.20E+01	1.17E+00	1.37E+01	1.52E-03
MHCS-900-E15 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.33E+01	7.64E-02	NA	NA	NA	NA	5.36E-04	2.21E+01	1.18E-02	6.68E-03	1.09E-01	5.39E-03	2.20E+01	1.17E+00	1.37E+01	3.94E-04
MHCS-900-E5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.04E+02	6.00E-01	NA	NA	NA	NA	5.36E-04	1.73E+02	9.28E-02	6.68E-03	1.09E-01	4.23E-02	2.20E+01	1.17E+00	1.37E+01	3.09E-03
MHCS-900-W5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	6.03E+01	3.48E-01	NA	NA	NA	NA	5.36E-04	1.00E+02	5.38E-02	6.68E-03	1.09E-01	2.46E-02	2.20E+01	1.17E+00	1.37E+01	1.79E-03
MHCS-1000-E10 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	3.03E+01	1.75E-01	NA	NA	NA	NA	5.36E-04	5.04E+01	2.70E-02	6.68E-03	1.09E-01	1.23E-02	2.20E+01	1.17E+00	1.37E+01	9.01E-04
MHCS-1000-W5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.13E+02	6.54E-01	NA	NA	NA	NA	5.36E-04	1.89E+02	1.01E-01	6.68E-03	1.09E-01	4.62E-02	2.20E+01	1.17E+00	1.37E+01	3.37E-03
MHCS-1100-E10 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	3.45E+01	1.99E-01	NA	NA	NA	NA	5.36E-04	5.74E+01	3.08E-02	6.68E-03	1.09E-01	1.40E-02	2.20E+01	1.17E+00	1.37E+01	1.03E-03
MHCS-1100-E35 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.24E+01	7.17E-02	NA	NA	NA	NA	5.36E-04	2.07E+01	1.11E-02	6.68E-03	1.09E-01	5.06E-03	2.20E+01	1.17E+00	1.37E+01	3.70E-04
MHCS-1200-E15 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	2.96E+01	1.70E-01	NA	NA	NA	NA	5.36E-04	4.92E+01	2.64E-02	6.68E-03	1.09E-01	1.20E-02	2.20E+01	1.17E+00	1.37E+01	8.79E-04
MHCS-1200-E30 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	2.11E+01	1.21E-01	NA	NA	NA	NA	5.36E-04	3.50E+01	1.88E-02	6.68E-03	1.09E-01	8.57E-03	2.20E+01	1.17E+00	1.37E+01	6.26E-04
MHCS-1300-E20 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	5.23E+01	3.01E-01	NA	NA	NA	NA	5.36E-04	8.70E+01	4.66E-02	6.68E-03	1.09E-01	2.13E-02	2.20E+01	1.17E+00	1.37E+01	1.55E-03
MHCS-1300-E35 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	9.95E+00	5.73E-02	NA	NA	NA	NA	5.36E-04	1.66E+01	8.87E-03	6.68E-03	1.09E-01	4.05E-03	2.20E+01	1.17E+00	1.37E+01	2.96E-04
Waste Areas 1 and 2																						**Maximum HQ (Mike Horse Creek Channel Area Deposits)**	**7.35E-03**
UMH1-00 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.92E+01	1.11E-01	NA	NA	NA	NA	5.36E-04	3.19E+01	1.71E-02	6.68E-03	1.09E-01	7.80E-03	2.20E+01	1.17E+00	1.37E+01	5.70E-04
UMH1-100 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	4.83E+01	2.78E-01	NA	NA	NA	NA	5.36E-04	8.04E+01	4.31E-02	6.68E-03	1.09E-01	1.97E-02	2.20E+01	1.17E+00	1.37E+01	1.44E-03
UMH1-150 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.45E+01	8.37E-02	NA	NA	NA	NA	5.36E-04	2.42E+01	1.29E-02	6.68E-03	1.09E-01	5.91E-03	2.20E+01	1.17E+00	1.37E+01	4.32E-04
UMH1-200 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.84E+01	1.06E-01	NA	NA	NA	NA	5.36E-04	3.06E+01	1.64E-02	6.68E-03	1.09E-01	7.49E-03	2.20E+01	1.17E+00	1.37E+01	5.47E-04
UMH1-250 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	5.58E+01	3.21E-01	NA	NA	NA	NA	5.36E-04	9.28E+01	4.97E-02	6.68E-03	1.09E-01	2.27E-02	2.20E+01	1.17E+00	1.37E+01	1.66E-03
UMH1-250+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	2.25E+01	1.30E-01	NA	NA	NA	NA	5.36E-04	3.75E+01	2.01E-02	6.68E-03	1.09E-01	9.17E-03	2.20E+01	1.17E+00	1.37E+01	6.70E-04
UMH1-300 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	6.04E+01	3.48E-01	NA	NA	NA	NA	5.36E-04	1.00E+02	5.38E-02	6.68E-03	1.09E-01	2.46E-02	2.20E+01	1.17E+00	1.37E+01	1.79E-03
UMH1-300+14 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.95E+01	1.13E-01	NA	NA	NA	NA	5.36E-04	3.25E+01	1.74E-02	6.68E-03	1.09E-01	7.95E-03	2.20E+01	1.17E+00	1.37E+01	5.81E-04
UMH1-350 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	7.47E+01	4.30E-01	NA	NA	NA	NA	5.36E-04	1.24E+02	6.66E-02	6.68E-03	1.09E-01	3.04E-02	2.20E+01	1.17E+00	1.37E+01	2.22E-03
UMH1-350+12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	2.26E+01	1.30E-01	NA	NA	NA	NA	5.36E-04	3.76E+01	2.01E-02	6.68E-03	1.09E-01	9.20E-03	2.20E+01	1.17E+00	1.37E+01	6.72E-04
UMH1-400 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.23E+01	7.08E-02	NA	NA	NA	NA	5.36E-04	2.04E+01	1.09E-02	6.68E-03	1.09E-01	5.00E-03	2.20E+01	1.17E+00	1.37E+01	3.65E-04
UMH1-400+12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.33E+01	7.69E-02	NA	NA	NA	NA	5.36E-04	2.22E+01	1.19E-02	6.68E-03	1.09E-01	5.43E-03	2.20E+01	1.17E+00	1.37E+01	3.97E-04
UMH1-450 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.50E+01	8.62E-02	NA	NA	NA	NA	5.36E-04	2.49E+01	1.33E-02	6.68E-03	1.09E-01	6.09E-03	2.20E+01	1.17E+00	1.37E+01	4.45E-04
UMH1-450+12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.81E+01	1.05E-01	NA	NA	NA	NA	5.36E-04	3.02E+01	1.62E-02	6.68E-03	1.09E-01	7.38E-03	2.20E+01	1.17E+00	1.37E+01	5.39E-04
UMH1-50 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.40E+01	8.07E-02	NA	NA	NA	NA	5.36E-04	2.33E+01	1.25E-02	6.68E-03	1.09E-01	5.70E-03	2.20E+01	1.17E+00	1.37E+01	4.16E-04
UMH1-Comp (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	7.83E+01	4.51E-01	NA	NA	NA	NA	5.36E-04	1.30E+02	6.98E-02	6.68E-03	1.09E-01	3.19E-02	2.20E+01	1.17E+00	1.37E+01	2.33E-03
UMH2-00 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	3.00E+02	1.73E+00	NA	NA	NA	NA	5.36E-04	4.99E+02	2.67E-01	6.68E-03	1.09E-01	1.22E-01	2.20E+01	1.17E+00	1.37E+01	8.91E-03

TABLE C-8A: ARSENIC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 8 - MIKE HORSE MINE WASTE PILES (Continued)
Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)
calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **1.73**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Mourning Dove (Herbivorous Birds - Terrestrial)																							
UMH2-00+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	2.79E+01	1.61E-01	NA	NA	NA	NA	5.36E-04	4.65E+01	2.49E-02	6.68E-03	1.09E-01	1.14E-02	2.20E+01	1.17E+00	1.37E+01	8.31E-04
UMH2-100 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	2.07E+02	1.19E+00	NA	NA	NA	NA	5.36E-04	3.44E+02	1.84E-01	6.68E-03	1.09E-01	8.40E-02	2.20E+01	1.17E+00	1.37E+01	6.14E-03
UMH2-100+35 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	2.13E+01	1.23E-01	NA	NA	NA	NA	5.36E-04	3.55E+01	1.90E-02	6.68E-03	1.09E-01	8.68E-03	2.20E+01	1.17E+00	1.37E+01	6.34E-04
UMH2-150 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.07E+02	6.15E-01	NA	NA	NA	NA	5.36E-04	1.78E+02	9.52E-02	6.68E-03	1.09E-01	4.34E-02	2.20E+01	1.17E+00	1.37E+01	3.17E-03
UMH2-150+60 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	6.10E+00	3.51E-02	NA	NA	NA	NA	5.36E-04	1.02E+01	5.44E-03	6.68E-03	1.09E-01	2.48E-03	2.20E+01	1.17E+00	1.37E+01	1.81E-04
UMH2-200 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.50E+02	8.63E-01	NA	NA	NA	NA	5.36E-04	2.49E+02	1.34E-01	6.68E-03	1.09E-01	6.10E-02	2.20E+01	1.17E+00	1.37E+01	4.45E-03
UMH2-200+85 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	9.53E+00	5.49E-02	NA	NA	NA	NA	5.36E-04	1.59E+01	8.49E-03	6.68E-03	1.09E-01	3.88E-03	2.20E+01	1.17E+00	1.37E+01	2.83E-04
UMH2-250 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.63E+02	9.39E-01	NA	NA	NA	NA	5.36E-04	2.71E+02	1.45E-01	6.68E-03	1.09E-01	6.63E-02	2.20E+01	1.17E+00	1.37E+01	4.84E-03
UMH2-250+75 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	3.09E+01	1.78E-01	NA	NA	NA	NA	5.36E-04	5.15E+01	2.76E-02	6.68E-03	1.09E-01	1.26E-02	2.20E+01	1.17E+00	1.37E+01	9.20E-04
UMH2-300 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	3.15E+01	1.81E-01	NA	NA	NA	NA	5.36E-04	5.24E+01	2.81E-02	6.68E-03	1.09E-01	1.28E-02	2.20E+01	1.17E+00	1.37E+01	9.36E-04
UMH2-300+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	2.18E+01	1.25E-01	NA	NA	NA	NA	5.36E-04	3.62E+01	1.94E-02	6.68E-03	1.09E-01	8.85E-03	2.20E+01	1.17E+00	1.37E+01	6.47E-04
UMH2-350 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	2.40E+01	1.38E-01	NA	NA	NA	NA	5.36E-04	3.99E+01	2.14E-02	6.68E-03	1.09E-01	9.76E-03	2.20E+01	1.17E+00	1.37E+01	7.13E-04
UMH2-350+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.88E+01	1.08E-01	NA	NA	NA	NA	5.36E-04	3.12E+01	1.67E-02	6.68E-03	1.09E-01	7.63E-03	2.20E+01	1.17E+00	1.37E+01	5.57E-04
UMH2-400 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	3.13E+01	1.80E-01	NA	NA	NA	NA	5.36E-04	5.21E+01	2.79E-02	6.68E-03	1.09E-01	1.27E-02	2.20E+01	1.17E+00	1.37E+01	9.30E-04
UMH2-400+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UMH2-450 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	2.79E+01	1.61E-01	NA	NA	NA	NA	5.36E-04	4.64E+01	2.48E-02	6.68E-03	1.09E-01	1.13E-02	2.20E+01	1.17E+00	1.37E+01	8.28E-04
UMH2-450+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	5.35E+00	3.08E-02	NA	NA	NA	NA	5.36E-04	8.90E+00	4.77E-03	6.68E-03	1.09E-01	2.18E-03	2.20E+01	1.17E+00	1.37E+01	1.59E-04
UMH2-50 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	2.76E+01	1.59E-01	NA	NA	NA	NA	5.36E-04	4.59E+01	2.46E-02	6.68E-03	1.09E-01	1.12E-02	2.20E+01	1.17E+00	1.37E+01	8.20E-04
UMH2-50+25b (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	2.86E+01	1.65E-01	NA	NA	NA	NA	5.36E-04	4.76E+01	2.55E-02	6.68E-03	1.09E-01	1.16E-02	2.20E+01	1.17E+00	1.37E+01	8.51E-04
UMH2-500 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	2.03E+02	1.17E+00	NA	NA	NA	NA	5.36E-04	3.38E+02	1.81E-01	6.68E-03	1.09E-01	8.27E-02	2.20E+01	1.17E+00	1.37E+01	6.04E-03
UMH2-500+75 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.97E+01	1.14E-01	NA	NA	NA	NA	5.36E-04	3.28E+01	1.76E-02	6.68E-03	1.09E-01	8.02E-03	2.20E+01	1.17E+00	1.37E+01	5.86E-04
UMH2-550 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	2.65E+02	1.52E+00	NA	NA	NA	NA	5.36E-04	4.40E+02	2.36E-01	6.68E-03	1.09E-01	1.08E-01	2.20E+01	1.17E+00	1.37E+01	7.86E-03
UMH2-550+75 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.13E+01	6.49E-02	NA	NA	NA	NA	5.36E-04	1.87E+01	1.00E-02	6.68E-03	1.09E-01	4.58E-03	2.20E+01	1.17E+00	1.37E+01	3.35E-04
UMH2-600 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	8.83E+01	5.09E-01	NA	NA	NA	NA	5.36E-04	1.47E+02	7.87E-02	6.68E-03	1.09E-01	3.59E-02	2.20E+01	1.17E+00	1.37E+01	2.62E-03
UMH2-600+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	2.04E+01	1.17E-01	NA	NA	NA	NA	5.36E-04	3.39E+01	1.82E-02	6.68E-03	1.09E-01	8.29E-03	2.20E+01	1.17E+00	1.37E+01	6.06E-04
UMH2-650 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	9.40E+01	5.41E-01	NA	NA	NA	NA	5.36E-04	1.56E+02	8.38E-02	6.68E-03	1.09E-01	3.82E-02	2.20E+01	1.17E+00	1.37E+01	2.79E-03
UMH2-650+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.74E+01	1.00E-01	NA	NA	NA	NA	5.36E-04	2.90E+01	1.55E-02	6.68E-03	1.09E-01	7.09E-03	2.20E+01	1.17E+00	1.37E+01	5.18E-04
UMH2-Comp 1 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.58E+02	9.13E-01	NA	NA	NA	NA	5.36E-04	2.64E+02	1.41E-01	6.68E-03	1.09E-01	6.45E-02	2.20E+01	1.17E+00	1.37E+01	4.71E-03
UMH2-Comp 2 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	2.14E+02	1.23E+00	NA	NA	NA	NA	5.36E-04	3.56E+02	1.91E-01	6.68E-03	1.09E-01	8.71E-02	2.20E+01	1.17E+00	1.37E+01	6.36E-03
Waste Area 3																						**Maximum HQ (Waste Areas 1 and 2)**	**8.91E-03**
UMH3-00 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	6.04E+00	3.48E-02	NA	NA	NA	NA	5.36E-04	1.00E+01	5.38E-03	6.68E-03	1.09E-01	2.46E-03	2.20E+01	1.17E+00	1.37E+01	1.79E-04
UMH3-100 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	2.26E+01	1.30E-01	NA	NA	NA	NA	5.36E-04	3.76E+01	2.02E-02	6.68E-03	1.09E-01	9.20E-03	2.20E+01	1.17E+00	1.37E+01	6.72E-04
UMH3-150 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.89E+01	1.09E-01	NA	NA	NA	NA	5.36E-04	3.15E+01	1.69E-02	6.68E-03	1.09E-01	7.69E-03	2.20E+01	1.17E+00	1.37E+01	5.62E-04
UMH3-200 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	7.32E+01	4.22E-01	NA	NA	NA	NA	5.36E-04	1.22E+02	6.53E-02	6.68E-03	1.09E-01	2.98E-02	2.20E+01	1.17E+00	1.37E+01	2.18E-03
UMH3-250 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	2.73E+02	1.58E+00	NA	NA	NA	NA	5.36E-04	4.55E+02	2.44E-01	6.68E-03	1.09E-01	1.11E-01	2.20E+01	1.17E+00	1.37E+01	8.13E-03
UMH3-300 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	5.40E+00	3.11E-02	NA	NA	NA	NA	5.36E-04	8.99E+00	4.81E-03	6.68E-03	1.09E-01	2.20E-03	2.20E+01	1.17E+00	1.37E+01	1.61E-04
UMH3-350 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	3.22E+02	1.85E+00	NA	NA	NA	NA	5.36E-04	5.35E+02	2.87E-01	6.68E-03	1.09E-01	1.31E-01	2.20E+01	1.17E+00	1.37E+01	9.56E-03
UMH3-350+75 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.26E+01	7.24E-02	NA	NA	NA	NA	5.36E-04	2.09E+01	1.12E-02	6.68E-03	1.09E-01	5.11E-03	2.20E+01	1.17E+00	1.37E+01	3.73E-04
UMH3-400 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.56E+02	9.01E-01	NA	NA	NA	NA	5.36E-04	2.60E+02	1.39E-01	6.68E-03	1.09E-01	6.36E-02	2.20E+01	1.17E+00	1.37E+01	4.65E-03
UMH3-400+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.69E+01	9.73E-02	NA	NA	NA	NA	5.36E-04	2.81E+01	1.51E-02	6.68E-03	1.09E-01	6.87E-03	2.20E+01	1.17E+00	1.37E+01	5.02E-04
UMH3-450 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.15E+01	6.65E-02	NA	NA	NA	NA	5.36E-04	1.92E+01	1.03E-02	6.68E-03	1.09E-01	4.69E-03	2.20E+01	1.17E+00	1.37E+01	3.43E-04
UMH3-50 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	6.82E+00	3.93E-02	NA	NA	NA	NA	5.36E-04	1.14E+01	6.08E-03	6.68E-03	1.09E-01	2.78E-03	2.20E+01	1.17E+00	1.37E+01	2.03E-04
UMH3-50+50 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	5.85E+00	3.37E-02	NA	NA	NA	NA	5.36E-04	9.74E+00	5.22E-03	6.68E-03	1.09E-01	2.38E-03	2.20E+01	1.17E+00	1.37E+01	1.74E-04
UMH3-500 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	4.32E+01	2.49E-01	NA	NA	NA	NA	5.36E-04	7.19E+01	3.85E-02	6.68E-03	1.09E-01	1.76E-02	2.20E+01	1.17E+00	1.37E+01	1.28E-03
UMH3-550 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	2.51E+02	1.45E+00	NA	NA	NA	NA	5.36E-04	4.18E+02	2.24E-01	6.68E-03	1.09E-01	1.02E-01	2.20E+01	1.17E+00	1.37E+01	7.47E-03
UMH3-600 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	5.44E+02	3.13E+00	NA	NA	NA	NA	5.36E-04	9.04E+02	4.85E-01	6.68E-03	1.09E-01	2.21E-01	2.20E+01	1.17E+00	1.37E+01	1.62E-02
UMH3-650 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	2.41E+02	1.39E+00	NA	NA	NA	NA	5.36E-04	4.01E+02	2.15E-01	6.68E-03	1.09E-01	9.82E-02	2.20E+01	1.17E+00	1.37E+01	7.17E-03
UMH3-700 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	2.91E+02	1.68E+00	NA	NA	NA	NA	5.36E-04	4.85E+02	2.60E-01	6.68E-03	1.09E-01	1.19E-01	2.20E+01	1.17E+00	1.37E+01	8.66E-03
UMH3-750 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	3.31E+01	1.91E-01	NA	NA	NA	NA	5.36E-04	5.51E+01	2.95E-02	6.68E-03	1.09E-01	1.35E-02	2.20E+01	1.17E+00	1.37E+01	9.85E-04
UMH3-800 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	6.37E+01	3.67E-01	NA	NA	NA	NA	5.36E-04	1.06E+02	5.68E-02	6.68E-03	1.09E-01	2.59E-02	2.20E+01	1.17E+00	1.37E+01	1.89E-03
UMH3-Comp 1 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.19E+01	6.84E-02	NA	NA	NA	NA	5.36E-04	1.97E+01	1.06E-02	6.68E-03	1.09E-01	4.83E-03	2.20E+01	1.17E+00	1.37E+01	3.53E-04
UMH3-Comp 2 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.31E+02	7.55E-01	NA	NA	NA	NA	5.36E-04	2.18E+02	1.17E-01	6.68E-03	1.09E-01	5.33E-02	2.20E+01	1.17E+00	1.37E+01	3.89E-03
UMH3-Comp 3 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	3.97E+02	2.29E+00	NA	NA	NA	NA	5.36E-04	6.61E+02	3.54E-01	6.68E-03	1.09E-01	1.62E-01	2.20E+01	1.17E+00	1.37E+01	1.18E-02
																						Maximum HQ (Waste Area 3)	**1.62E-02**

TABLE C-8A: ARSENIC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 8 - MIKE HORSE MINE WASTE PILES (Continued)
Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)
calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 1.73

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Red-Tailed Hawk (Carnivorous Birds - Terrestrial)																							
Reference Sites																							
BCBG-1 (0-6")	9.00E-02	9.00E-02	4.84E-01	7.42E+00	6.67E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.53E+01	7.86E-02	2.48E-03	1.13E+00	1.63E-03	2.20E+01	1.17E+00	2.19E+01	7.47E-05
MHBG-201 (0-6")	9.00E-02	9.00E-02	4.84E-01	7.53E+00	6.77E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.56E+01	7.98E-02	2.48E-03	1.13E+00	1.66E-03	2.20E+01	1.17E+00	2.19E+01	7.58E-05
MHBG-202 (0-6")	9.00E-02	9.00E-02	4.84E-01	7.35E+00	6.61E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.52E+01	7.79E-02	2.48E-03	1.13E+00	1.62E-03	2.20E+01	1.17E+00	2.19E+01	7.40E-05
Mike Horse Creek Channel Area Deposits																						**Minimum HQ (Reference Site)**	**7.40E-05**
AMHR-0 (0-6")	9.00E-02	9.00E-02	4.84E-01	4.32E+00	3.89E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	8.93E+00	4.58E-02	2.48E-03	1.13E+00	9.51E-04	2.20E+01	1.17E+00	2.19E+01	4.35E-05
AMHR-200 (0-6")	9.00E-02	9.00E-02	4.84E-01	4.25E+00	3.82E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	8.79E+00	4.50E-02	2.48E-03	1.13E+00	9.36E-04	2.20E+01	1.17E+00	2.19E+01	4.28E-05
AMHR-400 (0-6")	9.00E-02	9.00E-02	4.84E-01	9.06E+00	8.15E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.87E+01	9.60E-02	2.48E-03	1.13E+00	1.99E-03	2.20E+01	1.17E+00	2.19E+01	9.12E-05
AMHR-600 (0-6")	9.00E-02	9.00E-02	4.84E-01	9.23E+00	8.30E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.91E+01	9.78E-02	2.48E-03	1.13E+00	2.03E-03	2.20E+01	1.17E+00	2.19E+01	9.29E-05
MHCS-00-E25 (0-6")	9.00E-02	9.00E-02	4.84E-01	6.94E+01	6.24E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.43E+02	7.36E-01	2.48E-03	1.13E+00	1.53E-02	2.20E+01	1.17E+00	2.19E+01	6.99E-04
MHCS-0-W25 (0-6")	9.00E-02	9.00E-02	4.84E-01	7.61E+00	6.85E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.57E+01	8.07E-02	2.48E-03	1.13E+00	1.68E-03	2.20E+01	1.17E+00	2.19E+01	7.67E-05
MHCS-0-W5 (0-6")	9.00E-02	9.00E-02	4.84E-01	1.98E+01	1.78E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.10E+01	2.10E-01	2.48E-03	1.13E+00	4.37E-03	2.20E+01	1.17E+00	2.19E+01	2.00E-04
MHCS-100-E25 (0-6")	9.00E-02	9.00E-02	4.84E-01	1.99E+02	1.79E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.12E+02	2.11E+00	2.48E-03	1.13E+00	4.38E-02	2.20E+01	1.17E+00	2.19E+01	2.01E-03
MHCS-100-W1 (0-6")	9.00E-02	9.00E-02	4.84E-01	9.30E+01	8.36E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.92E+02	9.86E-01	2.48E-03	1.13E+00	2.05E-02	2.20E+01	1.17E+00	2.19E+01	9.36E-04
MHCS-100-W25 (0-6")	9.00E-02	9.00E-02	4.84E-01	6.98E+00	6.28E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.44E+01	7.40E-02	2.48E-03	1.13E+00	1.54E-03	2.20E+01	1.17E+00	2.19E+01	7.03E-05
MHCS-200-E10 (0-6")	9.00E-02	9.00E-02	4.84E-01	5.44E+01	4.90E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.13E+02	5.77E-01	2.48E-03	1.13E+00	1.20E-02	2.20E+01	1.17E+00	2.19E+01	5.48E-04
MHCS-200-E25 (0-6")	9.00E-02	9.00E-02	4.84E-01	1.09E+01	9.84E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.26E+01	1.16E-01	2.48E-03	1.13E+00	2.41E-03	2.20E+01	1.17E+00	2.19E+01	1.10E-04
MHCS-200-W10 (0-6")	9.00E-02	9.00E-02	4.84E-01	6.17E+00	5.55E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.28E+01	6.54E-02	2.48E-03	1.13E+00	1.36E-03	2.20E+01	1.17E+00	2.19E+01	6.21E-05
MHCS-525-E5 (0-6")	9.00E-02	9.00E-02	4.84E-01	8.37E+01	7.53E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.73E+02	8.87E-01	2.48E-03	1.13E+00	1.84E-02	2.20E+01	1.17E+00	2.19E+01	8.43E-04
MHCS-525-W15 (0-6")	9.00E-02	9.00E-02	4.84E-01	1.18E+02	1.06E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.44E+02	1.25E+00	2.48E-03	1.13E+00	2.60E-02	2.20E+01	1.17E+00	2.19E+01	1.19E-03
MHCS-600-E10 (0-6")	9.00E-02	9.00E-02	4.84E-01	6.55E+01	5.89E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.35E+02	6.94E-01	2.48E-03	1.13E+00	1.44E-02	2.20E+01	1.17E+00	2.19E+01	6.60E-04
MHCS-600-W10 (0-6")	9.00E-02	9.00E-02	4.84E-01	1.04E+02	9.37E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.15E+02	1.10E+00	2.48E-03	1.13E+00	2.29E-02	2.20E+01	1.17E+00	2.19E+01	1.05E-03
MHCS-700-E10 (0-6")	9.00E-02	9.00E-02	4.84E-01	7.12E+01	6.41E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.47E+02	7.55E-01	2.48E-03	1.13E+00	1.57E-02	2.20E+01	1.17E+00	2.19E+01	7.17E-04
MHCS-700-E25 (0-6")	9.00E-02	9.00E-02	4.84E-01	1.57E+01	1.42E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.25E+01	1.67E-01	2.48E-03	1.13E+00	3.46E-03	2.20E+01	1.17E+00	2.19E+01	1.58E-04
MHCS-700-W10 (0-6")	9.00E-02	9.00E-02	4.84E-01	7.27E+01	6.54E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.50E+02	7.71E-01	2.48E-03	1.13E+00	1.60E-02	2.20E+01	1.17E+00	2.19E+01	7.32E-04
MHCS-800-E15 (0-6")	9.00E-02	9.00E-02	4.84E-01	8.95E+00	8.05E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.85E+01	9.49E-02	2.48E-03	1.13E+00	1.97E-03	2.20E+01	1.17E+00	2.19E+01	9.01E-05
MHCS-800-E5 (0-6")	9.00E-02	9.00E-02	4.84E-01	6.28E+01	5.65E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.30E+02	6.65E-01	2.48E-03	1.13E+00	1.38E-02	2.20E+01	1.17E+00	2.19E+01	6.32E-04
MHCS-800-W5 (0-6")	9.00E-02	9.00E-02	4.84E-01	4.12E+01	3.70E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	8.51E+01	4.36E-01	2.48E-03	1.13E+00	9.06E-03	2.20E+01	1.17E+00	2.19E+01	4.15E-04
MHCS-900-E15 (0-6")	9.00E-02	9.00E-02	4.84E-01	1.07E+01	9.60E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.21E+01	1.13E-01	2.48E-03	1.13E+00	2.35E-03	2.20E+01	1.17E+00	2.19E+01	1.07E-04
MHCS-900-E5 (0-6")	9.00E-02	9.00E-02	4.84E-01	8.38E+01	7.53E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.73E+02	8.88E-01	2.48E-03	1.13E+00	1.84E-02	2.20E+01	1.17E+00	2.19E+01	8.43E-04
MHCS-900-W5 (0-6")	9.00E-02	9.00E-02	4.84E-01	4.86E+01	4.37E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.00E+02	5.15E-01	2.48E-03	1.13E+00	1.07E-02	2.20E+01	1.17E+00	2.19E+01	4.89E-04
MHCS-1000-E10 (0-6")	9.00E-02	9.00E-02	4.84E-01	2.44E+01	2.19E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.04E+01	2.59E-01	2.48E-03	1.13E+00	5.37E-03	2.20E+01	1.17E+00	2.19E+01	2.46E-04
MHCS-1000-W5 (0-6")	9.00E-02	9.00E-02	4.84E-01	9.13E+01	8.22E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.89E+02	9.68E-01	2.48E-03	1.13E+00	2.01E-02	2.20E+01	1.17E+00	2.19E+01	9.20E-04
MHCS-1100-E10 (0-6")	9.00E-02	9.00E-02	4.84E-01	2.78E+01	2.50E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.74E+01	2.94E-01	2.48E-03	1.13E+00	6.11E-03	2.20E+01	1.17E+00	2.19E+01	2.80E-04
MHCS-1100-E35 (0-6")	9.00E-02	9.00E-02	4.84E-01	1.00E+01	9.01E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.07E+01	1.06E-01	2.48E-03	1.13E+00	2.20E-03	2.20E+01	1.17E+00	2.19E+01	1.01E-04
MHCS-1200-E15 (0-6")	9.00E-02	9.00E-02	4.84E-01	2.38E+01	2.14E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.92E+01	2.52E-01	2.48E-03	1.13E+00	5.24E-03	2.20E+01	1.17E+00	2.19E+01	2.40E-04
MHCS-1200-E30 (0-6")	9.00E-02	9.00E-02	4.84E-01	1.70E+01	1.52E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.50E+01	1.80E-01	2.48E-03	1.13E+00	3.73E-03	2.20E+01	1.17E+00	2.19E+01	1.71E-04
MHCS-1300-E20 (0-6")	9.00E-02	9.00E-02	4.84E-01	4.21E+01	3.79E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	8.70E+01	4.46E-01	2.48E-03	1.13E+00	9.27E-03	2.20E+01	1.17E+00	2.19E+01	4.24E-04
MHCS-1300-E35 (0-6")	9.00E-02	9.00E-02	4.84E-01	8.01E+00	7.20E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.66E+01	8.49E-02	2.48E-03	1.13E+00	1.76E-03	2.20E+01	1.17E+00	2.19E+01	8.06E-05
Waste Areas 1 and 2																						**Maximum HQ (Mike Horse Creek Channel Area Deposits)**	**2.01E-03**
UMH1-00 (0-6")	9.00E-02	9.00E-02	4.84E-01	1.54E+01	1.39E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.19E+01	1.64E-01	2.48E-03	1.13E+00	3.40E-03	2.20E+01	1.17E+00	2.19E+01	1.55E-04
UMH1-100 (0-6")	9.00E-02	9.00E-02	4.84E-01	3.89E+01	3.50E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	8.04E+01	4.12E-01	2.48E-03	1.13E+00	8.56E-03	2.20E+01	1.17E+00	2.19E+01	3.92E-04
UMH1-150 (0-6")	9.00E-02	9.00E-02	4.84E-01	1.17E+01	1.05E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.42E+01	1.24E-01	2.48E-03	1.13E+00	2.57E-03	2.20E+01	1.17E+00	2.19E+01	1.18E-04
UMH1-200 (0-6")	9.00E-02	9.00E-02	4.84E-01	1.48E+01	1.33E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.06E+01	1.57E-01	2.48E-03	1.13E+00	3.26E-03	2.20E+01	1.17E+00	2.19E+01	1.49E-04
UMH1-250 (0-6")	9.00E-02	9.00E-02	4.84E-01	4.49E+01	4.04E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	9.28E+01	4.76E-01	2.48E-03	1.13E+00	9.89E-03	2.20E+01	1.17E+00	2.19E+01	4.52E-04
UMH1-250+25 (0-6")	9.00E-02	9.00E-02	4.84E-01	1.81E+01	1.63E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.75E+01	1.92E-01	2.48E-03	1.13E+00	3.99E-03	2.20E+01	1.17E+00	2.19E+01	1.83E-04
UMH1-300 (0-6")	9.00E-02	9.00E-02	4.84E-01	4.86E+01	4.37E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.00E+02	5.15E-01	2.48E-03	1.13E+00	1.07E-02	2.20E+01	1.17E+00	2.19E+01	4.89E-04
UMH1-300+14 (0-6")	9.00E-02	9.00E-02	4.84E-01	1.57E+01	1.41E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.25E+01	1.67E-01	2.48E-03	1.13E+00	3.46E-03	2.20E+01	1.17E+00	2.19E+01	1.58E-04
UMH1-350 (0-6")	9.00E-02	9.00E-02	4.84E-01	6.01E+01	5.41E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.24E+02	6.37E-01	2.48E-03	1.13E+00	1.32E-02	2.20E+01	1.17E+00	2.19E+01	6.05E-04
UMH1-350+12.5 (0-6")	9.00E-02	9.00E-02	4.84E-01	1.82E+01	1.64E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.76E+01	1.93E-01	2.48E-03	1.13E+00	4.00E-03	2.20E+01	1.17E+00	2.19E+01	1.83E-04
UMH1-400 (0-6")	9.00E-02	9.00E-02	4.84E-01	9.89E+00	8.89E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.04E+01	1.05E-01	2.48E-03	1.13E+00	2.18E-03	2.20E+01	1.17E+00	2.19E+01	9.96E-05
UMH1-400+12.5 (0-6")	9.00E-02	9.00E-02	4.84E-01	1.07E+01	9.66E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.22E+01	1.14E-01	2.48E-03	1.13E+00	2.36E-03	2.20E+01	1.17E+00	2.19E+01	1.08E-04
UMH1-450 (0-6")	9.00E-02	9.00E-02	4.84E-01	1.20E+01	1.08E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.49E+01	1.28E-01	2.48E-03	1.13E+00	2.65E-03	2.20E+01	1.17E+00	2.19E+01	1.21E-04
UMH1-450+12.5 (0-6")	9.00E-02	9.00E-02	4.84E-01	1.46E+01	1.31E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.02E+01	1.55E-01	2.48E-03	1.13E+00	3.21E-03	2.20E+01	1.17E+00	2.19E+01	1.47E-04
UMH1-50 (0-6")	9.00E-02	9.00E-02	4.84E-01	1.13E+01	1.01E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.33E+01	1.19E-01	2.48E-03	1.13E+00	2.48E-03	2.20E+01	1.17E+00	2.19E+01	1.13E-04
UMH1-Comp (0-6")	9.00E-02	9.00E-02	4.84E-01	6.30E+01	5.67E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.30E+02	6.68E-01	2.48E-03	1.13E+00	1.39E-02	2.20E+01	1.17E+00	2.19E+01	6.35E-04
UMH2-00 (0-6")	9.00E-02	9.00E-02	4.84E-01	2.41E+02	2.17E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.99E+02	2.56E+00	2.48E-03	1.13E+00	5.31E-02	2.20E+01	1.17E+00	2.19E+01	2.43E-03

TABLE C-8A: ARSENIC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 8 - MIKE HORSE MINE WASTE PILES (Continued)
Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)
calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **1.73**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Red-Tailed Hawk (Carnivorous Birds - Terrestrial)																							
UMH2-00+25 (0-6")	9.00E-02	9.00E-02	4.84E-01	2.25E+01	2.02E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.65E+01	2.38E-01	2.48E-03	1.13E+00	4.95E-03	2.20E+01	1.17E+00	2.19E+01	2.27E-04
UMH2-100 (0-6")	9.00E-02	9.00E-02	4.84E-01	1.66E+02	1.50E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.44E+02	1.76E+00	2.48E-03	1.13E+00	3.66E-02	2.20E+01	1.17E+00	2.19E+01	1.67E-03
UMH2-100+35 (0-6")	9.00E-02	9.00E-02	4.84E-01	1.72E+01	1.54E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.55E+01	1.82E-01	2.48E-03	1.13E+00	3.78E-03	2.20E+01	1.17E+00	2.19E+01	1.73E-04
UMH2-150 (0-6")	9.00E-02	9.00E-02	4.84E-01	8.59E+01	7.73E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.78E+02	9.11E-01	2.48E-03	1.13E+00	1.89E-02	2.20E+01	1.17E+00	2.19E+01	8.65E-04
UMH2-150+60 (0-6")	9.00E-02	9.00E-02	4.84E-01	4.91E+00	4.42E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.02E+01	5.20E-02	2.48E-03	1.13E+00	1.08E-03	2.20E+01	1.17E+00	2.19E+01	4.94E-05
UMH2-200 (0-6")	9.00E-02	9.00E-02	4.84E-01	1.21E+02	1.08E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.49E+02	1.28E+00	2.48E-03	1.13E+00	2.65E-02	2.20E+01	1.17E+00	2.19E+01	1.21E-03
UMH2-200+85 (0-6")	9.00E-02	9.00E-02	4.84E-01	7.67E+00	6.90E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.59E+01	8.13E-02	2.48E-03	1.13E+00	1.69E-03	2.20E+01	1.17E+00	2.19E+01	7.72E-05
UMH2-250 (0-6")	9.00E-02	9.00E-02	4.84E-01	1.31E+02	1.18E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.71E+02	1.39E+00	2.48E-03	1.13E+00	2.89E-02	2.20E+01	1.17E+00	2.19E+01	1.32E-03
UMH2-250+75 (0-6")	9.00E-02	9.00E-02	4.84E-01	2.49E+01	2.24E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.15E+01	2.64E-01	2.48E-03	1.13E+00	5.48E-03	2.20E+01	1.17E+00	2.19E+01	2.51E-04
UMH2-300 (0-6")	9.00E-02	9.00E-02	4.84E-01	2.54E+01	2.28E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.24E+01	2.69E-01	2.48E-03	1.13E+00	5.58E-03	2.20E+01	1.17E+00	2.19E+01	2.55E-04
UMH2-300+25 (0-6")	9.00E-02	9.00E-02	4.84E-01	1.75E+01	1.58E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.62E+01	1.86E-01	2.48E-03	1.13E+00	3.86E-03	2.20E+01	1.17E+00	2.19E+01	1.76E-04
UMH2-350 (0-6")	9.00E-02	9.00E-02	4.84E-01	1.93E+01	1.74E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.99E+01	2.05E-01	2.48E-03	1.13E+00	4.25E-03	2.20E+01	1.17E+00	2.19E+01	1.94E-04
UMH2-350+25 (0-6")	9.00E-02	9.00E-02	4.84E-01	1.51E+01	1.36E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.12E+01	1.60E-01	2.48E-03	1.13E+00	3.32E-03	2.20E+01	1.17E+00	2.19E+01	1.52E-04
UMH2-400 (0-6")	9.00E-02	9.00E-02	4.84E-01	2.52E+01	2.27E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.21E+01	2.67E-01	2.48E-03	1.13E+00	5.55E-03	2.20E+01	1.17E+00	2.19E+01	2.54E-04
UMH2-400+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UMH2-450 (0-6")	9.00E-02	9.00E-02	4.84E-01	2.24E+01	2.02E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.64E+01	2.38E-01	2.48E-03	1.13E+00	4.94E-03	2.20E+01	1.17E+00	2.19E+01	2.26E-04
UMH2-450+25 (0-6")	9.00E-02	9.00E-02	4.84E-01	4.31E+00	3.87E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	8.90E+00	4.56E-02	2.48E-03	1.13E+00	9.48E-04	2.20E+01	1.17E+00	2.19E+01	4.34E-05
UMH2-50 (0-6")	9.00E-02	9.00E-02	4.84E-01	2.22E+01	2.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.59E+01	2.35E-01	2.48E-03	1.13E+00	4.89E-03	2.20E+01	1.17E+00	2.19E+01	2.24E-04
UMH2-50+25b (0-6")	9.00E-02	9.00E-02	4.84E-01	2.30E+01	2.07E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.76E+01	2.44E-01	2.48E-03	1.13E+00	5.07E-03	2.20E+01	1.17E+00	2.19E+01	2.32E-04
UMH2-500 (0-6")	9.00E-02	9.00E-02	4.84E-01	1.64E+02	1.47E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.38E+02	1.73E+00	2.48E-03	1.13E+00	3.60E-02	2.20E+01	1.17E+00	2.19E+01	1.65E-03
UMH2-500+75 (0-6")	9.00E-02	9.00E-02	4.84E-01	1.59E+01	1.43E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.28E+01	1.68E-01	2.48E-03	1.13E+00	3.49E-03	2.20E+01	1.17E+00	2.19E+01	1.60E-04
UMH2-550 (0-6")	9.00E-02	9.00E-02	4.84E-01	2.13E+02	1.92E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.40E+02	2.26E+00	2.48E-03	1.13E+00	4.69E-02	2.20E+01	1.17E+00	2.19E+01	2.14E-03
UMH2-550+75 (0-6")	9.00E-02	9.00E-02	4.84E-01	9.07E+00	8.16E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.87E+01	9.61E-02	2.48E-03	1.13E+00	2.00E-03	2.20E+01	1.17E+00	2.19E+01	9.13E-05
UMH2-600 (0-6")	9.00E-02	9.00E-02	4.84E-01	7.10E+01	6.39E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.47E+02	7.53E-01	2.48E-03	1.13E+00	1.56E-02	2.20E+01	1.17E+00	2.19E+01	7.15E-04
UMH2-600+25 (0-6")	9.00E-02	9.00E-02	4.84E-01	1.64E+01	1.48E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.39E+01	1.74E-01	2.48E-03	1.13E+00	3.61E-03	2.20E+01	1.17E+00	2.19E+01	1.65E-04
UMH2-650 (0-6")	9.00E-02	9.00E-02	4.84E-01	7.56E+01	6.80E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.56E+02	8.02E-01	2.48E-03	1.13E+00	1.67E-02	2.20E+01	1.17E+00	2.19E+01	7.62E-04
UMH2-650+25 (0-6")	9.00E-02	9.00E-02	4.84E-01	1.40E+01	1.26E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.90E+01	1.49E-01	2.48E-03	1.13E+00	3.09E-03	2.20E+01	1.17E+00	2.19E+01	1.41E-04
UMH2-Comp 1 (0-6")	9.00E-02	9.00E-02	4.84E-01	1.28E+02	1.15E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.64E+02	1.35E+00	2.48E-03	1.13E+00	2.81E-02	2.20E+01	1.17E+00	2.19E+01	1.28E-03
UMH2-Comp 2 (0-6")	9.00E-02	9.00E-02	4.84E-01	1.72E+02	1.55E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.56E+02	1.83E+00	2.48E-03	1.13E+00	3.79E-02	2.20E+01	1.17E+00	2.19E+01	1.73E-03
Waste Area 3																						**Maximum HQ (Waste Areas 1 and 2)**	**2.43E-03**
UMH3-00 (0-6")	9.00E-02	9.00E-02	4.84E-01	4.86E+00	4.37E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.00E+01	5.15E-02	2.48E-03	1.13E+00	1.07E-03	2.20E+01	1.17E+00	2.19E+01	4.89E-05
UMH3-100 (0-6")	9.00E-02	9.00E-02	4.84E-01	1.82E+01	1.64E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.76E+01	1.93E-01	2.48E-03	1.13E+00	4.01E-03	2.20E+01	1.17E+00	2.19E+01	1.83E-04
UMH3-150 (0-6")	9.00E-02	9.00E-02	4.84E-01	1.52E+01	1.37E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.15E+01	1.61E-01	2.48E-03	1.13E+00	3.35E-03	2.20E+01	1.17E+00	2.19E+01	1.53E-04
UMH3-200 (0-6")	9.00E-02	9.00E-02	4.84E-01	5.89E+01	5.30E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.22E+02	6.24E-01	2.48E-03	1.13E+00	1.30E-02	2.20E+01	1.17E+00	2.19E+01	5.93E-04
UMH3-250 (0-6")	9.00E-02	9.00E-02	4.84E-01	2.20E+02	1.98E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.55E+02	2.33E+00	2.48E-03	1.13E+00	4.85E-02	2.20E+01	1.17E+00	2.19E+01	2.22E-03
UMH3-300 (0-6")	9.00E-02	9.00E-02	4.84E-01	4.35E+00	3.91E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	8.99E+00	4.61E-02	2.48E-03	1.13E+00	9.57E-04	2.20E+01	1.17E+00	2.19E+01	4.38E-05
UMH3-350 (0-6")	9.00E-02	9.00E-02	4.84E-01	2.59E+02	2.33E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.35E+02	2.74E+00	2.48E-03	1.13E+00	5.70E-02	2.20E+01	1.17E+00	2.19E+01	2.61E-03
UMH3-350+75 (0-6")	9.00E-02	9.00E-02	4.84E-01	1.01E+01	9.10E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.09E+01	1.07E-01	2.48E-03	1.13E+00	2.23E-03	2.20E+01	1.17E+00	2.19E+01	1.02E-04
UMH3-400 (0-6")	9.00E-02	9.00E-02	4.84E-01	1.26E+02	1.13E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.60E+02	1.33E+00	2.48E-03	1.13E+00	2.77E-02	2.20E+01	1.17E+00	2.19E+01	1.27E-03
UMH3-400+25 (0-6")	9.00E-02	9.00E-02	4.84E-01	1.36E+01	1.22E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.81E+01	1.44E-01	2.48E-03	1.13E+00	2.99E-03	2.20E+01	1.17E+00	2.19E+01	1.37E-04
UMH3-450 (0-6")	9.00E-02	9.00E-02	4.84E-01	9.28E+00	8.35E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.92E+01	9.84E-02	2.48E-03	1.13E+00	2.04E-03	2.20E+01	1.17E+00	2.19E+01	9.35E-05
UMH3-50 (0-6")	9.00E-02	9.00E-02	4.84E-01	5.49E+00	4.94E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.14E+01	5.82E-02	2.48E-03	1.13E+00	1.21E-03	2.20E+01	1.17E+00	2.19E+01	5.53E-05
UMH3-50+50 (0-6")	9.00E-02	9.00E-02	4.84E-01	4.71E+00	4.24E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	9.74E+00	4.99E-02	2.48E-03	1.13E+00	1.04E-03	2.20E+01	1.17E+00	2.19E+01	4.74E-05
UMH3-500 (0-6")	9.00E-02	9.00E-02	4.84E-01	3.48E+01	3.13E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	7.19E+01	3.68E-01	2.48E-03	1.13E+00	7.65E-03	2.20E+01	1.17E+00	2.19E+01	3.50E-04
UMH3-550 (0-6")	9.00E-02	9.00E-02	4.84E-01	2.02E+02	1.82E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.18E+02	2.15E+00	2.48E-03	1.13E+00	4.46E-02	2.20E+01	1.17E+00	2.19E+01	2.04E-03
UMH3-600 (0-6")	9.00E-02	9.00E-02	4.84E-01	4.37E+02	3.94E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	9.04E+02	4.64E+00	2.48E-03	1.13E+00	9.63E-02	2.20E+01	1.17E+00	2.19E+01	4.41E-03
UMH3-650 (0-6")	9.00E-02	9.00E-02	4.84E-01	1.94E+02	1.75E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.01E+02	2.06E+00	2.48E-03	1.13E+00	4.27E-02	2.20E+01	1.17E+00	2.19E+01	1.96E-03
UMH3-700 (0-6")	9.00E-02	9.00E-02	4.84E-01	2.34E+02	2.11E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.85E+02	2.48E+00	2.48E-03	1.13E+00	5.16E-02	2.20E+01	1.17E+00	2.19E+01	2.36E-03
UMH3-750 (0-6")	9.00E-02	9.00E-02	4.84E-01	2.67E+01	2.40E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.51E+01	2.83E-01	2.48E-03	1.13E+00	5.87E-03	2.20E+01	1.17E+00	2.19E+01	2.69E-04
UMH3-800 (0-6")	9.00E-02	9.00E-02	4.84E-01	5.13E+01	4.61E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.06E+02	5.44E-01	2.48E-03	1.13E+00	1.13E-02	2.20E+01	1.17E+00	2.19E+01	5.17E-04
UMH3-Comp 1 (0-6")	9.00E-02	9.00E-02	4.84E-01	9.55E+00	8.59E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.97E+01	1.01E-01	2.48E-03	1.13E+00	2.10E-03	2.20E+01	1.17E+00	2.19E+01	9.62E-05
UMH3-Comp 2 (0-6")	9.00E-02	9.00E-02	4.84E-01	1.05E+02	9.49E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.18E+02	1.12E+00	2.48E-03	1.13E+00	2.32E-02	2.20E+01	1.17E+00	2.19E+01	1.06E-03
UMH3-Comp 3 (0-6")	9.00E-02	9.00E-02	4.84E-01	3.20E+02	2.87E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	6.61E+02	3.39E+00	2.48E-03	1.13E+00	7.04E-02	2.20E+01	1.17E+00	2.19E+01	3.22E-03
																						Maximum HQ (Waste Area 3)	**4.41E-03**

TABLE C-8A: ARSENIC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 8 - MIKE HORSE MINE WASTE PILES (Continued)
Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)
calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **1.73**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
American Kestrel (Insectivorous Birds - Terrestrial)																							
Reference Sites																							
BCBG-1 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	2.55E+00	3.91E+01	5.38E-01	7.84E-04	1.53E+01	1.20E-02	6.61E-03	1.24E-01	2.93E-02	2.20E+01	1.17E+00	1.40E+01	2.09E-03
MHBG-201 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	2.55E+00	3.97E+01	5.46E-01	7.84E-04	1.56E+01	1.22E-02	6.61E-03	1.24E-01	2.98E-02	2.20E+01	1.17E+00	1.40E+01	2.12E-03
MHBG-202 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	2.55E+00	3.88E+01	5.34E-01	7.84E-04	1.52E+01	1.19E-02	6.61E-03	1.24E-01	2.91E-02	2.20E+01	1.17E+00	1.40E+01	2.07E-03
Mike Horse Creek Channel Area Deposits																						**Minimum HQ (Reference Site)**	**2.07E-03**
AMHR-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	1.47E+02	2.03E+00	7.84E-04	8.93E+00	7.00E-03	6.61E-03	1.24E-01	1.08E-01	2.20E+01	1.17E+00	1.40E+01	7.72E-03
AMHR-200 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	1.45E+02	1.99E+00	7.84E-04	8.79E+00	6.89E-03	6.61E-03	1.24E-01	1.07E-01	2.20E+01	1.17E+00	1.40E+01	7.59E-03
AMHR-400 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	3.09E+02	4.25E+00	7.84E-04	1.87E+01	1.47E-02	6.61E-03	1.24E-01	2.27E-01	2.20E+01	1.17E+00	1.40E+01	1.62E-02
AMHR-600 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	3.14E+02	4.33E+00	7.84E-04	1.91E+01	1.50E-02	6.61E-03	1.24E-01	2.31E-01	2.20E+01	1.17E+00	1.40E+01	1.65E-02
MHCS-00-E25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	2.36E+03	3.25E+01	7.84E-04	1.43E+02	1.13E-01	6.61E-03	1.24E-01	1.74E+00	2.20E+01	1.17E+00	1.40E+01	1.24E-01
MHCS-0-W25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	2.59E+02	3.57E+00	7.84E-04	1.57E+01	1.23E-02	6.61E-03	1.24E-01	1.91E-01	2.20E+01	1.17E+00	1.40E+01	1.36E-02
MHCS-0-W5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	6.76E+02	9.30E+00	7.84E-04	4.10E+01	3.22E-02	6.61E-03	1.24E-01	4.97E-01	2.20E+01	1.17E+00	1.40E+01	3.54E-02
MHCS-100-E25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	6.78E+03	9.34E+01	7.84E-04	4.12E+02	3.23E-01	6.61E-03	1.24E-01	5.00E+00	2.20E+01	1.17E+00	1.40E+01	3.56E-01
MHCS-100-W1 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	3.17E+03	4.36E+01	7.84E-04	1.92E+02	1.51E-01	6.61E-03	1.24E-01	2.33E+00	2.20E+01	1.17E+00	1.40E+01	1.66E-01
MHCS-100-W25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	2.38E+02	3.27E+00	7.84E-04	1.44E+01	1.13E-02	6.61E-03	1.24E-01	1.75E-01	2.20E+01	1.17E+00	1.40E+01	1.25E-02
MHCS-200-E10 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	1.85E+03	2.55E+01	7.84E-04	1.13E+02	8.83E-02	6.61E-03	1.24E-01	1.37E+00	2.20E+01	1.17E+00	1.40E+01	9.72E-02
MHCS-200-E25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	3.73E+02	5.13E+00	7.84E-04	2.26E+01	1.77E-02	6.61E-03	1.24E-01	2.74E-01	2.20E+01	1.17E+00	1.40E+01	1.95E-02
MHCS-200-W10 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	2.10E+02	2.89E+00	7.84E-04	1.28E+01	1.00E-02	6.61E-03	1.24E-01	1.55E-01	2.20E+01	1.17E+00	1.40E+01	1.10E-02
MHCS-525-E5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	2.85E+03	3.92E+01	7.84E-04	1.73E+02	1.36E-01	6.61E-03	1.24E-01	2.10E+00	2.20E+01	1.17E+00	1.40E+01	1.50E-01
MHCS-525-W15 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	4.02E+03	5.53E+01	7.84E-04	2.44E+02	1.91E-01	6.61E-03	1.24E-01	2.96E+00	2.20E+01	1.17E+00	1.40E+01	2.11E-01
MHCS-600-E10 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	2.23E+03	3.07E+01	7.84E-04	1.35E+02	1.06E-01	6.61E-03	1.24E-01	1.64E+00	2.20E+01	1.17E+00	1.40E+01	1.17E-01
MHCS-600-W10 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	3.55E+03	4.88E+01	7.84E-04	2.15E+02	1.69E-01	6.61E-03	1.24E-01	2.61E+00	2.20E+01	1.17E+00	1.40E+01	1.86E-01
MHCS-700-E10 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	2.43E+03	3.34E+01	7.84E-04	1.47E+02	1.15E-01	6.61E-03	1.24E-01	1.79E+00	2.20E+01	1.17E+00	1.40E+01	1.27E-01
MHCS-700-E25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	5.36E+02	7.38E+00	7.84E-04	3.25E+01	2.55E-02	6.61E-03	1.24E-01	3.95E-01	2.20E+01	1.17E+00	1.40E+01	2.81E-02
MHCS-700-W10 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	2.48E+03	3.41E+01	7.84E-04	1.50E+02	1.18E-01	6.61E-03	1.24E-01	1.82E+00	2.20E+01	1.17E+00	1.40E+01	1.30E-01
MHCS-800-E15 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	3.05E+02	4.20E+00	7.84E-04	1.85E+01	1.45E-02	6.61E-03	1.24E-01	2.25E-01	2.20E+01	1.17E+00	1.40E+01	1.60E-02
MHCS-800-E5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	2.14E+03	2.94E+01	7.84E-04	1.30E+02	1.02E-01	6.61E-03	1.24E-01	1.57E+00	2.20E+01	1.17E+00	1.40E+01	1.12E-01
MHCS-800-W5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	1.40E+03	1.93E+01	7.84E-04	8.51E+01	6.68E-02	6.61E-03	1.24E-01	1.03E+00	2.20E+01	1.17E+00	1.40E+01	7.35E-02
MHCS-900-E15 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	3.63E+02	5.00E+00	7.84E-04	2.21E+01	1.73E-02	6.61E-03	1.24E-01	2.68E-01	2.20E+01	1.17E+00	1.40E+01	1.91E-02
MHCS-900-E5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	2.85E+03	3.93E+01	7.84E-04	1.73E+02	1.36E-01	6.61E-03	1.24E-01	2.10E+00	2.20E+01	1.17E+00	1.40E+01	1.50E-01
MHCS-900-W5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	1.65E+03	2.28E+01	7.84E-04	1.00E+02	7.88E-02	6.61E-03	1.24E-01	1.22E+00	2.20E+01	1.17E+00	1.40E+01	8.68E-02
MHCS-1000-E10 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	8.31E+02	1.14E+01	7.84E-04	5.04E+01	3.95E-02	6.61E-03	1.24E-01	6.12E-01	2.20E+01	1.17E+00	1.40E+01	4.36E-02
MHCS-1000-W5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	3.11E+03	4.28E+01	7.84E-04	1.89E+02	1.48E-01	6.61E-03	1.24E-01	2.29E+00	2.20E+01	1.17E+00	1.40E+01	1.63E-01
MHCS-1100-E10 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	9.46E+02	1.30E+01	7.84E-04	5.74E+01	4.50E-02	6.61E-03	1.24E-01	6.96E-01	2.20E+01	1.17E+00	1.40E+01	4.96E-02
MHCS-1100-E35 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	3.41E+02	4.70E+00	7.84E-04	2.07E+01	1.62E-02	6.61E-03	1.24E-01	2.51E-01	2.20E+01	1.17E+00	1.40E+01	1.79E-02
MHCS-1200-E15 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	8.11E+02	1.12E+01	7.84E-04	4.92E+01	3.86E-02	6.61E-03	1.24E-01	5.97E-01	2.20E+01	1.17E+00	1.40E+01	4.25E-02
MHCS-1200-E30 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	5.78E+02	7.95E+00	7.84E-04	3.50E+01	2.75E-02	6.61E-03	1.24E-01	4.25E-01	2.20E+01	1.17E+00	1.40E+01	3.03E-02
MHCS-1300-E20 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	1.43E+03	1.97E+01	7.84E-04	8.70E+01	6.83E-02	6.61E-03	1.24E-01	1.06E+00	2.20E+01	1.17E+00	1.40E+01	7.52E-02
MHCS-1300-E35 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	2.73E+02	3.76E+00	7.84E-04	1.66E+01	1.30E-02	6.61E-03	1.24E-01	2.01E-01	2.20E+01	1.17E+00	1.40E+01	1.43E-02
Waste Areas 1 and 2																						**Maximum HQ (Mike Horse Creek Channel Area Deposits)**	**3.56E-01**
UMH1-00 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	5.26E+02	7.24E+00	7.84E-04	3.19E+01	2.50E-02	6.61E-03	1.24E-01	3.87E-01	2.20E+01	1.17E+00	1.40E+01	2.76E-02
UMH1-100 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	1.33E+03	1.82E+01	7.84E-04	8.04E+01	6.31E-02	6.61E-03	1.24E-01	9.76E-01	2.20E+01	1.17E+00	1.40E+01	6.95E-02
UMH1-150 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	3.98E+02	5.48E+00	7.84E-04	2.42E+01	1.90E-02	6.61E-03	1.24E-01	2.93E-01	2.20E+01	1.17E+00	1.40E+01	2.09E-02
UMH1-200 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	5.05E+02	6.94E+00	7.84E-04	3.06E+01	2.40E-02	6.61E-03	1.24E-01	3.71E-01	2.20E+01	1.17E+00	1.40E+01	2.64E-02
UMH1-250 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	1.53E+03	2.11E+01	7.84E-04	9.28E+01	7.28E-02	6.61E-03	1.24E-01	1.13E+00	2.20E+01	1.17E+00	1.40E+01	8.02E-02
UMH1-250+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	6.18E+02	8.51E+00	7.84E-04	3.75E+01	2.94E-02	6.61E-03	1.24E-01	4.55E-01	2.20E+01	1.17E+00	1.40E+01	3.24E-02
UMH1-300 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	1.66E+03	2.28E+01	7.84E-04	1.00E+02	7.88E-02	6.61E-03	1.24E-01	1.22E+00	2.20E+01	1.17E+00	1.40E+01	8.68E-02
UMH1-300+14 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	5.36E+02	7.37E+00	7.84E-04	3.25E+01	2.55E-02	6.61E-03	1.24E-01	3.94E-01	2.20E+01	1.17E+00	1.40E+01	2.81E-02
UMH1-350 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	2.05E+03	2.82E+01	7.84E-04	1.24E+02	9.75E-02	6.61E-03	1.24E-01	1.51E+00	2.20E+01	1.17E+00	1.40E+01	1.07E-01
UMH1-350+12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	6.20E+02	8.53E+00	7.84E-04	3.76E+01	2.95E-02	6.61E-03	1.24E-01	4.56E-01	2.20E+01	1.17E+00	1.40E+01	3.25E-02
UMH1-400 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	3.37E+02	4.64E+00	7.84E-04	2.04E+01	1.60E-02	6.61E-03	1.24E-01	2.48E-01	2.20E+01	1.17E+00	1.40E+01	1.77E-02
UMH1-400+12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	3.66E+02	5.04E+00	7.84E-04	2.22E+01	1.74E-02	6.61E-03	1.24E-01	2.69E-01	2.20E+01	1.17E+00	1.40E+01	1.92E-02
UMH1-450 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	4.10E+02	5.65E+00	7.84E-04	2.49E+01	1.95E-02	6.61E-03	1.24E-01	3.02E-01	2.20E+01	1.17E+00	1.40E+01	2.15E-02
UMH1-450+12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	4.97E+02	6.85E+00	7.84E-04	3.02E+01	2.37E-02	6.61E-03	1.24E-01	3.66E-01	2.20E+01	1.17E+00	1.40E+01	2.61E-02
UMH1-50 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	3.84E+02	5.28E+00	7.84E-04	2.33E+01	1.83E-02	6.61E-03	1.24E-01	2.83E-01	2.20E+01	1.17E+00	1.40E+01	2.01E-02
UMH1-Comp (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	2.15E+03	2.95E+01	7.84E-04	1.30E+02	1.02E-01	6.61E-03	1.24E-01	1.58E+00	2.20E+01	1.17E+00	1.40E+01	1.13E-01
UMH2-00 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	8.22E+03	1.13E+02	7.84E-04	4.99E+02	3.91E-01	6.61E-03	1.24E-01	6.05E+00	2.20E+01	1.17E+00	1.40E+01	4.31E-01

TABLE C-8A: ARSENIC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 8 - MIKE HORSE MINE WASTE PILES (Continued)
Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)
calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **1.73**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
American Kestrel (Insectivorous Birds - Terrestrial)																							
UMH2-00+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	7.66E+02	1.05E+01	7.84E-04	4.65E+01	3.65E-02	6.61E-03	1.24E-01	5.64E-01	2.20E+01	1.17E+00	1.40E+01	4.02E-02
UMH2-100 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	5.66E+03	7.79E+01	7.84E-04	3.44E+02	2.70E-01	6.61E-03	1.24E-01	4.17E+00	2.20E+01	1.17E+00	1.40E+01	2.97E-01
UMH2-100+35 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	5.85E+02	8.05E+00	7.84E-04	3.55E+01	2.78E-02	6.61E-03	1.24E-01	4.31E-01	2.20E+01	1.17E+00	1.40E+01	3.07E-02
UMH2-150 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	2.93E+03	4.03E+01	7.84E-04	1.78E+02	1.39E-01	6.61E-03	1.24E-01	2.16E+00	2.20E+01	1.17E+00	1.40E+01	1.53E-01
UMH2-150+60 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	1.67E+02	2.30E+00	7.84E-04	1.02E+01	7.96E-03	6.61E-03	1.24E-01	1.23E-01	2.20E+01	1.17E+00	1.40E+01	8.77E-03
UMH2-200 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	4.11E+03	5.65E+01	7.84E-04	2.49E+02	1.95E-01	6.61E-03	1.24E-01	3.02E+00	2.20E+01	1.17E+00	1.40E+01	2.15E-01
UMH2-200+85 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	2.61E+02	3.60E+00	7.84E-04	1.59E+01	1.24E-02	6.61E-03	1.24E-01	1.92E-01	2.20E+01	1.17E+00	1.40E+01	1.37E-02
UMH2-250 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	4.47E+03	6.15E+01	7.84E-04	2.71E+02	2.13E-01	6.61E-03	1.24E-01	3.29E+00	2.20E+01	1.17E+00	1.40E+01	2.34E-01
UMH2-250+75 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	8.49E+02	1.17E+01	7.84E-04	5.15E+01	4.04E-02	6.61E-03	1.24E-01	6.25E-01	2.20E+01	1.17E+00	1.40E+01	4.45E-02
UMH2-300 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	8.64E+02	1.19E+01	7.84E-04	5.24E+01	4.11E-02	6.61E-03	1.24E-01	6.36E-01	2.20E+01	1.17E+00	1.40E+01	4.53E-02
UMH2-300+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	5.97E+02	8.21E+00	7.84E-04	3.62E+01	2.84E-02	6.61E-03	1.24E-01	4.39E-01	2.20E+01	1.17E+00	1.40E+01	3.13E-02
UMH2-350 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	6.58E+02	9.05E+00	7.84E-04	3.99E+01	3.13E-02	6.61E-03	1.24E-01	4.84E-01	2.20E+01	1.17E+00	1.40E+01	3.45E-02
UMH2-350+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	5.14E+02	7.08E+00	7.84E-04	3.12E+01	2.45E-02	6.61E-03	1.24E-01	3.79E-01	2.20E+01	1.17E+00	1.40E+01	2.70E-02
UMH2-400 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	8.58E+02	1.18E+01	7.84E-04	5.21E+01	4.08E-02	6.61E-03	1.24E-01	6.32E-01	2.20E+01	1.17E+00	1.40E+01	4.50E-02
UMH2-400+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UMH2-450 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	7.64E+02	1.05E+01	7.84E-04	4.64E+01	3.64E-02	6.61E-03	1.24E-01	5.62E-01	2.20E+01	1.17E+00	1.40E+01	4.01E-02
UMH2-450+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	1.47E+02	2.02E+00	7.84E-04	8.90E+00	6.98E-03	6.61E-03	1.24E-01	1.08E-01	2.20E+01	1.17E+00	1.40E+01	7.69E-03
UMH2-50 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	7.56E+02	1.04E+01	7.84E-04	4.59E+01	3.60E-02	6.61E-03	1.24E-01	5.57E-01	2.20E+01	1.17E+00	1.40E+01	3.96E-02
UMH2-50+25b (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	7.85E+02	1.08E+01	7.84E-04	4.76E+01	3.74E-02	6.61E-03	1.24E-01	5.78E-01	2.20E+01	1.17E+00	1.40E+01	4.12E-02
UMH2-500 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	5.58E+03	7.67E+01	7.84E-04	3.38E+02	2.65E-01	6.61E-03	1.24E-01	4.10E+00	2.20E+01	1.17E+00	1.40E+01	2.92E-01
UMH2-500+75 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	5.41E+02	7.44E+00	7.84E-04	3.28E+01	2.57E-02	6.61E-03	1.24E-01	3.98E-01	2.20E+01	1.17E+00	1.40E+01	2.83E-02
UMH2-550 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	7.26E+03	9.99E+01	7.84E-04	4.40E+02	3.45E-01	6.61E-03	1.24E-01	5.34E+00	2.20E+01	1.17E+00	1.40E+01	3.80E-01
UMH2-550+75 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	3.09E+02	4.25E+00	7.84E-04	1.87E+01	1.47E-02	6.61E-03	1.24E-01	2.27E-01	2.20E+01	1.17E+00	1.40E+01	1.62E-02
UMH2-600 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	2.42E+03	3.33E+01	7.84E-04	1.47E+02	1.15E-01	6.61E-03	1.24E-01	1.78E+00	2.20E+01	1.17E+00	1.40E+01	1.27E-01
UMH2-600+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	5.59E+02	7.69E+00	7.84E-04	3.39E+01	2.66E-02	6.61E-03	1.24E-01	4.11E-01	2.20E+01	1.17E+00	1.40E+01	2.93E-02
UMH2-650 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	2.58E+03	3.55E+01	7.84E-04	1.56E+02	1.23E-01	6.61E-03	1.24E-01	1.90E+00	2.20E+01	1.17E+00	1.40E+01	1.35E-01
UMH2-650+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	4.78E+02	6.57E+00	7.84E-04	2.90E+01	2.27E-02	6.61E-03	1.24E-01	3.52E-01	2.20E+01	1.17E+00	1.40E+01	2.50E-02
UMH2-Comp 1 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	4.34E+03	5.98E+01	7.84E-04	2.64E+02	2.07E-01	6.61E-03	1.24E-01	3.20E+00	2.20E+01	1.17E+00	1.40E+01	2.28E-01
UMH2-Comp 2 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	5.87E+03	8.08E+01	7.84E-04	3.56E+02	2.79E-01	6.61E-03	1.24E-01	4.32E+00	2.20E+01	1.17E+00	1.40E+01	3.08E-01
Waste Area 3																						**Maximum HQ (Waste Areas 1 and 2)**	**4.31E-01**
UMH3-00 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	1.66E+02	2.28E+00	7.84E-04	1.00E+01	7.88E-03	6.61E-03	1.24E-01	1.22E-01	2.20E+01	1.17E+00	1.40E+01	8.68E-03
UMH3-100 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	6.20E+02	8.53E+00	7.84E-04	3.76E+01	2.95E-02	6.61E-03	1.24E-01	4.57E-01	2.20E+01	1.17E+00	1.40E+01	3.25E-02
UMH3-150 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	5.18E+02	7.13E+00	7.84E-04	3.15E+01	2.47E-02	6.61E-03	1.24E-01	3.82E-01	2.20E+01	1.17E+00	1.40E+01	2.72E-02
UMH3-200 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	2.01E+03	2.76E+01	7.84E-04	1.22E+02	9.55E-02	6.61E-03	1.24E-01	1.48E+00	2.20E+01	1.17E+00	1.40E+01	1.05E-01
UMH3-250 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	7.50E+03	1.03E+02	7.84E-04	4.55E+02	3.57E-01	6.61E-03	1.24E-01	5.52E+00	2.20E+01	1.17E+00	1.40E+01	3.93E-01
UMH3-300 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	1.48E+02	2.04E+00	7.84E-04	8.99E+00	7.05E-03	6.61E-03	1.24E-01	1.09E-01	2.20E+01	1.17E+00	1.40E+01	7.76E-03
UMH3-350 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	8.82E+03	1.21E+02	7.84E-04	5.35E+02	4.20E-01	6.61E-03	1.24E-01	6.49E+00	2.20E+01	1.17E+00	1.40E+01	4.62E-01
UMH3-350+75 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	3.44E+02	4.74E+00	7.84E-04	2.09E+01	1.64E-02	6.61E-03	1.24E-01	2.54E-01	2.20E+01	1.17E+00	1.40E+01	1.81E-02
UMH3-400 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	4.29E+03	5.90E+01	7.84E-04	2.60E+02	2.04E-01	6.61E-03	1.24E-01	3.16E+00	2.20E+01	1.17E+00	1.40E+01	2.25E-01
UMH3-400+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	4.63E+02	6.37E+00	7.84E-04	2.81E+01	2.20E-02	6.61E-03	1.24E-01	3.41E-01	2.20E+01	1.17E+00	1.40E+01	2.43E-02
UMH3-450 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	3.16E+02	4.35E+00	7.84E-04	1.92E+01	1.51E-02	6.61E-03	1.24E-01	2.33E-01	2.20E+01	1.17E+00	1.40E+01	1.66E-02
UMH3-50 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	1.87E+02	2.57E+00	7.84E-04	1.14E+01	8.90E-03	6.61E-03	1.24E-01	1.38E-01	2.20E+01	1.17E+00	1.40E+01	9.81E-03
UMH3-50+50 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	1.60E+02	2.21E+00	7.84E-04	9.74E+00	7.64E-03	6.61E-03	1.24E-01	1.18E-01	2.20E+01	1.17E+00	1.40E+01	8.41E-03
UMH3-500 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	1.18E+03	1.63E+01	7.84E-04	7.19E+01	5.64E-02	6.61E-03	1.24E-01	8.72E-01	2.20E+01	1.17E+00	1.40E+01	6.21E-02
UMH3-550 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	6.90E+03	9.49E+01	7.84E-04	4.18E+02	3.28E-01	6.61E-03	1.24E-01	5.08E+00	2.20E+01	1.17E+00	1.40E+01	3.62E-01
UMH3-600 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	1.49E+04	2.05E+02	7.84E-04	9.04E+02	7.09E-01	6.61E-03	1.24E-01	1.10E+01	2.20E+01	1.17E+00	1.40E+01	7.81E-01
UMH3-650 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	6.62E+03	9.10E+01	7.84E-04	4.01E+02	3.15E-01	6.61E-03	1.24E-01	4.87E+00	2.20E+01	1.17E+00	1.40E+01	3.47E-01
UMH3-700 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	7.99E+03	1.10E+02	7.84E-04	4.85E+02	3.80E-01	6.61E-03	1.24E-01	5.88E+00	2.20E+01	1.17E+00	1.40E+01	4.19E-01
UMH3-750 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	9.09E+02	1.25E+01	7.84E-04	5.51E+01	4.32E-02	6.61E-03	1.24E-01	6.69E-01	2.20E+01	1.17E+00	1.40E+01	4.76E-02
UMH3-800 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	1.75E+03	2.41E+01	7.84E-04	1.06E+02	8.32E-02	6.61E-03	1.24E-01	1.29E+00	2.20E+01	1.17E+00	1.40E+01	9.16E-02
UMH3-Comp 1 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	3.25E+02	4.48E+00	7.84E-04	1.97E+01	1.55E-02	6.61E-03	1.24E-01	2.40E-01	2.20E+01	1.17E+00	1.40E+01	1.71E-02
UMH3-Comp 2 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	3.59E+03	4.95E+01	7.84E-04	2.18E+02	1.71E-01	6.61E-03	1.24E-01	2.65E+00	2.20E+01	1.17E+00	1.40E+01	1.88E-01
UMH3-Comp 3 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	1.09E+04	1.50E+02	7.84E-04	6.61E+02	5.18E-01	6.61E-03	1.24E-01	8.02E+00	2.20E+01	1.17E+00	1.40E+01	5.71E-01
																						Maximum HQ (Waste Area 3)	**7.81E-01**

TABLE C-8A: ARSENIC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 8 - MIKE HORSE MINE WASTE PILES (Continued)
Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

Site Area (hectares) **1.73**

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)
calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Meadow Vole (Small Herbivorous Mammal - Terrestrial)																							
Reference Sites																							
BCBG-1 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	1.13E-04	1.53E+01	1.73E-03	1.00E+00	3.06E-02	5.64E-02	4.70E+00	1.10E-01	5.08E+00	1.11E-02
MHBG-201 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	1.13E-04	1.56E+01	1.75E-03	1.00E+00	3.06E-02	5.72E-02	4.70E+00	1.10E-01	5.08E+00	1.13E-02
MHBG-202 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	1.13E-04	1.52E+01	1.71E-03	1.00E+00	3.06E-02	5.59E-02	4.70E+00	1.10E-01	5.08E+00	1.10E-02
Mike Horse Creek Channel Area Deposits																						**Minimum HQ (Reference Site)**	**1.10E-02**
AMHR-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	5.37E+00	2.52E-02	NA	NA	NA	NA	1.13E-04	8.93E+00	1.00E-03	1.00E+00	3.06E-02	8.55E-01	4.70E+00	1.10E-01	5.08E+00	1.69E-01
AMHR-200 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	5.28E+00	2.48E-02	NA	NA	NA	NA	1.13E-04	8.79E+00	9.89E-04	1.00E+00	3.06E-02	8.41E-01	4.70E+00	1.10E-01	5.08E+00	1.66E-01
AMHR-400 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.13E+01	5.28E-02	NA	NA	NA	NA	1.13E-04	1.87E+01	2.11E-03	1.00E+00	3.06E-02	1.79E+00	4.70E+00	1.10E-01	5.08E+00	3.53E-01
AMHR-600 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.15E+01	5.37E-02	NA	NA	NA	NA	1.13E-04	1.91E+01	2.15E-03	1.00E+00	3.06E-02	1.83E+00	4.70E+00	1.10E-01	5.08E+00	3.60E-01
MHCS-00-E25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	8.62E+01	4.04E-01	NA	NA	NA	NA	1.13E-04	1.43E+02	1.61E-02	1.00E+00	3.06E-02	1.37E+01	4.70E+00	1.10E-01	5.08E+00	2.71E+00
MHCS-0-W25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	9.46E+00	4.44E-02	NA	NA	NA	NA	1.13E-04	1.57E+01	1.77E-03	1.00E+00	3.06E-02	1.51E+00	4.70E+00	1.10E-01	5.08E+00	2.97E-01
MHCS-0-W5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	2.46E+01	1.16E-01	NA	NA	NA	NA	1.13E-04	4.10E+01	4.61E-03	1.00E+00	3.06E-02	3.93E+00	4.70E+00	1.10E-01	5.08E+00	7.74E-01
MHCS-100-E25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	2.47E+02	1.16E+00	NA	NA	NA	NA	1.13E-04	4.12E+02	4.63E-02	1.00E+00	3.06E-02	3.94E+01	4.70E+00	1.10E-01	5.08E+00	7.77E+00
MHCS-100-W1 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.16E+02	5.42E-01	NA	NA	NA	NA	1.13E-04	1.92E+02	2.16E-02	1.00E+00	3.06E-02	1.84E+01	4.70E+00	1.10E-01	5.08E+00	3.63E+00
MHCS-100-W25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	8.67E+00	4.07E-02	NA	NA	NA	NA	1.13E-04	1.44E+01	1.62E-03	1.00E+00	3.06E-02	1.38E+00	4.70E+00	1.10E-01	5.08E+00	2.72E-01
MHCS-200-E10 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	6.76E+01	3.17E-01	NA	NA	NA	NA	1.13E-04	1.13E+02	1.27E-02	1.00E+00	3.06E-02	1.08E+01	4.70E+00	1.10E-01	5.08E+00	2.12E+00
MHCS-200-E25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.36E+01	6.37E-02	NA	NA	NA	NA	1.13E-04	2.26E+01	2.54E-03	1.00E+00	3.06E-02	2.16E+00	4.70E+00	1.10E-01	5.08E+00	4.27E-01
MHCS-200-W10 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	7.66E+00	3.59E-02	NA	NA	NA	NA	1.13E-04	1.28E+01	1.43E-03	1.00E+00	3.06E-02	1.22E+00	4.70E+00	1.10E-01	5.08E+00	2.41E-01
MHCS-525-E5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.04E+02	4.88E-01	NA	NA	NA	NA	1.13E-04	1.73E+02	1.95E-02	1.00E+00	3.06E-02	1.66E+01	4.70E+00	1.10E-01	5.08E+00	3.27E+00
MHCS-525-W15 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.47E+02	6.88E-01	NA	NA	NA	NA	1.13E-04	2.44E+02	2.75E-02	1.00E+00	3.06E-02	2.34E+01	4.70E+00	1.10E-01	5.08E+00	4.60E+00
MHCS-600-E10 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	8.14E+01	3.82E-01	NA	NA	NA	NA	1.13E-04	1.35E+02	1.52E-02	1.00E+00	3.06E-02	1.30E+01	4.70E+00	1.10E-01	5.08E+00	2.56E+00
MHCS-600-W10 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.29E+02	6.07E-01	NA	NA	NA	NA	1.13E-04	2.15E+02	2.42E-02	1.00E+00	3.06E-02	2.06E+01	4.70E+00	1.10E-01	5.08E+00	4.06E+00
MHCS-700-E10 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	8.85E+01	4.15E-01	NA	NA	NA	NA	1.13E-04	1.47E+02	1.66E-02	1.00E+00	3.06E-02	1.41E+01	4.70E+00	1.10E-01	5.08E+00	2.78E+00
MHCS-700-E25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.95E+01	9.17E-02	NA	NA	NA	NA	1.13E-04	3.25E+01	3.66E-03	1.00E+00	3.06E-02	3.11E+00	4.70E+00	1.10E-01	5.08E+00	6.14E-01
MHCS-700-W10 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	9.03E+01	4.24E-01	NA	NA	NA	NA	1.13E-04	1.50E+02	1.69E-02	1.00E+00	3.06E-02	1.44E+01	4.70E+00	1.10E-01	5.08E+00	2.84E+00
MHCS-800-E15 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.11E+01	5.21E-02	NA	NA	NA	NA	1.13E-04	1.85E+01	2.08E-03	1.00E+00	3.06E-02	1.77E+00	4.70E+00	1.10E-01	5.08E+00	3.49E-01
MHCS-800-E5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	7.80E+01	3.66E-01	NA	NA	NA	NA	1.13E-04	1.30E+02	1.46E-02	1.00E+00	3.06E-02	1.24E+01	4.70E+00	1.10E-01	5.08E+00	2.45E+00
MHCS-800-W5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	5.12E+01	2.40E-01	NA	NA	NA	NA	1.13E-04	8.51E+01	9.58E-03	1.00E+00	3.06E-02	8.15E+00	4.70E+00	1.10E-01	5.08E+00	1.61E+00
MHCS-900-E15 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.33E+01	6.21E-02	NA	NA	NA	NA	1.13E-04	2.21E+01	2.48E-03	1.00E+00	3.06E-02	2.11E+00	4.70E+00	1.10E-01	5.08E+00	4.16E-01
MHCS-900-E5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.04E+02	4.88E-01	NA	NA	NA	NA	1.13E-04	1.73E+02	1.95E-02	1.00E+00	3.06E-02	1.66E+01	4.70E+00	1.10E-01	5.08E+00	3.27E+00
MHCS-900-W5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	6.03E+01	2.83E-01	NA	NA	NA	NA	1.13E-04	1.00E+02	1.13E-02	1.00E+00	3.06E-02	9.62E+00	4.70E+00	1.10E-01	5.08E+00	1.89E+00
MHCS-1000-E10 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	3.03E+01	1.42E-01	NA	NA	NA	NA	1.13E-04	5.04E+01	5.67E-03	1.00E+00	3.06E-02	4.83E+00	4.70E+00	1.10E-01	5.08E+00	9.52E-01
MHCS-1000-W5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.13E+02	5.32E-01	NA	NA	NA	NA	1.13E-04	1.89E+02	2.12E-02	1.00E+00	3.06E-02	1.81E+01	4.70E+00	1.10E-01	5.08E+00	3.56E+00
MHCS-1100-E10 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	3.45E+01	1.62E-01	NA	NA	NA	NA	1.13E-04	5.74E+01	6.46E-03	1.00E+00	3.06E-02	5.50E+00	4.70E+00	1.10E-01	5.08E+00	1.08E+00
MHCS-1100-E35 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.24E+01	5.83E-02	NA	NA	NA	NA	1.13E-04	2.07E+01	2.33E-03	1.00E+00	3.06E-02	1.98E+00	4.70E+00	1.10E-01	5.08E+00	3.91E-01
MHCS-1200-E15 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	2.96E+01	1.39E-01	NA	NA	NA	NA	1.13E-04	4.92E+01	5.54E-03	1.00E+00	3.06E-02	4.71E+00	4.70E+00	1.10E-01	5.08E+00	9.28E-01
MHCS-1200-E30 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	2.11E+01	9.88E-02	NA	NA	NA	NA	1.13E-04	3.50E+01	3.94E-03	1.00E+00	3.06E-02	3.36E+00	4.70E+00	1.10E-01	5.08E+00	6.61E-01
MHCS-1300-E20 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	5.23E+01	2.45E-01	NA	NA	NA	NA	1.13E-04	8.70E+01	9.80E-03	1.00E+00	3.06E-02	8.34E+00	4.70E+00	1.10E-01	5.08E+00	1.64E+00
MHCS-1300-E35 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	9.95E+00	4.67E-02	NA	NA	NA	NA	1.13E-04	1.66E+01	1.86E-03	1.00E+00	3.06E-02	1.59E+00	4.70E+00	1.10E-01	5.08E+00	3.12E-01
Waste Areas 1 and 2																						**Maximum HQ (Mike Horse Creek Channel Area Deposits)**	**7.77E+00**
UMH1-00 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.92E+01	8.99E-02	NA	NA	NA	NA	1.13E-04	3.19E+01	3.59E-03	1.00E+00	3.06E-02	3.06E+00	4.70E+00	1.10E-01	5.08E+00	6.02E-01
UMH1-100 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	4.83E+01	2.27E-01	NA	NA	NA	NA	1.13E-04	8.04E+01	9.05E-03	1.00E+00	3.06E-02	7.70E+00	4.70E+00	1.10E-01	5.08E+00	1.52E+00
UMH1-150 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.45E+01	6.81E-02	NA	NA	NA	NA	1.13E-04	2.42E+01	2.72E-03	1.00E+00	3.06E-02	2.31E+00	4.70E+00	1.10E-01	5.08E+00	4.56E-01
UMH1-200 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.84E+01	8.63E-02	NA	NA	NA	NA	1.13E-04	3.06E+01	3.44E-03	1.00E+00	3.06E-02	2.93E+00	4.70E+00	1.10E-01	5.08E+00	5.78E-01
UMH1-250 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	5.58E+01	2.62E-01	NA	NA	NA	NA	1.13E-04	9.28E+01	1.04E-02	1.00E+00	3.06E-02	8.89E+00	4.70E+00	1.10E-01	5.08E+00	1.75E+00
UMH1-250+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	2.25E+01	1.06E-01	NA	NA	NA	NA	1.13E-04	3.75E+01	4.22E-03	1.00E+00	3.06E-02	3.59E+00	4.70E+00	1.10E-01	5.08E+00	7.08E-01
UMH1-300 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	6.04E+01	2.83E-01	NA	NA	NA	NA	1.13E-04	1.00E+02	1.13E-02	1.00E+00	3.06E-02	9.62E+00	4.70E+00	1.10E-01	5.08E+00	1.90E+00
UMH1-300+14 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.95E+01	9.16E-02	NA	NA	NA	NA	1.13E-04	3.25E+01	3.66E-03	1.00E+00	3.06E-02	3.11E+00	4.70E+00	1.10E-01	5.08E+00	6.13E-01
UMH1-350 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	7.47E+01	3.50E-01	NA	NA	NA	NA	1.13E-04	1.24E+02	1.40E-02	1.00E+00	3.06E-02	1.19E+01	4.70E+00	1.10E-01	5.08E+00	2.35E+00
UMH1-350+12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	2.26E+01	1.06E-01	NA	NA	NA	NA	1.13E-04	3.76E+01	4.23E-03	1.00E+00	3.06E-02	3.60E+00	4.70E+00	1.10E-01	5.08E+00	7.10E-01
UMH1-400 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.23E+01	5.76E-02	NA	NA	NA	NA	1.13E-04	2.04E+01	2.30E-03	1.00E+00	3.06E-02	1.96E+00	4.70E+00	1.10E-01	5.08E+00	3.86E-01
UMH1-400+12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.33E+01	6.26E-02	NA	NA	NA	NA	1.13E-04	2.22E+01	2.50E-03	1.00E+00	3.06E-02	2.13E+00	4.70E+00	1.10E-01	5.08E+00	4.19E-01
UMH1-450 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.50E+01	7.01E-02	NA	NA	NA	NA	1.13E-04	2.49E+01	2.80E-03	1.00E+00	3.06E-02	2.38E+00	4.70E+00	1.10E-01	5.08E+00	4.70E-01
UMH1-450+12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.81E+01	8.51E-02	NA	NA	NA	NA	1.13E-04	3.02E+01	3.40E-03	1.00E+00	3.06E-02	2.89E+00	4.70E+00	1.10E-01	5.08E+00	5.70E-01
UMH1-50 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.40E+01	6.56E-02	NA	NA	NA	NA	1.13E-04	2.33E+01	2.62E-03	1.00E+00	3.06E-02	2.23E+00	4.70E+00	1.10E-01	5.08E+00	4.40E-01
UMH1-Comp (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	7.83E+01	3.67E-01	NA	NA	NA	NA	1.13E-04	1.30E+02	1.47E-02	1.00E+00	3.06E-02	1.25E+01	4.70E+00	1.10E-01	5.08E+00	2.46E+00
UMH2-00 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	3.00E+02	1.41E+00	NA	NA	NA	NA	1.13E-04	4.99E+02	5.61E-02	1.00E+00	3.06E-02	4.78E+01	4.70E+00	1.10E-01	5.08E+00	9.41E+00

TABLE C-8A: ARSENIC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 8 - MIKE HORSE MINE WASTE PILES (Continued)
Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)
calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 1.73

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Meadow Vole (Small Herbivorous Mammal - Terrestrial)																							
UMH2-00+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	2.79E+01	1.31E-01	NA	NA	NA	NA	1.13E-04	4.65E+01	5.23E-03	1.00E+00	3.06E-02	4.45E+00	4.70E+00	1.10E-01	5.08E+00	8.78E-01
UMH2-100 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	2.07E+02	9.68E-01	NA	NA	NA	NA	1.13E-04	3.44E+02	3.87E-02	1.00E+00	3.06E-02	3.29E+01	4.70E+00	1.10E-01	5.08E+00	6.48E+00
UMH2-100+35 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	2.13E+01	1.00E-01	NA	NA	NA	NA	1.13E-04	3.55E+01	4.00E-03	1.00E+00	3.06E-02	3.40E+00	4.70E+00	1.10E-01	5.08E+00	6.70E-01
UMH2-150 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.07E+02	5.01E-01	NA	NA	NA	NA	1.13E-04	1.78E+02	2.00E-02	1.00E+00	3.06E-02	1.70E+01	4.70E+00	1.10E-01	5.08E+00	3.35E+00
UMH2-150+60 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	6.10E+00	2.86E-02	NA	NA	NA	NA	1.13E-04	1.02E+01	1.14E-03	1.00E+00	3.06E-02	9.72E-01	4.70E+00	1.10E-01	5.08E+00	1.92E-01
UMH2-200 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.50E+02	7.02E-01	NA	NA	NA	NA	1.13E-04	2.49E+02	2.80E-02	1.00E+00	3.06E-02	2.39E+01	4.70E+00	1.10E-01	5.08E+00	4.70E+00
UMH2-200+85 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	9.53E+00	4.47E-02	NA	NA	NA	NA	1.13E-04	1.59E+01	1.78E-03	1.00E+00	3.06E-02	1.52E+00	4.70E+00	1.10E-01	5.08E+00	2.99E-01
UMH2-250 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.63E+02	7.64E-01	NA	NA	NA	NA	1.13E-04	2.71E+02	3.05E-02	1.00E+00	3.06E-02	2.60E+01	4.70E+00	1.10E-01	5.08E+00	5.12E+00
UMH2-250+75 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	3.09E+01	1.45E-01	NA	NA	NA	NA	1.13E-04	5.15E+01	5.79E-03	1.00E+00	3.06E-02	4.93E+00	4.70E+00	1.10E-01	5.08E+00	9.72E-01
UMH2-300 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	3.15E+01	1.48E-01	NA	NA	NA	NA	1.13E-04	5.24E+01	5.90E-03	1.00E+00	3.06E-02	5.02E+00	4.70E+00	1.10E-01	5.08E+00	9.89E-01
UMH2-300+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	2.18E+01	1.02E-01	NA	NA	NA	NA	1.13E-04	3.62E+01	4.07E-03	1.00E+00	3.06E-02	3.47E+00	4.70E+00	1.10E-01	5.08E+00	6.83E-01
UMH2-350 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	2.40E+01	1.12E-01	NA	NA	NA	NA	1.13E-04	3.99E+01	4.49E-03	1.00E+00	3.06E-02	3.82E+00	4.70E+00	1.10E-01	5.08E+00	7.53E-01
UMH2-350+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.88E+01	8.79E-02	NA	NA	NA	NA	1.13E-04	3.12E+01	3.51E-03	1.00E+00	3.06E-02	2.99E+00	4.70E+00	1.10E-01	5.08E+00	5.89E-01
UMH2-400 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	3.13E+01	1.47E-01	NA	NA	NA	NA	1.13E-04	5.21E+01	5.86E-03	1.00E+00	3.06E-02	4.99E+00	4.70E+00	1.10E-01	5.08E+00	9.83E-01
UMH2-400+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UMH2-450 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	2.79E+01	1.31E-01	NA	NA	NA	NA	1.13E-04	4.64E+01	5.22E-03	1.00E+00	3.06E-02	4.44E+00	4.70E+00	1.10E-01	5.08E+00	8.75E-01
UMH2-450+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	5.35E+00	2.51E-02	NA	NA	NA	NA	1.13E-04	8.90E+00	1.00E-03	1.00E+00	3.06E-02	8.52E-01	4.70E+00	1.10E-01	5.08E+00	1.68E-01
UMH2-50 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	2.76E+01	1.29E-01	NA	NA	NA	NA	1.13E-04	4.59E+01	5.16E-03	1.00E+00	3.06E-02	4.39E+00	4.70E+00	1.10E-01	5.08E+00	8.66E-01
UMH2-50+25b (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	2.86E+01	1.34E-01	NA	NA	NA	NA	1.13E-04	4.76E+01	5.36E-03	1.00E+00	3.06E-02	4.56E+00	4.70E+00	1.10E-01	5.08E+00	8.99E-01
UMH2-500 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	2.03E+02	9.53E-01	NA	NA	NA	NA	1.13E-04	3.38E+02	3.81E-02	1.00E+00	3.06E-02	3.24E+01	4.70E+00	1.10E-01	5.08E+00	6.38E+00
UMH2-500+75 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.97E+01	9.24E-02	NA	NA	NA	NA	1.13E-04	3.28E+01	3.69E-03	1.00E+00	3.06E-02	3.14E+00	4.70E+00	1.10E-01	5.08E+00	6.19E-01
UMH2-550 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	2.65E+02	1.24E+00	NA	NA	NA	NA	1.13E-04	4.40E+02	4.95E-02	1.00E+00	3.06E-02	4.22E+01	4.70E+00	1.10E-01	5.08E+00	8.31E+00
UMH2-550+75 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.13E+01	5.28E-02	NA	NA	NA	NA	1.13E-04	1.87E+01	2.11E-03	1.00E+00	3.06E-02	1.79E+00	4.70E+00	1.10E-01	5.08E+00	3.54E-01
UMH2-600 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	8.83E+01	4.14E-01	NA	NA	NA	NA	1.13E-04	1.47E+02	1.65E-02	1.00E+00	3.06E-02	1.41E+01	4.70E+00	1.10E-01	5.08E+00	2.77E+00
UMH2-600+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	2.04E+01	9.55E-02	NA	NA	NA	NA	1.13E-04	3.39E+01	3.82E-03	1.00E+00	3.06E-02	3.25E+00	4.70E+00	1.10E-01	5.08E+00	6.40E-01
UMH2-650 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	9.40E+01	4.41E-01	NA	NA	NA	NA	1.13E-04	1.56E+02	1.76E-02	1.00E+00	3.06E-02	1.50E+01	4.70E+00	1.10E-01	5.08E+00	2.95E+00
UMH2-650+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.74E+01	8.16E-02	NA	NA	NA	NA	1.13E-04	2.90E+01	3.26E-03	1.00E+00	3.06E-02	2.77E+00	4.70E+00	1.10E-01	5.08E+00	5.47E-01
UMH2-Comp 1 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.58E+02	7.43E-01	NA	NA	NA	NA	1.13E-04	2.64E+02	2.97E-02	1.00E+00	3.06E-02	2.52E+01	4.70E+00	1.10E-01	5.08E+00	4.97E+00
UMH2-Comp 2 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	2.14E+02	1.00E+00	NA	NA	NA	NA	1.13E-04	3.56E+02	4.01E-02	1.00E+00	3.06E-02	3.41E+01	4.70E+00	1.10E-01	5.08E+00	6.72E+00
Waste Area 3																						**Maximum HQ (Waste Areas 1 and 2)**	**9.41E+00**
UMH3-00 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	6.04E+00	2.83E-02	NA	NA	NA	NA	1.13E-04	1.00E+01	1.13E-03	1.00E+00	3.06E-02	9.62E-01	4.70E+00	1.10E-01	5.08E+00	1.90E-01
UMH3-100 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	2.26E+01	1.06E-01	NA	NA	NA	NA	1.13E-04	3.76E+01	4.23E-03	1.00E+00	3.06E-02	3.60E+00	4.70E+00	1.10E-01	5.08E+00	7.10E-01
UMH3-150 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.89E+01	8.86E-02	NA	NA	NA	NA	1.13E-04	3.15E+01	3.54E-03	1.00E+00	3.06E-02	3.01E+00	4.70E+00	1.10E-01	5.08E+00	5.94E-01
UMH3-200 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	7.32E+01	3.43E-01	NA	NA	NA	NA	1.13E-04	1.22E+02	1.37E-02	1.00E+00	3.06E-02	1.17E+01	4.70E+00	1.10E-01	5.08E+00	2.30E+00
UMH3-250 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	2.73E+02	1.28E+00	NA	NA	NA	NA	1.13E-04	4.55E+02	5.12E-02	1.00E+00	3.06E-02	4.36E+01	4.70E+00	1.10E-01	5.08E+00	8.59E+00
UMH3-300 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	5.40E+00	2.53E-02	NA	NA	NA	NA	1.13E-04	8.99E+00	1.01E-03	1.00E+00	3.06E-02	8.61E-01	4.70E+00	1.10E-01	5.08E+00	1.70E-01
UMH3-350 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	3.22E+02	1.51E+00	NA	NA	NA	NA	1.13E-04	5.35E+02	6.02E-02	1.00E+00	3.06E-02	5.12E+01	4.70E+00	1.10E-01	5.08E+00	1.01E+01
UMH3-350+75 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.26E+01	5.89E-02	NA	NA	NA	NA	1.13E-04	2.09E+01	2.35E-03	1.00E+00	3.06E-02	2.00E+00	4.70E+00	1.10E-01	5.08E+00	3.94E-01
UMH3-400 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.56E+02	7.33E-01	NA	NA	NA	NA	1.13E-04	2.60E+02	2.93E-02	1.00E+00	3.06E-02	2.49E+01	4.70E+00	1.10E-01	5.08E+00	4.91E+00
UMH3-400+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.69E+01	7.92E-02	NA	NA	NA	NA	1.13E-04	2.81E+01	3.16E-03	1.00E+00	3.06E-02	2.69E+00	4.70E+00	1.10E-01	5.08E+00	5.30E-01
UMH3-450 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.15E+01	5.41E-02	NA	NA	NA	NA	1.13E-04	1.92E+01	2.16E-03	1.00E+00	3.06E-02	1.84E+00	4.70E+00	1.10E-01	5.08E+00	3.62E-01
UMH3-50 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	6.82E+00	3.20E-02	NA	NA	NA	NA	1.13E-04	1.14E+01	1.28E-03	1.00E+00	3.06E-02	1.09E+00	4.70E+00	1.10E-01	5.08E+00	2.14E-01
UMH3-50+50 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	5.85E+00	2.74E-02	NA	NA	NA	NA	1.13E-04	9.74E+00	1.10E-03	1.00E+00	3.06E-02	9.32E-01	4.70E+00	1.10E-01	5.08E+00	1.84E-01
UMH3-500 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	4.32E+01	2.02E-01	NA	NA	NA	NA	1.13E-04	7.19E+01	8.09E-03	1.00E+00	3.06E-02	6.88E+00	4.70E+00	1.10E-01	5.08E+00	1.36E+00
UMH3-550 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	2.51E+02	1.18E+00	NA	NA	NA	NA	1.13E-04	4.18E+02	4.71E-02	1.00E+00	3.06E-02	4.01E+01	4.70E+00	1.10E-01	5.08E+00	7.90E+00
UMH3-600 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	5.44E+02	2.55E+00	NA	NA	NA	NA	1.13E-04	9.04E+02	1.02E-01	1.00E+00	3.06E-02	8.66E+01	4.70E+00	1.10E-01	5.08E+00	1.71E+01
UMH3-650 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	2.41E+02	1.13E+00	NA	NA	NA	NA	1.13E-04	4.01E+02	4.52E-02	1.00E+00	3.06E-02	3.84E+01	4.70E+00	1.10E-01	5.08E+00	7.57E+00
UMH3-700 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	2.91E+02	1.37E+00	NA	NA	NA	NA	1.13E-04	4.85E+02	5.45E-02	1.00E+00	3.06E-02	4.64E+01	4.70E+00	1.10E-01	5.08E+00	9.14E+00
UMH3-750 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	3.31E+01	1.55E-01	NA	NA	NA	NA	1.13E-04	5.51E+01	6.20E-03	1.00E+00	3.06E-02	5.28E+00	4.70E+00	1.10E-01	5.08E+00	1.04E+00
UMH3-800 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	6.37E+01	2.99E-01	NA	NA	NA	NA	1.13E-04	1.06E+02	1.19E-02	1.00E+00	3.06E-02	1.02E+01	4.70E+00	1.10E-01	5.08E+00	2.00E+00
UMH3-Comp 1 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.19E+01	5.56E-02	NA	NA	NA	NA	1.13E-04	1.97E+01	2.22E-03	1.00E+00	3.06E-02	1.89E+00	4.70E+00	1.10E-01	5.08E+00	3.73E-01
UMH3-Comp 2 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.31E+02	6.14E-01	NA	NA	NA	NA	1.13E-04	2.18E+02	2.45E-02	1.00E+00	3.06E-02	2.09E+01	4.70E+00	1.10E-01	5.08E+00	4.11E+00
UMH3-Comp 3 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	3.97E+02	1.86E+00	NA	NA	NA	NA	1.13E-04	6.61E+02	7.43E-02	1.00E+00	3.06E-02	6.33E+01	4.70E+00	1.10E-01	5.08E+00	1.25E+01
																						Maximum HQ (Waste Area 3)	**1.71E+01**

TABLE C-8A: ARSENIC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 8 - MIKE HORSE MINE WASTE PILES (Continued)
Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)
calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **1.73**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
White-Tailed Deer (Large Herbivorous Mammal - Terrestrial)																							
Reference Sites																							
BCBG-1 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	2.86E-02	1.53E+01	4.39E-01	9.68E-03	1.35E+02	3.15E-05	4.70E+00	1.10E-01	3.07E+00	1.03E-05
MHBG-201 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	2.86E-02	1.56E+01	4.46E-01	9.68E-03	1.35E+02	3.19E-05	4.70E+00	1.10E-01	3.07E+00	1.04E-05
MHBG-202 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	2.86E-02	1.52E+01	4.35E-01	9.68E-03	1.35E+02	3.12E-05	4.70E+00	1.10E-01	3.07E+00	1.02E-05
Mike Horse Creek Channel Area Deposits																						**Minimum HQ (Reference Site)**	**1.02E-05**
AMHR-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	5.37E+00	7.68E+00	NA	NA	NA	NA	2.86E-02	8.93E+00	2.56E-01	9.68E-03	1.35E+02	5.69E-04	4.70E+00	1.10E-01	3.07E+00	1.86E-04
AMHR-200 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	5.28E+00	7.56E+00	NA	NA	NA	NA	2.86E-02	8.79E+00	2.52E-01	9.68E-03	1.35E+02	5.60E-04	4.70E+00	1.10E-01	3.07E+00	1.83E-04
AMHR-400 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.13E+01	1.61E+01	NA	NA	NA	NA	2.86E-02	1.87E+01	5.36E-01	9.68E-03	1.35E+02	1.19E-03	4.70E+00	1.10E-01	3.07E+00	3.89E-04
AMHR-600 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.15E+01	1.64E+01	NA	NA	NA	NA	2.86E-02	1.91E+01	5.46E-01	9.68E-03	1.35E+02	1.22E-03	4.70E+00	1.10E-01	3.07E+00	3.96E-04
MHCS-00-E25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	8.62E+01	1.23E+02	NA	NA	NA	NA	2.86E-02	1.43E+02	4.11E+00	9.68E-03	1.35E+02	9.14E-03	4.70E+00	1.10E-01	3.07E+00	2.98E-03
MHCS-0-W25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	9.46E+00	1.35E+01	NA	NA	NA	NA	2.86E-02	1.57E+01	4.51E-01	9.68E-03	1.35E+02	1.00E-03	4.70E+00	1.10E-01	3.07E+00	3.27E-04
MHCS-0-W5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	2.46E+01	3.53E+01	NA	NA	NA	NA	2.86E-02	4.10E+01	1.17E+00	9.68E-03	1.35E+02	2.61E-03	4.70E+00	1.10E-01	3.07E+00	8.52E-04
MHCS-100-E25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	2.47E+02	3.54E+02	NA	NA	NA	NA	2.86E-02	4.12E+02	1.18E+01	9.68E-03	1.35E+02	2.62E-02	4.70E+00	1.10E-01	3.07E+00	8.55E-03
MHCS-100-W1 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.16E+02	1.65E+02	NA	NA	NA	NA	2.86E-02	1.92E+02	5.50E+00	9.68E-03	1.35E+02	1.23E-02	4.70E+00	1.10E-01	3.07E+00	3.99E-03
MHCS-100-W25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	8.67E+00	1.24E+01	NA	NA	NA	NA	2.86E-02	1.44E+01	4.13E-01	9.68E-03	1.35E+02	9.19E-04	4.70E+00	1.10E-01	3.07E+00	3.00E-04
MHCS-200-E10 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	6.76E+01	9.68E+01	NA	NA	NA	NA	2.86E-02	1.13E+02	3.22E+00	9.68E-03	1.35E+02	7.17E-03	4.70E+00	1.10E-01	3.07E+00	2.34E-03
MHCS-200-E25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.36E+01	1.94E+01	NA	NA	NA	NA	2.86E-02	2.26E+01	6.47E-01	9.68E-03	1.35E+02	1.44E-03	4.70E+00	1.10E-01	3.07E+00	4.70E-04
MHCS-200-W10 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	7.66E+00	1.10E+01	NA	NA	NA	NA	2.86E-02	1.28E+01	3.65E-01	9.68E-03	1.35E+02	8.13E-04	4.70E+00	1.10E-01	3.07E+00	2.65E-04
MHCS-525-E5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.04E+02	1.49E+02	NA	NA	NA	NA	2.86E-02	1.73E+02	4.95E+00	9.68E-03	1.35E+02	1.10E-02	4.70E+00	1.10E-01	3.07E+00	3.60E-03
MHCS-525-W15 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.47E+02	2.10E+02	NA	NA	NA	NA	2.86E-02	2.44E+02	6.99E+00	9.68E-03	1.35E+02	1.56E-02	4.70E+00	1.10E-01	3.07E+00	5.07E-03
MHCS-600-E10 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	8.14E+01	1.17E+02	NA	NA	NA	NA	2.86E-02	1.35E+02	3.88E+00	9.68E-03	1.35E+02	8.63E-03	4.70E+00	1.10E-01	3.07E+00	2.81E-03
MHCS-600-W10 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.29E+02	1.85E+02	NA	NA	NA	NA	2.86E-02	2.15E+02	6.16E+00	9.68E-03	1.35E+02	1.37E-02	4.70E+00	1.10E-01	3.07E+00	4.47E-03
MHCS-700-E10 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	8.85E+01	1.27E+02	NA	NA	NA	NA	2.86E-02	1.47E+02	4.22E+00	9.68E-03	1.35E+02	9.39E-03	4.70E+00	1.10E-01	3.07E+00	3.06E-03
MHCS-700-E25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.95E+01	2.80E+01	NA	NA	NA	NA	2.86E-02	3.25E+01	9.31E-01	9.68E-03	1.35E+02	2.07E-03	4.70E+00	1.10E-01	3.07E+00	6.76E-04
MHCS-700-W10 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	9.03E+01	1.29E+02	NA	NA	NA	NA	2.86E-02	1.50E+02	4.30E+00	9.68E-03	1.35E+02	9.58E-03	4.70E+00	1.10E-01	3.07E+00	3.12E-03
MHCS-800-E15 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.11E+01	1.59E+01	NA	NA	NA	NA	2.86E-02	1.85E+01	5.30E-01	9.68E-03	1.35E+02	1.18E-03	4.70E+00	1.10E-01	3.07E+00	3.84E-04
MHCS-800-E5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	7.80E+01	1.12E+02	NA	NA	NA	NA	2.86E-02	1.30E+02	3.72E+00	9.68E-03	1.35E+02	8.27E-03	4.70E+00	1.10E-01	3.07E+00	2.70E-03
MHCS-800-W5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	5.12E+01	7.32E+01	NA	NA	NA	NA	2.86E-02	8.51E+01	2.44E+00	9.68E-03	1.35E+02	5.43E-03	4.70E+00	1.10E-01	3.07E+00	1.77E-03
MHCS-900-E15 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.33E+01	1.90E+01	NA	NA	NA	NA	2.86E-02	2.21E+01	6.31E-01	9.68E-03	1.35E+02	1.41E-03	4.70E+00	1.10E-01	3.07E+00	4.58E-04
MHCS-900-E5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.04E+02	1.49E+02	NA	NA	NA	NA	2.86E-02	1.73E+02	4.96E+00	9.68E-03	1.35E+02	1.10E-02	4.70E+00	1.10E-01	3.07E+00	3.60E-03
MHCS-900-W5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	6.03E+01	8.64E+01	NA	NA	NA	NA	2.86E-02	1.00E+02	2.87E+00	9.68E-03	1.35E+02	6.40E-03	4.70E+00	1.10E-01	3.07E+00	2.09E-03
MHCS-1000-E10 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	3.03E+01	4.34E+01	NA	NA	NA	NA	2.86E-02	5.04E+01	1.44E+00	9.68E-03	1.35E+02	3.21E-03	4.70E+00	1.10E-01	3.07E+00	1.05E-03
MHCS-1000-W5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.13E+02	1.62E+02	NA	NA	NA	NA	2.86E-02	1.89E+02	5.41E+00	9.68E-03	1.35E+02	1.20E-02	4.70E+00	1.10E-01	3.07E+00	3.92E-03
MHCS-1100-E10 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	3.45E+01	4.94E+01	NA	NA	NA	NA	2.86E-02	5.74E+01	1.64E+00	9.68E-03	1.35E+02	3.66E-03	4.70E+00	1.10E-01	3.07E+00	1.19E-03
MHCS-1100-E35 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.24E+01	1.78E+01	NA	NA	NA	NA	2.86E-02	2.07E+01	5.93E-01	9.68E-03	1.35E+02	1.32E-03	4.70E+00	1.10E-01	3.07E+00	4.30E-04
MHCS-1200-E15 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	2.96E+01	4.23E+01	NA	NA	NA	NA	2.86E-02	4.92E+01	1.41E+00	9.68E-03	1.35E+02	3.14E-03	4.70E+00	1.10E-01	3.07E+00	1.02E-03
MHCS-1200-E30 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	2.11E+01	3.02E+01	NA	NA	NA	NA	2.86E-02	3.50E+01	1.00E+00	9.68E-03	1.35E+02	2.23E-03	4.70E+00	1.10E-01	3.07E+00	7.28E-04
MHCS-1300-E20 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	5.23E+01	7.49E+01	NA	NA	NA	NA	2.86E-02	8.70E+01	2.49E+00	9.68E-03	1.35E+02	5.55E-03	4.70E+00	1.10E-01	3.07E+00	1.81E-03
MHCS-1300-E35 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	9.95E+00	1.42E+01	NA	NA	NA	NA	2.86E-02	1.66E+01	4.74E-01	9.68E-03	1.35E+02	1.06E-03	4.70E+00	1.10E-01	3.07E+00	3.44E-04
Waste Areas 1 and 2																						**Maximum HQ (Mike Horse Creek Channel Area Deposits)**	**8.55E-03**
UMH1-00 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.92E+01	2.75E+01	NA	NA	NA	NA	2.86E-02	3.19E+01	9.14E-01	9.68E-03	1.35E+02	2.03E-03	4.70E+00	1.10E-01	3.07E+00	6.63E-04
UMH1-100 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	4.83E+01	6.92E+01	NA	NA	NA	NA	2.86E-02	8.04E+01	2.30E+00	9.68E-03	1.35E+02	5.12E-03	4.70E+00	1.10E-01	3.07E+00	1.67E-03
UMH1-150 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.45E+01	2.08E+01	NA	NA	NA	NA	2.86E-02	2.42E+01	6.92E-01	9.68E-03	1.35E+02	1.54E-03	4.70E+00	1.10E-01	3.07E+00	5.02E-04
UMH1-200 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.84E+01	2.63E+01	NA	NA	NA	NA	2.86E-02	3.06E+01	8.76E-01	9.68E-03	1.35E+02	1.95E-03	4.70E+00	1.10E-01	3.07E+00	6.36E-04
UMH1-250 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	5.58E+01	7.99E+01	NA	NA	NA	NA	2.86E-02	9.28E+01	2.66E+00	9.68E-03	1.35E+02	5.92E-03	4.70E+00	1.10E-01	3.07E+00	1.93E-03
UMH1-250+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	2.25E+01	3.23E+01	NA	NA	NA	NA	2.86E-02	3.75E+01	1.07E+00	9.68E-03	1.35E+02	2.39E-03	4.70E+00	1.10E-01	3.07E+00	7.79E-04
UMH1-300 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	6.04E+01	8.64E+01	NA	NA	NA	NA	2.86E-02	1.00E+02	2.88E+00	9.68E-03	1.35E+02	6.40E-03	4.70E+00	1.10E-01	3.07E+00	2.09E-03
UMH1-300+14 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.95E+01	2.80E+01	NA	NA	NA	NA	2.86E-02	3.25E+01	9.31E-01	9.68E-03	1.35E+02	2.07E-03	4.70E+00	1.10E-01	3.07E+00	6.75E-04
UMH1-350 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	7.47E+01	1.07E+02	NA	NA	NA	NA	2.86E-02	1.24E+02	3.56E+00	9.68E-03	1.35E+02	7.92E-03	4.70E+00	1.10E-01	3.07E+00	2.58E-03
UMH1-350+12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	2.26E+01	3.24E+01	NA	NA	NA	NA	2.86E-02	3.76E+01	1.08E+00	9.68E-03	1.35E+02	2.40E-03	4.70E+00	1.10E-01	3.07E+00	7.81E-04
UMH1-400 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.23E+01	1.76E+01	NA	NA	NA	NA	2.86E-02	2.04E+01	5.85E-01	9.68E-03	1.35E+02	1.30E-03	4.70E+00	1.10E-01	3.07E+00	4.25E-04
UMH1-400+12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.33E+01	1.91E+01	NA	NA	NA	NA	2.86E-02	2.22E+01	6.36E-01	9.68E-03	1.35E+02	1.42E-03	4.70E+00	1.10E-01	3.07E+00	4.61E-04
UMH1-450 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.50E+01	2.14E+01	NA	NA	NA	NA	2.86E-02	2.49E+01	7.13E-01	9.68E-03	1.35E+02	1.59E-03	4.70E+00	1.10E-01	3.07E+00	5.17E-04
UMH1-450+12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.81E+01	2.60E+01	NA	NA	NA	NA	2.86E-02	3.02E+01	8.64E-01	9.68E-03	1.35E+02	1.92E-03	4.70E+00	1.10E-01	3.07E+00	6.27E-04
UMH1-50 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.40E+01	2.00E+01	NA	NA	NA	NA	2.86E-02	2.33E+01	6.67E-01	9.68E-03	1.35E+02	1.48E-03	4.70E+00	1.10E-01	3.07E+00	4.84E-04
UMH1-Comp (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	7.83E+01	1.12E+02	NA	NA	NA	NA	2.86E-02	1.30E+02	3.73E+00	9.68E-03	1.35E+02	8.30E-03	4.70E+00	1.10E-01	3.07E+00	2.71E-03
UMH2-00 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	3.00E+02	4.29E+02	NA	NA	NA	NA	2.86E-02	4.99E+02	1.43E+01	9.68E-03	1.35E+02	3.18E-02	4.70E+00	1.10E-01	3.07E+00	1.04E-02

TABLE C-8A: ARSENIC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 8 - MIKE HORSE MINE WASTE PILES (Continued)
Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)
calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **1.73**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
White-Tailed Deer (Large Herbivorous Mammal - Terrestrial)																							
UMH2-00+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	2.79E+01	4.00E+01	NA	NA	NA	NA	2.86E-02	4.65E+01	1.33E+00	9.68E-03	1.35E+02	2.96E-03	4.70E+00	1.10E-01	3.07E+00	9.66E-04
UMH2-100 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	2.07E+02	2.96E+02	NA	NA	NA	NA	2.86E-02	3.44E+02	9.84E+00	9.68E-03	1.35E+02	2.19E-02	4.70E+00	1.10E-01	3.07E+00	7.14E-03
UMH2-100+35 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	2.13E+01	3.05E+01	NA	NA	NA	NA	2.86E-02	3.55E+01	1.02E+00	9.68E-03	1.35E+02	2.26E-03	4.70E+00	1.10E-01	3.07E+00	7.38E-04
UMH2-150 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.07E+02	1.53E+02	NA	NA	NA	NA	2.86E-02	1.78E+02	5.09E+00	9.68E-03	1.35E+02	1.13E-02	4.70E+00	1.10E-01	3.07E+00	3.69E-03
UMH2-150+60 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	6.10E+00	8.73E+00	NA	NA	NA	NA	2.86E-02	1.02E+01	2.91E-01	9.68E-03	1.35E+02	6.47E-04	4.70E+00	1.10E-01	3.07E+00	2.11E-04
UMH2-200 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.50E+02	2.14E+02	NA	NA	NA	NA	2.86E-02	2.49E+02	7.14E+00	9.68E-03	1.35E+02	1.59E-02	4.70E+00	1.10E-01	3.07E+00	5.18E-03
UMH2-200+85 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	9.53E+00	1.36E+01	NA	NA	NA	NA	2.86E-02	1.59E+01	4.54E-01	9.68E-03	1.35E+02	1.01E-03	4.70E+00	1.10E-01	3.07E+00	3.29E-04
UMH2-250 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.63E+02	2.33E+02	NA	NA	NA	NA	2.86E-02	2.71E+02	7.77E+00	9.68E-03	1.35E+02	1.73E-02	4.70E+00	1.10E-01	3.07E+00	5.64E-03
UMH2-250+75 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	3.09E+01	4.43E+01	NA	NA	NA	NA	2.86E-02	5.15E+01	1.47E+00	9.68E-03	1.35E+02	3.28E-03	4.70E+00	1.10E-01	3.07E+00	1.07E-03
UMH2-300 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	3.15E+01	4.51E+01	NA	NA	NA	NA	2.86E-02	5.24E+01	1.50E+00	9.68E-03	1.35E+02	3.34E-03	4.70E+00	1.10E-01	3.07E+00	1.09E-03
UMH2-300+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	2.18E+01	3.11E+01	NA	NA	NA	NA	2.86E-02	3.62E+01	1.04E+00	9.68E-03	1.35E+02	2.31E-03	4.70E+00	1.10E-01	3.07E+00	7.52E-04
UMH2-350 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	2.40E+01	3.43E+01	NA	NA	NA	NA	2.86E-02	3.99E+01	1.14E+00	9.68E-03	1.35E+02	2.54E-03	4.70E+00	1.10E-01	3.07E+00	8.29E-04
UMH2-350+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.88E+01	2.68E+01	NA	NA	NA	NA	2.86E-02	3.12E+01	8.93E-01	9.68E-03	1.35E+02	1.99E-03	4.70E+00	1.10E-01	3.07E+00	6.48E-04
UMH2-400 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	3.13E+01	4.48E+01	NA	NA	NA	NA	2.86E-02	5.21E+01	1.49E+00	9.68E-03	1.35E+02	3.32E-03	4.70E+00	1.10E-01	3.07E+00	1.08E-03
UMH2-400+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UMH2-450 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	2.79E+01	3.99E+01	NA	NA	NA	NA	2.86E-02	4.64E+01	1.33E+00	9.68E-03	1.35E+02	2.95E-03	4.70E+00	1.10E-01	3.07E+00	9.63E-04
UMH2-450+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	5.35E+00	7.66E+00	NA	NA	NA	NA	2.86E-02	8.90E+00	2.55E-01	9.68E-03	1.35E+02	5.67E-04	4.70E+00	1.10E-01	3.07E+00	1.85E-04
UMH2-50 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	2.76E+01	3.95E+01	NA	NA	NA	NA	2.86E-02	4.59E+01	1.31E+00	9.68E-03	1.35E+02	2.92E-03	4.70E+00	1.10E-01	3.07E+00	9.53E-04
UMH2-50+25b (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	2.86E+01	4.10E+01	NA	NA	NA	NA	2.86E-02	4.76E+01	1.36E+00	9.68E-03	1.35E+02	3.04E-03	4.70E+00	1.10E-01	3.07E+00	9.90E-04
UMH2-500 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	2.03E+02	2.91E+02	NA	NA	NA	NA	2.86E-02	3.38E+02	9.68E+00	9.68E-03	1.35E+02	2.16E-02	4.70E+00	1.10E-01	3.07E+00	7.03E-03
UMH2-500+75 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.97E+01	2.82E+01	NA	NA	NA	NA	2.86E-02	3.28E+01	9.39E-01	9.68E-03	1.35E+02	2.09E-03	4.70E+00	1.10E-01	3.07E+00	6.82E-04
UMH2-550 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	2.65E+02	3.79E+02	NA	NA	NA	NA	2.86E-02	4.40E+02	1.26E+01	9.68E-03	1.35E+02	2.81E-02	4.70E+00	1.10E-01	3.07E+00	9.15E-03
UMH2-550+75 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.13E+01	1.61E+01	NA	NA	NA	NA	2.86E-02	1.87E+01	5.37E-01	9.68E-03	1.35E+02	1.19E-03	4.70E+00	1.10E-01	3.07E+00	3.89E-04
UMH2-600 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	8.83E+01	1.26E+02	NA	NA	NA	NA	2.86E-02	1.47E+02	4.20E+00	9.68E-03	1.35E+02	9.36E-03	4.70E+00	1.10E-01	3.07E+00	3.05E-03
UMH2-600+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	2.04E+01	2.92E+01	NA	NA	NA	NA	2.86E-02	3.39E+01	9.71E-01	9.68E-03	1.35E+02	2.16E-03	4.70E+00	1.10E-01	3.07E+00	7.04E-04
UMH2-650 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	9.40E+01	1.35E+02	NA	NA	NA	NA	2.86E-02	1.56E+02	4.48E+00	9.68E-03	1.35E+02	9.97E-03	4.70E+00	1.10E-01	3.07E+00	3.25E-03
UMH2-650+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.74E+01	2.49E+01	NA	NA	NA	NA	2.86E-02	2.90E+01	8.30E-01	9.68E-03	1.35E+02	1.85E-03	4.70E+00	1.10E-01	3.07E+00	6.02E-04
UMH2-Comp 1 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.58E+02	2.27E+02	NA	NA	NA	NA	2.86E-02	2.64E+02	7.55E+00	9.68E-03	1.35E+02	1.68E-02	4.70E+00	1.10E-01	3.07E+00	5.48E-03
UMH2-Comp 2 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	2.14E+02	3.06E+02	NA	NA	NA	NA	2.86E-02	3.56E+02	1.02E+01	9.68E-03	1.35E+02	2.27E-02	4.70E+00	1.10E-01	3.07E+00	7.40E-03
Waste Area 3																						**Maximum HQ (Waste Areas 1 and 2)**	**1.04E-02**
UMH3-00 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	6.04E+00	8.64E+00	NA	NA	NA	NA	2.86E-02	1.00E+01	2.88E-01	9.68E-03	1.35E+02	6.40E-04	4.70E+00	1.10E-01	3.07E+00	2.09E-04
UMH3-100 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	2.26E+01	3.24E+01	NA	NA	NA	NA	2.86E-02	3.76E+01	1.08E+00	9.68E-03	1.35E+02	2.40E-03	4.70E+00	1.10E-01	3.07E+00	7.82E-04
UMH3-150 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.89E+01	2.71E+01	NA	NA	NA	NA	2.86E-02	3.15E+01	9.01E-01	9.68E-03	1.35E+02	2.00E-03	4.70E+00	1.10E-01	3.07E+00	6.54E-04
UMH3-200 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	7.32E+01	1.05E+02	NA	NA	NA	NA	2.86E-02	1.22E+02	3.49E+00	9.68E-03	1.35E+02	7.76E-03	4.70E+00	1.10E-01	3.07E+00	2.53E-03
UMH3-250 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	2.73E+02	3.91E+02	NA	NA	NA	NA	2.86E-02	4.55E+02	1.30E+01	9.68E-03	1.35E+02	2.90E-02	4.70E+00	1.10E-01	3.07E+00	9.45E-03
UMH3-300 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	5.40E+00	7.73E+00	NA	NA	NA	NA	2.86E-02	8.99E+00	2.57E-01	9.68E-03	1.35E+02	5.73E-04	4.70E+00	1.10E-01	3.07E+00	1.87E-04
UMH3-350 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	3.22E+02	4.60E+02	NA	NA	NA	NA	2.86E-02	5.35E+02	1.53E+01	9.68E-03	1.35E+02	3.41E-02	4.70E+00	1.10E-01	3.07E+00	1.11E-02
UMH3-350+75 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.26E+01	1.80E+01	NA	NA	NA	NA	2.86E-02	2.09E+01	5.98E-01	9.68E-03	1.35E+02	1.33E-03	4.70E+00	1.10E-01	3.07E+00	4.34E-04
UMH3-400 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.56E+02	2.24E+02	NA	NA	NA	NA	2.86E-02	2.60E+02	7.45E+00	9.68E-03	1.35E+02	1.66E-02	4.70E+00	1.10E-01	3.07E+00	5.41E-03
UMH3-400+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.69E+01	2.42E+01	NA	NA	NA	NA	2.86E-02	2.81E+01	8.05E-01	9.68E-03	1.35E+02	1.79E-03	4.70E+00	1.10E-01	3.07E+00	5.84E-04
UMH3-450 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.15E+01	1.65E+01	NA	NA	NA	NA	2.86E-02	1.92E+01	5.49E-01	9.68E-03	1.35E+02	1.22E-03	4.70E+00	1.10E-01	3.07E+00	3.99E-04
UMH3-50 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	6.82E+00	9.77E+00	NA	NA	NA	NA	2.86E-02	1.14E+01	3.25E-01	9.68E-03	1.35E+02	7.23E-04	4.70E+00	1.10E-01	3.07E+00	2.36E-04
UMH3-50+50 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	5.85E+00	8.38E+00	NA	NA	NA	NA	2.86E-02	9.74E+00	2.79E-01	9.68E-03	1.35E+02	6.21E-04	4.70E+00	1.10E-01	3.07E+00	2.02E-04
UMH3-500 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	4.32E+01	6.18E+01	NA	NA	NA	NA	2.86E-02	7.19E+01	2.06E+00	9.68E-03	1.35E+02	4.58E-03	4.70E+00	1.10E-01	3.07E+00	1.49E-03
UMH3-550 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	2.51E+02	3.60E+02	NA	NA	NA	NA	2.86E-02	4.18E+02	1.20E+01	9.68E-03	1.35E+02	2.67E-02	4.70E+00	1.10E-01	3.07E+00	8.69E-03
UMH3-600 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	5.44E+02	7.78E+02	NA	NA	NA	NA	2.86E-02	9.04E+02	2.59E+01	9.68E-03	1.35E+02	5.76E-02	4.70E+00	1.10E-01	3.07E+00	1.88E-02
UMH3-650 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	2.41E+02	3.45E+02	NA	NA	NA	NA	2.86E-02	4.01E+02	1.15E+01	9.68E-03	1.35E+02	2.56E-02	4.70E+00	1.10E-01	3.07E+00	8.34E-03
UMH3-700 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	2.91E+02	4.17E+02	NA	NA	NA	NA	2.86E-02	4.85E+02	1.39E+01	9.68E-03	1.35E+02	3.09E-02	4.70E+00	1.10E-01	3.07E+00	1.01E-02
UMH3-750 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	3.31E+01	4.74E+01	NA	NA	NA	NA	2.86E-02	5.51E+01	1.58E+00	9.68E-03	1.35E+02	3.51E-03	4.70E+00	1.10E-01	3.07E+00	1.15E-03
UMH3-800 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	6.37E+01	9.12E+01	NA	NA	NA	NA	2.86E-02	1.06E+02	3.04E+00	9.68E-03	1.35E+02	6.76E-03	4.70E+00	1.10E-01	3.07E+00	2.20E-03
UMH3-Comp 1 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.19E+01	1.70E+01	NA	NA	NA	NA	2.86E-02	1.97E+01	5.65E-01	9.68E-03	1.35E+02	1.26E-03	4.70E+00	1.10E-01	3.07E+00	4.10E-04
UMH3-Comp 2 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.31E+02	1.88E+02	NA	NA	NA	NA	2.86E-02	2.18E+02	6.24E+00	9.68E-03	1.35E+02	1.39E-02	4.70E+00	1.10E-01	3.07E+00	4.53E-03
UMH3-Comp 3 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	3.97E+02	5.68E+02	NA	NA	NA	NA	2.86E-02	6.61E+02	1.89E+01	9.68E-03	1.35E+02	4.21E-02	4.70E+00	1.10E-01	3.07E+00	1.37E-02
																						Maximum HQ (Waste Area 3)	**1.88E-02**

TABLE C-8A: ARSENIC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 8 - MIKE HORSE MINE WASTE PILES (Continued)
Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)
calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **1.73**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Red Fox (Carnivorous Mammal - Terrestrial)																							
Reference Sites																							
BCBG-1 (0-6")	1.72E-01	1.72E-01	4.84E-01	7.42E+00	1.27E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.53E+01	7.36E-02	1.28E-03	4.54E+00	3.79E-04	4.70E+00	1.10E-01	3.76E+00	1.01E-04
MHBG-201 (0-6")	1.72E-01	1.72E-01	4.84E-01	7.53E+00	1.29E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.56E+01	7.47E-02	1.28E-03	4.54E+00	3.85E-04	4.70E+00	1.10E-01	3.76E+00	1.02E-04
MHBG-202 (0-6")	1.72E-01	1.72E-01	4.84E-01	7.35E+00	1.26E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.52E+01	7.30E-02	1.28E-03	4.54E+00	3.76E-04	4.70E+00	1.10E-01	3.76E+00	1.00E-04
Mike Horse Creek Channel Area Deposits																						**Minimum HQ (Reference Site)**	**1.00E-04**
AMHR-0 (0-6")	1.72E-01	1.72E-01	4.84E-01	4.32E+00	7.41E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	8.93E+00	4.29E-02	1.28E-03	4.54E+00	2.21E-04	4.70E+00	1.10E-01	3.76E+00	5.88E-05
AMHR-200 (0-6")	1.72E-01	1.72E-01	4.84E-01	4.25E+00	7.29E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	8.79E+00	4.22E-02	1.28E-03	4.54E+00	2.17E-04	4.70E+00	1.10E-01	3.76E+00	5.78E-05
AMHR-400 (0-6")	1.72E-01	1.72E-01	4.84E-01	9.06E+00	1.55E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.87E+01	9.00E-02	1.28E-03	4.54E+00	4.63E-04	4.70E+00	1.10E-01	3.76E+00	1.23E-04
AMHR-600 (0-6")	1.72E-01	1.72E-01	4.84E-01	9.23E+00	1.58E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.91E+01	9.16E-02	1.28E-03	4.54E+00	4.72E-04	4.70E+00	1.10E-01	3.76E+00	1.25E-04
MHCS-00-E25 (0-6")	1.72E-01	1.72E-01	4.84E-01	6.94E+01	1.19E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.43E+02	6.89E-01	1.28E-03	4.54E+00	3.55E-03	4.70E+00	1.10E-01	3.76E+00	9.44E-04
MHCS-0-W25 (0-6")	1.72E-01	1.72E-01	4.84E-01	7.61E+00	1.31E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.57E+01	7.56E-02	1.28E-03	4.54E+00	3.89E-04	4.70E+00	1.10E-01	3.76E+00	1.04E-04
MHCS-0-W5 (0-6")	1.72E-01	1.72E-01	4.84E-01	1.98E+01	3.40E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.10E+01	1.97E-01	1.28E-03	4.54E+00	1.01E-03	4.70E+00	1.10E-01	3.76E+00	2.70E-04
MHCS-100-E25 (0-6")	1.72E-01	1.72E-01	4.84E-01	1.99E+02	3.42E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.12E+02	1.98E+00	1.28E-03	4.54E+00	1.02E-02	4.70E+00	1.10E-01	3.76E+00	2.71E-03
MHCS-100-W1 (0-6")	1.72E-01	1.72E-01	4.84E-01	9.30E+01	1.60E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.92E+02	9.23E-01	1.28E-03	4.54E+00	4.75E-03	4.70E+00	1.10E-01	3.76E+00	1.26E-03
MHCS-100-W25 (0-6")	1.72E-01	1.72E-01	4.84E-01	6.98E+00	1.20E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.44E+01	6.93E-02	1.28E-03	4.54E+00	3.57E-04	4.70E+00	1.10E-01	3.76E+00	9.49E-05
MHCS-200-E10 (0-6")	1.72E-01	1.72E-01	4.84E-01	5.44E+01	9.34E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.13E+02	5.40E-01	1.28E-03	4.54E+00	2.78E-03	4.70E+00	1.10E-01	3.76E+00	7.40E-04
MHCS-200-E25 (0-6")	1.72E-01	1.72E-01	4.84E-01	1.09E+01	1.88E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.26E+01	1.09E-01	1.28E-03	4.54E+00	5.59E-04	4.70E+00	1.10E-01	3.76E+00	1.49E-04
MHCS-200-W10 (0-6")	1.72E-01	1.72E-01	4.84E-01	6.17E+00	1.06E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.28E+01	6.12E-02	1.28E-03	4.54E+00	3.15E-04	4.70E+00	1.10E-01	3.76E+00	8.39E-05
MHCS-525-E5 (0-6")	1.72E-01	1.72E-01	4.84E-01	8.37E+01	1.44E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.73E+02	8.31E-01	1.28E-03	4.54E+00	4.28E-03	4.70E+00	1.10E-01	3.76E+00	1.14E-03
MHCS-525-W15 (0-6")	1.72E-01	1.72E-01	4.84E-01	1.18E+02	2.02E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.44E+02	1.17E+00	1.28E-03	4.54E+00	6.04E-03	4.70E+00	1.10E-01	3.76E+00	1.61E-03
MHCS-600-E10 (0-6")	1.72E-01	1.72E-01	4.84E-01	6.55E+01	1.12E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.35E+02	6.50E-01	1.28E-03	4.54E+00	3.35E-03	4.70E+00	1.10E-01	3.76E+00	8.91E-04
MHCS-600-W10 (0-6")	1.72E-01	1.72E-01	4.84E-01	1.04E+02	1.79E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.15E+02	1.03E+00	1.28E-03	4.54E+00	5.33E-03	4.70E+00	1.10E-01	3.76E+00	1.42E-03
MHCS-700-E10 (0-6")	1.72E-01	1.72E-01	4.84E-01	7.12E+01	1.22E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.47E+02	7.07E-01	1.28E-03	4.54E+00	3.64E-03	4.70E+00	1.10E-01	3.76E+00	9.69E-04
MHCS-700-E25 (0-6")	1.72E-01	1.72E-01	4.84E-01	1.57E+01	2.70E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.25E+01	1.56E-01	1.28E-03	4.54E+00	8.04E-04	4.70E+00	1.10E-01	3.76E+00	2.14E-04
MHCS-700-W10 (0-6")	1.72E-01	1.72E-01	4.84E-01	7.27E+01	1.25E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.50E+02	7.22E-01	1.28E-03	4.54E+00	3.72E-03	4.70E+00	1.10E-01	3.76E+00	9.89E-04
MHCS-800-E15 (0-6")	1.72E-01	1.72E-01	4.84E-01	8.95E+00	1.54E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.85E+01	8.89E-02	1.28E-03	4.54E+00	4.58E-04	4.70E+00	1.10E-01	3.76E+00	1.22E-04
MHCS-800-E5 (0-6")	1.72E-01	1.72E-01	4.84E-01	6.28E+01	1.08E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.30E+02	6.23E-01	1.28E-03	4.54E+00	3.21E-03	4.70E+00	1.10E-01	3.76E+00	8.54E-04
MHCS-800-W5 (0-6")	1.72E-01	1.72E-01	4.84E-01	4.12E+01	7.06E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	8.51E+01	4.09E-01	1.28E-03	4.54E+00	2.11E-03	4.70E+00	1.10E-01	3.76E+00	5.60E-04
MHCS-900-E15 (0-6")	1.72E-01	1.72E-01	4.84E-01	1.07E+01	1.83E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.21E+01	1.06E-01	1.28E-03	4.54E+00	5.45E-04	4.70E+00	1.10E-01	3.76E+00	1.45E-04
MHCS-900-E5 (0-6")	1.72E-01	1.72E-01	4.84E-01	8.38E+01	1.44E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.73E+02	8.32E-01	1.28E-03	4.54E+00	4.28E-03	4.70E+00	1.10E-01	3.76E+00	1.14E-03
MHCS-900-W5 (0-6")	1.72E-01	1.72E-01	4.84E-01	4.86E+01	8.33E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.00E+02	4.82E-01	1.28E-03	4.54E+00	2.48E-03	4.70E+00	1.10E-01	3.76E+00	6.61E-04
MHCS-1000-E10 (0-6")	1.72E-01	1.72E-01	4.84E-01	2.44E+01	4.18E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.04E+01	2.42E-01	1.28E-03	4.54E+00	1.25E-03	4.70E+00	1.10E-01	3.76E+00	3.32E-04
MHCS-1000-W5 (0-6")	1.72E-01	1.72E-01	4.84E-01	9.13E+01	1.57E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.89E+02	9.07E-01	1.28E-03	4.54E+00	4.67E-03	4.70E+00	1.10E-01	3.76E+00	1.24E-03
MHCS-1100-E10 (0-6")	1.72E-01	1.72E-01	4.84E-01	2.78E+01	4.76E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.74E+01	2.76E-01	1.28E-03	4.54E+00	1.42E-03	4.70E+00	1.10E-01	3.76E+00	3.78E-04
MHCS-1100-E35 (0-6")	1.72E-01	1.72E-01	4.84E-01	1.00E+01	1.72E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.07E+01	9.94E-02	1.28E-03	4.54E+00	5.12E-04	4.70E+00	1.10E-01	3.76E+00	1.36E-04
MHCS-1200-E15 (0-6")	1.72E-01	1.72E-01	4.84E-01	2.38E+01	4.08E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.92E+01	2.36E-01	1.28E-03	4.54E+00	1.22E-03	4.70E+00	1.10E-01	3.76E+00	3.24E-04
MHCS-1200-E30 (0-6")	1.72E-01	1.72E-01	4.84E-01	1.70E+01	2.91E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.50E+01	1.68E-01	1.28E-03	4.54E+00	8.67E-04	4.70E+00	1.10E-01	3.76E+00	2.31E-04
MHCS-1300-E20 (0-6")	1.72E-01	1.72E-01	4.84E-01	4.21E+01	7.22E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	8.70E+01	4.18E-01	1.28E-03	4.54E+00	2.15E-03	4.70E+00	1.10E-01	3.76E+00	5.73E-04
MHCS-1300-E35 (0-6")	1.72E-01	1.72E-01	4.84E-01	8.01E+00	1.37E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.66E+01	7.95E-02	1.28E-03	4.54E+00	4.10E-04	4.70E+00	1.10E-01	3.76E+00	1.09E-04
Waste Areas 1 and 2																						**Maximum HQ (Mike Horse Creek Channel Area Deposits)**	**2.71E-03**
UMH1-00 (0-6")	1.72E-01	1.72E-01	4.84E-01	1.54E+01	2.65E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.19E+01	1.53E-01	1.28E-03	4.54E+00	7.89E-04	4.70E+00	1.10E-01	3.76E+00	2.10E-04
UMH1-100 (0-6")	1.72E-01	1.72E-01	4.84E-01	3.89E+01	6.67E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	8.04E+01	3.86E-01	1.28E-03	4.54E+00	1.99E-03	4.70E+00	1.10E-01	3.76E+00	5.29E-04
UMH1-150 (0-6")	1.72E-01	1.72E-01	4.84E-01	1.17E+01	2.01E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.42E+01	1.16E-01	1.28E-03	4.54E+00	5.98E-04	4.70E+00	1.10E-01	3.76E+00	1.59E-04
UMH1-200 (0-6")	1.72E-01	1.72E-01	4.84E-01	1.48E+01	2.54E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.06E+01	1.47E-01	1.28E-03	4.54E+00	7.57E-04	4.70E+00	1.10E-01	3.76E+00	2.01E-04
UMH1-250 (0-6")	1.72E-01	1.72E-01	4.84E-01	4.49E+01	7.71E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	9.28E+01	4.46E-01	1.28E-03	4.54E+00	2.30E-03	4.70E+00	1.10E-01	3.76E+00	6.11E-04
UMH1-250+25 (0-6")	1.72E-01	1.72E-01	4.84E-01	1.81E+01	3.11E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.75E+01	1.80E-01	1.28E-03	4.54E+00	9.28E-04	4.70E+00	1.10E-01	3.76E+00	2.47E-04
UMH1-300 (0-6")	1.72E-01	1.72E-01	4.84E-01	4.86E+01	8.34E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.00E+02	4.82E-01	1.28E-03	4.54E+00	2.48E-03	4.70E+00	1.10E-01	3.76E+00	6.61E-04
UMH1-300+14 (0-6")	1.72E-01	1.72E-01	4.84E-01	1.57E+01	2.70E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.25E+01	1.56E-01	1.28E-03	4.54E+00	8.04E-04	4.70E+00	1.10E-01	3.76E+00	2.14E-04
UMH1-350 (0-6")	1.72E-01	1.72E-01	4.84E-01	6.01E+01	1.03E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.24E+02	5.97E-01	1.28E-03	4.54E+00	3.07E-03	4.70E+00	1.10E-01	3.76E+00	8.18E-04
UMH1-350+12.5 (0-6")	1.72E-01	1.72E-01	4.84E-01	1.82E+01	3.12E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.76E+01	1.81E-01	1.28E-03	4.54E+00	9.30E-04	4.70E+00	1.10E-01	3.76E+00	2.47E-04
UMH1-400 (0-6")	1.72E-01	1.72E-01	4.84E-01	9.89E+00	1.70E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.04E+01	9.82E-02	1.28E-03	4.54E+00	5.06E-04	4.70E+00	1.10E-01	3.76E+00	1.34E-04
UMH1-400+12.5 (0-6")	1.72E-01	1.72E-01	4.84E-01	1.07E+01	1.84E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.22E+01	1.07E-01	1.28E-03	4.54E+00	5.49E-04	4.70E+00	1.10E-01	3.76E+00	1.46E-04
UMH1-450 (0-6")	1.72E-01	1.72E-01	4.84E-01	1.20E+01	2.07E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.49E+01	1.20E-01	1.28E-03	4.54E+00	6.16E-04	4.70E+00	1.10E-01	3.76E+00	1.64E-04
UMH1-450+12.5 (0-6")	1.72E-01	1.72E-01	4.84E-01	1.46E+01	2.50E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.02E+01	1.45E-01	1.28E-03	4.54E+00	7.47E-04	4.70E+00	1.10E-01	3.76E+00	1.99E-04
UMH1-50 (0-6")	1.72E-01	1.72E-01	4.84E-01	1.13E+01	1.93E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.33E+01	1.12E-01	1.28E-03	4.54E+00	5.76E-04	4.70E+00	1.10E-01	3.76E+00	1.53E-04
UMH1-Comp (0-6")	1.72E-01	1.72E-01	4.84E-01	6.30E+01	1.08E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.30E+02	6.26E-01	1.28E-03	4.54E+00	3.22E-03	4.70E+00	1.10E-01	3.76E+00	8.57E-04
UMH2-00 (0-6")	1.72E-01	1.72E-01	4.84E-01	2.41E+02	4.14E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.99E+02	2.40E+00	1.28E-03	4.54E+00	1.23E-02	4.70E+00	1.10E-01	3.76E+00	3.28E-03

TABLE C-8A: ARSENIC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 8 - MIKE HORSE MINE WASTE PILES (Continued)
Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)
calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **1.73**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Red Fox (Carnivorous Mammal - Terrestrial)																							
UMH2-00+25 (0-6")	1.72E-01	1.72E-01	4.84E-01	2.25E+01	3.86E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.65E+01	2.23E-01	1.28E-03	4.54E+00	1.15E-03	4.70E+00	1.10E-01	3.76E+00	3.06E-04
UMH2-100 (0-6")	1.72E-01	1.72E-01	4.84E-01	1.66E+02	2.85E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.44E+02	1.65E+00	1.28E-03	4.54E+00	8.50E-03	4.70E+00	1.10E-01	3.76E+00	2.26E-03
UMH2-100+35 (0-6")	1.72E-01	1.72E-01	4.84E-01	1.72E+01	2.95E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.55E+01	1.71E-01	1.28E-03	4.54E+00	8.78E-04	4.70E+00	1.10E-01	3.76E+00	2.34E-04
UMH2-150 (0-6")	1.72E-01	1.72E-01	4.84E-01	8.59E+01	1.47E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.78E+02	8.53E-01	1.28E-03	4.54E+00	4.39E-03	4.70E+00	1.10E-01	3.76E+00	1.17E-03
UMH2-150+60 (0-6")	1.72E-01	1.72E-01	4.84E-01	4.91E+00	8.42E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.02E+01	4.88E-02	1.28E-03	4.54E+00	2.51E-04	4.70E+00	1.10E-01	3.76E+00	6.68E-05
UMH2-200 (0-6")	1.72E-01	1.72E-01	4.84E-01	1.21E+02	2.07E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.49E+02	1.20E+00	1.28E-03	4.54E+00	6.16E-03	4.70E+00	1.10E-01	3.76E+00	1.64E-03
UMH2-200+85 (0-6")	1.72E-01	1.72E-01	4.84E-01	7.67E+00	1.32E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.59E+01	7.61E-02	1.28E-03	4.54E+00	3.92E-04	4.70E+00	1.10E-01	3.76E+00	1.04E-04
UMH2-250 (0-6")	1.72E-01	1.72E-01	4.84E-01	1.31E+02	2.25E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.71E+02	1.30E+00	1.28E-03	4.54E+00	6.71E-03	4.70E+00	1.10E-01	3.76E+00	1.78E-03
UMH2-250+75 (0-6")	1.72E-01	1.72E-01	4.84E-01	2.49E+01	4.27E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.15E+01	2.47E-01	1.28E-03	4.54E+00	1.27E-03	4.70E+00	1.10E-01	3.76E+00	3.39E-04
UMH2-300 (0-6")	1.72E-01	1.72E-01	4.84E-01	2.54E+01	4.35E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.24E+01	2.52E-01	1.28E-03	4.54E+00	1.30E-03	4.70E+00	1.10E-01	3.76E+00	3.45E-04
UMH2-300+25 (0-6")	1.72E-01	1.72E-01	4.84E-01	1.75E+01	3.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.62E+01	1.74E-01	1.28E-03	4.54E+00	8.95E-04	4.70E+00	1.10E-01	3.76E+00	2.38E-04
UMH2-350 (0-6")	1.72E-01	1.72E-01	4.84E-01	1.93E+01	3.31E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.99E+01	1.92E-01	1.28E-03	4.54E+00	9.87E-04	4.70E+00	1.10E-01	3.76E+00	2.63E-04
UMH2-350+25 (0-6")	1.72E-01	1.72E-01	4.84E-01	1.51E+01	2.59E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.12E+01	1.50E-01	1.28E-03	4.54E+00	7.72E-04	4.70E+00	1.10E-01	3.76E+00	2.05E-04
UMH2-400 (0-6")	1.72E-01	1.72E-01	4.84E-01	2.52E+01	4.32E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.21E+01	2.50E-01	1.28E-03	4.54E+00	1.29E-03	4.70E+00	1.10E-01	3.76E+00	3.43E-04
UMH2-400+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UMH2-450 (0-6")	1.72E-01	1.72E-01	4.84E-01	2.24E+01	3.85E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.64E+01	2.23E-01	1.28E-03	4.54E+00	1.15E-03	4.70E+00	1.10E-01	3.76E+00	3.05E-04
UMH2-450+25 (0-6")	1.72E-01	1.72E-01	4.84E-01	4.31E+00	7.39E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	8.90E+00	4.28E-02	1.28E-03	4.54E+00	2.20E-04	4.70E+00	1.10E-01	3.76E+00	5.86E-05
UMH2-50 (0-6")	1.72E-01	1.72E-01	4.84E-01	2.22E+01	3.81E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.59E+01	2.20E-01	1.28E-03	4.54E+00	1.13E-03	4.70E+00	1.10E-01	3.76E+00	3.02E-04
UMH2-50+25b (0-6")	1.72E-01	1.72E-01	4.84E-01	2.30E+01	3.95E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.76E+01	2.29E-01	1.28E-03	4.54E+00	1.18E-03	4.70E+00	1.10E-01	3.76E+00	3.13E-04
UMH2-500 (0-6")	1.72E-01	1.72E-01	4.84E-01	1.64E+02	2.81E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.38E+02	1.62E+00	1.28E-03	4.54E+00	8.37E-03	4.70E+00	1.10E-01	3.76E+00	2.23E-03
UMH2-500+75 (0-6")	1.72E-01	1.72E-01	4.84E-01	1.59E+01	2.72E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.28E+01	1.58E-01	1.28E-03	4.54E+00	8.11E-04	4.70E+00	1.10E-01	3.76E+00	2.16E-04
UMH2-550 (0-6")	1.72E-01	1.72E-01	4.84E-01	2.13E+02	3.65E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.40E+02	2.11E+00	1.28E-03	4.54E+00	1.09E-02	4.70E+00	1.10E-01	3.76E+00	2.90E-03
UMH2-550+75 (0-6")	1.72E-01	1.72E-01	4.84E-01	9.07E+00	1.56E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.87E+01	9.00E-02	1.28E-03	4.54E+00	4.64E-04	4.70E+00	1.10E-01	3.76E+00	1.23E-04
UMH2-600 (0-6")	1.72E-01	1.72E-01	4.84E-01	7.10E+01	1.22E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.47E+02	7.05E-01	1.28E-03	4.54E+00	3.63E-03	4.70E+00	1.10E-01	3.76E+00	9.66E-04
UMH2-600+25 (0-6")	1.72E-01	1.72E-01	4.84E-01	1.64E+01	2.81E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.39E+01	1.63E-01	1.28E-03	4.54E+00	8.39E-04	4.70E+00	1.10E-01	3.76E+00	2.23E-04
UMH2-650 (0-6")	1.72E-01	1.72E-01	4.84E-01	7.56E+01	1.30E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.56E+02	7.51E-01	1.28E-03	4.54E+00	3.87E-03	4.70E+00	1.10E-01	3.76E+00	1.03E-03
UMH2-650+25 (0-6")	1.72E-01	1.72E-01	4.84E-01	1.40E+01	2.40E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.90E+01	1.39E-01	1.28E-03	4.54E+00	7.17E-04	4.70E+00	1.10E-01	3.76E+00	1.91E-04
UMH2-Comp 1 (0-6")	1.72E-01	1.72E-01	4.84E-01	1.28E+02	2.19E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.64E+02	1.27E+00	1.28E-03	4.54E+00	6.52E-03	4.70E+00	1.10E-01	3.76E+00	1.73E-03
UMH2-Comp 2 (0-6")	1.72E-01	1.72E-01	4.84E-01	1.72E+02	2.96E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.56E+02	1.71E+00	1.28E-03	4.54E+00	8.81E-03	4.70E+00	1.10E-01	3.76E+00	2.34E-03
Waste Area 3																						**Maximum HQ (Waste Areas 1 and 2)**	**3.28E-03**
UMH3-00 (0-6")	1.72E-01	1.72E-01	4.84E-01	4.86E+00	8.34E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.00E+01	4.83E-02	1.28E-03	4.54E+00	2.48E-04	4.70E+00	1.10E-01	3.76E+00	6.61E-05
UMH3-100 (0-6")	1.72E-01	1.72E-01	4.84E-01	1.82E+01	3.12E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.76E+01	1.81E-01	1.28E-03	4.54E+00	9.31E-04	4.70E+00	1.10E-01	3.76E+00	2.48E-04
UMH3-150 (0-6")	1.72E-01	1.72E-01	4.84E-01	1.52E+01	2.61E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.15E+01	1.51E-01	1.28E-03	4.54E+00	7.78E-04	4.70E+00	1.10E-01	3.76E+00	2.07E-04
UMH3-200 (0-6")	1.72E-01	1.72E-01	4.84E-01	5.89E+01	1.01E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.22E+02	5.85E-01	1.28E-03	4.54E+00	3.01E-03	4.70E+00	1.10E-01	3.76E+00	8.01E-04
UMH3-250 (0-6")	1.72E-01	1.72E-01	4.84E-01	2.20E+02	3.78E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.55E+02	2.19E+00	1.28E-03	4.54E+00	1.13E-02	4.70E+00	1.10E-01	3.76E+00	2.99E-03
UMH3-300 (0-6")	1.72E-01	1.72E-01	4.84E-01	4.35E+00	7.46E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	8.99E+00	4.32E-02	1.28E-03	4.54E+00	2.22E-04	4.70E+00	1.10E-01	3.76E+00	5.91E-05
UMH3-350 (0-6")	1.72E-01	1.72E-01	4.84E-01	2.59E+02	4.44E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.35E+02	2.57E+00	1.28E-03	4.54E+00	1.32E-02	4.70E+00	1.10E-01	3.76E+00	3.52E-03
UMH3-350+75 (0-6")	1.72E-01	1.72E-01	4.84E-01	1.01E+01	1.73E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.09E+01	1.00E-01	1.28E-03	4.54E+00	5.17E-04	4.70E+00	1.10E-01	3.76E+00	1.38E-04
UMH3-400 (0-6")	1.72E-01	1.72E-01	4.84E-01	1.26E+02	2.16E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.60E+02	1.25E+00	1.28E-03	4.54E+00	6.44E-03	4.70E+00	1.10E-01	3.76E+00	1.71E-03
UMH3-400+25 (0-6")	1.72E-01	1.72E-01	4.84E-01	1.36E+01	2.33E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.81E+01	1.35E-01	1.28E-03	4.54E+00	6.95E-04	4.70E+00	1.10E-01	3.76E+00	1.85E-04
UMH3-450 (0-6")	1.72E-01	1.72E-01	4.84E-01	9.28E+00	1.59E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.92E+01	9.22E-02	1.28E-03	4.54E+00	4.75E-04	4.70E+00	1.10E-01	3.76E+00	1.26E-04
UMH3-50 (0-6")	1.72E-01	1.72E-01	4.84E-01	5.49E+00	9.42E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.14E+01	5.45E-02	1.28E-03	4.54E+00	2.81E-04	4.70E+00	1.10E-01	3.76E+00	7.47E-05
UMH3-50+50 (0-6")	1.72E-01	1.72E-01	4.84E-01	4.71E+00	8.08E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	9.74E+00	4.68E-02	1.28E-03	4.54E+00	2.41E-04	4.70E+00	1.10E-01	3.76E+00	6.40E-05
UMH3-500 (0-6")	1.72E-01	1.72E-01	4.84E-01	3.48E+01	5.96E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	7.19E+01	3.45E-01	1.28E-03	4.54E+00	1.78E-03	4.70E+00	1.10E-01	3.76E+00	4.73E-04
UMH3-550 (0-6")	1.72E-01	1.72E-01	4.84E-01	2.02E+02	3.47E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.18E+02	2.01E+00	1.28E-03	4.54E+00	1.03E-02	4.70E+00	1.10E-01	3.76E+00	2.75E-03
UMH3-600 (0-6")	1.72E-01	1.72E-01	4.84E-01	4.37E+02	7.51E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	9.04E+02	4.34E+00	1.28E-03	4.54E+00	2.24E-02	4.70E+00	1.10E-01	3.76E+00	5.95E-03
UMH3-650 (0-6")	1.72E-01	1.72E-01	4.84E-01	1.94E+02	3.33E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.01E+02	1.93E+00	1.28E-03	4.54E+00	9.93E-03	4.70E+00	1.10E-01	3.76E+00	2.64E-03
UMH3-700 (0-6")	1.72E-01	1.72E-01	4.84E-01	2.34E+02	4.02E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.85E+02	2.33E+00	1.28E-03	4.54E+00	1.20E-02	4.70E+00	1.10E-01	3.76E+00	3.19E-03
UMH3-750 (0-6")	1.72E-01	1.72E-01	4.84E-01	2.67E+01	4.57E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.51E+01	2.65E-01	1.28E-03	4.54E+00	1.36E-03	4.70E+00	1.10E-01	3.76E+00	3.63E-04
UMH3-800 (0-6")	1.72E-01	1.72E-01	4.84E-01	5.13E+01	8.80E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.06E+02	5.09E-01	1.28E-03	4.54E+00	2.62E-03	4.70E+00	1.10E-01	3.76E+00	6.98E-04
UMH3-Comp 1 (0-6")	1.72E-01	1.72E-01	4.84E-01	9.55E+00	1.64E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.97E+01	9.48E-02	1.28E-03	4.54E+00	4.88E-04	4.70E+00	1.10E-01	3.76E+00	1.30E-04
UMH3-Comp 2 (0-6")	1.72E-01	1.72E-01	4.84E-01	1.05E+02	1.81E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.18E+02	1.05E+00	1.28E-03	4.54E+00	5.39E-03	4.70E+00	1.10E-01	3.76E+00	1.43E-03
UMH3-Comp 3 (0-6")	1.72E-01	1.72E-01	4.84E-01	3.20E+02	5.48E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	6.61E+02	3.17E+00	1.28E-03	4.54E+00	1.63E-02	4.70E+00	1.10E-01	3.76E+00	4.35E-03
																						Maximum HQ (Waste Area 3)	**5.95E-03**

TABLE C-8A: ARSENIC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 8 - MIKE HORSE MINE WASTE PILES (Continued)
Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables; from BAF table; linked to soil or sed concentration table (VLOOKUP)
calculated values; linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 1.73

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Masked Shrew (Omnivorous Mammal - Terrestrial, Wetland)																							
Reference Sites																							
BCBG-1 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	2.55E+00	3.91E+01	3.31E-01	1.10E-03	1.53E+01	1.69E-02	1.00E+00	5.50E-03	6.33E+01	4.70E+00	1.10E-01	5.63E+00	1.13E+01
MHBG-201 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	2.55E+00	3.97E+01	3.36E-01	1.10E-03	1.56E+01	1.71E-02	1.00E+00	5.50E-03	6.43E+01	4.70E+00	1.10E-01	5.63E+00	1.14E+01
MHBG-202 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	2.55E+00	3.88E+01	3.29E-01	1.10E-03	1.52E+01	1.67E-02	1.00E+00	5.50E-03	6.28E+01	4.70E+00	1.10E-01	5.63E+00	1.12E+01
Mike Horse Creek Channel Area Deposits																						**Minimum HQ (Reference Site)**	**1.12E+01**
AMHR-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	1.47E+02	1.25E+00	1.10E-03	8.93E+00	9.83E-03	1.00E+00	5.50E-03	2.28E+02	4.70E+00	1.10E-01	5.63E+00	4.06E+01
AMHR-200 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	1.45E+02	1.23E+00	1.10E-03	8.79E+00	9.67E-03	1.00E+00	5.50E-03	2.25E+02	4.70E+00	1.10E-01	5.63E+00	4.00E+01
AMHR-400 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	3.09E+02	2.61E+00	1.10E-03	1.87E+01	2.06E-02	1.00E+00	5.50E-03	4.79E+02	4.70E+00	1.10E-01	5.63E+00	8.52E+01
AMHR-600 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	3.14E+02	2.66E+00	1.10E-03	1.91E+01	2.10E-02	1.00E+00	5.50E-03	4.88E+02	4.70E+00	1.10E-01	5.63E+00	8.67E+01
MHCS-00-E25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	2.36E+03	2.00E+01	1.10E-03	1.43E+02	1.58E-01	1.00E+00	5.50E-03	3.67E+03	4.70E+00	1.10E-01	5.63E+00	6.52E+02
MHCS-0-W25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	2.59E+02	2.20E+00	1.10E-03	1.57E+01	1.73E-02	1.00E+00	5.50E-03	4.03E+02	4.70E+00	1.10E-01	5.63E+00	7.16E+01
MHCS-0-W5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	6.76E+02	5.72E+00	1.10E-03	4.10E+01	4.51E-02	1.00E+00	5.50E-03	1.05E+03	4.70E+00	1.10E-01	5.63E+00	1.86E+02
MHCS-100-E25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	6.78E+03	5.75E+01	1.10E-03	4.12E+02	4.53E-01	1.00E+00	5.50E-03	1.05E+04	4.70E+00	1.10E-01	5.63E+00	1.87E+03
MHCS-100-W1 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	3.17E+03	2.68E+01	1.10E-03	1.92E+02	2.12E-01	1.00E+00	5.50E-03	4.92E+03	4.70E+00	1.10E-01	5.63E+00	8.74E+02
MHCS-100-W25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	2.38E+02	2.01E+00	1.10E-03	1.44E+01	1.59E-02	1.00E+00	5.50E-03	3.69E+02	4.70E+00	1.10E-01	5.63E+00	6.56E+01
MHCS-200-E10 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	1.85E+03	1.57E+01	1.10E-03	1.13E+02	1.24E-01	1.00E+00	5.50E-03	2.88E+03	4.70E+00	1.10E-01	5.63E+00	5.12E+02
MHCS-200-E25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	3.73E+02	3.16E+00	1.10E-03	2.26E+01	2.49E-02	1.00E+00	5.50E-03	5.78E+02	4.70E+00	1.10E-01	5.63E+00	1.03E+02
MHCS-200-W10 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	2.10E+02	1.78E+00	1.10E-03	1.28E+01	1.40E-02	1.00E+00	5.50E-03	3.26E+02	4.70E+00	1.10E-01	5.63E+00	5.80E+01
MHCS-525-E5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	2.85E+03	2.42E+01	1.10E-03	1.73E+02	1.91E-01	1.00E+00	5.50E-03	4.43E+03	4.70E+00	1.10E-01	5.63E+00	7.87E+02
MHCS-525-W15 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	4.02E+03	3.41E+01	1.10E-03	2.44E+02	2.69E-01	1.00E+00	5.50E-03	6.24E+03	4.70E+00	1.10E-01	5.63E+00	1.11E+03
MHCS-600-E10 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	2.23E+03	1.89E+01	1.10E-03	1.35E+02	1.49E-01	1.00E+00	5.50E-03	3.46E+03	4.70E+00	1.10E-01	5.63E+00	6.16E+02
MHCS-600-W10 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	3.55E+03	3.01E+01	1.10E-03	2.15E+02	2.37E-01	1.00E+00	5.50E-03	5.51E+03	4.70E+00	1.10E-01	5.63E+00	9.79E+02
MHCS-700-E10 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	2.43E+03	2.06E+01	1.10E-03	1.47E+02	1.62E-01	1.00E+00	5.50E-03	3.77E+03	4.70E+00	1.10E-01	5.63E+00	6.70E+02
MHCS-700-E25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	5.36E+02	4.54E+00	1.10E-03	3.25E+01	3.58E-02	1.00E+00	5.50E-03	8.32E+02	4.70E+00	1.10E-01	5.63E+00	1.48E+02
MHCS-700-W10 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	2.48E+03	2.10E+01	1.10E-03	1.50E+02	1.65E-01	1.00E+00	5.50E-03	3.85E+03	4.70E+00	1.10E-01	5.63E+00	6.84E+02
MHCS-800-E15 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	3.05E+02	2.58E+00	1.10E-03	1.85E+01	2.04E-02	1.00E+00	5.50E-03	4.73E+02	4.70E+00	1.10E-01	5.63E+00	8.41E+01
MHCS-800-E5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	2.14E+03	1.81E+01	1.10E-03	1.30E+02	1.43E-01	1.00E+00	5.50E-03	3.32E+03	4.70E+00	1.10E-01	5.63E+00	5.90E+02
MHCS-800-W5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	1.40E+03	1.19E+01	1.10E-03	8.51E+01	9.37E-02	1.00E+00	5.50E-03	2.18E+03	4.70E+00	1.10E-01	5.63E+00	3.87E+02
MHCS-900-E15 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	3.63E+02	3.08E+00	1.10E-03	2.21E+01	2.43E-02	1.00E+00	5.50E-03	5.64E+02	4.70E+00	1.10E-01	5.63E+00	1.00E+02
MHCS-900-E5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	2.85E+03	2.42E+01	1.10E-03	1.73E+02	1.91E-01	1.00E+00	5.50E-03	4.43E+03	4.70E+00	1.10E-01	5.63E+00	7.87E+02
MHCS-900-W5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	1.65E+03	1.40E+01	1.10E-03	1.00E+02	1.11E-01	1.00E+00	5.50E-03	2.57E+03	4.70E+00	1.10E-01	5.63E+00	4.57E+02
MHCS-1000-E10 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	8.31E+02	7.04E+00	1.10E-03	5.04E+01	5.55E-02	1.00E+00	5.50E-03	1.29E+03	4.70E+00	1.10E-01	5.63E+00	2.29E+02
MHCS-1000-W5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	3.11E+03	2.64E+01	1.10E-03	1.89E+02	2.08E-01	1.00E+00	5.50E-03	4.83E+03	4.70E+00	1.10E-01	5.63E+00	8.59E+02
MHCS-1100-E10 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	9.46E+02	8.01E+00	1.10E-03	5.74E+01	6.32E-02	1.00E+00	5.50E-03	1.47E+03	4.70E+00	1.10E-01	5.63E+00	2.61E+02
MHCS-1100-E35 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	3.41E+02	2.89E+00	1.10E-03	2.07E+01	2.28E-02	1.00E+00	5.50E-03	5.30E+02	4.70E+00	1.10E-01	5.63E+00	9.41E+01
MHCS-1200-E15 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	8.11E+02	6.87E+00	1.10E-03	4.92E+01	5.42E-02	1.00E+00	5.50E-03	1.26E+03	4.70E+00	1.10E-01	5.63E+00	2.24E+02
MHCS-1200-E30 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	5.78E+02	4.89E+00	1.10E-03	3.50E+01	3.86E-02	1.00E+00	5.50E-03	8.96E+02	4.70E+00	1.10E-01	5.63E+00	1.59E+02
MHCS-1300-E20 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	1.43E+03	1.22E+01	1.10E-03	8.70E+01	9.58E-02	1.00E+00	5.50E-03	2.23E+03	4.70E+00	1.10E-01	5.63E+00	3.96E+02
MHCS-1300-E35 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	2.73E+02	2.31E+00	1.10E-03	1.66E+01	1.82E-02	1.00E+00	5.50E-03	4.24E+02	4.70E+00	1.10E-01	5.63E+00	7.53E+01
Waste Areas 1 and 2																						**Maximum HQ (Mike Horse Creek Channel Area Deposits)**	**1.87E+03**
UMH1-00 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	5.26E+02	4.46E+00	1.10E-03	3.19E+01	3.51E-02	1.00E+00	5.50E-03	8.16E+02	4.70E+00	1.10E-01	5.63E+00	1.45E+02
UMH1-100 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	1.33E+03	1.12E+01	1.10E-03	8.04E+01	8.85E-02	1.00E+00	5.50E-03	2.06E+03	4.70E+00	1.10E-01	5.63E+00	3.66E+02
UMH1-150 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	3.98E+02	3.37E+00	1.10E-03	2.42E+01	2.66E-02	1.00E+00	5.50E-03	6.18E+02	4.70E+00	1.10E-01	5.63E+00	1.10E+02
UMH1-200 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	5.05E+02	4.27E+00	1.10E-03	3.06E+01	3.37E-02	1.00E+00	5.50E-03	7.83E+02	4.70E+00	1.10E-01	5.63E+00	1.39E+02
UMH1-250 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	1.53E+03	1.30E+01	1.10E-03	9.28E+01	1.02E-01	1.00E+00	5.50E-03	2.38E+03	4.70E+00	1.10E-01	5.63E+00	4.22E+02
UMH1-250+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	6.18E+02	5.24E+00	1.10E-03	3.75E+01	4.13E-02	1.00E+00	5.50E-03	9.59E+02	4.70E+00	1.10E-01	5.63E+00	1.71E+02
UMH1-300 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	1.66E+03	1.40E+01	1.10E-03	1.00E+02	1.11E-01	1.00E+00	5.50E-03	2.57E+03	4.70E+00	1.10E-01	5.63E+00	4.57E+02
UMH1-300+14 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	5.36E+02	4.54E+00	1.10E-03	3.25E+01	3.58E-02	1.00E+00	5.50E-03	8.31E+02	4.70E+00	1.10E-01	5.63E+00	1.48E+02
UMH1-350 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	2.05E+03	1.74E+01	1.10E-03	1.24E+02	1.37E-01	1.00E+00	5.50E-03	3.18E+03	4.70E+00	1.10E-01	5.63E+00	5.65E+02
UMH1-350+12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	6.20E+02	5.25E+00	1.10E-03	3.76E+01	4.14E-02	1.00E+00	5.50E-03	9.62E+02	4.70E+00	1.10E-01	5.63E+00	1.71E+02
UMH1-400 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	3.37E+02	2.85E+00	1.10E-03	2.04E+01	2.25E-02	1.00E+00	5.50E-03	5.23E+02	4.70E+00	1.10E-01	5.63E+00	9.29E+01
UMH1-400+12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	3.66E+02	3.10E+00	1.10E-03	2.22E+01	2.44E-02	1.00E+00	5.50E-03	5.68E+02	4.70E+00	1.10E-01	5.63E+00	1.01E+02
UMH1-450 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	4.10E+02	3.47E+00	1.10E-03	2.49E+01	2.74E-02	1.00E+00	5.50E-03	6.37E+02	4.70E+00	1.10E-01	5.63E+00	1.13E+02
UMH1-450+12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	4.97E+02	4.21E+00	1.10E-03	3.02E+01	3.32E-02	1.00E+00	5.50E-03	7.72E+02	4.70E+00	1.10E-01	5.63E+00	1.37E+02
UMH1-50 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	3.84E+02	3.25E+00	1.10E-03	2.33E+01	2.56E-02	1.00E+00	5.50E-03	5.96E+02	4.70E+00	1.10E-01	5.63E+00	1.06E+02
UMH1-Comp (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	2.15E+03	1.82E+01	1.10E-03	1.30E+02	1.43E-01	1.00E+00	5.50E-03	3.33E+03	4.70E+00	1.10E-01	5.63E+00	5.92E+02
UMH2-00 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	8.22E+03	6.96E+01	1.10E-03	4.99E+02	5.49E-01	1.00E+00	5.50E-03	1.28E+04	4.70E+00	1.10E-01	5.63E+00	2.27E+03

TABLE C-8A: ARSENIC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 8 - MIKE HORSE MINE WASTE PILES (Continued)
Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

Site Area (hectares) **1.73**

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)
calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Masked Shrew (Omnivorous Mammal - Terrestrial, Wetland)																							
UMH2-00+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	7.66E+02	6.49E+00	1.10E-03	4.65E+01	5.12E-02	1.00E+00	5.50E-03	1.19E+03	4.70E+00	1.10E-01	5.63E+00	2.11E+02
UMH2-100 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	5.66E+03	4.80E+01	1.10E-03	3.44E+02	3.78E-01	1.00E+00	5.50E-03	8.79E+03	4.70E+00	1.10E-01	5.63E+00	1.56E+03
UMH2-100+35 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	5.85E+02	4.96E+00	1.10E-03	3.55E+01	3.91E-02	1.00E+00	5.50E-03	9.08E+02	4.70E+00	1.10E-01	5.63E+00	1.61E+02
UMH2-150 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	2.93E+03	2.48E+01	1.10E-03	1.78E+02	1.96E-01	1.00E+00	5.50E-03	4.54E+03	4.70E+00	1.10E-01	5.63E+00	8.08E+02
UMH2-150+60 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	1.67E+02	1.42E+00	1.10E-03	1.02E+01	1.12E-02	1.00E+00	5.50E-03	2.60E+02	4.70E+00	1.10E-01	5.63E+00	4.62E+01
UMH2-200 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	4.11E+03	3.48E+01	1.10E-03	2.49E+02	2.74E-01	1.00E+00	5.50E-03	6.38E+03	4.70E+00	1.10E-01	5.63E+00	1.13E+03
UMH2-200+85 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	2.61E+02	2.21E+00	1.10E-03	1.59E+01	1.75E-02	1.00E+00	5.50E-03	4.06E+02	4.70E+00	1.10E-01	5.63E+00	7.21E+01
UMH2-250 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	4.47E+03	3.79E+01	1.10E-03	2.71E+02	2.99E-01	1.00E+00	5.50E-03	6.94E+03	4.70E+00	1.10E-01	5.63E+00	1.23E+03
UMH2-250+75 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	8.49E+02	7.19E+00	1.10E-03	5.15E+01	5.67E-02	1.00E+00	5.50E-03	1.32E+03	4.70E+00	1.10E-01	5.63E+00	2.34E+02
UMH2-300 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	8.64E+02	7.32E+00	1.10E-03	5.24E+01	5.77E-02	1.00E+00	5.50E-03	1.34E+03	4.70E+00	1.10E-01	5.63E+00	2.38E+02
UMH2-300+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	5.97E+02	5.05E+00	1.10E-03	3.62E+01	3.99E-02	1.00E+00	5.50E-03	9.26E+02	4.70E+00	1.10E-01	5.63E+00	1.65E+02
UMH2-350 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	6.58E+02	5.57E+00	1.10E-03	3.99E+01	4.39E-02	1.00E+00	5.50E-03	1.02E+03	4.70E+00	1.10E-01	5.63E+00	1.81E+02
UMH2-350+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	5.14E+02	4.36E+00	1.10E-03	3.12E+01	3.44E-02	1.00E+00	5.50E-03	7.98E+02	4.70E+00	1.10E-01	5.63E+00	1.42E+02
UMH2-400 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	8.58E+02	7.27E+00	1.10E-03	5.21E+01	5.73E-02	1.00E+00	5.50E-03	1.33E+03	4.70E+00	1.10E-01	5.63E+00	2.37E+02
UMH2-400+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UMH2-450 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	7.64E+02	6.47E+00	1.10E-03	4.64E+01	5.10E-02	1.00E+00	5.50E-03	1.19E+03	4.70E+00	1.10E-01	5.63E+00	2.11E+02
UMH2-450+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	1.47E+02	1.24E+00	1.10E-03	8.90E+00	9.80E-03	1.00E+00	5.50E-03	2.28E+02	4.70E+00	1.10E-01	5.63E+00	4.05E+01
UMH2-50 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	7.56E+02	6.41E+00	1.10E-03	4.59E+01	5.05E-02	1.00E+00	5.50E-03	1.17E+03	4.70E+00	1.10E-01	5.63E+00	2.09E+02
UMH2-50+25b (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	7.85E+02	6.65E+00	1.10E-03	4.76E+01	5.24E-02	1.00E+00	5.50E-03	1.22E+03	4.70E+00	1.10E-01	5.63E+00	2.17E+02
UMH2-500 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	5.58E+03	4.72E+01	1.10E-03	3.38E+02	3.72E-01	1.00E+00	5.50E-03	8.65E+03	4.70E+00	1.10E-01	5.63E+00	1.54E+03
UMH2-500+75 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	5.41E+02	4.58E+00	1.10E-03	3.28E+01	3.61E-02	1.00E+00	5.50E-03	8.39E+02	4.70E+00	1.10E-01	5.63E+00	1.49E+02
UMH2-550 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	7.26E+03	6.15E+01	1.10E-03	4.40E+02	4.85E-01	1.00E+00	5.50E-03	1.13E+04	4.70E+00	1.10E-01	5.63E+00	2.00E+03
UMH2-550+75 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	3.09E+02	2.62E+00	1.10E-03	1.87E+01	2.06E-02	1.00E+00	5.50E-03	4.79E+02	4.70E+00	1.10E-01	5.63E+00	8.52E+01
UMH2-600 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	2.42E+03	2.05E+01	1.10E-03	1.47E+02	1.62E-01	1.00E+00	5.50E-03	3.76E+03	4.70E+00	1.10E-01	5.63E+00	6.68E+02
UMH2-600+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	5.59E+02	4.73E+00	1.10E-03	3.39E+01	3.73E-02	1.00E+00	5.50E-03	8.67E+02	4.70E+00	1.10E-01	5.63E+00	1.54E+02
UMH2-650 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	2.58E+03	2.18E+01	1.10E-03	1.56E+02	1.72E-01	1.00E+00	5.50E-03	4.00E+03	4.70E+00	1.10E-01	5.63E+00	7.11E+02
UMH2-650+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	4.78E+02	4.04E+00	1.10E-03	2.90E+01	3.19E-02	1.00E+00	5.50E-03	7.41E+02	4.70E+00	1.10E-01	5.63E+00	1.32E+02
UMH2-Comp 1 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	4.34E+03	3.68E+01	1.10E-03	2.64E+02	2.90E-01	1.00E+00	5.50E-03	6.74E+03	4.70E+00	1.10E-01	5.63E+00	1.20E+03
UMH2-Comp 2 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	5.87E+03	4.97E+01	1.10E-03	3.56E+02	3.92E-01	1.00E+00	5.50E-03	9.11E+03	4.70E+00	1.10E-01	5.63E+00	1.62E+03
Waste Area 3																						**Maximum HQ (Waste Areas 1 and 2)**	**2.27E+03**
UMH3-00 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	1.66E+02	1.40E+00	1.10E-03	1.00E+01	1.11E-02	1.00E+00	5.50E-03	2.57E+02	4.70E+00	1.10E-01	5.63E+00	4.57E+01
UMH3-100 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	6.20E+02	5.25E+00	1.10E-03	3.76E+01	4.14E-02	1.00E+00	5.50E-03	9.62E+02	4.70E+00	1.10E-01	5.63E+00	1.71E+02
UMH3-150 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	5.18E+02	4.39E+00	1.10E-03	3.15E+01	3.46E-02	1.00E+00	5.50E-03	8.05E+02	4.70E+00	1.10E-01	5.63E+00	1.43E+02
UMH3-200 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	2.01E+03	1.70E+01	1.10E-03	1.22E+02	1.34E-01	1.00E+00	5.50E-03	3.12E+03	4.70E+00	1.10E-01	5.63E+00	5.54E+02
UMH3-250 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	7.50E+03	6.35E+01	1.10E-03	4.55E+02	5.01E-01	1.00E+00	5.50E-03	1.16E+04	4.70E+00	1.10E-01	5.63E+00	2.07E+03
UMH3-300 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	1.48E+02	1.25E+00	1.10E-03	8.99E+00	9.89E-03	1.00E+00	5.50E-03	2.30E+02	4.70E+00	1.10E-01	5.63E+00	4.09E+01
UMH3-350 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	8.82E+03	7.47E+01	1.10E-03	5.35E+02	5.89E-01	1.00E+00	5.50E-03	1.37E+04	4.70E+00	1.10E-01	5.63E+00	2.43E+03
UMH3-350+75 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	3.44E+02	2.92E+00	1.10E-03	2.09E+01	2.30E-02	1.00E+00	5.50E-03	5.35E+02	4.70E+00	1.10E-01	5.63E+00	9.51E+01
UMH3-400 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	4.29E+03	3.63E+01	1.10E-03	2.60E+02	2.86E-01	1.00E+00	5.50E-03	6.66E+03	4.70E+00	1.10E-01	5.63E+00	1.18E+03
UMH3-400+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	4.63E+02	3.92E+00	1.10E-03	2.81E+01	3.09E-02	1.00E+00	5.50E-03	7.19E+02	4.70E+00	1.10E-01	5.63E+00	1.28E+02
UMH3-450 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	3.16E+02	2.68E+00	1.10E-03	1.92E+01	2.11E-02	1.00E+00	5.50E-03	4.91E+02	4.70E+00	1.10E-01	5.63E+00	8.73E+01
UMH3-50 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	1.87E+02	1.58E+00	1.10E-03	1.14E+01	1.25E-02	1.00E+00	5.50E-03	2.90E+02	4.70E+00	1.10E-01	5.63E+00	5.16E+01
UMH3-50+50 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	1.60E+02	1.36E+00	1.10E-03	9.74E+00	1.07E-02	1.00E+00	5.50E-03	2.49E+02	4.70E+00	1.10E-01	5.63E+00	4.43E+01
UMH3-500 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	1.18E+03	1.00E+01	1.10E-03	7.19E+01	7.91E-02	1.00E+00	5.50E-03	1.84E+03	4.70E+00	1.10E-01	5.63E+00	3.27E+02
UMH3-550 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	6.90E+03	5.84E+01	1.10E-03	4.18E+02	4.61E-01	1.00E+00	5.50E-03	1.07E+04	4.70E+00	1.10E-01	5.63E+00	1.90E+03
UMH3-600 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	1.49E+04	1.26E+02	1.10E-03	9.04E+02	9.96E-01	1.00E+00	5.50E-03	2.31E+04	4.70E+00	1.10E-01	5.63E+00	4.11E+03
UMH3-650 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	6.62E+03	5.60E+01	1.10E-03	4.01E+02	4.42E-01	1.00E+00	5.50E-03	1.03E+04	4.70E+00	1.10E-01	5.63E+00	1.83E+03
UMH3-700 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	7.99E+03	6.77E+01	1.10E-03	4.85E+02	5.34E-01	1.00E+00	5.50E-03	1.24E+04	4.70E+00	1.10E-01	5.63E+00	2.20E+03
UMH3-750 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	9.09E+02	7.70E+00	1.10E-03	5.51E+01	6.07E-02	1.00E+00	5.50E-03	1.41E+03	4.70E+00	1.10E-01	5.63E+00	2.51E+02
UMH3-800 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	1.75E+03	1.48E+01	1.10E-03	1.06E+02	1.17E-01	1.00E+00	5.50E-03	2.71E+03	4.70E+00	1.10E-01	5.63E+00	4.82E+02
UMH3-Comp 1 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	3.25E+02	2.76E+00	1.10E-03	1.97E+01	2.17E-02	1.00E+00	5.50E-03	5.05E+02	4.70E+00	1.10E-01	5.63E+00	8.98E+01
UMH3-Comp 2 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	3.59E+03	3.04E+01	1.10E-03	2.18E+02	2.40E-01	1.00E+00	5.50E-03	5.58E+03	4.70E+00	1.10E-01	5.63E+00	9.92E+02
UMH3-Comp 3 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	1.09E+04	9.22E+01	1.10E-03	6.61E+02	7.27E-01	1.00E+00	5.50E-03	1.69E+04	4.70E+00	1.10E-01	5.63E+00	3.00E+03
																						Maximum HQ (Waste Area 3)	**4.11E+03**

TABLE C-8A: ARSENIC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 8 - MIKE HORSE MINE WASTE PILES (Continued)
Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)
calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **1.73**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)

Notes
1 See Tables 3-1 through 3-13 for ingestion rates, foraging ranges used to calculate the SUF, and body weights.
2 BAFs were calculated by dividing site-collected tissue by collocated soil concentrations (BAFs are in dry weight). The maximum BAF calculated from the Beartrap Creek and Blackfoot River transects was used for site dose calculations. The maximum BAF from the terrestrial reference site was used for reference site dose calculations.
3 The mammal, plant, and invertebrate concentrations were calculated by multiplying the soil concentration by the BAF to generate a tissue concentration (see note 2).
4 Mammal, plant, and invertebrate daily doses were calculated by multiplying the ingestion rate (see note 1) by the tissue concentration (see note 3).
5 Soil concentration from 0 to 6 inches below ground surface at point ID as measured by XRF 10. Doses were not calculated for detected and non-detected soil concentrations measured below the minimum reference site concentration, as indicated by BB. For results that were measured at less than the detection limit, doses were calculated using half of the detection limit.
6 Soil daily dose was calculated by multiplying the soil ingestion rate (see note 1) by soil concentration (see note 5).
7 Total daily dose is calculated using the following equation: total daily dose = ([mammal daily dose (if applicable) + plant daily dose (if applicable) + invertebrate daily dose (if applicable) + soil daily dose]*SUF)/receptor species body weight.
8 The derivation of TRVs is described in Navy (1998). The high TRV was used for dose calculations.
9 Allometrically adjusted TRVs for birds were calculated using the following equation: receptor species TRV = (test species TRV) x (test species body weight / receptor species body weight)$^{(1-1.2)}$.
10 Allometrically adjusted TRVs for mammals were calculated using the following equation: receptor species TRV = (test species TRV) x (test species body weight / receptor species body weight)$^{(1-0.94)}$.
11 HQs were calculated using the following equation: HQ = total daily dose/allometrically adjusted TRV.
12 Highlighted cells indicate an HQ greater than 1.0.

BAF	Bioaccumulation Factor	mg/day	Milligram per day
BB	Below minimum background reference site concentration	mg/kg	Milligram per kilogram
EE/CA	Engineering Evaluation/Cost Analysis	NA	Not applicable
EU	Exposure Unit	Navy	Department of the Navy
HQ	Hazard quotient	SUF	Site use factor
ID	Identification	TRV	Toxicity reference value
kg	Kilogram	XRF	X-ray flouresecence
kg/day	Kilogram per day	XRF 10	XRF measurements recorded following drying and seiving through a #10 -mesh screen

Sources: Department of the Navy. 1998. "Development of Toxicity Reference Values for Conducting Ecological Risk Assessments at Naval Facilities in California, Interim Final." Prepared by Naval Facilities Engineering Command, Engineering Field Activity West (EFA West). San Bruno, California.

TABLE C-8B: CADMIUM DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 8 - MIKE HORSE MINE WASTE PILES

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 1.73

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Mourning Dove (Herbivorous Birds - Terrestrial)																							
Reference Sites																							
BCBG-1 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.26E+00	1.97E+00	1.14E-02	NA	NA	NA	NA	5.36E-04	1.57E+00	8.41E-04	6.68E-03	1.09E-01	7.47E-04	1.00E+00	1.13E+00	6.27E-01	1.19E-03
MHBG-201 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.26E+00	5.65E+00	3.26E-02	NA	NA	NA	NA	5.36E-04	4.50E+00	2.41E-03	6.68E-03	1.09E-01	2.14E-03	1.00E+00	1.13E+00	6.27E-01	3.41E-03
MHBG-202 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.26E+00	5.78E+00	3.33E-02	NA	NA	NA	NA	5.36E-04	4.60E+00	2.46E-03	6.68E-03	1.09E-01	2.19E-03	1.00E+00	1.13E+00	6.27E-01	3.49E-03
Mike Horse Creek Channel Area Deposits																						**Minimum HQ (Reference Site)**	**1.19E-03**
AMHR-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
AMHR-200 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
AMHR-400 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
AMHR-600 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
MHCS-00-E25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
MHCS-0-W25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
MHCS-0-W5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
MHCS-100-E25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
MHCS-100-W1 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
MHCS-100-W25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
MHCS-200-E10 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
MHCS-200-E25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
MHCS-200-W10 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
MHCS-525-E5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.59E+00	1.78E+01	1.02E-01	NA	NA	NA	NA	5.36E-04	1.12E+01	6.00E-03	6.68E-03	1.09E-01	6.64E-03	1.00E+00	1.13E+00	6.27E-01	1.06E-02
MHCS-525-W15 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
MHCS-600-E10 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
MHCS-600-W10 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
MHCS-700-E10 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
MHCS-700-E25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
MHCS-700-W10 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
MHCS-800-E15 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
MHCS-800-E5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
MHCS-800-W5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
MHCS-900-E15 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
MHCS-900-E5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
MHCS-900-W5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
MHCS-1000-E10 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
MHCS-1000-W5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
MHCS-1100-E10 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
MHCS-1100-E35 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
MHCS-1200-E15 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
MHCS-1200-E30 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
MHCS-1300-E20 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
MHCS-1300-E35 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
Waste Areas 1 and 2																						**Maximum HQ (Mike Horse Creek Channel Area Deposits)**	**1.06E-02**
UMH1-00 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH1-100 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH1-150 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH1-200 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH1-250 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH1-250+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH1-300 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH1-300+14 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.59E+00	4.76E+00	2.74E-02	NA	NA	NA	NA	5.36E-04	3.00E+00	1.61E-03	6.68E-03	1.09E-01	1.78E-03	1.00E+00	1.13E+00	6.27E-01	2.84E-03
UMH1-350 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH1-350+12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH1-400 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH1-400+12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.59E+00	6.83E+00	3.93E-02	NA	NA	NA	NA	5.36E-04	4.30E+00	2.30E-03	6.68E-03	1.09E-01	2.55E-03	1.00E+00	1.13E+00	6.27E-01	4.07E-03
UMH1-450 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH1-450+12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH1-50 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH1-Comp (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.59E+00	1.55E+01	8.91E-02	NA	NA	NA	NA	5.36E-04	9.74E+00	5.22E-03	6.68E-03	1.09E-01	5.77E-03	1.00E+00	1.13E+00	6.27E-01	9.21E-03
UMH2-00 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE

TABLE C-8B: CADMIUM DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 8 - MIKE HORSE MINE WASTE PILES (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **1.73**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Mourning Dove (Herbivorous Birds - Terrestrial)																							
UMH2-00+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.59E+00	3.02E+00	1.74E-02	NA	NA	NA	NA	5.36E-04	1.90E+00	1.02E-03	6.68E-03	1.09E-01	1.13E-03	1.00E+00	1.13E+00	6.27E-01	1.80E-03
UMH2-100 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH2-100+35 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH2-150 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH2-150+60 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH2-200 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH2-200+85 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UMH2-250 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH2-250+75 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH2-300 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH2-300+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH2-350 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH2-350+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH2-400 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH2-400+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.59E+00	9.10E+00	5.24E-02	NA	NA	NA	NA	5.36E-04	5.73E+00	3.07E-03	6.68E-03	1.09E-01	3.39E-03	1.00E+00	1.13E+00	6.27E-01	5.42E-03
UMH2-450 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH2-450+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH2-50 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH2-50+25b (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH2-500 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH2-500+75 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.59E+00	3.49E+00	2.01E-02	NA	NA	NA	NA	5.36E-04	2.20E+00	1.18E-03	6.68E-03	1.09E-01	1.30E-03	1.00E+00	1.13E+00	6.27E-01	2.08E-03
UMH2-550 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH2-550+75 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH2-600 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH2-600+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UMH2-650 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH2-650+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH2-Comp 1 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.59E+00	7.38E+00	4.25E-02	NA	NA	NA	NA	5.36E-04	4.65E+00	2.49E-03	6.68E-03	1.09E-01	2.75E-03	1.00E+00	1.13E+00	6.27E-01	4.40E-03
UMH2-Comp 2 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.59E+00	1.45E+01	8.34E-02	NA	NA	NA	NA	5.36E-04	9.12E+00	4.89E-03	6.68E-03	1.09E-01	5.40E-03	1.00E+00	1.13E+00	6.27E-01	8.62E-03
Waste Area 3																						**Maximum HQ (Waste Areas 1 and 2)**	**9.21E-03**
UMH3-00 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH3-100 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH3-150 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH3-200 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH3-250 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH3-300 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH3-350 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH3-350+75 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UMH3-400 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH3-400+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UMH3-450 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH3-50 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH3-50+50 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH3-500 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH3-550 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH3-600 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH3-650 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH3-700 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH3-750 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH3-800 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH3-Comp 1 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH3-Comp 2 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.59E+00	2.52E+01	1.45E-01	NA	NA	NA	NA	5.36E-04	1.59E+01	8.52E-03	6.68E-03	1.09E-01	9.42E-03	1.00E+00	1.13E+00	6.27E-01	1.50E-02
UMH3-Comp 3 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.59E+00	7.86E+00	4.53E-02	NA	NA	NA	NA	5.36E-04	4.95E+00	2.65E-03	6.68E-03	1.09E-01	2.93E-03	1.00E+00	1.13E+00	6.27E-01	4.68E-03
																						Maximum HQ (Waste Area 3)	**1.50E-02**

TABLE C-8B: CADMIUM DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 8 - MIKE HORSE MINE WASTE PILES (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 1.73

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Red-Tailed Hawk (Carnivorous Birds - Terrestrial)																							
Reference Sites																							
BCBG-1 (0-6")	9.00E-02	9.00E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.57E+00	8.05E-03	2.48E-03	1.13E+00	1.76E-05	1.00E+00	1.13E+00	1.00E+00	1.76E-05
MHBG-201 (0-6")	9.00E-02	9.00E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.50E+00	2.31E-02	2.48E-03	1.13E+00	5.05E-05	1.00E+00	1.13E+00	1.00E+00	5.05E-05
MHBG-202 (0-6")	9.00E-02	9.00E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.60E+00	2.36E-02	2.48E-03	1.13E+00	5.16E-05	1.00E+00	1.13E+00	1.00E+00	5.16E-05
Mike Horse Creek Channel Area Deposits																						**Minimum HQ (Reference Site)**	**5.16E-05**
AMHR-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
AMHR-200 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
AMHR-400 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
AMHR-600 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
MHCS-00-E25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
MHCS-0-W25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
MHCS-0-W5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
MHCS-100-E25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
MHCS-100-W1 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
MHCS-100-W25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
MHCS-200-E10 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
MHCS-200-E25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
MHCS-200-W10 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
MHCS-525-E5 (0-6")	9.00E-02	9.00E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.12E+01	5.74E-02	2.48E-03	1.13E+00	1.26E-04	1.00E+00	1.13E+00	1.00E+00	1.26E-04
MHCS-525-W15 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
MHCS-600-E10 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
MHCS-600-W10 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
MHCS-700-E10 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
MHCS-700-E25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
MHCS-700-W10 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
MHCS-800-E15 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
MHCS-800-E5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
MHCS-800-W5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
MHCS-900-E15 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
MHCS-900-E5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
MHCS-900-W5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
MHCS-1000-E10 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
MHCS-1000-W5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
MHCS-1100-E10 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
MHCS-1100-E35 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
MHCS-1200-E15 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
MHCS-1200-E30 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
MHCS-1300-E20 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
MHCS-1300-E35 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
Waste Areas 1 and 2																						**Maximum HQ (Mike Horse Creek Channel Area Deposits)**	**1.26E-04**
UMH1-00 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH1-100 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH1-150 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH1-200 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH1-250 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH1-250+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH1-300 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH1-300+14 (0-6")	9.00E-02	9.00E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.00E+00	1.54E-02	2.48E-03	1.13E+00	3.37E-05	1.00E+00	1.13E+00	1.00E+00	3.37E-05
UMH1-350 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH1-350+12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH1-400 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH1-400+12.5 (0-6")	9.00E-02	9.00E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.30E+00	2.20E-02	2.48E-03	1.13E+00	4.83E-05	1.00E+00	1.13E+00	1.00E+00	4.82E-05
UMH1-450 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH1-450+12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH1-50 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH1-Comp (0-6")	9.00E-02	9.00E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	9.74E+00	4.99E-02	2.48E-03	1.13E+00	1.09E-04	1.00E+00	1.13E+00	1.00E+00	1.09E-04
UMH2-00 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE

TABLE C-8B: CADMIUM DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 8 - MIKE HORSE MINE WASTE PILES (Continued)
Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)
calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 1.73

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Red-Tailed Hawk (Carnivorous Birds - Terrestrial)																							
UMH2-00+25 (0-6")	9.00E-02	9.00E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.90E+00	9.74E-03	2.48E-03	1.13E+00	2.13E-05	1.00E+00	1.13E+00	1.00E+00	2.13E-05
UMH2-100 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH2-100+35 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH2-150 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH2-150+60 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH2-200 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH2-200+85 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UMH2-250 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH2-250+75 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH2-300 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH2-300+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH2-350 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH2-350+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH2-400 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH2-400+25 (0-6")	9.00E-02	9.00E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.73E+00	2.94E-02	2.48E-03	1.13E+00	6.43E-05	1.00E+00	1.13E+00	1.00E+00	6.43E-05
UMH2-450 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH2-450+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH2-50 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH2-50+25b (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH2-500 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH2-500+75 (0-6")	9.00E-02	9.00E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.20E+00	1.13E-02	2.48E-03	1.13E+00	2.47E-05	1.00E+00	1.13E+00	1.00E+00	2.47E-05
UMH2-550 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH2-550+75 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH2-600 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH2-600+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UMH2-650 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH2-650+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH2-Comp 1 (0-6")	9.00E-02	9.00E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.65E+00	2.38E-02	2.48E-03	1.13E+00	5.22E-05	1.00E+00	1.13E+00	1.00E+00	5.22E-05
UMH2-Comp 2 (0-6")	9.00E-02	9.00E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	9.12E+00	4.68E-02	2.48E-03	1.13E+00	1.02E-04	1.00E+00	1.13E+00	1.00E+00	1.02E-04
Waste Area 3																						**Maximum HQ (Waste Areas 1 and 2)**	**1.09E-04**
UMH3-00 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH3-100 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH3-150 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH3-200 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH3-250 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH3-300 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH3-350 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH3-350+75 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UMH3-400 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH3-400+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UMH3-450 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH3-50 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH3-50+50 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH3-500 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH3-550 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH3-600 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH3-650 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH3-700 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH3-750 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH3-800 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH3-Comp 1 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH3-Comp 2 (0-6")	9.00E-02	9.00E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.59E+01	8.15E-02	2.48E-03	1.13E+00	1.78E-04	1.00E+00	1.13E+00	1.00E+00	1.78E-04
UMH3-Comp 3 (0-6")	9.00E-02	9.00E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.95E+00	2.54E-02	2.48E-03	1.13E+00	5.56E-05	1.00E+00	1.13E+00	1.00E+00	5.55E-05
																						Maximum HQ (Waste Area 3)	**1.78E-04**

TABLE C-8B: CADMIUM DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 8 - MIKE HORSE MINE WASTE PILES (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 1.73

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
American Kestrel (Insectivorous Birds - Terrestrial)																							
Reference Sites																							
BCBG-1 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	7.00E+00	1.10E+01	1.51E-01	7.84E-04	1.57E+00	1.23E-03	6.61E-03	1.24E-01	8.13E-03	1.00E+00	1.13E+00	6.43E-01	1.26E-02
MHBG-201 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	7.00E+00	3.15E+01	4.33E-01	7.84E-04	4.50E+00	3.53E-03	6.61E-03	1.24E-01	2.33E-02	1.00E+00	1.13E+00	6.43E-01	3.62E-02
MHBG-202 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	7.00E+00	3.22E+01	4.43E-01	7.84E-04	4.60E+00	3.61E-03	6.61E-03	1.24E-01	2.38E-02	1.00E+00	1.13E+00	6.43E-01	3.70E-02
Mike Horse Creek Channel Area Deposits																						**Minimum HQ (Reference Site)**	**1.26E-02**
AMHR-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
AMHR-200 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
AMHR-400 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
AMHR-600 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
MHCS-00-E25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
MHCS-0-W25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
MHCS-0-W5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
MHCS-100-E25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
MHCS-100-W1 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
MHCS-100-W25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
MHCS-200-E10 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
MHCS-200-E25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
MHCS-200-W10 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
MHCS-525-E5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	7.00E+00	7.84E+01	1.08E+00	7.84E-04	1.12E+01	8.79E-03	6.61E-03	1.24E-01	5.80E-02	1.00E+00	1.13E+00	6.43E-01	9.02E-02
MHCS-525-W15 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
MHCS-600-E10 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
MHCS-600-W10 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
MHCS-700-E10 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
MHCS-700-E25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
MHCS-700-W10 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
MHCS-800-E15 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
MHCS-800-E5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
MHCS-800-W5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
MHCS-900-E15 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
MHCS-900-E5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
MHCS-900-W5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
MHCS-1000-E10 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
MHCS-1000-W5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
MHCS-1100-E10 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
MHCS-1100-E35 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
MHCS-1200-E15 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
MHCS-1200-E30 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
MHCS-1300-E20 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
MHCS-1300-E35 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
Waste Areas 1 and 2																						**Maximum HQ (Mike Horse Creek Channel Area Deposits)**	**9.02E-02**
UMH1-00 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH1-100 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH1-150 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH1-200 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH1-250 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH1-250+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH1-300 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH1-300+14 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	7.00E+00	2.10E+01	2.89E-01	7.84E-04	3.00E+00	2.35E-03	6.61E-03	1.24E-01	1.55E-02	1.00E+00	1.13E+00	6.43E-01	2.42E-02
UMH1-350 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH1-350+12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH1-400 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH1-400+12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	7.00E+00	3.01E+01	4.14E-01	7.84E-04	4.30E+00	3.37E-03	6.61E-03	1.24E-01	2.23E-02	1.00E+00	1.13E+00	6.43E-01	3.46E-02
UMH1-450 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH1-450+12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH1-50 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH1-Comp (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	7.00E+00	6.82E+01	9.38E-01	7.84E-04	9.74E+00	7.64E-03	6.61E-03	1.24E-01	5.04E-02	1.00E+00	1.13E+00	6.43E-01	7.84E-02
UMH2-00 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE

TABLE C-8B: CADMIUM DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 8 - MIKE HORSE MINE WASTE PILES (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **1.73**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
American Kestrel (Insectivorous Birds - Terrestrial)																							
UMH2-00+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	7.00E+00	1.33E+01	1.83E-01	7.84E-04	1.90E+00	1.49E-03	6.61E-03	1.24E-01	9.84E-03	1.00E+00	1.13E+00	6.43E-01	1.53E-02
UMH2-100 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH2-100+35 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH2-150 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH2-150+60 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH2-200 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH2-200+85 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UMH2-250 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH2-250+75 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH2-300 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH2-300+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH2-350 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH2-350+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH2-400 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH2-400+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	7.00E+00	4.01E+01	5.52E-01	7.84E-04	5.73E+00	4.49E-03	6.61E-03	1.24E-01	2.97E-02	1.00E+00	1.13E+00	6.43E-01	4.62E-02
UMH2-450 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH2-450+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH2-50 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH2-50+25b (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH2-500 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH2-500+75 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	7.00E+00	1.54E+01	2.12E-01	7.84E-04	2.20E+00	1.73E-03	6.61E-03	1.24E-01	1.14E-02	1.00E+00	1.13E+00	6.43E-01	1.77E-02
UMH2-550 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH2-550+75 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH2-600 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH2-600+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UMH2-650 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH2-650+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH2-Comp 1 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	7.00E+00	3.25E+01	4.48E-01	7.84E-04	4.65E+00	3.65E-03	6.61E-03	1.24E-01	2.41E-02	1.00E+00	1.13E+00	6.43E-01	3.75E-02
UMH2-Comp 2 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	7.00E+00	6.38E+01	8.78E-01	7.84E-04	9.12E+00	7.15E-03	6.61E-03	1.24E-01	4.72E-02	1.00E+00	1.13E+00	6.43E-01	7.35E-02
Waste Area 3																						**Maximum HQ (Waste Areas 1 and 2)**	**7.84E-02**
UMH3-00 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH3-100 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH3-150 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH3-200 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH3-250 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH3-300 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH3-350 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH3-350+75 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UMH3-400 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH3-400+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UMH3-450 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH3-50 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH3-50+50 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH3-500 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH3-550 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH3-600 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH3-650 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH3-700 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH3-750 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH3-800 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH3-Comp 1 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH3-Comp 2 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	7.00E+00	1.11E+02	1.53E+00	7.84E-04	1.59E+01	1.25E-02	6.61E-03	1.24E-01	8.23E-02	1.00E+00	1.13E+00	6.43E-01	1.28E-01
UMH3-Comp 3 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	7.00E+00	3.46E+01	4.77E-01	7.84E-04	4.95E+00	3.88E-03	6.61E-03	1.24E-01	2.56E-02	1.00E+00	1.13E+00	6.43E-01	3.99E-02
																						Maximum HQ (Waste Area 3)	**1.28E-01**

TABLE C-8B: CADMIUM DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 8 - MIKE HORSE MINE WASTE PILES (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 1.73

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Meadow Vole (Small Herbivorous Mammal - Terrestrial)																							
Reference Sites																							
BCBG-1 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.26E+00	1.97E+00	9.25E-03	NA	NA	NA	NA	1.13E-04	1.57E+00	1.77E-04	1.00E+00	3.06E-02	3.08E-01	2.64E+00	3.14E-02	2.64E+00	1.16E-01
MHBG-201 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.26E+00	5.65E+00	2.65E-02	NA	NA	NA	NA	1.13E-04	4.50E+00	5.06E-04	1.00E+00	3.06E-02	8.83E-01	2.64E+00	3.14E-02	2.64E+00	3.34E-01
MHBG-202 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.26E+00	5.78E+00	2.71E-02	NA	NA	NA	NA	1.13E-04	4.60E+00	5.18E-04	1.00E+00	3.06E-02	9.02E-01	2.64E+00	3.14E-02	2.64E+00	3.41E-01
Mike Horse Creek Channel Area Deposits																						**Minimum HQ (Reference Site)**	**1.16E-01**
AMHR-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
AMHR-200 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
AMHR-400 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
AMHR-600 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
MHCS-00-E25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
MHCS-0-W25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
MHCS-0-W5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
MHCS-100-E25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
MHCS-100-W1 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
MHCS-100-W25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
MHCS-200-E10 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
MHCS-200-E25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
MHCS-200-W10 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
MHCS-525-E5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.59E+00	1.78E+01	8.34E-02	NA	NA	NA	NA	1.13E-04	1.12E+01	1.26E-03	1.00E+00	3.06E-02	2.77E+00	2.64E+00	3.14E-02	2.64E+00	1.05E+00
MHCS-525-W15 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
MHCS-600-E10 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
MHCS-600-W10 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
MHCS-700-E10 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
MHCS-700-E25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
MHCS-700-W10 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
MHCS-800-E15 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
MHCS-800-E5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
MHCS-800-W5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
MHCS-900-E15 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
MHCS-900-E5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
MHCS-900-W5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
MHCS-1000-E10 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
MHCS-1000-W5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
MHCS-1100-E10 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
MHCS-1100-E35 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
MHCS-1200-E15 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
MHCS-1200-E30 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
MHCS-1300-E20 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
MHCS-1300-E35 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
Waste Areas 1 and 2																						**Maximum HQ (Mike Horse Creek Channel Area Deposits)**	**1.05E+00**
UMH1-00 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH1-100 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH1-150 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH1-200 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH1-250 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH1-250+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH1-300 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH1-300+14 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.59E+00	4.76E+00	2.23E-02	NA	NA	NA	NA	1.13E-04	3.00E+00	3.38E-04	1.00E+00	3.06E-02	7.41E-01	2.64E+00	3.14E-02	2.64E+00	2.80E-01
UMH1-350 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH1-350+12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH1-400 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH1-400+12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.59E+00	6.83E+00	3.20E-02	NA	NA	NA	NA	1.13E-04	4.30E+00	4.84E-04	1.00E+00	3.06E-02	1.06E+00	2.64E+00	3.14E-02	2.64E+00	4.02E-01
UMH1-450 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH1-450+12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH1-50 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH1-Comp (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.59E+00	1.55E+01	7.25E-02	NA	NA	NA	NA	1.13E-04	9.74E+00	1.10E-03	1.00E+00	3.06E-02	2.41E+00	2.64E+00	3.14E-02	2.64E+00	9.10E-01
UMH2-00 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE

TABLE C-8B: CADMIUM DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 8 - MIKE HORSE MINE WASTE PILES (Continued)
Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)
calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **1.73**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Meadow Vole (Small Herbivorous Mammal - Terrestrial)																							
UMH2-00+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.59E+00	3.02E+00	1.41E-02	NA	NA	NA	NA	1.13E-04	1.90E+00	2.14E-04	1.00E+00	3.06E-02	4.69E-01	2.64E+00	3.14E-02	2.64E+00	1.78E-01
UMH2-100 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH2-100+35 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH2-150 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH2-150+60 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH2-200 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH2-200+85 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UMH2-250 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH2-250+75 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH2-300 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH2-300+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH2-350 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH2-350+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH2-400 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH2-400+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.59E+00	9.10E+00	4.27E-02	NA	NA	NA	NA	1.13E-04	5.73E+00	6.45E-04	1.00E+00	3.06E-02	1.42E+00	2.64E+00	3.14E-02	2.64E+00	5.35E-01
UMH2-450 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH2-450+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH2-50 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH2-50+25b (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH2-500 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH2-500+75 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.59E+00	3.49E+00	1.64E-02	NA	NA	NA	NA	1.13E-04	2.20E+00	2.48E-04	1.00E+00	3.06E-02	5.43E-01	2.64E+00	3.14E-02	2.64E+00	2.06E-01
UMH2-550 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH2-550+75 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH2-600 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH2-600+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UMH2-650 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH2-650+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH2-Comp 1 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.59E+00	7.38E+00	3.46E-02	NA	NA	NA	NA	1.13E-04	4.65E+00	5.23E-04	1.00E+00	3.06E-02	1.15E+00	2.64E+00	3.14E-02	2.64E+00	4.34E-01
UMH2-Comp 2 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.59E+00	1.45E+01	6.79E-02	NA	NA	NA	NA	1.13E-04	9.12E+00	1.03E-03	1.00E+00	3.06E-02	2.25E+00	2.64E+00	3.14E-02	2.64E+00	8.52E-01
Waste Area 3																						**Maximum HQ (Waste Areas 1 and 2)**	**9.10E-01**
UMH3-00 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH3-100 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH3-150 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH3-200 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH3-250 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH3-300 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH3-350 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH3-350+75 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UMH3-400 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH3-400+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UMH3-450 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH3-50 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH3-50+50 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH3-500 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH3-550 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH3-600 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH3-650 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH3-700 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH3-750 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH3-800 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH3-Comp 1 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH3-Comp 2 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.59E+00	2.52E+01	1.18E-01	NA	NA	NA	NA	1.13E-04	1.59E+01	1.79E-03	1.00E+00	3.06E-02	3.93E+00	2.64E+00	3.14E-02	2.64E+00	1.49E+00
UMH3-Comp 3 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.59E+00	7.86E+00	3.69E-02	NA	NA	NA	NA	1.13E-04	4.95E+00	5.57E-04	1.00E+00	3.06E-02	1.22E+00	2.64E+00	3.14E-02	2.64E+00	4.62E-01
																						Maximum HQ (Waste Area 3)	**1.49E+00**

TABLE C-8B: CADMIUM DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 8 - MIKE HORSE MINE WASTE PILES (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **1.73**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
White-Tailed Deer (Large Herbivorous Mammal - Terrestrial)																							
Reference Sites																							
BCBG-1 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.26E+00	1.97E+00	2.82E+00	NA	NA	NA	NA	2.86E-02	1.57E+00	4.50E-02	9.68E-03	1.35E+02	2.06E-04	2.64E+00	3.14E-02	1.60E+00	1.29E-04
MHBG-201 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.26E+00	5.65E+00	8.09E+00	NA	NA	NA	NA	2.86E-02	4.50E+00	1.29E-01	9.68E-03	1.35E+02	5.89E-04	2.64E+00	3.14E-02	1.60E+00	3.69E-04
MHBG-202 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.26E+00	5.78E+00	8.27E+00	NA	NA	NA	NA	2.86E-02	4.60E+00	1.32E-01	9.68E-03	1.35E+02	6.03E-04	2.64E+00	3.14E-02	1.60E+00	3.77E-04
Mike Horse Creek Channel Area Deposits																						**Minimum HQ (Reference Site)**	**1.29E-04**
AMHR-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
AMHR-200 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
AMHR-400 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
AMHR-600 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
MHCS-00-E25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
MHCS-0-W25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
MHCS-0-W5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
MHCS-100-E25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
MHCS-100-W1 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
MHCS-100-W25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
MHCS-200-E10 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
MHCS-200-E25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
MHCS-200-W10 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
MHCS-525-E5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.59E+00	1.78E+01	2.55E+01	NA	NA	NA	NA	2.86E-02	1.12E+01	3.21E-01	9.68E-03	1.35E+02	1.85E-03	2.64E+00	3.14E-02	1.60E+00	1.16E-03
MHCS-525-W15 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
MHCS-600-E10 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
MHCS-600-W10 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
MHCS-700-E10 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
MHCS-700-E25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
MHCS-700-W10 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
MHCS-800-E15 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
MHCS-800-E5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
MHCS-800-W5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
MHCS-900-E15 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
MHCS-900-E5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
MHCS-900-W5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
MHCS-1000-E10 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
MHCS-1000-W5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
MHCS-1100-E10 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
MHCS-1100-E35 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
MHCS-1200-E15 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
MHCS-1200-E30 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
MHCS-1300-E20 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
MHCS-1300-E35 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
Waste Areas 1 and 2																						**Maximum HQ (Mike Horse Creek Channel Area Deposits)**	**1.16E-03**
UMH1-00 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH1-100 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH1-150 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH1-200 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH1-250 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH1-250+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH1-300 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH1-300+14 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.59E+00	4.76E+00	6.82E+00	NA	NA	NA	NA	2.86E-02	3.00E+00	8.59E-02	9.68E-03	1.35E+02	4.95E-04	2.64E+00	3.14E-02	1.60E+00	3.10E-04
UMH1-350 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH1-350+12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH1-400 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH1-400+12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.59E+00	6.83E+00	9.78E+00	NA	NA	NA	NA	2.86E-02	4.30E+00	1.23E-01	9.68E-03	1.35E+02	7.10E-04	2.64E+00	3.14E-02	1.60E+00	4.44E-04
UMH1-450 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH1-450+12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH1-50 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH1-Comp (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.59E+00	1.55E+01	2.21E+01	NA	NA	NA	NA	2.86E-02	9.74E+00	2.79E-01	9.68E-03	1.35E+02	1.61E-03	2.64E+00	3.14E-02	1.60E+00	1.01E-03
UMH2-00 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE

TABLE C-8B: CADMIUM DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 8 - MIKE HORSE MINE WASTE PILES (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **1.73**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
White-Tailed Deer (Large Herbivorous Mammal - Terrestrial)																							
UMH2-00+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.59E+00	3.02E+00	4.32E+00	NA	NA	NA	NA	2.86E-02	1.90E+00	5.44E-02	9.68E-03	1.35E+02	3.14E-04	2.64E+00	3.14E-02	1.60E+00	1.96E-04
UMH2-100 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH2-100+35 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH2-150 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH2-150+60 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH2-200 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH2-200+85 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UMH2-250 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH2-250+75 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH2-300 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH2-300+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH2-350 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH2-350+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH2-400 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH2-400+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.59E+00	9.10E+00	1.30E+01	NA	NA	NA	NA	2.86E-02	5.73E+00	1.64E-01	9.68E-03	1.35E+02	9.46E-04	2.64E+00	3.14E-02	1.60E+00	5.92E-04
UMH2-450 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH2-450+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH2-50 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH2-50+25b (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH2-500 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH2-500+75 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.59E+00	3.49E+00	5.00E+00	NA	NA	NA	NA	2.86E-02	2.20E+00	6.30E-02	9.68E-03	1.35E+02	3.63E-04	2.64E+00	3.14E-02	1.60E+00	2.27E-04
UMH2-550 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH2-550+75 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH2-600 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH2-600+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UMH2-650 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH2-650+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH2-Comp 1 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.59E+00	7.38E+00	1.06E+01	NA	NA	NA	NA	2.86E-02	4.65E+00	1.33E-01	9.68E-03	1.35E+02	7.67E-04	2.64E+00	3.14E-02	1.60E+00	4.80E-04
UMH2-Comp 2 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.59E+00	1.45E+01	2.07E+01	NA	NA	NA	NA	2.86E-02	9.12E+00	2.61E-01	9.68E-03	1.35E+02	1.51E-03	2.64E+00	3.14E-02	1.60E+00	9.42E-04
Waste Area 3																						**Maximum HQ (Waste Areas 1 and 2)**	**1.01E-03**
UMH3-00 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH3-100 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH3-150 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH3-200 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH3-250 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH3-300 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH3-350 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH3-350+75 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UMH3-400 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH3-400+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UMH3-450 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH3-50 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH3-50+50 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH3-500 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH3-550 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH3-600 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH3-650 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH3-700 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH3-750 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH3-800 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH3-Comp 1 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH3-Comp 2 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.59E+00	2.52E+01	3.61E+01	NA	NA	NA	NA	2.86E-02	1.59E+01	4.55E-01	9.68E-03	1.35E+02	2.62E-03	2.64E+00	3.14E-02	1.60E+00	1.64E-03
UMH3-Comp 3 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.59E+00	7.86E+00	1.13E+01	NA	NA	NA	NA	2.86E-02	4.95E+00	1.42E-01	9.68E-03	1.35E+02	8.17E-04	2.64E+00	3.14E-02	1.60E+00	5.11E-04
																						Maximum HQ (Waste Area 3)	**1.64E-03**

TABLE C-8B: CADMIUM DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 8 - MIKE HORSE MINE WASTE PILES (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 1.73

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Red Fox (Carnivorous Mammal - Terrestrial)																							
Reference Sites																							
BCBG-1 (0-6")	1.72E-01	1.72E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.57E+00	7.54E-03	1.28E-03	4.54E+00	2.12E-06	2.64E+00	3.14E-02	1.96E+00	1.08E-06
MHBG-201 (0-6")	1.72E-01	1.72E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.50E+00	2.16E-02	1.28E-03	4.54E+00	6.09E-06	2.64E+00	3.14E-02	1.96E+00	3.11E-06
MHBG-202 (0-6")	1.72E-01	1.72E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.60E+00	2.21E-02	1.28E-03	4.54E+00	6.23E-06	2.64E+00	3.14E-02	1.96E+00	3.18E-06
Mike Horse Creek Channel Area Deposits																						**Minimum HQ (Reference Site)**	**1.08E-06**
AMHR-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
AMHR-200 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
AMHR-400 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
AMHR-600 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
MHCS-00-E25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
MHCS-0-W25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
MHCS-0-W5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
MHCS-100-E25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
MHCS-100-W1 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
MHCS-100-W25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
MHCS-200-E10 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
MHCS-200-E25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
MHCS-200-W10 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
MHCS-525-E5 (0-6")	1.72E-01	1.72E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.12E+01	5.38E-02	1.28E-03	4.54E+00	1.52E-05	2.64E+00	3.14E-02	1.96E+00	7.74E-06
MHCS-525-W15 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
MHCS-600-E10 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
MHCS-600-W10 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
MHCS-700-E10 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
MHCS-700-E25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
MHCS-700-W10 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
MHCS-800-E15 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
MHCS-800-E5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
MHCS-800-W5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
MHCS-900-E15 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
MHCS-900-E5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
MHCS-900-W5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
MHCS-1000-E10 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
MHCS-1000-W5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
MHCS-1100-E10 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
MHCS-1100-E35 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
MHCS-1200-E15 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
MHCS-1200-E30 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
MHCS-1300-E20 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
MHCS-1300-E35 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
Waste Areas 1 and 2																						**Maximum HQ (Mike Horse Creek Channel Area Deposits)**	**7.74E-06**
UMH1-00 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH1-100 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH1-150 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH1-200 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH1-250 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH1-250+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH1-300 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH1-300+14 (0-6")	1.72E-01	1.72E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.00E+00	1.44E-02	1.28E-03	4.54E+00	4.06E-06	2.64E+00	3.14E-02	1.96E+00	2.07E-06
UMH1-350 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH1-350+12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH1-400 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH1-400+12.5 (0-6")	1.72E-01	1.72E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.30E+00	2.07E-02	1.28E-03	4.54E+00	5.82E-06	2.64E+00	3.14E-02	1.96E+00	2.97E-06
UMH1-450 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH1-450+12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH1-50 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH1-Comp (0-6")	1.72E-01	1.72E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	9.74E+00	4.68E-02	1.28E-03	4.54E+00	1.32E-05	2.64E+00	3.14E-02	1.96E+00	6.73E-06
UMH2-00 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE

TABLE C-8B: CADMIUM DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 8 - MIKE HORSE MINE WASTE PILES (Continued)
Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)
calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **1.73**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Red Fox (Carnivorous Mammal - Terrestrial)																							
UMH2-00+25 (0-6")	1.72E-01	1.72E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.90E+00	9.13E-03	1.28E-03	4.54E+00	2.57E-06	2.64E+00	3.14E-02	1.96E+00	1.31E-06
UMH2-100 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH2-100+35 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH2-150 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH2-150+60 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH2-200 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH2-200+85 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UMH2-250 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH2-250+75 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH2-300 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH2-300+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH2-350 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH2-350+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH2-400 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH2-400+25 (0-6")	1.72E-01	1.72E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.73E+00	2.75E-02	1.28E-03	4.54E+00	7.75E-06	2.64E+00	3.14E-02	1.96E+00	3.96E-06
UMH2-450 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH2-450+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH2-50 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH2-50+25b (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH2-500 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH2-500+75 (0-6")	1.72E-01	1.72E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.20E+00	1.06E-02	1.28E-03	4.54E+00	2.98E-06	2.64E+00	3.14E-02	1.96E+00	1.52E-06
UMH2-550 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH2-550+75 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH2-600 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH2-600+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UMH2-650 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH2-650+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH2-Comp 1 (0-6")	1.72E-01	1.72E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.65E+00	2.23E-02	1.28E-03	4.54E+00	6.29E-06	2.64E+00	3.14E-02	1.96E+00	3.21E-06
UMH2-Comp 2 (0-6")	1.72E-01	1.72E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	9.12E+00	4.38E-02	1.28E-03	4.54E+00	1.23E-05	2.64E+00	3.14E-02	1.96E+00	6.30E-06
Waste Area 3																						**Maximum HQ (Waste Areas 1 and 2)**	**6.73E-06**
UMH3-00 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH3-100 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH3-150 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH3-200 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH3-250 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH3-300 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH3-350 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH3-350+75 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UMH3-400 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH3-400+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UMH3-450 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH3-50 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH3-50+50 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH3-500 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH3-550 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH3-600 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH3-650 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH3-700 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH3-750 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH3-800 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH3-Comp 1 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH3-Comp 2 (0-6")	1.72E-01	1.72E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.59E+01	7.64E-02	1.28E-03	4.54E+00	2.15E-05	2.64E+00	3.14E-02	1.96E+00	1.10E-05
UMH3-Comp 3 (0-6")	1.72E-01	1.72E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.95E+00	2.38E-02	1.28E-03	4.54E+00	6.70E-06	2.64E+00	3.14E-02	1.96E+00	3.42E-06
																						Maximum HQ (Waste Area 3)	**1.10E-05**

TABLE C-8B: CADMIUM DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 8 - MIKE HORSE MINE WASTE PILES (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 1.73

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Masked Shrew (Omnivorous Mammal - Terrestrial, Wetland)																							
Reference Sites																							
BCBG-1 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	7.00E+00	1.10E+01	9.31E-02	1.10E-03	1.57E+00	1.73E-03	1.00E+00	5.50E-03	1.72E+01	2.64E+00	3.14E-02	2.93E+00	5.88E+00
MHBG-201 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	7.00E+00	3.15E+01	2.67E-01	1.10E-03	4.50E+00	4.95E-03	1.00E+00	5.50E-03	4.94E+01	2.64E+00	3.14E-02	2.93E+00	1.69E+01
MHBG-202 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	7.00E+00	3.22E+01	2.73E-01	1.10E-03	4.60E+00	5.07E-03	1.00E+00	5.50E-03	5.05E+01	2.64E+00	3.14E-02	2.93E+00	1.72E+01
Mike Horse Creek Channel Area Deposits																						**Minimum HQ (Reference Site)**	**5.88E+00**
AMHR-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
AMHR-200 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
AMHR-400 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
AMHR-600 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
MHCS-00-E25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
MHCS-0-W25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
MHCS-0-W5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
MHCS-100-E25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
MHCS-100-W1 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
MHCS-100-W25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
MHCS-200-E10 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
MHCS-200-E25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
MHCS-200-W10 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
MHCS-525-E5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	7.00E+00	7.84E+01	6.64E-01	1.10E-03	1.12E+01	1.23E-02	1.00E+00	5.50E-03	1.23E+02	2.64E+00	3.14E-02	2.93E+00	4.20E+01
MHCS-525-W15 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
MHCS-600-E10 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
MHCS-600-W10 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
MHCS-700-E10 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
MHCS-700-E25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
MHCS-700-W10 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
MHCS-800-E15 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
MHCS-800-E5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
MHCS-800-W5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
MHCS-900-E15 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
MHCS-900-E5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
MHCS-900-W5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
MHCS-1000-E10 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
MHCS-1000-W5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
MHCS-1100-E10 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
MHCS-1100-E35 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
MHCS-1200-E15 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
MHCS-1200-E30 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
MHCS-1300-E20 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
MHCS-1300-E35 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
Waste Areas 1 and 2																						**Maximum HQ (Mike Horse Creek Channel Area Deposits)**	**4.20E+01**
UMH1-00 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH1-100 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH1-150 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH1-200 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH1-250 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH1-250+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH1-300 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH1-300+14 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	7.00E+00	2.10E+01	1.78E-01	1.10E-03	3.00E+00	3.30E-03	1.00E+00	5.50E-03	3.29E+01	2.64E+00	3.14E-02	2.93E+00	1.12E+01
UMH1-350 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH1-350+12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH1-400 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH1-400+12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	7.00E+00	3.01E+01	2.55E-01	1.10E-03	4.30E+00	4.73E-03	1.00E+00	5.50E-03	4.72E+01	2.64E+00	3.14E-02	2.93E+00	1.61E+01
UMH1-450 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH1-450+12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH1-50 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH1-Comp (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	7.00E+00	6.82E+01	5.77E-01	1.10E-03	9.74E+00	1.07E-02	1.00E+00	5.50E-03	1.07E+02	2.64E+00	3.14E-02	2.93E+00	3.65E+01
UMH2-00 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE

TABLE C-8B: CADMIUM DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 8 - MIKE HORSE MINE WASTE PILES (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 1.73

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Masked Shrew (Omnivorous Mammal - Terrestrial, Wetland)																							
UMH2-00+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	7.00E+00	1.33E+01	1.13E-01	1.10E-03	1.90E+00	2.09E-03	1.00E+00	5.50E-03	2.09E+01	2.64E+00	3.14E-02	2.93E+00	7.12E+00
UMH2-100 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH2-100+35 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH2-150 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH2-150+60 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH2-200 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH2-200+85 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UMH2-250 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH2-250+75 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH2-300 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH2-300+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH2-350 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH2-350+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH2-400 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH2-400+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	7.00E+00	4.01E+01	3.40E-01	1.10E-03	5.73E+00	6.31E-03	1.00E+00	5.50E-03	6.29E+01	2.64E+00	3.14E-02	2.93E+00	2.15E+01
UMH2-450 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH2-450+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH2-50 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH2-50+25b (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH2-500 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH2-500+75 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	7.00E+00	1.54E+01	1.30E-01	1.10E-03	2.20E+00	2.42E-03	1.00E+00	5.50E-03	2.42E+01	2.64E+00	3.14E-02	2.93E+00	8.24E+00
UMH2-550 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH2-550+75 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH2-600 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH2-600+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UMH2-650 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH2-650+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH2-Comp 1 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	7.00E+00	3.25E+01	2.76E-01	1.10E-03	4.65E+00	5.12E-03	1.00E+00	5.50E-03	5.11E+01	2.64E+00	3.14E-02	2.93E+00	1.74E+01
UMH2-Comp 2 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	7.00E+00	6.38E+01	5.41E-01	1.10E-03	9.12E+00	1.00E-02	1.00E+00	5.50E-03	1.00E+02	2.64E+00	3.14E-02	2.93E+00	3.42E+01
Waste Area 3																						**Maximum HQ (Waste Areas 1 and 2)**	**3.65E+01**
UMH3-00 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH3-100 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH3-150 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH3-200 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH3-250 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH3-300 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH3-350 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH3-350+75 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UMH3-400 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH3-400+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UMH3-450 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH3-50 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH3-50+50 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH3-500 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH3-550 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH3-600 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH3-650 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH3-700 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH3-750 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH3-800 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH3-Comp 1 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UMH3-Comp 2 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	7.00E+00	1.11E+02	9.43E-01	1.10E-03	1.59E+01	1.75E-02	1.00E+00	5.50E-03	1.75E+02	2.64E+00	3.14E-02	2.93E+00	5.96E+01
UMH3-Comp 3 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	7.00E+00	3.46E+01	2.93E-01	1.10E-03	4.95E+00	5.45E-03	1.00E+00	5.50E-03	5.43E+01	2.64E+00	3.14E-02	2.93E+00	1.85E+01
																						Maximum HQ (Waste Area 3)	**5.96E+01**

TABLE C-8B: CADMIUM DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 8 - MIKE HORSE MINE WASTE PILES (Continued)
Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)
calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **1.73**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)

Notes

1 See Tables A-1 through A-13 for ingestion rates, foraging ranges used to calculate the SUF, and body weights.

2 BAFs were calculated by dividing site-collected tissue by collocated soil concentrations (BAFs are in dry weight). The maximum BAF calculated from the Beartrap Creek and Blackfoot River transects was used for site dose calculations. The maximum BAF from the terrestrial reference site was used for reference site dose calculations.

3 The mammal, plant, and invertebrate concentrations were calculated by multiplying the soil concentration by the BAF to generate a tissue concentration (see note 2).

4 Mammal, plant, and invertebrate daily doses were calculated by multiplying the ingestion rate (see note 1) by the tissue concentration (see note 3).

5 Soil concentration from 0 to 6 inches below ground surface at point ID from laboratory analysis. XRF 10 data were unavailable for cadmium. Doses were not calculated for detected and non-detected soil concentrations measured below the minimum reference site concentration, as indicated by BB. For results that were measured at less than the detection limit, doses were calculated using half of the detection limit.

6 Soil daily dose was calculated by multiplying the soil ingestion rate (see note 1) by soil concentration (see note 5).

7 Total daily dose is calculated using the following equation: total daily dose = ([mammal daily dose (if applicable) + plant daily dose (if applicable) + invertebrate daily dose (if applicable) + soil daily dose]*SUF)/receptor species body weight.

8 The derivation of TRVs is described in DTSC 2009. The high TRV was used for dose calculations.

9 Allometrically adjusted TRVs for birds were calculated using the following equation: receptor species TRV = (test species TRV) x (test species body weight / receptor species body weight)$^{(1-1.2)}$.

10 Allometrically adjusted TRVs for mammals were calculated using the following equation: receptor species TRV = (test species TRV) x (test species body weight / receptor species body weight)$^{(1-0.94)}$.

11 HQs were calculated using the following equation: HQ = total daily dose/allometrically adjusted TRV.

12 Highlighted cells indicate an HQ greater than 1.0.

BAF	Bioaccumulation Factor	mg/day	Milligram per day
BB	Below minimum background reference site concentration	mg/kg	Milligram per kilogram
DTSC	California Department of Toxic Substances Control	NA	Not applicable
EE/CA	Engineering Evaluation/Cost Analysis	Navy	Department of the Navy
EU	Exposure Unit	SUF	Site use factor
HQ	Hazard quotient	TRV	Toxicity reference value
ID	Identification	XRF	X-ray flourescence
kg	Kilogram	XRF 10	XRF measurements recorded following drying and seiving through a #10 -mesh screen
kg/day	Kilogram per day		

Sources: Department of the Navy. 1998. "Development of Toxicity Reference Values for Conducting Ecological Risk Assessments at Naval Facilities in California, Interim Final." Prepared by Naval Facilities Engineering Command, Engineering Field Activity West (EFA West). San Bruno, California.
DTSC. 2009. HERD Ecological Risk Assessment Note 6. February. Available on-line at: http://www.dtsc.ca.gov/AssessingRisk/upload/CdEconote_Final.pdf.

TABLE C-8C: COPPER DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 8 - MIKE HORSE MINE WASTE PILES (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **1.73**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Mourning Dove (Herbivorous Birds - Terrestrial)																							
Reference Sites																							
BCBG-1 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	7.79E-01	2.55E+01	1.47E-01	NA	NA	NA	NA	5.36E-04	3.28E+01	1.76E-02	6.68E-03	1.09E-01	1.01E-02	5.23E+01	4.09E-01	4.01E+01	2.51E-04
MHBG-201 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	7.79E-01	4.87E+01	2.80E-01	NA	NA	NA	NA	5.36E-04	6.25E+01	3.35E-02	6.68E-03	1.09E-01	1.92E-02	5.23E+01	4.09E-01	4.01E+01	4.79E-04
MHBG-202 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	7.79E-01	4.22E+01	2.43E-01	NA	NA	NA	NA	5.36E-04	5.42E+01	2.90E-02	6.68E-03	1.09E-01	1.67E-02	5.23E+01	4.09E-01	4.01E+01	4.15E-04
Mike Horse Creek Channel Area Deposits																						**Minimum HQ (Reference Site)**	**2.51E-04**
AMHR-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	6.41E+01	3.69E-01	NA	NA	NA	NA	5.36E-04	5.66E+01	3.03E-02	6.68E-03	1.09E-01	2.44E-02	5.23E+01	4.09E-01	4.01E+01	6.09E-04
AMHR-200 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	6.00E+01	3.45E-01	NA	NA	NA	NA	5.36E-04	5.30E+01	2.84E-02	6.68E-03	1.09E-01	2.29E-02	5.23E+01	4.09E-01	4.01E+01	5.70E-04
AMHR-400 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	6.29E+01	3.63E-01	NA	NA	NA	NA	5.36E-04	5.56E+01	2.98E-02	6.68E-03	1.09E-01	2.40E-02	5.23E+01	4.09E-01	4.01E+01	5.98E-04
AMHR-600 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	8.93E+01	5.14E-01	NA	NA	NA	NA	5.36E-04	7.89E+01	4.23E-02	6.68E-03	1.09E-01	3.40E-02	5.23E+01	4.09E-01	4.01E+01	8.48E-04
MHCS-00-E25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	4.59E+02	2.64E+00	NA	NA	NA	NA	5.36E-04	4.05E+02	2.17E-01	6.68E-03	1.09E-01	1.75E-01	5.23E+01	4.09E-01	4.01E+01	4.36E-03
MHCS-0-W25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	8.12E+01	4.68E-01	NA	NA	NA	NA	5.36E-04	7.18E+01	3.85E-02	6.68E-03	1.09E-01	3.10E-02	5.23E+01	4.09E-01	4.01E+01	7.72E-04
MHCS-0-W5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	5.53E+01	3.18E-01	NA	NA	NA	NA	5.36E-04	4.88E+01	2.62E-02	6.68E-03	1.09E-01	2.11E-02	5.23E+01	4.09E-01	4.01E+01	5.25E-04
MHCS-100-E25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	6.30E+02	3.63E+00	NA	NA	NA	NA	5.36E-04	5.57E+02	2.98E-01	6.68E-03	1.09E-01	2.40E-01	5.23E+01	4.09E-01	4.01E+01	5.99E-03
MHCS-100-W1 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	4.37E+02	2.52E+00	NA	NA	NA	NA	5.36E-04	3.86E+02	2.07E-01	6.68E-03	1.09E-01	1.67E-01	5.23E+01	4.09E-01	4.01E+01	4.15E-03
MHCS-100-W25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	5.73E+01	3.30E-01	NA	NA	NA	NA	5.36E-04	5.06E+01	2.71E-02	6.68E-03	1.09E-01	2.19E-02	5.23E+01	4.09E-01	4.01E+01	5.45E-04
MHCS-200-E10 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	2.45E+02	1.41E+00	NA	NA	NA	NA	5.36E-04	2.16E+02	1.16E-01	6.68E-03	1.09E-01	9.34E-02	5.23E+01	4.09E-01	4.01E+01	2.33E-03
MHCS-200-E25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
MHCS-200-W10 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	8.79E+01	5.06E-01	NA	NA	NA	NA	5.36E-04	7.77E+01	4.16E-02	6.68E-03	1.09E-01	3.35E-02	5.23E+01	4.09E-01	4.01E+01	8.35E-04
MHCS-525-E5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	1.21E+02	6.97E-01	NA	NA	NA	NA	5.36E-04	1.07E+02	5.73E-02	6.68E-03	1.09E-01	4.61E-02	5.23E+01	4.09E-01	4.01E+01	1.15E-03
MHCS-525-W15 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	3.39E+02	1.95E+00	NA	NA	NA	NA	5.36E-04	3.00E+02	1.61E-01	6.68E-03	1.09E-01	1.29E-01	5.23E+01	4.09E-01	4.01E+01	3.22E-03
MHCS-600-E10 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	2.36E+02	1.36E+00	NA	NA	NA	NA	5.36E-04	2.09E+02	1.12E-01	6.68E-03	1.09E-01	9.02E-02	5.23E+01	4.09E-01	4.01E+01	2.25E-03
MHCS-600-W10 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	3.22E+03	1.86E+01	NA	NA	NA	NA	5.36E-04	2.85E+03	1.53E+00	6.68E-03	1.09E-01	1.23E+00	5.23E+01	4.09E-01	4.01E+01	3.06E-02
MHCS-700-E10 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	3.51E+02	2.02E+00	NA	NA	NA	NA	5.36E-04	3.11E+02	1.66E-01	6.68E-03	1.09E-01	1.34E-01	5.23E+01	4.09E-01	4.01E+01	3.34E-03
MHCS-700-E25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	5.33E+01	3.07E-01	NA	NA	NA	NA	5.36E-04	4.71E+01	2.52E-02	6.68E-03	1.09E-01	2.03E-02	5.23E+01	4.09E-01	4.01E+01	5.07E-04
MHCS-700-W10 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	1.82E+03	1.05E+01	NA	NA	NA	NA	5.36E-04	1.61E+03	8.62E-01	6.68E-03	1.09E-01	6.94E-01	5.23E+01	4.09E-01	4.01E+01	1.73E-02
MHCS-800-E15 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
MHCS-800-E5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	5.01E+02	2.89E+00	NA	NA	NA	NA	5.36E-04	4.43E+02	2.37E-01	6.68E-03	1.09E-01	1.91E-01	5.23E+01	4.09E-01	4.01E+01	4.76E-03
MHCS-800-W5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	7.44E+02	4.29E+00	NA	NA	NA	NA	5.36E-04	6.58E+02	3.52E-01	6.68E-03	1.09E-01	2.84E-01	5.23E+01	4.09E-01	4.01E+01	7.07E-03
MHCS-900-E15 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
MHCS-900-E5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	4.92E+02	2.84E+00	NA	NA	NA	NA	5.36E-04	4.35E+02	2.33E-01	6.68E-03	1.09E-01	1.88E-01	5.23E+01	4.09E-01	4.01E+01	4.68E-03
MHCS-900-W5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	6.15E+02	3.55E+00	NA	NA	NA	NA	5.36E-04	5.44E+02	2.91E-01	6.68E-03	1.09E-01	2.35E-01	5.23E+01	4.09E-01	4.01E+01	5.85E-03
MHCS-1000-E10 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	3.97E+01	2.29E-01	NA	NA	NA	NA	5.36E-04	3.51E+01	1.88E-02	6.68E-03	1.09E-01	1.51E-02	5.23E+01	4.09E-01	4.01E+01	3.77E-04
MHCS-1000-W5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	1.56E+03	8.96E+00	NA	NA	NA	NA	5.36E-04	1.37E+03	7.37E-01	6.68E-03	1.09E-01	5.93E-01	5.23E+01	4.09E-01	4.01E+01	1.48E-02
MHCS-1100-E10 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	1.53E+02	8.84E-01	NA	NA	NA	NA	5.36E-04	1.36E+02	7.27E-02	6.68E-03	1.09E-01	5.85E-02	5.23E+01	4.09E-01	4.01E+01	1.46E-03
MHCS-1100-E35 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
MHCS-1200-E15 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	1.53E+02	8.79E-01	NA	NA	NA	NA	5.36E-04	1.35E+02	7.23E-02	6.68E-03	1.09E-01	5.82E-02	5.23E+01	4.09E-01	4.01E+01	1.45E-03
MHCS-1200-E30 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	4.76E+01	2.74E-01	NA	NA	NA	NA	5.36E-04	4.20E+01	2.25E-02	6.68E-03	1.09E-01	1.81E-02	5.23E+01	4.09E-01	4.01E+01	4.52E-04
MHCS-1300-E20 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	1.94E+02	1.12E+00	NA	NA	NA	NA	5.36E-04	1.72E+02	9.20E-02	6.68E-03	1.09E-01	7.41E-02	5.23E+01	4.09E-01	4.01E+01	1.85E-03
MHCS-1300-E35 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	1.82E+02	1.05E+00	NA	NA	NA	NA	5.36E-04	1.61E+02	8.64E-02	6.68E-03	1.09E-01	6.96E-02	5.23E+01	4.09E-01	4.01E+01	1.73E-03
Waste Areas 1 and 2																						**Maximum HQ (Mike Horse Creek Channel Area Deposits)**	**3.06E-02**
UMH1-00 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	1.35E+02	7.75E-01	NA	NA	NA	NA	5.36E-04	1.19E+02	6.37E-02	6.68E-03	1.09E-01	5.13E-02	5.23E+01	4.09E-01	4.01E+01	1.28E-03
UMH1-100 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	2.03E+02	1.17E+00	NA	NA	NA	NA	5.36E-04	1.79E+02	9.61E-02	6.68E-03	1.09E-01	7.74E-02	5.23E+01	4.09E-01	4.01E+01	1.93E-03
UMH1-150 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	5.91E+01	3.41E-01	NA	NA	NA	NA	5.36E-04	5.22E+01	2.80E-02	6.68E-03	1.09E-01	2.25E-02	5.23E+01	4.09E-01	4.01E+01	5.62E-04
UMH1-200 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	1.95E+01	1.12E-01	NA	NA	NA	NA	5.36E-04	1.72E+01	9.21E-03	6.68E-03	1.09E-01	7.42E-03	5.23E+01	4.09E-01	4.01E+01	1.85E-04
UMH1-250 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UMH1-250+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UMH1-300 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	1.12E+02	6.44E-01	NA	NA	NA	NA	5.36E-04	9.87E+01	5.29E-02	6.68E-03	1.09E-01	4.26E-02	5.23E+01	4.09E-01	4.01E+01	1.06E-03
UMH1-300+14 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	6.45E+01	3.72E-01	NA	NA	NA	NA	5.36E-04	5.70E+01	3.05E-02	6.68E-03	1.09E-01	2.46E-02	5.23E+01	4.09E-01	4.01E+01	6.13E-04
UMH1-350 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	1.15E+02	6.62E-01	NA	NA	NA	NA	5.36E-04	1.02E+02	5.44E-02	6.68E-03	1.09E-01	4.38E-02	5.23E+01	4.09E-01	4.01E+01	1.09E-03
UMH1-350+12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	3.96E+01	2.28E-01	NA	NA	NA	NA	5.36E-04	3.50E+01	1.88E-02	6.68E-03	1.09E-01	1.51E-02	5.23E+01	4.09E-01	4.01E+01	3.76E-04
UMH1-400 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	7.27E+01	4.19E-01	NA	NA	NA	NA	5.36E-04	6.43E+01	3.44E-02	6.68E-03	1.09E-01	2.77E-02	5.23E+01	4.09E-01	4.01E+01	6.91E-04
UMH1-400+12.5 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UMH1-450 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	4.08E+01	2.35E-01	NA	NA	NA	NA	5.36E-04	3.60E+01	1.93E-02	6.68E-03	1.09E-01	1.56E-02	5.23E+01	4.09E-01	4.01E+01	3.87E-04
UMH1-450+12.5 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UMH1-50 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	9.54E+01	5.50E-01	NA	NA	NA	NA	5.36E-04	8.43E+01	4.52E-02	6.68E-03	1.09E-01	3.64E-02	5.23E+01	4.09E-01	4.01E+01	9.07E-04
UMH1-Comp (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	1.36E+02	7.83E-01	NA	NA	NA	NA	5.36E-04	1.20E+02	6.43E-02	6.68E-03	1.09E-01	5.18E-02	5.23E+01	4.09E-01	4.01E+01	1.29E-03
UMH2-00 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	4.48E+02	2.58E+00	NA	NA	NA	NA	5.36E-04	3.96E+02	2.12E-01	6.68E-03	1.09E-01	1.71E-01	5.23E+01	4.09E-01	4.01E+01	4.26E-03

TABLE C-8C: COPPER DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 8 - MIKE HORSE MINE WASTE PILES (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **1.73**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Mourning Dove (Herbivorous Birds - Terrestrial)																							
UMH2-00+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	5.32E+01	3.06E-01	NA	NA	NA	NA	5.36E-04	4.70E+01	2.52E-02	6.68E-03	1.09E-01	2.03E-02	5.23E+01	4.09E-01	4.01E+01	5.05E-04
UMH2-100 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	5.70E+02	3.28E+00	NA	NA	NA	NA	5.36E-04	5.04E+02	2.70E-01	6.68E-03	1.09E-01	2.17E-01	5.23E+01	4.09E-01	4.01E+01	5.42E-03
UMH2-100+35 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	1.13E+02	6.52E-01	NA	NA	NA	NA	5.36E-04	1.00E+02	5.36E-02	6.68E-03	1.09E-01	4.32E-02	5.23E+01	4.09E-01	4.01E+01	1.08E-03
UMH2-150 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	3.02E+02	1.74E+00	NA	NA	NA	NA	5.36E-04	2.67E+02	1.43E-01	6.68E-03	1.09E-01	1.15E-01	5.23E+01	4.09E-01	4.01E+01	2.87E-03
UMH2-150+60 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	1.18E+02	6.78E-01	NA	NA	NA	NA	5.36E-04	1.04E+02	5.57E-02	6.68E-03	1.09E-01	4.49E-02	5.23E+01	4.09E-01	4.01E+01	1.12E-03
UMH2-200 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	5.53E+02	3.19E+00	NA	NA	NA	NA	5.36E-04	4.89E+02	2.62E-01	6.68E-03	1.09E-01	2.11E-01	5.23E+01	4.09E-01	4.01E+01	5.26E-03
UMH2-200+85 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	1.06E+02	6.13E-01	NA	NA	NA	NA	5.36E-04	9.40E+01	5.04E-02	6.68E-03	1.09E-01	4.06E-02	5.23E+01	4.09E-01	4.01E+01	1.01E-03
UMH2-250 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	5.10E+02	2.94E+00	NA	NA	NA	NA	5.36E-04	4.50E+02	2.41E-01	6.68E-03	1.09E-01	1.94E-01	5.23E+01	4.09E-01	4.01E+01	4.84E-03
UMH2-250+75 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	1.31E+02	7.56E-01	NA	NA	NA	NA	5.36E-04	1.16E+02	6.22E-02	6.68E-03	1.09E-01	5.01E-02	5.23E+01	4.09E-01	4.01E+01	1.25E-03
UMH2-300 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	8.76E+01	5.05E-01	NA	NA	NA	NA	5.36E-04	7.74E+01	4.15E-02	6.68E-03	1.09E-01	3.34E-02	5.23E+01	4.09E-01	4.01E+01	8.33E-04
UMH2-300+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	4.41E+01	2.54E-01	NA	NA	NA	NA	5.36E-04	3.90E+01	2.09E-02	6.68E-03	1.09E-01	1.68E-02	5.23E+01	4.09E-01	4.01E+01	4.19E-04
UMH2-350 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	6.05E+01	3.48E-01	NA	NA	NA	NA	5.36E-04	5.34E+01	2.86E-02	6.68E-03	1.09E-01	2.31E-02	5.23E+01	4.09E-01	4.01E+01	5.75E-04
UMH2-350+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	4.19E+01	2.41E-01	NA	NA	NA	NA	5.36E-04	3.70E+01	1.98E-02	6.68E-03	1.09E-01	1.60E-02	5.23E+01	4.09E-01	4.01E+01	3.98E-04
UMH2-400 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UMH2-400+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	3.96E+01	2.28E-01	NA	NA	NA	NA	5.36E-04	3.50E+01	1.88E-02	6.68E-03	1.09E-01	1.51E-02	5.23E+01	4.09E-01	4.01E+01	3.76E-04
UMH2-450 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	5.98E+01	3.45E-01	NA	NA	NA	NA	5.36E-04	5.29E+01	2.83E-02	6.68E-03	1.09E-01	2.28E-02	5.23E+01	4.09E-01	4.01E+01	5.69E-04
UMH2-450+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	3.85E+01	2.22E-01	NA	NA	NA	NA	5.36E-04	3.40E+01	1.82E-02	6.68E-03	1.09E-01	1.47E-02	5.23E+01	4.09E-01	4.01E+01	3.66E-04
UMH2-50 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	1.42E+02	8.18E-01	NA	NA	NA	NA	5.36E-04	1.25E+02	6.72E-02	6.68E-03	1.09E-01	5.41E-02	5.23E+01	4.09E-01	4.01E+01	1.35E-03
UMH2-50+25b (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	4.01E+01	2.31E-01	NA	NA	NA	NA	5.36E-04	3.55E+01	1.90E-02	6.68E-03	1.09E-01	1.53E-02	5.23E+01	4.09E-01	4.01E+01	3.81E-04
UMH2-500 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	5.24E+02	3.02E+00	NA	NA	NA	NA	5.36E-04	4.63E+02	2.48E-01	6.68E-03	1.09E-01	2.00E-01	5.23E+01	4.09E-01	4.01E+01	4.98E-03
UMH2-500+75 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UMH2-550 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	9.61E+02	5.54E+00	NA	NA	NA	NA	5.36E-04	8.49E+02	4.55E-01	6.68E-03	1.09E-01	3.66E-01	5.23E+01	4.09E-01	4.01E+01	9.13E-03
UMH2-550+75 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UMH2-600 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	1.16E+02	6.70E-01	NA	NA	NA	NA	5.36E-04	1.03E+02	5.51E-02	6.68E-03	1.09E-01	4.44E-02	5.23E+01	4.09E-01	4.01E+01	1.11E-03
UMH2-600+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UMH2-650 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	2.11E+02	1.21E+00	NA	NA	NA	NA	5.36E-04	1.86E+02	9.98E-02	6.68E-03	1.09E-01	8.04E-02	5.23E+01	4.09E-01	4.01E+01	2.00E-03
UMH2-650+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	4.87E+01	2.80E-01	NA	NA	NA	NA	5.36E-04	4.30E+01	2.31E-02	6.68E-03	1.09E-01	1.86E-02	5.23E+01	4.09E-01	4.01E+01	4.63E-04
UMH2-Comp 1 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	5.37E+02	3.09E+00	NA	NA	NA	NA	5.36E-04	4.75E+02	2.54E-01	6.68E-03	1.09E-01	2.05E-01	5.23E+01	4.09E-01	4.01E+01	5.10E-03
UMH2-Comp 2 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	1.06E+03	6.09E+00	NA	NA	NA	NA	5.36E-04	9.35E+02	5.01E-01	6.68E-03	1.09E-01	4.03E-01	5.23E+01	4.09E-01	4.01E+01	1.01E-02
Waste Area 3																						**Maximum HQ (Waste Areas 1 and 2)**	**1.01E-02**
UMH3-00 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	7.17E+01	4.13E-01	NA	NA	NA	NA	5.36E-04	6.34E+01	3.39E-02	6.68E-03	1.09E-01	2.73E-02	5.23E+01	4.09E-01	4.01E+01	6.81E-04
UMH3-100 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	6.13E+01	3.53E-01	NA	NA	NA	NA	5.36E-04	5.41E+01	2.90E-02	6.68E-03	1.09E-01	2.34E-02	5.23E+01	4.09E-01	4.01E+01	5.82E-04
UMH3-150 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	3.98E+02	2.29E+00	NA	NA	NA	NA	5.36E-04	3.52E+02	1.88E-01	6.68E-03	1.09E-01	1.52E-01	5.23E+01	4.09E-01	4.01E+01	3.78E-03
UMH3-200 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	2.65E+02	1.53E+00	NA	NA	NA	NA	5.36E-04	2.34E+02	1.26E-01	6.68E-03	1.09E-01	1.01E-01	5.23E+01	4.09E-01	4.01E+01	2.52E-03
UMH3-250 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	8.87E+02	5.11E+00	NA	NA	NA	NA	5.36E-04	7.84E+02	4.20E-01	6.68E-03	1.09E-01	3.38E-01	5.23E+01	4.09E-01	4.01E+01	8.43E-03
UMH3-300 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	4.04E+01	2.33E-01	NA	NA	NA	NA	5.36E-04	3.57E+01	1.91E-02	6.68E-03	1.09E-01	1.54E-02	5.23E+01	4.09E-01	4.01E+01	3.84E-04
UMH3-350 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	1.49E+03	8.59E+00	NA	NA	NA	NA	5.36E-04	1.32E+03	7.06E-01	6.68E-03	1.09E-01	5.69E-01	5.23E+01	4.09E-01	4.01E+01	1.42E-02
UMH3-350+75 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	5.77E+01	3.33E-01	NA	NA	NA	NA	5.36E-04	5.10E+01	2.73E-02	6.68E-03	1.09E-01	2.20E-02	5.23E+01	4.09E-01	4.01E+01	5.48E-04
UMH3-400 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	7.27E+02	4.19E+00	NA	NA	NA	NA	5.36E-04	6.42E+02	3.44E-01	6.68E-03	1.09E-01	2.77E-01	5.23E+01	4.09E-01	4.01E+01	6.91E-03
UMH3-400+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	8.71E+01	5.02E-01	NA	NA	NA	NA	5.36E-04	7.70E+01	4.13E-02	6.68E-03	1.09E-01	3.32E-02	5.23E+01	4.09E-01	4.01E+01	8.28E-04
UMH3-450 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	8.43E+01	4.86E-01	NA	NA	NA	NA	5.36E-04	7.45E+01	3.99E-02	6.68E-03	1.09E-01	3.22E-02	5.23E+01	4.09E-01	4.01E+01	8.02E-04
UMH3-50 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	4.86E+01	2.80E-01	NA	NA	NA	NA	5.36E-04	4.29E+01	2.30E-02	6.68E-03	1.09E-01	1.85E-02	5.23E+01	4.09E-01	4.01E+01	4.61E-04
UMH3-50+50 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	6.21E+01	3.58E-01	NA	NA	NA	NA	5.36E-04	5.49E+01	2.94E-02	6.68E-03	1.09E-01	2.37E-02	5.23E+01	4.09E-01	4.01E+01	5.90E-04
UMH3-500 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	1.60E+02	9.20E-01	NA	NA	NA	NA	5.36E-04	1.41E+02	7.56E-02	6.68E-03	1.09E-01	6.09E-02	5.23E+01	4.09E-01	4.01E+01	1.52E-03
UMH3-550 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	1.12E+03	6.48E+00	NA	NA	NA	NA	5.36E-04	9.94E+02	5.33E-01	6.68E-03	1.09E-01	4.29E-01	5.23E+01	4.09E-01	4.01E+01	1.07E-02
UMH3-600 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	1.37E+03	7.90E+00	NA	NA	NA	NA	5.36E-04	1.21E+03	6.50E-01	6.68E-03	1.09E-01	5.23E-01	5.23E+01	4.09E-01	4.01E+01	1.30E-02
UMH3-650 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	1.07E+03	6.17E+00	NA	NA	NA	NA	5.36E-04	9.47E+02	5.07E-01	6.68E-03	1.09E-01	4.09E-01	5.23E+01	4.09E-01	4.01E+01	1.02E-02
UMH3-700 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	1.00E+03	5.78E+00	NA	NA	NA	NA	5.36E-04	8.87E+02	4.75E-01	6.68E-03	1.09E-01	3.83E-01	5.23E+01	4.09E-01	4.01E+01	9.54E-03
UMH3-750 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	1.06E+02	6.09E-01	NA	NA	NA	NA	5.36E-04	9.34E+01	5.01E-02	6.68E-03	1.09E-01	4.03E-02	5.23E+01	4.09E-01	4.01E+01	1.00E-03
UMH3-800 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	2.28E+02	1.32E+00	NA	NA	NA	NA	5.36E-04	2.02E+02	1.08E-01	6.68E-03	1.09E-01	8.71E-02	5.23E+01	4.09E-01	4.01E+01	2.17E-03
UMH3-Comp 1 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	9.73E+01	5.60E-01	NA	NA	NA	NA	5.36E-04	8.60E+01	4.61E-02	6.68E-03	1.09E-01	3.71E-02	5.23E+01	4.09E-01	4.01E+01	9.24E-04
UMH3-Comp 2 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	7.58E+02	4.37E+00	NA	NA	NA	NA	5.36E-04	6.70E+02	3.59E-01	6.68E-03	1.09E-01	2.89E-01	5.23E+01	4.09E-01	4.01E+01	7.20E-03
UMH3-Comp 3 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	9.96E+02	5.74E+00	NA	NA	NA	NA	5.36E-04	8.80E+02	4.72E-01	6.68E-03	1.09E-01	3.80E-01	5.23E+01	4.09E-01	4.01E+01	9.47E-03
																						Maximum HQ (Waste Area 3)	**1.42E-02**

TABLE C-8C: COPPER DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 8 - MIKE HORSE MINE WASTE PILES (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **1.73**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Red-Tailed Hawk (Carnivorous Birds - Terrestrial)																							
Reference Sites																							
BCBG-1 (0-6")	9.00E-02	9.00E-02	6.61E-01	2.17E+01	1.95E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.28E+01	1.68E-01	2.48E-03	1.13E+00	4.63E-03	5.23E+01	4.09E-01	6.41E+01	7.23E-05
MHBG-201 (0-6")	9.00E-02	9.00E-02	6.61E-01	4.13E+01	3.72E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	6.25E+01	3.20E-01	2.48E-03	1.13E+00	8.84E-03	5.23E+01	4.09E-01	6.41E+01	1.38E-04
MHBG-202 (0-6")	9.00E-02	9.00E-02	6.61E-01	3.58E+01	3.22E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.42E+01	2.78E-01	2.48E-03	1.13E+00	7.66E-03	5.23E+01	4.09E-01	6.41E+01	1.20E-04
Mike Horse Creek Channel Area Deposits																						**Minimum HQ (Reference Site)**	**7.23E-05**
AMHR-0 (0-6")	9.00E-02	9.00E-02	1.01E+00	5.72E+01	5.15E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.66E+01	2.90E-01	2.48E-03	1.13E+00	1.19E-02	5.23E+01	4.09E-01	6.41E+01	1.86E-04
AMHR-200 (0-6")	9.00E-02	9.00E-02	1.01E+00	5.35E+01	4.82E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.30E+01	2.72E-01	2.48E-03	1.13E+00	1.11E-02	5.23E+01	4.09E-01	6.41E+01	1.74E-04
AMHR-400 (0-6")	9.00E-02	9.00E-02	1.01E+00	5.62E+01	5.05E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.56E+01	2.85E-01	2.48E-03	1.13E+00	1.17E-02	5.23E+01	4.09E-01	6.41E+01	1.82E-04
AMHR-600 (0-6")	9.00E-02	9.00E-02	1.01E+00	7.97E+01	7.17E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	7.89E+01	4.04E-01	2.48E-03	1.13E+00	1.66E-02	5.23E+01	4.09E-01	6.41E+01	2.59E-04
MHCS-00-E25 (0-6")	9.00E-02	9.00E-02	1.01E+00	4.10E+02	3.68E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.05E+02	2.08E+00	2.48E-03	1.13E+00	8.52E-02	5.23E+01	4.09E-01	6.41E+01	1.33E-03
MHCS-0-W25 (0-6")	9.00E-02	9.00E-02	1.01E+00	7.25E+01	6.52E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	7.18E+01	3.68E-01	2.48E-03	1.13E+00	1.51E-02	5.23E+01	4.09E-01	6.41E+01	2.35E-04
MHCS-0-W5 (0-6")	9.00E-02	9.00E-02	1.01E+00	4.93E+01	4.44E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.88E+01	2.50E-01	2.48E-03	1.13E+00	1.03E-02	5.23E+01	4.09E-01	6.41E+01	1.60E-04
MHCS-100-E25 (0-6")	9.00E-02	9.00E-02	1.01E+00	5.63E+02	5.06E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.57E+02	2.86E+00	2.48E-03	1.13E+00	1.17E-01	5.23E+01	4.09E-01	6.41E+01	1.83E-03
MHCS-100-W1 (0-6")	9.00E-02	9.00E-02	1.01E+00	3.90E+02	3.51E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.86E+02	1.98E+00	2.48E-03	1.13E+00	8.11E-02	5.23E+01	4.09E-01	6.41E+01	1.27E-03
MHCS-100-W25 (0-6")	9.00E-02	9.00E-02	1.01E+00	5.12E+01	4.60E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.06E+01	2.60E-01	2.48E-03	1.13E+00	1.06E-02	5.23E+01	4.09E-01	6.41E+01	1.66E-04
MHCS-200-E10 (0-6")	9.00E-02	9.00E-02	1.01E+00	2.19E+02	1.97E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.16E+02	1.11E+00	2.48E-03	1.13E+00	4.55E-02	5.23E+01	4.09E-01	6.41E+01	7.10E-04
MHCS-200-E25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
MHCS-200-W10 (0-6")	9.00E-02	9.00E-02	1.01E+00	7.85E+01	7.06E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	7.77E+01	3.98E-01	2.48E-03	1.13E+00	1.63E-02	5.23E+01	4.09E-01	6.41E+01	2.55E-04
MHCS-525-E5 (0-6")	9.00E-02	9.00E-02	1.01E+00	1.08E+02	9.71E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.07E+02	5.48E-01	2.48E-03	1.13E+00	2.25E-02	5.23E+01	4.09E-01	6.41E+01	3.51E-04
MHCS-525-W15 (0-6")	9.00E-02	9.00E-02	1.01E+00	3.03E+02	2.72E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.00E+02	1.54E+00	2.48E-03	1.13E+00	6.30E-02	5.23E+01	4.09E-01	6.41E+01	9.83E-04
MHCS-600-E10 (0-6")	9.00E-02	9.00E-02	1.01E+00	2.11E+02	1.90E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.09E+02	1.07E+00	2.48E-03	1.13E+00	4.39E-02	5.23E+01	4.09E-01	6.41E+01	6.85E-04
MHCS-600-W10 (0-6")	9.00E-02	9.00E-02	1.01E+00	2.88E+03	2.59E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.85E+03	1.46E+01	2.48E-03	1.13E+00	5.99E-01	5.23E+01	4.09E-01	6.41E+01	9.35E-03
MHCS-700-E10 (0-6")	9.00E-02	9.00E-02	1.01E+00	3.14E+02	2.82E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.11E+02	1.59E+00	2.48E-03	1.13E+00	6.53E-02	5.23E+01	4.09E-01	6.41E+01	1.02E-03
MHCS-700-E25 (0-6")	9.00E-02	9.00E-02	1.01E+00	4.76E+01	4.28E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.71E+01	2.42E-01	2.48E-03	1.13E+00	9.90E-03	5.23E+01	4.09E-01	6.41E+01	1.55E-04
MHCS-700-W10 (0-6")	9.00E-02	9.00E-02	1.01E+00	1.62E+03	1.46E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.61E+03	8.24E+00	2.48E-03	1.13E+00	3.38E-01	5.23E+01	4.09E-01	6.41E+01	5.27E-03
MHCS-800-E15 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
MHCS-800-E5 (0-6")	9.00E-02	9.00E-02	1.01E+00	4.47E+02	4.03E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.43E+02	2.27E+00	2.48E-03	1.13E+00	9.31E-02	5.23E+01	4.09E-01	6.41E+01	1.45E-03
MHCS-800-W5 (0-6")	9.00E-02	9.00E-02	1.01E+00	6.65E+02	5.98E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	6.58E+02	3.37E+00	2.48E-03	1.13E+00	1.38E-01	5.23E+01	4.09E-01	6.41E+01	2.16E-03
MHCS-900-E15 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
MHCS-900-E5 (0-6")	9.00E-02	9.00E-02	1.01E+00	4.39E+02	3.95E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.35E+02	2.23E+00	2.48E-03	1.13E+00	9.14E-02	5.23E+01	4.09E-01	6.41E+01	1.43E-03
MHCS-900-W5 (0-6")	9.00E-02	9.00E-02	1.01E+00	5.49E+02	4.94E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.44E+02	2.79E+00	2.48E-03	1.13E+00	1.14E-01	5.23E+01	4.09E-01	6.41E+01	1.78E-03
MHCS-1000-E10 (0-6")	9.00E-02	9.00E-02	1.01E+00	3.55E+01	3.19E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.51E+01	1.80E-01	2.48E-03	1.13E+00	7.38E-03	5.23E+01	4.09E-01	6.41E+01	1.15E-04
MHCS-1000-W5 (0-6")	9.00E-02	9.00E-02	1.01E+00	1.39E+03	1.25E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.37E+03	7.05E+00	2.48E-03	1.13E+00	2.89E-01	5.23E+01	4.09E-01	6.41E+01	4.51E-03
MHCS-1100-E10 (0-6")	9.00E-02	9.00E-02	1.01E+00	1.37E+02	1.23E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.36E+02	6.95E-01	2.48E-03	1.13E+00	2.85E-02	5.23E+01	4.09E-01	6.41E+01	4.45E-04
MHCS-1100-E35 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
MHCS-1200-E15 (0-6")	9.00E-02	9.00E-02	1.01E+00	1.36E+02	1.23E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.35E+02	6.92E-01	2.48E-03	1.13E+00	2.84E-02	5.23E+01	4.09E-01	6.41E+01	4.42E-04
MHCS-1200-E30 (0-6")	9.00E-02	9.00E-02	1.01E+00	4.25E+01	3.82E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.20E+01	2.16E-01	2.48E-03	1.13E+00	8.84E-03	5.23E+01	4.09E-01	6.41E+01	1.38E-04
MHCS-1300-E20 (0-6")	9.00E-02	9.00E-02	1.01E+00	1.74E+02	1.56E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.72E+02	8.81E-01	2.48E-03	1.13E+00	3.61E-02	5.23E+01	4.09E-01	6.41E+01	5.63E-04
MHCS-1300-E35 (0-6")	9.00E-02	9.00E-02	1.01E+00	1.63E+02	1.46E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.61E+02	8.27E-01	2.48E-03	1.13E+00	3.39E-02	5.23E+01	4.09E-01	6.41E+01	5.29E-04
Waste Areas 1 and 2																						**Maximum HQ (Mike Horse Creek Channel Area Deposits)**	**9.35E-03**
UMH1-00 (0-6")	9.00E-02	9.00E-02	1.01E+00	1.20E+02	1.08E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.19E+02	6.10E-01	2.48E-03	1.13E+00	2.50E-02	5.23E+01	4.09E-01	6.41E+01	3.90E-04
UMH1-100 (0-6")	9.00E-02	9.00E-02	1.01E+00	1.81E+02	1.63E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.79E+02	9.20E-01	2.48E-03	1.13E+00	3.77E-02	5.23E+01	4.09E-01	6.41E+01	5.88E-04
UMH1-150 (0-6")	9.00E-02	9.00E-02	1.01E+00	5.28E+01	4.75E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.22E+01	2.68E-01	2.48E-03	1.13E+00	1.10E-02	5.23E+01	4.09E-01	6.41E+01	1.71E-04
UMH1-200 (0-6")	9.00E-02	9.00E-02	1.01E+00	1.74E+01	1.56E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.72E+01	8.81E-02	2.48E-03	1.13E+00	3.61E-03	5.23E+01	4.09E-01	6.41E+01	5.64E-05
UMH1-250 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UMH1-250+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UMH1-300 (0-6")	9.00E-02	9.00E-02	1.01E+00	9.98E+01	8.97E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	9.87E+01	5.06E-01	2.48E-03	1.13E+00	2.08E-02	5.23E+01	4.09E-01	6.41E+01	3.24E-04
UMH1-300+14 (0-6")	9.00E-02	9.00E-02	1.01E+00	5.76E+01	5.18E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.70E+01	2.92E-01	2.48E-03	1.13E+00	1.20E-02	5.23E+01	4.09E-01	6.41E+01	1.87E-04
UMH1-350 (0-6")	9.00E-02	9.00E-02	1.01E+00	1.03E+02	9.23E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.02E+02	5.21E-01	2.48E-03	1.13E+00	2.13E-02	5.23E+01	4.09E-01	6.41E+01	3.33E-04
UMH1-350+12.5 (0-6")	9.00E-02	9.00E-02	1.01E+00	3.54E+01	3.18E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.50E+01	1.79E-01	2.48E-03	1.13E+00	7.36E-03	5.23E+01	4.09E-01	6.41E+01	1.15E-04
UMH1-400 (0-6")	9.00E-02	9.00E-02	1.01E+00	6.49E+01	5.84E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	6.43E+01	3.29E-01	2.48E-03	1.13E+00	1.35E-02	5.23E+01	4.09E-01	6.41E+01	2.11E-04
UMH1-400+12.5 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UMH1-450 (0-6")	9.00E-02	9.00E-02	1.01E+00	3.64E+01	3.27E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.60E+01	1.85E-01	2.48E-03	1.13E+00	7.57E-03	5.23E+01	4.09E-01	6.41E+01	1.18E-04
UMH1-450+12.5 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UMH1-50 (0-6")	9.00E-02	9.00E-02	1.01E+00	8.52E+01	7.66E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	8.43E+01	4.32E-01	2.48E-03	1.13E+00	1.77E-02	5.23E+01	4.09E-01	6.41E+01	2.77E-04
UMH1-Comp (0-6")	9.00E-02	9.00E-02	1.01E+00	1.21E+02	1.09E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.20E+02	6.16E-01	2.48E-03	1.13E+00	2.52E-02	5.23E+01	4.09E-01	6.41E+01	3.94E-04
UMH2-00 (0-6")	9.00E-02	9.00E-02	1.01E+00	4.00E+02	3.60E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.96E+02	2.03E+00	2.48E-03	1.13E+00	8.33E-02	5.23E+01	4.09E-01	6.41E+01	1.30E-03

TABLE C-8C: COPPER DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 8 - MIKE HORSE MINE WASTE PILES (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **1.73**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Red-Tailed Hawk (Carnivorous Birds - Terrestrial)																							
UMH2-00+25 (0-6")	9.00E-02	9.00E-02	1.01E+00	4.75E+01	4.27E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.70E+01	2.41E-01	2.48E-03	1.13E+00	9.88E-03	5.23E+01	4.09E-01	6.41E+01	1.54E-04
UMH2-100 (0-6")	9.00E-02	9.00E-02	1.01E+00	5.09E+02	4.58E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.04E+02	2.58E+00	2.48E-03	1.13E+00	1.06E-01	5.23E+01	4.09E-01	6.41E+01	1.65E-03
UMH2-100+35 (0-6")	9.00E-02	9.00E-02	1.01E+00	1.01E+02	9.09E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.00E+02	5.13E-01	2.48E-03	1.13E+00	2.10E-02	5.23E+01	4.09E-01	6.41E+01	3.28E-04
UMH2-150 (0-6")	9.00E-02	9.00E-02	1.01E+00	2.70E+02	2.43E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.67E+02	1.37E+00	2.48E-03	1.13E+00	5.62E-02	5.23E+01	4.09E-01	6.41E+01	8.76E-04
UMH2-150+60 (0-6")	9.00E-02	9.00E-02	1.01E+00	1.05E+02	9.45E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.04E+02	5.33E-01	2.48E-03	1.13E+00	2.19E-02	5.23E+01	4.09E-01	6.41E+01	3.41E-04
UMH2-200 (0-6")	9.00E-02	9.00E-02	1.01E+00	4.94E+02	4.45E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.89E+02	2.51E+00	2.48E-03	1.13E+00	1.03E-01	5.23E+01	4.09E-01	6.41E+01	1.60E-03
UMH2-200+85 (0-6")	9.00E-02	9.00E-02	1.01E+00	9.50E+01	8.54E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	9.40E+01	4.82E-01	2.48E-03	1.13E+00	1.98E-02	5.23E+01	4.09E-01	6.41E+01	3.08E-04
UMH2-250 (0-6")	9.00E-02	9.00E-02	1.01E+00	4.55E+02	4.09E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.50E+02	2.31E+00	2.48E-03	1.13E+00	9.46E-02	5.23E+01	4.09E-01	6.41E+01	1.48E-03
UMH2-250+75 (0-6")	9.00E-02	9.00E-02	1.01E+00	1.17E+02	1.05E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.16E+02	5.95E-01	2.48E-03	1.13E+00	2.44E-02	5.23E+01	4.09E-01	6.41E+01	3.81E-04
UMH2-300 (0-6")	9.00E-02	9.00E-02	1.01E+00	7.82E+01	7.04E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	7.74E+01	3.97E-01	2.48E-03	1.13E+00	1.63E-02	5.23E+01	4.09E-01	6.41E+01	2.54E-04
UMH2-300+25 (0-6")	9.00E-02	9.00E-02	1.01E+00	3.94E+01	3.54E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.90E+01	2.00E-01	2.48E-03	1.13E+00	8.20E-03	5.23E+01	4.09E-01	6.41E+01	1.28E-04
UMH2-350 (0-6")	9.00E-02	9.00E-02	1.01E+00	5.40E+01	4.86E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.34E+01	2.74E-01	2.48E-03	1.13E+00	1.12E-02	5.23E+01	4.09E-01	6.41E+01	1.75E-04
UMH2-350+25 (0-6")	9.00E-02	9.00E-02	1.01E+00	3.74E+01	3.36E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.70E+01	1.90E-01	2.48E-03	1.13E+00	7.78E-03	5.23E+01	4.09E-01	6.41E+01	1.21E-04
UMH2-400 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UMH2-400+25 (0-6")	9.00E-02	9.00E-02	1.01E+00	3.54E+01	3.18E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.50E+01	1.79E-01	2.48E-03	1.13E+00	7.36E-03	5.23E+01	4.09E-01	6.41E+01	1.15E-04
UMH2-450 (0-6")	9.00E-02	9.00E-02	1.01E+00	5.34E+01	4.81E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.29E+01	2.71E-01	2.48E-03	1.13E+00	1.11E-02	5.23E+01	4.09E-01	6.41E+01	1.73E-04
UMH2-450+25 (0-6")	9.00E-02	9.00E-02	1.01E+00	3.44E+01	3.09E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.40E+01	1.74E-01	2.48E-03	1.13E+00	7.15E-03	5.23E+01	4.09E-01	6.41E+01	1.12E-04
UMH2-50 (0-6")	9.00E-02	9.00E-02	1.01E+00	1.27E+02	1.14E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.25E+02	6.43E-01	2.48E-03	1.13E+00	2.64E-02	5.23E+01	4.09E-01	6.41E+01	4.11E-04
UMH2-50+25b (0-6")	9.00E-02	9.00E-02	1.01E+00	3.58E+01	3.22E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.55E+01	1.82E-01	2.48E-03	1.13E+00	7.45E-03	5.23E+01	4.09E-01	6.41E+01	1.16E-04
UMH2-500 (0-6")	9.00E-02	9.00E-02	1.01E+00	4.68E+02	4.21E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.63E+02	2.38E+00	2.48E-03	1.13E+00	9.74E-02	5.23E+01	4.09E-01	6.41E+01	1.52E-03
UMH2-500+75 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UMH2-550 (0-6")	9.00E-02	9.00E-02	1.01E+00	8.58E+02	7.72E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	8.49E+02	4.35E+00	2.48E-03	1.13E+00	1.78E-01	5.23E+01	4.09E-01	6.41E+01	2.79E-03
UMH2-550+75 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UMH2-600 (0-6")	9.00E-02	9.00E-02	1.01E+00	1.04E+02	9.35E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.03E+02	5.27E-01	2.48E-03	1.13E+00	2.16E-02	5.23E+01	4.09E-01	6.41E+01	3.37E-04
UMH2-600+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UMH2-650 (0-6")	9.00E-02	9.00E-02	1.01E+00	1.88E+02	1.69E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.86E+02	9.55E-01	2.48E-03	1.13E+00	3.91E-02	5.23E+01	4.09E-01	6.41E+01	6.11E-04
UMH2-650+25 (0-6")	9.00E-02	9.00E-02	1.01E+00	4.35E+01	3.91E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.30E+01	2.21E-01	2.48E-03	1.13E+00	9.04E-03	5.23E+01	4.09E-01	6.41E+01	1.41E-04
UMH2-Comp 1 (0-6")	9.00E-02	9.00E-02	1.01E+00	4.79E+02	4.31E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.75E+02	2.43E+00	2.48E-03	1.13E+00	9.98E-02	5.23E+01	4.09E-01	6.41E+01	1.56E-03
UMH2-Comp 2 (0-6")	9.00E-02	9.00E-02	1.01E+00	9.44E+02	8.49E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	9.35E+02	4.79E+00	2.48E-03	1.13E+00	1.96E-01	5.23E+01	4.09E-01	6.41E+01	3.07E-03
Waste Area 3																						**Maximum HQ (Waste Areas 1 and 2)**	**3.07E-03**
UMH3-00 (0-6")	9.00E-02	9.00E-02	1.01E+00	6.40E+01	5.76E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	6.34E+01	3.25E-01	2.48E-03	1.13E+00	1.33E-02	5.23E+01	4.09E-01	6.41E+01	2.08E-04
UMH3-100 (0-6")	9.00E-02	9.00E-02	1.01E+00	5.47E+01	4.92E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.41E+01	2.78E-01	2.48E-03	1.13E+00	1.14E-02	5.23E+01	4.09E-01	6.41E+01	1.78E-04
UMH3-150 (0-6")	9.00E-02	9.00E-02	1.01E+00	3.55E+02	3.20E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.52E+02	1.80E+00	2.48E-03	1.13E+00	7.39E-02	5.23E+01	4.09E-01	6.41E+01	1.15E-03
UMH3-200 (0-6")	9.00E-02	9.00E-02	1.01E+00	2.37E+02	2.13E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.34E+02	1.20E+00	2.48E-03	1.13E+00	4.93E-02	5.23E+01	4.09E-01	6.41E+01	7.69E-04
UMH3-250 (0-6")	9.00E-02	9.00E-02	1.01E+00	7.92E+02	7.13E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	7.84E+02	4.02E+00	2.48E-03	1.13E+00	1.65E-01	5.23E+01	4.09E-01	6.41E+01	2.57E-03
UMH3-300 (0-6")	9.00E-02	9.00E-02	1.01E+00	3.61E+01	3.25E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.57E+01	1.83E-01	2.48E-03	1.13E+00	7.51E-03	5.23E+01	4.09E-01	6.41E+01	1.17E-04
UMH3-350 (0-6")	9.00E-02	9.00E-02	1.01E+00	1.33E+03	1.20E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.32E+03	6.75E+00	2.48E-03	1.13E+00	2.77E-01	5.23E+01	4.09E-01	6.41E+01	4.32E-03
UMH3-350+75 (0-6")	9.00E-02	9.00E-02	1.01E+00	5.15E+01	4.64E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.10E+01	2.62E-01	2.48E-03	1.13E+00	1.07E-02	5.23E+01	4.09E-01	6.41E+01	1.67E-04
UMH3-400 (0-6")	9.00E-02	9.00E-02	1.01E+00	6.49E+02	5.84E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	6.42E+02	3.29E+00	2.48E-03	1.13E+00	1.35E-01	5.23E+01	4.09E-01	6.41E+01	2.11E-03
UMH3-400+25 (0-6")	9.00E-02	9.00E-02	1.01E+00	7.78E+01	7.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	7.70E+01	3.95E-01	2.48E-03	1.13E+00	1.62E-02	5.23E+01	4.09E-01	6.41E+01	2.53E-04
UMH3-450 (0-6")	9.00E-02	9.00E-02	1.01E+00	7.53E+01	6.77E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	7.45E+01	3.82E-01	2.48E-03	1.13E+00	1.57E-02	5.23E+01	4.09E-01	6.41E+01	2.44E-04
UMH3-50 (0-6")	9.00E-02	9.00E-02	1.01E+00	4.34E+01	3.90E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.29E+01	2.20E-01	2.48E-03	1.13E+00	9.02E-03	5.23E+01	4.09E-01	6.41E+01	1.41E-04
UMH3-50+50 (0-6")	9.00E-02	9.00E-02	1.01E+00	5.54E+01	4.99E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.49E+01	2.81E-01	2.48E-03	1.13E+00	1.15E-02	5.23E+01	4.09E-01	6.41E+01	1.80E-04
UMH3-500 (0-6")	9.00E-02	9.00E-02	1.01E+00	1.43E+02	1.28E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.41E+02	7.23E-01	2.48E-03	1.13E+00	2.97E-02	5.23E+01	4.09E-01	6.41E+01	4.63E-04
UMH3-550 (0-6")	9.00E-02	9.00E-02	1.01E+00	1.00E+03	9.03E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	9.94E+02	5.10E+00	2.48E-03	1.13E+00	2.09E-01	5.23E+01	4.09E-01	6.41E+01	3.26E-03
UMH3-600 (0-6")	9.00E-02	9.00E-02	1.01E+00	1.22E+03	1.10E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.21E+03	6.22E+00	2.48E-03	1.13E+00	2.55E-01	5.23E+01	4.09E-01	6.41E+01	3.98E-03
UMH3-650 (0-6")	9.00E-02	9.00E-02	1.01E+00	9.57E+02	8.61E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	9.47E+02	4.86E+00	2.48E-03	1.13E+00	1.99E-01	5.23E+01	4.09E-01	6.41E+01	3.11E-03
UMH3-700 (0-6")	9.00E-02	9.00E-02	1.01E+00	8.96E+02	8.06E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	8.87E+02	4.55E+00	2.48E-03	1.13E+00	1.86E-01	5.23E+01	4.09E-01	6.41E+01	2.91E-03
UMH3-750 (0-6")	9.00E-02	9.00E-02	1.01E+00	9.44E+01	8.49E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	9.34E+01	4.79E-01	2.48E-03	1.13E+00	1.96E-02	5.23E+01	4.09E-01	6.41E+01	3.06E-04
UMH3-800 (0-6")	9.00E-02	9.00E-02	1.01E+00	2.04E+02	1.83E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.02E+02	1.03E+00	2.48E-03	1.13E+00	4.24E-02	5.23E+01	4.09E-01	6.41E+01	6.62E-04
UMH3-Comp 1 (0-6")	9.00E-02	9.00E-02	1.01E+00	8.68E+01	7.81E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	8.60E+01	4.41E-01	2.48E-03	1.13E+00	1.81E-02	5.23E+01	4.09E-01	6.41E+01	2.82E-04
UMH3-Comp 2 (0-6")	9.00E-02	9.00E-02	1.01E+00	6.77E+02	6.09E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	6.70E+02	3.44E+00	2.48E-03	1.13E+00	1.41E-01	5.23E+01	4.09E-01	6.41E+01	2.20E-03
UMH3-Comp 3 (0-6")	9.00E-02	9.00E-02	1.01E+00	8.89E+02	8.00E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	8.80E+02	4.51E+00	2.48E-03	1.13E+00	1.85E-01	5.23E+01	4.09E-01	6.41E+01	2.89E-03
																						Maximum HQ (Waste Area 3)	**4.32E-03**

TABLE C-8C: COPPER DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 8 - MIKE HORSE MINE WASTE PILES (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **1.73**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
American Kestrel (Insectivorous Birds - Terrestrial)																							
Reference Sites																							
BCBG-1 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	3.70E+00	1.21E+02	1.67E+00	7.84E-04	3.28E+01	2.57E-02	6.61E-03	1.24E-01	9.04E-02	5.23E+01	4.09E-01	4.12E+01	2.20E-03
MHBG-201 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	3.70E+00	2.32E+02	3.19E+00	7.84E-04	6.25E+01	4.90E-02	6.61E-03	1.24E-01	1.73E-01	5.23E+01	4.09E-01	4.12E+01	4.19E-03
MHBG-202 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	3.70E+00	2.01E+02	2.76E+00	7.84E-04	5.42E+01	4.25E-02	6.61E-03	1.24E-01	1.50E-01	5.23E+01	4.09E-01	4.12E+01	3.63E-03
Mike Horse Creek Channel Area Deposits																						**Minimum HQ (Reference Site)**	**2.20E-03**
AMHR-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	2.75E+02	3.78E+00	7.84E-04	5.66E+01	4.44E-02	6.61E-03	1.24E-01	2.04E-01	5.23E+01	4.09E-01	4.12E+01	4.95E-03
AMHR-200 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	2.57E+02	3.54E+00	7.84E-04	5.30E+01	4.16E-02	6.61E-03	1.24E-01	1.91E-01	5.23E+01	4.09E-01	4.12E+01	4.64E-03
AMHR-400 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	2.70E+02	3.71E+00	7.84E-04	5.56E+01	4.36E-02	6.61E-03	1.24E-01	2.00E-01	5.23E+01	4.09E-01	4.12E+01	4.86E-03
AMHR-600 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	3.83E+02	5.26E+00	7.84E-04	7.89E+01	6.19E-02	6.61E-03	1.24E-01	2.84E-01	5.23E+01	4.09E-01	4.12E+01	6.90E-03
MHCS-00-E25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	1.97E+03	2.71E+01	7.84E-04	4.05E+02	3.18E-01	6.61E-03	1.24E-01	1.46E+00	5.23E+01	4.09E-01	4.12E+01	3.55E-02
MHCS-0-W25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	3.48E+02	4.79E+00	7.84E-04	7.18E+01	5.63E-02	6.61E-03	1.24E-01	2.58E-01	5.23E+01	4.09E-01	4.12E+01	6.28E-03
MHCS-0-W5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	2.37E+02	3.26E+00	7.84E-04	4.88E+01	3.83E-02	6.61E-03	1.24E-01	1.76E-01	5.23E+01	4.09E-01	4.12E+01	4.27E-03
MHCS-100-E25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	2.70E+03	3.72E+01	7.84E-04	5.57E+02	4.37E-01	6.61E-03	1.24E-01	2.01E+00	5.23E+01	4.09E-01	4.12E+01	4.87E-02
MHCS-100-W1 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	1.87E+03	2.58E+01	7.84E-04	3.86E+02	3.03E-01	6.61E-03	1.24E-01	1.39E+00	5.23E+01	4.09E-01	4.12E+01	3.38E-02
MHCS-100-W25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	2.46E+02	3.38E+00	7.84E-04	5.06E+01	3.97E-02	6.61E-03	1.24E-01	1.82E-01	5.23E+01	4.09E-01	4.12E+01	4.43E-03
MHCS-200-E10 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	1.05E+03	1.44E+01	7.84E-04	2.16E+02	1.70E-01	6.61E-03	1.24E-01	7.79E-01	5.23E+01	4.09E-01	4.12E+01	1.89E-02
MHCS-200-E25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
MHCS-200-W10 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	3.77E+02	5.18E+00	7.84E-04	7.77E+01	6.09E-02	6.61E-03	1.24E-01	2.80E-01	5.23E+01	4.09E-01	4.12E+01	6.79E-03
MHCS-525-E5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	5.18E+02	7.13E+00	7.84E-04	1.07E+02	8.38E-02	6.61E-03	1.24E-01	3.85E-01	5.23E+01	4.09E-01	4.12E+01	9.35E-03
MHCS-525-W15 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	1.45E+03	2.00E+01	7.84E-04	3.00E+02	2.35E-01	6.61E-03	1.24E-01	1.08E+00	5.23E+01	4.09E-01	4.12E+01	2.62E-02
MHCS-600-E10 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	1.01E+03	1.39E+01	7.84E-04	2.09E+02	1.64E-01	6.61E-03	1.24E-01	7.52E-01	5.23E+01	4.09E-01	4.12E+01	1.83E-02
MHCS-600-W10 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	1.38E+04	1.90E+02	7.84E-04	2.85E+03	2.23E+00	6.61E-03	1.24E-01	1.03E+01	5.23E+01	4.09E-01	4.12E+01	2.49E-01
MHCS-700-E10 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	1.51E+03	2.07E+01	7.84E-04	3.11E+02	2.44E-01	6.61E-03	1.24E-01	1.12E+00	5.23E+01	4.09E-01	4.12E+01	2.72E-02
MHCS-700-E25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	2.28E+02	3.14E+00	7.84E-04	4.71E+01	3.70E-02	6.61E-03	1.24E-01	1.70E-01	5.23E+01	4.09E-01	4.12E+01	4.12E-03
MHCS-700-W10 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	7.80E+03	1.07E+02	7.84E-04	1.61E+03	1.26E+00	6.61E-03	1.24E-01	5.79E+00	5.23E+01	4.09E-01	4.12E+01	1.41E-01
MHCS-800-E15 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
MHCS-800-E5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	2.15E+03	2.96E+01	7.84E-04	4.43E+02	3.47E-01	6.61E-03	1.24E-01	1.59E+00	5.23E+01	4.09E-01	4.12E+01	3.87E-02
MHCS-800-W5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	3.19E+03	4.39E+01	7.84E-04	6.58E+02	5.16E-01	6.61E-03	1.24E-01	2.37E+00	5.23E+01	4.09E-01	4.12E+01	5.75E-02
MHCS-900-E15 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
MHCS-900-E5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	2.11E+03	2.90E+01	7.84E-04	4.35E+02	3.41E-01	6.61E-03	1.24E-01	1.57E+00	5.23E+01	4.09E-01	4.12E+01	3.80E-02
MHCS-900-W5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	2.64E+03	3.63E+01	7.84E-04	5.44E+02	4.27E-01	6.61E-03	1.24E-01	1.96E+00	5.23E+01	4.09E-01	4.12E+01	4.76E-02
MHCS-1000-E10 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	1.70E+02	2.34E+00	7.84E-04	3.51E+01	2.75E-02	6.61E-03	1.24E-01	1.26E-01	5.23E+01	4.09E-01	4.12E+01	3.07E-03
MHCS-1000-W5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	6.67E+03	9.18E+01	7.84E-04	1.37E+03	1.08E+00	6.61E-03	1.24E-01	4.95E+00	5.23E+01	4.09E-01	4.12E+01	1.20E-01
MHCS-1100-E10 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	6.58E+02	9.05E+00	7.84E-04	1.36E+02	1.06E-01	6.61E-03	1.24E-01	4.88E-01	5.23E+01	4.09E-01	4.12E+01	1.19E-02
MHCS-1100-E35 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
MHCS-1200-E15 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	6.54E+02	9.00E+00	7.84E-04	1.35E+02	1.06E-01	6.61E-03	1.24E-01	4.86E-01	5.23E+01	4.09E-01	4.12E+01	1.18E-02
MHCS-1200-E30 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	2.04E+02	2.81E+00	7.84E-04	4.20E+01	3.30E-02	6.61E-03	1.24E-01	1.51E-01	5.23E+01	4.09E-01	4.12E+01	3.68E-03
MHCS-1300-E20 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	8.33E+02	1.15E+01	7.84E-04	1.72E+02	1.35E-01	6.61E-03	1.24E-01	6.18E-01	5.23E+01	4.09E-01	4.12E+01	1.50E-02
MHCS-1300-E35 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	7.82E+02	1.08E+01	7.84E-04	1.61E+02	1.26E-01	6.61E-03	1.24E-01	5.80E-01	5.23E+01	4.09E-01	4.12E+01	1.41E-02
Waste Areas 1 and 2																						**Maximum HQ (Mike Horse Creek Channel Area Deposits)**	**2.49E-01**
UMH1-00 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	5.77E+02	7.94E+00	7.84E-04	1.19E+02	9.33E-02	6.61E-03	1.24E-01	4.28E-01	5.23E+01	4.09E-01	4.12E+01	1.04E-02
UMH1-100 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	8.70E+02	1.20E+01	7.84E-04	1.79E+02	1.41E-01	6.61E-03	1.24E-01	6.46E-01	5.23E+01	4.09E-01	4.12E+01	1.57E-02
UMH1-150 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	2.53E+02	3.49E+00	7.84E-04	5.22E+01	4.10E-02	6.61E-03	1.24E-01	1.88E-01	5.23E+01	4.09E-01	4.12E+01	4.57E-03
UMH1-200 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	8.34E+01	1.15E+00	7.84E-04	1.72E+01	1.35E-02	6.61E-03	1.24E-01	6.19E-02	5.23E+01	4.09E-01	4.12E+01	1.50E-03
UMH1-250 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UMH1-250+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UMH1-300 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	4.79E+02	6.59E+00	7.84E-04	9.87E+01	7.74E-02	6.61E-03	1.24E-01	3.56E-01	5.23E+01	4.09E-01	4.12E+01	8.64E-03
UMH1-300+14 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	2.76E+02	3.80E+00	7.84E-04	5.70E+01	4.47E-02	6.61E-03	1.24E-01	2.05E-01	5.23E+01	4.09E-01	4.12E+01	4.99E-03
UMH1-350 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	4.93E+02	6.78E+00	7.84E-04	1.02E+02	7.97E-02	6.61E-03	1.24E-01	3.66E-01	5.23E+01	4.09E-01	4.12E+01	8.88E-03
UMH1-350+12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	1.70E+02	2.34E+00	7.84E-04	3.50E+01	2.75E-02	6.61E-03	1.24E-01	1.26E-01	5.23E+01	4.09E-01	4.12E+01	3.06E-03
UMH1-400 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	3.12E+02	4.29E+00	7.84E-04	6.43E+01	5.04E-02	6.61E-03	1.24E-01	2.31E-01	5.23E+01	4.09E-01	4.12E+01	5.62E-03
UMH1-400+12.5 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UMH1-450 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	1.75E+02	2.40E+00	7.84E-04	3.60E+01	2.83E-02	6.61E-03	1.24E-01	1.30E-01	5.23E+01	4.09E-01	4.12E+01	3.15E-03
UMH1-450+12.5 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UMH1-50 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	4.09E+02	5.63E+00	7.84E-04	8.43E+01	6.61E-02	6.61E-03	1.24E-01	3.04E-01	5.23E+01	4.09E-01	4.12E+01	7.37E-03
UMH1-Comp (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	5.82E+02	8.01E+00	7.84E-04	1.20E+02	9.42E-02	6.61E-03	1.24E-01	4.32E-01	5.23E+01	4.09E-01	4.12E+01	1.05E-02
UMH2-00 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	1.92E+03	2.65E+01	7.84E-04	3.96E+02	3.11E-01	6.61E-03	1.24E-01	1.43E+00	5.23E+01	4.09E-01	4.12E+01	3.47E-02

TABLE C-8C: COPPER DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 8 - MIKE HORSE MINE WASTE PILES (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **1.73**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
American Kestrel (Insectivorous Birds - Terrestrial)																							
UMH2-00+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	2.28E+02	3.14E+00	7.84E-04	4.70E+01	3.69E-02	6.61E-03	1.24E-01	1.69E-01	5.23E+01	4.09E-01	4.12E+01	4.11E-03
UMH2-100 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	2.44E+03	3.36E+01	7.84E-04	5.04E+02	3.95E-01	6.61E-03	1.24E-01	1.81E+00	5.23E+01	4.09E-01	4.12E+01	4.41E-02
UMH2-100+35 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	4.85E+02	6.67E+00	7.84E-04	1.00E+02	7.84E-02	6.61E-03	1.24E-01	3.60E-01	5.23E+01	4.09E-01	4.12E+01	8.75E-03
UMH2-150 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	1.30E+03	1.78E+01	7.84E-04	2.67E+02	2.10E-01	6.61E-03	1.24E-01	9.62E-01	5.23E+01	4.09E-01	4.12E+01	2.34E-02
UMH2-150+60 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	5.04E+02	6.94E+00	7.84E-04	1.04E+02	8.16E-02	6.61E-03	1.24E-01	3.74E-01	5.23E+01	4.09E-01	4.12E+01	9.10E-03
UMH2-200 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	2.37E+03	3.26E+01	7.84E-04	4.89E+02	3.84E-01	6.61E-03	1.24E-01	1.76E+00	5.23E+01	4.09E-01	4.12E+01	4.28E-02
UMH2-200+85 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	4.56E+02	6.27E+00	7.84E-04	9.40E+01	7.37E-02	6.61E-03	1.24E-01	3.38E-01	5.23E+01	4.09E-01	4.12E+01	8.22E-03
UMH2-250 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	2.18E+03	3.01E+01	7.84E-04	4.50E+02	3.53E-01	6.61E-03	1.24E-01	1.62E+00	5.23E+01	4.09E-01	4.12E+01	3.94E-02
UMH2-250+75 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	5.63E+02	7.74E+00	7.84E-04	1.16E+02	9.10E-02	6.61E-03	1.24E-01	4.18E-01	5.23E+01	4.09E-01	4.12E+01	1.01E-02
UMH2-300 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	3.75E+02	5.17E+00	7.84E-04	7.74E+01	6.07E-02	6.61E-03	1.24E-01	2.79E-01	5.23E+01	4.09E-01	4.12E+01	6.77E-03
UMH2-300+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	1.89E+02	2.60E+00	7.84E-04	3.90E+01	3.06E-02	6.61E-03	1.24E-01	1.40E-01	5.23E+01	4.09E-01	4.12E+01	3.41E-03
UMH2-350 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	2.59E+02	3.57E+00	7.84E-04	5.34E+01	4.19E-02	6.61E-03	1.24E-01	1.92E-01	5.23E+01	4.09E-01	4.12E+01	4.67E-03
UMH2-350+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	1.79E+02	2.47E+00	7.84E-04	3.70E+01	2.90E-02	6.61E-03	1.24E-01	1.33E-01	5.23E+01	4.09E-01	4.12E+01	3.24E-03
UMH2-400 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UMH2-400+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	1.70E+02	2.34E+00	7.84E-04	3.50E+01	2.75E-02	6.61E-03	1.24E-01	1.26E-01	5.23E+01	4.09E-01	4.12E+01	3.06E-03
UMH2-450 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	2.56E+02	3.53E+00	7.84E-04	5.29E+01	4.15E-02	6.61E-03	1.24E-01	1.90E-01	5.23E+01	4.09E-01	4.12E+01	4.62E-03
UMH2-450+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	1.65E+02	2.27E+00	7.84E-04	3.40E+01	2.67E-02	6.61E-03	1.24E-01	1.22E-01	5.23E+01	4.09E-01	4.12E+01	2.97E-03
UMH2-50 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	6.08E+02	8.37E+00	7.84E-04	1.25E+02	9.84E-02	6.61E-03	1.24E-01	4.52E-01	5.23E+01	4.09E-01	4.12E+01	1.10E-02
UMH2-50+25b (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	1.72E+02	2.37E+00	7.84E-04	3.55E+01	2.78E-02	6.61E-03	1.24E-01	1.28E-01	5.23E+01	4.09E-01	4.12E+01	3.10E-03
UMH2-500 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	2.25E+03	3.09E+01	7.84E-04	4.63E+02	3.63E-01	6.61E-03	1.24E-01	1.67E+00	5.23E+01	4.09E-01	4.12E+01	4.05E-02
UMH2-500+75 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UMH2-550 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	4.12E+03	5.67E+01	7.84E-04	8.49E+02	6.66E-01	6.61E-03	1.24E-01	3.06E+00	5.23E+01	4.09E-01	4.12E+01	7.43E-02
UMH2-550+75 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UMH2-600 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	4.99E+02	6.86E+00	7.84E-04	1.03E+02	8.07E-02	6.61E-03	1.24E-01	3.70E-01	5.23E+01	4.09E-01	4.12E+01	8.99E-03
UMH2-600+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UMH2-650 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	9.03E+02	1.24E+01	7.84E-04	1.86E+02	1.46E-01	6.61E-03	1.24E-01	6.70E-01	5.23E+01	4.09E-01	4.12E+01	1.63E-02
UMH2-650+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	2.09E+02	2.87E+00	7.84E-04	4.30E+01	3.37E-02	6.61E-03	1.24E-01	1.55E-01	5.23E+01	4.09E-01	4.12E+01	3.76E-03
UMH2-Comp 1 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	2.30E+03	3.17E+01	7.84E-04	4.75E+02	3.72E-01	6.61E-03	1.24E-01	1.71E+00	5.23E+01	4.09E-01	4.12E+01	4.15E-02
UMH2-Comp 2 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	4.53E+03	6.24E+01	7.84E-04	9.35E+02	7.33E-01	6.61E-03	1.24E-01	3.37E+00	5.23E+01	4.09E-01	4.12E+01	8.18E-02
Waste Area 3																						**Maximum HQ (Waste Areas 1 and 2)**	**8.18E-02**
UMH3-00 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	3.07E+02	4.23E+00	7.84E-04	6.34E+01	4.97E-02	6.61E-03	1.24E-01	2.28E-01	5.23E+01	4.09E-01	4.12E+01	5.54E-03
UMH3-100 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	2.63E+02	3.61E+00	7.84E-04	5.41E+01	4.25E-02	6.61E-03	1.24E-01	1.95E-01	5.23E+01	4.09E-01	4.12E+01	4.73E-03
UMH3-150 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	1.71E+03	2.35E+01	7.84E-04	3.52E+02	2.76E-01	6.61E-03	1.24E-01	1.27E+00	5.23E+01	4.09E-01	4.12E+01	3.08E-02
UMH3-200 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	1.14E+03	1.56E+01	7.84E-04	2.34E+02	1.84E-01	6.61E-03	1.24E-01	8.44E-01	5.23E+01	4.09E-01	4.12E+01	2.05E-02
UMH3-250 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	3.80E+03	5.23E+01	7.84E-04	7.84E+02	6.15E-01	6.61E-03	1.24E-01	2.82E+00	5.23E+01	4.09E-01	4.12E+01	6.86E-02
UMH3-300 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	1.73E+02	2.38E+00	7.84E-04	3.57E+01	2.80E-02	6.61E-03	1.24E-01	1.29E-01	5.23E+01	4.09E-01	4.12E+01	3.12E-03
UMH3-350 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	6.39E+03	8.79E+01	7.84E-04	1.32E+03	1.03E+00	6.61E-03	1.24E-01	4.74E+00	5.23E+01	4.09E-01	4.12E+01	1.15E-01
UMH3-350+75 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	2.47E+02	3.40E+00	7.84E-04	5.10E+01	4.00E-02	6.61E-03	1.24E-01	1.84E-01	5.23E+01	4.09E-01	4.12E+01	4.46E-03
UMH3-400 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	3.12E+03	4.29E+01	7.84E-04	6.42E+02	5.04E-01	6.61E-03	1.24E-01	2.31E+00	5.23E+01	4.09E-01	4.12E+01	5.62E-02
UMH3-400+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	3.73E+02	5.14E+00	7.84E-04	7.70E+01	6.04E-02	6.61E-03	1.24E-01	2.77E-01	5.23E+01	4.09E-01	4.12E+01	6.74E-03
UMH3-450 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	3.61E+02	4.97E+00	7.84E-04	7.45E+01	5.85E-02	6.61E-03	1.24E-01	2.68E-01	5.23E+01	4.09E-01	4.12E+01	6.52E-03
UMH3-50 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	2.08E+02	2.86E+00	7.84E-04	4.29E+01	3.37E-02	6.61E-03	1.24E-01	1.55E-01	5.23E+01	4.09E-01	4.12E+01	3.75E-03
UMH3-50+50 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	2.66E+02	3.66E+00	7.84E-04	5.49E+01	4.30E-02	6.61E-03	1.24E-01	1.98E-01	5.23E+01	4.09E-01	4.12E+01	4.80E-03
UMH3-500 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	6.84E+02	9.42E+00	7.84E-04	1.41E+02	1.11E-01	6.61E-03	1.24E-01	5.08E-01	5.23E+01	4.09E-01	4.12E+01	1.23E-02
UMH3-550 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	4.82E+03	6.63E+01	7.84E-04	9.94E+02	7.80E-01	6.61E-03	1.24E-01	3.58E+00	5.23E+01	4.09E-01	4.12E+01	8.69E-02
UMH3-600 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	5.88E+03	8.09E+01	7.84E-04	1.21E+03	9.51E-01	6.61E-03	1.24E-01	4.36E+00	5.23E+01	4.09E-01	4.12E+01	1.06E-01
UMH3-650 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	4.59E+03	6.32E+01	7.84E-04	9.47E+02	7.43E-01	6.61E-03	1.24E-01	3.41E+00	5.23E+01	4.09E-01	4.12E+01	8.28E-02
UMH3-700 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	4.30E+03	5.92E+01	7.84E-04	8.87E+02	6.96E-01	6.61E-03	1.24E-01	3.19E+00	5.23E+01	4.09E-01	4.12E+01	7.76E-02
UMH3-750 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	4.53E+02	6.24E+00	7.84E-04	9.34E+01	7.33E-02	6.61E-03	1.24E-01	3.36E-01	5.23E+01	4.09E-01	4.12E+01	8.17E-03
UMH3-800 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	9.79E+02	1.35E+01	7.84E-04	2.02E+02	1.58E-01	6.61E-03	1.24E-01	7.27E-01	5.23E+01	4.09E-01	4.12E+01	1.77E-02
UMH3-Comp 1 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	4.17E+02	5.74E+00	7.84E-04	8.60E+01	6.74E-02	6.61E-03	1.24E-01	3.10E-01	5.23E+01	4.09E-01	4.12E+01	7.52E-03
UMH3-Comp 2 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	3.25E+03	4.47E+01	7.84E-04	6.70E+02	5.25E-01	6.61E-03	1.24E-01	2.41E+00	5.23E+01	4.09E-01	4.12E+01	5.86E-02
UMH3-Comp 3 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	4.27E+03	5.87E+01	7.84E-04	8.80E+02	6.90E-01	6.61E-03	1.24E-01	3.17E+00	5.23E+01	4.09E-01	4.12E+01	7.70E-02
																						Maximum HQ (Waste Area 3)	**1.15E-01**

TABLE C-8C: COPPER DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 8 - MIKE HORSE MINE WASTE PILES (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **1.73**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Meadow Vole (Small Herbivorous Mammal - Terrestrial)																							
Reference Sites																							
BCBG-1 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	7.79E-01	2.55E+01	1.20E-01	NA	NA	NA	NA	1.13E-04	3.28E+01	3.69E-03	1.00E+00	3.06E-02	4.03E+00	6.32E+02	2.47E-02	6.24E+02	6.47E-03
MHBG-201 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	7.79E-01	4.87E+01	2.28E-01	NA	NA	NA	NA	1.13E-04	6.25E+01	7.03E-03	1.00E+00	3.06E-02	7.69E+00	6.32E+02	2.47E-02	6.24E+02	1.23E-02
MHBG-202 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	7.79E-01	4.22E+01	1.98E-01	NA	NA	NA	NA	1.13E-04	5.42E+01	6.10E-03	1.00E+00	3.06E-02	6.67E+00	6.32E+02	2.47E-02	6.24E+02	1.07E-02
Mike Horse Creek Channel Area Deposits																						**Minimum HQ (Reference Site)**	**6.47E-03**
AMHR-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	6.41E+01	3.00E-01	NA	NA	NA	NA	1.13E-04	5.66E+01	6.37E-03	1.00E+00	3.06E-02	1.00E+01	6.32E+02	2.47E-02	6.24E+02	1.61E-02
AMHR-200 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	6.00E+01	2.81E-01	NA	NA	NA	NA	1.13E-04	5.30E+01	5.96E-03	1.00E+00	3.06E-02	9.38E+00	6.32E+02	2.47E-02	6.24E+02	1.50E-02
AMHR-400 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	6.29E+01	2.95E-01	NA	NA	NA	NA	1.13E-04	5.56E+01	6.26E-03	1.00E+00	3.06E-02	9.85E+00	6.32E+02	2.47E-02	6.24E+02	1.58E-02
AMHR-600 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	8.93E+01	4.19E-01	NA	NA	NA	NA	1.13E-04	7.89E+01	8.88E-03	1.00E+00	3.06E-02	1.40E+01	6.32E+02	2.47E-02	6.24E+02	2.24E-02
MHCS-00-E25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	4.59E+02	2.15E+00	NA	NA	NA	NA	1.13E-04	4.05E+02	4.56E-02	1.00E+00	3.06E-02	7.18E+01	6.32E+02	2.47E-02	6.24E+02	1.15E-01
MHCS-0-W25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	8.12E+01	3.81E-01	NA	NA	NA	NA	1.13E-04	7.18E+01	8.08E-03	1.00E+00	3.06E-02	1.27E+01	6.32E+02	2.47E-02	6.24E+02	2.04E-02
MHCS-0-W5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	5.53E+01	2.59E-01	NA	NA	NA	NA	1.13E-04	4.88E+01	5.50E-03	1.00E+00	3.06E-02	8.65E+00	6.32E+02	2.47E-02	6.24E+02	1.39E-02
MHCS-100-E25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	6.30E+02	2.96E+00	NA	NA	NA	NA	1.13E-04	5.57E+02	6.27E-02	1.00E+00	3.06E-02	9.86E+01	6.32E+02	2.47E-02	6.24E+02	1.58E-01
MHCS-100-W1 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	4.37E+02	2.05E+00	NA	NA	NA	NA	1.13E-04	3.86E+02	4.34E-02	1.00E+00	3.06E-02	6.83E+01	6.32E+02	2.47E-02	6.24E+02	1.10E-01
MHCS-100-W25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	5.73E+01	2.69E-01	NA	NA	NA	NA	1.13E-04	5.06E+01	5.70E-03	1.00E+00	3.06E-02	8.97E+00	6.32E+02	2.47E-02	6.24E+02	1.44E-02
MHCS-200-E10 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	2.45E+02	1.15E+00	NA	NA	NA	NA	1.13E-04	2.16E+02	2.43E-02	1.00E+00	3.06E-02	3.83E+01	6.32E+02	2.47E-02	6.24E+02	6.14E-02
MHCS-200-E25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
MHCS-200-W10 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	8.79E+01	4.12E-01	NA	NA	NA	NA	1.13E-04	7.77E+01	8.74E-03	1.00E+00	3.06E-02	1.38E+01	6.32E+02	2.47E-02	6.24E+02	2.21E-02
MHCS-525-E5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	1.21E+02	5.67E-01	NA	NA	NA	NA	1.13E-04	1.07E+02	1.20E-02	1.00E+00	3.06E-02	1.89E+01	6.32E+02	2.47E-02	6.24E+02	3.04E-02
MHCS-525-W15 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	3.39E+02	1.59E+00	NA	NA	NA	NA	1.13E-04	3.00E+02	3.37E-02	1.00E+00	3.06E-02	5.31E+01	6.32E+02	2.47E-02	6.24E+02	8.51E-02
MHCS-600-E10 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	2.36E+02	1.11E+00	NA	NA	NA	NA	1.13E-04	2.09E+02	2.35E-02	1.00E+00	3.06E-02	3.70E+01	6.32E+02	2.47E-02	6.24E+02	5.93E-02
MHCS-600-W10 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	3.22E+03	1.51E+01	NA	NA	NA	NA	1.13E-04	2.85E+03	3.21E-01	1.00E+00	3.06E-02	5.05E+02	6.32E+02	2.47E-02	6.24E+02	8.09E-01
MHCS-700-E10 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	3.51E+02	1.65E+00	NA	NA	NA	NA	1.13E-04	3.11E+02	3.49E-02	1.00E+00	3.06E-02	5.50E+01	6.32E+02	2.47E-02	6.24E+02	8.82E-02
MHCS-700-E25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	5.33E+01	2.50E-01	NA	NA	NA	NA	1.13E-04	4.71E+01	5.30E-03	1.00E+00	3.06E-02	8.34E+00	6.32E+02	2.47E-02	6.24E+02	1.34E-02
MHCS-700-W10 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	1.82E+03	8.53E+00	NA	NA	NA	NA	1.13E-04	1.61E+03	1.81E-01	1.00E+00	3.06E-02	2.85E+02	6.32E+02	2.47E-02	6.24E+02	4.57E-01
MHCS-800-E15 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
MHCS-800-E5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	5.01E+02	2.35E+00	NA	NA	NA	NA	1.13E-04	4.43E+02	4.98E-02	1.00E+00	3.06E-02	7.84E+01	6.32E+02	2.47E-02	6.24E+02	1.26E-01
MHCS-800-W5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	7.44E+02	3.49E+00	NA	NA	NA	NA	1.13E-04	6.58E+02	7.40E-02	1.00E+00	3.06E-02	1.16E+02	6.32E+02	2.47E-02	6.24E+02	1.87E-01
MHCS-900-E15 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
MHCS-900-E5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	4.92E+02	2.31E+00	NA	NA	NA	NA	1.13E-04	4.35E+02	4.90E-02	1.00E+00	3.06E-02	7.70E+01	6.32E+02	2.47E-02	6.24E+02	1.24E-01
MHCS-900-W5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	6.15E+02	2.89E+00	NA	NA	NA	NA	1.13E-04	5.44E+02	6.12E-02	1.00E+00	3.06E-02	9.63E+01	6.32E+02	2.47E-02	6.24E+02	1.54E-01
MHCS-1000-E10 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	3.97E+01	1.86E-01	NA	NA	NA	NA	1.13E-04	3.51E+01	3.95E-03	1.00E+00	3.06E-02	6.21E+00	6.32E+02	2.47E-02	6.24E+02	9.97E-03
MHCS-1000-W5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	1.56E+03	7.30E+00	NA	NA	NA	NA	1.13E-04	1.37E+03	1.55E-01	1.00E+00	3.06E-02	2.43E+02	6.32E+02	2.47E-02	6.24E+02	3.90E-01
MHCS-1100-E10 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	1.53E+02	7.19E-01	NA	NA	NA	NA	1.13E-04	1.36E+02	1.53E-02	1.00E+00	3.06E-02	2.40E+01	6.32E+02	2.47E-02	6.24E+02	3.85E-02
MHCS-1100-E35 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
MHCS-1200-E15 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	1.53E+02	7.16E-01	NA	NA	NA	NA	1.13E-04	1.35E+02	1.52E-02	1.00E+00	3.06E-02	2.39E+01	6.32E+02	2.47E-02	6.24E+02	3.83E-02
MHCS-1200-E30 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	4.76E+01	2.23E-01	NA	NA	NA	NA	1.13E-04	4.20E+01	4.73E-03	1.00E+00	3.06E-02	7.44E+00	6.32E+02	2.47E-02	6.24E+02	1.19E-02
MHCS-1300-E20 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	1.94E+02	9.11E-01	NA	NA	NA	NA	1.13E-04	1.72E+02	1.93E-02	1.00E+00	3.06E-02	3.04E+01	6.32E+02	2.47E-02	6.24E+02	4.88E-02
MHCS-1300-E35 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	1.82E+02	8.55E-01	NA	NA	NA	NA	1.13E-04	1.61E+02	1.81E-02	1.00E+00	3.06E-02	2.85E+01	6.32E+02	2.47E-02	6.24E+02	4.58E-02
Waste Areas 1 and 2																						**Maximum HQ (Mike Horse Creek Channel Area Deposits)**	**8.09E-01**
UMH1-00 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	1.35E+02	6.31E-01	NA	NA	NA	NA	1.13E-04	1.19E+02	1.34E-02	1.00E+00	3.06E-02	2.11E+01	6.32E+02	2.47E-02	6.24E+02	3.38E-02
UMH1-100 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	2.03E+02	9.52E-01	NA	NA	NA	NA	1.13E-04	1.79E+02	2.02E-02	1.00E+00	3.06E-02	3.18E+01	6.32E+02	2.47E-02	6.24E+02	5.09E-02
UMH1-150 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	5.91E+01	2.77E-01	NA	NA	NA	NA	1.13E-04	5.22E+01	5.88E-03	1.00E+00	3.06E-02	9.25E+00	6.32E+02	2.47E-02	6.24E+02	1.48E-02
UMH1-200 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	1.95E+01	9.12E-02	NA	NA	NA	NA	1.13E-04	1.72E+01	1.93E-03	1.00E+00	3.06E-02	3.04E+00	6.32E+02	2.47E-02	6.24E+02	4.88E-03
UMH1-250 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UMH1-250+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UMH1-300 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	1.12E+02	5.24E-01	NA	NA	NA	NA	1.13E-04	9.87E+01	1.11E-02	1.00E+00	3.06E-02	1.75E+01	6.32E+02	2.47E-02	6.24E+02	2.80E-02
UMH1-300+14 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	6.45E+01	3.02E-01	NA	NA	NA	NA	1.13E-04	5.70E+01	6.41E-03	1.00E+00	3.06E-02	1.01E+01	6.32E+02	2.47E-02	6.24E+02	1.62E-02
UMH1-350 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	1.15E+02	5.39E-01	NA	NA	NA	NA	1.13E-04	1.02E+02	1.14E-02	1.00E+00	3.06E-02	1.80E+01	6.32E+02	2.47E-02	6.24E+02	2.88E-02
UMH1-350+12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	3.96E+01	1.86E-01	NA	NA	NA	NA	1.13E-04	3.50E+01	3.94E-03	1.00E+00	3.06E-02	6.20E+00	6.32E+02	2.47E-02	6.24E+02	9.94E-03
UMH1-400 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	7.27E+01	3.41E-01	NA	NA	NA	NA	1.13E-04	6.43E+01	7.23E-03	1.00E+00	3.06E-02	1.14E+01	6.32E+02	2.47E-02	6.24E+02	1.83E-02
UMH1-400+12.5 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UMH1-450 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	4.08E+01	1.91E-01	NA	NA	NA	NA	1.13E-04	3.60E+01	4.05E-03	1.00E+00	3.06E-02	6.38E+00	6.32E+02	2.47E-02	6.24E+02	1.02E-02
UMH1-450+12.5 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UMH1-50 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	9.54E+01	4.47E-01	NA	NA	NA	NA	1.13E-04	8.43E+01	9.49E-03	1.00E+00	3.06E-02	1.49E+01	6.32E+02	2.47E-02	6.24E+02	2.39E-02
UMH1-Comp (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	1.36E+02	6.37E-01	NA	NA	NA	NA	1.13E-04	1.20E+02	1.35E-02	1.00E+00	3.06E-02	2.13E+01	6.32E+02	2.47E-02	6.24E+02	3.41E-02
UMH2-00 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	4.48E+02	2.10E+00	NA	NA	NA	NA	1.13E-04	3.96E+02	4.46E-02	1.00E+00	3.06E-02	7.02E+01	6.32E+02	2.47E-02	6.24E+02	1.13E-01

TABLE C-8C: COPPER DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 8 - MIKE HORSE MINE WASTE PILES (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **1.73**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Meadow Vole (Small Herbivorous Mammal - Terrestrial)																							
UMH2-00+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	5.32E+01	2.49E-01	NA	NA	NA	NA	1.13E-04	4.70E+01	5.29E-03	1.00E+00	3.06E-02	8.32E+00	6.32E+02	2.47E-02	6.24E+02	1.33E-02
UMH2-100 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	5.70E+02	2.67E+00	NA	NA	NA	NA	1.13E-04	5.04E+02	5.67E-02	1.00E+00	3.06E-02	8.92E+01	6.32E+02	2.47E-02	6.24E+02	1.43E-01
UMH2-100+35 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	1.13E+02	5.31E-01	NA	NA	NA	NA	1.13E-04	1.00E+02	1.13E-02	1.00E+00	3.06E-02	1.77E+01	6.32E+02	2.47E-02	6.24E+02	2.84E-02
UMH2-150 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	3.02E+02	1.42E+00	NA	NA	NA	NA	1.13E-04	2.67E+02	3.01E-02	1.00E+00	3.06E-02	4.73E+01	6.32E+02	2.47E-02	6.24E+02	7.59E-02
UMH2-150+60 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	1.18E+02	5.52E-01	NA	NA	NA	NA	1.13E-04	1.04E+02	1.17E-02	1.00E+00	3.06E-02	1.84E+01	6.32E+02	2.47E-02	6.24E+02	2.95E-02
UMH2-200 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	5.53E+02	2.60E+00	NA	NA	NA	NA	1.13E-04	4.89E+02	5.50E-02	1.00E+00	3.06E-02	8.66E+01	6.32E+02	2.47E-02	6.24E+02	1.39E-01
UMH2-200+85 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	1.06E+02	4.99E-01	NA	NA	NA	NA	1.13E-04	9.40E+01	1.06E-02	1.00E+00	3.06E-02	1.66E+01	6.32E+02	2.47E-02	6.24E+02	2.67E-02
UMH2-250 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	5.10E+02	2.39E+00	NA	NA	NA	NA	1.13E-04	4.50E+02	5.07E-02	1.00E+00	3.06E-02	7.97E+01	6.32E+02	2.47E-02	6.24E+02	1.28E-01
UMH2-250+75 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	1.31E+02	6.16E-01	NA	NA	NA	NA	1.13E-04	1.16E+02	1.31E-02	1.00E+00	3.06E-02	2.05E+01	6.32E+02	2.47E-02	6.24E+02	3.29E-02
UMH2-300 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	8.76E+01	4.11E-01	NA	NA	NA	NA	1.13E-04	7.74E+01	8.71E-03	1.00E+00	3.06E-02	1.37E+01	6.32E+02	2.47E-02	6.24E+02	2.20E-02
UMH2-300+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	4.41E+01	2.07E-01	NA	NA	NA	NA	1.13E-04	3.90E+01	4.39E-03	1.00E+00	3.06E-02	6.91E+00	6.32E+02	2.47E-02	6.24E+02	1.11E-02
UMH2-350 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	6.05E+01	2.84E-01	NA	NA	NA	NA	1.13E-04	5.34E+01	6.01E-03	1.00E+00	3.06E-02	9.46E+00	6.32E+02	2.47E-02	6.24E+02	1.52E-02
UMH2-350+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	4.19E+01	1.96E-01	NA	NA	NA	NA	1.13E-04	3.70E+01	4.16E-03	1.00E+00	3.06E-02	6.55E+00	6.32E+02	2.47E-02	6.24E+02	1.05E-02
UMH2-400 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UMH2-400+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	3.96E+01	1.86E-01	NA	NA	NA	NA	1.13E-04	3.50E+01	3.94E-03	1.00E+00	3.06E-02	6.20E+00	6.32E+02	2.47E-02	6.24E+02	9.94E-03
UMH2-450 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	5.98E+01	2.81E-01	NA	NA	NA	NA	1.13E-04	5.29E+01	5.95E-03	1.00E+00	3.06E-02	9.36E+00	6.32E+02	2.47E-02	6.24E+02	1.50E-02
UMH2-450+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	3.85E+01	1.80E-01	NA	NA	NA	NA	1.13E-04	3.40E+01	3.83E-03	1.00E+00	3.06E-02	6.02E+00	6.32E+02	2.47E-02	6.24E+02	9.66E-03
UMH2-50 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	1.42E+02	6.66E-01	NA	NA	NA	NA	1.13E-04	1.25E+02	1.41E-02	1.00E+00	3.06E-02	2.22E+01	6.32E+02	2.47E-02	6.24E+02	3.56E-02
UMH2-50+25b (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	4.01E+01	1.88E-01	NA	NA	NA	NA	1.13E-04	3.55E+01	3.99E-03	1.00E+00	3.06E-02	6.28E+00	6.32E+02	2.47E-02	6.24E+02	1.01E-02
UMH2-500 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	5.24E+02	2.46E+00	NA	NA	NA	NA	1.13E-04	4.63E+02	5.21E-02	1.00E+00	3.06E-02	8.20E+01	6.32E+02	2.47E-02	6.24E+02	1.32E-01
UMH2-500+75 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UMH2-550 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	9.61E+02	4.51E+00	NA	NA	NA	NA	1.13E-04	8.49E+02	9.56E-02	1.00E+00	3.06E-02	1.50E+02	6.32E+02	2.47E-02	6.24E+02	2.41E-01
UMH2-550+75 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UMH2-600 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	1.16E+02	5.46E-01	NA	NA	NA	NA	1.13E-04	1.03E+02	1.16E-02	1.00E+00	3.06E-02	1.82E+01	6.32E+02	2.47E-02	6.24E+02	2.92E-02
UMH2-600+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UMH2-650 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	2.11E+02	9.88E-01	NA	NA	NA	NA	1.13E-04	1.86E+02	2.10E-02	1.00E+00	3.06E-02	3.30E+01	6.32E+02	2.47E-02	6.24E+02	5.29E-02
UMH2-650+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	4.87E+01	2.28E-01	NA	NA	NA	NA	1.13E-04	4.30E+01	4.84E-03	1.00E+00	3.06E-02	7.62E+00	6.32E+02	2.47E-02	6.24E+02	1.22E-02
UMH2-Comp 1 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	5.37E+02	2.52E+00	NA	NA	NA	NA	1.13E-04	4.75E+02	5.34E-02	1.00E+00	3.06E-02	8.40E+01	6.32E+02	2.47E-02	6.24E+02	1.35E-01
UMH2-Comp 2 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	1.06E+03	4.96E+00	NA	NA	NA	NA	1.13E-04	9.35E+02	1.05E-01	1.00E+00	3.06E-02	1.66E+02	6.32E+02	2.47E-02	6.24E+02	2.65E-01
Waste Area 3																						**Maximum HQ (Waste Areas 1 and 2)**	**2.65E-01**
UMH3-00 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	7.17E+01	3.36E-01	NA	NA	NA	NA	1.13E-04	6.34E+01	7.13E-03	1.00E+00	3.06E-02	1.12E+01	6.32E+02	2.47E-02	6.24E+02	1.80E-02
UMH3-100 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	6.13E+01	2.87E-01	NA	NA	NA	NA	1.13E-04	5.41E+01	6.09E-03	1.00E+00	3.06E-02	9.59E+00	6.32E+02	2.47E-02	6.24E+02	1.54E-02
UMH3-150 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	3.98E+02	1.87E+00	NA	NA	NA	NA	1.13E-04	3.52E+02	3.96E-02	1.00E+00	3.06E-02	6.23E+01	6.32E+02	2.47E-02	6.24E+02	9.99E-02
UMH3-200 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	2.65E+02	1.24E+00	NA	NA	NA	NA	1.13E-04	2.34E+02	2.64E-02	1.00E+00	3.06E-02	4.15E+01	6.32E+02	2.47E-02	6.24E+02	6.66E-02
UMH3-250 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	8.87E+02	4.16E+00	NA	NA	NA	NA	1.13E-04	7.84E+02	8.82E-02	1.00E+00	3.06E-02	1.39E+02	6.32E+02	2.47E-02	6.24E+02	2.23E-01
UMH3-300 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	4.04E+01	1.89E-01	NA	NA	NA	NA	1.13E-04	3.57E+01	4.02E-03	1.00E+00	3.06E-02	6.32E+00	6.32E+02	2.47E-02	6.24E+02	1.01E-02
UMH3-350 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	1.49E+03	6.99E+00	NA	NA	NA	NA	1.13E-04	1.32E+03	1.48E-01	1.00E+00	3.06E-02	2.33E+02	6.32E+02	2.47E-02	6.24E+02	3.74E-01
UMH3-350+75 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	5.77E+01	2.71E-01	NA	NA	NA	NA	1.13E-04	5.10E+01	5.74E-03	1.00E+00	3.06E-02	9.03E+00	6.32E+02	2.47E-02	6.24E+02	1.45E-02
UMH3-400 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	7.27E+02	3.41E+00	NA	NA	NA	NA	1.13E-04	6.42E+02	7.23E-02	1.00E+00	3.06E-02	1.14E+02	6.32E+02	2.47E-02	6.24E+02	1.82E-01
UMH3-400+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	8.71E+01	4.09E-01	NA	NA	NA	NA	1.13E-04	7.70E+01	8.67E-03	1.00E+00	3.06E-02	1.36E+01	6.32E+02	2.47E-02	6.24E+02	2.19E-02
UMH3-450 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	8.43E+01	3.95E-01	NA	NA	NA	NA	1.13E-04	7.45E+01	8.39E-03	1.00E+00	3.06E-02	1.32E+01	6.32E+02	2.47E-02	6.24E+02	2.12E-02
UMH3-50 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	4.86E+01	2.28E-01	NA	NA	NA	NA	1.13E-04	4.29E+01	4.83E-03	1.00E+00	3.06E-02	7.60E+00	6.32E+02	2.47E-02	6.24E+02	1.22E-02
UMH3-50+50 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	6.21E+01	2.91E-01	NA	NA	NA	NA	1.13E-04	5.49E+01	6.17E-03	1.00E+00	3.06E-02	9.72E+00	6.32E+02	2.47E-02	6.24E+02	1.56E-02
UMH3-500 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	1.60E+02	7.49E-01	NA	NA	NA	NA	1.13E-04	1.41E+02	1.59E-02	1.00E+00	3.06E-02	2.50E+01	6.32E+02	2.47E-02	6.24E+02	4.01E-02
UMH3-550 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	1.12E+03	5.27E+00	NA	NA	NA	NA	1.13E-04	9.94E+02	1.12E-01	1.00E+00	3.06E-02	1.76E+02	6.32E+02	2.47E-02	6.24E+02	2.82E-01
UMH3-600 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	1.37E+03	6.43E+00	NA	NA	NA	NA	1.13E-04	1.21E+03	1.36E-01	1.00E+00	3.06E-02	2.15E+02	6.32E+02	2.47E-02	6.24E+02	3.44E-01
UMH3-650 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	1.07E+03	5.02E+00	NA	NA	NA	NA	1.13E-04	9.47E+02	1.07E-01	1.00E+00	3.06E-02	1.68E+02	6.32E+02	2.47E-02	6.24E+02	2.69E-01
UMH3-700 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	1.00E+03	4.71E+00	NA	NA	NA	NA	1.13E-04	8.87E+02	9.98E-02	1.00E+00	3.06E-02	1.57E+02	6.32E+02	2.47E-02	6.24E+02	2.52E-01
UMH3-750 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	1.06E+02	4.96E-01	NA	NA	NA	NA	1.13E-04	9.34E+01	1.05E-02	1.00E+00	3.06E-02	1.65E+01	6.32E+02	2.47E-02	6.24E+02	2.65E-02
UMH3-800 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	2.28E+02	1.07E+00	NA	NA	NA	NA	1.13E-04	2.02E+02	2.27E-02	1.00E+00	3.06E-02	3.57E+01	6.32E+02	2.47E-02	6.24E+02	5.73E-02
UMH3-Comp 1 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	9.73E+01	4.56E-01	NA	NA	NA	NA	1.13E-04	8.60E+01	9.67E-03	1.00E+00	3.06E-02	1.52E+01	6.32E+02	2.47E-02	6.24E+02	2.44E-02
UMH3-Comp 2 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	7.58E+02	3.55E+00	NA	NA	NA	NA	1.13E-04	6.70E+02	7.54E-02	1.00E+00	3.06E-02	1.19E+02	6.32E+02	2.47E-02	6.24E+02	1.90E-01
UMH3-Comp 3 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	9.96E+02	4.67E+00	NA	NA	NA	NA	1.13E-04	8.80E+02	9.91E-02	1.00E+00	3.06E-02	1.56E+02	6.32E+02	2.47E-02	6.24E+02	2.50E-01
																						Maximum HQ (Waste Area 3)	**3.74E-01**

TABLE C-8C: COPPER DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 8 - MIKE HORSE MINE WASTE PILES (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **1.73**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
White-Tailed Deer (Large Herbivorous Mammal - Terrestrial)																							
Reference Sites																							
BCBG-1 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	7.79E-01	2.55E+01	3.65E+01	NA	NA	NA	NA	2.86E-02	3.28E+01	9.38E-01	9.68E-03	1.35E+02	2.69E-03	6.32E+02	2.47E-02	3.77E+02	7.13E-06
MHBG-201 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	7.79E-01	4.87E+01	6.97E+01	NA	NA	NA	NA	2.86E-02	6.25E+01	1.79E+00	9.68E-03	1.35E+02	5.13E-03	6.32E+02	2.47E-02	3.77E+02	1.36E-05
MHBG-202 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	7.79E-01	4.22E+01	6.04E+01	NA	NA	NA	NA	2.86E-02	5.42E+01	1.55E+00	9.68E-03	1.35E+02	4.44E-03	6.32E+02	2.47E-02	3.77E+02	1.18E-05
Mike Horse Creek Channel Area Deposits																						**Minimum HQ (Reference Site)**	**7.13E-06**
AMHR-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	6.41E+01	9.17E+01	NA	NA	NA	NA	2.86E-02	5.66E+01	1.62E+00	9.68E-03	1.35E+02	6.69E-03	6.32E+02	2.47E-02	3.77E+02	1.78E-05
AMHR-200 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	6.00E+01	8.59E+01	NA	NA	NA	NA	2.86E-02	5.30E+01	1.52E+00	9.68E-03	1.35E+02	6.26E-03	6.32E+02	2.47E-02	3.77E+02	1.66E-05
AMHR-400 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	6.29E+01	9.01E+01	NA	NA	NA	NA	2.86E-02	5.56E+01	1.59E+00	9.68E-03	1.35E+02	6.57E-03	6.32E+02	2.47E-02	3.77E+02	1.74E-05
AMHR-600 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	8.93E+01	1.28E+02	NA	NA	NA	NA	2.86E-02	7.89E+01	2.26E+00	9.68E-03	1.35E+02	9.32E-03	6.32E+02	2.47E-02	3.77E+02	2.47E-05
MHCS-00-E25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	4.59E+02	6.57E+02	NA	NA	NA	NA	2.86E-02	4.05E+02	1.16E+01	9.68E-03	1.35E+02	4.79E-02	6.32E+02	2.47E-02	3.77E+02	1.27E-04
MHCS-0-W25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	8.12E+01	1.16E+02	NA	NA	NA	NA	2.86E-02	7.18E+01	2.06E+00	9.68E-03	1.35E+02	8.48E-03	6.32E+02	2.47E-02	3.77E+02	2.25E-05
MHCS-0-W5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	5.53E+01	7.91E+01	NA	NA	NA	NA	2.86E-02	4.88E+01	1.40E+00	9.68E-03	1.35E+02	5.77E-03	6.32E+02	2.47E-02	3.77E+02	1.53E-05
MHCS-100-E25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	6.30E+02	9.02E+02	NA	NA	NA	NA	2.86E-02	5.57E+02	1.59E+01	9.68E-03	1.35E+02	6.58E-02	6.32E+02	2.47E-02	3.77E+02	1.75E-04
MHCS-100-W1 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	4.37E+02	6.25E+02	NA	NA	NA	NA	2.86E-02	3.86E+02	1.10E+01	9.68E-03	1.35E+02	4.56E-02	6.32E+02	2.47E-02	3.77E+02	1.21E-04
MHCS-100-W25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	5.73E+01	8.20E+01	NA	NA	NA	NA	2.86E-02	5.06E+01	1.45E+00	9.68E-03	1.35E+02	5.98E-03	6.32E+02	2.47E-02	3.77E+02	1.59E-05
MHCS-200-E10 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	2.45E+02	3.50E+02	NA	NA	NA	NA	2.86E-02	2.16E+02	6.19E+00	9.68E-03	1.35E+02	2.56E-02	6.32E+02	2.47E-02	3.77E+02	6.79E-05
MHCS-200-E25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
MHCS-200-W10 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	8.79E+01	1.26E+02	NA	NA	NA	NA	2.86E-02	7.77E+01	2.22E+00	9.68E-03	1.35E+02	9.18E-03	6.32E+02	2.47E-02	3.77E+02	2.44E-05
MHCS-525-E5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	1.21E+02	1.73E+02	NA	NA	NA	NA	2.86E-02	1.07E+02	3.06E+00	9.68E-03	1.35E+02	1.26E-02	6.32E+02	2.47E-02	3.77E+02	3.35E-05
MHCS-525-W15 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	3.39E+02	4.85E+02	NA	NA	NA	NA	2.86E-02	3.00E+02	8.58E+00	9.68E-03	1.35E+02	3.54E-02	6.32E+02	2.47E-02	3.77E+02	9.40E-05
MHCS-600-E10 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	2.36E+02	3.38E+02	NA	NA	NA	NA	2.86E-02	2.09E+02	5.98E+00	9.68E-03	1.35E+02	2.47E-02	6.32E+02	2.47E-02	3.77E+02	6.55E-05
MHCS-600-W10 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	3.22E+03	4.62E+03	NA	NA	NA	NA	2.86E-02	2.85E+03	8.16E+01	9.68E-03	1.35E+02	3.37E-01	6.32E+02	2.47E-02	3.77E+02	8.94E-04
MHCS-700-E10 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	3.51E+02	5.03E+02	NA	NA	NA	NA	2.86E-02	3.11E+02	8.89E+00	9.68E-03	1.35E+02	3.67E-02	6.32E+02	2.47E-02	3.77E+02	9.74E-05
MHCS-700-E25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	5.33E+01	7.63E+01	NA	NA	NA	NA	2.86E-02	4.71E+01	1.35E+00	9.68E-03	1.35E+02	5.57E-03	6.32E+02	2.47E-02	3.77E+02	1.48E-05
MHCS-700-W10 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	1.82E+03	2.61E+03	NA	NA	NA	NA	2.86E-02	1.61E+03	4.60E+01	9.68E-03	1.35E+02	1.90E-01	6.32E+02	2.47E-02	3.77E+02	5.04E-04
MHCS-800-E15 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
MHCS-800-E5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	5.01E+02	7.18E+02	NA	NA	NA	NA	2.86E-02	4.43E+02	1.27E+01	9.68E-03	1.35E+02	5.23E-02	6.32E+02	2.47E-02	3.77E+02	1.39E-04
MHCS-800-W5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	7.44E+02	1.07E+03	NA	NA	NA	NA	2.86E-02	6.58E+02	1.88E+01	9.68E-03	1.35E+02	7.77E-02	6.32E+02	2.47E-02	3.77E+02	2.06E-04
MHCS-900-E15 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
MHCS-900-E5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	4.92E+02	7.05E+02	NA	NA	NA	NA	2.86E-02	4.35E+02	1.25E+01	9.68E-03	1.35E+02	5.14E-02	6.32E+02	2.47E-02	3.77E+02	1.36E-04
MHCS-900-W5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	6.15E+02	8.81E+02	NA	NA	NA	NA	2.86E-02	5.44E+02	1.56E+01	9.68E-03	1.35E+02	6.43E-02	6.32E+02	2.47E-02	3.77E+02	1.71E-04
MHCS-1000-E10 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	3.97E+01	5.69E+01	NA	NA	NA	NA	2.86E-02	3.51E+01	1.00E+00	9.68E-03	1.35E+02	4.15E-03	6.32E+02	2.47E-02	3.77E+02	1.10E-05
MHCS-1000-W5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	1.56E+03	2.23E+03	NA	NA	NA	NA	2.86E-02	1.37E+03	3.94E+01	9.68E-03	1.35E+02	1.63E-01	6.32E+02	2.47E-02	3.77E+02	4.31E-04
MHCS-1100-E10 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	1.53E+02	2.20E+02	NA	NA	NA	NA	2.86E-02	1.36E+02	3.88E+00	9.68E-03	1.35E+02	1.60E-02	6.32E+02	2.47E-02	3.77E+02	4.25E-05
MHCS-1100-E35 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
MHCS-1200-E15 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	1.53E+02	2.19E+02	NA	NA	NA	NA	2.86E-02	1.35E+02	3.86E+00	9.68E-03	1.35E+02	1.59E-02	6.32E+02	2.47E-02	3.77E+02	4.23E-05
MHCS-1200-E30 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	4.76E+01	6.81E+01	NA	NA	NA	NA	2.86E-02	4.20E+01	1.20E+00	9.68E-03	1.35E+02	4.97E-03	6.32E+02	2.47E-02	3.77E+02	1.32E-05
MHCS-1300-E20 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	1.94E+02	2.78E+02	NA	NA	NA	NA	2.86E-02	1.72E+02	4.92E+00	9.68E-03	1.35E+02	2.03E-02	6.32E+02	2.47E-02	3.77E+02	5.39E-05
MHCS-1300-E35 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	1.82E+02	2.61E+02	NA	NA	NA	NA	2.86E-02	1.61E+02	4.62E+00	9.68E-03	1.35E+02	1.91E-02	6.32E+02	2.47E-02	3.77E+02	5.06E-05
Waste Areas 1 and 2																						**Maximum HQ (Mike Horse Creek Channel Area Deposits)**	**8.94E-04**
UMH1-00 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	1.35E+02	1.93E+02	NA	NA	NA	NA	2.86E-02	1.19E+02	3.40E+00	9.68E-03	1.35E+02	1.41E-02	6.32E+02	2.47E-02	3.77E+02	3.73E-05
UMH1-100 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	2.03E+02	2.91E+02	NA	NA	NA	NA	2.86E-02	1.79E+02	5.14E+00	9.68E-03	1.35E+02	2.12E-02	6.32E+02	2.47E-02	3.77E+02	5.63E-05
UMH1-150 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	5.91E+01	8.46E+01	NA	NA	NA	NA	2.86E-02	5.22E+01	1.50E+00	9.68E-03	1.35E+02	6.17E-03	6.32E+02	2.47E-02	3.77E+02	1.64E-05
UMH1-200 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	1.95E+01	2.79E+01	NA	NA	NA	NA	2.86E-02	1.72E+01	4.92E-01	9.68E-03	1.35E+02	2.03E-03	6.32E+02	2.47E-02	3.77E+02	5.39E-06
UMH1-250 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UMH1-250+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UMH1-300 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	1.12E+02	1.60E+02	NA	NA	NA	NA	2.86E-02	9.87E+01	2.83E+00	9.68E-03	1.35E+02	1.17E-02	6.32E+02	2.47E-02	3.77E+02	3.10E-05
UMH1-300+14 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	6.45E+01	9.23E+01	NA	NA	NA	NA	2.86E-02	5.70E+01	1.63E+00	9.68E-03	1.35E+02	6.74E-03	6.32E+02	2.47E-02	3.77E+02	1.79E-05
UMH1-350 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	1.15E+02	1.65E+02	NA	NA	NA	NA	2.86E-02	1.02E+02	2.91E+00	9.68E-03	1.35E+02	1.20E-02	6.32E+02	2.47E-02	3.77E+02	3.19E-05
UMH1-350+12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	3.96E+01	5.67E+01	NA	NA	NA	NA	2.86E-02	3.50E+01	1.00E+00	9.68E-03	1.35E+02	4.14E-03	6.32E+02	2.47E-02	3.77E+02	1.10E-05
UMH1-400 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	7.27E+01	1.04E+02	NA	NA	NA	NA	2.86E-02	6.43E+01	1.84E+00	9.68E-03	1.35E+02	7.60E-03	6.32E+02	2.47E-02	3.77E+02	2.02E-05
UMH1-400+12.5 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UMH1-450 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	4.08E+01	5.84E+01	NA	NA	NA	NA	2.86E-02	3.60E+01	1.03E+00	9.68E-03	1.35E+02	4.26E-03	6.32E+02	2.47E-02	3.77E+02	1.13E-05
UMH1-450+12.5 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UMH1-50 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	9.54E+01	1.37E+02	NA	NA	NA	NA	2.86E-02	8.43E+01	2.41E+00	9.68E-03	1.35E+02	9.96E-03	6.32E+02	2.47E-02	3.77E+02	2.64E-05
UMH1-Comp (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	1.36E+02	1.94E+02	NA	NA	NA	NA	2.86E-02	1.20E+02	3.44E+00	9.68E-03	1.35E+02	1.42E-02	6.32E+02	2.47E-02	3.77E+02	3.77E-05
UMH2-00 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	4.48E+02	6.42E+02	NA	NA	NA	NA	2.86E-02	3.96E+02	1.13E+01	9.68E-03	1.35E+02	4.68E-02	6.32E+02	2.47E-02	3.77E+02	1.24E-04

TABLE C-8C: COPPER DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 8 - MIKE HORSE MINE WASTE PILES (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **1.73**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
White-Tailed Deer (Large Herbivorous Mammal - Terrestrial)																							
UMH2-00+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	5.32E+01	7.61E+01	NA	NA	NA	NA	2.86E-02	4.70E+01	1.35E+00	9.68E-03	1.35E+02	5.56E-03	6.32E+02	2.47E-02	3.77E+02	1.47E-05
UMH2-100 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	5.70E+02	8.16E+02	NA	NA	NA	NA	2.86E-02	5.04E+02	1.44E+01	9.68E-03	1.35E+02	5.95E-02	6.32E+02	2.47E-02	3.77E+02	1.58E-04
UMH2-100+35 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	1.13E+02	1.62E+02	NA	NA	NA	NA	2.86E-02	1.00E+02	2.86E+00	9.68E-03	1.35E+02	1.18E-02	6.32E+02	2.47E-02	3.77E+02	3.14E-05
UMH2-150 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	3.02E+02	4.33E+02	NA	NA	NA	NA	2.86E-02	2.67E+02	7.65E+00	9.68E-03	1.35E+02	3.16E-02	6.32E+02	2.47E-02	3.77E+02	8.38E-05
UMH2-150+60 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	1.18E+02	1.68E+02	NA	NA	NA	NA	2.86E-02	1.04E+02	2.98E+00	9.68E-03	1.35E+02	1.23E-02	6.32E+02	2.47E-02	3.77E+02	3.26E-05
UMH2-200 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	5.53E+02	7.92E+02	NA	NA	NA	NA	2.86E-02	4.89E+02	1.40E+01	9.68E-03	1.35E+02	5.78E-02	6.32E+02	2.47E-02	3.77E+02	1.53E-04
UMH2-200+85 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	1.06E+02	1.52E+02	NA	NA	NA	NA	2.86E-02	9.40E+01	2.69E+00	9.68E-03	1.35E+02	1.11E-02	6.32E+02	2.47E-02	3.77E+02	2.95E-05
UMH2-250 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	5.10E+02	7.29E+02	NA	NA	NA	NA	2.86E-02	4.50E+02	1.29E+01	9.68E-03	1.35E+02	5.32E-02	6.32E+02	2.47E-02	3.77E+02	1.41E-04
UMH2-250+75 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	1.31E+02	1.88E+02	NA	NA	NA	NA	2.86E-02	1.16E+02	3.32E+00	9.68E-03	1.35E+02	1.37E-02	6.32E+02	2.47E-02	3.77E+02	3.64E-05
UMH2-300 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	8.76E+01	1.25E+02	NA	NA	NA	NA	2.86E-02	7.74E+01	2.22E+00	9.68E-03	1.35E+02	9.15E-03	6.32E+02	2.47E-02	3.77E+02	2.43E-05
UMH2-300+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	4.41E+01	6.32E+01	NA	NA	NA	NA	2.86E-02	3.90E+01	1.12E+00	9.68E-03	1.35E+02	4.61E-03	6.32E+02	2.47E-02	3.77E+02	1.22E-05
UMH2-350 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	6.05E+01	8.66E+01	NA	NA	NA	NA	2.86E-02	5.34E+01	1.53E+00	9.68E-03	1.35E+02	6.32E-03	6.32E+02	2.47E-02	3.77E+02	1.68E-05
UMH2-350+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	4.19E+01	5.99E+01	NA	NA	NA	NA	2.86E-02	3.70E+01	1.06E+00	9.68E-03	1.35E+02	4.37E-03	6.32E+02	2.47E-02	3.77E+02	1.16E-05
UMH2-400 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UMH2-400+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	3.96E+01	5.67E+01	NA	NA	NA	NA	2.86E-02	3.50E+01	1.00E+00	9.68E-03	1.35E+02	4.14E-03	6.32E+02	2.47E-02	3.77E+02	1.10E-05
UMH2-450 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	5.98E+01	8.57E+01	NA	NA	NA	NA	2.86E-02	5.29E+01	1.51E+00	9.68E-03	1.35E+02	6.25E-03	6.32E+02	2.47E-02	3.77E+02	1.66E-05
UMH2-450+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	3.85E+01	5.51E+01	NA	NA	NA	NA	2.86E-02	3.40E+01	9.74E-01	9.68E-03	1.35E+02	4.02E-03	6.32E+02	2.47E-02	3.77E+02	1.07E-05
UMH2-50 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	1.42E+02	2.03E+02	NA	NA	NA	NA	2.86E-02	1.25E+02	3.59E+00	9.68E-03	1.35E+02	1.48E-02	6.32E+02	2.47E-02	3.77E+02	3.93E-05
UMH2-50+25b (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	4.01E+01	5.75E+01	NA	NA	NA	NA	2.86E-02	3.55E+01	1.02E+00	9.68E-03	1.35E+02	4.19E-03	6.32E+02	2.47E-02	3.77E+02	1.11E-05
UMH2-500 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	5.24E+02	7.51E+02	NA	NA	NA	NA	2.86E-02	4.63E+02	1.33E+01	9.68E-03	1.35E+02	5.48E-02	6.32E+02	2.47E-02	3.77E+02	1.45E-04
UMH2-500+75 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UMH2-550 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	9.61E+02	1.38E+03	NA	NA	NA	NA	2.86E-02	8.49E+02	2.43E+01	9.68E-03	1.35E+02	1.00E-01	6.32E+02	2.47E-02	3.77E+02	2.66E-04
UMH2-550+75 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UMH2-600 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	1.16E+02	1.67E+02	NA	NA	NA	NA	2.86E-02	1.03E+02	2.94E+00	9.68E-03	1.35E+02	1.22E-02	6.32E+02	2.47E-02	3.77E+02	3.23E-05
UMH2-600+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UMH2-650 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	2.11E+02	3.02E+02	NA	NA	NA	NA	2.86E-02	1.86E+02	5.33E+00	9.68E-03	1.35E+02	2.20E-02	6.32E+02	2.47E-02	3.77E+02	5.84E-05
UMH2-650+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	4.87E+01	6.97E+01	NA	NA	NA	NA	2.86E-02	4.30E+01	1.23E+00	9.68E-03	1.35E+02	5.09E-03	6.32E+02	2.47E-02	3.77E+02	1.35E-05
UMH2-Comp 1 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	5.37E+02	7.69E+02	NA	NA	NA	NA	2.86E-02	4.75E+02	1.36E+01	9.68E-03	1.35E+02	5.61E-02	6.32E+02	2.47E-02	3.77E+02	1.49E-04
UMH2-Comp 2 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	1.06E+03	1.51E+03	NA	NA	NA	NA	2.86E-02	9.35E+02	2.68E+01	9.68E-03	1.35E+02	1.10E-01	6.32E+02	2.47E-02	3.77E+02	2.93E-04
Waste Area 3																						**Maximum HQ (Waste Areas 1 and 2)**	**2.93E-04**
UMH3-00 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	7.17E+01	1.03E+02	NA	NA	NA	NA	2.86E-02	6.34E+01	1.81E+00	9.68E-03	1.35E+02	7.49E-03	6.32E+02	2.47E-02	3.77E+02	1.99E-05
UMH3-100 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	6.13E+01	8.77E+01	NA	NA	NA	NA	2.86E-02	5.41E+01	1.55E+00	9.68E-03	1.35E+02	6.40E-03	6.32E+02	2.47E-02	3.77E+02	1.70E-05
UMH3-150 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	3.98E+02	5.70E+02	NA	NA	NA	NA	2.86E-02	3.52E+02	1.01E+01	9.68E-03	1.35E+02	4.16E-02	6.32E+02	2.47E-02	3.77E+02	1.10E-04
UMH3-200 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	2.65E+02	3.80E+02	NA	NA	NA	NA	2.86E-02	2.34E+02	6.71E+00	9.68E-03	1.35E+02	2.77E-02	6.32E+02	2.47E-02	3.77E+02	7.35E-05
UMH3-250 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	8.87E+02	1.27E+03	NA	NA	NA	NA	2.86E-02	7.84E+02	2.25E+01	9.68E-03	1.35E+02	9.27E-02	6.32E+02	2.47E-02	3.77E+02	2.46E-04
UMH3-300 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	4.04E+01	5.79E+01	NA	NA	NA	NA	2.86E-02	3.57E+01	1.02E+00	9.68E-03	1.35E+02	4.22E-03	6.32E+02	2.47E-02	3.77E+02	1.12E-05
UMH3-350 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	1.49E+03	2.13E+03	NA	NA	NA	NA	2.86E-02	1.32E+03	3.77E+01	9.68E-03	1.35E+02	1.56E-01	6.32E+02	2.47E-02	3.77E+02	4.13E-04
UMH3-350+75 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	5.77E+01	8.26E+01	NA	NA	NA	NA	2.86E-02	5.10E+01	1.46E+00	9.68E-03	1.35E+02	6.03E-03	6.32E+02	2.47E-02	3.77E+02	1.60E-05
UMH3-400 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	7.27E+02	1.04E+03	NA	NA	NA	NA	2.86E-02	6.42E+02	1.84E+01	9.68E-03	1.35E+02	7.59E-02	6.32E+02	2.47E-02	3.77E+02	2.01E-04
UMH3-400+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	8.71E+01	1.25E+02	NA	NA	NA	NA	2.86E-02	7.70E+01	2.20E+00	9.68E-03	1.35E+02	9.10E-03	6.32E+02	2.47E-02	3.77E+02	2.42E-05
UMH3-450 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	8.43E+01	1.21E+02	NA	NA	NA	NA	2.86E-02	7.45E+01	2.13E+00	9.68E-03	1.35E+02	8.81E-03	6.32E+02	2.47E-02	3.77E+02	2.34E-05
UMH3-50 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	4.86E+01	6.95E+01	NA	NA	NA	NA	2.86E-02	4.29E+01	1.23E+00	9.68E-03	1.35E+02	5.07E-03	6.32E+02	2.47E-02	3.77E+02	1.35E-05
UMH3-50+50 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	6.21E+01	8.89E+01	NA	NA	NA	NA	2.86E-02	5.49E+01	1.57E+00	9.68E-03	1.35E+02	6.48E-03	6.32E+02	2.47E-02	3.77E+02	1.72E-05
UMH3-500 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	1.60E+02	2.29E+02	NA	NA	NA	NA	2.86E-02	1.41E+02	4.04E+00	9.68E-03	1.35E+02	1.67E-02	6.32E+02	2.47E-02	3.77E+02	4.43E-05
UMH3-550 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	1.12E+03	1.61E+03	NA	NA	NA	NA	2.86E-02	9.94E+02	2.85E+01	9.68E-03	1.35E+02	1.17E-01	6.32E+02	2.47E-02	3.77E+02	3.12E-04
UMH3-600 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	1.37E+03	1.96E+03	NA	NA	NA	NA	2.86E-02	1.21E+03	3.47E+01	9.68E-03	1.35E+02	1.43E-01	6.32E+02	2.47E-02	3.77E+02	3.80E-04
UMH3-650 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	1.07E+03	1.53E+03	NA	NA	NA	NA	2.86E-02	9.47E+02	2.71E+01	9.68E-03	1.35E+02	1.12E-01	6.32E+02	2.47E-02	3.77E+02	2.97E-04
UMH3-700 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	1.00E+03	1.44E+03	NA	NA	NA	NA	2.86E-02	8.87E+02	2.54E+01	9.68E-03	1.35E+02	1.05E-01	6.32E+02	2.47E-02	3.77E+02	2.78E-04
UMH3-750 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	1.06E+02	1.51E+02	NA	NA	NA	NA	2.86E-02	9.34E+01	2.67E+00	9.68E-03	1.35E+02	1.10E-02	6.32E+02	2.47E-02	3.77E+02	2.93E-05
UMH3-800 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	2.28E+02	3.27E+02	NA	NA	NA	NA	2.86E-02	2.02E+02	5.78E+00	9.68E-03	1.35E+02	2.39E-02	6.32E+02	2.47E-02	3.77E+02	6.33E-05
UMH3-Comp 1 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	9.73E+01	1.39E+02	NA	NA	NA	NA	2.86E-02	8.60E+01	2.46E+00	9.68E-03	1.35E+02	1.02E-02	6.32E+02	2.47E-02	3.77E+02	2.70E-05
UMH3-Comp 2 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	7.58E+02	1.09E+03	NA	NA	NA	NA	2.86E-02	6.70E+02	1.92E+01	9.68E-03	1.35E+02	7.92E-02	6.32E+02	2.47E-02	3.77E+02	2.10E-04
UMH3-Comp 3 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	9.96E+02	1.43E+03	NA	NA	NA	NA	2.86E-02	8.80E+02	2.52E+01	9.68E-03	1.35E+02	1.04E-01	6.32E+02	2.47E-02	3.77E+02	2.76E-04
																						Maximum HQ (Waste Area 3)	**4.13E-04**

TABLE C-8C: COPPER DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 8 - MIKE HORSE MINE WASTE PILES (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **1.73**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Red Fox (Carnivorous Mammal - Terrestrial)																							
Reference Sites																							
BCBG-1 (0-6")	1.72E-01	1.72E-01	6.61E-01	2.17E+01	3.72E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.28E+01	1.57E-01	1.28E-03	4.54E+00	1.09E-03	6.32E+02	2.47E-02	4.62E+02	2.36E-06
MHBG-201 (0-6")	1.72E-01	1.72E-01	6.61E-01	4.13E+01	7.09E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	6.25E+01	3.00E-01	1.28E-03	4.54E+00	2.08E-03	6.32E+02	2.47E-02	4.62E+02	4.51E-06
MHBG-202 (0-6")	1.72E-01	1.72E-01	6.61E-01	3.58E+01	6.15E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.42E+01	2.60E-01	1.28E-03	4.54E+00	1.80E-03	6.32E+02	2.47E-02	4.62E+02	3.91E-06
Mike Horse Creek Channel Area Deposits																						**Minimum HQ (Reference Site)**	**2.36E-06**
AMHR-0 (0-6")	1.72E-01	1.72E-01	1.01E+00	5.72E+01	9.81E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.66E+01	2.72E-01	1.28E-03	4.54E+00	2.84E-03	6.32E+02	2.47E-02	4.62E+02	6.15E-06
AMHR-200 (0-6")	1.72E-01	1.72E-01	1.01E+00	5.35E+01	9.18E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.30E+01	2.55E-01	1.28E-03	4.54E+00	2.66E-03	6.32E+02	2.47E-02	4.62E+02	5.76E-06
AMHR-400 (0-6")	1.72E-01	1.72E-01	1.01E+00	5.62E+01	9.64E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.56E+01	2.67E-01	1.28E-03	4.54E+00	2.79E-03	6.32E+02	2.47E-02	4.62E+02	6.04E-06
AMHR-600 (0-6")	1.72E-01	1.72E-01	1.01E+00	7.97E+01	1.37E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	7.89E+01	3.79E-01	1.28E-03	4.54E+00	3.96E-03	6.32E+02	2.47E-02	4.62E+02	8.57E-06
MHCS-00-E25 (0-6")	1.72E-01	1.72E-01	1.01E+00	4.10E+02	7.03E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.05E+02	1.95E+00	1.28E-03	4.54E+00	2.03E-02	6.32E+02	2.47E-02	4.62E+02	4.40E-05
MHCS-0-W25 (0-6")	1.72E-01	1.72E-01	1.01E+00	7.25E+01	1.24E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	7.18E+01	3.45E-01	1.28E-03	4.54E+00	3.60E-03	6.32E+02	2.47E-02	4.62E+02	7.80E-06
MHCS-0-W5 (0-6")	1.72E-01	1.72E-01	1.01E+00	4.93E+01	8.46E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.88E+01	2.35E-01	1.28E-03	4.54E+00	2.45E-03	6.32E+02	2.47E-02	4.62E+02	5.31E-06
MHCS-100-E25 (0-6")	1.72E-01	1.72E-01	1.01E+00	5.63E+02	9.65E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.57E+02	2.68E+00	1.28E-03	4.54E+00	2.80E-02	6.32E+02	2.47E-02	4.62E+02	6.05E-05
MHCS-100-W1 (0-6")	1.72E-01	1.72E-01	1.01E+00	3.90E+02	6.69E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.86E+02	1.85E+00	1.28E-03	4.54E+00	1.94E-02	6.32E+02	2.47E-02	4.62E+02	4.19E-05
MHCS-100-W25 (0-6")	1.72E-01	1.72E-01	1.01E+00	5.12E+01	8.78E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.06E+01	2.43E-01	1.28E-03	4.54E+00	2.54E-03	6.32E+02	2.47E-02	4.62E+02	5.50E-06
MHCS-200-E10 (0-6")	1.72E-01	1.72E-01	1.01E+00	2.19E+02	3.75E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.16E+02	1.04E+00	1.28E-03	4.54E+00	1.09E-02	6.32E+02	2.47E-02	4.62E+02	2.35E-05
MHCS-200-E25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
MHCS-200-W10 (0-6")	1.72E-01	1.72E-01	1.01E+00	7.85E+01	1.35E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	7.77E+01	3.73E-01	1.28E-03	4.54E+00	3.90E-03	6.32E+02	2.47E-02	4.62E+02	8.44E-06
MHCS-525-E5 (0-6")	1.72E-01	1.72E-01	1.01E+00	1.08E+02	1.85E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.07E+02	5.13E-01	1.28E-03	4.54E+00	5.36E-03	6.32E+02	2.47E-02	4.62E+02	1.16E-05
MHCS-525-W15 (0-6")	1.72E-01	1.72E-01	1.01E+00	3.03E+02	5.19E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.00E+02	1.44E+00	1.28E-03	4.54E+00	1.50E-02	6.32E+02	2.47E-02	4.62E+02	3.26E-05
MHCS-600-E10 (0-6")	1.72E-01	1.72E-01	1.01E+00	2.11E+02	3.62E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.09E+02	1.00E+00	1.28E-03	4.54E+00	1.05E-02	6.32E+02	2.47E-02	4.62E+02	2.27E-05
MHCS-600-W10 (0-6")	1.72E-01	1.72E-01	1.01E+00	2.88E+03	4.94E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.85E+03	1.37E+01	1.28E-03	4.54E+00	1.43E-01	6.32E+02	2.47E-02	4.62E+02	3.10E-04
MHCS-700-E10 (0-6")	1.72E-01	1.72E-01	1.01E+00	3.14E+02	5.38E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.11E+02	1.49E+00	1.28E-03	4.54E+00	1.56E-02	6.32E+02	2.47E-02	4.62E+02	3.37E-05
MHCS-700-E25 (0-6")	1.72E-01	1.72E-01	1.01E+00	4.76E+01	8.17E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.71E+01	2.26E-01	1.28E-03	4.54E+00	2.36E-03	6.32E+02	2.47E-02	4.62E+02	5.12E-06
MHCS-700-W10 (0-6")	1.72E-01	1.72E-01	1.01E+00	1.62E+03	2.79E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.61E+03	7.72E+00	1.28E-03	4.54E+00	8.07E-02	6.32E+02	2.47E-02	4.62E+02	1.75E-04
MHCS-800-E15 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
MHCS-800-E5 (0-6")	1.72E-01	1.72E-01	1.01E+00	4.47E+02	7.68E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.43E+02	2.13E+00	1.28E-03	4.54E+00	2.22E-02	6.32E+02	2.47E-02	4.62E+02	4.81E-05
MHCS-800-W5 (0-6")	1.72E-01	1.72E-01	1.01E+00	6.65E+02	1.14E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	6.58E+02	3.16E+00	1.28E-03	4.54E+00	3.30E-02	6.32E+02	2.47E-02	4.62E+02	7.15E-05
MHCS-900-E15 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
MHCS-900-E5 (0-6")	1.72E-01	1.72E-01	1.01E+00	4.39E+02	7.54E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.35E+02	2.09E+00	1.28E-03	4.54E+00	2.18E-02	6.32E+02	2.47E-02	4.62E+02	4.73E-05
MHCS-900-W5 (0-6")	1.72E-01	1.72E-01	1.01E+00	5.49E+02	9.43E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.44E+02	2.61E+00	1.28E-03	4.54E+00	2.73E-02	6.32E+02	2.47E-02	4.62E+02	5.91E-05
MHCS-1000-E10 (0-6")	1.72E-01	1.72E-01	1.01E+00	3.55E+01	6.08E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.51E+01	1.69E-01	1.28E-03	4.54E+00	1.76E-03	6.32E+02	2.47E-02	4.62E+02	3.81E-06
MHCS-1000-W5 (0-6")	1.72E-01	1.72E-01	1.01E+00	1.39E+03	2.38E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.37E+03	6.60E+00	1.28E-03	4.54E+00	6.90E-02	6.32E+02	2.47E-02	4.62E+02	1.49E-04
MHCS-1100-E10 (0-6")	1.72E-01	1.72E-01	1.01E+00	1.37E+02	2.35E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.36E+02	6.51E-01	1.28E-03	4.54E+00	6.80E-03	6.32E+02	2.47E-02	4.62E+02	1.47E-05
MHCS-1100-E35 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
MHCS-1200-E15 (0-6")	1.72E-01	1.72E-01	1.01E+00	1.36E+02	2.34E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.35E+02	6.48E-01	1.28E-03	4.54E+00	6.77E-03	6.32E+02	2.47E-02	4.62E+02	1.47E-05
MHCS-1200-E30 (0-6")	1.72E-01	1.72E-01	1.01E+00	4.25E+01	7.29E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.20E+01	2.02E-01	1.28E-03	4.54E+00	2.11E-03	6.32E+02	2.47E-02	4.62E+02	4.57E-06
MHCS-1300-E20 (0-6")	1.72E-01	1.72E-01	1.01E+00	1.74E+02	2.98E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.72E+02	8.25E-01	1.28E-03	4.54E+00	8.62E-03	6.32E+02	2.47E-02	4.62E+02	1.87E-05
MHCS-1300-E35 (0-6")	1.72E-01	1.72E-01	1.01E+00	1.63E+02	2.79E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.61E+02	7.74E-01	1.28E-03	4.54E+00	8.09E-03	6.32E+02	2.47E-02	4.62E+02	1.75E-05
Waste Areas 1 and 2																						**Maximum HQ (Mike Horse Creek Channel Area Deposits)**	**3.10E-04**
UMH1-00 (0-6")	1.72E-01	1.72E-01	1.01E+00	1.20E+02	2.06E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.19E+02	5.71E-01	1.28E-03	4.54E+00	5.97E-03	6.32E+02	2.47E-02	4.62E+02	1.29E-05
UMH1-100 (0-6")	1.72E-01	1.72E-01	1.01E+00	1.81E+02	3.11E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.79E+02	8.62E-01	1.28E-03	4.54E+00	9.00E-03	6.32E+02	2.47E-02	4.62E+02	1.95E-05
UMH1-150 (0-6")	1.72E-01	1.72E-01	1.01E+00	5.28E+01	9.05E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.22E+01	2.51E-01	1.28E-03	4.54E+00	2.62E-03	6.32E+02	2.47E-02	4.62E+02	5.68E-06
UMH1-200 (0-6")	1.72E-01	1.72E-01	1.01E+00	1.74E+01	2.98E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.72E+01	8.26E-02	1.28E-03	4.54E+00	8.63E-04	6.32E+02	2.47E-02	4.62E+02	1.87E-06
UMH1-250 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UMH1-250+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UMH1-300 (0-6")	1.72E-01	1.72E-01	1.01E+00	9.98E+01	1.71E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	9.87E+01	4.74E-01	1.28E-03	4.54E+00	4.96E-03	6.32E+02	2.47E-02	4.62E+02	1.07E-05
UMH1-300+14 (0-6")	1.72E-01	1.72E-01	1.01E+00	5.76E+01	9.88E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.70E+01	2.74E-01	1.28E-03	4.54E+00	2.86E-03	6.32E+02	2.47E-02	4.62E+02	6.19E-06
UMH1-350 (0-6")	1.72E-01	1.72E-01	1.01E+00	1.03E+02	1.76E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.02E+02	4.88E-01	1.28E-03	4.54E+00	5.10E-03	6.32E+02	2.47E-02	4.62E+02	1.10E-05
UMH1-350+12.5 (0-6")	1.72E-01	1.72E-01	1.01E+00	3.54E+01	6.07E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.50E+01	1.68E-01	1.28E-03	4.54E+00	1.76E-03	6.32E+02	2.47E-02	4.62E+02	3.80E-06
UMH1-400 (0-6")	1.72E-01	1.72E-01	1.01E+00	6.49E+01	1.11E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	6.43E+01	3.09E-01	1.28E-03	4.54E+00	3.23E-03	6.32E+02	2.47E-02	4.62E+02	6.98E-06
UMH1-400+12.5 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UMH1-450 (0-6")	1.72E-01	1.72E-01	1.01E+00	3.64E+01	6.24E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.60E+01	1.73E-01	1.28E-03	4.54E+00	1.81E-03	6.32E+02	2.47E-02	4.62E+02	3.91E-06
UMH1-450+12.5 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UMH1-50 (0-6")	1.72E-01	1.72E-01	1.01E+00	8.52E+01	1.46E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	8.43E+01	4.05E-01	1.28E-03	4.54E+00	4.23E-03	6.32E+02	2.47E-02	4.62E+02	9.16E-06
UMH1-Comp (0-6")	1.72E-01	1.72E-01	1.01E+00	1.21E+02	2.08E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.20E+02	5.77E-01	1.28E-03	4.54E+00	6.02E-03	6.32E+02	2.47E-02	4.62E+02	1.30E-05
UMH2-00 (0-6")	1.72E-01	1.72E-01	1.01E+00	4.00E+02	6.87E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.96E+02	1.90E+00	1.28E-03	4.54E+00	1.99E-02	6.32E+02	2.47E-02	4.62E+02	4.31E-05

TABLE C-8C: COPPER DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 8 - MIKE HORSE MINE WASTE PILES (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **1.73**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Red Fox (Carnivorous Mammal - Terrestrial)																							
UMH2-00+25 (0-6")	1.72E-01	1.72E-01	1.01E+00	4.75E+01	8.15E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.70E+01	2.26E-01	1.28E-03	4.54E+00	2.36E-03	6.32E+02	2.47E-02	4.62E+02	5.11E-06
UMH2-100 (0-6")	1.72E-01	1.72E-01	1.01E+00	5.09E+02	8.73E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.04E+02	2.42E+00	1.28E-03	4.54E+00	2.53E-02	6.32E+02	2.47E-02	4.62E+02	5.47E-05
UMH2-100+35 (0-6")	1.72E-01	1.72E-01	1.01E+00	1.01E+02	1.73E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.00E+02	4.80E-01	1.28E-03	4.54E+00	5.02E-03	6.32E+02	2.47E-02	4.62E+02	1.09E-05
UMH2-150 (0-6")	1.72E-01	1.72E-01	1.01E+00	2.70E+02	4.63E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.67E+02	1.28E+00	1.28E-03	4.54E+00	1.34E-02	6.32E+02	2.47E-02	4.62E+02	2.90E-05
UMH2-150+60 (0-6")	1.72E-01	1.72E-01	1.01E+00	1.05E+02	1.80E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.04E+02	5.00E-01	1.28E-03	4.54E+00	5.22E-03	6.32E+02	2.47E-02	4.62E+02	1.13E-05
UMH2-200 (0-6")	1.72E-01	1.72E-01	1.01E+00	4.94E+02	8.48E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.89E+02	2.35E+00	1.28E-03	4.54E+00	2.45E-02	6.32E+02	2.47E-02	4.62E+02	5.31E-05
UMH2-200+85 (0-6")	1.72E-01	1.72E-01	1.01E+00	9.50E+01	1.63E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	9.40E+01	4.52E-01	1.28E-03	4.54E+00	4.72E-03	6.32E+02	2.47E-02	4.62E+02	1.02E-05
UMH2-250 (0-6")	1.72E-01	1.72E-01	1.01E+00	4.55E+02	7.80E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.50E+02	2.16E+00	1.28E-03	4.54E+00	2.26E-02	6.32E+02	2.47E-02	4.62E+02	4.89E-05
UMH2-250+75 (0-6")	1.72E-01	1.72E-01	1.01E+00	1.17E+02	2.01E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.16E+02	5.57E-01	1.28E-03	4.54E+00	5.82E-03	6.32E+02	2.47E-02	4.62E+02	1.26E-05
UMH2-300 (0-6")	1.72E-01	1.72E-01	1.01E+00	7.82E+01	1.34E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	7.74E+01	3.72E-01	1.28E-03	4.54E+00	3.88E-03	6.32E+02	2.47E-02	4.62E+02	8.41E-06
UMH2-300+25 (0-6")	1.72E-01	1.72E-01	1.01E+00	3.94E+01	6.76E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.90E+01	1.87E-01	1.28E-03	4.54E+00	1.96E-03	6.32E+02	2.47E-02	4.62E+02	4.24E-06
UMH2-350 (0-6")	1.72E-01	1.72E-01	1.01E+00	5.40E+01	9.26E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.34E+01	2.57E-01	1.28E-03	4.54E+00	2.68E-03	6.32E+02	2.47E-02	4.62E+02	5.81E-06
UMH2-350+25 (0-6")	1.72E-01	1.72E-01	1.01E+00	3.74E+01	6.41E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.70E+01	1.78E-01	1.28E-03	4.54E+00	1.86E-03	6.32E+02	2.47E-02	4.62E+02	4.02E-06
UMH2-400 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UMH2-400+25 (0-6")	1.72E-01	1.72E-01	1.01E+00	3.54E+01	6.07E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.50E+01	1.68E-01	1.28E-03	4.54E+00	1.76E-03	6.32E+02	2.47E-02	4.62E+02	3.80E-06
UMH2-450 (0-6")	1.72E-01	1.72E-01	1.01E+00	5.34E+01	9.16E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.29E+01	2.54E-01	1.28E-03	4.54E+00	2.65E-03	6.32E+02	2.47E-02	4.62E+02	5.74E-06
UMH2-450+25 (0-6")	1.72E-01	1.72E-01	1.01E+00	3.44E+01	5.89E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.40E+01	1.63E-01	1.28E-03	4.54E+00	1.71E-03	6.32E+02	2.47E-02	4.62E+02	3.69E-06
UMH2-50 (0-6")	1.72E-01	1.72E-01	1.01E+00	1.27E+02	2.17E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.25E+02	6.02E-01	1.28E-03	4.54E+00	6.29E-03	6.32E+02	2.47E-02	4.62E+02	1.36E-05
UMH2-50+25b (0-6")	1.72E-01	1.72E-01	1.01E+00	3.58E+01	6.15E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.55E+01	1.70E-01	1.28E-03	4.54E+00	1.78E-03	6.32E+02	2.47E-02	4.62E+02	3.85E-06
UMH2-500 (0-6")	1.72E-01	1.72E-01	1.01E+00	4.68E+02	8.03E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.63E+02	2.23E+00	1.28E-03	4.54E+00	2.33E-02	6.32E+02	2.47E-02	4.62E+02	5.03E-05
UMH2-500+75 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UMH2-550 (0-6")	1.72E-01	1.72E-01	1.01E+00	8.58E+02	1.47E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	8.49E+02	4.08E+00	1.28E-03	4.54E+00	4.26E-02	6.32E+02	2.47E-02	4.62E+02	9.23E-05
UMH2-550+75 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UMH2-600 (0-6")	1.72E-01	1.72E-01	1.01E+00	1.04E+02	1.78E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.03E+02	4.94E-01	1.28E-03	4.54E+00	5.16E-03	6.32E+02	2.47E-02	4.62E+02	1.12E-05
UMH2-600+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UMH2-650 (0-6")	1.72E-01	1.72E-01	1.01E+00	1.88E+02	3.23E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.86E+02	8.94E-01	1.28E-03	4.54E+00	9.34E-03	6.32E+02	2.47E-02	4.62E+02	2.02E-05
UMH2-650+25 (0-6")	1.72E-01	1.72E-01	1.01E+00	4.35E+01	7.46E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.30E+01	2.07E-01	1.28E-03	4.54E+00	2.16E-03	6.32E+02	2.47E-02	4.62E+02	4.67E-06
UMH2-Comp 1 (0-6")	1.72E-01	1.72E-01	1.01E+00	4.79E+02	8.22E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.75E+02	2.28E+00	1.28E-03	4.54E+00	2.38E-02	6.32E+02	2.47E-02	4.62E+02	5.16E-05
UMH2-Comp 2 (0-6")	1.72E-01	1.72E-01	1.01E+00	9.44E+02	1.62E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	9.35E+02	4.49E+00	1.28E-03	4.54E+00	4.69E-02	6.32E+02	2.47E-02	4.62E+02	1.02E-04
Waste Area 3																						**Maximum HQ (Waste Areas 1 and 2)**	**1.02E-04**
UMH3-00 (0-6")	1.72E-01	1.72E-01	1.01E+00	6.40E+01	1.10E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	6.34E+01	3.04E-01	1.28E-03	4.54E+00	3.18E-03	6.32E+02	2.47E-02	4.62E+02	6.88E-06
UMH3-100 (0-6")	1.72E-01	1.72E-01	1.01E+00	5.47E+01	9.38E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.41E+01	2.60E-01	1.28E-03	4.54E+00	2.72E-03	6.32E+02	2.47E-02	4.62E+02	5.88E-06
UMH3-150 (0-6")	1.72E-01	1.72E-01	1.01E+00	3.55E+02	6.09E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.52E+02	1.69E+00	1.28E-03	4.54E+00	1.76E-02	6.32E+02	2.47E-02	4.62E+02	3.82E-05
UMH3-200 (0-6")	1.72E-01	1.72E-01	1.01E+00	2.37E+02	4.06E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.34E+02	1.13E+00	1.28E-03	4.54E+00	1.18E-02	6.32E+02	2.47E-02	4.62E+02	2.55E-05
UMH3-250 (0-6")	1.72E-01	1.72E-01	1.01E+00	7.92E+02	1.36E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	7.84E+02	3.77E+00	1.28E-03	4.54E+00	3.94E-02	6.32E+02	2.47E-02	4.62E+02	8.52E-05
UMH3-300 (0-6")	1.72E-01	1.72E-01	1.01E+00	3.61E+01	6.19E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.57E+01	1.72E-01	1.28E-03	4.54E+00	1.79E-03	6.32E+02	2.47E-02	4.62E+02	3.88E-06
UMH3-350 (0-6")	1.72E-01	1.72E-01	1.01E+00	1.33E+03	2.28E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.32E+03	6.33E+00	1.28E-03	4.54E+00	6.61E-02	6.32E+02	2.47E-02	4.62E+02	1.43E-04
UMH3-350+75 (0-6")	1.72E-01	1.72E-01	1.01E+00	5.15E+01	8.84E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.10E+01	2.45E-01	1.28E-03	4.54E+00	2.56E-03	6.32E+02	2.47E-02	4.62E+02	5.54E-06
UMH3-400 (0-6")	1.72E-01	1.72E-01	1.01E+00	6.49E+02	1.11E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	6.42E+02	3.09E+00	1.28E-03	4.54E+00	3.22E-02	6.32E+02	2.47E-02	4.62E+02	6.98E-05
UMH3-400+25 (0-6")	1.72E-01	1.72E-01	1.01E+00	7.78E+01	1.33E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	7.70E+01	3.70E-01	1.28E-03	4.54E+00	3.86E-03	6.32E+02	2.47E-02	4.62E+02	8.37E-06
UMH3-450 (0-6")	1.72E-01	1.72E-01	1.01E+00	7.53E+01	1.29E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	7.45E+01	3.58E-01	1.28E-03	4.54E+00	3.74E-03	6.32E+02	2.47E-02	4.62E+02	8.10E-06
UMH3-50 (0-6")	1.72E-01	1.72E-01	1.01E+00	4.34E+01	7.44E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.29E+01	2.06E-01	1.28E-03	4.54E+00	2.15E-03	6.32E+02	2.47E-02	4.62E+02	4.66E-06
UMH3-50+50 (0-6")	1.72E-01	1.72E-01	1.01E+00	5.54E+01	9.51E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.49E+01	2.64E-01	1.28E-03	4.54E+00	2.75E-03	6.32E+02	2.47E-02	4.62E+02	5.96E-06
UMH3-500 (0-6")	1.72E-01	1.72E-01	1.01E+00	1.43E+02	2.45E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.41E+02	6.78E-01	1.28E-03	4.54E+00	7.08E-03	6.32E+02	2.47E-02	4.62E+02	1.53E-05
UMH3-550 (0-6")	1.72E-01	1.72E-01	1.01E+00	1.00E+03	1.72E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	9.94E+02	4.77E+00	1.28E-03	4.54E+00	4.99E-02	6.32E+02	2.47E-02	4.62E+02	1.08E-04
UMH3-600 (0-6")	1.72E-01	1.72E-01	1.01E+00	1.22E+03	2.10E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.21E+03	5.82E+00	1.28E-03	4.54E+00	6.08E-02	6.32E+02	2.47E-02	4.62E+02	1.32E-04
UMH3-650 (0-6")	1.72E-01	1.72E-01	1.01E+00	9.57E+02	1.64E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	9.47E+02	4.55E+00	1.28E-03	4.54E+00	4.75E-02	6.32E+02	2.47E-02	4.62E+02	1.03E-04
UMH3-700 (0-6")	1.72E-01	1.72E-01	1.01E+00	8.96E+02	1.54E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	8.87E+02	4.26E+00	1.28E-03	4.54E+00	4.45E-02	6.32E+02	2.47E-02	4.62E+02	9.64E-05
UMH3-750 (0-6")	1.72E-01	1.72E-01	1.01E+00	9.44E+01	1.62E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	9.34E+01	4.49E-01	1.28E-03	4.54E+00	4.69E-03	6.32E+02	2.47E-02	4.62E+02	1.01E-05
UMH3-800 (0-6")	1.72E-01	1.72E-01	1.01E+00	2.04E+02	3.50E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.02E+02	9.70E-01	1.28E-03	4.54E+00	1.01E-02	6.32E+02	2.47E-02	4.62E+02	2.19E-05
UMH3-Comp 1 (0-6")	1.72E-01	1.72E-01	1.01E+00	8.68E+01	1.49E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	8.60E+01	4.13E-01	1.28E-03	4.54E+00	4.31E-03	6.32E+02	2.47E-02	4.62E+02	9.34E-06
UMH3-Comp 2 (0-6")	1.72E-01	1.72E-01	1.01E+00	6.77E+02	1.16E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	6.70E+02	3.22E+00	1.28E-03	4.54E+00	3.36E-02	6.32E+02	2.47E-02	4.62E+02	7.28E-05
UMH3-Comp 3 (0-6")	1.72E-01	1.72E-01	1.01E+00	8.89E+02	1.53E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	8.80E+02	4.23E+00	1.28E-03	4.54E+00	4.42E-02	6.32E+02	2.47E-02	4.62E+02	9.56E-05
																						Maximum HQ (Waste Area 3)	**1.43E-04**

TABLE C-8C: COPPER DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 8 - MIKE HORSE MINE WASTE PILES (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **1.73**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Masked Shrew (Omnivorous Mammal - Terrestrial, Wetland)																							
Reference Sites																							
BCBG-1 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	3.70E+00	1.21E+02	1.03E+00	1.10E-03	3.28E+01	3.61E-02	1.00E+00	5.50E-03	1.94E+02	6.32E+02	2.47E-02	6.91E+02	2.80E-01
MHBG-201 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	3.70E+00	2.32E+02	1.96E+00	1.10E-03	6.25E+01	6.88E-02	1.00E+00	5.50E-03	3.69E+02	6.32E+02	2.47E-02	6.91E+02	5.34E-01
MHBG-202 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	3.70E+00	2.01E+02	1.70E+00	1.10E-03	5.42E+01	5.97E-02	1.00E+00	5.50E-03	3.20E+02	6.32E+02	2.47E-02	6.91E+02	4.63E-01
Mike Horse Creek Channel Area Deposits																						**Minimum HQ (Reference Site)**	**2.80E-01**
AMHR-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	2.75E+02	2.33E+00	1.10E-03	5.66E+01	6.23E-02	1.00E+00	5.50E-03	4.34E+02	6.32E+02	2.47E-02	6.91E+02	6.28E-01
AMHR-200 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	2.57E+02	2.18E+00	1.10E-03	5.30E+01	5.83E-02	1.00E+00	5.50E-03	4.06E+02	6.32E+02	2.47E-02	6.91E+02	5.88E-01
AMHR-400 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	2.70E+02	2.28E+00	1.10E-03	5.56E+01	6.12E-02	1.00E+00	5.50E-03	4.27E+02	6.32E+02	2.47E-02	6.91E+02	6.17E-01
AMHR-600 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	3.83E+02	3.24E+00	1.10E-03	7.89E+01	8.69E-02	1.00E+00	5.50E-03	6.05E+02	6.32E+02	2.47E-02	6.91E+02	8.75E-01
MHCS-00-E25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	1.97E+03	1.67E+01	1.10E-03	4.05E+02	4.46E-01	1.00E+00	5.50E-03	3.11E+03	6.32E+02	2.47E-02	6.91E+02	4.50E+00
MHCS-0-W25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	3.48E+02	2.95E+00	1.10E-03	7.18E+01	7.90E-02	1.00E+00	5.50E-03	5.51E+02	6.32E+02	2.47E-02	6.91E+02	7.97E-01
MHCS-0-W5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	2.37E+02	2.01E+00	1.10E-03	4.88E+01	5.38E-02	1.00E+00	5.50E-03	3.75E+02	6.32E+02	2.47E-02	6.91E+02	5.42E-01
MHCS-100-E25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	2.70E+03	2.29E+01	1.10E-03	5.57E+02	6.13E-01	1.00E+00	5.50E-03	4.27E+03	6.32E+02	2.47E-02	6.91E+02	6.18E+00
MHCS-100-W1 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	1.87E+03	1.59E+01	1.10E-03	3.86E+02	4.25E-01	1.00E+00	5.50E-03	2.96E+03	6.32E+02	2.47E-02	6.91E+02	4.28E+00
MHCS-100-W25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	2.46E+02	2.08E+00	1.10E-03	5.06E+01	5.57E-02	1.00E+00	5.50E-03	3.88E+02	6.32E+02	2.47E-02	6.91E+02	5.62E-01
MHCS-200-E10 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	1.05E+03	8.89E+00	1.10E-03	2.16E+02	2.38E-01	1.00E+00	5.50E-03	1.66E+03	6.32E+02	2.47E-02	6.91E+02	2.40E+00
MHCS-200-E25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
MHCS-200-W10 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	3.77E+02	3.19E+00	1.10E-03	7.77E+01	8.55E-02	1.00E+00	5.50E-03	5.96E+02	6.32E+02	2.47E-02	6.91E+02	8.62E-01
MHCS-525-E5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	5.18E+02	4.39E+00	1.10E-03	1.07E+02	1.18E-01	1.00E+00	5.50E-03	8.20E+02	6.32E+02	2.47E-02	6.91E+02	1.19E+00
MHCS-525-W15 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	1.45E+03	1.23E+01	1.10E-03	3.00E+02	3.30E-01	1.00E+00	5.50E-03	2.30E+03	6.32E+02	2.47E-02	6.91E+02	3.33E+00
MHCS-600-E10 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	1.01E+03	8.58E+00	1.10E-03	2.09E+02	2.30E-01	1.00E+00	5.50E-03	1.60E+03	6.32E+02	2.47E-02	6.91E+02	2.32E+00
MHCS-600-W10 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	1.38E+04	1.17E+02	1.10E-03	2.85E+03	3.14E+00	1.00E+00	5.50E-03	2.19E+04	6.32E+02	2.47E-02	6.91E+02	3.16E+01
MHCS-700-E10 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	1.51E+03	1.28E+01	1.10E-03	3.11E+02	3.42E-01	1.00E+00	5.50E-03	2.38E+03	6.32E+02	2.47E-02	6.91E+02	3.45E+00
MHCS-700-E25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	2.28E+02	1.94E+00	1.10E-03	4.71E+01	5.19E-02	1.00E+00	5.50E-03	3.61E+02	6.32E+02	2.47E-02	6.91E+02	5.23E-01
MHCS-700-W10 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	7.80E+03	6.61E+01	1.10E-03	1.61E+03	1.77E+00	1.00E+00	5.50E-03	1.23E+04	6.32E+02	2.47E-02	6.91E+02	1.78E+01
MHCS-800-E15 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
MHCS-800-E5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	2.15E+03	1.82E+01	1.10E-03	4.43E+02	4.88E-01	1.00E+00	5.50E-03	3.40E+03	6.32E+02	2.47E-02	6.91E+02	4.91E+00
MHCS-800-W5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	3.19E+03	2.70E+01	1.10E-03	6.58E+02	7.24E-01	1.00E+00	5.50E-03	5.04E+03	6.32E+02	2.47E-02	6.91E+02	7.30E+00
MHCS-900-E15 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
MHCS-900-E5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	2.11E+03	1.79E+01	1.10E-03	4.35E+02	4.79E-01	1.00E+00	5.50E-03	3.34E+03	6.32E+02	2.47E-02	6.91E+02	4.83E+00
MHCS-900-W5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	2.64E+03	2.23E+01	1.10E-03	5.44E+02	5.99E-01	1.00E+00	5.50E-03	4.17E+03	6.32E+02	2.47E-02	6.91E+02	6.04E+00
MHCS-1000-E10 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	1.70E+02	1.44E+00	1.10E-03	3.51E+01	3.86E-02	1.00E+00	5.50E-03	2.69E+02	6.32E+02	2.47E-02	6.91E+02	3.89E-01
MHCS-1000-W5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	6.67E+03	5.65E+01	1.10E-03	1.37E+03	1.51E+00	1.00E+00	5.50E-03	1.05E+04	6.32E+02	2.47E-02	6.91E+02	1.53E+01
MHCS-1100-E10 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	6.58E+02	5.57E+00	1.10E-03	1.36E+02	1.49E-01	1.00E+00	5.50E-03	1.04E+03	6.32E+02	2.47E-02	6.91E+02	1.50E+00
MHCS-1100-E35 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
MHCS-1200-E15 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	6.54E+02	5.54E+00	1.10E-03	1.35E+02	1.49E-01	1.00E+00	5.50E-03	1.03E+03	6.32E+02	2.47E-02	6.91E+02	1.50E+00
MHCS-1200-E30 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	2.04E+02	1.73E+00	1.10E-03	4.20E+01	4.63E-02	1.00E+00	5.50E-03	3.22E+02	6.32E+02	2.47E-02	6.91E+02	4.67E-01
MHCS-1300-E20 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	8.33E+02	7.06E+00	1.10E-03	1.72E+02	1.89E-01	1.00E+00	5.50E-03	1.32E+03	6.32E+02	2.47E-02	6.91E+02	1.91E+00
MHCS-1300-E35 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	7.82E+02	6.62E+00	1.10E-03	1.61E+02	1.77E-01	1.00E+00	5.50E-03	1.24E+03	6.32E+02	2.47E-02	6.91E+02	1.79E+00
Waste Areas 1 and 2																						**Maximum HQ (Mike Horse Creek Channel Area Deposits)**	**3.16E+01**
UMH1-00 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	5.77E+02	4.88E+00	1.10E-03	1.19E+02	1.31E-01	1.00E+00	5.50E-03	9.12E+02	6.32E+02	2.47E-02	6.91E+02	1.32E+00
UMH1-100 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	8.70E+02	7.37E+00	1.10E-03	1.79E+02	1.97E-01	1.00E+00	5.50E-03	1.38E+03	6.32E+02	2.47E-02	6.91E+02	1.99E+00
UMH1-150 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	2.53E+02	2.15E+00	1.10E-03	5.22E+01	5.75E-02	1.00E+00	5.50E-03	4.01E+02	6.32E+02	2.47E-02	6.91E+02	5.80E-01
UMH1-200 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	8.34E+01	7.06E-01	1.10E-03	1.72E+01	1.89E-02	1.00E+00	5.50E-03	1.32E+02	6.32E+02	2.47E-02	6.91E+02	1.91E-01
UMH1-250 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UMH1-250+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UMH1-300 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	4.79E+02	4.06E+00	1.10E-03	9.87E+01	1.09E-01	1.00E+00	5.50E-03	7.57E+02	6.32E+02	2.47E-02	6.91E+02	1.10E+00
UMH1-300+14 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	2.76E+02	2.34E+00	1.10E-03	5.70E+01	6.28E-02	1.00E+00	5.50E-03	4.37E+02	6.32E+02	2.47E-02	6.91E+02	6.33E-01
UMH1-350 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	4.93E+02	4.17E+00	1.10E-03	1.02E+02	1.12E-01	1.00E+00	5.50E-03	7.79E+02	6.32E+02	2.47E-02	6.91E+02	1.13E+00
UMH1-350+12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	1.70E+02	1.44E+00	1.10E-03	3.50E+01	3.85E-02	1.00E+00	5.50E-03	2.68E+02	6.32E+02	2.47E-02	6.91E+02	3.88E-01
UMH1-400 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	3.12E+02	2.64E+00	1.10E-03	6.43E+01	7.08E-02	1.00E+00	5.50E-03	4.93E+02	6.32E+02	2.47E-02	6.91E+02	7.13E-01
UMH1-400+12.5 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UMH1-450 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	1.75E+02	1.48E+00	1.10E-03	3.60E+01	3.97E-02	1.00E+00	5.50E-03	2.76E+02	6.32E+02	2.47E-02	6.91E+02	4.00E-01
UMH1-450+12.5 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UMH1-50 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	4.09E+02	3.46E+00	1.10E-03	8.43E+01	9.28E-02	1.00E+00	5.50E-03	6.47E+02	6.32E+02	2.47E-02	6.91E+02	9.35E-01
UMH1-Comp (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	5.82E+02	4.93E+00	1.10E-03	1.20E+02	1.32E-01	1.00E+00	5.50E-03	9.21E+02	6.32E+02	2.47E-02	6.91E+02	1.33E+00
UMH2-00 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	1.92E+03	1.63E+01	1.10E-03	3.96E+02	4.36E-01	1.00E+00	5.50E-03	3.04E+03	6.32E+02	2.47E-02	6.91E+02	4.40E+00

TABLE C-8C: COPPER DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 8 - MIKE HORSE MINE WASTE PILES (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **1.73**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Masked Shrew (Omnivorous Mammal - Terrestrial, Wetland)																							
UMH2-00+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	2.28E+02	1.93E+00	1.10E-03	4.70E+01	5.18E-02	1.00E+00	5.50E-03	3.60E+02	6.32E+02	2.47E-02	6.91E+02	5.22E-01
UMH2-100 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	2.44E+03	2.07E+01	1.10E-03	5.04E+02	5.55E-01	1.00E+00	5.50E-03	3.86E+03	6.32E+02	2.47E-02	6.91E+02	5.59E+00
UMH2-100+35 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	4.85E+02	4.11E+00	1.10E-03	1.00E+02	1.10E-01	1.00E+00	5.50E-03	7.67E+02	6.32E+02	2.47E-02	6.91E+02	1.11E+00
UMH2-150 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	1.30E+03	1.10E+01	1.10E-03	2.67E+02	2.94E-01	1.00E+00	5.50E-03	2.05E+03	6.32E+02	2.47E-02	6.91E+02	2.96E+00
UMH2-150+60 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	5.04E+02	4.27E+00	1.10E-03	1.04E+02	1.15E-01	1.00E+00	5.50E-03	7.98E+02	6.32E+02	2.47E-02	6.91E+02	1.15E+00
UMH2-200 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	2.37E+03	2.01E+01	1.10E-03	4.89E+02	5.39E-01	1.00E+00	5.50E-03	3.75E+03	6.32E+02	2.47E-02	6.91E+02	5.43E+00
UMH2-200+85 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	4.56E+02	3.86E+00	1.10E-03	9.40E+01	1.04E-01	1.00E+00	5.50E-03	7.21E+02	6.32E+02	2.47E-02	6.91E+02	1.04E+00
UMH2-250 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	2.18E+03	1.85E+01	1.10E-03	4.50E+02	4.96E-01	1.00E+00	5.50E-03	3.45E+03	6.32E+02	2.47E-02	6.91E+02	5.00E+00
UMH2-250+75 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	5.63E+02	4.77E+00	1.10E-03	1.16E+02	1.28E-01	1.00E+00	5.50E-03	8.90E+02	6.32E+02	2.47E-02	6.91E+02	1.29E+00
UMH2-300 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	3.75E+02	3.18E+00	1.10E-03	7.74E+01	8.52E-02	1.00E+00	5.50E-03	5.94E+02	6.32E+02	2.47E-02	6.91E+02	8.59E-01
UMH2-300+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	1.89E+02	1.60E+00	1.10E-03	3.90E+01	4.29E-02	1.00E+00	5.50E-03	2.99E+02	6.32E+02	2.47E-02	6.91E+02	4.33E-01
UMH2-350 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	2.59E+02	2.20E+00	1.10E-03	5.34E+01	5.88E-02	1.00E+00	5.50E-03	4.10E+02	6.32E+02	2.47E-02	6.91E+02	5.93E-01
UMH2-350+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	1.79E+02	1.52E+00	1.10E-03	3.70E+01	4.07E-02	1.00E+00	5.50E-03	2.84E+02	6.32E+02	2.47E-02	6.91E+02	4.11E-01
UMH2-400 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UMH2-400+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	1.70E+02	1.44E+00	1.10E-03	3.50E+01	3.85E-02	1.00E+00	5.50E-03	2.68E+02	6.32E+02	2.47E-02	6.91E+02	3.88E-01
UMH2-450 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	2.56E+02	2.17E+00	1.10E-03	5.29E+01	5.82E-02	1.00E+00	5.50E-03	4.05E+02	6.32E+02	2.47E-02	6.91E+02	5.87E-01
UMH2-450+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	1.65E+02	1.40E+00	1.10E-03	3.40E+01	3.74E-02	1.00E+00	5.50E-03	2.61E+02	6.32E+02	2.47E-02	6.91E+02	3.77E-01
UMH2-50 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	6.08E+02	5.15E+00	1.10E-03	1.25E+02	1.38E-01	1.00E+00	5.50E-03	9.62E+02	6.32E+02	2.47E-02	6.91E+02	1.39E+00
UMH2-50+25b (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	1.72E+02	1.46E+00	1.10E-03	3.55E+01	3.90E-02	1.00E+00	5.50E-03	2.72E+02	6.32E+02	2.47E-02	6.91E+02	3.94E-01
UMH2-500 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	2.25E+03	1.90E+01	1.10E-03	4.63E+02	5.10E-01	1.00E+00	5.50E-03	3.55E+03	6.32E+02	2.47E-02	6.91E+02	5.14E+00
UMH2-500+75 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UMH2-550 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	4.12E+03	3.49E+01	1.10E-03	8.49E+02	9.35E-01	1.00E+00	5.50E-03	6.51E+03	6.32E+02	2.47E-02	6.91E+02	9.42E+00
UMH2-550+75 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UMH2-600 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	4.99E+02	4.22E+00	1.10E-03	1.03E+02	1.13E-01	1.00E+00	5.50E-03	7.89E+02	6.32E+02	2.47E-02	6.91E+02	1.14E+00
UMH2-600+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UMH2-650 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	9.03E+02	7.65E+00	1.10E-03	1.86E+02	2.05E-01	1.00E+00	5.50E-03	1.43E+03	6.32E+02	2.47E-02	6.91E+02	2.07E+00
UMH2-650+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	2.09E+02	1.77E+00	1.10E-03	4.30E+01	4.74E-02	1.00E+00	5.50E-03	3.30E+02	6.32E+02	2.47E-02	6.91E+02	4.77E-01
UMH2-Comp 1 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	2.30E+03	1.95E+01	1.10E-03	4.75E+02	5.23E-01	1.00E+00	5.50E-03	3.64E+03	6.32E+02	2.47E-02	6.91E+02	5.27E+00
UMH2-Comp 2 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	4.53E+03	3.84E+01	1.10E-03	9.35E+02	1.03E+00	1.00E+00	5.50E-03	7.17E+03	6.32E+02	2.47E-02	6.91E+02	1.04E+01
Waste Area 3																						**Maximum HQ (Waste Areas 1 and 2)**	**1.04E+01**
UMH3-00 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	3.07E+02	2.60E+00	1.10E-03	6.34E+01	6.98E-02	1.00E+00	5.50E-03	4.86E+02	6.32E+02	2.47E-02	6.91E+02	7.03E-01
UMH3-100 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	2.63E+02	2.22E+00	1.10E-03	5.41E+01	5.96E-02	1.00E+00	5.50E-03	4.15E+02	6.32E+02	2.47E-02	6.91E+02	6.01E-01
UMH3-150 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	1.71E+03	1.44E+01	1.10E-03	3.52E+02	3.87E-01	1.00E+00	5.50E-03	2.70E+03	6.32E+02	2.47E-02	6.91E+02	3.90E+00
UMH3-200 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	1.14E+03	9.63E+00	1.10E-03	2.34E+02	2.58E-01	1.00E+00	5.50E-03	1.80E+03	6.32E+02	2.47E-02	6.91E+02	2.60E+00
UMH3-250 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	3.80E+03	3.22E+01	1.10E-03	7.84E+02	8.63E-01	1.00E+00	5.50E-03	6.01E+03	6.32E+02	2.47E-02	6.91E+02	8.70E+00
UMH3-300 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	1.73E+02	1.47E+00	1.10E-03	3.57E+01	3.93E-02	1.00E+00	5.50E-03	2.74E+02	6.32E+02	2.47E-02	6.91E+02	3.96E-01
UMH3-350 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	6.39E+03	5.41E+01	1.10E-03	1.32E+03	1.45E+00	1.00E+00	5.50E-03	1.01E+04	6.32E+02	2.47E-02	6.91E+02	1.46E+01
UMH3-350+75 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	2.47E+02	2.10E+00	1.10E-03	5.10E+01	5.62E-02	1.00E+00	5.50E-03	3.91E+02	6.32E+02	2.47E-02	6.91E+02	5.66E-01
UMH3-400 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	3.12E+03	2.64E+01	1.10E-03	6.42E+02	7.07E-01	1.00E+00	5.50E-03	4.93E+03	6.32E+02	2.47E-02	6.91E+02	7.13E+00
UMH3-400+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	3.73E+02	3.16E+00	1.10E-03	7.70E+01	8.48E-02	1.00E+00	5.50E-03	5.91E+02	6.32E+02	2.47E-02	6.91E+02	8.54E-01
UMH3-450 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	3.61E+02	3.06E+00	1.10E-03	7.45E+01	8.21E-02	1.00E+00	5.50E-03	5.72E+02	6.32E+02	2.47E-02	6.91E+02	8.27E-01
UMH3-50 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	2.08E+02	1.76E+00	1.10E-03	4.29E+01	4.72E-02	1.00E+00	5.50E-03	3.29E+02	6.32E+02	2.47E-02	6.91E+02	4.76E-01
UMH3-50+50 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	2.66E+02	2.25E+00	1.10E-03	5.49E+01	6.04E-02	1.00E+00	5.50E-03	4.21E+02	6.32E+02	2.47E-02	6.91E+02	6.09E-01
UMH3-500 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	6.84E+02	5.80E+00	1.10E-03	1.41E+02	1.55E-01	1.00E+00	5.50E-03	1.08E+03	6.32E+02	2.47E-02	6.91E+02	1.57E+00
UMH3-550 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	4.82E+03	4.08E+01	1.10E-03	9.94E+02	1.09E+00	1.00E+00	5.50E-03	7.62E+03	6.32E+02	2.47E-02	6.91E+02	1.10E+01
UMH3-600 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	5.88E+03	4.98E+01	1.10E-03	1.21E+03	1.33E+00	1.00E+00	5.50E-03	9.30E+03	6.32E+02	2.47E-02	6.91E+02	1.35E+01
UMH3-650 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	4.59E+03	3.89E+01	1.10E-03	9.47E+02	1.04E+00	1.00E+00	5.50E-03	7.26E+03	6.32E+02	2.47E-02	6.91E+02	1.05E+01
UMH3-700 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	4.30E+03	3.64E+01	1.10E-03	8.87E+02	9.77E-01	1.00E+00	5.50E-03	6.80E+03	6.32E+02	2.47E-02	6.91E+02	9.84E+00
UMH3-750 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	4.53E+02	3.84E+00	1.10E-03	9.34E+01	1.03E-01	1.00E+00	5.50E-03	7.17E+02	6.32E+02	2.47E-02	6.91E+02	1.04E+00
UMH3-800 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	9.79E+02	8.29E+00	1.10E-03	2.02E+02	2.22E-01	1.00E+00	5.50E-03	1.55E+03	6.32E+02	2.47E-02	6.91E+02	2.24E+00
UMH3-Comp 1 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	4.17E+02	3.53E+00	1.10E-03	8.60E+01	9.47E-02	1.00E+00	5.50E-03	6.59E+02	6.32E+02	2.47E-02	6.91E+02	9.54E-01
UMH3-Comp 2 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	3.25E+03	2.75E+01	1.10E-03	6.70E+02	7.38E-01	1.00E+00	5.50E-03	5.14E+03	6.32E+02	2.47E-02	6.91E+02	7.43E+00
UMH3-Comp 3 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	4.27E+03	3.62E+01	1.10E-03	8.80E+02	9.69E-01	1.00E+00	5.50E-03	6.75E+03	6.32E+02	2.47E-02	6.91E+02	9.77E+00
																						Maximum HQ (Waste Area 3)	**1.46E+01**

TABLE C-8C: COPPER DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 8 - MIKE HORSE MINE WASTE PILES (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

Notes	
1	See Tables 3-1 through 3-13 for ingestion rates, foraging ranges used to calculate the SUF, and body weights.
2	BAFs were calculated by dividing site-collected tissue by collocated soil concentrations (BAFs are in dry weight). The maximum BAF calculated from the Beartrap Creek and Blackfoot River transects was used for site dose calculations. The maximum BAF from the terrestrial reference site was used for reference site dose calculations.
3	The mammal, plant, and invertebrate concentrations were calculated by multiplying the soil concentration by the BAF to generate a tissue concentration (see note 2).
4	Mammal, plant, and invertebrate daily doses were calculated by multiplying the ingestion rate (see note 1) by the tissue concentration (see note 3).
5	Soil concentration from 0 to 6 inches below ground surface at point ID as measured by XRF 10. Doses were not calculated for detected and non-detected soil concentrations measured below the minimum reference site concentration, as indicated by BB. For results that were measured at less than the detection limit, doses were calculated using half of the detection limit.
6	Soil daily dose was calculated by multiplying the soil ingestion rate (see note 1) by soil concentration (see note 5).
7	Total daily dose is calculated using the following equation: total daily dose = ([mammal daily dose (if applicable) + plant daily dose (if applicable) + invertebrate daily dose (if applicable) + soil daily dose]*SUF)/receptor species body weight.
8	The derivation of TRVs is described in Navy (1998). The high TRV was used for dose calculations.
9	Allometrically adjusted TRVs for birds were calculated using the following equation: receptor species TRV = (test species TRV) x (test species body weight / receptor species body weight)$^{(1-1.2)}$.
10	Allometrically adjusted TRVs for mammals were calculated using the following equation: receptor species TRV = (test species TRV) x (test species body weight / receptor species body weight)$^{(1-0.94)}$.
11	HQs were calculated using the following equation: HQ = total daily dose/allometrically adjusted TRV.
12	Highlighted cells indicate an HQ greater than 1.0.

BAF	Bioaccumulation Factor	mg/day	Milligram per day
BB	Below minimum background reference site concentration	mg/kg	Milligram per kilogram
EE/CA	Engineering Evaluation/Cost Analysis	NA	Not applicable
EU	Exposure Unit	Navy	Department of the Navy
HQ	Hazard quotient	SUF	Site use factor
ID	Identification	TRV	Toxicity reference value
kg	Kilogram	XRF	X-ray flourescence
kg/day	Kilogram per day	XRF 10	XRF measurements recorded following drying and seiving through a #10 -mesh screen

Sources: Department of the Navy. 1998. "Development of Toxicity Reference Values for Conducting Ecological Risk Assessments at Naval Facilities in California, Interim Final." Prepared by Naval Facilities Engineering Command, Engineering Field Activity West (EFA West). San Bruno, California.

TABLE C-8D: LEAD DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 8 - MIKE HORSE MINE WASTE PILES

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **1.73**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Mourning Dove (Herbivorous Birds - Terrestrial)																							
Reference Sites																							
BCBG-1 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	4.35E-02	3.65E+00	2.10E-02	NA	NA	NA	NA	5.36E-04	8.40E+01	4.50E-02	6.68E-03	1.09E-01	4.04E-03	8.75E+00	8.00E-01	5.88E+00	6.87E-04
MHBG-201 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	4.35E-02	1.45E+00	8.35E-03	NA	NA	NA	NA	5.36E-04	3.33E+01	1.79E-02	6.68E-03	1.09E-01	1.60E-03	8.75E+00	8.00E-01	5.88E+00	2.73E-04
MHBG-202 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	4.35E-02	7.86E+00	4.53E-02	NA	NA	NA	NA	5.36E-04	1.81E+02	9.69E-02	6.68E-03	1.09E-01	8.70E-03	8.75E+00	8.00E-01	5.88E+00	1.48E-03
Mike Horse Creek Channel Area Deposits																						**Minimum HQ (Reference Site)**	**2.73E-04**
AMHR-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	7.19E+01	4.14E-01	NA	NA	NA	NA	5.36E-04	1.14E+02	6.13E-02	6.68E-03	1.09E-01	2.91E-02	8.75E+00	8.00E-01	5.88E+00	4.95E-03
AMHR-200 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	6.96E+01	4.01E-01	NA	NA	NA	NA	5.36E-04	1.11E+02	5.94E-02	6.68E-03	1.09E-01	2.82E-02	8.75E+00	8.00E-01	5.88E+00	4.80E-03
AMHR-400 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	3.53E+02	2.03E+00	NA	NA	NA	NA	5.36E-04	5.62E+02	3.01E-01	6.68E-03	1.09E-01	1.43E-01	8.75E+00	8.00E-01	5.88E+00	2.43E-02
AMHR-600 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	4.15E+02	2.39E+00	NA	NA	NA	NA	5.36E-04	6.60E+02	3.54E-01	6.68E-03	1.09E-01	1.68E-01	8.75E+00	8.00E-01	5.88E+00	2.85E-02
MHCS-00-E25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	2.43E+03	1.40E+01	NA	NA	NA	NA	5.36E-04	3.87E+03	2.07E+00	6.68E-03	1.09E-01	9.84E-01	8.75E+00	8.00E-01	5.88E+00	1.67E-01
MHCS-0-W25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	2.80E+02	1.61E+00	NA	NA	NA	NA	5.36E-04	4.46E+02	2.39E-01	6.68E-03	1.09E-01	1.13E-01	8.75E+00	8.00E-01	5.88E+00	1.93E-02
MHCS-0-W5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	2.00E+02	1.15E+00	NA	NA	NA	NA	5.36E-04	3.19E+02	1.71E-01	6.68E-03	1.09E-01	8.10E-02	8.75E+00	8.00E-01	5.88E+00	1.38E-02
MHCS-100-E25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	3.58E+03	2.06E+01	NA	NA	NA	NA	5.36E-04	5.70E+03	3.05E+00	6.68E-03	1.09E-01	1.45E+00	8.75E+00	8.00E-01	5.88E+00	2.47E-01
MHCS-100-W1 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	2.44E+03	1.41E+01	NA	NA	NA	NA	5.36E-04	3.89E+03	2.09E+00	6.68E-03	1.09E-01	9.89E-01	8.75E+00	8.00E-01	5.88E+00	1.68E-01
MHCS-100-W25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	2.15E+02	1.24E+00	NA	NA	NA	NA	5.36E-04	3.42E+02	1.83E-01	6.68E-03	1.09E-01	8.68E-02	8.75E+00	8.00E-01	5.88E+00	1.48E-02
MHCS-200-E10 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	1.22E+03	7.05E+00	NA	NA	NA	NA	5.36E-04	1.95E+03	1.04E+00	6.68E-03	1.09E-01	4.95E-01	8.75E+00	8.00E-01	5.88E+00	8.43E-02
MHCS-200-E25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	6.45E+01	3.71E-01	NA	NA	NA	NA	5.36E-04	1.03E+02	5.50E-02	6.68E-03	1.09E-01	2.61E-02	8.75E+00	8.00E-01	5.88E+00	4.44E-03
MHCS-200-W10 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	1.83E+02	1.06E+00	NA	NA	NA	NA	5.36E-04	2.92E+02	1.56E-01	6.68E-03	1.09E-01	7.42E-02	8.75E+00	8.00E-01	5.88E+00	1.26E-02
MHCS-525-E5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	2.35E+02	1.35E+00	NA	NA	NA	NA	5.36E-04	3.74E+02	2.00E-01	6.68E-03	1.09E-01	9.50E-02	8.75E+00	8.00E-01	5.88E+00	1.62E-02
MHCS-525-W15 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	1.72E+03	9.89E+00	NA	NA	NA	NA	5.36E-04	2.73E+03	1.46E+00	6.68E-03	1.09E-01	6.95E-01	8.75E+00	8.00E-01	5.88E+00	1.18E-01
MHCS-600-E10 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	2.17E+03	1.25E+01	NA	NA	NA	NA	5.36E-04	3.45E+03	1.85E+00	6.68E-03	1.09E-01	8.78E-01	8.75E+00	8.00E-01	5.88E+00	1.49E-01
MHCS-600-W10 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	1.94E+03	1.12E+01	NA	NA	NA	NA	5.36E-04	3.09E+03	1.65E+00	6.68E-03	1.09E-01	7.84E-01	8.75E+00	8.00E-01	5.88E+00	1.33E-01
MHCS-700-E10 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	1.90E+03	1.10E+01	NA	NA	NA	NA	5.36E-04	3.03E+03	1.62E+00	6.68E-03	1.09E-01	7.69E-01	8.75E+00	8.00E-01	5.88E+00	1.31E-01
MHCS-700-E25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	1.12E+02	6.46E-01	NA	NA	NA	NA	5.36E-04	1.78E+02	9.56E-02	6.68E-03	1.09E-01	4.53E-02	8.75E+00	8.00E-01	5.88E+00	7.72E-03
MHCS-700-W10 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	2.08E+03	1.20E+01	NA	NA	NA	NA	5.36E-04	3.31E+03	1.77E+00	6.68E-03	1.09E-01	8.41E-01	8.75E+00	8.00E-01	5.88E+00	1.43E-01
MHCS-800-E15 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	1.05E+02	6.02E-01	NA	NA	NA	NA	5.36E-04	1.66E+02	8.92E-02	6.68E-03	1.09E-01	4.23E-02	8.75E+00	8.00E-01	5.88E+00	7.20E-03
MHCS-800-E5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	1.65E+03	9.53E+00	NA	NA	NA	NA	5.36E-04	2.63E+03	1.41E+00	6.68E-03	1.09E-01	6.69E-01	8.75E+00	8.00E-01	5.88E+00	1.14E-01
MHCS-800-W5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	9.87E+02	5.69E+00	NA	NA	NA	NA	5.36E-04	1.57E+03	8.42E-01	6.68E-03	1.09E-01	4.00E-01	8.75E+00	8.00E-01	5.88E+00	6.80E-02
MHCS-900-E15 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	8.20E+01	4.73E-01	NA	NA	NA	NA	5.36E-04	1.31E+02	6.99E-02	6.68E-03	1.09E-01	3.32E-02	8.75E+00	8.00E-01	5.88E+00	5.65E-03
MHCS-900-E5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	1.69E+03	9.71E+00	NA	NA	NA	NA	5.36E-04	2.68E+03	1.44E+00	6.68E-03	1.09E-01	6.82E-01	8.75E+00	8.00E-01	5.88E+00	1.16E-01
MHCS-900-W5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	1.11E+03	6.41E+00	NA	NA	NA	NA	5.36E-04	1.77E+03	9.49E-01	6.68E-03	1.09E-01	4.50E-01	8.75E+00	8.00E-01	5.88E+00	7.66E-02
MHCS-1000-E10 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	1.90E+02	1.10E+00	NA	NA	NA	NA	5.36E-04	3.03E+02	1.62E-01	6.68E-03	1.09E-01	7.70E-02	8.75E+00	8.00E-01	5.88E+00	1.31E-02
MHCS-1000-W5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	2.33E+03	1.34E+01	NA	NA	NA	NA	5.36E-04	3.70E+03	1.98E+00	6.68E-03	1.09E-01	9.41E-01	8.75E+00	8.00E-01	5.88E+00	1.60E-01
MHCS-1100-E10 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	1.51E+02	8.71E-01	NA	NA	NA	NA	5.36E-04	2.41E+02	1.29E-01	6.68E-03	1.09E-01	6.12E-02	8.75E+00	8.00E-01	5.88E+00	1.04E-02
MHCS-1100-E35 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	6.87E+01	3.96E-01	NA	NA	NA	NA	5.36E-04	1.09E+02	5.86E-02	6.68E-03	1.09E-01	2.78E-02	8.75E+00	8.00E-01	5.88E+00	4.73E-03
MHCS-1200-E15 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	3.88E+02	2.24E+00	NA	NA	NA	NA	5.36E-04	6.18E+02	3.31E-01	6.68E-03	1.09E-01	1.57E-01	8.75E+00	8.00E-01	5.88E+00	2.67E-02
MHCS-1200-E30 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	1.22E+02	7.04E-01	NA	NA	NA	NA	5.36E-04	1.95E+02	1.04E-01	6.68E-03	1.09E-01	4.95E-02	8.75E+00	8.00E-01	5.88E+00	8.42E-03
MHCS-1300-E20 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	5.48E+02	3.16E+00	NA	NA	NA	NA	5.36E-04	8.72E+02	4.67E-01	6.68E-03	1.09E-01	2.22E-01	8.75E+00	8.00E-01	5.88E+00	3.77E-02
MHCS-1300-E35 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	2.15E+02	1.24E+00	NA	NA	NA	NA	5.36E-04	3.43E+02	1.84E-01	6.68E-03	1.09E-01	8.71E-02	8.75E+00	8.00E-01	5.88E+00	1.48E-02
Waste Areas 1 and 2																						**Maximum HQ (Mike Horse Creek Channel Area Deposits)**	**2.47E-01**
UMH1-00 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	1.11E+03	6.39E+00	NA	NA	NA	NA	5.36E-04	1.76E+03	9.45E-01	6.68E-03	1.09E-01	4.48E-01	8.75E+00	8.00E-01	5.88E+00	7.63E-02
UMH1-100 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	1.37E+03	7.90E+00	NA	NA	NA	NA	5.36E-04	2.18E+03	1.17E+00	6.68E-03	1.09E-01	5.54E-01	8.75E+00	8.00E-01	5.88E+00	9.44E-02
UMH1-150 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	6.49E+02	3.74E+00	NA	NA	NA	NA	5.36E-04	1.03E+03	5.53E-01	6.68E-03	1.09E-01	2.62E-01	8.75E+00	8.00E-01	5.88E+00	4.47E-02
UMH1-200 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	3.11E+01	1.79E-01	NA	NA	NA	NA	5.36E-04	4.95E+01	2.65E-02	6.68E-03	1.09E-01	1.26E-02	8.75E+00	8.00E-01	5.88E+00	2.14E-03
UMH1-250 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	5.08E+02	2.92E+00	NA	NA	NA	NA	5.36E-04	8.08E+02	4.33E-01	6.68E-03	1.09E-01	2.05E-01	8.75E+00	8.00E-01	5.88E+00	3.50E-02
UMH1-250+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	1.15E+02	6.65E-01	NA	NA	NA	NA	5.36E-04	1.84E+02	9.84E-02	6.68E-03	1.09E-01	4.67E-02	8.75E+00	8.00E-01	5.88E+00	7.94E-03
UMH1-300 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	1.07E+03	6.15E+00	NA	NA	NA	NA	5.36E-04	1.70E+03	9.10E-01	6.68E-03	1.09E-01	4.32E-01	8.75E+00	8.00E-01	5.88E+00	7.35E-02
UMH1-300+14 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	7.71E+01	4.44E-01	NA	NA	NA	NA	5.36E-04	1.23E+02	6.57E-02	6.68E-03	1.09E-01	3.12E-02	8.75E+00	8.00E-01	5.88E+00	5.31E-03
UMH1-350 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	1.24E+03	7.16E+00	NA	NA	NA	NA	5.36E-04	1.98E+03	1.06E+00	6.68E-03	1.09E-01	5.03E-01	8.75E+00	8.00E-01	5.88E+00	8.56E-02
UMH1-350+12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	1.00E+02	5.78E-01	NA	NA	NA	NA	5.36E-04	1.60E+02	8.56E-02	6.68E-03	1.09E-01	4.06E-02	8.75E+00	8.00E-01	5.88E+00	6.91E-03
UMH1-400 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	5.20E+02	3.00E+00	NA	NA	NA	NA	5.36E-04	8.28E+02	4.43E-01	6.68E-03	1.09E-01	2.10E-01	8.75E+00	8.00E-01	5.88E+00	3.58E-02
UMH1-400+12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	6.47E+01	3.73E-01	NA	NA	NA	NA	5.36E-04	1.03E+02	5.52E-02	6.68E-03	1.09E-01	2.62E-02	8.75E+00	8.00E-01	5.88E+00	4.46E-03
UMH1-450 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	7.31E+02	4.21E+00	NA	NA	NA	NA	5.36E-04	1.16E+03	6.23E-01	6.68E-03	1.09E-01	2.96E-01	8.75E+00	8.00E-01	5.88E+00	5.03E-02
UMH1-450+12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	5.48E+01	3.16E-01	NA	NA	NA	NA	5.36E-04	8.72E+01	4.67E-02	6.68E-03	1.09E-01	2.22E-02	8.75E+00	8.00E-01	5.88E+00	3.77E-03
UMH1-50 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	6.47E+01	3.73E-01	NA	NA	NA	NA	5.36E-04	1.03E+02	5.52E-02	6.68E-03	1.09E-01	2.62E-02	8.75E+00	8.00E-01	5.88E+00	4.46E-03
UMH1-Comp (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	1.22E+03	7.01E+00	NA	NA	NA	NA	5.36E-04	1.94E+03	1.04E+00	6.68E-03	1.09E-01	4.92E-01	8.75E+00	8.00E-01	5.88E+00	8.38E-02
UMH2-00 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	4.13E+03	2.38E+01	NA	NA	NA	NA	5.36E-04	6.57E+03	3.52E+00	6.68E-03	1.09E-01	1.67E+00	8.75E+00	8.00E-01	5.88E+00	2.84E-01

TABLE C-8D: LEAD DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 8 - MIKE HORSE MINE WASTE PILES (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **1.73**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Mourning Dove (Herbivorous Birds - Terrestrial)																							
UMH2-00+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	1.31E+02	7.52E-01	NA	NA	NA	NA	5.36E-04	2.08E+02	1.11E-01	6.68E-03	1.09E-01	5.28E-02	8.75E+00	8.00E-01	5.88E+00	8.99E-03
UMH2-100 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	4.59E+03	2.64E+01	NA	NA	NA	NA	5.36E-04	7.30E+03	3.91E+00	6.68E-03	1.09E-01	1.86E+00	8.75E+00	8.00E-01	5.88E+00	3.16E-01
UMH2-100+35 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	2.97E+02	1.71E+00	NA	NA	NA	NA	5.36E-04	4.73E+02	2.53E-01	6.68E-03	1.09E-01	1.20E-01	8.75E+00	8.00E-01	5.88E+00	2.05E-02
UMH2-150 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	2.12E+03	1.22E+01	NA	NA	NA	NA	5.36E-04	3.37E+03	1.81E+00	6.68E-03	1.09E-01	8.57E-01	8.75E+00	8.00E-01	5.88E+00	1.46E-01
UMH2-150+60 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	2.57E+02	1.48E+00	NA	NA	NA	NA	5.36E-04	4.10E+02	2.19E-01	6.68E-03	1.09E-01	1.04E-01	8.75E+00	8.00E-01	5.88E+00	1.77E-02
UMH2-200 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	4.29E+03	2.47E+01	NA	NA	NA	NA	5.36E-04	6.83E+03	3.66E+00	6.68E-03	1.09E-01	1.74E+00	8.75E+00	8.00E-01	5.88E+00	2.95E-01
UMH2-200+85 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	5.32E+02	3.07E+00	NA	NA	NA	NA	5.36E-04	8.47E+02	4.54E-01	6.68E-03	1.09E-01	2.15E-01	8.75E+00	8.00E-01	5.88E+00	3.66E-02
UMH2-250 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	3.39E+03	1.95E+01	NA	NA	NA	NA	5.36E-04	5.40E+03	2.89E+00	6.68E-03	1.09E-01	1.37E+00	8.75E+00	8.00E-01	5.88E+00	2.34E-01
UMH2-250+75 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	2.94E+02	1.70E+00	NA	NA	NA	NA	5.36E-04	4.69E+02	2.51E-01	6.68E-03	1.09E-01	1.19E-01	8.75E+00	8.00E-01	5.88E+00	2.03E-02
UMH2-300 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	4.78E+02	2.75E+00	NA	NA	NA	NA	5.36E-04	7.60E+02	4.07E-01	6.68E-03	1.09E-01	1.93E-01	8.75E+00	8.00E-01	5.88E+00	3.29E-02
UMH2-300+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	7.78E+01	4.48E-01	NA	NA	NA	NA	5.36E-04	1.24E+02	6.64E-02	6.68E-03	1.09E-01	3.15E-02	8.75E+00	8.00E-01	5.88E+00	5.36E-03
UMH2-350 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	3.65E+02	2.10E+00	NA	NA	NA	NA	5.36E-04	5.81E+02	3.11E-01	6.68E-03	1.09E-01	1.48E-01	8.75E+00	8.00E-01	5.88E+00	2.51E-02
UMH2-350+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	7.92E+01	4.56E-01	NA	NA	NA	NA	5.36E-04	1.26E+02	6.75E-02	6.68E-03	1.09E-01	3.20E-02	8.75E+00	8.00E-01	5.88E+00	5.45E-03
UMH2-400 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	3.80E+02	2.19E+00	NA	NA	NA	NA	5.36E-04	6.04E+02	3.24E-01	6.68E-03	1.09E-01	1.54E-01	8.75E+00	8.00E-01	5.88E+00	2.61E-02
UMH2-400+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	4.76E+01	2.74E-01	NA	NA	NA	NA	5.36E-04	7.57E+01	4.06E-02	6.68E-03	1.09E-01	1.92E-02	8.75E+00	8.00E-01	5.88E+00	3.27E-03
UMH2-450 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	2.67E+03	1.54E+01	NA	NA	NA	NA	5.36E-04	4.25E+03	2.28E+00	6.68E-03	1.09E-01	1.08E+00	8.75E+00	8.00E-01	5.88E+00	1.84E-01
UMH2-450+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	1.70E+02	9.78E-01	NA	NA	NA	NA	5.36E-04	2.70E+02	1.45E-01	6.68E-03	1.09E-01	6.87E-02	8.75E+00	8.00E-01	5.88E+00	1.17E-02
UMH2-50 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	4.10E+02	2.36E+00	NA	NA	NA	NA	5.36E-04	6.52E+02	3.49E-01	6.68E-03	1.09E-01	1.66E-01	8.75E+00	8.00E-01	5.88E+00	2.82E-02
UMH2-50+25b (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UMH2-500 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	5.43E+03	3.13E+01	NA	NA	NA	NA	5.36E-04	8.65E+03	4.63E+00	6.68E-03	1.09E-01	2.20E+00	8.75E+00	8.00E-01	5.88E+00	3.74E-01
UMH2-500+75 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	1.64E+02	9.46E-01	NA	NA	NA	NA	5.36E-04	2.61E+02	1.40E-01	6.68E-03	1.09E-01	6.64E-02	8.75E+00	8.00E-01	5.88E+00	1.13E-02
UMH2-550 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	6.95E+03	4.00E+01	NA	NA	NA	NA	5.36E-04	1.11E+04	5.93E+00	6.68E-03	1.09E-01	2.81E+00	8.75E+00	8.00E-01	5.88E+00	4.78E-01
UMH2-550+75 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	3.87E+01	2.23E-01	NA	NA	NA	NA	5.36E-04	6.16E+01	3.30E-02	6.68E-03	1.09E-01	1.57E-02	8.75E+00	8.00E-01	5.88E+00	2.67E-03
UMH2-600 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	1.70E+03	9.81E+00	NA	NA	NA	NA	5.36E-04	2.71E+03	1.45E+00	6.68E-03	1.09E-01	6.89E-01	8.75E+00	8.00E-01	5.88E+00	1.17E-01
UMH2-600+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	7.25E+01	4.18E-01	NA	NA	NA	NA	5.36E-04	1.15E+02	6.18E-02	6.68E-03	1.09E-01	2.93E-02	8.75E+00	8.00E-01	5.88E+00	4.99E-03
UMH2-650 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	2.25E+03	1.29E+01	NA	NA	NA	NA	5.36E-04	3.58E+03	1.92E+00	6.68E-03	1.09E-01	9.09E-01	8.75E+00	8.00E-01	5.88E+00	1.55E-01
UMH2-650+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	1.44E+02	8.32E-01	NA	NA	NA	NA	5.36E-04	2.30E+02	1.23E-01	6.68E-03	1.09E-01	5.84E-02	8.75E+00	8.00E-01	5.88E+00	9.94E-03
UMH2-Comp 1 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	4.97E+03	2.87E+01	NA	NA	NA	NA	5.36E-04	7.92E+03	4.24E+00	6.68E-03	1.09E-01	2.01E+00	8.75E+00	8.00E-01	5.88E+00	3.42E-01
UMH2-Comp 2 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	6.49E+03	3.74E+01	NA	NA	NA	NA	5.36E-04	1.03E+04	5.53E+00	6.68E-03	1.09E-01	2.63E+00	8.75E+00	8.00E-01	5.88E+00	4.47E-01
Waste Area 3																						**Maximum HQ (Waste Areas 1 and 2)**	**4.78E-01**
UMH3-00 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	1.03E+02	5.96E-01	NA	NA	NA	NA	5.36E-04	1.65E+02	8.82E-02	6.68E-03	1.09E-01	4.19E-02	8.75E+00	8.00E-01	5.88E+00	7.12E-03
UMH3-100 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	1.41E+02	8.13E-01	NA	NA	NA	NA	5.36E-04	2.24E+02	1.20E-01	6.68E-03	1.09E-01	5.71E-02	8.75E+00	8.00E-01	5.88E+00	9.71E-03
UMH3-150 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	1.19E+03	6.85E+00	NA	NA	NA	NA	5.36E-04	1.89E+03	1.01E+00	6.68E-03	1.09E-01	4.81E-01	8.75E+00	8.00E-01	5.88E+00	8.19E-02
UMH3-200 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	1.90E+03	1.10E+01	NA	NA	NA	NA	5.36E-04	3.03E+03	1.62E+00	6.68E-03	1.09E-01	7.70E-01	8.75E+00	8.00E-01	5.88E+00	1.31E-01
UMH3-250 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	7.10E+03	4.09E+01	NA	NA	NA	NA	5.36E-04	1.13E+04	6.05E+00	6.68E-03	1.09E-01	2.87E+00	8.75E+00	8.00E-01	5.88E+00	4.89E-01
UMH3-300 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	9.15E+01	5.27E-01	NA	NA	NA	NA	5.36E-04	1.46E+02	7.81E-02	6.68E-03	1.09E-01	3.70E-02	8.75E+00	8.00E-01	5.88E+00	6.30E-03
UMH3-350 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	1.06E+04	6.09E+01	NA	NA	NA	NA	5.36E-04	1.68E+04	9.01E+00	6.68E-03	1.09E-01	4.27E+00	8.75E+00	8.00E-01	5.88E+00	7.28E-01
UMH3-350+75 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	1.07E+02	6.19E-01	NA	NA	NA	NA	5.36E-04	1.71E+02	9.17E-02	6.68E-03	1.09E-01	4.35E-02	8.75E+00	8.00E-01	5.88E+00	7.40E-03
UMH3-400 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	6.03E+03	3.47E+01	NA	NA	NA	NA	5.36E-04	9.59E+03	5.14E+00	6.68E-03	1.09E-01	2.44E+00	8.75E+00	8.00E-01	5.88E+00	4.15E-01
UMH3-400+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	2.32E+02	1.34E+00	NA	NA	NA	NA	5.36E-04	3.69E+02	1.98E-01	6.68E-03	1.09E-01	9.38E-02	8.75E+00	8.00E-01	5.88E+00	1.60E-02
UMH3-450 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	6.24E+01	3.59E-01	NA	NA	NA	NA	5.36E-04	9.93E+01	5.32E-02	6.68E-03	1.09E-01	2.52E-02	8.75E+00	8.00E-01	5.88E+00	4.29E-03
UMH3-50 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	1.33E+02	7.69E-01	NA	NA	NA	NA	5.36E-04	2.12E+02	1.14E-01	6.68E-03	1.09E-01	5.40E-02	8.75E+00	8.00E-01	5.88E+00	9.19E-03
UMH3-50+50 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	1.98E+02	1.14E+00	NA	NA	NA	NA	5.36E-04	3.14E+02	1.68E-01	6.68E-03	1.09E-01	7.99E-02	8.75E+00	8.00E-01	5.88E+00	1.36E-02
UMH3-500 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	9.40E+02	5.42E+00	NA	NA	NA	NA	5.36E-04	1.50E+03	8.02E-01	6.68E-03	1.09E-01	3.80E-01	8.75E+00	8.00E-01	5.88E+00	6.48E-02
UMH3-550 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	7.78E+03	4.48E+01	NA	NA	NA	NA	5.36E-04	1.24E+04	6.63E+00	6.68E-03	1.09E-01	3.15E+00	8.75E+00	8.00E-01	5.88E+00	5.35E-01
UMH3-600 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	9.71E+03	5.59E+01	NA	NA	NA	NA	5.36E-04	1.54E+04	8.28E+00	6.68E-03	1.09E-01	3.93E+00	8.75E+00	8.00E-01	5.88E+00	6.68E-01
UMH3-650 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	9.72E+03	5.60E+01	NA	NA	NA	NA	5.36E-04	1.55E+04	8.29E+00	6.68E-03	1.09E-01	3.93E+00	8.75E+00	8.00E-01	5.88E+00	6.69E-01
UMH3-700 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	9.39E+03	5.41E+01	NA	NA	NA	NA	5.36E-04	1.49E+04	8.01E+00	6.68E-03	1.09E-01	3.80E+00	8.75E+00	8.00E-01	5.88E+00	6.46E-01
UMH3-750 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	7.17E+02	4.13E+00	NA	NA	NA	NA	5.36E-04	1.14E+03	6.11E-01	6.68E-03	1.09E-01	2.90E-01	8.75E+00	8.00E-01	5.88E+00	4.94E-02
UMH3-800 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	1.32E+03	7.62E+00	NA	NA	NA	NA	5.36E-04	2.10E+03	1.13E+00	6.68E-03	1.09E-01	5.35E-01	8.75E+00	8.00E-01	5.88E+00	9.10E-02
UMH3-Comp 1 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	4.59E+02	2.64E+00	NA	NA	NA	NA	5.36E-04	7.30E+02	3.91E-01	6.68E-03	1.09E-01	1.86E-01	8.75E+00	8.00E-01	5.88E+00	3.16E-02
UMH3-Comp 2 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	5.48E+03	3.16E+01	NA	NA	NA	NA	5.36E-04	8.73E+03	4.68E+00	6.68E-03	1.09E-01	2.22E+00	8.75E+00	8.00E-01	5.88E+00	3.77E-01
UMH3-Comp 3 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	9.03E+03	5.20E+01	NA	NA	NA	NA	5.36E-04	1.44E+04	7.70E+00	6.68E-03	1.09E-01	3.65E+00	8.75E+00	8.00E-01	5.88E+00	6.22E-01
																						Maximum HQ (Waste Area 3)	**7.28E-01**

TABLE C-8D: LEAD DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 8 - MIKE HORSE MINE WASTE PILES (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **1.73**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Red-Tailed Hawk (Carnivorous Birds - Terrestrial)																							
Reference Sites																							
BCBG-1 (0-6")	9.00E-02	9.00E-02	7.62E-02	6.40E+00	5.76E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	8.40E+01	4.31E-01	2.48E-03	1.13E+00	2.20E-03	8.75E+00	8.00E-01	9.38E+00	2.35E-04
MHBG-201 (0-6")	9.00E-02	9.00E-02	7.62E-02	2.54E+00	2.29E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.33E+01	1.71E-01	2.48E-03	1.13E+00	8.75E-04	8.75E+00	8.00E-01	9.38E+00	9.32E-05
MHBG-202 (0-6")	9.00E-02	9.00E-02	7.62E-02	1.38E+01	1.24E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.81E+02	9.27E-01	2.48E-03	1.13E+00	4.74E-03	8.75E+00	8.00E-01	9.38E+00	5.06E-04
Mike Horse Creek Channel Area Deposits																						**Minimum HQ (Reference Site)**	**9.32E-05**
AMHR-0 (0-6")	9.00E-02	9.00E-02	9.28E-01	1.06E+02	9.55E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.14E+02	5.87E-01	2.48E-03	1.13E+00	2.22E-02	8.75E+00	8.00E-01	9.38E+00	2.37E-03
AMHR-200 (0-6")	9.00E-02	9.00E-02	9.28E-01	1.03E+02	9.25E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.11E+02	5.68E-01	2.48E-03	1.13E+00	2.15E-02	8.75E+00	8.00E-01	9.38E+00	2.29E-03
AMHR-400 (0-6")	9.00E-02	9.00E-02	9.28E-01	5.22E+02	4.69E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.62E+02	2.88E+00	2.48E-03	1.13E+00	1.09E-01	8.75E+00	8.00E-01	9.38E+00	1.16E-02
AMHR-600 (0-6")	9.00E-02	9.00E-02	9.28E-01	6.12E+02	5.51E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	6.60E+02	3.38E+00	2.48E-03	1.13E+00	1.28E-01	8.75E+00	8.00E-01	9.38E+00	1.36E-02
MHCS-00-E25 (0-6")	9.00E-02	9.00E-02	9.28E-01	3.59E+03	3.23E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.87E+03	1.98E+01	2.48E-03	1.13E+00	7.51E-01	8.75E+00	8.00E-01	9.38E+00	8.00E-02
MHCS-0-W25 (0-6")	9.00E-02	9.00E-02	9.28E-01	4.14E+02	3.72E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.46E+02	2.29E+00	2.48E-03	1.13E+00	8.65E-02	8.75E+00	8.00E-01	9.38E+00	9.22E-03
MHCS-0-W5 (0-6")	9.00E-02	9.00E-02	9.28E-01	2.96E+02	2.66E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.19E+02	1.63E+00	2.48E-03	1.13E+00	6.18E-02	8.75E+00	8.00E-01	9.38E+00	6.58E-03
MHCS-100-E25 (0-6")	9.00E-02	9.00E-02	9.28E-01	5.29E+03	4.76E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.70E+03	2.92E+01	2.48E-03	1.13E+00	1.11E+00	8.75E+00	8.00E-01	9.38E+00	1.18E-01
MHCS-100-W1 (0-6")	9.00E-02	9.00E-02	9.28E-01	3.61E+03	3.25E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.89E+03	2.00E+01	2.48E-03	1.13E+00	7.55E-01	8.75E+00	8.00E-01	9.38E+00	8.05E-02
MHCS-100-W25 (0-6")	9.00E-02	9.00E-02	9.28E-01	3.17E+02	2.85E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.42E+02	1.75E+00	2.48E-03	1.13E+00	6.62E-02	8.75E+00	8.00E-01	9.38E+00	7.06E-03
MHCS-200-E10 (0-6")	9.00E-02	9.00E-02	9.28E-01	1.81E+03	1.63E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.95E+03	9.99E+00	2.48E-03	1.13E+00	3.78E-01	8.75E+00	8.00E-01	9.38E+00	4.03E-02
MHCS-200-E25 (0-6")	9.00E-02	9.00E-02	9.28E-01	9.52E+01	8.56E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.03E+02	5.26E-01	2.48E-03	1.13E+00	1.99E-02	8.75E+00	8.00E-01	9.38E+00	2.12E-03
MHCS-200-W10 (0-6")	9.00E-02	9.00E-02	9.28E-01	2.71E+02	2.44E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.92E+02	1.50E+00	2.48E-03	1.13E+00	5.66E-02	8.75E+00	8.00E-01	9.38E+00	6.03E-03
MHCS-525-E5 (0-6")	9.00E-02	9.00E-02	9.28E-01	3.47E+02	3.12E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.74E+02	1.92E+00	2.48E-03	1.13E+00	7.25E-02	8.75E+00	8.00E-01	9.38E+00	7.73E-03
MHCS-525-W15 (0-6")	9.00E-02	9.00E-02	9.28E-01	2.54E+03	2.28E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.73E+03	1.40E+01	2.48E-03	1.13E+00	5.30E-01	8.75E+00	8.00E-01	9.38E+00	5.65E-02
MHCS-600-E10 (0-6")	9.00E-02	9.00E-02	9.28E-01	3.20E+03	2.88E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.45E+03	1.77E+01	2.48E-03	1.13E+00	6.70E-01	8.75E+00	8.00E-01	9.38E+00	7.14E-02
MHCS-600-W10 (0-6")	9.00E-02	9.00E-02	9.28E-01	2.86E+03	2.58E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.09E+03	1.58E+01	2.48E-03	1.13E+00	5.98E-01	8.75E+00	8.00E-01	9.38E+00	6.38E-02
MHCS-700-E10 (0-6")	9.00E-02	9.00E-02	9.28E-01	2.81E+03	2.53E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.03E+03	1.55E+01	2.48E-03	1.13E+00	5.87E-01	8.75E+00	8.00E-01	9.38E+00	6.26E-02
MHCS-700-E25 (0-6")	9.00E-02	9.00E-02	9.28E-01	1.66E+02	1.49E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.78E+02	9.15E-01	2.48E-03	1.13E+00	3.46E-02	8.75E+00	8.00E-01	9.38E+00	3.69E-03
MHCS-700-W10 (0-6")	9.00E-02	9.00E-02	9.28E-01	3.07E+03	2.76E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.31E+03	1.70E+01	2.48E-03	1.13E+00	6.42E-01	8.75E+00	8.00E-01	9.38E+00	6.84E-02
MHCS-800-E15 (0-6")	9.00E-02	9.00E-02	9.28E-01	1.54E+02	1.39E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.66E+02	8.53E-01	2.48E-03	1.13E+00	3.23E-02	8.75E+00	8.00E-01	9.38E+00	3.44E-03
MHCS-800-E5 (0-6")	9.00E-02	9.00E-02	9.28E-01	2.44E+03	2.20E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.63E+03	1.35E+01	2.48E-03	1.13E+00	5.11E-01	8.75E+00	8.00E-01	9.38E+00	5.44E-02
MHCS-800-W5 (0-6")	9.00E-02	9.00E-02	9.28E-01	1.46E+03	1.31E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.57E+03	8.06E+00	2.48E-03	1.13E+00	3.05E-01	8.75E+00	8.00E-01	9.38E+00	3.25E-02
MHCS-900-E15 (0-6")	9.00E-02	9.00E-02	9.28E-01	1.21E+02	1.09E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.31E+02	6.69E-01	2.48E-03	1.13E+00	2.53E-02	8.75E+00	8.00E-01	9.38E+00	2.70E-03
MHCS-900-E5 (0-6")	9.00E-02	9.00E-02	9.28E-01	2.49E+03	2.24E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.68E+03	1.38E+01	2.48E-03	1.13E+00	5.20E-01	8.75E+00	8.00E-01	9.38E+00	5.55E-02
MHCS-900-W5 (0-6")	9.00E-02	9.00E-02	9.28E-01	1.64E+03	1.48E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.77E+03	9.08E+00	2.48E-03	1.13E+00	3.44E-01	8.75E+00	8.00E-01	9.38E+00	3.66E-02
MHCS-1000-E10 (0-6")	9.00E-02	9.00E-02	9.28E-01	2.81E+02	2.53E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.03E+02	1.55E+00	2.48E-03	1.13E+00	5.88E-02	8.75E+00	8.00E-01	9.38E+00	6.27E-03
MHCS-1000-W5 (0-6")	9.00E-02	9.00E-02	9.28E-01	3.43E+03	3.09E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.70E+03	1.90E+01	2.48E-03	1.13E+00	7.18E-01	8.75E+00	8.00E-01	9.38E+00	7.65E-02
MHCS-1100-E10 (0-6")	9.00E-02	9.00E-02	9.28E-01	2.23E+02	2.01E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.41E+02	1.23E+00	2.48E-03	1.13E+00	4.67E-02	8.75E+00	8.00E-01	9.38E+00	4.98E-03
MHCS-1100-E35 (0-6")	9.00E-02	9.00E-02	9.28E-01	1.01E+02	9.12E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.09E+02	5.60E-01	2.48E-03	1.13E+00	2.12E-02	8.75E+00	8.00E-01	9.38E+00	2.26E-03
MHCS-1200-E15 (0-6")	9.00E-02	9.00E-02	9.28E-01	5.74E+02	5.16E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	6.18E+02	3.17E+00	2.48E-03	1.13E+00	1.20E-01	8.75E+00	8.00E-01	9.38E+00	1.28E-02
MHCS-1200-E30 (0-6")	9.00E-02	9.00E-02	9.28E-01	1.81E+02	1.62E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.95E+02	9.98E-01	2.48E-03	1.13E+00	3.78E-02	8.75E+00	8.00E-01	9.38E+00	4.02E-03
MHCS-1300-E20 (0-6")	9.00E-02	9.00E-02	9.28E-01	8.09E+02	7.28E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	8.72E+02	4.47E+00	2.48E-03	1.13E+00	1.69E-01	8.75E+00	8.00E-01	9.38E+00	1.80E-02
MHCS-1300-E35 (0-6")	9.00E-02	9.00E-02	9.28E-01	3.18E+02	2.86E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.43E+02	1.76E+00	2.48E-03	1.13E+00	6.64E-02	8.75E+00	8.00E-01	9.38E+00	7.08E-03
Waste Areas 1 and 2																						**Maximum HQ (Mike Horse Creek Channel Area Deposits)**	**1.18E-01**
UMH1-00 (0-6")	9.00E-02	9.00E-02	9.28E-01	1.64E+03	1.47E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.76E+03	9.05E+00	2.48E-03	1.13E+00	3.42E-01	8.75E+00	8.00E-01	9.38E+00	3.65E-02
UMH1-100 (0-6")	9.00E-02	9.00E-02	9.28E-01	2.02E+03	1.82E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.18E+03	1.12E+01	2.48E-03	1.13E+00	4.23E-01	8.75E+00	8.00E-01	9.38E+00	4.51E-02
UMH1-150 (0-6")	9.00E-02	9.00E-02	9.28E-01	9.58E+02	8.62E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.03E+03	5.29E+00	2.48E-03	1.13E+00	2.00E-01	8.75E+00	8.00E-01	9.38E+00	2.13E-02
UMH1-200 (0-6")	9.00E-02	9.00E-02	9.28E-01	4.59E+01	4.13E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.95E+01	2.54E-01	2.48E-03	1.13E+00	9.60E-03	8.75E+00	8.00E-01	9.38E+00	1.02E-03
UMH1-250 (0-6")	9.00E-02	9.00E-02	9.28E-01	7.50E+02	6.74E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	8.08E+02	4.14E+00	2.48E-03	1.13E+00	1.57E-01	8.75E+00	8.00E-01	9.38E+00	1.67E-02
UMH1-250+25 (0-6")	9.00E-02	9.00E-02	9.28E-01	1.70E+02	1.53E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.84E+02	9.41E-01	2.48E-03	1.13E+00	3.56E-02	8.75E+00	8.00E-01	9.38E+00	3.80E-03
UMH1-300 (0-6")	9.00E-02	9.00E-02	9.28E-01	1.58E+03	1.42E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.70E+03	8.71E+00	2.48E-03	1.13E+00	3.29E-01	8.75E+00	8.00E-01	9.38E+00	3.51E-02
UMH1-300+14 (0-6")	9.00E-02	9.00E-02	9.28E-01	1.14E+02	1.02E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.23E+02	6.29E-01	2.48E-03	1.13E+00	2.38E-02	8.75E+00	8.00E-01	9.38E+00	2.54E-03
UMH1-350 (0-6")	9.00E-02	9.00E-02	9.28E-01	1.83E+03	1.65E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.98E+03	1.01E+01	2.48E-03	1.13E+00	3.84E-01	8.75E+00	8.00E-01	9.38E+00	4.09E-02
UMH1-350+12.5 (0-6")	9.00E-02	9.00E-02	9.28E-01	1.48E+02	1.33E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.60E+02	8.19E-01	2.48E-03	1.13E+00	3.10E-02	8.75E+00	8.00E-01	9.38E+00	3.30E-03
UMH1-400 (0-6")	9.00E-02	9.00E-02	9.28E-01	7.68E+02	6.91E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	8.28E+02	4.24E+00	2.48E-03	1.13E+00	1.61E-01	8.75E+00	8.00E-01	9.38E+00	1.71E-02
UMH1-400+12.5 (0-6")	9.00E-02	9.00E-02	9.28E-01	9.56E+01	8.60E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.03E+02	5.28E-01	2.48E-03	1.13E+00	2.00E-02	8.75E+00	8.00E-01	9.38E+00	2.13E-03
UMH1-450 (0-6")	9.00E-02	9.00E-02	9.28E-01	1.08E+03	9.71E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.16E+03	5.97E+00	2.48E-03	1.13E+00	2.26E-01	8.75E+00	8.00E-01	9.38E+00	2.41E-02
UMH1-450+12.5 (0-6")	9.00E-02	9.00E-02	9.28E-01	8.09E+01	7.28E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	8.72E+01	4.47E-01	2.48E-03	1.13E+00	1.69E-02	8.75E+00	8.00E-01	9.38E+00	1.80E-03
UMH1-50 (0-6")	9.00E-02	9.00E-02	9.28E-01	9.56E+01	8.60E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.03E+02	5.28E-01	2.48E-03	1.13E+00	2.00E-02	8.75E+00	8.00E-01	9.38E+00	2.13E-03
UMH1-Comp (0-6")	9.00E-02	9.00E-02	9.28E-01	1.80E+03	1.62E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.94E+03	9.93E+00	2.48E-03	1.13E+00	3.76E-01	8.75E+00	8.00E-01	9.38E+00	4.00E-02
UMH2-00 (0-6")	9.00E-02	9.00E-02	9.28E-01	6.10E+03	5.49E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	6.57E+03	3.37E+01	2.48E-03	1.13E+00	1.27E+00	8.75E+00	8.00E-01	9.38E+00	1.36E-01

TABLE C-8D: LEAD DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 8 - MIKE HORSE MINE WASTE PILES (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **1.73**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Red-Tailed Hawk (Carnivorous Birds - Terrestrial)																							
UMH2-00+25 (0-6")	9.00E-02	9.00E-02	9.28E-01	1.93E+02	1.73E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.08E+02	1.07E+00	2.48E-03	1.13E+00	4.03E-02	8.75E+00	8.00E-01	9.38E+00	4.30E-03
UMH2-100 (0-6")	9.00E-02	9.00E-02	9.28E-01	6.77E+03	6.09E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	7.30E+03	3.74E+01	2.48E-03	1.13E+00	1.42E+00	8.75E+00	8.00E-01	9.38E+00	1.51E-01
UMH2-100+35 (0-6")	9.00E-02	9.00E-02	9.28E-01	4.39E+02	3.95E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.73E+02	2.42E+00	2.48E-03	1.13E+00	9.17E-02	8.75E+00	8.00E-01	9.38E+00	9.78E-03
UMH2-150 (0-6")	9.00E-02	9.00E-02	9.28E-01	3.13E+03	2.81E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.37E+03	1.73E+01	2.48E-03	1.13E+00	6.54E-01	8.75E+00	8.00E-01	9.38E+00	6.97E-02
UMH2-150+60 (0-6")	9.00E-02	9.00E-02	9.28E-01	3.80E+02	3.42E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.10E+02	2.10E+00	2.48E-03	1.13E+00	7.94E-02	8.75E+00	8.00E-01	9.38E+00	8.47E-03
UMH2-200 (0-6")	9.00E-02	9.00E-02	9.28E-01	6.33E+03	5.70E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	6.83E+03	3.50E+01	2.48E-03	1.13E+00	1.32E+00	8.75E+00	8.00E-01	9.38E+00	1.41E-01
UMH2-200+85 (0-6")	9.00E-02	9.00E-02	9.28E-01	7.86E+02	7.07E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	8.47E+02	4.34E+00	2.48E-03	1.13E+00	1.64E-01	8.75E+00	8.00E-01	9.38E+00	1.75E-02
UMH2-250 (0-6")	9.00E-02	9.00E-02	9.28E-01	5.01E+03	4.51E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.40E+03	2.77E+01	2.48E-03	1.13E+00	1.05E+00	8.75E+00	8.00E-01	9.38E+00	1.12E-01
UMH2-250+75 (0-6")	9.00E-02	9.00E-02	9.28E-01	4.35E+02	3.91E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.69E+02	2.40E+00	2.48E-03	1.13E+00	9.09E-02	8.75E+00	8.00E-01	9.38E+00	9.69E-03
UMH2-300 (0-6")	9.00E-02	9.00E-02	9.28E-01	7.06E+02	6.35E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	7.60E+02	3.90E+00	2.48E-03	1.13E+00	1.47E-01	8.75E+00	8.00E-01	9.38E+00	1.57E-02
UMH2-300+25 (0-6")	9.00E-02	9.00E-02	9.28E-01	1.15E+02	1.03E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.24E+02	6.35E-01	2.48E-03	1.13E+00	2.40E-02	8.75E+00	8.00E-01	9.38E+00	2.56E-03
UMH2-350 (0-6")	9.00E-02	9.00E-02	9.28E-01	5.39E+02	4.85E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.81E+02	2.98E+00	2.48E-03	1.13E+00	1.13E-01	8.75E+00	8.00E-01	9.38E+00	1.20E-02
UMH2-350+25 (0-6")	9.00E-02	9.00E-02	9.28E-01	1.17E+02	1.05E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.26E+02	6.46E-01	2.48E-03	1.13E+00	2.44E-02	8.75E+00	8.00E-01	9.38E+00	2.60E-03
UMH2-400 (0-6")	9.00E-02	9.00E-02	9.28E-01	5.61E+02	5.04E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	6.04E+02	3.10E+00	2.48E-03	1.13E+00	1.17E-01	8.75E+00	8.00E-01	9.38E+00	1.25E-02
UMH2-400+25 (0-6")	9.00E-02	9.00E-02	9.28E-01	7.02E+01	6.32E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	7.57E+01	3.88E-01	2.48E-03	1.13E+00	1.47E-02	8.75E+00	8.00E-01	9.38E+00	1.57E-03
UMH2-450 (0-6")	9.00E-02	9.00E-02	9.28E-01	3.94E+03	3.54E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.25E+03	2.18E+01	2.48E-03	1.13E+00	8.24E-01	8.75E+00	8.00E-01	9.38E+00	8.78E-02
UMH2-450+25 (0-6")	9.00E-02	9.00E-02	9.28E-01	2.51E+02	2.26E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.70E+02	1.39E+00	2.48E-03	1.13E+00	5.24E-02	8.75E+00	8.00E-01	9.38E+00	5.59E-03
UMH2-50 (0-6")	9.00E-02	9.00E-02	9.28E-01	6.05E+02	5.44E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	6.52E+02	3.34E+00	2.48E-03	1.13E+00	1.26E-01	8.75E+00	8.00E-01	9.38E+00	1.35E-02
UMH2-50+25b (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UMH2-500 (0-6")	9.00E-02	9.00E-02	9.28E-01	8.02E+03	7.22E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	8.65E+03	4.43E+01	2.48E-03	1.13E+00	1.68E+00	8.75E+00	8.00E-01	9.38E+00	1.79E-01
UMH2-500+75 (0-6")	9.00E-02	9.00E-02	9.28E-01	2.43E+02	2.18E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.61E+02	1.34E+00	2.48E-03	1.13E+00	5.07E-02	8.75E+00	8.00E-01	9.38E+00	5.40E-03
UMH2-550 (0-6")	9.00E-02	9.00E-02	9.28E-01	1.03E+04	9.23E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.11E+04	5.67E+01	2.48E-03	1.13E+00	2.15E+00	8.75E+00	8.00E-01	9.38E+00	2.29E-01
UMH2-550+75 (0-6")	9.00E-02	9.00E-02	9.28E-01	5.72E+01	5.14E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	6.16E+01	3.16E-01	2.48E-03	1.13E+00	1.20E-02	8.75E+00	8.00E-01	9.38E+00	1.27E-03
UMH2-600 (0-6")	9.00E-02	9.00E-02	9.28E-01	2.52E+03	2.26E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.71E+03	1.39E+01	2.48E-03	1.13E+00	5.26E-01	8.75E+00	8.00E-01	9.38E+00	5.61E-02
UMH2-600+25 (0-6")	9.00E-02	9.00E-02	9.28E-01	1.07E+02	9.63E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.15E+02	5.92E-01	2.48E-03	1.13E+00	2.24E-02	8.75E+00	8.00E-01	9.38E+00	2.39E-03
UMH2-650 (0-6")	9.00E-02	9.00E-02	9.28E-01	3.32E+03	2.98E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.58E+03	1.83E+01	2.48E-03	1.13E+00	6.94E-01	8.75E+00	8.00E-01	9.38E+00	7.39E-02
UMH2-650+25 (0-6")	9.00E-02	9.00E-02	9.28E-01	2.13E+02	1.92E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.30E+02	1.18E+00	2.48E-03	1.13E+00	4.46E-02	8.75E+00	8.00E-01	9.38E+00	4.75E-03
UMH2-Comp 1 (0-6")	9.00E-02	9.00E-02	9.28E-01	7.35E+03	6.61E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	7.92E+03	4.06E+01	2.48E-03	1.13E+00	1.54E+00	8.75E+00	8.00E-01	9.38E+00	1.64E-01
UMH2-Comp 2 (0-6")	9.00E-02	9.00E-02	9.28E-01	9.58E+03	8.62E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.03E+04	5.30E+01	2.48E-03	1.13E+00	2.00E+00	8.75E+00	8.00E-01	9.38E+00	2.14E-01
Waste Area 3																						**Maximum HQ (Waste Areas 1 and 2)**	**2.29E-01**
UMH3-00 (0-6")	9.00E-02	9.00E-02	9.28E-01	1.53E+02	1.37E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.65E+02	8.44E-01	2.48E-03	1.13E+00	3.19E-02	8.75E+00	8.00E-01	9.38E+00	3.40E-03
UMH3-100 (0-6")	9.00E-02	9.00E-02	9.28E-01	2.08E+02	1.87E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.24E+02	1.15E+00	2.48E-03	1.13E+00	4.35E-02	8.75E+00	8.00E-01	9.38E+00	4.64E-03
UMH3-150 (0-6")	9.00E-02	9.00E-02	9.28E-01	1.76E+03	1.58E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.89E+03	9.70E+00	2.48E-03	1.13E+00	3.67E-01	8.75E+00	8.00E-01	9.38E+00	3.91E-02
UMH3-200 (0-6")	9.00E-02	9.00E-02	9.28E-01	2.81E+03	2.53E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.03E+03	1.55E+01	2.48E-03	1.13E+00	5.88E-01	8.75E+00	8.00E-01	9.38E+00	6.26E-02
UMH3-250 (0-6")	9.00E-02	9.00E-02	9.28E-01	1.05E+04	9.43E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.13E+04	5.79E+01	2.48E-03	1.13E+00	2.19E+00	8.75E+00	8.00E-01	9.38E+00	2.34E-01
UMH3-300 (0-6")	9.00E-02	9.00E-02	9.28E-01	1.35E+02	1.22E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.46E+02	7.47E-01	2.48E-03	1.13E+00	2.83E-02	8.75E+00	8.00E-01	9.38E+00	3.01E-03
UMH3-350 (0-6")	9.00E-02	9.00E-02	9.28E-01	1.56E+04	1.40E+03	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.68E+04	8.62E+01	2.48E-03	1.13E+00	3.26E+00	8.75E+00	8.00E-01	9.38E+00	3.48E-01
UMH3-350+75 (0-6")	9.00E-02	9.00E-02	9.28E-01	1.59E+02	1.43E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.71E+02	8.77E-01	2.48E-03	1.13E+00	3.32E-02	8.75E+00	8.00E-01	9.38E+00	3.54E-03
UMH3-400 (0-6")	9.00E-02	9.00E-02	9.28E-01	8.90E+03	8.01E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	9.59E+03	4.92E+01	2.48E-03	1.13E+00	1.86E+00	8.75E+00	8.00E-01	9.38E+00	1.98E-01
UMH3-400+25 (0-6")	9.00E-02	9.00E-02	9.28E-01	3.42E+02	3.08E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.69E+02	1.89E+00	2.48E-03	1.13E+00	7.16E-02	8.75E+00	8.00E-01	9.38E+00	7.63E-03
UMH3-450 (0-6")	9.00E-02	9.00E-02	9.28E-01	9.21E+01	8.28E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	9.93E+01	5.09E-01	2.48E-03	1.13E+00	1.93E-02	8.75E+00	8.00E-01	9.38E+00	2.05E-03
UMH3-50 (0-6")	9.00E-02	9.00E-02	9.28E-01	1.97E+02	1.77E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.12E+02	1.09E+00	2.48E-03	1.13E+00	4.12E-02	8.75E+00	8.00E-01	9.38E+00	4.39E-03
UMH3-50+50 (0-6")	9.00E-02	9.00E-02	9.28E-01	2.92E+02	2.62E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.14E+02	1.61E+00	2.48E-03	1.13E+00	6.10E-02	8.75E+00	8.00E-01	9.38E+00	6.50E-03
UMH3-500 (0-6")	9.00E-02	9.00E-02	9.28E-01	1.39E+03	1.25E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.50E+03	7.67E+00	2.48E-03	1.13E+00	2.90E-01	8.75E+00	8.00E-01	9.38E+00	3.09E-02
UMH3-550 (0-6")	9.00E-02	9.00E-02	9.28E-01	1.15E+04	1.03E+03	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.24E+04	6.35E+01	2.48E-03	1.13E+00	2.40E+00	8.75E+00	8.00E-01	9.38E+00	2.56E-01
UMH3-600 (0-6")	9.00E-02	9.00E-02	9.28E-01	1.43E+04	1.29E+03	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.54E+04	7.92E+01	2.48E-03	1.13E+00	3.00E+00	8.75E+00	8.00E-01	9.38E+00	3.19E-01
UMH3-650 (0-6")	9.00E-02	9.00E-02	9.28E-01	1.44E+04	1.29E+03	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.55E+04	7.93E+01	2.48E-03	1.13E+00	3.00E+00	8.75E+00	8.00E-01	9.38E+00	3.20E-01
UMH3-700 (0-6")	9.00E-02	9.00E-02	9.28E-01	1.39E+04	1.25E+03	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.49E+04	7.66E+01	2.48E-03	1.13E+00	2.90E+00	8.75E+00	8.00E-01	9.38E+00	3.09E-01
UMH3-750 (0-6")	9.00E-02	9.00E-02	9.28E-01	1.06E+03	9.52E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.14E+03	5.85E+00	2.48E-03	1.13E+00	2.21E-01	8.75E+00	8.00E-01	9.38E+00	2.36E-02
UMH3-800 (0-6")	9.00E-02	9.00E-02	9.28E-01	1.95E+03	1.76E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.10E+03	1.08E+01	2.48E-03	1.13E+00	4.08E-01	8.75E+00	8.00E-01	9.38E+00	4.35E-02
UMH3-Comp 1 (0-6")	9.00E-02	9.00E-02	9.28E-01	6.78E+02	6.10E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	7.30E+02	3.74E+00	2.48E-03	1.13E+00	1.42E-01	8.75E+00	8.00E-01	9.38E+00	1.51E-02
UMH3-Comp 2 (0-6")	9.00E-02	9.00E-02	9.28E-01	8.10E+03	7.28E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	8.73E+03	4.47E+01	2.48E-03	1.13E+00	1.69E+00	8.75E+00	8.00E-01	9.38E+00	1.80E-01
UMH3-Comp 3 (0-6")	9.00E-02	9.00E-02	9.28E-01	1.33E+04	1.20E+03	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.44E+04	7.37E+01	2.48E-03	1.13E+00	2.79E+00	8.75E+00	8.00E-01	9.38E+00	2.97E-01
																						Maximum HQ (Waste Area 3)	**3.48E-01**

TABLE C-8D: LEAD DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 8 - MIKE HORSE MINE WASTE PILES (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **1.73**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
American Kestrel (Insectivorous Birds - Terrestrial)																							
Reference Sites																							
BCBG-1 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.30E+02	1.79E+00	7.84E-04	8.40E+01	6.59E-02	6.61E-03	1.24E-01	9.91E-02	8.75E+00	8.00E-01	6.03E+00	1.65E-02
MHBG-201 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	5.17E+01	7.12E-01	7.84E-04	3.33E+01	2.62E-02	6.61E-03	1.24E-01	3.94E-02	8.75E+00	8.00E-01	6.03E+00	6.53E-03
MHBG-202 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	2.81E+02	3.86E+00	7.84E-04	1.81E+02	1.42E-01	6.61E-03	1.24E-01	2.14E-01	8.75E+00	8.00E-01	6.03E+00	3.54E-02
Mike Horse Creek Channel Area Deposits																						**Minimum HQ (Reference Site)**	**6.53E-03**
AMHR-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.78E+02	2.44E+00	7.84E-04	1.14E+02	8.97E-02	6.61E-03	1.24E-01	1.35E-01	8.75E+00	8.00E-01	6.03E+00	2.24E-02
AMHR-200 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.72E+02	2.37E+00	7.84E-04	1.11E+02	8.70E-02	6.61E-03	1.24E-01	1.31E-01	8.75E+00	8.00E-01	6.03E+00	2.17E-02
AMHR-400 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	8.73E+02	1.20E+01	7.84E-04	5.62E+02	4.41E-01	6.61E-03	1.24E-01	6.64E-01	8.75E+00	8.00E-01	6.03E+00	1.10E-01
AMHR-600 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.02E+03	1.41E+01	7.84E-04	6.60E+02	5.18E-01	6.61E-03	1.24E-01	7.79E-01	8.75E+00	8.00E-01	6.03E+00	1.29E-01
MHCS-00-E25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	6.01E+03	8.26E+01	7.84E-04	3.87E+03	3.04E+00	6.61E-03	1.24E-01	4.57E+00	8.75E+00	8.00E-01	6.03E+00	7.58E-01
MHCS-0-W25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	6.92E+02	9.53E+00	7.84E-04	4.46E+02	3.50E-01	6.61E-03	1.24E-01	5.27E-01	8.75E+00	8.00E-01	6.03E+00	8.74E-02
MHCS-0-W5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	4.94E+02	6.80E+00	7.84E-04	3.19E+02	2.50E-01	6.61E-03	1.24E-01	3.76E-01	8.75E+00	8.00E-01	6.03E+00	6.24E-02
MHCS-100-E25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	8.85E+03	1.22E+02	7.84E-04	5.70E+03	4.47E+00	6.61E-03	1.24E-01	6.73E+00	8.75E+00	8.00E-01	6.03E+00	1.12E+00
MHCS-100-W1 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	6.04E+03	8.31E+01	7.84E-04	3.89E+03	3.05E+00	6.61E-03	1.24E-01	4.59E+00	8.75E+00	8.00E-01	6.03E+00	7.62E-01
MHCS-100-W25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	5.30E+02	7.29E+00	7.84E-04	3.42E+02	2.68E-01	6.61E-03	1.24E-01	4.03E-01	8.75E+00	8.00E-01	6.03E+00	6.69E-02
MHCS-200-E10 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	3.02E+03	4.16E+01	7.84E-04	1.95E+03	1.53E+00	6.61E-03	1.24E-01	2.30E+00	8.75E+00	8.00E-01	6.03E+00	3.82E-01
MHCS-200-E25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.59E+02	2.19E+00	7.84E-04	1.03E+02	8.05E-02	6.61E-03	1.24E-01	1.21E-01	8.75E+00	8.00E-01	6.03E+00	2.01E-02
MHCS-200-W10 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	4.53E+02	6.23E+00	7.84E-04	2.92E+02	2.29E-01	6.61E-03	1.24E-01	3.45E-01	8.75E+00	8.00E-01	6.03E+00	5.72E-02
MHCS-525-E5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	5.80E+02	7.99E+00	7.84E-04	3.74E+02	2.93E-01	6.61E-03	1.24E-01	4.41E-01	8.75E+00	8.00E-01	6.03E+00	7.32E-02
MHCS-525-W15 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	4.24E+03	5.84E+01	7.84E-04	2.73E+03	2.14E+00	6.61E-03	1.24E-01	3.23E+00	8.75E+00	8.00E-01	6.03E+00	5.35E-01
MHCS-600-E10 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	5.36E+03	7.37E+01	7.84E-04	3.45E+03	2.71E+00	6.61E-03	1.24E-01	4.08E+00	8.75E+00	8.00E-01	6.03E+00	6.76E-01
MHCS-600-W10 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	4.79E+03	6.59E+01	7.84E-04	3.09E+03	2.42E+00	6.61E-03	1.24E-01	3.64E+00	8.75E+00	8.00E-01	6.03E+00	6.04E-01
MHCS-700-E10 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	4.70E+03	6.47E+01	7.84E-04	3.03E+03	2.37E+00	6.61E-03	1.24E-01	3.57E+00	8.75E+00	8.00E-01	6.03E+00	5.93E-01
MHCS-700-E25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	2.77E+02	3.81E+00	7.84E-04	1.78E+02	1.40E-01	6.61E-03	1.24E-01	2.11E-01	8.75E+00	8.00E-01	6.03E+00	3.49E-02
MHCS-700-W10 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	5.13E+03	7.07E+01	7.84E-04	3.31E+03	2.60E+00	6.61E-03	1.24E-01	3.91E+00	8.75E+00	8.00E-01	6.03E+00	6.48E-01
MHCS-800-E15 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	2.58E+02	3.55E+00	7.84E-04	1.66E+02	1.31E-01	6.61E-03	1.24E-01	1.96E-01	8.75E+00	8.00E-01	6.03E+00	3.26E-02
MHCS-800-E5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	4.09E+03	5.62E+01	7.84E-04	2.63E+03	2.07E+00	6.61E-03	1.24E-01	3.11E+00	8.75E+00	8.00E-01	6.03E+00	5.16E-01
MHCS-800-W5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	2.44E+03	3.36E+01	7.84E-04	1.57E+03	1.23E+00	6.61E-03	1.24E-01	1.86E+00	8.75E+00	8.00E-01	6.03E+00	3.08E-01
MHCS-900-E15 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	2.03E+02	2.79E+00	7.84E-04	1.31E+02	1.02E-01	6.61E-03	1.24E-01	1.54E-01	8.75E+00	8.00E-01	6.03E+00	2.56E-02
MHCS-900-E5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	4.16E+03	5.73E+01	7.84E-04	2.68E+03	2.10E+00	6.61E-03	1.24E-01	3.17E+00	8.75E+00	8.00E-01	6.03E+00	5.26E-01
MHCS-900-W5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	2.75E+03	3.78E+01	7.84E-04	1.77E+03	1.39E+00	6.61E-03	1.24E-01	2.09E+00	8.75E+00	8.00E-01	6.03E+00	3.47E-01
MHCS-1000-E10 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	4.70E+02	6.47E+00	7.84E-04	3.03E+02	2.38E-01	6.61E-03	1.24E-01	3.58E-01	8.75E+00	8.00E-01	6.03E+00	5.94E-02
MHCS-1000-W5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	5.74E+03	7.91E+01	7.84E-04	3.70E+03	2.90E+00	6.61E-03	1.24E-01	4.37E+00	8.75E+00	8.00E-01	6.03E+00	7.25E-01
MHCS-1100-E10 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	3.74E+02	5.14E+00	7.84E-04	2.41E+02	1.89E-01	6.61E-03	1.24E-01	2.84E-01	8.75E+00	8.00E-01	6.03E+00	4.72E-02
MHCS-1100-E35 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.70E+02	2.33E+00	7.84E-04	1.09E+02	8.57E-02	6.61E-03	1.24E-01	1.29E-01	8.75E+00	8.00E-01	6.03E+00	2.14E-02
MHCS-1200-E15 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	9.59E+02	1.32E+01	7.84E-04	6.18E+02	4.85E-01	6.61E-03	1.24E-01	7.30E-01	8.75E+00	8.00E-01	6.03E+00	1.21E-01
MHCS-1200-E30 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	3.02E+02	4.16E+00	7.84E-04	1.95E+02	1.53E-01	6.61E-03	1.24E-01	2.30E-01	8.75E+00	8.00E-01	6.03E+00	3.81E-02
MHCS-1300-E20 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.35E+03	1.86E+01	7.84E-04	8.72E+02	6.84E-01	6.61E-03	1.24E-01	1.03E+00	8.75E+00	8.00E-01	6.03E+00	1.71E-01
MHCS-1300-E35 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	5.32E+02	7.32E+00	7.84E-04	3.43E+02	2.69E-01	6.61E-03	1.24E-01	4.04E-01	8.75E+00	8.00E-01	6.03E+00	6.71E-02
Waste Areas 1 and 2																						**Maximum HQ (Mike Horse Creek Channel Area Deposits)**	**1.12E+00**
UMH1-00 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	2.74E+03	3.77E+01	7.84E-04	1.76E+03	1.38E+00	6.61E-03	1.24E-01	2.08E+00	8.75E+00	8.00E-01	6.03E+00	3.46E-01
UMH1-100 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	3.39E+03	4.66E+01	7.84E-04	2.18E+03	1.71E+00	6.61E-03	1.24E-01	2.58E+00	8.75E+00	8.00E-01	6.03E+00	4.27E-01
UMH1-150 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.60E+03	2.21E+01	7.84E-04	1.03E+03	8.10E-01	6.61E-03	1.24E-01	1.22E+00	8.75E+00	8.00E-01	6.03E+00	2.02E-01
UMH1-200 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	7.68E+01	1.06E+00	7.84E-04	4.95E+01	3.88E-02	6.61E-03	1.24E-01	5.84E-02	8.75E+00	8.00E-01	6.03E+00	9.69E-03
UMH1-250 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.25E+03	1.73E+01	7.84E-04	8.08E+02	6.34E-01	6.61E-03	1.24E-01	9.54E-01	8.75E+00	8.00E-01	6.03E+00	1.58E-01
UMH1-250+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	2.85E+02	3.92E+00	7.84E-04	1.84E+02	1.44E-01	6.61E-03	1.24E-01	2.17E-01	8.75E+00	8.00E-01	6.03E+00	3.60E-02
UMH1-300 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	2.64E+03	3.63E+01	7.84E-04	1.70E+03	1.33E+00	6.61E-03	1.24E-01	2.00E+00	8.75E+00	8.00E-01	6.03E+00	3.33E-01
UMH1-300+14 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.90E+02	2.62E+00	7.84E-04	1.23E+02	9.62E-02	6.61E-03	1.24E-01	1.45E-01	8.75E+00	8.00E-01	6.03E+00	2.40E-02
UMH1-350 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	3.07E+03	4.22E+01	7.84E-04	1.98E+03	1.55E+00	6.61E-03	1.24E-01	2.33E+00	8.75E+00	8.00E-01	6.03E+00	3.87E-01
UMH1-350+12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	2.48E+02	3.41E+00	7.84E-04	1.60E+02	1.25E-01	6.61E-03	1.24E-01	1.89E-01	8.75E+00	8.00E-01	6.03E+00	3.13E-02
UMH1-400 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.28E+03	1.77E+01	7.84E-04	8.28E+02	6.49E-01	6.61E-03	1.24E-01	9.77E-01	8.75E+00	8.00E-01	6.03E+00	1.62E-01
UMH1-400+12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.60E+02	2.20E+00	7.84E-04	1.03E+02	8.08E-02	6.61E-03	1.24E-01	1.22E-01	8.75E+00	8.00E-01	6.03E+00	2.02E-02
UMH1-450 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.81E+03	2.48E+01	7.84E-04	1.16E+03	9.13E-01	6.61E-03	1.24E-01	1.37E+00	8.75E+00	8.00E-01	6.03E+00	2.28E-01
UMH1-450+12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.35E+02	1.86E+00	7.84E-04	8.72E+01	6.84E-02	6.61E-03	1.24E-01	1.03E-01	8.75E+00	8.00E-01	6.03E+00	1.71E-02
UMH1-50 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.60E+02	2.20E+00	7.84E-04	1.03E+02	8.08E-02	6.61E-03	1.24E-01	1.22E-01	8.75E+00	8.00E-01	6.03E+00	2.02E-02
UMH1-Comp (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	3.01E+03	4.14E+01	7.84E-04	1.94E+03	1.52E+00	6.61E-03	1.24E-01	2.29E+00	8.75E+00	8.00E-01	6.03E+00	3.79E-01
UMH2-00 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.02E+04	1.40E+02	7.84E-04	6.57E+03	5.16E+00	6.61E-03	1.24E-01	7.76E+00	8.75E+00	8.00E-01	6.03E+00	1.29E+00

TABLE C-8D: LEAD DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 8 - MIKE HORSE MINE WASTE PILES (Continued)
Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)
calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **1.73**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
American Kestrel (Insectivorous Birds - Terrestrial)																							
UMH2-00+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	3.23E+02	4.44E+00	7.84E-04	2.08E+02	1.63E-01	6.61E-03	1.24E-01	2.45E-01	8.75E+00	8.00E-01	6.03E+00	4.07E-02
UMH2-100 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.13E+04	1.56E+02	7.84E-04	7.30E+03	5.73E+00	6.61E-03	1.24E-01	8.62E+00	8.75E+00	8.00E-01	6.03E+00	1.43E+00
UMH2-100+35 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	7.34E+02	1.01E+01	7.84E-04	4.73E+02	3.71E-01	6.61E-03	1.24E-01	5.58E-01	8.75E+00	8.00E-01	6.03E+00	9.26E-02
UMH2-150 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	5.23E+03	7.20E+01	7.84E-04	3.37E+03	2.64E+00	6.61E-03	1.24E-01	3.98E+00	8.75E+00	8.00E-01	6.03E+00	6.60E-01
UMH2-150+60 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	6.36E+02	8.75E+00	7.84E-04	4.10E+02	3.21E-01	6.61E-03	1.24E-01	4.84E-01	8.75E+00	8.00E-01	6.03E+00	8.02E-02
UMH2-200 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.06E+04	1.46E+02	7.84E-04	6.83E+03	5.35E+00	6.61E-03	1.24E-01	8.06E+00	8.75E+00	8.00E-01	6.03E+00	1.34E+00
UMH2-200+85 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.31E+03	1.81E+01	7.84E-04	8.47E+02	6.64E-01	6.61E-03	1.24E-01	1.00E+00	8.75E+00	8.00E-01	6.03E+00	1.66E-01
UMH2-250 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	8.38E+03	1.15E+02	7.84E-04	5.40E+03	4.23E+00	6.61E-03	1.24E-01	6.37E+00	8.75E+00	8.00E-01	6.03E+00	1.06E+00
UMH2-250+75 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	7.27E+02	1.00E+01	7.84E-04	4.69E+02	3.68E-01	6.61E-03	1.24E-01	5.53E-01	8.75E+00	8.00E-01	6.03E+00	9.18E-02
UMH2-300 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.18E+03	1.62E+01	7.84E-04	7.60E+02	5.96E-01	6.61E-03	1.24E-01	8.98E-01	8.75E+00	8.00E-01	6.03E+00	1.49E-01
UMH2-300+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.92E+02	2.65E+00	7.84E-04	1.24E+02	9.72E-02	6.61E-03	1.24E-01	1.46E-01	8.75E+00	8.00E-01	6.03E+00	2.43E-02
UMH2-350 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	9.01E+02	1.24E+01	7.84E-04	5.81E+02	4.56E-01	6.61E-03	1.24E-01	6.86E-01	8.75E+00	8.00E-01	6.03E+00	1.14E-01
UMH2-350+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.96E+02	2.69E+00	7.84E-04	1.26E+02	9.88E-02	6.61E-03	1.24E-01	1.49E-01	8.75E+00	8.00E-01	6.03E+00	2.47E-02
UMH2-400 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	9.38E+02	1.29E+01	7.84E-04	6.04E+02	4.74E-01	6.61E-03	1.24E-01	7.13E-01	8.75E+00	8.00E-01	6.03E+00	1.18E-01
UMH2-400+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.17E+02	1.62E+00	7.84E-04	7.57E+01	5.94E-02	6.61E-03	1.24E-01	8.94E-02	8.75E+00	8.00E-01	6.03E+00	1.48E-02
UMH2-450 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	6.59E+03	9.07E+01	7.84E-04	4.25E+03	3.33E+00	6.61E-03	1.24E-01	5.01E+00	8.75E+00	8.00E-01	6.03E+00	8.32E-01
UMH2-450+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	4.20E+02	5.77E+00	7.84E-04	2.70E+02	2.12E-01	6.61E-03	1.24E-01	3.19E-01	8.75E+00	8.00E-01	6.03E+00	5.29E-02
UMH2-50 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.01E+03	1.39E+01	7.84E-04	6.52E+02	5.11E-01	6.61E-03	1.24E-01	7.70E-01	8.75E+00	8.00E-01	6.03E+00	1.28E-01
UMH2-50+25b (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UMH2-500 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.34E+04	1.85E+02	7.84E-04	8.65E+03	6.78E+00	6.61E-03	1.24E-01	1.02E+01	8.75E+00	8.00E-01	6.03E+00	1.69E+00
UMH2-500+75 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	4.06E+02	5.58E+00	7.84E-04	2.61E+02	2.05E-01	6.61E-03	1.24E-01	3.09E-01	8.75E+00	8.00E-01	6.03E+00	5.12E-02
UMH2-550 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.72E+04	2.36E+02	7.84E-04	1.11E+04	8.68E+00	6.61E-03	1.24E-01	1.31E+01	8.75E+00	8.00E-01	6.03E+00	2.17E+00
UMH2-550+75 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	9.57E+01	1.32E+00	7.84E-04	6.16E+01	4.83E-02	6.61E-03	1.24E-01	7.28E-02	8.75E+00	8.00E-01	6.03E+00	1.21E-02
UMH2-600 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	4.21E+03	5.79E+01	7.84E-04	2.71E+03	2.13E+00	6.61E-03	1.24E-01	3.20E+00	8.75E+00	8.00E-01	6.03E+00	5.31E-01
UMH2-600+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.79E+02	2.46E+00	7.84E-04	1.15E+02	9.05E-02	6.61E-03	1.24E-01	1.36E-01	8.75E+00	8.00E-01	6.03E+00	2.26E-02
UMH2-650 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	5.55E+03	7.64E+01	7.84E-04	3.58E+03	2.81E+00	6.61E-03	1.24E-01	4.22E+00	8.75E+00	8.00E-01	6.03E+00	7.01E-01
UMH2-650+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	3.57E+02	4.91E+00	7.84E-04	2.30E+02	1.80E-01	6.61E-03	1.24E-01	2.71E-01	8.75E+00	8.00E-01	6.03E+00	4.50E-02
UMH2-Comp 1 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.23E+04	1.69E+02	7.84E-04	7.92E+03	6.21E+00	6.61E-03	1.24E-01	9.35E+00	8.75E+00	8.00E-01	6.03E+00	1.55E+00
UMH2-Comp 2 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.60E+04	2.21E+02	7.84E-04	1.03E+04	8.10E+00	6.61E-03	1.24E-01	1.22E+01	8.75E+00	8.00E-01	6.03E+00	2.02E+00
Waste Area 3																						**Maximum HQ (Waste Areas 1 and 2)**	**2.17E+00**
UMH3-00 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	2.56E+02	3.52E+00	7.84E-04	1.65E+02	1.29E-01	6.61E-03	1.24E-01	1.94E-01	8.75E+00	8.00E-01	6.03E+00	3.23E-02
UMH3-100 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	3.48E+02	4.79E+00	7.84E-04	2.24E+02	1.76E-01	6.61E-03	1.24E-01	2.65E-01	8.75E+00	8.00E-01	6.03E+00	4.40E-02
UMH3-150 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	2.94E+03	4.04E+01	7.84E-04	1.89E+03	1.48E+00	6.61E-03	1.24E-01	2.23E+00	8.75E+00	8.00E-01	6.03E+00	3.71E-01
UMH3-200 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	4.70E+03	6.47E+01	7.84E-04	3.03E+03	2.38E+00	6.61E-03	1.24E-01	3.58E+00	8.75E+00	8.00E-01	6.03E+00	5.93E-01
UMH3-250 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.75E+04	2.41E+02	7.84E-04	1.13E+04	8.86E+00	6.61E-03	1.24E-01	1.33E+01	8.75E+00	8.00E-01	6.03E+00	2.21E+00
UMH3-300 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	2.26E+02	3.11E+00	7.84E-04	1.46E+02	1.14E-01	6.61E-03	1.24E-01	1.72E-01	8.75E+00	8.00E-01	6.03E+00	2.85E-02
UMH3-350 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	2.61E+04	3.59E+02	7.84E-04	1.68E+04	1.32E+01	6.61E-03	1.24E-01	1.99E+01	8.75E+00	8.00E-01	6.03E+00	3.29E+00
UMH3-350+75 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	2.66E+02	3.65E+00	7.84E-04	1.71E+02	1.34E-01	6.61E-03	1.24E-01	2.02E-01	8.75E+00	8.00E-01	6.03E+00	3.35E-02
UMH3-400 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.49E+04	2.05E+02	7.84E-04	9.59E+03	7.53E+00	6.61E-03	1.24E-01	1.13E+01	8.75E+00	8.00E-01	6.03E+00	1.88E+00
UMH3-400+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	5.73E+02	7.88E+00	7.84E-04	3.69E+02	2.90E-01	6.61E-03	1.24E-01	4.36E-01	8.75E+00	8.00E-01	6.03E+00	7.23E-02
UMH3-450 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.54E+02	2.12E+00	7.84E-04	9.93E+01	7.78E-02	6.61E-03	1.24E-01	1.17E-01	8.75E+00	8.00E-01	6.03E+00	1.94E-02
UMH3-50 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	3.30E+02	4.54E+00	7.84E-04	2.12E+02	1.67E-01	6.61E-03	1.24E-01	2.51E-01	8.75E+00	8.00E-01	6.03E+00	4.16E-02
UMH3-50+50 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	4.88E+02	6.71E+00	7.84E-04	3.14E+02	2.47E-01	6.61E-03	1.24E-01	3.71E-01	8.75E+00	8.00E-01	6.03E+00	6.16E-02
UMH3-500 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	2.32E+03	3.20E+01	7.84E-04	1.50E+03	1.17E+00	6.61E-03	1.24E-01	1.77E+00	8.75E+00	8.00E-01	6.03E+00	2.93E-01
UMH3-550 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.92E+04	2.64E+02	7.84E-04	1.24E+04	9.71E+00	6.61E-03	1.24E-01	1.46E+01	8.75E+00	8.00E-01	6.03E+00	2.42E+00
UMH3-600 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	2.40E+04	3.30E+02	7.84E-04	1.54E+04	1.21E+01	6.61E-03	1.24E-01	1.82E+01	8.75E+00	8.00E-01	6.03E+00	3.03E+00
UMH3-650 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	2.40E+04	3.30E+02	7.84E-04	1.55E+04	1.21E+01	6.61E-03	1.24E-01	1.83E+01	8.75E+00	8.00E-01	6.03E+00	3.03E+00
UMH3-700 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	2.32E+04	3.19E+02	7.84E-04	1.49E+04	1.17E+01	6.61E-03	1.24E-01	1.76E+01	8.75E+00	8.00E-01	6.03E+00	2.93E+00
UMH3-750 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.77E+03	2.44E+01	7.84E-04	1.14E+03	8.95E-01	6.61E-03	1.24E-01	1.35E+00	8.75E+00	8.00E-01	6.03E+00	2.24E-01
UMH3-800 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	3.27E+03	4.49E+01	7.84E-04	2.10E+03	1.65E+00	6.61E-03	1.24E-01	2.48E+00	8.75E+00	8.00E-01	6.03E+00	4.12E-01
UMH3-Comp 1 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.13E+03	1.56E+01	7.84E-04	7.30E+02	5.73E-01	6.61E-03	1.24E-01	8.62E-01	8.75E+00	8.00E-01	6.03E+00	1.43E-01
UMH3-Comp 2 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.35E+04	1.86E+02	7.84E-04	8.73E+03	6.84E+00	6.61E-03	1.24E-01	1.03E+01	8.75E+00	8.00E-01	6.03E+00	1.71E+00
UMH3-Comp 3 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	2.23E+04	3.07E+02	7.84E-04	1.44E+04	1.13E+01	6.61E-03	1.24E-01	1.70E+01	8.75E+00	8.00E-01	6.03E+00	2.82E+00
																						Maximum HQ (Waste Area 3)	**3.29E+00**

TABLE C-8D: LEAD DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 8 - MIKE HORSE MINE WASTE PILES (Continued)
Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)
calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **1.73**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Meadow Vole (Small Herbivorous Mammal - Terrestrial)																							
Reference Sites																							
BCBG-1 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	4.35E-02	3.65E+00	1.71E-02	NA	NA	NA	NA	1.13E-04	8.40E+01	9.45E-03	1.00E+00	3.06E-02	8.68E-01	2.41E+02	1.87E-02	2.34E+02	3.72E-03
MHBG-201 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	4.35E-02	1.45E+00	6.79E-03	NA	NA	NA	NA	1.13E-04	3.33E+01	3.75E-03	1.00E+00	3.06E-02	3.45E-01	2.41E+02	1.87E-02	2.34E+02	1.48E-03
MHBG-202 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	4.35E-02	7.86E+00	3.69E-02	NA	NA	NA	NA	1.13E-04	1.81E+02	2.04E-02	1.00E+00	3.06E-02	1.87E+00	2.41E+02	1.87E-02	2.34E+02	8.00E-03
Mike Horse Creek Channel Area Deposits																						**Minimum HQ (Reference Site)**	**1.48E-03**
AMHR-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	7.19E+01	3.37E-01	NA	NA	NA	NA	1.13E-04	1.14E+02	1.29E-02	1.00E+00	3.06E-02	1.14E+01	2.41E+02	1.87E-02	2.34E+02	4.89E-02
AMHR-200 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	6.96E+01	3.27E-01	NA	NA	NA	NA	1.13E-04	1.11E+02	1.25E-02	1.00E+00	3.06E-02	1.11E+01	2.41E+02	1.87E-02	2.34E+02	4.74E-02
AMHR-400 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	3.53E+02	1.66E+00	NA	NA	NA	NA	1.13E-04	5.62E+02	6.33E-02	1.00E+00	3.06E-02	5.62E+01	2.41E+02	1.87E-02	2.34E+02	2.40E-01
AMHR-600 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	4.15E+02	1.94E+00	NA	NA	NA	NA	1.13E-04	6.60E+02	7.43E-02	1.00E+00	3.06E-02	6.59E+01	2.41E+02	1.87E-02	2.34E+02	2.82E-01
MHCS-00-E25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	2.43E+03	1.14E+01	NA	NA	NA	NA	1.13E-04	3.87E+03	4.35E-01	1.00E+00	3.06E-02	3.87E+02	2.41E+02	1.87E-02	2.34E+02	1.66E+00
MHCS-0-W25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	2.80E+02	1.31E+00	NA	NA	NA	NA	1.13E-04	4.46E+02	5.02E-02	1.00E+00	3.06E-02	4.46E+01	2.41E+02	1.87E-02	2.34E+02	1.91E-01
MHCS-0-W5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	2.00E+02	9.38E-01	NA	NA	NA	NA	1.13E-04	3.19E+02	3.58E-02	1.00E+00	3.06E-02	3.18E+01	2.41E+02	1.87E-02	2.34E+02	1.36E-01
MHCS-100-E25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	3.58E+03	1.68E+01	NA	NA	NA	NA	1.13E-04	5.70E+03	6.42E-01	1.00E+00	3.06E-02	5.70E+02	2.41E+02	1.87E-02	2.34E+02	2.44E+00
MHCS-100-W1 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	2.44E+03	1.15E+01	NA	NA	NA	NA	1.13E-04	3.89E+03	4.38E-01	1.00E+00	3.06E-02	3.89E+02	2.41E+02	1.87E-02	2.34E+02	1.66E+00
MHCS-100-W25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	2.15E+02	1.01E+00	NA	NA	NA	NA	1.13E-04	3.42E+02	3.84E-02	1.00E+00	3.06E-02	3.41E+01	2.41E+02	1.87E-02	2.34E+02	1.46E-01
MHCS-200-E10 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	1.22E+03	5.74E+00	NA	NA	NA	NA	1.13E-04	1.95E+03	2.19E-01	1.00E+00	3.06E-02	1.95E+02	2.41E+02	1.87E-02	2.34E+02	8.33E-01
MHCS-200-E25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	6.45E+01	3.02E-01	NA	NA	NA	NA	1.13E-04	1.03E+02	1.15E-02	1.00E+00	3.06E-02	1.03E+01	2.41E+02	1.87E-02	2.34E+02	4.39E-02
MHCS-200-W10 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	1.83E+02	8.60E-01	NA	NA	NA	NA	1.13E-04	2.92E+02	3.28E-02	1.00E+00	3.06E-02	2.92E+01	2.41E+02	1.87E-02	2.34E+02	1.25E-01
MHCS-525-E5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	2.35E+02	1.10E+00	NA	NA	NA	NA	1.13E-04	3.74E+02	4.21E-02	1.00E+00	3.06E-02	3.74E+01	2.41E+02	1.87E-02	2.34E+02	1.60E-01
MHCS-525-W15 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	1.72E+03	8.05E+00	NA	NA	NA	NA	1.13E-04	2.73E+03	3.08E-01	1.00E+00	3.06E-02	2.73E+02	2.41E+02	1.87E-02	2.34E+02	1.17E+00
MHCS-600-E10 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	2.17E+03	1.02E+01	NA	NA	NA	NA	1.13E-04	3.45E+03	3.89E-01	1.00E+00	3.06E-02	3.45E+02	2.41E+02	1.87E-02	2.34E+02	1.48E+00
MHCS-600-W10 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	1.94E+03	9.09E+00	NA	NA	NA	NA	1.13E-04	3.09E+03	3.47E-01	1.00E+00	3.06E-02	3.08E+02	2.41E+02	1.87E-02	2.34E+02	1.32E+00
MHCS-700-E10 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	1.90E+03	8.92E+00	NA	NA	NA	NA	1.13E-04	3.03E+03	3.41E-01	1.00E+00	3.06E-02	3.03E+02	2.41E+02	1.87E-02	2.34E+02	1.30E+00
MHCS-700-E25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	1.12E+02	5.25E-01	NA	NA	NA	NA	1.13E-04	1.78E+02	2.01E-02	1.00E+00	3.06E-02	1.78E+01	2.41E+02	1.87E-02	2.34E+02	7.63E-02
MHCS-700-W10 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	2.08E+03	9.75E+00	NA	NA	NA	NA	1.13E-04	3.31E+03	3.72E-01	1.00E+00	3.06E-02	3.31E+02	2.41E+02	1.87E-02	2.34E+02	1.42E+00
MHCS-800-E15 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	1.05E+02	4.90E-01	NA	NA	NA	NA	1.13E-04	1.66E+02	1.87E-02	1.00E+00	3.06E-02	1.66E+01	2.41E+02	1.87E-02	2.34E+02	7.12E-02
MHCS-800-E5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	1.65E+03	7.76E+00	NA	NA	NA	NA	1.13E-04	2.63E+03	2.96E-01	1.00E+00	3.06E-02	2.63E+02	2.41E+02	1.87E-02	2.34E+02	1.13E+00
MHCS-800-W5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	9.87E+02	4.63E+00	NA	NA	NA	NA	1.13E-04	1.57E+03	1.77E-01	1.00E+00	3.06E-02	1.57E+02	2.41E+02	1.87E-02	2.34E+02	6.72E-01
MHCS-900-E15 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	8.20E+01	3.85E-01	NA	NA	NA	NA	1.13E-04	1.31E+02	1.47E-02	1.00E+00	3.06E-02	1.30E+01	2.41E+02	1.87E-02	2.34E+02	5.58E-02
MHCS-900-E5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	1.69E+03	7.90E+00	NA	NA	NA	NA	1.13E-04	2.68E+03	3.02E-01	1.00E+00	3.06E-02	2.68E+02	2.41E+02	1.87E-02	2.34E+02	1.15E+00
MHCS-900-W5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	1.11E+03	5.22E+00	NA	NA	NA	NA	1.13E-04	1.77E+03	1.99E-01	1.00E+00	3.06E-02	1.77E+02	2.41E+02	1.87E-02	2.34E+02	7.58E-01
MHCS-1000-E10 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	1.90E+02	8.93E-01	NA	NA	NA	NA	1.13E-04	3.03E+02	3.41E-02	1.00E+00	3.06E-02	3.03E+01	2.41E+02	1.87E-02	2.34E+02	1.30E-01
MHCS-1000-W5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	2.33E+03	1.09E+01	NA	NA	NA	NA	1.13E-04	3.70E+03	4.17E-01	1.00E+00	3.06E-02	3.70E+02	2.41E+02	1.87E-02	2.34E+02	1.58E+00
MHCS-1100-E10 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	1.51E+02	7.09E-01	NA	NA	NA	NA	1.13E-04	2.41E+02	2.71E-02	1.00E+00	3.06E-02	2.41E+01	2.41E+02	1.87E-02	2.34E+02	1.03E-01
MHCS-1100-E35 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	6.87E+01	3.22E-01	NA	NA	NA	NA	1.13E-04	1.09E+02	1.23E-02	1.00E+00	3.06E-02	1.09E+01	2.41E+02	1.87E-02	2.34E+02	4.68E-02
MHCS-1200-E15 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	3.88E+02	1.82E+00	NA	NA	NA	NA	1.13E-04	6.18E+02	6.96E-02	1.00E+00	3.06E-02	6.18E+01	2.41E+02	1.87E-02	2.34E+02	2.64E-01
MHCS-1200-E30 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	1.22E+02	5.73E-01	NA	NA	NA	NA	1.13E-04	1.95E+02	2.19E-02	1.00E+00	3.06E-02	1.95E+01	2.41E+02	1.87E-02	2.34E+02	8.33E-02
MHCS-1300-E20 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	5.48E+02	2.57E+00	NA	NA	NA	NA	1.13E-04	8.72E+02	9.81E-02	1.00E+00	3.06E-02	8.72E+01	2.41E+02	1.87E-02	2.34E+02	3.73E-01
MHCS-1300-E35 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	2.15E+02	1.01E+00	NA	NA	NA	NA	1.13E-04	3.43E+02	3.85E-02	1.00E+00	3.06E-02	3.42E+01	2.41E+02	1.87E-02	2.34E+02	1.47E-01
Waste Areas 1 and 2																						**Maximum HQ (Mike Horse Creek Channel Area Deposits)**	**2.44E+00**
UMH1-00 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	1.11E+03	5.20E+00	NA	NA	NA	NA	1.13E-04	1.76E+03	1.99E-01	1.00E+00	3.06E-02	1.76E+02	2.41E+02	1.87E-02	2.34E+02	7.55E-01
UMH1-100 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	1.37E+03	6.43E+00	NA	NA	NA	NA	1.13E-04	2.18E+03	2.46E-01	1.00E+00	3.06E-02	2.18E+02	2.41E+02	1.87E-02	2.34E+02	9.33E-01
UMH1-150 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	6.49E+02	3.04E+00	NA	NA	NA	NA	1.13E-04	1.03E+03	1.16E-01	1.00E+00	3.06E-02	1.03E+02	2.41E+02	1.87E-02	2.34E+02	4.42E-01
UMH1-200 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	3.11E+01	1.46E-01	NA	NA	NA	NA	1.13E-04	4.95E+01	5.57E-03	1.00E+00	3.06E-02	4.95E+00	2.41E+02	1.87E-02	2.34E+02	2.12E-02
UMH1-250 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	5.08E+02	2.38E+00	NA	NA	NA	NA	1.13E-04	8.08E+02	9.09E-02	1.00E+00	3.06E-02	8.07E+01	2.41E+02	1.87E-02	2.34E+02	3.46E-01
UMH1-250+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	1.15E+02	5.41E-01	NA	NA	NA	NA	1.13E-04	1.84E+02	2.07E-02	1.00E+00	3.06E-02	1.84E+01	2.41E+02	1.87E-02	2.34E+02	7.85E-02
UMH1-300 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	1.07E+03	5.00E+00	NA	NA	NA	NA	1.13E-04	1.70E+03	1.91E-01	1.00E+00	3.06E-02	1.70E+02	2.41E+02	1.87E-02	2.34E+02	7.26E-01
UMH1-300+14 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	7.71E+01	3.61E-01	NA	NA	NA	NA	1.13E-04	1.23E+02	1.38E-02	1.00E+00	3.06E-02	1.23E+01	2.41E+02	1.87E-02	2.34E+02	5.25E-02
UMH1-350 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	1.24E+03	5.83E+00	NA	NA	NA	NA	1.13E-04	1.98E+03	2.23E-01	1.00E+00	3.06E-02	1.98E+02	2.41E+02	1.87E-02	2.34E+02	8.46E-01
UMH1-350+12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	1.00E+02	4.70E-01	NA	NA	NA	NA	1.13E-04	1.60E+02	1.80E-02	1.00E+00	3.06E-02	1.60E+01	2.41E+02	1.87E-02	2.34E+02	6.83E-02
UMH1-400 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	5.20E+02	2.44E+00	NA	NA	NA	NA	1.13E-04	8.28E+02	9.31E-02	1.00E+00	3.06E-02	8.27E+01	2.41E+02	1.87E-02	2.34E+02	3.54E-01
UMH1-400+12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	6.47E+01	3.03E-01	NA	NA	NA	NA	1.13E-04	1.03E+02	1.16E-02	1.00E+00	3.06E-02	1.03E+01	2.41E+02	1.87E-02	2.34E+02	4.41E-02
UMH1-450 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	7.31E+02	3.43E+00	NA	NA	NA	NA	1.13E-04	1.16E+03	1.31E-01	1.00E+00	3.06E-02	1.16E+02	2.41E+02	1.87E-02	2.34E+02	4.98E-01
UMH1-450+12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	5.48E+01	2.57E-01	NA	NA	NA	NA	1.13E-04	8.72E+01	9.82E-03	1.00E+00	3.06E-02	8.72E+00	2.41E+02	1.87E-02	2.34E+02	3.73E-02
UMH1-50 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	6.47E+01	3.03E-01	NA	NA	NA	NA	1.13E-04	1.03E+02	1.16E-02	1.00E+00	3.06E-02	1.03E+01	2.41E+02	1.87E-02	2.34E+02	4.41E-02
UMH1-Comp (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	1.22E+03	5.70E+00	NA	NA	NA	NA	1.13E-04	1.94E+03	2.18E-01	1.00E+00	3.06E-02	1.94E+02	2.41E+02	1.87E-02	2.34E+02	8.28E-01
UMH2-00 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	4.13E+03	1.94E+01	NA	NA	NA	NA	1.13E-04	6.57E+03	7.40E-01	1.00E+00	3.06E-02	6.57E+02	2.41E+02	1.87E-02	2.34E+02	2.81E+00

TABLE C-8D: LEAD DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 8 - MIKE HORSE MINE WASTE PILES (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **1.73**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Meadow Vole (Small Herbivorous Mammal - Terrestrial)																							
UMH2-00+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	1.31E+02	6.12E-01	NA	NA	NA	NA	1.13E-04	2.08E+02	2.34E-02	1.00E+00	3.06E-02	2.08E+01	2.41E+02	1.87E-02	2.34E+02	8.89E-02
UMH2-100 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	4.59E+03	2.15E+01	NA	NA	NA	NA	1.13E-04	7.30E+03	8.22E-01	1.00E+00	3.06E-02	7.30E+02	2.41E+02	1.87E-02	2.34E+02	3.12E+00
UMH2-100+35 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	2.97E+02	1.39E+00	NA	NA	NA	NA	1.13E-04	4.73E+02	5.32E-02	1.00E+00	3.06E-02	4.73E+01	2.41E+02	1.87E-02	2.34E+02	2.02E-01
UMH2-150 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	2.12E+03	9.93E+00	NA	NA	NA	NA	1.13E-04	3.37E+03	3.79E-01	1.00E+00	3.06E-02	3.37E+02	2.41E+02	1.87E-02	2.34E+02	1.44E+00
UMH2-150+60 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	2.57E+02	1.21E+00	NA	NA	NA	NA	1.13E-04	4.10E+02	4.61E-02	1.00E+00	3.06E-02	4.09E+01	2.41E+02	1.87E-02	2.34E+02	1.75E-01
UMH2-200 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	4.29E+03	2.01E+01	NA	NA	NA	NA	1.13E-04	6.83E+03	7.68E-01	1.00E+00	3.06E-02	6.82E+02	2.41E+02	1.87E-02	2.34E+02	2.92E+00
UMH2-200+85 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	5.32E+02	2.50E+00	NA	NA	NA	NA	1.13E-04	8.47E+02	9.53E-02	1.00E+00	3.06E-02	8.47E+01	2.41E+02	1.87E-02	2.34E+02	3.62E-01
UMH2-250 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	3.39E+03	1.59E+01	NA	NA	NA	NA	1.13E-04	5.40E+03	6.08E-01	1.00E+00	3.06E-02	5.40E+02	2.41E+02	1.87E-02	2.34E+02	2.31E+00
UMH2-250+75 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	2.94E+02	1.38E+00	NA	NA	NA	NA	1.13E-04	4.69E+02	5.27E-02	1.00E+00	3.06E-02	4.68E+01	2.41E+02	1.87E-02	2.34E+02	2.00E-01
UMH2-300 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	4.78E+02	2.24E+00	NA	NA	NA	NA	1.13E-04	7.60E+02	8.56E-02	1.00E+00	3.06E-02	7.60E+01	2.41E+02	1.87E-02	2.34E+02	3.25E-01
UMH2-300+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	7.78E+01	3.65E-01	NA	NA	NA	NA	1.13E-04	1.24E+02	1.39E-02	1.00E+00	3.06E-02	1.24E+01	2.41E+02	1.87E-02	2.34E+02	5.30E-02
UMH2-350 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	3.65E+02	1.71E+00	NA	NA	NA	NA	1.13E-04	5.81E+02	6.54E-02	1.00E+00	3.06E-02	5.80E+01	2.41E+02	1.87E-02	2.34E+02	2.48E-01
UMH2-350+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	7.92E+01	3.71E-01	NA	NA	NA	NA	1.13E-04	1.26E+02	1.42E-02	1.00E+00	3.06E-02	1.26E+01	2.41E+02	1.87E-02	2.34E+02	5.39E-02
UMH2-400 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	3.80E+02	1.78E+00	NA	NA	NA	NA	1.13E-04	6.04E+02	6.80E-02	1.00E+00	3.06E-02	6.04E+01	2.41E+02	1.87E-02	2.34E+02	2.58E-01
UMH2-400+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	4.76E+01	2.23E-01	NA	NA	NA	NA	1.13E-04	7.57E+01	8.52E-03	1.00E+00	3.06E-02	7.57E+00	2.41E+02	1.87E-02	2.34E+02	3.24E-02
UMH2-450 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	2.67E+03	1.25E+01	NA	NA	NA	NA	1.13E-04	4.25E+03	4.78E-01	1.00E+00	3.06E-02	4.24E+02	2.41E+02	1.87E-02	2.34E+02	1.82E+00
UMH2-450+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	1.70E+02	7.96E-01	NA	NA	NA	NA	1.13E-04	2.70E+02	3.04E-02	1.00E+00	3.06E-02	2.70E+01	2.41E+02	1.87E-02	2.34E+02	1.16E-01
UMH2-50 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	4.10E+02	1.92E+00	NA	NA	NA	NA	1.13E-04	6.52E+02	7.34E-02	1.00E+00	3.06E-02	6.52E+01	2.41E+02	1.87E-02	2.34E+02	2.79E-01
UMH2-50+25b (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UMH2-500 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	5.43E+03	2.55E+01	NA	NA	NA	NA	1.13E-04	8.65E+03	9.73E-01	1.00E+00	3.06E-02	8.64E+02	2.41E+02	1.87E-02	2.34E+02	3.70E+00
UMH2-500+75 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	1.64E+02	7.70E-01	NA	NA	NA	NA	1.13E-04	2.61E+02	2.94E-02	1.00E+00	3.06E-02	2.61E+01	2.41E+02	1.87E-02	2.34E+02	1.12E-01
UMH2-550 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	6.95E+03	3.26E+01	NA	NA	NA	NA	1.13E-04	1.11E+04	1.24E+00	1.00E+00	3.06E-02	1.11E+03	2.41E+02	1.87E-02	2.34E+02	4.73E+00
UMH2-550+75 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	3.87E+01	1.82E-01	NA	NA	NA	NA	1.13E-04	6.16E+01	6.94E-03	1.00E+00	3.06E-02	6.16E+00	2.41E+02	1.87E-02	2.34E+02	2.64E-02
UMH2-600 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	1.70E+03	7.99E+00	NA	NA	NA	NA	1.13E-04	2.71E+03	3.05E-01	1.00E+00	3.06E-02	2.71E+02	2.41E+02	1.87E-02	2.34E+02	1.16E+00
UMH2-600+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	7.25E+01	3.40E-01	NA	NA	NA	NA	1.13E-04	1.15E+02	1.30E-02	1.00E+00	3.06E-02	1.15E+01	2.41E+02	1.87E-02	2.34E+02	4.94E-02
UMH2-650 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	2.25E+03	1.05E+01	NA	NA	NA	NA	1.13E-04	3.58E+03	4.02E-01	1.00E+00	3.06E-02	3.57E+02	2.41E+02	1.87E-02	2.34E+02	1.53E+00
UMH2-650+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	1.44E+02	6.77E-01	NA	NA	NA	NA	1.13E-04	2.30E+02	2.59E-02	1.00E+00	3.06E-02	2.30E+01	2.41E+02	1.87E-02	2.34E+02	9.83E-02
UMH2-Comp 1 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	4.97E+03	2.33E+01	NA	NA	NA	NA	1.13E-04	7.92E+03	8.91E-01	1.00E+00	3.06E-02	7.91E+02	2.41E+02	1.87E-02	2.34E+02	3.39E+00
UMH2-Comp 2 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	6.49E+03	3.04E+01	NA	NA	NA	NA	1.13E-04	1.03E+04	1.16E+00	1.00E+00	3.06E-02	1.03E+03	2.41E+02	1.87E-02	2.34E+02	4.42E+00
Waste Area 3																						**Maximum HQ (Waste Areas 1 and 2)**	**4.73E+00**
UMH3-00 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	1.03E+02	4.85E-01	NA	NA	NA	NA	1.13E-04	1.65E+02	1.85E-02	1.00E+00	3.06E-02	1.65E+01	2.41E+02	1.87E-02	2.34E+02	7.04E-02
UMH3-100 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	1.41E+02	6.61E-01	NA	NA	NA	NA	1.13E-04	2.24E+02	2.53E-02	1.00E+00	3.06E-02	2.24E+01	2.41E+02	1.87E-02	2.34E+02	9.60E-02
UMH3-150 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	1.19E+03	5.57E+00	NA	NA	NA	NA	1.13E-04	1.89E+03	2.13E-01	1.00E+00	3.06E-02	1.89E+02	2.41E+02	1.87E-02	2.34E+02	8.09E-01
UMH3-200 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	1.90E+03	8.92E+00	NA	NA	NA	NA	1.13E-04	3.03E+03	3.41E-01	1.00E+00	3.06E-02	3.03E+02	2.41E+02	1.87E-02	2.34E+02	1.30E+00
UMH3-250 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	7.10E+03	3.33E+01	NA	NA	NA	NA	1.13E-04	1.13E+04	1.27E+00	1.00E+00	3.06E-02	1.13E+03	2.41E+02	1.87E-02	2.34E+02	4.83E+00
UMH3-300 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	9.15E+01	4.29E-01	NA	NA	NA	NA	1.13E-04	1.46E+02	1.64E-02	1.00E+00	3.06E-02	1.46E+01	2.41E+02	1.87E-02	2.34E+02	6.23E-02
UMH3-350 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	1.06E+04	4.95E+01	NA	NA	NA	NA	1.13E-04	1.68E+04	1.89E+00	1.00E+00	3.06E-02	1.68E+03	2.41E+02	1.87E-02	2.34E+02	7.19E+00
UMH3-350+75 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	1.07E+02	5.04E-01	NA	NA	NA	NA	1.13E-04	1.71E+02	1.93E-02	1.00E+00	3.06E-02	1.71E+01	2.41E+02	1.87E-02	2.34E+02	7.32E-02
UMH3-400 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	6.03E+03	2.83E+01	NA	NA	NA	NA	1.13E-04	9.59E+03	1.08E+00	1.00E+00	3.06E-02	9.59E+02	2.41E+02	1.87E-02	2.34E+02	4.10E+00
UMH3-400+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	2.32E+02	1.09E+00	NA	NA	NA	NA	1.13E-04	3.69E+02	4.15E-02	1.00E+00	3.06E-02	3.69E+01	2.41E+02	1.87E-02	2.34E+02	1.58E-01
UMH3-450 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	6.24E+01	2.92E-01	NA	NA	NA	NA	1.13E-04	9.93E+01	1.12E-02	1.00E+00	3.06E-02	9.92E+00	2.41E+02	1.87E-02	2.34E+02	4.25E-02
UMH3-50 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	1.33E+02	6.26E-01	NA	NA	NA	NA	1.13E-04	2.12E+02	2.39E-02	1.00E+00	3.06E-02	2.12E+01	2.41E+02	1.87E-02	2.34E+02	9.09E-02
UMH3-50+50 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	1.98E+02	9.26E-01	NA	NA	NA	NA	1.13E-04	3.14E+02	3.54E-02	1.00E+00	3.06E-02	3.14E+01	2.41E+02	1.87E-02	2.34E+02	1.34E-01
UMH3-500 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	9.40E+02	4.41E+00	NA	NA	NA	NA	1.13E-04	1.50E+03	1.68E-01	1.00E+00	3.06E-02	1.50E+02	2.41E+02	1.87E-02	2.34E+02	6.40E-01
UMH3-550 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	7.78E+03	3.65E+01	NA	NA	NA	NA	1.13E-04	1.24E+04	1.39E+00	1.00E+00	3.06E-02	1.24E+03	2.41E+02	1.87E-02	2.34E+02	5.29E+00
UMH3-600 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	9.71E+03	4.55E+01	NA	NA	NA	NA	1.13E-04	1.54E+04	1.74E+00	1.00E+00	3.06E-02	1.54E+03	2.41E+02	1.87E-02	2.34E+02	6.61E+00
UMH3-650 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	9.72E+03	4.56E+01	NA	NA	NA	NA	1.13E-04	1.55E+04	1.74E+00	1.00E+00	3.06E-02	1.55E+03	2.41E+02	1.87E-02	2.34E+02	6.62E+00
UMH3-700 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	9.39E+03	4.40E+01	NA	NA	NA	NA	1.13E-04	1.49E+04	1.68E+00	1.00E+00	3.06E-02	1.49E+03	2.41E+02	1.87E-02	2.34E+02	6.39E+00
UMH3-750 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	7.17E+02	3.36E+00	NA	NA	NA	NA	1.13E-04	1.14E+03	1.28E-01	1.00E+00	3.06E-02	1.14E+02	2.41E+02	1.87E-02	2.34E+02	4.88E-01
UMH3-800 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	1.32E+03	6.20E+00	NA	NA	NA	NA	1.13E-04	2.10E+03	2.37E-01	1.00E+00	3.06E-02	2.10E+02	2.41E+02	1.87E-02	2.34E+02	9.00E-01
UMH3-Comp 1 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	4.59E+02	2.15E+00	NA	NA	NA	NA	1.13E-04	7.30E+02	8.22E-02	1.00E+00	3.06E-02	7.30E+01	2.41E+02	1.87E-02	2.34E+02	3.12E-01
UMH3-Comp 2 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	5.48E+03	2.57E+01	NA	NA	NA	NA	1.13E-04	8.73E+03	9.82E-01	1.00E+00	3.06E-02	8.72E+02	2.41E+02	1.87E-02	2.34E+02	3.73E+00
UMH3-Comp 3 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	9.03E+03	4.23E+01	NA	NA	NA	NA	1.13E-04	1.44E+04	1.62E+00	1.00E+00	3.06E-02	1.44E+03	2.41E+02	1.87E-02	2.34E+02	6.15E+00
																						Maximum HQ (Waste Area 3)	**7.19E+00**

TABLE C-8D: LEAD DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 8 - MIKE HORSE MINE WASTE PILES (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **1.73**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
White-Tailed Deer (Large Herbivorous Mammal - Terrestrial)																							
Reference Sites																							
BCBG-1 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	4.35E-02	3.65E+00	5.22E+00	NA	NA	NA	NA	2.86E-02	8.40E+01	2.40E+00	9.68E-03	1.35E+02	5.47E-04	2.41E+02	1.87E-02	1.41E+02	3.87E-06
MHBG-201 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	4.35E-02	1.45E+00	2.07E+00	NA	NA	NA	NA	2.86E-02	3.33E+01	9.55E-01	9.68E-03	1.35E+02	2.17E-04	2.41E+02	1.87E-02	1.41E+02	1.54E-06
MHBG-202 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	4.35E-02	7.86E+00	1.13E+01	NA	NA	NA	NA	2.86E-02	1.81E+02	5.18E+00	9.68E-03	1.35E+02	1.18E-03	2.41E+02	1.87E-02	1.41E+02	8.34E-06
Mike Horse Creek Channel Area Deposits																						**Minimum HQ (Reference Site)**	**8.34E-06**
AMHR-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	7.19E+01	1.03E+02	NA	NA	NA	NA	2.86E-02	1.14E+02	3.28E+00	9.68E-03	1.35E+02	7.61E-03	2.41E+02	1.87E-02	1.41E+02	5.39E-05
AMHR-200 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	6.96E+01	9.97E+01	NA	NA	NA	NA	2.86E-02	1.11E+02	3.17E+00	9.68E-03	1.35E+02	7.38E-03	2.41E+02	1.87E-02	1.41E+02	5.22E-05
AMHR-400 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	3.53E+02	5.06E+02	NA	NA	NA	NA	2.86E-02	5.62E+02	1.61E+01	9.68E-03	1.35E+02	3.74E-02	2.41E+02	1.87E-02	1.41E+02	2.65E-04
AMHR-600 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	4.15E+02	5.93E+02	NA	NA	NA	NA	2.86E-02	6.60E+02	1.89E+01	9.68E-03	1.35E+02	4.39E-02	2.41E+02	1.87E-02	1.41E+02	3.11E-04
MHCS-00-E25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	2.43E+03	3.48E+03	NA	NA	NA	NA	2.86E-02	3.87E+03	1.11E+02	9.68E-03	1.35E+02	2.57E-01	2.41E+02	1.87E-02	1.41E+02	1.82E-03
MHCS-0-W25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	2.80E+02	4.01E+02	NA	NA	NA	NA	2.86E-02	4.46E+02	1.28E+01	9.68E-03	1.35E+02	2.97E-02	2.41E+02	1.87E-02	1.41E+02	2.10E-04
MHCS-0-W5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	2.00E+02	2.86E+02	NA	NA	NA	NA	2.86E-02	3.19E+02	9.12E+00	9.68E-03	1.35E+02	2.12E-02	2.41E+02	1.87E-02	1.41E+02	1.50E-04
MHCS-100-E25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	3.58E+03	5.13E+03	NA	NA	NA	NA	2.86E-02	5.70E+03	1.63E+02	9.68E-03	1.35E+02	3.79E-01	2.41E+02	1.87E-02	1.41E+02	2.69E-03
MHCS-100-W1 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	2.44E+03	3.50E+03	NA	NA	NA	NA	2.86E-02	3.89E+03	1.11E+02	9.68E-03	1.35E+02	2.59E-01	2.41E+02	1.87E-02	1.41E+02	1.83E-03
MHCS-100-W25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	2.15E+02	3.07E+02	NA	NA	NA	NA	2.86E-02	3.42E+02	9.78E+00	9.68E-03	1.35E+02	2.27E-02	2.41E+02	1.87E-02	1.41E+02	1.61E-04
MHCS-200-E10 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	1.22E+03	1.75E+03	NA	NA	NA	NA	2.86E-02	1.95E+03	5.58E+01	9.68E-03	1.35E+02	1.30E-01	2.41E+02	1.87E-02	1.41E+02	9.18E-04
MHCS-200-E25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	6.45E+01	9.23E+01	NA	NA	NA	NA	2.86E-02	1.03E+02	2.94E+00	9.68E-03	1.35E+02	6.83E-03	2.41E+02	1.87E-02	1.41E+02	4.83E-05
MHCS-200-W10 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	1.83E+02	2.62E+02	NA	NA	NA	NA	2.86E-02	2.92E+02	8.36E+00	9.68E-03	1.35E+02	1.94E-02	2.41E+02	1.87E-02	1.41E+02	1.38E-04
MHCS-525-E5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	2.35E+02	3.36E+02	NA	NA	NA	NA	2.86E-02	3.74E+02	1.07E+01	9.68E-03	1.35E+02	2.49E-02	2.41E+02	1.87E-02	1.41E+02	1.76E-04
MHCS-525-W15 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	1.72E+03	2.46E+03	NA	NA	NA	NA	2.86E-02	2.73E+03	7.83E+01	9.68E-03	1.35E+02	1.82E-01	2.41E+02	1.87E-02	1.41E+02	1.29E-03
MHCS-600-E10 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	2.17E+03	3.11E+03	NA	NA	NA	NA	2.86E-02	3.45E+03	9.89E+01	9.68E-03	1.35E+02	2.30E-01	2.41E+02	1.87E-02	1.41E+02	1.63E-03
MHCS-600-W10 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	1.94E+03	2.78E+03	NA	NA	NA	NA	2.86E-02	3.09E+03	8.84E+01	9.68E-03	1.35E+02	2.05E-01	2.41E+02	1.87E-02	1.41E+02	1.45E-03
MHCS-700-E10 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	1.90E+03	2.72E+03	NA	NA	NA	NA	2.86E-02	3.03E+03	8.67E+01	9.68E-03	1.35E+02	2.01E-01	2.41E+02	1.87E-02	1.41E+02	1.43E-03
MHCS-700-E25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	1.12E+02	1.60E+02	NA	NA	NA	NA	2.86E-02	1.78E+02	5.11E+00	9.68E-03	1.35E+02	1.19E-02	2.41E+02	1.87E-02	1.41E+02	8.40E-05
MHCS-700-W10 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	2.08E+03	2.98E+03	NA	NA	NA	NA	2.86E-02	3.31E+03	9.47E+01	9.68E-03	1.35E+02	2.20E-01	2.41E+02	1.87E-02	1.41E+02	1.56E-03
MHCS-800-E15 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	1.05E+02	1.50E+02	NA	NA	NA	NA	2.86E-02	1.66E+02	4.77E+00	9.68E-03	1.35E+02	1.11E-02	2.41E+02	1.87E-02	1.41E+02	7.84E-05
MHCS-800-E5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	1.65E+03	2.37E+03	NA	NA	NA	NA	2.86E-02	2.63E+03	7.54E+01	9.68E-03	1.35E+02	1.75E-01	2.41E+02	1.87E-02	1.41E+02	1.24E-03
MHCS-800-W5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	9.87E+02	1.41E+03	NA	NA	NA	NA	2.86E-02	1.57E+03	4.50E+01	9.68E-03	1.35E+02	1.05E-01	2.41E+02	1.87E-02	1.41E+02	7.41E-04
MHCS-900-E15 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	8.20E+01	1.17E+02	NA	NA	NA	NA	2.86E-02	1.31E+02	3.74E+00	9.68E-03	1.35E+02	8.69E-03	2.41E+02	1.87E-02	1.41E+02	6.15E-05
MHCS-900-E5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	1.69E+03	2.41E+03	NA	NA	NA	NA	2.86E-02	2.68E+03	7.68E+01	9.68E-03	1.35E+02	1.78E-01	2.41E+02	1.87E-02	1.41E+02	1.26E-03
MHCS-900-W5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	1.11E+03	1.59E+03	NA	NA	NA	NA	2.86E-02	1.77E+03	5.07E+01	9.68E-03	1.35E+02	1.18E-01	2.41E+02	1.87E-02	1.41E+02	8.35E-04
MHCS-1000-E10 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	1.90E+02	2.73E+02	NA	NA	NA	NA	2.86E-02	3.03E+02	8.68E+00	9.68E-03	1.35E+02	2.02E-02	2.41E+02	1.87E-02	1.41E+02	1.43E-04
MHCS-1000-W5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	2.33E+03	3.33E+03	NA	NA	NA	NA	2.86E-02	3.70E+03	1.06E+02	9.68E-03	1.35E+02	2.46E-01	2.41E+02	1.87E-02	1.41E+02	1.74E-03
MHCS-1100-E10 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	1.51E+02	2.17E+02	NA	NA	NA	NA	2.86E-02	2.41E+02	6.89E+00	9.68E-03	1.35E+02	1.60E-02	2.41E+02	1.87E-02	1.41E+02	1.13E-04
MHCS-1100-E35 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	6.87E+01	9.83E+01	NA	NA	NA	NA	2.86E-02	1.09E+02	3.13E+00	9.68E-03	1.35E+02	7.27E-03	2.41E+02	1.87E-02	1.41E+02	5.15E-05
MHCS-1200-E15 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	3.88E+02	5.56E+02	NA	NA	NA	NA	2.86E-02	6.18E+02	1.77E+01	9.68E-03	1.35E+02	4.11E-02	2.41E+02	1.87E-02	1.41E+02	2.91E-04
MHCS-1200-E30 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	1.22E+02	1.75E+02	NA	NA	NA	NA	2.86E-02	1.95E+02	5.57E+00	9.68E-03	1.35E+02	1.29E-02	2.41E+02	1.87E-02	1.41E+02	9.17E-05
MHCS-1300-E20 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	5.48E+02	7.84E+02	NA	NA	NA	NA	2.86E-02	8.72E+02	2.50E+01	9.68E-03	1.35E+02	5.80E-02	2.41E+02	1.87E-02	1.41E+02	4.11E-04
MHCS-1300-E35 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	2.15E+02	3.08E+02	NA	NA	NA	NA	2.86E-02	3.43E+02	9.81E+00	9.68E-03	1.35E+02	2.28E-02	2.41E+02	1.87E-02	1.41E+02	1.61E-04
Waste Areas 1 and 2																						**Maximum HQ (Mike Horse Creek Channel Area Deposits)**	**2.69E-03**
UMH1-00 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	1.11E+03	1.59E+03	NA	NA	NA	NA	2.86E-02	1.76E+03	5.05E+01	9.68E-03	1.35E+02	1.17E-01	2.41E+02	1.87E-02	1.41E+02	8.31E-04
UMH1-100 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	1.37E+03	1.96E+03	NA	NA	NA	NA	2.86E-02	2.18E+03	6.25E+01	9.68E-03	1.35E+02	1.45E-01	2.41E+02	1.87E-02	1.41E+02	1.03E-03
UMH1-150 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	6.49E+02	9.29E+02	NA	NA	NA	NA	2.86E-02	1.03E+03	2.96E+01	9.68E-03	1.35E+02	6.87E-02	2.41E+02	1.87E-02	1.41E+02	4.87E-04
UMH1-200 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	3.11E+01	4.45E+01	NA	NA	NA	NA	2.86E-02	4.95E+01	1.42E+00	9.68E-03	1.35E+02	3.29E-03	2.41E+02	1.87E-02	1.41E+02	2.33E-05
UMH1-250 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	5.08E+02	7.27E+02	NA	NA	NA	NA	2.86E-02	8.08E+02	2.31E+01	9.68E-03	1.35E+02	5.38E-02	2.41E+02	1.87E-02	1.41E+02	3.81E-04
UMH1-250+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	1.15E+02	1.65E+02	NA	NA	NA	NA	2.86E-02	1.84E+02	5.26E+00	9.68E-03	1.35E+02	1.22E-02	2.41E+02	1.87E-02	1.41E+02	8.65E-05
UMH1-300 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	1.07E+03	1.53E+03	NA	NA	NA	NA	2.86E-02	1.70E+03	4.86E+01	9.68E-03	1.35E+02	1.13E-01	2.41E+02	1.87E-02	1.41E+02	8.00E-04
UMH1-300+14 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	7.71E+01	1.10E+02	NA	NA	NA	NA	2.86E-02	1.23E+02	3.51E+00	9.68E-03	1.35E+02	8.16E-03	2.41E+02	1.87E-02	1.41E+02	5.78E-05
UMH1-350 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	1.24E+03	1.78E+03	NA	NA	NA	NA	2.86E-02	1.98E+03	5.66E+01	9.68E-03	1.35E+02	1.32E-01	2.41E+02	1.87E-02	1.41E+02	9.32E-04
UMH1-350+12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	1.00E+02	1.44E+02	NA	NA	NA	NA	2.86E-02	1.60E+02	4.57E+00	9.68E-03	1.35E+02	1.06E-02	2.41E+02	1.87E-02	1.41E+02	7.52E-05
UMH1-400 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	5.20E+02	7.44E+02	NA	NA	NA	NA	2.86E-02	8.28E+02	2.37E+01	9.68E-03	1.35E+02	5.51E-02	2.41E+02	1.87E-02	1.41E+02	3.90E-04
UMH1-400+12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	6.47E+01	9.26E+01	NA	NA	NA	NA	2.86E-02	1.03E+02	2.95E+00	9.68E-03	1.35E+02	6.85E-03	2.41E+02	1.87E-02	1.41E+02	4.85E-05
UMH1-450 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	7.31E+02	1.05E+03	NA	NA	NA	NA	2.86E-02	1.16E+03	3.33E+01	9.68E-03	1.35E+02	7.74E-02	2.41E+02	1.87E-02	1.41E+02	5.48E-04
UMH1-450+12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	5.48E+01	7.84E+01	NA	NA	NA	NA	2.86E-02	8.72E+01	2.50E+00	9.68E-03	1.35E+02	5.80E-03	2.41E+02	1.87E-02	1.41E+02	4.11E-05
UMH1-50 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	6.47E+01	9.26E+01	NA	NA	NA	NA	2.86E-02	1.03E+02	2.95E+00	9.68E-03	1.35E+02	6.85E-03	2.41E+02	1.87E-02	1.41E+02	4.85E-05
UMH1-Comp (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	1.22E+03	1.74E+03	NA	NA	NA	NA	2.86E-02	1.94E+03	5.55E+01	9.68E-03	1.35E+02	1.29E-01	2.41E+02	1.87E-02	1.41E+02	9.12E-04
UMH2-00 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	4.13E+03	5.91E+03	NA	NA	NA	NA	2.86E-02	6.57E+03	1.88E+02	9.68E-03	1.35E+02	4.37E-01	2.41E+02	1.87E-02	1.41E+02	3.10E-03

TABLE C-8D: LEAD DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 8 - MIKE HORSE MINE WASTE PILES (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **1.73**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
White-Tailed Deer (Large Herbivorous Mammal - Terrestrial)																							
UMH2-00+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	1.31E+02	1.87E+02	NA	NA	NA	NA	2.86E-02	2.08E+02	5.95E+00	9.68E-03	1.35E+02	1.38E-02	2.41E+02	1.87E-02	1.41E+02	9.79E-05
UMH2-100 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	4.59E+03	6.57E+03	NA	NA	NA	NA	2.86E-02	7.30E+03	2.09E+02	9.68E-03	1.35E+02	4.86E-01	2.41E+02	1.87E-02	1.41E+02	3.44E-03
UMH2-100+35 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	2.97E+02	4.25E+02	NA	NA	NA	NA	2.86E-02	4.73E+02	1.35E+01	9.68E-03	1.35E+02	3.15E-02	2.41E+02	1.87E-02	1.41E+02	2.23E-04
UMH2-150 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	2.12E+03	3.03E+03	NA	NA	NA	NA	2.86E-02	3.37E+03	9.65E+01	9.68E-03	1.35E+02	2.24E-01	2.41E+02	1.87E-02	1.41E+02	1.59E-03
UMH2-150+60 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	2.57E+02	3.68E+02	NA	NA	NA	NA	2.86E-02	4.10E+02	1.17E+01	9.68E-03	1.35E+02	2.73E-02	2.41E+02	1.87E-02	1.41E+02	1.93E-04
UMH2-200 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	4.29E+03	6.14E+03	NA	NA	NA	NA	2.86E-02	6.83E+03	1.95E+02	9.68E-03	1.35E+02	4.54E-01	2.41E+02	1.87E-02	1.41E+02	3.22E-03
UMH2-200+85 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	5.32E+02	7.62E+02	NA	NA	NA	NA	2.86E-02	8.47E+02	2.43E+01	9.68E-03	1.35E+02	5.64E-02	2.41E+02	1.87E-02	1.41E+02	3.99E-04
UMH2-250 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	3.39E+03	4.86E+03	NA	NA	NA	NA	2.86E-02	5.40E+03	1.55E+02	9.68E-03	1.35E+02	3.59E-01	2.41E+02	1.87E-02	1.41E+02	2.54E-03
UMH2-250+75 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	2.94E+02	4.21E+02	NA	NA	NA	NA	2.86E-02	4.69E+02	1.34E+01	9.68E-03	1.35E+02	3.12E-02	2.41E+02	1.87E-02	1.41E+02	2.21E-04
UMH2-300 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	4.78E+02	6.84E+02	NA	NA	NA	NA	2.86E-02	7.60E+02	2.18E+01	9.68E-03	1.35E+02	5.06E-02	2.41E+02	1.87E-02	1.41E+02	3.58E-04
UMH2-300+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	7.78E+01	1.11E+02	NA	NA	NA	NA	2.86E-02	1.24E+02	3.55E+00	9.68E-03	1.35E+02	8.24E-03	2.41E+02	1.87E-02	1.41E+02	5.84E-05
UMH2-350 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	3.65E+02	5.22E+02	NA	NA	NA	NA	2.86E-02	5.81E+02	1.66E+01	9.68E-03	1.35E+02	3.86E-02	2.41E+02	1.87E-02	1.41E+02	2.74E-04
UMH2-350+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	7.92E+01	1.13E+02	NA	NA	NA	NA	2.86E-02	1.26E+02	3.61E+00	9.68E-03	1.35E+02	8.38E-03	2.41E+02	1.87E-02	1.41E+02	5.94E-05
UMH2-400 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	3.80E+02	5.43E+02	NA	NA	NA	NA	2.86E-02	6.04E+02	1.73E+01	9.68E-03	1.35E+02	4.02E-02	2.41E+02	1.87E-02	1.41E+02	2.85E-04
UMH2-400+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	4.76E+01	6.81E+01	NA	NA	NA	NA	2.86E-02	7.57E+01	2.17E+00	9.68E-03	1.35E+02	5.04E-03	2.41E+02	1.87E-02	1.41E+02	3.57E-05
UMH2-450 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	2.67E+03	3.82E+03	NA	NA	NA	NA	2.86E-02	4.25E+03	1.22E+02	9.68E-03	1.35E+02	2.83E-01	2.41E+02	1.87E-02	1.41E+02	2.00E-03
UMH2-450+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	1.70E+02	2.43E+02	NA	NA	NA	NA	2.86E-02	2.70E+02	7.74E+00	9.68E-03	1.35E+02	1.80E-02	2.41E+02	1.87E-02	1.41E+02	1.27E-04
UMH2-50 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	4.10E+02	5.86E+02	NA	NA	NA	NA	2.86E-02	6.52E+02	1.87E+01	9.68E-03	1.35E+02	4.34E-02	2.41E+02	1.87E-02	1.41E+02	3.07E-04
UMH2-50+25b (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UMH2-500 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	5.43E+03	7.78E+03	NA	NA	NA	NA	2.86E-02	8.65E+03	2.48E+02	9.68E-03	1.35E+02	5.75E-01	2.41E+02	1.87E-02	1.41E+02	4.07E-03
UMH2-500+75 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	1.64E+02	2.35E+02	NA	NA	NA	NA	2.86E-02	2.61E+02	7.48E+00	9.68E-03	1.35E+02	1.74E-02	2.41E+02	1.87E-02	1.41E+02	1.23E-04
UMH2-550 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	6.95E+03	9.95E+03	NA	NA	NA	NA	2.86E-02	1.11E+04	3.17E+02	9.68E-03	1.35E+02	7.36E-01	2.41E+02	1.87E-02	1.41E+02	5.21E-03
UMH2-550+75 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	3.87E+01	5.54E+01	NA	NA	NA	NA	2.86E-02	6.16E+01	1.76E+00	9.68E-03	1.35E+02	4.10E-03	2.41E+02	1.87E-02	1.41E+02	2.90E-05
UMH2-600 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	1.70E+03	2.44E+03	NA	NA	NA	NA	2.86E-02	2.71E+03	7.76E+01	9.68E-03	1.35E+02	1.80E-01	2.41E+02	1.87E-02	1.41E+02	1.28E-03
UMH2-600+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	7.25E+01	1.04E+02	NA	NA	NA	NA	2.86E-02	1.15E+02	3.30E+00	9.68E-03	1.35E+02	7.68E-03	2.41E+02	1.87E-02	1.41E+02	5.44E-05
UMH2-650 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	2.25E+03	3.22E+03	NA	NA	NA	NA	2.86E-02	3.58E+03	1.02E+02	9.68E-03	1.35E+02	2.38E-01	2.41E+02	1.87E-02	1.41E+02	1.68E-03
UMH2-650+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	1.44E+02	2.07E+02	NA	NA	NA	NA	2.86E-02	2.30E+02	6.58E+00	9.68E-03	1.35E+02	1.53E-02	2.41E+02	1.87E-02	1.41E+02	1.08E-04
UMH2-Comp 1 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	4.97E+03	7.12E+03	NA	NA	NA	NA	2.86E-02	7.92E+03	2.27E+02	9.68E-03	1.35E+02	5.27E-01	2.41E+02	1.87E-02	1.41E+02	3.73E-03
UMH2-Comp 2 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	6.49E+03	9.29E+03	NA	NA	NA	NA	2.86E-02	1.03E+04	2.96E+02	9.68E-03	1.35E+02	6.87E-01	2.41E+02	1.87E-02	1.41E+02	4.87E-03
Waste Area 3																						**Maximum HQ (Waste Areas 1 and 2)**	**5.21E-03**
UMH3-00 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	1.03E+02	1.48E+02	NA	NA	NA	NA	2.86E-02	1.65E+02	4.71E+00	9.68E-03	1.35E+02	1.10E-02	2.41E+02	1.87E-02	1.41E+02	7.76E-05
UMH3-100 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	1.41E+02	2.02E+02	NA	NA	NA	NA	2.86E-02	2.24E+02	6.43E+00	9.68E-03	1.35E+02	1.49E-02	2.41E+02	1.87E-02	1.41E+02	1.06E-04
UMH3-150 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	1.19E+03	1.70E+03	NA	NA	NA	NA	2.86E-02	1.89E+03	5.42E+01	9.68E-03	1.35E+02	1.26E-01	2.41E+02	1.87E-02	1.41E+02	8.91E-04
UMH3-200 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	1.90E+03	2.72E+03	NA	NA	NA	NA	2.86E-02	3.03E+03	8.67E+01	9.68E-03	1.35E+02	2.02E-01	2.41E+02	1.87E-02	1.41E+02	1.43E-03
UMH3-250 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	7.10E+03	1.02E+04	NA	NA	NA	NA	2.86E-02	1.13E+04	3.23E+02	9.68E-03	1.35E+02	7.52E-01	2.41E+02	1.87E-02	1.41E+02	5.32E-03
UMH3-300 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	9.15E+01	1.31E+02	NA	NA	NA	NA	2.86E-02	1.46E+02	4.17E+00	9.68E-03	1.35E+02	9.70E-03	2.41E+02	1.87E-02	1.41E+02	6.87E-05
UMH3-350 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	1.06E+04	1.51E+04	NA	NA	NA	NA	2.86E-02	1.68E+04	4.82E+02	9.68E-03	1.35E+02	1.12E+00	2.41E+02	1.87E-02	1.41E+02	7.92E-03
UMH3-350+75 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	1.07E+02	1.54E+02	NA	NA	NA	NA	2.86E-02	1.71E+02	4.90E+00	9.68E-03	1.35E+02	1.14E-02	2.41E+02	1.87E-02	1.41E+02	8.06E-05
UMH3-400 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	6.03E+03	8.63E+03	NA	NA	NA	NA	2.86E-02	9.59E+03	2.75E+02	9.68E-03	1.35E+02	6.38E-01	2.41E+02	1.87E-02	1.41E+02	4.52E-03
UMH3-400+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	2.32E+02	3.32E+02	NA	NA	NA	NA	2.86E-02	3.69E+02	1.06E+01	9.68E-03	1.35E+02	2.46E-02	2.41E+02	1.87E-02	1.41E+02	1.74E-04
UMH3-450 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	6.24E+01	8.93E+01	NA	NA	NA	NA	2.86E-02	9.93E+01	2.84E+00	9.68E-03	1.35E+02	6.60E-03	2.41E+02	1.87E-02	1.41E+02	4.68E-05
UMH3-50 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	1.33E+02	1.91E+02	NA	NA	NA	NA	2.86E-02	2.12E+02	6.08E+00	9.68E-03	1.35E+02	1.41E-02	2.41E+02	1.87E-02	1.41E+02	1.00E-04
UMH3-50+50 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	1.98E+02	2.83E+02	NA	NA	NA	NA	2.86E-02	3.14E+02	9.00E+00	9.68E-03	1.35E+02	2.09E-02	2.41E+02	1.87E-02	1.41E+02	1.48E-04
UMH3-500 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	9.40E+02	1.35E+03	NA	NA	NA	NA	2.86E-02	1.50E+03	4.29E+01	9.68E-03	1.35E+02	9.96E-02	2.41E+02	1.87E-02	1.41E+02	7.05E-04
UMH3-550 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	7.78E+03	1.11E+04	NA	NA	NA	NA	2.86E-02	1.24E+04	3.54E+02	9.68E-03	1.35E+02	8.24E-01	2.41E+02	1.87E-02	1.41E+02	5.83E-03
UMH3-600 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	9.71E+03	1.39E+04	NA	NA	NA	NA	2.86E-02	1.54E+04	4.42E+02	9.68E-03	1.35E+02	1.03E+00	2.41E+02	1.87E-02	1.41E+02	7.28E-03
UMH3-650 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	9.72E+03	1.39E+04	NA	NA	NA	NA	2.86E-02	1.55E+04	4.43E+02	9.68E-03	1.35E+02	1.03E+00	2.41E+02	1.87E-02	1.41E+02	7.29E-03
UMH3-700 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	9.39E+03	1.34E+04	NA	NA	NA	NA	2.86E-02	1.49E+04	4.28E+02	9.68E-03	1.35E+02	9.94E-01	2.41E+02	1.87E-02	1.41E+02	7.04E-03
UMH3-750 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	7.17E+02	1.03E+03	NA	NA	NA	NA	2.86E-02	1.14E+03	3.27E+01	9.68E-03	1.35E+02	7.59E-02	2.41E+02	1.87E-02	1.41E+02	5.38E-04
UMH3-800 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	1.32E+03	1.89E+03	NA	NA	NA	NA	2.86E-02	2.10E+03	6.03E+01	9.68E-03	1.35E+02	1.40E-01	2.41E+02	1.87E-02	1.41E+02	9.91E-04
UMH3-Comp 1 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	4.59E+02	6.57E+02	NA	NA	NA	NA	2.86E-02	7.30E+02	2.09E+01	9.68E-03	1.35E+02	4.86E-02	2.41E+02	1.87E-02	1.41E+02	3.44E-04
UMH3-Comp 2 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	5.48E+03	7.85E+03	NA	NA	NA	NA	2.86E-02	8.73E+03	2.50E+02	9.68E-03	1.35E+02	5.81E-01	2.41E+02	1.87E-02	1.41E+02	4.11E-03
UMH3-Comp 3 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	9.03E+03	1.29E+04	NA	NA	NA	NA	2.86E-02	1.44E+04	4.12E+02	9.68E-03	1.35E+02	9.56E-01	2.41E+02	1.87E-02	1.41E+02	6.77E-03
																						Maximum HQ (Waste Area 3)	**7.92E-03**

TABLE C-8D: LEAD DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 8 - MIKE HORSE MINE WASTE PILES (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **1.73**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Red Fox (Carnivorous Mammal - Terrestrial)																							
Reference Sites																							
BCBG-1 (0-6")	1.72E-01	1.72E-01	7.62E-02	6.40E+00	1.10E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	8.40E+01	4.03E-01	1.28E-03	4.54E+00	4.23E-04	2.41E+02	1.87E-02	1.73E+02	2.44E-06
MHBG-201 (0-6")	1.72E-01	1.72E-01	7.62E-02	2.54E+00	4.36E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.33E+01	1.60E-01	1.28E-03	4.54E+00	1.68E-04	2.41E+02	1.87E-02	1.73E+02	9.70E-07
MHBG-202 (0-6")	1.72E-01	1.72E-01	7.62E-02	1.38E+01	2.36E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.81E+02	8.69E-01	1.28E-03	4.54E+00	9.11E-04	2.41E+02	1.87E-02	1.73E+02	5.26E-06
Mike Horse Creek Channel Area Deposits																						**Minimum HQ (Reference Site)**	**9.70E-07**
AMHR-0 (0-6")	1.72E-01	1.72E-01	9.28E-01	1.06E+02	1.82E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.14E+02	5.50E-01	1.28E-03	4.54E+00	5.29E-03	2.41E+02	1.87E-02	1.73E+02	3.05E-05
AMHR-200 (0-6")	1.72E-01	1.72E-01	9.28E-01	1.03E+02	1.76E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.11E+02	5.33E-01	1.28E-03	4.54E+00	5.12E-03	2.41E+02	1.87E-02	1.73E+02	2.96E-05
AMHR-400 (0-6")	1.72E-01	1.72E-01	9.28E-01	5.22E+02	8.95E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.62E+02	2.70E+00	1.28E-03	4.54E+00	2.60E-02	2.41E+02	1.87E-02	1.73E+02	1.50E-04
AMHR-600 (0-6")	1.72E-01	1.72E-01	9.28E-01	6.12E+02	1.05E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	6.60E+02	3.17E+00	1.28E-03	4.54E+00	3.05E-02	2.41E+02	1.87E-02	1.73E+02	1.76E-04
MHCS-00-E25 (0-6")	1.72E-01	1.72E-01	9.28E-01	3.59E+03	6.16E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.87E+03	1.86E+01	1.28E-03	4.54E+00	1.79E-01	2.41E+02	1.87E-02	1.73E+02	1.03E-03
MHCS-0-W25 (0-6")	1.72E-01	1.72E-01	9.28E-01	4.14E+02	7.10E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.46E+02	2.14E+00	1.28E-03	4.54E+00	2.06E-02	2.41E+02	1.87E-02	1.73E+02	1.19E-04
MHCS-0-W5 (0-6")	1.72E-01	1.72E-01	9.28E-01	2.96E+02	5.07E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.19E+02	1.53E+00	1.28E-03	4.54E+00	1.47E-02	2.41E+02	1.87E-02	1.73E+02	8.50E-05
MHCS-100-E25 (0-6")	1.72E-01	1.72E-01	9.28E-01	5.29E+03	9.07E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.70E+03	2.74E+01	1.28E-03	4.54E+00	2.63E-01	2.41E+02	1.87E-02	1.73E+02	1.52E-03
MHCS-100-W1 (0-6")	1.72E-01	1.72E-01	9.28E-01	3.61E+03	6.19E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.89E+03	1.87E+01	1.28E-03	4.54E+00	1.80E-01	2.41E+02	1.87E-02	1.73E+02	1.04E-03
MHCS-100-W25 (0-6")	1.72E-01	1.72E-01	9.28E-01	3.17E+02	5.44E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.42E+02	1.64E+00	1.28E-03	4.54E+00	1.58E-02	2.41E+02	1.87E-02	1.73E+02	9.12E-05
MHCS-200-E10 (0-6")	1.72E-01	1.72E-01	9.28E-01	1.81E+03	3.10E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.95E+03	9.36E+00	1.28E-03	4.54E+00	9.00E-02	2.41E+02	1.87E-02	1.73E+02	5.20E-04
MHCS-200-E25 (0-6")	1.72E-01	1.72E-01	9.28E-01	9.52E+01	1.63E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.03E+02	4.93E-01	1.28E-03	4.54E+00	4.74E-03	2.41E+02	1.87E-02	1.73E+02	2.74E-05
MHCS-200-W10 (0-6")	1.72E-01	1.72E-01	9.28E-01	2.71E+02	4.65E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.92E+02	1.40E+00	1.28E-03	4.54E+00	1.35E-02	2.41E+02	1.87E-02	1.73E+02	7.79E-05
MHCS-525-E5 (0-6")	1.72E-01	1.72E-01	9.28E-01	3.47E+02	5.95E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.74E+02	1.80E+00	1.28E-03	4.54E+00	1.73E-02	2.41E+02	1.87E-02	1.73E+02	9.98E-05
MHCS-525-W15 (0-6")	1.72E-01	1.72E-01	9.28E-01	2.54E+03	4.35E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.73E+03	1.31E+01	1.28E-03	4.54E+00	1.26E-01	2.41E+02	1.87E-02	1.73E+02	7.30E-04
MHCS-600-E10 (0-6")	1.72E-01	1.72E-01	9.28E-01	3.20E+03	5.50E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.45E+03	1.66E+01	1.28E-03	4.54E+00	1.60E-01	2.41E+02	1.87E-02	1.73E+02	9.22E-04
MHCS-600-W10 (0-6")	1.72E-01	1.72E-01	9.28E-01	2.86E+03	4.91E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.09E+03	1.48E+01	1.28E-03	4.54E+00	1.43E-01	2.41E+02	1.87E-02	1.73E+02	8.24E-04
MHCS-700-E10 (0-6")	1.72E-01	1.72E-01	9.28E-01	2.81E+03	4.82E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.03E+03	1.45E+01	1.28E-03	4.54E+00	1.40E-01	2.41E+02	1.87E-02	1.73E+02	8.08E-04
MHCS-700-E25 (0-6")	1.72E-01	1.72E-01	9.28E-01	1.66E+02	2.84E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.78E+02	8.57E-01	1.28E-03	4.54E+00	8.24E-03	2.41E+02	1.87E-02	1.73E+02	4.76E-05
MHCS-700-W10 (0-6")	1.72E-01	1.72E-01	9.28E-01	3.07E+03	5.27E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.31E+03	1.59E+01	1.28E-03	4.54E+00	1.53E-01	2.41E+02	1.87E-02	1.73E+02	8.83E-04
MHCS-800-E15 (0-6")	1.72E-01	1.72E-01	9.28E-01	1.54E+02	2.65E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.66E+02	7.99E-01	1.28E-03	4.54E+00	7.69E-03	2.41E+02	1.87E-02	1.73E+02	4.44E-05
MHCS-800-E5 (0-6")	1.72E-01	1.72E-01	9.28E-01	2.44E+03	4.19E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.63E+03	1.26E+01	1.28E-03	4.54E+00	1.22E-01	2.41E+02	1.87E-02	1.73E+02	7.03E-04
MHCS-800-W5 (0-6")	1.72E-01	1.72E-01	9.28E-01	1.46E+03	2.50E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.57E+03	7.55E+00	1.28E-03	4.54E+00	7.26E-02	2.41E+02	1.87E-02	1.73E+02	4.20E-04
MHCS-900-E15 (0-6")	1.72E-01	1.72E-01	9.28E-01	1.21E+02	2.08E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.31E+02	6.27E-01	1.28E-03	4.54E+00	6.03E-03	2.41E+02	1.87E-02	1.73E+02	3.48E-05
MHCS-900-E5 (0-6")	1.72E-01	1.72E-01	9.28E-01	2.49E+03	4.27E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.68E+03	1.29E+01	1.28E-03	4.54E+00	1.24E-01	2.41E+02	1.87E-02	1.73E+02	7.16E-04
MHCS-900-W5 (0-6")	1.72E-01	1.72E-01	9.28E-01	1.64E+03	2.82E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.77E+03	8.51E+00	1.28E-03	4.54E+00	8.18E-02	2.41E+02	1.87E-02	1.73E+02	4.73E-04
MHCS-1000-E10 (0-6")	1.72E-01	1.72E-01	9.28E-01	2.81E+02	4.82E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.03E+02	1.46E+00	1.28E-03	4.54E+00	1.40E-02	2.41E+02	1.87E-02	1.73E+02	8.09E-05
MHCS-1000-W5 (0-6")	1.72E-01	1.72E-01	9.28E-01	3.43E+03	5.89E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.70E+03	1.78E+01	1.28E-03	4.54E+00	1.71E-01	2.41E+02	1.87E-02	1.73E+02	9.88E-04
MHCS-1100-E10 (0-6")	1.72E-01	1.72E-01	9.28E-01	2.23E+02	3.83E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.41E+02	1.16E+00	1.28E-03	4.54E+00	1.11E-02	2.41E+02	1.87E-02	1.73E+02	6.42E-05
MHCS-1100-E35 (0-6")	1.72E-01	1.72E-01	9.28E-01	1.01E+02	1.74E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.09E+02	5.25E-01	1.28E-03	4.54E+00	5.05E-03	2.41E+02	1.87E-02	1.73E+02	2.92E-05
MHCS-1200-E15 (0-6")	1.72E-01	1.72E-01	9.28E-01	5.74E+02	9.84E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	6.18E+02	2.97E+00	1.28E-03	4.54E+00	2.86E-02	2.41E+02	1.87E-02	1.73E+02	1.65E-04
MHCS-1200-E30 (0-6")	1.72E-01	1.72E-01	9.28E-01	1.81E+02	3.10E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.95E+02	9.35E-01	1.28E-03	4.54E+00	8.99E-03	2.41E+02	1.87E-02	1.73E+02	5.19E-05
MHCS-1300-E20 (0-6")	1.72E-01	1.72E-01	9.28E-01	8.09E+02	1.39E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	8.72E+02	4.19E+00	1.28E-03	4.54E+00	4.03E-02	2.41E+02	1.87E-02	1.73E+02	2.33E-04
MHCS-1300-E35 (0-6")	1.72E-01	1.72E-01	9.28E-01	3.18E+02	5.45E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.43E+02	1.65E+00	1.28E-03	4.54E+00	1.58E-02	2.41E+02	1.87E-02	1.73E+02	9.14E-05
Waste Areas 1 and 2																						**Maximum HQ (Mike Horse Creek Channel Area Deposits)**	**1.52E-03**
UMH1-00 (0-6")	1.72E-01	1.72E-01	9.28E-01	1.64E+03	2.81E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.76E+03	8.47E+00	1.28E-03	4.54E+00	8.15E-02	2.41E+02	1.87E-02	1.73E+02	4.71E-04
UMH1-100 (0-6")	1.72E-01	1.72E-01	9.28E-01	2.02E+03	3.47E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.18E+03	1.05E+01	1.28E-03	4.54E+00	1.01E-01	2.41E+02	1.87E-02	1.73E+02	5.82E-04
UMH1-150 (0-6")	1.72E-01	1.72E-01	9.28E-01	9.58E+02	1.64E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.03E+03	4.96E+00	1.28E-03	4.54E+00	4.77E-02	2.41E+02	1.87E-02	1.73E+02	2.76E-04
UMH1-200 (0-6")	1.72E-01	1.72E-01	9.28E-01	4.59E+01	7.88E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.95E+01	2.38E-01	1.28E-03	4.54E+00	2.29E-03	2.41E+02	1.87E-02	1.73E+02	1.32E-05
UMH1-250 (0-6")	1.72E-01	1.72E-01	9.28E-01	7.50E+02	1.29E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	8.08E+02	3.88E+00	1.28E-03	4.54E+00	3.73E-02	2.41E+02	1.87E-02	1.73E+02	2.16E-04
UMH1-250+25 (0-6")	1.72E-01	1.72E-01	9.28E-01	1.70E+02	2.92E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.84E+02	8.82E-01	1.28E-03	4.54E+00	8.48E-03	2.41E+02	1.87E-02	1.73E+02	4.90E-05
UMH1-300 (0-6")	1.72E-01	1.72E-01	9.28E-01	1.58E+03	2.70E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.70E+03	8.16E+00	1.28E-03	4.54E+00	7.85E-02	2.41E+02	1.87E-02	1.73E+02	4.53E-04
UMH1-300+14 (0-6")	1.72E-01	1.72E-01	9.28E-01	1.14E+02	1.95E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.23E+02	5.89E-01	1.28E-03	4.54E+00	5.67E-03	2.41E+02	1.87E-02	1.73E+02	3.27E-05
UMH1-350 (0-6")	1.72E-01	1.72E-01	9.28E-01	1.83E+03	3.15E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.98E+03	9.50E+00	1.28E-03	4.54E+00	9.14E-02	2.41E+02	1.87E-02	1.73E+02	5.28E-04
UMH1-350+12.5 (0-6")	1.72E-01	1.72E-01	9.28E-01	1.48E+02	2.54E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.60E+02	7.67E-01	1.28E-03	4.54E+00	7.38E-03	2.41E+02	1.87E-02	1.73E+02	4.26E-05
UMH1-400 (0-6")	1.72E-01	1.72E-01	9.28E-01	7.68E+02	1.32E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	8.28E+02	3.97E+00	1.28E-03	4.54E+00	3.82E-02	2.41E+02	1.87E-02	1.73E+02	2.21E-04
UMH1-400+12.5 (0-6")	1.72E-01	1.72E-01	9.28E-01	9.56E+01	1.64E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.03E+02	4.95E-01	1.28E-03	4.54E+00	4.76E-03	2.41E+02	1.87E-02	1.73E+02	2.75E-05
UMH1-450 (0-6")	1.72E-01	1.72E-01	9.28E-01	1.08E+03	1.85E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.16E+03	5.59E+00	1.28E-03	4.54E+00	5.38E-02	2.41E+02	1.87E-02	1.73E+02	3.11E-04
UMH1-450+12.5 (0-6")	1.72E-01	1.72E-01	9.28E-01	8.09E+01	1.39E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	8.72E+01	4.19E-01	1.28E-03	4.54E+00	4.03E-03	2.41E+02	1.87E-02	1.73E+02	2.33E-05
UMH1-50 (0-6")	1.72E-01	1.72E-01	9.28E-01	9.56E+01	1.64E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.03E+02	4.95E-01	1.28E-03	4.54E+00	4.76E-03	2.41E+02	1.87E-02	1.73E+02	2.75E-05
UMH1-Comp (0-6")	1.72E-01	1.72E-01	9.28E-01	1.80E+03	3.08E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.94E+03	9.30E+00	1.28E-03	4.54E+00	8.95E-02	2.41E+02	1.87E-02	1.73E+02	5.17E-04
UMH2-00 (0-6")	1.72E-01	1.72E-01	9.28E-01	6.10E+03	1.05E+03	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	6.57E+03	3.16E+01	1.28E-03	4.54E+00	3.04E-01	2.41E+02	1.87E-02	1.73E+02	1.75E-03

TABLE C-8D: LEAD DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 8 - MIKE HORSE MINE WASTE PILES (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **1.73**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Red Fox (Carnivorous Mammal - Terrestrial)																							
UMH2-00+25 (0-6")	1.72E-01	1.72E-01	9.28E-01	1.93E+02	3.31E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.08E+02	9.98E-01	1.28E-03	4.54E+00	9.60E-03	2.41E+02	1.87E-02	1.73E+02	5.55E-05
UMH2-100 (0-6")	1.72E-01	1.72E-01	9.28E-01	6.77E+03	1.16E+03	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	7.30E+03	3.51E+01	1.28E-03	4.54E+00	3.37E-01	2.41E+02	1.87E-02	1.73E+02	1.95E-03
UMH2-100+35 (0-6")	1.72E-01	1.72E-01	9.28E-01	4.39E+02	7.53E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.73E+02	2.27E+00	1.28E-03	4.54E+00	2.18E-02	2.41E+02	1.87E-02	1.73E+02	1.26E-04
UMH2-150 (0-6")	1.72E-01	1.72E-01	9.28E-01	3.13E+03	5.36E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.37E+03	1.62E+01	1.28E-03	4.54E+00	1.56E-01	2.41E+02	1.87E-02	1.73E+02	9.00E-04
UMH2-150+60 (0-6")	1.72E-01	1.72E-01	9.28E-01	3.80E+02	6.52E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.10E+02	1.97E+00	1.28E-03	4.54E+00	1.89E-02	2.41E+02	1.87E-02	1.73E+02	1.09E-04
UMH2-200 (0-6")	1.72E-01	1.72E-01	9.28E-01	6.33E+03	1.09E+03	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	6.83E+03	3.28E+01	1.28E-03	4.54E+00	3.15E-01	2.41E+02	1.87E-02	1.73E+02	1.82E-03
UMH2-200+85 (0-6")	1.72E-01	1.72E-01	9.28E-01	7.86E+02	1.35E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	8.47E+02	4.07E+00	1.28E-03	4.54E+00	3.91E-02	2.41E+02	1.87E-02	1.73E+02	2.26E-04
UMH2-250 (0-6")	1.72E-01	1.72E-01	9.28E-01	5.01E+03	8.59E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.40E+03	2.59E+01	1.28E-03	4.54E+00	2.49E-01	2.41E+02	1.87E-02	1.73E+02	1.44E-03
UMH2-250+75 (0-6")	1.72E-01	1.72E-01	9.28E-01	4.35E+02	7.46E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.69E+02	2.25E+00	1.28E-03	4.54E+00	2.16E-02	2.41E+02	1.87E-02	1.73E+02	1.25E-04
UMH2-300 (0-6")	1.72E-01	1.72E-01	9.28E-01	7.06E+02	1.21E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	7.60E+02	3.65E+00	1.28E-03	4.54E+00	3.51E-02	2.41E+02	1.87E-02	1.73E+02	2.03E-04
UMH2-300+25 (0-6")	1.72E-01	1.72E-01	9.28E-01	1.15E+02	1.97E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.24E+02	5.95E-01	1.28E-03	4.54E+00	5.72E-03	2.41E+02	1.87E-02	1.73E+02	3.31E-05
UMH2-350 (0-6")	1.72E-01	1.72E-01	9.28E-01	5.39E+02	9.24E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.81E+02	2.79E+00	1.28E-03	4.54E+00	2.68E-02	2.41E+02	1.87E-02	1.73E+02	1.55E-04
UMH2-350+25 (0-6")	1.72E-01	1.72E-01	9.28E-01	1.17E+02	2.01E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.26E+02	6.05E-01	1.28E-03	4.54E+00	5.82E-03	2.41E+02	1.87E-02	1.73E+02	3.36E-05
UMH2-400 (0-6")	1.72E-01	1.72E-01	9.28E-01	5.61E+02	9.62E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	6.04E+02	2.90E+00	1.28E-03	4.54E+00	2.79E-02	2.41E+02	1.87E-02	1.73E+02	1.61E-04
UMH2-400+25 (0-6")	1.72E-01	1.72E-01	9.28E-01	7.02E+01	1.20E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	7.57E+01	3.64E-01	1.28E-03	4.54E+00	3.50E-03	2.41E+02	1.87E-02	1.73E+02	2.02E-05
UMH2-450 (0-6")	1.72E-01	1.72E-01	9.28E-01	3.94E+03	6.76E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.25E+03	2.04E+01	1.28E-03	4.54E+00	1.96E-01	2.41E+02	1.87E-02	1.73E+02	1.13E-03
UMH2-450+25 (0-6")	1.72E-01	1.72E-01	9.28E-01	2.51E+02	4.30E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.70E+02	1.30E+00	1.28E-03	4.54E+00	1.25E-02	2.41E+02	1.87E-02	1.73E+02	7.21E-05
UMH2-50 (0-6")	1.72E-01	1.72E-01	9.28E-01	6.05E+02	1.04E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	6.52E+02	3.13E+00	1.28E-03	4.54E+00	3.01E-02	2.41E+02	1.87E-02	1.73E+02	1.74E-04
UMH2-50+25b (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UMH2-500 (0-6")	1.72E-01	1.72E-01	9.28E-01	8.02E+03	1.38E+03	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	8.65E+03	4.15E+01	1.28E-03	4.54E+00	4.00E-01	2.41E+02	1.87E-02	1.73E+02	2.31E-03
UMH2-500+75 (0-6")	1.72E-01	1.72E-01	9.28E-01	2.43E+02	4.16E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.61E+02	1.26E+00	1.28E-03	4.54E+00	1.21E-02	2.41E+02	1.87E-02	1.73E+02	6.98E-05
UMH2-550 (0-6")	1.72E-01	1.72E-01	9.28E-01	1.03E+04	1.76E+03	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.11E+04	5.31E+01	1.28E-03	4.54E+00	5.11E-01	2.41E+02	1.87E-02	1.73E+02	2.95E-03
UMH2-550+75 (0-6")	1.72E-01	1.72E-01	9.28E-01	5.72E+01	9.81E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	6.16E+01	2.96E-01	1.28E-03	4.54E+00	2.85E-03	2.41E+02	1.87E-02	1.73E+02	1.64E-05
UMH2-600 (0-6")	1.72E-01	1.72E-01	9.28E-01	2.52E+03	4.32E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.71E+03	1.30E+01	1.28E-03	4.54E+00	1.25E-01	2.41E+02	1.87E-02	1.73E+02	7.24E-04
UMH2-600+25 (0-6")	1.72E-01	1.72E-01	9.28E-01	1.07E+02	1.84E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.15E+02	5.54E-01	1.28E-03	4.54E+00	5.33E-03	2.41E+02	1.87E-02	1.73E+02	3.08E-05
UMH2-650 (0-6")	1.72E-01	1.72E-01	9.28E-01	3.32E+03	5.69E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.58E+03	1.72E+01	1.28E-03	4.54E+00	1.65E-01	2.41E+02	1.87E-02	1.73E+02	9.54E-04
UMH2-650+25 (0-6")	1.72E-01	1.72E-01	9.28E-01	2.13E+02	3.66E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.30E+02	1.10E+00	1.28E-03	4.54E+00	1.06E-02	2.41E+02	1.87E-02	1.73E+02	6.13E-05
UMH2-Comp 1 (0-6")	1.72E-01	1.72E-01	9.28E-01	7.35E+03	1.26E+03	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	7.92E+03	3.80E+01	1.28E-03	4.54E+00	3.66E-01	2.41E+02	1.87E-02	1.73E+02	2.11E-03
UMH2-Comp 2 (0-6")	1.72E-01	1.72E-01	9.28E-01	9.58E+03	1.64E+03	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.03E+04	4.96E+01	1.28E-03	4.54E+00	4.77E-01	2.41E+02	1.87E-02	1.73E+02	2.76E-03
Waste Area 3																						**Maximum HQ (Waste Areas 1 and 2)**	**2.95E-03**
UMH3-00 (0-6")	1.72E-01	1.72E-01	9.28E-01	1.53E+02	2.62E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.65E+02	7.91E-01	1.28E-03	4.54E+00	7.61E-03	2.41E+02	1.87E-02	1.73E+02	4.39E-05
UMH3-100 (0-6")	1.72E-01	1.72E-01	9.28E-01	2.08E+02	3.57E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.24E+02	1.08E+00	1.28E-03	4.54E+00	1.04E-02	2.41E+02	1.87E-02	1.73E+02	5.99E-05
UMH3-150 (0-6")	1.72E-01	1.72E-01	9.28E-01	1.76E+03	3.01E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.89E+03	9.09E+00	1.28E-03	4.54E+00	8.74E-02	2.41E+02	1.87E-02	1.73E+02	5.05E-04
UMH3-200 (0-6")	1.72E-01	1.72E-01	9.28E-01	2.81E+03	4.82E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.03E+03	1.46E+01	1.28E-03	4.54E+00	1.40E-01	2.41E+02	1.87E-02	1.73E+02	8.08E-04
UMH3-250 (0-6")	1.72E-01	1.72E-01	9.28E-01	1.05E+04	1.80E+03	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.13E+04	5.43E+01	1.28E-03	4.54E+00	5.22E-01	2.41E+02	1.87E-02	1.73E+02	3.02E-03
UMH3-300 (0-6")	1.72E-01	1.72E-01	9.28E-01	1.35E+02	2.32E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.46E+02	7.00E-01	1.28E-03	4.54E+00	6.73E-03	2.41E+02	1.87E-02	1.73E+02	3.89E-05
UMH3-350 (0-6")	1.72E-01	1.72E-01	9.28E-01	1.56E+04	2.68E+03	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.68E+04	8.08E+01	1.28E-03	4.54E+00	7.77E-01	2.41E+02	1.87E-02	1.73E+02	4.49E-03
UMH3-350+75 (0-6")	1.72E-01	1.72E-01	9.28E-01	1.59E+02	2.72E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.71E+02	8.22E-01	1.28E-03	4.54E+00	7.90E-03	2.41E+02	1.87E-02	1.73E+02	4.57E-05
UMH3-400 (0-6")	1.72E-01	1.72E-01	9.28E-01	8.90E+03	1.53E+03	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	9.59E+03	4.61E+01	1.28E-03	4.54E+00	4.43E-01	2.41E+02	1.87E-02	1.73E+02	2.56E-03
UMH3-400+25 (0-6")	1.72E-01	1.72E-01	9.28E-01	3.42E+02	5.87E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.69E+02	1.77E+00	1.28E-03	4.54E+00	1.71E-02	2.41E+02	1.87E-02	1.73E+02	9.85E-05
UMH3-450 (0-6")	1.72E-01	1.72E-01	9.28E-01	9.21E+01	1.58E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	9.93E+01	4.77E-01	1.28E-03	4.54E+00	4.59E-03	2.41E+02	1.87E-02	1.73E+02	2.65E-05
UMH3-50 (0-6")	1.72E-01	1.72E-01	9.28E-01	1.97E+02	3.38E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.12E+02	1.02E+00	1.28E-03	4.54E+00	9.82E-03	2.41E+02	1.87E-02	1.73E+02	5.67E-05
UMH3-50+50 (0-6")	1.72E-01	1.72E-01	9.28E-01	2.92E+02	5.00E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.14E+02	1.51E+00	1.28E-03	4.54E+00	1.45E-02	2.41E+02	1.87E-02	1.73E+02	8.39E-05
UMH3-500 (0-6")	1.72E-01	1.72E-01	9.28E-01	1.39E+03	2.38E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.50E+03	7.19E+00	1.28E-03	4.54E+00	6.91E-02	2.41E+02	1.87E-02	1.73E+02	3.99E-04
UMH3-550 (0-6")	1.72E-01	1.72E-01	9.28E-01	1.15E+04	1.97E+03	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.24E+04	5.95E+01	1.28E-03	4.54E+00	5.72E-01	2.41E+02	1.87E-02	1.73E+02	3.30E-03
UMH3-600 (0-6")	1.72E-01	1.72E-01	9.28E-01	1.43E+04	2.46E+03	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.54E+04	7.42E+01	1.28E-03	4.54E+00	7.14E-01	2.41E+02	1.87E-02	1.73E+02	4.12E-03
UMH3-650 (0-6")	1.72E-01	1.72E-01	9.28E-01	1.44E+04	2.46E+03	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.55E+04	7.43E+01	1.28E-03	4.54E+00	7.15E-01	2.41E+02	1.87E-02	1.73E+02	4.13E-03
UMH3-700 (0-6")	1.72E-01	1.72E-01	9.28E-01	1.39E+04	2.38E+03	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.49E+04	7.18E+01	1.28E-03	4.54E+00	6.90E-01	2.41E+02	1.87E-02	1.73E+02	3.99E-03
UMH3-750 (0-6")	1.72E-01	1.72E-01	9.28E-01	1.06E+03	1.82E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.14E+03	5.48E+00	1.28E-03	4.54E+00	5.27E-02	2.41E+02	1.87E-02	1.73E+02	3.05E-04
UMH3-800 (0-6")	1.72E-01	1.72E-01	9.28E-01	1.95E+03	3.35E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.10E+03	1.01E+01	1.28E-03	4.54E+00	9.72E-02	2.41E+02	1.87E-02	1.73E+02	5.62E-04
UMH3-Comp 1 (0-6")	1.72E-01	1.72E-01	9.28E-01	6.78E+02	1.16E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	7.30E+02	3.51E+00	1.28E-03	4.54E+00	3.37E-02	2.41E+02	1.87E-02	1.73E+02	1.95E-04
UMH3-Comp 2 (0-6")	1.72E-01	1.72E-01	9.28E-01	8.10E+03	1.39E+03	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	8.73E+03	4.19E+01	1.28E-03	4.54E+00	4.03E-01	2.41E+02	1.87E-02	1.73E+02	2.33E-03
UMH3-Comp 3 (0-6")	1.72E-01	1.72E-01	9.28E-01	1.33E+04	2.29E+03	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.44E+04	6.91E+01	1.28E-03	4.54E+00	6.64E-01	2.41E+02	1.87E-02	1.73E+02	3.84E-03
																						Maximum HQ (Waste Area 3)	**4.49E-03**

TABLE C-8D: LEAD DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 8 - MIKE HORSE MINE WASTE PILES (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **1.73**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Masked Shrew (Omnivorous Mammal - Terrestrial, Wetland)																							
Reference Sites																							
BCBG-1 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.30E+02	1.10E+00	1.10E-03	8.40E+01	9.25E-02	1.00E+00	5.50E-03	2.18E+02	2.41E+02	1.87E-02	2.59E+02	8.40E-01
MHBG-201 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	5.17E+01	4.38E-01	1.10E-03	3.33E+01	3.67E-02	1.00E+00	5.50E-03	8.64E+01	2.41E+02	1.87E-02	2.59E+02	3.33E-01
MHBG-202 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	2.81E+02	2.38E+00	1.10E-03	1.81E+02	1.99E-01	1.00E+00	5.50E-03	4.68E+02	2.41E+02	1.87E-02	2.59E+02	1.81E+00
Mike Horse Creek Channel Area Deposits																						**Minimum HQ (Reference Site)**	**3.33E-01**
AMHR-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.78E+02	1.50E+00	1.10E-03	1.14E+02	1.26E-01	1.00E+00	5.50E-03	2.96E+02	2.41E+02	1.87E-02	2.59E+02	1.14E+00
AMHR-200 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.72E+02	1.46E+00	1.10E-03	1.11E+02	1.22E-01	1.00E+00	5.50E-03	2.87E+02	2.41E+02	1.87E-02	2.59E+02	1.11E+00
AMHR-400 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	8.73E+02	7.39E+00	1.10E-03	5.62E+02	6.19E-01	1.00E+00	5.50E-03	1.46E+03	2.41E+02	1.87E-02	2.59E+02	5.62E+00
AMHR-600 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.02E+03	8.67E+00	1.10E-03	6.60E+02	7.27E-01	1.00E+00	5.50E-03	1.71E+03	2.41E+02	1.87E-02	2.59E+02	6.60E+00
MHCS-00-E25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	6.01E+03	5.09E+01	1.10E-03	3.87E+03	4.26E+00	1.00E+00	5.50E-03	1.00E+04	2.41E+02	1.87E-02	2.59E+02	3.87E+01
MHCS-0-W25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	6.92E+02	5.86E+00	1.10E-03	4.46E+02	4.91E-01	1.00E+00	5.50E-03	1.16E+03	2.41E+02	1.87E-02	2.59E+02	4.46E+00
MHCS-0-W5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	4.94E+02	4.19E+00	1.10E-03	3.19E+02	3.51E-01	1.00E+00	5.50E-03	8.25E+02	2.41E+02	1.87E-02	2.59E+02	3.19E+00
MHCS-100-E25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	8.85E+03	7.49E+01	1.10E-03	5.70E+03	6.28E+00	1.00E+00	5.50E-03	1.48E+04	2.41E+02	1.87E-02	2.59E+02	5.70E+01
MHCS-100-W1 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	6.04E+03	5.12E+01	1.10E-03	3.89E+03	4.28E+00	1.00E+00	5.50E-03	1.01E+04	2.41E+02	1.87E-02	2.59E+02	3.89E+01
MHCS-100-W25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	5.30E+02	4.49E+00	1.10E-03	3.42E+02	3.76E-01	1.00E+00	5.50E-03	8.85E+02	2.41E+02	1.87E-02	2.59E+02	3.42E+00
MHCS-200-E10 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	3.02E+03	2.56E+01	1.10E-03	1.95E+03	2.14E+00	1.00E+00	5.50E-03	5.05E+03	2.41E+02	1.87E-02	2.59E+02	1.95E+01
MHCS-200-E25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.59E+02	1.35E+00	1.10E-03	1.03E+02	1.13E-01	1.00E+00	5.50E-03	2.66E+02	2.41E+02	1.87E-02	2.59E+02	1.03E+00
MHCS-200-W10 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	4.53E+02	3.84E+00	1.10E-03	2.92E+02	3.21E-01	1.00E+00	5.50E-03	7.56E+02	2.41E+02	1.87E-02	2.59E+02	2.92E+00
MHCS-525-E5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	5.80E+02	4.91E+00	1.10E-03	3.74E+02	4.12E-01	1.00E+00	5.50E-03	9.68E+02	2.41E+02	1.87E-02	2.59E+02	3.74E+00
MHCS-525-W15 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	4.24E+03	3.59E+01	1.10E-03	2.73E+03	3.01E+00	1.00E+00	5.50E-03	7.08E+03	2.41E+02	1.87E-02	2.59E+02	2.73E+01
MHCS-600-E10 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	5.36E+03	4.54E+01	1.10E-03	3.45E+03	3.80E+00	1.00E+00	5.50E-03	8.94E+03	2.41E+02	1.87E-02	2.59E+02	3.45E+01
MHCS-600-W10 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	4.79E+03	4.06E+01	1.10E-03	3.09E+03	3.40E+00	1.00E+00	5.50E-03	7.99E+03	2.41E+02	1.87E-02	2.59E+02	3.09E+01
MHCS-700-E10 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	4.70E+03	3.98E+01	1.10E-03	3.03E+03	3.33E+00	1.00E+00	5.50E-03	7.84E+03	2.41E+02	1.87E-02	2.59E+02	3.03E+01
MHCS-700-E25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	2.77E+02	2.34E+00	1.10E-03	1.78E+02	1.96E-01	1.00E+00	5.50E-03	4.62E+02	2.41E+02	1.87E-02	2.59E+02	1.78E+00
MHCS-700-W10 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	5.13E+03	4.35E+01	1.10E-03	3.31E+03	3.64E+00	1.00E+00	5.50E-03	8.57E+03	2.41E+02	1.87E-02	2.59E+02	3.31E+01
MHCS-800-E15 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	2.58E+02	2.19E+00	1.10E-03	1.66E+02	1.83E-01	1.00E+00	5.50E-03	4.31E+02	2.41E+02	1.87E-02	2.59E+02	1.66E+00
MHCS-800-E5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	4.09E+03	3.46E+01	1.10E-03	2.63E+03	2.90E+00	1.00E+00	5.50E-03	6.82E+03	2.41E+02	1.87E-02	2.59E+02	2.63E+01
MHCS-800-W5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	2.44E+03	2.07E+01	1.10E-03	1.57E+03	1.73E+00	1.00E+00	5.50E-03	4.07E+03	2.41E+02	1.87E-02	2.59E+02	1.57E+01
MHCS-900-E15 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	2.03E+02	1.72E+00	1.10E-03	1.31E+02	1.44E-01	1.00E+00	5.50E-03	3.38E+02	2.41E+02	1.87E-02	2.59E+02	1.31E+00
MHCS-900-E5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	4.16E+03	3.53E+01	1.10E-03	2.68E+03	2.95E+00	1.00E+00	5.50E-03	6.95E+03	2.41E+02	1.87E-02	2.59E+02	2.68E+01
MHCS-900-W5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	2.75E+03	2.33E+01	1.10E-03	1.77E+03	1.95E+00	1.00E+00	5.50E-03	4.59E+03	2.41E+02	1.87E-02	2.59E+02	1.77E+01
MHCS-1000-E10 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	4.70E+02	3.98E+00	1.10E-03	3.03E+02	3.34E-01	1.00E+00	5.50E-03	7.85E+02	2.41E+02	1.87E-02	2.59E+02	3.03E+00
MHCS-1000-W5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	5.74E+03	4.87E+01	1.10E-03	3.70E+03	4.08E+00	1.00E+00	5.50E-03	9.59E+03	2.41E+02	1.87E-02	2.59E+02	3.70E+01
MHCS-1100-E10 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	3.74E+02	3.16E+00	1.10E-03	2.41E+02	2.65E-01	1.00E+00	5.50E-03	6.24E+02	2.41E+02	1.87E-02	2.59E+02	2.41E+00
MHCS-1100-E35 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.70E+02	1.44E+00	1.10E-03	1.09E+02	1.20E-01	1.00E+00	5.50E-03	2.83E+02	2.41E+02	1.87E-02	2.59E+02	1.09E+00
MHCS-1200-E15 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	9.59E+02	8.13E+00	1.10E-03	6.18E+02	6.81E-01	1.00E+00	5.50E-03	1.60E+03	2.41E+02	1.87E-02	2.59E+02	6.18E+00
MHCS-1200-E30 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	3.02E+02	2.56E+00	1.10E-03	1.95E+02	2.14E-01	1.00E+00	5.50E-03	5.04E+02	2.41E+02	1.87E-02	2.59E+02	1.95E+00
MHCS-1300-E20 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.35E+03	1.15E+01	1.10E-03	8.72E+02	9.60E-01	1.00E+00	5.50E-03	2.26E+03	2.41E+02	1.87E-02	2.59E+02	8.72E+00
MHCS-1300-E35 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	5.32E+02	4.50E+00	1.10E-03	3.43E+02	3.77E-01	1.00E+00	5.50E-03	8.87E+02	2.41E+02	1.87E-02	2.59E+02	3.43E+00
Waste Areas 1 and 2																						**Maximum HQ (Mike Horse Creek Channel Area Deposits)**	**5.70E+01**
UMH1-00 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	2.74E+03	2.32E+01	1.10E-03	1.76E+03	1.94E+00	1.00E+00	5.50E-03	4.57E+03	2.41E+02	1.87E-02	2.59E+02	1.76E+01
UMH1-100 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	3.39E+03	2.87E+01	1.10E-03	2.18E+03	2.40E+00	1.00E+00	5.50E-03	5.65E+03	2.41E+02	1.87E-02	2.59E+02	2.18E+01
UMH1-150 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.60E+03	1.36E+01	1.10E-03	1.03E+03	1.14E+00	1.00E+00	5.50E-03	2.67E+03	2.41E+02	1.87E-02	2.59E+02	1.03E+01
UMH1-200 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	7.68E+01	6.50E-01	1.10E-03	4.95E+01	5.45E-02	1.00E+00	5.50E-03	1.28E+02	2.41E+02	1.87E-02	2.59E+02	4.95E-01
UMH1-250 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.25E+03	1.06E+01	1.10E-03	8.08E+02	8.90E-01	1.00E+00	5.50E-03	2.09E+03	2.41E+02	1.87E-02	2.59E+02	8.08E+00
UMH1-250+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	2.85E+02	2.41E+00	1.10E-03	1.84E+02	2.02E-01	1.00E+00	5.50E-03	4.76E+02	2.41E+02	1.87E-02	2.59E+02	1.84E+00
UMH1-300 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	2.64E+03	2.23E+01	1.10E-03	1.70E+03	1.87E+00	1.00E+00	5.50E-03	4.40E+03	2.41E+02	1.87E-02	2.59E+02	1.70E+01
UMH1-300+14 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.90E+02	1.61E+00	1.10E-03	1.23E+02	1.35E-01	1.00E+00	5.50E-03	3.18E+02	2.41E+02	1.87E-02	2.59E+02	1.23E+00
UMH1-350 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	3.07E+03	2.60E+01	1.10E-03	1.98E+03	2.18E+00	1.00E+00	5.50E-03	5.12E+03	2.41E+02	1.87E-02	2.59E+02	1.98E+01
UMH1-350+12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	2.48E+02	2.10E+00	1.10E-03	1.60E+02	1.76E-01	1.00E+00	5.50E-03	4.14E+02	2.41E+02	1.87E-02	2.59E+02	1.60E+00
UMH1-400 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.28E+03	1.09E+01	1.10E-03	8.28E+02	9.11E-01	1.00E+00	5.50E-03	2.14E+03	2.41E+02	1.87E-02	2.59E+02	8.28E+00
UMH1-400+12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.60E+02	1.35E+00	1.10E-03	1.03E+02	1.13E-01	1.00E+00	5.50E-03	2.67E+02	2.41E+02	1.87E-02	2.59E+02	1.03E+00
UMH1-450 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.81E+03	1.53E+01	1.10E-03	1.16E+03	1.28E+00	1.00E+00	5.50E-03	3.01E+03	2.41E+02	1.87E-02	2.59E+02	1.16E+01
UMH1-450+12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.35E+02	1.15E+00	1.10E-03	8.72E+01	9.60E-02	1.00E+00	5.50E-03	2.26E+02	2.41E+02	1.87E-02	2.59E+02	8.72E-01
UMH1-50 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.60E+02	1.35E+00	1.10E-03	1.03E+02	1.13E-01	1.00E+00	5.50E-03	2.67E+02	2.41E+02	1.87E-02	2.59E+02	1.03E+00
UMH1-Comp (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	3.01E+03	2.55E+01	1.10E-03	1.94E+03	2.13E+00	1.00E+00	5.50E-03	5.02E+03	2.41E+02	1.87E-02	2.59E+02	1.94E+01
UMH2-00 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.02E+04	8.64E+01	1.10E-03	6.57E+03	7.24E+00	1.00E+00	5.50E-03	1.70E+04	2.41E+02	1.87E-02	2.59E+02	6.57E+01

TABLE C-8D: LEAD DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 8 - MIKE HORSE MINE WASTE PILES (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **1.73**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Masked Shrew (Omnivorous Mammal - Terrestrial, Wetland)																							
UMH2-00+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	3.23E+02	2.73E+00	1.10E-03	2.08E+02	2.29E-01	1.00E+00	5.50E-03	5.38E+02	2.41E+02	1.87E-02	2.59E+02	2.08E+00
UMH2-100 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.13E+04	9.60E+01	1.10E-03	7.30E+03	8.04E+00	1.00E+00	5.50E-03	1.89E+04	2.41E+02	1.87E-02	2.59E+02	7.30E+01
UMH2-100+35 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	7.34E+02	6.22E+00	1.10E-03	4.73E+02	5.21E-01	1.00E+00	5.50E-03	1.22E+03	2.41E+02	1.87E-02	2.59E+02	4.73E+00
UMH2-150 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	5.23E+03	4.43E+01	1.10E-03	3.37E+03	3.71E+00	1.00E+00	5.50E-03	8.73E+03	2.41E+02	1.87E-02	2.59E+02	3.37E+01
UMH2-150+60 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	6.36E+02	5.38E+00	1.10E-03	4.10E+02	4.51E-01	1.00E+00	5.50E-03	1.06E+03	2.41E+02	1.87E-02	2.59E+02	4.10E+00
UMH2-200 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.06E+04	8.97E+01	1.10E-03	6.83E+03	7.52E+00	1.00E+00	5.50E-03	1.77E+04	2.41E+02	1.87E-02	2.59E+02	6.83E+01
UMH2-200+85 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.31E+03	1.11E+01	1.10E-03	8.47E+02	9.33E-01	1.00E+00	5.50E-03	2.19E+03	2.41E+02	1.87E-02	2.59E+02	8.47E+00
UMH2-250 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	8.38E+03	7.10E+01	1.10E-03	5.40E+03	5.94E+00	1.00E+00	5.50E-03	1.40E+04	2.41E+02	1.87E-02	2.59E+02	5.40E+01
UMH2-250+75 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	7.27E+02	6.16E+00	1.10E-03	4.69E+02	5.16E-01	1.00E+00	5.50E-03	1.21E+03	2.41E+02	1.87E-02	2.59E+02	4.69E+00
UMH2-300 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.18E+03	1.00E+01	1.10E-03	7.60E+02	8.37E-01	1.00E+00	5.50E-03	1.97E+03	2.41E+02	1.87E-02	2.59E+02	7.61E+00
UMH2-300+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.92E+02	1.63E+00	1.10E-03	1.24E+02	1.36E-01	1.00E+00	5.50E-03	3.21E+02	2.41E+02	1.87E-02	2.59E+02	1.24E+00
UMH2-350 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	9.01E+02	7.64E+00	1.10E-03	5.81E+02	6.40E-01	1.00E+00	5.50E-03	1.50E+03	2.41E+02	1.87E-02	2.59E+02	5.81E+00
UMH2-350+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.96E+02	1.66E+00	1.10E-03	1.26E+02	1.39E-01	1.00E+00	5.50E-03	3.26E+02	2.41E+02	1.87E-02	2.59E+02	1.26E+00
UMH2-400 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	9.38E+02	7.94E+00	1.10E-03	6.04E+02	6.65E-01	1.00E+00	5.50E-03	1.57E+03	2.41E+02	1.87E-02	2.59E+02	6.04E+00
UMH2-400+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.17E+02	9.95E-01	1.10E-03	7.57E+01	8.34E-02	1.00E+00	5.50E-03	1.96E+02	2.41E+02	1.87E-02	2.59E+02	7.57E-01
UMH2-450 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	6.59E+03	5.58E+01	1.10E-03	4.25E+03	4.68E+00	1.00E+00	5.50E-03	1.10E+04	2.41E+02	1.87E-02	2.59E+02	4.25E+01
UMH2-450+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	4.20E+02	3.55E+00	1.10E-03	2.70E+02	2.98E-01	1.00E+00	5.50E-03	7.00E+02	2.41E+02	1.87E-02	2.59E+02	2.70E+00
UMH2-50 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.01E+03	8.57E+00	1.10E-03	6.52E+02	7.18E-01	1.00E+00	5.50E-03	1.69E+03	2.41E+02	1.87E-02	2.59E+02	6.52E+00
UMH2-50+25b (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UMH2-500 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.34E+04	1.14E+02	1.10E-03	8.65E+03	9.52E+00	1.00E+00	5.50E-03	2.24E+04	2.41E+02	1.87E-02	2.59E+02	8.65E+01
UMH2-500+75 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	4.06E+02	3.44E+00	1.10E-03	2.61E+02	2.88E-01	1.00E+00	5.50E-03	6.77E+02	2.41E+02	1.87E-02	2.59E+02	2.61E+00
UMH2-550 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.72E+04	1.45E+02	1.10E-03	1.11E+04	1.22E+01	1.00E+00	5.50E-03	2.86E+04	2.41E+02	1.87E-02	2.59E+02	1.11E+02
UMH2-550+75 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	9.57E+01	8.10E-01	1.10E-03	6.16E+01	6.79E-02	1.00E+00	5.50E-03	1.60E+02	2.41E+02	1.87E-02	2.59E+02	6.16E-01
UMH2-600 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	4.21E+03	3.56E+01	1.10E-03	2.71E+03	2.99E+00	1.00E+00	5.50E-03	7.02E+03	2.41E+02	1.87E-02	2.59E+02	2.71E+01
UMH2-600+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.79E+02	1.52E+00	1.10E-03	1.15E+02	1.27E-01	1.00E+00	5.50E-03	2.99E+02	2.41E+02	1.87E-02	2.59E+02	1.15E+00
UMH2-650 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	5.55E+03	4.70E+01	1.10E-03	3.58E+03	3.94E+00	1.00E+00	5.50E-03	9.26E+03	2.41E+02	1.87E-02	2.59E+02	3.58E+01
UMH2-650+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	3.57E+02	3.02E+00	1.10E-03	2.30E+02	2.53E-01	1.00E+00	5.50E-03	5.95E+02	2.41E+02	1.87E-02	2.59E+02	2.30E+00
UMH2-Comp 1 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.23E+04	1.04E+02	1.10E-03	7.92E+03	8.72E+00	1.00E+00	5.50E-03	2.05E+04	2.41E+02	1.87E-02	2.59E+02	7.92E+01
UMH2-Comp 2 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.60E+04	1.36E+02	1.10E-03	1.03E+04	1.14E+01	1.00E+00	5.50E-03	2.68E+04	2.41E+02	1.87E-02	2.59E+02	1.03E+02
Waste Area 3																						**Maximum HQ (Waste Areas 1 and 2)**	**1.11E+02**
UMH3-00 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	2.56E+02	2.16E+00	1.10E-03	1.65E+02	1.81E-01	1.00E+00	5.50E-03	4.27E+02	2.41E+02	1.87E-02	2.59E+02	1.65E+00
UMH3-100 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	3.48E+02	2.95E+00	1.10E-03	2.24E+02	2.47E-01	1.00E+00	5.50E-03	5.82E+02	2.41E+02	1.87E-02	2.59E+02	2.25E+00
UMH3-150 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	2.94E+03	2.49E+01	1.10E-03	1.89E+03	2.08E+00	1.00E+00	5.50E-03	4.90E+03	2.41E+02	1.87E-02	2.59E+02	1.89E+01
UMH3-200 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	4.70E+03	3.98E+01	1.10E-03	3.03E+03	3.34E+00	1.00E+00	5.50E-03	7.85E+03	2.41E+02	1.87E-02	2.59E+02	3.03E+01
UMH3-250 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.75E+04	1.48E+02	1.10E-03	1.13E+04	1.24E+01	1.00E+00	5.50E-03	2.93E+04	2.41E+02	1.87E-02	2.59E+02	1.13E+02
UMH3-300 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	2.26E+02	1.92E+00	1.10E-03	1.46E+02	1.60E-01	1.00E+00	5.50E-03	3.77E+02	2.41E+02	1.87E-02	2.59E+02	1.46E+00
UMH3-350 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	2.61E+04	2.21E+02	1.10E-03	1.68E+04	1.85E+01	1.00E+00	5.50E-03	4.36E+04	2.41E+02	1.87E-02	2.59E+02	1.68E+02
UMH3-350+75 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	2.66E+02	2.25E+00	1.10E-03	1.71E+02	1.88E-01	1.00E+00	5.50E-03	4.43E+02	2.41E+02	1.87E-02	2.59E+02	1.71E+00
UMH3-400 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.49E+04	1.26E+02	1.10E-03	9.59E+03	1.06E+01	1.00E+00	5.50E-03	2.49E+04	2.41E+02	1.87E-02	2.59E+02	9.60E+01
UMH3-400+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	5.73E+02	4.85E+00	1.10E-03	3.69E+02	4.06E-01	1.00E+00	5.50E-03	9.56E+02	2.41E+02	1.87E-02	2.59E+02	3.69E+00
UMH3-450 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.54E+02	1.30E+00	1.10E-03	9.93E+01	1.09E-01	1.00E+00	5.50E-03	2.57E+02	2.41E+02	1.87E-02	2.59E+02	9.93E-01
UMH3-50 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	3.30E+02	2.79E+00	1.10E-03	2.12E+02	2.34E-01	1.00E+00	5.50E-03	5.50E+02	2.41E+02	1.87E-02	2.59E+02	2.13E+00
UMH3-50+50 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	4.88E+02	4.13E+00	1.10E-03	3.14E+02	3.46E-01	1.00E+00	5.50E-03	8.14E+02	2.41E+02	1.87E-02	2.59E+02	3.14E+00
UMH3-500 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	2.32E+03	1.97E+01	1.10E-03	1.50E+03	1.65E+00	1.00E+00	5.50E-03	3.88E+03	2.41E+02	1.87E-02	2.59E+02	1.50E+01
UMH3-550 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.92E+04	1.63E+02	1.10E-03	1.24E+04	1.36E+01	1.00E+00	5.50E-03	3.21E+04	2.41E+02	1.87E-02	2.59E+02	1.24E+02
UMH3-600 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	2.40E+04	2.03E+02	1.10E-03	1.54E+04	1.70E+01	1.00E+00	5.50E-03	4.00E+04	2.41E+02	1.87E-02	2.59E+02	1.55E+02
UMH3-650 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	2.40E+04	2.03E+02	1.10E-03	1.55E+04	1.70E+01	1.00E+00	5.50E-03	4.01E+04	2.41E+02	1.87E-02	2.59E+02	1.55E+02
UMH3-700 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	2.32E+04	1.96E+02	1.10E-03	1.49E+04	1.65E+01	1.00E+00	5.50E-03	3.87E+04	2.41E+02	1.87E-02	2.59E+02	1.49E+02
UMH3-750 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.77E+03	1.50E+01	1.10E-03	1.14E+03	1.26E+00	1.00E+00	5.50E-03	2.96E+03	2.41E+02	1.87E-02	2.59E+02	1.14E+01
UMH3-800 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	3.27E+03	2.77E+01	1.10E-03	2.10E+03	2.32E+00	1.00E+00	5.50E-03	5.45E+03	2.41E+02	1.87E-02	2.59E+02	2.10E+01
UMH3-Comp 1 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.13E+03	9.60E+00	1.10E-03	7.30E+02	8.04E-01	1.00E+00	5.50E-03	1.89E+03	2.41E+02	1.87E-02	2.59E+02	7.30E+00
UMH3-Comp 2 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.35E+04	1.15E+02	1.10E-03	8.73E+03	9.61E+00	1.00E+00	5.50E-03	2.26E+04	2.41E+02	1.87E-02	2.59E+02	8.73E+01
UMH3-Comp 3 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	2.23E+04	1.89E+02	1.10E-03	1.44E+04	1.58E+01	1.00E+00	5.50E-03	3.72E+04	2.41E+02	1.87E-02	2.59E+02	1.44E+02
																						Maximum HQ (Waste Area 3)	**1.68E+02**

TABLE C-8D: LEAD DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 8 - MIKE HORSE MINE WASTE PILES (Continued)
Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)
calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **1.73**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)

Notes
1 See Tables 3-1 through 3-13 for ingestion rates, foraging ranges used to calculate the SUF, and body weights.
2 BAFs were calculated by dividing site-collected tissue by collocated soil concentrations (BAFs are in dry weight). The maximum BAF calculated from the Beartrap Creek and Blackfoot River transects was used for site dose calculations. The maximum BAF from the terrestrial reference site was used for reference site dose calculations.
3 The mammal, plant, and invertebrate concentrations were calculated by multiplying the soil concentration by the BAF to generate a tissue concentration (see note 2).
4 Mammal, plant, and invertebrate daily doses were calculated by multiplying the ingestion rate (see note 1) by the tissue concentration (see note 3).
5 Soil concentration from 0 to 6 inches below ground surface at point ID as measured by XRF 10. Doses were not calculated for detected and non-detected soil concentrations measured below the minimum reference site concentration, as indicated by BB. For results that were measured at less than the detection limit, doses were calculated using half of the detection limit.
6 Soil daily dose was calculated by multiplying the soil ingestion rate (see note 1) by soil concentration (see note 5).
7 Total daily dose is calculated using the following equation: total daily dose = ([mammal daily dose (if applicable) + plant daily dose (if applicable) + invertebrate daily dose (if applicable) + soil daily dose]*SUF)/receptor species body weight.
8 The derivation of TRVs is described in Navy (1998). The high TRV was used for dose calculations.
9 Allometrically adjusted TRVs for birds were calculated using the following equation: receptor species TRV = (test species TRV) x (test species body weight / receptor species body weight)$^{(1-1.2)}$.
10 Allometrically adjusted TRVs for mammals were calculated using the following equation: receptor species TRV = (test species TRV) x (test species body weight / receptor species body weight)$^{(1-0.94)}$.
11 HQs were calculated using the following equation: HQ = total daily dose/allometrically adjusted TRV.
12 Highlighted cells indicate an HQ greater than 1.0.

BAF	Bioaccumulation Factor	mg/day	Milligram per day
BB	Below minimum background reference site concentration	mg/kg	Milligram per kilogram
EE/CA	Engineering Evaluation/Cost Analysis	NA	Not applicable
EU	Exposure Unit	Navy	Department of the Navy
HQ	Hazard quotient	SUF	Site use factor
ID	Identification	TRV	Toxicity reference value
kg	Kilogram	XRF	X-ray flourescence
kg/day	Kilogram per day	XRF 10	XRF measurements recorded following drying and seiving through a #10 -mesh screen

Sources: Department of the Navy. 1998. "Development of Toxicity Reference Values for Conducting Ecological Risk Assessments at Naval Facilities in California, Interim Final." Prepared by Naval Facilities Engineering Command, Engineering Field Activity West (EFA West). San Bruno, California.

TABLE C-8E: MANGANESE DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 8 - MIKE HORSE MINE WASTE PILES

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **1.73**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[9] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Mourning Dove (Herbivorous Birds - Terrestrial)																							
Reference Sites																							
BCBG-1 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	3.34E-01	2.89E+02	1.67E+00	NA	NA	NA	NA	5.36E-04	8.65E+02	4.63E-01	6.68E-03	1.09E-01	1.30E-01	7.76E+02	1.97E-01	6.90E+02	1.89E-04
MHBG-201 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	3.34E-01	8.13E+02	4.68E+00	NA	NA	NA	NA	5.36E-04	2.43E+03	1.30E+00	6.68E-03	1.09E-01	3.66E-01	7.76E+02	1.97E-01	6.90E+02	5.31E-04
MHBG-202 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	3.34E-01	4.92E+02	2.84E+00	NA	NA	NA	NA	5.36E-04	1.47E+03	7.89E-01	6.68E-03	1.09E-01	2.22E-01	7.76E+02	1.97E-01	6.90E+02	3.21E-04
Mike Horse Creek Channel Area Deposits																						**Minimum HQ (Reference Site)**	**1.89E-04**
AMHR-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
AMHR-200 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
AMHR-400 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	1.37E+04	7.90E+01	NA	NA	NA	NA	5.36E-04	1.38E+03	7.41E-01	6.68E-03	1.09E-01	4.88E+00	7.76E+02	1.97E-01	6.90E+02	7.07E-03
AMHR-600 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
MHCS-00-E25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	6.27E+04	3.62E+02	NA	NA	NA	NA	5.36E-04	6.33E+03	3.39E+00	6.68E-03	1.09E-01	2.23E+01	7.76E+02	1.97E-01	6.90E+02	3.24E-02
MHCS-0-W25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	1.02E+04	5.87E+01	NA	NA	NA	NA	5.36E-04	1.03E+03	5.51E-01	6.68E-03	1.09E-01	3.63E+00	7.76E+02	1.97E-01	6.90E+02	5.26E-03
MHCS-0-W5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	2.74E+04	1.58E+02	NA	NA	NA	NA	5.36E-04	2.77E+03	1.48E+00	6.68E-03	1.09E-01	9.76E+00	7.76E+02	1.97E-01	6.90E+02	1.41E-02
MHCS-100-E25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	4.45E+04	2.56E+02	NA	NA	NA	NA	5.36E-04	4.49E+03	2.41E+00	6.68E-03	1.09E-01	1.58E+01	7.76E+02	1.97E-01	6.90E+02	2.29E-02
MHCS-100-W1 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	4.60E+04	2.65E+02	NA	NA	NA	NA	5.36E-04	4.64E+03	2.49E+00	6.68E-03	1.09E-01	1.63E+01	7.76E+02	1.97E-01	6.90E+02	2.37E-02
MHCS-100-W25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
MHCS-200-E10 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	4.04E+04	2.33E+02	NA	NA	NA	NA	5.36E-04	4.07E+03	2.18E+00	6.68E-03	1.09E-01	1.44E+01	7.76E+02	1.97E-01	6.90E+02	2.08E-02
MHCS-200-E25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
MHCS-200-W10 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	1.15E+04	6.61E+01	NA	NA	NA	NA	5.36E-04	1.16E+03	6.21E-01	6.68E-03	1.09E-01	4.08E+00	7.76E+02	1.97E-01	6.90E+02	5.92E-03
MHCS-525-E5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	8.98E+04	5.17E+02	NA	NA	NA	NA	5.36E-04	9.06E+03	4.85E+00	6.68E-03	1.09E-01	3.19E+01	7.76E+02	1.97E-01	6.90E+02	4.63E-02
MHCS-525-W15 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	4.46E+04	2.57E+02	NA	NA	NA	NA	5.36E-04	4.50E+03	2.41E+00	6.68E-03	1.09E-01	1.59E+01	7.76E+02	1.97E-01	6.90E+02	2.30E-02
MHCS-600-E10 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	3.44E+04	1.98E+02	NA	NA	NA	NA	5.36E-04	3.47E+03	1.86E+00	6.68E-03	1.09E-01	1.22E+01	7.76E+02	1.97E-01	6.90E+02	1.77E-02
MHCS-600-W10 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	4.97E+04	2.86E+02	NA	NA	NA	NA	5.36E-04	5.02E+03	2.69E+00	6.68E-03	1.09E-01	1.77E+01	7.76E+02	1.97E-01	6.90E+02	2.56E-02
MHCS-700-E10 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	5.25E+04	3.02E+02	NA	NA	NA	NA	5.36E-04	5.30E+03	2.84E+00	6.68E-03	1.09E-01	1.87E+01	7.76E+02	1.97E-01	6.90E+02	2.71E-02
MHCS-700-E25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
MHCS-700-W10 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	1.15E+05	6.61E+02	NA	NA	NA	NA	5.36E-04	1.16E+04	6.20E+00	6.68E-03	1.09E-01	4.08E+01	7.76E+02	1.97E-01	6.90E+02	5.91E-02
MHCS-800-E15 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	1.11E+04	6.39E+01	NA	NA	NA	NA	5.36E-04	1.12E+03	5.99E-01	6.68E-03	1.09E-01	3.94E+00	7.76E+02	1.97E-01	6.90E+02	5.71E-03
MHCS-800-E5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	6.99E+04	4.03E+02	NA	NA	NA	NA	5.36E-04	7.05E+03	3.78E+00	6.68E-03	1.09E-01	2.49E+01	7.76E+02	1.97E-01	6.90E+02	3.60E-02
MHCS-800-W5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	2.25E+04	1.29E+02	NA	NA	NA	NA	5.36E-04	2.27E+03	1.21E+00	6.68E-03	1.09E-01	7.99E+00	7.76E+02	1.97E-01	6.90E+02	1.16E-02
MHCS-900-E15 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
MHCS-900-E5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	5.08E+04	2.93E+02	NA	NA	NA	NA	5.36E-04	5.13E+03	2.75E+00	6.68E-03	1.09E-01	1.81E+01	7.76E+02	1.97E-01	6.90E+02	2.62E-02
MHCS-900-W5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	3.30E+04	1.90E+02	NA	NA	NA	NA	5.36E-04	3.33E+03	1.78E+00	6.68E-03	1.09E-01	1.17E+01	7.76E+02	1.97E-01	6.90E+02	1.70E-02
MHCS-1000-E10 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
MHCS-1000-W5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	7.09E+04	4.09E+02	NA	NA	NA	NA	5.36E-04	7.16E+03	3.83E+00	6.68E-03	1.09E-01	2.52E+01	7.76E+02	1.97E-01	6.90E+02	3.66E-02
MHCS-1100-E10 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	6.55E+04	3.78E+02	NA	NA	NA	NA	5.36E-04	6.61E+03	3.54E+00	6.68E-03	1.09E-01	2.33E+01	7.76E+02	1.97E-01	6.90E+02	3.38E-02
MHCS-1100-E35 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
MHCS-1200-E15 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	2.24E+04	1.29E+02	NA	NA	NA	NA	5.36E-04	2.26E+03	1.21E+00	6.68E-03	1.09E-01	7.95E+00	7.76E+02	1.97E-01	6.90E+02	1.15E-02
MHCS-1200-E30 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	1.71E+04	9.85E+01	NA	NA	NA	NA	5.36E-04	1.73E+03	9.24E-01	6.68E-03	1.09E-01	6.08E+00	7.76E+02	1.97E-01	6.90E+02	8.81E-03
MHCS-1300-E20 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	2.37E+04	1.36E+02	NA	NA	NA	NA	5.36E-04	2.39E+03	1.28E+00	6.68E-03	1.09E-01	8.42E+00	7.76E+02	1.97E-01	6.90E+02	1.22E-02
MHCS-1300-E35 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	2.13E+04	1.23E+02	NA	NA	NA	NA	5.36E-04	2.15E+03	1.15E+00	6.68E-03	1.09E-01	7.59E+00	7.76E+02	1.97E-01	6.90E+02	1.10E-02
Waste Areas 1 and 2																						**Maximum HQ (Mike Horse Creek Channel Area Deposits)**	**5.91E-02**
UMH1-00 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	2.25E+04	1.29E+02	NA	NA	NA	NA	5.36E-04	2.27E+03	1.21E+00	6.68E-03	1.09E-01	7.99E+00	7.76E+02	1.97E-01	6.90E+02	1.16E-02
UMH1-100 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	6.89E+04	3.97E+02	NA	NA	NA	NA	5.36E-04	6.95E+03	3.73E+00	6.68E-03	1.09E-01	2.45E+01	7.76E+02	1.97E-01	6.90E+02	3.55E-02
UMH1-150 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	2.88E+04	1.66E+02	NA	NA	NA	NA	5.36E-04	2.91E+03	1.56E+00	6.68E-03	1.09E-01	1.03E+01	7.76E+02	1.97E-01	6.90E+02	1.49E-02
UMH1-200 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UMH1-250 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	4.45E+04	2.56E+02	NA	NA	NA	NA	5.36E-04	4.49E+03	2.41E+00	6.68E-03	1.09E-01	1.58E+01	7.76E+02	1.97E-01	6.90E+02	2.29E-02
UMH1-250+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	5.97E+04	3.44E+02	NA	NA	NA	NA	5.36E-04	6.02E+03	3.23E+00	6.68E-03	1.09E-01	2.12E+01	7.76E+02	1.97E-01	6.90E+02	3.08E-02
UMH1-300 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	8.43E+04	4.85E+02	NA	NA	NA	NA	5.36E-04	8.50E+03	4.56E+00	6.68E-03	1.09E-01	3.00E+01	7.76E+02	1.97E-01	6.90E+02	4.34E-02
UMH1-300+14 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	3.26E+04	1.88E+02	NA	NA	NA	NA	5.36E-04	3.29E+03	1.76E+00	6.68E-03	1.09E-01	1.16E+01	7.76E+02	1.97E-01	6.90E+02	1.68E-02
UMH1-350 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	7.92E+04	4.56E+02	NA	NA	NA	NA	5.36E-04	7.99E+03	4.28E+00	6.68E-03	1.09E-01	2.82E+01	7.76E+02	1.97E-01	6.90E+02	4.08E-02
UMH1-350+12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	1.64E+04	9.45E+01	NA	NA	NA	NA	5.36E-04	1.66E+03	8.87E-01	6.68E-03	1.09E-01	5.84E+00	7.76E+02	1.97E-01	6.90E+02	8.46E-03
UMH1-400 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	1.53E+04	8.81E+01	NA	NA	NA	NA	5.36E-04	1.54E+03	8.27E-01	6.68E-03	1.09E-01	5.44E+00	7.76E+02	1.97E-01	6.90E+02	7.89E-03
UMH1-400+12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	4.40E+04	2.54E+02	NA	NA	NA	NA	5.36E-04	4.45E+03	2.38E+00	6.68E-03	1.09E-01	1.57E+01	7.76E+02	1.97E-01	6.90E+02	2.27E-02
UMH1-450 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	1.43E+04	8.25E+01	NA	NA	NA	NA	5.36E-04	1.45E+03	7.75E-01	6.68E-03	1.09E-01	5.10E+00	7.76E+02	1.97E-01	6.90E+02	7.39E-03
UMH1-450+12.5 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UMH1-50 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	1.60E+04	9.20E+01	NA	NA	NA	NA	5.36E-04	1.61E+03	8.63E-01	6.68E-03	1.09E-01	5.68E+00	7.76E+02	1.97E-01	6.90E+02	8.23E-03
UMH1-Comp (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	4.18E+04	2.41E+02	NA	NA	NA	NA	5.36E-04	4.22E+03	2.26E+00	6.68E-03	1.09E-01	1.49E+01	7.76E+02	1.97E-01	6.90E+02	2.16E-02
UMH2-00 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	2.26E+04	1.30E+02	NA	NA	NA	NA	5.36E-04	2.28E+03	1.22E+00	6.68E-03	1.09E-01	8.03E+00	7.76E+02	1.97E-01	6.90E+02	1.16E-02

TABLE C-8E: MANGANESE DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 8 - MIKE HORSE MINE WASTE PILES (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **1.73**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[9] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Mourning Dove (Herbivorous Birds - Terrestrial)																							
UMH2-00+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	2.39E+04	1.38E+02	NA	NA	NA	NA	5.36E-04	2.41E+03	1.29E+00	6.68E-03	1.09E-01	8.51E+00	7.76E+02	1.97E-01	6.90E+02	1.23E-02
UMH2-100 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	4.06E+04	2.34E+02	NA	NA	NA	NA	5.36E-04	4.10E+03	2.20E+00	6.68E-03	1.09E-01	1.45E+01	7.76E+02	1.97E-01	6.90E+02	2.09E-02
UMH2-100+35 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	2.35E+04	1.35E+02	NA	NA	NA	NA	5.36E-04	2.37E+03	1.27E+00	6.68E-03	1.09E-01	8.35E+00	7.76E+02	1.97E-01	6.90E+02	1.21E-02
UMH2-150 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	1.55E+04	8.95E+01	NA	NA	NA	NA	5.36E-04	1.57E+03	8.40E-01	6.68E-03	1.09E-01	5.52E+00	7.76E+02	1.97E-01	6.90E+02	8.01E-03
UMH2-150+60 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UMH2-200 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	5.70E+04	3.28E+02	NA	NA	NA	NA	5.36E-04	5.75E+03	3.08E+00	6.68E-03	1.09E-01	2.03E+01	7.76E+02	1.97E-01	6.90E+02	2.94E-02
UMH2-200+85 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	1.29E+04	7.46E+01	NA	NA	NA	NA	5.36E-04	1.31E+03	7.00E-01	6.68E-03	1.09E-01	4.60E+00	7.76E+02	1.97E-01	6.90E+02	6.67E-03
UMH2-250 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	4.02E+04	2.32E+02	NA	NA	NA	NA	5.36E-04	4.06E+03	2.17E+00	6.68E-03	1.09E-01	1.43E+01	7.76E+02	1.97E-01	6.90E+02	2.07E-02
UMH2-250+75 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	2.29E+04	1.32E+02	NA	NA	NA	NA	5.36E-04	2.31E+03	1.24E+00	6.68E-03	1.09E-01	8.13E+00	7.76E+02	1.97E-01	6.90E+02	1.18E-02
UMH2-300 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	1.00E+04	5.78E+01	NA	NA	NA	NA	5.36E-04	1.01E+03	5.43E-01	6.68E-03	1.09E-01	3.57E+00	7.76E+02	1.97E-01	6.90E+02	5.18E-03
UMH2-300+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	1.07E+04	6.14E+01	NA	NA	NA	NA	5.36E-04	1.08E+03	5.76E-01	6.68E-03	1.09E-01	3.79E+00	7.76E+02	1.97E-01	6.90E+02	5.49E-03
UMH2-350 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UMH2-350+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	6.03E+04	3.47E+02	NA	NA	NA	NA	5.36E-04	6.09E+03	3.26E+00	6.68E-03	1.09E-01	2.15E+01	7.76E+02	1.97E-01	6.90E+02	3.11E-02
UMH2-400 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UMH2-400+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	1.51E+04	8.72E+01	NA	NA	NA	NA	5.36E-04	1.53E+03	8.18E-01	6.68E-03	1.09E-01	5.38E+00	7.76E+02	1.97E-01	6.90E+02	7.80E-03
UMH2-450 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	9.69E+03	5.58E+01	NA	NA	NA	NA	5.36E-04	9.78E+02	5.24E-01	6.68E-03	1.09E-01	3.45E+00	7.76E+02	1.97E-01	6.90E+02	5.00E-03
UMH2-450+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UMH2-50 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	2.17E+04	1.25E+02	NA	NA	NA	NA	5.36E-04	2.19E+03	1.17E+00	6.68E-03	1.09E-01	7.71E+00	7.76E+02	1.97E-01	6.90E+02	1.12E-02
UMH2-50+25b (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	1.72E+04	9.88E+01	NA	NA	NA	NA	5.36E-04	1.73E+03	9.28E-01	6.68E-03	1.09E-01	6.10E+00	7.76E+02	1.97E-01	6.90E+02	8.84E-03
UMH2-500 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	2.78E+04	1.60E+02	NA	NA	NA	NA	5.36E-04	2.80E+03	1.50E+00	6.68E-03	1.09E-01	9.88E+00	7.76E+02	1.97E-01	6.90E+02	1.43E-02
UMH2-500+75 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	1.79E+04	1.03E+02	NA	NA	NA	NA	5.36E-04	1.81E+03	9.70E-01	6.68E-03	1.09E-01	6.38E+00	7.76E+02	1.97E-01	6.90E+02	9.25E-03
UMH2-550 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	7.74E+04	4.46E+02	NA	NA	NA	NA	5.36E-04	7.81E+03	4.18E+00	6.68E-03	1.09E-01	2.75E+01	7.76E+02	1.97E-01	6.90E+02	3.99E-02
UMH2-550+75 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	1.94E+04	1.12E+02	NA	NA	NA	NA	5.36E-04	1.96E+03	1.05E+00	6.68E-03	1.09E-01	6.91E+00	7.76E+02	1.97E-01	6.90E+02	1.00E-02
UMH2-600 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	2.17E+04	1.25E+02	NA	NA	NA	NA	5.36E-04	2.19E+03	1.18E+00	6.68E-03	1.09E-01	7.73E+00	7.76E+02	1.97E-01	6.90E+02	1.12E-02
UMH2-600+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	1.25E+04	7.19E+01	NA	NA	NA	NA	5.36E-04	1.26E+03	6.75E-01	6.68E-03	1.09E-01	4.44E+00	7.76E+02	1.97E-01	6.90E+02	6.44E-03
UMH2-650 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	1.95E+04	1.12E+02	NA	NA	NA	NA	5.36E-04	1.97E+03	1.05E+00	6.68E-03	1.09E-01	6.94E+00	7.76E+02	1.97E-01	6.90E+02	1.01E-02
UMH2-650+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UMH2-Comp 1 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	4.52E+04	2.61E+02	NA	NA	NA	NA	5.36E-04	4.57E+03	2.45E+00	6.68E-03	1.09E-01	1.61E+01	7.76E+02	1.97E-01	6.90E+02	2.33E-02
UMH2-Comp 2 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	5.51E+04	3.18E+02	NA	NA	NA	NA	5.36E-04	5.56E+03	2.98E+00	6.68E-03	1.09E-01	1.96E+01	7.76E+02	1.97E-01	6.90E+02	2.84E-02
Waste Area 3																						**Maximum HQ (Waste Areas 1 and 2)**	**4.34E-02**
UMH3-00 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UMH3-100 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UMH3-150 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UMH3-200 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	1.45E+04	8.37E+01	NA	NA	NA	NA	5.36E-04	1.47E+03	7.86E-01	6.68E-03	1.09E-01	5.17E+00	7.76E+02	1.97E-01	6.90E+02	7.49E-03
UMH3-250 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UMH3-300 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UMH3-350 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	1.68E+04	9.69E+01	NA	NA	NA	NA	5.36E-04	1.70E+03	9.09E-01	6.68E-03	1.09E-01	5.98E+00	7.76E+02	1.97E-01	6.90E+02	8.67E-03
UMH3-350+75 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	1.89E+04	1.09E+02	NA	NA	NA	NA	5.36E-04	1.91E+03	1.02E+00	6.68E-03	1.09E-01	6.73E+00	7.76E+02	1.97E-01	6.90E+02	9.76E-03
UMH3-400 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	9.78E+03	5.63E+01	NA	NA	NA	NA	5.36E-04	9.87E+02	5.29E-01	6.68E-03	1.09E-01	3.48E+00	7.76E+02	1.97E-01	6.90E+02	5.04E-03
UMH3-400+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UMH3-450 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UMH3-50 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UMH3-50+50 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	1.29E+04	7.45E+01	NA	NA	NA	NA	5.36E-04	1.30E+03	6.99E-01	6.68E-03	1.09E-01	4.60E+00	7.76E+02	1.97E-01	6.90E+02	6.66E-03
UMH3-500 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UMH3-550 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	1.51E+04	8.71E+01	NA	NA	NA	NA	5.36E-04	1.53E+03	8.18E-01	6.68E-03	1.09E-01	5.38E+00	7.76E+02	1.97E-01	6.90E+02	7.80E-03
UMH3-600 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	1.31E+04	7.55E+01	NA	NA	NA	NA	5.36E-04	1.32E+03	7.08E-01	6.68E-03	1.09E-01	4.66E+00	7.76E+02	1.97E-01	6.90E+02	6.75E-03
UMH3-650 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	1.48E+04	8.51E+01	NA	NA	NA	NA	5.36E-04	1.49E+03	7.99E-01	6.68E-03	1.09E-01	5.26E+00	7.76E+02	1.97E-01	6.90E+02	7.62E-03
UMH3-700 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UMH3-750 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UMH3-800 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	1.09E+04	6.27E+01	NA	NA	NA	NA	5.36E-04	1.10E+03	5.89E-01	6.68E-03	1.09E-01	3.87E+00	7.76E+02	1.97E-01	6.90E+02	5.61E-03
UMH3-Comp 1 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UMH3-Comp 2 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UMH3-Comp 3 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	1.50E+04	8.66E+01	NA	NA	NA	NA	5.36E-04	1.52E+03	8.13E-01	6.68E-03	1.09E-01	5.35E+00	7.76E+02	1.97E-01	6.90E+02	7.75E-03
																						Maximum HQ (Waste Area 3)	**9.76E-03**

TABLE C-8E: MANGANESE DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 8 - MIKE HORSE MINE WASTE PILES (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **1.73**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Red-Tailed Hawk (Carnivorous Birds - Terrestrial)																							
Reference Sites																							
BCBG-1 (0-6")	9.00E-02	9.00E-02	5.93E-02	5.13E+01	4.62E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	8.65E+02	4.43E+00	2.48E-03	1.13E+00	1.98E-02	7.76E+02	1.97E-01	1.10E+03	1.80E-05
MHBG-201 (0-6")	9.00E-02	9.00E-02	5.93E-02	1.44E+02	1.30E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.43E+03	1.25E+01	2.48E-03	1.13E+00	5.57E-02	7.76E+02	1.97E-01	1.10E+03	5.06E-05
MHBG-202 (0-6")	9.00E-02	9.00E-02	5.93E-02	8.74E+01	7.86E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.47E+03	7.55E+00	2.48E-03	1.13E+00	3.38E-02	7.76E+02	1.97E-01	1.10E+03	3.06E-05
Mike Horse Creek Channel Area Deposits																						**Minimum HQ (Reference Site)**	**1.80E-05**
AMHR-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
AMHR-200 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
AMHR-400 (0-6")	9.00E-02	9.00E-02	2.80E-02	3.87E+01	3.48E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.38E+03	7.09E+00	2.48E-03	1.13E+00	2.32E-02	7.76E+02	1.97E-01	1.10E+03	2.10E-05
AMHR-600 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
MHCS-00-E25 (0-6")	9.00E-02	9.00E-02	2.80E-02	1.77E+02	1.59E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	6.33E+03	3.25E+01	2.48E-03	1.13E+00	1.06E-01	7.76E+02	1.97E-01	1.10E+03	9.62E-05
MHCS-0-W25 (0-6")	9.00E-02	9.00E-02	2.80E-02	2.88E+01	2.59E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.03E+03	5.28E+00	2.48E-03	1.13E+00	1.72E-02	7.76E+02	1.97E-01	1.10E+03	1.56E-05
MHCS-0-W5 (0-6")	9.00E-02	9.00E-02	2.80E-02	7.75E+01	6.97E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.77E+03	1.42E+01	2.48E-03	1.13E+00	4.64E-02	7.76E+02	1.97E-01	1.10E+03	4.21E-05
MHCS-100-E25 (0-6")	9.00E-02	9.00E-02	2.80E-02	1.26E+02	1.13E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.49E+03	2.30E+01	2.48E-03	1.13E+00	7.52E-02	7.76E+02	1.97E-01	1.10E+03	6.82E-05
MHCS-100-W1 (0-6")	9.00E-02	9.00E-02	2.80E-02	1.30E+02	1.17E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.64E+03	2.38E+01	2.48E-03	1.13E+00	7.76E-02	7.76E+02	1.97E-01	1.10E+03	7.05E-05
MHCS-100-W25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
MHCS-200-E10 (0-6")	9.00E-02	9.00E-02	2.80E-02	1.14E+02	1.03E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.07E+03	2.09E+01	2.48E-03	1.13E+00	6.82E-02	7.76E+02	1.97E-01	1.10E+03	6.19E-05
MHCS-200-E25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
MHCS-200-W10 (0-6")	9.00E-02	9.00E-02	2.80E-02	3.24E+01	2.92E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.16E+03	5.94E+00	2.48E-03	1.13E+00	1.94E-02	7.76E+02	1.97E-01	1.10E+03	1.76E-05
MHCS-525-E5 (0-6")	9.00E-02	9.00E-02	2.80E-02	2.54E+02	2.28E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	9.06E+03	4.64E+01	2.48E-03	1.13E+00	1.52E-01	7.76E+02	1.97E-01	1.10E+03	1.38E-04
MHCS-525-W15 (0-6")	9.00E-02	9.00E-02	2.80E-02	1.26E+02	1.13E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.50E+03	2.31E+01	2.48E-03	1.13E+00	7.54E-02	7.76E+02	1.97E-01	1.10E+03	6.84E-05
MHCS-600-E10 (0-6")	9.00E-02	9.00E-02	2.80E-02	9.72E+01	8.74E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.47E+03	1.78E+01	2.48E-03	1.13E+00	5.81E-02	7.76E+02	1.97E-01	1.10E+03	5.28E-05
MHCS-600-W10 (0-6")	9.00E-02	9.00E-02	2.80E-02	1.40E+02	1.26E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.02E+03	2.57E+01	2.48E-03	1.13E+00	8.40E-02	7.76E+02	1.97E-01	1.10E+03	7.62E-05
MHCS-700-E10 (0-6")	9.00E-02	9.00E-02	2.80E-02	1.48E+02	1.33E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.30E+03	2.72E+01	2.48E-03	1.13E+00	8.86E-02	7.76E+02	1.97E-01	1.10E+03	8.05E-05
MHCS-700-E25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
MHCS-700-W10 (0-6")	9.00E-02	9.00E-02	2.80E-02	3.24E+02	2.91E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.16E+04	5.93E+01	2.48E-03	1.13E+00	1.94E-01	7.76E+02	1.97E-01	1.10E+03	1.76E-04
MHCS-800-E15 (0-6")	9.00E-02	9.00E-02	2.80E-02	3.13E+01	2.82E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.12E+03	5.74E+00	2.48E-03	1.13E+00	1.87E-02	7.76E+02	1.97E-01	1.10E+03	1.70E-05
MHCS-800-E5 (0-6")	9.00E-02	9.00E-02	2.80E-02	1.97E+02	1.78E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	7.05E+03	3.62E+01	2.48E-03	1.13E+00	1.18E-01	7.76E+02	1.97E-01	1.10E+03	1.07E-04
MHCS-800-W5 (0-6")	9.00E-02	9.00E-02	2.80E-02	6.34E+01	5.71E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.27E+03	1.16E+01	2.48E-03	1.13E+00	3.79E-02	7.76E+02	1.97E-01	1.10E+03	3.44E-05
MHCS-900-E15 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
MHCS-900-E5 (0-6")	9.00E-02	9.00E-02	2.80E-02	1.44E+02	1.29E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.13E+03	2.63E+01	2.48E-03	1.13E+00	8.59E-02	7.76E+02	1.97E-01	1.10E+03	7.79E-05
MHCS-900-W5 (0-6")	9.00E-02	9.00E-02	2.80E-02	9.32E+01	8.39E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.33E+03	1.71E+01	2.48E-03	1.13E+00	5.58E-02	7.76E+02	1.97E-01	1.10E+03	5.06E-05
MHCS-1000-E10 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
MHCS-1000-W5 (0-6")	9.00E-02	9.00E-02	2.80E-02	2.00E+02	1.80E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	7.16E+03	3.67E+01	2.48E-03	1.13E+00	1.20E-01	7.76E+02	1.97E-01	1.10E+03	1.09E-04
MHCS-1100-E10 (0-6")	9.00E-02	9.00E-02	2.80E-02	1.85E+02	1.67E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	6.61E+03	3.39E+01	2.48E-03	1.13E+00	1.11E-01	7.76E+02	1.97E-01	1.10E+03	1.00E-04
MHCS-1100-E35 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
MHCS-1200-E15 (0-6")	9.00E-02	9.00E-02	2.80E-02	6.32E+01	5.68E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.26E+03	1.16E+01	2.48E-03	1.13E+00	3.78E-02	7.76E+02	1.97E-01	1.10E+03	3.43E-05
MHCS-1200-E30 (0-6")	9.00E-02	9.00E-02	2.80E-02	4.83E+01	4.34E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.73E+03	8.85E+00	2.48E-03	1.13E+00	2.89E-02	7.76E+02	1.97E-01	1.10E+03	2.62E-05
MHCS-1300-E20 (0-6")	9.00E-02	9.00E-02	2.80E-02	6.69E+01	6.02E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.39E+03	1.23E+01	2.48E-03	1.13E+00	4.00E-02	7.76E+02	1.97E-01	1.10E+03	3.63E-05
MHCS-1300-E35 (0-6")	9.00E-02	9.00E-02	2.80E-02	6.02E+01	5.42E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.15E+03	1.10E+01	2.48E-03	1.13E+00	3.60E-02	7.76E+02	1.97E-01	1.10E+03	3.27E-05
Waste Areas 1 and 2																						**Maximum HQ (Mike Horse Creek Channel Area Deposits)**	**1.76E-04**
UMH1-00 (0-6")	9.00E-02	9.00E-02	2.80E-02	6.35E+01	5.71E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.27E+03	1.16E+01	2.48E-03	1.13E+00	3.79E-02	7.76E+02	1.97E-01	1.10E+03	3.44E-05
UMH1-100 (0-6")	9.00E-02	9.00E-02	2.80E-02	1.95E+02	1.75E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	6.95E+03	3.57E+01	2.48E-03	1.13E+00	1.16E-01	7.76E+02	1.97E-01	1.10E+03	1.06E-04
UMH1-150 (0-6")	9.00E-02	9.00E-02	2.80E-02	8.15E+01	7.33E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.91E+03	1.49E+01	2.48E-03	1.13E+00	4.87E-02	7.76E+02	1.97E-01	1.10E+03	4.42E-05
UMH1-200 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UMH1-250 (0-6")	9.00E-02	9.00E-02	2.80E-02	1.26E+02	1.13E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.49E+03	2.30E+01	2.48E-03	1.13E+00	7.52E-02	7.76E+02	1.97E-01	1.10E+03	6.82E-05
UMH1-250+25 (0-6")	9.00E-02	9.00E-02	2.80E-02	1.69E+02	1.52E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	6.02E+03	3.09E+01	2.48E-03	1.13E+00	1.01E-01	7.76E+02	1.97E-01	1.10E+03	9.15E-05
UMH1-300 (0-6")	9.00E-02	9.00E-02	2.80E-02	2.38E+02	2.14E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	8.50E+03	4.36E+01	2.48E-03	1.13E+00	1.42E-01	7.76E+02	1.97E-01	1.10E+03	1.29E-04
UMH1-300+14 (0-6")	9.00E-02	9.00E-02	2.80E-02	9.20E+01	8.28E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.29E+03	1.68E+01	2.48E-03	1.13E+00	5.50E-02	7.76E+02	1.97E-01	1.10E+03	4.99E-05
UMH1-350 (0-6")	9.00E-02	9.00E-02	2.80E-02	2.24E+02	2.01E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	7.99E+03	4.10E+01	2.48E-03	1.13E+00	1.34E-01	7.76E+02	1.97E-01	1.10E+03	1.21E-04
UMH1-350+12.5 (0-6")	9.00E-02	9.00E-02	2.80E-02	4.64E+01	4.17E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.66E+03	8.49E+00	2.48E-03	1.13E+00	2.77E-02	7.76E+02	1.97E-01	1.10E+03	2.52E-05
UMH1-400 (0-6")	9.00E-02	9.00E-02	2.80E-02	4.32E+01	3.89E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.54E+03	7.92E+00	2.48E-03	1.13E+00	2.58E-02	7.76E+02	1.97E-01	1.10E+03	2.35E-05
UMH1-400+12.5 (0-6")	9.00E-02	9.00E-02	2.80E-02	1.24E+02	1.12E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.45E+03	2.28E+01	2.48E-03	1.13E+00	7.44E-02	7.76E+02	1.97E-01	1.10E+03	6.75E-05
UMH1-450 (0-6")	9.00E-02	9.00E-02	2.80E-02	4.05E+01	3.64E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.45E+03	7.41E+00	2.48E-03	1.13E+00	2.42E-02	7.76E+02	1.97E-01	1.10E+03	2.20E-05
UMH1-450+12.5 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UMH1-50 (0-6")	9.00E-02	9.00E-02	2.80E-02	4.51E+01	4.06E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.61E+03	8.26E+00	2.48E-03	1.13E+00	2.70E-02	7.76E+02	1.97E-01	1.10E+03	2.45E-05
UMH1-Comp (0-6")	9.00E-02	9.00E-02	2.80E-02	1.18E+02	1.06E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.22E+03	2.16E+01	2.48E-03	1.13E+00	7.06E-02	7.76E+02	1.97E-01	1.10E+03	6.41E-05
UMH2-00 (0-6")	9.00E-02	9.00E-02	2.80E-02	6.37E+01	5.73E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.28E+03	1.17E+01	2.48E-03	1.13E+00	3.81E-02	7.76E+02	1.97E-01	1.10E+03	3.46E-05

TABLE C-8E: MANGANESE DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 8 - MIKE HORSE MINE WASTE PILES (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **1.73**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Red-Tailed Hawk (Carnivorous Birds - Terrestrial)																							
UMH2-00+25 (0-6")	9.00E-02	9.00E-02	2.80E-02	6.76E+01	6.08E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.41E+03	1.24E+01	2.48E-03	1.13E+00	4.04E-02	7.76E+02	1.97E-01	1.10E+03	3.67E-05
UMH2-100 (0-6")	9.00E-02	9.00E-02	2.80E-02	1.15E+02	1.03E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.10E+03	2.10E+01	2.48E-03	1.13E+00	6.86E-02	7.76E+02	1.97E-01	1.10E+03	6.23E-05
UMH2-100+35 (0-6")	9.00E-02	9.00E-02	2.80E-02	6.63E+01	5.96E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.37E+03	1.21E+01	2.48E-03	1.13E+00	3.96E-02	7.76E+02	1.97E-01	1.10E+03	3.60E-05
UMH2-150 (0-6")	9.00E-02	9.00E-02	2.80E-02	4.39E+01	3.95E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.57E+03	8.04E+00	2.48E-03	1.13E+00	2.62E-02	7.76E+02	1.97E-01	1.10E+03	2.38E-05
UMH2-150+60 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UMH2-200 (0-6")	9.00E-02	9.00E-02	2.80E-02	1.61E+02	1.45E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.75E+03	2.95E+01	2.48E-03	1.13E+00	9.62E-02	7.76E+02	1.97E-01	1.10E+03	8.73E-05
UMH2-200+85 (0-6")	9.00E-02	9.00E-02	2.80E-02	3.66E+01	3.29E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.31E+03	6.70E+00	2.48E-03	1.13E+00	2.19E-02	7.76E+02	1.97E-01	1.10E+03	1.98E-05
UMH2-250 (0-6")	9.00E-02	9.00E-02	2.80E-02	1.14E+02	1.02E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.06E+03	2.08E+01	2.48E-03	1.13E+00	6.79E-02	7.76E+02	1.97E-01	1.10E+03	6.16E-05
UMH2-250+75 (0-6")	9.00E-02	9.00E-02	2.80E-02	6.46E+01	5.81E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.31E+03	1.18E+01	2.48E-03	1.13E+00	3.86E-02	7.76E+02	1.97E-01	1.10E+03	3.51E-05
UMH2-300 (0-6")	9.00E-02	9.00E-02	2.80E-02	2.84E+01	2.55E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.01E+03	5.19E+00	2.48E-03	1.13E+00	1.70E-02	7.76E+02	1.97E-01	1.10E+03	1.54E-05
UMH2-300+25 (0-6")	9.00E-02	9.00E-02	2.80E-02	3.01E+01	2.71E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.08E+03	5.51E+00	2.48E-03	1.13E+00	1.80E-02	7.76E+02	1.97E-01	1.10E+03	1.63E-05
UMH2-350 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UMH2-350+25 (0-6")	9.00E-02	9.00E-02	2.80E-02	1.70E+02	1.53E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	6.09E+03	3.12E+01	2.48E-03	1.13E+00	1.02E-01	7.76E+02	1.97E-01	1.10E+03	9.25E-05
UMH2-400 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UMH2-400+25 (0-6")	9.00E-02	9.00E-02	2.80E-02	4.27E+01	3.85E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.53E+03	7.83E+00	2.48E-03	1.13E+00	2.56E-02	7.76E+02	1.97E-01	1.10E+03	2.32E-05
UMH2-450 (0-6")	9.00E-02	9.00E-02	2.80E-02	2.74E+01	2.46E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	9.78E+02	5.01E+00	2.48E-03	1.13E+00	1.64E-02	7.76E+02	1.97E-01	1.10E+03	1.49E-05
UMH2-450+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UMH2-50 (0-6")	9.00E-02	9.00E-02	2.80E-02	6.13E+01	5.51E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.19E+03	1.12E+01	2.48E-03	1.13E+00	3.66E-02	7.76E+02	1.97E-01	1.10E+03	3.32E-05
UMH2-50+25b (0-6")	9.00E-02	9.00E-02	2.80E-02	4.85E+01	4.36E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.73E+03	8.88E+00	2.48E-03	1.13E+00	2.90E-02	7.76E+02	1.97E-01	1.10E+03	2.63E-05
UMH2-500 (0-6")	9.00E-02	9.00E-02	2.80E-02	7.85E+01	7.06E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.80E+03	1.44E+01	2.48E-03	1.13E+00	4.69E-02	7.76E+02	1.97E-01	1.10E+03	4.26E-05
UMH2-500+75 (0-6")	9.00E-02	9.00E-02	2.80E-02	5.07E+01	4.56E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.81E+03	9.29E+00	2.48E-03	1.13E+00	3.03E-02	7.76E+02	1.97E-01	1.10E+03	2.75E-05
UMH2-550 (0-6")	9.00E-02	9.00E-02	2.80E-02	2.19E+02	1.97E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	7.81E+03	4.00E+01	2.48E-03	1.13E+00	1.31E-01	7.76E+02	1.97E-01	1.10E+03	1.19E-04
UMH2-550+75 (0-6")	9.00E-02	9.00E-02	2.80E-02	5.49E+01	4.94E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.96E+03	1.00E+01	2.48E-03	1.13E+00	3.28E-02	7.76E+02	1.97E-01	1.10E+03	2.98E-05
UMH2-600 (0-6")	9.00E-02	9.00E-02	2.80E-02	6.14E+01	5.53E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.19E+03	1.13E+01	2.48E-03	1.13E+00	3.67E-02	7.76E+02	1.97E-01	1.10E+03	3.33E-05
UMH2-600+25 (0-6")	9.00E-02	9.00E-02	2.80E-02	3.53E+01	3.17E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.26E+03	6.46E+00	2.48E-03	1.13E+00	2.11E-02	7.76E+02	1.97E-01	1.10E+03	1.91E-05
UMH2-650 (0-6")	9.00E-02	9.00E-02	2.80E-02	5.51E+01	4.96E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.97E+03	1.01E+01	2.48E-03	1.13E+00	3.29E-02	7.76E+02	1.97E-01	1.10E+03	2.99E-05
UMH2-650+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UMH2-Comp 1 (0-6")	9.00E-02	9.00E-02	2.80E-02	1.28E+02	1.15E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.57E+03	2.34E+01	2.48E-03	1.13E+00	7.64E-02	7.76E+02	1.97E-01	1.10E+03	6.94E-05
UMH2-Comp 2 (0-6")	9.00E-02	9.00E-02	2.80E-02	1.56E+02	1.40E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.56E+03	2.85E+01	2.48E-03	1.13E+00	9.31E-02	7.76E+02	1.97E-01	1.10E+03	8.45E-05
Waste Area 3																						**Maximum HQ (Waste Areas 1 and 2)**	**1.29E-04**
UMH3-00 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UMH3-100 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UMH3-150 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UMH3-200 (0-6")	9.00E-02	9.00E-02	2.80E-02	4.10E+01	3.69E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.47E+03	7.52E+00	2.48E-03	1.13E+00	2.45E-02	7.76E+02	1.97E-01	1.10E+03	2.23E-05
UMH3-250 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UMH3-300 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UMH3-350 (0-6")	9.00E-02	9.00E-02	2.80E-02	4.75E+01	4.27E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.70E+03	8.70E+00	2.48E-03	1.13E+00	2.84E-02	7.76E+02	1.97E-01	1.10E+03	2.58E-05
UMH3-350+75 (0-6")	9.00E-02	9.00E-02	2.80E-02	5.35E+01	4.81E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.91E+03	9.79E+00	2.48E-03	1.13E+00	3.20E-02	7.76E+02	1.97E-01	1.10E+03	2.90E-05
UMH3-400 (0-6")	9.00E-02	9.00E-02	2.80E-02	2.76E+01	2.48E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	9.87E+02	5.06E+00	2.48E-03	1.13E+00	1.65E-02	7.76E+02	1.97E-01	1.10E+03	1.50E-05
UMH3-400+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UMH3-450 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UMH3-50 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UMH3-50+50 (0-6")	9.00E-02	9.00E-02	2.80E-02	3.65E+01	3.28E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.30E+03	6.69E+00	2.48E-03	1.13E+00	2.18E-02	7.76E+02	1.97E-01	1.10E+03	1.98E-05
UMH3-500 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UMH3-550 (0-6")	9.00E-02	9.00E-02	2.80E-02	4.27E+01	3.84E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.53E+03	7.82E+00	2.48E-03	1.13E+00	2.55E-02	7.76E+02	1.97E-01	1.10E+03	2.32E-05
UMH3-600 (0-6")	9.00E-02	9.00E-02	2.80E-02	3.70E+01	3.33E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.32E+03	6.78E+00	2.48E-03	1.13E+00	2.21E-02	7.76E+02	1.97E-01	1.10E+03	2.01E-05
UMH3-650 (0-6")	9.00E-02	9.00E-02	2.80E-02	4.18E+01	3.76E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.49E+03	7.65E+00	2.48E-03	1.13E+00	2.50E-02	7.76E+02	1.97E-01	1.10E+03	2.27E-05
UMH3-700 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UMH3-750 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UMH3-800 (0-6")	9.00E-02	9.00E-02	2.80E-02	3.08E+01	2.77E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.10E+03	5.64E+00	2.48E-03	1.13E+00	1.84E-02	7.76E+02	1.97E-01	1.10E+03	1.67E-05
UMH3-Comp 1 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UMH3-Comp 2 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UMH3-Comp 3 (0-6")	9.00E-02	9.00E-02	2.80E-02	4.25E+01	3.82E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.52E+03	7.78E+00	2.48E-03	1.13E+00	2.54E-02	7.76E+02	1.97E-01	1.10E+03	2.30E-05
																						Maximum HQ (Waste Area 3)	**2.90E-05**

TABLE C-8E: MANGANESE DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 8 - MIKE HORSE MINE WASTE PILES (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **1.73**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[9] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
American Kestrel (Insectivorous Birds - Terrestrial)																							
Reference Sites																							
BCBG-1 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.28E+03	1.76E+01	7.84E-04	8.65E+02	6.78E-01	6.61E-03	1.24E-01	9.72E-01	7.76E+02	1.97E-01	7.08E+02	1.37E-03
MHBG-201 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	3.59E+03	4.94E+01	7.84E-04	2.43E+03	1.91E+00	6.61E-03	1.24E-01	2.74E+00	7.76E+02	1.97E-01	7.08E+02	3.87E-03
MHBG-202 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	2.17E+03	2.99E+01	7.84E-04	1.47E+03	1.16E+00	6.61E-03	1.24E-01	1.66E+00	7.76E+02	1.97E-01	7.08E+02	2.34E-03
Mike Horse Creek Channel Area Deposits																						**Minimum HQ (Reference Site)**	**1.37E-03**
AMHR-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
AMHR-200 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
AMHR-400 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	2.04E+03	2.81E+01	7.84E-04	1.38E+03	1.09E+00	6.61E-03	1.24E-01	1.56E+00	7.76E+02	1.97E-01	7.08E+02	2.20E-03
AMHR-600 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
MHCS-00-E25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	9.35E+03	1.29E+02	7.84E-04	6.33E+03	4.97E+00	6.61E-03	1.24E-01	7.12E+00	7.76E+02	1.97E-01	7.08E+02	1.01E-02
MHCS-0-W25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.52E+03	2.09E+01	7.84E-04	1.03E+03	8.07E-01	6.61E-03	1.24E-01	1.16E+00	7.76E+02	1.97E-01	7.08E+02	1.64E-03
MHCS-0-W5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	4.09E+03	5.63E+01	7.84E-04	2.77E+03	2.17E+00	6.61E-03	1.24E-01	3.12E+00	7.76E+02	1.97E-01	7.08E+02	4.40E-03
MHCS-100-E25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	6.63E+03	9.12E+01	7.84E-04	4.49E+03	3.52E+00	6.61E-03	1.24E-01	5.05E+00	7.76E+02	1.97E-01	7.08E+02	7.14E-03
MHCS-100-W1 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	6.85E+03	9.42E+01	7.84E-04	4.64E+03	3.64E+00	6.61E-03	1.24E-01	5.22E+00	7.76E+02	1.97E-01	7.08E+02	7.37E-03
MHCS-100-W25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
MHCS-200-E10 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	6.01E+03	8.28E+01	7.84E-04	4.07E+03	3.20E+00	6.61E-03	1.24E-01	4.58E+00	7.76E+02	1.97E-01	7.08E+02	6.48E-03
MHCS-200-E25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
MHCS-200-W10 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.71E+03	2.35E+01	7.84E-04	1.16E+03	9.09E-01	6.61E-03	1.24E-01	1.30E+00	7.76E+02	1.97E-01	7.08E+02	1.84E-03
MHCS-525-E5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.34E+04	1.84E+02	7.84E-04	9.06E+03	7.11E+00	6.61E-03	1.24E-01	1.02E+01	7.76E+02	1.97E-01	7.08E+02	1.44E-02
MHCS-525-W15 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	6.65E+03	9.15E+01	7.84E-04	4.50E+03	3.53E+00	6.61E-03	1.24E-01	5.07E+00	7.76E+02	1.97E-01	7.08E+02	7.16E-03
MHCS-600-E10 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	5.13E+03	7.05E+01	7.84E-04	3.47E+03	2.72E+00	6.61E-03	1.24E-01	3.91E+00	7.76E+02	1.97E-01	7.08E+02	5.52E-03
MHCS-600-W10 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	7.40E+03	1.02E+02	7.84E-04	5.02E+03	3.93E+00	6.61E-03	1.24E-01	5.64E+00	7.76E+02	1.97E-01	7.08E+02	7.97E-03
MHCS-700-E10 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	7.82E+03	1.08E+02	7.84E-04	5.30E+03	4.15E+00	6.61E-03	1.24E-01	5.96E+00	7.76E+02	1.97E-01	7.08E+02	8.42E-03
MHCS-700-E25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
MHCS-700-W10 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.71E+04	2.35E+02	7.84E-04	1.16E+04	9.08E+00	6.61E-03	1.24E-01	1.30E+01	7.76E+02	1.97E-01	7.08E+02	1.84E-02
MHCS-800-E15 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.65E+03	2.27E+01	7.84E-04	1.12E+03	8.77E-01	6.61E-03	1.24E-01	1.26E+00	7.76E+02	1.97E-01	7.08E+02	1.78E-03
MHCS-800-E5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.04E+04	1.43E+02	7.84E-04	7.05E+03	5.53E+00	6.61E-03	1.24E-01	7.93E+00	7.76E+02	1.97E-01	7.08E+02	1.12E-02
MHCS-800-W5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	3.34E+03	4.60E+01	7.84E-04	2.27E+03	1.78E+00	6.61E-03	1.24E-01	2.55E+00	7.76E+02	1.97E-01	7.08E+02	3.60E-03
MHCS-900-E15 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
MHCS-900-E5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	7.57E+03	1.04E+02	7.84E-04	5.13E+03	4.02E+00	6.61E-03	1.24E-01	5.77E+00	7.76E+02	1.97E-01	7.08E+02	8.15E-03
MHCS-900-W5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	4.92E+03	6.77E+01	7.84E-04	3.33E+03	2.61E+00	6.61E-03	1.24E-01	3.75E+00	7.76E+02	1.97E-01	7.08E+02	5.29E-03
MHCS-1000-E10 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
MHCS-1000-W5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.06E+04	1.45E+02	7.84E-04	7.16E+03	5.61E+00	6.61E-03	1.24E-01	8.05E+00	7.76E+02	1.97E-01	7.08E+02	1.14E-02
MHCS-1100-E10 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	9.76E+03	1.34E+02	7.84E-04	6.61E+03	5.19E+00	6.61E-03	1.24E-01	7.44E+00	7.76E+02	1.97E-01	7.08E+02	1.05E-02
MHCS-1100-E35 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
MHCS-1200-E15 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	3.33E+03	4.58E+01	7.84E-04	2.26E+03	1.77E+00	6.61E-03	1.24E-01	2.54E+00	7.76E+02	1.97E-01	7.08E+02	3.59E-03
MHCS-1200-E30 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	2.55E+03	3.50E+01	7.84E-04	1.73E+03	1.35E+00	6.61E-03	1.24E-01	1.94E+00	7.76E+02	1.97E-01	7.08E+02	2.74E-03
MHCS-1300-E20 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	3.53E+03	4.85E+01	7.84E-04	2.39E+03	1.87E+00	6.61E-03	1.24E-01	2.69E+00	7.76E+02	1.97E-01	7.08E+02	3.80E-03
MHCS-1300-E35 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	3.18E+03	4.37E+01	7.84E-04	2.15E+03	1.69E+00	6.61E-03	1.24E-01	2.42E+00	7.76E+02	1.97E-01	7.08E+02	3.42E-03
Waste Areas 1 and 2																						**Maximum HQ (Mike Horse Creek Channel Area Deposits)**	**1.84E-02**
UMH1-00 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	3.35E+03	4.60E+01	7.84E-04	2.27E+03	1.78E+00	6.61E-03	1.24E-01	2.55E+00	7.76E+02	1.97E-01	7.08E+02	3.60E-03
UMH1-100 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.03E+04	1.41E+02	7.84E-04	6.95E+03	5.45E+00	6.61E-03	1.24E-01	7.82E+00	7.76E+02	1.97E-01	7.08E+02	1.10E-02
UMH1-150 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	4.29E+03	5.91E+01	7.84E-04	2.91E+03	2.28E+00	6.61E-03	1.24E-01	3.27E+00	7.76E+02	1.97E-01	7.08E+02	4.62E-03
UMH1-200 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UMH1-250 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	6.63E+03	9.12E+01	7.84E-04	4.49E+03	3.52E+00	6.61E-03	1.24E-01	5.05E+00	7.76E+02	1.97E-01	7.08E+02	7.13E-03
UMH1-250+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	8.89E+03	1.22E+02	7.84E-04	6.02E+03	4.72E+00	6.61E-03	1.24E-01	6.77E+00	7.76E+02	1.97E-01	7.08E+02	9.57E-03
UMH1-300 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.26E+04	1.73E+02	7.84E-04	8.50E+03	6.67E+00	6.61E-03	1.24E-01	9.56E+00	7.76E+02	1.97E-01	7.08E+02	1.35E-02
UMH1-300+14 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	4.85E+03	6.67E+01	7.84E-04	3.29E+03	2.58E+00	6.61E-03	1.24E-01	3.70E+00	7.76E+02	1.97E-01	7.08E+02	5.22E-03
UMH1-350 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.18E+04	1.62E+02	7.84E-04	7.99E+03	6.27E+00	6.61E-03	1.24E-01	8.99E+00	7.76E+02	1.97E-01	7.08E+02	1.27E-02
UMH1-350+12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	2.44E+03	3.36E+01	7.84E-04	1.66E+03	1.30E+00	6.61E-03	1.24E-01	1.86E+00	7.76E+02	1.97E-01	7.08E+02	2.63E-03
UMH1-400 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	2.28E+03	3.14E+01	7.84E-04	1.54E+03	1.21E+00	6.61E-03	1.24E-01	1.74E+00	7.76E+02	1.97E-01	7.08E+02	2.45E-03
UMH1-400+12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	6.56E+03	9.03E+01	7.84E-04	4.45E+03	3.49E+00	6.61E-03	1.24E-01	5.00E+00	7.76E+02	1.97E-01	7.08E+02	7.06E-03
UMH1-450 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	2.13E+03	2.94E+01	7.84E-04	1.45E+03	1.13E+00	6.61E-03	1.24E-01	1.63E+00	7.76E+02	1.97E-01	7.08E+02	2.30E-03
UMH1-450+12.5 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UMH1-50 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	2.38E+03	3.27E+01	7.84E-04	1.61E+03	1.26E+00	6.61E-03	1.24E-01	1.81E+00	7.76E+02	1.97E-01	7.08E+02	2.56E-03
UMH1-Comp (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	6.23E+03	8.57E+01	7.84E-04	4.22E+03	3.31E+00	6.61E-03	1.24E-01	4.75E+00	7.76E+02	1.97E-01	7.08E+02	6.70E-03
UMH2-00 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	3.36E+03	4.62E+01	7.84E-04	2.28E+03	1.79E+00	6.61E-03	1.24E-01	2.56E+00	7.76E+02	1.97E-01	7.08E+02	3.62E-03

TABLE C-8E: MANGANESE DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 8 - MIKE HORSE MINE WASTE PILES (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **1.73**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[9] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
American Kestrel (Insectivorous Birds - Terrestrial)																							
UMH2-00+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	3.56E+03	4.90E+01	7.84E-04	2.41E+03	1.89E+00	6.61E-03	1.24E-01	2.71E+00	7.76E+02	1.97E-01	7.08E+02	3.83E-03
UMH2-100 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	6.05E+03	8.33E+01	7.84E-04	4.10E+03	3.22E+00	6.61E-03	1.24E-01	4.61E+00	7.76E+02	1.97E-01	7.08E+02	6.52E-03
UMH2-100+35 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	3.50E+03	4.81E+01	7.84E-04	2.37E+03	1.86E+00	6.61E-03	1.24E-01	2.66E+00	7.76E+02	1.97E-01	7.08E+02	3.76E-03
UMH2-150 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	2.31E+03	3.18E+01	7.84E-04	1.57E+03	1.23E+00	6.61E-03	1.24E-01	1.76E+00	7.76E+02	1.97E-01	7.08E+02	2.49E-03
UMH2-150+60 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UMH2-200 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	8.49E+03	1.17E+02	7.84E-04	5.75E+03	4.51E+00	6.61E-03	1.24E-01	6.47E+00	7.76E+02	1.97E-01	7.08E+02	9.14E-03
UMH2-200+85 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.93E+03	2.65E+01	7.84E-04	1.31E+03	1.02E+00	6.61E-03	1.24E-01	1.47E+00	7.76E+02	1.97E-01	7.08E+02	2.08E-03
UMH2-250 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	5.99E+03	8.24E+01	7.84E-04	4.06E+03	3.18E+00	6.61E-03	1.24E-01	4.56E+00	7.76E+02	1.97E-01	7.08E+02	6.45E-03
UMH2-250+75 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	3.41E+03	4.69E+01	7.84E-04	2.31E+03	1.81E+00	6.61E-03	1.24E-01	2.60E+00	7.76E+02	1.97E-01	7.08E+02	3.67E-03
UMH2-300 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.50E+03	2.06E+01	7.84E-04	1.01E+03	7.95E-01	6.61E-03	1.24E-01	1.14E+00	7.76E+02	1.97E-01	7.08E+02	1.61E-03
UMH2-300+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.59E+03	2.18E+01	7.84E-04	1.08E+03	8.43E-01	6.61E-03	1.24E-01	1.21E+00	7.76E+02	1.97E-01	7.08E+02	1.71E-03
UMH2-350 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UMH2-350+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	8.98E+03	1.24E+02	7.84E-04	6.09E+03	4.77E+00	6.61E-03	1.24E-01	6.85E+00	7.76E+02	1.97E-01	7.08E+02	9.67E-03
UMH2-400 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UMH2-400+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	2.25E+03	3.10E+01	7.84E-04	1.53E+03	1.20E+00	6.61E-03	1.24E-01	1.72E+00	7.76E+02	1.97E-01	7.08E+02	2.43E-03
UMH2-450 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.44E+03	1.99E+01	7.84E-04	9.78E+02	7.67E-01	6.61E-03	1.24E-01	1.10E+00	7.76E+02	1.97E-01	7.08E+02	1.55E-03
UMH2-450+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UMH2-50 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	3.23E+03	4.44E+01	7.84E-04	2.19E+03	1.72E+00	6.61E-03	1.24E-01	2.46E+00	7.76E+02	1.97E-01	7.08E+02	3.48E-03
UMH2-50+25b (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	2.55E+03	3.52E+01	7.84E-04	1.73E+03	1.36E+00	6.61E-03	1.24E-01	1.95E+00	7.76E+02	1.97E-01	7.08E+02	2.75E-03
UMH2-500 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	4.14E+03	5.69E+01	7.84E-04	2.80E+03	2.20E+00	6.61E-03	1.24E-01	3.15E+00	7.76E+02	1.97E-01	7.08E+02	4.45E-03
UMH2-500+75 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	2.67E+03	3.68E+01	7.84E-04	1.81E+03	1.42E+00	6.61E-03	1.24E-01	2.04E+00	7.76E+02	1.97E-01	7.08E+02	2.88E-03
UMH2-550 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.15E+04	1.59E+02	7.84E-04	7.81E+03	6.12E+00	6.61E-03	1.24E-01	8.78E+00	7.76E+02	1.97E-01	7.08E+02	1.24E-02
UMH2-550+75 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	2.89E+03	3.98E+01	7.84E-04	1.96E+03	1.54E+00	6.61E-03	1.24E-01	2.20E+00	7.76E+02	1.97E-01	7.08E+02	3.11E-03
UMH2-600 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	3.24E+03	4.46E+01	7.84E-04	2.19E+03	1.72E+00	6.61E-03	1.24E-01	2.47E+00	7.76E+02	1.97E-01	7.08E+02	3.49E-03
UMH2-600+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.86E+03	2.56E+01	7.84E-04	1.26E+03	9.88E-01	6.61E-03	1.24E-01	1.42E+00	7.76E+02	1.97E-01	7.08E+02	2.00E-03
UMH2-650 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	2.90E+03	4.00E+01	7.84E-04	1.97E+03	1.54E+00	6.61E-03	1.24E-01	2.21E+00	7.76E+02	1.97E-01	7.08E+02	3.13E-03
UMH2-650+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UMH2-Comp 1 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	6.74E+03	9.27E+01	7.84E-04	4.57E+03	3.58E+00	6.61E-03	1.24E-01	5.13E+00	7.76E+02	1.97E-01	7.08E+02	7.26E-03
UMH2-Comp 2 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	8.21E+03	1.13E+02	7.84E-04	5.56E+03	4.36E+00	6.61E-03	1.24E-01	6.26E+00	7.76E+02	1.97E-01	7.08E+02	8.84E-03
Waste Area 3																						**Maximum HQ (Waste Areas 1 and 2)**	**1.35E-02**
UMH3-00 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UMH3-100 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UMH3-150 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UMH3-200 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	2.16E+03	2.98E+01	7.84E-04	1.47E+03	1.15E+00	6.61E-03	1.24E-01	1.65E+00	7.76E+02	1.97E-01	7.08E+02	2.33E-03
UMH3-250 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UMH3-300 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UMH3-350 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	2.50E+03	3.45E+01	7.84E-04	1.70E+03	1.33E+00	6.61E-03	1.24E-01	1.91E+00	7.76E+02	1.97E-01	7.08E+02	2.70E-03
UMH3-350+75 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	2.82E+03	3.88E+01	7.84E-04	1.91E+03	1.50E+00	6.61E-03	1.24E-01	2.15E+00	7.76E+02	1.97E-01	7.08E+02	3.04E-03
UMH3-400 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.46E+03	2.00E+01	7.84E-04	9.87E+02	7.74E-01	6.61E-03	1.24E-01	1.11E+00	7.76E+02	1.97E-01	7.08E+02	1.57E-03
UMH3-400+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UMH3-450 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UMH3-50 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UMH3-50+50 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.92E+03	2.65E+01	7.84E-04	1.30E+03	1.02E+00	6.61E-03	1.24E-01	1.47E+00	7.76E+02	1.97E-01	7.08E+02	2.07E-03
UMH3-500 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UMH3-550 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	2.25E+03	3.10E+01	7.84E-04	1.53E+03	1.20E+00	6.61E-03	1.24E-01	1.72E+00	7.76E+02	1.97E-01	7.08E+02	2.42E-03
UMH3-600 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.95E+03	2.69E+01	7.84E-04	1.32E+03	1.04E+00	6.61E-03	1.24E-01	1.49E+00	7.76E+02	1.97E-01	7.08E+02	2.10E-03
UMH3-650 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	2.20E+03	3.03E+01	7.84E-04	1.49E+03	1.17E+00	6.61E-03	1.24E-01	1.68E+00	7.76E+02	1.97E-01	7.08E+02	2.37E-03
UMH3-700 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UMH3-750 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UMH3-800 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.62E+03	2.23E+01	7.84E-04	1.10E+03	8.62E-01	6.61E-03	1.24E-01	1.24E+00	7.76E+02	1.97E-01	7.08E+02	1.75E-03
UMH3-Comp 1 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UMH3-Comp 2 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UMH3-Comp 3 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	2.24E+03	3.08E+01	7.84E-04	1.52E+03	1.19E+00	6.61E-03	1.24E-01	1.71E+00	7.76E+02	1.97E-01	7.08E+02	2.41E-03
																						Maximum HQ (Waste Area 3)	**3.04E-03**

TABLE C-8E: MANGANESE DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 8 - MIKE HORSE MINE WASTE PILES (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables; from BAF table; linked to soil or sed concentration table (VLOOKUP)

calculated values; linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 1.73

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Meadow Vole (Small Herbivorous Mammal - Terrestrial)																							
Reference Sites																							
BCBG-1 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	3.34E-01	2.89E+02	1.36E+00	NA	NA	NA	NA	1.13E-04	8.65E+02	9.73E-02	1.00E+00	3.06E-02	4.75E+01	1.59E+02	2.97E-02	1.59E+02	2.99E-01
MHBG-201 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	3.34E-01	8.13E+02	3.81E+00	NA	NA	NA	NA	1.13E-04	2.43E+03	2.74E-01	1.00E+00	3.06E-02	1.34E+02	1.59E+02	2.97E-02	1.59E+02	8.41E-01
MHBG-202 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	3.34E-01	4.92E+02	2.31E+00	NA	NA	NA	NA	1.13E-04	1.47E+03	1.66E-01	1.00E+00	3.06E-02	8.09E+01	1.59E+02	2.97E-02	1.59E+02	5.09E-01
Mike Horse Creek Channel Area Deposits																						**Minimum HQ (Reference Site)**	**2.99E-01**
AMHR-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
AMHR-200 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
AMHR-400 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	1.37E+04	6.43E+01	NA	NA	NA	NA	1.13E-04	1.38E+03	1.56E-01	1.00E+00	3.06E-02	2.11E+03	1.59E+02	2.97E-02	1.59E+02	1.33E+01
AMHR-600 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
MHCS-00-E25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	6.27E+04	2.94E+02	NA	NA	NA	NA	1.13E-04	6.33E+03	7.13E-01	1.00E+00	3.06E-02	9.64E+03	1.59E+02	2.97E-02	1.59E+02	6.07E+01
MHCS-0-W25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	1.02E+04	4.78E+01	NA	NA	NA	NA	1.13E-04	1.03E+03	1.16E-01	1.00E+00	3.06E-02	1.57E+03	1.59E+02	2.97E-02	1.59E+02	9.86E+00
MHCS-0-W5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	2.74E+04	1.29E+02	NA	NA	NA	NA	1.13E-04	2.77E+03	3.12E-01	1.00E+00	3.06E-02	4.22E+03	1.59E+02	2.97E-02	1.59E+02	2.65E+01
MHCS-100-E25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	4.45E+04	2.09E+02	NA	NA	NA	NA	1.13E-04	4.49E+03	5.05E-01	1.00E+00	3.06E-02	6.83E+03	1.59E+02	2.97E-02	1.59E+02	4.30E+01
MHCS-100-W1 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	4.60E+04	2.16E+02	NA	NA	NA	NA	1.13E-04	4.64E+03	5.22E-01	1.00E+00	3.06E-02	7.06E+03	1.59E+02	2.97E-02	1.59E+02	4.45E+01
MHCS-100-W25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
MHCS-200-E10 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	4.04E+04	1.89E+02	NA	NA	NA	NA	1.13E-04	4.07E+03	4.59E-01	1.00E+00	3.06E-02	6.20E+03	1.59E+02	2.97E-02	1.59E+02	3.91E+01
MHCS-200-E25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
MHCS-200-W10 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	1.15E+04	5.38E+01	NA	NA	NA	NA	1.13E-04	1.16E+03	1.30E-01	1.00E+00	3.06E-02	1.76E+03	1.59E+02	2.97E-02	1.59E+02	1.11E+01
MHCS-525-E5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	8.98E+04	4.21E+02	NA	NA	NA	NA	1.13E-04	9.06E+03	1.02E+00	1.00E+00	3.06E-02	1.38E+04	1.59E+02	2.97E-02	1.59E+02	8.68E+01
MHCS-525-W15 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	4.46E+04	2.09E+02	NA	NA	NA	NA	1.13E-04	4.50E+03	5.07E-01	1.00E+00	3.06E-02	6.86E+03	1.59E+02	2.97E-02	1.59E+02	4.32E+01
MHCS-600-E10 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	3.44E+04	1.61E+02	NA	NA	NA	NA	1.13E-04	3.47E+03	3.91E-01	1.00E+00	3.06E-02	5.29E+03	1.59E+02	2.97E-02	1.59E+02	3.33E+01
MHCS-600-W10 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	4.97E+04	2.33E+02	NA	NA	NA	NA	1.13E-04	5.02E+03	5.65E-01	1.00E+00	3.06E-02	7.64E+03	1.59E+02	2.97E-02	1.59E+02	4.81E+01
MHCS-700-E10 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	5.25E+04	2.46E+02	NA	NA	NA	NA	1.13E-04	5.30E+03	5.96E-01	1.00E+00	3.06E-02	8.06E+03	1.59E+02	2.97E-02	1.59E+02	5.08E+01
MHCS-700-E25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
MHCS-700-W10 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	1.15E+05	5.38E+02	NA	NA	NA	NA	1.13E-04	1.16E+04	1.30E+00	1.00E+00	3.06E-02	1.76E+04	1.59E+02	2.97E-02	1.59E+02	1.11E+02
MHCS-800-E15 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	1.11E+04	5.20E+01	NA	NA	NA	NA	1.13E-04	1.12E+03	1.26E-01	1.00E+00	3.06E-02	1.70E+03	1.59E+02	2.97E-02	1.59E+02	1.07E+01
MHCS-800-E5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	6.99E+04	3.28E+02	NA	NA	NA	NA	1.13E-04	7.05E+03	7.94E-01	1.00E+00	3.06E-02	1.07E+04	1.59E+02	2.97E-02	1.59E+02	6.76E+01
MHCS-800-W5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	2.25E+04	1.05E+02	NA	NA	NA	NA	1.13E-04	2.27E+03	2.55E-01	1.00E+00	3.06E-02	3.45E+03	1.59E+02	2.97E-02	1.59E+02	2.17E+01
MHCS-900-E15 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
MHCS-900-E5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	5.08E+04	2.38E+02	NA	NA	NA	NA	1.13E-04	5.13E+03	5.77E-01	1.00E+00	3.06E-02	7.81E+03	1.59E+02	2.97E-02	1.59E+02	4.92E+01
MHCS-900-W5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	3.30E+04	1.55E+02	NA	NA	NA	NA	1.13E-04	3.33E+03	3.75E-01	1.00E+00	3.06E-02	5.07E+03	1.59E+02	2.97E-02	1.59E+02	3.19E+01
MHCS-1000-E10 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
MHCS-1000-W5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	7.09E+04	3.33E+02	NA	NA	NA	NA	1.13E-04	7.16E+03	8.05E-01	1.00E+00	3.06E-02	1.09E+04	1.59E+02	2.97E-02	1.59E+02	6.86E+01
MHCS-1100-E10 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	6.55E+04	3.07E+02	NA	NA	NA	NA	1.13E-04	6.61E+03	7.44E-01	1.00E+00	3.06E-02	1.01E+04	1.59E+02	2.97E-02	1.59E+02	6.34E+01
MHCS-1100-E35 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
MHCS-1200-E15 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	2.24E+04	1.05E+02	NA	NA	NA	NA	1.13E-04	2.26E+03	2.54E-01	1.00E+00	3.06E-02	3.43E+03	1.59E+02	2.97E-02	1.59E+02	2.16E+01
MHCS-1200-E30 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	1.71E+04	8.02E+01	NA	NA	NA	NA	1.13E-04	1.73E+03	1.94E-01	1.00E+00	3.06E-02	2.63E+03	1.59E+02	2.97E-02	1.59E+02	1.65E+01
MHCS-1300-E20 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	2.37E+04	1.11E+02	NA	NA	NA	NA	1.13E-04	2.39E+03	2.69E-01	1.00E+00	3.06E-02	3.64E+03	1.59E+02	2.97E-02	1.59E+02	2.29E+01
MHCS-1300-E35 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	2.13E+04	1.00E+02	NA	NA	NA	NA	1.13E-04	2.15E+03	2.42E-01	1.00E+00	3.06E-02	3.28E+03	1.59E+02	2.97E-02	1.59E+02	2.06E+01
Waste Areas 1 and 2																						**Maximum HQ (Mike Horse Creek Channel Area Deposits)**	**1.11E+02**
UMH1-00 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	2.25E+04	1.05E+02	NA	NA	NA	NA	1.13E-04	2.27E+03	2.55E-01	1.00E+00	3.06E-02	3.45E+03	1.59E+02	2.97E-02	1.59E+02	2.17E+01
UMH1-100 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	6.89E+04	3.23E+02	NA	NA	NA	NA	1.13E-04	6.95E+03	7.82E-01	1.00E+00	3.06E-02	1.06E+04	1.59E+02	2.97E-02	1.59E+02	6.66E+01
UMH1-150 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	2.88E+04	1.35E+02	NA	NA	NA	NA	1.13E-04	2.91E+03	3.27E-01	1.00E+00	3.06E-02	4.43E+03	1.59E+02	2.97E-02	1.59E+02	2.79E+01
UMH1-200 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UMH1-250 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	4.45E+04	2.09E+02	NA	NA	NA	NA	1.13E-04	4.49E+03	5.05E-01	1.00E+00	3.06E-02	6.83E+03	1.59E+02	2.97E-02	1.59E+02	4.30E+01
UMH1-250+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	5.97E+04	2.80E+02	NA	NA	NA	NA	1.13E-04	6.02E+03	6.78E-01	1.00E+00	3.06E-02	9.16E+03	1.59E+02	2.97E-02	1.59E+02	5.77E+01
UMH1-300 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	8.43E+04	3.95E+02	NA	NA	NA	NA	1.13E-04	8.50E+03	9.57E-01	1.00E+00	3.06E-02	1.29E+04	1.59E+02	2.97E-02	1.59E+02	8.15E+01
UMH1-300+14 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	3.26E+04	1.53E+02	NA	NA	NA	NA	1.13E-04	3.29E+03	3.70E-01	1.00E+00	3.06E-02	5.00E+03	1.59E+02	2.97E-02	1.59E+02	3.15E+01
UMH1-350 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	7.92E+04	3.71E+02	NA	NA	NA	NA	1.13E-04	7.99E+03	8.99E-01	1.00E+00	3.06E-02	1.22E+04	1.59E+02	2.97E-02	1.59E+02	7.66E+01
UMH1-350+12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	1.64E+04	7.69E+01	NA	NA	NA	NA	1.13E-04	1.66E+03	1.86E-01	1.00E+00	3.06E-02	2.52E+03	1.59E+02	2.97E-02	1.59E+02	1.59E+01
UMH1-400 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	1.53E+04	7.17E+01	NA	NA	NA	NA	1.13E-04	1.54E+03	1.74E-01	1.00E+00	3.06E-02	2.35E+03	1.59E+02	2.97E-02	1.59E+02	1.48E+01
UMH1-400+12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	4.40E+04	2.07E+02	NA	NA	NA	NA	1.13E-04	4.45E+03	5.00E-01	1.00E+00	3.06E-02	6.77E+03	1.59E+02	2.97E-02	1.59E+02	4.26E+01
UMH1-450 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	1.43E+04	6.72E+01	NA	NA	NA	NA	1.13E-04	1.45E+03	1.63E-01	1.00E+00	3.06E-02	2.20E+03	1.59E+02	2.97E-02	1.59E+02	1.39E+01
UMH1-450+12.5 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UMH1-50 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	1.60E+04	7.48E+01	NA	NA	NA	NA	1.13E-04	1.61E+03	1.81E-01	1.00E+00	3.06E-02	2.45E+03	1.59E+02	2.97E-02	1.59E+02	1.54E+01
UMH1-Comp (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	4.18E+04	1.96E+02	NA	NA	NA	NA	1.13E-04	4.22E+03	4.75E-01	1.00E+00	3.06E-02	6.42E+03	1.59E+02	2.97E-02	1.59E+02	4.04E+01
UMH2-00 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	2.26E+04	1.06E+02	NA	NA	NA	NA	1.13E-04	2.28E+03	2.56E-01	1.00E+00	3.06E-02	3.47E+03	1.59E+02	2.97E-02	1.59E+02	2.18E+01

TABLE C-8E: MANGANESE DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 8 - MIKE HORSE MINE WASTE PILES (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 1.73

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Meadow Vole (Small Herbivorous Mammal - Terrestrial)																							
UMH2-00+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	2.39E+04	1.12E+02	NA	NA	NA	NA	1.13E-04	2.41E+03	2.72E-01	1.00E+00	3.06E-02	3.67E+03	1.59E+02	2.97E-02	1.59E+02	2.31E+01
UMH2-100 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	4.06E+04	1.91E+02	NA	NA	NA	NA	1.13E-04	4.10E+03	4.61E-01	1.00E+00	3.06E-02	6.24E+03	1.59E+02	2.97E-02	1.59E+02	3.93E+01
UMH2-100+35 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	2.35E+04	1.10E+02	NA	NA	NA	NA	1.13E-04	2.37E+03	2.66E-01	1.00E+00	3.06E-02	3.60E+03	1.59E+02	2.97E-02	1.59E+02	2.27E+01
UMH2-150 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	1.55E+04	7.28E+01	NA	NA	NA	NA	1.13E-04	1.57E+03	1.76E-01	1.00E+00	3.06E-02	2.39E+03	1.59E+02	2.97E-02	1.59E+02	1.50E+01
UMH2-150+60 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UMH2-200 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	5.70E+04	2.67E+02	NA	NA	NA	NA	1.13E-04	5.75E+03	6.47E-01	1.00E+00	3.06E-02	8.75E+03	1.59E+02	2.97E-02	1.59E+02	5.51E+01
UMH2-200+85 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	1.29E+04	6.07E+01	NA	NA	NA	NA	1.13E-04	1.31E+03	1.47E-01	1.00E+00	3.06E-02	1.99E+03	1.59E+02	2.97E-02	1.59E+02	1.25E+01
UMH2-250 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	4.02E+04	1.88E+02	NA	NA	NA	NA	1.13E-04	4.06E+03	4.57E-01	1.00E+00	3.06E-02	6.17E+03	1.59E+02	2.97E-02	1.59E+02	3.89E+01
UMH2-250+75 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	2.29E+04	1.07E+02	NA	NA	NA	NA	1.13E-04	2.31E+03	2.60E-01	1.00E+00	3.06E-02	3.51E+03	1.59E+02	2.97E-02	1.59E+02	2.21E+01
UMH2-300 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	1.00E+04	4.71E+01	NA	NA	NA	NA	1.13E-04	1.01E+03	1.14E-01	1.00E+00	3.06E-02	1.54E+03	1.59E+02	2.97E-02	1.59E+02	9.71E+00
UMH2-300+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	1.07E+04	4.99E+01	NA	NA	NA	NA	1.13E-04	1.08E+03	1.21E-01	1.00E+00	3.06E-02	1.64E+03	1.59E+02	2.97E-02	1.59E+02	1.03E+01
UMH2-350 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UMH2-350+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	6.03E+04	2.83E+02	NA	NA	NA	NA	1.13E-04	6.09E+03	6.85E-01	1.00E+00	3.06E-02	9.26E+03	1.59E+02	2.97E-02	1.59E+02	5.83E+01
UMH2-400 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UMH2-400+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	1.51E+04	7.10E+01	NA	NA	NA	NA	1.13E-04	1.53E+03	1.72E-01	1.00E+00	3.06E-02	2.32E+03	1.59E+02	2.97E-02	1.59E+02	1.46E+01
UMH2-450 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	9.69E+03	4.54E+01	NA	NA	NA	NA	1.13E-04	9.78E+02	1.10E-01	1.00E+00	3.06E-02	1.49E+03	1.59E+02	2.97E-02	1.59E+02	9.37E+00
UMH2-450+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UMH2-50 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	2.17E+04	1.02E+02	NA	NA	NA	NA	1.13E-04	2.19E+03	2.46E-01	1.00E+00	3.06E-02	3.33E+03	1.59E+02	2.97E-02	1.59E+02	2.10E+01
UMH2-50+25b (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	1.72E+04	8.04E+01	NA	NA	NA	NA	1.13E-04	1.73E+03	1.95E-01	1.00E+00	3.06E-02	2.63E+03	1.59E+02	2.97E-02	1.59E+02	1.66E+01
UMH2-500 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	2.78E+04	1.30E+02	NA	NA	NA	NA	1.13E-04	2.80E+03	3.15E-01	1.00E+00	3.06E-02	4.27E+03	1.59E+02	2.97E-02	1.59E+02	2.69E+01
UMH2-500+75 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	1.79E+04	8.41E+01	NA	NA	NA	NA	1.13E-04	1.81E+03	2.04E-01	1.00E+00	3.06E-02	2.76E+03	1.59E+02	2.97E-02	1.59E+02	1.74E+01
UMH2-550 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	7.74E+04	3.63E+02	NA	NA	NA	NA	1.13E-04	7.81E+03	8.79E-01	1.00E+00	3.06E-02	1.19E+04	1.59E+02	2.97E-02	1.59E+02	7.48E+01
UMH2-550+75 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	1.94E+04	9.11E+01	NA	NA	NA	NA	1.13E-04	1.96E+03	2.21E-01	1.00E+00	3.06E-02	2.98E+03	1.59E+02	2.97E-02	1.59E+02	1.88E+01
UMH2-600 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	2.17E+04	1.02E+02	NA	NA	NA	NA	1.13E-04	2.19E+03	2.47E-01	1.00E+00	3.06E-02	3.34E+03	1.59E+02	2.97E-02	1.59E+02	2.10E+01
UMH2-600+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	1.25E+04	5.85E+01	NA	NA	NA	NA	1.13E-04	1.26E+03	1.42E-01	1.00E+00	3.06E-02	1.92E+03	1.59E+02	2.97E-02	1.59E+02	1.21E+01
UMH2-650 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	1.95E+04	9.14E+01	NA	NA	NA	NA	1.13E-04	1.97E+03	2.21E-01	1.00E+00	3.06E-02	3.00E+03	1.59E+02	2.97E-02	1.59E+02	1.89E+01
UMH2-650+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UMH2-Comp 1 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	4.52E+04	2.12E+02	NA	NA	NA	NA	1.13E-04	4.57E+03	5.14E-01	1.00E+00	3.06E-02	6.95E+03	1.59E+02	2.97E-02	1.59E+02	4.38E+01
UMH2-Comp 2 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	5.51E+04	2.59E+02	NA	NA	NA	NA	1.13E-04	5.56E+03	6.26E-01	1.00E+00	3.06E-02	8.47E+03	1.59E+02	2.97E-02	1.59E+02	5.33E+01
Waste Area 3																						**Maximum HQ (Waste Areas 1 and 2)**	**8.15E+01**
UMH3-00 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UMH3-100 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UMH3-150 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UMH3-200 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	1.45E+04	6.81E+01	NA	NA	NA	NA	1.13E-04	1.47E+03	1.65E-01	1.00E+00	3.06E-02	2.23E+03	1.59E+02	2.97E-02	1.59E+02	1.41E+01
UMH3-250 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UMH3-300 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UMH3-350 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	1.68E+04	7.89E+01	NA	NA	NA	NA	1.13E-04	1.70E+03	1.91E-01	1.00E+00	3.06E-02	2.58E+03	1.59E+02	2.97E-02	1.59E+02	1.63E+01
UMH3-350+75 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	1.89E+04	8.87E+01	NA	NA	NA	NA	1.13E-04	1.91E+03	2.15E-01	1.00E+00	3.06E-02	2.91E+03	1.59E+02	2.97E-02	1.59E+02	1.83E+01
UMH3-400 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	9.78E+03	4.58E+01	NA	NA	NA	NA	1.13E-04	9.87E+02	1.11E-01	1.00E+00	3.06E-02	1.50E+03	1.59E+02	2.97E-02	1.59E+02	9.46E+00
UMH3-400+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UMH3-450 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UMH3-50 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UMH3-50+50 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	1.29E+04	6.06E+01	NA	NA	NA	NA	1.13E-04	1.30E+03	1.47E-01	1.00E+00	3.06E-02	1.99E+03	1.59E+02	2.97E-02	1.59E+02	1.25E+01
UMH3-500 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UMH3-550 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	1.51E+04	7.09E+01	NA	NA	NA	NA	1.13E-04	1.53E+03	1.72E-01	1.00E+00	3.06E-02	2.32E+03	1.59E+02	2.97E-02	1.59E+02	1.46E+01
UMH3-600 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	1.31E+04	6.14E+01	NA	NA	NA	NA	1.13E-04	1.32E+03	1.49E-01	1.00E+00	3.06E-02	2.01E+03	1.59E+02	2.97E-02	1.59E+02	1.27E+01
UMH3-650 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	1.48E+04	6.93E+01	NA	NA	NA	NA	1.13E-04	1.49E+03	1.68E-01	1.00E+00	3.06E-02	2.27E+03	1.59E+02	2.97E-02	1.59E+02	1.43E+01
UMH3-700 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UMH3-750 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UMH3-800 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	1.09E+04	5.11E+01	NA	NA	NA	NA	1.13E-04	1.10E+03	1.24E-01	1.00E+00	3.06E-02	1.67E+03	1.59E+02	2.97E-02	1.59E+02	1.05E+01
UMH3-Comp 1 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UMH3-Comp 2 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UMH3-Comp 3 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	1.50E+04	7.05E+01	NA	NA	NA	NA	1.13E-04	1.52E+03	1.71E-01	1.00E+00	3.06E-02	2.31E+03	1.59E+02	2.97E-02	1.59E+02	1.45E+01
																						Maximum HQ (Waste Area 3)	**1.83E+01**

TABLE C-8E: MANGANESE DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 8 - MIKE HORSE MINE WASTE PILES (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **1.73**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[9] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
White-Tailed Deer (Large Herbivorous Mammal - Terrestrial)																							
Reference Sites																							
BCBG-1 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	3.34E-01	2.89E+02	4.14E+02	NA	NA	NA	NA	2.86E-02	8.65E+02	2.48E+01	9.68E-03	1.35E+02	3.14E-02	1.59E+02	2.97E-02	9.60E+01	3.28E-04
MHBG-201 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	3.34E-01	8.13E+02	1.16E+03	NA	NA	NA	NA	2.86E-02	2.43E+03	6.96E+01	9.68E-03	1.35E+02	8.84E-02	1.59E+02	2.97E-02	9.60E+01	9.21E-04
MHBG-202 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	3.34E-01	4.92E+02	7.05E+02	NA	NA	NA	NA	2.86E-02	1.47E+03	4.22E+01	9.68E-03	1.35E+02	5.36E-02	1.59E+02	2.97E-02	9.60E+01	5.58E-04
Mike Horse Creek Channel Area Deposits																						**Minimum HQ (Reference Site)**	**3.28E-04**
AMHR-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
AMHR-200 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
AMHR-400 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	1.37E+04	1.96E+04	NA	NA	NA	NA	2.86E-02	1.38E+03	3.96E+01	9.68E-03	1.35E+02	1.41E+00	1.59E+02	2.97E-02	9.60E+01	1.47E-02
AMHR-600 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
MHCS-00-E25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	6.27E+04	8.98E+04	NA	NA	NA	NA	2.86E-02	6.33E+03	1.81E+02	9.68E-03	1.35E+02	6.45E+00	1.59E+02	2.97E-02	9.60E+01	6.72E-02
MHCS-0-W25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	1.02E+04	1.46E+04	NA	NA	NA	NA	2.86E-02	1.03E+03	2.95E+01	9.68E-03	1.35E+02	1.05E+00	1.59E+02	2.97E-02	9.60E+01	1.09E-02
MHCS-0-W5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	2.74E+04	3.93E+04	NA	NA	NA	NA	2.86E-02	2.77E+03	7.93E+01	9.68E-03	1.35E+02	2.82E+00	1.59E+02	2.97E-02	9.60E+01	2.94E-02
MHCS-100-E25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	4.45E+04	6.37E+04	NA	NA	NA	NA	2.86E-02	4.49E+03	1.29E+02	9.68E-03	1.35E+02	4.58E+00	1.59E+02	2.97E-02	9.60E+01	4.77E-02
MHCS-100-W1 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	4.60E+04	6.58E+04	NA	NA	NA	NA	2.86E-02	4.64E+03	1.33E+02	9.68E-03	1.35E+02	4.73E+00	1.59E+02	2.97E-02	9.60E+01	4.92E-02
MHCS-100-W25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
MHCS-200-E10 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	4.04E+04	5.78E+04	NA	NA	NA	NA	2.86E-02	4.07E+03	1.17E+02	9.68E-03	1.35E+02	4.15E+00	1.59E+02	2.97E-02	9.60E+01	4.33E-02
MHCS-200-E25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
MHCS-200-W10 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	1.15E+04	1.64E+04	NA	NA	NA	NA	2.86E-02	1.16E+03	3.32E+01	9.68E-03	1.35E+02	1.18E+00	1.59E+02	2.97E-02	9.60E+01	1.23E-02
MHCS-525-E5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	8.98E+04	1.29E+05	NA	NA	NA	NA	2.86E-02	9.06E+03	2.59E+02	9.68E-03	1.35E+02	9.23E+00	1.59E+02	2.97E-02	9.60E+01	9.62E-02
MHCS-525-W15 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	4.46E+04	6.39E+04	NA	NA	NA	NA	2.86E-02	4.50E+03	1.29E+02	9.68E-03	1.35E+02	4.59E+00	1.59E+02	2.97E-02	9.60E+01	4.78E-02
MHCS-600-E10 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	3.44E+04	4.93E+04	NA	NA	NA	NA	2.86E-02	3.47E+03	9.94E+01	9.68E-03	1.35E+02	3.54E+00	1.59E+02	2.97E-02	9.60E+01	3.69E-02
MHCS-600-W10 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	4.97E+04	7.12E+04	NA	NA	NA	NA	2.86E-02	5.02E+03	1.44E+02	9.68E-03	1.35E+02	5.11E+00	1.59E+02	2.97E-02	9.60E+01	5.33E-02
MHCS-700-E10 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	5.25E+04	7.51E+04	NA	NA	NA	NA	2.86E-02	5.30E+03	1.52E+02	9.68E-03	1.35E+02	5.40E+00	1.59E+02	2.97E-02	9.60E+01	5.62E-02
MHCS-700-E25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
MHCS-700-W10 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	1.15E+05	1.64E+05	NA	NA	NA	NA	2.86E-02	1.16E+04	3.31E+02	9.68E-03	1.35E+02	1.18E+01	1.59E+02	2.97E-02	9.60E+01	1.23E-01
MHCS-800-E15 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	1.11E+04	1.59E+04	NA	NA	NA	NA	2.86E-02	1.12E+03	3.20E+01	9.68E-03	1.35E+02	1.14E+00	1.59E+02	2.97E-02	9.60E+01	1.19E-02
MHCS-800-E5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	6.99E+04	1.00E+05	NA	NA	NA	NA	2.86E-02	7.05E+03	2.02E+02	9.68E-03	1.35E+02	7.19E+00	1.59E+02	2.97E-02	9.60E+01	7.49E-02
MHCS-800-W5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	2.25E+04	3.21E+04	NA	NA	NA	NA	2.86E-02	2.27E+03	6.49E+01	9.68E-03	1.35E+02	2.31E+00	1.59E+02	2.97E-02	9.60E+01	2.41E-02
MHCS-900-E15 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
MHCS-900-E5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	5.08E+04	7.28E+04	NA	NA	NA	NA	2.86E-02	5.13E+03	1.47E+02	9.68E-03	1.35E+02	5.23E+00	1.59E+02	2.97E-02	9.60E+01	5.45E-02
MHCS-900-W5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	3.30E+04	4.73E+04	NA	NA	NA	NA	2.86E-02	3.33E+03	9.54E+01	9.68E-03	1.35E+02	3.39E+00	1.59E+02	2.97E-02	9.60E+01	3.54E-02
MHCS-1000-E10 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
MHCS-1000-W5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	7.09E+04	1.02E+05	NA	NA	NA	NA	2.86E-02	7.16E+03	2.05E+02	9.68E-03	1.35E+02	7.29E+00	1.59E+02	2.97E-02	9.60E+01	7.60E-02
MHCS-1100-E10 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	6.55E+04	9.38E+04	NA	NA	NA	NA	2.86E-02	6.61E+03	1.89E+02	9.68E-03	1.35E+02	6.74E+00	1.59E+02	2.97E-02	9.60E+01	7.02E-02
MHCS-1100-E35 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
MHCS-1200-E15 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	2.24E+04	3.20E+04	NA	NA	NA	NA	2.86E-02	2.26E+03	6.46E+01	9.68E-03	1.35E+02	2.30E+00	1.59E+02	2.97E-02	9.60E+01	2.40E-02
MHCS-1200-E30 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	1.71E+04	2.45E+04	NA	NA	NA	NA	2.86E-02	1.73E+03	4.94E+01	9.68E-03	1.35E+02	1.76E+00	1.59E+02	2.97E-02	9.60E+01	1.83E-02
MHCS-1300-E20 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	2.37E+04	3.39E+04	NA	NA	NA	NA	2.86E-02	2.39E+03	6.84E+01	9.68E-03	1.35E+02	2.44E+00	1.59E+02	2.97E-02	9.60E+01	2.54E-02
MHCS-1300-E35 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	2.13E+04	3.05E+04	NA	NA	NA	NA	2.86E-02	2.15E+03	6.16E+01	9.68E-03	1.35E+02	2.19E+00	1.59E+02	2.97E-02	9.60E+01	2.28E-02
Waste Areas 1 and 2																						**Maximum HQ (Mike Horse Creek Channel Area Deposits)**	**1.23E-01**
UMH1-00 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	2.25E+04	3.22E+04	NA	NA	NA	NA	2.86E-02	2.27E+03	6.49E+01	9.68E-03	1.35E+02	2.31E+00	1.59E+02	2.97E-02	9.60E+01	2.41E-02
UMH1-100 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	6.89E+04	9.86E+04	NA	NA	NA	NA	2.86E-02	6.95E+03	1.99E+02	9.68E-03	1.35E+02	7.09E+00	1.59E+02	2.97E-02	9.60E+01	7.38E-02
UMH1-150 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	2.88E+04	4.13E+04	NA	NA	NA	NA	2.86E-02	2.91E+03	8.33E+01	9.68E-03	1.35E+02	2.97E+00	1.59E+02	2.97E-02	9.60E+01	3.09E-02
UMH1-200 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UMH1-250 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	4.45E+04	6.37E+04	NA	NA	NA	NA	2.86E-02	4.49E+03	1.29E+02	9.68E-03	1.35E+02	4.58E+00	1.59E+02	2.97E-02	9.60E+01	4.77E-02
UMH1-250+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	5.97E+04	8.54E+04	NA	NA	NA	NA	2.86E-02	6.02E+03	1.72E+02	9.68E-03	1.35E+02	6.14E+00	1.59E+02	2.97E-02	9.60E+01	6.39E-02
UMH1-300 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	8.43E+04	1.21E+05	NA	NA	NA	NA	2.86E-02	8.50E+03	2.43E+02	9.68E-03	1.35E+02	8.67E+00	1.59E+02	2.97E-02	9.60E+01	9.03E-02
UMH1-300+14 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	3.26E+04	4.66E+04	NA	NA	NA	NA	2.86E-02	3.29E+03	9.41E+01	9.68E-03	1.35E+02	3.35E+00	1.59E+02	2.97E-02	9.60E+01	3.49E-02
UMH1-350 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	7.92E+04	1.13E+05	NA	NA	NA	NA	2.86E-02	7.99E+03	2.29E+02	9.68E-03	1.35E+02	8.14E+00	1.59E+02	2.97E-02	9.60E+01	8.48E-02
UMH1-350+12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	1.64E+04	2.35E+04	NA	NA	NA	NA	2.86E-02	1.66E+03	4.74E+01	9.68E-03	1.35E+02	1.69E+00	1.59E+02	2.97E-02	9.60E+01	1.76E-02
UMH1-400 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	1.53E+04	2.19E+04	NA	NA	NA	NA	2.86E-02	1.54E+03	4.42E+01	9.68E-03	1.35E+02	1.57E+00	1.59E+02	2.97E-02	9.60E+01	1.64E-02
UMH1-400+12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	4.40E+04	6.31E+04	NA	NA	NA	NA	2.86E-02	4.45E+03	1.27E+02	9.68E-03	1.35E+02	4.53E+00	1.59E+02	2.97E-02	9.60E+01	4.72E-02
UMH1-450 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	1.43E+04	2.05E+04	NA	NA	NA	NA	2.86E-02	1.45E+03	4.14E+01	9.68E-03	1.35E+02	1.47E+00	1.59E+02	2.97E-02	9.60E+01	1.53E-02
UMH1-450+12.5 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UMH1-50 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	1.60E+04	2.29E+04	NA	NA	NA	NA	2.86E-02	1.61E+03	4.61E+01	9.68E-03	1.35E+02	1.64E+00	1.59E+02	2.97E-02	9.60E+01	1.71E-02
UMH1-Comp (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	4.18E+04	5.98E+04	NA	NA	NA	NA	2.86E-02	4.22E+03	1.21E+02	9.68E-03	1.35E+02	4.30E+00	1.59E+02	2.97E-02	9.60E+01	4.48E-02
UMH2-00 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	2.26E+04	3.23E+04	NA	NA	NA	NA	2.86E-02	2.28E+03	6.52E+01	9.68E-03	1.35E+02	2.32E+00	1.59E+02	2.97E-02	9.60E+01	2.42E-02

TABLE C-8E: MANGANESE DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 8 - MIKE HORSE MINE WASTE PILES (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **1.73**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
White-Tailed Deer (Large Herbivorous Mammal - Terrestrial)																							
UMH2-00+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	2.39E+04	3.42E+04	NA	NA	NA	NA	2.86E-02	2.41E+03	6.91E+01	9.68E-03	1.35E+02	2.46E+00	1.59E+02	2.97E-02	9.60E+01	2.56E-02
UMH2-100 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	4.06E+04	5.82E+04	NA	NA	NA	NA	2.86E-02	4.10E+03	1.17E+02	9.68E-03	1.35E+02	4.18E+00	1.59E+02	2.97E-02	9.60E+01	4.35E-02
UMH2-100+35 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	2.35E+04	3.36E+04	NA	NA	NA	NA	2.86E-02	2.37E+03	6.78E+01	9.68E-03	1.35E+02	2.41E+00	1.59E+02	2.97E-02	9.60E+01	2.51E-02
UMH2-150 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	1.55E+04	2.22E+04	NA	NA	NA	NA	2.86E-02	1.57E+03	4.49E+01	9.68E-03	1.35E+02	1.60E+00	1.59E+02	2.97E-02	9.60E+01	1.66E-02
UMH2-150+60 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UMH2-200 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	5.70E+04	8.16E+04	NA	NA	NA	NA	2.86E-02	5.75E+03	1.65E+02	9.68E-03	1.35E+02	5.86E+00	1.59E+02	2.97E-02	9.60E+01	6.10E-02
UMH2-200+85 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	1.29E+04	1.85E+04	NA	NA	NA	NA	2.86E-02	1.31E+03	3.74E+01	9.68E-03	1.35E+02	1.33E+00	1.59E+02	2.97E-02	9.60E+01	1.39E-02
UMH2-250 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	4.02E+04	5.76E+04	NA	NA	NA	NA	2.86E-02	4.06E+03	1.16E+02	9.68E-03	1.35E+02	4.13E+00	1.59E+02	2.97E-02	9.60E+01	4.31E-02
UMH2-250+75 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	2.29E+04	3.27E+04	NA	NA	NA	NA	2.86E-02	2.31E+03	6.61E+01	9.68E-03	1.35E+02	2.35E+00	1.59E+02	2.97E-02	9.60E+01	2.45E-02
UMH2-300 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	1.00E+04	1.44E+04	NA	NA	NA	NA	2.86E-02	1.01E+03	2.90E+01	9.68E-03	1.35E+02	1.03E+00	1.59E+02	2.97E-02	9.60E+01	1.08E-02
UMH2-300+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	1.07E+04	1.53E+04	NA	NA	NA	NA	2.86E-02	1.08E+03	3.08E+01	9.68E-03	1.35E+02	1.10E+00	1.59E+02	2.97E-02	9.60E+01	1.14E-02
UMH2-350 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UMH2-350+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	6.03E+04	8.63E+04	NA	NA	NA	NA	2.86E-02	6.09E+03	1.74E+02	9.68E-03	1.35E+02	6.20E+00	1.59E+02	2.97E-02	9.60E+01	6.46E-02
UMH2-400 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UMH2-400+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	1.51E+04	2.17E+04	NA	NA	NA	NA	2.86E-02	1.53E+03	4.37E+01	9.68E-03	1.35E+02	1.56E+00	1.59E+02	2.97E-02	9.60E+01	1.62E-02
UMH2-450 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	9.69E+03	1.39E+04	NA	NA	NA	NA	2.86E-02	9.78E+02	2.80E+01	9.68E-03	1.35E+02	9.97E-01	1.59E+02	2.97E-02	9.60E+01	1.04E-02
UMH2-450+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UMH2-50 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	2.17E+04	3.10E+04	NA	NA	NA	NA	2.86E-02	2.19E+03	6.27E+01	9.68E-03	1.35E+02	2.23E+00	1.59E+02	2.97E-02	9.60E+01	2.32E-02
UMH2-50+25b (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	1.72E+04	2.46E+04	NA	NA	NA	NA	2.86E-02	1.73E+03	4.96E+01	9.68E-03	1.35E+02	1.76E+00	1.59E+02	2.97E-02	9.60E+01	1.84E-02
UMH2-500 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	2.78E+04	3.98E+04	NA	NA	NA	NA	2.86E-02	2.80E+03	8.03E+01	9.68E-03	1.35E+02	2.86E+00	1.59E+02	2.97E-02	9.60E+01	2.98E-02
UMH2-500+75 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	1.79E+04	2.57E+04	NA	NA	NA	NA	2.86E-02	1.81E+03	5.19E+01	9.68E-03	1.35E+02	1.85E+00	1.59E+02	2.97E-02	9.60E+01	1.92E-02
UMH2-550 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	7.74E+04	1.11E+05	NA	NA	NA	NA	2.86E-02	7.81E+03	2.24E+02	9.68E-03	1.35E+02	7.96E+00	1.59E+02	2.97E-02	9.60E+01	8.29E-02
UMH2-550+75 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	1.94E+04	2.78E+04	NA	NA	NA	NA	2.86E-02	1.96E+03	5.61E+01	9.68E-03	1.35E+02	2.00E+00	1.59E+02	2.97E-02	9.60E+01	2.08E-02
UMH2-600 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	2.17E+04	3.11E+04	NA	NA	NA	NA	2.86E-02	2.19E+03	6.28E+01	9.68E-03	1.35E+02	2.24E+00	1.59E+02	2.97E-02	9.60E+01	2.33E-02
UMH2-600+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	1.25E+04	1.79E+04	NA	NA	NA	NA	2.86E-02	1.26E+03	3.61E+01	9.68E-03	1.35E+02	1.28E+00	1.59E+02	2.97E-02	9.60E+01	1.34E-02
UMH2-650 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	1.95E+04	2.79E+04	NA	NA	NA	NA	2.86E-02	1.97E+03	5.63E+01	9.68E-03	1.35E+02	2.01E+00	1.59E+02	2.97E-02	9.60E+01	2.09E-02
UMH2-650+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UMH2-Comp 1 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	4.52E+04	6.48E+04	NA	NA	NA	NA	2.86E-02	4.57E+03	1.31E+02	9.68E-03	1.35E+02	4.65E+00	1.59E+02	2.97E-02	9.60E+01	4.85E-02
UMH2-Comp 2 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	5.51E+04	7.89E+04	NA	NA	NA	NA	2.86E-02	5.56E+03	1.59E+02	9.68E-03	1.35E+02	5.67E+00	1.59E+02	2.97E-02	9.60E+01	5.91E-02
Waste Area 3																						**Maximum HQ (Waste Areas 1 and 2)**	**9.03E-02**
UMH3-00 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UMH3-100 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UMH3-150 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UMH3-200 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	1.45E+04	2.08E+04	NA	NA	NA	NA	2.86E-02	1.47E+03	4.20E+01	9.68E-03	1.35E+02	1.49E+00	1.59E+02	2.97E-02	9.60E+01	1.56E-02
UMH3-250 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UMH3-300 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UMH3-350 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	1.68E+04	2.41E+04	NA	NA	NA	NA	2.86E-02	1.70E+03	4.86E+01	9.68E-03	1.35E+02	1.73E+00	1.59E+02	2.97E-02	9.60E+01	1.80E-02
UMH3-350+75 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	1.89E+04	2.71E+04	NA	NA	NA	NA	2.86E-02	1.91E+03	5.47E+01	9.68E-03	1.35E+02	1.95E+00	1.59E+02	2.97E-02	9.60E+01	2.03E-02
UMH3-400 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	9.78E+03	1.40E+04	NA	NA	NA	NA	2.86E-02	9.87E+02	2.83E+01	9.68E-03	1.35E+02	1.01E+00	1.59E+02	2.97E-02	9.60E+01	1.05E-02
UMH3-400+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UMH3-450 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UMH3-50 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UMH3-50+50 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	1.29E+04	1.85E+04	NA	NA	NA	NA	2.86E-02	1.30E+03	3.73E+01	9.68E-03	1.35E+02	1.33E+00	1.59E+02	2.97E-02	9.60E+01	1.38E-02
UMH3-500 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UMH3-550 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	1.51E+04	2.16E+04	NA	NA	NA	NA	2.86E-02	1.53E+03	4.37E+01	9.68E-03	1.35E+02	1.55E+00	1.59E+02	2.97E-02	9.60E+01	1.62E-02
UMH3-600 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	1.31E+04	1.88E+04	NA	NA	NA	NA	2.86E-02	1.32E+03	3.79E+01	9.68E-03	1.35E+02	1.35E+00	1.59E+02	2.97E-02	9.60E+01	1.40E-02
UMH3-650 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	1.48E+04	2.12E+04	NA	NA	NA	NA	2.86E-02	1.49E+03	4.27E+01	9.68E-03	1.35E+02	1.52E+00	1.59E+02	2.97E-02	9.60E+01	1.58E-02
UMH3-700 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UMH3-750 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UMH3-800 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	1.09E+04	1.56E+04	NA	NA	NA	NA	2.86E-02	1.10E+03	3.15E+01	9.68E-03	1.35E+02	1.12E+00	1.59E+02	2.97E-02	9.60E+01	1.17E-02
UMH3-Comp 1 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UMH3-Comp 2 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UMH3-Comp 3 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	1.50E+04	2.15E+04	NA	NA	NA	NA	2.86E-02	1.52E+03	4.34E+01	9.68E-03	1.35E+02	1.55E+00	1.59E+02	2.97E-02	9.60E+01	1.61E-02
																						Maximum HQ (Waste Area 3)	**2.03E-02**

TABLE C-8E: MANGANESE DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 8 - MIKE HORSE MINE WASTE PILES (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **1.73**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Red Fox (Carnivorous Mammal - Terrestrial)																							
Reference Sites																							
BCBG-1 (0-6")	1.72E-01	1.72E-01	5.93E-02	5.13E+01	8.80E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	8.65E+02	4.15E+00	1.28E-03	4.54E+00	3.65E-03	1.59E+02	2.97E-02	1.18E+02	3.10E-05
MHBG-201 (0-6")	1.72E-01	1.72E-01	5.93E-02	1.44E+02	2.48E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.43E+03	1.17E+01	1.28E-03	4.54E+00	1.03E-02	1.59E+02	2.97E-02	1.18E+02	8.73E-05
MHBG-202 (0-6")	1.72E-01	1.72E-01	5.93E-02	8.74E+01	1.50E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.47E+03	7.07E+00	1.28E-03	4.54E+00	6.22E-03	1.59E+02	2.97E-02	1.18E+02	5.29E-05
Mike Horse Creek Channel Area Deposits																						**Minimum HQ (Reference Site)**	**3.10E-05**
AMHR-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
AMHR-200 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
AMHR-400 (0-6")	1.72E-01	1.72E-01	2.80E-02	3.87E+01	6.65E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.38E+03	6.65E+00	1.28E-03	4.54E+00	3.74E-03	1.59E+02	2.97E-02	1.18E+02	3.18E-05
AMHR-600 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
MHCS-00-E25 (0-6")	1.72E-01	1.72E-01	2.80E-02	1.77E+02	3.04E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	6.33E+03	3.04E+01	1.28E-03	4.54E+00	1.71E-02	1.59E+02	2.97E-02	1.18E+02	1.46E-04
MHCS-0-W25 (0-6")	1.72E-01	1.72E-01	2.80E-02	2.88E+01	4.94E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.03E+03	4.94E+00	1.28E-03	4.54E+00	2.79E-03	1.59E+02	2.97E-02	1.18E+02	2.37E-05
MHCS-0-W5 (0-6")	1.72E-01	1.72E-01	2.80E-02	7.75E+01	1.33E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.77E+03	1.33E+01	1.28E-03	4.54E+00	7.50E-03	1.59E+02	2.97E-02	1.18E+02	6.37E-05
MHCS-100-E25 (0-6")	1.72E-01	1.72E-01	2.80E-02	1.26E+02	2.16E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.49E+03	2.16E+01	1.28E-03	4.54E+00	1.22E-02	1.59E+02	2.97E-02	1.18E+02	1.03E-04
MHCS-100-W1 (0-6")	1.72E-01	1.72E-01	2.80E-02	1.30E+02	2.23E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.64E+03	2.23E+01	1.28E-03	4.54E+00	1.26E-02	1.59E+02	2.97E-02	1.18E+02	1.07E-04
MHCS-100-W25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
MHCS-200-E10 (0-6")	1.72E-01	1.72E-01	2.80E-02	1.14E+02	1.96E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.07E+03	1.96E+01	1.28E-03	4.54E+00	1.10E-02	1.59E+02	2.97E-02	1.18E+02	9.37E-05
MHCS-200-E25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
MHCS-200-W10 (0-6")	1.72E-01	1.72E-01	2.80E-02	3.24E+01	5.56E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.16E+03	5.56E+00	1.28E-03	4.54E+00	3.14E-03	1.59E+02	2.97E-02	1.18E+02	2.66E-05
MHCS-525-E5 (0-6")	1.72E-01	1.72E-01	2.80E-02	2.54E+02	4.35E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	9.06E+03	4.35E+01	1.28E-03	4.54E+00	2.45E-02	1.59E+02	2.97E-02	1.18E+02	2.08E-04
MHCS-525-W15 (0-6")	1.72E-01	1.72E-01	2.80E-02	1.26E+02	2.16E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.50E+03	2.16E+01	1.28E-03	4.54E+00	1.22E-02	1.59E+02	2.97E-02	1.18E+02	1.04E-04
MHCS-600-E10 (0-6")	1.72E-01	1.72E-01	2.80E-02	9.72E+01	1.67E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.47E+03	1.67E+01	1.28E-03	4.54E+00	9.40E-03	1.59E+02	2.97E-02	1.18E+02	7.99E-05
MHCS-600-W10 (0-6")	1.72E-01	1.72E-01	2.80E-02	1.40E+02	2.41E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.02E+03	2.41E+01	1.28E-03	4.54E+00	1.36E-02	1.59E+02	2.97E-02	1.18E+02	1.15E-04
MHCS-700-E10 (0-6")	1.72E-01	1.72E-01	2.80E-02	1.48E+02	2.54E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.30E+03	2.54E+01	1.28E-03	4.54E+00	1.43E-02	1.59E+02	2.97E-02	1.18E+02	1.22E-04
MHCS-700-E25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
MHCS-700-W10 (0-6")	1.72E-01	1.72E-01	2.80E-02	3.24E+02	5.56E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.16E+04	5.56E+01	1.28E-03	4.54E+00	3.13E-02	1.59E+02	2.97E-02	1.18E+02	2.66E-04
MHCS-800-E15 (0-6")	1.72E-01	1.72E-01	2.80E-02	3.13E+01	5.37E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.12E+03	5.37E+00	1.28E-03	4.54E+00	3.03E-03	1.59E+02	2.97E-02	1.18E+02	2.57E-05
MHCS-800-E5 (0-6")	1.72E-01	1.72E-01	2.80E-02	1.97E+02	3.39E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	7.05E+03	3.39E+01	1.28E-03	4.54E+00	1.91E-02	1.59E+02	2.97E-02	1.18E+02	1.62E-04
MHCS-800-W5 (0-6")	1.72E-01	1.72E-01	2.80E-02	6.34E+01	1.09E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.27E+03	1.09E+01	1.28E-03	4.54E+00	6.13E-03	1.59E+02	2.97E-02	1.18E+02	5.21E-05
MHCS-900-E15 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
MHCS-900-E5 (0-6")	1.72E-01	1.72E-01	2.80E-02	1.44E+02	2.46E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.13E+03	2.46E+01	1.28E-03	4.54E+00	1.39E-02	1.59E+02	2.97E-02	1.18E+02	1.18E-04
MHCS-900-W5 (0-6")	1.72E-01	1.72E-01	2.80E-02	9.32E+01	1.60E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.33E+03	1.60E+01	1.28E-03	4.54E+00	9.02E-03	1.59E+02	2.97E-02	1.18E+02	7.66E-05
MHCS-1000-E10 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
MHCS-1000-W5 (0-6")	1.72E-01	1.72E-01	2.80E-02	2.00E+02	3.44E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	7.16E+03	3.44E+01	1.28E-03	4.54E+00	1.94E-02	1.59E+02	2.97E-02	1.18E+02	1.65E-04
MHCS-1100-E10 (0-6")	1.72E-01	1.72E-01	2.80E-02	1.85E+02	3.18E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	6.61E+03	3.18E+01	1.28E-03	4.54E+00	1.79E-02	1.59E+02	2.97E-02	1.18E+02	1.52E-04
MHCS-1100-E35 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
MHCS-1200-E15 (0-6")	1.72E-01	1.72E-01	2.80E-02	6.32E+01	1.08E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.26E+03	1.08E+01	1.28E-03	4.54E+00	6.11E-03	1.59E+02	2.97E-02	1.18E+02	5.19E-05
MHCS-1200-E30 (0-6")	1.72E-01	1.72E-01	2.80E-02	4.83E+01	8.29E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.73E+03	8.29E+00	1.28E-03	4.54E+00	4.67E-03	1.59E+02	2.97E-02	1.18E+02	3.97E-05
MHCS-1300-E20 (0-6")	1.72E-01	1.72E-01	2.80E-02	6.69E+01	1.15E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.39E+03	1.15E+01	1.28E-03	4.54E+00	6.47E-03	1.59E+02	2.97E-02	1.18E+02	5.50E-05
MHCS-1300-E35 (0-6")	1.72E-01	1.72E-01	2.80E-02	6.02E+01	1.03E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.15E+03	1.03E+01	1.28E-03	4.54E+00	5.82E-03	1.59E+02	2.97E-02	1.18E+02	4.95E-05
Waste Areas 1 and 2																						**Maximum HQ (Mike Horse Creek Channel Area Deposits)**	**2.66E-04**
UMH1-00 (0-6")	1.72E-01	1.72E-01	2.80E-02	6.35E+01	1.09E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.27E+03	1.09E+01	1.28E-03	4.54E+00	6.14E-03	1.59E+02	2.97E-02	1.18E+02	5.21E-05
UMH1-100 (0-6")	1.72E-01	1.72E-01	2.80E-02	1.95E+02	3.34E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	6.95E+03	3.34E+01	1.28E-03	4.54E+00	1.88E-02	1.59E+02	2.97E-02	1.18E+02	1.60E-04
UMH1-150 (0-6")	1.72E-01	1.72E-01	2.80E-02	8.15E+01	1.40E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.91E+03	1.40E+01	1.28E-03	4.54E+00	7.88E-03	1.59E+02	2.97E-02	1.18E+02	6.69E-05
UMH1-200 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UMH1-250 (0-6")	1.72E-01	1.72E-01	2.80E-02	1.26E+02	2.16E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.49E+03	2.16E+01	1.28E-03	4.54E+00	1.22E-02	1.59E+02	2.97E-02	1.18E+02	1.03E-04
UMH1-250+25 (0-6")	1.72E-01	1.72E-01	2.80E-02	1.69E+02	2.89E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	6.02E+03	2.89E+01	1.28E-03	4.54E+00	1.63E-02	1.59E+02	2.97E-02	1.18E+02	1.39E-04
UMH1-300 (0-6")	1.72E-01	1.72E-01	2.80E-02	2.38E+02	4.08E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	8.50E+03	4.08E+01	1.28E-03	4.54E+00	2.30E-02	1.59E+02	2.97E-02	1.18E+02	1.96E-04
UMH1-300+14 (0-6")	1.72E-01	1.72E-01	2.80E-02	9.20E+01	1.58E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.29E+03	1.58E+01	1.28E-03	4.54E+00	8.89E-03	1.59E+02	2.97E-02	1.18E+02	7.56E-05
UMH1-350 (0-6")	1.72E-01	1.72E-01	2.80E-02	2.24E+02	3.84E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	7.99E+03	3.84E+01	1.28E-03	4.54E+00	2.16E-02	1.59E+02	2.97E-02	1.18E+02	1.84E-04
UMH1-350+12.5 (0-6")	1.72E-01	1.72E-01	2.80E-02	4.64E+01	7.95E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.66E+03	7.95E+00	1.28E-03	4.54E+00	4.48E-03	1.59E+02	2.97E-02	1.18E+02	3.81E-05
UMH1-400 (0-6")	1.72E-01	1.72E-01	2.80E-02	4.32E+01	7.42E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.54E+03	7.42E+00	1.28E-03	4.54E+00	4.18E-03	1.59E+02	2.97E-02	1.18E+02	3.55E-05
UMH1-400+12.5 (0-6")	1.72E-01	1.72E-01	2.80E-02	1.24E+02	2.13E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.45E+03	2.14E+01	1.28E-03	4.54E+00	1.20E-02	1.59E+02	2.97E-02	1.18E+02	1.02E-04
UMH1-450 (0-6")	1.72E-01	1.72E-01	2.80E-02	4.05E+01	6.94E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.45E+03	6.94E+00	1.28E-03	4.54E+00	3.91E-03	1.59E+02	2.97E-02	1.18E+02	3.33E-05
UMH1-450+12.5 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UMH1-50 (0-6")	1.72E-01	1.72E-01	2.80E-02	4.51E+01	7.74E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.61E+03	7.74E+00	1.28E-03	4.54E+00	4.36E-03	1.59E+02	2.97E-02	1.18E+02	3.71E-05
UMH1-Comp (0-6")	1.72E-01	1.72E-01	2.80E-02	1.18E+02	2.03E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.22E+03	2.03E+01	1.28E-03	4.54E+00	1.14E-02	1.59E+02	2.97E-02	1.18E+02	9.70E-05
UMH2-00 (0-6")	1.72E-01	1.72E-01	2.80E-02	6.37E+01	1.09E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.28E+03	1.09E+01	1.28E-03	4.54E+00	6.16E-03	1.59E+02	2.97E-02	1.18E+02	5.24E-05

TABLE C-8E: MANGANESE DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 8 - MIKE HORSE MINE WASTE PILES (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **1.73**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Red Fox (Carnivorous Mammal - Terrestrial)																							
UMH2-00+25 (0-6")	1.72E-01	1.72E-01	2.80E-02	6.76E+01	1.16E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.41E+03	1.16E+01	1.28E-03	4.54E+00	6.53E-03	1.59E+02	2.97E-02	1.18E+02	5.55E-05
UMH2-100 (0-6")	1.72E-01	1.72E-01	2.80E-02	1.15E+02	1.97E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.10E+03	1.97E+01	1.28E-03	4.54E+00	1.11E-02	1.59E+02	2.97E-02	1.18E+02	9.43E-05
UMH2-100+35 (0-6")	1.72E-01	1.72E-01	2.80E-02	6.63E+01	1.14E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.37E+03	1.14E+01	1.28E-03	4.54E+00	6.41E-03	1.59E+02	2.97E-02	1.18E+02	5.45E-05
UMH2-150 (0-6")	1.72E-01	1.72E-01	2.80E-02	4.39E+01	7.53E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.57E+03	7.53E+00	1.28E-03	4.54E+00	4.24E-03	1.59E+02	2.97E-02	1.18E+02	3.61E-05
UMH2-150+60 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UMH2-200 (0-6")	1.72E-01	1.72E-01	2.80E-02	1.61E+02	2.76E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.75E+03	2.76E+01	1.28E-03	4.54E+00	1.56E-02	1.59E+02	2.97E-02	1.18E+02	1.32E-04
UMH2-200+85 (0-6")	1.72E-01	1.72E-01	2.80E-02	3.66E+01	6.27E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.31E+03	6.27E+00	1.28E-03	4.54E+00	3.53E-03	1.59E+02	2.97E-02	1.18E+02	3.00E-05
UMH2-250 (0-6")	1.72E-01	1.72E-01	2.80E-02	1.14E+02	1.95E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.06E+03	1.95E+01	1.28E-03	4.54E+00	1.10E-02	1.59E+02	2.97E-02	1.18E+02	9.33E-05
UMH2-250+75 (0-6")	1.72E-01	1.72E-01	2.80E-02	6.46E+01	1.11E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.31E+03	1.11E+01	1.28E-03	4.54E+00	6.25E-03	1.59E+02	2.97E-02	1.18E+02	5.31E-05
UMH2-300 (0-6")	1.72E-01	1.72E-01	2.80E-02	2.84E+01	4.87E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.01E+03	4.87E+00	1.28E-03	4.54E+00	2.74E-03	1.59E+02	2.97E-02	1.18E+02	2.33E-05
UMH2-300+25 (0-6")	1.72E-01	1.72E-01	2.80E-02	3.01E+01	5.16E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.08E+03	5.16E+00	1.28E-03	4.54E+00	2.91E-03	1.59E+02	2.97E-02	1.18E+02	2.47E-05
UMH2-350 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UMH2-350+25 (0-6")	1.72E-01	1.72E-01	2.80E-02	1.70E+02	2.92E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	6.09E+03	2.92E+01	1.28E-03	4.54E+00	1.65E-02	1.59E+02	2.97E-02	1.18E+02	1.40E-04
UMH2-400 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UMH2-400+25 (0-6")	1.72E-01	1.72E-01	2.80E-02	4.27E+01	7.33E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.53E+03	7.33E+00	1.28E-03	4.54E+00	4.13E-03	1.59E+02	2.97E-02	1.18E+02	3.51E-05
UMH2-450 (0-6")	1.72E-01	1.72E-01	2.80E-02	2.74E+01	4.70E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	9.78E+02	4.70E+00	1.28E-03	4.54E+00	2.65E-03	1.59E+02	2.97E-02	1.18E+02	2.25E-05
UMH2-450+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UMH2-50 (0-6")	1.72E-01	1.72E-01	2.80E-02	6.13E+01	1.05E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.19E+03	1.05E+01	1.28E-03	4.54E+00	5.92E-03	1.59E+02	2.97E-02	1.18E+02	5.03E-05
UMH2-50+25b (0-6")	1.72E-01	1.72E-01	2.80E-02	4.85E+01	8.31E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.73E+03	8.31E+00	1.28E-03	4.54E+00	4.69E-03	1.59E+02	2.97E-02	1.18E+02	3.98E-05
UMH2-500 (0-6")	1.72E-01	1.72E-01	2.80E-02	7.85E+01	1.35E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.80E+03	1.35E+01	1.28E-03	4.54E+00	7.59E-03	1.59E+02	2.97E-02	1.18E+02	6.45E-05
UMH2-500+75 (0-6")	1.72E-01	1.72E-01	2.80E-02	5.07E+01	8.70E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.81E+03	8.70E+00	1.28E-03	4.54E+00	4.90E-03	1.59E+02	2.97E-02	1.18E+02	4.17E-05
UMH2-550 (0-6")	1.72E-01	1.72E-01	2.80E-02	2.19E+02	3.75E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	7.81E+03	3.75E+01	1.28E-03	4.54E+00	2.11E-02	1.59E+02	2.97E-02	1.18E+02	1.80E-04
UMH2-550+75 (0-6")	1.72E-01	1.72E-01	2.80E-02	5.49E+01	9.41E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.96E+03	9.41E+00	1.28E-03	4.54E+00	5.30E-03	1.59E+02	2.97E-02	1.18E+02	4.51E-05
UMH2-600 (0-6")	1.72E-01	1.72E-01	2.80E-02	6.14E+01	1.05E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.19E+03	1.05E+01	1.28E-03	4.54E+00	5.94E-03	1.59E+02	2.97E-02	1.18E+02	5.05E-05
UMH2-600+25 (0-6")	1.72E-01	1.72E-01	2.80E-02	3.53E+01	6.05E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.26E+03	6.05E+00	1.28E-03	4.54E+00	3.41E-03	1.59E+02	2.97E-02	1.18E+02	2.90E-05
UMH2-650 (0-6")	1.72E-01	1.72E-01	2.80E-02	5.51E+01	9.45E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.97E+03	9.45E+00	1.28E-03	4.54E+00	5.33E-03	1.59E+02	2.97E-02	1.18E+02	4.53E-05
UMH2-650+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UMH2-Comp 1 (0-6")	1.72E-01	1.72E-01	2.80E-02	1.28E+02	2.19E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.57E+03	2.19E+01	1.28E-03	4.54E+00	1.24E-02	1.59E+02	2.97E-02	1.18E+02	1.05E-04
UMH2-Comp 2 (0-6")	1.72E-01	1.72E-01	2.80E-02	1.56E+02	2.67E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.56E+03	2.67E+01	1.28E-03	4.54E+00	1.51E-02	1.59E+02	2.97E-02	1.18E+02	1.28E-04
Waste Area 3																						**Maximum HQ (Waste Areas 1 and 2)**	**1.96E-04**
UMH3-00 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UMH3-100 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UMH3-150 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UMH3-200 (0-6")	1.72E-01	1.72E-01	2.80E-02	4.10E+01	7.04E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.47E+03	7.04E+00	1.28E-03	4.54E+00	3.97E-03	1.59E+02	2.97E-02	1.18E+02	3.37E-05
UMH3-250 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UMH3-300 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UMH3-350 (0-6")	1.72E-01	1.72E-01	2.80E-02	4.75E+01	8.15E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.70E+03	8.15E+00	1.28E-03	4.54E+00	4.59E-03	1.59E+02	2.97E-02	1.18E+02	3.90E-05
UMH3-350+75 (0-6")	1.72E-01	1.72E-01	2.80E-02	5.35E+01	9.17E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.91E+03	9.17E+00	1.28E-03	4.54E+00	5.17E-03	1.59E+02	2.97E-02	1.18E+02	4.39E-05
UMH3-400 (0-6")	1.72E-01	1.72E-01	2.80E-02	2.76E+01	4.74E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	9.87E+02	4.74E+00	1.28E-03	4.54E+00	2.67E-03	1.59E+02	2.97E-02	1.18E+02	2.27E-05
UMH3-400+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UMH3-450 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UMH3-50 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UMH3-50+50 (0-6")	1.72E-01	1.72E-01	2.80E-02	3.65E+01	6.26E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.30E+03	6.26E+00	1.28E-03	4.54E+00	3.53E-03	1.59E+02	2.97E-02	1.18E+02	3.00E-05
UMH3-500 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UMH3-550 (0-6")	1.72E-01	1.72E-01	2.80E-02	4.27E+01	7.33E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.53E+03	7.33E+00	1.28E-03	4.54E+00	4.13E-03	1.59E+02	2.97E-02	1.18E+02	3.51E-05
UMH3-600 (0-6")	1.72E-01	1.72E-01	2.80E-02	3.70E+01	6.35E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.32E+03	6.35E+00	1.28E-03	4.54E+00	3.58E-03	1.59E+02	2.97E-02	1.18E+02	3.04E-05
UMH3-650 (0-6")	1.72E-01	1.72E-01	2.80E-02	4.18E+01	7.16E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.49E+03	7.16E+00	1.28E-03	4.54E+00	4.04E-03	1.59E+02	2.97E-02	1.18E+02	3.43E-05
UMH3-700 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UMH3-750 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UMH3-800 (0-6")	1.72E-01	1.72E-01	2.80E-02	3.08E+01	5.28E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.10E+03	5.28E+00	1.28E-03	4.54E+00	2.97E-03	1.59E+02	2.97E-02	1.18E+02	2.53E-05
UMH3-Comp 1 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UMH3-Comp 2 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UMH3-Comp 3 (0-6")	1.72E-01	1.72E-01	2.80E-02	4.25E+01	7.29E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.52E+03	7.29E+00	1.28E-03	4.54E+00	4.11E-03	1.59E+02	2.97E-02	1.18E+02	3.49E-05
																						Maximum HQ (Waste Area 3)	**4.39E-05**

TABLE C-8E: MANGANESE DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 8 - MIKE HORSE MINE WASTE PILES (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **1.73**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Masked Shrew (Omnivorous Mammal - Terrestrial, Wetland)																							
Reference Sites																							
BCBG-1 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.28E+03	1.08E+01	1.10E-03	8.65E+02	9.52E-01	1.00E+00	5.50E-03	2.14E+03	1.59E+02	2.97E-02	1.76E+02	1.21E+01
MHBG-201 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	3.59E+03	3.04E+01	1.10E-03	2.43E+03	2.68E+00	1.00E+00	5.50E-03	6.01E+03	1.59E+02	2.97E-02	1.76E+02	3.42E+01
MHBG-202 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	2.17E+03	1.84E+01	1.10E-03	1.47E+03	1.62E+00	1.00E+00	5.50E-03	3.64E+03	1.59E+02	2.97E-02	1.76E+02	2.07E+01
Mike Horse Creek Channel Area Deposits																						**Minimum HQ (Reference Site)**	**1.21E+01**
AMHR-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
AMHR-200 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
AMHR-400 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	2.04E+03	1.73E+01	1.10E-03	1.38E+03	1.52E+00	1.00E+00	5.50E-03	3.42E+03	1.59E+02	2.97E-02	1.76E+02	1.94E+01
AMHR-600 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
MHCS-00-E25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	9.35E+03	7.92E+01	1.10E-03	6.33E+03	6.97E+00	1.00E+00	5.50E-03	1.57E+04	1.59E+02	2.97E-02	1.76E+02	8.90E+01
MHCS-0-W25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.52E+03	1.29E+01	1.10E-03	1.03E+03	1.13E+00	1.00E+00	5.50E-03	2.55E+03	1.59E+02	2.97E-02	1.76E+02	1.45E+01
MHCS-0-W5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	4.09E+03	3.46E+01	1.10E-03	2.77E+03	3.05E+00	1.00E+00	5.50E-03	6.85E+03	1.59E+02	2.97E-02	1.76E+02	3.89E+01
MHCS-100-E25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	6.63E+03	5.61E+01	1.10E-03	4.49E+03	4.94E+00	1.00E+00	5.50E-03	1.11E+04	1.59E+02	2.97E-02	1.76E+02	6.31E+01
MHCS-100-W1 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	6.85E+03	5.80E+01	1.10E-03	4.64E+03	5.11E+00	1.00E+00	5.50E-03	1.15E+04	1.59E+02	2.97E-02	1.76E+02	6.52E+01
MHCS-100-W25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
MHCS-200-E10 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	6.01E+03	5.09E+01	1.10E-03	4.07E+03	4.49E+00	1.00E+00	5.50E-03	1.01E+04	1.59E+02	2.97E-02	1.76E+02	5.72E+01
MHCS-200-E25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
MHCS-200-W10 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.71E+03	1.45E+01	1.10E-03	1.16E+03	1.28E+00	1.00E+00	5.50E-03	2.86E+03	1.59E+02	2.97E-02	1.76E+02	1.63E+01
MHCS-525-E5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.34E+04	1.13E+02	1.10E-03	9.06E+03	9.97E+00	1.00E+00	5.50E-03	2.24E+04	1.59E+02	2.97E-02	1.76E+02	1.27E+02
MHCS-525-W15 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	6.65E+03	5.63E+01	1.10E-03	4.50E+03	4.96E+00	1.00E+00	5.50E-03	1.11E+04	1.59E+02	2.97E-02	1.76E+02	6.33E+01
MHCS-600-E10 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	5.13E+03	4.34E+01	1.10E-03	3.47E+03	3.82E+00	1.00E+00	5.50E-03	8.59E+03	1.59E+02	2.97E-02	1.76E+02	4.88E+01
MHCS-600-W10 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	7.40E+03	6.27E+01	1.10E-03	5.02E+03	5.52E+00	1.00E+00	5.50E-03	1.24E+04	1.59E+02	2.97E-02	1.76E+02	7.05E+01
MHCS-700-E10 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	7.82E+03	6.62E+01	1.10E-03	5.30E+03	5.83E+00	1.00E+00	5.50E-03	1.31E+04	1.59E+02	2.97E-02	1.76E+02	7.44E+01
MHCS-700-E25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
MHCS-700-W10 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.71E+04	1.45E+02	1.10E-03	1.16E+04	1.27E+01	1.00E+00	5.50E-03	2.86E+04	1.59E+02	2.97E-02	1.76E+02	1.63E+02
MHCS-800-E15 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.65E+03	1.40E+01	1.10E-03	1.12E+03	1.23E+00	1.00E+00	5.50E-03	2.77E+03	1.59E+02	2.97E-02	1.76E+02	1.57E+01
MHCS-800-E5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.04E+04	8.82E+01	1.10E-03	7.05E+03	7.77E+00	1.00E+00	5.50E-03	1.74E+04	1.59E+02	2.97E-02	1.76E+02	9.91E+01
MHCS-800-W5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	3.34E+03	2.83E+01	1.10E-03	2.27E+03	2.49E+00	1.00E+00	5.50E-03	5.60E+03	1.59E+02	2.97E-02	1.76E+02	3.18E+01
MHCS-900-E15 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
MHCS-900-E5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	7.57E+03	6.41E+01	1.10E-03	5.13E+03	5.65E+00	1.00E+00	5.50E-03	1.27E+04	1.59E+02	2.97E-02	1.76E+02	7.21E+01
MHCS-900-W5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	4.92E+03	4.16E+01	1.10E-03	3.33E+03	3.67E+00	1.00E+00	5.50E-03	8.24E+03	1.59E+02	2.97E-02	1.76E+02	4.68E+01
MHCS-1000-E10 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
MHCS-1000-W5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.06E+04	8.95E+01	1.10E-03	7.16E+03	7.88E+00	1.00E+00	5.50E-03	1.77E+04	1.59E+02	2.97E-02	1.76E+02	1.01E+02
MHCS-1100-E10 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	9.76E+03	8.27E+01	1.10E-03	6.61E+03	7.28E+00	1.00E+00	5.50E-03	1.64E+04	1.59E+02	2.97E-02	1.76E+02	9.29E+01
MHCS-1100-E35 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
MHCS-1200-E15 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	3.33E+03	2.82E+01	1.10E-03	2.26E+03	2.48E+00	1.00E+00	5.50E-03	5.58E+03	1.59E+02	2.97E-02	1.76E+02	3.17E+01
MHCS-1200-E30 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	2.55E+03	2.16E+01	1.10E-03	1.73E+03	1.90E+00	1.00E+00	5.50E-03	4.27E+03	1.59E+02	2.97E-02	1.76E+02	2.42E+01
MHCS-1300-E20 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	3.53E+03	2.99E+01	1.10E-03	2.39E+03	2.63E+00	1.00E+00	5.50E-03	5.91E+03	1.59E+02	2.97E-02	1.76E+02	3.36E+01
MHCS-1300-E35 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	3.18E+03	2.69E+01	1.10E-03	2.15E+03	2.37E+00	1.00E+00	5.50E-03	5.32E+03	1.59E+02	2.97E-02	1.76E+02	3.02E+01
Waste Areas 1 and 2																						**Maximum HQ (Mike Horse Creek Channel Area Deposits)**	**1.63E+02**
UMH1-00 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	3.35E+03	2.83E+01	1.10E-03	2.27E+03	2.50E+00	1.00E+00	5.50E-03	5.61E+03	1.59E+02	2.97E-02	1.76E+02	3.18E+01
UMH1-100 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.03E+04	8.69E+01	1.10E-03	6.95E+03	7.66E+00	1.00E+00	5.50E-03	1.72E+04	1.59E+02	2.97E-02	1.76E+02	9.77E+01
UMH1-150 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	4.29E+03	3.64E+01	1.10E-03	2.91E+03	3.20E+00	1.00E+00	5.50E-03	7.20E+03	1.59E+02	2.97E-02	1.76E+02	4.09E+01
UMH1-200 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UMH1-250 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	6.63E+03	5.61E+01	1.10E-03	4.49E+03	4.94E+00	1.00E+00	5.50E-03	1.11E+04	1.59E+02	2.97E-02	1.76E+02	6.31E+01
UMH1-250+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	8.89E+03	7.53E+01	1.10E-03	6.02E+03	6.63E+00	1.00E+00	5.50E-03	1.49E+04	1.59E+02	2.97E-02	1.76E+02	8.46E+01
UMH1-300 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.26E+04	1.06E+02	1.10E-03	8.50E+03	9.36E+00	1.00E+00	5.50E-03	2.10E+04	1.59E+02	2.97E-02	1.76E+02	1.19E+02
UMH1-300+14 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	4.85E+03	4.11E+01	1.10E-03	3.29E+03	3.62E+00	1.00E+00	5.50E-03	8.13E+03	1.59E+02	2.97E-02	1.76E+02	4.62E+01
UMH1-350 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.18E+04	9.99E+01	1.10E-03	7.99E+03	8.80E+00	1.00E+00	5.50E-03	1.98E+04	1.59E+02	2.97E-02	1.76E+02	1.12E+02
UMH1-350+12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	2.44E+03	2.07E+01	1.10E-03	1.66E+03	1.82E+00	1.00E+00	5.50E-03	4.10E+03	1.59E+02	2.97E-02	1.76E+02	2.33E+01
UMH1-400 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	2.28E+03	1.93E+01	1.10E-03	1.54E+03	1.70E+00	1.00E+00	5.50E-03	3.82E+03	1.59E+02	2.97E-02	1.76E+02	2.17E+01
UMH1-400+12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	6.56E+03	5.56E+01	1.10E-03	4.45E+03	4.89E+00	1.00E+00	5.50E-03	1.10E+04	1.59E+02	2.97E-02	1.76E+02	6.25E+01
UMH1-450 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	2.13E+03	1.81E+01	1.10E-03	1.45E+03	1.59E+00	1.00E+00	5.50E-03	3.58E+03	1.59E+02	2.97E-02	1.76E+02	2.03E+01
UMH1-450+12.5 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UMH1-50 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	2.38E+03	2.01E+01	1.10E-03	1.61E+03	1.77E+00	1.00E+00	5.50E-03	3.98E+03	1.59E+02	2.97E-02	1.76E+02	2.26E+01
UMH1-Comp (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	6.23E+03	5.27E+01	1.10E-03	4.22E+03	4.65E+00	1.00E+00	5.50E-03	1.04E+04	1.59E+02	2.97E-02	1.76E+02	5.93E+01
UMH2-00 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	3.36E+03	2.85E+01	1.10E-03	2.28E+03	2.51E+00	1.00E+00	5.50E-03	5.63E+03	1.59E+02	2.97E-02	1.76E+02	3.20E+01

TABLE C-8E: MANGANESE DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 8 - MIKE HORSE MINE WASTE PILES (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 1.73

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Masked Shrew (Omnivorous Mammal - Terrestrial, Wetland)																							
UMH2-00+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	3.56E+03	3.02E+01	1.10E-03	2.41E+03	2.66E+00	1.00E+00	5.50E-03	5.97E+03	1.59E+02	2.97E-02	1.76E+02	3.39E+01
UMH2-100 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	6.05E+03	5.13E+01	1.10E-03	4.10E+03	4.51E+00	1.00E+00	5.50E-03	1.01E+04	1.59E+02	2.97E-02	1.76E+02	5.76E+01
UMH2-100+35 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	3.50E+03	2.96E+01	1.10E-03	2.37E+03	2.61E+00	1.00E+00	5.50E-03	5.86E+03	1.59E+02	2.97E-02	1.76E+02	3.33E+01
UMH2-150 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	2.31E+03	1.96E+01	1.10E-03	1.57E+03	1.73E+00	1.00E+00	5.50E-03	3.88E+03	1.59E+02	2.97E-02	1.76E+02	2.20E+01
UMH2-150+60 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UMH2-200 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	8.49E+03	7.19E+01	1.10E-03	5.75E+03	6.33E+00	1.00E+00	5.50E-03	1.42E+04	1.59E+02	2.97E-02	1.76E+02	8.08E+01
UMH2-200+85 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.93E+03	1.63E+01	1.10E-03	1.31E+03	1.44E+00	1.00E+00	5.50E-03	3.23E+03	1.59E+02	2.97E-02	1.76E+02	1.83E+01
UMH2-250 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	5.99E+03	5.07E+01	1.10E-03	4.06E+03	4.47E+00	1.00E+00	5.50E-03	1.00E+04	1.59E+02	2.97E-02	1.76E+02	5.70E+01
UMH2-250+75 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	3.41E+03	2.88E+01	1.10E-03	2.31E+03	2.54E+00	1.00E+00	5.50E-03	5.71E+03	1.59E+02	2.97E-02	1.76E+02	3.24E+01
UMH2-300 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.50E+03	1.27E+01	1.10E-03	1.01E+03	1.12E+00	1.00E+00	5.50E-03	2.51E+03	1.59E+02	2.97E-02	1.76E+02	1.42E+01
UMH2-300+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.59E+03	1.34E+01	1.10E-03	1.08E+03	1.18E+00	1.00E+00	5.50E-03	2.66E+03	1.59E+02	2.97E-02	1.76E+02	1.51E+01
UMH2-350 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UMH2-350+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	8.98E+03	7.61E+01	1.10E-03	6.09E+03	6.70E+00	1.00E+00	5.50E-03	1.51E+04	1.59E+02	2.97E-02	1.76E+02	8.55E+01
UMH2-400 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UMH2-400+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	2.25E+03	1.91E+01	1.10E-03	1.53E+03	1.68E+00	1.00E+00	5.50E-03	3.78E+03	1.59E+02	2.97E-02	1.76E+02	2.15E+01
UMH2-450 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.44E+03	1.22E+01	1.10E-03	9.78E+02	1.08E+00	1.00E+00	5.50E-03	2.42E+03	1.59E+02	2.97E-02	1.76E+02	1.37E+01
UMH2-450+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UMH2-50 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	3.23E+03	2.74E+01	1.10E-03	2.19E+03	2.41E+00	1.00E+00	5.50E-03	5.41E+03	1.59E+02	2.97E-02	1.76E+02	3.07E+01
UMH2-50+25b (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	2.55E+03	2.16E+01	1.10E-03	1.73E+03	1.91E+00	1.00E+00	5.50E-03	4.28E+03	1.59E+02	2.97E-02	1.76E+02	2.43E+01
UMH2-500 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	4.14E+03	3.50E+01	1.10E-03	2.80E+03	3.09E+00	1.00E+00	5.50E-03	6.93E+03	1.59E+02	2.97E-02	1.76E+02	3.94E+01
UMH2-500+75 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	2.67E+03	2.26E+01	1.10E-03	1.81E+03	1.99E+00	1.00E+00	5.50E-03	4.48E+03	1.59E+02	2.97E-02	1.76E+02	2.54E+01
UMH2-550 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.15E+04	9.76E+01	1.10E-03	7.81E+03	8.60E+00	1.00E+00	5.50E-03	1.93E+04	1.59E+02	2.97E-02	1.76E+02	1.10E+02
UMH2-550+75 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	2.89E+03	2.45E+01	1.10E-03	1.96E+03	2.16E+00	1.00E+00	5.50E-03	4.85E+03	1.59E+02	2.97E-02	1.76E+02	2.75E+01
UMH2-600 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	3.24E+03	2.74E+01	1.10E-03	2.19E+03	2.42E+00	1.00E+00	5.50E-03	5.43E+03	1.59E+02	2.97E-02	1.76E+02	3.08E+01
UMH2-600+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.86E+03	1.58E+01	1.10E-03	1.26E+03	1.39E+00	1.00E+00	5.50E-03	3.12E+03	1.59E+02	2.97E-02	1.76E+02	1.77E+01
UMH2-650 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	2.90E+03	2.46E+01	1.10E-03	1.97E+03	2.17E+00	1.00E+00	5.50E-03	4.87E+03	1.59E+02	2.97E-02	1.76E+02	2.76E+01
UMH2-650+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UMH2-Comp 1 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	6.74E+03	5.71E+01	1.10E-03	4.57E+03	5.03E+00	1.00E+00	5.50E-03	1.13E+04	1.59E+02	2.97E-02	1.76E+02	6.41E+01
UMH2-Comp 2 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	8.21E+03	6.96E+01	1.10E-03	5.56E+03	6.13E+00	1.00E+00	5.50E-03	1.38E+04	1.59E+02	2.97E-02	1.76E+02	7.82E+01
Waste Area 3																						**Maximum HQ (Waste Areas 1 and 2)**	**1.19E+02**
UMH3-00 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UMH3-100 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UMH3-150 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UMH3-200 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	2.16E+03	1.83E+01	1.10E-03	1.47E+03	1.61E+00	1.00E+00	5.50E-03	3.63E+03	1.59E+02	2.97E-02	1.76E+02	2.06E+01
UMH3-250 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UMH3-300 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UMH3-350 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	2.50E+03	2.12E+01	1.10E-03	1.70E+03	1.87E+00	1.00E+00	5.50E-03	4.20E+03	1.59E+02	2.97E-02	1.76E+02	2.38E+01
UMH3-350+75 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	2.82E+03	2.39E+01	1.10E-03	1.91E+03	2.10E+00	1.00E+00	5.50E-03	4.72E+03	1.59E+02	2.97E-02	1.76E+02	2.68E+01
UMH3-400 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.46E+03	1.23E+01	1.10E-03	9.87E+02	1.09E+00	1.00E+00	5.50E-03	2.44E+03	1.59E+02	2.97E-02	1.76E+02	1.39E+01
UMH3-400+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UMH3-450 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UMH3-50 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UMH3-50+50 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.92E+03	1.63E+01	1.10E-03	1.30E+03	1.44E+00	1.00E+00	5.50E-03	3.23E+03	1.59E+02	2.97E-02	1.76E+02	1.83E+01
UMH3-500 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UMH3-550 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	2.25E+03	1.91E+01	1.10E-03	1.53E+03	1.68E+00	1.00E+00	5.50E-03	3.77E+03	1.59E+02	2.97E-02	1.76E+02	2.14E+01
UMH3-600 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.95E+03	1.65E+01	1.10E-03	1.32E+03	1.46E+00	1.00E+00	5.50E-03	3.27E+03	1.59E+02	2.97E-02	1.76E+02	1.86E+01
UMH3-650 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	2.20E+03	1.86E+01	1.10E-03	1.49E+03	1.64E+00	1.00E+00	5.50E-03	3.69E+03	1.59E+02	2.97E-02	1.76E+02	2.10E+01
UMH3-700 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UMH3-750 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UMH3-800 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.62E+03	1.37E+01	1.10E-03	1.10E+03	1.21E+00	1.00E+00	5.50E-03	2.72E+03	1.59E+02	2.97E-02	1.76E+02	1.54E+01
UMH3-Comp 1 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UMH3-Comp 2 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UMH3-Comp 3 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	2.24E+03	1.90E+01	1.10E-03	1.52E+03	1.67E+00	1.00E+00	5.50E-03	3.75E+03	1.59E+02	2.97E-02	1.76E+02	2.13E+01
																						Maximum HQ (Waste Area 3)	**2.68E+01**

TABLE C-8E: MANGANESE DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 8 - MIKE HORSE MINE WASTE PILES (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables — from BAF table — linked to soil or sed concentration table (VLOOKUP)

calculated values — linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 1.73

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)

Notes

1 See Tables 3-1 through 3-13 for ingestion rates, foraging ranges used to calculate the SUF, and body weights.

2 BAFs were calculated by dividing site-collected tissue by collocated soil concentrations (BAFs are in dry weight). The maximum BAF calculated from the Beartrap Creek and Blackfoot River transects was used for site dose calculations. The maximum BAF from the terrestrial reference site was used for reference site dose calculations.

3 The mammal, plant, and invertebrate concentrations were calculated by multiplying the soil concentration by the BAF to generate a tissue concentration (see note 2).

4 Mammal, plant, and invertebrate daily doses were calculated by multiplying the ingestion rate (see note 1) by the tissue concentration (see note 3).

5 Soil concentration from 0 to 6 inches below ground surface at point ID as measured by XRF 10. Doses were not calculated for detected and non-detected soil concentrations measured below the minimum reference site concentration, as indicated by BB. For results that were measured at less than the detection limit, doses were calculated using half of the detection limit.

6 Soil daily dose was calculated by multiplying the soil ingestion rate (see note 1) by soil concentration (see note 5).

7 Total daily dose is calculated using the following equation: total daily dose = ([mammal daily dose (if applicable) + plant daily dose (if applicable) + invertebrate daily dose (if applicable) + soil daily dose]*SUF)/receptor species body weight.

8 The derivation of TRVs is described in Navy (1998). The high TRV was used for dose calculations.

9 Allometrically adjusted TRVs for birds were calculated using the following equation: receptor species TRV = (test species TRV) x (test species body weight / receptor species body weight)$^{(1-1.2)}$.

10 Allometrically adjusted TRVs for mammals were calculated using the following equation: receptor species TRV = (test species TRV) x (test species body weight / receptor species body weight)$^{(1-0.94)}$.

11 HQs were calculated using the following equation: HQ = total daily dose/allometrically adjusted TRV.

12 Highlighted cells indicate an HQ greater than 1.0.

BAF	Bioaccumulation Factor	mg/day	Milligram per day
BB	Below minimum background reference site concentration	mg/kg	Milligram per kilogram
EE/CA	Engineering Evaluation/Cost Analysis	NA	Not applicable
EU	Exposure Unit	Navy	Department of the Navy
HQ	Hazard quotient	SUF	Site use factor
ID	Identification	TRV	Toxicity reference value
kg	Kilogram	XRF	X-ray flouresence
kg/day	Kilogram per day	XRF 10	XRF measurements recorded following drying and seiving through a #10 -mesh screen

Sources: Department of the Navy. 1998. "Development of Toxicity Reference Values for Conducting Ecological Risk Assessments at Naval Facilities in California, Interim Final." Prepared by Naval Facilities Engineering Command, Engineering Field Activity West (EFA West). San Bruno, California.

TABLE C-8F: ZINC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 8 - MIKE HORSE MINE WASTE PILES

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **1.73**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Mourning Dove (Herbivorous Birds - Terrestrial)																							
Reference Sites																							
BCBG-1 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.41E+00	4.20E+02	2.42E+00	NA	NA	NA	NA	5.36E-04	2.97E+02	1.59E-01	6.68E-03	1.09E-01	1.58E-01	1.72E+02	9.55E-01	1.11E+02	1.41E-03
MHBG-201 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.41E+00	7.38E+01	4.25E-01	NA	NA	NA	NA	5.36E-04	5.23E+01	2.80E-02	6.68E-03	1.09E-01	2.77E-02	1.72E+02	9.55E-01	1.11E+02	2.49E-04
MHBG-202 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.41E+00	6.83E+01	3.93E-01	NA	NA	NA	NA	5.36E-04	4.84E+01	2.59E-02	6.68E-03	1.09E-01	2.56E-02	1.72E+02	9.55E-01	1.11E+02	2.30E-04
Mike Horse Creek Channel Area Deposits																						**Minimum HQ (Reference Site)**	**2.30E-04**
AMHR-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	4.03E+02	2.32E+00	NA	NA	NA	NA	5.36E-04	2.04E+02	1.09E-01	6.68E-03	1.09E-01	1.49E-01	1.72E+02	9.55E-01	1.11E+02	1.33E-03
AMHR-200 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	2.66E+02	1.53E+00	NA	NA	NA	NA	5.36E-04	1.34E+02	7.20E-02	6.68E-03	1.09E-01	9.83E-02	1.72E+02	9.55E-01	1.11E+02	8.82E-04
AMHR-400 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	1.11E+03	6.37E+00	NA	NA	NA	NA	5.36E-04	5.58E+02	2.99E-01	6.68E-03	1.09E-01	4.08E-01	1.72E+02	9.55E-01	1.11E+02	3.66E-03
AMHR-600 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	1.34E+03	7.73E+00	NA	NA	NA	NA	5.36E-04	6.77E+02	3.63E-01	6.68E-03	1.09E-01	4.95E-01	1.72E+02	9.55E-01	1.11E+02	4.44E-03
MHCS-00-E25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	3.63E+03	2.09E+01	NA	NA	NA	NA	5.36E-04	1.83E+03	9.81E-01	6.68E-03	1.09E-01	1.34E+00	1.72E+02	9.55E-01	1.11E+02	1.20E-02
MHCS-0-W25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	4.88E+02	2.81E+00	NA	NA	NA	NA	5.36E-04	2.46E+02	1.32E-01	6.68E-03	1.09E-01	1.80E-01	1.72E+02	9.55E-01	1.11E+02	1.61E-03
MHCS-0-W5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	4.69E+02	2.70E+00	NA	NA	NA	NA	5.36E-04	2.37E+02	1.27E-01	6.68E-03	1.09E-01	1.73E-01	1.72E+02	9.55E-01	1.11E+02	1.55E-03
MHCS-100-E25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	2.40E+03	1.38E+01	NA	NA	NA	NA	5.36E-04	1.21E+03	6.49E-01	6.68E-03	1.09E-01	8.86E-01	1.72E+02	9.55E-01	1.11E+02	7.95E-03
MHCS-100-W1 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	2.53E+03	1.46E+01	NA	NA	NA	NA	5.36E-04	1.28E+03	6.85E-01	6.68E-03	1.09E-01	9.35E-01	1.72E+02	9.55E-01	1.11E+02	8.39E-03
MHCS-100-W25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	3.49E+02	2.01E+00	NA	NA	NA	NA	5.36E-04	1.76E+02	9.43E-02	6.68E-03	1.09E-01	1.29E-01	1.72E+02	9.55E-01	1.11E+02	1.15E-03
MHCS-200-E10 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	1.84E+03	1.06E+01	NA	NA	NA	NA	5.36E-04	9.29E+02	4.98E-01	6.68E-03	1.09E-01	6.79E-01	1.72E+02	9.55E-01	1.11E+02	6.09E-03
MHCS-200-E25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	4.01E+02	2.31E+00	NA	NA	NA	NA	5.36E-04	2.02E+02	1.08E-01	6.68E-03	1.09E-01	1.48E-01	1.72E+02	9.55E-01	1.11E+02	1.33E-03
MHCS-200-W10 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	5.33E+02	3.07E+00	NA	NA	NA	NA	5.36E-04	2.69E+02	1.44E-01	6.68E-03	1.09E-01	1.97E-01	1.72E+02	9.55E-01	1.11E+02	1.77E-03
MHCS-525-E5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	4.93E+03	2.84E+01	NA	NA	NA	NA	5.36E-04	2.49E+03	1.33E+00	6.68E-03	1.09E-01	1.82E+00	1.72E+02	9.55E-01	1.11E+02	1.63E-02
MHCS-525-W15 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	4.66E+03	2.68E+01	NA	NA	NA	NA	5.36E-04	2.35E+03	1.26E+00	6.68E-03	1.09E-01	1.72E+00	1.72E+02	9.55E-01	1.11E+02	1.54E-02
MHCS-600-E10 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	2.16E+03	1.24E+01	NA	NA	NA	NA	5.36E-04	1.09E+03	5.84E-01	6.68E-03	1.09E-01	7.96E-01	1.72E+02	9.55E-01	1.11E+02	7.14E-03
MHCS-600-W10 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	6.35E+03	3.66E+01	NA	NA	NA	NA	5.36E-04	3.21E+03	1.72E+00	6.68E-03	1.09E-01	2.34E+00	1.72E+02	9.55E-01	1.11E+02	2.10E-02
MHCS-700-E10 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	2.72E+03	1.57E+01	NA	NA	NA	NA	5.36E-04	1.37E+03	7.36E-01	6.68E-03	1.09E-01	1.00E+00	1.72E+02	9.55E-01	1.11E+02	9.01E-03
MHCS-700-E25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	5.10E+02	2.94E+00	NA	NA	NA	NA	5.36E-04	2.58E+02	1.38E-01	6.68E-03	1.09E-01	1.88E-01	1.72E+02	9.55E-01	1.11E+02	1.69E-03
MHCS-700-W10 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	3.07E+03	1.77E+01	NA	NA	NA	NA	5.36E-04	1.55E+03	8.30E-01	6.68E-03	1.09E-01	1.13E+00	1.72E+02	9.55E-01	1.11E+02	1.02E-02
MHCS-800-E15 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	3.21E+02	1.85E+00	NA	NA	NA	NA	5.36E-04	1.62E+02	8.67E-02	6.68E-03	1.09E-01	1.18E-01	1.72E+02	9.55E-01	1.11E+02	1.06E-03
MHCS-800-E5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	3.23E+03	1.86E+01	NA	NA	NA	NA	5.36E-04	1.63E+03	8.72E-01	6.68E-03	1.09E-01	1.19E+00	1.72E+02	9.55E-01	1.11E+02	1.07E-02
MHCS-800-W5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	1.26E+03	7.27E+00	NA	NA	NA	NA	5.36E-04	6.37E+02	3.41E-01	6.68E-03	1.09E-01	4.66E-01	1.72E+02	9.55E-01	1.11E+02	4.18E-03
MHCS-900-E15 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	6.11E+02	3.52E+00	NA	NA	NA	NA	5.36E-04	3.09E+02	1.65E-01	6.68E-03	1.09E-01	2.26E-01	1.72E+02	9.55E-01	1.11E+02	2.02E-03
MHCS-900-E5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	2.79E+03	1.61E+01	NA	NA	NA	NA	5.36E-04	1.41E+03	7.54E-01	6.68E-03	1.09E-01	1.03E+00	1.72E+02	9.55E-01	1.11E+02	9.23E-03
MHCS-900-W5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	1.08E+03	6.21E+00	NA	NA	NA	NA	5.36E-04	5.44E+02	2.91E-01	6.68E-03	1.09E-01	3.98E-01	1.72E+02	9.55E-01	1.11E+02	3.57E-03
MHCS-1000-E10 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	1.23E+03	7.06E+00	NA	NA	NA	NA	5.36E-04	6.19E+02	3.31E-01	6.68E-03	1.09E-01	4.52E-01	1.72E+02	9.55E-01	1.11E+02	4.06E-03
MHCS-1000-W5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	5.44E+03	3.13E+01	NA	NA	NA	NA	5.36E-04	2.75E+03	1.47E+00	6.68E-03	1.09E-01	2.01E+00	1.72E+02	9.55E-01	1.11E+02	1.80E-02
MHCS-1100-E10 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	1.86E+03	1.07E+01	NA	NA	NA	NA	5.36E-04	9.40E+02	5.04E-01	6.68E-03	1.09E-01	6.87E-01	1.72E+02	9.55E-01	1.11E+02	6.16E-03
MHCS-1100-E35 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	3.16E+02	1.82E+00	NA	NA	NA	NA	5.36E-04	1.59E+02	8.53E-02	6.68E-03	1.09E-01	1.16E-01	1.72E+02	9.55E-01	1.11E+02	1.04E-03
MHCS-1200-E15 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	1.49E+03	8.61E+00	NA	NA	NA	NA	5.36E-04	7.54E+02	4.04E-01	6.68E-03	1.09E-01	5.51E-01	1.72E+02	9.55E-01	1.11E+02	4.95E-03
MHCS-1200-E30 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	4.01E+02	2.31E+00	NA	NA	NA	NA	5.36E-04	2.02E+02	1.08E-01	6.68E-03	1.09E-01	1.48E-01	1.72E+02	9.55E-01	1.11E+02	1.33E-03
MHCS-1300-E20 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	2.83E+03	1.63E+01	NA	NA	NA	NA	5.36E-04	1.43E+03	7.66E-01	6.68E-03	1.09E-01	1.04E+00	1.72E+02	9.55E-01	1.11E+02	9.37E-03
MHCS-1300-E35 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	7.96E+02	4.59E+00	NA	NA	NA	NA	5.36E-04	4.02E+02	2.15E-01	6.68E-03	1.09E-01	2.94E-01	1.72E+02	9.55E-01	1.11E+02	2.63E-03
Waste Areas 1 and 2																						**Maximum HQ (Mike Horse Creek Channel Area Deposits)**	**2.10E-02**
UMH1-00 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	1.78E+03	1.02E+01	NA	NA	NA	NA	5.36E-04	8.97E+02	4.81E-01	6.68E-03	1.09E-01	6.56E-01	1.72E+02	9.55E-01	1.11E+02	5.89E-03
UMH1-100 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	3.29E+03	1.89E+01	NA	NA	NA	NA	5.36E-04	1.66E+03	8.89E-01	6.68E-03	1.09E-01	1.21E+00	1.72E+02	9.55E-01	1.11E+02	1.09E-02
UMH1-150 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	1.58E+03	9.08E+00	NA	NA	NA	NA	5.36E-04	7.96E+02	4.26E-01	6.68E-03	1.09E-01	5.82E-01	1.72E+02	9.55E-01	1.11E+02	5.22E-03
UMH1-200 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	2.02E+02	1.16E+00	NA	NA	NA	NA	5.36E-04	1.02E+02	5.45E-02	6.68E-03	1.09E-01	7.44E-02	1.72E+02	9.55E-01	1.11E+02	6.67E-04
UMH1-250 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	1.91E+03	1.10E+01	NA	NA	NA	NA	5.36E-04	9.66E+02	5.17E-01	6.68E-03	1.09E-01	7.06E-01	1.72E+02	9.55E-01	1.11E+02	6.33E-03
UMH1-250+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	8.12E+02	4.68E+00	NA	NA	NA	NA	5.36E-04	4.10E+02	2.20E-01	6.68E-03	1.09E-01	3.00E-01	1.72E+02	9.55E-01	1.11E+02	2.69E-03
UMH1-300 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	2.90E+03	1.67E+01	NA	NA	NA	NA	5.36E-04	1.46E+03	7.84E-01	6.68E-03	1.09E-01	1.07E+00	1.72E+02	9.55E-01	1.11E+02	9.60E-03
UMH1-300+14 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	5.71E+02	3.29E+00	NA	NA	NA	NA	5.36E-04	2.88E+02	1.55E-01	6.68E-03	1.09E-01	2.11E-01	1.72E+02	9.55E-01	1.11E+02	1.89E-03
UMH1-350 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	3.02E+03	1.74E+01	NA	NA	NA	NA	5.36E-04	1.52E+03	8.16E-01	6.68E-03	1.09E-01	1.11E+00	1.72E+02	9.55E-01	1.11E+02	9.98E-03
UMH1-350+12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	9.45E+02	5.44E+00	NA	NA	NA	NA	5.36E-04	4.77E+02	2.56E-01	6.68E-03	1.09E-01	3.49E-01	1.72E+02	9.55E-01	1.11E+02	3.13E-03
UMH1-400 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	1.49E+03	8.61E+00	NA	NA	NA	NA	5.36E-04	7.54E+02	4.04E-01	6.68E-03	1.09E-01	5.52E-01	1.72E+02	9.55E-01	1.11E+02	4.95E-03
UMH1-400+12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	1.56E+03	8.99E+00	NA	NA	NA	NA	5.36E-04	7.87E+02	4.22E-01	6.68E-03	1.09E-01	5.76E-01	1.72E+02	9.55E-01	1.11E+02	5.16E-03
UMH1-450 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	1.54E+03	8.85E+00	NA	NA	NA	NA	5.36E-04	7.76E+02	4.16E-01	6.68E-03	1.09E-01	5.67E-01	1.72E+02	9.55E-01	1.11E+02	5.09E-03
UMH1-450+12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	1.53E+03	8.84E+00	NA	NA	NA	NA	5.36E-04	7.75E+02	4.15E-01	6.68E-03	1.09E-01	5.66E-01	1.72E+02	9.55E-01	1.11E+02	5.08E-03
UMH1-50 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	1.49E+03	8.61E+00	NA	NA	NA	NA	5.36E-04	7.54E+02	4.04E-01	6.68E-03	1.09E-01	5.51E-01	1.72E+02	9.55E-01	1.11E+02	4.94E-03
UMH1-Comp (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	2.76E+03	1.59E+01	NA	NA	NA	NA	5.36E-04	1.39E+03	7.45E-01	6.68E-03	1.09E-01	1.02E+00	1.72E+02	9.55E-01	1.11E+02	9.12E-03
UMH2-00 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	1.76E+03	1.01E+01	NA	NA	NA	NA	5.36E-04	8.88E+02	4.76E-01	6.68E-03	1.09E-01	6.49E-01	1.72E+02	9.55E-01	1.11E+02	5.82E-03

TABLE C-8F: ZINC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 8 - MIKE HORSE MINE WASTE PILES (Continued)
Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)
calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **1.73**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Mourning Dove (Herbivorous Birds - Terrestrial)																							
UMH2-00+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	7.59E+02	4.38E+00	NA	NA	NA	NA	5.36E-04	3.83E+02	2.05E-01	6.68E-03	1.09E-01	2.80E-01	1.72E+02	9.55E-01	1.11E+02	2.51E-03
UMH2-100 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	3.20E+03	1.84E+01	NA	NA	NA	NA	5.36E-04	1.62E+03	8.66E-01	6.68E-03	1.09E-01	1.18E+00	1.72E+02	9.55E-01	1.11E+02	1.06E-02
UMH2-100+35 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	8.17E+02	4.71E+00	NA	NA	NA	NA	5.36E-04	4.12E+02	2.21E-01	6.68E-03	1.09E-01	3.01E-01	1.72E+02	9.55E-01	1.11E+02	2.70E-03
UMH2-150 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	1.09E+03	6.28E+00	NA	NA	NA	NA	5.36E-04	5.50E+02	2.95E-01	6.68E-03	1.09E-01	4.02E-01	1.72E+02	9.55E-01	1.11E+02	3.60E-03
UMH2-150+60 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	3.13E+02	1.80E+00	NA	NA	NA	NA	5.36E-04	1.58E+02	8.46E-02	6.68E-03	1.09E-01	1.15E-01	1.72E+02	9.55E-01	1.11E+02	1.03E-03
UMH2-200 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	3.19E+03	1.84E+01	NA	NA	NA	NA	5.36E-04	1.61E+03	8.64E-01	6.68E-03	1.09E-01	1.18E+00	1.72E+02	9.55E-01	1.11E+02	1.06E-02
UMH2-200+85 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	5.40E+02	3.11E+00	NA	NA	NA	NA	5.36E-04	2.73E+02	1.46E-01	6.68E-03	1.09E-01	1.99E-01	1.72E+02	9.55E-01	1.11E+02	1.79E-03
UMH2-250 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	3.12E+03	1.80E+01	NA	NA	NA	NA	5.36E-04	1.57E+03	8.43E-01	6.68E-03	1.09E-01	1.15E+00	1.72E+02	9.55E-01	1.11E+02	1.03E-02
UMH2-250+75 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	7.69E+02	4.43E+00	NA	NA	NA	NA	5.36E-04	3.88E+02	2.08E-01	6.68E-03	1.09E-01	2.84E-01	1.72E+02	9.55E-01	1.11E+02	2.54E-03
UMH2-300 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	1.34E+03	7.74E+00	NA	NA	NA	NA	5.36E-04	6.78E+02	3.63E-01	6.68E-03	1.09E-01	4.96E-01	1.72E+02	9.55E-01	1.11E+02	4.45E-03
UMH2-300+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	2.31E+03	1.33E+01	NA	NA	NA	NA	5.36E-04	1.16E+03	6.24E-01	6.68E-03	1.09E-01	8.51E-01	1.72E+02	9.55E-01	1.11E+02	7.64E-03
UMH2-350 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	1.43E+03	8.23E+00	NA	NA	NA	NA	5.36E-04	7.21E+02	3.86E-01	6.68E-03	1.09E-01	5.27E-01	1.72E+02	9.55E-01	1.11E+02	4.73E-03
UMH2-350+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	2.35E+03	1.35E+01	NA	NA	NA	NA	5.36E-04	1.19E+03	6.35E-01	6.68E-03	1.09E-01	8.66E-01	1.72E+02	9.55E-01	1.11E+02	7.77E-03
UMH2-400 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	5.90E+02	3.40E+00	NA	NA	NA	NA	5.36E-04	2.98E+02	1.60E-01	6.68E-03	1.09E-01	2.18E-01	1.72E+02	9.55E-01	1.11E+02	1.95E-03
UMH2-400+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	1.45E+03	8.37E+00	NA	NA	NA	NA	5.36E-04	7.33E+02	3.93E-01	6.68E-03	1.09E-01	5.36E-01	1.72E+02	9.55E-01	1.11E+02	4.81E-03
UMH2-450 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	7.88E+02	4.54E+00	NA	NA	NA	NA	5.36E-04	3.98E+02	2.13E-01	6.68E-03	1.09E-01	2.91E-01	1.72E+02	9.55E-01	1.11E+02	2.61E-03
UMH2-450+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	1.17E+03	6.76E+00	NA	NA	NA	NA	5.36E-04	5.92E+02	3.17E-01	6.68E-03	1.09E-01	4.33E-01	1.72E+02	9.55E-01	1.11E+02	3.88E-03
UMH2-50 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	9.07E+02	5.23E+00	NA	NA	NA	NA	5.36E-04	4.58E+02	2.45E-01	6.68E-03	1.09E-01	3.35E-01	1.72E+02	9.55E-01	1.11E+02	3.00E-03
UMH2-50+25b (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	7.35E+02	4.23E+00	NA	NA	NA	NA	5.36E-04	3.71E+02	1.99E-01	6.68E-03	1.09E-01	2.71E-01	1.72E+02	9.55E-01	1.11E+02	2.43E-03
UMH2-500 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	1.63E+03	9.40E+00	NA	NA	NA	NA	5.36E-04	8.23E+02	4.41E-01	6.68E-03	1.09E-01	6.02E-01	1.72E+02	9.55E-01	1.11E+02	5.40E-03
UMH2-500+75 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	1.21E+03	6.97E+00	NA	NA	NA	NA	5.36E-04	6.11E+02	3.27E-01	6.68E-03	1.09E-01	4.46E-01	1.72E+02	9.55E-01	1.11E+02	4.01E-03
UMH2-550 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	4.79E+03	2.76E+01	NA	NA	NA	NA	5.36E-04	2.42E+03	1.30E+00	6.68E-03	1.09E-01	1.77E+00	1.72E+02	9.55E-01	1.11E+02	1.59E-02
UMH2-550+75 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	7.80E+02	4.49E+00	NA	NA	NA	NA	5.36E-04	3.94E+02	2.11E-01	6.68E-03	1.09E-01	2.88E-01	1.72E+02	9.55E-01	1.11E+02	2.58E-03
UMH2-600 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	1.01E+03	5.83E+00	NA	NA	NA	NA	5.36E-04	5.11E+02	2.74E-01	6.68E-03	1.09E-01	3.73E-01	1.72E+02	9.55E-01	1.11E+02	3.35E-03
UMH2-600+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	7.48E+02	4.31E+00	NA	NA	NA	NA	5.36E-04	3.78E+02	2.02E-01	6.68E-03	1.09E-01	2.76E-01	1.72E+02	9.55E-01	1.11E+02	2.48E-03
UMH2-650 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	9.35E+02	5.39E+00	NA	NA	NA	NA	5.36E-04	4.72E+02	2.53E-01	6.68E-03	1.09E-01	3.45E-01	1.72E+02	9.55E-01	1.11E+02	3.10E-03
UMH2-650+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	8.33E+02	4.80E+00	NA	NA	NA	NA	5.36E-04	4.21E+02	2.25E-01	6.68E-03	1.09E-01	3.08E-01	1.72E+02	9.55E-01	1.11E+02	2.76E-03
UMH2-Comp 1 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	2.60E+03	1.50E+01	NA	NA	NA	NA	5.36E-04	1.31E+03	7.02E-01	6.68E-03	1.09E-01	9.58E-01	1.72E+02	9.55E-01	1.11E+02	8.59E-03
UMH2-Comp 2 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	2.65E+03	1.53E+01	NA	NA	NA	NA	5.36E-04	1.34E+03	7.18E-01	6.68E-03	1.09E-01	9.79E-01	1.72E+02	9.55E-01	1.11E+02	8.78E-03
Waste Area 3																						**Maximum HQ (Waste Areas 1 and 2)**	**1.59E-02**
UMH3-00 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	2.44E+02	1.41E+00	NA	NA	NA	NA	5.36E-04	1.23E+02	6.60E-02	6.68E-03	1.09E-01	9.00E-02	1.72E+02	9.55E-01	1.11E+02	8.08E-04
UMH3-100 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	4.59E+02	2.64E+00	NA	NA	NA	NA	5.36E-04	2.32E+02	1.24E-01	6.68E-03	1.09E-01	1.69E-01	1.72E+02	9.55E-01	1.11E+02	1.52E-03
UMH3-150 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	1.08E+03	6.24E+00	NA	NA	NA	NA	5.36E-04	5.47E+02	2.93E-01	6.68E-03	1.09E-01	4.00E-01	1.72E+02	9.55E-01	1.11E+02	3.59E-03
UMH3-200 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	8.67E+02	4.99E+00	NA	NA	NA	NA	5.36E-04	4.37E+02	2.34E-01	6.68E-03	1.09E-01	3.20E-01	1.72E+02	9.55E-01	1.11E+02	2.87E-03
UMH3-250 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	1.52E+03	8.75E+00	NA	NA	NA	NA	5.36E-04	7.67E+02	4.11E-01	6.68E-03	1.09E-01	5.61E-01	1.72E+02	9.55E-01	1.11E+02	5.03E-03
UMH3-300 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	3.94E+02	2.27E+00	NA	NA	NA	NA	5.36E-04	1.99E+02	1.06E-01	6.68E-03	1.09E-01	1.45E-01	1.72E+02	9.55E-01	1.11E+02	1.30E-03
UMH3-350 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	1.99E+03	1.14E+01	NA	NA	NA	NA	5.36E-04	1.00E+03	5.37E-01	6.68E-03	1.09E-01	7.32E-01	1.72E+02	9.55E-01	1.11E+02	6.57E-03
UMH3-350+75 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	6.09E+02	3.51E+00	NA	NA	NA	NA	5.36E-04	3.08E+02	1.65E-01	6.68E-03	1.09E-01	2.25E-01	1.72E+02	9.55E-01	1.11E+02	2.02E-03
UMH3-400 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	1.30E+03	7.49E+00	NA	NA	NA	NA	5.36E-04	6.56E+02	3.52E-01	6.68E-03	1.09E-01	4.80E-01	1.72E+02	9.55E-01	1.11E+02	4.30E-03
UMH3-400+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	5.36E+02	3.09E+00	NA	NA	NA	NA	5.36E-04	2.71E+02	1.45E-01	6.68E-03	1.09E-01	1.98E-01	1.72E+02	9.55E-01	1.11E+02	1.77E-03
UMH3-450 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	3.01E+02	1.73E+00	NA	NA	NA	NA	5.36E-04	1.52E+02	8.13E-02	6.68E-03	1.09E-01	1.11E-01	1.72E+02	9.55E-01	1.11E+02	9.95E-04
UMH3-50 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	7.42E+02	4.28E+00	NA	NA	NA	NA	5.36E-04	3.75E+02	2.01E-01	6.68E-03	1.09E-01	2.74E-01	1.72E+02	9.55E-01	1.11E+02	2.46E-03
UMH3-50+50 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	8.47E+02	4.88E+00	NA	NA	NA	NA	5.36E-04	4.28E+02	2.29E-01	6.68E-03	1.09E-01	3.13E-01	1.72E+02	9.55E-01	1.11E+02	2.80E-03
UMH3-500 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	7.48E+02	4.31E+00	NA	NA	NA	NA	5.36E-04	3.77E+02	2.02E-01	6.68E-03	1.09E-01	2.76E-01	1.72E+02	9.55E-01	1.11E+02	2.47E-03
UMH3-550 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	1.98E+03	1.14E+01	NA	NA	NA	NA	5.36E-04	1.00E+03	5.36E-01	6.68E-03	1.09E-01	7.32E-01	1.72E+02	9.55E-01	1.11E+02	6.56E-03
UMH3-600 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	1.88E+03	1.08E+01	NA	NA	NA	NA	5.36E-04	9.48E+02	5.08E-01	6.68E-03	1.09E-01	6.93E-01	1.72E+02	9.55E-01	1.11E+02	6.22E-03
UMH3-650 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	1.72E+03	9.92E+00	NA	NA	NA	NA	5.36E-04	8.69E+02	4.66E-01	6.68E-03	1.09E-01	6.36E-01	1.72E+02	9.55E-01	1.11E+02	5.70E-03
UMH3-700 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	1.29E+03	7.42E+00	NA	NA	NA	NA	5.36E-04	6.50E+02	3.48E-01	6.68E-03	1.09E-01	4.75E-01	1.72E+02	9.55E-01	1.11E+02	4.26E-03
UMH3-750 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	5.65E+02	3.26E+00	NA	NA	NA	NA	5.36E-04	2.85E+02	1.53E-01	6.68E-03	1.09E-01	2.08E-01	1.72E+02	9.55E-01	1.11E+02	1.87E-03
UMH3-800 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	5.89E+02	3.39E+00	NA	NA	NA	NA	5.36E-04	2.97E+02	1.59E-01	6.68E-03	1.09E-01	2.17E-01	1.72E+02	9.55E-01	1.11E+02	1.95E-03
UMH3-Comp 1 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	3.92E+02	2.26E+00	NA	NA	NA	NA	5.36E-04	1.98E+02	1.06E-01	6.68E-03	1.09E-01	1.44E-01	1.72E+02	9.55E-01	1.11E+02	1.30E-03
UMH3-Comp 2 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	1.53E+03	8.82E+00	NA	NA	NA	NA	5.36E-04	7.73E+02	4.14E-01	6.68E-03	1.09E-01	5.65E-01	1.72E+02	9.55E-01	1.11E+02	5.07E-03
UMH3-Comp 3 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	4.45E+03	2.56E+01	NA	NA	NA	NA	5.36E-04	2.25E+03	1.20E+00	6.68E-03	1.09E-01	1.64E+00	1.72E+02	9.55E-01	1.11E+02	1.47E-02
																						Maximum HQ (Waste Area 3)	**1.47E-02**

TABLE C-8F: ZINC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 8 - MIKE HORSE MINE WASTE PILES (Continued)
Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)
calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **1.73**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Red-Tailed Hawk (Carnivorous Birds - Terrestrial)																							
Reference Sites																							
BCBG-1 (0-6")	9.00E-02	9.00E-02	1.03E+01	3.08E+03	2.77E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.97E+02	1.52E+00	2.48E-03	1.13E+00	6.09E-01	1.72E+02	9.55E-01	1.78E+02	3.42E-03
MHBG-201 (0-6")	9.00E-02	9.00E-02	1.03E+01	5.41E+02	4.87E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.23E+01	2.68E-01	2.48E-03	1.13E+00	1.07E-01	1.72E+02	9.55E-01	1.78E+02	6.02E-04
MHBG-202 (0-6")	9.00E-02	9.00E-02	1.03E+01	5.01E+02	4.50E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.84E+01	2.48E-01	2.48E-03	1.13E+00	9.91E-02	1.72E+02	9.55E-01	1.78E+02	5.57E-04
Mike Horse Creek Channel Area Deposits																						**Minimum HQ (Reference Site)**	**5.57E-04**
AMHR-0 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.28E+03	1.15E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.04E+02	1.04E+00	2.48E-03	1.13E+00	2.55E-01	1.72E+02	9.55E-01	1.78E+02	1.43E-03
AMHR-200 (0-6")	9.00E-02	9.00E-02	6.30E+00	8.47E+02	7.61E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.34E+02	6.89E-01	2.48E-03	1.13E+00	1.68E-01	1.72E+02	9.55E-01	1.78E+02	9.45E-04
AMHR-400 (0-6")	9.00E-02	9.00E-02	6.30E+00	3.51E+03	3.16E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.58E+02	2.86E+00	2.48E-03	1.13E+00	6.98E-01	1.72E+02	9.55E-01	1.78E+02	3.92E-03
AMHR-600 (0-6")	9.00E-02	9.00E-02	6.30E+00	4.26E+03	3.83E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	6.77E+02	3.47E+00	2.48E-03	1.13E+00	8.47E-01	1.72E+02	9.55E-01	1.78E+02	4.76E-03
MHCS-00-E25 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.15E+04	1.04E+03	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.83E+03	9.39E+00	2.48E-03	1.13E+00	2.29E+00	1.72E+02	9.55E-01	1.78E+02	1.29E-02
MHCS-0-W25 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.55E+03	1.39E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.46E+02	1.26E+00	2.48E-03	1.13E+00	3.08E-01	1.72E+02	9.55E-01	1.78E+02	1.73E-03
MHCS-0-W5 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.49E+03	1.34E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.37E+02	1.21E+00	2.48E-03	1.13E+00	2.96E-01	1.72E+02	9.55E-01	1.78E+02	1.66E-03
MHCS-100-E25 (0-6")	9.00E-02	9.00E-02	6.30E+00	7.63E+03	6.86E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.21E+03	6.21E+00	2.48E-03	1.13E+00	1.52E+00	1.72E+02	9.55E-01	1.78E+02	8.52E-03
MHCS-100-W1 (0-6")	9.00E-02	9.00E-02	6.30E+00	8.05E+03	7.24E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.28E+03	6.56E+00	2.48E-03	1.13E+00	1.60E+00	1.72E+02	9.55E-01	1.78E+02	8.99E-03
MHCS-100-W25 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.11E+03	9.97E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.76E+02	9.02E-01	2.48E-03	1.13E+00	2.20E-01	1.72E+02	9.55E-01	1.78E+02	1.24E-03
MHCS-200-E10 (0-6")	9.00E-02	9.00E-02	6.30E+00	5.85E+03	5.26E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	9.29E+02	4.76E+00	2.48E-03	1.13E+00	1.16E+00	1.72E+02	9.55E-01	1.78E+02	6.53E-03
MHCS-200-E25 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.27E+03	1.15E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.02E+02	1.04E+00	2.48E-03	1.13E+00	2.53E-01	1.72E+02	9.55E-01	1.78E+02	1.42E-03
MHCS-200-W10 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.70E+03	1.52E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.69E+02	1.38E+00	2.48E-03	1.13E+00	3.37E-01	1.72E+02	9.55E-01	1.78E+02	1.89E-03
MHCS-525-E5 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.57E+04	1.41E+03	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.49E+03	1.28E+01	2.48E-03	1.13E+00	3.11E+00	1.72E+02	9.55E-01	1.78E+02	1.75E-02
MHCS-525-W15 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.48E+04	1.33E+03	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.35E+03	1.21E+01	2.48E-03	1.13E+00	2.94E+00	1.72E+02	9.55E-01	1.78E+02	1.65E-02
MHCS-600-E10 (0-6")	9.00E-02	9.00E-02	6.30E+00	6.86E+03	6.17E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.09E+03	5.59E+00	2.48E-03	1.13E+00	1.36E+00	1.72E+02	9.55E-01	1.78E+02	7.66E-03
MHCS-600-W10 (0-6")	9.00E-02	9.00E-02	6.30E+00	2.02E+04	1.82E+03	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.21E+03	1.64E+01	2.48E-03	1.13E+00	4.01E+00	1.72E+02	9.55E-01	1.78E+02	2.25E-02
MHCS-700-E10 (0-6")	9.00E-02	9.00E-02	6.30E+00	8.65E+03	7.78E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.37E+03	7.05E+00	2.48E-03	1.13E+00	1.72E+00	1.72E+02	9.55E-01	1.78E+02	9.66E-03
MHCS-700-E25 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.62E+03	1.46E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.58E+02	1.32E+00	2.48E-03	1.13E+00	3.22E-01	1.72E+02	9.55E-01	1.78E+02	1.81E-03
MHCS-700-W10 (0-6")	9.00E-02	9.00E-02	6.30E+00	9.75E+03	8.77E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.55E+03	7.94E+00	2.48E-03	1.13E+00	1.94E+00	1.72E+02	9.55E-01	1.78E+02	1.09E-02
MHCS-800-E15 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.02E+03	9.16E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.62E+02	8.30E-01	2.48E-03	1.13E+00	2.02E-01	1.72E+02	9.55E-01	1.78E+02	1.14E-03
MHCS-800-E5 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.03E+04	9.22E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.63E+03	8.35E+00	2.48E-03	1.13E+00	2.04E+00	1.72E+02	9.55E-01	1.78E+02	1.14E-02
MHCS-800-W5 (0-6")	9.00E-02	9.00E-02	6.30E+00	4.01E+03	3.61E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	6.37E+02	3.27E+00	2.48E-03	1.13E+00	7.97E-01	1.72E+02	9.55E-01	1.78E+02	4.48E-03
MHCS-900-E15 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.94E+03	1.75E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.09E+02	1.58E+00	2.48E-03	1.13E+00	3.86E-01	1.72E+02	9.55E-01	1.78E+02	2.17E-03
MHCS-900-E5 (0-6")	9.00E-02	9.00E-02	6.30E+00	8.86E+03	7.97E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.41E+03	7.22E+00	2.48E-03	1.13E+00	1.76E+00	1.72E+02	9.55E-01	1.78E+02	9.89E-03
MHCS-900-W5 (0-6")	9.00E-02	9.00E-02	6.30E+00	3.42E+03	3.08E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.44E+02	2.79E+00	2.48E-03	1.13E+00	6.80E-01	1.72E+02	9.55E-01	1.78E+02	3.82E-03
MHCS-1000-E10 (0-6")	9.00E-02	9.00E-02	6.30E+00	3.89E+03	3.50E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	6.19E+02	3.17E+00	2.48E-03	1.13E+00	7.74E-01	1.72E+02	9.55E-01	1.78E+02	4.35E-03
MHCS-1000-W5 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.73E+04	1.55E+03	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.75E+03	1.41E+01	2.48E-03	1.13E+00	3.44E+00	1.72E+02	9.55E-01	1.78E+02	1.93E-02
MHCS-1100-E10 (0-6")	9.00E-02	9.00E-02	6.30E+00	5.92E+03	5.32E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	9.40E+02	4.82E+00	2.48E-03	1.13E+00	1.18E+00	1.72E+02	9.55E-01	1.78E+02	6.61E-03
MHCS-1100-E35 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.00E+03	9.02E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.59E+02	8.17E-01	2.48E-03	1.13E+00	1.99E-01	1.72E+02	9.55E-01	1.78E+02	1.12E-03
MHCS-1200-E15 (0-6")	9.00E-02	9.00E-02	6.30E+00	4.75E+03	4.27E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	7.54E+02	3.87E+00	2.48E-03	1.13E+00	9.44E-01	1.72E+02	9.55E-01	1.78E+02	5.30E-03
MHCS-1200-E30 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.27E+03	1.15E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.02E+02	1.04E+00	2.48E-03	1.13E+00	2.53E-01	1.72E+02	9.55E-01	1.78E+02	1.42E-03
MHCS-1300-E20 (0-6")	9.00E-02	9.00E-02	6.30E+00	9.00E+03	8.09E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.43E+03	7.33E+00	2.48E-03	1.13E+00	1.79E+00	1.72E+02	9.55E-01	1.78E+02	1.00E-02
MHCS-1300-E35 (0-6")	9.00E-02	9.00E-02	6.30E+00	2.53E+03	2.27E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.02E+02	2.06E+00	2.48E-03	1.13E+00	5.03E-01	1.72E+02	9.55E-01	1.78E+02	2.82E-03
Waste Areas 1 and 2																						**Maximum HQ (Mike Horse Creek Channel Area Deposits)**	**2.25E-02**
UMH1-00 (0-6")	9.00E-02	9.00E-02	6.30E+00	5.65E+03	5.08E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	8.97E+02	4.60E+00	2.48E-03	1.13E+00	1.12E+00	1.72E+02	9.55E-01	1.78E+02	6.31E-03
UMH1-100 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.04E+04	9.40E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.66E+03	8.51E+00	2.48E-03	1.13E+00	2.08E+00	1.72E+02	9.55E-01	1.78E+02	1.17E-02
UMH1-150 (0-6")	9.00E-02	9.00E-02	6.30E+00	5.01E+03	4.51E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	7.96E+02	4.08E+00	2.48E-03	1.13E+00	9.96E-01	1.72E+02	9.55E-01	1.78E+02	5.59E-03
UMH1-200 (0-6")	9.00E-02	9.00E-02	6.30E+00	6.41E+02	5.76E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.02E+02	5.22E-01	2.48E-03	1.13E+00	1.27E-01	1.72E+02	9.55E-01	1.78E+02	7.15E-04
UMH1-250 (0-6")	9.00E-02	9.00E-02	6.30E+00	6.08E+03	5.47E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	9.66E+02	4.95E+00	2.48E-03	1.13E+00	1.21E+00	1.72E+02	9.55E-01	1.78E+02	6.79E-03
UMH1-250+25 (0-6")	9.00E-02	9.00E-02	6.30E+00	2.58E+03	2.32E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.10E+02	2.10E+00	2.48E-03	1.13E+00	5.13E-01	1.72E+02	9.55E-01	1.78E+02	2.88E-03
UMH1-300 (0-6")	9.00E-02	9.00E-02	6.30E+00	9.22E+03	8.29E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.46E+03	7.50E+00	2.48E-03	1.13E+00	1.83E+00	1.72E+02	9.55E-01	1.78E+02	1.03E-02
UMH1-300+14 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.82E+03	1.63E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.88E+02	1.48E+00	2.48E-03	1.13E+00	3.61E-01	1.72E+02	9.55E-01	1.78E+02	2.03E-03
UMH1-350 (0-6")	9.00E-02	9.00E-02	6.30E+00	9.58E+03	8.62E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.52E+03	7.81E+00	2.48E-03	1.13E+00	1.90E+00	1.72E+02	9.55E-01	1.78E+02	1.07E-02
UMH1-350+12.5 (0-6")	9.00E-02	9.00E-02	6.30E+00	3.00E+03	2.70E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.77E+02	2.45E+00	2.48E-03	1.13E+00	5.97E-01	1.72E+02	9.55E-01	1.78E+02	3.35E-03
UMH1-400 (0-6")	9.00E-02	9.00E-02	6.30E+00	4.75E+03	4.27E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	7.54E+02	3.87E+00	2.48E-03	1.13E+00	9.44E-01	1.72E+02	9.55E-01	1.78E+02	5.30E-03
UMH1-400+12.5 (0-6")	9.00E-02	9.00E-02	6.30E+00	4.96E+03	4.46E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	7.87E+02	4.04E+00	2.48E-03	1.13E+00	9.85E-01	1.72E+02	9.55E-01	1.78E+02	5.53E-03
UMH1-450 (0-6")	9.00E-02	9.00E-02	6.30E+00	4.88E+03	4.39E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	7.76E+02	3.98E+00	2.48E-03	1.13E+00	9.71E-01	1.72E+02	9.55E-01	1.78E+02	5.45E-03
UMH1-450+12.5 (0-6")	9.00E-02	9.00E-02	6.30E+00	4.88E+03	4.39E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	7.75E+02	3.97E+00	2.48E-03	1.13E+00	9.69E-01	1.72E+02	9.55E-01	1.78E+02	5.44E-03
UMH1-50 (0-6")	9.00E-02	9.00E-02	6.30E+00	4.75E+03	4.27E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	7.54E+02	3.87E+00	2.48E-03	1.13E+00	9.43E-01	1.72E+02	9.55E-01	1.78E+02	5.30E-03
UMH1-Comp (0-6")	9.00E-02	9.00E-02	6.30E+00	8.76E+03	7.88E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.39E+03	7.13E+00	2.48E-03	1.13E+00	1.74E+00	1.72E+02	9.55E-01	1.78E+02	9.78E-03
UMH2-00 (0-6")	9.00E-02	9.00E-02	6.30E+00	5.59E+03	5.03E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	8.88E+02	4.55E+00	2.48E-03	1.13E+00	1.11E+00	1.72E+02	9.55E-01	1.78E+02	6.24E-03

TABLE C-8F: ZINC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 8 - MIKE HORSE MINE WASTE PILES (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **1.73**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Red-Tailed Hawk (Carnivorous Birds - Terrestrial)																							
UMH2-00+25 (0-6")	9.00E-02	9.00E-02	6.30E+00	2.41E+03	2.17E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.83E+02	1.97E+00	2.48E-03	1.13E+00	4.80E-01	1.72E+02	9.55E-01	1.78E+02	2.69E-03
UMH2-100 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.02E+04	9.15E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.62E+03	8.28E+00	2.48E-03	1.13E+00	2.02E+00	1.72E+02	9.55E-01	1.78E+02	1.14E-02
UMH2-100+35 (0-6")	9.00E-02	9.00E-02	6.30E+00	2.60E+03	2.33E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.12E+02	2.11E+00	2.48E-03	1.13E+00	5.16E-01	1.72E+02	9.55E-01	1.78E+02	2.90E-03
UMH2-150 (0-6")	9.00E-02	9.00E-02	6.30E+00	3.46E+03	3.11E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.50E+02	2.82E+00	2.48E-03	1.13E+00	6.88E-01	1.72E+02	9.55E-01	1.78E+02	3.86E-03
UMH2-150+60 (0-6")	9.00E-02	9.00E-02	6.30E+00	9.94E+02	8.94E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.58E+02	8.09E-01	2.48E-03	1.13E+00	1.97E-01	1.72E+02	9.55E-01	1.78E+02	1.11E-03
UMH2-200 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.01E+04	9.13E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.61E+03	8.27E+00	2.48E-03	1.13E+00	2.02E+00	1.72E+02	9.55E-01	1.78E+02	1.13E-02
UMH2-200+85 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.72E+03	1.54E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.73E+02	1.40E+00	2.48E-03	1.13E+00	3.41E-01	1.72E+02	9.55E-01	1.78E+02	1.92E-03
UMH2-250 (0-6")	9.00E-02	9.00E-02	6.30E+00	9.91E+03	8.91E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.57E+03	8.07E+00	2.48E-03	1.13E+00	1.97E+00	1.72E+02	9.55E-01	1.78E+02	1.11E-02
UMH2-250+75 (0-6")	9.00E-02	9.00E-02	6.30E+00	2.44E+03	2.20E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.88E+02	1.99E+00	2.48E-03	1.13E+00	4.86E-01	1.72E+02	9.55E-01	1.78E+02	2.73E-03
UMH2-300 (0-6")	9.00E-02	9.00E-02	6.30E+00	4.27E+03	3.84E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	6.78E+02	3.48E+00	2.48E-03	1.13E+00	8.48E-01	1.72E+02	9.55E-01	1.78E+02	4.77E-03
UMH2-300+25 (0-6")	9.00E-02	9.00E-02	6.30E+00	7.33E+03	6.60E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.16E+03	5.97E+00	2.48E-03	1.13E+00	1.46E+00	1.72E+02	9.55E-01	1.78E+02	8.19E-03
UMH2-350 (0-6")	9.00E-02	9.00E-02	6.30E+00	4.54E+03	4.08E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	7.21E+02	3.70E+00	2.48E-03	1.13E+00	9.02E-01	1.72E+02	9.55E-01	1.78E+02	5.07E-03
UMH2-350+25 (0-6")	9.00E-02	9.00E-02	6.30E+00	7.46E+03	6.71E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.19E+03	6.08E+00	2.48E-03	1.13E+00	1.48E+00	1.72E+02	9.55E-01	1.78E+02	8.33E-03
UMH2-400 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.87E+03	1.69E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.98E+02	1.53E+00	2.48E-03	1.13E+00	3.72E-01	1.72E+02	9.55E-01	1.78E+02	2.09E-03
UMH2-400+25 (0-6")	9.00E-02	9.00E-02	6.30E+00	4.61E+03	4.15E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	7.33E+02	3.76E+00	2.48E-03	1.13E+00	9.17E-01	1.72E+02	9.55E-01	1.78E+02	5.15E-03
UMH2-450 (0-6")	9.00E-02	9.00E-02	6.30E+00	2.50E+03	2.25E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.98E+02	2.04E+00	2.48E-03	1.13E+00	4.98E-01	1.72E+02	9.55E-01	1.78E+02	2.80E-03
UMH2-450+25 (0-6")	9.00E-02	9.00E-02	6.30E+00	3.73E+03	3.35E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.92E+02	3.04E+00	2.48E-03	1.13E+00	7.41E-01	1.72E+02	9.55E-01	1.78E+02	4.16E-03
UMH2-50 (0-6")	9.00E-02	9.00E-02	6.30E+00	2.88E+03	2.59E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.58E+02	2.35E+00	2.48E-03	1.13E+00	5.73E-01	1.72E+02	9.55E-01	1.78E+02	3.22E-03
UMH2-50+25b (0-6")	9.00E-02	9.00E-02	6.30E+00	2.33E+03	2.10E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.71E+02	1.90E+00	2.48E-03	1.13E+00	4.64E-01	1.72E+02	9.55E-01	1.78E+02	2.61E-03
UMH2-500 (0-6")	9.00E-02	9.00E-02	6.30E+00	5.18E+03	4.66E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	8.23E+02	4.22E+00	2.48E-03	1.13E+00	1.03E+00	1.72E+02	9.55E-01	1.78E+02	5.79E-03
UMH2-500+75 (0-6")	9.00E-02	9.00E-02	6.30E+00	3.85E+03	3.46E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	6.11E+02	3.13E+00	2.48E-03	1.13E+00	7.64E-01	1.72E+02	9.55E-01	1.78E+02	4.29E-03
UMH2-550 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.52E+04	1.37E+03	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.42E+03	1.24E+01	2.48E-03	1.13E+00	3.03E+00	1.72E+02	9.55E-01	1.78E+02	1.70E-02
UMH2-550+75 (0-6")	9.00E-02	9.00E-02	6.30E+00	2.48E+03	2.23E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.94E+02	2.02E+00	2.48E-03	1.13E+00	4.93E-01	1.72E+02	9.55E-01	1.78E+02	2.77E-03
UMH2-600 (0-6")	9.00E-02	9.00E-02	6.30E+00	3.21E+03	2.89E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.11E+02	2.62E+00	2.48E-03	1.13E+00	6.39E-01	1.72E+02	9.55E-01	1.78E+02	3.59E-03
UMH2-600+25 (0-6")	9.00E-02	9.00E-02	6.30E+00	2.38E+03	2.14E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.78E+02	1.94E+00	2.48E-03	1.13E+00	4.73E-01	1.72E+02	9.55E-01	1.78E+02	2.66E-03
UMH2-650 (0-6")	9.00E-02	9.00E-02	6.30E+00	2.97E+03	2.67E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.72E+02	2.42E+00	2.48E-03	1.13E+00	5.91E-01	1.72E+02	9.55E-01	1.78E+02	3.32E-03
UMH2-650+25 (0-6")	9.00E-02	9.00E-02	6.30E+00	2.65E+03	2.38E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.21E+02	2.16E+00	2.48E-03	1.13E+00	5.26E-01	1.72E+02	9.55E-01	1.78E+02	2.96E-03
UMH2-Comp 1 (0-6")	9.00E-02	9.00E-02	6.30E+00	8.25E+03	7.42E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.31E+03	6.72E+00	2.48E-03	1.13E+00	1.64E+00	1.72E+02	9.55E-01	1.78E+02	9.21E-03
UMH2-Comp 2 (0-6")	9.00E-02	9.00E-02	6.30E+00	8.43E+03	7.59E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.34E+03	6.87E+00	2.48E-03	1.13E+00	1.68E+00	1.72E+02	9.55E-01	1.78E+02	9.42E-03
Waste Area 3																						**Maximum HQ (Waste Areas 1 and 2)**	**1.70E-02**
UMH3-00 (0-6")	9.00E-02	9.00E-02	6.30E+00	7.75E+02	6.97E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.23E+02	6.31E-01	2.48E-03	1.13E+00	1.54E-01	1.72E+02	9.55E-01	1.78E+02	8.66E-04
UMH3-100 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.46E+03	1.31E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.32E+02	1.19E+00	2.48E-03	1.13E+00	2.90E-01	1.72E+02	9.55E-01	1.78E+02	1.63E-03
UMH3-150 (0-6")	9.00E-02	9.00E-02	6.30E+00	3.44E+03	3.10E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.47E+02	2.80E+00	2.48E-03	1.13E+00	6.84E-01	1.72E+02	9.55E-01	1.78E+02	3.85E-03
UMH3-200 (0-6")	9.00E-02	9.00E-02	6.30E+00	2.75E+03	2.48E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.37E+02	2.24E+00	2.48E-03	1.13E+00	5.47E-01	1.72E+02	9.55E-01	1.78E+02	3.07E-03
UMH3-250 (0-6")	9.00E-02	9.00E-02	6.30E+00	4.83E+03	4.34E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	7.67E+02	3.93E+00	2.48E-03	1.13E+00	9.59E-01	1.72E+02	9.55E-01	1.78E+02	5.39E-03
UMH3-300 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.25E+03	1.13E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.99E+02	1.02E+00	2.48E-03	1.13E+00	2.49E-01	1.72E+02	9.55E-01	1.78E+02	1.40E-03
UMH3-350 (0-6")	9.00E-02	9.00E-02	6.30E+00	6.31E+03	5.67E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.00E+03	5.14E+00	2.48E-03	1.13E+00	1.25E+00	1.72E+02	9.55E-01	1.78E+02	7.04E-03
UMH3-350+75 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.94E+03	1.74E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.08E+02	1.58E+00	2.48E-03	1.13E+00	3.85E-01	1.72E+02	9.55E-01	1.78E+02	2.16E-03
UMH3-400 (0-6")	9.00E-02	9.00E-02	6.30E+00	4.13E+03	3.72E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	6.56E+02	3.36E+00	2.48E-03	1.13E+00	8.21E-01	1.72E+02	9.55E-01	1.78E+02	4.61E-03
UMH3-400+25 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.70E+03	1.53E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.71E+02	1.39E+00	2.48E-03	1.13E+00	3.39E-01	1.72E+02	9.55E-01	1.78E+02	1.90E-03
UMH3-450 (0-6")	9.00E-02	9.00E-02	6.30E+00	9.56E+02	8.60E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.52E+02	7.78E-01	2.48E-03	1.13E+00	1.90E-01	1.72E+02	9.55E-01	1.78E+02	1.07E-03
UMH3-50 (0-6")	9.00E-02	9.00E-02	6.30E+00	2.36E+03	2.12E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.75E+02	1.92E+00	2.48E-03	1.13E+00	4.69E-01	1.72E+02	9.55E-01	1.78E+02	2.63E-03
UMH3-50+50 (0-6")	9.00E-02	9.00E-02	6.30E+00	2.69E+03	2.42E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.28E+02	2.19E+00	2.48E-03	1.13E+00	5.35E-01	1.72E+02	9.55E-01	1.78E+02	3.01E-03
UMH3-500 (0-6")	9.00E-02	9.00E-02	6.30E+00	2.38E+03	2.14E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.77E+02	1.93E+00	2.48E-03	1.13E+00	4.72E-01	1.72E+02	9.55E-01	1.78E+02	2.65E-03
UMH3-550 (0-6")	9.00E-02	9.00E-02	6.30E+00	6.30E+03	5.67E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.00E+03	5.13E+00	2.48E-03	1.13E+00	1.25E+00	1.72E+02	9.55E-01	1.78E+02	7.04E-03
UMH3-600 (0-6")	9.00E-02	9.00E-02	6.30E+00	5.97E+03	5.37E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	9.48E+02	4.86E+00	2.48E-03	1.13E+00	1.19E+00	1.72E+02	9.55E-01	1.78E+02	6.66E-03
UMH3-650 (0-6")	9.00E-02	9.00E-02	6.30E+00	5.47E+03	4.92E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	8.69E+02	4.46E+00	2.48E-03	1.13E+00	1.09E+00	1.72E+02	9.55E-01	1.78E+02	6.11E-03
UMH3-700 (0-6")	9.00E-02	9.00E-02	6.30E+00	4.09E+03	3.68E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	6.50E+02	3.33E+00	2.48E-03	1.13E+00	8.13E-01	1.72E+02	9.55E-01	1.78E+02	4.57E-03
UMH3-750 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.80E+03	1.62E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.85E+02	1.46E+00	2.48E-03	1.13E+00	3.57E-01	1.72E+02	9.55E-01	1.78E+02	2.00E-03
UMH3-800 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.87E+03	1.68E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.97E+02	1.52E+00	2.48E-03	1.13E+00	3.72E-01	1.72E+02	9.55E-01	1.78E+02	2.09E-03
UMH3-Comp 1 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.24E+03	1.12E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.98E+02	1.01E+00	2.48E-03	1.13E+00	2.47E-01	1.72E+02	9.55E-01	1.78E+02	1.39E-03
UMH3-Comp 2 (0-6")	9.00E-02	9.00E-02	6.30E+00	4.87E+03	4.38E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	7.73E+02	3.96E+00	2.48E-03	1.13E+00	9.67E-01	1.72E+02	9.55E-01	1.78E+02	5.43E-03
UMH3-Comp 3 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.41E+04	1.27E+03	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.25E+03	1.15E+01	2.48E-03	1.13E+00	2.81E+00	1.72E+02	9.55E-01	1.78E+02	1.58E-02
																						Maximum HQ (Waste Area 3)	**1.58E-02**

TABLE C-8F: ZINC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 8 - MIKE HORSE MINE WASTE PILES (Continued)
Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)
calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **1.73**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
American Kestrel (Insectivorous Birds - Terrestrial)																							
Reference Sites																							
BCBG-1 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	8.31E+00	2.47E+03	3.40E+01	7.84E-04	2.97E+02	2.33E-01	6.61E-03	1.24E-01	1.83E+00	1.72E+02	9.55E-01	1.14E+02	1.60E-02
MHBG-201 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	8.31E+00	4.35E+02	5.98E+00	7.84E-04	5.23E+01	4.10E-02	6.61E-03	1.24E-01	3.21E-01	1.72E+02	9.55E-01	1.14E+02	2.81E-03
MHBG-202 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	8.31E+00	4.02E+02	5.54E+00	7.84E-04	4.84E+01	3.79E-02	6.61E-03	1.24E-01	2.97E-01	1.72E+02	9.55E-01	1.14E+02	2.60E-03
Mike Horse Creek Channel Area Deposits																						**Minimum HQ (Reference Site)**	**2.60E-03**
AMHR-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	8.91E+02	1.23E+01	7.84E-04	2.04E+02	1.60E-01	6.61E-03	1.24E-01	6.62E-01	1.72E+02	9.55E-01	1.14E+02	5.79E-03
AMHR-200 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	5.89E+02	8.10E+00	7.84E-04	1.34E+02	1.05E-01	6.61E-03	1.24E-01	4.38E-01	1.72E+02	9.55E-01	1.14E+02	3.83E-03
AMHR-400 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	2.44E+03	3.36E+01	7.84E-04	5.58E+02	4.38E-01	6.61E-03	1.24E-01	1.82E+00	1.72E+02	9.55E-01	1.14E+02	1.59E-02
AMHR-600 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	2.96E+03	4.08E+01	7.84E-04	6.77E+02	5.31E-01	6.61E-03	1.24E-01	2.20E+00	1.72E+02	9.55E-01	1.14E+02	1.93E-02
MHCS-00-E25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	8.02E+03	1.10E+02	7.84E-04	1.83E+03	1.44E+00	6.61E-03	1.24E-01	5.96E+00	1.72E+02	9.55E-01	1.14E+02	5.21E-02
MHCS-0-W25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	1.08E+03	1.48E+01	7.84E-04	2.46E+02	1.93E-01	6.61E-03	1.24E-01	8.01E-01	1.72E+02	9.55E-01	1.14E+02	7.01E-03
MHCS-0-W5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	1.04E+03	1.43E+01	7.84E-04	2.37E+02	1.86E-01	6.61E-03	1.24E-01	7.70E-01	1.72E+02	9.55E-01	1.14E+02	6.73E-03
MHCS-100-E25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	5.31E+03	7.30E+01	7.84E-04	1.21E+03	9.51E-01	6.61E-03	1.24E-01	3.94E+00	1.72E+02	9.55E-01	1.14E+02	3.45E-02
MHCS-100-W1 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	5.60E+03	7.71E+01	7.84E-04	1.28E+03	1.00E+00	6.61E-03	1.24E-01	4.16E+00	1.72E+02	9.55E-01	1.14E+02	3.64E-02
MHCS-100-W25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	7.71E+02	1.06E+01	7.84E-04	1.76E+02	1.38E-01	6.61E-03	1.24E-01	5.73E-01	1.72E+02	9.55E-01	1.14E+02	5.01E-03
MHCS-200-E10 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	4.07E+03	5.60E+01	7.84E-04	9.29E+02	7.29E-01	6.61E-03	1.24E-01	3.02E+00	1.72E+02	9.55E-01	1.14E+02	2.65E-02
MHCS-200-E25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	8.86E+02	1.22E+01	7.84E-04	2.02E+02	1.59E-01	6.61E-03	1.24E-01	6.58E-01	1.72E+02	9.55E-01	1.14E+02	5.76E-03
MHCS-200-W10 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	1.18E+03	1.62E+01	7.84E-04	2.69E+02	2.11E-01	6.61E-03	1.24E-01	8.76E-01	1.72E+02	9.55E-01	1.14E+02	7.66E-03
MHCS-525-E5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	1.09E+04	1.50E+02	7.84E-04	2.49E+03	1.95E+00	6.61E-03	1.24E-01	8.10E+00	1.72E+02	9.55E-01	1.14E+02	7.08E-02
MHCS-525-W15 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	1.03E+04	1.42E+02	7.84E-04	2.35E+03	1.84E+00	6.61E-03	1.24E-01	7.65E+00	1.72E+02	9.55E-01	1.14E+02	6.69E-02
MHCS-600-E10 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	4.77E+03	6.56E+01	7.84E-04	1.09E+03	8.54E-01	6.61E-03	1.24E-01	3.55E+00	1.72E+02	9.55E-01	1.14E+02	3.10E-02
MHCS-600-W10 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	1.40E+04	1.93E+02	7.84E-04	3.21E+03	2.51E+00	6.61E-03	1.24E-01	1.04E+01	1.72E+02	9.55E-01	1.14E+02	9.12E-02
MHCS-700-E10 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	6.02E+03	8.28E+01	7.84E-04	1.37E+03	1.08E+00	6.61E-03	1.24E-01	4.47E+00	1.72E+02	9.55E-01	1.14E+02	3.91E-02
MHCS-700-E25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	1.13E+03	1.55E+01	7.84E-04	2.58E+02	2.02E-01	6.61E-03	1.24E-01	8.38E-01	1.72E+02	9.55E-01	1.14E+02	7.33E-03
MHCS-700-W10 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	6.78E+03	9.34E+01	7.84E-04	1.55E+03	1.22E+00	6.61E-03	1.24E-01	5.04E+00	1.72E+02	9.55E-01	1.14E+02	4.41E-02
MHCS-800-E15 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	7.08E+02	9.75E+00	7.84E-04	1.62E+02	1.27E-01	6.61E-03	1.24E-01	5.27E-01	1.72E+02	9.55E-01	1.14E+02	4.61E-03
MHCS-800-E5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	7.13E+03	9.81E+01	7.84E-04	1.63E+03	1.28E+00	6.61E-03	1.24E-01	5.30E+00	1.72E+02	9.55E-01	1.14E+02	4.63E-02
MHCS-800-W5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	2.79E+03	3.84E+01	7.84E-04	6.37E+02	5.00E-01	6.61E-03	1.24E-01	2.07E+00	1.72E+02	9.55E-01	1.14E+02	1.81E-02
MHCS-900-E15 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	1.35E+03	1.86E+01	7.84E-04	3.09E+02	2.42E-01	6.61E-03	1.24E-01	1.00E+00	1.72E+02	9.55E-01	1.14E+02	8.78E-03
MHCS-900-E5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	6.16E+03	8.48E+01	7.84E-04	1.41E+03	1.10E+00	6.61E-03	1.24E-01	4.58E+00	1.72E+02	9.55E-01	1.14E+02	4.01E-02
MHCS-900-W5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	2.38E+03	3.28E+01	7.84E-04	5.44E+02	4.27E-01	6.61E-03	1.24E-01	1.77E+00	1.72E+02	9.55E-01	1.14E+02	1.55E-02
MHCS-1000-E10 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	2.71E+03	3.73E+01	7.84E-04	6.19E+02	4.85E-01	6.61E-03	1.24E-01	2.01E+00	1.72E+02	9.55E-01	1.14E+02	1.76E-02
MHCS-1000-W5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	1.20E+04	1.65E+02	7.84E-04	2.75E+03	2.15E+00	6.61E-03	1.24E-01	8.94E+00	1.72E+02	9.55E-01	1.14E+02	7.82E-02
MHCS-1100-E10 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	4.12E+03	5.66E+01	7.84E-04	9.40E+02	7.37E-01	6.61E-03	1.24E-01	3.06E+00	1.72E+02	9.55E-01	1.14E+02	2.68E-02
MHCS-1100-E35 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	6.98E+02	9.60E+00	7.84E-04	1.59E+02	1.25E-01	6.61E-03	1.24E-01	5.18E-01	1.72E+02	9.55E-01	1.14E+02	4.53E-03
MHCS-1200-E15 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	3.30E+03	4.55E+01	7.84E-04	7.54E+02	5.92E-01	6.61E-03	1.24E-01	2.45E+00	1.72E+02	9.55E-01	1.14E+02	2.15E-02
MHCS-1200-E30 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	8.86E+02	1.22E+01	7.84E-04	2.02E+02	1.59E-01	6.61E-03	1.24E-01	6.58E-01	1.72E+02	9.55E-01	1.14E+02	5.76E-03
MHCS-1300-E20 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	6.26E+03	8.61E+01	7.84E-04	1.43E+03	1.12E+00	6.61E-03	1.24E-01	4.65E+00	1.72E+02	9.55E-01	1.14E+02	4.07E-02
MHCS-1300-E35 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	1.76E+03	2.42E+01	7.84E-04	4.02E+02	3.15E-01	6.61E-03	1.24E-01	1.31E+00	1.72E+02	9.55E-01	1.14E+02	1.14E-02
Waste Areas 1 and 2																						**Maximum HQ (Mike Horse Creek Channel Area Deposits)**	**9.12E-02**
UMH1-00 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	3.93E+03	5.41E+01	7.84E-04	8.97E+02	7.04E-01	6.61E-03	1.24E-01	2.92E+00	1.72E+02	9.55E-01	1.14E+02	2.55E-02
UMH1-100 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	7.27E+03	1.00E+02	7.84E-04	1.66E+03	1.30E+00	6.61E-03	1.24E-01	5.40E+00	1.72E+02	9.55E-01	1.14E+02	4.72E-02
UMH1-150 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	3.48E+03	4.80E+01	7.84E-04	7.96E+02	6.24E-01	6.61E-03	1.24E-01	2.59E+00	1.72E+02	9.55E-01	1.14E+02	2.27E-02
UMH1-200 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	4.46E+02	6.13E+00	7.84E-04	1.02E+02	7.98E-02	6.61E-03	1.24E-01	3.31E-01	1.72E+02	9.55E-01	1.14E+02	2.90E-03
UMH1-250 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	4.23E+03	5.82E+01	7.84E-04	9.66E+02	7.58E-01	6.61E-03	1.24E-01	3.14E+00	1.72E+02	9.55E-01	1.14E+02	2.75E-02
UMH1-250+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	1.80E+03	2.47E+01	7.84E-04	4.10E+02	3.22E-01	6.61E-03	1.24E-01	1.33E+00	1.72E+02	9.55E-01	1.14E+02	1.17E-02
UMH1-300 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	6.41E+03	8.82E+01	7.84E-04	1.46E+03	1.15E+00	6.61E-03	1.24E-01	4.76E+00	1.72E+02	9.55E-01	1.14E+02	4.17E-02
UMH1-300+14 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	1.26E+03	1.74E+01	7.84E-04	2.88E+02	2.26E-01	6.61E-03	1.24E-01	9.39E-01	1.72E+02	9.55E-01	1.14E+02	8.21E-03
UMH1-350 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	6.67E+03	9.17E+01	7.84E-04	1.52E+03	1.19E+00	6.61E-03	1.24E-01	4.95E+00	1.72E+02	9.55E-01	1.14E+02	4.33E-02
UMH1-350+12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	2.09E+03	2.87E+01	7.84E-04	4.77E+02	3.74E-01	6.61E-03	1.24E-01	1.55E+00	1.72E+02	9.55E-01	1.14E+02	1.36E-02
UMH1-400 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	3.30E+03	4.55E+01	7.84E-04	7.54E+02	5.92E-01	6.61E-03	1.24E-01	2.46E+00	1.72E+02	9.55E-01	1.14E+02	2.15E-02
UMH1-400+12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	3.45E+03	4.74E+01	7.84E-04	7.87E+02	6.18E-01	6.61E-03	1.24E-01	2.56E+00	1.72E+02	9.55E-01	1.14E+02	2.24E-02
UMH1-450 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	3.40E+03	4.67E+01	7.84E-04	7.76E+02	6.08E-01	6.61E-03	1.24E-01	2.52E+00	1.72E+02	9.55E-01	1.14E+02	2.21E-02
UMH1-450+12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	3.39E+03	4.67E+01	7.84E-04	7.75E+02	6.08E-01	6.61E-03	1.24E-01	2.52E+00	1.72E+02	9.55E-01	1.14E+02	2.20E-02
UMH1-50 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	3.30E+03	4.54E+01	7.84E-04	7.54E+02	5.91E-01	6.61E-03	1.24E-01	2.45E+00	1.72E+02	9.55E-01	1.14E+02	2.15E-02
UMH1-Comp (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	6.09E+03	8.38E+01	7.84E-04	1.39E+03	1.09E+00	6.61E-03	1.24E-01	4.53E+00	1.72E+02	9.55E-01	1.14E+02	3.96E-02
UMH2-00 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	3.89E+03	5.35E+01	7.84E-04	8.88E+02	6.96E-01	6.61E-03	1.24E-01	2.89E+00	1.72E+02	9.55E-01	1.14E+02	2.53E-02

TABLE C-8F: ZINC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 8 - MIKE HORSE MINE WASTE PILES (Continued)
Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)
calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **1.73**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
American Kestrel (Insectivorous Birds - Terrestrial)																							
UMH2-00+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	1.68E+03	2.31E+01	7.84E-04	3.83E+02	3.01E-01	6.61E-03	1.24E-01	1.25E+00	1.72E+02	9.55E-01	1.14E+02	1.09E-02
UMH2-100 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	7.07E+03	9.74E+01	7.84E-04	1.62E+03	1.27E+00	6.61E-03	1.24E-01	5.26E+00	1.72E+02	9.55E-01	1.14E+02	4.60E-02
UMH2-100+35 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	1.81E+03	2.48E+01	7.84E-04	4.12E+02	3.23E-01	6.61E-03	1.24E-01	1.34E+00	1.72E+02	9.55E-01	1.14E+02	1.17E-02
UMH2-150 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	2.41E+03	3.31E+01	7.84E-04	5.50E+02	4.31E-01	6.61E-03	1.24E-01	1.79E+00	1.72E+02	9.55E-01	1.14E+02	1.56E-02
UMH2-150+60 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	6.91E+02	9.51E+00	7.84E-04	1.58E+02	1.24E-01	6.61E-03	1.24E-01	5.14E-01	1.72E+02	9.55E-01	1.14E+02	4.49E-03
UMH2-200 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	7.06E+03	9.71E+01	7.84E-04	1.61E+03	1.26E+00	6.61E-03	1.24E-01	5.25E+00	1.72E+02	9.55E-01	1.14E+02	4.59E-02
UMH2-200+85 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	1.19E+03	1.64E+01	7.84E-04	2.73E+02	2.14E-01	6.61E-03	1.24E-01	8.87E-01	1.72E+02	9.55E-01	1.14E+02	7.76E-03
UMH2-250 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	6.89E+03	9.48E+01	7.84E-04	1.57E+03	1.23E+00	6.61E-03	1.24E-01	5.12E+00	1.72E+02	9.55E-01	1.14E+02	4.48E-02
UMH2-250+75 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	1.70E+03	2.34E+01	7.84E-04	3.88E+02	3.04E-01	6.61E-03	1.24E-01	1.26E+00	1.72E+02	9.55E-01	1.14E+02	1.10E-02
UMH2-300 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	2.97E+03	4.09E+01	7.84E-04	6.78E+02	5.32E-01	6.61E-03	1.24E-01	2.21E+00	1.72E+02	9.55E-01	1.14E+02	1.93E-02
UMH2-300+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	5.10E+03	7.02E+01	7.84E-04	1.16E+03	9.13E-01	6.61E-03	1.24E-01	3.79E+00	1.72E+02	9.55E-01	1.14E+02	3.32E-02
UMH2-350 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	3.16E+03	4.34E+01	7.84E-04	7.21E+02	5.65E-01	6.61E-03	1.24E-01	2.35E+00	1.72E+02	9.55E-01	1.14E+02	2.05E-02
UMH2-350+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	5.19E+03	7.14E+01	7.84E-04	1.19E+03	9.30E-01	6.61E-03	1.24E-01	3.86E+00	1.72E+02	9.55E-01	1.14E+02	3.37E-02
UMH2-400 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	1.30E+03	1.79E+01	7.84E-04	2.98E+02	2.34E-01	6.61E-03	1.24E-01	9.69E-01	1.72E+02	9.55E-01	1.14E+02	8.47E-03
UMH2-400+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	3.21E+03	4.42E+01	7.84E-04	7.33E+02	5.75E-01	6.61E-03	1.24E-01	2.39E+00	1.72E+02	9.55E-01	1.14E+02	2.09E-02
UMH2-450 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	1.74E+03	2.40E+01	7.84E-04	3.98E+02	3.12E-01	6.61E-03	1.24E-01	1.29E+00	1.72E+02	9.55E-01	1.14E+02	1.13E-02
UMH2-450+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	2.59E+03	3.57E+01	7.84E-04	5.92E+02	4.64E-01	6.61E-03	1.24E-01	1.93E+00	1.72E+02	9.55E-01	1.14E+02	1.69E-02
UMH2-50 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	2.00E+03	2.76E+01	7.84E-04	4.58E+02	3.59E-01	6.61E-03	1.24E-01	1.49E+00	1.72E+02	9.55E-01	1.14E+02	1.30E-02
UMH2-50+25b (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	1.62E+03	2.23E+01	7.84E-04	3.71E+02	2.91E-01	6.61E-03	1.24E-01	1.21E+00	1.72E+02	9.55E-01	1.14E+02	1.06E-02
UMH2-500 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	3.61E+03	4.96E+01	7.84E-04	8.23E+02	6.46E-01	6.61E-03	1.24E-01	2.68E+00	1.72E+02	9.55E-01	1.14E+02	2.34E-02
UMH2-500+75 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	2.67E+03	3.68E+01	7.84E-04	6.11E+02	4.79E-01	6.61E-03	1.24E-01	1.99E+00	1.72E+02	9.55E-01	1.14E+02	1.74E-02
UMH2-550 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	1.06E+04	1.46E+02	7.84E-04	2.42E+03	1.90E+00	6.61E-03	1.24E-01	7.87E+00	1.72E+02	9.55E-01	1.14E+02	6.88E-02
UMH2-550+75 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	1.72E+03	2.37E+01	7.84E-04	3.94E+02	3.09E-01	6.61E-03	1.24E-01	1.28E+00	1.72E+02	9.55E-01	1.14E+02	1.12E-02
UMH2-600 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	2.24E+03	3.08E+01	7.84E-04	5.11E+02	4.00E-01	6.61E-03	1.24E-01	1.66E+00	1.72E+02	9.55E-01	1.14E+02	1.45E-02
UMH2-600+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	1.65E+03	2.28E+01	7.84E-04	3.78E+02	2.96E-01	6.61E-03	1.24E-01	1.23E+00	1.72E+02	9.55E-01	1.14E+02	1.08E-02
UMH2-650 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	2.07E+03	2.85E+01	7.84E-04	4.72E+02	3.70E-01	6.61E-03	1.24E-01	1.54E+00	1.72E+02	9.55E-01	1.14E+02	1.34E-02
UMH2-650+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	1.84E+03	2.53E+01	7.84E-04	4.21E+02	3.30E-01	6.61E-03	1.24E-01	1.37E+00	1.72E+02	9.55E-01	1.14E+02	1.20E-02
UMH2-Comp 1 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	5.74E+03	7.90E+01	7.84E-04	1.31E+03	1.03E+00	6.61E-03	1.24E-01	4.26E+00	1.72E+02	9.55E-01	1.14E+02	3.73E-02
UMH2-Comp 2 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	5.87E+03	8.07E+01	7.84E-04	1.34E+03	1.05E+00	6.61E-03	1.24E-01	4.36E+00	1.72E+02	9.55E-01	1.14E+02	3.81E-02
Waste Area 3																						**Maximum HQ (Waste Areas 1 and 2)**	**6.88E-02**
UMH3-00 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	1.23E+02	BB	BB	BB	BB	BB	BB	BB	BB
UMH3-100 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	1.01E+03	1.40E+01	7.84E-04	2.32E+02	1.82E-01	6.61E-03	1.24E-01	7.54E-01	1.72E+02	9.55E-01	1.14E+02	6.59E-03
UMH3-150 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	2.40E+03	3.30E+01	7.84E-04	5.47E+02	4.29E-01	6.61E-03	1.24E-01	1.78E+00	1.72E+02	9.55E-01	1.14E+02	1.56E-02
UMH3-200 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	1.92E+03	2.64E+01	7.84E-04	4.37E+02	3.43E-01	6.61E-03	1.24E-01	1.42E+00	1.72E+02	9.55E-01	1.14E+02	1.25E-02
UMH3-250 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	3.36E+03	4.62E+01	7.84E-04	7.67E+02	6.01E-01	6.61E-03	1.24E-01	2.50E+00	1.72E+02	9.55E-01	1.14E+02	2.18E-02
UMH3-300 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	8.70E+02	1.20E+01	7.84E-04	1.99E+02	1.56E-01	6.61E-03	1.24E-01	6.47E-01	1.72E+02	9.55E-01	1.14E+02	5.66E-03
UMH3-350 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	4.39E+03	6.04E+01	7.84E-04	1.00E+03	7.86E-01	6.61E-03	1.24E-01	3.26E+00	1.72E+02	9.55E-01	1.14E+02	2.85E-02
UMH3-350+75 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	1.35E+03	1.85E+01	7.84E-04	3.08E+02	2.41E-01	6.61E-03	1.24E-01	1.00E+00	1.72E+02	9.55E-01	1.14E+02	8.75E-03
UMH3-400 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	2.87E+03	3.95E+01	7.84E-04	6.56E+02	5.15E-01	6.61E-03	1.24E-01	2.14E+00	1.72E+02	9.55E-01	1.14E+02	1.87E-02
UMH3-400+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	1.19E+03	1.63E+01	7.84E-04	2.71E+02	2.12E-01	6.61E-03	1.24E-01	8.81E-01	1.72E+02	9.55E-01	1.14E+02	7.70E-03
UMH3-450 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	6.65E+02	9.15E+00	7.84E-04	1.52E+02	1.19E-01	6.61E-03	1.24E-01	4.94E-01	1.72E+02	9.55E-01	1.14E+02	4.32E-03
UMH3-50 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	1.64E+03	2.26E+01	7.84E-04	3.75E+02	2.94E-01	6.61E-03	1.24E-01	1.22E+00	1.72E+02	9.55E-01	1.14E+02	1.07E-02
UMH3-50+50 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	1.87E+03	2.58E+01	7.84E-04	4.28E+02	3.35E-01	6.61E-03	1.24E-01	1.39E+00	1.72E+02	9.55E-01	1.14E+02	1.22E-02
UMH3-500 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	1.65E+03	2.27E+01	7.84E-04	3.77E+02	2.96E-01	6.61E-03	1.24E-01	1.23E+00	1.72E+02	9.55E-01	1.14E+02	1.07E-02
UMH3-550 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	4.38E+03	6.03E+01	7.84E-04	1.00E+03	7.85E-01	6.61E-03	1.24E-01	3.26E+00	1.72E+02	9.55E-01	1.14E+02	2.85E-02
UMH3-600 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	4.15E+03	5.71E+01	7.84E-04	9.48E+02	7.44E-01	6.61E-03	1.24E-01	3.09E+00	1.72E+02	9.55E-01	1.14E+02	2.70E-02
UMH3-650 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	3.81E+03	5.24E+01	7.84E-04	8.69E+02	6.82E-01	6.61E-03	1.24E-01	2.83E+00	1.72E+02	9.55E-01	1.14E+02	2.47E-02
UMH3-700 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	2.85E+03	3.92E+01	7.84E-04	6.50E+02	5.10E-01	6.61E-03	1.24E-01	2.11E+00	1.72E+02	9.55E-01	1.14E+02	1.85E-02
UMH3-750 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	1.25E+03	1.72E+01	7.84E-04	2.85E+02	2.24E-01	6.61E-03	1.24E-01	9.28E-01	1.72E+02	9.55E-01	1.14E+02	8.12E-03
UMH3-800 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	1.30E+03	1.79E+01	7.84E-04	2.97E+02	2.33E-01	6.61E-03	1.24E-01	9.67E-01	1.72E+02	9.55E-01	1.14E+02	8.46E-03
UMH3-Comp 1 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	8.65E+02	1.19E+01	7.84E-04	1.98E+02	1.55E-01	6.61E-03	1.24E-01	6.43E-01	1.72E+02	9.55E-01	1.14E+02	5.63E-03
UMH3-Comp 2 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	3.38E+03	4.66E+01	7.84E-04	7.73E+02	6.06E-01	6.61E-03	1.24E-01	2.52E+00	1.72E+02	9.55E-01	1.14E+02	2.20E-02
UMH3-Comp 3 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	9.84E+03	1.35E+02	7.84E-04	2.25E+03	1.76E+00	6.61E-03	1.24E-01	7.31E+00	1.72E+02	9.55E-01	1.14E+02	6.39E-02
																						Maximum HQ (Waste Area 3)	**6.39E-02**

TABLE C-8F: ZINC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 8 - MIKE HORSE MINE WASTE PILES (Continued)
Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)
calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **1.73**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Meadow Vole (Small Herbivorous Mammal - Terrestrial)																							
Reference Sites																							
BCBG-1 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.41E+00	4.20E+02	1.97E+00	NA	NA	NA	NA	1.13E-04	2.97E+02	3.35E-02	1.00E+00	3.06E-02	6.54E+01	4.11E+02	1.75E-01	4.57E+02	1.43E-01
MHBG-201 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.41E+00	7.38E+01	3.46E-01	NA	NA	NA	NA	1.13E-04	5.23E+01	5.89E-03	1.00E+00	3.06E-02	1.15E+01	4.11E+02	1.75E-01	4.57E+02	2.52E-02
MHBG-202 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.41E+00	6.83E+01	3.20E-01	NA	NA	NA	NA	1.13E-04	4.84E+01	5.44E-03	1.00E+00	3.06E-02	1.06E+01	4.11E+02	1.75E-01	4.57E+02	2.33E-02
Mike Horse Creek Channel Area Deposits																						**Minimum HQ (Reference Site)**	**2.33E-02**
AMHR-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	4.03E+02	1.89E+00	NA	NA	NA	NA	1.13E-04	2.04E+02	2.29E-02	1.00E+00	3.06E-02	6.25E+01	4.11E+02	1.75E-01	4.57E+02	1.37E-01
AMHR-200 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	2.66E+02	1.25E+00	NA	NA	NA	NA	1.13E-04	1.34E+02	1.51E-02	1.00E+00	3.06E-02	4.13E+01	4.11E+02	1.75E-01	4.57E+02	9.04E-02
AMHR-400 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	1.11E+03	5.19E+00	NA	NA	NA	NA	1.13E-04	5.58E+02	6.28E-02	1.00E+00	3.06E-02	1.72E+02	4.11E+02	1.75E-01	4.57E+02	3.76E-01
AMHR-600 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	1.34E+03	6.29E+00	NA	NA	NA	NA	1.13E-04	6.77E+02	7.62E-02	1.00E+00	3.06E-02	2.08E+02	4.11E+02	1.75E-01	4.57E+02	4.55E-01
MHCS-00-E25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	3.63E+03	1.70E+01	NA	NA	NA	NA	1.13E-04	1.83E+03	2.06E-01	1.00E+00	3.06E-02	5.63E+02	4.11E+02	1.75E-01	4.57E+02	1.23E+00
MHCS-0-W25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	4.88E+02	2.29E+00	NA	NA	NA	NA	1.13E-04	2.46E+02	2.77E-02	1.00E+00	3.06E-02	7.56E+01	4.11E+02	1.75E-01	4.57E+02	1.66E-01
MHCS-0-W5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	4.69E+02	2.20E+00	NA	NA	NA	NA	1.13E-04	2.37E+02	2.66E-02	1.00E+00	3.06E-02	7.27E+01	4.11E+02	1.75E-01	4.57E+02	1.59E-01
MHCS-100-E25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	2.40E+03	1.13E+01	NA	NA	NA	NA	1.13E-04	1.21E+03	1.36E-01	1.00E+00	3.06E-02	3.72E+02	4.11E+02	1.75E-01	4.57E+02	8.15E-01
MHCS-100-W1 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	2.53E+03	1.19E+01	NA	NA	NA	NA	1.13E-04	1.28E+03	1.44E-01	1.00E+00	3.06E-02	3.93E+02	4.11E+02	1.75E-01	4.57E+02	8.60E-01
MHCS-100-W25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	3.49E+02	1.63E+00	NA	NA	NA	NA	1.13E-04	1.76E+02	1.98E-02	1.00E+00	3.06E-02	5.41E+01	4.11E+02	1.75E-01	4.57E+02	1.18E-01
MHCS-200-E10 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	1.84E+03	8.63E+00	NA	NA	NA	NA	1.13E-04	9.29E+02	1.05E-01	1.00E+00	3.06E-02	2.86E+02	4.11E+02	1.75E-01	4.57E+02	6.25E-01
MHCS-200-E25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	4.01E+02	1.88E+00	NA	NA	NA	NA	1.13E-04	2.02E+02	2.28E-02	1.00E+00	3.06E-02	6.22E+01	4.11E+02	1.75E-01	4.57E+02	1.36E-01
MHCS-200-W10 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	5.33E+02	2.50E+00	NA	NA	NA	NA	1.13E-04	2.69E+02	3.03E-02	1.00E+00	3.06E-02	8.27E+01	4.11E+02	1.75E-01	4.57E+02	1.81E-01
MHCS-525-E5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	4.93E+03	2.31E+01	NA	NA	NA	NA	1.13E-04	2.49E+03	2.80E-01	1.00E+00	3.06E-02	7.65E+02	4.11E+02	1.75E-01	4.57E+02	1.67E+00
MHCS-525-W15 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	4.66E+03	2.18E+01	NA	NA	NA	NA	1.13E-04	2.35E+03	2.65E-01	1.00E+00	3.06E-02	7.22E+02	4.11E+02	1.75E-01	4.57E+02	1.58E+00
MHCS-600-E10 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	2.16E+03	1.01E+01	NA	NA	NA	NA	1.13E-04	1.09E+03	1.23E-01	1.00E+00	3.06E-02	3.35E+02	4.11E+02	1.75E-01	4.57E+02	7.33E-01
MHCS-600-W10 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	6.35E+03	2.98E+01	NA	NA	NA	NA	1.13E-04	3.21E+03	3.61E-01	1.00E+00	3.06E-02	9.85E+02	4.11E+02	1.75E-01	4.57E+02	2.16E+00
MHCS-700-E10 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	2.72E+03	1.28E+01	NA	NA	NA	NA	1.13E-04	1.37E+03	1.55E-01	1.00E+00	3.06E-02	4.22E+02	4.11E+02	1.75E-01	4.57E+02	9.24E-01
MHCS-700-E25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	5.10E+02	2.39E+00	NA	NA	NA	NA	1.13E-04	2.58E+02	2.90E-02	1.00E+00	3.06E-02	7.91E+01	4.11E+02	1.75E-01	4.57E+02	1.73E-01
MHCS-700-W10 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	3.07E+03	1.44E+01	NA	NA	NA	NA	1.13E-04	1.55E+03	1.74E-01	1.00E+00	3.06E-02	4.76E+02	4.11E+02	1.75E-01	4.57E+02	1.04E+00
MHCS-800-E15 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	3.21E+02	1.50E+00	NA	NA	NA	NA	1.13E-04	1.62E+02	1.82E-02	1.00E+00	3.06E-02	4.97E+01	4.11E+02	1.75E-01	4.57E+02	1.09E-01
MHCS-800-E5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	3.23E+03	1.51E+01	NA	NA	NA	NA	1.13E-04	1.63E+03	1.83E-01	1.00E+00	3.06E-02	5.00E+02	4.11E+02	1.75E-01	4.57E+02	1.10E+00
MHCS-800-W5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	1.26E+03	5.92E+00	NA	NA	NA	NA	1.13E-04	6.37E+02	7.17E-02	1.00E+00	3.06E-02	1.96E+02	4.11E+02	1.75E-01	4.57E+02	4.29E-01
MHCS-900-E15 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	6.11E+02	2.87E+00	NA	NA	NA	NA	1.13E-04	3.09E+02	3.47E-02	1.00E+00	3.06E-02	9.48E+01	4.11E+02	1.75E-01	4.57E+02	2.08E-01
MHCS-900-E5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	2.79E+03	1.31E+01	NA	NA	NA	NA	1.13E-04	1.41E+03	1.58E-01	1.00E+00	3.06E-02	4.32E+02	4.11E+02	1.75E-01	4.57E+02	9.47E-01
MHCS-900-W5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	1.08E+03	5.05E+00	NA	NA	NA	NA	1.13E-04	5.44E+02	6.12E-02	1.00E+00	3.06E-02	1.67E+02	4.11E+02	1.75E-01	4.57E+02	3.66E-01
MHCS-1000-E10 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	1.23E+03	5.75E+00	NA	NA	NA	NA	1.13E-04	6.19E+02	6.96E-02	1.00E+00	3.06E-02	1.90E+02	4.11E+02	1.75E-01	4.57E+02	4.16E-01
MHCS-1000-W5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	5.44E+03	2.55E+01	NA	NA	NA	NA	1.13E-04	2.75E+03	3.09E-01	1.00E+00	3.06E-02	8.44E+02	4.11E+02	1.75E-01	4.57E+02	1.85E+00
MHCS-1100-E10 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	1.86E+03	8.73E+00	NA	NA	NA	NA	1.13E-04	9.40E+02	1.06E-01	1.00E+00	3.06E-02	2.89E+02	4.11E+02	1.75E-01	4.57E+02	6.32E-01
MHCS-1100-E35 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	3.16E+02	1.48E+00	NA	NA	NA	NA	1.13E-04	1.59E+02	1.79E-02	1.00E+00	3.06E-02	4.89E+01	4.11E+02	1.75E-01	4.57E+02	1.07E-01
MHCS-1200-E15 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	1.49E+03	7.01E+00	NA	NA	NA	NA	1.13E-04	7.54E+02	8.49E-02	1.00E+00	3.06E-02	2.32E+02	4.11E+02	1.75E-01	4.57E+02	5.07E-01
MHCS-1200-E30 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	4.01E+02	1.88E+00	NA	NA	NA	NA	1.13E-04	2.02E+02	2.28E-02	1.00E+00	3.06E-02	6.22E+01	4.11E+02	1.75E-01	4.57E+02	1.36E-01
MHCS-1300-E20 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	2.83E+03	1.33E+01	NA	NA	NA	NA	1.13E-04	1.43E+03	1.61E-01	1.00E+00	3.06E-02	4.39E+02	4.11E+02	1.75E-01	4.57E+02	9.61E-01
MHCS-1300-E35 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	7.96E+02	3.73E+00	NA	NA	NA	NA	1.13E-04	4.02E+02	4.52E-02	1.00E+00	3.06E-02	1.23E+02	4.11E+02	1.75E-01	4.57E+02	2.70E-01
Waste Areas 1 and 2																						**Maximum HQ (Mike Horse Creek Channel Area Deposits)**	**2.16E+00**
UMH1-00 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	1.78E+03	8.34E+00	NA	NA	NA	NA	1.13E-04	8.97E+02	1.01E-01	1.00E+00	3.06E-02	2.76E+02	4.11E+02	1.75E-01	4.57E+02	6.04E-01
UMH1-100 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	3.29E+03	1.54E+01	NA	NA	NA	NA	1.13E-04	1.66E+03	1.87E-01	1.00E+00	3.06E-02	5.10E+02	4.11E+02	1.75E-01	4.57E+02	1.12E+00
UMH1-150 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	1.58E+03	7.39E+00	NA	NA	NA	NA	1.13E-04	7.96E+02	8.96E-02	1.00E+00	3.06E-02	2.45E+02	4.11E+02	1.75E-01	4.57E+02	5.35E-01
UMH1-200 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	2.02E+02	9.46E-01	NA	NA	NA	NA	1.13E-04	1.02E+02	1.15E-02	1.00E+00	3.06E-02	3.13E+01	4.11E+02	1.75E-01	4.57E+02	6.85E-02
UMH1-250 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	1.91E+03	8.97E+00	NA	NA	NA	NA	1.13E-04	9.66E+02	1.09E-01	1.00E+00	3.06E-02	2.97E+02	4.11E+02	1.75E-01	4.57E+02	6.50E-01
UMH1-250+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	8.12E+02	3.81E+00	NA	NA	NA	NA	1.13E-04	4.10E+02	4.61E-02	1.00E+00	3.06E-02	1.26E+02	4.11E+02	1.75E-01	4.57E+02	2.76E-01
UMH1-300 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	2.90E+03	1.36E+01	NA	NA	NA	NA	1.13E-04	1.46E+03	1.65E-01	1.00E+00	3.06E-02	4.50E+02	4.11E+02	1.75E-01	4.57E+02	9.85E-01
UMH1-300+14 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	5.71E+02	2.68E+00	NA	NA	NA	NA	1.13E-04	2.88E+02	3.25E-02	1.00E+00	3.06E-02	8.86E+01	4.11E+02	1.75E-01	4.57E+02	1.94E-01
UMH1-350 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	3.02E+03	1.41E+01	NA	NA	NA	NA	1.13E-04	1.52E+03	1.71E-01	1.00E+00	3.06E-02	4.68E+02	4.11E+02	1.75E-01	4.57E+02	1.02E+00
UMH1-350+12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	9.45E+02	4.43E+00	NA	NA	NA	NA	1.13E-04	4.77E+02	5.37E-02	1.00E+00	3.06E-02	1.47E+02	4.11E+02	1.75E-01	4.57E+02	3.21E-01
UMH1-400 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	1.49E+03	7.01E+00	NA	NA	NA	NA	1.13E-04	7.54E+02	8.49E-02	1.00E+00	3.06E-02	2.32E+02	4.11E+02	1.75E-01	4.57E+02	5.07E-01
UMH1-400+12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	1.56E+03	7.31E+00	NA	NA	NA	NA	1.13E-04	7.87E+02	8.86E-02	1.00E+00	3.06E-02	2.42E+02	4.11E+02	1.75E-01	4.57E+02	5.30E-01
UMH1-450 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	1.54E+03	7.21E+00	NA	NA	NA	NA	1.13E-04	7.76E+02	8.73E-02	1.00E+00	3.06E-02	2.38E+02	4.11E+02	1.75E-01	4.57E+02	5.22E-01
UMH1-450+12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	1.53E+03	7.20E+00	NA	NA	NA	NA	1.13E-04	7.75E+02	8.72E-02	1.00E+00	3.06E-02	2.38E+02	4.11E+02	1.75E-01	4.57E+02	5.21E-01
UMH1-50 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	1.49E+03	7.00E+00	NA	NA	NA	NA	1.13E-04	7.54E+02	8.48E-02	1.00E+00	3.06E-02	2.32E+02	4.11E+02	1.75E-01	4.57E+02	5.07E-01
UMH1-Comp (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	2.76E+03	1.29E+01	NA	NA	NA	NA	1.13E-04	1.39E+03	1.57E-01	1.00E+00	3.06E-02	4.27E+02	4.11E+02	1.75E-01	4.57E+02	9.36E-01
UMH2-00 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	1.76E+03	8.25E+00	NA	NA	NA	NA	1.13E-04	8.88E+02	9.99E-02	1.00E+00	3.06E-02	2.73E+02	4.11E+02	1.75E-01	4.57E+02	5.97E-01

TABLE C-8F: ZINC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 8 - MIKE HORSE MINE WASTE PILES (Continued)
Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)
calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 1.73

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Meadow Vole (Small Herbivorous Mammal - Terrestrial)																							
UMH2-00+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	7.59E+02	3.56E+00	NA	NA	NA	NA	1.13E-04	3.83E+02	4.31E-02	1.00E+00	3.06E-02	1.18E+02	4.11E+02	1.75E-01	4.57E+02	2.58E-01
UMH2-100 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	3.20E+03	1.50E+01	NA	NA	NA	NA	1.13E-04	1.62E+03	1.82E-01	1.00E+00	3.06E-02	4.96E+02	4.11E+02	1.75E-01	4.57E+02	1.09E+00
UMH2-100+35 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	8.17E+02	3.83E+00	NA	NA	NA	NA	1.13E-04	4.12E+02	4.64E-02	1.00E+00	3.06E-02	1.27E+02	4.11E+02	1.75E-01	4.57E+02	2.77E-01
UMH2-150 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	1.09E+03	5.11E+00	NA	NA	NA	NA	1.13E-04	5.50E+02	6.19E-02	1.00E+00	3.06E-02	1.69E+02	4.11E+02	1.75E-01	4.57E+02	3.70E-01
UMH2-150+60 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	3.13E+02	1.47E+00	NA	NA	NA	NA	1.13E-04	1.58E+02	1.78E-02	1.00E+00	3.06E-02	4.85E+01	4.11E+02	1.75E-01	4.57E+02	1.06E-01
UMH2-200 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	3.19E+03	1.50E+01	NA	NA	NA	NA	1.13E-04	1.61E+03	1.81E-01	1.00E+00	3.06E-02	4.95E+02	4.11E+02	1.75E-01	4.57E+02	1.08E+00
UMH2-200+85 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	5.40E+02	2.53E+00	NA	NA	NA	NA	1.13E-04	2.73E+02	3.07E-02	1.00E+00	3.06E-02	8.38E+01	4.11E+02	1.75E-01	4.57E+02	1.83E-01
UMH2-250 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	3.12E+03	1.46E+01	NA	NA	NA	NA	1.13E-04	1.57E+03	1.77E-01	1.00E+00	3.06E-02	4.84E+02	4.11E+02	1.75E-01	4.57E+02	1.06E+00
UMH2-250+75 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	7.69E+02	3.61E+00	NA	NA	NA	NA	1.13E-04	3.88E+02	4.37E-02	1.00E+00	3.06E-02	1.19E+02	4.11E+02	1.75E-01	4.57E+02	2.61E-01
UMH2-300 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	1.34E+03	6.30E+00	NA	NA	NA	NA	1.13E-04	6.78E+02	7.63E-02	1.00E+00	3.06E-02	2.08E+02	4.11E+02	1.75E-01	4.57E+02	4.56E-01
UMH2-300+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	2.31E+03	1.08E+01	NA	NA	NA	NA	1.13E-04	1.16E+03	1.31E-01	1.00E+00	3.06E-02	3.58E+02	4.11E+02	1.75E-01	4.57E+02	7.83E-01
UMH2-350 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	1.43E+03	6.70E+00	NA	NA	NA	NA	1.13E-04	7.21E+02	8.11E-02	1.00E+00	3.06E-02	2.21E+02	4.11E+02	1.75E-01	4.57E+02	4.85E-01
UMH2-350+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	2.35E+03	1.10E+01	NA	NA	NA	NA	1.13E-04	1.19E+03	1.33E-01	1.00E+00	3.06E-02	3.64E+02	4.11E+02	1.75E-01	4.57E+02	7.97E-01
UMH2-400 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	5.90E+02	2.77E+00	NA	NA	NA	NA	1.13E-04	2.98E+02	3.35E-02	1.00E+00	3.06E-02	9.15E+01	4.11E+02	1.75E-01	4.57E+02	2.00E-01
UMH2-400+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	1.45E+03	6.81E+00	NA	NA	NA	NA	1.13E-04	7.33E+02	8.25E-02	1.00E+00	3.06E-02	2.25E+02	4.11E+02	1.75E-01	4.57E+02	4.93E-01
UMH2-450 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	7.88E+02	3.70E+00	NA	NA	NA	NA	1.13E-04	3.98E+02	4.48E-02	1.00E+00	3.06E-02	1.22E+02	4.11E+02	1.75E-01	4.57E+02	2.68E-01
UMH2-450+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	1.17E+03	5.50E+00	NA	NA	NA	NA	1.13E-04	5.92E+02	6.66E-02	1.00E+00	3.06E-02	1.82E+02	4.11E+02	1.75E-01	4.57E+02	3.98E-01
UMH2-50 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	9.07E+02	4.25E+00	NA	NA	NA	NA	1.13E-04	4.58E+02	5.15E-02	1.00E+00	3.06E-02	1.41E+02	4.11E+02	1.75E-01	4.57E+02	3.08E-01
UMH2-50+25b (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	7.35E+02	3.44E+00	NA	NA	NA	NA	1.13E-04	3.71E+02	4.17E-02	1.00E+00	3.06E-02	1.14E+02	4.11E+02	1.75E-01	4.57E+02	2.49E-01
UMH2-500 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	1.63E+03	7.65E+00	NA	NA	NA	NA	1.13E-04	8.23E+02	9.26E-02	1.00E+00	3.06E-02	2.53E+02	4.11E+02	1.75E-01	4.57E+02	5.54E-01
UMH2-500+75 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	1.21E+03	5.67E+00	NA	NA	NA	NA	1.13E-04	6.11E+02	6.87E-02	1.00E+00	3.06E-02	1.88E+02	4.11E+02	1.75E-01	4.57E+02	4.11E-01
UMH2-550 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	4.79E+03	2.25E+01	NA	NA	NA	NA	1.13E-04	2.42E+03	2.72E-01	1.00E+00	3.06E-02	7.43E+02	4.11E+02	1.75E-01	4.57E+02	1.63E+00
UMH2-550+75 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	7.80E+02	3.66E+00	NA	NA	NA	NA	1.13E-04	3.94E+02	4.43E-02	1.00E+00	3.06E-02	1.21E+02	4.11E+02	1.75E-01	4.57E+02	2.65E-01
UMH2-600 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	1.01E+03	4.74E+00	NA	NA	NA	NA	1.13E-04	5.11E+02	5.75E-02	1.00E+00	3.06E-02	1.57E+02	4.11E+02	1.75E-01	4.57E+02	3.43E-01
UMH2-600+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	7.48E+02	3.51E+00	NA	NA	NA	NA	1.13E-04	3.78E+02	4.25E-02	1.00E+00	3.06E-02	1.16E+02	4.11E+02	1.75E-01	4.57E+02	2.54E-01
UMH2-650 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	9.35E+02	4.39E+00	NA	NA	NA	NA	1.13E-04	4.72E+02	5.31E-02	1.00E+00	3.06E-02	1.45E+02	4.11E+02	1.75E-01	4.57E+02	3.18E-01
UMH2-650+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	8.33E+02	3.91E+00	NA	NA	NA	NA	1.13E-04	4.21E+02	4.73E-02	1.00E+00	3.06E-02	1.29E+02	4.11E+02	1.75E-01	4.57E+02	2.83E-01
UMH2-Comp 1 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	2.60E+03	1.22E+01	NA	NA	NA	NA	1.13E-04	1.31E+03	1.47E-01	1.00E+00	3.06E-02	4.03E+02	4.11E+02	1.75E-01	4.57E+02	8.81E-01
UMH2-Comp 2 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	2.65E+03	1.24E+01	NA	NA	NA	NA	1.13E-04	1.34E+03	1.51E-01	1.00E+00	3.06E-02	4.12E+02	4.11E+02	1.75E-01	4.57E+02	9.01E-01
Waste Area 3																						**Maximum HQ (Waste Areas 1 and 2)**	**1.63E+00**
UMH3-00 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	2.44E+02	1.14E+00	NA	NA	NA	NA	1.13E-04	1.23E+02	1.39E-02	1.00E+00	3.06E-02	3.78E+01	4.11E+02	1.75E-01	4.57E+02	8.28E-02
UMH3-100 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	4.59E+02	2.15E+00	NA	NA	NA	NA	1.13E-04	2.32E+02	2.61E-02	1.00E+00	3.06E-02	7.12E+01	4.11E+02	1.75E-01	4.57E+02	1.56E-01
UMH3-150 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	1.08E+03	5.08E+00	NA	NA	NA	NA	1.13E-04	5.47E+02	6.16E-02	1.00E+00	3.06E-02	1.68E+02	4.11E+02	1.75E-01	4.57E+02	3.68E-01
UMH3-200 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	8.67E+02	4.06E+00	NA	NA	NA	NA	1.13E-04	4.37E+02	4.92E-02	1.00E+00	3.06E-02	1.34E+02	4.11E+02	1.75E-01	4.57E+02	2.94E-01
UMH3-250 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	1.52E+03	7.12E+00	NA	NA	NA	NA	1.13E-04	7.67E+02	8.63E-02	1.00E+00	3.06E-02	2.36E+02	4.11E+02	1.75E-01	4.57E+02	5.16E-01
UMH3-300 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	3.94E+02	1.85E+00	NA	NA	NA	NA	1.13E-04	1.99E+02	2.24E-02	1.00E+00	3.06E-02	6.11E+01	4.11E+02	1.75E-01	4.57E+02	1.34E-01
UMH3-350 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	1.99E+03	9.31E+00	NA	NA	NA	NA	1.13E-04	1.00E+03	1.13E-01	1.00E+00	3.06E-02	3.08E+02	4.11E+02	1.75E-01	4.57E+02	6.74E-01
UMH3-350+75 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	6.09E+02	2.86E+00	NA	NA	NA	NA	1.13E-04	3.08E+02	3.46E-02	1.00E+00	3.06E-02	9.45E+01	4.11E+02	1.75E-01	4.57E+02	2.07E-01
UMH3-400 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	1.30E+03	6.10E+00	NA	NA	NA	NA	1.13E-04	6.56E+02	7.38E-02	1.00E+00	3.06E-02	2.02E+02	4.11E+02	1.75E-01	4.57E+02	4.41E-01
UMH3-400+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	5.36E+02	2.51E+00	NA	NA	NA	NA	1.13E-04	2.71E+02	3.05E-02	1.00E+00	3.06E-02	8.32E+01	4.11E+02	1.75E-01	4.57E+02	1.82E-01
UMH3-450 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	3.01E+02	1.41E+00	NA	NA	NA	NA	1.13E-04	1.52E+02	1.71E-02	1.00E+00	3.06E-02	4.66E+01	4.11E+02	1.75E-01	4.57E+02	1.02E-01
UMH3-50 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	7.42E+02	3.48E+00	NA	NA	NA	NA	1.13E-04	3.75E+02	4.21E-02	1.00E+00	3.06E-02	1.15E+02	4.11E+02	1.75E-01	4.57E+02	2.52E-01
UMH3-50+50 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	8.47E+02	3.97E+00	NA	NA	NA	NA	1.13E-04	4.28E+02	4.81E-02	1.00E+00	3.06E-02	1.31E+02	4.11E+02	1.75E-01	4.57E+02	2.88E-01
UMH3-500 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	7.48E+02	3.51E+00	NA	NA	NA	NA	1.13E-04	3.77E+02	4.25E-02	1.00E+00	3.06E-02	1.16E+02	4.11E+02	1.75E-01	4.57E+02	2.54E-01
UMH3-550 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	1.98E+03	9.30E+00	NA	NA	NA	NA	1.13E-04	1.00E+03	1.13E-01	1.00E+00	3.06E-02	3.08E+02	4.11E+02	1.75E-01	4.57E+02	6.73E-01
UMH3-600 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	1.88E+03	8.81E+00	NA	NA	NA	NA	1.13E-04	9.48E+02	1.07E-01	1.00E+00	3.06E-02	2.91E+02	4.11E+02	1.75E-01	4.57E+02	6.38E-01
UMH3-650 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	1.72E+03	8.08E+00	NA	NA	NA	NA	1.13E-04	8.69E+02	9.78E-02	1.00E+00	3.06E-02	2.67E+02	4.11E+02	1.75E-01	4.57E+02	5.85E-01
UMH3-700 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	1.29E+03	6.04E+00	NA	NA	NA	NA	1.13E-04	6.50E+02	7.31E-02	1.00E+00	3.06E-02	2.00E+02	4.11E+02	1.75E-01	4.57E+02	4.37E-01
UMH3-750 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	5.65E+02	2.65E+00	NA	NA	NA	NA	1.13E-04	2.85E+02	3.21E-02	1.00E+00	3.06E-02	8.76E+01	4.11E+02	1.75E-01	4.57E+02	1.92E-01
UMH3-800 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	5.89E+02	2.76E+00	NA	NA	NA	NA	1.13E-04	2.97E+02	3.34E-02	1.00E+00	3.06E-02	9.13E+01	4.11E+02	1.75E-01	4.57E+02	2.00E-01
UMH3-Comp 1 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	3.92E+02	1.84E+00	NA	NA	NA	NA	1.13E-04	1.98E+02	2.22E-02	1.00E+00	3.06E-02	6.07E+01	4.11E+02	1.75E-01	4.57E+02	1.33E-01
UMH3-Comp 2 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	1.53E+03	7.18E+00	NA	NA	NA	NA	1.13E-04	7.73E+02	8.70E-02	1.00E+00	3.06E-02	2.37E+02	4.11E+02	1.75E-01	4.57E+02	5.20E-01
UMH3-Comp 3 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	4.45E+03	2.09E+01	NA	NA	NA	NA	1.13E-04	2.25E+03	2.53E-01	1.00E+00	3.06E-02	6.90E+02	4.11E+02	1.75E-01	4.57E+02	1.51E+00
																						Maximum HQ (Waste Area 3)	**1.51E+00**

TABLE C-8F: ZINC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 8 - MIKE HORSE MINE WASTE PILES (Continued)
Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)
calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **1.73**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
White-Tailed Deer (Large Herbivorous Mammal - Terrestrial)																							
Reference Sites																							
BCBG-1 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.41E+00	4.20E+02	6.01E+02	NA	NA	NA	NA	2.86E-02	2.97E+02	8.51E+00	9.68E-03	1.35E+02	4.37E-02	4.11E+02	1.75E-01	2.76E+02	1.58E-04
MHBG-201 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.41E+00	7.38E+01	1.06E+02	NA	NA	NA	NA	2.86E-02	5.23E+01	1.50E+00	9.68E-03	1.35E+02	7.68E-03	4.11E+02	1.75E-01	2.76E+02	2.78E-05
MHBG-202 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.41E+00	6.83E+01	9.78E+01	NA	NA	NA	NA	2.86E-02	4.84E+01	1.39E+00	9.68E-03	1.35E+02	7.11E-03	4.11E+02	1.75E-01	2.76E+02	2.57E-05
Mike Horse Creek Channel Area Deposits																						**Minimum HQ (Reference Site)**	**2.57E-05**
AMHR-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	4.03E+02	5.77E+02	NA	NA	NA	NA	2.86E-02	2.04E+02	5.83E+00	9.68E-03	1.35E+02	4.18E-02	4.11E+02	1.75E-01	2.76E+02	1.51E-04
AMHR-200 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	2.66E+02	3.81E+02	NA	NA	NA	NA	2.86E-02	1.34E+02	3.85E+00	9.68E-03	1.35E+02	2.76E-02	4.11E+02	1.75E-01	2.76E+02	1.00E-04
AMHR-400 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	1.11E+03	1.58E+03	NA	NA	NA	NA	2.86E-02	5.58E+02	1.60E+01	9.68E-03	1.35E+02	1.15E-01	4.11E+02	1.75E-01	2.76E+02	4.15E-04
AMHR-600 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	1.34E+03	1.92E+03	NA	NA	NA	NA	2.86E-02	6.77E+02	1.94E+01	9.68E-03	1.35E+02	1.39E-01	4.11E+02	1.75E-01	2.76E+02	5.04E-04
MHCS-00-E25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	3.63E+03	5.19E+03	NA	NA	NA	NA	2.86E-02	1.83E+03	5.24E+01	9.68E-03	1.35E+02	3.76E-01	4.11E+02	1.75E-01	2.76E+02	1.36E-03
MHCS-0-W25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	4.88E+02	6.98E+02	NA	NA	NA	NA	2.86E-02	2.46E+02	7.05E+00	9.68E-03	1.35E+02	5.06E-02	4.11E+02	1.75E-01	2.76E+02	1.83E-04
MHCS-0-W5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	4.69E+02	6.71E+02	NA	NA	NA	NA	2.86E-02	2.37E+02	6.77E+00	9.68E-03	1.35E+02	4.86E-02	4.11E+02	1.75E-01	2.76E+02	1.76E-04
MHCS-100-E25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	2.40E+03	3.44E+03	NA	NA	NA	NA	2.86E-02	1.21E+03	3.47E+01	9.68E-03	1.35E+02	2.49E-01	4.11E+02	1.75E-01	2.76E+02	9.02E-04
MHCS-100-W1 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	2.53E+03	3.63E+03	NA	NA	NA	NA	2.86E-02	1.28E+03	3.66E+01	9.68E-03	1.35E+02	2.63E-01	4.11E+02	1.75E-01	2.76E+02	9.51E-04
MHCS-100-W25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	3.49E+02	4.99E+02	NA	NA	NA	NA	2.86E-02	1.76E+02	5.04E+00	9.68E-03	1.35E+02	3.61E-02	4.11E+02	1.75E-01	2.76E+02	1.31E-04
MHCS-200-E10 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	1.84E+03	2.64E+03	NA	NA	NA	NA	2.86E-02	9.29E+02	2.66E+01	9.68E-03	1.35E+02	1.91E-01	4.11E+02	1.75E-01	2.76E+02	6.91E-04
MHCS-200-E25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	4.01E+02	5.74E+02	NA	NA	NA	NA	2.86E-02	2.02E+02	5.79E+00	9.68E-03	1.35E+02	4.15E-02	4.11E+02	1.75E-01	2.76E+02	1.50E-04
MHCS-200-W10 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	5.33E+02	7.64E+02	NA	NA	NA	NA	2.86E-02	2.69E+02	7.71E+00	9.68E-03	1.35E+02	5.53E-02	4.11E+02	1.75E-01	2.76E+02	2.00E-04
MHCS-525-E5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	4.93E+03	7.06E+03	NA	NA	NA	NA	2.86E-02	2.49E+03	7.13E+01	9.68E-03	1.35E+02	5.11E-01	4.11E+02	1.75E-01	2.76E+02	1.85E-03
MHCS-525-W15 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	4.66E+03	6.67E+03	NA	NA	NA	NA	2.86E-02	2.35E+03	6.73E+01	9.68E-03	1.35E+02	4.83E-01	4.11E+02	1.75E-01	2.76E+02	1.75E-03
MHCS-600-E10 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	2.16E+03	3.09E+03	NA	NA	NA	NA	2.86E-02	1.09E+03	3.12E+01	9.68E-03	1.35E+02	2.24E-01	4.11E+02	1.75E-01	2.76E+02	8.10E-04
MHCS-600-W10 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	6.35E+03	9.09E+03	NA	NA	NA	NA	2.86E-02	3.21E+03	9.18E+01	9.68E-03	1.35E+02	6.58E-01	4.11E+02	1.75E-01	2.76E+02	2.38E-03
MHCS-700-E10 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	2.72E+03	3.90E+03	NA	NA	NA	NA	2.86E-02	1.37E+03	3.93E+01	9.68E-03	1.35E+02	2.82E-01	4.11E+02	1.75E-01	2.76E+02	1.02E-03
MHCS-700-E25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	5.10E+02	7.31E+02	NA	NA	NA	NA	2.86E-02	2.58E+02	7.37E+00	9.68E-03	1.35E+02	5.29E-02	4.11E+02	1.75E-01	2.76E+02	1.92E-04
MHCS-700-W10 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	3.07E+03	4.39E+03	NA	NA	NA	NA	2.86E-02	1.55E+03	4.44E+01	9.68E-03	1.35E+02	3.18E-01	4.11E+02	1.75E-01	2.76E+02	1.15E-03
MHCS-800-E15 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	3.21E+02	4.59E+02	NA	NA	NA	NA	2.86E-02	1.62E+02	4.63E+00	9.68E-03	1.35E+02	3.32E-02	4.11E+02	1.75E-01	2.76E+02	1.20E-04
MHCS-800-E5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	3.23E+03	4.62E+03	NA	NA	NA	NA	2.86E-02	1.63E+03	4.66E+01	9.68E-03	1.35E+02	3.34E-01	4.11E+02	1.75E-01	2.76E+02	1.21E-03
MHCS-800-W5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	1.26E+03	1.81E+03	NA	NA	NA	NA	2.86E-02	6.37E+02	1.82E+01	9.68E-03	1.35E+02	1.31E-01	4.11E+02	1.75E-01	2.76E+02	4.74E-04
MHCS-900-E15 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	6.11E+02	8.75E+02	NA	NA	NA	NA	2.86E-02	3.09E+02	8.84E+00	9.68E-03	1.35E+02	6.34E-02	4.11E+02	1.75E-01	2.76E+02	2.30E-04
MHCS-900-E5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	2.79E+03	3.99E+03	NA	NA	NA	NA	2.86E-02	1.41E+03	4.03E+01	9.68E-03	1.35E+02	2.89E-01	4.11E+02	1.75E-01	2.76E+02	1.05E-03
MHCS-900-W5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	1.08E+03	1.54E+03	NA	NA	NA	NA	2.86E-02	5.44E+02	1.56E+01	9.68E-03	1.35E+02	1.12E-01	4.11E+02	1.75E-01	2.76E+02	4.05E-04
MHCS-1000-E10 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	1.23E+03	1.75E+03	NA	NA	NA	NA	2.86E-02	6.19E+02	1.77E+01	9.68E-03	1.35E+02	1.27E-01	4.11E+02	1.75E-01	2.76E+02	4.60E-04
MHCS-1000-W5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	5.44E+03	7.79E+03	NA	NA	NA	NA	2.86E-02	2.75E+03	7.86E+01	9.68E-03	1.35E+02	5.64E-01	4.11E+02	1.75E-01	2.76E+02	2.04E-03
MHCS-1100-E10 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	1.86E+03	2.67E+03	NA	NA	NA	NA	2.86E-02	9.40E+02	2.69E+01	9.68E-03	1.35E+02	1.93E-01	4.11E+02	1.75E-01	2.76E+02	6.99E-04
MHCS-1100-E35 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	3.16E+02	4.52E+02	NA	NA	NA	NA	2.86E-02	1.59E+02	4.56E+00	9.68E-03	1.35E+02	3.27E-02	4.11E+02	1.75E-01	2.76E+02	1.19E-04
MHCS-1200-E15 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	1.49E+03	2.14E+03	NA	NA	NA	NA	2.86E-02	7.54E+02	2.16E+01	9.68E-03	1.35E+02	1.55E-01	4.11E+02	1.75E-01	2.76E+02	5.61E-04
MHCS-1200-E30 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	4.01E+02	5.74E+02	NA	NA	NA	NA	2.86E-02	2.02E+02	5.79E+00	9.68E-03	1.35E+02	4.16E-02	4.11E+02	1.75E-01	2.76E+02	1.51E-04
MHCS-1300-E20 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	2.83E+03	4.05E+03	NA	NA	NA	NA	2.86E-02	1.43E+03	4.09E+01	9.68E-03	1.35E+02	2.93E-01	4.11E+02	1.75E-01	2.76E+02	1.06E-03
MHCS-1300-E35 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	7.96E+02	1.14E+03	NA	NA	NA	NA	2.86E-02	4.02E+02	1.15E+01	9.68E-03	1.35E+02	8.25E-02	4.11E+02	1.75E-01	2.76E+02	2.99E-04
Waste Areas 1 and 2																						**Maximum HQ (Mike Horse Creek Channel Area Deposits)**	**2.38E-03**
UMH1-00 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	1.78E+03	2.55E+03	NA	NA	NA	NA	2.86E-02	8.97E+02	2.57E+01	9.68E-03	1.35E+02	1.84E-01	4.11E+02	1.75E-01	2.76E+02	6.68E-04
UMH1-100 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	3.29E+03	4.71E+03	NA	NA	NA	NA	2.86E-02	1.66E+03	4.75E+01	9.68E-03	1.35E+02	3.41E-01	4.11E+02	1.75E-01	2.76E+02	1.23E-03
UMH1-150 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	1.58E+03	2.26E+03	NA	NA	NA	NA	2.86E-02	7.96E+02	2.28E+01	9.68E-03	1.35E+02	1.63E-01	4.11E+02	1.75E-01	2.76E+02	5.92E-04
UMH1-200 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	2.02E+02	2.89E+02	NA	NA	NA	NA	2.86E-02	1.02E+02	2.91E+00	9.68E-03	1.35E+02	2.09E-02	4.11E+02	1.75E-01	2.76E+02	7.57E-05
UMH1-250 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	1.91E+03	2.74E+03	NA	NA	NA	NA	2.86E-02	9.66E+02	2.77E+01	9.68E-03	1.35E+02	1.98E-01	4.11E+02	1.75E-01	2.76E+02	7.19E-04
UMH1-250+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	8.12E+02	1.16E+03	NA	NA	NA	NA	2.86E-02	4.10E+02	1.17E+01	9.68E-03	1.35E+02	8.42E-02	4.11E+02	1.75E-01	2.76E+02	3.05E-04
UMH1-300 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	2.90E+03	4.15E+03	NA	NA	NA	NA	2.86E-02	1.46E+03	4.19E+01	9.68E-03	1.35E+02	3.01E-01	4.11E+02	1.75E-01	2.76E+02	1.09E-03
UMH1-300+14 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	5.71E+02	8.18E+02	NA	NA	NA	NA	2.86E-02	2.88E+02	8.26E+00	9.68E-03	1.35E+02	5.92E-02	4.11E+02	1.75E-01	2.76E+02	2.15E-04
UMH1-350 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	3.02E+03	4.32E+03	NA	NA	NA	NA	2.86E-02	1.52E+03	4.36E+01	9.68E-03	1.35E+02	3.13E-01	4.11E+02	1.75E-01	2.76E+02	1.13E-03
UMH1-350+12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	9.45E+02	1.35E+03	NA	NA	NA	NA	2.86E-02	4.77E+02	1.37E+01	9.68E-03	1.35E+02	9.80E-02	4.11E+02	1.75E-01	2.76E+02	3.55E-04
UMH1-400 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	1.49E+03	2.14E+03	NA	NA	NA	NA	2.86E-02	7.54E+02	2.16E+01	9.68E-03	1.35E+02	1.55E-01	4.11E+02	1.75E-01	2.76E+02	5.61E-04
UMH1-400+12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	1.56E+03	2.23E+03	NA	NA	NA	NA	2.86E-02	7.87E+02	2.25E+01	9.68E-03	1.35E+02	1.62E-01	4.11E+02	1.75E-01	2.76E+02	5.86E-04
UMH1-450 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	1.54E+03	2.20E+03	NA	NA	NA	NA	2.86E-02	7.76E+02	2.22E+01	9.68E-03	1.35E+02	1.59E-01	4.11E+02	1.75E-01	2.76E+02	5.77E-04
UMH1-450+12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	1.53E+03	2.20E+03	NA	NA	NA	NA	2.86E-02	7.75E+02	2.22E+01	9.68E-03	1.35E+02	1.59E-01	4.11E+02	1.75E-01	2.76E+02	5.76E-04
UMH1-50 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	1.49E+03	2.14E+03	NA	NA	NA	NA	2.86E-02	7.54E+02	2.16E+01	9.68E-03	1.35E+02	1.55E-01	4.11E+02	1.75E-01	2.76E+02	5.61E-04
UMH1-Comp (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	2.76E+03	3.95E+03	NA	NA	NA	NA	2.86E-02	1.39E+03	3.98E+01	9.68E-03	1.35E+02	2.86E-01	4.11E+02	1.75E-01	2.76E+02	1.03E-03
UMH2-00 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	1.76E+03	2.52E+03	NA	NA	NA	NA	2.86E-02	8.88E+02	2.54E+01	9.68E-03	1.35E+02	1.82E-01	4.11E+02	1.75E-01	2.76E+02	6.61E-04

TABLE C-8F: ZINC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 8 - MIKE HORSE MINE WASTE PILES (Continued)
Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)
calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **1.73**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
White-Tailed Deer (Large Herbivorous Mammal - Terrestrial)																							
UMH2-00+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	7.59E+02	1.09E+03	NA	NA	NA	NA	2.86E-02	3.83E+02	1.10E+01	9.68E-03	1.35E+02	7.87E-02	4.11E+02	1.75E-01	2.76E+02	2.85E-04
UMH2-100 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	3.20E+03	4.58E+03	NA	NA	NA	NA	2.86E-02	1.62E+03	4.63E+01	9.68E-03	1.35E+02	3.32E-01	4.11E+02	1.75E-01	2.76E+02	1.20E-03
UMH2-100+35 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	8.17E+02	1.17E+03	NA	NA	NA	NA	2.86E-02	4.12E+02	1.18E+01	9.68E-03	1.35E+02	8.47E-02	4.11E+02	1.75E-01	2.76E+02	3.07E-04
UMH2-150 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	1.09E+03	1.56E+03	NA	NA	NA	NA	2.86E-02	5.50E+02	1.57E+01	9.68E-03	1.35E+02	1.13E-01	4.11E+02	1.75E-01	2.76E+02	4.09E-04
UMH2-150+60 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	3.13E+02	4.48E+02	NA	NA	NA	NA	2.86E-02	1.58E+02	4.52E+00	9.68E-03	1.35E+02	3.24E-02	4.11E+02	1.75E-01	2.76E+02	1.17E-04
UMH2-200 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	3.19E+03	4.57E+03	NA	NA	NA	NA	2.86E-02	1.61E+03	4.62E+01	9.68E-03	1.35E+02	3.31E-01	4.11E+02	1.75E-01	2.76E+02	1.20E-03
UMH2-200+85 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	5.40E+02	7.73E+02	NA	NA	NA	NA	2.86E-02	2.73E+02	7.81E+00	9.68E-03	1.35E+02	5.60E-02	4.11E+02	1.75E-01	2.76E+02	2.03E-04
UMH2-250 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	3.12E+03	4.46E+03	NA	NA	NA	NA	2.86E-02	1.57E+03	4.51E+01	9.68E-03	1.35E+02	3.23E-01	4.11E+02	1.75E-01	2.76E+02	1.17E-03
UMH2-250+75 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	7.69E+02	1.10E+03	NA	NA	NA	NA	2.86E-02	3.88E+02	1.11E+01	9.68E-03	1.35E+02	7.97E-02	4.11E+02	1.75E-01	2.76E+02	2.89E-04
UMH2-300 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	1.34E+03	1.92E+03	NA	NA	NA	NA	2.86E-02	6.78E+02	1.94E+01	9.68E-03	1.35E+02	1.39E-01	4.11E+02	1.75E-01	2.76E+02	5.04E-04
UMH2-300+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	2.31E+03	3.30E+03	NA	NA	NA	NA	2.86E-02	1.16E+03	3.33E+01	9.68E-03	1.35E+02	2.39E-01	4.11E+02	1.75E-01	2.76E+02	8.67E-04
UMH2-350 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	1.43E+03	2.04E+03	NA	NA	NA	NA	2.86E-02	7.21E+02	2.06E+01	9.68E-03	1.35E+02	1.48E-01	4.11E+02	1.75E-01	2.76E+02	5.36E-04
UMH2-350+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	2.35E+03	3.36E+03	NA	NA	NA	NA	2.86E-02	1.19E+03	3.39E+01	9.68E-03	1.35E+02	2.43E-01	4.11E+02	1.75E-01	2.76E+02	8.82E-04
UMH2-400 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	5.90E+02	8.45E+02	NA	NA	NA	NA	2.86E-02	2.98E+02	8.52E+00	9.68E-03	1.35E+02	6.12E-02	4.11E+02	1.75E-01	2.76E+02	2.22E-04
UMH2-400+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	1.45E+03	2.08E+03	NA	NA	NA	NA	2.86E-02	7.33E+02	2.10E+01	9.68E-03	1.35E+02	1.51E-01	4.11E+02	1.75E-01	2.76E+02	5.45E-04
UMH2-450 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	7.88E+02	1.13E+03	NA	NA	NA	NA	2.86E-02	3.98E+02	1.14E+01	9.68E-03	1.35E+02	8.17E-02	4.11E+02	1.75E-01	2.76E+02	2.96E-04
UMH2-450+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	1.17E+03	1.68E+03	NA	NA	NA	NA	2.86E-02	5.92E+02	1.70E+01	9.68E-03	1.35E+02	1.22E-01	4.11E+02	1.75E-01	2.76E+02	4.41E-04
UMH2-50 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	9.07E+02	1.30E+03	NA	NA	NA	NA	2.86E-02	4.58E+02	1.31E+01	9.68E-03	1.35E+02	9.40E-02	4.11E+02	1.75E-01	2.76E+02	3.41E-04
UMH2-50+25b (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	7.35E+02	1.05E+03	NA	NA	NA	NA	2.86E-02	3.71E+02	1.06E+01	9.68E-03	1.35E+02	7.62E-02	4.11E+02	1.75E-01	2.76E+02	2.76E-04
UMH2-500 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	1.63E+03	2.34E+03	NA	NA	NA	NA	2.86E-02	8.23E+02	2.36E+01	9.68E-03	1.35E+02	1.69E-01	4.11E+02	1.75E-01	2.76E+02	6.13E-04
UMH2-500+75 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	1.21E+03	1.73E+03	NA	NA	NA	NA	2.86E-02	6.11E+02	1.75E+01	9.68E-03	1.35E+02	1.25E-01	4.11E+02	1.75E-01	2.76E+02	4.54E-04
UMH2-550 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	4.79E+03	6.86E+03	NA	NA	NA	NA	2.86E-02	2.42E+03	6.92E+01	9.68E-03	1.35E+02	4.97E-01	4.11E+02	1.75E-01	2.76E+02	1.80E-03
UMH2-550+75 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	7.80E+02	1.12E+03	NA	NA	NA	NA	2.86E-02	3.94E+02	1.13E+01	9.68E-03	1.35E+02	8.09E-02	4.11E+02	1.75E-01	2.76E+02	2.93E-04
UMH2-600 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	1.01E+03	1.45E+03	NA	NA	NA	NA	2.86E-02	5.11E+02	1.46E+01	9.68E-03	1.35E+02	1.05E-01	4.11E+02	1.75E-01	2.76E+02	3.80E-04
UMH2-600+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	7.48E+02	1.07E+03	NA	NA	NA	NA	2.86E-02	3.78E+02	1.08E+01	9.68E-03	1.35E+02	7.76E-02	4.11E+02	1.75E-01	2.76E+02	2.81E-04
UMH2-650 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	9.35E+02	1.34E+03	NA	NA	NA	NA	2.86E-02	4.72E+02	1.35E+01	9.68E-03	1.35E+02	9.70E-02	4.11E+02	1.75E-01	2.76E+02	3.51E-04
UMH2-650+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	8.33E+02	1.19E+03	NA	NA	NA	NA	2.86E-02	4.21E+02	1.20E+01	9.68E-03	1.35E+02	8.64E-02	4.11E+02	1.75E-01	2.76E+02	3.13E-04
UMH2-Comp 1 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	2.60E+03	3.72E+03	NA	NA	NA	NA	2.86E-02	1.31E+03	3.75E+01	9.68E-03	1.35E+02	2.69E-01	4.11E+02	1.75E-01	2.76E+02	9.75E-04
UMH2-Comp 2 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	2.65E+03	3.80E+03	NA	NA	NA	NA	2.86E-02	1.34E+03	3.84E+01	9.68E-03	1.35E+02	2.75E-01	4.11E+02	1.75E-01	2.76E+02	9.97E-04
Waste Area 3																						**Maximum HQ (Waste Areas 1 and 2)**	**1.80E-03**
UMH3-00 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	2.44E+02	3.49E+02	NA	NA	NA	NA	2.86E-02	1.23E+02	3.53E+00	9.68E-03	1.35E+02	2.53E-02	4.11E+02	1.75E-01	2.76E+02	9.16E-05
UMH3-100 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	4.59E+02	6.57E+02	NA	NA	NA	NA	2.86E-02	2.32E+02	6.63E+00	9.68E-03	1.35E+02	4.76E-02	4.11E+02	1.75E-01	2.76E+02	1.72E-04
UMH3-150 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	1.08E+03	1.55E+03	NA	NA	NA	NA	2.86E-02	5.47E+02	1.57E+01	9.68E-03	1.35E+02	1.12E-01	4.11E+02	1.75E-01	2.76E+02	4.07E-04
UMH3-200 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	8.67E+02	1.24E+03	NA	NA	NA	NA	2.86E-02	4.37E+02	1.25E+01	9.68E-03	1.35E+02	8.99E-02	4.11E+02	1.75E-01	2.76E+02	3.25E-04
UMH3-250 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	1.52E+03	2.18E+03	NA	NA	NA	NA	2.86E-02	7.67E+02	2.20E+01	9.68E-03	1.35E+02	1.58E-01	4.11E+02	1.75E-01	2.76E+02	5.71E-04
UMH3-300 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	3.94E+02	5.64E+02	NA	NA	NA	NA	2.86E-02	1.99E+02	5.69E+00	9.68E-03	1.35E+02	4.08E-02	4.11E+02	1.75E-01	2.76E+02	1.48E-04
UMH3-350 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	1.99E+03	2.84E+03	NA	NA	NA	NA	2.86E-02	1.00E+03	2.87E+01	9.68E-03	1.35E+02	2.06E-01	4.11E+02	1.75E-01	2.76E+02	7.45E-04
UMH3-350+75 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	6.09E+02	8.72E+02	NA	NA	NA	NA	2.86E-02	3.08E+02	8.80E+00	9.68E-03	1.35E+02	6.32E-02	4.11E+02	1.75E-01	2.76E+02	2.29E-04
UMH3-400 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	1.30E+03	1.86E+03	NA	NA	NA	NA	2.86E-02	6.56E+02	1.88E+01	9.68E-03	1.35E+02	1.35E-01	4.11E+02	1.75E-01	2.76E+02	4.88E-04
UMH3-400+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	5.36E+02	7.68E+02	NA	NA	NA	NA	2.86E-02	2.71E+02	7.75E+00	9.68E-03	1.35E+02	5.56E-02	4.11E+02	1.75E-01	2.76E+02	2.01E-04
UMH3-450 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	3.01E+02	4.31E+02	NA	NA	NA	NA	2.86E-02	1.52E+02	4.35E+00	9.68E-03	1.35E+02	3.12E-02	4.11E+02	1.75E-01	2.76E+02	1.13E-04
UMH3-50 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	7.42E+02	1.06E+03	NA	NA	NA	NA	2.86E-02	3.75E+02	1.07E+01	9.68E-03	1.35E+02	7.69E-02	4.11E+02	1.75E-01	2.76E+02	2.79E-04
UMH3-50+50 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	8.47E+02	1.21E+03	NA	NA	NA	NA	2.86E-02	4.28E+02	1.22E+01	9.68E-03	1.35E+02	8.78E-02	4.11E+02	1.75E-01	2.76E+02	3.18E-04
UMH3-500 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	7.48E+02	1.07E+03	NA	NA	NA	NA	2.86E-02	3.77E+02	1.08E+01	9.68E-03	1.35E+02	7.75E-02	4.11E+02	1.75E-01	2.76E+02	2.81E-04
UMH3-550 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	1.98E+03	2.84E+03	NA	NA	NA	NA	2.86E-02	1.00E+03	2.87E+01	9.68E-03	1.35E+02	2.06E-01	4.11E+02	1.75E-01	2.76E+02	7.45E-04
UMH3-600 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	1.88E+03	2.69E+03	NA	NA	NA	NA	2.86E-02	9.48E+02	2.71E+01	9.68E-03	1.35E+02	1.95E-01	4.11E+02	1.75E-01	2.76E+02	7.05E-04
UMH3-650 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	1.72E+03	2.47E+03	NA	NA	NA	NA	2.86E-02	8.69E+02	2.49E+01	9.68E-03	1.35E+02	1.79E-01	4.11E+02	1.75E-01	2.76E+02	6.47E-04
UMH3-700 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	1.29E+03	1.84E+03	NA	NA	NA	NA	2.86E-02	6.50E+02	1.86E+01	9.68E-03	1.35E+02	1.33E-01	4.11E+02	1.75E-01	2.76E+02	4.83E-04
UMH3-750 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	5.65E+02	8.09E+02	NA	NA	NA	NA	2.86E-02	2.85E+02	8.16E+00	9.68E-03	1.35E+02	5.86E-02	4.11E+02	1.75E-01	2.76E+02	2.12E-04
UMH3-800 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	5.89E+02	8.43E+02	NA	NA	NA	NA	2.86E-02	2.97E+02	8.51E+00	9.68E-03	1.35E+02	6.10E-02	4.11E+02	1.75E-01	2.76E+02	2.21E-04
UMH3-Comp 1 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	3.92E+02	5.61E+02	NA	NA	NA	NA	2.86E-02	1.98E+02	5.66E+00	9.68E-03	1.35E+02	4.06E-02	4.11E+02	1.75E-01	2.76E+02	1.47E-04
UMH3-Comp 2 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	1.53E+03	2.19E+03	NA	NA	NA	NA	2.86E-02	7.73E+02	2.21E+01	9.68E-03	1.35E+02	1.59E-01	4.11E+02	1.75E-01	2.76E+02	5.75E-04
UMH3-Comp 3 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	4.45E+03	6.37E+03	NA	NA	NA	NA	2.86E-02	2.25E+03	6.43E+01	9.68E-03	1.35E+02	4.61E-01	4.11E+02	1.75E-01	2.76E+02	1.67E-03
																						Maximum HQ (Waste Area 3)	**1.67E-03**

TABLE C-8F: ZINC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 8 - MIKE HORSE MINE WASTE PILES (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **1.73**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Red Fox (Carnivorous Mammal - Terrestrial)																							
Reference Sites																							
BCBG-1 (0-6")	1.72E-01	1.72E-01	1.03E+01	3.08E+03	5.28E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.97E+02	1.43E+00	1.28E-03	4.54E+00	1.49E-01	4.11E+02	1.75E-01	3.38E+02	4.41E-04
MHBG-201 (0-6")	1.72E-01	1.72E-01	1.03E+01	5.41E+02	9.28E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.23E+01	2.51E-01	1.28E-03	4.54E+00	2.62E-02	4.11E+02	1.75E-01	3.38E+02	7.75E-05
MHBG-202 (0-6")	1.72E-01	1.72E-01	1.03E+01	5.01E+02	8.59E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.84E+01	2.32E-01	1.28E-03	4.54E+00	2.43E-02	4.11E+02	1.75E-01	3.38E+02	7.17E-05
Mike Horse Creek Channel Area Deposits																						**Minimum HQ (Reference Site)**	**7.17E-05**
AMHR-0 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.28E+03	2.20E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.04E+02	9.78E-01	1.28E-03	4.54E+00	6.22E-02	4.11E+02	1.75E-01	3.38E+02	1.84E-04
AMHR-200 (0-6")	1.72E-01	1.72E-01	6.30E+00	8.47E+02	1.45E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.34E+02	6.46E-01	1.28E-03	4.54E+00	4.11E-02	4.11E+02	1.75E-01	3.38E+02	1.21E-04
AMHR-400 (0-6")	1.72E-01	1.72E-01	6.30E+00	3.51E+03	6.03E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.58E+02	2.68E+00	1.28E-03	4.54E+00	1.71E-01	4.11E+02	1.75E-01	3.38E+02	5.04E-04
AMHR-600 (0-6")	1.72E-01	1.72E-01	6.30E+00	4.26E+03	7.31E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	6.77E+02	3.25E+00	1.28E-03	4.54E+00	2.07E-01	4.11E+02	1.75E-01	3.38E+02	6.11E-04
MHCS-00-E25 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.15E+04	1.98E+03	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.83E+03	8.80E+00	1.28E-03	4.54E+00	5.60E-01	4.11E+02	1.75E-01	3.38E+02	1.65E-03
MHCS-0-W25 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.55E+03	2.66E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.46E+02	1.18E+00	1.28E-03	4.54E+00	7.52E-02	4.11E+02	1.75E-01	3.38E+02	2.22E-04
MHCS-0-W5 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.49E+03	2.55E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.37E+02	1.14E+00	1.28E-03	4.54E+00	7.23E-02	4.11E+02	1.75E-01	3.38E+02	2.14E-04
MHCS-100-E25 (0-6")	1.72E-01	1.72E-01	6.30E+00	7.63E+03	1.31E+03	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.21E+03	5.82E+00	1.28E-03	4.54E+00	3.70E-01	4.11E+02	1.75E-01	3.38E+02	1.09E-03
MHCS-100-W1 (0-6")	1.72E-01	1.72E-01	6.30E+00	8.05E+03	1.38E+03	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.28E+03	6.14E+00	1.28E-03	4.54E+00	3.91E-01	4.11E+02	1.75E-01	3.38E+02	1.15E-03
MHCS-100-W25 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.11E+03	1.90E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.76E+02	8.45E-01	1.28E-03	4.54E+00	5.38E-02	4.11E+02	1.75E-01	3.38E+02	1.59E-04
MHCS-200-E10 (0-6")	1.72E-01	1.72E-01	6.30E+00	5.85E+03	1.00E+03	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	9.29E+02	4.46E+00	1.28E-03	4.54E+00	2.84E-01	4.11E+02	1.75E-01	3.38E+02	8.39E-04
MHCS-200-E25 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.27E+03	2.18E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.02E+02	9.72E-01	1.28E-03	4.54E+00	6.18E-02	4.11E+02	1.75E-01	3.38E+02	1.83E-04
MHCS-200-W10 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.70E+03	2.91E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.69E+02	1.29E+00	1.28E-03	4.54E+00	8.23E-02	4.11E+02	1.75E-01	3.38E+02	2.43E-04
MHCS-525-E5 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.57E+04	2.69E+03	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.49E+03	1.20E+01	1.28E-03	4.54E+00	7.61E-01	4.11E+02	1.75E-01	3.38E+02	2.25E-03
MHCS-525-W15 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.48E+04	2.54E+03	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.35E+03	1.13E+01	1.28E-03	4.54E+00	7.19E-01	4.11E+02	1.75E-01	3.38E+02	2.12E-03
MHCS-600-E10 (0-6")	1.72E-01	1.72E-01	6.30E+00	6.86E+03	1.18E+03	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.09E+03	5.23E+00	1.28E-03	4.54E+00	3.33E-01	4.11E+02	1.75E-01	3.38E+02	9.84E-04
MHCS-600-W10 (0-6")	1.72E-01	1.72E-01	6.30E+00	2.02E+04	3.46E+03	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.21E+03	1.54E+01	1.28E-03	4.54E+00	9.80E-01	4.11E+02	1.75E-01	3.38E+02	2.90E-03
MHCS-700-E10 (0-6")	1.72E-01	1.72E-01	6.30E+00	8.65E+03	1.48E+03	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.37E+03	6.60E+00	1.28E-03	4.54E+00	4.20E-01	4.11E+02	1.75E-01	3.38E+02	1.24E-03
MHCS-700-E25 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.62E+03	2.78E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.58E+02	1.24E+00	1.28E-03	4.54E+00	7.87E-02	4.11E+02	1.75E-01	3.38E+02	2.33E-04
MHCS-700-W10 (0-6")	1.72E-01	1.72E-01	6.30E+00	9.75E+03	1.67E+03	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.55E+03	7.44E+00	1.28E-03	4.54E+00	4.74E-01	4.11E+02	1.75E-01	3.38E+02	1.40E-03
MHCS-800-E15 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.02E+03	1.75E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.62E+02	7.77E-01	1.28E-03	4.54E+00	4.95E-02	4.11E+02	1.75E-01	3.38E+02	1.46E-04
MHCS-800-E5 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.03E+04	1.76E+03	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.63E+03	7.82E+00	1.28E-03	4.54E+00	4.98E-01	4.11E+02	1.75E-01	3.38E+02	1.47E-03
MHCS-800-W5 (0-6")	1.72E-01	1.72E-01	6.30E+00	4.01E+03	6.88E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	6.37E+02	3.06E+00	1.28E-03	4.54E+00	1.95E-01	4.11E+02	1.75E-01	3.38E+02	5.75E-04
MHCS-900-E15 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.94E+03	3.33E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.09E+02	1.48E+00	1.28E-03	4.54E+00	9.43E-02	4.11E+02	1.75E-01	3.38E+02	2.79E-04
MHCS-900-E5 (0-6")	1.72E-01	1.72E-01	6.30E+00	8.86E+03	1.52E+03	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.41E+03	6.76E+00	1.28E-03	4.54E+00	4.30E-01	4.11E+02	1.75E-01	3.38E+02	1.27E-03
MHCS-900-W5 (0-6")	1.72E-01	1.72E-01	6.30E+00	3.42E+03	5.87E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.44E+02	2.61E+00	1.28E-03	4.54E+00	1.66E-01	4.11E+02	1.75E-01	3.38E+02	4.91E-04
MHCS-1000-E10 (0-6")	1.72E-01	1.72E-01	6.30E+00	3.89E+03	6.68E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	6.19E+02	2.97E+00	1.28E-03	4.54E+00	1.89E-01	4.11E+02	1.75E-01	3.38E+02	5.59E-04
MHCS-1000-W5 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.73E+04	2.97E+03	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.75E+03	1.32E+01	1.28E-03	4.54E+00	8.39E-01	4.11E+02	1.75E-01	3.38E+02	2.48E-03
MHCS-1100-E10 (0-6")	1.72E-01	1.72E-01	6.30E+00	5.92E+03	1.02E+03	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	9.40E+02	4.51E+00	1.28E-03	4.54E+00	2.87E-01	4.11E+02	1.75E-01	3.38E+02	8.49E-04
MHCS-1100-E35 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.00E+03	1.72E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.59E+02	7.65E-01	1.28E-03	4.54E+00	4.87E-02	4.11E+02	1.75E-01	3.38E+02	1.44E-04
MHCS-1200-E15 (0-6")	1.72E-01	1.72E-01	6.30E+00	4.75E+03	8.15E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	7.54E+02	3.62E+00	1.28E-03	4.54E+00	2.31E-01	4.11E+02	1.75E-01	3.38E+02	6.81E-04
MHCS-1200-E30 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.27E+03	2.19E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.02E+02	9.72E-01	1.28E-03	4.54E+00	6.18E-02	4.11E+02	1.75E-01	3.38E+02	1.83E-04
MHCS-1300-E20 (0-6")	1.72E-01	1.72E-01	6.30E+00	9.00E+03	1.54E+03	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.43E+03	6.86E+00	1.28E-03	4.54E+00	4.37E-01	4.11E+02	1.75E-01	3.38E+02	1.29E-03
MHCS-1300-E35 (0-6")	1.72E-01	1.72E-01	6.30E+00	2.53E+03	4.34E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.02E+02	1.93E+00	1.28E-03	4.54E+00	1.23E-01	4.11E+02	1.75E-01	3.38E+02	3.63E-04
Waste Areas 1 and 2																						**Maximum HQ (Mike Horse Creek Channel Area Deposits)**	**2.90E-03**
UMH1-00 (0-6")	1.72E-01	1.72E-01	6.30E+00	5.65E+03	9.69E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	8.97E+02	4.31E+00	1.28E-03	4.54E+00	2.74E-01	4.11E+02	1.75E-01	3.38E+02	8.11E-04
UMH1-100 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.04E+04	1.79E+03	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.66E+03	7.97E+00	1.28E-03	4.54E+00	5.07E-01	4.11E+02	1.75E-01	3.38E+02	1.50E-03
UMH1-150 (0-6")	1.72E-01	1.72E-01	6.30E+00	5.01E+03	8.60E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	7.96E+02	3.82E+00	1.28E-03	4.54E+00	2.43E-01	4.11E+02	1.75E-01	3.38E+02	7.19E-04
UMH1-200 (0-6")	1.72E-01	1.72E-01	6.30E+00	6.41E+02	1.10E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.02E+02	4.89E-01	1.28E-03	4.54E+00	3.11E-02	4.11E+02	1.75E-01	3.38E+02	9.19E-05
UMH1-250 (0-6")	1.72E-01	1.72E-01	6.30E+00	6.08E+03	1.04E+03	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	9.66E+02	4.64E+00	1.28E-03	4.54E+00	2.95E-01	4.11E+02	1.75E-01	3.38E+02	8.72E-04
UMH1-250+25 (0-6")	1.72E-01	1.72E-01	6.30E+00	2.58E+03	4.43E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.10E+02	1.97E+00	1.28E-03	4.54E+00	1.25E-01	4.11E+02	1.75E-01	3.38E+02	3.70E-04
UMH1-300 (0-6")	1.72E-01	1.72E-01	6.30E+00	9.22E+03	1.58E+03	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.46E+03	7.03E+00	1.28E-03	4.54E+00	4.47E-01	4.11E+02	1.75E-01	3.38E+02	1.32E-03
UMH1-300+14 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.82E+03	3.12E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.88E+02	1.39E+00	1.28E-03	4.54E+00	8.82E-02	4.11E+02	1.75E-01	3.38E+02	2.60E-04
UMH1-350 (0-6")	1.72E-01	1.72E-01	6.30E+00	9.58E+03	1.64E+03	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.52E+03	7.31E+00	1.28E-03	4.54E+00	4.65E-01	4.11E+02	1.75E-01	3.38E+02	1.37E-03
UMH1-350+12.5 (0-6")	1.72E-01	1.72E-01	6.30E+00	3.00E+03	5.15E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.77E+02	2.29E+00	1.28E-03	4.54E+00	1.46E-01	4.11E+02	1.75E-01	3.38E+02	4.31E-04
UMH1-400 (0-6")	1.72E-01	1.72E-01	6.30E+00	4.75E+03	8.15E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	7.54E+02	3.62E+00	1.28E-03	4.54E+00	2.31E-01	4.11E+02	1.75E-01	3.38E+02	6.81E-04
UMH1-400+12.5 (0-6")	1.72E-01	1.72E-01	6.30E+00	4.96E+03	8.50E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	7.87E+02	3.78E+00	1.28E-03	4.54E+00	2.41E-01	4.11E+02	1.75E-01	3.38E+02	7.11E-04
UMH1-450 (0-6")	1.72E-01	1.72E-01	6.30E+00	4.88E+03	8.38E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	7.76E+02	3.73E+00	1.28E-03	4.54E+00	2.37E-01	4.11E+02	1.75E-01	3.38E+02	7.01E-04
UMH1-450+12.5 (0-6")	1.72E-01	1.72E-01	6.30E+00	4.88E+03	8.37E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	7.75E+02	3.72E+00	1.28E-03	4.54E+00	2.37E-01	4.11E+02	1.75E-01	3.38E+02	7.00E-04
UMH1-50 (0-6")	1.72E-01	1.72E-01	6.30E+00	4.75E+03	8.14E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	7.54E+02	3.62E+00	1.28E-03	4.54E+00	2.30E-01	4.11E+02	1.75E-01	3.38E+02	6.81E-04
UMH1-Comp (0-6")	1.72E-01	1.72E-01	6.30E+00	8.76E+03	1.50E+03	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.39E+03	6.68E+00	1.28E-03	4.54E+00	4.25E-01	4.11E+02	1.75E-01	3.38E+02	1.26E-03
UMH2-00 (0-6")	1.72E-01	1.72E-01	6.30E+00	5.59E+03	9.59E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	8.88E+02	4.26E+00	1.28E-03	4.54E+00	2.71E-01	4.11E+02	1.75E-01	3.38E+02	8.02E-04

TABLE C-8F: ZINC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 8 - MIKE HORSE MINE WASTE PILES (Continued)
Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)
calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **1.73**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Red Fox (Carnivorous Mammal - Terrestrial)																							
UMH2-00+25 (0-6")	1.72E-01	1.72E-01	6.30E+00	2.41E+03	4.14E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.83E+02	1.84E+00	1.28E-03	4.54E+00	1.17E-01	4.11E+02	1.75E-01	3.38E+02	3.46E-04
UMH2-100 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.02E+04	1.74E+03	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.62E+03	7.76E+00	1.28E-03	4.54E+00	4.94E-01	4.11E+02	1.75E-01	3.38E+02	1.46E-03
UMH2-100+35 (0-6")	1.72E-01	1.72E-01	6.30E+00	2.60E+03	4.45E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.12E+02	1.98E+00	1.28E-03	4.54E+00	1.26E-01	4.11E+02	1.75E-01	3.38E+02	3.72E-04
UMH2-150 (0-6")	1.72E-01	1.72E-01	6.30E+00	3.46E+03	5.94E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.50E+02	2.64E+00	1.28E-03	4.54E+00	1.68E-01	4.11E+02	1.75E-01	3.38E+02	4.96E-04
UMH2-150+60 (0-6")	1.72E-01	1.72E-01	6.30E+00	9.94E+02	1.70E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.58E+02	7.58E-01	1.28E-03	4.54E+00	4.82E-02	4.11E+02	1.75E-01	3.38E+02	1.43E-04
UMH2-200 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.01E+04	1.74E+03	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.61E+03	7.74E+00	1.28E-03	4.54E+00	4.93E-01	4.11E+02	1.75E-01	3.38E+02	1.46E-03
UMH2-200+85 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.72E+03	2.94E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.73E+02	1.31E+00	1.28E-03	4.54E+00	8.33E-02	4.11E+02	1.75E-01	3.38E+02	2.46E-04
UMH2-250 (0-6")	1.72E-01	1.72E-01	6.30E+00	9.91E+03	1.70E+03	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.57E+03	7.56E+00	1.28E-03	4.54E+00	4.81E-01	4.11E+02	1.75E-01	3.38E+02	1.42E-03
UMH2-250+75 (0-6")	1.72E-01	1.72E-01	6.30E+00	2.44E+03	4.19E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.88E+02	1.86E+00	1.28E-03	4.54E+00	1.19E-01	4.11E+02	1.75E-01	3.38E+02	3.50E-04
UMH2-300 (0-6")	1.72E-01	1.72E-01	6.30E+00	4.27E+03	7.32E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	6.78E+02	3.26E+00	1.28E-03	4.54E+00	2.07E-01	4.11E+02	1.75E-01	3.38E+02	6.12E-04
UMH2-300+25 (0-6")	1.72E-01	1.72E-01	6.30E+00	7.33E+03	1.26E+03	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.16E+03	5.59E+00	1.28E-03	4.54E+00	3.56E-01	4.11E+02	1.75E-01	3.38E+02	1.05E-03
UMH2-350 (0-6")	1.72E-01	1.72E-01	6.30E+00	4.54E+03	7.78E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	7.21E+02	3.46E+00	1.28E-03	4.54E+00	2.20E-01	4.11E+02	1.75E-01	3.38E+02	6.51E-04
UMH2-350+25 (0-6")	1.72E-01	1.72E-01	6.30E+00	7.46E+03	1.28E+03	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.19E+03	5.69E+00	1.28E-03	4.54E+00	3.62E-01	4.11E+02	1.75E-01	3.38E+02	1.07E-03
UMH2-400 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.87E+03	3.22E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.98E+02	1.43E+00	1.28E-03	4.54E+00	9.10E-02	4.11E+02	1.75E-01	3.38E+02	2.69E-04
UMH2-400+25 (0-6")	1.72E-01	1.72E-01	6.30E+00	4.61E+03	7.92E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	7.33E+02	3.52E+00	1.28E-03	4.54E+00	2.24E-01	4.11E+02	1.75E-01	3.38E+02	6.62E-04
UMH2-450 (0-6")	1.72E-01	1.72E-01	6.30E+00	2.50E+03	4.30E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.98E+02	1.91E+00	1.28E-03	4.54E+00	1.22E-01	4.11E+02	1.75E-01	3.38E+02	3.59E-04
UMH2-450+25 (0-6")	1.72E-01	1.72E-01	6.30E+00	3.73E+03	6.40E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.92E+02	2.84E+00	1.28E-03	4.54E+00	1.81E-01	4.11E+02	1.75E-01	3.38E+02	5.35E-04
UMH2-50 (0-6")	1.72E-01	1.72E-01	6.30E+00	2.88E+03	4.94E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.58E+02	2.20E+00	1.28E-03	4.54E+00	1.40E-01	4.11E+02	1.75E-01	3.38E+02	4.14E-04
UMH2-50+25b (0-6")	1.72E-01	1.72E-01	6.30E+00	2.33E+03	4.00E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.71E+02	1.78E+00	1.28E-03	4.54E+00	1.13E-01	4.11E+02	1.75E-01	3.38E+02	3.35E-04
UMH2-500 (0-6")	1.72E-01	1.72E-01	6.30E+00	5.18E+03	8.89E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	8.23E+02	3.95E+00	1.28E-03	4.54E+00	2.52E-01	4.11E+02	1.75E-01	3.38E+02	7.44E-04
UMH2-500+75 (0-6")	1.72E-01	1.72E-01	6.30E+00	3.85E+03	6.60E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	6.11E+02	2.93E+00	1.28E-03	4.54E+00	1.87E-01	4.11E+02	1.75E-01	3.38E+02	5.52E-04
UMH2-550 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.52E+04	2.61E+03	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.42E+03	1.16E+01	1.28E-03	4.54E+00	7.39E-01	4.11E+02	1.75E-01	3.38E+02	2.18E-03
UMH2-550+75 (0-6")	1.72E-01	1.72E-01	6.30E+00	2.48E+03	4.25E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.94E+02	1.89E+00	1.28E-03	4.54E+00	1.20E-01	4.11E+02	1.75E-01	3.38E+02	3.56E-04
UMH2-600 (0-6")	1.72E-01	1.72E-01	6.30E+00	3.21E+03	5.51E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.11E+02	2.45E+00	1.28E-03	4.54E+00	1.56E-01	4.11E+02	1.75E-01	3.38E+02	4.61E-04
UMH2-600+25 (0-6")	1.72E-01	1.72E-01	6.30E+00	2.38E+03	4.08E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.78E+02	1.81E+00	1.28E-03	4.54E+00	1.15E-01	4.11E+02	1.75E-01	3.38E+02	3.41E-04
UMH2-650 (0-6")	1.72E-01	1.72E-01	6.30E+00	2.97E+03	5.10E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.72E+02	2.27E+00	1.28E-03	4.54E+00	1.44E-01	4.11E+02	1.75E-01	3.38E+02	4.26E-04
UMH2-650+25 (0-6")	1.72E-01	1.72E-01	6.30E+00	2.65E+03	4.54E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.21E+02	2.02E+00	1.28E-03	4.54E+00	1.29E-01	4.11E+02	1.75E-01	3.38E+02	3.80E-04
UMH2-Comp 1 (0-6")	1.72E-01	1.72E-01	6.30E+00	8.25E+03	1.42E+03	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.31E+03	6.29E+00	1.28E-03	4.54E+00	4.01E-01	4.11E+02	1.75E-01	3.38E+02	1.18E-03
UMH2-Comp 2 (0-6")	1.72E-01	1.72E-01	6.30E+00	8.43E+03	1.45E+03	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.34E+03	6.43E+00	1.28E-03	4.54E+00	4.09E-01	4.11E+02	1.75E-01	3.38E+02	1.21E-03
Waste Area 3																						**Maximum HQ (Waste Areas 1 and 2)**	**2.18E-03**
UMH3-00 (0-6")	1.72E-01	1.72E-01	6.30E+00	7.75E+02	1.33E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.23E+02	5.92E-01	1.28E-03	4.54E+00	3.76E-02	4.11E+02	1.75E-01	3.38E+02	1.11E-04
UMH3-100 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.46E+03	2.50E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.32E+02	1.11E+00	1.28E-03	4.54E+00	7.08E-02	4.11E+02	1.75E-01	3.38E+02	2.09E-04
UMH3-150 (0-6")	1.72E-01	1.72E-01	6.30E+00	3.44E+03	5.91E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.47E+02	2.63E+00	1.28E-03	4.54E+00	1.67E-01	4.11E+02	1.75E-01	3.38E+02	4.94E-04
UMH3-200 (0-6")	1.72E-01	1.72E-01	6.30E+00	2.75E+03	4.72E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.37E+02	2.10E+00	1.28E-03	4.54E+00	1.34E-01	4.11E+02	1.75E-01	3.38E+02	3.95E-04
UMH3-250 (0-6")	1.72E-01	1.72E-01	6.30E+00	4.83E+03	8.28E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	7.67E+02	3.68E+00	1.28E-03	4.54E+00	2.34E-01	4.11E+02	1.75E-01	3.38E+02	6.93E-04
UMH3-300 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.25E+03	2.15E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.99E+02	9.55E-01	1.28E-03	4.54E+00	6.07E-02	4.11E+02	1.75E-01	3.38E+02	1.79E-04
UMH3-350 (0-6")	1.72E-01	1.72E-01	6.30E+00	6.31E+03	1.08E+03	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.00E+03	4.81E+00	1.28E-03	4.54E+00	3.06E-01	4.11E+02	1.75E-01	3.38E+02	9.05E-04
UMH3-350+75 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.94E+03	3.32E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.08E+02	1.48E+00	1.28E-03	4.54E+00	9.40E-02	4.11E+02	1.75E-01	3.38E+02	2.78E-04
UMH3-400 (0-6")	1.72E-01	1.72E-01	6.30E+00	4.13E+03	7.09E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	6.56E+02	3.15E+00	1.28E-03	4.54E+00	2.01E-01	4.11E+02	1.75E-01	3.38E+02	5.93E-04
UMH3-400+25 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.70E+03	2.92E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.71E+02	1.30E+00	1.28E-03	4.54E+00	8.27E-02	4.11E+02	1.75E-01	3.38E+02	2.44E-04
UMH3-450 (0-6")	1.72E-01	1.72E-01	6.30E+00	9.56E+02	1.64E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.52E+02	7.29E-01	1.28E-03	4.54E+00	4.64E-02	4.11E+02	1.75E-01	3.38E+02	1.37E-04
UMH3-50 (0-6")	1.72E-01	1.72E-01	6.30E+00	2.36E+03	4.05E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.75E+02	1.80E+00	1.28E-03	4.54E+00	1.14E-01	4.11E+02	1.75E-01	3.38E+02	3.38E-04
UMH3-50+50 (0-6")	1.72E-01	1.72E-01	6.30E+00	2.69E+03	4.62E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.28E+02	2.05E+00	1.28E-03	4.54E+00	1.31E-01	4.11E+02	1.75E-01	3.38E+02	3.86E-04
UMH3-500 (0-6")	1.72E-01	1.72E-01	6.30E+00	2.38E+03	4.08E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.77E+02	1.81E+00	1.28E-03	4.54E+00	1.15E-01	4.11E+02	1.75E-01	3.38E+02	3.41E-04
UMH3-550 (0-6")	1.72E-01	1.72E-01	6.30E+00	6.30E+03	1.08E+03	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.00E+03	4.81E+00	1.28E-03	4.54E+00	3.06E-01	4.11E+02	1.75E-01	3.38E+02	9.04E-04
UMH3-600 (0-6")	1.72E-01	1.72E-01	6.30E+00	5.97E+03	1.02E+03	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	9.48E+02	4.55E+00	1.28E-03	4.54E+00	2.90E-01	4.11E+02	1.75E-01	3.38E+02	8.56E-04
UMH3-650 (0-6")	1.72E-01	1.72E-01	6.30E+00	5.47E+03	9.39E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	8.69E+02	4.18E+00	1.28E-03	4.54E+00	2.66E-01	4.11E+02	1.75E-01	3.38E+02	7.85E-04
UMH3-700 (0-6")	1.72E-01	1.72E-01	6.30E+00	4.09E+03	7.02E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	6.50E+02	3.12E+00	1.28E-03	4.54E+00	1.99E-01	4.11E+02	1.75E-01	3.38E+02	5.87E-04
UMH3-750 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.80E+03	3.08E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.85E+02	1.37E+00	1.28E-03	4.54E+00	8.72E-02	4.11E+02	1.75E-01	3.38E+02	2.58E-04
UMH3-800 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.87E+03	3.21E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.97E+02	1.43E+00	1.28E-03	4.54E+00	9.08E-02	4.11E+02	1.75E-01	3.38E+02	2.68E-04
UMH3-Comp 1 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.24E+03	2.13E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.98E+02	9.49E-01	1.28E-03	4.54E+00	6.04E-02	4.11E+02	1.75E-01	3.38E+02	1.78E-04
UMH3-Comp 2 (0-6")	1.72E-01	1.72E-01	6.30E+00	4.87E+03	8.35E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	7.73E+02	3.71E+00	1.28E-03	4.54E+00	2.36E-01	4.11E+02	1.75E-01	3.38E+02	6.98E-04
UMH3-Comp 3 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.41E+04	2.43E+03	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.25E+03	1.08E+01	1.28E-03	4.54E+00	6.87E-01	4.11E+02	1.75E-01	3.38E+02	2.03E-03
																						Maximum HQ (Waste Area 3)	**2.03E-03**

TABLE C-8F: ZINC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 8 - MIKE HORSE MINE WASTE PILES (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **1.73**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Masked Shrew (Omnivorous Mammal - Terrestrial, Wetland)																							
Reference Sites																							
BCBG-1 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	8.31E+00	2.47E+03	2.09E+01	1.10E-03	2.97E+02	3.27E-01	1.00E+00	5.50E-03	3.87E+03	4.11E+02	1.75E-01	5.06E+02	7.64E+00
MHBG-201 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	8.31E+00	4.35E+02	3.68E+00	1.10E-03	5.23E+01	5.76E-02	1.00E+00	5.50E-03	6.80E+02	4.11E+02	1.75E-01	5.06E+02	1.34E+00
MHBG-202 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	8.31E+00	4.02E+02	3.41E+00	1.10E-03	4.84E+01	5.33E-02	1.00E+00	5.50E-03	6.29E+02	4.11E+02	1.75E-01	5.06E+02	1.24E+00
Mike Horse Creek Channel Area Deposits																						**Minimum HQ (Reference Site)**	**1.24E+00**
AMHR-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	8.91E+02	7.55E+00	1.10E-03	2.04E+02	2.24E-01	1.00E+00	5.50E-03	1.41E+03	4.11E+02	1.75E-01	5.06E+02	2.79E+00
AMHR-200 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	5.89E+02	4.99E+00	1.10E-03	1.34E+02	1.48E-01	1.00E+00	5.50E-03	9.34E+02	4.11E+02	1.75E-01	5.06E+02	1.84E+00
AMHR-400 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	2.44E+03	2.07E+01	1.10E-03	5.58E+02	6.15E-01	1.00E+00	5.50E-03	3.88E+03	4.11E+02	1.75E-01	5.06E+02	7.66E+00
AMHR-600 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	2.96E+03	2.51E+01	1.10E-03	6.77E+02	7.45E-01	1.00E+00	5.50E-03	4.70E+03	4.11E+02	1.75E-01	5.06E+02	9.28E+00
MHCS-00-E25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	8.02E+03	6.79E+01	1.10E-03	1.83E+03	2.02E+00	1.00E+00	5.50E-03	1.27E+04	4.11E+02	1.75E-01	5.06E+02	2.51E+01
MHCS-0-W25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	1.08E+03	9.13E+00	1.10E-03	2.46E+02	2.71E-01	1.00E+00	5.50E-03	1.71E+03	4.11E+02	1.75E-01	5.06E+02	3.37E+00
MHCS-0-W5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	1.04E+03	8.77E+00	1.10E-03	2.37E+02	2.60E-01	1.00E+00	5.50E-03	1.64E+03	4.11E+02	1.75E-01	5.06E+02	3.24E+00
MHCS-100-E25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	5.31E+03	4.49E+01	1.10E-03	1.21E+03	1.33E+00	1.00E+00	5.50E-03	8.42E+03	4.11E+02	1.75E-01	5.06E+02	1.66E+01
MHCS-100-W1 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	5.60E+03	4.74E+01	1.10E-03	1.28E+03	1.41E+00	1.00E+00	5.50E-03	8.88E+03	4.11E+02	1.75E-01	5.06E+02	1.75E+01
MHCS-100-W25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	7.71E+02	6.53E+00	1.10E-03	1.76E+02	1.94E-01	1.00E+00	5.50E-03	1.22E+03	4.11E+02	1.75E-01	5.06E+02	2.41E+00
MHCS-200-E10 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	4.07E+03	3.45E+01	1.10E-03	9.29E+02	1.02E+00	1.00E+00	5.50E-03	6.45E+03	4.11E+02	1.75E-01	5.06E+02	1.27E+01
MHCS-200-E25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	8.86E+02	7.50E+00	1.10E-03	2.02E+02	2.23E-01	1.00E+00	5.50E-03	1.40E+03	4.11E+02	1.75E-01	5.06E+02	2.77E+00
MHCS-200-W10 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	1.18E+03	9.99E+00	1.10E-03	2.69E+02	2.96E-01	1.00E+00	5.50E-03	1.87E+03	4.11E+02	1.75E-01	5.06E+02	3.69E+00
MHCS-525-E5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	1.09E+04	9.23E+01	1.10E-03	2.49E+03	2.74E+00	1.00E+00	5.50E-03	1.73E+04	4.11E+02	1.75E-01	5.06E+02	3.41E+01
MHCS-525-W15 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	1.03E+04	8.72E+01	1.10E-03	2.35E+03	2.59E+00	1.00E+00	5.50E-03	1.63E+04	4.11E+02	1.75E-01	5.06E+02	3.22E+01
MHCS-600-E10 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	4.77E+03	4.04E+01	1.10E-03	1.09E+03	1.20E+00	1.00E+00	5.50E-03	7.56E+03	4.11E+02	1.75E-01	5.06E+02	1.49E+01
MHCS-600-W10 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	1.40E+04	1.19E+02	1.10E-03	3.21E+03	3.53E+00	1.00E+00	5.50E-03	2.23E+04	4.11E+02	1.75E-01	5.06E+02	4.40E+01
MHCS-700-E10 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	6.02E+03	5.10E+01	1.10E-03	1.37E+03	1.51E+00	1.00E+00	5.50E-03	9.54E+03	4.11E+02	1.75E-01	5.06E+02	1.88E+01
MHCS-700-E25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	1.13E+03	9.55E+00	1.10E-03	2.58E+02	2.84E-01	1.00E+00	5.50E-03	1.79E+03	4.11E+02	1.75E-01	5.06E+02	3.53E+00
MHCS-700-W10 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	6.78E+03	5.75E+01	1.10E-03	1.55E+03	1.71E+00	1.00E+00	5.50E-03	1.08E+04	4.11E+02	1.75E-01	5.06E+02	2.12E+01
MHCS-800-E15 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	7.08E+02	6.00E+00	1.10E-03	1.62E+02	1.78E-01	1.00E+00	5.50E-03	1.12E+03	4.11E+02	1.75E-01	5.06E+02	2.22E+00
MHCS-800-E5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	7.13E+03	6.04E+01	1.10E-03	1.63E+03	1.79E+00	1.00E+00	5.50E-03	1.13E+04	4.11E+02	1.75E-01	5.06E+02	2.23E+01
MHCS-800-W5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	2.79E+03	2.36E+01	1.10E-03	6.37E+02	7.01E-01	1.00E+00	5.50E-03	4.42E+03	4.11E+02	1.75E-01	5.06E+02	8.74E+00
MHCS-900-E15 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	1.35E+03	1.14E+01	1.10E-03	3.09E+02	3.40E-01	1.00E+00	5.50E-03	2.14E+03	4.11E+02	1.75E-01	5.06E+02	4.23E+00
MHCS-900-E5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	6.16E+03	5.22E+01	1.10E-03	1.41E+03	1.55E+00	1.00E+00	5.50E-03	9.77E+03	4.11E+02	1.75E-01	5.06E+02	1.93E+01
MHCS-900-W5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	2.38E+03	2.02E+01	1.10E-03	5.44E+02	5.99E-01	1.00E+00	5.50E-03	3.78E+03	4.11E+02	1.75E-01	5.06E+02	7.46E+00
MHCS-1000-E10 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	2.71E+03	2.29E+01	1.10E-03	6.19E+02	6.81E-01	1.00E+00	5.50E-03	4.30E+03	4.11E+02	1.75E-01	5.06E+02	8.48E+00
MHCS-1000-W5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	1.20E+04	1.02E+02	1.10E-03	2.75E+03	3.02E+00	1.00E+00	5.50E-03	1.91E+04	4.11E+02	1.75E-01	5.06E+02	3.77E+01
MHCS-1100-E10 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	4.12E+03	3.49E+01	1.10E-03	9.40E+02	1.03E+00	1.00E+00	5.50E-03	6.53E+03	4.11E+02	1.75E-01	5.06E+02	1.29E+01
MHCS-1100-E35 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	6.98E+02	5.91E+00	1.10E-03	1.59E+02	1.75E-01	1.00E+00	5.50E-03	1.11E+03	4.11E+02	1.75E-01	5.06E+02	2.18E+00
MHCS-1200-E15 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	3.30E+03	2.80E+01	1.10E-03	7.54E+02	8.30E-01	1.00E+00	5.50E-03	5.24E+03	4.11E+02	1.75E-01	5.06E+02	1.03E+01
MHCS-1200-E30 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	8.86E+02	7.50E+00	1.10E-03	2.02E+02	2.23E-01	1.00E+00	5.50E-03	1.40E+03	4.11E+02	1.75E-01	5.06E+02	2.77E+00
MHCS-1300-E20 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	6.26E+03	5.30E+01	1.10E-03	1.43E+03	1.57E+00	1.00E+00	5.50E-03	9.92E+03	4.11E+02	1.75E-01	5.06E+02	1.96E+01
MHCS-1300-E35 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	1.76E+03	1.49E+01	1.10E-03	4.02E+02	4.42E-01	1.00E+00	5.50E-03	2.79E+03	4.11E+02	1.75E-01	5.06E+02	5.51E+00
Waste Areas 1 and 2																						**Maximum HQ (Mike Horse Creek Channel Area Deposits)**	**4.40E+01**
UMH1-00 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	3.93E+03	3.33E+01	1.10E-03	8.97E+02	9.88E-01	1.00E+00	5.50E-03	6.23E+03	4.11E+02	1.75E-01	5.06E+02	1.23E+01
UMH1-100 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	7.27E+03	6.16E+01	1.10E-03	1.66E+03	1.83E+00	1.00E+00	5.50E-03	1.15E+04	4.11E+02	1.75E-01	5.06E+02	2.28E+01
UMH1-150 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	3.48E+03	2.95E+01	1.10E-03	7.96E+02	8.76E-01	1.00E+00	5.50E-03	5.53E+03	4.11E+02	1.75E-01	5.06E+02	1.09E+01
UMH1-200 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	4.46E+02	3.77E+00	1.10E-03	1.02E+02	1.12E-01	1.00E+00	5.50E-03	7.07E+02	4.11E+02	1.75E-01	5.06E+02	1.40E+00
UMH1-250 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	4.23E+03	3.58E+01	1.10E-03	9.66E+02	1.06E+00	1.00E+00	5.50E-03	6.71E+03	4.11E+02	1.75E-01	5.06E+02	1.32E+01
UMH1-250+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	1.80E+03	1.52E+01	1.10E-03	4.10E+02	4.51E-01	1.00E+00	5.50E-03	2.85E+03	4.11E+02	1.75E-01	5.06E+02	5.62E+00
UMH1-300 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	6.41E+03	5.43E+01	1.10E-03	1.46E+03	1.61E+00	1.00E+00	5.50E-03	1.02E+04	4.11E+02	1.75E-01	5.06E+02	2.01E+01
UMH1-300+14 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	1.26E+03	1.07E+01	1.10E-03	2.88E+02	3.18E-01	1.00E+00	5.50E-03	2.00E+03	4.11E+02	1.75E-01	5.06E+02	3.96E+00
UMH1-350 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	6.67E+03	5.65E+01	1.10E-03	1.52E+03	1.68E+00	1.00E+00	5.50E-03	1.06E+04	4.11E+02	1.75E-01	5.06E+02	2.09E+01
UMH1-350+12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	2.09E+03	1.77E+01	1.10E-03	4.77E+02	5.25E-01	1.00E+00	5.50E-03	3.31E+03	4.11E+02	1.75E-01	5.06E+02	6.54E+00
UMH1-400 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	3.30E+03	2.80E+01	1.10E-03	7.54E+02	8.31E-01	1.00E+00	5.50E-03	5.24E+03	4.11E+02	1.75E-01	5.06E+02	1.03E+01
UMH1-400+12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	3.45E+03	2.92E+01	1.10E-03	7.87E+02	8.67E-01	1.00E+00	5.50E-03	5.47E+03	4.11E+02	1.75E-01	5.06E+02	1.08E+01
UMH1-450 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	3.40E+03	2.88E+01	1.10E-03	7.76E+02	8.54E-01	1.00E+00	5.50E-03	5.39E+03	4.11E+02	1.75E-01	5.06E+02	1.06E+01
UMH1-450+12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	3.39E+03	2.87E+01	1.10E-03	7.75E+02	8.53E-01	1.00E+00	5.50E-03	5.38E+03	4.11E+02	1.75E-01	5.06E+02	1.06E+01
UMH1-50 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	3.30E+03	2.80E+01	1.10E-03	7.54E+02	8.30E-01	1.00E+00	5.50E-03	5.23E+03	4.11E+02	1.75E-01	5.06E+02	1.03E+01
UMH1-Comp (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	6.09E+03	5.16E+01	1.10E-03	1.39E+03	1.53E+00	1.00E+00	5.50E-03	9.66E+03	4.11E+02	1.75E-01	5.06E+02	1.91E+01
UMH2-00 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	3.89E+03	3.29E+01	1.10E-03	8.88E+02	9.78E-01	1.00E+00	5.50E-03	6.16E+03	4.11E+02	1.75E-01	5.06E+02	1.22E+01

TABLE C-8F: ZINC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 8 - MIKE HORSE MINE WASTE PILES (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **1.73**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Masked Shrew (Omnivorous Mammal - Terrestrial, Wetland)																							
UMH2-00+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	1.68E+03	1.42E+01	1.10E-03	3.83E+02	4.22E-01	1.00E+00	5.50E-03	2.66E+03	4.11E+02	1.75E-01	5.06E+02	5.26E+00
UMH2-100 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	7.07E+03	5.99E+01	1.10E-03	1.62E+03	1.78E+00	1.00E+00	5.50E-03	1.12E+04	4.11E+02	1.75E-01	5.06E+02	2.22E+01
UMH2-100+35 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	1.81E+03	1.53E+01	1.10E-03	4.12E+02	4.54E-01	1.00E+00	5.50E-03	2.86E+03	4.11E+02	1.75E-01	5.06E+02	5.65E+00
UMH2-150 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	2.41E+03	2.04E+01	1.10E-03	5.50E+02	6.05E-01	1.00E+00	5.50E-03	3.82E+03	4.11E+02	1.75E-01	5.06E+02	7.54E+00
UMH2-150+60 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	6.91E+02	5.85E+00	1.10E-03	1.58E+02	1.74E-01	1.00E+00	5.50E-03	1.10E+03	4.11E+02	1.75E-01	5.06E+02	2.16E+00
UMH2-200 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	7.06E+03	5.98E+01	1.10E-03	1.61E+03	1.78E+00	1.00E+00	5.50E-03	1.12E+04	4.11E+02	1.75E-01	5.06E+02	2.21E+01
UMH2-200+85 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	1.19E+03	1.01E+01	1.10E-03	2.73E+02	3.00E-01	1.00E+00	5.50E-03	1.89E+03	4.11E+02	1.75E-01	5.06E+02	3.74E+00
UMH2-250 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	6.89E+03	5.84E+01	1.10E-03	1.57E+03	1.73E+00	1.00E+00	5.50E-03	1.09E+04	4.11E+02	1.75E-01	5.06E+02	2.16E+01
UMH2-250+75 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	1.70E+03	1.44E+01	1.10E-03	3.88E+02	4.27E-01	1.00E+00	5.50E-03	2.69E+03	4.11E+02	1.75E-01	5.06E+02	5.32E+00
UMH2-300 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	2.97E+03	2.51E+01	1.10E-03	6.78E+02	7.46E-01	1.00E+00	5.50E-03	4.71E+03	4.11E+02	1.75E-01	5.06E+02	9.30E+00
UMH2-300+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	5.10E+03	4.32E+01	1.10E-03	1.16E+03	1.28E+00	1.00E+00	5.50E-03	8.09E+03	4.11E+02	1.75E-01	5.06E+02	1.60E+01
UMH2-350 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	3.16E+03	2.67E+01	1.10E-03	7.21E+02	7.94E-01	1.00E+00	5.50E-03	5.00E+03	4.11E+02	1.75E-01	5.06E+02	9.88E+00
UMH2-350+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	5.19E+03	4.40E+01	1.10E-03	1.19E+03	1.31E+00	1.00E+00	5.50E-03	8.23E+03	4.11E+02	1.75E-01	5.06E+02	1.63E+01
UMH2-400 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	1.30E+03	1.10E+01	1.10E-03	2.98E+02	3.28E-01	1.00E+00	5.50E-03	2.07E+03	4.11E+02	1.75E-01	5.06E+02	4.08E+00
UMH2-400+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	3.21E+03	2.72E+01	1.10E-03	7.33E+02	8.07E-01	1.00E+00	5.50E-03	5.09E+03	4.11E+02	1.75E-01	5.06E+02	1.00E+01
UMH2-450 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	1.74E+03	1.48E+01	1.10E-03	3.98E+02	4.38E-01	1.00E+00	5.50E-03	2.76E+03	4.11E+02	1.75E-01	5.06E+02	5.45E+00
UMH2-450+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	2.59E+03	2.20E+01	1.10E-03	5.92E+02	6.52E-01	1.00E+00	5.50E-03	4.11E+03	4.11E+02	1.75E-01	5.06E+02	8.12E+00
UMH2-50 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	2.00E+03	1.70E+01	1.10E-03	4.58E+02	5.04E-01	1.00E+00	5.50E-03	3.18E+03	4.11E+02	1.75E-01	5.06E+02	6.28E+00
UMH2-50+25b (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	1.62E+03	1.38E+01	1.10E-03	3.71E+02	4.08E-01	1.00E+00	5.50E-03	2.57E+03	4.11E+02	1.75E-01	5.06E+02	5.08E+00
UMH2-500 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	3.61E+03	3.05E+01	1.10E-03	8.23E+02	9.07E-01	1.00E+00	5.50E-03	5.72E+03	4.11E+02	1.75E-01	5.06E+02	1.13E+01
UMH2-500+75 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	2.67E+03	2.27E+01	1.10E-03	6.11E+02	6.72E-01	1.00E+00	5.50E-03	4.24E+03	4.11E+02	1.75E-01	5.06E+02	8.38E+00
UMH2-550 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	1.06E+04	8.97E+01	1.10E-03	2.42E+03	2.66E+00	1.00E+00	5.50E-03	1.68E+04	4.11E+02	1.75E-01	5.06E+02	3.32E+01
UMH2-550+75 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	1.72E+03	1.46E+01	1.10E-03	3.94E+02	4.33E-01	1.00E+00	5.50E-03	2.73E+03	4.11E+02	1.75E-01	5.06E+02	5.40E+00
UMH2-600 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	2.24E+03	1.89E+01	1.10E-03	5.11E+02	5.62E-01	1.00E+00	5.50E-03	3.55E+03	4.11E+02	1.75E-01	5.06E+02	7.00E+00
UMH2-600+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	1.65E+03	1.40E+01	1.10E-03	3.78E+02	4.16E-01	1.00E+00	5.50E-03	2.62E+03	4.11E+02	1.75E-01	5.06E+02	5.18E+00
UMH2-650 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	2.07E+03	1.75E+01	1.10E-03	4.72E+02	5.20E-01	1.00E+00	5.50E-03	3.28E+03	4.11E+02	1.75E-01	5.06E+02	6.47E+00
UMH2-650+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	1.84E+03	1.56E+01	1.10E-03	4.21E+02	4.63E-01	1.00E+00	5.50E-03	2.92E+03	4.11E+02	1.75E-01	5.06E+02	5.77E+00
UMH2-Comp 1 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	5.74E+03	4.86E+01	1.10E-03	1.31E+03	1.44E+00	1.00E+00	5.50E-03	9.10E+03	4.11E+02	1.75E-01	5.06E+02	1.80E+01
UMH2-Comp 2 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	5.87E+03	4.97E+01	1.10E-03	1.34E+03	1.47E+00	1.00E+00	5.50E-03	9.30E+03	4.11E+02	1.75E-01	5.06E+02	1.84E+01
Waste Area 3																						**Maximum HQ (Waste Areas 1 and 2)**	**3.32E+01**
UMH3-00 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	5.39E+02	4.57E+00	1.10E-03	1.23E+02	1.36E-01	1.00E+00	5.50E-03	8.55E+02	4.11E+02	1.75E-01	5.06E+02	1.69E+00
UMH3-100 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	1.01E+03	8.59E+00	1.10E-03	2.32E+02	2.55E-01	1.00E+00	5.50E-03	1.61E+03	4.11E+02	1.75E-01	5.06E+02	3.18E+00
UMH3-150 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	2.40E+03	2.03E+01	1.10E-03	5.47E+02	6.02E-01	1.00E+00	5.50E-03	3.80E+03	4.11E+02	1.75E-01	5.06E+02	7.50E+00
UMH3-200 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	1.92E+03	1.62E+01	1.10E-03	4.37E+02	4.82E-01	1.00E+00	5.50E-03	3.04E+03	4.11E+02	1.75E-01	5.06E+02	6.00E+00
UMH3-250 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	3.36E+03	2.84E+01	1.10E-03	7.67E+02	8.44E-01	1.00E+00	5.50E-03	5.32E+03	4.11E+02	1.75E-01	5.06E+02	1.05E+01
UMH3-300 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	8.70E+02	7.37E+00	1.10E-03	1.99E+02	2.19E-01	1.00E+00	5.50E-03	1.38E+03	4.11E+02	1.75E-01	5.06E+02	2.73E+00
UMH3-350 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	4.39E+03	3.72E+01	1.10E-03	1.00E+03	1.10E+00	1.00E+00	5.50E-03	6.96E+03	4.11E+02	1.75E-01	5.06E+02	1.37E+01
UMH3-350+75 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	1.35E+03	1.14E+01	1.10E-03	3.08E+02	3.39E-01	1.00E+00	5.50E-03	2.14E+03	4.11E+02	1.75E-01	5.06E+02	4.22E+00
UMH3-400 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	2.87E+03	2.43E+01	1.10E-03	6.56E+02	7.22E-01	1.00E+00	5.50E-03	4.56E+03	4.11E+02	1.75E-01	5.06E+02	9.00E+00
UMH3-400+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	1.19E+03	1.00E+01	1.10E-03	2.71E+02	2.98E-01	1.00E+00	5.50E-03	1.88E+03	4.11E+02	1.75E-01	5.06E+02	3.71E+00
UMH3-450 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	6.65E+02	5.63E+00	1.10E-03	1.52E+02	1.67E-01	1.00E+00	5.50E-03	1.05E+03	4.11E+02	1.75E-01	5.06E+02	2.08E+00
UMH3-50 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	1.64E+03	1.39E+01	1.10E-03	3.75E+02	4.12E-01	1.00E+00	5.50E-03	2.60E+03	4.11E+02	1.75E-01	5.06E+02	5.14E+00
UMH3-50+50 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	1.87E+03	1.59E+01	1.10E-03	4.28E+02	4.71E-01	1.00E+00	5.50E-03	2.97E+03	4.11E+02	1.75E-01	5.06E+02	5.86E+00
UMH3-500 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	1.65E+03	1.40E+01	1.10E-03	3.77E+02	4.16E-01	1.00E+00	5.50E-03	2.62E+03	4.11E+02	1.75E-01	5.06E+02	5.18E+00
UMH3-550 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	4.38E+03	3.71E+01	1.10E-03	1.00E+03	1.10E+00	1.00E+00	5.50E-03	6.95E+03	4.11E+02	1.75E-01	5.06E+02	1.37E+01
UMH3-600 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	4.15E+03	3.52E+01	1.10E-03	9.48E+02	1.04E+00	1.00E+00	5.50E-03	6.58E+03	4.11E+02	1.75E-01	5.06E+02	1.30E+01
UMH3-650 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	3.81E+03	3.22E+01	1.10E-03	8.69E+02	9.57E-01	1.00E+00	5.50E-03	6.04E+03	4.11E+02	1.75E-01	5.06E+02	1.19E+01
UMH3-700 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	2.85E+03	2.41E+01	1.10E-03	6.50E+02	7.15E-01	1.00E+00	5.50E-03	4.51E+03	4.11E+02	1.75E-01	5.06E+02	8.91E+00
UMH3-750 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	1.25E+03	1.06E+01	1.10E-03	2.85E+02	3.14E-01	1.00E+00	5.50E-03	1.98E+03	4.11E+02	1.75E-01	5.06E+02	3.91E+00
UMH3-800 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	1.30E+03	1.10E+01	1.10E-03	2.97E+02	3.27E-01	1.00E+00	5.50E-03	2.06E+03	4.11E+02	1.75E-01	5.06E+02	4.08E+00
UMH3-Comp 1 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	8.65E+02	7.33E+00	1.10E-03	1.98E+02	2.18E-01	1.00E+00	5.50E-03	1.37E+03	4.11E+02	1.75E-01	5.06E+02	2.71E+00
UMH3-Comp 2 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	3.38E+03	2.87E+01	1.10E-03	7.73E+02	8.51E-01	1.00E+00	5.50E-03	5.37E+03	4.11E+02	1.75E-01	5.06E+02	1.06E+01
UMH3-Comp 3 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	9.84E+03	8.33E+01	1.10E-03	2.25E+03	2.47E+00	1.00E+00	5.50E-03	1.56E+04	4.11E+02	1.75E-01	5.06E+02	3.08E+01
																						Maximum HQ (Waste Area 3)	**3.08E+01**

TABLE C-8F: ZINC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 8 - MIKE HORSE MINE WASTE PILES (Continued)
Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)
calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 1.73

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)

Notes
1 See Tables 3-1 through 3-13 for ingestion rates, foraging ranges used to calculate the SUF, and body weights.
2 BAFs were calculated by dividing site-collected tissue by collocated soil concentrations (BAFs are in dry weight). The maximum BAF calculated from the Beartrap Creek and Blackfoot River transects was used for site dose calculations. The maximum BAF from the terrestrial reference site was used for reference site dose calculations.
3 The mammal, plant, and invertebrate concentrations were calculated by multiplying the soil concentration by the BAF to generate a tissue concentration (see note 2).
4 Mammal, plant, and invertebrate daily doses were calculated by multiplying the ingestion rate (see note 1) by the tissue concentration (see note 3).
5 Soil concentration from 0 to 6 inches below ground surface at point ID as measured by XRF 10. Doses were not calculated for detected and non-detected soil concentrations measured below the minimum reference site concentration, as indicated by BB. For results that were measured at less than the detection limit, doses were calculated using half of the detection limit.
6 Soil daily dose was calculated by multiplying the soil ingestion rate (see note 1) by soil concentration (see note 5).
7 Total daily dose is calculated using the following equation: total daily dose = ([mammal daily dose (if applicable) + plant daily dose (if applicable) + invertebrate daily dose (if applicable) + soil daily dose]*SUF)/receptor species body weight.
8 The derivation of TRVs is described in Navy (1998). The high TRV was used for dose calculations.
9 Allometrically adjusted TRVs for birds were calculated using the following equation: receptor species TRV = (test species TRV) x (test species body weight / receptor species body weight)$^{(1-1.2)}$.
10 Allometrically adjusted TRVs for mammals were calculated using the following equation: receptor species TRV = (test species TRV) x (test species body weight / receptor species body weight)$^{(1-0.94)}$.
11 HQs were calculated using the following equation: HQ = total daily dose/allometrically adjusted TRV.
12 Highlighted cells indicate an HQ greater than 1.0.

BAF	Bioaccumulation Factor	mg/day	Milligram per day
BB	Below minimum background reference site concentration	mg/kg	Milligram per kilogram
EE/CA	Engineering Evaluation/Cost Analysis	NA	Not applicable
EU	Exposure Unit	Navy	Department of the Navy
HQ	Hazard quotient	SUF	Site use factor
ID	Identification	TRV	Toxicity reference value
kg	Kilogram	XRF	X-ray flourescence
kg/day	Kilogram per day	XRF 10	XRF measurements recorded following drying and seiving through a #10 -mesh screen

Sources: Department of the Navy. 1998. "Development of Toxicity Reference Values for Conducting Ecological Risk Assessments at Naval Facilities in California, Interim Final." Prepared by Naval Facilities Engineering Command, Engineering Field Activity West (EFA West). San Bruno, California.

TABLE C-9A: CADMIUM DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 9 - PAYMASTER MINE WASTE AREAS

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 0.125

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Mourning Dove (Herbivorous Birds - Terrestrial)																							
Reference Site																							
PCBG-1 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.26E+00	6.82E-01	3.93E-03	NA	NA	NA	NA	5.36E-04	5.43E-01	2.91E-04	4.83E-04	1.09E-01	1.87E-05	1.00E+00	1.13E+00	6.27E-01	2.98E-05
MGBG-1 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.26E+00	5.58E+00	3.21E-02	NA	NA	NA	NA	5.36E-04	4.44E+00	2.38E-03	4.83E-04	1.09E-01	1.53E-04	1.00E+00	1.13E+00	6.27E-01	2.43E-04
MGBG-1 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.26E+00	5.58E+00	3.21E-02	NA	NA	NA	NA	5.36E-04	4.44E+00	2.38E-03	4.83E-04	1.09E-01	1.53E-04	1.00E+00	1.13E+00	6.27E-01	2.43E-04
MGBG-2 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.26E+00	4.51E+00	2.60E-02	NA	NA	NA	NA	5.36E-04	3.59E+00	1.92E-03	4.83E-04	1.09E-01	1.23E-04	1.00E+00	1.13E+00	6.27E-01	1.97E-04
PCBG-201	5.76E-03	NA	NA	NA	NA	5.76E-03	1.26E+00	2.76E+00	1.59E-02	NA	NA	NA	NA	5.36E-04	2.20E+00	1.18E-03	4.83E-04	1.09E-01	7.56E-05	1.00E+00	1.13E+00	6.27E-01	1.21E-04
PCBG-202	5.76E-03	NA	NA	NA	NA	5.76E-03	1.26E+00	2.76E+00	1.59E-02	NA	NA	NA	NA	5.36E-04	2.20E+00	1.18E-03	4.83E-04	1.09E-01	7.56E-05	1.00E+00	1.13E+00	6.27E-01	1.21E-04
Paymaster Mine Waste Area 1																						**Minimum HQ (Reference Site)**	**2.98E-05**
PMWA1-1 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
PMWA1-50 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
PMWA1-100 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
PMWA1-100+15 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
PMWA1-100+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
PMWA1-150 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
PMWA1-200 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
PMWA1-230 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
PMWA1-230+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
PMWA1-Comp 1 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
PMWA1-Comp 2 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
Paymaster Mine Waste Area 2																						**Maximum HQ (Paymaster Mine Waste Area 1)**	**0.00E+00**
PMWA2-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
PMWA2-50 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
PMWA2-100 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
PMWA2-150 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
PMWA2-200 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
PMWA2-200+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.59E+00	1.11E+00	6.40E-03	NA	NA	NA	NA	5.36E-04	7.00E-01	3.75E-04	4.83E-04	1.09E-01	3.00E-05	1.00E+00	1.13E+00	6.27E-01	4.78E-05
PMWA2-Comp 1 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.59E+00	1.10E+00	6.31E-03	NA	NA	NA	NA	5.36E-04	6.90E-01	3.70E-04	4.83E-04	1.09E-01	2.95E-05	1.00E+00	1.13E+00	6.27E-01	4.71E-05
																						Maximum HQ (Paymaster Mine Waste Area 2)	**4.78E-05**
Red-Tailed Hawk (Carnivorous Birds - Terrestrial)																							
Reference Site																							
PCBG-1 (0-6")	9.00E-02	9.00E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.43E-01	2.78E-03	1.79E-04	1.13E+00	4.40E-07	1.00E+00	1.13E+00	1.00E+00	4.40E-07
MGBG-1 (0-6")	9.00E-02	9.00E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.44E+00	2.28E-02	1.79E-04	1.13E+00	3.60E-06	1.00E+00	1.13E+00	1.00E+00	3.60E-06
MGBG-1 (0-6")	9.00E-02	9.00E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.44E+00	2.28E-02	1.79E-04	1.13E+00	3.60E-06	1.00E+00	1.13E+00	1.00E+00	3.60E-06
MGBG-2 (0-6")	9.00E-02	9.00E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.59E+00	1.84E-02	1.79E-04	1.13E+00	2.91E-06	1.00E+00	1.13E+00	1.00E+00	2.91E-06
PCBG-201	9.00E-02	9.00E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.20E+00	1.13E-02	1.79E-04	1.13E+00	1.78E-06	1.00E+00	1.13E+00	1.00E+00	1.78E-06
PCBG-202	9.00E-02	9.00E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.20E+00	1.13E-02	1.79E-04	1.13E+00	1.78E-06	1.00E+00	1.13E+00	1.00E+00	1.78E-06
Paymaster Mine Waste Area 1																						**Minimum HQ (Reference Site)**	**4.40E-07**
PMWA1-1 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
PMWA1-50 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
PMWA1-100 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
PMWA1-100+15 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
PMWA1-100+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
PMWA1-150 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
PMWA1-200 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
PMWA1-230 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
PMWA1-230+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
PMWA1-Comp 1 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
PMWA1-Comp 2 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
Paymaster Mine Waste Area 2																						**Maximum HQ (Paymaster Mine Waste Area 1)**	**0.00E+00**
PMWA2-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
PMWA2-50 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
PMWA2-100 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
PMWA2-150 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
PMWA2-200 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
PMWA2-200+25 (0-6")	9.00E-02	9.00E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	7.00E-01	3.59E-03	1.79E-04	1.13E+00	5.68E-07	1.00E+00	1.13E+00	1.00E+00	5.67E-07
PMWA2-Comp 1 (0-6")	9.00E-02	9.00E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	6.90E-01	3.54E-03	1.79E-04	1.13E+00	5.60E-07	1.00E+00	1.13E+00	1.00E+00	5.59E-07
																						Maximum HQ (Paymaster Mine Waste Area 2)	**5.67E-07**

TABLE C-9A: CADMIUM DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 9 - PAYMASTER MINE WASTE AREAS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **0.125**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
American Kestrel (Insectivorous Birds - Terrestrial)																							
Reference Site																							
PCBG-1 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	7.00E+00	3.80E+00	5.23E-02	7.84E-04	5.43E-01	4.26E-04	4.78E-04	1.24E-01	2.03E-04	1.00E+00	1.13E+00	6.43E-01	3.16E-04
MGBG-1 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	7.00E+00	3.11E+01	4.28E-01	7.84E-04	4.44E+00	3.48E-03	4.78E-04	1.24E-01	1.66E-03	1.00E+00	1.13E+00	6.43E-01	2.58E-03
MGBG-1 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	7.00E+00	3.11E+01	4.28E-01	7.84E-04	4.44E+00	3.48E-03	4.78E-04	1.24E-01	1.66E-03	1.00E+00	1.13E+00	6.43E-01	2.58E-03
MGBG-2 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	7.00E+00	2.51E+01	3.46E-01	7.84E-04	3.59E+00	2.82E-03	4.78E-04	1.24E-01	1.34E-03	1.00E+00	1.13E+00	6.43E-01	2.09E-03
PCBG-201	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	7.00E+00	1.54E+01	2.12E-01	7.84E-04	2.20E+00	1.73E-03	4.78E-04	1.24E-01	8.23E-04	1.00E+00	1.13E+00	6.43E-01	1.28E-03
PCBG-202	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	7.00E+00	1.54E+01	2.12E-01	7.84E-04	2.20E+00	1.73E-03	4.78E-04	1.24E-01	8.23E-04	1.00E+00	1.13E+00	6.43E-01	1.28E-03
Paymaster Mine Waste Area 1																						**Minimum HQ (Reference Site)**	**3.16E-04**
PMWA1-1 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
PMWA1-50 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
PMWA1-100 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
PMWA1-100+15 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
PMWA1-100+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
PMWA1-150 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
PMWA1-200 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
American Kestrel (Insectivorous Birds - Terrestrial)																							
PMWA1-230 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
PMWA1-230+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
PMWA1-Comp 1 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
PMWA1-Comp 2 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
Paymaster Mine Waste Area 2																						**Maximum HQ (Paymaster Mine Waste Area 1)**	**0.00E+00**
PMWA2-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
PMWA2-50 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
PMWA2-100 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
PMWA2-150 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
PMWA2-200 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
PMWA2-200+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	7.00E+00	4.90E+00	6.74E-02	7.84E-04	7.00E-01	5.49E-04	4.78E-04	1.24E-01	2.62E-04	1.00E+00	1.13E+00	6.43E-01	4.07E-04
PMWA2-Comp 1 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	7.00E+00	4.83E+00	6.65E-02	7.84E-04	6.90E-01	5.41E-04	4.78E-04	1.24E-01	2.58E-04	1.00E+00	1.13E+00	6.43E-01	4.02E-04
																						Maximum HQ (Paymaster Mine Waste Area 2)	**4.07E-04**
Meadow Vole (Small Herbivorous Mammal - Terrestrial)																							
Reference Site																							
PCBG-1 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.26E+00	6.82E-01	3.20E-03	NA	NA	NA	NA	1.13E-04	5.43E-01	6.11E-05	1.00E+00	3.06E-02	1.07E-01	2.64E+00	3.14E-02	2.64E+00	4.03E-02
MGBG-1 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.26E+00	5.58E+00	2.62E-02	NA	NA	NA	NA	1.13E-04	4.44E+00	5.00E-04	1.00E+00	3.06E-02	8.71E-01	2.64E+00	3.14E-02	2.64E+00	3.29E-01
MGBG-1 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.26E+00	5.58E+00	2.62E-02	NA	NA	NA	NA	1.13E-04	4.44E+00	5.00E-04	1.00E+00	3.06E-02	8.71E-01	2.64E+00	3.14E-02	2.64E+00	3.29E-01
MGBG-2 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.26E+00	4.51E+00	2.11E-02	NA	NA	NA	NA	1.13E-04	3.59E+00	4.04E-04	1.00E+00	3.06E-02	7.04E-01	2.64E+00	3.14E-02	2.64E+00	2.66E-01
PCBG-201	4.69E-03	NA	NA	NA	NA	4.69E-03	1.26E+00	2.76E+00	1.30E-02	NA	NA	NA	NA	1.13E-04	2.20E+00	2.48E-04	1.00E+00	3.06E-02	4.32E-01	2.64E+00	3.14E-02	2.64E+00	1.63E-01
PCBG-202	4.69E-03	NA	NA	NA	NA	4.69E-03	1.26E+00	2.76E+00	1.30E-02	NA	NA	NA	NA	1.13E-04	2.20E+00	2.48E-04	1.00E+00	3.06E-02	4.32E-01	2.64E+00	3.14E-02	2.64E+00	1.63E-01
Paymaster Mine Waste Area 1																						**Minimum HQ (Reference Site)**	**4.03E-02**
PMWA1-1 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
PMWA1-50 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
PMWA1-100 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
PMWA1-100+15 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
PMWA1-100+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
PMWA1-150 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
PMWA1-200 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
PMWA1-230 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
PMWA1-230+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
PMWA1-Comp 1 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
PMWA1-Comp 2 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
Paymaster Mine Waste Area 2																						**Maximum HQ (Paymaster Mine Waste Area 1)**	**0.00E+00**
PMWA2-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
PMWA2-50 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
PMWA2-100 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
PMWA2-150 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
PMWA2-200 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
PMWA2-200+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.59E+00	1.11E+00	5.21E-03	NA	NA	NA	NA	1.13E-04	7.00E-01	7.88E-05	1.00E+00	3.06E-02	1.73E-01	2.64E+00	3.14E-02	2.64E+00	6.54E-02
PMWA2-Comp 1 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.59E+00	1.10E+00	5.14E-03	NA	NA	NA	NA	1.13E-04	6.90E-01	7.77E-05	1.00E+00	3.06E-02	1.70E-01	2.64E+00	3.14E-02	2.64E+00	6.45E-02
																						Maximum HQ (Paymaster Mine Waste Area 2)	**6.54E-02**

TABLE C-9A: CADMIUM DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 9 - PAYMASTER MINE WASTE AREAS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **0.125**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
White-Tailed Deer (Large Herbivorous Mammal - Terrestrial)																							
Reference Site																							
PCBG-1 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.26E+00	6.82E-01	9.77E-01	NA	NA	NA	NA	2.86E-02	5.43E-01	1.55E-02	6.99E-04	1.35E+02	5.14E-06	2.64E+00	3.14E-02	1.60E+00	3.22E-06
MGBG-1 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.26E+00	5.58E+00	7.99E+00	NA	NA	NA	NA	2.86E-02	4.44E+00	1.27E-01	6.99E-04	1.35E+02	4.20E-05	2.64E+00	3.14E-02	1.60E+00	2.63E-05
MGBG-1 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.26E+00	5.58E+00	7.99E+00	NA	NA	NA	NA	2.86E-02	4.44E+00	1.27E-01	6.99E-04	1.35E+02	4.20E-05	2.64E+00	3.14E-02	1.60E+00	2.63E-05
MGBG-2 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.26E+00	4.51E+00	6.46E+00	NA	NA	NA	NA	2.86E-02	3.59E+00	1.03E-01	6.99E-04	1.35E+02	3.40E-05	2.64E+00	3.14E-02	1.60E+00	2.13E-05
PCBG-201	1.43E+00	NA	NA	NA	NA	1.43E+00	1.26E+00	2.76E+00	3.96E+00	NA	NA	NA	NA	2.86E-02	2.20E+00	6.30E-02	6.99E-04	1.35E+02	2.08E-05	2.64E+00	3.14E-02	1.60E+00	1.30E-05
PCBG-202	1.43E+00	NA	NA	NA	NA	1.43E+00	1.26E+00	2.76E+00	3.96E+00	NA	NA	NA	NA	2.86E-02	2.20E+00	6.30E-02	6.99E-04	1.35E+02	2.08E-05	2.64E+00	3.14E-02	1.60E+00	1.30E-05
Paymaster Mine Waste Area 1																						**Minimum HQ (Reference Site)**	**3.22E-06**
PMWA1-1 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
PMWA1-50 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
PMWA1-100 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
PMWA1-100+15 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
PMWA1-100+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
PMWA1-150 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
PMWA1-200 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
PMWA1-230 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
PMWA1-230+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
PMWA1-Comp 1 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
PMWA1-Comp 2 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
Paymaster Mine Waste Area 2																						**Maximum HQ (Paymaster Mine Waste Area 1)**	**0.00E+00**
PMWA2-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
PMWA2-50 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
PMWA2-100 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
PMWA2-150 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
PMWA2-200 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
PMWA2-200+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.59E+00	1.11E+00	1.59E+00	NA	NA	NA	NA	2.86E-02	7.00E-01	2.00E-02	6.99E-04	1.35E+02	8.35E-06	2.64E+00	3.14E-02	1.60E+00	5.22E-06
PMWA2-Comp 1 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.59E+00	1.10E+00	1.57E+00	NA	NA	NA	NA	2.86E-02	6.90E-01	1.98E-02	6.99E-04	1.35E+02	8.23E-06	2.64E+00	3.14E-02	1.60E+00	5.15E-06
																						Maximum HQ (Paymaster Mine Waste Area 2)	**5.22E-06**
Red Fox (Carnivorous Mammal - Terrestrial)																							
Reference Site																							
PCBG-1 (0-6")	1.72E-01	1.72E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.43E-01	2.61E-03	9.24E-05	4.54E+00	5.31E-08	2.64E+00	3.14E-02	1.96E+00	2.71E-08
MGBG-1 (0-6")	1.72E-01	1.72E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.44E+00	2.13E-02	9.24E-05	4.54E+00	4.34E-07	2.64E+00	3.14E-02	1.96E+00	2.22E-07
MGBG-1 (0-6")	1.72E-01	1.72E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.44E+00	2.13E-02	9.24E-05	4.54E+00	4.34E-07	2.64E+00	3.14E-02	1.96E+00	2.22E-07
MGBG-2 (0-6")	1.72E-01	1.72E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.59E+00	1.72E-02	9.24E-05	4.54E+00	3.51E-07	2.64E+00	3.14E-02	1.96E+00	1.79E-07
PCBG-201	1.72E-01	1.72E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.20E+00	1.06E-02	9.24E-05	4.54E+00	2.15E-07	2.64E+00	3.14E-02	1.96E+00	1.10E-07
PCBG-202	1.72E-01	1.72E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.20E+00	1.06E-02	9.24E-05	4.54E+00	2.15E-07	2.64E+00	3.14E-02	1.96E+00	1.10E-07
Paymaster Mine Waste Area 1																						**Minimum HQ (Reference Site)**	**2.71E-08**
PMWA1-1 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
PMWA1-50 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
PMWA1-100 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
PMWA1-100+15 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
PMWA1-100+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
PMWA1-150 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
PMWA1-200 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
PMWA1-230 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
PMWA1-230+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
PMWA1-Comp 1 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
PMWA1-Comp 2 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
Paymaster Mine Waste Area 2																						**Maximum HQ (Paymaster Mine Waste Area 1)**	**0.00E+00**
PMWA2-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
PMWA2-50 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
PMWA2-100 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
PMWA2-150 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
PMWA2-200 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
PMWA2-200+25 (0-6")	1.72E-01	1.72E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	7.00E-01	3.36E-03	9.24E-05	4.54E+00	6.85E-08	2.64E+00	3.14E-02	1.96E+00	3.49E-08
PMWA2-Comp 1 (0-6")	1.72E-01	1.72E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	6.90E-01	3.31E-03	9.24E-05	4.54E+00	6.75E-08	2.64E+00	3.14E-02	1.96E+00	3.44E-08
																						Maximum HQ (Paymaster Mine Waste Area 2)	**3.49E-08**

TABLE C-9A: CADMIUM DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 9 - PAYMASTER MINE WASTE AREAS (Continued)
Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)
calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **0.125**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Masked Shrew (Omnivorous Mammal - Terrestrial, Wetland)																							
Reference Site																							
PCBG-1 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	7.00E+00	3.80E+00	3.22E-02	1.10E-03	5.43E-01	5.98E-04	3.13E-01	5.50E-03	1.86E+00	2.64E+00	3.14E-02	2.93E+00	6.36E-01
MGBG-1 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	7.00E+00	3.11E+01	2.63E-01	1.10E-03	4.44E+00	4.89E-03	3.13E-01	5.50E-03	1.52E+01	2.64E+00	3.14E-02	2.93E+00	5.20E+00
MGBG-1 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	7.00E+00	3.11E+01	2.63E-01	1.10E-03	4.44E+00	4.89E-03	3.13E-01	5.50E-03	1.52E+01	2.64E+00	3.14E-02	2.93E+00	5.20E+00
MGBG-2 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	7.00E+00	2.51E+01	2.13E-01	1.10E-03	3.59E+00	3.95E-03	3.13E-01	5.50E-03	1.23E+01	2.64E+00	3.14E-02	2.93E+00	4.20E+00
PCBG-201	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	7.00E+00	1.54E+01	1.30E-01	1.10E-03	2.20E+00	2.42E-03	3.13E-01	5.50E-03	7.55E+00	2.64E+00	3.14E-02	2.93E+00	2.58E+00
PCBG-202	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	7.00E+00	1.54E+01	1.30E-01	1.10E-03	2.20E+00	2.42E-03	3.13E-01	5.50E-03	7.55E+00	2.64E+00	3.14E-02	2.93E+00	2.58E+00
Paymaster Mine Waste Area 1																						**Minimum HQ (Reference Site)**	**6.36E-01**
PMWA1-1 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
PMWA1-50 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
PMWA1-100 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
PMWA1-100+15 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
PMWA1-100+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
PMWA1-150 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
PMWA1-200 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
PMWA1-230 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
PMWA1-230+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
PMWA1-Comp 1 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
PMWA1-Comp 2 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
Paymaster Mine Waste Area 2																						**Maximum HQ (Paymaster Mine Waste Area 1)**	**0.00E+00**
PMWA2-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
PMWA2-50 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
PMWA2-100 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
PMWA2-150 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
PMWA2-200 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
PMWA2-200+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	7.00E+00	4.90E+00	4.15E-02	1.10E-03	7.00E-01	7.71E-04	3.13E-01	5.50E-03	2.40E+00	2.64E+00	3.14E-02	2.93E+00	8.19E-01
PMWA2-Comp 1 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	7.00E+00	4.83E+00	4.09E-02	1.10E-03	6.90E-01	7.60E-04	3.13E-01	5.50E-03	2.37E+00	2.64E+00	3.14E-02	2.93E+00	8.08E-01
																						Maximum HQ (Paymaster Mine Waste Area 2)	**8.19E-01**

Notes

1 See Tables 3-1 through 3-13 for ingestion rates, foraging ranges used to calculate the SUF, and body weights.
2 BAFs were calculated by dividing site-collected tissue by collocated soil concentrations (BAFs are in dry weight). The maximum BAF calculated from the Beartrap Creek and Blackfoot River transects was used for site dose calculations. The maximum BAF from the terrestrial reference site was used for reference site dose calculations.
3 The mammal, plant, and invertebrate concentrations were calculated by multiplying the soil concentration by the BAF to generate a tissue concentration (see note 2).
4 Mammal, plant, and invertebrate daily doses were calculated by multiplying the ingestion rate (see note 1) by the tissue concentration (see note 3).
5 Soil concentration from 0 to 6 inches below ground surface at point ID from laboratory analysis. XRF 10 data were unavailable for cadmium. Doses were not calculated for detected and non-detected soil concentrations measured below the minimum reference site concentration, as indicated by BB. For results that were measured at less than the detection limit, doses were calculated using half of the detection limit.
6 Soil daily dose was calculated by multiplying the soil ingestion rate (see note 1) by soil concentration (see note 5).
7 Total daily dose is calculated using the following equation: total daily dose = ([mammal daily dose (if applicable) + plant daily dose (if applicable) + invertebrate daily dose (if applicable) + soil daily dose]*SUF)/receptor species body weight.
8 The TRVs used in this risk assessment represent a mid-range effects level. The derivation of TRVs is described in Navy (1998) and DTSC (2009).
9 Allometrically adjusted TRVs for birds were calculated using the following equation: receptor species TRV = (test species TRV) x (test species body weight / receptor species body weight)$^{(1-1.2)}$.
10 Allometrically adjusted TRVs for mammals were calculated using the following equation: receptor species TRV = (test species TRV) x (test species body weight / receptor species body weight)$^{(1-0.94)}$.
11 HQs were calculated using the following equation: HQ = total daily dose/allometrically adjusted TRV.
12 Highlighted cells indicate an HQ greater than 1.0.

BAF	Bioaccumulation Factor	mg/day	Milligram per day
BB	Below minimum background reference site concentration	mg/kg	Milligram per kilogram
DTSC	California Department of Toxic Substances Control	NA	Not applicable
EE/CA	Engineering Evaluation/Cost Analysis	Navy	Department of the Navy
EU	Exposure Unit	NE	Not evaluated (no data for that point ID)
HQ	Hazard quotient	SUF	Site use factor
ID	Identification	TRV	Toxicity reference value
kg	Kilogram	XRF	X-ray fluorescence
kg/day	Kilogram per day	XRF 10	XRF measurements recorded following drying and seiving through a #10-mesh screen

Sources:
Department of the Navy. 1998. "Development of Toxicity Reference Values for Conducting Ecological Risk Assessments at Naval Facilities in California, Interim Final." Prepared by Naval Facilities Engineering Command, Engineering Field Activity West (EFA West). San Bruno, California.
DTSC. 2009. HERD Ecological Risk Assessment Note 6. February. Available on-line at: http://www.dtsc.ca.gov/AssessingRisk/upload/CdEconote_Final.pdf.

TABLE C-9B: COPPER DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 9 - PAYMASTER MINE WASTE AREAS

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **0.125**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Mourning Dove (Herbivorous Birds - Terrestrial)																							
Reference Site																							
PCBG-1 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	7.79E-01	2.04E+01	1.18E-01	NA	NA	NA	NA	5.36E-04	2.62E+01	1.40E-02	4.83E-04	1.09E-01	5.82E-04	5.23E+01	4.09E-01	4.01E+01	1.45E-05
MGBG-1 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	7.79E-01	6.40E+01	3.69E-01	NA	NA	NA	NA	5.36E-04	8.22E+01	4.40E-02	4.83E-04	1.09E-01	1.82E-03	5.23E+01	4.09E-01	4.01E+01	4.55E-05
MGBG-1 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	7.79E-01	6.40E+01	3.69E-01	NA	NA	NA	NA	5.36E-04	8.22E+01	4.40E-02	4.83E-04	1.09E-01	1.82E-03	5.23E+01	4.09E-01	4.01E+01	4.55E-05
MGBG-2 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	7.79E-01	1.78E+02	1.02E+00	NA	NA	NA	NA	5.36E-04	2.28E+02	1.22E-01	4.83E-04	1.09E-01	5.07E-03	5.23E+01	4.09E-01	4.01E+01	1.26E-04
PCBG-201	5.76E-03	NA	NA	NA	NA	5.76E-03	7.79E-01	3.95E+02	2.28E+00	NA	NA	NA	NA	5.36E-04	5.07E+02	2.72E-01	4.83E-04	1.09E-01	1.13E-02	5.23E+01	4.09E-01	4.01E+01	2.81E-04
PCBG-202	5.76E-03	NA	NA	NA	NA	5.76E-03	7.79E-01	7.65E+01	4.41E-01	NA	NA	NA	NA	5.36E-04	9.82E+01	5.26E-02	4.83E-04	1.09E-01	2.18E-03	5.23E+01	4.09E-01	4.01E+01	5.43E-05
Paymaster Mine Waste Area 1																						**Minimum HQ (Reference Site)**	**1.45E-05**
PMWA1-1 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	3.18E+02	1.83E+00	NA	NA	NA	NA	5.36E-04	2.81E+02	1.50E-01	4.83E-04	1.09E-01	8.76E-03	5.23E+01	4.09E-01	4.01E+01	2.18E-04
PMWA1-50 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	3.46E+02	1.99E+00	NA	NA	NA	NA	5.36E-04	3.06E+02	1.64E-01	4.83E-04	1.09E-01	9.53E-03	5.23E+01	4.09E-01	4.01E+01	2.37E-04
PMWA1-100 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	3.05E+02	1.75E+00	NA	NA	NA	NA	5.36E-04	2.69E+02	1.44E-01	4.83E-04	1.09E-01	8.39E-03	5.23E+01	4.09E-01	4.01E+01	2.09E-04
PMWA1-100+15 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
PMWA1-100+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
PMWA1-150 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	4.66E+02	2.68E+00	NA	NA	NA	NA	5.36E-04	4.12E+02	2.21E-01	4.83E-04	1.09E-01	1.28E-02	5.23E+01	4.09E-01	4.01E+01	3.20E-04
PMWA1-200 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	4.02E+02	2.32E+00	NA	NA	NA	NA	5.36E-04	3.55E+02	1.90E-01	4.83E-04	1.09E-01	1.11E-02	5.23E+01	4.09E-01	4.01E+01	2.76E-04
PMWA1-230 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	3.17E+02	1.83E+00	NA	NA	NA	NA	5.36E-04	2.80E+02	1.50E-01	4.83E-04	1.09E-01	8.74E-03	5.23E+01	4.09E-01	4.01E+01	2.18E-04
PMWA1-230+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
PMWA1-Comp 1 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	3.70E+02	2.13E+00	NA	NA	NA	NA	5.36E-04	3.27E+02	1.75E-01	4.83E-04	1.09E-01	1.02E-02	5.23E+01	4.09E-01	4.01E+01	2.54E-04
PMWA1-Comp 2 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	2.60E+02	1.50E+00	NA	NA	NA	NA	5.36E-04	2.30E+02	1.23E-01	4.83E-04	1.09E-01	7.18E-03	5.23E+01	4.09E-01	4.01E+01	1.79E-04
Paymaster Mine Waste Area 2																						**Maximum HQ (Paymaster Mine Waste Area 1)**	**3.20E-04**
PMWA2-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	1.89E+02	1.09E+00	NA	NA	NA	NA	5.36E-04	1.67E+02	8.94E-02	4.83E-04	1.09E-01	5.20E-03	5.23E+01	4.09E-01	4.01E+01	1.30E-04
PMWA2-50 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	1.01E+02	5.79E-01	NA	NA	NA	NA	5.36E-04	8.89E+01	4.76E-02	4.83E-04	1.09E-01	2.77E-03	5.23E+01	4.09E-01	4.01E+01	6.90E-05
PMWA2-100 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	6.80E+02	3.92E+00	NA	NA	NA	NA	5.36E-04	6.01E+02	3.22E-01	4.83E-04	1.09E-01	1.87E-02	5.23E+01	4.09E-01	4.01E+01	4.67E-04
PMWA2-150 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	3.81E+02	2.20E+00	NA	NA	NA	NA	5.36E-04	3.37E+02	1.80E-01	4.83E-04	1.09E-01	1.05E-02	5.23E+01	4.09E-01	4.01E+01	2.62E-04
PMWA2-200 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	3.57E+02	2.06E+00	NA	NA	NA	NA	5.36E-04	3.16E+02	1.69E-01	4.83E-04	1.09E-01	9.85E-03	5.23E+01	4.09E-01	4.01E+01	2.45E-04
PMWA2-200+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
PMWA2-Comp 1 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	3.40E+02	1.96E+00	NA	NA	NA	NA	5.36E-04	3.00E+02	1.61E-01	4.83E-04	1.09E-01	9.36E-03	5.23E+01	4.09E-01	4.01E+01	2.33E-04
																						Maximum HQ (Paymaster Mine Waste Area 2)	**4.67E-04**
Red-Tailed Hawk (Carnivorous Birds - Terrestrial)																							
Reference Site																							
PCBG-1 (0-6")	9.00E-02	9.00E-02	6.61E-01	1.73E+01	1.56E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.62E+01	1.34E-01	1.79E-04	1.13E+00	2.68E-04	5.23E+01	4.09E-01	6.41E+01	4.18E-06
MGBG-1 (0-6")	9.00E-02	9.00E-02	6.61E-01	5.43E+01	4.88E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	8.22E+01	4.21E-01	1.79E-04	1.13E+00	8.39E-04	5.23E+01	4.09E-01	6.41E+01	1.31E-05
MGBG-1 (0-6")	9.00E-02	9.00E-02	6.61E-01	5.43E+01	4.88E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	8.22E+01	4.21E-01	1.79E-04	1.13E+00	8.39E-04	5.23E+01	4.09E-01	6.41E+01	1.31E-05
MGBG-2 (0-6")	9.00E-02	9.00E-02	6.61E-01	1.51E+02	1.36E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.28E+02	1.17E+00	1.79E-04	1.13E+00	2.33E-03	5.23E+01	4.09E-01	6.41E+01	3.64E-05
PCBG-201	9.00E-02	9.00E-02	6.61E-01	3.35E+02	3.02E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.07E+02	2.60E+00	1.79E-04	1.13E+00	5.18E-03	5.23E+01	4.09E-01	6.41E+01	8.09E-05
PCBG-202	9.00E-02	9.00E-02	6.61E-01	6.49E+01	5.84E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	9.82E+01	5.03E-01	1.79E-04	1.13E+00	1.00E-03	5.23E+01	4.09E-01	6.41E+01	1.57E-05
Paymaster Mine Waste Area 1																						**Minimum HQ (Reference Site)**	**4.18E-06**
PMWA1-1 (0-6")	9.00E-02	9.00E-02	1.01E+00	2.84E+02	2.55E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.81E+02	1.44E+00	1.79E-04	1.13E+00	4.26E-03	5.23E+01	4.09E-01	6.41E+01	6.66E-05
PMWA1-50 (0-6")	9.00E-02	9.00E-02	1.01E+00	3.09E+02	2.78E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.06E+02	1.57E+00	1.79E-04	1.13E+00	4.64E-03	5.23E+01	4.09E-01	6.41E+01	7.24E-05
PMWA1-100 (0-6")	9.00E-02	9.00E-02	1.01E+00	2.72E+02	2.45E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.69E+02	1.38E+00	1.79E-04	1.13E+00	4.09E-03	5.23E+01	4.09E-01	6.41E+01	6.38E-05
PMWA1-100+15 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
PMWA1-100+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
PMWA1-150 (0-6")	9.00E-02	9.00E-02	1.01E+00	4.16E+02	3.74E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.12E+02	2.11E+00	1.79E-04	1.13E+00	6.25E-03	5.23E+01	4.09E-01	6.41E+01	9.76E-05
PMWA1-200 (0-6")	9.00E-02	9.00E-02	1.01E+00	3.59E+02	3.23E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.55E+02	1.82E+00	1.79E-04	1.13E+00	5.40E-03	5.23E+01	4.09E-01	6.41E+01	8.42E-05
PMWA1-230 (0-6")	9.00E-02	9.00E-02	1.01E+00	2.83E+02	2.55E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.80E+02	1.44E+00	1.79E-04	1.13E+00	4.26E-03	5.23E+01	4.09E-01	6.41E+01	6.64E-05
PMWA1-230+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
PMWA1-Comp 1 (0-6")	9.00E-02	9.00E-02	1.01E+00	3.30E+02	2.97E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.27E+02	1.67E+00	1.79E-04	1.13E+00	4.96E-03	5.23E+01	4.09E-01	6.41E+01	7.74E-05
PMWA1-Comp 2 (0-6")	9.00E-02	9.00E-02	1.01E+00	2.33E+02	2.09E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.30E+02	1.18E+00	1.79E-04	1.13E+00	3.50E-03	5.23E+01	4.09E-01	6.41E+01	5.46E-05
Paymaster Mine Waste Area 2																						**Maximum HQ (Paymaster Mine Waste Area 1)**	**9.76E-05**
PMWA2-0 (0-6")	9.00E-02	9.00E-02	1.01E+00	1.69E+02	1.52E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.67E+02	8.56E-01	1.79E-04	1.13E+00	2.53E-03	5.23E+01	4.09E-01	6.41E+01	3.96E-05
PMWA2-50 (0-6")	9.00E-02	9.00E-02	1.01E+00	8.98E+01	8.08E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	8.89E+01	4.56E-01	1.79E-04	1.13E+00	1.35E-03	5.23E+01	4.09E-01	6.41E+01	2.11E-05
PMWA2-100 (0-6")	9.00E-02	9.00E-02	1.01E+00	6.07E+02	5.46E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	6.01E+02	3.08E+00	1.79E-04	1.13E+00	9.13E-03	5.23E+01	4.09E-01	6.41E+01	1.42E-04
PMWA2-150 (0-6")	9.00E-02	9.00E-02	1.01E+00	3.40E+02	3.06E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.37E+02	1.73E+00	1.79E-04	1.13E+00	5.11E-03	5.23E+01	4.09E-01	6.41E+01	7.98E-05
PMWA2-200 (0-6")	9.00E-02	9.00E-02	1.01E+00	3.19E+02	2.87E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.16E+02	1.62E+00	1.79E-04	1.13E+00	4.80E-03	5.23E+01	4.09E-01	6.41E+01	7.48E-05
PMWA2-200+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
PMWA2-Comp 1 (0-6")	9.00E-02	9.00E-02	1.01E+00	3.03E+02	2.73E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.00E+02	1.54E+00	1.79E-04	1.13E+00	4.56E-03	5.23E+01	4.09E-01	6.41E+01	7.11E-05
																						Maximum HQ (Paymaster Mine Waste Area 2)	**1.42E-04**

TABLE C-9B: COPPER DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 9 - PAYMASTER MINE WASTE AREAS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **0.125**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
American Kestrel (Insectivorous Birds - Terrestrial)																							
Reference Site																							
PCBG-1 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	3.70E+00	9.70E+01	1.34E+00	7.84E-04	2.62E+01	2.05E-02	4.78E-04	1.24E-01	5.22E-03	5.23E+01	4.09E-01	4.12E+01	1.27E-04
MGBG-1 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	3.70E+00	3.04E+02	4.19E+00	7.84E-04	8.22E+01	6.44E-02	4.78E-04	1.24E-01	1.64E-02	5.23E+01	4.09E-01	4.12E+01	3.98E-04
MGBG-1 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	3.70E+00	3.04E+02	4.19E+00	7.84E-04	8.22E+01	6.44E-02	4.78E-04	1.24E-01	1.64E-02	5.23E+01	4.09E-01	4.12E+01	3.98E-04
MGBG-2 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	3.70E+00	8.45E+02	1.16E+01	7.84E-04	2.28E+02	1.79E-01	4.78E-04	1.24E-01	4.55E-02	5.23E+01	4.09E-01	4.12E+01	1.11E-03
PCBG-201	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	3.70E+00	1.88E+03	2.59E+01	7.84E-04	5.07E+02	3.98E-01	4.78E-04	1.24E-01	1.01E-01	5.23E+01	4.09E-01	4.12E+01	2.46E-03
PCBG-202	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	3.70E+00	3.64E+02	5.00E+00	7.84E-04	9.82E+01	7.70E-02	4.78E-04	1.24E-01	1.96E-02	5.23E+01	4.09E-01	4.12E+01	4.76E-04
Paymaster Mine Waste Area 1																						**Minimum HQ (Reference Site)**	**1.27E-04**
PMWA1-1 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	1.36E+03	1.87E+01	7.84E-04	2.81E+02	2.20E-01	4.78E-04	1.24E-01	7.31E-02	5.23E+01	4.09E-01	4.12E+01	1.77E-03
PMWA1-50 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	1.48E+03	2.04E+01	7.84E-04	3.06E+02	2.40E-01	4.78E-04	1.24E-01	7.95E-02	5.23E+01	4.09E-01	4.12E+01	1.93E-03
PMWA1-100 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	1.31E+03	1.80E+01	7.84E-04	2.69E+02	2.11E-01	4.78E-04	1.24E-01	7.00E-02	5.23E+01	4.09E-01	4.12E+01	1.70E-03
PMWA1-100+15 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
PMWA1-100+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
PMWA1-150 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	2.00E+03	2.75E+01	7.84E-04	4.12E+02	3.23E-01	4.78E-04	1.24E-01	1.07E-01	5.23E+01	4.09E-01	4.12E+01	2.60E-03
PMWA1-200 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	1.72E+03	2.37E+01	7.84E-04	3.55E+02	2.79E-01	4.78E-04	1.24E-01	9.24E-02	5.23E+01	4.09E-01	4.12E+01	2.24E-03
American Kestrel (Insectivorous Birds - Terrestrial)																							
PMWA1-230 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	1.36E+03	1.87E+01	7.84E-04	2.80E+02	2.20E-01	4.78E-04	1.24E-01	7.29E-02	5.23E+01	4.09E-01	4.12E+01	1.77E-03
PMWA1-230+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
PMWA1-Comp 1 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	1.58E+03	2.18E+01	7.84E-04	3.27E+02	2.56E-01	4.78E-04	1.24E-01	8.50E-02	5.23E+01	4.09E-01	4.12E+01	2.06E-03
PMWA1-Comp 2 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	1.12E+03	1.54E+01	7.84E-04	2.30E+02	1.81E-01	4.78E-04	1.24E-01	5.99E-02	5.23E+01	4.09E-01	4.12E+01	1.45E-03
Paymaster Mine Waste Area 2																						**Maximum HQ (Paymaster Mine Waste Area 1)**	**2.60E-03**
PMWA2-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	8.09E+02	1.11E+01	7.84E-04	1.67E+02	1.31E-01	4.78E-04	1.24E-01	4.34E-02	5.23E+01	4.09E-01	4.12E+01	1.05E-03
PMWA2-50 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	1.54E+03	2.12E+01	7.84E-04	3.19E+02	2.50E-01	4.78E-04	1.24E-01	8.29E-02	5.23E+01	4.09E-01	4.12E+01	2.01E-03
PMWA2-100 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	2.92E+03	4.01E+01	7.84E-04	6.01E+02	4.72E-01	4.78E-04	1.24E-01	1.56E-01	5.23E+01	4.09E-01	4.12E+01	3.80E-03
PMWA2-150 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	1.63E+03	2.25E+01	7.84E-04	3.37E+02	2.64E-01	4.78E-04	1.24E-01	8.76E-02	5.23E+01	4.09E-01	4.12E+01	2.13E-03
PMWA2-200 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	1.53E+03	2.11E+01	7.84E-04	3.16E+02	2.48E-01	4.78E-04	1.24E-01	8.22E-02	5.23E+01	4.09E-01	4.12E+01	2.00E-03
PMWA2-200+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
PMWA2-Comp 1 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	1.46E+03	2.00E+01	7.84E-04	3.00E+02	2.35E-01	4.78E-04	1.24E-01	7.81E-02	5.23E+01	4.09E-01	4.12E+01	1.90E-03
																						Maximum HQ (Paymaster Mine Waste Area 2)	**3.80E-03**
Meadow Vole (Small Herbivorous Mammal - Terrestrial)																							
Reference Site																							
PCBG-1 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	7.79E-01	2.04E+01	9.57E-02	NA	NA	NA	NA	1.13E-04	2.62E+01	2.95E-03	1.00E+00	3.06E-02	3.22E+00	6.32E+02	2.47E-02	6.24E+02	5.17E-03
MGBG-1 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	7.79E-01	6.40E+01	3.00E-01	NA	NA	NA	NA	1.13E-04	8.22E+01	9.24E-03	1.00E+00	3.06E-02	1.01E+01	6.32E+02	2.47E-02	6.24E+02	1.62E-02
MGBG-1 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	7.79E-01	6.40E+01	3.00E-01	NA	NA	NA	NA	1.13E-04	8.22E+01	9.24E-03	1.00E+00	3.06E-02	1.01E+01	6.32E+02	2.47E-02	6.24E+02	1.62E-02
MGBG-2 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	7.79E-01	1.78E+02	8.33E-01	NA	NA	NA	NA	1.13E-04	2.28E+02	2.57E-02	1.00E+00	3.06E-02	2.81E+01	6.32E+02	2.47E-02	6.24E+02	4.50E-02
PCBG-201	4.69E-03	NA	NA	NA	NA	4.69E-03	7.79E-01	3.95E+02	1.85E+00	NA	NA	NA	NA	1.13E-04	5.07E+02	5.71E-02	1.00E+00	3.06E-02	6.24E+01	6.32E+02	2.47E-02	6.24E+02	1.00E-01
PCBG-202	4.69E-03	NA	NA	NA	NA	4.69E-03	7.79E-01	7.65E+01	3.59E-01	NA	NA	NA	NA	1.13E-04	9.82E+01	1.10E-02	1.00E+00	3.06E-02	1.21E+01	6.32E+02	2.47E-02	6.24E+02	1.94E-02
Paymaster Mine Waste Area 1																						**Minimum HQ (Reference Site)**	**5.17E-03**
PMWA1-1 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	3.18E+02	1.49E+00	NA	NA	NA	NA	1.13E-04	2.81E+02	3.16E-02	1.00E+00	3.06E-02	4.97E+01	6.32E+02	2.47E-02	6.24E+02	7.98E-02
PMWA1-50 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	3.46E+02	1.62E+00	NA	NA	NA	NA	1.13E-04	3.06E+02	3.44E-02	1.00E+00	3.06E-02	5.41E+01	6.32E+02	2.47E-02	6.24E+02	8.68E-02
PMWA1-100 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	3.05E+02	1.43E+00	NA	NA	NA	NA	1.13E-04	2.69E+02	3.03E-02	1.00E+00	3.06E-02	4.77E+01	6.32E+02	2.47E-02	6.24E+02	7.64E-02
PMWA1-100+15 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
PMWA1-100+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
PMWA1-150 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	4.66E+02	2.18E+00	NA	NA	NA	NA	1.13E-04	4.12E+02	4.63E-02	1.00E+00	3.06E-02	7.29E+01	6.32E+02	2.47E-02	6.24E+02	1.17E-01
PMWA1-200 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	4.02E+02	1.88E+00	NA	NA	NA	NA	1.13E-04	3.55E+02	4.00E-02	1.00E+00	3.06E-02	6.29E+01	6.32E+02	2.47E-02	6.24E+02	1.01E-01
PMWA1-230 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	3.17E+02	1.49E+00	NA	NA	NA	NA	1.13E-04	2.80E+02	3.15E-02	1.00E+00	3.06E-02	4.96E+01	6.32E+02	2.47E-02	6.24E+02	7.96E-02
PMWA1-230+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
PMWA1-Comp 1 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	3.70E+02	1.73E+00	NA	NA	NA	NA	1.13E-04	3.27E+02	3.68E-02	1.00E+00	3.06E-02	5.78E+01	6.32E+02	2.47E-02	6.24E+02	9.28E-02
PMWA1-Comp 2 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	2.60E+02	1.22E+00	NA	NA	NA	NA	1.13E-04	2.30E+02	2.59E-02	1.00E+00	3.06E-02	4.08E+01	6.32E+02	2.47E-02	6.24E+02	6.54E-02
Paymaster Mine Waste Area 2																						**Maximum HQ (Paymaster Mine Waste Area 1)**	**1.17E-01**
PMWA2-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	1.89E+02	8.86E-01	NA	NA	NA	NA	1.13E-04	1.67E+02	1.88E-02	1.00E+00	3.06E-02	2.96E+01	6.32E+02	2.47E-02	6.24E+02	4.74E-02
PMWA2-50 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	1.01E+02	4.71E-01	NA	NA	NA	NA	1.13E-04	8.89E+01	1.00E-02	1.00E+00	3.06E-02	1.57E+01	6.32E+02	2.47E-02	6.24E+02	2.52E-02
PMWA2-100 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	6.80E+02	3.19E+00	NA	NA	NA	NA	1.13E-04	6.01E+02	6.77E-02	1.00E+00	3.06E-02	1.06E+02	6.32E+02	2.47E-02	6.24E+02	1.71E-01
PMWA2-150 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	3.81E+02	1.79E+00	NA	NA	NA	NA	1.13E-04	3.37E+02	3.79E-02	1.00E+00	3.06E-02	5.96E+01	6.32E+02	2.47E-02	6.24E+02	9.56E-02
PMWA2-200 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	3.57E+02	1.68E+00	NA	NA	NA	NA	1.13E-04	3.16E+02	3.55E-02	1.00E+00	3.06E-02	5.59E+01	6.32E+02	2.47E-02	6.24E+02	8.97E-02
PMWA2-200+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
PMWA2-Comp 1 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	3.40E+02	1.59E+00	NA	NA	NA	NA	1.13E-04	3.00E+02	3.38E-02	1.00E+00	3.06E-02	5.31E+01	6.32E+02	2.47E-02	6.24E+02	8.52E-02
																						Maximum HQ (Paymaster Mine Waste Area 2)	**1.71E-01**

TABLE C-9B: COPPER DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 9 - PAYMASTER MINE WASTE AREAS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **0.125**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
White-Tailed Deer (Large Herbivorous Mammal - Terrestrial)																							
Reference Site																							
PCBG-1 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	7.79E-01	2.04E+01	2.92E+01	NA	NA	NA	NA	2.86E-02	2.62E+01	7.50E-01	6.99E-04	1.35E+02	1.55E-04	6.32E+02	2.47E-02	3.77E+02	4.12E-07
MGBG-1 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	7.79E-01	6.40E+01	9.16E+01	NA	NA	NA	NA	2.86E-02	8.22E+01	2.35E+00	6.99E-04	1.35E+02	4.87E-04	6.32E+02	2.47E-02	3.77E+02	1.29E-06
MGBG-1 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	7.79E-01	6.40E+01	9.16E+01	NA	NA	NA	NA	2.86E-02	8.22E+01	2.35E+00	6.99E-04	1.35E+02	4.87E-04	6.32E+02	2.47E-02	3.77E+02	1.29E-06
MGBG-2 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	7.79E-01	1.78E+02	2.54E+02	NA	NA	NA	NA	2.86E-02	2.28E+02	6.53E+00	6.99E-04	1.35E+02	1.35E-03	6.32E+02	2.47E-02	3.77E+02	3.59E-06
PCBG-201	1.43E+00	NA	NA	NA	NA	1.43E+00	7.79E-01	3.95E+02	5.66E+02	NA	NA	NA	NA	2.86E-02	5.07E+02	1.45E+01	6.99E-04	1.35E+02	3.01E-03	6.32E+02	2.47E-02	3.77E+02	7.98E-06
PCBG-202	1.43E+00	NA	NA	NA	NA	1.43E+00	7.79E-01	7.65E+01	1.09E+02	NA	NA	NA	NA	2.86E-02	9.82E+01	2.81E+00	6.99E-04	1.35E+02	5.82E-04	6.32E+02	2.47E-02	3.77E+02	1.54E-06
Paymaster Mine Waste Area 1																						**Minimum HQ (Reference Site)**	**4.12E-07**
PMWA1-1 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	3.18E+02	4.55E+02	NA	NA	NA	NA	2.86E-02	2.81E+02	8.04E+00	6.99E-04	1.35E+02	2.40E-03	6.32E+02	2.47E-02	3.77E+02	6.36E-06
PMWA1-50 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	3.46E+02	4.95E+02	NA	NA	NA	NA	2.86E-02	3.06E+02	8.75E+00	6.99E-04	1.35E+02	2.61E-03	6.32E+02	2.47E-02	3.77E+02	6.93E-06
PMWA1-100 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	3.05E+02	4.36E+02	NA	NA	NA	NA	2.86E-02	2.69E+02	7.71E+00	6.99E-04	1.35E+02	2.30E-03	6.32E+02	2.47E-02	3.77E+02	6.10E-06
PMWA1-100+15 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
PMWA1-100+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
PMWA1-150 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	4.66E+02	6.67E+02	NA	NA	NA	NA	2.86E-02	4.12E+02	1.18E+01	6.99E-04	1.35E+02	3.52E-03	6.32E+02	2.47E-02	3.77E+02	9.33E-06
PMWA1-200 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	4.02E+02	5.75E+02	NA	NA	NA	NA	2.86E-02	3.55E+02	1.02E+01	6.99E-04	1.35E+02	3.03E-03	6.32E+02	2.47E-02	3.77E+02	8.05E-06
PMWA1-230 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	3.17E+02	4.54E+02	NA	NA	NA	NA	2.86E-02	2.80E+02	8.02E+00	6.99E-04	1.35E+02	2.39E-03	6.32E+02	2.47E-02	3.77E+02	6.35E-06
PMWA1-230+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
PMWA1-Comp 1 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	3.70E+02	5.29E+02	NA	NA	NA	NA	2.86E-02	3.27E+02	9.35E+00	6.99E-04	1.35E+02	2.79E-03	6.32E+02	2.47E-02	3.77E+02	7.40E-06
PMWA1-Comp 2 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	2.60E+02	3.73E+02	NA	NA	NA	NA	2.86E-02	2.30E+02	6.59E+00	6.99E-04	1.35E+02	1.97E-03	6.32E+02	2.47E-02	3.77E+02	5.22E-06
Paymaster Mine Waste Area 2																						**Maximum HQ (Paymaster Mine Waste Area 1)**	**9.33E-06**
PMWA2-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	1.89E+02	2.70E+02	NA	NA	NA	NA	2.86E-02	1.67E+02	4.78E+00	6.99E-04	1.35E+02	1.43E-03	6.32E+02	2.47E-02	3.77E+02	3.78E-06
PMWA2-50 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	1.01E+02	1.44E+02	NA	NA	NA	NA	2.86E-02	8.89E+01	2.54E+00	6.99E-04	1.35E+02	7.59E-04	6.32E+02	2.47E-02	3.77E+02	2.01E-06
PMWA2-100 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	6.80E+02	9.74E+02	NA	NA	NA	NA	2.86E-02	6.01E+02	1.72E+01	6.99E-04	1.35E+02	5.13E-03	6.32E+02	2.47E-02	3.77E+02	1.36E-05
PMWA2-150 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	3.81E+02	5.46E+02	NA	NA	NA	NA	2.86E-02	3.37E+02	9.64E+00	6.99E-04	1.35E+02	2.88E-03	6.32E+02	2.47E-02	3.77E+02	7.63E-06
PMWA2-200 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	3.57E+02	5.12E+02	NA	NA	NA	NA	2.86E-02	3.16E+02	9.04E+00	6.99E-04	1.35E+02	2.70E-03	6.32E+02	2.47E-02	3.77E+02	7.16E-06
PMWA2-200+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
PMWA2-Comp 1 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	3.40E+02	4.86E+02	NA	NA	NA	NA	2.86E-02	3.00E+02	8.59E+00	6.99E-04	1.35E+02	2.56E-03	6.32E+02	2.47E-02	3.77E+02	6.80E-06
																						Maximum HQ (Paymaster Mine Waste Area 2)	**1.36E-05**
Red Fox (Carnivorous Mammal - Terrestrial)																							
Reference Site																							
PCBG-1 (0-6")	1.72E-01	1.72E-01	6.61E-01	1.73E+01	2.97E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.62E+01	1.26E-01	9.24E-05	4.54E+00	6.30E-05	6.32E+02	2.47E-02	4.62E+02	1.36E-07
MGBG-1 (0-6")	1.72E-01	1.72E-01	6.61E-01	5.43E+01	9.31E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	8.22E+01	3.95E-01	9.24E-05	4.54E+00	1.98E-04	6.32E+02	2.47E-02	4.62E+02	4.28E-07
MGBG-1 (0-6")	1.72E-01	1.72E-01	6.61E-01	5.43E+01	9.31E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	8.22E+01	3.95E-01	9.24E-05	4.54E+00	1.98E-04	6.32E+02	2.47E-02	4.62E+02	4.28E-07
MGBG-2 (0-6")	1.72E-01	1.72E-01	6.61E-01	1.51E+02	2.59E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.28E+02	1.10E+00	9.24E-05	4.54E+00	5.49E-04	6.32E+02	2.47E-02	4.62E+02	1.19E-06
PCBG-201	1.72E-01	1.72E-01	6.61E-01	3.35E+02	5.75E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.07E+02	2.44E+00	9.24E-05	4.54E+00	1.22E-03	6.32E+02	2.47E-02	4.62E+02	2.64E-06
PCBG-202	1.72E-01	1.72E-01	6.61E-01	6.49E+01	1.11E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	9.82E+01	4.72E-01	9.24E-05	4.54E+00	2.36E-04	6.32E+02	2.47E-02	4.62E+02	5.11E-07
Paymaster Mine Waste Area 1																						**Minimum HQ (Reference Site)**	**1.36E-07**
PMWA1-1 (0-6")	1.72E-01	1.72E-01	1.01E+00	2.84E+02	4.87E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.81E+02	1.35E+00	9.24E-05	4.54E+00	1.02E-03	6.32E+02	2.47E-02	4.62E+02	2.20E-06
PMWA1-50 (0-6")	1.72E-01	1.72E-01	1.01E+00	3.09E+02	5.30E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.06E+02	1.47E+00	9.24E-05	4.54E+00	1.11E-03	6.32E+02	2.47E-02	4.62E+02	2.40E-06
PMWA1-100 (0-6")	1.72E-01	1.72E-01	1.01E+00	2.72E+02	4.66E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.69E+02	1.29E+00	9.24E-05	4.54E+00	9.76E-04	6.32E+02	2.47E-02	4.62E+02	2.11E-06
PMWA1-100+15 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
PMWA1-100+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
PMWA1-150 (0-6")	1.72E-01	1.72E-01	1.01E+00	4.16E+02	7.14E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.12E+02	1.98E+00	9.24E-05	4.54E+00	1.49E-03	6.32E+02	2.47E-02	4.62E+02	3.23E-06
PMWA1-200 (0-6")	1.72E-01	1.72E-01	1.01E+00	3.59E+02	6.16E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.55E+02	1.71E+00	9.24E-05	4.54E+00	1.29E-03	6.32E+02	2.47E-02	4.62E+02	2.79E-06
PMWA1-230 (0-6")	1.72E-01	1.72E-01	1.01E+00	2.83E+02	4.86E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.80E+02	1.35E+00	9.24E-05	4.54E+00	1.02E-03	6.32E+02	2.47E-02	4.62E+02	2.20E-06
PMWA1-230+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
PMWA1-Comp 1 (0-6")	1.72E-01	1.72E-01	1.01E+00	3.30E+02	5.66E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.27E+02	1.57E+00	9.24E-05	4.54E+00	1.18E-03	6.32E+02	2.47E-02	4.62E+02	2.56E-06
PMWA1-Comp 2 (0-6")	1.72E-01	1.72E-01	1.01E+00	2.33E+02	3.99E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.30E+02	1.11E+00	9.24E-05	4.54E+00	8.35E-04	6.32E+02	2.47E-02	4.62E+02	1.81E-06
Paymaster Mine Waste Area 2																						**Maximum HQ (Paymaster Mine Waste Area 1)**	**3.23E-06**
PMWA2-0 (0-6")	1.72E-01	1.72E-01	1.01E+00	1.69E+02	2.89E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.67E+02	8.02E-01	9.24E-05	4.54E+00	6.05E-04	6.32E+02	2.47E-02	4.62E+02	1.31E-06
PMWA2-50 (0-6")	1.72E-01	1.72E-01	1.01E+00	8.98E+01	1.54E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	8.89E+01	4.27E-01	9.24E-05	4.54E+00	3.22E-04	6.32E+02	2.47E-02	4.62E+02	6.97E-07
PMWA2-100 (0-6")	1.72E-01	1.72E-01	1.01E+00	6.07E+02	1.04E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	6.01E+02	2.89E+00	9.24E-05	4.54E+00	2.18E-03	6.32E+02	2.47E-02	4.62E+02	4.72E-06
PMWA2-150 (0-6")	1.72E-01	1.72E-01	1.01E+00	3.40E+02	5.84E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.37E+02	1.62E+00	9.24E-05	4.54E+00	1.22E-03	6.32E+02	2.47E-02	4.62E+02	2.64E-06
PMWA2-200 (0-6")	1.72E-01	1.72E-01	1.01E+00	3.19E+02	5.47E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.16E+02	1.52E+00	9.24E-05	4.54E+00	1.15E-03	6.32E+02	2.47E-02	4.62E+02	2.48E-06
PMWA2-200+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
PMWA2-Comp 1 (0-6")	1.72E-01	1.72E-01	1.01E+00	3.03E+02	5.20E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.00E+02	1.44E+00	9.24E-05	4.54E+00	1.09E-03	6.32E+02	2.47E-02	4.62E+02	2.36E-06
																						Maximum HQ (Paymaster Mine Waste Area 2)	**4.72E-06**

TABLE C-9B: COPPER DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 9 - PAYMASTER MINE WASTE AREAS (Continued)
Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)
calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **0.125**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Masked Shrew (Omnivorous Mammal - Terrestrial, Wetland)																							
Reference Site																							
PCBG-1 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	3.70E+00	9.70E+01	8.22E-01	1.10E-03	2.62E+01	2.88E-02	3.13E-01	5.50E-03	4.83E+01	6.32E+02	2.47E-02	6.91E+02	6.99E-02
MGBG-1 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	3.70E+00	3.04E+02	2.58E+00	1.10E-03	8.22E+01	9.05E-02	3.13E-01	5.50E-03	1.52E+02	6.32E+02	2.47E-02	6.91E+02	2.19E-01
MGBG-1 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	3.70E+00	3.04E+02	2.58E+00	1.10E-03	8.22E+01	9.05E-02	3.13E-01	5.50E-03	1.52E+02	6.32E+02	2.47E-02	6.91E+02	2.19E-01
MGBG-2 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	3.70E+00	8.45E+02	7.16E+00	1.10E-03	2.28E+02	2.51E-01	3.13E-01	5.50E-03	4.21E+02	6.32E+02	2.47E-02	6.91E+02	6.09E-01
PCBG-201	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	3.70E+00	1.88E+03	1.59E+01	1.10E-03	5.07E+02	5.59E-01	3.13E-01	5.50E-03	9.37E+02	6.32E+02	2.47E-02	6.91E+02	1.36E+00
PCBG-202	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	3.70E+00	3.64E+02	3.08E+00	1.10E-03	9.82E+01	1.08E-01	3.13E-01	5.50E-03	1.81E+02	6.32E+02	2.47E-02	6.91E+02	2.62E-01
Paymaster Mine Waste Area 1																						**Minimum HQ (Reference Site)**	**6.99E-02**
PMWA1-1 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	1.36E+03	1.15E+01	1.10E-03	2.81E+02	3.09E-01	3.13E-01	5.50E-03	6.73E+02	6.32E+02	2.47E-02	6.91E+02	9.74E-01
PMWA1-50 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	1.48E+03	1.26E+01	1.10E-03	3.06E+02	3.37E-01	3.13E-01	5.50E-03	7.33E+02	6.32E+02	2.47E-02	6.91E+02	1.06E+00
PMWA1-100 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	1.31E+03	1.11E+01	1.10E-03	2.69E+02	2.96E-01	3.13E-01	5.50E-03	6.45E+02	6.32E+02	2.47E-02	6.91E+02	9.33E-01
PMWA1-100+15 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
PMWA1-100+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
PMWA1-150 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	2.00E+03	1.69E+01	1.10E-03	4.12E+02	4.53E-01	3.13E-01	5.50E-03	9.87E+02	6.32E+02	2.47E-02	6.91E+02	1.43E+00
PMWA1-200 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	1.72E+03	1.46E+01	1.10E-03	3.55E+02	3.91E-01	3.13E-01	5.50E-03	8.51E+02	6.32E+02	2.47E-02	6.91E+02	1.23E+00
PMWA1-230 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	1.36E+03	1.15E+01	1.10E-03	2.80E+02	3.09E-01	3.13E-01	5.50E-03	6.72E+02	6.32E+02	2.47E-02	6.91E+02	9.72E-01
PMWA1-230+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
PMWA1-Comp 1 (0-6")	BB	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	1.58E+03	1.34E+01	1.10E-03	3.27E+02	3.60E-01	3.13E-01	5.50E-03	7.83E+02	6.32E+02	2.47E-02	6.91E+02	1.13E+00
PMWA1-Comp 2 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	1.12E+03	9.46E+00	1.10E-03	2.30E+02	2.53E-01	3.13E-01	5.50E-03	5.52E+02	6.32E+02	2.47E-02	6.91E+02	7.98E-01
Paymaster Mine Waste Area 2																						**Maximum HQ (Paymaster Mine Waste Area 1)**	**1.43E+00**
PMWA2-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	8.09E+02	6.86E+00	1.10E-03	1.67E+02	1.84E-01	3.13E-01	5.50E-03	4.00E+02	6.32E+02	2.47E-02	6.91E+02	5.79E-01
PMWA2-50 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	4.31E+02	3.65E+00	1.10E-03	8.89E+01	9.78E-02	3.13E-01	5.50E-03	2.13E+02	6.32E+02	2.47E-02	6.91E+02	3.08E-01
PMWA2-100 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	2.92E+03	2.47E+01	1.10E-03	6.01E+02	6.62E-01	3.13E-01	5.50E-03	1.44E+03	6.32E+02	2.47E-02	6.91E+02	2.08E+00
PMWA2-150 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	1.63E+03	1.38E+01	1.10E-03	3.37E+02	3.71E-01	3.13E-01	5.50E-03	8.07E+02	6.32E+02	2.47E-02	6.91E+02	1.17E+00
PMWA2-200 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	1.53E+03	1.30E+01	1.10E-03	3.16E+02	3.48E-01	3.13E-01	5.50E-03	7.57E+02	6.32E+02	2.47E-02	6.91E+02	1.10E+00
PMWA2-200+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
PMWA2-Comp 1 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	1.46E+03	1.23E+01	1.10E-03	3.00E+02	3.30E-01	3.13E-01	5.50E-03	7.19E+02	6.32E+02	2.47E-02	6.91E+02	1.04E+00
																						Maximum HQ (Paymaster Mine Waste Area 2)	**2.08E+00**

Notes

1 See Tables 3-1 through 3-13 for ingestion rates, foraging ranges used to calculate the SUF, and body weights.
2 BAFs were calculated by dividing site-collected tissue by collocated soil concentrations (BAFs are in dry weight). The maximum BAF calculated from the Beartrap Creek and Blackfoot River transects was used for site dose calculations. The maximum BAF from the terrestrial reference site was used for reference site dose calculations.
3 The mammal, plant, and invertebrate concentrations were calculated by multiplying the soil concentration by the BAF to generate a tissue concentration (see note 2).
4 Mammal, plant, and invertebrate daily doses were calculated by multiplying the ingestion rate (see note 1) by the tissue concentration (see note 3).
5 Soil concentration from 0 to 6 inches below ground surface at point ID as measured by XRF 10. Doses were not calculated for detected and non-detected soil concentrations measured below the minimum reference site concentration, as indicated by BB. For results that were measured at less than the detection limit, doses were calculated using half of the detection limit.
6 Soil daily dose was calculated by multiplying the soil ingestion rate (see note 1) by soil concentration (see note 5).
7 Total daily dose is calculated using the following equation: total daily dose = ([mammal daily dose (if applicable) + plant daily dose (if applicable) + invertebrate daily dose (if applicable) + soil daily dose]*SUF)/receptor species body weight.
8 The TRVs used in this risk assessment represent a mid-range effects level. The derivation of TRVs is described in Navy (1998).
9 Allometrically adjusted TRVs for birds were calculated using the following equation: receptor species TRV = (test species TRV) x (test species body weight / receptor species body weight)$^{(1-1.2)}$.
10 Allometrically adjusted TRVs for mammals were calculated using the following equation: receptor species TRV = (test species TRV) x (test species body weight / receptor species body weight)$^{(1-0.94)}$.
11 HQs were calculated using the following equation: HQ = total daily dose/allometrically adjusted TRV.
12 Highlighted cells indicate an HQ greater than 1.0.

BAF	Bioaccumulation Factor	mg/day	Milligram per day
BB	Below minimum background reference site concentration	mg/kg	Milligram per kilogram
EE/CA	Engineering Evaluation/Cost Analysis	NA	Not applicable
EU	Exposure Unit	Navy	Department of the Navy
HQ	Hazard quotient	SUF	Site use factor
ID	Identification	TRV	Toxicity reference value
kg	Kilogram	XRF	X-ray fluorescence
kg/day	Kilogram per day	XRF 10	XRF measurements recorded following drying and seiving through a #10-mesh screen

Sources: Department of the Navy. 1998. "Development of Toxicity Reference Values for Conducting Ecological Risk Assessments at Naval Facilities in California, Interim Final." Prepared by Naval Facilities Engineering Command, Engineering Field Activity West (EFA West). San Bruno, California.

TABLE C-9C: LEAD DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 9 - PAYMASTER MINE WASTE AREAS

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **0.125**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Mourning Dove (Herbivorous Birds - Terrestrial)																							
Reference Site																							
PCBG-1 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	4.35E-02	1.26E+00	7.28E-03	NA	NA	NA	NA	5.36E-04	2.91E+01	1.56E-02	4.83E-04	1.09E-01	1.01E-04	8.75E+00	8.00E-01	5.88E+00	1.72E-05
MGBG-1 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	4.35E-02	1.35E+01	7.79E-02	NA	NA	NA	NA	5.36E-04	3.11E+02	1.67E-01	4.83E-04	1.09E-01	1.08E-03	8.75E+00	8.00E-01	5.88E+00	1.84E-04
MGBG-1 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	4.35E-02	1.35E+01	7.79E-02	NA	NA	NA	NA	5.36E-04	3.11E+02	1.67E-01	4.83E-04	1.09E-01	1.08E-03	8.75E+00	8.00E-01	5.88E+00	1.84E-04
MGBG-2 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	4.35E-02	1.02E+01	5.88E-02	NA	NA	NA	NA	5.36E-04	2.35E+02	1.26E-01	4.83E-04	1.09E-01	8.17E-04	8.75E+00	8.00E-01	5.88E+00	1.39E-04
PCBG-201	5.76E-03	NA	NA	NA	NA	5.76E-03	4.35E-02	1.64E+01	9.47E-02	NA	NA	NA	NA	5.36E-04	3.78E+02	2.03E-01	4.83E-04	1.09E-01	1.31E-03	8.75E+00	8.00E-01	5.88E+00	2.24E-04
PCBG-202	5.76E-03	NA	NA	NA	NA	5.76E-03	4.35E-02	4.84E+01	2.79E-01	NA	NA	NA	NA	5.36E-04	1.11E+03	5.97E-01	4.83E-04	1.09E-01	3.87E-03	8.75E+00	8.00E-01	5.88E+00	6.59E-04
Paymaster Mine Waste Area 1																						**Minimum HQ (Reference Site)**	**1.72E-05**
PMWA1-1 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	1.45E+02	8.36E-01	NA	NA	NA	NA	5.36E-04	2.31E+02	1.24E-01	4.83E-04	1.09E-01	4.24E-03	8.75E+00	8.00E-01	5.88E+00	7.22E-04
PMWA1-50 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	1.66E+02	9.59E-01	NA	NA	NA	NA	5.36E-04	2.65E+02	1.42E-01	4.83E-04	1.09E-01	4.87E-03	8.75E+00	8.00E-01	5.88E+00	8.28E-04
PMWA1-100 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	3.63E+02	2.09E+00	NA	NA	NA	NA	5.36E-04	5.78E+02	3.09E-01	4.83E-04	1.09E-01	1.06E-02	8.75E+00	8.00E-01	5.88E+00	1.81E-03
PMWA1-100+15 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
PMWA1-100+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
PMWA1-150 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	1.49E+02	8.59E-01	NA	NA	NA	NA	5.36E-04	2.37E+02	1.27E-01	4.83E-04	1.09E-01	4.36E-03	8.75E+00	8.00E-01	5.88E+00	7.42E-04
PMWA1-200 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	5.35E+02	3.08E+00	NA	NA	NA	NA	5.36E-04	8.51E+02	4.56E-01	4.83E-04	1.09E-01	1.56E-02	8.75E+00	8.00E-01	5.88E+00	2.66E-03
PMWA1-230 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	5.00E+02	2.88E+00	NA	NA	NA	NA	5.36E-04	7.97E+02	4.27E-01	4.83E-04	1.09E-01	1.46E-02	8.75E+00	8.00E-01	5.88E+00	2.49E-03
PMWA1-230+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
PMWA1-Comp 1 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	3.97E+02	2.29E+00	NA	NA	NA	NA	5.36E-04	6.32E+02	3.38E-01	4.83E-04	1.09E-01	1.16E-02	8.75E+00	8.00E-01	5.88E+00	1.97E-03
PMWA1-Comp 2 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	3.55E+02	2.04E+00	NA	NA	NA	NA	5.36E-04	5.65E+02	3.03E-01	4.83E-04	1.09E-01	1.04E-02	8.75E+00	8.00E-01	5.88E+00	1.77E-03
Paymaster Mine Waste Area 2																						**Maximum HQ (Paymaster Mine Waste Area 1)**	**2.66E-03**
PMWA2-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	1.12E+02	6.45E-01	NA	NA	NA	NA	5.36E-04	1.78E+02	9.55E-02	4.83E-04	1.09E-01	3.27E-03	8.75E+00	8.00E-01	5.88E+00	5.57E-04
PMWA2-50 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	9.64E+01	5.56E-01	NA	NA	NA	NA	5.36E-04	1.54E+02	8.23E-02	4.83E-04	1.09E-01	2.82E-03	8.75E+00	8.00E-01	5.88E+00	4.80E-04
PMWA2-100 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	1.40E+02	8.06E-01	NA	NA	NA	NA	5.36E-04	2.23E+02	1.19E-01	4.83E-04	1.09E-01	4.09E-03	8.75E+00	8.00E-01	5.88E+00	6.96E-04
PMWA2-150 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	1.77E+02	1.02E+00	NA	NA	NA	NA	5.36E-04	2.81E+02	1.51E-01	4.83E-04	1.09E-01	5.16E-03	8.75E+00	8.00E-01	5.88E+00	8.79E-04
PMWA2-200 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	4.05E+02	2.33E+00	NA	NA	NA	NA	5.36E-04	6.45E+02	3.45E-01	4.83E-04	1.09E-01	1.18E-02	8.75E+00	8.00E-01	5.88E+00	2.02E-03
PMWA2-200+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
PMWA2-Comp 1 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	3.72E+02	2.14E+00	NA	NA	NA	NA	5.36E-04	5.92E+02	3.17E-01	4.83E-04	1.09E-01	1.09E-02	8.75E+00	8.00E-01	5.88E+00	1.85E-03
																						Maximum HQ (Paymaster Mine Waste Area 2)	**2.02E-03**
Red-Tailed Hawk (Carnivorous Birds - Terrestrial)																							
Reference Site																							
PCBG-1 (0-6")	9.00E-02	9.00E-02	7.62E-02	2.22E+00	1.99E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.91E+01	1.49E-01	1.79E-04	1.13E+00	5.51E-05	8.75E+00	8.00E-01	9.38E+00	5.88E-06
MGBG-1 (0-6")	9.00E-02	9.00E-02	7.62E-02	2.37E+01	2.13E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.11E+02	1.59E+00	1.79E-04	1.13E+00	5.90E-04	8.75E+00	8.00E-01	9.38E+00	6.28E-05
MGBG-1 (0-6")	9.00E-02	9.00E-02	7.62E-02	2.37E+01	2.13E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.11E+02	1.59E+00	1.79E-04	1.13E+00	5.90E-04	8.75E+00	8.00E-01	9.38E+00	6.28E-05
MGBG-2 (0-6")	9.00E-02	9.00E-02	7.62E-02	1.79E+01	1.61E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.35E+02	1.21E+00	1.79E-04	1.13E+00	4.46E-04	8.75E+00	8.00E-01	9.38E+00	4.75E-05
PCBG-201	9.00E-02	9.00E-02	7.62E-02	2.88E+01	2.59E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.78E+02	1.94E+00	1.79E-04	1.13E+00	7.17E-04	8.75E+00	8.00E-01	9.38E+00	7.65E-05
PCBG-202	9.00E-02	9.00E-02	7.62E-02	8.49E+01	7.64E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.11E+03	5.71E+00	1.79E-04	1.13E+00	2.11E-03	8.75E+00	8.00E-01	9.38E+00	2.25E-04
Paymaster Mine Waste Area 1																						**Minimum HQ (Reference Site)**	**5.88E-06**
PMWA1-1 (0-6")	9.00E-02	9.00E-02	9.28E-01	2.14E+02	1.93E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.31E+02	1.18E+00	1.79E-04	1.13E+00	3.24E-03	8.75E+00	8.00E-01	9.38E+00	3.45E-04
PMWA1-50 (0-6")	9.00E-02	9.00E-02	9.28E-01	2.46E+02	2.21E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.65E+02	1.36E+00	1.79E-04	1.13E+00	3.71E-03	8.75E+00	8.00E-01	9.38E+00	3.96E-04
PMWA1-100 (0-6")	9.00E-02	9.00E-02	9.28E-01	5.36E+02	4.82E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.78E+02	2.96E+00	1.79E-04	1.13E+00	8.09E-03	8.75E+00	8.00E-01	9.38E+00	8.63E-04
PMWA1-100+15 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
PMWA1-100+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
PMWA1-150 (0-6")	9.00E-02	9.00E-02	9.28E-01	2.20E+02	1.98E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.37E+02	1.22E+00	1.79E-04	1.13E+00	3.33E-03	8.75E+00	8.00E-01	9.38E+00	3.54E-04
PMWA1-200 (0-6")	9.00E-02	9.00E-02	9.28E-01	7.90E+02	7.11E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	8.51E+02	4.37E+00	1.79E-04	1.13E+00	1.19E-02	8.75E+00	8.00E-01	9.38E+00	1.27E-03
PMWA1-230 (0-6")	9.00E-02	9.00E-02	9.28E-01	7.39E+02	6.65E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	7.97E+02	4.08E+00	1.79E-04	1.13E+00	1.12E-02	8.75E+00	8.00E-01	9.38E+00	1.19E-03
PMWA1-230+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
PMWA1-Comp 1 (0-6")	9.00E-02	9.00E-02	9.28E-01	5.86E+02	5.27E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	6.32E+02	3.24E+00	1.79E-04	1.13E+00	8.85E-03	8.75E+00	8.00E-01	9.38E+00	9.43E-04
PMWA1-Comp 2 (0-6")	9.00E-02	9.00E-02	9.28E-01	5.24E+02	4.71E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.65E+02	2.90E+00	1.79E-04	1.13E+00	7.92E-03	8.75E+00	8.00E-01	9.38E+00	8.44E-04
Paymaster Mine Waste Area 2																						**Maximum HQ (Paymaster Mine Waste Area 1)**	**1.27E-03**
PMWA2-0 (0-6")	9.00E-02	9.00E-02	9.28E-01	1.65E+02	1.49E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.78E+02	9.14E-01	1.79E-04	1.13E+00	2.50E-03	8.75E+00	8.00E-01	9.38E+00	2.66E-04
PMWA2-50 (0-6")	9.00E-02	9.00E-02	9.28E-01	1.42E+02	1.28E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.54E+02	7.87E-01	1.79E-04	1.13E+00	2.15E-03	8.75E+00	8.00E-01	9.38E+00	2.29E-04
PMWA2-100 (0-6")	9.00E-02	9.00E-02	9.28E-01	2.07E+02	1.86E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.23E+02	1.14E+00	1.79E-04	1.13E+00	3.12E-03	8.75E+00	8.00E-01	9.38E+00	3.33E-04
PMWA2-150 (0-6")	9.00E-02	9.00E-02	9.28E-01	2.61E+02	2.35E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.81E+02	1.44E+00	1.79E-04	1.13E+00	3.94E-03	8.75E+00	8.00E-01	9.38E+00	4.20E-04
PMWA2-200 (0-6")	9.00E-02	9.00E-02	9.28E-01	5.98E+02	5.38E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	6.45E+02	3.31E+00	1.79E-04	1.13E+00	9.04E-03	8.75E+00	8.00E-01	9.38E+00	9.63E-04
PMWA2-200+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
PMWA2-Comp 1 (0-6")	9.00E-02	9.00E-02	9.28E-01	5.49E+02	4.94E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.92E+02	3.04E+00	1.79E-04	1.13E+00	8.30E-03	8.75E+00	8.00E-01	9.38E+00	8.84E-04
																						Maximum HQ (Paymaster Mine Waste Area 2)	**9.63E-04**

TABLE C-9C: LEAD DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 9 - PAYMASTER MINE WASTE AREAS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **0.125**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
American Kestrel (Insectivorous Birds - Terrestrial)																							
Reference Site																							
PCBG-1 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	4.51E+01	6.21E-01	7.84E-04	2.91E+01	2.28E-02	4.78E-04	1.24E-01	2.48E-03	8.75E+00	8.00E-01	6.03E+00	4.12E-04
MGBG-1 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	4.83E+02	6.64E+00	7.84E-04	3.11E+02	2.44E-01	4.78E-04	1.24E-01	2.65E-02	8.75E+00	8.00E-01	6.03E+00	4.40E-03
MGBG-1 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	4.83E+02	6.64E+00	7.84E-04	3.11E+02	2.44E-01	4.78E-04	1.24E-01	2.65E-02	8.75E+00	8.00E-01	6.03E+00	4.40E-03
MGBG-2 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	3.65E+02	5.02E+00	7.84E-04	2.35E+02	1.84E-01	4.78E-04	1.24E-01	2.00E-02	8.75E+00	8.00E-01	6.03E+00	3.33E-03
PCBG-201	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	5.87E+02	8.08E+00	7.84E-04	3.78E+02	2.97E-01	4.78E-04	1.24E-01	3.23E-02	8.75E+00	8.00E-01	6.03E+00	5.36E-03
PCBG-202	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.73E+03	2.38E+01	7.84E-04	1.11E+03	8.74E-01	4.78E-04	1.24E-01	9.50E-02	8.75E+00	8.00E-01	6.03E+00	1.58E-02
Paymaster Mine Waste Area 1																						**Minimum HQ (Reference Site)**	**4.12E-04**
PMWA1-1 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	3.58E+02	4.93E+00	7.84E-04	2.31E+02	1.81E-01	4.78E-04	1.24E-01	1.97E-02	8.75E+00	8.00E-01	6.03E+00	3.27E-03
PMWA1-50 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	4.11E+02	5.66E+00	7.84E-04	2.65E+02	2.08E-01	4.78E-04	1.24E-01	2.26E-02	8.75E+00	8.00E-01	6.03E+00	3.75E-03
PMWA1-100 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	8.96E+02	1.23E+01	7.84E-04	5.78E+02	4.53E-01	4.78E-04	1.24E-01	4.93E-02	8.75E+00	8.00E-01	6.03E+00	8.17E-03
PMWA1-100+15 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
PMWA1-100+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
PMWA1-150 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	3.68E+02	5.07E+00	7.84E-04	2.37E+02	1.86E-01	4.78E-04	1.24E-01	2.02E-02	8.75E+00	8.00E-01	6.03E+00	3.36E-03
PMWA1-200 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.32E+03	1.82E+01	7.84E-04	8.51E+02	6.68E-01	4.78E-04	1.24E-01	7.26E-02	8.75E+00	8.00E-01	6.03E+00	1.21E-02
PMWA1-230 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.24E+03	1.70E+01	7.84E-04	7.97E+02	6.25E-01	4.78E-04	1.24E-01	6.80E-02	8.75E+00	8.00E-01	6.03E+00	1.13E-02
American Kestrel (Insectivorous Birds - Terrestrial)																							
PMWA1-230+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
PMWA1-Comp 1 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	9.80E+02	1.35E+01	7.84E-04	6.32E+02	4.95E-01	4.78E-04	1.24E-01	5.39E-02	8.75E+00	8.00E-01	6.03E+00	8.94E-03
PMWA1-Comp 2 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	8.77E+02	1.21E+01	7.84E-04	5.65E+02	4.43E-01	4.78E-04	1.24E-01	4.82E-02	8.75E+00	8.00E-01	6.03E+00	7.99E-03
Paymaster Mine Waste Area 2																						**Maximum HQ (Paymaster Mine Waste Area 1)**	**1.21E-02**
PMWA2-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	2.77E+02	3.81E+00	7.84E-04	1.78E+02	1.40E-01	4.78E-04	1.24E-01	1.52E-02	8.75E+00	8.00E-01	6.03E+00	2.52E-03
PMWA2-50 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	2.38E+02	3.28E+00	7.84E-04	1.54E+02	1.20E-01	4.78E-04	1.24E-01	1.31E-02	8.75E+00	8.00E-01	6.03E+00	2.17E-03
PMWA2-100 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	3.46E+02	4.76E+00	7.84E-04	2.23E+02	1.75E-01	4.78E-04	1.24E-01	1.90E-02	8.75E+00	8.00E-01	6.03E+00	3.15E-03
PMWA2-150 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	4.36E+02	6.01E+00	7.84E-04	2.81E+02	2.21E-01	4.78E-04	1.24E-01	2.40E-02	8.75E+00	8.00E-01	6.03E+00	3.98E-03
PMWA2-200 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.00E+03	1.38E+01	7.84E-04	6.45E+02	5.06E-01	4.78E-04	1.24E-01	5.50E-02	8.75E+00	8.00E-01	6.03E+00	9.13E-03
PMWA2-200+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
PMWA2-Comp 1 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	9.19E+02	1.26E+01	7.84E-04	5.92E+02	4.64E-01	4.78E-04	1.24E-01	5.05E-02	8.75E+00	8.00E-01	6.03E+00	8.38E-03
																						Maximum HQ (Paymaster Mine Waste Area 2)	**9.13E-03**
Meadow Vole (Small Herbivorous Mammal - Terrestrial)																							
Reference Site																							
PCBG-1 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	4.35E-02	1.26E+00	5.93E-03	NA	NA	NA	NA	1.13E-04	2.91E+01	3.27E-03	1.00E+00	3.06E-02	3.01E-01	2.41E+02	1.87E-02	2.34E+02	1.29E-03
MGBG-1 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	4.35E-02	1.35E+01	6.34E-02	NA	NA	NA	NA	1.13E-04	3.11E+02	3.50E-02	1.00E+00	3.06E-02	3.21E+00	2.41E+02	1.87E-02	2.34E+02	1.38E-02
MGBG-1 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	4.35E-02	1.35E+01	6.34E-02	NA	NA	NA	NA	1.13E-04	3.11E+02	3.50E-02	1.00E+00	3.06E-02	3.21E+00	2.41E+02	1.87E-02	2.34E+02	1.38E-02
MGBG-2 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	4.35E-02	1.02E+01	4.79E-02	NA	NA	NA	NA	1.13E-04	2.35E+02	2.65E-02	1.00E+00	3.06E-02	2.43E+00	2.41E+02	1.87E-02	2.34E+02	1.04E-02
PCBG-201	4.69E-03	NA	NA	NA	NA	4.69E-03	4.35E-02	1.64E+01	7.71E-02	NA	NA	NA	NA	1.13E-04	3.78E+02	4.26E-02	1.00E+00	3.06E-02	3.91E+00	2.41E+02	1.87E-02	2.34E+02	1.67E-02
PCBG-202	4.69E-03	NA	NA	NA	NA	4.69E-03	4.35E-02	4.84E+01	2.27E-01	NA	NA	NA	NA	1.13E-04	1.11E+03	1.25E-01	1.00E+00	3.06E-02	1.15E+01	2.41E+02	1.87E-02	2.34E+02	4.93E-02
Paymaster Mine Waste Area 1																						**Minimum HQ (Reference Site)**	**1.29E-03**
PMWA1-1 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	1.45E+02	6.80E-01	NA	NA	NA	NA	1.13E-04	2.31E+02	2.60E-02	1.00E+00	3.06E-02	2.31E+01	2.41E+02	1.87E-02	2.34E+02	9.88E-02
PMWA1-50 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	1.66E+02	7.81E-01	NA	NA	NA	NA	1.13E-04	2.65E+02	2.98E-02	1.00E+00	3.06E-02	2.65E+01	2.41E+02	1.87E-02	2.34E+02	1.13E-01
PMWA1-100 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	3.63E+02	1.70E+00	NA	NA	NA	NA	1.13E-04	5.78E+02	6.50E-02	1.00E+00	3.06E-02	5.77E+01	2.41E+02	1.87E-02	2.34E+02	2.47E-01
PMWA1-100+15 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
PMWA1-100+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
PMWA1-150 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	1.49E+02	6.99E-01	NA	NA	NA	NA	1.13E-04	2.37E+02	2.67E-02	1.00E+00	3.06E-02	2.37E+01	2.41E+02	1.87E-02	2.34E+02	1.02E-01
PMWA1-200 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	5.35E+02	2.51E+00	NA	NA	NA	NA	1.13E-04	8.51E+02	9.58E-02	1.00E+00	3.06E-02	8.51E+01	2.41E+02	1.87E-02	2.34E+02	3.64E-01
PMWA1-230 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	5.00E+02	2.35E+00	NA	NA	NA	NA	1.13E-04	7.97E+02	8.96E-02	1.00E+00	3.06E-02	7.96E+01	2.41E+02	1.87E-02	2.34E+02	3.41E-01
PMWA1-230+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
PMWA1-Comp 1 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	3.97E+02	1.86E+00	NA	NA	NA	NA	1.13E-04	6.32E+02	7.11E-02	1.00E+00	3.06E-02	6.31E+01	2.41E+02	1.87E-02	2.34E+02	2.70E-01
PMWA1-Comp 2 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	3.55E+02	1.66E+00	NA	NA	NA	NA	1.13E-04	5.65E+02	6.36E-02	1.00E+00	3.06E-02	5.65E+01	2.41E+02	1.87E-02	2.34E+02	2.42E-01
Paymaster Mine Waste Area 2																						**Maximum HQ (Paymaster Mine Waste Area 1)**	**3.64E-01**
PMWA2-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	1.12E+02	5.25E-01	NA	NA	NA	NA	1.13E-04	1.78E+02	2.01E-02	1.00E+00	3.06E-02	1.78E+01	2.41E+02	1.87E-02	2.34E+02	7.63E-02
PMWA2-50 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	9.64E+01	4.52E-01	NA	NA	NA	NA	1.13E-04	1.54E+02	1.73E-02	1.00E+00	3.06E-02	1.53E+01	2.41E+02	1.87E-02	2.34E+02	6.57E-02
PMWA2-100 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	1.40E+02	6.56E-01	NA	NA	NA	NA	1.13E-04	2.23E+02	2.51E-02	1.00E+00	3.06E-02	2.23E+01	2.41E+02	1.87E-02	2.34E+02	9.53E-02
PMWA2-150 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	1.77E+02	8.28E-01	NA	NA	NA	NA	1.13E-04	2.81E+02	3.16E-02	1.00E+00	3.06E-02	2.81E+01	2.41E+02	1.87E-02	2.34E+02	1.20E-01
PMWA2-200 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	4.05E+02	1.90E+00	NA	NA	NA	NA	1.13E-04	6.45E+02	7.26E-02	1.00E+00	3.06E-02	6.44E+01	2.41E+02	1.87E-02	2.34E+02	2.76E-01
PMWA2-200+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
PMWA2-Comp 1 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	3.72E+02	1.74E+00	NA	NA	NA	NA	1.13E-04	5.92E+02	6.66E-02	1.00E+00	3.06E-02	5.92E+01	2.41E+02	1.87E-02	2.34E+02	2.53E-01
																						Maximum HQ (Paymaster Mine Waste Area 2)	**2.76E-01**

TABLE C-9C: LEAD DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 9 - PAYMASTER MINE WASTE AREAS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **0.125**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
White-Tailed Deer (Large Herbivorous Mammal - Terrestrial)																							
Reference Site																							
PCBG-1 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	4.35E-02	1.26E+00	1.81E+00	NA	NA	NA	NA	2.86E-02	2.91E+01	8.33E-01	6.99E-04	1.35E+02	1.37E-05	2.41E+02	1.87E-02	1.41E+02	9.69E-08
MGBG-1 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	4.35E-02	1.35E+01	1.93E+01	NA	NA	NA	NA	2.86E-02	3.11E+02	8.91E+00	6.99E-04	1.35E+02	1.46E-04	2.41E+02	1.87E-02	1.41E+02	1.04E-06
MGBG-1 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	4.35E-02	1.35E+01	1.93E+01	NA	NA	NA	NA	2.86E-02	3.11E+02	8.91E+00	6.99E-04	1.35E+02	1.46E-04	2.41E+02	1.87E-02	1.41E+02	1.04E-06
MGBG-2 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	4.35E-02	1.02E+01	1.46E+01	NA	NA	NA	NA	2.86E-02	2.35E+02	6.73E+00	6.99E-04	1.35E+02	1.11E-04	2.41E+02	1.87E-02	1.41E+02	7.83E-07
PCBG-201	1.43E+00	NA	NA	NA	NA	1.43E+00	4.35E-02	1.64E+01	2.35E+01	NA	NA	NA	NA	2.86E-02	3.78E+02	1.08E+01	6.99E-04	1.35E+02	1.78E-04	2.41E+02	1.87E-02	1.41E+02	1.26E-06
PCBG-202	1.43E+00	NA	NA	NA	NA	1.43E+00	4.35E-02	4.84E+01	6.93E+01	NA	NA	NA	NA	2.86E-02	1.11E+03	3.19E+01	6.99E-04	1.35E+02	5.24E-04	2.41E+02	1.87E-02	1.41E+02	3.71E-06
Paymaster Mine Waste Area 1																						**Minimum HQ (Reference Site)**	**9.69E-08**
PMWA1-1 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	1.45E+02	2.08E+02	NA	NA	NA	NA	2.86E-02	2.31E+02	6.61E+00	6.99E-04	1.35E+02	1.11E-03	2.41E+02	1.87E-02	1.41E+02	7.86E-06
PMWA1-50 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	1.66E+02	2.38E+02	NA	NA	NA	NA	2.86E-02	2.65E+02	7.59E+00	6.99E-04	1.35E+02	1.27E-03	2.41E+02	1.87E-02	1.41E+02	9.02E-06
PMWA1-100 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	3.63E+02	5.19E+02	NA	NA	NA	NA	2.86E-02	5.78E+02	1.65E+01	6.99E-04	1.35E+02	2.78E-03	2.41E+02	1.87E-02	1.41E+02	1.97E-05
PMWA1-100+15 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
PMWA1-100+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
PMWA1-150 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	1.49E+02	2.13E+02	NA	NA	NA	NA	2.86E-02	2.37E+02	6.79E+00	6.99E-04	1.35E+02	1.14E-03	2.41E+02	1.87E-02	1.41E+02	8.08E-06
PMWA1-200 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	5.35E+02	7.66E+02	NA	NA	NA	NA	2.86E-02	8.51E+02	2.44E+01	6.99E-04	1.35E+02	4.09E-03	2.41E+02	1.87E-02	1.41E+02	2.90E-05
PMWA1-230 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	5.00E+02	7.16E+02	NA	NA	NA	NA	2.86E-02	7.97E+02	2.28E+01	6.99E-04	1.35E+02	3.83E-03	2.41E+02	1.87E-02	1.41E+02	2.71E-05
PMWA1-230+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
PMWA1-Comp 1 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	3.97E+02	5.68E+02	NA	NA	NA	NA	2.86E-02	6.32E+02	1.81E+01	6.99E-04	1.35E+02	3.04E-03	2.41E+02	1.87E-02	1.41E+02	2.15E-05
PMWA1-Comp 2 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	3.55E+02	5.08E+02	NA	NA	NA	NA	2.86E-02	5.65E+02	1.62E+01	6.99E-04	1.35E+02	2.72E-03	2.41E+02	1.87E-02	1.41E+02	1.92E-05
Paymaster Mine Waste Area 2																						**Maximum HQ (Paymaster Mine Waste Area 1)**	**2.90E-05**
PMWA2-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	1.12E+02	1.60E+02	NA	NA	NA	NA	2.86E-02	1.78E+02	5.11E+00	6.99E-04	1.35E+02	8.57E-04	2.41E+02	1.87E-02	1.41E+02	6.07E-06
PMWA2-50 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	9.64E+01	1.38E+02	NA	NA	NA	NA	2.86E-02	1.54E+02	4.40E+00	6.99E-04	1.35E+02	7.38E-04	2.41E+02	1.87E-02	1.41E+02	5.23E-06
PMWA2-100 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	1.40E+02	2.00E+02	NA	NA	NA	NA	2.86E-02	2.23E+02	6.38E+00	6.99E-04	1.35E+02	1.07E-03	2.41E+02	1.87E-02	1.41E+02	7.58E-06
PMWA2-150 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	1.77E+02	2.53E+02	NA	NA	NA	NA	2.86E-02	2.81E+02	8.05E+00	6.99E-04	1.35E+02	1.35E-03	2.41E+02	1.87E-02	1.41E+02	9.57E-06
PMWA2-200 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	4.05E+02	5.80E+02	NA	NA	NA	NA	2.86E-02	6.45E+02	1.85E+01	6.99E-04	1.35E+02	3.10E-03	2.41E+02	1.87E-02	1.41E+02	2.19E-05
PMWA2-200+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
PMWA2-Comp 1 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	3.72E+02	5.33E+02	NA	NA	NA	NA	2.86E-02	5.92E+02	1.70E+01	6.99E-04	1.35E+02	2.85E-03	2.41E+02	1.87E-02	1.41E+02	2.02E-05
																						Maximum HQ (Paymaster Mine Waste Area 2)	**2.19E-05**
Red Fox (Carnivorous Mammal - Terrestrial)																							
Reference Site																							
PCBG-1 (0-6")	1.72E-01	1.72E-01	7.62E-02	2.22E+00	3.80E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.91E+01	1.40E-01	9.24E-05	4.54E+00	1.06E-05	2.41E+02	1.87E-02	1.73E+02	6.11E-08
MGBG-1 (0-6")	1.72E-01	1.72E-01	7.62E-02	2.37E+01	4.07E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.11E+02	1.49E+00	9.24E-05	4.54E+00	1.13E-04	2.41E+02	1.87E-02	1.73E+02	6.54E-07
MGBG-1 (0-6")	1.72E-01	1.72E-01	7.62E-02	2.37E+01	4.07E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.11E+02	1.49E+00	9.24E-05	4.54E+00	1.13E-04	2.41E+02	1.87E-02	1.73E+02	6.54E-07
MGBG-2 (0-6")	1.72E-01	1.72E-01	7.62E-02	1.79E+01	3.07E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.35E+02	1.13E+00	9.24E-05	4.54E+00	8.55E-05	2.41E+02	1.87E-02	1.73E+02	4.94E-07
PCBG-201	1.72E-01	1.72E-01	7.62E-02	2.88E+01	4.95E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.78E+02	1.82E+00	9.24E-05	4.54E+00	1.38E-04	2.41E+02	1.87E-02	1.73E+02	7.96E-07
PCBG-202	1.72E-01	1.72E-01	7.62E-02	8.49E+01	1.46E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.11E+03	5.35E+00	9.24E-05	4.54E+00	4.05E-04	2.41E+02	1.87E-02	1.73E+02	2.34E-06
Paymaster Mine Waste Area 1																						**Minimum HQ (Reference Site)**	**6.11E-08**
PMWA1-1 (0-6")	1.72E-01	1.72E-01	9.28E-01	2.14E+02	3.68E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.31E+02	1.11E+00	9.24E-05	4.54E+00	7.71E-04	2.41E+02	1.87E-02	1.73E+02	4.45E-06
PMWA1-50 (0-6")	1.72E-01	1.72E-01	9.28E-01	2.46E+02	4.22E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.65E+02	1.27E+00	9.24E-05	4.54E+00	8.85E-04	2.41E+02	1.87E-02	1.73E+02	5.11E-06
PMWA1-100 (0-6")	1.72E-01	1.72E-01	9.28E-01	5.36E+02	9.19E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.78E+02	2.77E+00	9.24E-05	4.54E+00	1.93E-03	2.41E+02	1.87E-02	1.73E+02	1.11E-05
PMWA1-100+15 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
PMWA1-100+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
PMWA1-150 (0-6")	1.72E-01	1.72E-01	9.28E-01	2.20E+02	3.78E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.37E+02	1.14E+00	9.24E-05	4.54E+00	7.92E-04	2.41E+02	1.87E-02	1.73E+02	4.58E-06
PMWA1-200 (0-6")	1.72E-01	1.72E-01	9.28E-01	7.90E+02	1.36E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	8.51E+02	4.09E+00	9.24E-05	4.54E+00	2.84E-03	2.41E+02	1.87E-02	1.73E+02	1.64E-05
PMWA1-230 (0-6")	1.72E-01	1.72E-01	9.28E-01	7.39E+02	1.27E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	7.97E+02	3.83E+00	9.24E-05	4.54E+00	2.66E-03	2.41E+02	1.87E-02	1.73E+02	1.54E-05
PMWA1-230+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
PMWA1-Comp 1 (0-6")	1.72E-01	1.72E-01	9.28E-01	5.86E+02	1.01E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	6.32E+02	3.03E+00	9.24E-05	4.54E+00	2.11E-03	2.41E+02	1.87E-02	1.73E+02	1.22E-05
PMWA1-Comp 2 (0-6")	1.72E-01	1.72E-01	9.28E-01	5.24E+02	8.99E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.65E+02	2.71E+00	9.24E-05	4.54E+00	1.89E-03	2.41E+02	1.87E-02	1.73E+02	1.09E-05
Paymaster Mine Waste Area 2																						**Maximum HQ (Paymaster Mine Waste Area 1)**	**1.64E-05**
PMWA2-0 (0-6")	1.72E-01	1.72E-01	9.28E-01	1.65E+02	2.84E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.78E+02	8.57E-01	9.24E-05	4.54E+00	5.95E-04	2.41E+02	1.87E-02	1.73E+02	3.44E-06
PMWA2-50 (0-6")	1.72E-01	1.72E-01	9.28E-01	1.42E+02	2.44E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.54E+02	7.37E-01	9.24E-05	4.54E+00	5.12E-04	2.41E+02	1.87E-02	1.73E+02	2.96E-06
PMWA2-100 (0-6")	1.72E-01	1.72E-01	9.28E-01	2.07E+02	3.54E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.23E+02	1.07E+00	9.24E-05	4.54E+00	7.43E-04	2.41E+02	1.87E-02	1.73E+02	4.30E-06
PMWA2-150 (0-6")	1.72E-01	1.72E-01	9.28E-01	2.61E+02	4.48E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.81E+02	1.35E+00	9.24E-05	4.54E+00	9.39E-04	2.41E+02	1.87E-02	1.73E+02	5.42E-06
PMWA2-200 (0-6")	1.72E-01	1.72E-01	9.28E-01	5.98E+02	1.03E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	6.45E+02	3.10E+00	9.24E-05	4.54E+00	2.15E-03	2.41E+02	1.87E-02	1.73E+02	1.24E-05
PMWA2-200+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
PMWA2-Comp 1 (0-6")	1.72E-01	1.72E-01	9.28E-01	5.49E+02	9.42E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.92E+02	2.84E+00	9.24E-05	4.54E+00	1.98E-03	2.41E+02	1.87E-02	1.73E+02	1.14E-05
																						Maximum HQ (Paymaster Mine Waste Area 2)	**1.24E-05**

TABLE C-9C: LEAD DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 9 - PAYMASTER MINE WASTE AREAS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 0.125

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Masked Shrew (Omnivorous Mammal - Terrestrial, Wetland)																							
Reference Site																							
PCBG-1 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	4.51E+01	3.82E-01	1.10E-03	2.91E+01	3.20E-02	3.13E-01	5.50E-03	2.35E+01	2.41E+02	1.87E-02	2.59E+02	9.09E-02
MGBG-1 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	4.83E+02	4.09E+00	1.10E-03	3.11E+02	3.42E-01	3.13E-01	5.50E-03	2.52E+02	2.41E+02	1.87E-02	2.59E+02	9.72E-01
MGBG-1 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	4.83E+02	4.09E+00	1.10E-03	3.11E+02	3.42E-01	3.13E-01	5.50E-03	2.52E+02	2.41E+02	1.87E-02	2.59E+02	9.72E-01
MGBG-2 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	3.65E+02	3.09E+00	1.10E-03	2.35E+02	2.59E-01	3.13E-01	5.50E-03	1.90E+02	2.41E+02	1.87E-02	2.59E+02	7.35E-01
PCBG-201	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	5.87E+02	4.97E+00	1.10E-03	3.78E+02	4.17E-01	3.13E-01	5.50E-03	3.06E+02	2.41E+02	1.87E-02	2.59E+02	1.18E+00
PCBG-202	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.73E+03	1.46E+01	1.10E-03	1.11E+03	1.23E+00	3.13E-01	5.50E-03	9.02E+02	2.41E+02	1.87E-02	2.59E+02	3.48E+00
Paymaster Mine Waste Area 1																						**Minimum HQ (Reference Site)**	**9.09E-02**
PMWA1-1 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	3.58E+02	3.04E+00	1.10E-03	2.31E+02	2.54E-01	3.13E-01	5.50E-03	1.87E+02	2.41E+02	1.87E-02	2.59E+02	7.22E-01
PMWA1-50 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	4.11E+02	3.48E+00	1.10E-03	2.65E+02	2.92E-01	3.13E-01	5.50E-03	2.15E+02	2.41E+02	1.87E-02	2.59E+02	8.28E-01
PMWA1-100 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	8.96E+02	7.59E+00	1.10E-03	5.78E+02	6.36E-01	3.13E-01	5.50E-03	4.67E+02	2.41E+02	1.87E-02	2.59E+02	1.81E+00
PMWA1-100+15 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
PMWA1-100+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
PMWA1-150 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	3.68E+02	3.12E+00	1.10E-03	2.37E+02	2.61E-01	3.13E-01	5.50E-03	1.92E+02	2.41E+02	1.87E-02	2.59E+02	7.42E-01
PMWA1-200 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.32E+03	1.12E+01	1.10E-03	8.51E+02	9.37E-01	3.13E-01	5.50E-03	6.89E+02	2.41E+02	1.87E-02	2.59E+02	2.66E+00
PMWA1-230 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.24E+03	1.05E+01	1.10E-03	7.97E+02	8.77E-01	3.13E-01	5.50E-03	6.45E+02	2.41E+02	1.87E-02	2.59E+02	2.49E+00
PMWA1-230+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
PMWA1-Comp 1 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	9.80E+02	8.30E+00	1.10E-03	6.32E+02	6.95E-01	3.13E-01	5.50E-03	5.11E+02	2.41E+02	1.87E-02	2.59E+02	1.97E+00
PMWA1-Comp 2 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	8.77E+02	7.43E+00	1.10E-03	5.65E+02	6.22E-01	3.13E-01	5.50E-03	4.57E+02	2.41E+02	1.87E-02	2.59E+02	1.77E+00
Paymaster Mine Waste Area 2																						**Maximum HQ (Paymaster Mine Waste Area 1)**	**2.66E+00**
PMWA2-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	2.77E+02	2.34E+00	1.10E-03	1.78E+02	1.96E-01	3.13E-01	5.50E-03	1.44E+02	2.41E+02	1.87E-02	2.59E+02	5.57E-01
PMWA2-50 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	2.38E+02	2.02E+00	1.10E-03	1.54E+02	1.69E-01	3.13E-01	5.50E-03	1.24E+02	2.41E+02	1.87E-02	2.59E+02	4.80E-01
PMWA2-100 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	3.46E+02	2.93E+00	1.10E-03	2.23E+02	2.45E-01	3.13E-01	5.50E-03	1.80E+02	2.41E+02	1.87E-02	2.59E+02	6.96E-01
PMWA2-150 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	4.36E+02	3.70E+00	1.10E-03	2.81E+02	3.10E-01	3.13E-01	5.50E-03	2.28E+02	2.41E+02	1.87E-02	2.59E+02	8.79E-01
PMWA2-200 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.00E+03	8.48E+00	1.10E-03	6.45E+02	7.10E-01	3.13E-01	5.50E-03	5.22E+02	2.41E+02	1.87E-02	2.59E+02	2.02E+00
PMWA2-200+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
PMWA2-Comp 1 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	9.19E+02	7.78E+00	1.10E-03	5.92E+02	6.52E-01	3.13E-01	5.50E-03	4.79E+02	2.41E+02	1.87E-02	2.59E+02	1.85E+00
																						Maximum HQ (Paymaster Mine Waste Area 2)	**2.02E+00**

Notes

1 See Tables 3-1 through 3-13 for ingestion rates, foraging ranges used to calculate the SUF, and body weights.

2 BAFs were calculated by dividing site-collected tissue by collocated soil concentrations (BAFs are in dry weight). The maximum BAF calculated from the Beartrap Creek and Blackfoot River transects was used for site dose calculations. The maximum BAF from the terrestrial reference site was used for reference site dose calculations.

3 The mammal, plant, and invertebrate concentrations were calculated by multiplying the soil concentration by the BAF to generate a tissue concentration (see note 2).

4 Mammal, plant, and invertebrate daily doses were calculated by multiplying the ingestion rate (see note 1) by the tissue concentration (see note 3).

5 Soil concentration from 0 to 6 inches below ground surface at point ID as measured by XRF 10. Doses were not calculated for detected and non-detected soil concentrations measured below the minimum reference site concentration, as indicated by BB. For results that were measured at less than the detection limit, doses were calculated using half of the detection limit.

6 Soil daily dose was calculated by multiplying the soil ingestion rate (see note 1) by soil concentration (see note 5).

7 Total daily dose is calculated using the following equation: total daily dose = ([mammal daily dose (if applicable) + plant daily dose (if applicable) + invertebrate daily dose (if applicable) + soil daily dose]*SUF)/receptor species body weight.

8 The TRVs used in this risk assessment represent a mid-range effects level. The derivation of TRVs is described in Navy (1998).

9 Allometrically adjusted TRVs for birds were calculated using the following equation: receptor species TRV = (test species TRV) x (test species body weight / receptor species body weight)$^{(1-1.2)}$.

10 Allometrically adjusted TRVs for mammals were calculated using the following equation: receptor species TRV = (test species TRV) x (test species body weight / receptor species body weight)$^{(1-0.94)}$.

11 HQs were calculated using the following equation: HQ = total daily dose/allometrically adjusted TRV.

12 Highlighted cells indicate an HQ greater than 1.0.

BAF	Bioaccumulation Factor	mg/day	Milligram per day
BB	Below minimum background reference site concentration	mg/kg	Milligram per kilogram
EE/CA	Engineering Evaluation/Cost Analysis	NA	Not applicable
EU	Exposure Unit	Navy	Department of the Navy
HQ	Hazard quotient	SUF	Site use factor
ID	Identification	TRV	Toxicity reference value
kg	Kilogram	XRF	X-ray fluorescence
kg/day	Kilogram per day	XRF 10	XRF measurements recorded following drying and seiving through a #10-mesh screen

Sources: Department of the Navy. 1998. "Development of Toxicity Reference Values for Conducting Ecological Risk Assessments at Naval Facilities in California, Interim Final." Prepared by Naval Facilities Engineering Command, Engineering Field Activity West (EFA West). San Bruno, California.

TABLE C-9D: MANGANESE DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 9 - PAYMASTER MINE WASTE AREAS

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **0.125**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Mourning Dove (Herbivorous Birds - Terrestrial)																							
Reference Site																							
PCBG-1 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	3.34E-01	1.20E+02	6.94E-01	NA	NA	NA	NA	5.36E-04	3.60E+02	1.93E-01	4.83E-04	1.09E-01	3.92E-03	7.76E+02	1.97E-01	6.90E+02	5.68E-06
MGBG-1 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	3.34E-01	2.15E+03	1.24E+01	NA	NA	NA	NA	5.36E-04	6.43E+03	3.45E+00	4.83E-04	1.09E-01	7.00E-02	7.76E+02	1.97E-01	6.90E+02	1.01E-04
MGBG-1 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	3.34E-01	2.15E+03	1.24E+01	NA	NA	NA	NA	5.36E-04	6.43E+03	3.45E+00	4.83E-04	1.09E-01	7.00E-02	7.76E+02	1.97E-01	6.90E+02	1.01E-04
MGBG-2 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	3.34E-01	4.16E+02	2.40E+00	NA	NA	NA	NA	5.36E-04	1.24E+03	6.67E-01	4.83E-04	1.09E-01	1.35E-02	7.76E+02	1.97E-01	6.90E+02	1.96E-05
PCBG-201	5.76E-03	NA	NA	NA	NA	5.76E-03	3.34E-01	3.31E+02	1.91E+00	NA	NA	NA	NA	5.36E-04	9.89E+02	5.30E-01	4.83E-04	1.09E-01	1.08E-02	7.76E+02	1.97E-01	6.90E+02	1.56E-05
PCBG-202	5.76E-03	NA	NA	NA	NA	5.76E-03	3.34E-01	1.93E+02	1.11E+00	NA	NA	NA	NA	5.36E-04	5.77E+02	3.09E-01	4.83E-04	1.09E-01	6.28E-03	7.76E+02	1.97E-01	6.90E+02	9.10E-06
Paymaster Mine Waste Area 1																						**Minimum HQ (Reference Site)**	**5.68E-06**
PMWA1-1 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	4.10E+03	2.36E+01	NA	NA	NA	NA	5.36E-04	4.14E+02	2.22E-01	4.83E-04	1.09E-01	1.05E-01	7.76E+02	1.97E-01	6.90E+02	1.53E-04
PMWA1-50 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
PMWA1-100 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
PMWA1-100+15 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
PMWA1-100+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
PMWA1-150 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
PMWA1-200 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	4.17E+03	2.40E+01	NA	NA	NA	NA	5.36E-04	4.21E+02	2.26E-01	4.83E-04	1.09E-01	1.07E-01	7.76E+02	1.97E-01	6.90E+02	1.55E-04
PMWA1-230 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	5.09E+03	2.93E+01	NA	NA	NA	NA	5.36E-04	5.14E+02	2.75E-01	4.83E-04	1.09E-01	1.31E-01	7.76E+02	1.97E-01	6.90E+02	1.90E-04
PMWA1-230+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
PMWA1-Comp 1 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	3.82E+03	2.20E+01	NA	NA	NA	NA	5.36E-04	3.86E+02	2.07E-01	4.83E-04	1.09E-01	9.83E-02	7.76E+02	1.97E-01	6.90E+02	1.42E-04
PMWA1-Comp 2 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
Paymaster Mine Waste Area 2																						**Maximum HQ (Paymaster Mine Waste Area 1)**	**1.90E-04**
PMWA2-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
PMWA2-50 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	9.08E+03	5.23E+01	NA	NA	NA	NA	5.36E-04	9.16E+02	4.91E-01	4.83E-04	1.09E-01	2.33E-01	7.76E+02	1.97E-01	6.90E+02	3.38E-04
PMWA2-100 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	5.22E+03	3.00E+01	NA	NA	NA	NA	5.36E-04	5.26E+02	2.82E-01	4.83E-04	1.09E-01	1.34E-01	7.76E+02	1.97E-01	6.90E+02	1.94E-04
PMWA2-150 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
PMWA2-200 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	4.57E+03	2.63E+01	NA	NA	NA	NA	5.36E-04	4.61E+02	2.47E-01	4.83E-04	1.09E-01	1.17E-01	7.76E+02	1.97E-01	6.90E+02	1.70E-04
PMWA2-200+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
PMWA2-Comp 1 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	4.14E+03	2.39E+01	NA	NA	NA	NA	5.36E-04	4.18E+02	2.24E-01	4.83E-04	1.09E-01	1.07E-01	7.76E+02	1.97E-01	6.90E+02	1.54E-04
																						Maximum HQ (Paymaster Mine Waste Area 2)	**3.38E-04**
Red-Tailed Hawk (Carnivorous Birds - Terrestrial)																							
Reference Site																							
PCBG-1 (0-6")	9.00E-02	9.00E-02	5.93E-02	2.14E+01	1.92E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.60E+02	1.85E+00	1.79E-04	1.13E+00	5.97E-04	7.76E+02	1.97E-01	1.10E+03	5.42E-07
MGBG-1 (0-6")	9.00E-02	9.00E-02	5.93E-02	3.82E+02	3.43E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	6.43E+03	3.30E+01	1.79E-04	1.13E+00	1.07E-02	7.76E+02	1.97E-01	1.10E+03	9.67E-06
MGBG-1 (0-6")	9.00E-02	9.00E-02	5.93E-02	3.82E+02	3.43E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	6.43E+03	3.30E+01	1.79E-04	1.13E+00	1.07E-02	7.76E+02	1.97E-01	1.10E+03	9.67E-06
MGBG-2 (0-6")	9.00E-02	9.00E-02	5.93E-02	7.39E+01	6.64E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.24E+03	6.38E+00	1.79E-04	1.13E+00	2.06E-03	7.76E+02	1.97E-01	1.10E+03	1.87E-06
PCBG-201	9.00E-02	9.00E-02	5.93E-02	5.87E+01	5.28E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	9.89E+02	5.07E+00	1.79E-04	1.13E+00	1.64E-03	7.76E+02	1.97E-01	1.10E+03	1.49E-06
PCBG-202	9.00E-02	9.00E-02	5.93E-02	3.42E+01	3.08E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.77E+02	2.96E+00	1.79E-04	1.13E+00	9.55E-04	7.76E+02	1.97E-01	1.10E+03	8.67E-07
Paymaster Mine Waste Area 1																						**Minimum HQ (Reference Site)**	**5.42E-07**
PMWA1-1 (0-6")	9.00E-02	9.00E-02	2.80E-02	1.16E+01	1.04E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.14E+02	2.12E+00	1.79E-04	1.13E+00	5.00E-04	7.76E+02	1.97E-01	1.10E+03	4.54E-07
PMWA1-50 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
PMWA1-100 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
PMWA1-100+15 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
PMWA1-100+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
PMWA1-150 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
PMWA1-200 (0-6")	9.00E-02	9.00E-02	2.80E-02	1.18E+01	1.06E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.21E+02	2.16E+00	1.79E-04	1.13E+00	5.09E-04	7.76E+02	1.97E-01	1.10E+03	4.62E-07
PMWA1-230 (0-6")	9.00E-02	9.00E-02	2.80E-02	1.44E+01	1.29E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.14E+02	2.63E+00	1.79E-04	1.13E+00	6.21E-04	7.76E+02	1.97E-01	1.10E+03	5.64E-07
PMWA1-230+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
PMWA1-Comp 1 (0-6")	9.00E-02	9.00E-02	2.80E-02	1.08E+01	9.72E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.86E+02	1.98E+00	1.79E-04	1.13E+00	4.67E-04	7.76E+02	1.97E-01	1.10E+03	4.24E-07
PMWA1-Comp 2 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
Paymaster Mine Waste Area 2																						**Maximum HQ (Paymaster Mine Waste Area 1)**	**5.64E-07**
PMWA2-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
PMWA2-50 (0-6")	9.00E-02	9.00E-02	2.80E-02	2.57E+01	2.31E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	9.16E+02	4.70E+00	1.79E-04	1.13E+00	1.11E-03	7.76E+02	1.97E-01	1.10E+03	1.01E-06
PMWA2-100 (0-6")	9.00E-02	9.00E-02	2.80E-02	1.47E+01	1.33E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.26E+02	2.70E+00	1.79E-04	1.13E+00	6.37E-04	7.76E+02	1.97E-01	1.10E+03	5.78E-07
PMWA2-150 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
PMWA2-200 (0-6")	9.00E-02	9.00E-02	2.80E-02	1.29E+01	1.16E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.61E+02	2.36E+00	1.79E-04	1.13E+00	5.57E-04	7.76E+02	1.97E-01	1.10E+03	5.06E-07
PMWA2-200+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
PMWA2-Comp 1 (0-6")	9.00E-02	9.00E-02	2.80E-02	1.17E+01	1.05E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.18E+02	2.14E+00	1.79E-04	1.13E+00	5.06E-04	7.76E+02	1.97E-01	1.10E+03	4.59E-07
																						Maximum HQ (Paymaster Mine Waste Area 2)	**1.01E-06**

TABLE C-9D: MANGANESE DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 9 - PAYMASTER MINE WASTE AREAS (Continued)
Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables; from BAF table; linked to soil or sed concentration table (VLOOKUP)
calculated values; linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 0.125

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
American Kestrel (Insectivorous Birds - Terrestrial)																							
Reference Site																							
PCBG-1 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	5.32E+02	7.32E+00	7.84E-04	3.60E+02	2.83E-01	4.78E-04	1.24E-01	2.93E-02	7.76E+02	1.97E-01	7.08E+02	4.14E-05
MGBG-1 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	9.50E+03	1.31E+02	7.84E-04	6.43E+03	5.05E+00	4.78E-04	1.24E-01	5.23E-01	7.76E+02	1.97E-01	7.08E+02	7.39E-04
MGBG-1 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	9.50E+03	1.31E+02	7.84E-04	6.43E+03	5.05E+00	4.78E-04	1.24E-01	5.23E-01	7.76E+02	1.97E-01	7.08E+02	7.39E-04
MGBG-2 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.84E+03	2.53E+01	7.84E-04	1.24E+03	9.76E-01	4.78E-04	1.24E-01	1.01E-01	7.76E+02	1.97E-01	7.08E+02	1.43E-04
PCBG-201	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.46E+03	2.01E+01	7.84E-04	9.89E+02	7.76E-01	4.78E-04	1.24E-01	8.04E-02	7.76E+02	1.97E-01	7.08E+02	1.14E-04
PCBG-202	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	8.52E+02	1.17E+01	7.84E-04	5.77E+02	4.53E-01	4.78E-04	1.24E-01	4.69E-02	7.76E+02	1.97E-01	7.08E+02	6.62E-05
Paymaster Mine Waste Area 1																						**Minimum HQ (Reference Site)**	**4.14E-05**
PMWA1-1 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	6.11E+02	8.40E+00	7.84E-04	4.14E+02	3.24E-01	4.78E-04	1.24E-01	3.36E-02	7.76E+02	1.97E-01	7.08E+02	4.75E-05
PMWA1-50 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
PMWA1-100 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
PMWA1-100+15 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
PMWA1-100+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
PMWA1-150 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
PMWA1-200 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	6.22E+02	8.55E+00	7.84E-04	4.21E+02	3.30E-01	4.78E-04	1.24E-01	3.42E-02	7.76E+02	1.97E-01	7.08E+02	4.84E-05
PMWA1-230 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	7.58E+02	1.04E+01	7.84E-04	5.14E+02	4.03E-01	4.78E-04	1.24E-01	4.18E-02	7.76E+02	1.97E-01	7.08E+02	5.90E-05
American Kestrel (Insectivorous Birds - Terrestrial)																							
PMWA1-230+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
PMWA1-Comp 1 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	5.70E+02	7.84E+00	7.84E-04	3.86E+02	3.03E-01	4.78E-04	1.24E-01	3.14E-02	7.76E+02	1.97E-01	7.08E+02	4.43E-05
PMWA1-Comp 2 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
Paymaster Mine Waste Area 2																						**Maximum HQ (Paymaster Mine Waste Area 1)**	**5.90E-05**
PMWA2-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
PMWA2-50 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.35E+03	1.86E+01	7.84E-04	9.16E+02	7.19E-01	4.78E-04	1.24E-01	7.45E-02	7.76E+02	1.97E-01	7.08E+02	1.05E-04
PMWA2-100 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	7.77E+02	1.07E+01	7.84E-04	5.26E+02	4.13E-01	4.78E-04	1.24E-01	4.28E-02	7.76E+02	1.97E-01	7.08E+02	6.04E-05
PMWA2-150 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
PMWA2-200 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	6.80E+02	9.36E+00	7.84E-04	4.61E+02	3.62E-01	4.78E-04	1.24E-01	3.75E-02	7.76E+02	1.97E-01	7.08E+02	5.29E-05
PMWA2-200+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
PMWA2-Comp 1 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	6.17E+02	8.49E+00	7.84E-04	4.18E+02	3.28E-01	4.78E-04	1.24E-01	3.40E-02	7.76E+02	1.97E-01	7.08E+02	4.80E-05
																						Maximum HQ (Paymaster Mine Waste Area 2)	**1.05E-04**
Meadow Vole (Small Herbivorous Mammal - Terrestrial)																							
Reference Site																							
PCBG-1 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	3.34E-01	1.20E+02	5.65E-01	NA	NA	NA	NA	1.13E-04	3.60E+02	4.06E-02	1.00E+00	3.06E-02	1.98E+01	1.59E+02	2.97E-02	1.59E+02	1.25E-01
MGBG-1 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	3.34E-01	2.15E+03	1.01E+01	NA	NA	NA	NA	1.13E-04	6.43E+03	7.24E-01	1.00E+00	3.06E-02	3.53E+02	1.59E+02	2.97E-02	1.59E+02	2.22E+00
MGBG-1 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	3.34E-01	2.15E+03	1.01E+01	NA	NA	NA	NA	1.13E-04	6.43E+03	7.24E-01	1.00E+00	3.06E-02	3.53E+02	1.59E+02	2.97E-02	1.59E+02	2.22E+00
MGBG-2 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	3.34E-01	4.16E+02	1.95E+00	NA	NA	NA	NA	1.13E-04	1.24E+03	1.40E-01	1.00E+00	3.06E-02	6.83E+01	1.59E+02	2.97E-02	1.59E+02	4.30E-01
PCBG-201	4.69E-03	NA	NA	NA	NA	4.69E-03	3.34E-01	3.31E+02	1.55E+00	NA	NA	NA	NA	1.13E-04	9.89E+02	1.11E-01	1.00E+00	3.06E-02	5.43E+01	1.59E+02	2.97E-02	1.59E+02	3.42E-01
PCBG-202	4.69E-03	NA	NA	NA	NA	4.69E-03	3.34E-01	1.93E+02	9.04E-01	NA	NA	NA	NA	1.13E-04	5.77E+02	6.49E-02	1.00E+00	3.06E-02	3.17E+01	1.59E+02	2.97E-02	1.59E+02	1.99E-01
Paymaster Mine Waste Area 1																						**Minimum HQ (Reference Site)**	**1.25E-01**
PMWA1-1 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	4.10E+03	1.92E+01	NA	NA	NA	NA	1.13E-04	4.14E+02	4.66E-02	1.00E+00	3.06E-02	6.30E+02	1.59E+02	2.97E-02	1.59E+02	3.96E+00
PMWA1-50 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
PMWA1-100 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
PMWA1-100+15 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
PMWA1-100+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
PMWA1-150 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
PMWA1-200 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	4.17E+03	1.96E+01	NA	NA	NA	NA	1.13E-04	4.21E+02	4.74E-02	1.00E+00	3.06E-02	6.41E+02	1.59E+02	2.97E-02	1.59E+02	4.04E+00
PMWA1-230 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	5.09E+03	2.39E+01	NA	NA	NA	NA	1.13E-04	5.14E+02	5.78E-02	1.00E+00	3.06E-02	7.82E+02	1.59E+02	2.97E-02	1.59E+02	4.92E+00
PMWA1-230+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
PMWA1-Comp 1 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	3.82E+03	1.79E+01	NA	NA	NA	NA	1.13E-04	3.86E+02	4.34E-02	1.00E+00	3.06E-02	5.87E+02	1.59E+02	2.97E-02	1.59E+02	3.70E+00
PMWA1-Comp 2 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
Paymaster Mine Waste Area 2																						**Maximum HQ (Paymaster Mine Waste Area 1)**	**4.92E+00**
PMWA2-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
PMWA2-50 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	9.08E+03	4.26E+01	NA	NA	NA	NA	1.13E-04	9.16E+02	1.03E-01	1.00E+00	3.06E-02	1.39E+03	1.59E+02	2.97E-02	1.59E+02	8.78E+00
PMWA2-100 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	5.22E+03	2.45E+01	NA	NA	NA	NA	1.13E-04	5.26E+02	5.92E-02	1.00E+00	3.06E-02	8.01E+02	1.59E+02	2.97E-02	1.59E+02	5.04E+00
PMWA2-150 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
PMWA2-200 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	4.57E+03	2.14E+01	NA	NA	NA	NA	1.13E-04	4.61E+02	5.19E-02	1.00E+00	3.06E-02	7.02E+02	1.59E+02	2.97E-02	1.59E+02	4.42E+00
PMWA2-200+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
PMWA2-Comp 1 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	4.14E+03	1.94E+01	NA	NA	NA	NA	1.13E-04	4.18E+02	4.71E-02	1.00E+00	3.06E-02	6.37E+02	1.59E+02	2.97E-02	1.59E+02	4.01E+00
																						Maximum HQ (Paymaster Mine Waste Area 2)	**8.78E+00**

TABLE C-9D: MANGANESE DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 9 - PAYMASTER MINE WASTE AREAS (Continued)
Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables; from BAF table; linked to soil or sed concentration table (VLOOKUP)
calculated values; linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 0.125

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
White-Tailed Deer (Large Herbivorous Mammal - Terrestrial)																							
Reference Site																							
PCBG-1 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	3.34E-01	1.20E+02	1.72E+02	NA	NA	NA	NA	2.86E-02	3.60E+02	1.03E+01	6.99E-04	1.35E+02	9.47E-04	1.59E+02	2.97E-02	9.60E+01	9.87E-06
MGBG-1 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	3.34E-01	2.15E+03	3.08E+03	NA	NA	NA	NA	2.86E-02	6.43E+03	1.84E+02	6.99E-04	1.35E+02	1.69E-02	1.59E+02	2.97E-02	9.60E+01	1.76E-04
MGBG-1 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	3.34E-01	2.15E+03	3.08E+03	NA	NA	NA	NA	2.86E-02	6.43E+03	1.84E+02	6.99E-04	1.35E+02	1.69E-02	1.59E+02	2.97E-02	9.60E+01	1.76E-04
MGBG-2 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	3.34E-01	4.16E+02	5.96E+02	NA	NA	NA	NA	2.86E-02	1.24E+03	3.56E+01	6.99E-04	1.35E+02	3.27E-03	1.59E+02	2.97E-02	9.60E+01	3.41E-05
PCBG-201	1.43E+00	NA	NA	NA	NA	1.43E+00	3.34E-01	3.31E+02	4.73E+02	NA	NA	NA	NA	2.86E-02	9.89E+02	2.83E+01	6.99E-04	1.35E+02	2.60E-03	1.59E+02	2.97E-02	9.60E+01	2.71E-05
PCBG-202	1.43E+00	NA	NA	NA	NA	1.43E+00	3.34E-01	1.93E+02	2.76E+02	NA	NA	NA	NA	2.86E-02	5.77E+02	1.65E+01	6.99E-04	1.35E+02	1.52E-03	1.59E+02	2.97E-02	9.60E+01	1.58E-05
Paymaster Mine Waste Area 1																						**Minimum HQ (Reference Site)**	**9.87E-06**
PMWA1-1 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	4.10E+03	5.87E+03	NA	NA	NA	NA	2.86E-02	4.14E+02	1.18E+01	6.99E-04	1.35E+02	3.05E-02	1.59E+02	2.97E-02	9.60E+01	3.17E-04
PMWA1-50 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
PMWA1-100 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
PMWA1-100+15 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
PMWA1-100+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
PMWA1-150 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
PMWA1-200 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	4.17E+03	5.97E+03	NA	NA	NA	NA	2.86E-02	4.21E+02	1.21E+01	6.99E-04	1.35E+02	3.10E-02	1.59E+02	2.97E-02	9.60E+01	3.23E-04
PMWA1-230 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	5.09E+03	7.29E+03	NA	NA	NA	NA	2.86E-02	5.14E+02	1.47E+01	6.99E-04	1.35E+02	3.78E-02	1.59E+02	2.97E-02	9.60E+01	3.94E-04
PMWA1-230+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
PMWA1-Comp 1 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	3.82E+03	5.47E+03	NA	NA	NA	NA	2.86E-02	3.86E+02	1.11E+01	6.99E-04	1.35E+02	2.84E-02	1.59E+02	2.97E-02	9.60E+01	2.96E-04
PMWA1-Comp 2 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
Paymaster Mine Waste Area 2																						**Maximum HQ (Paymaster Mine Waste Area 1)**	**3.94E-04**
PMWA2-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
PMWA2-50 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	9.08E+03	1.30E+04	NA	NA	NA	NA	2.86E-02	9.16E+02	2.62E+01	6.99E-04	1.35E+02	6.75E-02	1.59E+02	2.97E-02	9.60E+01	7.03E-04
PMWA2-150 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
PMWA2-200 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	4.57E+03	6.54E+03	NA	NA	NA	NA	2.86E-02	4.61E+02	1.32E+01	6.99E-04	1.35E+02	3.39E-02	1.59E+02	2.97E-02	9.60E+01	3.54E-04
PMWA2-200+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
PMWA2-Comp 1 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	4.14E+03	5.93E+03	NA	NA	NA	NA	2.86E-02	4.18E+02	1.20E+01	6.99E-04	1.35E+02	3.08E-02	1.59E+02	2.97E-02	9.60E+01	3.21E-04
																						Maximum HQ (Paymaster Mine Waste Area 2)	**7.03E-04**
Red Fox (Carnivorous Mammal - Terrestrial)																							
Reference Site																							
PCBG-1 (0-6")	1.72E-01	1.72E-01	5.93E-02	2.14E+01	3.67E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.60E+02	1.73E+00	9.24E-05	4.54E+00	1.10E-04	1.59E+02	2.97E-02	1.18E+02	9.34E-07
MGBG-1 (0-6")	1.72E-01	1.72E-01	5.93E-02	3.82E+02	6.55E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	6.43E+03	3.09E+01	9.24E-05	4.54E+00	1.96E-03	1.59E+02	2.97E-02	1.18E+02	1.67E-05
MGBG-1 (0-6")	1.72E-01	1.72E-01	5.93E-02	3.82E+02	6.55E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	6.43E+03	3.09E+01	9.24E-05	4.54E+00	1.96E-03	1.59E+02	2.97E-02	1.18E+02	1.67E-05
MGBG-2 (0-6")	1.72E-01	1.72E-01	5.93E-02	7.39E+01	1.27E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.24E+03	5.98E+00	9.24E-05	4.54E+00	3.80E-04	1.59E+02	2.97E-02	1.18E+02	3.23E-06
PCBG-201	1.72E-01	1.72E-01	5.93E-02	5.87E+01	1.01E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	9.89E+02	4.75E+00	9.24E-05	4.54E+00	3.02E-04	1.59E+02	2.97E-02	1.18E+02	2.57E-06
PCBG-202	1.72E-01	1.72E-01	5.93E-02	3.42E+01	5.87E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.77E+02	2.77E+00	9.24E-05	4.54E+00	1.76E-04	1.59E+02	2.97E-02	1.18E+02	1.50E-06
Paymaster Mine Waste Area 1																						**Minimum HQ (Reference Site)**	**9.34E-07**
PMWA1-1 (0-6")	1.72E-01	1.72E-01	2.80E-02	1.16E+01	1.99E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.14E+02	1.99E+00	9.24E-05	4.54E+00	8.09E-05	1.59E+02	2.97E-02	1.18E+02	6.88E-07
PMWA1-50 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
PMWA1-100 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
PMWA1-100+15 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
PMWA1-100+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
PMWA1-150 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
PMWA1-200 (0-6")	1.72E-01	1.72E-01	2.80E-02	1.18E+01	2.02E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.21E+02	2.02E+00	9.24E-05	4.54E+00	8.24E-05	1.59E+02	2.97E-02	1.18E+02	7.00E-07
PMWA1-230 (0-6")	1.72E-01	1.72E-01	2.80E-02	1.44E+01	2.47E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.14E+02	2.47E+00	9.24E-05	4.54E+00	1.00E-04	1.59E+02	2.97E-02	1.18E+02	8.54E-07
PMWA1-230+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
PMWA1-Comp 1 (0-6")	1.72E-01	1.72E-01	2.80E-02	1.08E+01	1.85E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.86E+02	1.85E+00	9.24E-05	4.54E+00	7.55E-05	1.59E+02	2.97E-02	1.18E+02	6.41E-07
PMWA1-Comp 2 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
Paymaster Mine Waste Area 2																						**Maximum HQ (Paymaster Mine Waste Area 1)**	**8.54E-07**
PMWA2-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
PMWA2-50 (0-6")	1.72E-01	1.72E-01	2.80E-02	2.57E+01	4.40E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	9.16E+02	4.40E+00	9.24E-05	4.54E+00	1.79E-04	1.59E+02	2.97E-02	1.18E+02	1.52E-06
PMWA2-100 (0-6")	1.72E-01	1.72E-01	2.80E-02	1.47E+01	2.53E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.26E+02	2.53E+00	9.24E-05	4.54E+00	1.03E-04	1.59E+02	2.97E-02	1.18E+02	8.75E-07
PMWA2-150 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
PMWA2-200 (0-6")	1.72E-01	1.72E-01	2.80E-02	1.29E+01	2.21E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.61E+02	2.21E+00	9.24E-05	4.54E+00	9.01E-05	1.59E+02	2.97E-02	1.18E+02	7.66E-07
PMWA2-200+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
PMWA2-Comp 1 (0-6")	1.72E-01	1.72E-01	2.80E-02	1.17E+01	2.01E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.18E+02	2.01E+00	9.24E-05	4.54E+00	8.18E-05	1.59E+02	2.97E-02	1.18E+02	6.95E-07
																						Maximum HQ (Paymaster Mine Waste Area 2)	**1.52E-06**

TABLE C-9D: MANGANESE DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 9 - PAYMASTER MINE WASTE AREAS (Continued)
Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)
calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **0.125**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Masked Shrew (Omnivorous Mammal - Terrestrial, Wetland)																							
Reference Site																							
PCBG-1 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	5.32E+02	4.51E+00	1.10E-03	3.60E+02	3.97E-01	3.13E-01	5.50E-03	2.79E+02	1.59E+02	2.97E-02	1.76E+02	1.58E+00
MGBG-1 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	9.50E+03	8.04E+01	1.10E-03	6.43E+03	7.08E+00	3.13E-01	5.50E-03	4.97E+03	1.59E+02	2.97E-02	1.76E+02	2.82E+01
MGBG-1 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	9.50E+03	8.04E+01	1.10E-03	6.43E+03	7.08E+00	3.13E-01	5.50E-03	4.97E+03	1.59E+02	2.97E-02	1.76E+02	2.82E+01
MGBG-2 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.84E+03	1.56E+01	1.10E-03	1.24E+03	1.37E+00	3.13E-01	5.50E-03	9.62E+02	1.59E+02	2.97E-02	1.76E+02	5.46E+00
PCBG-201	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.46E+03	1.24E+01	1.10E-03	9.89E+02	1.09E+00	3.13E-01	5.50E-03	7.65E+02	1.59E+02	2.97E-02	1.76E+02	4.34E+00
PCBG-202	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	8.52E+02	7.21E+00	1.10E-03	5.77E+02	6.35E-01	3.13E-01	5.50E-03	4.46E+02	1.59E+02	2.97E-02	1.76E+02	2.53E+00
Paymaster Mine Waste Area 1																						**Minimum HQ (Reference Site)**	**1.58E+00**
PMWA1-1 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	6.11E+02	5.17E+00	1.10E-03	4.14E+02	4.55E-01	3.13E-01	5.50E-03	3.20E+02	1.59E+02	2.97E-02	1.76E+02	1.82E+00
PMWA1-50 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
PMWA1-100 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
PMWA1-100+15 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
PMWA1-100+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
PMWA1-150 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
PMWA1-200 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	6.22E+02	5.26E+00	1.10E-03	4.21E+02	4.64E-01	3.13E-01	5.50E-03	3.25E+02	1.59E+02	2.97E-02	1.76E+02	1.85E+00
PMWA1-230 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	7.58E+02	6.42E+00	1.10E-03	5.14E+02	5.66E-01	3.13E-01	5.50E-03	3.97E+02	1.59E+02	2.97E-02	1.76E+02	2.26E+00
PMWA1-230+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
PMWA1-Comp 1 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	5.70E+02	4.82E+00	1.10E-03	3.86E+02	4.25E-01	3.13E-01	5.50E-03	2.98E+02	1.59E+02	2.97E-02	1.76E+02	1.69E+00
PMWA1-Comp 2 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
Paymaster Mine Waste Area 2																						**Maximum HQ (Paymaster Mine Waste Area 1)**	**2.26E+00**
PMWA2-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
PMWA2-50 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.35E+03	1.15E+01	1.10E-03	9.16E+02	1.01E+00	3.13E-01	5.50E-03	7.08E+02	1.59E+02	2.97E-02	1.76E+02	4.02E+00
PMWA2-150 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
PMWA2-200 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	6.80E+02	5.76E+00	1.10E-03	4.61E+02	5.08E-01	3.13E-01	5.50E-03	3.56E+02	1.59E+02	2.97E-02	1.76E+02	2.02E+00
PMWA2-200+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
PMWA2-Comp 1 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	6.17E+02	5.23E+00	1.10E-03	4.18E+02	4.60E-01	3.13E-01	5.50E-03	3.23E+02	1.59E+02	2.97E-02	1.76E+02	1.84E+00
																						Maximum HQ (Paymaster Mine Waste Area 2)	**4.02E+00**

Notes

1 See Tables 3-1 through 3-13 for ingestion rates, foraging ranges used to calculate the SUF, and body weights.
2 BAFs were calculated by dividing site-collected tissue by collocated soil concentrations (BAFs are in dry weight). The maximum BAF calculated from the Beartrap Creek and Blackfoot River transects was used for site dose calculations. The maximum BAF from the terrestrial reference site was used for reference site dose calculations.
3 The mammal, plant, and invertebrate concentrations were calculated by multiplying the soil concentration by the BAF to generate a tissue concentration (see note 2).
4 Mammal, plant, and invertebrate daily doses were calculated by multiplying the ingestion rate (see note 1) by the tissue concentration (see note 3).
5 Soil concentration from 0 to 6 inches below ground surface at point ID as measured by XRF 10. Doses were not calculated for detected and non-detected soil concentrations measured below the minimum reference site concentration, as indicated by BB. For results that were measured at less than the detection limit, doses were calculated using half of the detection limit.
6 Soil daily dose was calculated by multiplying the soil ingestion rate (see note 1) by soil concentration (see note 5).
7 Total daily dose is calculated using the following equation: total daily dose = ([mammal daily dose (if applicable) + plant daily dose (if applicable) + invertebrate daily dose (if applicable) + soil daily dose]*SUF)/receptor species body weight.
8 The TRVs used in this risk assessment represent a mid-range effects level. The derivation of TRVs is described in Navy (1998).
9 Allometrically adjusted TRVs for birds were calculated using the following equation: receptor species TRV = (test species TRV) x (test species body weight / receptor species body weight) $^{(1-1.2)}$.
10 Allometrically adjusted TRVs for mammals were calculated using the following equation: receptor species TRV = (test species TRV) x (test species body weight / receptor species body weight) $^{(1-0.94)}$.
11 HQs were calculated using the following equation: HQ = total daily dose/allometrically adjusted TRV.
12 Highlighted cells indicate an HQ greater than 1.0.

BAF	Bioaccumulation Factor	mg/kg	Milligram per kilogram
BB	Below minimum background reference site concentration	NA	Not applicable
EU	Exposure unit	Navy	Department of the Navy
HQ	Hazard quotient	SUF	Site use factor
ID	Identification	TRV	Toxicity reference value
kg	Kilogram	XRF	X-ray fluorescence
kg/day	Kilogram per day	XRF 10	XRF measurements recorded following drying and seiving through a #10-mesh screen
mg/day	Milligram per day		

Sources: Department of the Navy. 1998. "Development of Toxicity Reference Values for Conducting Ecological Risk Assessments at Naval Facilities in California, Interim Final." Prepared by Naval Facilities Engineering Command, Engineering Field Activity West (EFA West). San Bruno, California.

TABLE C-9E: ZINC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 9 - PAYMASTER MINE WASTE AREAS

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **0.125**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Mourning Dove (Herbivorous Birds - Terrestrial)																							
Reference Site																							
PCBG-1 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.41E+00	2.71E+02	1.56E+00	NA	NA	NA	NA	5.36E-04	1.92E+02	1.03E-01	4.83E-04	1.09E-01	7.37E-03	1.72E+02	9.55E-01	1.11E+02	6.61E-05
MGBG-1 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.41E+00	9.18E+02	5.29E+00	NA	NA	NA	NA	5.36E-04	6.50E+02	3.49E-01	4.83E-04	1.09E-01	2.49E-02	1.72E+02	9.55E-01	1.11E+02	2.24E-04
MGBG-1 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.41E+00	9.18E+02	5.29E+00	NA	NA	NA	NA	5.36E-04	6.50E+02	3.49E-01	4.83E-04	1.09E-01	2.49E-02	1.72E+02	9.55E-01	1.11E+02	2.24E-04
MGBG-2 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.41E+00	7.17E+02	4.13E+00	NA	NA	NA	NA	5.36E-04	5.08E+02	2.72E-01	4.83E-04	1.09E-01	1.94E-02	1.72E+02	9.55E-01	1.11E+02	1.74E-04
PCBG-201	5.76E-03	NA	NA	NA	NA	5.76E-03	1.41E+00	9.44E+01	5.44E-01	NA	NA	NA	NA	5.36E-04	6.69E+01	3.58E-02	4.83E-04	1.09E-01	2.56E-03	1.72E+02	9.55E-01	1.11E+02	2.30E-05
PCBG-202	5.76E-03	NA	NA	NA	NA	5.76E-03	1.41E+00	1.77E+02	1.02E+00	NA	NA	NA	NA	5.36E-04	1.25E+02	6.71E-02	4.83E-04	1.09E-01	4.80E-03	1.72E+02	9.55E-01	1.11E+02	4.30E-05
Paymaster Mine Waste Area 1																						**Minimum HQ (Reference Site)**	**2.30E-05**
PMWA1-1 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
PMWA1-50 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	2.49E+02	1.44E+00	NA	NA	NA	NA	5.36E-04	1.26E+02	6.74E-02	4.83E-04	1.09E-01	6.65E-03	1.72E+02	9.55E-01	1.11E+02	5.96E-05
PMWA1-100 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	1.84E+02	1.06E+00	NA	NA	NA	NA	5.36E-04	9.27E+01	4.96E-02	4.83E-04	1.09E-01	4.89E-03	1.72E+02	9.55E-01	1.11E+02	4.39E-05
PMWA1-100+15 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
PMWA1-100+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
PMWA1-150 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	2.52E+02	1.45E+00	NA	NA	NA	NA	5.36E-04	1.27E+02	6.81E-02	4.83E-04	1.09E-01	6.71E-03	1.72E+02	9.55E-01	1.11E+02	6.02E-05
PMWA1-200 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	2.30E+02	1.33E+00	NA	NA	NA	NA	5.36E-04	1.16E+02	6.23E-02	4.83E-04	1.09E-01	6.14E-03	1.72E+02	9.55E-01	1.11E+02	5.51E-05
PMWA1-230 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	2.24E+02	1.29E+00	NA	NA	NA	NA	5.36E-04	1.13E+02	6.07E-02	4.83E-04	1.09E-01	5.98E-03	1.72E+02	9.55E-01	1.11E+02	5.37E-05
PMWA1-230+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
PMWA1-Comp 1 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	2.32E+02	1.34E+00	NA	NA	NA	NA	5.36E-04	1.17E+02	6.28E-02	4.83E-04	1.09E-01	6.19E-03	1.72E+02	9.55E-01	1.11E+02	5.55E-05
PMWA1-Comp 2 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	1.92E+02	1.11E+00	NA	NA	NA	NA	5.36E-04	9.72E+01	5.21E-02	4.83E-04	1.09E-01	5.13E-03	1.72E+02	9.55E-01	1.11E+02	4.60E-05
Paymaster Mine Waste Area 2																						**Maximum HQ (Paymaster Mine Waste Area 1)**	**6.02E-05**
PMWA2-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	2.59E+02	1.49E+00	NA	NA	NA	NA	5.36E-04	1.31E+02	7.00E-02	4.83E-04	1.09E-01	6.90E-03	1.72E+02	9.55E-01	1.11E+02	6.19E-05
PMWA2-50 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	3.12E+02	1.80E+00	NA	NA	NA	NA	5.36E-04	1.58E+02	8.44E-02	4.83E-04	1.09E-01	8.33E-03	1.72E+02	9.55E-01	1.11E+02	7.47E-05
PMWA2-100 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	1.56E+02	8.99E-01	NA	NA	NA	NA	5.36E-04	7.87E+01	4.22E-02	4.83E-04	1.09E-01	4.16E-03	1.72E+02	9.55E-01	1.11E+02	3.73E-05
PMWA2-150 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	2.55E+02	1.47E+00	NA	NA	NA	NA	5.36E-04	1.29E+02	6.90E-02	4.83E-04	1.09E-01	6.81E-03	1.72E+02	9.55E-01	1.11E+02	6.11E-05
PMWA2-200 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	2.38E+02	1.37E+00	NA	NA	NA	NA	5.36E-04	1.20E+02	6.42E-02	4.83E-04	1.09E-01	6.33E-03	1.72E+02	9.55E-01	1.11E+02	5.68E-05
PMWA2-200+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
PMWA2-Comp 1 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	1.98E+02	1.14E+00	NA	NA	NA	NA	5.36E-04	1.00E+02	5.37E-02	4.83E-04	1.09E-01	5.29E-03	1.72E+02	9.55E-01	1.11E+02	4.75E-05
																						Maximum HQ (Paymaster Mine Waste Area 2)	**7.47E-05**
Red-Tailed Hawk (Carnivorous Birds - Terrestrial)																							
Reference Site																							
PCBG-1 (0-6")	9.00E-02	9.00E-02	1.03E+01	1.99E+03	1.79E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.92E+02	9.86E-01	1.79E-04	1.13E+00	2.85E-02	1.72E+02	9.55E-01	1.78E+02	1.60E-04
MGBG-1 (0-6")	9.00E-02	9.00E-02	1.03E+01	6.73E+03	6.05E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	6.50E+02	3.34E+00	1.79E-04	1.13E+00	9.63E-02	1.72E+02	9.55E-01	1.78E+02	5.41E-04
MGBG-1 (0-6")	9.00E-02	9.00E-02	1.03E+01	6.73E+03	6.05E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	6.50E+02	3.34E+00	1.79E-04	1.13E+00	9.63E-02	1.72E+02	9.55E-01	1.78E+02	5.41E-04
MGBG-2 (0-6")	9.00E-02	9.00E-02	1.03E+01	5.25E+03	4.73E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.08E+02	2.60E+00	1.79E-04	1.13E+00	7.52E-02	1.72E+02	9.55E-01	1.78E+02	4.22E-04
PCBG-201	9.00E-02	9.00E-02	1.03E+01	6.92E+02	6.22E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	6.69E+01	3.43E-01	1.79E-04	1.13E+00	9.90E-03	1.72E+02	9.55E-01	1.78E+02	5.56E-05
PCBG-202	9.00E-02	9.00E-02	1.03E+01	1.30E+03	1.17E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.25E+02	6.42E-01	1.79E-04	1.13E+00	1.85E-02	1.72E+02	9.55E-01	1.78E+02	1.04E-04
Paymaster Mine Waste Area 1																						**Minimum HQ (Reference Site)**	**5.56E-05**
PMWA1-1 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
PMWA1-50 (0-6")	9.00E-02	9.00E-02	6.30E+00	7.92E+02	7.13E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.26E+02	6.45E-01	1.79E-04	1.13E+00	1.14E-02	1.72E+02	9.55E-01	1.78E+02	6.39E-05
PMWA1-100 (0-6")	9.00E-02	9.00E-02	6.30E+00	5.83E+02	5.25E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	9.27E+01	4.75E-01	1.79E-04	1.13E+00	8.38E-03	1.72E+02	9.55E-01	1.78E+02	4.71E-05
PMWA1-100+15 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
PMWA1-100+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
PMWA1-150 (0-6")	9.00E-02	9.00E-02	6.30E+00	8.00E+02	7.20E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.27E+02	6.51E-01	1.79E-04	1.13E+00	1.15E-02	1.72E+02	9.55E-01	1.78E+02	6.45E-05
PMWA1-200 (0-6")	9.00E-02	9.00E-02	6.30E+00	7.32E+02	6.58E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.16E+02	5.96E-01	1.79E-04	1.13E+00	1.05E-02	1.72E+02	9.55E-01	1.78E+02	5.90E-05
PMWA1-230 (0-6")	9.00E-02	9.00E-02	6.30E+00	7.13E+02	6.42E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.13E+02	5.81E-01	1.79E-04	1.13E+00	1.02E-02	1.72E+02	9.55E-01	1.78E+02	5.75E-05
PMWA1-230+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
PMWA1-Comp 1 (0-6")	9.00E-02	9.00E-02	6.30E+00	7.38E+02	6.64E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.17E+02	6.01E-01	1.79E-04	1.13E+00	1.06E-02	1.72E+02	9.55E-01	1.78E+02	5.95E-05
PMWA1-Comp 2 (0-6")	9.00E-02	9.00E-02	6.30E+00	6.12E+02	5.50E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	9.72E+01	4.98E-01	1.79E-04	1.13E+00	8.78E-03	1.72E+02	9.55E-01	1.78E+02	4.93E-05
Paymaster Mine Waste Area 2																						**Maximum HQ (Paymaster Mine Waste Area 1)**	**6.45E-05**
PMWA2-0 (0-6")	9.00E-02	9.00E-02	6.30E+00	8.23E+02	7.40E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.31E+02	6.70E-01	1.79E-04	1.13E+00	1.18E-02	1.72E+02	9.55E-01	1.78E+02	6.64E-05
PMWA2-50 (0-6")	9.00E-02	9.00E-02	6.30E+00	9.92E+02	8.93E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.58E+02	8.08E-01	1.79E-04	1.13E+00	1.42E-02	1.72E+02	9.55E-01	1.78E+02	8.00E-05
PMWA2-100 (0-6")	9.00E-02	9.00E-02	6.30E+00	4.96E+02	4.46E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	7.87E+01	4.04E-01	1.79E-04	1.13E+00	7.12E-03	1.72E+02	9.55E-01	1.78E+02	4.00E-05
PMWA2-150 (0-6")	9.00E-02	9.00E-02	6.30E+00	8.11E+02	7.30E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.29E+02	6.61E-01	1.79E-04	1.13E+00	1.16E-02	1.72E+02	9.55E-01	1.78E+02	6.54E-05
PMWA2-200 (0-6")	9.00E-02	9.00E-02	6.30E+00	7.55E+02	6.79E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.20E+02	6.15E-01	1.79E-04	1.13E+00	1.08E-02	1.72E+02	9.55E-01	1.78E+02	6.09E-05
PMWA2-200+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
PMWA2-Comp 1 (0-6")	9.00E-02	9.00E-02	6.30E+00	6.31E+02	5.67E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.00E+02	5.14E-01	1.79E-04	1.13E+00	9.05E-03	1.72E+02	9.55E-01	1.78E+02	5.09E-05
																						Maximum HQ (Paymaster Mine Waste Area 2)	**8.00E-05**

TABLE C-9E: ZINC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 9 - PAYMASTER MINE WASTE AREAS (Continued)
Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables; from BAF table; linked to soil or sed concentration table (VLOOKUP)
calculated values; linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 0.125

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
American Kestrel (Insectivorous Birds - Terrestrial)																							
Reference Site																							
PCBG-1 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	8.31E+00	1.60E+03	2.20E+01	7.84E-04	1.92E+02	1.51E-01	4.78E-04	1.24E-01	8.54E-02	1.72E+02	9.55E-01	1.14E+02	7.47E-04
MGBG-1 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	8.31E+00	5.41E+03	7.44E+01	7.84E-04	6.50E+02	5.10E-01	4.78E-04	1.24E-01	2.89E-01	1.72E+02	9.55E-01	1.14E+02	2.52E-03
MGBG-1 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	8.31E+00	5.41E+03	7.44E+01	7.84E-04	6.50E+02	5.10E-01	4.78E-04	1.24E-01	2.89E-01	1.72E+02	9.55E-01	1.14E+02	2.52E-03
MGBG-2 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	8.31E+00	4.22E+03	5.81E+01	7.84E-04	5.08E+02	3.98E-01	4.78E-04	1.24E-01	2.25E-01	1.72E+02	9.55E-01	1.14E+02	1.97E-03
PCBG-201	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	8.31E+00	5.56E+02	7.65E+00	7.84E-04	6.69E+01	5.24E-02	4.78E-04	1.24E-01	2.97E-02	1.72E+02	9.55E-01	1.14E+02	2.60E-04
PCBG-202	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	8.31E+00	1.04E+03	1.43E+01	7.84E-04	1.25E+02	9.83E-02	4.78E-04	1.24E-01	5.56E-02	1.72E+02	9.55E-01	1.14E+02	4.86E-04
Paymaster Mine Waste Area 1																						**Minimum HQ (Reference Site)**	**2.60E-04**
PMWA1-1 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
PMWA1-50 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	5.51E+02	7.59E+00	7.84E-04	1.26E+02	9.87E-02	4.78E-04	1.24E-01	2.96E-02	1.72E+02	9.55E-01	1.14E+02	2.59E-04
PMWA1-100 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	4.06E+02	5.58E+00	7.84E-04	9.27E+01	7.27E-02	4.78E-04	1.24E-01	2.18E-02	1.72E+02	9.55E-01	1.14E+02	1.91E-04
PMWA1-100+15 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
PMWA1-100+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
PMWA1-150 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	5.56E+02	7.66E+00	7.84E-04	1.27E+02	9.97E-02	4.78E-04	1.24E-01	2.99E-02	1.72E+02	9.55E-01	1.14E+02	2.61E-04
PMWA1-200 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	5.09E+02	7.00E+00	7.84E-04	1.16E+02	9.12E-02	4.78E-04	1.24E-01	2.73E-02	1.72E+02	9.55E-01	1.14E+02	2.39E-04
PMWA1-230 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	4.96E+02	6.83E+00	7.84E-04	1.13E+02	8.89E-02	4.78E-04	1.24E-01	2.66E-02	1.72E+02	9.55E-01	1.14E+02	2.33E-04
American Kestrel (Insectivorous Birds - Terrestrial)																							
PMWA1-230+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
PMWA1-Comp 1 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	5.13E+02	7.06E+00	7.84E-04	1.17E+02	9.19E-02	4.78E-04	1.24E-01	2.76E-02	1.72E+02	9.55E-01	1.14E+02	2.41E-04
PMWA1-Comp 2 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	4.25E+02	5.85E+00	7.84E-04	9.72E+01	7.62E-02	4.78E-04	1.24E-01	2.28E-02	1.72E+02	9.55E-01	1.14E+02	2.00E-04
Paymaster Mine Waste Area 2																						**Maximum HQ (Paymaster Mine Waste Area 1)**	**2.61E-04**
PMWA2-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	5.72E+02	7.87E+00	7.84E-04	1.31E+02	1.02E-01	4.78E-04	1.24E-01	3.07E-02	1.72E+02	9.55E-01	1.14E+02	2.69E-04
PMWA2-50 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	6.90E+02	9.50E+00	7.84E-04	1.58E+02	1.24E-01	4.78E-04	1.24E-01	3.71E-02	1.72E+02	9.55E-01	1.14E+02	3.24E-04
PMWA2-100 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	3.45E+02	4.74E+00	7.84E-04	7.87E+01	6.17E-02	4.78E-04	1.24E-01	1.85E-02	1.72E+02	9.55E-01	1.14E+02	1.62E-04
PMWA2-150 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	5.64E+02	7.76E+00	7.84E-04	1.29E+02	1.01E-01	4.78E-04	1.24E-01	3.03E-02	1.72E+02	9.55E-01	1.14E+02	2.65E-04
PMWA2-200 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	5.25E+02	7.23E+00	7.84E-04	1.20E+02	9.40E-02	4.78E-04	1.24E-01	2.82E-02	1.72E+02	9.55E-01	1.14E+02	2.47E-04
PMWA2-200+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
PMWA2-Comp 1 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	4.39E+02	6.04E+00	7.84E-04	1.00E+02	7.86E-02	4.78E-04	1.24E-01	2.36E-02	1.72E+02	9.55E-01	1.14E+02	2.06E-04
																						Maximum HQ (Paymaster Mine Waste Area 2)	**3.24E-04**
Meadow Vole (Small Herbivorous Mammal - Terrestrial)																							
Reference Site																							
PCBG-1 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.41E+00	2.71E+02	1.27E+00	NA	NA	NA	NA	1.13E-04	1.92E+02	2.16E-02	1.00E+00	3.06E-02	4.23E+01	4.11E+02	1.75E-01	4.57E+02	9.26E-02
MGBG-1 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.41E+00	9.18E+02	4.30E+00	NA	NA	NA	NA	1.13E-04	6.50E+02	7.32E-02	1.00E+00	3.06E-02	1.43E+02	4.11E+02	1.75E-01	4.57E+02	3.13E-01
MGBG-1 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.41E+00	9.18E+02	4.30E+00	NA	NA	NA	NA	1.13E-04	6.50E+02	7.32E-02	1.00E+00	3.06E-02	1.43E+02	4.11E+02	1.75E-01	4.57E+02	3.13E-01
MGBG-2 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.41E+00	7.17E+02	3.36E+00	NA	NA	NA	NA	1.13E-04	5.08E+02	5.71E-02	1.00E+00	3.06E-02	1.12E+02	4.11E+02	1.75E-01	4.57E+02	2.44E-01
PCBG-201	4.69E-03	NA	NA	NA	NA	4.69E-03	1.41E+00	9.44E+01	4.42E-01	NA	NA	NA	NA	1.13E-04	6.69E+01	7.52E-03	1.00E+00	3.06E-02	1.47E+01	4.11E+02	1.75E-01	4.57E+02	3.22E-02
PCBG-202	4.69E-03	NA	NA	NA	NA	4.69E-03	1.41E+00	1.77E+02	8.29E-01	NA	NA	NA	NA	1.13E-04	1.25E+02	1.41E-02	1.00E+00	3.06E-02	2.76E+01	4.11E+02	1.75E-01	4.57E+02	6.03E-02
Paymaster Mine Waste Area 1																						**Minimum HQ (Reference Site)**	**3.22E-02**
PMWA1-1 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
PMWA1-50 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	2.49E+02	1.17E+00	NA	NA	NA	NA	1.13E-04	1.26E+02	1.42E-02	1.00E+00	3.06E-02	3.87E+01	4.11E+02	1.75E-01	4.57E+02	8.47E-02
PMWA1-100 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	1.84E+02	8.61E-01	NA	NA	NA	NA	1.13E-04	9.27E+01	1.04E-02	1.00E+00	3.06E-02	2.85E+01	4.11E+02	1.75E-01	4.57E+02	6.23E-02
PMWA1-100+15 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
PMWA1-100+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
PMWA1-150 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	2.52E+02	1.18E+00	NA	NA	NA	NA	1.13E-04	1.27E+02	1.43E-02	1.00E+00	3.06E-02	3.90E+01	4.11E+02	1.75E-01	4.57E+02	8.55E-02
PMWA1-200 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	2.30E+02	1.08E+00	NA	NA	NA	NA	1.13E-04	1.16E+02	1.31E-02	1.00E+00	3.06E-02	3.57E+01	4.11E+02	1.75E-01	4.57E+02	7.82E-02
PMWA1-230 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	2.24E+02	1.05E+00	NA	NA	NA	NA	1.13E-04	1.13E+02	1.27E-02	1.00E+00	3.06E-02	3.48E+01	4.11E+02	1.75E-01	4.57E+02	7.62E-02
PMWA1-230+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
PMWA1-Comp 1 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	2.32E+02	1.09E+00	NA	NA	NA	NA	1.13E-04	1.17E+02	1.32E-02	1.00E+00	3.06E-02	3.60E+01	4.11E+02	1.75E-01	4.57E+02	7.89E-02
PMWA1-Comp 2 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	1.92E+02	9.03E-01	NA	NA	NA	NA	1.13E-04	9.72E+01	1.09E-02	1.00E+00	3.06E-02	2.99E+01	4.11E+02	1.75E-01	4.57E+02	6.54E-02
Paymaster Mine Waste Area 2																						**Maximum HQ (Paymaster Mine Waste Area 1)**	**8.55E-02**
PMWA2-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	2.59E+02	1.21E+00	NA	NA	NA	NA	1.13E-04	1.31E+02	1.47E-02	1.00E+00	3.06E-02	4.02E+01	4.11E+02	1.75E-01	4.57E+02	8.79E-02
PMWA2-50 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	3.12E+02	1.46E+00	NA	NA	NA	NA	1.13E-04	1.58E+02	1.77E-02	1.00E+00	3.06E-02	4.84E+01	4.11E+02	1.75E-01	4.57E+02	1.06E-01
PMWA2-100 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	1.56E+02	7.31E-01	NA	NA	NA	NA	1.13E-04	7.87E+01	8.86E-03	1.00E+00	3.06E-02	2.42E+01	4.11E+02	1.75E-01	4.57E+02	5.30E-02
PMWA2-150 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	2.55E+02	1.20E+00	NA	NA	NA	NA	1.13E-04	1.29E+02	1.45E-02	1.00E+00	3.06E-02	3.96E+01	4.11E+02	1.75E-01	4.57E+02	8.67E-02
PMWA2-200 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	2.38E+02	1.11E+00	NA	NA	NA	NA	1.13E-04	1.20E+02	1.35E-02	1.00E+00	3.06E-02	3.68E+01	4.11E+02	1.75E-01	4.57E+02	8.07E-02
PMWA2-200+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
PMWA2-Comp 1 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	1.98E+02	9.31E-01	NA	NA	NA	NA	1.13E-04	1.00E+02	1.13E-02	1.00E+00	3.06E-02	3.08E+01	4.11E+02	1.75E-01	4.57E+02	6.74E-02
																						Maximum HQ (Paymaster Mine Waste Area 2)	**1.06E-01**

TABLE C-9E: ZINC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 9 - PAYMASTER MINE WASTE AREAS (Continued)
Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables; from BAF table; linked to soil or sed concentration table (VLOOKUP)
calculated values; linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 0.125

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
White-Tailed Deer (Large Herbivorous Mammal - Terrestrial)																							
Reference Site																							
PCBG-1 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.41E+00	2.71E+02	3.89E+02	NA	NA	NA	NA	2.86E-02	1.92E+02	5.51E+00	6.99E-04	1.35E+02	2.04E-03	4.11E+02	1.75E-01	2.76E+02	7.39E-06
MGBG-1 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.41E+00	9.18E+02	1.31E+03	NA	NA	NA	NA	2.86E-02	6.50E+02	1.86E+01	6.99E-04	1.35E+02	6.90E-03	4.11E+02	1.75E-01	2.76E+02	2.50E-05
MGBG-1 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.41E+00	9.18E+02	1.31E+03	NA	NA	NA	NA	2.86E-02	6.50E+02	1.86E+01	6.99E-04	1.35E+02	6.90E-03	4.11E+02	1.75E-01	2.76E+02	2.50E-05
MGBG-2 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.41E+00	7.17E+02	1.03E+03	NA	NA	NA	NA	2.86E-02	5.08E+02	1.45E+01	6.99E-04	1.35E+02	5.39E-03	4.11E+02	1.75E-01	2.76E+02	1.95E-05
PCBG-201	1.43E+00	NA	NA	NA	NA	1.43E+00	1.41E+00	9.44E+01	1.35E+02	NA	NA	NA	NA	2.86E-02	6.69E+01	1.91E+00	6.99E-04	1.35E+02	7.10E-04	4.11E+02	1.75E-01	2.76E+02	2.57E-06
PCBG-202	1.43E+00	NA	NA	NA	NA	1.43E+00	1.41E+00	1.77E+02	2.53E+02	NA	NA	NA	NA	2.86E-02	1.25E+02	3.59E+00	6.99E-04	1.35E+02	1.33E-03	4.11E+02	1.75E-01	2.76E+02	4.82E-06
Paymaster Mine Waste Area 1																						**Minimum HQ (Reference Site)**	**2.57E-06**
PMWA1-1 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
PMWA1-50 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	2.49E+02	3.57E+02	NA	NA	NA	NA	2.86E-02	1.26E+02	3.60E+00	6.99E-04	1.35E+02	1.87E-03	4.11E+02	1.75E-01	2.76E+02	6.77E-06
PMWA1-100 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	1.84E+02	2.63E+02	NA	NA	NA	NA	2.86E-02	9.27E+01	2.65E+00	6.99E-04	1.35E+02	1.38E-03	4.11E+02	1.75E-01	2.76E+02	4.98E-06
PMWA1-100+15 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
PMWA1-100+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
PMWA1-150 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	2.52E+02	3.60E+02	NA	NA	NA	NA	2.86E-02	1.27E+02	3.64E+00	6.99E-04	1.35E+02	1.89E-03	4.11E+02	1.75E-01	2.76E+02	6.83E-06
PMWA1-200 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	2.30E+02	3.30E+02	NA	NA	NA	NA	2.86E-02	1.16E+02	3.33E+00	6.99E-04	1.35E+02	1.73E-03	4.11E+02	1.75E-01	2.76E+02	6.25E-06
PMWA1-230 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	2.24E+02	3.21E+02	NA	NA	NA	NA	2.86E-02	1.13E+02	3.24E+00	6.99E-04	1.35E+02	1.68E-03	4.11E+02	1.75E-01	2.76E+02	6.09E-06
PMWA1-230+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
PMWA1-Comp 1 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	2.32E+02	3.33E+02	NA	NA	NA	NA	2.86E-02	1.17E+02	3.36E+00	6.99E-04	1.35E+02	1.74E-03	4.11E+02	1.75E-01	2.76E+02	6.30E-06
PMWA1-Comp 2 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	1.92E+02	2.76E+02	NA	NA	NA	NA	2.86E-02	9.72E+01	2.78E+00	6.99E-04	1.35E+02	1.44E-03	4.11E+02	1.75E-01	2.76E+02	5.22E-06
Paymaster Mine Waste Area 2																						**Maximum HQ (Paymaster Mine Waste Area 1)**	**6.83E-06**
PMWA2-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	2.59E+02	3.71E+02	NA	NA	NA	NA	2.86E-02	1.31E+02	3.74E+00	6.99E-04	1.35E+02	1.94E-03	4.11E+02	1.75E-01	2.76E+02	7.02E-06
PMWA2-50 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	3.12E+02	4.47E+02	NA	NA	NA	NA	2.86E-02	1.58E+02	4.51E+00	6.99E-04	1.35E+02	2.34E-03	4.11E+02	1.75E-01	2.76E+02	8.47E-06
PMWA2-100 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	1.56E+02	2.23E+02	NA	NA	NA	NA	2.86E-02	7.87E+01	2.25E+00	6.99E-04	1.35E+02	1.17E-03	4.11E+02	1.75E-01	2.76E+02	4.23E-06
PMWA2-150 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	2.55E+02	3.65E+02	NA	NA	NA	NA	2.86E-02	1.29E+02	3.69E+00	6.99E-04	1.35E+02	1.91E-03	4.11E+02	1.75E-01	2.76E+02	6.93E-06
PMWA2-200 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	2.38E+02	3.40E+02	NA	NA	NA	NA	2.86E-02	1.20E+02	3.43E+00	6.99E-04	1.35E+02	1.78E-03	4.11E+02	1.75E-01	2.76E+02	6.45E-06
PMWA2-200+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
PMWA2-Comp 1 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	1.98E+02	2.84E+02	NA	NA	NA	NA	2.86E-02	1.00E+02	2.87E+00	6.99E-04	1.35E+02	1.49E-03	4.11E+02	1.75E-01	2.76E+02	5.38E-06
																						Maximum HQ (Paymaster Mine Waste Area 2)	**8.47E-06**
Red Fox (Carnivorous Mammal - Terrestrial)																							
Reference Site																							
PCBG-1 (0-6")	1.72E-01	1.72E-01	1.03E+01	1.99E+03	3.41E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.92E+02	9.24E-01	9.24E-05	4.54E+00	6.97E-03	4.11E+02	1.75E-01	3.38E+02	2.06E-05
MGBG-1 (0-6")	1.72E-01	1.72E-01	1.03E+01	6.73E+03	1.15E+03	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	6.50E+02	3.12E+00	9.24E-05	4.54E+00	2.36E-02	4.11E+02	1.75E-01	3.38E+02	6.96E-05
MGBG-1 (0-6")	1.72E-01	1.72E-01	1.03E+01	6.73E+03	1.15E+03	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	6.50E+02	3.12E+00	9.24E-05	4.54E+00	2.36E-02	4.11E+02	1.75E-01	3.38E+02	6.96E-05
MGBG-2 (0-6")	1.72E-01	1.72E-01	1.03E+01	5.25E+03	9.01E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.08E+02	2.44E+00	9.24E-05	4.54E+00	1.84E-02	4.11E+02	1.75E-01	3.38E+02	5.44E-05
PCBG-201	1.72E-01	1.72E-01	1.03E+01	6.92E+02	1.19E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	6.69E+01	3.21E-01	9.24E-05	4.54E+00	2.42E-03	4.11E+02	1.75E-01	3.38E+02	7.16E-06
PCBG-202	1.72E-01	1.72E-01	1.03E+01	1.30E+03	2.22E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.25E+02	6.02E-01	9.24E-05	4.54E+00	4.54E-03	4.11E+02	1.75E-01	3.38E+02	1.34E-05
Paymaster Mine Waste Area 1																						**Minimum HQ (Reference Site)**	**7.16E-06**
PMWA1-1 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
PMWA1-50 (0-6")	1.72E-01	1.72E-01	6.30E+00	7.92E+02	1.36E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.26E+02	6.05E-01	9.24E-05	4.54E+00	2.78E-03	4.11E+02	1.75E-01	3.38E+02	8.21E-06
PMWA1-100 (0-6")	1.72E-01	1.72E-01	6.30E+00	5.83E+02	1.00E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	9.27E+01	4.45E-01	9.24E-05	4.54E+00	2.05E-03	4.11E+02	1.75E-01	3.38E+02	6.05E-06
PMWA1-100+15 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
PMWA1-100+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
PMWA1-150 (0-6")	1.72E-01	1.72E-01	6.30E+00	8.00E+02	1.37E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.27E+02	6.10E-01	9.24E-05	4.54E+00	2.81E-03	4.11E+02	1.75E-01	3.38E+02	8.29E-06
PMWA1-200 (0-6")	1.72E-01	1.72E-01	6.30E+00	7.32E+02	1.26E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.16E+02	5.58E-01	9.24E-05	4.54E+00	2.57E-03	4.11E+02	1.75E-01	3.38E+02	7.58E-06
PMWA1-230 (0-6")	1.72E-01	1.72E-01	6.30E+00	7.13E+02	1.22E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.13E+02	5.44E-01	9.24E-05	4.54E+00	2.50E-03	4.11E+02	1.75E-01	3.38E+02	7.39E-06
PMWA1-230+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
PMWA1-Comp 1 (0-6")	1.72E-01	1.72E-01	6.30E+00	7.38E+02	1.27E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.17E+02	5.63E-01	9.24E-05	4.54E+00	2.59E-03	4.11E+02	1.75E-01	3.38E+02	7.65E-06
PMWA1-Comp 2 (0-6")	1.72E-01	1.72E-01	6.30E+00	6.12E+02	1.05E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	9.72E+01	4.67E-01	9.24E-05	4.54E+00	2.15E-03	4.11E+02	1.75E-01	3.38E+02	6.34E-06
Paymaster Mine Waste Area 2																						**Maximum HQ (Paymaster Mine Waste Area 1)**	**8.29E-06**
PMWA2-0 (0-6")	1.72E-01	1.72E-01	6.30E+00	8.23E+02	1.41E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.31E+02	6.28E-01	9.24E-05	4.54E+00	2.89E-03	4.11E+02	1.75E-01	3.38E+02	8.53E-06
PMWA2-50 (0-6")	1.72E-01	1.72E-01	6.30E+00	9.92E+02	1.70E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.58E+02	7.57E-01	9.24E-05	4.54E+00	3.48E-03	4.11E+02	1.75E-01	3.38E+02	1.03E-05
PMWA2-100 (0-6")	1.72E-01	1.72E-01	6.30E+00	4.96E+02	8.50E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	7.87E+01	3.78E-01	9.24E-05	4.54E+00	1.74E-03	4.11E+02	1.75E-01	3.38E+02	5.14E-06
PMWA2-150 (0-6")	1.72E-01	1.72E-01	6.30E+00	8.11E+02	1.39E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.29E+02	6.19E-01	9.24E-05	4.54E+00	2.85E-03	4.11E+02	1.75E-01	3.38E+02	8.41E-06
PMWA2-200 (0-6")	1.72E-01	1.72E-01	6.30E+00	7.55E+02	1.30E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.20E+02	5.76E-01	9.24E-05	4.54E+00	2.65E-03	4.11E+02	1.75E-01	3.38E+02	7.82E-06
PMWA2-200+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
PMWA2-Comp 1 (0-6")	1.72E-01	1.72E-01	6.30E+00	6.31E+02	1.08E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.00E+02	4.81E-01	9.24E-05	4.54E+00	2.21E-03	4.11E+02	1.75E-01	3.38E+02	6.54E-06
																						Maximum HQ (Paymaster Mine Waste Area 2)	**1.03E-05**

TABLE C-9E: ZINC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 9 - PAYMASTER MINE WASTE AREAS (Continued)
Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)
calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **0.125**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Masked Shrew (Omnivorous Mammal - Terrestrial, Wetland)																							
Reference Site																							
PCBG-1 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	8.31E+00	1.60E+03	1.35E+01	1.10E-03	1.92E+02	2.12E-01	3.13E-01	5.50E-03	7.82E+02	4.11E+02	1.75E-01	5.06E+02	1.54E+00
MGBG-1 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	8.31E+00	5.41E+03	4.58E+01	1.10E-03	6.50E+02	7.16E-01	3.13E-01	5.50E-03	2.64E+03	4.11E+02	1.75E-01	5.06E+02	5.22E+00
MGBG-1 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	8.31E+00	5.41E+03	4.58E+01	1.10E-03	6.50E+02	7.16E-01	3.13E-01	5.50E-03	2.64E+03	4.11E+02	1.75E-01	5.06E+02	5.22E+00
MGBG-2 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	8.31E+00	4.22E+03	3.58E+01	1.10E-03	5.08E+02	5.59E-01	3.13E-01	5.50E-03	2.06E+03	4.11E+02	1.75E-01	5.06E+02	4.08E+00
PCBG-201	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	8.31E+00	5.56E+02	4.71E+00	1.10E-03	6.69E+01	7.36E-02	3.13E-01	5.50E-03	2.72E+02	4.11E+02	1.75E-01	5.06E+02	5.37E-01
PCBG-202	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	8.31E+00	1.04E+03	8.82E+00	1.10E-03	1.25E+02	1.38E-01	3.13E-01	5.50E-03	5.09E+02	4.11E+02	1.75E-01	5.06E+02	1.01E+00
Paymaster Mine Waste Area 1																						**Minimum HQ (Reference Site)**	**5.37E-01**
PMWA1-1 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
PMWA1-50 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	5.51E+02	4.67E+00	1.10E-03	1.26E+02	1.39E-01	3.13E-01	5.50E-03	2.73E+02	4.11E+02	1.75E-01	5.06E+02	5.39E-01
PMWA1-100 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	4.06E+02	3.44E+00	1.10E-03	9.27E+01	1.02E-01	3.13E-01	5.50E-03	2.01E+02	4.11E+02	1.75E-01	5.06E+02	3.97E-01
PMWA1-100+15 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
PMWA1-100+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
PMWA1-150 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	5.56E+02	4.71E+00	1.10E-03	1.27E+02	1.40E-01	3.13E-01	5.50E-03	2.76E+02	4.11E+02	1.75E-01	5.06E+02	5.44E-01
PMWA1-200 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	5.09E+02	4.31E+00	1.10E-03	1.16E+02	1.28E-01	3.13E-01	5.50E-03	2.52E+02	4.11E+02	1.75E-01	5.06E+02	4.98E-01
PMWA1-230 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	4.96E+02	4.20E+00	1.10E-03	1.13E+02	1.25E-01	3.13E-01	5.50E-03	2.46E+02	4.11E+02	1.75E-01	5.06E+02	4.85E-01
PMWA1-230+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
PMWA1-Comp 1 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	5.13E+02	4.35E+00	1.10E-03	1.17E+02	1.29E-01	3.13E-01	5.50E-03	2.54E+02	4.11E+02	1.75E-01	5.06E+02	5.02E-01
PMWA1-Comp 2 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	4.25E+02	3.60E+00	1.10E-03	9.72E+01	1.07E-01	3.13E-01	5.50E-03	2.11E+02	4.11E+02	1.75E-01	5.06E+02	4.16E-01
Paymaster Mine Waste Area 2																						**Maximum HQ (Paymaster Mine Waste Area 1)**	**5.44E-01**
PMWA2-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	5.72E+02	4.85E+00	1.10E-03	1.31E+02	1.44E-01	3.13E-01	5.50E-03	2.84E+02	4.11E+02	1.75E-01	5.06E+02	5.60E-01
PMWA2-50 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	6.90E+02	5.85E+00	1.10E-03	1.58E+02	1.74E-01	3.13E-01	5.50E-03	3.42E+02	4.11E+02	1.75E-01	5.06E+02	6.75E-01
PMWA2-100 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	3.45E+02	2.92E+00	1.10E-03	7.87E+01	8.67E-02	3.13E-01	5.50E-03	1.71E+02	4.11E+02	1.75E-01	5.06E+02	3.37E-01
PMWA2-150 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	5.64E+02	4.78E+00	1.10E-03	1.29E+02	1.42E-01	3.13E-01	5.50E-03	2.80E+02	4.11E+02	1.75E-01	5.06E+02	5.52E-01
PMWA2-200 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	5.25E+02	4.45E+00	1.10E-03	1.20E+02	1.32E-01	3.13E-01	5.50E-03	2.60E+02	4.11E+02	1.75E-01	5.06E+02	5.14E-01
PMWA2-200+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
PMWA2-Comp 1 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	4.39E+02	3.71E+00	1.10E-03	1.00E+02	1.10E-01	3.13E-01	5.50E-03	2.17E+02	4.11E+02	1.75E-01	5.06E+02	4.29E-01
																						Maximum HQ (Paymaster Mine Waste Area 2)	**6.75E-01**

Notes

1 See Tables 3-1 through 3-13 for ingestion rates, foraging ranges used to calculate the SUF, and body weights.
2 BAFs were calculated by dividing site-collected tissue by collocated soil concentrations (BAFs are in dry weight). The maximum BAF calculated from the Beartrap Creek and Blackfoot River transects was used for site dose calculations. The maximum BAF from the terrestrial reference site was used for reference site dose calculations.
3 The mammal, plant, and invertebrate concentrations were calculated by multiplying the soil concentration by the BAF to generate a tissue concentration (see note 2).
4 Mammal, plant, and invertebrate daily doses were calculated by multiplying the ingestion rate (see note 1) by the tissue concentration (see note 3).
5 Soil concentration from 0 to 6 inches below ground surface at point ID as measured by XRF 10. Doses were not calculated for detected and non-detected soil concentrations measured below the minimum reference site concentration, as indicated by BB. For results that were measured at less than the detection limit, doses were calculated using half of the detection limit.
6 Soil daily dose was calculated by multiplying the soil ingestion rate (see note 1) by soil concentration (see note 5).
7 Total daily dose is calculated using the following equation: total daily dose = ([mammal daily dose (if applicable) + plant daily dose (if applicable) + invertebrate daily dose (if applicable) + soil daily dose]*SUF)/receptor species body weight.
8 The TRVs used in this risk assessment represent a mid-range effects level. The derivation of TRVs is described in Navy (1998).
9 Allometrically adjusted TRVs for birds were calculated using the following equation: receptor species TRV = (test species TRV) x (test species body weight / receptor species body weight) $^{(1-1.2)}$.
10 Allometrically adjusted TRVs for mammals were calculated using the following equation: receptor species TRV = (test species TRV) x (test species body weight / receptor species body weight) $^{(1-0.94)}$.
11 HQs were calculated using the following equation: HQ = total daily dose/allometrically adjusted TRV.
12 Highlighted cells indicate an HQ greater than 1.0.

BAF	Bioaccumulation Factor	mg/kg	Milligram per kilogram
BB	Below minimum background reference site concentration	NA	Not applicable
EU	Exposure unit	Navy	Department of the Navy
HQ	Hazard quotient	SUF	Site use factor
ID	Identification	TRV	Toxicity reference value
kg	Kilogram	XRF	X-ray fluorescence
kg/day	Kilogram per day	XRF 10	XRF measurements recorded following drying and seiving through a #10-mesh screen
mg/day	Milligram per day		

Sources: Department of the Navy. 1998. "Development of Toxicity Reference Values for Conducting Ecological Risk Assessments at Naval Facilities in California, Interim Final." Prepared by Naval Facilities Engineering Command, Engineering Field Activity West (EFA West). San Bruno, California.

TABLE C-10A: ARSENIC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 10 - NUMBER 3 TUNNEL WASTE AREA
Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables; from BAF table; linked to soil or sed concentration table (VLOOKUP)
calculated values; linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **1.089**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Mourning Dove (Herbivorous Birds - Terrestrial)																							
Reference Site																							
SGBG-1 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	5.36E-04	3.46E+01	1.85E-02	4.20E-03	1.09E-01	7.13E-04	2.20E+01	1.17E+00	1.37E+01	5.21E-05
SGBG-201 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	5.36E-04	1.66E+01	8.87E-03	4.20E-03	1.09E-01	3.42E-04	2.20E+01	1.17E+00	1.37E+01	2.50E-05
UBRBG-201 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	5.36E-04	1.11E+01	5.94E-03	4.20E-03	1.09E-01	2.29E-04	2.20E+01	1.17E+00	1.37E+01	1.67E-05
No. 3 Tunnel Waste Area																						**Minimum HQ (Reference Site)**	**1.67E-05**
N3TA fine tail (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	8.71E+00	5.02E-02	NA	NA	NA	NA	5.36E-04	1.45E+01	7.77E-03	4.20E-03	1.09E-01	2.23E-03	2.20E+01	1.17E+00	1.37E+01	1.63E-04
N3TA-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	4.11E+00	2.37E-02	NA	NA	NA	NA	5.36E-04	6.84E+00	3.66E-03	4.20E-03	1.09E-01	1.05E-03	2.20E+01	1.17E+00	1.37E+01	7.69E-05
N3TA-100 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.88E+01	1.09E-01	NA	NA	NA	NA	5.36E-04	3.13E+01	1.68E-02	4.20E-03	1.09E-01	4.83E-03	2.20E+01	1.17E+00	1.37E+01	3.52E-04
N3TA-1000 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	8.53E+00	4.91E-02	NA	NA	NA	NA	5.36E-04	1.42E+01	7.60E-03	4.20E-03	1.09E-01	2.18E-03	2.20E+01	1.17E+00	1.37E+01	1.60E-04
N3TA-1000-EOT (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.13E+01	6.49E-02	NA	NA	NA	NA	5.36E-04	1.87E+01	1.00E-02	4.20E-03	1.09E-01	2.89E-03	2.20E+01	1.17E+00	1.37E+01	2.11E-04
N3TA-1050 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	7.75E+00	4.47E-02	NA	NA	NA	NA	5.36E-04	1.29E+01	6.91E-03	4.20E-03	1.09E-01	1.99E-03	2.20E+01	1.17E+00	1.37E+01	1.45E-04
N3TA-150 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	5.79E+00	3.34E-02	NA	NA	NA	NA	5.36E-04	9.64E+00	5.16E-03	4.20E-03	1.09E-01	1.48E-03	2.20E+01	1.17E+00	1.37E+01	1.08E-04
N3TA-200 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	6.34E+00	3.66E-02	NA	NA	NA	NA	5.36E-04	1.06E+01	5.66E-03	4.20E-03	1.09E-01	1.63E-03	2.20E+01	1.17E+00	1.37E+01	1.19E-04
N3TA-250 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	7.23E+00	4.17E-02	NA	NA	NA	NA	5.36E-04	1.20E+01	6.45E-03	4.20E-03	1.09E-01	1.85E-03	2.20E+01	1.17E+00	1.37E+01	1.35E-04
N3TA-300 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	2.25E+01	1.30E-01	NA	NA	NA	NA	5.36E-04	3.74E+01	2.00E-02	4.20E-03	1.09E-01	5.76E-03	2.20E+01	1.17E+00	1.37E+01	4.21E-04
N3TA-350 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	9.24E+00	5.32E-02	NA	NA	NA	NA	5.36E-04	1.54E+01	8.24E-03	4.20E-03	1.09E-01	2.37E-03	2.20E+01	1.17E+00	1.37E+01	1.73E-04
N3TA-400 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.32E+01	7.62E-02	NA	NA	NA	NA	5.36E-04	2.20E+01	1.18E-02	4.20E-03	1.09E-01	3.39E-03	2.20E+01	1.17E+00	1.37E+01	2.47E-04
N3TA-450 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	4.93E+00	2.84E-02	NA	NA	NA	NA	5.36E-04	8.20E+00	4.39E-03	4.20E-03	1.09E-01	1.26E-03	2.20E+01	1.17E+00	1.37E+01	9.22E-05
N3TA-50 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	7.93E+00	4.57E-02	NA	NA	NA	NA	5.36E-04	1.32E+01	7.07E-03	4.20E-03	1.09E-01	2.03E-03	2.20E+01	1.17E+00	1.37E+01	1.48E-04
N3TA-500 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.50E+01	8.63E-02	NA	NA	NA	NA	5.36E-04	2.49E+01	1.34E-02	4.20E-03	1.09E-01	3.84E-03	2.20E+01	1.17E+00	1.37E+01	2.80E-04
N3TA-550 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.19E+01	6.87E-02	NA	NA	NA	NA	5.36E-04	1.99E+01	1.06E-02	4.20E-03	1.09E-01	3.06E-03	2.20E+01	1.17E+00	1.37E+01	2.23E-04
N3TA-600 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.33E+01	7.67E-02	NA	NA	NA	NA	5.36E-04	2.22E+01	1.19E-02	4.20E-03	1.09E-01	3.41E-03	2.20E+01	1.17E+00	1.37E+01	2.49E-04
N3TA-650 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.18E+01	6.77E-02	NA	NA	NA	NA	5.36E-04	1.96E+01	1.05E-02	4.20E-03	1.09E-01	3.01E-03	2.20E+01	1.17E+00	1.37E+01	2.20E-04
N3TA-700 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	4.29E+01	2.47E-01	NA	NA	NA	NA	5.36E-04	7.15E+01	3.83E-02	4.20E-03	1.09E-01	1.10E-02	2.20E+01	1.17E+00	1.37E+01	8.04E-04
N3TA-750 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	2.78E+01	1.60E-01	NA	NA	NA	NA	5.36E-04	4.63E+01	2.48E-02	4.20E-03	1.09E-01	7.12E-03	2.20E+01	1.17E+00	1.37E+01	5.20E-04
N3TA-800 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.29E+01	7.42E-02	NA	NA	NA	NA	5.36E-04	2.14E+01	1.15E-02	4.20E-03	1.09E-01	3.30E-03	2.20E+01	1.17E+00	1.37E+01	2.41E-04
N3TA-850 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	5.62E+00	3.24E-02	NA	NA	NA	NA	5.36E-04	9.35E+00	5.01E-03	4.20E-03	1.09E-01	1.44E-03	2.20E+01	1.17E+00	1.37E+01	1.05E-04
N3TA-900 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	5.70E+00	3.28E-02	NA	NA	NA	NA	5.36E-04	9.49E+00	5.08E-03	4.20E-03	1.09E-01	1.46E-03	2.20E+01	1.17E+00	1.37E+01	1.07E-04
N3TA-950 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	7.32E+00	4.22E-02	NA	NA	NA	NA	5.36E-04	1.22E+01	6.53E-03	4.20E-03	1.09E-01	1.88E-03	2.20E+01	1.17E+00	1.37E+01	1.37E-04
N3TA-Comp 1 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.51E+01	8.73E-02	NA	NA	NA	NA	5.36E-04	2.52E+01	1.35E-02	4.20E-03	1.09E-01	3.88E-03	2.20E+01	1.17E+00	1.37E+01	2.83E-04
N3TA-Comp 2 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.25E+01	7.19E-02	NA	NA	NA	NA	5.36E-04	2.08E+01	1.11E-02	4.20E-03	1.09E-01	3.19E-03	2.20E+01	1.17E+00	1.37E+01	2.33E-04
N3TA-Comp 3 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.94E+01	1.12E-01	NA	NA	NA	NA	5.36E-04	3.22E+01	1.73E-02	4.20E-03	1.09E-01	4.96E-03	2.20E+01	1.17E+00	1.37E+01	3.62E-04
N3TA-Det Pond (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	3.63E+00	2.09E-02	NA	NA	NA	NA	5.36E-04	6.05E+00	3.24E-03	4.20E-03	1.09E-01	9.31E-04	2.20E+01	1.17E+00	1.37E+01	6.80E-05
N3TA-Pile #1 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.70E+01	9.79E-02	NA	NA	NA	NA	5.36E-04	2.83E+01	1.51E-02	4.20E-03	1.09E-01	4.35E-03	2.20E+01	1.17E+00	1.37E+01	3.18E-04
N3TA-Pile #2 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	5.14E+00	2.96E-02	NA	NA	NA	NA	5.36E-04	8.55E+00	4.58E-03	4.20E-03	1.09E-01	1.32E-03	2.20E+01	1.17E+00	1.37E+01	9.61E-05
																						Maximum HQ (Tunnel No. 3 Area)	**8.04E-04**
Red-Tailed Hawk (Carnivorous Birds - Terrestrial)																							
Reference Site																							
SGBG-1 (0-6")	9.00E-02	9.00E-02	4.84E-01	1.67E+01	1.50E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.46E+01	1.77E-01	1.56E-03	1.13E+00	2.32E-03	2.20E+01	1.17E+00	2.19E+01	1.06E-04
SGBG-201 (0-6")	9.00E-02	9.00E-02	4.84E-01	8.01E+00	7.21E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.66E+01	8.49E-02	1.56E-03	1.13E+00	1.11E-03	2.20E+01	1.17E+00	2.19E+01	5.08E-05
UBRBG-201 (0-6")	9.00E-02	9.00E-02	4.84E-01	5.37E+00	4.83E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.11E+01	5.69E-02	1.56E-03	1.13E+00	7.44E-04	2.20E+01	1.17E+00	2.19E+01	3.40E-05
No. 3 Tunnel Waste Area																						**Minimum HQ (Reference Site)**	**3.40E-05**
N3TA fine tail (0-6")	9.00E-02	9.00E-02	4.84E-01	7.01E+00	6.31E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.45E+01	7.43E-02	1.56E-03	1.13E+00	9.72E-04	2.20E+01	1.17E+00	2.19E+01	4.44E-05
N3TA-0 (0-6")	9.00E-02	9.00E-02	4.84E-01	3.31E+00	2.97E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	6.84E+00	3.50E-02	1.56E-03	1.13E+00	4.58E-04	2.20E+01	1.17E+00	2.19E+01	2.10E-05
N3TA-100 (0-6")	9.00E-02	9.00E-02	4.84E-01	1.52E+01	1.36E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.13E+01	1.61E-01	1.56E-03	1.13E+00	2.10E-03	2.20E+01	1.17E+00	2.19E+01	9.61E-05
N3TA-1000 (0-6")	9.00E-02	9.00E-02	4.84E-01	6.86E+00	6.17E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.42E+01	7.27E-02	1.56E-03	1.13E+00	9.51E-04	2.20E+01	1.17E+00	2.19E+01	4.35E-05
N3TA-1000-EOT (0-6")	9.00E-02	9.00E-02	4.84E-01	9.07E+00	8.16E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.87E+01	9.61E-02	1.56E-03	1.13E+00	1.26E-03	2.20E+01	1.17E+00	2.19E+01	5.75E-05
N3TA-1050 (0-6")	9.00E-02	9.00E-02	4.84E-01	6.24E+00	5.61E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.29E+01	6.61E-02	1.56E-03	1.13E+00	8.65E-04	2.20E+01	1.17E+00	2.19E+01	3.96E-05
N3TA-150 (0-6")	9.00E-02	9.00E-02	4.84E-01	4.66E+00	4.19E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	9.64E+00	4.94E-02	1.56E-03	1.13E+00	6.46E-04	2.20E+01	1.17E+00	2.19E+01	2.95E-05
N3TA-200 (0-6")	9.00E-02	9.00E-02	4.84E-01	5.11E+00	4.59E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.06E+01	5.41E-02	1.56E-03	1.13E+00	7.08E-04	2.20E+01	1.17E+00	2.19E+01	3.24E-05
N3TA-250 (0-6")	9.00E-02	9.00E-02	4.84E-01	5.82E+00	5.24E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.20E+01	6.17E-02	1.56E-03	1.13E+00	8.07E-04	2.20E+01	1.17E+00	2.19E+01	3.69E-05
N3TA-300 (0-6")	9.00E-02	9.00E-02	4.84E-01	1.81E+01	1.63E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.74E+01	1.92E-01	1.56E-03	1.13E+00	2.51E-03	2.20E+01	1.17E+00	2.19E+01	1.15E-04
N3TA-350 (0-6")	9.00E-02	9.00E-02	4.84E-01	7.44E+00	6.69E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.54E+01	7.88E-02	1.56E-03	1.13E+00	1.03E-03	2.20E+01	1.17E+00	2.19E+01	4.71E-05
N3TA-400 (0-6")	9.00E-02	9.00E-02	4.84E-01	1.06E+01	9.57E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.20E+01	1.13E-01	1.56E-03	1.13E+00	1.47E-03	2.20E+01	1.17E+00	2.19E+01	6.75E-05
N3TA-450 (0-6")	9.00E-02	9.00E-02	4.84E-01	3.96E+00	3.57E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	8.20E+00	4.20E-02	1.56E-03	1.13E+00	5.49E-04	2.20E+01	1.17E+00	2.19E+01	2.51E-05
N3TA-50 (0-6")	9.00E-02	9.00E-02	4.84E-01	6.38E+00	5.74E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.32E+01	6.77E-02	1.56E-03	1.13E+00	8.85E-04	2.20E+01	1.17E+00	2.19E+01	4.05E-05
N3TA-500 (0-6")	9.00E-02	9.00E-02	4.84E-01	1.21E+01	1.08E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.49E+01	1.28E-01	1.56E-03	1.13E+00	1.67E-03	2.20E+01	1.17E+00	2.19E+01	7.64E-05
N3TA-550 (0-6")	9.00E-02	9.00E-02	4.84E-01	9.60E+00	8.64E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.99E+01	1.02E-01	1.56E-03	1.13E+00	1.33E-03	2.20E+01	1.17E+00	2.19E+01	6.09E-05

TABLE C-10A: ARSENIC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 10 - NUMBER 3 TUNNEL WASTE AREA (Continued)
Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)
calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **1.089**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Red-Tailed Hawk (Carnivorous Birds - Terrestrial)																							
N3TA-600 (0-6")	9.00E-02	9.00E-02	4.84E-01	1.07E+01	9.64E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.22E+01	1.14E-01	1.56E-03	1.13E+00	1.49E-03	2.20E+01	1.17E+00	2.19E+01	6.79E-05
N3TA-650 (0-6")	9.00E-02	9.00E-02	4.84E-01	9.46E+00	8.51E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.96E+01	1.00E-01	1.56E-03	1.13E+00	1.31E-03	2.20E+01	1.17E+00	2.19E+01	6.00E-05
N3TA-700 (0-6")	9.00E-02	9.00E-02	4.84E-01	3.46E+01	3.11E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	7.15E+01	3.66E-01	1.56E-03	1.13E+00	4.79E-03	2.20E+01	1.17E+00	2.19E+01	2.19E-04
N3TA-750 (0-6")	9.00E-02	9.00E-02	4.84E-01	2.24E+01	2.01E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.63E+01	2.37E-01	1.56E-03	1.13E+00	3.10E-03	2.20E+01	1.17E+00	2.19E+01	1.42E-04
N3TA-800 (0-6")	9.00E-02	9.00E-02	4.84E-01	1.04E+01	9.32E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.14E+01	1.10E-01	1.56E-03	1.13E+00	1.44E-03	2.20E+01	1.17E+00	2.19E+01	6.57E-05
N3TA-850 (0-6")	9.00E-02	9.00E-02	4.84E-01	4.52E+00	4.07E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	9.35E+00	4.79E-02	1.56E-03	1.13E+00	6.27E-04	2.20E+01	1.17E+00	2.19E+01	2.87E-05
N3TA-900 (0-6")	9.00E-02	9.00E-02	4.84E-01	4.59E+00	4.13E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	9.49E+00	4.86E-02	1.56E-03	1.13E+00	6.36E-04	2.20E+01	1.17E+00	2.19E+01	2.91E-05
N3TA-950 (0-6")	9.00E-02	9.00E-02	4.84E-01	5.89E+00	5.30E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.22E+01	6.25E-02	1.56E-03	1.13E+00	8.17E-04	2.20E+01	1.17E+00	2.19E+01	3.74E-05
N3TA-Comp 1 (0-6")	9.00E-02	9.00E-02	4.84E-01	1.22E+01	1.10E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.52E+01	1.29E-01	1.56E-03	1.13E+00	1.69E-03	2.20E+01	1.17E+00	2.19E+01	7.73E-05
N3TA-Comp 2 (0-6")	9.00E-02	9.00E-02	4.84E-01	1.00E+01	9.03E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.08E+01	1.06E-01	1.56E-03	1.13E+00	1.39E-03	2.20E+01	1.17E+00	2.19E+01	6.36E-05
N3TA-Comp 3 (0-6")	9.00E-02	9.00E-02	4.84E-01	1.56E+01	1.40E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.22E+01	1.65E-01	1.56E-03	1.13E+00	2.16E-03	2.20E+01	1.17E+00	2.19E+01	9.88E-05
N3TA-Det Pond (0-6")	9.00E-02	9.00E-02	4.84E-01	2.92E+00	2.63E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	6.05E+00	3.10E-02	1.56E-03	1.13E+00	4.05E-04	2.20E+01	1.17E+00	2.19E+01	1.85E-05
N3TA-Pile #1 (0-6")	9.00E-02	9.00E-02	4.84E-01	1.37E+01	1.23E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.83E+01	1.45E-01	1.56E-03	1.13E+00	1.90E-03	2.20E+01	1.17E+00	2.19E+01	8.67E-05
N3TA-Pile #2 (0-6")	9.00E-02	9.00E-02	4.84E-01	4.13E+00	3.72E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	8.55E+00	4.38E-02	1.56E-03	1.13E+00	5.73E-04	2.20E+01	1.17E+00	2.19E+01	2.62E-05
																						Maximum HQ (Tunnel No. 3 Area)	**2.19E-04**
American Kestrel (Insectivorous Birds - Terrestrial)																							
Reference Site																							
SGBG-1 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	2.55E+00	8.82E+01	1.21E+00	7.84E-04	3.46E+01	2.71E-02	4.16E-03	1.24E-01	4.17E-02	2.20E+01	1.17E+00	1.40E+01	2.97E-03
SGBG-201 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	2.55E+00	4.23E+01	5.82E-01	7.84E-04	1.66E+01	1.30E-02	4.16E-03	1.24E-01	2.00E-02	2.20E+01	1.17E+00	1.40E+01	1.42E-03
UBRBG-201 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	2.55E+00	2.83E+01	3.89E-01	7.84E-04	1.11E+01	8.70E-03	4.16E-03	1.24E-01	1.34E-02	2.20E+01	1.17E+00	1.40E+01	9.51E-04
No. 3 Tunnel Waste Area																						**Minimum HQ (Reference Site)**	**9.51E-04**
N3TA fine tail (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	2.39E+02	3.29E+00	7.84E-04	1.45E+01	1.14E-02	4.16E-03	1.24E-01	1.11E-01	2.20E+01	1.17E+00	1.40E+01	7.88E-03
N3TA-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	1.13E+02	1.55E+00	7.84E-04	6.84E+00	5.36E-03	4.16E-03	1.24E-01	5.22E-02	2.20E+01	1.17E+00	1.40E+01	3.72E-03
N3TA-100 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	5.17E+02	7.11E+00	7.84E-04	3.13E+01	2.46E-02	4.16E-03	1.24E-01	2.39E-01	2.20E+01	1.17E+00	1.40E+01	1.70E-02
N3TA-1000 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	2.34E+02	3.22E+00	7.84E-04	1.42E+01	1.11E-02	4.16E-03	1.24E-01	1.08E-01	2.20E+01	1.17E+00	1.40E+01	7.72E-03
N3TA-1000-EOT (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	3.09E+02	4.25E+00	7.84E-04	1.87E+01	1.47E-02	4.16E-03	1.24E-01	1.43E-01	2.20E+01	1.17E+00	1.40E+01	1.02E-02
N3TA-1050 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	2.13E+02	2.93E+00	7.84E-04	1.29E+01	1.01E-02	4.16E-03	1.24E-01	9.85E-02	2.20E+01	1.17E+00	1.40E+01	7.02E-03
N3TA-150 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	1.59E+02	2.19E+00	7.84E-04	9.64E+00	7.56E-03	4.16E-03	1.24E-01	7.36E-02	2.20E+01	1.17E+00	1.40E+01	5.24E-03
N3TA-200 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	1.74E+02	2.39E+00	7.84E-04	1.06E+01	8.28E-03	4.16E-03	1.24E-01	8.06E-02	2.20E+01	1.17E+00	1.40E+01	5.74E-03
N3TA-250 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	1.98E+02	2.73E+00	7.84E-04	1.20E+01	9.44E-03	4.16E-03	1.24E-01	9.19E-02	2.20E+01	1.17E+00	1.40E+01	6.54E-03
N3TA-300 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	6.17E+02	8.49E+00	7.84E-04	3.74E+01	2.93E-02	4.16E-03	1.24E-01	2.86E-01	2.20E+01	1.17E+00	1.40E+01	2.03E-02
N3TA-350 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	2.53E+02	3.49E+00	7.84E-04	1.54E+01	1.21E-02	4.16E-03	1.24E-01	1.17E-01	2.20E+01	1.17E+00	1.40E+01	8.36E-03
N3TA-400 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	3.63E+02	4.99E+00	7.84E-04	2.20E+01	1.73E-02	4.16E-03	1.24E-01	1.68E-01	2.20E+01	1.17E+00	1.40E+01	1.20E-02
N3TA-450 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	1.35E+02	1.86E+00	7.84E-04	8.20E+00	6.43E-03	4.16E-03	1.24E-01	6.26E-02	2.20E+01	1.17E+00	1.40E+01	4.46E-03
N3TA-50 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	2.17E+02	2.99E+00	7.84E-04	1.32E+01	1.03E-02	4.16E-03	1.24E-01	1.01E-01	2.20E+01	1.17E+00	1.40E+01	7.18E-03
N3TA-500 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	4.11E+02	5.65E+00	7.84E-04	2.49E+01	1.96E-02	4.16E-03	1.24E-01	1.90E-01	2.20E+01	1.17E+00	1.40E+01	1.36E-02
N3TA-550 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	3.27E+02	4.50E+00	7.84E-04	1.99E+01	1.56E-02	4.16E-03	1.24E-01	1.52E-01	2.20E+01	1.17E+00	1.40E+01	1.08E-02
N3TA-600 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	3.65E+02	5.02E+00	7.84E-04	2.22E+01	1.74E-02	4.16E-03	1.24E-01	1.69E-01	2.20E+01	1.17E+00	1.40E+01	1.20E-02
N3TA-650 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	3.22E+02	4.44E+00	7.84E-04	1.96E+01	1.53E-02	4.16E-03	1.24E-01	1.49E-01	2.20E+01	1.17E+00	1.40E+01	1.06E-02
N3TA-700 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	1.18E+03	1.62E+01	7.84E-04	7.15E+01	5.61E-02	4.16E-03	1.24E-01	5.46E-01	2.20E+01	1.17E+00	1.40E+01	3.89E-02
N3TA-750 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	7.63E+02	1.05E+01	7.84E-04	4.63E+01	3.63E-02	4.16E-03	1.24E-01	3.53E-01	2.20E+01	1.17E+00	1.40E+01	2.52E-02
N3TA-800 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	3.53E+02	4.86E+00	7.84E-04	2.14E+01	1.68E-02	4.16E-03	1.24E-01	1.64E-01	2.20E+01	1.17E+00	1.40E+01	1.17E-02
N3TA-850 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	1.54E+02	2.12E+00	7.84E-04	9.35E+00	7.33E-03	4.16E-03	1.24E-01	7.14E-02	2.20E+01	1.17E+00	1.40E+01	5.08E-03
N3TA-900 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	1.56E+02	2.15E+00	7.84E-04	9.49E+00	7.44E-03	4.16E-03	1.24E-01	7.25E-02	2.20E+01	1.17E+00	1.40E+01	5.16E-03
N3TA-950 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	2.01E+02	2.76E+00	7.84E-04	1.22E+01	9.55E-03	4.16E-03	1.24E-01	9.30E-02	2.20E+01	1.17E+00	1.40E+01	6.63E-03
N3TA-Comp 1 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	4.15E+02	5.72E+00	7.84E-04	2.52E+01	1.98E-02	4.16E-03	1.24E-01	1.93E-01	2.20E+01	1.17E+00	1.40E+01	1.37E-02
N3TA-Comp 2 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	3.42E+02	4.71E+00	7.84E-04	2.08E+01	1.63E-02	4.16E-03	1.24E-01	1.59E-01	2.20E+01	1.17E+00	1.40E+01	1.13E-02
N3TA-Comp 3 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	5.31E+02	7.31E+00	7.84E-04	3.22E+01	2.53E-02	4.16E-03	1.24E-01	2.46E-01	2.20E+01	1.17E+00	1.40E+01	1.75E-02
N3TA-Det Pond (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	9.96E+01	1.37E+00	7.84E-04	6.05E+00	4.74E-03	4.16E-03	1.24E-01	4.62E-02	2.20E+01	1.17E+00	1.40E+01	3.29E-03
N3TA-Pile #1 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	4.66E+02	6.41E+00	7.84E-04	2.83E+01	2.22E-02	4.16E-03	1.24E-01	2.16E-01	2.20E+01	1.17E+00	1.40E+01	1.54E-02
N3TA-Pile #2 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	1.41E+02	1.94E+00	7.84E-04	8.55E+00	6.70E-03	4.16E-03	1.24E-01	6.53E-02	2.20E+01	1.17E+00	1.40E+01	4.65E-03
																						Maximum HQ (Tunnel No. 3 Area)	**3.89E-02**

TABLE C-10A: ARSENIC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 10 - NUMBER 3 TUNNEL WASTE AREA (Continued)
Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)
calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **1.089**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Meadow Vole (Small Herbivorous Mammal - Terrestrial)																							
Reference Site																							
SGBG-1 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	1.13E-04	3.46E+01	3.89E-03	1.00E+00	3.06E-02	1.27E-01	4.70E+00	1.10E-01	5.08E+00	2.51E-02
SGBG-201 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	1.13E-04	1.66E+01	1.86E-03	1.00E+00	3.06E-02	6.09E-02	4.70E+00	1.10E-01	5.08E+00	1.20E-02
UBRBG-201 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	1.13E-04	1.11E+01	1.25E-03	1.00E+00	3.06E-02	4.08E-02	4.70E+00	1.10E-01	5.08E+00	8.04E-03
No. 3 Tunnel Waste Area																						**Minimum HQ (Reference Site)**	**8.04E-03**
N3TA fine tail (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	8.71E+00	4.09E-02	NA	NA	NA	NA	1.13E-04	1.45E+01	1.63E-03	1.00E+00	3.06E-02	1.39E+00	4.70E+00	1.10E-01	5.08E+00	2.74E-01
N3TA-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	4.11E+00	1.93E-02	NA	NA	NA	NA	1.13E-04	6.84E+00	7.69E-04	1.00E+00	3.06E-02	6.55E-01	4.70E+00	1.10E-01	5.08E+00	1.29E-01
N3TA-100 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.88E+01	8.83E-02	NA	NA	NA	NA	1.13E-04	3.13E+01	3.53E-03	1.00E+00	3.06E-02	3.00E+00	4.70E+00	1.10E-01	5.08E+00	5.91E-01
N3TA-1000 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	8.53E+00	4.00E-02	NA	NA	NA	NA	1.13E-04	1.42E+01	1.60E-03	1.00E+00	3.06E-02	1.36E+00	4.70E+00	1.10E-01	5.08E+00	2.68E-01
N3TA-1000-EOT (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.13E+01	5.28E-02	NA	NA	NA	NA	1.13E-04	1.87E+01	2.11E-03	1.00E+00	3.06E-02	1.79E+00	4.70E+00	1.10E-01	5.08E+00	3.54E-01
N3TA-1050 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	7.75E+00	3.64E-02	NA	NA	NA	NA	1.13E-04	1.29E+01	1.45E-03	1.00E+00	3.06E-02	1.24E+00	4.70E+00	1.10E-01	5.08E+00	2.43E-01
N3TA-150 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	5.79E+00	2.72E-02	NA	NA	NA	NA	1.13E-04	9.64E+00	1.08E-03	1.00E+00	3.06E-02	9.23E-01	4.70E+00	1.10E-01	5.08E+00	1.82E-01
N3TA-200 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	6.34E+00	2.97E-02	NA	NA	NA	NA	1.13E-04	1.06E+01	1.19E-03	1.00E+00	3.06E-02	1.01E+00	4.70E+00	1.10E-01	5.08E+00	1.99E-01
N3TA-250 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	7.23E+00	3.39E-02	NA	NA	NA	NA	1.13E-04	1.20E+01	1.35E-03	1.00E+00	3.06E-02	1.15E+00	4.70E+00	1.10E-01	5.08E+00	2.27E-01
N3TA-300 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	2.25E+01	1.05E-01	NA	NA	NA	NA	1.13E-04	3.74E+01	4.21E-03	1.00E+00	3.06E-02	3.58E+00	4.70E+00	1.10E-01	5.08E+00	7.06E-01
N3TA-350 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	9.24E+00	4.33E-02	NA	NA	NA	NA	1.13E-04	1.54E+01	1.73E-03	1.00E+00	3.06E-02	1.47E+00	4.70E+00	1.10E-01	5.08E+00	2.90E-01
N3TA-400 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.32E+01	6.20E-02	NA	NA	NA	NA	1.13E-04	2.20E+01	2.48E-03	1.00E+00	3.06E-02	2.11E+00	4.70E+00	1.10E-01	5.08E+00	4.15E-01
N3TA-450 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	4.93E+00	2.31E-02	NA	NA	NA	NA	1.13E-04	8.20E+00	9.22E-04	1.00E+00	3.06E-02	7.85E-01	4.70E+00	1.10E-01	5.08E+00	1.55E-01
N3TA-50 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	7.93E+00	3.72E-02	NA	NA	NA	NA	1.13E-04	1.32E+01	1.48E-03	1.00E+00	3.06E-02	1.26E+00	4.70E+00	1.10E-01	5.08E+00	2.49E-01
N3TA-500 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.50E+01	7.03E-02	NA	NA	NA	NA	1.13E-04	2.49E+01	2.81E-03	1.00E+00	3.06E-02	2.39E+00	4.70E+00	1.10E-01	5.08E+00	4.70E-01
N3TA-550 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.19E+01	5.59E-02	NA	NA	NA	NA	1.13E-04	1.99E+01	2.23E-03	1.00E+00	3.06E-02	1.90E+00	4.70E+00	1.10E-01	5.08E+00	3.75E-01
N3TA-600 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.33E+01	6.24E-02	NA	NA	NA	NA	1.13E-04	2.22E+01	2.49E-03	1.00E+00	3.06E-02	2.12E+00	4.70E+00	1.10E-01	5.08E+00	4.18E-01
N3TA-650 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.18E+01	5.51E-02	NA	NA	NA	NA	1.13E-04	1.96E+01	2.20E-03	1.00E+00	3.06E-02	1.87E+00	4.70E+00	1.10E-01	5.08E+00	3.69E-01
N3TA-700 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	4.29E+01	2.01E-01	NA	NA	NA	NA	1.13E-04	7.15E+01	8.04E-03	1.00E+00	3.06E-02	6.84E+00	4.70E+00	1.10E-01	5.08E+00	1.35E+00
N3TA-750 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	2.78E+01	1.30E-01	NA	NA	NA	NA	1.13E-04	4.63E+01	5.21E-03	1.00E+00	3.06E-02	4.43E+00	4.70E+00	1.10E-01	5.08E+00	8.73E-01
N3TA-800 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.29E+01	6.04E-02	NA	NA	NA	NA	1.13E-04	2.14E+01	2.41E-03	1.00E+00	3.06E-02	2.05E+00	4.70E+00	1.10E-01	5.08E+00	4.04E-01
N3TA-850 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	5.62E+00	2.63E-02	NA	NA	NA	NA	1.13E-04	9.35E+00	1.05E-03	1.00E+00	3.06E-02	8.95E-01	4.70E+00	1.10E-01	5.08E+00	1.76E-01
N3TA-900 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	5.70E+00	2.67E-02	NA	NA	NA	NA	1.13E-04	9.49E+00	1.07E-03	1.00E+00	3.06E-02	9.08E-01	4.70E+00	1.10E-01	5.08E+00	1.79E-01
N3TA-950 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	7.32E+00	3.43E-02	NA	NA	NA	NA	1.13E-04	1.22E+01	1.37E-03	1.00E+00	3.06E-02	1.17E+00	4.70E+00	1.10E-01	5.08E+00	2.30E-01
N3TA-Comp 1 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.51E+01	7.10E-02	NA	NA	NA	NA	1.13E-04	2.52E+01	2.84E-03	1.00E+00	3.06E-02	2.41E+00	4.70E+00	1.10E-01	5.08E+00	4.76E-01
N3TA-Comp 2 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.25E+01	5.85E-02	NA	NA	NA	NA	1.13E-04	2.08E+01	2.34E-03	1.00E+00	3.06E-02	1.99E+00	4.70E+00	1.10E-01	5.08E+00	3.92E-01
N3TA-Comp 3 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.94E+01	9.08E-02	NA	NA	NA	NA	1.13E-04	3.22E+01	3.63E-03	1.00E+00	3.06E-02	3.09E+00	4.70E+00	1.10E-01	5.08E+00	6.08E-01
N3TA-Det Pond (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	3.63E+00	1.70E-02	NA	NA	NA	NA	1.13E-04	6.05E+00	6.80E-04	1.00E+00	3.06E-02	5.79E-01	4.70E+00	1.10E-01	5.08E+00	1.14E-01
N3TA-Pile #1 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.70E+01	7.97E-02	NA	NA	NA	NA	1.13E-04	2.83E+01	3.18E-03	1.00E+00	3.06E-02	2.71E+00	4.70E+00	1.10E-01	5.08E+00	5.34E-01
N3TA-Pile #2 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	5.14E+00	2.41E-02	NA	NA	NA	NA	1.13E-04	8.55E+00	9.62E-04	1.00E+00	3.06E-02	8.18E-01	4.70E+00	1.10E-01	5.08E+00	1.61E-01
																						Maximum HQ (Tunnel No. 3 Area)	**1.35E+00**
White-Tailed Deer (Large Herbivorous Mammal - Terrestrial)																							
Reference Site																							
SGBG-1 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	2.86E-02	3.46E+01	9.90E-01	6.09E-03	1.35E+02	4.47E-05	4.70E+00	1.10E-01	3.07E+00	1.46E-05
SGBG-201 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	2.86E-02	1.66E+01	4.74E-01	6.09E-03	1.35E+02	2.14E-05	4.70E+00	1.10E-01	3.07E+00	6.98E-06
UBRBG-201 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	2.86E-02	1.11E+01	3.18E-01	6.09E-03	1.35E+02	1.43E-05	4.70E+00	1.10E-01	3.07E+00	4.67E-06
No. 3 Tunnel Waste Area																						**Minimum HQ (Reference Site)**	**4.67E-06**
N3TA fine tail (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	8.71E+00	1.25E+01	NA	NA	NA	NA	2.86E-02	1.45E+01	4.15E-01	6.09E-03	1.35E+02	5.82E-04	4.70E+00	1.10E-01	3.07E+00	1.90E-04
N3TA-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	4.11E+00	5.88E+00	NA	NA	NA	NA	2.86E-02	6.84E+00	1.96E-01	6.09E-03	1.35E+02	2.74E-04	4.70E+00	1.10E-01	3.07E+00	8.94E-05
N3TA-100 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.88E+01	2.70E+01	NA	NA	NA	NA	2.86E-02	3.13E+01	8.97E-01	6.09E-03	1.35E+02	1.26E-03	4.70E+00	1.10E-01	3.07E+00	4.10E-04
N3TA-1000 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	8.53E+00	1.22E+01	NA	NA	NA	NA	2.86E-02	1.42E+01	4.06E-01	6.09E-03	1.35E+02	5.69E-04	4.70E+00	1.10E-01	3.07E+00	1.86E-04
N3TA-1000-EOT (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.13E+01	1.61E+01	NA	NA	NA	NA	2.86E-02	1.87E+01	5.37E-01	6.09E-03	1.35E+02	7.52E-04	4.70E+00	1.10E-01	3.07E+00	2.45E-04
N3TA-1050 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	7.75E+00	1.11E+01	NA	NA	NA	NA	2.86E-02	1.29E+01	3.69E-01	6.09E-03	1.35E+02	5.18E-04	4.70E+00	1.10E-01	3.07E+00	1.69E-04
N3TA-150 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	5.79E+00	8.29E+00	NA	NA	NA	NA	2.86E-02	9.64E+00	2.76E-01	6.09E-03	1.35E+02	3.87E-04	4.70E+00	1.10E-01	3.07E+00	1.26E-04
N3TA-200 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	6.34E+00	9.08E+00	NA	NA	NA	NA	2.86E-02	1.06E+01	3.02E-01	6.09E-03	1.35E+02	4.24E-04	4.70E+00	1.10E-01	3.07E+00	1.38E-04
N3TA-250 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	7.23E+00	1.04E+01	NA	NA	NA	NA	2.86E-02	1.20E+01	3.44E-01	6.09E-03	1.35E+02	4.83E-04	4.70E+00	1.10E-01	3.07E+00	1.57E-04
N3TA-300 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	2.25E+01	3.22E+01	NA	NA	NA	NA	2.86E-02	3.74E+01	1.07E+00	6.09E-03	1.35E+02	1.50E-03	4.70E+00	1.10E-01	3.07E+00	4.89E-04
N3TA-350 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	9.24E+00	1.32E+01	NA	NA	NA	NA	2.86E-02	1.54E+01	4.40E-01	6.09E-03	1.35E+02	6.17E-04	4.70E+00	1.10E-01	3.07E+00	2.01E-04
N3TA-400 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.32E+01	1.89E+01	NA	NA	NA	NA	2.86E-02	2.20E+01	6.30E-01	6.09E-03	1.35E+02	8.83E-04	4.70E+00	1.10E-01	3.07E+00	2.88E-04
N3TA-450 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	4.93E+00	7.05E+00	NA	NA	NA	NA	2.86E-02	8.20E+00	2.35E-01	6.09E-03	1.35E+02	3.29E-04	4.70E+00	1.10E-01	3.07E+00	1.07E-04
N3TA-50 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	7.93E+00	1.14E+01	NA	NA	NA	NA	2.86E-02	1.32E+01	3.78E-01	6.09E-03	1.35E+02	5.29E-04	4.70E+00	1.10E-01	3.07E+00	1.73E-04
N3TA-500 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.50E+01	2.15E+01	NA	NA	NA	NA	2.86E-02	2.49E+01	7.14E-01	6.09E-03	1.35E+02	1.00E-03	4.70E+00	1.10E-01	3.07E+00	3.26E-04
N3TA-550 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.19E+01	1.71E+01	NA	NA	NA	NA	2.86E-02	1.99E+01	5.68E-01	6.09E-03	1.35E+02	7.96E-04	4.70E+00	1.10E-01	3.07E+00	2.60E-04

TABLE C-10A: ARSENIC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 10 - NUMBER 3 TUNNEL WASTE AREA (Continued)
Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)
calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **1.089**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
White-Tailed Deer (Large Herbivorous Mammal - Terrestrial)																							
N3TA-600 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.33E+01	1.91E+01	NA	NA	NA	NA	2.86E-02	2.22E+01	6.34E-01	6.09E-03	1.35E+02	8.89E-04	4.70E+00	1.10E-01	3.07E+00	2.90E-04
N3TA-650 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.18E+01	1.68E+01	NA	NA	NA	NA	2.86E-02	1.96E+01	5.60E-01	6.09E-03	1.35E+02	7.85E-04	4.70E+00	1.10E-01	3.07E+00	2.56E-04
N3TA-700 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	4.29E+01	6.15E+01	NA	NA	NA	NA	2.86E-02	7.15E+01	2.05E+00	6.09E-03	1.35E+02	2.87E-03	4.70E+00	1.10E-01	3.07E+00	9.35E-04
N3TA-750 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	2.78E+01	3.98E+01	NA	NA	NA	NA	2.86E-02	4.63E+01	1.32E+00	6.09E-03	1.35E+02	1.86E-03	4.70E+00	1.10E-01	3.07E+00	6.05E-04
N3TA-800 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.29E+01	1.84E+01	NA	NA	NA	NA	2.86E-02	2.14E+01	6.13E-01	6.09E-03	1.35E+02	8.59E-04	4.70E+00	1.10E-01	3.07E+00	2.80E-04
N3TA-850 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	5.62E+00	8.04E+00	NA	NA	NA	NA	2.86E-02	9.35E+00	2.68E-01	6.09E-03	1.35E+02	3.75E-04	4.70E+00	1.10E-01	3.07E+00	1.22E-04
N3TA-900 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	5.70E+00	8.16E+00	NA	NA	NA	NA	2.86E-02	9.49E+00	2.72E-01	6.09E-03	1.35E+02	3.81E-04	4.70E+00	1.10E-01	3.07E+00	1.24E-04
N3TA-950 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	7.32E+00	1.05E+01	NA	NA	NA	NA	2.86E-02	1.22E+01	3.49E-01	6.09E-03	1.35E+02	4.89E-04	4.70E+00	1.10E-01	3.07E+00	1.59E-04
N3TA-Comp 1 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.51E+01	2.17E+01	NA	NA	NA	NA	2.86E-02	2.52E+01	7.22E-01	6.09E-03	1.35E+02	1.01E-03	4.70E+00	1.10E-01	3.07E+00	3.30E-04
N3TA-Comp 2 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.25E+01	1.79E+01	NA	NA	NA	NA	2.86E-02	2.08E+01	5.94E-01	6.09E-03	1.35E+02	8.33E-04	4.70E+00	1.10E-01	3.07E+00	2.71E-04
N3TA-Comp 3 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.94E+01	2.77E+01	NA	NA	NA	NA	2.86E-02	3.22E+01	9.23E-01	6.09E-03	1.35E+02	1.29E-03	4.70E+00	1.10E-01	3.07E+00	4.21E-04
N3TA-Det Pond (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	3.63E+00	5.20E+00	NA	NA	NA	NA	2.86E-02	6.05E+00	1.73E-01	6.09E-03	1.35E+02	2.43E-04	4.70E+00	1.10E-01	3.07E+00	7.91E-05
N3TA-Pile #1 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.70E+01	2.43E+01	NA	NA	NA	NA	2.86E-02	2.83E+01	8.09E-01	6.09E-03	1.35E+02	1.13E-03	4.70E+00	1.10E-01	3.07E+00	3.70E-04
N3TA-Pile #2 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	5.14E+00	7.35E+00	NA	NA	NA	NA	2.86E-02	8.55E+00	2.45E-01	6.09E-03	1.35E+02	3.43E-04	4.70E+00	1.10E-01	3.07E+00	1.12E-04
																						Maximum HQ (Tunnel No. 3 Area)	**9.35E-04**
Red Fox (Carnivorous Mammal - Terrestrial)																							
Reference Site																							
SGBG-1 (0-6")	1.72E-01	1.72E-01	4.84E-01	1.67E+01	2.87E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.46E+01	1.66E-01	8.05E-04	4.54E+00	5.38E-04	4.70E+00	1.10E-01	3.76E+00	1.43E-04
SGBG-201 (0-6")	1.72E-01	1.72E-01	4.84E-01	8.01E+00	1.37E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.66E+01	7.95E-02	8.05E-04	4.54E+00	2.58E-04	4.70E+00	1.10E-01	3.76E+00	6.86E-05
UBRBG-201 (0-6")	1.72E-01	1.72E-01	4.84E-01	5.37E+00	9.20E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.11E+01	5.33E-02	8.05E-04	4.54E+00	1.73E-04	4.70E+00	1.10E-01	3.76E+00	4.59E-05
No. 3 Tunnel Waste Area																						**Minimum HQ (Reference Site)**	**4.59E-05**
N3TA fine tail (0-6")	1.72E-01	1.72E-01	4.84E-01	7.01E+00	1.20E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.45E+01	6.96E-02	8.05E-04	4.54E+00	2.26E-04	4.70E+00	1.10E-01	3.76E+00	6.00E-05
N3TA-0 (0-6")	1.72E-01	1.72E-01	4.84E-01	3.31E+00	5.67E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	6.84E+00	3.28E-02	8.05E-04	4.54E+00	1.06E-04	4.70E+00	1.10E-01	3.76E+00	2.83E-05
N3TA-100 (0-6")	1.72E-01	1.72E-01	4.84E-01	1.52E+01	2.60E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.13E+01	1.51E-01	8.05E-04	4.54E+00	4.88E-04	4.70E+00	1.10E-01	3.76E+00	1.30E-04
N3TA-1000 (0-6")	1.72E-01	1.72E-01	4.84E-01	6.86E+00	1.18E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.42E+01	6.81E-02	8.05E-04	4.54E+00	2.21E-04	4.70E+00	1.10E-01	3.76E+00	5.87E-05
N3TA-1000-EOT (0-6")	1.72E-01	1.72E-01	4.84E-01	9.07E+00	1.56E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.87E+01	9.00E-02	8.05E-04	4.54E+00	2.92E-04	4.70E+00	1.10E-01	3.76E+00	7.76E-05
N3TA-1050 (0-6")	1.72E-01	1.72E-01	4.84E-01	6.24E+00	1.07E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.29E+01	6.20E-02	8.05E-04	4.54E+00	2.01E-04	4.70E+00	1.10E-01	3.76E+00	5.34E-05
N3TA-150 (0-6")	1.72E-01	1.72E-01	4.84E-01	4.66E+00	8.00E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	9.64E+00	4.63E-02	8.05E-04	4.54E+00	1.50E-04	4.70E+00	1.10E-01	3.76E+00	3.99E-05
N3TA-200 (0-6")	1.72E-01	1.72E-01	4.84E-01	5.11E+00	8.76E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.06E+01	5.07E-02	8.05E-04	4.54E+00	1.64E-04	4.70E+00	1.10E-01	3.76E+00	4.37E-05
N3TA-250 (0-6")	1.72E-01	1.72E-01	4.84E-01	5.82E+00	9.98E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.20E+01	5.78E-02	8.05E-04	4.54E+00	1.87E-04	4.70E+00	1.10E-01	3.76E+00	4.98E-05
N3TA-300 (0-6")	1.72E-01	1.72E-01	4.84E-01	1.81E+01	3.10E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.74E+01	1.80E-01	8.05E-04	4.54E+00	5.83E-04	4.70E+00	1.10E-01	3.76E+00	1.55E-04
N3TA-350 (0-6")	1.72E-01	1.72E-01	4.84E-01	7.44E+00	1.28E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.54E+01	7.38E-02	8.05E-04	4.54E+00	2.39E-04	4.70E+00	1.10E-01	3.76E+00	6.37E-05
N3TA-400 (0-6")	1.72E-01	1.72E-01	4.84E-01	1.06E+01	1.83E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.20E+01	1.06E-01	8.05E-04	4.54E+00	3.43E-04	4.70E+00	1.10E-01	3.76E+00	9.11E-05
N3TA-450 (0-6")	1.72E-01	1.72E-01	4.84E-01	3.96E+00	6.80E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	8.20E+00	3.94E-02	8.05E-04	4.54E+00	1.28E-04	4.70E+00	1.10E-01	3.76E+00	3.39E-05
N3TA-50 (0-6")	1.72E-01	1.72E-01	4.84E-01	6.38E+00	1.10E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.32E+01	6.34E-02	8.05E-04	4.54E+00	2.05E-04	4.70E+00	1.10E-01	3.76E+00	5.46E-05
N3TA-500 (0-6")	1.72E-01	1.72E-01	4.84E-01	1.21E+01	2.07E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.49E+01	1.20E-01	8.05E-04	4.54E+00	3.88E-04	4.70E+00	1.10E-01	3.76E+00	1.03E-04
N3TA-550 (0-6")	1.72E-01	1.72E-01	4.84E-01	9.60E+00	1.65E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.99E+01	9.53E-02	8.05E-04	4.54E+00	3.09E-04	4.70E+00	1.10E-01	3.76E+00	8.22E-05
N3TA-600 (0-6")	1.72E-01	1.72E-01	4.84E-01	1.07E+01	1.84E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.22E+01	1.06E-01	8.05E-04	4.54E+00	3.45E-04	4.70E+00	1.10E-01	3.76E+00	9.17E-05
N3TA-650 (0-6")	1.72E-01	1.72E-01	4.84E-01	9.46E+00	1.62E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.96E+01	9.40E-02	8.05E-04	4.54E+00	3.05E-04	4.70E+00	1.10E-01	3.76E+00	8.10E-05
N3TA-700 (0-6")	1.72E-01	1.72E-01	4.84E-01	3.46E+01	5.93E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	7.15E+01	3.43E-01	8.05E-04	4.54E+00	1.11E-03	4.70E+00	1.10E-01	3.76E+00	2.96E-04
N3TA-750 (0-6")	1.72E-01	1.72E-01	4.84E-01	2.24E+01	3.84E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.63E+01	2.22E-01	8.05E-04	4.54E+00	7.20E-04	4.70E+00	1.10E-01	3.76E+00	1.92E-04
N3TA-800 (0-6")	1.72E-01	1.72E-01	4.84E-01	1.04E+01	1.78E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.14E+01	1.03E-01	8.05E-04	4.54E+00	3.34E-04	4.70E+00	1.10E-01	3.76E+00	8.87E-05
N3TA-850 (0-6")	1.72E-01	1.72E-01	4.84E-01	4.52E+00	7.76E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	9.35E+00	4.49E-02	8.05E-04	4.54E+00	1.46E-04	4.70E+00	1.10E-01	3.76E+00	3.87E-05
N3TA-900 (0-6")	1.72E-01	1.72E-01	4.84E-01	4.59E+00	7.87E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	9.49E+00	4.56E-02	8.05E-04	4.54E+00	1.48E-04	4.70E+00	1.10E-01	3.76E+00	3.93E-05
N3TA-950 (0-6")	1.72E-01	1.72E-01	4.84E-01	5.89E+00	1.01E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.22E+01	5.85E-02	8.05E-04	4.54E+00	1.90E-04	4.70E+00	1.10E-01	3.76E+00	5.04E-05
N3TA-Comp 1 (0-6")	1.72E-01	1.72E-01	4.84E-01	1.22E+01	2.09E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.52E+01	1.21E-01	8.05E-04	4.54E+00	3.92E-04	4.70E+00	1.10E-01	3.76E+00	1.04E-04
N3TA-Comp 2 (0-6")	1.72E-01	1.72E-01	4.84E-01	1.00E+01	1.72E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.08E+01	9.97E-02	8.05E-04	4.54E+00	3.23E-04	4.70E+00	1.10E-01	3.76E+00	8.59E-05
N3TA-Comp 3 (0-6")	1.72E-01	1.72E-01	4.84E-01	1.56E+01	2.67E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.22E+01	1.55E-01	8.05E-04	4.54E+00	5.02E-04	4.70E+00	1.10E-01	3.76E+00	1.33E-04
N3TA-Det Pond (0-6")	1.72E-01	1.72E-01	4.84E-01	2.92E+00	5.02E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	6.05E+00	2.90E-02	8.05E-04	4.54E+00	9.41E-05	4.70E+00	1.10E-01	3.76E+00	2.50E-05
N3TA-Pile #1 (0-6")	1.72E-01	1.72E-01	4.84E-01	1.37E+01	2.35E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.83E+01	1.36E-01	8.05E-04	4.54E+00	4.40E-04	4.70E+00	1.10E-01	3.76E+00	1.17E-04
N3TA-Pile #2 (0-6")	1.72E-01	1.72E-01	4.84E-01	4.13E+00	7.09E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	8.55E+00	4.10E-02	8.05E-04	4.54E+00	1.33E-04	4.70E+00	1.10E-01	3.76E+00	3.54E-05
																						Maximum HQ (Tunnel No. 3 Area)	**2.96E-04**

TABLE C-10A: ARSENIC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 10 - NUMBER 3 TUNNEL WASTE AREA (Continued)
Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)
calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **1.089**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Masked Shrew (Omnivorous Mammal - Terrestrial, Wetland)																							
Reference Site																							
SGBG-1 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	2.55E+00	8.82E+01	7.47E-01	1.10E-03	3.46E+01	3.81E-02	1.00E+00	5.50E-03	1.43E+02	4.70E+00	1.10E-01	5.63E+00	2.54E+01
SGBG-201 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	2.55E+00	4.23E+01	3.58E-01	1.10E-03	1.66E+01	1.82E-02	1.00E+00	5.50E-03	6.84E+01	4.70E+00	1.10E-01	5.63E+00	1.22E+01
UBRBG-201 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	2.55E+00	2.83E+01	2.40E-01	1.10E-03	1.11E+01	1.22E-02	1.00E+00	5.50E-03	4.58E+01	4.70E+00	1.10E-01	5.63E+00	8.14E+00
No. 3 Tunnel Waste Area																						**Minimum HQ (Reference Site)**	**8.14E+00**
N3TA fine tail (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	2.39E+02	2.02E+00	1.10E-03	1.45E+01	1.60E-02	1.00E+00	5.50E-03	3.71E+02	4.70E+00	1.10E-01	5.63E+00	6.59E+01
N3TA-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	1.13E+02	9.54E-01	1.10E-03	6.84E+00	7.53E-03	1.00E+00	5.50E-03	1.75E+02	4.70E+00	1.10E-01	5.63E+00	3.11E+01
N3TA-100 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	5.17E+02	4.38E+00	1.10E-03	3.13E+01	3.45E-02	1.00E+00	5.50E-03	8.02E+02	4.70E+00	1.10E-01	5.63E+00	1.43E+02
N3TA-1000 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	2.34E+02	1.98E+00	1.10E-03	1.42E+01	1.56E-02	1.00E+00	5.50E-03	3.63E+02	4.70E+00	1.10E-01	5.63E+00	6.45E+01
N3TA-1000-EOT (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	3.09E+02	2.62E+00	1.10E-03	1.87E+01	2.06E-02	1.00E+00	5.50E-03	4.79E+02	4.70E+00	1.10E-01	5.63E+00	8.52E+01
N3TA-1050 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	2.13E+02	1.80E+00	1.10E-03	1.29E+01	1.42E-02	1.00E+00	5.50E-03	3.30E+02	4.70E+00	1.10E-01	5.63E+00	5.87E+01
N3TA-150 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	1.59E+02	1.35E+00	1.10E-03	9.64E+00	1.06E-02	1.00E+00	5.50E-03	2.47E+02	4.70E+00	1.10E-01	5.63E+00	4.38E+01
N3TA-200 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	1.74E+02	1.47E+00	1.10E-03	1.06E+01	1.16E-02	1.00E+00	5.50E-03	2.70E+02	4.70E+00	1.10E-01	5.63E+00	4.80E+01
N3TA-250 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	1.98E+02	1.68E+00	1.10E-03	1.20E+01	1.32E-02	1.00E+00	5.50E-03	3.08E+02	4.70E+00	1.10E-01	5.63E+00	5.47E+01
N3TA-300 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	6.17E+02	5.22E+00	1.10E-03	3.74E+01	4.12E-02	1.00E+00	5.50E-03	9.57E+02	4.70E+00	1.10E-01	5.63E+00	1.70E+02
N3TA-350 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	2.53E+02	2.15E+00	1.10E-03	1.54E+01	1.69E-02	1.00E+00	5.50E-03	3.93E+02	4.70E+00	1.10E-01	5.63E+00	6.99E+01
N3TA-400 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	3.63E+02	3.07E+00	1.10E-03	2.20E+01	2.42E-02	1.00E+00	5.50E-03	5.63E+02	4.70E+00	1.10E-01	5.63E+00	1.00E+02
N3TA-450 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	1.35E+02	1.14E+00	1.10E-03	8.20E+00	9.02E-03	1.00E+00	5.50E-03	2.10E+02	4.70E+00	1.10E-01	5.63E+00	3.73E+01
N3TA-50 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	2.17E+02	1.84E+00	1.10E-03	1.32E+01	1.45E-02	1.00E+00	5.50E-03	3.38E+02	4.70E+00	1.10E-01	5.63E+00	6.00E+01
N3TA-500 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	4.11E+02	3.48E+00	1.10E-03	2.49E+01	2.75E-02	1.00E+00	5.50E-03	6.38E+02	4.70E+00	1.10E-01	5.63E+00	1.13E+02
N3TA-550 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	3.27E+02	2.77E+00	1.10E-03	1.99E+01	2.19E-02	1.00E+00	5.50E-03	5.08E+02	4.70E+00	1.10E-01	5.63E+00	9.03E+01
N3TA-600 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	3.65E+02	3.09E+00	1.10E-03	2.22E+01	2.44E-02	1.00E+00	5.50E-03	5.67E+02	4.70E+00	1.10E-01	5.63E+00	1.01E+02
N3TA-650 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	3.22E+02	2.73E+00	1.10E-03	1.96E+01	2.15E-02	1.00E+00	5.50E-03	5.00E+02	4.70E+00	1.10E-01	5.63E+00	8.90E+01
N3TA-700 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	1.18E+03	9.98E+00	1.10E-03	7.15E+01	7.87E-02	1.00E+00	5.50E-03	1.83E+03	4.70E+00	1.10E-01	5.63E+00	3.25E+02
N3TA-750 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	7.63E+02	6.46E+00	1.10E-03	4.63E+01	5.09E-02	1.00E+00	5.50E-03	1.18E+03	4.70E+00	1.10E-01	5.63E+00	2.10E+02
N3TA-800 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	3.53E+02	2.99E+00	1.10E-03	2.14E+01	2.36E-02	1.00E+00	5.50E-03	5.48E+02	4.70E+00	1.10E-01	5.63E+00	9.74E+01
N3TA-850 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	1.54E+02	1.30E+00	1.10E-03	9.35E+00	1.03E-02	1.00E+00	5.50E-03	2.39E+02	4.70E+00	1.10E-01	5.63E+00	4.25E+01
N3TA-900 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	1.56E+02	1.32E+00	1.10E-03	9.49E+00	1.04E-02	1.00E+00	5.50E-03	2.43E+02	4.70E+00	1.10E-01	5.63E+00	4.31E+01
N3TA-950 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	2.01E+02	1.70E+00	1.10E-03	1.22E+01	1.34E-02	1.00E+00	5.50E-03	3.12E+02	4.70E+00	1.10E-01	5.63E+00	5.54E+01
N3TA-Comp 1 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	4.15E+02	3.52E+00	1.10E-03	2.52E+01	2.77E-02	1.00E+00	5.50E-03	6.45E+02	4.70E+00	1.10E-01	5.63E+00	1.15E+02
N3TA-Comp 2 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	3.42E+02	2.90E+00	1.10E-03	2.08E+01	2.28E-02	1.00E+00	5.50E-03	5.31E+02	4.70E+00	1.10E-01	5.63E+00	9.44E+01
N3TA-Comp 3 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	5.31E+02	4.50E+00	1.10E-03	3.22E+01	3.55E-02	1.00E+00	5.50E-03	8.24E+02	4.70E+00	1.10E-01	5.63E+00	1.47E+02
N3TA-Det Pond (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	9.96E+01	8.44E-01	1.10E-03	6.05E+00	6.66E-03	1.00E+00	5.50E-03	1.55E+02	4.70E+00	1.10E-01	5.63E+00	2.75E+01
N3TA-Pile #1 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	4.66E+02	3.95E+00	1.10E-03	2.83E+01	3.11E-02	1.00E+00	5.50E-03	7.23E+02	4.70E+00	1.10E-01	5.63E+00	1.29E+02
N3TA-Pile #2 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	1.41E+02	1.19E+00	1.10E-03	8.55E+00	9.41E-03	1.00E+00	5.50E-03	2.19E+02	4.70E+00	1.10E-01	5.63E+00	3.89E+01
																						Maximum HQ (Tunnel No. 3 Area)	**3.25E+02**

Notes
1 See Tables A-1 through A-13 for ingestion rates, foraging ranges used to calculate the SUF, and body weights.
2 BAFs were calculated by dividing site-collected tissue by collocated soil concentrations (BAFs are in dry weight). The maximum BAF calculated from the Beartrap Creek and Blackfoot River transects was used for site dose calculations. The maximum BAF from the terrestrial reference site was used for reference site dose calculations.
3 The mammal, plant, and invertebrate concentrations were calculated by multiplying the soil concentration by the BAF to generate a tissue concentration (see note 2).
4 Mammal, plant, and invertebrate daily doses were calculated by multiplying the ingestion rate (see note 1) by the tissue concentration (see note 3).
5 Soil concentration from 0 to 6 inches below ground surface at point ID as measured by XRF 10. Doses were not calculated for detected and non-detected soil concentrations measured below the minimum reference site concentration, as indicated by BB. For results that were measured at less than the detection limit, doses were calculated using half of the detection limit.
6 Soil daily dose was calculated by multiplying the soil ingestion rate (see note 1) by soil concentration (see note 5).
7 Total daily dose is calculated using the following equation: total daily dose = ([mammal daily dose (if applicable) + plant daily dose (if applicable) + invertebrate daily dose (if applicable) + soil daily dose]*SUF)/receptor species body weight.
8 The TRVs used in this risk assessment represent a mid-range effects level. The derivation of TRVs is described in Navy (1998).
9 Allometrically adjusted TRVs for birds were calculated using the following equation: receptor species TRV = (test species TRV) x (test species body weight / receptor species body weight)$^{(1-1.2)}$.
10 Allometrically adjusted TRVs for mammals were calculated using the following equation: receptor species TRV = (test species TRV) x (test species body weight / receptor species body weight)$^{(1-0.94)}$.
11 HQs were calculated using the following equation: HQ = total daily dose/allometrically adjusted TRV.
12 Highlighted cells indicate an HQ greater than 1.0.

BAF	Bioaccumulation Factor	mg/day	Milligram per day
BB	Below minimum background reference site concentration	mg/kg	Milligram per kilogram
EE/CA	Engineering Evaluation/Cost Analysis	NA	Not applicable
EU	Exposure Unit	Navy	Department of the Navy
HQ	Hazard quotient	SUF	Site use factor
ID	Identification	TRV	Toxicity reference value
kg	Kilogram	XRF	X-ray fluorescence
kg/day	Kilogram per day	XRF 10	XRF measurements recorded following drying and seiving through a #10-mesh screen

Sources:
Department of the Navy. 1998. "Development of Toxicity Reference Values for Conducting Ecological Risk Assessments at Naval Facilities in California, Interim Final." Prepared by Naval Facilities Engineering Command, Engineering Field Activity West (EFA West). San Bruno, California.

TABLE C-10B: CADMIUM DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 10 - NUMBER 3 TUNNEL WASTE AREA
Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)
calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **1.089**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Mourning Dove (Herbivorous Birds - Terrestrial)																							
Reference Site																							
SGBG-1 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.26E+00	3.57E-01	2.06E-03	NA	NA	NA	NA	5.36E-04	2.84E-01	1.52E-04	4.20E-03	1.09E-01	8.50E-05	1.00E+00	1.13E+00	6.27E-01	1.36E-04
SGBG-201 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.26E+00	2.76E+00	1.59E-02	NA	NA	NA	NA	5.36E-04	2.20E+00	1.18E-03	4.20E-03	1.09E-01	6.59E-04	1.00E+00	1.13E+00	6.27E-01	1.05E-03
UBRBG-201 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.26E+00	2.64E+00	1.52E-02	NA	NA	NA	NA	5.36E-04	2.10E+00	1.13E-03	4.20E-03	1.09E-01	6.29E-04	1.00E+00	1.13E+00	6.27E-01	1.00E-03
No. 3 Tunnel Waste Area																					**Minimum HQ (Reference Site)**		**1.36E-04**
N3TA fine tail (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
N3TA-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
N3TA-100 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
N3TA-1000 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
N3TA-1000-EOT (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.59E+00	5.72E-01	3.29E-03	NA	NA	NA	NA	5.36E-04	3.60E-01	1.93E-04	4.20E-03	1.09E-01	1.34E-04	1.00E+00	1.13E+00	6.27E-01	2.14E-04
N3TA-1050 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
N3TA-150 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
N3TA-200 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
N3TA-250 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
N3TA-300 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
N3TA-350 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
N3TA-400 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
N3TA-450 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
N3TA-50 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
N3TA-500 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
N3TA-550 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
N3TA-600 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
N3TA-650 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
N3TA-700 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.59E+00	2.16E+00	1.24E-02	NA	NA	NA	NA	5.36E-04	1.36E+00	7.29E-04	4.20E-03	1.09E-01	5.07E-04	1.00E+00	1.13E+00	6.27E-01	8.09E-04
N3TA-750 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
N3TA-800 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
N3TA-850 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
N3TA-900 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
N3TA-950 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
N3TA-Comp 1 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
N3TA-Comp 2 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
N3TA-Comp 3 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
N3TA-Det Pond (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
N3TA-Pile #1 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
N3TA-Pile #2 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
																					Maximum HQ (Tunnel No. 3 Area)		**8.09E-04**
Red-Tailed Hawk (Carnivorous Birds - Terrestrial)																							
Reference Site																							
SGBG-1 (0-6")	9.00E-02	9.00E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.84E-01	1.46E-03	1.56E-03	1.13E+00	2.01E-06	1.00E+00	1.13E+00	1.00E+00	2.01E-06
SGBG-201 (0-6")	9.00E-02	9.00E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.20E+00	1.13E-02	1.56E-03	1.13E+00	1.55E-05	1.00E+00	1.13E+00	1.00E+00	1.55E-05
UBRBG-201 (0-6")	9.00E-02	9.00E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.10E+00	1.08E-02	1.56E-03	1.13E+00	1.48E-05	1.00E+00	1.13E+00	1.00E+00	1.48E-05
No. 3 Tunnel Waste Area																					**Minimum HQ (Reference Site)**		**2.01E-06**
N3TA fine tail (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
N3TA-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
N3TA-100 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
N3TA-1000 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
N3TA-1000-EOT (0-6")	9.00E-02	9.00E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.60E-01	1.85E-03	1.56E-03	1.13E+00	2.54E-06	1.00E+00	1.13E+00	1.00E+00	2.54E-06
N3TA-1050 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
N3TA-150 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
N3TA-200 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
N3TA-250 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
N3TA-300 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
N3TA-350 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
N3TA-400 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
N3TA-450 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
N3TA-50 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
N3TA-500 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
N3TA-550 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE

TABLE C-10B: CADMIUM DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 10 - NUMBER 3 TUNNEL WASTE AREA (Continued)
Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)
calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **1.089**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Red-Tailed Hawk (Carnivorous Birds - Terrestrial)																							
N3TA-600 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
N3TA-650 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
N3TA-700 (0-6")	9.00E-02	9.00E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.36E+00	6.97E-03	1.56E-03	1.13E+00	9.61E-06	1.00E+00	1.13E+00	1.00E+00	9.60E-06
N3TA-750 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
N3TA-800 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
N3TA-850 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
N3TA-900 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
N3TA-950 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
N3TA-Comp 1 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
N3TA-Comp 2 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
N3TA-Comp 3 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
N3TA-Det Pond (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
N3TA-Pile #1 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
N3TA-Pile #2 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
																					Maximum HQ (Tunnel No. 3 Area)		**9.60E-06**
American Kestrel (Insectivorous Birds - Terrestrial)																							
Reference Site																							
SGBG-1 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	7.00E+00	1.99E+00	2.74E-02	7.84E-04	2.84E-01	2.23E-04	4.16E-03	1.24E-01	9.26E-04	1.00E+00	1.13E+00	6.43E-01	1.44E-03
SGBG-201 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	7.00E+00	1.54E+01	2.12E-01	7.84E-04	2.20E+00	1.73E-03	4.16E-03	1.24E-01	7.17E-03	1.00E+00	1.13E+00	6.43E-01	1.12E-02
UBRBG-201 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	7.00E+00	1.47E+01	2.02E-01	7.84E-04	2.10E+00	1.65E-03	4.16E-03	1.24E-01	6.84E-03	1.00E+00	1.13E+00	6.43E-01	1.06E-02
No. 3 Tunnel Waste Area																						**Minimum HQ (Reference Site)**	**1.44E-03**
N3TA fine tail (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
N3TA-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
N3TA-100 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
N3TA-1000 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
N3TA-1000-EOT (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	7.00E+00	2.52E+00	3.47E-02	7.84E-04	3.60E-01	2.82E-04	4.16E-03	1.24E-01	1.17E-03	1.00E+00	1.13E+00	6.43E-01	1.83E-03
N3TA-1050 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
N3TA-150 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
N3TA-200 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
N3TA-250 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
N3TA-300 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
N3TA-350 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
N3TA-400 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
N3TA-450 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
N3TA-50 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
N3TA-500 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
N3TA-550 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
N3TA-600 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
N3TA-650 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
N3TA-700 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	7.00E+00	9.52E+00	1.31E-01	7.84E-04	1.36E+00	1.07E-03	4.16E-03	1.24E-01	4.43E-03	1.00E+00	1.13E+00	6.43E-01	6.90E-03
N3TA-750 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
N3TA-800 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
N3TA-850 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
N3TA-900 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
N3TA-950 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
N3TA-Comp 1 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
N3TA-Comp 2 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
N3TA-Comp 3 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
N3TA-Det Pond (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
N3TA-Pile #1 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
N3TA-Pile #2 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
																					Maximum HQ (Tunnel No. 3 Area)		**6.90E-03**

TABLE C-10B: CADMIUM DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 10 - NUMBER 3 TUNNEL WASTE AREA (Continued)
Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)
calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 1.089

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Meadow Vole (Small Herbivorous Mammal - Terrestrial)																							
Reference Site																							
SGBG-1 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.26E+00	3.57E-01	1.67E-03	NA	NA	NA	NA	1.13E-04	2.84E-01	3.20E-05	1.00E+00	3.06E-02	5.57E-02	2.64E+00	3.14E-02	2.64E+00	2.11E-02
SGBG-201 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.26E+00	2.76E+00	1.30E-02	NA	NA	NA	NA	1.13E-04	2.20E+00	2.48E-04	1.00E+00	3.06E-02	4.32E-01	2.64E+00	3.14E-02	2.64E+00	1.63E-01
UBRBG-201 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.26E+00	2.64E+00	1.24E-02	NA	NA	NA	NA	1.13E-04	2.10E+00	2.36E-04	1.00E+00	3.06E-02	4.12E-01	2.64E+00	3.14E-02	2.64E+00	1.56E-01
No. 3 Tunnel Waste Area																					**Minimum HQ (Reference Site)**		**2.11E-02**
N3TA fine tail (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
N3TA-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
N3TA-100 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
N3TA-1000 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
N3TA-1000-EOT (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.59E+00	5.72E-01	2.68E-03	NA	NA	NA	NA	1.13E-04	3.60E-01	4.05E-05	1.00E+00	3.06E-02	8.89E-02	2.64E+00	3.14E-02	2.64E+00	3.36E-02
N3TA-1050 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
N3TA-150 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
N3TA-200 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
N3TA-250 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
N3TA-300 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
N3TA-350 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
N3TA-400 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
N3TA-450 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
N3TA-50 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
N3TA-500 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
N3TA-550 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
N3TA-600 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
N3TA-650 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
N3TA-700 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.59E+00	2.16E+00	1.01E-02	NA	NA	NA	NA	1.13E-04	1.36E+00	1.53E-04	1.00E+00	3.06E-02	3.36E-01	2.64E+00	3.14E-02	2.64E+00	1.27E-01
N3TA-750 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
N3TA-800 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
N3TA-850 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
N3TA-900 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
N3TA-950 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
N3TA-Comp 1 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
N3TA-Comp 2 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
N3TA-Comp 3 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
N3TA-Det Pond (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
N3TA-Pile #1 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
N3TA-Pile #2 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
																					Maximum HQ (Tunnel No. 3 Area)		**1.27E-01**
White-Tailed Deer (Large Herbivorous Mammal - Terrestrial)																							
Reference Site																							
SGBG-1 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.26E+00	3.57E-01	5.11E-01	NA	NA	NA	NA	2.86E-02	2.84E-01	8.13E-03	6.09E-03	1.35E+02	2.34E-05	2.64E+00	3.14E-02	1.60E+00	1.47E-05
SGBG-201 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.26E+00	2.76E+00	3.96E+00	NA	NA	NA	NA	2.86E-02	2.20E+00	6.30E-02	6.09E-03	1.35E+02	1.81E-04	2.64E+00	3.14E-02	1.60E+00	1.14E-04
UBRBG-201 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.26E+00	2.64E+00	3.78E+00	NA	NA	NA	NA	2.86E-02	2.10E+00	6.01E-02	6.09E-03	1.35E+02	1.73E-04	2.64E+00	3.14E-02	1.60E+00	1.08E-04
No. 3 Tunnel Waste Area																					**Minimum HQ (Reference Site)**		**1.47E-05**
N3TA fine tail (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
N3TA-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
N3TA-100 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
N3TA-1000 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
N3TA-1000-EOT (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.59E+00	5.72E-01	8.18E-01	NA	NA	NA	NA	2.86E-02	3.60E-01	1.03E-02	6.09E-03	1.35E+02	3.74E-05	2.64E+00	3.14E-02	1.60E+00	2.34E-05
N3TA-1050 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
N3TA-150 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
N3TA-200 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
N3TA-250 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
N3TA-300 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
N3TA-350 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
N3TA-400 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
N3TA-450 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
N3TA-50 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
N3TA-500 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
N3TA-550 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE

TABLE C-10B: CADMIUM DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 10 - NUMBER 3 TUNNEL WASTE AREA (Continued)
Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)
calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **1.089**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
White-Tailed Deer (Large Herbivorous Mammal - Terrestrial)																							
N3TA-600 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
N3TA-650 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
N3TA-700 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.59E+00	2.16E+00	3.09E+00	NA	NA	NA	NA	2.86E-02	1.36E+00	3.89E-02	6.09E-03	1.35E+02	1.41E-04	2.64E+00	3.14E-02	1.60E+00	8.84E-05
N3TA-750 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
N3TA-800 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
N3TA-850 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
N3TA-900 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
N3TA-950 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
N3TA-Comp 1 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
N3TA-Comp 2 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
N3TA-Comp 3 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
N3TA-Det Pond (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
N3TA-Pile #1 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
N3TA-Pile #2 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
																					Maximum HQ (Tunnel No. 3 Area)		**8.84E-05**
Red Fox (Carnivorous Mammal - Terrestrial)																							
Reference Site																							
SGBG-1 (0-6")	1.72E-01	1.72E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.84E-01	1.36E-03	8.05E-04	4.54E+00	2.42E-07	2.64E+00	3.14E-02	1.96E+00	1.24E-07
SGBG-201 (0-6")	1.72E-01	1.72E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.20E+00	1.06E-02	8.05E-04	4.54E+00	1.87E-06	2.64E+00	3.14E-02	1.96E+00	9.57E-07
UBRBG-201 (0-6")	1.72E-01	1.72E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.10E+00	1.01E-02	8.05E-04	4.54E+00	1.79E-06	2.64E+00	3.14E-02	1.96E+00	9.13E-07
No. 3 Tunnel Waste Area																					**Minimum HQ (Reference Site)**		**1.24E-07**
N3TA fine tail (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
N3TA-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
N3TA-100 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
N3TA-1000 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
N3TA-1000-EOT (0-6")	1.72E-01	1.72E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.60E-01	1.73E-03	8.05E-04	4.54E+00	3.07E-07	2.64E+00	3.14E-02	1.96E+00	1.57E-07
N3TA-1050 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
N3TA-150 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
N3TA-200 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
N3TA-250 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
N3TA-300 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
N3TA-350 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
N3TA-400 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
N3TA-450 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
N3TA-50 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
N3TA-500 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
N3TA-550 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
N3TA-600 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
N3TA-650 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
N3TA-700 (0-6")	1.72E-01	1.72E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.36E+00	6.53E-03	8.05E-04	4.54E+00	1.16E-06	2.64E+00	3.14E-02	1.96E+00	5.91E-07
N3TA-750 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
N3TA-800 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
N3TA-850 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
N3TA-900 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
N3TA-950 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
N3TA-Comp 1 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
N3TA-Comp 2 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
N3TA-Comp 3 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
N3TA-Det Pond (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
N3TA-Pile #1 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
N3TA-Pile #2 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
																					Maximum HQ (Tunnel No. 3 Area)		**5.91E-07**

TABLE C-10B: CADMIUM DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 10 - NUMBER 3 TUNNEL WASTE AREA (Continued)
Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)
calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **1.089**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Masked Shrew (Omnivorous Mammal - Terrestrial, Wetland)																							
Reference Site																							
SGBG-1 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	7.00E+00	1.99E+00	1.68E-02	1.10E-03	2.84E-01	3.13E-04	1.00E+00	5.50E-03	3.12E+00	2.64E+00	3.14E-02	2.93E+00	1.06E+00
SGBG-201 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	7.00E+00	1.54E+01	1.30E-01	1.10E-03	2.20E+00	2.42E-03	1.00E+00	5.50E-03	2.42E+01	2.64E+00	3.14E-02	2.93E+00	8.24E+00
UBRBG-201 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	7.00E+00	1.47E+01	1.24E-01	1.10E-03	2.10E+00	2.31E-03	1.00E+00	5.50E-03	2.31E+01	2.64E+00	3.14E-02	2.93E+00	7.87E+00
No. 3 Tunnel Waste Area																						**Minimum HQ (Reference Site)**	**1.06E+00**
N3TA fine tail (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
N3TA-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
N3TA-100 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
N3TA-1000 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
N3TA-1000-EOT (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	7.00E+00	2.52E+00	2.13E-02	1.10E-03	3.60E-01	3.96E-04	1.00E+00	5.50E-03	3.95E+00	2.64E+00	3.14E-02	2.93E+00	1.35E+00
N3TA-1050 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
N3TA-150 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
N3TA-200 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
N3TA-250 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
N3TA-300 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
N3TA-350 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
N3TA-400 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
N3TA-450 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
N3TA-50 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
N3TA-500 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
N3TA-550 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
N3TA-600 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
N3TA-650 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
N3TA-700 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	7.00E+00	9.52E+00	8.06E-02	1.10E-03	1.36E+00	1.50E-03	1.00E+00	5.50E-03	1.49E+01	2.64E+00	3.14E-02	2.93E+00	5.09E+00
N3TA-750 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
N3TA-800 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
N3TA-850 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
N3TA-900 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
N3TA-950 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
N3TA-Comp 1 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
N3TA-Comp 2 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
N3TA-Comp 3 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
N3TA-Det Pond (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
N3TA-Pile #1 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
N3TA-Pile #2 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
																						Maximum HQ (Tunnel No. 3 Area)	**5.09E+00**

Notes

1 See Tables 3-1 through 3-13 for ingestion rates, foraging ranges used to calculate the SUF, and body weights.
2 BAFs were calculated by dividing site-collected tissue by collocated soil concentrations (BAFs are in dry weight). The maximum BAF calculated from the Beartrap Creek and Blackfoot River transects was used for site dose calculations. The maximum BAF from the terrestrial reference site was used for reference site dose calculations.
3 The mammal, plant, and invertebrate concentrations were calculated by multiplying the soil concentration by the BAF to generate a tissue concentration (see note 2).
4 Mammal, plant, and invertebrate daily doses were calculated by multiplying the ingestion rate (see note 1) by the tissue concentration (see note 3).
5 Soil concentration from 0 to 6 inches below ground surface at point ID from laboratory analysis. XRF 10 data was unavailable for cadmium. Doses were not calculated for detected and non-detected soil concentrations measured below the maximum reference site concentration, as indicated by BB. For results that were measured at less than the detection limit, doses were calculated
6 Soil daily dose was calculated by multiplying the soil ingestion rate (see note 1) by soil concentration (see note 5).
7 Total daily dose is calculated using the following equation: total daily dose = ([mammal daily dose (if applicable) + plant daily dose (if applicable) + invertebrate daily dose (if applicable) + soil daily dose]*SUF)/receptor species body weight.
8 The TRVs used in this risk assessment represent a mid-range effects level. The derivation of TRVs is described in Navy (1998) and DTSC (2009).
9 Allometrically adjusted TRVs for birds were calculated using the following equation: receptor species TRV = (test species TRV) x (test species body weight / receptor species body weight) $^{(1-1.2)}$.
10 Allometrically adjusted TRVs for mammals were calculated using the following equation: receptor species TRV = (test species TRV) x (test species body weight / receptor species body weight) $^{(1-0.94)}$.
11 HQs were calculated using the following equation: HQ = total daily dose/allometrically adjusted TRV.
12 Highlighted cells indicate an HQ greater than 1.0.

BAF	Bioaccumulation Factor	mg/day	Milligram per day
BB	Below minimum background reference site concentration	mg/kg	Milligram per kilogram
DTSC	California Department of Toxic Substances Control	NA	Not applicable
EE/CA	Engineering Evaluation/Cost Analysis	Navy	Department of the Navy
EU	Exposure Unit	NE	Not evaluated (no data for that point ID)
HQ	Hazard quotient	SUF	Site use factor
ID	Identification	TRV	Toxicity reference value
kg	Kilogram	XRF	X-ray fluorescence
kg/day	Kilogram per day	XRF 10	XRF measurements recorded following drying and seiving through a #10-mesh screen

Sources:
Department of the Navy. 1998. "Development of Toxicity Reference Values for Conducting Ecological Risk Assessments at Naval Facilities in California, Interim Final." Prepared by Naval Facilities Engineering Command, Engineering Field Activity West (EFA West). San Bruno, California.
DTSC. 2009. HERD Ecological Risk Assessment Note 6. February. Available on-line at: http://www.dtsc.ca.gov/AssessingRisk/upload/CdEconote_Final.pdf.

TABLE C-10C: COPPER DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 10 - NUMBER 3 TUNNEL WASTE AREA

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **1.089**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Mourning Dove (Herbivorous Birds - Terrestrial)																							
Reference Site																							
SGBG-1 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	7.79E-01	7.21E+01	4.15E-01	NA	NA	NA	NA	5.36E-04	9.25E+01	4.96E-02	4.20E-03	1.09E-01	1.79E-02	5.23E+01	4.09E-01	4.01E+01	4.46E-04
SGBG-201 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	7.79E-01	5.60E+01	3.22E-01	NA	NA	NA	NA	5.36E-04	7.19E+01	3.85E-02	4.20E-03	1.09E-01	1.39E-02	5.23E+01	4.09E-01	4.01E+01	3.46E-04
UBRBG-201 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	7.79E-01	1.56E+02	8.97E-01	NA	NA	NA	NA	5.36E-04	2.00E+02	1.07E-01	4.20E-03	1.09E-01	3.86E-02	5.23E+01	4.09E-01	4.01E+01	9.63E-04
No. 3 Tunnel Waste Area																						**Minimum HQ (Reference Site)**	**3.46E-04**
N3TA fine tail (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	1.41E+02	8.14E-01	NA	NA	NA	NA	5.36E-04	1.25E+02	6.69E-02	4.20E-03	1.09E-01	3.39E-02	5.23E+01	4.09E-01	4.01E+01	8.46E-04
N3TA-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	2.54E+02	1.46E+00	NA	NA	NA	NA	5.36E-04	2.24E+02	1.20E-01	4.20E-03	1.09E-01	6.09E-02	5.23E+01	4.09E-01	4.01E+01	1.52E-03
N3TA-100 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	2.45E+02	1.41E+00	NA	NA	NA	NA	5.36E-04	2.16E+02	1.16E-01	4.20E-03	1.09E-01	5.88E-02	5.23E+01	4.09E-01	4.01E+01	1.46E-03
N3TA-1000 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	1.43E+02	8.26E-01	NA	NA	NA	NA	5.36E-04	1.27E+02	6.79E-02	4.20E-03	1.09E-01	3.44E-02	5.23E+01	4.09E-01	4.01E+01	8.58E-04
N3TA-1000-EOT (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
N3TA-1050 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	1.99E+02	1.15E+00	NA	NA	NA	NA	5.36E-04	1.76E+02	9.44E-02	4.20E-03	1.09E-01	4.79E-02	5.23E+01	4.09E-01	4.01E+01	1.19E-03
N3TA-150 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	1.58E+02	9.11E-01	NA	NA	NA	NA	5.36E-04	1.40E+02	7.48E-02	4.20E-03	1.09E-01	3.79E-02	5.23E+01	4.09E-01	4.01E+01	9.45E-04
N3TA-200 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	1.59E+02	9.16E-01	NA	NA	NA	NA	5.36E-04	1.40E+02	7.52E-02	4.20E-03	1.09E-01	3.81E-02	5.23E+01	4.09E-01	4.01E+01	9.51E-04
N3TA-250 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	1.30E+02	7.48E-01	NA	NA	NA	NA	5.36E-04	1.15E+02	6.15E-02	4.20E-03	1.09E-01	3.12E-02	5.23E+01	4.09E-01	4.01E+01	7.77E-04
N3TA-300 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	1.90E+02	1.10E+00	NA	NA	NA	NA	5.36E-04	1.68E+02	9.02E-02	4.20E-03	1.09E-01	4.57E-02	5.23E+01	4.09E-01	4.01E+01	1.14E-03
N3TA-350 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	9.25E+01	5.33E-01	NA	NA	NA	NA	5.36E-04	8.17E+01	4.38E-02	4.20E-03	1.09E-01	2.22E-02	5.23E+01	4.09E-01	4.01E+01	5.53E-04
N3TA-400 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	1.18E+02	6.77E-01	NA	NA	NA	NA	5.36E-04	1.04E+02	5.56E-02	4.20E-03	1.09E-01	2.82E-02	5.23E+01	4.09E-01	4.01E+01	7.03E-04
N3TA-450 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	1.26E+02	7.25E-01	NA	NA	NA	NA	5.36E-04	1.11E+02	5.96E-02	4.20E-03	1.09E-01	3.02E-02	5.23E+01	4.09E-01	4.01E+01	7.53E-04
N3TA-50 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	2.45E+02	1.41E+00	NA	NA	NA	NA	5.36E-04	2.16E+02	1.16E-01	4.20E-03	1.09E-01	5.87E-02	5.23E+01	4.09E-01	4.01E+01	1.46E-03
N3TA-500 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	1.62E+02	9.33E-01	NA	NA	NA	NA	5.36E-04	1.43E+02	7.66E-02	4.20E-03	1.09E-01	3.89E-02	5.23E+01	4.09E-01	4.01E+01	9.68E-04
N3TA-550 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	1.95E+02	1.13E+00	NA	NA	NA	NA	5.36E-04	1.73E+02	9.25E-02	4.20E-03	1.09E-01	4.69E-02	5.23E+01	4.09E-01	4.01E+01	1.17E-03
N3TA-600 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	1.85E+02	1.07E+00	NA	NA	NA	NA	5.36E-04	1.64E+02	8.77E-02	4.20E-03	1.09E-01	4.45E-02	5.23E+01	4.09E-01	4.01E+01	1.11E-03
N3TA-650 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	2.03E+02	1.17E+00	NA	NA	NA	NA	5.36E-04	1.80E+02	9.62E-02	4.20E-03	1.09E-01	4.88E-02	5.23E+01	4.09E-01	4.01E+01	1.22E-03
N3TA-700 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	8.54E+02	4.92E+00	NA	NA	NA	NA	5.36E-04	7.55E+02	4.05E-01	4.20E-03	1.09E-01	2.05E-01	5.23E+01	4.09E-01	4.01E+01	5.11E-03
N3TA-750 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	8.22E+02	4.73E+00	NA	NA	NA	NA	5.36E-04	7.26E+02	3.89E-01	4.20E-03	1.09E-01	1.97E-01	5.23E+01	4.09E-01	4.01E+01	4.92E-03
N3TA-800 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	7.39E+02	4.26E+00	NA	NA	NA	NA	5.36E-04	6.53E+02	3.50E-01	4.20E-03	1.09E-01	1.77E-01	5.23E+01	4.09E-01	4.01E+01	4.42E-03
N3TA-850 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	2.55E+02	1.47E+00	NA	NA	NA	NA	5.36E-04	2.26E+02	1.21E-01	4.20E-03	1.09E-01	6.13E-02	5.23E+01	4.09E-01	4.01E+01	1.53E-03
N3TA-900 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	1.02E+02	5.88E-01	NA	NA	NA	NA	5.36E-04	9.02E+01	4.83E-02	4.20E-03	1.09E-01	2.45E-02	5.23E+01	4.09E-01	4.01E+01	6.11E-04
N3TA-950 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	2.22E+02	1.28E+00	NA	NA	NA	NA	5.36E-04	1.97E+02	1.05E-01	4.20E-03	1.09E-01	5.34E-02	5.23E+01	4.09E-01	4.01E+01	1.33E-03
N3TA-Comp 1 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	1.78E+02	1.03E+00	NA	NA	NA	NA	5.36E-04	1.57E+02	8.43E-02	4.20E-03	1.09E-01	4.27E-02	5.23E+01	4.09E-01	4.01E+01	1.06E-03
N3TA-Comp 2 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	2.92E+02	1.68E+00	NA	NA	NA	NA	5.36E-04	2.58E+02	1.38E-01	4.20E-03	1.09E-01	7.00E-02	5.23E+01	4.09E-01	4.01E+01	1.74E-03
N3TA-Comp 3 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	3.17E+02	1.82E+00	NA	NA	NA	NA	5.36E-04	2.80E+02	1.50E-01	4.20E-03	1.09E-01	7.60E-02	5.23E+01	4.09E-01	4.01E+01	1.89E-03
N3TA-Det Pond (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	2.45E+02	1.41E+00	NA	NA	NA	NA	5.36E-04	2.17E+02	1.16E-01	4.20E-03	1.09E-01	5.89E-02	5.23E+01	4.09E-01	4.01E+01	1.47E-03
N3TA-Pile #1 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	1.12E+03	6.45E+00	NA	NA	NA	NA	5.36E-04	9.90E+02	5.30E-01	4.20E-03	1.09E-01	2.69E-01	5.23E+01	4.09E-01	4.01E+01	6.70E-03
N3TA-Pile #2 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	1.18E+02	6.78E-01	NA	NA	NA	NA	5.36E-04	1.04E+02	5.57E-02	4.20E-03	1.09E-01	2.82E-02	5.23E+01	4.09E-01	4.01E+01	7.04E-04
																						Maximum HQ (Tunnel No. 3 Area)	**6.70E-03**
Red-Tailed Hawk (Carnivorous Birds - Terrestrial)																							
Reference Site																							
SGBG-1 (0-6")	9.00E-02	9.00E-02	6.61E-01	6.11E+01	5.50E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	9.25E+01	4.74E-01	1.56E-03	1.13E+00	8.23E-03	5.23E+01	4.09E-01	6.41E+01	1.28E-04
SGBG-201 (0-6")	9.00E-02	9.00E-02	6.61E-01	4.75E+01	4.27E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	7.19E+01	3.68E-01	1.56E-03	1.13E+00	6.39E-03	5.23E+01	4.09E-01	6.41E+01	9.98E-05
UBRBG-201 (0-6")	9.00E-02	9.00E-02	6.61E-01	1.32E+02	1.19E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.00E+02	1.02E+00	1.56E-03	1.13E+00	1.78E-02	5.23E+01	4.09E-01	6.41E+01	2.78E-04
No. 3 Tunnel Waste Area																						**Minimum HQ (Reference Site)**	**9.98E-05**
N3TA fine tail (0-6")	9.00E-02	9.00E-02	1.01E+00	1.26E+02	1.14E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.25E+02	6.40E-01	1.56E-03	1.13E+00	1.65E-02	5.23E+01	4.09E-01	6.41E+01	2.58E-04
N3TA-0 (0-6")	9.00E-02	9.00E-02	1.01E+00	2.26E+02	2.04E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.24E+02	1.15E+00	1.56E-03	1.13E+00	2.96E-02	5.23E+01	4.09E-01	6.41E+01	4.63E-04
N3TA-100 (0-6")	9.00E-02	9.00E-02	1.01E+00	2.19E+02	1.97E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.16E+02	1.11E+00	1.56E-03	1.13E+00	2.86E-02	5.23E+01	4.09E-01	6.41E+01	4.47E-04
N3TA-1000 (0-6")	9.00E-02	9.00E-02	1.01E+00	1.28E+02	1.15E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.27E+02	6.50E-01	1.56E-03	1.13E+00	1.68E-02	5.23E+01	4.09E-01	6.41E+01	2.62E-04
N3TA-1000-EOT (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
N3TA-1050 (0-6")	9.00E-02	9.00E-02	1.01E+00	1.78E+02	1.60E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.76E+02	9.04E-01	1.56E-03	1.13E+00	2.33E-02	5.23E+01	4.09E-01	6.41E+01	3.64E-04
N3TA-150 (0-6")	9.00E-02	9.00E-02	1.01E+00	1.41E+02	1.27E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.40E+02	7.16E-01	1.56E-03	1.13E+00	1.85E-02	5.23E+01	4.09E-01	6.41E+01	2.88E-04
N3TA-200 (0-6")	9.00E-02	9.00E-02	1.01E+00	1.42E+02	1.28E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.40E+02	7.20E-01	1.56E-03	1.13E+00	1.86E-02	5.23E+01	4.09E-01	6.41E+01	2.90E-04
N3TA-250 (0-6")	9.00E-02	9.00E-02	1.01E+00	1.16E+02	1.04E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.15E+02	5.88E-01	1.56E-03	1.13E+00	1.52E-02	5.23E+01	4.09E-01	6.41E+01	2.37E-04
N3TA-300 (0-6")	9.00E-02	9.00E-02	1.01E+00	1.70E+02	1.53E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.68E+02	8.63E-01	1.56E-03	1.13E+00	2.23E-02	5.23E+01	4.09E-01	6.41E+01	3.48E-04
N3TA-350 (0-6")	9.00E-02	9.00E-02	1.01E+00	8.25E+01	7.43E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	8.17E+01	4.19E-01	1.56E-03	1.13E+00	1.08E-02	5.23E+01	4.09E-01	6.41E+01	1.69E-04
N3TA-400 (0-6")	9.00E-02	9.00E-02	1.01E+00	1.05E+02	9.44E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.04E+02	5.32E-01	1.56E-03	1.13E+00	1.37E-02	5.23E+01	4.09E-01	6.41E+01	2.14E-04
N3TA-450 (0-6")	9.00E-02	9.00E-02	1.01E+00	1.12E+02	1.01E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.11E+02	5.70E-01	1.56E-03	1.13E+00	1.47E-02	5.23E+01	4.09E-01	6.41E+01	2.30E-04
N3TA-50 (0-6")	9.00E-02	9.00E-02	1.01E+00	2.18E+02	1.96E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.16E+02	1.11E+00	1.56E-03	1.13E+00	2.86E-02	5.23E+01	4.09E-01	6.41E+01	4.46E-04
N3TA-500 (0-6")	9.00E-02	9.00E-02	1.01E+00	1.45E+02	1.30E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.43E+02	7.33E-01	1.56E-03	1.13E+00	1.89E-02	5.23E+01	4.09E-01	6.41E+01	2.95E-04
N3TA-550 (0-6")	9.00E-02	9.00E-02	1.01E+00	1.74E+02	1.57E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.73E+02	8.85E-01	1.56E-03	1.13E+00	2.28E-02	5.23E+01	4.09E-01	6.41E+01	3.56E-04

TABLE C-10C: COPPER DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 10 - NUMBER 3 TUNNEL WASTE AREA (Continued)
Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)
calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **1.089**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Red-Tailed Hawk (Carnivorous Birds - Terrestrial)																							
N3TA-600 (0-6")	9.00E-02	9.00E-02	1.01E+00	1.65E+02	1.49E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.64E+02	8.39E-01	1.56E-03	1.13E+00	2.17E-02	5.23E+01	4.09E-01	6.41E+01	3.38E-04
N3TA-650 (0-6")	9.00E-02	9.00E-02	1.01E+00	1.81E+02	1.63E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.80E+02	9.21E-01	1.56E-03	1.13E+00	2.38E-02	5.23E+01	4.09E-01	6.41E+01	3.71E-04
N3TA-700 (0-6")	9.00E-02	9.00E-02	1.01E+00	7.63E+02	6.86E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	7.55E+02	3.87E+00	1.56E-03	1.13E+00	9.99E-02	5.23E+01	4.09E-01	6.41E+01	1.56E-03
N3TA-750 (0-6")	9.00E-02	9.00E-02	1.01E+00	7.34E+02	6.60E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	7.26E+02	3.72E+00	1.56E-03	1.13E+00	9.61E-02	5.23E+01	4.09E-01	6.41E+01	1.50E-03
N3TA-800 (0-6")	9.00E-02	9.00E-02	1.01E+00	6.60E+02	5.94E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	6.53E+02	3.35E+00	1.56E-03	1.13E+00	8.64E-02	5.23E+01	4.09E-01	6.41E+01	1.35E-03
N3TA-850 (0-6")	9.00E-02	9.00E-02	1.01E+00	2.28E+02	2.05E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.26E+02	1.16E+00	1.56E-03	1.13E+00	2.99E-02	5.23E+01	4.09E-01	6.41E+01	4.66E-04
N3TA-900 (0-6")	9.00E-02	9.00E-02	1.01E+00	9.11E+01	8.20E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	9.02E+01	4.62E-01	1.56E-03	1.13E+00	1.19E-02	5.23E+01	4.09E-01	6.41E+01	1.86E-04
N3TA-950 (0-6")	9.00E-02	9.00E-02	1.01E+00	1.99E+02	1.79E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.97E+02	1.01E+00	1.56E-03	1.13E+00	2.60E-02	5.23E+01	4.09E-01	6.41E+01	4.06E-04
N3TA-Comp 1 (0-6")	9.00E-02	9.00E-02	1.01E+00	1.59E+02	1.43E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.57E+02	8.06E-01	1.56E-03	1.13E+00	2.08E-02	5.23E+01	4.09E-01	6.41E+01	3.25E-04
N3TA-Comp 2 (0-6")	9.00E-02	9.00E-02	1.01E+00	2.60E+02	2.34E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.58E+02	1.32E+00	1.56E-03	1.13E+00	3.41E-02	5.23E+01	4.09E-01	6.41E+01	5.32E-04
N3TA-Comp 3 (0-6")	9.00E-02	9.00E-02	1.01E+00	2.83E+02	2.54E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.80E+02	1.43E+00	1.56E-03	1.13E+00	3.70E-02	5.23E+01	4.09E-01	6.41E+01	5.78E-04
N3TA-Det Pond (0-6")	9.00E-02	9.00E-02	1.01E+00	2.19E+02	1.97E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.17E+02	1.11E+00	1.56E-03	1.13E+00	2.87E-02	5.23E+01	4.09E-01	6.41E+01	4.48E-04
N3TA-Pile #1 (0-6")	9.00E-02	9.00E-02	1.01E+00	1.00E+03	9.00E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	9.90E+02	5.08E+00	1.56E-03	1.13E+00	1.31E-01	5.23E+01	4.09E-01	6.41E+01	2.04E-03
N3TA-Pile #2 (0-6")	9.00E-02	9.00E-02	1.01E+00	1.05E+02	9.45E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.04E+02	5.33E-01	1.56E-03	1.13E+00	1.38E-02	5.23E+01	4.09E-01	6.41E+01	2.15E-04
																						Maximum HQ (Tunnel No. 3 Area)	**2.04E-03**
American Kestrel (Insectivorous Birds - Terrestrial)																							
Reference Site																							
SGBG-1 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	3.70E+00	3.43E+02	4.72E+00	7.84E-04	9.25E+01	7.26E-02	4.16E-03	1.24E-01	1.61E-01	5.23E+01	4.09E-01	4.12E+01	3.90E-03
SGBG-201 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	3.70E+00	2.66E+02	3.66E+00	7.84E-04	7.19E+01	5.64E-02	4.16E-03	1.24E-01	1.25E-01	5.23E+01	4.09E-01	4.12E+01	3.03E-03
UBRBG-201 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	3.70E+00	7.40E+02	1.02E+01	7.84E-04	2.00E+02	1.57E-01	4.16E-03	1.24E-01	3.47E-01	5.23E+01	4.09E-01	4.12E+01	8.43E-03
No. 3 Tunnel Waste Area																						**Minimum HQ (Reference Site)**	**3.03E-03**
N3TA fine tail (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	6.06E+02	8.34E+00	7.84E-04	1.25E+02	9.80E-02	4.16E-03	1.24E-01	2.83E-01	5.23E+01	4.09E-01	4.12E+01	6.88E-03
N3TA-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	1.09E+03	1.50E+01	7.84E-04	2.24E+02	1.76E-01	4.16E-03	1.24E-01	5.08E-01	5.23E+01	4.09E-01	4.12E+01	1.23E-02
N3TA-100 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	1.05E+03	1.44E+01	7.84E-04	2.16E+02	1.70E-01	4.16E-03	1.24E-01	4.90E-01	5.23E+01	4.09E-01	4.12E+01	1.19E-02
N3TA-1000 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	6.15E+02	8.46E+00	7.84E-04	1.27E+02	9.94E-02	4.16E-03	1.24E-01	2.87E-01	5.23E+01	4.09E-01	4.12E+01	6.98E-03
N3TA-1000-EOT (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
N3TA-1050 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	8.55E+02	1.18E+01	7.84E-04	1.76E+02	1.38E-01	4.16E-03	1.24E-01	3.99E-01	5.23E+01	4.09E-01	4.12E+01	9.70E-03
N3TA-150 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	6.77E+02	9.32E+00	7.84E-04	1.40E+02	1.10E-01	4.16E-03	1.24E-01	3.17E-01	5.23E+01	4.09E-01	4.12E+01	7.69E-03
N3TA-200 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	6.81E+02	9.37E+00	7.84E-04	1.40E+02	1.10E-01	4.16E-03	1.24E-01	3.18E-01	5.23E+01	4.09E-01	4.12E+01	7.73E-03
N3TA-250 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	5.57E+02	7.66E+00	7.84E-04	1.15E+02	9.00E-02	4.16E-03	1.24E-01	2.60E-01	5.23E+01	4.09E-01	4.12E+01	6.32E-03
N3TA-300 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	8.16E+02	1.12E+01	7.84E-04	1.68E+02	1.32E-01	4.16E-03	1.24E-01	3.81E-01	5.23E+01	4.09E-01	4.12E+01	9.27E-03
N3TA-350 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	3.96E+02	5.45E+00	7.84E-04	8.17E+01	6.41E-02	4.16E-03	1.24E-01	1.85E-01	5.23E+01	4.09E-01	4.12E+01	4.50E-03
N3TA-400 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	5.04E+02	6.93E+00	7.84E-04	1.04E+02	8.14E-02	4.16E-03	1.24E-01	2.35E-01	5.23E+01	4.09E-01	4.12E+01	5.72E-03
N3TA-450 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	5.39E+02	7.42E+00	7.84E-04	1.11E+02	8.72E-02	4.16E-03	1.24E-01	2.52E-01	5.23E+01	4.09E-01	4.12E+01	6.12E-03
N3TA-50 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	1.05E+03	1.44E+01	7.84E-04	2.16E+02	1.70E-01	4.16E-03	1.24E-01	4.90E-01	5.23E+01	4.09E-01	4.12E+01	1.19E-02
N3TA-500 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	6.94E+02	9.55E+00	7.84E-04	1.43E+02	1.12E-01	4.16E-03	1.24E-01	3.24E-01	5.23E+01	4.09E-01	4.12E+01	7.88E-03
N3TA-550 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	8.37E+02	1.15E+01	7.84E-04	1.73E+02	1.35E-01	4.16E-03	1.24E-01	3.91E-01	5.23E+01	4.09E-01	4.12E+01	9.50E-03
N3TA-600 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	7.94E+02	1.09E+01	7.84E-04	1.64E+02	1.28E-01	4.16E-03	1.24E-01	3.71E-01	5.23E+01	4.09E-01	4.12E+01	9.01E-03
N3TA-650 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	8.71E+02	1.20E+01	7.84E-04	1.80E+02	1.41E-01	4.16E-03	1.24E-01	4.07E-01	5.23E+01	4.09E-01	4.12E+01	9.89E-03
N3TA-700 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	3.66E+03	5.04E+01	7.84E-04	7.55E+02	5.92E-01	4.16E-03	1.24E-01	1.71E+00	5.23E+01	4.09E-01	4.12E+01	4.16E-02
N3TA-750 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	3.52E+03	4.85E+01	7.84E-04	7.26E+02	5.70E-01	4.16E-03	1.24E-01	1.65E+00	5.23E+01	4.09E-01	4.12E+01	4.00E-02
N3TA-800 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	3.17E+03	4.36E+01	7.84E-04	6.53E+02	5.12E-01	4.16E-03	1.24E-01	1.48E+00	5.23E+01	4.09E-01	4.12E+01	3.60E-02
N3TA-850 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	1.09E+03	1.51E+01	7.84E-04	2.26E+02	1.77E-01	4.16E-03	1.24E-01	5.11E-01	5.23E+01	4.09E-01	4.12E+01	1.24E-02
N3TA-900 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	4.37E+02	6.02E+00	7.84E-04	9.02E+01	7.07E-02	4.16E-03	1.24E-01	2.04E-01	5.23E+01	4.09E-01	4.12E+01	4.97E-03
N3TA-950 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	9.53E+02	1.31E+01	7.84E-04	1.97E+02	1.54E-01	4.16E-03	1.24E-01	4.46E-01	5.23E+01	4.09E-01	4.12E+01	1.08E-02
N3TA-Comp 1 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	7.63E+02	1.05E+01	7.84E-04	1.57E+02	1.23E-01	4.16E-03	1.24E-01	3.56E-01	5.23E+01	4.09E-01	4.12E+01	8.66E-03
N3TA-Comp 2 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	1.25E+03	1.72E+01	7.84E-04	2.58E+02	2.02E-01	4.16E-03	1.24E-01	5.84E-01	5.23E+01	4.09E-01	4.12E+01	1.42E-02
N3TA-Comp 3 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	1.36E+03	1.87E+01	7.84E-04	2.80E+02	2.19E-01	4.16E-03	1.24E-01	6.34E-01	5.23E+01	4.09E-01	4.12E+01	1.54E-02
N3TA-Det Pond (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	1.05E+03	1.45E+01	7.84E-04	2.17E+02	1.70E-01	4.16E-03	1.24E-01	4.92E-01	5.23E+01	4.09E-01	4.12E+01	1.19E-02
N3TA-Pile #1 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	4.80E+03	6.61E+01	7.84E-04	9.90E+02	7.76E-01	4.16E-03	1.24E-01	2.24E+00	5.23E+01	4.09E-01	4.12E+01	5.45E-02
N3TA-Pile #2 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	5.04E+02	6.94E+00	7.84E-04	1.04E+02	8.16E-02	4.16E-03	1.24E-01	2.36E-01	5.23E+01	4.09E-01	4.12E+01	5.73E-03
																						Maximum HQ (Tunnel No. 3 Area)	**5.45E-02**

TABLE C-10C: COPPER DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 10 - NUMBER 3 TUNNEL WASTE AREA (Continued)
Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)
calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **1.089**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Meadow Vole (Small Herbivorous Mammal - Terrestrial)																							
Reference Site																							
SGBG-1 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	7.79E-01	7.21E+01	3.38E-01	NA	NA	NA	NA	1.13E-04	9.25E+01	1.04E-02	1.00E+00	3.06E-02	1.14E+01	6.32E+02	2.47E-02	6.24E+02	1.83E-02
SGBG-201 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	7.79E-01	5.60E+01	2.62E-01	NA	NA	NA	NA	1.13E-04	7.19E+01	8.09E-03	1.00E+00	3.06E-02	8.84E+00	6.32E+02	2.47E-02	6.24E+02	1.42E-02
UBRBG-201 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	7.79E-01	1.56E+02	7.30E-01	NA	NA	NA	NA	1.13E-04	2.00E+02	2.25E-02	1.00E+00	3.06E-02	2.46E+01	6.32E+02	2.47E-02	6.24E+02	3.94E-02
No. 3 Tunnel Waste Area																						**Minimum HQ (Reference Site)**	**1.42E-02**
N3TA fine tail (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	1.41E+02	6.63E-01	NA	NA	NA	NA	1.13E-04	1.25E+02	1.41E-02	1.00E+00	3.06E-02	2.21E+01	6.32E+02	2.47E-02	6.24E+02	3.55E-02
N3TA-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	2.54E+02	1.19E+00	NA	NA	NA	NA	1.13E-04	2.24E+02	2.52E-02	1.00E+00	3.06E-02	3.97E+01	6.32E+02	2.47E-02	6.24E+02	6.36E-02
N3TA-100 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	2.45E+02	1.15E+00	NA	NA	NA	NA	1.13E-04	2.16E+02	2.44E-02	1.00E+00	3.06E-02	3.83E+01	6.32E+02	2.47E-02	6.24E+02	6.15E-02
N3TA-1000 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	1.43E+02	6.72E-01	NA	NA	NA	NA	1.13E-04	1.27E+02	1.43E-02	1.00E+00	3.06E-02	2.24E+01	6.32E+02	2.47E-02	6.24E+02	3.60E-02
N3TA-1000-EOT (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
N3TA-1050 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	1.99E+02	9.35E-01	NA	NA	NA	NA	1.13E-04	1.76E+02	1.98E-02	1.00E+00	3.06E-02	3.12E+01	6.32E+02	2.47E-02	6.24E+02	5.01E-02
N3TA-150 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	1.58E+02	7.41E-01	NA	NA	NA	NA	1.13E-04	1.40E+02	1.57E-02	1.00E+00	3.06E-02	2.47E+01	6.32E+02	2.47E-02	6.24E+02	3.97E-02
N3TA-200 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	1.59E+02	7.45E-01	NA	NA	NA	NA	1.13E-04	1.40E+02	1.58E-02	1.00E+00	3.06E-02	2.49E+01	6.32E+02	2.47E-02	6.24E+02	3.99E-02
N3TA-250 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	1.30E+02	6.09E-01	NA	NA	NA	NA	1.13E-04	1.15E+02	1.29E-02	1.00E+00	3.06E-02	2.03E+01	6.32E+02	2.47E-02	6.24E+02	3.26E-02
N3TA-300 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	1.90E+02	8.93E-01	NA	NA	NA	NA	1.13E-04	1.68E+02	1.89E-02	1.00E+00	3.06E-02	2.98E+01	6.32E+02	2.47E-02	6.24E+02	4.78E-02
N3TA-350 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	9.25E+01	4.34E-01	NA	NA	NA	NA	1.13E-04	8.17E+01	9.19E-03	1.00E+00	3.06E-02	1.45E+01	6.32E+02	2.47E-02	6.24E+02	2.32E-02
N3TA-400 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	1.18E+02	5.51E-01	NA	NA	NA	NA	1.13E-04	1.04E+02	1.17E-02	1.00E+00	3.06E-02	1.84E+01	6.32E+02	2.47E-02	6.24E+02	2.95E-02
N3TA-450 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	1.26E+02	5.90E-01	NA	NA	NA	NA	1.13E-04	1.11E+02	1.25E-02	1.00E+00	3.06E-02	1.97E+01	6.32E+02	2.47E-02	6.24E+02	3.16E-02
N3TA-50 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	2.45E+02	1.15E+00	NA	NA	NA	NA	1.13E-04	2.16E+02	2.43E-02	1.00E+00	3.06E-02	3.83E+01	6.32E+02	2.47E-02	6.24E+02	6.14E-02
N3TA-500 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	1.62E+02	7.59E-01	NA	NA	NA	NA	1.13E-04	1.43E+02	1.61E-02	1.00E+00	3.06E-02	2.53E+01	6.32E+02	2.47E-02	6.24E+02	4.06E-02
N3TA-550 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	1.95E+02	9.16E-01	NA	NA	NA	NA	1.13E-04	1.73E+02	1.94E-02	1.00E+00	3.06E-02	3.06E+01	6.32E+02	2.47E-02	6.24E+02	4.90E-02
N3TA-600 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	1.85E+02	8.68E-01	NA	NA	NA	NA	1.13E-04	1.64E+02	1.84E-02	1.00E+00	3.06E-02	2.90E+01	6.32E+02	2.47E-02	6.24E+02	4.65E-02
N3TA-650 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	2.03E+02	9.53E-01	NA	NA	NA	NA	1.13E-04	1.80E+02	2.02E-02	1.00E+00	3.06E-02	3.18E+01	6.32E+02	2.47E-02	6.24E+02	5.10E-02
N3TA-700 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	8.54E+02	4.01E+00	NA	NA	NA	NA	1.13E-04	7.55E+02	8.50E-02	1.00E+00	3.06E-02	1.34E+02	6.32E+02	2.47E-02	6.24E+02	2.14E-01
N3TA-750 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	8.22E+02	3.85E+00	NA	NA	NA	NA	1.13E-04	7.26E+02	8.17E-02	1.00E+00	3.06E-02	1.29E+02	6.32E+02	2.47E-02	6.24E+02	2.06E-01
N3TA-800 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	7.39E+02	3.47E+00	NA	NA	NA	NA	1.13E-04	6.53E+02	7.35E-02	1.00E+00	3.06E-02	1.16E+02	6.32E+02	2.47E-02	6.24E+02	1.86E-01
N3TA-850 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	2.55E+02	1.20E+00	NA	NA	NA	NA	1.13E-04	2.26E+02	2.54E-02	1.00E+00	3.06E-02	3.99E+01	6.32E+02	2.47E-02	6.24E+02	6.41E-02
N3TA-900 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	1.02E+02	4.79E-01	NA	NA	NA	NA	1.13E-04	9.02E+01	1.01E-02	1.00E+00	3.06E-02	1.60E+01	6.32E+02	2.47E-02	6.24E+02	2.56E-02
N3TA-950 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	2.22E+02	1.04E+00	NA	NA	NA	NA	1.13E-04	1.97E+02	2.21E-02	1.00E+00	3.06E-02	3.48E+01	6.32E+02	2.47E-02	6.24E+02	5.58E-02
N3TA-Comp 1 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	1.78E+02	8.34E-01	NA	NA	NA	NA	1.13E-04	1.57E+02	1.77E-02	1.00E+00	3.06E-02	2.78E+01	6.32E+02	2.47E-02	6.24E+02	4.47E-02
N3TA-Comp 2 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	2.92E+02	1.37E+00	NA	NA	NA	NA	1.13E-04	2.58E+02	2.90E-02	1.00E+00	3.06E-02	4.56E+01	6.32E+02	2.47E-02	6.24E+02	7.32E-02
N3TA-Comp 3 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	3.17E+02	1.48E+00	NA	NA	NA	NA	1.13E-04	2.80E+02	3.15E-02	1.00E+00	3.06E-02	4.95E+01	6.32E+02	2.47E-02	6.24E+02	7.95E-02
N3TA-Det Pond (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	2.45E+02	1.15E+00	NA	NA	NA	NA	1.13E-04	2.17E+02	2.44E-02	1.00E+00	3.06E-02	3.84E+01	6.32E+02	2.47E-02	6.24E+02	6.16E-02
N3TA-Pile #1 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	1.12E+03	5.25E+00	NA	NA	NA	NA	1.13E-04	9.90E+02	1.11E-01	1.00E+00	3.06E-02	1.75E+02	6.32E+02	2.47E-02	6.24E+02	2.81E-01
N3TA-Pile #2 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	1.18E+02	5.52E-01	NA	NA	NA	NA	1.13E-04	1.04E+02	1.17E-02	1.00E+00	3.06E-02	1.84E+01	6.32E+02	2.47E-02	6.24E+02	2.95E-02
																						Maximum HQ (Tunnel No. 3 Area)	**2.81E-01**
White-Tailed Deer (Large Herbivorous Mammal - Terrestrial)																							
Reference Site																							
SGBG-1 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	7.79E-01	7.21E+01	1.03E+02	NA	NA	NA	NA	2.86E-02	9.25E+01	2.65E+00	6.09E-03	1.35E+02	4.78E-03	6.32E+02	2.47E-02	3.77E+02	1.27E-05
SGBG-201 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	7.79E-01	5.60E+01	8.01E+01	NA	NA	NA	NA	2.86E-02	7.19E+01	2.06E+00	6.09E-03	1.35E+02	3.71E-03	6.32E+02	2.47E-02	3.77E+02	9.84E-06
UBRBG-201 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	7.79E-01	1.56E+02	2.23E+02	NA	NA	NA	NA	2.86E-02	2.00E+02	5.72E+00	6.09E-03	1.35E+02	1.03E-02	6.32E+02	2.47E-02	3.77E+02	2.74E-05
No. 3 Tunnel Waste Area																						**Minimum HQ (Reference Site)**	**9.84E-06**
N3TA fine tail (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	1.41E+02	2.02E+02	NA	NA	NA	NA	2.86E-02	1.25E+02	3.58E+00	6.09E-03	1.35E+02	9.29E-03	6.32E+02	2.47E-02	3.77E+02	2.47E-05
N3TA-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	2.54E+02	3.63E+02	NA	NA	NA	NA	2.86E-02	2.24E+02	6.42E+00	6.09E-03	1.35E+02	1.67E-02	6.32E+02	2.47E-02	3.77E+02	4.42E-05
N3TA-100 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	2.45E+02	3.51E+02	NA	NA	NA	NA	2.86E-02	2.16E+02	6.20E+00	6.09E-03	1.35E+02	1.61E-02	6.32E+02	2.47E-02	3.77E+02	4.27E-05
N3TA-1000 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	1.43E+02	2.05E+02	NA	NA	NA	NA	2.86E-02	1.27E+02	3.63E+00	6.09E-03	1.35E+02	9.43E-03	6.32E+02	2.47E-02	3.77E+02	2.50E-05
N3TA-1000-EOT (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
N3TA-1050 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	1.99E+02	2.86E+02	NA	NA	NA	NA	2.86E-02	1.76E+02	5.05E+00	6.09E-03	1.35E+02	1.31E-02	6.32E+02	2.47E-02	3.77E+02	3.48E-05
N3TA-150 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	1.58E+02	2.26E+02	NA	NA	NA	NA	2.86E-02	1.40E+02	4.00E+00	6.09E-03	1.35E+02	1.04E-02	6.32E+02	2.47E-02	3.77E+02	2.76E-05
N3TA-200 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	1.59E+02	2.27E+02	NA	NA	NA	NA	2.86E-02	1.40E+02	4.02E+00	6.09E-03	1.35E+02	1.04E-02	6.32E+02	2.47E-02	3.77E+02	2.77E-05
N3TA-250 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	1.30E+02	1.86E+02	NA	NA	NA	NA	2.86E-02	1.15E+02	3.29E+00	6.09E-03	1.35E+02	8.54E-03	6.32E+02	2.47E-02	3.77E+02	2.27E-05
N3TA-300 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	1.90E+02	2.73E+02	NA	NA	NA	NA	2.86E-02	1.68E+02	4.82E+00	6.09E-03	1.35E+02	1.25E-02	6.32E+02	2.47E-02	3.77E+02	3.32E-05
N3TA-350 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	9.25E+01	1.32E+02	NA	NA	NA	NA	2.86E-02	8.17E+01	2.34E+00	6.09E-03	1.35E+02	6.08E-03	6.32E+02	2.47E-02	3.77E+02	1.61E-05
N3TA-400 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	1.18E+02	1.68E+02	NA	NA	NA	NA	2.86E-02	1.04E+02	2.97E+00	6.09E-03	1.35E+02	7.73E-03	6.32E+02	2.47E-02	3.77E+02	2.05E-05
N3TA-450 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	1.26E+02	1.80E+02	NA	NA	NA	NA	2.86E-02	1.11E+02	3.18E+00	6.09E-03	1.35E+02	8.28E-03	6.32E+02	2.47E-02	3.77E+02	2.20E-05
N3TA-50 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	2.45E+02	3.50E+02	NA	NA	NA	NA	2.86E-02	2.16E+02	6.19E+00	6.09E-03	1.35E+02	1.61E-02	6.32E+02	2.47E-02	3.77E+02	4.27E-05
N3TA-500 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	1.62E+02	2.32E+02	NA	NA	NA	NA	2.86E-02	1.43E+02	4.10E+00	6.09E-03	1.35E+02	1.06E-02	6.32E+02	2.47E-02	3.77E+02	2.82E-05
N3TA-550 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	1.95E+02	2.80E+02	NA	NA	NA	NA	2.86E-02	1.73E+02	4.94E+00	6.09E-03	1.35E+02	1.28E-02	6.32E+02	2.47E-02	3.77E+02	3.41E-05

TABLE C-10C: COPPER DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 10 - NUMBER 3 TUNNEL WASTE AREA (Continued)
Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)
calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **1.089**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
White-Tailed Deer (Large Herbivorous Mammal - Terrestrial)																							
N3TA-600 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	1.85E+02	2.65E+02	NA	NA	NA	NA	2.86E-02	1.64E+02	4.68E+00	6.09E-03	1.35E+02	1.22E-02	6.32E+02	2.47E-02	3.77E+02	3.23E-05
N3TA-650 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	2.03E+02	2.91E+02	NA	NA	NA	NA	2.86E-02	1.80E+02	5.14E+00	6.09E-03	1.35E+02	1.34E-02	6.32E+02	2.47E-02	3.77E+02	3.55E-05
N3TA-700 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	8.54E+02	1.22E+03	NA	NA	NA	NA	2.86E-02	7.55E+02	2.16E+01	6.09E-03	1.35E+02	5.62E-02	6.32E+02	2.47E-02	3.77E+02	1.49E-04
N3TA-750 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	8.22E+02	1.18E+03	NA	NA	NA	NA	2.86E-02	7.26E+02	2.08E+01	6.09E-03	1.35E+02	5.40E-02	6.32E+02	2.47E-02	3.77E+02	1.43E-04
N3TA-800 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	7.39E+02	1.06E+03	NA	NA	NA	NA	2.86E-02	6.53E+02	1.87E+01	6.09E-03	1.35E+02	4.86E-02	6.32E+02	2.47E-02	3.77E+02	1.29E-04
N3TA-850 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	2.55E+02	3.65E+02	NA	NA	NA	NA	2.86E-02	2.26E+02	6.46E+00	6.09E-03	1.35E+02	1.68E-02	6.32E+02	2.47E-02	3.77E+02	4.45E-05
N3TA-900 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	1.02E+02	1.46E+02	NA	NA	NA	NA	2.86E-02	9.02E+01	2.58E+00	6.09E-03	1.35E+02	6.71E-03	6.32E+02	2.47E-02	3.77E+02	1.78E-05
N3TA-950 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	2.22E+02	3.18E+02	NA	NA	NA	NA	2.86E-02	1.97E+02	5.63E+00	6.09E-03	1.35E+02	1.46E-02	6.32E+02	2.47E-02	3.77E+02	3.88E-05
N3TA-Comp 1 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	1.78E+02	2.55E+02	NA	NA	NA	NA	2.86E-02	1.57E+02	4.50E+00	6.09E-03	1.35E+02	1.17E-02	6.32E+02	2.47E-02	3.77E+02	3.10E-05
N3TA-Comp 2 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	2.92E+02	4.18E+02	NA	NA	NA	NA	2.86E-02	2.58E+02	7.38E+00	6.09E-03	1.35E+02	1.92E-02	6.32E+02	2.47E-02	3.77E+02	5.09E-05
N3TA-Comp 3 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	3.17E+02	4.53E+02	NA	NA	NA	NA	2.86E-02	2.80E+02	8.01E+00	6.09E-03	1.35E+02	2.08E-02	6.32E+02	2.47E-02	3.77E+02	5.52E-05
N3TA-Det Pond (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	2.45E+02	3.51E+02	NA	NA	NA	NA	2.86E-02	2.17E+02	6.21E+00	6.09E-03	1.35E+02	1.61E-02	6.32E+02	2.47E-02	3.77E+02	4.28E-05
N3TA-Pile #1 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	1.12E+03	1.60E+03	NA	NA	NA	NA	2.86E-02	9.90E+02	2.83E+01	6.09E-03	1.35E+02	7.36E-02	6.32E+02	2.47E-02	3.77E+02	1.95E-04
N3TA-Pile #2 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	1.18E+02	1.68E+02	NA	NA	NA	NA	2.86E-02	1.04E+02	2.98E+00	6.09E-03	1.35E+02	7.74E-03	6.32E+02	2.47E-02	3.77E+02	2.05E-05
																						Maximum HQ (Tunnel No. 3 Area)	**1.95E-04**
Red Fox (Carnivorous Mammal - Terrestrial)																							
Reference Site																							
SGBG-1 (0-6")	1.72E-01	1.72E-01	6.61E-01	6.11E+01	1.05E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	9.25E+01	4.44E-01	8.05E-04	4.54E+00	1.94E-03	6.32E+02	2.47E-02	4.62E+02	4.20E-06
SGBG-201 (0-6")	1.72E-01	1.72E-01	6.61E-01	4.75E+01	8.15E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	7.19E+01	3.45E-01	8.05E-04	4.54E+00	1.51E-03	6.32E+02	2.47E-02	4.62E+02	3.26E-06
UBRBG-201 (0-6")	1.72E-01	1.72E-01	6.61E-01	1.32E+02	2.27E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.00E+02	9.60E-01	8.05E-04	4.54E+00	4.19E-03	6.32E+02	2.47E-02	4.62E+02	9.07E-06
No. 3 Tunnel Waste Area																						**Minimum HQ (Reference Site)**	**3.26E-06**
N3TA fine tail (0-6")	1.72E-01	1.72E-01	1.01E+00	1.26E+02	2.16E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.25E+02	6.00E-01	8.05E-04	4.54E+00	3.95E-03	6.32E+02	2.47E-02	4.62E+02	8.54E-06
N3TA-0 (0-6")	1.72E-01	1.72E-01	1.01E+00	2.26E+02	3.88E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.24E+02	1.08E+00	8.05E-04	4.54E+00	7.08E-03	6.32E+02	2.47E-02	4.62E+02	1.53E-05
N3TA-100 (0-6")	1.72E-01	1.72E-01	1.01E+00	2.19E+02	3.75E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.16E+02	1.04E+00	8.05E-04	4.54E+00	6.84E-03	6.32E+02	2.47E-02	4.62E+02	1.48E-05
N3TA-1000 (0-6")	1.72E-01	1.72E-01	1.01E+00	1.28E+02	2.20E+01	NA	NA	NA	1.27E+02	NA	NA	NA	NA	4.80E-03	1.27E+02	6.09E-01	8.05E-04	4.54E+00	4.00E-03	6.32E+02	2.47E-02	4.62E+02	8.67E-06
N3TA-1000-EOT (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
N3TA-1050 (0-6")	1.72E-01	1.72E-01	1.01E+00	1.78E+02	3.05E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.76E+02	8.47E-01	8.05E-04	4.54E+00	5.57E-03	6.32E+02	2.47E-02	4.62E+02	1.21E-05
N3TA-150 (0-6")	1.72E-01	1.72E-01	1.01E+00	1.41E+02	2.42E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.40E+02	6.71E-01	8.05E-04	4.54E+00	4.41E-03	6.32E+02	2.47E-02	4.62E+02	9.55E-06
N3TA-200 (0-6")	1.72E-01	1.72E-01	1.01E+00	1.42E+02	2.43E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.40E+02	6.75E-01	8.05E-04	4.54E+00	4.44E-03	6.32E+02	2.47E-02	4.62E+02	9.60E-06
N3TA-250 (0-6")	1.72E-01	1.72E-01	1.01E+00	1.16E+02	1.99E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.15E+02	5.51E-01	8.05E-04	4.54E+00	3.63E-03	6.32E+02	2.47E-02	4.62E+02	7.85E-06
N3TA-300 (0-6")	1.72E-01	1.72E-01	1.01E+00	1.70E+02	2.92E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.68E+02	8.08E-01	8.05E-04	4.54E+00	5.32E-03	6.32E+02	2.47E-02	4.62E+02	1.15E-05
N3TA-350 (0-6")	1.72E-01	1.72E-01	1.01E+00	8.25E+01	1.42E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	8.17E+01	3.92E-01	8.05E-04	4.54E+00	2.58E-03	6.32E+02	2.47E-02	4.62E+02	5.59E-06
N3TA-400 (0-6")	1.72E-01	1.72E-01	1.01E+00	1.05E+02	1.80E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.04E+02	4.99E-01	8.05E-04	4.54E+00	3.28E-03	6.32E+02	2.47E-02	4.62E+02	7.10E-06
N3TA-450 (0-6")	1.72E-01	1.72E-01	1.01E+00	1.12E+02	1.93E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.11E+02	5.34E-01	8.05E-04	4.54E+00	3.51E-03	6.32E+02	2.47E-02	4.62E+02	7.61E-06
N3TA-50 (0-6")	1.72E-01	1.72E-01	1.01E+00	2.18E+02	3.75E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.16E+02	1.04E+00	8.05E-04	4.54E+00	6.83E-03	6.32E+02	2.47E-02	4.62E+02	1.48E-05
N3TA-500 (0-6")	1.72E-01	1.72E-01	1.01E+00	1.45E+02	2.48E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.43E+02	6.87E-01	8.05E-04	4.54E+00	4.52E-03	6.32E+02	2.47E-02	4.62E+02	9.78E-06
N3TA-550 (0-6")	1.72E-01	1.72E-01	1.01E+00	1.74E+02	2.99E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.73E+02	8.29E-01	8.05E-04	4.54E+00	5.45E-03	6.32E+02	2.47E-02	4.62E+02	1.18E-05
N3TA-600 (0-6")	1.72E-01	1.72E-01	1.01E+00	1.65E+02	2.84E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.64E+02	7.86E-01	8.05E-04	4.54E+00	5.17E-03	6.32E+02	2.47E-02	4.62E+02	1.12E-05
N3TA-650 (0-6")	1.72E-01	1.72E-01	1.01E+00	1.81E+02	3.11E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.80E+02	8.63E-01	8.05E-04	4.54E+00	5.67E-03	6.32E+02	2.47E-02	4.62E+02	1.23E-05
N3TA-700 (0-6")	1.72E-01	1.72E-01	1.01E+00	7.63E+02	1.31E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	7.55E+02	3.63E+00	8.05E-04	4.54E+00	2.39E-02	6.32E+02	2.47E-02	4.62E+02	5.16E-05
N3TA-750 (0-6")	1.72E-01	1.72E-01	1.01E+00	7.34E+02	1.26E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	7.26E+02	3.49E+00	8.05E-04	4.54E+00	2.29E-02	6.32E+02	2.47E-02	4.62E+02	4.97E-05
N3TA-800 (0-6")	1.72E-01	1.72E-01	1.01E+00	6.60E+02	1.13E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	6.53E+02	3.14E+00	8.05E-04	4.54E+00	2.06E-02	6.32E+02	2.47E-02	4.62E+02	4.47E-05
N3TA-850 (0-6")	1.72E-01	1.72E-01	1.01E+00	2.28E+02	3.91E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.26E+02	1.08E+00	8.05E-04	4.54E+00	7.13E-03	6.32E+02	2.47E-02	4.62E+02	1.54E-05
N3TA-900 (0-6")	1.72E-01	1.72E-01	1.01E+00	9.11E+01	1.56E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	9.02E+01	4.33E-01	8.05E-04	4.54E+00	2.85E-03	6.32E+02	2.47E-02	4.62E+02	6.17E-06
N3TA-950 (0-6")	1.72E-01	1.72E-01	1.01E+00	1.99E+02	3.41E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.97E+02	9.44E-01	8.05E-04	4.54E+00	6.21E-03	6.32E+02	2.47E-02	4.62E+02	1.34E-05
N3TA-Comp 1 (0-6")	1.72E-01	1.72E-01	1.01E+00	1.59E+02	2.73E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.57E+02	7.55E-01	8.05E-04	4.54E+00	4.97E-03	6.32E+02	2.47E-02	4.62E+02	1.08E-05
N3TA-Comp 2 (0-6")	1.72E-01	1.72E-01	1.01E+00	2.60E+02	4.47E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.58E+02	1.24E+00	8.05E-04	4.54E+00	8.14E-03	6.32E+02	2.47E-02	4.62E+02	1.76E-05
N3TA-Comp 3 (0-6")	1.72E-01	1.72E-01	1.01E+00	2.83E+02	4.85E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.80E+02	1.34E+00	8.05E-04	4.54E+00	8.84E-03	6.32E+02	2.47E-02	4.62E+02	1.91E-05
N3TA-Det Pond (0-6")	1.72E-01	1.72E-01	1.01E+00	2.19E+02	3.76E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.17E+02	1.04E+00	8.05E-04	4.54E+00	6.85E-03	6.32E+02	2.47E-02	4.62E+02	1.48E-05
N3TA-Pile #1 (0-6")	1.72E-01	1.72E-01	1.01E+00	1.00E+03	1.72E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	9.90E+02	4.75E+00	8.05E-04	4.54E+00	3.13E-02	6.32E+02	2.47E-02	4.62E+02	6.77E-05
N3TA-Pile #2 (0-6")	1.72E-01	1.72E-01	1.01E+00	1.05E+02	1.80E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.04E+02	4.99E-01	8.05E-04	4.54E+00	3.28E-03	6.32E+02	2.47E-02	4.62E+02	7.11E-06
																						Maximum HQ (Tunnel No. 3 Area)	**6.77E-05**

TABLE C-10C: COPPER DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 10 - NUMBER 3 TUNNEL WASTE AREA (Continued)
Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)
calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **1.089**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Masked Shrew (Omnivorous Mammal - Terrestrial, Wetland)																							
Reference Site																							
SGBG-1 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	3.70E+00	3.43E+02	2.90E+00	1.10E-03	9.25E+01	1.02E-01	1.00E+00	5.50E-03	5.46E+02	6.32E+02	2.47E-02	6.91E+02	7.90E-01
SGBG-201 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	3.70E+00	2.66E+02	2.25E+00	1.10E-03	7.19E+01	7.91E-02	1.00E+00	5.50E-03	4.24E+02	6.32E+02	2.47E-02	6.91E+02	6.14E-01
UBRBG-201 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	3.70E+00	7.40E+02	6.27E+00	1.10E-03	2.00E+02	2.20E-01	1.00E+00	5.50E-03	1.18E+03	6.32E+02	2.47E-02	6.91E+02	1.71E+00
No. 3 Tunnel Waste Area																						**Minimum HQ (Reference Site)**	**6.14E-01**
N3TA fine tail (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	6.06E+02	5.13E+00	1.10E-03	1.25E+02	1.38E-01	1.00E+00	5.50E-03	9.58E+02	6.32E+02	2.47E-02	6.91E+02	1.39E+00
N3TA-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	1.09E+03	9.21E+00	1.10E-03	2.24E+02	2.47E-01	1.00E+00	5.50E-03	1.72E+03	6.32E+02	2.47E-02	6.91E+02	2.49E+00
N3TA-100 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	1.05E+03	8.89E+00	1.10E-03	2.16E+02	2.38E-01	1.00E+00	5.50E-03	1.66E+03	6.32E+02	2.47E-02	6.91E+02	2.40E+00
N3TA-1000 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	6.15E+02	5.21E+00	1.10E-03	1.27E+02	1.40E-01	1.00E+00	5.50E-03	9.72E+02	6.32E+02	2.47E-02	6.91E+02	1.41E+00
N3TA-1000-EOT (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
N3TA-1050 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	8.55E+02	7.24E+00	1.10E-03	1.76E+02	1.94E-01	1.00E+00	5.50E-03	1.35E+03	6.32E+02	2.47E-02	6.91E+02	1.96E+00
N3TA-150 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	6.77E+02	5.74E+00	1.10E-03	1.40E+02	1.54E-01	1.00E+00	5.50E-03	1.07E+03	6.32E+02	2.47E-02	6.91E+02	1.55E+00
N3TA-200 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	6.81E+02	5.77E+00	1.10E-03	1.40E+02	1.55E-01	1.00E+00	5.50E-03	1.08E+03	6.32E+02	2.47E-02	6.91E+02	1.56E+00
N3TA-250 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	5.57E+02	4.71E+00	1.10E-03	1.15E+02	1.26E-01	1.00E+00	5.50E-03	8.80E+02	6.32E+02	2.47E-02	6.91E+02	1.27E+00
N3TA-300 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	8.16E+02	6.91E+00	1.10E-03	1.68E+02	1.85E-01	1.00E+00	5.50E-03	1.29E+03	6.32E+02	2.47E-02	6.91E+02	1.87E+00
N3TA-350 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	3.96E+02	3.36E+00	1.10E-03	8.17E+01	9.00E-02	1.00E+00	5.50E-03	6.27E+02	6.32E+02	2.47E-02	6.91E+02	9.07E-01
N3TA-400 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	5.04E+02	4.27E+00	1.10E-03	1.04E+02	1.14E-01	1.00E+00	5.50E-03	7.96E+02	6.32E+02	2.47E-02	6.91E+02	1.15E+00
N3TA-450 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	5.39E+02	4.57E+00	1.10E-03	1.11E+02	1.22E-01	1.00E+00	5.50E-03	8.53E+02	6.32E+02	2.47E-02	6.91E+02	1.23E+00
N3TA-50 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	1.05E+03	8.88E+00	1.10E-03	2.16E+02	2.38E-01	1.00E+00	5.50E-03	1.66E+03	6.32E+02	2.47E-02	6.91E+02	2.40E+00
N3TA-500 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	6.94E+02	5.88E+00	1.10E-03	1.43E+02	1.57E-01	1.00E+00	5.50E-03	1.10E+03	6.32E+02	2.47E-02	6.91E+02	1.59E+00
N3TA-550 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	8.37E+02	7.09E+00	1.10E-03	1.73E+02	1.90E-01	1.00E+00	5.50E-03	1.32E+03	6.32E+02	2.47E-02	6.91E+02	1.92E+00
N3TA-600 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	7.94E+02	6.72E+00	1.10E-03	1.64E+02	1.80E-01	1.00E+00	5.50E-03	1.25E+03	6.32E+02	2.47E-02	6.91E+02	1.82E+00
N3TA-650 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	8.71E+02	7.38E+00	1.10E-03	1.80E+02	1.98E-01	1.00E+00	5.50E-03	1.38E+03	6.32E+02	2.47E-02	6.91E+02	1.99E+00
N3TA-700 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	3.66E+03	3.10E+01	1.10E-03	7.55E+02	8.31E-01	1.00E+00	5.50E-03	5.79E+03	6.32E+02	2.47E-02	6.91E+02	8.38E+00
N3TA-750 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	3.52E+03	2.98E+01	1.10E-03	7.26E+02	8.00E-01	1.00E+00	5.50E-03	5.57E+03	6.32E+02	2.47E-02	6.91E+02	8.06E+00
N3TA-800 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	3.17E+03	2.68E+01	1.10E-03	6.53E+02	7.19E-01	1.00E+00	5.50E-03	5.01E+03	6.32E+02	2.47E-02	6.91E+02	7.25E+00
N3TA-850 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	1.09E+03	9.27E+00	1.10E-03	2.26E+02	2.48E-01	1.00E+00	5.50E-03	1.73E+03	6.32E+02	2.47E-02	6.91E+02	2.50E+00
N3TA-900 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	4.37E+02	3.70E+00	1.10E-03	9.02E+01	9.93E-02	1.00E+00	5.50E-03	6.92E+02	6.32E+02	2.47E-02	6.91E+02	1.00E+00
N3TA-950 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	9.53E+02	8.08E+00	1.10E-03	1.97E+02	2.16E-01	1.00E+00	5.50E-03	1.51E+03	6.32E+02	2.47E-02	6.91E+02	2.18E+00
N3TA-Comp 1 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	7.63E+02	6.46E+00	1.10E-03	1.57E+02	1.73E-01	1.00E+00	5.50E-03	1.21E+03	6.32E+02	2.47E-02	6.91E+02	1.75E+00
N3TA-Comp 2 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	1.25E+03	1.06E+01	1.10E-03	2.58E+02	2.84E-01	1.00E+00	5.50E-03	1.98E+03	6.32E+02	2.47E-02	6.91E+02	2.86E+00
N3TA-Comp 3 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	1.36E+03	1.15E+01	1.10E-03	2.80E+02	3.08E-01	1.00E+00	5.50E-03	2.15E+03	6.32E+02	2.47E-02	6.91E+02	3.10E+00
N3TA-Det Pond (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	1.05E+03	8.91E+00	1.10E-03	2.17E+02	2.39E-01	1.00E+00	5.50E-03	1.66E+03	6.32E+02	2.47E-02	6.91E+02	2.41E+00
N3TA-Pile #1 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	4.80E+03	4.07E+01	1.10E-03	9.90E+02	1.09E+00	1.00E+00	5.50E-03	7.59E+03	6.32E+02	2.47E-02	6.91E+02	1.10E+01
N3TA-Pile #2 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	5.04E+02	4.27E+00	1.10E-03	1.04E+02	1.14E-01	1.00E+00	5.50E-03	7.97E+02	6.32E+02	2.47E-02	6.91E+02	1.15E+00
																						Maximum HQ (Tunnel No. 3 Area)	**1.10E+01**

Notes

1 See Tables A-1 through A-13 for ingestion rates, foraging ranges used to calculate the SUF, and body weights.
2 BAFs were calculated by dividing site-collected tissue by collocated soil concentrations (BAFs are in dry weight). The maximum BAF calculated from the Beartrap Creek and Blackfoot River transects was used for site dose calculations. The maximum BAF from the terrestrial reference site was used for reference site dose calculations.
3 The mammal, plant, and invertebrate concentrations were calculated by multiplying the soil concentration by the BAF to generate a tissue concentration (see note 2).
4 Mammal, plant, and invertebrate daily doses were calculated by multiplying the ingestion rate (see note 1) by the tissue concentration (see note 3).
5 Soil concentration from 0 to 6 inches below ground surface at point ID as measured by XRF 10. Doses were not calculated for detected and non-detected soil concentrations measured below the minimum reference site concentration, as indicated by BB. For results that were measured at less than the detection limit, doses were calculated using half of the detection limit.
6 Soil daily dose was calculated by multiplying the soil ingestion rate (see note 1) by soil concentration (see note 5).
7 Total daily dose is calculated using the following equation: total daily dose = ([mammal daily dose (if applicable) + plant daily dose (if applicable) + invertebrate daily dose (if applicable) + soil daily dose]*SUF)/receptor species body weight.
8 The TRVs used in this risk assessment represent a mid-range effects level. The derivation of TRVs is described in Navy (1998).
9 Allometrically adjusted TRVs for birds were calculated using the following equation: receptor species TRV = (test species TRV) x (test species body weight / receptor species body weight)$^{(1-1.2)}$.
10 Allometrically adjusted TRVs for mammals were calculated using the following equation: receptor species TRV = (test species TRV) x (test species body weight / receptor species body weight)$^{(1-0.94)}$.
11 HQs were calculated using the following equation: HQ = total daily dose/allometrically adjusted TRV.
12 Highlighted cells indicate an HQ greater than 1.0.

BAF	Bioaccumulation Factor	mg/day	Milligram per day
BB	Below minimum background reference site concentration	mg/kg	Milligram per kilogram
EE/CA	Engineering Evaluation/Cost Analysis	NA	Not applicable
EU	Exposure Unit	Navy	Department of the Navy
HQ	Hazard quotient	SUF	Site use factor
ID	Identification	TRV	Toxicity reference value
kg	Kilogram	XRF	X-ray fluorescence
kg/day	Kilogram per day	XRF 10	XRF measurements recorded following drying and seiving through a #10-mesh screen

Sources: Department of the Navy. 1998. "Development of Toxicity Reference Values for Conducting Ecological Risk Assessments at Naval Facilities in California, Interim Final." Prepared by Naval Facilities Engineering Command, Engineering Field Activity West (EFA West). San Bruno, California.

TABLE C-10D: LEAD DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 10 - NUMBER 3 TUNNEL WASTE AREA
Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)
calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **1.089**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Mourning Dove (Herbivorous Birds - Terrestrial)																							
Reference Site																							
SGBG-1 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	4.35E-02	5.00E+00	2.88E-02	NA	NA	NA	NA	5.36E-04	1.15E+02	6.17E-02	4.20E-03	1.09E-01	3.49E-03	8.75E+00	8.00E-01	5.88E+00	5.93E-04
SGBG-201 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	4.35E-02	2.70E+00	1.56E-02	NA	NA	NA	NA	5.36E-04	6.22E+01	3.33E-02	4.20E-03	1.09E-01	1.88E-03	8.75E+00	8.00E-01	5.88E+00	3.21E-04
UBRBG-201 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	4.35E-02	1.34E+01	7.70E-02	NA	NA	NA	NA	5.36E-04	3.08E+02	1.65E-01	4.20E-03	1.09E-01	9.32E-03	8.75E+00	8.00E-01	5.88E+00	1.59E-03
No. 3 Tunnel Waste Area																						**Minimum HQ (Reference Site)**	**3.21E-04**
N3TA fine tail (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	2.42E+02	1.40E+00	NA	NA	NA	NA	5.36E-04	3.86E+02	2.07E-01	4.20E-03	1.09E-01	6.18E-02	8.75E+00	8.00E-01	5.88E+00	1.05E-02
N3TA-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	4.45E+01	2.56E-01	NA	NA	NA	NA	5.36E-04	7.08E+01	3.79E-02	4.20E-03	1.09E-01	1.13E-02	8.75E+00	8.00E-01	5.88E+00	1.93E-03
N3TA-100 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
N3TA-1000 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	2.30E+02	1.33E+00	NA	NA	NA	NA	5.36E-04	3.67E+02	1.97E-01	4.20E-03	1.09E-01	5.87E-02	8.75E+00	8.00E-01	5.88E+00	9.99E-03
N3TA-1000-EOT (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	6.41E+01	3.69E-01	NA	NA	NA	NA	5.36E-04	1.02E+02	5.47E-02	4.20E-03	1.09E-01	1.63E-02	8.75E+00	8.00E-01	5.88E+00	2.78E-03
N3TA-1050 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	1.65E+02	9.48E-01	NA	NA	NA	NA	5.36E-04	2.62E+02	1.40E-01	4.20E-03	1.09E-01	4.19E-02	8.75E+00	8.00E-01	5.88E+00	7.13E-03
N3TA-150 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
N3TA-200 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	6.81E+01	BB	BB	BB	BB	BB	BB	BB	BB
N3TA-250 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	7.31E+01	4.21E-01	NA	NA	NA	NA	5.36E-04	1.16E+02	6.23E-02	4.20E-03	1.09E-01	1.86E-02	8.75E+00	8.00E-01	5.88E+00	3.17E-03
N3TA-300 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	5.26E+01	3.03E-01	NA	NA	NA	NA	5.36E-04	8.37E+01	4.48E-02	4.20E-03	1.09E-01	1.34E-02	8.75E+00	8.00E-01	5.88E+00	2.28E-03
N3TA-350 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
N3TA-400 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	3.94E+01	2.27E-01	NA	NA	NA	NA	5.36E-04	6.28E+01	3.36E-02	4.20E-03	1.09E-01	1.00E-02	8.75E+00	8.00E-01	5.88E+00	1.71E-03
N3TA-450 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	5.35E+01	3.08E-01	NA	NA	NA	NA	5.36E-04	8.51E+01	4.56E-02	4.20E-03	1.09E-01	1.36E-02	8.75E+00	8.00E-01	5.88E+00	2.32E-03
N3TA-50 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	4.94E+01	2.84E-01	NA	NA	NA	NA	5.36E-04	7.86E+01	4.21E-02	4.20E-03	1.09E-01	1.26E-02	8.75E+00	8.00E-01	5.88E+00	2.14E-03
N3TA-500 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	6.48E+01	3.74E-01	NA	NA	NA	NA	5.36E-04	1.03E+02	5.53E-02	4.20E-03	1.09E-01	1.65E-02	8.75E+00	8.00E-01	5.88E+00	2.81E-03
N3TA-550 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	6.78E+01	3.91E-01	NA	NA	NA	NA	5.36E-04	1.08E+02	5.79E-02	4.20E-03	1.09E-01	1.73E-02	8.75E+00	8.00E-01	5.88E+00	2.94E-03
N3TA-600 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	8.66E+01	4.99E-01	NA	NA	NA	NA	5.36E-04	1.38E+02	7.39E-02	4.20E-03	1.09E-01	2.21E-02	8.75E+00	8.00E-01	5.88E+00	3.75E-03
N3TA-650 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	5.95E+01	3.43E-01	NA	NA	NA	NA	5.36E-04	9.47E+01	5.07E-02	4.20E-03	1.09E-01	1.51E-02	8.75E+00	8.00E-01	5.88E+00	2.58E-03
N3TA-700 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	2.01E+02	1.16E+00	NA	NA	NA	NA	5.36E-04	3.20E+02	1.72E-01	4.20E-03	1.09E-01	5.12E-02	8.75E+00	8.00E-01	5.88E+00	8.72E-03
N3TA-750 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	1.42E+02	8.17E-01	NA	NA	NA	NA	5.36E-04	2.26E+02	1.21E-01	4.20E-03	1.09E-01	3.61E-02	8.75E+00	8.00E-01	5.88E+00	6.15E-03
N3TA-800 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	8.00E+01	4.61E-01	NA	NA	NA	NA	5.36E-04	1.27E+02	6.82E-02	4.20E-03	1.09E-01	2.04E-02	8.75E+00	8.00E-01	5.88E+00	3.47E-03
N3TA-850 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	7.94E+01	4.57E-01	NA	NA	NA	NA	5.36E-04	1.26E+02	6.77E-02	4.20E-03	1.09E-01	2.02E-02	8.75E+00	8.00E-01	5.88E+00	3.44E-03
N3TA-900 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	1.05E+02	6.07E-01	NA	NA	NA	NA	5.36E-04	1.68E+02	8.99E-02	4.20E-03	1.09E-01	2.69E-02	8.75E+00	8.00E-01	5.88E+00	4.57E-03
N3TA-950 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	1.43E+02	8.24E-01	NA	NA	NA	NA	5.36E-04	2.28E+02	1.22E-01	4.20E-03	1.09E-01	3.64E-02	8.75E+00	8.00E-01	5.88E+00	6.20E-03
N3TA-Comp 1 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
N3TA-Comp 2 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	7.40E+01	4.27E-01	NA	NA	NA	NA	5.36E-04	1.18E+02	6.32E-02	4.20E-03	1.09E-01	1.89E-02	8.75E+00	8.00E-01	5.88E+00	3.21E-03
N3TA-Comp 3 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	5.11E+02	2.95E+00	NA	NA	NA	NA	5.36E-04	8.14E+02	4.36E-01	4.20E-03	1.09E-01	1.30E-01	8.75E+00	8.00E-01	5.88E+00	2.22E-02
N3TA-Det Pond (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
N3TA-Pile #1 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	1.04E+02	5.97E-01	NA	NA	NA	NA	5.36E-04	1.65E+02	8.84E-02	4.20E-03	1.09E-01	2.64E-02	8.75E+00	8.00E-01	5.88E+00	4.49E-03
N3TA-Pile #2 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	7.90E+01	4.55E-01	NA	NA	NA	NA	5.36E-04	1.26E+02	6.74E-02	4.20E-03	1.09E-01	2.01E-02	8.75E+00	8.00E-01	5.88E+00	3.42E-03
																						Maximum HQ (Tunnel No. 3 Area)	**2.22E-02**
Red-Tailed Hawk (Carnivorous Birds - Terrestrial)																							
Reference Site																							
SGBG-1 (0-6")	9.00E-02	9.00E-02	7.62E-02	8.78E+00	7.89E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.15E+02	5.90E-01	1.56E-03	1.13E+00	1.90E-03	8.75E+00	8.00E-01	9.38E+00	2.03E-04
SGBG-201 (0-6")	9.00E-02	9.00E-02	7.62E-02	4.74E+00	4.26E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	6.22E+01	3.19E-01	1.56E-03	1.13E+00	1.03E-03	8.75E+00	8.00E-01	9.38E+00	1.10E-04
UBRBG-201 (0-6")	9.00E-02	9.00E-02	7.62E-02	2.35E+01	2.11E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.08E+02	1.58E+00	1.56E-03	1.13E+00	5.08E-03	8.75E+00	8.00E-01	9.38E+00	5.42E-04
No. 3 Tunnel Waste Area																						**Minimum HQ (Reference Site)**	**1.10E-04**
N3TA fine tail (0-6")	9.00E-02	9.00E-02	9.28E-01	3.58E+02	3.22E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.86E+02	1.98E+00	1.56E-03	1.13E+00	4.71E-02	8.75E+00	8.00E-01	9.38E+00	5.02E-03
N3TA-0 (0-6")	9.00E-02	9.00E-02	9.28E-01	6.57E+01	5.91E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	7.08E+01	3.63E-01	1.56E-03	1.13E+00	8.64E-03	8.75E+00	8.00E-01	9.38E+00	9.21E-04
N3TA-100 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
N3TA-1000 (0-6")	9.00E-02	9.00E-02	9.28E-01	3.40E+02	3.06E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.67E+02	1.88E+00	1.56E-03	1.13E+00	4.48E-02	8.75E+00	8.00E-01	9.38E+00	4.77E-03
N3TA-1000-EOT (0-6")	9.00E-02	9.00E-02	9.28E-01	9.47E+01	8.52E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.02E+02	5.23E-01	1.56E-03	1.13E+00	1.25E-02	8.75E+00	8.00E-01	9.38E+00	1.33E-03
N3TA-1050 (0-6")	9.00E-02	9.00E-02	9.28E-01	2.43E+02	2.19E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.62E+02	1.34E+00	1.56E-03	1.13E+00	3.20E-02	8.75E+00	8.00E-01	9.38E+00	3.41E-03
N3TA-150 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
N3TA-200 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	6.81E+01	BB	BB	BB	BB	BB	BB	BB	BB
N3TA-250 (0-6")	9.00E-02	9.00E-02	9.28E-01	1.08E+02	9.71E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.16E+02	5.96E-01	1.56E-03	1.13E+00	1.42E-02	8.75E+00	8.00E-01	9.38E+00	1.51E-03
N3TA-300 (0-6")	9.00E-02	9.00E-02	9.28E-01	7.76E+01	6.98E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	8.37E+01	4.29E-01	1.56E-03	1.13E+00	1.02E-02	8.75E+00	8.00E-01	9.38E+00	1.09E-03
N3TA-350 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
N3TA-400 (0-6")	9.00E-02	9.00E-02	9.28E-01	5.82E+01	5.24E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	6.28E+01	3.22E-01	1.56E-03	1.13E+00	7.67E-03	8.75E+00	8.00E-01	9.38E+00	8.17E-04
N3TA-450 (0-6")	9.00E-02	9.00E-02	9.28E-01	7.90E+01	7.10E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	8.51E+01	4.36E-01	1.56E-03	1.13E+00	1.04E-02	8.75E+00	8.00E-01	9.38E+00	1.11E-03
N3TA-50 (0-6")	9.00E-02	9.00E-02	9.28E-01	7.29E+01	6.56E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	7.86E+01	4.03E-01	1.56E-03	1.13E+00	9.59E-03	8.75E+00	8.00E-01	9.38E+00	1.02E-03
N3TA-500 (0-6")	9.00E-02	9.00E-02	9.28E-01	9.58E+01	8.61E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.03E+02	5.29E-01	1.56E-03	1.13E+00	1.26E-02	8.75E+00	8.00E-01	9.38E+00	1.34E-03
N3TA-550 (0-6")	9.00E-02	9.00E-02	9.28E-01	1.00E+02	9.01E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.08E+02	5.54E-01	1.56E-03	1.13E+00	1.32E-02	8.75E+00	8.00E-01	9.38E+00	1.41E-03

TABLE C-10D: LEAD DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 10 - NUMBER 3 TUNNEL WASTE AREA (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **1.089**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Red-Tailed Hawk (Carnivorous Birds - Terrestrial)																							
N3TA-600 (0-6")	9.00E-02	9.00E-02	9.28E-01	1.28E+02	1.15E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.38E+02	7.07E-01	1.56E-03	1.13E+00	1.68E-02	8.75E+00	8.00E-01	9.38E+00	1.79E-03
N3TA-650 (0-6")	9.00E-02	9.00E-02	9.28E-01	8.78E+01	7.90E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	9.47E+01	4.85E-01	1.56E-03	1.13E+00	1.16E-02	8.75E+00	8.00E-01	9.38E+00	1.23E-03
N3TA-700 (0-6")	9.00E-02	9.00E-02	9.28E-01	2.97E+02	2.67E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.20E+02	1.64E+00	1.56E-03	1.13E+00	3.91E-02	8.75E+00	8.00E-01	9.38E+00	4.17E-03
N3TA-750 (0-6")	9.00E-02	9.00E-02	9.28E-01	2.09E+02	1.88E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.26E+02	1.16E+00	1.56E-03	1.13E+00	2.76E-02	8.75E+00	8.00E-01	9.38E+00	2.94E-03
N3TA-800 (0-6")	9.00E-02	9.00E-02	9.28E-01	1.18E+02	1.06E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.27E+02	6.53E-01	1.56E-03	1.13E+00	1.55E-02	8.75E+00	8.00E-01	9.38E+00	1.66E-03
N3TA-850 (0-6")	9.00E-02	9.00E-02	9.28E-01	1.17E+02	1.05E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.26E+02	6.48E-01	1.56E-03	1.13E+00	1.54E-02	8.75E+00	8.00E-01	9.38E+00	1.64E-03
N3TA-900 (0-6")	9.00E-02	9.00E-02	9.28E-01	1.56E+02	1.40E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.68E+02	8.60E-01	1.56E-03	1.13E+00	2.05E-02	8.75E+00	8.00E-01	9.38E+00	2.18E-03
N3TA-950 (0-6")	9.00E-02	9.00E-02	9.28E-01	2.11E+02	1.90E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.28E+02	1.17E+00	1.56E-03	1.13E+00	2.78E-02	8.75E+00	8.00E-01	9.38E+00	2.96E-03
N3TA-Comp 1 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
N3TA-Comp 2 (0-6")	9.00E-02	9.00E-02	9.28E-01	1.09E+02	9.84E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.18E+02	6.04E-01	1.56E-03	1.13E+00	1.44E-02	8.75E+00	8.00E-01	9.38E+00	1.53E-03
N3TA-Comp 3 (0-6")	9.00E-02	9.00E-02	9.28E-01	7.55E+02	6.80E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	8.14E+02	4.17E+00	1.56E-03	1.13E+00	9.94E-02	8.75E+00	8.00E-01	9.38E+00	1.06E-02
N3TA-Det Pond (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
N3TA-Pile #1 (0-6")	9.00E-02	9.00E-02	9.28E-01	1.53E+02	1.38E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.65E+02	8.46E-01	1.56E-03	1.13E+00	2.01E-02	8.75E+00	8.00E-01	9.38E+00	2.15E-03
N3TA-Pile #2 (0-6")	9.00E-02	9.00E-02	9.28E-01	1.17E+02	1.05E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.26E+02	6.45E-01	1.56E-03	1.13E+00	1.54E-02	8.75E+00	8.00E-01	9.38E+00	1.64E-03
																						Maximum HQ (Tunnel No. 3 Area)	**1.06E-02**
American Kestrel (Insectivorous Birds - Terrestrial)																							
Reference Site																							
SGBG-1 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.79E+02	2.46E+00	7.84E-04	1.15E+02	9.03E-02	4.16E-03	1.24E-01	8.56E-02	8.75E+00	8.00E-01	6.03E+00	1.42E-02
SGBG-201 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	9.66E+01	1.33E+00	7.84E-04	6.22E+01	4.88E-02	4.16E-03	1.24E-01	4.62E-02	8.75E+00	8.00E-01	6.03E+00	7.67E-03
UBRBG-201 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	4.78E+02	6.57E+00	7.84E-04	3.08E+02	2.41E-01	4.16E-03	1.24E-01	2.29E-01	8.75E+00	8.00E-01	6.03E+00	3.79E-02
No. 3 Tunnel Waste Area																						**Minimum HQ (Reference Site)**	**7.67E-03**
N3TA fine tail (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	5.99E+02	8.24E+00	7.84E-04	3.86E+02	3.03E-01	4.16E-03	1.24E-01	2.87E-01	8.75E+00	8.00E-01	6.03E+00	4.76E-02
N3TA-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.10E+02	1.51E+00	7.84E-04	7.08E+01	5.55E-02	4.16E-03	1.24E-01	5.26E-02	8.75E+00	8.00E-01	6.03E+00	8.73E-03
N3TA-100 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
N3TA-1000 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	5.69E+02	7.84E+00	7.84E-04	3.67E+02	2.88E-01	4.16E-03	1.24E-01	2.73E-01	8.75E+00	8.00E-01	6.03E+00	4.52E-02
N3TA-1000-EOT (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.58E+02	2.18E+00	7.84E-04	1.02E+02	8.01E-02	4.16E-03	1.24E-01	7.59E-02	8.75E+00	8.00E-01	6.03E+00	1.26E-02
N3TA-1050 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	4.06E+02	5.59E+00	7.84E-04	2.62E+02	2.05E-01	4.16E-03	1.24E-01	1.95E-01	8.75E+00	8.00E-01	6.03E+00	3.23E-02
N3TA-150 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
N3TA-200 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.06E+02	1.45E+00	7.84E-04	6.81E+01	5.34E-02	4.16E-03	1.24E-01	5.06E-02	8.75E+00	8.00E-01	6.03E+00	8.39E-03
N3TA-250 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.80E+02	2.48E+00	7.84E-04	1.16E+02	9.12E-02	4.16E-03	1.24E-01	8.64E-02	8.75E+00	8.00E-01	6.03E+00	1.43E-02
N3TA-300 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.30E+02	1.79E+00	7.84E-04	8.37E+01	6.56E-02	4.16E-03	1.24E-01	6.22E-02	8.75E+00	8.00E-01	6.03E+00	1.03E-02
N3TA-350 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
N3TA-400 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	9.74E+01	1.34E+00	7.84E-04	6.28E+01	4.92E-02	4.16E-03	1.24E-01	4.67E-02	8.75E+00	8.00E-01	6.03E+00	7.74E-03
N3TA-450 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.32E+02	1.82E+00	7.84E-04	8.51E+01	6.68E-02	4.16E-03	1.24E-01	6.32E-02	8.75E+00	8.00E-01	6.03E+00	1.05E-02
N3TA-50 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.22E+02	1.68E+00	7.84E-04	7.86E+01	6.16E-02	4.16E-03	1.24E-01	5.84E-02	8.75E+00	8.00E-01	6.03E+00	9.69E-03
N3TA-500 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.60E+02	2.20E+00	7.84E-04	1.03E+02	8.10E-02	4.16E-03	1.24E-01	7.67E-02	8.75E+00	8.00E-01	6.03E+00	1.27E-02
N3TA-550 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.68E+02	2.31E+00	7.84E-04	1.08E+02	8.47E-02	4.16E-03	1.24E-01	8.03E-02	8.75E+00	8.00E-01	6.03E+00	1.33E-02
N3TA-600 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	2.14E+02	2.94E+00	7.84E-04	1.38E+02	1.08E-01	4.16E-03	1.24E-01	1.02E-01	8.75E+00	8.00E-01	6.03E+00	1.70E-02
N3TA-650 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.47E+02	2.02E+00	7.84E-04	9.47E+01	7.42E-02	4.16E-03	1.24E-01	7.03E-02	8.75E+00	8.00E-01	6.03E+00	1.17E-02
N3TA-700 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	4.97E+02	6.84E+00	7.84E-04	3.20E+02	2.51E-01	4.16E-03	1.24E-01	2.38E-01	8.75E+00	8.00E-01	6.03E+00	3.95E-02
N3TA-750 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	3.50E+02	4.82E+00	7.84E-04	2.26E+02	1.77E-01	4.16E-03	1.24E-01	1.68E-01	8.75E+00	8.00E-01	6.03E+00	2.78E-02
N3TA-800 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.98E+02	2.72E+00	7.84E-04	1.27E+02	9.98E-02	4.16E-03	1.24E-01	9.46E-02	8.75E+00	8.00E-01	6.03E+00	1.57E-02
N3TA-850 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.96E+02	2.70E+00	7.84E-04	1.26E+02	9.91E-02	4.16E-03	1.24E-01	9.39E-02	8.75E+00	8.00E-01	6.03E+00	1.56E-02
N3TA-900 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	2.60E+02	3.58E+00	7.84E-04	1.68E+02	1.32E-01	4.16E-03	1.24E-01	1.25E-01	8.75E+00	8.00E-01	6.03E+00	2.07E-02
N3TA-950 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	3.53E+02	4.86E+00	7.84E-04	2.28E+02	1.78E-01	4.16E-03	1.24E-01	1.69E-01	8.75E+00	8.00E-01	6.03E+00	2.81E-02
N3TA-Comp 1 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
N3TA-Comp 2 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.83E+02	2.52E+00	7.84E-04	1.18E+02	9.24E-02	4.16E-03	1.24E-01	8.76E-02	8.75E+00	8.00E-01	6.03E+00	1.45E-02
N3TA-Comp 3 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.26E+03	1.74E+01	7.84E-04	8.14E+02	6.39E-01	4.16E-03	1.24E-01	6.05E-01	8.75E+00	8.00E-01	6.03E+00	1.00E-01
N3TA-Det Pond (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
N3TA-Pile #1 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	2.56E+02	3.52E+00	7.84E-04	1.65E+02	1.29E-01	4.16E-03	1.24E-01	1.23E-01	8.75E+00	8.00E-01	6.03E+00	2.03E-02
N3TA-Pile #2 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.95E+02	2.69E+00	7.84E-04	1.26E+02	9.86E-02	4.16E-03	1.24E-01	9.34E-02	8.75E+00	8.00E-01	6.03E+00	1.55E-02
																						Maximum HQ (Tunnel No. 3 Area)	**1.00E-01**

TABLE C-10D: LEAD DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 10 - NUMBER 3 TUNNEL WASTE AREA (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **1.089**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Meadow Vole (Small Herbivorous Mammal - Terrestrial)																							
Reference Site																							
SGBG-1 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	4.35E-02	5.00E+00	2.35E-02	NA	NA	NA	NA	1.13E-04	1.15E+02	1.30E-02	1.00E+00	3.06E-02	1.19E+00	2.41E+02	1.87E-02	2.34E+02	5.09E-03
SGBG-201 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	4.35E-02	2.70E+00	1.27E-02	NA	NA	NA	NA	1.13E-04	6.22E+01	7.00E-03	1.00E+00	3.06E-02	6.43E-01	2.41E+02	1.87E-02	2.34E+02	2.75E-03
UBRBG-201 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	4.35E-02	1.34E+01	6.27E-02	NA	NA	NA	NA	1.13E-04	3.08E+02	3.46E-02	1.00E+00	3.06E-02	3.18E+00	2.41E+02	1.87E-02	2.34E+02	1.36E-02
No. 3 Tunnel Waste Area																						**Minimum HQ (Reference Site)**	**2.75E-03**
N3TA fine tail (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	2.42E+02	1.14E+00	NA	NA	NA	NA	1.13E-04	3.86E+02	4.34E-02	1.00E+00	3.06E-02	3.86E+01	2.41E+02	1.87E-02	2.34E+02	1.65E-01
N3TA-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	4.45E+01	2.08E-01	NA	NA	NA	NA	1.13E-04	7.08E+01	7.96E-03	1.00E+00	3.06E-02	7.07E+00	2.41E+02	1.87E-02	2.34E+02	3.03E-02
N3TA-100 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
N3TA-1000 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	2.30E+02	1.08E+00	NA	NA	NA	NA	1.13E-04	3.67E+02	4.13E-02	1.00E+00	3.06E-02	3.67E+01	2.41E+02	1.87E-02	2.34E+02	1.57E-01
N3TA-1000-EOT (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	6.41E+01	3.01E-01	NA	NA	NA	NA	1.13E-04	1.02E+02	1.15E-02	1.00E+00	3.06E-02	1.02E+01	2.41E+02	1.87E-02	2.34E+02	4.37E-02
N3TA-1050 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	1.65E+02	7.71E-01	NA	NA	NA	NA	1.13E-04	2.62E+02	2.95E-02	1.00E+00	3.06E-02	2.62E+01	2.41E+02	1.87E-02	2.34E+02	1.12E-01
N3TA-150 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
N3TA-200 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	4.28E+01	2.01E-01	NA	NA	NA	NA	1.13E-04	6.81E+01	7.66E-03	1.00E+00	3.06E-02	6.80E+00	2.41E+02	1.87E-02	2.34E+02	2.91E-02
N3TA-250 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	7.31E+01	3.43E-01	NA	NA	NA	NA	1.13E-04	1.16E+02	1.31E-02	1.00E+00	3.06E-02	1.16E+01	2.41E+02	1.87E-02	2.34E+02	4.97E-02
N3TA-300 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	5.26E+01	2.46E-01	NA	NA	NA	NA	1.13E-04	8.37E+01	9.42E-03	1.00E+00	3.06E-02	8.36E+00	2.41E+02	1.87E-02	2.34E+02	3.58E-02
N3TA-350 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
N3TA-400 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	3.94E+01	1.85E-01	NA	NA	NA	NA	1.13E-04	6.28E+01	7.07E-03	1.00E+00	3.06E-02	6.27E+00	2.41E+02	1.87E-02	2.34E+02	2.69E-02
N3TA-450 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	5.35E+01	2.51E-01	NA	NA	NA	NA	1.13E-04	8.51E+01	9.58E-03	1.00E+00	3.06E-02	8.51E+00	2.41E+02	1.87E-02	2.34E+02	3.64E-02
N3TA-50 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	4.94E+01	2.31E-01	NA	NA	NA	NA	1.13E-04	7.86E+01	8.84E-03	1.00E+00	3.06E-02	7.85E+00	2.41E+02	1.87E-02	2.34E+02	3.36E-02
N3TA-500 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	6.48E+01	3.04E-01	NA	NA	NA	NA	1.13E-04	1.03E+02	1.16E-02	1.00E+00	3.06E-02	1.03E+01	2.41E+02	1.87E-02	2.34E+02	4.42E-02
N3TA-550 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	6.78E+01	3.18E-01	NA	NA	NA	NA	1.13E-04	1.08E+02	1.22E-02	1.00E+00	3.06E-02	1.08E+01	2.41E+02	1.87E-02	2.34E+02	4.62E-02
N3TA-600 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	8.66E+01	4.06E-01	NA	NA	NA	NA	1.13E-04	1.38E+02	1.55E-02	1.00E+00	3.06E-02	1.38E+01	2.41E+02	1.87E-02	2.34E+02	5.90E-02
N3TA-650 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	5.95E+01	2.79E-01	NA	NA	NA	NA	1.13E-04	9.47E+01	1.07E-02	1.00E+00	3.06E-02	9.46E+00	2.41E+02	1.87E-02	2.34E+02	4.05E-02
N3TA-700 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	2.01E+02	9.43E-01	NA	NA	NA	NA	1.13E-04	3.20E+02	3.60E-02	1.00E+00	3.06E-02	3.20E+01	2.41E+02	1.87E-02	2.34E+02	1.37E-01
N3TA-750 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	1.42E+02	6.65E-01	NA	NA	NA	NA	1.13E-04	2.26E+02	2.54E-02	1.00E+00	3.06E-02	2.26E+01	2.41E+02	1.87E-02	2.34E+02	9.65E-02
N3TA-800 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	8.00E+01	3.75E-01	NA	NA	NA	NA	1.13E-04	1.27E+02	1.43E-02	1.00E+00	3.06E-02	1.27E+01	2.41E+02	1.87E-02	2.34E+02	5.44E-02
N3TA-850 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	7.94E+01	3.72E-01	NA	NA	NA	NA	1.13E-04	1.26E+02	1.42E-02	1.00E+00	3.06E-02	1.26E+01	2.41E+02	1.87E-02	2.34E+02	5.41E-02
N3TA-900 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	1.05E+02	4.94E-01	NA	NA	NA	NA	1.13E-04	1.68E+02	1.89E-02	1.00E+00	3.06E-02	1.68E+01	2.41E+02	1.87E-02	2.34E+02	7.18E-02
N3TA-950 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	1.43E+02	6.70E-01	NA	NA	NA	NA	1.13E-04	2.28E+02	2.56E-02	1.00E+00	3.06E-02	2.27E+01	2.41E+02	1.87E-02	2.34E+02	9.73E-02
N3TA-Comp 1 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
N3TA-Comp 2 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	7.40E+01	3.47E-01	NA	NA	NA	NA	1.13E-04	1.18E+02	1.33E-02	1.00E+00	3.06E-02	1.18E+01	2.41E+02	1.87E-02	2.34E+02	5.04E-02
N3TA-Comp 3 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	5.11E+02	2.40E+00	NA	NA	NA	NA	1.13E-04	8.14E+02	9.16E-02	1.00E+00	3.06E-02	8.14E+01	2.41E+02	1.87E-02	2.34E+02	3.48E-01
N3TA-Det Pond (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
N3TA-Pile #1 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	1.04E+02	4.86E-01	NA	NA	NA	NA	1.13E-04	1.65E+02	1.86E-02	1.00E+00	3.06E-02	1.65E+01	2.41E+02	1.87E-02	2.34E+02	7.05E-02
N3TA-Pile #2 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	7.90E+01	3.70E-01	NA	NA	NA	NA	1.13E-04	1.26E+02	1.42E-02	1.00E+00	3.06E-02	1.26E+01	2.41E+02	1.87E-02	2.34E+02	5.38E-02
																						Maximum HQ (Tunnel No. 3 Area)	**3.48E-01**
White-Tailed Deer (Large Herbivorous Mammal - Terrestrial)																							
Reference Site																							
SGBG-1 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	4.35E-02	5.00E+00	7.16E+00	NA	NA	NA	NA	2.86E-02	1.15E+02	3.30E+00	6.09E-03	1.35E+02	4.72E-04	2.41E+02	1.87E-02	1.41E+02	3.34E-06
SGBG-201 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	4.35E-02	2.70E+00	3.87E+00	NA	NA	NA	NA	2.86E-02	6.22E+01	1.78E+00	6.09E-03	1.35E+02	2.55E-04	2.41E+02	1.87E-02	1.41E+02	1.81E-06
UBRBG-201 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	4.35E-02	1.34E+01	1.91E+01	NA	NA	NA	NA	2.86E-02	3.08E+02	8.81E+00	6.09E-03	1.35E+02	1.26E-03	2.41E+02	1.87E-02	1.41E+02	8.93E-06
No. 3 Tunnel Waste Area																						**Minimum HQ (Reference Site)**	**1.81E-06**
N3TA fine tail (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	2.42E+02	3.47E+02	NA	NA	NA	NA	2.86E-02	3.86E+02	1.11E+01	6.09E-03	1.35E+02	1.62E-02	2.41E+02	1.87E-02	1.41E+02	1.14E-04
N3TA-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	4.45E+01	6.37E+01	NA	NA	NA	NA	2.86E-02	7.08E+01	2.03E+00	6.09E-03	1.35E+02	2.96E-03	2.41E+02	1.87E-02	1.41E+02	2.10E-05
N3TA-100 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
N3TA-1000 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	2.30E+02	3.30E+02	NA	NA	NA	NA	2.86E-02	3.67E+02	1.05E+01	6.09E-03	1.35E+02	1.54E-02	2.41E+02	1.87E-02	1.41E+02	1.09E-04
N3TA-1000-EOT (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	6.41E+01	9.18E+01	NA	NA	NA	NA	2.86E-02	1.02E+02	2.92E+00	6.09E-03	1.35E+02	4.27E-03	2.41E+02	1.87E-02	1.41E+02	3.03E-05
N3TA-1050 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	1.65E+02	2.36E+02	NA	NA	NA	NA	2.86E-02	2.62E+02	7.50E+00	6.09E-03	1.35E+02	1.10E-02	2.41E+02	1.87E-02	1.41E+02	7.77E-05
N3TA-150 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
N3TA-200 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	4.28E+01	6.12E+01	NA	NA	NA	NA	2.86E-02	6.81E+01	1.95E+00	6.09E-03	1.35E+02	2.85E-03	2.41E+02	1.87E-02	1.41E+02	2.02E-05
N3TA-250 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	7.31E+01	1.05E+02	NA	NA	NA	NA	2.86E-02	1.16E+02	3.33E+00	6.09E-03	1.35E+02	4.87E-03	2.41E+02	1.87E-02	1.41E+02	3.45E-05
N3TA-300 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	5.26E+01	7.53E+01	NA	NA	NA	NA	2.86E-02	8.37E+01	2.40E+00	6.09E-03	1.35E+02	3.50E-03	2.41E+02	1.87E-02	1.41E+02	2.48E-05
N3TA-350 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
N3TA-400 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	3.94E+01	5.65E+01	NA	NA	NA	NA	2.86E-02	6.28E+01	1.80E+00	6.09E-03	1.35E+02	2.63E-03	2.41E+02	1.87E-02	1.41E+02	1.86E-05
N3TA-450 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	5.35E+01	7.66E+01	NA	NA	NA	NA	2.86E-02	8.51E+01	2.44E+00	6.09E-03	1.35E+02	3.56E-03	2.41E+02	1.87E-02	1.41E+02	2.52E-05
N3TA-50 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	4.94E+01	7.07E+01	NA	NA	NA	NA	2.86E-02	7.86E+01	2.25E+00	6.09E-03	1.35E+02	3.29E-03	2.41E+02	1.87E-02	1.41E+02	2.33E-05
N3TA-500 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	6.48E+01	9.28E+01	NA	NA	NA	NA	2.86E-02	1.03E+02	2.96E+00	6.09E-03	1.35E+02	4.32E-03	2.41E+02	1.87E-02	1.41E+02	3.06E-05
N3TA-550 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	6.78E+01	9.71E+01	NA	NA	NA	NA	2.86E-02	1.08E+02	3.09E+00	6.09E-03	1.35E+02	4.52E-03	2.41E+02	1.87E-02	1.41E+02	3.20E-05

TABLE C-10D: LEAD DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 10 - NUMBER 3 TUNNEL WASTE AREA (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **1.089**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
White-Tailed Deer (Large Herbivorous Mammal - Terrestrial)																							
N3TA-600 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	8.66E+01	1.24E+02	NA	NA	NA	NA	2.86E-02	1.38E+02	3.95E+00	6.09E-03	1.35E+02	5.77E-03	2.41E+02	1.87E-02	1.41E+02	4.09E-05
N3TA-650 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	5.95E+01	8.51E+01	NA	NA	NA	NA	2.86E-02	9.47E+01	2.71E+00	6.09E-03	1.35E+02	3.96E-03	2.41E+02	1.87E-02	1.41E+02	2.81E-05
N3TA-700 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	2.01E+02	2.88E+02	NA	NA	NA	NA	2.86E-02	3.20E+02	9.17E+00	6.09E-03	1.35E+02	1.34E-02	2.41E+02	1.87E-02	1.41E+02	9.50E-05
N3TA-750 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	1.42E+02	2.03E+02	NA	NA	NA	NA	2.86E-02	2.26E+02	6.46E+00	6.09E-03	1.35E+02	9.45E-03	2.41E+02	1.87E-02	1.41E+02	6.69E-05
N3TA-800 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	8.00E+01	1.14E+02	NA	NA	NA	NA	2.86E-02	1.27E+02	3.64E+00	6.09E-03	1.35E+02	5.33E-03	2.41E+02	1.87E-02	1.41E+02	3.77E-05
N3TA-850 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	7.94E+01	1.14E+02	NA	NA	NA	NA	2.86E-02	1.26E+02	3.62E+00	6.09E-03	1.35E+02	5.29E-03	2.41E+02	1.87E-02	1.41E+02	3.75E-05
N3TA-900 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	1.05E+02	1.51E+02	NA	NA	NA	NA	2.86E-02	1.68E+02	4.81E+00	6.09E-03	1.35E+02	7.03E-03	2.41E+02	1.87E-02	1.41E+02	4.98E-05
N3TA-950 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	1.43E+02	2.05E+02	NA	NA	NA	NA	2.86E-02	2.28E+02	6.52E+00	6.09E-03	1.35E+02	9.53E-03	2.41E+02	1.87E-02	1.41E+02	6.75E-05
N3TA-Comp 1 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
N3TA-Comp 2 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	7.40E+01	1.06E+02	NA	NA	NA	NA	2.86E-02	1.18E+02	3.37E+00	6.09E-03	1.35E+02	4.94E-03	2.41E+02	1.87E-02	1.41E+02	3.50E-05
N3TA-Comp 3 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	5.11E+02	7.32E+02	NA	NA	NA	NA	2.86E-02	8.14E+02	2.33E+01	6.09E-03	1.35E+02	3.41E-02	2.41E+02	1.87E-02	1.41E+02	2.41E-04
N3TA-Det Pond (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
N3TA-Pile #1 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	1.04E+02	1.48E+02	NA	NA	NA	NA	2.86E-02	1.65E+02	4.72E+00	6.09E-03	1.35E+02	6.91E-03	2.41E+02	1.87E-02	1.41E+02	4.89E-05
N3TA-Pile #2 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	7.90E+01	1.13E+02	NA	NA	NA	NA	2.86E-02	1.26E+02	3.60E+00	6.09E-03	1.35E+02	5.27E-03	2.41E+02	1.87E-02	1.41E+02	3.73E-05
																						Maximum HQ (Tunnel No. 3 Area)	**2.41E-04**
Red Fox (Carnivorous Mammal - Terrestrial)																							
Reference Site																							
SGBG-1 (0-6")	1.72E-01	1.72E-01	7.62E-02	8.78E+00	1.51E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.15E+02	5.53E-01	8.05E-04	4.54E+00	3.65E-04	2.41E+02	1.87E-02	1.73E+02	2.11E-06
SGBG-201 (0-6")	1.72E-01	1.72E-01	7.62E-02	4.74E+00	8.13E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	6.22E+01	2.99E-01	8.05E-04	4.54E+00	1.97E-04	2.41E+02	1.87E-02	1.73E+02	1.14E-06
UBRBG-201 (0-6")	1.72E-01	1.72E-01	7.62E-02	2.35E+01	4.02E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.08E+02	1.48E+00	8.05E-04	4.54E+00	9.76E-04	2.41E+02	1.87E-02	1.73E+02	5.64E-06
No. 3 Tunnel Waste Area																						**Minimum HQ (Reference Site)**	**1.14E-06**
N3TA fine tail (0-6")	1.72E-01	1.72E-01	9.28E-01	3.58E+02	6.14E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.86E+02	1.85E+00	8.05E-04	4.54E+00	1.12E-02	2.41E+02	1.87E-02	1.73E+02	6.48E-05
N3TA-0 (0-6")	1.72E-01	1.72E-01	9.28E-01	6.57E+01	1.13E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	7.08E+01	3.40E-01	8.05E-04	4.54E+00	2.06E-03	2.41E+02	1.87E-02	1.73E+02	1.19E-05
N3TA-100 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
N3TA-1000 (0-6")	1.72E-01	1.72E-01	9.28E-01	3.40E+02	5.84E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.67E+02	1.76E+00	8.05E-04	4.54E+00	1.07E-02	2.41E+02	1.87E-02	1.73E+02	6.16E-05
N3TA-1000-EOT (0-6")	1.72E-01	1.72E-01	9.28E-01	9.47E+01	1.62E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.02E+02	4.90E-01	8.05E-04	4.54E+00	2.97E-03	2.41E+02	1.87E-02	1.73E+02	1.71E-05
N3TA-1050 (0-6")	1.72E-01	1.72E-01	9.28E-01	2.43E+02	4.17E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.62E+02	1.26E+00	8.05E-04	4.54E+00	7.62E-03	2.41E+02	1.87E-02	1.73E+02	4.40E-05
N3TA-150 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
N3TA-200 (0-6")	1.72E-01	1.72E-01	9.28E-01	6.32E+01	1.08E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	6.81E+01	3.27E-01	8.05E-04	4.54E+00	1.98E-03	2.41E+02	1.87E-02	1.73E+02	1.14E-05
N3TA-250 (0-6")	1.72E-01	1.72E-01	9.28E-01	1.08E+02	1.85E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.16E+02	5.59E-01	8.05E-04	4.54E+00	3.38E-03	2.41E+02	1.87E-02	1.73E+02	1.95E-05
N3TA-300 (0-6")	1.72E-01	1.72E-01	9.28E-01	7.76E+01	1.33E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	8.37E+01	4.02E-01	8.05E-04	4.54E+00	2.43E-03	2.41E+02	1.87E-02	1.73E+02	1.41E-05
N3TA-350 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
N3TA-400 (0-6")	1.72E-01	1.72E-01	9.28E-01	5.82E+01	9.99E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	6.28E+01	3.02E-01	8.05E-04	4.54E+00	1.83E-03	2.41E+02	1.87E-02	1.73E+02	1.05E-05
N3TA-450 (0-6")	1.72E-01	1.72E-01	9.28E-01	7.90E+01	1.35E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	8.51E+01	4.09E-01	8.05E-04	4.54E+00	2.48E-03	2.41E+02	1.87E-02	1.73E+02	1.43E-05
N3TA-50 (0-6")	1.72E-01	1.72E-01	9.28E-01	7.29E+01	1.25E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	7.86E+01	3.77E-01	8.05E-04	4.54E+00	2.28E-03	2.41E+02	1.87E-02	1.73E+02	1.32E-05
N3TA-500 (0-6")	1.72E-01	1.72E-01	9.28E-01	9.58E+01	1.64E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.03E+02	4.96E-01	8.05E-04	4.54E+00	3.00E-03	2.41E+02	1.87E-02	1.73E+02	1.73E-05
N3TA-550 (0-6")	1.72E-01	1.72E-01	9.28E-01	1.00E+02	1.72E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.08E+02	5.19E-01	8.05E-04	4.54E+00	3.14E-03	2.41E+02	1.87E-02	1.73E+02	1.81E-05
N3TA-600 (0-6")	1.72E-01	1.72E-01	9.28E-01	1.28E+02	2.19E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.38E+02	6.62E-01	8.05E-04	4.54E+00	4.01E-03	2.41E+02	1.87E-02	1.73E+02	2.32E-05
N3TA-650 (0-6")	1.72E-01	1.72E-01	9.28E-01	8.78E+01	1.51E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	9.47E+01	4.55E-01	8.05E-04	4.54E+00	2.75E-03	2.41E+02	1.87E-02	1.73E+02	1.59E-05
N3TA-700 (0-6")	1.72E-01	1.72E-01	9.28E-01	2.97E+02	5.10E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.20E+02	1.54E+00	8.05E-04	4.54E+00	9.31E-03	2.41E+02	1.87E-02	1.73E+02	5.38E-05
N3TA-750 (0-6")	1.72E-01	1.72E-01	9.28E-01	2.09E+02	3.59E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.26E+02	1.08E+00	8.05E-04	4.54E+00	6.56E-03	2.41E+02	1.87E-02	1.73E+02	3.79E-05
N3TA-800 (0-6")	1.72E-01	1.72E-01	9.28E-01	1.18E+02	2.03E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.27E+02	6.11E-01	8.05E-04	4.54E+00	3.70E-03	2.41E+02	1.87E-02	1.73E+02	2.14E-05
N3TA-850 (0-6")	1.72E-01	1.72E-01	9.28E-01	1.17E+02	2.01E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.26E+02	6.07E-01	8.05E-04	4.54E+00	3.68E-03	2.41E+02	1.87E-02	1.73E+02	2.12E-05
N3TA-900 (0-6")	1.72E-01	1.72E-01	9.28E-01	1.56E+02	2.67E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.68E+02	8.06E-01	8.05E-04	4.54E+00	4.88E-03	2.41E+02	1.87E-02	1.73E+02	2.82E-05
N3TA-950 (0-6")	1.72E-01	1.72E-01	9.28E-01	2.11E+02	3.62E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.28E+02	1.09E+00	8.05E-04	4.54E+00	6.62E-03	2.41E+02	1.87E-02	1.73E+02	3.82E-05
N3TA-Comp 1 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
N3TA-Comp 2 (0-6")	1.72E-01	1.72E-01	9.28E-01	1.09E+02	1.88E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.18E+02	5.66E-01	8.05E-04	4.54E+00	3.43E-03	2.41E+02	1.87E-02	1.73E+02	1.98E-05
N3TA-Comp 3 (0-6")	1.72E-01	1.72E-01	9.28E-01	7.55E+02	1.30E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	8.14E+02	3.91E+00	8.05E-04	4.54E+00	2.37E-02	2.41E+02	1.87E-02	1.73E+02	1.37E-04
N3TA-Det Pond (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
N3TA-Pile #1 (0-6")	1.72E-01	1.72E-01	9.28E-01	1.53E+02	2.62E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.65E+02	7.92E-01	8.05E-04	4.54E+00	4.80E-03	2.41E+02	1.87E-02	1.73E+02	2.77E-05
N3TA-Pile #2 (0-6")	1.72E-01	1.72E-01	9.28E-01	1.17E+02	2.00E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.26E+02	6.04E-01	8.05E-04	4.54E+00	3.66E-03	2.41E+02	1.87E-02	1.73E+02	2.11E-05
																						Maximum HQ (Tunnel No. 3 Area)	**1.37E-04**

TABLE C-10D: LEAD DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 10 - NUMBER 3 TUNNEL WASTE AREA (Continued)
Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)
calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **1.089**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Masked Shrew (Omnivorous Mammal - Terrestrial, Wetland)																							
Reference Site																							
SGBG-1 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.79E+02	1.51E+00	1.10E-03	1.15E+02	1.27E-01	1.00E+00	5.50E-03	2.98E+02	2.41E+02	1.87E-02	2.59E+02	1.15E+00
SGBG-201 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	9.66E+01	8.18E-01	1.10E-03	6.22E+01	6.85E-02	1.00E+00	5.50E-03	1.61E+02	2.41E+02	1.87E-02	2.59E+02	6.22E-01
UBRBG-201 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	4.78E+02	4.05E+00	1.10E-03	3.08E+02	3.39E-01	1.00E+00	5.50E-03	7.97E+02	2.41E+02	1.87E-02	2.59E+02	3.08E+00
No. 3 Tunnel Waste Area																						**Minimum HQ (Reference Site)**	**6.22E-01**
N3TA fine tail (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	5.99E+02	5.07E+00	1.10E-03	3.86E+02	4.25E-01	1.00E+00	5.50E-03	1.00E+03	2.41E+02	1.87E-02	2.59E+02	3.86E+00
N3TA-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.10E+02	9.30E-01	1.10E-03	7.08E+01	7.79E-02	1.00E+00	5.50E-03	1.83E+02	2.41E+02	1.87E-02	2.59E+02	7.08E-01
N3TA-100 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
N3TA-1000 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	5.69E+02	4.82E+00	1.10E-03	3.67E+02	4.04E-01	1.00E+00	5.50E-03	9.50E+02	2.41E+02	1.87E-02	2.59E+02	3.67E+00
N3TA-1000-EOT (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.58E+02	1.34E+00	1.10E-03	1.02E+02	1.12E-01	1.00E+00	5.50E-03	2.64E+02	2.41E+02	1.87E-02	2.59E+02	1.02E+00
N3TA-1050 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	4.06E+02	3.44E+00	1.10E-03	2.62E+02	2.88E-01	1.00E+00	5.50E-03	6.78E+02	2.41E+02	1.87E-02	2.59E+02	2.62E+00
N3TA-150 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
N3TA-200 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.06E+02	8.95E-01	1.10E-03	6.81E+01	7.50E-02	1.00E+00	5.50E-03	1.76E+02	2.41E+02	1.87E-02	2.59E+02	6.81E-01
N3TA-250 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.80E+02	1.53E+00	1.10E-03	1.16E+02	1.28E-01	1.00E+00	5.50E-03	3.01E+02	2.41E+02	1.87E-02	2.59E+02	1.16E+00
N3TA-300 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.30E+02	1.10E+00	1.10E-03	8.37E+01	9.21E-02	1.00E+00	5.50E-03	2.17E+02	2.41E+02	1.87E-02	2.59E+02	8.37E-01
N3TA-350 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
N3TA-400 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	9.74E+01	8.25E-01	1.10E-03	6.28E+01	6.91E-02	1.00E+00	5.50E-03	1.63E+02	2.41E+02	1.87E-02	2.59E+02	6.28E-01
N3TA-450 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.32E+02	1.12E+00	1.10E-03	8.51E+01	9.37E-02	1.00E+00	5.50E-03	2.20E+02	2.41E+02	1.87E-02	2.59E+02	8.51E-01
N3TA-50 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.22E+02	1.03E+00	1.10E-03	7.86E+01	8.65E-02	1.00E+00	5.50E-03	2.03E+02	2.41E+02	1.87E-02	2.59E+02	7.86E-01
N3TA-500 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.60E+02	1.36E+00	1.10E-03	1.03E+02	1.14E-01	1.00E+00	5.50E-03	2.67E+02	2.41E+02	1.87E-02	2.59E+02	1.03E+00
N3TA-550 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.68E+02	1.42E+00	1.10E-03	1.08E+02	1.19E-01	1.00E+00	5.50E-03	2.80E+02	2.41E+02	1.87E-02	2.59E+02	1.08E+00
N3TA-600 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	2.14E+02	1.81E+00	1.10E-03	1.38E+02	1.52E-01	1.00E+00	5.50E-03	3.57E+02	2.41E+02	1.87E-02	2.59E+02	1.38E+00
N3TA-650 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.47E+02	1.24E+00	1.10E-03	9.47E+01	1.04E-01	1.00E+00	5.50E-03	2.45E+02	2.41E+02	1.87E-02	2.59E+02	9.47E-01
N3TA-700 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	4.97E+02	4.21E+00	1.10E-03	3.20E+02	3.53E-01	1.00E+00	5.50E-03	8.30E+02	2.41E+02	1.87E-02	2.59E+02	3.20E+00
N3TA-750 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	3.50E+02	2.97E+00	1.10E-03	2.26E+02	2.48E-01	1.00E+00	5.50E-03	5.85E+02	2.41E+02	1.87E-02	2.59E+02	2.26E+00
N3TA-800 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.98E+02	1.67E+00	1.10E-03	1.27E+02	1.40E-01	1.00E+00	5.50E-03	3.30E+02	2.41E+02	1.87E-02	2.59E+02	1.27E+00
N3TA-850 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.96E+02	1.66E+00	1.10E-03	1.26E+02	1.39E-01	1.00E+00	5.50E-03	3.27E+02	2.41E+02	1.87E-02	2.59E+02	1.26E+00
N3TA-900 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	2.60E+02	2.21E+00	1.10E-03	1.68E+02	1.85E-01	1.00E+00	5.50E-03	4.35E+02	2.41E+02	1.87E-02	2.59E+02	1.68E+00
N3TA-950 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	3.53E+02	2.99E+00	1.10E-03	2.28E+02	2.51E-01	1.00E+00	5.50E-03	5.89E+02	2.41E+02	1.87E-02	2.59E+02	2.28E+00
N3TA-Comp 1 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
N3TA-Comp 2 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.83E+02	1.55E+00	1.10E-03	1.18E+02	1.30E-01	1.00E+00	5.50E-03	3.05E+02	2.41E+02	1.87E-02	2.59E+02	1.18E+00
N3TA-Comp 3 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.26E+03	1.07E+01	1.10E-03	8.14E+02	8.96E-01	1.00E+00	5.50E-03	2.11E+03	2.41E+02	1.87E-02	2.59E+02	8.14E+00
N3TA-Det Pond (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
N3TA-Pile #1 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	2.56E+02	2.17E+00	1.10E-03	1.65E+02	1.82E-01	1.00E+00	5.50E-03	4.27E+02	2.41E+02	1.87E-02	2.59E+02	1.65E+00
N3TA-Pile #2 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.95E+02	1.65E+00	1.10E-03	1.26E+02	1.38E-01	1.00E+00	5.50E-03	3.26E+02	2.41E+02	1.87E-02	2.59E+02	1.26E+00
																						Maximum HQ (Tunnel No. 3 Area)	**8.14E+00**

Notes

1 See Tables 3-1 through 3-13 for ingestion rates, foraging ranges used to calculate the SUF, and body weights.
2 BAFs were calculated by dividing site-collected tissue by collocated soil concentrations (BAFs are in dry weight). The maximum BAF calculated from the Beartrap Creek and Blackfoot River transects was used for site dose calculations. The maximum BAF from the terrestrial reference site was used for reference site dose calculations.
3 The mammal, plant, and invertebrate concentrations were calculated by multiplying the soil concentration by the BAF to generate a tissue concentration (see note 2).
4 Mammal, plant, and invertebrate daily doses were calculated by multiplying the ingestion rate (see note 1) by the tissue concentration (see note 3).
5 Soil concentration from 0 to 6 inches below ground surface at point ID as measured by XRF 10. Doses were not calculated for detected and non-detected soil concentrations measured below the minimum reference site concentration, as indicated by BB. For results that were measured at less than the detection limit, doses were calculated using half of the detection limit.
6 Soil daily dose was calculated by multiplying the soil ingestion rate (see note 1) by soil concentration (see note 5).
7 Total daily dose is calculated using the following equation: total daily dose = ([mammal daily dose (if applicable) + plant daily dose (if applicable) + invertebrate daily dose (if applicable) + soil daily dose]*SUF)/receptor species body weight.
8 The TRVs used in this risk assessment represent a mid-range effects level. The derivation of TRVs is described in Navy (1998).
9 Allometrically adjusted TRVs for birds were calculated using the following equation: receptor species TRV = (test species TRV) x (test species body weight / receptor species body weight)$^{(1-1.2)}$.
10 Allometrically adjusted TRVs for mammals were calculated using the following equation: receptor species TRV = (test species TRV) x (test species body weight / receptor species body weight)$^{(1-0.94)}$.
11 HQs were calculated using the following equation: HQ = total daily dose/allometrically adjusted TRV.
12 Highlighted cells indicate an HQ greater than 1.0.

BAF	Bioaccumulation Factor	mg/day	Milligram per day
BB	Below minimum background reference site concentration	mg/kg	Milligram per kilogram
EE/CA	Engineering Evaluation/Cost Analysis	NA	Not applicable
EU	Exposure Unit	Navy	Department of the Navy
HQ	Hazard quotient	SUF	Site use factor
ID	Identification	TRV	Toxicity reference value
kg	Kilogram	XRF	X-ray fluorescence
kg/day	Kilogram per day	XRF 10	XRF measurements recorded following drying and seiving through a #10-mesh screen

Sources: Department of the Navy. 1998. "Development of Toxicity Reference Values for Conducting Ecological Risk Assessments at Naval Facilities in California, Interim Final." Prepared by Naval Facilities Engineering Command, Engineering Field Activity West (EFA West). San Bruno, California.

TABLE C-10E: MANGANESE DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 10 - NUMBER 3 TUNNEL WASTE AREA
Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)
calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **1.089**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Mourning Dove (Herbivorous Birds - Terrestrial)																							
Reference Site																							
SGBG-1 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	3.34E-01	4.72E+01	2.72E-01	NA	NA	NA	NA	5.36E-04	1.41E+02	7.56E-02	4.20E-03	1.09E-01	1.34E-02	7.76E+02	1.97E-01	6.90E+02	1.94E-05
SGBG-201 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	3.34E-01	4.38E+01	2.52E-01	NA	NA	NA	NA	5.36E-04	1.31E+02	7.01E-02	4.20E-03	1.09E-01	1.24E-02	7.76E+02	1.97E-01	6.90E+02	1.80E-05
UBRBG-201 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	3.34E-01	2.65E+02	1.53E+00	NA	NA	NA	NA	5.36E-04	7.92E+02	4.24E-01	4.20E-03	1.09E-01	7.51E-02	7.76E+02	1.97E-01	6.90E+02	1.09E-04
No. 3 Tunnel Waste Area																						**Minimum HQ (Reference Site)**	**1.80E-05**
N3TA fine tail (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
N3TA-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
N3TA-100 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	1.06E+03	6.10E+00	NA	NA	NA	NA	5.36E-04	1.07E+02	5.73E-02	4.20E-03	1.09E-01	2.37E-01	7.76E+02	1.97E-01	6.90E+02	3.44E-04
N3TA-1000 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	7.18E+02	4.14E+00	NA	NA	NA	NA	5.36E-04	7.25E+01	3.88E-02	4.20E-03	1.09E-01	1.61E-01	7.76E+02	1.97E-01	6.90E+02	2.33E-04
N3TA-1000-EOT (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
N3TA-1050 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	3.32E+03	1.91E+01	NA	NA	NA	NA	5.36E-04	3.35E+02	1.79E-01	4.20E-03	1.09E-01	7.43E-01	7.76E+02	1.97E-01	6.90E+02	1.08E-03
N3TA-150 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	9.77E+02	5.63E+00	NA	NA	NA	NA	5.36E-04	9.86E+01	5.28E-02	4.20E-03	1.09E-01	2.19E-01	7.76E+02	1.97E-01	6.90E+02	3.17E-04
N3TA-200 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	9.86E+02	5.68E+00	NA	NA	NA	NA	5.36E-04	9.95E+01	5.33E-02	4.20E-03	1.09E-01	2.21E-01	7.76E+02	1.97E-01	6.90E+02	3.20E-04
N3TA-250 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	7.47E+02	4.30E+00	NA	NA	NA	NA	5.36E-04	7.54E+01	4.04E-02	4.20E-03	1.09E-01	1.67E-01	7.76E+02	1.97E-01	6.90E+02	2.42E-04
N3TA-300 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	7.19E+02	4.14E+00	NA	NA	NA	NA	5.36E-04	7.26E+01	3.89E-02	4.20E-03	1.09E-01	1.61E-01	7.76E+02	1.97E-01	6.90E+02	2.33E-04
N3TA-350 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
N3TA-400 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	6.76E+02	3.89E+00	NA	NA	NA	NA	5.36E-04	6.82E+01	3.66E-02	4.20E-03	1.09E-01	1.51E-01	7.76E+02	1.97E-01	6.90E+02	2.19E-04
N3TA-450 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	6.52E+02	3.76E+00	NA	NA	NA	NA	5.36E-04	6.58E+01	3.52E-02	4.20E-03	1.09E-01	1.46E-01	7.76E+02	1.97E-01	6.90E+02	2.12E-04
N3TA-50 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	1.29E+03	7.42E+00	NA	NA	NA	NA	5.36E-04	1.30E+02	6.96E-02	4.20E-03	1.09E-01	2.88E-01	7.76E+02	1.97E-01	6.90E+02	4.18E-04
N3TA-500 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	1.99E+03	1.15E+01	NA	NA	NA	NA	5.36E-04	2.01E+02	1.08E-01	4.20E-03	1.09E-01	4.46E-01	7.76E+02	1.97E-01	6.90E+02	6.47E-04
N3TA-550 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
N3TA-600 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	6.94E+02	4.00E+00	NA	NA	NA	NA	5.36E-04	7.00E+01	3.75E-02	4.20E-03	1.09E-01	1.55E-01	7.76E+02	1.97E-01	6.90E+02	2.25E-04
N3TA-650 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	7.17E+02	4.13E+00	NA	NA	NA	NA	5.36E-04	7.24E+01	3.88E-02	4.20E-03	1.09E-01	1.61E-01	7.76E+02	1.97E-01	6.90E+02	2.33E-04
N3TA-700 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	1.85E+04	1.06E+02	NA	NA	NA	NA	5.36E-04	1.87E+03	9.99E-01	4.20E-03	1.09E-01	4.14E+00	7.76E+02	1.97E-01	6.90E+02	6.00E-03
N3TA-750 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	3.29E+04	1.90E+02	NA	NA	NA	NA	5.36E-04	3.32E+03	1.78E+00	4.20E-03	1.09E-01	7.37E+00	7.76E+02	1.97E-01	6.90E+02	1.07E-02
N3TA-800 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	2.65E+04	1.53E+02	NA	NA	NA	NA	5.36E-04	2.68E+03	1.43E+00	4.20E-03	1.09E-01	5.94E+00	7.76E+02	1.97E-01	6.90E+02	8.61E-03
N3TA-850 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	2.08E+03	1.20E+01	NA	NA	NA	NA	5.36E-04	2.10E+02	1.13E-01	4.20E-03	1.09E-01	4.67E-01	7.76E+02	1.97E-01	6.90E+02	6.76E-04
N3TA-900 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	2.42E+03	1.40E+01	NA	NA	NA	NA	5.36E-04	2.44E+02	1.31E-01	4.20E-03	1.09E-01	5.42E-01	7.76E+02	1.97E-01	6.90E+02	7.86E-04
N3TA-950 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	7.00E+02	4.03E+00	NA	NA	NA	NA	5.36E-04	7.06E+01	3.78E-02	4.20E-03	1.09E-01	1.57E-01	7.76E+02	1.97E-01	6.90E+02	2.27E-04
N3TA-Comp 1 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	1.85E+03	1.07E+01	NA	NA	NA	NA	5.36E-04	1.87E+02	1.00E-01	4.20E-03	1.09E-01	4.15E-01	7.76E+02	1.97E-01	6.90E+02	6.01E-04
N3TA-Comp 2 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	6.90E+02	3.97E+00	NA	NA	NA	NA	5.36E-04	6.96E+01	3.73E-02	4.20E-03	1.09E-01	1.54E-01	7.76E+02	1.97E-01	6.90E+02	2.24E-04
N3TA-Comp 3 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	1.28E+04	7.35E+01	NA	NA	NA	NA	5.36E-04	1.29E+03	6.90E-01	4.20E-03	1.09E-01	2.86E+00	7.76E+02	1.97E-01	6.90E+02	4.14E-03
N3TA-Det Pond (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
N3TA-Pile #1 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	6.14E+04	3.54E+02	NA	NA	NA	NA	5.36E-04	6.19E+03	3.32E+00	4.20E-03	1.09E-01	1.37E+01	7.76E+02	1.97E-01	6.90E+02	1.99E-02
N3TA-Pile #2 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	4.76E+03	2.74E+01	NA	NA	NA	NA	5.36E-04	4.81E+02	2.58E-01	4.20E-03	1.09E-01	1.07E+00	7.76E+02	1.97E-01	6.90E+02	1.55E-03
																						Maximum HQ (Tunnel No. 3 Area)	**1.99E-02**
Red-Tailed Hawk (Carnivorous Birds - Terrestrial)																							
Reference Site																							
SGBG-1 (0-6")	9.00E-02	9.00E-02	5.93E-02	8.37E+00	7.53E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.41E+02	7.23E-01	1.56E-03	1.13E+00	2.03E-03	7.76E+02	1.97E-01	1.10E+03	1.85E-06
SGBG-201 (0-6")	9.00E-02	9.00E-02	5.93E-02	7.77E+00	6.99E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.31E+02	6.71E-01	1.56E-03	1.13E+00	1.89E-03	7.76E+02	1.97E-01	1.10E+03	1.71E-06
UBRBG-201 (0-6")	9.00E-02	9.00E-02	5.93E-02	4.70E+01	4.23E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	7.92E+02	4.06E+00	1.56E-03	1.13E+00	1.14E-02	7.76E+02	1.97E-01	1.10E+03	1.04E-05
No. 3 Tunnel Waste Area																						**Minimum HQ (Reference Site)**	**1.71E-06**
N3TA fine tail (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
N3TA-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
N3TA-100 (0-6")	9.00E-02	9.00E-02	2.80E-02	2.99E+00	2.69E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.07E+02	5.48E-01	1.56E-03	1.13E+00	1.13E-03	7.76E+02	1.97E-01	1.10E+03	1.02E-06
N3TA-1000 (0-6")	9.00E-02	9.00E-02	2.80E-02	2.03E+00	1.83E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	7.25E+01	3.72E-01	1.56E-03	1.13E+00	7.64E-04	7.76E+02	1.97E-01	1.10E+03	6.93E-07
N3TA-1000-EOT (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
N3TA-1050 (0-6")	9.00E-02	9.00E-02	2.80E-02	9.38E+00	8.43E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.35E+02	1.72E+00	1.56E-03	1.13E+00	3.53E-03	7.76E+02	1.97E-01	1.10E+03	3.20E-06
N3TA-150 (0-6")	9.00E-02	9.00E-02	2.80E-02	2.76E+00	2.48E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	9.86E+01	5.05E-01	1.56E-03	1.13E+00	1.04E-03	7.76E+02	1.97E-01	1.10E+03	9.43E-07
N3TA-200 (0-6")	9.00E-02	9.00E-02	2.80E-02	2.79E+00	2.51E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	9.95E+01	5.10E-01	1.56E-03	1.13E+00	1.05E-03	7.76E+02	1.97E-01	1.10E+03	9.52E-07
N3TA-250 (0-6")	9.00E-02	9.00E-02	2.80E-02	2.11E+00	1.90E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	7.54E+01	3.87E-01	1.56E-03	1.13E+00	7.94E-04	7.76E+02	1.97E-01	1.10E+03	7.21E-07
N3TA-300 (0-6")	9.00E-02	9.00E-02	2.80E-02	2.03E+00	1.83E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	7.26E+01	3.72E-01	1.56E-03	1.13E+00	7.65E-04	7.76E+02	1.97E-01	1.10E+03	6.94E-07
N3TA-350 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
N3TA-400 (0-6")	9.00E-02	9.00E-02	2.80E-02	1.91E+00	1.72E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	6.82E+01	3.50E-01	1.56E-03	1.13E+00	7.19E-04	7.76E+02	1.97E-01	1.10E+03	6.52E-07
N3TA-450 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	6.58E+01	BB	BB	BB	BB	BB	BB	BB	BB
N3TA-50 (0-6")	9.00E-02	9.00E-02	2.80E-02	3.64E+00	3.27E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.30E+02	6.66E-01	1.56E-03	1.13E+00	1.37E-03	7.76E+02	1.97E-01	1.10E+03	1.24E-06
N3TA-500 (0-6")	9.00E-02	9.00E-02	2.80E-02	5.63E+00	5.06E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.01E+02	1.03E+00	1.56E-03	1.13E+00	2.12E-03	7.76E+02	1.97E-01	1.10E+03	1.92E-06
N3TA-550 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB

TABLE C-10E: MANGANESE DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 10 - NUMBER 3 TUNNEL WASTE AREA (Continued)
Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)
calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **1.089**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Red-Tailed Hawk (Carnivorous Birds - Terrestrial)																							
N3TA-600 (0-6")	9.00E-02	9.00E-02	2.80E-02	1.96E+00	1.76E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	7.00E+01	3.59E-01	1.56E-03	1.13E+00	7.38E-04	7.76E+02	1.97E-01	1.10E+03	6.70E-07
N3TA-650 (0-6")	9.00E-02	9.00E-02	2.80E-02	2.03E+00	1.82E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	7.24E+01	3.71E-01	1.56E-03	1.13E+00	7.63E-04	7.76E+02	1.97E-01	1.10E+03	6.92E-07
N3TA-700 (0-6")	9.00E-02	9.00E-02	2.80E-02	5.22E+01	4.70E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.87E+03	9.56E+00	1.56E-03	1.13E+00	1.97E-02	7.76E+02	1.97E-01	1.10E+03	1.78E-05
N3TA-750 (0-6")	9.00E-02	9.00E-02	2.80E-02	9.30E+01	8.37E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.32E+03	1.70E+01	1.56E-03	1.13E+00	3.50E-02	7.76E+02	1.97E-01	1.10E+03	3.18E-05
N3TA-800 (0-6")	9.00E-02	9.00E-02	2.80E-02	7.49E+01	6.74E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.68E+03	1.37E+01	1.56E-03	1.13E+00	2.82E-02	7.76E+02	1.97E-01	1.10E+03	2.56E-05
N3TA-850 (0-6")	9.00E-02	9.00E-02	2.80E-02	5.89E+00	5.30E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.10E+02	1.08E+00	1.56E-03	1.13E+00	2.22E-03	7.76E+02	1.97E-01	1.10E+03	2.01E-06
N3TA-900 (0-6")	9.00E-02	9.00E-02	2.80E-02	6.84E+00	6.16E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.44E+02	1.25E+00	1.56E-03	1.13E+00	2.58E-03	7.76E+02	1.97E-01	1.10E+03	2.34E-06
N3TA-950 (0-6")	9.00E-02	9.00E-02	2.80E-02	1.98E+00	1.78E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	7.06E+01	3.62E-01	1.56E-03	1.13E+00	7.44E-04	7.76E+02	1.97E-01	1.10E+03	6.76E-07
N3TA-Comp 1 (0-6")	9.00E-02	9.00E-02	2.80E-02	5.24E+00	4.71E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.87E+02	9.59E-01	1.56E-03	1.13E+00	1.97E-03	7.76E+02	1.97E-01	1.10E+03	1.79E-06
N3TA-Comp 2 (0-6")	9.00E-02	9.00E-02	2.80E-02	1.95E+00	1.75E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	6.96E+01	3.57E-01	1.56E-03	1.13E+00	7.33E-04	7.76E+02	1.97E-01	1.10E+03	6.66E-07
N3TA-Comp 3 (0-6")	9.00E-02	9.00E-02	2.80E-02	3.60E+01	3.24E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.29E+03	6.60E+00	1.56E-03	1.13E+00	1.36E-02	7.76E+02	1.97E-01	1.10E+03	1.23E-05
N3TA-Det Pond (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
N3TA-Pile #1 (0-6")	9.00E-02	9.00E-02	2.80E-02	1.73E+02	1.56E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	6.19E+03	3.18E+01	1.56E-03	1.13E+00	6.53E-02	7.76E+02	1.97E-01	1.10E+03	5.92E-05
N3TA-Pile #2 (0-6")	9.00E-02	9.00E-02	2.80E-02	1.35E+01	1.21E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.81E+02	2.46E+00	1.56E-03	1.13E+00	5.06E-03	7.76E+02	1.97E-01	1.10E+03	4.60E-06
																						Maximum HQ (Tunnel No. 3 Area)	**5.92E-05**
American Kestrel (Insectivorous Birds - Terrestrial)																							
Reference Site																							
SGBG-1 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	2.08E+02	2.86E+00	7.84E-04	1.41E+02	1.11E-01	4.16E-03	1.24E-01	9.99E-02	7.76E+02	1.97E-01	7.08E+02	1.41E-04
SGBG-201 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.93E+02	2.66E+00	7.84E-04	1.31E+02	1.03E-01	4.16E-03	1.24E-01	9.27E-02	7.76E+02	1.97E-01	7.08E+02	1.31E-04
UBRBG-201 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.17E+03	1.61E+01	7.84E-04	7.92E+02	6.21E-01	4.16E-03	1.24E-01	5.61E-01	7.76E+02	1.97E-01	7.08E+02	7.92E-04
No. 3 Tunnel Waste Area																						**Minimum HQ (Reference Site)**	**1.31E-04**
N3TA fine tail (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
N3TA-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
N3TA-100 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.58E+02	2.17E+00	7.84E-04	1.07E+02	8.38E-02	4.16E-03	1.24E-01	7.57E-02	7.76E+02	1.97E-01	7.08E+02	1.07E-04
N3TA-1000 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.07E+02	1.47E+00	7.84E-04	7.25E+01	5.69E-02	4.16E-03	1.24E-01	5.13E-02	7.76E+02	1.97E-01	7.08E+02	7.25E-05
N3TA-1000-EOT (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
N3TA-1050 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	4.94E+02	6.80E+00	7.84E-04	3.35E+02	2.63E-01	4.16E-03	1.24E-01	2.37E-01	7.76E+02	1.97E-01	7.08E+02	3.35E-04
N3TA-150 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.45E+02	2.00E+00	7.84E-04	9.86E+01	7.73E-02	4.16E-03	1.24E-01	6.98E-02	7.76E+02	1.97E-01	7.08E+02	9.86E-05
N3TA-200 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.47E+02	2.02E+00	7.84E-04	9.95E+01	7.81E-02	4.16E-03	1.24E-01	7.05E-02	7.76E+02	1.97E-01	7.08E+02	9.96E-05
N3TA-250 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.11E+02	1.53E+00	7.84E-04	7.54E+01	5.91E-02	4.16E-03	1.24E-01	5.34E-02	7.76E+02	1.97E-01	7.08E+02	7.54E-05
N3TA-300 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.07E+02	1.47E+00	7.84E-04	7.26E+01	5.69E-02	4.16E-03	1.24E-01	5.14E-02	7.76E+02	1.97E-01	7.08E+02	7.26E-05
N3TA-350 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
N3TA-400 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.01E+02	1.39E+00	7.84E-04	6.82E+01	5.35E-02	4.16E-03	1.24E-01	4.83E-02	7.76E+02	1.97E-01	7.08E+02	6.82E-05
N3TA-450 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	9.71E+01	1.34E+00	7.84E-04	6.58E+01	5.16E-02	4.16E-03	1.24E-01	4.66E-02	7.76E+02	1.97E-01	7.08E+02	6.58E-05
N3TA-50 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.92E+02	2.64E+00	7.84E-04	1.30E+02	1.02E-01	4.16E-03	1.24E-01	9.20E-02	7.76E+02	1.97E-01	7.08E+02	1.30E-04
N3TA-500 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	2.97E+02	4.08E+00	7.84E-04	2.01E+02	1.58E-01	4.16E-03	1.24E-01	1.42E-01	7.76E+02	1.97E-01	7.08E+02	2.01E-04
N3TA-550 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
N3TA-600 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.03E+02	1.42E+00	7.84E-04	7.00E+01	5.49E-02	4.16E-03	1.24E-01	4.96E-02	7.76E+02	1.97E-01	7.08E+02	7.01E-05
N3TA-650 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.07E+02	1.47E+00	7.84E-04	7.24E+01	5.68E-02	4.16E-03	1.24E-01	5.13E-02	7.76E+02	1.97E-01	7.08E+02	7.24E-05
N3TA-700 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	2.75E+03	3.79E+01	7.84E-04	1.87E+03	1.46E+00	4.16E-03	1.24E-01	1.32E+00	7.76E+02	1.97E-01	7.08E+02	1.87E-03
N3TA-750 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	4.90E+03	6.75E+01	7.84E-04	3.32E+03	2.61E+00	4.16E-03	1.24E-01	2.35E+00	7.76E+02	1.97E-01	7.08E+02	3.32E-03
N3TA-800 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	3.95E+03	5.44E+01	7.84E-04	2.68E+03	2.10E+00	4.16E-03	1.24E-01	1.89E+00	7.76E+02	1.97E-01	7.08E+02	2.68E-03
N3TA-850 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	3.10E+02	4.27E+00	7.84E-04	2.10E+02	1.65E-01	4.16E-03	1.24E-01	1.49E-01	7.76E+02	1.97E-01	7.08E+02	2.10E-04
N3TA-900 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	3.61E+02	4.97E+00	7.84E-04	2.44E+02	1.92E-01	4.16E-03	1.24E-01	1.73E-01	7.76E+02	1.97E-01	7.08E+02	2.45E-04
N3TA-950 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.04E+02	1.43E+00	7.84E-04	7.06E+01	5.54E-02	4.16E-03	1.24E-01	5.00E-02	7.76E+02	1.97E-01	7.08E+02	7.07E-05
N3TA-Comp 1 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	2.76E+02	3.80E+00	7.84E-04	1.87E+02	1.47E-01	4.16E-03	1.24E-01	1.32E-01	7.76E+02	1.97E-01	7.08E+02	1.87E-04
N3TA-Comp 2 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.03E+02	1.41E+00	7.84E-04	6.96E+01	5.46E-02	4.16E-03	1.24E-01	4.93E-02	7.76E+02	1.97E-01	7.08E+02	6.96E-05
N3TA-Comp 3 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.90E+03	2.62E+01	7.84E-04	1.29E+03	1.01E+00	4.16E-03	1.24E-01	9.12E-01	7.76E+02	1.97E-01	7.08E+02	1.29E-03
N3TA-Det Pond (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
N3TA-Pile #1 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	9.14E+03	1.26E+02	7.84E-04	6.19E+03	4.86E+00	4.16E-03	1.24E-01	4.39E+00	7.76E+02	1.97E-01	7.08E+02	6.20E-03
N3TA-Pile #2 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	7.09E+02	9.76E+00	7.84E-04	4.81E+02	3.77E-01	4.16E-03	1.24E-01	3.40E-01	7.76E+02	1.97E-01	7.08E+02	4.81E-04
																						Maximum HQ (Tunnel No. 3 Area)	**6.20E-03**

TABLE C-10E: MANGANESE DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 10 - NUMBER 3 TUNNEL WASTE AREA (Continued)
Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables; from BAF table; linked to soil or sed concentration table (VLOOKUP)
calculated values; linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **1.089**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Meadow Vole (Small Herbivorous Mammal - Terrestrial)																							
Reference Site																							
SGBG-1 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	3.34E-01	4.72E+01	2.21E-01	NA	NA	NA	NA	1.13E-04	1.41E+02	1.59E-02	1.00E+00	3.06E-02	7.74E+00	1.59E+02	2.97E-02	1.59E+02	4.88E-02
SGBG-201 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	3.34E-01	4.38E+01	2.05E-01	NA	NA	NA	NA	1.13E-04	1.31E+02	1.47E-02	1.00E+00	3.06E-02	7.19E+00	1.59E+02	2.97E-02	1.59E+02	4.52E-02
UBRBG-201 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	3.34E-01	2.65E+02	1.24E+00	NA	NA	NA	NA	1.13E-04	7.92E+02	8.91E-02	1.00E+00	3.06E-02	4.35E+01	1.59E+02	2.97E-02	1.59E+02	2.74E-01
No. 3 Tunnel Waste Area																						**Minimum HQ (Reference Site)**	**4.52E-02**
N3TA fine tail (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
N3TA-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
N3TA-100 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	1.06E+03	4.97E+00	NA	NA	NA	NA	1.13E-04	1.07E+02	1.20E-02	1.00E+00	3.06E-02	1.63E+02	1.59E+02	2.97E-02	1.59E+02	1.02E+00
N3TA-1000 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	7.18E+02	3.37E+00	NA	NA	NA	NA	1.13E-04	7.25E+01	8.16E-03	1.00E+00	3.06E-02	1.10E+02	1.59E+02	2.97E-02	1.59E+02	6.95E-01
N3TA-1000-EOT (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
N3TA-1050 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	3.32E+03	1.56E+01	NA	NA	NA	NA	1.13E-04	3.35E+02	3.77E-02	1.00E+00	3.06E-02	5.10E+02	1.59E+02	2.97E-02	1.59E+02	3.21E+00
N3TA-150 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	9.77E+02	4.58E+00	NA	NA	NA	NA	1.13E-04	9.86E+01	1.11E-02	1.00E+00	3.06E-02	1.50E+02	1.59E+02	2.97E-02	1.59E+02	9.45E-01
N3TA-200 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	9.86E+02	4.63E+00	NA	NA	NA	NA	1.13E-04	9.95E+01	1.12E-02	1.00E+00	3.06E-02	1.52E+02	1.59E+02	2.97E-02	1.59E+02	9.54E-01
N3TA-250 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	7.47E+02	3.50E+00	NA	NA	NA	NA	1.13E-04	7.54E+01	8.48E-03	1.00E+00	3.06E-02	1.15E+02	1.59E+02	2.97E-02	1.59E+02	7.23E-01
N3TA-300 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	7.19E+02	3.37E+00	NA	NA	NA	NA	1.13E-04	7.26E+01	8.17E-03	1.00E+00	3.06E-02	1.10E+02	1.59E+02	2.97E-02	1.59E+02	6.96E-01
N3TA-350 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
N3TA-400 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	6.76E+02	3.17E+00	NA	NA	NA	NA	1.13E-04	6.82E+01	7.68E-03	1.00E+00	3.06E-02	1.04E+02	1.59E+02	2.97E-02	1.59E+02	6.54E-01
N3TA-450 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	6.52E+02	3.06E+00	NA	NA	NA	NA	1.13E-04	6.58E+01	7.40E-03	1.00E+00	3.06E-02	1.00E+02	1.59E+02	2.97E-02	1.59E+02	6.30E-01
N3TA-50 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	1.29E+03	6.04E+00	NA	NA	NA	NA	1.13E-04	1.30E+02	1.46E-02	1.00E+00	3.06E-02	1.98E+02	1.59E+02	2.97E-02	1.59E+02	1.25E+00
N3TA-500 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	1.99E+03	9.34E+00	NA	NA	NA	NA	1.13E-04	2.01E+02	2.26E-02	1.00E+00	3.06E-02	3.06E+02	1.59E+02	2.97E-02	1.59E+02	1.93E+00
N3TA-550 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
N3TA-600 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	6.94E+02	3.25E+00	NA	NA	NA	NA	1.13E-04	7.00E+01	7.88E-03	1.00E+00	3.06E-02	1.07E+02	1.59E+02	2.97E-02	1.59E+02	6.71E-01
N3TA-650 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	7.17E+02	3.36E+00	NA	NA	NA	NA	1.13E-04	7.24E+01	8.15E-03	1.00E+00	3.06E-02	1.10E+02	1.59E+02	2.97E-02	1.59E+02	6.94E-01
N3TA-700 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	1.85E+04	8.67E+01	NA	NA	NA	NA	1.13E-04	1.87E+03	2.10E-01	1.00E+00	3.06E-02	2.84E+03	1.59E+02	2.97E-02	1.59E+02	1.79E+01
N3TA-750 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	3.29E+04	1.54E+02	NA	NA	NA	NA	1.13E-04	3.32E+03	3.74E-01	1.00E+00	3.06E-02	5.06E+03	1.59E+02	2.97E-02	1.59E+02	3.19E+01
N3TA-800 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	2.65E+04	1.24E+02	NA	NA	NA	NA	1.13E-04	2.68E+03	3.01E-01	1.00E+00	3.06E-02	4.07E+03	1.59E+02	2.97E-02	1.59E+02	2.57E+01
N3TA-850 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	2.08E+03	9.77E+00	NA	NA	NA	NA	1.13E-04	2.10E+02	2.37E-02	1.00E+00	3.06E-02	3.20E+02	1.59E+02	2.97E-02	1.59E+02	2.02E+00
N3TA-900 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	2.42E+03	1.14E+01	NA	NA	NA	NA	1.13E-04	2.44E+02	2.75E-02	1.00E+00	3.06E-02	3.72E+02	1.59E+02	2.97E-02	1.59E+02	2.34E+00
N3TA-950 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	7.00E+02	3.28E+00	NA	NA	NA	NA	1.13E-04	7.06E+01	7.95E-03	1.00E+00	3.06E-02	1.08E+02	1.59E+02	2.97E-02	1.59E+02	6.77E-01
N3TA-Comp 1 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	1.85E+03	8.69E+00	NA	NA	NA	NA	1.13E-04	1.87E+02	2.10E-02	1.00E+00	3.06E-02	2.85E+02	1.59E+02	2.97E-02	1.59E+02	1.79E+00
N3TA-Comp 2 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	6.90E+02	3.23E+00	NA	NA	NA	NA	1.13E-04	6.96E+01	7.83E-03	1.00E+00	3.06E-02	1.06E+02	1.59E+02	2.97E-02	1.59E+02	6.67E-01
N3TA-Comp 3 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	1.28E+04	5.98E+01	NA	NA	NA	NA	1.13E-04	1.29E+03	1.45E-01	1.00E+00	3.06E-02	1.96E+03	1.59E+02	2.97E-02	1.59E+02	1.23E+01
N3TA-Det Pond (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
N3TA-Pile #1 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	6.14E+04	2.88E+02	NA	NA	NA	NA	1.13E-04	6.19E+03	6.97E-01	1.00E+00	3.06E-02	9.43E+03	1.59E+02	2.97E-02	1.59E+02	5.94E+01
N3TA-Pile #2 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	4.76E+03	2.23E+01	NA	NA	NA	NA	1.13E-04	4.81E+02	5.41E-02	1.00E+00	3.06E-02	7.31E+02	1.59E+02	2.97E-02	1.59E+02	4.61E+00
																						Maximum HQ (Tunnel No. 3 Area)	**5.94E+01**
White-Tailed Deer (Large Herbivorous Mammal - Terrestrial)																							
Reference Site																							
SGBG-1 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	3.34E-01	4.72E+01	6.75E+01	NA	NA	NA	NA	2.86E-02	1.41E+02	4.04E+00	6.09E-03	1.35E+02	3.23E-03	1.59E+02	2.97E-02	9.60E+01	3.36E-05
SGBG-201 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	3.34E-01	4.38E+01	6.26E+01	NA	NA	NA	NA	2.86E-02	1.31E+02	3.75E+00	6.09E-03	1.35E+02	3.00E-03	1.59E+02	2.97E-02	9.60E+01	3.12E-05
UBRBG-201 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	3.34E-01	2.65E+02	3.79E+02	NA	NA	NA	NA	2.86E-02	7.92E+02	2.27E+01	6.09E-03	1.35E+02	1.81E-02	1.59E+02	2.97E-02	9.60E+01	1.89E-04
No. 3 Tunnel Waste Area																						**Minimum HQ (Reference Site)**	**3.12E-05**
N3TA fine tail (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
N3TA-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
N3TA-100 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	1.06E+03	1.52E+03	NA	NA	NA	NA	2.86E-02	1.07E+02	3.06E+00	6.09E-03	1.35E+02	6.86E-02	1.59E+02	2.97E-02	9.60E+01	7.14E-04
N3TA-1000 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	7.18E+02	1.03E+03	NA	NA	NA	NA	2.86E-02	7.25E+01	2.08E+00	6.09E-03	1.35E+02	4.65E-02	1.59E+02	2.97E-02	9.60E+01	4.84E-04
N3TA-1000-EOT (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
N3TA-1050 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	3.32E+03	4.75E+03	NA	NA	NA	NA	2.86E-02	3.35E+02	9.59E+00	6.09E-03	1.35E+02	2.15E-01	1.59E+02	2.97E-02	9.60E+01	2.24E-03
N3TA-150 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	9.77E+02	1.40E+03	NA	NA	NA	NA	2.86E-02	9.86E+01	2.82E+00	6.09E-03	1.35E+02	6.32E-02	1.59E+02	2.97E-02	9.60E+01	6.59E-04
N3TA-200 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	9.86E+02	1.41E+03	NA	NA	NA	NA	2.86E-02	9.95E+01	2.85E+00	6.09E-03	1.35E+02	6.39E-02	1.59E+02	2.97E-02	9.60E+01	6.65E-04
N3TA-250 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	7.47E+02	1.07E+03	NA	NA	NA	NA	2.86E-02	7.54E+01	2.16E+00	6.09E-03	1.35E+02	4.84E-02	1.59E+02	2.97E-02	9.60E+01	5.04E-04
N3TA-300 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	7.19E+02	1.03E+03	NA	NA	NA	NA	2.86E-02	7.26E+01	2.08E+00	6.09E-03	1.35E+02	4.66E-02	1.59E+02	2.97E-02	9.60E+01	4.85E-04
N3TA-350 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
N3TA-400 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	6.76E+02	9.68E+02	NA	NA	NA	NA	2.86E-02	6.82E+01	1.95E+00	6.09E-03	1.35E+02	4.38E-02	1.59E+02	2.97E-02	9.60E+01	4.56E-04
N3TA-450 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	6.52E+02	9.33E+02	NA	NA	NA	NA	2.86E-02	6.58E+01	1.88E+00	6.09E-03	1.35E+02	4.22E-02	1.59E+02	2.97E-02	9.60E+01	4.40E-04
N3TA-50 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	1.29E+03	1.84E+03	NA	NA	NA	NA	2.86E-02	1.30E+02	3.72E+00	6.09E-03	1.35E+02	8.33E-02	1.59E+02	2.97E-02	9.60E+01	8.68E-04
N3TA-500 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	1.99E+03	2.85E+03	NA	NA	NA	NA	2.86E-02	2.01E+02	5.76E+00	6.09E-03	1.35E+02	1.29E-01	1.59E+02	2.97E-02	9.60E+01	1.34E-03
N3TA-550 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB

TABLE C-10E: MANGANESE DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 10 - NUMBER 3 TUNNEL WASTE AREA (Continued)
Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)
calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **1.089**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
White-Tailed Deer (Large Herbivorous Mammal - Terrestrial)																							
N3TA-600 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	7.00E+01	BB	BB	BB	BB	BB	BB	BB	BB
N3TA-650 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	7.17E+02	1.03E+03	NA	NA	NA	NA	2.86E-02	7.24E+01	2.07E+00	6.09E-03	1.35E+02	4.64E-02	1.59E+02	2.97E-02	9.60E+01	4.84E-04
N3TA-700 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	1.85E+04	2.65E+04	NA	NA	NA	NA	2.86E-02	1.87E+03	5.34E+01	6.09E-03	1.35E+02	1.20E+00	1.59E+02	2.97E-02	9.60E+01	1.25E-02
N3TA-750 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	3.29E+04	4.71E+04	NA	NA	NA	NA	2.86E-02	3.32E+03	9.52E+01	6.09E-03	1.35E+02	2.13E+00	1.59E+02	2.97E-02	9.60E+01	2.22E-02
N3TA-800 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	2.65E+04	3.80E+04	NA	NA	NA	NA	2.86E-02	2.68E+03	7.66E+01	6.09E-03	1.35E+02	1.72E+00	1.59E+02	2.97E-02	9.60E+01	1.79E-02
N3TA-850 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	2.08E+03	2.98E+03	NA	NA	NA	NA	2.86E-02	2.10E+02	6.02E+00	6.09E-03	1.35E+02	1.35E-01	1.59E+02	2.97E-02	9.60E+01	1.41E-03
N3TA-900 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	2.42E+03	3.47E+03	NA	NA	NA	NA	2.86E-02	2.44E+02	7.00E+00	6.09E-03	1.35E+02	1.57E-01	1.59E+02	2.97E-02	9.60E+01	1.63E-03
N3TA-950 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	7.00E+02	1.00E+03	NA	NA	NA	NA	2.86E-02	7.06E+01	2.02E+00	6.09E-03	1.35E+02	4.53E-02	1.59E+02	2.97E-02	9.60E+01	4.72E-04
N3TA-Comp 1 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	1.85E+03	2.65E+03	NA	NA	NA	NA	2.86E-02	1.87E+02	5.35E+00	6.09E-03	1.35E+02	1.20E-01	1.59E+02	2.97E-02	9.60E+01	1.25E-03
N3TA-Comp 2 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	6.90E+02	9.87E+02	NA	NA	NA	NA	2.86E-02	6.96E+01	1.99E+00	6.09E-03	1.35E+02	4.46E-02	1.59E+02	2.97E-02	9.60E+01	4.65E-04
N3TA-Comp 3 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	1.28E+04	1.83E+04	NA	NA	NA	NA	2.86E-02	1.29E+03	3.69E+01	6.09E-03	1.35E+02	8.26E-01	1.59E+02	2.97E-02	9.60E+01	8.61E-03
N3TA-Det Pond (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
N3TA-Pile #1 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	6.14E+04	8.79E+04	NA	NA	NA	NA	2.86E-02	6.19E+03	1.77E+02	6.09E-03	1.35E+02	3.97E+00	1.59E+02	2.97E-02	9.60E+01	4.14E-02
N3TA-Pile #2 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	4.76E+03	6.82E+03	NA	NA	NA	NA	2.86E-02	4.81E+02	1.38E+01	6.09E-03	1.35E+02	3.08E-01	1.59E+02	2.97E-02	9.60E+01	3.21E-03
																						Maximum HQ (Tunnel No. 3 Area)	**4.14E-02**
Red Fox (Carnivorous Mammal - Terrestrial)																							
Reference Site																							
SGBG-1 (0-6")	1.72E-01	1.72E-01	5.93E-02	8.37E+00	1.44E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.41E+02	6.78E-01	8.05E-04	4.54E+00	3.75E-04	1.59E+02	2.97E-02	1.18E+02	3.19E-06
SGBG-201 (0-6")	1.72E-01	1.72E-01	5.93E-02	7.77E+00	1.33E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.31E+02	6.29E-01	8.05E-04	4.54E+00	3.48E-04	1.59E+02	2.97E-02	1.18E+02	2.96E-06
UBRBG-201 (0-6")	1.72E-01	1.72E-01	5.93E-02	4.70E+01	8.06E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	7.92E+02	3.80E+00	8.05E-04	4.54E+00	2.10E-03	1.59E+02	2.97E-02	1.18E+02	1.79E-05
No. 3 Tunnel Waste Area																						**Minimum HQ (Reference Site)**	**2.96E-06**
N3TA fine tail (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
N3TA-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
N3TA-100 (0-6")	1.72E-01	1.72E-01	2.80E-02	2.99E+00	5.13E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.07E+02	5.13E-01	8.05E-04	4.54E+00	1.82E-04	1.59E+02	2.97E-02	1.18E+02	1.55E-06
N3TA-1000 (0-6")	1.72E-01	1.72E-01	2.80E-02	2.03E+00	3.48E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	7.25E+01	3.48E-01	8.05E-04	4.54E+00	1.23E-04	1.59E+02	2.97E-02	1.18E+02	1.05E-06
N3TA-1000-EOT (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
N3TA-1050 (0-6")	1.72E-01	1.72E-01	2.80E-02	9.38E+00	1.61E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.35E+02	1.61E+00	8.05E-04	4.54E+00	5.71E-04	1.59E+02	2.97E-02	1.18E+02	4.85E-06
N3TA-150 (0-6")	1.72E-01	1.72E-01	2.80E-02	2.76E+00	4.73E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	9.86E+01	4.73E-01	8.05E-04	4.54E+00	1.68E-04	1.59E+02	2.97E-02	1.18E+02	1.43E-06
N3TA-200 (0-6")	1.72E-01	1.72E-01	2.80E-02	2.79E+00	4.78E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	9.95E+01	4.78E-01	8.05E-04	4.54E+00	1.70E-04	1.59E+02	2.97E-02	1.18E+02	1.44E-06
N3TA-250 (0-6")	1.72E-01	1.72E-01	2.80E-02	2.11E+00	3.62E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	7.54E+01	3.62E-01	8.05E-04	4.54E+00	1.28E-04	1.59E+02	2.97E-02	1.18E+02	1.09E-06
N3TA-300 (0-6")	1.72E-01	1.72E-01	2.80E-02	2.03E+00	3.49E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	7.26E+01	3.49E-01	8.05E-04	4.54E+00	1.24E-04	1.59E+02	2.97E-02	1.18E+02	1.05E-06
N3TA-350 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
N3TA-400 (0-6")	1.72E-01	1.72E-01	2.80E-02	1.91E+00	3.28E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	6.82E+01	3.28E-01	8.05E-04	4.54E+00	1.16E-04	1.59E+02	2.97E-02	1.18E+02	9.88E-07
N3TA-450 (0-6")	1.72E-01	1.72E-01	2.80E-02	1.84E+00	3.16E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	6.58E+01	3.16E-01	8.05E-04	4.54E+00	1.12E-04	1.59E+02	2.97E-02	1.18E+02	9.52E-07
N3TA-50 (0-6")	1.72E-01	1.72E-01	2.80E-02	3.64E+00	6.24E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.30E+02	6.24E-01	8.05E-04	4.54E+00	2.21E-04	1.59E+02	2.97E-02	1.18E+02	1.88E-06
N3TA-500 (0-6")	1.72E-01	1.72E-01	2.80E-02	5.63E+00	9.66E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.01E+02	9.66E-01	8.05E-04	4.54E+00	3.43E-04	1.59E+02	2.97E-02	1.18E+02	2.91E-06
N3TA-550 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
N3TA-600 (0-6")	1.72E-01	1.72E-01	2.80E-02	1.96E+00	3.36E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	7.00E+01	3.36E-01	8.05E-04	4.54E+00	1.19E-04	1.59E+02	2.97E-02	1.18E+02	1.01E-06
N3TA-650 (0-6")	1.72E-01	1.72E-01	2.80E-02	2.03E+00	3.48E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	7.24E+01	3.48E-01	8.05E-04	4.54E+00	1.23E-04	1.59E+02	2.97E-02	1.18E+02	1.05E-06
N3TA-700 (0-6")	1.72E-01	1.72E-01	2.80E-02	5.22E+01	8.96E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.87E+03	8.96E+00	8.05E-04	4.54E+00	3.18E-03	1.59E+02	2.97E-02	1.18E+02	2.70E-05
N3TA-750 (0-6")	1.72E-01	1.72E-01	2.80E-02	9.30E+01	1.60E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.32E+03	1.60E+01	8.05E-04	4.54E+00	5.66E-03	1.59E+02	2.97E-02	1.18E+02	4.81E-05
N3TA-800 (0-6")	1.72E-01	1.72E-01	2.80E-02	7.49E+01	1.29E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.68E+03	1.29E+01	8.05E-04	4.54E+00	4.56E-03	1.59E+02	2.97E-02	1.18E+02	3.88E-05
N3TA-850 (0-6")	1.72E-01	1.72E-01	2.80E-02	5.89E+00	1.01E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.10E+02	1.01E+00	8.05E-04	4.54E+00	3.58E-04	1.59E+02	2.97E-02	1.18E+02	3.05E-06
N3TA-900 (0-6")	1.72E-01	1.72E-01	2.80E-02	6.84E+00	1.17E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.44E+02	1.17E+00	8.05E-04	4.54E+00	4.17E-04	1.59E+02	2.97E-02	1.18E+02	3.54E-06
N3TA-950 (0-6")	1.72E-01	1.72E-01	2.80E-02	1.98E+00	3.39E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	7.06E+01	3.39E-01	8.05E-04	4.54E+00	1.20E-04	1.59E+02	2.97E-02	1.18E+02	1.02E-06
N3TA-Comp 1 (0-6")	1.72E-01	1.72E-01	2.80E-02	5.24E+00	8.98E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.87E+02	8.98E-01	8.05E-04	4.54E+00	3.19E-04	1.59E+02	2.97E-02	1.18E+02	2.71E-06
N3TA-Comp 2 (0-6")	1.72E-01	1.72E-01	2.80E-02	1.95E+00	3.34E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	6.96E+01	3.34E-01	8.05E-04	4.54E+00	1.19E-04	1.59E+02	2.97E-02	1.18E+02	1.01E-06
N3TA-Comp 3 (0-6")	1.72E-01	1.72E-01	2.80E-02	3.60E+01	6.18E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.29E+03	6.18E+00	8.05E-04	4.54E+00	2.19E-03	1.59E+02	2.97E-02	1.18E+02	1.86E-05
N3TA-Det Pond (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
N3TA-Pile #1 (0-6")	1.72E-01	1.72E-01	2.80E-02	1.73E+02	2.97E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	6.19E+03	2.98E+01	8.05E-04	4.54E+00	1.06E-02	1.59E+02	2.97E-02	1.18E+02	8.97E-05
N3TA-Pile #2 (0-6")	1.72E-01	1.72E-01	2.80E-02	1.35E+01	2.31E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.81E+02	2.31E+00	8.05E-04	4.54E+00	8.19E-04	1.59E+02	2.97E-02	1.18E+02	6.96E-06
																						Maximum HQ (Tunnel No. 3 Area)	**8.97E-05**

TABLE C-10E: MANGANESE DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 10 - NUMBER 3 TUNNEL WASTE AREA (Continued)
Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)
calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **1.089**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Masked Shrew (Omnivorous Mammal - Terrestrial, Wetland)																							
Reference Site																							
SGBG-1 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	2.08E+02	1.76E+00	1.10E-03	1.41E+02	1.55E-01	1.00E+00	5.50E-03	3.49E+02	1.59E+02	2.97E-02	1.76E+02	1.98E+00
SGBG-201 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.93E+02	1.64E+00	1.10E-03	1.31E+02	1.44E-01	1.00E+00	5.50E-03	3.24E+02	1.59E+02	2.97E-02	1.76E+02	1.84E+00
UBRBG-201 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.17E+03	9.90E+00	1.10E-03	7.92E+02	8.72E-01	1.00E+00	5.50E-03	1.96E+03	1.59E+02	2.97E-02	1.76E+02	1.11E+01
No. 3 Tunnel Waste Area																						**Minimum HQ (Reference Site)**	**1.84E+00**
N3TA fine tail (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
N3TA-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
N3TA-100 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.58E+02	1.34E+00	1.10E-03	1.07E+02	1.18E-01	1.00E+00	5.50E-03	2.64E+02	1.59E+02	2.97E-02	1.76E+02	1.50E+00
N3TA-1000 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.07E+02	9.06E-01	1.10E-03	7.25E+01	7.98E-02	1.00E+00	5.50E-03	1.79E+02	1.59E+02	2.97E-02	1.76E+02	1.02E+00
N3TA-1000-EOT (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
N3TA-1050 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	4.94E+02	4.19E+00	1.10E-03	3.35E+02	3.69E-01	1.00E+00	5.50E-03	8.28E+02	1.59E+02	2.97E-02	1.76E+02	4.71E+00
N3TA-150 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.45E+02	1.23E+00	1.10E-03	9.86E+01	1.09E-01	1.00E+00	5.50E-03	2.44E+02	1.59E+02	2.97E-02	1.76E+02	1.38E+00
N3TA-200 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.47E+02	1.24E+00	1.10E-03	9.95E+01	1.10E-01	1.00E+00	5.50E-03	2.46E+02	1.59E+02	2.97E-02	1.76E+02	1.40E+00
N3TA-250 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.11E+02	9.42E-01	1.10E-03	7.54E+01	8.30E-02	1.00E+00	5.50E-03	1.86E+02	1.59E+02	2.97E-02	1.76E+02	1.06E+00
N3TA-300 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.07E+02	9.07E-01	1.10E-03	7.26E+01	7.99E-02	1.00E+00	5.50E-03	1.80E+02	1.59E+02	2.97E-02	1.76E+02	1.02E+00
N3TA-350 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
N3TA-400 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.01E+02	8.53E-01	1.10E-03	6.82E+01	7.51E-02	1.00E+00	5.50E-03	1.69E+02	1.59E+02	2.97E-02	1.76E+02	9.58E-01
N3TA-450 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	9.71E+01	8.22E-01	1.10E-03	6.58E+01	7.24E-02	1.00E+00	5.50E-03	1.63E+02	1.59E+02	2.97E-02	1.76E+02	9.24E-01
N3TA-50 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.92E+02	1.62E+00	1.10E-03	1.30E+02	1.43E-01	1.00E+00	5.50E-03	3.21E+02	1.59E+02	2.97E-02	1.76E+02	1.83E+00
N3TA-500 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	2.97E+02	2.51E+00	1.10E-03	2.01E+02	2.21E-01	1.00E+00	5.50E-03	4.97E+02	1.59E+02	2.97E-02	1.76E+02	2.82E+00
N3TA-550 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
N3TA-600 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.03E+02	8.76E-01	1.10E-03	7.00E+01	7.71E-02	1.00E+00	5.50E-03	1.73E+02	1.59E+02	2.97E-02	1.76E+02	9.84E-01
N3TA-650 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.07E+02	9.05E-01	1.10E-03	7.24E+01	7.97E-02	1.00E+00	5.50E-03	1.79E+02	1.59E+02	2.97E-02	1.76E+02	1.02E+00
N3TA-700 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	2.75E+03	2.33E+01	1.10E-03	1.87E+03	2.05E+00	1.00E+00	5.50E-03	4.61E+03	1.59E+02	2.97E-02	1.76E+02	2.62E+01
N3TA-750 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	4.90E+03	4.15E+01	1.10E-03	3.32E+03	3.66E+00	1.00E+00	5.50E-03	8.22E+03	1.59E+02	2.97E-02	1.76E+02	4.67E+01
N3TA-800 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	3.95E+03	3.35E+01	1.10E-03	2.68E+03	2.95E+00	1.00E+00	5.50E-03	6.62E+03	1.59E+02	2.97E-02	1.76E+02	3.76E+01
N3TA-850 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	3.10E+02	2.63E+00	1.10E-03	2.10E+02	2.32E-01	1.00E+00	5.50E-03	5.20E+02	1.59E+02	2.97E-02	1.76E+02	2.96E+00
N3TA-900 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	3.61E+02	3.06E+00	1.10E-03	2.44E+02	2.69E-01	1.00E+00	5.50E-03	6.05E+02	1.59E+02	2.97E-02	1.76E+02	3.43E+00
N3TA-950 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.04E+02	8.83E-01	1.10E-03	7.06E+01	7.78E-02	1.00E+00	5.50E-03	1.75E+02	1.59E+02	2.97E-02	1.76E+02	9.92E-01
N3TA-Comp 1 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	2.76E+02	2.34E+00	1.10E-03	1.87E+02	2.06E-01	1.00E+00	5.50E-03	4.62E+02	1.59E+02	2.97E-02	1.76E+02	2.63E+00
N3TA-Comp 2 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.03E+02	8.70E-01	1.10E-03	6.96E+01	7.66E-02	1.00E+00	5.50E-03	1.72E+02	1.59E+02	2.97E-02	1.76E+02	9.78E-01
N3TA-Comp 3 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.90E+03	1.61E+01	1.10E-03	1.29E+03	1.42E+00	1.00E+00	5.50E-03	3.18E+03	1.59E+02	2.97E-02	1.76E+02	1.81E+01
N3TA-Det Pond (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
N3TA-Pile #1 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	9.14E+03	7.74E+01	1.10E-03	6.19E+03	6.82E+00	1.00E+00	5.50E-03	1.53E+04	1.59E+02	2.97E-02	1.76E+02	8.70E+01
N3TA-Pile #2 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	7.09E+02	6.01E+00	1.10E-03	4.81E+02	5.29E-01	1.00E+00	5.50E-03	1.19E+03	1.59E+02	2.97E-02	1.76E+02	6.75E+00
																						Maximum HQ (Tunnel No. 3 Area)	**8.70E+01**

Notes

1 See Tables 3-1 through 3-13 for ingestion rates, foraging ranges used to calculate the SUF, and body weights.
2 BAFs were calculated by dividing site-collected tissue by collocated soil concentrations (BAFs are in dry weight). The maximum BAF calculated from the Beartrap Creek and Blackfoot River transects was used for site dose calculations. The maximum BAF from the terrestrial reference site was used for reference site dose calculations.
3 The mammal, plant, and invertebrate concentrations were calculated by multiplying the soil concentration by the BAF to generate a tissue concentration (see note 2).
4 Mammal, plant, and invertebrate daily doses were calculated by multiplying the ingestion rate (see note 1) by the tissue concentration (see note 3).
5 Soil concentration from 0 to 6 inches below ground surface at point ID as measured by XRF 10. Doses were not calculated for detected and non-detected soil concentrations measured below the minimum reference site concentration, as indicated by BB. For results that were measured at less than the detection limit, doses were calculated using half of the detection limit.
6 Soil daily dose was calculated by multiplying the soil ingestion rate (see note 1) by soil concentration (see note 5).
7 Total daily dose is calculated using the following equation: total daily dose = ([mammal daily dose (if applicable) + plant daily dose (if applicable) + invertebrate daily dose (if applicable) + soil daily dose]*SUF)/receptor species body weight.
8 The TRVs used in this risk assessment represent a mid-range effects level. The derivation of TRVs is described in Navy (1998).
9 Allometrically adjusted TRVs for birds were calculated using the following equation: receptor species TRV = (test species TRV) x (test species body weight / receptor species body weight)$^{(1-1.2)}$.
10 Allometrically adjusted TRVs for mammals were calculated using the following equation: receptor species TRV = (test species TRV) x (test species body weight / receptor species body weight)$^{(1-0.94)}$.
11 HQs were calculated using the following equation: HQ = total daily dose/allometrically adjusted TRV.
12 Highlighted cells indicate an HQ greater than 1.0.

BAF	Bioaccumulation Factor	mg/day	Milligram per day
BB	Below minimum background reference site concentration	mg/kg	Milligram per kilogram
EE/CA	Engineering Evaluation/Cost Analysis	NA	Not applicable
EU	Exposure Unit	Navy	Department of the Navy
HQ	Hazard quotient	SUF	Site use factor
ID	Identification	TRV	Toxicity reference value
kg	Kilogram	XRF	X-ray fluorescence
kg/day	Kilogram per day	XRF 10	XRF measurements recorded following drying and seiving through a #10-mesh screen

Sources: Department of the Navy. 1998. "Development of Toxicity Reference Values for Conducting Ecological Risk Assessments at Naval Facilities in California, Interim Final." Prepared by Naval Facilities Engineering Command, Engineering Field Activity West (EFA West). San Bruno, California.

TABLE C-10F: ZINC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 10 - NUMBER 3 TUNNEL WASTE AREA
Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)
calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **1.089**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Mourning Dove (Herbivorous Birds - Terrestrial)																							
Reference Site																							
SGBG-1 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.41E+00	5.78E+01	3.33E-01	NA	NA	NA	NA	5.36E-04	4.09E+01	2.19E-02	4.20E-03	1.09E-01	1.37E-02	1.72E+02	9.55E-01	1.11E+02	1.23E-04
SGBG-201 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.41E+00	4.70E+02	2.71E+00	NA	NA	NA	NA	5.36E-04	3.33E+02	1.78E-01	4.20E-03	1.09E-01	1.11E-01	1.72E+02	9.55E-01	1.11E+02	9.97E-04
UBRBG-201 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.41E+00	1.51E+02	8.70E-01	NA	NA	NA	NA	5.36E-04	1.07E+02	5.73E-02	4.20E-03	1.09E-01	3.57E-02	1.72E+02	9.55E-01	1.11E+02	3.20E-04
No. 3 Tunnel Waste Area																						**Minimum HQ (Reference Site)**	**1.23E-04**
N3TA fine tail (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
N3TA-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
N3TA-100 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	4.48E+01	2.58E-01	NA	NA	NA	NA	5.36E-04	2.26E+01	1.21E-02	4.20E-03	1.09E-01	1.04E-02	1.72E+02	9.55E-01	1.11E+02	9.33E-05
N3TA-1000 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
N3TA-1000-EOT (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	1.32E+02	7.61E-01	NA	NA	NA	NA	5.36E-04	6.66E+01	3.57E-02	4.20E-03	1.09E-01	3.07E-02	1.72E+02	9.55E-01	1.11E+02	2.75E-04
N3TA-1050 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	2.85E+02	1.64E+00	NA	NA	NA	NA	5.36E-04	1.44E+02	7.70E-02	4.20E-03	1.09E-01	6.61E-02	1.72E+02	9.55E-01	1.11E+02	5.93E-04
N3TA-150 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
N3TA-200 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	4.11E+01	2.37E-01	NA	NA	NA	NA	5.36E-04	2.08E+01	1.11E-02	4.20E-03	1.09E-01	9.55E-03	1.72E+02	9.55E-01	1.11E+02	8.57E-05
N3TA-250 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
N3TA-300 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
N3TA-350 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
N3TA-400 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
N3TA-450 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
N3TA-50 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	4.38E+01	2.52E-01	NA	NA	NA	NA	5.36E-04	2.21E+01	1.18E-02	4.20E-03	1.09E-01	1.02E-02	1.72E+02	9.55E-01	1.11E+02	9.13E-05
N3TA-500 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
N3TA-550 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
N3TA-600 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
N3TA-650 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
N3TA-700 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	3.68E+02	2.12E+00	NA	NA	NA	NA	5.36E-04	1.86E+02	9.96E-02	4.20E-03	1.09E-01	8.55E-02	1.72E+02	9.55E-01	1.11E+02	7.67E-04
N3TA-750 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	5.46E+02	3.15E+00	NA	NA	NA	NA	5.36E-04	2.76E+02	1.48E-01	4.20E-03	1.09E-01	1.27E-01	1.72E+02	9.55E-01	1.11E+02	1.14E-03
N3TA-800 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	1.38E+03	7.96E+00	NA	NA	NA	NA	5.36E-04	6.97E+02	3.74E-01	4.20E-03	1.09E-01	3.21E-01	1.72E+02	9.55E-01	1.11E+02	2.88E-03
N3TA-850 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	3.03E+02	1.74E+00	NA	NA	NA	NA	5.36E-04	1.53E+02	8.18E-02	4.20E-03	1.09E-01	7.03E-02	1.72E+02	9.55E-01	1.11E+02	6.30E-04
N3TA-900 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	1.47E+02	8.45E-01	NA	NA	NA	NA	5.36E-04	7.40E+01	3.96E-02	4.20E-03	1.09E-01	3.40E-02	1.72E+02	9.55E-01	1.11E+02	3.05E-04
N3TA-950 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
N3TA-Comp 1 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
N3TA-Comp 2 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
N3TA-Comp 3 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	1.19E+03	6.87E+00	NA	NA	NA	NA	5.36E-04	6.02E+02	3.22E-01	4.20E-03	1.09E-01	2.77E-01	1.72E+02	9.55E-01	1.11E+02	2.48E-03
N3TA-Det Pond (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	8.36E+01	4.82E-01	NA	NA	NA	NA	5.36E-04	4.22E+01	2.26E-02	4.20E-03	1.09E-01	1.94E-02	1.72E+02	9.55E-01	1.11E+02	1.74E-04
N3TA-Pile #1 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	1.28E+03	7.36E+00	NA	NA	NA	NA	5.36E-04	6.45E+02	3.46E-01	4.20E-03	1.09E-01	2.97E-01	1.72E+02	9.55E-01	1.11E+02	2.66E-03
N3TA-Pile #2 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	1.72E+02	9.89E-01	NA	NA	NA	NA	5.36E-04	8.66E+01	4.64E-02	4.20E-03	1.09E-01	3.99E-02	1.72E+02	9.55E-01	1.11E+02	3.58E-04
																						Maximum HQ (Tunnel No. 3 Area)	**2.88E-03**
Red-Tailed Hawk (Carnivorous Birds - Terrestrial)																							
Reference Site																							
SGBG-1 (0-6")	9.00E-02	9.00E-02	1.03E+01	4.24E+02	3.81E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.09E+01	2.10E-01	1.56E-03	1.13E+00	5.28E-02	1.72E+02	9.55E-01	1.78E+02	2.97E-04
SGBG-201 (0-6")	9.00E-02	9.00E-02	1.03E+01	3.45E+03	3.10E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.33E+02	1.71E+00	1.56E-03	1.13E+00	4.30E-01	1.72E+02	9.55E-01	1.78E+02	2.41E-03
UBRBG-201 (0-6")	9.00E-02	9.00E-02	1.03E+01	1.11E+03	9.96E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.07E+02	5.48E-01	1.56E-03	1.13E+00	1.38E-01	1.72E+02	9.55E-01	1.78E+02	7.75E-04
No. 3 Tunnel Waste Area																						**Minimum HQ (Reference Site)**	**2.97E-04**
N3TA fine tail (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
N3TA-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
N3TA-100 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.42E+02	1.28E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.26E+01	1.16E-01	1.56E-03	1.13E+00	1.78E-02	1.72E+02	9.55E-01	1.78E+02	1.00E-04
N3TA-1000 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
N3TA-1000-EOT (0-6")	9.00E-02	9.00E-02	6.30E+00	4.19E+02	3.77E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	6.66E+01	3.42E-01	1.56E-03	1.13E+00	5.25E-02	1.72E+02	9.55E-01	1.78E+02	2.95E-04
N3TA-1050 (0-6")	9.00E-02	9.00E-02	6.30E+00	9.05E+02	8.14E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.44E+02	7.37E-01	1.56E-03	1.13E+00	1.13E-01	1.72E+02	9.55E-01	1.78E+02	6.36E-04
N3TA-150 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
N3TA-200 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.31E+02	1.18E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.08E+01	1.06E-01	1.56E-03	1.13E+00	1.63E-02	1.72E+02	9.55E-01	1.78E+02	9.18E-05
N3TA-250 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
N3TA-300 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
N3TA-350 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
N3TA-400 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
N3TA-450 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
N3TA-50 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.39E+02	1.25E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.21E+01	1.13E-01	1.56E-03	1.13E+00	1.74E-02	1.72E+02	9.55E-01	1.78E+02	9.79E-05
N3TA-500 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
N3TA-550 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB

TABLE C-10F: ZINC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 10 - NUMBER 3 TUNNEL WASTE AREA (Continued)
Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)
calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **1.089**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Red-Tailed Hawk (Carnivorous Birds - Terrestrial)																							
N3TA-600 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
N3TA-650 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
N3TA-700 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.17E+03	1.05E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.86E+02	9.53E-01	1.56E-03	1.13E+00	1.46E-01	1.72E+02	9.55E-01	1.78E+02	8.23E-04
N3TA-750 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.74E+03	1.56E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.76E+02	1.41E+00	1.56E-03	1.13E+00	2.17E-01	1.72E+02	9.55E-01	1.78E+02	1.22E-03
N3TA-800 (0-6")	9.00E-02	9.00E-02	6.30E+00	4.39E+03	3.95E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	6.97E+02	3.58E+00	1.56E-03	1.13E+00	5.49E-01	1.72E+02	9.55E-01	1.78E+02	3.09E-03
N3TA-850 (0-6")	9.00E-02	9.00E-02	6.30E+00	9.62E+02	8.65E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.53E+02	7.83E-01	1.56E-03	1.13E+00	1.20E-01	1.72E+02	9.55E-01	1.78E+02	6.76E-04
N3TA-900 (0-6")	9.00E-02	9.00E-02	6.30E+00	4.66E+02	4.19E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	7.40E+01	3.79E-01	1.56E-03	1.13E+00	5.83E-02	1.72E+02	9.55E-01	1.78E+02	3.27E-04
N3TA-950 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
N3TA-Comp 1 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
N3TA-Comp 2 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
N3TA-Comp 3 (0-6")	9.00E-02	9.00E-02	6.30E+00	3.79E+03	3.41E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	6.02E+02	3.08E+00	1.56E-03	1.13E+00	4.74E-01	1.72E+02	9.55E-01	1.78E+02	2.66E-03
N3TA-Det Pond (0-6")	9.00E-02	9.00E-02	6.30E+00	2.66E+02	2.39E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.22E+01	2.16E-01	1.56E-03	1.13E+00	3.32E-02	1.72E+02	9.55E-01	1.78E+02	1.87E-04
N3TA-Pile #1 (0-6")	9.00E-02	9.00E-02	6.30E+00	4.06E+03	3.65E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	6.45E+02	3.31E+00	1.56E-03	1.13E+00	5.08E-01	1.72E+02	9.55E-01	1.78E+02	2.85E-03
N3TA-Pile #2 (0-6")	9.00E-02	9.00E-02	6.30E+00	5.45E+02	4.91E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	8.66E+01	4.44E-01	1.56E-03	1.13E+00	6.82E-02	1.72E+02	9.55E-01	1.78E+02	3.83E-04
																						Maximum HQ (Tunnel No. 3 Area)	**3.09E-03**
American Kestrel (Insectivorous Birds - Terrestrial)																							
Reference Site																							
SGBG-1 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	8.31E+00	3.40E+02	4.68E+00	7.84E-04	4.09E+01	3.21E-02	4.16E-03	1.24E-01	1.58E-01	1.72E+02	9.55E-01	1.14E+02	1.38E-03
SGBG-201 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	8.31E+00	2.77E+03	3.81E+01	7.84E-04	3.33E+02	2.61E-01	4.16E-03	1.24E-01	1.29E+00	1.72E+02	9.55E-01	1.14E+02	1.13E-02
UBRBG-201 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	8.31E+00	8.89E+02	1.22E+01	7.84E-04	1.07E+02	8.39E-02	4.16E-03	1.24E-01	4.14E-01	1.72E+02	9.55E-01	1.14E+02	3.62E-03
No. 3 Tunnel Waste Area																						**Minimum HQ (Reference Site)**	**1.38E-03**
N3TA fine tail (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
N3TA-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
N3TA-100 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	9.89E+01	1.36E+00	7.84E-04	2.26E+01	1.77E-02	4.16E-03	1.24E-01	4.63E-02	1.72E+02	9.55E-01	1.14E+02	4.05E-04
N3TA-1000 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
N3TA-1000-EOT (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	2.92E+02	4.01E+00	7.84E-04	6.66E+01	5.23E-02	4.16E-03	1.24E-01	1.36E-01	1.72E+02	9.55E-01	1.14E+02	1.19E-03
N3TA-1050 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	6.29E+02	8.66E+00	7.84E-04	1.44E+02	1.13E-01	4.16E-03	1.24E-01	2.94E-01	1.72E+02	9.55E-01	1.14E+02	2.57E-03
N3TA-150 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
N3TA-200 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	9.09E+01	1.25E+00	7.84E-04	2.08E+01	1.63E-02	4.16E-03	1.24E-01	4.25E-02	1.72E+02	9.55E-01	1.14E+02	3.72E-04
N3TA-250 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
N3TA-300 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
N3TA-350 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
N3TA-400 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
N3TA-450 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
N3TA-50 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	9.68E+01	1.33E+00	7.84E-04	2.21E+01	1.73E-02	4.16E-03	1.24E-01	4.53E-02	1.72E+02	9.55E-01	1.14E+02	3.96E-04
N3TA-500 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
N3TA-550 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
N3TA-600 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
N3TA-650 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
N3TA-700 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	8.14E+02	1.12E+01	7.84E-04	1.86E+02	1.46E-01	4.16E-03	1.24E-01	3.81E-01	1.72E+02	9.55E-01	1.14E+02	3.33E-03
N3TA-750 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	1.21E+03	1.66E+01	7.84E-04	2.76E+02	2.16E-01	4.16E-03	1.24E-01	5.65E-01	1.72E+02	9.55E-01	1.14E+02	4.94E-03
N3TA-800 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	3.05E+03	4.20E+01	7.84E-04	6.97E+02	5.47E-01	4.16E-03	1.24E-01	1.43E+00	1.72E+02	9.55E-01	1.14E+02	1.25E-02
N3TA-850 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	6.69E+02	9.20E+00	7.84E-04	1.53E+02	1.20E-01	4.16E-03	1.24E-01	3.13E-01	1.72E+02	9.55E-01	1.14E+02	2.74E-03
N3TA-900 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	3.24E+02	4.46E+00	7.84E-04	7.40E+01	5.80E-02	4.16E-03	1.24E-01	1.52E-01	1.72E+02	9.55E-01	1.14E+02	1.33E-03
N3TA-950 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
N3TA-Comp 1 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
N3TA-Comp 2 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
N3TA-Comp 3 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	2.63E+03	3.63E+01	7.84E-04	6.02E+02	4.72E-01	4.16E-03	1.24E-01	1.23E+00	1.72E+02	9.55E-01	1.14E+02	1.08E-02
N3TA-Det Pond (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	1.85E+02	2.54E+00	7.84E-04	4.22E+01	3.31E-02	4.16E-03	1.24E-01	8.65E-02	1.72E+02	9.55E-01	1.14E+02	7.56E-04
N3TA-Pile #1 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	2.83E+03	3.89E+01	7.84E-04	6.45E+02	5.06E-01	4.16E-03	1.24E-01	1.32E+00	1.72E+02	9.55E-01	1.14E+02	1.16E-02
N3TA-Pile #2 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	3.79E+02	5.22E+00	7.84E-04	8.66E+01	6.79E-02	4.16E-03	1.24E-01	1.77E-01	1.72E+02	9.55E-01	1.14E+02	1.55E-03
																						Maximum HQ (Tunnel No. 3 Area)	**1.25E-02**

TABLE C-10F: ZINC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 10 - NUMBER 3 TUNNEL WASTE AREA (Continued)
Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)
calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **1.089**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Meadow Vole (Small Herbivorous Mammal - Terrestrial)																							
Reference Site																							
SGBG-1 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.41E+00	5.78E+01	2.71E-01	NA	NA	NA	NA	1.13E-04	4.09E+01	4.61E-03	1.00E+00	3.06E-02	9.00E+00	4.11E+02	1.75E-01	4.57E+02	1.97E-02
SGBG-201 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.41E+00	4.70E+02	2.20E+00	NA	NA	NA	NA	1.13E-04	3.33E+02	3.75E-02	1.00E+00	3.06E-02	7.32E+01	4.11E+02	1.75E-01	4.57E+02	1.60E-01
UBRBG-201 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.41E+00	1.51E+02	7.08E-01	NA	NA	NA	NA	1.13E-04	1.07E+02	1.20E-02	1.00E+00	3.06E-02	2.35E+01	4.11E+02	1.75E-01	4.57E+02	5.15E-02
No. 3 Tunnel Waste Area																						**Minimum HQ (Reference Site)**	**1.97E-02**
N3TA fine tail (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
N3TA-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
N3TA-100 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	4.48E+01	2.10E-01	NA	NA	NA	NA	1.13E-04	2.26E+01	2.54E-03	1.00E+00	3.06E-02	6.94E+00	4.11E+02	1.75E-01	4.57E+02	1.52E-02
N3TA-1000 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
N3TA-1000-EOT (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	1.32E+02	6.19E-01	NA	NA	NA	NA	1.13E-04	6.66E+01	7.50E-03	1.00E+00	3.06E-02	2.05E+01	4.11E+02	1.75E-01	4.57E+02	4.48E-02
N3TA-1050 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	2.85E+02	1.34E+00	NA	NA	NA	NA	1.13E-04	1.44E+02	1.62E-02	1.00E+00	3.06E-02	4.42E+01	4.11E+02	1.75E-01	4.57E+02	9.67E-02
N3TA-150 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
N3TA-200 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	4.11E+01	1.93E-01	NA	NA	NA	NA	1.13E-04	2.08E+01	2.34E-03	1.00E+00	3.06E-02	6.38E+00	4.11E+02	1.75E-01	4.57E+02	1.40E-02
N3TA-250 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
N3TA-300 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
N3TA-350 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
N3TA-400 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
N3TA-450 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
N3TA-50 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	4.38E+01	2.05E-01	NA	NA	NA	NA	1.13E-04	2.21E+01	2.49E-03	1.00E+00	3.06E-02	6.80E+00	4.11E+02	1.75E-01	4.57E+02	1.49E-02
N3TA-500 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
N3TA-550 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
N3TA-600 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
N3TA-650 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
N3TA-700 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	3.68E+02	1.73E+00	NA	NA	NA	NA	1.13E-04	1.86E+02	2.09E-02	1.00E+00	3.06E-02	5.71E+01	4.11E+02	1.75E-01	4.57E+02	1.25E-01
N3TA-750 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	5.46E+02	2.56E+00	NA	NA	NA	NA	1.13E-04	2.76E+02	3.10E-02	1.00E+00	3.06E-02	8.47E+01	4.11E+02	1.75E-01	4.57E+02	1.85E-01
N3TA-800 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	1.38E+03	6.48E+00	NA	NA	NA	NA	1.13E-04	6.97E+02	7.85E-02	1.00E+00	3.06E-02	2.14E+02	4.11E+02	1.75E-01	4.57E+02	4.69E-01
N3TA-850 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	3.03E+02	1.42E+00	NA	NA	NA	NA	1.13E-04	1.53E+02	1.72E-02	1.00E+00	3.06E-02	4.69E+01	4.11E+02	1.75E-01	4.57E+02	1.03E-01
N3TA-900 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	1.47E+02	6.87E-01	NA	NA	NA	NA	1.13E-04	7.40E+01	8.33E-03	1.00E+00	3.06E-02	2.27E+01	4.11E+02	1.75E-01	4.57E+02	4.98E-02
N3TA-950 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
N3TA-Comp 1 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
N3TA-Comp 2 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
N3TA-Comp 3 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	1.19E+03	5.59E+00	NA	NA	NA	NA	1.13E-04	6.02E+02	6.77E-02	1.00E+00	3.06E-02	1.85E+02	4.11E+02	1.75E-01	4.57E+02	4.05E-01
N3TA-Det Pond (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	8.36E+01	3.92E-01	NA	NA	NA	NA	1.13E-04	4.22E+01	4.75E-03	1.00E+00	3.06E-02	1.30E+01	4.11E+02	1.75E-01	4.57E+02	2.84E-02
N3TA-Pile #1 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	1.28E+03	5.99E+00	NA	NA	NA	NA	1.13E-04	6.45E+02	7.26E-02	1.00E+00	3.06E-02	1.98E+02	4.11E+02	1.75E-01	4.57E+02	4.34E-01
N3TA-Pile #2 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	1.72E+02	8.05E-01	NA	NA	NA	NA	1.13E-04	8.66E+01	9.75E-03	1.00E+00	3.06E-02	2.66E+01	4.11E+02	1.75E-01	4.57E+02	5.83E-02
																						Maximum HQ (Tunnel No. 3 Area)	**4.69E-01**
White-Tailed Deer (Large Herbivorous Mammal - Terrestrial)																							
Reference Site																							
SGBG-1 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.41E+00	5.78E+01	8.27E+01	NA	NA	NA	NA	2.86E-02	4.09E+01	1.17E+00	6.09E-03	1.35E+02	3.79E-03	4.11E+02	1.75E-01	2.76E+02	1.37E-05
SGBG-201 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.41E+00	4.70E+02	6.73E+02	NA	NA	NA	NA	2.86E-02	3.33E+02	9.54E+00	6.09E-03	1.35E+02	3.08E-02	4.11E+02	1.75E-01	2.76E+02	1.12E-04
UBRBG-201 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.41E+00	1.51E+02	2.16E+02	NA	NA	NA	NA	2.86E-02	1.07E+02	3.06E+00	6.09E-03	1.35E+02	9.89E-03	4.11E+02	1.75E-01	2.76E+02	3.58E-05
No. 3 Tunnel Waste Area																						**Minimum HQ (Reference Site)**	**1.37E-05**
N3TA fine tail (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
N3TA-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
N3TA-100 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	4.48E+01	6.41E+01	NA	NA	NA	NA	2.86E-02	2.26E+01	6.47E-01	6.09E-03	1.35E+02	2.92E-03	4.11E+02	1.75E-01	2.76E+02	1.06E-05
N3TA-1000 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
N3TA-1000-EOT (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	1.32E+02	1.89E+02	NA	NA	NA	NA	2.86E-02	6.66E+01	1.91E+00	6.09E-03	1.35E+02	8.61E-03	4.11E+02	1.75E-01	2.76E+02	3.12E-05
N3TA-1050 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	2.85E+02	4.08E+02	NA	NA	NA	NA	2.86E-02	1.44E+02	4.11E+00	6.09E-03	1.35E+02	1.86E-02	4.11E+02	1.75E-01	2.76E+02	6.73E-05
N3TA-150 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
N3TA-200 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	4.11E+01	5.89E+01	NA	NA	NA	NA	2.86E-02	2.08E+01	5.94E-01	6.09E-03	1.35E+02	2.68E-03	4.11E+02	1.75E-01	2.76E+02	9.72E-06
N3TA-250 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
N3TA-300 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
N3TA-350 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
N3TA-400 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
N3TA-450 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
N3TA-50 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	4.38E+01	6.27E+01	NA	NA	NA	NA	2.86E-02	2.21E+01	6.33E-01	6.09E-03	1.35E+02	2.86E-03	4.11E+02	1.75E-01	2.76E+02	1.04E-05
N3TA-500 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
N3TA-550 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB

TABLE C-10F: ZINC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 10 - NUMBER 3 TUNNEL WASTE AREA (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **1.089**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
White-Tailed Deer (Large Herbivorous Mammal - Terrestrial)																							
N3TA-600 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
N3TA-650 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
N3TA-700 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	3.68E+02	5.27E+02	NA	NA	NA	NA	2.86E-02	1.86E+02	5.32E+00	6.09E-03	1.35E+02	2.40E-02	4.11E+02	1.75E-01	2.76E+02	8.71E-05
N3TA-750 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	5.46E+02	7.82E+02	NA	NA	NA	NA	2.86E-02	2.76E+02	7.89E+00	6.09E-03	1.35E+02	3.57E-02	4.11E+02	1.75E-01	2.76E+02	1.29E-04
N3TA-800 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	1.38E+03	1.98E+03	NA	NA	NA	NA	2.86E-02	6.97E+02	2.00E+01	6.09E-03	1.35E+02	9.02E-02	4.11E+02	1.75E-01	2.76E+02	3.27E-04
N3TA-850 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	3.03E+02	4.33E+02	NA	NA	NA	NA	2.86E-02	1.53E+02	4.37E+00	6.09E-03	1.35E+02	1.97E-02	4.11E+02	1.75E-01	2.76E+02	7.15E-05
N3TA-900 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	1.47E+02	2.10E+02	NA	NA	NA	NA	2.86E-02	7.40E+01	2.12E+00	6.09E-03	1.35E+02	9.57E-03	4.11E+02	1.75E-01	2.76E+02	3.46E-05
N3TA-950 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
N3TA-Comp 1 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
N3TA-Comp 2 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
N3TA-Comp 3 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	1.19E+03	1.71E+03	NA	NA	NA	NA	2.86E-02	6.02E+02	1.72E+01	6.09E-03	1.35E+02	7.78E-02	4.11E+02	1.75E-01	2.76E+02	2.82E-04
N3TA-Det Pond (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	8.36E+01	1.20E+02	NA	NA	NA	NA	2.86E-02	4.22E+01	1.21E+00	6.09E-03	1.35E+02	5.46E-03	4.11E+02	1.75E-01	2.76E+02	1.98E-05
N3TA-Pile #1 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	1.28E+03	1.83E+03	NA	NA	NA	NA	2.86E-02	6.45E+02	1.85E+01	6.09E-03	1.35E+02	8.34E-02	4.11E+02	1.75E-01	2.76E+02	3.02E-04
N3TA-Pile #2 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	1.72E+02	2.46E+02	NA	NA	NA	NA	2.86E-02	8.66E+01	2.48E+00	6.09E-03	1.35E+02	1.12E-02	4.11E+02	1.75E-01	2.76E+02	4.06E-05
																						Maximum HQ (Tunnel No. 3 Area)	**3.27E-04**
Red Fox (Carnivorous Mammal - Terrestrial)																							
Reference Site																							
SGBG-1 (0-6")	1.72E-01	1.72E-01	1.03E+01	4.24E+02	7.27E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.09E+01	1.97E-01	8.05E-04	4.54E+00	1.29E-02	4.11E+02	1.75E-01	3.38E+02	3.82E-05
SGBG-201 (0-6")	1.72E-01	1.72E-01	1.03E+01	3.45E+03	5.91E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.33E+02	1.60E+00	8.05E-04	4.54E+00	1.05E-01	4.11E+02	1.75E-01	3.38E+02	3.11E-04
UBRBG-201 (0-6")	1.72E-01	1.72E-01	1.03E+01	1.11E+03	1.90E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.07E+02	5.14E-01	8.05E-04	4.54E+00	3.38E-02	4.11E+02	1.75E-01	3.38E+02	9.98E-05
No. 3 Tunnel Waste Area																						**Minimum HQ (Reference Site)**	**3.82E-05**
N3TA fine tail (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
N3TA-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
N3TA-100 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.42E+02	2.44E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.26E+01	1.09E-01	8.05E-04	4.54E+00	4.35E-03	4.11E+02	1.75E-01	3.38E+02	1.28E-05
N3TA-1000 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
N3TA-1000-EOT (0-6")	1.72E-01	1.72E-01	6.30E+00	4.19E+02	7.20E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	6.66E+01	3.20E-01	8.05E-04	4.54E+00	1.28E-02	4.11E+02	1.75E-01	3.38E+02	3.79E-05
N3TA-1050 (0-6")	1.72E-01	1.72E-01	6.30E+00	9.05E+02	1.55E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.44E+02	6.90E-01	8.05E-04	4.54E+00	2.77E-02	4.11E+02	1.75E-01	3.38E+02	8.17E-05
N3TA-150 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
N3TA-200 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.31E+02	2.24E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.08E+01	9.97E-02	8.05E-04	4.54E+00	3.99E-03	4.11E+02	1.75E-01	3.38E+02	1.18E-05
N3TA-250 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
N3TA-300 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
N3TA-350 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
N3TA-400 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
N3TA-450 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
N3TA-50 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.39E+02	2.39E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.21E+01	1.06E-01	8.05E-04	4.54E+00	4.26E-03	4.11E+02	1.75E-01	3.38E+02	1.26E-05
N3TA-500 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
N3TA-550 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
N3TA-600 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
N3TA-650 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
N3TA-700 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.17E+03	2.01E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.86E+02	8.93E-01	8.05E-04	4.54E+00	3.58E-02	4.11E+02	1.75E-01	3.38E+02	1.06E-04
N3TA-750 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.74E+03	2.98E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.76E+02	1.32E+00	8.05E-04	4.54E+00	5.31E-02	4.11E+02	1.75E-01	3.38E+02	1.57E-04
N3TA-800 (0-6")	1.72E-01	1.72E-01	6.30E+00	4.39E+03	7.53E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	6.97E+02	3.35E+00	8.05E-04	4.54E+00	1.34E-01	4.11E+02	1.75E-01	3.38E+02	3.97E-04
N3TA-850 (0-6")	1.72E-01	1.72E-01	6.30E+00	9.62E+02	1.65E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.53E+02	7.34E-01	8.05E-04	4.54E+00	2.94E-02	4.11E+02	1.75E-01	3.38E+02	8.68E-05
N3TA-900 (0-6")	1.72E-01	1.72E-01	6.30E+00	4.66E+02	7.99E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	7.40E+01	3.55E-01	8.05E-04	4.54E+00	1.42E-02	4.11E+02	1.75E-01	3.38E+02	4.21E-05
N3TA-950 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
N3TA-Comp 1 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
N3TA-Comp 2 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
N3TA-Comp 3 (0-6")	1.72E-01	1.72E-01	6.30E+00	3.79E+03	6.50E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	6.02E+02	2.89E+00	8.05E-04	4.54E+00	1.16E-01	4.11E+02	1.75E-01	3.38E+02	3.42E-04
N3TA-Det Pond (0-6")	1.72E-01	1.72E-01	6.30E+00	2.66E+02	4.56E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.22E+01	2.03E-01	8.05E-04	4.54E+00	8.12E-03	4.11E+02	1.75E-01	3.38E+02	2.40E-05
N3TA-Pile #1 (0-6")	1.72E-01	1.72E-01	6.30E+00	4.06E+03	6.97E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	6.45E+02	3.10E+00	8.05E-04	4.54E+00	1.24E-01	4.11E+02	1.75E-01	3.38E+02	3.67E-04
N3TA-Pile #2 (0-6")	1.72E-01	1.72E-01	6.30E+00	5.45E+02	9.35E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	8.66E+01	4.16E-01	8.05E-04	4.54E+00	1.67E-02	4.11E+02	1.75E-01	3.38E+02	4.92E-05
																						Maximum HQ (Tunnel No. 3 Area)	**3.97E-04**

TABLE C-10F: ZINC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 10 - NUMBER 3 TUNNEL WASTE AREA (Continued)
Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)
calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **1.089**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Masked Shrew (Omnivorous Mammal - Terrestrial, Wetland)																							
Reference Site																							
SGBG-1 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	8.31E+00	3.40E+02	2.88E+00	1.10E-03	4.09E+01	4.51E-02	1.00E+00	5.50E-03	5.32E+02	4.11E+02	1.75E-01	5.06E+02	1.05E+00
SGBG-201 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	8.31E+00	2.77E+03	2.35E+01	1.10E-03	3.33E+02	3.67E-01	1.00E+00	5.50E-03	4.33E+03	4.11E+02	1.75E-01	5.06E+02	8.55E+00
UBRBG-201 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	8.31E+00	8.89E+02	7.53E+00	1.10E-03	1.07E+02	1.18E-01	1.00E+00	5.50E-03	1.39E+03	4.11E+02	1.75E-01	5.06E+02	2.75E+00
No. 3 Tunnel Waste Area																						**Minimum HQ (Reference Site)**	**1.05E+00**
N3TA fine tail (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
N3TA-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
N3TA-100 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	9.89E+01	8.38E-01	1.10E-03	2.26E+01	2.49E-02	1.00E+00	5.50E-03	1.57E+02	4.11E+02	1.75E-01	5.06E+02	3.10E-01
N3TA-1000 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
N3TA-1000-EOT (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	2.92E+02	2.47E+00	1.10E-03	6.66E+01	7.34E-02	1.00E+00	5.50E-03	4.63E+02	4.11E+02	1.75E-01	5.06E+02	9.14E-01
N3TA-1050 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	6.29E+02	5.33E+00	1.10E-03	1.44E+02	1.58E-01	1.00E+00	5.50E-03	9.98E+02	4.11E+02	1.75E-01	5.06E+02	1.97E+00
N3TA-150 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
N3TA-200 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	9.09E+01	7.70E-01	1.10E-03	2.08E+01	2.28E-02	1.00E+00	5.50E-03	1.44E+02	4.11E+02	1.75E-01	5.06E+02	2.85E-01
N3TA-250 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
N3TA-300 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
N3TA-350 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
N3TA-400 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
N3TA-450 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
N3TA-50 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	9.68E+01	8.20E-01	1.10E-03	2.21E+01	2.44E-02	1.00E+00	5.50E-03	1.54E+02	4.11E+02	1.75E-01	5.06E+02	3.03E-01
N3TA-500 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
N3TA-550 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
N3TA-600 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
N3TA-650 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
N3TA-700 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	8.14E+02	6.90E+00	1.10E-03	1.86E+02	2.05E-01	1.00E+00	5.50E-03	1.29E+03	4.11E+02	1.75E-01	5.06E+02	2.55E+00
N3TA-750 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	1.21E+03	1.02E+01	1.10E-03	2.76E+02	3.04E-01	1.00E+00	5.50E-03	1.91E+03	4.11E+02	1.75E-01	5.06E+02	3.78E+00
N3TA-800 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	3.05E+03	2.59E+01	1.10E-03	6.97E+02	7.68E-01	1.00E+00	5.50E-03	4.84E+03	4.11E+02	1.75E-01	5.06E+02	9.57E+00
N3TA-850 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	6.69E+02	5.66E+00	1.10E-03	1.53E+02	1.68E-01	1.00E+00	5.50E-03	1.06E+03	4.11E+02	1.75E-01	5.06E+02	2.09E+00
N3TA-900 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	3.24E+02	2.74E+00	1.10E-03	7.40E+01	8.15E-02	1.00E+00	5.50E-03	5.14E+02	4.11E+02	1.75E-01	5.06E+02	1.01E+00
N3TA-950 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
N3TA-Comp 1 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
N3TA-Comp 2 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
N3TA-Comp 3 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	2.63E+03	2.23E+01	1.10E-03	6.02E+02	6.62E-01	1.00E+00	5.50E-03	4.18E+03	4.11E+02	1.75E-01	5.06E+02	8.25E+00
N3TA-Det Pond (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	1.85E+02	1.57E+00	1.10E-03	4.22E+01	4.65E-02	1.00E+00	5.50E-03	2.93E+02	4.11E+02	1.75E-01	5.06E+02	5.79E-01
N3TA-Pile #1 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	2.83E+03	2.39E+01	1.10E-03	6.45E+02	7.10E-01	1.00E+00	5.50E-03	4.48E+03	4.11E+02	1.75E-01	5.06E+02	8.85E+00
N3TA-Pile #2 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	3.79E+02	3.21E+00	1.10E-03	8.66E+01	9.54E-02	1.00E+00	5.50E-03	6.01E+02	4.11E+02	1.75E-01	5.06E+02	1.19E+00
																						Maximum HQ (Tunnel No. 3 Area)	**9.57E+00**

Notes

1 See Tables 3-1 through 3-13 for ingestion rates, foraging ranges used to calculate the SUF, and body weights.
2 BAFs were calculated by dividing site-collected tissue by collocated soil concentrations (BAFs are in dry weight). The maximum BAF calculated from the Beartrap Creek and Blackfoot River transects was used for site dose calculations. The maximum BAF from the terrestrial reference site was used for reference site dose calculations.
3 The mammal, plant, and invertebrate concentrations were calculated by multiplying the soil concentration by the BAF to generate a tissue concentration (see note 2).
4 Mammal, plant, and invertebrate daily doses were calculated by multiplying the ingestion rate (see note 1) by the tissue concentration (see note 3).
5 Soil concentration from 0 to 6 inches below ground surface at point ID as measured by XRF 10. Doses were not calculated for detected and non-detected soil concentrations measured below the minimum reference site concentration, as indicated by BB. For results that were measured at less than the detection limit, doses were calculated using half of the detection limit.
6 Soil daily dose was calculated by multiplying the soil ingestion rate (see note 1) by soil concentration (see note 5).
7 Total daily dose is calculated using the following equation: total daily dose = ([mammal daily dose (if applicable) + plant daily dose (if applicable) + invertebrate daily dose (if applicable) + soil daily dose]*SUF)/receptor species body weight.
8 The TRVs used in this risk assessment represent a mid-range effects level. The derivation of TRVs is described in Navy (1998).
9 Allometrically adjusted TRVs for birds were calculated using the following equation: receptor species TRV = (test species TRV) x (test species body weight / receptor species body weight)$^{(1-1.2)}$.
10 Allometrically adjusted TRVs for mammals were calculated using the following equation: receptor species TRV = (test species TRV) x (test species body weight / receptor species body weight)$^{(1-0.94)}$.
11 HQs were calculated using the following equation: HQ = total daily dose/allometrically adjusted TRV.
12 Highlighted cells indicate an HQ greater than 1.0.

BAF	Bioaccumulation Factor	mg/day	Milligram per day
BB	Below minimum background reference site concentration	mg/kg	Milligram per kilogram
EE/CA	Engineering Evaluation/Cost Analysis	NA	Not applicable
EU	Exposure Unit	Navy	Department of the Navy
HQ	Hazard quotient	SUF	Site use factor
ID	Identification	TRV	Toxicity reference value
kg	Kilogram	XRF	X-ray fluorescence
kg/day	Kilogram per day	XRF 10	XRF measurements recorded following drying and seiving through a #10-mesh screen

Sources: Department of the Navy. 1998. "Development of Toxicity Reference Values for Conducting Ecological Risk Assessments at Naval Facilities in California, Interim Final." Prepared by Naval Facilities Engineering Command, Engineering Field Activity West (EFA West). San Bruno, California.

TABLE C-11A: ARSENIC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 11 - BEARTRAP CREEK DISPERSED TAILINGS DEPOSITS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK TAILINGS DEPOSITS AND FLOSSIE LOUISE MINE WASTE PILE

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 4.982

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Mourning Dove (Herbivorous Birds - Terrestrial)																							
Reference Sites																							
ACBG-1 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	5.36E-04	2.60E+01	1.39E-02	1.92E-02	1.09E-01	2.46E-03	2.20E+01	1.17E+00	1.37E+01	1.79E-04
ACBG-2 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	5.36E-04	1.83E+01	9.82E-03	1.92E-02	1.09E-01	1.73E-03	2.20E+01	1.17E+00	1.37E+01	1.26E-04
BCBG-201 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	5.36E-04	3.04E+01	1.63E-02	1.92E-02	1.09E-01	2.87E-03	2.20E+01	1.17E+00	1.37E+01	2.10E-04
Inside Tailings Pile																						**Minimum HQ (Reference Sites)**	**1.26E-04**
BCEOT-E0-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	7.55E+01	4.35E-01	NA	NA	NA	NA	5.36E-04	1.26E+02	6.73E-02	1.92E-02	1.09E-01	8.84E-02	2.20E+01	1.17E+00	1.37E+01	6.46E-03
BCEOT-E1-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	7.03E+01	4.05E-01	NA	NA	NA	NA	5.36E-04	1.17E+02	6.27E-02	1.92E-02	1.09E-01	8.24E-02	2.20E+01	1.17E+00	1.37E+01	6.02E-03
BCEOT-E2-8 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	7.77E+01	4.47E-01	NA	NA	NA	NA	5.36E-04	1.29E+02	6.92E-02	1.92E-02	1.09E-01	9.10E-02	2.20E+01	1.17E+00	1.37E+01	6.65E-03
BCEOT-E3-8 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	3.94E+01	2.27E-01	NA	NA	NA	NA	5.36E-04	6.55E+01	3.51E-02	1.92E-02	1.09E-01	4.62E-02	2.20E+01	1.17E+00	1.37E+01	3.37E-03
BCEOT-E4-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	6.34E+01	3.66E-01	NA	NA	NA	NA	5.36E-04	1.06E+02	5.66E-02	1.92E-02	1.09E-01	7.44E-02	2.20E+01	1.17E+00	1.37E+01	5.43E-03
BCEOT-W4-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	5.38E+01	3.10E-01	NA	NA	NA	NA	5.36E-04	8.96E+01	4.80E-02	1.92E-02	1.09E-01	6.31E-02	2.20E+01	1.17E+00	1.37E+01	4.61E-03
BCEOT-E5-25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.56E+01	8.98E-02	NA	NA	NA	NA	5.36E-04	2.59E+01	1.39E-02	1.92E-02	1.09E-01	1.83E-02	2.20E+01	1.17E+00	1.37E+01	1.33E-03
BCEOT-W5-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.82E+02	1.05E+00	NA	NA	NA	NA	5.36E-04	3.02E+02	1.62E-01	1.92E-02	1.09E-01	2.13E-01	2.20E+01	1.17E+00	1.37E+01	1.55E-02
BCEOT-E6-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	4.37E+01	2.52E-01	NA	NA	NA	NA	5.36E-04	7.28E+01	3.90E-02	1.92E-02	1.09E-01	5.12E-02	2.20E+01	1.17E+00	1.37E+01	3.74E-03
BCEOT-W6-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	2.29E+01	1.32E-01	NA	NA	NA	NA	5.36E-04	3.80E+01	2.04E-02	1.92E-02	1.09E-01	2.68E-02	2.20E+01	1.17E+00	1.37E+01	1.96E-03
BCEOT-E7-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	2.75E+01	1.58E-01	NA	NA	NA	NA	5.36E-04	4.58E+01	2.45E-02	1.92E-02	1.09E-01	3.22E-02	2.20E+01	1.17E+00	1.37E+01	2.35E-03
BCEOT-W7-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	7.22E+01	4.16E-01	NA	NA	NA	NA	5.36E-04	1.20E+02	6.43E-02	1.92E-02	1.09E-01	8.46E-02	2.20E+01	1.17E+00	1.37E+01	6.18E-03
BCEOT-W8-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.22E+02	7.01E-01	NA	NA	NA	NA	5.36E-04	2.02E+02	1.08E-01	1.92E-02	1.09E-01	1.43E-01	2.20E+01	1.17E+00	1.37E+01	1.04E-02
BCEOT-E9-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	9.73E+01	5.61E-01	NA	NA	NA	NA	5.36E-04	1.62E+02	8.68E-02	1.92E-02	1.09E-01	1.14E-01	2.20E+01	1.17E+00	1.37E+01	8.33E-03
BCEOT-W9-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.81E+02	1.04E+00	NA	NA	NA	NA	5.36E-04	3.00E+02	1.61E-01	1.92E-02	1.09E-01	2.12E-01	2.20E+01	1.17E+00	1.37E+01	1.55E-02
BCEOT-E10-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	2.46E+01	1.41E-01	NA	NA	NA	NA	5.36E-04	4.09E+01	2.19E-02	1.92E-02	1.09E-01	2.88E-02	2.20E+01	1.17E+00	1.37E+01	2.10E-03
BCEOT-W10-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.02E+02	5.88E-01	NA	NA	NA	NA	5.36E-04	1.70E+02	9.09E-02	1.92E-02	1.09E-01	1.20E-01	2.20E+01	1.17E+00	1.37E+01	8.73E-03
BCEOT-E11-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	5.92E+01	3.41E-01	NA	NA	NA	NA	5.36E-04	9.85E+01	5.28E-02	1.92E-02	1.09E-01	6.94E-02	2.20E+01	1.17E+00	1.37E+01	5.07E-03
BCEOT-W11-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.20E+02	6.89E-01	NA	NA	NA	NA	5.36E-04	1.99E+02	1.07E-01	1.92E-02	1.09E-01	1.40E-01	2.20E+01	1.17E+00	1.37E+01	1.02E-02
BCEOT-E12-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	3.68E+01	2.12E-01	NA	NA	NA	NA	5.36E-04	6.13E+01	3.29E-02	1.92E-02	1.09E-01	4.32E-02	2.20E+01	1.17E+00	1.37E+01	3.15E-03
BCEOT-W12-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.46E+02	8.41E-01	NA	NA	NA	NA	5.36E-04	2.43E+02	1.30E-01	1.92E-02	1.09E-01	1.71E-01	2.20E+01	1.17E+00	1.37E+01	1.25E-02
BCEOT-E13-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	6.82E+01	3.93E-01	NA	NA	NA	NA	5.36E-04	1.13E+02	6.08E-02	1.92E-02	1.09E-01	7.99E-02	2.20E+01	1.17E+00	1.37E+01	5.84E-03
BCEOT-W13-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.51E+02	8.71E-01	NA	NA	NA	NA	5.36E-04	2.52E+02	1.35E-01	1.92E-02	1.09E-01	1.77E-01	2.20E+01	1.17E+00	1.37E+01	1.29E-02
BCEOT-W13-25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-W14-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	3.86E+01	2.22E-01	NA	NA	NA	NA	5.36E-04	6.42E+01	3.44E-02	1.92E-02	1.09E-01	4.52E-02	2.20E+01	1.17E+00	1.37E+01	3.30E-03
BCEOT-E15-8 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	4.59E+01	2.64E-01	NA	NA	NA	NA	5.36E-04	7.64E+01	4.09E-02	1.92E-02	1.09E-01	5.38E-02	2.20E+01	1.17E+00	1.37E+01	3.93E-03
BCEOT-W15-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.16E+02	6.67E-01	NA	NA	NA	NA	5.36E-04	1.93E+02	1.03E-01	1.92E-02	1.09E-01	1.36E-01	2.20E+01	1.17E+00	1.37E+01	9.91E-03
BCEOT-E16-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.65E+02	9.49E-01	NA	NA	NA	NA	5.36E-04	2.74E+02	1.47E-01	1.92E-02	1.09E-01	1.93E-01	2.20E+01	1.17E+00	1.37E+01	1.41E-02
BCEOT-W16-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.44E+02	8.28E-01	NA	NA	NA	NA	5.36E-04	2.39E+02	1.28E-01	1.92E-02	1.09E-01	1.68E-01	2.20E+01	1.17E+00	1.37E+01	1.23E-02
BCEOT-E17-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	4.40E+02	2.54E+00	NA	NA	NA	NA	5.36E-04	7.33E+02	3.93E-01	1.92E-02	1.09E-01	5.16E-01	2.20E+01	1.17E+00	1.37E+01	3.77E-02
BCEOT-W17-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	5.98E+01	3.45E-01	NA	NA	NA	NA	5.36E-04	9.95E+01	5.33E-02	1.92E-02	1.09E-01	7.01E-02	2.20E+01	1.17E+00	1.37E+01	5.12E-03
BCEOT-W18-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.33E+02	7.65E-01	NA	NA	NA	NA	5.36E-04	2.21E+02	1.18E-01	1.92E-02	1.09E-01	1.56E-01	2.20E+01	1.17E+00	1.37E+01	1.14E-02
BCEOT-E19-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	6.49E+01	3.74E-01	NA	NA	NA	NA	5.36E-04	1.08E+02	5.79E-02	1.92E-02	1.09E-01	7.61E-02	2.20E+01	1.17E+00	1.37E+01	5.55E-03
BCEOT-W19-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	4.17E+01	2.40E-01	NA	NA	NA	NA	5.36E-04	6.93E+01	3.71E-02	1.92E-02	1.09E-01	4.88E-02	2.20E+01	1.17E+00	1.37E+01	3.57E-03
BCEOT-E20-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	9.81E+01	5.65E-01	NA	NA	NA	NA	5.36E-04	1.63E+02	8.75E-02	1.92E-02	1.09E-01	1.15E-01	2.20E+01	1.17E+00	1.37E+01	8.40E-03
BCEOT-W20-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.78E+02	1.02E+00	NA	NA	NA	NA	5.36E-04	2.96E+02	1.59E-01	1.92E-02	1.09E-01	2.08E-01	2.20E+01	1.17E+00	1.37E+01	1.52E-02
BCEOT-E21-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.07E+02	6.19E-01	NA	NA	NA	NA	5.36E-04	1.79E+02	9.58E-02	1.92E-02	1.09E-01	1.26E-01	2.20E+01	1.17E+00	1.37E+01	9.19E-03
BCEOT-W21-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	9.05E+01	5.22E-01	NA	NA	NA	NA	5.36E-04	1.51E+02	8.07E-02	1.92E-02	1.09E-01	1.06E-01	2.20E+01	1.17E+00	1.37E+01	7.75E-03
BCEOT-E22-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.59E+02	9.18E-01	NA	NA	NA	NA	5.36E-04	2.65E+02	1.42E-01	1.92E-02	1.09E-01	1.87E-01	2.20E+01	1.17E+00	1.37E+01	1.36E-02
BCEOT-W22-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	9.95E+01	5.73E-01	NA	NA	NA	NA	5.36E-04	1.66E+02	8.87E-02	1.92E-02	1.09E-01	1.17E-01	2.20E+01	1.17E+00	1.37E+01	8.52E-03
BCEOT-E23-15 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	2.71E+01	1.56E-01	NA	NA	NA	NA	5.36E-04	4.52E+01	2.42E-02	1.92E-02	1.09E-01	3.18E-02	2.20E+01	1.17E+00	1.37E+01	2.32E-03
BCEOT-W23-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.69E+02	9.74E-01	NA	NA	NA	NA	5.36E-04	2.81E+02	1.51E-01	1.92E-02	1.09E-01	1.98E-01	2.20E+01	1.17E+00	1.37E+01	1.45E-02
BCEOT-E24-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.52E+01	8.74E-02	NA	NA	NA	NA	5.36E-04	2.52E+01	1.35E-02	1.92E-02	1.09E-01	1.78E-02	2.20E+01	1.17E+00	1.37E+01	1.30E-03
BCEOT-W24-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.23E+02	7.10E-01	NA	NA	NA	NA	5.36E-04	2.05E+02	1.10E-01	1.92E-02	1.09E-01	1.45E-01	2.20E+01	1.17E+00	1.37E+01	1.06E-02
BCEOT-E25-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.15E+02	6.65E-01	NA	NA	NA	NA	5.36E-04	1.92E+02	1.03E-01	1.92E-02	1.09E-01	1.35E-01	2.20E+01	1.17E+00	1.37E+01	9.88E-03
BCEOT-W25-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.06E+02	6.13E-01	NA	NA	NA	NA	5.36E-04	1.77E+02	9.48E-02	1.92E-02	1.09E-01	1.25E-01	2.20E+01	1.17E+00	1.37E+01	9.10E-03

TABLE C-11A: ARSENIC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 11 - BEARTRAP CREEK DISPERSED TAILINGS DEPOSITS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK TAILINGS DEPOSITS AND FLOSSIE LOUISE MINE WASTE PILE (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **4.982**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Mourning Dove (Herbivorous Birds - Terrestrial)																							
BCEOT-E26-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	6.27E+01	3.61E-01	NA	NA	NA	NA	5.36E-04	1.04E+02	5.59E-02	1.92E-02	1.09E-01	7.34E-02	2.20E+01	1.17E+00	1.37E+01	5.36E-03
BCEOT-W26-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	6.53E+01	3.76E-01	NA	NA	NA	NA	5.36E-04	1.09E+02	5.82E-02	1.92E-02	1.09E-01	7.66E-02	2.20E+01	1.17E+00	1.37E+01	5.59E-03
BCEOT-W27-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	9.14E+01	5.26E-01	NA	NA	NA	NA	5.36E-04	1.52E+02	8.15E-02	1.92E-02	1.09E-01	1.07E-01	2.20E+01	1.17E+00	1.37E+01	7.82E-03
At Edge of Tailings Pile																						**Maximum HQ (Inside Tailings Pile)**	**3.77E-02**
BCEOT-E0-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	8.60E+01	4.96E-01	NA	NA	NA	NA	5.36E-04	1.43E+02	7.67E-02	1.92E-02	1.09E-01	1.01E-01	2.20E+01	1.17E+00	1.37E+01	7.36E-03
BCEOT-E1-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.25E+01	7.21E-02	NA	NA	NA	NA	5.36E-04	2.08E+01	1.12E-02	1.92E-02	1.09E-01	1.47E-02	2.20E+01	1.17E+00	1.37E+01	1.07E-03
BCEOT-E2-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	9.42E+01	5.43E-01	NA	NA	NA	NA	5.36E-04	1.57E+02	8.40E-02	1.92E-02	1.09E-01	1.10E-01	2.20E+01	1.17E+00	1.37E+01	8.07E-03
BCEOT-E3-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	2.95E+01	1.70E-01	NA	NA	NA	NA	5.36E-04	4.91E+01	2.63E-02	1.92E-02	1.09E-01	3.46E-02	2.20E+01	1.17E+00	1.37E+01	2.53E-03
BCEOT-E4-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-W4-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	2.25E+01	1.29E-01	NA	NA	NA	NA	5.36E-04	3.74E+01	2.00E-02	1.92E-02	1.09E-01	2.63E-02	2.20E+01	1.17E+00	1.37E+01	1.92E-03
BCEOT-E5-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	5.99E+01	3.45E-01	NA	NA	NA	NA	5.36E-04	9.96E+01	5.34E-02	1.92E-02	1.09E-01	7.01E-02	2.20E+01	1.17E+00	1.37E+01	5.12E-03
BCEOT-W5-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	7.52E+01	4.34E-01	NA	NA	NA	NA	5.36E-04	1.25E+02	6.71E-02	1.92E-02	1.09E-01	8.82E-02	2.20E+01	1.17E+00	1.37E+01	6.44E-03
BCEOT-E6-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	3.58E+01	2.06E-01	NA	NA	NA	NA	5.36E-04	5.96E+01	3.19E-02	1.92E-02	1.09E-01	4.19E-02	2.20E+01	1.17E+00	1.37E+01	3.06E-03
BCEOT-W6-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.80E+01	1.04E-01	NA	NA	NA	NA	5.36E-04	3.00E+01	1.61E-02	1.92E-02	1.09E-01	2.11E-02	2.20E+01	1.17E+00	1.37E+01	1.54E-03
BCEOT-E7-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	5.02E+01	2.89E-01	NA	NA	NA	NA	5.36E-04	8.35E+01	4.47E-02	1.92E-02	1.09E-01	5.88E-02	2.20E+01	1.17E+00	1.37E+01	4.30E-03
BCEOT-W7-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	3.26E+01	1.88E-01	NA	NA	NA	NA	5.36E-04	5.42E+01	2.90E-02	1.92E-02	1.09E-01	3.82E-02	2.20E+01	1.17E+00	1.37E+01	2.79E-03
BCEOT-W8-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-E9-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	2.98E+01	1.71E-01	NA	NA	NA	NA	5.36E-04	4.95E+01	2.65E-02	1.92E-02	1.09E-01	3.49E-02	2.20E+01	1.17E+00	1.37E+01	2.55E-03
BCEOT-W9-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-E10-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	2.94E+01	1.69E-01	NA	NA	NA	NA	5.36E-04	4.89E+01	2.62E-02	1.92E-02	1.09E-01	3.44E-02	2.20E+01	1.17E+00	1.37E+01	2.51E-03
BCEOT-W10-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-E11-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.46E+01	8.43E-02	NA	NA	NA	NA	5.36E-04	2.43E+01	1.30E-02	1.92E-02	1.09E-01	1.71E-02	2.20E+01	1.17E+00	1.37E+01	1.25E-03
BCEOT-E12-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	2.77E+01	1.60E-01	NA	NA	NA	NA	5.36E-04	4.61E+01	2.47E-02	1.92E-02	1.09E-01	3.25E-02	2.20E+01	1.17E+00	1.37E+01	2.37E-03
BCEOT-W12-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.38E+01	7.97E-02	NA	NA	NA	NA	5.36E-04	2.30E+01	1.23E-02	1.92E-02	1.09E-01	1.62E-02	2.20E+01	1.17E+00	1.37E+01	1.18E-03
BCEOT-E13-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.47E+01	8.49E-02	NA	NA	NA	NA	5.36E-04	2.45E+01	1.31E-02	1.92E-02	1.09E-01	1.73E-02	2.20E+01	1.17E+00	1.37E+01	1.26E-03
BCEOT-W13-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-E14-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.94E+01	1.12E-01	NA	NA	NA	NA	5.36E-04	3.24E+01	1.73E-02	1.92E-02	1.09E-01	2.28E-02	2.20E+01	1.17E+00	1.37E+01	1.66E-03
BCEOT-W14-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	3.14E+01	1.81E-01	NA	NA	NA	NA	5.36E-04	5.22E+01	2.80E-02	1.92E-02	1.09E-01	3.67E-02	2.20E+01	1.17E+00	1.37E+01	2.68E-03
BCEOT-E15-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	6.68E+00	3.85E-02	NA	NA	NA	NA	5.36E-04	1.11E+01	5.96E-03	1.92E-02	1.09E-01	7.83E-03	2.20E+01	1.17E+00	1.37E+01	5.72E-04
BCEOT-W15-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	4.57E+01	2.64E-01	NA	NA	NA	NA	5.36E-04	7.61E+01	4.08E-02	1.92E-02	1.09E-01	5.36E-02	2.20E+01	1.17E+00	1.37E+01	3.91E-03
BCEOT-E16-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.26E+01	7.27E-02	NA	NA	NA	NA	5.36E-04	2.10E+01	1.12E-02	1.92E-02	1.09E-01	1.48E-02	2.20E+01	1.17E+00	1.37E+01	1.08E-03
BCEOT-W16-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-E17-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	5.91E+01	3.41E-01	NA	NA	NA	NA	5.36E-04	9.84E+01	5.27E-02	1.92E-02	1.09E-01	6.93E-02	2.20E+01	1.17E+00	1.37E+01	5.06E-03
BCEOT-W17-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	2.96E+01	1.71E-01	NA	NA	NA	NA	5.36E-04	4.93E+01	2.64E-02	1.92E-02	1.09E-01	3.47E-02	2.20E+01	1.17E+00	1.37E+01	2.54E-03
BCEOT-E18-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	2.52E+01	1.45E-01	NA	NA	NA	NA	5.36E-04	4.19E+01	2.25E-02	1.92E-02	1.09E-01	2.95E-02	2.20E+01	1.17E+00	1.37E+01	2.16E-03
BCEOT-W18-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.93E+01	1.11E-01	NA	NA	NA	NA	5.36E-04	3.21E+01	1.72E-02	1.92E-02	1.09E-01	2.26E-02	2.20E+01	1.17E+00	1.37E+01	1.65E-03
BCEOT-E19-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.46E+01	8.42E-02	NA	NA	NA	NA	5.36E-04	2.43E+01	1.30E-02	1.92E-02	1.09E-01	1.71E-02	2.20E+01	1.17E+00	1.37E+01	1.25E-03
BCEOT-W19-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	2.29E+01	1.32E-01	NA	NA	NA	NA	5.36E-04	3.82E+01	2.05E-02	1.92E-02	1.09E-01	2.69E-02	2.20E+01	1.17E+00	1.37E+01	1.96E-03
BCEOT-E20-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.36E+01	7.86E-02	NA	NA	NA	NA	5.36E-04	2.27E+01	1.22E-02	1.92E-02	1.09E-01	1.60E-02	2.20E+01	1.17E+00	1.37E+01	1.17E-03
BCEOT-W20-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-E21-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	4.58E+01	2.64E-01	NA	NA	NA	NA	5.36E-04	7.61E+01	4.08E-02	1.92E-02	1.09E-01	5.36E-02	2.20E+01	1.17E+00	1.37E+01	3.92E-03
BCEOT-W21-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.58E+01	9.10E-02	NA	NA	NA	NA	5.36E-04	2.63E+01	1.41E-02	1.92E-02	1.09E-01	1.85E-02	2.20E+01	1.17E+00	1.37E+01	1.35E-03
BCEOT-E22-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	2.88E+01	1.66E-01	NA	NA	NA	NA	5.36E-04	4.79E+01	2.57E-02	1.92E-02	1.09E-01	3.37E-02	2.20E+01	1.17E+00	1.37E+01	2.46E-03
BCEOT-W22-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.99E+01	1.15E-01	NA	NA	NA	NA	5.36E-04	3.32E+01	1.78E-02	1.92E-02	1.09E-01	2.34E-02	2.20E+01	1.17E+00	1.37E+01	1.71E-03
BCEOT-E23-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-W23-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-E24-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	2.00E+01	1.15E-01	NA	NA	NA	NA	5.36E-04	3.33E+01	1.78E-02	1.92E-02	1.09E-01	2.34E-02	2.20E+01	1.17E+00	1.37E+01	1.71E-03
BCEOT-W24-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	6.94E+00	4.00E-02	NA	NA	NA	NA	5.36E-04	1.15E+01	6.19E-03	1.92E-02	1.09E-01	8.13E-03	2.20E+01	1.17E+00	1.37E+01	5.94E-04
BCEOT-E25-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	2.53E+01	1.46E-01	NA	NA	NA	NA	5.36E-04	4.21E+01	2.25E-02	1.92E-02	1.09E-01	2.96E-02	2.20E+01	1.17E+00	1.37E+01	2.16E-03

TABLE C-11A: ARSENIC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 11 - BEARTRAP CREEK DISPERSED TAILINGS DEPOSITS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK TAILINGS DEPOSITS AND FLOSSIE LOUISE MINE WASTE PILE (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 4.982

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Mourning Dove (Herbivorous Birds - Terrestrial)																							
BCEOT-W25-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	8.65E+00	4.98E-02	NA	NA	NA	NA	5.36E-04	1.44E+01	7.71E-03	1.92E-02	1.09E-01	1.01E-02	2.20E+01	1.17E+00	1.37E+01	7.41E-04
BCEOT-E26-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.63E+01	9.40E-02	NA	NA	NA	NA	5.36E-04	2.72E+01	1.45E-02	1.92E-02	1.09E-01	1.91E-02	2.20E+01	1.17E+00	1.37E+01	1.40E-03
BCEOT-W26-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	6.66E+00	3.84E-02	NA	NA	NA	NA	5.36E-04	1.11E+01	5.93E-03	1.92E-02	1.09E-01	7.80E-03	2.20E+01	1.17E+00	1.37E+01	5.70E-04
BCEOT-W27-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	7.02E+00	4.04E-02	NA	NA	NA	NA	5.36E-04	1.17E+01	6.26E-03	1.92E-02	1.09E-01	8.22E-03	2.20E+01	1.17E+00	1.37E+01	6.01E-04
Outside Tailings Piles																						**Maximum HQ (Edge of Tailings Pile)**	**8.07E-03**
BCEOT-E0+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	5.49E+01	3.16E-01	NA	NA	NA	NA	5.36E-04	9.13E+01	4.89E-02	1.92E-02	1.09E-01	6.43E-02	2.20E+01	1.17E+00	1.37E+01	4.70E-03
BCEOT-E1+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	6.49E+01	3.74E-01	NA	NA	NA	NA	5.36E-04	1.08E+02	5.79E-02	1.92E-02	1.09E-01	7.61E-02	2.20E+01	1.17E+00	1.37E+01	5.56E-03
BCEOT-E2+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	5.35E+01	3.08E-01	NA	NA	NA	NA	5.36E-04	8.90E+01	4.77E-02	1.92E-02	1.09E-01	6.27E-02	2.20E+01	1.17E+00	1.37E+01	4.58E-03
BCEOT-E3+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.65E+01	9.51E-02	NA	NA	NA	NA	5.36E-04	2.75E+01	1.47E-02	1.92E-02	1.09E-01	1.93E-02	2.20E+01	1.17E+00	1.37E+01	1.41E-03
BCEOT-E4+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	3.03E+01	1.75E-01	NA	NA	NA	NA	5.36E-04	5.05E+01	2.70E-02	1.92E-02	1.09E-01	3.56E-02	2.20E+01	1.17E+00	1.37E+01	2.60E-03
BCEOT-W4+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	3.23E+01	1.86E-01	NA	NA	NA	NA	5.36E-04	5.38E+01	2.88E-02	1.92E-02	1.09E-01	3.79E-02	2.20E+01	1.17E+00	1.37E+01	2.77E-03
BCEOT-E5+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	5.66E+01	3.26E-01	NA	NA	NA	NA	5.36E-04	9.41E+01	5.04E-02	1.92E-02	1.09E-01	6.63E-02	2.20E+01	1.17E+00	1.37E+01	4.84E-03
BCEOT-W5+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	7.40E+01	4.26E-01	NA	NA	NA	NA	5.36E-04	1.23E+02	6.60E-02	1.92E-02	1.09E-01	8.67E-02	2.20E+01	1.17E+00	1.37E+01	6.34E-03
BCEOT-E6+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	4.01E+01	2.31E-01	NA	NA	NA	NA	5.36E-04	6.67E+01	3.57E-02	1.92E-02	1.09E-01	4.70E-02	2.20E+01	1.17E+00	1.37E+01	3.43E-03
BCEOT-W6+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.12E+01	6.47E-02	NA	NA	NA	NA	5.36E-04	1.87E+01	1.00E-02	1.92E-02	1.09E-01	1.32E-02	2.20E+01	1.17E+00	1.37E+01	9.61E-04
BCEOT-E7+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.74E+01	1.00E-01	NA	NA	NA	NA	5.36E-04	2.89E+01	1.55E-02	1.92E-02	1.09E-01	2.04E-02	2.20E+01	1.17E+00	1.37E+01	1.49E-03
BCEOT-W7+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
FLWA-101 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.28E+02	7.35E-01	NA	NA	NA	NA	5.36E-04	2.12E+02	1.14E-01	1.92E-02	1.09E-01	1.50E-01	2.20E+01	1.17E+00	1.37E+01	1.09E-02
BCEOT-W8+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	2.28E+01	1.31E-01	NA	NA	NA	NA	5.36E-04	3.79E+01	2.03E-02	1.92E-02	1.09E-01	2.67E-02	2.20E+01	1.17E+00	1.37E+01	1.95E-03
BCEOT-E9+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	6.16E+01	3.55E-01	NA	NA	NA	NA	5.36E-04	1.02E+02	5.49E-02	1.92E-02	1.09E-01	7.21E-02	2.20E+01	1.17E+00	1.37E+01	5.27E-03
BCEOT-W9+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.26E+01	7.23E-02	NA	NA	NA	NA	5.36E-04	2.09E+01	1.12E-02	1.92E-02	1.09E-01	1.47E-02	2.20E+01	1.17E+00	1.37E+01	1.07E-03
BCEOT-E10+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.46E+01	8.43E-02	NA	NA	NA	NA	5.36E-04	2.44E+01	1.30E-02	1.92E-02	1.09E-01	1.72E-02	2.20E+01	1.17E+00	1.37E+01	1.25E-03
BCEOT-E11+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	5.68E+01	3.27E-01	NA	NA	NA	NA	5.36E-04	9.44E+01	5.06E-02	1.92E-02	1.09E-01	6.65E-02	2.20E+01	1.17E+00	1.37E+01	4.86E-03
BCEOT-W11+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	2.73E+01	1.57E-01	NA	NA	NA	NA	5.36E-04	4.54E+01	2.43E-02	1.92E-02	1.09E-01	3.20E-02	2.20E+01	1.17E+00	1.37E+01	2.33E-03
BCEOT-E12+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	3.30E+01	1.90E-01	NA	NA	NA	NA	5.36E-04	5.49E+01	2.94E-02	1.92E-02	1.09E-01	3.87E-02	2.20E+01	1.17E+00	1.37E+01	2.82E-03
BCEOT-W12+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-E13+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	5.51E+01	3.18E-01	NA	NA	NA	NA	5.36E-04	9.17E+01	4.91E-02	1.92E-02	1.09E-01	6.46E-02	2.20E+01	1.17E+00	1.37E+01	4.72E-03
BCEOT-E14+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.15E+01	6.60E-02	NA	NA	NA	NA	5.36E-04	1.91E+01	1.02E-02	1.92E-02	1.09E-01	1.34E-02	2.20E+01	1.17E+00	1.37E+01	9.81E-04
BCEOT-W14+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-E15+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	2.29E+01	1.32E-01	NA	NA	NA	NA	5.36E-04	3.80E+01	2.04E-02	1.92E-02	1.09E-01	2.68E-02	2.20E+01	1.17E+00	1.37E+01	1.96E-03
BCEOT-W15+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	3.33E+01	1.92E-01	NA	NA	NA	NA	5.36E-04	5.55E+01	2.97E-02	1.92E-02	1.09E-01	3.91E-02	2.20E+01	1.17E+00	1.37E+01	2.85E-03
BCEOT-E16+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.16E+01	6.66E-02	NA	NA	NA	NA	5.36E-04	1.92E+01	1.03E-02	1.92E-02	1.09E-01	1.36E-02	2.20E+01	1.17E+00	1.37E+01	9.90E-04
BCEOT-W16+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-E17+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.69E+01	9.74E-02	NA	NA	NA	NA	5.36E-04	2.81E+01	1.51E-02	1.92E-02	1.09E-01	1.98E-02	2.20E+01	1.17E+00	1.37E+01	1.45E-03
BCEOT-W17+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.12E+01	6.47E-02	NA	NA	NA	NA	5.36E-04	1.87E+01	1.00E-02	1.92E-02	1.09E-01	1.32E-02	2.20E+01	1.17E+00	1.37E+01	9.61E-04
BCEOT-E18+12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	4.11E+02	2.37E+00	NA	NA	NA	NA	5.36E-04	6.83E+02	3.66E-01	1.92E-02	1.09E-01	4.81E-01	2.20E+01	1.17E+00	1.37E+01	3.51E-02
BCEOT-E18+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	2.01E+01	1.16E-01	NA	NA	NA	NA	5.36E-04	3.35E+01	1.80E-02	1.92E-02	1.09E-01	2.36E-02	2.20E+01	1.17E+00	1.37E+01	1.72E-03
BCEOT-W18+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.58E+01	9.09E-02	NA	NA	NA	NA	5.36E-04	2.63E+01	1.41E-02	1.92E-02	1.09E-01	1.85E-02	2.20E+01	1.17E+00	1.37E+01	1.35E-03
BCEOT-E19+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.83E+01	1.05E-01	NA	NA	NA	NA	5.36E-04	3.04E+01	1.63E-02	1.92E-02	1.09E-01	2.14E-02	2.20E+01	1.17E+00	1.37E+01	1.57E-03
BCEOT-W19+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-E20+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.33E+01	7.67E-02	NA	NA	NA	NA	5.36E-04	2.22E+01	1.19E-02	1.92E-02	1.09E-01	1.56E-02	2.20E+01	1.17E+00	1.37E+01	1.14E-03
BCEOT-W20+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-E21+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.48E+01	8.50E-02	NA	NA	NA	NA	5.36E-04	2.46E+01	1.32E-02	1.92E-02	1.09E-01	1.73E-02	2.20E+01	1.17E+00	1.37E+01	1.26E-03
BCEOT-W21+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-E22+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	8.91E+01	5.14E-01	NA	NA	NA	NA	5.36E-04	1.48E+02	7.95E-02	1.92E-02	1.09E-01	1.04E-01	2.20E+01	1.17E+00	1.37E+01	7.63E-03
BCEOT-E22+70 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.96E+01	1.13E-01	NA	NA	NA	NA	5.36E-04	3.26E+01	1.75E-02	1.92E-02	1.09E-01	2.30E-02	2.20E+01	1.17E+00	1.37E+01	1.68E-03
BCEOT-W22+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.25E+01	7.19E-02	NA	NA	NA	NA	5.36E-04	2.08E+01	1.11E-02	1.92E-02	1.09E-01	1.46E-02	2.20E+01	1.17E+00	1.37E+01	1.07E-03
BCEOT-E23+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.24E+01	7.14E-02	NA	NA	NA	NA	5.36E-04	2.06E+01	1.10E-02	1.92E-02	1.09E-01	1.45E-02	2.20E+01	1.17E+00	1.37E+01	1.06E-03
BCEOT-W23+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.15E+01	6.63E-02	NA	NA	NA	NA	5.36E-04	1.92E+01	1.03E-02	1.92E-02	1.09E-01	1.35E-02	2.20E+01	1.17E+00	1.37E+01	9.86E-04
BCEOT-E24+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB

TABLE C-11A: ARSENIC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 11 - BEARTRAP CREEK DISPERSED TAILINGS DEPOSITS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK TAILINGS DEPOSITS AND FLOSSIE LOUISE MINE WASTE PILE (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 4.982

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Mourning Dove (Herbivorous Birds - Terrestrial)																							
BCEOT-W24+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	6.62E+00	3.81E-02	NA	NA	NA	NA	5.36E-04	1.10E+01	5.90E-03	1.92E-02	1.09E-01	7.76E-03	2.20E+01	1.17E+00	1.37E+01	5.67E-04
BCEOT-E25+20 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-W25+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	6.25E+00	3.60E-02	NA	NA	NA	NA	5.36E-04	1.04E+01	5.58E-03	1.92E-02	1.09E-01	7.33E-03	2.20E+01	1.17E+00	1.37E+01	5.35E-04
BCEOT-E26+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	5.32E+01	3.06E-01	NA	NA	NA	NA	5.36E-04	8.85E+01	4.74E-02	1.92E-02	1.09E-01	6.23E-02	2.20E+01	1.17E+00	1.37E+01	4.55E-03
BCEOT-W26+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	4.96E+01	2.86E-01	NA	NA	NA	NA	5.36E-04	8.25E+01	4.42E-02	1.92E-02	1.09E-01	5.81E-02	2.20E+01	1.17E+00	1.37E+01	4.24E-03
BCEOT-W27+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.01E-01	1.67E+01	9.60E-02	NA	NA	NA	NA	5.36E-04	2.77E+01	1.48E-02	1.92E-02	1.09E-01	1.95E-02	2.20E+01	1.17E+00	1.37E+01	1.43E-03
																						Maximum HQ (Outside Tailings Pile)	**3.51E-02**
Red-Tailed Hawk (Carnivorous Birds - Terrestrial)																							
Reference Sites																							
ACBG-1 (0-6")	9.00E-02	9.00E-02	4.84E-01	1.26E+01	1.13E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.60E+01	1.33E-01	7.15E-03	1.13E+00	7.98E-03	2.20E+01	1.17E+00	2.19E+01	3.65E-04
ACBG-2 (0-6")	9.00E-02	9.00E-02	4.84E-01	8.87E+00	7.98E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.83E+01	9.40E-02	7.15E-03	1.13E+00	5.62E-03	2.20E+01	1.17E+00	2.19E+01	2.57E-04
BCBG-201 (0-6")	9.00E-02	9.00E-02	4.84E-01	1.47E+01	1.32E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.04E+01	1.56E-01	7.15E-03	1.13E+00	9.33E-03	2.20E+01	1.17E+00	2.19E+01	4.27E-04
Inside Tailings Pile																						**Minimum HQ (Reference Sites)**	**2.57E-04**
BCEOT-E0-12.5 (0-6")	9.00E-02	9.00E-02	4.84E-01	6.07E+01	5.46E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.26E+02	6.44E-01	7.15E-03	1.13E+00	3.85E-02	2.20E+01	1.17E+00	2.19E+01	1.76E-03
BCEOT-E1-12.5 (0-6")	9.00E-02	9.00E-02	4.84E-01	5.66E+01	5.09E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.17E+02	6.00E-01	7.15E-03	1.13E+00	3.59E-02	2.20E+01	1.17E+00	2.19E+01	1.64E-03
BCEOT-E2-8 (0-6")	9.00E-02	9.00E-02	4.84E-01	6.25E+01	5.62E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.29E+02	6.63E-01	7.15E-03	1.13E+00	3.96E-02	2.20E+01	1.17E+00	2.19E+01	1.81E-03
BCEOT-E3-8 (0-6")	9.00E-02	9.00E-02	4.84E-01	3.17E+01	2.85E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	6.55E+01	3.36E-01	7.15E-03	1.13E+00	2.01E-02	2.20E+01	1.17E+00	2.19E+01	9.19E-04
BCEOT-E4-12.5 (0-6")	9.00E-02	9.00E-02	4.84E-01	5.11E+01	4.59E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.06E+02	5.41E-01	7.15E-03	1.13E+00	3.24E-02	2.20E+01	1.17E+00	2.19E+01	1.48E-03
BCEOT-W4-12.5 (0-6")	9.00E-02	9.00E-02	4.84E-01	4.33E+01	3.90E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	8.96E+01	4.59E-01	7.15E-03	1.13E+00	2.75E-02	2.20E+01	1.17E+00	2.19E+01	1.26E-03
BCEOT-E5-25 (0-6")	9.00E-02	9.00E-02	4.84E-01	1.25E+01	1.13E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.59E+01	1.33E-01	7.15E-03	1.13E+00	7.95E-03	2.20E+01	1.17E+00	2.19E+01	3.64E-04
BCEOT-W5-12.5 (0-6")	9.00E-02	9.00E-02	4.84E-01	1.46E+02	1.31E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.02E+02	1.55E+00	7.15E-03	1.13E+00	9.26E-02	2.20E+01	1.17E+00	2.19E+01	4.24E-03
BCEOT-W6-12.5 (0-6")	9.00E-02	9.00E-02	4.84E-01	1.84E+01	1.66E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.80E+01	1.95E-01	7.15E-03	1.13E+00	1.17E-02	2.20E+01	1.17E+00	2.19E+01	5.34E-04
BCEOT-E7-12.5 (0-6")	9.00E-02	9.00E-02	4.84E-01	2.21E+01	1.99E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.58E+01	2.35E-01	7.15E-03	1.13E+00	1.40E-02	2.20E+01	1.17E+00	2.19E+01	6.42E-04
BCEOT-W7-12.5 (0-6")	9.00E-02	9.00E-02	4.84E-01	5.81E+01	5.23E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.20E+02	6.16E-01	7.15E-03	1.13E+00	3.68E-02	2.20E+01	1.17E+00	2.19E+01	1.68E-03
BCEOT-W8-12.5 (0-6")	9.00E-02	9.00E-02	4.84E-01	9.79E+01	8.81E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.02E+02	1.04E+00	7.15E-03	1.13E+00	6.21E-02	2.20E+01	1.17E+00	2.19E+01	2.84E-03
BCEOT-E9-12.5 (0-6")	9.00E-02	9.00E-02	4.84E-01	7.83E+01	7.05E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.62E+02	8.30E-01	7.15E-03	1.13E+00	4.97E-02	2.20E+01	1.17E+00	2.19E+01	2.27E-03
BCEOT-W9-12.5 (0-6")	9.00E-02	9.00E-02	4.84E-01	1.45E+02	1.31E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.00E+02	1.54E+00	7.15E-03	1.13E+00	9.21E-02	2.20E+01	1.17E+00	2.19E+01	4.21E-03
BCEOT-E10-12.5 (0-6")	9.00E-02	9.00E-02	4.84E-01	1.98E+01	1.78E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.09E+01	2.09E-01	7.15E-03	1.13E+00	1.25E-02	2.20E+01	1.17E+00	2.19E+01	5.73E-04
BCEOT-W10-12.5 (0-6")	9.00E-02	9.00E-02	4.84E-01	8.21E+01	7.39E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.70E+02	8.70E-01	7.15E-03	1.13E+00	5.21E-02	2.20E+01	1.17E+00	2.19E+01	2.38E-03
BCEOT-E11-12.5 (0-6")	9.00E-02	9.00E-02	4.84E-01	4.77E+01	4.29E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	9.85E+01	5.05E-01	7.15E-03	1.13E+00	3.02E-02	2.20E+01	1.17E+00	2.19E+01	1.38E-03
BCEOT-W11-12.5 (0-6")	9.00E-02	9.00E-02	4.84E-01	9.62E+01	8.66E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.99E+02	1.02E+00	7.15E-03	1.13E+00	6.10E-02	2.20E+01	1.17E+00	2.19E+01	2.79E-03
BCEOT-E12-12.5 (0-6")	9.00E-02	9.00E-02	4.84E-01	2.97E+01	2.67E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	6.13E+01	3.14E-01	7.15E-03	1.13E+00	1.88E-02	2.20E+01	1.17E+00	2.19E+01	8.60E-04
BCEOT-W12-12.5 (0-6")	9.00E-02	9.00E-02	4.84E-01	1.17E+02	1.06E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.43E+02	1.25E+00	7.15E-03	1.13E+00	7.45E-02	2.20E+01	1.17E+00	2.19E+01	3.41E-03
BCEOT-E13-12.5 (0-6")	9.00E-02	9.00E-02	4.84E-01	5.49E+01	4.94E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.13E+02	5.82E-01	7.15E-03	1.13E+00	3.48E-02	2.20E+01	1.17E+00	2.19E+01	1.59E-03
BCEOT-W13-12.5 (0-6")	9.00E-02	9.00E-02	4.84E-01	1.22E+02	1.09E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.52E+02	1.29E+00	7.15E-03	1.13E+00	7.71E-02	2.20E+01	1.17E+00	2.19E+01	3.53E-03
BCEOT-W13-25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-W14-12.5 (0-6")	9.00E-02	9.00E-02	4.84E-01	3.11E+01	2.79E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	6.42E+01	3.29E-01	7.15E-03	1.13E+00	1.97E-02	2.20E+01	1.17E+00	2.19E+01	9.01E-04
BCEOT-E15-8 (0-6")	9.00E-02	9.00E-02	4.84E-01	3.70E+01	3.32E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	7.64E+01	3.92E-01	7.15E-03	1.13E+00	2.34E-02	2.20E+01	1.17E+00	2.19E+01	1.07E-03
BCEOT-W15-12.5 (0-6")	9.00E-02	9.00E-02	4.84E-01	9.32E+01	8.39E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.93E+02	9.88E-01	7.15E-03	1.13E+00	5.91E-02	2.20E+01	1.17E+00	2.19E+01	2.70E-03
BCEOT-E16-12.5 (0-6")	9.00E-02	9.00E-02	4.84E-01	1.33E+02	1.19E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.74E+02	1.41E+00	7.15E-03	1.13E+00	8.41E-02	2.20E+01	1.17E+00	2.19E+01	3.85E-03
BCEOT-W16-12.5 (0-6")	9.00E-02	9.00E-02	4.84E-01	1.16E+02	1.04E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.39E+02	1.23E+00	7.15E-03	1.13E+00	7.34E-02	2.20E+01	1.17E+00	2.19E+01	3.36E-03
BCEOT-E17-12.5 (0-6")	9.00E-02	9.00E-02	4.84E-01	3.54E+02	3.19E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	7.33E+02	3.76E+00	7.15E-03	1.13E+00	2.25E-01	2.20E+01	1.17E+00	2.19E+01	1.03E-02
BCEOT-W17-12.5 (0-6")	9.00E-02	9.00E-02	4.84E-01	4.82E+01	4.33E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	9.95E+01	5.10E-01	7.15E-03	1.13E+00	3.05E-02	2.20E+01	1.17E+00	2.19E+01	1.40E-03
BCEOT-W18-12.5 (0-6")	9.00E-02	9.00E-02	4.84E-01	1.07E+02	9.61E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.21E+02	1.13E+00	7.15E-03	1.13E+00	6.77E-02	2.20E+01	1.17E+00	2.19E+01	3.10E-03
BCEOT-E19-12.5 (0-6")	9.00E-02	9.00E-02	4.84E-01	5.22E+01	4.70E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.08E+02	5.54E-01	7.15E-03	1.13E+00	3.31E-02	2.20E+01	1.17E+00	2.19E+01	1.51E-03
BCEOT-W19-12.5 (0-6")	9.00E-02	9.00E-02	4.84E-01	3.35E+01	3.02E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	6.93E+01	3.55E-01	7.15E-03	1.13E+00	2.13E-02	2.20E+01	1.17E+00	2.19E+01	9.73E-04
BCEOT-E20-12.5 (0-6")	9.00E-02	9.00E-02	4.84E-01	7.90E+01	7.11E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.63E+02	8.37E-01	7.15E-03	1.13E+00	5.01E-02	2.20E+01	1.17E+00	2.19E+01	2.29E-03
BCEOT-W20-12.5 (0-6")	9.00E-02	9.00E-02	4.84E-01	1.43E+02	1.29E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.96E+02	1.52E+00	7.15E-03	1.13E+00	9.07E-02	2.20E+01	1.17E+00	2.19E+01	4.15E-03
BCEOT-E21-12.5 (0-6")	9.00E-02	9.00E-02	4.84E-01	8.65E+01	7.78E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.79E+02	9.16E-01	7.15E-03	1.13E+00	5.48E-02	2.20E+01	1.17E+00	2.19E+01	2.51E-03
BCEOT-W21-12.5 (0-6")	9.00E-02	9.00E-02	4.84E-01	7.29E+01	6.56E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.51E+02	7.72E-01	7.15E-03	1.13E+00	4.62E-02	2.20E+01	1.17E+00	2.19E+01	2.11E-03
BCEOT-E22-12.5 (0-6")	9.00E-02	9.00E-02	4.84E-01	1.28E+02	1.15E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.65E+02	1.36E+00	7.15E-03	1.13E+00	8.13E-02	2.20E+01	1.17E+00	2.19E+01	3.72E-03
BCEOT-W22-12.5 (0-6")	9.00E-02	9.00E-02	4.84E-01	8.01E+01	7.21E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.66E+02	8.49E-01	7.15E-03	1.13E+00	5.08E-02	2.20E+01	1.17E+00	2.19E+01	2.32E-03
BCEOT-E23-15 (0-6")	9.00E-02	9.00E-02	4.84E-01	2.18E+01	1.97E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.52E+01	2.32E-01	7.15E-03	1.13E+00	1.39E-02	2.20E+01	1.17E+00	2.19E+01	6.34E-04
BCEOT-W23-12.5 (0-6")	9.00E-02	9.00E-02	4.84E-01	1.36E+02	1.22E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.81E+02	1.44E+00	7.15E-03	1.13E+00	8.62E-02	2.20E+01	1.17E+00	2.19E+01	3.94E-03

TABLE C-11A: ARSENIC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 11 - BEARTRAP CREEK DISPERSED TAILINGS DEPOSITS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK TAILINGS DEPOSITS AND FLOSSIE LOUISE MINE WASTE PILE (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 4.982

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Red-Tailed Hawk (Carnivorous Birds - Terrestrial)																							
BCEOT-E24-12.5 (0-6")	9.00E-02	9.00E-02	4.84E-01	1.22E+01	1.10E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.52E+01	1.29E-01	7.15E-03	1.13E+00	7.74E-03	2.20E+01	1.17E+00	2.19E+01	3.54E-04
BCEOT-W24-12.5 (0-6")	9.00E-02	9.00E-02	4.84E-01	9.93E+01	8.93E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.05E+02	1.05E+00	7.15E-03	1.13E+00	6.29E-02	2.20E+01	1.17E+00	2.19E+01	2.88E-03
BCEOT-E25-12.5 (0-6")	9.00E-02	9.00E-02	4.84E-01	9.29E+01	8.36E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.92E+02	9.85E-01	7.15E-03	1.13E+00	5.89E-02	2.20E+01	1.17E+00	2.19E+01	2.69E-03
BCEOT-W25-12.5 (0-6")	9.00E-02	9.00E-02	4.84E-01	8.56E+01	7.70E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.77E+02	9.07E-01	7.15E-03	1.13E+00	5.43E-02	2.20E+01	1.17E+00	2.19E+01	2.48E-03
BCEOT-E26-12.5 (0-6")	9.00E-02	9.00E-02	4.84E-01	5.04E+01	4.54E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.04E+02	5.35E-01	7.15E-03	1.13E+00	3.20E-02	2.20E+01	1.17E+00	2.19E+01	1.46E-03
BCEOT-W26-12.5 (0-6")	9.00E-02	9.00E-02	4.84E-01	5.26E+01	4.73E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.09E+02	5.57E-01	7.15E-03	1.13E+00	3.33E-02	2.20E+01	1.17E+00	2.19E+01	1.52E-03
BCEOT-W27-12.5 (0-6")	9.00E-02	9.00E-02	4.84E-01	7.35E+01	6.62E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.52E+02	7.79E-01	7.15E-03	1.13E+00	4.66E-02	2.20E+01	1.17E+00	2.19E+01	2.13E-03
At Edge of Tailings Pile																						**Maximum HQ (Inside Tailings Pile)**	**1.03E-02**
BCEOT-E0-0 (0-6")	9.00E-02	9.00E-02	4.84E-01	6.92E+01	6.23E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.43E+02	7.34E-01	7.15E-03	1.13E+00	4.39E-02	2.20E+01	1.17E+00	2.19E+01	2.01E-03
BCEOT-E1-0 (0-6")	9.00E-02	9.00E-02	4.84E-01	1.01E+01	9.06E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.08E+01	1.07E-01	7.15E-03	1.13E+00	6.38E-03	2.20E+01	1.17E+00	2.19E+01	2.92E-04
BCEOT-E2-0 (0-6")	9.00E-02	9.00E-02	4.84E-01	7.59E+01	6.82E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.57E+02	8.04E-01	7.15E-03	1.13E+00	4.81E-02	2.20E+01	1.17E+00	2.19E+01	2.20E-03
BCEOT-E3-0 (0-6")	9.00E-02	9.00E-02	4.84E-01	2.38E+01	2.14E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.91E+01	2.52E-01	7.15E-03	1.13E+00	1.51E-02	2.20E+01	1.17E+00	2.19E+01	6.89E-04
BCEOT-E4-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-W4-0 (0-6")	9.00E-02	9.00E-02	4.84E-01	1.81E+01	1.63E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.74E+01	1.92E-01	7.15E-03	1.13E+00	1.15E-02	2.20E+01	1.17E+00	2.19E+01	5.25E-04
BCEOT-E5-0 (0-6")	9.00E-02	9.00E-02	4.84E-01	4.82E+01	4.33E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	9.96E+01	5.11E-01	7.15E-03	1.13E+00	3.05E-02	2.20E+01	1.17E+00	2.19E+01	1.40E-03
BCEOT-W5-0 (0-6")	9.00E-02	9.00E-02	4.84E-01	6.06E+01	5.45E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.25E+02	6.42E-01	7.15E-03	1.13E+00	3.84E-02	2.20E+01	1.17E+00	2.19E+01	1.76E-03
BCEOT-E6-0 (0-6")	9.00E-02	9.00E-02	4.84E-01	2.88E+01	2.59E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.96E+01	3.05E-01	7.15E-03	1.13E+00	1.83E-02	2.20E+01	1.17E+00	2.19E+01	8.35E-04
BCEOT-W6-0 (0-6")	9.00E-02	9.00E-02	4.84E-01	1.45E+01	1.30E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.00E+01	1.54E-01	7.15E-03	1.13E+00	9.19E-03	2.20E+01	1.17E+00	2.19E+01	4.20E-04
BCEOT-E7-0 (0-6")	9.00E-02	9.00E-02	4.84E-01	4.04E+01	3.63E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	8.35E+01	4.28E-01	7.15E-03	1.13E+00	2.56E-02	2.20E+01	1.17E+00	2.19E+01	1.17E-03
BCEOT-W7-0 (0-6")	9.00E-02	9.00E-02	4.84E-01	2.62E+01	2.36E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.42E+01	2.78E-01	7.15E-03	1.13E+00	1.66E-02	2.20E+01	1.17E+00	2.19E+01	7.60E-04
BCEOT-W8-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-E9-0 (0-6")	9.00E-02	9.00E-02	4.84E-01	2.39E+01	2.15E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.95E+01	2.54E-01	7.15E-03	1.13E+00	1.52E-02	2.20E+01	1.17E+00	2.19E+01	6.94E-04
BCEOT-E10-0 (0-6")	9.00E-02	9.00E-02	4.84E-01	2.36E+01	2.13E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.89E+01	2.51E-01	7.15E-03	1.13E+00	1.50E-02	2.20E+01	1.17E+00	2.19E+01	6.86E-04
BCEOT-W10-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-E11-0 (0-6")	9.00E-02	9.00E-02	4.84E-01	1.18E+01	1.06E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.43E+01	1.25E-01	7.15E-03	1.13E+00	7.46E-03	2.20E+01	1.17E+00	2.19E+01	3.41E-04
BCEOT-W11-0 (0-6")	9.00E-02	9.00E-02	4.84E-01	5.35E+01	4.81E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.11E+02	5.67E-01	7.15E-03	1.13E+00	3.39E-02	2.20E+01	1.17E+00	2.19E+01	1.55E-03
BCEOT-E12-0 (0-6")	9.00E-02	9.00E-02	4.84E-01	2.23E+01	2.01E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.61E+01	2.37E-01	7.15E-03	1.13E+00	1.41E-02	2.20E+01	1.17E+00	2.19E+01	6.47E-04
BCEOT-W12-0 (0-6")	9.00E-02	9.00E-02	4.84E-01	1.11E+01	1.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.30E+01	1.18E-01	7.15E-03	1.13E+00	7.06E-03	2.20E+01	1.17E+00	2.19E+01	3.23E-04
BCEOT-E13-0 (0-6")	9.00E-02	9.00E-02	4.84E-01	1.19E+01	1.07E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.45E+01	1.26E-01	7.15E-03	1.13E+00	7.52E-03	2.20E+01	1.17E+00	2.19E+01	3.44E-04
BCEOT-W13-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-E14-0 (0-6")	9.00E-02	9.00E-02	4.84E-01	1.57E+01	1.41E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.24E+01	1.66E-01	7.15E-03	1.13E+00	9.93E-03	2.20E+01	1.17E+00	2.19E+01	4.54E-04
BCEOT-W14-0 (0-6")	9.00E-02	9.00E-02	4.84E-01	2.52E+01	2.27E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.22E+01	2.68E-01	7.15E-03	1.13E+00	1.60E-02	2.20E+01	1.17E+00	2.19E+01	7.32E-04
BCEOT-E15-0 (0-6")	9.00E-02	9.00E-02	4.84E-01	5.38E+00	4.84E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.11E+01	5.70E-02	7.15E-03	1.13E+00	3.41E-03	2.20E+01	1.17E+00	2.19E+01	1.56E-04
BCEOT-W15-0 (0-6")	9.00E-02	9.00E-02	4.84E-01	3.68E+01	3.31E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	7.61E+01	3.90E-01	7.15E-03	1.13E+00	2.33E-02	2.20E+01	1.17E+00	2.19E+01	1.07E-03
BCEOT-E16-0 (0-6")	9.00E-02	9.00E-02	4.84E-01	1.01E+01	9.13E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.10E+01	1.08E-01	7.15E-03	1.13E+00	6.43E-03	2.20E+01	1.17E+00	2.19E+01	2.94E-04
BCEOT-W16-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-E17-0 (0-6")	9.00E-02	9.00E-02	4.84E-01	4.76E+01	4.28E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	9.84E+01	5.04E-01	7.15E-03	1.13E+00	3.02E-02	2.20E+01	1.17E+00	2.19E+01	1.38E-03
BCEOT-W17-0 (0-6")	9.00E-02	9.00E-02	4.84E-01	2.39E+01	2.15E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.93E+01	2.53E-01	7.15E-03	1.13E+00	1.51E-02	2.20E+01	1.17E+00	2.19E+01	6.92E-04
BCEOT-E18-0 (0-6")	9.00E-02	9.00E-02	4.84E-01	2.03E+01	1.82E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.19E+01	2.15E-01	7.15E-03	1.13E+00	1.29E-02	2.20E+01	1.17E+00	2.19E+01	5.88E-04
BCEOT-W18-0 (0-6")	9.00E-02	9.00E-02	4.84E-01	1.55E+01	1.40E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.21E+01	1.64E-01	7.15E-03	1.13E+00	9.84E-03	2.20E+01	1.17E+00	2.19E+01	4.50E-04
BCEOT-E19-0 (0-6")	9.00E-02	9.00E-02	4.84E-01	1.18E+01	1.06E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.43E+01	1.25E-01	7.15E-03	1.13E+00	7.46E-03	2.20E+01	1.17E+00	2.19E+01	3.41E-04
BCEOT-W19-0 (0-6")	9.00E-02	9.00E-02	4.84E-01	1.85E+01	1.66E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.82E+01	1.96E-01	7.15E-03	1.13E+00	1.17E-02	2.20E+01	1.17E+00	2.19E+01	5.36E-04
BCEOT-E20-0 (0-6")	9.00E-02	9.00E-02	4.84E-01	1.10E+01	9.88E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.27E+01	1.16E-01	7.15E-03	1.13E+00	6.96E-03	2.20E+01	1.17E+00	2.19E+01	3.18E-04
BCEOT-W20-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-E21-0 (0-6")	9.00E-02	9.00E-02	4.84E-01	3.68E+01	3.31E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	7.61E+01	3.90E-01	7.15E-03	1.13E+00	2.34E-02	2.20E+01	1.17E+00	2.19E+01	1.07E-03
BCEOT-W21-0 (0-6")	9.00E-02	9.00E-02	4.84E-01	1.27E+01	1.14E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.63E+01	1.35E-01	7.15E-03	1.13E+00	8.06E-03	2.20E+01	1.17E+00	2.19E+01	3.69E-04
BCEOT-E22-0 (0-6")	9.00E-02	9.00E-02	4.84E-01	2.32E+01	2.08E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.79E+01	2.46E-01	7.15E-03	1.13E+00	1.47E-02	2.20E+01	1.17E+00	2.19E+01	6.72E-04
BCEOT-W22-0 (0-6")	9.00E-02	9.00E-02	4.84E-01	1.61E+01	1.44E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.32E+01	1.70E-01	7.15E-03	1.13E+00	1.02E-02	2.20E+01	1.17E+00	2.19E+01	4.66E-04
BCEOT-E23-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-W23-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-E24-0 (0-6")	9.00E-02	9.00E-02	4.84E-01	1.61E+01	1.45E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.33E+01	1.71E-01	7.15E-03	1.13E+00	1.02E-02	2.20E+01	1.17E+00	2.19E+01	4.67E-04
BCEOT-W24-0 (0-6")	9.00E-02	9.00E-02	4.84E-01	5.59E+00	5.02E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.15E+01	5.92E-02	7.15E-03	1.13E+00	3.54E-03	2.20E+01	1.17E+00	2.19E+01	1.62E-04

TABLE C-11A: ARSENIC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 11 - BEARTRAP CREEK DISPERSED TAILINGS DEPOSITS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK TAILINGS DEPOSITS AND FLOSSIE LOUISE MINE WASTE PILE (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **4.982**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Red-Tailed Hawk (Carnivorous Birds - Terrestrial)																							
BCEOT-E25-0 (0-6")	9.00E-02	9.00E-02	4.84E-01	2.03E+01	1.83E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.21E+01	2.16E-01	7.15E-03	1.13E+00	1.29E-02	2.20E+01	1.17E+00	2.19E+01	5.90E-04
BCEOT-W25-0 (0-6")	9.00E-02	9.00E-02	4.84E-01	6.96E+00	6.26E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.44E+01	7.38E-02	7.15E-03	1.13E+00	4.42E-03	2.20E+01	1.17E+00	2.19E+01	2.02E-04
BCEOT-E26-0 (0-6")	9.00E-02	9.00E-02	4.84E-01	1.31E+01	1.18E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.72E+01	1.39E-01	7.15E-03	1.13E+00	8.33E-03	2.20E+01	1.17E+00	2.19E+01	3.81E-04
BCEOT-W26-0 (0-6")	9.00E-02	9.00E-02	4.84E-01	5.36E+00	4.82E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.11E+01	5.68E-02	7.15E-03	1.13E+00	3.40E-03	2.20E+01	1.17E+00	2.19E+01	1.55E-04
BCEOT-W27-0 (0-6")	9.00E-02	9.00E-02	4.84E-01	5.65E+00	5.08E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.17E+01	5.99E-02	7.15E-03	1.13E+00	3.58E-03	2.20E+01	1.17E+00	2.19E+01	1.64E-04
Outside Tailings Piles																						**Maximum HQ (Edge of Tailings Pile)**	**2.20E-03**
BCEOT-E0+25 (0-6")	9.00E-02	9.00E-02	4.84E-01	4.42E+01	3.97E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	9.13E+01	4.68E-01	7.15E-03	1.13E+00	2.80E-02	2.20E+01	1.17E+00	2.19E+01	1.28E-03
BCEOT-E1+25 (0-6")	9.00E-02	9.00E-02	4.84E-01	5.23E+01	4.70E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.08E+02	5.54E-01	7.15E-03	1.13E+00	3.31E-02	2.20E+01	1.17E+00	2.19E+01	1.52E-03
BCEOT-E2+25 (0-6")	9.00E-02	9.00E-02	4.84E-01	4.30E+01	3.87E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	8.90E+01	4.56E-01	7.15E-03	1.13E+00	2.73E-02	2.20E+01	1.17E+00	2.19E+01	1.25E-03
BCEOT-E3+25 (0-6")	9.00E-02	9.00E-02	4.84E-01	1.33E+01	1.20E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.75E+01	1.41E-01	7.15E-03	1.13E+00	8.43E-03	2.20E+01	1.17E+00	2.19E+01	3.85E-04
BCEOT-E4+25 (0-6")	9.00E-02	9.00E-02	4.84E-01	2.44E+01	2.20E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.05E+01	2.59E-01	7.15E-03	1.13E+00	1.55E-02	2.20E+01	1.17E+00	2.19E+01	7.08E-04
BCEOT-W4+25 (0-6")	9.00E-02	9.00E-02	4.84E-01	2.60E+01	2.34E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.38E+01	2.76E-01	7.15E-03	1.13E+00	1.65E-02	2.20E+01	1.17E+00	2.19E+01	7.55E-04
BCEOT-E5+25 (0-6")	9.00E-02	9.00E-02	4.84E-01	4.55E+01	4.09E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	9.41E+01	4.82E-01	7.15E-03	1.13E+00	2.89E-02	2.20E+01	1.17E+00	2.19E+01	1.32E-03
BCEOT-W5+25 (0-6")	9.00E-02	9.00E-02	4.84E-01	5.96E+01	5.36E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.23E+02	6.32E-01	7.15E-03	1.13E+00	3.78E-02	2.20E+01	1.17E+00	2.19E+01	1.73E-03
BCEOT-E6+25 (0-6")	9.00E-02	9.00E-02	4.84E-01	3.23E+01	2.90E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	6.67E+01	3.42E-01	7.15E-03	1.13E+00	2.04E-02	2.20E+01	1.17E+00	2.19E+01	9.35E-04
BCEOT-W6+25 (0-6")	9.00E-02	9.00E-02	4.84E-01	9.04E+00	8.13E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.87E+01	9.58E-02	7.15E-03	1.13E+00	5.73E-03	2.20E+01	1.17E+00	2.19E+01	2.62E-04
BCEOT-E7+25 (0-6")	9.00E-02	9.00E-02	4.84E-01	1.40E+01	1.26E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.89E+01	1.48E-01	7.15E-03	1.13E+00	8.88E-03	2.20E+01	1.17E+00	2.19E+01	4.06E-04
BCEOT-W7+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
FLWA-101 (0-6")	9.00E-02	9.00E-02	4.84E-01	1.03E+02	9.24E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.12E+02	1.09E+00	7.15E-03	1.13E+00	6.51E-02	2.20E+01	1.17E+00	2.19E+01	2.98E-03
BCEOT-W8+25 (0-6")	9.00E-02	9.00E-02	4.84E-01	1.83E+01	1.65E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.79E+01	1.94E-01	7.15E-03	1.13E+00	1.16E-02	2.20E+01	1.17E+00	2.19E+01	5.32E-04
BCEOT-E9+25 (0-6")	9.00E-02	9.00E-02	4.84E-01	4.95E+01	4.46E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.02E+02	5.25E-01	7.15E-03	1.13E+00	3.14E-02	2.20E+01	1.17E+00	2.19E+01	1.44E-03
BCEOT-W9+25 (0-6")	9.00E-02	9.00E-02	4.84E-01	1.01E+01	9.09E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.09E+01	1.07E-01	7.15E-03	1.13E+00	6.41E-03	2.20E+01	1.17E+00	2.19E+01	2.93E-04
BCEOT-E10+25 (0-6")	9.00E-02	9.00E-02	4.84E-01	1.18E+01	1.06E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.44E+01	1.25E-01	7.15E-03	1.13E+00	7.47E-03	2.20E+01	1.17E+00	2.19E+01	3.42E-04
BCEOT-W10+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-E11+25 (0-6")	9.00E-02	9.00E-02	4.84E-01	4.57E+01	4.11E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	9.44E+01	4.84E-01	7.15E-03	1.13E+00	2.90E-02	2.20E+01	1.17E+00	2.19E+01	1.32E-03
BCEOT-W11+25 (0-6")	9.00E-02	9.00E-02	4.84E-01	2.20E+01	1.97E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.54E+01	2.33E-01	7.15E-03	1.13E+00	1.39E-02	2.20E+01	1.17E+00	2.19E+01	6.37E-04
BCEOT-E12+25 (0-6")	9.00E-02	9.00E-02	4.84E-01	2.66E+01	2.39E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.49E+01	2.81E-01	7.15E-03	1.13E+00	1.68E-02	2.20E+01	1.17E+00	2.19E+01	7.70E-04
BCEOT-W12+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-E13+25 (0-6")	9.00E-02	9.00E-02	4.84E-01	4.44E+01	3.99E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	9.17E+01	4.70E-01	7.15E-03	1.13E+00	2.81E-02	2.20E+01	1.17E+00	2.19E+01	1.29E-03
BCEOT-E14+25 (0-6")	9.00E-02	9.00E-02	4.84E-01	9.22E+00	8.29E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.91E+01	9.77E-02	7.15E-03	1.13E+00	5.85E-03	2.20E+01	1.17E+00	2.19E+01	2.67E-04
BCEOT-W14+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-E15+25 (0-6")	9.00E-02	9.00E-02	4.84E-01	1.84E+01	1.66E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.80E+01	1.95E-01	7.15E-03	1.13E+00	1.17E-02	2.20E+01	1.17E+00	2.19E+01	5.34E-04
BCEOT-W15+25 (0-6")	9.00E-02	9.00E-02	4.84E-01	2.68E+01	2.41E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.55E+01	2.84E-01	7.15E-03	1.13E+00	1.70E-02	2.20E+01	1.17E+00	2.19E+01	7.78E-04
BCEOT-E16+25 (0-6")	9.00E-02	9.00E-02	4.84E-01	9.31E+00	8.37E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.92E+01	9.87E-02	7.15E-03	1.13E+00	5.90E-03	2.20E+01	1.17E+00	2.19E+01	2.70E-04
BCEOT-W16+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-E17+25 (0-6")	9.00E-02	9.00E-02	4.84E-01	1.36E+01	1.22E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.81E+01	1.44E-01	7.15E-03	1.13E+00	8.63E-03	2.20E+01	1.17E+00	2.19E+01	3.95E-04
BCEOT-W17+25 (0-6")	9.00E-02	9.00E-02	4.84E-01	9.04E+00	8.13E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.87E+01	9.58E-02	7.15E-03	1.13E+00	5.73E-03	2.20E+01	1.17E+00	2.19E+01	2.62E-04
BCEOT-E18+12.5 (0-6")	9.00E-02	9.00E-02	4.84E-01	3.31E+02	2.97E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	6.83E+02	3.50E+00	7.15E-03	1.13E+00	2.10E-01	2.20E+01	1.17E+00	2.19E+01	9.58E-03
BCEOT-E18+25 (0-6")	9.00E-02	9.00E-02	4.84E-01	1.62E+01	1.46E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.35E+01	1.72E-01	7.15E-03	1.13E+00	1.03E-02	2.20E+01	1.17E+00	2.19E+01	4.70E-04
BCEOT-W18+25 (0-6")	9.00E-02	9.00E-02	4.84E-01	1.27E+01	1.14E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.63E+01	1.35E-01	7.15E-03	1.13E+00	8.05E-03	2.20E+01	1.17E+00	2.19E+01	3.68E-04
BCEOT-E19+25 (0-6")	9.00E-02	9.00E-02	4.84E-01	1.47E+01	1.32E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.04E+01	1.56E-01	7.15E-03	1.13E+00	9.33E-03	2.20E+01	1.17E+00	2.19E+01	4.27E-04
BCEOT-W19+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-E20+25 (0-6")	9.00E-02	9.00E-02	4.84E-01	1.07E+01	9.64E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.22E+01	1.14E-01	7.15E-03	1.13E+00	6.79E-03	2.20E+01	1.17E+00	2.19E+01	3.11E-04
BCEOT-W20+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-E21+25 (0-6")	9.00E-02	9.00E-02	4.84E-01	1.19E+01	1.07E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.46E+01	1.26E-01	7.15E-03	1.13E+00	7.53E-03	2.20E+01	1.17E+00	2.19E+01	3.44E-04
BCEOT-W21+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-E22+25 (0-6")	9.00E-02	9.00E-02	4.84E-01	7.17E+01	6.45E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.48E+02	7.60E-01	7.15E-03	1.13E+00	4.55E-02	2.20E+01	1.17E+00	2.19E+01	2.08E-03
BCEOT-E22+70 (0-6")	9.00E-02	9.00E-02	4.84E-01	1.58E+01	1.42E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.26E+01	1.67E-01	7.15E-03	1.13E+00	1.00E-02	2.20E+01	1.17E+00	2.19E+01	4.58E-04
BCEOT-W22+25 (0-6")	9.00E-02	9.00E-02	4.84E-01	1.00E+01	9.04E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.08E+01	1.06E-01	7.15E-03	1.13E+00	6.37E-03	2.20E+01	1.17E+00	2.19E+01	2.91E-04
BCEOT-E23+25 (0-6")	9.00E-02	9.00E-02	4.84E-01	9.98E+00	8.97E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.06E+01	1.06E-01	7.15E-03	1.13E+00	6.32E-03	2.20E+01	1.17E+00	2.19E+01	2.89E-04
BCEOT-W23+25 (0-6")	9.00E-02	9.00E-02	4.84E-01	9.27E+00	8.34E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.92E+01	9.82E-02	7.15E-03	1.13E+00	5.88E-03	2.20E+01	1.17E+00	2.19E+01	2.69E-04

TABLE C-11A: ARSENIC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 11 - BEARTRAP CREEK DISPERSED TAILINGS DEPOSITS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK TAILINGS DEPOSITS AND FLOSSIE LOUISE MINE WASTE PILE (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 4.982

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Red-Tailed Hawk (Carnivorous Birds - Terrestrial)																							
BCEOT-E24+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-W24+25 (0-6")	9.00E-02	9.00E-02	4.84E-01	5.33E+00	4.79E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.10E+01	5.65E-02	7.15E-03	1.13E+00	3.38E-03	2.20E+01	1.17E+00	2.19E+01	1.55E-04
BCEOT-E25+20 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-W25+25 (0-6")	9.00E-02	9.00E-02	4.84E-01	5.03E+00	4.53E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.04E+01	5.34E-02	7.15E-03	1.13E+00	3.19E-03	2.20E+01	1.17E+00	2.19E+01	1.46E-04
BCEOT-E26+25 (0-6")	9.00E-02	9.00E-02	4.84E-01	4.28E+01	3.85E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	8.85E+01	4.54E-01	7.15E-03	1.13E+00	2.71E-02	2.20E+01	1.17E+00	2.19E+01	1.24E-03
BCEOT-W26+25 (0-6")	9.00E-02	9.00E-02	4.84E-01	3.99E+01	3.59E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	8.25E+01	4.23E-01	7.15E-03	1.13E+00	2.53E-02	2.20E+01	1.17E+00	2.19E+01	1.16E-03
BCEOT-W27+25 (0-6")	9.00E-02	9.00E-02	4.84E-01	1.34E+01	1.21E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.77E+01	1.42E-01	7.15E-03	1.13E+00	8.50E-03	2.20E+01	1.17E+00	2.19E+01	3.89E-04
																						Maximum HQ (Outside Tailings Pile)	9.58E-03
American Kestrel (Insectivorous Birds - Terrestrial)																							
Reference Sites																							
ACBG-1 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	2.55E+00	6.64E+01	9.14E-01	7.84E-04	2.60E+01	2.04E-02	1.90E-02	1.24E-01	1.43E-01	2.20E+01	1.17E+00	1.40E+01	1.02E-02
ACBG-2 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	2.55E+00	4.68E+01	6.44E-01	7.84E-04	1.83E+01	1.44E-02	1.90E-02	1.24E-01	1.01E-01	2.20E+01	1.17E+00	1.40E+01	7.19E-03
BCBG-201 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	2.55E+00	7.76E+01	1.07E+00	7.84E-04	3.04E+01	2.39E-02	1.90E-02	1.24E-01	1.68E-01	2.20E+01	1.17E+00	1.40E+01	1.19E-02
Inside Tailings Pile																						**Minimum HQ (Reference Sites)**	**7.19E-03**
BCEOT-E0-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	2.07E+03	2.85E+01	7.84E-04	1.26E+02	9.85E-02	1.90E-02	1.24E-01	4.39E+00	2.20E+01	1.17E+00	1.40E+01	3.12E-01
BCEOT-E1-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	1.93E+03	2.65E+01	7.84E-04	1.17E+02	9.17E-02	1.90E-02	1.24E-01	4.09E+00	2.20E+01	1.17E+00	1.40E+01	2.91E-01
BCEOT-E2-8 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	2.13E+03	2.93E+01	7.84E-04	1.29E+02	1.01E-01	1.90E-02	1.24E-01	4.52E+00	2.20E+01	1.17E+00	1.40E+01	3.22E-01
BCEOT-E3-8 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	1.08E+03	1.49E+01	7.84E-04	6.55E+01	5.14E-02	1.90E-02	1.24E-01	2.29E+00	2.20E+01	1.17E+00	1.40E+01	1.63E-01
BCEOT-E4-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	1.74E+03	2.39E+01	7.84E-04	1.06E+02	8.28E-02	1.90E-02	1.24E-01	3.69E+00	2.20E+01	1.17E+00	1.40E+01	2.63E-01
BCEOT-W4-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	1.48E+03	2.03E+01	7.84E-04	8.96E+01	7.02E-02	1.90E-02	1.24E-01	3.13E+00	2.20E+01	1.17E+00	1.40E+01	2.23E-01
BCEOT-E5-25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	4.27E+02	5.88E+00	7.84E-04	2.59E+01	2.03E-02	1.90E-02	1.24E-01	9.06E-01	2.20E+01	1.17E+00	1.40E+01	6.45E-02
BCEOT-W5-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	4.98E+03	6.85E+01	7.84E-04	3.02E+02	2.37E-01	1.90E-02	1.24E-01	1.06E+01	2.20E+01	1.17E+00	1.40E+01	7.51E-01
BCEOT-E6-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	1.20E+03	1.65E+01	7.84E-04	7.28E+01	5.71E-02	1.90E-02	1.24E-01	2.54E+00	2.20E+01	1.17E+00	1.40E+01	1.81E-01
BCEOT-W6-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	6.27E+02	8.63E+00	7.84E-04	3.80E+01	2.98E-02	1.90E-02	1.24E-01	1.33E+00	2.20E+01	1.17E+00	1.40E+01	9.47E-02
BCEOT-E7-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	7.54E+02	1.04E+01	7.84E-04	4.58E+01	3.59E-02	1.90E-02	1.24E-01	1.60E+00	2.20E+01	1.17E+00	1.40E+01	1.14E-01
BCEOT-W7-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	1.98E+03	2.72E+01	7.84E-04	1.20E+02	9.42E-02	1.90E-02	1.24E-01	4.20E+00	2.20E+01	1.17E+00	1.40E+01	2.99E-01
BCEOT-W8-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	3.34E+03	4.59E+01	7.84E-04	2.02E+02	1.59E-01	1.90E-02	1.24E-01	7.07E+00	2.20E+01	1.17E+00	1.40E+01	5.04E-01
BCEOT-E9-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	2.67E+03	3.67E+01	7.84E-04	1.62E+02	1.27E-01	1.90E-02	1.24E-01	5.66E+00	2.20E+01	1.17E+00	1.40E+01	4.03E-01
BCEOT-W9-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	4.95E+03	6.81E+01	7.84E-04	3.00E+02	2.36E-01	1.90E-02	1.24E-01	1.05E+01	2.20E+01	1.17E+00	1.40E+01	7.47E-01
BCEOT-E10-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	6.73E+02	9.27E+00	7.84E-04	4.09E+01	3.20E-02	1.90E-02	1.24E-01	1.43E+00	2.20E+01	1.17E+00	1.40E+01	1.02E-01
BCEOT-W10-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	2.80E+03	3.85E+01	7.84E-04	1.70E+02	1.33E-01	1.90E-02	1.24E-01	5.93E+00	2.20E+01	1.17E+00	1.40E+01	4.22E-01
BCEOT-E11-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	1.62E+03	2.24E+01	7.84E-04	9.85E+01	7.73E-02	1.90E-02	1.24E-01	3.44E+00	2.20E+01	1.17E+00	1.40E+01	2.45E-01
BCEOT-W11-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	3.28E+03	4.51E+01	7.84E-04	1.99E+02	1.56E-01	1.90E-02	1.24E-01	6.95E+00	2.20E+01	1.17E+00	1.40E+01	4.95E-01
BCEOT-E12-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	1.01E+03	1.39E+01	7.84E-04	6.13E+01	4.81E-02	1.90E-02	1.24E-01	2.14E+00	2.20E+01	1.17E+00	1.40E+01	1.53E-01
BCEOT-W12-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	4.00E+03	5.51E+01	7.84E-04	2.43E+02	1.90E-01	1.90E-02	1.24E-01	8.49E+00	2.20E+01	1.17E+00	1.40E+01	6.04E-01
BCEOT-E13-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	1.87E+03	2.57E+01	7.84E-04	1.13E+02	8.90E-02	1.90E-02	1.24E-01	3.97E+00	2.20E+01	1.17E+00	1.40E+01	2.82E-01
BCEOT-W13-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	4.15E+03	5.70E+01	7.84E-04	2.52E+02	1.97E-01	1.90E-02	1.24E-01	8.79E+00	2.20E+01	1.17E+00	1.40E+01	6.26E-01
BCEOT-W13-25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-W14-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	1.06E+03	1.46E+01	7.84E-04	6.42E+01	5.04E-02	1.90E-02	1.24E-01	2.24E+00	2.20E+01	1.17E+00	1.40E+01	1.60E-01
BCEOT-E15-8 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	1.26E+03	1.73E+01	7.84E-04	7.64E+01	5.99E-02	1.90E-02	1.24E-01	2.67E+00	2.20E+01	1.17E+00	1.40E+01	1.90E-01
BCEOT-W15-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	3.18E+03	4.37E+01	7.84E-04	1.93E+02	1.51E-01	1.90E-02	1.24E-01	6.73E+00	2.20E+01	1.17E+00	1.40E+01	4.80E-01
BCEOT-E16-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	4.52E+03	6.22E+01	7.84E-04	2.74E+02	2.15E-01	1.90E-02	1.24E-01	9.58E+00	2.20E+01	1.17E+00	1.40E+01	6.82E-01
BCEOT-W16-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	3.94E+03	5.42E+01	7.84E-04	2.39E+02	1.88E-01	1.90E-02	1.24E-01	8.36E+00	2.20E+01	1.17E+00	1.40E+01	5.95E-01
BCEOT-E17-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	1.21E+04	1.66E+02	7.84E-04	7.33E+02	5.75E-01	1.90E-02	1.24E-01	2.56E+01	2.20E+01	1.17E+00	1.40E+01	1.82E+00
BCEOT-W17-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	1.64E+03	2.26E+01	7.84E-04	9.95E+01	7.81E-02	1.90E-02	1.24E-01	3.48E+00	2.20E+01	1.17E+00	1.40E+01	2.48E-01
BCEOT-W18-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	3.64E+03	5.01E+01	7.84E-04	2.21E+02	1.73E-01	1.90E-02	1.24E-01	7.72E+00	2.20E+01	1.17E+00	1.40E+01	5.50E-01
BCEOT-E19-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	1.78E+03	2.45E+01	7.84E-04	1.08E+02	8.47E-02	1.90E-02	1.24E-01	3.77E+00	2.20E+01	1.17E+00	1.40E+01	2.69E-01
BCEOT-W19-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	1.14E+03	1.57E+01	7.84E-04	6.93E+01	5.44E-02	1.90E-02	1.24E-01	2.42E+00	2.20E+01	1.17E+00	1.40E+01	1.73E-01
BCEOT-E20-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	2.69E+03	3.70E+01	7.84E-04	1.63E+02	1.28E-01	1.90E-02	1.24E-01	5.71E+00	2.20E+01	1.17E+00	1.40E+01	4.06E-01
BCEOT-W20-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	4.88E+03	6.71E+01	7.84E-04	2.96E+02	2.32E-01	1.90E-02	1.24E-01	1.03E+01	2.20E+01	1.17E+00	1.40E+01	7.36E-01
BCEOT-E21-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	2.95E+03	4.05E+01	7.84E-04	1.79E+02	1.40E-01	1.90E-02	1.24E-01	6.25E+00	2.20E+01	1.17E+00	1.40E+01	4.45E-01
BCEOT-W21-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	2.48E+03	3.42E+01	7.84E-04	1.51E+02	1.18E-01	1.90E-02	1.24E-01	5.26E+00	2.20E+01	1.17E+00	1.40E+01	3.75E-01
BCEOT-E22-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	4.37E+03	6.01E+01	7.84E-04	2.65E+02	2.08E-01	1.90E-02	1.24E-01	9.26E+00	2.20E+01	1.17E+00	1.40E+01	6.60E-01
BCEOT-W22-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	2.73E+03	3.76E+01	7.84E-04	1.66E+02	1.30E-01	1.90E-02	1.24E-01	5.79E+00	2.20E+01	1.17E+00	1.40E+01	4.12E-01
BCEOT-E23-15 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	7.44E+02	1.02E+01	7.84E-04	4.52E+01	3.54E-02	1.90E-02	1.24E-01	1.58E+00	2.20E+01	1.17E+00	1.40E+01	1.12E-01
BCEOT-W23-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	4.63E+03	6.38E+01	7.84E-04	2.81E+02	2.21E-01	1.90E-02	1.24E-01	9.83E+00	2.20E+01	1.17E+00	1.40E+01	7.00E-01

TABLE C-11A: ARSENIC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 11 - BEARTRAP CREEK DISPERSED TAILINGS DEPOSITS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK TAILINGS DEPOSITS AND FLOSSIE LOUISE MINE WASTE PILE (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **4.982**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
American Kestrel (Insectivorous Birds - Terrestrial)																							
BCEOT-E24-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	4.16E+02	5.73E+00	7.84E-04	2.52E+01	1.98E-02	1.90E-02	1.24E-01	8.82E-01	2.20E+01	1.17E+00	1.40E+01	6.28E-02
BCEOT-W24-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	3.38E+03	4.65E+01	7.84E-04	2.05E+02	1.61E-01	1.90E-02	1.24E-01	7.17E+00	2.20E+01	1.17E+00	1.40E+01	5.11E-01
BCEOT-E25-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	3.17E+03	4.36E+01	7.84E-04	1.92E+02	1.51E-01	1.90E-02	1.24E-01	6.71E+00	2.20E+01	1.17E+00	1.40E+01	4.78E-01
BCEOT-W25-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	2.92E+03	4.01E+01	7.84E-04	1.77E+02	1.39E-01	1.90E-02	1.24E-01	6.18E+00	2.20E+01	1.17E+00	1.40E+01	4.40E-01
BCEOT-E26-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	1.72E+03	2.36E+01	7.84E-04	1.04E+02	8.18E-02	1.90E-02	1.24E-01	3.64E+00	2.20E+01	1.17E+00	1.40E+01	2.59E-01
BCEOT-W26-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	1.79E+03	2.47E+01	7.84E-04	1.09E+02	8.53E-02	1.90E-02	1.24E-01	3.80E+00	2.20E+01	1.17E+00	1.40E+01	2.70E-01
BCEOT-W27-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	2.51E+03	3.45E+01	7.84E-04	1.52E+02	1.19E-01	1.90E-02	1.24E-01	5.31E+00	2.20E+01	1.17E+00	1.40E+01	3.78E-01
At Edge of Tailings Pile																						**Maximum HQ (Inside Tailings Pile)**	**1.82E+00**
BCEOT-E0-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	2.36E+03	3.25E+01	7.84E-04	1.43E+02	1.12E-01	1.90E-02	1.24E-01	5.00E+00	2.20E+01	1.17E+00	1.40E+01	3.56E-01
BCEOT-E1-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	3.43E+02	4.72E+00	7.84E-04	2.08E+01	1.63E-02	1.90E-02	1.24E-01	7.27E-01	2.20E+01	1.17E+00	1.40E+01	5.18E-02
BCEOT-E2-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	2.58E+03	3.56E+01	7.84E-04	1.57E+02	1.23E-01	1.90E-02	1.24E-01	5.48E+00	2.20E+01	1.17E+00	1.40E+01	3.90E-01
BCEOT-E3-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	8.09E+02	1.11E+01	7.84E-04	4.91E+01	3.85E-02	1.90E-02	1.24E-01	1.72E+00	2.20E+01	1.17E+00	1.40E+01	1.22E-01
BCEOT-E4-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-W4-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	6.16E+02	8.48E+00	7.84E-04	3.74E+01	2.93E-02	1.90E-02	1.24E-01	1.31E+00	2.20E+01	1.17E+00	1.40E+01	9.30E-02
BCEOT-E5-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	1.64E+03	2.26E+01	7.84E-04	9.96E+01	7.81E-02	1.90E-02	1.24E-01	3.48E+00	2.20E+01	1.17E+00	1.40E+01	2.48E-01
BCEOT-W5-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	2.06E+03	2.84E+01	7.84E-04	1.25E+02	9.82E-02	1.90E-02	1.24E-01	4.38E+00	2.20E+01	1.17E+00	1.40E+01	3.12E-01
BCEOT-E6-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	9.82E+02	1.35E+01	7.84E-04	5.96E+01	4.67E-02	1.90E-02	1.24E-01	2.08E+00	2.20E+01	1.17E+00	1.40E+01	1.48E-01
BCEOT-W6-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	4.94E+02	6.80E+00	7.84E-04	3.00E+01	2.35E-02	1.90E-02	1.24E-01	1.05E+00	2.20E+01	1.17E+00	1.40E+01	7.46E-02
BCEOT-E7-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	1.38E+03	1.89E+01	7.84E-04	8.35E+01	6.55E-02	1.90E-02	1.24E-01	2.92E+00	2.20E+01	1.17E+00	1.40E+01	2.08E-01
BCEOT-W7-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	8.93E+02	1.23E+01	7.84E-04	5.42E+01	4.25E-02	1.90E-02	1.24E-01	1.89E+00	2.20E+01	1.17E+00	1.40E+01	1.35E-01
BCEOT-W8-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-E9-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	8.16E+02	1.12E+01	7.84E-04	4.95E+01	3.88E-02	1.90E-02	1.24E-01	1.73E+00	2.20E+01	1.17E+00	1.40E+01	1.23E-01
BCEOT-E10-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	8.06E+02	1.11E+01	7.84E-04	4.89E+01	3.83E-02	1.90E-02	1.24E-01	1.71E+00	2.20E+01	1.17E+00	1.40E+01	1.22E-01
BCEOT-W10-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-E11-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	4.01E+02	5.52E+00	7.84E-04	2.43E+01	1.91E-02	1.90E-02	1.24E-01	8.50E-01	2.20E+01	1.17E+00	1.40E+01	6.05E-02
BCEOT-W11-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	1.82E+03	2.51E+01	7.84E-04	1.11E+02	8.68E-02	1.90E-02	1.24E-01	3.87E+00	2.20E+01	1.17E+00	1.40E+01	2.75E-01
BCEOT-E12-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	7.60E+02	1.05E+01	7.84E-04	4.61E+01	3.62E-02	1.90E-02	1.24E-01	1.61E+00	2.20E+01	1.17E+00	1.40E+01	1.15E-01
BCEOT-W12-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	3.79E+02	5.22E+00	7.84E-04	2.30E+01	1.80E-02	1.90E-02	1.24E-01	8.04E-01	2.20E+01	1.17E+00	1.40E+01	5.73E-02
BCEOT-E13-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	4.04E+02	5.56E+00	7.84E-04	2.45E+01	1.92E-02	1.90E-02	1.24E-01	8.57E-01	2.20E+01	1.17E+00	1.40E+01	6.10E-02
BCEOT-W13-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-E14-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	5.33E+02	7.34E+00	7.84E-04	3.24E+01	2.54E-02	1.90E-02	1.24E-01	1.13E+00	2.20E+01	1.17E+00	1.40E+01	8.05E-02
BCEOT-W14-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	8.60E+02	1.18E+01	7.84E-04	5.22E+01	4.09E-02	1.90E-02	1.24E-01	1.82E+00	2.20E+01	1.17E+00	1.40E+01	1.30E-01
BCEOT-E15-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	1.83E+02	2.52E+00	7.84E-04	1.11E+01	8.72E-03	1.90E-02	1.24E-01	3.88E-01	2.20E+01	1.17E+00	1.40E+01	2.77E-02
BCEOT-W15-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	1.25E+03	1.73E+01	7.84E-04	7.61E+01	5.97E-02	1.90E-02	1.24E-01	2.66E+00	2.20E+01	1.17E+00	1.40E+01	1.89E-01
BCEOT-E16-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	3.46E+02	4.76E+00	7.84E-04	2.10E+01	1.65E-02	1.90E-02	1.24E-01	7.33E-01	2.20E+01	1.17E+00	1.40E+01	5.22E-02
BCEOT-W16-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-E17-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	1.62E+03	2.23E+01	7.84E-04	9.84E+01	7.72E-02	1.90E-02	1.24E-01	3.44E+00	2.20E+01	1.17E+00	1.40E+01	2.45E-01
BCEOT-W17-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	8.13E+02	1.12E+01	7.84E-04	4.93E+01	3.87E-02	1.90E-02	1.24E-01	1.72E+00	2.20E+01	1.17E+00	1.40E+01	1.23E-01
BCEOT-E18-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	6.91E+02	9.51E+00	7.84E-04	4.19E+01	3.29E-02	1.90E-02	1.24E-01	1.47E+00	2.20E+01	1.17E+00	1.40E+01	1.04E-01
BCEOT-W18-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	5.29E+02	7.27E+00	7.84E-04	3.21E+01	2.52E-02	1.90E-02	1.24E-01	1.12E+00	2.20E+01	1.17E+00	1.40E+01	7.98E-02
BCEOT-E19-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	4.01E+02	5.51E+00	7.84E-04	2.43E+01	1.91E-02	1.90E-02	1.24E-01	8.50E-01	2.20E+01	1.17E+00	1.40E+01	6.05E-02
BCEOT-W19-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	6.29E+02	8.66E+00	7.84E-04	3.82E+01	2.99E-02	1.90E-02	1.24E-01	1.33E+00	2.20E+01	1.17E+00	1.40E+01	9.50E-02
BCEOT-E20-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	3.74E+02	5.15E+00	7.84E-04	2.27E+01	1.78E-02	1.90E-02	1.24E-01	7.93E-01	2.20E+01	1.17E+00	1.40E+01	5.65E-02
BCEOT-W20-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-E21-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	1.25E+03	1.73E+01	7.84E-04	7.61E+01	5.97E-02	1.90E-02	1.24E-01	2.66E+00	2.20E+01	1.17E+00	1.40E+01	1.89E-01
BCEOT-W21-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	4.33E+02	5.96E+00	7.84E-04	2.63E+01	2.06E-02	1.90E-02	1.24E-01	9.18E-01	2.20E+01	1.17E+00	1.40E+01	6.54E-02
BCEOT-E22-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	7.90E+02	1.09E+01	7.84E-04	4.79E+01	3.76E-02	1.90E-02	1.24E-01	1.67E+00	2.20E+01	1.17E+00	1.40E+01	1.19E-01
BCEOT-W22-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	5.47E+02	7.53E+00	7.84E-04	3.32E+01	2.60E-02	1.90E-02	1.24E-01	1.16E+00	2.20E+01	1.17E+00	1.40E+01	8.26E-02
BCEOT-E23-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-W23-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-E24-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	5.49E+02	7.55E+00	7.84E-04	3.33E+01	2.61E-02	1.90E-02	1.24E-01	1.16E+00	2.20E+01	1.17E+00	1.40E+01	8.28E-02
BCEOT-W24-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	1.90E+02	2.62E+00	7.84E-04	1.15E+01	9.06E-03	1.90E-02	1.24E-01	4.03E-01	2.20E+01	1.17E+00	1.40E+01	2.87E-02

TABLE C-11A: ARSENIC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 11 - BEARTRAP CREEK DISPERSED TAILINGS DEPOSITS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK TAILINGS DEPOSITS AND FLOSSIE LOUISE MINE WASTE PILE (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 4.982

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
American Kestrel (Insectivorous Birds - Terrestrial)																							
BCEOT-E25-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	6.93E+02	9.54E+00	7.84E-04	4.21E+01	3.30E-02	1.90E-02	1.24E-01	1.47E+00	2.20E+01	1.17E+00	1.40E+01	1.05E-01
BCEOT-W25-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	2.37E+02	3.27E+00	7.84E-04	1.44E+01	1.13E-02	1.90E-02	1.24E-01	5.03E-01	2.20E+01	1.17E+00	1.40E+01	3.58E-02
BCEOT-E26-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	4.48E+02	6.16E+00	7.84E-04	2.72E+01	2.13E-02	1.90E-02	1.24E-01	9.49E-01	2.20E+01	1.17E+00	1.40E+01	6.76E-02
BCEOT-W26-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	1.83E+02	2.51E+00	7.84E-04	1.11E+01	8.69E-03	1.90E-02	1.24E-01	3.87E-01	2.20E+01	1.17E+00	1.40E+01	2.76E-02
BCEOT-W27-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	1.92E+02	2.65E+00	7.84E-04	1.17E+01	9.16E-03	1.90E-02	1.24E-01	4.08E-01	2.20E+01	1.17E+00	1.40E+01	2.91E-02
Outside Tailings Piles																						**Maximum HQ (Edge of Tailings Pile)**	**3.90E-01**
BCEOT-E0+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	1.51E+03	2.07E+01	7.84E-04	9.13E+01	7.16E-02	1.90E-02	1.24E-01	3.19E+00	2.20E+01	1.17E+00	1.40E+01	2.27E-01
BCEOT-E1+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	1.78E+03	2.45E+01	7.84E-04	1.08E+02	8.47E-02	1.90E-02	1.24E-01	3.78E+00	2.20E+01	1.17E+00	1.40E+01	2.69E-01
BCEOT-E2+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	1.47E+03	2.02E+01	7.84E-04	8.90E+01	6.98E-02	1.90E-02	1.24E-01	3.11E+00	2.20E+01	1.17E+00	1.40E+01	2.21E-01
BCEOT-E3+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	4.53E+02	6.23E+00	7.84E-04	2.75E+01	2.15E-02	1.90E-02	1.24E-01	9.60E-01	2.20E+01	1.17E+00	1.40E+01	6.84E-02
BCEOT-E4+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	8.32E+02	1.15E+01	7.84E-04	5.05E+01	3.96E-02	1.90E-02	1.24E-01	1.76E+00	2.20E+01	1.17E+00	1.40E+01	1.26E-01
BCEOT-W4+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	8.87E+02	1.22E+01	7.84E-04	5.38E+01	4.22E-02	1.90E-02	1.24E-01	1.88E+00	2.20E+01	1.17E+00	1.40E+01	1.34E-01
BCEOT-E5+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	1.55E+03	2.13E+01	7.84E-04	9.41E+01	7.38E-02	1.90E-02	1.24E-01	3.29E+00	2.20E+01	1.17E+00	1.40E+01	2.34E-01
BCEOT-W5+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	2.03E+03	2.79E+01	7.84E-04	1.23E+02	9.66E-02	1.90E-02	1.24E-01	4.30E+00	2.20E+01	1.17E+00	1.40E+01	3.06E-01
BCEOT-E6+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	1.10E+03	1.51E+01	7.84E-04	6.67E+01	5.23E-02	1.90E-02	1.24E-01	2.33E+00	2.20E+01	1.17E+00	1.40E+01	1.66E-01
BCEOT-W6+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	3.08E+02	4.24E+00	7.84E-04	1.87E+01	1.47E-02	1.90E-02	1.24E-01	6.53E-01	2.20E+01	1.17E+00	1.40E+01	4.65E-02
BCEOT-E7+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	4.77E+02	6.56E+00	7.84E-04	2.89E+01	2.27E-02	1.90E-02	1.24E-01	1.01E+00	2.20E+01	1.17E+00	1.40E+01	7.20E-02
BCEOT-W7+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
FLWA-101 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	3.50E+03	4.82E+01	7.84E-04	2.12E+02	1.67E-01	1.90E-02	1.24E-01	7.42E+00	2.20E+01	1.17E+00	1.40E+01	5.28E-01
BCEOT-W8+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	6.25E+02	8.59E+00	7.84E-04	3.79E+01	2.97E-02	1.90E-02	1.24E-01	1.32E+00	2.20E+01	1.17E+00	1.40E+01	9.43E-02
BCEOT-E9+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	1.69E+03	2.32E+01	7.84E-04	1.02E+02	8.03E-02	1.90E-02	1.24E-01	3.58E+00	2.20E+01	1.17E+00	1.40E+01	2.55E-01
BCEOT-W9+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	3.44E+02	4.74E+00	7.84E-04	2.09E+01	1.64E-02	1.90E-02	1.24E-01	7.30E-01	2.20E+01	1.17E+00	1.40E+01	5.20E-02
BCEOT-E10+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	4.01E+02	5.52E+00	7.84E-04	2.44E+01	1.91E-02	1.90E-02	1.24E-01	8.51E-01	2.20E+01	1.17E+00	1.40E+01	6.06E-02
BCEOT-W10+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-E11+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	1.56E+03	2.14E+01	7.84E-04	9.44E+01	7.41E-02	1.90E-02	1.24E-01	3.30E+00	2.20E+01	1.17E+00	1.40E+01	2.35E-01
BCEOT-W11+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	7.48E+02	1.03E+01	7.84E-04	4.54E+01	3.56E-02	1.90E-02	1.24E-01	1.59E+00	2.20E+01	1.17E+00	1.40E+01	1.13E-01
BCEOT-E12+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	9.05E+02	1.24E+01	7.84E-04	5.49E+01	4.30E-02	1.90E-02	1.24E-01	1.92E+00	2.20E+01	1.17E+00	1.40E+01	1.37E-01
BCEOT-W12+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-E13+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	1.51E+03	2.08E+01	7.84E-04	9.17E+01	7.19E-02	1.90E-02	1.24E-01	3.21E+00	2.20E+01	1.17E+00	1.40E+01	2.28E-01
BCEOT-E14+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	3.14E+02	4.32E+00	7.84E-04	1.91E+01	1.50E-02	1.90E-02	1.24E-01	6.66E-01	2.20E+01	1.17E+00	1.40E+01	4.74E-02
BCEOT-W14+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-E15+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	6.27E+02	8.63E+00	7.84E-04	3.80E+01	2.98E-02	1.90E-02	1.24E-01	1.33E+00	2.20E+01	1.17E+00	1.40E+01	9.46E-02
BCEOT-W15+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	9.14E+02	1.26E+01	7.84E-04	5.55E+01	4.35E-02	1.90E-02	1.24E-01	1.94E+00	2.20E+01	1.17E+00	1.40E+01	1.38E-01
BCEOT-E16+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	3.17E+02	4.36E+00	7.84E-04	1.92E+01	1.51E-02	1.90E-02	1.24E-01	6.72E-01	2.20E+01	1.17E+00	1.40E+01	4.79E-02
BCEOT-W16+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-E17+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	4.64E+02	6.38E+00	7.84E-04	2.81E+01	2.21E-02	1.90E-02	1.24E-01	9.83E-01	2.20E+01	1.17E+00	1.40E+01	7.00E-02
BCEOT-W17+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	3.08E+02	4.24E+00	7.84E-04	1.87E+01	1.47E-02	1.90E-02	1.24E-01	6.53E-01	2.20E+01	1.17E+00	1.40E+01	4.65E-02
BCEOT-E18+12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	1.13E+04	1.55E+02	7.84E-04	6.83E+02	5.36E-01	1.90E-02	1.24E-01	2.39E+01	2.20E+01	1.17E+00	1.40E+01	1.70E+00
BCEOT-E18+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	5.52E+02	7.60E+00	7.84E-04	3.35E+01	2.63E-02	1.90E-02	1.24E-01	1.17E+00	2.20E+01	1.17E+00	1.40E+01	8.34E-02
BCEOT-W18+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	4.33E+02	5.95E+00	7.84E-04	2.63E+01	2.06E-02	1.90E-02	1.24E-01	9.17E-01	2.20E+01	1.17E+00	1.40E+01	6.53E-02
BCEOT-E19+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	5.02E+02	6.90E+00	7.84E-04	3.04E+01	2.39E-02	1.90E-02	1.24E-01	1.06E+00	2.20E+01	1.17E+00	1.40E+01	7.57E-02
BCEOT-W19+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-E20+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	3.65E+02	5.02E+00	7.84E-04	2.22E+01	1.74E-02	1.90E-02	1.24E-01	7.74E-01	2.20E+01	1.17E+00	1.40E+01	5.51E-02
BCEOT-W20+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-E21+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	4.05E+02	5.57E+00	7.84E-04	2.46E+01	1.93E-02	1.90E-02	1.24E-01	8.58E-01	2.20E+01	1.17E+00	1.40E+01	6.11E-02
BCEOT-W21+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-E22+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	2.44E+03	3.36E+01	7.84E-04	1.48E+02	1.16E-01	1.90E-02	1.24E-01	5.18E+00	2.20E+01	1.17E+00	1.40E+01	3.69E-01
BCEOT-E22+70 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	5.38E+02	7.40E+00	7.84E-04	3.26E+01	2.56E-02	1.90E-02	1.24E-01	1.14E+00	2.20E+01	1.17E+00	1.40E+01	8.12E-02
BCEOT-W22+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	3.42E+02	4.71E+00	7.84E-04	2.08E+01	1.63E-02	1.90E-02	1.24E-01	7.26E-01	2.20E+01	1.17E+00	1.40E+01	5.17E-02
BCEOT-E23+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	3.40E+02	4.68E+00	7.84E-04	2.06E+01	1.62E-02	1.90E-02	1.24E-01	7.21E-01	2.20E+01	1.17E+00	1.40E+01	5.13E-02
BCEOT-W23+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	3.16E+02	4.35E+00	7.84E-04	1.92E+01	1.50E-02	1.90E-02	1.24E-01	6.70E-01	2.20E+01	1.17E+00	1.40E+01	4.77E-02
BCEOT-E24+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB

TABLE C-11A: ARSENIC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 11 - BEARTRAP CREEK DISPERSED TAILINGS DEPOSITS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK TAILINGS DEPOSITS AND FLOSSIE LOUISE MINE WASTE PILE (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 4.982

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
American Kestrel (Insectivorous Birds - Terrestrial)																							
BCEOT-W24+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	1.82E+02	2.50E+00	7.84E-04	1.10E+01	8.64E-03	1.90E-02	1.24E-01	3.85E-01	2.20E+01	1.17E+00	1.40E+01	2.74E-02
BCEOT-E25+20 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-W25+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	1.72E+02	2.36E+00	7.84E-04	1.04E+01	8.16E-03	1.90E-02	1.24E-01	3.64E-01	2.20E+01	1.17E+00	1.40E+01	2.59E-02
BCEOT-E26+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	1.46E+03	2.01E+01	7.84E-04	8.85E+01	6.94E-02	1.90E-02	1.24E-01	3.09E+00	2.20E+01	1.17E+00	1.40E+01	2.20E-01
BCEOT-W26+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	1.36E+03	1.87E+01	7.84E-04	8.25E+01	6.47E-02	1.90E-02	1.24E-01	2.88E+00	2.20E+01	1.17E+00	1.40E+01	2.05E-01
BCEOT-W27+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.65E+01	4.57E+02	6.29E+00	7.84E-04	2.77E+01	2.17E-02	1.90E-02	1.24E-01	9.68E-01	2.20E+01	1.17E+00	1.40E+01	6.90E-02
																						Maximum HQ (Outside Tailings Pile)	1.70E+00
Meadow Vole (Small Herbivorous Mammal - Terrestrial)																							
Reference Sites																							
ACBG-1 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	1.13E-04	2.60E+01	2.93E-03	1.00E+00	3.06E-02	9.57E-02	4.70E+00	1.10E-01	5.08E+00	1.89E-02
ACBG-2 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	1.13E-04	1.83E+01	2.06E-03	1.00E+00	3.06E-02	6.74E-02	4.70E+00	1.10E-01	5.08E+00	1.33E-02
BCBG-201 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	1.13E-04	3.04E+01	3.42E-03	1.00E+00	3.06E-02	1.12E-01	4.70E+00	1.10E-01	5.08E+00	2.20E-02
Inside Tailings Pile																						**Minimum HQ (Reference Sites)**	**1.33E-02**
BCEOT-E0-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	7.55E+01	3.54E-01	NA	NA	NA	NA	1.13E-04	1.26E+02	1.41E-02	1.00E+00	3.06E-02	1.20E+01	4.70E+00	1.10E-01	5.08E+00	2.37E+00
BCEOT-E1-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	7.03E+01	3.30E-01	NA	NA	NA	NA	1.13E-04	1.17E+02	1.32E-02	1.00E+00	3.06E-02	1.12E+01	4.70E+00	1.10E-01	5.08E+00	2.21E+00
BCEOT-E2-8 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	7.77E+01	3.64E-01	NA	NA	NA	NA	1.13E-04	1.29E+02	1.45E-02	1.00E+00	3.06E-02	1.24E+01	4.70E+00	1.10E-01	5.08E+00	2.44E+00
BCEOT-E3-8 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	3.94E+01	1.85E-01	NA	NA	NA	NA	1.13E-04	6.55E+01	7.37E-03	1.00E+00	3.06E-02	6.28E+00	4.70E+00	1.10E-01	5.08E+00	1.24E+00
BCEOT-E4-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	6.34E+01	2.97E-01	NA	NA	NA	NA	1.13E-04	1.06E+02	1.19E-02	1.00E+00	3.06E-02	1.01E+01	4.70E+00	1.10E-01	5.08E+00	1.99E+00
BCEOT-W4-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	5.38E+01	2.52E-01	NA	NA	NA	NA	1.13E-04	8.96E+01	1.01E-02	1.00E+00	3.06E-02	8.58E+00	4.70E+00	1.10E-01	5.08E+00	1.69E+00
BCEOT-E5-25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.56E+01	7.30E-02	NA	NA	NA	NA	1.13E-04	2.59E+01	2.92E-03	1.00E+00	3.06E-02	2.48E+00	4.70E+00	1.10E-01	5.08E+00	4.89E-01
BCEOT-W5-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.82E+02	8.51E-01	NA	NA	NA	NA	1.13E-04	3.02E+02	3.40E-02	1.00E+00	3.06E-02	2.89E+01	4.70E+00	1.10E-01	5.08E+00	5.70E+00
BCEOT-E6-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	4.37E+01	2.05E-01	NA	NA	NA	NA	1.13E-04	7.28E+01	8.19E-03	1.00E+00	3.06E-02	6.97E+00	4.70E+00	1.10E-01	5.08E+00	1.37E+00
BCEOT-E7-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	2.75E+01	1.29E-01	NA	NA	NA	NA	1.13E-04	4.58E+01	5.15E-03	1.00E+00	3.06E-02	4.38E+00	4.70E+00	1.10E-01	5.08E+00	8.64E-01
BCEOT-W7-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	7.22E+01	3.38E-01	NA	NA	NA	NA	1.13E-04	1.20E+02	1.35E-02	1.00E+00	3.06E-02	1.15E+01	4.70E+00	1.10E-01	5.08E+00	2.27E+00
BCEOT-W8-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.22E+02	5.70E-01	NA	NA	NA	NA	1.13E-04	2.02E+02	2.28E-02	1.00E+00	3.06E-02	1.94E+01	4.70E+00	1.10E-01	5.08E+00	3.82E+00
BCEOT-E9-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	9.73E+01	4.56E-01	NA	NA	NA	NA	1.13E-04	1.62E+02	1.82E-02	1.00E+00	3.06E-02	1.55E+01	4.70E+00	1.10E-01	5.08E+00	3.06E+00
BCEOT-W9-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.81E+02	8.46E-01	NA	NA	NA	NA	1.13E-04	3.00E+02	3.38E-02	1.00E+00	3.06E-02	2.88E+01	4.70E+00	1.10E-01	5.08E+00	5.67E+00
BCEOT-E10-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	2.46E+01	1.15E-01	NA	NA	NA	NA	1.13E-04	4.09E+01	4.60E-03	1.00E+00	3.06E-02	3.91E+00	4.70E+00	1.10E-01	5.08E+00	7.71E-01
BCEOT-W10-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.02E+02	4.78E-01	NA	NA	NA	NA	1.13E-04	1.70E+02	1.91E-02	1.00E+00	3.06E-02	1.63E+01	4.70E+00	1.10E-01	5.08E+00	3.20E+00
BCEOT-E11-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	5.92E+01	2.78E-01	NA	NA	NA	NA	1.13E-04	9.85E+01	1.11E-02	1.00E+00	3.06E-02	9.44E+00	4.70E+00	1.10E-01	5.08E+00	1.86E+00
BCEOT-W11-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.20E+02	5.61E-01	NA	NA	NA	NA	1.13E-04	1.99E+02	2.24E-02	1.00E+00	3.06E-02	1.91E+01	4.70E+00	1.10E-01	5.08E+00	3.75E+00
BCEOT-E12-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	3.68E+01	1.73E-01	NA	NA	NA	NA	1.13E-04	6.13E+01	6.90E-03	1.00E+00	3.06E-02	5.87E+00	4.70E+00	1.10E-01	5.08E+00	1.16E+00
BCEOT-W12-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.46E+02	6.84E-01	NA	NA	NA	NA	1.13E-04	2.43E+02	2.73E-02	1.00E+00	3.06E-02	2.33E+01	4.70E+00	1.10E-01	5.08E+00	4.58E+00
BCEOT-E13-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	6.82E+01	3.20E-01	NA	NA	NA	NA	1.13E-04	1.13E+02	1.28E-02	1.00E+00	3.06E-02	1.09E+01	4.70E+00	1.10E-01	5.08E+00	2.14E+00
BCEOT-W13-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.51E+02	7.09E-01	NA	NA	NA	NA	1.13E-04	2.52E+02	2.83E-02	1.00E+00	3.06E-02	2.41E+01	4.70E+00	1.10E-01	5.08E+00	4.75E+00
BCEOT-W13-25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-W14-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	3.86E+01	1.81E-01	NA	NA	NA	NA	1.13E-04	6.42E+01	7.23E-03	1.00E+00	3.06E-02	6.15E+00	4.70E+00	1.10E-01	5.08E+00	1.21E+00
BCEOT-E15-8 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	4.59E+01	2.15E-01	NA	NA	NA	NA	1.13E-04	7.64E+01	8.60E-03	1.00E+00	3.06E-02	7.32E+00	4.70E+00	1.10E-01	5.08E+00	1.44E+00
BCEOT-W15-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.16E+02	5.43E-01	NA	NA	NA	NA	1.13E-04	1.93E+02	2.17E-02	1.00E+00	3.06E-02	1.85E+01	4.70E+00	1.10E-01	5.08E+00	3.64E+00
BCEOT-E16-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.65E+02	7.73E-01	NA	NA	NA	NA	1.13E-04	2.74E+02	3.08E-02	1.00E+00	3.06E-02	2.63E+01	4.70E+00	1.10E-01	5.08E+00	5.17E+00
BCEOT-W16-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.44E+02	6.74E-01	NA	NA	NA	NA	1.13E-04	2.39E+02	2.69E-02	1.00E+00	3.06E-02	2.29E+01	4.70E+00	1.10E-01	5.08E+00	4.51E+00
BCEOT-E17-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	4.40E+02	2.06E+00	NA	NA	NA	NA	1.13E-04	7.33E+02	8.24E-02	1.00E+00	3.06E-02	7.02E+01	4.70E+00	1.10E-01	5.08E+00	1.38E+01
BCEOT-W17-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	5.98E+01	2.81E-01	NA	NA	NA	NA	1.13E-04	9.95E+01	1.12E-02	1.00E+00	3.06E-02	9.53E+00	4.70E+00	1.10E-01	5.08E+00	1.88E+00
BCEOT-W18-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.33E+02	6.23E-01	NA	NA	NA	NA	1.13E-04	2.21E+02	2.49E-02	1.00E+00	3.06E-02	2.12E+01	4.70E+00	1.10E-01	5.08E+00	4.17E+00
BCEOT-E19-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	6.49E+01	3.04E-01	NA	NA	NA	NA	1.13E-04	1.08E+02	1.22E-02	1.00E+00	3.06E-02	1.03E+01	4.70E+00	1.10E-01	5.08E+00	2.04E+00
BCEOT-W19-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	4.17E+01	1.95E-01	NA	NA	NA	NA	1.13E-04	6.93E+01	7.80E-03	1.00E+00	3.06E-02	6.64E+00	4.70E+00	1.10E-01	5.08E+00	1.31E+00
BCEOT-E20-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	9.81E+01	4.60E-01	NA	NA	NA	NA	1.13E-04	1.63E+02	1.84E-02	1.00E+00	3.06E-02	1.56E+01	4.70E+00	1.10E-01	5.08E+00	3.08E+00
BCEOT-W20-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.78E+02	8.34E-01	NA	NA	NA	NA	1.13E-04	2.96E+02	3.33E-02	1.00E+00	3.06E-02	2.83E+01	4.70E+00	1.10E-01	5.08E+00	5.58E+00
BCEOT-E21-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.07E+02	5.04E-01	NA	NA	NA	NA	1.13E-04	1.79E+02	2.01E-02	1.00E+00	3.06E-02	1.71E+01	4.70E+00	1.10E-01	5.08E+00	3.37E+00
BCEOT-W21-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	9.05E+01	4.25E-01	NA	NA	NA	NA	1.13E-04	1.51E+02	1.70E-02	1.00E+00	3.06E-02	1.44E+01	4.70E+00	1.10E-01	5.08E+00	2.84E+00
BCEOT-E22-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.59E+02	7.47E-01	NA	NA	NA	NA	1.13E-04	2.65E+02	2.98E-02	1.00E+00	3.06E-02	2.54E+01	4.70E+00	1.10E-01	5.08E+00	5.00E+00
BCEOT-W22-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	9.95E+01	4.67E-01	NA	NA	NA	NA	1.13E-04	1.66E+02	1.86E-02	1.00E+00	3.06E-02	1.59E+01	4.70E+00	1.10E-01	5.08E+00	3.12E+00
BCEOT-E23-15 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	2.71E+01	1.27E-01	NA	NA	NA	NA	1.13E-04	4.52E+01	5.08E-03	1.00E+00	3.06E-02	4.33E+00	4.70E+00	1.10E-01	5.08E+00	8.52E-01
BCEOT-W23-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.69E+02	7.92E-01	NA	NA	NA	NA	1.13E-04	2.81E+02	3.16E-02	1.00E+00	3.06E-02	2.69E+01	4.70E+00	1.10E-01	5.08E+00	5.31E+00
BCEOT-E24-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.52E+01	7.11E-02	NA	NA	NA	NA	1.13E-04	2.52E+01	2.84E-03	1.00E+00	3.06E-02	2.42E+00	4.70E+00	1.10E-01	5.08E+00	4.76E-01

TABLE C-11A: ARSENIC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 11 - BEARTRAP CREEK DISPERSED TAILINGS DEPOSITS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK TAILINGS DEPOSITS AND FLOSSIE LOUISE MINE WASTE PILE (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **4.982**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Meadow Vole (Small Herbivorous Mammal - Terrestrial)																							
BCEOT-W24-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.23E+02	5.78E-01	NA	NA	NA	NA	1.13E-04	2.05E+02	2.31E-02	1.00E+00	3.06E-02	1.96E+01	4.70E+00	1.10E-01	5.08E+00	3.87E+00
BCEOT-E25-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.15E+02	5.41E-01	NA	NA	NA	NA	1.13E-04	1.92E+02	2.16E-02	1.00E+00	3.06E-02	1.84E+01	4.70E+00	1.10E-01	5.08E+00	3.63E+00
BCEOT-W25-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.06E+02	4.99E-01	NA	NA	NA	NA	1.13E-04	1.77E+02	1.99E-02	1.00E+00	3.06E-02	1.69E+01	4.70E+00	1.10E-01	5.08E+00	3.34E+00
BCEOT-E26-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	6.27E+01	2.94E-01	NA	NA	NA	NA	1.13E-04	1.04E+02	1.17E-02	1.00E+00	3.06E-02	9.99E+00	4.70E+00	1.10E-01	5.08E+00	1.97E+00
BCEOT-W26-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	6.53E+01	3.06E-01	NA	NA	NA	NA	1.13E-04	1.09E+02	1.22E-02	1.00E+00	3.06E-02	1.04E+01	4.70E+00	1.10E-01	5.08E+00	2.05E+00
BCEOT-W27-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	9.14E+01	4.28E-01	NA	NA	NA	NA	1.13E-04	1.52E+02	1.71E-02	1.00E+00	3.06E-02	1.46E+01	4.70E+00	1.10E-01	5.08E+00	2.87E+00
At Edge of Tailings Pile																						**Maximum HQ (Inside Tailings Pile)**	**1.38E+01**
BCEOT-E0-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	8.60E+01	4.03E-01	NA	NA	NA	NA	1.13E-04	1.43E+02	1.61E-02	1.00E+00	3.06E-02	1.37E+01	4.70E+00	1.10E-01	5.08E+00	2.70E+00
BCEOT-E1-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.25E+01	5.86E-02	NA	NA	NA	NA	1.13E-04	2.08E+01	2.34E-03	1.00E+00	3.06E-02	1.99E+00	4.70E+00	1.10E-01	5.08E+00	3.93E-01
BCEOT-E2-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	9.42E+01	4.42E-01	NA	NA	NA	NA	1.13E-04	1.57E+02	1.76E-02	1.00E+00	3.06E-02	1.50E+01	4.70E+00	1.10E-01	5.08E+00	2.96E+00
BCEOT-E3-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	2.95E+01	1.38E-01	NA	NA	NA	NA	1.13E-04	4.91E+01	5.53E-03	1.00E+00	3.06E-02	4.70E+00	4.70E+00	1.10E-01	5.08E+00	9.27E-01
BCEOT-E4-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-W4-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	2.25E+01	1.05E-01	NA	NA	NA	NA	1.13E-04	3.74E+01	4.21E-03	1.00E+00	3.06E-02	3.58E+00	4.70E+00	1.10E-01	5.08E+00	7.06E-01
BCEOT-E5-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	5.99E+01	2.81E-01	NA	NA	NA	NA	1.13E-04	9.96E+01	1.12E-02	1.00E+00	3.06E-02	9.54E+00	4.70E+00	1.10E-01	5.08E+00	1.88E+00
BCEOT-W5-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	7.52E+01	3.53E-01	NA	NA	NA	NA	1.13E-04	1.25E+02	1.41E-02	1.00E+00	3.06E-02	1.20E+01	4.70E+00	1.10E-01	5.08E+00	2.36E+00
BCEOT-E6-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	3.58E+01	1.68E-01	NA	NA	NA	NA	1.13E-04	5.96E+01	6.70E-03	1.00E+00	3.06E-02	5.70E+00	4.70E+00	1.10E-01	5.08E+00	1.12E+00
BCEOT-W6-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.80E+01	8.45E-02	NA	NA	NA	NA	1.13E-04	3.00E+01	3.37E-03	1.00E+00	3.06E-02	2.87E+00	4.70E+00	1.10E-01	5.08E+00	5.66E-01
BCEOT-E7-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	5.02E+01	2.35E-01	NA	NA	NA	NA	1.13E-04	8.35E+01	9.40E-03	1.00E+00	3.06E-02	8.00E+00	4.70E+00	1.10E-01	5.08E+00	1.58E+00
BCEOT-W7-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	3.26E+01	1.53E-01	NA	NA	NA	NA	1.13E-04	5.42E+01	6.10E-03	1.00E+00	3.06E-02	5.19E+00	4.70E+00	1.10E-01	5.08E+00	1.02E+00
BCEOT-W8-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-E9-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	2.98E+01	1.40E-01	NA	NA	NA	NA	1.13E-04	4.95E+01	5.57E-03	1.00E+00	3.06E-02	4.74E+00	4.70E+00	1.10E-01	5.08E+00	9.34E-01
BCEOT-W9-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-W10-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-E11-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.46E+01	6.86E-02	NA	NA	NA	NA	1.13E-04	2.43E+01	2.74E-03	1.00E+00	3.06E-02	2.33E+00	4.70E+00	1.10E-01	5.08E+00	4.59E-01
BCEOT-W11-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	6.65E+01	3.12E-01	NA	NA	NA	NA	1.13E-04	1.11E+02	1.24E-02	1.00E+00	3.06E-02	1.06E+01	4.70E+00	1.10E-01	5.08E+00	2.09E+00
BCEOT-E12-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	2.77E+01	1.30E-01	NA	NA	NA	NA	1.13E-04	4.61E+01	5.19E-03	1.00E+00	3.06E-02	4.42E+00	4.70E+00	1.10E-01	5.08E+00	8.71E-01
BCEOT-W12-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.38E+01	6.48E-02	NA	NA	NA	NA	1.13E-04	2.30E+01	2.59E-03	1.00E+00	3.06E-02	2.20E+00	4.70E+00	1.10E-01	5.08E+00	4.34E-01
BCEOT-E13-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.47E+01	6.91E-02	NA	NA	NA	NA	1.13E-04	2.45E+01	2.76E-03	1.00E+00	3.06E-02	2.35E+00	4.70E+00	1.10E-01	5.08E+00	4.63E-01
BCEOT-W13-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-E14-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.94E+01	9.12E-02	NA	NA	NA	NA	1.13E-04	3.24E+01	3.64E-03	1.00E+00	3.06E-02	3.10E+00	4.70E+00	1.10E-01	5.08E+00	6.11E-01
BCEOT-W14-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	3.14E+01	1.47E-01	NA	NA	NA	NA	1.13E-04	5.22E+01	5.87E-03	1.00E+00	3.06E-02	5.00E+00	4.70E+00	1.10E-01	5.08E+00	9.85E-01
BCEOT-E15-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	6.68E+00	3.13E-02	NA	NA	NA	NA	1.13E-04	1.11E+01	1.25E-03	1.00E+00	3.06E-02	1.06E+00	4.70E+00	1.10E-01	5.08E+00	2.10E-01
BCEOT-W15-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	4.57E+01	2.14E-01	NA	NA	NA	NA	1.13E-04	7.61E+01	8.56E-03	1.00E+00	3.06E-02	7.29E+00	4.70E+00	1.10E-01	5.08E+00	1.44E+00
BCEOT-E16-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.26E+01	5.91E-02	NA	NA	NA	NA	1.13E-04	2.10E+01	2.36E-03	1.00E+00	3.06E-02	2.01E+00	4.70E+00	1.10E-01	5.08E+00	3.96E-01
BCEOT-W16-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-E17-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	5.91E+01	2.77E-01	NA	NA	NA	NA	1.13E-04	9.84E+01	1.11E-02	1.00E+00	3.06E-02	9.42E+00	4.70E+00	1.10E-01	5.08E+00	1.86E+00
BCEOT-W17-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	2.96E+01	1.39E-01	NA	NA	NA	NA	1.13E-04	4.93E+01	5.55E-03	1.00E+00	3.06E-02	4.72E+00	4.70E+00	1.10E-01	5.08E+00	9.31E-01
BCEOT-E18-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	2.52E+01	1.18E-01	NA	NA	NA	NA	1.13E-04	4.19E+01	4.72E-03	1.00E+00	3.06E-02	4.02E+00	4.70E+00	1.10E-01	5.08E+00	7.91E-01
BCEOT-W18-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.93E+01	9.04E-02	NA	NA	NA	NA	1.13E-04	3.21E+01	3.61E-03	1.00E+00	3.06E-02	3.07E+00	4.70E+00	1.10E-01	5.08E+00	6.05E-01
BCEOT-E19-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.46E+01	6.85E-02	NA	NA	NA	NA	1.13E-04	2.43E+01	2.74E-03	1.00E+00	3.06E-02	2.33E+00	4.70E+00	1.10E-01	5.08E+00	4.59E-01
BCEOT-W19-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	2.29E+01	1.08E-01	NA	NA	NA	NA	1.13E-04	3.82E+01	4.30E-03	1.00E+00	3.06E-02	3.66E+00	4.70E+00	1.10E-01	5.08E+00	7.21E-01
BCEOT-E20-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.36E+01	6.40E-02	NA	NA	NA	NA	1.13E-04	2.27E+01	2.55E-03	1.00E+00	3.06E-02	2.17E+00	4.70E+00	1.10E-01	5.08E+00	4.28E-01
BCEOT-W20-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-E21-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	4.58E+01	2.15E-01	NA	NA	NA	NA	1.13E-04	7.61E+01	8.57E-03	1.00E+00	3.06E-02	7.29E+00	4.70E+00	1.10E-01	5.08E+00	1.44E+00
BCEOT-W21-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.58E+01	7.40E-02	NA	NA	NA	NA	1.13E-04	2.63E+01	2.96E-03	1.00E+00	3.06E-02	2.52E+00	4.70E+00	1.10E-01	5.08E+00	4.96E-01
BCEOT-E22-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	2.88E+01	1.35E-01	NA	NA	NA	NA	1.13E-04	4.79E+01	5.39E-03	1.00E+00	3.06E-02	4.59E+00	4.70E+00	1.10E-01	5.08E+00	9.04E-01
BCEOT-W22-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.99E+01	9.35E-02	NA	NA	NA	NA	1.13E-04	3.32E+01	3.74E-03	1.00E+00	3.06E-02	3.18E+00	4.70E+00	1.10E-01	5.08E+00	6.26E-01
BCEOT-E23-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-W23-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-E24-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	2.00E+01	9.38E-02	NA	NA	NA	NA	1.13E-04	3.33E+01	3.75E-03	1.00E+00	3.06E-02	3.19E+00	4.70E+00	1.10E-01	5.08E+00	6.28E-01
BCEOT-W24-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	6.94E+00	3.25E-02	NA	NA	NA	NA	1.13E-04	1.15E+01	1.30E-03	1.00E+00	3.06E-02	1.11E+00	4.70E+00	1.10E-01	5.08E+00	2.18E-01

TABLE C-11A: ARSENIC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 11 - BEARTRAP CREEK DISPERSED TAILINGS DEPOSITS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK TAILINGS DEPOSITS AND FLOSSIE LOUISE MINE WASTE PILE (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **4.982**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Meadow Vole (Small Herbivorous Mammal - Terrestrial)																							
BCEOT-E25-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	2.53E+01	1.19E-01	NA	NA	NA	NA	1.13E-04	4.21E+01	4.73E-03	1.00E+00	3.06E-02	4.03E+00	4.70E+00	1.10E-01	5.08E+00	7.94E-01
BCEOT-W25-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	8.65E+00	4.06E-02	NA	NA	NA	NA	1.13E-04	1.44E+01	1.62E-03	1.00E+00	3.06E-02	1.38E+00	4.70E+00	1.10E-01	5.08E+00	2.72E-01
BCEOT-E26-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.63E+01	7.65E-02	NA	NA	NA	NA	1.13E-04	2.72E+01	3.06E-03	1.00E+00	3.06E-02	2.60E+00	4.70E+00	1.10E-01	5.08E+00	5.12E-01
BCEOT-W26-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	6.66E+00	3.12E-02	NA	NA	NA	NA	1.13E-04	1.11E+01	1.25E-03	1.00E+00	3.06E-02	1.06E+00	4.70E+00	1.10E-01	5.08E+00	2.09E-01
BCEOT-W27-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	7.02E+00	3.29E-02	NA	NA	NA	NA	1.13E-04	1.17E+01	1.31E-03	1.00E+00	3.06E-02	1.12E+00	4.70E+00	1.10E-01	5.08E+00	2.20E-01
Outside Tailings Piles																						**Maximum HQ (Edge of Tailings Pile)**	**2.96E+00**
BCEOT-E0+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	5.49E+01	2.57E-01	NA	NA	NA	NA	1.13E-04	9.13E+01	1.03E-02	1.00E+00	3.06E-02	8.75E+00	4.70E+00	1.10E-01	5.08E+00	1.72E+00
BCEOT-E1+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	6.49E+01	3.04E-01	NA	NA	NA	NA	1.13E-04	1.08E+02	1.22E-02	1.00E+00	3.06E-02	1.03E+01	4.70E+00	1.10E-01	5.08E+00	2.04E+00
BCEOT-E2+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	5.35E+01	2.51E-01	NA	NA	NA	NA	1.13E-04	8.90E+01	1.00E-02	1.00E+00	3.06E-02	8.52E+00	4.70E+00	1.10E-01	5.08E+00	1.68E+00
BCEOT-E3+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.65E+01	7.74E-02	NA	NA	NA	NA	1.13E-04	2.75E+01	3.09E-03	1.00E+00	3.06E-02	2.63E+00	4.70E+00	1.10E-01	5.08E+00	5.18E-01
BCEOT-E4+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	3.03E+01	1.42E-01	NA	NA	NA	NA	1.13E-04	5.05E+01	5.68E-03	1.00E+00	3.06E-02	4.83E+00	4.70E+00	1.10E-01	5.08E+00	9.53E-01
BCEOT-W4+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	3.23E+01	1.52E-01	NA	NA	NA	NA	1.13E-04	5.38E+01	6.06E-03	1.00E+00	3.06E-02	5.15E+00	4.70E+00	1.10E-01	5.08E+00	1.02E+00
BCEOT-E5+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	5.66E+01	2.65E-01	NA	NA	NA	NA	1.13E-04	9.41E+01	1.06E-02	1.00E+00	3.06E-02	9.01E+00	4.70E+00	1.10E-01	5.08E+00	1.78E+00
BCEOT-W5+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	7.40E+01	3.47E-01	NA	NA	NA	NA	1.13E-04	1.23E+02	1.39E-02	1.00E+00	3.06E-02	1.18E+01	4.70E+00	1.10E-01	5.08E+00	2.32E+00
BCEOT-E6+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	4.01E+01	1.88E-01	NA	NA	NA	NA	1.13E-04	6.67E+01	7.50E-03	1.00E+00	3.06E-02	6.39E+00	4.70E+00	1.10E-01	5.08E+00	1.26E+00
BCEOT-W6+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.12E+01	5.26E-02	NA	NA	NA	NA	1.13E-04	1.87E+01	2.10E-03	1.00E+00	3.06E-02	1.79E+00	4.70E+00	1.10E-01	5.08E+00	3.53E-01
BCEOT-E7+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.74E+01	8.16E-02	NA	NA	NA	NA	1.13E-04	2.89E+01	3.26E-03	1.00E+00	3.06E-02	2.77E+00	4.70E+00	1.10E-01	5.08E+00	5.46E-01
BCEOT-W7+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
FLWA-101 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.28E+02	5.98E-01	NA	NA	NA	NA	1.13E-04	2.12E+02	2.39E-02	1.00E+00	3.06E-02	2.03E+01	4.70E+00	1.10E-01	5.08E+00	4.01E+00
BCEOT-W8+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	2.28E+01	1.07E-01	NA	NA	NA	NA	1.13E-04	3.79E+01	4.26E-03	1.00E+00	3.06E-02	3.63E+00	4.70E+00	1.10E-01	5.08E+00	7.15E-01
BCEOT-E9+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	6.16E+01	2.89E-01	NA	NA	NA	NA	1.13E-04	1.02E+02	1.15E-02	1.00E+00	3.06E-02	9.81E+00	4.70E+00	1.10E-01	5.08E+00	1.93E+00
BCEOT-W9+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.26E+01	5.89E-02	NA	NA	NA	NA	1.13E-04	2.09E+01	2.35E-03	1.00E+00	3.06E-02	2.00E+00	4.70E+00	1.10E-01	5.08E+00	3.94E-01
BCEOT-W10+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-E11+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	5.68E+01	2.66E-01	NA	NA	NA	NA	1.13E-04	9.44E+01	1.06E-02	1.00E+00	3.06E-02	9.05E+00	4.70E+00	1.10E-01	5.08E+00	1.78E+00
BCEOT-W11+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	2.73E+01	1.28E-01	NA	NA	NA	NA	1.13E-04	4.54E+01	5.11E-03	1.00E+00	3.06E-02	4.35E+00	4.70E+00	1.10E-01	5.08E+00	8.56E-01
BCEOT-E12+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	3.30E+01	1.55E-01	NA	NA	NA	NA	1.13E-04	5.49E+01	6.18E-03	1.00E+00	3.06E-02	5.26E+00	4.70E+00	1.10E-01	5.08E+00	1.04E+00
BCEOT-W12+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-E13+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	5.51E+01	2.58E-01	NA	NA	NA	NA	1.13E-04	9.17E+01	1.03E-02	1.00E+00	3.06E-02	8.78E+00	4.70E+00	1.10E-01	5.08E+00	1.73E+00
BCEOT-E14+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.15E+01	5.37E-02	NA	NA	NA	NA	1.13E-04	1.91E+01	2.14E-03	1.00E+00	3.06E-02	1.83E+00	4.70E+00	1.10E-01	5.08E+00	3.60E-01
BCEOT-W14+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-E15+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	2.29E+01	1.07E-01	NA	NA	NA	NA	1.13E-04	3.80E+01	4.28E-03	1.00E+00	3.06E-02	3.64E+00	4.70E+00	1.10E-01	5.08E+00	7.18E-01
BCEOT-W15+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	3.33E+01	1.56E-01	NA	NA	NA	NA	1.13E-04	5.55E+01	6.24E-03	1.00E+00	3.06E-02	5.31E+00	4.70E+00	1.10E-01	5.08E+00	1.05E+00
BCEOT-E16+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.16E+01	5.42E-02	NA	NA	NA	NA	1.13E-04	1.92E+01	2.17E-03	1.00E+00	3.06E-02	1.84E+00	4.70E+00	1.10E-01	5.08E+00	3.63E-01
BCEOT-W16+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-E17+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.69E+01	7.93E-02	NA	NA	NA	NA	1.13E-04	2.81E+01	3.17E-03	1.00E+00	3.06E-02	2.70E+00	4.70E+00	1.10E-01	5.08E+00	5.31E-01
BCEOT-W17+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.12E+01	5.26E-02	NA	NA	NA	NA	1.13E-04	1.87E+01	2.10E-03	1.00E+00	3.06E-02	1.79E+00	4.70E+00	1.10E-01	5.08E+00	3.53E-01
BCEOT-E18+12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	4.11E+02	1.93E+00	NA	NA	NA	NA	1.13E-04	6.83E+02	7.69E-02	1.00E+00	3.06E-02	6.54E+01	4.70E+00	1.10E-01	5.08E+00	1.29E+01
BCEOT-E18+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	2.01E+01	9.44E-02	NA	NA	NA	NA	1.13E-04	3.35E+01	3.77E-03	1.00E+00	3.06E-02	3.21E+00	4.70E+00	1.10E-01	5.08E+00	6.32E-01
BCEOT-W18+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.58E+01	7.40E-02	NA	NA	NA	NA	1.13E-04	2.63E+01	2.95E-03	1.00E+00	3.06E-02	2.51E+00	4.70E+00	1.10E-01	5.08E+00	4.95E-01
BCEOT-E19+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.83E+01	8.58E-02	NA	NA	NA	NA	1.13E-04	3.04E+01	3.42E-03	1.00E+00	3.06E-02	2.91E+00	4.70E+00	1.10E-01	5.08E+00	5.74E-01
BCEOT-W19+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-E20+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.33E+01	6.24E-02	NA	NA	NA	NA	1.13E-04	2.22E+01	2.49E-03	1.00E+00	3.06E-02	2.12E+00	4.70E+00	1.10E-01	5.08E+00	4.18E-01
BCEOT-W20+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-E21+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.48E+01	6.92E-02	NA	NA	NA	NA	1.13E-04	2.46E+01	2.76E-03	1.00E+00	3.06E-02	2.35E+00	4.70E+00	1.10E-01	5.08E+00	4.63E-01
BCEOT-W21+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-E22+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	8.91E+01	4.18E-01	NA	NA	NA	NA	1.13E-04	1.48E+02	1.67E-02	1.00E+00	3.06E-02	1.42E+01	4.70E+00	1.10E-01	5.08E+00	2.80E+00
BCEOT-E22+70 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.96E+01	9.20E-02	NA	NA	NA	NA	1.13E-04	3.26E+01	3.67E-03	1.00E+00	3.06E-02	3.13E+00	4.70E+00	1.10E-01	5.08E+00	6.16E-01
BCEOT-W22+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.25E+01	5.85E-02	NA	NA	NA	NA	1.13E-04	2.08E+01	2.34E-03	1.00E+00	3.06E-02	1.99E+00	4.70E+00	1.10E-01	5.08E+00	3.92E-01
BCEOT-E23+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.24E+01	5.81E-02	NA	NA	NA	NA	1.13E-04	2.06E+01	2.32E-03	1.00E+00	3.06E-02	1.97E+00	4.70E+00	1.10E-01	5.08E+00	3.89E-01
BCEOT-W23+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.15E+01	5.40E-02	NA	NA	NA	NA	1.13E-04	1.92E+01	2.16E-03	1.00E+00	3.06E-02	1.84E+00	4.70E+00	1.10E-01	5.08E+00	3.62E-01
BCEOT-E24+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB

TABLE C-11A: ARSENIC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 11 - BEARTRAP CREEK DISPERSED TAILINGS DEPOSITS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK TAILINGS DEPOSITS AND FLOSSIE LOUISE MINE WASTE PILE (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 4.982

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Meadow Vole (Small Herbivorous Mammal - Terrestrial)																							
BCEOT-W24+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	6.62E+00	3.10E-02	NA	NA	NA	NA	1.13E-04	1.10E+01	1.24E-03	1.00E+00	3.06E-02	1.05E+00	4.70E+00	1.10E-01	5.08E+00	2.08E-01
BCEOT-E25+20 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-W25+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	6.25E+00	2.93E-02	NA	NA	NA	NA	1.13E-04	1.04E+01	1.17E-03	1.00E+00	3.06E-02	9.97E-01	4.70E+00	1.10E-01	5.08E+00	1.96E-01
BCEOT-E26+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	5.32E+01	2.49E-01	NA	NA	NA	NA	1.13E-04	8.85E+01	9.96E-03	1.00E+00	3.06E-02	8.48E+00	4.70E+00	1.10E-01	5.08E+00	1.67E+00
BCEOT-W26+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	4.96E+01	2.33E-01	NA	NA	NA	NA	1.13E-04	8.25E+01	9.29E-03	1.00E+00	3.06E-02	7.90E+00	4.70E+00	1.10E-01	5.08E+00	1.56E+00
BCEOT-W27+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.01E-01	1.67E+01	7.81E-02	NA	NA	NA	NA	1.13E-04	2.77E+01	3.12E-03	1.00E+00	3.06E-02	2.65E+00	4.70E+00	1.10E-01	5.08E+00	5.23E-01
																						Maximum HQ (Outside Tailings Pile)	**1.29E+01**
White-Tailed Deer (Large Herbivorous Mammal - Terrestrial)																							
Reference Sites																							
ACBG-1 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	2.86E-02	2.60E+01	7.45E-01	2.79E-02	1.35E+02	1.54E-04	4.70E+00	1.10E-01	3.07E+00	5.02E-05
ACBG-2 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	2.86E-02	1.83E+01	5.25E-01	2.79E-02	1.35E+02	1.08E-04	4.70E+00	1.10E-01	3.07E+00	3.53E-05
BCBG-201 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	2.86E-02	3.04E+01	8.71E-01	2.79E-02	1.35E+02	1.80E-04	4.70E+00	1.10E-01	3.07E+00	5.86E-05
Inside Tailings Pile																						**Minimum HQ (Reference Sites)**	**3.53E-05**
BCEOT-E0-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	7.55E+01	1.08E+02	NA	NA	NA	NA	2.86E-02	1.26E+02	3.60E+00	2.79E-02	1.35E+02	2.30E-02	4.70E+00	1.10E-01	3.07E+00	7.51E-03
BCEOT-E1-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	7.03E+01	1.01E+02	NA	NA	NA	NA	2.86E-02	1.17E+02	3.35E+00	2.79E-02	1.35E+02	2.15E-02	4.70E+00	1.10E-01	3.07E+00	7.00E-03
BCEOT-E2-8 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	7.77E+01	1.11E+02	NA	NA	NA	NA	2.86E-02	1.29E+02	3.70E+00	2.79E-02	1.35E+02	2.37E-02	4.70E+00	1.10E-01	3.07E+00	7.73E-03
BCEOT-E3-8 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	3.94E+01	5.64E+01	NA	NA	NA	NA	2.86E-02	6.55E+01	1.88E+00	2.79E-02	1.35E+02	1.20E-02	4.70E+00	1.10E-01	3.07E+00	3.92E-03
BCEOT-E4-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	6.34E+01	9.08E+01	NA	NA	NA	NA	2.86E-02	1.06E+02	3.02E+00	2.79E-02	1.35E+02	1.94E-02	4.70E+00	1.10E-01	3.07E+00	6.32E-03
BCEOT-W4-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	5.38E+01	7.71E+01	NA	NA	NA	NA	2.86E-02	8.96E+01	2.56E+00	2.79E-02	1.35E+02	1.64E-02	4.70E+00	1.10E-01	3.07E+00	5.36E-03
BCEOT-E5-25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.56E+01	2.23E+01	NA	NA	NA	NA	2.86E-02	2.59E+01	7.42E-01	2.79E-02	1.35E+02	4.76E-03	4.70E+00	1.10E-01	3.07E+00	1.55E-03
BCEOT-W5-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.82E+02	2.60E+02	NA	NA	NA	NA	2.86E-02	3.02E+02	8.65E+00	2.79E-02	1.35E+02	5.54E-02	4.70E+00	1.10E-01	3.07E+00	1.81E-02
BCEOT-E6-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	4.37E+01	6.26E+01	NA	NA	NA	NA	2.86E-02	7.28E+01	2.08E+00	2.79E-02	1.35E+02	1.34E-02	4.70E+00	1.10E-01	3.07E+00	4.35E-03
BCEOT-E7-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	2.75E+01	3.94E+01	NA	NA	NA	NA	2.86E-02	4.58E+01	1.31E+00	2.79E-02	1.35E+02	8.40E-03	4.70E+00	1.10E-01	3.07E+00	2.74E-03
BCEOT-W7-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	7.22E+01	1.03E+02	NA	NA	NA	NA	2.86E-02	1.20E+02	3.44E+00	2.79E-02	1.35E+02	2.20E-02	4.70E+00	1.10E-01	3.07E+00	7.19E-03
BCEOT-W8-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.22E+02	1.74E+02	NA	NA	NA	NA	2.86E-02	2.02E+02	5.79E+00	2.79E-02	1.35E+02	3.71E-02	4.70E+00	1.10E-01	3.07E+00	1.21E-02
BCEOT-E9-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	9.73E+01	1.39E+02	NA	NA	NA	NA	2.86E-02	1.62E+02	4.64E+00	2.79E-02	1.35E+02	2.97E-02	4.70E+00	1.10E-01	3.07E+00	9.69E-03
BCEOT-W9-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.81E+02	2.58E+02	NA	NA	NA	NA	2.86E-02	3.00E+02	8.60E+00	2.79E-02	1.35E+02	5.51E-02	4.70E+00	1.10E-01	3.07E+00	1.80E-02
BCEOT-E10-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	2.46E+01	3.52E+01	NA	NA	NA	NA	2.86E-02	4.09E+01	1.17E+00	2.79E-02	1.35E+02	7.50E-03	4.70E+00	1.10E-01	3.07E+00	2.44E-03
BCEOT-W10-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.02E+02	1.46E+02	NA	NA	NA	NA	2.86E-02	1.70E+02	4.86E+00	2.79E-02	1.35E+02	3.12E-02	4.70E+00	1.10E-01	3.07E+00	1.02E-02
BCEOT-E11-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	5.92E+01	8.48E+01	NA	NA	NA	NA	2.86E-02	9.85E+01	2.82E+00	2.79E-02	1.35E+02	1.81E-02	4.70E+00	1.10E-01	3.07E+00	5.90E-03
BCEOT-W11-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.20E+02	1.71E+02	NA	NA	NA	NA	2.86E-02	1.99E+02	5.70E+00	2.79E-02	1.35E+02	3.65E-02	4.70E+00	1.10E-01	3.07E+00	1.19E-02
BCEOT-E12-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	3.68E+01	5.28E+01	NA	NA	NA	NA	2.86E-02	6.13E+01	1.76E+00	2.79E-02	1.35E+02	1.13E-02	4.70E+00	1.10E-01	3.07E+00	3.67E-03
BCEOT-W12-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.46E+02	2.09E+02	NA	NA	NA	NA	2.86E-02	2.43E+02	6.95E+00	2.79E-02	1.35E+02	4.46E-02	4.70E+00	1.10E-01	3.07E+00	1.45E-02
BCEOT-E13-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	6.82E+01	9.77E+01	NA	NA	NA	NA	2.86E-02	1.13E+02	3.25E+00	2.79E-02	1.35E+02	2.08E-02	4.70E+00	1.10E-01	3.07E+00	6.79E-03
BCEOT-W13-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.51E+02	2.16E+02	NA	NA	NA	NA	2.86E-02	2.52E+02	7.20E+00	2.79E-02	1.35E+02	4.62E-02	4.70E+00	1.10E-01	3.07E+00	1.51E-02
BCEOT-W13-25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-W14-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	3.86E+01	5.53E+01	NA	NA	NA	NA	2.86E-02	6.42E+01	1.84E+00	2.79E-02	1.35E+02	1.18E-02	4.70E+00	1.10E-01	3.07E+00	3.84E-03
BCEOT-E15-8 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	4.59E+01	6.57E+01	NA	NA	NA	NA	2.86E-02	7.64E+01	2.19E+00	2.79E-02	1.35E+02	1.40E-02	4.70E+00	1.10E-01	3.07E+00	4.57E-03
BCEOT-W15-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.16E+02	1.66E+02	NA	NA	NA	NA	2.86E-02	1.93E+02	5.52E+00	2.79E-02	1.35E+02	3.54E-02	4.70E+00	1.10E-01	3.07E+00	1.15E-02
BCEOT-E16-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.65E+02	2.36E+02	NA	NA	NA	NA	2.86E-02	2.74E+02	7.85E+00	2.79E-02	1.35E+02	5.03E-02	4.70E+00	1.10E-01	3.07E+00	1.64E-02
BCEOT-W16-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.44E+02	2.06E+02	NA	NA	NA	NA	2.86E-02	2.39E+02	6.85E+00	2.79E-02	1.35E+02	4.39E-02	4.70E+00	1.10E-01	3.07E+00	1.43E-02
BCEOT-E17-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	4.40E+02	6.30E+02	NA	NA	NA	NA	2.86E-02	7.33E+02	2.10E+01	2.79E-02	1.35E+02	1.34E-01	4.70E+00	1.10E-01	3.07E+00	4.38E-02
BCEOT-W17-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	5.98E+01	8.56E+01	NA	NA	NA	NA	2.86E-02	9.95E+01	2.85E+00	2.79E-02	1.35E+02	1.83E-02	4.70E+00	1.10E-01	3.07E+00	5.96E-03
BCEOT-W18-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.33E+02	1.90E+02	NA	NA	NA	NA	2.86E-02	2.21E+02	6.32E+00	2.79E-02	1.35E+02	4.05E-02	4.70E+00	1.10E-01	3.07E+00	1.32E-02
BCEOT-E19-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	6.49E+01	9.29E+01	NA	NA	NA	NA	2.86E-02	1.08E+02	3.09E+00	2.79E-02	1.35E+02	1.98E-02	4.70E+00	1.10E-01	3.07E+00	6.46E-03
BCEOT-W19-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	4.17E+01	5.97E+01	NA	NA	NA	NA	2.86E-02	6.93E+01	1.99E+00	2.79E-02	1.35E+02	1.27E-02	4.70E+00	1.10E-01	3.07E+00	4.15E-03
BCEOT-E20-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	9.81E+01	1.40E+02	NA	NA	NA	NA	2.86E-02	1.63E+02	4.68E+00	2.79E-02	1.35E+02	3.00E-02	4.70E+00	1.10E-01	3.07E+00	9.77E-03
BCEOT-W20-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.78E+02	2.55E+02	NA	NA	NA	NA	2.86E-02	2.96E+02	8.47E+00	2.79E-02	1.35E+02	5.43E-02	4.70E+00	1.10E-01	3.07E+00	1.77E-02
BCEOT-E21-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.07E+02	1.54E+02	NA	NA	NA	NA	2.86E-02	1.79E+02	5.12E+00	2.79E-02	1.35E+02	3.28E-02	4.70E+00	1.10E-01	3.07E+00	1.07E-02
BCEOT-W21-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	9.05E+01	1.30E+02	NA	NA	NA	NA	2.86E-02	1.51E+02	4.31E+00	2.79E-02	1.35E+02	2.77E-02	4.70E+00	1.10E-01	3.07E+00	9.02E-03
BCEOT-E22-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.59E+02	2.28E+02	NA	NA	NA	NA	2.86E-02	2.65E+02	7.59E+00	2.79E-02	1.35E+02	4.87E-02	4.70E+00	1.10E-01	3.07E+00	1.59E-02
BCEOT-W22-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	9.95E+01	1.42E+02	NA	NA	NA	NA	2.86E-02	1.66E+02	4.74E+00	2.79E-02	1.35E+02	3.04E-02	4.70E+00	1.10E-01	3.07E+00	9.91E-03
BCEOT-E23-15 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	2.71E+01	3.89E+01	NA	NA	NA	NA	2.86E-02	4.52E+01	1.29E+00	2.79E-02	1.35E+02	8.29E-03	4.70E+00	1.10E-01	3.07E+00	2.70E-03
BCEOT-W23-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.69E+02	2.42E+02	NA	NA	NA	NA	2.86E-02	2.81E+02	8.05E+00	2.79E-02	1.35E+02	5.16E-02	4.70E+00	1.10E-01	3.07E+00	1.68E-02
BCEOT-E24-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.52E+01	2.17E+01	NA	NA	NA	NA	2.86E-02	2.52E+01	7.23E-01	2.79E-02	1.35E+02	4.63E-03	4.70E+00	1.10E-01	3.07E+00	1.51E-03

TABLE C-11A: ARSENIC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 11 - BEARTRAP CREEK DISPERSED TAILINGS DEPOSITS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK TAILINGS DEPOSITS AND FLOSSIE LOUISE MINE WASTE PILE (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 4.982

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
White-Tailed Deer (Large Herbivorous Mammal - Terrestrial)																							
BCEOT-W24-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.23E+02	1.77E+02	NA	NA	NA	NA	2.86E-02	2.05E+02	5.87E+00	2.79E-02	1.35E+02	3.77E-02	4.70E+00	1.10E-01	3.07E+00	1.23E-02
BCEOT-E25-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.15E+02	1.65E+02	NA	NA	NA	NA	2.86E-02	1.92E+02	5.50E+00	2.79E-02	1.35E+02	3.53E-02	4.70E+00	1.10E-01	3.07E+00	1.15E-02
BCEOT-W25-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.06E+02	1.52E+02	NA	NA	NA	NA	2.86E-02	1.77E+02	5.07E+00	2.79E-02	1.35E+02	3.25E-02	4.70E+00	1.10E-01	3.07E+00	1.06E-02
BCEOT-E26-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	6.27E+01	8.97E+01	NA	NA	NA	NA	2.86E-02	1.04E+02	2.99E+00	2.79E-02	1.35E+02	1.91E-02	4.70E+00	1.10E-01	3.07E+00	6.24E-03
BCEOT-W26-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	6.53E+01	9.35E+01	NA	NA	NA	NA	2.86E-02	1.09E+02	3.11E+00	2.79E-02	1.35E+02	2.00E-02	4.70E+00	1.10E-01	3.07E+00	6.50E-03
BCEOT-W27-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	9.14E+01	1.31E+02	NA	NA	NA	NA	2.86E-02	1.52E+02	4.35E+00	2.79E-02	1.35E+02	2.79E-02	4.70E+00	1.10E-01	3.07E+00	9.10E-03
At Edge of Tailings Pile																						**Maximum HQ (Inside Tailings Pile)**	**4.38E-02**
BCEOT-E0-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	8.60E+01	1.23E+02	NA	NA	NA	NA	2.86E-02	1.43E+02	4.10E+00	2.79E-02	1.35E+02	2.63E-02	4.70E+00	1.10E-01	3.07E+00	8.56E-03
BCEOT-E1-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.25E+01	1.79E+01	NA	NA	NA	NA	2.86E-02	2.08E+01	5.96E-01	2.79E-02	1.35E+02	3.82E-03	4.70E+00	1.10E-01	3.07E+00	1.25E-03
BCEOT-E2-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	9.42E+01	1.35E+02	NA	NA	NA	NA	2.86E-02	1.57E+02	4.49E+00	2.79E-02	1.35E+02	2.88E-02	4.70E+00	1.10E-01	3.07E+00	9.38E-03
BCEOT-E3-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	2.95E+01	4.22E+01	NA	NA	NA	NA	2.86E-02	4.91E+01	1.41E+00	2.79E-02	1.35E+02	9.01E-03	4.70E+00	1.10E-01	3.07E+00	2.94E-03
BCEOT-E4-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-W4-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	2.25E+01	3.22E+01	NA	NA	NA	NA	2.86E-02	3.74E+01	1.07E+00	2.79E-02	1.35E+02	6.86E-03	4.70E+00	1.10E-01	3.07E+00	2.24E-03
BCEOT-E5-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	5.99E+01	8.57E+01	NA	NA	NA	NA	2.86E-02	9.96E+01	2.85E+00	2.79E-02	1.35E+02	1.83E-02	4.70E+00	1.10E-01	3.07E+00	5.96E-03
BCEOT-W5-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	7.52E+01	1.08E+02	NA	NA	NA	NA	2.86E-02	1.25E+02	3.58E+00	2.79E-02	1.35E+02	2.30E-02	4.70E+00	1.10E-01	3.07E+00	7.49E-03
BCEOT-E6-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	3.58E+01	5.12E+01	NA	NA	NA	NA	2.86E-02	5.96E+01	1.71E+00	2.79E-02	1.35E+02	1.09E-02	4.70E+00	1.10E-01	3.07E+00	3.56E-03
BCEOT-W6-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.80E+01	2.58E+01	NA	NA	NA	NA	2.86E-02	3.00E+01	8.58E-01	2.79E-02	1.35E+02	5.50E-03	4.70E+00	1.10E-01	3.07E+00	1.79E-03
BCEOT-E7-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	5.02E+01	7.18E+01	NA	NA	NA	NA	2.86E-02	8.35E+01	2.39E+00	2.79E-02	1.35E+02	1.53E-02	4.70E+00	1.10E-01	3.07E+00	5.00E-03
BCEOT-W7-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	3.26E+01	4.66E+01	NA	NA	NA	NA	2.86E-02	5.42E+01	1.55E+00	2.79E-02	1.35E+02	9.95E-03	4.70E+00	1.10E-01	3.07E+00	3.24E-03
BCEOT-W8-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-E9-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	2.98E+01	4.26E+01	NA	NA	NA	NA	2.86E-02	4.95E+01	1.42E+00	2.79E-02	1.35E+02	9.09E-03	4.70E+00	1.10E-01	3.07E+00	2.96E-03
BCEOT-W9-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-E10-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	2.94E+01	4.21E+01	NA	NA	NA	NA	2.86E-02	4.89E+01	1.40E+00	2.79E-02	1.35E+02	8.97E-03	4.70E+00	1.10E-01	3.07E+00	2.92E-03
BCEOT-W10-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-E11-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.46E+01	2.09E+01	NA	NA	NA	NA	2.86E-02	2.43E+01	6.97E-01	2.79E-02	1.35E+02	4.47E-03	4.70E+00	1.10E-01	3.07E+00	1.46E-03
BCEOT-W11-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	6.65E+01	9.52E+01	NA	NA	NA	NA	2.86E-02	1.11E+02	3.17E+00	2.79E-02	1.35E+02	2.03E-02	4.70E+00	1.10E-01	3.07E+00	6.62E-03
BCEOT-E12-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	2.77E+01	3.97E+01	NA	NA	NA	NA	2.86E-02	4.61E+01	1.32E+00	2.79E-02	1.35E+02	8.47E-03	4.70E+00	1.10E-01	3.07E+00	2.76E-03
BCEOT-W12-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.38E+01	1.98E+01	NA	NA	NA	NA	2.86E-02	2.30E+01	6.59E-01	2.79E-02	1.35E+02	4.22E-03	4.70E+00	1.10E-01	3.07E+00	1.38E-03
BCEOT-E13-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.47E+01	2.11E+01	NA	NA	NA	NA	2.86E-02	2.45E+01	7.02E-01	2.79E-02	1.35E+02	4.50E-03	4.70E+00	1.10E-01	3.07E+00	1.47E-03
BCEOT-W13-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-E14-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.94E+01	2.78E+01	NA	NA	NA	NA	2.86E-02	3.24E+01	9.27E-01	2.79E-02	1.35E+02	5.94E-03	4.70E+00	1.10E-01	3.07E+00	1.94E-03
BCEOT-W14-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	3.14E+01	4.49E+01	NA	NA	NA	NA	2.86E-02	5.22E+01	1.49E+00	2.79E-02	1.35E+02	9.58E-03	4.70E+00	1.10E-01	3.07E+00	3.12E-03
BCEOT-E15-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	6.68E+00	9.56E+00	NA	NA	NA	NA	2.86E-02	1.11E+01	3.18E-01	2.79E-02	1.35E+02	2.04E-03	4.70E+00	1.10E-01	3.07E+00	6.65E-04
BCEOT-W15-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	4.57E+01	6.55E+01	NA	NA	NA	NA	2.86E-02	7.61E+01	2.18E+00	2.79E-02	1.35E+02	1.40E-02	4.70E+00	1.10E-01	3.07E+00	4.55E-03
BCEOT-E16-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.26E+01	1.81E+01	NA	NA	NA	NA	2.86E-02	2.10E+01	6.01E-01	2.79E-02	1.35E+02	3.85E-03	4.70E+00	1.10E-01	3.07E+00	1.26E-03
BCEOT-W16-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-E17-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	5.91E+01	8.46E+01	NA	NA	NA	NA	2.86E-02	9.84E+01	2.82E+00	2.79E-02	1.35E+02	1.81E-02	4.70E+00	1.10E-01	3.07E+00	5.89E-03
BCEOT-W17-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	2.96E+01	4.24E+01	NA	NA	NA	NA	2.86E-02	4.93E+01	1.41E+00	2.79E-02	1.35E+02	9.05E-03	4.70E+00	1.10E-01	3.07E+00	2.95E-03
BCEOT-E18-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	2.52E+01	3.61E+01	NA	NA	NA	NA	2.86E-02	4.19E+01	1.20E+00	2.79E-02	1.35E+02	7.69E-03	4.70E+00	1.10E-01	3.07E+00	2.51E-03
BCEOT-W18-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.93E+01	2.76E+01	NA	NA	NA	NA	2.86E-02	3.21E+01	9.18E-01	2.79E-02	1.35E+02	5.89E-03	4.70E+00	1.10E-01	3.07E+00	1.92E-03
BCEOT-E19-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.46E+01	2.09E+01	NA	NA	NA	NA	2.86E-02	2.43E+01	6.96E-01	2.79E-02	1.35E+02	4.46E-03	4.70E+00	1.10E-01	3.07E+00	1.45E-03
BCEOT-W19-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	2.29E+01	3.29E+01	NA	NA	NA	NA	2.86E-02	3.82E+01	1.09E+00	2.79E-02	1.35E+02	7.01E-03	4.70E+00	1.10E-01	3.07E+00	2.28E-03
BCEOT-E20-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.36E+01	1.95E+01	NA	NA	NA	NA	2.86E-02	2.27E+01	6.50E-01	2.79E-02	1.35E+02	4.17E-03	4.70E+00	1.10E-01	3.07E+00	1.36E-03
BCEOT-W20-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-E21-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	4.58E+01	6.55E+01	NA	NA	NA	NA	2.86E-02	7.61E+01	2.18E+00	2.79E-02	1.35E+02	1.40E-02	4.70E+00	1.10E-01	3.07E+00	4.56E-03
BCEOT-W21-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.58E+01	2.26E+01	NA	NA	NA	NA	2.86E-02	2.63E+01	7.52E-01	2.79E-02	1.35E+02	4.82E-03	4.70E+00	1.10E-01	3.07E+00	1.57E-03
BCEOT-E22-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	2.88E+01	4.12E+01	NA	NA	NA	NA	2.86E-02	4.79E+01	1.37E+00	2.79E-02	1.35E+02	8.79E-03	4.70E+00	1.10E-01	3.07E+00	2.87E-03
BCEOT-W22-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.99E+01	2.86E+01	NA	NA	NA	NA	2.86E-02	3.32E+01	9.50E-01	2.79E-02	1.35E+02	6.09E-03	4.70E+00	1.10E-01	3.07E+00	1.99E-03
BCEOT-E23-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-W23-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-E24-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	2.00E+01	2.86E+01	NA	NA	NA	NA	2.86E-02	3.33E+01	9.53E-01	2.79E-02	1.35E+02	6.11E-03	4.70E+00	1.10E-01	3.07E+00	1.99E-03
BCEOT-W24-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	6.94E+00	9.93E+00	NA	NA	NA	NA	2.86E-02	1.15E+01	3.31E-01	2.79E-02	1.35E+02	2.12E-03	4.70E+00	1.10E-01	3.07E+00	6.91E-04

TABLE C-11A: ARSENIC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 11 - BEARTRAP CREEK DISPERSED TAILINGS DEPOSITS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK TAILINGS DEPOSITS AND FLOSSIE LOUISE MINE WASTE PILE (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 4.982

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
White-Tailed Deer (Large Herbivorous Mammal - Terrestrial)																							
BCEOT-E25-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	2.53E+01	3.62E+01	NA	NA	NA	NA	2.86E-02	4.21E+01	1.20E+00	2.79E-02	1.35E+02	7.72E-03	4.70E+00	1.10E-01	3.07E+00	2.52E-03
BCEOT-W25-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	8.65E+00	1.24E+01	NA	NA	NA	NA	2.86E-02	1.44E+01	4.12E-01	2.79E-02	1.35E+02	2.64E-03	4.70E+00	1.10E-01	3.07E+00	8.61E-04
BCEOT-E26-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.63E+01	2.34E+01	NA	NA	NA	NA	2.86E-02	2.72E+01	7.77E-01	2.79E-02	1.35E+02	4.98E-03	4.70E+00	1.10E-01	3.07E+00	1.62E-03
BCEOT-W26-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	6.66E+00	9.53E+00	NA	NA	NA	NA	2.86E-02	1.11E+01	3.17E-01	2.79E-02	1.35E+02	2.03E-03	4.70E+00	1.10E-01	3.07E+00	6.63E-04
BCEOT-W27-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	7.02E+00	1.00E+01	NA	NA	NA	NA	2.86E-02	1.17E+01	3.34E-01	2.79E-02	1.35E+02	2.14E-03	4.70E+00	1.10E-01	3.07E+00	6.99E-04
Outside Tailings Piles																						**Maximum HQ (Edge of Tailings Pile)**	**9.38E-03**
BCEOT-E0+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	5.49E+01	7.86E+01	NA	NA	NA	NA	2.86E-02	9.13E+01	2.61E+00	2.79E-02	1.35E+02	1.68E-02	4.70E+00	1.10E-01	3.07E+00	5.46E-03
BCEOT-E1+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	6.49E+01	9.30E+01	NA	NA	NA	NA	2.86E-02	1.08E+02	3.09E+00	2.79E-02	1.35E+02	1.98E-02	4.70E+00	1.10E-01	3.07E+00	6.46E-03
BCEOT-E2+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	5.35E+01	7.65E+01	NA	NA	NA	NA	2.86E-02	8.90E+01	2.55E+00	2.79E-02	1.35E+02	1.63E-02	4.70E+00	1.10E-01	3.07E+00	5.32E-03
BCEOT-E3+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.65E+01	2.36E+01	NA	NA	NA	NA	2.86E-02	2.75E+01	7.87E-01	2.79E-02	1.35E+02	5.04E-03	4.70E+00	1.10E-01	3.07E+00	1.64E-03
BCEOT-E4+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	3.03E+01	4.34E+01	NA	NA	NA	NA	2.86E-02	5.05E+01	1.45E+00	2.79E-02	1.35E+02	9.27E-03	4.70E+00	1.10E-01	3.07E+00	3.02E-03
BCEOT-W4+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	3.23E+01	4.63E+01	NA	NA	NA	NA	2.86E-02	5.38E+01	1.54E+00	2.79E-02	1.35E+02	9.88E-03	4.70E+00	1.10E-01	3.07E+00	3.22E-03
BCEOT-E5+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	5.66E+01	8.10E+01	NA	NA	NA	NA	2.86E-02	9.41E+01	2.69E+00	2.79E-02	1.35E+02	1.73E-02	4.70E+00	1.10E-01	3.07E+00	5.63E-03
BCEOT-W5+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	7.40E+01	1.06E+02	NA	NA	NA	NA	2.86E-02	1.23E+02	3.53E+00	2.79E-02	1.35E+02	2.26E-02	4.70E+00	1.10E-01	3.07E+00	7.37E-03
BCEOT-E6+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	4.01E+01	5.74E+01	NA	NA	NA	NA	2.86E-02	6.67E+01	1.91E+00	2.79E-02	1.35E+02	1.22E-02	4.70E+00	1.10E-01	3.07E+00	3.99E-03
BCEOT-W6+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.12E+01	1.61E+01	NA	NA	NA	NA	2.86E-02	1.87E+01	5.35E-01	2.79E-02	1.35E+02	3.43E-03	4.70E+00	1.10E-01	3.07E+00	1.12E-03
BCEOT-E7+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.74E+01	2.49E+01	NA	NA	NA	NA	2.86E-02	2.89E+01	8.29E-01	2.79E-02	1.35E+02	5.31E-03	4.70E+00	1.10E-01	3.07E+00	1.73E-03
BCEOT-W7+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
FLWA-101 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.28E+02	1.83E+02	NA	NA	NA	NA	2.86E-02	2.12E+02	6.08E+00	2.79E-02	1.35E+02	3.90E-02	4.70E+00	1.10E-01	3.07E+00	1.27E-02
BCEOT-W8+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	2.28E+01	3.26E+01	NA	NA	NA	NA	2.86E-02	3.79E+01	1.08E+00	2.79E-02	1.35E+02	6.96E-03	4.70E+00	1.10E-01	3.07E+00	2.27E-03
BCEOT-E9+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	6.16E+01	8.81E+01	NA	NA	NA	NA	2.86E-02	1.02E+02	2.93E+00	2.79E-02	1.35E+02	1.88E-02	4.70E+00	1.10E-01	3.07E+00	6.13E-03
BCEOT-W9+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.26E+01	1.80E+01	NA	NA	NA	NA	2.86E-02	2.09E+01	5.98E-01	2.79E-02	1.35E+02	3.83E-03	4.70E+00	1.10E-01	3.07E+00	1.25E-03
BCEOT-E10+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.46E+01	2.10E+01	NA	NA	NA	NA	2.86E-02	2.44E+01	6.97E-01	2.79E-02	1.35E+02	4.47E-03	4.70E+00	1.10E-01	3.07E+00	1.46E-03
BCEOT-W10+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-E11+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	5.68E+01	8.13E+01	NA	NA	NA	NA	2.86E-02	9.44E+01	2.70E+00	2.79E-02	1.35E+02	1.73E-02	4.70E+00	1.10E-01	3.07E+00	5.65E-03
BCEOT-W11+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	2.73E+01	3.90E+01	NA	NA	NA	NA	2.86E-02	4.54E+01	1.30E+00	2.79E-02	1.35E+02	8.33E-03	4.70E+00	1.10E-01	3.07E+00	2.72E-03
BCEOT-E12+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	3.30E+01	4.72E+01	NA	NA	NA	NA	2.86E-02	5.49E+01	1.57E+00	2.79E-02	1.35E+02	1.01E-02	4.70E+00	1.10E-01	3.07E+00	3.28E-03
BCEOT-W12+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-E13+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	5.51E+01	7.89E+01	NA	NA	NA	NA	2.86E-02	9.17E+01	2.63E+00	2.79E-02	1.35E+02	1.68E-02	4.70E+00	1.10E-01	3.07E+00	5.49E-03
BCEOT-E14+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.15E+01	1.64E+01	NA	NA	NA	NA	2.86E-02	1.91E+01	5.46E-01	2.79E-02	1.35E+02	3.50E-03	4.70E+00	1.10E-01	3.07E+00	1.14E-03
BCEOT-W14+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-E15+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	2.29E+01	3.27E+01	NA	NA	NA	NA	2.86E-02	3.80E+01	1.09E+00	2.79E-02	1.35E+02	6.98E-03	4.70E+00	1.10E-01	3.07E+00	2.28E-03
BCEOT-W15+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	3.33E+01	4.77E+01	NA	NA	NA	NA	2.86E-02	5.55E+01	1.59E+00	2.79E-02	1.35E+02	1.02E-02	4.70E+00	1.10E-01	3.07E+00	3.32E-03
BCEOT-E16+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.16E+01	1.66E+01	NA	NA	NA	NA	2.86E-02	1.92E+01	5.51E-01	2.79E-02	1.35E+02	3.53E-03	4.70E+00	1.10E-01	3.07E+00	1.15E-03
BCEOT-W16+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-E17+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.69E+01	2.42E+01	NA	NA	NA	NA	2.86E-02	2.81E+01	8.06E-01	2.79E-02	1.35E+02	5.17E-03	4.70E+00	1.10E-01	3.07E+00	1.68E-03
BCEOT-W17+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.12E+01	1.61E+01	NA	NA	NA	NA	2.86E-02	1.87E+01	5.35E-01	2.79E-02	1.35E+02	3.43E-03	4.70E+00	1.10E-01	3.07E+00	1.12E-03
BCEOT-E18+12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	4.11E+02	5.88E+02	NA	NA	NA	NA	2.86E-02	6.83E+02	1.96E+01	2.79E-02	1.35E+02	1.25E-01	4.70E+00	1.10E-01	3.07E+00	4.09E-02
BCEOT-E18+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	2.01E+01	2.88E+01	NA	NA	NA	NA	2.86E-02	3.35E+01	9.59E-01	2.79E-02	1.35E+02	6.15E-03	4.70E+00	1.10E-01	3.07E+00	2.00E-03
BCEOT-W18+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.58E+01	2.26E+01	NA	NA	NA	NA	2.86E-02	2.63E+01	7.52E-01	2.79E-02	1.35E+02	4.82E-03	4.70E+00	1.10E-01	3.07E+00	1.57E-03
BCEOT-E19+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.83E+01	2.62E+01	NA	NA	NA	NA	2.86E-02	3.04E+01	8.71E-01	2.79E-02	1.35E+02	5.59E-03	4.70E+00	1.10E-01	3.07E+00	1.82E-03
BCEOT-W19+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-E20+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.33E+01	1.91E+01	NA	NA	NA	NA	2.86E-02	2.22E+01	6.34E-01	2.79E-02	1.35E+02	4.07E-03	4.70E+00	1.10E-01	3.07E+00	1.33E-03
BCEOT-W20+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-E21+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.48E+01	2.11E+01	NA	NA	NA	NA	2.86E-02	2.46E+01	7.03E-01	2.79E-02	1.35E+02	4.51E-03	4.70E+00	1.10E-01	3.07E+00	1.47E-03
BCEOT-W21+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-E22+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	8.91E+01	1.28E+02	NA	NA	NA	NA	2.86E-02	1.48E+02	4.25E+00	2.79E-02	1.35E+02	2.72E-02	4.70E+00	1.10E-01	3.07E+00	8.87E-03
BCEOT-E22+70 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.96E+01	2.81E+01	NA	NA	NA	NA	2.86E-02	3.26E+01	9.34E-01	2.79E-02	1.35E+02	5.99E-03	4.70E+00	1.10E-01	3.07E+00	1.95E-03
BCEOT-W22+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.25E+01	1.79E+01	NA	NA	NA	NA	2.86E-02	2.08E+01	5.95E-01	2.79E-02	1.35E+02	3.81E-03	4.70E+00	1.10E-01	3.07E+00	1.24E-03
BCEOT-E23+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.24E+01	1.77E+01	NA	NA	NA	NA	2.86E-02	2.06E+01	5.90E-01	2.79E-02	1.35E+02	3.79E-03	4.70E+00	1.10E-01	3.07E+00	1.23E-03
BCEOT-W23+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.15E+01	1.65E+01	NA	NA	NA	NA	2.86E-02	1.92E+01	5.49E-01	2.79E-02	1.35E+02	3.52E-03	4.70E+00	1.10E-01	3.07E+00	1.15E-03

TABLE C-11A: ARSENIC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 11 - BEARTRAP CREEK DISPERSED TAILINGS DEPOSITS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK TAILINGS DEPOSITS AND FLOSSIE LOUISE MINE WASTE PILE (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 4.982

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
White-Tailed Deer (Large Herbivorous Mammal - Terrestrial)																							
BCEOT-E24+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-W24+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	6.62E+00	9.48E+00	NA	NA	NA	NA	2.86E-02	1.10E+01	3.15E-01	2.79E-02	1.35E+02	2.02E-03	4.70E+00	1.10E-01	3.07E+00	6.59E-04
BCEOT-E25+20 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-W25+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	6.25E+00	8.95E+00	NA	NA	NA	NA	2.86E-02	1.04E+01	2.98E-01	2.79E-02	1.35E+02	1.91E-03	4.70E+00	1.10E-01	3.07E+00	6.23E-04
BCEOT-E26+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	5.32E+01	7.62E+01	NA	NA	NA	NA	2.86E-02	8.85E+01	2.53E+00	2.79E-02	1.35E+02	1.62E-02	4.70E+00	1.10E-01	3.07E+00	5.30E-03
BCEOT-W26+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	4.96E+01	7.10E+01	NA	NA	NA	NA	2.86E-02	8.25E+01	2.36E+00	2.79E-02	1.35E+02	1.51E-02	4.70E+00	1.10E-01	3.07E+00	4.94E-03
BCEOT-W27+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.01E-01	1.67E+01	2.38E+01	NA	NA	NA	NA	2.86E-02	2.77E+01	7.93E-01	2.79E-02	1.35E+02	5.09E-03	4.70E+00	1.10E-01	3.07E+00	1.66E-03
																						Maximum HQ (Outside Tailings Pile)	**4.09E-02**
Red Fox (Carnivorous Mammal - Terrestrial)																							
Reference Sites																							
ACBG-1 (0-6")	1.72E-01	1.72E-01	4.84E-01	1.26E+01	2.16E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.60E+01	1.25E-01	3.68E-03	4.54E+00	1.85E-03	4.70E+00	1.10E-01	3.76E+00	4.93E-04
ACBG-2 (0-6")	1.72E-01	1.72E-01	4.84E-01	8.87E+00	1.52E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.83E+01	8.80E-02	3.68E-03	4.54E+00	1.31E-03	4.70E+00	1.10E-01	3.76E+00	3.47E-04
BCBG-201 (0-6")	1.72E-01	1.72E-01	4.84E-01	1.47E+01	2.52E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.04E+01	1.46E-01	3.68E-03	4.54E+00	2.17E-03	4.70E+00	1.10E-01	3.76E+00	5.76E-04
Inside Tailings Pile																						**Minimum HQ (Reference Sites)**	**3.47E-04**
BCEOT-E0-12.5 (0-6")	1.72E-01	1.72E-01	4.84E-01	6.07E+01	1.04E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.26E+02	6.03E-01	3.68E-03	4.54E+00	8.95E-03	4.70E+00	1.10E-01	3.76E+00	2.38E-03
BCEOT-E1-12.5 (0-6")	1.72E-01	1.72E-01	4.84E-01	5.66E+01	9.71E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.17E+02	5.62E-01	3.68E-03	4.54E+00	8.33E-03	4.70E+00	1.10E-01	3.76E+00	2.22E-03
BCEOT-E2-8 (0-6")	1.72E-01	1.72E-01	4.84E-01	6.25E+01	1.07E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.29E+02	6.21E-01	3.68E-03	4.54E+00	9.21E-03	4.70E+00	1.10E-01	3.76E+00	2.45E-03
BCEOT-E3-8 (0-6")	1.72E-01	1.72E-01	4.84E-01	3.17E+01	5.44E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	6.55E+01	3.15E-01	3.68E-03	4.54E+00	4.67E-03	4.70E+00	1.10E-01	3.76E+00	1.24E-03
BCEOT-E4-12.5 (0-6")	1.72E-01	1.72E-01	4.84E-01	5.11E+01	8.76E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.06E+02	5.07E-01	3.68E-03	4.54E+00	7.52E-03	4.70E+00	1.10E-01	3.76E+00	2.00E-03
BCEOT-W4-12.5 (0-6")	1.72E-01	1.72E-01	4.84E-01	4.33E+01	7.43E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	8.96E+01	4.30E-01	3.68E-03	4.54E+00	6.38E-03	4.70E+00	1.10E-01	3.76E+00	1.70E-03
BCEOT-E5-25 (0-6")	1.72E-01	1.72E-01	4.84E-01	1.25E+01	2.15E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.59E+01	1.25E-01	3.68E-03	4.54E+00	1.85E-03	4.70E+00	1.10E-01	3.76E+00	4.91E-04
BCEOT-W5-12.5 (0-6")	1.72E-01	1.72E-01	4.84E-01	1.46E+02	2.51E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.02E+02	1.45E+00	3.68E-03	4.54E+00	2.15E-02	4.70E+00	1.10E-01	3.76E+00	5.72E-03
BCEOT-W6-12.5 (0-6")	1.72E-01	1.72E-01	4.84E-01	1.84E+01	3.16E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.80E+01	1.83E-01	3.68E-03	4.54E+00	2.71E-03	4.70E+00	1.10E-01	3.76E+00	7.21E-04
BCEOT-E7-12.5 (0-6")	1.72E-01	1.72E-01	4.84E-01	2.21E+01	3.80E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.58E+01	2.20E-01	3.68E-03	4.54E+00	3.26E-03	4.70E+00	1.10E-01	3.76E+00	8.67E-04
BCEOT-W7-12.5 (0-6")	1.72E-01	1.72E-01	4.84E-01	5.81E+01	9.97E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.20E+02	5.77E-01	3.68E-03	4.54E+00	8.55E-03	4.70E+00	1.10E-01	3.76E+00	2.28E-03
BCEOT-W8-12.5 (0-6")	1.72E-01	1.72E-01	4.84E-01	9.79E+01	1.68E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.02E+02	9.72E-01	3.68E-03	4.54E+00	1.44E-02	4.70E+00	1.10E-01	3.76E+00	3.83E-03
BCEOT-E9-12.5 (0-6")	1.72E-01	1.72E-01	4.84E-01	7.83E+01	1.34E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.62E+02	7.78E-01	3.68E-03	4.54E+00	1.15E-02	4.70E+00	1.10E-01	3.76E+00	3.07E-03
BCEOT-W9-12.5 (0-6")	1.72E-01	1.72E-01	4.84E-01	1.45E+02	2.49E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.00E+02	1.44E+00	3.68E-03	4.54E+00	2.14E-02	4.70E+00	1.10E-01	3.76E+00	5.69E-03
BCEOT-E10-12.5 (0-6")	1.72E-01	1.72E-01	4.84E-01	1.98E+01	3.39E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.09E+01	1.96E-01	3.68E-03	4.54E+00	2.91E-03	4.70E+00	1.10E-01	3.76E+00	7.74E-04
BCEOT-W10-12.5 (0-6")	1.72E-01	1.72E-01	4.84E-01	8.21E+01	1.41E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.70E+02	8.15E-01	3.68E-03	4.54E+00	1.21E-02	4.70E+00	1.10E-01	3.76E+00	3.22E-03
BCEOT-E11-12.5 (0-6")	1.72E-01	1.72E-01	4.84E-01	4.77E+01	8.18E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	9.85E+01	4.73E-01	3.68E-03	4.54E+00	7.02E-03	4.70E+00	1.10E-01	3.76E+00	1.87E-03
BCEOT-W11-12.5 (0-6")	1.72E-01	1.72E-01	4.84E-01	9.62E+01	1.65E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.99E+02	9.56E-01	3.68E-03	4.54E+00	1.42E-02	4.70E+00	1.10E-01	3.76E+00	3.77E-03
BCEOT-E12-12.5 (0-6")	1.72E-01	1.72E-01	4.84E-01	2.97E+01	5.09E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	6.13E+01	2.95E-01	3.68E-03	4.54E+00	4.37E-03	4.70E+00	1.10E-01	3.76E+00	1.16E-03
BCEOT-W12-12.5 (0-6")	1.72E-01	1.72E-01	4.84E-01	1.17E+02	2.02E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.43E+02	1.17E+00	3.68E-03	4.54E+00	1.73E-02	4.70E+00	1.10E-01	3.76E+00	4.60E-03
BCEOT-E13-12.5 (0-6")	1.72E-01	1.72E-01	4.84E-01	5.49E+01	9.42E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.13E+02	5.45E-01	3.68E-03	4.54E+00	8.08E-03	4.70E+00	1.10E-01	3.76E+00	2.15E-03
BCEOT-W13-12.5 (0-6")	1.72E-01	1.72E-01	4.84E-01	1.22E+02	2.09E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.52E+02	1.21E+00	3.68E-03	4.54E+00	1.79E-02	4.70E+00	1.10E-01	3.76E+00	4.77E-03
BCEOT-W13-25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-W14-12.5 (0-6")	1.72E-01	1.72E-01	4.84E-01	3.11E+01	5.33E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	6.42E+01	3.08E-01	3.68E-03	4.54E+00	4.57E-03	4.70E+00	1.10E-01	3.76E+00	1.22E-03
BCEOT-E15-8 (0-6")	1.72E-01	1.72E-01	4.84E-01	3.70E+01	6.34E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	7.64E+01	3.67E-01	3.68E-03	4.54E+00	5.44E-03	4.70E+00	1.10E-01	3.76E+00	1.45E-03
BCEOT-W15-12.5 (0-6")	1.72E-01	1.72E-01	4.84E-01	9.32E+01	1.60E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.93E+02	9.26E-01	3.68E-03	4.54E+00	1.37E-02	4.70E+00	1.10E-01	3.76E+00	3.65E-03
BCEOT-E16-12.5 (0-6")	1.72E-01	1.72E-01	4.84E-01	1.33E+02	2.28E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.74E+02	1.32E+00	3.68E-03	4.54E+00	1.95E-02	4.70E+00	1.10E-01	3.76E+00	5.19E-03
BCEOT-W16-12.5 (0-6")	1.72E-01	1.72E-01	4.84E-01	1.16E+02	1.98E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.39E+02	1.15E+00	3.68E-03	4.54E+00	1.70E-02	4.70E+00	1.10E-01	3.76E+00	4.53E-03
BCEOT-E17-12.5 (0-6")	1.72E-01	1.72E-01	4.84E-01	3.54E+02	6.08E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	7.33E+02	3.52E+00	3.68E-03	4.54E+00	5.22E-02	4.70E+00	1.10E-01	3.76E+00	1.39E-02
BCEOT-W17-12.5 (0-6")	1.72E-01	1.72E-01	4.84E-01	4.82E+01	8.26E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	9.95E+01	4.78E-01	3.68E-03	4.54E+00	7.09E-03	4.70E+00	1.10E-01	3.76E+00	1.89E-03
BCEOT-W18-12.5 (0-6")	1.72E-01	1.72E-01	4.84E-01	1.07E+02	1.83E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.21E+02	1.06E+00	3.68E-03	4.54E+00	1.57E-02	4.70E+00	1.10E-01	3.76E+00	4.18E-03
BCEOT-E19-12.5 (0-6")	1.72E-01	1.72E-01	4.84E-01	5.22E+01	8.96E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.08E+02	5.19E-01	3.68E-03	4.54E+00	7.69E-03	4.70E+00	1.10E-01	3.76E+00	2.05E-03
BCEOT-W19-12.5 (0-6")	1.72E-01	1.72E-01	4.84E-01	3.35E+01	5.75E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	6.93E+01	3.33E-01	3.68E-03	4.54E+00	4.94E-03	4.70E+00	1.10E-01	3.76E+00	1.31E-03
BCEOT-E20-12.5 (0-6")	1.72E-01	1.72E-01	4.84E-01	7.90E+01	1.36E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.63E+02	7.84E-01	3.68E-03	4.54E+00	1.16E-02	4.70E+00	1.10E-01	3.76E+00	3.09E-03
BCEOT-W20-12.5 (0-6")	1.72E-01	1.72E-01	4.84E-01	1.43E+02	2.46E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.96E+02	1.42E+00	3.68E-03	4.54E+00	2.11E-02	4.70E+00	1.10E-01	3.76E+00	5.61E-03
BCEOT-E21-12.5 (0-6")	1.72E-01	1.72E-01	4.84E-01	8.65E+01	1.48E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.79E+02	8.58E-01	3.68E-03	4.54E+00	1.27E-02	4.70E+00	1.10E-01	3.76E+00	3.39E-03
BCEOT-W21-12.5 (0-6")	1.72E-01	1.72E-01	4.84E-01	7.29E+01	1.25E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.51E+02	7.24E-01	3.68E-03	4.54E+00	1.07E-02	4.70E+00	1.10E-01	3.76E+00	2.85E-03
BCEOT-E22-12.5 (0-6")	1.72E-01	1.72E-01	4.84E-01	1.28E+02	2.20E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.65E+02	1.27E+00	3.68E-03	4.54E+00	1.89E-02	4.70E+00	1.10E-01	3.76E+00	5.02E-03
BCEOT-W22-12.5 (0-6")	1.72E-01	1.72E-01	4.84E-01	8.01E+01	1.37E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.66E+02	7.95E-01	3.68E-03	4.54E+00	1.18E-02	4.70E+00	1.10E-01	3.76E+00	3.14E-03
BCEOT-E23-15 (0-6")	1.72E-01	1.72E-01	4.84E-01	2.18E+01	3.75E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.52E+01	2.17E-01	3.68E-03	4.54E+00	3.22E-03	4.70E+00	1.10E-01	3.76E+00	8.56E-04
BCEOT-W23-12.5 (0-6")	1.72E-01	1.72E-01	4.84E-01	1.36E+02	2.33E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.81E+02	1.35E+00	3.68E-03	4.54E+00	2.00E-02	4.70E+00	1.10E-01	3.76E+00	5.33E-03

TABLE C-11A: ARSENIC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 11 - BEARTRAP CREEK DISPERSED TAILINGS DEPOSITS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK TAILINGS DEPOSITS AND FLOSSIE LOUISE MINE WASTE PILE (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 4.982

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Red Fox (Carnivorous Mammal - Terrestrial)																							
BCEOT-E24-12.5 (0-6")	1.72E-01	1.72E-01	4.84E-01	1.22E+01	2.09E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.52E+01	1.21E-01	3.68E-03	4.54E+00	1.80E-03	4.70E+00	1.10E-01	3.76E+00	4.78E-04
BCEOT-W24-12.5 (0-6")	1.72E-01	1.72E-01	4.84E-01	9.93E+01	1.70E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.05E+02	9.85E-01	3.68E-03	4.54E+00	1.46E-02	4.70E+00	1.10E-01	3.76E+00	3.89E-03
BCEOT-E25-12.5 (0-6")	1.72E-01	1.72E-01	4.84E-01	9.29E+01	1.59E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.92E+02	9.23E-01	3.68E-03	4.54E+00	1.37E-02	4.70E+00	1.10E-01	3.76E+00	3.64E-03
BCEOT-W25-12.5 (0-6")	1.72E-01	1.72E-01	4.84E-01	8.56E+01	1.47E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.77E+02	8.50E-01	3.68E-03	4.54E+00	1.26E-02	4.70E+00	1.10E-01	3.76E+00	3.35E-03
BCEOT-E26-12.5 (0-6")	1.72E-01	1.72E-01	4.84E-01	5.04E+01	8.65E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.04E+02	5.01E-01	3.68E-03	4.54E+00	7.43E-03	4.70E+00	1.10E-01	3.76E+00	1.98E-03
BCEOT-W26-12.5 (0-6")	1.72E-01	1.72E-01	4.84E-01	5.26E+01	9.02E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.09E+02	5.22E-01	3.68E-03	4.54E+00	7.74E-03	4.70E+00	1.10E-01	3.76E+00	2.06E-03
BCEOT-W27-12.5 (0-6")	1.72E-01	1.72E-01	4.84E-01	7.35E+01	1.26E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.52E+02	7.30E-01	3.68E-03	4.54E+00	1.08E-02	4.70E+00	1.10E-01	3.76E+00	2.88E-03
At Edge of Tailings Pile																						**Maximum HQ (Inside Tailings Pile)**	**1.39E-02**
BCEOT-E0-0 (0-6")	1.72E-01	1.72E-01	4.84E-01	6.92E+01	1.19E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.43E+02	6.87E-01	3.68E-03	4.54E+00	1.02E-02	4.70E+00	1.10E-01	3.76E+00	2.71E-03
BCEOT-E1-0 (0-6")	1.72E-01	1.72E-01	4.84E-01	1.01E+01	1.73E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.08E+01	1.00E-01	3.68E-03	4.54E+00	1.48E-03	4.70E+00	1.10E-01	3.76E+00	3.94E-04
BCEOT-E2-0 (0-6")	1.72E-01	1.72E-01	4.84E-01	7.59E+01	1.30E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.57E+02	7.53E-01	3.68E-03	4.54E+00	1.12E-02	4.70E+00	1.10E-01	3.76E+00	2.97E-03
BCEOT-E3-0 (0-6")	1.72E-01	1.72E-01	4.84E-01	2.38E+01	4.08E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.91E+01	2.36E-01	3.68E-03	4.54E+00	3.50E-03	4.70E+00	1.10E-01	3.76E+00	9.30E-04
BCEOT-E4-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-W4-0 (0-6")	1.72E-01	1.72E-01	4.84E-01	1.81E+01	3.10E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.74E+01	1.80E-01	3.68E-03	4.54E+00	2.66E-03	4.70E+00	1.10E-01	3.76E+00	7.08E-04
BCEOT-E5-0 (0-6")	1.72E-01	1.72E-01	4.84E-01	4.82E+01	8.27E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	9.96E+01	4.78E-01	3.68E-03	4.54E+00	7.09E-03	4.70E+00	1.10E-01	3.76E+00	1.89E-03
BCEOT-W5-0 (0-6")	1.72E-01	1.72E-01	4.84E-01	6.06E+01	1.04E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.25E+02	6.01E-01	3.68E-03	4.54E+00	8.92E-03	4.70E+00	1.10E-01	3.76E+00	2.37E-03
BCEOT-E6-0 (0-6")	1.72E-01	1.72E-01	4.84E-01	2.88E+01	4.94E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.96E+01	2.86E-01	3.68E-03	4.54E+00	4.24E-03	4.70E+00	1.10E-01	3.76E+00	1.13E-03
BCEOT-W6-0 (0-6")	1.72E-01	1.72E-01	4.84E-01	1.45E+01	2.49E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.00E+01	1.44E-01	3.68E-03	4.54E+00	2.13E-03	4.70E+00	1.10E-01	3.76E+00	5.68E-04
BCEOT-E7-0 (0-6")	1.72E-01	1.72E-01	4.84E-01	4.04E+01	6.93E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	8.35E+01	4.01E-01	3.68E-03	4.54E+00	5.95E-03	4.70E+00	1.10E-01	3.76E+00	1.58E-03
BCEOT-W7-0 (0-6")	1.72E-01	1.72E-01	4.84E-01	2.62E+01	4.50E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.42E+01	2.60E-01	3.68E-03	4.54E+00	3.86E-03	4.70E+00	1.10E-01	3.76E+00	1.03E-03
BCEOT-W8-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-E9-0 (0-6")	1.72E-01	1.72E-01	4.84E-01	2.39E+01	4.11E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.95E+01	2.38E-01	3.68E-03	4.54E+00	3.53E-03	4.70E+00	1.10E-01	3.76E+00	9.38E-04
BCEOT-E10-0 (0-6")	1.72E-01	1.72E-01	4.84E-01	2.36E+01	4.06E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.89E+01	2.35E-01	3.68E-03	4.54E+00	3.48E-03	4.70E+00	1.10E-01	3.76E+00	9.26E-04
BCEOT-W10-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-E11-0 (0-6")	1.72E-01	1.72E-01	4.84E-01	1.18E+01	2.02E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.43E+01	1.17E-01	3.68E-03	4.54E+00	1.73E-03	4.70E+00	1.10E-01	3.76E+00	4.61E-04
BCEOT-W11-0 (0-6")	1.72E-01	1.72E-01	4.84E-01	5.35E+01	9.18E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.11E+02	5.31E-01	3.68E-03	4.54E+00	7.88E-03	4.70E+00	1.10E-01	3.76E+00	2.10E-03
BCEOT-E12-0 (0-6")	1.72E-01	1.72E-01	4.84E-01	2.23E+01	3.83E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.61E+01	2.22E-01	3.68E-03	4.54E+00	3.29E-03	4.70E+00	1.10E-01	3.76E+00	8.74E-04
BCEOT-W12-0 (0-6")	1.72E-01	1.72E-01	4.84E-01	1.11E+01	1.91E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.30E+01	1.11E-01	3.68E-03	4.54E+00	1.64E-03	4.70E+00	1.10E-01	3.76E+00	4.36E-04
BCEOT-E13-0 (0-6")	1.72E-01	1.72E-01	4.84E-01	1.19E+01	2.03E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.45E+01	1.18E-01	3.68E-03	4.54E+00	1.75E-03	4.70E+00	1.10E-01	3.76E+00	4.64E-04
BCEOT-W13-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-E14-0 (0-6")	1.72E-01	1.72E-01	4.84E-01	1.57E+01	2.69E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.24E+01	1.55E-01	3.68E-03	4.54E+00	2.31E-03	4.70E+00	1.10E-01	3.76E+00	6.13E-04
BCEOT-W14-0 (0-6")	1.72E-01	1.72E-01	4.84E-01	2.52E+01	4.33E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.22E+01	2.51E-01	3.68E-03	4.54E+00	3.72E-03	4.70E+00	1.10E-01	3.76E+00	9.88E-04
BCEOT-E15-0 (0-6")	1.72E-01	1.72E-01	4.84E-01	5.38E+00	9.22E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.11E+01	5.34E-02	3.68E-03	4.54E+00	7.92E-04	4.70E+00	1.10E-01	3.76E+00	2.11E-04
BCEOT-W15-0 (0-6")	1.72E-01	1.72E-01	4.84E-01	3.68E+01	6.32E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	7.61E+01	3.66E-01	3.68E-03	4.54E+00	5.42E-03	4.70E+00	1.10E-01	3.76E+00	1.44E-03
BCEOT-E16-0 (0-6")	1.72E-01	1.72E-01	4.84E-01	1.01E+01	1.74E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.10E+01	1.01E-01	3.68E-03	4.54E+00	1.49E-03	4.70E+00	1.10E-01	3.76E+00	3.98E-04
BCEOT-W16-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-E17-0 (0-6")	1.72E-01	1.72E-01	4.84E-01	4.76E+01	8.16E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	9.84E+01	4.73E-01	3.68E-03	4.54E+00	7.01E-03	4.70E+00	1.10E-01	3.76E+00	1.86E-03
BCEOT-W17-0 (0-6")	1.72E-01	1.72E-01	4.84E-01	2.39E+01	4.09E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.93E+01	2.37E-01	3.68E-03	4.54E+00	3.51E-03	4.70E+00	1.10E-01	3.76E+00	9.34E-04
BCEOT-E18-0 (0-6")	1.72E-01	1.72E-01	4.84E-01	2.03E+01	3.48E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.19E+01	2.01E-01	3.68E-03	4.54E+00	2.99E-03	4.70E+00	1.10E-01	3.76E+00	7.94E-04
BCEOT-W18-0 (0-6")	1.72E-01	1.72E-01	4.84E-01	1.55E+01	2.66E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.21E+01	1.54E-01	3.68E-03	4.54E+00	2.28E-03	4.70E+00	1.10E-01	3.76E+00	6.08E-04
BCEOT-E19-0 (0-6")	1.72E-01	1.72E-01	4.84E-01	1.18E+01	2.02E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.43E+01	1.17E-01	3.68E-03	4.54E+00	1.73E-03	4.70E+00	1.10E-01	3.76E+00	4.61E-04
BCEOT-W19-0 (0-6")	1.72E-01	1.72E-01	4.84E-01	1.85E+01	3.17E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.82E+01	1.83E-01	3.68E-03	4.54E+00	2.72E-03	4.70E+00	1.10E-01	3.76E+00	7.23E-04
BCEOT-E20-0 (0-6")	1.72E-01	1.72E-01	4.84E-01	1.10E+01	1.88E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.27E+01	1.09E-01	3.68E-03	4.54E+00	1.62E-03	4.70E+00	1.10E-01	3.76E+00	4.30E-04
BCEOT-W20-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-E21-0 (0-6")	1.72E-01	1.72E-01	4.84E-01	3.68E+01	6.32E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	7.61E+01	3.66E-01	3.68E-03	4.54E+00	5.42E-03	4.70E+00	1.10E-01	3.76E+00	1.44E-03
BCEOT-W21-0 (0-6")	1.72E-01	1.72E-01	4.84E-01	1.27E+01	2.18E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.63E+01	1.26E-01	3.68E-03	4.54E+00	1.87E-03	4.70E+00	1.10E-01	3.76E+00	4.98E-04
BCEOT-E22-0 (0-6")	1.72E-01	1.72E-01	4.84E-01	2.32E+01	3.98E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.79E+01	2.30E-01	3.68E-03	4.54E+00	3.41E-03	4.70E+00	1.10E-01	3.76E+00	9.08E-04
BCEOT-W22-0 (0-6")	1.72E-01	1.72E-01	4.84E-01	1.61E+01	2.75E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.32E+01	1.59E-01	3.68E-03	4.54E+00	2.36E-03	4.70E+00	1.10E-01	3.76E+00	6.29E-04
BCEOT-E23-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-W23-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB

TABLE C-11A: ARSENIC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 11 - BEARTRAP CREEK DISPERSED TAILINGS DEPOSITS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK TAILINGS DEPOSITS AND FLOSSIE LOUISE MINE WASTE PILE (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 4.982

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Red Fox (Carnivorous Mammal - Terrestrial)																							
BCEOT-E24-0 (0-6")	1.72E-01	1.72E-01	4.84E-01	1.61E+01	2.76E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.33E+01	1.60E-01	3.68E-03	4.54E+00	2.37E-03	4.70E+00	1.10E-01	3.76E+00	6.31E-04
BCEOT-W24-0 (0-6")	1.72E-01	1.72E-01	4.84E-01	5.59E+00	9.58E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.15E+01	5.55E-02	3.68E-03	4.54E+00	8.22E-04	4.70E+00	1.10E-01	3.76E+00	2.19E-04
BCEOT-E25-0 (0-6")	1.72E-01	1.72E-01	4.84E-01	2.03E+01	3.49E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.21E+01	2.02E-01	3.68E-03	4.54E+00	3.00E-03	4.70E+00	1.10E-01	3.76E+00	7.97E-04
BCEOT-W25-0 (0-6")	1.72E-01	1.72E-01	4.84E-01	6.96E+00	1.19E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.44E+01	6.91E-02	3.68E-03	4.54E+00	1.03E-03	4.70E+00	1.10E-01	3.76E+00	2.73E-04
BCEOT-E26-0 (0-6")	1.72E-01	1.72E-01	4.84E-01	1.31E+01	2.25E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.72E+01	1.30E-01	3.68E-03	4.54E+00	1.93E-03	4.70E+00	1.10E-01	3.76E+00	5.14E-04
BCEOT-W26-0 (0-6")	1.72E-01	1.72E-01	4.84E-01	5.36E+00	9.19E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.11E+01	5.32E-02	3.68E-03	4.54E+00	7.89E-04	4.70E+00	1.10E-01	3.76E+00	2.10E-04
BCEOT-W27-0 (0-6")	1.72E-01	1.72E-01	4.84E-01	5.65E+00	9.69E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.17E+01	5.61E-02	3.68E-03	4.54E+00	8.32E-04	4.70E+00	1.10E-01	3.76E+00	2.21E-04
Outside Tailings Piles																						**Maximum HQ (Edge of Tailings Pile)**	**2.97E-03**
BCEOT-E0+25 (0-6")	1.72E-01	1.72E-01	4.84E-01	4.42E+01	7.58E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	9.13E+01	4.39E-01	3.68E-03	4.54E+00	6.50E-03	4.70E+00	1.10E-01	3.76E+00	1.73E-03
BCEOT-E1+25 (0-6")	1.72E-01	1.72E-01	4.84E-01	5.23E+01	8.97E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.08E+02	5.19E-01	3.68E-03	4.54E+00	7.70E-03	4.70E+00	1.10E-01	3.76E+00	2.05E-03
BCEOT-E2+25 (0-6")	1.72E-01	1.72E-01	4.84E-01	4.30E+01	7.38E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	8.90E+01	4.27E-01	3.68E-03	4.54E+00	6.34E-03	4.70E+00	1.10E-01	3.76E+00	1.69E-03
BCEOT-E3+25 (0-6")	1.72E-01	1.72E-01	4.84E-01	1.33E+01	2.28E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.75E+01	1.32E-01	3.68E-03	4.54E+00	1.96E-03	4.70E+00	1.10E-01	3.76E+00	5.20E-04
BCEOT-E4+25 (0-6")	1.72E-01	1.72E-01	4.84E-01	2.44E+01	4.19E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.05E+01	2.42E-01	3.68E-03	4.54E+00	3.60E-03	4.70E+00	1.10E-01	3.76E+00	9.56E-04
BCEOT-W4+25 (0-6")	1.72E-01	1.72E-01	4.84E-01	2.60E+01	4.47E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.38E+01	2.58E-01	3.68E-03	4.54E+00	3.83E-03	4.70E+00	1.10E-01	3.76E+00	1.02E-03
BCEOT-E5+25 (0-6")	1.72E-01	1.72E-01	4.84E-01	4.55E+01	7.81E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	9.41E+01	4.52E-01	3.68E-03	4.54E+00	6.70E-03	4.70E+00	1.10E-01	3.76E+00	1.78E-03
BCEOT-W5+25 (0-6")	1.72E-01	1.72E-01	4.84E-01	5.96E+01	1.02E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.23E+02	5.92E-01	3.68E-03	4.54E+00	8.77E-03	4.70E+00	1.10E-01	3.76E+00	2.33E-03
BCEOT-E6+25 (0-6")	1.72E-01	1.72E-01	4.84E-01	3.23E+01	5.53E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	6.67E+01	3.20E-01	3.68E-03	4.54E+00	4.75E-03	4.70E+00	1.10E-01	3.76E+00	1.26E-03
BCEOT-W6+25 (0-6")	1.72E-01	1.72E-01	4.84E-01	9.04E+00	1.55E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.87E+01	8.97E-02	3.68E-03	4.54E+00	1.33E-03	4.70E+00	1.10E-01	3.76E+00	3.54E-04
BCEOT-E7+25 (0-6")	1.72E-01	1.72E-01	4.84E-01	1.40E+01	2.40E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.89E+01	1.39E-01	3.68E-03	4.54E+00	2.06E-03	4.70E+00	1.10E-01	3.76E+00	5.48E-04
BCEOT-W7+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
FLWA-101 (0-6")	1.72E-01	1.72E-01	4.84E-01	1.03E+02	1.76E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.12E+02	1.02E+00	3.68E-03	4.54E+00	1.51E-02	4.70E+00	1.10E-01	3.76E+00	4.02E-03
BCEOT-W8+25 (0-6")	1.72E-01	1.72E-01	4.84E-01	1.83E+01	3.14E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.79E+01	1.82E-01	3.68E-03	4.54E+00	2.70E-03	4.70E+00	1.10E-01	3.76E+00	7.18E-04
BCEOT-W9+25 (0-6")	1.72E-01	1.72E-01	4.84E-01	1.01E+01	1.73E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.09E+01	1.00E-01	3.68E-03	4.54E+00	1.49E-03	4.70E+00	1.10E-01	3.76E+00	3.96E-04
BCEOT-E10+25 (0-6")	1.72E-01	1.72E-01	4.84E-01	1.18E+01	2.02E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.44E+01	1.17E-01	3.68E-03	4.54E+00	1.73E-03	4.70E+00	1.10E-01	3.76E+00	4.61E-04
BCEOT-W10+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-E11+25 (0-6")	1.72E-01	1.72E-01	4.84E-01	4.57E+01	7.84E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	9.44E+01	4.54E-01	3.68E-03	4.54E+00	6.73E-03	4.70E+00	1.10E-01	3.76E+00	1.79E-03
BCEOT-W11+25 (0-6")	1.72E-01	1.72E-01	4.84E-01	2.20E+01	3.77E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.54E+01	2.18E-01	3.68E-03	4.54E+00	3.23E-03	4.70E+00	1.10E-01	3.76E+00	8.60E-04
BCEOT-E12+25 (0-6")	1.72E-01	1.72E-01	4.84E-01	2.66E+01	4.55E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.49E+01	2.64E-01	3.68E-03	4.54E+00	3.91E-03	4.70E+00	1.10E-01	3.76E+00	1.04E-03
BCEOT-W12+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-E13+25 (0-6")	1.72E-01	1.72E-01	4.84E-01	4.44E+01	7.61E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	9.17E+01	4.41E-01	3.68E-03	4.54E+00	6.53E-03	4.70E+00	1.10E-01	3.76E+00	1.74E-03
BCEOT-E14+25 (0-6")	1.72E-01	1.72E-01	4.84E-01	9.22E+00	1.58E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.91E+01	9.16E-02	3.68E-03	4.54E+00	1.36E-03	4.70E+00	1.10E-01	3.76E+00	3.61E-04
BCEOT-W14+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-E15+25 (0-6")	1.72E-01	1.72E-01	4.84E-01	1.84E+01	3.16E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.80E+01	1.83E-01	3.68E-03	4.54E+00	2.71E-03	4.70E+00	1.10E-01	3.76E+00	7.21E-04
BCEOT-W15+25 (0-6")	1.72E-01	1.72E-01	4.84E-01	2.68E+01	4.60E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.55E+01	2.66E-01	3.68E-03	4.54E+00	3.95E-03	4.70E+00	1.10E-01	3.76E+00	1.05E-03
BCEOT-E16+25 (0-6")	1.72E-01	1.72E-01	4.84E-01	9.31E+00	1.60E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.92E+01	9.24E-02	3.68E-03	4.54E+00	1.37E-03	4.70E+00	1.10E-01	3.76E+00	3.65E-04
BCEOT-W16+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-E17+25 (0-6")	1.72E-01	1.72E-01	4.84E-01	1.36E+01	2.34E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.81E+01	1.35E-01	3.68E-03	4.54E+00	2.00E-03	4.70E+00	1.10E-01	3.76E+00	5.33E-04
BCEOT-W17+25 (0-6")	1.72E-01	1.72E-01	4.84E-01	9.04E+00	1.55E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.87E+01	8.97E-02	3.68E-03	4.54E+00	1.33E-03	4.70E+00	1.10E-01	3.76E+00	3.54E-04
BCEOT-E18+12.5 (0-6")	1.72E-01	1.72E-01	4.84E-01	3.31E+02	5.67E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	6.83E+02	3.28E+00	3.68E-03	4.54E+00	4.87E-02	4.70E+00	1.10E-01	3.76E+00	1.29E-02
BCEOT-E18+25 (0-6")	1.72E-01	1.72E-01	4.84E-01	1.62E+01	2.78E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.35E+01	1.61E-01	3.68E-03	4.54E+00	2.39E-03	4.70E+00	1.10E-01	3.76E+00	6.35E-04
BCEOT-W18+25 (0-6")	1.72E-01	1.72E-01	4.84E-01	1.27E+01	2.18E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.63E+01	1.26E-01	3.68E-03	4.54E+00	1.87E-03	4.70E+00	1.10E-01	3.76E+00	4.97E-04
BCEOT-E19+25 (0-6")	1.72E-01	1.72E-01	4.84E-01	1.47E+01	2.53E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.04E+01	1.46E-01	3.68E-03	4.54E+00	2.17E-03	4.70E+00	1.10E-01	3.76E+00	5.77E-04
BCEOT-W19+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-E20+25 (0-6")	1.72E-01	1.72E-01	4.84E-01	1.07E+01	1.84E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.22E+01	1.06E-01	3.68E-03	4.54E+00	1.58E-03	4.70E+00	1.10E-01	3.76E+00	4.20E-04
BCEOT-W20+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-E21+25 (0-6")	1.72E-01	1.72E-01	4.84E-01	1.19E+01	2.04E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.46E+01	1.18E-01	3.68E-03	4.54E+00	1.75E-03	4.70E+00	1.10E-01	3.76E+00	4.65E-04
BCEOT-W21+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-E22+25 (0-6")	1.72E-01	1.72E-01	4.84E-01	7.17E+01	1.23E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.48E+02	7.12E-01	3.68E-03	4.54E+00	1.06E-02	4.70E+00	1.10E-01	3.76E+00	2.81E-03
BCEOT-E22+70 (0-6")	1.72E-01	1.72E-01	4.84E-01	1.58E+01	2.71E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.26E+01	1.57E-01	3.68E-03	4.54E+00	2.32E-03	4.70E+00	1.10E-01	3.76E+00	6.18E-04
BCEOT-W22+25 (0-6")	1.72E-01	1.72E-01	4.84E-01	1.00E+01	1.72E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.08E+01	9.98E-02	3.68E-03	4.54E+00	1.48E-03	4.70E+00	1.10E-01	3.76E+00	3.94E-04
BCEOT-E23+25 (0-6")	1.72E-01	1.72E-01	4.84E-01	9.98E+00	1.71E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.06E+01	9.90E-02	3.68E-03	4.54E+00	1.47E-03	4.70E+00	1.10E-01	3.76E+00	3.91E-04
BCEOT-W23+25 (0-6")	1.72E-01	1.72E-01	4.84E-01	9.27E+00	1.59E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.92E+01	9.20E-02	3.68E-03	4.54E+00	1.36E-03	4.70E+00	1.10E-01	3.76E+00	3.63E-04

TABLE C-11A: ARSENIC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 11 - BEARTRAP CREEK DISPERSED TAILINGS DEPOSITS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK TAILINGS DEPOSITS AND FLOSSIE LOUISE MINE WASTE PILE (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 4.982

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Red Fox (Carnivorous Mammal - Terrestrial)																							
BCEOT-E24+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-W24+25 (0-6")	1.72E-01	1.72E-01	4.84E-01	5.33E+00	9.14E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.10E+01	5.29E-02	3.68E-03	4.54E+00	7.85E-04	4.70E+00	1.10E-01	3.76E+00	2.09E-04
BCEOT-E25+20 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-W25+25 (0-6")	1.72E-01	1.72E-01	4.84E-01	5.03E+00	8.64E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.04E+01	5.00E-02	3.68E-03	4.54E+00	7.41E-04	4.70E+00	1.10E-01	3.76E+00	1.97E-04
BCEOT-E26+25 (0-6")	1.72E-01	1.72E-01	4.84E-01	4.28E+01	7.35E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	8.85E+01	4.25E-01	3.68E-03	4.54E+00	6.31E-03	4.70E+00	1.10E-01	3.76E+00	1.68E-03
BCEOT-W26+25 (0-6")	1.72E-01	1.72E-01	4.84E-01	3.99E+01	6.85E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	8.25E+01	3.96E-01	3.68E-03	4.54E+00	5.88E-03	4.70E+00	1.10E-01	3.76E+00	1.56E-03
BCEOT-W27+25 (0-6")	1.72E-01	1.72E-01	4.84E-01	1.34E+01	2.30E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.77E+01	1.33E-01	3.68E-03	4.54E+00	1.97E-03	4.70E+00	1.10E-01	3.76E+00	5.25E-04
																						Maximum HQ (Outside Tailings Pile)	**1.29E-02**
Masked Shrew (Omnivorous Mammal - Terrestrial, Wetland)																							
Reference Sites																							
ACBG-1 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	2.55E+00	6.64E+01	5.63E-01	1.10E-03	2.60E+01	2.87E-02	1.00E+00	5.50E-03	1.08E+02	4.70E+00	1.10E-01	5.63E+00	1.91E+01
ACBG-2 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	2.55E+00	4.68E+01	3.96E-01	1.10E-03	1.83E+01	2.02E-02	1.00E+00	5.50E-03	7.57E+01	4.70E+00	1.10E-01	5.63E+00	1.35E+01
BCBG-201 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	2.55E+00	7.76E+01	6.57E-01	1.10E-03	3.04E+01	3.35E-02	1.00E+00	5.50E-03	1.26E+02	4.70E+00	1.10E-01	5.63E+00	2.23E+01
Inside Tailings Pile																						**Minimum HQ (Reference Sites)**	**1.35E+01**
BCEOT-E0-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	2.07E+03	1.75E+01	1.10E-03	1.26E+02	1.38E-01	1.00E+00	5.50E-03	3.21E+03	4.70E+00	1.10E-01	5.63E+00	5.71E+02
BCEOT-E1-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	1.93E+03	1.63E+01	1.10E-03	1.17E+02	1.29E-01	1.00E+00	5.50E-03	2.99E+03	4.70E+00	1.10E-01	5.63E+00	5.32E+02
BCEOT-E2-8 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	2.13E+03	1.80E+01	1.10E-03	1.29E+02	1.42E-01	1.00E+00	5.50E-03	3.31E+03	4.70E+00	1.10E-01	5.63E+00	5.88E+02
BCEOT-E3-8 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	1.08E+03	9.15E+00	1.10E-03	6.55E+01	7.21E-02	1.00E+00	5.50E-03	1.68E+03	4.70E+00	1.10E-01	5.63E+00	2.98E+02
BCEOT-E4-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	1.74E+03	1.47E+01	1.10E-03	1.06E+02	1.16E-01	1.00E+00	5.50E-03	2.70E+03	4.70E+00	1.10E-01	5.63E+00	4.80E+02
BCEOT-W4-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	1.48E+03	1.25E+01	1.10E-03	8.96E+01	9.86E-02	1.00E+00	5.50E-03	2.29E+03	4.70E+00	1.10E-01	5.63E+00	4.07E+02
BCEOT-E5-25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	4.27E+02	3.62E+00	1.10E-03	2.59E+01	2.85E-02	1.00E+00	5.50E-03	6.63E+02	4.70E+00	1.10E-01	5.63E+00	1.18E+02
BCEOT-W5-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	4.98E+03	4.22E+01	1.10E-03	3.02E+02	3.33E-01	1.00E+00	5.50E-03	7.73E+03	4.70E+00	1.10E-01	5.63E+00	1.37E+03
BCEOT-E6-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	1.20E+03	1.02E+01	1.10E-03	7.28E+01	8.01E-02	1.00E+00	5.50E-03	1.86E+03	4.70E+00	1.10E-01	5.63E+00	3.31E+02
BCEOT-W6-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	6.27E+02	5.31E+00	1.10E-03	3.80E+01	4.19E-02	1.00E+00	5.50E-03	9.73E+02	4.70E+00	1.10E-01	5.63E+00	1.73E+02
BCEOT-E7-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	7.54E+02	6.39E+00	1.10E-03	4.58E+01	5.04E-02	1.00E+00	5.50E-03	1.17E+03	4.70E+00	1.10E-01	5.63E+00	2.08E+02
BCEOT-W7-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	1.98E+03	1.68E+01	1.10E-03	1.20E+02	1.32E-01	1.00E+00	5.50E-03	3.07E+03	4.70E+00	1.10E-01	5.63E+00	5.46E+02
BCEOT-W8-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	3.34E+03	2.83E+01	1.10E-03	2.02E+02	2.23E-01	1.00E+00	5.50E-03	5.18E+03	4.70E+00	1.10E-01	5.63E+00	9.20E+02
BCEOT-E9-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	2.67E+03	2.26E+01	1.10E-03	1.62E+02	1.78E-01	1.00E+00	5.50E-03	4.14E+03	4.70E+00	1.10E-01	5.63E+00	7.36E+02
BCEOT-W9-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	4.95E+03	4.19E+01	1.10E-03	3.00E+02	3.31E-01	1.00E+00	5.50E-03	7.68E+03	4.70E+00	1.10E-01	5.63E+00	1.37E+03
BCEOT-E10-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	6.73E+02	5.70E+00	1.10E-03	4.09E+01	4.50E-02	1.00E+00	5.50E-03	1.05E+03	4.70E+00	1.10E-01	5.63E+00	1.86E+02
BCEOT-W10-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	2.80E+03	2.37E+01	1.10E-03	1.70E+02	1.87E-01	1.00E+00	5.50E-03	4.34E+03	4.70E+00	1.10E-01	5.63E+00	7.72E+02
BCEOT-E11-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	1.62E+03	1.38E+01	1.10E-03	9.85E+01	1.09E-01	1.00E+00	5.50E-03	2.52E+03	4.70E+00	1.10E-01	5.63E+00	4.48E+02
BCEOT-W11-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	3.28E+03	2.78E+01	1.10E-03	1.99E+02	2.19E-01	1.00E+00	5.50E-03	5.09E+03	4.70E+00	1.10E-01	5.63E+00	9.05E+02
BCEOT-E12-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	1.01E+03	8.56E+00	1.10E-03	6.13E+01	6.75E-02	1.00E+00	5.50E-03	1.57E+03	4.70E+00	1.10E-01	5.63E+00	2.79E+02
BCEOT-W12-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	4.00E+03	3.39E+01	1.10E-03	2.43E+02	2.67E-01	1.00E+00	5.50E-03	6.21E+03	4.70E+00	1.10E-01	5.63E+00	1.10E+03
BCEOT-E13-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	1.87E+03	1.58E+01	1.10E-03	1.13E+02	1.25E-01	1.00E+00	5.50E-03	2.90E+03	4.70E+00	1.10E-01	5.63E+00	5.16E+02
BCEOT-W13-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	4.15E+03	3.51E+01	1.10E-03	2.52E+02	2.77E-01	1.00E+00	5.50E-03	6.43E+03	4.70E+00	1.10E-01	5.63E+00	1.14E+03
BCEOT-W13-25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-W14-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	1.06E+03	8.97E+00	1.10E-03	6.42E+01	7.07E-02	1.00E+00	5.50E-03	1.64E+03	4.70E+00	1.10E-01	5.63E+00	2.92E+02
BCEOT-E15-8 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	1.26E+03	1.07E+01	1.10E-03	7.64E+01	8.41E-02	1.00E+00	5.50E-03	1.95E+03	4.70E+00	1.10E-01	5.63E+00	3.47E+02
BCEOT-W15-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	3.18E+03	2.69E+01	1.10E-03	1.93E+02	2.12E-01	1.00E+00	5.50E-03	4.93E+03	4.70E+00	1.10E-01	5.63E+00	8.76E+02
BCEOT-E16-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	4.52E+03	3.83E+01	1.10E-03	2.74E+02	3.02E-01	1.00E+00	5.50E-03	7.01E+03	4.70E+00	1.10E-01	5.63E+00	1.25E+03
BCEOT-W16-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	3.94E+03	3.34E+01	1.10E-03	2.39E+02	2.63E-01	1.00E+00	5.50E-03	6.12E+03	4.70E+00	1.10E-01	5.63E+00	1.09E+03
BCEOT-E17-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	1.21E+04	1.02E+02	1.10E-03	7.33E+02	8.07E-01	1.00E+00	5.50E-03	1.87E+04	4.70E+00	1.10E-01	5.63E+00	3.33E+03
BCEOT-W17-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	1.64E+03	1.39E+01	1.10E-03	9.95E+01	1.10E-01	1.00E+00	5.50E-03	2.55E+03	4.70E+00	1.10E-01	5.63E+00	4.53E+02
BCEOT-W18-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	3.64E+03	3.08E+01	1.10E-03	2.21E+02	2.43E-01	1.00E+00	5.50E-03	5.65E+03	4.70E+00	1.10E-01	5.63E+00	1.00E+03
BCEOT-E19-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	1.78E+03	1.51E+01	1.10E-03	1.08E+02	1.19E-01	1.00E+00	5.50E-03	2.76E+03	4.70E+00	1.10E-01	5.63E+00	4.91E+02
BCEOT-W19-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	1.14E+03	9.68E+00	1.10E-03	6.93E+01	7.63E-02	1.00E+00	5.50E-03	1.77E+03	4.70E+00	1.10E-01	5.63E+00	3.15E+02
BCEOT-E20-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	2.69E+03	2.28E+01	1.10E-03	1.63E+02	1.80E-01	1.00E+00	5.50E-03	4.18E+03	4.70E+00	1.10E-01	5.63E+00	7.43E+02
BCEOT-W20-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	4.88E+03	4.13E+01	1.10E-03	2.96E+02	3.26E-01	1.00E+00	5.50E-03	7.57E+03	4.70E+00	1.10E-01	5.63E+00	1.35E+03
BCEOT-E21-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	2.95E+03	2.49E+01	1.10E-03	1.79E+02	1.97E-01	1.00E+00	5.50E-03	4.57E+03	4.70E+00	1.10E-01	5.63E+00	8.13E+02
BCEOT-W21-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	2.48E+03	2.10E+01	1.10E-03	1.51E+02	1.66E-01	1.00E+00	5.50E-03	3.85E+03	4.70E+00	1.10E-01	5.63E+00	6.85E+02
BCEOT-E22-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	4.37E+03	3.70E+01	1.10E-03	2.65E+02	2.92E-01	1.00E+00	5.50E-03	6.78E+03	4.70E+00	1.10E-01	5.63E+00	1.21E+03
BCEOT-W22-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	2.73E+03	2.31E+01	1.10E-03	1.66E+02	1.82E-01	1.00E+00	5.50E-03	4.24E+03	4.70E+00	1.10E-01	5.63E+00	7.53E+02
BCEOT-E23-15 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	7.44E+02	6.30E+00	1.10E-03	4.52E+01	4.97E-02	1.00E+00	5.50E-03	1.16E+03	4.70E+00	1.10E-01	5.63E+00	2.05E+02

TABLE C-11A: ARSENIC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 11 - BEARTRAP CREEK DISPERSED TAILINGS DEPOSITS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK TAILINGS DEPOSITS AND FLOSSIE LOUISE MINE WASTE PILE (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **4.982**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Masked Shrew (Omnivorous Mammal - Terrestrial, Wetland)																							
BCEOT-W23-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	4.63E+03	3.93E+01	1.10E-03	2.81E+02	3.10E-01	1.00E+00	5.50E-03	7.19E+03	4.70E+00	1.10E-01	5.63E+00	1.28E+03
BCEOT-E24-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	4.16E+02	3.52E+00	1.10E-03	2.52E+01	2.78E-02	1.00E+00	5.50E-03	6.46E+02	4.70E+00	1.10E-01	5.63E+00	1.15E+02
BCEOT-W24-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	3.38E+03	2.86E+01	1.10E-03	2.05E+02	2.26E-01	1.00E+00	5.50E-03	5.25E+03	4.70E+00	1.10E-01	5.63E+00	9.33E+02
BCEOT-E25-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	3.17E+03	2.68E+01	1.10E-03	1.92E+02	2.12E-01	1.00E+00	5.50E-03	4.91E+03	4.70E+00	1.10E-01	5.63E+00	8.74E+02
BCEOT-W25-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	2.92E+03	2.47E+01	1.10E-03	1.77E+02	1.95E-01	1.00E+00	5.50E-03	4.53E+03	4.70E+00	1.10E-01	5.63E+00	8.05E+02
BCEOT-E26-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	1.72E+03	1.46E+01	1.10E-03	1.04E+02	1.15E-01	1.00E+00	5.50E-03	2.67E+03	4.70E+00	1.10E-01	5.63E+00	4.74E+02
BCEOT-W26-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	1.79E+03	1.52E+01	1.10E-03	1.09E+02	1.20E-01	1.00E+00	5.50E-03	2.78E+03	4.70E+00	1.10E-01	5.63E+00	4.94E+02
BCEOT-W27-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	2.51E+03	2.12E+01	1.10E-03	1.52E+02	1.67E-01	1.00E+00	5.50E-03	3.89E+03	4.70E+00	1.10E-01	5.63E+00	6.91E+02
At Edge of Tailings Pile																						**Maximum HQ (Inside Tailings Pile)**	**3.33E+03**
BCEOT-E0-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	2.36E+03	2.00E+01	1.10E-03	1.43E+02	1.58E-01	1.00E+00	5.50E-03	3.66E+03	4.70E+00	1.10E-01	5.63E+00	6.51E+02
BCEOT-E1-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	3.43E+02	2.91E+00	1.10E-03	2.08E+01	2.29E-02	1.00E+00	5.50E-03	5.32E+02	4.70E+00	1.10E-01	5.63E+00	9.46E+01
BCEOT-E2-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	2.58E+03	2.19E+01	1.10E-03	1.57E+02	1.73E-01	1.00E+00	5.50E-03	4.01E+03	4.70E+00	1.10E-01	5.63E+00	7.13E+02
BCEOT-E3-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	8.09E+02	6.85E+00	1.10E-03	4.91E+01	5.41E-02	1.00E+00	5.50E-03	1.26E+03	4.70E+00	1.10E-01	5.63E+00	2.23E+02
BCEOT-E4-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-W4-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	6.16E+02	5.22E+00	1.10E-03	3.74E+01	4.12E-02	1.00E+00	5.50E-03	9.57E+02	4.70E+00	1.10E-01	5.63E+00	1.70E+02
BCEOT-E5-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	1.64E+03	1.39E+01	1.10E-03	9.96E+01	1.10E-01	1.00E+00	5.50E-03	2.55E+03	4.70E+00	1.10E-01	5.63E+00	4.53E+02
BCEOT-W5-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	2.06E+03	1.75E+01	1.10E-03	1.25E+02	1.38E-01	1.00E+00	5.50E-03	3.20E+03	4.70E+00	1.10E-01	5.63E+00	5.69E+02
BCEOT-E6-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	9.82E+02	8.31E+00	1.10E-03	5.96E+01	6.56E-02	1.00E+00	5.50E-03	1.52E+03	4.70E+00	1.10E-01	5.63E+00	2.71E+02
BCEOT-W6-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	4.94E+02	4.18E+00	1.10E-03	3.00E+01	3.30E-02	1.00E+00	5.50E-03	7.67E+02	4.70E+00	1.10E-01	5.63E+00	1.36E+02
BCEOT-E7-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	1.38E+03	1.17E+01	1.10E-03	8.35E+01	9.19E-02	1.00E+00	5.50E-03	2.14E+03	4.70E+00	1.10E-01	5.63E+00	3.80E+02
BCEOT-W7-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	8.93E+02	7.57E+00	1.10E-03	5.42E+01	5.97E-02	1.00E+00	5.50E-03	1.39E+03	4.70E+00	1.10E-01	5.63E+00	2.46E+02
BCEOT-W8-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-W9-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-E10-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	8.06E+02	6.82E+00	1.10E-03	4.89E+01	5.38E-02	1.00E+00	5.50E-03	1.25E+03	4.70E+00	1.10E-01	5.63E+00	2.22E+02
BCEOT-W10-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-E11-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	4.01E+02	3.40E+00	1.10E-03	2.43E+01	2.68E-02	1.00E+00	5.50E-03	6.22E+02	4.70E+00	1.10E-01	5.63E+00	1.11E+02
BCEOT-W11-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	1.82E+03	1.54E+01	1.10E-03	1.11E+02	1.22E-01	1.00E+00	5.50E-03	2.83E+03	4.70E+00	1.10E-01	5.63E+00	5.03E+02
BCEOT-E12-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	7.60E+02	6.44E+00	1.10E-03	4.61E+01	5.08E-02	1.00E+00	5.50E-03	1.18E+03	4.70E+00	1.10E-01	5.63E+00	2.10E+02
BCEOT-W12-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	3.79E+02	3.21E+00	1.10E-03	2.30E+01	2.53E-02	1.00E+00	5.50E-03	5.89E+02	4.70E+00	1.10E-01	5.63E+00	1.05E+02
BCEOT-E13-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	4.04E+02	3.42E+00	1.10E-03	2.45E+01	2.70E-02	1.00E+00	5.50E-03	6.27E+02	4.70E+00	1.10E-01	5.63E+00	1.11E+02
BCEOT-W13-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-E14-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	5.33E+02	4.52E+00	1.10E-03	3.24E+01	3.56E-02	1.00E+00	5.50E-03	8.28E+02	4.70E+00	1.10E-01	5.63E+00	1.47E+02
BCEOT-W14-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	8.60E+02	7.28E+00	1.10E-03	5.22E+01	5.74E-02	1.00E+00	5.50E-03	1.33E+03	4.70E+00	1.10E-01	5.63E+00	2.37E+02
BCEOT-E15-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	1.83E+02	1.55E+00	1.10E-03	1.11E+01	1.22E-02	1.00E+00	5.50E-03	2.84E+02	4.70E+00	1.10E-01	5.63E+00	5.05E+01
BCEOT-W15-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	1.25E+03	1.06E+01	1.10E-03	7.61E+01	8.38E-02	1.00E+00	5.50E-03	1.95E+03	4.70E+00	1.10E-01	5.63E+00	3.46E+02
BCEOT-E16-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	3.46E+02	2.93E+00	1.10E-03	2.10E+01	2.31E-02	1.00E+00	5.50E-03	5.37E+02	4.70E+00	1.10E-01	5.63E+00	9.54E+01
BCEOT-W16-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-E17-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	1.62E+03	1.37E+01	1.10E-03	9.84E+01	1.08E-01	1.00E+00	5.50E-03	2.52E+03	4.70E+00	1.10E-01	5.63E+00	4.47E+02
BCEOT-W17-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	8.13E+02	6.88E+00	1.10E-03	4.93E+01	5.43E-02	1.00E+00	5.50E-03	1.26E+03	4.70E+00	1.10E-01	5.63E+00	2.24E+02
BCEOT-E18-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	6.91E+02	5.85E+00	1.10E-03	4.19E+01	4.62E-02	1.00E+00	5.50E-03	1.07E+03	4.70E+00	1.10E-01	5.63E+00	1.91E+02
BCEOT-W18-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	5.29E+02	4.48E+00	1.10E-03	3.21E+01	3.53E-02	1.00E+00	5.50E-03	8.20E+02	4.70E+00	1.10E-01	5.63E+00	1.46E+02
BCEOT-E19-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	4.01E+02	3.39E+00	1.10E-03	2.43E+01	2.68E-02	1.00E+00	5.50E-03	6.22E+02	4.70E+00	1.10E-01	5.63E+00	1.11E+02
BCEOT-W19-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	6.29E+02	5.33E+00	1.10E-03	3.82E+01	4.20E-02	1.00E+00	5.50E-03	9.77E+02	4.70E+00	1.10E-01	5.63E+00	1.74E+02
BCEOT-E20-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	3.74E+02	3.17E+00	1.10E-03	2.27E+01	2.50E-02	1.00E+00	5.50E-03	5.81E+02	4.70E+00	1.10E-01	5.63E+00	1.03E+02
BCEOT-W20-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-E21-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	1.25E+03	1.06E+01	1.10E-03	7.61E+01	8.38E-02	1.00E+00	5.50E-03	1.95E+03	4.70E+00	1.10E-01	5.63E+00	3.46E+02
BCEOT-W21-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	4.33E+02	3.67E+00	1.10E-03	2.63E+01	2.89E-02	1.00E+00	5.50E-03	6.72E+02	4.70E+00	1.10E-01	5.63E+00	1.19E+02
BCEOT-E22-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	7.90E+02	6.69E+00	1.10E-03	4.79E+01	5.27E-02	1.00E+00	5.50E-03	1.23E+03	4.70E+00	1.10E-01	5.63E+00	2.18E+02
BCEOT-W22-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	5.47E+02	4.63E+00	1.10E-03	3.32E+01	3.65E-02	1.00E+00	5.50E-03	8.49E+02	4.70E+00	1.10E-01	5.63E+00	1.51E+02
BCEOT-E23-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-W23-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-E24-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	5.49E+02	4.65E+00	1.10E-03	3.33E+01	3.66E-02	1.00E+00	5.50E-03	8.51E+02	4.70E+00	1.10E-01	5.63E+00	1.51E+02

TABLE C-11A: ARSENIC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 11 - BEARTRAP CREEK DISPERSED TAILINGS DEPOSITS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK TAILINGS DEPOSITS AND FLOSSIE LOUISE MINE WASTE PILE (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 4.982

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Masked Shrew (Omnivorous Mammal - Terrestrial, Wetland)																							
BCEOT-W24-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	1.90E+02	1.61E+00	1.10E-03	1.15E+01	1.27E-02	1.00E+00	5.50E-03	2.95E+02	4.70E+00	1.10E-01	5.63E+00	5.25E+01
BCEOT-E25-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	6.93E+02	5.87E+00	1.10E-03	4.21E+01	4.63E-02	1.00E+00	5.50E-03	1.08E+03	4.70E+00	1.10E-01	5.63E+00	1.91E+02
BCEOT-W25-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	2.37E+02	2.01E+00	1.10E-03	1.44E+01	1.59E-02	1.00E+00	5.50E-03	3.68E+02	4.70E+00	1.10E-01	5.63E+00	6.55E+01
BCEOT-E26-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	4.48E+02	3.79E+00	1.10E-03	2.72E+01	2.99E-02	1.00E+00	5.50E-03	6.95E+02	4.70E+00	1.10E-01	5.63E+00	1.23E+02
BCEOT-W26-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	1.83E+02	1.55E+00	1.10E-03	1.11E+01	1.22E-02	1.00E+00	5.50E-03	2.83E+02	4.70E+00	1.10E-01	5.63E+00	5.04E+01
BCEOT-W27-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	1.92E+02	1.63E+00	1.10E-03	1.17E+01	1.29E-02	1.00E+00	5.50E-03	2.99E+02	4.70E+00	1.10E-01	5.63E+00	5.31E+01
Outside Tailings Piles																						**Maximum HQ (Edge of Tailings Pile)**	**7.13E+02**
BCEOT-E0+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	1.51E+03	1.27E+01	1.10E-03	9.13E+01	1.01E-01	1.00E+00	5.50E-03	2.34E+03	4.70E+00	1.10E-01	5.63E+00	4.15E+02
BCEOT-E1+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	1.78E+03	1.51E+01	1.10E-03	1.08E+02	1.19E-01	1.00E+00	5.50E-03	2.76E+03	4.70E+00	1.10E-01	5.63E+00	4.91E+02
BCEOT-E2+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	1.47E+03	1.24E+01	1.10E-03	8.90E+01	9.79E-02	1.00E+00	5.50E-03	2.28E+03	4.70E+00	1.10E-01	5.63E+00	4.05E+02
BCEOT-E3+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	4.53E+02	3.84E+00	1.10E-03	2.75E+01	3.02E-02	1.00E+00	5.50E-03	7.03E+02	4.70E+00	1.10E-01	5.63E+00	1.25E+02
BCEOT-E4+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	8.32E+02	7.05E+00	1.10E-03	5.05E+01	5.56E-02	1.00E+00	5.50E-03	1.29E+03	4.70E+00	1.10E-01	5.63E+00	2.30E+02
BCEOT-W4+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	8.87E+02	7.51E+00	1.10E-03	5.38E+01	5.93E-02	1.00E+00	5.50E-03	1.38E+03	4.70E+00	1.10E-01	5.63E+00	2.45E+02
BCEOT-E5+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	1.55E+03	1.31E+01	1.10E-03	9.41E+01	1.04E-01	1.00E+00	5.50E-03	2.41E+03	4.70E+00	1.10E-01	5.63E+00	4.28E+02
BCEOT-W5+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	2.03E+03	1.72E+01	1.10E-03	1.23E+02	1.36E-01	1.00E+00	5.50E-03	3.15E+03	4.70E+00	1.10E-01	5.63E+00	5.60E+02
BCEOT-E6+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	1.10E+03	9.31E+00	1.10E-03	6.67E+01	7.34E-02	1.00E+00	5.50E-03	1.71E+03	4.70E+00	1.10E-01	5.63E+00	3.03E+02
BCEOT-W6+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	3.08E+02	2.61E+00	1.10E-03	1.87E+01	2.06E-02	1.00E+00	5.50E-03	4.78E+02	4.70E+00	1.10E-01	5.63E+00	8.50E+01
BCEOT-E7+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	4.77E+02	4.04E+00	1.10E-03	2.89E+01	3.19E-02	1.00E+00	5.50E-03	7.40E+02	4.70E+00	1.10E-01	5.63E+00	1.32E+02
BCEOT-W7+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
FLWA-101 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	3.50E+03	2.96E+01	1.10E-03	2.12E+02	2.34E-01	1.00E+00	5.50E-03	5.43E+03	4.70E+00	1.10E-01	5.63E+00	9.66E+02
BCEOT-W8+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	6.25E+02	5.29E+00	1.10E-03	3.79E+01	4.17E-02	1.00E+00	5.50E-03	9.69E+02	4.70E+00	1.10E-01	5.63E+00	1.72E+02
BCEOT-E9+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	1.69E+03	1.43E+01	1.10E-03	1.02E+02	1.13E-01	1.00E+00	5.50E-03	2.62E+03	4.70E+00	1.10E-01	5.63E+00	4.66E+02
BCEOT-E10+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	4.01E+02	3.40E+00	1.10E-03	2.44E+01	2.68E-02	1.00E+00	5.50E-03	6.23E+02	4.70E+00	1.10E-01	5.63E+00	1.11E+02
BCEOT-W10+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-E11+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	1.56E+03	1.32E+01	1.10E-03	9.44E+01	1.04E-01	1.00E+00	5.50E-03	2.42E+03	4.70E+00	1.10E-01	5.63E+00	4.30E+02
BCEOT-W11+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	7.48E+02	6.34E+00	1.10E-03	4.54E+01	5.00E-02	1.00E+00	5.50E-03	1.16E+03	4.70E+00	1.10E-01	5.63E+00	2.06E+02
BCEOT-E12+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	9.05E+02	7.66E+00	1.10E-03	5.49E+01	6.04E-02	1.00E+00	5.50E-03	1.40E+03	4.70E+00	1.10E-01	5.63E+00	2.50E+02
BCEOT-W12+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-E13+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	1.51E+03	1.28E+01	1.10E-03	9.17E+01	1.01E-01	1.00E+00	5.50E-03	2.35E+03	4.70E+00	1.10E-01	5.63E+00	4.17E+02
BCEOT-E14+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	3.14E+02	2.66E+00	1.10E-03	1.91E+01	2.10E-02	1.00E+00	5.50E-03	4.88E+02	4.70E+00	1.10E-01	5.63E+00	8.67E+01
BCEOT-W14+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-E15+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	6.27E+02	5.31E+00	1.10E-03	3.80E+01	4.19E-02	1.00E+00	5.50E-03	9.73E+02	4.70E+00	1.10E-01	5.63E+00	1.73E+02
BCEOT-W15+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	9.14E+02	7.74E+00	1.10E-03	5.55E+01	6.11E-02	1.00E+00	5.50E-03	1.42E+03	4.70E+00	1.10E-01	5.63E+00	2.52E+02
BCEOT-E16+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	3.17E+02	2.69E+00	1.10E-03	1.92E+01	2.12E-02	1.00E+00	5.50E-03	4.92E+02	4.70E+00	1.10E-01	5.63E+00	8.75E+01
BCEOT-W16+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-E17+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	4.64E+02	3.93E+00	1.10E-03	2.81E+01	3.10E-02	1.00E+00	5.50E-03	7.20E+02	4.70E+00	1.10E-01	5.63E+00	1.28E+02
BCEOT-W17+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	3.08E+02	2.61E+00	1.10E-03	1.87E+01	2.06E-02	1.00E+00	5.50E-03	4.78E+02	4.70E+00	1.10E-01	5.63E+00	8.50E+01
BCEOT-E18+12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	1.13E+04	9.54E+01	1.10E-03	6.83E+02	7.52E-01	1.00E+00	5.50E-03	1.75E+04	4.70E+00	1.10E-01	5.63E+00	3.11E+03
BCEOT-E18+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	5.52E+02	4.68E+00	1.10E-03	3.35E+01	3.69E-02	1.00E+00	5.50E-03	8.57E+02	4.70E+00	1.10E-01	5.63E+00	1.52E+02
BCEOT-W18+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	4.33E+02	3.66E+00	1.10E-03	2.63E+01	2.89E-02	1.00E+00	5.50E-03	6.72E+02	4.70E+00	1.10E-01	5.63E+00	1.19E+02
BCEOT-E19+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	5.02E+02	4.25E+00	1.10E-03	3.04E+01	3.35E-02	1.00E+00	5.50E-03	7.79E+02	4.70E+00	1.10E-01	5.63E+00	1.38E+02
BCEOT-W19+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-E20+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	3.65E+02	3.09E+00	1.10E-03	2.22E+01	2.44E-02	1.00E+00	5.50E-03	5.67E+02	4.70E+00	1.10E-01	5.63E+00	1.01E+02
BCEOT-W20+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-E21+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	4.05E+02	3.43E+00	1.10E-03	2.46E+01	2.70E-02	1.00E+00	5.50E-03	6.28E+02	4.70E+00	1.10E-01	5.63E+00	1.12E+02
BCEOT-W21+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-E22+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	2.44E+03	2.07E+01	1.10E-03	1.48E+02	1.63E-01	1.00E+00	5.50E-03	3.79E+03	4.70E+00	1.10E-01	5.63E+00	6.74E+02
BCEOT-E22+70 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	5.38E+02	4.56E+00	1.10E-03	3.26E+01	3.59E-02	1.00E+00	5.50E-03	8.35E+02	4.70E+00	1.10E-01	5.63E+00	1.48E+02
BCEOT-W22+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	3.42E+02	2.90E+00	1.10E-03	2.08E+01	2.29E-02	1.00E+00	5.50E-03	5.31E+02	4.70E+00	1.10E-01	5.63E+00	9.45E+01
BCEOT-E23+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	3.40E+02	2.88E+00	1.10E-03	2.06E+01	2.27E-02	1.00E+00	5.50E-03	5.28E+02	4.70E+00	1.10E-01	5.63E+00	9.38E+01
BCEOT-W23+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	3.16E+02	2.67E+00	1.10E-03	1.92E+01	2.11E-02	1.00E+00	5.50E-03	4.90E+02	4.70E+00	1.10E-01	5.63E+00	8.71E+01

TABLE C-11A: ARSENIC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 11 - BEARTRAP CREEK DISPERSED TAILINGS DEPOSITS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK TAILINGS DEPOSITS AND FLOSSIE LOUISE MINE WASTE PILE (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **4.982**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Masked Shrew (Omnivorous Mammal - Terrestrial, Wetland)																							
BCEOT-E24+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-W24+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	1.82E+02	1.54E+00	1.10E-03	1.10E+01	1.21E-02	1.00E+00	5.50E-03	2.82E+02	4.70E+00	1.10E-01	5.63E+00	5.01E+01
BCEOT-E25+20 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-W25+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	1.72E+02	1.45E+00	1.10E-03	1.04E+01	1.15E-02	1.00E+00	5.50E-03	2.66E+02	4.70E+00	1.10E-01	5.63E+00	4.73E+01
BCEOT-E26+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	1.46E+03	1.24E+01	1.10E-03	8.85E+01	9.75E-02	1.00E+00	5.50E-03	2.26E+03	4.70E+00	1.10E-01	5.63E+00	4.03E+02
BCEOT-W26+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	1.36E+03	1.15E+01	1.10E-03	8.25E+01	9.09E-02	1.00E+00	5.50E-03	2.11E+03	4.70E+00	1.10E-01	5.63E+00	3.75E+02
BCEOT-W27+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.65E+01	4.57E+02	3.87E+00	1.10E-03	2.77E+01	3.05E-02	1.00E+00	5.50E-03	7.09E+02	4.70E+00	1.10E-01	5.63E+00	1.26E+02
																						Maximum HQ (Outside Tailings Pile)	**3.11E+03**

Notes

1 See Tables 3-1 through 3-13 for ingestion rates, foraging ranges used to calculate the SUF, and body weights.

2 BAFs were calculated by dividing site-collected tissue by collocated soil concentrations (BAFs are in dry weight). The maximum BAF calculated from the Beartrap Creek and Blackfoot River transects was used for site dose calculations. The maximum BAF from the terrestrial reference site was used for reference site dose calculations.

3 The mammal, plant, and invertebrate concentrations were calculated by multiplying the soil concentration by the BAF to generate a tissue concentration (see note 2).

4 Mammal, plant, and invertebrate daily doses were calculated by multiplying the ingestion rate (see note 1) by the tissue concentration (see note 3).

5 Soil concentration from 0 to 6 inches below ground surface at point ID as measured by XRF 10. Doses were not calculated for detected and non-detected soil concentrations measured below the minimum reference site concentration, as indicated by BB. For results that were measured at less than the detection limit, doses were calculated using half of the detection limit.

6 Soil daily dose was calculated by multiplying the soil ingestion rate (see note 1) by soil concentration (see note 5).

7 Total daily dose is calculated using the following equation: total daily dose = ([mammal daily dose (if applicable) + plant daily dose (if applicable) + invertebrate daily dose (if applicable) + soil daily dose]*SUF)/receptor species body weight.

8 The derivation of TRVs is described in Navy (1998). The high TRV was used for dose calculations.

9 Allometrically adjusted TRVs for birds were calculated using the following equation: receptor species TRV = (test species TRV) x (test species body weight / receptor species body weight)$^{(1-1.2)}$.

10 Allometrically adjusted TRVs for mammals were calculated using the following equation: receptor species TRV = (test species TRV) x (test species body weight / receptor species body weight)$^{(1-0.94)}$.

11 HQs were calculated using the following equation: HQ = total daily dose/allometrically adjusted TRV.

12 Green cells indicate an HQ between 1.0 and 9.99; yellow cells indicate an HQ between 10 and 99.9; blue cells indicate an HQ 100 or greater.

BAF	Bioaccumulation Factor	mg/day	Milligram per day
BB	Below minimum background reference site concentration	mg/kg	Milligram per kilogram
EE/CA	Engineering Evaluation/Cost Analysis	NA	Not applicable
EU	Exposure Unit	Navy	Department of the Navy
HQ	Hazard quotient	SUF	Site use factor
ID	Identification	TRV	Toxicity reference value
kg	Kilogram	XRF	X-ray fluorescence
kg/day	Kilogram per day	XRF 10	XRF measurements recorded following drying and seiving through a #10 -mesh screen

Sources: Department of the Navy. 1998. "Development of Toxicity Reference Values for Conducting Ecological Risk Assessments at Naval Facilities in California, Interim Final." Prepared by Naval Facilities Engineering Command, Engineering Field Activity West (EFA West). San Bruno, California.

TABLE C-11B: CADMIUM DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 11 - BEARTRAP CREEK DISPERSED TAILINGS DEPOSITS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK TAILINGS DEPOSITS AND FLOSSIE LOUISE MINE WASTE PILE

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **4.982**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Mourning Dove (Herbivorous Birds - Terrestrial)																							
Reference Sites																							
ACBG-1 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.26E+00	6.11E-01	3.52E-03	NA	NA	NA	NA	5.36E-04	4.86E-01	2.60E-04	1.92E-02	1.09E-01	6.66E-04	1.00E+00	1.13E+00	6.27E-01	1.06E-03
ACBG-2 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.26E+00	6.53E-01	3.76E-03	NA	NA	NA	NA	5.36E-04	5.20E-01	2.79E-04	1.92E-02	1.09E-01	7.12E-04	1.00E+00	1.13E+00	6.27E-01	1.14E-03
BCBG-201 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.26E+00	3.27E+00	1.88E-02	NA	NA	NA	NA	5.36E-04	2.60E+00	1.39E-03	1.92E-02	1.09E-01	3.56E-03	1.00E+00	1.13E+00	6.27E-01	5.68E-03
Inside Tailings Pile																						**Minimum HQ (Reference Sites)**	**1.06E-03**
BCEOT-E0-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E1-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E2-8 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E3-8 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.59E+00	2.30E+00	1.33E-02	NA	NA	NA	NA	5.36E-04	1.45E+00	7.77E-04	1.92E-02	1.09E-01	2.47E-03	1.00E+00	1.13E+00	6.27E-01	3.95E-03
BCEOT-E4-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.59E+00	1.04E+00	5.97E-03	NA	NA	NA	NA	5.36E-04	6.52E-01	3.49E-04	1.92E-02	1.09E-01	1.11E-03	1.00E+00	1.13E+00	6.27E-01	1.78E-03
BCEOT-W4-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E5-25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W5-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E6-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W6-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E7-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W7-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W8-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E9-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W9-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E10-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W10-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E11-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W11-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E12-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W12-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E13-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W13-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W13-25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W14-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E15-8 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W15-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E16-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W16-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E17-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W17-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W18-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E19-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.59E+00	1.01E+01	5.82E-02	NA	NA	NA	NA	5.36E-04	6.36E+00	3.41E-03	1.92E-02	1.09E-01	1.09E-02	1.00E+00	1.13E+00	6.27E-01	1.73E-02
BCEOT-W19-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E20-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W20-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E21-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.59E+00	1.89E+00	1.09E-02	NA	NA	NA	NA	5.36E-04	1.19E+00	6.38E-04	1.92E-02	1.09E-01	2.03E-03	1.00E+00	1.13E+00	6.27E-01	3.24E-03
BCEOT-W21-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E22-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W22-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.59E+00	1.15E+02	6.61E-01	NA	NA	NA	NA	5.36E-04	7.22E+01	3.87E-02	1.92E-02	1.09E-01	1.23E-01	1.00E+00	1.13E+00	6.27E-01	1.97E-01
BCEOT-E23-15 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W23-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E24-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W24-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E25-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE

TABLE C-11B: CADMIUM DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 11 - BEARTRAP CREEK DISPERSED TAILINGS DEPOSITS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK TAILINGS DEPOSITS AND FLOSSIE LOUISE MINE WASTE PILE (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **4.982**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Mourning Dove (Herbivorous Birds - Terrestrial)																							
BCEOT-W25-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.59E+00	2.87E+01	1.66E-01	NA	NA	NA	NA	5.36E-04	1.81E+01	9.70E-03	1.92E-02	1.09E-01	3.09E-02	1.00E+00	1.13E+00	6.27E-01	4.93E-02
BCEOT-E26-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W26-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W27-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
At Edge of Tailings Pile																					**Maximum HQ (Inside Tailings Pile)**		**1.97E-01**
BCEOT-E0-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E1-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E2-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E3-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E4-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W4-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E5-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W5-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E6-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W6-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E7-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W7-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W8-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-E9-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W9-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E10-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W10-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E11-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W11-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E12-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W12-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E13-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W13-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-E14-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W14-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E15-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W15-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E16-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W16-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E17-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W17-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E18-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W18-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E19-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W19-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E20-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W20-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E21-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W21-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E22-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W22-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E23-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W23-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E24-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W24-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE

TABLE C-11B: CADMIUM DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 11 - BEARTRAP CREEK DISPERSED TAILINGS DEPOSITS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK TAILINGS DEPOSITS AND FLOSSIE LOUISE MINE WASTE PILE (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **4.982**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Mourning Dove (Herbivorous Birds - Terrestrial)																							
BCEOT-E25-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W25-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E26-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W26-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.59E+00	2.57E+00	1.48E-02	NA	NA	NA	NA	5.36E-04	1.62E+00	8.68E-04	1.92E-02	1.09E-01	2.76E-03	1.00E+00	1.13E+00	6.27E-01	4.41E-03
BCEOT-W27-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
Outside Tailings Piles																						**Maximum HQ (Edge of Tailings Pile)**	**4.41E-03**
BCEOT-E0+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E1+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E2+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E3+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E4+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W4+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E5+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.59E+00	3.08E+00	1.77E-02	NA	NA	NA	NA	5.36E-04	1.94E+00	1.04E-03	1.92E-02	1.09E-01	3.31E-03	1.00E+00	1.13E+00	6.27E-01	5.28E-03
BCEOT-W5+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E6+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W6+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E7+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W7+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
FLWA-101 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.59E+00	2.38E+00	1.37E-02	NA	NA	NA	NA	5.36E-04	1.50E+00	8.04E-04	1.92E-02	1.09E-01	2.56E-03	1.00E+00	1.13E+00	6.27E-01	4.08E-03
BCEOT-W8+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E9+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W9+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E10+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W10+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-E11+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W11+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E12+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W12+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E13+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E14+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W14+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E15+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W15+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E16+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W16+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E17+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W17+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.59E+00	1.13E+00	6.50E-03	NA	NA	NA	NA	5.36E-04	7.10E-01	3.80E-04	1.92E-02	1.09E-01	1.21E-03	1.00E+00	1.13E+00	6.27E-01	1.93E-03
BCEOT-E18+12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E18+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.59E+00	3.03E+00	1.75E-02	NA	NA	NA	NA	5.36E-04	1.91E+00	1.02E-03	1.92E-02	1.09E-01	3.26E-03	1.00E+00	1.13E+00	6.27E-01	5.20E-03
BCEOT-W18+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E19+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W19+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E20+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.59E+00	1.65E+00	9.52E-03	NA	NA	NA	NA	5.36E-04	1.04E+00	5.57E-04	1.92E-02	1.09E-01	1.77E-03	1.00E+00	1.13E+00	6.27E-01	2.83E-03
BCEOT-W20+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E21+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W21+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E22+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E22+70 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W22+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E23+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W23+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.59E+00	8.73E-01	5.03E-03	NA	NA	NA	NA	5.36E-04	5.50E-01	2.95E-04	1.92E-02	1.09E-01	9.38E-04	1.00E+00	1.13E+00	6.27E-01	1.50E-03
BCEOT-E24+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W24+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE

TABLE C-11B: CADMIUM DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 11 - BEARTRAP CREEK DISPERSED TAILINGS DEPOSITS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK TAILINGS DEPOSITS AND FLOSSIE LOUISE MINE WASTE PILE (Continued)

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from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

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Site Area (hectares) **4.982**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Mourning Dove (Herbivorous Birds - Terrestrial)																							
BCEOT-E25+20 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W25+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E26+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W26+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W27+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
																						Maximum HQ (Outside Tailings Pile)	**5.28E-03**
Red-Tailed Hawk (Carnivorous Birds - Terrestrial)																							
Reference Sites																							
ACBG-1 (0-6")	9.00E-02	9.00E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.86E-01	2.49E-03	7.15E-03	1.13E+00	1.57E-05	1.00E+00	1.13E+00	1.00E+00	1.57E-05
ACBG-2 (0-6")	9.00E-02	9.00E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.20E-01	2.67E-03	7.15E-03	1.13E+00	1.68E-05	1.00E+00	1.13E+00	1.00E+00	1.68E-05
BCBG-201 (0-6")	9.00E-02	9.00E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.60E+00	1.33E-02	7.15E-03	1.13E+00	8.41E-05	1.00E+00	1.13E+00	1.00E+00	8.40E-05
Inside Tailings Pile																						**Minimum HQ (Reference Sites)**	**1.57E-05**
BCEOT-E0-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E1-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E2-8 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E3-8 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.59E+00	2.30E+00	1.33E-02	NA	NA	NA	NA	5.36E-04	1.45E+00	7.77E-04	1.92E-02	1.09E-01	2.47E-03	1.00E+00	1.13E+00	6.27E-01	3.95E-03
BCEOT-E4-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.59E+00	1.04E+00	5.97E-03	NA	NA	NA	NA	5.36E-04	6.52E-01	3.49E-04	1.92E-02	1.09E-01	1.11E-03	1.00E+00	1.13E+00	6.27E-01	1.78E-03
BCEOT-W4-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E5-25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W5-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E6-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W6-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E7-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W7-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W8-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E9-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W9-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E10-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W10-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E11-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W11-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E12-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W12-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E13-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W13-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W13-25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W14-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E15-8 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W15-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E16-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W16-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E17-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W17-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W18-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E19-12.5 (0-6")	9.00E-02	9.00E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	6.36E+00	3.26E-02	7.15E-03	1.13E+00	2.06E-04	1.00E+00	1.13E+00	1.00E+00	2.05E-04
BCEOT-W19-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E20-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W20-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E21-12.5 (0-6")	9.00E-02	9.00E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.19E+00	6.10E-03	7.15E-03	1.13E+00	3.85E-05	1.00E+00	1.13E+00	1.00E+00	3.84E-05
BCEOT-W21-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E22-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W22-12.5 (0-6")	9.00E-02	9.00E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	7.22E+01	3.70E-01	7.15E-03	1.13E+00	2.33E-03	1.00E+00	1.13E+00	1.00E+00	2.33E-03
BCEOT-E23-15 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE

TABLE C-11B: CADMIUM DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 11 - BEARTRAP CREEK DISPERSED TAILINGS DEPOSITS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK TAILINGS DEPOSITS AND FLOSSIE LOUISE MINE WASTE PILE (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **4.982**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Red-Tailed Hawk (Carnivorous Birds - Terrestrial)																							
BCEOT-W23-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E24-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W24-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E25-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W25-12.5 (0-6")	9.00E-02	9.00E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.81E+01	9.28E-02	7.15E-03	1.13E+00	5.85E-04	1.00E+00	1.13E+00	1.00E+00	5.85E-04
BCEOT-E26-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W26-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W27-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
At Edge of Tailings Pile																						**Maximum HQ (Inside Tailings Pile)**	**3.95E-03**
BCEOT-E0-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E1-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E2-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E3-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E4-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W4-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E5-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W5-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E6-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W6-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E7-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W7-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W8-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-E9-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W9-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E10-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W10-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E11-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W11-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E12-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W12-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E13-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W13-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-E14-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W14-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E15-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W15-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E16-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W16-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E17-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W17-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E18-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W18-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E19-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W19-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E20-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W20-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E21-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W21-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E22-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W22-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E23-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W23-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E24-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE

TABLE C-11B: CADMIUM DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 11 - BEARTRAP CREEK DISPERSED TAILINGS DEPOSITS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK TAILINGS DEPOSITS AND FLOSSIE LOUISE MINE WASTE PILE (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **4.982**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Red-Tailed Hawk (Carnivorous Birds - Terrestrial)																							
BCEOT-W24-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E25-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W25-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E26-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W26-0 (0-6")	9.00E-02	9.00E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.62E+00	8.31E-03	7.15E-03	1.13E+00	5.24E-05	1.00E+00	1.13E+00	1.00E+00	5.23E-05
BCEOT-W27-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
Outside Tailings Piles																					**Maximum HQ (Edge of Tailings Pile)**		**5.23E-05**
BCEOT-E0+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E1+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E2+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E3+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E4+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W4+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E5+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.59E+00	3.08E+00	1.77E-02	NA	NA	NA	NA	5.36E-04	1.94E+00	1.04E-03	1.92E-02	1.09E-01	3.31E-03	1.00E+00	1.13E+00	6.27E-01	5.28E-03
BCEOT-W5+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E6+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W6+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E7+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W7+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
FLWA-101 (0-6")	9.00E-02	9.00E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.50E+00	7.69E-03	7.15E-03	1.13E+00	4.85E-05	1.00E+00	1.13E+00	1.00E+00	4.85E-05
BCEOT-W8+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E9+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W9+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E10+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W10+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-E11+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W11+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E12+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W12+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E13+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E14+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W14+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E15+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W15+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E16+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W16+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E17+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W17+25 (0-6")	9.00E-02	9.00E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	7.10E-01	3.64E-03	7.15E-03	1.13E+00	2.30E-05	1.00E+00	1.13E+00	1.00E+00	2.29E-05
BCEOT-E18+12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E18+25 (0-6")	9.00E-02	9.00E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.91E+00	9.79E-03	7.15E-03	1.13E+00	6.17E-05	1.00E+00	1.13E+00	1.00E+00	6.17E-05
BCEOT-W18+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E19+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W19+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E20+25 (0-6")	9.00E-02	9.00E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.04E+00	5.33E-03	7.15E-03	1.13E+00	3.36E-05	1.00E+00	1.13E+00	1.00E+00	3.36E-05
BCEOT-W20+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E21+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W21+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E22+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E22+70 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W22+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E23+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W23+25 (0-6")	9.00E-02	9.00E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.50E-01	2.82E-03	7.15E-03	1.13E+00	1.78E-05	1.00E+00	1.13E+00	1.00E+00	1.78E-05
BCEOT-E24+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE

TABLE C-11B: CADMIUM DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 11 - BEARTRAP CREEK DISPERSED TAILINGS DEPOSITS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK TAILINGS DEPOSITS AND FLOSSIE LOUISE MINE WASTE PILE (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **4.982**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Red-Tailed Hawk (Carnivorous Birds - Terrestrial)																							
BCEOT-W24+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E25+20 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W25+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E26+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W26+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W27+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
																						Maximum HQ (Outside Tailings Pile)	**5.28E-03**
American Kestrel (Insectivorous Birds - Terrestrial)																							
Reference Sites																							
ACBG-1 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	7.00E+00	3.40E+00	4.68E-02	7.84E-04	4.86E-01	3.81E-04	1.90E-02	1.24E-01	7.25E-03	1.00E+00	1.13E+00	6.43E-01	1.13E-02
ACBG-2 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	7.00E+00	3.64E+00	5.01E-02	7.84E-04	5.20E-01	4.08E-04	1.90E-02	1.24E-01	7.75E-03	1.00E+00	1.13E+00	6.43E-01	1.21E-02
BCBG-201 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	7.00E+00	1.82E+01	2.50E-01	7.84E-04	2.60E+00	2.04E-03	1.90E-02	1.24E-01	3.88E-02	1.00E+00	1.13E+00	6.43E-01	6.03E-02
Inside Tailings Pile																						**Minimum HQ (Reference Sites)**	**1.13E-02**
BCEOT-E0-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E1-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E2-8 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E3-8 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.59E+00	2.30E+00	1.33E-02	NA	NA	NA	NA	5.36E-04	1.45E+00	7.77E-04	1.92E-02	1.09E-01	2.47E-03	1.00E+00	1.13E+00	6.27E-01	3.95E-03
BCEOT-E4-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.59E+00	1.04E+00	5.97E-03	NA	NA	NA	NA	5.36E-04	6.52E-01	3.49E-04	1.92E-02	1.09E-01	1.11E-03	1.00E+00	1.13E+00	6.27E-01	1.78E-03
BCEOT-W4-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E5-25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W5-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E6-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W6-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E7-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W7-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W8-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E9-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W9-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E10-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W10-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E11-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W11-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E12-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W12-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E13-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W13-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W13-25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W14-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E15-8 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W15-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E16-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W16-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E17-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W17-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W18-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E19-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	7.00E+00	4.45E+01	6.13E-01	7.84E-04	6.36E+00	4.99E-03	1.90E-02	1.24E-01	9.48E-02	1.00E+00	1.13E+00	6.43E-01	1.48E-01
BCEOT-W19-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E20-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W20-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E21-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	7.00E+00	8.33E+00	1.15E-01	7.84E-04	1.19E+00	9.33E-04	1.90E-02	1.24E-01	1.77E-02	1.00E+00	1.13E+00	6.43E-01	2.76E-02
BCEOT-W21-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E22-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W22-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	7.00E+00	5.05E+02	6.95E+00	7.84E-04	7.22E+01	5.66E-02	1.90E-02	1.24E-01	1.08E+00	1.00E+00	1.13E+00	6.43E-01	1.67E+00
BCEOT-E23-15 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE

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Site Area (hectares) **4.982**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
American Kestrel (Insectivorous Birds - Terrestrial)																							
BCEOT-W23-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E24-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W24-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E25-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W25-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	7.00E+00	1.27E+02	1.74E+00	7.84E-04	1.81E+01	1.42E-02	1.90E-02	1.24E-01	2.70E-01	1.00E+00	1.13E+00	6.43E-01	4.20E-01
BCEOT-E26-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W26-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W27-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
At Edge of Tailings Pile																						**Maximum HQ (Inside Tailings Pile)**	**1.67E+00**
BCEOT-E0-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E1-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E2-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E3-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E4-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W4-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E5-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W5-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E6-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W6-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E7-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W7-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W8-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-E9-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W9-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E10-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W10-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E11-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W11-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E12-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W12-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E13-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W13-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-E14-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W14-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E15-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W15-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E16-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W16-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E17-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W17-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E18-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W18-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E19-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W19-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E20-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W20-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E21-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W21-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E22-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W22-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E23-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W23-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E24-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE

TABLE C-11B: CADMIUM DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 11 - BEARTRAP CREEK DISPERSED TAILINGS DEPOSITS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK TAILINGS DEPOSITS AND FLOSSIE LOUISE MINE WASTE PILE (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **4.982**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
American Kestrel (Insectivorous Birds - Terrestrial)																							
BCEOT-W24-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E25-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W25-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E26-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W26-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	7.00E+00	1.13E+01	1.56E-01	7.84E-04	1.62E+00	1.27E-03	1.90E-02	1.24E-01	2.42E-02	1.00E+00	1.13E+00	6.43E-01	3.76E-02
BCEOT-W27-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
Outside Tailings Piles																					**Maximum HQ (Edge of Tailings Pile)**		**3.76E-02**
BCEOT-E0+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E1+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E2+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E3+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E4+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W4+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E5+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.59E+00	3.08E+00	1.77E-02	NA	NA	NA	NA	5.36E-04	1.94E+00	1.04E-03	1.92E-02	1.09E-01	3.31E-03	1.00E+00	1.13E+00	6.27E-01	5.28E-03
BCEOT-W5+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E6+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W6+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E7+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W7+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
FLWA-101 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	7.00E+00	1.05E+01	1.44E-01	7.84E-04	1.50E+00	1.18E-03	1.90E-02	1.24E-01	2.24E-02	1.00E+00	1.13E+00	6.43E-01	3.48E-02
BCEOT-W8+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E9+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W9+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E10+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W10+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-E11+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W11+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E12+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W12+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E13+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E14+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W14+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E15+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W15+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E16+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W16+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E17+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W17+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	7.00E+00	4.97E+00	6.84E-02	7.84E-04	7.10E-01	5.57E-04	1.90E-02	1.24E-01	1.06E-02	1.00E+00	1.13E+00	6.43E-01	1.65E-02
BCEOT-E18+12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E18+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	7.00E+00	1.34E+01	1.84E-01	7.84E-04	1.91E+00	1.50E-03	1.90E-02	1.24E-01	2.85E-02	1.00E+00	1.13E+00	6.43E-01	4.43E-02
BCEOT-W18+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E19+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W19+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E20+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	7.00E+00	7.28E+00	1.00E-01	7.84E-04	1.04E+00	8.16E-04	1.90E-02	1.24E-01	1.55E-02	1.00E+00	1.13E+00	6.43E-01	2.41E-02
BCEOT-W20+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E21+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W21+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E22+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E22+70 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W22+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E23+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W23+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	7.00E+00	3.85E+00	5.30E-02	7.84E-04	5.50E-01	4.31E-04	1.90E-02	1.24E-01	8.20E-03	1.00E+00	1.13E+00	6.43E-01	1.28E-02
BCEOT-E24+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE

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Site Area (hectares) **4.982**

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American Kestrel (Insectivorous Birds - Terrestrial)																							
BCEOT-W24+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E25+20 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W25+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E26+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W26+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W27+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
																						Maximum HQ (Outside Tailings Pile)	**4.43E-02**
Meadow Vole (Small Herbivorous Mammal - Terrestrial)																							
Reference Sites																							
ACBG-1 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.26E+00	6.11E-01	2.86E-03	NA	NA	NA	NA	1.13E-04	4.86E-01	5.47E-05	1.00E+00	3.06E-02	9.53E-02	2.64E+00	3.14E-02	2.64E+00	3.61E-02
ACBG-2 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.26E+00	6.53E-01	3.06E-03	NA	NA	NA	NA	1.13E-04	5.20E-01	5.85E-05	1.00E+00	3.06E-02	1.02E-01	2.64E+00	3.14E-02	2.64E+00	3.86E-02
BCBG-201 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.26E+00	3.27E+00	1.53E-02	NA	NA	NA	NA	1.13E-04	2.60E+00	2.93E-04	1.00E+00	3.06E-02	5.10E-01	2.64E+00	3.14E-02	2.64E+00	1.93E-01
Inside Tailings Pile																						**Minimum HQ (Reference Sites)**	**3.61E-02**
BCEOT-E0-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E1-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E2-8 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E3-8 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.59E+00	2.30E+00	1.33E-02	NA	NA	NA	NA	5.36E-04	1.45E+00	7.77E-04	1.92E-02	1.09E-01	2.47E-03	1.00E+00	1.13E+00	6.27E-01	3.95E-03
BCEOT-E4-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.59E+00	1.04E+00	5.97E-03	NA	NA	NA	NA	5.36E-04	6.52E-01	3.49E-04	1.92E-02	1.09E-01	1.11E-03	1.00E+00	1.13E+00	6.27E-01	1.78E-03
BCEOT-W4-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E5-25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W5-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E6-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W6-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E7-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W7-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W8-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E9-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W9-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E10-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W10-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E11-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W11-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E12-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W12-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E13-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W13-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W13-25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W14-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E15-8 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W15-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E16-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W16-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E17-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W17-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W18-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E19-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.59E+00	1.01E+01	4.74E-02	NA	NA	NA	NA	1.13E-04	6.36E+00	7.16E-04	1.00E+00	3.06E-02	1.57E+00	2.64E+00	3.14E-02	2.64E+00	5.94E-01
BCEOT-W19-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E20-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W20-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E21-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.59E+00	1.89E+00	8.86E-03	NA	NA	NA	NA	1.13E-04	1.19E+00	1.34E-04	1.00E+00	3.06E-02	2.94E-01	2.64E+00	3.14E-02	2.64E+00	1.11E-01
BCEOT-W21-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E22-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W22-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.59E+00	1.15E+02	5.38E-01	NA	NA	NA	NA	1.13E-04	7.22E+01	8.13E-03	1.00E+00	3.06E-02	1.78E+01	2.64E+00	3.14E-02	2.64E+00	6.75E+00
BCEOT-E23-15 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE

TABLE C-11B: CADMIUM DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 11 - BEARTRAP CREEK DISPERSED TAILINGS DEPOSITS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK TAILINGS DEPOSITS AND FLOSSIE LOUISE MINE WASTE PILE (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **4.982**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Meadow Vole (Small Herbivorous Mammal - Terrestrial)																							
BCEOT-W23-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E24-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W24-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E25-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W25-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.59E+00	2.87E+01	1.35E-01	NA	NA	NA	NA	1.13E-04	1.81E+01	2.04E-03	1.00E+00	3.06E-02	4.47E+00	2.64E+00	3.14E-02	2.64E+00	1.69E+00
BCEOT-E26-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W26-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W27-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
At Edge of Tailings Pile																						**Maximum HQ (Inside Tailings Pile)**	**6.75E+00**
BCEOT-E0-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E1-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E2-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E3-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E4-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W4-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E5-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W5-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E6-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W6-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E7-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W7-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W8-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-E9-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W9-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E10-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W10-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E11-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W11-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E12-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W12-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E13-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W13-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-E14-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W14-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E15-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W15-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E16-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W16-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E17-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W17-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E18-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W18-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E19-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W19-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E20-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W20-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E21-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W21-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E22-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W22-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E23-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W23-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E24-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE

TABLE C-11B: CADMIUM DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 11 - BEARTRAP CREEK DISPERSED TAILINGS DEPOSITS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK TAILINGS DEPOSITS AND FLOSSIE LOUISE MINE WASTE PILE (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **4.982**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Meadow Vole (Small Herbivorous Mammal - Terrestrial)																							
BCEOT-W24-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E25-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W25-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E26-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W26-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.59E+00	2.57E+00	1.21E-02	NA	NA	NA	NA	1.13E-04	1.62E+00	1.82E-04	1.00E+00	3.06E-02	4.00E-01	2.64E+00	3.14E-02	2.64E+00	1.51E-01
BCEOT-W27-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
Outside Tailings Piles																					**Maximum HQ (Edge of Tailings Pile)**		**1.51E-01**
BCEOT-E0+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E1+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E2+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E3+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E4+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W4+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E5+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.59E+00	3.08E+00	1.77E-02	NA	NA	NA	NA	5.36E-04	1.94E+00	1.04E-03	1.92E-02	1.09E-01	3.31E-03	1.00E+00	1.13E+00	6.27E-01	5.28E-03
BCEOT-W5+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E6+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W6+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E7+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W7+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
FLWA-101 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.59E+00	2.38E+00	1.12E-02	NA	NA	NA	NA	1.13E-04	1.50E+00	1.69E-04	1.00E+00	3.06E-02	3.71E-01	2.64E+00	3.14E-02	2.64E+00	1.40E-01
BCEOT-W8+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E9+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W9+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E10+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W10+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-E11+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W11+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E12+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W12+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E13+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E14+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W14+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E15+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W15+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E16+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W16+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E17+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W17+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.59E+00	1.13E+00	5.29E-03	NA	NA	NA	NA	1.13E-04	7.10E-01	7.99E-05	1.00E+00	3.06E-02	1.75E-01	2.64E+00	3.14E-02	2.64E+00	6.63E-02
BCEOT-E18+12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E18+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.59E+00	3.03E+00	1.42E-02	NA	NA	NA	NA	1.13E-04	1.91E+00	2.15E-04	1.00E+00	3.06E-02	4.72E-01	2.64E+00	3.14E-02	2.64E+00	1.78E-01
BCEOT-W18+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E19+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W19+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E20+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.59E+00	1.65E+00	7.74E-03	NA	NA	NA	NA	1.13E-04	1.04E+00	1.17E-04	1.00E+00	3.06E-02	2.57E-01	2.64E+00	3.14E-02	2.64E+00	9.72E-02
BCEOT-W20+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E21+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W21+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E22+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E22+70 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W22+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E23+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W23+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.59E+00	8.73E-01	4.10E-03	NA	NA	NA	NA	1.13E-04	5.50E-01	6.19E-05	1.00E+00	3.06E-02	1.36E-01	2.64E+00	3.14E-02	2.64E+00	5.14E-02
BCEOT-E24+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE

TABLE C-11B: CADMIUM DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 11 - BEARTRAP CREEK DISPERSED TAILINGS DEPOSITS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK TAILINGS DEPOSITS AND FLOSSIE LOUISE MINE WASTE PILE (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **4.982**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Meadow Vole (Small Herbivorous Mammal - Terrestrial)																							
BCEOT-W24+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E25+20 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W25+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E26+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W26+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W27+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
																						Maximum HQ (Outside Tailings Pile)	**1.78E-01**
White-Tailed Deer (Large Herbivorous Mammal - Terrestrial)																							
Reference Sites																							
ACBG-1 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.26E+00	6.11E-01	8.74E-01	NA	NA	NA	NA	2.86E-02	4.86E-01	1.39E-02	2.79E-02	1.35E+02	1.83E-04	2.64E+00	3.14E-02	1.60E+00	1.15E-04
ACBG-2 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.26E+00	6.53E-01	9.35E-01	NA	NA	NA	NA	2.86E-02	5.20E-01	1.49E-02	2.79E-02	1.35E+02	1.96E-04	2.64E+00	3.14E-02	1.60E+00	1.23E-04
BCBG-201 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.26E+00	3.27E+00	4.68E+00	NA	NA	NA	NA	2.86E-02	2.60E+00	7.44E-02	2.79E-02	1.35E+02	9.81E-04	2.64E+00	3.14E-02	1.60E+00	6.14E-04
Inside Tailings Pile																						**Minimum HQ (Reference Sites)**	**1.15E-04**
BCEOT-E0-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E1-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E2-8 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E3-8 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.59E+00	2.30E+00	1.33E-02	NA	NA	NA	NA	5.36E-04	1.45E+00	7.77E-04	1.92E-02	1.09E-01	2.47E-03	1.00E+00	1.13E+00	6.27E-01	3.95E-03
BCEOT-E4-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.59E+00	1.04E+00	5.97E-03	NA	NA	NA	NA	5.36E-04	6.52E-01	3.49E-04	1.92E-02	1.09E-01	1.11E-03	1.00E+00	1.13E+00	6.27E-01	1.78E-03
BCEOT-W4-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E5-25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W5-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E6-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W6-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E7-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W7-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W8-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E9-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W9-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E10-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W10-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E11-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W11-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E12-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W12-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E13-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W13-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W13-25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W14-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E15-8 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W15-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E16-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W16-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E17-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W17-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W18-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E19-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.59E+00	1.01E+01	1.45E+01	NA	NA	NA	NA	2.86E-02	6.36E+00	1.82E-01	2.79E-02	1.35E+02	3.02E-03	2.64E+00	3.14E-02	1.60E+00	1.89E-03
BCEOT-W19-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E20-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W20-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E21-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.59E+00	1.89E+00	2.71E+00	NA	NA	NA	NA	2.86E-02	1.19E+00	3.41E-02	2.79E-02	1.35E+02	5.66E-04	2.64E+00	3.14E-02	1.60E+00	3.54E-04
BCEOT-W21-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E22-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W22-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.59E+00	1.15E+02	1.64E+02	NA	NA	NA	NA	2.86E-02	7.22E+01	2.07E+00	2.79E-02	1.35E+02	3.43E-02	2.64E+00	3.14E-02	1.60E+00	2.15E-02
BCEOT-E23-15 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE

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Baseline Ecological Risk Assessment

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from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

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Site Area (hectares) **4.982**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
White-Tailed Deer (Large Herbivorous Mammal - Terrestrial)																							
BCEOT-W23-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E24-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W24-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E25-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W25-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.59E+00	2.87E+01	4.12E+01	NA	NA	NA	NA	2.86E-02	1.81E+01	5.18E-01	2.79E-02	1.35E+02	8.60E-03	2.64E+00	3.14E-02	1.60E+00	5.38E-03
BCEOT-E26-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W26-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W27-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
At Edge of Tailings Pile																						**Maximum HQ (Inside Tailings Pile)**	**2.15E-02**
BCEOT-E0-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E1-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E2-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E3-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E4-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W4-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E5-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W5-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E6-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W6-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E7-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W7-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W8-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-E9-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W9-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E10-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W10-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E11-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W11-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E12-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W12-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E13-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W13-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-E14-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W14-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E15-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W15-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E16-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W16-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E17-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W17-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E18-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W18-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E19-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W19-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E20-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W20-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E21-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W21-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E22-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W22-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E23-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W23-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E24-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE

TABLE C-11B: CADMIUM DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 11 - BEARTRAP CREEK DISPERSED TAILINGS DEPOSITS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK TAILINGS DEPOSITS AND FLOSSIE LOUISE MINE WASTE PILE (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **4.982**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
White-Tailed Deer (Large Herbivorous Mammal - Terrestrial)																							
BCEOT-W24-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E25-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W25-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E26-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W26-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.59E+00	2.57E+00	3.68E+00	NA	NA	NA	NA	2.86E-02	1.62E+00	4.64E-02	2.79E-02	1.35E+02	7.70E-04	2.64E+00	3.14E-02	1.60E+00	4.82E-04
BCEOT-W27-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
Outside Tailings Piles																					**Maximum HQ (Edge of Tailings Pile)**		**4.82E-04**
BCEOT-E0+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E1+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E2+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E3+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E4+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W4+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E5+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.59E+00	3.08E+00	1.77E-02	NA	NA	NA	NA	5.36E-04	1.94E+00	1.04E-03	1.92E-02	1.09E-01	3.31E-03	1.00E+00	1.13E+00	6.27E-01	5.28E-03
BCEOT-W5+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E6+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W6+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E7+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W7+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
FLWA-101 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.59E+00	2.38E+00	3.41E+00	NA	NA	NA	NA	2.86E-02	1.50E+00	4.30E-02	2.79E-02	1.35E+02	7.13E-04	2.64E+00	3.14E-02	1.60E+00	4.46E-04
BCEOT-W8+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E9+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W9+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E10+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W10+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-E11+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W11+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E12+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W12+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E13+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E14+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W14+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E15+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W15+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E16+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W16+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E17+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W17+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.59E+00	1.13E+00	1.61E+00	NA	NA	NA	NA	2.86E-02	7.10E-01	2.03E-02	2.79E-02	1.35E+02	3.37E-04	2.64E+00	3.14E-02	1.60E+00	2.11E-04
BCEOT-E18+12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E18+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.59E+00	3.03E+00	4.34E+00	NA	NA	NA	NA	2.86E-02	1.91E+00	5.47E-02	2.79E-02	1.35E+02	9.08E-04	2.64E+00	3.14E-02	1.60E+00	5.68E-04
BCEOT-W18+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E19+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W19+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E20+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.59E+00	1.65E+00	2.36E+00	NA	NA	NA	NA	2.86E-02	1.04E+00	2.98E-02	2.79E-02	1.35E+02	4.94E-04	2.64E+00	3.14E-02	1.60E+00	3.09E-04
BCEOT-W20+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E21+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W21+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E22+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E22+70 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W22+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E23+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W23+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.59E+00	8.73E-01	1.25E+00	NA	NA	NA	NA	2.86E-02	5.50E-01	1.57E-02	2.79E-02	1.35E+02	2.61E-04	2.64E+00	3.14E-02	1.60E+00	1.64E-04
BCEOT-E24+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE

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from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **4.982**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
White-Tailed Deer (Large Herbivorous Mammal - Terrestrial)																							
BCEOT-W24+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E25+20 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W25+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E26+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W26+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W27+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
																						Maximum HQ (Outside Tailings Pile)	**5.28E-03**
Red Fox (Carnivorous Mammal - Terrestrial)																							
Reference Sites																							
ACBG-1 (0-6")	1.72E-01	1.72E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.86E-01	2.33E-03	3.68E-03	4.54E+00	1.89E-06	2.64E+00	3.14E-02	1.96E+00	9.67E-07
ACBG-2 (0-6")	1.72E-01	1.72E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.20E-01	2.50E-03	3.68E-03	4.54E+00	2.03E-06	2.64E+00	3.14E-02	1.96E+00	1.03E-06
BCBG-201 (0-6")	1.72E-01	1.72E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.60E+00	1.25E-02	3.68E-03	4.54E+00	1.01E-05	2.64E+00	3.14E-02	1.96E+00	5.17E-06
Inside Tailings Pile																						**Minimum HQ (Reference Sites)**	**9.67E-07**
BCEOT-E0-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E1-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E2-8 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E3-8 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.59E+00	2.30E+00	1.33E-02	NA	NA	NA	NA	5.36E-04	1.45E+00	7.77E-04	1.92E-02	1.09E-01	2.47E-03	1.00E+00	1.13E+00	6.27E-01	3.95E-03
BCEOT-E4-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.59E+00	1.04E+00	5.97E-03	NA	NA	NA	NA	5.36E-04	6.52E-01	3.49E-04	1.92E-02	1.09E-01	1.11E-03	1.00E+00	1.13E+00	6.27E-01	1.78E-03
BCEOT-W4-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E5-25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W5-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E6-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W6-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E7-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W7-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W8-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E9-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W9-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E10-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W10-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E11-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W11-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E12-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W12-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E13-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W13-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W13-25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W14-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E15-8 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W15-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E16-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W16-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E17-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W17-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W18-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E19-12.5 (0-6")	1.72E-01	1.72E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	6.36E+00	3.06E-02	3.68E-03	4.54E+00	2.48E-05	2.64E+00	3.14E-02	1.96E+00	1.27E-05
BCEOT-W19-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E20-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W20-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E21-12.5 (0-6")	1.72E-01	1.72E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.19E+00	5.72E-03	3.68E-03	4.54E+00	4.64E-06	2.64E+00	3.14E-02	1.96E+00	2.37E-06
BCEOT-W21-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E22-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W22-12.5 (0-6")	1.72E-01	1.72E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	7.22E+01	3.47E-01	3.68E-03	4.54E+00	2.81E-04	2.64E+00	3.14E-02	1.96E+00	1.44E-04
BCEOT-E23-15 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE

TABLE C-11B: CADMIUM DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 11 - BEARTRAP CREEK DISPERSED TAILINGS DEPOSITS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK TAILINGS DEPOSITS AND FLOSSIE LOUISE MINE WASTE PILE (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **4.982**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Red Fox (Carnivorous Mammal - Terrestrial)																							
BCEOT-W23-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E24-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W24-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E25-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W25-12.5 (0-6")	1.72E-01	1.72E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.81E+01	8.69E-02	3.68E-03	4.54E+00	7.05E-05	2.64E+00	3.14E-02	1.96E+00	3.60E-05
BCEOT-E26-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W26-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W27-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
At Edge of Tailings Pile																						**Maximum HQ (Inside Tailings Pile)**	**3.95E-03**
BCEOT-E0-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E1-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E2-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E3-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E4-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W4-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E5-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W5-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E6-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W6-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E7-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W7-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W8-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-E9-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W9-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E10-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W10-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E11-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W11-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E12-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W12-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E13-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W13-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-E14-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W14-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E15-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W15-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E16-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W16-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E17-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W17-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E18-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W18-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E19-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W19-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E20-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W20-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E21-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W21-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E22-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W22-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E23-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W23-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E24-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE

TABLE C-11B: CADMIUM DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 11 - BEARTRAP CREEK DISPERSED TAILINGS DEPOSITS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK TAILINGS DEPOSITS AND FLOSSIE LOUISE MINE WASTE PILE (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **4.982**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Red Fox (Carnivorous Mammal - Terrestrial)																							
BCEOT-W24-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E25-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W25-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E26-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W26-0 (0-6")	1.72E-01	1.72E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.62E+00	7.78E-03	3.68E-03	4.54E+00	6.31E-06	2.64E+00	3.14E-02	1.96E+00	3.22E-06
BCEOT-W27-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
Outside Tailings Piles																					**Maximum HQ (Edge of Tailings Pile)**		**3.22E-06**
BCEOT-E0+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E1+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E2+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E3+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E4+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W4+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E5+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.59E+00	3.08E+00	1.77E-02	NA	NA	NA	NA	5.36E-04	1.94E+00	1.04E-03	1.92E-02	1.09E-01	3.31E-03	1.00E+00	1.13E+00	6.27E-01	5.28E-03
BCEOT-W5+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E6+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W6+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E7+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W7+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
FLWA-101 (0-6")	1.72E-01	1.72E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.50E+00	7.21E-03	3.68E-03	4.54E+00	5.85E-06	2.64E+00	3.14E-02	1.96E+00	2.98E-06
BCEOT-W8+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E9+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W9+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E10+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W10+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-E11+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W11+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E12+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W12+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E13+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E14+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W14+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E15+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W15+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E16+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W16+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E17+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W17+25 (0-6")	1.72E-01	1.72E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	7.10E-01	3.41E-03	3.68E-03	4.54E+00	2.77E-06	2.64E+00	3.14E-02	1.96E+00	1.41E-06
BCEOT-E18+12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E18+25 (0-6")	1.72E-01	1.72E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.91E+00	9.17E-03	3.68E-03	4.54E+00	7.44E-06	2.64E+00	3.14E-02	1.96E+00	3.80E-06
BCEOT-W18+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E19+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W19+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E20+25 (0-6")	1.72E-01	1.72E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.04E+00	5.00E-03	3.68E-03	4.54E+00	4.05E-06	2.64E+00	3.14E-02	1.96E+00	2.07E-06
BCEOT-W20+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E21+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W21+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E22+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E22+70 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W22+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E23+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W23+25 (0-6")	1.72E-01	1.72E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.50E-01	2.64E-03	3.68E-03	4.54E+00	2.14E-06	2.64E+00	3.14E-02	1.96E+00	1.09E-06
BCEOT-E24+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE

TABLE C-11B: CADMIUM DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 11 - BEARTRAP CREEK DISPERSED TAILINGS DEPOSITS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK TAILINGS DEPOSITS AND FLOSSIE LOUISE MINE WASTE PILE (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **4.982**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Red Fox (Carnivorous Mammal - Terrestrial)																							
BCEOT-W24+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E25+20 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W25+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E26+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W26+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W27+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
																						Maximum HQ (Outside Tailings Pile)	**5.28E-03**
Masked Shrew (Omnivorous Mammal - Terrestrial, Wetland)																							
Reference Sites																							
ACBG-1 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	7.00E+00	3.40E+00	2.88E-02	1.10E-03	4.86E-01	5.35E-04	1.00E+00	5.50E-03	5.34E+00	2.64E+00	3.14E-02	2.93E+00	1.82E+00
ACBG-2 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	7.00E+00	3.64E+00	3.08E-02	1.10E-03	5.20E-01	5.73E-04	1.00E+00	5.50E-03	5.71E+00	2.64E+00	3.14E-02	2.93E+00	1.95E+00
BCBG-201 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	7.00E+00	1.82E+01	1.54E-01	1.10E-03	2.60E+00	2.86E-03	1.00E+00	5.50E-03	2.85E+01	2.64E+00	3.14E-02	2.93E+00	9.74E+00
Inside Tailings Pile																						**Minimum HQ (Reference Sites)**	**1.82E+00**
BCEOT-E0-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E1-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E2-8 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E3-8 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.59E+00	2.30E+00	1.33E-02	NA	NA	NA	NA	5.36E-04	1.45E+00	7.77E-04	1.92E-02	1.09E-01	2.47E-03	1.00E+00	1.13E+00	6.27E-01	3.95E-03
BCEOT-E4-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.59E+00	1.04E+00	5.97E-03	NA	NA	NA	NA	5.36E-04	6.52E-01	3.49E-04	1.92E-02	1.09E-01	1.11E-03	1.00E+00	1.13E+00	6.27E-01	1.78E-03
BCEOT-W4-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E5-25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W5-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E6-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W6-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E7-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W7-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W8-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E9-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W9-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E10-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W10-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E11-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W11-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E12-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W12-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E13-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W13-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W13-25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W14-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E15-8 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W15-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E16-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W16-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E17-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W17-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W18-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E19-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	7.00E+00	4.45E+01	3.77E-01	1.10E-03	6.36E+00	7.00E-03	1.00E+00	5.50E-03	6.98E+01	2.64E+00	3.14E-02	2.93E+00	2.38E+01
BCEOT-W19-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E20-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W20-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E21-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	7.00E+00	8.33E+00	7.05E-02	1.10E-03	1.19E+00	1.31E-03	1.00E+00	5.50E-03	1.31E+01	2.64E+00	3.14E-02	2.93E+00	4.46E+00
BCEOT-W21-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	1.10E-03	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E22-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W22-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	7.00E+00	5.05E+02	4.28E+00	1.10E-03	7.22E+01	7.95E-02	1.00E+00	5.50E-03	7.93E+02	2.64E+00	3.14E-02	2.93E+00	2.70E+02
BCEOT-E23-15 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE

TABLE C-11B: CADMIUM DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 11 - BEARTRAP CREEK DISPERSED TAILINGS DEPOSITS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK TAILINGS DEPOSITS AND FLOSSIE LOUISE MINE WASTE PILE (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **4.982**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Masked Shrew (Omnivorous Mammal - Terrestrial, Wetland)																							
BCEOT-W23-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E24-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W24-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E25-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W25-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	7.00E+00	1.27E+02	1.07E+00	1.10E-03	1.81E+01	1.99E-02	1.00E+00	5.50E-03	1.99E+02	2.64E+00	3.14E-02	2.93E+00	6.78E+01
BCEOT-E26-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W26-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W27-12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
At Edge of Tailings Pile																						**Maximum HQ (Inside Tailings Pile)**	**2.70E+02**
BCEOT-E0-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E1-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E2-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E3-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E4-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W4-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E5-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W5-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E6-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W6-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E7-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W7-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W8-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-E9-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W9-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E10-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W10-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E11-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W11-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E12-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W12-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E13-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W13-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-E14-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W14-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E15-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W15-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E16-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W16-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E17-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W17-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E18-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W18-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E19-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W19-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E20-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W20-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E21-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W21-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E22-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W22-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E23-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W23-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E24-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE

TABLE C-11B: CADMIUM DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 11 - BEARTRAP CREEK DISPERSED TAILINGS DEPOSITS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK TAILINGS DEPOSITS AND FLOSSIE LOUISE MINE WASTE PILE (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **4.982**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Masked Shrew (Omnivorous Mammal - Terrestrial, Wetland)																							
BCEOT-W24-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E25-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W25-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E26-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W26-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	7.00E+00	1.13E+01	9.60E-02	1.10E-03	1.62E+00	1.78E-03	1.00E+00	5.50E-03	1.78E+01	2.64E+00	3.14E-02	2.93E+00	6.07E+00
BCEOT-W27-0 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
Outside Tailings Piles																						**Maximum HQ (Edge of Tailings Pile)**	**6.07E+00**
BCEOT-E0+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E1+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E2+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E3+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E4+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W4+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E5+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.59E+00	3.08E+00	1.77E-02	NA	NA	NA	NA	5.36E-04	1.94E+00	1.04E-03	1.92E-02	1.09E-01	3.31E-03	1.00E+00	1.13E+00	6.27E-01	5.28E-03
BCEOT-W5+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E6+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W6+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E7+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W7+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
FLWA-101 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	7.00E+00	1.05E+01	8.89E-02	1.10E-03	1.50E+00	1.65E-03	1.00E+00	5.50E-03	1.65E+01	2.64E+00	3.14E-02	2.93E+00	5.62E+00
BCEOT-W8+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E9+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W9+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E10+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W10+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-E11+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W11+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E12+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W12+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E13+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E14+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W14+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E15+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W15+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E16+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W16+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E17+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W17+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	7.00E+00	4.97E+00	4.21E-02	1.10E-03	7.10E-01	7.82E-04	1.00E+00	5.50E-03	7.79E+00	2.64E+00	3.14E-02	2.93E+00	2.66E+00
BCEOT-E18+12.5 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E18+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	7.00E+00	1.34E+01	1.13E-01	1.10E-03	1.91E+00	2.10E-03	1.00E+00	5.50E-03	2.10E+01	2.64E+00	3.14E-02	2.93E+00	7.15E+00
BCEOT-W18+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E19+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W19+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E20+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	7.00E+00	7.28E+00	6.17E-02	1.10E-03	1.04E+00	1.15E-03	1.00E+00	5.50E-03	1.14E+01	2.64E+00	3.14E-02	2.93E+00	3.90E+00
BCEOT-W20+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E21+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W21+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E22+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E22+70 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W22+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E23+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W23+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	7.00E+00	3.85E+00	3.26E-02	1.10E-03	5.50E-01	6.06E-04	1.00E+00	5.50E-03	6.04E+00	2.64E+00	3.14E-02	2.93E+00	2.06E+00
BCEOT-E24+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE

TABLE C-11B: CADMIUM DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 11 - BEARTRAP CREEK DISPERSED TAILINGS DEPOSITS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK TAILINGS DEPOSITS AND FLOSSIE LOUISE MINE WASTE PILE (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **4.982**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Masked Shrew (Omnivorous Mammal - Terrestrial, Wetland)																							
BCEOT-W24+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E25+20 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W25+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-E26+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W26+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BCEOT-W27+25 (0-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
																						Maximum HQ (Outside Tailings Pile)	**7.15E+00**

Notes

1 See Tables 3-1 through 3-13 for ingestion rates, foraging ranges used to calculate the SUF, and body weights.

2 BAFs were calculated by dividing site-collected tissue by collocated soil concentrations (BAFs are in dry weight). The maximum BAF calculated from the Beartrap Creek and Blackfoot River transects was used for site dose calculations. The maximum BAF from the terrestrial reference site was used for reference site dose calculations.

3 The mammal, plant, and invertebrate concentrations were calculated by multiplying the soil concentration by the BAF to generate a tissue concentration (see note 2).

4 Mammal, plant, and invertebrate daily doses were calculated by multiplying the ingestion rate (see note 1) by the tissue concentration (see note 3).

5 Soil concentration from 0 to 6 inches below ground surface at point ID from laboratory analysis. XRF 10 data were unavailable for cadmium. Doses were not calculated for detected and non-detected soil concentrations measured below the minimum reference site concentration, as indicated by BB. For results that were measured at less than the detection limit, doses were calculated using half of the detection limit.

6 Soil daily dose was calculated by multiplying the soil ingestion rate (see note 1) by soil concentration (see note 5).

7 Total daily dose is calculated using the following equation: total daily dose = ([mammal daily dose (if applicable) + plant daily dose (if applicable) + invertebrate daily dose (if applicable) + soil daily dose]*SUF)/receptor species body weight.

8 The derivation of TRVs is described in DTSC 2009. The high TRV was used for dose calculations.

9 Allometrically adjusted TRVs for birds were calculated using the following equation: receptor species TRV = (test species TRV) x (test species body weight / receptor species body weight)$^{(1-1.2)}$.

10 Allometrically adjusted TRVs for mammals were calculated using the following equation: receptor species TRV = (test species TRV) x (test species body weight / receptor species body weight)$^{(1-0.94)}$.

11 HQs were calculated using the following equation: HQ = total daily dose/allometrically adjusted TRV.

12 Green cells indicate an HQ between 1.0 and 9.99; yellow cells indicate an HQ between 10 and 99.9; blue cells indicate an HQ 100 or greater.

BAF	Bioaccumulation Factor	mg/day	Milligram per day
BB	Below minimum background reference site concentration	mg/kg	Milligram per kilogram
DTSC	California Department of Toxic Substances Control	NA	Not applicable
EE/CA	Engineering Evaluation/Cost Analysis	Navy	Department of the Navy
EU	Exposure Unit	NE	Not evaluated
HQ	Hazard quotient	SUF	Site use factor
ID	Identification	TRV	Toxicity reference value
kg	Kilogram	XRF	X-ray fluorescence
kg/day	Kilogram per day	XRF 10	XRF measurements recorded following drying and seiving through a #10 -mesh screen

Sources: Department of the Navy. 1998. "Development of Toxicity Reference Values for Conducting Ecological Risk Assessments at Naval Facilities in California, Interim Final." Prepared by Naval Facilities Engineering Command, Engineering Field Activity West (EFA West). San Bruno, California.

DTSC. 2009. HERD Ecological Risk Assessment Note 6. February. Available on-line at: http://www.dtsc.ca.gov/AssessingRisk/upload/CdEconote_Final.pdf.

TABLE C-11C: COPPER DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 11 - BEARTRAP CREEK DISPERSED TAILINGS DEPOSITS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK TAILINGS DEPOSITS AND FLOSSIE LOUISE MINE WASTE PILE

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **4.982**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Mourning Dove (Herbivorous Birds - Terrestrial)																							
Reference Sites																							
ACBG-1 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	7.79E-01	6.20E+01	3.57E-01	NA	NA	NA	NA	5.36E-04	7.96E+01	4.26E-02	1.92E-02	1.09E-01	7.04E-02	5.23E+01	4.09E-01	4.01E+01	1.75E-03
ACBG-2 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	7.79E-01	1.95E+02	1.12E+00	NA	NA	NA	NA	5.36E-04	2.50E+02	1.34E-01	1.92E-02	1.09E-01	2.21E-01	5.23E+01	4.09E-01	4.01E+01	5.51E-03
BCBG-201 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	7.79E-01	4.89E+01	2.82E-01	NA	NA	NA	NA	5.36E-04	6.28E+01	3.36E-02	1.92E-02	1.09E-01	5.56E-02	5.23E+01	4.09E-01	4.01E+01	1.38E-03
Inside Tailings Pile																						**Minimum HQ (Reference Sites)**	**1.38E-03**
BCEOT-E0-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	1.37E+02	7.92E-01	NA	NA	NA	NA	5.36E-04	1.21E+02	6.51E-02	1.92E-02	1.09E-01	1.51E-01	5.23E+01	4.09E-01	4.01E+01	3.76E-03
BCEOT-E1-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	1.84E+02	1.06E+00	NA	NA	NA	NA	5.36E-04	1.63E+02	8.71E-02	1.92E-02	1.09E-01	2.02E-01	5.23E+01	4.09E-01	4.01E+01	5.03E-03
BCEOT-E2-8 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	1.16E+02	6.71E-01	NA	NA	NA	NA	5.36E-04	1.03E+02	5.51E-02	1.92E-02	1.09E-01	1.28E-01	5.23E+01	4.09E-01	4.01E+01	3.19E-03
BCEOT-E3-8 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	1.72E+02	9.92E-01	NA	NA	NA	NA	5.36E-04	1.52E+02	8.16E-02	1.92E-02	1.09E-01	1.89E-01	5.23E+01	4.09E-01	4.01E+01	4.71E-03
BCEOT-E4-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	1.13E+02	6.52E-01	NA	NA	NA	NA	5.36E-04	1.00E+02	5.36E-02	1.92E-02	1.09E-01	1.24E-01	5.23E+01	4.09E-01	4.01E+01	3.10E-03
BCEOT-W4-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	1.58E+02	9.09E-01	NA	NA	NA	NA	5.36E-04	1.39E+02	7.47E-02	1.92E-02	1.09E-01	1.73E-01	5.23E+01	4.09E-01	4.01E+01	4.32E-03
BCEOT-E5-25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	8.65E+01	4.98E-01	NA	NA	NA	NA	5.36E-04	7.64E+01	4.10E-02	1.92E-02	1.09E-01	9.50E-02	5.23E+01	4.09E-01	4.01E+01	2.37E-03
BCEOT-W5-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	4.56E+02	2.63E+00	NA	NA	NA	NA	5.36E-04	4.03E+02	2.16E-01	1.92E-02	1.09E-01	5.01E-01	5.23E+01	4.09E-01	4.01E+01	1.25E-02
BCEOT-E6-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	1.43E+02	8.24E-01	NA	NA	NA	NA	5.36E-04	1.26E+02	6.77E-02	1.92E-02	1.09E-01	1.57E-01	5.23E+01	4.09E-01	4.01E+01	3.91E-03
BCEOT-W6-12.5 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-E7-12.5 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-W7-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	1.98E+02	1.14E+00	NA	NA	NA	NA	5.36E-04	1.75E+02	9.36E-02	1.92E-02	1.09E-01	2.17E-01	5.23E+01	4.09E-01	4.01E+01	5.41E-03
BCEOT-W8-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	2.55E+02	1.47E+00	NA	NA	NA	NA	5.36E-04	2.25E+02	1.21E-01	1.92E-02	1.09E-01	2.80E-01	5.23E+01	4.09E-01	4.01E+01	6.98E-03
BCEOT-E9-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	1.81E+02	1.04E+00	NA	NA	NA	NA	5.36E-04	1.60E+02	8.59E-02	1.92E-02	1.09E-01	1.99E-01	5.23E+01	4.09E-01	4.01E+01	4.96E-03
BCEOT-W9-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	4.37E+02	2.52E+00	NA	NA	NA	NA	5.36E-04	3.86E+02	2.07E-01	1.92E-02	1.09E-01	4.80E-01	5.23E+01	4.09E-01	4.01E+01	1.20E-02
BCEOT-E10-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	4.73E+02	2.73E+00	NA	NA	NA	NA	5.36E-04	4.18E+02	2.24E-01	1.92E-02	1.09E-01	5.20E-01	5.23E+01	4.09E-01	4.01E+01	1.29E-02
BCEOT-W10-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	1.54E+02	8.87E-01	NA	NA	NA	NA	5.36E-04	1.36E+02	7.29E-02	1.92E-02	1.09E-01	1.69E-01	5.23E+01	4.09E-01	4.01E+01	4.22E-03
BCEOT-E11-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	1.17E+02	6.73E-01	NA	NA	NA	NA	5.36E-04	1.03E+02	5.53E-02	1.92E-02	1.09E-01	1.28E-01	5.23E+01	4.09E-01	4.01E+01	3.20E-03
BCEOT-W11-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	4.82E+02	2.78E+00	NA	NA	NA	NA	5.36E-04	4.26E+02	2.28E-01	1.92E-02	1.09E-01	5.29E-01	5.23E+01	4.09E-01	4.01E+01	1.32E-02
BCEOT-E12-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	2.28E+02	1.32E+00	NA	NA	NA	NA	5.36E-04	2.02E+02	1.08E-01	1.92E-02	1.09E-01	2.51E-01	5.23E+01	4.09E-01	4.01E+01	6.25E-03
BCEOT-W12-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	3.26E+02	1.88E+00	NA	NA	NA	NA	5.36E-04	2.89E+02	1.55E-01	1.92E-02	1.09E-01	3.59E-01	5.23E+01	4.09E-01	4.01E+01	8.94E-03
BCEOT-E13-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	1.75E+02	1.01E+00	NA	NA	NA	NA	5.36E-04	1.55E+02	8.28E-02	1.92E-02	1.09E-01	1.92E-01	5.23E+01	4.09E-01	4.01E+01	4.79E-03
BCEOT-W13-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	1.95E+02	1.13E+00	NA	NA	NA	NA	5.36E-04	1.73E+02	9.25E-02	1.92E-02	1.09E-01	2.15E-01	5.23E+01	4.09E-01	4.01E+01	5.35E-03
BCEOT-W13-25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-W14-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	9.51E+01	5.48E-01	NA	NA	NA	NA	5.36E-04	8.40E+01	4.50E-02	1.92E-02	1.09E-01	1.04E-01	5.23E+01	4.09E-01	4.01E+01	2.60E-03
BCEOT-E15-8 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	2.26E+02	1.30E+00	NA	NA	NA	NA	5.36E-04	2.00E+02	1.07E-01	1.92E-02	1.09E-01	2.48E-01	5.23E+01	4.09E-01	4.01E+01	6.18E-03
BCEOT-W15-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	2.35E+02	1.36E+00	NA	NA	NA	NA	5.36E-04	2.08E+02	1.11E-01	1.92E-02	1.09E-01	2.59E-01	5.23E+01	4.09E-01	4.01E+01	6.44E-03
BCEOT-E16-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	5.48E+02	3.16E+00	NA	NA	NA	NA	5.36E-04	4.85E+02	2.60E-01	1.92E-02	1.09E-01	6.02E-01	5.23E+01	4.09E-01	4.01E+01	1.50E-02
BCEOT-W16-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	6.30E+02	3.63E+00	NA	NA	NA	NA	5.36E-04	5.57E+02	2.98E-01	1.92E-02	1.09E-01	6.92E-01	5.23E+01	4.09E-01	4.01E+01	1.72E-02
BCEOT-E17-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	3.05E+03	1.76E+01	NA	NA	NA	NA	5.36E-04	2.69E+03	1.44E+00	1.92E-02	1.09E-01	3.35E+00	5.23E+01	4.09E-01	4.01E+01	8.35E-02
BCEOT-W17-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	1.33E+02	7.65E-01	NA	NA	NA	NA	5.36E-04	1.17E+02	6.29E-02	1.92E-02	1.09E-01	1.46E-01	5.23E+01	4.09E-01	4.01E+01	3.63E-03
BCEOT-W18-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	3.36E+02	1.93E+00	NA	NA	NA	NA	5.36E-04	2.97E+02	1.59E-01	1.92E-02	1.09E-01	3.69E-01	5.23E+01	4.09E-01	4.01E+01	9.19E-03
BCEOT-E19-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	2.47E+02	1.42E+00	NA	NA	NA	NA	5.36E-04	2.18E+02	1.17E-01	1.92E-02	1.09E-01	2.71E-01	5.23E+01	4.09E-01	4.01E+01	6.76E-03
BCEOT-W19-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	9.30E+01	5.36E-01	NA	NA	NA	NA	5.36E-04	8.22E+01	4.40E-02	1.92E-02	1.09E-01	1.02E-01	5.23E+01	4.09E-01	4.01E+01	2.55E-03
BCEOT-E20-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	2.68E+02	1.54E+00	NA	NA	NA	NA	5.36E-04	2.37E+02	1.27E-01	1.92E-02	1.09E-01	2.94E-01	5.23E+01	4.09E-01	4.01E+01	7.33E-03
BCEOT-W20-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	8.02E+02	4.62E+00	NA	NA	NA	NA	5.36E-04	7.09E+02	3.80E-01	1.92E-02	1.09E-01	8.81E-01	5.23E+01	4.09E-01	4.01E+01	2.20E-02
BCEOT-E21-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	2.27E+02	1.31E+00	NA	NA	NA	NA	5.36E-04	2.00E+02	1.07E-01	1.92E-02	1.09E-01	2.49E-01	5.23E+01	4.09E-01	4.01E+01	6.20E-03
BCEOT-W21-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	2.12E+02	1.22E+00	NA	NA	NA	NA	5.36E-04	1.87E+02	1.00E-01	1.92E-02	1.09E-01	2.32E-01	5.23E+01	4.09E-01	4.01E+01	5.79E-03
BCEOT-E22-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	4.03E+02	2.32E+00	NA	NA	NA	NA	5.36E-04	3.56E+02	1.91E-01	1.92E-02	1.09E-01	4.42E-01	5.23E+01	4.09E-01	4.01E+01	1.10E-02
BCEOT-W22-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	2.22E+03	1.28E+01	NA	NA	NA	NA	5.36E-04	1.96E+03	1.05E+00	1.92E-02	1.09E-01	2.43E+00	5.23E+01	4.09E-01	4.01E+01	6.06E-02
BCEOT-E23-15 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	1.06E+02	6.12E-01	NA	NA	NA	NA	5.36E-04	9.39E+01	5.03E-02	1.92E-02	1.09E-01	1.17E-01	5.23E+01	4.09E-01	4.01E+01	2.91E-03
BCEOT-W23-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	1.08E+03	6.22E+00	NA	NA	NA	NA	5.36E-04	9.54E+02	5.11E-01	1.92E-02	1.09E-01	1.19E+00	5.23E+01	4.09E-01	4.01E+01	2.96E-02
BCEOT-E24-12.5 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-W24-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	6.71E+02	3.87E+00	NA	NA	NA	NA	5.36E-04	5.93E+02	3.18E-01	1.92E-02	1.09E-01	7.37E-01	5.23E+01	4.09E-01	4.01E+01	1.84E-02
BCEOT-E25-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	3.41E+02	1.97E+00	NA	NA	NA	NA	5.36E-04	3.02E+02	1.62E-01	1.92E-02	1.09E-01	3.75E-01	5.23E+01	4.09E-01	4.01E+01	9.34E-03

TABLE C-11C: COPPER DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 11 - BEARTRAP CREEK DISPERSED TAILINGS DEPOSITS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK TAILINGS DEPOSITS AND FLOSSIE LOUISE MINE WASTE PILE (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **4.982**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Mourning Dove (Herbivorous Birds - Terrestrial)																							
BCEOT-W25-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	6.87E+02	3.96E+00	NA	NA	NA	NA	5.36E-04	6.07E+02	3.25E-01	1.92E-02	1.09E-01	7.55E-01	5.23E+01	4.09E-01	4.01E+01	1.88E-02
BCEOT-E26-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	8.13E+01	4.68E-01	NA	NA	NA	NA	5.36E-04	7.18E+01	3.85E-02	1.92E-02	1.09E-01	8.92E-02	5.23E+01	4.09E-01	4.01E+01	2.22E-03
BCEOT-W26-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	2.56E+02	1.47E+00	NA	NA	NA	NA	5.36E-04	2.26E+02	1.21E-01	1.92E-02	1.09E-01	2.81E-01	5.23E+01	4.09E-01	4.01E+01	7.00E-03
BCEOT-W27-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	4.41E+02	2.54E+00	NA	NA	NA	NA	5.36E-04	3.90E+02	2.09E-01	1.92E-02	1.09E-01	4.84E-01	5.23E+01	4.09E-01	4.01E+01	1.21E-02
At Edge of Tailings Pile																						**Maximum HQ (Inside Tailings Pile)**	**8.35E-02**
BCEOT-E0-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	2.30E+02	1.33E+00	NA	NA	NA	NA	5.36E-04	2.03E+02	1.09E-01	1.92E-02	1.09E-01	2.53E-01	5.23E+01	4.09E-01	4.01E+01	6.30E-03
BCEOT-E1-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-E2-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	3.08E+02	1.77E+00	NA	NA	NA	NA	5.36E-04	2.72E+02	1.46E-01	1.92E-02	1.09E-01	3.38E-01	5.23E+01	4.09E-01	4.01E+01	8.42E-03
BCEOT-E3-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-E4-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-W4-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-E5-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	2.08E+02	1.20E+00	NA	NA	NA	NA	5.36E-04	1.84E+02	9.86E-02	1.92E-02	1.09E-01	2.29E-01	5.23E+01	4.09E-01	4.01E+01	5.70E-03
BCEOT-W5-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	1.01E+02	5.84E-01	NA	NA	NA	NA	5.36E-04	8.95E+01	4.80E-02	1.92E-02	1.09E-01	1.11E-01	5.23E+01	4.09E-01	4.01E+01	2.77E-03
BCEOT-E6-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	8.13E+01	4.68E-01	NA	NA	NA	NA	5.36E-04	7.18E+01	3.85E-02	1.92E-02	1.09E-01	8.93E-02	5.23E+01	4.09E-01	4.01E+01	2.22E-03
BCEOT-W6-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	1.06E+02	6.11E-01	NA	NA	NA	NA	5.36E-04	9.37E+01	5.02E-02	1.92E-02	1.09E-01	1.16E-01	5.23E+01	4.09E-01	4.01E+01	2.90E-03
BCEOT-E7-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	1.61E+02	9.25E-01	NA	NA	NA	NA	5.36E-04	1.42E+02	7.60E-02	1.92E-02	1.09E-01	1.76E-01	5.23E+01	4.09E-01	4.01E+01	4.39E-03
BCEOT-W7-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	8.23E+01	4.74E-01	NA	NA	NA	NA	5.36E-04	7.28E+01	3.90E-02	1.92E-02	1.09E-01	9.04E-02	5.23E+01	4.09E-01	4.01E+01	2.25E-03
BCEOT-W8-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-E9-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	8.42E+01	4.85E-01	NA	NA	NA	NA	5.36E-04	7.44E+01	3.99E-02	1.92E-02	1.09E-01	9.25E-02	5.23E+01	4.09E-01	4.01E+01	2.31E-03
BCEOT-W9-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-E10-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	4.98E+02	2.87E+00	NA	NA	NA	NA	5.36E-04	4.40E+02	2.36E-01	1.92E-02	1.09E-01	5.47E-01	5.23E+01	4.09E-01	4.01E+01	1.36E-02
BCEOT-W10-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-E11-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	1.13E+02	6.54E-01	NA	NA	NA	NA	5.36E-04	1.00E+02	5.37E-02	1.92E-02	1.09E-01	1.25E-01	5.23E+01	4.09E-01	4.01E+01	3.11E-03
BCEOT-W11-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	1.82E+02	1.05E+00	NA	NA	NA	NA	5.36E-04	1.61E+02	8.64E-02	1.92E-02	1.09E-01	2.00E-01	5.23E+01	4.09E-01	4.01E+01	4.99E-03
BCEOT-E12-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	2.29E+02	1.32E+00	NA	NA	NA	NA	5.36E-04	2.02E+02	1.08E-01	1.92E-02	1.09E-01	2.52E-01	5.23E+01	4.09E-01	4.01E+01	6.27E-03
BCEOT-W12-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-E13-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	1.19E+02	6.87E-01	NA	NA	NA	NA	5.36E-04	1.05E+02	5.65E-02	1.92E-02	1.09E-01	1.31E-01	5.23E+01	4.09E-01	4.01E+01	3.26E-03
BCEOT-W13-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-E14-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	1.22E+02	7.05E-01	NA	NA	NA	NA	5.36E-04	1.08E+02	5.79E-02	1.92E-02	1.09E-01	1.34E-01	5.23E+01	4.09E-01	4.01E+01	3.35E-03
BCEOT-W14-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	1.16E+02	6.69E-01	NA	NA	NA	NA	5.36E-04	1.03E+02	5.50E-02	1.92E-02	1.09E-01	1.28E-01	5.23E+01	4.09E-01	4.01E+01	3.18E-03
BCEOT-E15-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	1.79E+02	1.03E+00	NA	NA	NA	NA	5.36E-04	1.58E+02	8.47E-02	1.92E-02	1.09E-01	1.96E-01	5.23E+01	4.09E-01	4.01E+01	4.89E-03
BCEOT-W15-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	1.81E+02	1.04E+00	NA	NA	NA	NA	5.36E-04	1.60E+02	8.55E-02	1.92E-02	1.09E-01	1.98E-01	5.23E+01	4.09E-01	4.01E+01	4.94E-03
BCEOT-E16-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	1.22E+02	7.01E-01	NA	NA	NA	NA	5.36E-04	1.08E+02	5.76E-02	1.92E-02	1.09E-01	1.34E-01	5.23E+01	4.09E-01	4.01E+01	3.33E-03
BCEOT-W16-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-E17-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	2.16E+02	1.24E+00	NA	NA	NA	NA	5.36E-04	1.91E+02	1.02E-01	1.92E-02	1.09E-01	2.37E-01	5.23E+01	4.09E-01	4.01E+01	5.90E-03
BCEOT-W17-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	1.28E+02	7.36E-01	NA	NA	NA	NA	5.36E-04	1.13E+02	6.05E-02	1.92E-02	1.09E-01	1.40E-01	5.23E+01	4.09E-01	4.01E+01	3.50E-03
BCEOT-E18-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	1.31E+02	7.54E-01	NA	NA	NA	NA	5.36E-04	1.16E+02	6.19E-02	1.92E-02	1.09E-01	1.44E-01	5.23E+01	4.09E-01	4.01E+01	3.58E-03
BCEOT-W18-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	9.38E+01	5.40E-01	NA	NA	NA	NA	5.36E-04	8.29E+01	4.44E-02	1.92E-02	1.09E-01	1.03E-01	5.23E+01	4.09E-01	4.01E+01	2.57E-03
BCEOT-E19-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	7.38E+01	4.25E-01	NA	NA	NA	NA	5.36E-04	6.52E+01	3.49E-02	1.92E-02	1.09E-01	8.11E-02	5.23E+01	4.09E-01	4.01E+01	2.02E-03
BCEOT-W19-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	7.36E+01	4.24E-01	NA	NA	NA	NA	5.36E-04	6.51E+01	3.49E-02	1.92E-02	1.09E-01	8.09E-02	5.23E+01	4.09E-01	4.01E+01	2.01E-03
BCEOT-E20-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-W20-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	7.42E+01	4.27E-01	NA	NA	NA	NA	5.36E-04	6.56E+01	3.51E-02	1.92E-02	1.09E-01	8.15E-02	5.23E+01	4.09E-01	4.01E+01	2.03E-03
BCEOT-E21-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	1.92E+02	1.10E+00	NA	NA	NA	NA	5.36E-04	1.69E+02	9.07E-02	1.92E-02	1.09E-01	2.10E-01	5.23E+01	4.09E-01	4.01E+01	5.24E-03
BCEOT-W21-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	1.46E+02	8.44E-01	NA	NA	NA	NA	5.36E-04	1.29E+02	6.93E-02	1.92E-02	1.09E-01	1.61E-01	5.23E+01	4.09E-01	4.01E+01	4.01E-03
BCEOT-E22-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	8.26E+01	4.76E-01	NA	NA	NA	NA	5.36E-04	7.30E+01	3.91E-02	1.92E-02	1.09E-01	9.07E-02	5.23E+01	4.09E-01	4.01E+01	2.26E-03
BCEOT-W22-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	1.95E+02	1.12E+00	NA	NA	NA	NA	5.36E-04	1.72E+02	9.24E-02	1.92E-02	1.09E-01	2.14E-01	5.23E+01	4.09E-01	4.01E+01	5.34E-03
BCEOT-E23-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-W23-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	1.21E+02	6.98E-01	NA	NA	NA	NA	5.36E-04	1.07E+02	5.74E-02	1.92E-02	1.09E-01	1.33E-01	5.23E+01	4.09E-01	4.01E+01	3.32E-03
BCEOT-E24-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-W24-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	1.64E+02	9.44E-01	NA	NA	NA	NA	5.36E-04	1.45E+02	7.76E-02	1.92E-02	1.09E-01	1.80E-01	5.23E+01	4.09E-01	4.01E+01	4.48E-03
BCEOT-E25-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB

TABLE C-11C: COPPER DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 11 - BEARTRAP CREEK DISPERSED TAILINGS DEPOSITS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK TAILINGS DEPOSITS AND FLOSSIE LOUISE MINE WASTE PILE (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **4.982**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Mourning Dove (Herbivorous Birds - Terrestrial)																							
BCEOT-W25-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	1.70E+02	9.81E-01	NA	NA	NA	NA	5.36E-04	1.51E+02	8.06E-02	1.92E-02	1.09E-01	1.87E-01	5.23E+01	4.09E-01	4.01E+01	4.66E-03
BCEOT-E26-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	8.51E+01	4.90E-01	NA	NA	NA	NA	5.36E-04	7.52E+01	4.03E-02	1.92E-02	1.09E-01	9.35E-02	5.23E+01	4.09E-01	4.01E+01	2.33E-03
BCEOT-W26-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	8.03E+01	4.63E-01	NA	NA	NA	NA	5.36E-04	7.10E+01	3.80E-02	1.92E-02	1.09E-01	8.82E-02	5.23E+01	4.09E-01	4.01E+01	2.20E-03
BCEOT-W27-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	1.11E+02	6.39E-01	NA	NA	NA	NA	5.36E-04	9.80E+01	5.25E-02	1.92E-02	1.09E-01	1.22E-01	5.23E+01	4.09E-01	4.01E+01	3.04E-03
Outside Tailings Piles																						**Maximum HQ (Edge of Tailings Pile)**	**1.36E-02**
BCEOT-E0+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	9.86E+01	5.68E-01	NA	NA	NA	NA	5.36E-04	8.71E+01	4.67E-02	1.92E-02	1.09E-01	1.08E-01	5.23E+01	4.09E-01	4.01E+01	2.70E-03
BCEOT-E1+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	2.07E+02	1.19E+00	NA	NA	NA	NA	5.36E-04	1.83E+02	9.79E-02	1.92E-02	1.09E-01	2.27E-01	5.23E+01	4.09E-01	4.01E+01	5.66E-03
BCEOT-E2+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	1.08E+02	6.23E-01	NA	NA	NA	NA	5.36E-04	9.55E+01	5.12E-02	1.92E-02	1.09E-01	1.19E-01	5.23E+01	4.09E-01	4.01E+01	2.96E-03
BCEOT-E3+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	#VALUE!	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-E4+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	1.21E+02	6.99E-01	NA	NA	NA	NA	5.36E-04	1.07E+02	5.74E-02	1.92E-02	1.09E-01	1.33E-01	5.23E+01	4.09E-01	4.01E+01	3.32E-03
BCEOT-W4+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	1.19E+02	6.84E-01	NA	NA	NA	NA	5.36E-04	1.05E+02	5.62E-02	1.92E-02	1.09E-01	1.30E-01	5.23E+01	4.09E-01	4.01E+01	3.25E-03
BCEOT-E5+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	1.44E+02	8.27E-01	NA	NA	NA	NA	5.36E-04	1.27E+02	6.79E-02	1.92E-02	1.09E-01	1.58E-01	5.23E+01	4.09E-01	4.01E+01	3.93E-03
BCEOT-W5+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	9.31E+01	5.37E-01	NA	NA	NA	NA	5.36E-04	8.23E+01	4.41E-02	1.92E-02	1.09E-01	1.02E-01	5.23E+01	4.09E-01	4.01E+01	2.55E-03
BCEOT-E6+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	8.96E+01	5.16E-01	NA	NA	NA	NA	5.36E-04	7.92E+01	4.24E-02	1.92E-02	1.09E-01	9.84E-02	5.23E+01	4.09E-01	4.01E+01	2.45E-03
BCEOT-W6+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	7.48E+01	4.31E-01	NA	NA	NA	NA	5.36E-04	6.61E+01	3.54E-02	1.92E-02	1.09E-01	8.22E-02	5.23E+01	4.09E-01	4.01E+01	2.05E-03
BCEOT-E7+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	1.22E+02	7.01E-01	NA	NA	NA	NA	5.36E-04	1.08E+02	5.76E-02	1.92E-02	1.09E-01	1.34E-01	5.23E+01	4.09E-01	4.01E+01	3.33E-03
BCEOT-W7+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
FLWA-101 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	7.99E+01	4.60E-01	NA	NA	NA	NA	5.36E-04	7.06E+01	3.78E-02	1.92E-02	1.09E-01	8.77E-02	5.23E+01	4.09E-01	4.01E+01	2.19E-03
BCEOT-W8+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	8.53E+01	4.91E-01	NA	NA	NA	NA	5.36E-04	7.54E+01	4.04E-02	1.92E-02	1.09E-01	9.37E-02	5.23E+01	4.09E-01	4.01E+01	2.33E-03
BCEOT-E9+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	1.68E+02	9.70E-01	NA	NA	NA	NA	5.36E-04	1.49E+02	7.97E-02	1.92E-02	1.09E-01	1.85E-01	5.23E+01	4.09E-01	4.01E+01	4.61E-03
BCEOT-W9+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-E10+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	4.37E+02	2.52E+00	NA	NA	NA	NA	5.36E-04	3.87E+02	2.07E-01	1.92E-02	1.09E-01	4.80E-01	5.23E+01	4.09E-01	4.01E+01	1.20E-02
BCEOT-W10+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-E11+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	1.18E+02	6.80E-01	NA	NA	NA	NA	5.36E-04	1.04E+02	5.59E-02	1.92E-02	1.09E-01	1.30E-01	5.23E+01	4.09E-01	4.01E+01	3.23E-03
BCEOT-W11+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	7.83E+01	4.51E-01	NA	NA	NA	NA	5.36E-04	6.92E+01	3.71E-02	1.92E-02	1.09E-01	8.59E-02	5.23E+01	4.09E-01	4.01E+01	2.14E-03
BCEOT-E12+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	2.66E+02	1.53E+00	NA	NA	NA	NA	5.36E-04	2.35E+02	1.26E-01	1.92E-02	1.09E-01	2.93E-01	5.23E+01	4.09E-01	4.01E+01	7.29E-03
BCEOT-W12+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-E13+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	2.64E+02	1.52E+00	NA	NA	NA	NA	5.36E-04	2.34E+02	1.25E-01	1.92E-02	1.09E-01	2.90E-01	5.23E+01	4.09E-01	4.01E+01	7.24E-03
BCEOT-E14+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	1.41E+02	8.13E-01	NA	NA	NA	NA	5.36E-04	1.25E+02	6.68E-02	1.92E-02	1.09E-01	1.55E-01	5.23E+01	4.09E-01	4.01E+01	3.86E-03
BCEOT-W14+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-E15+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	2.24E+02	1.29E+00	NA	NA	NA	NA	5.36E-04	1.98E+02	1.06E-01	1.92E-02	1.09E-01	2.46E-01	5.23E+01	4.09E-01	4.01E+01	6.14E-03
BCEOT-W15+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	1.55E+02	8.96E-01	NA	NA	NA	NA	5.36E-04	1.37E+02	7.36E-02	1.92E-02	1.09E-01	1.71E-01	5.23E+01	4.09E-01	4.01E+01	4.26E-03
BCEOT-E16+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	9.37E+01	5.40E-01	NA	NA	NA	NA	5.36E-04	8.28E+01	4.43E-02	1.92E-02	1.09E-01	1.03E-01	5.23E+01	4.09E-01	4.01E+01	2.56E-03
BCEOT-W16+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-E17+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	1.40E+02	8.07E-01	NA	NA	NA	NA	5.36E-04	1.24E+02	6.63E-02	1.92E-02	1.09E-01	1.54E-01	5.23E+01	4.09E-01	4.01E+01	3.83E-03
BCEOT-W17+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	8.47E+01	4.88E-01	NA	NA	NA	NA	5.36E-04	7.49E+01	4.01E-02	1.92E-02	1.09E-01	9.30E-02	5.23E+01	4.09E-01	4.01E+01	2.32E-03
BCEOT-E18+12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	2.47E+03	1.42E+01	NA	NA	NA	NA	5.36E-04	2.18E+03	1.17E+00	1.92E-02	1.09E-01	2.71E+00	5.23E+01	4.09E-01	4.01E+01	6.75E-02
BCEOT-E18+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	1.26E+02	7.28E-01	NA	NA	NA	NA	5.36E-04	1.12E+02	5.98E-02	1.92E-02	1.09E-01	1.39E-01	5.23E+01	4.09E-01	4.01E+01	3.46E-03
BCEOT-W18+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	8.02E+01	4.62E-01	NA	NA	NA	NA	5.36E-04	7.09E+01	3.80E-02	1.92E-02	1.09E-01	8.81E-02	5.23E+01	4.09E-01	4.01E+01	2.20E-03
BCEOT-E19+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	1.10E+02	6.35E-01	NA	NA	NA	NA	5.36E-04	9.75E+01	5.22E-02	1.92E-02	1.09E-01	1.21E-01	5.23E+01	4.09E-01	4.01E+01	3.02E-03
BCEOT-W19+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-E20+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-W20+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	1.19E+02	6.85E-01	NA	NA	NA	NA	5.36E-04	1.05E+02	5.63E-02	1.92E-02	1.09E-01	1.31E-01	5.23E+01	4.09E-01	4.01E+01	3.26E-03
BCEOT-E21+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-W21+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	1.76E+02	1.01E+00	NA	NA	NA	NA	5.36E-04	1.56E+02	8.34E-02	1.92E-02	1.09E-01	1.93E-01	5.23E+01	4.09E-01	4.01E+01	4.82E-03
BCEOT-E22+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	1.45E+02	8.35E-01	NA	NA	NA	NA	5.36E-04	1.28E+02	6.86E-02	1.92E-02	1.09E-01	1.59E-01	5.23E+01	4.09E-01	4.01E+01	3.96E-03
BCEOT-E22+70 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-W22+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	1.50E+02	8.66E-01	NA	NA	NA	NA	5.36E-04	1.33E+02	7.11E-02	1.92E-02	1.09E-01	1.65E-01	5.23E+01	4.09E-01	4.01E+01	4.11E-03
BCEOT-E23+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-W23+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	1.52E+02	8.76E-01	NA	NA	NA	NA	5.36E-04	1.34E+02	7.20E-02	1.92E-02	1.09E-01	1.67E-01	5.23E+01	4.09E-01	4.01E+01	4.16E-03

TABLE C-11C: COPPER DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 11 - BEARTRAP CREEK DISPERSED TAILINGS DEPOSITS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK TAILINGS DEPOSITS AND FLOSSIE LOUISE MINE WASTE PILE (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **4.982**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Mourning Dove (Herbivorous Birds - Terrestrial)																							
BCEOT-E24+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-W24+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	1.33E+02	7.67E-01	NA	NA	NA	NA	5.36E-04	1.18E+02	6.30E-02	1.92E-02	1.09E-01	1.46E-01	5.23E+01	4.09E-01	4.01E+01	3.64E-03
BCEOT-E25+20 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	9.23E+01	5.32E-01	NA	NA	NA	NA	5.36E-04	8.15E+01	4.37E-02	1.92E-02	1.09E-01	1.01E-01	5.23E+01	4.09E-01	4.01E+01	2.53E-03
BCEOT-W25+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	7.52E+01	4.33E-01	NA	NA	NA	NA	5.36E-04	6.65E+01	3.56E-02	1.92E-02	1.09E-01	8.26E-02	5.23E+01	4.09E-01	4.01E+01	2.06E-03
BCEOT-E26+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	1.43E+02	8.22E-01	NA	NA	NA	NA	5.36E-04	1.26E+02	6.76E-02	1.92E-02	1.09E-01	1.57E-01	5.23E+01	4.09E-01	4.01E+01	3.90E-03
BCEOT-W26+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	3.34E+02	1.92E+00	NA	NA	NA	NA	5.36E-04	2.95E+02	1.58E-01	1.92E-02	1.09E-01	3.67E-01	5.23E+01	4.09E-01	4.01E+01	9.14E-03
BCEOT-W27+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.13E+00	1.04E+02	5.99E-01	NA	NA	NA	NA	5.36E-04	9.19E+01	4.92E-02	1.92E-02	1.09E-01	1.14E-01	5.23E+01	4.09E-01	4.01E+01	2.85E-03
																						Maximum HQ (Outside Tailings Pile)	**6.75E-02**
Red-Tailed Hawk (Carnivorous Birds - Terrestrial)																							
Reference Sites																							
ACBG-1 (0-6")	9.00E-02	9.00E-02	6.61E-01	5.26E+01	4.73E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	7.96E+01	4.08E-01	7.15E-03	1.13E+00	3.24E-02	5.23E+01	4.09E-01	6.41E+01	5.06E-04
ACBG-2 (0-6")	9.00E-02	9.00E-02	6.61E-01	1.65E+02	1.49E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.50E+02	1.28E+00	7.15E-03	1.13E+00	1.02E-01	5.23E+01	4.09E-01	6.41E+01	1.59E-03
BCBG-201 (0-6")	9.00E-02	9.00E-02	6.61E-01	4.15E+01	3.73E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	6.28E+01	3.22E-01	7.15E-03	1.13E+00	2.56E-02	5.23E+01	4.09E-01	6.41E+01	3.99E-04
Inside Tailings Pile																						**Minimum HQ (Reference Sites)**	**3.99E-04**
BCEOT-E0-12.5 (0-6")	9.00E-02	9.00E-02	1.01E+00	1.23E+02	1.10E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.21E+02	6.23E-01	7.15E-03	1.13E+00	7.35E-02	5.23E+01	4.09E-01	6.41E+01	1.15E-03
BCEOT-E1-12.5 (0-6")	9.00E-02	9.00E-02	1.01E+00	1.64E+02	1.48E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.63E+02	8.33E-01	7.15E-03	1.13E+00	9.84E-02	5.23E+01	4.09E-01	6.41E+01	1.54E-03
BCEOT-E2-8 (0-6")	9.00E-02	9.00E-02	1.01E+00	1.04E+02	9.35E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.03E+02	5.28E-01	7.15E-03	1.13E+00	6.23E-02	5.23E+01	4.09E-01	6.41E+01	9.72E-04
BCEOT-E3-8 (0-6")	9.00E-02	9.00E-02	1.01E+00	1.54E+02	1.38E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.52E+02	7.80E-01	7.15E-03	1.13E+00	9.21E-02	5.23E+01	4.09E-01	6.41E+01	1.44E-03
BCEOT-E4-12.5 (0-6")	9.00E-02	9.00E-02	1.01E+00	1.01E+02	9.09E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.00E+02	5.13E-01	7.15E-03	1.13E+00	6.05E-02	5.23E+01	4.09E-01	6.41E+01	9.45E-04
BCEOT-W4-12.5 (0-6")	9.00E-02	9.00E-02	1.01E+00	1.41E+02	1.27E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.39E+02	7.15E-01	7.15E-03	1.13E+00	8.44E-02	5.23E+01	4.09E-01	6.41E+01	1.32E-03
BCEOT-E5-25 (0-6")	9.00E-02	9.00E-02	1.01E+00	7.72E+01	6.95E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	7.64E+01	3.92E-01	7.15E-03	1.13E+00	4.63E-02	5.23E+01	4.09E-01	6.41E+01	7.22E-04
BCEOT-W5-12.5 (0-6")	9.00E-02	9.00E-02	1.01E+00	4.07E+02	3.66E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.03E+02	2.07E+00	7.15E-03	1.13E+00	2.44E-01	5.23E+01	4.09E-01	6.41E+01	3.81E-03
BCEOT-E6-12.5 (0-6")	9.00E-02	9.00E-02	1.01E+00	1.28E+02	1.15E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.26E+02	6.48E-01	7.15E-03	1.13E+00	7.65E-02	5.23E+01	4.09E-01	6.41E+01	1.19E-03
BCEOT-W6-12.5 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-E7-12.5 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-W7-12.5 (0-6")	9.00E-02	9.00E-02	1.01E+00	1.76E+02	1.59E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.75E+02	8.95E-01	7.15E-03	1.13E+00	1.06E-01	5.23E+01	4.09E-01	6.41E+01	1.65E-03
BCEOT-W8-12.5 (0-6")	9.00E-02	9.00E-02	1.01E+00	2.28E+02	2.05E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.25E+02	1.16E+00	7.15E-03	1.13E+00	1.36E-01	5.23E+01	4.09E-01	6.41E+01	2.13E-03
BCEOT-E9-12.5 (0-6")	9.00E-02	9.00E-02	1.01E+00	1.62E+02	1.46E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.60E+02	8.22E-01	7.15E-03	1.13E+00	9.70E-02	5.23E+01	4.09E-01	6.41E+01	1.51E-03
BCEOT-W9-12.5 (0-6")	9.00E-02	9.00E-02	1.01E+00	3.90E+02	3.51E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.86E+02	1.98E+00	7.15E-03	1.13E+00	2.34E-01	5.23E+01	4.09E-01	6.41E+01	3.65E-03
BCEOT-E10-12.5 (0-6")	9.00E-02	9.00E-02	1.01E+00	4.22E+02	3.80E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.18E+02	2.14E+00	7.15E-03	1.13E+00	2.53E-01	5.23E+01	4.09E-01	6.41E+01	3.95E-03
BCEOT-W10-12.5 (0-6")	9.00E-02	9.00E-02	1.01E+00	1.38E+02	1.24E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.36E+02	6.98E-01	7.15E-03	1.13E+00	8.24E-02	5.23E+01	4.09E-01	6.41E+01	1.29E-03
BCEOT-E11-12.5 (0-6")	9.00E-02	9.00E-02	1.01E+00	1.04E+02	9.38E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.03E+02	5.29E-01	7.15E-03	1.13E+00	6.25E-02	5.23E+01	4.09E-01	6.41E+01	9.75E-04
BCEOT-W11-12.5 (0-6")	9.00E-02	9.00E-02	1.01E+00	4.30E+02	3.87E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.26E+02	2.18E+00	7.15E-03	1.13E+00	2.58E-01	5.23E+01	4.09E-01	6.41E+01	4.02E-03
BCEOT-E12-12.5 (0-6")	9.00E-02	9.00E-02	1.01E+00	2.04E+02	1.83E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.02E+02	1.04E+00	7.15E-03	1.13E+00	1.22E-01	5.23E+01	4.09E-01	6.41E+01	1.91E-03
BCEOT-W12-12.5 (0-6")	9.00E-02	9.00E-02	1.01E+00	2.91E+02	2.62E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.89E+02	1.48E+00	7.15E-03	1.13E+00	1.75E-01	5.23E+01	4.09E-01	6.41E+01	2.73E-03
BCEOT-E13-12.5 (0-6")	9.00E-02	9.00E-02	1.01E+00	1.56E+02	1.41E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.55E+02	7.93E-01	7.15E-03	1.13E+00	9.36E-02	5.23E+01	4.09E-01	6.41E+01	1.46E-03
BCEOT-W13-12.5 (0-6")	9.00E-02	9.00E-02	1.01E+00	1.74E+02	1.57E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.73E+02	8.85E-01	7.15E-03	1.13E+00	1.04E-01	5.23E+01	4.09E-01	6.41E+01	1.63E-03
BCEOT-W13-25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-W14-12.5 (0-6")	9.00E-02	9.00E-02	1.01E+00	8.49E+01	7.63E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	8.40E+01	4.31E-01	7.15E-03	1.13E+00	5.08E-02	5.23E+01	4.09E-01	6.41E+01	7.94E-04
BCEOT-E15-8 (0-6")	9.00E-02	9.00E-02	1.01E+00	2.02E+02	1.81E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.00E+02	1.02E+00	7.15E-03	1.13E+00	1.21E-01	5.23E+01	4.09E-01	6.41E+01	1.88E-03
BCEOT-W15-12.5 (0-6")	9.00E-02	9.00E-02	1.01E+00	2.10E+02	1.89E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.08E+02	1.07E+00	7.15E-03	1.13E+00	1.26E-01	5.23E+01	4.09E-01	6.41E+01	1.97E-03
BCEOT-E16-12.5 (0-6")	9.00E-02	9.00E-02	1.01E+00	4.90E+02	4.40E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.85E+02	2.48E+00	7.15E-03	1.13E+00	2.93E-01	5.23E+01	4.09E-01	6.41E+01	4.58E-03
BCEOT-W16-12.5 (0-6")	9.00E-02	9.00E-02	1.01E+00	5.63E+02	5.06E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.57E+02	2.86E+00	7.15E-03	1.13E+00	3.37E-01	5.23E+01	4.09E-01	6.41E+01	5.26E-03
BCEOT-E17-12.5 (0-6")	9.00E-02	9.00E-02	1.01E+00	2.72E+03	2.45E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.69E+03	1.38E+01	7.15E-03	1.13E+00	1.63E+00	5.23E+01	4.09E-01	6.41E+01	2.55E-02
BCEOT-W17-12.5 (0-6")	9.00E-02	9.00E-02	1.01E+00	1.19E+02	1.07E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.17E+02	6.02E-01	7.15E-03	1.13E+00	7.10E-02	5.23E+01	4.09E-01	6.41E+01	1.11E-03
BCEOT-W18-12.5 (0-6")	9.00E-02	9.00E-02	1.01E+00	3.00E+02	2.70E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.97E+02	1.52E+00	7.15E-03	1.13E+00	1.80E-01	5.23E+01	4.09E-01	6.41E+01	2.80E-03
BCEOT-E19-12.5 (0-6")	9.00E-02	9.00E-02	1.01E+00	2.20E+02	1.98E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.18E+02	1.12E+00	7.15E-03	1.13E+00	1.32E-01	5.23E+01	4.09E-01	6.41E+01	2.06E-03
BCEOT-W19-12.5 (0-6")	9.00E-02	9.00E-02	1.01E+00	8.30E+01	7.47E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	8.22E+01	4.21E-01	7.15E-03	1.13E+00	4.98E-02	5.23E+01	4.09E-01	6.41E+01	7.76E-04
BCEOT-E20-12.5 (0-6")	9.00E-02	9.00E-02	1.01E+00	2.39E+02	2.15E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.37E+02	1.21E+00	7.15E-03	1.13E+00	1.43E-01	5.23E+01	4.09E-01	6.41E+01	2.23E-03
BCEOT-W20-12.5 (0-6")	9.00E-02	9.00E-02	1.01E+00	7.16E+02	6.44E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	7.09E+02	3.63E+00	7.15E-03	1.13E+00	4.29E-01	5.23E+01	4.09E-01	6.41E+01	6.70E-03
BCEOT-E21-12.5 (0-6")	9.00E-02	9.00E-02	1.01E+00	2.02E+02	1.82E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.00E+02	1.03E+00	7.15E-03	1.13E+00	1.21E-01	5.23E+01	4.09E-01	6.41E+01	1.89E-03
BCEOT-W21-12.5 (0-6")	9.00E-02	9.00E-02	1.01E+00	1.89E+02	1.70E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.87E+02	9.58E-01	7.15E-03	1.13E+00	1.13E-01	5.23E+01	4.09E-01	6.41E+01	1.77E-03
BCEOT-E22-12.5 (0-6")	9.00E-02	9.00E-02	1.01E+00	3.59E+02	3.23E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.56E+02	1.82E+00	7.15E-03	1.13E+00	2.15E-01	5.23E+01	4.09E-01	6.41E+01	3.36E-03
BCEOT-W22-12.5 (0-6")	9.00E-02	9.00E-02	1.01E+00	1.98E+03	1.78E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.96E+03	1.00E+01	7.15E-03	1.13E+00	1.19E+00	5.23E+01	4.09E-01	6.41E+01	1.85E-02

TABLE C-11C: COPPER DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 11 - BEARTRAP CREEK DISPERSED TAILINGS DEPOSITS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK TAILINGS DEPOSITS AND FLOSSIE LOUISE MINE WASTE PILE (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **4.982**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Red-Tailed Hawk (Carnivorous Birds - Terrestrial)																							
BCEOT-E23-15 (0-6")	9.00E-02	9.00E-02	1.01E+00	9.49E+01	8.54E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	9.39E+01	4.82E-01	7.15E-03	1.13E+00	5.69E-02	5.23E+01	4.09E-01	6.41E+01	8.87E-04
BCEOT-W23-12.5 (0-6")	9.00E-02	9.00E-02	1.01E+00	9.64E+02	8.67E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	9.54E+02	4.89E+00	7.15E-03	1.13E+00	5.78E-01	5.23E+01	4.09E-01	6.41E+01	9.02E-03
BCEOT-E24-12.5 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-W24-12.5 (0-6")	9.00E-02	9.00E-02	1.01E+00	5.99E+02	5.39E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.93E+02	3.04E+00	7.15E-03	1.13E+00	3.59E-01	5.23E+01	4.09E-01	6.41E+01	5.60E-03
BCEOT-E25-12.5 (0-6")	9.00E-02	9.00E-02	1.01E+00	3.05E+02	2.74E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.02E+02	1.55E+00	7.15E-03	1.13E+00	1.83E-01	5.23E+01	4.09E-01	6.41E+01	2.85E-03
BCEOT-W25-12.5 (0-6")	9.00E-02	9.00E-02	1.01E+00	6.13E+02	5.52E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	6.07E+02	3.11E+00	7.15E-03	1.13E+00	3.68E-01	5.23E+01	4.09E-01	6.41E+01	5.74E-03
BCEOT-E26-12.5 (0-6")	9.00E-02	9.00E-02	1.01E+00	7.25E+01	6.53E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	7.18E+01	3.68E-01	7.15E-03	1.13E+00	4.35E-02	5.23E+01	4.09E-01	6.41E+01	6.78E-04
BCEOT-W26-12.5 (0-6")	9.00E-02	9.00E-02	1.01E+00	2.28E+02	2.05E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.26E+02	1.16E+00	7.15E-03	1.13E+00	1.37E-01	5.23E+01	4.09E-01	6.41E+01	2.13E-03
BCEOT-W27-12.5 (0-6")	9.00E-02	9.00E-02	1.01E+00	3.94E+02	3.54E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.90E+02	2.00E+00	7.15E-03	1.13E+00	2.36E-01	5.23E+01	4.09E-01	6.41E+01	3.68E-03
At Edge of Tailings Pile																						**Maximum HQ (Inside Tailings Pile)**	**2.55E-02**
BCEOT-E0-0 (0-6")	9.00E-02	9.00E-02	1.01E+00	2.05E+02	1.85E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.03E+02	1.04E+00	7.15E-03	1.13E+00	1.23E-01	5.23E+01	4.09E-01	6.41E+01	1.92E-03
BCEOT-E1-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-E2-0 (0-6")	9.00E-02	9.00E-02	1.01E+00	2.75E+02	2.47E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.72E+02	1.39E+00	7.15E-03	1.13E+00	1.65E-01	5.23E+01	4.09E-01	6.41E+01	2.57E-03
BCEOT-E3-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-E4-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-W4-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-E5-0 (0-6")	9.00E-02	9.00E-02	1.01E+00	1.86E+02	1.67E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.84E+02	9.44E-01	7.15E-03	1.13E+00	1.11E-01	5.23E+01	4.09E-01	6.41E+01	1.74E-03
BCEOT-W5-0 (0-6")	9.00E-02	9.00E-02	1.01E+00	9.04E+01	8.14E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	8.95E+01	4.59E-01	7.15E-03	1.13E+00	5.42E-02	5.23E+01	4.09E-01	6.41E+01	8.46E-04
BCEOT-E6-0 (0-6")	9.00E-02	9.00E-02	1.01E+00	7.26E+01	6.53E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	7.18E+01	3.68E-01	7.15E-03	1.13E+00	4.35E-02	5.23E+01	4.09E-01	6.41E+01	6.79E-04
BCEOT-W6-0 (0-6")	9.00E-02	9.00E-02	1.01E+00	9.47E+01	8.51E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	9.37E+01	4.80E-01	7.15E-03	1.13E+00	5.67E-02	5.23E+01	4.09E-01	6.41E+01	8.85E-04
BCEOT-E7-0 (0-6")	9.00E-02	9.00E-02	1.01E+00	1.43E+02	1.29E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.42E+02	7.27E-01	7.15E-03	1.13E+00	8.59E-02	5.23E+01	4.09E-01	6.41E+01	1.34E-03
BCEOT-W7-0 (0-6")	9.00E-02	9.00E-02	1.01E+00	7.35E+01	6.61E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	7.28E+01	3.73E-01	7.15E-03	1.13E+00	4.40E-02	5.23E+01	4.09E-01	6.41E+01	6.87E-04
BCEOT-W8-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-E9-0 (0-6")	9.00E-02	9.00E-02	1.01E+00	7.52E+01	6.76E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	7.44E+01	3.82E-01	7.15E-03	1.13E+00	4.51E-02	5.23E+01	4.09E-01	6.41E+01	7.03E-04
BCEOT-W9-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-E10-0 (0-6")	9.00E-02	9.00E-02	1.01E+00	4.45E+02	4.00E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.40E+02	2.26E+00	7.15E-03	1.13E+00	2.67E-01	5.23E+01	4.09E-01	6.41E+01	4.16E-03
BCEOT-W10-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-E11-0 (0-6")	9.00E-02	9.00E-02	1.01E+00	1.01E+02	9.11E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.00E+02	5.14E-01	7.15E-03	1.13E+00	6.07E-02	5.23E+01	4.09E-01	6.41E+01	9.47E-04
BCEOT-W11-0 (0-6")	9.00E-02	9.00E-02	1.01E+00	1.63E+02	1.47E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.61E+02	8.27E-01	7.15E-03	1.13E+00	9.76E-02	5.23E+01	4.09E-01	6.41E+01	1.52E-03
BCEOT-E12-0 (0-6")	9.00E-02	9.00E-02	1.01E+00	2.04E+02	1.84E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.02E+02	1.04E+00	7.15E-03	1.13E+00	1.23E-01	5.23E+01	4.09E-01	6.41E+01	1.91E-03
BCEOT-W12-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-E13-0 (0-6")	9.00E-02	9.00E-02	1.01E+00	1.06E+02	9.58E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.05E+02	5.40E-01	7.15E-03	1.13E+00	6.38E-02	5.23E+01	4.09E-01	6.41E+01	9.96E-04
BCEOT-W13-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-E14-0 (0-6")	9.00E-02	9.00E-02	1.01E+00	1.09E+02	9.83E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.08E+02	5.54E-01	7.15E-03	1.13E+00	6.55E-02	5.23E+01	4.09E-01	6.41E+01	1.02E-03
BCEOT-W14-0 (0-6")	9.00E-02	9.00E-02	1.01E+00	1.04E+02	9.33E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.03E+02	5.26E-01	7.15E-03	1.13E+00	6.21E-02	5.23E+01	4.09E-01	6.41E+01	9.70E-04
BCEOT-E15-0 (0-6")	9.00E-02	9.00E-02	1.01E+00	1.60E+02	1.44E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.58E+02	8.10E-01	7.15E-03	1.13E+00	9.56E-02	5.23E+01	4.09E-01	6.41E+01	1.49E-03
BCEOT-W15-0 (0-6")	9.00E-02	9.00E-02	1.01E+00	1.61E+02	1.45E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.60E+02	8.18E-01	7.15E-03	1.13E+00	9.66E-02	5.23E+01	4.09E-01	6.41E+01	1.51E-03
BCEOT-E16-0 (0-6")	9.00E-02	9.00E-02	1.01E+00	1.09E+02	9.77E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.08E+02	5.51E-01	7.15E-03	1.13E+00	6.51E-02	5.23E+01	4.09E-01	6.41E+01	1.02E-03
BCEOT-W16-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-E17-0 (0-6")	9.00E-02	9.00E-02	1.01E+00	1.93E+02	1.73E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.91E+02	9.77E-01	7.15E-03	1.13E+00	1.15E-01	5.23E+01	4.09E-01	6.41E+01	1.80E-03
BCEOT-W17-0 (0-6")	9.00E-02	9.00E-02	1.01E+00	1.14E+02	1.03E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.13E+02	5.79E-01	7.15E-03	1.13E+00	6.84E-02	5.23E+01	4.09E-01	6.41E+01	1.07E-03
BCEOT-E18-0 (0-6")	9.00E-02	9.00E-02	1.01E+00	1.17E+02	1.05E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.16E+02	5.93E-01	7.15E-03	1.13E+00	7.00E-02	5.23E+01	4.09E-01	6.41E+01	1.09E-03
BCEOT-W18-0 (0-6")	9.00E-02	9.00E-02	1.01E+00	8.37E+01	7.53E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	8.29E+01	4.25E-01	7.15E-03	1.13E+00	5.02E-02	5.23E+01	4.09E-01	6.41E+01	7.83E-04
BCEOT-E19-0 (0-6")	9.00E-02	9.00E-02	1.01E+00	6.59E+01	5.93E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	6.52E+01	3.34E-01	7.15E-03	1.13E+00	3.95E-02	5.23E+01	4.09E-01	6.41E+01	6.16E-04
BCEOT-W19-0 (0-6")	9.00E-02	9.00E-02	1.01E+00	6.57E+01	5.91E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	6.51E+01	3.34E-01	7.15E-03	1.13E+00	3.94E-02	5.23E+01	4.09E-01	6.41E+01	6.15E-04
BCEOT-E20-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-W20-0 (0-6")	9.00E-02	9.00E-02	1.01E+00	6.62E+01	5.96E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	6.56E+01	3.36E-01	7.15E-03	1.13E+00	3.97E-02	5.23E+01	4.09E-01	6.41E+01	6.19E-04
BCEOT-E21-0 (0-6")	9.00E-02	9.00E-02	1.01E+00	1.71E+02	1.54E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.69E+02	8.68E-01	7.15E-03	1.13E+00	1.03E-01	5.23E+01	4.09E-01	6.41E+01	1.60E-03
BCEOT-W21-0 (0-6")	9.00E-02	9.00E-02	1.01E+00	1.31E+02	1.18E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.29E+02	6.64E-01	7.15E-03	1.13E+00	7.83E-02	5.23E+01	4.09E-01	6.41E+01	1.22E-03
BCEOT-E22-0 (0-6")	9.00E-02	9.00E-02	1.01E+00	7.38E+01	6.64E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	7.30E+01	3.74E-01	7.15E-03	1.13E+00	4.42E-02	5.23E+01	4.09E-01	6.41E+01	6.90E-04
BCEOT-W22-0 (0-6")	9.00E-02	9.00E-02	1.01E+00	1.74E+02	1.57E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.72E+02	8.84E-01	7.15E-03	1.13E+00	1.04E-01	5.23E+01	4.09E-01	6.41E+01	1.63E-03
BCEOT-E23-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-W23-0 (0-6")	9.00E-02	9.00E-02	1.01E+00	1.08E+02	9.73E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.07E+02	5.49E-01	7.15E-03	1.13E+00	6.48E-02	5.23E+01	4.09E-01	6.41E+01	1.01E-03

TABLE C-11C: COPPER DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 11 - BEARTRAP CREEK DISPERSED TAILINGS DEPOSITS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK TAILINGS DEPOSITS AND FLOSSIE LOUISE MINE WASTE PILE (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **4.982**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Red-Tailed Hawk (Carnivorous Birds - Terrestrial)																							
BCEOT-E24-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-W24-0 (0-6")	9.00E-02	9.00E-02	1.01E+00	1.46E+02	1.32E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.45E+02	7.42E-01	7.15E-03	1.13E+00	8.76E-02	5.23E+01	4.09E-01	6.41E+01	1.37E-03
BCEOT-E25-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-W25-0 (0-6")	9.00E-02	9.00E-02	1.01E+00	1.52E+02	1.37E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.51E+02	7.72E-01	7.15E-03	1.13E+00	9.11E-02	5.23E+01	4.09E-01	6.41E+01	1.42E-03
BCEOT-E26-0 (0-6")	9.00E-02	9.00E-02	1.01E+00	7.60E+01	6.83E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	7.52E+01	3.86E-01	7.15E-03	1.13E+00	4.55E-02	5.23E+01	4.09E-01	6.41E+01	7.10E-04
BCEOT-W26-0 (0-6")	9.00E-02	9.00E-02	1.01E+00	7.17E+01	6.45E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	7.10E+01	3.64E-01	7.15E-03	1.13E+00	4.30E-02	5.23E+01	4.09E-01	6.41E+01	6.70E-04
BCEOT-W27-0 (0-6")	9.00E-02	9.00E-02	1.01E+00	9.90E+01	8.91E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	9.80E+01	5.03E-01	7.15E-03	1.13E+00	5.93E-02	5.23E+01	4.09E-01	6.41E+01	9.26E-04
Outside Tailings Piles																						**Maximum HQ (Edge of Tailings Pile)**	**4.16E-03**
BCEOT-E0+25 (0-6")	9.00E-02	9.00E-02	1.01E+00	8.80E+01	7.92E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	8.71E+01	4.47E-01	7.15E-03	1.13E+00	5.28E-02	5.23E+01	4.09E-01	6.41E+01	8.23E-04
BCEOT-E1+25 (0-6")	9.00E-02	9.00E-02	1.01E+00	1.85E+02	1.66E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.83E+02	9.37E-01	7.15E-03	1.13E+00	1.11E-01	5.23E+01	4.09E-01	6.41E+01	1.73E-03
BCEOT-E2+25 (0-6")	9.00E-02	9.00E-02	1.01E+00	9.65E+01	8.68E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	9.55E+01	4.90E-01	7.15E-03	1.13E+00	5.78E-02	5.23E+01	4.09E-01	6.41E+01	9.02E-04
BCEOT-E3+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-E4+25 (0-6")	9.00E-02	9.00E-02	1.01E+00	1.08E+02	9.74E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.07E+02	5.49E-01	7.15E-03	1.13E+00	6.49E-02	5.23E+01	4.09E-01	6.41E+01	1.01E-03
BCEOT-W4+25 (0-6")	9.00E-02	9.00E-02	1.01E+00	1.06E+02	9.53E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.05E+02	5.38E-01	7.15E-03	1.13E+00	6.35E-02	5.23E+01	4.09E-01	6.41E+01	9.91E-04
BCEOT-E5+25 (0-6")	9.00E-02	9.00E-02	1.01E+00	1.28E+02	1.15E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.27E+02	6.50E-01	7.15E-03	1.13E+00	7.68E-02	5.23E+01	4.09E-01	6.41E+01	1.20E-03
BCEOT-W5+25 (0-6")	9.00E-02	9.00E-02	1.01E+00	8.32E+01	7.48E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	8.23E+01	4.22E-01	7.15E-03	1.13E+00	4.98E-02	5.23E+01	4.09E-01	6.41E+01	7.78E-04
BCEOT-E6+25 (0-6")	9.00E-02	9.00E-02	1.01E+00	8.00E+01	7.20E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	7.92E+01	4.06E-01	7.15E-03	1.13E+00	4.79E-02	5.23E+01	4.09E-01	6.41E+01	7.48E-04
BCEOT-W6+25 (0-6")	9.00E-02	9.00E-02	1.01E+00	6.68E+01	6.01E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	6.61E+01	3.39E-01	7.15E-03	1.13E+00	4.00E-02	5.23E+01	4.09E-01	6.41E+01	6.24E-04
BCEOT-E7+25 (0-6")	9.00E-02	9.00E-02	1.01E+00	1.09E+02	9.78E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.08E+02	5.52E-01	7.15E-03	1.13E+00	6.51E-02	5.23E+01	4.09E-01	6.41E+01	1.02E-03
BCEOT-W7+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
FLWA-101 (0-6")	9.00E-02	9.00E-02	1.01E+00	7.13E+01	6.41E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	7.06E+01	3.62E-01	7.15E-03	1.13E+00	4.27E-02	5.23E+01	4.09E-01	6.41E+01	6.67E-04
BCEOT-W8+25 (0-6")	9.00E-02	9.00E-02	1.01E+00	7.61E+01	6.85E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	7.54E+01	3.86E-01	7.15E-03	1.13E+00	4.56E-02	5.23E+01	4.09E-01	6.41E+01	7.12E-04
BCEOT-E9+25 (0-6")	9.00E-02	9.00E-02	1.01E+00	1.50E+02	1.35E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.49E+02	7.62E-01	7.15E-03	1.13E+00	9.00E-02	5.23E+01	4.09E-01	6.41E+01	1.40E-03
BCEOT-W9+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-E10+25 (0-6")	9.00E-02	9.00E-02	1.01E+00	3.91E+02	3.51E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.87E+02	1.98E+00	7.15E-03	1.13E+00	2.34E-01	5.23E+01	4.09E-01	6.41E+01	3.65E-03
BCEOT-W10+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-E11+25 (0-6")	9.00E-02	9.00E-02	1.01E+00	1.05E+02	9.48E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.04E+02	5.35E-01	7.15E-03	1.13E+00	6.31E-02	5.23E+01	4.09E-01	6.41E+01	9.85E-04
BCEOT-W11+25 (0-6")	9.00E-02	9.00E-02	1.01E+00	6.99E+01	6.28E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	6.92E+01	3.55E-01	7.15E-03	1.13E+00	4.19E-02	5.23E+01	4.09E-01	6.41E+01	6.53E-04
BCEOT-E12+25 (0-6")	9.00E-02	9.00E-02	1.01E+00	2.38E+02	2.14E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.35E+02	1.21E+00	7.15E-03	1.13E+00	1.43E-01	5.23E+01	4.09E-01	6.41E+01	2.22E-03
BCEOT-W12+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-E13+25 (0-6")	9.00E-02	9.00E-02	1.01E+00	2.36E+02	2.12E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.34E+02	1.20E+00	7.15E-03	1.13E+00	1.41E-01	5.23E+01	4.09E-01	6.41E+01	2.21E-03
BCEOT-E14+25 (0-6")	9.00E-02	9.00E-02	1.01E+00	1.26E+02	1.13E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.25E+02	6.40E-01	7.15E-03	1.13E+00	7.55E-02	5.23E+01	4.09E-01	6.41E+01	1.18E-03
BCEOT-W14+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-E15+25 (0-6")	9.00E-02	9.00E-02	1.01E+00	2.00E+02	1.80E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.98E+02	1.02E+00	7.15E-03	1.13E+00	1.20E-01	5.23E+01	4.09E-01	6.41E+01	1.87E-03
BCEOT-W15+25 (0-6")	9.00E-02	9.00E-02	1.01E+00	1.39E+02	1.25E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.37E+02	7.05E-01	7.15E-03	1.13E+00	8.32E-02	5.23E+01	4.09E-01	6.41E+01	1.30E-03
BCEOT-E16+25 (0-6")	9.00E-02	9.00E-02	1.01E+00	8.36E+01	7.52E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	8.28E+01	4.24E-01	7.15E-03	1.13E+00	5.01E-02	5.23E+01	4.09E-01	6.41E+01	7.82E-04
BCEOT-W16+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-E17+25 (0-6")	9.00E-02	9.00E-02	1.01E+00	1.25E+02	1.12E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.24E+02	6.35E-01	7.15E-03	1.13E+00	7.49E-02	5.23E+01	4.09E-01	6.41E+01	1.17E-03
BCEOT-W17+25 (0-6")	9.00E-02	9.00E-02	1.01E+00	7.56E+01	6.80E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	7.49E+01	3.84E-01	7.15E-03	1.13E+00	4.53E-02	5.23E+01	4.09E-01	6.41E+01	7.07E-04
BCEOT-E18+12.5 (0-6")	9.00E-02	9.00E-02	1.01E+00	2.20E+03	1.98E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.18E+03	1.12E+01	7.15E-03	1.13E+00	1.32E+00	5.23E+01	4.09E-01	6.41E+01	2.06E-02
BCEOT-E18+25 (0-6")	9.00E-02	9.00E-02	1.01E+00	1.13E+02	1.01E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.12E+02	5.72E-01	7.15E-03	1.13E+00	6.76E-02	5.23E+01	4.09E-01	6.41E+01	1.05E-03
BCEOT-W18+25 (0-6")	9.00E-02	9.00E-02	1.01E+00	7.16E+01	6.44E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	7.09E+01	3.64E-01	7.15E-03	1.13E+00	4.29E-02	5.23E+01	4.09E-01	6.41E+01	6.70E-04
BCEOT-E19+25 (0-6")	9.00E-02	9.00E-02	1.01E+00	9.85E+01	8.86E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	9.75E+01	5.00E-01	7.15E-03	1.13E+00	5.90E-02	5.23E+01	4.09E-01	6.41E+01	9.21E-04
BCEOT-W19+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-E20+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-W20+25 (0-6")	9.00E-02	9.00E-02	1.01E+00	1.06E+02	9.55E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.05E+02	5.39E-01	7.15E-03	1.13E+00	6.36E-02	5.23E+01	4.09E-01	6.41E+01	9.93E-04
BCEOT-E21+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-W21+25 (0-6")	9.00E-02	9.00E-02	1.01E+00	1.57E+02	1.41E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.56E+02	7.98E-01	7.15E-03	1.13E+00	9.42E-02	5.23E+01	4.09E-01	6.41E+01	1.47E-03
BCEOT-E22+25 (0-6")	9.00E-02	9.00E-02	1.01E+00	1.29E+02	1.16E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.28E+02	6.56E-01	7.15E-03	1.13E+00	7.75E-02	5.23E+01	4.09E-01	6.41E+01	1.21E-03
BCEOT-E22+70 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-W22+25 (0-6")	9.00E-02	9.00E-02	1.01E+00	1.34E+02	1.21E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.33E+02	6.81E-01	7.15E-03	1.13E+00	8.04E-02	5.23E+01	4.09E-01	6.41E+01	1.25E-03
BCEOT-E23+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-W23+25 (0-6")	9.00E-02	9.00E-02	1.01E+00	1.36E+02	1.22E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.34E+02	6.89E-01	7.15E-03	1.13E+00	8.14E-02	5.23E+01	4.09E-01	6.41E+01	1.27E-03

TABLE C-11C: COPPER DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 11 - BEARTRAP CREEK DISPERSED TAILINGS DEPOSITS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK TAILINGS DEPOSITS AND FLOSSIE LOUISE MINE WASTE PILE (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **4.982**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Red-Tailed Hawk (Carnivorous Birds - Terrestrial)																							
BCEOT-E24+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-W24+25 (0-6")	9.00E-02	9.00E-02	1.01E+00	1.19E+02	1.07E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.18E+02	6.03E-01	7.15E-03	1.13E+00	7.12E-02	5.23E+01	4.09E-01	6.41E+01	1.11E-03
BCEOT-E25+20 (0-6")	9.00E-02	9.00E-02	1.01E+00	8.24E+01	7.41E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	8.15E+01	4.18E-01	7.15E-03	1.13E+00	4.94E-02	5.23E+01	4.09E-01	6.41E+01	7.70E-04
BCEOT-W25+25 (0-6")	9.00E-02	9.00E-02	1.01E+00	6.71E+01	6.04E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	6.65E+01	3.41E-01	7.15E-03	1.13E+00	4.02E-02	5.23E+01	4.09E-01	6.41E+01	6.28E-04
BCEOT-E26+25 (0-6")	9.00E-02	9.00E-02	1.01E+00	1.27E+02	1.15E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.26E+02	6.46E-01	7.15E-03	1.13E+00	7.63E-02	5.23E+01	4.09E-01	6.41E+01	1.19E-03
BCEOT-W26+25 (0-6")	9.00E-02	9.00E-02	1.01E+00	2.98E+02	2.68E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.95E+02	1.51E+00	7.15E-03	1.13E+00	1.79E-01	5.23E+01	4.09E-01	6.41E+01	2.79E-03
BCEOT-W27+25 (0-6")	9.00E-02	9.00E-02	1.01E+00	9.28E+01	8.35E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	9.19E+01	4.71E-01	7.15E-03	1.13E+00	5.56E-02	5.23E+01	4.09E-01	6.41E+01	8.68E-04
																						Maximum HQ (Outside Tailings Pile)	**2.06E-02**
American Kestrel (Insectivorous Birds - Terrestrial)																							
Reference Sites																							
ACBG-1 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	3.70E+00	2.95E+02	4.06E+00	7.84E-04	7.96E+01	6.24E-02	1.90E-02	1.24E-01	6.33E-01	5.23E+01	4.09E-01	4.12E+01	1.54E-02
ACBG-2 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	3.70E+00	9.26E+02	1.27E+01	7.84E-04	2.50E+02	1.96E-01	1.90E-02	1.24E-01	1.99E+00	5.23E+01	4.09E-01	4.12E+01	4.83E-02
BCBG-201 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	3.70E+00	2.33E+02	3.20E+00	7.84E-04	6.28E+01	4.93E-02	1.90E-02	1.24E-01	4.99E-01	5.23E+01	4.09E-01	4.12E+01	1.21E-02
Inside Tailings Pile																						**Minimum HQ (Reference Sites)**	**1.21E-02**
BCEOT-E0-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	5.89E+02	8.10E+00	7.84E-04	1.21E+02	9.52E-02	1.90E-02	1.24E-01	1.26E+00	5.23E+01	4.09E-01	4.12E+01	3.06E-02
BCEOT-E1-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	7.88E+02	1.08E+01	7.84E-04	1.63E+02	1.27E-01	1.90E-02	1.24E-01	1.69E+00	5.23E+01	4.09E-01	4.12E+01	4.09E-02
BCEOT-E2-8 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	4.99E+02	6.87E+00	7.84E-04	1.03E+02	8.07E-02	1.90E-02	1.24E-01	1.07E+00	5.23E+01	4.09E-01	4.12E+01	2.59E-02
BCEOT-E3-8 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	7.38E+02	1.02E+01	7.84E-04	1.52E+02	1.19E-01	1.90E-02	1.24E-01	1.58E+00	5.23E+01	4.09E-01	4.12E+01	3.83E-02
BCEOT-E4-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	4.85E+02	6.68E+00	7.84E-04	1.00E+02	7.84E-02	1.90E-02	1.24E-01	1.04E+00	5.23E+01	4.09E-01	4.12E+01	2.52E-02
BCEOT-W4-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	6.76E+02	9.31E+00	7.84E-04	1.39E+02	1.09E-01	1.90E-02	1.24E-01	1.45E+00	5.23E+01	4.09E-01	4.12E+01	3.51E-02
BCEOT-E5-25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	3.71E+02	5.10E+00	7.84E-04	7.64E+01	5.99E-02	1.90E-02	1.24E-01	7.92E-01	5.23E+01	4.09E-01	4.12E+01	1.93E-02
BCEOT-W5-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	1.95E+03	2.69E+01	7.84E-04	4.03E+02	3.16E-01	1.90E-02	1.24E-01	4.18E+00	5.23E+01	4.09E-01	4.12E+01	1.02E-01
BCEOT-E6-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	6.13E+02	8.44E+00	7.84E-04	1.26E+02	9.91E-02	1.90E-02	1.24E-01	1.31E+00	5.23E+01	4.09E-01	4.12E+01	3.18E-02
BCEOT-W6-12.5 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-E7-12.5 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-W7-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	8.47E+02	1.17E+01	7.84E-04	1.75E+02	1.37E-01	1.90E-02	1.24E-01	1.81E+00	5.23E+01	4.09E-01	4.12E+01	4.40E-02
BCEOT-W8-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	1.09E+03	1.50E+01	7.84E-04	2.25E+02	1.77E-01	1.90E-02	1.24E-01	2.34E+00	5.23E+01	4.09E-01	4.12E+01	5.68E-02
BCEOT-E9-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	7.77E+02	1.07E+01	7.84E-04	1.60E+02	1.26E-01	1.90E-02	1.24E-01	1.66E+00	5.23E+01	4.09E-01	4.12E+01	4.04E-02
BCEOT-W9-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	1.87E+03	2.58E+01	7.84E-04	3.86E+02	3.03E-01	1.90E-02	1.24E-01	4.01E+00	5.23E+01	4.09E-01	4.12E+01	9.73E-02
BCEOT-E10-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	2.03E+03	2.79E+01	7.84E-04	4.18E+02	3.28E-01	1.90E-02	1.24E-01	4.33E+00	5.23E+01	4.09E-01	4.12E+01	1.05E-01
BCEOT-W10-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	6.60E+02	9.08E+00	7.84E-04	1.36E+02	1.07E-01	1.90E-02	1.24E-01	1.41E+00	5.23E+01	4.09E-01	4.12E+01	3.43E-02
BCEOT-E11-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	5.01E+02	6.89E+00	7.84E-04	1.03E+02	8.10E-02	1.90E-02	1.24E-01	1.07E+00	5.23E+01	4.09E-01	4.12E+01	2.60E-02
BCEOT-W11-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	2.07E+03	2.84E+01	7.84E-04	4.26E+02	3.34E-01	1.90E-02	1.24E-01	4.42E+00	5.23E+01	4.09E-01	4.12E+01	1.07E-01
BCEOT-E12-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	9.79E+02	1.35E+01	7.84E-04	2.02E+02	1.58E-01	1.90E-02	1.24E-01	2.09E+00	5.23E+01	4.09E-01	4.12E+01	5.09E-02
BCEOT-W12-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	1.40E+03	1.93E+01	7.84E-04	2.89E+02	2.26E-01	1.90E-02	1.24E-01	2.99E+00	5.23E+01	4.09E-01	4.12E+01	7.27E-02
BCEOT-E13-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	7.50E+02	1.03E+01	7.84E-04	1.55E+02	1.21E-01	1.90E-02	1.24E-01	1.60E+00	5.23E+01	4.09E-01	4.12E+01	3.89E-02
BCEOT-W13-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	8.37E+02	1.15E+01	7.84E-04	1.73E+02	1.35E-01	1.90E-02	1.24E-01	1.79E+00	5.23E+01	4.09E-01	4.12E+01	4.35E-02
BCEOT-W13-25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-W14-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	4.07E+02	5.61E+00	7.84E-04	8.40E+01	6.59E-02	1.90E-02	1.24E-01	8.71E-01	5.23E+01	4.09E-01	4.12E+01	2.12E-02
BCEOT-E15-8 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	9.68E+02	1.33E+01	7.84E-04	2.00E+02	1.56E-01	1.90E-02	1.24E-01	2.07E+00	5.23E+01	4.09E-01	4.12E+01	5.03E-02
BCEOT-W15-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	1.01E+03	1.39E+01	7.84E-04	2.08E+02	1.63E-01	1.90E-02	1.24E-01	2.16E+00	5.23E+01	4.09E-01	4.12E+01	5.24E-02
BCEOT-E16-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	2.35E+03	3.23E+01	7.84E-04	4.85E+02	3.80E-01	1.90E-02	1.24E-01	5.02E+00	5.23E+01	4.09E-01	4.12E+01	1.22E-01
BCEOT-W16-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	2.70E+03	3.72E+01	7.84E-04	5.57E+02	4.37E-01	1.90E-02	1.24E-01	5.77E+00	5.23E+01	4.09E-01	4.12E+01	1.40E-01
BCEOT-E17-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	1.31E+04	1.80E+02	7.84E-04	2.69E+03	2.11E+00	1.90E-02	1.24E-01	2.79E+01	5.23E+01	4.09E-01	4.12E+01	6.79E-01
BCEOT-W17-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	5.69E+02	7.83E+00	7.84E-04	1.17E+02	9.20E-02	1.90E-02	1.24E-01	1.22E+00	5.23E+01	4.09E-01	4.12E+01	2.96E-02
BCEOT-W18-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	1.44E+03	1.98E+01	7.84E-04	2.97E+02	2.33E-01	1.90E-02	1.24E-01	3.08E+00	5.23E+01	4.09E-01	4.12E+01	7.47E-02
BCEOT-E19-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	1.06E+03	1.46E+01	7.84E-04	2.18E+02	1.71E-01	1.90E-02	1.24E-01	2.26E+00	5.23E+01	4.09E-01	4.12E+01	5.50E-02
BCEOT-W19-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	3.99E+02	5.49E+00	7.84E-04	8.22E+01	6.45E-02	1.90E-02	1.24E-01	8.52E-01	5.23E+01	4.09E-01	4.12E+01	2.07E-02
BCEOT-E20-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	1.15E+03	1.58E+01	7.84E-04	2.37E+02	1.86E-01	1.90E-02	1.24E-01	2.45E+00	5.23E+01	4.09E-01	4.12E+01	5.96E-02
BCEOT-W20-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	3.44E+03	4.73E+01	7.84E-04	7.09E+02	5.56E-01	1.90E-02	1.24E-01	7.35E+00	5.23E+01	4.09E-01	4.12E+01	1.79E-01
BCEOT-E21-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	9.71E+02	1.34E+01	7.84E-04	2.00E+02	1.57E-01	1.90E-02	1.24E-01	2.08E+00	5.23E+01	4.09E-01	4.12E+01	5.04E-02
BCEOT-W21-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	9.07E+02	1.25E+01	7.84E-04	1.87E+02	1.47E-01	1.90E-02	1.24E-01	1.94E+00	5.23E+01	4.09E-01	4.12E+01	4.71E-02
BCEOT-E22-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	1.73E+03	2.37E+01	7.84E-04	3.56E+02	2.79E-01	1.90E-02	1.24E-01	3.69E+00	5.23E+01	4.09E-01	4.12E+01	8.96E-02
BCEOT-W22-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	9.50E+03	1.31E+02	7.84E-04	1.96E+03	1.54E+00	1.90E-02	1.24E-01	2.03E+01	5.23E+01	4.09E-01	4.12E+01	4.93E-01
BCEOT-E23-15 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	4.56E+02	6.27E+00	7.84E-04	9.39E+01	7.37E-02	1.90E-02	1.24E-01	9.74E-01	5.23E+01	4.09E-01	4.12E+01	2.37E-02

TABLE C-11C: COPPER DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 11 - BEARTRAP CREEK DISPERSED TAILINGS DEPOSITS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK TAILINGS DEPOSITS AND FLOSSIE LOUISE MINE WASTE PILE (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **4.982**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
American Kestrel (Insectivorous Birds - Terrestrial)																							
BCEOT-W23-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	4.63E+03	6.37E+01	7.84E-04	9.54E+02	7.49E-01	1.90E-02	1.24E-01	9.90E+00	5.23E+01	4.09E-01	4.12E+01	2.40E-01
BCEOT-E24-12.5 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-W24-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	2.88E+03	3.96E+01	7.84E-04	5.93E+02	4.65E-01	1.90E-02	1.24E-01	6.15E+00	5.23E+01	4.09E-01	4.12E+01	1.49E-01
BCEOT-E25-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	1.46E+03	2.01E+01	7.84E-04	3.02E+02	2.37E-01	1.90E-02	1.24E-01	3.13E+00	5.23E+01	4.09E-01	4.12E+01	7.60E-02
BCEOT-W25-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	2.94E+03	4.05E+01	7.84E-04	6.07E+02	4.76E-01	1.90E-02	1.24E-01	6.30E+00	5.23E+01	4.09E-01	4.12E+01	1.53E-01
BCEOT-E26-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	3.48E+02	4.79E+00	7.84E-04	7.18E+01	5.63E-02	1.90E-02	1.24E-01	7.44E-01	5.23E+01	4.09E-01	4.12E+01	1.81E-02
BCEOT-W26-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	1.10E+03	1.51E+01	7.84E-04	2.26E+02	1.77E-01	1.90E-02	1.24E-01	2.34E+00	5.23E+01	4.09E-01	4.12E+01	5.69E-02
BCEOT-W27-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	1.89E+03	2.60E+01	7.84E-04	3.90E+02	3.06E-01	1.90E-02	1.24E-01	4.04E+00	5.23E+01	4.09E-01	4.12E+01	9.81E-02
At Edge of Tailings Pile																						**Maximum HQ (Inside Tailings Pile)**	**6.79E-01**
BCEOT-E0-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	9.86E+02	1.36E+01	7.84E-04	2.03E+02	1.59E-01	1.90E-02	1.24E-01	2.11E+00	5.23E+01	4.09E-01	4.12E+01	5.12E-02
BCEOT-E1-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-E2-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	1.32E+03	1.81E+01	7.84E-04	2.72E+02	2.13E-01	1.90E-02	1.24E-01	2.82E+00	5.23E+01	4.09E-01	4.12E+01	6.85E-02
BCEOT-E3-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-E4-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-W4-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-E5-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	8.93E+02	1.23E+01	7.84E-04	1.84E+02	1.44E-01	1.90E-02	1.24E-01	1.91E+00	5.23E+01	4.09E-01	4.12E+01	4.64E-02
BCEOT-W5-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	4.34E+02	5.97E+00	7.84E-04	8.95E+01	7.02E-02	1.90E-02	1.24E-01	9.28E-01	5.23E+01	4.09E-01	4.12E+01	2.25E-02
BCEOT-E6-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	3.48E+02	4.79E+00	7.84E-04	7.18E+01	5.63E-02	1.90E-02	1.24E-01	7.45E-01	5.23E+01	4.09E-01	4.12E+01	1.81E-02
BCEOT-W6-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	4.54E+02	6.25E+00	7.84E-04	9.37E+01	7.35E-02	1.90E-02	1.24E-01	9.71E-01	5.23E+01	4.09E-01	4.12E+01	2.36E-02
BCEOT-E7-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	6.88E+02	9.47E+00	7.84E-04	1.42E+02	1.11E-01	1.90E-02	1.24E-01	1.47E+00	5.23E+01	4.09E-01	4.12E+01	3.57E-02
BCEOT-W7-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	3.53E+02	4.86E+00	7.84E-04	7.28E+01	5.71E-02	1.90E-02	1.24E-01	7.54E-01	5.23E+01	4.09E-01	4.12E+01	1.83E-02
BCEOT-W8-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-W9-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-E10-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	2.14E+03	2.94E+01	7.84E-04	4.40E+02	3.45E-01	1.90E-02	1.24E-01	4.57E+00	5.23E+01	4.09E-01	4.12E+01	1.11E-01
BCEOT-W10-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-E11-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	4.86E+02	6.69E+00	7.84E-04	1.00E+02	7.86E-02	1.90E-02	1.24E-01	1.04E+00	5.23E+01	4.09E-01	4.12E+01	2.53E-02
BCEOT-W11-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	7.82E+02	1.08E+01	7.84E-04	1.61E+02	1.26E-01	1.90E-02	1.24E-01	1.67E+00	5.23E+01	4.09E-01	4.12E+01	4.06E-02
BCEOT-E12-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	9.82E+02	1.35E+01	7.84E-04	2.02E+02	1.59E-01	1.90E-02	1.24E-01	2.10E+00	5.23E+01	4.09E-01	4.12E+01	5.10E-02
BCEOT-W12-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-E13-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	5.11E+02	7.04E+00	7.84E-04	1.05E+02	8.27E-02	1.90E-02	1.24E-01	1.09E+00	5.23E+01	4.09E-01	4.12E+01	2.66E-02
BCEOT-W13-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-E14-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	5.24E+02	7.22E+00	7.84E-04	1.08E+02	8.48E-02	1.90E-02	1.24E-01	1.12E+00	5.23E+01	4.09E-01	4.12E+01	2.72E-02
BCEOT-W14-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	4.98E+02	6.85E+00	7.84E-04	1.03E+02	8.05E-02	1.90E-02	1.24E-01	1.06E+00	5.23E+01	4.09E-01	4.12E+01	2.59E-02
BCEOT-E15-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	7.66E+02	1.05E+01	7.84E-04	1.58E+02	1.24E-01	1.90E-02	1.24E-01	1.64E+00	5.23E+01	4.09E-01	4.12E+01	3.98E-02
BCEOT-W15-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	7.74E+02	1.07E+01	7.84E-04	1.60E+02	1.25E-01	1.90E-02	1.24E-01	1.65E+00	5.23E+01	4.09E-01	4.12E+01	4.02E-02
BCEOT-E16-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	5.22E+02	7.18E+00	7.84E-04	1.08E+02	8.44E-02	1.90E-02	1.24E-01	1.12E+00	5.23E+01	4.09E-01	4.12E+01	2.71E-02
BCEOT-W16-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-E17-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	9.24E+02	1.27E+01	7.84E-04	1.91E+02	1.49E-01	1.90E-02	1.24E-01	1.98E+00	5.23E+01	4.09E-01	4.12E+01	4.80E-02
BCEOT-W17-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	5.48E+02	7.54E+00	7.84E-04	1.13E+02	8.86E-02	1.90E-02	1.24E-01	1.17E+00	5.23E+01	4.09E-01	4.12E+01	2.84E-02
BCEOT-E18-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	5.61E+02	7.72E+00	7.84E-04	1.16E+02	9.07E-02	1.90E-02	1.24E-01	1.20E+00	5.23E+01	4.09E-01	4.12E+01	2.91E-02
BCEOT-W18-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	4.02E+02	5.53E+00	7.84E-04	8.29E+01	6.50E-02	1.90E-02	1.24E-01	8.59E-01	5.23E+01	4.09E-01	4.12E+01	2.09E-02
BCEOT-E19-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	3.16E+02	4.35E+00	7.84E-04	6.52E+01	5.12E-02	1.90E-02	1.24E-01	6.76E-01	5.23E+01	4.09E-01	4.12E+01	1.64E-02
BCEOT-W19-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	3.16E+02	4.34E+00	7.84E-04	6.51E+01	5.10E-02	1.90E-02	1.24E-01	6.75E-01	5.23E+01	4.09E-01	4.12E+01	1.64E-02
BCEOT-E20-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-W20-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	3.18E+02	4.38E+00	7.84E-04	6.56E+01	5.14E-02	1.90E-02	1.24E-01	6.80E-01	5.23E+01	4.09E-01	4.12E+01	1.65E-02
BCEOT-E21-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	8.21E+02	1.13E+01	7.84E-04	1.69E+02	1.33E-01	1.90E-02	1.24E-01	1.76E+00	5.23E+01	4.09E-01	4.12E+01	4.27E-02
BCEOT-W21-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	6.28E+02	8.64E+00	7.84E-04	1.29E+02	1.02E-01	1.90E-02	1.24E-01	1.34E+00	5.23E+01	4.09E-01	4.12E+01	3.26E-02
BCEOT-E22-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	3.54E+02	4.87E+00	7.84E-04	7.30E+01	5.73E-02	1.90E-02	1.24E-01	7.57E-01	5.23E+01	4.09E-01	4.12E+01	1.84E-02
BCEOT-W22-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	8.37E+02	1.15E+01	7.84E-04	1.72E+02	1.35E-01	1.90E-02	1.24E-01	1.79E+00	5.23E+01	4.09E-01	4.12E+01	4.34E-02
BCEOT-E23-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-W23-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	5.19E+02	7.15E+00	7.84E-04	1.07E+02	8.40E-02	1.90E-02	1.24E-01	1.11E+00	5.23E+01	4.09E-01	4.12E+01	2.70E-02
BCEOT-E24-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-W24-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	7.02E+02	9.66E+00	7.84E-04	1.45E+02	1.14E-01	1.90E-02	1.24E-01	1.50E+00	5.23E+01	4.09E-01	4.12E+01	3.65E-02

TABLE C-11C: COPPER DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 11 - BEARTRAP CREEK DISPERSED TAILINGS DEPOSITS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK TAILINGS DEPOSITS AND FLOSSIE LOUISE MINE WASTE PILE (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **4.982**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
American Kestrel (Insectivorous Birds - Terrestrial)																							
BCEOT-E25-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-W25-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	7.30E+02	1.00E+01	7.84E-04	1.51E+02	1.18E-01	1.90E-02	1.24E-01	1.56E+00	5.23E+01	4.09E-01	4.12E+01	3.79E-02
BCEOT-E26-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	3.65E+02	5.02E+00	7.84E-04	7.52E+01	5.90E-02	1.90E-02	1.24E-01	7.80E-01	5.23E+01	4.09E-01	4.12E+01	1.89E-02
BCEOT-W26-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	3.44E+02	4.74E+00	7.84E-04	7.10E+01	5.57E-02	1.90E-02	1.24E-01	7.36E-01	5.23E+01	4.09E-01	4.12E+01	1.79E-02
BCEOT-W27-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	4.75E+02	6.54E+00	7.84E-04	9.80E+01	7.69E-02	1.90E-02	1.24E-01	1.02E+00	5.23E+01	4.09E-01	4.12E+01	2.47E-02
Outside Tailings Piles																						**Maximum HQ (Edge of Tailings Pile)**	**1.11E-01**
BCEOT-E0+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	4.23E+02	5.82E+00	7.84E-04	8.71E+01	6.84E-02	1.90E-02	1.24E-01	9.04E-01	5.23E+01	4.09E-01	4.12E+01	2.20E-02
BCEOT-E1+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	8.86E+02	1.22E+01	7.84E-04	1.83E+02	1.43E-01	1.90E-02	1.24E-01	1.89E+00	5.23E+01	4.09E-01	4.12E+01	4.60E-02
BCEOT-E2+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	4.63E+02	6.37E+00	7.84E-04	9.55E+01	7.49E-02	1.90E-02	1.24E-01	9.90E-01	5.23E+01	4.09E-01	4.12E+01	2.41E-02
BCEOT-E3+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-E4+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	5.20E+02	7.15E+00	7.84E-04	1.07E+02	8.41E-02	1.90E-02	1.24E-01	1.11E+00	5.23E+01	4.09E-01	4.12E+01	2.70E-02
BCEOT-W4+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	5.09E+02	7.00E+00	7.84E-04	1.05E+02	8.23E-02	1.90E-02	1.24E-01	1.09E+00	5.23E+01	4.09E-01	4.12E+01	2.64E-02
BCEOT-E5+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	6.15E+02	8.46E+00	7.84E-04	1.27E+02	9.95E-02	1.90E-02	1.24E-01	1.31E+00	5.23E+01	4.09E-01	4.12E+01	3.19E-02
BCEOT-W5+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	3.99E+02	5.49E+00	7.84E-04	8.23E+01	6.46E-02	1.90E-02	1.24E-01	8.53E-01	5.23E+01	4.09E-01	4.12E+01	2.07E-02
BCEOT-E6+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	3.84E+02	5.29E+00	7.84E-04	7.92E+01	6.21E-02	1.90E-02	1.24E-01	8.21E-01	5.23E+01	4.09E-01	4.12E+01	1.99E-02
BCEOT-W6+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	3.21E+02	4.41E+00	7.84E-04	6.61E+01	5.18E-02	1.90E-02	1.24E-01	6.85E-01	5.23E+01	4.09E-01	4.12E+01	1.67E-02
BCEOT-E7+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	5.22E+02	7.18E+00	7.84E-04	1.08E+02	8.44E-02	1.90E-02	1.24E-01	1.12E+00	5.23E+01	4.09E-01	4.12E+01	2.71E-02
BCEOT-W7+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
FLWA-101 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	3.42E+02	4.71E+00	7.84E-04	7.06E+01	5.54E-02	1.90E-02	1.24E-01	7.32E-01	5.23E+01	4.09E-01	4.12E+01	1.78E-02
BCEOT-W8+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	3.65E+02	5.03E+00	7.84E-04	7.54E+01	5.91E-02	1.90E-02	1.24E-01	7.81E-01	5.23E+01	4.09E-01	4.12E+01	1.90E-02
BCEOT-E9+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	7.21E+02	9.93E+00	7.84E-04	1.49E+02	1.17E-01	1.90E-02	1.24E-01	1.54E+00	5.23E+01	4.09E-01	4.12E+01	3.75E-02
BCEOT-W9+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-E10+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	1.88E+03	2.58E+01	7.84E-04	3.87E+02	3.03E-01	1.90E-02	1.24E-01	4.01E+00	5.23E+01	4.09E-01	4.12E+01	9.74E-02
BCEOT-W10+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-E11+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	5.06E+02	6.96E+00	7.84E-04	1.04E+02	8.18E-02	1.90E-02	1.24E-01	1.08E+00	5.23E+01	4.09E-01	4.12E+01	2.63E-02
BCEOT-W11+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	3.35E+02	4.62E+00	7.84E-04	6.92E+01	5.42E-02	1.90E-02	1.24E-01	7.17E-01	5.23E+01	4.09E-01	4.12E+01	1.74E-02
BCEOT-E12+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	1.14E+03	1.57E+01	7.84E-04	2.35E+02	1.85E-01	1.90E-02	1.24E-01	2.44E+00	5.23E+01	4.09E-01	4.12E+01	5.93E-02
BCEOT-W12+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-E13+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	1.13E+03	1.56E+01	7.84E-04	2.34E+02	1.83E-01	1.90E-02	1.24E-01	2.42E+00	5.23E+01	4.09E-01	4.12E+01	5.89E-02
BCEOT-E14+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	6.05E+02	8.33E+00	7.84E-04	1.25E+02	9.78E-02	1.90E-02	1.24E-01	1.29E+00	5.23E+01	4.09E-01	4.12E+01	3.14E-02
BCEOT-W14+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-E15+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	9.61E+02	1.32E+01	7.84E-04	1.98E+02	1.55E-01	1.90E-02	1.24E-01	2.05E+00	5.23E+01	4.09E-01	4.12E+01	4.99E-02
BCEOT-W15+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	6.66E+02	9.17E+00	7.84E-04	1.37E+02	1.08E-01	1.90E-02	1.24E-01	1.42E+00	5.23E+01	4.09E-01	4.12E+01	3.46E-02
BCEOT-E16+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	4.01E+02	5.52E+00	7.84E-04	8.28E+01	6.49E-02	1.90E-02	1.24E-01	8.58E-01	5.23E+01	4.09E-01	4.12E+01	2.08E-02
BCEOT-W16+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-E17+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	6.00E+02	8.26E+00	7.84E-04	1.24E+02	9.71E-02	1.90E-02	1.24E-01	1.28E+00	5.23E+01	4.09E-01	4.12E+01	3.12E-02
BCEOT-W17+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	3.63E+02	5.00E+00	7.84E-04	7.49E+01	5.87E-02	1.90E-02	1.24E-01	7.76E-01	5.23E+01	4.09E-01	4.12E+01	1.89E-02
BCEOT-E18+12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	1.06E+04	1.46E+02	7.84E-04	2.18E+03	1.71E+00	1.90E-02	1.24E-01	2.26E+01	5.23E+01	4.09E-01	4.12E+01	5.49E-01
BCEOT-E18+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	5.41E+02	7.45E+00	7.84E-04	1.12E+02	8.76E-02	1.90E-02	1.24E-01	1.16E+00	5.23E+01	4.09E-01	4.12E+01	2.81E-02
BCEOT-W18+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	3.44E+02	4.73E+00	7.84E-04	7.09E+01	5.56E-02	1.90E-02	1.24E-01	7.35E-01	5.23E+01	4.09E-01	4.12E+01	1.79E-02
BCEOT-E19+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	4.73E+02	6.50E+00	7.84E-04	9.75E+01	7.64E-02	1.90E-02	1.24E-01	1.01E+00	5.23E+01	4.09E-01	4.12E+01	2.45E-02
BCEOT-W19+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-E20+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-W20+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	5.10E+02	7.02E+00	7.84E-04	1.05E+02	8.24E-02	1.90E-02	1.24E-01	1.09E+00	5.23E+01	4.09E-01	4.12E+01	2.65E-02
BCEOT-E21+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-W21+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	7.55E+02	1.04E+01	7.84E-04	1.56E+02	1.22E-01	1.90E-02	1.24E-01	1.61E+00	5.23E+01	4.09E-01	4.12E+01	3.92E-02
BCEOT-E22+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	6.21E+02	8.54E+00	7.84E-04	1.28E+02	1.00E-01	1.90E-02	1.24E-01	1.33E+00	5.23E+01	4.09E-01	4.12E+01	3.22E-02
BCEOT-E22+70 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-W22+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	6.44E+02	8.86E+00	7.84E-04	1.33E+02	1.04E-01	1.90E-02	1.24E-01	1.38E+00	5.23E+01	4.09E-01	4.12E+01	3.34E-02
BCEOT-E23+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-W23+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	6.52E+02	8.97E+00	7.84E-04	1.34E+02	1.05E-01	1.90E-02	1.24E-01	1.39E+00	5.23E+01	4.09E-01	4.12E+01	3.39E-02
BCEOT-E24+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB

TABLE C-11C: COPPER DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 11 - BEARTRAP CREEK DISPERSED TAILINGS DEPOSITS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK TAILINGS DEPOSITS AND FLOSSIE LOUISE MINE WASTE PILE (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **4.982**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
American Kestrel (Insectivorous Birds - Terrestrial)																							
BCEOT-W24+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	5.70E+02	7.85E+00	7.84E-04	1.18E+02	9.23E-02	1.90E-02	1.24E-01	1.22E+00	5.23E+01	4.09E-01	4.12E+01	2.96E-02
BCEOT-E25+20 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	3.95E+02	5.44E+00	7.84E-04	8.15E+01	6.40E-02	1.90E-02	1.24E-01	8.45E-01	5.23E+01	4.09E-01	4.12E+01	2.05E-02
BCEOT-W25+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	3.22E+02	4.44E+00	7.84E-04	6.65E+01	5.21E-02	1.90E-02	1.24E-01	6.89E-01	5.23E+01	4.09E-01	4.12E+01	1.67E-02
BCEOT-E26+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	6.12E+02	8.42E+00	7.84E-04	1.26E+02	9.89E-02	1.90E-02	1.24E-01	1.31E+00	5.23E+01	4.09E-01	4.12E+01	3.18E-02
BCEOT-W26+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	1.43E+03	1.97E+01	7.84E-04	2.95E+02	2.31E-01	1.90E-02	1.24E-01	3.06E+00	5.23E+01	4.09E-01	4.12E+01	7.43E-02
BCEOT-W27+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.85E+00	4.46E+02	6.13E+00	7.84E-04	9.19E+01	7.21E-02	1.90E-02	1.24E-01	9.53E-01	5.23E+01	4.09E-01	4.12E+01	2.31E-02
																						Maximum HQ (Outside Tailings Pile)	**5.49E-01**
Meadow Vole (Small Herbivorous Mammal - Terrestrial)																							
Reference Sites																							
ACBG-1 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	7.79E-01	6.20E+01	2.91E-01	NA	NA	NA	NA	1.13E-04	7.96E+01	8.96E-03	1.00E+00	3.06E-02	9.79E+00	6.32E+02	2.47E-02	6.24E+02	1.57E-02
ACBG-2 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	7.79E-01	1.95E+02	9.13E-01	NA	NA	NA	NA	1.13E-04	2.50E+02	2.81E-02	1.00E+00	3.06E-02	3.08E+01	6.32E+02	2.47E-02	6.24E+02	4.93E-02
BCBG-201 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	7.79E-01	4.89E+01	2.29E-01	NA	NA	NA	NA	1.13E-04	6.28E+01	7.07E-03	1.00E+00	3.06E-02	7.73E+00	6.32E+02	2.47E-02	6.24E+02	1.24E-02
Inside Tailings Pile																						**Minimum HQ (Reference Sites)**	**1.24E-02**
BCEOT-E0-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	1.37E+02	6.44E-01	NA	NA	NA	NA	1.13E-04	1.21E+02	1.37E-02	1.00E+00	3.06E-02	2.15E+01	6.32E+02	2.47E-02	6.24E+02	3.45E-02
BCEOT-E1-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	1.84E+02	8.62E-01	NA	NA	NA	NA	1.13E-04	1.63E+02	1.83E-02	1.00E+00	3.06E-02	2.88E+01	6.32E+02	2.47E-02	6.24E+02	4.62E-02
BCEOT-E2-8 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	1.16E+02	5.46E-01	NA	NA	NA	NA	1.13E-04	1.03E+02	1.16E-02	1.00E+00	3.06E-02	1.82E+01	6.32E+02	2.47E-02	6.24E+02	2.92E-02
BCEOT-E3-8 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	1.72E+02	8.08E-01	NA	NA	NA	NA	1.13E-04	1.52E+02	1.71E-02	1.00E+00	3.06E-02	2.70E+01	6.32E+02	2.47E-02	6.24E+02	4.32E-02
BCEOT-E4-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	1.13E+02	5.31E-01	NA	NA	NA	NA	1.13E-04	1.00E+02	1.13E-02	1.00E+00	3.06E-02	1.77E+01	6.32E+02	2.47E-02	6.24E+02	2.84E-02
BCEOT-W4-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	1.58E+02	7.40E-01	NA	NA	NA	NA	1.13E-04	1.39E+02	1.57E-02	1.00E+00	3.06E-02	2.47E+01	6.32E+02	2.47E-02	6.24E+02	3.96E-02
BCEOT-E5-25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	8.65E+01	4.06E-01	NA	NA	NA	NA	1.13E-04	7.64E+01	8.60E-03	1.00E+00	3.06E-02	1.35E+01	6.32E+02	2.47E-02	6.24E+02	2.17E-02
BCEOT-W5-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	4.56E+02	2.14E+00	NA	NA	NA	NA	1.13E-04	4.03E+02	4.54E-02	1.00E+00	3.06E-02	7.14E+01	6.32E+02	2.47E-02	6.24E+02	1.14E-01
BCEOT-E6-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	1.43E+02	6.71E-01	NA	NA	NA	NA	1.13E-04	1.26E+02	1.42E-02	1.00E+00	3.06E-02	2.24E+01	6.32E+02	2.47E-02	6.24E+02	3.59E-02
BCEOT-W6-12.5 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-E7-12.5 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-W7-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	1.98E+02	9.27E-01	NA	NA	NA	NA	1.13E-04	1.75E+02	1.97E-02	1.00E+00	3.06E-02	3.09E+01	6.32E+02	2.47E-02	6.24E+02	4.96E-02
BCEOT-W8-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	2.55E+02	1.20E+00	NA	NA	NA	NA	1.13E-04	2.25E+02	2.54E-02	1.00E+00	3.06E-02	3.99E+01	6.32E+02	2.47E-02	6.24E+02	6.40E-02
BCEOT-E9-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	1.81E+02	8.50E-01	NA	NA	NA	NA	1.13E-04	1.60E+02	1.80E-02	1.00E+00	3.06E-02	2.84E+01	6.32E+02	2.47E-02	6.24E+02	4.55E-02
BCEOT-W9-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	4.37E+02	2.05E+00	NA	NA	NA	NA	1.13E-04	3.86E+02	4.35E-02	1.00E+00	3.06E-02	6.84E+01	6.32E+02	2.47E-02	6.24E+02	1.10E-01
BCEOT-E10-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	4.73E+02	2.22E+00	NA	NA	NA	NA	1.13E-04	4.18E+02	4.70E-02	1.00E+00	3.06E-02	7.40E+01	6.32E+02	2.47E-02	6.24E+02	1.19E-01
BCEOT-W10-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	1.54E+02	7.22E-01	NA	NA	NA	NA	1.13E-04	1.36E+02	1.53E-02	1.00E+00	3.06E-02	2.41E+01	6.32E+02	2.47E-02	6.24E+02	3.87E-02
BCEOT-E11-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	1.17E+02	5.48E-01	NA	NA	NA	NA	1.13E-04	1.03E+02	1.16E-02	1.00E+00	3.06E-02	1.83E+01	6.32E+02	2.47E-02	6.24E+02	2.93E-02
BCEOT-W11-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	4.82E+02	2.26E+00	NA	NA	NA	NA	1.13E-04	4.26E+02	4.79E-02	1.00E+00	3.06E-02	7.54E+01	6.32E+02	2.47E-02	6.24E+02	1.21E-01
BCEOT-E12-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	2.28E+02	1.07E+00	NA	NA	NA	NA	1.13E-04	2.02E+02	2.27E-02	1.00E+00	3.06E-02	3.58E+01	6.32E+02	2.47E-02	6.24E+02	5.73E-02
BCEOT-W12-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	3.26E+02	1.53E+00	NA	NA	NA	NA	1.13E-04	2.89E+02	3.25E-02	1.00E+00	3.06E-02	5.11E+01	6.32E+02	2.47E-02	6.24E+02	8.19E-02
BCEOT-E13-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	1.75E+02	8.20E-01	NA	NA	NA	NA	1.13E-04	1.55E+02	1.74E-02	1.00E+00	3.06E-02	2.74E+01	6.32E+02	2.47E-02	6.24E+02	4.39E-02
BCEOT-W13-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	1.95E+02	9.16E-01	NA	NA	NA	NA	1.13E-04	1.73E+02	1.94E-02	1.00E+00	3.06E-02	3.06E+01	6.32E+02	2.47E-02	6.24E+02	4.90E-02
BCEOT-W13-25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-W14-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	9.51E+01	4.46E-01	NA	NA	NA	NA	1.13E-04	8.40E+01	9.45E-03	1.00E+00	3.06E-02	1.49E+01	6.32E+02	2.47E-02	6.24E+02	2.39E-02
BCEOT-E15-8 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	2.26E+02	1.06E+00	NA	NA	NA	NA	1.13E-04	2.00E+02	2.25E-02	1.00E+00	3.06E-02	3.53E+01	6.32E+02	2.47E-02	6.24E+02	5.67E-02
BCEOT-W15-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	2.35E+02	1.10E+00	NA	NA	NA	NA	1.13E-04	2.08E+02	2.34E-02	1.00E+00	3.06E-02	3.68E+01	6.32E+02	2.47E-02	6.24E+02	5.91E-02
BCEOT-E16-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	5.48E+02	2.57E+00	NA	NA	NA	NA	1.13E-04	4.85E+02	5.45E-02	1.00E+00	3.06E-02	8.58E+01	6.32E+02	2.47E-02	6.24E+02	1.38E-01
BCEOT-W16-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	6.30E+02	2.96E+00	NA	NA	NA	NA	1.13E-04	5.57E+02	6.27E-02	1.00E+00	3.06E-02	9.86E+01	6.32E+02	2.47E-02	6.24E+02	1.58E-01
BCEOT-E17-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	3.05E+03	1.43E+01	NA	NA	NA	NA	1.13E-04	2.69E+03	3.03E-01	1.00E+00	3.06E-02	4.77E+02	6.32E+02	2.47E-02	6.24E+02	7.65E-01
BCEOT-W17-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	1.33E+02	6.23E-01	NA	NA	NA	NA	1.13E-04	1.17E+02	1.32E-02	1.00E+00	3.06E-02	2.08E+01	6.32E+02	2.47E-02	6.24E+02	3.33E-02
BCEOT-W18-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	3.36E+02	1.57E+00	NA	NA	NA	NA	1.13E-04	2.97E+02	3.34E-02	1.00E+00	3.06E-02	5.25E+01	6.32E+02	2.47E-02	6.24E+02	8.43E-02
BCEOT-E19-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	2.47E+02	1.16E+00	NA	NA	NA	NA	1.13E-04	2.18E+02	2.46E-02	1.00E+00	3.06E-02	3.86E+01	6.32E+02	2.47E-02	6.24E+02	6.20E-02
BCEOT-W19-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	9.30E+01	4.36E-01	NA	NA	NA	NA	1.13E-04	8.22E+01	9.25E-03	1.00E+00	3.06E-02	1.46E+01	6.32E+02	2.47E-02	6.24E+02	2.33E-02
BCEOT-E20-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	2.68E+02	1.26E+00	NA	NA	NA	NA	1.13E-04	2.37E+02	2.66E-02	1.00E+00	3.06E-02	4.19E+01	6.32E+02	2.47E-02	6.24E+02	6.72E-02
BCEOT-W20-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	8.02E+02	3.76E+00	NA	NA	NA	NA	1.13E-04	7.09E+02	7.98E-02	1.00E+00	3.06E-02	1.26E+02	6.32E+02	2.47E-02	6.24E+02	2.01E-01
BCEOT-E21-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	2.27E+02	1.06E+00	NA	NA	NA	NA	1.13E-04	2.00E+02	2.25E-02	1.00E+00	3.06E-02	3.55E+01	6.32E+02	2.47E-02	6.24E+02	5.69E-02
BCEOT-W21-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	2.12E+02	9.92E-01	NA	NA	NA	NA	1.13E-04	1.87E+02	2.10E-02	1.00E+00	3.06E-02	3.31E+01	6.32E+02	2.47E-02	6.24E+02	5.31E-02
BCEOT-E22-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	4.03E+02	1.89E+00	NA	NA	NA	NA	1.13E-04	3.56E+02	4.00E-02	1.00E+00	3.06E-02	6.30E+01	6.32E+02	2.47E-02	6.24E+02	1.01E-01
BCEOT-W22-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	2.22E+03	1.04E+01	NA	NA	NA	NA	1.13E-04	1.96E+03	2.20E-01	1.00E+00	3.06E-02	3.47E+02	6.32E+02	2.47E-02	6.24E+02	5.56E-01
BCEOT-E23-15 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	1.06E+02	4.98E-01	NA	NA	NA	NA	1.13E-04	9.39E+01	1.06E-02	1.00E+00	3.06E-02	1.66E+01	6.32E+02	2.47E-02	6.24E+02	2.67E-02
BCEOT-W23-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	1.08E+03	5.06E+00	NA	NA	NA	NA	1.13E-04	9.54E+02	1.07E-01	1.00E+00	3.06E-02	1.69E+02	6.32E+02	2.47E-02	6.24E+02	2.71E-01

TABLE C-11C: COPPER DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 11 - BEARTRAP CREEK DISPERSED TAILINGS DEPOSITS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK TAILINGS DEPOSITS AND FLOSSIE LOUISE MINE WASTE PILE (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **4.982**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Meadow Vole (Small Herbivorous Mammal - Terrestrial)																							
BCEOT-E24-12.5 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-W24-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	6.71E+02	3.15E+00	NA	NA	NA	NA	1.13E-04	5.93E+02	6.68E-02	1.00E+00	3.06E-02	1.05E+02	6.32E+02	2.47E-02	6.24E+02	1.68E-01
BCEOT-E25-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	3.41E+02	1.60E+00	NA	NA	NA	NA	1.13E-04	3.02E+02	3.39E-02	1.00E+00	3.06E-02	5.34E+01	6.32E+02	2.47E-02	6.24E+02	8.57E-02
BCEOT-W25-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	6.87E+02	3.22E+00	NA	NA	NA	NA	1.13E-04	6.07E+02	6.83E-02	1.00E+00	3.06E-02	1.08E+02	6.32E+02	2.47E-02	6.24E+02	1.72E-01
BCEOT-E26-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	8.13E+01	3.81E-01	NA	NA	NA	NA	1.13E-04	7.18E+01	8.08E-03	1.00E+00	3.06E-02	1.27E+01	6.32E+02	2.47E-02	6.24E+02	2.04E-02
BCEOT-W26-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	2.56E+02	1.20E+00	NA	NA	NA	NA	1.13E-04	2.26E+02	2.54E-02	1.00E+00	3.06E-02	4.00E+01	6.32E+02	2.47E-02	6.24E+02	6.42E-02
BCEOT-W27-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	4.41E+02	2.07E+00	NA	NA	NA	NA	1.13E-04	3.90E+02	4.38E-02	1.00E+00	3.06E-02	6.90E+01	6.32E+02	2.47E-02	6.24E+02	1.11E-01
At Edge of Tailings Pile																						**Maximum HQ (Inside Tailings Pile)**	**7.65E-01**
BCEOT-E0-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	2.30E+02	1.08E+00	NA	NA	NA	NA	1.13E-04	2.03E+02	2.29E-02	1.00E+00	3.06E-02	3.60E+01	6.32E+02	2.47E-02	6.24E+02	5.77E-02
BCEOT-E1-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-E2-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	3.08E+02	1.44E+00	NA	NA	NA	NA	1.13E-04	2.72E+02	3.06E-02	1.00E+00	3.06E-02	4.81E+01	6.32E+02	2.47E-02	6.24E+02	7.72E-02
BCEOT-E3-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-E4-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-W4-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-E5-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	2.08E+02	9.76E-01	NA	NA	NA	NA	1.13E-04	1.84E+02	2.07E-02	1.00E+00	3.06E-02	3.26E+01	6.32E+02	2.47E-02	6.24E+02	5.23E-02
BCEOT-W5-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	1.01E+02	4.75E-01	NA	NA	NA	NA	1.13E-04	8.95E+01	1.01E-02	1.00E+00	3.06E-02	1.59E+01	6.32E+02	2.47E-02	6.24E+02	2.54E-02
BCEOT-E6-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	8.13E+01	3.81E-01	NA	NA	NA	NA	1.13E-04	7.18E+01	8.08E-03	1.00E+00	3.06E-02	1.27E+01	6.32E+02	2.47E-02	6.24E+02	2.04E-02
BCEOT-W6-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	1.06E+02	4.97E-01	NA	NA	NA	NA	1.13E-04	9.37E+01	1.05E-02	1.00E+00	3.06E-02	1.66E+01	6.32E+02	2.47E-02	6.24E+02	2.66E-02
BCEOT-E7-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	1.61E+02	7.53E-01	NA	NA	NA	NA	1.13E-04	1.42E+02	1.60E-02	1.00E+00	3.06E-02	2.51E+01	6.32E+02	2.47E-02	6.24E+02	4.03E-02
BCEOT-W7-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	8.23E+01	3.86E-01	NA	NA	NA	NA	1.13E-04	7.28E+01	8.19E-03	1.00E+00	3.06E-02	1.29E+01	6.32E+02	2.47E-02	6.24E+02	2.07E-02
BCEOT-W8-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-E9-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	8.42E+01	3.95E-01	NA	NA	NA	NA	1.13E-04	7.44E+01	8.38E-03	1.00E+00	3.06E-02	1.32E+01	6.32E+02	2.47E-02	6.24E+02	2.11E-02
BCEOT-E10-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	4.98E+02	2.34E+00	NA	NA	NA	NA	1.13E-04	4.40E+02	4.96E-02	1.00E+00	3.06E-02	7.80E+01	6.32E+02	2.47E-02	6.24E+02	1.25E-01
BCEOT-W10-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-E11-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	1.13E+02	5.32E-01	NA	NA	NA	NA	1.13E-04	1.00E+02	1.13E-02	1.00E+00	3.06E-02	1.78E+01	6.32E+02	2.47E-02	6.24E+02	2.85E-02
BCEOT-W11-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	1.82E+02	8.55E-01	NA	NA	NA	NA	1.13E-04	1.61E+02	1.81E-02	1.00E+00	3.06E-02	2.85E+01	6.32E+02	2.47E-02	6.24E+02	4.58E-02
BCEOT-E12-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	2.29E+02	1.07E+00	NA	NA	NA	NA	1.13E-04	2.02E+02	2.28E-02	1.00E+00	3.06E-02	3.58E+01	6.32E+02	2.47E-02	6.24E+02	5.75E-02
BCEOT-W12-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-E13-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	1.19E+02	5.59E-01	NA	NA	NA	NA	1.13E-04	1.05E+02	1.19E-02	1.00E+00	3.06E-02	1.87E+01	6.32E+02	2.47E-02	6.24E+02	2.99E-02
BCEOT-W13-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-E14-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	1.22E+02	5.74E-01	NA	NA	NA	NA	1.13E-04	1.08E+02	1.22E-02	1.00E+00	3.06E-02	1.91E+01	6.32E+02	2.47E-02	6.24E+02	3.07E-02
BCEOT-W14-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	1.16E+02	5.45E-01	NA	NA	NA	NA	1.13E-04	1.03E+02	1.16E-02	1.00E+00	3.06E-02	1.82E+01	6.32E+02	2.47E-02	6.24E+02	2.92E-02
BCEOT-E15-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	1.79E+02	8.38E-01	NA	NA	NA	NA	1.13E-04	1.58E+02	1.78E-02	1.00E+00	3.06E-02	2.80E+01	6.32E+02	2.47E-02	6.24E+02	4.49E-02
BCEOT-W15-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	1.81E+02	8.47E-01	NA	NA	NA	NA	1.13E-04	1.60E+02	1.80E-02	1.00E+00	3.06E-02	2.83E+01	6.32E+02	2.47E-02	6.24E+02	4.53E-02
BCEOT-E16-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	1.22E+02	5.71E-01	NA	NA	NA	NA	1.13E-04	1.08E+02	1.21E-02	1.00E+00	3.06E-02	1.90E+01	6.32E+02	2.47E-02	6.24E+02	3.05E-02
BCEOT-W16-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-E17-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	2.16E+02	1.01E+00	NA	NA	NA	NA	1.13E-04	1.91E+02	2.14E-02	1.00E+00	3.06E-02	3.37E+01	6.32E+02	2.47E-02	6.24E+02	5.41E-02
BCEOT-W17-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	1.28E+02	5.99E-01	NA	NA	NA	NA	1.13E-04	1.13E+02	1.27E-02	1.00E+00	3.06E-02	2.00E+01	6.32E+02	2.47E-02	6.24E+02	3.21E-02
BCEOT-E18-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	1.31E+02	6.13E-01	NA	NA	NA	NA	1.13E-04	1.16E+02	1.30E-02	1.00E+00	3.06E-02	2.05E+01	6.32E+02	2.47E-02	6.24E+02	3.28E-02
BCEOT-W18-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	9.38E+01	4.40E-01	NA	NA	NA	NA	1.13E-04	8.29E+01	9.32E-03	1.00E+00	3.06E-02	1.47E+01	6.32E+02	2.47E-02	6.24E+02	2.35E-02
BCEOT-E19-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	7.38E+01	3.46E-01	NA	NA	NA	NA	1.13E-04	6.52E+01	7.34E-03	1.00E+00	3.06E-02	1.15E+01	6.32E+02	2.47E-02	6.24E+02	1.85E-02
BCEOT-W19-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	7.36E+01	3.45E-01	NA	NA	NA	NA	1.13E-04	6.51E+01	7.32E-03	1.00E+00	3.06E-02	1.15E+01	6.32E+02	2.47E-02	6.24E+02	1.85E-02
BCEOT-E20-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-W20-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	7.42E+01	3.48E-01	NA	NA	NA	NA	1.13E-04	6.56E+01	7.38E-03	1.00E+00	3.06E-02	1.16E+01	6.32E+02	2.47E-02	6.24E+02	1.86E-02
BCEOT-E21-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	1.92E+02	8.99E-01	NA	NA	NA	NA	1.13E-04	1.69E+02	1.91E-02	1.00E+00	3.06E-02	3.00E+01	6.32E+02	2.47E-02	6.24E+02	4.81E-02
BCEOT-W21-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	1.46E+02	6.87E-01	NA	NA	NA	NA	1.13E-04	1.29E+02	1.46E-02	1.00E+00	3.06E-02	2.29E+01	6.32E+02	2.47E-02	6.24E+02	3.68E-02
BCEOT-E22-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	8.26E+01	3.87E-01	NA	NA	NA	NA	1.13E-04	7.30E+01	8.22E-03	1.00E+00	3.06E-02	1.29E+01	6.32E+02	2.47E-02	6.24E+02	2.07E-02
BCEOT-W22-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	1.95E+02	9.15E-01	NA	NA	NA	NA	1.13E-04	1.72E+02	1.94E-02	1.00E+00	3.06E-02	3.05E+01	6.32E+02	2.47E-02	6.24E+02	4.90E-02
BCEOT-E23-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-W23-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	1.21E+02	5.68E-01	NA	NA	NA	NA	1.13E-04	1.07E+02	1.20E-02	1.00E+00	3.06E-02	1.90E+01	6.32E+02	2.47E-02	6.24E+02	3.04E-02
BCEOT-E24-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-W24-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	1.64E+02	7.68E-01	NA	NA	NA	NA	1.13E-04	1.45E+02	1.63E-02	1.00E+00	3.06E-02	2.56E+01	6.32E+02	2.47E-02	6.24E+02	4.11E-02

TABLE C-11C: COPPER DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 11 - BEARTRAP CREEK DISPERSED TAILINGS DEPOSITS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK TAILINGS DEPOSITS AND FLOSSIE LOUISE MINE WASTE PILE (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **4.982**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Meadow Vole (Small Herbivorous Mammal - Terrestrial)																							
BCEOT-E25-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-W25-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	1.70E+02	7.99E-01	NA	NA	NA	NA	1.13E-04	1.51E+02	1.69E-02	1.00E+00	3.06E-02	2.67E+01	6.32E+02	2.47E-02	6.24E+02	4.27E-02
BCEOT-E26-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	8.51E+01	3.99E-01	NA	NA	NA	NA	1.13E-04	7.52E+01	8.46E-03	1.00E+00	3.06E-02	1.33E+01	6.32E+02	2.47E-02	6.24E+02	2.14E-02
BCEOT-W26-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	8.03E+01	3.77E-01	NA	NA	NA	NA	1.13E-04	7.10E+01	7.99E-03	1.00E+00	3.06E-02	1.26E+01	6.32E+02	2.47E-02	6.24E+02	2.02E-02
BCEOT-W27-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	1.11E+02	5.20E-01	NA	NA	NA	NA	1.13E-04	9.80E+01	1.10E-02	1.00E+00	3.06E-02	1.74E+01	6.32E+02	2.47E-02	6.24E+02	2.78E-02
Outside Tailings Piles																						**Maximum HQ (Edge of Tailings Pile)**	**1.25E-01**
BCEOT-E0+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	9.86E+01	4.62E-01	NA	NA	NA	NA	1.13E-04	8.71E+01	9.81E-03	1.00E+00	3.06E-02	1.54E+01	6.32E+02	2.47E-02	6.24E+02	2.47E-02
BCEOT-E1+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	2.07E+02	9.69E-01	NA	NA	NA	NA	1.13E-04	1.83E+02	2.06E-02	1.00E+00	3.06E-02	3.24E+01	6.32E+02	2.47E-02	6.24E+02	5.19E-02
BCEOT-E2+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	1.08E+02	5.07E-01	NA	NA	NA	NA	1.13E-04	9.55E+01	1.07E-02	1.00E+00	3.06E-02	1.69E+01	6.32E+02	2.47E-02	6.24E+02	2.71E-02
BCEOT-E3+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-E4+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	1.21E+02	5.69E-01	NA	NA	NA	NA	1.13E-04	1.07E+02	1.21E-02	1.00E+00	3.06E-02	1.90E+01	6.32E+02	2.47E-02	6.24E+02	3.04E-02
BCEOT-W4+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	1.19E+02	5.56E-01	NA	NA	NA	NA	1.13E-04	1.05E+02	1.18E-02	1.00E+00	3.06E-02	1.86E+01	6.32E+02	2.47E-02	6.24E+02	2.98E-02
BCEOT-E5+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	1.44E+02	6.73E-01	NA	NA	NA	NA	1.13E-04	1.27E+02	1.43E-02	1.00E+00	3.06E-02	2.25E+01	6.32E+02	2.47E-02	6.24E+02	3.60E-02
BCEOT-W5+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	9.31E+01	4.37E-01	NA	NA	NA	NA	1.13E-04	8.23E+01	9.26E-03	1.00E+00	3.06E-02	1.46E+01	6.32E+02	2.47E-02	6.24E+02	2.34E-02
BCEOT-E6+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	8.96E+01	4.20E-01	NA	NA	NA	NA	1.13E-04	7.92E+01	8.91E-03	1.00E+00	3.06E-02	1.40E+01	6.32E+02	2.47E-02	6.24E+02	2.25E-02
BCEOT-W6+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	7.48E+01	3.51E-01	NA	NA	NA	NA	1.13E-04	6.61E+01	7.44E-03	1.00E+00	3.06E-02	1.17E+01	6.32E+02	2.47E-02	6.24E+02	1.88E-02
BCEOT-E7+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	1.22E+02	5.71E-01	NA	NA	NA	NA	1.13E-04	1.08E+02	1.21E-02	1.00E+00	3.06E-02	1.90E+01	6.32E+02	2.47E-02	6.24E+02	3.06E-02
BCEOT-W7+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
FLWA-101 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	7.99E+01	3.74E-01	NA	NA	NA	NA	1.13E-04	7.06E+01	7.94E-03	1.00E+00	3.06E-02	1.25E+01	6.32E+02	2.47E-02	6.24E+02	2.00E-02
BCEOT-W8+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	8.53E+01	4.00E-01	NA	NA	NA	NA	1.13E-04	7.54E+01	8.48E-03	1.00E+00	3.06E-02	1.33E+01	6.32E+02	2.47E-02	6.24E+02	2.14E-02
BCEOT-E9+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	1.68E+02	7.89E-01	NA	NA	NA	NA	1.13E-04	1.49E+02	1.67E-02	1.00E+00	3.06E-02	2.63E+01	6.32E+02	2.47E-02	6.24E+02	4.22E-02
BCEOT-W9+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-E10+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	4.37E+02	2.05E+00	NA	NA	NA	NA	1.13E-04	3.87E+02	4.35E-02	1.00E+00	3.06E-02	6.85E+01	6.32E+02	2.47E-02	6.24E+02	1.10E-01
BCEOT-W10+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-E11+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	1.18E+02	5.53E-01	NA	NA	NA	NA	1.13E-04	1.04E+02	1.17E-02	1.00E+00	3.06E-02	1.85E+01	6.32E+02	2.47E-02	6.24E+02	2.96E-02
BCEOT-W11+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	7.83E+01	3.67E-01	NA	NA	NA	NA	1.13E-04	6.92E+01	7.78E-03	1.00E+00	3.06E-02	1.22E+01	6.32E+02	2.47E-02	6.24E+02	1.96E-02
BCEOT-E12+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	2.66E+02	1.25E+00	NA	NA	NA	NA	1.13E-04	2.35E+02	2.65E-02	1.00E+00	3.06E-02	4.17E+01	6.32E+02	2.47E-02	6.24E+02	6.69E-02
BCEOT-W12+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-E13+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	2.64E+02	1.24E+00	NA	NA	NA	NA	1.13E-04	2.34E+02	2.63E-02	1.00E+00	3.06E-02	4.14E+01	6.32E+02	2.47E-02	6.24E+02	6.64E-02
BCEOT-E14+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	1.41E+02	6.62E-01	NA	NA	NA	NA	1.13E-04	1.25E+02	1.40E-02	1.00E+00	3.06E-02	2.21E+01	6.32E+02	2.47E-02	6.24E+02	3.54E-02
BCEOT-W14+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-E15+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	2.24E+02	1.05E+00	NA	NA	NA	NA	1.13E-04	1.98E+02	2.23E-02	1.00E+00	3.06E-02	3.51E+01	6.32E+02	2.47E-02	6.24E+02	5.63E-02
BCEOT-W15+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	1.55E+02	7.29E-01	NA	NA	NA	NA	1.13E-04	1.37E+02	1.55E-02	1.00E+00	3.06E-02	2.43E+01	6.32E+02	2.47E-02	6.24E+02	3.90E-02
BCEOT-E16+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	9.37E+01	4.39E-01	NA	NA	NA	NA	1.13E-04	8.28E+01	9.31E-03	1.00E+00	3.06E-02	1.47E+01	6.32E+02	2.47E-02	6.24E+02	2.35E-02
BCEOT-W16+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-E17+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	1.40E+02	6.57E-01	NA	NA	NA	NA	1.13E-04	1.24E+02	1.39E-02	1.00E+00	3.06E-02	2.19E+01	6.32E+02	2.47E-02	6.24E+02	3.51E-02
BCEOT-W17+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	8.47E+01	3.97E-01	NA	NA	NA	NA	1.13E-04	7.49E+01	8.42E-03	1.00E+00	3.06E-02	1.33E+01	6.32E+02	2.47E-02	6.24E+02	2.13E-02
BCEOT-E18+12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	2.47E+03	1.16E+01	NA	NA	NA	NA	1.13E-04	2.18E+03	2.45E-01	1.00E+00	3.06E-02	3.86E+02	6.32E+02	2.47E-02	6.24E+02	6.19E-01
BCEOT-E18+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	1.26E+02	5.92E-01	NA	NA	NA	NA	1.13E-04	1.12E+02	1.26E-02	1.00E+00	3.06E-02	1.98E+01	6.32E+02	2.47E-02	6.24E+02	3.17E-02
BCEOT-W18+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	8.02E+01	3.76E-01	NA	NA	NA	NA	1.13E-04	7.09E+01	7.98E-03	1.00E+00	3.06E-02	1.26E+01	6.32E+02	2.47E-02	6.24E+02	2.01E-02
BCEOT-E19+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	1.10E+02	5.17E-01	NA	NA	NA	NA	1.13E-04	9.75E+01	1.10E-02	1.00E+00	3.06E-02	1.73E+01	6.32E+02	2.47E-02	6.24E+02	2.77E-02
BCEOT-W19+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-E20+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-W20+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	1.19E+02	5.58E-01	NA	NA	NA	NA	1.13E-04	1.05E+02	1.18E-02	1.00E+00	3.06E-02	1.86E+01	6.32E+02	2.47E-02	6.24E+02	2.99E-02
BCEOT-E21+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-W21+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	1.76E+02	8.26E-01	NA	NA	NA	NA	1.13E-04	1.56E+02	1.75E-02	1.00E+00	3.06E-02	2.76E+01	6.32E+02	2.47E-02	6.24E+02	4.42E-02
BCEOT-E22+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	1.45E+02	6.79E-01	NA	NA	NA	NA	1.13E-04	1.28E+02	1.44E-02	1.00E+00	3.06E-02	2.27E+01	6.32E+02	2.47E-02	6.24E+02	3.64E-02
BCEOT-E22+70 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-W22+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	1.50E+02	7.05E-01	NA	NA	NA	NA	1.13E-04	1.33E+02	1.49E-02	1.00E+00	3.06E-02	2.35E+01	6.32E+02	2.47E-02	6.24E+02	3.77E-02
BCEOT-E23+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-W23+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	1.52E+02	7.13E-01	NA	NA	NA	NA	1.13E-04	1.34E+02	1.51E-02	1.00E+00	3.06E-02	2.38E+01	6.32E+02	2.47E-02	6.24E+02	3.82E-02
BCEOT-E24+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-W24+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	1.33E+02	6.24E-01	NA	NA	NA	NA	1.13E-04	1.18E+02	1.32E-02	1.00E+00	3.06E-02	2.08E+01	6.32E+02	2.47E-02	6.24E+02	3.34E-02

TABLE C-11C: COPPER DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 11 - BEARTRAP CREEK DISPERSED TAILINGS DEPOSITS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK TAILINGS DEPOSITS AND FLOSSIE LOUISE MINE WASTE PILE (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **4.982**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Meadow Vole (Small Herbivorous Mammal - Terrestrial)																							
BCEOT-E25+20 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	9.23E+01	4.33E-01	NA	NA	NA	NA	1.13E-04	8.15E+01	9.18E-03	1.00E+00	3.06E-02	1.44E+01	6.32E+02	2.47E-02	6.24E+02	2.32E-02
BCEOT-W25+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	7.52E+01	3.53E-01	NA	NA	NA	NA	1.13E-04	6.65E+01	7.48E-03	1.00E+00	3.06E-02	1.18E+01	6.32E+02	2.47E-02	6.24E+02	1.89E-02
BCEOT-E26+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	1.43E+02	6.69E-01	NA	NA	NA	NA	1.13E-04	1.26E+02	1.42E-02	1.00E+00	3.06E-02	2.23E+01	6.32E+02	2.47E-02	6.24E+02	3.58E-02
BCEOT-W26+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	3.34E+02	1.57E+00	NA	NA	NA	NA	1.13E-04	2.95E+02	3.32E-02	1.00E+00	3.06E-02	5.22E+01	6.32E+02	2.47E-02	6.24E+02	8.38E-02
BCEOT-W27+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.13E+00	1.04E+02	4.88E-01	NA	NA	NA	NA	1.13E-04	9.19E+01	1.03E-02	1.00E+00	3.06E-02	1.63E+01	6.32E+02	2.47E-02	6.24E+02	2.61E-02
																						Maximum HQ (Outside Tailings Pile)	**6.19E-01**
White-Tailed Deer (Large Herbivorous Mammal - Terrestrial)																							
Reference Sites																							
ACBG-1 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	7.79E-01	6.20E+01	8.87E+01	NA	NA	NA	NA	2.86E-02	7.96E+01	2.28E+00	2.79E-02	1.35E+02	1.88E-02	6.32E+02	2.47E-02	3.77E+02	4.99E-05
ACBG-2 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	7.79E-01	1.95E+02	2.79E+02	NA	NA	NA	NA	2.86E-02	2.50E+02	7.16E+00	2.79E-02	1.35E+02	5.90E-02	6.32E+02	2.47E-02	3.77E+02	1.57E-04
BCBG-201 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	7.79E-01	4.89E+01	7.00E+01	NA	NA	NA	NA	2.86E-02	6.28E+01	1.80E+00	2.79E-02	1.35E+02	1.48E-02	6.32E+02	2.47E-02	3.77E+02	3.94E-05
Inside Tailings Pile																						**Minimum HQ (Reference Sites)**	**3.94E-05**
BCEOT-E0-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	1.37E+02	1.97E+02	NA	NA	NA	NA	2.86E-02	1.21E+02	3.48E+00	2.79E-02	1.35E+02	4.13E-02	6.32E+02	2.47E-02	3.77E+02	1.10E-04
BCEOT-E1-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	1.84E+02	2.63E+02	NA	NA	NA	NA	2.86E-02	1.63E+02	4.65E+00	2.79E-02	1.35E+02	5.53E-02	6.32E+02	2.47E-02	3.77E+02	1.47E-04
BCEOT-E2-8 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	1.16E+02	1.67E+02	NA	NA	NA	NA	2.86E-02	1.03E+02	2.95E+00	2.79E-02	1.35E+02	3.50E-02	6.32E+02	2.47E-02	3.77E+02	9.29E-05
BCEOT-E3-8 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	1.72E+02	2.47E+02	NA	NA	NA	NA	2.86E-02	1.52E+02	4.36E+00	2.79E-02	1.35E+02	5.18E-02	6.32E+02	2.47E-02	3.77E+02	1.37E-04
BCEOT-E4-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	1.13E+02	1.62E+02	NA	NA	NA	NA	2.86E-02	1.00E+02	2.86E+00	2.79E-02	1.35E+02	3.40E-02	6.32E+02	2.47E-02	3.77E+02	9.03E-05
BCEOT-W4-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	1.58E+02	2.26E+02	NA	NA	NA	NA	2.86E-02	1.39E+02	3.99E+00	2.79E-02	1.35E+02	4.75E-02	6.32E+02	2.47E-02	3.77E+02	1.26E-04
BCEOT-E5-25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	8.65E+01	1.24E+02	NA	NA	NA	NA	2.86E-02	7.64E+01	2.19E+00	2.79E-02	1.35E+02	2.60E-02	6.32E+02	2.47E-02	3.77E+02	6.90E-05
BCEOT-W5-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	4.56E+02	6.53E+02	NA	NA	NA	NA	2.86E-02	4.03E+02	1.15E+01	2.79E-02	1.35E+02	1.37E-01	6.32E+02	2.47E-02	3.77E+02	3.64E-04
BCEOT-E6-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	1.43E+02	2.05E+02	NA	NA	NA	NA	2.86E-02	1.26E+02	3.62E+00	2.79E-02	1.35E+02	4.30E-02	6.32E+02	2.47E-02	3.77E+02	1.14E-04
BCEOT-W6-12.5 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-W7-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	1.98E+02	2.83E+02	NA	NA	NA	NA	2.86E-02	1.75E+02	5.00E+00	2.79E-02	1.35E+02	5.94E-02	6.32E+02	2.47E-02	3.77E+02	1.58E-04
BCEOT-W8-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	2.55E+02	3.65E+02	NA	NA	NA	NA	2.86E-02	2.25E+02	6.46E+00	2.79E-02	1.35E+02	7.67E-02	6.32E+02	2.47E-02	3.77E+02	2.04E-04
BCEOT-E9-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	1.81E+02	2.60E+02	NA	NA	NA	NA	2.86E-02	1.60E+02	4.59E+00	2.79E-02	1.35E+02	5.45E-02	6.32E+02	2.47E-02	3.77E+02	1.45E-04
BCEOT-W9-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	4.37E+02	6.26E+02	NA	NA	NA	NA	2.86E-02	3.86E+02	1.11E+01	2.79E-02	1.35E+02	1.31E-01	6.32E+02	2.47E-02	3.77E+02	3.49E-04
BCEOT-E10-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	4.73E+02	6.77E+02	NA	NA	NA	NA	2.86E-02	4.18E+02	1.20E+01	2.79E-02	1.35E+02	1.42E-01	6.32E+02	2.47E-02	3.77E+02	3.78E-04
BCEOT-W10-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	1.54E+02	2.21E+02	NA	NA	NA	NA	2.86E-02	1.36E+02	3.90E+00	2.79E-02	1.35E+02	4.63E-02	6.32E+02	2.47E-02	3.77E+02	1.23E-04
BCEOT-E11-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	1.17E+02	1.67E+02	NA	NA	NA	NA	2.86E-02	1.03E+02	2.96E+00	2.79E-02	1.35E+02	3.51E-02	6.32E+02	2.47E-02	3.77E+02	9.32E-05
BCEOT-W11-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	4.82E+02	6.90E+02	NA	NA	NA	NA	2.86E-02	4.26E+02	1.22E+01	2.79E-02	1.35E+02	1.45E-01	6.32E+02	2.47E-02	3.77E+02	3.85E-04
BCEOT-E12-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	2.28E+02	3.27E+02	NA	NA	NA	NA	2.86E-02	2.02E+02	5.78E+00	2.79E-02	1.35E+02	6.87E-02	6.32E+02	2.47E-02	3.77E+02	1.82E-04
BCEOT-W12-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	3.26E+02	4.67E+02	NA	NA	NA	NA	2.86E-02	2.89E+02	8.26E+00	2.79E-02	1.35E+02	9.82E-02	6.32E+02	2.47E-02	3.77E+02	2.61E-04
BCEOT-E13-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	1.75E+02	2.50E+02	NA	NA	NA	NA	2.86E-02	1.55E+02	4.43E+00	2.79E-02	1.35E+02	5.26E-02	6.32E+02	2.47E-02	3.77E+02	1.40E-04
BCEOT-W13-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	1.95E+02	2.80E+02	NA	NA	NA	NA	2.86E-02	1.73E+02	4.94E+00	2.79E-02	1.35E+02	5.88E-02	6.32E+02	2.47E-02	3.77E+02	1.56E-04
BCEOT-W13-25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-W14-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	9.51E+01	1.36E+02	NA	NA	NA	NA	2.86E-02	8.40E+01	2.41E+00	2.79E-02	1.35E+02	2.86E-02	6.32E+02	2.47E-02	3.77E+02	7.59E-05
BCEOT-E15-8 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	2.26E+02	3.23E+02	NA	NA	NA	NA	2.86E-02	2.00E+02	5.71E+00	2.79E-02	1.35E+02	6.79E-02	6.32E+02	2.47E-02	3.77E+02	1.80E-04
BCEOT-W15-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	2.35E+02	3.37E+02	NA	NA	NA	NA	2.86E-02	2.08E+02	5.96E+00	2.79E-02	1.35E+02	7.08E-02	6.32E+02	2.47E-02	3.77E+02	1.88E-04
BCEOT-E16-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	5.48E+02	7.85E+02	NA	NA	NA	NA	2.86E-02	4.85E+02	1.39E+01	2.79E-02	1.35E+02	1.65E-01	6.32E+02	2.47E-02	3.77E+02	4.38E-04
BCEOT-W16-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	6.30E+02	9.02E+02	NA	NA	NA	NA	2.86E-02	5.57E+02	1.59E+01	2.79E-02	1.35E+02	1.90E-01	6.32E+02	2.47E-02	3.77E+02	5.03E-04
BCEOT-E17-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	3.05E+03	4.37E+03	NA	NA	NA	NA	2.86E-02	2.69E+03	7.72E+01	2.79E-02	1.35E+02	9.17E-01	6.32E+02	2.47E-02	3.77E+02	2.43E-03
BCEOT-W17-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	1.33E+02	1.90E+02	NA	NA	NA	NA	2.86E-02	1.17E+02	3.36E+00	2.79E-02	1.35E+02	3.99E-02	6.32E+02	2.47E-02	3.77E+02	1.06E-04
BCEOT-W18-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	3.36E+02	4.81E+02	NA	NA	NA	NA	2.86E-02	2.97E+02	8.50E+00	2.79E-02	1.35E+02	1.01E-01	6.32E+02	2.47E-02	3.77E+02	2.68E-04
BCEOT-E19-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	2.47E+02	3.53E+02	NA	NA	NA	NA	2.86E-02	2.18E+02	6.25E+00	2.79E-02	1.35E+02	7.43E-02	6.32E+02	2.47E-02	3.77E+02	1.97E-04
BCEOT-W19-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	9.30E+01	1.33E+02	NA	NA	NA	NA	2.86E-02	8.22E+01	2.35E+00	2.79E-02	1.35E+02	2.80E-02	6.32E+02	2.47E-02	3.77E+02	7.42E-05
BCEOT-E20-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	2.68E+02	3.83E+02	NA	NA	NA	NA	2.86E-02	2.37E+02	6.77E+00	2.79E-02	1.35E+02	8.05E-02	6.32E+02	2.47E-02	3.77E+02	2.14E-04
BCEOT-W20-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	8.02E+02	1.15E+03	NA	NA	NA	NA	2.86E-02	7.09E+02	2.03E+01	2.79E-02	1.35E+02	2.41E-01	6.32E+02	2.47E-02	3.77E+02	6.40E-04
BCEOT-E21-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	2.27E+02	3.24E+02	NA	NA	NA	NA	2.86E-02	2.00E+02	5.73E+00	2.79E-02	1.35E+02	6.82E-02	6.32E+02	2.47E-02	3.77E+02	1.81E-04
BCEOT-W21-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	2.12E+02	3.03E+02	NA	NA	NA	NA	2.86E-02	1.87E+02	5.35E+00	2.79E-02	1.35E+02	6.36E-02	6.32E+02	2.47E-02	3.77E+02	1.69E-04
BCEOT-E22-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	4.03E+02	5.76E+02	NA	NA	NA	NA	2.86E-02	3.56E+02	1.02E+01	2.79E-02	1.35E+02	1.21E-01	6.32E+02	2.47E-02	3.77E+02	3.21E-04
BCEOT-W22-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	2.22E+03	3.17E+03	NA	NA	NA	NA	2.86E-02	1.96E+03	5.61E+01	2.79E-02	1.35E+02	6.67E-01	6.32E+02	2.47E-02	3.77E+02	1.77E-03
BCEOT-E23-15 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	1.06E+02	1.52E+02	NA	NA	NA	NA	2.86E-02	9.39E+01	2.69E+00	2.79E-02	1.35E+02	3.20E-02	6.32E+02	2.47E-02	3.77E+02	8.48E-05
BCEOT-W23-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	1.08E+03	1.55E+03	NA	NA	NA	NA	2.86E-02	9.54E+02	2.73E+01	2.79E-02	1.35E+02	3.25E-01	6.32E+02	2.47E-02	3.77E+02	8.62E-04
BCEOT-E24-12.5 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB

TABLE C-11C: COPPER DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 11 - BEARTRAP CREEK DISPERSED TAILINGS DEPOSITS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK TAILINGS DEPOSITS AND FLOSSIE LOUISE MINE WASTE PILE (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **4.982**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
White-Tailed Deer (Large Herbivorous Mammal - Terrestrial)																							
BCEOT-W24-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	6.71E+02	9.61E+02	NA	NA	NA	NA	2.86E-02	5.93E+02	1.70E+01	2.79E-02	1.35E+02	2.02E-01	6.32E+02	2.47E-02	3.77E+02	5.36E-04
BCEOT-E25-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	3.41E+02	4.89E+02	NA	NA	NA	NA	2.86E-02	3.02E+02	8.64E+00	2.79E-02	1.35E+02	1.03E-01	6.32E+02	2.47E-02	3.77E+02	2.72E-04
BCEOT-W25-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	6.87E+02	9.84E+02	NA	NA	NA	NA	2.86E-02	6.07E+02	1.74E+01	2.79E-02	1.35E+02	2.07E-01	6.32E+02	2.47E-02	3.77E+02	5.48E-04
BCEOT-E26-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	8.13E+01	1.16E+02	NA	NA	NA	NA	2.86E-02	7.18E+01	2.06E+00	2.79E-02	1.35E+02	2.44E-02	6.32E+02	2.47E-02	3.77E+02	6.49E-05
BCEOT-W26-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	2.56E+02	3.66E+02	NA	NA	NA	NA	2.86E-02	2.26E+02	6.47E+00	2.79E-02	1.35E+02	7.69E-02	6.32E+02	2.47E-02	3.77E+02	2.04E-04
BCEOT-W27-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	4.41E+02	6.31E+02	NA	NA	NA	NA	2.86E-02	3.90E+02	1.12E+01	2.79E-02	1.35E+02	1.33E-01	6.32E+02	2.47E-02	3.77E+02	3.52E-04
At Edge of Tailings Pile																						**Maximum HQ (Inside Tailings Pile)**	**2.43E-03**
BCEOT-E0-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	2.30E+02	3.29E+02	NA	NA	NA	NA	2.86E-02	2.03E+02	5.82E+00	2.79E-02	1.35E+02	6.92E-02	6.32E+02	2.47E-02	3.77E+02	1.84E-04
BCEOT-E1-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-E2-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	3.08E+02	4.40E+02	NA	NA	NA	NA	2.86E-02	2.72E+02	7.78E+00	2.79E-02	1.35E+02	9.25E-02	6.32E+02	2.47E-02	3.77E+02	2.46E-04
BCEOT-E3-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-E4-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-W4-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-E5-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	2.08E+02	2.98E+02	NA	NA	NA	NA	2.86E-02	1.84E+02	5.27E+00	2.79E-02	1.35E+02	6.26E-02	6.32E+02	2.47E-02	3.77E+02	1.66E-04
BCEOT-W5-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	1.01E+02	1.45E+02	NA	NA	NA	NA	2.86E-02	8.95E+01	2.56E+00	2.79E-02	1.35E+02	3.05E-02	6.32E+02	2.47E-02	3.77E+02	8.09E-05
BCEOT-E6-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	8.13E+01	1.16E+02	NA	NA	NA	NA	2.86E-02	7.18E+01	2.06E+00	2.79E-02	1.35E+02	2.45E-02	6.32E+02	2.47E-02	3.77E+02	6.49E-05
BCEOT-W6-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	1.06E+02	1.52E+02	NA	NA	NA	NA	2.86E-02	9.37E+01	2.68E+00	2.79E-02	1.35E+02	3.19E-02	6.32E+02	2.47E-02	3.77E+02	8.46E-05
BCEOT-E7-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	1.61E+02	2.30E+02	NA	NA	NA	NA	2.86E-02	1.42E+02	4.06E+00	2.79E-02	1.35E+02	4.83E-02	6.32E+02	2.47E-02	3.77E+02	1.28E-04
BCEOT-W7-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	8.23E+01	1.18E+02	NA	NA	NA	NA	2.86E-02	7.28E+01	2.08E+00	2.79E-02	1.35E+02	2.48E-02	6.32E+02	2.47E-02	3.77E+02	6.57E-05
BCEOT-W8-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-E9-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	8.42E+01	1.21E+02	NA	NA	NA	NA	2.86E-02	7.44E+01	2.13E+00	2.79E-02	1.35E+02	2.53E-02	6.32E+02	2.47E-02	3.77E+02	6.72E-05
BCEOT-W9-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-E10-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	4.98E+02	7.13E+02	NA	NA	NA	NA	2.86E-02	4.40E+02	1.26E+01	2.79E-02	1.35E+02	1.50E-01	6.32E+02	2.47E-02	3.77E+02	3.98E-04
BCEOT-W10-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-E11-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	1.13E+02	1.62E+02	NA	NA	NA	NA	2.86E-02	1.00E+02	2.87E+00	2.79E-02	1.35E+02	3.41E-02	6.32E+02	2.47E-02	3.77E+02	9.06E-05
BCEOT-W11-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	1.82E+02	2.61E+02	NA	NA	NA	NA	2.86E-02	1.61E+02	4.62E+00	2.79E-02	1.35E+02	5.49E-02	6.32E+02	2.47E-02	3.77E+02	1.46E-04
BCEOT-E12-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	2.29E+02	3.28E+02	NA	NA	NA	NA	2.86E-02	2.02E+02	5.80E+00	2.79E-02	1.35E+02	6.89E-02	6.32E+02	2.47E-02	3.77E+02	1.83E-04
BCEOT-W12-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-E13-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	1.19E+02	1.71E+02	NA	NA	NA	NA	2.86E-02	1.05E+02	3.02E+00	2.79E-02	1.35E+02	3.59E-02	6.32E+02	2.47E-02	3.77E+02	9.52E-05
BCEOT-W13-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-E14-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	1.22E+02	1.75E+02	NA	NA	NA	NA	2.86E-02	1.08E+02	3.10E+00	2.79E-02	1.35E+02	3.68E-02	6.32E+02	2.47E-02	3.77E+02	9.77E-05
BCEOT-W14-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	1.16E+02	1.66E+02	NA	NA	NA	NA	2.86E-02	1.03E+02	2.94E+00	2.79E-02	1.35E+02	3.49E-02	6.32E+02	2.47E-02	3.77E+02	9.27E-05
BCEOT-E15-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	1.79E+02	2.56E+02	NA	NA	NA	NA	2.86E-02	1.58E+02	4.52E+00	2.79E-02	1.35E+02	5.38E-02	6.32E+02	2.47E-02	3.77E+02	1.43E-04
BCEOT-W15-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	1.81E+02	2.59E+02	NA	NA	NA	NA	2.86E-02	1.60E+02	4.57E+00	2.79E-02	1.35E+02	5.43E-02	6.32E+02	2.47E-02	3.77E+02	1.44E-04
BCEOT-E16-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	1.22E+02	1.74E+02	NA	NA	NA	NA	2.86E-02	1.08E+02	3.08E+00	2.79E-02	1.35E+02	3.66E-02	6.32E+02	2.47E-02	3.77E+02	9.71E-05
BCEOT-W16-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-E17-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	2.16E+02	3.09E+02	NA	NA	NA	NA	2.86E-02	1.91E+02	5.46E+00	2.79E-02	1.35E+02	6.49E-02	6.32E+02	2.47E-02	3.77E+02	1.72E-04
BCEOT-W17-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	1.28E+02	1.83E+02	NA	NA	NA	NA	2.86E-02	1.13E+02	3.23E+00	2.79E-02	1.35E+02	3.84E-02	6.32E+02	2.47E-02	3.77E+02	1.02E-04
BCEOT-E18-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	1.31E+02	1.87E+02	NA	NA	NA	NA	2.86E-02	1.16E+02	3.31E+00	2.79E-02	1.35E+02	3.93E-02	6.32E+02	2.47E-02	3.77E+02	1.04E-04
BCEOT-W18-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	9.38E+01	1.34E+02	NA	NA	NA	NA	2.86E-02	8.29E+01	2.37E+00	2.79E-02	1.35E+02	2.82E-02	6.32E+02	2.47E-02	3.77E+02	7.48E-05
BCEOT-E19-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	7.38E+01	1.06E+02	NA	NA	NA	NA	2.86E-02	6.52E+01	1.87E+00	2.79E-02	1.35E+02	2.22E-02	6.32E+02	2.47E-02	3.77E+02	5.89E-05
BCEOT-W19-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	7.36E+01	1.05E+02	NA	NA	NA	NA	2.86E-02	6.51E+01	1.86E+00	2.79E-02	1.35E+02	2.21E-02	6.32E+02	2.47E-02	3.77E+02	5.88E-05
BCEOT-E20-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-W20-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	7.42E+01	1.06E+02	NA	NA	NA	NA	2.86E-02	6.56E+01	1.88E+00	2.79E-02	1.35E+02	2.23E-02	6.32E+02	2.47E-02	3.77E+02	5.92E-05
BCEOT-E21-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	1.92E+02	2.74E+02	NA	NA	NA	NA	2.86E-02	1.69E+02	4.85E+00	2.79E-02	1.35E+02	5.76E-02	6.32E+02	2.47E-02	3.77E+02	1.53E-04
BCEOT-W21-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	1.46E+02	2.10E+02	NA	NA	NA	NA	2.86E-02	1.29E+02	3.71E+00	2.79E-02	1.35E+02	4.41E-02	6.32E+02	2.47E-02	3.77E+02	1.17E-04
BCEOT-E22-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	8.26E+01	1.18E+02	NA	NA	NA	NA	2.86E-02	7.30E+01	2.09E+00	2.79E-02	1.35E+02	2.49E-02	6.32E+02	2.47E-02	3.77E+02	6.59E-05
BCEOT-W22-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	1.95E+02	2.79E+02	NA	NA	NA	NA	2.86E-02	1.72E+02	4.94E+00	2.79E-02	1.35E+02	5.87E-02	6.32E+02	2.47E-02	3.77E+02	1.56E-04
BCEOT-E23-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-W23-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	1.21E+02	1.73E+02	NA	NA	NA	NA	2.86E-02	1.07E+02	3.07E+00	2.79E-02	1.35E+02	3.64E-02	6.32E+02	2.47E-02	3.77E+02	9.67E-05
BCEOT-E24-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-W24-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	1.64E+02	2.35E+02	NA	NA	NA	NA	2.86E-02	1.45E+02	4.15E+00	2.79E-02	1.35E+02	4.93E-02	6.32E+02	2.47E-02	3.77E+02	1.31E-04
BCEOT-E25-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB

TABLE C-11C: COPPER DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 11 - BEARTRAP CREEK DISPERSED TAILINGS DEPOSITS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK TAILINGS DEPOSITS AND FLOSSIE LOUISE MINE WASTE PILE (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **4.982**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
White-Tailed Deer (Large Herbivorous Mammal - Terrestrial)																							
BCEOT-W25-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	1.70E+02	2.44E+02	NA	NA	NA	NA	2.86E-02	1.51E+02	4.31E+00	2.79E-02	1.35E+02	5.12E-02	6.32E+02	2.47E-02	3.77E+02	1.36E-04
BCEOT-E26-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	8.51E+01	1.22E+02	NA	NA	NA	NA	2.86E-02	7.52E+01	2.15E+00	2.79E-02	1.35E+02	2.56E-02	6.32E+02	2.47E-02	3.77E+02	6.79E-05
BCEOT-W26-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	8.03E+01	1.15E+02	NA	NA	NA	NA	2.86E-02	7.10E+01	2.03E+00	2.79E-02	1.35E+02	2.42E-02	6.32E+02	2.47E-02	3.77E+02	6.41E-05
BCEOT-W27-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	1.11E+02	1.59E+02	NA	NA	NA	NA	2.86E-02	9.80E+01	2.81E+00	2.79E-02	1.35E+02	3.34E-02	6.32E+02	2.47E-02	3.77E+02	8.85E-05
Outside Tailings Piles																						**Maximum HQ (Edge of Tailings Pile)**	**3.98E-04**
BCEOT-E0+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	9.86E+01	1.41E+02	NA	NA	NA	NA	2.86E-02	8.71E+01	2.50E+00	2.79E-02	1.35E+02	2.97E-02	6.32E+02	2.47E-02	3.77E+02	7.87E-05
BCEOT-E1+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	2.07E+02	2.96E+02	NA	NA	NA	NA	2.86E-02	1.83E+02	5.23E+00	2.79E-02	1.35E+02	6.22E-02	6.32E+02	2.47E-02	3.77E+02	1.65E-04
BCEOT-E2+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	1.08E+02	1.55E+02	NA	NA	NA	NA	2.86E-02	9.55E+01	2.73E+00	2.79E-02	1.35E+02	3.25E-02	6.32E+02	2.47E-02	3.77E+02	8.62E-05
BCEOT-E3+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-E4+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	1.21E+02	1.74E+02	NA	NA	NA	NA	2.86E-02	1.07E+02	3.07E+00	2.79E-02	1.35E+02	3.65E-02	6.32E+02	2.47E-02	3.77E+02	9.68E-05
BCEOT-W4+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	1.19E+02	1.70E+02	NA	NA	NA	NA	2.86E-02	1.05E+02	3.00E+00	2.79E-02	1.35E+02	3.57E-02	6.32E+02	2.47E-02	3.77E+02	9.47E-05
BCEOT-E5+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	1.44E+02	2.05E+02	NA	NA	NA	NA	2.86E-02	1.27E+02	3.63E+00	2.79E-02	1.35E+02	4.32E-02	6.32E+02	2.47E-02	3.77E+02	1.15E-04
BCEOT-W5+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	9.31E+01	1.33E+02	NA	NA	NA	NA	2.86E-02	8.23E+01	2.36E+00	2.79E-02	1.35E+02	2.80E-02	6.32E+02	2.47E-02	3.77E+02	7.43E-05
BCEOT-E6+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	8.96E+01	1.28E+02	NA	NA	NA	NA	2.86E-02	7.92E+01	2.27E+00	2.79E-02	1.35E+02	2.70E-02	6.32E+02	2.47E-02	3.77E+02	7.15E-05
BCEOT-W6+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	7.48E+01	1.07E+02	NA	NA	NA	NA	2.86E-02	6.61E+01	1.89E+00	2.79E-02	1.35E+02	2.25E-02	6.32E+02	2.47E-02	3.77E+02	5.97E-05
BCEOT-E7+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	1.22E+02	1.74E+02	NA	NA	NA	NA	2.86E-02	1.08E+02	3.08E+00	2.79E-02	1.35E+02	3.66E-02	6.32E+02	2.47E-02	3.77E+02	9.72E-05
BCEOT-W7+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
FLWA-101 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	7.99E+01	1.14E+02	NA	NA	NA	NA	2.86E-02	7.06E+01	2.02E+00	2.79E-02	1.35E+02	2.40E-02	6.32E+02	2.47E-02	3.77E+02	6.37E-05
BCEOT-W8+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	8.53E+01	1.22E+02	NA	NA	NA	NA	2.86E-02	7.54E+01	2.16E+00	2.79E-02	1.35E+02	2.56E-02	6.32E+02	2.47E-02	3.77E+02	6.81E-05
BCEOT-E9+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	1.68E+02	2.41E+02	NA	NA	NA	NA	2.86E-02	1.49E+02	4.26E+00	2.79E-02	1.35E+02	5.06E-02	6.32E+02	2.47E-02	3.77E+02	1.34E-04
BCEOT-W9+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-E10+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	4.37E+02	6.26E+02	NA	NA	NA	NA	2.86E-02	3.87E+02	1.11E+01	2.79E-02	1.35E+02	1.32E-01	6.32E+02	2.47E-02	3.77E+02	3.49E-04
BCEOT-W10+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-E11+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	1.18E+02	1.69E+02	NA	NA	NA	NA	2.86E-02	1.04E+02	2.99E+00	2.79E-02	1.35E+02	3.55E-02	6.32E+02	2.47E-02	3.77E+02	9.42E-05
BCEOT-W11+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	7.83E+01	1.12E+02	NA	NA	NA	NA	2.86E-02	6.92E+01	1.98E+00	2.79E-02	1.35E+02	2.35E-02	6.32E+02	2.47E-02	3.77E+02	6.25E-05
BCEOT-E12+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	2.66E+02	3.81E+02	NA	NA	NA	NA	2.86E-02	2.35E+02	6.74E+00	2.79E-02	1.35E+02	8.01E-02	6.32E+02	2.47E-02	3.77E+02	2.13E-04
BCEOT-W12+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-E13+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	2.64E+02	3.79E+02	NA	NA	NA	NA	2.86E-02	2.34E+02	6.69E+00	2.79E-02	1.35E+02	7.95E-02	6.32E+02	2.47E-02	3.77E+02	2.11E-04
BCEOT-E14+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	1.41E+02	2.02E+02	NA	NA	NA	NA	2.86E-02	1.25E+02	3.57E+00	2.79E-02	1.35E+02	4.25E-02	6.32E+02	2.47E-02	3.77E+02	1.13E-04
BCEOT-W14+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-E15+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	2.24E+02	3.21E+02	NA	NA	NA	NA	2.86E-02	1.98E+02	5.67E+00	2.79E-02	1.35E+02	6.74E-02	6.32E+02	2.47E-02	3.77E+02	1.79E-04
BCEOT-W15+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	1.55E+02	2.23E+02	NA	NA	NA	NA	2.86E-02	1.37E+02	3.93E+00	2.79E-02	1.35E+02	4.68E-02	6.32E+02	2.47E-02	3.77E+02	1.24E-04
BCEOT-E16+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	9.37E+01	1.34E+02	NA	NA	NA	NA	2.86E-02	8.28E+01	2.37E+00	2.79E-02	1.35E+02	2.82E-02	6.32E+02	2.47E-02	3.77E+02	7.48E-05
BCEOT-W16+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-E17+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	1.40E+02	2.01E+02	NA	NA	NA	NA	2.86E-02	1.24E+02	3.54E+00	2.79E-02	1.35E+02	4.21E-02	6.32E+02	2.47E-02	3.77E+02	1.12E-04
BCEOT-W17+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	8.47E+01	1.21E+02	NA	NA	NA	NA	2.86E-02	7.49E+01	2.14E+00	2.79E-02	1.35E+02	2.55E-02	6.32E+02	2.47E-02	3.77E+02	6.76E-05
BCEOT-E18+12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	2.47E+03	3.53E+03	NA	NA	NA	NA	2.86E-02	2.18E+03	6.24E+01	2.79E-02	1.35E+02	7.42E-01	6.32E+02	2.47E-02	3.77E+02	1.97E-03
BCEOT-E18+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	1.26E+02	1.81E+02	NA	NA	NA	NA	2.86E-02	1.12E+02	3.20E+00	2.79E-02	1.35E+02	3.80E-02	6.32E+02	2.47E-02	3.77E+02	1.01E-04
BCEOT-W18+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	8.02E+01	1.15E+02	NA	NA	NA	NA	2.86E-02	7.09E+01	2.03E+00	2.79E-02	1.35E+02	2.41E-02	6.32E+02	2.47E-02	3.77E+02	6.41E-05
BCEOT-E19+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	1.10E+02	1.58E+02	NA	NA	NA	NA	2.86E-02	9.75E+01	2.79E+00	2.79E-02	1.35E+02	3.32E-02	6.32E+02	2.47E-02	3.77E+02	8.80E-05
BCEOT-W19+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-E20+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-W20+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	1.19E+02	1.70E+02	NA	NA	NA	NA	2.86E-02	1.05E+02	3.01E+00	2.79E-02	1.35E+02	3.58E-02	6.32E+02	2.47E-02	3.77E+02	9.49E-05
BCEOT-E21+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-W21+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	1.76E+02	2.52E+02	NA	NA	NA	NA	2.86E-02	1.56E+02	4.46E+00	2.79E-02	1.35E+02	5.30E-02	6.32E+02	2.47E-02	3.77E+02	1.41E-04
BCEOT-E22+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	1.45E+02	2.07E+02	NA	NA	NA	NA	2.86E-02	1.28E+02	3.67E+00	2.79E-02	1.35E+02	4.36E-02	6.32E+02	2.47E-02	3.77E+02	1.16E-04
BCEOT-E22+70 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-W22+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	1.50E+02	2.15E+02	NA	NA	NA	NA	2.86E-02	1.33E+02	3.80E+00	2.79E-02	1.35E+02	4.52E-02	6.32E+02	2.47E-02	3.77E+02	1.20E-04
BCEOT-E23+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-W23+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	1.52E+02	2.18E+02	NA	NA	NA	NA	2.86E-02	1.34E+02	3.85E+00	2.79E-02	1.35E+02	4.58E-02	6.32E+02	2.47E-02	3.77E+02	1.21E-04
BCEOT-E24+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB

TABLE C-11C: COPPER DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 11 - BEARTRAP CREEK DISPERSED TAILINGS DEPOSITS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK TAILINGS DEPOSITS AND FLOSSIE LOUISE MINE WASTE PILE (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **4.982**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
White-Tailed Deer (Large Herbivorous Mammal - Terrestrial)																							
BCEOT-W24+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	1.33E+02	1.91E+02	NA	NA	NA	NA	2.86E-02	1.18E+02	3.37E+00	2.79E-02	1.35E+02	4.00E-02	6.32E+02	2.47E-02	3.77E+02	1.06E-04
BCEOT-E25+20 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	9.23E+01	1.32E+02	NA	NA	NA	NA	2.86E-02	8.15E+01	2.33E+00	2.79E-02	1.35E+02	2.78E-02	6.32E+02	2.47E-02	3.77E+02	7.36E-05
BCEOT-W25+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	7.52E+01	1.08E+02	NA	NA	NA	NA	2.86E-02	6.65E+01	1.90E+00	2.79E-02	1.35E+02	2.26E-02	6.32E+02	2.47E-02	3.77E+02	6.00E-05
BCEOT-E26+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	1.43E+02	2.04E+02	NA	NA	NA	NA	2.86E-02	1.26E+02	3.61E+00	2.79E-02	1.35E+02	4.29E-02	6.32E+02	2.47E-02	3.77E+02	1.14E-04
BCEOT-W26+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	3.34E+02	4.78E+02	NA	NA	NA	NA	2.86E-02	2.95E+02	8.45E+00	2.79E-02	1.35E+02	1.00E-01	6.32E+02	2.47E-02	3.77E+02	2.66E-04
BCEOT-W27+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.13E+00	1.04E+02	1.49E+02	NA	NA	NA	NA	2.86E-02	9.19E+01	2.63E+00	2.79E-02	1.35E+02	3.13E-02	6.32E+02	2.47E-02	3.77E+02	8.30E-05
																						Maximum HQ (Outside Tailings Pile)	**1.97E-03**
Red Fox (Carnivorous Mammal - Terrestrial)																							
Reference Sites																							
ACBG-1 (0-6")	1.72E-01	1.72E-01	6.61E-01	5.26E+01	9.02E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	7.96E+01	3.82E-01	3.68E-03	4.54E+00	7.63E-03	6.32E+02	2.47E-02	4.62E+02	1.65E-05
ACBG-2 (0-6")	1.72E-01	1.72E-01	6.61E-01	1.65E+02	2.83E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.50E+02	1.20E+00	3.68E-03	4.54E+00	2.40E-02	6.32E+02	2.47E-02	4.62E+02	5.19E-05
BCBG-201 (0-6")	1.72E-01	1.72E-01	6.61E-01	4.15E+01	7.12E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	6.28E+01	3.02E-01	3.68E-03	4.54E+00	6.02E-03	6.32E+02	2.47E-02	4.62E+02	1.30E-05
Inside Tailings Pile																						**Minimum HQ (Reference Sites)**	**1.30E-05**
BCEOT-E0-12.5 (0-6")	1.72E-01	1.72E-01	1.01E+00	1.23E+02	2.10E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.21E+02	5.83E-01	3.68E-03	4.54E+00	1.75E-02	6.32E+02	2.47E-02	4.62E+02	3.80E-05
BCEOT-E1-12.5 (0-6")	1.72E-01	1.72E-01	1.01E+00	1.64E+02	2.82E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.63E+02	7.81E-01	3.68E-03	4.54E+00	2.35E-02	6.32E+02	2.47E-02	4.62E+02	5.08E-05
BCEOT-E2-8 (0-6")	1.72E-01	1.72E-01	1.01E+00	1.04E+02	1.78E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.03E+02	4.94E-01	3.68E-03	4.54E+00	1.49E-02	6.32E+02	2.47E-02	4.62E+02	3.22E-05
BCEOT-E3-8 (0-6")	1.72E-01	1.72E-01	1.01E+00	1.54E+02	2.64E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.52E+02	7.31E-01	3.68E-03	4.54E+00	2.20E-02	6.32E+02	2.47E-02	4.62E+02	4.76E-05
BCEOT-E4-12.5 (0-6")	1.72E-01	1.72E-01	1.01E+00	1.01E+02	1.73E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.00E+02	4.80E-01	3.68E-03	4.54E+00	1.45E-02	6.32E+02	2.47E-02	4.62E+02	3.13E-05
BCEOT-W4-12.5 (0-6")	1.72E-01	1.72E-01	1.01E+00	1.41E+02	2.42E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.39E+02	6.70E-01	3.68E-03	4.54E+00	2.02E-02	6.32E+02	2.47E-02	4.62E+02	4.36E-05
BCEOT-E5-25 (0-6")	1.72E-01	1.72E-01	1.01E+00	7.72E+01	1.32E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	7.64E+01	3.67E-01	3.68E-03	4.54E+00	1.10E-02	6.32E+02	2.47E-02	4.62E+02	2.39E-05
BCEOT-W5-12.5 (0-6")	1.72E-01	1.72E-01	1.01E+00	4.07E+02	6.98E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.03E+02	1.94E+00	3.68E-03	4.54E+00	5.82E-02	6.32E+02	2.47E-02	4.62E+02	1.26E-04
BCEOT-E6-12.5 (0-6")	1.72E-01	1.72E-01	1.01E+00	1.28E+02	2.19E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.26E+02	6.07E-01	3.68E-03	4.54E+00	1.83E-02	6.32E+02	2.47E-02	4.62E+02	3.95E-05
BCEOT-W6-12.5 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-E7-12.5 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-W7-12.5 (0-6")	1.72E-01	1.72E-01	1.01E+00	1.76E+02	3.03E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.75E+02	8.39E-01	3.68E-03	4.54E+00	2.52E-02	6.32E+02	2.47E-02	4.62E+02	5.46E-05
BCEOT-W8-12.5 (0-6")	1.72E-01	1.72E-01	1.01E+00	2.28E+02	3.91E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.25E+02	1.08E+00	3.68E-03	4.54E+00	3.26E-02	6.32E+02	2.47E-02	4.62E+02	7.05E-05
BCEOT-E9-12.5 (0-6")	1.72E-01	1.72E-01	1.01E+00	1.62E+02	2.78E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.60E+02	7.70E-01	3.68E-03	4.54E+00	2.32E-02	6.32E+02	2.47E-02	4.62E+02	5.01E-05
BCEOT-W9-12.5 (0-6")	1.72E-01	1.72E-01	1.01E+00	3.90E+02	6.70E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.86E+02	1.86E+00	3.68E-03	4.54E+00	5.58E-02	6.32E+02	2.47E-02	4.62E+02	1.21E-04
BCEOT-E10-12.5 (0-6")	1.72E-01	1.72E-01	1.01E+00	4.22E+02	7.25E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.18E+02	2.01E+00	3.68E-03	4.54E+00	6.04E-02	6.32E+02	2.47E-02	4.62E+02	1.31E-04
BCEOT-W10-12.5 (0-6")	1.72E-01	1.72E-01	1.01E+00	1.38E+02	2.36E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.36E+02	6.54E-01	3.68E-03	4.54E+00	1.97E-02	6.32E+02	2.47E-02	4.62E+02	4.26E-05
BCEOT-E11-12.5 (0-6")	1.72E-01	1.72E-01	1.01E+00	1.04E+02	1.79E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.03E+02	4.96E-01	3.68E-03	4.54E+00	1.49E-02	6.32E+02	2.47E-02	4.62E+02	3.23E-05
BCEOT-W11-12.5 (0-6")	1.72E-01	1.72E-01	1.01E+00	4.30E+02	7.38E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.26E+02	2.05E+00	3.68E-03	4.54E+00	6.15E-02	6.32E+02	2.47E-02	4.62E+02	1.33E-04
BCEOT-E12-12.5 (0-6")	1.72E-01	1.72E-01	1.01E+00	2.04E+02	3.50E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.02E+02	9.70E-01	3.68E-03	4.54E+00	2.92E-02	6.32E+02	2.47E-02	4.62E+02	6.32E-05
BCEOT-W12-12.5 (0-6")	1.72E-01	1.72E-01	1.01E+00	2.91E+02	5.00E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.89E+02	1.39E+00	3.68E-03	4.54E+00	4.17E-02	6.32E+02	2.47E-02	4.62E+02	9.03E-05
BCEOT-E13-12.5 (0-6")	1.72E-01	1.72E-01	1.01E+00	1.56E+02	2.68E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.55E+02	7.43E-01	3.68E-03	4.54E+00	2.23E-02	6.32E+02	2.47E-02	4.62E+02	4.84E-05
BCEOT-W13-12.5 (0-6")	1.72E-01	1.72E-01	1.01E+00	1.74E+02	2.99E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.73E+02	8.29E-01	3.68E-03	4.54E+00	2.49E-02	6.32E+02	2.47E-02	4.62E+02	5.40E-05
BCEOT-W13-25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-W14-12.5 (0-6")	1.72E-01	1.72E-01	1.01E+00	8.49E+01	1.46E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	8.40E+01	4.03E-01	3.68E-03	4.54E+00	1.21E-02	6.32E+02	2.47E-02	4.62E+02	2.63E-05
BCEOT-E15-8 (0-6")	1.72E-01	1.72E-01	1.01E+00	2.02E+02	3.46E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.00E+02	9.58E-01	3.68E-03	4.54E+00	2.88E-02	6.32E+02	2.47E-02	4.62E+02	6.24E-05
BCEOT-W15-12.5 (0-6")	1.72E-01	1.72E-01	1.01E+00	2.10E+02	3.61E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.08E+02	9.99E-01	3.68E-03	4.54E+00	3.01E-02	6.32E+02	2.47E-02	4.62E+02	6.51E-05
BCEOT-E16-12.5 (0-6")	1.72E-01	1.72E-01	1.01E+00	4.90E+02	8.40E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.85E+02	2.33E+00	3.68E-03	4.54E+00	7.00E-02	6.32E+02	2.47E-02	4.62E+02	1.52E-04
BCEOT-W16-12.5 (0-6")	1.72E-01	1.72E-01	1.01E+00	5.63E+02	9.65E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.57E+02	2.68E+00	3.68E-03	4.54E+00	8.05E-02	6.32E+02	2.47E-02	4.62E+02	1.74E-04
BCEOT-E17-12.5 (0-6")	1.72E-01	1.72E-01	1.01E+00	2.72E+03	4.67E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.69E+03	1.29E+01	3.68E-03	4.54E+00	3.89E-01	6.32E+02	2.47E-02	4.62E+02	8.43E-04
BCEOT-W17-12.5 (0-6")	1.72E-01	1.72E-01	1.01E+00	1.19E+02	2.03E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.17E+02	5.64E-01	3.68E-03	4.54E+00	1.70E-02	6.32E+02	2.47E-02	4.62E+02	3.67E-05
BCEOT-W18-12.5 (0-6")	1.72E-01	1.72E-01	1.01E+00	3.00E+02	5.14E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.97E+02	1.43E+00	3.68E-03	4.54E+00	4.29E-02	6.32E+02	2.47E-02	4.62E+02	9.28E-05
BCEOT-E19-12.5 (0-6")	1.72E-01	1.72E-01	1.01E+00	2.20E+02	3.78E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.18E+02	1.05E+00	3.68E-03	4.54E+00	3.15E-02	6.32E+02	2.47E-02	4.62E+02	6.83E-05
BCEOT-W19-12.5 (0-6")	1.72E-01	1.72E-01	1.01E+00	8.30E+01	1.42E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	8.22E+01	3.95E-01	3.68E-03	4.54E+00	1.19E-02	6.32E+02	2.47E-02	4.62E+02	2.57E-05
BCEOT-E20-12.5 (0-6")	1.72E-01	1.72E-01	1.01E+00	2.39E+02	4.10E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.37E+02	1.14E+00	3.68E-03	4.54E+00	3.42E-02	6.32E+02	2.47E-02	4.62E+02	7.40E-05
BCEOT-W20-12.5 (0-6")	1.72E-01	1.72E-01	1.01E+00	7.16E+02	1.23E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	7.09E+02	3.40E+00	3.68E-03	4.54E+00	1.02E-01	6.32E+02	2.47E-02	4.62E+02	2.22E-04
BCEOT-E21-12.5 (0-6")	1.72E-01	1.72E-01	1.01E+00	2.02E+02	3.47E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.00E+02	9.62E-01	3.68E-03	4.54E+00	2.89E-02	6.32E+02	2.47E-02	4.62E+02	6.26E-05
BCEOT-W21-12.5 (0-6")	1.72E-01	1.72E-01	1.01E+00	1.89E+02	3.24E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.87E+02	8.98E-01	3.68E-03	4.54E+00	2.70E-02	6.32E+02	2.47E-02	4.62E+02	5.85E-05
BCEOT-E22-12.5 (0-6")	1.72E-01	1.72E-01	1.01E+00	3.59E+02	6.17E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.56E+02	1.71E+00	3.68E-03	4.54E+00	5.14E-02	6.32E+02	2.47E-02	4.62E+02	1.11E-04
BCEOT-W22-12.5 (0-6")	1.72E-01	1.72E-01	1.01E+00	1.98E+03	3.39E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.96E+03	9.41E+00	3.68E-03	4.54E+00	2.83E-01	6.32E+02	2.47E-02	4.62E+02	6.13E-04
BCEOT-E23-15 (0-6")	1.72E-01	1.72E-01	1.01E+00	9.49E+01	1.63E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	9.39E+01	4.51E-01	3.68E-03	4.54E+00	1.36E-02	6.32E+02	2.47E-02	4.62E+02	2.94E-05
BCEOT-W23-12.5 (0-6")	1.72E-01	1.72E-01	1.01E+00	9.64E+02	1.65E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	9.54E+02	4.58E+00	3.68E-03	4.54E+00	1.38E-01	6.32E+02	2.47E-02	4.62E+02	2.99E-04

TABLE C-11C: COPPER DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 11 - BEARTRAP CREEK DISPERSED TAILINGS DEPOSITS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK TAILINGS DEPOSITS AND FLOSSIE LOUISE MINE WASTE PILE (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **4.982**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Red Fox (Carnivorous Mammal - Terrestrial)																							
BCEOT-E24-12.5 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-W24-12.5 (0-6")	1.72E-01	1.72E-01	1.01E+00	5.99E+02	1.03E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.93E+02	2.85E+00	3.68E-03	4.54E+00	8.57E-02	6.32E+02	2.47E-02	4.62E+02	1.86E-04
BCEOT-E25-12.5 (0-6")	1.72E-01	1.72E-01	1.01E+00	3.05E+02	5.23E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.02E+02	1.45E+00	3.68E-03	4.54E+00	4.36E-02	6.32E+02	2.47E-02	4.62E+02	9.44E-05
BCEOT-W25-12.5 (0-6")	1.72E-01	1.72E-01	1.01E+00	6.13E+02	1.05E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	6.07E+02	2.92E+00	3.68E-03	4.54E+00	8.78E-02	6.32E+02	2.47E-02	4.62E+02	1.90E-04
BCEOT-E26-12.5 (0-6")	1.72E-01	1.72E-01	1.01E+00	7.25E+01	1.24E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	7.18E+01	3.45E-01	3.68E-03	4.54E+00	1.04E-02	6.32E+02	2.47E-02	4.62E+02	2.25E-05
BCEOT-W26-12.5 (0-6")	1.72E-01	1.72E-01	1.01E+00	2.28E+02	3.92E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.26E+02	1.09E+00	3.68E-03	4.54E+00	3.27E-02	6.32E+02	2.47E-02	4.62E+02	7.07E-05
BCEOT-W27-12.5 (0-6")	1.72E-01	1.72E-01	1.01E+00	3.94E+02	6.75E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.90E+02	1.87E+00	3.68E-03	4.54E+00	5.63E-02	6.32E+02	2.47E-02	4.62E+02	1.22E-04
At Edge of Tailings Pile																						**Maximum HQ (Inside Tailings Pile)**	**8.43E-04**
BCEOT-E0-0 (0-6")	1.72E-01	1.72E-01	1.01E+00	2.05E+02	3.52E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.03E+02	9.76E-01	3.68E-03	4.54E+00	2.94E-02	6.32E+02	2.47E-02	4.62E+02	6.36E-05
BCEOT-E1-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-E2-0 (0-6")	1.72E-01	1.72E-01	1.01E+00	2.75E+02	4.71E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.72E+02	1.31E+00	3.68E-03	4.54E+00	3.93E-02	6.32E+02	2.47E-02	4.62E+02	8.51E-05
BCEOT-E3-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-E4-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-W4-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-E5-0 (0-6")	1.72E-01	1.72E-01	1.01E+00	1.86E+02	3.19E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.84E+02	8.84E-01	3.68E-03	4.54E+00	2.66E-02	6.32E+02	2.47E-02	4.62E+02	5.76E-05
BCEOT-W5-0 (0-6")	1.72E-01	1.72E-01	1.01E+00	9.04E+01	1.55E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	8.95E+01	4.30E-01	3.68E-03	4.54E+00	1.29E-02	6.32E+02	2.47E-02	4.62E+02	2.80E-05
BCEOT-E6-0 (0-6")	1.72E-01	1.72E-01	1.01E+00	7.26E+01	1.24E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	7.18E+01	3.45E-01	3.68E-03	4.54E+00	1.04E-02	6.32E+02	2.47E-02	4.62E+02	2.25E-05
BCEOT-W6-0 (0-6")	1.72E-01	1.72E-01	1.01E+00	9.47E+01	1.62E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	9.37E+01	4.50E-01	3.68E-03	4.54E+00	1.35E-02	6.32E+02	2.47E-02	4.62E+02	2.93E-05
BCEOT-E7-0 (0-6")	1.72E-01	1.72E-01	1.01E+00	1.43E+02	2.46E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.42E+02	6.81E-01	3.68E-03	4.54E+00	2.05E-02	6.32E+02	2.47E-02	4.62E+02	4.44E-05
BCEOT-W7-0 (0-6")	1.72E-01	1.72E-01	1.01E+00	7.35E+01	1.26E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	7.28E+01	3.49E-01	3.68E-03	4.54E+00	1.05E-02	6.32E+02	2.47E-02	4.62E+02	2.28E-05
BCEOT-W8-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-E9-0 (0-6")	1.72E-01	1.72E-01	1.01E+00	7.52E+01	1.29E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	7.44E+01	3.58E-01	3.68E-03	4.54E+00	1.08E-02	6.32E+02	2.47E-02	4.62E+02	2.33E-05
BCEOT-E10-0 (0-6")	1.72E-01	1.72E-01	1.01E+00	4.45E+02	7.63E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.40E+02	2.12E+00	3.68E-03	4.54E+00	6.36E-02	6.32E+02	2.47E-02	4.62E+02	1.38E-04
BCEOT-W10-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-E11-0 (0-6")	1.72E-01	1.72E-01	1.01E+00	1.01E+02	1.74E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.00E+02	4.82E-01	3.68E-03	4.54E+00	1.45E-02	6.32E+02	2.47E-02	4.62E+02	3.14E-05
BCEOT-W11-0 (0-6")	1.72E-01	1.72E-01	1.01E+00	1.63E+02	2.79E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.61E+02	7.74E-01	3.68E-03	4.54E+00	2.33E-02	6.32E+02	2.47E-02	4.62E+02	5.04E-05
BCEOT-E12-0 (0-6")	1.72E-01	1.72E-01	1.01E+00	2.04E+02	3.51E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.02E+02	9.72E-01	3.68E-03	4.54E+00	2.93E-02	6.32E+02	2.47E-02	4.62E+02	6.33E-05
BCEOT-W12-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-E13-0 (0-6")	1.72E-01	1.72E-01	1.01E+00	1.06E+02	1.83E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.05E+02	5.06E-01	3.68E-03	4.54E+00	1.52E-02	6.32E+02	2.47E-02	4.62E+02	3.30E-05
BCEOT-W13-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-E14-0 (0-6")	1.72E-01	1.72E-01	1.01E+00	1.09E+02	1.87E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.08E+02	5.19E-01	3.68E-03	4.54E+00	1.56E-02	6.32E+02	2.47E-02	4.62E+02	3.38E-05
BCEOT-W14-0 (0-6")	1.72E-01	1.72E-01	1.01E+00	1.04E+02	1.78E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.03E+02	4.93E-01	3.68E-03	4.54E+00	1.48E-02	6.32E+02	2.47E-02	4.62E+02	3.21E-05
BCEOT-E15-0 (0-6")	1.72E-01	1.72E-01	1.01E+00	1.60E+02	2.74E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.58E+02	7.59E-01	3.68E-03	4.54E+00	2.28E-02	6.32E+02	2.47E-02	4.62E+02	4.94E-05
BCEOT-W15-0 (0-6")	1.72E-01	1.72E-01	1.01E+00	1.61E+02	2.77E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.60E+02	7.67E-01	3.68E-03	4.54E+00	2.31E-02	6.32E+02	2.47E-02	4.62E+02	4.99E-05
BCEOT-E16-0 (0-6")	1.72E-01	1.72E-01	1.01E+00	1.09E+02	1.86E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.08E+02	5.17E-01	3.68E-03	4.54E+00	1.55E-02	6.32E+02	2.47E-02	4.62E+02	3.36E-05
BCEOT-W16-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-E17-0 (0-6")	1.72E-01	1.72E-01	1.01E+00	1.93E+02	3.30E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.91E+02	9.15E-01	3.68E-03	4.54E+00	2.75E-02	6.32E+02	2.47E-02	4.62E+02	5.96E-05
BCEOT-W17-0 (0-6")	1.72E-01	1.72E-01	1.01E+00	1.14E+02	1.96E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.13E+02	5.42E-01	3.68E-03	4.54E+00	1.63E-02	6.32E+02	2.47E-02	4.62E+02	3.53E-05
BCEOT-E18-0 (0-6")	1.72E-01	1.72E-01	1.01E+00	1.17E+02	2.00E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.16E+02	5.55E-01	3.68E-03	4.54E+00	1.67E-02	6.32E+02	2.47E-02	4.62E+02	3.62E-05
BCEOT-W18-0 (0-6")	1.72E-01	1.72E-01	1.01E+00	8.37E+01	1.44E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	8.29E+01	3.98E-01	3.68E-03	4.54E+00	1.20E-02	6.32E+02	2.47E-02	4.62E+02	2.59E-05
BCEOT-E19-0 (0-6")	1.72E-01	1.72E-01	1.01E+00	6.59E+01	1.13E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	6.52E+01	3.13E-01	3.68E-03	4.54E+00	9.43E-03	6.32E+02	2.47E-02	4.62E+02	2.04E-05
BCEOT-W19-0 (0-6")	1.72E-01	1.72E-01	1.01E+00	6.57E+01	1.13E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	6.51E+01	3.13E-01	3.68E-03	4.54E+00	9.40E-03	6.32E+02	2.47E-02	4.62E+02	2.04E-05
BCEOT-E20-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-W20-0 (0-6")	1.72E-01	1.72E-01	1.01E+00	6.62E+01	1.14E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	6.56E+01	3.15E-01	3.68E-03	4.54E+00	9.47E-03	6.32E+02	2.47E-02	4.62E+02	2.05E-05
BCEOT-E21-0 (0-6")	1.72E-01	1.72E-01	1.01E+00	1.71E+02	2.94E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.69E+02	8.13E-01	3.68E-03	4.54E+00	2.45E-02	6.32E+02	2.47E-02	4.62E+02	5.30E-05
BCEOT-W21-0 (0-6")	1.72E-01	1.72E-01	1.01E+00	1.31E+02	2.24E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.29E+02	6.22E-01	3.68E-03	4.54E+00	1.87E-02	6.32E+02	2.47E-02	4.62E+02	4.05E-05
BCEOT-E22-0 (0-6")	1.72E-01	1.72E-01	1.01E+00	7.38E+01	1.27E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	7.30E+01	3.51E-01	3.68E-03	4.54E+00	1.06E-02	6.32E+02	2.47E-02	4.62E+02	2.28E-05
BCEOT-W22-0 (0-6")	1.72E-01	1.72E-01	1.01E+00	1.74E+02	2.99E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.72E+02	8.28E-01	3.68E-03	4.54E+00	2.49E-02	6.32E+02	2.47E-02	4.62E+02	5.40E-05
BCEOT-E23-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-W23-0 (0-6")	1.72E-01	1.72E-01	1.01E+00	1.08E+02	1.86E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.07E+02	5.14E-01	3.68E-03	4.54E+00	1.55E-02	6.32E+02	2.47E-02	4.62E+02	3.35E-05
BCEOT-E24-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-W24-0 (0-6")	1.72E-01	1.72E-01	1.01E+00	1.46E+02	2.51E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.45E+02	6.95E-01	3.68E-03	4.54E+00	2.09E-02	6.32E+02	2.47E-02	4.62E+02	4.53E-05

TABLE C-11C: COPPER DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 11 - BEARTRAP CREEK DISPERSED TAILINGS DEPOSITS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK TAILINGS DEPOSITS AND FLOSSIE LOUISE MINE WASTE PILE (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **4.982**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Red Fox (Carnivorous Mammal - Terrestrial)																							
BCEOT-E25-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-W25-0 (0-6")	1.72E-01	1.72E-01	1.01E+00	1.52E+02	2.61E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.51E+02	7.23E-01	3.68E-03	4.54E+00	2.18E-02	6.32E+02	2.47E-02	4.62E+02	4.71E-05
BCEOT-E26-0 (0-6")	1.72E-01	1.72E-01	1.01E+00	7.60E+01	1.30E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	7.52E+01	3.61E-01	3.68E-03	4.54E+00	1.09E-02	6.32E+02	2.47E-02	4.62E+02	2.35E-05
BCEOT-W26-0 (0-6")	1.72E-01	1.72E-01	1.01E+00	7.17E+01	1.23E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	7.10E+01	3.41E-01	3.68E-03	4.54E+00	1.03E-02	6.32E+02	2.47E-02	4.62E+02	2.22E-05
BCEOT-W27-0 (0-6")	1.72E-01	1.72E-01	1.01E+00	9.90E+01	1.70E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	9.80E+01	4.71E-01	3.68E-03	4.54E+00	1.42E-02	6.32E+02	2.47E-02	4.62E+02	3.07E-05
Outside Tailings Piles																						**Maximum HQ (Edge of Tailings Pile)**	**1.38E-04**
BCEOT-E0+25 (0-6")	1.72E-01	1.72E-01	1.01E+00	8.80E+01	1.51E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	8.71E+01	4.19E-01	3.68E-03	4.54E+00	1.26E-02	6.32E+02	2.47E-02	4.62E+02	2.73E-05
BCEOT-E1+25 (0-6")	1.72E-01	1.72E-01	1.01E+00	1.85E+02	3.17E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.83E+02	8.78E-01	3.68E-03	4.54E+00	2.64E-02	6.32E+02	2.47E-02	4.62E+02	5.72E-05
BCEOT-E2+25 (0-6")	1.72E-01	1.72E-01	1.01E+00	9.65E+01	1.65E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	9.55E+01	4.59E-01	3.68E-03	4.54E+00	1.38E-02	6.32E+02	2.47E-02	4.62E+02	2.99E-05
BCEOT-E3+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-E4+25 (0-6")	1.72E-01	1.72E-01	1.01E+00	1.08E+02	1.86E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.07E+02	5.15E-01	3.68E-03	4.54E+00	1.55E-02	6.32E+02	2.47E-02	4.62E+02	3.35E-05
BCEOT-W4+25 (0-6")	1.72E-01	1.72E-01	1.01E+00	1.06E+02	1.82E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.05E+02	5.04E-01	3.68E-03	4.54E+00	1.52E-02	6.32E+02	2.47E-02	4.62E+02	3.28E-05
BCEOT-E5+25 (0-6")	1.72E-01	1.72E-01	1.01E+00	1.28E+02	2.20E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.27E+02	6.09E-01	3.68E-03	4.54E+00	1.83E-02	6.32E+02	2.47E-02	4.62E+02	3.97E-05
BCEOT-W5+25 (0-6")	1.72E-01	1.72E-01	1.01E+00	8.32E+01	1.43E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	8.23E+01	3.95E-01	3.68E-03	4.54E+00	1.19E-02	6.32E+02	2.47E-02	4.62E+02	2.58E-05
BCEOT-E6+25 (0-6")	1.72E-01	1.72E-01	1.01E+00	8.00E+01	1.37E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	7.92E+01	3.80E-01	3.68E-03	4.54E+00	1.14E-02	6.32E+02	2.47E-02	4.62E+02	2.48E-05
BCEOT-W6+25 (0-6")	1.72E-01	1.72E-01	1.01E+00	6.68E+01	1.15E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	6.61E+01	3.18E-01	3.68E-03	4.54E+00	9.55E-03	6.32E+02	2.47E-02	4.62E+02	2.07E-05
BCEOT-E7+25 (0-6")	1.72E-01	1.72E-01	1.01E+00	1.09E+02	1.86E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.08E+02	5.17E-01	3.68E-03	4.54E+00	1.55E-02	6.32E+02	2.47E-02	4.62E+02	3.37E-05
BCEOT-W7+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
FLWA-101 (0-6")	1.72E-01	1.72E-01	1.01E+00	7.13E+01	1.22E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	7.06E+01	3.39E-01	3.68E-03	4.54E+00	1.02E-02	6.32E+02	2.47E-02	4.62E+02	2.21E-05
BCEOT-W8+25 (0-6")	1.72E-01	1.72E-01	1.01E+00	7.61E+01	1.31E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	7.54E+01	3.62E-01	3.68E-03	4.54E+00	1.09E-02	6.32E+02	2.47E-02	4.62E+02	2.36E-05
BCEOT-E9+25 (0-6")	1.72E-01	1.72E-01	1.01E+00	1.50E+02	2.58E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.49E+02	7.14E-01	3.68E-03	4.54E+00	2.15E-02	6.32E+02	2.47E-02	4.62E+02	4.65E-05
BCEOT-W9+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-E10+25 (0-6")	1.72E-01	1.72E-01	1.01E+00	3.91E+02	6.70E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.87E+02	1.86E+00	3.68E-03	4.54E+00	5.59E-02	6.32E+02	2.47E-02	4.62E+02	1.21E-04
BCEOT-W10+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-E11+25 (0-6")	1.72E-01	1.72E-01	1.01E+00	1.05E+02	1.81E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.04E+02	5.01E-01	3.68E-03	4.54E+00	1.51E-02	6.32E+02	2.47E-02	4.62E+02	3.26E-05
BCEOT-W11+25 (0-6")	1.72E-01	1.72E-01	1.01E+00	6.99E+01	1.20E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	6.92E+01	3.32E-01	3.68E-03	4.54E+00	9.99E-03	6.32E+02	2.47E-02	4.62E+02	2.16E-05
BCEOT-E12+25 (0-6")	1.72E-01	1.72E-01	1.01E+00	2.38E+02	4.08E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.35E+02	1.13E+00	3.68E-03	4.54E+00	3.40E-02	6.32E+02	2.47E-02	4.62E+02	7.37E-05
BCEOT-W12+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-E13+25 (0-6")	1.72E-01	1.72E-01	1.01E+00	2.36E+02	4.05E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.34E+02	1.12E+00	3.68E-03	4.54E+00	3.38E-02	6.32E+02	2.47E-02	4.62E+02	7.31E-05
BCEOT-E14+25 (0-6")	1.72E-01	1.72E-01	1.01E+00	1.26E+02	2.16E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.25E+02	5.99E-01	3.68E-03	4.54E+00	1.80E-02	6.32E+02	2.47E-02	4.62E+02	3.90E-05
BCEOT-W14+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-E15+25 (0-6")	1.72E-01	1.72E-01	1.01E+00	2.00E+02	3.43E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.98E+02	9.52E-01	3.68E-03	4.54E+00	2.86E-02	6.32E+02	2.47E-02	4.62E+02	6.20E-05
BCEOT-W15+25 (0-6")	1.72E-01	1.72E-01	1.01E+00	1.39E+02	2.38E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.37E+02	6.60E-01	3.68E-03	4.54E+00	1.99E-02	6.32E+02	2.47E-02	4.62E+02	4.30E-05
BCEOT-E16+25 (0-6")	1.72E-01	1.72E-01	1.01E+00	8.36E+01	1.43E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	8.28E+01	3.98E-01	3.68E-03	4.54E+00	1.20E-02	6.32E+02	2.47E-02	4.62E+02	2.59E-05
BCEOT-W16+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-E17+25 (0-6")	1.72E-01	1.72E-01	1.01E+00	1.25E+02	2.15E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.24E+02	5.94E-01	3.68E-03	4.54E+00	1.79E-02	6.32E+02	2.47E-02	4.62E+02	3.87E-05
BCEOT-W17+25 (0-6")	1.72E-01	1.72E-01	1.01E+00	7.56E+01	1.30E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	7.49E+01	3.60E-01	3.68E-03	4.54E+00	1.08E-02	6.32E+02	2.47E-02	4.62E+02	2.34E-05
BCEOT-E18+12.5 (0-6")	1.72E-01	1.72E-01	1.01E+00	2.20E+03	3.78E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.18E+03	1.05E+01	3.68E-03	4.54E+00	3.15E-01	6.32E+02	2.47E-02	4.62E+02	6.82E-04
BCEOT-E18+25 (0-6")	1.72E-01	1.72E-01	1.01E+00	1.13E+02	1.93E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.12E+02	5.36E-01	3.68E-03	4.54E+00	1.61E-02	6.32E+02	2.47E-02	4.62E+02	3.49E-05
BCEOT-W18+25 (0-6")	1.72E-01	1.72E-01	1.01E+00	7.16E+01	1.23E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	7.09E+01	3.41E-01	3.68E-03	4.54E+00	1.02E-02	6.32E+02	2.47E-02	4.62E+02	2.22E-05
BCEOT-E19+25 (0-6")	1.72E-01	1.72E-01	1.01E+00	9.85E+01	1.69E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	9.75E+01	4.68E-01	3.68E-03	4.54E+00	1.41E-02	6.32E+02	2.47E-02	4.62E+02	3.05E-05
BCEOT-W19+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-E20+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-W20+25 (0-6")	1.72E-01	1.72E-01	1.01E+00	1.06E+02	1.82E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.05E+02	5.05E-01	3.68E-03	4.54E+00	1.52E-02	6.32E+02	2.47E-02	4.62E+02	3.29E-05
BCEOT-E21+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-W21+25 (0-6")	1.72E-01	1.72E-01	1.01E+00	1.57E+02	2.70E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.56E+02	7.48E-01	3.68E-03	4.54E+00	2.25E-02	6.32E+02	2.47E-02	4.62E+02	4.87E-05
BCEOT-E22+25 (0-6")	1.72E-01	1.72E-01	1.01E+00	1.29E+02	2.22E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.28E+02	6.15E-01	3.68E-03	4.54E+00	1.85E-02	6.32E+02	2.47E-02	4.62E+02	4.00E-05
BCEOT-E22+70 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-W22+25 (0-6")	1.72E-01	1.72E-01	1.01E+00	1.34E+02	2.30E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.33E+02	6.38E-01	3.68E-03	4.54E+00	1.92E-02	6.32E+02	2.47E-02	4.62E+02	4.15E-05
BCEOT-E23+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-W23+25 (0-6")	1.72E-01	1.72E-01	1.01E+00	1.36E+02	2.33E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.34E+02	6.46E-01	3.68E-03	4.54E+00	1.94E-02	6.32E+02	2.47E-02	4.62E+02	4.21E-05
BCEOT-E24+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB

TABLE C-11C: COPPER DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 11 - BEARTRAP CREEK DISPERSED TAILINGS DEPOSITS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK TAILINGS DEPOSITS AND FLOSSIE LOUISE MINE WASTE PILE (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **4.982**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Red Fox (Carnivorous Mammal - Terrestrial)																							
BCEOT-W24+25 (0-6")	1.72E-01	1.72E-01	1.01E+00	1.19E+02	2.04E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.18E+02	5.65E-01	3.68E-03	4.54E+00	1.70E-02	6.32E+02	2.47E-02	4.62E+02	3.68E-05
BCEOT-E25+20 (0-6")	1.72E-01	1.72E-01	1.01E+00	8.24E+01	1.41E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	8.15E+01	3.92E-01	3.68E-03	4.54E+00	1.18E-02	6.32E+02	2.47E-02	4.62E+02	2.55E-05
BCEOT-W25+25 (0-6")	1.72E-01	1.72E-01	1.01E+00	6.71E+01	1.15E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	6.65E+01	3.19E-01	3.68E-03	4.54E+00	9.60E-03	6.32E+02	2.47E-02	4.62E+02	2.08E-05
BCEOT-E26+25 (0-6")	1.72E-01	1.72E-01	1.01E+00	1.27E+02	2.19E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.26E+02	6.06E-01	3.68E-03	4.54E+00	1.82E-02	6.32E+02	2.47E-02	4.62E+02	3.94E-05
BCEOT-W26+25 (0-6")	1.72E-01	1.72E-01	1.01E+00	2.98E+02	5.11E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.95E+02	1.42E+00	3.68E-03	4.54E+00	4.26E-02	6.32E+02	2.47E-02	4.62E+02	9.23E-05
BCEOT-W27+25 (0-6")	1.72E-01	1.72E-01	1.01E+00	9.28E+01	1.59E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	9.19E+01	4.41E-01	3.68E-03	4.54E+00	1.33E-02	6.32E+02	2.47E-02	4.62E+02	2.88E-05
																						Maximum HQ (Outside Tailings Pile)	**6.82E-04**
Masked Shrew (Omnivorous Mammal - Terrestrial, Wetland)																							
Reference Sites																							
ACBG-1 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	3.70E+00	2.95E+02	2.50E+00	1.10E-03	7.96E+01	8.76E-02	1.00E+00	5.50E-03	4.70E+02	6.32E+02	2.47E-02	6.91E+02	6.80E-01
ACBG-2 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	3.70E+00	9.26E+02	7.85E+00	1.10E-03	2.50E+02	2.75E-01	1.00E+00	5.50E-03	1.48E+03	6.32E+02	2.47E-02	6.91E+02	2.14E+00
BCBG-201 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	3.70E+00	2.33E+02	1.97E+00	1.10E-03	6.28E+01	6.91E-02	1.00E+00	5.50E-03	3.71E+02	6.32E+02	2.47E-02	6.91E+02	5.37E-01
Inside Tailings Pile																						**Minimum HQ (Reference Sites)**	**5.37E-01**
BCEOT-E0-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	5.89E+02	4.99E+00	1.10E-03	1.21E+02	1.34E-01	1.00E+00	5.50E-03	9.31E+02	6.32E+02	2.47E-02	6.91E+02	1.35E+00
BCEOT-E1-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	7.88E+02	6.68E+00	1.10E-03	1.63E+02	1.79E-01	1.00E+00	5.50E-03	1.25E+03	6.32E+02	2.47E-02	6.91E+02	1.80E+00
BCEOT-E2-8 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	4.99E+02	4.23E+00	1.10E-03	1.03E+02	1.13E-01	1.00E+00	5.50E-03	7.89E+02	6.32E+02	2.47E-02	6.91E+02	1.14E+00
BCEOT-E3-8 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	7.38E+02	6.25E+00	1.10E-03	1.52E+02	1.68E-01	1.00E+00	5.50E-03	1.17E+03	6.32E+02	2.47E-02	6.91E+02	1.69E+00
BCEOT-E4-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	4.85E+02	4.11E+00	1.10E-03	1.00E+02	1.10E-01	1.00E+00	5.50E-03	7.67E+02	6.32E+02	2.47E-02	6.91E+02	1.11E+00
BCEOT-W4-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	6.76E+02	5.73E+00	1.10E-03	1.39E+02	1.54E-01	1.00E+00	5.50E-03	1.07E+03	6.32E+02	2.47E-02	6.91E+02	1.55E+00
BCEOT-E5-25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	3.71E+02	3.14E+00	1.10E-03	7.64E+01	8.42E-02	1.00E+00	5.50E-03	5.86E+02	6.32E+02	2.47E-02	6.91E+02	8.48E-01
BCEOT-W5-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	1.95E+03	1.66E+01	1.10E-03	4.03E+02	4.44E-01	1.00E+00	5.50E-03	3.09E+03	6.32E+02	2.47E-02	6.91E+02	4.47E+00
BCEOT-E6-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	6.13E+02	5.19E+00	1.10E-03	1.26E+02	1.39E-01	1.00E+00	5.50E-03	9.69E+02	6.32E+02	2.47E-02	6.91E+02	1.40E+00
BCEOT-W6-12.5 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-E7-12.5 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-W7-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	8.47E+02	7.17E+00	1.10E-03	1.75E+02	1.92E-01	1.00E+00	5.50E-03	1.34E+03	6.32E+02	2.47E-02	6.91E+02	1.94E+00
BCEOT-W8-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	1.09E+03	9.26E+00	1.10E-03	2.25E+02	2.48E-01	1.00E+00	5.50E-03	1.73E+03	6.32E+02	2.47E-02	6.91E+02	2.50E+00
BCEOT-E9-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	7.77E+02	6.58E+00	1.10E-03	1.60E+02	1.76E-01	1.00E+00	5.50E-03	1.23E+03	6.32E+02	2.47E-02	6.91E+02	1.78E+00
BCEOT-W9-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	1.87E+03	1.59E+01	1.10E-03	3.86E+02	4.25E-01	1.00E+00	5.50E-03	2.96E+03	6.32E+02	2.47E-02	6.91E+02	4.29E+00
BCEOT-E10-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	2.03E+03	1.72E+01	1.10E-03	4.18E+02	4.60E-01	1.00E+00	5.50E-03	3.21E+03	6.32E+02	2.47E-02	6.91E+02	4.64E+00
BCEOT-W10-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	6.60E+02	5.59E+00	1.10E-03	1.36E+02	1.50E-01	1.00E+00	5.50E-03	1.04E+03	6.32E+02	2.47E-02	6.91E+02	1.51E+00
BCEOT-E11-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	5.01E+02	4.24E+00	1.10E-03	1.03E+02	1.14E-01	1.00E+00	5.50E-03	7.92E+02	6.32E+02	2.47E-02	6.91E+02	1.15E+00
BCEOT-W11-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	2.07E+03	1.75E+01	1.10E-03	4.26E+02	4.69E-01	1.00E+00	5.50E-03	3.27E+03	6.32E+02	2.47E-02	6.91E+02	4.73E+00
BCEOT-E12-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	9.79E+02	8.29E+00	1.10E-03	2.02E+02	2.22E-01	1.00E+00	5.50E-03	1.55E+03	6.32E+02	2.47E-02	6.91E+02	2.24E+00
BCEOT-W12-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	1.40E+03	1.19E+01	1.10E-03	2.89E+02	3.18E-01	1.00E+00	5.50E-03	2.21E+03	6.32E+02	2.47E-02	6.91E+02	3.20E+00
BCEOT-E13-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	7.50E+02	6.35E+00	1.10E-03	1.55E+02	1.70E-01	1.00E+00	5.50E-03	1.19E+03	6.32E+02	2.47E-02	6.91E+02	1.72E+00
BCEOT-W13-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	8.37E+02	7.09E+00	1.10E-03	1.73E+02	1.90E-01	1.00E+00	5.50E-03	1.32E+03	6.32E+02	2.47E-02	6.91E+02	1.92E+00
BCEOT-W13-25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-W14-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	4.07E+02	3.45E+00	1.10E-03	8.40E+01	9.25E-02	1.00E+00	5.50E-03	6.44E+02	6.32E+02	2.47E-02	6.91E+02	9.32E-01
BCEOT-E15-8 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	9.68E+02	8.20E+00	1.10E-03	2.00E+02	2.20E-01	1.00E+00	5.50E-03	1.53E+03	6.32E+02	2.47E-02	6.91E+02	2.21E+00
BCEOT-W15-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	1.01E+03	8.55E+00	1.10E-03	2.08E+02	2.29E-01	1.00E+00	5.50E-03	1.60E+03	6.32E+02	2.47E-02	6.91E+02	2.31E+00
BCEOT-E16-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	2.35E+03	1.99E+01	1.10E-03	4.85E+02	5.34E-01	1.00E+00	5.50E-03	3.72E+03	6.32E+02	2.47E-02	6.91E+02	5.38E+00
BCEOT-W16-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	2.70E+03	2.29E+01	1.10E-03	5.57E+02	6.13E-01	1.00E+00	5.50E-03	4.27E+03	6.32E+02	2.47E-02	6.91E+02	6.18E+00
BCEOT-E17-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	1.31E+04	1.11E+02	1.10E-03	2.69E+03	2.97E+00	1.00E+00	5.50E-03	2.07E+04	6.32E+02	2.47E-02	6.91E+02	2.99E+01
BCEOT-W17-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	5.69E+02	4.82E+00	1.10E-03	1.17E+02	1.29E-01	1.00E+00	5.50E-03	9.00E+02	6.32E+02	2.47E-02	6.91E+02	1.30E+00
BCEOT-W18-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	1.44E+03	1.22E+01	1.10E-03	2.97E+02	3.27E-01	1.00E+00	5.50E-03	2.28E+03	6.32E+02	2.47E-02	6.91E+02	3.29E+00
BCEOT-E19-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	1.06E+03	8.96E+00	1.10E-03	2.18E+02	2.40E-01	1.00E+00	5.50E-03	1.67E+03	6.32E+02	2.47E-02	6.91E+02	2.42E+00
BCEOT-W19-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	3.99E+02	3.38E+00	1.10E-03	8.22E+01	9.05E-02	1.00E+00	5.50E-03	6.30E+02	6.32E+02	2.47E-02	6.91E+02	9.12E-01
BCEOT-E20-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	1.15E+03	9.72E+00	1.10E-03	2.37E+02	2.60E-01	1.00E+00	5.50E-03	1.81E+03	6.32E+02	2.47E-02	6.91E+02	2.63E+00
BCEOT-W20-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	3.44E+03	2.91E+01	1.10E-03	7.09E+02	7.80E-01	1.00E+00	5.50E-03	5.44E+03	6.32E+02	2.47E-02	6.91E+02	7.87E+00
BCEOT-E21-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	9.71E+02	8.23E+00	1.10E-03	2.00E+02	2.20E-01	1.00E+00	5.50E-03	1.54E+03	6.32E+02	2.47E-02	6.91E+02	2.22E+00
BCEOT-W21-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	9.07E+02	7.68E+00	1.10E-03	1.87E+02	2.06E-01	1.00E+00	5.50E-03	1.43E+03	6.32E+02	2.47E-02	6.91E+02	2.07E+00
BCEOT-E22-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	1.73E+03	1.46E+01	1.10E-03	3.56E+02	3.92E-01	1.00E+00	5.50E-03	2.73E+03	6.32E+02	2.47E-02	6.91E+02	3.95E+00
BCEOT-W22-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	9.50E+03	8.04E+01	1.10E-03	1.96E+03	2.16E+00	1.00E+00	5.50E-03	1.50E+04	6.32E+02	2.47E-02	6.91E+02	2.17E+01
BCEOT-E23-15 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	4.56E+02	3.86E+00	1.10E-03	9.39E+01	1.03E-01	1.00E+00	5.50E-03	7.20E+02	6.32E+02	2.47E-02	6.91E+02	1.04E+00
BCEOT-W23-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	4.63E+03	3.92E+01	1.10E-03	9.54E+02	1.05E+00	1.00E+00	5.50E-03	7.32E+03	6.32E+02	2.47E-02	6.91E+02	1.06E+01

TABLE C-11C: COPPER DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 11 - BEARTRAP CREEK DISPERSED TAILINGS DEPOSITS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK TAILINGS DEPOSITS AND FLOSSIE LOUISE MINE WASTE PILE (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **4.982**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Masked Shrew (Omnivorous Mammal - Terrestrial, Wetland)																							
BCEOT-E24-12.5 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-W24-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	2.88E+03	2.44E+01	1.10E-03	5.93E+02	6.53E-01	1.00E+00	5.50E-03	4.55E+03	6.32E+02	2.47E-02	6.91E+02	6.58E+00
BCEOT-E25-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	1.46E+03	1.24E+01	1.10E-03	3.02E+02	3.32E-01	1.00E+00	5.50E-03	2.31E+03	6.32E+02	2.47E-02	6.91E+02	3.35E+00
BCEOT-W25-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	2.94E+03	2.49E+01	1.10E-03	6.07E+02	6.69E-01	1.00E+00	5.50E-03	4.66E+03	6.32E+02	2.47E-02	6.91E+02	6.74E+00
BCEOT-E26-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	3.48E+02	2.95E+00	1.10E-03	7.18E+01	7.91E-02	1.00E+00	5.50E-03	5.51E+02	6.32E+02	2.47E-02	6.91E+02	7.97E-01
BCEOT-W26-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	1.10E+03	9.28E+00	1.10E-03	2.26E+02	2.49E-01	1.00E+00	5.50E-03	1.73E+03	6.32E+02	2.47E-02	6.91E+02	2.51E+00
BCEOT-W27-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	1.89E+03	1.60E+01	1.10E-03	3.90E+02	4.29E-01	1.00E+00	5.50E-03	2.99E+03	6.32E+02	2.47E-02	6.91E+02	4.32E+00
At Edge of Tailings Pile																						**Maximum HQ (Inside Tailings Pile)**	**2.99E+01**
BCEOT-E0-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	9.86E+02	8.35E+00	1.10E-03	2.03E+02	2.24E-01	1.00E+00	5.50E-03	1.56E+03	6.32E+02	2.47E-02	6.91E+02	2.26E+00
BCEOT-E1-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-E2-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	1.32E+03	1.12E+01	1.10E-03	2.72E+02	2.99E-01	1.00E+00	5.50E-03	2.09E+03	6.32E+02	2.47E-02	6.91E+02	3.02E+00
BCEOT-E3-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-E4-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-W4-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-E5-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	8.93E+02	7.56E+00	1.10E-03	1.84E+02	2.03E-01	1.00E+00	5.50E-03	1.41E+03	6.32E+02	2.47E-02	6.91E+02	2.04E+00
BCEOT-W5-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	4.34E+02	3.68E+00	1.10E-03	8.95E+01	9.86E-02	1.00E+00	5.50E-03	6.87E+02	6.32E+02	2.47E-02	6.91E+02	9.93E-01
BCEOT-E6-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	3.48E+02	2.95E+00	1.10E-03	7.18E+01	7.91E-02	1.00E+00	5.50E-03	5.51E+02	6.32E+02	2.47E-02	6.91E+02	7.97E-01
BCEOT-W6-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	4.54E+02	3.85E+00	1.10E-03	9.37E+01	1.03E-01	1.00E+00	5.50E-03	7.19E+02	6.32E+02	2.47E-02	6.91E+02	1.04E+00
BCEOT-E7-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	6.88E+02	5.83E+00	1.10E-03	1.42E+02	1.56E-01	1.00E+00	5.50E-03	1.09E+03	6.32E+02	2.47E-02	6.91E+02	1.57E+00
BCEOT-W7-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	3.53E+02	2.99E+00	1.10E-03	7.28E+01	8.01E-02	1.00E+00	5.50E-03	5.58E+02	6.32E+02	2.47E-02	6.91E+02	8.07E-01
BCEOT-W8-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-E9-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	3.61E+02	3.06E+00	1.10E-03	7.44E+01	8.20E-02	1.00E+00	5.50E-03	5.71E+02	6.32E+02	2.47E-02	6.91E+02	8.26E-01
BCEOT-E10-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	2.14E+03	1.81E+01	1.10E-03	4.40E+02	4.85E-01	1.00E+00	5.50E-03	3.38E+03	6.32E+02	2.47E-02	6.91E+02	4.89E+00
BCEOT-W10-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-E11-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	4.86E+02	4.12E+00	1.10E-03	1.00E+02	1.10E-01	1.00E+00	5.50E-03	7.69E+02	6.32E+02	2.47E-02	6.91E+02	1.11E+00
BCEOT-W11-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	7.82E+02	6.62E+00	1.10E-03	1.61E+02	1.78E-01	1.00E+00	5.50E-03	1.24E+03	6.32E+02	2.47E-02	6.91E+02	1.79E+00
BCEOT-E12-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	9.82E+02	8.31E+00	1.10E-03	2.02E+02	2.23E-01	1.00E+00	5.50E-03	1.55E+03	6.32E+02	2.47E-02	6.91E+02	2.25E+00
BCEOT-W12-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-E13-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	5.11E+02	4.33E+00	1.10E-03	1.05E+02	1.16E-01	1.00E+00	5.50E-03	8.08E+02	6.32E+02	2.47E-02	6.91E+02	1.17E+00
BCEOT-W13-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-E14-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	5.24E+02	4.44E+00	1.10E-03	1.08E+02	1.19E-01	1.00E+00	5.50E-03	8.29E+02	6.32E+02	2.47E-02	6.91E+02	1.20E+00
BCEOT-W14-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	4.98E+02	4.22E+00	1.10E-03	1.03E+02	1.13E-01	1.00E+00	5.50E-03	7.87E+02	6.32E+02	2.47E-02	6.91E+02	1.14E+00
BCEOT-E15-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	7.66E+02	6.49E+00	1.10E-03	1.58E+02	1.74E-01	1.00E+00	5.50E-03	1.21E+03	6.32E+02	2.47E-02	6.91E+02	1.75E+00
BCEOT-W15-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	7.74E+02	6.56E+00	1.10E-03	1.60E+02	1.76E-01	1.00E+00	5.50E-03	1.22E+03	6.32E+02	2.47E-02	6.91E+02	1.77E+00
BCEOT-E16-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	5.22E+02	4.42E+00	1.10E-03	1.08E+02	1.18E-01	1.00E+00	5.50E-03	8.25E+02	6.32E+02	2.47E-02	6.91E+02	1.19E+00
BCEOT-W16-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-E17-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	9.24E+02	7.83E+00	1.10E-03	1.91E+02	2.10E-01	1.00E+00	5.50E-03	1.46E+03	6.32E+02	2.47E-02	6.91E+02	2.11E+00
BCEOT-W17-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	5.48E+02	4.64E+00	1.10E-03	1.13E+02	1.24E-01	1.00E+00	5.50E-03	8.66E+02	6.32E+02	2.47E-02	6.91E+02	1.25E+00
BCEOT-E18-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	5.61E+02	4.75E+00	1.10E-03	1.16E+02	1.27E-01	1.00E+00	5.50E-03	8.87E+02	6.32E+02	2.47E-02	6.91E+02	1.28E+00
BCEOT-W18-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	4.02E+02	3.40E+00	1.10E-03	8.29E+01	9.12E-02	1.00E+00	5.50E-03	6.35E+02	6.32E+02	2.47E-02	6.91E+02	9.19E-01
BCEOT-E19-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	3.16E+02	2.68E+00	1.10E-03	6.52E+01	7.18E-02	1.00E+00	5.50E-03	5.00E+02	6.32E+02	2.47E-02	6.91E+02	7.24E-01
BCEOT-W19-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	3.16E+02	2.67E+00	1.10E-03	6.51E+01	7.16E-02	1.00E+00	5.50E-03	4.99E+02	6.32E+02	2.47E-02	6.91E+02	7.22E-01
BCEOT-E20-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-W20-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	3.18E+02	2.69E+00	1.10E-03	6.56E+01	7.22E-02	1.00E+00	5.50E-03	5.03E+02	6.32E+02	2.47E-02	6.91E+02	7.27E-01
BCEOT-E21-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	8.21E+02	6.96E+00	1.10E-03	1.69E+02	1.86E-01	1.00E+00	5.50E-03	1.30E+03	6.32E+02	2.47E-02	6.91E+02	1.88E+00
BCEOT-W21-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	6.28E+02	5.32E+00	1.10E-03	1.29E+02	1.43E-01	1.00E+00	5.50E-03	9.93E+02	6.32E+02	2.47E-02	6.91E+02	1.44E+00
BCEOT-E22-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	3.54E+02	3.00E+00	1.10E-03	7.30E+01	8.04E-02	1.00E+00	5.50E-03	5.60E+02	6.32E+02	2.47E-02	6.91E+02	8.10E-01
BCEOT-W22-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	8.37E+02	7.09E+00	1.10E-03	1.72E+02	1.90E-01	1.00E+00	5.50E-03	1.32E+03	6.32E+02	2.47E-02	6.91E+02	1.91E+00
BCEOT-E23-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-W23-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	5.19E+02	4.40E+00	1.10E-03	1.07E+02	1.18E-01	1.00E+00	5.50E-03	8.21E+02	6.32E+02	2.47E-02	6.91E+02	1.19E+00
BCEOT-E24-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-W24-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	7.02E+02	5.95E+00	1.10E-03	1.45E+02	1.59E-01	1.00E+00	5.50E-03	1.11E+03	6.32E+02	2.47E-02	6.91E+02	1.61E+00

TABLE C-11C: COPPER DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 11 - BEARTRAP CREEK DISPERSED TAILINGS DEPOSITS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK TAILINGS DEPOSITS AND FLOSSIE LOUISE MINE WASTE PILE (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **4.982**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Masked Shrew (Omnivorous Mammal - Terrestrial, Wetland)																							
BCEOT-E25-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-W25-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	7.30E+02	6.18E+00	1.10E-03	1.51E+02	1.66E-01	1.00E+00	5.50E-03	1.15E+03	6.32E+02	2.47E-02	6.91E+02	1.67E+00
BCEOT-E26-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	3.65E+02	3.09E+00	1.10E-03	7.52E+01	8.28E-02	1.00E+00	5.50E-03	5.77E+02	6.32E+02	2.47E-02	6.91E+02	8.35E-01
BCEOT-W26-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	3.44E+02	2.92E+00	1.10E-03	7.10E+01	7.81E-02	1.00E+00	5.50E-03	5.44E+02	6.32E+02	2.47E-02	6.91E+02	7.87E-01
BCEOT-W27-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	4.75E+02	4.03E+00	1.10E-03	9.80E+01	1.08E-01	1.00E+00	5.50E-03	7.52E+02	6.32E+02	2.47E-02	6.91E+02	1.09E+00
Outside Tailings Piles																						**Maximum HQ (Edge of Tailings Pile)**	**4.89E+00**
BCEOT-E0+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	4.23E+02	3.58E+00	1.10E-03	8.71E+01	9.59E-02	1.00E+00	5.50E-03	6.68E+02	6.32E+02	2.47E-02	6.91E+02	9.67E-01
BCEOT-E1+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	8.86E+02	7.51E+00	1.10E-03	1.83E+02	2.01E-01	1.00E+00	5.50E-03	1.40E+03	6.32E+02	2.47E-02	6.91E+02	2.03E+00
BCEOT-E2+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	4.63E+02	3.92E+00	1.10E-03	9.55E+01	1.05E-01	1.00E+00	5.50E-03	7.32E+02	6.32E+02	2.47E-02	6.91E+02	1.06E+00
BCEOT-E3+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-E4+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	5.20E+02	4.40E+00	1.10E-03	1.07E+02	1.18E-01	1.00E+00	5.50E-03	8.22E+02	6.32E+02	2.47E-02	6.91E+02	1.19E+00
BCEOT-W4+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	5.09E+02	4.31E+00	1.10E-03	1.05E+02	1.15E-01	1.00E+00	5.50E-03	8.04E+02	6.32E+02	2.47E-02	6.91E+02	1.16E+00
BCEOT-E5+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	6.15E+02	5.21E+00	1.10E-03	1.27E+02	1.40E-01	1.00E+00	5.50E-03	9.73E+02	6.32E+02	2.47E-02	6.91E+02	1.41E+00
BCEOT-W5+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	3.99E+02	3.38E+00	1.10E-03	8.23E+01	9.06E-02	1.00E+00	5.50E-03	6.31E+02	6.32E+02	2.47E-02	6.91E+02	9.13E-01
BCEOT-E6+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	3.84E+02	3.25E+00	1.10E-03	7.92E+01	8.72E-02	1.00E+00	5.50E-03	6.07E+02	6.32E+02	2.47E-02	6.91E+02	8.79E-01
BCEOT-W6+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	3.21E+02	2.72E+00	1.10E-03	6.61E+01	7.28E-02	1.00E+00	5.50E-03	5.07E+02	6.32E+02	2.47E-02	6.91E+02	7.34E-01
BCEOT-E7+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	5.22E+02	4.42E+00	1.10E-03	1.08E+02	1.18E-01	1.00E+00	5.50E-03	8.25E+02	6.32E+02	2.47E-02	6.91E+02	1.19E+00
BCEOT-W7+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
FLWA-101 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	3.42E+02	2.90E+00	1.10E-03	7.06E+01	7.77E-02	1.00E+00	5.50E-03	5.41E+02	6.32E+02	2.47E-02	6.91E+02	7.83E-01
BCEOT-W8+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	3.65E+02	3.10E+00	1.10E-03	7.54E+01	8.30E-02	1.00E+00	5.50E-03	5.78E+02	6.32E+02	2.47E-02	6.91E+02	8.36E-01
BCEOT-E9+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	7.21E+02	6.11E+00	1.10E-03	1.49E+02	1.64E-01	1.00E+00	5.50E-03	1.14E+03	6.32E+02	2.47E-02	6.91E+02	1.65E+00
BCEOT-W9+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-E10+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	1.88E+03	1.59E+01	1.10E-03	3.87E+02	4.26E-01	1.00E+00	5.50E-03	2.97E+03	6.32E+02	2.47E-02	6.91E+02	4.29E+00
BCEOT-W10+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-E11+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	5.06E+02	4.28E+00	1.10E-03	1.04E+02	1.15E-01	1.00E+00	5.50E-03	8.00E+02	6.32E+02	2.47E-02	6.91E+02	1.16E+00
BCEOT-W11+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	3.35E+02	2.84E+00	1.10E-03	6.92E+01	7.61E-02	1.00E+00	5.50E-03	5.30E+02	6.32E+02	2.47E-02	6.91E+02	7.67E-01
BCEOT-E12+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	1.14E+03	9.67E+00	1.10E-03	2.35E+02	2.59E-01	1.00E+00	5.50E-03	1.81E+03	6.32E+02	2.47E-02	6.91E+02	2.61E+00
BCEOT-W12+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-E13+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	1.13E+03	9.60E+00	1.10E-03	2.34E+02	2.57E-01	1.00E+00	5.50E-03	1.79E+03	6.32E+02	2.47E-02	6.91E+02	2.59E+00
BCEOT-E14+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	6.05E+02	5.12E+00	1.10E-03	1.25E+02	1.37E-01	1.00E+00	5.50E-03	9.57E+02	6.32E+02	2.47E-02	6.91E+02	1.38E+00
BCEOT-W14+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-E15+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	9.61E+02	8.14E+00	1.10E-03	1.98E+02	2.18E-01	1.00E+00	5.50E-03	1.52E+03	6.32E+02	2.47E-02	6.91E+02	2.20E+00
BCEOT-W15+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	6.66E+02	5.64E+00	1.10E-03	1.37E+02	1.51E-01	1.00E+00	5.50E-03	1.05E+03	6.32E+02	2.47E-02	6.91E+02	1.52E+00
BCEOT-E16+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	4.01E+02	3.40E+00	1.10E-03	8.28E+01	9.11E-02	1.00E+00	5.50E-03	6.35E+02	6.32E+02	2.47E-02	6.91E+02	9.18E-01
BCEOT-W16+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-E17+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	6.00E+02	5.08E+00	1.10E-03	1.24E+02	1.36E-01	1.00E+00	5.50E-03	9.49E+02	6.32E+02	2.47E-02	6.91E+02	1.37E+00
BCEOT-W17+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	3.63E+02	3.07E+00	1.10E-03	7.49E+01	8.24E-02	1.00E+00	5.50E-03	5.74E+02	6.32E+02	2.47E-02	6.91E+02	8.31E-01
BCEOT-E18+12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	1.06E+04	8.96E+01	1.10E-03	2.18E+03	2.40E+00	1.00E+00	5.50E-03	1.67E+04	6.32E+02	2.47E-02	6.91E+02	2.42E+01
BCEOT-E18+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	5.41E+02	4.59E+00	1.10E-03	1.12E+02	1.23E-01	1.00E+00	5.50E-03	8.56E+02	6.32E+02	2.47E-02	6.91E+02	1.24E+00
BCEOT-W18+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	3.44E+02	2.91E+00	1.10E-03	7.09E+01	7.81E-02	1.00E+00	5.50E-03	5.44E+02	6.32E+02	2.47E-02	6.91E+02	7.87E-01
BCEOT-E19+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	4.73E+02	4.00E+00	1.10E-03	9.75E+01	1.07E-01	1.00E+00	5.50E-03	7.47E+02	6.32E+02	2.47E-02	6.91E+02	1.08E+00
BCEOT-W19+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-E20+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-W20+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	5.10E+02	4.32E+00	1.10E-03	1.05E+02	1.16E-01	1.00E+00	5.50E-03	8.06E+02	6.32E+02	2.47E-02	6.91E+02	1.17E+00
BCEOT-E21+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-W21+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	7.55E+02	6.39E+00	1.10E-03	1.56E+02	1.71E-01	1.00E+00	5.50E-03	1.19E+03	6.32E+02	2.47E-02	6.91E+02	1.73E+00
BCEOT-E22+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	6.21E+02	5.26E+00	1.10E-03	1.28E+02	1.41E-01	1.00E+00	5.50E-03	9.82E+02	6.32E+02	2.47E-02	6.91E+02	1.42E+00
BCEOT-E22+70 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-W22+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	6.44E+02	5.45E+00	1.10E-03	1.33E+02	1.46E-01	1.00E+00	5.50E-03	1.02E+03	6.32E+02	2.47E-02	6.91E+02	1.47E+00
BCEOT-E23+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-W23+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	6.52E+02	5.52E+00	1.10E-03	1.34E+02	1.48E-01	1.00E+00	5.50E-03	1.03E+03	6.32E+02	2.47E-02	6.91E+02	1.49E+00
BCEOT-E24+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB

TABLE C-11C: COPPER DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 11 - BEARTRAP CREEK DISPERSED TAILINGS DEPOSITS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK TAILINGS DEPOSITS AND FLOSSIE LOUISE MINE WASTE PILE (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **4.982**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Masked Shrew (Omnivorous Mammal - Terrestrial, Wetland)																							
BCEOT-W24+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	5.70E+02	4.83E+00	1.10E-03	1.18E+02	1.30E-01	1.00E+00	5.50E-03	9.02E+02	6.32E+02	2.47E-02	6.91E+02	1.31E+00
BCEOT-E25+20 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	3.95E+02	3.35E+00	1.10E-03	8.15E+01	8.98E-02	1.00E+00	5.50E-03	6.25E+02	6.32E+02	2.47E-02	6.91E+02	9.05E-01
BCEOT-W25+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	3.22E+02	2.73E+00	1.10E-03	6.65E+01	7.32E-02	1.00E+00	5.50E-03	5.10E+02	6.32E+02	2.47E-02	6.91E+02	7.37E-01
BCEOT-E26+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	6.12E+02	5.18E+00	1.10E-03	1.26E+02	1.39E-01	1.00E+00	5.50E-03	9.67E+02	6.32E+02	2.47E-02	6.91E+02	1.40E+00
BCEOT-W26+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	1.43E+03	1.21E+01	1.10E-03	2.95E+02	3.25E-01	1.00E+00	5.50E-03	2.26E+03	6.32E+02	2.47E-02	6.91E+02	3.27E+00
BCEOT-W27+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.85E+00	4.46E+02	3.78E+00	1.10E-03	9.19E+01	1.01E-01	1.00E+00	5.50E-03	7.05E+02	6.32E+02	2.47E-02	6.91E+02	1.02E+00
																						Maximum HQ (Outside Tailings Pile)	**2.42E+01**

Notes

1 See Tables 3-1 through 3-13 for ingestion rates, foraging ranges used to calculate the SUF, and body weights.

2 BAFs were calculated by dividing site-collected tissue by collocated soil concentrations (BAFs are in dry weight). The maximum BAF calculated from the Beartrap Creek and Blackfoot River transects was used for site dose calculations. The maximum BAF from the terrestrial reference site was used for reference site dose calculations.

3 The mammal, plant, and invertebrate concentrations were calculated by multiplying the soil concentration by the BAF to generate a tissue concentration (see note 2).

4 Mammal, plant, and invertebrate daily doses were calculated by multiplying the ingestion rate (see note 1) by the tissue concentration (see note 3).

5 Soil concentration from 0 to 6 inches below ground surface at point ID as measured by XRF 10. Doses were not calculated for detected and non-detected soil concentrations measured below the minimum reference site concentration, as indicated by BB. For results that were measured at less than the detection limit, doses were calculated using half of the detection limit.

6 Soil daily dose was calculated by multiplying the soil ingestion rate (see note 1) by soil concentration (see note 5).

7 Total daily dose is calculated using the following equation: total daily dose = ([mammal daily dose (if applicable) + plant daily dose (if applicable) + invertebrate daily dose (if applicable) + soil daily dose]*SUF)/receptor species body weight.

8 The derivation of TRVs is described in Navy (1998). The high TRV was used for dose calculations.

9 Allometrically adjusted TRVs for birds were calculated using the following equation: receptor species TRV = (test species TRV) x (test species body weight / receptor species body weight)$^{(1-1.2)}$.

10 Allometrically adjusted TRVs for mammals were calculated using the following equation: receptor species TRV = (test species TRV) x (test species body weight / receptor species body weight)$^{(1-0.94)}$.

11 HQs were calculated using the following equation: HQ = total daily dose/allometrically adjusted TRV.

12 Green cells indicate an HQ between 1.0 and 9.99; yellow cells indicate an HQ between 10 and 99.9; blue cells indicate an HQ 100 or greater.

BAF	Bioaccumulation Factor	mg/day	Milligram per day
BB	Below minimum background reference site concentration	mg/kg	Milligram per kilogram
EE/CA	Engineering Evaluation/Cost Analysis	NA	Not applicable
EU	Exposure Unit	Navy	Department of the Navy
HQ	Hazard quotient	SUF	Site use factor
ID	Identification	TRV	Toxicity reference value
kg	Kilogram	XRF	X-ray fluorescence
kg/day	Kilogram per day	XRF 10	XRF measurements recorded following drying and seiving through a #10 -mesh screen

Sources: Department of the Navy. 1998. "Development of Toxicity Reference Values for Conducting Ecological Risk Assessments at Naval Facilities in California, Interim Final." Prepared by Naval Facilities Engineering Command, Engineering Field Activity West (EFA West). San Bruno, California.

TABLE C-11D: LEAD DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 11 - BEARTRAP CREEK DISPERSED TAILINGS DEPOSITS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK TAILINGS DEPOSITS AND FLOSSIE LOUISE MINE WASTE PILE

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 4.982

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Mourning Dove (Herbivorous Birds - Terrestrial)																							
Reference Sites																							
ACBG-1 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	4.35E-02	1.00E+00	5.78E-03	NA	NA	NA	NA	5.36E-04	2.31E+01	1.24E-02	1.92E-02	1.09E-01	3.20E-03	8.75E+00	8.00E-01	5.88E+00	5.44E-04
ACBG-2 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	4.35E-02	1.66E+00	9.58E-03	NA	NA	NA	NA	5.36E-04	3.83E+01	2.05E-02	1.92E-02	1.09E-01	5.30E-03	8.75E+00	8.00E-01	5.88E+00	9.02E-04
BCBG-201 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	4.35E-02	4.14E+00	2.39E-02	NA	NA	NA	NA	5.36E-04	9.53E+01	5.11E-02	1.92E-02	1.09E-01	1.32E-02	8.75E+00	8.00E-01	5.88E+00	2.25E-03
Inside Tailings Pile																						**Minimum HQ (Reference Sites)**	**5.44E-04**
BCEOT-E0-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	3.60E+02	2.07E+00	NA	NA	NA	NA	5.36E-04	5.72E+02	3.07E-01	1.92E-02	1.09E-01	4.19E-01	8.75E+00	8.00E-01	5.88E+00	7.13E-02
BCEOT-E1-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	2.94E+02	1.69E+00	NA	NA	NA	NA	5.36E-04	4.68E+02	2.50E-01	1.92E-02	1.09E-01	3.42E-01	8.75E+00	8.00E-01	5.88E+00	5.82E-02
BCEOT-E2-8 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	2.82E+02	1.62E+00	NA	NA	NA	NA	5.36E-04	4.48E+02	2.40E-01	1.92E-02	1.09E-01	3.28E-01	8.75E+00	8.00E-01	5.88E+00	5.59E-02
BCEOT-E3-8 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	2.36E+02	1.36E+00	NA	NA	NA	NA	5.36E-04	3.76E+02	2.02E-01	1.92E-02	1.09E-01	2.75E-01	8.75E+00	8.00E-01	5.88E+00	4.69E-02
BCEOT-E4-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	2.54E+02	1.47E+00	NA	NA	NA	NA	5.36E-04	4.05E+02	2.17E-01	1.92E-02	1.09E-01	2.96E-01	8.75E+00	8.00E-01	5.88E+00	5.04E-02
BCEOT-W4-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	2.66E+02	1.53E+00	NA	NA	NA	NA	5.36E-04	4.24E+02	2.27E-01	1.92E-02	1.09E-01	3.10E-01	8.75E+00	8.00E-01	5.88E+00	5.28E-02
BCEOT-E5-25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	8.27E+01	4.76E-01	NA	NA	NA	NA	5.36E-04	1.32E+02	7.05E-02	1.92E-02	1.09E-01	9.63E-02	8.75E+00	8.00E-01	5.88E+00	1.64E-02
BCEOT-W5-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	1.03E+03	5.95E+00	NA	NA	NA	NA	5.36E-04	1.64E+03	8.81E-01	1.92E-02	1.09E-01	1.20E+00	8.75E+00	8.00E-01	5.88E+00	2.05E-01
BCEOT-E6-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	2.20E+02	1.27E+00	NA	NA	NA	NA	5.36E-04	3.51E+02	1.88E-01	1.92E-02	1.09E-01	2.57E-01	8.75E+00	8.00E-01	5.88E+00	4.37E-02
BCEOT-W6-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	7.11E+01	4.10E-01	NA	NA	NA	NA	5.36E-04	1.13E+02	6.06E-02	1.92E-02	1.09E-01	8.28E-02	8.75E+00	8.00E-01	5.88E+00	1.41E-02
BCEOT-E7-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	7.57E+01	4.36E-01	NA	NA	NA	NA	5.36E-04	1.21E+02	6.46E-02	1.92E-02	1.09E-01	8.82E-02	8.75E+00	8.00E-01	5.88E+00	1.50E-02
BCEOT-W7-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	3.89E+02	2.24E+00	NA	NA	NA	NA	5.36E-04	6.20E+02	3.32E-01	1.92E-02	1.09E-01	4.54E-01	8.75E+00	8.00E-01	5.88E+00	7.72E-02
BCEOT-W8-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	1.45E+03	8.36E+00	NA	NA	NA	NA	5.36E-04	2.31E+03	1.24E+00	1.92E-02	1.09E-01	1.69E+00	8.75E+00	8.00E-01	5.88E+00	2.88E-01
BCEOT-E9-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	4.50E+02	2.59E+00	NA	NA	NA	NA	5.36E-04	7.16E+02	3.83E-01	1.92E-02	1.09E-01	5.24E-01	8.75E+00	8.00E-01	5.88E+00	8.91E-02
BCEOT-W9-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	5.29E+02	3.05E+00	NA	NA	NA	NA	5.36E-04	8.43E+02	4.52E-01	1.92E-02	1.09E-01	6.17E-01	8.75E+00	8.00E-01	5.88E+00	1.05E-01
BCEOT-E10-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	5.78E+01	3.33E-01	NA	NA	NA	NA	5.36E-04	9.20E+01	4.93E-02	1.92E-02	1.09E-01	6.73E-02	8.75E+00	8.00E-01	5.88E+00	1.15E-02
BCEOT-E11-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	2.19E+02	1.26E+00	NA	NA	NA	NA	5.36E-04	3.49E+02	1.87E-01	1.92E-02	1.09E-01	2.56E-01	8.75E+00	8.00E-01	5.88E+00	4.35E-02
BCEOT-W11-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	4.48E+02	2.58E+00	NA	NA	NA	NA	5.36E-04	7.14E+02	3.82E-01	1.92E-02	1.09E-01	5.22E-01	8.75E+00	8.00E-01	5.88E+00	8.89E-02
BCEOT-E12-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	1.49E+02	8.61E-01	NA	NA	NA	NA	5.36E-04	2.38E+02	1.27E-01	1.92E-02	1.09E-01	1.74E-01	8.75E+00	8.00E-01	5.88E+00	2.96E-02
BCEOT-W12-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	1.30E+03	7.48E+00	NA	NA	NA	NA	5.36E-04	2.07E+03	1.11E+00	1.92E-02	1.09E-01	1.51E+00	8.75E+00	8.00E-01	5.88E+00	2.58E-01
BCEOT-E13-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	3.89E+02	2.24E+00	NA	NA	NA	NA	5.36E-04	6.19E+02	3.32E-01	1.92E-02	1.09E-01	4.53E-01	8.75E+00	8.00E-01	5.88E+00	7.72E-02
BCEOT-W13-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	1.33E+03	7.64E+00	NA	NA	NA	NA	5.36E-04	2.11E+03	1.13E+00	1.92E-02	1.09E-01	1.55E+00	8.75E+00	8.00E-01	5.88E+00	2.63E-01
BCEOT-W13-25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	3.41E+01	1.97E-01	NA	NA	NA	NA	5.36E-04	5.44E+01	2.91E-02	1.92E-02	1.09E-01	3.98E-02	8.75E+00	8.00E-01	5.88E+00	6.77E-03
BCEOT-W14-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	1.80E+02	1.04E+00	NA	NA	NA	NA	5.36E-04	2.87E+02	1.54E-01	1.92E-02	1.09E-01	2.10E-01	8.75E+00	8.00E-01	5.88E+00	3.57E-02
BCEOT-E15-8 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	3.49E+02	2.01E+00	NA	NA	NA	NA	5.36E-04	5.55E+02	2.97E-01	1.92E-02	1.09E-01	4.06E-01	8.75E+00	8.00E-01	5.88E+00	6.91E-02
BCEOT-W15-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	7.93E+02	4.57E+00	NA	NA	NA	NA	5.36E-04	1.26E+03	6.76E-01	1.92E-02	1.09E-01	9.23E-01	8.75E+00	8.00E-01	5.88E+00	1.57E-01
BCEOT-E16-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	2.11E+03	1.21E+01	NA	NA	NA	NA	5.36E-04	3.35E+03	1.80E+00	1.92E-02	1.09E-01	2.45E+00	8.75E+00	8.00E-01	5.88E+00	4.18E-01
BCEOT-W16-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	7.92E+02	4.56E+00	NA	NA	NA	NA	5.36E-04	1.26E+03	6.75E-01	1.92E-02	1.09E-01	9.22E-01	8.75E+00	8.00E-01	5.88E+00	1.57E-01
BCEOT-E17-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	1.10E+04	6.31E+01	NA	NA	NA	NA	5.36E-04	1.74E+04	9.34E+00	1.92E-02	1.09E-01	1.28E+01	8.75E+00	8.00E-01	5.88E+00	2.17E+00
BCEOT-W17-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	4.15E+02	2.39E+00	NA	NA	NA	NA	5.36E-04	6.61E+02	3.54E-01	1.92E-02	1.09E-01	4.84E-01	8.75E+00	8.00E-01	5.88E+00	8.23E-02
BCEOT-W18-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	1.45E+03	8.36E+00	NA	NA	NA	NA	5.36E-04	2.31E+03	1.24E+00	1.92E-02	1.09E-01	1.69E+00	8.75E+00	8.00E-01	5.88E+00	2.88E-01
BCEOT-E19-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	7.39E+02	4.26E+00	NA	NA	NA	NA	5.36E-04	1.18E+03	6.30E-01	1.92E-02	1.09E-01	8.61E-01	8.75E+00	8.00E-01	5.88E+00	1.46E-01
BCEOT-W19-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	2.13E+02	1.23E+00	NA	NA	NA	NA	5.36E-04	3.40E+02	1.82E-01	1.92E-02	1.09E-01	2.49E-01	8.75E+00	8.00E-01	5.88E+00	4.23E-02
BCEOT-E20-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	1.08E+03	6.23E+00	NA	NA	NA	NA	5.36E-04	1.72E+03	9.22E-01	1.92E-02	1.09E-01	1.26E+00	8.75E+00	8.00E-01	5.88E+00	2.14E-01
BCEOT-W20-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	9.90E+02	5.71E+00	NA	NA	NA	NA	5.36E-04	1.58E+03	8.45E-01	1.92E-02	1.09E-01	1.15E+00	8.75E+00	8.00E-01	5.88E+00	1.96E-01
BCEOT-E21-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	1.00E+03	5.78E+00	NA	NA	NA	NA	5.36E-04	1.60E+03	8.55E-01	1.92E-02	1.09E-01	1.17E+00	8.75E+00	8.00E-01	5.88E+00	1.99E-01
BCEOT-W21-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	6.98E+02	4.02E+00	NA	NA	NA	NA	5.36E-04	1.11E+03	5.95E-01	1.92E-02	1.09E-01	8.13E-01	8.75E+00	8.00E-01	5.88E+00	1.38E-01
BCEOT-E22-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	1.28E+03	7.40E+00	NA	NA	NA	NA	5.36E-04	2.04E+03	1.10E+00	1.92E-02	1.09E-01	1.50E+00	8.75E+00	8.00E-01	5.88E+00	2.55E-01
BCEOT-W22-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	2.19E+03	1.26E+01	NA	NA	NA	NA	5.36E-04	3.49E+03	1.87E+00	1.92E-02	1.09E-01	2.55E+00	8.75E+00	8.00E-01	5.88E+00	4.34E-01
BCEOT-E23-15 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	1.81E+02	1.04E+00	NA	NA	NA	NA	5.36E-04	2.87E+02	1.54E-01	1.92E-02	1.09E-01	2.10E-01	8.75E+00	8.00E-01	5.88E+00	3.58E-02
BCEOT-W23-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	1.49E+03	8.56E+00	NA	NA	NA	NA	5.36E-04	2.36E+03	1.27E+00	1.92E-02	1.09E-01	1.73E+00	8.75E+00	8.00E-01	5.88E+00	2.94E-01
BCEOT-E24-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	7.88E+01	4.54E-01	NA	NA	NA	NA	5.36E-04	1.25E+02	6.72E-02	1.92E-02	1.09E-01	9.18E-02	8.75E+00	8.00E-01	5.88E+00	1.56E-02
BCEOT-W24-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	1.01E+03	5.85E+00	NA	NA	NA	NA	5.36E-04	1.62E+03	8.66E-01	1.92E-02	1.09E-01	1.18E+00	8.75E+00	8.00E-01	5.88E+00	2.01E-01
BCEOT-E25-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	9.06E+02	5.22E+00	NA	NA	NA	NA	5.36E-04	1.44E+03	7.73E-01	1.92E-02	1.09E-01	1.06E+00	8.75E+00	8.00E-01	5.88E+00	1.80E-01

TABLE C-11D: LEAD DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 11 - BEARTRAP CREEK DISPERSED TAILINGS DEPOSITS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK TAILINGS DEPOSITS AND FLOSSIE LOUISE MINE WASTE PILE (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 4.982

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Mourning Dove (Herbivorous Birds - Terrestrial)																							
BCEOT-W25-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	8.02E+02	4.62E+00	NA	NA	NA	NA	5.36E-04	1.28E+03	6.84E-01	1.92E-02	1.09E-01	9.35E-01	8.75E+00	8.00E-01	5.88E+00	1.59E-01
BCEOT-E26-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	4.13E+02	2.38E+00	NA	NA	NA	NA	5.36E-04	6.58E+02	3.52E-01	1.92E-02	1.09E-01	4.81E-01	8.75E+00	8.00E-01	5.88E+00	8.20E-02
BCEOT-W26-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	6.49E+02	3.74E+00	NA	NA	NA	NA	5.36E-04	1.03E+03	5.54E-01	1.92E-02	1.09E-01	7.56E-01	8.75E+00	8.00E-01	5.88E+00	1.29E-01
BCEOT-W27-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	7.68E+02	4.42E+00	NA	NA	NA	NA	5.36E-04	1.22E+03	6.55E-01	1.92E-02	1.09E-01	8.95E-01	8.75E+00	8.00E-01	5.88E+00	1.52E-01
At Edge of Tailings Pile																						**Maximum HQ (Inside Tailings Pile)**	**2.17E+00**
BCEOT-E0-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	4.64E+02	2.67E+00	NA	NA	NA	NA	5.36E-04	7.38E+02	3.96E-01	1.92E-02	1.09E-01	5.40E-01	8.75E+00	8.00E-01	5.88E+00	9.20E-02
BCEOT-E1-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	5.26E+01	3.03E-01	NA	NA	NA	NA	5.36E-04	8.38E+01	4.49E-02	1.92E-02	1.09E-01	6.13E-02	8.75E+00	8.00E-01	5.88E+00	1.04E-02
BCEOT-E2-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	5.74E+02	3.31E+00	NA	NA	NA	NA	5.36E-04	9.14E+02	4.90E-01	1.92E-02	1.09E-01	6.69E-01	8.75E+00	8.00E-01	5.88E+00	1.14E-01
BCEOT-E3-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	1.15E+02	6.64E-01	NA	NA	NA	NA	5.36E-04	1.83E+02	9.82E-02	1.92E-02	1.09E-01	1.34E-01	8.75E+00	8.00E-01	5.88E+00	2.28E-02
BCEOT-E4-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	8.55E+01	4.93E-01	NA	NA	NA	NA	5.36E-04	1.36E+02	7.29E-02	1.92E-02	1.09E-01	9.96E-02	8.75E+00	8.00E-01	5.88E+00	1.70E-02
BCEOT-W4-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	6.05E+01	3.49E-01	NA	NA	NA	NA	5.36E-04	9.64E+01	5.16E-02	1.92E-02	1.09E-01	7.05E-02	8.75E+00	8.00E-01	5.88E+00	1.20E-02
BCEOT-E5-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	3.43E+02	1.98E+00	NA	NA	NA	NA	5.36E-04	5.47E+02	2.93E-01	1.92E-02	1.09E-01	4.00E-01	8.75E+00	8.00E-01	5.88E+00	6.81E-02
BCEOT-W5-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	3.87E+02	2.23E+00	NA	NA	NA	NA	5.36E-04	6.15E+02	3.30E-01	1.92E-02	1.09E-01	4.50E-01	8.75E+00	8.00E-01	5.88E+00	7.66E-02
BCEOT-E6-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	1.85E+02	1.07E+00	NA	NA	NA	NA	5.36E-04	2.95E+02	1.58E-01	1.92E-02	1.09E-01	2.16E-01	8.75E+00	8.00E-01	5.88E+00	3.67E-02
BCEOT-W6-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	6.90E+01	3.98E-01	NA	NA	NA	NA	5.36E-04	1.10E+02	5.89E-02	1.92E-02	1.09E-01	8.04E-02	8.75E+00	8.00E-01	5.88E+00	1.37E-02
BCEOT-E7-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	2.69E+02	1.55E+00	NA	NA	NA	NA	5.36E-04	4.29E+02	2.30E-01	1.92E-02	1.09E-01	3.14E-01	8.75E+00	8.00E-01	5.88E+00	5.34E-02
BCEOT-W7-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	1.45E+02	8.35E-01	NA	NA	NA	NA	5.36E-04	2.31E+02	1.24E-01	1.92E-02	1.09E-01	1.69E-01	8.75E+00	8.00E-01	5.88E+00	2.88E-02
BCEOT-W8-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	2.89E+01	1.66E-01	NA	NA	NA	NA	5.36E-04	4.60E+01	2.46E-02	1.92E-02	1.09E-01	3.36E-02	8.75E+00	8.00E-01	5.88E+00	5.73E-03
BCEOT-E9-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	1.76E+02	1.01E+00	NA	NA	NA	NA	5.36E-04	2.80E+02	1.50E-01	1.92E-02	1.09E-01	2.05E-01	8.75E+00	8.00E-01	5.88E+00	3.49E-02
BCEOT-W9-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	2.19E+01	1.26E-01	NA	NA	NA	NA	5.36E-04	3.48E+01	1.86E-02	1.92E-02	1.09E-01	2.55E-02	8.75E+00	8.00E-01	5.88E+00	4.33E-03
BCEOT-E10-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	6.61E+01	3.81E-01	NA	NA	NA	NA	5.36E-04	1.05E+02	5.64E-02	1.92E-02	1.09E-01	7.71E-02	8.75E+00	8.00E-01	5.88E+00	1.31E-02
BCEOT-E11-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	3.37E+01	1.94E-01	NA	NA	NA	NA	5.36E-04	5.37E+01	2.88E-02	1.92E-02	1.09E-01	3.93E-02	8.75E+00	8.00E-01	5.88E+00	6.69E-03
BCEOT-W11-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	3.96E+02	2.28E+00	NA	NA	NA	NA	5.36E-04	6.31E+02	3.38E-01	1.92E-02	1.09E-01	4.62E-01	8.75E+00	8.00E-01	5.88E+00	7.86E-02
BCEOT-E12-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	1.20E+02	6.93E-01	NA	NA	NA	NA	5.36E-04	1.92E+02	1.03E-01	1.92E-02	1.09E-01	1.40E-01	8.75E+00	8.00E-01	5.88E+00	2.39E-02
BCEOT-W12-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	4.77E+01	2.75E-01	NA	NA	NA	NA	5.36E-04	7.60E+01	4.07E-02	1.92E-02	1.09E-01	5.56E-02	8.75E+00	8.00E-01	5.88E+00	9.47E-03
BCEOT-E13-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	3.08E+01	1.78E-01	NA	NA	NA	NA	5.36E-04	4.91E+01	2.63E-02	1.92E-02	1.09E-01	3.59E-02	8.75E+00	8.00E-01	5.88E+00	6.12E-03
BCEOT-W13-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	5.24E+01	3.02E-01	NA	NA	NA	NA	5.36E-04	8.35E+01	4.47E-02	1.92E-02	1.09E-01	6.11E-02	8.75E+00	8.00E-01	5.88E+00	1.04E-02
BCEOT-E14-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	8.96E+01	5.16E-01	NA	NA	NA	NA	5.36E-04	1.43E+02	7.64E-02	1.92E-02	1.09E-01	1.04E-01	8.75E+00	8.00E-01	5.88E+00	1.78E-02
BCEOT-W14-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	2.49E+02	1.43E+00	NA	NA	NA	NA	5.36E-04	3.96E+02	2.12E-01	1.92E-02	1.09E-01	2.90E-01	8.75E+00	8.00E-01	5.88E+00	4.93E-02
BCEOT-E15-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	1.39E+02	8.00E-01	NA	NA	NA	NA	5.36E-04	2.21E+02	1.18E-01	1.92E-02	1.09E-01	1.62E-01	8.75E+00	8.00E-01	5.88E+00	2.75E-02
BCEOT-W15-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	3.30E+02	1.90E+00	NA	NA	NA	NA	5.36E-04	5.26E+02	2.82E-01	1.92E-02	1.09E-01	3.85E-01	8.75E+00	8.00E-01	5.88E+00	6.55E-02
BCEOT-E16-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	8.32E+01	4.79E-01	NA	NA	NA	NA	5.36E-04	1.32E+02	7.09E-02	1.92E-02	1.09E-01	9.69E-02	8.75E+00	8.00E-01	5.88E+00	1.65E-02
BCEOT-W16-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	6.43E+01	3.70E-01	NA	NA	NA	NA	5.36E-04	1.02E+02	5.48E-02	1.92E-02	1.09E-01	7.49E-02	8.75E+00	8.00E-01	5.88E+00	1.27E-02
BCEOT-E17-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	3.46E+02	1.99E+00	NA	NA	NA	NA	5.36E-04	5.51E+02	2.95E-01	1.92E-02	1.09E-01	4.03E-01	8.75E+00	8.00E-01	5.88E+00	6.86E-02
BCEOT-W17-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	1.75E+02	1.01E+00	NA	NA	NA	NA	5.36E-04	2.78E+02	1.49E-01	1.92E-02	1.09E-01	2.04E-01	8.75E+00	8.00E-01	5.88E+00	3.47E-02
BCEOT-E18-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	1.45E+02	8.37E-01	NA	NA	NA	NA	5.36E-04	2.31E+02	1.24E-01	1.92E-02	1.09E-01	1.69E-01	8.75E+00	8.00E-01	5.88E+00	2.88E-02
BCEOT-W18-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	4.43E+01	2.55E-01	NA	NA	NA	NA	5.36E-04	7.06E+01	3.78E-02	1.92E-02	1.09E-01	5.16E-02	8.75E+00	8.00E-01	5.88E+00	8.79E-03
BCEOT-E19-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	6.05E+01	3.49E-01	NA	NA	NA	NA	5.36E-04	9.64E+01	5.16E-02	1.92E-02	1.09E-01	7.05E-02	8.75E+00	8.00E-01	5.88E+00	1.20E-02
BCEOT-W19-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	9.88E+01	5.69E-01	NA	NA	NA	NA	5.36E-04	1.57E+02	8.43E-02	1.92E-02	1.09E-01	1.15E-01	8.75E+00	8.00E-01	5.88E+00	1.96E-02
BCEOT-E20-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	1.84E+01	1.06E-01	NA	NA	NA	NA	5.36E-04	2.92E+01	1.57E-02	1.92E-02	1.09E-01	2.14E-02	8.75E+00	8.00E-01	5.88E+00	3.64E-03
BCEOT-W20-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	5.19E+01	2.99E-01	NA	NA	NA	NA	5.36E-04	8.26E+01	4.42E-02	1.92E-02	1.09E-01	6.04E-02	8.75E+00	8.00E-01	5.88E+00	1.03E-02
BCEOT-E21-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	4.43E+02	2.55E+00	NA	NA	NA	NA	5.36E-04	7.05E+02	3.78E-01	1.92E-02	1.09E-01	5.16E-01	8.75E+00	8.00E-01	5.88E+00	8.78E-02
BCEOT-W21-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	8.43E+01	4.86E-01	NA	NA	NA	NA	5.36E-04	1.34E+02	7.19E-02	1.92E-02	1.09E-01	9.82E-02	8.75E+00	8.00E-01	5.88E+00	1.67E-02
BCEOT-E22-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	1.89E+02	1.09E+00	NA	NA	NA	NA	5.36E-04	3.00E+02	1.61E-01	1.92E-02	1.09E-01	2.20E-01	8.75E+00	8.00E-01	5.88E+00	3.74E-02
BCEOT-W22-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	7.99E+01	4.61E-01	NA	NA	NA	NA	5.36E-04	1.27E+02	6.82E-02	1.92E-02	1.09E-01	9.31E-02	8.75E+00	8.00E-01	5.88E+00	1.59E-02
BCEOT-E23-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	2.85E+01	1.64E-01	NA	NA	NA	NA	5.36E-04	4.54E+01	2.43E-02	1.92E-02	1.09E-01	3.32E-02	8.75E+00	8.00E-01	5.88E+00	5.66E-03
BCEOT-W23-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	7.50E+01	4.32E-01	NA	NA	NA	NA	5.36E-04	1.19E+02	6.40E-02	1.92E-02	1.09E-01	8.74E-02	8.75E+00	8.00E-01	5.88E+00	1.49E-02
BCEOT-E24-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	7.04E+01	4.06E-01	NA	NA	NA	NA	5.36E-04	1.12E+02	6.01E-02	1.92E-02	1.09E-01	8.20E-02	8.75E+00	8.00E-01	5.88E+00	1.40E-02
BCEOT-W24-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	1.39E+02	8.00E-01	NA	NA	NA	NA	5.36E-04	2.21E+02	1.18E-01	1.92E-02	1.09E-01	1.62E-01	8.75E+00	8.00E-01	5.88E+00	2.75E-02
BCEOT-E25-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	1.07E+02	6.16E-01	NA	NA	NA	NA	5.36E-04	1.70E+02	9.13E-02	1.92E-02	1.09E-01	1.25E-01	8.75E+00	8.00E-01	5.88E+00	2.12E-02

TABLE C-11D: LEAD DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 11 - BEARTRAP CREEK DISPERSED TAILINGS DEPOSITS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK TAILINGS DEPOSITS AND FLOSSIE LOUISE MINE WASTE PILE (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 4.982

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Mourning Dove (Herbivorous Birds - Terrestrial)																							
BCEOT-W25-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	1.87E+02	1.08E+00	NA	NA	NA	NA	5.36E-04	2.97E+02	1.59E-01	1.92E-02	1.09E-01	2.18E-01	8.75E+00	8.00E-01	5.88E+00	3.70E-02
BCEOT-E26-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	1.59E+02	9.18E-01	NA	NA	NA	NA	5.36E-04	2.54E+02	1.36E-01	1.92E-02	1.09E-01	1.86E-01	8.75E+00	8.00E-01	5.88E+00	3.16E-02
BCEOT-W26-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	1.18E+02	6.79E-01	NA	NA	NA	NA	5.36E-04	1.88E+02	1.00E-01	1.92E-02	1.09E-01	1.37E-01	8.75E+00	8.00E-01	5.88E+00	2.34E-02
BCEOT-W27-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	1.46E+02	8.43E-01	NA	NA	NA	NA	5.36E-04	2.33E+02	1.25E-01	1.92E-02	1.09E-01	1.70E-01	8.75E+00	8.00E-01	5.88E+00	2.90E-02
Outside Tailings Piles																						**Maximum HQ (Edge of Tailings Pile)**	**1.14E-01**
BCEOT-E0+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	2.46E+02	1.41E+00	NA	NA	NA	NA	5.36E-04	3.91E+02	2.09E-01	1.92E-02	1.09E-01	2.86E-01	8.75E+00	8.00E-01	5.88E+00	4.87E-02
BCEOT-E1+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	3.51E+02	2.02E+00	NA	NA	NA	NA	5.36E-04	5.58E+02	2.99E-01	1.92E-02	1.09E-01	4.09E-01	8.75E+00	8.00E-01	5.88E+00	6.95E-02
BCEOT-E2+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	2.19E+02	1.26E+00	NA	NA	NA	NA	5.36E-04	3.49E+02	1.87E-01	1.92E-02	1.09E-01	2.56E-01	8.75E+00	8.00E-01	5.88E+00	4.35E-02
BCEOT-E3+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	6.81E+01	3.92E-01	NA	NA	NA	NA	5.36E-04	1.08E+02	5.81E-02	1.92E-02	1.09E-01	7.93E-02	8.75E+00	8.00E-01	5.88E+00	1.35E-02
BCEOT-E4+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	9.83E+01	5.66E-01	NA	NA	NA	NA	5.36E-04	1.56E+02	8.38E-02	1.92E-02	1.09E-01	1.15E-01	8.75E+00	8.00E-01	5.88E+00	1.95E-02
BCEOT-W4+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	1.17E+02	6.74E-01	NA	NA	NA	NA	5.36E-04	1.86E+02	9.97E-02	1.92E-02	1.09E-01	1.36E-01	8.75E+00	8.00E-01	5.88E+00	2.32E-02
BCEOT-E5+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	2.44E+02	1.41E+00	NA	NA	NA	NA	5.36E-04	3.89E+02	2.08E-01	1.92E-02	1.09E-01	2.84E-01	8.75E+00	8.00E-01	5.88E+00	4.84E-02
BCEOT-W5+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	3.06E+02	1.76E+00	NA	NA	NA	NA	5.36E-04	4.87E+02	2.61E-01	1.92E-02	1.09E-01	3.57E-01	8.75E+00	8.00E-01	5.88E+00	6.07E-02
BCEOT-E6+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	2.33E+02	1.34E+00	NA	NA	NA	NA	5.36E-04	3.70E+02	1.98E-01	1.92E-02	1.09E-01	2.71E-01	8.75E+00	8.00E-01	5.88E+00	4.61E-02
BCEOT-W6+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	4.94E+01	2.85E-01	NA	NA	NA	NA	5.36E-04	7.87E+01	4.22E-02	1.92E-02	1.09E-01	5.76E-02	8.75E+00	8.00E-01	5.88E+00	9.80E-03
BCEOT-E7+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	7.83E+01	4.51E-01	NA	NA	NA	NA	5.36E-04	1.25E+02	6.68E-02	1.92E-02	1.09E-01	9.12E-02	8.75E+00	8.00E-01	5.88E+00	1.55E-02
BCEOT-W7+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	2.56E+01	1.47E-01	NA	NA	NA	NA	5.36E-04	4.07E+01	2.18E-02	1.92E-02	1.09E-01	2.98E-02	8.75E+00	8.00E-01	5.88E+00	5.07E-03
FLWA-101 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	1.17E+03	6.75E+00	NA	NA	NA	NA	5.36E-04	1.87E+03	9.99E-01	1.92E-02	1.09E-01	1.37E+00	8.75E+00	8.00E-01	5.88E+00	2.32E-01
BCEOT-W8+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	9.93E+01	5.72E-01	NA	NA	NA	NA	5.36E-04	1.58E+02	8.47E-02	1.92E-02	1.09E-01	1.16E-01	8.75E+00	8.00E-01	5.88E+00	1.97E-02
BCEOT-E9+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	3.25E+02	1.87E+00	NA	NA	NA	NA	5.36E-04	5.18E+02	2.77E-01	1.92E-02	1.09E-01	3.79E-01	8.75E+00	8.00E-01	5.88E+00	6.45E-02
BCEOT-W9+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	6.36E+01	3.66E-01	NA	NA	NA	NA	5.36E-04	1.01E+02	5.42E-02	1.92E-02	1.09E-01	7.41E-02	8.75E+00	8.00E-01	5.88E+00	1.26E-02
BCEOT-E10+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	2.58E+01	1.49E-01	NA	NA	NA	NA	5.36E-04	4.11E+01	2.20E-02	1.92E-02	1.09E-01	3.01E-02	8.75E+00	8.00E-01	5.88E+00	5.12E-03
BCEOT-W10+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	2.02E+01	1.16E-01	NA	NA	NA	NA	5.36E-04	3.21E+01	1.72E-02	1.92E-02	1.09E-01	2.35E-02	8.75E+00	8.00E-01	5.88E+00	4.00E-03
BCEOT-E11+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	2.30E+02	1.33E+00	NA	NA	NA	NA	5.36E-04	3.67E+02	1.96E-01	1.92E-02	1.09E-01	2.68E-01	8.75E+00	8.00E-01	5.88E+00	4.57E-02
BCEOT-W11+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	1.11E+02	6.41E-01	NA	NA	NA	NA	5.36E-04	1.77E+02	9.49E-02	1.92E-02	1.09E-01	1.30E-01	8.75E+00	8.00E-01	5.88E+00	2.21E-02
BCEOT-E12+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	1.52E+02	8.75E-01	NA	NA	NA	NA	5.36E-04	2.42E+02	1.30E-01	1.92E-02	1.09E-01	1.77E-01	8.75E+00	8.00E-01	5.88E+00	3.01E-02
BCEOT-W12+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	1.50E+01	8.61E-02	NA	NA	NA	NA	5.36E-04	2.38E+01	1.28E-02	1.92E-02	1.09E-01	1.74E-02	8.75E+00	8.00E-01	5.88E+00	2.97E-03
BCEOT-E13+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	2.32E+02	1.34E+00	NA	NA	NA	NA	5.36E-04	3.69E+02	1.98E-01	1.92E-02	1.09E-01	2.70E-01	8.75E+00	8.00E-01	5.88E+00	4.60E-02
BCEOT-E14+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	6.32E+01	3.64E-01	NA	NA	NA	NA	5.36E-04	1.01E+02	5.39E-02	1.92E-02	1.09E-01	7.36E-02	8.75E+00	8.00E-01	5.88E+00	1.25E-02
BCEOT-W14+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	2.53E+01	1.46E-01	NA	NA	NA	NA	5.36E-04	4.02E+01	2.15E-02	1.92E-02	1.09E-01	2.94E-02	8.75E+00	8.00E-01	5.88E+00	5.01E-03
BCEOT-E15+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	1.38E+02	7.97E-01	NA	NA	NA	NA	5.36E-04	2.20E+02	1.18E-01	1.92E-02	1.09E-01	1.61E-01	8.75E+00	8.00E-01	5.88E+00	2.74E-02
BCEOT-W15+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	1.18E+02	6.82E-01	NA	NA	NA	NA	5.36E-04	1.89E+02	1.01E-01	1.92E-02	1.09E-01	1.38E-01	8.75E+00	8.00E-01	5.88E+00	2.35E-02
BCEOT-E16+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	4.75E+01	2.73E-01	NA	NA	NA	NA	5.36E-04	7.55E+01	4.05E-02	1.92E-02	1.09E-01	5.53E-02	8.75E+00	8.00E-01	5.88E+00	9.41E-03
BCEOT-W16+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	1.78E+01	1.03E-01	NA	NA	NA	NA	5.36E-04	2.84E+01	1.52E-02	1.92E-02	1.09E-01	2.08E-02	8.75E+00	8.00E-01	5.88E+00	3.53E-03
BCEOT-E17+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	1.12E+02	6.44E-01	NA	NA	NA	NA	5.36E-04	1.78E+02	9.54E-02	1.92E-02	1.09E-01	1.30E-01	8.75E+00	8.00E-01	5.88E+00	2.22E-02
BCEOT-W17+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	6.28E+01	3.62E-01	NA	NA	NA	NA	5.36E-04	9.99E+01	5.35E-02	1.92E-02	1.09E-01	7.31E-02	8.75E+00	8.00E-01	5.88E+00	1.24E-02
BCEOT-E18+12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	9.87E+03	5.69E+01	NA	NA	NA	NA	5.36E-04	1.57E+04	8.42E+00	1.92E-02	1.09E-01	1.15E+01	8.75E+00	8.00E-01	5.88E+00	1.96E+00
BCEOT-E18+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	6.48E+01	3.73E-01	NA	NA	NA	NA	5.36E-04	1.03E+02	5.52E-02	1.92E-02	1.09E-01	7.55E-02	8.75E+00	8.00E-01	5.88E+00	1.28E-02
BCEOT-W18+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	5.51E+01	3.17E-01	NA	NA	NA	NA	5.36E-04	8.77E+01	4.70E-02	1.92E-02	1.09E-01	6.42E-02	8.75E+00	8.00E-01	5.88E+00	1.09E-02
BCEOT-E19+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	4.78E+01	2.75E-01	NA	NA	NA	NA	5.36E-04	7.60E+01	4.07E-02	1.92E-02	1.09E-01	5.56E-02	8.75E+00	8.00E-01	5.88E+00	9.47E-03
BCEOT-W19+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	4.62E+01	2.66E-01	NA	NA	NA	NA	5.36E-04	7.35E+01	3.94E-02	1.92E-02	1.09E-01	5.38E-02	8.75E+00	8.00E-01	5.88E+00	9.16E-03
BCEOT-E20+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	2.11E+01	1.22E-01	NA	NA	NA	NA	5.36E-04	3.37E+01	1.80E-02	1.92E-02	1.09E-01	2.46E-02	8.75E+00	8.00E-01	5.88E+00	4.19E-03
BCEOT-W20+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	4.85E+01	2.79E-01	NA	NA	NA	NA	5.36E-04	7.72E+01	4.13E-02	1.92E-02	1.09E-01	5.65E-02	8.75E+00	8.00E-01	5.88E+00	9.61E-03
BCEOT-E21+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	8.15E+01	4.69E-01	NA	NA	NA	NA	5.36E-04	1.30E+02	6.95E-02	1.92E-02	1.09E-01	9.49E-02	8.75E+00	8.00E-01	5.88E+00	1.62E-02
BCEOT-W21+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	5.73E+01	3.30E-01	NA	NA	NA	NA	5.36E-04	9.12E+01	4.88E-02	1.92E-02	1.09E-01	6.67E-02	8.75E+00	8.00E-01	5.88E+00	1.14E-02
BCEOT-E22+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	8.51E+02	4.90E+00	NA	NA	NA	NA	5.36E-04	1.35E+03	7.26E-01	1.92E-02	1.09E-01	9.91E-01	8.75E+00	8.00E-01	5.88E+00	1.69E-01
BCEOT-E22+70 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	1.57E+02	9.05E-01	NA	NA	NA	NA	5.36E-04	2.50E+02	1.34E-01	1.92E-02	1.09E-01	1.83E-01	8.75E+00	8.00E-01	5.88E+00	3.11E-02
BCEOT-W22+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	4.48E+01	2.58E-01	NA	NA	NA	NA	5.36E-04	7.13E+01	3.82E-02	1.92E-02	1.09E-01	5.22E-02	8.75E+00	8.00E-01	5.88E+00	8.88E-03
BCEOT-E23+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	3.10E+01	1.79E-01	NA	NA	NA	NA	5.36E-04	4.94E+01	2.65E-02	1.92E-02	1.09E-01	3.62E-02	8.75E+00	8.00E-01	5.88E+00	6.16E-03
BCEOT-W23+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	6.71E+01	3.87E-01	NA	NA	NA	NA	5.36E-04	1.07E+02	5.72E-02	1.92E-02	1.09E-01	7.82E-02	8.75E+00	8.00E-01	5.88E+00	1.33E-02
BCEOT-E24+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB

TABLE C-11D: LEAD DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 11 - BEARTRAP CREEK DISPERSED TAILINGS DEPOSITS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK TAILINGS DEPOSITS AND FLOSSIE LOUISE MINE WASTE PILE (Continued)

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Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

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calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 4.982

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Mourning Dove (Herbivorous Birds - Terrestrial)																							
BCEOT-W24+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	1.26E+02	7.24E-01	NA	NA	NA	NA	5.36E-04	2.00E+02	1.07E-01	1.92E-02	1.09E-01	1.46E-01	8.75E+00	8.00E-01	5.88E+00	2.49E-02
BCEOT-E25+20 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	2.45E+01	1.41E-01	NA	NA	NA	NA	5.36E-04	3.90E+01	2.09E-02	1.92E-02	1.09E-01	2.85E-02	8.75E+00	8.00E-01	5.88E+00	4.86E-03
BCEOT-W25+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	1.03E+02	5.94E-01	NA	NA	NA	NA	5.36E-04	1.64E+02	8.80E-02	1.92E-02	1.09E-01	1.20E-01	8.75E+00	8.00E-01	5.88E+00	2.05E-02
BCEOT-E26+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	3.30E+02	1.90E+00	NA	NA	NA	NA	5.36E-04	5.25E+02	2.81E-01	1.92E-02	1.09E-01	3.84E-01	8.75E+00	8.00E-01	5.88E+00	6.53E-02
BCEOT-W26+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	8.49E+01	4.89E-01	NA	NA	NA	NA	5.36E-04	1.35E+02	7.24E-02	1.92E-02	1.09E-01	9.90E-02	8.75E+00	8.00E-01	5.88E+00	1.68E-02
BCEOT-W27+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	6.28E-01	9.07E+01	5.23E-01	NA	NA	NA	NA	5.36E-04	1.44E+02	7.74E-02	1.92E-02	1.09E-01	1.06E-01	8.75E+00	8.00E-01	5.88E+00	1.80E-02
																						Maximum HQ (Outside Tailings Pile)	**1.96E+00**
Red-Tailed Hawk (Carnivorous Birds - Terrestrial)																							
Reference Sites																							
ACBG-1 (0-6")	9.00E-02	9.00E-02	7.62E-02	1.76E+00	1.58E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.31E+01	1.18E-01	7.15E-03	1.13E+00	1.74E-03	8.75E+00	8.00E-01	9.38E+00	1.86E-04
ACBG-2 (0-6")	9.00E-02	9.00E-02	7.62E-02	2.92E+00	2.62E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.83E+01	1.96E-01	7.15E-03	1.13E+00	2.89E-03	8.75E+00	8.00E-01	9.38E+00	3.08E-04
BCBG-201 (0-6")	9.00E-02	9.00E-02	7.62E-02	7.27E+00	6.54E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	9.53E+01	4.89E-01	7.15E-03	1.13E+00	7.20E-03	8.75E+00	8.00E-01	9.38E+00	7.68E-04
Inside Tailings Pile																						**Minimum HQ (Reference Sites)**	**1.86E-04**
BCEOT-E0-12.5 (0-6")	9.00E-02	9.00E-02	9.28E-01	5.31E+02	4.78E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.72E+02	2.94E+00	7.15E-03	1.13E+00	3.20E-01	8.75E+00	8.00E-01	9.38E+00	3.41E-02
BCEOT-E1-12.5 (0-6")	9.00E-02	9.00E-02	9.28E-01	4.34E+02	3.90E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.68E+02	2.40E+00	7.15E-03	1.13E+00	2.61E-01	8.75E+00	8.00E-01	9.38E+00	2.78E-02
BCEOT-E2-8 (0-6")	9.00E-02	9.00E-02	9.28E-01	4.16E+02	3.74E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.48E+02	2.30E+00	7.15E-03	1.13E+00	2.51E-01	8.75E+00	8.00E-01	9.38E+00	2.67E-02
BCEOT-E3-8 (0-6")	9.00E-02	9.00E-02	9.28E-01	3.49E+02	3.14E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.76E+02	1.93E+00	7.15E-03	1.13E+00	2.10E-01	8.75E+00	8.00E-01	9.38E+00	2.24E-02
BCEOT-E4-12.5 (0-6")	9.00E-02	9.00E-02	9.28E-01	3.76E+02	3.38E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.05E+02	2.08E+00	7.15E-03	1.13E+00	2.26E-01	8.75E+00	8.00E-01	9.38E+00	2.41E-02
BCEOT-W4-12.5 (0-6")	9.00E-02	9.00E-02	9.28E-01	3.93E+02	3.54E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.24E+02	2.17E+00	7.15E-03	1.13E+00	2.37E-01	8.75E+00	8.00E-01	9.38E+00	2.52E-02
BCEOT-E5-25 (0-6")	9.00E-02	9.00E-02	9.28E-01	1.22E+02	1.10E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.32E+02	6.75E-01	7.15E-03	1.13E+00	7.35E-02	8.75E+00	8.00E-01	9.38E+00	7.83E-03
BCEOT-E6-12.5 (0-6")	9.00E-02	9.00E-02	9.28E-01	3.25E+02	2.93E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.51E+02	1.80E+00	7.15E-03	1.13E+00	1.96E-01	8.75E+00	8.00E-01	9.38E+00	2.09E-02
BCEOT-W6-12.5 (0-6")	9.00E-02	9.00E-02	9.28E-01	1.05E+02	9.44E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.13E+02	5.80E-01	7.15E-03	1.13E+00	6.32E-02	8.75E+00	8.00E-01	9.38E+00	6.74E-03
BCEOT-E7-12.5 (0-6")	9.00E-02	9.00E-02	9.28E-01	1.12E+02	1.01E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.21E+02	6.18E-01	7.15E-03	1.13E+00	6.73E-02	8.75E+00	8.00E-01	9.38E+00	7.18E-03
BCEOT-W7-12.5 (0-6")	9.00E-02	9.00E-02	9.28E-01	5.75E+02	5.17E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	6.20E+02	3.18E+00	7.15E-03	1.13E+00	3.46E-01	8.75E+00	8.00E-01	9.38E+00	3.69E-02
BCEOT-W8-12.5 (0-6")	9.00E-02	9.00E-02	9.28E-01	2.14E+03	1.93E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.31E+03	1.18E+01	7.15E-03	1.13E+00	1.29E+00	8.75E+00	8.00E-01	9.38E+00	1.37E-01
BCEOT-E9-12.5 (0-6")	9.00E-02	9.00E-02	9.28E-01	6.64E+02	5.97E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	7.16E+02	3.67E+00	7.15E-03	1.13E+00	4.00E-01	8.75E+00	8.00E-01	9.38E+00	4.26E-02
BCEOT-W9-12.5 (0-6")	9.00E-02	9.00E-02	9.28E-01	7.82E+02	7.03E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	8.43E+02	4.32E+00	7.15E-03	1.13E+00	4.71E-01	8.75E+00	8.00E-01	9.38E+00	5.02E-02
BCEOT-E10-12.5 (0-6")	9.00E-02	9.00E-02	9.28E-01	8.54E+01	7.68E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	9.20E+01	4.72E-01	7.15E-03	1.13E+00	5.14E-02	8.75E+00	8.00E-01	9.38E+00	5.48E-03
BCEOT-W10-12.5 (0-6")	9.00E-02	9.00E-02	9.28E-01	9.38E+02	8.44E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.01E+03	5.18E+00	7.15E-03	1.13E+00	5.65E-01	8.75E+00	8.00E-01	9.38E+00	6.02E-02
BCEOT-E11-12.5 (0-6")	9.00E-02	9.00E-02	9.28E-01	3.24E+02	2.92E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.49E+02	1.79E+00	7.15E-03	1.13E+00	1.95E-01	8.75E+00	8.00E-01	9.38E+00	2.08E-02
BCEOT-W11-12.5 (0-6")	9.00E-02	9.00E-02	9.28E-01	6.62E+02	5.96E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	7.14E+02	3.66E+00	7.15E-03	1.13E+00	3.99E-01	8.75E+00	8.00E-01	9.38E+00	4.25E-02
BCEOT-E12-12.5 (0-6")	9.00E-02	9.00E-02	9.28E-01	2.21E+02	1.98E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.38E+02	1.22E+00	7.15E-03	1.13E+00	1.33E-01	8.75E+00	8.00E-01	9.38E+00	1.42E-02
BCEOT-W12-12.5 (0-6")	9.00E-02	9.00E-02	9.28E-01	1.92E+03	1.73E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.07E+03	1.06E+01	7.15E-03	1.13E+00	1.16E+00	8.75E+00	8.00E-01	9.38E+00	1.23E-01
BCEOT-E13-12.5 (0-6")	9.00E-02	9.00E-02	9.28E-01	5.75E+02	5.17E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	6.19E+02	3.18E+00	7.15E-03	1.13E+00	3.46E-01	8.75E+00	8.00E-01	9.38E+00	3.69E-02
BCEOT-W13-12.5 (0-6")	9.00E-02	9.00E-02	9.28E-01	1.96E+03	1.76E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.11E+03	1.08E+01	7.15E-03	1.13E+00	1.18E+00	8.75E+00	8.00E-01	9.38E+00	1.26E-01
BCEOT-W13-25 (0-6")	9.00E-02	9.00E-02	9.28E-01	5.04E+01	4.54E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.44E+01	2.79E-01	7.15E-03	1.13E+00	3.04E-02	8.75E+00	8.00E-01	9.38E+00	3.24E-03
BCEOT-W14-12.5 (0-6")	9.00E-02	9.00E-02	9.28E-01	2.66E+02	2.39E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.87E+02	1.47E+00	7.15E-03	1.13E+00	1.60E-01	8.75E+00	8.00E-01	9.38E+00	1.71E-02
BCEOT-E15-8 (0-6")	9.00E-02	9.00E-02	9.28E-01	5.15E+02	4.63E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.55E+02	2.84E+00	7.15E-03	1.13E+00	3.10E-01	8.75E+00	8.00E-01	9.38E+00	3.30E-02
BCEOT-W15-12.5 (0-6")	9.00E-02	9.00E-02	9.28E-01	1.17E+03	1.05E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.26E+03	6.47E+00	7.15E-03	1.13E+00	7.05E-01	8.75E+00	8.00E-01	9.38E+00	7.51E-02
BCEOT-E16-12.5 (0-6")	9.00E-02	9.00E-02	9.28E-01	3.11E+03	2.80E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.35E+03	1.72E+01	7.15E-03	1.13E+00	1.87E+00	8.75E+00	8.00E-01	9.38E+00	2.00E-01
BCEOT-W16-12.5 (0-6")	9.00E-02	9.00E-02	9.28E-01	1.17E+03	1.05E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.26E+03	6.46E+00	7.15E-03	1.13E+00	7.04E-01	8.75E+00	8.00E-01	9.38E+00	7.50E-02
BCEOT-E17-12.5 (0-6")	9.00E-02	9.00E-02	9.28E-01	1.62E+04	1.45E+03	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.74E+04	8.94E+01	7.15E-03	1.13E+00	9.74E+00	8.75E+00	8.00E-01	9.38E+00	1.04E+00
BCEOT-W17-12.5 (0-6")	9.00E-02	9.00E-02	9.28E-01	6.13E+02	5.51E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	6.61E+02	3.39E+00	7.15E-03	1.13E+00	3.69E-01	8.75E+00	8.00E-01	9.38E+00	3.93E-02
BCEOT-W18-12.5 (0-6")	9.00E-02	9.00E-02	9.28E-01	2.14E+03	1.93E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.31E+03	1.18E+01	7.15E-03	1.13E+00	1.29E+00	8.75E+00	8.00E-01	9.38E+00	1.38E-01
BCEOT-E19-12.5 (0-6")	9.00E-02	9.00E-02	9.28E-01	1.09E+03	9.81E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.18E+03	6.03E+00	7.15E-03	1.13E+00	6.57E-01	8.75E+00	8.00E-01	9.38E+00	7.00E-02
BCEOT-W19-12.5 (0-6")	9.00E-02	9.00E-02	9.28E-01	3.15E+02	2.84E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.40E+02	1.74E+00	7.15E-03	1.13E+00	1.90E-01	8.75E+00	8.00E-01	9.38E+00	2.02E-02
BCEOT-E20-12.5 (0-6")	9.00E-02	9.00E-02	9.28E-01	1.60E+03	1.44E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.72E+03	8.82E+00	7.15E-03	1.13E+00	9.61E-01	8.75E+00	8.00E-01	9.38E+00	1.02E-01
BCEOT-W20-12.5 (0-6")	9.00E-02	9.00E-02	9.28E-01	1.46E+03	1.32E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.58E+03	8.08E+00	7.15E-03	1.13E+00	8.80E-01	8.75E+00	8.00E-01	9.38E+00	9.38E-02
BCEOT-E21-12.5 (0-6")	9.00E-02	9.00E-02	9.28E-01	1.48E+03	1.33E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.60E+03	8.18E+00	7.15E-03	1.13E+00	8.91E-01	8.75E+00	8.00E-01	9.38E+00	9.50E-02
BCEOT-W21-12.5 (0-6")	9.00E-02	9.00E-02	9.28E-01	1.03E+03	9.27E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.11E+03	5.70E+00	7.15E-03	1.13E+00	6.21E-01	8.75E+00	8.00E-01	9.38E+00	6.61E-02
BCEOT-E22-12.5 (0-6")	9.00E-02	9.00E-02	9.28E-01	1.90E+03	1.71E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.04E+03	1.05E+01	7.15E-03	1.13E+00	1.14E+00	8.75E+00	8.00E-01	9.38E+00	1.22E-01
BCEOT-W22-12.5 (0-6")	9.00E-02	9.00E-02	9.28E-01	3.24E+03	2.91E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.49E+03	1.79E+01	7.15E-03	1.13E+00	1.95E+00	8.75E+00	8.00E-01	9.38E+00	2.08E-01

TABLE C-11D: LEAD DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 11 - BEARTRAP CREEK DISPERSED TAILINGS DEPOSITS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK TAILINGS DEPOSITS AND FLOSSIE LOUISE MINE WASTE PILE (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 4.982

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Red-Tailed Hawk (Carnivorous Birds - Terrestrial)																							
BCEOT-E23-15 (0-6")	9.00E-02	9.00E-02	9.28E-01	2.67E+02	2.40E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.87E+02	1.47E+00	7.15E-03	1.13E+00	1.61E-01	8.75E+00	8.00E-01	9.38E+00	1.71E-02
BCEOT-W23-12.5 (0-6")	9.00E-02	9.00E-02	9.28E-01	2.19E+03	1.97E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.36E+03	1.21E+01	7.15E-03	1.13E+00	1.32E+00	8.75E+00	8.00E-01	9.38E+00	1.41E-01
BCEOT-E24-12.5 (0-6")	9.00E-02	9.00E-02	9.28E-01	1.16E+02	1.05E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.25E+02	6.43E-01	7.15E-03	1.13E+00	7.00E-02	8.75E+00	8.00E-01	9.38E+00	7.47E-03
BCEOT-W24-12.5 (0-6")	9.00E-02	9.00E-02	9.28E-01	1.50E+03	1.35E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.62E+03	8.28E+00	7.15E-03	1.13E+00	9.02E-01	8.75E+00	8.00E-01	9.38E+00	9.62E-02
BCEOT-E25-12.5 (0-6")	9.00E-02	9.00E-02	9.28E-01	1.34E+03	1.20E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.44E+03	7.40E+00	7.15E-03	1.13E+00	8.06E-01	8.75E+00	8.00E-01	9.38E+00	8.59E-02
BCEOT-W25-12.5 (0-6")	9.00E-02	9.00E-02	9.28E-01	1.18E+03	1.07E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.28E+03	6.55E+00	7.15E-03	1.13E+00	7.13E-01	8.75E+00	8.00E-01	9.38E+00	7.60E-02
BCEOT-E26-12.5 (0-6")	9.00E-02	9.00E-02	9.28E-01	6.10E+02	5.49E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	6.58E+02	3.37E+00	7.15E-03	1.13E+00	3.67E-01	8.75E+00	8.00E-01	9.38E+00	3.92E-02
BCEOT-W26-12.5 (0-6")	9.00E-02	9.00E-02	9.28E-01	9.59E+02	8.62E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.03E+03	5.30E+00	7.15E-03	1.13E+00	5.77E-01	8.75E+00	8.00E-01	9.38E+00	6.15E-02
BCEOT-W27-12.5 (0-6")	9.00E-02	9.00E-02	9.28E-01	1.13E+03	1.02E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.22E+03	6.27E+00	7.15E-03	1.13E+00	6.83E-01	8.75E+00	8.00E-01	9.38E+00	7.28E-02
At Edge of Tailings Pile																						**Maximum HQ (Inside Tailings Pile)**	**1.04E+00**
BCEOT-E0-0 (0-6")	9.00E-02	9.00E-02	9.28E-01	6.85E+02	6.16E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	7.38E+02	3.79E+00	7.15E-03	1.13E+00	4.12E-01	8.75E+00	8.00E-01	9.38E+00	4.39E-02
BCEOT-E1-0 (0-6")	9.00E-02	9.00E-02	9.28E-01	7.77E+01	6.99E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	8.38E+01	4.30E-01	7.15E-03	1.13E+00	4.68E-02	8.75E+00	8.00E-01	9.38E+00	4.99E-03
BCEOT-E2-0 (0-6")	9.00E-02	9.00E-02	9.28E-01	8.48E+02	7.63E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	9.14E+02	4.69E+00	7.15E-03	1.13E+00	5.11E-01	8.75E+00	8.00E-01	9.38E+00	5.44E-02
BCEOT-E3-0 (0-6")	9.00E-02	9.00E-02	9.28E-01	1.70E+02	1.53E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.83E+02	9.40E-01	7.15E-03	1.13E+00	1.02E-01	8.75E+00	8.00E-01	9.38E+00	1.09E-02
BCEOT-E4-0 (0-6")	9.00E-02	9.00E-02	9.28E-01	1.26E+02	1.14E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.36E+02	6.98E-01	7.15E-03	1.13E+00	7.60E-02	8.75E+00	8.00E-01	9.38E+00	8.10E-03
BCEOT-W4-0 (0-6")	9.00E-02	9.00E-02	9.28E-01	8.94E+01	8.04E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	9.64E+01	4.94E-01	7.15E-03	1.13E+00	5.38E-02	8.75E+00	8.00E-01	9.38E+00	5.74E-03
BCEOT-E5-0 (0-6")	9.00E-02	9.00E-02	9.28E-01	5.07E+02	4.56E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.47E+02	2.80E+00	7.15E-03	1.13E+00	3.05E-01	8.75E+00	8.00E-01	9.38E+00	3.25E-02
BCEOT-W5-0 (0-6")	9.00E-02	9.00E-02	9.28E-01	5.71E+02	5.13E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	6.15E+02	3.15E+00	7.15E-03	1.13E+00	3.44E-01	8.75E+00	8.00E-01	9.38E+00	3.66E-02
BCEOT-E6-0 (0-6")	9.00E-02	9.00E-02	9.28E-01	2.74E+02	2.46E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.95E+02	1.51E+00	7.15E-03	1.13E+00	1.65E-01	8.75E+00	8.00E-01	9.38E+00	1.76E-02
BCEOT-W6-0 (0-6")	9.00E-02	9.00E-02	9.28E-01	1.02E+02	9.17E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.10E+02	5.63E-01	7.15E-03	1.13E+00	6.14E-02	8.75E+00	8.00E-01	9.38E+00	6.54E-03
BCEOT-E7-0 (0-6")	9.00E-02	9.00E-02	9.28E-01	3.98E+02	3.58E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.29E+02	2.20E+00	7.15E-03	1.13E+00	2.39E-01	8.75E+00	8.00E-01	9.38E+00	2.55E-02
BCEOT-W7-0 (0-6")	9.00E-02	9.00E-02	9.28E-01	2.14E+02	1.93E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.31E+02	1.18E+00	7.15E-03	1.13E+00	1.29E-01	8.75E+00	8.00E-01	9.38E+00	1.37E-02
BCEOT-W8-0 (0-6")	9.00E-02	9.00E-02	9.28E-01	4.27E+01	3.84E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.60E+01	2.36E-01	7.15E-03	1.13E+00	2.57E-02	8.75E+00	8.00E-01	9.38E+00	2.74E-03
BCEOT-E9-0 (0-6")	9.00E-02	9.00E-02	9.28E-01	2.60E+02	2.33E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.80E+02	1.43E+00	7.15E-03	1.13E+00	1.56E-01	8.75E+00	8.00E-01	9.38E+00	1.67E-02
BCEOT-W9-0 (0-6")	9.00E-02	9.00E-02	9.28E-01	3.23E+01	2.90E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.48E+01	1.78E-01	7.15E-03	1.13E+00	1.94E-02	8.75E+00	8.00E-01	9.38E+00	2.07E-03
BCEOT-E10-0 (0-6")	9.00E-02	9.00E-02	9.28E-01	9.77E+01	8.79E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.05E+02	5.40E-01	7.15E-03	1.13E+00	5.88E-02	8.75E+00	8.00E-01	9.38E+00	6.27E-03
BCEOT-W10-0 (0-6")	9.00E-02	9.00E-02	9.28E-01	5.16E+01	4.64E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.56E+01	2.85E-01	7.15E-03	1.13E+00	3.11E-02	8.75E+00	8.00E-01	9.38E+00	3.31E-03
BCEOT-E11-0 (0-6")	9.00E-02	9.00E-02	9.28E-01	4.98E+01	4.48E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.37E+01	2.75E-01	7.15E-03	1.13E+00	3.00E-02	8.75E+00	8.00E-01	9.38E+00	3.20E-03
BCEOT-W11-0 (0-6")	9.00E-02	9.00E-02	9.28E-01	5.85E+02	5.26E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	6.31E+02	3.23E+00	7.15E-03	1.13E+00	3.52E-01	8.75E+00	8.00E-01	9.38E+00	3.76E-02
BCEOT-E12-0 (0-6")	9.00E-02	9.00E-02	9.28E-01	1.78E+02	1.60E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.92E+02	9.82E-01	7.15E-03	1.13E+00	1.07E-01	8.75E+00	8.00E-01	9.38E+00	1.14E-02
BCEOT-W12-0 (0-6")	9.00E-02	9.00E-02	9.28E-01	7.05E+01	6.34E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	7.60E+01	3.90E-01	7.15E-03	1.13E+00	4.25E-02	8.75E+00	8.00E-01	9.38E+00	4.52E-03
BCEOT-E13-0 (0-6")	9.00E-02	9.00E-02	9.28E-01	4.56E+01	4.10E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.91E+01	2.52E-01	7.15E-03	1.13E+00	2.74E-02	8.75E+00	8.00E-01	9.38E+00	2.92E-03
BCEOT-W13-0 (0-6")	9.00E-02	9.00E-02	9.28E-01	7.74E+01	6.96E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	8.35E+01	4.28E-01	7.15E-03	1.13E+00	4.66E-02	8.75E+00	8.00E-01	9.38E+00	4.97E-03
BCEOT-E14-0 (0-6")	9.00E-02	9.00E-02	9.28E-01	1.32E+02	1.19E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.43E+02	7.31E-01	7.15E-03	1.13E+00	7.97E-02	8.75E+00	8.00E-01	9.38E+00	8.49E-03
BCEOT-W14-0 (0-6")	9.00E-02	9.00E-02	9.28E-01	3.67E+02	3.30E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.96E+02	2.03E+00	7.15E-03	1.13E+00	2.21E-01	8.75E+00	8.00E-01	9.38E+00	2.36E-02
BCEOT-E15-0 (0-6")	9.00E-02	9.00E-02	9.28E-01	2.05E+02	1.85E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.21E+02	1.13E+00	7.15E-03	1.13E+00	1.24E-01	8.75E+00	8.00E-01	9.38E+00	1.32E-02
BCEOT-W15-0 (0-6")	9.00E-02	9.00E-02	9.28E-01	4.88E+02	4.39E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.26E+02	2.70E+00	7.15E-03	1.13E+00	2.94E-01	8.75E+00	8.00E-01	9.38E+00	3.13E-02
BCEOT-E16-0 (0-6")	9.00E-02	9.00E-02	9.28E-01	1.23E+02	1.10E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.32E+02	6.79E-01	7.15E-03	1.13E+00	7.39E-02	8.75E+00	8.00E-01	9.38E+00	7.88E-03
BCEOT-W16-0 (0-6")	9.00E-02	9.00E-02	9.28E-01	9.50E+01	8.54E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.02E+02	5.25E-01	7.15E-03	1.13E+00	5.72E-02	8.75E+00	8.00E-01	9.38E+00	6.09E-03
BCEOT-E17-0 (0-6")	9.00E-02	9.00E-02	9.28E-01	5.11E+02	4.60E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.51E+02	2.82E+00	7.15E-03	1.13E+00	3.08E-01	8.75E+00	8.00E-01	9.38E+00	3.28E-02
BCEOT-W17-0 (0-6")	9.00E-02	9.00E-02	9.28E-01	2.58E+02	2.32E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.78E+02	1.43E+00	7.15E-03	1.13E+00	1.55E-01	8.75E+00	8.00E-01	9.38E+00	1.66E-02
BCEOT-E18-0 (0-6")	9.00E-02	9.00E-02	9.28E-01	2.14E+02	1.93E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.31E+02	1.19E+00	7.15E-03	1.13E+00	1.29E-01	8.75E+00	8.00E-01	9.38E+00	1.38E-02
BCEOT-W18-0 (0-6")	9.00E-02	9.00E-02	9.28E-01	6.55E+01	5.89E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	7.06E+01	3.62E-01	7.15E-03	1.13E+00	3.94E-02	8.75E+00	8.00E-01	9.38E+00	4.20E-03
BCEOT-E19-0 (0-6")	9.00E-02	9.00E-02	9.28E-01	8.94E+01	8.04E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	9.64E+01	4.94E-01	7.15E-03	1.13E+00	5.38E-02	8.75E+00	8.00E-01	9.38E+00	5.74E-03
BCEOT-W19-0 (0-6")	9.00E-02	9.00E-02	9.28E-01	1.46E+02	1.31E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.57E+02	8.07E-01	7.15E-03	1.13E+00	8.79E-02	8.75E+00	8.00E-01	9.38E+00	9.37E-03
BCEOT-E20-0 (0-6")	9.00E-02	9.00E-02	9.28E-01	2.71E+01	2.44E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.92E+01	1.50E-01	7.15E-03	1.13E+00	1.63E-02	8.75E+00	8.00E-01	9.38E+00	1.74E-03
BCEOT-W20-0 (0-6")	9.00E-02	9.00E-02	9.28E-01	7.66E+01	6.89E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	8.26E+01	4.23E-01	7.15E-03	1.13E+00	4.61E-02	8.75E+00	8.00E-01	9.38E+00	4.92E-03
BCEOT-E21-0 (0-6")	9.00E-02	9.00E-02	9.28E-01	6.54E+02	5.88E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	7.05E+02	3.62E+00	7.15E-03	1.13E+00	3.94E-01	8.75E+00	8.00E-01	9.38E+00	4.20E-02
BCEOT-W21-0 (0-6")	9.00E-02	9.00E-02	9.28E-01	1.24E+02	1.12E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.34E+02	6.88E-01	7.15E-03	1.13E+00	7.49E-02	8.75E+00	8.00E-01	9.38E+00	7.99E-03
BCEOT-E22-0 (0-6")	9.00E-02	9.00E-02	9.28E-01	2.78E+02	2.50E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.00E+02	1.54E+00	7.15E-03	1.13E+00	1.68E-01	8.75E+00	8.00E-01	9.38E+00	1.79E-02
BCEOT-W22-0 (0-6")	9.00E-02	9.00E-02	9.28E-01	1.18E+02	1.06E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.27E+02	6.52E-01	7.15E-03	1.13E+00	7.11E-02	8.75E+00	8.00E-01	9.38E+00	7.58E-03
BCEOT-E23-0 (0-6")	9.00E-02	9.00E-02	9.28E-01	4.21E+01	3.79E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.54E+01	2.33E-01	7.15E-03	1.13E+00	2.54E-02	8.75E+00	8.00E-01	9.38E+00	2.70E-03
BCEOT-W23-0 (0-6")	9.00E-02	9.00E-02	9.28E-01	1.11E+02	9.97E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.19E+02	6.13E-01	7.15E-03	1.13E+00	6.67E-02	8.75E+00	8.00E-01	9.38E+00	7.11E-03

TABLE C-11D: LEAD DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 11 - BEARTRAP CREEK DISPERSED TAILINGS DEPOSITS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK TAILINGS DEPOSITS AND FLOSSIE LOUISE MINE WASTE PILE (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 4.982

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Red-Tailed Hawk (Carnivorous Birds - Terrestrial)																							
BCEOT-E24-0 (0-6")	9.00E-02	9.00E-02	9.28E-01	1.04E+02	9.36E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.12E+02	5.75E-01	7.15E-03	1.13E+00	6.26E-02	8.75E+00	8.00E-01	9.38E+00	6.67E-03
BCEOT-W24-0 (0-6")	9.00E-02	9.00E-02	9.28E-01	2.05E+02	1.85E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.21E+02	1.13E+00	7.15E-03	1.13E+00	1.23E-01	8.75E+00	8.00E-01	9.38E+00	1.32E-02
BCEOT-E25-0 (0-6")	9.00E-02	9.00E-02	9.28E-01	1.58E+02	1.42E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.70E+02	8.73E-01	7.15E-03	1.13E+00	9.51E-02	8.75E+00	8.00E-01	9.38E+00	1.01E-02
BCEOT-W25-0 (0-6")	9.00E-02	9.00E-02	9.28E-01	2.76E+02	2.48E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.97E+02	1.52E+00	7.15E-03	1.13E+00	1.66E-01	8.75E+00	8.00E-01	9.38E+00	1.77E-02
BCEOT-E26-0 (0-6")	9.00E-02	9.00E-02	9.28E-01	2.35E+02	2.12E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.54E+02	1.30E+00	7.15E-03	1.13E+00	1.42E-01	8.75E+00	8.00E-01	9.38E+00	1.51E-02
BCEOT-W26-0 (0-6")	9.00E-02	9.00E-02	9.28E-01	1.74E+02	1.56E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.88E+02	9.61E-01	7.15E-03	1.13E+00	1.05E-01	8.75E+00	8.00E-01	9.38E+00	1.12E-02
BCEOT-W27-0 (0-6")	9.00E-02	9.00E-02	9.28E-01	2.16E+02	1.94E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.33E+02	1.19E+00	7.15E-03	1.13E+00	1.30E-01	8.75E+00	8.00E-01	9.38E+00	1.39E-02
Outside Tailings Piles																						**Maximum HQ (Edge of Tailings Pile)**	**5.44E-02**
BCEOT-E0+25 (0-6")	9.00E-02	9.00E-02	9.28E-01	3.63E+02	3.26E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.91E+02	2.00E+00	7.15E-03	1.13E+00	2.18E-01	8.75E+00	8.00E-01	9.38E+00	2.33E-02
BCEOT-E1+25 (0-6")	9.00E-02	9.00E-02	9.28E-01	5.18E+02	4.66E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.58E+02	2.86E+00	7.15E-03	1.13E+00	3.12E-01	8.75E+00	8.00E-01	9.38E+00	3.32E-02
BCEOT-E2+25 (0-6")	9.00E-02	9.00E-02	9.28E-01	3.24E+02	2.91E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.49E+02	1.79E+00	7.15E-03	1.13E+00	1.95E-01	8.75E+00	8.00E-01	9.38E+00	2.08E-02
BCEOT-E3+25 (0-6")	9.00E-02	9.00E-02	9.28E-01	1.01E+02	9.04E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.08E+02	5.56E-01	7.15E-03	1.13E+00	6.05E-02	8.75E+00	8.00E-01	9.38E+00	6.45E-03
BCEOT-E4+25 (0-6")	9.00E-02	9.00E-02	9.28E-01	1.45E+02	1.31E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.56E+02	8.02E-01	7.15E-03	1.13E+00	8.74E-02	8.75E+00	8.00E-01	9.38E+00	9.31E-03
BCEOT-W4+25 (0-6")	9.00E-02	9.00E-02	9.28E-01	1.73E+02	1.55E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.86E+02	9.54E-01	7.15E-03	1.13E+00	1.04E-01	8.75E+00	8.00E-01	9.38E+00	1.11E-02
BCEOT-E5+25 (0-6")	9.00E-02	9.00E-02	9.28E-01	3.61E+02	3.24E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.89E+02	1.99E+00	7.15E-03	1.13E+00	2.17E-01	8.75E+00	8.00E-01	9.38E+00	2.31E-02
BCEOT-W5+25 (0-6")	9.00E-02	9.00E-02	9.28E-01	4.52E+02	4.07E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.87E+02	2.50E+00	7.15E-03	1.13E+00	2.72E-01	8.75E+00	8.00E-01	9.38E+00	2.90E-02
BCEOT-E6+25 (0-6")	9.00E-02	9.00E-02	9.28E-01	3.43E+02	3.09E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.70E+02	1.90E+00	7.15E-03	1.13E+00	2.07E-01	8.75E+00	8.00E-01	9.38E+00	2.20E-02
BCEOT-W6+25 (0-6")	9.00E-02	9.00E-02	9.28E-01	7.30E+01	6.57E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	7.87E+01	4.03E-01	7.15E-03	1.13E+00	4.39E-02	8.75E+00	8.00E-01	9.38E+00	4.68E-03
BCEOT-E7+25 (0-6")	9.00E-02	9.00E-02	9.28E-01	1.16E+02	1.04E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.25E+02	6.39E-01	7.15E-03	1.13E+00	6.96E-02	8.75E+00	8.00E-01	9.38E+00	7.42E-03
BCEOT-W7+25 (0-6")	9.00E-02	9.00E-02	9.28E-01	3.77E+01	3.40E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.07E+01	2.09E-01	7.15E-03	1.13E+00	2.27E-02	8.75E+00	8.00E-01	9.38E+00	2.42E-03
FLWA-101 (0-6")	9.00E-02	9.00E-02	9.28E-01	1.73E+03	1.56E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.87E+03	9.56E+00	7.15E-03	1.13E+00	1.04E+00	8.75E+00	8.00E-01	9.38E+00	1.11E-01
BCEOT-W8+25 (0-6")	9.00E-02	9.00E-02	9.28E-01	1.47E+02	1.32E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.58E+02	8.10E-01	7.15E-03	1.13E+00	8.83E-02	8.75E+00	8.00E-01	9.38E+00	9.41E-03
BCEOT-E9+25 (0-6")	9.00E-02	9.00E-02	9.28E-01	4.80E+02	4.32E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.18E+02	2.65E+00	7.15E-03	1.13E+00	2.89E-01	8.75E+00	8.00E-01	9.38E+00	3.08E-02
BCEOT-W9+25 (0-6")	9.00E-02	9.00E-02	9.28E-01	9.39E+01	8.44E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.01E+02	5.19E-01	7.15E-03	1.13E+00	5.65E-02	8.75E+00	8.00E-01	9.38E+00	6.02E-03
BCEOT-E10+25 (0-6")	9.00E-02	9.00E-02	9.28E-01	3.81E+01	3.43E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.11E+01	2.11E-01	7.15E-03	1.13E+00	2.29E-02	8.75E+00	8.00E-01	9.38E+00	2.45E-03
BCEOT-W10+25 (0-6")	9.00E-02	9.00E-02	9.28E-01	2.98E+01	2.68E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.21E+01	1.65E-01	7.15E-03	1.13E+00	1.79E-02	8.75E+00	8.00E-01	9.38E+00	1.91E-03
BCEOT-E11+25 (0-6")	9.00E-02	9.00E-02	9.28E-01	3.40E+02	3.06E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.67E+02	1.88E+00	7.15E-03	1.13E+00	2.05E-01	8.75E+00	8.00E-01	9.38E+00	2.18E-02
BCEOT-W11+25 (0-6")	9.00E-02	9.00E-02	9.28E-01	1.64E+02	1.48E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.77E+02	9.08E-01	7.15E-03	1.13E+00	9.90E-02	8.75E+00	8.00E-01	9.38E+00	1.05E-02
BCEOT-E12+25 (0-6")	9.00E-02	9.00E-02	9.28E-01	2.24E+02	2.02E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.42E+02	1.24E+00	7.15E-03	1.13E+00	1.35E-01	8.75E+00	8.00E-01	9.38E+00	1.44E-02
BCEOT-W12+25 (0-6")	9.00E-02	9.00E-02	9.28E-01	2.21E+01	1.99E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.38E+01	1.22E-01	7.15E-03	1.13E+00	1.33E-02	8.75E+00	8.00E-01	9.38E+00	1.42E-03
BCEOT-E13+25 (0-6")	9.00E-02	9.00E-02	9.28E-01	3.42E+02	3.08E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.69E+02	1.89E+00	7.15E-03	1.13E+00	2.06E-01	8.75E+00	8.00E-01	9.38E+00	2.20E-02
BCEOT-E14+25 (0-6")	9.00E-02	9.00E-02	9.28E-01	9.33E+01	8.39E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.01E+02	5.16E-01	7.15E-03	1.13E+00	5.62E-02	8.75E+00	8.00E-01	9.38E+00	5.99E-03
BCEOT-W14+25 (0-6")	9.00E-02	9.00E-02	9.28E-01	3.73E+01	3.36E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.02E+01	2.06E-01	7.15E-03	1.13E+00	2.25E-02	8.75E+00	8.00E-01	9.38E+00	2.39E-03
BCEOT-E15+25 (0-6")	9.00E-02	9.00E-02	9.28E-01	2.04E+02	1.84E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.20E+02	1.13E+00	7.15E-03	1.13E+00	1.23E-01	8.75E+00	8.00E-01	9.38E+00	1.31E-02
BCEOT-W15+25 (0-6")	9.00E-02	9.00E-02	9.28E-01	1.75E+02	1.57E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.89E+02	9.67E-01	7.15E-03	1.13E+00	1.05E-01	8.75E+00	8.00E-01	9.38E+00	1.12E-02
BCEOT-E16+25 (0-6")	9.00E-02	9.00E-02	9.28E-01	7.01E+01	6.30E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	7.55E+01	3.87E-01	7.15E-03	1.13E+00	4.22E-02	8.75E+00	8.00E-01	9.38E+00	4.50E-03
BCEOT-W16+25 (0-6")	9.00E-02	9.00E-02	9.28E-01	2.63E+01	2.37E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.84E+01	1.45E-01	7.15E-03	1.13E+00	1.58E-02	8.75E+00	8.00E-01	9.38E+00	1.69E-03
BCEOT-E17+25 (0-6")	9.00E-02	9.00E-02	9.28E-01	1.65E+02	1.49E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.78E+02	9.13E-01	7.15E-03	1.13E+00	9.94E-02	8.75E+00	8.00E-01	9.38E+00	1.06E-02
BCEOT-W17+25 (0-6")	9.00E-02	9.00E-02	9.28E-01	9.27E+01	8.34E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	9.99E+01	5.12E-01	7.15E-03	1.13E+00	5.58E-02	8.75E+00	8.00E-01	9.38E+00	5.95E-03
BCEOT-E18+12.5 (0-6")	9.00E-02	9.00E-02	9.28E-01	1.46E+04	1.31E+03	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.57E+04	8.06E+01	7.15E-03	1.13E+00	8.78E+00	8.75E+00	8.00E-01	9.38E+00	9.36E-01
BCEOT-E18+25 (0-6")	9.00E-02	9.00E-02	9.28E-01	9.57E+01	8.61E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.03E+02	5.29E-01	7.15E-03	1.13E+00	5.76E-02	8.75E+00	8.00E-01	9.38E+00	6.14E-03
BCEOT-W18+25 (0-6")	9.00E-02	9.00E-02	9.28E-01	8.13E+01	7.32E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	8.77E+01	4.49E-01	7.15E-03	1.13E+00	4.90E-02	8.75E+00	8.00E-01	9.38E+00	5.22E-03
BCEOT-E19+25 (0-6")	9.00E-02	9.00E-02	9.28E-01	7.05E+01	6.34E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	7.60E+01	3.90E-01	7.15E-03	1.13E+00	4.25E-02	8.75E+00	8.00E-01	9.38E+00	4.53E-03
BCEOT-W19+25 (0-6")	9.00E-02	9.00E-02	9.28E-01	6.82E+01	6.14E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	7.35E+01	3.77E-01	7.15E-03	1.13E+00	4.11E-02	8.75E+00	8.00E-01	9.38E+00	4.38E-03
BCEOT-E20+25 (0-6")	9.00E-02	9.00E-02	9.28E-01	3.12E+01	2.81E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.37E+01	1.73E-01	7.15E-03	1.13E+00	1.88E-02	8.75E+00	8.00E-01	9.38E+00	2.00E-03
BCEOT-W20+25 (0-6")	9.00E-02	9.00E-02	9.28E-01	7.16E+01	6.44E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	7.72E+01	3.96E-01	7.15E-03	1.13E+00	4.31E-02	8.75E+00	8.00E-01	9.38E+00	4.59E-03
BCEOT-E21+25 (0-6")	9.00E-02	9.00E-02	9.28E-01	1.20E+02	1.08E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.30E+02	6.65E-01	7.15E-03	1.13E+00	7.24E-02	8.75E+00	8.00E-01	9.38E+00	7.72E-03
BCEOT-W21+25 (0-6")	9.00E-02	9.00E-02	9.28E-01	8.46E+01	7.61E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	9.12E+01	4.67E-01	7.15E-03	1.13E+00	5.09E-02	8.75E+00	8.00E-01	9.38E+00	5.43E-03
BCEOT-E22+25 (0-6")	9.00E-02	9.00E-02	9.28E-01	1.26E+03	1.13E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.35E+03	6.95E+00	7.15E-03	1.13E+00	7.57E-01	8.75E+00	8.00E-01	9.38E+00	8.06E-02
BCEOT-E22+70 (0-6")	9.00E-02	9.00E-02	9.28E-01	2.32E+02	2.09E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.50E+02	1.28E+00	7.15E-03	1.13E+00	1.40E-01	8.75E+00	8.00E-01	9.38E+00	1.49E-02
BCEOT-W22+25 (0-6")	9.00E-02	9.00E-02	9.28E-01	6.61E+01	5.95E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	7.13E+01	3.66E-01	7.15E-03	1.13E+00	3.98E-02	8.75E+00	8.00E-01	9.38E+00	4.24E-03
BCEOT-E23+25 (0-6")	9.00E-02	9.00E-02	9.28E-01	4.58E+01	4.12E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.94E+01	2.53E-01	7.15E-03	1.13E+00	2.76E-02	8.75E+00	8.00E-01	9.38E+00	2.94E-03
BCEOT-W23+25 (0-6")	9.00E-02	9.00E-02	9.28E-01	9.91E+01	8.92E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.07E+02	5.48E-01	7.15E-03	1.13E+00	5.97E-02	8.75E+00	8.00E-01	9.38E+00	6.36E-03

TABLE C-11D: LEAD DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 11 - BEARTRAP CREEK DISPERSED TAILINGS DEPOSITS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK TAILINGS DEPOSITS AND FLOSSIE LOUISE MINE WASTE PILE (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 4.982

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Red-Tailed Hawk (Carnivorous Birds - Terrestrial)																							
BCEOT-E24+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-W24+25 (0-6")	9.00E-02	9.00E-02	9.28E-01	1.86E+02	1.67E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.00E+02	1.03E+00	7.15E-03	1.13E+00	1.12E-01	8.75E+00	8.00E-01	9.38E+00	1.19E-02
BCEOT-E25+20 (0-6")	9.00E-02	9.00E-02	9.28E-01	3.62E+01	3.25E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.90E+01	2.00E-01	7.15E-03	1.13E+00	2.18E-02	8.75E+00	8.00E-01	9.38E+00	2.32E-03
BCEOT-W25+25 (0-6")	9.00E-02	9.00E-02	9.28E-01	1.52E+02	1.37E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.64E+02	8.42E-01	7.15E-03	1.13E+00	9.17E-02	8.75E+00	8.00E-01	9.38E+00	9.77E-03
BCEOT-E26+25 (0-6")	9.00E-02	9.00E-02	9.28E-01	4.87E+02	4.38E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.25E+02	2.69E+00	7.15E-03	1.13E+00	2.93E-01	8.75E+00	8.00E-01	9.38E+00	3.12E-02
BCEOT-W26+25 (0-6")	9.00E-02	9.00E-02	9.28E-01	1.25E+02	1.13E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.35E+02	6.93E-01	7.15E-03	1.13E+00	7.55E-02	8.75E+00	8.00E-01	9.38E+00	8.05E-03
BCEOT-W27+25 (0-6")	9.00E-02	9.00E-02	9.28E-01	1.34E+02	1.21E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.44E+02	7.41E-01	7.15E-03	1.13E+00	8.07E-02	8.75E+00	8.00E-01	9.38E+00	8.60E-03
																						Maximum HQ (Outside Tailings Pile)	**9.36E-01**
American Kestrel (Insectivorous Birds - Terrestrial)																							
Reference Sites																							
ACBG-1 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	3.58E+01	4.93E-01	7.84E-04	2.31E+01	1.81E-02	1.90E-02	1.24E-01	7.85E-02	8.75E+00	8.00E-01	6.03E+00	1.30E-02
ACBG-2 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	5.94E+01	8.17E-01	7.84E-04	3.83E+01	3.00E-02	1.90E-02	1.24E-01	1.30E-01	8.75E+00	8.00E-01	6.03E+00	2.16E-02
BCBG-201 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.48E+02	2.04E+00	7.84E-04	9.53E+01	7.48E-02	1.90E-02	1.24E-01	3.24E-01	8.75E+00	8.00E-01	6.03E+00	5.38E-02
Inside Tailings Pile																						**Minimum HQ (Reference Sites)**	**1.30E-02**
BCEOT-E0-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	8.88E+02	1.22E+01	7.84E-04	5.72E+02	4.49E-01	1.90E-02	1.24E-01	1.95E+00	8.75E+00	8.00E-01	6.03E+00	3.23E-01
BCEOT-E1-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	7.26E+02	9.98E+00	7.84E-04	4.68E+02	3.67E-01	1.90E-02	1.24E-01	1.59E+00	8.75E+00	8.00E-01	6.03E+00	2.64E-01
BCEOT-E2-8 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	6.96E+02	9.58E+00	7.84E-04	4.48E+02	3.52E-01	1.90E-02	1.24E-01	1.52E+00	8.75E+00	8.00E-01	6.03E+00	2.53E-01
BCEOT-E3-8 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	5.84E+02	8.03E+00	7.84E-04	3.76E+02	2.95E-01	1.90E-02	1.24E-01	1.28E+00	8.75E+00	8.00E-01	6.03E+00	2.12E-01
BCEOT-E4-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	6.28E+02	8.65E+00	7.84E-04	4.05E+02	3.18E-01	1.90E-02	1.24E-01	1.38E+00	8.75E+00	8.00E-01	6.03E+00	2.28E-01
BCEOT-W4-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	6.57E+02	9.05E+00	7.84E-04	4.24E+02	3.32E-01	1.90E-02	1.24E-01	1.44E+00	8.75E+00	8.00E-01	6.03E+00	2.39E-01
BCEOT-E5-25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	2.04E+02	2.81E+00	7.84E-04	1.32E+02	1.03E-01	1.90E-02	1.24E-01	4.47E-01	8.75E+00	8.00E-01	6.03E+00	7.42E-02
BCEOT-E6-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	5.44E+02	7.49E+00	7.84E-04	3.51E+02	2.75E-01	1.90E-02	1.24E-01	1.19E+00	8.75E+00	8.00E-01	6.03E+00	1.98E-01
BCEOT-W6-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.76E+02	2.42E+00	7.84E-04	1.13E+02	8.88E-02	1.90E-02	1.24E-01	3.85E-01	8.75E+00	8.00E-01	6.03E+00	6.38E-02
BCEOT-E7-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.87E+02	2.57E+00	7.84E-04	1.21E+02	9.46E-02	1.90E-02	1.24E-01	4.10E-01	8.75E+00	8.00E-01	6.03E+00	6.80E-02
BCEOT-W7-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	9.62E+02	1.32E+01	7.84E-04	6.20E+02	4.86E-01	1.90E-02	1.24E-01	2.11E+00	8.75E+00	8.00E-01	6.03E+00	3.50E-01
BCEOT-W8-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	3.58E+03	4.93E+01	7.84E-04	2.31E+03	1.81E+00	1.90E-02	1.24E-01	7.85E+00	8.75E+00	8.00E-01	6.03E+00	1.30E+00
BCEOT-E9-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.11E+03	1.53E+01	7.84E-04	7.16E+02	5.61E-01	1.90E-02	1.24E-01	2.43E+00	8.75E+00	8.00E-01	6.03E+00	4.04E-01
BCEOT-W9-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.31E+03	1.80E+01	7.84E-04	8.43E+02	6.61E-01	1.90E-02	1.24E-01	2.86E+00	8.75E+00	8.00E-01	6.03E+00	4.75E-01
BCEOT-E10-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.43E+02	1.97E+00	7.84E-04	9.20E+01	7.22E-02	1.90E-02	1.24E-01	3.13E-01	8.75E+00	8.00E-01	6.03E+00	5.19E-02
BCEOT-W10-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.57E+03	2.16E+01	7.84E-04	1.01E+03	7.93E-01	1.90E-02	1.24E-01	3.44E+00	8.75E+00	8.00E-01	6.03E+00	5.70E-01
BCEOT-E11-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	5.42E+02	7.46E+00	7.84E-04	3.49E+02	2.74E-01	1.90E-02	1.24E-01	1.19E+00	8.75E+00	8.00E-01	6.03E+00	1.97E-01
BCEOT-W11-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.11E+03	1.52E+01	7.84E-04	7.14E+02	5.60E-01	1.90E-02	1.24E-01	2.43E+00	8.75E+00	8.00E-01	6.03E+00	4.03E-01
BCEOT-E12-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	3.69E+02	5.08E+00	7.84E-04	2.38E+02	1.87E-01	1.90E-02	1.24E-01	8.09E-01	8.75E+00	8.00E-01	6.03E+00	1.34E-01
BCEOT-W12-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	3.21E+03	4.42E+01	7.84E-04	2.07E+03	1.62E+00	1.90E-02	1.24E-01	7.03E+00	8.75E+00	8.00E-01	6.03E+00	1.17E+00
BCEOT-E13-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	9.61E+02	1.32E+01	7.84E-04	6.19E+02	4.86E-01	1.90E-02	1.24E-01	2.11E+00	8.75E+00	8.00E-01	6.03E+00	3.49E-01
BCEOT-W13-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	3.28E+03	4.51E+01	7.84E-04	2.11E+03	1.66E+00	1.90E-02	1.24E-01	7.18E+00	8.75E+00	8.00E-01	6.03E+00	1.19E+00
BCEOT-W13-25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	8.44E+01	1.16E+00	7.84E-04	5.44E+01	4.26E-02	1.90E-02	1.24E-01	1.85E-01	8.75E+00	8.00E-01	6.03E+00	3.07E-02
BCEOT-W14-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	4.45E+02	6.13E+00	7.84E-04	2.87E+02	2.25E-01	1.90E-02	1.24E-01	9.75E-01	8.75E+00	8.00E-01	6.03E+00	1.62E-01
BCEOT-E15-8 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	8.61E+02	1.18E+01	7.84E-04	5.55E+02	4.35E-01	1.90E-02	1.24E-01	1.89E+00	8.75E+00	8.00E-01	6.03E+00	3.13E-01
BCEOT-W15-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.96E+03	2.69E+01	7.84E-04	1.26E+03	9.90E-01	1.90E-02	1.24E-01	4.29E+00	8.75E+00	8.00E-01	6.03E+00	7.12E-01
BCEOT-E16-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	5.20E+03	7.16E+01	7.84E-04	3.35E+03	2.63E+00	1.90E-02	1.24E-01	1.14E+01	8.75E+00	8.00E-01	6.03E+00	1.89E+00
BCEOT-W16-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.96E+03	2.69E+01	7.84E-04	1.26E+03	9.88E-01	1.90E-02	1.24E-01	4.28E+00	8.75E+00	8.00E-01	6.03E+00	7.11E-01
BCEOT-E17-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	2.71E+04	3.72E+02	7.84E-04	1.74E+04	1.37E+01	1.90E-02	1.24E-01	5.93E+01	8.75E+00	8.00E-01	6.03E+00	9.83E+00
BCEOT-W17-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.03E+03	1.41E+01	7.84E-04	6.61E+02	5.18E-01	1.90E-02	1.24E-01	2.25E+00	8.75E+00	8.00E-01	6.03E+00	3.73E-01
BCEOT-W18-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	3.58E+03	4.93E+01	7.84E-04	2.31E+03	1.81E+00	1.90E-02	1.24E-01	7.85E+00	8.75E+00	8.00E-01	6.03E+00	1.30E+00
BCEOT-E19-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.82E+03	2.51E+01	7.84E-04	1.18E+03	9.22E-01	1.90E-02	1.24E-01	4.00E+00	8.75E+00	8.00E-01	6.03E+00	6.63E-01
BCEOT-W19-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	5.27E+02	7.26E+00	7.84E-04	3.40E+02	2.67E-01	1.90E-02	1.24E-01	1.16E+00	8.75E+00	8.00E-01	6.03E+00	1.92E-01
BCEOT-E20-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	2.67E+03	3.67E+01	7.84E-04	1.72E+03	1.35E+00	1.90E-02	1.24E-01	5.85E+00	8.75E+00	8.00E-01	6.03E+00	9.70E-01
BCEOT-W20-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	2.45E+03	3.37E+01	7.84E-04	1.58E+03	1.24E+00	1.90E-02	1.24E-01	5.36E+00	8.75E+00	8.00E-01	6.03E+00	8.89E-01
BCEOT-E21-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	2.48E+03	3.41E+01	7.84E-04	1.60E+03	1.25E+00	1.90E-02	1.24E-01	5.43E+00	8.75E+00	8.00E-01	6.03E+00	9.00E-01
BCEOT-W21-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.72E+03	2.37E+01	7.84E-04	1.11E+03	8.71E-01	1.90E-02	1.24E-01	3.78E+00	8.75E+00	8.00E-01	6.03E+00	6.27E-01
BCEOT-E22-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	3.17E+03	4.37E+01	7.84E-04	2.04E+03	1.60E+00	1.90E-02	1.24E-01	6.95E+00	8.75E+00	8.00E-01	6.03E+00	1.15E+00
BCEOT-W22-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	5.41E+03	7.45E+01	7.84E-04	3.49E+03	2.74E+00	1.90E-02	1.24E-01	1.19E+01	8.75E+00	8.00E-01	6.03E+00	1.97E+00

TABLE C-11D: LEAD DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 11 - BEARTRAP CREEK DISPERSED TAILINGS DEPOSITS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK TAILINGS DEPOSITS AND FLOSSIE LOUISE MINE WASTE PILE (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 4.982

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
American Kestrel (Insectivorous Birds - Terrestrial)																							
BCEOT-E23-15 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	4.46E+02	6.14E+00	7.84E-04	2.87E+02	2.25E-01	1.90E-02	1.24E-01	9.77E-01	8.75E+00	8.00E-01	6.03E+00	1.62E-01
BCEOT-W23-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	3.67E+03	5.05E+01	7.84E-04	2.36E+03	1.85E+00	1.90E-02	1.24E-01	8.04E+00	8.75E+00	8.00E-01	6.03E+00	1.33E+00
BCEOT-E24-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.95E+02	2.68E+00	7.84E-04	1.25E+02	9.84E-02	1.90E-02	1.24E-01	4.26E-01	8.75E+00	8.00E-01	6.03E+00	7.07E-02
BCEOT-W24-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	2.51E+03	3.45E+01	7.84E-04	1.62E+03	1.27E+00	1.90E-02	1.24E-01	5.49E+00	8.75E+00	8.00E-01	6.03E+00	9.11E-01
BCEOT-E25-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	2.24E+03	3.08E+01	7.84E-04	1.44E+03	1.13E+00	1.90E-02	1.24E-01	4.90E+00	8.75E+00	8.00E-01	6.03E+00	8.14E-01
BCEOT-W25-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.98E+03	2.73E+01	7.84E-04	1.28E+03	1.00E+00	1.90E-02	1.24E-01	4.34E+00	8.75E+00	8.00E-01	6.03E+00	7.20E-01
BCEOT-E26-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.02E+03	1.40E+01	7.84E-04	6.58E+02	5.16E-01	1.90E-02	1.24E-01	2.24E+00	8.75E+00	8.00E-01	6.03E+00	3.71E-01
BCEOT-W26-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.60E+03	2.21E+01	7.84E-04	1.03E+03	8.11E-01	1.90E-02	1.24E-01	3.51E+00	8.75E+00	8.00E-01	6.03E+00	5.83E-01
BCEOT-W27-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.90E+03	2.61E+01	7.84E-04	1.22E+03	9.59E-01	1.90E-02	1.24E-01	4.16E+00	8.75E+00	8.00E-01	6.03E+00	6.90E-01
At Edge of Tailings Pile																						**Maximum HQ (Inside Tailings Pile)**	**9.83E+00**
BCEOT-E0-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.15E+03	1.58E+01	7.84E-04	7.38E+02	5.79E-01	1.90E-02	1.24E-01	2.51E+00	8.75E+00	8.00E-01	6.03E+00	4.16E-01
BCEOT-E1-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.30E+02	1.79E+00	7.84E-04	8.38E+01	6.57E-02	1.90E-02	1.24E-01	2.85E-01	8.75E+00	8.00E-01	6.03E+00	4.73E-02
BCEOT-E2-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.42E+03	1.95E+01	7.84E-04	9.14E+02	7.17E-01	1.90E-02	1.24E-01	3.11E+00	8.75E+00	8.00E-01	6.03E+00	5.16E-01
BCEOT-E3-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	2.85E+02	3.92E+00	7.84E-04	1.83E+02	1.44E-01	1.90E-02	1.24E-01	6.23E-01	8.75E+00	8.00E-01	6.03E+00	1.03E-01
BCEOT-E4-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	2.11E+02	2.91E+00	7.84E-04	1.36E+02	1.07E-01	1.90E-02	1.24E-01	4.63E-01	8.75E+00	8.00E-01	6.03E+00	7.68E-02
BCEOT-W4-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.50E+02	2.06E+00	7.84E-04	9.64E+01	7.56E-02	1.90E-02	1.24E-01	3.28E-01	8.75E+00	8.00E-01	6.03E+00	5.44E-02
BCEOT-E5-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	8.48E+02	1.17E+01	7.84E-04	5.47E+02	4.29E-01	1.90E-02	1.24E-01	1.86E+00	8.75E+00	8.00E-01	6.03E+00	3.08E-01
BCEOT-W5-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	9.55E+02	1.31E+01	7.84E-04	6.15E+02	4.83E-01	1.90E-02	1.24E-01	2.09E+00	8.75E+00	8.00E-01	6.03E+00	3.47E-01
BCEOT-E6-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	4.58E+02	6.30E+00	7.84E-04	2.95E+02	2.31E-01	1.90E-02	1.24E-01	1.00E+00	8.75E+00	8.00E-01	6.03E+00	1.66E-01
BCEOT-W6-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.70E+02	2.35E+00	7.84E-04	1.10E+02	8.62E-02	1.90E-02	1.24E-01	3.73E-01	8.75E+00	8.00E-01	6.03E+00	6.20E-02
BCEOT-E7-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	6.65E+02	9.16E+00	7.84E-04	4.29E+02	3.36E-01	1.90E-02	1.24E-01	1.46E+00	8.75E+00	8.00E-01	6.03E+00	2.42E-01
BCEOT-W7-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	3.58E+02	4.93E+00	7.84E-04	2.31E+02	1.81E-01	1.90E-02	1.24E-01	7.85E-01	8.75E+00	8.00E-01	6.03E+00	1.30E-01
BCEOT-W8-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	7.13E+01	9.82E-01	7.84E-04	4.60E+01	3.61E-02	1.90E-02	1.24E-01	1.56E-01	8.75E+00	8.00E-01	6.03E+00	2.59E-02
BCEOT-E9-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	4.34E+02	5.97E+00	7.84E-04	2.80E+02	2.19E-01	1.90E-02	1.24E-01	9.51E-01	8.75E+00	8.00E-01	6.03E+00	1.58E-01
BCEOT-W9-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	5.40E+01	7.43E-01	7.84E-04	3.48E+01	2.73E-02	1.90E-02	1.24E-01	1.18E-01	8.75E+00	8.00E-01	6.03E+00	1.96E-02
BCEOT-E10-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.63E+02	2.25E+00	7.84E-04	1.05E+02	8.26E-02	1.90E-02	1.24E-01	3.58E-01	8.75E+00	8.00E-01	6.03E+00	5.94E-02
BCEOT-W10-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	8.63E+01	1.19E+00	7.84E-04	5.56E+01	4.36E-02	1.90E-02	1.24E-01	1.89E-01	8.75E+00	8.00E-01	6.03E+00	3.14E-02
BCEOT-E11-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	8.33E+01	1.15E+00	7.84E-04	5.37E+01	4.21E-02	1.90E-02	1.24E-01	1.83E-01	8.75E+00	8.00E-01	6.03E+00	3.03E-02
BCEOT-W11-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	9.79E+02	1.35E+01	7.84E-04	6.31E+02	4.95E-01	1.90E-02	1.24E-01	2.14E+00	8.75E+00	8.00E-01	6.03E+00	3.56E-01
BCEOT-E12-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	2.97E+02	4.09E+00	7.84E-04	1.92E+02	1.50E-01	1.90E-02	1.24E-01	6.51E-01	8.75E+00	8.00E-01	6.03E+00	1.08E-01
BCEOT-W12-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.18E+02	1.62E+00	7.84E-04	7.60E+01	5.96E-02	1.90E-02	1.24E-01	2.58E-01	8.75E+00	8.00E-01	6.03E+00	4.29E-02
BCEOT-E13-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	7.62E+01	1.05E+00	7.84E-04	4.91E+01	3.85E-02	1.90E-02	1.24E-01	1.67E-01	8.75E+00	8.00E-01	6.03E+00	2.77E-02
BCEOT-W13-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.30E+02	1.78E+00	7.84E-04	8.35E+01	6.55E-02	1.90E-02	1.24E-01	2.84E-01	8.75E+00	8.00E-01	6.03E+00	4.71E-02
BCEOT-E14-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	2.21E+02	3.05E+00	7.84E-04	1.43E+02	1.12E-01	1.90E-02	1.24E-01	4.85E-01	8.75E+00	8.00E-01	6.03E+00	8.04E-02
BCEOT-W14-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	6.14E+02	8.45E+00	7.84E-04	3.96E+02	3.10E-01	1.90E-02	1.24E-01	1.35E+00	8.75E+00	8.00E-01	6.03E+00	2.23E-01
BCEOT-E15-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	3.43E+02	4.72E+00	7.84E-04	2.21E+02	1.73E-01	1.90E-02	1.24E-01	7.52E-01	8.75E+00	8.00E-01	6.03E+00	1.25E-01
BCEOT-W15-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	8.16E+02	1.12E+01	7.84E-04	5.26E+02	4.12E-01	1.90E-02	1.24E-01	1.79E+00	8.75E+00	8.00E-01	6.03E+00	2.97E-01
BCEOT-E16-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	2.05E+02	2.83E+00	7.84E-04	1.32E+02	1.04E-01	1.90E-02	1.24E-01	4.50E-01	8.75E+00	8.00E-01	6.03E+00	7.47E-02
BCEOT-W16-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.59E+02	2.19E+00	7.84E-04	1.02E+02	8.03E-02	1.90E-02	1.24E-01	3.48E-01	8.75E+00	8.00E-01	6.03E+00	5.77E-02
BCEOT-E17-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	8.55E+02	1.18E+01	7.84E-04	5.51E+02	4.32E-01	1.90E-02	1.24E-01	1.87E+00	8.75E+00	8.00E-01	6.03E+00	3.11E-01
BCEOT-W17-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	4.32E+02	5.94E+00	7.84E-04	2.78E+02	2.18E-01	1.90E-02	1.24E-01	9.46E-01	8.75E+00	8.00E-01	6.03E+00	1.57E-01
BCEOT-E18-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	3.59E+02	4.94E+00	7.84E-04	2.31E+02	1.81E-01	1.90E-02	1.24E-01	7.86E-01	8.75E+00	8.00E-01	6.03E+00	1.30E-01
BCEOT-W18-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.09E+02	1.51E+00	7.84E-04	7.06E+01	5.53E-02	1.90E-02	1.24E-01	2.40E-01	8.75E+00	8.00E-01	6.03E+00	3.98E-02
BCEOT-E19-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.50E+02	2.06E+00	7.84E-04	9.64E+01	7.56E-02	1.90E-02	1.24E-01	3.28E-01	8.75E+00	8.00E-01	6.03E+00	5.44E-02
BCEOT-W19-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	2.44E+02	3.36E+00	7.84E-04	1.57E+02	1.23E-01	1.90E-02	1.24E-01	5.35E-01	8.75E+00	8.00E-01	6.03E+00	8.88E-02
BCEOT-E20-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	4.54E+01	6.24E-01	7.84E-04	2.92E+01	2.29E-02	1.90E-02	1.24E-01	9.94E-02	8.75E+00	8.00E-01	6.03E+00	1.65E-02
BCEOT-W20-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.28E+02	1.76E+00	7.84E-04	8.26E+01	6.48E-02	1.90E-02	1.24E-01	2.81E-01	8.75E+00	8.00E-01	6.03E+00	4.66E-02
BCEOT-E21-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.09E+03	1.51E+01	7.84E-04	7.05E+02	5.53E-01	1.90E-02	1.24E-01	2.40E+00	8.75E+00	8.00E-01	6.03E+00	3.98E-01
BCEOT-W21-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	2.08E+02	2.86E+00	7.84E-04	1.34E+02	1.05E-01	1.90E-02	1.24E-01	4.56E-01	8.75E+00	8.00E-01	6.03E+00	7.57E-02
BCEOT-E22-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	4.66E+02	6.41E+00	7.84E-04	3.00E+02	2.35E-01	1.90E-02	1.24E-01	1.02E+00	8.75E+00	8.00E-01	6.03E+00	1.69E-01
BCEOT-W22-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.97E+02	2.72E+00	7.84E-04	1.27E+02	9.98E-02	1.90E-02	1.24E-01	4.33E-01	8.75E+00	8.00E-01	6.03E+00	7.18E-02
BCEOT-E23-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	7.05E+01	9.70E-01	7.84E-04	4.54E+01	3.56E-02	1.90E-02	1.24E-01	1.54E-01	8.75E+00	8.00E-01	6.03E+00	2.56E-02
BCEOT-W23-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.85E+02	2.55E+00	7.84E-04	1.19E+02	9.37E-02	1.90E-02	1.24E-01	4.06E-01	8.75E+00	8.00E-01	6.03E+00	6.74E-02

TABLE C-11D: LEAD DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 11 - BEARTRAP CREEK DISPERSED TAILINGS DEPOSITS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK TAILINGS DEPOSITS AND FLOSSIE LOUISE MINE WASTE PILE (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 4.982

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
American Kestrel (Insectivorous Birds - Terrestrial)																							
BCEOT-E24-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.74E+02	2.39E+00	7.84E-04	1.12E+02	8.79E-02	1.90E-02	1.24E-01	3.81E-01	8.75E+00	8.00E-01	6.03E+00	6.32E-02
BCEOT-W24-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	3.43E+02	4.72E+00	7.84E-04	2.21E+02	1.73E-01	1.90E-02	1.24E-01	7.52E-01	8.75E+00	8.00E-01	6.03E+00	1.25E-01
BCEOT-E25-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	2.64E+02	3.64E+00	7.84E-04	1.70E+02	1.34E-01	1.90E-02	1.24E-01	5.79E-01	8.75E+00	8.00E-01	6.03E+00	9.61E-02
BCEOT-W25-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	4.61E+02	6.35E+00	7.84E-04	2.97E+02	2.33E-01	1.90E-02	1.24E-01	1.01E+00	8.75E+00	8.00E-01	6.03E+00	1.68E-01
BCEOT-E26-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	3.94E+02	5.42E+00	7.84E-04	2.54E+02	1.99E-01	1.90E-02	1.24E-01	8.62E-01	8.75E+00	8.00E-01	6.03E+00	1.43E-01
BCEOT-W26-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	2.91E+02	4.00E+00	7.84E-04	1.88E+02	1.47E-01	1.90E-02	1.24E-01	6.37E-01	8.75E+00	8.00E-01	6.03E+00	1.06E-01
BCEOT-W27-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	3.61E+02	4.97E+00	7.84E-04	2.33E+02	1.83E-01	1.90E-02	1.24E-01	7.92E-01	8.75E+00	8.00E-01	6.03E+00	1.31E-01
Outside Tailings Piles																						**Maximum HQ (Edge of Tailings Pile)**	**5.16E-01**
BCEOT-E0+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	6.07E+02	8.35E+00	7.84E-04	3.91E+02	3.07E-01	1.90E-02	1.24E-01	1.33E+00	8.75E+00	8.00E-01	6.03E+00	2.21E-01
BCEOT-E1+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	8.66E+02	1.19E+01	7.84E-04	5.58E+02	4.38E-01	1.90E-02	1.24E-01	1.90E+00	8.75E+00	8.00E-01	6.03E+00	3.15E-01
BCEOT-E2+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	5.42E+02	7.46E+00	7.84E-04	3.49E+02	2.74E-01	1.90E-02	1.24E-01	1.19E+00	8.75E+00	8.00E-01	6.03E+00	1.97E-01
BCEOT-E3+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.68E+02	2.31E+00	7.84E-04	1.08E+02	8.50E-02	1.90E-02	1.24E-01	3.68E-01	8.75E+00	8.00E-01	6.03E+00	6.11E-02
BCEOT-E4+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	2.43E+02	3.34E+00	7.84E-04	1.56E+02	1.23E-01	1.90E-02	1.24E-01	5.32E-01	8.75E+00	8.00E-01	6.03E+00	8.83E-02
BCEOT-W4+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	2.89E+02	3.97E+00	7.84E-04	1.86E+02	1.46E-01	1.90E-02	1.24E-01	6.33E-01	8.75E+00	8.00E-01	6.03E+00	1.05E-01
BCEOT-E5+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	6.03E+02	8.30E+00	7.84E-04	3.89E+02	3.05E-01	1.90E-02	1.24E-01	1.32E+00	8.75E+00	8.00E-01	6.03E+00	2.19E-01
BCEOT-W5+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	7.57E+02	1.04E+01	7.84E-04	4.87E+02	3.82E-01	1.90E-02	1.24E-01	1.66E+00	8.75E+00	8.00E-01	6.03E+00	2.75E-01
BCEOT-E6+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	5.75E+02	7.91E+00	7.84E-04	3.70E+02	2.90E-01	1.90E-02	1.24E-01	1.26E+00	8.75E+00	8.00E-01	6.03E+00	2.09E-01
BCEOT-W6+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.22E+02	1.68E+00	7.84E-04	7.87E+01	6.17E-02	1.90E-02	1.24E-01	2.67E-01	8.75E+00	8.00E-01	6.03E+00	4.44E-02
BCEOT-E7+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.93E+02	2.66E+00	7.84E-04	1.25E+02	9.78E-02	1.90E-02	1.24E-01	4.24E-01	8.75E+00	8.00E-01	6.03E+00	7.03E-02
BCEOT-W7+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	6.31E+01	8.69E-01	7.84E-04	4.07E+01	3.19E-02	1.90E-02	1.24E-01	1.38E-01	8.75E+00	8.00E-01	6.03E+00	2.29E-02
FLWA-101 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	2.89E+03	3.98E+01	7.84E-04	1.87E+03	1.46E+00	1.90E-02	1.24E-01	6.34E+00	8.75E+00	8.00E-01	6.03E+00	1.05E+00
BCEOT-E9+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	8.04E+02	1.11E+01	7.84E-04	5.18E+02	4.06E-01	1.90E-02	1.24E-01	1.76E+00	8.75E+00	8.00E-01	6.03E+00	2.92E-01
BCEOT-W9+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.57E+02	2.16E+00	7.84E-04	1.01E+02	7.94E-02	1.90E-02	1.24E-01	3.44E-01	8.75E+00	8.00E-01	6.03E+00	5.71E-02
BCEOT-E10+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	6.38E+01	8.77E-01	7.84E-04	4.11E+01	3.22E-02	1.90E-02	1.24E-01	1.40E-01	8.75E+00	8.00E-01	6.03E+00	2.32E-02
BCEOT-W10+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	4.98E+01	6.85E-01	7.84E-04	3.21E+01	2.52E-02	1.90E-02	1.24E-01	1.09E-01	8.75E+00	8.00E-01	6.03E+00	1.81E-02
BCEOT-E11+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	5.69E+02	7.83E+00	7.84E-04	3.67E+02	2.88E-01	1.90E-02	1.24E-01	1.25E+00	8.75E+00	8.00E-01	6.03E+00	2.07E-01
BCEOT-W11+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	2.75E+02	3.78E+00	7.84E-04	1.77E+02	1.39E-01	1.90E-02	1.24E-01	6.02E-01	8.75E+00	8.00E-01	6.03E+00	1.00E-01
BCEOT-E12+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	3.75E+02	5.17E+00	7.84E-04	2.42E+02	1.90E-01	1.90E-02	1.24E-01	8.22E-01	8.75E+00	8.00E-01	6.03E+00	1.36E-01
BCEOT-W12+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	3.69E+01	5.08E-01	7.84E-04	2.38E+01	1.87E-02	1.90E-02	1.24E-01	8.09E-02	8.75E+00	8.00E-01	6.03E+00	1.34E-02
BCEOT-E13+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	5.73E+02	7.88E+00	7.84E-04	3.69E+02	2.90E-01	1.90E-02	1.24E-01	1.25E+00	8.75E+00	8.00E-01	6.03E+00	2.08E-01
BCEOT-E14+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.56E+02	2.15E+00	7.84E-04	1.01E+02	7.89E-02	1.90E-02	1.24E-01	3.42E-01	8.75E+00	8.00E-01	6.03E+00	5.67E-02
BCEOT-W14+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	6.24E+01	8.59E-01	7.84E-04	4.02E+01	3.15E-02	1.90E-02	1.24E-01	1.37E-01	8.75E+00	8.00E-01	6.03E+00	2.27E-02
BCEOT-E15+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	3.42E+02	4.70E+00	7.84E-04	2.20E+02	1.73E-01	1.90E-02	1.24E-01	7.49E-01	8.75E+00	8.00E-01	6.03E+00	1.24E-01
BCEOT-W15+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	2.93E+02	4.03E+00	7.84E-04	1.89E+02	1.48E-01	1.90E-02	1.24E-01	6.41E-01	8.75E+00	8.00E-01	6.03E+00	1.06E-01
BCEOT-E16+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.17E+02	1.61E+00	7.84E-04	7.55E+01	5.92E-02	1.90E-02	1.24E-01	2.57E-01	8.75E+00	8.00E-01	6.03E+00	4.26E-02
BCEOT-W16+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	4.40E+01	6.05E-01	7.84E-04	2.84E+01	2.22E-02	1.90E-02	1.24E-01	9.64E-02	8.75E+00	8.00E-01	6.03E+00	1.60E-02
BCEOT-E17+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	2.76E+02	3.80E+00	7.84E-04	1.78E+02	1.40E-01	1.90E-02	1.24E-01	6.05E-01	8.75E+00	8.00E-01	6.03E+00	1.00E-01
BCEOT-W17+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.55E+02	2.13E+00	7.84E-04	9.99E+01	7.84E-02	1.90E-02	1.24E-01	3.40E-01	8.75E+00	8.00E-01	6.03E+00	5.64E-02
BCEOT-E18+12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	2.44E+04	3.36E+02	7.84E-04	1.57E+04	1.23E+01	1.90E-02	1.24E-01	5.34E+01	8.75E+00	8.00E-01	6.03E+00	8.87E+00
BCEOT-E18+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.60E+02	2.20E+00	7.84E-04	1.03E+02	8.09E-02	1.90E-02	1.24E-01	3.51E-01	8.75E+00	8.00E-01	6.03E+00	5.82E-02
BCEOT-W18+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.36E+02	1.87E+00	7.84E-04	8.77E+01	6.88E-02	1.90E-02	1.24E-01	2.98E-01	8.75E+00	8.00E-01	6.03E+00	4.94E-02
BCEOT-E19+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.18E+02	1.62E+00	7.84E-04	7.60E+01	5.96E-02	1.90E-02	1.24E-01	2.58E-01	8.75E+00	8.00E-01	6.03E+00	4.29E-02
BCEOT-W19+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.14E+02	1.57E+00	7.84E-04	7.35E+01	5.77E-02	1.90E-02	1.24E-01	2.50E-01	8.75E+00	8.00E-01	6.03E+00	4.15E-02
BCEOT-E20+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	5.22E+01	7.19E-01	7.84E-04	3.37E+01	2.64E-02	1.90E-02	1.24E-01	1.14E-01	8.75E+00	8.00E-01	6.03E+00	1.90E-02
BCEOT-W20+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.20E+02	1.65E+00	7.84E-04	7.72E+01	6.05E-02	1.90E-02	1.24E-01	2.62E-01	8.75E+00	8.00E-01	6.03E+00	4.35E-02
BCEOT-E21+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	2.01E+02	2.77E+00	7.84E-04	1.30E+02	1.02E-01	1.90E-02	1.24E-01	4.41E-01	8.75E+00	8.00E-01	6.03E+00	7.32E-02
BCEOT-W21+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.41E+02	1.95E+00	7.84E-04	9.12E+01	7.15E-02	1.90E-02	1.24E-01	3.10E-01	8.75E+00	8.00E-01	6.03E+00	5.14E-02
BCEOT-E22+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	2.10E+03	2.89E+01	7.84E-04	1.35E+03	1.06E+00	1.90E-02	1.24E-01	4.61E+00	8.75E+00	8.00E-01	6.03E+00	7.64E-01
BCEOT-E22+70 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	3.88E+02	5.34E+00	7.84E-04	2.50E+02	1.96E-01	1.90E-02	1.24E-01	8.50E-01	8.75E+00	8.00E-01	6.03E+00	1.41E-01
BCEOT-W22+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.11E+02	1.52E+00	7.84E-04	7.13E+01	5.59E-02	1.90E-02	1.24E-01	2.42E-01	8.75E+00	8.00E-01	6.03E+00	4.02E-02
BCEOT-E23+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	7.67E+01	1.06E+00	7.84E-04	4.94E+01	3.88E-02	1.90E-02	1.24E-01	1.68E-01	8.75E+00	8.00E-01	6.03E+00	2.79E-02
BCEOT-W23+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	1.66E+02	2.28E+00	7.84E-04	1.07E+02	8.38E-02	1.90E-02	1.24E-01	3.63E-01	8.75E+00	8.00E-01	6.03E+00	6.03E-02

TABLE C-11D: LEAD DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 11 - BEARTRAP CREEK DISPERSED TAILINGS DEPOSITS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK TAILINGS DEPOSITS AND FLOSSIE LOUISE MINE WASTE PILE (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 4.982

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
American Kestrel (Insectivorous Birds - Terrestrial)																							
BCEOT-E24+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-W24+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	3.11E+02	4.27E+00	7.84E-04	2.00E+02	1.57E-01	1.90E-02	1.24E-01	6.80E-01	8.75E+00	8.00E-01	6.03E+00	1.13E-01
BCEOT-E25+20 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	6.05E+01	8.32E-01	7.84E-04	3.90E+01	3.06E-02	1.90E-02	1.24E-01	1.32E-01	8.75E+00	8.00E-01	6.03E+00	2.20E-02
BCEOT-W25+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	2.55E+02	3.51E+00	7.84E-04	1.64E+02	1.29E-01	1.90E-02	1.24E-01	5.58E-01	8.75E+00	8.00E-01	6.03E+00	9.26E-02
BCEOT-E26+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	8.14E+02	1.12E+01	7.84E-04	5.25E+02	4.11E-01	1.90E-02	1.24E-01	1.78E+00	8.75E+00	8.00E-01	6.03E+00	2.96E-01
BCEOT-W26+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	2.10E+02	2.89E+00	7.84E-04	1.35E+02	1.06E-01	1.90E-02	1.24E-01	4.60E-01	8.75E+00	8.00E-01	6.03E+00	7.63E-02
BCEOT-W27+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.55E+00	2.24E+02	3.08E+00	7.84E-04	1.44E+02	1.13E-01	1.90E-02	1.24E-01	4.91E-01	8.75E+00	8.00E-01	6.03E+00	8.15E-02
																						Maximum HQ (Outside Tailings Pile)	**8.87E+00**
Meadow Vole (Small Herbivorous Mammal - Terrestrial)																							
Reference Sites																							
ACBG-1 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	4.35E-02	1.00E+00	4.70E-03	NA	NA	NA	NA	1.13E-04	2.31E+01	2.60E-03	1.00E+00	3.06E-02	2.39E-01	2.41E+02	1.87E-02	2.34E+02	1.02E-03
ACBG-2 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	4.35E-02	1.66E+00	7.80E-03	NA	NA	NA	NA	1.13E-04	3.83E+01	4.31E-03	1.00E+00	3.06E-02	3.95E-01	2.41E+02	1.87E-02	2.34E+02	1.69E-03
BCBG-201 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	4.35E-02	4.14E+00	1.94E-02	NA	NA	NA	NA	1.13E-04	9.53E+01	1.07E-02	1.00E+00	3.06E-02	9.85E-01	2.41E+02	1.87E-02	2.34E+02	4.22E-03
Inside Tailings Pile																						**Minimum HQ (Reference Sites)**	**1.02E-03**
BCEOT-E0-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	3.60E+02	1.69E+00	NA	NA	NA	NA	1.13E-04	5.72E+02	6.44E-02	1.00E+00	3.06E-02	5.72E+01	2.41E+02	1.87E-02	2.34E+02	2.45E-01
BCEOT-E1-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	2.94E+02	1.38E+00	NA	NA	NA	NA	1.13E-04	4.68E+02	5.26E-02	1.00E+00	3.06E-02	4.67E+01	2.41E+02	1.87E-02	2.34E+02	2.00E-01
BCEOT-E2-8 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	2.82E+02	1.32E+00	NA	NA	NA	NA	1.13E-04	4.48E+02	5.05E-02	1.00E+00	3.06E-02	4.48E+01	2.41E+02	1.87E-02	2.34E+02	1.92E-01
BCEOT-E3-8 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	2.36E+02	1.11E+00	NA	NA	NA	NA	1.13E-04	3.76E+02	4.23E-02	1.00E+00	3.06E-02	3.76E+01	2.41E+02	1.87E-02	2.34E+02	1.61E-01
BCEOT-E4-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	2.54E+02	1.19E+00	NA	NA	NA	NA	1.13E-04	4.05E+02	4.56E-02	1.00E+00	3.06E-02	4.05E+01	2.41E+02	1.87E-02	2.34E+02	1.73E-01
BCEOT-W4-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	2.66E+02	1.25E+00	NA	NA	NA	NA	1.13E-04	4.24E+02	4.77E-02	1.00E+00	3.06E-02	4.23E+01	2.41E+02	1.87E-02	2.34E+02	1.81E-01
BCEOT-E5-25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	8.27E+01	3.88E-01	NA	NA	NA	NA	1.13E-04	1.32E+02	1.48E-02	1.00E+00	3.06E-02	1.32E+01	2.41E+02	1.87E-02	2.34E+02	5.63E-02
BCEOT-W5-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	1.03E+03	4.85E+00	NA	NA	NA	NA	1.13E-04	1.64E+03	1.85E-01	1.00E+00	3.06E-02	1.64E+02	2.41E+02	1.87E-02	2.34E+02	7.04E-01
BCEOT-E6-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	2.20E+02	1.03E+00	NA	NA	NA	NA	1.13E-04	3.51E+02	3.95E-02	1.00E+00	3.06E-02	3.51E+01	2.41E+02	1.87E-02	2.34E+02	1.50E-01
BCEOT-W6-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	7.11E+01	3.33E-01	NA	NA	NA	NA	1.13E-04	1.13E+02	1.27E-02	1.00E+00	3.06E-02	1.13E+01	2.41E+02	1.87E-02	2.34E+02	4.84E-02
BCEOT-E7-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	7.57E+01	3.55E-01	NA	NA	NA	NA	1.13E-04	1.21E+02	1.36E-02	1.00E+00	3.06E-02	1.20E+01	2.41E+02	1.87E-02	2.34E+02	5.16E-02
BCEOT-W7-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	3.89E+02	1.83E+00	NA	NA	NA	NA	1.13E-04	6.20E+02	6.97E-02	1.00E+00	3.06E-02	6.19E+01	2.41E+02	1.87E-02	2.34E+02	2.65E-01
BCEOT-W8-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	1.45E+03	6.80E+00	NA	NA	NA	NA	1.13E-04	2.31E+03	2.60E-01	1.00E+00	3.06E-02	2.31E+02	2.41E+02	1.87E-02	2.34E+02	9.88E-01
BCEOT-E9-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	4.50E+02	2.11E+00	NA	NA	NA	NA	1.13E-04	7.16E+02	8.05E-02	1.00E+00	3.06E-02	7.15E+01	2.41E+02	1.87E-02	2.34E+02	3.06E-01
BCEOT-W9-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	5.29E+02	2.48E+00	NA	NA	NA	NA	1.13E-04	8.43E+02	9.48E-02	1.00E+00	3.06E-02	8.42E+01	2.41E+02	1.87E-02	2.34E+02	3.60E-01
BCEOT-E10-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	5.78E+01	2.71E-01	NA	NA	NA	NA	1.13E-04	9.20E+01	1.04E-02	1.00E+00	3.06E-02	9.20E+00	2.41E+02	1.87E-02	2.34E+02	3.94E-02
BCEOT-W10-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	6.35E+02	2.98E+00	NA	NA	NA	NA	1.13E-04	1.01E+03	1.14E-01	1.00E+00	3.06E-02	1.01E+02	2.41E+02	1.87E-02	2.34E+02	4.32E-01
BCEOT-E11-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	2.19E+02	1.03E+00	NA	NA	NA	NA	1.13E-04	3.49E+02	3.93E-02	1.00E+00	3.06E-02	3.49E+01	2.41E+02	1.87E-02	2.34E+02	1.49E-01
BCEOT-W11-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	4.48E+02	2.10E+00	NA	NA	NA	NA	1.13E-04	7.14E+02	8.03E-02	1.00E+00	3.06E-02	7.13E+01	2.41E+02	1.87E-02	2.34E+02	3.05E-01
BCEOT-E12-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	1.49E+02	7.01E-01	NA	NA	NA	NA	1.13E-04	2.38E+02	2.68E-02	1.00E+00	3.06E-02	2.38E+01	2.41E+02	1.87E-02	2.34E+02	1.02E-01
BCEOT-W12-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	1.30E+03	6.09E+00	NA	NA	NA	NA	1.13E-04	2.07E+03	2.33E-01	1.00E+00	3.06E-02	2.07E+02	2.41E+02	1.87E-02	2.34E+02	8.85E-01
BCEOT-E13-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	3.89E+02	1.82E+00	NA	NA	NA	NA	1.13E-04	6.19E+02	6.97E-02	1.00E+00	3.06E-02	6.19E+01	2.41E+02	1.87E-02	2.34E+02	2.65E-01
BCEOT-W13-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	1.33E+03	6.22E+00	NA	NA	NA	NA	1.13E-04	2.11E+03	2.38E-01	1.00E+00	3.06E-02	2.11E+02	2.41E+02	1.87E-02	2.34E+02	9.03E-01
BCEOT-W13-25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	3.41E+01	1.60E-01	NA	NA	NA	NA	1.13E-04	5.44E+01	6.12E-03	1.00E+00	3.06E-02	5.43E+00	2.41E+02	1.87E-02	2.34E+02	2.33E-02
BCEOT-W14-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	1.80E+02	8.45E-01	NA	NA	NA	NA	1.13E-04	2.87E+02	3.23E-02	1.00E+00	3.06E-02	2.87E+01	2.41E+02	1.87E-02	2.34E+02	1.23E-01
BCEOT-E15-8 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	3.49E+02	1.63E+00	NA	NA	NA	NA	1.13E-04	5.55E+02	6.24E-02	1.00E+00	3.06E-02	5.54E+01	2.41E+02	1.87E-02	2.34E+02	2.37E-01
BCEOT-W15-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	7.93E+02	3.72E+00	NA	NA	NA	NA	1.13E-04	1.26E+03	1.42E-01	1.00E+00	3.06E-02	1.26E+02	2.41E+02	1.87E-02	2.34E+02	5.40E-01
BCEOT-E16-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	2.11E+03	9.88E+00	NA	NA	NA	NA	1.13E-04	3.35E+03	3.77E-01	1.00E+00	3.06E-02	3.35E+02	2.41E+02	1.87E-02	2.34E+02	1.43E+00
BCEOT-W16-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	7.92E+02	3.71E+00	NA	NA	NA	NA	1.13E-04	1.26E+03	1.42E-01	1.00E+00	3.06E-02	1.26E+02	2.41E+02	1.87E-02	2.34E+02	5.39E-01
BCEOT-E17-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	1.10E+04	5.14E+01	NA	NA	NA	NA	1.13E-04	1.74E+04	1.96E+00	1.00E+00	3.06E-02	1.74E+03	2.41E+02	1.87E-02	2.34E+02	7.46E+00
BCEOT-W17-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	4.15E+02	1.95E+00	NA	NA	NA	NA	1.13E-04	6.61E+02	7.44E-02	1.00E+00	3.06E-02	6.60E+01	2.41E+02	1.87E-02	2.34E+02	2.83E-01
BCEOT-W18-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	1.45E+03	6.80E+00	NA	NA	NA	NA	1.13E-04	2.31E+03	2.60E-01	1.00E+00	3.06E-02	2.31E+02	2.41E+02	1.87E-02	2.34E+02	9.88E-01
BCEOT-E19-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	7.39E+02	3.46E+00	NA	NA	NA	NA	1.13E-04	1.18E+03	1.32E-01	1.00E+00	3.06E-02	1.18E+02	2.41E+02	1.87E-02	2.34E+02	5.03E-01
BCEOT-W19-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	2.13E+02	1.00E+00	NA	NA	NA	NA	1.13E-04	3.40E+02	3.82E-02	1.00E+00	3.06E-02	3.40E+01	2.41E+02	1.87E-02	2.34E+02	1.45E-01
BCEOT-E20-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	1.08E+03	5.07E+00	NA	NA	NA	NA	1.13E-04	1.72E+03	1.94E-01	1.00E+00	3.06E-02	1.72E+02	2.41E+02	1.87E-02	2.34E+02	7.36E-01
BCEOT-W20-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	9.90E+02	4.64E+00	NA	NA	NA	NA	1.13E-04	1.58E+03	1.77E-01	1.00E+00	3.06E-02	1.58E+02	2.41E+02	1.87E-02	2.34E+02	6.74E-01
BCEOT-E21-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	1.00E+03	4.70E+00	NA	NA	NA	NA	1.13E-04	1.60E+03	1.80E-01	1.00E+00	3.06E-02	1.60E+02	2.41E+02	1.87E-02	2.34E+02	6.83E-01
BCEOT-W21-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	6.98E+02	3.27E+00	NA	NA	NA	NA	1.13E-04	1.11E+03	1.25E-01	1.00E+00	3.06E-02	1.11E+02	2.41E+02	1.87E-02	2.34E+02	4.75E-01
BCEOT-E22-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	1.28E+03	6.02E+00	NA	NA	NA	NA	1.13E-04	2.04E+03	2.30E-01	1.00E+00	3.06E-02	2.04E+02	2.41E+02	1.87E-02	2.34E+02	8.75E-01
BCEOT-W22-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	2.19E+03	1.03E+01	NA	NA	NA	NA	1.13E-04	3.49E+03	3.92E-01	1.00E+00	3.06E-02	3.49E+02	2.41E+02	1.87E-02	2.34E+02	1.49E+00

TABLE C-11D: LEAD DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 11 - BEARTRAP CREEK DISPERSED TAILINGS DEPOSITS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK TAILINGS DEPOSITS AND FLOSSIE LOUISE MINE WASTE PILE (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 4.982

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Meadow Vole (Small Herbivorous Mammal - Terrestrial)																							
BCEOT-E23-15 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	1.81E+02	8.47E-01	NA	NA	NA	NA	1.13E-04	2.87E+02	3.24E-02	1.00E+00	3.06E-02	2.87E+01	2.41E+02	1.87E-02	2.34E+02	1.23E-01
BCEOT-W23-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	1.49E+03	6.96E+00	NA	NA	NA	NA	1.13E-04	2.36E+03	2.66E-01	1.00E+00	3.06E-02	2.36E+02	2.41E+02	1.87E-02	2.34E+02	1.01E+00
BCEOT-E24-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	7.88E+01	3.69E-01	NA	NA	NA	NA	1.13E-04	1.25E+02	1.41E-02	1.00E+00	3.06E-02	1.25E+01	2.41E+02	1.87E-02	2.34E+02	5.36E-02
BCEOT-W24-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	1.01E+03	4.76E+00	NA	NA	NA	NA	1.13E-04	1.62E+03	1.82E-01	1.00E+00	3.06E-02	1.61E+02	2.41E+02	1.87E-02	2.34E+02	6.91E-01
BCEOT-E25-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	9.06E+02	4.25E+00	NA	NA	NA	NA	1.13E-04	1.44E+03	1.62E-01	1.00E+00	3.06E-02	1.44E+02	2.41E+02	1.87E-02	2.34E+02	6.17E-01
BCEOT-W25-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	8.02E+02	3.76E+00	NA	NA	NA	NA	1.13E-04	1.28E+03	1.44E-01	1.00E+00	3.06E-02	1.28E+02	2.41E+02	1.87E-02	2.34E+02	5.46E-01
BCEOT-E26-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	4.13E+02	1.94E+00	NA	NA	NA	NA	1.13E-04	6.58E+02	7.40E-02	1.00E+00	3.06E-02	6.57E+01	2.41E+02	1.87E-02	2.34E+02	2.81E-01
BCEOT-W26-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	6.49E+02	3.04E+00	NA	NA	NA	NA	1.13E-04	1.03E+03	1.16E-01	1.00E+00	3.06E-02	1.03E+02	2.41E+02	1.87E-02	2.34E+02	4.42E-01
BCEOT-W27-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	7.68E+02	3.60E+00	NA	NA	NA	NA	1.13E-04	1.22E+03	1.38E-01	1.00E+00	3.06E-02	1.22E+02	2.41E+02	1.87E-02	2.34E+02	5.23E-01
At Edge of Tailings Pile																						**Maximum HQ (Inside Tailings Pile)**	**7.46E+00**
BCEOT-E0-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	4.64E+02	2.17E+00	NA	NA	NA	NA	1.13E-04	7.38E+02	8.31E-02	1.00E+00	3.06E-02	7.38E+01	2.41E+02	1.87E-02	2.34E+02	3.16E-01
BCEOT-E1-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	5.26E+01	2.47E-01	NA	NA	NA	NA	1.13E-04	8.38E+01	9.43E-03	1.00E+00	3.06E-02	8.37E+00	2.41E+02	1.87E-02	2.34E+02	3.58E-02
BCEOT-E2-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	5.74E+02	2.69E+00	NA	NA	NA	NA	1.13E-04	9.14E+02	1.03E-01	1.00E+00	3.06E-02	9.14E+01	2.41E+02	1.87E-02	2.34E+02	3.91E-01
BCEOT-E3-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	1.15E+02	5.40E-01	NA	NA	NA	NA	1.13E-04	1.83E+02	2.06E-02	1.00E+00	3.06E-02	1.83E+01	2.41E+02	1.87E-02	2.34E+02	7.84E-02
BCEOT-E4-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	8.55E+01	4.01E-01	NA	NA	NA	NA	1.13E-04	1.36E+02	1.53E-02	1.00E+00	3.06E-02	1.36E+01	2.41E+02	1.87E-02	2.34E+02	5.82E-02
BCEOT-W4-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	6.05E+01	2.84E-01	NA	NA	NA	NA	1.13E-04	9.64E+01	1.08E-02	1.00E+00	3.06E-02	9.63E+00	2.41E+02	1.87E-02	2.34E+02	4.12E-02
BCEOT-E5-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	3.43E+02	1.61E+00	NA	NA	NA	NA	1.13E-04	5.47E+02	6.15E-02	1.00E+00	3.06E-02	5.46E+01	2.41E+02	1.87E-02	2.34E+02	2.34E-01
BCEOT-W5-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	3.87E+02	1.81E+00	NA	NA	NA	NA	1.13E-04	6.15E+02	6.92E-02	1.00E+00	3.06E-02	6.15E+01	2.41E+02	1.87E-02	2.34E+02	2.63E-01
BCEOT-E6-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	1.85E+02	8.69E-01	NA	NA	NA	NA	1.13E-04	2.95E+02	3.32E-02	1.00E+00	3.06E-02	2.95E+01	2.41E+02	1.87E-02	2.34E+02	1.26E-01
BCEOT-W6-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	6.90E+01	3.24E-01	NA	NA	NA	NA	1.13E-04	1.10E+02	1.24E-02	1.00E+00	3.06E-02	1.10E+01	2.41E+02	1.87E-02	2.34E+02	4.70E-02
BCEOT-E7-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	2.69E+02	1.26E+00	NA	NA	NA	NA	1.13E-04	4.29E+02	4.82E-02	1.00E+00	3.06E-02	4.29E+01	2.41E+02	1.87E-02	2.34E+02	1.83E-01
BCEOT-W7-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	1.45E+02	6.80E-01	NA	NA	NA	NA	1.13E-04	2.31E+02	2.60E-02	1.00E+00	3.06E-02	2.31E+01	2.41E+02	1.87E-02	2.34E+02	9.87E-02
BCEOT-W8-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	2.89E+01	1.35E-01	NA	NA	NA	NA	1.13E-04	4.60E+01	5.17E-03	1.00E+00	3.06E-02	4.59E+00	2.41E+02	1.87E-02	2.34E+02	1.97E-02
BCEOT-E9-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	1.76E+02	8.24E-01	NA	NA	NA	NA	1.13E-04	2.80E+02	3.15E-02	1.00E+00	3.06E-02	2.80E+01	2.41E+02	1.87E-02	2.34E+02	1.20E-01
BCEOT-W9-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	2.19E+01	1.02E-01	NA	NA	NA	NA	1.13E-04	3.48E+01	3.91E-03	1.00E+00	3.06E-02	3.48E+00	2.41E+02	1.87E-02	2.34E+02	1.49E-02
BCEOT-E10-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	6.61E+01	3.10E-01	NA	NA	NA	NA	1.13E-04	1.05E+02	1.18E-02	1.00E+00	3.06E-02	1.05E+01	2.41E+02	1.87E-02	2.34E+02	4.50E-02
BCEOT-W10-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	3.49E+01	1.64E-01	NA	NA	NA	NA	1.13E-04	5.56E+01	6.26E-03	1.00E+00	3.06E-02	5.56E+00	2.41E+02	1.87E-02	2.34E+02	2.38E-02
BCEOT-E11-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	3.37E+01	1.58E-01	NA	NA	NA	NA	1.13E-04	5.37E+01	6.04E-03	1.00E+00	3.06E-02	5.37E+00	2.41E+02	1.87E-02	2.34E+02	2.30E-02
BCEOT-W11-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	3.96E+02	1.86E+00	NA	NA	NA	NA	1.13E-04	6.31E+02	7.10E-02	1.00E+00	3.06E-02	6.30E+01	2.41E+02	1.87E-02	2.34E+02	2.70E-01
BCEOT-E12-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	1.20E+02	5.64E-01	NA	NA	NA	NA	1.13E-04	1.92E+02	2.16E-02	1.00E+00	3.06E-02	1.91E+01	2.41E+02	1.87E-02	2.34E+02	8.19E-02
BCEOT-W12-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	4.77E+01	2.24E-01	NA	NA	NA	NA	1.13E-04	7.60E+01	8.55E-03	1.00E+00	3.06E-02	7.60E+00	2.41E+02	1.87E-02	2.34E+02	3.25E-02
BCEOT-E13-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	3.08E+01	1.45E-01	NA	NA	NA	NA	1.13E-04	4.91E+01	5.53E-03	1.00E+00	3.06E-02	4.91E+00	2.41E+02	1.87E-02	2.34E+02	2.10E-02
BCEOT-W13-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	5.24E+01	2.46E-01	NA	NA	NA	NA	1.13E-04	8.35E+01	9.39E-03	1.00E+00	3.06E-02	8.34E+00	2.41E+02	1.87E-02	2.34E+02	3.57E-02
BCEOT-E14-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	8.96E+01	4.20E-01	NA	NA	NA	NA	1.13E-04	1.43E+02	1.60E-02	1.00E+00	3.06E-02	1.43E+01	2.41E+02	1.87E-02	2.34E+02	6.10E-02
BCEOT-W14-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	2.49E+02	1.17E+00	NA	NA	NA	NA	1.13E-04	3.96E+02	4.45E-02	1.00E+00	3.06E-02	3.96E+01	2.41E+02	1.87E-02	2.34E+02	1.69E-01
BCEOT-E15-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	1.39E+02	6.51E-01	NA	NA	NA	NA	1.13E-04	2.21E+02	2.49E-02	1.00E+00	3.06E-02	2.21E+01	2.41E+02	1.87E-02	2.34E+02	9.46E-02
BCEOT-W15-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	3.30E+02	1.55E+00	NA	NA	NA	NA	1.13E-04	5.26E+02	5.92E-02	1.00E+00	3.06E-02	5.25E+01	2.41E+02	1.87E-02	2.34E+02	2.25E-01
BCEOT-E16-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	8.32E+01	3.90E-01	NA	NA	NA	NA	1.13E-04	1.32E+02	1.49E-02	1.00E+00	3.06E-02	1.32E+01	2.41E+02	1.87E-02	2.34E+02	5.66E-02
BCEOT-W16-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	6.43E+01	3.01E-01	NA	NA	NA	NA	1.13E-04	1.02E+02	1.15E-02	1.00E+00	3.06E-02	1.02E+01	2.41E+02	1.87E-02	2.34E+02	4.38E-02
BCEOT-E17-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	3.46E+02	1.62E+00	NA	NA	NA	NA	1.13E-04	5.51E+02	6.20E-02	1.00E+00	3.06E-02	5.50E+01	2.41E+02	1.87E-02	2.34E+02	2.36E-01
BCEOT-W17-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	1.75E+02	8.19E-01	NA	NA	NA	NA	1.13E-04	2.78E+02	3.13E-02	1.00E+00	3.06E-02	2.78E+01	2.41E+02	1.87E-02	2.34E+02	1.19E-01
BCEOT-E18-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	1.45E+02	6.81E-01	NA	NA	NA	NA	1.13E-04	2.31E+02	2.60E-02	1.00E+00	3.06E-02	2.31E+01	2.41E+02	1.87E-02	2.34E+02	9.89E-02
BCEOT-W18-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	4.43E+01	2.08E-01	NA	NA	NA	NA	1.13E-04	7.06E+01	7.94E-03	1.00E+00	3.06E-02	7.05E+00	2.41E+02	1.87E-02	2.34E+02	3.02E-02
BCEOT-E19-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	6.05E+01	2.84E-01	NA	NA	NA	NA	1.13E-04	9.64E+01	1.08E-02	1.00E+00	3.06E-02	9.63E+00	2.41E+02	1.87E-02	2.34E+02	4.12E-02
BCEOT-W19-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	9.88E+01	4.63E-01	NA	NA	NA	NA	1.13E-04	1.57E+02	1.77E-02	1.00E+00	3.06E-02	1.57E+01	2.41E+02	1.87E-02	2.34E+02	6.73E-02
BCEOT-E20-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	1.84E+01	8.61E-02	NA	NA	NA	NA	1.13E-04	2.92E+01	3.29E-03	1.00E+00	3.06E-02	2.92E+00	2.41E+02	1.87E-02	2.34E+02	1.25E-02
BCEOT-W20-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	5.19E+01	2.43E-01	NA	NA	NA	NA	1.13E-04	8.26E+01	9.29E-03	1.00E+00	3.06E-02	8.25E+00	2.41E+02	1.87E-02	2.34E+02	3.53E-02
BCEOT-E21-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	4.43E+02	2.08E+00	NA	NA	NA	NA	1.13E-04	7.05E+02	7.93E-02	1.00E+00	3.06E-02	7.05E+01	2.41E+02	1.87E-02	2.34E+02	3.02E-01
BCEOT-W21-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	8.43E+01	3.95E-01	NA	NA	NA	NA	1.13E-04	1.34E+02	1.51E-02	1.00E+00	3.06E-02	1.34E+01	2.41E+02	1.87E-02	2.34E+02	5.74E-02
BCEOT-E22-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	1.89E+02	8.84E-01	NA	NA	NA	NA	1.13E-04	3.00E+02	3.38E-02	1.00E+00	3.06E-02	3.00E+01	2.41E+02	1.87E-02	2.34E+02	1.28E-01
BCEOT-W22-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	7.99E+01	3.75E-01	NA	NA	NA	NA	1.13E-04	1.27E+02	1.43E-02	1.00E+00	3.06E-02	1.27E+01	2.41E+02	1.87E-02	2.34E+02	5.44E-02
BCEOT-E23-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	2.85E+01	1.34E-01	NA	NA	NA	NA	1.13E-04	4.54E+01	5.11E-03	1.00E+00	3.06E-02	4.54E+00	2.41E+02	1.87E-02	2.34E+02	1.94E-02

TABLE C-11D: LEAD DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 11 - BEARTRAP CREEK DISPERSED TAILINGS DEPOSITS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK TAILINGS DEPOSITS AND FLOSSIE LOUISE MINE WASTE PILE (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 4.982

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Meadow Vole (Small Herbivorous Mammal - Terrestrial)																							
BCEOT-W23-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	7.50E+01	3.52E-01	NA	NA	NA	NA	1.13E-04	1.19E+02	1.34E-02	1.00E+00	3.06E-02	1.19E+01	2.41E+02	1.87E-02	2.34E+02	5.11E-02
BCEOT-E24-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	7.04E+01	3.30E-01	NA	NA	NA	NA	1.13E-04	1.12E+02	1.26E-02	1.00E+00	3.06E-02	1.12E+01	2.41E+02	1.87E-02	2.34E+02	4.80E-02
BCEOT-W24-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	1.39E+02	6.51E-01	NA	NA	NA	NA	1.13E-04	2.21E+02	2.49E-02	1.00E+00	3.06E-02	2.21E+01	2.41E+02	1.87E-02	2.34E+02	9.46E-02
BCEOT-E25-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	1.07E+02	5.02E-01	NA	NA	NA	NA	1.13E-04	1.70E+02	1.92E-02	1.00E+00	3.06E-02	1.70E+01	2.41E+02	1.87E-02	2.34E+02	7.29E-02
BCEOT-W25-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	1.87E+02	8.76E-01	NA	NA	NA	NA	1.13E-04	2.97E+02	3.34E-02	1.00E+00	3.06E-02	2.97E+01	2.41E+02	1.87E-02	2.34E+02	1.27E-01
BCEOT-E26-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	1.59E+02	7.47E-01	NA	NA	NA	NA	1.13E-04	2.54E+02	2.85E-02	1.00E+00	3.06E-02	2.54E+01	2.41E+02	1.87E-02	2.34E+02	1.09E-01
BCEOT-W26-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	1.18E+02	5.52E-01	NA	NA	NA	NA	1.13E-04	1.88E+02	2.11E-02	1.00E+00	3.06E-02	1.87E+01	2.41E+02	1.87E-02	2.34E+02	8.02E-02
BCEOT-W27-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	1.46E+02	6.86E-01	NA	NA	NA	NA	1.13E-04	2.33E+02	2.62E-02	1.00E+00	3.06E-02	2.33E+01	2.41E+02	1.87E-02	2.34E+02	9.96E-02
Outside Tailings Piles																						**Maximum HQ (Edge of Tailings Pile)**	**3.91E-01**
BCEOT-E0+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	2.46E+02	1.15E+00	NA	NA	NA	NA	1.13E-04	3.91E+02	4.40E-02	1.00E+00	3.06E-02	3.91E+01	2.41E+02	1.87E-02	2.34E+02	1.67E-01
BCEOT-E1+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	3.51E+02	1.64E+00	NA	NA	NA	NA	1.13E-04	5.58E+02	6.28E-02	1.00E+00	3.06E-02	5.58E+01	2.41E+02	1.87E-02	2.34E+02	2.39E-01
BCEOT-E2+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	2.19E+02	1.03E+00	NA	NA	NA	NA	1.13E-04	3.49E+02	3.93E-02	1.00E+00	3.06E-02	3.49E+01	2.41E+02	1.87E-02	2.34E+02	1.49E-01
BCEOT-E3+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	6.81E+01	3.19E-01	NA	NA	NA	NA	1.13E-04	1.08E+02	1.22E-02	1.00E+00	3.06E-02	1.08E+01	2.41E+02	1.87E-02	2.34E+02	4.64E-02
BCEOT-E4+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	9.83E+01	4.61E-01	NA	NA	NA	NA	1.13E-04	1.56E+02	1.76E-02	1.00E+00	3.06E-02	1.56E+01	2.41E+02	1.87E-02	2.34E+02	6.69E-02
BCEOT-W4+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	1.17E+02	5.48E-01	NA	NA	NA	NA	1.13E-04	1.86E+02	2.09E-02	1.00E+00	3.06E-02	1.86E+01	2.41E+02	1.87E-02	2.34E+02	7.96E-02
BCEOT-E5+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	2.44E+02	1.14E+00	NA	NA	NA	NA	1.13E-04	3.89E+02	4.37E-02	1.00E+00	3.06E-02	3.88E+01	2.41E+02	1.87E-02	2.34E+02	1.66E-01
BCEOT-W5+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	3.06E+02	1.44E+00	NA	NA	NA	NA	1.13E-04	4.87E+02	5.49E-02	1.00E+00	3.06E-02	4.87E+01	2.41E+02	1.87E-02	2.34E+02	2.09E-01
BCEOT-E6+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	2.33E+02	1.09E+00	NA	NA	NA	NA	1.13E-04	3.70E+02	4.17E-02	1.00E+00	3.06E-02	3.70E+01	2.41E+02	1.87E-02	2.34E+02	1.58E-01
BCEOT-W6+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	4.94E+01	2.32E-01	NA	NA	NA	NA	1.13E-04	7.87E+01	8.85E-03	1.00E+00	3.06E-02	7.86E+00	2.41E+02	1.87E-02	2.34E+02	3.37E-02
BCEOT-E7+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	7.83E+01	3.67E-01	NA	NA	NA	NA	1.13E-04	1.25E+02	1.40E-02	1.00E+00	3.06E-02	1.25E+01	2.41E+02	1.87E-02	2.34E+02	5.33E-02
BCEOT-W7+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	2.56E+01	1.20E-01	NA	NA	NA	NA	1.13E-04	4.07E+01	4.58E-03	1.00E+00	3.06E-02	4.07E+00	2.41E+02	1.87E-02	2.34E+02	1.74E-02
BCEOT-W8+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	9.93E+01	4.65E-01	NA	NA	NA	NA	1.13E-04	1.58E+02	1.78E-02	1.00E+00	3.06E-02	1.58E+01	2.41E+02	1.87E-02	2.34E+02	6.76E-02
BCEOT-E9+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	3.25E+02	1.53E+00	NA	NA	NA	NA	1.13E-04	5.18E+02	5.83E-02	1.00E+00	3.06E-02	5.17E+01	2.41E+02	1.87E-02	2.34E+02	2.21E-01
BCEOT-W9+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	6.36E+01	2.98E-01	NA	NA	NA	NA	1.13E-04	1.01E+02	1.14E-02	1.00E+00	3.06E-02	1.01E+01	2.41E+02	1.87E-02	2.34E+02	4.33E-02
BCEOT-E10+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	2.58E+01	1.21E-01	NA	NA	NA	NA	1.13E-04	4.11E+01	4.62E-03	1.00E+00	3.06E-02	4.11E+00	2.41E+02	1.87E-02	2.34E+02	1.76E-02
BCEOT-W10+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	2.02E+01	9.45E-02	NA	NA	NA	NA	1.13E-04	3.21E+01	3.61E-03	1.00E+00	3.06E-02	3.21E+00	2.41E+02	1.87E-02	2.34E+02	1.37E-02
BCEOT-E11+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	2.30E+02	1.08E+00	NA	NA	NA	NA	1.13E-04	3.67E+02	4.13E-02	1.00E+00	3.06E-02	3.66E+01	2.41E+02	1.87E-02	2.34E+02	1.57E-01
BCEOT-W11+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	1.11E+02	5.22E-01	NA	NA	NA	NA	1.13E-04	1.77E+02	1.99E-02	1.00E+00	3.06E-02	1.77E+01	2.41E+02	1.87E-02	2.34E+02	7.58E-02
BCEOT-E12+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	1.52E+02	7.12E-01	NA	NA	NA	NA	1.13E-04	2.42E+02	2.72E-02	1.00E+00	3.06E-02	2.42E+01	2.41E+02	1.87E-02	2.34E+02	1.03E-01
BCEOT-W12+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	1.50E+01	7.01E-02	NA	NA	NA	NA	1.13E-04	2.38E+01	2.68E-03	1.00E+00	3.06E-02	2.38E+00	2.41E+02	1.87E-02	2.34E+02	1.02E-02
BCEOT-E13+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	2.32E+02	1.09E+00	NA	NA	NA	NA	1.13E-04	3.69E+02	4.15E-02	1.00E+00	3.06E-02	3.69E+01	2.41E+02	1.87E-02	2.34E+02	1.58E-01
BCEOT-E14+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	6.32E+01	2.96E-01	NA	NA	NA	NA	1.13E-04	1.01E+02	1.13E-02	1.00E+00	3.06E-02	1.01E+01	2.41E+02	1.87E-02	2.34E+02	4.30E-02
BCEOT-W14+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	2.53E+01	1.18E-01	NA	NA	NA	NA	1.13E-04	4.02E+01	4.53E-03	1.00E+00	3.06E-02	4.02E+00	2.41E+02	1.87E-02	2.34E+02	1.72E-02
BCEOT-E15+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	1.38E+02	6.49E-01	NA	NA	NA	NA	1.13E-04	2.20E+02	2.48E-02	1.00E+00	3.06E-02	2.20E+01	2.41E+02	1.87E-02	2.34E+02	9.42E-02
BCEOT-W15+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	1.18E+02	5.55E-01	NA	NA	NA	NA	1.13E-04	1.89E+02	2.12E-02	1.00E+00	3.06E-02	1.88E+01	2.41E+02	1.87E-02	2.34E+02	8.06E-02
BCEOT-E16+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	4.75E+01	2.22E-01	NA	NA	NA	NA	1.13E-04	7.55E+01	8.50E-03	1.00E+00	3.06E-02	7.55E+00	2.41E+02	1.87E-02	2.34E+02	3.23E-02
BCEOT-W16+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	1.78E+01	8.35E-02	NA	NA	NA	NA	1.13E-04	2.84E+01	3.19E-03	1.00E+00	3.06E-02	2.83E+00	2.41E+02	1.87E-02	2.34E+02	1.21E-02
BCEOT-E17+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	1.12E+02	5.24E-01	NA	NA	NA	NA	1.13E-04	1.78E+02	2.00E-02	1.00E+00	3.06E-02	1.78E+01	2.41E+02	1.87E-02	2.34E+02	7.62E-02
BCEOT-W17+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	6.28E+01	2.94E-01	NA	NA	NA	NA	1.13E-04	9.99E+01	1.12E-02	1.00E+00	3.06E-02	9.99E+00	2.41E+02	1.87E-02	2.34E+02	4.27E-02
BCEOT-E18+12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	9.87E+03	4.63E+01	NA	NA	NA	NA	1.13E-04	1.57E+04	1.77E+00	1.00E+00	3.06E-02	1.57E+03	2.41E+02	1.87E-02	2.34E+02	6.72E+00
BCEOT-E18+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	6.48E+01	3.04E-01	NA	NA	NA	NA	1.13E-04	1.03E+02	1.16E-02	1.00E+00	3.06E-02	1.03E+01	2.41E+02	1.87E-02	2.34E+02	4.41E-02
BCEOT-W18+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	5.51E+01	2.58E-01	NA	NA	NA	NA	1.13E-04	8.77E+01	9.86E-03	1.00E+00	3.06E-02	8.76E+00	2.41E+02	1.87E-02	2.34E+02	3.75E-02
BCEOT-E19+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	4.78E+01	2.24E-01	NA	NA	NA	NA	1.13E-04	7.60E+01	8.55E-03	1.00E+00	3.06E-02	7.60E+00	2.41E+02	1.87E-02	2.34E+02	3.25E-02
BCEOT-W19+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	4.62E+01	2.17E-01	NA	NA	NA	NA	1.13E-04	7.35E+01	8.27E-03	1.00E+00	3.06E-02	7.35E+00	2.41E+02	1.87E-02	2.34E+02	3.15E-02
BCEOT-E20+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	2.11E+01	9.92E-02	NA	NA	NA	NA	1.13E-04	3.37E+01	3.79E-03	1.00E+00	3.06E-02	3.36E+00	2.41E+02	1.87E-02	2.34E+02	1.44E-02
BCEOT-W20+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	4.85E+01	2.27E-01	NA	NA	NA	NA	1.13E-04	7.72E+01	8.68E-03	1.00E+00	3.06E-02	7.71E+00	2.41E+02	1.87E-02	2.34E+02	3.30E-02
BCEOT-E21+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	8.15E+01	3.82E-01	NA	NA	NA	NA	1.13E-04	1.30E+02	1.46E-02	1.00E+00	3.06E-02	1.30E+01	2.41E+02	1.87E-02	2.34E+02	5.55E-02
BCEOT-W21+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	5.73E+01	2.69E-01	NA	NA	NA	NA	1.13E-04	9.12E+01	1.03E-02	1.00E+00	3.06E-02	9.11E+00	2.41E+02	1.87E-02	2.34E+02	3.90E-02
BCEOT-E22+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	8.51E+02	3.99E+00	NA	NA	NA	NA	1.13E-04	1.35E+03	1.52E-01	1.00E+00	3.06E-02	1.35E+02	2.41E+02	1.87E-02	2.34E+02	5.79E-01
BCEOT-E22+70 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	1.57E+02	7.36E-01	NA	NA	NA	NA	1.13E-04	2.50E+02	2.81E-02	1.00E+00	3.06E-02	2.50E+01	2.41E+02	1.87E-02	2.34E+02	1.07E-01
BCEOT-W22+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	4.48E+01	2.10E-01	NA	NA	NA	NA	1.13E-04	7.13E+01	8.02E-03	1.00E+00	3.06E-02	7.13E+00	2.41E+02	1.87E-02	2.34E+02	3.05E-02
BCEOT-E23+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	3.10E+01	1.46E-01	NA	NA	NA	NA	1.13E-04	4.94E+01	5.56E-03	1.00E+00	3.06E-02	4.94E+00	2.41E+02	1.87E-02	2.34E+02	2.11E-02
FLWA-101 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	1.17E+03	5.49E+00	NA	NA	NA	NA	1.13E-04	1.87E+03	2.10E-01	1.00E+00	3.06E-02	1.86E+02	2.41E+02	1.87E-02	2.34E+02	7.98E-01

TABLE C-11D: LEAD DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 11 - BEARTRAP CREEK DISPERSED TAILINGS DEPOSITS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK TAILINGS DEPOSITS AND FLOSSIE LOUISE MINE WASTE PILE (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 4.982

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Meadow Vole (Small Herbivorous Mammal - Terrestrial)																							
BCEOT-W23+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	6.71E+01	3.15E-01	NA	NA	NA	NA	1.13E-04	1.07E+02	1.20E-02	1.00E+00	3.06E-02	1.07E+01	2.41E+02	1.87E-02	2.34E+02	4.57E-02
BCEOT-E24+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-W24+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	1.26E+02	5.89E-01	NA	NA	NA	NA	1.13E-04	2.00E+02	2.25E-02	1.00E+00	3.06E-02	2.00E+01	2.41E+02	1.87E-02	2.34E+02	8.56E-02
BCEOT-E25+20 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	2.45E+01	1.15E-01	NA	NA	NA	NA	1.13E-04	3.90E+01	4.39E-03	1.00E+00	3.06E-02	3.89E+00	2.41E+02	1.87E-02	2.34E+02	1.67E-02
BCEOT-W25+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	1.03E+02	4.84E-01	NA	NA	NA	NA	1.13E-04	1.64E+02	1.85E-02	1.00E+00	3.06E-02	1.64E+01	2.41E+02	1.87E-02	2.34E+02	7.02E-02
BCEOT-E26+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	3.30E+02	1.55E+00	NA	NA	NA	NA	1.13E-04	5.25E+02	5.90E-02	1.00E+00	3.06E-02	5.24E+01	2.41E+02	1.87E-02	2.34E+02	2.24E-01
BCEOT-W26+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	8.49E+01	3.98E-01	NA	NA	NA	NA	1.13E-04	1.35E+02	1.52E-02	1.00E+00	3.06E-02	1.35E+01	2.41E+02	1.87E-02	2.34E+02	5.78E-02
BCEOT-W27+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	6.28E-01	9.07E+01	4.25E-01	NA	NA	NA	NA	1.13E-04	1.44E+02	1.63E-02	1.00E+00	3.06E-02	1.44E+01	2.41E+02	1.87E-02	2.34E+02	6.18E-02
																						Maximum HQ (Outside Tailings Pile)	**6.72E+00**
White-Tailed Deer (Large Herbivorous Mammal - Terrestrial)																							
Reference Sites																							
ACBG-1 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	4.35E-02	1.00E+00	1.44E+00	NA	NA	NA	NA	2.86E-02	2.31E+01	6.61E-01	2.79E-02	1.35E+02	4.33E-04	2.41E+02	1.87E-02	1.41E+02	3.07E-06
ACBG-2 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	4.35E-02	1.66E+00	2.38E+00	NA	NA	NA	NA	2.86E-02	3.83E+01	1.10E+00	2.79E-02	1.35E+02	7.18E-04	2.41E+02	1.87E-02	1.41E+02	5.08E-06
BCBG-201 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	4.35E-02	4.14E+00	5.93E+00	NA	NA	NA	NA	2.86E-02	9.53E+01	2.73E+00	2.79E-02	1.35E+02	1.79E-03	2.41E+02	1.87E-02	1.41E+02	1.27E-05
Inside Tailings Pile																						**Minimum HQ (Reference Sites)**	**3.07E-06**
BCEOT-E0-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	3.60E+02	5.15E+02	NA	NA	NA	NA	2.86E-02	5.72E+02	1.64E+01	2.79E-02	1.35E+02	1.10E-01	2.41E+02	1.87E-02	1.41E+02	7.77E-04
BCEOT-E1-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	2.94E+02	4.20E+02	NA	NA	NA	NA	2.86E-02	4.68E+02	1.34E+01	2.79E-02	1.35E+02	8.96E-02	2.41E+02	1.87E-02	1.41E+02	6.34E-04
BCEOT-E2-8 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	2.82E+02	4.03E+02	NA	NA	NA	NA	2.86E-02	4.48E+02	1.28E+01	2.79E-02	1.35E+02	8.59E-02	2.41E+02	1.87E-02	1.41E+02	6.09E-04
BCEOT-E3-8 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	2.36E+02	3.38E+02	NA	NA	NA	NA	2.86E-02	3.76E+02	1.08E+01	2.79E-02	1.35E+02	7.21E-02	2.41E+02	1.87E-02	1.41E+02	5.10E-04
BCEOT-E4-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	2.54E+02	3.64E+02	NA	NA	NA	NA	2.86E-02	4.05E+02	1.16E+01	2.79E-02	1.35E+02	7.76E-02	2.41E+02	1.87E-02	1.41E+02	5.49E-04
BCEOT-W4-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	2.66E+02	3.81E+02	NA	NA	NA	NA	2.86E-02	4.24E+02	1.21E+01	2.79E-02	1.35E+02	8.12E-02	2.41E+02	1.87E-02	1.41E+02	5.75E-04
BCEOT-W5-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	1.03E+03	1.48E+03	NA	NA	NA	NA	2.86E-02	1.64E+03	4.71E+01	2.79E-02	1.35E+02	3.15E-01	2.41E+02	1.87E-02	1.41E+02	2.23E-03
BCEOT-E6-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	2.20E+02	3.16E+02	NA	NA	NA	NA	2.86E-02	3.51E+02	1.00E+01	2.79E-02	1.35E+02	6.72E-02	2.41E+02	1.87E-02	1.41E+02	4.76E-04
BCEOT-W6-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	7.11E+01	1.02E+02	NA	NA	NA	NA	2.86E-02	1.13E+02	3.24E+00	2.79E-02	1.35E+02	2.17E-02	2.41E+02	1.87E-02	1.41E+02	1.54E-04
BCEOT-E7-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	7.57E+01	1.08E+02	NA	NA	NA	NA	2.86E-02	1.21E+02	3.45E+00	2.79E-02	1.35E+02	2.31E-02	2.41E+02	1.87E-02	1.41E+02	1.64E-04
BCEOT-W7-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	3.89E+02	5.57E+02	NA	NA	NA	NA	2.86E-02	6.20E+02	1.77E+01	2.79E-02	1.35E+02	1.19E-01	2.41E+02	1.87E-02	1.41E+02	8.41E-04
BCEOT-W8-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	1.45E+03	2.08E+03	NA	NA	NA	NA	2.86E-02	2.31E+03	6.61E+01	2.79E-02	1.35E+02	4.42E-01	2.41E+02	1.87E-02	1.41E+02	3.13E-03
BCEOT-E9-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	4.50E+02	6.44E+02	NA	NA	NA	NA	2.86E-02	7.16E+02	2.05E+01	2.79E-02	1.35E+02	1.37E-01	2.41E+02	1.87E-02	1.41E+02	9.71E-04
BCEOT-W9-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	5.29E+02	7.58E+02	NA	NA	NA	NA	2.86E-02	8.43E+02	2.41E+01	2.79E-02	1.35E+02	1.61E-01	2.41E+02	1.87E-02	1.41E+02	1.14E-03
BCEOT-E10-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	5.78E+01	8.28E+01	NA	NA	NA	NA	2.86E-02	9.20E+01	2.63E+00	2.79E-02	1.35E+02	1.76E-02	2.41E+02	1.87E-02	1.41E+02	1.25E-04
BCEOT-W10-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	6.35E+02	9.09E+02	NA	NA	NA	NA	2.86E-02	1.01E+03	2.89E+01	2.79E-02	1.35E+02	1.94E-01	2.41E+02	1.87E-02	1.41E+02	1.37E-03
BCEOT-E11-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	2.19E+02	3.14E+02	NA	NA	NA	NA	2.86E-02	3.49E+02	1.00E+01	2.79E-02	1.35E+02	6.69E-02	2.41E+02	1.87E-02	1.41E+02	4.74E-04
BCEOT-W11-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	4.48E+02	6.42E+02	NA	NA	NA	NA	2.86E-02	7.14E+02	2.04E+01	2.79E-02	1.35E+02	1.37E-01	2.41E+02	1.87E-02	1.41E+02	9.69E-04
BCEOT-E12-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	1.49E+02	2.14E+02	NA	NA	NA	NA	2.86E-02	2.38E+02	6.81E+00	2.79E-02	1.35E+02	4.56E-02	2.41E+02	1.87E-02	1.41E+02	3.23E-04
BCEOT-W12-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	1.30E+03	1.86E+03	NA	NA	NA	NA	2.86E-02	2.07E+03	5.92E+01	2.79E-02	1.35E+02	3.96E-01	2.41E+02	1.87E-02	1.41E+02	2.81E-03
BCEOT-E13-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	3.89E+02	5.57E+02	NA	NA	NA	NA	2.86E-02	6.19E+02	1.77E+01	2.79E-02	1.35E+02	1.19E-01	2.41E+02	1.87E-02	1.41E+02	8.40E-04
BCEOT-W13-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	1.33E+03	1.90E+03	NA	NA	NA	NA	2.86E-02	2.11E+03	6.05E+01	2.79E-02	1.35E+02	4.05E-01	2.41E+02	1.87E-02	1.41E+02	2.87E-03
BCEOT-W13-25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	3.41E+01	4.89E+01	NA	NA	NA	NA	2.86E-02	5.44E+01	1.56E+00	2.79E-02	1.35E+02	1.04E-02	2.41E+02	1.87E-02	1.41E+02	7.37E-05
BCEOT-W14-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	1.80E+02	2.58E+02	NA	NA	NA	NA	2.86E-02	2.87E+02	8.22E+00	2.79E-02	1.35E+02	5.50E-02	2.41E+02	1.87E-02	1.41E+02	3.89E-04
BCEOT-E15-8 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	3.49E+02	4.99E+02	NA	NA	NA	NA	2.86E-02	5.55E+02	1.59E+01	2.79E-02	1.35E+02	1.06E-01	2.41E+02	1.87E-02	1.41E+02	7.53E-04
BCEOT-W15-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	7.93E+02	1.13E+03	NA	NA	NA	NA	2.86E-02	1.26E+03	3.61E+01	2.79E-02	1.35E+02	2.42E-01	2.41E+02	1.87E-02	1.41E+02	1.71E-03
BCEOT-E16-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	2.11E+03	3.02E+03	NA	NA	NA	NA	2.86E-02	3.35E+03	9.60E+01	2.79E-02	1.35E+02	6.42E-01	2.41E+02	1.87E-02	1.41E+02	4.55E-03
BCEOT-W16-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	7.92E+02	1.13E+03	NA	NA	NA	NA	2.86E-02	1.26E+03	3.61E+01	2.79E-02	1.35E+02	2.41E-01	2.41E+02	1.87E-02	1.41E+02	1.71E-03
BCEOT-E17-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	1.10E+04	1.57E+04	NA	NA	NA	NA	2.86E-02	1.74E+04	4.99E+02	2.79E-02	1.35E+02	3.34E+00	2.41E+02	1.87E-02	1.41E+02	2.37E-02
BCEOT-W17-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	4.15E+02	5.94E+02	NA	NA	NA	NA	2.86E-02	6.61E+02	1.89E+01	2.79E-02	1.35E+02	1.27E-01	2.41E+02	1.87E-02	1.41E+02	8.97E-04
BCEOT-W18-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	1.45E+03	2.08E+03	NA	NA	NA	NA	2.86E-02	2.31E+03	6.61E+01	2.79E-02	1.35E+02	4.43E-01	2.41E+02	1.87E-02	1.41E+02	3.13E-03
BCEOT-E19-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	7.39E+02	1.06E+03	NA	NA	NA	NA	2.86E-02	1.18E+03	3.37E+01	2.79E-02	1.35E+02	2.25E-01	2.41E+02	1.87E-02	1.41E+02	1.60E-03
BCEOT-W19-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	2.13E+02	3.06E+02	NA	NA	NA	NA	2.86E-02	3.40E+02	9.73E+00	2.79E-02	1.35E+02	6.51E-02	2.41E+02	1.87E-02	1.41E+02	4.61E-04
BCEOT-E20-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	1.08E+03	1.55E+03	NA	NA	NA	NA	2.86E-02	1.72E+03	4.92E+01	2.79E-02	1.35E+02	3.30E-01	2.41E+02	1.87E-02	1.41E+02	2.33E-03
BCEOT-W20-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	9.90E+02	1.42E+03	NA	NA	NA	NA	2.86E-02	1.58E+03	4.51E+01	2.79E-02	1.35E+02	3.02E-01	2.41E+02	1.87E-02	1.41E+02	2.14E-03
BCEOT-E21-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	1.00E+03	1.44E+03	NA	NA	NA	NA	2.86E-02	1.60E+03	4.57E+01	2.79E-02	1.35E+02	3.06E-01	2.41E+02	1.87E-02	1.41E+02	2.17E-03
BCEOT-W21-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	6.98E+02	9.99E+02	NA	NA	NA	NA	2.86E-02	1.11E+03	3.18E+01	2.79E-02	1.35E+02	2.13E-01	2.41E+02	1.87E-02	1.41E+02	1.51E-03
BCEOT-E22-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	1.28E+03	1.84E+03	NA	NA	NA	NA	2.86E-02	2.04E+03	5.85E+01	2.79E-02	1.35E+02	3.92E-01	2.41E+02	1.87E-02	1.41E+02	2.77E-03

TABLE C-11D: LEAD DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 11 - BEARTRAP CREEK DISPERSED TAILINGS DEPOSITS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK TAILINGS DEPOSITS AND FLOSSIE LOUISE MINE WASTE PILE (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 4.982

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
White-Tailed Deer (Large Herbivorous Mammal - Terrestrial)																							
BCEOT-W22-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	2.19E+03	3.14E+03	NA	NA	NA	NA	2.86E-02	3.49E+03	9.98E+01	2.79E-02	1.35E+02	6.68E-01	2.41E+02	1.87E-02	1.41E+02	4.73E-03
BCEOT-E23-15 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	1.81E+02	2.59E+02	NA	NA	NA	NA	2.86E-02	2.87E+02	8.23E+00	2.79E-02	1.35E+02	5.51E-02	2.41E+02	1.87E-02	1.41E+02	3.90E-04
BCEOT-W23-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	1.49E+03	2.13E+03	NA	NA	NA	NA	2.86E-02	2.36E+03	6.77E+01	2.79E-02	1.35E+02	4.53E-01	2.41E+02	1.87E-02	1.41E+02	3.21E-03
BCEOT-E24-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	7.88E+01	1.13E+02	NA	NA	NA	NA	2.86E-02	1.25E+02	3.59E+00	2.79E-02	1.35E+02	2.40E-02	2.41E+02	1.87E-02	1.41E+02	1.70E-04
BCEOT-W24-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	1.01E+03	1.45E+03	NA	NA	NA	NA	2.86E-02	1.62E+03	4.63E+01	2.79E-02	1.35E+02	3.10E-01	2.41E+02	1.87E-02	1.41E+02	2.19E-03
BCEOT-E25-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	9.06E+02	1.30E+03	NA	NA	NA	NA	2.86E-02	1.44E+03	4.13E+01	2.79E-02	1.35E+02	2.76E-01	2.41E+02	1.87E-02	1.41E+02	1.96E-03
BCEOT-W25-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	8.02E+02	1.15E+03	NA	NA	NA	NA	2.86E-02	1.28E+03	3.66E+01	2.79E-02	1.35E+02	2.45E-01	2.41E+02	1.87E-02	1.41E+02	1.73E-03
BCEOT-E26-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	4.13E+02	5.92E+02	NA	NA	NA	NA	2.86E-02	6.58E+02	1.88E+01	2.79E-02	1.35E+02	1.26E-01	2.41E+02	1.87E-02	1.41E+02	8.93E-04
BCEOT-W26-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	6.49E+02	9.29E+02	NA	NA	NA	NA	2.86E-02	1.03E+03	2.96E+01	2.79E-02	1.35E+02	1.98E-01	2.41E+02	1.87E-02	1.41E+02	1.40E-03
BCEOT-W27-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	7.68E+02	1.10E+03	NA	NA	NA	NA	2.86E-02	1.22E+03	3.50E+01	2.79E-02	1.35E+02	2.34E-01	2.41E+02	1.87E-02	1.41E+02	1.66E-03
At Edge of Tailings Pile																						**Maximum HQ (Inside Tailings Pile)**	**2.37E-02**
BCEOT-E0-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	4.64E+02	6.64E+02	NA	NA	NA	NA	2.86E-02	7.38E+02	2.11E+01	2.79E-02	1.35E+02	1.41E-01	2.41E+02	1.87E-02	1.41E+02	1.00E-03
BCEOT-E1-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	5.26E+01	7.53E+01	NA	NA	NA	NA	2.86E-02	8.38E+01	2.40E+00	2.79E-02	1.35E+02	1.61E-02	2.41E+02	1.87E-02	1.41E+02	1.14E-04
BCEOT-E2-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	5.74E+02	8.22E+02	NA	NA	NA	NA	2.86E-02	9.14E+02	2.62E+01	2.79E-02	1.35E+02	1.75E-01	2.41E+02	1.87E-02	1.41E+02	1.24E-03
BCEOT-E3-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	1.15E+02	1.65E+02	NA	NA	NA	NA	2.86E-02	1.83E+02	5.25E+00	2.79E-02	1.35E+02	3.51E-02	2.41E+02	1.87E-02	1.41E+02	2.49E-04
BCEOT-E4-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	8.55E+01	1.22E+02	NA	NA	NA	NA	2.86E-02	1.36E+02	3.90E+00	2.79E-02	1.35E+02	2.61E-02	2.41E+02	1.87E-02	1.41E+02	1.85E-04
BCEOT-W4-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	6.05E+01	8.67E+01	NA	NA	NA	NA	2.86E-02	9.64E+01	2.76E+00	2.79E-02	1.35E+02	1.85E-02	2.41E+02	1.87E-02	1.41E+02	1.31E-04
BCEOT-E5-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	3.43E+02	4.92E+02	NA	NA	NA	NA	2.86E-02	5.47E+02	1.57E+01	2.79E-02	1.35E+02	1.05E-01	2.41E+02	1.87E-02	1.41E+02	7.42E-04
BCEOT-W5-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	3.87E+02	5.53E+02	NA	NA	NA	NA	2.86E-02	6.15E+02	1.76E+01	2.79E-02	1.35E+02	1.18E-01	2.41E+02	1.87E-02	1.41E+02	8.35E-04
BCEOT-E6-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	1.85E+02	2.65E+02	NA	NA	NA	NA	2.86E-02	2.95E+02	8.44E+00	2.79E-02	1.35E+02	5.65E-02	2.41E+02	1.87E-02	1.41E+02	4.00E-04
BCEOT-W6-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	6.90E+01	9.88E+01	NA	NA	NA	NA	2.86E-02	1.10E+02	3.15E+00	2.79E-02	1.35E+02	2.10E-02	2.41E+02	1.87E-02	1.41E+02	1.49E-04
BCEOT-W7-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	1.45E+02	2.08E+02	NA	NA	NA	NA	2.86E-02	2.31E+02	6.61E+00	2.79E-02	1.35E+02	4.42E-02	2.41E+02	1.87E-02	1.41E+02	3.13E-04
BCEOT-W8-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	2.89E+01	4.13E+01	NA	NA	NA	NA	2.86E-02	4.60E+01	1.32E+00	2.79E-02	1.35E+02	8.81E-03	2.41E+02	1.87E-02	1.41E+02	6.24E-05
BCEOT-E9-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	1.76E+02	2.52E+02	NA	NA	NA	NA	2.86E-02	2.80E+02	8.01E+00	2.79E-02	1.35E+02	5.36E-02	2.41E+02	1.87E-02	1.41E+02	3.80E-04
BCEOT-W9-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	2.19E+01	3.13E+01	NA	NA	NA	NA	2.86E-02	3.48E+01	9.96E-01	2.79E-02	1.35E+02	6.66E-03	2.41E+02	1.87E-02	1.41E+02	4.72E-05
BCEOT-E10-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	6.61E+01	9.47E+01	NA	NA	NA	NA	2.86E-02	1.05E+02	3.01E+00	2.79E-02	1.35E+02	2.02E-02	2.41E+02	1.87E-02	1.41E+02	1.43E-04
BCEOT-W10-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	3.49E+01	5.00E+01	NA	NA	NA	NA	2.86E-02	5.56E+01	1.59E+00	2.79E-02	1.35E+02	1.07E-02	2.41E+02	1.87E-02	1.41E+02	7.54E-05
BCEOT-E11-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	3.37E+01	4.83E+01	NA	NA	NA	NA	2.86E-02	5.37E+01	1.54E+00	2.79E-02	1.35E+02	1.03E-02	2.41E+02	1.87E-02	1.41E+02	7.28E-05
BCEOT-W11-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	3.96E+02	5.67E+02	NA	NA	NA	NA	2.86E-02	6.31E+02	1.81E+01	2.79E-02	1.35E+02	1.21E-01	2.41E+02	1.87E-02	1.41E+02	8.56E-04
BCEOT-E12-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	1.20E+02	1.72E+02	NA	NA	NA	NA	2.86E-02	1.92E+02	5.49E+00	2.79E-02	1.35E+02	3.67E-02	2.41E+02	1.87E-02	1.41E+02	2.60E-04
BCEOT-W12-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	4.77E+01	6.84E+01	NA	NA	NA	NA	2.86E-02	7.60E+01	2.18E+00	2.79E-02	1.35E+02	1.46E-02	2.41E+02	1.87E-02	1.41E+02	1.03E-04
BCEOT-E13-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	3.08E+01	4.42E+01	NA	NA	NA	NA	2.86E-02	4.91E+01	1.41E+00	2.79E-02	1.35E+02	9.41E-03	2.41E+02	1.87E-02	1.41E+02	6.66E-05
BCEOT-W13-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	5.24E+01	7.51E+01	NA	NA	NA	NA	2.86E-02	8.35E+01	2.39E+00	2.79E-02	1.35E+02	1.60E-02	2.41E+02	1.87E-02	1.41E+02	1.13E-04
BCEOT-E14-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	8.96E+01	1.28E+02	NA	NA	NA	NA	2.86E-02	1.43E+02	4.08E+00	2.79E-02	1.35E+02	2.73E-02	2.41E+02	1.87E-02	1.41E+02	1.93E-04
BCEOT-W14-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	2.49E+02	3.56E+02	NA	NA	NA	NA	2.86E-02	3.96E+02	1.13E+01	2.79E-02	1.35E+02	7.58E-02	2.41E+02	1.87E-02	1.41E+02	5.37E-04
BCEOT-E15-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	1.39E+02	1.99E+02	NA	NA	NA	NA	2.86E-02	2.21E+02	6.33E+00	2.79E-02	1.35E+02	4.24E-02	2.41E+02	1.87E-02	1.41E+02	3.00E-04
BCEOT-W15-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	3.30E+02	4.73E+02	NA	NA	NA	NA	2.86E-02	5.26E+02	1.51E+01	2.79E-02	1.35E+02	1.01E-01	2.41E+02	1.87E-02	1.41E+02	7.13E-04
BCEOT-E16-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	8.32E+01	1.19E+02	NA	NA	NA	NA	2.86E-02	1.32E+02	3.79E+00	2.79E-02	1.35E+02	2.54E-02	2.41E+02	1.87E-02	1.41E+02	1.80E-04
BCEOT-W16-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	6.43E+01	9.20E+01	NA	NA	NA	NA	2.86E-02	1.02E+02	2.93E+00	2.79E-02	1.35E+02	1.96E-02	2.41E+02	1.87E-02	1.41E+02	1.39E-04
BCEOT-E17-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	3.46E+02	4.95E+02	NA	NA	NA	NA	2.86E-02	5.51E+02	1.58E+01	2.79E-02	1.35E+02	1.06E-01	2.41E+02	1.87E-02	1.41E+02	7.47E-04
BCEOT-W17-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	1.75E+02	2.50E+02	NA	NA	NA	NA	2.86E-02	2.78E+02	7.96E+00	2.79E-02	1.35E+02	5.33E-02	2.41E+02	1.87E-02	1.41E+02	3.77E-04
BCEOT-E18-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	1.45E+02	2.08E+02	NA	NA	NA	NA	2.86E-02	2.31E+02	6.62E+00	2.79E-02	1.35E+02	4.43E-02	2.41E+02	1.87E-02	1.41E+02	3.14E-04
BCEOT-W18-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	4.43E+01	6.35E+01	NA	NA	NA	NA	2.86E-02	7.06E+01	2.02E+00	2.79E-02	1.35E+02	1.35E-02	2.41E+02	1.87E-02	1.41E+02	9.57E-05
BCEOT-E19-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	6.05E+01	8.67E+01	NA	NA	NA	NA	2.86E-02	9.64E+01	2.76E+00	2.79E-02	1.35E+02	1.85E-02	2.41E+02	1.87E-02	1.41E+02	1.31E-04
BCEOT-W19-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	9.88E+01	1.42E+02	NA	NA	NA	NA	2.86E-02	1.57E+02	4.50E+00	2.79E-02	1.35E+02	3.01E-02	2.41E+02	1.87E-02	1.41E+02	2.13E-04
BCEOT-E20-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	1.84E+01	2.63E+01	NA	NA	NA	NA	2.86E-02	2.92E+01	8.37E-01	2.79E-02	1.35E+02	5.60E-03	2.41E+02	1.87E-02	1.41E+02	3.97E-05
BCEOT-W20-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	5.19E+01	7.43E+01	NA	NA	NA	NA	2.86E-02	8.26E+01	2.36E+00	2.79E-02	1.35E+02	1.58E-02	2.41E+02	1.87E-02	1.41E+02	1.12E-04
BCEOT-E21-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	4.43E+02	6.34E+02	NA	NA	NA	NA	2.86E-02	7.05E+02	2.02E+01	2.79E-02	1.35E+02	1.35E-01	2.41E+02	1.87E-02	1.41E+02	9.57E-04
BCEOT-W21-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	8.43E+01	1.21E+02	NA	NA	NA	NA	2.86E-02	1.34E+02	3.84E+00	2.79E-02	1.35E+02	2.57E-02	2.41E+02	1.87E-02	1.41E+02	1.82E-04
BCEOT-E22-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	1.89E+02	2.70E+02	NA	NA	NA	NA	2.86E-02	3.00E+02	8.59E+00	2.79E-02	1.35E+02	5.75E-02	2.41E+02	1.87E-02	1.41E+02	4.07E-04
BCEOT-W22-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	7.99E+01	1.14E+02	NA	NA	NA	NA	2.86E-02	1.27E+02	3.64E+00	2.79E-02	1.35E+02	2.44E-02	2.41E+02	1.87E-02	1.41E+02	1.73E-04
BCEOT-E23-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	2.85E+01	4.09E+01	NA	NA	NA	NA	2.86E-02	4.54E+01	1.30E+00	2.79E-02	1.35E+02	8.70E-03	2.41E+02	1.87E-02	1.41E+02	6.16E-05
BCEOT-E7-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	2.69E+02	3.86E+02	NA	NA	NA	NA	2.86E-02	4.29E+02	1.23E+01	2.79E-02	1.35E+02	8.21E-02	2.41E+02	1.87E-02	1.41E+02	5.82E-04

TABLE C-11D: LEAD DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 11 - BEARTRAP CREEK DISPERSED TAILINGS DEPOSITS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK TAILINGS DEPOSITS AND FLOSSIE LOUISE MINE WASTE PILE (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 4.982

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
White-Tailed Deer (Large Herbivorous Mammal - Terrestrial)																							
BCEOT-W23-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	7.50E+01	1.07E+02	NA	NA	NA	NA	2.86E-02	1.19E+02	3.42E+00	2.79E-02	1.35E+02	2.29E-02	2.41E+02	1.87E-02	1.41E+02	1.62E-04
BCEOT-E24-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	7.04E+01	1.01E+02	NA	NA	NA	NA	2.86E-02	1.12E+02	3.21E+00	2.79E-02	1.35E+02	2.15E-02	2.41E+02	1.87E-02	1.41E+02	1.52E-04
BCEOT-W24-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	1.39E+02	1.99E+02	NA	NA	NA	NA	2.86E-02	2.21E+02	6.33E+00	2.79E-02	1.35E+02	4.24E-02	2.41E+02	1.87E-02	1.41E+02	3.00E-04
BCEOT-E25-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	1.07E+02	1.53E+02	NA	NA	NA	NA	2.86E-02	1.70E+02	4.88E+00	2.79E-02	1.35E+02	3.26E-02	2.41E+02	1.87E-02	1.41E+02	2.31E-04
BCEOT-W25-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	1.87E+02	2.67E+02	NA	NA	NA	NA	2.86E-02	2.97E+02	8.51E+00	2.79E-02	1.35E+02	5.69E-02	2.41E+02	1.87E-02	1.41E+02	4.03E-04
BCEOT-E26-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	1.59E+02	2.28E+02	NA	NA	NA	NA	2.86E-02	2.54E+02	7.26E+00	2.79E-02	1.35E+02	4.86E-02	2.41E+02	1.87E-02	1.41E+02	3.44E-04
BCEOT-W26-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	1.18E+02	1.69E+02	NA	NA	NA	NA	2.86E-02	1.88E+02	5.37E+00	2.79E-02	1.35E+02	3.59E-02	2.41E+02	1.87E-02	1.41E+02	2.54E-04
BCEOT-W27-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	1.46E+02	2.09E+02	NA	NA	NA	NA	2.86E-02	2.33E+02	6.67E+00	2.79E-02	1.35E+02	4.46E-02	2.41E+02	1.87E-02	1.41E+02	3.16E-04
Outside Tailings Piles																						**Maximum HQ (Edge of Tailings Pile)**	**1.24E-03**
BCEOT-E0+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	2.46E+02	3.52E+02	NA	NA	NA	NA	2.86E-02	3.91E+02	1.12E+01	2.79E-02	1.35E+02	7.49E-02	2.41E+02	1.87E-02	1.41E+02	5.30E-04
BCEOT-E1+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	3.51E+02	5.02E+02	NA	NA	NA	NA	2.86E-02	5.58E+02	1.60E+01	2.79E-02	1.35E+02	1.07E-01	2.41E+02	1.87E-02	1.41E+02	7.57E-04
BCEOT-E2+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	2.19E+02	3.14E+02	NA	NA	NA	NA	2.86E-02	3.49E+02	1.00E+01	2.79E-02	1.35E+02	6.69E-02	2.41E+02	1.87E-02	1.41E+02	4.74E-04
BCEOT-E3+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	6.81E+01	9.75E+01	NA	NA	NA	NA	2.86E-02	1.08E+02	3.10E+00	2.79E-02	1.35E+02	2.08E-02	2.41E+02	1.87E-02	1.41E+02	1.47E-04
BCEOT-E4+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	9.83E+01	1.41E+02	NA	NA	NA	NA	2.86E-02	1.56E+02	4.48E+00	2.79E-02	1.35E+02	3.00E-02	2.41E+02	1.87E-02	1.41E+02	2.12E-04
BCEOT-W4+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	1.17E+02	1.67E+02	NA	NA	NA	NA	2.86E-02	1.86E+02	5.33E+00	2.79E-02	1.35E+02	3.57E-02	2.41E+02	1.87E-02	1.41E+02	2.53E-04
BCEOT-E5+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	2.44E+02	3.49E+02	NA	NA	NA	NA	2.86E-02	3.89E+02	1.11E+01	2.79E-02	1.35E+02	7.44E-02	2.41E+02	1.87E-02	1.41E+02	5.27E-04
BCEOT-W5+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	3.06E+02	4.38E+02	NA	NA	NA	NA	2.86E-02	4.87E+02	1.40E+01	2.79E-02	1.35E+02	9.34E-02	2.41E+02	1.87E-02	1.41E+02	6.61E-04
BCEOT-E6+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	2.33E+02	3.33E+02	NA	NA	NA	NA	2.86E-02	3.70E+02	1.06E+01	2.79E-02	1.35E+02	7.09E-02	2.41E+02	1.87E-02	1.41E+02	5.02E-04
BCEOT-W6+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	4.94E+01	7.08E+01	NA	NA	NA	NA	2.86E-02	7.87E+01	2.25E+00	2.79E-02	1.35E+02	1.51E-02	2.41E+02	1.87E-02	1.41E+02	1.07E-04
BCEOT-E7+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	7.83E+01	1.12E+02	NA	NA	NA	NA	2.86E-02	1.25E+02	3.57E+00	2.79E-02	1.35E+02	2.39E-02	2.41E+02	1.87E-02	1.41E+02	1.69E-04
BCEOT-W7+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	2.56E+01	3.66E+01	NA	NA	NA	NA	2.86E-02	4.07E+01	1.16E+00	2.79E-02	1.35E+02	7.79E-03	2.41E+02	1.87E-02	1.41E+02	5.52E-05
BCEOT-W8+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	9.93E+01	1.42E+02	NA	NA	NA	NA	2.86E-02	1.58E+02	4.52E+00	2.79E-02	1.35E+02	3.03E-02	2.41E+02	1.87E-02	1.41E+02	2.14E-04
BCEOT-E9+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	3.25E+02	4.66E+02	NA	NA	NA	NA	2.86E-02	5.18E+02	1.48E+01	2.79E-02	1.35E+02	9.92E-02	2.41E+02	1.87E-02	1.41E+02	7.02E-04
BCEOT-W9+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	6.36E+01	9.10E+01	NA	NA	NA	NA	2.86E-02	1.01E+02	2.90E+00	2.79E-02	1.35E+02	1.94E-02	2.41E+02	1.87E-02	1.41E+02	1.37E-04
BCEOT-E10+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	2.58E+01	3.69E+01	NA	NA	NA	NA	2.86E-02	4.11E+01	1.18E+00	2.79E-02	1.35E+02	7.87E-03	2.41E+02	1.87E-02	1.41E+02	5.57E-05
BCEOT-W10+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	2.02E+01	2.89E+01	NA	NA	NA	NA	2.86E-02	3.21E+01	9.19E-01	2.79E-02	1.35E+02	6.15E-03	2.41E+02	1.87E-02	1.41E+02	4.35E-05
BCEOT-E11+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	2.30E+02	3.30E+02	NA	NA	NA	NA	2.86E-02	3.67E+02	1.05E+01	2.79E-02	1.35E+02	7.03E-02	2.41E+02	1.87E-02	1.41E+02	4.98E-04
BCEOT-W11+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	1.11E+02	1.59E+02	NA	NA	NA	NA	2.86E-02	1.77E+02	5.07E+00	2.79E-02	1.35E+02	3.39E-02	2.41E+02	1.87E-02	1.41E+02	2.40E-04
BCEOT-E12+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	1.52E+02	2.18E+02	NA	NA	NA	NA	2.86E-02	2.42E+02	6.93E+00	2.79E-02	1.35E+02	4.63E-02	2.41E+02	1.87E-02	1.41E+02	3.28E-04
BCEOT-W12+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	1.50E+01	2.14E+01	NA	NA	NA	NA	2.86E-02	2.38E+01	6.81E-01	2.79E-02	1.35E+02	4.56E-03	2.41E+02	1.87E-02	1.41E+02	3.23E-05
BCEOT-E13+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	2.32E+02	3.32E+02	NA	NA	NA	NA	2.86E-02	3.69E+02	1.06E+01	2.79E-02	1.35E+02	7.07E-02	2.41E+02	1.87E-02	1.41E+02	5.01E-04
BCEOT-E14+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	6.32E+01	9.05E+01	NA	NA	NA	NA	2.86E-02	1.01E+02	2.88E+00	2.79E-02	1.35E+02	1.93E-02	2.41E+02	1.87E-02	1.41E+02	1.36E-04
BCEOT-W14+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	2.53E+01	3.62E+01	NA	NA	NA	NA	2.86E-02	4.02E+01	1.15E+00	2.79E-02	1.35E+02	7.70E-03	2.41E+02	1.87E-02	1.41E+02	5.46E-05
BCEOT-E15+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	1.38E+02	1.98E+02	NA	NA	NA	NA	2.86E-02	2.20E+02	6.31E+00	2.79E-02	1.35E+02	4.22E-02	2.41E+02	1.87E-02	1.41E+02	2.99E-04
BCEOT-W15+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	1.18E+02	1.70E+02	NA	NA	NA	NA	2.86E-02	1.89E+02	5.40E+00	2.79E-02	1.35E+02	3.61E-02	2.41E+02	1.87E-02	1.41E+02	2.56E-04
BCEOT-E16+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	4.75E+01	6.79E+01	NA	NA	NA	NA	2.86E-02	7.55E+01	2.16E+00	2.79E-02	1.35E+02	1.45E-02	2.41E+02	1.87E-02	1.41E+02	1.02E-04
BCEOT-W16+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	1.78E+01	2.55E+01	NA	NA	NA	NA	2.86E-02	2.84E+01	8.12E-01	2.79E-02	1.35E+02	5.43E-03	2.41E+02	1.87E-02	1.41E+02	3.85E-05
BCEOT-E17+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	1.12E+02	1.60E+02	NA	NA	NA	NA	2.86E-02	1.78E+02	5.10E+00	2.79E-02	1.35E+02	3.41E-02	2.41E+02	1.87E-02	1.41E+02	2.42E-04
BCEOT-W17+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	6.28E+01	8.99E+01	NA	NA	NA	NA	2.86E-02	9.99E+01	2.86E+00	2.79E-02	1.35E+02	1.91E-02	2.41E+02	1.87E-02	1.41E+02	1.36E-04
BCEOT-E18+12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	9.87E+03	1.41E+04	NA	NA	NA	NA	2.86E-02	1.57E+04	4.50E+02	2.79E-02	1.35E+02	3.01E+00	2.41E+02	1.87E-02	1.41E+02	2.13E-02
BCEOT-E18+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	6.48E+01	9.27E+01	NA	NA	NA	NA	2.86E-02	1.03E+02	2.95E+00	2.79E-02	1.35E+02	1.98E-02	2.41E+02	1.87E-02	1.41E+02	1.40E-04
BCEOT-W18+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	5.51E+01	7.88E+01	NA	NA	NA	NA	2.86E-02	8.77E+01	2.51E+00	2.79E-02	1.35E+02	1.68E-02	2.41E+02	1.87E-02	1.41E+02	1.19E-04
BCEOT-E19+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	4.78E+01	6.84E+01	NA	NA	NA	NA	2.86E-02	7.60E+01	2.18E+00	2.79E-02	1.35E+02	1.46E-02	2.41E+02	1.87E-02	1.41E+02	1.03E-04
BCEOT-W19+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	4.62E+01	6.61E+01	NA	NA	NA	NA	2.86E-02	7.35E+01	2.11E+00	2.79E-02	1.35E+02	1.41E-02	2.41E+02	1.87E-02	1.41E+02	9.98E-05
BCEOT-E20+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	2.11E+01	3.03E+01	NA	NA	NA	NA	2.86E-02	3.37E+01	9.64E-01	2.79E-02	1.35E+02	6.45E-03	2.41E+02	1.87E-02	1.41E+02	4.57E-05
BCEOT-W20+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	4.85E+01	6.94E+01	NA	NA	NA	NA	2.86E-02	7.72E+01	2.21E+00	2.79E-02	1.35E+02	1.48E-02	2.41E+02	1.87E-02	1.41E+02	1.05E-04
BCEOT-E21+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	8.15E+01	1.17E+02	NA	NA	NA	NA	2.86E-02	1.30E+02	3.71E+00	2.79E-02	1.35E+02	2.49E-02	2.41E+02	1.87E-02	1.41E+02	1.76E-04
BCEOT-W21+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	5.73E+01	8.20E+01	NA	NA	NA	NA	2.86E-02	9.12E+01	2.61E+00	2.79E-02	1.35E+02	1.75E-02	2.41E+02	1.87E-02	1.41E+02	1.24E-04
BCEOT-E22+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	8.51E+02	1.22E+03	NA	NA	NA	NA	2.86E-02	1.35E+03	3.88E+01	2.79E-02	1.35E+02	2.60E-01	2.41E+02	1.87E-02	1.41E+02	1.84E-03
BCEOT-E22+70 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	1.57E+02	2.25E+02	NA	NA	NA	NA	2.86E-02	2.50E+02	7.16E+00	2.79E-02	1.35E+02	4.79E-02	2.41E+02	1.87E-02	1.41E+02	3.39E-04
BCEOT-W22+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	4.48E+01	6.41E+01	NA	NA	NA	NA	2.86E-02	7.13E+01	2.04E+00	2.79E-02	1.35E+02	1.37E-02	2.41E+02	1.87E-02	1.41E+02	9.67E-05
BCEOT-E23+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	3.10E+01	4.44E+01	NA	NA	NA	NA	2.86E-02	4.94E+01	1.41E+00	2.79E-02	1.35E+02	9.47E-03	2.41E+02	1.87E-02	1.41E+02	6.70E-05

TABLE C-11D: LEAD DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 11 - BEARTRAP CREEK DISPERSED TAILINGS DEPOSITS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK TAILINGS DEPOSITS AND FLOSSIE LOUISE MINE WASTE PILE (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 4.982

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
White-Tailed Deer (Large Herbivorous Mammal - Terrestrial)																							
BCEOT-W23+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	6.71E+01	9.61E+01	NA	NA	NA	NA	2.86E-02	1.07E+02	3.06E+00	2.79E-02	1.35E+02	2.05E-02	2.41E+02	1.87E-02	1.41E+02	1.45E-04
BCEOT-E24+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-W24+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	1.26E+02	1.80E+02	NA	NA	NA	NA	2.86E-02	2.00E+02	5.73E+00	2.79E-02	1.35E+02	3.83E-02	2.41E+02	1.87E-02	1.41E+02	2.71E-04
BCEOT-E25+20 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	2.45E+01	3.51E+01	NA	NA	NA	NA	2.86E-02	3.90E+01	1.12E+00	2.79E-02	1.35E+02	7.47E-03	2.41E+02	1.87E-02	1.41E+02	5.29E-05
BCEOT-W25+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	1.03E+02	1.48E+02	NA	NA	NA	NA	2.86E-02	1.64E+02	4.70E+00	2.79E-02	1.35E+02	3.15E-02	2.41E+02	1.87E-02	1.41E+02	2.23E-04
BCEOT-E26+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	3.30E+02	4.72E+02	NA	NA	NA	NA	2.86E-02	5.25E+02	1.50E+01	2.79E-02	1.35E+02	1.00E-01	2.41E+02	1.87E-02	1.41E+02	7.12E-04
BCEOT-W26+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	8.49E+01	1.22E+02	NA	NA	NA	NA	2.86E-02	1.35E+02	3.87E+00	2.79E-02	1.35E+02	2.59E-02	2.41E+02	1.87E-02	1.41E+02	1.83E-04
BCEOT-W27+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	6.28E-01	9.07E+01	1.30E+02	NA	NA	NA	NA	2.86E-02	1.44E+02	4.14E+00	2.79E-02	1.35E+02	2.77E-02	2.41E+02	1.87E-02	1.41E+02	1.96E-04
																						Maximum HQ (Outside Tailings Pile)	**2.13E-02**
Red Fox (Carnivorous Mammal - Terrestrial)																							
Reference Sites																							
ACBG-1 (0-6")	1.72E-01	1.72E-01	7.62E-02	1.76E+00	3.02E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.31E+01	1.11E-01	3.68E-03	4.54E+00	3.35E-04	2.41E+02	1.87E-02	1.73E+02	1.93E-06
ACBG-2 (0-6")	1.72E-01	1.72E-01	7.62E-02	2.92E+00	5.00E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.83E+01	1.84E-01	3.68E-03	4.54E+00	5.55E-04	2.41E+02	1.87E-02	1.73E+02	3.21E-06
BCBG-201 (0-6")	1.72E-01	1.72E-01	7.62E-02	7.27E+00	1.25E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	9.53E+01	4.58E-01	3.68E-03	4.54E+00	1.38E-03	2.41E+02	1.87E-02	1.73E+02	7.99E-06
Inside Tailings Pile																						**Minimum HQ (Reference Sites)**	**1.93E-06**
BCEOT-E0-12.5 (0-6")	1.72E-01	1.72E-01	9.28E-01	5.31E+02	9.11E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.72E+02	2.75E+00	3.68E-03	4.54E+00	7.62E-02	2.41E+02	1.87E-02	1.73E+02	4.40E-04
BCEOT-E1-12.5 (0-6")	1.72E-01	1.72E-01	9.28E-01	4.34E+02	7.44E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.68E+02	2.25E+00	3.68E-03	4.54E+00	6.22E-02	2.41E+02	1.87E-02	1.73E+02	3.59E-04
BCEOT-E2-8 (0-6")	1.72E-01	1.72E-01	9.28E-01	4.16E+02	7.14E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.48E+02	2.15E+00	3.68E-03	4.54E+00	5.97E-02	2.41E+02	1.87E-02	1.73E+02	3.45E-04
BCEOT-E3-8 (0-6")	1.72E-01	1.72E-01	9.28E-01	3.49E+02	5.99E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.76E+02	1.81E+00	3.68E-03	4.54E+00	5.00E-02	2.41E+02	1.87E-02	1.73E+02	2.89E-04
BCEOT-E4-12.5 (0-6")	1.72E-01	1.72E-01	9.28E-01	3.76E+02	6.44E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.05E+02	1.94E+00	3.68E-03	4.54E+00	5.39E-02	2.41E+02	1.87E-02	1.73E+02	3.11E-04
BCEOT-W4-12.5 (0-6")	1.72E-01	1.72E-01	9.28E-01	3.93E+02	6.74E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.24E+02	2.03E+00	3.68E-03	4.54E+00	5.64E-02	2.41E+02	1.87E-02	1.73E+02	3.26E-04
BCEOT-E5-25 (0-6")	1.72E-01	1.72E-01	9.28E-01	1.22E+02	2.09E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.32E+02	6.32E-01	3.68E-03	4.54E+00	1.75E-02	2.41E+02	1.87E-02	1.73E+02	1.01E-04
BCEOT-W5-12.5 (0-6")	1.72E-01	1.72E-01	9.28E-01	1.53E+03	2.62E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.64E+03	7.90E+00	3.68E-03	4.54E+00	2.19E-01	2.41E+02	1.87E-02	1.73E+02	1.26E-03
BCEOT-E6-12.5 (0-6")	1.72E-01	1.72E-01	9.28E-01	3.25E+02	5.58E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.51E+02	1.69E+00	3.68E-03	4.54E+00	4.67E-02	2.41E+02	1.87E-02	1.73E+02	2.70E-04
BCEOT-W6-12.5 (0-6")	1.72E-01	1.72E-01	9.28E-01	1.05E+02	1.80E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.13E+02	5.44E-01	3.68E-03	4.54E+00	1.51E-02	2.41E+02	1.87E-02	1.73E+02	8.70E-05
BCEOT-E7-12.5 (0-6")	1.72E-01	1.72E-01	9.28E-01	1.12E+02	1.92E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.21E+02	5.79E-01	3.68E-03	4.54E+00	1.60E-02	2.41E+02	1.87E-02	1.73E+02	9.27E-05
BCEOT-W7-12.5 (0-6")	1.72E-01	1.72E-01	9.28E-01	5.75E+02	9.86E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	6.20E+02	2.98E+00	3.68E-03	4.54E+00	8.24E-02	2.41E+02	1.87E-02	1.73E+02	4.76E-04
BCEOT-W8-12.5 (0-6")	1.72E-01	1.72E-01	9.28E-01	2.14E+03	3.67E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.31E+03	1.11E+01	3.68E-03	4.54E+00	3.07E-01	2.41E+02	1.87E-02	1.73E+02	1.77E-03
BCEOT-E9-12.5 (0-6")	1.72E-01	1.72E-01	9.28E-01	6.64E+02	1.14E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	7.16E+02	3.44E+00	3.68E-03	4.54E+00	9.52E-02	2.41E+02	1.87E-02	1.73E+02	5.50E-04
BCEOT-W9-12.5 (0-6")	1.72E-01	1.72E-01	9.28E-01	7.82E+02	1.34E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	8.43E+02	4.05E+00	3.68E-03	4.54E+00	1.12E-01	2.41E+02	1.87E-02	1.73E+02	6.48E-04
BCEOT-E10-12.5 (0-6")	1.72E-01	1.72E-01	9.28E-01	8.54E+01	1.46E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	9.20E+01	4.42E-01	3.68E-03	4.54E+00	1.22E-02	2.41E+02	1.87E-02	1.73E+02	7.07E-05
BCEOT-W10-12.5 (0-6")	1.72E-01	1.72E-01	9.28E-01	9.38E+02	1.61E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.01E+03	4.86E+00	3.68E-03	4.54E+00	1.35E-01	2.41E+02	1.87E-02	1.73E+02	7.77E-04
BCEOT-E11-12.5 (0-6")	1.72E-01	1.72E-01	9.28E-01	3.24E+02	5.56E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.49E+02	1.68E+00	3.68E-03	4.54E+00	4.65E-02	2.41E+02	1.87E-02	1.73E+02	2.69E-04
BCEOT-W11-12.5 (0-6")	1.72E-01	1.72E-01	9.28E-01	6.62E+02	1.14E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	7.14E+02	3.43E+00	3.68E-03	4.54E+00	9.50E-02	2.41E+02	1.87E-02	1.73E+02	5.49E-04
BCEOT-E12-12.5 (0-6")	1.72E-01	1.72E-01	9.28E-01	2.21E+02	3.79E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.38E+02	1.14E+00	3.68E-03	4.54E+00	3.16E-02	2.41E+02	1.87E-02	1.73E+02	1.83E-04
BCEOT-W12-12.5 (0-6")	1.72E-01	1.72E-01	9.28E-01	1.92E+03	3.29E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.07E+03	9.93E+00	3.68E-03	4.54E+00	2.75E-01	2.41E+02	1.87E-02	1.73E+02	1.59E-03
BCEOT-E13-12.5 (0-6")	1.72E-01	1.72E-01	9.28E-01	5.75E+02	9.86E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	6.19E+02	2.97E+00	3.68E-03	4.54E+00	8.24E-02	2.41E+02	1.87E-02	1.73E+02	4.76E-04
BCEOT-W13-12.5 (0-6")	1.72E-01	1.72E-01	9.28E-01	1.96E+03	3.36E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.11E+03	1.01E+01	3.68E-03	4.54E+00	2.81E-01	2.41E+02	1.87E-02	1.73E+02	1.62E-03
BCEOT-W13-25 (0-6")	1.72E-01	1.72E-01	9.28E-01	5.04E+01	8.65E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.44E+01	2.61E-01	3.68E-03	4.54E+00	7.23E-03	2.41E+02	1.87E-02	1.73E+02	4.18E-05
BCEOT-W14-12.5 (0-6")	1.72E-01	1.72E-01	9.28E-01	2.66E+02	4.57E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.87E+02	1.38E+00	3.68E-03	4.54E+00	3.82E-02	2.41E+02	1.87E-02	1.73E+02	2.21E-04
BCEOT-E15-8 (0-6")	1.72E-01	1.72E-01	9.28E-01	5.15E+02	8.83E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.55E+02	2.66E+00	3.68E-03	4.54E+00	7.38E-02	2.41E+02	1.87E-02	1.73E+02	4.26E-04
BCEOT-W15-12.5 (0-6")	1.72E-01	1.72E-01	9.28E-01	1.17E+03	2.01E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.26E+03	6.06E+00	3.68E-03	4.54E+00	1.68E-01	2.41E+02	1.87E-02	1.73E+02	9.70E-04
BCEOT-E16-12.5 (0-6")	1.72E-01	1.72E-01	9.28E-01	3.11E+03	5.34E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.35E+03	1.61E+01	3.68E-03	4.54E+00	4.46E-01	2.41E+02	1.87E-02	1.73E+02	2.58E-03
BCEOT-W16-12.5 (0-6")	1.72E-01	1.72E-01	9.28E-01	1.17E+03	2.01E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.26E+03	6.05E+00	3.68E-03	4.54E+00	1.68E-01	2.41E+02	1.87E-02	1.73E+02	9.69E-04
BCEOT-E17-12.5 (0-6")	1.72E-01	1.72E-01	9.28E-01	1.62E+04	2.77E+03	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.74E+04	8.37E+01	3.68E-03	4.54E+00	2.32E+00	2.41E+02	1.87E-02	1.73E+02	1.34E-02
BCEOT-W17-12.5 (0-6")	1.72E-01	1.72E-01	9.28E-01	6.13E+02	1.05E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	6.61E+02	3.17E+00	3.68E-03	4.54E+00	8.79E-02	2.41E+02	1.87E-02	1.73E+02	5.08E-04
BCEOT-W18-12.5 (0-6")	1.72E-01	1.72E-01	9.28E-01	2.14E+03	3.68E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.31E+03	1.11E+01	3.68E-03	4.54E+00	3.07E-01	2.41E+02	1.87E-02	1.73E+02	1.78E-03
BCEOT-E19-12.5 (0-6")	1.72E-01	1.72E-01	9.28E-01	1.09E+03	1.87E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.18E+03	5.65E+00	3.68E-03	4.54E+00	1.56E-01	2.41E+02	1.87E-02	1.73E+02	9.04E-04
BCEOT-W19-12.5 (0-6")	1.72E-01	1.72E-01	9.28E-01	3.15E+02	5.41E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.40E+02	1.63E+00	3.68E-03	4.54E+00	4.52E-02	2.41E+02	1.87E-02	1.73E+02	2.61E-04
BCEOT-E20-12.5 (0-6")	1.72E-01	1.72E-01	9.28E-01	1.60E+03	2.74E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.72E+03	8.26E+00	3.68E-03	4.54E+00	2.29E-01	2.41E+02	1.87E-02	1.73E+02	1.32E-03
BCEOT-W20-12.5 (0-6")	1.72E-01	1.72E-01	9.28E-01	1.46E+03	2.51E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.58E+03	7.57E+00	3.68E-03	4.54E+00	2.10E-01	2.41E+02	1.87E-02	1.73E+02	1.21E-03
BCEOT-E21-12.5 (0-6")	1.72E-01	1.72E-01	9.28E-01	1.48E+03	2.54E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.60E+03	7.67E+00	3.68E-03	4.54E+00	2.12E-01	2.41E+02	1.87E-02	1.73E+02	1.23E-03
BCEOT-W21-12.5 (0-6")	1.72E-01	1.72E-01	9.28E-01	1.03E+03	1.77E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.11E+03	5.34E+00	3.68E-03	4.54E+00	1.48E-01	2.41E+02	1.87E-02	1.73E+02	8.54E-04
BCEOT-E22-12.5 (0-6")	1.72E-01	1.72E-01	9.28E-01	1.90E+03	3.25E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.04E+03	9.82E+00	3.68E-03	4.54E+00	2.72E-01	2.41E+02	1.87E-02	1.73E+02	1.57E-03

TABLE C-11D: LEAD DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 11 - BEARTRAP CREEK DISPERSED TAILINGS DEPOSITS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK TAILINGS DEPOSITS AND FLOSSIE LOUISE MINE WASTE PILE (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 4.982

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Red Fox (Carnivorous Mammal - Terrestrial)																							
BCEOT-W22-12.5 (0-6")	1.72E-01	1.72E-01	9.28E-01	3.24E+03	5.55E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.49E+03	1.67E+01	3.68E-03	4.54E+00	4.64E-01	2.41E+02	1.87E-02	1.73E+02	2.68E-03
BCEOT-E23-15 (0-6")	1.72E-01	1.72E-01	9.28E-01	2.67E+02	4.58E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.87E+02	1.38E+00	3.68E-03	4.54E+00	3.82E-02	2.41E+02	1.87E-02	1.73E+02	2.21E-04
BCEOT-W23-12.5 (0-6")	1.72E-01	1.72E-01	9.28E-01	2.19E+03	3.76E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.36E+03	1.14E+01	3.68E-03	4.54E+00	3.14E-01	2.41E+02	1.87E-02	1.73E+02	1.82E-03
BCEOT-E24-12.5 (0-6")	1.72E-01	1.72E-01	9.28E-01	1.16E+02	2.00E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.25E+02	6.02E-01	3.68E-03	4.54E+00	1.67E-02	2.41E+02	1.87E-02	1.73E+02	9.64E-05
BCEOT-W24-12.5 (0-6")	1.72E-01	1.72E-01	9.28E-01	1.50E+03	2.57E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.62E+03	7.76E+00	3.68E-03	4.54E+00	2.15E-01	2.41E+02	1.87E-02	1.73E+02	1.24E-03
BCEOT-E25-12.5 (0-6")	1.72E-01	1.72E-01	9.28E-01	1.34E+03	2.30E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.44E+03	6.93E+00	3.68E-03	4.54E+00	1.92E-01	2.41E+02	1.87E-02	1.73E+02	1.11E-03
BCEOT-W25-12.5 (0-6")	1.72E-01	1.72E-01	9.28E-01	1.18E+03	2.03E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.28E+03	6.13E+00	3.68E-03	4.54E+00	1.70E-01	2.41E+02	1.87E-02	1.73E+02	9.81E-04
BCEOT-E26-12.5 (0-6")	1.72E-01	1.72E-01	9.28E-01	6.10E+02	1.05E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	6.58E+02	3.16E+00	3.68E-03	4.54E+00	8.75E-02	2.41E+02	1.87E-02	1.73E+02	5.06E-04
BCEOT-W26-12.5 (0-6")	1.72E-01	1.72E-01	9.28E-01	9.59E+02	1.64E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.03E+03	4.96E+00	3.68E-03	4.54E+00	1.37E-01	2.41E+02	1.87E-02	1.73E+02	7.94E-04
BCEOT-W27-12.5 (0-6")	1.72E-01	1.72E-01	9.28E-01	1.13E+03	1.95E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.22E+03	5.87E+00	3.68E-03	4.54E+00	1.63E-01	2.41E+02	1.87E-02	1.73E+02	9.40E-04
At Edge of Tailings Pile																						**Maximum HQ (Inside Tailings Pile)**	**1.34E-02**
BCEOT-E0-0 (0-6")	1.72E-01	1.72E-01	9.28E-01	6.85E+02	1.17E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	7.38E+02	3.55E+00	3.68E-03	4.54E+00	9.82E-02	2.41E+02	1.87E-02	1.73E+02	5.67E-04
BCEOT-E1-0 (0-6")	1.72E-01	1.72E-01	9.28E-01	7.77E+01	1.33E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	8.38E+01	4.02E-01	3.68E-03	4.54E+00	1.11E-02	2.41E+02	1.87E-02	1.73E+02	6.44E-05
BCEOT-E2-0 (0-6")	1.72E-01	1.72E-01	9.28E-01	8.48E+02	1.46E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	9.14E+02	4.39E+00	3.68E-03	4.54E+00	1.22E-01	2.41E+02	1.87E-02	1.73E+02	7.03E-04
BCEOT-E3-0 (0-6")	1.72E-01	1.72E-01	9.28E-01	1.70E+02	2.92E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.83E+02	8.81E-01	3.68E-03	4.54E+00	2.44E-02	2.41E+02	1.87E-02	1.73E+02	1.41E-04
BCEOT-E4-0 (0-6")	1.72E-01	1.72E-01	9.28E-01	1.26E+02	2.17E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.36E+02	6.54E-01	3.68E-03	4.54E+00	1.81E-02	2.41E+02	1.87E-02	1.73E+02	1.05E-04
BCEOT-W4-0 (0-6")	1.72E-01	1.72E-01	9.28E-01	8.94E+01	1.53E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	9.64E+01	4.63E-01	3.68E-03	4.54E+00	1.28E-02	2.41E+02	1.87E-02	1.73E+02	7.41E-05
BCEOT-E5-0 (0-6")	1.72E-01	1.72E-01	9.28E-01	5.07E+02	8.70E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.47E+02	2.63E+00	3.68E-03	4.54E+00	7.27E-02	2.41E+02	1.87E-02	1.73E+02	4.20E-04
BCEOT-W5-0 (0-6")	1.72E-01	1.72E-01	9.28E-01	5.71E+02	9.79E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	6.15E+02	2.96E+00	3.68E-03	4.54E+00	8.19E-02	2.41E+02	1.87E-02	1.73E+02	4.73E-04
BCEOT-E6-0 (0-6")	1.72E-01	1.72E-01	9.28E-01	2.74E+02	4.69E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.95E+02	1.42E+00	3.68E-03	4.54E+00	3.92E-02	2.41E+02	1.87E-02	1.73E+02	2.27E-04
BCEOT-W6-0 (0-6")	1.72E-01	1.72E-01	9.28E-01	1.02E+02	1.75E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.10E+02	5.28E-01	3.68E-03	4.54E+00	1.46E-02	2.41E+02	1.87E-02	1.73E+02	8.44E-05
BCEOT-E7-0 (0-6")	1.72E-01	1.72E-01	9.28E-01	3.98E+02	6.82E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.29E+02	2.06E+00	3.68E-03	4.54E+00	5.70E-02	2.41E+02	1.87E-02	1.73E+02	3.30E-04
BCEOT-W7-0 (0-6")	1.72E-01	1.72E-01	9.28E-01	2.14E+02	3.67E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.31E+02	1.11E+00	3.68E-03	4.54E+00	3.07E-02	2.41E+02	1.87E-02	1.73E+02	1.77E-04
BCEOT-W8-0 (0-6")	1.72E-01	1.72E-01	9.28E-01	4.27E+01	7.32E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.60E+01	2.21E-01	3.68E-03	4.54E+00	6.12E-03	2.41E+02	1.87E-02	1.73E+02	3.53E-05
BCEOT-E9-0 (0-6")	1.72E-01	1.72E-01	9.28E-01	2.60E+02	4.45E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.80E+02	1.34E+00	3.68E-03	4.54E+00	3.72E-02	2.41E+02	1.87E-02	1.73E+02	2.15E-04
BCEOT-W9-0 (0-6")	1.72E-01	1.72E-01	9.28E-01	3.23E+01	5.54E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.48E+01	1.67E-01	3.68E-03	4.54E+00	4.63E-03	2.41E+02	1.87E-02	1.73E+02	2.67E-05
BCEOT-E10-0 (0-6")	1.72E-01	1.72E-01	9.28E-01	9.77E+01	1.68E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.05E+02	5.06E-01	3.68E-03	4.54E+00	1.40E-02	2.41E+02	1.87E-02	1.73E+02	8.09E-05
BCEOT-W10-0 (0-6")	1.72E-01	1.72E-01	9.28E-01	5.16E+01	8.85E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.56E+01	2.67E-01	3.68E-03	4.54E+00	7.40E-03	2.41E+02	1.87E-02	1.73E+02	4.27E-05
BCEOT-E11-0 (0-6")	1.72E-01	1.72E-01	9.28E-01	4.98E+01	8.54E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.37E+01	2.58E-01	3.68E-03	4.54E+00	7.14E-03	2.41E+02	1.87E-02	1.73E+02	4.13E-05
BCEOT-W11-0 (0-6")	1.72E-01	1.72E-01	9.28E-01	5.85E+02	1.00E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	6.31E+02	3.03E+00	3.68E-03	4.54E+00	8.39E-02	2.41E+02	1.87E-02	1.73E+02	4.85E-04
BCEOT-E12-0 (0-6")	1.72E-01	1.72E-01	9.28E-01	1.78E+02	3.05E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.92E+02	9.20E-01	3.68E-03	4.54E+00	2.55E-02	2.41E+02	1.87E-02	1.73E+02	1.47E-04
BCEOT-W12-0 (0-6")	1.72E-01	1.72E-01	9.28E-01	7.05E+01	1.21E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	7.60E+01	3.65E-01	3.68E-03	4.54E+00	1.01E-02	2.41E+02	1.87E-02	1.73E+02	5.84E-05
BCEOT-E13-0 (0-6")	1.72E-01	1.72E-01	9.28E-01	4.56E+01	7.82E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.91E+01	2.36E-01	3.68E-03	4.54E+00	6.53E-03	2.41E+02	1.87E-02	1.73E+02	3.77E-05
BCEOT-W13-0 (0-6")	1.72E-01	1.72E-01	9.28E-01	7.74E+01	1.33E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	8.35E+01	4.01E-01	3.68E-03	4.54E+00	1.11E-02	2.41E+02	1.87E-02	1.73E+02	6.41E-05
BCEOT-E14-0 (0-6")	1.72E-01	1.72E-01	9.28E-01	1.32E+02	2.27E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.43E+02	6.85E-01	3.68E-03	4.54E+00	1.90E-02	2.41E+02	1.87E-02	1.73E+02	1.10E-04
BCEOT-W14-0 (0-6")	1.72E-01	1.72E-01	9.28E-01	3.67E+02	6.30E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.96E+02	1.90E+00	3.68E-03	4.54E+00	5.26E-02	2.41E+02	1.87E-02	1.73E+02	3.04E-04
BCEOT-E15-0 (0-6")	1.72E-01	1.72E-01	9.28E-01	2.05E+02	3.52E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.21E+02	1.06E+00	3.68E-03	4.54E+00	2.94E-02	2.41E+02	1.87E-02	1.73E+02	1.70E-04
BCEOT-W15-0 (0-6")	1.72E-01	1.72E-01	9.28E-01	4.88E+02	8.37E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.26E+02	2.53E+00	3.68E-03	4.54E+00	6.99E-02	2.41E+02	1.87E-02	1.73E+02	4.04E-04
BCEOT-E16-0 (0-6")	1.72E-01	1.72E-01	9.28E-01	1.23E+02	2.11E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.32E+02	6.36E-01	3.68E-03	4.54E+00	1.76E-02	2.41E+02	1.87E-02	1.73E+02	1.02E-04
BCEOT-W16-0 (0-6")	1.72E-01	1.72E-01	9.28E-01	9.50E+01	1.63E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.02E+02	4.92E-01	3.68E-03	4.54E+00	1.36E-02	2.41E+02	1.87E-02	1.73E+02	7.87E-05
BCEOT-E17-0 (0-6")	1.72E-01	1.72E-01	9.28E-01	5.11E+02	8.77E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.51E+02	2.65E+00	3.68E-03	4.54E+00	7.33E-02	2.41E+02	1.87E-02	1.73E+02	4.23E-04
BCEOT-W17-0 (0-6")	1.72E-01	1.72E-01	9.28E-01	2.58E+02	4.43E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.78E+02	1.34E+00	3.68E-03	4.54E+00	3.70E-02	2.41E+02	1.87E-02	1.73E+02	2.14E-04
BCEOT-E18-0 (0-6")	1.72E-01	1.72E-01	9.28E-01	2.14E+02	3.68E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.31E+02	1.11E+00	3.68E-03	4.54E+00	3.08E-02	2.41E+02	1.87E-02	1.73E+02	1.78E-04
BCEOT-W18-0 (0-6")	1.72E-01	1.72E-01	9.28E-01	6.55E+01	1.12E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	7.06E+01	3.39E-01	3.68E-03	4.54E+00	9.39E-03	2.41E+02	1.87E-02	1.73E+02	5.42E-05
BCEOT-E19-0 (0-6")	1.72E-01	1.72E-01	9.28E-01	8.94E+01	1.53E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	9.64E+01	4.63E-01	3.68E-03	4.54E+00	1.28E-02	2.41E+02	1.87E-02	1.73E+02	7.41E-05
BCEOT-W19-0 (0-6")	1.72E-01	1.72E-01	9.28E-01	1.46E+02	2.50E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.57E+02	7.56E-01	3.68E-03	4.54E+00	2.09E-02	2.41E+02	1.87E-02	1.73E+02	1.21E-04
BCEOT-E20-0 (0-6")	1.72E-01	1.72E-01	9.28E-01	2.71E+01	4.65E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.92E+01	1.40E-01	3.68E-03	4.54E+00	3.89E-03	2.41E+02	1.87E-02	1.73E+02	2.25E-05
BCEOT-W20-0 (0-6")	1.72E-01	1.72E-01	9.28E-01	7.66E+01	1.31E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	8.26E+01	3.97E-01	3.68E-03	4.54E+00	1.10E-02	2.41E+02	1.87E-02	1.73E+02	6.35E-05
BCEOT-E21-0 (0-6")	1.72E-01	1.72E-01	9.28E-01	6.54E+02	1.12E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	7.05E+02	3.39E+00	3.68E-03	4.54E+00	9.38E-02	2.41E+02	1.87E-02	1.73E+02	5.42E-04
BCEOT-W21-0 (0-6")	1.72E-01	1.72E-01	9.28E-01	1.24E+02	2.14E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.34E+02	6.44E-01	3.68E-03	4.54E+00	1.78E-02	2.41E+02	1.87E-02	1.73E+02	1.03E-04
BCEOT-E22-0 (0-6")	1.72E-01	1.72E-01	9.28E-01	2.78E+02	4.78E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.00E+02	1.44E+00	3.68E-03	4.54E+00	3.99E-02	2.41E+02	1.87E-02	1.73E+02	2.31E-04
BCEOT-W22-0 (0-6")	1.72E-01	1.72E-01	9.28E-01	1.18E+02	2.03E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.27E+02	6.11E-01	3.68E-03	4.54E+00	1.69E-02	2.41E+02	1.87E-02	1.73E+02	9.78E-05
BCEOT-E23-0 (0-6")	1.72E-01	1.72E-01	9.28E-01	4.21E+01	7.23E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.54E+01	2.18E-01	3.68E-03	4.54E+00	6.04E-03	2.41E+02	1.87E-02	1.73E+02	3.49E-05

TABLE C-11D: LEAD DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 11 - BEARTRAP CREEK DISPERSED TAILINGS DEPOSITS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK TAILINGS DEPOSITS AND FLOSSIE LOUISE MINE WASTE PILE (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 4.982

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Red Fox (Carnivorous Mammal - Terrestrial)																							
BCEOT-W23-0 (0-6")	1.72E-01	1.72E-01	9.28E-01	1.11E+02	1.90E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.19E+02	5.74E-01	3.68E-03	4.54E+00	1.59E-02	2.41E+02	1.87E-02	1.73E+02	9.18E-05
BCEOT-E24-0 (0-6")	1.72E-01	1.72E-01	9.28E-01	1.04E+02	1.78E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.12E+02	5.38E-01	3.68E-03	4.54E+00	1.49E-02	2.41E+02	1.87E-02	1.73E+02	8.62E-05
BCEOT-W24-0 (0-6")	1.72E-01	1.72E-01	9.28E-01	2.05E+02	3.52E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.21E+02	1.06E+00	3.68E-03	4.54E+00	2.94E-02	2.41E+02	1.87E-02	1.73E+02	1.70E-04
BCEOT-E25-0 (0-6")	1.72E-01	1.72E-01	9.28E-01	1.58E+02	2.71E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.70E+02	8.18E-01	3.68E-03	4.54E+00	2.27E-02	2.41E+02	1.87E-02	1.73E+02	1.31E-04
BCEOT-W25-0 (0-6")	1.72E-01	1.72E-01	9.28E-01	2.76E+02	4.73E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.97E+02	1.43E+00	3.68E-03	4.54E+00	3.95E-02	2.41E+02	1.87E-02	1.73E+02	2.28E-04
BCEOT-E26-0 (0-6")	1.72E-01	1.72E-01	9.28E-01	2.35E+02	4.04E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.54E+02	1.22E+00	3.68E-03	4.54E+00	3.37E-02	2.41E+02	1.87E-02	1.73E+02	1.95E-04
BCEOT-W26-0 (0-6")	1.72E-01	1.72E-01	9.28E-01	1.74E+02	2.98E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.88E+02	9.01E-01	3.68E-03	4.54E+00	2.49E-02	2.41E+02	1.87E-02	1.73E+02	1.44E-04
BCEOT-W27-0 (0-6")	1.72E-01	1.72E-01	9.28E-01	2.16E+02	3.71E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.33E+02	1.12E+00	3.68E-03	4.54E+00	3.10E-02	2.41E+02	1.87E-02	1.73E+02	1.79E-04
Outside Tailings Piles																						**Maximum HQ (Edge of Tailings Pile)**	**7.03E-04**
BCEOT-E0+25 (0-6")	1.72E-01	1.72E-01	9.28E-01	3.63E+02	6.22E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.91E+02	1.88E+00	3.68E-03	4.54E+00	5.20E-02	2.41E+02	1.87E-02	1.73E+02	3.00E-04
BCEOT-E1+25 (0-6")	1.72E-01	1.72E-01	9.28E-01	5.18E+02	8.88E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.58E+02	2.68E+00	3.68E-03	4.54E+00	7.43E-02	2.41E+02	1.87E-02	1.73E+02	4.29E-04
BCEOT-E2+25 (0-6")	1.72E-01	1.72E-01	9.28E-01	3.24E+02	5.56E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.49E+02	1.68E+00	3.68E-03	4.54E+00	4.64E-02	2.41E+02	1.87E-02	1.73E+02	2.68E-04
BCEOT-E3+25 (0-6")	1.72E-01	1.72E-01	9.28E-01	1.01E+02	1.72E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.08E+02	5.21E-01	3.68E-03	4.54E+00	1.44E-02	2.41E+02	1.87E-02	1.73E+02	8.33E-05
BCEOT-E4+25 (0-6")	1.72E-01	1.72E-01	9.28E-01	1.45E+02	2.49E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.56E+02	7.51E-01	3.68E-03	4.54E+00	2.08E-02	2.41E+02	1.87E-02	1.73E+02	1.20E-04
BCEOT-W4+25 (0-6")	1.72E-01	1.72E-01	9.28E-01	1.73E+02	2.96E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.86E+02	8.94E-01	3.68E-03	4.54E+00	2.48E-02	2.41E+02	1.87E-02	1.73E+02	1.43E-04
BCEOT-E5+25 (0-6")	1.72E-01	1.72E-01	9.28E-01	3.61E+02	6.18E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.89E+02	1.87E+00	3.68E-03	4.54E+00	5.17E-02	2.41E+02	1.87E-02	1.73E+02	2.99E-04
BCEOT-W5+25 (0-6")	1.72E-01	1.72E-01	9.28E-01	4.52E+02	7.76E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.87E+02	2.34E+00	3.68E-03	4.54E+00	6.49E-02	2.41E+02	1.87E-02	1.73E+02	3.75E-04
BCEOT-E6+25 (0-6")	1.72E-01	1.72E-01	9.28E-01	3.43E+02	5.89E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.70E+02	1.78E+00	3.68E-03	4.54E+00	4.93E-02	2.41E+02	1.87E-02	1.73E+02	2.85E-04
BCEOT-W6+25 (0-6")	1.72E-01	1.72E-01	9.28E-01	7.30E+01	1.25E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	7.87E+01	3.78E-01	3.68E-03	4.54E+00	1.05E-02	2.41E+02	1.87E-02	1.73E+02	6.05E-05
BCEOT-E7+25 (0-6")	1.72E-01	1.72E-01	9.28E-01	1.16E+02	1.98E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.25E+02	5.99E-01	3.68E-03	4.54E+00	1.66E-02	2.41E+02	1.87E-02	1.73E+02	9.58E-05
BCEOT-W7+25 (0-6")	1.72E-01	1.72E-01	9.28E-01	3.77E+01	6.47E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.07E+01	1.95E-01	3.68E-03	4.54E+00	5.41E-03	2.41E+02	1.87E-02	1.73E+02	3.13E-05
FLWA-101 (0-6")	1.72E-01	1.72E-01	9.28E-01	1.73E+03	2.97E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.87E+03	8.96E+00	3.68E-03	4.54E+00	2.48E-01	2.41E+02	1.87E-02	1.73E+02	1.43E-03
BCEOT-W8+25 (0-6")	1.72E-01	1.72E-01	9.28E-01	1.47E+02	2.52E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.58E+02	7.59E-01	3.68E-03	4.54E+00	2.10E-02	2.41E+02	1.87E-02	1.73E+02	1.21E-04
BCEOT-E9+25 (0-6")	1.72E-01	1.72E-01	9.28E-01	4.80E+02	8.24E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.18E+02	2.49E+00	3.68E-03	4.54E+00	6.89E-02	2.41E+02	1.87E-02	1.73E+02	3.98E-04
BCEOT-W9+25 (0-6")	1.72E-01	1.72E-01	9.28E-01	9.39E+01	1.61E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.01E+02	4.86E-01	3.68E-03	4.54E+00	1.35E-02	2.41E+02	1.87E-02	1.73E+02	7.78E-05
BCEOT-E10+25 (0-6")	1.72E-01	1.72E-01	9.28E-01	3.81E+01	6.54E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.11E+01	1.97E-01	3.68E-03	4.54E+00	5.47E-03	2.41E+02	1.87E-02	1.73E+02	3.16E-05
BCEOT-W10+25 (0-6")	1.72E-01	1.72E-01	9.28E-01	2.98E+01	5.11E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.21E+01	1.54E-01	3.68E-03	4.54E+00	4.27E-03	2.41E+02	1.87E-02	1.73E+02	2.47E-05
BCEOT-E11+25 (0-6")	1.72E-01	1.72E-01	9.28E-01	3.40E+02	5.84E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.67E+02	1.76E+00	3.68E-03	4.54E+00	4.88E-02	2.41E+02	1.87E-02	1.73E+02	2.82E-04
BCEOT-W11+25 (0-6")	1.72E-01	1.72E-01	9.28E-01	1.64E+02	2.82E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.77E+02	8.51E-01	3.68E-03	4.54E+00	2.36E-02	2.41E+02	1.87E-02	1.73E+02	1.36E-04
BCEOT-E12+25 (0-6")	1.72E-01	1.72E-01	9.28E-01	2.24E+02	3.85E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.42E+02	1.16E+00	3.68E-03	4.54E+00	3.22E-02	2.41E+02	1.87E-02	1.73E+02	1.86E-04
BCEOT-W12+25 (0-6")	1.72E-01	1.72E-01	9.28E-01	2.21E+01	3.79E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.38E+01	1.14E-01	3.68E-03	4.54E+00	3.17E-03	2.41E+02	1.87E-02	1.73E+02	1.83E-05
BCEOT-E13+25 (0-6")	1.72E-01	1.72E-01	9.28E-01	3.42E+02	5.88E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.69E+02	1.77E+00	3.68E-03	4.54E+00	4.91E-02	2.41E+02	1.87E-02	1.73E+02	2.84E-04
BCEOT-E14+25 (0-6")	1.72E-01	1.72E-01	9.28E-01	9.33E+01	1.60E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.01E+02	4.83E-01	3.68E-03	4.54E+00	1.34E-02	2.41E+02	1.87E-02	1.73E+02	7.73E-05
BCEOT-W14+25 (0-6")	1.72E-01	1.72E-01	9.28E-01	3.73E+01	6.40E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.02E+01	1.93E-01	3.68E-03	4.54E+00	5.35E-03	2.41E+02	1.87E-02	1.73E+02	3.09E-05
BCEOT-E15+25 (0-6")	1.72E-01	1.72E-01	9.28E-01	2.04E+02	3.51E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.20E+02	1.06E+00	3.68E-03	4.54E+00	2.93E-02	2.41E+02	1.87E-02	1.73E+02	1.69E-04
BCEOT-W15+25 (0-6")	1.72E-01	1.72E-01	9.28E-01	1.75E+02	3.00E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.89E+02	9.05E-01	3.68E-03	4.54E+00	2.51E-02	2.41E+02	1.87E-02	1.73E+02	1.45E-04
BCEOT-E16+25 (0-6")	1.72E-01	1.72E-01	9.28E-01	7.01E+01	1.20E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	7.55E+01	3.63E-01	3.68E-03	4.54E+00	1.00E-02	2.41E+02	1.87E-02	1.73E+02	5.81E-05
BCEOT-W16+25 (0-6")	1.72E-01	1.72E-01	9.28E-01	2.63E+01	4.51E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.84E+01	1.36E-01	3.68E-03	4.54E+00	3.77E-03	2.41E+02	1.87E-02	1.73E+02	2.18E-05
BCEOT-E17+25 (0-6")	1.72E-01	1.72E-01	9.28E-01	1.65E+02	2.83E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.78E+02	8.55E-01	3.68E-03	4.54E+00	2.37E-02	2.41E+02	1.87E-02	1.73E+02	1.37E-04
BCEOT-W17+25 (0-6")	1.72E-01	1.72E-01	9.28E-01	9.27E+01	1.59E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	9.99E+01	4.80E-01	3.68E-03	4.54E+00	1.33E-02	2.41E+02	1.87E-02	1.73E+02	7.68E-05
BCEOT-E18+12.5 (0-6")	1.72E-01	1.72E-01	9.28E-01	1.46E+04	2.50E+03	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.57E+04	7.55E+01	3.68E-03	4.54E+00	2.09E+00	2.41E+02	1.87E-02	1.73E+02	1.21E-02
BCEOT-E18+25 (0-6")	1.72E-01	1.72E-01	9.28E-01	9.57E+01	1.64E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.03E+02	4.95E-01	3.68E-03	4.54E+00	1.37E-02	2.41E+02	1.87E-02	1.73E+02	7.93E-05
BCEOT-W18+25 (0-6")	1.72E-01	1.72E-01	9.28E-01	8.13E+01	1.40E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	8.77E+01	4.21E-01	3.68E-03	4.54E+00	1.17E-02	2.41E+02	1.87E-02	1.73E+02	6.74E-05
BCEOT-E19+25 (0-6")	1.72E-01	1.72E-01	9.28E-01	7.05E+01	1.21E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	7.60E+01	3.65E-01	3.68E-03	4.54E+00	1.01E-02	2.41E+02	1.87E-02	1.73E+02	5.84E-05
BCEOT-W19+25 (0-6")	1.72E-01	1.72E-01	9.28E-01	6.82E+01	1.17E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	7.35E+01	3.53E-01	3.68E-03	4.54E+00	9.78E-03	2.41E+02	1.87E-02	1.73E+02	5.65E-05
BCEOT-E20+25 (0-6")	1.72E-01	1.72E-01	9.28E-01	3.12E+01	5.36E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.37E+01	1.62E-01	3.68E-03	4.54E+00	4.48E-03	2.41E+02	1.87E-02	1.73E+02	2.59E-05
BCEOT-W20+25 (0-6")	1.72E-01	1.72E-01	9.28E-01	7.16E+01	1.23E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	7.72E+01	3.71E-01	3.68E-03	4.54E+00	1.03E-02	2.41E+02	1.87E-02	1.73E+02	5.93E-05
BCEOT-E21+25 (0-6")	1.72E-01	1.72E-01	9.28E-01	1.20E+02	2.06E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.30E+02	6.23E-01	3.68E-03	4.54E+00	1.73E-02	2.41E+02	1.87E-02	1.73E+02	9.97E-05
BCEOT-W21+25 (0-6")	1.72E-01	1.72E-01	9.28E-01	8.46E+01	1.45E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	9.12E+01	4.38E-01	3.68E-03	4.54E+00	1.21E-02	2.41E+02	1.87E-02	1.73E+02	7.01E-05
BCEOT-E22+25 (0-6")	1.72E-01	1.72E-01	9.28E-01	1.26E+03	2.16E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.35E+03	6.51E+00	3.68E-03	4.54E+00	1.80E-01	2.41E+02	1.87E-02	1.73E+02	1.04E-03
BCEOT-E22+70 (0-6")	1.72E-01	1.72E-01	9.28E-01	2.32E+02	3.98E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.50E+02	1.20E+00	3.68E-03	4.54E+00	3.33E-02	2.41E+02	1.87E-02	1.73E+02	1.92E-04
BCEOT-W22+25 (0-6")	1.72E-01	1.72E-01	9.28E-01	6.61E+01	1.13E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	7.13E+01	3.42E-01	3.68E-03	4.54E+00	9.48E-03	2.41E+02	1.87E-02	1.73E+02	5.48E-05
BCEOT-E23+25 (0-6")	1.72E-01	1.72E-01	9.28E-01	4.58E+01	7.86E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.94E+01	2.37E-01	3.68E-03	4.54E+00	6.57E-03	2.41E+02	1.87E-02	1.73E+02	3.80E-05

TABLE C-11D: LEAD DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 11 - BEARTRAP CREEK DISPERSED TAILINGS DEPOSITS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK TAILINGS DEPOSITS AND FLOSSIE LOUISE MINE WASTE PILE (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

Site Area (hectares) 4.982

from dose parameters tables | calculated values | from BAF table | linked to soil or sed concentration table (VLOOKUP) | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Red Fox (Carnivorous Mammal - Terrestrial)																							
BCEOT-W23+25 (0-6")	1.72E-01	1.72E-01	9.28E-01	9.91E+01	1.70E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.07E+02	5.13E-01	3.68E-03	4.54E+00	1.42E-02	2.41E+02	1.87E-02	1.73E+02	8.21E-05
BCEOT-E24+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-W24+25 (0-6")	1.72E-01	1.72E-01	9.28E-01	1.86E+02	3.18E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.00E+02	9.61E-01	3.68E-03	4.54E+00	2.66E-02	2.41E+02	1.87E-02	1.73E+02	1.54E-04
BCEOT-E25+20 (0-6")	1.72E-01	1.72E-01	9.28E-01	3.62E+01	6.20E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.90E+01	1.87E-01	3.68E-03	4.54E+00	5.18E-03	2.41E+02	1.87E-02	1.73E+02	3.00E-05
BCEOT-W25+25 (0-6")	1.72E-01	1.72E-01	9.28E-01	1.52E+02	2.61E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.64E+02	7.89E-01	3.68E-03	4.54E+00	2.18E-02	2.41E+02	1.87E-02	1.73E+02	1.26E-04
BCEOT-E26+25 (0-6")	1.72E-01	1.72E-01	9.28E-01	4.87E+02	8.35E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.25E+02	2.52E+00	3.68E-03	4.54E+00	6.98E-02	2.41E+02	1.87E-02	1.73E+02	4.03E-04
BCEOT-W26+25 (0-6")	1.72E-01	1.72E-01	9.28E-01	1.25E+02	2.15E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.35E+02	6.49E-01	3.68E-03	4.54E+00	1.80E-02	2.41E+02	1.87E-02	1.73E+02	1.04E-04
BCEOT-W27+25 (0-6")	1.72E-01	1.72E-01	9.28E-01	1.34E+02	2.30E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.44E+02	6.94E-01	3.68E-03	4.54E+00	1.92E-02	2.41E+02	1.87E-02	1.73E+02	1.11E-04
																						Maximum HQ (Outside Tailings Pile)	**1.21E-02**
Masked Shrew (Omnivorous Mammal - Terrestrial, Wetland)																							
Reference Sites																							
ACBG-1 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	3.58E+01	3.04E-01	1.10E-03	2.31E+01	2.54E-02	1.00E+00	5.50E-03	5.98E+01	2.41E+02	1.87E-02	2.59E+02	2.31E-01
ACBG-2 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	5.94E+01	5.03E-01	1.10E-03	3.83E+01	4.21E-02	1.00E+00	5.50E-03	9.91E+01	2.41E+02	1.87E-02	2.59E+02	3.83E-01
BCBG-201 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.48E+02	1.25E+00	1.10E-03	9.53E+01	1.05E-01	1.00E+00	5.50E-03	2.47E+02	2.41E+02	1.87E-02	2.59E+02	9.54E-01
Inside Tailings Pile																						**Minimum HQ (Reference Sites)**	**2.31E-01**
BCEOT-E0-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	8.88E+02	7.52E+00	1.10E-03	5.72E+02	6.30E-01	1.00E+00	5.50E-03	1.48E+03	2.41E+02	1.87E-02	2.59E+02	5.73E+00
BCEOT-E1-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	7.26E+02	6.15E+00	1.10E-03	4.68E+02	5.15E-01	1.00E+00	5.50E-03	1.21E+03	2.41E+02	1.87E-02	2.59E+02	4.68E+00
BCEOT-E2-8 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	6.96E+02	5.90E+00	1.10E-03	4.48E+02	4.94E-01	1.00E+00	5.50E-03	1.16E+03	2.41E+02	1.87E-02	2.59E+02	4.49E+00
BCEOT-E3-8 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	5.84E+02	4.95E+00	1.10E-03	3.76E+02	4.14E-01	1.00E+00	5.50E-03	9.74E+02	2.41E+02	1.87E-02	2.59E+02	3.76E+00
BCEOT-E4-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	6.28E+02	5.32E+00	1.10E-03	4.05E+02	4.46E-01	1.00E+00	5.50E-03	1.05E+03	2.41E+02	1.87E-02	2.59E+02	4.05E+00
BCEOT-W4-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	6.57E+02	5.57E+00	1.10E-03	4.24E+02	4.66E-01	1.00E+00	5.50E-03	1.10E+03	2.41E+02	1.87E-02	2.59E+02	4.24E+00
BCEOT-W5-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	2.55E+03	2.16E+01	1.10E-03	1.64E+03	1.81E+00	1.00E+00	5.50E-03	4.26E+03	2.41E+02	1.87E-02	2.59E+02	1.65E+01
BCEOT-E6-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	5.44E+02	4.61E+00	1.10E-03	3.51E+02	3.86E-01	1.00E+00	5.50E-03	9.09E+02	2.41E+02	1.87E-02	2.59E+02	3.51E+00
BCEOT-W6-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.76E+02	1.49E+00	1.10E-03	1.13E+02	1.25E-01	1.00E+00	5.50E-03	2.93E+02	2.41E+02	1.87E-02	2.59E+02	1.13E+00
BCEOT-E7-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.87E+02	1.58E+00	1.10E-03	1.21E+02	1.33E-01	1.00E+00	5.50E-03	3.12E+02	2.41E+02	1.87E-02	2.59E+02	1.21E+00
BCEOT-W7-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	9.62E+02	8.15E+00	1.10E-03	6.20E+02	6.82E-01	1.00E+00	5.50E-03	1.61E+03	2.41E+02	1.87E-02	2.59E+02	6.20E+00
BCEOT-W8-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	3.58E+03	3.03E+01	1.10E-03	2.31E+03	2.54E+00	1.00E+00	5.50E-03	5.98E+03	2.41E+02	1.87E-02	2.59E+02	2.31E+01
BCEOT-E9-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.11E+03	9.41E+00	1.10E-03	7.16E+02	7.88E-01	1.00E+00	5.50E-03	1.85E+03	2.41E+02	1.87E-02	2.59E+02	7.16E+00
BCEOT-W9-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.31E+03	1.11E+01	1.10E-03	8.43E+02	9.28E-01	1.00E+00	5.50E-03	2.18E+03	2.41E+02	1.87E-02	2.59E+02	8.43E+00
BCEOT-E10-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.43E+02	1.21E+00	1.10E-03	9.20E+01	1.01E-01	1.00E+00	5.50E-03	2.38E+02	2.41E+02	1.87E-02	2.59E+02	9.20E-01
BCEOT-W10-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.57E+03	1.33E+01	1.10E-03	1.01E+03	1.11E+00	1.00E+00	5.50E-03	2.62E+03	2.41E+02	1.87E-02	2.59E+02	1.01E+01
BCEOT-E11-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	5.42E+02	4.59E+00	1.10E-03	3.49E+02	3.85E-01	1.00E+00	5.50E-03	9.05E+02	2.41E+02	1.87E-02	2.59E+02	3.49E+00
BCEOT-W11-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.11E+03	9.38E+00	1.10E-03	7.14E+02	7.86E-01	1.00E+00	5.50E-03	1.85E+03	2.41E+02	1.87E-02	2.59E+02	7.14E+00
BCEOT-E12-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	3.69E+02	3.13E+00	1.10E-03	2.38E+02	2.62E-01	1.00E+00	5.50E-03	6.16E+02	2.41E+02	1.87E-02	2.59E+02	2.38E+00
BCEOT-W12-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	3.21E+03	2.72E+01	1.10E-03	2.07E+03	2.28E+00	1.00E+00	5.50E-03	5.36E+03	2.41E+02	1.87E-02	2.59E+02	2.07E+01
BCEOT-E13-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	9.61E+02	8.14E+00	1.10E-03	6.19E+02	6.82E-01	1.00E+00	5.50E-03	1.60E+03	2.41E+02	1.87E-02	2.59E+02	6.19E+00
BCEOT-W13-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	3.28E+03	2.78E+01	1.10E-03	2.11E+03	2.33E+00	1.00E+00	5.50E-03	5.47E+03	2.41E+02	1.87E-02	2.59E+02	2.11E+01
BCEOT-W13-25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	8.44E+01	7.14E-01	1.10E-03	5.44E+01	5.98E-02	1.00E+00	5.50E-03	1.41E+02	2.41E+02	1.87E-02	2.59E+02	5.44E-01
BCEOT-W14-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	4.45E+02	3.77E+00	1.10E-03	2.87E+02	3.16E-01	1.00E+00	5.50E-03	7.43E+02	2.41E+02	1.87E-02	2.59E+02	2.87E+00
BCEOT-E15-8 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	8.61E+02	7.29E+00	1.10E-03	5.55E+02	6.11E-01	1.00E+00	5.50E-03	1.44E+03	2.41E+02	1.87E-02	2.59E+02	5.55E+00
BCEOT-W15-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.96E+03	1.66E+01	1.10E-03	1.26E+03	1.39E+00	1.00E+00	5.50E-03	3.27E+03	2.41E+02	1.87E-02	2.59E+02	1.26E+01
BCEOT-E16-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	5.20E+03	4.41E+01	1.10E-03	3.35E+03	3.69E+00	1.00E+00	5.50E-03	8.69E+03	2.41E+02	1.87E-02	2.59E+02	3.35E+01
BCEOT-W16-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.96E+03	1.66E+01	1.10E-03	1.26E+03	1.39E+00	1.00E+00	5.50E-03	3.26E+03	2.41E+02	1.87E-02	2.59E+02	1.26E+01
BCEOT-E17-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	2.71E+04	2.29E+02	1.10E-03	1.74E+04	1.92E+01	1.00E+00	5.50E-03	4.52E+04	2.41E+02	1.87E-02	2.59E+02	1.74E+02
BCEOT-W17-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.03E+03	8.69E+00	1.10E-03	6.61E+02	7.28E-01	1.00E+00	5.50E-03	1.71E+03	2.41E+02	1.87E-02	2.59E+02	6.61E+00
BCEOT-W18-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	3.58E+03	3.04E+01	1.10E-03	2.31E+03	2.54E+00	1.00E+00	5.50E-03	5.98E+03	2.41E+02	1.87E-02	2.59E+02	2.31E+01
BCEOT-E19-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.82E+03	1.55E+01	1.10E-03	1.18E+03	1.29E+00	1.00E+00	5.50E-03	3.05E+03	2.41E+02	1.87E-02	2.59E+02	1.18E+01
BCEOT-W19-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	5.27E+02	4.47E+00	1.10E-03	3.40E+02	3.74E-01	1.00E+00	5.50E-03	8.80E+02	2.41E+02	1.87E-02	2.59E+02	3.40E+00
BCEOT-E20-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	2.67E+03	2.26E+01	1.10E-03	1.72E+03	1.89E+00	1.00E+00	5.50E-03	4.46E+03	2.41E+02	1.87E-02	2.59E+02	1.72E+01
BCEOT-W20-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	2.45E+03	2.07E+01	1.10E-03	1.58E+03	1.74E+00	1.00E+00	5.50E-03	4.08E+03	2.41E+02	1.87E-02	2.59E+02	1.58E+01
BCEOT-E21-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	2.48E+03	2.10E+01	1.10E-03	1.60E+03	1.76E+00	1.00E+00	5.50E-03	4.13E+03	2.41E+02	1.87E-02	2.59E+02	1.60E+01
BCEOT-W21-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.72E+03	1.46E+01	1.10E-03	1.11E+03	1.22E+00	1.00E+00	5.50E-03	2.88E+03	2.41E+02	1.87E-02	2.59E+02	1.11E+01
BCEOT-E22-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	3.17E+03	2.69E+01	1.10E-03	2.04E+03	2.25E+00	1.00E+00	5.50E-03	5.30E+03	2.41E+02	1.87E-02	2.59E+02	2.04E+01

TABLE C-11D: LEAD DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 11 - BEARTRAP CREEK DISPERSED TAILINGS DEPOSITS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK TAILINGS DEPOSITS AND FLOSSIE LOUISE MINE WASTE PILE (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 4.982

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Masked Shrew (Omnivorous Mammal - Terrestrial, Wetland)																							
BCEOT-W22-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	5.41E+03	4.58E+01	1.10E-03	3.49E+03	3.84E+00	1.00E+00	5.50E-03	9.03E+03	2.41E+02	1.87E-02	2.59E+02	3.49E+01
BCEOT-E23-15 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	4.46E+02	3.78E+00	1.10E-03	2.87E+02	3.17E-01	1.00E+00	5.50E-03	7.45E+02	2.41E+02	1.87E-02	2.59E+02	2.88E+00
BCEOT-W23-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	3.67E+03	3.11E+01	1.10E-03	2.36E+03	2.60E+00	1.00E+00	5.50E-03	6.12E+03	2.41E+02	1.87E-02	2.59E+02	2.36E+01
BCEOT-E24-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.95E+02	1.65E+00	1.10E-03	1.25E+02	1.38E-01	1.00E+00	5.50E-03	3.25E+02	2.41E+02	1.87E-02	2.59E+02	1.25E+00
BCEOT-W24-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	2.51E+03	2.12E+01	1.10E-03	1.62E+03	1.78E+00	1.00E+00	5.50E-03	4.18E+03	2.41E+02	1.87E-02	2.59E+02	1.62E+01
BCEOT-E25-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	2.24E+03	1.90E+01	1.10E-03	1.44E+03	1.59E+00	1.00E+00	5.50E-03	3.74E+03	2.41E+02	1.87E-02	2.59E+02	1.44E+01
BCEOT-W25-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.98E+03	1.68E+01	1.10E-03	1.28E+03	1.41E+00	1.00E+00	5.50E-03	3.31E+03	2.41E+02	1.87E-02	2.59E+02	1.28E+01
BCEOT-E26-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.02E+03	8.65E+00	1.10E-03	6.58E+02	7.24E-01	1.00E+00	5.50E-03	1.70E+03	2.41E+02	1.87E-02	2.59E+02	6.58E+00
BCEOT-W26-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.60E+03	1.36E+01	1.10E-03	1.03E+03	1.14E+00	1.00E+00	5.50E-03	2.68E+03	2.41E+02	1.87E-02	2.59E+02	1.03E+01
BCEOT-W27-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.90E+03	1.61E+01	1.10E-03	1.22E+03	1.35E+00	1.00E+00	5.50E-03	3.17E+03	2.41E+02	1.87E-02	2.59E+02	1.22E+01
At Edge of Tailings Pile																						**Maximum HQ (Inside Tailings Pile)**	**1.74E+02**
BCEOT-E0-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.15E+03	9.70E+00	1.10E-03	7.38E+02	8.13E-01	1.00E+00	5.50E-03	1.91E+03	2.41E+02	1.87E-02	2.59E+02	7.38E+00
BCEOT-E1-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.30E+02	1.10E+00	1.10E-03	8.38E+01	9.22E-02	1.00E+00	5.50E-03	2.17E+02	2.41E+02	1.87E-02	2.59E+02	8.38E-01
BCEOT-E2-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.42E+03	1.20E+01	1.10E-03	9.14E+02	1.01E+00	1.00E+00	5.50E-03	2.37E+03	2.41E+02	1.87E-02	2.59E+02	9.15E+00
BCEOT-E3-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	2.85E+02	2.41E+00	1.10E-03	1.83E+02	2.02E-01	1.00E+00	5.50E-03	4.75E+02	2.41E+02	1.87E-02	2.59E+02	1.83E+00
BCEOT-E4-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	2.11E+02	1.79E+00	1.10E-03	1.36E+02	1.50E-01	1.00E+00	5.50E-03	3.52E+02	2.41E+02	1.87E-02	2.59E+02	1.36E+00
BCEOT-W4-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.50E+02	1.27E+00	1.10E-03	9.64E+01	1.06E-01	1.00E+00	5.50E-03	2.50E+02	2.41E+02	1.87E-02	2.59E+02	9.64E-01
BCEOT-E5-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	8.48E+02	7.19E+00	1.10E-03	5.47E+02	6.02E-01	1.00E+00	5.50E-03	1.42E+03	2.41E+02	1.87E-02	2.59E+02	5.47E+00
BCEOT-W5-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	9.55E+02	8.09E+00	1.10E-03	6.15E+02	6.77E-01	1.00E+00	5.50E-03	1.59E+03	2.41E+02	1.87E-02	2.59E+02	6.15E+00
BCEOT-E6-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	4.58E+02	3.88E+00	1.10E-03	2.95E+02	3.25E-01	1.00E+00	5.50E-03	7.64E+02	2.41E+02	1.87E-02	2.59E+02	2.95E+00
BCEOT-W6-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.70E+02	1.44E+00	1.10E-03	1.10E+02	1.21E-01	1.00E+00	5.50E-03	2.85E+02	2.41E+02	1.87E-02	2.59E+02	1.10E+00
BCEOT-W7-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	3.58E+02	3.03E+00	1.10E-03	2.31E+02	2.54E-01	1.00E+00	5.50E-03	5.98E+02	2.41E+02	1.87E-02	2.59E+02	2.31E+00
BCEOT-W8-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	7.13E+01	6.04E-01	1.10E-03	4.60E+01	5.06E-02	1.00E+00	5.50E-03	1.19E+02	2.41E+02	1.87E-02	2.59E+02	4.60E-01
BCEOT-E9-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	4.34E+02	3.68E+00	1.10E-03	2.80E+02	3.08E-01	1.00E+00	5.50E-03	7.25E+02	2.41E+02	1.87E-02	2.59E+02	2.80E+00
BCEOT-W9-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	5.40E+01	4.57E-01	1.10E-03	3.48E+01	3.83E-02	1.00E+00	5.50E-03	9.01E+01	2.41E+02	1.87E-02	2.59E+02	3.48E-01
BCEOT-E10-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.63E+02	1.38E+00	1.10E-03	1.05E+02	1.16E-01	1.00E+00	5.50E-03	2.73E+02	2.41E+02	1.87E-02	2.59E+02	1.05E+00
BCEOT-W10-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	8.63E+01	7.31E-01	1.10E-03	5.56E+01	6.12E-02	1.00E+00	5.50E-03	1.44E+02	2.41E+02	1.87E-02	2.59E+02	5.56E-01
BCEOT-E11-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	8.33E+01	7.06E-01	1.10E-03	5.37E+01	5.91E-02	1.00E+00	5.50E-03	1.39E+02	2.41E+02	1.87E-02	2.59E+02	5.37E-01
BCEOT-W11-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	9.79E+02	8.29E+00	1.10E-03	6.31E+02	6.95E-01	1.00E+00	5.50E-03	1.63E+03	2.41E+02	1.87E-02	2.59E+02	6.31E+00
BCEOT-E12-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	2.97E+02	2.52E+00	1.10E-03	1.92E+02	2.11E-01	1.00E+00	5.50E-03	4.96E+02	2.41E+02	1.87E-02	2.59E+02	1.92E+00
BCEOT-W12-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.18E+02	9.99E-01	1.10E-03	7.60E+01	8.37E-02	1.00E+00	5.50E-03	1.97E+02	2.41E+02	1.87E-02	2.59E+02	7.60E-01
BCEOT-E13-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	7.62E+01	6.45E-01	1.10E-03	4.91E+01	5.41E-02	1.00E+00	5.50E-03	1.27E+02	2.41E+02	1.87E-02	2.59E+02	4.91E-01
BCEOT-W13-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.30E+02	1.10E+00	1.10E-03	8.35E+01	9.19E-02	1.00E+00	5.50E-03	2.16E+02	2.41E+02	1.87E-02	2.59E+02	8.35E-01
BCEOT-E14-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	2.21E+02	1.87E+00	1.10E-03	1.43E+02	1.57E-01	1.00E+00	5.50E-03	3.69E+02	2.41E+02	1.87E-02	2.59E+02	1.43E+00
BCEOT-W14-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	6.14E+02	5.20E+00	1.10E-03	3.96E+02	4.36E-01	1.00E+00	5.50E-03	1.03E+03	2.41E+02	1.87E-02	2.59E+02	3.96E+00
BCEOT-E15-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	3.43E+02	2.91E+00	1.10E-03	2.21E+02	2.43E-01	1.00E+00	5.50E-03	5.73E+02	2.41E+02	1.87E-02	2.59E+02	2.21E+00
BCEOT-W15-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	8.16E+02	6.91E+00	1.10E-03	5.26E+02	5.79E-01	1.00E+00	5.50E-03	1.36E+03	2.41E+02	1.87E-02	2.59E+02	5.26E+00
BCEOT-E16-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	2.05E+02	1.74E+00	1.10E-03	1.32E+02	1.46E-01	1.00E+00	5.50E-03	3.43E+02	2.41E+02	1.87E-02	2.59E+02	1.32E+00
BCEOT-W16-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.59E+02	1.35E+00	1.10E-03	1.02E+02	1.13E-01	1.00E+00	5.50E-03	2.65E+02	2.41E+02	1.87E-02	2.59E+02	1.02E+00
BCEOT-E17-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	8.55E+02	7.24E+00	1.10E-03	5.51E+02	6.06E-01	1.00E+00	5.50E-03	1.43E+03	2.41E+02	1.87E-02	2.59E+02	5.51E+00
BCEOT-W17-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	4.32E+02	3.66E+00	1.10E-03	2.78E+02	3.06E-01	1.00E+00	5.50E-03	7.21E+02	2.41E+02	1.87E-02	2.59E+02	2.78E+00
BCEOT-E18-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	3.59E+02	3.04E+00	1.10E-03	2.31E+02	2.55E-01	1.00E+00	5.50E-03	5.99E+02	2.41E+02	1.87E-02	2.59E+02	2.31E+00
BCEOT-W18-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.09E+02	9.27E-01	1.10E-03	7.06E+01	7.77E-02	1.00E+00	5.50E-03	1.83E+02	2.41E+02	1.87E-02	2.59E+02	7.06E-01
BCEOT-E19-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.50E+02	1.27E+00	1.10E-03	9.64E+01	1.06E-01	1.00E+00	5.50E-03	2.50E+02	2.41E+02	1.87E-02	2.59E+02	9.64E-01
BCEOT-W19-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	2.44E+02	2.07E+00	1.10E-03	1.57E+02	1.73E-01	1.00E+00	5.50E-03	4.08E+02	2.41E+02	1.87E-02	2.59E+02	1.57E+00
BCEOT-E20-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	4.54E+01	3.84E-01	1.10E-03	2.92E+01	3.22E-02	1.00E+00	5.50E-03	7.57E+01	2.41E+02	1.87E-02	2.59E+02	2.92E-01
BCEOT-W20-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.28E+02	1.09E+00	1.10E-03	8.26E+01	9.09E-02	1.00E+00	5.50E-03	2.14E+02	2.41E+02	1.87E-02	2.59E+02	8.26E-01
BCEOT-E21-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.09E+03	9.27E+00	1.10E-03	7.05E+02	7.76E-01	1.00E+00	5.50E-03	1.83E+03	2.41E+02	1.87E-02	2.59E+02	7.05E+00
BCEOT-W21-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	2.08E+02	1.76E+00	1.10E-03	1.34E+02	1.48E-01	1.00E+00	5.50E-03	3.47E+02	2.41E+02	1.87E-02	2.59E+02	1.34E+00
BCEOT-E22-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	4.66E+02	3.95E+00	1.10E-03	3.00E+02	3.30E-01	1.00E+00	5.50E-03	7.77E+02	2.41E+02	1.87E-02	2.59E+02	3.00E+00
BCEOT-W22-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.97E+02	1.67E+00	1.10E-03	1.27E+02	1.40E-01	1.00E+00	5.50E-03	3.30E+02	2.41E+02	1.87E-02	2.59E+02	1.27E+00
BCEOT-E23-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	7.05E+01	5.97E-01	1.10E-03	4.54E+01	5.00E-02	1.00E+00	5.50E-03	1.18E+02	2.41E+02	1.87E-02	2.59E+02	4.54E-01
BCEOT-E7-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	6.65E+02	5.64E+00	1.10E-03	4.29E+02	4.72E-01	1.00E+00	5.50E-03	1.11E+03	2.41E+02	1.87E-02	2.59E+02	4.29E+00

TABLE C-11D: LEAD DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 11 - BEARTRAP CREEK DISPERSED TAILINGS DEPOSITS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK TAILINGS DEPOSITS AND FLOSSIE LOUISE MINE WASTE PILE (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 4.982

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Masked Shrew (Omnivorous Mammal - Terrestrial, Wetland)																							
BCEOT-W23-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.85E+02	1.57E+00	1.10E-03	1.19E+02	1.32E-01	1.00E+00	5.50E-03	3.09E+02	2.41E+02	1.87E-02	2.59E+02	1.19E+00
BCEOT-E24-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.74E+02	1.47E+00	1.10E-03	1.12E+02	1.23E-01	1.00E+00	5.50E-03	2.90E+02	2.41E+02	1.87E-02	2.59E+02	1.12E+00
BCEOT-W24-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	3.43E+02	2.91E+00	1.10E-03	2.21E+02	2.43E-01	1.00E+00	5.50E-03	5.73E+02	2.41E+02	1.87E-02	2.59E+02	2.21E+00
BCEOT-E25-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	2.64E+02	2.24E+00	1.10E-03	1.70E+02	1.88E-01	1.00E+00	5.50E-03	4.41E+02	2.41E+02	1.87E-02	2.59E+02	1.70E+00
BCEOT-W25-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	4.61E+02	3.91E+00	1.10E-03	2.97E+02	3.27E-01	1.00E+00	5.50E-03	7.70E+02	2.41E+02	1.87E-02	2.59E+02	2.97E+00
BCEOT-E26-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	3.94E+02	3.33E+00	1.10E-03	2.54E+02	2.79E-01	1.00E+00	5.50E-03	6.57E+02	2.41E+02	1.87E-02	2.59E+02	2.54E+00
BCEOT-W26-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	2.91E+02	2.46E+00	1.10E-03	1.88E+02	2.06E-01	1.00E+00	5.50E-03	4.86E+02	2.41E+02	1.87E-02	2.59E+02	1.88E+00
BCEOT-W27-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	3.61E+02	3.06E+00	1.10E-03	2.33E+02	2.56E-01	1.00E+00	5.50E-03	6.03E+02	2.41E+02	1.87E-02	2.59E+02	2.33E+00
Outside Tailings Piles																						**Maximum HQ (Edge of Tailings Pile)**	**9.15E+00**
BCEOT-E0+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	6.07E+02	5.14E+00	1.10E-03	3.91E+02	4.30E-01	1.00E+00	5.50E-03	1.01E+03	2.41E+02	1.87E-02	2.59E+02	3.91E+00
BCEOT-E1+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	8.66E+02	7.34E+00	1.10E-03	5.58E+02	6.15E-01	1.00E+00	5.50E-03	1.45E+03	2.41E+02	1.87E-02	2.59E+02	5.58E+00
BCEOT-E2+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	5.42E+02	4.59E+00	1.10E-03	3.49E+02	3.84E-01	1.00E+00	5.50E-03	9.04E+02	2.41E+02	1.87E-02	2.59E+02	3.49E+00
BCEOT-E3+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.68E+02	1.42E+00	1.10E-03	1.08E+02	1.19E-01	1.00E+00	5.50E-03	2.81E+02	2.41E+02	1.87E-02	2.59E+02	1.08E+00
BCEOT-E4+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	2.43E+02	2.06E+00	1.10E-03	1.56E+02	1.72E-01	1.00E+00	5.50E-03	4.05E+02	2.41E+02	1.87E-02	2.59E+02	1.56E+00
BCEOT-W4+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	2.89E+02	2.45E+00	1.10E-03	1.86E+02	2.05E-01	1.00E+00	5.50E-03	4.82E+02	2.41E+02	1.87E-02	2.59E+02	1.86E+00
BCEOT-E5+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	6.03E+02	5.11E+00	1.10E-03	3.89E+02	4.28E-01	1.00E+00	5.50E-03	1.01E+03	2.41E+02	1.87E-02	2.59E+02	3.89E+00
BCEOT-W5+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	7.57E+02	6.41E+00	1.10E-03	4.87E+02	5.37E-01	1.00E+00	5.50E-03	1.26E+03	2.41E+02	1.87E-02	2.59E+02	4.88E+00
BCEOT-E6+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	5.75E+02	4.87E+00	1.10E-03	3.70E+02	4.08E-01	1.00E+00	5.50E-03	9.59E+02	2.41E+02	1.87E-02	2.59E+02	3.70E+00
BCEOT-W6+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.22E+02	1.03E+00	1.10E-03	7.87E+01	8.66E-02	1.00E+00	5.50E-03	2.04E+02	2.41E+02	1.87E-02	2.59E+02	7.87E-01
BCEOT-E7+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.93E+02	1.64E+00	1.10E-03	1.25E+02	1.37E-01	1.00E+00	5.50E-03	3.23E+02	2.41E+02	1.87E-02	2.59E+02	1.25E+00
BCEOT-W7+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	6.31E+01	5.35E-01	1.10E-03	4.07E+01	4.48E-02	1.00E+00	5.50E-03	1.05E+02	2.41E+02	1.87E-02	2.59E+02	4.07E-01
BCEOT-W8+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	2.45E+02	2.08E+00	1.10E-03	1.58E+02	1.74E-01	1.00E+00	5.50E-03	4.09E+02	2.41E+02	1.87E-02	2.59E+02	1.58E+00
BCEOT-E9+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	8.04E+02	6.81E+00	1.10E-03	5.18E+02	5.70E-01	1.00E+00	5.50E-03	1.34E+03	2.41E+02	1.87E-02	2.59E+02	5.18E+00
BCEOT-W9+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.57E+02	1.33E+00	1.10E-03	1.01E+02	1.11E-01	1.00E+00	5.50E-03	2.62E+02	2.41E+02	1.87E-02	2.59E+02	1.01E+00
BCEOT-E10+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	6.38E+01	5.40E-01	1.10E-03	4.11E+01	4.52E-02	1.00E+00	5.50E-03	1.06E+02	2.41E+02	1.87E-02	2.59E+02	4.11E-01
BCEOT-W10+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	4.98E+01	4.22E-01	1.10E-03	3.21E+01	3.53E-02	1.00E+00	5.50E-03	8.31E+01	2.41E+02	1.87E-02	2.59E+02	3.21E-01
BCEOT-E11+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	5.69E+02	4.82E+00	1.10E-03	3.67E+02	4.04E-01	1.00E+00	5.50E-03	9.50E+02	2.41E+02	1.87E-02	2.59E+02	3.67E+00
BCEOT-W11+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	2.75E+02	2.33E+00	1.10E-03	1.77E+02	1.95E-01	1.00E+00	5.50E-03	4.59E+02	2.41E+02	1.87E-02	2.59E+02	1.77E+00
BCEOT-E12+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	3.75E+02	3.18E+00	1.10E-03	2.42E+02	2.66E-01	1.00E+00	5.50E-03	6.26E+02	2.41E+02	1.87E-02	2.59E+02	2.42E+00
BCEOT-W12+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	3.69E+01	3.13E-01	1.10E-03	2.38E+01	2.62E-02	1.00E+00	5.50E-03	6.17E+01	2.41E+02	1.87E-02	2.59E+02	2.38E-01
BCEOT-E13+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	5.73E+02	4.85E+00	1.10E-03	3.69E+02	4.06E-01	1.00E+00	5.50E-03	9.56E+02	2.41E+02	1.87E-02	2.59E+02	3.69E+00
BCEOT-E14+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.56E+02	1.32E+00	1.10E-03	1.01E+02	1.11E-01	1.00E+00	5.50E-03	2.61E+02	2.41E+02	1.87E-02	2.59E+02	1.01E+00
BCEOT-W14+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	6.24E+01	5.29E-01	1.10E-03	4.02E+01	4.43E-02	1.00E+00	5.50E-03	1.04E+02	2.41E+02	1.87E-02	2.59E+02	4.02E-01
BCEOT-E15+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	3.42E+02	2.90E+00	1.10E-03	2.20E+02	2.43E-01	1.00E+00	5.50E-03	5.71E+02	2.41E+02	1.87E-02	2.59E+02	2.20E+00
BCEOT-W15+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	2.93E+02	2.48E+00	1.10E-03	1.89E+02	2.08E-01	1.00E+00	5.50E-03	4.88E+02	2.41E+02	1.87E-02	2.59E+02	1.89E+00
BCEOT-E16+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.17E+02	9.93E-01	1.10E-03	7.55E+01	8.32E-02	1.00E+00	5.50E-03	1.96E+02	2.41E+02	1.87E-02	2.59E+02	7.55E-01
BCEOT-W16+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	4.40E+01	3.73E-01	1.10E-03	2.84E+01	3.12E-02	1.00E+00	5.50E-03	7.34E+01	2.41E+02	1.87E-02	2.59E+02	2.84E-01
BCEOT-E17+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	2.76E+02	2.34E+00	1.10E-03	1.78E+02	1.96E-01	1.00E+00	5.50E-03	4.61E+02	2.41E+02	1.87E-02	2.59E+02	1.78E+00
BCEOT-W17+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.55E+02	1.31E+00	1.10E-03	9.99E+01	1.10E-01	1.00E+00	5.50E-03	2.59E+02	2.41E+02	1.87E-02	2.59E+02	9.99E-01
BCEOT-E18+12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	2.44E+04	2.07E+02	1.10E-03	1.57E+04	1.73E+01	1.00E+00	5.50E-03	4.07E+04	2.41E+02	1.87E-02	2.59E+02	1.57E+02
BCEOT-E18+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.60E+02	1.36E+00	1.10E-03	1.03E+02	1.14E-01	1.00E+00	5.50E-03	2.67E+02	2.41E+02	1.87E-02	2.59E+02	1.03E+00
BCEOT-W18+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.36E+02	1.15E+00	1.10E-03	8.77E+01	9.65E-02	1.00E+00	5.50E-03	2.27E+02	2.41E+02	1.87E-02	2.59E+02	8.77E-01
BCEOT-E19+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.18E+02	9.99E-01	1.10E-03	7.60E+01	8.37E-02	1.00E+00	5.50E-03	1.97E+02	2.41E+02	1.87E-02	2.59E+02	7.60E-01
BCEOT-W19+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.14E+02	9.67E-01	1.10E-03	7.35E+01	8.10E-02	1.00E+00	5.50E-03	1.90E+02	2.41E+02	1.87E-02	2.59E+02	7.35E-01
BCEOT-E20+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	5.22E+01	4.42E-01	1.10E-03	3.37E+01	3.71E-02	1.00E+00	5.50E-03	8.72E+01	2.41E+02	1.87E-02	2.59E+02	3.37E-01
BCEOT-W20+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.20E+02	1.01E+00	1.10E-03	7.72E+01	8.49E-02	1.00E+00	5.50E-03	2.00E+02	2.41E+02	1.87E-02	2.59E+02	7.72E-01
BCEOT-E21+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	2.01E+02	1.71E+00	1.10E-03	1.30E+02	1.43E-01	1.00E+00	5.50E-03	3.36E+02	2.41E+02	1.87E-02	2.59E+02	1.30E+00
BCEOT-W21+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.41E+02	1.20E+00	1.10E-03	9.12E+01	1.00E-01	1.00E+00	5.50E-03	2.36E+02	2.41E+02	1.87E-02	2.59E+02	9.12E-01
BCEOT-E22+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	2.10E+03	1.78E+01	1.10E-03	1.35E+03	1.49E+00	1.00E+00	5.50E-03	3.51E+03	2.41E+02	1.87E-02	2.59E+02	1.35E+01
BCEOT-E22+70 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	3.88E+02	3.29E+00	1.10E-03	2.50E+02	2.75E-01	1.00E+00	5.50E-03	6.47E+02	2.41E+02	1.87E-02	2.59E+02	2.50E+00
BCEOT-W22+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.11E+02	9.37E-01	1.10E-03	7.13E+01	7.85E-02	1.00E+00	5.50E-03	1.85E+02	2.41E+02	1.87E-02	2.59E+02	7.13E-01
BCEOT-E23+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	7.67E+01	6.50E-01	1.10E-03	4.94E+01	5.44E-02	1.00E+00	5.50E-03	1.28E+02	2.41E+02	1.87E-02	2.59E+02	4.94E-01
FLWA-101 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	2.89E+03	2.45E+01	1.10E-03	1.87E+03	2.05E+00	1.00E+00	5.50E-03	4.83E+03	2.41E+02	1.87E-02	2.59E+02	1.87E+01

TABLE C-11D: LEAD DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 11 - BEARTRAP CREEK DISPERSED TAILINGS DEPOSITS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK TAILINGS DEPOSITS AND FLOSSIE LOUISE MINE WASTE PILE (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 4.982

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Masked Shrew (Omnivorous Mammal - Terrestrial, Wetland)																							
BCEOT-W23+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	1.66E+02	1.40E+00	1.10E-03	1.07E+02	1.18E-01	1.00E+00	5.50E-03	2.77E+02	2.41E+02	1.87E-02	2.59E+02	1.07E+00
BCEOT-E24+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-W24+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	3.11E+02	2.63E+00	1.10E-03	2.00E+02	2.20E-01	1.00E+00	5.50E-03	5.18E+02	2.41E+02	1.87E-02	2.59E+02	2.00E+00
BCEOT-E25+20 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	6.05E+01	5.12E-01	1.10E-03	3.90E+01	4.29E-02	1.00E+00	5.50E-03	1.01E+02	2.41E+02	1.87E-02	2.59E+02	3.90E-01
BCEOT-W25+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	2.55E+02	2.16E+00	1.10E-03	1.64E+02	1.81E-01	1.00E+00	5.50E-03	4.25E+02	2.41E+02	1.87E-02	2.59E+02	1.64E+00
BCEOT-E26+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	8.14E+02	6.89E+00	1.10E-03	5.25E+02	5.78E-01	1.00E+00	5.50E-03	1.36E+03	2.41E+02	1.87E-02	2.59E+02	5.25E+00
BCEOT-W26+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	2.10E+02	1.78E+00	1.10E-03	1.35E+02	1.49E-01	1.00E+00	5.50E-03	3.50E+02	2.41E+02	1.87E-02	2.59E+02	1.35E+00
BCEOT-W27+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.55E+00	2.24E+02	1.90E+00	1.10E-03	1.44E+02	1.59E-01	1.00E+00	5.50E-03	3.74E+02	2.41E+02	1.87E-02	2.59E+02	1.44E+00
																						Maximum HQ (Outside Tailings Pile)	**1.57E+02**

Notes

1 See Tables 3-1 through 3-13 for ingestion rates, foraging ranges used to calculate the SUF, and body weights.

2 BAFs were calculated by dividing site-collected tissue by collocated soil concentrations (BAFs are in dry weight). The maximum BAF calculated from the Beartrap Creek and Blackfoot River transects was used for site dose calculations. The maximum BAF from the terrestrial reference site was used for reference site dose calculations.

3 The mammal, plant, and invertebrate concentrations were calculated by multiplying the soil concentration by the BAF to generate a tissue concentration (see note 2).

4 Mammal, plant, and invertebrate daily doses were calculated by multiplying the ingestion rate (see note 1) by the tissue concentration (see note 3).

5 Soil concentration from 0 to 6 inches below ground surface at point ID as measured by XRF 10. Doses were not calculated for detected and non-detected soil concentrations measured below the minimum reference site concentration, as indicated by BB. For results that were measured at less than the detection limit, doses were calculated using half of the detection limit.

6 Soil daily dose was calculated by multiplying the soil ingestion rate (see note 1) by soil concentration (see note 5).

7 Total daily dose is calculated using the following equation: total daily dose = ([mammal daily dose (if applicable) + plant daily dose (if applicable) + invertebrate daily dose (if applicable) + soil daily dose]*SUF)/receptor species body weight.

8 The derivation of TRVs is described in Navy (1998). The high TRV was used for dose calculations.

9 Allometrically adjusted TRVs for birds were calculated using the following equation: receptor species TRV = (test species TRV) x (test species body weight / receptor species body weight) $^{(1-1.2)}$.

10 Allometrically adjusted TRVs for mammals were calculated using the following equation: receptor species TRV = (test species TRV) x (test species body weight / receptor species body weight) $^{(1-0.94)}$.

11 HQs were calculated using the following equation: HQ = total daily dose/allometrically adjusted TRV.

12 Green cells indicate an HQ between 1.0 and 9.99; yellow cells indicate an HQ between 10 and 99.9; blue cells indicate an HQ 100 or greater.

BAF	Bioaccumulation Factor	mg/day	Milligram per day
BB	Below minimum background reference site concentration	mg/kg	Milligram per kilogram
EE/CA	Engineering Evaluation/Cost Analysis	NA	Not applicable
EU	Exposure Unit	Navy	Department of the Navy
HQ	Hazard quotient	SUF	Site use factor
ID	Identification	TRV	Toxicity reference value
kg	Kilogram	XRF	X-ray fluorescence
kg/day	Kilogram per day	XRF 10	XRF measurements recorded following drying and seiving through a #10 -mesh screen

Sources: Department of the Navy. 1998. "Development of Toxicity Reference Values for Conducting Ecological Risk Assessments at Naval Facilities in California, Interim Final." Prepared by Naval Facilities Engineering Command, Engineering Field Activity West (EFA West). San Bruno, California.

TABLE C-11E: MANGANESE DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 11 - BEARTRAP CREEK DISPERSED TAILINGS DEPOSITS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK TAILINGS DEPOSITS AND FLOSSIE LOUISE MINE WASTE PILE

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **4.982**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Mourning Dove (Herbivorous Birds - Terrestrial)																							
Reference Sites																							
ACBG-1 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	3.34E-01	9.85E+01	5.68E-01	NA	NA	NA	NA	5.36E-04	2.95E+02	1.58E-01	1.92E-02	1.09E-01	1.28E-01	7.76E+02	1.97E-01	6.90E+02	1.85E-04
ACBG-2 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	3.34E-01	3.33E+02	1.92E+00	NA	NA	NA	NA	5.36E-04	9.97E+02	5.34E-01	1.92E-02	1.09E-01	4.32E-01	7.76E+02	1.97E-01	6.90E+02	6.27E-04
BCBG-201 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	3.34E-01	5.38E+01	3.10E-01	NA	NA	NA	NA	5.36E-04	1.61E+02	8.63E-02	1.92E-02	1.09E-01	6.98E-02	7.76E+02	1.97E-01	6.90E+02	1.01E-04
Inside Tailings Pile																						**Minimum HQ (Reference Sites)**	**1.01E-04**
BCEOT-E0-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	1.51E+04	8.70E+01	NA	NA	NA	NA	5.36E-04	1.52E+03	8.16E-01	1.92E-02	1.09E-01	1.55E+01	7.76E+02	1.97E-01	6.90E+02	2.24E-02
BCEOT-E1-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	3.36E+04	1.93E+02	NA	NA	NA	NA	5.36E-04	3.39E+03	1.82E+00	1.92E-02	1.09E-01	3.44E+01	7.76E+02	1.97E-01	6.90E+02	4.98E-02
BCEOT-E2-8 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	1.73E+04	9.99E+01	NA	NA	NA	NA	5.36E-04	1.75E+03	9.38E-01	1.92E-02	1.09E-01	1.78E+01	7.76E+02	1.97E-01	6.90E+02	2.58E-02
BCEOT-E3-8 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	1.75E+04	1.01E+02	NA	NA	NA	NA	5.36E-04	1.77E+03	9.46E-01	1.92E-02	1.09E-01	1.79E+01	7.76E+02	1.97E-01	6.90E+02	2.60E-02
BCEOT-E4-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	1.04E+04	6.01E+01	NA	NA	NA	NA	5.36E-04	1.05E+03	5.64E-01	1.92E-02	1.09E-01	1.07E+01	7.76E+02	1.97E-01	6.90E+02	1.55E-02
BCEOT-W4-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	1.15E+04	6.65E+01	NA	NA	NA	NA	5.36E-04	1.16E+03	6.24E-01	1.92E-02	1.09E-01	1.18E+01	7.76E+02	1.97E-01	6.90E+02	1.71E-02
BCEOT-E5-25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	5.77E+03	3.33E+01	NA	NA	NA	NA	5.36E-04	5.83E+02	3.12E-01	1.92E-02	1.09E-01	5.91E+00	7.76E+02	1.97E-01	6.90E+02	8.57E-03
BCEOT-W5-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	2.80E+04	1.61E+02	NA	NA	NA	NA	5.36E-04	2.83E+03	1.51E+00	1.92E-02	1.09E-01	2.87E+01	7.76E+02	1.97E-01	6.90E+02	4.16E-02
BCEOT-E6-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	1.21E+04	6.99E+01	NA	NA	NA	NA	5.36E-04	1.22E+03	6.56E-01	1.92E-02	1.09E-01	1.24E+01	7.76E+02	1.97E-01	6.90E+02	1.80E-02
BCEOT-W6-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	1.04E+04	5.97E+01	NA	NA	NA	NA	5.36E-04	1.05E+03	5.61E-01	1.92E-02	1.09E-01	1.06E+01	7.76E+02	1.97E-01	6.90E+02	1.54E-02
BCEOT-E7-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	1.25E+04	7.20E+01	NA	NA	NA	NA	5.36E-04	1.26E+03	6.75E-01	1.92E-02	1.09E-01	1.28E+01	7.76E+02	1.97E-01	6.90E+02	1.85E-02
BCEOT-W7-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	6.03E+03	3.47E+01	NA	NA	NA	NA	5.36E-04	6.09E+02	3.26E-01	1.92E-02	1.09E-01	6.18E+00	7.76E+02	1.97E-01	6.90E+02	8.95E-03
BCEOT-W8-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	1.14E+03	6.57E+00	NA	NA	NA	NA	5.36E-04	1.15E+02	6.17E-02	1.92E-02	1.09E-01	1.17E+00	7.76E+02	1.97E-01	6.90E+02	1.69E-03
BCEOT-E9-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	5.78E+03	3.33E+01	NA	NA	NA	NA	5.36E-04	5.83E+02	3.12E-01	1.92E-02	1.09E-01	5.92E+00	7.76E+02	1.97E-01	6.90E+02	8.58E-03
BCEOT-W9-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	1.23E+03	7.07E+00	NA	NA	NA	NA	5.36E-04	1.24E+02	6.64E-02	1.92E-02	1.09E-01	1.26E+00	7.76E+02	1.97E-01	6.90E+02	1.82E-03
BCEOT-E10-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	3.69E+04	2.13E+02	NA	NA	NA	NA	5.36E-04	3.72E+03	2.00E+00	1.92E-02	1.09E-01	3.78E+01	7.76E+02	1.97E-01	6.90E+02	5.48E-02
BCEOT-W10-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	7.06E+03	4.07E+01	NA	NA	NA	NA	5.36E-04	7.12E+02	3.82E-01	1.92E-02	1.09E-01	7.23E+00	7.76E+02	1.97E-01	6.90E+02	1.05E-02
BCEOT-E11-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	4.22E+03	2.43E+01	NA	NA	NA	NA	5.36E-04	4.26E+02	2.28E-01	1.92E-02	1.09E-01	4.33E+00	7.76E+02	1.97E-01	6.90E+02	6.27E-03
BCEOT-W11-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	5.95E+03	3.43E+01	NA	NA	NA	NA	5.36E-04	6.00E+02	3.22E-01	1.92E-02	1.09E-01	6.09E+00	7.76E+02	1.97E-01	6.90E+02	8.83E-03
BCEOT-E12-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	1.19E+04	6.88E+01	NA	NA	NA	NA	5.36E-04	1.21E+03	6.46E-01	1.92E-02	1.09E-01	1.22E+01	7.76E+02	1.97E-01	6.90E+02	1.77E-02
BCEOT-W12-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	2.63E+04	1.51E+02	NA	NA	NA	NA	5.36E-04	2.65E+03	1.42E+00	1.92E-02	1.09E-01	2.69E+01	7.76E+02	1.97E-01	6.90E+02	3.90E-02
BCEOT-E13-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	6.05E+03	3.48E+01	NA	NA	NA	NA	5.36E-04	6.10E+02	3.27E-01	1.92E-02	1.09E-01	6.20E+00	7.76E+02	1.97E-01	6.90E+02	8.98E-03
BCEOT-W13-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	3.20E+03	1.85E+01	NA	NA	NA	NA	5.36E-04	3.23E+02	1.73E-01	1.92E-02	1.09E-01	3.28E+00	7.76E+02	1.97E-01	6.90E+02	4.76E-03
BCEOT-W13-25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	5.67E+03	3.27E+01	NA	NA	NA	NA	5.36E-04	5.72E+02	3.07E-01	1.92E-02	1.09E-01	5.81E+00	7.76E+02	1.97E-01	6.90E+02	8.42E-03
BCEOT-W14-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	2.71E+04	1.56E+02	NA	NA	NA	NA	5.36E-04	2.74E+03	1.47E+00	1.92E-02	1.09E-01	2.78E+01	7.76E+02	1.97E-01	6.90E+02	4.03E-02
BCEOT-E15-8 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	8.82E+03	5.08E+01	NA	NA	NA	NA	5.36E-04	8.90E+02	4.77E-01	1.92E-02	1.09E-01	9.03E+00	7.76E+02	1.97E-01	6.90E+02	1.31E-02
BCEOT-W15-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	1.21E+03	6.97E+00	NA	NA	NA	NA	5.36E-04	1.22E+02	6.54E-02	1.92E-02	1.09E-01	1.24E+00	7.76E+02	1.97E-01	6.90E+02	1.80E-03
BCEOT-E16-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	7.10E+03	4.09E+01	NA	NA	NA	NA	5.36E-04	7.16E+02	3.84E-01	1.92E-02	1.09E-01	7.27E+00	7.76E+02	1.97E-01	6.90E+02	1.05E-02
BCEOT-W16-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	2.30E+04	1.32E+02	NA	NA	NA	NA	5.36E-04	2.32E+03	1.24E+00	1.92E-02	1.09E-01	2.35E+01	7.76E+02	1.97E-01	6.90E+02	3.41E-02
BCEOT-E17-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	8.31E+04	4.79E+02	NA	NA	NA	NA	5.36E-04	8.38E+03	4.49E+00	1.92E-02	1.09E-01	8.51E+01	7.76E+02	1.97E-01	6.90E+02	1.23E-01
BCEOT-W17-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	1.14E+04	6.56E+01	NA	NA	NA	NA	5.36E-04	1.15E+03	6.16E-01	1.92E-02	1.09E-01	1.17E+01	7.76E+02	1.97E-01	6.90E+02	1.69E-02
BCEOT-W18-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	8.28E+02	4.77E+00	NA	NA	NA	NA	5.36E-04	8.36E+01	4.48E-02	1.92E-02	1.09E-01	8.49E-01	7.76E+02	1.97E-01	6.90E+02	1.23E-03
BCEOT-E19-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	1.78E+04	1.02E+02	NA	NA	NA	NA	5.36E-04	1.79E+03	9.61E-01	1.92E-02	1.09E-01	1.82E+01	7.76E+02	1.97E-01	6.90E+02	2.64E-02
BCEOT-W19-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	1.11E+04	6.41E+01	NA	NA	NA	NA	5.36E-04	1.12E+03	6.02E-01	1.92E-02	1.09E-01	1.14E+01	7.76E+02	1.97E-01	6.90E+02	1.65E-02
BCEOT-E20-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	2.25E+04	1.30E+02	NA	NA	NA	NA	5.36E-04	2.27E+03	1.22E+00	1.92E-02	1.09E-01	2.31E+01	7.76E+02	1.97E-01	6.90E+02	3.35E-02
BCEOT-W20-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	1.03E+05	5.92E+02	NA	NA	NA	NA	5.36E-04	1.04E+04	5.55E+00	1.92E-02	1.09E-01	1.05E+02	7.76E+02	1.97E-01	6.90E+02	1.52E-01
BCEOT-E21-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	2.27E+04	1.31E+02	NA	NA	NA	NA	5.36E-04	2.29E+03	1.23E+00	1.92E-02	1.09E-01	2.32E+01	7.76E+02	1.97E-01	6.90E+02	3.37E-02
BCEOT-W21-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	3.50E+03	2.01E+01	NA	NA	NA	NA	5.36E-04	3.53E+02	1.89E-01	1.92E-02	1.09E-01	3.58E+00	7.76E+02	1.97E-01	6.90E+02	5.19E-03
BCEOT-E22-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	7.42E+04	4.28E+02	NA	NA	NA	NA	5.36E-04	7.49E+03	4.01E+00	1.92E-02	1.09E-01	7.60E+01	7.76E+02	1.97E-01	6.90E+02	1.10E-01
BCEOT-W22-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	4.10E+05	2.36E+03	NA	NA	NA	NA	5.36E-04	4.14E+04	2.22E+01	1.92E-02	1.09E-01	4.20E+02	7.76E+02	1.97E-01	6.90E+02	6.09E-01
BCEOT-E23-15 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	1.36E+04	7.85E+01	NA	NA	NA	NA	5.36E-04	1.38E+03	7.37E-01	1.92E-02	1.09E-01	1.40E+01	7.76E+02	1.97E-01	6.90E+02	2.02E-02
BCEOT-W23-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	1.02E+05	5.88E+02	NA	NA	NA	NA	5.36E-04	1.03E+04	5.52E+00	1.92E-02	1.09E-01	1.05E+02	7.76E+02	1.97E-01	6.90E+02	1.52E-01
BCEOT-E24-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	3.61E+03	2.08E+01	NA	NA	NA	NA	5.36E-04	3.65E+02	1.95E-01	1.92E-02	1.09E-01	3.70E+00	7.76E+02	1.97E-01	6.90E+02	5.37E-03
BCEOT-W24-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	9.05E+04	5.22E+02	NA	NA	NA	NA	5.36E-04	9.14E+03	4.90E+00	1.92E-02	1.09E-01	9.28E+01	7.76E+02	1.97E-01	6.90E+02	1.34E-01
BCEOT-E25-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	1.10E+04	6.33E+01	NA	NA	NA	NA	5.36E-04	1.11E+03	5.94E-01	1.92E-02	1.09E-01	1.13E+01	7.76E+02	1.97E-01	6.90E+02	1.63E-02

TABLE C-11E: MANGANESE DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 11 - BEARTRAP CREEK DISPERSED TAILINGS DEPOSITS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK TAILINGS DEPOSIT AND FLOSSIE LOUISE MINE WASTE PILE (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **4.982**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Mourning Dove (Herbivorous Birds - Terrestrial)																							
BCEOT-W25-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	1.06E+05	6.08E+02	NA	NA	NA	NA	5.36E-04	1.07E+04	5.71E+00	1.92E-02	1.09E-01	1.08E+02	7.76E+02	1.97E-01	6.90E+02	1.57E-01
BCEOT-E26-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	5.95E+03	3.43E+01	NA	NA	NA	NA	5.36E-04	6.01E+02	3.22E-01	1.92E-02	1.09E-01	6.10E+00	7.76E+02	1.97E-01	6.90E+02	8.84E-03
BCEOT-W26-12.5 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	8.35E+01	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-W27-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	7.93E+04	4.57E+02	NA	NA	NA	NA	5.36E-04	8.00E+03	4.29E+00	1.92E-02	1.09E-01	8.12E+01	7.76E+02	1.97E-01	6.90E+02	1.18E-01
At Edge of Tailings Pile																						**Maximum HQ (Inside Tailings Pile)**	**6.09E-01**
BCEOT-E0-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	3.03E+04	1.75E+02	NA	NA	NA	NA	5.36E-04	3.06E+03	1.64E+00	1.92E-02	1.09E-01	3.10E+01	7.76E+02	1.97E-01	6.90E+02	4.50E-02
BCEOT-E1-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	2.62E+04	1.51E+02	NA	NA	NA	NA	5.36E-04	2.64E+03	1.41E+00	1.92E-02	1.09E-01	2.68E+01	7.76E+02	1.97E-01	6.90E+02	3.88E-02
BCEOT-E2-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	2.23E+04	1.28E+02	NA	NA	NA	NA	5.36E-04	2.25E+03	1.20E+00	1.92E-02	1.09E-01	2.28E+01	7.76E+02	1.97E-01	6.90E+02	3.30E-02
BCEOT-E3-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	7.85E+03	4.52E+01	NA	NA	NA	NA	5.36E-04	7.92E+02	4.24E-01	1.92E-02	1.09E-01	8.04E+00	7.76E+02	1.97E-01	6.90E+02	1.17E-02
BCEOT-E4-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	1.43E+04	8.25E+01	NA	NA	NA	NA	5.36E-04	1.44E+03	7.74E-01	1.92E-02	1.09E-01	1.47E+01	7.76E+02	1.97E-01	6.90E+02	2.12E-02
BCEOT-W4-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	7.54E+03	4.35E+01	NA	NA	NA	NA	5.36E-04	7.61E+02	4.08E-01	1.92E-02	1.09E-01	7.73E+00	7.76E+02	1.97E-01	6.90E+02	1.12E-02
BCEOT-E5-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	1.18E+04	6.78E+01	NA	NA	NA	NA	5.36E-04	1.19E+03	6.36E-01	1.92E-02	1.09E-01	1.21E+01	7.76E+02	1.97E-01	6.90E+02	1.75E-02
BCEOT-W5-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	5.21E+03	3.00E+01	NA	NA	NA	NA	5.36E-04	5.26E+02	2.82E-01	1.92E-02	1.09E-01	5.34E+00	7.76E+02	1.97E-01	6.90E+02	7.74E-03
BCEOT-E6-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	8.38E+03	4.83E+01	NA	NA	NA	NA	5.36E-04	8.46E+02	4.53E-01	1.92E-02	1.09E-01	8.59E+00	7.76E+02	1.97E-01	6.90E+02	1.24E-02
BCEOT-W6-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	1.10E+04	6.33E+01	NA	NA	NA	NA	5.36E-04	1.11E+03	5.94E-01	1.92E-02	1.09E-01	1.13E+01	7.76E+02	1.97E-01	6.90E+02	1.63E-02
BCEOT-E7-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	1.20E+04	6.94E+01	NA	NA	NA	NA	5.36E-04	1.22E+03	6.51E-01	1.92E-02	1.09E-01	1.23E+01	7.76E+02	1.97E-01	6.90E+02	1.79E-02
BCEOT-W7-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	4.19E+03	2.42E+01	NA	NA	NA	NA	5.36E-04	4.23E+02	2.27E-01	1.92E-02	1.09E-01	4.30E+00	7.76E+02	1.97E-01	6.90E+02	6.23E-03
BCEOT-W8-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	4.10E+03	2.36E+01	NA	NA	NA	NA	5.36E-04	4.14E+02	2.22E-01	1.92E-02	1.09E-01	4.20E+00	7.76E+02	1.97E-01	6.90E+02	6.09E-03
BCEOT-E9-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	3.13E+04	1.80E+02	NA	NA	NA	NA	5.36E-04	3.16E+03	1.69E+00	1.92E-02	1.09E-01	3.20E+01	7.76E+02	1.97E-01	6.90E+02	4.64E-02
BCEOT-W9-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	4.63E+03	2.67E+01	NA	NA	NA	NA	5.36E-04	4.67E+02	2.50E-01	1.92E-02	1.09E-01	4.74E+00	7.76E+02	1.97E-01	6.90E+02	6.87E-03
BCEOT-E10-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	5.79E+04	3.34E+02	NA	NA	NA	NA	5.36E-04	5.84E+03	3.13E+00	1.92E-02	1.09E-01	5.93E+01	7.76E+02	1.97E-01	6.90E+02	8.60E-02
BCEOT-W10-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	4.37E+03	2.52E+01	NA	NA	NA	NA	5.36E-04	4.41E+02	2.36E-01	1.92E-02	1.09E-01	4.48E+00	7.76E+02	1.97E-01	6.90E+02	6.49E-03
BCEOT-E11-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	2.83E+04	1.63E+02	NA	NA	NA	NA	5.36E-04	2.86E+03	1.53E+00	1.92E-02	1.09E-01	2.90E+01	7.76E+02	1.97E-01	6.90E+02	4.21E-02
BCEOT-W11-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	1.38E+04	7.97E+01	NA	NA	NA	NA	5.36E-04	1.40E+03	7.48E-01	1.92E-02	1.09E-01	1.42E+01	7.76E+02	1.97E-01	6.90E+02	2.05E-02
BCEOT-E12-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	1.46E+04	8.40E+01	NA	NA	NA	NA	5.36E-04	1.47E+03	7.89E-01	1.92E-02	1.09E-01	1.49E+01	7.76E+02	1.97E-01	6.90E+02	2.17E-02
BCEOT-W12-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	8.07E+03	4.65E+01	NA	NA	NA	NA	5.36E-04	8.15E+02	4.37E-01	1.92E-02	1.09E-01	8.27E+00	7.76E+02	1.97E-01	6.90E+02	1.20E-02
BCEOT-E13-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	1.12E+04	6.45E+01	NA	NA	NA	NA	5.36E-04	1.13E+03	6.06E-01	1.92E-02	1.09E-01	1.15E+01	7.76E+02	1.97E-01	6.90E+02	1.66E-02
BCEOT-W13-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	9.50E+03	5.47E+01	NA	NA	NA	NA	5.36E-04	9.59E+02	5.14E-01	1.92E-02	1.09E-01	9.73E+00	7.76E+02	1.97E-01	6.90E+02	1.41E-02
BCEOT-E14-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	1.11E+04	6.40E+01	NA	NA	NA	NA	5.36E-04	1.12E+03	6.00E-01	1.92E-02	1.09E-01	1.14E+01	7.76E+02	1.97E-01	6.90E+02	1.65E-02
BCEOT-W14-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	3.71E+04	2.14E+02	NA	NA	NA	NA	5.36E-04	3.75E+03	2.01E+00	1.92E-02	1.09E-01	3.80E+01	7.76E+02	1.97E-01	6.90E+02	5.51E-02
BCEOT-E15-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	1.25E+04	7.23E+01	NA	NA	NA	NA	5.36E-04	1.27E+03	6.78E-01	1.92E-02	1.09E-01	1.29E+01	7.76E+02	1.97E-01	6.90E+02	1.86E-02
BCEOT-W15-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	3.51E+04	2.02E+02	NA	NA	NA	NA	5.36E-04	3.54E+03	1.90E+00	1.92E-02	1.09E-01	3.60E+01	7.76E+02	1.97E-01	6.90E+02	5.21E-02
BCEOT-E16-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	1.40E+04	8.09E+01	NA	NA	NA	NA	5.36E-04	1.42E+03	7.59E-01	1.92E-02	1.09E-01	1.44E+01	7.76E+02	1.97E-01	6.90E+02	2.08E-02
BCEOT-W16-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	8.18E+03	4.71E+01	NA	NA	NA	NA	5.36E-04	8.26E+02	4.42E-01	1.92E-02	1.09E-01	8.38E+00	7.76E+02	1.97E-01	6.90E+02	1.21E-02
BCEOT-E17-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	1.91E+04	1.10E+02	NA	NA	NA	NA	5.36E-04	1.93E+03	1.04E+00	1.92E-02	1.09E-01	1.96E+01	7.76E+02	1.97E-01	6.90E+02	2.84E-02
BCEOT-W17-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	1.23E+04	7.06E+01	NA	NA	NA	NA	5.36E-04	1.24E+03	6.63E-01	1.92E-02	1.09E-01	1.26E+01	7.76E+02	1.97E-01	6.90E+02	1.82E-02
BCEOT-E18-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	1.70E+04	9.80E+01	NA	NA	NA	NA	5.36E-04	1.72E+03	9.20E-01	1.92E-02	1.09E-01	1.74E+01	7.76E+02	1.97E-01	6.90E+02	2.53E-02
BCEOT-W18-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	1.23E+04	7.11E+01	NA	NA	NA	NA	5.36E-04	1.25E+03	6.67E-01	1.92E-02	1.09E-01	1.26E+01	7.76E+02	1.97E-01	6.90E+02	1.83E-02
BCEOT-E19-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	1.03E+04	5.93E+01	NA	NA	NA	NA	5.36E-04	1.04E+03	5.56E-01	1.92E-02	1.09E-01	1.05E+01	7.76E+02	1.97E-01	6.90E+02	1.53E-02
BCEOT-W19-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	2.61E+04	1.51E+02	NA	NA	NA	NA	5.36E-04	2.64E+03	1.41E+00	1.92E-02	1.09E-01	2.68E+01	7.76E+02	1.97E-01	6.90E+02	3.88E-02
BCEOT-E20-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	3.60E+03	2.07E+01	NA	NA	NA	NA	5.36E-04	3.63E+02	1.95E-01	1.92E-02	1.09E-01	3.69E+00	7.76E+02	1.97E-01	6.90E+02	5.35E-03
BCEOT-W20-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	1.02E+04	5.90E+01	NA	NA	NA	NA	5.36E-04	1.03E+03	5.53E-01	1.92E-02	1.09E-01	1.05E+01	7.76E+02	1.97E-01	6.90E+02	1.52E-02
BCEOT-E21-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	1.41E+04	8.11E+01	NA	NA	NA	NA	5.36E-04	1.42E+03	7.61E-01	1.92E-02	1.09E-01	1.44E+01	7.76E+02	1.97E-01	6.90E+02	2.09E-02
BCEOT-W21-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	1.16E+04	6.69E+01	NA	NA	NA	NA	5.36E-04	1.17E+03	6.28E-01	1.92E-02	1.09E-01	1.19E+01	7.76E+02	1.97E-01	6.90E+02	1.72E-02
BCEOT-E22-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	8.45E+03	4.87E+01	NA	NA	NA	NA	5.36E-04	8.53E+02	4.57E-01	1.92E-02	1.09E-01	8.66E+00	7.76E+02	1.97E-01	6.90E+02	1.25E-02
BCEOT-W22-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	6.31E+03	3.64E+01	NA	NA	NA	NA	5.36E-04	6.37E+02	3.41E-01	1.92E-02	1.09E-01	6.46E+00	7.76E+02	1.97E-01	6.90E+02	9.37E-03
BCEOT-E23-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	4.66E+03	2.68E+01	NA	NA	NA	NA	5.36E-04	4.70E+02	2.52E-01	1.92E-02	1.09E-01	4.77E+00	7.76E+02	1.97E-01	6.90E+02	6.92E-03
BCEOT-W23-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	5.49E+03	3.16E+01	NA	NA	NA	NA	5.36E-04	5.54E+02	2.97E-01	1.92E-02	1.09E-01	5.62E+00	7.76E+02	1.97E-01	6.90E+02	8.15E-03
BCEOT-E24-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	5.33E+03	3.07E+01	NA	NA	NA	NA	5.36E-04	5.38E+02	2.88E-01	1.92E-02	1.09E-01	5.46E+00	7.76E+02	1.97E-01	6.90E+02	7.91E-03

TABLE C-11E: MANGANESE DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 11 - BEARTRAP CREEK DISPERSED TAILINGS DEPOSITS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK TAILINGS DEPOSIT AND FLOSSIE LOUISE MINE WASTE PILE (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **4.982**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Mourning Dove (Herbivorous Birds - Terrestrial)																							
BCEOT-W24-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	1.16E+04	6.70E+01	NA	NA	NA	NA	5.36E-04	1.17E+03	6.29E-01	1.92E-02	1.09E-01	1.19E+01	7.76E+02	1.97E-01	6.90E+02	1.73E-02
BCEOT-E25-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	7.05E+03	4.06E+01	NA	NA	NA	NA	5.36E-04	7.11E+02	3.81E-01	1.92E-02	1.09E-01	7.22E+00	7.76E+02	1.97E-01	6.90E+02	1.05E-02
BCEOT-W25-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	1.68E+04	9.66E+01	NA	NA	NA	NA	5.36E-04	1.69E+03	9.07E-01	1.92E-02	1.09E-01	1.72E+01	7.76E+02	1.97E-01	6.90E+02	2.49E-02
BCEOT-E26-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	1.27E+04	7.32E+01	NA	NA	NA	NA	5.36E-04	1.28E+03	6.87E-01	1.92E-02	1.09E-01	1.30E+01	7.76E+02	1.97E-01	6.90E+02	1.89E-02
BCEOT-W26-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	1.24E+04	7.16E+01	NA	NA	NA	NA	5.36E-04	1.25E+03	6.72E-01	1.92E-02	1.09E-01	1.27E+01	7.76E+02	1.97E-01	6.90E+02	1.84E-02
BCEOT-W27-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	9.95E+03	5.73E+01	NA	NA	NA	NA	5.36E-04	1.00E+03	5.38E-01	1.92E-02	1.09E-01	1.02E+01	7.76E+02	1.97E-01	6.90E+02	1.48E-02
Outside Tailings Piles																						**Maximum HQ (Edge of Tailings Pile)**	**8.60E-02**
BCEOT-E0+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	9.18E+03	5.29E+01	NA	NA	NA	NA	5.36E-04	9.27E+02	4.97E-01	1.92E-02	1.09E-01	9.41E+00	7.76E+02	1.97E-01	6.90E+02	1.36E-02
BCEOT-E1+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	4.52E+04	2.60E+02	NA	NA	NA	NA	5.36E-04	4.56E+03	2.44E+00	1.92E-02	1.09E-01	4.63E+01	7.76E+02	1.97E-01	6.90E+02	6.71E-02
BCEOT-E2+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	5.51E+03	3.18E+01	NA	NA	NA	NA	5.36E-04	5.56E+02	2.98E-01	1.92E-02	1.09E-01	5.65E+00	7.76E+02	1.97E-01	6.90E+02	8.19E-03
BCEOT-E3+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	1.04E+04	5.98E+01	NA	NA	NA	NA	5.36E-04	1.05E+03	5.61E-01	1.92E-02	1.09E-01	1.06E+01	7.76E+02	1.97E-01	6.90E+02	1.54E-02
BCEOT-E4+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	2.66E+04	1.53E+02	NA	NA	NA	NA	5.36E-04	2.69E+03	1.44E+00	1.92E-02	1.09E-01	2.73E+01	7.76E+02	1.97E-01	6.90E+02	3.95E-02
BCEOT-W4+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	6.66E+03	3.84E+01	NA	NA	NA	NA	5.36E-04	6.73E+02	3.60E-01	1.92E-02	1.09E-01	6.83E+00	7.76E+02	1.97E-01	6.90E+02	9.89E-03
BCEOT-E5+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	2.30E+04	1.33E+02	NA	NA	NA	NA	5.36E-04	2.32E+03	1.24E+00	1.92E-02	1.09E-01	2.36E+01	7.76E+02	1.97E-01	6.90E+02	3.41E-02
BCEOT-W5+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	7.08E+03	4.08E+01	NA	NA	NA	NA	5.36E-04	7.14E+02	3.83E-01	1.92E-02	1.09E-01	7.25E+00	7.76E+02	1.97E-01	6.90E+02	1.05E-02
BCEOT-E6+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	5.69E+03	3.28E+01	NA	NA	NA	NA	5.36E-04	5.74E+02	3.08E-01	1.92E-02	1.09E-01	5.83E+00	7.76E+02	1.97E-01	6.90E+02	8.45E-03
BCEOT-W6+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	2.95E+03	1.70E+01	NA	NA	NA	NA	5.36E-04	2.97E+02	1.59E-01	1.92E-02	1.09E-01	3.02E+00	7.76E+02	1.97E-01	6.90E+02	4.37E-03
BCEOT-E7+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	2.41E+04	1.39E+02	NA	NA	NA	NA	5.36E-04	2.44E+03	1.31E+00	1.92E-02	1.09E-01	2.47E+01	7.76E+02	1.97E-01	6.90E+02	3.58E-02
BCEOT-W7+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	8.25E+03	4.75E+01	NA	NA	NA	NA	5.36E-04	8.33E+02	4.46E-01	1.92E-02	1.09E-01	8.45E+00	7.76E+02	1.97E-01	6.90E+02	1.23E-02
FLWA-101 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	2.39E+03	1.38E+01	NA	NA	NA	NA	5.36E-04	2.42E+02	1.29E-01	1.92E-02	1.09E-01	2.45E+00	7.76E+02	1.97E-01	6.90E+02	3.55E-03
BCEOT-W8+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	5.01E+03	2.89E+01	NA	NA	NA	NA	5.36E-04	5.06E+02	2.71E-01	1.92E-02	1.09E-01	5.13E+00	7.76E+02	1.97E-01	6.90E+02	7.44E-03
BCEOT-E9+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	1.95E+04	1.12E+02	NA	NA	NA	NA	5.36E-04	1.97E+03	1.05E+00	1.92E-02	1.09E-01	2.00E+01	7.76E+02	1.97E-01	6.90E+02	2.89E-02
BCEOT-W9+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	2.10E+04	1.21E+02	NA	NA	NA	NA	5.36E-04	2.12E+03	1.14E+00	1.92E-02	1.09E-01	2.15E+01	7.76E+02	1.97E-01	6.90E+02	3.12E-02
BCEOT-E10+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	2.26E+04	1.30E+02	NA	NA	NA	NA	5.36E-04	2.29E+03	1.22E+00	1.92E-02	1.09E-01	2.32E+01	7.76E+02	1.97E-01	6.90E+02	3.36E-02
BCEOT-W10+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	3.77E+03	2.17E+01	NA	NA	NA	NA	5.36E-04	3.80E+02	2.04E-01	1.92E-02	1.09E-01	3.86E+00	7.76E+02	1.97E-01	6.90E+02	5.59E-03
BCEOT-E11+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	9.39E+03	5.41E+01	NA	NA	NA	NA	5.36E-04	9.47E+02	5.08E-01	1.92E-02	1.09E-01	9.62E+00	7.76E+02	1.97E-01	6.90E+02	1.39E-02
BCEOT-W11+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	6.28E+03	3.62E+01	NA	NA	NA	NA	5.36E-04	6.34E+02	3.40E-01	1.92E-02	1.09E-01	6.43E+00	7.76E+02	1.97E-01	6.90E+02	9.32E-03
BCEOT-E12+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	9.77E+03	5.63E+01	NA	NA	NA	NA	5.36E-04	9.86E+02	5.28E-01	1.92E-02	1.09E-01	1.00E+01	7.76E+02	1.97E-01	6.90E+02	1.45E-02
BCEOT-W12+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	1.10E+04	6.33E+01	NA	NA	NA	NA	5.36E-04	1.11E+03	5.94E-01	1.92E-02	1.09E-01	1.13E+01	7.76E+02	1.97E-01	6.90E+02	1.63E-02
BCEOT-E13+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	8.69E+03	5.01E+01	NA	NA	NA	NA	5.36E-04	8.77E+02	4.70E-01	1.92E-02	1.09E-01	8.90E+00	7.76E+02	1.97E-01	6.90E+02	1.29E-02
BCEOT-E14+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	1.22E+04	7.05E+01	NA	NA	NA	NA	5.36E-04	1.24E+03	6.62E-01	1.92E-02	1.09E-01	1.25E+01	7.76E+02	1.97E-01	6.90E+02	1.82E-02
BCEOT-W14+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	1.74E+04	1.00E+02	NA	NA	NA	NA	5.36E-04	1.75E+03	9.40E-01	1.92E-02	1.09E-01	1.78E+01	7.76E+02	1.97E-01	6.90E+02	2.58E-02
BCEOT-E15+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	1.53E+04	8.82E+01	NA	NA	NA	NA	5.36E-04	1.55E+03	8.28E-01	1.92E-02	1.09E-01	1.57E+01	7.76E+02	1.97E-01	6.90E+02	2.27E-02
BCEOT-W15+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	2.72E+04	1.57E+02	NA	NA	NA	NA	5.36E-04	2.74E+03	1.47E+00	1.92E-02	1.09E-01	2.78E+01	7.76E+02	1.97E-01	6.90E+02	4.04E-02
BCEOT-E16+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	9.55E+03	5.50E+01	NA	NA	NA	NA	5.36E-04	9.64E+02	5.17E-01	1.92E-02	1.09E-01	9.79E+00	7.76E+02	1.97E-01	6.90E+02	1.42E-02
BCEOT-W16+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	6.05E+03	3.49E+01	NA	NA	NA	NA	5.36E-04	6.11E+02	3.27E-01	1.92E-02	1.09E-01	6.20E+00	7.76E+02	1.97E-01	6.90E+02	8.99E-03
BCEOT-E17+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	1.21E+04	6.96E+01	NA	NA	NA	NA	5.36E-04	1.22E+03	6.53E-01	1.92E-02	1.09E-01	1.24E+01	7.76E+02	1.97E-01	6.90E+02	1.79E-02
BCEOT-W17+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	5.92E+03	3.41E+01	NA	NA	NA	NA	5.36E-04	5.97E+02	3.20E-01	1.92E-02	1.09E-01	6.06E+00	7.76E+02	1.97E-01	6.90E+02	8.79E-03
BCEOT-E18+12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	7.81E+04	4.50E+02	NA	NA	NA	NA	5.36E-04	7.88E+03	4.22E+00	1.92E-02	1.09E-01	8.00E+01	7.76E+02	1.97E-01	6.90E+02	1.16E-01
BCEOT-E18+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	1.26E+04	7.29E+01	NA	NA	NA	NA	5.36E-04	1.28E+03	6.84E-01	1.92E-02	1.09E-01	1.30E+01	7.76E+02	1.97E-01	6.90E+02	1.88E-02
BCEOT-W18+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	1.30E+04	7.48E+01	NA	NA	NA	NA	5.36E-04	1.31E+03	7.02E-01	1.92E-02	1.09E-01	1.33E+01	7.76E+02	1.97E-01	6.90E+02	1.93E-02
BCEOT-E19+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	1.23E+04	7.11E+01	NA	NA	NA	NA	5.36E-04	1.25E+03	6.67E-01	1.92E-02	1.09E-01	1.26E+01	7.76E+02	1.97E-01	6.90E+02	1.83E-02
BCEOT-W19+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	2.77E+03	1.60E+01	NA	NA	NA	NA	5.36E-04	2.80E+02	1.50E-01	1.92E-02	1.09E-01	2.84E+00	7.76E+02	1.97E-01	6.90E+02	4.12E-03
BCEOT-E20+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	1.05E+04	6.04E+01	NA	NA	NA	NA	5.36E-04	1.06E+03	5.67E-01	1.92E-02	1.09E-01	1.07E+01	7.76E+02	1.97E-01	6.90E+02	1.56E-02
BCEOT-W20+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	7.89E+03	4.54E+01	NA	NA	NA	NA	5.36E-04	7.96E+02	4.27E-01	1.92E-02	1.09E-01	8.08E+00	7.76E+02	1.97E-01	6.90E+02	1.17E-02
BCEOT-E21+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	5.13E+03	2.95E+01	NA	NA	NA	NA	5.36E-04	5.18E+02	2.77E-01	1.92E-02	1.09E-01	5.25E+00	7.76E+02	1.97E-01	6.90E+02	7.61E-03
BCEOT-W21+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	7.07E+03	4.08E+01	NA	NA	NA	NA	5.36E-04	7.14E+02	3.83E-01	1.92E-02	1.09E-01	7.25E+00	7.76E+02	1.97E-01	6.90E+02	1.05E-02
BCEOT-E22+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	2.43E+04	1.40E+02	NA	NA	NA	NA	5.36E-04	2.46E+03	1.32E+00	1.92E-02	1.09E-01	2.49E+01	7.76E+02	1.97E-01	6.90E+02	3.61E-02
BCEOT-E22+70 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	6.92E+03	3.99E+01	NA	NA	NA	NA	5.36E-04	6.98E+02	3.74E-01	1.92E-02	1.09E-01	7.09E+00	7.76E+02	1.97E-01	6.90E+02	1.03E-02
BCEOT-W22+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	3.10E+03	1.79E+01	NA	NA	NA	NA	5.36E-04	3.13E+02	1.68E-01	1.92E-02	1.09E-01	3.18E+00	7.76E+02	1.97E-01	6.90E+02	4.60E-03
BCEOT-E23+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	4.19E+03	2.42E+01	NA	NA	NA	NA	5.36E-04	4.23E+02	2.27E-01	1.92E-02	1.09E-01	4.30E+00	7.76E+02	1.97E-01	6.90E+02	6.23E-03
BCEOT-W23+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	5.87E+03	3.38E+01	NA	NA	NA	NA	5.36E-04	5.92E+02	3.17E-01	1.92E-02	1.09E-01	6.01E+00	7.76E+02	1.97E-01	6.90E+02	8.71E-03
BCEOT-E24+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	3.44E+03	1.98E+01	NA	NA	NA	NA	5.36E-04	3.47E+02	1.86E-01	1.92E-02	1.09E-01	3.52E+00	7.76E+02	1.97E-01	6.90E+02	5.10E-03

TABLE C-11E: MANGANESE DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 11 - BEARTRAP CREEK DISPERSED TAILINGS DEPOSITS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK TAILINGS DEPOSIT AND FLOSSIE LOUISE MINE WASTE PILE (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **4.982**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Mourning Dove (Herbivorous Birds - Terrestrial)																							
BCEOT-W24+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	5.45E+03	3.14E+01	NA	NA	NA	NA	5.36E-04	5.50E+02	2.95E-01	1.92E-02	1.09E-01	5.59E+00	7.76E+02	1.97E-01	6.90E+02	8.10E-03
BCEOT-E25+20 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	4.31E+03	2.48E+01	NA	NA	NA	NA	5.36E-04	4.34E+02	2.33E-01	1.92E-02	1.09E-01	4.41E+00	7.76E+02	1.97E-01	6.90E+02	6.39E-03
BCEOT-W25+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	3.00E+03	1.73E+01	NA	NA	NA	NA	5.36E-04	3.03E+02	1.62E-01	1.92E-02	1.09E-01	3.07E+00	7.76E+02	1.97E-01	6.90E+02	4.45E-03
BCEOT-E26+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	2.39E+03	1.38E+01	NA	NA	NA	NA	5.36E-04	2.41E+02	1.29E-01	1.92E-02	1.09E-01	2.45E+00	7.76E+02	1.97E-01	6.90E+02	3.55E-03
BCEOT-W26+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	4.99E+04	2.88E+02	NA	NA	NA	NA	5.36E-04	5.04E+03	2.70E+00	1.92E-02	1.09E-01	5.11E+01	7.76E+02	1.97E-01	6.90E+02	7.41E-02
BCEOT-W27+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	9.91E+00	1.13E+04	6.51E+01	NA	NA	NA	NA	5.36E-04	1.14E+03	6.11E-01	1.92E-02	1.09E-01	1.16E+01	7.76E+02	1.97E-01	6.90E+02	1.68E-02
																						Maximum HQ (Outside Tailings Pile)	**1.16E-01**
Red-Tailed Hawk (Carnivorous Birds - Terrestrial)																							
Reference Sites																							
ACBG-1 (0-6")	9.00E-02	9.00E-02	5.93E-02	1.75E+01	1.57E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.95E+02	1.51E+00	7.15E-03	1.13E+00	1.94E-02	7.76E+02	1.97E-01	1.10E+03	1.77E-05
ACBG-2 (0-6")	9.00E-02	9.00E-02	5.93E-02	5.92E+01	5.32E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	9.97E+02	5.11E+00	7.15E-03	1.13E+00	6.58E-02	7.76E+02	1.97E-01	1.10E+03	5.97E-05
BCBG-201 (0-6")	9.00E-02	9.00E-02	5.93E-02	9.55E+00	8.60E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.61E+02	8.26E-01	7.15E-03	1.13E+00	1.06E-02	7.76E+02	1.97E-01	1.10E+03	9.64E-06
Inside Tailings Pile																						**Minimum HQ (Reference Sites)**	**9.64E-06**
BCEOT-E0-12.5 (0-6")	9.00E-02	9.00E-02	2.80E-02	4.26E+01	3.84E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.52E+03	7.81E+00	7.15E-03	1.13E+00	7.34E-02	7.76E+02	1.97E-01	1.10E+03	6.66E-05
BCEOT-E1-12.5 (0-6")	9.00E-02	9.00E-02	2.80E-02	9.48E+01	8.53E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.39E+03	1.74E+01	7.15E-03	1.13E+00	1.63E-01	7.76E+02	1.97E-01	1.10E+03	1.48E-04
BCEOT-E2-8 (0-6")	9.00E-02	9.00E-02	2.80E-02	4.90E+01	4.41E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.75E+03	8.98E+00	7.15E-03	1.13E+00	8.44E-02	7.76E+02	1.97E-01	1.10E+03	7.66E-05
BCEOT-E3-8 (0-6")	9.00E-02	9.00E-02	2.80E-02	4.94E+01	4.45E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.77E+03	9.05E+00	7.15E-03	1.13E+00	8.51E-02	7.76E+02	1.97E-01	1.10E+03	7.73E-05
BCEOT-E4-12.5 (0-6")	9.00E-02	9.00E-02	2.80E-02	2.95E+01	2.65E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.05E+03	5.40E+00	7.15E-03	1.13E+00	5.08E-02	7.76E+02	1.97E-01	1.10E+03	4.61E-05
BCEOT-W4-12.5 (0-6")	9.00E-02	9.00E-02	2.80E-02	3.26E+01	2.93E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.16E+03	5.97E+00	7.15E-03	1.13E+00	5.62E-02	7.76E+02	1.97E-01	1.10E+03	5.10E-05
BCEOT-E5-25 (0-6")	9.00E-02	9.00E-02	2.80E-02	1.63E+01	1.47E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.83E+02	2.99E+00	7.15E-03	1.13E+00	2.81E-02	7.76E+02	1.97E-01	1.10E+03	2.55E-05
BCEOT-W5-12.5 (0-6")	9.00E-02	9.00E-02	2.80E-02	7.91E+01	7.12E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.83E+03	1.45E+01	7.15E-03	1.13E+00	1.36E-01	7.76E+02	1.97E-01	1.10E+03	1.24E-04
BCEOT-E6-12.5 (0-6")	9.00E-02	9.00E-02	2.80E-02	3.43E+01	3.08E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.22E+03	6.28E+00	7.15E-03	1.13E+00	5.90E-02	7.76E+02	1.97E-01	1.10E+03	5.36E-05
BCEOT-W6-12.5 (0-6")	9.00E-02	9.00E-02	2.80E-02	2.93E+01	2.64E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.05E+03	5.36E+00	7.15E-03	1.13E+00	5.04E-02	7.76E+02	1.97E-01	1.10E+03	4.58E-05
BCEOT-E7-12.5 (0-6")	9.00E-02	9.00E-02	2.80E-02	3.53E+01	3.17E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.26E+03	6.46E+00	7.15E-03	1.13E+00	6.08E-02	7.76E+02	1.97E-01	1.10E+03	5.52E-05
BCEOT-W7-12.5 (0-6")	9.00E-02	9.00E-02	2.80E-02	1.70E+01	1.53E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	6.09E+02	3.12E+00	7.15E-03	1.13E+00	2.93E-02	7.76E+02	1.97E-01	1.10E+03	2.66E-05
BCEOT-W8-12.5 (0-6")	9.00E-02	9.00E-02	2.80E-02	3.22E+00	2.90E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.15E+02	5.90E-01	7.15E-03	1.13E+00	5.55E-03	7.76E+02	1.97E-01	1.10E+03	5.04E-06
BCEOT-E9-12.5 (0-6")	9.00E-02	9.00E-02	2.80E-02	1.63E+01	1.47E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.83E+02	2.99E+00	7.15E-03	1.13E+00	2.81E-02	7.76E+02	1.97E-01	1.10E+03	2.55E-05
BCEOT-W9-12.5 (0-6")	9.00E-02	9.00E-02	2.80E-02	3.47E+00	3.12E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.24E+02	6.35E-01	7.15E-03	1.13E+00	5.97E-03	7.76E+02	1.97E-01	1.10E+03	5.42E-06
BCEOT-E10-12.5 (0-6")	9.00E-02	9.00E-02	2.80E-02	1.04E+02	9.38E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.72E+03	1.91E+01	7.15E-03	1.13E+00	1.79E-01	7.76E+02	1.97E-01	1.10E+03	1.63E-04
BCEOT-W10-12.5 (0-6")	9.00E-02	9.00E-02	2.80E-02	1.99E+01	1.79E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	7.12E+02	3.65E+00	7.15E-03	1.13E+00	3.43E-02	7.76E+02	1.97E-01	1.10E+03	3.12E-05
BCEOT-E11-12.5 (0-6")	9.00E-02	9.00E-02	2.80E-02	1.19E+01	1.07E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.26E+02	2.19E+00	7.15E-03	1.13E+00	2.06E-02	7.76E+02	1.97E-01	1.10E+03	1.87E-05
BCEOT-W11-12.5 (0-6")	9.00E-02	9.00E-02	2.80E-02	1.68E+01	1.51E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	6.00E+02	3.08E+00	7.15E-03	1.13E+00	2.89E-02	7.76E+02	1.97E-01	1.10E+03	2.63E-05
BCEOT-E12-12.5 (0-6")	9.00E-02	9.00E-02	2.80E-02	3.38E+01	3.04E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.21E+03	6.18E+00	7.15E-03	1.13E+00	5.81E-02	7.76E+02	1.97E-01	1.10E+03	5.28E-05
BCEOT-W12-12.5 (0-6")	9.00E-02	9.00E-02	2.80E-02	7.42E+01	6.68E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.65E+03	1.36E+01	7.15E-03	1.13E+00	1.28E-01	7.76E+02	1.97E-01	1.10E+03	1.16E-04
BCEOT-E13-12.5 (0-6")	9.00E-02	9.00E-02	2.80E-02	1.71E+01	1.54E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	6.10E+02	3.13E+00	7.15E-03	1.13E+00	2.94E-02	7.76E+02	1.97E-01	1.10E+03	2.67E-05
BCEOT-W13-12.5 (0-6")	9.00E-02	9.00E-02	2.80E-02	9.05E+00	8.14E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.23E+02	1.66E+00	7.15E-03	1.13E+00	1.56E-02	7.76E+02	1.97E-01	1.10E+03	1.42E-05
BCEOT-W13-25 (0-6")	9.00E-02	9.00E-02	2.80E-02	1.60E+01	1.44E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.72E+02	2.93E+00	7.15E-03	1.13E+00	2.76E-02	7.76E+02	1.97E-01	1.10E+03	2.50E-05
BCEOT-W14-12.5 (0-6")	9.00E-02	9.00E-02	2.80E-02	7.66E+01	6.89E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.74E+03	1.40E+01	7.15E-03	1.13E+00	1.32E-01	7.76E+02	1.97E-01	1.10E+03	1.20E-04
BCEOT-E15-8 (0-6")	9.00E-02	9.00E-02	2.80E-02	2.49E+01	2.24E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	8.90E+02	4.56E+00	7.15E-03	1.13E+00	4.29E-02	7.76E+02	1.97E-01	1.10E+03	3.89E-05
BCEOT-W15-12.5 (0-6")	9.00E-02	9.00E-02	2.80E-02	3.42E+00	3.07E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.22E+02	6.26E-01	7.15E-03	1.13E+00	5.88E-03	7.76E+02	1.97E-01	1.10E+03	5.34E-06
BCEOT-E16-12.5 (0-6")	9.00E-02	9.00E-02	2.80E-02	2.01E+01	1.80E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	7.16E+02	3.67E+00	7.15E-03	1.13E+00	3.45E-02	7.76E+02	1.97E-01	1.10E+03	3.13E-05
BCEOT-W16-12.5 (0-6")	9.00E-02	9.00E-02	2.80E-02	6.49E+01	5.84E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.32E+03	1.19E+01	7.15E-03	1.13E+00	1.12E-01	7.76E+02	1.97E-01	1.10E+03	1.01E-04
BCEOT-E17-12.5 (0-6")	9.00E-02	9.00E-02	2.80E-02	2.35E+02	2.11E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	8.38E+03	4.30E+01	7.15E-03	1.13E+00	4.04E-01	7.76E+02	1.97E-01	1.10E+03	3.67E-04
BCEOT-W17-12.5 (0-6")	9.00E-02	9.00E-02	2.80E-02	3.22E+01	2.89E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.15E+03	5.89E+00	7.15E-03	1.13E+00	5.54E-02	7.76E+02	1.97E-01	1.10E+03	5.03E-05
BCEOT-W18-12.5 (0-6")	9.00E-02	9.00E-02	2.80E-02	2.34E+00	2.11E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	8.36E+01	4.29E-01	7.15E-03	1.13E+00	4.03E-03	7.76E+02	1.97E-01	1.10E+03	3.66E-06
BCEOT-E19-12.5 (0-6")	9.00E-02	9.00E-02	2.80E-02	5.02E+01	4.52E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.79E+03	9.20E+00	7.15E-03	1.13E+00	8.65E-02	7.76E+02	1.97E-01	1.10E+03	7.85E-05
BCEOT-W19-12.5 (0-6")	9.00E-02	9.00E-02	2.80E-02	3.14E+01	2.83E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.12E+03	5.76E+00	7.15E-03	1.13E+00	5.41E-02	7.76E+02	1.97E-01	1.10E+03	4.91E-05
BCEOT-E20-12.5 (0-6")	9.00E-02	9.00E-02	2.80E-02	6.37E+01	5.73E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.27E+03	1.17E+01	7.15E-03	1.13E+00	1.10E-01	7.76E+02	1.97E-01	1.10E+03	9.95E-05
BCEOT-W20-12.5 (0-6")	9.00E-02	9.00E-02	2.80E-02	2.90E+02	2.61E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.04E+04	5.31E+01	7.15E-03	1.13E+00	5.00E-01	7.76E+02	1.97E-01	1.10E+03	4.54E-04
BCEOT-E21-12.5 (0-6")	9.00E-02	9.00E-02	2.80E-02	6.41E+01	5.76E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.29E+03	1.17E+01	7.15E-03	1.13E+00	1.10E-01	7.76E+02	1.97E-01	1.10E+03	1.00E-04
BCEOT-W21-12.5 (0-6")	9.00E-02	9.00E-02	2.80E-02	9.87E+00	8.88E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.53E+02	1.81E+00	7.15E-03	1.13E+00	1.70E-02	7.76E+02	1.97E-01	1.10E+03	1.54E-05
BCEOT-E22-12.5 (0-6")	9.00E-02	9.00E-02	2.80E-02	2.10E+02	1.89E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	7.49E+03	3.84E+01	7.15E-03	1.13E+00	3.61E-01	7.76E+02	1.97E-01	1.10E+03	3.28E-04

TABLE C-11E: MANGANESE DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 11 - BEARTRAP CREEK DISPERSED TAILINGS DEPOSITS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK TAILINGS DEPOSIT AND FLOSSIE LOUISE MINE WASTE PILE (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **4.982**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Red-Tailed Hawk (Carnivorous Birds - Terrestrial)																							
BCEOT-W22-12.5 (0-6")	9.00E-02	9.00E-02	2.80E-02	1.16E+03	1.04E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.14E+04	2.12E+02	7.15E-03	1.13E+00	2.00E+00	7.76E+02	1.97E-01	1.10E+03	1.81E-03
BCEOT-E23-15 (0-6")	9.00E-02	9.00E-02	2.80E-02	3.85E+01	3.46E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.38E+03	7.05E+00	7.15E-03	1.13E+00	6.63E-02	7.76E+02	1.97E-01	1.10E+03	6.02E-05
BCEOT-W23-12.5 (0-6")	9.00E-02	9.00E-02	2.80E-02	2.88E+02	2.59E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.03E+04	5.28E+01	7.15E-03	1.13E+00	4.96E-01	7.76E+02	1.97E-01	1.10E+03	4.51E-04
BCEOT-E24-12.5 (0-6")	9.00E-02	9.00E-02	2.80E-02	1.02E+01	9.19E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.65E+02	1.87E+00	7.15E-03	1.13E+00	1.76E-02	7.76E+02	1.97E-01	1.10E+03	1.60E-05
BCEOT-W24-12.5 (0-6")	9.00E-02	9.00E-02	2.80E-02	2.56E+02	2.30E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	9.14E+03	4.69E+01	7.15E-03	1.13E+00	4.40E-01	7.76E+02	1.97E-01	1.10E+03	4.00E-04
BCEOT-E25-12.5 (0-6")	9.00E-02	9.00E-02	2.80E-02	3.10E+01	2.79E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.11E+03	5.68E+00	7.15E-03	1.13E+00	5.34E-02	7.76E+02	1.97E-01	1.10E+03	4.85E-05
BCEOT-W25-12.5 (0-6")	9.00E-02	9.00E-02	2.80E-02	2.98E+02	2.68E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.07E+04	5.46E+01	7.15E-03	1.13E+00	5.14E-01	7.76E+02	1.97E-01	1.10E+03	4.66E-04
BCEOT-E26-12.5 (0-6")	9.00E-02	9.00E-02	2.80E-02	1.68E+01	1.51E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	6.01E+02	3.08E+00	7.15E-03	1.13E+00	2.90E-02	7.76E+02	1.97E-01	1.10E+03	2.63E-05
BCEOT-W26-12.5 (0-6")	9.00E-02	9.00E-02	2.80E-02	2.34E+00	2.10E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	8.35E+01	4.28E-01	7.15E-03	1.13E+00	4.03E-03	7.76E+02	1.97E-01	1.10E+03	3.65E-06
BCEOT-W27-12.5 (0-6")	9.00E-02	9.00E-02	2.80E-02	2.24E+02	2.01E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	8.00E+03	4.10E+01	7.15E-03	1.13E+00	3.86E-01	7.76E+02	1.97E-01	1.10E+03	3.50E-04
At Edge of Tailings Pile																						**Maximum HQ (Inside Tailings Pile)**	**1.81E-03**
BCEOT-E0-0 (0-6")	9.00E-02	9.00E-02	2.80E-02	8.56E+01	7.70E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.06E+03	1.57E+01	7.15E-03	1.13E+00	1.47E-01	7.76E+02	1.97E-01	1.10E+03	1.34E-04
BCEOT-E1-0 (0-6")	9.00E-02	9.00E-02	2.80E-02	7.39E+01	6.65E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.64E+03	1.35E+01	7.15E-03	1.13E+00	1.27E-01	7.76E+02	1.97E-01	1.10E+03	1.16E-04
BCEOT-E2-0 (0-6")	9.00E-02	9.00E-02	2.80E-02	6.29E+01	5.66E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.25E+03	1.15E+01	7.15E-03	1.13E+00	1.08E-01	7.76E+02	1.97E-01	1.10E+03	9.83E-05
BCEOT-E3-0 (0-6")	9.00E-02	9.00E-02	2.80E-02	2.22E+01	1.99E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	7.92E+02	4.06E+00	7.15E-03	1.13E+00	3.82E-02	7.76E+02	1.97E-01	1.10E+03	3.47E-05
BCEOT-E4-0 (0-6")	9.00E-02	9.00E-02	2.80E-02	4.04E+01	3.64E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.44E+03	7.41E+00	7.15E-03	1.13E+00	6.96E-02	7.76E+02	1.97E-01	1.10E+03	6.32E-05
BCEOT-W4-0 (0-6")	9.00E-02	9.00E-02	2.80E-02	2.13E+01	1.92E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	7.61E+02	3.90E+00	7.15E-03	1.13E+00	3.67E-02	7.76E+02	1.97E-01	1.10E+03	3.33E-05
BCEOT-E5-0 (0-6")	9.00E-02	9.00E-02	2.80E-02	3.32E+01	2.99E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.19E+03	6.09E+00	7.15E-03	1.13E+00	5.72E-02	7.76E+02	1.97E-01	1.10E+03	5.19E-05
BCEOT-W5-0 (0-6")	9.00E-02	9.00E-02	2.80E-02	1.47E+01	1.32E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.26E+02	2.70E+00	7.15E-03	1.13E+00	2.54E-02	7.76E+02	1.97E-01	1.10E+03	2.30E-05
BCEOT-E6-0 (0-6")	9.00E-02	9.00E-02	2.80E-02	2.37E+01	2.13E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	8.46E+02	4.34E+00	7.15E-03	1.13E+00	4.08E-02	7.76E+02	1.97E-01	1.10E+03	3.70E-05
BCEOT-W6-0 (0-6")	9.00E-02	9.00E-02	2.80E-02	3.10E+01	2.79E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.11E+03	5.68E+00	7.15E-03	1.13E+00	5.34E-02	7.76E+02	1.97E-01	1.10E+03	4.85E-05
BCEOT-E7-0 (0-6")	9.00E-02	9.00E-02	2.80E-02	3.40E+01	3.06E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.22E+03	6.23E+00	7.15E-03	1.13E+00	5.86E-02	7.76E+02	1.97E-01	1.10E+03	5.32E-05
BCEOT-W7-0 (0-6")	9.00E-02	9.00E-02	2.80E-02	1.18E+01	1.07E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.23E+02	2.17E+00	7.15E-03	1.13E+00	2.04E-02	7.76E+02	1.97E-01	1.10E+03	1.85E-05
BCEOT-W8-0 (0-6")	9.00E-02	9.00E-02	2.80E-02	1.16E+01	1.04E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.14E+02	2.12E+00	7.15E-03	1.13E+00	1.99E-02	7.76E+02	1.97E-01	1.10E+03	1.81E-05
BCEOT-E9-0 (0-6")	9.00E-02	9.00E-02	2.80E-02	8.84E+01	7.95E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.16E+03	1.62E+01	7.15E-03	1.13E+00	1.52E-01	7.76E+02	1.97E-01	1.10E+03	1.38E-04
BCEOT-W9-0 (0-6")	9.00E-02	9.00E-02	2.80E-02	1.31E+01	1.18E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.67E+02	2.40E+00	7.15E-03	1.13E+00	2.25E-02	7.76E+02	1.97E-01	1.10E+03	2.04E-05
BCEOT-E10-0 (0-6")	9.00E-02	9.00E-02	2.80E-02	1.64E+02	1.47E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.84E+03	3.00E+01	7.15E-03	1.13E+00	2.82E-01	7.76E+02	1.97E-01	1.10E+03	2.56E-04
BCEOT-W10-0 (0-6")	9.00E-02	9.00E-02	2.80E-02	1.23E+01	1.11E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.41E+02	2.26E+00	7.15E-03	1.13E+00	2.13E-02	7.76E+02	1.97E-01	1.10E+03	1.93E-05
BCEOT-E11-0 (0-6")	9.00E-02	9.00E-02	2.80E-02	8.01E+01	7.21E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.86E+03	1.47E+01	7.15E-03	1.13E+00	1.38E-01	7.76E+02	1.97E-01	1.10E+03	1.25E-04
BCEOT-W11-0 (0-6")	9.00E-02	9.00E-02	2.80E-02	3.91E+01	3.52E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.40E+03	7.16E+00	7.15E-03	1.13E+00	6.73E-02	7.76E+02	1.97E-01	1.10E+03	6.11E-05
BCEOT-E12-0 (0-6")	9.00E-02	9.00E-02	2.80E-02	4.12E+01	3.71E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.47E+03	7.55E+00	7.15E-03	1.13E+00	7.10E-02	7.76E+02	1.97E-01	1.10E+03	6.44E-05
BCEOT-W12-0 (0-6")	9.00E-02	9.00E-02	2.80E-02	2.28E+01	2.05E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	8.15E+02	4.18E+00	7.15E-03	1.13E+00	3.93E-02	7.76E+02	1.97E-01	1.10E+03	3.56E-05
BCEOT-E13-0 (0-6")	9.00E-02	9.00E-02	2.80E-02	3.17E+01	2.85E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.13E+03	5.80E+00	7.15E-03	1.13E+00	5.45E-02	7.76E+02	1.97E-01	1.10E+03	4.95E-05
BCEOT-W13-0 (0-6")	9.00E-02	9.00E-02	2.80E-02	2.68E+01	2.41E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	9.59E+02	4.91E+00	7.15E-03	1.13E+00	4.62E-02	7.76E+02	1.97E-01	1.10E+03	4.19E-05
BCEOT-E14-0 (0-6")	9.00E-02	9.00E-02	2.80E-02	3.14E+01	2.82E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.12E+03	5.74E+00	7.15E-03	1.13E+00	5.40E-02	7.76E+02	1.97E-01	1.10E+03	4.90E-05
BCEOT-W14-0 (0-6")	9.00E-02	9.00E-02	2.80E-02	1.05E+02	9.43E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.75E+03	1.92E+01	7.15E-03	1.13E+00	1.81E-01	7.76E+02	1.97E-01	1.10E+03	1.64E-04
BCEOT-E15-0 (0-6")	9.00E-02	9.00E-02	2.80E-02	3.54E+01	3.19E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.27E+03	6.49E+00	7.15E-03	1.13E+00	6.10E-02	7.76E+02	1.97E-01	1.10E+03	5.54E-05
BCEOT-W15-0 (0-6")	9.00E-02	9.00E-02	2.80E-02	9.91E+01	8.92E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.54E+03	1.82E+01	7.15E-03	1.13E+00	1.71E-01	7.76E+02	1.97E-01	1.10E+03	1.55E-04
BCEOT-E16-0 (0-6")	9.00E-02	9.00E-02	2.80E-02	3.97E+01	3.57E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.42E+03	7.27E+00	7.15E-03	1.13E+00	6.83E-02	7.76E+02	1.97E-01	1.10E+03	6.20E-05
BCEOT-W16-0 (0-6")	9.00E-02	9.00E-02	2.80E-02	2.31E+01	2.08E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	8.26E+02	4.23E+00	7.15E-03	1.13E+00	3.98E-02	7.76E+02	1.97E-01	1.10E+03	3.61E-05
BCEOT-E17-0 (0-6")	9.00E-02	9.00E-02	2.80E-02	5.41E+01	4.87E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.93E+03	9.91E+00	7.15E-03	1.13E+00	9.31E-02	7.76E+02	1.97E-01	1.10E+03	8.45E-05
BCEOT-W17-0 (0-6")	9.00E-02	9.00E-02	2.80E-02	3.46E+01	3.12E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.24E+03	6.34E+00	7.15E-03	1.13E+00	5.96E-02	7.76E+02	1.97E-01	1.10E+03	5.41E-05
BCEOT-E18-0 (0-6")	9.00E-02	9.00E-02	2.80E-02	4.81E+01	4.32E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.72E+03	8.81E+00	7.15E-03	1.13E+00	8.28E-02	7.76E+02	1.97E-01	1.10E+03	7.51E-05
BCEOT-W18-0 (0-6")	9.00E-02	9.00E-02	2.80E-02	3.49E+01	3.14E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.25E+03	6.38E+00	7.15E-03	1.13E+00	6.00E-02	7.76E+02	1.97E-01	1.10E+03	5.45E-05
BCEOT-E19-0 (0-6")	9.00E-02	9.00E-02	2.80E-02	2.91E+01	2.61E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.04E+03	5.32E+00	7.15E-03	1.13E+00	5.00E-02	7.76E+02	1.97E-01	1.10E+03	4.54E-05
BCEOT-W19-0 (0-6")	9.00E-02	9.00E-02	2.80E-02	7.38E+01	6.64E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.64E+03	1.35E+01	7.15E-03	1.13E+00	1.27E-01	7.76E+02	1.97E-01	1.10E+03	1.15E-04
BCEOT-E20-0 (0-6")	9.00E-02	9.00E-02	2.80E-02	1.02E+01	9.15E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.63E+02	1.86E+00	7.15E-03	1.13E+00	1.75E-02	7.76E+02	1.97E-01	1.10E+03	1.59E-05
BCEOT-W20-0 (0-6")	9.00E-02	9.00E-02	2.80E-02	2.89E+01	2.60E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.03E+03	5.30E+00	7.15E-03	1.13E+00	4.98E-02	7.76E+02	1.97E-01	1.10E+03	4.52E-05
BCEOT-E21-0 (0-6")	9.00E-02	9.00E-02	2.80E-02	3.98E+01	3.58E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.42E+03	7.28E+00	7.15E-03	1.13E+00	6.85E-02	7.76E+02	1.97E-01	1.10E+03	6.21E-05
BCEOT-W21-0 (0-6")	9.00E-02	9.00E-02	2.80E-02	3.28E+01	2.95E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.17E+03	6.01E+00	7.15E-03	1.13E+00	5.65E-02	7.76E+02	1.97E-01	1.10E+03	5.13E-05
BCEOT-E22-0 (0-6")	9.00E-02	9.00E-02	2.80E-02	2.39E+01	2.15E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	8.53E+02	4.37E+00	7.15E-03	1.13E+00	4.11E-02	7.76E+02	1.97E-01	1.10E+03	3.73E-05
BCEOT-W22-0 (0-6")	9.00E-02	9.00E-02	2.80E-02	1.78E+01	1.60E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	6.37E+02	3.27E+00	7.15E-03	1.13E+00	3.07E-02	7.76E+02	1.97E-01	1.10E+03	2.79E-05
BCEOT-E23-0 (0-6")	9.00E-02	9.00E-02	2.80E-02	1.32E+01	1.18E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.70E+02	2.41E+00	7.15E-03	1.13E+00	2.27E-02	7.76E+02	1.97E-01	1.10E+03	2.06E-05

TABLE C-11E: MANGANESE DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 11 - BEARTRAP CREEK DISPERSED TAILINGS DEPOSITS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK TAILINGS DEPOSIT AND FLOSSIE LOUISE MINE WASTE PILE (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **4.982**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Red-Tailed Hawk (Carnivorous Birds - Terrestrial)																							
BCEOT-W23-0 (0-6")	9.00E-02	9.00E-02	2.80E-02	1.55E+01	1.39E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.54E+02	2.84E+00	7.15E-03	1.13E+00	2.67E-02	7.76E+02	1.97E-01	1.10E+03	2.42E-05
BCEOT-E24-0 (0-6")	9.00E-02	9.00E-02	2.80E-02	1.51E+01	1.35E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.38E+02	2.76E+00	7.15E-03	1.13E+00	2.59E-02	7.76E+02	1.97E-01	1.10E+03	2.35E-05
BCEOT-W24-0 (0-6")	9.00E-02	9.00E-02	2.80E-02	3.28E+01	2.95E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.17E+03	6.02E+00	7.15E-03	1.13E+00	5.66E-02	7.76E+02	1.97E-01	1.10E+03	5.13E-05
BCEOT-E25-0 (0-6")	9.00E-02	9.00E-02	2.80E-02	1.99E+01	1.79E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	7.11E+02	3.65E+00	7.15E-03	1.13E+00	3.43E-02	7.76E+02	1.97E-01	1.10E+03	3.11E-05
BCEOT-W25-0 (0-6")	9.00E-02	9.00E-02	2.80E-02	4.74E+01	4.26E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.69E+03	8.67E+00	7.15E-03	1.13E+00	8.16E-02	7.76E+02	1.97E-01	1.10E+03	7.40E-05
BCEOT-E26-0 (0-6")	9.00E-02	9.00E-02	2.80E-02	3.59E+01	3.23E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.28E+03	6.58E+00	7.15E-03	1.13E+00	6.19E-02	7.76E+02	1.97E-01	1.10E+03	5.61E-05
BCEOT-W26-0 (0-6")	9.00E-02	9.00E-02	2.80E-02	3.51E+01	3.16E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.25E+03	6.43E+00	7.15E-03	1.13E+00	6.04E-02	7.76E+02	1.97E-01	1.10E+03	5.49E-05
BCEOT-W27-0 (0-6")	9.00E-02	9.00E-02	2.80E-02	2.81E+01	2.53E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.00E+03	5.15E+00	7.15E-03	1.13E+00	4.84E-02	7.76E+02	1.97E-01	1.10E+03	4.39E-05
Outside Tailings Piles																						**Maximum HQ (Edge of Tailings Pile)**	**2.56E-04**
BCEOT-E0+25 (0-6")	9.00E-02	9.00E-02	2.80E-02	2.59E+01	2.33E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	9.27E+02	4.75E+00	7.15E-03	1.13E+00	4.47E-02	7.76E+02	1.97E-01	1.10E+03	4.06E-05
BCEOT-E1+25 (0-6")	9.00E-02	9.00E-02	2.80E-02	1.28E+02	1.15E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.56E+03	2.34E+01	7.15E-03	1.13E+00	2.20E-01	7.76E+02	1.97E-01	1.10E+03	1.99E-04
BCEOT-E2+25 (0-6")	9.00E-02	9.00E-02	2.80E-02	1.56E+01	1.40E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.56E+02	2.85E+00	7.15E-03	1.13E+00	2.68E-02	7.76E+02	1.97E-01	1.10E+03	2.43E-05
BCEOT-E3+25 (0-6")	9.00E-02	9.00E-02	2.80E-02	2.93E+01	2.64E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.05E+03	5.37E+00	7.15E-03	1.13E+00	5.05E-02	7.76E+02	1.97E-01	1.10E+03	4.58E-05
BCEOT-E4+25 (0-6")	9.00E-02	9.00E-02	2.80E-02	7.52E+01	6.76E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.69E+03	1.38E+01	7.15E-03	1.13E+00	1.29E-01	7.76E+02	1.97E-01	1.10E+03	1.17E-04
BCEOT-W4+25 (0-6")	9.00E-02	9.00E-02	2.80E-02	1.88E+01	1.69E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	6.73E+02	3.45E+00	7.15E-03	1.13E+00	3.24E-02	7.76E+02	1.97E-01	1.10E+03	2.94E-05
BCEOT-E5+25 (0-6")	9.00E-02	9.00E-02	2.80E-02	6.50E+01	5.85E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.32E+03	1.19E+01	7.15E-03	1.13E+00	1.12E-01	7.76E+02	1.97E-01	1.10E+03	1.02E-04
BCEOT-W5+25 (0-6")	9.00E-02	9.00E-02	2.80E-02	2.00E+01	1.80E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	7.14E+02	3.66E+00	7.15E-03	1.13E+00	3.44E-02	7.76E+02	1.97E-01	1.10E+03	3.12E-05
BCEOT-E6+25 (0-6")	9.00E-02	9.00E-02	2.80E-02	1.61E+01	1.45E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.74E+02	2.94E+00	7.15E-03	1.13E+00	2.77E-02	7.76E+02	1.97E-01	1.10E+03	2.51E-05
BCEOT-W6+25 (0-6")	9.00E-02	9.00E-02	2.80E-02	8.32E+00	7.49E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.97E+02	1.52E+00	7.15E-03	1.13E+00	1.43E-02	7.76E+02	1.97E-01	1.10E+03	1.30E-05
BCEOT-E7+25 (0-6")	9.00E-02	9.00E-02	2.80E-02	6.82E+01	6.13E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.44E+03	1.25E+01	7.15E-03	1.13E+00	1.17E-01	7.76E+02	1.97E-01	1.10E+03	1.07E-04
BCEOT-W7+25 (0-6")	9.00E-02	9.00E-02	2.80E-02	2.33E+01	2.10E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	8.33E+02	4.27E+00	7.15E-03	1.13E+00	4.01E-02	7.76E+02	1.97E-01	1.10E+03	3.64E-05
FLWA-101 (0-6")	9.00E-02	9.00E-02	2.80E-02	6.76E+00	6.08E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.42E+02	1.24E+00	7.15E-03	1.13E+00	1.16E-02	7.76E+02	1.97E-01	1.10E+03	1.06E-05
BCEOT-W8+25 (0-6")	9.00E-02	9.00E-02	2.80E-02	1.42E+01	1.27E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.06E+02	2.59E+00	7.15E-03	1.13E+00	2.44E-02	7.76E+02	1.97E-01	1.10E+03	2.21E-05
BCEOT-E9+25 (0-6")	9.00E-02	9.00E-02	2.80E-02	5.51E+01	4.95E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.97E+03	1.01E+01	7.15E-03	1.13E+00	9.48E-02	7.76E+02	1.97E-01	1.10E+03	8.61E-05
BCEOT-W9+25 (0-6")	9.00E-02	9.00E-02	2.80E-02	5.94E+01	5.35E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.12E+03	1.09E+01	7.15E-03	1.13E+00	1.02E-01	7.76E+02	1.97E-01	1.10E+03	9.29E-05
BCEOT-E10+25 (0-6")	9.00E-02	9.00E-02	2.80E-02	6.40E+01	5.76E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.29E+03	1.17E+01	7.15E-03	1.13E+00	1.10E-01	7.76E+02	1.97E-01	1.10E+03	1.00E-04
BCEOT-W10+25 (0-6")	9.00E-02	9.00E-02	2.80E-02	1.06E+01	9.57E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.80E+02	1.95E+00	7.15E-03	1.13E+00	1.83E-02	7.76E+02	1.97E-01	1.10E+03	1.66E-05
BCEOT-E11+25 (0-6")	9.00E-02	9.00E-02	2.80E-02	2.65E+01	2.39E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	9.47E+02	4.86E+00	7.15E-03	1.13E+00	4.57E-02	7.76E+02	1.97E-01	1.10E+03	4.15E-05
BCEOT-W11+25 (0-6")	9.00E-02	9.00E-02	2.80E-02	1.77E+01	1.60E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	6.34E+02	3.25E+00	7.15E-03	1.13E+00	3.05E-02	7.76E+02	1.97E-01	1.10E+03	2.77E-05
BCEOT-E12+25 (0-6")	9.00E-02	9.00E-02	2.80E-02	2.76E+01	2.48E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	9.86E+02	5.06E+00	7.15E-03	1.13E+00	4.75E-02	7.76E+02	1.97E-01	1.10E+03	4.31E-05
BCEOT-W12+25 (0-6")	9.00E-02	9.00E-02	2.80E-02	3.10E+01	2.79E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.11E+03	5.68E+00	7.15E-03	1.13E+00	5.34E-02	7.76E+02	1.97E-01	1.10E+03	4.85E-05
BCEOT-E13+25 (0-6")	9.00E-02	9.00E-02	2.80E-02	2.46E+01	2.21E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	8.77E+02	4.50E+00	7.15E-03	1.13E+00	4.23E-02	7.76E+02	1.97E-01	1.10E+03	3.84E-05
BCEOT-E14+25 (0-6")	9.00E-02	9.00E-02	2.80E-02	3.46E+01	3.11E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.24E+03	6.34E+00	7.15E-03	1.13E+00	5.96E-02	7.76E+02	1.97E-01	1.10E+03	5.41E-05
BCEOT-W14+25 (0-6")	9.00E-02	9.00E-02	2.80E-02	4.91E+01	4.42E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.75E+03	9.00E+00	7.15E-03	1.13E+00	8.46E-02	7.76E+02	1.97E-01	1.10E+03	7.68E-05
BCEOT-E15+25 (0-6")	9.00E-02	9.00E-02	2.80E-02	4.33E+01	3.89E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.55E+03	7.93E+00	7.15E-03	1.13E+00	7.45E-02	7.76E+02	1.97E-01	1.10E+03	6.76E-05
BCEOT-W15+25 (0-6")	9.00E-02	9.00E-02	2.80E-02	7.68E+01	6.91E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.74E+03	1.41E+01	7.15E-03	1.13E+00	1.32E-01	7.76E+02	1.97E-01	1.10E+03	1.20E-04
BCEOT-E16+25 (0-6")	9.00E-02	9.00E-02	2.80E-02	2.70E+01	2.43E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	9.64E+02	4.94E+00	7.15E-03	1.13E+00	4.65E-02	7.76E+02	1.97E-01	1.10E+03	4.22E-05
BCEOT-W16+25 (0-6")	9.00E-02	9.00E-02	2.80E-02	1.71E+01	1.54E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	6.11E+02	3.13E+00	7.15E-03	1.13E+00	2.94E-02	7.76E+02	1.97E-01	1.10E+03	2.67E-05
BCEOT-E17+25 (0-6")	9.00E-02	9.00E-02	2.80E-02	3.41E+01	3.07E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.22E+03	6.25E+00	7.15E-03	1.13E+00	5.88E-02	7.76E+02	1.97E-01	1.10E+03	5.33E-05
BCEOT-W17+25 (0-6")	9.00E-02	9.00E-02	2.80E-02	1.67E+01	1.50E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.97E+02	3.06E+00	7.15E-03	1.13E+00	2.88E-02	7.76E+02	1.97E-01	1.10E+03	2.61E-05
BCEOT-E18+12.5 (0-6")	9.00E-02	9.00E-02	2.80E-02	2.21E+02	1.99E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	7.88E+03	4.04E+01	7.15E-03	1.13E+00	3.80E-01	7.76E+02	1.97E-01	1.10E+03	3.45E-04
BCEOT-E18+25 (0-6")	9.00E-02	9.00E-02	2.80E-02	3.57E+01	3.21E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.28E+03	6.54E+00	7.15E-03	1.13E+00	6.15E-02	7.76E+02	1.97E-01	1.10E+03	5.58E-05
BCEOT-W18+25 (0-6")	9.00E-02	9.00E-02	2.80E-02	3.67E+01	3.30E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.31E+03	6.72E+00	7.15E-03	1.13E+00	6.32E-02	7.76E+02	1.97E-01	1.10E+03	5.74E-05
BCEOT-E19+25 (0-6")	9.00E-02	9.00E-02	2.80E-02	3.49E+01	3.14E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.25E+03	6.39E+00	7.15E-03	1.13E+00	6.00E-02	7.76E+02	1.97E-01	1.10E+03	5.45E-05
BCEOT-W19+25 (0-6")	9.00E-02	9.00E-02	2.80E-02	7.83E+00	7.05E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.80E+02	1.43E+00	7.15E-03	1.13E+00	1.35E-02	7.76E+02	1.97E-01	1.10E+03	1.22E-05
BCEOT-E20+25 (0-6")	9.00E-02	9.00E-02	2.80E-02	2.96E+01	2.67E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.06E+03	5.43E+00	7.15E-03	1.13E+00	5.10E-02	7.76E+02	1.97E-01	1.10E+03	4.63E-05
BCEOT-W20+25 (0-6")	9.00E-02	9.00E-02	2.80E-02	2.23E+01	2.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	7.96E+02	4.08E+00	7.15E-03	1.13E+00	3.84E-02	7.76E+02	1.97E-01	1.10E+03	3.48E-05
BCEOT-E21+25 (0-6")	9.00E-02	9.00E-02	2.80E-02	1.45E+01	1.30E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.18E+02	2.65E+00	7.15E-03	1.13E+00	2.50E-02	7.76E+02	1.97E-01	1.10E+03	2.26E-05
BCEOT-W21+25 (0-6")	9.00E-02	9.00E-02	2.80E-02	2.00E+01	1.80E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	7.14E+02	3.66E+00	7.15E-03	1.13E+00	3.44E-02	7.76E+02	1.97E-01	1.10E+03	3.12E-05
BCEOT-E22+25 (0-6")	9.00E-02	9.00E-02	2.80E-02	6.88E+01	6.19E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.46E+03	1.26E+01	7.15E-03	1.13E+00	1.18E-01	7.76E+02	1.97E-01	1.10E+03	1.08E-04
BCEOT-E22+70 (0-6")	9.00E-02	9.00E-02	2.80E-02	1.95E+01	1.76E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	6.98E+02	3.58E+00	7.15E-03	1.13E+00	3.37E-02	7.76E+02	1.97E-01	1.10E+03	3.06E-05
BCEOT-W22+25 (0-6")	9.00E-02	9.00E-02	2.80E-02	8.76E+00	7.88E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.13E+02	1.60E+00	7.15E-03	1.13E+00	1.51E-02	7.76E+02	1.97E-01	1.10E+03	1.37E-05
BCEOT-E23+25 (0-6")	9.00E-02	9.00E-02	2.80E-02	1.18E+01	1.07E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.23E+02	2.17E+00	7.15E-03	1.13E+00	2.04E-02	7.76E+02	1.97E-01	1.10E+03	1.85E-05

TABLE C-11E: MANGANESE DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 11 - BEARTRAP CREEK DISPERSED TAILINGS DEPOSITS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK TAILINGS DEPOSIT AND FLOSSIE LOUISE MINE WASTE PILE (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **4.982**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Red-Tailed Hawk (Carnivorous Birds - Terrestrial)																							
BCEOT-W23+25 (0-6")	9.00E-02	9.00E-02	2.80E-02	1.66E+01	1.49E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.92E+02	3.04E+00	7.15E-03	1.13E+00	2.85E-02	7.76E+02	1.97E-01	1.10E+03	2.59E-05
BCEOT-E24+25 (0-6")	9.00E-02	9.00E-02	2.80E-02	9.71E+00	8.73E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.47E+02	1.78E+00	7.15E-03	1.13E+00	1.67E-02	7.76E+02	1.97E-01	1.10E+03	1.52E-05
BCEOT-W24+25 (0-6")	9.00E-02	9.00E-02	2.80E-02	1.54E+01	1.39E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.50E+02	2.82E+00	7.15E-03	1.13E+00	2.65E-02	7.76E+02	1.97E-01	1.10E+03	2.41E-05
BCEOT-E25+20 (0-6")	9.00E-02	9.00E-02	2.80E-02	1.22E+01	1.09E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.34E+02	2.23E+00	7.15E-03	1.13E+00	2.09E-02	7.76E+02	1.97E-01	1.10E+03	1.90E-05
BCEOT-W25+25 (0-6")	9.00E-02	9.00E-02	2.80E-02	8.47E+00	7.62E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.03E+02	1.55E+00	7.15E-03	1.13E+00	1.46E-02	7.76E+02	1.97E-01	1.10E+03	1.32E-05
BCEOT-E26+25 (0-6")	9.00E-02	9.00E-02	2.80E-02	6.75E+00	6.07E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.41E+02	1.24E+00	7.15E-03	1.13E+00	1.16E-02	7.76E+02	1.97E-01	1.10E+03	1.06E-05
BCEOT-W26+25 (0-6")	9.00E-02	9.00E-02	2.80E-02	1.41E+02	1.27E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.04E+03	2.58E+01	7.15E-03	1.13E+00	2.43E-01	7.76E+02	1.97E-01	1.10E+03	2.20E-04
BCEOT-W27+25 (0-6")	9.00E-02	9.00E-02	2.80E-02	3.19E+01	2.87E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.14E+03	5.85E+00	7.15E-03	1.13E+00	5.50E-02	7.76E+02	1.97E-01	1.10E+03	4.99E-05
																						Maximum HQ (Outside Tailings Pile)	**3.45E-04**
American Kestrel (Insectivorous Birds - Terrestrial)																							
Reference Sites																							
ACBG-1 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	4.35E+02	5.99E+00	7.84E-04	2.95E+02	2.31E-01	1.90E-02	1.24E-01	9.55E-01	7.76E+02	1.97E-01	7.08E+02	1.35E-03
ACBG-2 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.47E+03	2.03E+01	7.84E-04	9.97E+02	7.82E-01	1.90E-02	1.24E-01	3.23E+00	7.76E+02	1.97E-01	7.08E+02	4.56E-03
BCBG-201 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	2.38E+02	3.27E+00	7.84E-04	1.61E+02	1.26E-01	1.90E-02	1.24E-01	5.21E-01	7.76E+02	1.97E-01	7.08E+02	7.37E-04
Inside Tailings Pile																						**Minimum HQ (Reference Sites)**	**7.37E-04**
BCEOT-E0-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	2.25E+03	3.09E+01	7.84E-04	1.52E+03	1.19E+00	1.90E-02	1.24E-01	4.93E+00	7.76E+02	1.97E-01	7.08E+02	6.97E-03
BCEOT-E1-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	5.00E+03	6.88E+01	7.84E-04	3.39E+03	2.66E+00	1.90E-02	1.24E-01	1.10E+01	7.76E+02	1.97E-01	7.08E+02	1.55E-02
BCEOT-E2-8 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	2.58E+03	3.56E+01	7.84E-04	1.75E+03	1.37E+00	1.90E-02	1.24E-01	5.67E+00	7.76E+02	1.97E-01	7.08E+02	8.01E-03
BCEOT-E3-8 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	2.61E+03	3.59E+01	7.84E-04	1.77E+03	1.38E+00	1.90E-02	1.24E-01	5.72E+00	7.76E+02	1.97E-01	7.08E+02	8.08E-03
BCEOT-E4-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.55E+03	2.14E+01	7.84E-04	1.05E+03	8.26E-01	1.90E-02	1.24E-01	3.41E+00	7.76E+02	1.97E-01	7.08E+02	4.82E-03
BCEOT-W4-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.72E+03	2.37E+01	7.84E-04	1.16E+03	9.14E-01	1.90E-02	1.24E-01	3.77E+00	7.76E+02	1.97E-01	7.08E+02	5.33E-03
BCEOT-E5-25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	8.60E+02	1.18E+01	7.84E-04	5.83E+02	4.57E-01	1.90E-02	1.24E-01	1.89E+00	7.76E+02	1.97E-01	7.08E+02	2.67E-03
BCEOT-W5-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	4.17E+03	5.74E+01	7.84E-04	2.83E+03	2.22E+00	1.90E-02	1.24E-01	9.15E+00	7.76E+02	1.97E-01	7.08E+02	1.29E-02
BCEOT-E6-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.81E+03	2.49E+01	7.84E-04	1.22E+03	9.60E-01	1.90E-02	1.24E-01	3.97E+00	7.76E+02	1.97E-01	7.08E+02	5.60E-03
BCEOT-W6-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.54E+03	2.13E+01	7.84E-04	1.05E+03	8.21E-01	1.90E-02	1.24E-01	3.39E+00	7.76E+02	1.97E-01	7.08E+02	4.79E-03
BCEOT-E7-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.86E+03	2.56E+01	7.84E-04	1.26E+03	9.89E-01	1.90E-02	1.24E-01	4.08E+00	7.76E+02	1.97E-01	7.08E+02	5.77E-03
BCEOT-W7-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	8.98E+02	1.24E+01	7.84E-04	6.09E+02	4.77E-01	1.90E-02	1.24E-01	1.97E+00	7.76E+02	1.97E-01	7.08E+02	2.78E-03
BCEOT-W8-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.70E+02	2.34E+00	7.84E-04	1.15E+02	9.03E-02	1.90E-02	1.24E-01	3.73E-01	7.76E+02	1.97E-01	7.08E+02	5.27E-04
BCEOT-E9-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	8.60E+02	1.18E+01	7.84E-04	5.83E+02	4.57E-01	1.90E-02	1.24E-01	1.89E+00	7.76E+02	1.97E-01	7.08E+02	2.67E-03
BCEOT-W9-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.83E+02	2.52E+00	7.84E-04	1.24E+02	9.72E-02	1.90E-02	1.24E-01	4.01E-01	7.76E+02	1.97E-01	7.08E+02	5.67E-04
BCEOT-E10-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	5.50E+03	7.56E+01	7.84E-04	3.72E+03	2.92E+00	1.90E-02	1.24E-01	1.21E+01	7.76E+02	1.97E-01	7.08E+02	1.70E-02
BCEOT-W10-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.05E+03	1.45E+01	7.84E-04	7.12E+02	5.59E-01	1.90E-02	1.24E-01	2.31E+00	7.76E+02	1.97E-01	7.08E+02	3.26E-03
BCEOT-E11-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	6.29E+02	8.66E+00	7.84E-04	4.26E+02	3.34E-01	1.90E-02	1.24E-01	1.38E+00	7.76E+02	1.97E-01	7.08E+02	1.95E-03
BCEOT-W11-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	8.86E+02	1.22E+01	7.84E-04	6.00E+02	4.71E-01	1.90E-02	1.24E-01	1.94E+00	7.76E+02	1.97E-01	7.08E+02	2.75E-03
BCEOT-E12-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.78E+03	2.45E+01	7.84E-04	1.21E+03	9.46E-01	1.90E-02	1.24E-01	3.91E+00	7.76E+02	1.97E-01	7.08E+02	5.52E-03
BCEOT-W12-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	3.91E+03	5.38E+01	7.84E-04	2.65E+03	2.08E+00	1.90E-02	1.24E-01	8.59E+00	7.76E+02	1.97E-01	7.08E+02	1.21E-02
BCEOT-E13-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	9.01E+02	1.24E+01	7.84E-04	6.10E+02	4.79E-01	1.90E-02	1.24E-01	1.98E+00	7.76E+02	1.97E-01	7.08E+02	2.79E-03
BCEOT-W13-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	4.77E+02	6.57E+00	7.84E-04	3.23E+02	2.54E-01	1.90E-02	1.24E-01	1.05E+00	7.76E+02	1.97E-01	7.08E+02	1.48E-03
BCEOT-W13-25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	8.44E+02	1.16E+01	7.84E-04	5.72E+02	4.49E-01	1.90E-02	1.24E-01	1.85E+00	7.76E+02	1.97E-01	7.08E+02	2.62E-03
BCEOT-W14-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	4.04E+03	5.56E+01	7.84E-04	2.74E+03	2.15E+00	1.90E-02	1.24E-01	8.87E+00	7.76E+02	1.97E-01	7.08E+02	1.25E-02
BCEOT-E15-8 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.31E+03	1.81E+01	7.84E-04	8.90E+02	6.98E-01	1.90E-02	1.24E-01	2.88E+00	7.76E+02	1.97E-01	7.08E+02	4.07E-03
BCEOT-W15-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.80E+02	2.48E+00	7.84E-04	1.22E+02	9.57E-02	1.90E-02	1.24E-01	3.95E-01	7.76E+02	1.97E-01	7.08E+02	5.59E-04
BCEOT-E16-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.06E+03	1.45E+01	7.84E-04	7.16E+02	5.62E-01	1.90E-02	1.24E-01	2.32E+00	7.76E+02	1.97E-01	7.08E+02	3.28E-03
BCEOT-W16-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	3.42E+03	4.71E+01	7.84E-04	2.32E+03	1.82E+00	1.90E-02	1.24E-01	7.51E+00	7.76E+02	1.97E-01	7.08E+02	1.06E-02
BCEOT-E17-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.24E+04	1.70E+02	7.84E-04	8.38E+03	6.57E+00	1.90E-02	1.24E-01	2.71E+01	7.76E+02	1.97E-01	7.08E+02	3.84E-02
BCEOT-W17-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.70E+03	2.33E+01	7.84E-04	1.15E+03	9.01E-01	1.90E-02	1.24E-01	3.72E+00	7.76E+02	1.97E-01	7.08E+02	5.26E-03
BCEOT-W18-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.23E+02	1.70E+00	7.84E-04	8.36E+01	6.56E-02	1.90E-02	1.24E-01	2.71E-01	7.76E+02	1.97E-01	7.08E+02	3.83E-04
BCEOT-E19-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	2.65E+03	3.64E+01	7.84E-04	1.79E+03	1.41E+00	1.90E-02	1.24E-01	5.81E+00	7.76E+02	1.97E-01	7.08E+02	8.21E-03
BCEOT-W19-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.66E+03	2.28E+01	7.84E-04	1.12E+03	8.81E-01	1.90E-02	1.24E-01	3.64E+00	7.76E+02	1.97E-01	7.08E+02	5.14E-03
BCEOT-E20-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	3.36E+03	4.62E+01	7.84E-04	2.27E+03	1.78E+00	1.90E-02	1.24E-01	7.37E+00	7.76E+02	1.97E-01	7.08E+02	1.04E-02
BCEOT-W20-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.53E+04	2.11E+02	7.84E-04	1.04E+04	8.13E+00	1.90E-02	1.24E-01	3.36E+01	7.76E+02	1.97E-01	7.08E+02	4.74E-02
BCEOT-E21-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	3.38E+03	4.65E+01	7.84E-04	2.29E+03	1.80E+00	1.90E-02	1.24E-01	7.41E+00	7.76E+02	1.97E-01	7.08E+02	1.05E-02
BCEOT-W21-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	5.21E+02	7.16E+00	7.84E-04	3.53E+02	2.77E-01	1.90E-02	1.24E-01	1.14E+00	7.76E+02	1.97E-01	7.08E+02	1.61E-03
BCEOT-E22-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.11E+04	1.52E+02	7.84E-04	7.49E+03	5.87E+00	1.90E-02	1.24E-01	2.43E+01	7.76E+02	1.97E-01	7.08E+02	3.43E-02

TABLE C-11E: MANGANESE DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 11 - BEARTRAP CREEK DISPERSED TAILINGS DEPOSITS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK TAILINGS DEPOSIT AND FLOSSIE LOUISE MINE WASTE PILE (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **4.982**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
American Kestrel (Insectivorous Birds - Terrestrial)																							
BCEOT-W22-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	6.11E+04	8.41E+02	7.84E-04	4.14E+04	3.25E+01	1.90E-02	1.24E-01	1.34E+02	7.76E+02	1.97E-01	7.08E+02	1.89E-01
BCEOT-E23-15 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	2.03E+03	2.79E+01	7.84E-04	1.38E+03	1.08E+00	1.90E-02	1.24E-01	4.46E+00	7.76E+02	1.97E-01	7.08E+02	6.30E-03
BCEOT-W23-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.52E+04	2.09E+02	7.84E-04	1.03E+04	8.08E+00	1.90E-02	1.24E-01	3.34E+01	7.76E+02	1.97E-01	7.08E+02	4.71E-02
BCEOT-E24-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	5.38E+02	7.41E+00	7.84E-04	3.65E+02	2.86E-01	1.90E-02	1.24E-01	1.18E+00	7.76E+02	1.97E-01	7.08E+02	1.67E-03
BCEOT-W24-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.35E+04	1.86E+02	7.84E-04	9.14E+03	7.17E+00	1.90E-02	1.24E-01	2.96E+01	7.76E+02	1.97E-01	7.08E+02	4.18E-02
BCEOT-E25-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.64E+03	2.25E+01	7.84E-04	1.11E+03	8.70E-01	1.90E-02	1.24E-01	3.59E+00	7.76E+02	1.97E-01	7.08E+02	5.07E-03
BCEOT-W25-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.57E+04	2.16E+02	7.84E-04	1.07E+04	8.36E+00	1.90E-02	1.24E-01	3.45E+01	7.76E+02	1.97E-01	7.08E+02	4.88E-02
BCEOT-E26-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	8.86E+02	1.22E+01	7.84E-04	6.01E+02	4.71E-01	1.90E-02	1.24E-01	1.95E+00	7.76E+02	1.97E-01	7.08E+02	2.75E-03
BCEOT-W26-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.23E+02	1.70E+00	7.84E-04	8.35E+01	6.55E-02	1.90E-02	1.24E-01	2.71E-01	7.76E+02	1.97E-01	7.08E+02	3.82E-04
BCEOT-W27-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.18E+04	1.62E+02	7.84E-04	8.00E+03	6.27E+00	1.90E-02	1.24E-01	2.59E+01	7.76E+02	1.97E-01	7.08E+02	3.66E-02
At Edge of Tailings Pile																						**Maximum HQ (Inside Tailings Pile)**	**1.89E-01**
BCEOT-E0-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	4.51E+03	6.21E+01	7.84E-04	3.06E+03	2.40E+00	1.90E-02	1.24E-01	9.90E+00	7.76E+02	1.97E-01	7.08E+02	1.40E-02
BCEOT-E1-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	3.90E+03	5.36E+01	7.84E-04	2.64E+03	2.07E+00	1.90E-02	1.24E-01	8.55E+00	7.76E+02	1.97E-01	7.08E+02	1.21E-02
BCEOT-E2-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	3.31E+03	4.56E+01	7.84E-04	2.25E+03	1.76E+00	1.90E-02	1.24E-01	7.27E+00	7.76E+02	1.97E-01	7.08E+02	1.03E-02
BCEOT-E3-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.17E+03	1.61E+01	7.84E-04	7.92E+02	6.21E-01	1.90E-02	1.24E-01	2.57E+00	7.76E+02	1.97E-01	7.08E+02	3.62E-03
BCEOT-E4-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	2.13E+03	2.93E+01	7.84E-04	1.44E+03	1.13E+00	1.90E-02	1.24E-01	4.68E+00	7.76E+02	1.97E-01	7.08E+02	6.61E-03
BCEOT-W4-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.12E+03	1.55E+01	7.84E-04	7.61E+02	5.97E-01	1.90E-02	1.24E-01	2.47E+00	7.76E+02	1.97E-01	7.08E+02	3.48E-03
BCEOT-E5-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.75E+03	2.41E+01	7.84E-04	1.19E+03	9.31E-01	1.90E-02	1.24E-01	3.85E+00	7.76E+02	1.97E-01	7.08E+02	5.43E-03
BCEOT-W5-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	7.76E+02	1.07E+01	7.84E-04	5.26E+02	4.13E-01	1.90E-02	1.24E-01	1.70E+00	7.76E+02	1.97E-01	7.08E+02	2.41E-03
BCEOT-E6-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.25E+03	1.72E+01	7.84E-04	8.46E+02	6.64E-01	1.90E-02	1.24E-01	2.74E+00	7.76E+02	1.97E-01	7.08E+02	3.87E-03
BCEOT-W6-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.64E+03	2.25E+01	7.84E-04	1.11E+03	8.69E-01	1.90E-02	1.24E-01	3.59E+00	7.76E+02	1.97E-01	7.08E+02	5.07E-03
BCEOT-E7-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.79E+03	2.47E+01	7.84E-04	1.22E+03	9.54E-01	1.90E-02	1.24E-01	3.94E+00	7.76E+02	1.97E-01	7.08E+02	5.56E-03
BCEOT-W7-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	6.25E+02	8.59E+00	7.84E-04	4.23E+02	3.32E-01	1.90E-02	1.24E-01	1.37E+00	7.76E+02	1.97E-01	7.08E+02	1.94E-03
BCEOT-W8-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	6.11E+02	8.40E+00	7.84E-04	4.14E+02	3.25E-01	1.90E-02	1.24E-01	1.34E+00	7.76E+02	1.97E-01	7.08E+02	1.89E-03
BCEOT-E9-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	4.66E+03	6.41E+01	7.84E-04	3.16E+03	2.48E+00	1.90E-02	1.24E-01	1.02E+01	7.76E+02	1.97E-01	7.08E+02	1.44E-02
BCEOT-W9-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	6.89E+02	9.49E+00	7.84E-04	4.67E+02	3.66E-01	1.90E-02	1.24E-01	1.51E+00	7.76E+02	1.97E-01	7.08E+02	2.14E-03
BCEOT-E10-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	8.62E+03	1.19E+02	7.84E-04	5.84E+03	4.58E+00	1.90E-02	1.24E-01	1.89E+01	7.76E+02	1.97E-01	7.08E+02	2.67E-02
BCEOT-W10-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	6.51E+02	8.95E+00	7.84E-04	4.41E+02	3.46E-01	1.90E-02	1.24E-01	1.43E+00	7.76E+02	1.97E-01	7.08E+02	2.02E-03
BCEOT-E11-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	4.22E+03	5.81E+01	7.84E-04	2.86E+03	2.24E+00	1.90E-02	1.24E-01	9.27E+00	7.76E+02	1.97E-01	7.08E+02	1.31E-02
BCEOT-W11-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	2.06E+03	2.84E+01	7.84E-04	1.40E+03	1.09E+00	1.90E-02	1.24E-01	4.52E+00	7.76E+02	1.97E-01	7.08E+02	6.39E-03
BCEOT-E12-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	2.17E+03	2.99E+01	7.84E-04	1.47E+03	1.15E+00	1.90E-02	1.24E-01	4.77E+00	7.76E+02	1.97E-01	7.08E+02	6.74E-03
BCEOT-W12-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.20E+03	1.65E+01	7.84E-04	8.15E+02	6.39E-01	1.90E-02	1.24E-01	2.64E+00	7.76E+02	1.97E-01	7.08E+02	3.73E-03
BCEOT-E13-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.67E+03	2.30E+01	7.84E-04	1.13E+03	8.87E-01	1.90E-02	1.24E-01	3.66E+00	7.76E+02	1.97E-01	7.08E+02	5.17E-03
BCEOT-W13-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.41E+03	1.95E+01	7.84E-04	9.59E+02	7.52E-01	1.90E-02	1.24E-01	3.10E+00	7.76E+02	1.97E-01	7.08E+02	4.39E-03
BCEOT-E14-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.65E+03	2.28E+01	7.84E-04	1.12E+03	8.79E-01	1.90E-02	1.24E-01	3.63E+00	7.76E+02	1.97E-01	7.08E+02	5.13E-03
BCEOT-W14-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	5.53E+03	7.61E+01	7.84E-04	3.75E+03	2.94E+00	1.90E-02	1.24E-01	1.21E+01	7.76E+02	1.97E-01	7.08E+02	1.71E-02
BCEOT-E15-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.87E+03	2.57E+01	7.84E-04	1.27E+03	9.93E-01	1.90E-02	1.24E-01	4.10E+00	7.76E+02	1.97E-01	7.08E+02	5.79E-03
BCEOT-W15-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	5.23E+03	7.19E+01	7.84E-04	3.54E+03	2.78E+00	1.90E-02	1.24E-01	1.15E+01	7.76E+02	1.97E-01	7.08E+02	1.62E-02
BCEOT-E16-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	2.09E+03	2.88E+01	7.84E-04	1.42E+03	1.11E+00	1.90E-02	1.24E-01	4.59E+00	7.76E+02	1.97E-01	7.08E+02	6.48E-03
BCEOT-W16-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.22E+03	1.68E+01	7.84E-04	8.26E+02	6.48E-01	1.90E-02	1.24E-01	2.67E+00	7.76E+02	1.97E-01	7.08E+02	3.78E-03
BCEOT-E17-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	2.85E+03	3.92E+01	7.84E-04	1.93E+03	1.52E+00	1.90E-02	1.24E-01	6.26E+00	7.76E+02	1.97E-01	7.08E+02	8.84E-03
BCEOT-W17-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.83E+03	2.51E+01	7.84E-04	1.24E+03	9.70E-01	1.90E-02	1.24E-01	4.01E+00	7.76E+02	1.97E-01	7.08E+02	5.66E-03
BCEOT-E18-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	2.53E+03	3.49E+01	7.84E-04	1.72E+03	1.35E+00	1.90E-02	1.24E-01	5.56E+00	7.76E+02	1.97E-01	7.08E+02	7.86E-03
BCEOT-W18-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.84E+03	2.53E+01	7.84E-04	1.25E+03	9.77E-01	1.90E-02	1.24E-01	4.03E+00	7.76E+02	1.97E-01	7.08E+02	5.70E-03
BCEOT-E19-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.53E+03	2.11E+01	7.84E-04	1.04E+03	8.14E-01	1.90E-02	1.24E-01	3.36E+00	7.76E+02	1.97E-01	7.08E+02	4.75E-03
BCEOT-W19-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	3.89E+03	5.36E+01	7.84E-04	2.64E+03	2.07E+00	1.90E-02	1.24E-01	8.54E+00	7.76E+02	1.97E-01	7.08E+02	1.21E-02
BCEOT-E20-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	5.36E+02	7.38E+00	7.84E-04	3.63E+02	2.85E-01	1.90E-02	1.24E-01	1.18E+00	7.76E+02	1.97E-01	7.08E+02	1.66E-03
BCEOT-W20-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.52E+03	2.10E+01	7.84E-04	1.03E+03	8.10E-01	1.90E-02	1.24E-01	3.35E+00	7.76E+02	1.97E-01	7.08E+02	4.73E-03
BCEOT-E21-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	2.10E+03	2.88E+01	7.84E-04	1.42E+03	1.11E+00	1.90E-02	1.24E-01	4.60E+00	7.76E+02	1.97E-01	7.08E+02	6.50E-03
BCEOT-W21-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.73E+03	2.38E+01	7.84E-04	1.17E+03	9.19E-01	1.90E-02	1.24E-01	3.80E+00	7.76E+02	1.97E-01	7.08E+02	5.36E-03
BCEOT-E22-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.26E+03	1.73E+01	7.84E-04	8.53E+02	6.69E-01	1.90E-02	1.24E-01	2.76E+00	7.76E+02	1.97E-01	7.08E+02	3.90E-03
BCEOT-W22-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	9.40E+02	1.29E+01	7.84E-04	6.37E+02	5.00E-01	1.90E-02	1.24E-01	2.06E+00	7.76E+02	1.97E-01	7.08E+02	2.91E-03

TABLE C-11E: MANGANESE DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 11 - BEARTRAP CREEK DISPERSED TAILINGS DEPOSITS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK TAILINGS DEPOSIT AND FLOSSIE LOUISE MINE WASTE PILE (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **4.982**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
American Kestrel (Insectivorous Birds - Terrestrial)																							
BCEOT-E23-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	6.94E+02	9.55E+00	7.84E-04	4.70E+02	3.69E-01	1.90E-02	1.24E-01	1.52E+00	7.76E+02	1.97E-01	7.08E+02	2.15E-03
BCEOT-W23-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	8.17E+02	1.12E+01	7.84E-04	5.54E+02	4.34E-01	1.90E-02	1.24E-01	1.79E+00	7.76E+02	1.97E-01	7.08E+02	2.53E-03
BCEOT-E24-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	7.94E+02	1.09E+01	7.84E-04	5.38E+02	4.22E-01	1.90E-02	1.24E-01	1.74E+00	7.76E+02	1.97E-01	7.08E+02	2.46E-03
BCEOT-W24-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.73E+03	2.38E+01	7.84E-04	1.17E+03	9.20E-01	1.90E-02	1.24E-01	3.80E+00	7.76E+02	1.97E-01	7.08E+02	5.37E-03
BCEOT-E25-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.05E+03	1.44E+01	7.84E-04	7.11E+02	5.58E-01	1.90E-02	1.24E-01	2.30E+00	7.76E+02	1.97E-01	7.08E+02	3.26E-03
BCEOT-W25-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	2.50E+03	3.44E+01	7.84E-04	1.69E+03	1.33E+00	1.90E-02	1.24E-01	5.48E+00	7.76E+02	1.97E-01	7.08E+02	7.74E-03
BCEOT-E26-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.89E+03	2.61E+01	7.84E-04	1.28E+03	1.01E+00	1.90E-02	1.24E-01	4.16E+00	7.76E+02	1.97E-01	7.08E+02	5.87E-03
BCEOT-W26-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.85E+03	2.55E+01	7.84E-04	1.25E+03	9.84E-01	1.90E-02	1.24E-01	4.06E+00	7.76E+02	1.97E-01	7.08E+02	5.74E-03
BCEOT-W27-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.48E+03	2.04E+01	7.84E-04	1.00E+03	7.88E-01	1.90E-02	1.24E-01	3.25E+00	7.76E+02	1.97E-01	7.08E+02	4.60E-03
Outside Tailings Piles																						**Maximum HQ (Edge of Tailings Pile)**	**2.67E-02**
BCEOT-E0+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.37E+03	1.88E+01	7.84E-04	9.27E+02	7.27E-01	1.90E-02	1.24E-01	3.00E+00	7.76E+02	1.97E-01	7.08E+02	4.24E-03
BCEOT-E1+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	6.73E+03	9.26E+01	7.84E-04	4.56E+03	3.58E+00	1.90E-02	1.24E-01	1.48E+01	7.76E+02	1.97E-01	7.08E+02	2.09E-02
BCEOT-E2+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	8.21E+02	1.13E+01	7.84E-04	5.56E+02	4.36E-01	1.90E-02	1.24E-01	1.80E+00	7.76E+02	1.97E-01	7.08E+02	2.55E-03
BCEOT-E3+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.55E+03	2.13E+01	7.84E-04	1.05E+03	8.21E-01	1.90E-02	1.24E-01	3.39E+00	7.76E+02	1.97E-01	7.08E+02	4.79E-03
BCEOT-E4+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	3.96E+03	5.45E+01	7.84E-04	2.69E+03	2.11E+00	1.90E-02	1.24E-01	8.70E+00	7.76E+02	1.97E-01	7.08E+02	1.23E-02
BCEOT-W4+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	9.93E+02	1.37E+01	7.84E-04	6.73E+02	5.28E-01	1.90E-02	1.24E-01	2.18E+00	7.76E+02	1.97E-01	7.08E+02	3.08E-03
BCEOT-E5+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	3.43E+03	4.71E+01	7.84E-04	2.32E+03	1.82E+00	1.90E-02	1.24E-01	7.52E+00	7.76E+02	1.97E-01	7.08E+02	1.06E-02
BCEOT-W5+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.05E+03	1.45E+01	7.84E-04	7.14E+02	5.60E-01	1.90E-02	1.24E-01	2.31E+00	7.76E+02	1.97E-01	7.08E+02	3.27E-03
BCEOT-E6+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	8.47E+02	1.17E+01	7.84E-04	5.74E+02	4.50E-01	1.90E-02	1.24E-01	1.86E+00	7.76E+02	1.97E-01	7.08E+02	2.63E-03
BCEOT-W6+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	4.39E+02	6.04E+00	7.84E-04	2.97E+02	2.33E-01	1.90E-02	1.24E-01	9.63E-01	7.76E+02	1.97E-01	7.08E+02	1.36E-03
BCEOT-E7+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	3.60E+03	4.95E+01	7.84E-04	2.44E+03	1.91E+00	1.90E-02	1.24E-01	7.89E+00	7.76E+02	1.97E-01	7.08E+02	1.11E-02
BCEOT-W7+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.23E+03	1.69E+01	7.84E-04	8.33E+02	6.53E-01	1.90E-02	1.24E-01	2.70E+00	7.76E+02	1.97E-01	7.08E+02	3.81E-03
BCEOT-W8+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	7.47E+02	1.03E+01	7.84E-04	5.06E+02	3.97E-01	1.90E-02	1.24E-01	1.64E+00	7.76E+02	1.97E-01	7.08E+02	2.32E-03
BCEOT-E9+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	2.90E+03	4.00E+01	7.84E-04	1.97E+03	1.54E+00	1.90E-02	1.24E-01	6.37E+00	7.76E+02	1.97E-01	7.08E+02	9.00E-03
BCEOT-W9+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	3.13E+03	4.31E+01	7.84E-04	2.12E+03	1.66E+00	1.90E-02	1.24E-01	6.88E+00	7.76E+02	1.97E-01	7.08E+02	9.71E-03
BCEOT-E10+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	3.37E+03	4.64E+01	7.84E-04	2.29E+03	1.79E+00	1.90E-02	1.24E-01	7.40E+00	7.76E+02	1.97E-01	7.08E+02	1.05E-02
BCEOT-W10+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	5.61E+02	7.72E+00	7.84E-04	3.80E+02	2.98E-01	1.90E-02	1.24E-01	1.23E+00	7.76E+02	1.97E-01	7.08E+02	1.74E-03
BCEOT-E11+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.40E+03	1.92E+01	7.84E-04	9.47E+02	7.43E-01	1.90E-02	1.24E-01	3.07E+00	7.76E+02	1.97E-01	7.08E+02	4.34E-03
BCEOT-W11+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	9.35E+02	1.29E+01	7.84E-04	6.34E+02	4.97E-01	1.90E-02	1.24E-01	2.05E+00	7.76E+02	1.97E-01	7.08E+02	2.90E-03
BCEOT-E12+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.46E+03	2.00E+01	7.84E-04	9.86E+02	7.74E-01	1.90E-02	1.24E-01	3.19E+00	7.76E+02	1.97E-01	7.08E+02	4.51E-03
BCEOT-W12+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.64E+03	2.25E+01	7.84E-04	1.11E+03	8.70E-01	1.90E-02	1.24E-01	3.59E+00	7.76E+02	1.97E-01	7.08E+02	5.07E-03
BCEOT-E13+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.29E+03	1.78E+01	7.84E-04	8.77E+02	6.88E-01	1.90E-02	1.24E-01	2.84E+00	7.76E+02	1.97E-01	7.08E+02	4.01E-03
BCEOT-E14+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.82E+03	2.51E+01	7.84E-04	1.24E+03	9.69E-01	1.90E-02	1.24E-01	4.00E+00	7.76E+02	1.97E-01	7.08E+02	5.66E-03
BCEOT-W14+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	2.59E+03	3.56E+01	7.84E-04	1.75E+03	1.38E+00	1.90E-02	1.24E-01	5.68E+00	7.76E+02	1.97E-01	7.08E+02	8.03E-03
BCEOT-E15+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	2.28E+03	3.14E+01	7.84E-04	1.55E+03	1.21E+00	1.90E-02	1.24E-01	5.01E+00	7.76E+02	1.97E-01	7.08E+02	7.07E-03
BCEOT-W15+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	4.05E+03	5.57E+01	7.84E-04	2.74E+03	2.15E+00	1.90E-02	1.24E-01	8.88E+00	7.76E+02	1.97E-01	7.08E+02	1.26E-02
BCEOT-E16+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.42E+03	1.96E+01	7.84E-04	9.64E+02	7.56E-01	1.90E-02	1.24E-01	3.12E+00	7.76E+02	1.97E-01	7.08E+02	4.41E-03
BCEOT-W16+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	9.02E+02	1.24E+01	7.84E-04	6.11E+02	4.79E-01	1.90E-02	1.24E-01	1.98E+00	7.76E+02	1.97E-01	7.08E+02	2.80E-03
BCEOT-E17+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.80E+03	2.48E+01	7.84E-04	1.22E+03	9.56E-01	1.90E-02	1.24E-01	3.95E+00	7.76E+02	1.97E-01	7.08E+02	5.58E-03
BCEOT-W17+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	8.82E+02	1.21E+01	7.84E-04	5.97E+02	4.69E-01	1.90E-02	1.24E-01	1.94E+00	7.76E+02	1.97E-01	7.08E+02	2.73E-03
BCEOT-E18+12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.16E+04	1.60E+02	7.84E-04	7.88E+03	6.18E+00	1.90E-02	1.24E-01	2.55E+01	7.76E+02	1.97E-01	7.08E+02	3.61E-02
BCEOT-E18+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.88E+03	2.59E+01	7.84E-04	1.28E+03	1.00E+00	1.90E-02	1.24E-01	4.13E+00	7.76E+02	1.97E-01	7.08E+02	5.84E-03
BCEOT-W18+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.93E+03	2.66E+01	7.84E-04	1.31E+03	1.03E+00	1.90E-02	1.24E-01	4.25E+00	7.76E+02	1.97E-01	7.08E+02	6.00E-03
BCEOT-E19+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.84E+03	2.53E+01	7.84E-04	1.25E+03	9.77E-01	1.90E-02	1.24E-01	4.03E+00	7.76E+02	1.97E-01	7.08E+02	5.70E-03
BCEOT-W19+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	4.13E+02	5.68E+00	7.84E-04	2.80E+02	2.20E-01	1.90E-02	1.24E-01	9.06E-01	7.76E+02	1.97E-01	7.08E+02	1.28E-03
BCEOT-E20+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.56E+03	2.15E+01	7.84E-04	1.06E+03	8.30E-01	1.90E-02	1.24E-01	3.43E+00	7.76E+02	1.97E-01	7.08E+02	4.84E-03
BCEOT-W20+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.17E+03	1.62E+01	7.84E-04	7.96E+02	6.24E-01	1.90E-02	1.24E-01	2.58E+00	7.76E+02	1.97E-01	7.08E+02	3.64E-03
BCEOT-E21+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	7.64E+02	1.05E+01	7.84E-04	5.18E+02	4.06E-01	1.90E-02	1.24E-01	1.68E+00	7.76E+02	1.97E-01	7.08E+02	2.37E-03
BCEOT-W21+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.05E+03	1.45E+01	7.84E-04	7.14E+02	5.60E-01	1.90E-02	1.24E-01	2.31E+00	7.76E+02	1.97E-01	7.08E+02	3.27E-03
BCEOT-E22+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	3.63E+03	4.99E+01	7.84E-04	2.46E+03	1.93E+00	1.90E-02	1.24E-01	7.96E+00	7.76E+02	1.97E-01	7.08E+02	1.12E-02
BCEOT-E22+70 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.03E+03	1.42E+01	7.84E-04	6.98E+02	5.48E-01	1.90E-02	1.24E-01	2.26E+00	7.76E+02	1.97E-01	7.08E+02	3.20E-03
BCEOT-W22+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	4.62E+02	6.36E+00	7.84E-04	3.13E+02	2.46E-01	1.90E-02	1.24E-01	1.01E+00	7.76E+02	1.97E-01	7.08E+02	1.43E-03

TABLE C-11E: MANGANESE DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 11 - BEARTRAP CREEK DISPERSED TAILINGS DEPOSITS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK TAILINGS DEPOSIT AND FLOSSIE LOUISE MINE WASTE PILE (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **4.982**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
American Kestrel (Insectivorous Birds - Terrestrial)																							
BCEOT-E23+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	6.25E+02	8.60E+00	7.84E-04	4.23E+02	3.32E-01	1.90E-02	1.24E-01	1.37E+00	7.76E+02	1.97E-01	7.08E+02	1.94E-03
BCEOT-W23+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	8.74E+02	1.20E+01	7.84E-04	5.92E+02	4.64E-01	1.90E-02	1.24E-01	1.92E+00	7.76E+02	1.97E-01	7.08E+02	2.71E-03
BCEOT-E24+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	5.12E+02	7.04E+00	7.84E-04	3.47E+02	2.72E-01	1.90E-02	1.24E-01	1.12E+00	7.76E+02	1.97E-01	7.08E+02	1.59E-03
BCEOT-W24+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	8.12E+02	1.12E+01	7.84E-04	5.50E+02	4.32E-01	1.90E-02	1.24E-01	1.78E+00	7.76E+02	1.97E-01	7.08E+02	2.52E-03
BCEOT-E25+20 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	6.41E+02	8.82E+00	7.84E-04	4.34E+02	3.41E-01	1.90E-02	1.24E-01	1.41E+00	7.76E+02	1.97E-01	7.08E+02	1.99E-03
BCEOT-W25+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	4.47E+02	6.15E+00	7.84E-04	3.03E+02	2.37E-01	1.90E-02	1.24E-01	9.80E-01	7.76E+02	1.97E-01	7.08E+02	1.38E-03
BCEOT-E26+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	3.56E+02	4.90E+00	7.84E-04	2.41E+02	1.89E-01	1.90E-02	1.24E-01	7.81E-01	7.76E+02	1.97E-01	7.08E+02	1.10E-03
BCEOT-W26+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	7.44E+03	1.02E+02	7.84E-04	5.04E+03	3.95E+00	1.90E-02	1.24E-01	1.63E+01	7.76E+02	1.97E-01	7.08E+02	2.31E-02
BCEOT-W27+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.48E+00	1.68E+03	2.32E+01	7.84E-04	1.14E+03	8.95E-01	1.90E-02	1.24E-01	3.69E+00	7.76E+02	1.97E-01	7.08E+02	5.22E-03
																						Maximum HQ (Outside Tailings Pile)	**3.61E-02**
Meadow Vole (Small Herbivorous Mammal - Terrestrial)																							
Reference Sites																							
ACBG-1 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	3.34E-01	9.85E+01	4.62E-01	NA	NA	NA	NA	1.13E-04	2.95E+02	3.32E-02	1.00E+00	3.06E-02	1.62E+01	1.59E+02	2.97E-02	1.59E+02	1.02E-01
ACBG-2 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	3.34E-01	3.33E+02	1.56E+00	NA	NA	NA	NA	1.13E-04	9.97E+02	1.12E-01	1.00E+00	3.06E-02	5.48E+01	1.59E+02	2.97E-02	1.59E+02	3.45E-01
BCBG-201 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	3.34E-01	5.38E+01	2.52E-01	NA	NA	NA	NA	1.13E-04	1.61E+02	1.81E-02	1.00E+00	3.06E-02	8.84E+00	1.59E+02	2.97E-02	1.59E+02	5.57E-02
Inside Tailings Pile																						**Minimum HQ (Reference Sites)**	**5.57E-02**
BCEOT-E0-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	1.51E+04	7.08E+01	NA	NA	NA	NA	1.13E-04	1.52E+03	1.71E-01	1.00E+00	3.06E-02	2.32E+03	1.59E+02	2.97E-02	1.59E+02	1.46E+01
BCEOT-E1-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	3.36E+04	1.57E+02	NA	NA	NA	NA	1.13E-04	3.39E+03	3.81E-01	1.00E+00	3.06E-02	5.16E+03	1.59E+02	2.97E-02	1.59E+02	3.25E+01
BCEOT-E2-8 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	1.73E+04	8.13E+01	NA	NA	NA	NA	1.13E-04	1.75E+03	1.97E-01	1.00E+00	3.06E-02	2.66E+03	1.59E+02	2.97E-02	1.59E+02	1.68E+01
BCEOT-E3-8 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	1.75E+04	8.20E+01	NA	NA	NA	NA	1.13E-04	1.77E+03	1.99E-01	1.00E+00	3.06E-02	2.69E+03	1.59E+02	2.97E-02	1.59E+02	1.69E+01
BCEOT-E4-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	1.04E+04	4.89E+01	NA	NA	NA	NA	1.13E-04	1.05E+03	1.19E-01	1.00E+00	3.06E-02	1.60E+03	1.59E+02	2.97E-02	1.59E+02	1.01E+01
BCEOT-W4-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	1.15E+04	5.41E+01	NA	NA	NA	NA	1.13E-04	1.16E+03	1.31E-01	1.00E+00	3.06E-02	1.77E+03	1.59E+02	2.97E-02	1.59E+02	1.12E+01
BCEOT-E5-25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	5.77E+03	2.71E+01	NA	NA	NA	NA	1.13E-04	5.83E+02	6.56E-02	1.00E+00	3.06E-02	8.87E+02	1.59E+02	2.97E-02	1.59E+02	5.58E+00
BCEOT-W5-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	2.80E+04	1.31E+02	NA	NA	NA	NA	1.13E-04	2.83E+03	3.18E-01	1.00E+00	3.06E-02	4.30E+03	1.59E+02	2.97E-02	1.59E+02	2.71E+01
BCEOT-E6-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	1.21E+04	5.69E+01	NA	NA	NA	NA	1.13E-04	1.22E+03	1.38E-01	1.00E+00	3.06E-02	1.86E+03	1.59E+02	2.97E-02	1.59E+02	1.17E+01
BCEOT-W6-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	1.04E+04	4.86E+01	NA	NA	NA	NA	1.13E-04	1.05E+03	1.18E-01	1.00E+00	3.06E-02	1.59E+03	1.59E+02	2.97E-02	1.59E+02	1.00E+01
BCEOT-E7-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	1.25E+04	5.86E+01	NA	NA	NA	NA	1.13E-04	1.26E+03	1.42E-01	1.00E+00	3.06E-02	1.92E+03	1.59E+02	2.97E-02	1.59E+02	1.21E+01
BCEOT-W7-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	6.03E+03	2.83E+01	NA	NA	NA	NA	1.13E-04	6.09E+02	6.85E-02	1.00E+00	3.06E-02	9.26E+02	1.59E+02	2.97E-02	1.59E+02	5.83E+00
BCEOT-W8-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	1.14E+03	5.35E+00	NA	NA	NA	NA	1.13E-04	1.15E+02	1.30E-02	1.00E+00	3.06E-02	1.75E+02	1.59E+02	2.97E-02	1.59E+02	1.10E+00
BCEOT-E9-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	5.78E+03	2.71E+01	NA	NA	NA	NA	1.13E-04	5.83E+02	6.56E-02	1.00E+00	3.06E-02	8.87E+02	1.59E+02	2.97E-02	1.59E+02	5.59E+00
BCEOT-W9-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	1.23E+03	5.76E+00	NA	NA	NA	NA	1.13E-04	1.24E+02	1.39E-02	1.00E+00	3.06E-02	1.89E+02	1.59E+02	2.97E-02	1.59E+02	1.19E+00
BCEOT-E10-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	3.69E+04	1.73E+02	NA	NA	NA	NA	1.13E-04	3.72E+03	4.19E-01	1.00E+00	3.06E-02	5.67E+03	1.59E+02	2.97E-02	1.59E+02	3.57E+01
BCEOT-W10-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	7.06E+03	3.31E+01	NA	NA	NA	NA	1.13E-04	7.12E+02	8.02E-02	1.00E+00	3.06E-02	1.08E+03	1.59E+02	2.97E-02	1.59E+02	6.83E+00
BCEOT-E11-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	4.22E+03	1.98E+01	NA	NA	NA	NA	1.13E-04	4.26E+02	4.80E-02	1.00E+00	3.06E-02	6.49E+02	1.59E+02	2.97E-02	1.59E+02	4.09E+00
BCEOT-W11-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	5.95E+03	2.79E+01	NA	NA	NA	NA	1.13E-04	6.00E+02	6.75E-02	1.00E+00	3.06E-02	9.13E+02	1.59E+02	2.97E-02	1.59E+02	5.75E+00
BCEOT-E12-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	1.19E+04	5.60E+01	NA	NA	NA	NA	1.13E-04	1.21E+03	1.36E-01	1.00E+00	3.06E-02	1.84E+03	1.59E+02	2.97E-02	1.59E+02	1.16E+01
BCEOT-W12-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	2.63E+04	1.23E+02	NA	NA	NA	NA	1.13E-04	2.65E+03	2.98E-01	1.00E+00	3.06E-02	4.04E+03	1.59E+02	2.97E-02	1.59E+02	2.54E+01
BCEOT-E13-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	6.05E+03	2.84E+01	NA	NA	NA	NA	1.13E-04	6.10E+02	6.87E-02	1.00E+00	3.06E-02	9.29E+02	1.59E+02	2.97E-02	1.59E+02	5.85E+00
BCEOT-W13-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	3.20E+03	1.50E+01	NA	NA	NA	NA	1.13E-04	3.23E+02	3.64E-02	1.00E+00	3.06E-02	4.92E+02	1.59E+02	2.97E-02	1.59E+02	3.10E+00
BCEOT-W13-25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	5.67E+03	2.66E+01	NA	NA	NA	NA	1.13E-04	5.72E+02	6.44E-02	1.00E+00	3.06E-02	8.71E+02	1.59E+02	2.97E-02	1.59E+02	5.48E+00
BCEOT-W14-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	2.71E+04	1.27E+02	NA	NA	NA	NA	1.13E-04	2.74E+03	3.08E-01	1.00E+00	3.06E-02	4.17E+03	1.59E+02	2.97E-02	1.59E+02	2.62E+01
BCEOT-E15-8 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	8.82E+03	4.13E+01	NA	NA	NA	NA	1.13E-04	8.90E+02	1.00E-01	1.00E+00	3.06E-02	1.35E+03	1.59E+02	2.97E-02	1.59E+02	8.53E+00
BCEOT-W15-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	1.21E+03	5.67E+00	NA	NA	NA	NA	1.13E-04	1.22E+02	1.37E-02	1.00E+00	3.06E-02	1.86E+02	1.59E+02	2.97E-02	1.59E+02	1.17E+00
BCEOT-E16-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	7.10E+03	3.33E+01	NA	NA	NA	NA	1.13E-04	7.16E+02	8.06E-02	1.00E+00	3.06E-02	1.09E+03	1.59E+02	2.97E-02	1.59E+02	6.87E+00
BCEOT-W16-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	2.30E+04	1.08E+02	NA	NA	NA	NA	1.13E-04	2.32E+03	2.61E-01	1.00E+00	3.06E-02	3.53E+03	1.59E+02	2.97E-02	1.59E+02	2.22E+01
BCEOT-E17-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	8.31E+04	3.89E+02	NA	NA	NA	NA	1.13E-04	8.38E+03	9.43E-01	1.00E+00	3.06E-02	1.28E+04	1.59E+02	2.97E-02	1.59E+02	8.03E+01
BCEOT-W17-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	1.14E+04	5.34E+01	NA	NA	NA	NA	1.13E-04	1.15E+03	1.29E-01	1.00E+00	3.06E-02	1.75E+03	1.59E+02	2.97E-02	1.59E+02	1.10E+01
BCEOT-W18-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	8.28E+02	3.88E+00	NA	NA	NA	NA	1.13E-04	8.36E+01	9.41E-03	1.00E+00	3.06E-02	1.27E+02	1.59E+02	2.97E-02	1.59E+02	8.01E-01
BCEOT-E19-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	1.78E+04	8.34E+01	NA	NA	NA	NA	1.13E-04	1.79E+03	2.02E-01	1.00E+00	3.06E-02	2.73E+03	1.59E+02	2.97E-02	1.59E+02	1.72E+01
BCEOT-W19-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	1.11E+04	5.22E+01	NA	NA	NA	NA	1.13E-04	1.12E+03	1.26E-01	1.00E+00	3.06E-02	1.71E+03	1.59E+02	2.97E-02	1.59E+02	1.08E+01
BCEOT-E20-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	2.25E+04	1.06E+02	NA	NA	NA	NA	1.13E-04	2.27E+03	2.56E-01	1.00E+00	3.06E-02	3.46E+03	1.59E+02	2.97E-02	1.59E+02	2.18E+01
BCEOT-W20-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	1.03E+05	4.82E+02	NA	NA	NA	NA	1.13E-04	1.04E+04	1.17E+00	1.00E+00	3.06E-02	1.58E+04	1.59E+02	2.97E-02	1.59E+02	9.93E+01
BCEOT-E21-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	2.27E+04	1.06E+02	NA	NA	NA	NA	1.13E-04	2.29E+03	2.58E-01	1.00E+00	3.06E-02	3.48E+03	1.59E+02	2.97E-02	1.59E+02	2.19E+01
BCEOT-W21-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	3.50E+03	1.64E+01	NA	NA	NA	NA	1.13E-04	3.53E+02	3.97E-02	1.00E+00	3.06E-02	5.37E+02	1.59E+02	2.97E-02	1.59E+02	3.38E+00

TABLE C-11E: MANGANESE DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 11 - BEARTRAP CREEK DISPERSED TAILINGS DEPOSITS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK TAILINGS DEPOSIT AND FLOSSIE LOUISE MINE WASTE PILE (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **4.982**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Meadow Vole (Small Herbivorous Mammal - Terrestrial)																							
BCEOT-E22-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	7.42E+04	3.48E+02	NA	NA	NA	NA	1.13E-04	7.49E+03	8.43E-01	1.00E+00	3.06E-02	1.14E+04	1.59E+02	2.97E-02	1.59E+02	7.18E+01
BCEOT-W22-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	4.10E+05	1.92E+03	NA	NA	NA	NA	1.13E-04	4.14E+04	4.66E+00	1.00E+00	3.06E-02	6.30E+04	1.59E+02	2.97E-02	1.59E+02	3.97E+02
BCEOT-E23-15 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	1.36E+04	6.39E+01	NA	NA	NA	NA	1.13E-04	1.38E+03	1.55E-01	1.00E+00	3.06E-02	2.09E+03	1.59E+02	2.97E-02	1.59E+02	1.32E+01
BCEOT-W23-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	1.02E+05	4.78E+02	NA	NA	NA	NA	1.13E-04	1.03E+04	1.16E+00	1.00E+00	3.06E-02	1.57E+04	1.59E+02	2.97E-02	1.59E+02	9.87E+01
BCEOT-E24-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	3.61E+03	1.69E+01	NA	NA	NA	NA	1.13E-04	3.65E+02	4.10E-02	1.00E+00	3.06E-02	5.55E+02	1.59E+02	2.97E-02	1.59E+02	3.50E+00
BCEOT-W24-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	9.05E+04	4.25E+02	NA	NA	NA	NA	1.13E-04	9.14E+03	1.03E+00	1.00E+00	3.06E-02	1.39E+04	1.59E+02	2.97E-02	1.59E+02	8.76E+01
BCEOT-E25-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	1.10E+04	5.15E+01	NA	NA	NA	NA	1.13E-04	1.11E+03	1.25E-01	1.00E+00	3.06E-02	1.69E+03	1.59E+02	2.97E-02	1.59E+02	1.06E+01
BCEOT-W25-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	1.06E+05	4.95E+02	NA	NA	NA	NA	1.13E-04	1.07E+04	1.20E+00	1.00E+00	3.06E-02	1.62E+04	1.59E+02	2.97E-02	1.59E+02	1.02E+02
BCEOT-E26-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	5.95E+03	2.79E+01	NA	NA	NA	NA	1.13E-04	6.01E+02	6.76E-02	1.00E+00	3.06E-02	9.14E+02	1.59E+02	2.97E-02	1.59E+02	5.76E+00
BCEOT-W26-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	8.28E+02	3.88E+00	NA	NA	NA	NA	1.13E-04	8.35E+01	9.40E-03	1.00E+00	3.06E-02	1.27E+02	1.59E+02	2.97E-02	1.59E+02	8.01E-01
BCEOT-W27-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	7.93E+04	3.72E+02	NA	NA	NA	NA	1.13E-04	8.00E+03	9.00E-01	1.00E+00	3.06E-02	1.22E+04	1.59E+02	2.97E-02	1.59E+02	7.67E+01
At Edge of Tailings Pile																						**Maximum HQ (Inside Tailings Pile)**	**3.97E+02**
BCEOT-E0-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	3.03E+04	1.42E+02	NA	NA	NA	NA	1.13E-04	3.06E+03	3.44E-01	1.00E+00	3.06E-02	4.65E+03	1.59E+02	2.97E-02	1.59E+02	2.93E+01
BCEOT-E1-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	2.62E+04	1.23E+02	NA	NA	NA	NA	1.13E-04	2.64E+03	2.97E-01	1.00E+00	3.06E-02	4.02E+03	1.59E+02	2.97E-02	1.59E+02	2.53E+01
BCEOT-E2-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	2.23E+04	1.04E+02	NA	NA	NA	NA	1.13E-04	2.25E+03	2.53E-01	1.00E+00	3.06E-02	3.42E+03	1.59E+02	2.97E-02	1.59E+02	2.15E+01
BCEOT-E3-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	7.85E+03	3.68E+01	NA	NA	NA	NA	1.13E-04	7.92E+02	8.91E-02	1.00E+00	3.06E-02	1.21E+03	1.59E+02	2.97E-02	1.59E+02	7.59E+00
BCEOT-E4-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	1.43E+04	6.71E+01	NA	NA	NA	NA	1.13E-04	1.44E+03	1.63E-01	1.00E+00	3.06E-02	2.20E+03	1.59E+02	2.97E-02	1.59E+02	1.38E+01
BCEOT-W4-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	7.54E+03	3.54E+01	NA	NA	NA	NA	1.13E-04	7.61E+02	8.57E-02	1.00E+00	3.06E-02	1.16E+03	1.59E+02	2.97E-02	1.59E+02	7.30E+00
BCEOT-E5-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	1.18E+04	5.52E+01	NA	NA	NA	NA	1.13E-04	1.19E+03	1.34E-01	1.00E+00	3.06E-02	1.81E+03	1.59E+02	2.97E-02	1.59E+02	1.14E+01
BCEOT-W5-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	5.21E+03	2.44E+01	NA	NA	NA	NA	1.13E-04	5.26E+02	5.92E-02	1.00E+00	3.06E-02	8.01E+02	1.59E+02	2.97E-02	1.59E+02	5.04E+00
BCEOT-E6-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	8.38E+03	3.93E+01	NA	NA	NA	NA	1.13E-04	8.46E+02	9.52E-02	1.00E+00	3.06E-02	1.29E+03	1.59E+02	2.97E-02	1.59E+02	8.11E+00
BCEOT-W6-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	1.10E+04	5.15E+01	NA	NA	NA	NA	1.13E-04	1.11E+03	1.25E-01	1.00E+00	3.06E-02	1.69E+03	1.59E+02	2.97E-02	1.59E+02	1.06E+01
BCEOT-E7-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	1.20E+04	5.65E+01	NA	NA	NA	NA	1.13E-04	1.22E+03	1.37E-01	1.00E+00	3.06E-02	1.85E+03	1.59E+02	2.97E-02	1.59E+02	1.17E+01
BCEOT-W7-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	4.19E+03	1.97E+01	NA	NA	NA	NA	1.13E-04	4.23E+02	4.76E-02	1.00E+00	3.06E-02	6.44E+02	1.59E+02	2.97E-02	1.59E+02	4.06E+00
BCEOT-W8-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	4.10E+03	1.92E+01	NA	NA	NA	NA	1.13E-04	4.14E+02	4.66E-02	1.00E+00	3.06E-02	6.30E+02	1.59E+02	2.97E-02	1.59E+02	3.97E+00
BCEOT-E9-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	3.13E+04	1.47E+02	NA	NA	NA	NA	1.13E-04	3.16E+03	3.55E-01	1.00E+00	3.06E-02	4.81E+03	1.59E+02	2.97E-02	1.59E+02	3.03E+01
BCEOT-W9-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	4.63E+03	2.17E+01	NA	NA	NA	NA	1.13E-04	4.67E+02	5.26E-02	1.00E+00	3.06E-02	7.11E+02	1.59E+02	2.97E-02	1.59E+02	4.48E+00
BCEOT-E10-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	5.79E+04	2.72E+02	NA	NA	NA	NA	1.13E-04	5.84E+03	6.58E-01	1.00E+00	3.06E-02	8.89E+03	1.59E+02	2.97E-02	1.59E+02	5.60E+01
BCEOT-W10-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	4.37E+03	2.05E+01	NA	NA	NA	NA	1.13E-04	4.41E+02	4.96E-02	1.00E+00	3.06E-02	6.71E+02	1.59E+02	2.97E-02	1.59E+02	4.23E+00
BCEOT-E11-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	2.83E+04	1.33E+02	NA	NA	NA	NA	1.13E-04	2.86E+03	3.22E-01	1.00E+00	3.06E-02	4.35E+03	1.59E+02	2.97E-02	1.59E+02	2.74E+01
BCEOT-W11-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	1.38E+04	6.49E+01	NA	NA	NA	NA	1.13E-04	1.40E+03	1.57E-01	1.00E+00	3.06E-02	2.12E+03	1.59E+02	2.97E-02	1.59E+02	1.34E+01
BCEOT-E12-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	1.46E+04	6.84E+01	NA	NA	NA	NA	1.13E-04	1.47E+03	1.66E-01	1.00E+00	3.06E-02	2.24E+03	1.59E+02	2.97E-02	1.59E+02	1.41E+01
BCEOT-W12-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	8.07E+03	3.79E+01	NA	NA	NA	NA	1.13E-04	8.15E+02	9.17E-02	1.00E+00	3.06E-02	1.24E+03	1.59E+02	2.97E-02	1.59E+02	7.81E+00
BCEOT-E13-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	1.12E+04	5.25E+01	NA	NA	NA	NA	1.13E-04	1.13E+03	1.27E-01	1.00E+00	3.06E-02	1.72E+03	1.59E+02	2.97E-02	1.59E+02	1.08E+01
BCEOT-W13-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	9.50E+03	4.45E+01	NA	NA	NA	NA	1.13E-04	9.59E+02	1.08E-01	1.00E+00	3.06E-02	1.46E+03	1.59E+02	2.97E-02	1.59E+02	9.19E+00
BCEOT-E14-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	1.11E+04	5.21E+01	NA	NA	NA	NA	1.13E-04	1.12E+03	1.26E-01	1.00E+00	3.06E-02	1.71E+03	1.59E+02	2.97E-02	1.59E+02	1.07E+01
BCEOT-W14-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	3.71E+04	1.74E+02	NA	NA	NA	NA	1.13E-04	3.75E+03	4.22E-01	1.00E+00	3.06E-02	5.70E+03	1.59E+02	2.97E-02	1.59E+02	3.59E+01
BCEOT-E15-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	1.25E+04	5.88E+01	NA	NA	NA	NA	1.13E-04	1.27E+03	1.42E-01	1.00E+00	3.06E-02	1.93E+03	1.59E+02	2.97E-02	1.59E+02	1.21E+01
BCEOT-W15-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	3.51E+04	1.65E+02	NA	NA	NA	NA	1.13E-04	3.54E+03	3.99E-01	1.00E+00	3.06E-02	5.39E+03	1.59E+02	2.97E-02	1.59E+02	3.39E+01
BCEOT-E16-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	1.40E+04	6.58E+01	NA	NA	NA	NA	1.13E-04	1.42E+03	1.59E-01	1.00E+00	3.06E-02	2.16E+03	1.59E+02	2.97E-02	1.59E+02	1.36E+01
BCEOT-W16-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	8.18E+03	3.84E+01	NA	NA	NA	NA	1.13E-04	8.26E+02	9.29E-02	1.00E+00	3.06E-02	1.26E+03	1.59E+02	2.97E-02	1.59E+02	7.91E+00
BCEOT-E17-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	1.91E+04	8.98E+01	NA	NA	NA	NA	1.13E-04	1.93E+03	2.17E-01	1.00E+00	3.06E-02	2.94E+03	1.59E+02	2.97E-02	1.59E+02	1.85E+01
BCEOT-W17-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	1.23E+04	5.75E+01	NA	NA	NA	NA	1.13E-04	1.24E+03	1.39E-01	1.00E+00	3.06E-02	1.88E+03	1.59E+02	2.97E-02	1.59E+02	1.19E+01
BCEOT-E18-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	1.70E+04	7.98E+01	NA	NA	NA	NA	1.13E-04	1.72E+03	1.93E-01	1.00E+00	3.06E-02	2.61E+03	1.59E+02	2.97E-02	1.59E+02	1.65E+01
BCEOT-W18-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	1.23E+04	5.79E+01	NA	NA	NA	NA	1.13E-04	1.25E+03	1.40E-01	1.00E+00	3.06E-02	1.90E+03	1.59E+02	2.97E-02	1.59E+02	1.19E+01
BCEOT-E19-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	1.03E+04	4.82E+01	NA	NA	NA	NA	1.13E-04	1.04E+03	1.17E-01	1.00E+00	3.06E-02	1.58E+03	1.59E+02	2.97E-02	1.59E+02	9.95E+00
BCEOT-W19-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	2.61E+04	1.23E+02	NA	NA	NA	NA	1.13E-04	2.64E+03	2.97E-01	1.00E+00	3.06E-02	4.01E+03	1.59E+02	2.97E-02	1.59E+02	2.53E+01
BCEOT-E20-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	3.60E+03	1.69E+01	NA	NA	NA	NA	1.13E-04	3.63E+02	4.09E-02	1.00E+00	3.06E-02	5.53E+02	1.59E+02	2.97E-02	1.59E+02	3.48E+00
BCEOT-W20-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	1.02E+04	4.80E+01	NA	NA	NA	NA	1.13E-04	1.03E+03	1.16E-01	1.00E+00	3.06E-02	1.57E+03	1.59E+02	2.97E-02	1.59E+02	9.90E+00
BCEOT-E21-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	1.41E+04	6.60E+01	NA	NA	NA	NA	1.13E-04	1.42E+03	1.60E-01	1.00E+00	3.06E-02	2.16E+03	1.59E+02	2.97E-02	1.59E+02	1.36E+01
BCEOT-W21-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	1.16E+04	5.45E+01	NA	NA	NA	NA	1.13E-04	1.17E+03	1.32E-01	1.00E+00	3.06E-02	1.78E+03	1.59E+02	2.97E-02	1.59E+02	1.12E+01
BCEOT-E22-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	8.45E+03	3.96E+01	NA	NA	NA	NA	1.13E-04	8.53E+02	9.60E-02	1.00E+00	3.06E-02	1.30E+03	1.59E+02	2.97E-02	1.59E+02	8.17E+00

TABLE C-11E: MANGANESE DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 11 - BEARTRAP CREEK DISPERSED TAILINGS DEPOSITS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK TAILINGS DEPOSIT AND FLOSSIE LOUISE MINE WASTE PILE (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **4.982**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Meadow Vole (Small Herbivorous Mammal - Terrestrial)																							
BCEOT-W22-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	6.31E+03	2.96E+01	NA	NA	NA	NA	1.13E-04	6.37E+02	7.17E-02	1.00E+00	3.06E-02	9.69E+02	1.59E+02	2.97E-02	1.59E+02	6.10E+00
BCEOT-E23-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	4.66E+03	2.18E+01	NA	NA	NA	NA	1.13E-04	4.70E+02	5.29E-02	1.00E+00	3.06E-02	7.16E+02	1.59E+02	2.97E-02	1.59E+02	4.51E+00
BCEOT-W23-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	5.49E+03	2.57E+01	NA	NA	NA	NA	1.13E-04	5.54E+02	6.23E-02	1.00E+00	3.06E-02	8.43E+02	1.59E+02	2.97E-02	1.59E+02	5.31E+00
BCEOT-E24-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	5.33E+03	2.50E+01	NA	NA	NA	NA	1.13E-04	5.38E+02	6.05E-02	1.00E+00	3.06E-02	8.19E+02	1.59E+02	2.97E-02	1.59E+02	5.16E+00
BCEOT-W24-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	1.16E+04	5.45E+01	NA	NA	NA	NA	1.13E-04	1.17E+03	1.32E-01	1.00E+00	3.06E-02	1.79E+03	1.59E+02	2.97E-02	1.59E+02	1.12E+01
BCEOT-E25-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	7.05E+03	3.30E+01	NA	NA	NA	NA	1.13E-04	7.11E+02	8.00E-02	1.00E+00	3.06E-02	1.08E+03	1.59E+02	2.97E-02	1.59E+02	6.82E+00
BCEOT-W25-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	1.68E+04	7.86E+01	NA	NA	NA	NA	1.13E-04	1.69E+03	1.90E-01	1.00E+00	3.06E-02	2.58E+03	1.59E+02	2.97E-02	1.59E+02	1.62E+01
BCEOT-E26-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	1.27E+04	5.96E+01	NA	NA	NA	NA	1.13E-04	1.28E+03	1.44E-01	1.00E+00	3.06E-02	1.95E+03	1.59E+02	2.97E-02	1.59E+02	1.23E+01
BCEOT-W26-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	1.24E+04	5.83E+01	NA	NA	NA	NA	1.13E-04	1.25E+03	1.41E-01	1.00E+00	3.06E-02	1.91E+03	1.59E+02	2.97E-02	1.59E+02	1.20E+01
BCEOT-W27-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	9.95E+03	4.67E+01	NA	NA	NA	NA	1.13E-04	1.00E+03	1.13E-01	1.00E+00	3.06E-02	1.53E+03	1.59E+02	2.97E-02	1.59E+02	9.62E+00
Outside Tailings Piles																						**Maximum HQ (Edge of Tailings Pile)**	**5.60E+01**
BCEOT-E0+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	9.18E+03	4.31E+01	NA	NA	NA	NA	1.13E-04	9.27E+02	1.04E-01	1.00E+00	3.06E-02	1.41E+03	1.59E+02	2.97E-02	1.59E+02	8.88E+00
BCEOT-E1+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	4.52E+04	2.12E+02	NA	NA	NA	NA	1.13E-04	4.56E+03	5.13E-01	1.00E+00	3.06E-02	6.94E+03	1.59E+02	2.97E-02	1.59E+02	4.37E+01
BCEOT-E2+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	5.51E+03	2.59E+01	NA	NA	NA	NA	1.13E-04	5.56E+02	6.26E-02	1.00E+00	3.06E-02	8.47E+02	1.59E+02	2.97E-02	1.59E+02	5.33E+00
BCEOT-E3+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	1.04E+04	4.87E+01	NA	NA	NA	NA	1.13E-04	1.05E+03	1.18E-01	1.00E+00	3.06E-02	1.59E+03	1.59E+02	2.97E-02	1.59E+02	1.00E+01
BCEOT-E4+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	2.66E+04	1.25E+02	NA	NA	NA	NA	1.13E-04	2.69E+03	3.02E-01	1.00E+00	3.06E-02	4.09E+03	1.59E+02	2.97E-02	1.59E+02	2.57E+01
BCEOT-W4+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	6.66E+03	3.12E+01	NA	NA	NA	NA	1.13E-04	6.73E+02	7.57E-02	1.00E+00	3.06E-02	1.02E+03	1.59E+02	2.97E-02	1.59E+02	6.45E+00
BCEOT-E5+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	2.30E+04	1.08E+02	NA	NA	NA	NA	1.13E-04	2.32E+03	2.61E-01	1.00E+00	3.06E-02	3.53E+03	1.59E+02	2.97E-02	1.59E+02	2.22E+01
BCEOT-W5+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	7.08E+03	3.32E+01	NA	NA	NA	NA	1.13E-04	7.14E+02	8.04E-02	1.00E+00	3.06E-02	1.09E+03	1.59E+02	2.97E-02	1.59E+02	6.84E+00
BCEOT-E6+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	5.69E+03	2.67E+01	NA	NA	NA	NA	1.13E-04	5.74E+02	6.46E-02	1.00E+00	3.06E-02	8.74E+02	1.59E+02	2.97E-02	1.59E+02	5.50E+00
BCEOT-W6+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	2.95E+03	1.38E+01	NA	NA	NA	NA	1.13E-04	2.97E+02	3.34E-02	1.00E+00	3.06E-02	4.52E+02	1.59E+02	2.97E-02	1.59E+02	2.85E+00
BCEOT-E7+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	2.41E+04	1.13E+02	NA	NA	NA	NA	1.13E-04	2.44E+03	2.74E-01	1.00E+00	3.06E-02	3.71E+03	1.59E+02	2.97E-02	1.59E+02	2.33E+01
BCEOT-W7+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	8.25E+03	3.87E+01	NA	NA	NA	NA	1.13E-04	8.33E+02	9.37E-02	1.00E+00	3.06E-02	1.27E+03	1.59E+02	2.97E-02	1.59E+02	7.98E+00
FLWA-101 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	2.39E+03	1.12E+01	NA	NA	NA	NA	1.13E-04	2.42E+02	2.72E-02	1.00E+00	3.06E-02	3.68E+02	1.59E+02	2.97E-02	1.59E+02	2.31E+00
BCEOT-W8+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	5.01E+03	2.35E+01	NA	NA	NA	NA	1.13E-04	5.06E+02	5.69E-02	1.00E+00	3.06E-02	7.70E+02	1.59E+02	2.97E-02	1.59E+02	4.85E+00
BCEOT-E9+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	1.95E+04	9.14E+01	NA	NA	NA	NA	1.13E-04	1.97E+03	2.21E-01	1.00E+00	3.06E-02	2.99E+03	1.59E+02	2.97E-02	1.59E+02	1.89E+01
BCEOT-W9+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	2.10E+04	9.86E+01	NA	NA	NA	NA	1.13E-04	2.12E+03	2.39E-01	1.00E+00	3.06E-02	3.23E+03	1.59E+02	2.97E-02	1.59E+02	2.03E+01
BCEOT-E10+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	2.26E+04	1.06E+02	NA	NA	NA	NA	1.13E-04	2.29E+03	2.57E-01	1.00E+00	3.06E-02	3.48E+03	1.59E+02	2.97E-02	1.59E+02	2.19E+01
BCEOT-W10+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	3.77E+03	1.77E+01	NA	NA	NA	NA	1.13E-04	3.80E+02	4.28E-02	1.00E+00	3.06E-02	5.78E+02	1.59E+02	2.97E-02	1.59E+02	3.64E+00
BCEOT-E11+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	9.39E+03	4.40E+01	NA	NA	NA	NA	1.13E-04	9.47E+02	1.07E-01	1.00E+00	3.06E-02	1.44E+03	1.59E+02	2.97E-02	1.59E+02	9.08E+00
BCEOT-W11+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	6.28E+03	2.94E+01	NA	NA	NA	NA	1.13E-04	6.34E+02	7.13E-02	1.00E+00	3.06E-02	9.64E+02	1.59E+02	2.97E-02	1.59E+02	6.07E+00
BCEOT-E12+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	9.77E+03	4.58E+01	NA	NA	NA	NA	1.13E-04	9.86E+02	1.11E-01	1.00E+00	3.06E-02	1.50E+03	1.59E+02	2.97E-02	1.59E+02	9.45E+00
BCEOT-W12+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	1.10E+04	5.15E+01	NA	NA	NA	NA	1.13E-04	1.11E+03	1.25E-01	1.00E+00	3.06E-02	1.69E+03	1.59E+02	2.97E-02	1.59E+02	1.06E+01
BCEOT-E13+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	8.69E+03	4.08E+01	NA	NA	NA	NA	1.13E-04	8.77E+02	9.87E-02	1.00E+00	3.06E-02	1.34E+03	1.59E+02	2.97E-02	1.59E+02	8.41E+00
BCEOT-E14+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	1.22E+04	5.74E+01	NA	NA	NA	NA	1.13E-04	1.24E+03	1.39E-01	1.00E+00	3.06E-02	1.88E+03	1.59E+02	2.97E-02	1.59E+02	1.18E+01
BCEOT-W14+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	1.74E+04	8.15E+01	NA	NA	NA	NA	1.13E-04	1.75E+03	1.97E-01	1.00E+00	3.06E-02	2.67E+03	1.59E+02	2.97E-02	1.59E+02	1.68E+01
BCEOT-E15+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	1.53E+04	7.18E+01	NA	NA	NA	NA	1.13E-04	1.55E+03	1.74E-01	1.00E+00	3.06E-02	2.35E+03	1.59E+02	2.97E-02	1.59E+02	1.48E+01
BCEOT-W15+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	2.72E+04	1.27E+02	NA	NA	NA	NA	1.13E-04	2.74E+03	3.09E-01	1.00E+00	3.06E-02	4.17E+03	1.59E+02	2.97E-02	1.59E+02	2.63E+01
BCEOT-E16+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	9.55E+03	4.48E+01	NA	NA	NA	NA	1.13E-04	9.64E+02	1.09E-01	1.00E+00	3.06E-02	1.47E+03	1.59E+02	2.97E-02	1.59E+02	9.24E+00
BCEOT-W16+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	6.05E+03	2.84E+01	NA	NA	NA	NA	1.13E-04	6.11E+02	6.87E-02	1.00E+00	3.06E-02	9.30E+02	1.59E+02	2.97E-02	1.59E+02	5.86E+00
BCEOT-E17+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	1.21E+04	5.67E+01	NA	NA	NA	NA	1.13E-04	1.22E+03	1.37E-01	1.00E+00	3.06E-02	1.86E+03	1.59E+02	2.97E-02	1.59E+02	1.17E+01
BCEOT-W17+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	5.92E+03	2.78E+01	NA	NA	NA	NA	1.13E-04	5.97E+02	6.72E-02	1.00E+00	3.06E-02	9.09E+02	1.59E+02	2.97E-02	1.59E+02	5.73E+00
BCEOT-E18+12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	7.81E+04	3.66E+02	NA	NA	NA	NA	1.13E-04	7.88E+03	8.87E-01	1.00E+00	3.06E-02	1.20E+04	1.59E+02	2.97E-02	1.59E+02	7.55E+01
BCEOT-E18+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	1.26E+04	5.93E+01	NA	NA	NA	NA	1.13E-04	1.28E+03	1.44E-01	1.00E+00	3.06E-02	1.94E+03	1.59E+02	2.97E-02	1.59E+02	1.22E+01
BCEOT-W18+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	1.30E+04	6.09E+01	NA	NA	NA	NA	1.13E-04	1.31E+03	1.48E-01	1.00E+00	3.06E-02	2.00E+03	1.59E+02	2.97E-02	1.59E+02	1.26E+01
BCEOT-E19+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	1.23E+04	5.79E+01	NA	NA	NA	NA	1.13E-04	1.25E+03	1.40E-01	1.00E+00	3.06E-02	1.90E+03	1.59E+02	2.97E-02	1.59E+02	1.19E+01
BCEOT-W19+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	2.77E+03	1.30E+01	NA	NA	NA	NA	1.13E-04	2.80E+02	3.15E-02	1.00E+00	3.06E-02	4.26E+02	1.59E+02	2.97E-02	1.59E+02	2.68E+00
BCEOT-E20+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	1.05E+04	4.92E+01	NA	NA	NA	NA	1.13E-04	1.06E+03	1.19E-01	1.00E+00	3.06E-02	1.61E+03	1.59E+02	2.97E-02	1.59E+02	1.01E+01
BCEOT-W20+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	7.89E+03	3.70E+01	NA	NA	NA	NA	1.13E-04	7.96E+02	8.96E-02	1.00E+00	3.06E-02	1.21E+03	1.59E+02	2.97E-02	1.59E+02	7.63E+00
BCEOT-E21+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	5.13E+03	2.40E+01	NA	NA	NA	NA	1.13E-04	5.18E+02	5.82E-02	1.00E+00	3.06E-02	7.88E+02	1.59E+02	2.97E-02	1.59E+02	4.96E+00
BCEOT-W21+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	7.07E+03	3.32E+01	NA	NA	NA	NA	1.13E-04	7.14E+02	8.04E-02	1.00E+00	3.06E-02	1.09E+03	1.59E+02	2.97E-02	1.59E+02	6.84E+00
BCEOT-E22+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	2.43E+04	1.14E+02	NA	NA	NA	NA	1.13E-04	2.46E+03	2.77E-01	1.00E+00	3.06E-02	3.74E+03	1.59E+02	2.97E-02	1.59E+02	2.35E+01
BCEOT-E22+70 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	6.92E+03	3.24E+01	NA	NA	NA	NA	1.13E-04	6.98E+02	7.86E-02	1.00E+00	3.06E-02	1.06E+03	1.59E+02	2.97E-02	1.59E+02	6.69E+00

TABLE C-11E: MANGANESE DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 11 - BEARTRAP CREEK DISPERSED TAILINGS DEPOSITS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK TAILINGS DEPOSIT AND FLOSSIE LOUISE MINE WASTE PILE (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **4.982**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Meadow Vole (Small Herbivorous Mammal - Terrestrial)																							
BCEOT-W22+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	3.10E+03	1.45E+01	NA	NA	NA	NA	1.13E-04	3.13E+02	3.52E-02	1.00E+00	3.06E-02	4.76E+02	1.59E+02	2.97E-02	1.59E+02	3.00E+00
BCEOT-E23+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	4.19E+03	1.97E+01	NA	NA	NA	NA	1.13E-04	4.23E+02	4.76E-02	1.00E+00	3.06E-02	6.44E+02	1.59E+02	2.97E-02	1.59E+02	4.06E+00
BCEOT-W23+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	5.87E+03	2.75E+01	NA	NA	NA	NA	1.13E-04	5.92E+02	6.66E-02	1.00E+00	3.06E-02	9.01E+02	1.59E+02	2.97E-02	1.59E+02	5.68E+00
BCEOT-E24+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	3.44E+03	1.61E+01	NA	NA	NA	NA	1.13E-04	3.47E+02	3.90E-02	1.00E+00	3.06E-02	5.28E+02	1.59E+02	2.97E-02	1.59E+02	3.32E+00
BCEOT-W24+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	5.45E+03	2.56E+01	NA	NA	NA	NA	1.13E-04	5.50E+02	6.19E-02	1.00E+00	3.06E-02	8.38E+02	1.59E+02	2.97E-02	1.59E+02	5.28E+00
BCEOT-E25+20 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	4.31E+03	2.02E+01	NA	NA	NA	NA	1.13E-04	4.34E+02	4.89E-02	1.00E+00	3.06E-02	6.61E+02	1.59E+02	2.97E-02	1.59E+02	4.16E+00
BCEOT-W25+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	3.00E+03	1.41E+01	NA	NA	NA	NA	1.13E-04	3.03E+02	3.41E-02	1.00E+00	3.06E-02	4.61E+02	1.59E+02	2.97E-02	1.59E+02	2.90E+00
BCEOT-E26+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	2.39E+03	1.12E+01	NA	NA	NA	NA	1.13E-04	2.41E+02	2.71E-02	1.00E+00	3.06E-02	3.67E+02	1.59E+02	2.97E-02	1.59E+02	2.31E+00
BCEOT-W26+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	4.99E+04	2.34E+02	NA	NA	NA	NA	1.13E-04	5.04E+03	5.67E-01	1.00E+00	3.06E-02	7.67E+03	1.59E+02	2.97E-02	1.59E+02	4.83E+01
BCEOT-W27+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	9.91E+00	1.13E+04	5.30E+01	NA	NA	NA	NA	1.13E-04	1.14E+03	1.28E-01	1.00E+00	3.06E-02	1.74E+03	1.59E+02	2.97E-02	1.59E+02	1.09E+01
																						Maximum HQ (Outside Tailings Pile)	**7.55E+01**
White-Tailed Deer (Large Herbivorous Mammal - Terrestrial)																							
Reference Sites																							
ACBG-1 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	3.34E-01	9.85E+01	1.41E+02	NA	NA	NA	NA	2.86E-02	2.95E+02	8.44E+00	2.79E-02	1.35E+02	3.09E-02	1.59E+02	2.97E-02	9.60E+01	3.22E-04
ACBG-2 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	3.34E-01	3.33E+02	4.77E+02	NA	NA	NA	NA	2.86E-02	9.97E+02	2.86E+01	2.79E-02	1.35E+02	1.04E-01	1.59E+02	2.97E-02	9.60E+01	1.09E-03
BCBG-201 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	3.34E-01	5.38E+01	7.71E+01	NA	NA	NA	NA	2.86E-02	1.61E+02	4.61E+00	2.79E-02	1.35E+02	1.69E-02	1.59E+02	2.97E-02	9.60E+01	1.76E-04
Inside Tailings Pile																						**Minimum HQ (Reference Sites)**	**1.76E-04**
BCEOT-E0-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	1.51E+04	2.16E+04	NA	NA	NA	NA	2.86E-02	1.52E+03	4.36E+01	2.79E-02	1.35E+02	4.47E+00	1.59E+02	2.97E-02	9.60E+01	4.66E-02
BCEOT-E1-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	3.36E+04	4.81E+04	NA	NA	NA	NA	2.86E-02	3.39E+03	9.70E+01	2.79E-02	1.35E+02	9.94E+00	1.59E+02	2.97E-02	9.60E+01	1.04E-01
BCEOT-E2-8 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	1.73E+04	2.48E+04	NA	NA	NA	NA	2.86E-02	1.75E+03	5.01E+01	2.79E-02	1.35E+02	5.14E+00	1.59E+02	2.97E-02	9.60E+01	5.35E-02
BCEOT-E3-8 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	1.75E+04	2.50E+04	NA	NA	NA	NA	2.86E-02	1.77E+03	5.06E+01	2.79E-02	1.35E+02	5.18E+00	1.59E+02	2.97E-02	9.60E+01	5.40E-02
BCEOT-E4-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	1.04E+04	1.49E+04	NA	NA	NA	NA	2.86E-02	1.05E+03	3.02E+01	2.79E-02	1.35E+02	3.09E+00	1.59E+02	2.97E-02	9.60E+01	3.22E-02
BCEOT-W4-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	1.15E+04	1.65E+04	NA	NA	NA	NA	2.86E-02	1.16E+03	3.34E+01	2.79E-02	1.35E+02	3.42E+00	1.59E+02	2.97E-02	9.60E+01	3.56E-02
BCEOT-E5-25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	5.77E+03	8.26E+03	NA	NA	NA	NA	2.86E-02	5.83E+02	1.67E+01	2.79E-02	1.35E+02	1.71E+00	1.59E+02	2.97E-02	9.60E+01	1.78E-02
BCEOT-W5-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	2.80E+04	4.01E+04	NA	NA	NA	NA	2.86E-02	2.83E+03	8.09E+01	2.79E-02	1.35E+02	8.29E+00	1.59E+02	2.97E-02	9.60E+01	8.64E-02
BCEOT-E6-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	1.21E+04	1.74E+04	NA	NA	NA	NA	2.86E-02	1.22E+03	3.51E+01	2.79E-02	1.35E+02	3.59E+00	1.59E+02	2.97E-02	9.60E+01	3.74E-02
BCEOT-W6-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	1.04E+04	1.48E+04	NA	NA	NA	NA	2.86E-02	1.05E+03	3.00E+01	2.79E-02	1.35E+02	3.07E+00	1.59E+02	2.97E-02	9.60E+01	3.20E-02
BCEOT-E7-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	1.25E+04	1.79E+04	NA	NA	NA	NA	2.86E-02	1.26E+03	3.61E+01	2.79E-02	1.35E+02	3.70E+00	1.59E+02	2.97E-02	9.60E+01	3.85E-02
BCEOT-W7-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	6.03E+03	8.63E+03	NA	NA	NA	NA	2.86E-02	6.09E+02	1.74E+01	2.79E-02	1.35E+02	1.79E+00	1.59E+02	2.97E-02	9.60E+01	1.86E-02
BCEOT-W8-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	1.14E+03	1.63E+03	NA	NA	NA	NA	2.86E-02	1.15E+02	3.30E+00	2.79E-02	1.35E+02	3.38E-01	1.59E+02	2.97E-02	9.60E+01	3.52E-03
BCEOT-E9-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	5.78E+03	8.27E+03	NA	NA	NA	NA	2.86E-02	5.83E+02	1.67E+01	2.79E-02	1.35E+02	1.71E+00	1.59E+02	2.97E-02	9.60E+01	1.78E-02
BCEOT-W9-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	1.23E+03	1.76E+03	NA	NA	NA	NA	2.86E-02	1.24E+02	3.55E+00	2.79E-02	1.35E+02	3.64E-01	1.59E+02	2.97E-02	9.60E+01	3.79E-03
BCEOT-E10-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	3.69E+04	5.28E+04	NA	NA	NA	NA	2.86E-02	3.72E+03	1.07E+02	2.79E-02	1.35E+02	1.09E+01	1.59E+02	2.97E-02	9.60E+01	1.14E-01
BCEOT-W10-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	7.06E+03	1.01E+04	NA	NA	NA	NA	2.86E-02	7.12E+02	2.04E+01	2.79E-02	1.35E+02	2.09E+00	1.59E+02	2.97E-02	9.60E+01	2.18E-02
BCEOT-E11-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	4.22E+03	6.05E+03	NA	NA	NA	NA	2.86E-02	4.26E+02	1.22E+01	2.79E-02	1.35E+02	1.25E+00	1.59E+02	2.97E-02	9.60E+01	1.30E-02
BCEOT-W11-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	5.95E+03	8.51E+03	NA	NA	NA	NA	2.86E-02	6.00E+02	1.72E+01	2.79E-02	1.35E+02	1.76E+00	1.59E+02	2.97E-02	9.60E+01	1.83E-02
BCEOT-E12-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	1.19E+04	1.71E+04	NA	NA	NA	NA	2.86E-02	1.21E+03	3.45E+01	2.79E-02	1.35E+02	3.54E+00	1.59E+02	2.97E-02	9.60E+01	3.69E-02
BCEOT-W12-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	2.63E+04	3.76E+04	NA	NA	NA	NA	2.86E-02	2.65E+03	7.59E+01	2.79E-02	1.35E+02	7.78E+00	1.59E+02	2.97E-02	9.60E+01	8.11E-02
BCEOT-E13-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	6.05E+03	8.66E+03	NA	NA	NA	NA	2.86E-02	6.10E+02	1.75E+01	2.79E-02	1.35E+02	1.79E+00	1.59E+02	2.97E-02	9.60E+01	1.87E-02
BCEOT-W13-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	3.20E+03	4.59E+03	NA	NA	NA	NA	2.86E-02	3.23E+02	9.26E+00	2.79E-02	1.35E+02	9.49E-01	1.59E+02	2.97E-02	9.60E+01	9.89E-03
BCEOT-W13-25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	5.67E+03	8.12E+03	NA	NA	NA	NA	2.86E-02	5.72E+02	1.64E+01	2.79E-02	1.35E+02	1.68E+00	1.59E+02	2.97E-02	9.60E+01	1.75E-02
BCEOT-W14-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	2.71E+04	3.88E+04	NA	NA	NA	NA	2.86E-02	2.74E+03	7.84E+01	2.79E-02	1.35E+02	8.03E+00	1.59E+02	2.97E-02	9.60E+01	8.37E-02
BCEOT-E15-8 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	8.82E+03	1.26E+04	NA	NA	NA	NA	2.86E-02	8.90E+02	2.55E+01	2.79E-02	1.35E+02	2.61E+00	1.59E+02	2.97E-02	9.60E+01	2.72E-02
BCEOT-W15-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	1.21E+03	1.73E+03	NA	NA	NA	NA	2.86E-02	1.22E+02	3.49E+00	2.79E-02	1.35E+02	3.58E-01	1.59E+02	2.97E-02	9.60E+01	3.73E-03
BCEOT-E16-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	7.10E+03	1.02E+04	NA	NA	NA	NA	2.86E-02	7.16E+02	2.05E+01	2.79E-02	1.35E+02	2.10E+00	1.59E+02	2.97E-02	9.60E+01	2.19E-02
BCEOT-W16-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	2.30E+04	3.29E+04	NA	NA	NA	NA	2.86E-02	2.32E+03	6.64E+01	2.79E-02	1.35E+02	6.80E+00	1.59E+02	2.97E-02	9.60E+01	7.09E-02
BCEOT-E17-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	8.31E+04	1.19E+05	NA	NA	NA	NA	2.86E-02	8.38E+03	2.40E+02	2.79E-02	1.35E+02	2.46E+01	1.59E+02	2.97E-02	9.60E+01	2.56E-01
BCEOT-W17-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	1.14E+04	1.63E+04	NA	NA	NA	NA	2.86E-02	1.15E+03	3.29E+01	2.79E-02	1.35E+02	3.37E+00	1.59E+02	2.97E-02	9.60E+01	3.51E-02
BCEOT-W18-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	8.28E+02	1.19E+03	NA	NA	NA	NA	2.86E-02	8.36E+01	2.39E+00	2.79E-02	1.35E+02	2.45E-01	1.59E+02	2.97E-02	9.60E+01	2.56E-03
BCEOT-E19-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	1.78E+04	2.55E+04	NA	NA	NA	NA	2.86E-02	1.79E+03	5.14E+01	2.79E-02	1.35E+02	5.27E+00	1.59E+02	2.97E-02	9.60E+01	5.49E-02
BCEOT-W19-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	1.11E+04	1.59E+04	NA	NA	NA	NA	2.86E-02	1.12E+03	3.21E+01	2.79E-02	1.35E+02	3.29E+00	1.59E+02	2.97E-02	9.60E+01	3.43E-02
BCEOT-E20-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	2.25E+04	3.23E+04	NA	NA	NA	NA	2.86E-02	2.27E+03	6.51E+01	2.79E-02	1.35E+02	6.67E+00	1.59E+02	2.97E-02	9.60E+01	6.95E-02
BCEOT-W20-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	1.03E+05	1.47E+05	NA	NA	NA	NA	2.86E-02	1.04E+04	2.97E+02	2.79E-02	1.35E+02	3.04E+01	1.59E+02	2.97E-02	9.60E+01	3.17E-01
BCEOT-E21-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	2.27E+04	3.25E+04	NA	NA	NA	NA	2.86E-02	2.29E+03	6.55E+01	2.79E-02	1.35E+02	6.72E+00	1.59E+02	2.97E-02	9.60E+01	7.00E-02

TABLE C-11E: MANGANESE DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 11 - BEARTRAP CREEK DISPERSED TAILINGS DEPOSITS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK TAILINGS DEPOSIT AND FLOSSIE LOUISE MINE WASTE PILE (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **4.982**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
White-Tailed Deer (Large Herbivorous Mammal - Terrestrial)																							
BCEOT-W21-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	3.50E+03	5.00E+03	NA	NA	NA	NA	2.86E-02	3.53E+02	1.01E+01	2.79E-02	1.35E+02	1.04E+00	1.59E+02	2.97E-02	9.60E+01	1.08E-02
BCEOT-E22-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	7.42E+04	1.06E+05	NA	NA	NA	NA	2.86E-02	7.49E+03	2.14E+02	2.79E-02	1.35E+02	2.20E+01	1.59E+02	2.97E-02	9.60E+01	2.29E-01
BCEOT-W22-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	4.10E+05	5.87E+05	NA	NA	NA	NA	2.86E-02	4.14E+04	1.19E+03	2.79E-02	1.35E+02	1.22E+02	1.59E+02	2.97E-02	9.60E+01	1.27E+00
BCEOT-E23-15 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	1.36E+04	1.95E+04	NA	NA	NA	NA	2.86E-02	1.38E+03	3.94E+01	2.79E-02	1.35E+02	4.04E+00	1.59E+02	2.97E-02	9.60E+01	4.21E-02
BCEOT-W23-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	1.02E+05	1.46E+05	NA	NA	NA	NA	2.86E-02	1.03E+04	2.95E+02	2.79E-02	1.35E+02	3.02E+01	1.59E+02	2.97E-02	9.60E+01	3.15E-01
BCEOT-E24-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	3.61E+03	5.17E+03	NA	NA	NA	NA	2.86E-02	3.65E+02	1.04E+01	2.79E-02	1.35E+02	1.07E+00	1.59E+02	2.97E-02	9.60E+01	1.12E-02
BCEOT-W24-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	9.05E+04	1.30E+05	NA	NA	NA	NA	2.86E-02	9.14E+03	2.62E+02	2.79E-02	1.35E+02	2.68E+01	1.59E+02	2.97E-02	9.60E+01	2.79E-01
BCEOT-E25-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	1.10E+04	1.57E+04	NA	NA	NA	NA	2.86E-02	1.11E+03	3.17E+01	2.79E-02	1.35E+02	3.25E+00	1.59E+02	2.97E-02	9.60E+01	3.39E-02
BCEOT-W25-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	1.06E+05	1.51E+05	NA	NA	NA	NA	2.86E-02	1.07E+04	3.05E+02	2.79E-02	1.35E+02	3.13E+01	1.59E+02	2.97E-02	9.60E+01	3.26E-01
BCEOT-E26-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	5.95E+03	8.52E+03	NA	NA	NA	NA	2.86E-02	6.01E+02	1.72E+01	2.79E-02	1.35E+02	1.76E+00	1.59E+02	2.97E-02	9.60E+01	1.84E-02
BCEOT-W26-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	8.28E+02	1.18E+03	NA	NA	NA	NA	2.86E-02	8.35E+01	2.39E+00	2.79E-02	1.35E+02	2.45E-01	1.59E+02	2.97E-02	9.60E+01	2.55E-03
BCEOT-W27-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	7.93E+04	1.13E+05	NA	NA	NA	NA	2.86E-02	8.00E+03	2.29E+02	2.79E-02	1.35E+02	2.35E+01	1.59E+02	2.97E-02	9.60E+01	2.45E-01
At Edge of Tailings Pile																						**Maximum HQ (Inside Tailings Pile)**	**1.27E+00**
BCEOT-E0-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	3.03E+04	4.34E+04	NA	NA	NA	NA	2.86E-02	3.06E+03	8.75E+01	2.79E-02	1.35E+02	8.97E+00	1.59E+02	2.97E-02	9.60E+01	9.35E-02
BCEOT-E1-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	2.62E+04	3.75E+04	NA	NA	NA	NA	2.86E-02	2.64E+03	7.56E+01	2.79E-02	1.35E+02	7.75E+00	1.59E+02	2.97E-02	9.60E+01	8.07E-02
BCEOT-E2-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	2.23E+04	3.19E+04	NA	NA	NA	NA	2.86E-02	2.25E+03	6.43E+01	2.79E-02	1.35E+02	6.59E+00	1.59E+02	2.97E-02	9.60E+01	6.87E-02
BCEOT-E3-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	7.85E+03	1.12E+04	NA	NA	NA	NA	2.86E-02	7.92E+02	2.27E+01	2.79E-02	1.35E+02	2.32E+00	1.59E+02	2.97E-02	9.60E+01	2.42E-02
BCEOT-E4-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	1.43E+04	2.05E+04	NA	NA	NA	NA	2.86E-02	1.44E+03	4.14E+01	2.79E-02	1.35E+02	4.24E+00	1.59E+02	2.97E-02	9.60E+01	4.42E-02
BCEOT-W4-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	7.54E+03	1.08E+04	NA	NA	NA	NA	2.86E-02	7.61E+02	2.18E+01	2.79E-02	1.35E+02	2.23E+00	1.59E+02	2.97E-02	9.60E+01	2.33E-02
BCEOT-E5-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	1.18E+04	1.68E+04	NA	NA	NA	NA	2.86E-02	1.19E+03	3.40E+01	2.79E-02	1.35E+02	3.48E+00	1.59E+02	2.97E-02	9.60E+01	3.63E-02
BCEOT-W5-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	5.21E+03	7.46E+03	NA	NA	NA	NA	2.86E-02	5.26E+02	1.51E+01	2.79E-02	1.35E+02	1.54E+00	1.59E+02	2.97E-02	9.60E+01	1.61E-02
BCEOT-E6-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	8.38E+03	1.20E+04	NA	NA	NA	NA	2.86E-02	8.46E+02	2.42E+01	2.79E-02	1.35E+02	2.48E+00	1.59E+02	2.97E-02	9.60E+01	2.59E-02
BCEOT-E7-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	1.20E+04	1.72E+04	NA	NA	NA	NA	2.86E-02	1.22E+03	3.48E+01	2.79E-02	1.35E+02	3.57E+00	1.59E+02	2.97E-02	9.60E+01	3.72E-02
BCEOT-W7-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	4.19E+03	6.00E+03	NA	NA	NA	NA	2.86E-02	4.23E+02	1.21E+01	2.79E-02	1.35E+02	1.24E+00	1.59E+02	2.97E-02	9.60E+01	1.29E-02
BCEOT-W8-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	4.10E+03	5.87E+03	NA	NA	NA	NA	2.86E-02	4.14E+02	1.18E+01	2.79E-02	1.35E+02	1.21E+00	1.59E+02	2.97E-02	9.60E+01	1.26E-02
BCEOT-E9-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	3.13E+04	4.48E+04	NA	NA	NA	NA	2.86E-02	3.16E+03	9.04E+01	2.79E-02	1.35E+02	9.26E+00	1.59E+02	2.97E-02	9.60E+01	9.65E-02
BCEOT-W9-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	4.63E+03	6.63E+03	NA	NA	NA	NA	2.86E-02	4.67E+02	1.34E+01	2.79E-02	1.35E+02	1.37E+00	1.59E+02	2.97E-02	9.60E+01	1.43E-02
BCEOT-E10-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	5.79E+04	8.29E+04	NA	NA	NA	NA	2.86E-02	5.84E+03	1.67E+02	2.79E-02	1.35E+02	1.71E+01	1.59E+02	2.97E-02	9.60E+01	1.79E-01
BCEOT-W10-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	4.37E+03	6.25E+03	NA	NA	NA	NA	2.86E-02	4.41E+02	1.26E+01	2.79E-02	1.35E+02	1.29E+00	1.59E+02	2.97E-02	9.60E+01	1.35E-02
BCEOT-E11-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	2.83E+04	4.06E+04	NA	NA	NA	NA	2.86E-02	2.86E+03	8.19E+01	2.79E-02	1.35E+02	8.40E+00	1.59E+02	2.97E-02	9.60E+01	8.75E-02
BCEOT-W11-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	1.38E+04	1.98E+04	NA	NA	NA	NA	2.86E-02	1.40E+03	4.00E+01	2.79E-02	1.35E+02	4.10E+00	1.59E+02	2.97E-02	9.60E+01	4.27E-02
BCEOT-E12-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	1.46E+04	2.09E+04	NA	NA	NA	NA	2.86E-02	1.47E+03	4.22E+01	2.79E-02	1.35E+02	4.32E+00	1.59E+02	2.97E-02	9.60E+01	4.50E-02
BCEOT-W12-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	8.07E+03	1.16E+04	NA	NA	NA	NA	2.86E-02	8.15E+02	2.33E+01	2.79E-02	1.35E+02	2.39E+00	1.59E+02	2.97E-02	9.60E+01	2.49E-02
BCEOT-E13-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	1.12E+04	1.60E+04	NA	NA	NA	NA	2.86E-02	1.13E+03	3.24E+01	2.79E-02	1.35E+02	3.32E+00	1.59E+02	2.97E-02	9.60E+01	3.46E-02
BCEOT-W13-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	9.50E+03	1.36E+04	NA	NA	NA	NA	2.86E-02	9.59E+02	2.74E+01	2.79E-02	1.35E+02	2.81E+00	1.59E+02	2.97E-02	9.60E+01	2.93E-02
BCEOT-E14-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	1.11E+04	1.59E+04	NA	NA	NA	NA	2.86E-02	1.12E+03	3.21E+01	2.79E-02	1.35E+02	3.29E+00	1.59E+02	2.97E-02	9.60E+01	3.43E-02
BCEOT-W14-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	3.71E+04	5.31E+04	NA	NA	NA	NA	2.86E-02	3.75E+03	1.07E+02	2.79E-02	1.35E+02	1.10E+01	1.59E+02	2.97E-02	9.60E+01	1.15E-01
BCEOT-E15-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	1.25E+04	1.80E+04	NA	NA	NA	NA	2.86E-02	1.27E+03	3.62E+01	2.79E-02	1.35E+02	3.72E+00	1.59E+02	2.97E-02	9.60E+01	3.87E-02
BCEOT-W15-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	3.51E+04	5.02E+04	NA	NA	NA	NA	2.86E-02	3.54E+03	1.01E+02	2.79E-02	1.35E+02	1.04E+01	1.59E+02	2.97E-02	9.60E+01	1.08E-01
BCEOT-E16-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	1.40E+04	2.01E+04	NA	NA	NA	NA	2.86E-02	1.42E+03	4.06E+01	2.79E-02	1.35E+02	4.16E+00	1.59E+02	2.97E-02	9.60E+01	4.33E-02
BCEOT-W16-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	8.18E+03	1.17E+04	NA	NA	NA	NA	2.86E-02	8.26E+02	2.36E+01	2.79E-02	1.35E+02	2.42E+00	1.59E+02	2.97E-02	9.60E+01	2.52E-02
BCEOT-E17-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	1.91E+04	2.74E+04	NA	NA	NA	NA	2.86E-02	1.93E+03	5.53E+01	2.79E-02	1.35E+02	5.67E+00	1.59E+02	2.97E-02	9.60E+01	5.91E-02
BCEOT-W17-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	1.23E+04	1.75E+04	NA	NA	NA	NA	2.86E-02	1.24E+03	3.54E+01	2.79E-02	1.35E+02	3.63E+00	1.59E+02	2.97E-02	9.60E+01	3.78E-02
BCEOT-E18-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	1.70E+04	2.44E+04	NA	NA	NA	NA	2.86E-02	1.72E+03	4.92E+01	2.79E-02	1.35E+02	5.04E+00	1.59E+02	2.97E-02	9.60E+01	5.25E-02
BCEOT-W18-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	1.23E+04	1.77E+04	NA	NA	NA	NA	2.86E-02	1.25E+03	3.57E+01	2.79E-02	1.35E+02	3.65E+00	1.59E+02	2.97E-02	9.60E+01	3.81E-02
BCEOT-E19-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	1.03E+04	1.47E+04	NA	NA	NA	NA	2.86E-02	1.04E+03	2.97E+01	2.79E-02	1.35E+02	3.05E+00	1.59E+02	2.97E-02	9.60E+01	3.17E-02
BCEOT-W19-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	2.61E+04	3.74E+04	NA	NA	NA	NA	2.86E-02	2.64E+03	7.55E+01	2.79E-02	1.35E+02	7.74E+00	1.59E+02	2.97E-02	9.60E+01	8.06E-02
BCEOT-E20-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	3.60E+03	5.15E+03	NA	NA	NA	NA	2.86E-02	3.63E+02	1.04E+01	2.79E-02	1.35E+02	1.07E+00	1.59E+02	2.97E-02	9.60E+01	1.11E-02
BCEOT-W20-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	1.02E+04	1.47E+04	NA	NA	NA	NA	2.86E-02	1.03E+03	2.96E+01	2.79E-02	1.35E+02	3.03E+00	1.59E+02	2.97E-02	9.60E+01	3.16E-02
BCEOT-E21-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	1.41E+04	2.01E+04	NA	NA	NA	NA	2.86E-02	1.42E+03	4.07E+01	2.79E-02	1.35E+02	4.17E+00	1.59E+02	2.97E-02	9.60E+01	4.34E-02
BCEOT-W21-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	1.16E+04	1.66E+04	NA	NA	NA	NA	2.86E-02	1.17E+03	3.36E+01	2.79E-02	1.35E+02	3.44E+00	1.59E+02	2.97E-02	9.60E+01	3.58E-02
BCEOT-E22-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	8.45E+03	1.21E+04	NA	NA	NA	NA	2.86E-02	8.53E+02	2.44E+01	2.79E-02	1.35E+02	2.50E+00	1.59E+02	2.97E-02	9.60E+01	2.61E-02

TABLE C-11E: MANGANESE DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 11 - BEARTRAP CREEK DISPERSED TAILINGS DEPOSITS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK TAILINGS DEPOSIT AND FLOSSIE LOUISE MINE WASTE PILE (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **4.982**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
White-Tailed Deer (Large Herbivorous Mammal - Terrestrial)																							
BCEOT-W22-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	6.31E+03	9.03E+03	NA	NA	NA	NA	2.86E-02	6.37E+02	1.82E+01	2.79E-02	1.35E+02	1.87E+00	1.59E+02	2.97E-02	9.60E+01	1.95E-02
BCEOT-E23-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	4.66E+03	6.67E+03	NA	NA	NA	NA	2.86E-02	4.70E+02	1.35E+01	2.79E-02	1.35E+02	1.38E+00	1.59E+02	2.97E-02	9.60E+01	1.44E-02
BCEOT-W23-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	5.49E+03	7.86E+03	NA	NA	NA	NA	2.86E-02	5.54E+02	1.59E+01	2.79E-02	1.35E+02	1.63E+00	1.59E+02	2.97E-02	9.60E+01	1.69E-02
BCEOT-E24-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	5.33E+03	7.63E+03	NA	NA	NA	NA	2.86E-02	5.38E+02	1.54E+01	2.79E-02	1.35E+02	1.58E+00	1.59E+02	2.97E-02	9.60E+01	1.64E-02
BCEOT-W24-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	1.16E+04	1.66E+04	NA	NA	NA	NA	2.86E-02	1.17E+03	3.36E+01	2.79E-02	1.35E+02	3.44E+00	1.59E+02	2.97E-02	9.60E+01	3.59E-02
BCEOT-E25-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	7.05E+03	1.01E+04	NA	NA	NA	NA	2.86E-02	7.11E+02	2.04E+01	2.79E-02	1.35E+02	2.09E+00	1.59E+02	2.97E-02	9.60E+01	2.17E-02
BCEOT-W25-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	1.68E+04	2.40E+04	NA	NA	NA	NA	2.86E-02	1.69E+03	4.84E+01	2.79E-02	1.35E+02	4.97E+00	1.59E+02	2.97E-02	9.60E+01	5.17E-02
BCEOT-E26-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	1.27E+04	1.82E+04	NA	NA	NA	NA	2.86E-02	1.28E+03	3.67E+01	2.79E-02	1.35E+02	3.77E+00	1.59E+02	2.97E-02	9.60E+01	3.92E-02
BCEOT-W26-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	1.24E+04	1.78E+04	NA	NA	NA	NA	2.86E-02	1.25E+03	3.59E+01	2.79E-02	1.35E+02	3.68E+00	1.59E+02	2.97E-02	9.60E+01	3.83E-02
BCEOT-W27-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	9.95E+03	1.42E+04	NA	NA	NA	NA	2.86E-02	1.00E+03	2.88E+01	2.79E-02	1.35E+02	2.95E+00	1.59E+02	2.97E-02	9.60E+01	3.07E-02
Outside Tailings Piles																						**Maximum HQ (Edge of Tailings Pile)**	**1.79E-01**
BCEOT-E0+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	9.18E+03	1.31E+04	NA	NA	NA	NA	2.86E-02	9.27E+02	2.65E+01	2.79E-02	1.35E+02	2.72E+00	1.59E+02	2.97E-02	9.60E+01	2.83E-02
BCEOT-E1+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	4.52E+04	6.47E+04	NA	NA	NA	NA	2.86E-02	4.56E+03	1.31E+02	2.79E-02	1.35E+02	1.34E+01	1.59E+02	2.97E-02	9.60E+01	1.39E-01
BCEOT-E2+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	5.51E+03	7.89E+03	NA	NA	NA	NA	2.86E-02	5.56E+02	1.59E+01	2.79E-02	1.35E+02	1.63E+00	1.59E+02	2.97E-02	9.60E+01	1.70E-02
BCEOT-E3+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	1.04E+04	1.49E+04	NA	NA	NA	NA	2.86E-02	1.05E+03	3.00E+01	2.79E-02	1.35E+02	3.07E+00	1.59E+02	2.97E-02	9.60E+01	3.20E-02
BCEOT-E4+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	2.66E+04	3.81E+04	NA	NA	NA	NA	2.86E-02	2.69E+03	7.69E+01	2.79E-02	1.35E+02	7.88E+00	1.59E+02	2.97E-02	9.60E+01	8.21E-02
BCEOT-W4+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	6.66E+03	9.54E+03	NA	NA	NA	NA	2.86E-02	6.73E+02	1.93E+01	2.79E-02	1.35E+02	1.97E+00	1.59E+02	2.97E-02	9.60E+01	2.06E-02
BCEOT-E5+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	2.30E+04	3.29E+04	NA	NA	NA	NA	2.86E-02	2.32E+03	6.65E+01	2.79E-02	1.35E+02	6.81E+00	1.59E+02	2.97E-02	9.60E+01	7.10E-02
BCEOT-W5+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	7.08E+03	1.01E+04	NA	NA	NA	NA	2.86E-02	7.14E+02	2.04E+01	2.79E-02	1.35E+02	2.10E+00	1.59E+02	2.97E-02	9.60E+01	2.18E-02
BCEOT-E6+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	5.69E+03	8.14E+03	NA	NA	NA	NA	2.86E-02	5.74E+02	1.64E+01	2.79E-02	1.35E+02	1.68E+00	1.59E+02	2.97E-02	9.60E+01	1.76E-02
BCEOT-W6+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	2.95E+03	4.22E+03	NA	NA	NA	NA	2.86E-02	2.97E+02	8.51E+00	2.79E-02	1.35E+02	8.72E-01	1.59E+02	2.97E-02	9.60E+01	9.09E-03
BCEOT-E7+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	2.41E+04	3.46E+04	NA	NA	NA	NA	2.86E-02	2.44E+03	6.98E+01	2.79E-02	1.35E+02	7.15E+00	1.59E+02	2.97E-02	9.60E+01	7.45E-02
BCEOT-W7+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	8.25E+03	1.18E+04	NA	NA	NA	NA	2.86E-02	8.33E+02	2.38E+01	2.79E-02	1.35E+02	2.44E+00	1.59E+02	2.97E-02	9.60E+01	2.55E-02
FLWA-101 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	2.39E+03	3.43E+03	NA	NA	NA	NA	2.86E-02	2.42E+02	6.92E+00	2.79E-02	1.35E+02	7.09E-01	1.59E+02	2.97E-02	9.60E+01	7.38E-03
BCEOT-W8+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	5.01E+03	7.18E+03	NA	NA	NA	NA	2.86E-02	5.06E+02	1.45E+01	2.79E-02	1.35E+02	1.48E+00	1.59E+02	2.97E-02	9.60E+01	1.55E-02
BCEOT-E9+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	1.95E+04	2.79E+04	NA	NA	NA	NA	2.86E-02	1.97E+03	5.63E+01	2.79E-02	1.35E+02	5.77E+00	1.59E+02	2.97E-02	9.60E+01	6.01E-02
BCEOT-W9+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	2.10E+04	3.01E+04	NA	NA	NA	NA	2.86E-02	2.12E+03	6.08E+01	2.79E-02	1.35E+02	6.23E+00	1.59E+02	2.97E-02	9.60E+01	6.49E-02
BCEOT-E10+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	2.26E+04	3.24E+04	NA	NA	NA	NA	2.86E-02	2.29E+03	6.54E+01	2.79E-02	1.35E+02	6.71E+00	1.59E+02	2.97E-02	9.60E+01	6.99E-02
BCEOT-W10+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	3.77E+03	5.39E+03	NA	NA	NA	NA	2.86E-02	3.80E+02	1.09E+01	2.79E-02	1.35E+02	1.12E+00	1.59E+02	2.97E-02	9.60E+01	1.16E-02
BCEOT-E11+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	9.39E+03	1.34E+04	NA	NA	NA	NA	2.86E-02	9.47E+02	2.71E+01	2.79E-02	1.35E+02	2.78E+00	1.59E+02	2.97E-02	9.60E+01	2.90E-02
BCEOT-W11+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	6.28E+03	8.99E+03	NA	NA	NA	NA	2.86E-02	6.34E+02	1.81E+01	2.79E-02	1.35E+02	1.86E+00	1.59E+02	2.97E-02	9.60E+01	1.94E-02
BCEOT-E12+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	9.77E+03	1.40E+04	NA	NA	NA	NA	2.86E-02	9.86E+02	2.82E+01	2.79E-02	1.35E+02	2.89E+00	1.59E+02	2.97E-02	9.60E+01	3.02E-02
BCEOT-W12+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	1.10E+04	1.57E+04	NA	NA	NA	NA	2.86E-02	1.11E+03	3.17E+01	2.79E-02	1.35E+02	3.25E+00	1.59E+02	2.97E-02	9.60E+01	3.39E-02
BCEOT-E13+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	8.69E+03	1.24E+04	NA	NA	NA	NA	2.86E-02	8.77E+02	2.51E+01	2.79E-02	1.35E+02	2.57E+00	1.59E+02	2.97E-02	9.60E+01	2.68E-02
BCEOT-E14+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	1.22E+04	1.75E+04	NA	NA	NA	NA	2.86E-02	1.24E+03	3.54E+01	2.79E-02	1.35E+02	3.63E+00	1.59E+02	2.97E-02	9.60E+01	3.78E-02
BCEOT-W14+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	1.74E+04	2.49E+04	NA	NA	NA	NA	2.86E-02	1.75E+03	5.02E+01	2.79E-02	1.35E+02	5.15E+00	1.59E+02	2.97E-02	9.60E+01	5.37E-02
BCEOT-E15+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	1.53E+04	2.19E+04	NA	NA	NA	NA	2.86E-02	1.55E+03	4.43E+01	2.79E-02	1.35E+02	4.54E+00	1.59E+02	2.97E-02	9.60E+01	4.73E-02
BCEOT-W15+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	2.72E+04	3.89E+04	NA	NA	NA	NA	2.86E-02	2.74E+03	7.85E+01	2.79E-02	1.35E+02	8.05E+00	1.59E+02	2.97E-02	9.60E+01	8.39E-02
BCEOT-E16+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	9.55E+03	1.37E+04	NA	NA	NA	NA	2.86E-02	9.64E+02	2.76E+01	2.79E-02	1.35E+02	2.83E+00	1.59E+02	2.97E-02	9.60E+01	2.95E-02
BCEOT-W16+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	6.05E+03	8.67E+03	NA	NA	NA	NA	2.86E-02	6.11E+02	1.75E+01	2.79E-02	1.35E+02	1.79E+00	1.59E+02	2.97E-02	9.60E+01	1.87E-02
BCEOT-E17+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	1.21E+04	1.73E+04	NA	NA	NA	NA	2.86E-02	1.22E+03	3.49E+01	2.79E-02	1.35E+02	3.58E+00	1.59E+02	2.97E-02	9.60E+01	3.73E-02
BCEOT-W17+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	5.92E+03	8.47E+03	NA	NA	NA	NA	2.86E-02	5.97E+02	1.71E+01	2.79E-02	1.35E+02	1.75E+00	1.59E+02	2.97E-02	9.60E+01	1.83E-02
BCEOT-E18+12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	7.81E+04	1.12E+05	NA	NA	NA	NA	2.86E-02	7.88E+03	2.26E+02	2.79E-02	1.35E+02	2.31E+01	1.59E+02	2.97E-02	9.60E+01	2.41E-01
BCEOT-E18+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	1.26E+04	1.81E+04	NA	NA	NA	NA	2.86E-02	1.28E+03	3.65E+01	2.79E-02	1.35E+02	3.75E+00	1.59E+02	2.97E-02	9.60E+01	3.90E-02
BCEOT-W18+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	1.30E+04	1.86E+04	NA	NA	NA	NA	2.86E-02	1.31E+03	3.75E+01	2.79E-02	1.35E+02	3.85E+00	1.59E+02	2.97E-02	9.60E+01	4.01E-02
BCEOT-E19+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	1.23E+04	1.77E+04	NA	NA	NA	NA	2.86E-02	1.25E+03	3.57E+01	2.79E-02	1.35E+02	3.65E+00	1.59E+02	2.97E-02	9.60E+01	3.81E-02
BCEOT-W19+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	2.77E+03	3.97E+03	NA	NA	NA	NA	2.86E-02	2.80E+02	8.01E+00	2.79E-02	1.35E+02	8.21E-01	1.59E+02	2.97E-02	9.60E+01	8.56E-03
BCEOT-E20+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	1.05E+04	1.50E+04	NA	NA	NA	NA	2.86E-02	1.06E+03	3.03E+01	2.79E-02	1.35E+02	3.11E+00	1.59E+02	2.97E-02	9.60E+01	3.24E-02
BCEOT-W20+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	7.89E+03	1.13E+04	NA	NA	NA	NA	2.86E-02	7.96E+02	2.28E+01	2.79E-02	1.35E+02	2.34E+00	1.59E+02	2.97E-02	9.60E+01	2.43E-02
BCEOT-E21+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	5.13E+03	7.34E+03	NA	NA	NA	NA	2.86E-02	5.18E+02	1.48E+01	2.79E-02	1.35E+02	1.52E+00	1.59E+02	2.97E-02	9.60E+01	1.58E-02
BCEOT-W21+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	7.07E+03	1.01E+04	NA	NA	NA	NA	2.86E-02	7.14E+02	2.04E+01	2.79E-02	1.35E+02	2.10E+00	1.59E+02	2.97E-02	9.60E+01	2.18E-02
BCEOT-E22+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	2.43E+04	3.49E+04	NA	NA	NA	NA	2.86E-02	2.46E+03	7.04E+01	2.79E-02	1.35E+02	7.21E+00	1.59E+02	2.97E-02	9.60E+01	7.51E-02
BCEOT-E22+70 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	6.92E+03	9.91E+03	NA	NA	NA	NA	2.86E-02	6.98E+02	2.00E+01	2.79E-02	1.35E+02	2.05E+00	1.59E+02	2.97E-02	9.60E+01	2.13E-02

TABLE C-11E: MANGANESE DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 11 - BEARTRAP CREEK DISPERSED TAILINGS DEPOSITS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK TAILINGS DEPOSIT AND FLOSSIE LOUISE MINE WASTE PILE (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **4.982**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
White-Tailed Deer (Large Herbivorous Mammal - Terrestrial)																							
BCEOT-W22+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	3.10E+03	4.44E+03	NA	NA	NA	NA	2.86E-02	3.13E+02	8.96E+00	2.79E-02	1.35E+02	9.19E-01	1.59E+02	2.97E-02	9.60E+01	9.57E-03
BCEOT-E23+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	4.19E+03	6.00E+03	NA	NA	NA	NA	2.86E-02	4.23E+02	1.21E+01	2.79E-02	1.35E+02	1.24E+00	1.59E+02	2.97E-02	9.60E+01	1.29E-02
BCEOT-W23+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	5.87E+03	8.40E+03	NA	NA	NA	NA	2.86E-02	5.92E+02	1.70E+01	2.79E-02	1.35E+02	1.74E+00	1.59E+02	2.97E-02	9.60E+01	1.81E-02
BCEOT-E24+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	3.44E+03	4.92E+03	NA	NA	NA	NA	2.86E-02	3.47E+02	9.93E+00	2.79E-02	1.35E+02	1.02E+00	1.59E+02	2.97E-02	9.60E+01	1.06E-02
BCEOT-W24+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	5.45E+03	7.81E+03	NA	NA	NA	NA	2.86E-02	5.50E+02	1.58E+01	2.79E-02	1.35E+02	1.62E+00	1.59E+02	2.97E-02	9.60E+01	1.68E-02
BCEOT-E25+20 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	4.31E+03	6.16E+03	NA	NA	NA	NA	2.86E-02	4.34E+02	1.24E+01	2.79E-02	1.35E+02	1.28E+00	1.59E+02	2.97E-02	9.60E+01	1.33E-02
BCEOT-W25+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	3.00E+03	4.29E+03	NA	NA	NA	NA	2.86E-02	3.03E+02	8.66E+00	2.79E-02	1.35E+02	8.88E-01	1.59E+02	2.97E-02	9.60E+01	9.25E-03
BCEOT-E26+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	2.39E+03	3.42E+03	NA	NA	NA	NA	2.86E-02	2.41E+02	6.91E+00	2.79E-02	1.35E+02	7.08E-01	1.59E+02	2.97E-02	9.60E+01	7.37E-03
BCEOT-W26+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	4.99E+04	7.15E+04	NA	NA	NA	NA	2.86E-02	5.04E+03	1.44E+02	2.79E-02	1.35E+02	1.48E+01	1.59E+02	2.97E-02	9.60E+01	1.54E-01
BCEOT-W27+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	9.91E+00	1.13E+04	1.62E+04	NA	NA	NA	NA	2.86E-02	1.14E+03	3.27E+01	2.79E-02	1.35E+02	3.35E+00	1.59E+02	2.97E-02	9.60E+01	3.49E-02
																						Maximum HQ (Outside Tailings Pile)	**2.41E-01**
Red Fox (Carnivorous Mammal - Terrestrial)																							
Reference Sites																							
ACBG-1 (0-6")	1.72E-01	1.72E-01	5.93E-02	1.75E+01	3.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.95E+02	1.42E+00	3.68E-03	4.54E+00	3.58E-03	1.59E+02	2.97E-02	1.18E+02	3.05E-05
ACBG-2 (0-6")	1.72E-01	1.72E-01	5.93E-02	5.92E+01	1.02E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	9.97E+02	4.79E+00	3.68E-03	4.54E+00	1.21E-02	1.59E+02	2.97E-02	1.18E+02	1.03E-04
BCBG-201 (0-6")	1.72E-01	1.72E-01	5.93E-02	9.55E+00	1.64E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.61E+02	7.73E-01	3.68E-03	4.54E+00	1.96E-03	1.59E+02	2.97E-02	1.18E+02	1.66E-05
Inside Tailings Pile																						**Minimum HQ (Reference Sites)**	**1.66E-05**
BCEOT-E0-12.5 (0-6")	1.72E-01	1.72E-01	2.80E-02	4.26E+01	7.31E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.52E+03	7.32E+00	3.68E-03	4.54E+00	1.19E-02	1.59E+02	2.97E-02	1.18E+02	1.01E-04
BCEOT-E1-12.5 (0-6")	1.72E-01	1.72E-01	2.80E-02	9.48E+01	1.63E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.39E+03	1.63E+01	3.68E-03	4.54E+00	2.64E-02	1.59E+02	2.97E-02	1.18E+02	2.24E-04
BCEOT-E2-8 (0-6")	1.72E-01	1.72E-01	2.80E-02	4.90E+01	8.41E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.75E+03	8.41E+00	3.68E-03	4.54E+00	1.36E-02	1.59E+02	2.97E-02	1.18E+02	1.16E-04
BCEOT-E3-8 (0-6")	1.72E-01	1.72E-01	2.80E-02	4.94E+01	8.48E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.77E+03	8.48E+00	3.68E-03	4.54E+00	1.38E-02	1.59E+02	2.97E-02	1.18E+02	1.17E-04
BCEOT-E4-12.5 (0-6")	1.72E-01	1.72E-01	2.80E-02	2.95E+01	5.06E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.05E+03	5.06E+00	3.68E-03	4.54E+00	8.21E-03	1.59E+02	2.97E-02	1.18E+02	6.98E-05
BCEOT-W4-12.5 (0-6")	1.72E-01	1.72E-01	2.80E-02	3.26E+01	5.60E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.16E+03	5.60E+00	3.68E-03	4.54E+00	9.08E-03	1.59E+02	2.97E-02	1.18E+02	7.72E-05
BCEOT-E5-25 (0-6")	1.72E-01	1.72E-01	2.80E-02	1.63E+01	2.80E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.83E+02	2.80E+00	3.68E-03	4.54E+00	4.54E-03	1.59E+02	2.97E-02	1.18E+02	3.86E-05
BCEOT-W5-12.5 (0-6")	1.72E-01	1.72E-01	2.80E-02	7.91E+01	1.36E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.83E+03	1.36E+01	3.68E-03	4.54E+00	2.20E-02	1.59E+02	2.97E-02	1.18E+02	1.87E-04
BCEOT-E6-12.5 (0-6")	1.72E-01	1.72E-01	2.80E-02	3.43E+01	5.88E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.22E+03	5.88E+00	3.68E-03	4.54E+00	9.54E-03	1.59E+02	2.97E-02	1.18E+02	8.11E-05
BCEOT-W6-12.5 (0-6")	1.72E-01	1.72E-01	2.80E-02	2.93E+01	5.03E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.05E+03	5.03E+00	3.68E-03	4.54E+00	8.16E-03	1.59E+02	2.97E-02	1.18E+02	6.93E-05
BCEOT-E7-12.5 (0-6")	1.72E-01	1.72E-01	2.80E-02	3.53E+01	6.05E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.26E+03	6.06E+00	3.68E-03	4.54E+00	9.83E-03	1.59E+02	2.97E-02	1.18E+02	8.35E-05
BCEOT-W7-12.5 (0-6")	1.72E-01	1.72E-01	2.80E-02	1.70E+01	2.92E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	6.09E+02	2.92E+00	3.68E-03	4.54E+00	4.74E-03	1.59E+02	2.97E-02	1.18E+02	4.03E-05
BCEOT-W8-12.5 (0-6")	1.72E-01	1.72E-01	2.80E-02	3.22E+00	5.53E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.15E+02	5.53E-01	3.68E-03	4.54E+00	8.97E-04	1.59E+02	2.97E-02	1.18E+02	7.62E-06
BCEOT-E9-12.5 (0-6")	1.72E-01	1.72E-01	2.80E-02	1.63E+01	2.80E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.83E+02	2.80E+00	3.68E-03	4.54E+00	4.54E-03	1.59E+02	2.97E-02	1.18E+02	3.86E-05
BCEOT-W9-12.5 (0-6")	1.72E-01	1.72E-01	2.80E-02	3.47E+00	5.95E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.24E+02	5.95E-01	3.68E-03	4.54E+00	9.66E-04	1.59E+02	2.97E-02	1.18E+02	8.21E-06
BCEOT-E10-12.5 (0-6")	1.72E-01	1.72E-01	2.80E-02	1.04E+02	1.79E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.72E+03	1.79E+01	3.68E-03	4.54E+00	2.90E-02	1.59E+02	2.97E-02	1.18E+02	2.47E-04
BCEOT-W10-12.5 (0-6")	1.72E-01	1.72E-01	2.80E-02	1.99E+01	3.42E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	7.12E+02	3.42E+00	3.68E-03	4.54E+00	5.55E-03	1.59E+02	2.97E-02	1.18E+02	4.72E-05
BCEOT-E11-12.5 (0-6")	1.72E-01	1.72E-01	2.80E-02	1.19E+01	2.05E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.26E+02	2.05E+00	3.68E-03	4.54E+00	3.32E-03	1.59E+02	2.97E-02	1.18E+02	2.82E-05
BCEOT-W11-12.5 (0-6")	1.72E-01	1.72E-01	2.80E-02	1.68E+01	2.88E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	6.00E+02	2.88E+00	3.68E-03	4.54E+00	4.68E-03	1.59E+02	2.97E-02	1.18E+02	3.98E-05
BCEOT-E12-12.5 (0-6")	1.72E-01	1.72E-01	2.80E-02	3.38E+01	5.79E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.21E+03	5.79E+00	3.68E-03	4.54E+00	9.40E-03	1.59E+02	2.97E-02	1.18E+02	7.99E-05
BCEOT-W12-12.5 (0-6")	1.72E-01	1.72E-01	2.80E-02	7.42E+01	1.27E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.65E+03	1.27E+01	3.68E-03	4.54E+00	2.07E-02	1.59E+02	2.97E-02	1.18E+02	1.76E-04
BCEOT-E13-12.5 (0-6")	1.72E-01	1.72E-01	2.80E-02	1.71E+01	2.93E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	6.10E+02	2.93E+00	3.68E-03	4.54E+00	4.76E-03	1.59E+02	2.97E-02	1.18E+02	4.04E-05
BCEOT-W13-12.5 (0-6")	1.72E-01	1.72E-01	2.80E-02	9.05E+00	1.55E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.23E+02	1.55E+00	3.68E-03	4.54E+00	2.52E-03	1.59E+02	2.97E-02	1.18E+02	2.14E-05
BCEOT-W13-25 (0-6")	1.72E-01	1.72E-01	2.80E-02	1.60E+01	2.75E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.72E+02	2.75E+00	3.68E-03	4.54E+00	4.46E-03	1.59E+02	2.97E-02	1.18E+02	3.79E-05
BCEOT-W14-12.5 (0-6")	1.72E-01	1.72E-01	2.80E-02	7.66E+01	1.31E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.74E+03	1.31E+01	3.68E-03	4.54E+00	2.13E-02	1.59E+02	2.97E-02	1.18E+02	1.81E-04
BCEOT-E15-8 (0-6")	1.72E-01	1.72E-01	2.80E-02	2.49E+01	4.27E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	8.90E+02	4.27E+00	3.68E-03	4.54E+00	6.93E-03	1.59E+02	2.97E-02	1.18E+02	5.89E-05
BCEOT-W15-12.5 (0-6")	1.72E-01	1.72E-01	2.80E-02	3.42E+00	5.86E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.22E+02	5.86E-01	3.68E-03	4.54E+00	9.51E-04	1.59E+02	2.97E-02	1.18E+02	8.09E-06
BCEOT-E16-12.5 (0-6")	1.72E-01	1.72E-01	2.80E-02	2.01E+01	3.44E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	7.16E+02	3.44E+00	3.68E-03	4.54E+00	5.58E-03	1.59E+02	2.97E-02	1.18E+02	4.75E-05
BCEOT-W16-12.5 (0-6")	1.72E-01	1.72E-01	2.80E-02	6.49E+01	1.11E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.32E+03	1.11E+01	3.68E-03	4.54E+00	1.81E-02	1.59E+02	2.97E-02	1.18E+02	1.54E-04
BCEOT-E17-12.5 (0-6")	1.72E-01	1.72E-01	2.80E-02	2.35E+02	4.03E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	8.38E+03	4.03E+01	3.68E-03	4.54E+00	6.53E-02	1.59E+02	2.97E-02	1.18E+02	5.55E-04
BCEOT-W17-12.5 (0-6")	1.72E-01	1.72E-01	2.80E-02	3.22E+01	5.52E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.15E+03	5.52E+00	3.68E-03	4.54E+00	8.96E-03	1.59E+02	2.97E-02	1.18E+02	7.61E-05
BCEOT-W18-12.5 (0-6")	1.72E-01	1.72E-01	2.80E-02	2.34E+00	4.02E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	8.36E+01	4.02E-01	3.68E-03	4.54E+00	6.52E-04	1.59E+02	2.97E-02	1.18E+02	5.54E-06
BCEOT-E19-12.5 (0-6")	1.72E-01	1.72E-01	2.80E-02	5.02E+01	8.62E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.79E+03	8.62E+00	3.68E-03	4.54E+00	1.40E-02	1.59E+02	2.97E-02	1.18E+02	1.19E-04
BCEOT-W19-12.5 (0-6")	1.72E-01	1.72E-01	2.80E-02	3.14E+01	5.39E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.12E+03	5.39E+00	3.68E-03	4.54E+00	8.75E-03	1.59E+02	2.97E-02	1.18E+02	7.44E-05
BCEOT-E20-12.5 (0-6")	1.72E-01	1.72E-01	2.80E-02	6.37E+01	1.09E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.27E+03	1.09E+01	3.68E-03	4.54E+00	1.77E-02	1.59E+02	2.97E-02	1.18E+02	1.51E-04
BCEOT-W20-12.5 (0-6")	1.72E-01	1.72E-01	2.80E-02	2.90E+02	4.98E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.04E+04	4.98E+01	3.68E-03	4.54E+00	8.08E-02	1.59E+02	2.97E-02	1.18E+02	6.87E-04
BCEOT-E21-12.5 (0-6")	1.72E-01	1.72E-01	2.80E-02	6.41E+01	1.10E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.29E+03	1.10E+01	3.68E-03	4.54E+00	1.78E-02	1.59E+02	2.97E-02	1.18E+02	1.52E-04

TABLE C-11E: MANGANESE DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 11 - BEARTRAP CREEK DISPERSED TAILINGS DEPOSITS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK TAILINGS DEPOSIT AND FLOSSIE LOUISE MINE WASTE PILE (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **4.982**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Red Fox (Carnivorous Mammal - Terrestrial)																							
BCEOT-W21-12.5 (0-6")	1.72E-01	1.72E-01	2.80E-02	9.87E+00	1.69E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.53E+02	1.69E+00	3.68E-03	4.54E+00	2.75E-03	1.59E+02	2.97E-02	1.18E+02	2.34E-05
BCEOT-E22-12.5 (0-6")	1.72E-01	1.72E-01	2.80E-02	2.10E+02	3.60E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	7.49E+03	3.60E+01	3.68E-03	4.54E+00	5.84E-02	1.59E+02	2.97E-02	1.18E+02	4.96E-04
BCEOT-W22-12.5 (0-6")	1.72E-01	1.72E-01	2.80E-02	1.16E+03	1.99E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.14E+04	1.99E+02	3.68E-03	4.54E+00	3.23E-01	1.59E+02	2.97E-02	1.18E+02	2.74E-03
BCEOT-E23-15 (0-6")	1.72E-01	1.72E-01	2.80E-02	3.85E+01	6.61E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.38E+03	6.61E+00	3.68E-03	4.54E+00	1.07E-02	1.59E+02	2.97E-02	1.18E+02	9.11E-05
BCEOT-W23-12.5 (0-6")	1.72E-01	1.72E-01	2.80E-02	2.88E+02	4.95E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.03E+04	4.95E+01	3.68E-03	4.54E+00	8.03E-02	1.59E+02	2.97E-02	1.18E+02	6.82E-04
BCEOT-E24-12.5 (0-6")	1.72E-01	1.72E-01	2.80E-02	1.02E+01	1.75E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.65E+02	1.75E+00	3.68E-03	4.54E+00	2.84E-03	1.59E+02	2.97E-02	1.18E+02	2.42E-05
BCEOT-W24-12.5 (0-6")	1.72E-01	1.72E-01	2.80E-02	2.56E+02	4.39E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	9.14E+03	4.39E+01	3.68E-03	4.54E+00	7.12E-02	1.59E+02	2.97E-02	1.18E+02	6.05E-04
BCEOT-E25-12.5 (0-6")	1.72E-01	1.72E-01	2.80E-02	3.10E+01	5.32E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.11E+03	5.33E+00	3.68E-03	4.54E+00	8.64E-03	1.59E+02	2.97E-02	1.18E+02	7.34E-05
BCEOT-W25-12.5 (0-6")	1.72E-01	1.72E-01	2.80E-02	2.98E+02	5.12E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.07E+04	5.12E+01	3.68E-03	4.54E+00	8.30E-02	1.59E+02	2.97E-02	1.18E+02	7.06E-04
BCEOT-E26-12.5 (0-6")	1.72E-01	1.72E-01	2.80E-02	1.68E+01	2.88E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	6.01E+02	2.88E+00	3.68E-03	4.54E+00	4.68E-03	1.59E+02	2.97E-02	1.18E+02	3.98E-05
BCEOT-W26-12.5 (0-6")	1.72E-01	1.72E-01	2.80E-02	2.34E+00	4.01E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	8.35E+01	4.01E-01	3.68E-03	4.54E+00	6.51E-04	1.59E+02	2.97E-02	1.18E+02	5.53E-06
BCEOT-W27-12.5 (0-6")	1.72E-01	1.72E-01	2.80E-02	2.24E+02	3.84E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	8.00E+03	3.84E+01	3.68E-03	4.54E+00	6.23E-02	1.59E+02	2.97E-02	1.18E+02	5.30E-04
At Edge of Tailings Pile																						**Maximum HQ (Inside Tailings Pile)**	**2.74E-03**
BCEOT-E0-0 (0-6")	1.72E-01	1.72E-01	2.80E-02	8.56E+01	1.47E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.06E+03	1.47E+01	3.68E-03	4.54E+00	2.38E-02	1.59E+02	2.97E-02	1.18E+02	2.02E-04
BCEOT-E1-0 (0-6")	1.72E-01	1.72E-01	2.80E-02	7.39E+01	1.27E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.64E+03	1.27E+01	3.68E-03	4.54E+00	2.06E-02	1.59E+02	2.97E-02	1.18E+02	1.75E-04
BCEOT-E2-0 (0-6")	1.72E-01	1.72E-01	2.80E-02	6.29E+01	1.08E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.25E+03	1.08E+01	3.68E-03	4.54E+00	1.75E-02	1.59E+02	2.97E-02	1.18E+02	1.49E-04
BCEOT-E3-0 (0-6")	1.72E-01	1.72E-01	2.80E-02	2.22E+01	3.80E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	7.92E+02	3.80E+00	3.68E-03	4.54E+00	6.17E-03	1.59E+02	2.97E-02	1.18E+02	5.25E-05
BCEOT-E4-0 (0-6")	1.72E-01	1.72E-01	2.80E-02	4.04E+01	6.94E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.44E+03	6.94E+00	3.68E-03	4.54E+00	1.13E-02	1.59E+02	2.97E-02	1.18E+02	9.57E-05
BCEOT-W4-0 (0-6")	1.72E-01	1.72E-01	2.80E-02	2.13E+01	3.66E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	7.61E+02	3.66E+00	3.68E-03	4.54E+00	5.93E-03	1.59E+02	2.97E-02	1.18E+02	5.04E-05
BCEOT-E5-0 (0-6")	1.72E-01	1.72E-01	2.80E-02	3.32E+01	5.70E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.19E+03	5.70E+00	3.68E-03	4.54E+00	9.25E-03	1.59E+02	2.97E-02	1.18E+02	7.86E-05
BCEOT-W5-0 (0-6")	1.72E-01	1.72E-01	2.80E-02	1.47E+01	2.53E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.26E+02	2.53E+00	3.68E-03	4.54E+00	4.10E-03	1.59E+02	2.97E-02	1.18E+02	3.49E-05
BCEOT-E6-0 (0-6")	1.72E-01	1.72E-01	2.80E-02	2.37E+01	4.06E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	8.46E+02	4.06E+00	3.68E-03	4.54E+00	6.59E-03	1.59E+02	2.97E-02	1.18E+02	5.61E-05
BCEOT-W6-0 (0-6")	1.72E-01	1.72E-01	2.80E-02	3.10E+01	5.32E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.11E+03	5.32E+00	3.68E-03	4.54E+00	8.64E-03	1.59E+02	2.97E-02	1.18E+02	7.34E-05
BCEOT-E7-0 (0-6")	1.72E-01	1.72E-01	2.80E-02	3.40E+01	5.84E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.22E+03	5.84E+00	3.68E-03	4.54E+00	9.48E-03	1.59E+02	2.97E-02	1.18E+02	8.05E-05
BCEOT-W7-0 (0-6")	1.72E-01	1.72E-01	2.80E-02	1.18E+01	2.03E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.23E+02	2.03E+00	3.68E-03	4.54E+00	3.30E-03	1.59E+02	2.97E-02	1.18E+02	2.80E-05
BCEOT-W8-0 (0-6")	1.72E-01	1.72E-01	2.80E-02	1.16E+01	1.99E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.14E+02	1.99E+00	3.68E-03	4.54E+00	3.22E-03	1.59E+02	2.97E-02	1.18E+02	2.74E-05
BCEOT-E9-0 (0-6")	1.72E-01	1.72E-01	2.80E-02	8.84E+01	1.52E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.16E+03	1.52E+01	3.68E-03	4.54E+00	2.46E-02	1.59E+02	2.97E-02	1.18E+02	2.09E-04
BCEOT-W9-0 (0-6")	1.72E-01	1.72E-01	2.80E-02	1.31E+01	2.24E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.67E+02	2.24E+00	3.68E-03	4.54E+00	3.64E-03	1.59E+02	2.97E-02	1.18E+02	3.09E-05
BCEOT-E10-0 (0-6")	1.72E-01	1.72E-01	2.80E-02	1.64E+02	2.81E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.84E+03	2.81E+01	3.68E-03	4.54E+00	4.55E-02	1.59E+02	2.97E-02	1.18E+02	3.87E-04
BCEOT-W10-0 (0-6")	1.72E-01	1.72E-01	2.80E-02	1.23E+01	2.12E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.41E+02	2.12E+00	3.68E-03	4.54E+00	3.44E-03	1.59E+02	2.97E-02	1.18E+02	2.92E-05
BCEOT-E11-0 (0-6")	1.72E-01	1.72E-01	2.80E-02	8.01E+01	1.37E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.86E+03	1.37E+01	3.68E-03	4.54E+00	2.23E-02	1.59E+02	2.97E-02	1.18E+02	1.90E-04
BCEOT-W11-0 (0-6")	1.72E-01	1.72E-01	2.80E-02	3.91E+01	6.70E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.40E+03	6.71E+00	3.68E-03	4.54E+00	1.09E-02	1.59E+02	2.97E-02	1.18E+02	9.25E-05
BCEOT-E12-0 (0-6")	1.72E-01	1.72E-01	2.80E-02	4.12E+01	7.07E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.47E+03	7.07E+00	3.68E-03	4.54E+00	1.15E-02	1.59E+02	2.97E-02	1.18E+02	9.75E-05
BCEOT-W12-0 (0-6")	1.72E-01	1.72E-01	2.80E-02	2.28E+01	3.91E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	8.15E+02	3.91E+00	3.68E-03	4.54E+00	6.35E-03	1.59E+02	2.97E-02	1.18E+02	5.40E-05
BCEOT-E13-0 (0-6")	1.72E-01	1.72E-01	2.80E-02	3.17E+01	5.43E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.13E+03	5.43E+00	3.68E-03	4.54E+00	8.81E-03	1.59E+02	2.97E-02	1.18E+02	7.49E-05
BCEOT-W13-0 (0-6")	1.72E-01	1.72E-01	2.80E-02	2.68E+01	4.60E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	9.59E+02	4.60E+00	3.68E-03	4.54E+00	7.47E-03	1.59E+02	2.97E-02	1.18E+02	6.35E-05
BCEOT-E14-0 (0-6")	1.72E-01	1.72E-01	2.80E-02	3.14E+01	5.38E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.12E+03	5.38E+00	3.68E-03	4.54E+00	8.73E-03	1.59E+02	2.97E-02	1.18E+02	7.42E-05
BCEOT-W14-0 (0-6")	1.72E-01	1.72E-01	2.80E-02	1.05E+02	1.80E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.75E+03	1.80E+01	3.68E-03	4.54E+00	2.92E-02	1.59E+02	2.97E-02	1.18E+02	2.48E-04
BCEOT-E15-0 (0-6")	1.72E-01	1.72E-01	2.80E-02	3.54E+01	6.08E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.27E+03	6.08E+00	3.68E-03	4.54E+00	9.87E-03	1.59E+02	2.97E-02	1.18E+02	8.39E-05
BCEOT-W15-0 (0-6")	1.72E-01	1.72E-01	2.80E-02	9.91E+01	1.70E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.54E+03	1.70E+01	3.68E-03	4.54E+00	2.76E-02	1.59E+02	2.97E-02	1.18E+02	2.35E-04
BCEOT-E16-0 (0-6")	1.72E-01	1.72E-01	2.80E-02	3.97E+01	6.81E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.42E+03	6.81E+00	3.68E-03	4.54E+00	1.10E-02	1.59E+02	2.97E-02	1.18E+02	9.39E-05
BCEOT-W16-0 (0-6")	1.72E-01	1.72E-01	2.80E-02	2.31E+01	3.97E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	8.26E+02	3.97E+00	3.68E-03	4.54E+00	6.44E-03	1.59E+02	2.97E-02	1.18E+02	5.47E-05
BCEOT-E17-0 (0-6")	1.72E-01	1.72E-01	2.80E-02	5.41E+01	9.28E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.93E+03	9.28E+00	3.68E-03	4.54E+00	1.51E-02	1.59E+02	2.97E-02	1.18E+02	1.28E-04
BCEOT-W17-0 (0-6")	1.72E-01	1.72E-01	2.80E-02	3.46E+01	5.94E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.24E+03	5.94E+00	3.68E-03	4.54E+00	9.64E-03	1.59E+02	2.97E-02	1.18E+02	8.19E-05
BCEOT-E18-0 (0-6")	1.72E-01	1.72E-01	2.80E-02	4.81E+01	8.25E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.72E+03	8.25E+00	3.68E-03	4.54E+00	1.34E-02	1.59E+02	2.97E-02	1.18E+02	1.14E-04
BCEOT-W18-0 (0-6")	1.72E-01	1.72E-01	2.80E-02	3.49E+01	5.98E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.25E+03	5.98E+00	3.68E-03	4.54E+00	9.70E-03	1.59E+02	2.97E-02	1.18E+02	8.25E-05
BCEOT-E19-0 (0-6")	1.72E-01	1.72E-01	2.80E-02	2.91E+01	4.98E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.04E+03	4.99E+00	3.68E-03	4.54E+00	8.09E-03	1.59E+02	2.97E-02	1.18E+02	6.88E-05
BCEOT-W19-0 (0-6")	1.72E-01	1.72E-01	2.80E-02	7.38E+01	1.27E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.64E+03	1.27E+01	3.68E-03	4.54E+00	2.06E-02	1.59E+02	2.97E-02	1.18E+02	1.75E-04
BCEOT-E20-0 (0-6")	1.72E-01	1.72E-01	2.80E-02	1.02E+01	1.75E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.63E+02	1.75E+00	3.68E-03	4.54E+00	2.83E-03	1.59E+02	2.97E-02	1.18E+02	2.41E-05
BCEOT-W20-0 (0-6")	1.72E-01	1.72E-01	2.80E-02	2.89E+01	4.96E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.03E+03	4.96E+00	3.68E-03	4.54E+00	8.05E-03	1.59E+02	2.97E-02	1.18E+02	6.84E-05
BCEOT-E21-0 (0-6")	1.72E-01	1.72E-01	2.80E-02	3.98E+01	6.82E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.42E+03	6.82E+00	3.68E-03	4.54E+00	1.11E-02	1.59E+02	2.97E-02	1.18E+02	9.41E-05
BCEOT-W21-0 (0-6")	1.72E-01	1.72E-01	2.80E-02	3.28E+01	5.63E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.17E+03	5.63E+00	3.68E-03	4.54E+00	9.14E-03	1.59E+02	2.97E-02	1.18E+02	7.77E-05
BCEOT-E22-0 (0-6")	1.72E-01	1.72E-01	2.80E-02	2.39E+01	4.10E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	8.53E+02	4.10E+00	3.68E-03	4.54E+00	6.65E-03	1.59E+02	2.97E-02	1.18E+02	5.65E-05

TABLE C-11E: MANGANESE DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 11 - BEARTRAP CREEK DISPERSED TAILINGS DEPOSITS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK TAILINGS DEPOSIT AND FLOSSIE LOUISE MINE WASTE PILE (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **4.982**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Red Fox (Carnivorous Mammal - Terrestrial)																							
BCEOT-W22-0 (0-6")	1.72E-01	1.72E-01	2.80E-02	1.78E+01	3.06E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	6.37E+02	3.06E+00	3.68E-03	4.54E+00	4.96E-03	1.59E+02	2.97E-02	1.18E+02	4.22E-05
BCEOT-E23-0 (0-6")	1.72E-01	1.72E-01	2.80E-02	1.32E+01	2.26E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.70E+02	2.26E+00	3.68E-03	4.54E+00	3.66E-03	1.59E+02	2.97E-02	1.18E+02	3.11E-05
BCEOT-W23-0 (0-6")	1.72E-01	1.72E-01	2.80E-02	1.55E+01	2.66E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.54E+02	2.66E+00	3.68E-03	4.54E+00	4.32E-03	1.59E+02	2.97E-02	1.18E+02	3.67E-05
BCEOT-E24-0 (0-6")	1.72E-01	1.72E-01	2.80E-02	1.51E+01	2.58E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.38E+02	2.58E+00	3.68E-03	4.54E+00	4.19E-03	1.59E+02	2.97E-02	1.18E+02	3.56E-05
BCEOT-W24-0 (0-6")	1.72E-01	1.72E-01	2.80E-02	3.28E+01	5.63E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.17E+03	5.64E+00	3.68E-03	4.54E+00	9.14E-03	1.59E+02	2.97E-02	1.18E+02	7.77E-05
BCEOT-E25-0 (0-6")	1.72E-01	1.72E-01	2.80E-02	1.99E+01	3.42E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	7.11E+02	3.42E+00	3.68E-03	4.54E+00	5.54E-03	1.59E+02	2.97E-02	1.18E+02	4.71E-05
BCEOT-W25-0 (0-6")	1.72E-01	1.72E-01	2.80E-02	4.74E+01	8.13E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.69E+03	8.13E+00	3.68E-03	4.54E+00	1.32E-02	1.59E+02	2.97E-02	1.18E+02	1.12E-04
BCEOT-E26-0 (0-6")	1.72E-01	1.72E-01	2.80E-02	3.59E+01	6.16E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.28E+03	6.16E+00	3.68E-03	4.54E+00	1.00E-02	1.59E+02	2.97E-02	1.18E+02	8.50E-05
BCEOT-W26-0 (0-6")	1.72E-01	1.72E-01	2.80E-02	3.51E+01	6.02E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.25E+03	6.02E+00	3.68E-03	4.54E+00	9.77E-03	1.59E+02	2.97E-02	1.18E+02	8.31E-05
BCEOT-W27-0 (0-6")	1.72E-01	1.72E-01	2.80E-02	2.81E+01	4.82E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.00E+03	4.82E+00	3.68E-03	4.54E+00	7.83E-03	1.59E+02	2.97E-02	1.18E+02	6.65E-05
Outside Tailings Piles																						**Maximum HQ (Edge of Tailings Pile)**	**3.87E-04**
BCEOT-E0+25 (0-6")	1.72E-01	1.72E-01	2.80E-02	2.59E+01	4.45E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	9.27E+02	4.45E+00	3.68E-03	4.54E+00	7.22E-03	1.59E+02	2.97E-02	1.18E+02	6.14E-05
BCEOT-E1+25 (0-6")	1.72E-01	1.72E-01	2.80E-02	1.28E+02	2.19E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.56E+03	2.19E+01	3.68E-03	4.54E+00	3.55E-02	1.59E+02	2.97E-02	1.18E+02	3.02E-04
BCEOT-E2+25 (0-6")	1.72E-01	1.72E-01	2.80E-02	1.56E+01	2.67E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.56E+02	2.67E+00	3.68E-03	4.54E+00	4.34E-03	1.59E+02	2.97E-02	1.18E+02	3.69E-05
BCEOT-E3+25 (0-6")	1.72E-01	1.72E-01	2.80E-02	2.93E+01	5.03E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.05E+03	5.03E+00	3.68E-03	4.54E+00	8.16E-03	1.59E+02	2.97E-02	1.18E+02	6.94E-05
BCEOT-E4+25 (0-6")	1.72E-01	1.72E-01	2.80E-02	7.52E+01	1.29E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.69E+03	1.29E+01	3.68E-03	4.54E+00	2.09E-02	1.59E+02	2.97E-02	1.18E+02	1.78E-04
BCEOT-W4+25 (0-6")	1.72E-01	1.72E-01	2.80E-02	1.88E+01	3.23E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	6.73E+02	3.23E+00	3.68E-03	4.54E+00	5.24E-03	1.59E+02	2.97E-02	1.18E+02	4.46E-05
BCEOT-E5+25 (0-6")	1.72E-01	1.72E-01	2.80E-02	6.50E+01	1.11E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.32E+03	1.11E+01	3.68E-03	4.54E+00	1.81E-02	1.59E+02	2.97E-02	1.18E+02	1.54E-04
BCEOT-W5+25 (0-6")	1.72E-01	1.72E-01	2.80E-02	2.00E+01	3.43E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	7.14E+02	3.43E+00	3.68E-03	4.54E+00	5.57E-03	1.59E+02	2.97E-02	1.18E+02	4.73E-05
BCEOT-E6+25 (0-6")	1.72E-01	1.72E-01	2.80E-02	1.61E+01	2.76E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.74E+02	2.76E+00	3.68E-03	4.54E+00	4.47E-03	1.59E+02	2.97E-02	1.18E+02	3.80E-05
BCEOT-W6+25 (0-6")	1.72E-01	1.72E-01	2.80E-02	8.32E+00	1.43E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.97E+02	1.43E+00	3.68E-03	4.54E+00	2.32E-03	1.59E+02	2.97E-02	1.18E+02	1.97E-05
BCEOT-E7+25 (0-6")	1.72E-01	1.72E-01	2.80E-02	6.82E+01	1.17E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.44E+03	1.17E+01	3.68E-03	4.54E+00	1.90E-02	1.59E+02	2.97E-02	1.18E+02	1.61E-04
BCEOT-W7+25 (0-6")	1.72E-01	1.72E-01	2.80E-02	2.33E+01	4.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	8.33E+02	4.00E+00	3.68E-03	4.54E+00	6.49E-03	1.59E+02	2.97E-02	1.18E+02	5.52E-05
FLWA-101 (0-6")	1.72E-01	1.72E-01	2.80E-02	6.76E+00	1.16E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.42E+02	1.16E+00	3.68E-03	4.54E+00	1.88E-03	1.59E+02	2.97E-02	1.18E+02	1.60E-05
BCEOT-W8+25 (0-6")	1.72E-01	1.72E-01	2.80E-02	1.42E+01	2.43E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.06E+02	2.43E+00	3.68E-03	4.54E+00	3.94E-03	1.59E+02	2.97E-02	1.18E+02	3.35E-05
BCEOT-E9+25 (0-6")	1.72E-01	1.72E-01	2.80E-02	5.51E+01	9.45E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.97E+03	9.45E+00	3.68E-03	4.54E+00	1.53E-02	1.59E+02	2.97E-02	1.18E+02	1.30E-04
BCEOT-W9+25 (0-6")	1.72E-01	1.72E-01	2.80E-02	5.94E+01	1.02E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.12E+03	1.02E+01	3.68E-03	4.54E+00	1.65E-02	1.59E+02	2.97E-02	1.18E+02	1.41E-04
BCEOT-E10+25 (0-6")	1.72E-01	1.72E-01	2.80E-02	6.40E+01	1.10E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.29E+03	1.10E+01	3.68E-03	4.54E+00	1.78E-02	1.59E+02	2.97E-02	1.18E+02	1.51E-04
BCEOT-W10+25 (0-6")	1.72E-01	1.72E-01	2.80E-02	1.06E+01	1.83E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.80E+02	1.83E+00	3.68E-03	4.54E+00	2.96E-03	1.59E+02	2.97E-02	1.18E+02	2.52E-05
BCEOT-E11+25 (0-6")	1.72E-01	1.72E-01	2.80E-02	2.65E+01	4.55E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	9.47E+02	4.55E+00	3.68E-03	4.54E+00	7.38E-03	1.59E+02	2.97E-02	1.18E+02	6.28E-05
BCEOT-W11+25 (0-6")	1.72E-01	1.72E-01	2.80E-02	1.77E+01	3.04E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	6.34E+02	3.04E+00	3.68E-03	4.54E+00	4.94E-03	1.59E+02	2.97E-02	1.18E+02	4.20E-05
BCEOT-E12+25 (0-6")	1.72E-01	1.72E-01	2.80E-02	2.76E+01	4.74E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	9.86E+02	4.74E+00	3.68E-03	4.54E+00	7.69E-03	1.59E+02	2.97E-02	1.18E+02	6.53E-05
BCEOT-W12+25 (0-6")	1.72E-01	1.72E-01	2.80E-02	3.10E+01	5.32E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.11E+03	5.33E+00	3.68E-03	4.54E+00	8.64E-03	1.59E+02	2.97E-02	1.18E+02	7.34E-05
BCEOT-E13+25 (0-6")	1.72E-01	1.72E-01	2.80E-02	2.46E+01	4.21E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	8.77E+02	4.21E+00	3.68E-03	4.54E+00	6.84E-03	1.59E+02	2.97E-02	1.18E+02	5.81E-05
BCEOT-E14+25 (0-6")	1.72E-01	1.72E-01	2.80E-02	3.46E+01	5.93E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.24E+03	5.94E+00	3.68E-03	4.54E+00	9.63E-03	1.59E+02	2.97E-02	1.18E+02	8.19E-05
BCEOT-W14+25 (0-6")	1.72E-01	1.72E-01	2.80E-02	4.91E+01	8.43E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.75E+03	8.43E+00	3.68E-03	4.54E+00	1.37E-02	1.59E+02	2.97E-02	1.18E+02	1.16E-04
BCEOT-E15+25 (0-6")	1.72E-01	1.72E-01	2.80E-02	4.33E+01	7.42E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.55E+03	7.42E+00	3.68E-03	4.54E+00	1.20E-02	1.59E+02	2.97E-02	1.18E+02	1.02E-04
BCEOT-W15+25 (0-6")	1.72E-01	1.72E-01	2.80E-02	7.68E+01	1.32E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.74E+03	1.32E+01	3.68E-03	4.54E+00	2.14E-02	1.59E+02	2.97E-02	1.18E+02	1.82E-04
BCEOT-E16+25 (0-6")	1.72E-01	1.72E-01	2.80E-02	2.70E+01	4.63E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	9.64E+02	4.63E+00	3.68E-03	4.54E+00	7.52E-03	1.59E+02	2.97E-02	1.18E+02	6.39E-05
BCEOT-W16+25 (0-6")	1.72E-01	1.72E-01	2.80E-02	1.71E+01	2.93E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	6.11E+02	2.93E+00	3.68E-03	4.54E+00	4.76E-03	1.59E+02	2.97E-02	1.18E+02	4.05E-05
BCEOT-E17+25 (0-6")	1.72E-01	1.72E-01	2.80E-02	3.41E+01	5.86E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.22E+03	5.86E+00	3.68E-03	4.54E+00	9.50E-03	1.59E+02	2.97E-02	1.18E+02	8.08E-05
BCEOT-W17+25 (0-6")	1.72E-01	1.72E-01	2.80E-02	1.67E+01	2.87E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.97E+02	2.87E+00	3.68E-03	4.54E+00	4.66E-03	1.59E+02	2.97E-02	1.18E+02	3.96E-05
BCEOT-E18+12.5 (0-6")	1.72E-01	1.72E-01	2.80E-02	2.21E+02	3.79E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	7.88E+03	3.79E+01	3.68E-03	4.54E+00	6.14E-02	1.59E+02	2.97E-02	1.18E+02	5.22E-04
BCEOT-E18+25 (0-6")	1.72E-01	1.72E-01	2.80E-02	3.57E+01	6.13E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.28E+03	6.13E+00	3.68E-03	4.54E+00	9.95E-03	1.59E+02	2.97E-02	1.18E+02	8.45E-05
BCEOT-W18+25 (0-6")	1.72E-01	1.72E-01	2.80E-02	3.67E+01	6.30E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.31E+03	6.30E+00	3.68E-03	4.54E+00	1.02E-02	1.59E+02	2.97E-02	1.18E+02	8.68E-05
BCEOT-E19+25 (0-6")	1.72E-01	1.72E-01	2.80E-02	3.49E+01	5.98E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.25E+03	5.98E+00	3.68E-03	4.54E+00	9.71E-03	1.59E+02	2.97E-02	1.18E+02	8.25E-05
BCEOT-W19+25 (0-6")	1.72E-01	1.72E-01	2.80E-02	7.83E+00	1.34E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.80E+02	1.34E+00	3.68E-03	4.54E+00	2.18E-03	1.59E+02	2.97E-02	1.18E+02	1.85E-05
BCEOT-E20+25 (0-6")	1.72E-01	1.72E-01	2.80E-02	2.96E+01	5.08E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.06E+03	5.08E+00	3.68E-03	4.54E+00	8.25E-03	1.59E+02	2.97E-02	1.18E+02	7.01E-05
BCEOT-W20+25 (0-6")	1.72E-01	1.72E-01	2.80E-02	2.23E+01	3.82E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	7.96E+02	3.82E+00	3.68E-03	4.54E+00	6.20E-03	1.59E+02	2.97E-02	1.18E+02	5.27E-05
BCEOT-E21+25 (0-6")	1.72E-01	1.72E-01	2.80E-02	1.45E+01	2.49E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.18E+02	2.49E+00	3.68E-03	4.54E+00	4.03E-03	1.59E+02	2.97E-02	1.18E+02	3.43E-05
BCEOT-W21+25 (0-6")	1.72E-01	1.72E-01	2.80E-02	2.00E+01	3.43E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	7.14E+02	3.43E+00	3.68E-03	4.54E+00	5.57E-03	1.59E+02	2.97E-02	1.18E+02	4.73E-05
BCEOT-E22+25 (0-6")	1.72E-01	1.72E-01	2.80E-02	6.88E+01	1.18E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.46E+03	1.18E+01	3.68E-03	4.54E+00	1.92E-02	1.59E+02	2.97E-02	1.18E+02	1.63E-04
BCEOT-E22+70 (0-6")	1.72E-01	1.72E-01	2.80E-02	1.95E+01	3.35E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	6.98E+02	3.35E+00	3.68E-03	4.54E+00	5.44E-03	1.59E+02	2.97E-02	1.18E+02	4.63E-05

TABLE C-11E: MANGANESE DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 11 - BEARTRAP CREEK DISPERSED TAILINGS DEPOSITS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK TAILINGS DEPOSIT AND FLOSSIE LOUISE MINE WASTE PILE (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **4.982**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Red Fox (Carnivorous Mammal - Terrestrial)																							
BCEOT-W22+25 (0-6")	1.72E-01	1.72E-01	2.80E-02	8.76E+00	1.50E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.13E+02	1.50E+00	3.68E-03	4.54E+00	2.44E-03	1.59E+02	2.97E-02	1.18E+02	2.07E-05
BCEOT-E23+25 (0-6")	1.72E-01	1.72E-01	2.80E-02	1.18E+01	2.03E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.23E+02	2.03E+00	3.68E-03	4.54E+00	3.30E-03	1.59E+02	2.97E-02	1.18E+02	2.80E-05
BCEOT-W23+25 (0-6")	1.72E-01	1.72E-01	2.80E-02	1.66E+01	2.84E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.92E+02	2.84E+00	3.68E-03	4.54E+00	4.62E-03	1.59E+02	2.97E-02	1.18E+02	3.92E-05
BCEOT-E24+25 (0-6")	1.72E-01	1.72E-01	2.80E-02	9.71E+00	1.67E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.47E+02	1.67E+00	3.68E-03	4.54E+00	2.70E-03	1.59E+02	2.97E-02	1.18E+02	2.30E-05
BCEOT-W24+25 (0-6")	1.72E-01	1.72E-01	2.80E-02	1.54E+01	2.64E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.50E+02	2.64E+00	3.68E-03	4.54E+00	4.29E-03	1.59E+02	2.97E-02	1.18E+02	3.65E-05
BCEOT-E25+20 (0-6")	1.72E-01	1.72E-01	2.80E-02	1.22E+01	2.09E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.34E+02	2.09E+00	3.68E-03	4.54E+00	3.39E-03	1.59E+02	2.97E-02	1.18E+02	2.88E-05
BCEOT-W25+25 (0-6")	1.72E-01	1.72E-01	2.80E-02	8.47E+00	1.45E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.03E+02	1.45E+00	3.68E-03	4.54E+00	2.36E-03	1.59E+02	2.97E-02	1.18E+02	2.00E-05
BCEOT-E26+25 (0-6")	1.72E-01	1.72E-01	2.80E-02	6.75E+00	1.16E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.41E+02	1.16E+00	3.68E-03	4.54E+00	1.88E-03	1.59E+02	2.97E-02	1.18E+02	1.60E-05
BCEOT-W26+25 (0-6")	1.72E-01	1.72E-01	2.80E-02	1.41E+02	2.42E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.04E+03	2.42E+01	3.68E-03	4.54E+00	3.93E-02	1.59E+02	2.97E-02	1.18E+02	3.34E-04
BCEOT-W27+25 (0-6")	1.72E-01	1.72E-01	2.80E-02	3.19E+01	5.48E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.14E+03	5.48E+00	3.68E-03	4.54E+00	8.89E-03	1.59E+02	2.97E-02	1.18E+02	7.56E-05
																						Maximum HQ (Outside Tailings Pile)	**5.22E-04**
Masked Shrew (Omnivorous Mammal - Terrestrial, Wetland)																							
Reference Sites																							
ACBG-1 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	4.35E+02	3.68E+00	1.10E-03	2.95E+02	3.25E-01	1.00E+00	5.50E-03	7.29E+02	1.59E+02	2.97E-02	1.76E+02	4.14E+00
ACBG-2 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.47E+03	1.25E+01	1.10E-03	9.97E+02	1.10E+00	1.00E+00	5.50E-03	2.47E+03	1.59E+02	2.97E-02	1.76E+02	1.40E+01
BCBG-201 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	2.38E+02	2.01E+00	1.10E-03	1.61E+02	1.77E-01	1.00E+00	5.50E-03	3.98E+02	1.59E+02	2.97E-02	1.76E+02	2.26E+00
Inside Tailings Pile																						**Minimum HQ (Reference Sites)**	**2.26E+00**
BCEOT-E0-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	2.25E+03	1.90E+01	1.10E-03	1.52E+03	1.68E+00	1.00E+00	5.50E-03	3.77E+03	1.59E+02	2.97E-02	1.76E+02	2.14E+01
BCEOT-E1-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	5.00E+03	4.23E+01	1.10E-03	3.39E+03	3.73E+00	1.00E+00	5.50E-03	8.38E+03	1.59E+02	2.97E-02	1.76E+02	4.76E+01
BCEOT-E2-8 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	2.58E+03	2.19E+01	1.10E-03	1.75E+03	1.93E+00	1.00E+00	5.50E-03	4.33E+03	1.59E+02	2.97E-02	1.76E+02	2.46E+01
BCEOT-E3-8 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	2.61E+03	2.21E+01	1.10E-03	1.77E+03	1.94E+00	1.00E+00	5.50E-03	4.37E+03	1.59E+02	2.97E-02	1.76E+02	2.48E+01
BCEOT-E4-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.55E+03	1.32E+01	1.10E-03	1.05E+03	1.16E+00	1.00E+00	5.50E-03	2.60E+03	1.59E+02	2.97E-02	1.76E+02	1.48E+01
BCEOT-E5-25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	8.60E+02	7.28E+00	1.10E-03	5.83E+02	6.41E-01	1.00E+00	5.50E-03	1.44E+03	1.59E+02	2.97E-02	1.76E+02	8.18E+00
BCEOT-W5-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	4.17E+03	3.53E+01	1.10E-03	2.83E+03	3.11E+00	1.00E+00	5.50E-03	6.99E+03	1.59E+02	2.97E-02	1.76E+02	3.97E+01
BCEOT-E6-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.81E+03	1.53E+01	1.10E-03	1.22E+03	1.35E+00	1.00E+00	5.50E-03	3.03E+03	1.59E+02	2.97E-02	1.76E+02	1.72E+01
BCEOT-W6-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.54E+03	1.31E+01	1.10E-03	1.05E+03	1.15E+00	1.00E+00	5.50E-03	2.59E+03	1.59E+02	2.97E-02	1.76E+02	1.47E+01
BCEOT-E7-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.86E+03	1.58E+01	1.10E-03	1.26E+03	1.39E+00	1.00E+00	5.50E-03	3.12E+03	1.59E+02	2.97E-02	1.76E+02	1.77E+01
BCEOT-W7-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	8.98E+02	7.61E+00	1.10E-03	6.09E+02	6.70E-01	1.00E+00	5.50E-03	1.50E+03	1.59E+02	2.97E-02	1.76E+02	8.55E+00
BCEOT-W8-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.70E+02	1.44E+00	1.10E-03	1.15E+02	1.27E-01	1.00E+00	5.50E-03	2.85E+02	1.59E+02	2.97E-02	1.76E+02	1.62E+00
BCEOT-E9-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	8.60E+02	7.29E+00	1.10E-03	5.83E+02	6.42E-01	1.00E+00	5.50E-03	1.44E+03	1.59E+02	2.97E-02	1.76E+02	8.19E+00
BCEOT-W9-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.83E+02	1.55E+00	1.10E-03	1.24E+02	1.36E-01	1.00E+00	5.50E-03	3.06E+02	1.59E+02	2.97E-02	1.76E+02	1.74E+00
BCEOT-E10-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	5.50E+03	4.65E+01	1.10E-03	3.72E+03	4.10E+00	1.00E+00	5.50E-03	9.21E+03	1.59E+02	2.97E-02	1.76E+02	5.23E+01
BCEOT-W10-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.05E+03	8.91E+00	1.10E-03	7.12E+02	7.85E-01	1.00E+00	5.50E-03	1.76E+03	1.59E+02	2.97E-02	1.76E+02	1.00E+01
BCEOT-E11-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	6.29E+02	5.33E+00	1.10E-03	4.26E+02	4.69E-01	1.00E+00	5.50E-03	1.05E+03	1.59E+02	2.97E-02	1.76E+02	5.99E+00
BCEOT-W11-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	8.86E+02	7.50E+00	1.10E-03	6.00E+02	6.61E-01	1.00E+00	5.50E-03	1.48E+03	1.59E+02	2.97E-02	1.76E+02	8.43E+00
BCEOT-E12-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.78E+03	1.51E+01	1.10E-03	1.21E+03	1.33E+00	1.00E+00	5.50E-03	2.98E+03	1.59E+02	2.97E-02	1.76E+02	1.69E+01
BCEOT-W12-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	3.91E+03	3.31E+01	1.10E-03	2.65E+03	2.92E+00	1.00E+00	5.50E-03	6.56E+03	1.59E+02	2.97E-02	1.76E+02	3.72E+01
BCEOT-E13-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	9.01E+02	7.63E+00	1.10E-03	6.10E+02	6.72E-01	1.00E+00	5.50E-03	1.51E+03	1.59E+02	2.97E-02	1.76E+02	8.58E+00
BCEOT-W13-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	4.77E+02	4.04E+00	1.10E-03	3.23E+02	3.56E-01	1.00E+00	5.50E-03	8.00E+02	1.59E+02	2.97E-02	1.76E+02	4.54E+00
BCEOT-W13-25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	8.44E+02	7.15E+00	1.10E-03	5.72E+02	6.30E-01	1.00E+00	5.50E-03	1.41E+03	1.59E+02	2.97E-02	1.76E+02	8.04E+00
BCEOT-W14-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	4.04E+03	3.42E+01	1.10E-03	2.74E+03	3.01E+00	1.00E+00	5.50E-03	6.77E+03	1.59E+02	2.97E-02	1.76E+02	3.85E+01
BCEOT-E15-8 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.31E+03	1.11E+01	1.10E-03	8.90E+02	9.80E-01	1.00E+00	5.50E-03	2.20E+03	1.59E+02	2.97E-02	1.76E+02	1.25E+01
BCEOT-W15-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.80E+02	1.53E+00	1.10E-03	1.22E+02	1.34E-01	1.00E+00	5.50E-03	3.02E+02	1.59E+02	2.97E-02	1.76E+02	1.71E+00
BCEOT-E16-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.06E+03	8.96E+00	1.10E-03	7.16E+02	7.89E-01	1.00E+00	5.50E-03	1.77E+03	1.59E+02	2.97E-02	1.76E+02	1.01E+01
BCEOT-W16-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	3.42E+03	2.90E+01	1.10E-03	2.32E+03	2.55E+00	1.00E+00	5.50E-03	5.73E+03	1.59E+02	2.97E-02	1.76E+02	3.26E+01
BCEOT-E17-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.24E+04	1.05E+02	1.10E-03	8.38E+03	9.23E+00	1.00E+00	5.50E-03	2.07E+04	1.59E+02	2.97E-02	1.76E+02	1.18E+02
BCEOT-W17-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.70E+03	1.44E+01	1.10E-03	1.15E+03	1.27E+00	1.00E+00	5.50E-03	2.84E+03	1.59E+02	2.97E-02	1.76E+02	1.61E+01
BCEOT-W18-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.23E+02	1.05E+00	1.10E-03	8.36E+01	9.21E-02	1.00E+00	5.50E-03	2.07E+02	1.59E+02	2.97E-02	1.76E+02	1.17E+00
BCEOT-E19-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	2.65E+03	2.24E+01	1.10E-03	1.79E+03	1.98E+00	1.00E+00	5.50E-03	4.44E+03	1.59E+02	2.97E-02	1.76E+02	2.52E+01
BCEOT-W19-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.66E+03	1.40E+01	1.10E-03	1.12E+03	1.24E+00	1.00E+00	5.50E-03	2.78E+03	1.59E+02	2.97E-02	1.76E+02	1.58E+01
BCEOT-E20-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	3.36E+03	2.84E+01	1.10E-03	2.27E+03	2.50E+00	1.00E+00	5.50E-03	5.62E+03	1.59E+02	2.97E-02	1.76E+02	3.20E+01
BCEOT-W20-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.53E+04	1.30E+02	1.10E-03	1.04E+04	1.14E+01	1.00E+00	5.50E-03	2.56E+04	1.59E+02	2.97E-02	1.76E+02	1.46E+02
BCEOT-E21-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	3.38E+03	2.86E+01	1.10E-03	2.29E+03	2.52E+00	1.00E+00	5.50E-03	5.66E+03	1.59E+02	2.97E-02	1.76E+02	3.22E+01

TABLE C-11E: MANGANESE DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 11 - BEARTRAP CREEK DISPERSED TAILINGS DEPOSITS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK TAILINGS DEPOSIT AND FLOSSIE LOUISE MINE WASTE PILE (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **4.982**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Masked Shrew (Omnivorous Mammal - Terrestrial, Wetland)																							
BCEOT-W21-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	5.21E+02	4.41E+00	1.10E-03	3.53E+02	3.88E-01	1.00E+00	5.50E-03	8.72E+02	1.59E+02	2.97E-02	1.76E+02	4.96E+00
BCEOT-E22-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.11E+04	9.36E+01	1.10E-03	7.49E+03	8.25E+00	1.00E+00	5.50E-03	1.85E+04	1.59E+02	2.97E-02	1.76E+02	1.05E+02
BCEOT-W22-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	6.11E+04	5.18E+02	1.10E-03	4.14E+04	4.56E+01	1.00E+00	5.50E-03	1.02E+05	1.59E+02	2.97E-02	1.76E+02	5.82E+02
BCEOT-E23-15 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	2.03E+03	1.72E+01	1.10E-03	1.38E+03	1.51E+00	1.00E+00	5.50E-03	3.40E+03	1.59E+02	2.97E-02	1.76E+02	1.93E+01
BCEOT-W23-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.52E+04	1.29E+02	1.10E-03	1.03E+04	1.13E+01	1.00E+00	5.50E-03	2.55E+04	1.59E+02	2.97E-02	1.76E+02	1.45E+02
BCEOT-E24-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	5.38E+02	4.56E+00	1.10E-03	3.65E+02	4.02E-01	1.00E+00	5.50E-03	9.02E+02	1.59E+02	2.97E-02	1.76E+02	5.12E+00
BCEOT-W24-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.35E+04	1.14E+02	1.10E-03	9.14E+03	1.01E+01	1.00E+00	5.50E-03	2.26E+04	1.59E+02	2.97E-02	1.76E+02	1.28E+02
BCEOT-E25-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.64E+03	1.39E+01	1.10E-03	1.11E+03	1.22E+00	1.00E+00	5.50E-03	2.74E+03	1.59E+02	2.97E-02	1.76E+02	1.56E+01
BCEOT-W25-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.57E+04	1.33E+02	1.10E-03	1.07E+04	1.17E+01	1.00E+00	5.50E-03	2.63E+04	1.59E+02	2.97E-02	1.76E+02	1.50E+02
BCEOT-E26-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	8.86E+02	7.51E+00	1.10E-03	6.01E+02	6.61E-01	1.00E+00	5.50E-03	1.49E+03	1.59E+02	2.97E-02	1.76E+02	8.44E+00
BCEOT-W26-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.23E+02	1.04E+00	1.10E-03	8.35E+01	9.20E-02	1.00E+00	5.50E-03	2.07E+02	1.59E+02	2.97E-02	1.76E+02	1.17E+00
BCEOT-W27-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.18E+04	1.00E+02	1.10E-03	8.00E+03	8.81E+00	1.00E+00	5.50E-03	1.98E+04	1.59E+02	2.97E-02	1.76E+02	1.12E+02
At Edge of Tailings Pile																						**Maximum HQ (Inside Tailings Pile)**	**5.82E+02**
BCEOT-E0-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	4.51E+03	3.82E+01	1.10E-03	3.06E+03	3.37E+00	1.00E+00	5.50E-03	7.56E+03	1.59E+02	2.97E-02	1.76E+02	4.29E+01
BCEOT-E1-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	3.90E+03	3.30E+01	1.10E-03	2.64E+03	2.91E+00	1.00E+00	5.50E-03	6.53E+03	1.59E+02	2.97E-02	1.76E+02	3.71E+01
BCEOT-E2-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	3.31E+03	2.81E+01	1.10E-03	2.25E+03	2.47E+00	1.00E+00	5.50E-03	5.55E+03	1.59E+02	2.97E-02	1.76E+02	3.16E+01
BCEOT-E3-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.17E+03	9.90E+00	1.10E-03	7.92E+02	8.72E-01	1.00E+00	5.50E-03	1.96E+03	1.59E+02	2.97E-02	1.76E+02	1.11E+01
BCEOT-E4-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	2.13E+03	1.81E+01	1.10E-03	1.44E+03	1.59E+00	1.00E+00	5.50E-03	3.57E+03	1.59E+02	2.97E-02	1.76E+02	2.03E+01
BCEOT-W4-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.12E+03	9.52E+00	1.10E-03	7.61E+02	8.38E-01	1.00E+00	5.50E-03	1.88E+03	1.59E+02	2.97E-02	1.76E+02	1.07E+01
BCEOT-E5-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.75E+03	1.48E+01	1.10E-03	1.19E+03	1.31E+00	1.00E+00	5.50E-03	2.94E+03	1.59E+02	2.97E-02	1.76E+02	1.67E+01
BCEOT-W5-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	7.76E+02	6.58E+00	1.10E-03	5.26E+02	5.79E-01	1.00E+00	5.50E-03	1.30E+03	1.59E+02	2.97E-02	1.76E+02	7.39E+00
BCEOT-E6-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.25E+03	1.06E+01	1.10E-03	8.46E+02	9.32E-01	1.00E+00	5.50E-03	2.09E+03	1.59E+02	2.97E-02	1.76E+02	1.19E+01
BCEOT-E7-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.79E+03	1.52E+01	1.10E-03	1.22E+03	1.34E+00	1.00E+00	5.50E-03	3.01E+03	1.59E+02	2.97E-02	1.76E+02	1.71E+01
BCEOT-W7-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	6.25E+02	5.29E+00	1.10E-03	4.23E+02	4.66E-01	1.00E+00	5.50E-03	1.05E+03	1.59E+02	2.97E-02	1.76E+02	5.95E+00
BCEOT-W8-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	6.11E+02	5.17E+00	1.10E-03	4.14E+02	4.56E-01	1.00E+00	5.50E-03	1.02E+03	1.59E+02	2.97E-02	1.76E+02	5.81E+00
BCEOT-E9-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	4.66E+03	3.95E+01	1.10E-03	3.16E+03	3.48E+00	1.00E+00	5.50E-03	7.81E+03	1.59E+02	2.97E-02	1.76E+02	4.44E+01
BCEOT-W9-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	6.89E+02	5.84E+00	1.10E-03	4.67E+02	5.14E-01	1.00E+00	5.50E-03	1.16E+03	1.59E+02	2.97E-02	1.76E+02	6.56E+00
BCEOT-E10-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	8.62E+03	7.31E+01	1.10E-03	5.84E+03	6.43E+00	1.00E+00	5.50E-03	1.45E+04	1.59E+02	2.97E-02	1.76E+02	8.21E+01
BCEOT-W10-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	6.51E+02	5.51E+00	1.10E-03	4.41E+02	4.85E-01	1.00E+00	5.50E-03	1.09E+03	1.59E+02	2.97E-02	1.76E+02	6.19E+00
BCEOT-E11-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	4.22E+03	3.58E+01	1.10E-03	2.86E+03	3.15E+00	1.00E+00	5.50E-03	7.08E+03	1.59E+02	2.97E-02	1.76E+02	4.02E+01
BCEOT-W11-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	2.06E+03	1.75E+01	1.10E-03	1.40E+03	1.54E+00	1.00E+00	5.50E-03	3.45E+03	1.59E+02	2.97E-02	1.76E+02	1.96E+01
BCEOT-E12-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	2.17E+03	1.84E+01	1.10E-03	1.47E+03	1.62E+00	1.00E+00	5.50E-03	3.64E+03	1.59E+02	2.97E-02	1.76E+02	2.07E+01
BCEOT-W12-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.20E+03	1.02E+01	1.10E-03	8.15E+02	8.97E-01	1.00E+00	5.50E-03	2.02E+03	1.59E+02	2.97E-02	1.76E+02	1.14E+01
BCEOT-E13-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.67E+03	1.41E+01	1.10E-03	1.13E+03	1.24E+00	1.00E+00	5.50E-03	2.80E+03	1.59E+02	2.97E-02	1.76E+02	1.59E+01
BCEOT-W13-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.41E+03	1.20E+01	1.10E-03	9.59E+02	1.06E+00	1.00E+00	5.50E-03	2.37E+03	1.59E+02	2.97E-02	1.76E+02	1.35E+01
BCEOT-E14-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.65E+03	1.40E+01	1.10E-03	1.12E+03	1.23E+00	1.00E+00	5.50E-03	2.77E+03	1.59E+02	2.97E-02	1.76E+02	1.57E+01
BCEOT-W14-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	5.53E+03	4.68E+01	1.10E-03	3.75E+03	4.12E+00	1.00E+00	5.50E-03	9.26E+03	1.59E+02	2.97E-02	1.76E+02	5.26E+01
BCEOT-E15-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.87E+03	1.58E+01	1.10E-03	1.27E+03	1.39E+00	1.00E+00	5.50E-03	3.13E+03	1.59E+02	2.97E-02	1.76E+02	1.78E+01
BCEOT-W15-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	5.23E+03	4.43E+01	1.10E-03	3.54E+03	3.90E+00	1.00E+00	5.50E-03	8.76E+03	1.59E+02	2.97E-02	1.76E+02	4.98E+01
BCEOT-E16-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	2.09E+03	1.77E+01	1.10E-03	1.42E+03	1.56E+00	1.00E+00	5.50E-03	3.50E+03	1.59E+02	2.97E-02	1.76E+02	1.99E+01
BCEOT-W16-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.22E+03	1.03E+01	1.10E-03	8.26E+02	9.09E-01	1.00E+00	5.50E-03	2.04E+03	1.59E+02	2.97E-02	1.76E+02	1.16E+01
BCEOT-E17-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	2.85E+03	2.42E+01	1.10E-03	1.93E+03	2.13E+00	1.00E+00	5.50E-03	4.78E+03	1.59E+02	2.97E-02	1.76E+02	2.71E+01
BCEOT-W17-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.83E+03	1.55E+01	1.10E-03	1.24E+03	1.36E+00	1.00E+00	5.50E-03	3.06E+03	1.59E+02	2.97E-02	1.76E+02	1.74E+01
BCEOT-E18-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	2.53E+03	2.15E+01	1.10E-03	1.72E+03	1.89E+00	1.00E+00	5.50E-03	4.25E+03	1.59E+02	2.97E-02	1.76E+02	2.41E+01
BCEOT-W18-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.84E+03	1.56E+01	1.10E-03	1.25E+03	1.37E+00	1.00E+00	5.50E-03	3.08E+03	1.59E+02	2.97E-02	1.76E+02	1.75E+01
BCEOT-E19-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.53E+03	1.30E+01	1.10E-03	1.04E+03	1.14E+00	1.00E+00	5.50E-03	2.57E+03	1.59E+02	2.97E-02	1.76E+02	1.46E+01
BCEOT-W19-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	3.89E+03	3.30E+01	1.10E-03	2.64E+03	2.90E+00	1.00E+00	5.50E-03	6.52E+03	1.59E+02	2.97E-02	1.76E+02	3.70E+01
BCEOT-E20-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	5.36E+02	4.54E+00	1.10E-03	3.63E+02	4.00E-01	1.00E+00	5.50E-03	8.99E+02	1.59E+02	2.97E-02	1.76E+02	5.11E+00
BCEOT-W20-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.52E+03	1.29E+01	1.10E-03	1.03E+03	1.14E+00	1.00E+00	5.50E-03	2.55E+03	1.59E+02	2.97E-02	1.76E+02	1.45E+01
BCEOT-E21-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	2.10E+03	1.78E+01	1.10E-03	1.42E+03	1.56E+00	1.00E+00	5.50E-03	3.51E+03	1.59E+02	2.97E-02	1.76E+02	2.00E+01
BCEOT-W21-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.73E+03	1.47E+01	1.10E-03	1.17E+03	1.29E+00	1.00E+00	5.50E-03	2.90E+03	1.59E+02	2.97E-02	1.76E+02	1.65E+01
BCEOT-E22-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.26E+03	1.07E+01	1.10E-03	8.53E+02	9.39E-01	1.00E+00	5.50E-03	2.11E+03	1.59E+02	2.97E-02	1.76E+02	1.20E+01

TABLE C-11E: MANGANESE DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 11 - BEARTRAP CREEK DISPERSED TAILINGS DEPOSITS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK TAILINGS DEPOSIT AND FLOSSIE LOUISE MINE WASTE PILE (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **4.982**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Masked Shrew (Omnivorous Mammal - Terrestrial, Wetland)																							
BCEOT-W22-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	9.40E+02	7.96E+00	1.10E-03	6.37E+02	7.01E-01	1.00E+00	5.50E-03	1.58E+03	1.59E+02	2.97E-02	1.76E+02	8.95E+00
BCEOT-E23-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	6.94E+02	5.88E+00	1.10E-03	4.70E+02	5.18E-01	1.00E+00	5.50E-03	1.16E+03	1.59E+02	2.97E-02	1.76E+02	6.60E+00
BCEOT-W23-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	8.17E+02	6.92E+00	1.10E-03	5.54E+02	6.10E-01	1.00E+00	5.50E-03	1.37E+03	1.59E+02	2.97E-02	1.76E+02	7.78E+00
BCEOT-E24-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	7.94E+02	6.72E+00	1.10E-03	5.38E+02	5.92E-01	1.00E+00	5.50E-03	1.33E+03	1.59E+02	2.97E-02	1.76E+02	7.56E+00
BCEOT-W24-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.73E+03	1.47E+01	1.10E-03	1.17E+03	1.29E+00	1.00E+00	5.50E-03	2.90E+03	1.59E+02	2.97E-02	1.76E+02	1.65E+01
BCEOT-E25-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.05E+03	8.89E+00	1.10E-03	7.11E+02	7.83E-01	1.00E+00	5.50E-03	1.76E+03	1.59E+02	2.97E-02	1.76E+02	9.99E+00
BCEOT-W25-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	2.50E+03	2.12E+01	1.10E-03	1.69E+03	1.86E+00	1.00E+00	5.50E-03	4.18E+03	1.59E+02	2.97E-02	1.76E+02	2.38E+01
BCEOT-E26-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.89E+03	1.60E+01	1.10E-03	1.28E+03	1.41E+00	1.00E+00	5.50E-03	3.17E+03	1.59E+02	2.97E-02	1.76E+02	1.80E+01
BCEOT-W26-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.85E+03	1.57E+01	1.10E-03	1.25E+03	1.38E+00	1.00E+00	5.50E-03	3.10E+03	1.59E+02	2.97E-02	1.76E+02	1.76E+01
BCEOT-W27-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.48E+03	1.26E+01	1.10E-03	1.00E+03	1.11E+00	1.00E+00	5.50E-03	2.48E+03	1.59E+02	2.97E-02	1.76E+02	1.41E+01
Outside Tailings Piles																						**Maximum HQ (Edge of Tailings Pile)**	**8.21E+01**
BCEOT-E0+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.37E+03	1.16E+01	1.10E-03	9.27E+02	1.02E+00	1.00E+00	5.50E-03	2.29E+03	1.59E+02	2.97E-02	1.76E+02	1.30E+01
BCEOT-E1+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	6.73E+03	5.70E+01	1.10E-03	4.56E+03	5.02E+00	1.00E+00	5.50E-03	1.13E+04	1.59E+02	2.97E-02	1.76E+02	6.41E+01
BCEOT-E2+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	8.21E+02	6.96E+00	1.10E-03	5.56E+02	6.13E-01	1.00E+00	5.50E-03	1.38E+03	1.59E+02	2.97E-02	1.76E+02	7.82E+00
BCEOT-E3+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.55E+03	1.31E+01	1.10E-03	1.05E+03	1.15E+00	1.00E+00	5.50E-03	2.59E+03	1.59E+02	2.97E-02	1.76E+02	1.47E+01
BCEOT-E4+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	3.96E+03	3.36E+01	1.10E-03	2.69E+03	2.96E+00	1.00E+00	5.50E-03	6.64E+03	1.59E+02	2.97E-02	1.76E+02	3.77E+01
BCEOT-W4+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	9.93E+02	8.41E+00	1.10E-03	6.73E+02	7.41E-01	1.00E+00	5.50E-03	1.66E+03	1.59E+02	2.97E-02	1.76E+02	9.45E+00
BCEOT-E5+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	3.43E+03	2.90E+01	1.10E-03	2.32E+03	2.56E+00	1.00E+00	5.50E-03	5.74E+03	1.59E+02	2.97E-02	1.76E+02	3.26E+01
BCEOT-W5+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.05E+03	8.93E+00	1.10E-03	7.14E+02	7.86E-01	1.00E+00	5.50E-03	1.77E+03	1.59E+02	2.97E-02	1.76E+02	1.00E+01
BCEOT-E6+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	8.47E+02	7.18E+00	1.10E-03	5.74E+02	6.32E-01	1.00E+00	5.50E-03	1.42E+03	1.59E+02	2.97E-02	1.76E+02	8.07E+00
BCEOT-W6+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	4.39E+02	3.72E+00	1.10E-03	2.97E+02	3.27E-01	1.00E+00	5.50E-03	7.35E+02	1.59E+02	2.97E-02	1.76E+02	4.18E+00
BCEOT-E7+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	3.60E+03	3.05E+01	1.10E-03	2.44E+03	2.68E+00	1.00E+00	5.50E-03	6.02E+03	1.59E+02	2.97E-02	1.76E+02	3.42E+01
BCEOT-W7+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.23E+03	1.04E+01	1.10E-03	8.33E+02	9.17E-01	1.00E+00	5.50E-03	2.06E+03	1.59E+02	2.97E-02	1.76E+02	1.17E+01
FLWA-101 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	3.56E+02	3.02E+00	1.10E-03	2.42E+02	2.66E-01	1.00E+00	5.50E-03	5.97E+02	1.59E+02	2.97E-02	1.76E+02	3.39E+00
BCEOT-W8+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	7.47E+02	6.32E+00	1.10E-03	5.06E+02	5.57E-01	1.00E+00	5.50E-03	1.25E+03	1.59E+02	2.97E-02	1.76E+02	7.11E+00
BCEOT-E9+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	2.90E+03	2.46E+01	1.10E-03	1.97E+03	2.17E+00	1.00E+00	5.50E-03	4.86E+03	1.59E+02	2.97E-02	1.76E+02	2.76E+01
BCEOT-W9+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	3.13E+03	2.65E+01	1.10E-03	2.12E+03	2.34E+00	1.00E+00	5.50E-03	5.25E+03	1.59E+02	2.97E-02	1.76E+02	2.98E+01
BCEOT-E10+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	3.37E+03	2.86E+01	1.10E-03	2.29E+03	2.52E+00	1.00E+00	5.50E-03	5.65E+03	1.59E+02	2.97E-02	1.76E+02	3.21E+01
BCEOT-W10+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	5.61E+02	4.75E+00	1.10E-03	3.80E+02	4.18E-01	1.00E+00	5.50E-03	9.40E+02	1.59E+02	2.97E-02	1.76E+02	5.34E+00
BCEOT-E11+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.40E+03	1.18E+01	1.10E-03	9.47E+02	1.04E+00	1.00E+00	5.50E-03	2.34E+03	1.59E+02	2.97E-02	1.76E+02	1.33E+01
BCEOT-W11+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	9.35E+02	7.92E+00	1.10E-03	6.34E+02	6.98E-01	1.00E+00	5.50E-03	1.57E+03	1.59E+02	2.97E-02	1.76E+02	8.90E+00
BCEOT-E12+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.46E+03	1.23E+01	1.10E-03	9.86E+02	1.09E+00	1.00E+00	5.50E-03	2.44E+03	1.59E+02	2.97E-02	1.76E+02	1.39E+01
BCEOT-W12+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.64E+03	1.39E+01	1.10E-03	1.11E+03	1.22E+00	1.00E+00	5.50E-03	2.74E+03	1.59E+02	2.97E-02	1.76E+02	1.56E+01
BCEOT-E13+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.29E+03	1.10E+01	1.10E-03	8.77E+02	9.66E-01	1.00E+00	5.50E-03	2.17E+03	1.59E+02	2.97E-02	1.76E+02	1.23E+01
BCEOT-E14+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.82E+03	1.54E+01	1.10E-03	1.24E+03	1.36E+00	1.00E+00	5.50E-03	3.06E+03	1.59E+02	2.97E-02	1.76E+02	1.74E+01
BCEOT-W14+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	2.59E+03	2.19E+01	1.10E-03	1.75E+03	1.93E+00	1.00E+00	5.50E-03	4.34E+03	1.59E+02	2.97E-02	1.76E+02	2.47E+01
BCEOT-E15+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	2.28E+03	1.93E+01	1.10E-03	1.55E+03	1.70E+00	1.00E+00	5.50E-03	3.82E+03	1.59E+02	2.97E-02	1.76E+02	2.17E+01
BCEOT-W15+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	4.05E+03	3.43E+01	1.10E-03	2.74E+03	3.02E+00	1.00E+00	5.50E-03	6.78E+03	1.59E+02	2.97E-02	1.76E+02	3.85E+01
BCEOT-E16+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.42E+03	1.21E+01	1.10E-03	9.64E+02	1.06E+00	1.00E+00	5.50E-03	2.38E+03	1.59E+02	2.97E-02	1.76E+02	1.35E+01
BCEOT-W16+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	9.02E+02	7.64E+00	1.10E-03	6.11E+02	6.73E-01	1.00E+00	5.50E-03	1.51E+03	1.59E+02	2.97E-02	1.76E+02	8.58E+00
BCEOT-E17+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.80E+03	1.52E+01	1.10E-03	1.22E+03	1.34E+00	1.00E+00	5.50E-03	3.02E+03	1.59E+02	2.97E-02	1.76E+02	1.71E+01
BCEOT-W17+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	8.82E+02	7.47E+00	1.10E-03	5.97E+02	6.58E-01	1.00E+00	5.50E-03	1.48E+03	1.59E+02	2.97E-02	1.76E+02	8.39E+00
BCEOT-E18+12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.16E+04	9.85E+01	1.10E-03	7.88E+03	8.68E+00	1.00E+00	5.50E-03	1.95E+04	1.59E+02	2.97E-02	1.76E+02	1.11E+02
BCEOT-E18+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.88E+03	1.60E+01	1.10E-03	1.28E+03	1.41E+00	1.00E+00	5.50E-03	3.16E+03	1.59E+02	2.97E-02	1.76E+02	1.79E+01
BCEOT-W18+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.93E+03	1.64E+01	1.10E-03	1.31E+03	1.44E+00	1.00E+00	5.50E-03	3.24E+03	1.59E+02	2.97E-02	1.76E+02	1.84E+01
BCEOT-E19+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.84E+03	1.56E+01	1.10E-03	1.25E+03	1.37E+00	1.00E+00	5.50E-03	3.08E+03	1.59E+02	2.97E-02	1.76E+02	1.75E+01
BCEOT-W19+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	4.13E+02	3.50E+00	1.10E-03	2.80E+02	3.08E-01	1.00E+00	5.50E-03	6.92E+02	1.59E+02	2.97E-02	1.76E+02	3.93E+00
BCEOT-E20+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.56E+03	1.32E+01	1.10E-03	1.06E+03	1.17E+00	1.00E+00	5.50E-03	2.62E+03	1.59E+02	2.97E-02	1.76E+02	1.49E+01
BCEOT-W20+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.17E+03	9.95E+00	1.10E-03	7.96E+02	8.76E-01	1.00E+00	5.50E-03	1.97E+03	1.59E+02	2.97E-02	1.76E+02	1.12E+01
BCEOT-E21+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	7.64E+02	6.47E+00	1.10E-03	5.18E+02	5.70E-01	1.00E+00	5.50E-03	1.28E+03	1.59E+02	2.97E-02	1.76E+02	7.27E+00
BCEOT-W21+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.05E+03	8.93E+00	1.10E-03	7.14E+02	7.86E-01	1.00E+00	5.50E-03	1.77E+03	1.59E+02	2.97E-02	1.76E+02	1.00E+01
BCEOT-E22+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	3.63E+03	3.07E+01	1.10E-03	2.46E+03	2.71E+00	1.00E+00	5.50E-03	6.08E+03	1.59E+02	2.97E-02	1.76E+02	3.45E+01
BCEOT-E22+70 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.03E+03	8.73E+00	1.10E-03	6.98E+02	7.69E-01	1.00E+00	5.50E-03	1.73E+03	1.59E+02	2.97E-02	1.76E+02	9.81E+00

TABLE C-11E: MANGANESE DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 11 - BEARTRAP CREEK DISPERSED TAILINGS DEPOSITS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK TAILINGS DEPOSIT AND FLOSSIE LOUISE MINE WASTE PILE (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **4.982**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Masked Shrew (Omnivorous Mammal - Terrestrial, Wetland)																							
BCEOT-W22+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	4.62E+02	3.91E+00	1.10E-03	3.13E+02	3.45E-01	1.00E+00	5.50E-03	7.74E+02	1.59E+02	2.97E-02	1.76E+02	4.40E+00
BCEOT-E23+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	6.25E+02	5.29E+00	1.10E-03	4.23E+02	4.66E-01	1.00E+00	5.50E-03	1.05E+03	1.59E+02	2.97E-02	1.76E+02	5.95E+00
BCEOT-W23+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	8.74E+02	7.40E+00	1.10E-03	5.92E+02	6.52E-01	1.00E+00	5.50E-03	1.46E+03	1.59E+02	2.97E-02	1.76E+02	8.32E+00
BCEOT-E24+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	5.12E+02	4.34E+00	1.10E-03	3.47E+02	3.82E-01	1.00E+00	5.50E-03	8.58E+02	1.59E+02	2.97E-02	1.76E+02	4.87E+00
BCEOT-W24+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	8.12E+02	6.88E+00	1.10E-03	5.50E+02	6.06E-01	1.00E+00	5.50E-03	1.36E+03	1.59E+02	2.97E-02	1.76E+02	7.73E+00
BCEOT-E25+20 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	6.41E+02	5.43E+00	1.10E-03	4.34E+02	4.78E-01	1.00E+00	5.50E-03	1.07E+03	1.59E+02	2.97E-02	1.76E+02	6.10E+00
BCEOT-W25+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	4.47E+02	3.78E+00	1.10E-03	3.03E+02	3.33E-01	1.00E+00	5.50E-03	7.48E+02	1.59E+02	2.97E-02	1.76E+02	4.25E+00
BCEOT-E26+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	3.56E+02	3.02E+00	1.10E-03	2.41E+02	2.66E-01	1.00E+00	5.50E-03	5.96E+02	1.59E+02	2.97E-02	1.76E+02	3.39E+00
BCEOT-W26+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	7.44E+03	6.30E+01	1.10E-03	5.04E+03	5.55E+00	1.00E+00	5.50E-03	1.25E+04	1.59E+02	2.97E-02	1.76E+02	7.08E+01
BCEOT-W27+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.48E+00	1.68E+03	1.43E+01	1.10E-03	1.14E+03	1.26E+00	1.00E+00	5.50E-03	2.82E+03	1.59E+02	2.97E-02	1.76E+02	1.60E+01
																						Maximum HQ (Outside Tailings Pile)	**1.11E+02**

Notes

1 See Tables 3-1 through 3-13 for ingestion rates, foraging ranges used to calculate the SUF, and body weights.

2 BAFs were calculated by dividing site-collected tissue by collocated soil concentrations (BAFs are in dry weight). The maximum BAF calculated from the Beartrap Creek and Blackfoot River transects was used for site dose calculations. The maximum BAF from the terrestrial reference site was used for reference site dose calculations.

3 The mammal, plant, and invertebrate concentrations were calculated by multiplying the soil concentration by the BAF to generate a tissue concentration (see note 2).

4 Mammal, plant, and invertebrate daily doses were calculated by multiplying the ingestion rate (see note 1) by the tissue concentration (see note 3).

5 Soil concentration from 0 to 6 inches below ground surface at point ID as measured by XRF 10. Doses were not calculated for detected and non-detected soil concentrations measured below the minimum reference site concentration, as indicated by BB. For results that were measured at less than the detection limit, doses were calculated using half of the detection limit.

6 Soil daily dose was calculated by multiplying the soil ingestion rate (see note 1) by soil concentration (see note 5).

7 Total daily dose is calculated using the following equation: total daily dose = ([mammal daily dose (if applicable) + plant daily dose (if applicable) + invertebrate daily dose (if applicable) + soil daily dose]*SUF)/receptor species body weight.

8 The derivation of TRVs is described in Navy (1998). The high TRV was used for dose calculations.

9 Allometrically adjusted TRVs for birds were calculated using the following equation: receptor species TRV = (test species TRV) x (test species body weight / receptor species body weight) $^{(1-1.2)}$.

10 Allometrically adjusted TRVs for mammals were calculated using the following equation: receptor species TRV = (test species TRV) x (test species body weight / receptor species body weight) $^{(1-0.94)}$.

11 HQs were calculated using the following equation: HQ = total daily dose/allometrically adjusted TRV.

12 Green cells indicate an HQ between 1.0 and 9.99; yellow cells indicate an HQ between 10 and 99.9; blue cells indicate an HQ 100 or greater.

BAF	Bioaccumulation Factor	mg/kg	Milligram per kilogram
EE/CA	Engineering Evaluation/Cost Analysis	NA	Not applicable
EU	Exposure Unit	Navy	Department of the Navy
HQ	Hazard quotient	SUF	Site use factor
ID	Identification	TRV	Toxicity reference value
kg	Kilogram	XRF	X-ray fluorescence
kg/day	Kilogram per day	XRF 10	XRF measurements recorded following drying and seiving through a #10 -mesh screen
mg/day	Milligram per day		

Sources: Department of the Navy. 1998. "Development of Toxicity Reference Values for Conducting Ecological Risk Assessments at Naval Facilities in California, Interim Final." Prepared by Naval Facilities Engineering Command, Engineering Field Activity West (EFA West). San Bruno, California.

TABLE C-11F: ZINC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 11 - BEARTRAP CREEK DISPERSED TAILINGS DEPOSITS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK TAILINGS DEPOSITS AND FLOSSIE LOUISE MINE WASTE PILE

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 4.982

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Mourning Dove (Herbivorous Birds - Terrestrial)																							
Reference Sites																							
ACBG-1 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.41E+00	1.93E+02	1.11E+00	NA	NA	NA	NA	5.36E-04	1.37E+02	7.34E-02	1.92E-02	1.09E-01	2.09E-01	1.72E+02	9.55E-01	1.11E+02	1.88E-03
ACBG-2 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.41E+00	1.18E+02	6.82E-01	NA	NA	NA	NA	5.36E-04	8.39E+01	4.50E-02	1.92E-02	1.09E-01	1.28E-01	1.72E+02	9.55E-01	1.11E+02	1.15E-03
BCBG-201 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.41E+00	3.41E+02	1.96E+00	NA	NA	NA	NA	5.36E-04	2.42E+02	1.29E-01	1.92E-02	1.09E-01	3.69E-01	1.72E+02	9.55E-01	1.11E+02	3.31E-03
Inside Tailings Pile																						**Minimum HQ (Reference Sites)**	**1.15E-03**
BCEOT-E0-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	3.62E+02	2.09E+00	NA	NA	NA	NA	5.36E-04	1.83E+02	9.79E-02	1.92E-02	1.09E-01	3.85E-01	1.72E+02	9.55E-01	1.11E+02	3.45E-03
BCEOT-E1-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	5.46E+02	3.14E+00	NA	NA	NA	NA	5.36E-04	2.75E+02	1.48E-01	1.92E-02	1.09E-01	5.80E-01	1.72E+02	9.55E-01	1.11E+02	5.20E-03
BCEOT-E2-8 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	2.70E+02	1.56E+00	NA	NA	NA	NA	5.36E-04	1.36E+02	7.30E-02	1.92E-02	1.09E-01	2.87E-01	1.72E+02	9.55E-01	1.11E+02	2.57E-03
BCEOT-E3-8 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	4.69E+02	2.70E+00	NA	NA	NA	NA	5.36E-04	2.37E+02	1.27E-01	1.92E-02	1.09E-01	4.99E-01	1.72E+02	9.55E-01	1.11E+02	4.47E-03
BCEOT-E4-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	3.21E+02	1.85E+00	NA	NA	NA	NA	5.36E-04	1.62E+02	8.69E-02	1.92E-02	1.09E-01	3.41E-01	1.72E+02	9.55E-01	1.11E+02	3.06E-03
BCEOT-W4-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	4.68E+02	2.70E+00	NA	NA	NA	NA	5.36E-04	2.36E+02	1.27E-01	1.92E-02	1.09E-01	4.97E-01	1.72E+02	9.55E-01	1.11E+02	4.46E-03
BCEOT-E5-25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	1.89E+02	1.09E+00	NA	NA	NA	NA	5.36E-04	9.56E+01	5.12E-02	1.92E-02	1.09E-01	2.01E-01	1.72E+02	9.55E-01	1.11E+02	1.81E-03
BCEOT-W5-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	2.30E+03	1.33E+01	NA	NA	NA	NA	5.36E-04	1.16E+03	6.22E-01	1.92E-02	1.09E-01	2.44E+00	1.72E+02	9.55E-01	1.11E+02	2.19E-02
BCEOT-E6-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	3.82E+02	2.20E+00	NA	NA	NA	NA	5.36E-04	1.93E+02	1.03E-01	1.92E-02	1.09E-01	4.06E-01	1.72E+02	9.55E-01	1.11E+02	3.64E-03
BCEOT-W6-12.5 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-E7-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	2.21E+02	1.27E+00	NA	NA	NA	NA	5.36E-04	1.11E+02	5.97E-02	1.92E-02	1.09E-01	2.35E-01	1.72E+02	9.55E-01	1.11E+02	2.11E-03
BCEOT-W7-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	2.83E+02	1.63E+00	NA	NA	NA	NA	5.36E-04	1.43E+02	7.64E-02	1.92E-02	1.09E-01	3.00E-01	1.72E+02	9.55E-01	1.11E+02	2.69E-03
BCEOT-W8-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	7.52E+02	4.33E+00	NA	NA	NA	NA	5.36E-04	3.80E+02	2.03E-01	1.92E-02	1.09E-01	7.99E-01	1.72E+02	9.55E-01	1.11E+02	7.17E-03
BCEOT-E9-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	5.16E+02	2.98E+00	NA	NA	NA	NA	5.36E-04	2.61E+02	1.40E-01	1.92E-02	1.09E-01	5.49E-01	1.72E+02	9.55E-01	1.11E+02	4.92E-03
BCEOT-W9-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	5.55E+03	3.20E+01	NA	NA	NA	NA	5.36E-04	2.80E+03	1.50E+00	1.92E-02	1.09E-01	5.90E+00	1.72E+02	9.55E-01	1.11E+02	5.29E-02
BCEOT-E10-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	5.03E+02	2.90E+00	NA	NA	NA	NA	5.36E-04	2.54E+02	1.36E-01	1.92E-02	1.09E-01	5.35E-01	1.72E+02	9.55E-01	1.11E+02	4.80E-03
BCEOT-E11-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	3.28E+02	1.89E+00	NA	NA	NA	NA	5.36E-04	1.65E+02	8.86E-02	1.92E-02	1.09E-01	3.48E-01	1.72E+02	9.55E-01	1.11E+02	3.12E-03
BCEOT-W11-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	3.59E+03	2.07E+01	NA	NA	NA	NA	5.36E-04	1.81E+03	9.71E-01	1.92E-02	1.09E-01	3.81E+00	1.72E+02	9.55E-01	1.11E+02	3.42E-02
BCEOT-E12-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	2.49E+02	1.44E+00	NA	NA	NA	NA	5.36E-04	1.26E+02	6.75E-02	1.92E-02	1.09E-01	2.65E-01	1.72E+02	9.55E-01	1.11E+02	2.38E-03
BCEOT-W12-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	2.14E+03	1.23E+01	NA	NA	NA	NA	5.36E-04	1.08E+03	5.79E-01	1.92E-02	1.09E-01	2.27E+00	1.72E+02	9.55E-01	1.11E+02	2.04E-02
BCEOT-E13-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	4.36E+02	2.51E+00	NA	NA	NA	NA	5.36E-04	2.20E+02	1.18E-01	1.92E-02	1.09E-01	4.63E-01	1.72E+02	9.55E-01	1.11E+02	4.16E-03
BCEOT-W13-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	1.14E+03	6.58E+00	NA	NA	NA	NA	5.36E-04	5.77E+02	3.09E-01	1.92E-02	1.09E-01	1.21E+00	1.72E+02	9.55E-01	1.11E+02	1.09E-02
BCEOT-W13-25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-W14-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	7.69E+02	4.43E+00	NA	NA	NA	NA	5.36E-04	3.88E+02	2.08E-01	1.92E-02	1.09E-01	8.17E-01	1.72E+02	9.55E-01	1.11E+02	7.33E-03
BCEOT-E15-8 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	4.51E+02	2.60E+00	NA	NA	NA	NA	5.36E-04	2.28E+02	1.22E-01	1.92E-02	1.09E-01	4.79E-01	1.72E+02	9.55E-01	1.11E+02	4.30E-03
BCEOT-W15-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	7.76E+02	4.47E+00	NA	NA	NA	NA	5.36E-04	3.92E+02	2.10E-01	1.92E-02	1.09E-01	8.25E-01	1.72E+02	9.55E-01	1.11E+02	7.40E-03
BCEOT-E16-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	7.65E+03	4.41E+01	NA	NA	NA	NA	5.36E-04	3.86E+03	2.07E+00	1.92E-02	1.09E-01	8.13E+00	1.72E+02	9.55E-01	1.11E+02	7.29E-02
BCEOT-W16-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	2.12E+03	1.22E+01	NA	NA	NA	NA	5.36E-04	1.07E+03	5.72E-01	1.92E-02	1.09E-01	2.25E+00	1.72E+02	9.55E-01	1.11E+02	2.02E-02
BCEOT-E17-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	3.21E+04	1.85E+02	NA	NA	NA	NA	5.36E-04	1.62E+04	8.67E+00	1.92E-02	1.09E-01	3.41E+01	1.72E+02	9.55E-01	1.11E+02	3.06E-01
BCEOT-W17-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	1.00E+03	5.76E+00	NA	NA	NA	NA	5.36E-04	5.05E+02	2.70E-01	1.92E-02	1.09E-01	1.06E+00	1.72E+02	9.55E-01	1.11E+02	9.53E-03
BCEOT-W18-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	7.69E+02	4.43E+00	NA	NA	NA	NA	5.36E-04	3.88E+02	2.08E-01	1.92E-02	1.09E-01	8.17E-01	1.72E+02	9.55E-01	1.11E+02	7.33E-03
BCEOT-E19-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	1.85E+03	1.07E+01	NA	NA	NA	NA	5.36E-04	9.34E+02	5.01E-01	1.92E-02	1.09E-01	1.97E+00	1.72E+02	9.55E-01	1.11E+02	1.76E-02
BCEOT-W19-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	6.74E+02	3.88E+00	NA	NA	NA	NA	5.36E-04	3.40E+02	1.82E-01	1.92E-02	1.09E-01	7.16E-01	1.72E+02	9.55E-01	1.11E+02	6.42E-03
BCEOT-E20-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	1.13E+03	6.53E+00	NA	NA	NA	NA	5.36E-04	5.72E+02	3.06E-01	1.92E-02	1.09E-01	1.20E+00	1.72E+02	9.55E-01	1.11E+02	1.08E-02
BCEOT-W20-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	7.19E+03	4.14E+01	NA	NA	NA	NA	5.36E-04	3.63E+03	1.94E+00	1.92E-02	1.09E-01	7.64E+00	1.72E+02	9.55E-01	1.11E+02	6.85E-02
BCEOT-E21-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	4.93E+02	2.84E+00	NA	NA	NA	NA	5.36E-04	2.49E+02	1.33E-01	1.92E-02	1.09E-01	5.24E-01	1.72E+02	9.55E-01	1.11E+02	4.70E-03
BCEOT-W21-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	6.85E+02	3.95E+00	NA	NA	NA	NA	5.36E-04	3.46E+02	1.85E-01	1.92E-02	1.09E-01	7.28E-01	1.72E+02	9.55E-01	1.11E+02	6.53E-03
BCEOT-E22-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	2.45E+03	1.41E+01	NA	NA	NA	NA	5.36E-04	1.24E+03	6.63E-01	1.92E-02	1.09E-01	2.61E+00	1.72E+02	9.55E-01	1.11E+02	2.34E-02
BCEOT-W22-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	2.89E+04	1.67E+02	NA	NA	NA	NA	5.36E-04	1.46E+04	7.83E+00	1.92E-02	1.09E-01	3.07E+01	1.72E+02	9.55E-01	1.11E+02	2.76E-01
BCEOT-E23-15 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	5.40E+02	3.11E+00	NA	NA	NA	NA	5.36E-04	2.73E+02	1.46E-01	1.92E-02	1.09E-01	5.74E-01	1.72E+02	9.55E-01	1.11E+02	5.15E-03
BCEOT-W23-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	7.26E+03	4.18E+01	NA	NA	NA	NA	5.36E-04	3.67E+03	1.96E+00	1.92E-02	1.09E-01	7.72E+00	1.72E+02	9.55E-01	1.11E+02	6.92E-02
BCEOT-E24-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	2.12E+02	1.22E+00	NA	NA	NA	NA	5.36E-04	1.07E+02	5.73E-02	1.92E-02	1.09E-01	2.25E-01	1.72E+02	9.55E-01	1.11E+02	2.02E-03
BCEOT-W24-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	5.57E+03	3.21E+01	NA	NA	NA	NA	5.36E-04	2.81E+03	1.51E+00	1.92E-02	1.09E-01	5.91E+00	1.72E+02	9.55E-01	1.11E+02	5.31E-02
BCEOT-E25-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	1.12E+03	6.48E+00	NA	NA	NA	NA	5.36E-04	5.67E+02	3.04E-01	1.92E-02	1.09E-01	1.19E+00	1.72E+02	9.55E-01	1.11E+02	1.07E-02
BCEOT-W25-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	3.81E+03	2.20E+01	NA	NA	NA	NA	5.36E-04	1.92E+03	1.03E+00	1.92E-02	1.09E-01	4.05E+00	1.72E+02	9.55E-01	1.11E+02	3.63E-02

TABLE C-11F: ZINC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 11 - BEARTRAP CREEK DISPERSED TAILINGS DEPOSITS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK TAILINGS DEPOSITS AND FLOSSIE LOUISE MINE WASTE PILE (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 4.982

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Mourning Dove (Herbivorous Birds - Terrestrial)																							
BCEOT-E26-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	3.94E+02	2.27E+00	NA	NA	NA	NA	5.36E-04	1.99E+02	1.06E-01	1.92E-02	1.09E-01	4.18E-01	1.72E+02	9.55E-01	1.11E+02	3.75E-03
BCEOT-W26-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	6.12E+02	3.53E+00	NA	NA	NA	NA	5.36E-04	3.09E+02	1.66E-01	1.92E-02	1.09E-01	6.51E-01	1.72E+02	9.55E-01	1.11E+02	5.84E-03
BCEOT-W27-12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	3.44E+03	1.98E+01	NA	NA	NA	NA	5.36E-04	1.74E+03	9.30E-01	1.92E-02	1.09E-01	3.65E+00	1.72E+02	9.55E-01	1.11E+02	3.28E-02
At Edge of Tailings Pile																						**Maximum HQ (Inside Tailings Pile)**	**3.06E-01**
BCEOT-E0-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	5.41E+02	3.12E+00	NA	NA	NA	NA	5.36E-04	2.73E+02	1.46E-01	1.92E-02	1.09E-01	5.75E-01	1.72E+02	9.55E-01	1.11E+02	5.15E-03
BCEOT-E1-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	3.67E+02	2.12E+00	NA	NA	NA	NA	5.36E-04	1.85E+02	9.93E-02	1.92E-02	1.09E-01	3.90E-01	1.72E+02	9.55E-01	1.11E+02	3.50E-03
BCEOT-E2-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	1.01E+03	5.81E+00	NA	NA	NA	NA	5.36E-04	5.09E+02	2.73E-01	1.92E-02	1.09E-01	1.07E+00	1.72E+02	9.55E-01	1.11E+02	9.62E-03
BCEOT-E3-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	2.46E+02	1.42E+00	NA	NA	NA	NA	5.36E-04	1.24E+02	6.65E-02	1.92E-02	1.09E-01	2.61E-01	1.72E+02	9.55E-01	1.11E+02	2.34E-03
BCEOT-E4-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	3.49E+02	2.01E+00	NA	NA	NA	NA	5.36E-04	1.76E+02	9.44E-02	1.92E-02	1.09E-01	3.71E-01	1.72E+02	9.55E-01	1.11E+02	3.33E-03
BCEOT-W4-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	1.75E+02	1.01E+00	NA	NA	NA	NA	5.36E-04	8.85E+01	4.74E-02	1.92E-02	1.09E-01	1.86E-01	1.72E+02	9.55E-01	1.11E+02	1.67E-03
BCEOT-E5-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	4.70E+02	2.71E+00	NA	NA	NA	NA	5.36E-04	2.37E+02	1.27E-01	1.92E-02	1.09E-01	4.99E-01	1.72E+02	9.55E-01	1.11E+02	4.48E-03
BCEOT-W5-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	3.82E+02	2.20E+00	NA	NA	NA	NA	5.36E-04	1.93E+02	1.03E-01	1.92E-02	1.09E-01	4.06E-01	1.72E+02	9.55E-01	1.11E+02	3.64E-03
BCEOT-E6-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	3.36E+02	1.93E+00	NA	NA	NA	NA	5.36E-04	1.69E+02	9.08E-02	1.92E-02	1.09E-01	3.57E-01	1.72E+02	9.55E-01	1.11E+02	3.20E-03
BCEOT-W6-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	2.16E+02	1.24E+00	NA	NA	NA	NA	5.36E-04	1.09E+02	5.83E-02	1.92E-02	1.09E-01	2.29E-01	1.72E+02	9.55E-01	1.11E+02	2.06E-03
BCEOT-E7-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	3.36E+02	1.93E+00	NA	NA	NA	NA	5.36E-04	1.69E+02	9.08E-02	1.92E-02	1.09E-01	3.57E-01	1.72E+02	9.55E-01	1.11E+02	3.20E-03
BCEOT-W7-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-W8-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-E9-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	4.49E+02	2.59E+00	NA	NA	NA	NA	5.36E-04	2.27E+02	1.21E-01	1.92E-02	1.09E-01	4.77E-01	1.72E+02	9.55E-01	1.11E+02	4.28E-03
BCEOT-W9-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-E10-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	6.38E+02	3.68E+00	NA	NA	NA	NA	5.36E-04	3.22E+02	1.73E-01	1.92E-02	1.09E-01	6.78E-01	1.72E+02	9.55E-01	1.11E+02	6.08E-03
BCEOT-W10-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-E11-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	2.86E+02	1.65E+00	NA	NA	NA	NA	5.36E-04	1.44E+02	7.72E-02	1.92E-02	1.09E-01	3.03E-01	1.72E+02	9.55E-01	1.11E+02	2.72E-03
BCEOT-W11-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	6.39E+02	3.68E+00	NA	NA	NA	NA	5.36E-04	3.23E+02	1.73E-01	1.92E-02	1.09E-01	6.79E-01	1.72E+02	9.55E-01	1.11E+02	6.09E-03
BCEOT-E12-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	3.20E+02	1.84E+00	NA	NA	NA	NA	5.36E-04	1.61E+02	8.65E-02	1.92E-02	1.09E-01	3.40E-01	1.72E+02	9.55E-01	1.11E+02	3.05E-03
BCEOT-W12-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-E13-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	2.67E+02	1.54E+00	NA	NA	NA	NA	5.36E-04	1.35E+02	7.23E-02	1.92E-02	1.09E-01	2.84E-01	1.72E+02	9.55E-01	1.11E+02	2.55E-03
BCEOT-W13-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	3.05E+02	1.76E+00	NA	NA	NA	NA	5.36E-04	1.54E+02	8.24E-02	1.92E-02	1.09E-01	3.24E-01	1.72E+02	9.55E-01	1.11E+02	2.90E-03
BCEOT-E14-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	2.44E+02	1.41E+00	NA	NA	NA	NA	5.36E-04	1.23E+02	6.61E-02	1.92E-02	1.09E-01	2.60E-01	1.72E+02	9.55E-01	1.11E+02	2.33E-03
BCEOT-W14-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	1.46E+03	8.40E+00	NA	NA	NA	NA	5.36E-04	7.35E+02	3.94E-01	1.92E-02	1.09E-01	1.55E+00	1.72E+02	9.55E-01	1.11E+02	1.39E-02
BCEOT-E15-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	5.21E+02	3.00E+00	NA	NA	NA	NA	5.36E-04	2.63E+02	1.41E-01	1.92E-02	1.09E-01	5.53E-01	1.72E+02	9.55E-01	1.11E+02	4.96E-03
BCEOT-W15-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	1.53E+03	8.81E+00	NA	NA	NA	NA	5.36E-04	7.72E+02	4.13E-01	1.92E-02	1.09E-01	1.62E+00	1.72E+02	9.55E-01	1.11E+02	1.46E-02
BCEOT-E16-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	3.62E+02	2.08E+00	NA	NA	NA	NA	5.36E-04	1.83E+02	9.79E-02	1.92E-02	1.09E-01	3.84E-01	1.72E+02	9.55E-01	1.11E+02	3.45E-03
BCEOT-W16-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	4.35E+02	2.51E+00	NA	NA	NA	NA	5.36E-04	2.20E+02	1.18E-01	1.92E-02	1.09E-01	4.62E-01	1.72E+02	9.55E-01	1.11E+02	4.15E-03
BCEOT-E17-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	1.28E+03	7.36E+00	NA	NA	NA	NA	5.36E-04	6.44E+02	3.45E-01	1.92E-02	1.09E-01	1.36E+00	1.72E+02	9.55E-01	1.11E+02	1.22E-02
BCEOT-W17-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	4.58E+02	2.64E+00	NA	NA	NA	NA	5.36E-04	2.31E+02	1.24E-01	1.92E-02	1.09E-01	4.86E-01	1.72E+02	9.55E-01	1.11E+02	4.36E-03
BCEOT-E18-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	7.53E+02	4.34E+00	NA	NA	NA	NA	5.36E-04	3.80E+02	2.04E-01	1.92E-02	1.09E-01	8.00E-01	1.72E+02	9.55E-01	1.11E+02	7.17E-03
BCEOT-W18-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	5.41E+02	3.12E+00	NA	NA	NA	NA	5.36E-04	2.73E+02	1.46E-01	1.92E-02	1.09E-01	5.75E-01	1.72E+02	9.55E-01	1.11E+02	5.16E-03
BCEOT-E19-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	5.25E+02	3.03E+00	NA	NA	NA	NA	5.36E-04	2.65E+02	1.42E-01	1.92E-02	1.09E-01	5.58E-01	1.72E+02	9.55E-01	1.11E+02	5.01E-03
BCEOT-W19-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	5.91E+02	3.41E+00	NA	NA	NA	NA	5.36E-04	2.98E+02	1.60E-01	1.92E-02	1.09E-01	6.28E-01	1.72E+02	9.55E-01	1.11E+02	5.63E-03
BCEOT-E20-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	2.62E+02	1.51E+00	NA	NA	NA	NA	5.36E-04	1.32E+02	7.09E-02	1.92E-02	1.09E-01	2.79E-01	1.72E+02	9.55E-01	1.11E+02	2.50E-03
BCEOT-W20-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	5.37E+02	3.10E+00	NA	NA	NA	NA	5.36E-04	2.71E+02	1.45E-01	1.92E-02	1.09E-01	5.71E-01	1.72E+02	9.55E-01	1.11E+02	5.12E-03
BCEOT-E21-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	5.30E+02	3.05E+00	NA	NA	NA	NA	5.36E-04	2.67E+02	1.43E-01	1.92E-02	1.09E-01	5.63E-01	1.72E+02	9.55E-01	1.11E+02	5.05E-03
BCEOT-W21-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	6.11E+02	3.52E+00	NA	NA	NA	NA	5.36E-04	3.09E+02	1.65E-01	1.92E-02	1.09E-01	6.50E-01	1.72E+02	9.55E-01	1.11E+02	5.83E-03
BCEOT-E22-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	2.47E+02	1.42E+00	NA	NA	NA	NA	5.36E-04	1.25E+02	6.68E-02	1.92E-02	1.09E-01	2.62E-01	1.72E+02	9.55E-01	1.11E+02	2.35E-03
BCEOT-W22-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	4.77E+02	2.75E+00	NA	NA	NA	NA	5.36E-04	2.41E+02	1.29E-01	1.92E-02	1.09E-01	5.07E-01	1.72E+02	9.55E-01	1.11E+02	4.55E-03
BCEOT-E23-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	1.79E+02	1.03E+00	NA	NA	NA	NA	5.36E-04	9.02E+01	4.83E-02	1.92E-02	1.09E-01	1.90E-01	1.72E+02	9.55E-01	1.11E+02	1.70E-03
BCEOT-W23-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	8.01E+02	4.61E+00	NA	NA	NA	NA	5.36E-04	4.04E+02	2.17E-01	1.92E-02	1.09E-01	8.51E-01	1.72E+02	9.55E-01	1.11E+02	7.63E-03
BCEOT-E24-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	2.90E+02	1.67E+00	NA	NA	NA	NA	5.36E-04	1.46E+02	7.84E-02	1.92E-02	1.09E-01	3.08E-01	1.72E+02	9.55E-01	1.11E+02	2.76E-03
BCEOT-W24-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	4.90E+02	2.82E+00	NA	NA	NA	NA	5.36E-04	2.47E+02	1.33E-01	1.92E-02	1.09E-01	5.21E-01	1.72E+02	9.55E-01	1.11E+02	4.67E-03
BCEOT-E25-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	3.40E+02	1.96E+00	NA	NA	NA	NA	5.36E-04	1.72E+02	9.21E-02	1.92E-02	1.09E-01	3.62E-01	1.72E+02	9.55E-01	1.11E+02	3.24E-03
BCEOT-W25-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	5.62E+02	3.24E+00	NA	NA	NA	NA	5.36E-04	2.84E+02	1.52E-01	1.92E-02	1.09E-01	5.97E-01	1.72E+02	9.55E-01	1.11E+02	5.36E-03

TABLE C-11F: ZINC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 11 - BEARTRAP CREEK DISPERSED TAILINGS DEPOSITS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK TAILINGS DEPOSITS AND FLOSSIE LOUISE MINE WASTE PILE (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 4.982

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Mourning Dove (Herbivorous Birds - Terrestrial)																							
BCEOT-E26-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	6.53E+02	3.76E+00	NA	NA	NA	NA	5.36E-04	3.30E+02	1.77E-01	1.92E-02	1.09E-01	6.94E-01	1.72E+02	9.55E-01	1.11E+02	6.23E-03
BCEOT-W26-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	4.63E+02	2.67E+00	NA	NA	NA	NA	5.36E-04	2.34E+02	1.25E-01	1.92E-02	1.09E-01	4.92E-01	1.72E+02	9.55E-01	1.11E+02	4.41E-03
BCEOT-W27-0 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	5.34E+02	3.08E+00	NA	NA	NA	NA	5.36E-04	2.69E+02	1.44E-01	1.92E-02	1.09E-01	5.67E-01	1.72E+02	9.55E-01	1.11E+02	5.09E-03
Outside Tailings Piles																						**Maximum HQ (Edge of Tailings Pile)**	**1.46E-02**
BCEOT-E0+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	4.06E+02	2.34E+00	NA	NA	NA	NA	5.36E-04	2.05E+02	1.10E-01	1.92E-02	1.09E-01	4.31E-01	1.72E+02	9.55E-01	1.11E+02	3.87E-03
BCEOT-E1+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	8.49E+02	4.89E+00	NA	NA	NA	NA	5.36E-04	4.28E+02	2.30E-01	1.92E-02	1.09E-01	9.02E-01	1.72E+02	9.55E-01	1.11E+02	8.09E-03
BCEOT-E2+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	3.47E+02	2.00E+00	NA	NA	NA	NA	5.36E-04	1.75E+02	9.38E-02	1.92E-02	1.09E-01	3.68E-01	1.72E+02	9.55E-01	1.11E+02	3.30E-03
BCEOT-E3+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	2.19E+02	1.26E+00	NA	NA	NA	NA	5.36E-04	1.10E+02	5.91E-02	1.92E-02	1.09E-01	2.32E-01	1.72E+02	9.55E-01	1.11E+02	2.08E-03
BCEOT-E4+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	3.17E+02	1.82E+00	NA	NA	NA	NA	5.36E-04	1.60E+02	8.56E-02	1.92E-02	1.09E-01	3.36E-01	1.72E+02	9.55E-01	1.11E+02	3.02E-03
BCEOT-W4+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	2.89E+02	1.66E+00	NA	NA	NA	NA	5.36E-04	1.46E+02	7.81E-02	1.92E-02	1.09E-01	3.07E-01	1.72E+02	9.55E-01	1.11E+02	2.75E-03
BCEOT-E5+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	8.35E+02	4.81E+00	NA	NA	NA	NA	5.36E-04	4.21E+02	2.26E-01	1.92E-02	1.09E-01	8.87E-01	1.72E+02	9.55E-01	1.11E+02	7.96E-03
BCEOT-W5+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	3.39E+02	1.95E+00	NA	NA	NA	NA	5.36E-04	1.71E+02	9.17E-02	1.92E-02	1.09E-01	3.60E-01	1.72E+02	9.55E-01	1.11E+02	3.23E-03
BCEOT-E6+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	3.02E+02	1.74E+00	NA	NA	NA	NA	5.36E-04	1.52E+02	8.17E-02	1.92E-02	1.09E-01	3.21E-01	1.72E+02	9.55E-01	1.11E+02	2.88E-03
BCEOT-W6+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	1.69E+02	9.76E-01	NA	NA	NA	NA	5.36E-04	8.55E+01	4.58E-02	1.92E-02	1.09E-01	1.80E-01	1.72E+02	9.55E-01	1.11E+02	1.61E-03
BCEOT-E7+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	2.89E+02	1.66E+00	NA	NA	NA	NA	5.36E-04	1.46E+02	7.81E-02	1.92E-02	1.09E-01	3.07E-01	1.72E+02	9.55E-01	1.11E+02	2.75E-03
BCEOT-W7+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	2.44E+02	1.40E+00	NA	NA	NA	NA	5.36E-04	1.23E+02	6.59E-02	1.92E-02	1.09E-01	2.59E-01	1.72E+02	9.55E-01	1.11E+02	2.32E-03
FLWA-101 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	5.62E+02	3.24E+00	NA	NA	NA	NA	5.36E-04	2.84E+02	1.52E-01	1.92E-02	1.09E-01	5.97E-01	1.72E+02	9.55E-01	1.11E+02	5.36E-03
BCEOT-W8+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	3.18E+02	1.83E+00	NA	NA	NA	NA	5.36E-04	1.61E+02	8.60E-02	1.92E-02	1.09E-01	3.38E-01	1.72E+02	9.55E-01	1.11E+02	3.03E-03
BCEOT-E9+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	5.07E+02	2.92E+00	NA	NA	NA	NA	5.36E-04	2.56E+02	1.37E-01	1.92E-02	1.09E-01	5.39E-01	1.72E+02	9.55E-01	1.11E+02	4.83E-03
BCEOT-W9+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	4.65E+02	2.68E+00	NA	NA	NA	NA	5.36E-04	2.35E+02	1.26E-01	1.92E-02	1.09E-01	4.95E-01	1.72E+02	9.55E-01	1.11E+02	4.44E-03
BCEOT-E10+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	3.13E+02	1.81E+00	NA	NA	NA	NA	5.36E-04	1.58E+02	8.48E-02	1.92E-02	1.09E-01	3.33E-01	1.72E+02	9.55E-01	1.11E+02	2.99E-03
BCEOT-W10+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-E11+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	4.07E+02	2.34E+00	NA	NA	NA	NA	5.36E-04	2.05E+02	1.10E-01	1.92E-02	1.09E-01	4.32E-01	1.72E+02	9.55E-01	1.11E+02	3.88E-03
BCEOT-W11+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	1.71E+02	9.86E-01	NA	NA	NA	NA	5.36E-04	8.64E+01	4.63E-02	1.92E-02	1.09E-01	1.82E-01	1.72E+02	9.55E-01	1.11E+02	1.63E-03
BCEOT-E12+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	2.92E+02	1.68E+00	NA	NA	NA	NA	5.36E-04	1.48E+02	7.91E-02	1.92E-02	1.09E-01	3.11E-01	1.72E+02	9.55E-01	1.11E+02	2.79E-03
BCEOT-W12+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	3.38E+02	1.95E+00	NA	NA	NA	NA	5.36E-04	1.71E+02	9.15E-02	1.92E-02	1.09E-01	3.59E-01	1.72E+02	9.55E-01	1.11E+02	3.22E-03
BCEOT-E13+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	3.09E+02	1.78E+00	NA	NA	NA	NA	5.36E-04	1.56E+02	8.35E-02	1.92E-02	1.09E-01	3.28E-01	1.72E+02	9.55E-01	1.11E+02	2.94E-03
BCEOT-E14+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	1.87E+02	1.08E+00	NA	NA	NA	NA	5.36E-04	9.45E+01	5.06E-02	1.92E-02	1.09E-01	1.99E-01	1.72E+02	9.55E-01	1.11E+02	1.78E-03
BCEOT-W14+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	3.41E+02	1.96E+00	NA	NA	NA	NA	5.36E-04	1.72E+02	9.21E-02	1.92E-02	1.09E-01	3.62E-01	1.72E+02	9.55E-01	1.11E+02	3.25E-03
BCEOT-E15+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	5.13E+02	2.96E+00	NA	NA	NA	NA	5.36E-04	2.59E+02	1.39E-01	1.92E-02	1.09E-01	5.45E-01	1.72E+02	9.55E-01	1.11E+02	4.89E-03
BCEOT-W15+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	5.27E+02	3.04E+00	NA	NA	NA	NA	5.36E-04	2.66E+02	1.43E-01	1.92E-02	1.09E-01	5.60E-01	1.72E+02	9.55E-01	1.11E+02	5.03E-03
BCEOT-E16+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	3.93E+02	2.27E+00	NA	NA	NA	NA	5.36E-04	1.99E+02	1.06E-01	1.92E-02	1.09E-01	4.18E-01	1.72E+02	9.55E-01	1.11E+02	3.75E-03
BCEOT-W16+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	3.01E+02	1.74E+00	NA	NA	NA	NA	5.36E-04	1.52E+02	8.15E-02	1.92E-02	1.09E-01	3.20E-01	1.72E+02	9.55E-01	1.11E+02	2.87E-03
BCEOT-E17+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	7.49E+02	4.31E+00	NA	NA	NA	NA	5.36E-04	3.78E+02	2.02E-01	1.92E-02	1.09E-01	7.95E-01	1.72E+02	9.55E-01	1.11E+02	7.14E-03
BCEOT-W17+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	2.46E+02	1.42E+00	NA	NA	NA	NA	5.36E-04	1.24E+02	6.65E-02	1.92E-02	1.09E-01	2.61E-01	1.72E+02	9.55E-01	1.11E+02	2.34E-03
BCEOT-E18+12.5 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	2.70E+04	1.56E+02	NA	NA	NA	NA	5.36E-04	1.36E+04	7.31E+00	1.92E-02	1.09E-01	2.87E+01	1.72E+02	9.55E-01	1.11E+02	2.58E-01
BCEOT-E18+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	5.69E+02	3.28E+00	NA	NA	NA	NA	5.36E-04	2.87E+02	1.54E-01	1.92E-02	1.09E-01	6.05E-01	1.72E+02	9.55E-01	1.11E+02	5.43E-03
BCEOT-W18+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	4.08E+02	2.35E+00	NA	NA	NA	NA	5.36E-04	2.06E+02	1.10E-01	1.92E-02	1.09E-01	4.34E-01	1.72E+02	9.55E-01	1.11E+02	3.89E-03
BCEOT-E19+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	4.96E+02	2.86E+00	NA	NA	NA	NA	5.36E-04	2.50E+02	1.34E-01	1.92E-02	1.09E-01	5.27E-01	1.72E+02	9.55E-01	1.11E+02	4.73E-03
BCEOT-W19+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	2.46E+02	1.42E+00	NA	NA	NA	NA	5.36E-04	1.24E+02	6.66E-02	1.92E-02	1.09E-01	2.62E-01	1.72E+02	9.55E-01	1.11E+02	2.35E-03
BCEOT-E20+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	3.25E+02	1.87E+00	NA	NA	NA	NA	5.36E-04	1.64E+02	8.78E-02	1.92E-02	1.09E-01	3.45E-01	1.72E+02	9.55E-01	1.11E+02	3.10E-03
BCEOT-W20+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	3.92E+02	2.26E+00	NA	NA	NA	NA	5.36E-04	1.98E+02	1.06E-01	1.92E-02	1.09E-01	4.16E-01	1.72E+02	9.55E-01	1.11E+02	3.73E-03
BCEOT-E21+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	3.73E+02	2.15E+00	NA	NA	NA	NA	5.36E-04	1.88E+02	1.01E-01	1.92E-02	1.09E-01	3.97E-01	1.72E+02	9.55E-01	1.11E+02	3.56E-03
BCEOT-W21+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	3.46E+02	1.99E+00	NA	NA	NA	NA	5.36E-04	1.75E+02	9.36E-02	1.92E-02	1.09E-01	3.68E-01	1.72E+02	9.55E-01	1.11E+02	3.30E-03
BCEOT-E22+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	3.99E+02	2.30E+00	NA	NA	NA	NA	5.36E-04	2.01E+02	1.08E-01	1.92E-02	1.09E-01	4.24E-01	1.72E+02	9.55E-01	1.11E+02	3.80E-03
BCEOT-E22+70 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	6.09E+02	3.51E+00	NA	NA	NA	NA	5.36E-04	3.07E+02	1.65E-01	1.92E-02	1.09E-01	6.47E-01	1.72E+02	9.55E-01	1.11E+02	5.81E-03
BCEOT-W22+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	3.17E+02	1.83E+00	NA	NA	NA	NA	5.36E-04	1.60E+02	8.58E-02	1.92E-02	1.09E-01	3.37E-01	1.72E+02	9.55E-01	1.11E+02	3.02E-03
BCEOT-E23+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	2.02E+02	1.17E+00	NA	NA	NA	NA	5.36E-04	1.02E+02	5.47E-02	1.92E-02	1.09E-01	2.15E-01	1.72E+02	9.55E-01	1.11E+02	1.93E-03
BCEOT-W23+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	3.81E+02	2.20E+00	NA	NA	NA	NA	5.36E-04	1.92E+02	1.03E-01	1.92E-02	1.09E-01	4.05E-01	1.72E+02	9.55E-01	1.11E+02	3.63E-03
BCEOT-E24+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-W24+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	6.14E+02	3.54E+00	NA	NA	NA	NA	5.36E-04	3.10E+02	1.66E-01	1.92E-02	1.09E-01	6.52E-01	1.72E+02	9.55E-01	1.11E+02	5.85E-03

TABLE C-11F: ZINC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 11 - BEARTRAP CREEK DISPERSED TAILINGS DEPOSITS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK TAILINGS DEPOSITS AND FLOSSIE LOUISE MINE WASTE PILE (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 4.982

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Mourning Dove (Herbivorous Birds - Terrestrial)																							
BCEOT-E25+20 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	2.15E+02	1.24E+00	NA	NA	NA	NA	5.36E-04	1.09E+02	5.82E-02	1.92E-02	1.09E-01	2.29E-01	1.72E+02	9.55E-01	1.11E+02	2.05E-03
BCEOT-W25+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	5.34E+02	3.08E+00	NA	NA	NA	NA	5.36E-04	2.70E+02	1.45E-01	1.92E-02	1.09E-01	5.68E-01	1.72E+02	9.55E-01	1.11E+02	5.09E-03
BCEOT-E26+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	2.46E+02	1.42E+00	NA	NA	NA	NA	5.36E-04	1.24E+02	6.66E-02	1.92E-02	1.09E-01	2.62E-01	1.72E+02	9.55E-01	1.11E+02	2.35E-03
BCEOT-W26+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	5.58E+02	3.21E+00	NA	NA	NA	NA	5.36E-04	2.81E+02	1.51E-01	1.92E-02	1.09E-01	5.93E-01	1.72E+02	9.55E-01	1.11E+02	5.32E-03
BCEOT-W27+25 (0-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.98E+00	5.21E+02	3.00E+00	NA	NA	NA	NA	5.36E-04	2.63E+02	1.41E-01	1.92E-02	1.09E-01	5.53E-01	1.72E+02	9.55E-01	1.11E+02	4.96E-03
																						Maximum HQ (Outside Tailings Pile)	**2.58E-01**
Red-Tailed Hawk (Carnivorous Birds - Terrestrial)																							
Reference Sites																							
ACBG-1 (0-6")	9.00E-02	9.00E-02	1.03E+01	1.42E+03	1.27E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.37E+02	7.02E-01	7.15E-03	1.13E+00	8.08E-01	1.72E+02	9.55E-01	1.78E+02	4.54E-03
ACBG-2 (0-6")	9.00E-02	9.00E-02	1.03E+01	8.68E+02	7.81E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	8.39E+01	4.30E-01	7.15E-03	1.13E+00	4.95E-01	1.72E+02	9.55E-01	1.78E+02	2.78E-03
BCBG-201 (0-6")	9.00E-02	9.00E-02	1.03E+01	2.50E+03	2.25E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.42E+02	1.24E+00	7.15E-03	1.13E+00	1.43E+00	1.72E+02	9.55E-01	1.78E+02	8.01E-03
Inside Tailings Pile																						**Minimum HQ (Reference Sites)**	**2.78E-03**
BCEOT-E0-12.5 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.15E+03	1.03E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.83E+02	9.37E-01	7.15E-03	1.13E+00	6.58E-01	1.72E+02	9.55E-01	1.78E+02	3.70E-03
BCEOT-E1-12.5 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.73E+03	1.56E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.75E+02	1.41E+00	7.15E-03	1.13E+00	9.92E-01	1.72E+02	9.55E-01	1.78E+02	5.57E-03
BCEOT-E2-8 (0-6")	9.00E-02	9.00E-02	6.30E+00	8.58E+02	7.72E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.36E+02	6.99E-01	7.15E-03	1.13E+00	4.91E-01	1.72E+02	9.55E-01	1.78E+02	2.76E-03
BCEOT-E3-8 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.49E+03	1.34E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.37E+02	1.21E+00	7.15E-03	1.13E+00	8.54E-01	1.72E+02	9.55E-01	1.78E+02	4.80E-03
BCEOT-E4-12.5 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.02E+03	9.18E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.62E+02	8.31E-01	7.15E-03	1.13E+00	5.84E-01	1.72E+02	9.55E-01	1.78E+02	3.28E-03
BCEOT-W4-12.5 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.49E+03	1.34E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.36E+02	1.21E+00	7.15E-03	1.13E+00	8.51E-01	1.72E+02	9.55E-01	1.78E+02	4.78E-03
BCEOT-E5-25 (0-6")	9.00E-02	9.00E-02	6.30E+00	6.02E+02	5.42E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	9.56E+01	4.90E-01	7.15E-03	1.13E+00	3.45E-01	1.72E+02	9.55E-01	1.78E+02	1.94E-03
BCEOT-W5-12.5 (0-6")	9.00E-02	9.00E-02	6.30E+00	7.31E+03	6.57E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.16E+03	5.95E+00	7.15E-03	1.13E+00	4.18E+00	1.72E+02	9.55E-01	1.78E+02	2.35E-02
BCEOT-W6-12.5 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-E7-12.5 (0-6")	9.00E-02	9.00E-02	6.30E+00	7.02E+02	6.31E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.11E+02	5.72E-01	7.15E-03	1.13E+00	4.02E-01	1.72E+02	9.55E-01	1.78E+02	2.26E-03
BCEOT-W7-12.5 (0-6")	9.00E-02	9.00E-02	6.30E+00	8.98E+02	8.08E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.43E+02	7.31E-01	7.15E-03	1.13E+00	5.14E-01	1.72E+02	9.55E-01	1.78E+02	2.89E-03
BCEOT-W8-12.5 (0-6")	9.00E-02	9.00E-02	6.30E+00	2.39E+03	2.15E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.80E+02	1.95E+00	7.15E-03	1.13E+00	1.37E+00	1.72E+02	9.55E-01	1.78E+02	7.69E-03
BCEOT-E9-12.5 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.64E+03	1.48E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.61E+02	1.34E+00	7.15E-03	1.13E+00	9.39E-01	1.72E+02	9.55E-01	1.78E+02	5.28E-03
BCEOT-W9-12.5 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.76E+04	1.59E+03	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.80E+03	1.44E+01	7.15E-03	1.13E+00	1.01E+01	1.72E+02	9.55E-01	1.78E+02	5.67E-02
BCEOT-E10-12.5 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.60E+03	1.44E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.54E+02	1.30E+00	7.15E-03	1.13E+00	9.15E-01	1.72E+02	9.55E-01	1.78E+02	5.14E-03
BCEOT-W10-12.5 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.52E+03	1.36E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.41E+02	1.23E+00	7.15E-03	1.13E+00	8.67E-01	1.72E+02	9.55E-01	1.78E+02	4.87E-03
BCEOT-E11-12.5 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.04E+03	9.37E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.65E+02	8.48E-01	7.15E-03	1.13E+00	5.96E-01	1.72E+02	9.55E-01	1.78E+02	3.35E-03
BCEOT-W11-12.5 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.14E+04	1.03E+03	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.81E+03	9.29E+00	7.15E-03	1.13E+00	6.53E+00	1.72E+02	9.55E-01	1.78E+02	3.67E-02
BCEOT-E12-12.5 (0-6")	9.00E-02	9.00E-02	6.30E+00	7.93E+02	7.13E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.26E+02	6.46E-01	7.15E-03	1.13E+00	4.54E-01	1.72E+02	9.55E-01	1.78E+02	2.55E-03
BCEOT-W12-12.5 (0-6")	9.00E-02	9.00E-02	6.30E+00	6.80E+03	6.12E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.08E+03	5.54E+00	7.15E-03	1.13E+00	3.89E+00	1.72E+02	9.55E-01	1.78E+02	2.19E-02
BCEOT-E13-12.5 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.39E+03	1.25E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.20E+02	1.13E+00	7.15E-03	1.13E+00	7.93E-01	1.72E+02	9.55E-01	1.78E+02	4.45E-03
BCEOT-W13-12.5 (0-6")	9.00E-02	9.00E-02	6.30E+00	3.63E+03	3.27E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.77E+02	2.96E+00	7.15E-03	1.13E+00	2.08E+00	1.72E+02	9.55E-01	1.78E+02	1.17E-02
BCEOT-W13-25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-W14-12.5 (0-6")	9.00E-02	9.00E-02	6.30E+00	2.44E+03	2.20E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.88E+02	1.99E+00	7.15E-03	1.13E+00	1.40E+00	1.72E+02	9.55E-01	1.78E+02	7.85E-03
BCEOT-E15-8 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.43E+03	1.29E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.28E+02	1.17E+00	7.15E-03	1.13E+00	8.20E-01	1.72E+02	9.55E-01	1.78E+02	4.61E-03
BCEOT-W15-12.5 (0-6")	9.00E-02	9.00E-02	6.30E+00	2.47E+03	2.22E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.92E+02	2.01E+00	7.15E-03	1.13E+00	1.41E+00	1.72E+02	9.55E-01	1.78E+02	7.93E-03
BCEOT-E16-12.5 (0-6")	9.00E-02	9.00E-02	6.30E+00	2.43E+04	2.19E+03	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.86E+03	1.98E+01	7.15E-03	1.13E+00	1.39E+01	1.72E+02	9.55E-01	1.78E+02	7.82E-02
BCEOT-W16-12.5 (0-6")	9.00E-02	9.00E-02	6.30E+00	6.72E+03	6.05E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.07E+03	5.48E+00	7.15E-03	1.13E+00	3.85E+00	1.72E+02	9.55E-01	1.78E+02	2.16E-02
BCEOT-E17-12.5 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.02E+05	9.17E+03	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.62E+04	8.30E+01	7.15E-03	1.13E+00	5.83E+01	1.72E+02	9.55E-01	1.78E+02	3.28E-01
BCEOT-W17-12.5 (0-6")	9.00E-02	9.00E-02	6.30E+00	3.18E+03	2.86E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.05E+02	2.59E+00	7.15E-03	1.13E+00	1.82E+00	1.72E+02	9.55E-01	1.78E+02	1.02E-02
BCEOT-W18-12.5 (0-6")	9.00E-02	9.00E-02	6.30E+00	2.44E+03	2.20E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.88E+02	1.99E+00	7.15E-03	1.13E+00	1.40E+00	1.72E+02	9.55E-01	1.78E+02	7.85E-03
BCEOT-E19-12.5 (0-6")	9.00E-02	9.00E-02	6.30E+00	5.88E+03	5.29E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	9.34E+02	4.79E+00	7.15E-03	1.13E+00	3.37E+00	1.72E+02	9.55E-01	1.78E+02	1.89E-02
BCEOT-W19-12.5 (0-6")	9.00E-02	9.00E-02	6.30E+00	2.14E+03	1.93E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.40E+02	1.74E+00	7.15E-03	1.13E+00	1.22E+00	1.72E+02	9.55E-01	1.78E+02	6.88E-03
BCEOT-E20-12.5 (0-6")	9.00E-02	9.00E-02	6.30E+00	3.60E+03	3.24E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.72E+02	2.93E+00	7.15E-03	1.13E+00	2.06E+00	1.72E+02	9.55E-01	1.78E+02	1.16E-02
BCEOT-W20-12.5 (0-6")	9.00E-02	9.00E-02	6.30E+00	2.28E+04	2.05E+03	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.63E+03	1.86E+01	7.15E-03	1.13E+00	1.31E+01	1.72E+02	9.55E-01	1.78E+02	7.34E-02
BCEOT-E21-12.5 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.57E+03	1.41E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.49E+02	1.28E+00	7.15E-03	1.13E+00	8.97E-01	1.72E+02	9.55E-01	1.78E+02	5.04E-03
BCEOT-W21-12.5 (0-6")	9.00E-02	9.00E-02	6.30E+00	2.18E+03	1.96E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.46E+02	1.77E+00	7.15E-03	1.13E+00	1.25E+00	1.72E+02	9.55E-01	1.78E+02	7.00E-03
BCEOT-E22-12.5 (0-6")	9.00E-02	9.00E-02	6.30E+00	7.80E+03	7.01E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.24E+03	6.35E+00	7.15E-03	1.13E+00	4.46E+00	1.72E+02	9.55E-01	1.78E+02	2.51E-02
BCEOT-W22-12.5 (0-6")	9.00E-02	9.00E-02	6.30E+00	9.20E+04	8.27E+03	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.46E+04	7.49E+01	7.15E-03	1.13E+00	5.26E+01	1.72E+02	9.55E-01	1.78E+02	2.96E-01

TABLE C-11F: ZINC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 11 - BEARTRAP CREEK DISPERSED TAILINGS DEPOSITS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK TAILINGS DEPOSITS AND FLOSSIE LOUISE MINE WASTE PILE (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **4.982**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Red-Tailed Hawk (Carnivorous Birds - Terrestrial)																							
BCEOT-E23-15 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.72E+03	1.54E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.73E+02	1.40E+00	7.15E-03	1.13E+00	9.83E-01	1.72E+02	9.55E-01	1.78E+02	5.52E-03
BCEOT-W23-12.5 (0-6")	9.00E-02	9.00E-02	6.30E+00	2.31E+04	2.08E+03	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.67E+03	1.88E+01	7.15E-03	1.13E+00	1.32E+01	1.72E+02	9.55E-01	1.78E+02	7.42E-02
BCEOT-E24-12.5 (0-6")	9.00E-02	9.00E-02	6.30E+00	6.73E+02	6.05E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.07E+02	5.48E-01	7.15E-03	1.13E+00	3.85E-01	1.72E+02	9.55E-01	1.78E+02	2.16E-03
BCEOT-W24-12.5 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.77E+04	1.59E+03	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.81E+03	1.44E+01	7.15E-03	1.13E+00	1.01E+01	1.72E+02	9.55E-01	1.78E+02	5.69E-02
BCEOT-E25-12.5 (0-6")	9.00E-02	9.00E-02	6.30E+00	3.57E+03	3.21E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.67E+02	2.91E+00	7.15E-03	1.13E+00	2.04E+00	1.72E+02	9.55E-01	1.78E+02	1.15E-02
BCEOT-W25-12.5 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.21E+04	1.09E+03	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.92E+03	9.86E+00	7.15E-03	1.13E+00	6.93E+00	1.72E+02	9.55E-01	1.78E+02	3.89E-02
BCEOT-E26-12.5 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.25E+03	1.12E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.99E+02	1.02E+00	7.15E-03	1.13E+00	7.16E-01	1.72E+02	9.55E-01	1.78E+02	4.02E-03
BCEOT-W26-12.5 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.95E+03	1.75E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.09E+02	1.58E+00	7.15E-03	1.13E+00	1.11E+00	1.72E+02	9.55E-01	1.78E+02	6.26E-03
BCEOT-W27-12.5 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.09E+04	9.83E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.74E+03	8.90E+00	7.15E-03	1.13E+00	6.25E+00	1.72E+02	9.55E-01	1.78E+02	3.51E-02
At Edge of Tailings Pile																						**Maximum HQ (Inside Tailings Pile)**	**3.28E-01**
BCEOT-E0-0 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.72E+03	1.55E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.73E+02	1.40E+00	7.15E-03	1.13E+00	9.83E-01	1.72E+02	9.55E-01	1.78E+02	5.53E-03
BCEOT-E1-0 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.17E+03	1.05E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.85E+02	9.50E-01	7.15E-03	1.13E+00	6.68E-01	1.72E+02	9.55E-01	1.78E+02	3.75E-03
BCEOT-E2-0 (0-6")	9.00E-02	9.00E-02	6.30E+00	3.21E+03	2.88E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.09E+02	2.61E+00	7.15E-03	1.13E+00	1.84E+00	1.72E+02	9.55E-01	1.78E+02	1.03E-02
BCEOT-E3-0 (0-6")	9.00E-02	9.00E-02	6.30E+00	7.82E+02	7.03E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.24E+02	6.36E-01	7.15E-03	1.13E+00	4.47E-01	1.72E+02	9.55E-01	1.78E+02	2.51E-03
BCEOT-E4-0 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.11E+03	9.98E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.76E+02	9.03E-01	7.15E-03	1.13E+00	6.35E-01	1.72E+02	9.55E-01	1.78E+02	3.57E-03
BCEOT-W4-0 (0-6")	9.00E-02	9.00E-02	6.30E+00	5.57E+02	5.01E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	8.85E+01	4.54E-01	7.15E-03	1.13E+00	3.19E-01	1.72E+02	9.55E-01	1.78E+02	1.79E-03
BCEOT-E5-0 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.49E+03	1.34E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.37E+02	1.22E+00	7.15E-03	1.13E+00	8.54E-01	1.72E+02	9.55E-01	1.78E+02	4.80E-03
BCEOT-W5-0 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.21E+03	1.09E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.93E+02	9.89E-01	7.15E-03	1.13E+00	6.95E-01	1.72E+02	9.55E-01	1.78E+02	3.90E-03
BCEOT-E6-0 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.07E+03	9.60E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.69E+02	8.69E-01	7.15E-03	1.13E+00	6.11E-01	1.72E+02	9.55E-01	1.78E+02	3.43E-03
BCEOT-W6-0 (0-6")	9.00E-02	9.00E-02	6.30E+00	6.85E+02	6.16E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.09E+02	5.58E-01	7.15E-03	1.13E+00	3.92E-01	1.72E+02	9.55E-01	1.78E+02	2.20E-03
BCEOT-E7-0 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.07E+03	9.59E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.69E+02	8.69E-01	7.15E-03	1.13E+00	6.10E-01	1.72E+02	9.55E-01	1.78E+02	3.43E-03
BCEOT-W7-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-W8-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-E9-0 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.43E+03	1.28E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.27E+02	1.16E+00	7.15E-03	1.13E+00	8.17E-01	1.72E+02	9.55E-01	1.78E+02	4.59E-03
BCEOT-W9-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-E10-0 (0-6")	9.00E-02	9.00E-02	6.30E+00	2.03E+03	1.82E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.22E+02	1.65E+00	7.15E-03	1.13E+00	1.16E+00	1.72E+02	9.55E-01	1.78E+02	6.52E-03
BCEOT-W10-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-E11-0 (0-6")	9.00E-02	9.00E-02	6.30E+00	9.08E+02	8.16E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.44E+02	7.39E-01	7.15E-03	1.13E+00	5.19E-01	1.72E+02	9.55E-01	1.78E+02	2.92E-03
BCEOT-W11-0 (0-6")	9.00E-02	9.00E-02	6.30E+00	2.03E+03	1.83E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.23E+02	1.65E+00	7.15E-03	1.13E+00	1.16E+00	1.72E+02	9.55E-01	1.78E+02	6.53E-03
BCEOT-E12-0 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.02E+03	9.14E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.61E+02	8.28E-01	7.15E-03	1.13E+00	5.82E-01	1.72E+02	9.55E-01	1.78E+02	3.27E-03
BCEOT-W12-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-E13-0 (0-6")	9.00E-02	9.00E-02	6.30E+00	8.49E+02	7.64E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.35E+02	6.92E-01	7.15E-03	1.13E+00	4.86E-01	1.72E+02	9.55E-01	1.78E+02	2.73E-03
BCEOT-W13-0 (0-6")	9.00E-02	9.00E-02	6.30E+00	9.68E+02	8.71E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.54E+02	7.88E-01	7.15E-03	1.13E+00	5.54E-01	1.72E+02	9.55E-01	1.78E+02	3.11E-03
BCEOT-E14-0 (0-6")	9.00E-02	9.00E-02	6.30E+00	7.77E+02	6.99E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.23E+02	6.33E-01	7.15E-03	1.13E+00	4.45E-01	1.72E+02	9.55E-01	1.78E+02	2.50E-03
BCEOT-W14-0 (0-6")	9.00E-02	9.00E-02	6.30E+00	4.63E+03	4.17E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	7.35E+02	3.77E+00	7.15E-03	1.13E+00	2.65E+00	1.72E+02	9.55E-01	1.78E+02	1.49E-02
BCEOT-E15-0 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.65E+03	1.49E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.63E+02	1.35E+00	7.15E-03	1.13E+00	9.47E-01	1.72E+02	9.55E-01	1.78E+02	5.32E-03
BCEOT-W15-0 (0-6")	9.00E-02	9.00E-02	6.30E+00	4.86E+03	4.37E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	7.72E+02	3.96E+00	7.15E-03	1.13E+00	2.78E+00	1.72E+02	9.55E-01	1.78E+02	1.56E-02
BCEOT-E16-0 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.15E+03	1.03E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.83E+02	9.36E-01	7.15E-03	1.13E+00	6.58E-01	1.72E+02	9.55E-01	1.78E+02	3.70E-03
BCEOT-W16-0 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.38E+03	1.24E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.20E+02	1.13E+00	7.15E-03	1.13E+00	7.91E-01	1.72E+02	9.55E-01	1.78E+02	4.44E-03
BCEOT-E17-0 (0-6")	9.00E-02	9.00E-02	6.30E+00	4.06E+03	3.65E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	6.44E+02	3.30E+00	7.15E-03	1.13E+00	2.32E+00	1.72E+02	9.55E-01	1.78E+02	1.30E-02
BCEOT-W17-0 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.45E+03	1.31E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.31E+02	1.18E+00	7.15E-03	1.13E+00	8.32E-01	1.72E+02	9.55E-01	1.78E+02	4.67E-03
BCEOT-E18-0 (0-6")	9.00E-02	9.00E-02	6.30E+00	2.39E+03	2.15E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.80E+02	1.95E+00	7.15E-03	1.13E+00	1.37E+00	1.72E+02	9.55E-01	1.78E+02	7.69E-03
BCEOT-W18-0 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.72E+03	1.55E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.73E+02	1.40E+00	7.15E-03	1.13E+00	9.84E-01	1.72E+02	9.55E-01	1.78E+02	5.53E-03
BCEOT-E19-0 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.67E+03	1.50E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.65E+02	1.36E+00	7.15E-03	1.13E+00	9.55E-01	1.72E+02	9.55E-01	1.78E+02	5.37E-03
BCEOT-W19-0 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.88E+03	1.69E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.98E+02	1.53E+00	7.15E-03	1.13E+00	1.07E+00	1.72E+02	9.55E-01	1.78E+02	6.04E-03
BCEOT-E20-0 (0-6")	9.00E-02	9.00E-02	6.30E+00	8.33E+02	7.50E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.32E+02	6.79E-01	7.15E-03	1.13E+00	4.77E-01	1.72E+02	9.55E-01	1.78E+02	2.68E-03
BCEOT-W20-0 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.71E+03	1.54E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.71E+02	1.39E+00	7.15E-03	1.13E+00	9.77E-01	1.72E+02	9.55E-01	1.78E+02	5.49E-03
BCEOT-E21-0 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.68E+03	1.51E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.67E+02	1.37E+00	7.15E-03	1.13E+00	9.63E-01	1.72E+02	9.55E-01	1.78E+02	5.41E-03
BCEOT-W21-0 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.94E+03	1.75E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.09E+02	1.58E+00	7.15E-03	1.13E+00	1.11E+00	1.72E+02	9.55E-01	1.78E+02	6.25E-03
BCEOT-E22-0 (0-6")	9.00E-02	9.00E-02	6.30E+00	7.85E+02	7.06E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.25E+02	6.39E-01	7.15E-03	1.13E+00	4.49E-01	1.72E+02	9.55E-01	1.78E+02	2.52E-03
BCEOT-W22-0 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.52E+03	1.36E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.41E+02	1.24E+00	7.15E-03	1.13E+00	8.68E-01	1.72E+02	9.55E-01	1.78E+02	4.88E-03
BCEOT-E23-0 (0-6")	9.00E-02	9.00E-02	6.30E+00	5.68E+02	5.11E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	9.02E+01	4.62E-01	7.15E-03	1.13E+00	3.25E-01	1.72E+02	9.55E-01	1.78E+02	1.83E-03

TABLE C-11F: ZINC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 11 - BEARTRAP CREEK DISPERSED TAILINGS DEPOSITS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK TAILINGS DEPOSITS AND FLOSSIE LOUISE MINE WASTE PILE (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 4.982

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Red-Tailed Hawk (Carnivorous Birds - Terrestrial)																							
BCEOT-W23-0 (0-6")	9.00E-02	9.00E-02	6.30E+00	2.54E+03	2.29E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.04E+02	2.07E+00	7.15E-03	1.13E+00	1.46E+00	1.72E+02	9.55E-01	1.78E+02	8.18E-03
BCEOT-E24-0 (0-6")	9.00E-02	9.00E-02	6.30E+00	9.21E+02	8.29E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.46E+02	7.50E-01	7.15E-03	1.13E+00	5.27E-01	1.72E+02	9.55E-01	1.78E+02	2.96E-03
BCEOT-W24-0 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.56E+03	1.40E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.47E+02	1.27E+00	7.15E-03	1.13E+00	8.91E-01	1.72E+02	9.55E-01	1.78E+02	5.01E-03
BCEOT-E25-0 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.08E+03	9.73E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.72E+02	8.81E-01	7.15E-03	1.13E+00	6.19E-01	1.72E+02	9.55E-01	1.78E+02	3.48E-03
BCEOT-W25-0 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.79E+03	1.61E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.84E+02	1.45E+00	7.15E-03	1.13E+00	1.02E+00	1.72E+02	9.55E-01	1.78E+02	5.74E-03
BCEOT-E26-0 (0-6")	9.00E-02	9.00E-02	6.30E+00	2.08E+03	1.87E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.30E+02	1.69E+00	7.15E-03	1.13E+00	1.19E+00	1.72E+02	9.55E-01	1.78E+02	6.67E-03
BCEOT-W26-0 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.47E+03	1.32E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.34E+02	1.20E+00	7.15E-03	1.13E+00	8.42E-01	1.72E+02	9.55E-01	1.78E+02	4.73E-03
BCEOT-W27-0 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.70E+03	1.53E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.69E+02	1.38E+00	7.15E-03	1.13E+00	9.71E-01	1.72E+02	9.55E-01	1.78E+02	5.46E-03
Outside Tailings Piles																						**Maximum HQ (Edge of Tailings Pile)**	**1.56E-02**
BCEOT-E0+25 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.29E+03	1.16E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.05E+02	1.05E+00	7.15E-03	1.13E+00	7.38E-01	1.72E+02	9.55E-01	1.78E+02	4.14E-03
BCEOT-E1+25 (0-6")	9.00E-02	9.00E-02	6.30E+00	2.70E+03	2.43E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.28E+02	2.20E+00	7.15E-03	1.13E+00	1.54E+00	1.72E+02	9.55E-01	1.78E+02	8.67E-03
BCEOT-E2+25 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.10E+03	9.91E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.75E+02	8.97E-01	7.15E-03	1.13E+00	6.31E-01	1.72E+02	9.55E-01	1.78E+02	3.54E-03
BCEOT-E3+25 (0-6")	9.00E-02	9.00E-02	6.30E+00	6.95E+02	6.25E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.10E+02	5.66E-01	7.15E-03	1.13E+00	3.98E-01	1.72E+02	9.55E-01	1.78E+02	2.23E-03
BCEOT-E4+25 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.01E+03	9.05E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.60E+02	8.19E-01	7.15E-03	1.13E+00	5.76E-01	1.72E+02	9.55E-01	1.78E+02	3.23E-03
BCEOT-W4+25 (0-6")	9.00E-02	9.00E-02	6.30E+00	9.18E+02	8.25E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.46E+02	7.47E-01	7.15E-03	1.13E+00	5.25E-01	1.72E+02	9.55E-01	1.78E+02	2.95E-03
BCEOT-E5+25 (0-6")	9.00E-02	9.00E-02	6.30E+00	2.65E+03	2.39E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.21E+02	2.16E+00	7.15E-03	1.13E+00	1.52E+00	1.72E+02	9.55E-01	1.78E+02	8.53E-03
BCEOT-W5+25 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.08E+03	9.70E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.71E+02	8.78E-01	7.15E-03	1.13E+00	6.17E-01	1.72E+02	9.55E-01	1.78E+02	3.47E-03
BCEOT-E6+25 (0-6")	9.00E-02	9.00E-02	6.30E+00	9.60E+02	8.64E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.52E+02	7.82E-01	7.15E-03	1.13E+00	5.49E-01	1.72E+02	9.55E-01	1.78E+02	3.09E-03
BCEOT-W6+25 (0-6")	9.00E-02	9.00E-02	6.30E+00	5.38E+02	4.84E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	8.55E+01	4.38E-01	7.15E-03	1.13E+00	3.08E-01	1.72E+02	9.55E-01	1.78E+02	1.73E-03
BCEOT-E7+25 (0-6")	9.00E-02	9.00E-02	6.30E+00	9.17E+02	8.25E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.46E+02	7.47E-01	7.15E-03	1.13E+00	5.25E-01	1.72E+02	9.55E-01	1.78E+02	2.95E-03
BCEOT-W7+25 (0-6")	9.00E-02	9.00E-02	6.30E+00	7.75E+02	6.97E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.23E+02	6.31E-01	7.15E-03	1.13E+00	4.43E-01	1.72E+02	9.55E-01	1.78E+02	2.49E-03
BCEOT-W8+25 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.01E+03	9.09E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.61E+02	8.23E-01	7.15E-03	1.13E+00	5.79E-01	1.72E+02	9.55E-01	1.78E+02	3.25E-03
BCEOT-E9+25 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.61E+03	1.45E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.56E+02	1.31E+00	7.15E-03	1.13E+00	9.22E-01	1.72E+02	9.55E-01	1.78E+02	5.18E-03
BCEOT-W9+25 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.48E+03	1.33E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.35E+02	1.20E+00	7.15E-03	1.13E+00	8.46E-01	1.72E+02	9.55E-01	1.78E+02	4.75E-03
BCEOT-E10+25 (0-6")	9.00E-02	9.00E-02	6.30E+00	9.96E+02	8.96E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.58E+02	8.11E-01	7.15E-03	1.13E+00	5.70E-01	1.72E+02	9.55E-01	1.78E+02	3.20E-03
BCEOT-W10+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-E11+25 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.29E+03	1.16E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.05E+02	1.05E+00	7.15E-03	1.13E+00	7.40E-01	1.72E+02	9.55E-01	1.78E+02	4.16E-03
BCEOT-W11+25 (0-6")	9.00E-02	9.00E-02	6.30E+00	5.44E+02	4.89E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	8.64E+01	4.43E-01	7.15E-03	1.13E+00	3.11E-01	1.72E+02	9.55E-01	1.78E+02	1.75E-03
BCEOT-E12+25 (0-6")	9.00E-02	9.00E-02	6.30E+00	9.29E+02	8.36E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.48E+02	7.57E-01	7.15E-03	1.13E+00	5.32E-01	1.72E+02	9.55E-01	1.78E+02	2.99E-03
BCEOT-W12+25 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.07E+03	9.67E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.71E+02	8.75E-01	7.15E-03	1.13E+00	6.15E-01	1.72E+02	9.55E-01	1.78E+02	3.46E-03
BCEOT-E13+25 (0-6")	9.00E-02	9.00E-02	6.30E+00	9.81E+02	8.83E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.56E+02	7.99E-01	7.15E-03	1.13E+00	5.62E-01	1.72E+02	9.55E-01	1.78E+02	3.16E-03
BCEOT-E14+25 (0-6")	9.00E-02	9.00E-02	6.30E+00	5.95E+02	5.35E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	9.45E+01	4.84E-01	7.15E-03	1.13E+00	3.40E-01	1.72E+02	9.55E-01	1.78E+02	1.91E-03
BCEOT-W14+25 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.08E+03	9.74E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.72E+02	8.81E-01	7.15E-03	1.13E+00	6.19E-01	1.72E+02	9.55E-01	1.78E+02	3.48E-03
BCEOT-E15+25 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.63E+03	1.47E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.59E+02	1.33E+00	7.15E-03	1.13E+00	9.33E-01	1.72E+02	9.55E-01	1.78E+02	5.24E-03
BCEOT-W15+25 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.68E+03	1.51E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.66E+02	1.36E+00	7.15E-03	1.13E+00	9.59E-01	1.72E+02	9.55E-01	1.78E+02	5.39E-03
BCEOT-E16+25 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.25E+03	1.12E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.99E+02	1.02E+00	7.15E-03	1.13E+00	7.15E-01	1.72E+02	9.55E-01	1.78E+02	4.02E-03
BCEOT-W16+25 (0-6")	9.00E-02	9.00E-02	6.30E+00	9.57E+02	8.61E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.52E+02	7.80E-01	7.15E-03	1.13E+00	5.48E-01	1.72E+02	9.55E-01	1.78E+02	3.08E-03
BCEOT-E17+25 (0-6")	9.00E-02	9.00E-02	6.30E+00	2.38E+03	2.14E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.78E+02	1.94E+00	7.15E-03	1.13E+00	1.36E+00	1.72E+02	9.55E-01	1.78E+02	7.65E-03
BCEOT-W17+25 (0-6")	9.00E-02	9.00E-02	6.30E+00	7.81E+02	7.03E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.24E+02	6.36E-01	7.15E-03	1.13E+00	4.47E-01	1.72E+02	9.55E-01	1.78E+02	2.51E-03
BCEOT-E18+12.5 (0-6")	9.00E-02	9.00E-02	6.30E+00	8.59E+04	7.73E+03	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.36E+04	7.00E+01	7.15E-03	1.13E+00	4.92E+01	1.72E+02	9.55E-01	1.78E+02	2.76E-01
BCEOT-E18+25 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.81E+03	1.63E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.87E+02	1.47E+00	7.15E-03	1.13E+00	1.04E+00	1.72E+02	9.55E-01	1.78E+02	5.82E-03
BCEOT-W18+25 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.30E+03	1.17E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.06E+02	1.06E+00	7.15E-03	1.13E+00	7.42E-01	1.72E+02	9.55E-01	1.78E+02	4.17E-03
BCEOT-E19+25 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.58E+03	1.42E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.50E+02	1.28E+00	7.15E-03	1.13E+00	9.03E-01	1.72E+02	9.55E-01	1.78E+02	5.07E-03
BCEOT-W19+25 (0-6")	9.00E-02	9.00E-02	6.30E+00	7.83E+02	7.04E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.24E+02	6.38E-01	7.15E-03	1.13E+00	4.48E-01	1.72E+02	9.55E-01	1.78E+02	2.52E-03
BCEOT-E20+25 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.03E+03	9.28E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.64E+02	8.41E-01	7.15E-03	1.13E+00	5.91E-01	1.72E+02	9.55E-01	1.78E+02	3.32E-03
BCEOT-W20+25 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.24E+03	1.12E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.98E+02	1.01E+00	7.15E-03	1.13E+00	7.12E-01	1.72E+02	9.55E-01	1.78E+02	4.00E-03
BCEOT-E21+25 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.19E+03	1.07E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.88E+02	9.66E-01	7.15E-03	1.13E+00	6.79E-01	1.72E+02	9.55E-01	1.78E+02	3.81E-03
BCEOT-W21+25 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.10E+03	9.89E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.75E+02	8.96E-01	7.15E-03	1.13E+00	6.29E-01	1.72E+02	9.55E-01	1.78E+02	3.54E-03
BCEOT-E22+25 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.27E+03	1.14E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.01E+02	1.03E+00	7.15E-03	1.13E+00	7.26E-01	1.72E+02	9.55E-01	1.78E+02	4.08E-03
BCEOT-E22+70 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.94E+03	1.74E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.07E+02	1.58E+00	7.15E-03	1.13E+00	1.11E+00	1.72E+02	9.55E-01	1.78E+02	6.22E-03
BCEOT-W22+25 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.01E+03	9.07E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.60E+02	8.21E-01	7.15E-03	1.13E+00	5.77E-01	1.72E+02	9.55E-01	1.78E+02	3.24E-03
FLWA-101 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.79E+03	1.61E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.84E+02	1.45E+00	7.15E-03	1.13E+00	1.02E+00	1.72E+02	9.55E-01	1.78E+02	5.74E-03

TABLE C-11F: ZINC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 11 - BEARTRAP CREEK DISPERSED TAILINGS DEPOSITS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK TAILINGS DEPOSITS AND FLOSSIE LOUISE MINE WASTE PILE (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 4.982

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Red-Tailed Hawk (Carnivorous Birds - Terrestrial)																							
BCEOT-E23+25 (0-6")	9.00E-02	9.00E-02	6.30E+00	6.43E+02	5.79E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.02E+02	5.24E-01	7.15E-03	1.13E+00	3.68E-01	1.72E+02	9.55E-01	1.78E+02	2.07E-03
BCEOT-W23+25 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.21E+03	1.09E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.92E+02	9.86E-01	7.15E-03	1.13E+00	6.93E-01	1.72E+02	9.55E-01	1.78E+02	3.89E-03
BCEOT-E24+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-W24+25 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.95E+03	1.76E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.10E+02	1.59E+00	7.15E-03	1.13E+00	1.12E+00	1.72E+02	9.55E-01	1.78E+02	6.27E-03
BCEOT-E25+20 (0-6")	9.00E-02	9.00E-02	6.30E+00	6.84E+02	6.15E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.09E+02	5.57E-01	7.15E-03	1.13E+00	3.91E-01	1.72E+02	9.55E-01	1.78E+02	2.20E-03
BCEOT-W25+25 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.70E+03	1.53E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.70E+02	1.38E+00	7.15E-03	1.13E+00	9.72E-01	1.72E+02	9.55E-01	1.78E+02	5.46E-03
BCEOT-E26+25 (0-6")	9.00E-02	9.00E-02	6.30E+00	7.83E+02	7.04E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.24E+02	6.37E-01	7.15E-03	1.13E+00	4.48E-01	1.72E+02	9.55E-01	1.78E+02	2.52E-03
BCEOT-W26+25 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.77E+03	1.59E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.81E+02	1.44E+00	7.15E-03	1.13E+00	1.01E+00	1.72E+02	9.55E-01	1.78E+02	5.70E-03
BCEOT-W27+25 (0-6")	9.00E-02	9.00E-02	6.30E+00	1.65E+03	1.49E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.63E+02	1.35E+00	7.15E-03	1.13E+00	9.47E-01	1.72E+02	9.55E-01	1.78E+02	5.32E-03
																						Maximum HQ (Outside Tailings Pile)	**2.76E-01**
American Kestrel (Insectivorous Birds - Terrestrial)																							
Reference Sites																							
ACBG-1 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	8.31E+00	1.14E+03	1.57E+01	7.84E-04	1.37E+02	1.07E-01	1.90E-02	1.24E-01	2.42E+00	1.72E+02	9.55E-01	1.14E+02	2.12E-02
ACBG-2 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	8.31E+00	6.98E+02	9.60E+00	7.84E-04	8.39E+01	6.58E-02	1.90E-02	1.24E-01	1.48E+00	1.72E+02	9.55E-01	1.14E+02	1.30E-02
BCBG-201 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	8.31E+00	2.01E+03	2.76E+01	7.84E-04	2.42E+02	1.90E-01	1.90E-02	1.24E-01	4.27E+00	1.72E+02	9.55E-01	1.14E+02	3.74E-02
Inside Tailings Pile																						**Minimum HQ (Reference Sites)**	**1.30E-02**
BCEOT-E0-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	8.00E+02	1.10E+01	7.84E-04	1.83E+02	1.43E-01	1.90E-02	1.24E-01	1.71E+00	1.72E+02	9.55E-01	1.14E+02	1.50E-02
BCEOT-E1-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	1.21E+03	1.66E+01	7.84E-04	2.75E+02	2.16E-01	1.90E-02	1.24E-01	2.58E+00	1.72E+02	9.55E-01	1.14E+02	2.26E-02
BCEOT-E2-8 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	5.97E+02	8.21E+00	7.84E-04	1.36E+02	1.07E-01	1.90E-02	1.24E-01	1.28E+00	1.72E+02	9.55E-01	1.14E+02	1.12E-02
BCEOT-E3-8 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	1.04E+03	1.43E+01	7.84E-04	2.37E+02	1.86E-01	1.90E-02	1.24E-01	2.22E+00	1.72E+02	9.55E-01	1.14E+02	1.94E-02
BCEOT-E4-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	7.10E+02	9.77E+00	7.84E-04	1.62E+02	1.27E-01	1.90E-02	1.24E-01	1.52E+00	1.72E+02	9.55E-01	1.14E+02	1.33E-02
BCEOT-E5-25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	4.19E+02	5.76E+00	7.84E-04	9.56E+01	7.50E-02	1.90E-02	1.24E-01	8.96E-01	1.72E+02	9.55E-01	1.14E+02	7.84E-03
BCEOT-W5-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	5.08E+03	7.00E+01	7.84E-04	1.16E+03	9.11E-01	1.90E-02	1.24E-01	1.09E+01	1.72E+02	9.55E-01	1.14E+02	9.52E-02
BCEOT-E6-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	8.44E+02	1.16E+01	7.84E-04	1.93E+02	1.51E-01	1.90E-02	1.24E-01	1.81E+00	1.72E+02	9.55E-01	1.14E+02	1.58E-02
BCEOT-W6-12.5 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-E7-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	4.88E+02	6.72E+00	7.84E-04	1.11E+02	8.74E-02	1.90E-02	1.24E-01	1.04E+00	1.72E+02	9.55E-01	1.14E+02	9.14E-03
BCEOT-W7-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	6.24E+02	8.59E+00	7.84E-04	1.43E+02	1.12E-01	1.90E-02	1.24E-01	1.34E+00	1.72E+02	9.55E-01	1.14E+02	1.17E-02
BCEOT-W8-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	1.66E+03	2.29E+01	7.84E-04	3.80E+02	2.98E-01	1.90E-02	1.24E-01	3.56E+00	1.72E+02	9.55E-01	1.14E+02	3.11E-02
BCEOT-E9-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	1.14E+03	1.57E+01	7.84E-04	2.61E+02	2.04E-01	1.90E-02	1.24E-01	2.44E+00	1.72E+02	9.55E-01	1.14E+02	2.14E-02
BCEOT-W9-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	1.23E+04	1.69E+02	7.84E-04	2.80E+03	2.20E+00	1.90E-02	1.24E-01	2.63E+01	1.72E+02	9.55E-01	1.14E+02	2.30E-01
BCEOT-E10-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	1.11E+03	1.53E+01	7.84E-04	2.54E+02	1.99E-01	1.90E-02	1.24E-01	2.38E+00	1.72E+02	9.55E-01	1.14E+02	2.08E-02
BCEOT-W10-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	1.05E+03	1.45E+01	7.84E-04	2.41E+02	1.89E-01	1.90E-02	1.24E-01	2.26E+00	1.72E+02	9.55E-01	1.14E+02	1.97E-02
BCEOT-E11-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	7.24E+02	9.97E+00	7.84E-04	1.65E+02	1.30E-01	1.90E-02	1.24E-01	1.55E+00	1.72E+02	9.55E-01	1.14E+02	1.36E-02
BCEOT-W11-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	7.93E+03	1.09E+02	7.84E-04	1.81E+03	1.42E+00	1.90E-02	1.24E-01	1.70E+01	1.72E+02	9.55E-01	1.14E+02	1.48E-01
BCEOT-E12-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	5.51E+02	7.59E+00	7.84E-04	1.26E+02	9.87E-02	1.90E-02	1.24E-01	1.18E+00	1.72E+02	9.55E-01	1.14E+02	1.03E-02
BCEOT-W12-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	4.73E+03	6.51E+01	7.84E-04	1.08E+03	8.47E-01	1.90E-02	1.24E-01	1.01E+01	1.72E+02	9.55E-01	1.14E+02	8.86E-02
BCEOT-E13-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	9.64E+02	1.33E+01	7.84E-04	2.20E+02	1.73E-01	1.90E-02	1.24E-01	2.06E+00	1.72E+02	9.55E-01	1.14E+02	1.80E-02
BCEOT-W13-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	2.52E+03	3.47E+01	7.84E-04	5.77E+02	4.52E-01	1.90E-02	1.24E-01	5.40E+00	1.72E+02	9.55E-01	1.14E+02	4.73E-02
BCEOT-W13-25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-W14-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	1.70E+03	2.34E+01	7.84E-04	3.88E+02	3.04E-01	1.90E-02	1.24E-01	3.64E+00	1.72E+02	9.55E-01	1.14E+02	3.18E-02
BCEOT-E15-8 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	9.97E+02	1.37E+01	7.84E-04	2.28E+02	1.79E-01	1.90E-02	1.24E-01	2.13E+00	1.72E+02	9.55E-01	1.14E+02	1.87E-02
BCEOT-W15-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	1.72E+03	2.36E+01	7.84E-04	3.92E+02	3.07E-01	1.90E-02	1.24E-01	3.67E+00	1.72E+02	9.55E-01	1.14E+02	3.21E-02
BCEOT-E16-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	1.69E+04	2.33E+02	7.84E-04	3.86E+03	3.03E+00	1.90E-02	1.24E-01	3.62E+01	1.72E+02	9.55E-01	1.14E+02	3.17E-01
BCEOT-W16-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	4.68E+03	6.44E+01	7.84E-04	1.07E+03	8.38E-01	1.90E-02	1.24E-01	1.00E+01	1.72E+02	9.55E-01	1.14E+02	8.75E-02
BCEOT-E17-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	7.09E+04	9.75E+02	7.84E-04	1.62E+04	1.27E+01	1.90E-02	1.24E-01	1.52E+02	1.72E+02	9.55E-01	1.14E+02	1.33E+00
BCEOT-W17-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	2.21E+03	3.04E+01	7.84E-04	5.05E+02	3.96E-01	1.90E-02	1.24E-01	4.73E+00	1.72E+02	9.55E-01	1.14E+02	4.14E-02
BCEOT-W18-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	1.70E+03	2.34E+01	7.84E-04	3.88E+02	3.04E-01	1.90E-02	1.24E-01	3.64E+00	1.72E+02	9.55E-01	1.14E+02	3.18E-02
BCEOT-E19-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	4.09E+03	5.63E+01	7.84E-04	9.34E+02	7.33E-01	1.90E-02	1.24E-01	8.76E+00	1.72E+02	9.55E-01	1.14E+02	7.66E-02
BCEOT-W19-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	1.49E+03	2.05E+01	7.84E-04	3.40E+02	2.67E-01	1.90E-02	1.24E-01	3.19E+00	1.72E+02	9.55E-01	1.14E+02	2.79E-02
BCEOT-E20-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	2.50E+03	3.45E+01	7.84E-04	5.72E+02	4.49E-01	1.90E-02	1.24E-01	5.36E+00	1.72E+02	9.55E-01	1.14E+02	4.69E-02
BCEOT-W20-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	1.59E+04	2.19E+02	7.84E-04	3.63E+03	2.85E+00	1.90E-02	1.24E-01	3.40E+01	1.72E+02	9.55E-01	1.14E+02	2.97E-01
BCEOT-E21-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	1.09E+03	1.50E+01	7.84E-04	2.49E+02	1.95E-01	1.90E-02	1.24E-01	2.33E+00	1.72E+02	9.55E-01	1.14E+02	2.04E-02

TABLE C-11F: ZINC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 11 - BEARTRAP CREEK DISPERSED TAILINGS DEPOSITS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK TAILINGS DEPOSITS AND FLOSSIE LOUISE MINE WASTE PILE (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 4.982

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
American Kestrel (Insectivorous Birds - Terrestrial)																							
BCEOT-W21-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	1.51E+03	2.08E+01	7.84E-04	3.46E+02	2.71E-01	1.90E-02	1.24E-01	3.24E+00	1.72E+02	9.55E-01	1.14E+02	2.84E-02
BCEOT-E22-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	5.42E+03	7.46E+01	7.84E-04	1.24E+03	9.71E-01	1.90E-02	1.24E-01	1.16E+01	1.72E+02	9.55E-01	1.14E+02	1.02E-01
BCEOT-W22-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	6.40E+04	8.80E+02	7.84E-04	1.46E+04	1.15E+01	1.90E-02	1.24E-01	1.37E+02	1.72E+02	9.55E-01	1.14E+02	1.20E+00
BCEOT-E23-15 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	1.19E+03	1.64E+01	7.84E-04	2.73E+02	2.14E-01	1.90E-02	1.24E-01	2.56E+00	1.72E+02	9.55E-01	1.14E+02	2.24E-02
BCEOT-W23-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	1.61E+04	2.21E+02	7.84E-04	3.67E+03	2.88E+00	1.90E-02	1.24E-01	3.44E+01	1.72E+02	9.55E-01	1.14E+02	3.01E-01
BCEOT-E24-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	4.68E+02	6.44E+00	7.84E-04	1.07E+02	8.38E-02	1.90E-02	1.24E-01	1.00E+00	1.72E+02	9.55E-01	1.14E+02	8.76E-03
BCEOT-W24-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	1.23E+04	1.69E+02	7.84E-04	2.81E+03	2.20E+00	1.90E-02	1.24E-01	2.63E+01	1.72E+02	9.55E-01	1.14E+02	2.30E-01
BCEOT-E25-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	2.48E+03	3.42E+01	7.84E-04	5.67E+02	4.45E-01	1.90E-02	1.24E-01	5.32E+00	1.72E+02	9.55E-01	1.14E+02	4.65E-02
BCEOT-W25-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	8.42E+03	1.16E+02	7.84E-04	1.92E+03	1.51E+00	1.90E-02	1.24E-01	1.80E+01	1.72E+02	9.55E-01	1.14E+02	1.58E-01
BCEOT-E26-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	8.70E+02	1.20E+01	7.84E-04	1.99E+02	1.56E-01	1.90E-02	1.24E-01	1.86E+00	1.72E+02	9.55E-01	1.14E+02	1.63E-02
BCEOT-W26-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	1.35E+03	1.86E+01	7.84E-04	3.09E+02	2.42E-01	1.90E-02	1.24E-01	2.90E+00	1.72E+02	9.55E-01	1.14E+02	2.53E-02
BCEOT-W27-12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	7.60E+03	1.05E+02	7.84E-04	1.74E+03	1.36E+00	1.90E-02	1.24E-01	1.63E+01	1.72E+02	9.55E-01	1.14E+02	1.42E-01
At Edge of Tailings Pile																						**Maximum HQ (Inside Tailings Pile)**	**1.33E+00**
BCEOT-E0-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	1.20E+03	1.64E+01	7.84E-04	2.73E+02	2.14E-01	1.90E-02	1.24E-01	2.56E+00	1.72E+02	9.55E-01	1.14E+02	2.24E-02
BCEOT-E1-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	8.11E+02	1.12E+01	7.84E-04	1.85E+02	1.45E-01	1.90E-02	1.24E-01	1.74E+00	1.72E+02	9.55E-01	1.14E+02	1.52E-02
BCEOT-E2-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	2.23E+03	3.07E+01	7.84E-04	5.09E+02	3.99E-01	1.90E-02	1.24E-01	4.77E+00	1.72E+02	9.55E-01	1.14E+02	4.18E-02
BCEOT-E3-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	5.44E+02	7.48E+00	7.84E-04	1.24E+02	9.74E-02	1.90E-02	1.24E-01	1.16E+00	1.72E+02	9.55E-01	1.14E+02	1.02E-02
BCEOT-E4-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	7.71E+02	1.06E+01	7.84E-04	1.76E+02	1.38E-01	1.90E-02	1.24E-01	1.65E+00	1.72E+02	9.55E-01	1.14E+02	1.44E-02
BCEOT-W4-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	3.87E+02	5.33E+00	7.84E-04	8.85E+01	6.94E-02	1.90E-02	1.24E-01	8.29E-01	1.72E+02	9.55E-01	1.14E+02	7.25E-03
BCEOT-E5-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	1.04E+03	1.43E+01	7.84E-04	2.37E+02	1.86E-01	1.90E-02	1.24E-01	2.22E+00	1.72E+02	9.55E-01	1.14E+02	1.94E-02
BCEOT-W5-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	8.44E+02	1.16E+01	7.84E-04	1.93E+02	1.51E-01	1.90E-02	1.24E-01	1.81E+00	1.72E+02	9.55E-01	1.14E+02	1.58E-02
BCEOT-E6-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	7.42E+02	1.02E+01	7.84E-04	1.69E+02	1.33E-01	1.90E-02	1.24E-01	1.59E+00	1.72E+02	9.55E-01	1.14E+02	1.39E-02
BCEOT-W6-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	4.77E+02	6.56E+00	7.84E-04	1.09E+02	8.54E-02	1.90E-02	1.24E-01	1.02E+00	1.72E+02	9.55E-01	1.14E+02	8.92E-03
BCEOT-E7-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	7.42E+02	1.02E+01	7.84E-04	1.69E+02	1.33E-01	1.90E-02	1.24E-01	1.59E+00	1.72E+02	9.55E-01	1.14E+02	1.39E-02
BCEOT-W7-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-W8-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-E9-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	9.93E+02	1.37E+01	7.84E-04	2.27E+02	1.78E-01	1.90E-02	1.24E-01	2.12E+00	1.72E+02	9.55E-01	1.14E+02	1.86E-02
BCEOT-W9-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-E10-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	1.41E+03	1.94E+01	7.84E-04	3.22E+02	2.53E-01	1.90E-02	1.24E-01	3.02E+00	1.72E+02	9.55E-01	1.14E+02	2.64E-02
BCEOT-W10-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-E11-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	6.31E+02	8.69E+00	7.84E-04	1.44E+02	1.13E-01	1.90E-02	1.24E-01	1.35E+00	1.72E+02	9.55E-01	1.14E+02	1.18E-02
BCEOT-W11-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	1.41E+03	1.94E+01	7.84E-04	3.23E+02	2.53E-01	1.90E-02	1.24E-01	3.02E+00	1.72E+02	9.55E-01	1.14E+02	2.64E-02
BCEOT-E12-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	7.07E+02	9.73E+00	7.84E-04	1.61E+02	1.27E-01	1.90E-02	1.24E-01	1.51E+00	1.72E+02	9.55E-01	1.14E+02	1.32E-02
BCEOT-W12-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-E13-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	5.91E+02	8.13E+00	7.84E-04	1.35E+02	1.06E-01	1.90E-02	1.24E-01	1.26E+00	1.72E+02	9.55E-01	1.14E+02	1.11E-02
BCEOT-W13-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	6.73E+02	9.27E+00	7.84E-04	1.54E+02	1.21E-01	1.90E-02	1.24E-01	1.44E+00	1.72E+02	9.55E-01	1.14E+02	1.26E-02
BCEOT-E14-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	5.40E+02	7.44E+00	7.84E-04	1.23E+02	9.68E-02	1.90E-02	1.24E-01	1.16E+00	1.72E+02	9.55E-01	1.14E+02	1.01E-02
BCEOT-W14-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	3.22E+03	4.43E+01	7.84E-04	7.35E+02	5.77E-01	1.90E-02	1.24E-01	6.89E+00	1.72E+02	9.55E-01	1.14E+02	6.03E-02
BCEOT-E15-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	1.15E+03	1.58E+01	7.84E-04	2.63E+02	2.06E-01	1.90E-02	1.24E-01	2.46E+00	1.72E+02	9.55E-01	1.14E+02	2.15E-02
BCEOT-W15-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	3.38E+03	4.65E+01	7.84E-04	7.72E+02	6.05E-01	1.90E-02	1.24E-01	7.23E+00	1.72E+02	9.55E-01	1.14E+02	6.32E-02
BCEOT-E16-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	8.00E+02	1.10E+01	7.84E-04	1.83E+02	1.43E-01	1.90E-02	1.24E-01	1.71E+00	1.72E+02	9.55E-01	1.14E+02	1.50E-02
BCEOT-W16-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	9.61E+02	1.32E+01	7.84E-04	2.20E+02	1.72E-01	1.90E-02	1.24E-01	2.06E+00	1.72E+02	9.55E-01	1.14E+02	1.80E-02
BCEOT-E17-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	2.82E+03	3.88E+01	7.84E-04	6.44E+02	5.05E-01	1.90E-02	1.24E-01	6.04E+00	1.72E+02	9.55E-01	1.14E+02	5.28E-02
BCEOT-W17-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	1.01E+03	1.39E+01	7.84E-04	2.31E+02	1.81E-01	1.90E-02	1.24E-01	2.16E+00	1.72E+02	9.55E-01	1.14E+02	1.89E-02
BCEOT-E18-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	1.66E+03	2.29E+01	7.84E-04	3.80E+02	2.98E-01	1.90E-02	1.24E-01	3.56E+00	1.72E+02	9.55E-01	1.14E+02	3.11E-02
BCEOT-W18-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	1.20E+03	1.65E+01	7.84E-04	2.73E+02	2.14E-01	1.90E-02	1.24E-01	2.56E+00	1.72E+02	9.55E-01	1.14E+02	2.24E-02
BCEOT-E19-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	1.16E+03	1.60E+01	7.84E-04	2.65E+02	2.08E-01	1.90E-02	1.24E-01	2.49E+00	1.72E+02	9.55E-01	1.14E+02	2.17E-02
BCEOT-W19-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	1.31E+03	1.80E+01	7.84E-04	2.98E+02	2.34E-01	1.90E-02	1.24E-01	2.80E+00	1.72E+02	9.55E-01	1.14E+02	2.45E-02
BCEOT-E20-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	5.80E+02	7.98E+00	7.84E-04	1.32E+02	1.04E-01	1.90E-02	1.24E-01	1.24E+00	1.72E+02	9.55E-01	1.14E+02	1.09E-02
BCEOT-W20-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	1.19E+03	1.63E+01	7.84E-04	2.71E+02	2.13E-01	1.90E-02	1.24E-01	2.54E+00	1.72E+02	9.55E-01	1.14E+02	2.22E-02
BCEOT-E21-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	1.17E+03	1.61E+01	7.84E-04	2.67E+02	2.10E-01	1.90E-02	1.24E-01	2.51E+00	1.72E+02	9.55E-01	1.14E+02	2.19E-02
BCEOT-W21-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	1.35E+03	1.86E+01	7.84E-04	3.09E+02	2.42E-01	1.90E-02	1.24E-01	2.89E+00	1.72E+02	9.55E-01	1.14E+02	2.53E-02

TABLE C-11F: ZINC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 11 - BEARTRAP CREEK DISPERSED TAILINGS DEPOSITS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK TAILINGS DEPOSITS AND FLOSSIE LOUISE MINE WASTE PILE (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 4.982

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
American Kestrel (Insectivorous Birds - Terrestrial)																							
BCEOT-E22-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	5.46E+02	7.51E+00	7.84E-04	1.25E+02	9.78E-02	1.90E-02	1.24E-01	1.17E+00	1.72E+02	9.55E-01	1.14E+02	1.02E-02
BCEOT-W22-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	1.06E+03	1.45E+01	7.84E-04	2.41E+02	1.89E-01	1.90E-02	1.24E-01	2.26E+00	1.72E+02	9.55E-01	1.14E+02	1.98E-02
BCEOT-E23-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	3.95E+02	5.43E+00	7.84E-04	9.02E+01	7.07E-02	1.90E-02	1.24E-01	8.45E-01	1.72E+02	9.55E-01	1.14E+02	7.39E-03
BCEOT-W23-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	1.77E+03	2.44E+01	7.84E-04	4.04E+02	3.17E-01	1.90E-02	1.24E-01	3.79E+00	1.72E+02	9.55E-01	1.14E+02	3.31E-02
BCEOT-E24-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	6.41E+02	8.82E+00	7.84E-04	1.46E+02	1.15E-01	1.90E-02	1.24E-01	1.37E+00	1.72E+02	9.55E-01	1.14E+02	1.20E-02
BCEOT-W24-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	1.08E+03	1.49E+01	7.84E-04	2.47E+02	1.94E-01	1.90E-02	1.24E-01	2.32E+00	1.72E+02	9.55E-01	1.14E+02	2.03E-02
BCEOT-E25-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	7.52E+02	1.04E+01	7.84E-04	1.72E+02	1.35E-01	1.90E-02	1.24E-01	1.61E+00	1.72E+02	9.55E-01	1.14E+02	1.41E-02
BCEOT-W25-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	1.24E+03	1.71E+01	7.84E-04	2.84E+02	2.22E-01	1.90E-02	1.24E-01	2.66E+00	1.72E+02	9.55E-01	1.14E+02	2.32E-02
BCEOT-E26-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	1.44E+03	1.99E+01	7.84E-04	3.30E+02	2.59E-01	1.90E-02	1.24E-01	3.09E+00	1.72E+02	9.55E-01	1.14E+02	2.70E-02
BCEOT-W26-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	1.02E+03	1.41E+01	7.84E-04	2.34E+02	1.83E-01	1.90E-02	1.24E-01	2.19E+00	1.72E+02	9.55E-01	1.14E+02	1.92E-02
BCEOT-W27-0 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	1.18E+03	1.62E+01	7.84E-04	2.69E+02	2.11E-01	1.90E-02	1.24E-01	2.53E+00	1.72E+02	9.55E-01	1.14E+02	2.21E-02
Outside Tailings Piles																						**Maximum HQ (Edge of Tailings Pile)**	**6.32E-02**
BCEOT-E0+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	8.96E+02	1.23E+01	7.84E-04	2.05E+02	1.61E-01	1.90E-02	1.24E-01	1.92E+00	1.72E+02	9.55E-01	1.14E+02	1.68E-02
BCEOT-E1+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	1.88E+03	2.58E+01	7.84E-04	4.28E+02	3.36E-01	1.90E-02	1.24E-01	4.02E+00	1.72E+02	9.55E-01	1.14E+02	3.51E-02
BCEOT-E2+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	7.66E+02	1.05E+01	7.84E-04	1.75E+02	1.37E-01	1.90E-02	1.24E-01	1.64E+00	1.72E+02	9.55E-01	1.14E+02	1.43E-02
BCEOT-E3+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	4.83E+02	6.65E+00	7.84E-04	1.10E+02	8.65E-02	1.90E-02	1.24E-01	1.03E+00	1.72E+02	9.55E-01	1.14E+02	9.05E-03
BCEOT-E4+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	7.00E+02	9.63E+00	7.84E-04	1.60E+02	1.25E-01	1.90E-02	1.24E-01	1.50E+00	1.72E+02	9.55E-01	1.14E+02	1.31E-02
BCEOT-W4+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	6.38E+02	8.78E+00	7.84E-04	1.46E+02	1.14E-01	1.90E-02	1.24E-01	1.37E+00	1.72E+02	9.55E-01	1.14E+02	1.19E-02
BCEOT-E5+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	1.84E+03	2.54E+01	7.84E-04	4.21E+02	3.30E-01	1.90E-02	1.24E-01	3.95E+00	1.72E+02	9.55E-01	1.14E+02	3.45E-02
BCEOT-W5+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	7.50E+02	1.03E+01	7.84E-04	1.71E+02	1.34E-01	1.90E-02	1.24E-01	1.60E+00	1.72E+02	9.55E-01	1.14E+02	1.40E-02
BCEOT-E6+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	6.68E+02	9.19E+00	7.84E-04	1.52E+02	1.20E-01	1.90E-02	1.24E-01	1.43E+00	1.72E+02	9.55E-01	1.14E+02	1.25E-02
BCEOT-W6+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	3.74E+02	5.15E+00	7.84E-04	8.55E+01	6.70E-02	1.90E-02	1.24E-01	8.01E-01	1.72E+02	9.55E-01	1.14E+02	7.01E-03
BCEOT-E7+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	6.38E+02	8.78E+00	7.84E-04	1.46E+02	1.14E-01	1.90E-02	1.24E-01	1.37E+00	1.72E+02	9.55E-01	1.14E+02	1.19E-02
BCEOT-W7+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	5.39E+02	7.42E+00	7.84E-04	1.23E+02	9.65E-02	1.90E-02	1.24E-01	1.15E+00	1.72E+02	9.55E-01	1.14E+02	1.01E-02
FLWA-101 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	1.24E+03	1.71E+01	7.84E-04	2.84E+02	2.23E-01	1.90E-02	1.24E-01	2.66E+00	1.72E+02	9.55E-01	1.14E+02	2.33E-02
BCEOT-W8+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	7.03E+02	9.68E+00	7.84E-04	1.61E+02	1.26E-01	1.90E-02	1.24E-01	1.51E+00	1.72E+02	9.55E-01	1.14E+02	1.32E-02
BCEOT-E9+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	1.12E+03	1.54E+01	7.84E-04	2.56E+02	2.01E-01	1.90E-02	1.24E-01	2.40E+00	1.72E+02	9.55E-01	1.14E+02	2.10E-02
BCEOT-W9+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	1.03E+03	1.42E+01	7.84E-04	2.35E+02	1.84E-01	1.90E-02	1.24E-01	2.20E+00	1.72E+02	9.55E-01	1.14E+02	1.93E-02
BCEOT-E10+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	6.93E+02	9.53E+00	7.84E-04	1.58E+02	1.24E-01	1.90E-02	1.24E-01	1.48E+00	1.72E+02	9.55E-01	1.14E+02	1.30E-02
BCEOT-W10+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-E11+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	8.99E+02	1.24E+01	7.84E-04	2.05E+02	1.61E-01	1.90E-02	1.24E-01	1.92E+00	1.72E+02	9.55E-01	1.14E+02	1.68E-02
BCEOT-W11+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	3.78E+02	5.21E+00	7.84E-04	8.64E+01	6.78E-02	1.90E-02	1.24E-01	8.10E-01	1.72E+02	9.55E-01	1.14E+02	7.08E-03
BCEOT-E12+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	6.46E+02	8.89E+00	7.84E-04	1.48E+02	1.16E-01	1.90E-02	1.24E-01	1.38E+00	1.72E+02	9.55E-01	1.14E+02	1.21E-02
BCEOT-W12+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	7.47E+02	1.03E+01	7.84E-04	1.71E+02	1.34E-01	1.90E-02	1.24E-01	1.60E+00	1.72E+02	9.55E-01	1.14E+02	1.40E-02
BCEOT-E13+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	6.83E+02	9.39E+00	7.84E-04	1.56E+02	1.22E-01	1.90E-02	1.24E-01	1.46E+00	1.72E+02	9.55E-01	1.14E+02	1.28E-02
BCEOT-E14+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	4.14E+02	5.69E+00	7.84E-04	9.45E+01	7.41E-02	1.90E-02	1.24E-01	8.85E-01	1.72E+02	9.55E-01	1.14E+02	7.74E-03
BCEOT-W14+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	7.53E+02	1.04E+01	7.84E-04	1.72E+02	1.35E-01	1.90E-02	1.24E-01	1.61E+00	1.72E+02	9.55E-01	1.14E+02	1.41E-02
BCEOT-E15+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	1.13E+03	1.56E+01	7.84E-04	2.59E+02	2.03E-01	1.90E-02	1.24E-01	2.43E+00	1.72E+02	9.55E-01	1.14E+02	2.12E-02
BCEOT-W15+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	1.17E+03	1.60E+01	7.84E-04	2.66E+02	2.09E-01	1.90E-02	1.24E-01	2.49E+00	1.72E+02	9.55E-01	1.14E+02	2.18E-02
BCEOT-E16+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	8.69E+02	1.20E+01	7.84E-04	1.99E+02	1.56E-01	1.90E-02	1.24E-01	1.86E+00	1.72E+02	9.55E-01	1.14E+02	1.63E-02
BCEOT-W16+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	6.66E+02	9.16E+00	7.84E-04	1.52E+02	1.19E-01	1.90E-02	1.24E-01	1.43E+00	1.72E+02	9.55E-01	1.14E+02	1.25E-02
BCEOT-E17+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	1.65E+03	2.28E+01	7.84E-04	3.78E+02	2.96E-01	1.90E-02	1.24E-01	3.54E+00	1.72E+02	9.55E-01	1.14E+02	3.10E-02
BCEOT-W17+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	5.44E+02	7.48E+00	7.84E-04	1.24E+02	9.73E-02	1.90E-02	1.24E-01	1.16E+00	1.72E+02	9.55E-01	1.14E+02	1.02E-02
BCEOT-E18+12.5 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	5.98E+04	8.22E+02	7.84E-04	1.36E+04	1.07E+01	1.90E-02	1.24E-01	1.28E+02	1.72E+02	9.55E-01	1.14E+02	1.12E+00
BCEOT-E18+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	1.26E+03	1.73E+01	7.84E-04	2.87E+02	2.25E-01	1.90E-02	1.24E-01	2.69E+00	1.72E+02	9.55E-01	1.14E+02	2.36E-02
BCEOT-W18+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	9.02E+02	1.24E+01	7.84E-04	2.06E+02	1.62E-01	1.90E-02	1.24E-01	1.93E+00	1.72E+02	9.55E-01	1.14E+02	1.69E-02
BCEOT-E19+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	1.10E+03	1.51E+01	7.84E-04	2.50E+02	1.96E-01	1.90E-02	1.24E-01	2.35E+00	1.72E+02	9.55E-01	1.14E+02	2.05E-02
BCEOT-W19+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	5.45E+02	7.49E+00	7.84E-04	1.24E+02	9.75E-02	1.90E-02	1.24E-01	1.17E+00	1.72E+02	9.55E-01	1.14E+02	1.02E-02
BCEOT-E20+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	7.18E+02	9.88E+00	7.84E-04	1.64E+02	1.29E-01	1.90E-02	1.24E-01	1.54E+00	1.72E+02	9.55E-01	1.14E+02	1.34E-02
BCEOT-W20+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	8.66E+02	1.19E+01	7.84E-04	1.98E+02	1.55E-01	1.90E-02	1.24E-01	1.85E+00	1.72E+02	9.55E-01	1.14E+02	1.62E-02
BCEOT-E21+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	8.25E+02	1.14E+01	7.84E-04	1.88E+02	1.48E-01	1.90E-02	1.24E-01	1.77E+00	1.72E+02	9.55E-01	1.14E+02	1.54E-02
BCEOT-W21+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	7.65E+02	1.05E+01	7.84E-04	1.75E+02	1.37E-01	1.90E-02	1.24E-01	1.64E+00	1.72E+02	9.55E-01	1.14E+02	1.43E-02

TABLE C-11F: ZINC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 11 - BEARTRAP CREEK DISPERSED TAILINGS DEPOSITS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK TAILINGS DEPOSITS AND FLOSSIE LOUISE MINE WASTE PILE (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 4.982

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
American Kestrel (Insectivorous Birds - Terrestrial)																							
BCEOT-E22+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	8.82E+02	1.21E+01	7.84E-04	2.01E+02	1.58E-01	1.90E-02	1.24E-01	1.89E+00	1.72E+02	9.55E-01	1.14E+02	1.65E-02
BCEOT-E22+70 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	1.35E+03	1.85E+01	7.84E-04	3.07E+02	2.41E-01	1.90E-02	1.24E-01	2.88E+00	1.72E+02	9.55E-01	1.14E+02	2.52E-02
BCEOT-W22+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	7.01E+02	9.65E+00	7.84E-04	1.60E+02	1.26E-01	1.90E-02	1.24E-01	1.50E+00	1.72E+02	9.55E-01	1.14E+02	1.31E-02
BCEOT-E23+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	4.47E+02	6.16E+00	7.84E-04	1.02E+02	8.01E-02	1.90E-02	1.24E-01	9.58E-01	1.72E+02	9.55E-01	1.14E+02	8.38E-03
BCEOT-W23+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	8.42E+02	1.16E+01	7.84E-04	1.92E+02	1.51E-01	1.90E-02	1.24E-01	1.80E+00	1.72E+02	9.55E-01	1.14E+02	1.58E-02
BCEOT-E24+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-W24+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	1.36E+03	1.87E+01	7.84E-04	3.10E+02	2.43E-01	1.90E-02	1.24E-01	2.90E+00	1.72E+02	9.55E-01	1.14E+02	2.54E-02
BCEOT-E25+20 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	4.75E+02	6.54E+00	7.84E-04	1.09E+02	8.52E-02	1.90E-02	1.24E-01	1.02E+00	1.72E+02	9.55E-01	1.14E+02	8.90E-03
BCEOT-W25+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	1.18E+03	1.63E+01	7.84E-04	2.70E+02	2.12E-01	1.90E-02	1.24E-01	2.53E+00	1.72E+02	9.55E-01	1.14E+02	2.21E-02
BCEOT-E26+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	5.44E+02	7.49E+00	7.84E-04	1.24E+02	9.75E-02	1.90E-02	1.24E-01	1.17E+00	1.72E+02	9.55E-01	1.14E+02	1.02E-02
BCEOT-W26+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	1.23E+03	1.70E+01	7.84E-04	2.81E+02	2.21E-01	1.90E-02	1.24E-01	2.64E+00	1.72E+02	9.55E-01	1.14E+02	2.31E-02
BCEOT-W27+25 (0-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	4.38E+00	1.15E+03	1.58E+01	7.84E-04	2.63E+02	2.06E-01	1.90E-02	1.24E-01	2.46E+00	1.72E+02	9.55E-01	1.14E+02	2.15E-02
																						Maximum HQ (Outside Tailings Pile)	**1.12E+00**
Meadow Vole (Small Herbivorous Mammal - Terrestrial)																							
Reference Sites																							
ACBG-1 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.41E+00	1.93E+02	9.06E-01	NA	NA	NA	NA	1.13E-04	1.37E+02	1.54E-02	1.00E+00	3.06E-02	3.01E+01	4.11E+02	1.75E-01	4.57E+02	6.59E-02
ACBG-2 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.41E+00	1.18E+02	5.55E-01	NA	NA	NA	NA	1.13E-04	8.39E+01	9.45E-03	1.00E+00	3.06E-02	1.85E+01	4.11E+02	1.75E-01	4.57E+02	4.04E-02
BCBG-201 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.41E+00	3.41E+02	1.60E+00	NA	NA	NA	NA	1.13E-04	2.42E+02	2.72E-02	1.00E+00	3.06E-02	5.31E+01	4.11E+02	1.75E-01	4.57E+02	1.16E-01
Inside Tailings Pile																						**Minimum HQ (Reference Sites)**	**4.04E-02**
BCEOT-E0-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	3.62E+02	1.70E+00	NA	NA	NA	NA	1.13E-04	1.83E+02	2.06E-02	1.00E+00	3.06E-02	5.62E+01	4.11E+02	1.75E-01	4.57E+02	1.23E-01
BCEOT-E1-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	5.46E+02	2.56E+00	NA	NA	NA	NA	1.13E-04	2.75E+02	3.10E-02	1.00E+00	3.06E-02	8.46E+01	4.11E+02	1.75E-01	4.57E+02	1.85E-01
BCEOT-E2-8 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	2.70E+02	1.27E+00	NA	NA	NA	NA	1.13E-04	1.36E+02	1.53E-02	1.00E+00	3.06E-02	4.19E+01	4.11E+02	1.75E-01	4.57E+02	9.17E-02
BCEOT-E3-8 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	4.69E+02	2.20E+00	NA	NA	NA	NA	1.13E-04	2.37E+02	2.67E-02	1.00E+00	3.06E-02	7.28E+01	4.11E+02	1.75E-01	4.57E+02	1.59E-01
BCEOT-E4-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	3.21E+02	1.51E+00	NA	NA	NA	NA	1.13E-04	1.62E+02	1.82E-02	1.00E+00	3.06E-02	4.98E+01	4.11E+02	1.75E-01	4.57E+02	1.09E-01
BCEOT-W4-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	4.68E+02	2.19E+00	NA	NA	NA	NA	1.13E-04	2.36E+02	2.66E-02	1.00E+00	3.06E-02	7.26E+01	4.11E+02	1.75E-01	4.57E+02	1.59E-01
BCEOT-E5-25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	1.89E+02	8.88E-01	NA	NA	NA	NA	1.13E-04	9.56E+01	1.08E-02	1.00E+00	3.06E-02	2.94E+01	4.11E+02	1.75E-01	4.57E+02	6.43E-02
BCEOT-W5-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	2.30E+03	1.08E+01	NA	NA	NA	NA	1.13E-04	1.16E+03	1.31E-01	1.00E+00	3.06E-02	3.57E+02	4.11E+02	1.75E-01	4.57E+02	7.81E-01
BCEOT-E6-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	3.82E+02	1.79E+00	NA	NA	NA	NA	1.13E-04	1.93E+02	2.17E-02	1.00E+00	3.06E-02	5.93E+01	4.11E+02	1.75E-01	4.57E+02	1.30E-01
BCEOT-W6-12.5 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-E7-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	2.21E+02	1.04E+00	NA	NA	NA	NA	1.13E-04	1.11E+02	1.25E-02	1.00E+00	3.06E-02	3.43E+01	4.11E+02	1.75E-01	4.57E+02	7.50E-02
BCEOT-W7-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	2.83E+02	1.32E+00	NA	NA	NA	NA	1.13E-04	1.43E+02	1.60E-02	1.00E+00	3.06E-02	4.38E+01	4.11E+02	1.75E-01	4.57E+02	9.59E-02
BCEOT-W8-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	7.52E+02	3.53E+00	NA	NA	NA	NA	1.13E-04	3.80E+02	4.27E-02	1.00E+00	3.06E-02	1.17E+02	4.11E+02	1.75E-01	4.57E+02	2.55E-01
BCEOT-E9-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	5.16E+02	2.42E+00	NA	NA	NA	NA	1.13E-04	2.61E+02	2.93E-02	1.00E+00	3.06E-02	8.01E+01	4.11E+02	1.75E-01	4.57E+02	1.75E-01
BCEOT-W9-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	5.55E+03	2.60E+01	NA	NA	NA	NA	1.13E-04	2.80E+03	3.15E-01	1.00E+00	3.06E-02	8.61E+02	4.11E+02	1.75E-01	4.57E+02	1.88E+00
BCEOT-E10-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	5.03E+02	2.36E+00	NA	NA	NA	NA	1.13E-04	2.54E+02	2.86E-02	1.00E+00	3.06E-02	7.80E+01	4.11E+02	1.75E-01	4.57E+02	1.71E-01
BCEOT-W10-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	4.77E+02	2.24E+00	NA	NA	NA	NA	1.13E-04	2.41E+02	2.71E-02	1.00E+00	3.06E-02	7.40E+01	4.11E+02	1.75E-01	4.57E+02	1.62E-01
BCEOT-E11-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	3.28E+02	1.54E+00	NA	NA	NA	NA	1.13E-04	1.65E+02	1.86E-02	1.00E+00	3.06E-02	5.08E+01	4.11E+02	1.75E-01	4.57E+02	1.11E-01
BCEOT-W11-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	3.59E+03	1.68E+01	NA	NA	NA	NA	1.13E-04	1.81E+03	2.04E-01	1.00E+00	3.06E-02	5.57E+02	4.11E+02	1.75E-01	4.57E+02	1.22E+00
BCEOT-E12-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	2.49E+02	1.17E+00	NA	NA	NA	NA	1.13E-04	1.26E+02	1.42E-02	1.00E+00	3.06E-02	3.87E+01	4.11E+02	1.75E-01	4.57E+02	8.47E-02
BCEOT-W12-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	2.14E+03	1.00E+01	NA	NA	NA	NA	1.13E-04	1.08E+03	1.22E-01	1.00E+00	3.06E-02	3.32E+02	4.11E+02	1.75E-01	4.57E+02	7.27E-01
BCEOT-E13-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	4.36E+02	2.04E+00	NA	NA	NA	NA	1.13E-04	2.20E+02	2.48E-02	1.00E+00	3.06E-02	6.76E+01	4.11E+02	1.75E-01	4.57E+02	1.48E-01
BCEOT-W13-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	1.14E+03	5.36E+00	NA	NA	NA	NA	1.13E-04	5.77E+02	6.49E-02	1.00E+00	3.06E-02	1.77E+02	4.11E+02	1.75E-01	4.57E+02	3.88E-01
BCEOT-W13-25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-W14-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	7.69E+02	3.60E+00	NA	NA	NA	NA	1.13E-04	3.88E+02	4.37E-02	1.00E+00	3.06E-02	1.19E+02	4.11E+02	1.75E-01	4.57E+02	2.61E-01
BCEOT-E15-8 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	4.51E+02	2.11E+00	NA	NA	NA	NA	1.13E-04	2.28E+02	2.56E-02	1.00E+00	3.06E-02	6.99E+01	4.11E+02	1.75E-01	4.57E+02	1.53E-01
BCEOT-W15-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	7.76E+02	3.64E+00	NA	NA	NA	NA	1.13E-04	3.92E+02	4.41E-02	1.00E+00	3.06E-02	1.20E+02	4.11E+02	1.75E-01	4.57E+02	2.64E-01
BCEOT-E16-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	7.65E+03	3.59E+01	NA	NA	NA	NA	1.13E-04	3.86E+03	4.35E-01	1.00E+00	3.06E-02	1.19E+03	4.11E+02	1.75E-01	4.57E+02	2.60E+00
BCEOT-W16-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	2.12E+03	9.92E+00	NA	NA	NA	NA	1.13E-04	1.07E+03	1.20E-01	1.00E+00	3.06E-02	3.28E+02	4.11E+02	1.75E-01	4.57E+02	7.18E-01
BCEOT-E17-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	3.21E+04	1.50E+02	NA	NA	NA	NA	1.13E-04	1.62E+04	1.82E+00	1.00E+00	3.06E-02	4.97E+03	4.11E+02	1.75E-01	4.57E+02	1.09E+01
BCEOT-W17-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	1.00E+03	4.69E+00	NA	NA	NA	NA	1.13E-04	5.05E+02	5.68E-02	1.00E+00	3.06E-02	1.55E+02	4.11E+02	1.75E-01	4.57E+02	3.39E-01
BCEOT-W18-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	7.69E+02	3.60E+00	NA	NA	NA	NA	1.13E-04	3.88E+02	4.37E-02	1.00E+00	3.06E-02	1.19E+02	4.11E+02	1.75E-01	4.57E+02	2.61E-01
BCEOT-E19-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	1.85E+03	8.68E+00	NA	NA	NA	NA	1.13E-04	9.34E+02	1.05E-01	1.00E+00	3.06E-02	2.87E+02	4.11E+02	1.75E-01	4.57E+02	6.28E-01
BCEOT-W19-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	6.74E+02	3.16E+00	NA	NA	NA	NA	1.13E-04	3.40E+02	3.83E-02	1.00E+00	3.06E-02	1.04E+02	4.11E+02	1.75E-01	4.57E+02	2.29E-01

TABLE C-11F: ZINC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 11 - BEARTRAP CREEK DISPERSED TAILINGS DEPOSITS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK TAILINGS DEPOSITS AND FLOSSIE LOUISE MINE WASTE PILE (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 4.982

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Meadow Vole (Small Herbivorous Mammal - Terrestrial)																							
BCEOT-E20-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	1.13E+03	5.31E+00	NA	NA	NA	NA	1.13E-04	5.72E+02	6.44E-02	1.00E+00	3.06E-02	1.76E+02	4.11E+02	1.75E-01	4.57E+02	3.85E-01
BCEOT-W20-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	7.19E+03	3.37E+01	NA	NA	NA	NA	1.13E-04	3.63E+03	4.08E-01	1.00E+00	3.06E-02	1.11E+03	4.11E+02	1.75E-01	4.57E+02	2.44E+00
BCEOT-E21-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	4.93E+02	2.31E+00	NA	NA	NA	NA	1.13E-04	2.49E+02	2.80E-02	1.00E+00	3.06E-02	7.65E+01	4.11E+02	1.75E-01	4.57E+02	1.67E-01
BCEOT-W21-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	6.85E+02	3.21E+00	NA	NA	NA	NA	1.13E-04	3.46E+02	3.89E-02	1.00E+00	3.06E-02	1.06E+02	4.11E+02	1.75E-01	4.57E+02	2.33E-01
BCEOT-E22-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	2.45E+03	1.15E+01	NA	NA	NA	NA	1.13E-04	1.24E+03	1.39E-01	1.00E+00	3.06E-02	3.81E+02	4.11E+02	1.75E-01	4.57E+02	8.33E-01
BCEOT-W22-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	2.89E+04	1.36E+02	NA	NA	NA	NA	1.13E-04	1.46E+04	1.64E+00	1.00E+00	3.06E-02	4.49E+03	4.11E+02	1.75E-01	4.57E+02	9.83E+00
BCEOT-E23-15 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	5.40E+02	2.53E+00	NA	NA	NA	NA	1.13E-04	2.73E+02	3.07E-02	1.00E+00	3.06E-02	8.38E+01	4.11E+02	1.75E-01	4.57E+02	1.83E-01
BCEOT-W23-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	7.26E+03	3.41E+01	NA	NA	NA	NA	1.13E-04	3.67E+03	4.13E-01	1.00E+00	3.06E-02	1.13E+03	4.11E+02	1.75E-01	4.57E+02	2.47E+00
BCEOT-E24-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	2.12E+02	9.93E-01	NA	NA	NA	NA	1.13E-04	1.07E+02	1.20E-02	1.00E+00	3.06E-02	3.28E+01	4.11E+02	1.75E-01	4.57E+02	7.19E-02
BCEOT-W24-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	5.57E+03	2.61E+01	NA	NA	NA	NA	1.13E-04	2.81E+03	3.16E-01	1.00E+00	3.06E-02	8.63E+02	4.11E+02	1.75E-01	4.57E+02	1.89E+00
BCEOT-E25-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	1.12E+03	5.27E+00	NA	NA	NA	NA	1.13E-04	5.67E+02	6.38E-02	1.00E+00	3.06E-02	1.74E+02	4.11E+02	1.75E-01	4.57E+02	3.82E-01
BCEOT-W25-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	3.81E+03	1.79E+01	NA	NA	NA	NA	1.13E-04	1.92E+03	2.16E-01	1.00E+00	3.06E-02	5.91E+02	4.11E+02	1.75E-01	4.57E+02	1.29E+00
BCEOT-E26-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	3.94E+02	1.85E+00	NA	NA	NA	NA	1.13E-04	1.99E+02	2.24E-02	1.00E+00	3.06E-02	6.10E+01	4.11E+02	1.75E-01	4.57E+02	1.34E-01
BCEOT-W26-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	6.12E+02	2.87E+00	NA	NA	NA	NA	1.13E-04	3.09E+02	3.48E-02	1.00E+00	3.06E-02	9.50E+01	4.11E+02	1.75E-01	4.57E+02	2.08E-01
BCEOT-W27-12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	3.44E+03	1.61E+01	NA	NA	NA	NA	1.13E-04	1.74E+03	1.95E-01	1.00E+00	3.06E-02	5.33E+02	4.11E+02	1.75E-01	4.57E+02	1.17E+00
At Edge of Tailings Pile																						**Maximum HQ (Inside Tailings Pile)**	**1.09E+01**
BCEOT-E0-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	5.41E+02	2.54E+00	NA	NA	NA	NA	1.13E-04	2.73E+02	3.07E-02	1.00E+00	3.06E-02	8.39E+01	4.11E+02	1.75E-01	4.57E+02	1.84E-01
BCEOT-E1-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	3.67E+02	1.72E+00	NA	NA	NA	NA	1.13E-04	1.85E+02	2.08E-02	1.00E+00	3.06E-02	5.69E+01	4.11E+02	1.75E-01	4.57E+02	1.25E-01
BCEOT-E2-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	1.01E+03	4.73E+00	NA	NA	NA	NA	1.13E-04	5.09E+02	5.73E-02	1.00E+00	3.06E-02	1.57E+02	4.11E+02	1.75E-01	4.57E+02	3.43E-01
BCEOT-E3-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	2.46E+02	1.15E+00	NA	NA	NA	NA	1.13E-04	1.24E+02	1.40E-02	1.00E+00	3.06E-02	3.81E+01	4.11E+02	1.75E-01	4.57E+02	8.35E-02
BCEOT-E4-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	3.49E+02	1.64E+00	NA	NA	NA	NA	1.13E-04	1.76E+02	1.98E-02	1.00E+00	3.06E-02	5.41E+01	4.11E+02	1.75E-01	4.57E+02	1.19E-01
BCEOT-E5-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	4.70E+02	2.20E+00	NA	NA	NA	NA	1.13E-04	2.37E+02	2.67E-02	1.00E+00	3.06E-02	7.29E+01	4.11E+02	1.75E-01	4.57E+02	1.59E-01
BCEOT-W5-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	3.82E+02	1.79E+00	NA	NA	NA	NA	1.13E-04	1.93E+02	2.17E-02	1.00E+00	3.06E-02	5.93E+01	4.11E+02	1.75E-01	4.57E+02	1.30E-01
BCEOT-E6-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	3.36E+02	1.57E+00	NA	NA	NA	NA	1.13E-04	1.69E+02	1.91E-02	1.00E+00	3.06E-02	5.21E+01	4.11E+02	1.75E-01	4.57E+02	1.14E-01
BCEOT-W6-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	2.16E+02	1.01E+00	NA	NA	NA	NA	1.13E-04	1.09E+02	1.22E-02	1.00E+00	3.06E-02	3.34E+01	4.11E+02	1.75E-01	4.57E+02	7.32E-02
BCEOT-E7-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	3.36E+02	1.57E+00	NA	NA	NA	NA	1.13E-04	1.69E+02	1.91E-02	1.00E+00	3.06E-02	5.21E+01	4.11E+02	1.75E-01	4.57E+02	1.14E-01
BCEOT-W7-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-W8-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-E9-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	4.49E+02	2.11E+00	NA	NA	NA	NA	1.13E-04	2.27E+02	2.55E-02	1.00E+00	3.06E-02	6.96E+01	4.11E+02	1.75E-01	4.57E+02	1.52E-01
BCEOT-W9-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-E10-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	6.38E+02	2.99E+00	NA	NA	NA	NA	1.13E-04	3.22E+02	3.63E-02	1.00E+00	3.06E-02	9.90E+01	4.11E+02	1.75E-01	4.57E+02	2.17E-01
BCEOT-W10-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-E11-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	2.86E+02	1.34E+00	NA	NA	NA	NA	1.13E-04	1.44E+02	1.62E-02	1.00E+00	3.06E-02	4.43E+01	4.11E+02	1.75E-01	4.57E+02	9.70E-02
BCEOT-W11-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	6.39E+02	3.00E+00	NA	NA	NA	NA	1.13E-04	3.23E+02	3.63E-02	1.00E+00	3.06E-02	9.91E+01	4.11E+02	1.75E-01	4.57E+02	2.17E-01
BCEOT-E12-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	3.20E+02	1.50E+00	NA	NA	NA	NA	1.13E-04	1.61E+02	1.82E-02	1.00E+00	3.06E-02	4.96E+01	4.11E+02	1.75E-01	4.57E+02	1.09E-01
BCEOT-W12-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-E13-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	2.67E+02	1.25E+00	NA	NA	NA	NA	1.13E-04	1.35E+02	1.52E-02	1.00E+00	3.06E-02	4.15E+01	4.11E+02	1.75E-01	4.57E+02	9.08E-02
BCEOT-W13-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	3.05E+02	1.43E+00	NA	NA	NA	NA	1.13E-04	1.54E+02	1.73E-02	1.00E+00	3.06E-02	4.73E+01	4.11E+02	1.75E-01	4.57E+02	1.03E-01
BCEOT-E14-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	2.44E+02	1.15E+00	NA	NA	NA	NA	1.13E-04	1.23E+02	1.39E-02	1.00E+00	3.06E-02	3.79E+01	4.11E+02	1.75E-01	4.57E+02	8.30E-02
BCEOT-W14-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	1.46E+03	6.83E+00	NA	NA	NA	NA	1.13E-04	7.35E+02	8.28E-02	1.00E+00	3.06E-02	2.26E+02	4.11E+02	1.75E-01	4.57E+02	4.95E-01
BCEOT-E15-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	5.21E+02	2.44E+00	NA	NA	NA	NA	1.13E-04	2.63E+02	2.96E-02	1.00E+00	3.06E-02	8.08E+01	4.11E+02	1.75E-01	4.57E+02	1.77E-01
BCEOT-W15-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	1.53E+03	7.17E+00	NA	NA	NA	NA	1.13E-04	7.72E+02	8.68E-02	1.00E+00	3.06E-02	2.37E+02	4.11E+02	1.75E-01	4.57E+02	5.19E-01
BCEOT-E16-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	3.62E+02	1.70E+00	NA	NA	NA	NA	1.13E-04	1.83E+02	2.06E-02	1.00E+00	3.06E-02	5.61E+01	4.11E+02	1.75E-01	4.57E+02	1.23E-01
BCEOT-W16-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	4.35E+02	2.04E+00	NA	NA	NA	NA	1.13E-04	2.20E+02	2.47E-02	1.00E+00	3.06E-02	6.75E+01	4.11E+02	1.75E-01	4.57E+02	1.48E-01
BCEOT-E17-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	1.28E+03	5.99E+00	NA	NA	NA	NA	1.13E-04	6.44E+02	7.25E-02	1.00E+00	3.06E-02	1.98E+02	4.11E+02	1.75E-01	4.57E+02	4.34E-01
BCEOT-W17-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	4.58E+02	2.15E+00	NA	NA	NA	NA	1.13E-04	2.31E+02	2.60E-02	1.00E+00	3.06E-02	7.10E+01	4.11E+02	1.75E-01	4.57E+02	1.55E-01
BCEOT-E18-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	7.53E+02	3.53E+00	NA	NA	NA	NA	1.13E-04	3.80E+02	4.27E-02	1.00E+00	3.06E-02	1.17E+02	4.11E+02	1.75E-01	4.57E+02	2.56E-01
BCEOT-W18-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	5.41E+02	2.54E+00	NA	NA	NA	NA	1.13E-04	2.73E+02	3.07E-02	1.00E+00	3.06E-02	8.40E+01	4.11E+02	1.75E-01	4.57E+02	1.84E-01
BCEOT-E19-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	5.25E+02	2.46E+00	NA	NA	NA	NA	1.13E-04	2.65E+02	2.98E-02	1.00E+00	3.06E-02	8.15E+01	4.11E+02	1.75E-01	4.57E+02	1.78E-01
BCEOT-W19-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	5.91E+02	2.77E+00	NA	NA	NA	NA	1.13E-04	2.98E+02	3.36E-02	1.00E+00	3.06E-02	9.17E+01	4.11E+02	1.75E-01	4.57E+02	2.01E-01
BCEOT-E20-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	2.62E+02	1.23E+00	NA	NA	NA	NA	1.13E-04	1.32E+02	1.49E-02	1.00E+00	3.06E-02	4.07E+01	4.11E+02	1.75E-01	4.57E+02	8.91E-02

TABLE C-11F: ZINC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 11 - BEARTRAP CREEK DISPERSED TAILINGS DEPOSITS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK TAILINGS DEPOSITS AND FLOSSIE LOUISE MINE WASTE PILE (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **4.982**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Meadow Vole (Small Herbivorous Mammal - Terrestrial)																							
BCEOT-W20-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	5.37E+02	2.52E+00	NA	NA	NA	NA	1.13E-04	2.71E+02	3.05E-02	1.00E+00	3.06E-02	8.33E+01	4.11E+02	1.75E-01	4.57E+02	1.82E-01
BCEOT-E21-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	5.30E+02	2.48E+00	NA	NA	NA	NA	1.13E-04	2.67E+02	3.01E-02	1.00E+00	3.06E-02	8.21E+01	4.11E+02	1.75E-01	4.57E+02	1.80E-01
BCEOT-W21-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	6.11E+02	2.87E+00	NA	NA	NA	NA	1.13E-04	3.09E+02	3.47E-02	1.00E+00	3.06E-02	9.48E+01	4.11E+02	1.75E-01	4.57E+02	2.08E-01
BCEOT-E22-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	2.47E+02	1.16E+00	NA	NA	NA	NA	1.13E-04	1.25E+02	1.40E-02	1.00E+00	3.06E-02	3.83E+01	4.11E+02	1.75E-01	4.57E+02	8.39E-02
BCEOT-W22-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	4.77E+02	2.24E+00	NA	NA	NA	NA	1.13E-04	2.41E+02	2.71E-02	1.00E+00	3.06E-02	7.40E+01	4.11E+02	1.75E-01	4.57E+02	1.62E-01
BCEOT-E23-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	1.79E+02	8.38E-01	NA	NA	NA	NA	1.13E-04	9.02E+01	1.01E-02	1.00E+00	3.06E-02	2.77E+01	4.11E+02	1.75E-01	4.57E+02	6.07E-02
BCEOT-W23-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	8.01E+02	3.75E+00	NA	NA	NA	NA	1.13E-04	4.04E+02	4.55E-02	1.00E+00	3.06E-02	1.24E+02	4.11E+02	1.75E-01	4.57E+02	2.72E-01
BCEOT-E24-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	2.90E+02	1.36E+00	NA	NA	NA	NA	1.13E-04	1.46E+02	1.65E-02	1.00E+00	3.06E-02	4.50E+01	4.11E+02	1.75E-01	4.57E+02	9.84E-02
BCEOT-W24-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	4.90E+02	2.30E+00	NA	NA	NA	NA	1.13E-04	2.47E+02	2.78E-02	1.00E+00	3.06E-02	7.60E+01	4.11E+02	1.75E-01	4.57E+02	1.66E-01
BCEOT-E25-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	3.40E+02	1.60E+00	NA	NA	NA	NA	1.13E-04	1.72E+02	1.93E-02	1.00E+00	3.06E-02	5.28E+01	4.11E+02	1.75E-01	4.57E+02	1.16E-01
BCEOT-W25-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	5.62E+02	2.63E+00	NA	NA	NA	NA	1.13E-04	2.84E+02	3.19E-02	1.00E+00	3.06E-02	8.71E+01	4.11E+02	1.75E-01	4.57E+02	1.91E-01
BCEOT-E26-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	6.53E+02	3.06E+00	NA	NA	NA	NA	1.13E-04	3.30E+02	3.71E-02	1.00E+00	3.06E-02	1.01E+02	4.11E+02	1.75E-01	4.57E+02	2.22E-01
BCEOT-W26-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	4.63E+02	2.17E+00	NA	NA	NA	NA	1.13E-04	2.34E+02	2.63E-02	1.00E+00	3.06E-02	7.18E+01	4.11E+02	1.75E-01	4.57E+02	1.57E-01
BCEOT-W27-0 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	5.34E+02	2.50E+00	NA	NA	NA	NA	1.13E-04	2.69E+02	3.03E-02	1.00E+00	3.06E-02	8.28E+01	4.11E+02	1.75E-01	4.57E+02	1.81E-01
Outside Tailings Piles																						**Maximum HQ (Edge of Tailings Pile)**	**5.19E-01**
BCEOT-E0+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	4.06E+02	1.90E+00	NA	NA	NA	NA	1.13E-04	2.05E+02	2.30E-02	1.00E+00	3.06E-02	6.29E+01	4.11E+02	1.75E-01	4.57E+02	1.38E-01
BCEOT-E1+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	8.49E+02	3.98E+00	NA	NA	NA	NA	1.13E-04	4.28E+02	4.82E-02	1.00E+00	3.06E-02	1.32E+02	4.11E+02	1.75E-01	4.57E+02	2.88E-01
BCEOT-E2+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	3.47E+02	1.63E+00	NA	NA	NA	NA	1.13E-04	1.75E+02	1.97E-02	1.00E+00	3.06E-02	5.38E+01	4.11E+02	1.75E-01	4.57E+02	1.18E-01
BCEOT-E3+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	2.19E+02	1.03E+00	NA	NA	NA	NA	1.13E-04	1.10E+02	1.24E-02	1.00E+00	3.06E-02	3.39E+01	4.11E+02	1.75E-01	4.57E+02	7.42E-02
BCEOT-E4+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	3.17E+02	1.48E+00	NA	NA	NA	NA	1.13E-04	1.60E+02	1.80E-02	1.00E+00	3.06E-02	4.91E+01	4.11E+02	1.75E-01	4.57E+02	1.08E-01
BCEOT-W4+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	2.89E+02	1.35E+00	NA	NA	NA	NA	1.13E-04	1.46E+02	1.64E-02	1.00E+00	3.06E-02	4.48E+01	4.11E+02	1.75E-01	4.57E+02	9.80E-02
BCEOT-W5+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	3.39E+02	1.59E+00	NA	NA	NA	NA	1.13E-04	1.71E+02	1.93E-02	1.00E+00	3.06E-02	5.26E+01	4.11E+02	1.75E-01	4.57E+02	1.15E-01
BCEOT-E6+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	3.02E+02	1.42E+00	NA	NA	NA	NA	1.13E-04	1.52E+02	1.72E-02	1.00E+00	3.06E-02	4.69E+01	4.11E+02	1.75E-01	4.57E+02	1.03E-01
BCEOT-W6+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	1.69E+02	7.94E-01	NA	NA	NA	NA	1.13E-04	8.55E+01	9.62E-03	1.00E+00	3.06E-02	2.63E+01	4.11E+02	1.75E-01	4.57E+02	5.75E-02
BCEOT-E7+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	2.89E+02	1.35E+00	NA	NA	NA	NA	1.13E-04	1.46E+02	1.64E-02	1.00E+00	3.06E-02	4.48E+01	4.11E+02	1.75E-01	4.57E+02	9.80E-02
BCEOT-W7+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	2.44E+02	1.14E+00	NA	NA	NA	NA	1.13E-04	1.23E+02	1.38E-02	1.00E+00	3.06E-02	3.78E+01	4.11E+02	1.75E-01	4.57E+02	8.28E-02
FLWA-101 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	5.62E+02	2.64E+00	NA	NA	NA	NA	1.13E-04	2.84E+02	3.19E-02	1.00E+00	3.06E-02	8.72E+01	4.11E+02	1.75E-01	4.57E+02	1.91E-01
BCEOT-W8+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	3.18E+02	1.49E+00	NA	NA	NA	NA	1.13E-04	1.61E+02	1.81E-02	1.00E+00	3.06E-02	4.93E+01	4.11E+02	1.75E-01	4.57E+02	1.08E-01
BCEOT-E9+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	5.07E+02	2.38E+00	NA	NA	NA	NA	1.13E-04	2.56E+02	2.88E-02	1.00E+00	3.06E-02	7.86E+01	4.11E+02	1.75E-01	4.57E+02	1.72E-01
BCEOT-W9+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	4.65E+02	2.18E+00	NA	NA	NA	NA	1.13E-04	2.35E+02	2.64E-02	1.00E+00	3.06E-02	7.22E+01	4.11E+02	1.75E-01	4.57E+02	1.58E-01
BCEOT-E10+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	3.13E+02	1.47E+00	NA	NA	NA	NA	1.13E-04	1.58E+02	1.78E-02	1.00E+00	3.06E-02	4.86E+01	4.11E+02	1.75E-01	4.57E+02	1.06E-01
BCEOT-W10+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-E11+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	4.07E+02	1.91E+00	NA	NA	NA	NA	1.13E-04	2.05E+02	2.31E-02	1.00E+00	3.06E-02	6.31E+01	4.11E+02	1.75E-01	4.57E+02	1.38E-01
BCEOT-W11+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	1.71E+02	8.03E-01	NA	NA	NA	NA	1.13E-04	8.64E+01	9.72E-03	1.00E+00	3.06E-02	2.66E+01	4.11E+02	1.75E-01	4.57E+02	5.81E-02
BCEOT-E12+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	2.92E+02	1.37E+00	NA	NA	NA	NA	1.13E-04	1.48E+02	1.66E-02	1.00E+00	3.06E-02	4.53E+01	4.11E+02	1.75E-01	4.57E+02	9.93E-02
BCEOT-W12+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	3.38E+02	1.59E+00	NA	NA	NA	NA	1.13E-04	1.71E+02	1.92E-02	1.00E+00	3.06E-02	5.25E+01	4.11E+02	1.75E-01	4.57E+02	1.15E-01
BCEOT-E13+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	3.09E+02	1.45E+00	NA	NA	NA	NA	1.13E-04	1.56E+02	1.75E-02	1.00E+00	3.06E-02	4.79E+01	4.11E+02	1.75E-01	4.57E+02	1.05E-01
BCEOT-E14+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	1.87E+02	8.78E-01	NA	NA	NA	NA	1.13E-04	9.45E+01	1.06E-02	1.00E+00	3.06E-02	2.90E+01	4.11E+02	1.75E-01	4.57E+02	6.35E-02
BCEOT-W14+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	3.41E+02	1.60E+00	NA	NA	NA	NA	1.13E-04	1.72E+02	1.93E-02	1.00E+00	3.06E-02	5.28E+01	4.11E+02	1.75E-01	4.57E+02	1.16E-01
BCEOT-E15+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	5.13E+02	2.41E+00	NA	NA	NA	NA	1.13E-04	2.59E+02	2.91E-02	1.00E+00	3.06E-02	7.96E+01	4.11E+02	1.75E-01	4.57E+02	1.74E-01
BCEOT-W15+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	5.27E+02	2.47E+00	NA	NA	NA	NA	1.13E-04	2.66E+02	2.99E-02	1.00E+00	3.06E-02	8.18E+01	4.11E+02	1.75E-01	4.57E+02	1.79E-01
BCEOT-E16+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	3.93E+02	1.84E+00	NA	NA	NA	NA	1.13E-04	1.99E+02	2.23E-02	1.00E+00	3.06E-02	6.10E+01	4.11E+02	1.75E-01	4.57E+02	1.34E-01
BCEOT-W16+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	3.01E+02	1.41E+00	NA	NA	NA	NA	1.13E-04	1.52E+02	1.71E-02	1.00E+00	3.06E-02	4.67E+01	4.11E+02	1.75E-01	4.57E+02	1.02E-01
BCEOT-E17+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	7.49E+02	3.51E+00	NA	NA	NA	NA	1.13E-04	3.78E+02	4.25E-02	1.00E+00	3.06E-02	1.16E+02	4.11E+02	1.75E-01	4.57E+02	2.54E-01
BCEOT-W17+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	2.46E+02	1.15E+00	NA	NA	NA	NA	1.13E-04	1.24E+02	1.40E-02	1.00E+00	3.06E-02	3.81E+01	4.11E+02	1.75E-01	4.57E+02	8.35E-02
BCEOT-E18+12.5 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	2.70E+04	1.27E+02	NA	NA	NA	NA	1.13E-04	1.36E+04	1.54E+00	1.00E+00	3.06E-02	4.19E+03	4.11E+02	1.75E-01	4.57E+02	9.18E+00
BCEOT-E18+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	5.69E+02	2.67E+00	NA	NA	NA	NA	1.13E-04	2.87E+02	3.23E-02	1.00E+00	3.06E-02	8.83E+01	4.11E+02	1.75E-01	4.57E+02	1.93E-01
BCEOT-W18+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	4.08E+02	1.91E+00	NA	NA	NA	NA	1.13E-04	2.06E+02	2.32E-02	1.00E+00	3.06E-02	6.33E+01	4.11E+02	1.75E-01	4.57E+02	1.39E-01
BCEOT-E19+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	4.96E+02	2.33E+00	NA	NA	NA	NA	1.13E-04	2.50E+02	2.82E-02	1.00E+00	3.06E-02	7.70E+01	4.11E+02	1.75E-01	4.57E+02	1.69E-01
BCEOT-W19+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	2.46E+02	1.16E+00	NA	NA	NA	NA	1.13E-04	1.24E+02	1.40E-02	1.00E+00	3.06E-02	3.82E+01	4.11E+02	1.75E-01	4.57E+02	8.37E-02
BCEOT-E20+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	3.25E+02	1.52E+00	NA	NA	NA	NA	1.13E-04	1.64E+02	1.84E-02	1.00E+00	3.06E-02	5.04E+01	4.11E+02	1.75E-01	4.57E+02	1.10E-01

TABLE C-11F: ZINC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 11 - BEARTRAP CREEK DISPERSED TAILINGS DEPOSITS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK TAILINGS DEPOSITS AND FLOSSIE LOUISE MINE WASTE PILE (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **4.982**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Meadow Vole (Small Herbivorous Mammal - Terrestrial)																							
BCEOT-W20+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	3.92E+02	1.84E+00	NA	NA	NA	NA	1.13E-04	1.98E+02	2.22E-02	1.00E+00	3.06E-02	6.08E+01	4.11E+02	1.75E-01	4.57E+02	1.33E-01
BCEOT-E21+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	3.73E+02	1.75E+00	NA	NA	NA	NA	1.13E-04	1.88E+02	2.12E-02	1.00E+00	3.06E-02	5.79E+01	4.11E+02	1.75E-01	4.57E+02	1.27E-01
BCEOT-W21+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	3.46E+02	1.62E+00	NA	NA	NA	NA	1.13E-04	1.75E+02	1.97E-02	1.00E+00	3.06E-02	5.37E+01	4.11E+02	1.75E-01	4.57E+02	1.18E-01
BCEOT-E22+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	3.99E+02	1.87E+00	NA	NA	NA	NA	1.13E-04	2.01E+02	2.27E-02	1.00E+00	3.06E-02	6.19E+01	4.11E+02	1.75E-01	4.57E+02	1.35E-01
BCEOT-E22+70 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	6.09E+02	2.86E+00	NA	NA	NA	NA	1.13E-04	3.07E+02	3.46E-02	1.00E+00	3.06E-02	9.45E+01	4.11E+02	1.75E-01	4.57E+02	2.07E-01
BCEOT-W22+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	3.17E+02	1.49E+00	NA	NA	NA	NA	1.13E-04	1.60E+02	1.80E-02	1.00E+00	3.06E-02	4.92E+01	4.11E+02	1.75E-01	4.57E+02	1.08E-01
BCEOT-E23+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	2.02E+02	9.49E-01	NA	NA	NA	NA	1.13E-04	1.02E+02	1.15E-02	1.00E+00	3.06E-02	3.14E+01	4.11E+02	1.75E-01	4.57E+02	6.87E-02
BCEOT-W23+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	3.81E+02	1.79E+00	NA	NA	NA	NA	1.13E-04	1.92E+02	2.16E-02	1.00E+00	3.06E-02	5.91E+01	4.11E+02	1.75E-01	4.57E+02	1.29E-01
BCEOT-E24+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-W24+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	6.14E+02	2.88E+00	NA	NA	NA	NA	1.13E-04	3.10E+02	3.49E-02	1.00E+00	3.06E-02	9.52E+01	4.11E+02	1.75E-01	4.57E+02	2.08E-01
BCEOT-E25+20 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	2.15E+02	1.01E+00	NA	NA	NA	NA	1.13E-04	1.09E+02	1.22E-02	1.00E+00	3.06E-02	3.34E+01	4.11E+02	1.75E-01	4.57E+02	7.30E-02
BCEOT-W25+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	5.34E+02	2.51E+00	NA	NA	NA	NA	1.13E-04	2.70E+02	3.04E-02	1.00E+00	3.06E-02	8.29E+01	4.11E+02	1.75E-01	4.57E+02	1.81E-01
BCEOT-E26+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	2.46E+02	1.15E+00	NA	NA	NA	NA	1.13E-04	1.24E+02	1.40E-02	1.00E+00	3.06E-02	3.82E+01	4.11E+02	1.75E-01	4.57E+02	8.36E-02
BCEOT-W26+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	5.58E+02	2.61E+00	NA	NA	NA	NA	1.13E-04	2.81E+02	3.17E-02	1.00E+00	3.06E-02	8.65E+01	4.11E+02	1.75E-01	4.57E+02	1.89E-01
BCEOT-W27+25 (0-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.98E+00	5.21E+02	2.44E+00	NA	NA	NA	NA	1.13E-04	2.63E+02	2.96E-02	1.00E+00	3.06E-02	8.08E+01	4.11E+02	1.75E-01	4.57E+02	1.77E-01
																						Maximum HQ (Outside Tailings Pile)	**9.18E+00**
White-Tailed Deer (Large Herbivorous Mammal - Terrestrial)																							
Reference Sites																							
ACBG-1 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.41E+00	1.93E+02	2.77E+02	NA	NA	NA	NA	2.86E-02	1.37E+02	3.92E+00	2.79E-02	1.35E+02	5.79E-02	4.11E+02	1.75E-01	2.76E+02	2.10E-04
ACBG-2 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.41E+00	1.18E+02	1.70E+02	NA	NA	NA	NA	2.86E-02	8.39E+01	2.40E+00	2.79E-02	1.35E+02	3.55E-02	4.11E+02	1.75E-01	2.76E+02	1.29E-04
BCBG-201 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.41E+00	3.41E+02	4.88E+02	NA	NA	NA	NA	2.86E-02	2.42E+02	6.92E+00	2.79E-02	1.35E+02	1.02E-01	4.11E+02	1.75E-01	2.76E+02	3.70E-04
Inside Tailings Pile																						**Minimum HQ (Reference Sites)**	**1.29E-04**
BCEOT-E0-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	3.62E+02	5.18E+02	NA	NA	NA	NA	2.86E-02	1.83E+02	5.23E+00	2.79E-02	1.35E+02	1.08E-01	4.11E+02	1.75E-01	2.76E+02	3.92E-04
BCEOT-E1-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	5.46E+02	7.81E+02	NA	NA	NA	NA	2.86E-02	2.75E+02	7.89E+00	2.79E-02	1.35E+02	1.63E-01	4.11E+02	1.75E-01	2.76E+02	5.90E-04
BCEOT-E2-8 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	2.70E+02	3.87E+02	NA	NA	NA	NA	2.86E-02	1.36E+02	3.90E+00	2.79E-02	1.35E+02	8.06E-02	4.11E+02	1.75E-01	2.76E+02	2.92E-04
BCEOT-E3-8 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	4.69E+02	6.72E+02	NA	NA	NA	NA	2.86E-02	2.37E+02	6.78E+00	2.79E-02	1.35E+02	1.40E-01	4.11E+02	1.75E-01	2.76E+02	5.08E-04
BCEOT-E4-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	3.21E+02	4.60E+02	NA	NA	NA	NA	2.86E-02	1.62E+02	4.64E+00	2.79E-02	1.35E+02	9.59E-02	4.11E+02	1.75E-01	2.76E+02	3.47E-04
BCEOT-W4-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	4.68E+02	6.70E+02	NA	NA	NA	NA	2.86E-02	2.36E+02	6.76E+00	2.79E-02	1.35E+02	1.40E-01	4.11E+02	1.75E-01	2.76E+02	5.06E-04
BCEOT-E5-25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	1.89E+02	2.71E+02	NA	NA	NA	NA	2.86E-02	9.56E+01	2.74E+00	2.79E-02	1.35E+02	5.66E-02	4.11E+02	1.75E-01	2.76E+02	2.05E-04
BCEOT-W5-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	2.30E+03	3.29E+03	NA	NA	NA	NA	2.86E-02	1.16E+03	3.32E+01	2.79E-02	1.35E+02	6.87E-01	4.11E+02	1.75E-01	2.76E+02	2.49E-03
BCEOT-E6-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	3.82E+02	5.47E+02	NA	NA	NA	NA	2.86E-02	1.93E+02	5.52E+00	2.79E-02	1.35E+02	1.14E-01	4.11E+02	1.75E-01	2.76E+02	4.13E-04
BCEOT-W6-12.5 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-E7-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	2.21E+02	3.16E+02	NA	NA	NA	NA	2.86E-02	1.11E+02	3.19E+00	2.79E-02	1.35E+02	6.59E-02	4.11E+02	1.75E-01	2.76E+02	2.39E-04
BCEOT-W7-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	2.83E+02	4.05E+02	NA	NA	NA	NA	2.86E-02	1.43E+02	4.08E+00	2.79E-02	1.35E+02	8.44E-02	4.11E+02	1.75E-01	2.76E+02	3.06E-04
BCEOT-W8-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	7.52E+02	1.08E+03	NA	NA	NA	NA	2.86E-02	3.80E+02	1.09E+01	2.79E-02	1.35E+02	2.25E-01	4.11E+02	1.75E-01	2.76E+02	8.13E-04
BCEOT-E9-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	5.16E+02	7.39E+02	NA	NA	NA	NA	2.86E-02	2.61E+02	7.46E+00	2.79E-02	1.35E+02	1.54E-01	4.11E+02	1.75E-01	2.76E+02	5.58E-04
BCEOT-W9-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	5.55E+03	7.95E+03	NA	NA	NA	NA	2.86E-02	2.80E+03	8.02E+01	2.79E-02	1.35E+02	1.66E+00	4.11E+02	1.75E-01	2.76E+02	6.00E-03
BCEOT-E10-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	5.03E+02	7.20E+02	NA	NA	NA	NA	2.86E-02	2.54E+02	7.27E+00	2.79E-02	1.35E+02	1.50E-01	4.11E+02	1.75E-01	2.76E+02	5.44E-04
BCEOT-W10-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	4.77E+02	6.83E+02	NA	NA	NA	NA	2.86E-02	2.41E+02	6.89E+00	2.79E-02	1.35E+02	1.42E-01	4.11E+02	1.75E-01	2.76E+02	5.16E-04
BCEOT-E11-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	3.28E+02	4.69E+02	NA	NA	NA	NA	2.86E-02	1.65E+02	4.73E+00	2.79E-02	1.35E+02	9.78E-02	4.11E+02	1.75E-01	2.76E+02	3.54E-04
BCEOT-W11-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	3.59E+03	5.14E+03	NA	NA	NA	NA	2.86E-02	1.81E+03	5.19E+01	2.79E-02	1.35E+02	1.07E+00	4.11E+02	1.75E-01	2.76E+02	3.88E-03
BCEOT-E12-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	2.49E+02	3.57E+02	NA	NA	NA	NA	2.86E-02	1.26E+02	3.60E+00	2.79E-02	1.35E+02	7.45E-02	4.11E+02	1.75E-01	2.76E+02	2.70E-04
BCEOT-W12-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	2.14E+03	3.06E+03	NA	NA	NA	NA	2.86E-02	1.08E+03	3.09E+01	2.79E-02	1.35E+02	6.39E-01	4.11E+02	1.75E-01	2.76E+02	2.31E-03
BCEOT-E13-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	4.36E+02	6.24E+02	NA	NA	NA	NA	2.86E-02	2.20E+02	6.30E+00	2.79E-02	1.35E+02	1.30E-01	4.11E+02	1.75E-01	2.76E+02	4.71E-04
BCEOT-W13-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	1.14E+03	1.64E+03	NA	NA	NA	NA	2.86E-02	5.77E+02	1.65E+01	2.79E-02	1.35E+02	3.41E-01	4.11E+02	1.75E-01	2.76E+02	1.24E-03
BCEOT-W13-25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-W14-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	7.69E+02	1.10E+03	NA	NA	NA	NA	2.86E-02	3.88E+02	1.11E+01	2.79E-02	1.35E+02	2.30E-01	4.11E+02	1.75E-01	2.76E+02	8.31E-04
BCEOT-E15-8 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	4.51E+02	6.46E+02	NA	NA	NA	NA	2.86E-02	2.28E+02	6.52E+00	2.79E-02	1.35E+02	1.35E-01	4.11E+02	1.75E-01	2.76E+02	4.88E-04
BCEOT-W15-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	7.76E+02	1.11E+03	NA	NA	NA	NA	2.86E-02	3.92E+02	1.12E+01	2.79E-02	1.35E+02	2.32E-01	4.11E+02	1.75E-01	2.76E+02	8.39E-04
BCEOT-E16-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	7.65E+03	1.10E+04	NA	NA	NA	NA	2.86E-02	3.86E+03	1.11E+02	2.79E-02	1.35E+02	2.28E+00	4.11E+02	1.75E-01	2.76E+02	8.27E-03
BCEOT-W16-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	2.12E+03	3.03E+03	NA	NA	NA	NA	2.86E-02	1.07E+03	3.06E+01	2.79E-02	1.35E+02	6.32E-01	4.11E+02	1.75E-01	2.76E+02	2.29E-03
BCEOT-E17-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	3.21E+04	4.59E+04	NA	NA	NA	NA	2.86E-02	1.62E+04	4.63E+02	2.79E-02	1.35E+02	9.57E+00	4.11E+02	1.75E-01	2.76E+02	3.47E-02
BCEOT-W17-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	1.00E+03	1.43E+03	NA	NA	NA	NA	2.86E-02	5.05E+02	1.44E+01	2.79E-02	1.35E+02	2.99E-01	4.11E+02	1.75E-01	2.76E+02	1.08E-03

TABLE C-11F: ZINC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 11 - BEARTRAP CREEK DISPERSED TAILINGS DEPOSITS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK TAILINGS DEPOSITS AND FLOSSIE LOUISE MINE WASTE PILE (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 4.982

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
White-Tailed Deer (Large Herbivorous Mammal - Terrestrial)																							
BCEOT-W18-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	7.69E+02	1.10E+03	NA	NA	NA	NA	2.86E-02	3.88E+02	1.11E+01	2.79E-02	1.35E+02	2.29E-01	4.11E+02	1.75E-01	2.76E+02	8.31E-04
BCEOT-E19-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	1.85E+03	2.65E+03	NA	NA	NA	NA	2.86E-02	9.34E+02	2.67E+01	2.79E-02	1.35E+02	5.53E-01	4.11E+02	1.75E-01	2.76E+02	2.00E-03
BCEOT-W19-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	6.74E+02	9.64E+02	NA	NA	NA	NA	2.86E-02	3.40E+02	9.73E+00	2.79E-02	1.35E+02	2.01E-01	4.11E+02	1.75E-01	2.76E+02	7.28E-04
BCEOT-E20-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	1.13E+03	1.62E+03	NA	NA	NA	NA	2.86E-02	5.72E+02	1.64E+01	2.79E-02	1.35E+02	3.38E-01	4.11E+02	1.75E-01	2.76E+02	1.23E-03
BCEOT-W20-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	7.19E+03	1.03E+04	NA	NA	NA	NA	2.86E-02	3.63E+03	1.04E+02	2.79E-02	1.35E+02	2.15E+00	4.11E+02	1.75E-01	2.76E+02	7.77E-03
BCEOT-E21-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	4.93E+02	7.06E+02	NA	NA	NA	NA	2.86E-02	2.49E+02	7.13E+00	2.79E-02	1.35E+02	1.47E-01	4.11E+02	1.75E-01	2.76E+02	5.33E-04
BCEOT-W21-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	6.85E+02	9.81E+02	NA	NA	NA	NA	2.86E-02	3.46E+02	9.90E+00	2.79E-02	1.35E+02	2.05E-01	4.11E+02	1.75E-01	2.76E+02	7.41E-04
BCEOT-E22-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	2.45E+03	3.51E+03	NA	NA	NA	NA	2.86E-02	1.24E+03	3.55E+01	2.79E-02	1.35E+02	7.32E-01	4.11E+02	1.75E-01	2.76E+02	2.65E-03
BCEOT-W22-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	2.89E+04	4.14E+04	NA	NA	NA	NA	2.86E-02	1.46E+04	4.18E+02	2.79E-02	1.35E+02	8.64E+00	4.11E+02	1.75E-01	2.76E+02	3.13E-02
BCEOT-E23-15 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	5.40E+02	7.74E+02	NA	NA	NA	NA	2.86E-02	2.73E+02	7.81E+00	2.79E-02	1.35E+02	1.61E-01	4.11E+02	1.75E-01	2.76E+02	5.84E-04
BCEOT-W23-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	7.26E+03	1.04E+04	NA	NA	NA	NA	2.86E-02	3.67E+03	1.05E+02	2.79E-02	1.35E+02	2.17E+00	4.11E+02	1.75E-01	2.76E+02	7.85E-03
BCEOT-E24-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	2.12E+02	3.03E+02	NA	NA	NA	NA	2.86E-02	1.07E+02	3.06E+00	2.79E-02	1.35E+02	6.32E-02	4.11E+02	1.75E-01	2.76E+02	2.29E-04
BCEOT-W24-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	5.57E+03	7.97E+03	NA	NA	NA	NA	2.86E-02	2.81E+03	8.04E+01	2.79E-02	1.35E+02	1.66E+00	4.11E+02	1.75E-01	2.76E+02	6.02E-03
BCEOT-E25-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	1.12E+03	1.61E+03	NA	NA	NA	NA	2.86E-02	5.67E+02	1.62E+01	2.79E-02	1.35E+02	3.36E-01	4.11E+02	1.75E-01	2.76E+02	1.22E-03
BCEOT-W25-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	3.81E+03	5.46E+03	NA	NA	NA	NA	2.86E-02	1.92E+03	5.51E+01	2.79E-02	1.35E+02	1.14E+00	4.11E+02	1.75E-01	2.76E+02	4.12E-03
BCEOT-E26-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	3.94E+02	5.63E+02	NA	NA	NA	NA	2.86E-02	1.99E+02	5.69E+00	2.79E-02	1.35E+02	1.17E-01	4.11E+02	1.75E-01	2.76E+02	4.26E-04
BCEOT-W26-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	6.12E+02	8.77E+02	NA	NA	NA	NA	2.86E-02	3.09E+02	8.85E+00	2.79E-02	1.35E+02	1.83E-01	4.11E+02	1.75E-01	2.76E+02	6.62E-04
BCEOT-W27-12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	3.44E+03	4.92E+03	NA	NA	NA	NA	2.86E-02	1.74E+03	4.97E+01	2.79E-02	1.35E+02	1.03E+00	4.11E+02	1.75E-01	2.76E+02	3.72E-03
At Edge of Tailings Pile																						**Maximum HQ (Inside Tailings Pile)**	**3.47E-02**
BCEOT-E0-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	5.41E+02	7.74E+02	NA	NA	NA	NA	2.86E-02	2.73E+02	7.82E+00	2.79E-02	1.35E+02	1.61E-01	4.11E+02	1.75E-01	2.76E+02	5.85E-04
BCEOT-E1-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	3.67E+02	5.26E+02	NA	NA	NA	NA	2.86E-02	1.85E+02	5.30E+00	2.79E-02	1.35E+02	1.10E-01	4.11E+02	1.75E-01	2.76E+02	3.97E-04
BCEOT-E2-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	1.01E+03	1.44E+03	NA	NA	NA	NA	2.86E-02	5.09E+02	1.46E+01	2.79E-02	1.35E+02	3.01E-01	4.11E+02	1.75E-01	2.76E+02	1.09E-03
BCEOT-E3-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	2.46E+02	3.52E+02	NA	NA	NA	NA	2.86E-02	1.24E+02	3.55E+00	2.79E-02	1.35E+02	7.34E-02	4.11E+02	1.75E-01	2.76E+02	2.66E-04
BCEOT-E4-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	3.49E+02	5.00E+02	NA	NA	NA	NA	2.86E-02	1.76E+02	5.04E+00	2.79E-02	1.35E+02	1.04E-01	4.11E+02	1.75E-01	2.76E+02	3.77E-04
BCEOT-W4-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	1.75E+02	2.51E+02	NA	NA	NA	NA	2.86E-02	8.85E+01	2.53E+00	2.79E-02	1.35E+02	5.23E-02	4.11E+02	1.75E-01	2.76E+02	1.90E-04
BCEOT-E5-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	4.70E+02	6.73E+02	NA	NA	NA	NA	2.86E-02	2.37E+02	6.79E+00	2.79E-02	1.35E+02	1.40E-01	4.11E+02	1.75E-01	2.76E+02	5.08E-04
BCEOT-W5-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	3.82E+02	5.47E+02	NA	NA	NA	NA	2.86E-02	1.93E+02	5.52E+00	2.79E-02	1.35E+02	1.14E-01	4.11E+02	1.75E-01	2.76E+02	4.13E-04
BCEOT-E6-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	3.36E+02	4.81E+02	NA	NA	NA	NA	2.86E-02	1.69E+02	4.85E+00	2.79E-02	1.35E+02	1.00E-01	4.11E+02	1.75E-01	2.76E+02	3.63E-04
BCEOT-W6-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	2.16E+02	3.09E+02	NA	NA	NA	NA	2.86E-02	1.09E+02	3.12E+00	2.79E-02	1.35E+02	6.44E-02	4.11E+02	1.75E-01	2.76E+02	2.33E-04
BCEOT-E7-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	3.36E+02	4.81E+02	NA	NA	NA	NA	2.86E-02	1.69E+02	4.85E+00	2.79E-02	1.35E+02	1.00E-01	4.11E+02	1.75E-01	2.76E+02	3.63E-04
BCEOT-W7-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-W8-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-E9-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	4.49E+02	6.43E+02	NA	NA	NA	NA	2.86E-02	2.27E+02	6.49E+00	2.79E-02	1.35E+02	1.34E-01	4.11E+02	1.75E-01	2.76E+02	4.86E-04
BCEOT-W9-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-E10-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	6.38E+02	9.14E+02	NA	NA	NA	NA	2.86E-02	3.22E+02	9.22E+00	2.79E-02	1.35E+02	1.91E-01	4.11E+02	1.75E-01	2.76E+02	6.90E-04
BCEOT-W10-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-E11-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	2.86E+02	4.09E+02	NA	NA	NA	NA	2.86E-02	1.44E+02	4.13E+00	2.79E-02	1.35E+02	8.53E-02	4.11E+02	1.75E-01	2.76E+02	3.09E-04
BCEOT-W11-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	6.39E+02	9.15E+02	NA	NA	NA	NA	2.86E-02	3.23E+02	9.24E+00	2.79E-02	1.35E+02	1.91E-01	4.11E+02	1.75E-01	2.76E+02	6.91E-04
BCEOT-E12-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	3.20E+02	4.58E+02	NA	NA	NA	NA	2.86E-02	1.61E+02	4.62E+00	2.79E-02	1.35E+02	9.55E-02	4.11E+02	1.75E-01	2.76E+02	3.46E-04
BCEOT-W12-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-E13-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	2.67E+02	3.83E+02	NA	NA	NA	NA	2.86E-02	1.35E+02	3.86E+00	2.79E-02	1.35E+02	7.98E-02	4.11E+02	1.75E-01	2.76E+02	2.89E-04
BCEOT-W13-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	3.05E+02	4.36E+02	NA	NA	NA	NA	2.86E-02	1.54E+02	4.40E+00	2.79E-02	1.35E+02	9.10E-02	4.11E+02	1.75E-01	2.76E+02	3.29E-04
BCEOT-E14-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	2.44E+02	3.50E+02	NA	NA	NA	NA	2.86E-02	1.23E+02	3.53E+00	2.79E-02	1.35E+02	7.30E-02	4.11E+02	1.75E-01	2.76E+02	2.64E-04
BCEOT-W14-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	1.46E+03	2.09E+03	NA	NA	NA	NA	2.86E-02	7.35E+02	2.11E+01	2.79E-02	1.35E+02	4.35E-01	4.11E+02	1.75E-01	2.76E+02	1.58E-03
BCEOT-E15-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	5.21E+02	7.45E+02	NA	NA	NA	NA	2.86E-02	2.63E+02	7.52E+00	2.79E-02	1.35E+02	1.55E-01	4.11E+02	1.75E-01	2.76E+02	5.63E-04
BCEOT-W15-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	1.53E+03	2.19E+03	NA	NA	NA	NA	2.86E-02	7.72E+02	2.21E+01	2.79E-02	1.35E+02	4.56E-01	4.11E+02	1.75E-01	2.76E+02	1.65E-03
BCEOT-E16-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	3.62E+02	5.18E+02	NA	NA	NA	NA	2.86E-02	1.83E+02	5.23E+00	2.79E-02	1.35E+02	1.08E-01	4.11E+02	1.75E-01	2.76E+02	3.91E-04
BCEOT-W16-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	4.35E+02	6.23E+02	NA	NA	NA	NA	2.86E-02	2.20E+02	6.29E+00	2.79E-02	1.35E+02	1.30E-01	4.11E+02	1.75E-01	2.76E+02	4.70E-04
BCEOT-E17-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	1.28E+03	1.83E+03	NA	NA	NA	NA	2.86E-02	6.44E+02	1.85E+01	2.79E-02	1.35E+02	3.81E-01	4.11E+02	1.75E-01	2.76E+02	1.38E-03
BCEOT-W17-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	4.58E+02	6.55E+02	NA	NA	NA	NA	2.86E-02	2.31E+02	6.61E+00	2.79E-02	1.35E+02	1.37E-01	4.11E+02	1.75E-01	2.76E+02	4.95E-04
BCEOT-E18-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	7.53E+02	1.08E+03	NA	NA	NA	NA	2.86E-02	3.80E+02	1.09E+01	2.79E-02	1.35E+02	2.25E-01	4.11E+02	1.75E-01	2.76E+02	8.14E-04
BCEOT-W18-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	5.41E+02	7.75E+02	NA	NA	NA	NA	2.86E-02	2.73E+02	7.82E+00	2.79E-02	1.35E+02	1.62E-01	4.11E+02	1.75E-01	2.76E+02	5.85E-04

TABLE C-11F: ZINC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 11 - BEARTRAP CREEK DISPERSED TAILINGS DEPOSITS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK TAILINGS DEPOSITS AND FLOSSIE LOUISE MINE WASTE PILE (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 4.982

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
White-Tailed Deer (Large Herbivorous Mammal - Terrestrial)																							
BCEOT-E19-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	5.25E+02	7.52E+02	NA	NA	NA	NA	2.86E-02	2.65E+02	7.59E+00	2.79E-02	1.35E+02	1.57E-01	4.11E+02	1.75E-01	2.76E+02	5.68E-04
BCEOT-W19-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	5.91E+02	8.46E+02	NA	NA	NA	NA	2.86E-02	2.98E+02	8.54E+00	2.79E-02	1.35E+02	1.76E-01	4.11E+02	1.75E-01	2.76E+02	6.39E-04
BCEOT-E20-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	2.62E+02	3.76E+02	NA	NA	NA	NA	2.86E-02	1.32E+02	3.79E+00	2.79E-02	1.35E+02	7.83E-02	4.11E+02	1.75E-01	2.76E+02	2.84E-04
BCEOT-W20-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	5.37E+02	7.69E+02	NA	NA	NA	NA	2.86E-02	2.71E+02	7.77E+00	2.79E-02	1.35E+02	1.60E-01	4.11E+02	1.75E-01	2.76E+02	5.81E-04
BCEOT-E21-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	5.30E+02	7.58E+02	NA	NA	NA	NA	2.86E-02	2.67E+02	7.65E+00	2.79E-02	1.35E+02	1.58E-01	4.11E+02	1.75E-01	2.76E+02	5.73E-04
BCEOT-W21-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	6.11E+02	8.75E+02	NA	NA	NA	NA	2.86E-02	3.09E+02	8.84E+00	2.79E-02	1.35E+02	1.83E-01	4.11E+02	1.75E-01	2.76E+02	6.61E-04
BCEOT-E22-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	2.47E+02	3.54E+02	NA	NA	NA	NA	2.86E-02	1.25E+02	3.57E+00	2.79E-02	1.35E+02	7.37E-02	4.11E+02	1.75E-01	2.76E+02	2.67E-04
BCEOT-W22-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	4.77E+02	6.83E+02	NA	NA	NA	NA	2.86E-02	2.41E+02	6.90E+00	2.79E-02	1.35E+02	1.43E-01	4.11E+02	1.75E-01	2.76E+02	5.16E-04
BCEOT-E23-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	1.79E+02	2.56E+02	NA	NA	NA	NA	2.86E-02	9.02E+01	2.58E+00	2.79E-02	1.35E+02	5.33E-02	4.11E+02	1.75E-01	2.76E+02	1.93E-04
BCEOT-W23-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	8.01E+02	1.15E+03	NA	NA	NA	NA	2.86E-02	4.04E+02	1.16E+01	2.79E-02	1.35E+02	2.39E-01	4.11E+02	1.75E-01	2.76E+02	8.66E-04
BCEOT-E24-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	2.90E+02	4.15E+02	NA	NA	NA	NA	2.86E-02	1.46E+02	4.19E+00	2.79E-02	1.35E+02	8.65E-02	4.11E+02	1.75E-01	2.76E+02	3.13E-04
BCEOT-W24-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	4.90E+02	7.02E+02	NA	NA	NA	NA	2.86E-02	2.47E+02	7.08E+00	2.79E-02	1.35E+02	1.46E-01	4.11E+02	1.75E-01	2.76E+02	5.30E-04
BCEOT-E25-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	3.40E+02	4.87E+02	NA	NA	NA	NA	2.86E-02	1.72E+02	4.92E+00	2.79E-02	1.35E+02	1.02E-01	4.11E+02	1.75E-01	2.76E+02	3.68E-04
BCEOT-W25-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	5.62E+02	8.04E+02	NA	NA	NA	NA	2.86E-02	2.84E+02	8.12E+00	2.79E-02	1.35E+02	1.68E-01	4.11E+02	1.75E-01	2.76E+02	6.08E-04
BCEOT-E26-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	6.53E+02	9.35E+02	NA	NA	NA	NA	2.86E-02	3.30E+02	9.44E+00	2.79E-02	1.35E+02	1.95E-01	4.11E+02	1.75E-01	2.76E+02	7.06E-04
BCEOT-W26-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	4.63E+02	6.63E+02	NA	NA	NA	NA	2.86E-02	2.34E+02	6.69E+00	2.79E-02	1.35E+02	1.38E-01	4.11E+02	1.75E-01	2.76E+02	5.01E-04
BCEOT-W27-0 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	5.34E+02	7.64E+02	NA	NA	NA	NA	2.86E-02	2.69E+02	7.72E+00	2.79E-02	1.35E+02	1.59E-01	4.11E+02	1.75E-01	2.76E+02	5.77E-04
Outside Tailings Piles																						**Maximum HQ (Edge of Tailings Pile)**	**1.65E-03**
BCEOT-E0+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	4.06E+02	5.81E+02	NA	NA	NA	NA	2.86E-02	2.05E+02	5.86E+00	2.79E-02	1.35E+02	1.21E-01	4.11E+02	1.75E-01	2.76E+02	4.39E-04
BCEOT-E1+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	8.49E+02	1.22E+03	NA	NA	NA	NA	2.86E-02	4.28E+02	1.23E+01	2.79E-02	1.35E+02	2.53E-01	4.11E+02	1.75E-01	2.76E+02	9.18E-04
BCEOT-E2+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	3.47E+02	4.96E+02	NA	NA	NA	NA	2.86E-02	1.75E+02	5.01E+00	2.79E-02	1.35E+02	1.04E-01	4.11E+02	1.75E-01	2.76E+02	3.75E-04
BCEOT-E3+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	2.19E+02	3.13E+02	NA	NA	NA	NA	2.86E-02	1.10E+02	3.16E+00	2.79E-02	1.35E+02	6.53E-02	4.11E+02	1.75E-01	2.76E+02	2.36E-04
BCEOT-E4+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	3.17E+02	4.53E+02	NA	NA	NA	NA	2.86E-02	1.60E+02	4.58E+00	2.79E-02	1.35E+02	9.45E-02	4.11E+02	1.75E-01	2.76E+02	3.42E-04
BCEOT-W4+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	2.89E+02	4.13E+02	NA	NA	NA	NA	2.86E-02	1.46E+02	4.17E+00	2.79E-02	1.35E+02	8.62E-02	4.11E+02	1.75E-01	2.76E+02	3.12E-04
BCEOT-E5+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	8.35E+02	1.19E+03	NA	NA	NA	NA	2.86E-02	4.21E+02	1.21E+01	2.79E-02	1.35E+02	2.49E-01	4.11E+02	1.75E-01	2.76E+02	9.03E-04
BCEOT-W5+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	3.39E+02	4.86E+02	NA	NA	NA	NA	2.86E-02	1.71E+02	4.90E+00	2.79E-02	1.35E+02	1.01E-01	4.11E+02	1.75E-01	2.76E+02	3.67E-04
BCEOT-E6+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	3.02E+02	4.33E+02	NA	NA	NA	NA	2.86E-02	1.52E+02	4.37E+00	2.79E-02	1.35E+02	9.02E-02	4.11E+02	1.75E-01	2.76E+02	3.27E-04
BCEOT-W6+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	1.69E+02	2.42E+02	NA	NA	NA	NA	2.86E-02	8.55E+01	2.45E+00	2.79E-02	1.35E+02	5.06E-02	4.11E+02	1.75E-01	2.76E+02	1.83E-04
BCEOT-E7+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	2.89E+02	4.13E+02	NA	NA	NA	NA	2.86E-02	1.46E+02	4.17E+00	2.79E-02	1.35E+02	8.62E-02	4.11E+02	1.75E-01	2.76E+02	3.12E-04
BCEOT-W7+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	2.44E+02	3.49E+02	NA	NA	NA	NA	2.86E-02	1.23E+02	3.52E+00	2.79E-02	1.35E+02	7.28E-02	4.11E+02	1.75E-01	2.76E+02	2.64E-04
FLWA-101 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	5.62E+02	8.05E+02	NA	NA	NA	NA	2.86E-02	2.84E+02	8.12E+00	2.79E-02	1.35E+02	1.68E-01	4.11E+02	1.75E-01	2.76E+02	6.08E-04
BCEOT-W8+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	3.18E+02	4.56E+02	NA	NA	NA	NA	2.86E-02	1.61E+02	4.60E+00	2.79E-02	1.35E+02	9.50E-02	4.11E+02	1.75E-01	2.76E+02	3.44E-04
BCEOT-E9+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	5.07E+02	7.26E+02	NA	NA	NA	NA	2.86E-02	2.56E+02	7.33E+00	2.79E-02	1.35E+02	1.51E-01	4.11E+02	1.75E-01	2.76E+02	5.48E-04
BCEOT-W9+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	4.65E+02	6.66E+02	NA	NA	NA	NA	2.86E-02	2.35E+02	6.73E+00	2.79E-02	1.35E+02	1.39E-01	4.11E+02	1.75E-01	2.76E+02	5.03E-04
BCEOT-E10+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	3.13E+02	4.49E+02	NA	NA	NA	NA	2.86E-02	1.58E+02	4.53E+00	2.79E-02	1.35E+02	9.36E-02	4.11E+02	1.75E-01	2.76E+02	3.39E-04
BCEOT-W10+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-E11+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	4.07E+02	5.82E+02	NA	NA	NA	NA	2.86E-02	2.05E+02	5.88E+00	2.79E-02	1.35E+02	1.21E-01	4.11E+02	1.75E-01	2.76E+02	4.40E-04
BCEOT-W11+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	1.71E+02	2.45E+02	NA	NA	NA	NA	2.86E-02	8.64E+01	2.47E+00	2.79E-02	1.35E+02	5.11E-02	4.11E+02	1.75E-01	2.76E+02	1.85E-04
BCEOT-E12+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	2.92E+02	4.19E+02	NA	NA	NA	NA	2.86E-02	1.48E+02	4.22E+00	2.79E-02	1.35E+02	8.73E-02	4.11E+02	1.75E-01	2.76E+02	3.16E-04
BCEOT-W12+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	3.38E+02	4.84E+02	NA	NA	NA	NA	2.86E-02	1.71E+02	4.89E+00	2.79E-02	1.35E+02	1.01E-01	4.11E+02	1.75E-01	2.76E+02	3.66E-04
BCEOT-E13+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	3.09E+02	4.42E+02	NA	NA	NA	NA	2.86E-02	1.56E+02	4.46E+00	2.79E-02	1.35E+02	9.22E-02	4.11E+02	1.75E-01	2.76E+02	3.34E-04
BCEOT-E14+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	1.87E+02	2.68E+02	NA	NA	NA	NA	2.86E-02	9.45E+01	2.70E+00	2.79E-02	1.35E+02	5.59E-02	4.11E+02	1.75E-01	2.76E+02	2.02E-04
BCEOT-W14+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	3.41E+02	4.88E+02	NA	NA	NA	NA	2.86E-02	1.72E+02	4.92E+00	2.79E-02	1.35E+02	1.02E-01	4.11E+02	1.75E-01	2.76E+02	3.68E-04
BCEOT-E15+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	5.13E+02	7.35E+02	NA	NA	NA	NA	2.86E-02	2.59E+02	7.42E+00	2.79E-02	1.35E+02	1.53E-01	4.11E+02	1.75E-01	2.76E+02	5.55E-04
BCEOT-W15+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	5.27E+02	7.55E+02	NA	NA	NA	NA	2.86E-02	2.66E+02	7.62E+00	2.79E-02	1.35E+02	1.57E-01	4.11E+02	1.75E-01	2.76E+02	5.70E-04
BCEOT-E16+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	3.93E+02	5.63E+02	NA	NA	NA	NA	2.86E-02	1.99E+02	5.68E+00	2.79E-02	1.35E+02	1.17E-01	4.11E+02	1.75E-01	2.76E+02	4.25E-04
BCEOT-W16+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	3.01E+02	4.31E+02	NA	NA	NA	NA	2.86E-02	1.52E+02	4.35E+00	2.79E-02	1.35E+02	8.99E-02	4.11E+02	1.75E-01	2.76E+02	3.26E-04
BCEOT-E17+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	7.49E+02	1.07E+03	NA	NA	NA	NA	2.86E-02	3.78E+02	1.08E+01	2.79E-02	1.35E+02	2.23E-01	4.11E+02	1.75E-01	2.76E+02	8.09E-04
BCEOT-W17+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	2.46E+02	3.52E+02	NA	NA	NA	NA	2.86E-02	1.24E+02	3.55E+00	2.79E-02	1.35E+02	7.34E-02	4.11E+02	1.75E-01	2.76E+02	2.66E-04
BCEOT-E18+12.5 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	2.70E+04	3.87E+04	NA	NA	NA	NA	2.86E-02	1.36E+04	3.91E+02	2.79E-02	1.35E+02	8.07E+00	4.11E+02	1.75E-01	2.76E+02	2.92E-02
BCEOT-E18+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	5.69E+02	8.15E+02	NA	NA	NA	NA	2.86E-02	2.87E+02	8.23E+00	2.79E-02	1.35E+02	1.70E-01	4.11E+02	1.75E-01	2.76E+02	6.16E-04
BCEOT-W18+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	4.08E+02	5.84E+02	NA	NA	NA	NA	2.86E-02	2.06E+02	5.90E+00	2.79E-02	1.35E+02	1.22E-01	4.11E+02	1.75E-01	2.76E+02	4.41E-04

TABLE C-11F: ZINC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 11 - BEARTRAP CREEK DISPERSED TAILINGS DEPOSITS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK TAILINGS DEPOSITS AND FLOSSIE LOUISE MINE WASTE PILE (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 4.982

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
White-Tailed Deer (Large Herbivorous Mammal - Terrestrial)																							
BCEOT-E19+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	4.96E+02	7.11E+02	NA	NA	NA	NA	2.86E-02	2.50E+02	7.17E+00	2.79E-02	1.35E+02	1.48E-01	4.11E+02	1.75E-01	2.76E+02	5.37E-04
BCEOT-W19+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	2.46E+02	3.53E+02	NA	NA	NA	NA	2.86E-02	1.24E+02	3.56E+00	2.79E-02	1.35E+02	7.36E-02	4.11E+02	1.75E-01	2.76E+02	2.66E-04
BCEOT-E20+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	3.25E+02	4.65E+02	NA	NA	NA	NA	2.86E-02	1.64E+02	4.69E+00	2.79E-02	1.35E+02	9.70E-02	4.11E+02	1.75E-01	2.76E+02	3.51E-04
BCEOT-W20+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	3.92E+02	5.61E+02	NA	NA	NA	NA	2.86E-02	1.98E+02	5.66E+00	2.79E-02	1.35E+02	1.17E-01	4.11E+02	1.75E-01	2.76E+02	4.24E-04
BCEOT-E21+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	3.73E+02	5.35E+02	NA	NA	NA	NA	2.86E-02	1.88E+02	5.40E+00	2.79E-02	1.35E+02	1.11E-01	4.11E+02	1.75E-01	2.76E+02	4.04E-04
BCEOT-W21+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	3.46E+02	4.96E+02	NA	NA	NA	NA	2.86E-02	1.75E+02	5.00E+00	2.79E-02	1.35E+02	1.03E-01	4.11E+02	1.75E-01	2.76E+02	3.74E-04
BCEOT-E22+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	3.99E+02	5.71E+02	NA	NA	NA	NA	2.86E-02	2.01E+02	5.77E+00	2.79E-02	1.35E+02	1.19E-01	4.11E+02	1.75E-01	2.76E+02	4.31E-04
BCEOT-E22+70 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	6.09E+02	8.72E+02	NA	NA	NA	NA	2.86E-02	3.07E+02	8.80E+00	2.79E-02	1.35E+02	1.82E-01	4.11E+02	1.75E-01	2.76E+02	6.59E-04
BCEOT-W22+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	3.17E+02	4.54E+02	NA	NA	NA	NA	2.86E-02	1.60E+02	4.59E+00	2.79E-02	1.35E+02	9.47E-02	4.11E+02	1.75E-01	2.76E+02	3.43E-04
BCEOT-E23+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	2.02E+02	2.90E+02	NA	NA	NA	NA	2.86E-02	1.02E+02	2.93E+00	2.79E-02	1.35E+02	6.04E-02	4.11E+02	1.75E-01	2.76E+02	2.19E-04
BCEOT-W23+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	3.81E+02	5.46E+02	NA	NA	NA	NA	2.86E-02	1.92E+02	5.51E+00	2.79E-02	1.35E+02	1.14E-01	4.11E+02	1.75E-01	2.76E+02	4.12E-04
BCEOT-E24+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-W24+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	6.14E+02	8.79E+02	NA	NA	NA	NA	2.86E-02	3.10E+02	8.87E+00	2.79E-02	1.35E+02	1.83E-01	4.11E+02	1.75E-01	2.76E+02	6.64E-04
BCEOT-E25+20 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	2.15E+02	3.08E+02	NA	NA	NA	NA	2.86E-02	1.09E+02	3.11E+00	2.79E-02	1.35E+02	6.42E-02	4.11E+02	1.75E-01	2.76E+02	2.33E-04
BCEOT-W25+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	5.34E+02	7.65E+02	NA	NA	NA	NA	2.86E-02	2.70E+02	7.72E+00	2.79E-02	1.35E+02	1.60E-01	4.11E+02	1.75E-01	2.76E+02	5.78E-04
BCEOT-E26+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	2.46E+02	3.53E+02	NA	NA	NA	NA	2.86E-02	1.24E+02	3.56E+00	2.79E-02	1.35E+02	7.35E-02	4.11E+02	1.75E-01	2.76E+02	2.66E-04
BCEOT-W26+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	5.58E+02	7.98E+02	NA	NA	NA	NA	2.86E-02	2.81E+02	8.06E+00	2.79E-02	1.35E+02	1.66E-01	4.11E+02	1.75E-01	2.76E+02	6.03E-04
BCEOT-W27+25 (0-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.98E+00	5.21E+02	7.45E+02	NA	NA	NA	NA	2.86E-02	2.63E+02	7.52E+00	2.79E-02	1.35E+02	1.55E-01	4.11E+02	1.75E-01	2.76E+02	5.63E-04
																						Maximum HQ (Outside Tailings Pile)	**2.92E-02**
Red Fox (Carnivorous Mammal - Terrestrial)																							
Reference Sites																							
ACBG-1 (0-6")	1.72E-01	1.72E-01	1.03E+01	1.42E+03	2.43E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.37E+02	6.58E-01	3.68E-03	4.54E+00	1.98E-01	4.11E+02	1.75E-01	3.38E+02	5.84E-04
ACBG-2 (0-6")	1.72E-01	1.72E-01	1.03E+01	8.68E+02	1.49E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	8.39E+01	4.03E-01	3.68E-03	4.54E+00	1.21E-01	4.11E+02	1.75E-01	3.38E+02	3.58E-04
BCBG-201 (0-6")	1.72E-01	1.72E-01	1.03E+01	2.50E+03	4.29E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.42E+02	1.16E+00	3.68E-03	4.54E+00	3.49E-01	4.11E+02	1.75E-01	3.38E+02	1.03E-03
Inside Tailings Pile																						**Minimum HQ (Reference Sites)**	**3.58E-04**
BCEOT-E0-12.5 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.15E+03	1.97E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.83E+02	8.78E-01	3.68E-03	4.54E+00	1.61E-01	4.11E+02	1.75E-01	3.38E+02	4.75E-04
BCEOT-E1-12.5 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.73E+03	2.97E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.75E+02	1.32E+00	3.68E-03	4.54E+00	2.42E-01	4.11E+02	1.75E-01	3.38E+02	7.16E-04
BCEOT-E2-8 (0-6")	1.72E-01	1.72E-01	6.30E+00	8.58E+02	1.47E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.36E+02	6.55E-01	3.68E-03	4.54E+00	1.20E-01	4.11E+02	1.75E-01	3.38E+02	3.55E-04
BCEOT-E3-8 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.49E+03	2.56E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.37E+02	1.14E+00	3.68E-03	4.54E+00	2.09E-01	4.11E+02	1.75E-01	3.38E+02	6.16E-04
BCEOT-E4-12.5 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.02E+03	1.75E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.62E+02	7.79E-01	3.68E-03	4.54E+00	1.43E-01	4.11E+02	1.75E-01	3.38E+02	4.22E-04
BCEOT-W4-12.5 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.49E+03	2.55E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.36E+02	1.13E+00	3.68E-03	4.54E+00	2.08E-01	4.11E+02	1.75E-01	3.38E+02	6.14E-04
BCEOT-E5-25 (0-6")	1.72E-01	1.72E-01	6.30E+00	6.02E+02	1.03E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	9.56E+01	4.59E-01	3.68E-03	4.54E+00	8.42E-02	4.11E+02	1.75E-01	3.38E+02	2.49E-04
BCEOT-W5-12.5 (0-6")	1.72E-01	1.72E-01	6.30E+00	7.31E+03	1.25E+03	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.16E+03	5.58E+00	3.68E-03	4.54E+00	1.02E+00	4.11E+02	1.75E-01	3.38E+02	3.02E-03
BCEOT-E6-12.5 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.21E+03	2.08E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.93E+02	9.26E-01	3.68E-03	4.54E+00	1.70E-01	4.11E+02	1.75E-01	3.38E+02	5.02E-04
BCEOT-W6-12.5 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-E7-12.5 (0-6")	1.72E-01	1.72E-01	6.30E+00	7.02E+02	1.20E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.11E+02	5.35E-01	3.68E-03	4.54E+00	9.81E-02	4.11E+02	1.75E-01	3.38E+02	2.90E-04
BCEOT-W7-12.5 (0-6")	1.72E-01	1.72E-01	6.30E+00	8.98E+02	1.54E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.43E+02	6.85E-01	3.68E-03	4.54E+00	1.26E-01	4.11E+02	1.75E-01	3.38E+02	3.71E-04
BCEOT-W8-12.5 (0-6")	1.72E-01	1.72E-01	6.30E+00	2.39E+03	4.10E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.80E+02	1.82E+00	3.68E-03	4.54E+00	3.34E-01	4.11E+02	1.75E-01	3.38E+02	9.87E-04
BCEOT-E9-12.5 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.64E+03	2.82E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.61E+02	1.25E+00	3.68E-03	4.54E+00	2.29E-01	4.11E+02	1.75E-01	3.38E+02	6.78E-04
BCEOT-W9-12.5 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.76E+04	3.03E+03	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.80E+03	1.35E+01	3.68E-03	4.54E+00	2.47E+00	4.11E+02	1.75E-01	3.38E+02	7.28E-03
BCEOT-E10-12.5 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.60E+03	2.74E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.54E+02	1.22E+00	3.68E-03	4.54E+00	2.24E-01	4.11E+02	1.75E-01	3.38E+02	6.60E-04
BCEOT-W10-12.5 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.52E+03	2.60E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.41E+02	1.16E+00	3.68E-03	4.54E+00	2.12E-01	4.11E+02	1.75E-01	3.38E+02	6.26E-04
BCEOT-E11-12.5 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.04E+03	1.79E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.65E+02	7.94E-01	3.68E-03	4.54E+00	1.46E-01	4.11E+02	1.75E-01	3.38E+02	4.30E-04
BCEOT-W11-12.5 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.14E+04	1.96E+03	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.81E+03	8.70E+00	3.68E-03	4.54E+00	1.59E+00	4.11E+02	1.75E-01	3.38E+02	4.71E-03
BCEOT-E12-12.5 (0-6")	1.72E-01	1.72E-01	6.30E+00	7.93E+02	1.36E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.26E+02	6.05E-01	3.68E-03	4.54E+00	1.11E-01	4.11E+02	1.75E-01	3.38E+02	3.27E-04
BCEOT-W12-12.5 (0-6")	1.72E-01	1.72E-01	6.30E+00	6.80E+03	1.17E+03	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.08E+03	5.19E+00	3.68E-03	4.54E+00	9.51E-01	4.11E+02	1.75E-01	3.38E+02	2.81E-03
BCEOT-E13-12.5 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.39E+03	2.38E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.20E+02	1.06E+00	3.68E-03	4.54E+00	1.94E-01	4.11E+02	1.75E-01	3.38E+02	5.72E-04
BCEOT-W13-12.5 (0-6")	1.72E-01	1.72E-01	6.30E+00	3.63E+03	6.23E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.77E+02	2.77E+00	3.68E-03	4.54E+00	5.08E-01	4.11E+02	1.75E-01	3.38E+02	1.50E-03
BCEOT-W13-25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-W14-12.5 (0-6")	1.72E-01	1.72E-01	6.30E+00	2.44E+03	4.19E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.88E+02	1.86E+00	3.68E-03	4.54E+00	3.42E-01	4.11E+02	1.75E-01	3.38E+02	1.01E-03
BCEOT-E15-8 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.43E+03	2.46E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.28E+02	1.09E+00	3.68E-03	4.54E+00	2.00E-01	4.11E+02	1.75E-01	3.38E+02	5.92E-04
BCEOT-W15-12.5 (0-6")	1.72E-01	1.72E-01	6.30E+00	2.47E+03	4.23E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.92E+02	1.88E+00	3.68E-03	4.54E+00	3.45E-01	4.11E+02	1.75E-01	3.38E+02	1.02E-03
BCEOT-E16-12.5 (0-6")	1.72E-01	1.72E-01	6.30E+00	2.43E+04	4.17E+03	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.86E+03	1.85E+01	3.68E-03	4.54E+00	3.40E+00	4.11E+02	1.75E-01	3.38E+02	1.00E-02

TABLE C-11F: ZINC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 11 - BEARTRAP CREEK DISPERSED TAILINGS DEPOSITS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK TAILINGS DEPOSITS AND FLOSSIE LOUISE MINE WASTE PILE (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 4.982

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Red Fox (Carnivorous Mammal - Terrestrial)																							
BCEOT-W16-12.5 (0-6")	1.72E-01	1.72E-01	6.30E+00	6.72E+03	1.15E+03	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.07E+03	5.13E+00	3.68E-03	4.54E+00	9.40E-01	4.11E+02	1.75E-01	3.38E+02	2.78E-03
BCEOT-E17-12.5 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.02E+05	1.75E+04	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.62E+04	7.77E+01	3.68E-03	4.54E+00	1.42E+01	4.11E+02	1.75E-01	3.38E+02	4.21E-02
BCEOT-W17-12.5 (0-6")	1.72E-01	1.72E-01	6.30E+00	3.18E+03	5.45E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.05E+02	2.42E+00	3.68E-03	4.54E+00	4.44E-01	4.11E+02	1.75E-01	3.38E+02	1.31E-03
BCEOT-W18-12.5 (0-6")	1.72E-01	1.72E-01	6.30E+00	2.44E+03	4.19E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.88E+02	1.86E+00	3.68E-03	4.54E+00	3.41E-01	4.11E+02	1.75E-01	3.38E+02	1.01E-03
BCEOT-E19-12.5 (0-6")	1.72E-01	1.72E-01	6.30E+00	5.88E+03	1.01E+03	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	9.34E+02	4.49E+00	3.68E-03	4.54E+00	8.22E-01	4.11E+02	1.75E-01	3.38E+02	2.43E-03
BCEOT-W19-12.5 (0-6")	1.72E-01	1.72E-01	6.30E+00	2.14E+03	3.67E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.40E+02	1.63E+00	3.68E-03	4.54E+00	2.99E-01	4.11E+02	1.75E-01	3.38E+02	8.84E-04
BCEOT-E20-12.5 (0-6")	1.72E-01	1.72E-01	6.30E+00	3.60E+03	6.18E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.72E+02	2.75E+00	3.68E-03	4.54E+00	5.03E-01	4.11E+02	1.75E-01	3.38E+02	1.49E-03
BCEOT-W20-12.5 (0-6")	1.72E-01	1.72E-01	6.30E+00	2.28E+04	3.92E+03	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.63E+03	1.74E+01	3.68E-03	4.54E+00	3.19E+00	4.11E+02	1.75E-01	3.38E+02	9.44E-03
BCEOT-E21-12.5 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.57E+03	2.69E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.49E+02	1.20E+00	3.68E-03	4.54E+00	2.19E-01	4.11E+02	1.75E-01	3.38E+02	6.47E-04
BCEOT-W21-12.5 (0-6")	1.72E-01	1.72E-01	6.30E+00	2.18E+03	3.74E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.46E+02	1.66E+00	3.68E-03	4.54E+00	3.04E-01	4.11E+02	1.75E-01	3.38E+02	9.00E-04
BCEOT-E22-12.5 (0-6")	1.72E-01	1.72E-01	6.30E+00	7.80E+03	1.34E+03	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.24E+03	5.95E+00	3.68E-03	4.54E+00	1.09E+00	4.11E+02	1.75E-01	3.38E+02	3.22E-03
BCEOT-W22-12.5 (0-6")	1.72E-01	1.72E-01	6.30E+00	9.20E+04	1.58E+04	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.46E+04	7.02E+01	3.68E-03	4.54E+00	1.29E+01	4.11E+02	1.75E-01	3.38E+02	3.80E-02
BCEOT-E23-15 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.72E+03	2.95E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.73E+02	1.31E+00	3.68E-03	4.54E+00	2.40E-01	4.11E+02	1.75E-01	3.38E+02	7.09E-04
BCEOT-W23-12.5 (0-6")	1.72E-01	1.72E-01	6.30E+00	2.31E+04	3.96E+03	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.67E+03	1.76E+01	3.68E-03	4.54E+00	3.23E+00	4.11E+02	1.75E-01	3.38E+02	9.53E-03
BCEOT-E24-12.5 (0-6")	1.72E-01	1.72E-01	6.30E+00	6.73E+02	1.15E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.07E+02	5.13E-01	3.68E-03	4.54E+00	9.41E-02	4.11E+02	1.75E-01	3.38E+02	2.78E-04
BCEOT-W24-12.5 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.77E+04	3.03E+03	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.81E+03	1.35E+01	3.68E-03	4.54E+00	2.47E+00	4.11E+02	1.75E-01	3.38E+02	7.31E-03
BCEOT-E25-12.5 (0-6")	1.72E-01	1.72E-01	6.30E+00	3.57E+03	6.13E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.67E+02	2.72E+00	3.68E-03	4.54E+00	4.99E-01	4.11E+02	1.75E-01	3.38E+02	1.48E-03
BCEOT-W25-12.5 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.21E+04	2.08E+03	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.92E+03	9.24E+00	3.68E-03	4.54E+00	1.69E+00	4.11E+02	1.75E-01	3.38E+02	5.00E-03
BCEOT-E26-12.5 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.25E+03	2.15E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.99E+02	9.54E-01	3.68E-03	4.54E+00	1.75E-01	4.11E+02	1.75E-01	3.38E+02	5.17E-04
BCEOT-W26-12.5 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.95E+03	3.34E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.09E+02	1.48E+00	3.68E-03	4.54E+00	2.72E-01	4.11E+02	1.75E-01	3.38E+02	8.04E-04
BCEOT-W27-12.5 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.09E+04	1.87E+03	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.74E+03	8.34E+00	3.68E-03	4.54E+00	1.53E+00	4.11E+02	1.75E-01	3.38E+02	4.51E-03
At Edge of Tailings Pile																						**Maximum HQ (Inside Tailings Pile)**	**4.21E-02**
BCEOT-E0-0 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.72E+03	2.95E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.73E+02	1.31E+00	3.68E-03	4.54E+00	2.40E-01	4.11E+02	1.75E-01	3.38E+02	7.10E-04
BCEOT-E1-0 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.17E+03	2.00E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.85E+02	8.90E-01	3.68E-03	4.54E+00	1.63E-01	4.11E+02	1.75E-01	3.38E+02	4.82E-04
BCEOT-E2-0 (0-6")	1.72E-01	1.72E-01	6.30E+00	3.21E+03	5.50E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.09E+02	2.45E+00	3.68E-03	4.54E+00	4.48E-01	4.11E+02	1.75E-01	3.38E+02	1.32E-03
BCEOT-E3-0 (0-6")	1.72E-01	1.72E-01	6.30E+00	7.82E+02	1.34E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.24E+02	5.96E-01	3.68E-03	4.54E+00	1.09E-01	4.11E+02	1.75E-01	3.38E+02	3.23E-04
BCEOT-E4-0 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.11E+03	1.90E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.76E+02	8.46E-01	3.68E-03	4.54E+00	1.55E-01	4.11E+02	1.75E-01	3.38E+02	4.58E-04
BCEOT-W4-0 (0-6")	1.72E-01	1.72E-01	6.30E+00	5.57E+02	9.55E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	8.85E+01	4.25E-01	3.68E-03	4.54E+00	7.79E-02	4.11E+02	1.75E-01	3.38E+02	2.30E-04
BCEOT-E5-0 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.49E+03	2.56E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.37E+02	1.14E+00	3.68E-03	4.54E+00	2.09E-01	4.11E+02	1.75E-01	3.38E+02	6.17E-04
BCEOT-W5-0 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.21E+03	2.08E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.93E+02	9.26E-01	3.68E-03	4.54E+00	1.70E-01	4.11E+02	1.75E-01	3.38E+02	5.02E-04
BCEOT-E6-0 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.07E+03	1.83E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.69E+02	8.14E-01	3.68E-03	4.54E+00	1.49E-01	4.11E+02	1.75E-01	3.38E+02	4.41E-04
BCEOT-W6-0 (0-6")	1.72E-01	1.72E-01	6.30E+00	6.85E+02	1.18E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.09E+02	5.23E-01	3.68E-03	4.54E+00	9.58E-02	4.11E+02	1.75E-01	3.38E+02	2.83E-04
BCEOT-E7-0 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.07E+03	1.83E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.69E+02	8.14E-01	3.68E-03	4.54E+00	1.49E-01	4.11E+02	1.75E-01	3.38E+02	4.41E-04
BCEOT-W7-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-W8-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-E9-0 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.43E+03	2.45E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.27E+02	1.09E+00	3.68E-03	4.54E+00	2.00E-01	4.11E+02	1.75E-01	3.38E+02	5.89E-04
BCEOT-W9-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-E10-0 (0-6")	1.72E-01	1.72E-01	6.30E+00	2.03E+03	3.48E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.22E+02	1.55E+00	3.68E-03	4.54E+00	2.84E-01	4.11E+02	1.75E-01	3.38E+02	8.38E-04
BCEOT-W10-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-E11-0 (0-6")	1.72E-01	1.72E-01	6.30E+00	9.08E+02	1.56E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.44E+02	6.92E-01	3.68E-03	4.54E+00	1.27E-01	4.11E+02	1.75E-01	3.38E+02	3.75E-04
BCEOT-W11-0 (0-6")	1.72E-01	1.72E-01	6.30E+00	2.03E+03	3.48E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.23E+02	1.55E+00	3.68E-03	4.54E+00	2.84E-01	4.11E+02	1.75E-01	3.38E+02	8.39E-04
BCEOT-E12-0 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.02E+03	1.74E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.61E+02	7.75E-01	3.68E-03	4.54E+00	1.42E-01	4.11E+02	1.75E-01	3.38E+02	4.20E-04
BCEOT-W12-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-E13-0 (0-6")	1.72E-01	1.72E-01	6.30E+00	8.49E+02	1.46E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.35E+02	6.48E-01	3.68E-03	4.54E+00	1.19E-01	4.11E+02	1.75E-01	3.38E+02	3.51E-04
BCEOT-W13-0 (0-6")	1.72E-01	1.72E-01	6.30E+00	9.68E+02	1.66E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.54E+02	7.39E-01	3.68E-03	4.54E+00	1.35E-01	4.11E+02	1.75E-01	3.38E+02	4.00E-04
BCEOT-E14-0 (0-6")	1.72E-01	1.72E-01	6.30E+00	7.77E+02	1.33E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.23E+02	5.93E-01	3.68E-03	4.54E+00	1.09E-01	4.11E+02	1.75E-01	3.38E+02	3.21E-04
BCEOT-W14-0 (0-6")	1.72E-01	1.72E-01	6.30E+00	4.63E+03	7.94E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	7.35E+02	3.53E+00	3.68E-03	4.54E+00	6.47E-01	4.11E+02	1.75E-01	3.38E+02	1.91E-03
BCEOT-E15-0 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.65E+03	2.84E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.63E+02	1.26E+00	3.68E-03	4.54E+00	2.31E-01	4.11E+02	1.75E-01	3.38E+02	6.83E-04
BCEOT-W15-0 (0-6")	1.72E-01	1.72E-01	6.30E+00	4.86E+03	8.33E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	7.72E+02	3.71E+00	3.68E-03	4.54E+00	6.79E-01	4.11E+02	1.75E-01	3.38E+02	2.01E-03
BCEOT-E16-0 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.15E+03	1.97E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.83E+02	8.77E-01	3.68E-03	4.54E+00	1.61E-01	4.11E+02	1.75E-01	3.38E+02	4.75E-04
BCEOT-W16-0 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.38E+03	2.37E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.20E+02	1.05E+00	3.68E-03	4.54E+00	1.93E-01	4.11E+02	1.75E-01	3.38E+02	5.71E-04
BCEOT-E17-0 (0-6")	1.72E-01	1.72E-01	6.30E+00	4.06E+03	6.96E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	6.44E+02	3.10E+00	3.68E-03	4.54E+00	5.67E-01	4.11E+02	1.75E-01	3.38E+02	1.68E-03

TABLE C-11F: ZINC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 11 - BEARTRAP CREEK DISPERSED TAILINGS DEPOSITS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK TAILINGS DEPOSITS AND FLOSSIE LOUISE MINE WASTE PILE (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 4.982

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Red Fox (Carnivorous Mammal - Terrestrial)																							
BCEOT-W17-0 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.45E+03	2.49E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.31E+02	1.11E+00	3.68E-03	4.54E+00	2.03E-01	4.11E+02	1.75E-01	3.38E+02	6.01E-04
BCEOT-E18-0 (0-6")	1.72E-01	1.72E-01	6.30E+00	2.39E+03	4.10E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.80E+02	1.82E+00	3.68E-03	4.54E+00	3.34E-01	4.11E+02	1.75E-01	3.38E+02	9.88E-04
BCEOT-W18-0 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.72E+03	2.95E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.73E+02	1.31E+00	3.68E-03	4.54E+00	2.41E-01	4.11E+02	1.75E-01	3.38E+02	7.11E-04
BCEOT-E19-0 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.67E+03	2.86E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.65E+02	1.27E+00	3.68E-03	4.54E+00	2.33E-01	4.11E+02	1.75E-01	3.38E+02	6.90E-04
BCEOT-W19-0 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.88E+03	3.22E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.98E+02	1.43E+00	3.68E-03	4.54E+00	2.63E-01	4.11E+02	1.75E-01	3.38E+02	7.76E-04
BCEOT-E20-0 (0-6")	1.72E-01	1.72E-01	6.30E+00	8.33E+02	1.43E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.32E+02	6.36E-01	3.68E-03	4.54E+00	1.17E-01	4.11E+02	1.75E-01	3.38E+02	3.44E-04
BCEOT-W20-0 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.71E+03	2.93E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.71E+02	1.30E+00	3.68E-03	4.54E+00	2.39E-01	4.11E+02	1.75E-01	3.38E+02	7.05E-04
BCEOT-E21-0 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.68E+03	2.89E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.67E+02	1.28E+00	3.68E-03	4.54E+00	2.35E-01	4.11E+02	1.75E-01	3.38E+02	6.95E-04
BCEOT-W21-0 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.94E+03	3.33E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.09E+02	1.48E+00	3.68E-03	4.54E+00	2.72E-01	4.11E+02	1.75E-01	3.38E+02	8.03E-04
BCEOT-E22-0 (0-6")	1.72E-01	1.72E-01	6.30E+00	7.85E+02	1.35E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.25E+02	5.99E-01	3.68E-03	4.54E+00	1.10E-01	4.11E+02	1.75E-01	3.38E+02	3.24E-04
BCEOT-W22-0 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.52E+03	2.60E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.41E+02	1.16E+00	3.68E-03	4.54E+00	2.12E-01	4.11E+02	1.75E-01	3.38E+02	6.27E-04
BCEOT-E23-0 (0-6")	1.72E-01	1.72E-01	6.30E+00	5.68E+02	9.74E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	9.02E+01	4.33E-01	3.68E-03	4.54E+00	7.94E-02	4.11E+02	1.75E-01	3.38E+02	2.35E-04
BCEOT-W23-0 (0-6")	1.72E-01	1.72E-01	6.30E+00	2.54E+03	4.36E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.04E+02	1.94E+00	3.68E-03	4.54E+00	3.56E-01	4.11E+02	1.75E-01	3.38E+02	1.05E-03
BCEOT-E24-0 (0-6")	1.72E-01	1.72E-01	6.30E+00	9.21E+02	1.58E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.46E+02	7.03E-01	3.68E-03	4.54E+00	1.29E-01	4.11E+02	1.75E-01	3.38E+02	3.81E-04
BCEOT-W24-0 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.56E+03	2.67E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.47E+02	1.19E+00	3.68E-03	4.54E+00	2.18E-01	4.11E+02	1.75E-01	3.38E+02	6.44E-04
BCEOT-E25-0 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.08E+03	1.86E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.72E+02	8.25E-01	3.68E-03	4.54E+00	1.51E-01	4.11E+02	1.75E-01	3.38E+02	4.47E-04
BCEOT-W25-0 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.79E+03	3.06E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.84E+02	1.36E+00	3.68E-03	4.54E+00	2.50E-01	4.11E+02	1.75E-01	3.38E+02	7.38E-04
BCEOT-E26-0 (0-6")	1.72E-01	1.72E-01	6.30E+00	2.08E+03	3.56E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.30E+02	1.58E+00	3.68E-03	4.54E+00	2.90E-01	4.11E+02	1.75E-01	3.38E+02	8.57E-04
BCEOT-W26-0 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.47E+03	2.52E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.34E+02	1.12E+00	3.68E-03	4.54E+00	2.06E-01	4.11E+02	1.75E-01	3.38E+02	6.08E-04
BCEOT-W27-0 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.70E+03	2.91E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.69E+02	1.29E+00	3.68E-03	4.54E+00	2.37E-01	4.11E+02	1.75E-01	3.38E+02	7.01E-04
Outside Tailings Piles																						**Maximum HQ (Edge of Tailings Pile)**	**2.01E-03**
BCEOT-E0+25 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.29E+03	2.21E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.05E+02	9.83E-01	3.68E-03	4.54E+00	1.80E-01	4.11E+02	1.75E-01	3.38E+02	5.32E-04
BCEOT-E1+25 (0-6")	1.72E-01	1.72E-01	6.30E+00	2.70E+03	4.63E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.28E+02	2.06E+00	3.68E-03	4.54E+00	3.77E-01	4.11E+02	1.75E-01	3.38E+02	1.11E-03
BCEOT-E2+25 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.10E+03	1.89E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.75E+02	8.41E-01	3.68E-03	4.54E+00	1.54E-01	4.11E+02	1.75E-01	3.38E+02	4.55E-04
BCEOT-E3+25 (0-6")	1.72E-01	1.72E-01	6.30E+00	6.95E+02	1.19E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.10E+02	5.30E-01	3.68E-03	4.54E+00	9.71E-02	4.11E+02	1.75E-01	3.38E+02	2.87E-04
BCEOT-E4+25 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.01E+03	1.73E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.60E+02	7.68E-01	3.68E-03	4.54E+00	1.41E-01	4.11E+02	1.75E-01	3.38E+02	4.16E-04
BCEOT-W4+25 (0-6")	1.72E-01	1.72E-01	6.30E+00	9.18E+02	1.57E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.46E+02	7.00E-01	3.68E-03	4.54E+00	1.28E-01	4.11E+02	1.75E-01	3.38E+02	3.79E-04
BCEOT-E5+25 (0-6")	1.72E-01	1.72E-01	6.30E+00	2.65E+03	4.55E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.21E+02	2.02E+00	3.68E-03	4.54E+00	3.71E-01	4.11E+02	1.75E-01	3.38E+02	1.10E-03
BCEOT-W5+25 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.08E+03	1.85E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.71E+02	8.22E-01	3.68E-03	4.54E+00	1.51E-01	4.11E+02	1.75E-01	3.38E+02	4.45E-04
BCEOT-E6+25 (0-6")	1.72E-01	1.72E-01	6.30E+00	9.60E+02	1.65E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.52E+02	7.32E-01	3.68E-03	4.54E+00	1.34E-01	4.11E+02	1.75E-01	3.38E+02	3.97E-04
BCEOT-W6+25 (0-6")	1.72E-01	1.72E-01	6.30E+00	5.38E+02	9.23E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	8.55E+01	4.11E-01	3.68E-03	4.54E+00	7.52E-02	4.11E+02	1.75E-01	3.38E+02	2.22E-04
BCEOT-E7+25 (0-6")	1.72E-01	1.72E-01	6.30E+00	9.17E+02	1.57E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.46E+02	7.00E-01	3.68E-03	4.54E+00	1.28E-01	4.11E+02	1.75E-01	3.38E+02	3.79E-04
BCEOT-W7+25 (0-6")	1.72E-01	1.72E-01	6.30E+00	7.75E+02	1.33E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.23E+02	5.91E-01	3.68E-03	4.54E+00	1.08E-01	4.11E+02	1.75E-01	3.38E+02	3.20E-04
FLWA-101 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.79E+03	3.06E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.84E+02	1.36E+00	3.68E-03	4.54E+00	2.50E-01	4.11E+02	1.75E-01	3.38E+02	7.38E-04
BCEOT-W8+25 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.01E+03	1.73E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.61E+02	7.71E-01	3.68E-03	4.54E+00	1.41E-01	4.11E+02	1.75E-01	3.38E+02	4.18E-04
BCEOT-E9+25 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.61E+03	2.76E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.56E+02	1.23E+00	3.68E-03	4.54E+00	2.25E-01	4.11E+02	1.75E-01	3.38E+02	6.66E-04
BCEOT-W9+25 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.48E+03	2.54E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.35E+02	1.13E+00	3.68E-03	4.54E+00	2.07E-01	4.11E+02	1.75E-01	3.38E+02	6.11E-04
BCEOT-E10+25 (0-6")	1.72E-01	1.72E-01	6.30E+00	9.96E+02	1.71E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.58E+02	7.60E-01	3.68E-03	4.54E+00	1.39E-01	4.11E+02	1.75E-01	3.38E+02	4.11E-04
BCEOT-W10+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-E11+25 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.29E+03	2.22E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.05E+02	9.86E-01	3.68E-03	4.54E+00	1.81E-01	4.11E+02	1.75E-01	3.38E+02	5.34E-04
BCEOT-W11+25 (0-6")	1.72E-01	1.72E-01	6.30E+00	5.44E+02	9.33E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	8.64E+01	4.15E-01	3.68E-03	4.54E+00	7.61E-02	4.11E+02	1.75E-01	3.38E+02	2.25E-04
BCEOT-E12+25 (0-6")	1.72E-01	1.72E-01	6.30E+00	9.29E+02	1.59E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.48E+02	7.09E-01	3.68E-03	4.54E+00	1.30E-01	4.11E+02	1.75E-01	3.38E+02	3.84E-04
BCEOT-W12+25 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.07E+03	1.84E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.71E+02	8.20E-01	3.68E-03	4.54E+00	1.50E-01	4.11E+02	1.75E-01	3.38E+02	4.44E-04
BCEOT-E13+25 (0-6")	1.72E-01	1.72E-01	6.30E+00	9.81E+02	1.68E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.56E+02	7.49E-01	3.68E-03	4.54E+00	1.37E-01	4.11E+02	1.75E-01	3.38E+02	4.05E-04
BCEOT-E14+25 (0-6")	1.72E-01	1.72E-01	6.30E+00	5.95E+02	1.02E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	9.45E+01	4.54E-01	3.68E-03	4.54E+00	8.31E-02	4.11E+02	1.75E-01	3.38E+02	2.46E-04
BCEOT-W14+25 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.08E+03	1.86E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.72E+02	8.26E-01	3.68E-03	4.54E+00	1.51E-01	4.11E+02	1.75E-01	3.38E+02	4.47E-04
BCEOT-E15+25 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.63E+03	2.80E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.59E+02	1.24E+00	3.68E-03	4.54E+00	2.28E-01	4.11E+02	1.75E-01	3.38E+02	6.74E-04
BCEOT-W15+25 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.68E+03	2.87E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.66E+02	1.28E+00	3.68E-03	4.54E+00	2.34E-01	4.11E+02	1.75E-01	3.38E+02	6.92E-04
BCEOT-E16+25 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.25E+03	2.14E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.99E+02	9.54E-01	3.68E-03	4.54E+00	1.75E-01	4.11E+02	1.75E-01	3.38E+02	5.16E-04
BCEOT-W16+25 (0-6")	1.72E-01	1.72E-01	6.30E+00	9.57E+02	1.64E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.52E+02	7.30E-01	3.68E-03	4.54E+00	1.34E-01	4.11E+02	1.75E-01	3.38E+02	3.95E-04
BCEOT-E17+25 (0-6")	1.72E-01	1.72E-01	6.30E+00	2.38E+03	4.08E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.78E+02	1.81E+00	3.68E-03	4.54E+00	3.33E-01	4.11E+02	1.75E-01	3.38E+02	9.83E-04
BCEOT-W17+25 (0-6")	1.72E-01	1.72E-01	6.30E+00	7.81E+02	1.34E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.24E+02	5.96E-01	3.68E-03	4.54E+00	1.09E-01	4.11E+02	1.75E-01	3.38E+02	3.23E-04

TABLE C-11F: ZINC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 11 - BEARTRAP CREEK DISPERSED TAILINGS DEPOSITS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK TAILINGS DEPOSITS AND FLOSSIE LOUISE MINE WASTE PILE (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 4.982

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Red Fox (Carnivorous Mammal - Terrestrial)																							
BCEOT-E18+12.5 (0-6")	1.72E-01	1.72E-01	6.30E+00	8.59E+04	1.47E+04	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.36E+04	6.56E+01	3.68E-03	4.54E+00	1.20E+01	4.11E+02	1.75E-01	3.38E+02	3.55E-02
BCEOT-E18+25 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.81E+03	3.10E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.87E+02	1.38E+00	3.68E-03	4.54E+00	2.53E-01	4.11E+02	1.75E-01	3.38E+02	7.47E-04
BCEOT-W18+25 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.30E+03	2.22E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.06E+02	9.89E-01	3.68E-03	4.54E+00	1.81E-01	4.11E+02	1.75E-01	3.38E+02	5.36E-04
BCEOT-E19+25 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.58E+03	2.71E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.50E+02	1.20E+00	3.68E-03	4.54E+00	2.20E-01	4.11E+02	1.75E-01	3.38E+02	6.52E-04
BCEOT-W19+25 (0-6")	1.72E-01	1.72E-01	6.30E+00	7.83E+02	1.34E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.24E+02	5.97E-01	3.68E-03	4.54E+00	1.09E-01	4.11E+02	1.75E-01	3.38E+02	3.23E-04
BCEOT-E20+25 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.03E+03	1.77E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.64E+02	7.87E-01	3.68E-03	4.54E+00	1.44E-01	4.11E+02	1.75E-01	3.38E+02	4.26E-04
BCEOT-W20+25 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.24E+03	2.14E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.98E+02	9.50E-01	3.68E-03	4.54E+00	1.74E-01	4.11E+02	1.75E-01	3.38E+02	5.14E-04
BCEOT-E21+25 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.19E+03	2.04E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.88E+02	9.05E-01	3.68E-03	4.54E+00	1.66E-01	4.11E+02	1.75E-01	3.38E+02	4.90E-04
BCEOT-W21+25 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.10E+03	1.89E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.75E+02	8.39E-01	3.68E-03	4.54E+00	1.54E-01	4.11E+02	1.75E-01	3.38E+02	4.54E-04
BCEOT-E22+25 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.27E+03	2.18E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.01E+02	9.67E-01	3.68E-03	4.54E+00	1.77E-01	4.11E+02	1.75E-01	3.38E+02	5.24E-04
BCEOT-E22+70 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.94E+03	3.32E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.07E+02	1.48E+00	3.68E-03	4.54E+00	2.71E-01	4.11E+02	1.75E-01	3.38E+02	8.00E-04
BCEOT-W22+25 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.01E+03	1.73E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.60E+02	7.69E-01	3.68E-03	4.54E+00	1.41E-01	4.11E+02	1.75E-01	3.38E+02	4.17E-04
BCEOT-E23+25 (0-6")	1.72E-01	1.72E-01	6.30E+00	6.43E+02	1.10E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.02E+02	4.91E-01	3.68E-03	4.54E+00	8.99E-02	4.11E+02	1.75E-01	3.38E+02	2.66E-04
BCEOT-W23+25 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.21E+03	2.08E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.92E+02	9.24E-01	3.68E-03	4.54E+00	1.69E-01	4.11E+02	1.75E-01	3.38E+02	5.00E-04
BCEOT-E24+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-W24+25 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.95E+03	3.35E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.10E+02	1.49E+00	3.68E-03	4.54E+00	2.73E-01	4.11E+02	1.75E-01	3.38E+02	8.06E-04
BCEOT-E25+20 (0-6")	1.72E-01	1.72E-01	6.30E+00	6.84E+02	1.17E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.09E+02	5.22E-01	3.68E-03	4.54E+00	9.56E-02	4.11E+02	1.75E-01	3.38E+02	2.82E-04
BCEOT-W25+25 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.70E+03	2.91E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.70E+02	1.30E+00	3.68E-03	4.54E+00	2.37E-01	4.11E+02	1.75E-01	3.38E+02	7.02E-04
BCEOT-E26+25 (0-6")	1.72E-01	1.72E-01	6.30E+00	7.83E+02	1.34E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.24E+02	5.97E-01	3.68E-03	4.54E+00	1.09E-01	4.11E+02	1.75E-01	3.38E+02	3.23E-04
BCEOT-W26+25 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.77E+03	3.04E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.81E+02	1.35E+00	3.68E-03	4.54E+00	2.48E-01	4.11E+02	1.75E-01	3.38E+02	7.32E-04
BCEOT-W27+25 (0-6")	1.72E-01	1.72E-01	6.30E+00	1.65E+03	2.84E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.63E+02	1.26E+00	3.68E-03	4.54E+00	2.31E-01	4.11E+02	1.75E-01	3.38E+02	6.83E-04
																						Maximum HQ (Outside Tailings Pile)	**3.55E-02**
Masked Shrew (Omnivorous Mammal - Terrestrial, Wetland)																							
Reference Sites																							
ACBG-1 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	8.31E+00	1.14E+03	9.64E+00	1.10E-03	1.37E+02	1.51E-01	1.00E+00	5.50E-03	1.78E+03	4.11E+02	1.75E-01	5.06E+02	3.52E+00
ACBG-2 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	8.31E+00	6.98E+02	5.91E+00	1.10E-03	8.39E+01	9.24E-02	1.00E+00	5.50E-03	1.09E+03	4.11E+02	1.75E-01	5.06E+02	2.16E+00
BCBG-201 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	8.31E+00	2.01E+03	1.70E+01	1.10E-03	2.42E+02	2.66E-01	1.00E+00	5.50E-03	3.14E+03	4.11E+02	1.75E-01	5.06E+02	6.21E+00
Inside Tailings Pile																						**Minimum HQ (Reference Sites)**	**2.16E+00**
BCEOT-E0-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	8.00E+02	6.78E+00	1.10E-03	1.83E+02	2.01E-01	1.00E+00	5.50E-03	1.27E+03	4.11E+02	1.75E-01	5.06E+02	2.51E+00
BCEOT-E1-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	1.21E+03	1.02E+01	1.10E-03	2.75E+02	3.03E-01	1.00E+00	5.50E-03	1.91E+03	4.11E+02	1.75E-01	5.06E+02	3.78E+00
BCEOT-E2-8 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	5.97E+02	5.06E+00	1.10E-03	1.36E+02	1.50E-01	1.00E+00	5.50E-03	9.47E+02	4.11E+02	1.75E-01	5.06E+02	1.87E+00
BCEOT-E3-8 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	1.04E+03	8.79E+00	1.10E-03	2.37E+02	2.61E-01	1.00E+00	5.50E-03	1.65E+03	4.11E+02	1.75E-01	5.06E+02	3.25E+00
BCEOT-E4-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	7.10E+02	6.01E+00	1.10E-03	1.62E+02	1.78E-01	1.00E+00	5.50E-03	1.13E+03	4.11E+02	1.75E-01	5.06E+02	2.22E+00
BCEOT-W4-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	1.03E+03	8.76E+00	1.10E-03	2.36E+02	2.60E-01	1.00E+00	5.50E-03	1.64E+03	4.11E+02	1.75E-01	5.06E+02	3.24E+00
BCEOT-E5-25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	4.19E+02	3.55E+00	1.10E-03	9.56E+01	1.05E-01	1.00E+00	5.50E-03	6.64E+02	4.11E+02	1.75E-01	5.06E+02	1.31E+00
BCEOT-W5-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	5.08E+03	4.31E+01	1.10E-03	1.16E+03	1.28E+00	1.00E+00	5.50E-03	8.06E+03	4.11E+02	1.75E-01	5.06E+02	1.59E+01
BCEOT-E6-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	8.44E+02	7.15E+00	1.10E-03	1.93E+02	2.12E-01	1.00E+00	5.50E-03	1.34E+03	4.11E+02	1.75E-01	5.06E+02	2.64E+00
BCEOT-W6-12.5 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-E7-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	4.88E+02	4.13E+00	1.10E-03	1.11E+02	1.23E-01	1.00E+00	5.50E-03	7.74E+02	4.11E+02	1.75E-01	5.06E+02	1.53E+00
BCEOT-W7-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	6.24E+02	5.29E+00	1.10E-03	1.43E+02	1.57E-01	1.00E+00	5.50E-03	9.90E+02	4.11E+02	1.75E-01	5.06E+02	1.96E+00
BCEOT-W8-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	1.66E+03	1.41E+01	1.10E-03	3.80E+02	4.18E-01	1.00E+00	5.50E-03	2.64E+03	4.11E+02	1.75E-01	5.06E+02	5.21E+00
BCEOT-E9-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	1.14E+03	9.67E+00	1.10E-03	2.61E+02	2.87E-01	1.00E+00	5.50E-03	1.81E+03	4.11E+02	1.75E-01	5.06E+02	3.57E+00
BCEOT-W9-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	1.23E+04	1.04E+02	1.10E-03	2.80E+03	3.08E+00	1.00E+00	5.50E-03	1.94E+04	4.11E+02	1.75E-01	5.06E+02	3.84E+01
BCEOT-E10-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	1.11E+03	9.42E+00	1.10E-03	2.54E+02	2.80E-01	1.00E+00	5.50E-03	1.76E+03	4.11E+02	1.75E-01	5.06E+02	3.48E+00
BCEOT-W10-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	1.05E+03	8.93E+00	1.10E-03	2.41E+02	2.65E-01	1.00E+00	5.50E-03	1.67E+03	4.11E+02	1.75E-01	5.06E+02	3.30E+00
BCEOT-E11-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	7.24E+02	6.13E+00	1.10E-03	1.65E+02	1.82E-01	1.00E+00	5.50E-03	1.15E+03	4.11E+02	1.75E-01	5.06E+02	2.27E+00
BCEOT-W11-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	7.93E+03	6.72E+01	1.10E-03	1.81E+03	1.99E+00	1.00E+00	5.50E-03	1.26E+04	4.11E+02	1.75E-01	5.06E+02	2.48E+01
BCEOT-E12-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	5.51E+02	4.67E+00	1.10E-03	1.26E+02	1.39E-01	1.00E+00	5.50E-03	8.74E+02	4.11E+02	1.75E-01	5.06E+02	1.73E+00
BCEOT-W12-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	4.73E+03	4.01E+01	1.10E-03	1.08E+03	1.19E+00	1.00E+00	5.50E-03	7.50E+03	4.11E+02	1.75E-01	5.06E+02	1.48E+01
BCEOT-E13-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	9.64E+02	8.16E+00	1.10E-03	2.20E+02	2.42E-01	1.00E+00	5.50E-03	1.53E+03	4.11E+02	1.75E-01	5.06E+02	3.02E+00
BCEOT-W13-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	2.52E+03	2.14E+01	1.10E-03	5.77E+02	6.35E-01	1.00E+00	5.50E-03	4.00E+03	4.11E+02	1.75E-01	5.06E+02	7.91E+00
BCEOT-W13-25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-W14-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	1.70E+03	1.44E+01	1.10E-03	3.88E+02	4.27E-01	1.00E+00	5.50E-03	2.69E+03	4.11E+02	1.75E-01	5.06E+02	5.32E+00

TABLE C-11F: ZINC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 11 - BEARTRAP CREEK DISPERSED TAILINGS DEPOSITS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK TAILINGS DEPOSITS AND FLOSSIE LOUISE MINE WASTE PILE (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 4.982

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Masked Shrew (Omnivorous Mammal - Terrestrial, Wetland)																							
BCEOT-E15-8 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	9.97E+02	8.44E+00	1.10E-03	2.28E+02	2.51E-01	1.00E+00	5.50E-03	1.58E+03	4.11E+02	1.75E-01	5.06E+02	3.12E+00
BCEOT-W15-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	1.72E+03	1.45E+01	1.10E-03	3.92E+02	4.31E-01	1.00E+00	5.50E-03	2.72E+03	4.11E+02	1.75E-01	5.06E+02	5.37E+00
BCEOT-E16-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	1.69E+04	1.43E+02	1.10E-03	3.86E+03	4.25E+00	1.00E+00	5.50E-03	2.68E+04	4.11E+02	1.75E-01	5.06E+02	5.30E+01
BCEOT-W16-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	4.68E+03	3.96E+01	1.10E-03	1.07E+03	1.18E+00	1.00E+00	5.50E-03	7.42E+03	4.11E+02	1.75E-01	5.06E+02	1.46E+01
BCEOT-E17-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	7.09E+04	6.00E+02	1.10E-03	1.62E+04	1.78E+01	1.00E+00	5.50E-03	1.12E+05	4.11E+02	1.75E-01	5.06E+02	2.22E+02
BCEOT-W17-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	2.21E+03	1.87E+01	1.10E-03	5.05E+02	5.56E-01	1.00E+00	5.50E-03	3.50E+03	4.11E+02	1.75E-01	5.06E+02	6.92E+00
BCEOT-W18-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	1.70E+03	1.44E+01	1.10E-03	3.88E+02	4.27E-01	1.00E+00	5.50E-03	2.69E+03	4.11E+02	1.75E-01	5.06E+02	5.32E+00
BCEOT-E19-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	4.09E+03	3.46E+01	1.10E-03	9.34E+02	1.03E+00	1.00E+00	5.50E-03	6.49E+03	4.11E+02	1.75E-01	5.06E+02	1.28E+01
BCEOT-W19-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	1.49E+03	1.26E+01	1.10E-03	3.40E+02	3.74E-01	1.00E+00	5.50E-03	2.36E+03	4.11E+02	1.75E-01	5.06E+02	4.66E+00
BCEOT-E20-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	2.50E+03	2.12E+01	1.10E-03	5.72E+02	6.30E-01	1.00E+00	5.50E-03	3.97E+03	4.11E+02	1.75E-01	5.06E+02	7.84E+00
BCEOT-W20-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	1.59E+04	1.35E+02	1.10E-03	3.63E+03	3.99E+00	1.00E+00	5.50E-03	2.52E+04	4.11E+02	1.75E-01	5.06E+02	4.97E+01
BCEOT-E21-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	1.09E+03	9.23E+00	1.10E-03	2.49E+02	2.74E-01	1.00E+00	5.50E-03	1.73E+03	4.11E+02	1.75E-01	5.06E+02	3.41E+00
BCEOT-W21-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	1.51E+03	1.28E+01	1.10E-03	3.46E+02	3.81E-01	1.00E+00	5.50E-03	2.40E+03	4.11E+02	1.75E-01	5.06E+02	4.74E+00
BCEOT-E22-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	5.42E+03	4.59E+01	1.10E-03	1.24E+03	1.36E+00	1.00E+00	5.50E-03	8.60E+03	4.11E+02	1.75E-01	5.06E+02	1.70E+01
BCEOT-W22-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	6.40E+04	5.42E+02	1.10E-03	1.46E+04	1.61E+01	1.00E+00	5.50E-03	1.01E+05	4.11E+02	1.75E-01	5.06E+02	2.00E+02
BCEOT-E23-15 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	1.19E+03	1.01E+01	1.10E-03	2.73E+02	3.00E-01	1.00E+00	5.50E-03	1.89E+03	4.11E+02	1.75E-01	5.06E+02	3.74E+00
BCEOT-W23-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	1.61E+04	1.36E+02	1.10E-03	3.67E+03	4.04E+00	1.00E+00	5.50E-03	2.55E+04	4.11E+02	1.75E-01	5.06E+02	5.03E+01
BCEOT-E24-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	4.68E+02	3.96E+00	1.10E-03	1.07E+02	1.18E-01	1.00E+00	5.50E-03	7.42E+02	4.11E+02	1.75E-01	5.06E+02	1.47E+00
BCEOT-W24-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	1.23E+04	1.04E+02	1.10E-03	2.81E+03	3.09E+00	1.00E+00	5.50E-03	1.95E+04	4.11E+02	1.75E-01	5.06E+02	3.85E+01
BCEOT-E25-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	2.48E+03	2.10E+01	1.10E-03	5.67E+02	6.25E-01	1.00E+00	5.50E-03	3.94E+03	4.11E+02	1.75E-01	5.06E+02	7.78E+00
BCEOT-W25-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	8.42E+03	7.13E+01	1.10E-03	1.92E+03	2.12E+00	1.00E+00	5.50E-03	1.34E+04	4.11E+02	1.75E-01	5.06E+02	2.64E+01
BCEOT-E26-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	8.70E+02	7.37E+00	1.10E-03	1.99E+02	2.19E-01	1.00E+00	5.50E-03	1.38E+03	4.11E+02	1.75E-01	5.06E+02	2.72E+00
BCEOT-W26-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	1.35E+03	1.15E+01	1.10E-03	3.09E+02	3.40E-01	1.00E+00	5.50E-03	2.15E+03	4.11E+02	1.75E-01	5.06E+02	4.24E+00
BCEOT-W27-12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	7.60E+03	6.44E+01	1.10E-03	1.74E+03	1.91E+00	1.00E+00	5.50E-03	1.21E+04	4.11E+02	1.75E-01	5.06E+02	2.38E+01
At Edge of Tailings Pile																						**Maximum HQ (Inside Tailings Pile)**	**2.22E+02**
BCEOT-E0-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	1.20E+03	1.01E+01	1.10E-03	2.73E+02	3.01E-01	1.00E+00	5.50E-03	1.90E+03	4.11E+02	1.75E-01	5.06E+02	3.74E+00
BCEOT-E1-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	8.11E+02	6.87E+00	1.10E-03	1.85E+02	2.04E-01	1.00E+00	5.50E-03	1.29E+03	4.11E+02	1.75E-01	5.06E+02	2.54E+00
BCEOT-E2-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	2.23E+03	1.89E+01	1.10E-03	5.09E+02	5.61E-01	1.00E+00	5.50E-03	3.54E+03	4.11E+02	1.75E-01	5.06E+02	6.98E+00
BCEOT-E3-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	5.44E+02	4.60E+00	1.10E-03	1.24E+02	1.37E-01	1.00E+00	5.50E-03	8.62E+02	4.11E+02	1.75E-01	5.06E+02	1.70E+00
BCEOT-E4-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	7.71E+02	6.53E+00	1.10E-03	1.76E+02	1.94E-01	1.00E+00	5.50E-03	1.22E+03	4.11E+02	1.75E-01	5.06E+02	2.42E+00
BCEOT-W4-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	3.87E+02	3.28E+00	1.10E-03	8.85E+01	9.74E-02	1.00E+00	5.50E-03	6.14E+02	4.11E+02	1.75E-01	5.06E+02	1.21E+00
BCEOT-E5-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	1.04E+03	8.79E+00	1.10E-03	2.37E+02	2.61E-01	1.00E+00	5.50E-03	1.65E+03	4.11E+02	1.75E-01	5.06E+02	3.25E+00
BCEOT-W5-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	8.44E+02	7.15E+00	1.10E-03	1.93E+02	2.12E-01	1.00E+00	5.50E-03	1.34E+03	4.11E+02	1.75E-01	5.06E+02	2.64E+00
BCEOT-E6-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	7.42E+02	6.29E+00	1.10E-03	1.69E+02	1.87E-01	1.00E+00	5.50E-03	1.18E+03	4.11E+02	1.75E-01	5.06E+02	2.32E+00
BCEOT-W6-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	4.77E+02	4.04E+00	1.10E-03	1.09E+02	1.20E-01	1.00E+00	5.50E-03	7.56E+02	4.11E+02	1.75E-01	5.06E+02	1.49E+00
BCEOT-E7-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	7.42E+02	6.28E+00	1.10E-03	1.69E+02	1.87E-01	1.00E+00	5.50E-03	1.18E+03	4.11E+02	1.75E-01	5.06E+02	2.32E+00
BCEOT-W7-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-W8-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-E9-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	9.93E+02	8.41E+00	1.10E-03	2.27E+02	2.50E-01	1.00E+00	5.50E-03	1.57E+03	4.11E+02	1.75E-01	5.06E+02	3.11E+00
BCEOT-W9-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-E10-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	1.41E+03	1.19E+01	1.10E-03	3.22E+02	3.55E-01	1.00E+00	5.50E-03	2.24E+03	4.11E+02	1.75E-01	5.06E+02	4.42E+00
BCEOT-W10-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-E11-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	6.31E+02	5.35E+00	1.10E-03	1.44E+02	1.59E-01	1.00E+00	5.50E-03	1.00E+03	4.11E+02	1.75E-01	5.06E+02	1.98E+00
BCEOT-W11-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	1.41E+03	1.20E+01	1.10E-03	3.23E+02	3.55E-01	1.00E+00	5.50E-03	2.24E+03	4.11E+02	1.75E-01	5.06E+02	4.42E+00
BCEOT-E12-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	7.07E+02	5.99E+00	1.10E-03	1.61E+02	1.78E-01	1.00E+00	5.50E-03	1.12E+03	4.11E+02	1.75E-01	5.06E+02	2.21E+00
BCEOT-W12-0 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-E13-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	5.91E+02	5.00E+00	1.10E-03	1.35E+02	1.49E-01	1.00E+00	5.50E-03	9.37E+02	4.11E+02	1.75E-01	5.06E+02	1.85E+00
BCEOT-W13-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	6.73E+02	5.70E+00	1.10E-03	1.54E+02	1.69E-01	1.00E+00	5.50E-03	1.07E+03	4.11E+02	1.75E-01	5.06E+02	2.11E+00
BCEOT-E14-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	5.40E+02	4.58E+00	1.10E-03	1.23E+02	1.36E-01	1.00E+00	5.50E-03	8.57E+02	4.11E+02	1.75E-01	5.06E+02	1.69E+00
BCEOT-W14-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	3.22E+03	2.73E+01	1.10E-03	7.35E+02	8.10E-01	1.00E+00	5.50E-03	5.11E+03	4.11E+02	1.75E-01	5.06E+02	1.01E+01
BCEOT-E15-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	1.15E+03	9.75E+00	1.10E-03	2.63E+02	2.89E-01	1.00E+00	5.50E-03	1.82E+03	4.11E+02	1.75E-01	5.06E+02	3.60E+00
BCEOT-W15-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	3.38E+03	2.86E+01	1.10E-03	7.72E+02	8.50E-01	1.00E+00	5.50E-03	5.36E+03	4.11E+02	1.75E-01	5.06E+02	1.06E+01

TABLE C-11F: ZINC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 11 - BEARTRAP CREEK DISPERSED TAILINGS DEPOSITS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK TAILINGS DEPOSITS AND FLOSSIE LOUISE MINE WASTE PILE (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 4.982

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Masked Shrew (Omnivorous Mammal - Terrestrial, Wetland)																							
BCEOT-E16-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	8.00E+02	6.77E+00	1.10E-03	1.83E+02	2.01E-01	1.00E+00	5.50E-03	1.27E+03	4.11E+02	1.75E-01	5.06E+02	2.50E+00
BCEOT-W16-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	9.61E+02	8.14E+00	1.10E-03	2.20E+02	2.42E-01	1.00E+00	5.50E-03	1.52E+03	4.11E+02	1.75E-01	5.06E+02	3.01E+00
BCEOT-E17-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	2.82E+03	2.39E+01	1.10E-03	6.44E+02	7.10E-01	1.00E+00	5.50E-03	4.48E+03	4.11E+02	1.75E-01	5.06E+02	8.84E+00
BCEOT-W17-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	1.01E+03	8.57E+00	1.10E-03	2.31E+02	2.54E-01	1.00E+00	5.50E-03	1.60E+03	4.11E+02	1.75E-01	5.06E+02	3.17E+00
BCEOT-E18-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	1.66E+03	1.41E+01	1.10E-03	3.80E+02	4.18E-01	1.00E+00	5.50E-03	2.64E+03	4.11E+02	1.75E-01	5.06E+02	5.21E+00
BCEOT-W18-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	1.20E+03	1.01E+01	1.10E-03	2.73E+02	3.01E-01	1.00E+00	5.50E-03	1.90E+03	4.11E+02	1.75E-01	5.06E+02	3.75E+00
BCEOT-E19-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	1.16E+03	9.84E+00	1.10E-03	2.65E+02	2.92E-01	1.00E+00	5.50E-03	1.84E+03	4.11E+02	1.75E-01	5.06E+02	3.64E+00
BCEOT-W19-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	1.31E+03	1.11E+01	1.10E-03	2.98E+02	3.28E-01	1.00E+00	5.50E-03	2.07E+03	4.11E+02	1.75E-01	5.06E+02	4.09E+00
BCEOT-E20-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	5.80E+02	4.91E+00	1.10E-03	1.32E+02	1.46E-01	1.00E+00	5.50E-03	9.19E+02	4.11E+02	1.75E-01	5.06E+02	1.82E+00
BCEOT-W20-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	1.19E+03	1.01E+01	1.10E-03	2.71E+02	2.99E-01	1.00E+00	5.50E-03	1.88E+03	4.11E+02	1.75E-01	5.06E+02	3.72E+00
BCEOT-E21-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	1.17E+03	9.91E+00	1.10E-03	2.67E+02	2.94E-01	1.00E+00	5.50E-03	1.86E+03	4.11E+02	1.75E-01	5.06E+02	3.67E+00
BCEOT-W21-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	1.35E+03	1.14E+01	1.10E-03	3.09E+02	3.40E-01	1.00E+00	5.50E-03	2.14E+03	4.11E+02	1.75E-01	5.06E+02	4.23E+00
BCEOT-E22-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	5.46E+02	4.62E+00	1.10E-03	1.25E+02	1.37E-01	1.00E+00	5.50E-03	8.66E+02	4.11E+02	1.75E-01	5.06E+02	1.71E+00
BCEOT-W22-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	1.06E+03	8.94E+00	1.10E-03	2.41E+02	2.65E-01	1.00E+00	5.50E-03	1.67E+03	4.11E+02	1.75E-01	5.06E+02	3.30E+00
BCEOT-E23-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	3.95E+02	3.34E+00	1.10E-03	9.02E+01	9.93E-02	1.00E+00	5.50E-03	6.26E+02	4.11E+02	1.75E-01	5.06E+02	1.24E+00
BCEOT-W23-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	1.77E+03	1.50E+01	1.10E-03	4.04E+02	4.45E-01	1.00E+00	5.50E-03	2.81E+03	4.11E+02	1.75E-01	5.06E+02	5.54E+00
BCEOT-E24-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	6.41E+02	5.43E+00	1.10E-03	1.46E+02	1.61E-01	1.00E+00	5.50E-03	1.02E+03	4.11E+02	1.75E-01	5.06E+02	2.01E+00
BCEOT-W24-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	1.08E+03	9.18E+00	1.10E-03	2.47E+02	2.72E-01	1.00E+00	5.50E-03	1.72E+03	4.11E+02	1.75E-01	5.06E+02	3.39E+00
BCEOT-E25-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	7.52E+02	6.37E+00	1.10E-03	1.72E+02	1.89E-01	1.00E+00	5.50E-03	1.19E+03	4.11E+02	1.75E-01	5.06E+02	2.36E+00
BCEOT-W25-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	1.24E+03	1.05E+01	1.10E-03	2.84E+02	3.12E-01	1.00E+00	5.50E-03	1.97E+03	4.11E+02	1.75E-01	5.06E+02	3.89E+00
BCEOT-E26-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	1.44E+03	1.22E+01	1.10E-03	3.30E+02	3.63E-01	1.00E+00	5.50E-03	2.29E+03	4.11E+02	1.75E-01	5.06E+02	4.52E+00
BCEOT-W26-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	1.02E+03	8.67E+00	1.10E-03	2.34E+02	2.57E-01	1.00E+00	5.50E-03	1.62E+03	4.11E+02	1.75E-01	5.06E+02	3.20E+00
BCEOT-W27-0 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	1.18E+03	1.00E+01	1.10E-03	2.69E+02	2.97E-01	1.00E+00	5.50E-03	1.87E+03	4.11E+02	1.75E-01	5.06E+02	3.70E+00
Outside Tailings Piles																						**Maximum HQ (Edge of Tailings Pile)**	**1.06E+01**
BCEOT-E0+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	8.96E+02	7.59E+00	1.10E-03	2.05E+02	2.25E-01	1.00E+00	5.50E-03	1.42E+03	4.11E+02	1.75E-01	5.06E+02	2.81E+00
BCEOT-E1+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	1.88E+03	1.59E+01	1.10E-03	4.28E+02	4.72E-01	1.00E+00	5.50E-03	2.98E+03	4.11E+02	1.75E-01	5.06E+02	5.88E+00
BCEOT-E2+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	7.66E+02	6.49E+00	1.10E-03	1.75E+02	1.93E-01	1.00E+00	5.50E-03	1.22E+03	4.11E+02	1.75E-01	5.06E+02	2.40E+00
BCEOT-E3+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	4.83E+02	4.09E+00	1.10E-03	1.10E+02	1.21E-01	1.00E+00	5.50E-03	7.66E+02	4.11E+02	1.75E-01	5.06E+02	1.51E+00
BCEOT-E4+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	7.00E+02	5.93E+00	1.10E-03	1.60E+02	1.76E-01	1.00E+00	5.50E-03	1.11E+03	4.11E+02	1.75E-01	5.06E+02	2.19E+00
BCEOT-W4+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	6.38E+02	5.41E+00	1.10E-03	1.46E+02	1.60E-01	1.00E+00	5.50E-03	1.01E+03	4.11E+02	1.75E-01	5.06E+02	2.00E+00
BCEOT-E5+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	1.84E+03	1.56E+01	1.10E-03	4.21E+02	4.64E-01	1.00E+00	5.50E-03	2.93E+03	4.11E+02	1.75E-01	5.06E+02	5.78E+00
BCEOT-W5+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	7.50E+02	6.35E+00	1.10E-03	1.71E+02	1.88E-01	1.00E+00	5.50E-03	1.19E+03	4.11E+02	1.75E-01	5.06E+02	2.35E+00
BCEOT-E6+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	6.68E+02	5.66E+00	1.10E-03	1.52E+02	1.68E-01	1.00E+00	5.50E-03	1.06E+03	4.11E+02	1.75E-01	5.06E+02	2.09E+00
BCEOT-W6+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	3.74E+02	3.17E+00	1.10E-03	8.55E+01	9.41E-02	1.00E+00	5.50E-03	5.93E+02	4.11E+02	1.75E-01	5.06E+02	1.17E+00
BCEOT-E7+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	6.38E+02	5.40E+00	1.10E-03	1.46E+02	1.60E-01	1.00E+00	5.50E-03	1.01E+03	4.11E+02	1.75E-01	5.06E+02	2.00E+00
BCEOT-W7+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	5.39E+02	4.56E+00	1.10E-03	1.23E+02	1.35E-01	1.00E+00	5.50E-03	8.54E+02	4.11E+02	1.75E-01	5.06E+02	1.69E+00
FLWA-101 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	1.24E+03	1.05E+01	1.10E-03	2.84E+02	3.12E-01	1.00E+00	5.50E-03	1.97E+03	4.11E+02	1.75E-01	5.06E+02	3.89E+00
BCEOT-W8+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	7.03E+02	5.96E+00	1.10E-03	1.61E+02	1.77E-01	1.00E+00	5.50E-03	1.12E+03	4.11E+02	1.75E-01	5.06E+02	2.20E+00
BCEOT-E9+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	1.12E+03	9.49E+00	1.10E-03	2.56E+02	2.82E-01	1.00E+00	5.50E-03	1.78E+03	4.11E+02	1.75E-01	5.06E+02	3.51E+00
BCEOT-W9+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	1.03E+03	8.71E+00	1.10E-03	2.35E+02	2.59E-01	1.00E+00	5.50E-03	1.63E+03	4.11E+02	1.75E-01	5.06E+02	3.22E+00
BCEOT-E10+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	6.93E+02	5.87E+00	1.10E-03	1.58E+02	1.74E-01	1.00E+00	5.50E-03	1.10E+03	4.11E+02	1.75E-01	5.06E+02	2.17E+00
BCEOT-W10+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-E11+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	8.99E+02	7.61E+00	1.10E-03	2.05E+02	2.26E-01	1.00E+00	5.50E-03	1.43E+03	4.11E+02	1.75E-01	5.06E+02	2.82E+00
BCEOT-W11+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	3.78E+02	3.20E+00	1.10E-03	8.64E+01	9.51E-02	1.00E+00	5.50E-03	6.00E+02	4.11E+02	1.75E-01	5.06E+02	1.18E+00
BCEOT-E12+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	6.46E+02	5.47E+00	1.10E-03	1.48E+02	1.62E-01	1.00E+00	5.50E-03	1.02E+03	4.11E+02	1.75E-01	5.06E+02	2.02E+00
BCEOT-W12+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	7.47E+02	6.33E+00	1.10E-03	1.71E+02	1.88E-01	1.00E+00	5.50E-03	1.19E+03	4.11E+02	1.75E-01	5.06E+02	2.34E+00
BCEOT-E13+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	6.83E+02	5.78E+00	1.10E-03	1.56E+02	1.72E-01	1.00E+00	5.50E-03	1.08E+03	4.11E+02	1.75E-01	5.06E+02	2.14E+00
BCEOT-E14+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	4.14E+02	3.50E+00	1.10E-03	9.45E+01	1.04E-01	1.00E+00	5.50E-03	6.56E+02	4.11E+02	1.75E-01	5.06E+02	1.30E+00
BCEOT-W14+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	7.53E+02	6.38E+00	1.10E-03	1.72E+02	1.89E-01	1.00E+00	5.50E-03	1.19E+03	4.11E+02	1.75E-01	5.06E+02	2.36E+00
BCEOT-E15+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	1.13E+03	9.61E+00	1.10E-03	2.59E+02	2.85E-01	1.00E+00	5.50E-03	1.80E+03	4.11E+02	1.75E-01	5.06E+02	3.55E+00
BCEOT-W15+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	1.17E+03	9.87E+00	1.10E-03	2.66E+02	2.93E-01	1.00E+00	5.50E-03	1.85E+03	4.11E+02	1.75E-01	5.06E+02	3.65E+00
BCEOT-E16+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	8.69E+02	7.36E+00	1.10E-03	1.99E+02	2.19E-01	1.00E+00	5.50E-03	1.38E+03	4.11E+02	1.75E-01	5.06E+02	2.72E+00

TABLE C-11F: ZINC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 11 - BEARTRAP CREEK DISPERSED TAILINGS DEPOSITS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK TAILINGS DEPOSITS AND FLOSSIE LOUISE MINE WASTE PILE (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 4.982

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Masked Shrew (Omnivorous Mammal - Terrestrial, Wetland)																							
BCEOT-W16+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	6.66E+02	5.64E+00	1.10E-03	1.52E+02	1.67E-01	1.00E+00	5.50E-03	1.06E+03	4.11E+02	1.75E-01	5.06E+02	2.09E+00
BCEOT-E17+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	1.65E+03	1.40E+01	1.10E-03	3.78E+02	4.16E-01	1.00E+00	5.50E-03	2.62E+03	4.11E+02	1.75E-01	5.06E+02	5.18E+00
BCEOT-W17+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	5.44E+02	4.60E+00	1.10E-03	1.24E+02	1.37E-01	1.00E+00	5.50E-03	8.62E+02	4.11E+02	1.75E-01	5.06E+02	1.70E+00
BCEOT-E18+12.5 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	5.98E+04	5.06E+02	1.10E-03	1.36E+04	1.50E+01	1.00E+00	5.50E-03	9.48E+04	4.11E+02	1.75E-01	5.06E+02	1.87E+02
BCEOT-E18+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	1.26E+03	1.07E+01	1.10E-03	2.87E+02	3.16E-01	1.00E+00	5.50E-03	2.00E+03	4.11E+02	1.75E-01	5.06E+02	3.94E+00
BCEOT-W18+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	9.02E+02	7.64E+00	1.10E-03	2.06E+02	2.27E-01	1.00E+00	5.50E-03	1.43E+03	4.11E+02	1.75E-01	5.06E+02	2.82E+00
BCEOT-E19+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	1.10E+03	9.29E+00	1.10E-03	2.50E+02	2.76E-01	1.00E+00	5.50E-03	1.74E+03	4.11E+02	1.75E-01	5.06E+02	3.44E+00
BCEOT-W19+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	5.45E+02	4.61E+00	1.10E-03	1.24E+02	1.37E-01	1.00E+00	5.50E-03	8.64E+02	4.11E+02	1.75E-01	5.06E+02	1.71E+00
BCEOT-E20+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	7.18E+02	6.08E+00	1.10E-03	1.64E+02	1.81E-01	1.00E+00	5.50E-03	1.14E+03	4.11E+02	1.75E-01	5.06E+02	2.25E+00
BCEOT-W20+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	8.66E+02	7.33E+00	1.10E-03	1.98E+02	2.18E-01	1.00E+00	5.50E-03	1.37E+03	4.11E+02	1.75E-01	5.06E+02	2.71E+00
BCEOT-E21+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	8.25E+02	6.99E+00	1.10E-03	1.88E+02	2.08E-01	1.00E+00	5.50E-03	1.31E+03	4.11E+02	1.75E-01	5.06E+02	2.58E+00
BCEOT-W21+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	7.65E+02	6.48E+00	1.10E-03	1.75E+02	1.92E-01	1.00E+00	5.50E-03	1.21E+03	4.11E+02	1.75E-01	5.06E+02	2.40E+00
BCEOT-E22+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	8.82E+02	7.47E+00	1.10E-03	2.01E+02	2.22E-01	1.00E+00	5.50E-03	1.40E+03	4.11E+02	1.75E-01	5.06E+02	2.76E+00
BCEOT-E22+70 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	1.35E+03	1.14E+01	1.10E-03	3.07E+02	3.39E-01	1.00E+00	5.50E-03	2.14E+03	4.11E+02	1.75E-01	5.06E+02	4.22E+00
BCEOT-W22+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	7.01E+02	5.94E+00	1.10E-03	1.60E+02	1.76E-01	1.00E+00	5.50E-03	1.11E+03	4.11E+02	1.75E-01	5.06E+02	2.20E+00
BCEOT-E23+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	4.47E+02	3.79E+00	1.10E-03	1.02E+02	1.12E-01	1.00E+00	5.50E-03	7.09E+02	4.11E+02	1.75E-01	5.06E+02	1.40E+00
BCEOT-W23+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	8.42E+02	7.14E+00	1.10E-03	1.92E+02	2.12E-01	1.00E+00	5.50E-03	1.34E+03	4.11E+02	1.75E-01	5.06E+02	2.64E+00
BCEOT-E24+25 (0-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BCEOT-W24+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	1.36E+03	1.15E+01	1.10E-03	3.10E+02	3.41E-01	1.00E+00	5.50E-03	2.15E+03	4.11E+02	1.75E-01	5.06E+02	4.25E+00
BCEOT-E25+20 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	4.75E+02	4.03E+00	1.10E-03	1.09E+02	1.20E-01	1.00E+00	5.50E-03	7.54E+02	4.11E+02	1.75E-01	5.06E+02	1.49E+00
BCEOT-W25+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	1.18E+03	1.00E+01	1.10E-03	2.70E+02	2.97E-01	1.00E+00	5.50E-03	1.87E+03	4.11E+02	1.75E-01	5.06E+02	3.70E+00
BCEOT-E26+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	5.44E+02	4.61E+00	1.10E-03	1.24E+02	1.37E-01	1.00E+00	5.50E-03	8.63E+02	4.11E+02	1.75E-01	5.06E+02	1.70E+00
BCEOT-W26+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	1.23E+03	1.04E+01	1.10E-03	2.81E+02	3.10E-01	1.00E+00	5.50E-03	1.95E+03	4.11E+02	1.75E-01	5.06E+02	3.86E+00
BCEOT-W27+25 (0-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	4.38E+00	1.15E+03	9.75E+00	1.10E-03	2.63E+02	2.89E-01	1.00E+00	5.50E-03	1.82E+03	4.11E+02	1.75E-01	5.06E+02	3.60E+00
																						Maximum HQ (Outside Tailings Pile)	**1.87E+02**

Notes

1 See Tables 3-1 through 3-13 for ingestion rates, foraging ranges used to calculate the SUF, and body weights.

2 BAFs were calculated by dividing site-collected tissue by collocated soil concentrations (BAFs are in dry weight). The maximum BAF calculated from the Beartrap Creek and Blackfoot River transects was used for site dose calculations. The maximum BAF from the terrestrial reference site was used for reference site dose calculations.

3 The mammal, plant, and invertebrate concentrations were calculated by multiplying the soil concentration by the BAF to generate a tissue concentration (see note 2).

4 Mammal, plant, and invertebrate daily doses were calculated by multiplying the ingestion rate (see note 1) by the tissue concentration (see note 3).

5 Soil concentration from 0 to 6 inches below ground surface at point ID as measured by XRF 10. Doses were not calculated for detected and non-detected soil concentrations measured below the minimum reference site concentration, as indicated by BB. For results that were measured at less than the detection limit, doses were calculated using half of the detection limit.

6 Soil daily dose was calculated by multiplying the soil ingestion rate (see note 1) by soil concentration (see note 5).

7 Total daily dose is calculated using the following equation: total daily dose = ([mammal daily dose (if applicable) + plant daily dose (if applicable) + invertebrate daily dose (if applicable) + soil daily dose]*SUF)/receptor species body weight.

8 The derivation of TRVs is described in Navy (1998). The high TRV was used for dose calculations.

9 Allometrically adjusted TRVs for birds were calculated using the following equation: receptor species TRV = (test species TRV) x (test species body weight / receptor species body weight) $^{(1-1.2)}$.

10 Allometrically adjusted TRVs for mammals were calculated using the following equation: receptor species TRV = (test species TRV) x (test species body weight / receptor species body weight) $^{(1-0.94)}$.

11 HQs were calculated using the following equation: HQ = total daily dose/allometrically adjusted TRV.

12 Green cells indicate an HQ between 1.0 and 9.99; yellow cells indicate an HQ between 10 and 99.9; blue cells indicate an HQ 100 or greater.

BAF	Bioaccumulation Factor	mg/day	Milligram per day
BB	Below minimum background reference site concentration	mg/kg	Milligram per kilogram
EE/CA	Engineering Evaluation/Cost Analysis	NA	Not applicable
EU	Exposure Unit	Navy	Department of the Navy
HQ	Hazard quotient	SUF	Site use factor
ID	Identification	TRV	Toxicity reference value
kg	Kilogram	XRF	X-ray fluorescence
kg/day	Kilogram per day	XRF 10	XRF measurements recorded following drying and seiving through a #10 -mesh screen

Sources: Department of the Navy. 1998. "Development of Toxicity Reference Values for Conducting Ecological Risk Assessments at Naval Facilities in California, Interim Final." Prepared by Naval Facilities Engineering Command, Engineering Field Activity West (EFA West). San Bruno, California.

TABLE C-12AA: ALUMINUM DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 12 - UPPER MARSH, TERRESTRIAL RECEPTORS

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **118.73**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Mourning Dove (Herbivorous Birds)																							
Reference Sites																							
BRSD-5 (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	2.15E-02	1.62E+02	9.31E-01	NA	NA	NA	NA	5.36E-04	7.50E+03	4.02E+00	4.58E-01	1.09E-01	2.08E+01	1.10E+03	1.55E-01	1.02E+03	2.03E-02
BRSD-5 (2-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	2.15E-02	1.73E+02	9.97E-01	NA	NA	NA	NA	5.36E-04	8.03E+03	4.30E+00	4.58E-01	1.09E-01	2.22E+01	1.10E+03	1.55E-01	1.02E+03	2.18E-02
BRSD-5 (6-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	2.15E-02	1.64E+02	9.46E-01	NA	NA	NA	NA	5.36E-04	7.62E+03	4.08E+00	4.58E-01	1.09E-01	2.11E+01	1.10E+03	1.55E-01	1.02E+03	2.06E-02
PGBG-1 (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
PGBG-1 (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
PGBG-1 (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
PGBG-2 (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
PGBG-2 (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
PGBG-2 (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
Eastern Upper Marsh (0-2")																						**Minimum HQ (Reference Sites)**	**2.03E-02**
UM-1000S-3500E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSD-15 (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	5.89E-02	5.50E+02	3.17E+00	NA	NA	NA	NA	5.36E-04	9.34E+03	5.00E+00	4.58E-01	1.09E-01	3.43E+01	1.10E+03	1.55E-01	1.02E+03	3.35E-02
BRSD-4 (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	5.89E-02	9.83E+02	5.66E+00	NA	NA	NA	NA	5.36E-04	1.67E+04	8.95E+00	4.58E-01	1.09E-01	6.13E+01	1.10E+03	1.55E-01	1.02E+03	6.00E-02
UM-750S-3500E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSD-16 (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-750S-3000E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSD-3 (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	5.89E-02	4.84E+02	2.79E+00	NA	NA	NA	NA	5.36E-04	8.22E+03	4.40E+00	4.58E-01	1.09E-01	3.02E+01	1.10E+03	1.55E-01	1.02E+03	2.95E-02
UM-500S-3250E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-500S-3000E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-500S-2750E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSD-25 (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-250S-3000E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250S-3250E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSD-24 (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-250S-2750E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250S-2500E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-0N-2500E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-0N-250E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSD-2 (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-500N-2500E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250N-2500E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250N-2250E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
Western Upper Marsh (0-2")																						**Maximum HQ (Eastern Upper Marsh, 0-2")**	**6.00E-02**
UM-500S-2500E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-0N-2000E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-500S-2000E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250N-1750E (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	7.74E-03	8.36E+01	4.82E-01	NA	NA	NA	NA	5.36E-04	1.08E+04	5.79E+00	4.58E-01	1.09E-01	2.63E+01	1.10E+03	1.55E-01	1.02E+03	2.57E-02
UM-0N-1500E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250S-1500E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250S-1250E (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	7.74E-03	7.15E+01	4.12E-01	NA	NA	NA	NA	5.36E-04	9.23E+03	4.95E+00	4.58E-01	1.09E-01	2.25E+01	1.10E+03	1.55E-01	1.02E+03	2.20E-02
BRSD-6 (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-1000E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-0N-750E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-0N-500E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250S-500E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250S-250E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSD-7 (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-8 (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	7.74E-03	1.62E+02	9.32E-01	NA	NA	NA	NA	5.36E-04	2.09E+04	1.12E+01	4.58E-01	1.09E-01	5.09E+01	1.10E+03	1.55E-01	1.02E+03	4.98E-02
UM-500S-500E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE

TABLE C-12AA: ALUMINUM DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 12 - MARSH, TERRESTRIAL RECEPTORS (Continued)
Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)
calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **118.73**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Mourning Dove (Herbivorous Birds)																							
BRSD-9 (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	7.74E-03	1.80E+02	1.04E+00	NA	NA	NA	NA	5.36E-04	2.33E+04	1.25E+01	4.58E-01	1.09E-01	5.68E+01	1.10E+03	1.55E-01	1.02E+03	5.55E-02
BRSD-10 (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-11 (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	7.74E-03	1.82E+02	1.05E+00	NA	NA	NA	NA	5.36E-04	2.35E+04	1.26E+01	4.58E-01	1.09E-01	5.73E+01	1.10E+03	1.55E-01	1.02E+03	5.60E-02
Eastern Upper Marsh (2-6")																						**Maximum HQ (Western Upper Marsh, 0-2")**	**5.60E-02**
UM-1000S-3500E (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSD-15 (2-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	5.89E-02	8.42E+02	4.85E+00	NA	NA	NA	NA	5.36E-04	1.43E+04	7.66E+00	4.58E-01	1.09E-01	5.25E+01	1.10E+03	1.55E-01	1.02E+03	5.14E-02
BRSD-4 (2-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	5.89E-02	1.04E+03	5.97E+00	NA	NA	NA	NA	5.36E-04	1.76E+04	9.43E+00	4.58E-01	1.09E-01	6.46E+01	1.10E+03	1.55E-01	1.02E+03	6.32E-02
UM-750S-3500E (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSD-16 (2-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	5.89E-02	4.76E+02	2.74E+00	NA	NA	NA	NA	5.36E-04	8.08E+03	4.33E+00	4.58E-01	1.09E-01	2.97E+01	1.10E+03	1.55E-01	1.02E+03	2.90E-02
UM-750S-3000E (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSD-3 (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-500S-3250E (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-500S-3000E (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-500S-2750E (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSD-25 (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-250S-3000E (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250S-3250E (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSD-24 (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-250S-2750E (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-0N-2500E (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSD-2 (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-500N-2500E (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250N-2500E (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250N-2250E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
Western Upper Marsh (2-6")																						**Maximum HQ (Eastern Upper Marsh, 2-6")**	**6.32E-02**
UM-500S-2500E (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-0N-2000E (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-500S-2000E (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250N-1750E (2-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	7.74E-03	7.37E+01	4.25E-01	NA	NA	NA	NA	5.36E-04	9.52E+03	5.10E+00	4.58E-01	1.09E-01	2.32E+01	1.10E+03	1.55E-01	1.02E+03	2.27E-02
UM-0N-1500E (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250S-1500E (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250S-1250E (2-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	7.74E-03	8.21E+01	4.73E-01	NA	NA	NA	NA	5.36E-04	1.06E+04	5.68E+00	4.58E-01	1.09E-01	2.58E+01	1.10E+03	1.55E-01	1.02E+03	2.53E-02
BRSD-6 (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-1000E (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-0N-750E (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-0N-500E (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250S-500E (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-0N-250E (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250S-250E (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSD-7 (2-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	7.74E-03	6.06E+01	3.49E-01	NA	NA	NA	NA	5.36E-04	7.82E+03	4.19E+00	4.58E-01	1.09E-01	1.91E+01	1.10E+03	1.55E-01	1.02E+03	1.86E-02
BRSD-8 (2-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	7.74E-03	1.26E+02	7.27E-01	NA	NA	NA	NA	5.36E-04	1.63E+04	8.73E+00	4.58E-01	1.09E-01	3.97E+01	1.10E+03	1.55E-01	1.02E+03	3.88E-02
UM-500S-500E (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSD-9 (2-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	7.74E-03	9.37E+01	5.40E-01	NA	NA	NA	NA	5.36E-04	1.21E+04	6.48E+00	4.58E-01	1.09E-01	2.95E+01	1.10E+03	1.55E-01	1.02E+03	2.88E-02
BRSD-10 (2-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	7.74E-03	6.50E+01	3.75E-01	NA	NA	NA	NA	5.36E-04	8.40E+03	4.50E+00	4.58E-01	1.09E-01	2.05E+01	1.10E+03	1.55E-01	1.02E+03	2.00E-02
BRSD-11 (2-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	7.74E-03	1.18E+02	6.83E-01	NA	NA	NA	NA	5.36E-04	1.53E+04	8.20E+00	4.58E-01	1.09E-01	3.73E+01	1.10E+03	1.55E-01	1.02E+03	3.65E-02
Eastern Upper Marsh (6-12")																						**Maximum HQ (Western Upper Marsh, 2-6")**	**3.88E-02**
UM-1000S-3500E (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSD-15 (6-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	5.89E-02	9.65E+02	5.56E+00	NA	NA	NA	NA	5.36E-04	1.64E+04	8.79E+00	4.58E-01	1.09E-01	6.02E+01	1.10E+03	1.55E-01	1.02E+03	5.89E-02
BRSD-4 (6-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	5.89E-02	6.95E+02	4.00E+00	NA	NA	NA	NA	5.36E-04	1.18E+04	6.32E+00	4.58E-01	1.09E-01	4.33E+01	1.10E+03	1.55E-01	1.02E+03	4.24E-02
UM-750S-3500E (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE

TABLE C-12AA: ALUMINUM DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 12 - MARSH, TERRESTRIAL RECEPTORS (Continued)
Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)
calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **118.73**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Mourning Dove (Herbivorous Birds)																							
BRSD-16 (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-750S-3000E (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSD-3 (6-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	5.89E-02	4.56E+02	2.63E+00	NA	NA	NA	NA	5.36E-04	7.74E+03	4.15E+00	4.58E-01	1.09E-01	2.84E+01	1.10E+03	1.55E-01	1.02E+03	2.78E-02
UM-500S-3250E (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-500S-3000E (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-500S-2750E (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSD-25 (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-250S-3000E (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250S-3250E (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSD-24 (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-250S-2750E (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250S-2500E (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSD-2 (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-500N-2500E (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250N-2500E (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250N-2250E (6-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	5.89E-02	4.81E+02	2.77E+00	NA	NA	NA	NA	5.36E-04	8.17E+03	4.38E+00	4.58E-01	1.09E-01	3.00E+01	1.10E+03	1.55E-01	1.02E+03	2.93E-02
Western Upper Marsh (6-12")																						**Maximum HQ (Eastern Upper Marsh, 6-12")**	**5.89E-02**
UM-500S-2500E (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-0N-2000E (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-500S-2000E (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250N-1750E (6-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	7.74E-03	8.52E+01	4.91E-01	NA	NA	NA	NA	5.36E-04	1.10E+04	5.89E+00	4.58E-01	1.09E-01	2.68E+01	1.10E+03	1.55E-01	1.02E+03	2.62E-02
UM-0N-1500E (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250S-1500E (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250S-1250E (6-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	7.74E-03	7.98E+01	4.60E-01	NA	NA	NA	NA	5.36E-04	1.03E+04	5.52E+00	4.58E-01	1.09E-01	2.51E+01	1.10E+03	1.55E-01	1.02E+03	2.45E-02
UM-0N-1000E (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-0N-750E (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-0N-500E (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250S-500E (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-0N-250E (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250S-250E (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSD-7 (6-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	7.74E-03	7.22E+01	4.16E-01	NA	NA	NA	NA	5.36E-04	9.32E+03	4.99E+00	4.58E-01	1.09E-01	2.27E+01	1.10E+03	1.55E-01	1.02E+03	2.22E-02
BRSD-8 (6-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	7.74E-03	1.32E+02	7.63E-01	NA	NA	NA	NA	5.36E-04	1.71E+04	9.16E+00	4.58E-01	1.09E-01	4.17E+01	1.10E+03	1.55E-01	1.02E+03	4.07E-02
UM-500S-500E (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSD-9 (6-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	7.74E-03	1.02E+02	5.89E-01	NA	NA	NA	NA	5.36E-04	1.32E+04	7.07E+00	4.58E-01	1.09E-01	3.22E+01	1.10E+03	1.55E-01	1.02E+03	3.14E-02
BRSD-10 (6-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	7.74E-03	8.98E+01	5.18E-01	NA	NA	NA	NA	5.36E-04	1.16E+04	6.22E+00	4.58E-01	1.09E-01	2.83E+01	1.10E+03	1.55E-01	1.02E+03	2.76E-02
BRSD-11 (6-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	7.74E-03	1.22E+02	7.00E-01	NA	NA	NA	NA	5.36E-04	1.57E+04	8.41E+00	4.58E-01	1.09E-01	3.83E+01	1.10E+03	1.55E-01	1.02E+03	3.74E-02
Middle Marsh (0-2")																						**Maximum HQ (Western Upper Marsh, 6-12")**	**4.07E-02**
MMSD-201 (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	7.74E-03	9.45E+01	5.44E-01	NA	NA	NA	NA	5.36E-04	1.22E+04	6.54E+00	4.58E-01	1.09E-01	2.97E+01	1.10E+03	1.55E-01	1.02E+03	2.91E-02
MMSD-202 (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	7.74E-03	9.14E+01	5.26E-01	NA	NA	NA	NA	5.36E-04	1.18E+04	6.32E+00	4.58E-01	1.09E-01	2.88E+01	1.10E+03	1.55E-01	1.02E+03	2.81E-02
Middle Marsh (2-6")																						**Maximum HQ (Middle Marsh, 0-2")**	**2.91E-02**
MMSD-201 (2-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	7.74E-03	9.60E+01	5.53E-01	NA	NA	NA	NA	5.36E-04	1.24E+04	6.64E+00	4.58E-01	1.09E-01	3.02E+01	1.10E+03	1.55E-01	1.02E+03	2.95E-02
MMSD-202 (2-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	7.74E-03	8.59E+01	4.95E-01	NA	NA	NA	NA	5.36E-04	1.11E+04	5.95E+00	4.58E-01	1.09E-01	2.70E+01	1.10E+03	1.55E-01	1.02E+03	2.64E-02
Middle Marsh (6-12")																						**Maximum HQ (Middle Marsh, 2-6")**	**2.95E-02**
MMSD-201 (6-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	7.74E-03	9.83E+01	5.67E-01	NA	NA	NA	NA	5.36E-04	1.27E+04	6.80E+00	4.58E-01	1.09E-01	3.09E+01	1.10E+03	1.55E-01	1.02E+03	3.03E-02
MMSD-202 (6-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	7.74E-03	9.37E+01	5.40E-01	NA	NA	NA	NA	5.36E-04	1.21E+04	6.48E+00	4.58E-01	1.09E-01	2.95E+01	1.10E+03	1.55E-01	1.02E+03	2.88E-02
Lower Marsh (0-2")																						**Maximum HQ (Middle Marsh, 6-12")**	**3.03E-02**
LMSD-201 (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	5.89E-02	9.18E+02	5.29E+00	NA	NA	NA	NA	5.36E-04	1.56E+04	8.36E+00	4.58E-01	1.09E-01	5.73E+01	1.10E+03	1.55E-01	1.02E+03	5.60E-02
LMSD-202 (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	5.89E-02	7.18E+02	4.14E+00	NA	NA	NA	NA	5.36E-04	1.22E+04	6.54E+00	4.58E-01	1.09E-01	4.48E+01	1.10E+03	1.55E-01	1.02E+03	4.38E-02
LMSD-203 (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	5.89E-02	1.24E+03	7.16E+00	NA	NA	NA	NA	5.36E-04	2.11E+04	1.13E+01	4.58E-01	1.09E-01	7.75E+01	1.10E+03	1.55E-01	1.02E+03	7.58E-02
LMSD-204 (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	5.89E-02	9.60E+02	5.53E+00	NA	NA	NA	NA	5.36E-04	1.63E+04	8.73E+00	4.58E-01	1.09E-01	5.99E+01	1.10E+03	1.55E-01	1.02E+03	5.85E-02

TABLE C-12AA: ALUMINUM DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 12 - MARSH, TERRESTRIAL RECEPTORS (Continued)
Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)
calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **118.73**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Mourning Dove (Herbivorous Birds)																							
Lower Marsh (2-6")																						**Maximum HQ (Lower Marsh, 0-2")**	**7.58E-02**
LMSD-201 (2-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	5.89E-02	8.77E+02	5.05E+00	NA	NA	NA	NA	5.36E-04	1.49E+04	7.98E+00	4.58E-01	1.09E-01	5.47E+01	1.10E+03	1.55E-01	1.02E+03	5.35E-02
LMSD-202 (2-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	5.89E-02	8.89E+02	5.12E+00	NA	NA	NA	NA	5.36E-04	1.51E+04	8.09E+00	4.58E-01	1.09E-01	5.55E+01	1.10E+03	1.55E-01	1.02E+03	5.42E-02
LMSD-203 (2-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	5.89E-02	1.20E+03	6.92E+00	NA	NA	NA	NA	5.36E-04	2.04E+04	1.09E+01	4.58E-01	1.09E-01	7.49E+01	1.10E+03	1.55E-01	1.02E+03	7.33E-02
LMSD-204 (2-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	5.89E-02	9.83E+02	5.66E+00	NA	NA	NA	NA	5.36E-04	1.67E+04	8.95E+00	4.58E-01	1.09E-01	6.13E+01	1.10E+03	1.55E-01	1.02E+03	6.00E-02
Lower Marsh (6-12")																						**Maximum HQ (Lower Marsh, 2-6")**	**7.33E-02**
LMSD-201 (6-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	5.89E-02	9.24E+02	5.33E+00	NA	NA	NA	NA	5.36E-04	1.57E+04	8.41E+00	4.58E-01	1.09E-01	5.77E+01	1.10E+03	1.55E-01	1.02E+03	5.64E-02
LMSD-202 (6-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	5.89E-02	9.12E+02	5.26E+00	NA	NA	NA	NA	5.36E-04	1.55E+04	8.31E+00	4.58E-01	1.09E-01	5.69E+01	1.10E+03	1.55E-01	1.02E+03	5.57E-02
LMSD-203 (6-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	5.89E-02	1.17E+03	6.75E+00	NA	NA	NA	NA	5.36E-04	1.99E+04	1.07E+01	4.58E-01	1.09E-01	7.31E+01	1.10E+03	1.55E-01	1.02E+03	7.15E-02
LMSD-204 (6-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	5.89E-02	9.24E+02	5.33E+00	NA	NA	NA	NA	5.36E-04	1.57E+04	8.41E+00	4.58E-01	1.09E-01	5.77E+01	1.10E+03	1.55E-01	1.02E+03	5.64E-02
																						Maximum HQ (Lower Marsh, 6-12")	**7.15E-02**
Red-Tailed Hawk (Carnivorous Birds)																							
Reference Sites																							
BRSD-5 (0-2")	9.00E-02	9.00E-02	1.84E-02	1.38E+02	1.24E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	7.50E+03	3.85E+01	1.70E-01	1.13E+00	7.64E+00	1.10E+03	1.55E-01	1.63E+03	4.68E-03
BRSD-5 (2-6")	9.00E-02	9.00E-02	1.84E-02	1.48E+02	1.33E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	8.03E+03	4.12E+01	1.70E-01	1.13E+00	8.19E+00	1.10E+03	1.55E-01	1.63E+03	5.01E-03
BRSD-5 (6-12")	9.00E-02	9.00E-02	1.84E-02	1.40E+02	1.26E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	7.62E+03	3.91E+01	1.70E-01	1.13E+00	7.77E+00	1.10E+03	1.55E-01	1.63E+03	4.76E-03
PGBG-1 (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
PGBG-1 (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
PGBG-1 (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
PGBG-2 (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
PGBG-2 (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
PGBG-2 (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
Eastern Upper Marsh (0-2")																						**Minimum HQ (Reference Sites)**	**4.68E-03**
UM-1000S-3500E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSD-15 (0-2")	9.00E-02	9.00E-02	3.77E-02	3.52E+02	3.17E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	9.34E+03	4.79E+01	1.70E-01	1.13E+00	1.20E+01	1.10E+03	1.55E-01	1.63E+03	7.32E-03
BRSD-4 (0-2")	9.00E-02	9.00E-02	3.77E-02	6.29E+02	5.66E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.67E+04	8.56E+01	1.70E-01	1.13E+00	2.14E+01	1.10E+03	1.55E-01	1.63E+03	1.31E-02
UM-750S-3500E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSD-16 (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-750S-3000E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSD-3 (0-2")	9.00E-02	9.00E-02	3.77E-02	3.10E+02	2.79E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	8.22E+03	4.21E+01	1.70E-01	1.13E+00	1.05E+01	1.10E+03	1.55E-01	1.63E+03	6.44E-03
UM-500S-3250E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-500S-3000E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-500S-2750E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSD-25 (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-250S-3000E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250S-3250E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSD-24 (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-250S-2750E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250S-2500E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-0N-2500E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-0N-250E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSD-2 (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-500N-2500E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250N-2500E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250N-2250E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
Western Upper Marsh (0-2")																						**Maximum HQ (Eastern Upper Marsh, 0-2")**	**1.31E-02**
UM-500S-2500E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-0N-2000E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-500S-2000E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250N-1750E (0-2")	9.00E-02	9.00E-02	3.77E-02	4.07E+02	3.66E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.08E+04	5.54E+01	1.70E-01	1.13E+00	1.38E+01	1.10E+03	1.55E-01	1.63E+03	8.46E-03
UM-0N-1500E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250S-1500E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE

TABLE C-12AA: ALUMINUM DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 12 - MARSH, TERRESTRIAL RECEPTORS (Continued)
Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)
calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **118.73**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Red-Tailed Hawk (Carnivorous Birds)																							
UM-250S-1250E (0-2")	9.00E-02	9.00E-02	3.77E-02	3.48E+02	3.13E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	9.23E+03	4.73E+01	1.70E-01	1.13E+00	1.18E+01	1.10E+03	1.55E-01	1.63E+03	7.23E-03
BRSD-6 (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-1000E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-0N-750E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-0N-500E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250S-500E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250S-250E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSD-7 (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-8 (0-2")	9.00E-02	9.00E-02	3.77E-02	7.88E+02	7.08E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.09E+04	1.07E+02	1.70E-01	1.13E+00	2.67E+01	1.10E+03	1.55E-01	1.63E+03	1.64E-02
UM-500S-500E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSD-9 (0-2")	9.00E-02	9.00E-02	3.77E-02	8.78E+02	7.90E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.33E+04	1.19E+02	1.70E-01	1.13E+00	2.98E+01	1.10E+03	1.55E-01	1.63E+03	1.83E-02
BRSD-10 (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-11 (0-2")	9.00E-02	9.00E-02	3.77E-02	8.86E+02	7.97E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.35E+04	1.20E+02	1.70E-01	1.13E+00	3.01E+01	1.10E+03	1.55E-01	1.63E+03	1.84E-02
Eastern Upper Marsh (2-6")																						**Maximum HQ (Western Upper Marsh, 0-2")**	**1.84E-02**
UM-1000S-3500E (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSD-15 (2-6")	9.00E-02	9.00E-02	3.77E-02	5.39E+02	4.85E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.43E+04	7.33E+01	1.70E-01	1.13E+00	1.83E+01	1.10E+03	1.55E-01	1.63E+03	1.12E-02
BRSD-4 (2-6")	9.00E-02	9.00E-02	3.77E-02	6.63E+02	5.97E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.76E+04	9.02E+01	1.70E-01	1.13E+00	2.25E+01	1.10E+03	1.55E-01	1.63E+03	1.38E-02
UM-750S-3500E (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSD-16 (2-6")	9.00E-02	9.00E-02	3.77E-02	3.04E+02	2.74E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	8.08E+03	4.14E+01	1.70E-01	1.13E+00	1.03E+01	1.10E+03	1.55E-01	1.63E+03	6.33E-03
UM-750S-3000E (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSD-3 (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-500S-3250E (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-500S-3000E (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-500S-2750E (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250S-3000E (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250S-3250E (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSD-24 (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-250S-2750E (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-0N-2500E (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSD-2 (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-500N-2500E (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250N-2500E (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250N-2250E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
Western Upper Marsh (2-6")																						**Maximum HQ (Eastern Upper Marsh, 2-6")**	**1.38E-02**
UM-500S-2500E (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-0N-2000E (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-500S-2000E (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250N-1750E (2-6")	9.00E-02	9.00E-02	3.77E-02	3.59E+02	3.23E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	9.52E+03	4.88E+01	1.70E-01	1.13E+00	1.22E+01	1.10E+03	1.55E-01	1.63E+03	7.46E-03
UM-0N-1500E (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250S-1500E (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250S-1250E (2-6")	9.00E-02	9.00E-02	3.77E-02	3.99E+02	3.59E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.06E+04	5.44E+01	1.70E-01	1.13E+00	1.36E+01	1.10E+03	1.55E-01	1.63E+03	8.31E-03
BRSD-6 (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-1000E (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-0N-750E (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-0N-500E (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250S-500E (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-0N-250E (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250S-250E (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSD-7 (2-6")	9.00E-02	9.00E-02	3.77E-02	2.95E+02	2.65E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	7.82E+03	4.01E+01	1.70E-01	1.13E+00	1.00E+01	1.10E+03	1.55E-01	1.63E+03	6.13E-03

TABLE C-12AA: ALUMINUM DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 12 - MARSH, TERRESTRIAL RECEPTORS (Continued)
Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)
calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 118.73

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Red-Tailed Hawk (Carnivorous Birds)																							
BRSD-8 (2-6")	9.00E-02	9.00E-02	3.77E-02	6.14E+02	5.53E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.63E+04	8.36E+01	1.70E-01	1.13E+00	2.09E+01	1.10E+03	1.55E-01	1.63E+03	1.28E-02
UM-500S-500E (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSD-9 (2-6")	9.00E-02	9.00E-02	3.77E-02	4.56E+02	4.10E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.21E+04	6.20E+01	1.70E-01	1.13E+00	1.55E+01	1.10E+03	1.55E-01	1.63E+03	9.48E-03
BRSD-10 (2-6")	9.00E-02	9.00E-02	3.77E-02	3.17E+02	2.85E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	8.40E+03	4.31E+01	1.70E-01	1.13E+00	1.08E+01	1.10E+03	1.55E-01	1.63E+03	6.58E-03
BRSD-11 (2-6")	9.00E-02	9.00E-02	3.77E-02	5.77E+02	5.19E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.53E+04	7.85E+01	1.70E-01	1.13E+00	1.96E+01	1.10E+03	1.55E-01	1.63E+03	1.20E-02
Eastern Upper Marsh (6-12")																						**Maximum HQ (Western Upper Marsh, 2-6")**	**1.28E-02**
UM-1000S-3500E (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSD-15 (6-12")	9.00E-02	9.00E-02	3.77E-02	6.18E+02	5.56E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.64E+04	8.41E+01	1.70E-01	1.13E+00	2.10E+01	1.10E+03	1.55E-01	1.63E+03	1.29E-02
BRSD-4 (6-12")	9.00E-02	9.00E-02	3.77E-02	4.45E+02	4.00E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.18E+04	6.05E+01	1.70E-01	1.13E+00	1.51E+01	1.10E+03	1.55E-01	1.63E+03	9.25E-03
UM-750S-3500E (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSD-16 (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-750S-3000E (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSD-3 (6-12")	9.00E-02	9.00E-02	3.77E-02	2.92E+02	2.62E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	7.74E+03	3.97E+01	1.70E-01	1.13E+00	9.91E+00	1.10E+03	1.55E-01	1.63E+03	6.07E-03
UM-500S-3250E (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-500S-3000E (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-500S-2750E (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSD-25 (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-250S-3000E (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250S-3250E (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSD-24 (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-250S-2750E (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250S-2500E (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSD-2 (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-500N-2500E (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250N-2500E (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250N-2250E (6-12")	9.00E-02	9.00E-02	3.77E-02	3.08E+02	2.77E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	8.17E+03	4.19E+01	1.70E-01	1.13E+00	1.05E+01	1.10E+03	1.55E-01	1.63E+03	6.40E-03
Western Upper Marsh (6-12")																						**Maximum HQ (Eastern Upper Marsh, 6-12")**	**1.29E-02**
UM-500S-2500E (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-0N-2000E (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-500S-2000E (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250N-1750E (6-12")	9.00E-02	9.00E-02	3.77E-02	4.15E+02	3.73E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.10E+04	5.64E+01	1.70E-01	1.13E+00	1.41E+01	1.10E+03	1.55E-01	1.63E+03	8.62E-03
UM-0N-1500E (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250S-1500E (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250S-1250E (6-12")	9.00E-02	9.00E-02	3.77E-02	3.88E+02	3.49E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.03E+04	5.28E+01	1.70E-01	1.13E+00	1.32E+01	1.10E+03	1.55E-01	1.63E+03	8.07E-03
BRSD-6 (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-1000E (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-0N-750E (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-0N-500E (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250S-500E (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-0N-250E (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250S-250E (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSD-7 (6-12")	9.00E-02	9.00E-02	3.77E-02	3.51E+02	3.16E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	9.32E+03	4.78E+01	1.70E-01	1.13E+00	1.19E+01	1.10E+03	1.55E-01	1.63E+03	7.30E-03
BRSD-8 (6-12")	9.00E-02	9.00E-02	3.77E-02	6.44E+02	5.80E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.71E+04	8.77E+01	1.70E-01	1.13E+00	2.19E+01	1.10E+03	1.55E-01	1.63E+03	1.34E-02
UM-500S-500E (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSD-9 (6-12")	9.00E-02	9.00E-02	3.77E-02	4.97E+02	4.47E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.32E+04	6.77E+01	1.70E-01	1.13E+00	1.69E+01	1.10E+03	1.55E-01	1.63E+03	1.03E-02
BRSD-10 (6-12")	9.00E-02	9.00E-02	3.77E-02	4.37E+02	3.93E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.16E+04	5.95E+01	1.70E-01	1.13E+00	1.48E+01	1.10E+03	1.55E-01	1.63E+03	9.09E-03
BRSD-11 (6-12")	9.00E-02	9.00E-02	3.77E-02	5.92E+02	5.32E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.57E+04	8.05E+01	1.70E-01	1.13E+00	2.01E+01	1.10E+03	1.55E-01	1.63E+03	1.23E-02
Middle Marsh (0-2")																						**Maximum HQ (Western Upper Marsh, 6-12")**	**1.34E-02**
MMSD-201 (0-2")	9.00E-02	9.00E-02	3.77E-02	4.60E+02	4.14E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.22E+04	6.26E+01	1.70E-01	1.13E+00	1.56E+01	1.10E+03	1.55E-01	1.63E+03	9.56E-03
MMSD-202 (0-2")	9.00E-02	9.00E-02	3.77E-02	4.45E+02	4.00E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.18E+04	6.05E+01	1.70E-01	1.13E+00	1.51E+01	1.10E+03	1.55E-01	1.63E+03	9.25E-03

TABLE C-12AA: ALUMINUM DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 12 - MARSH, TERRESTRIAL RECEPTORS (Continued)
Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)
calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 118.73

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Red-Tailed Hawk (Carnivorous Birds)																							
Middle Marsh (2-6")																						**Maximum HQ (Middle Marsh, 0-2")**	**9.56E-03**
MMSD-201 (2-6")	9.00E-02	9.00E-02	3.77E-02	4.67E+02	4.20E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.24E+04	6.36E+01	1.70E-01	1.13E+00	1.59E+01	1.10E+03	1.55E-01	1.63E+03	9.72E-03
MMSD-202 (2-6")	9.00E-02	9.00E-02	3.77E-02	4.18E+02	3.76E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.11E+04	5.69E+01	1.70E-01	1.13E+00	1.42E+01	1.10E+03	1.55E-01	1.63E+03	8.70E-03
Middle Marsh (6-12")																						**Maximum HQ (Middle Marsh, 2-6")**	**9.72E-03**
MMSD-201 (6-12")	9.00E-02	9.00E-02	3.77E-02	4.79E+02	4.31E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.27E+04	6.51E+01	1.70E-01	1.13E+00	1.63E+01	1.10E+03	1.55E-01	1.63E+03	9.95E-03
MMSD-202 (6-12")	9.00E-02	9.00E-02	3.77E-02	4.56E+02	4.10E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.21E+04	6.20E+01	1.70E-01	1.13E+00	1.55E+01	1.10E+03	1.55E-01	1.63E+03	9.48E-03
Lower Marsh (0-2")																						**Maximum HQ (Middle Marsh, 6-12")**	**9.95E-03**
LMSD-201 (0-2")	9.00E-02	9.00E-02	3.77E-02	5.88E+02	5.29E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.56E+04	8.00E+01	1.70E-01	1.13E+00	2.00E+01	1.10E+03	1.55E-01	1.63E+03	1.22E-02
LMSD-202 (0-2")	9.00E-02	9.00E-02	3.77E-02	4.60E+02	4.14E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.22E+04	6.26E+01	1.70E-01	1.13E+00	1.56E+01	1.10E+03	1.55E-01	1.63E+03	9.56E-03
LMSD-203 (0-2")	9.00E-02	9.00E-02	3.77E-02	7.95E+02	7.15E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.11E+04	1.08E+02	1.70E-01	1.13E+00	2.70E+01	1.10E+03	1.55E-01	1.63E+03	1.65E-02
LMSD-204 (0-2")	9.00E-02	9.00E-02	3.77E-02	6.14E+02	5.53E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.63E+04	8.36E+01	1.70E-01	1.13E+00	2.09E+01	1.10E+03	1.55E-01	1.63E+03	1.28E-02
Lower Marsh (2-6")																						**Maximum HQ (Lower Marsh, 0-2")**	**1.65E-02**
LMSD-201 (2-6")	9.00E-02	9.00E-02	3.77E-02	5.61E+02	5.05E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.49E+04	7.64E+01	1.70E-01	1.13E+00	1.91E+01	1.10E+03	1.55E-01	1.63E+03	1.17E-02
LMSD-202 (2-6")	9.00E-02	9.00E-02	3.77E-02	5.69E+02	5.12E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.51E+04	7.74E+01	1.70E-01	1.13E+00	1.93E+01	1.10E+03	1.55E-01	1.63E+03	1.18E-02
LMSD-203 (2-6")	9.00E-02	9.00E-02	3.77E-02	7.69E+02	6.92E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.04E+04	1.05E+02	1.70E-01	1.13E+00	2.61E+01	1.10E+03	1.55E-01	1.63E+03	1.60E-02
LMSD-204 (2-6")	9.00E-02	9.00E-02	3.77E-02	6.29E+02	5.66E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.67E+04	8.56E+01	1.70E-01	1.13E+00	2.14E+01	1.10E+03	1.55E-01	1.63E+03	1.31E-02
Lower Marsh (6-12")																						**Maximum HQ (Lower Marsh, 2-6")**	**1.60E-02**
LMSD-201 (6-12")	9.00E-02	9.00E-02	3.77E-02	5.92E+02	5.32E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.57E+04	8.05E+01	1.70E-01	1.13E+00	2.01E+01	1.10E+03	1.55E-01	1.63E+03	1.23E-02
LMSD-202 (6-12")	9.00E-02	9.00E-02	3.77E-02	5.84E+02	5.25E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.55E+04	7.95E+01	1.70E-01	1.13E+00	1.98E+01	1.10E+03	1.55E-01	1.63E+03	1.21E-02
LMSD-203 (6-12")	9.00E-02	9.00E-02	3.77E-02	7.50E+02	6.75E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.99E+04	1.02E+02	1.70E-01	1.13E+00	2.55E+01	1.10E+03	1.55E-01	1.63E+03	1.56E-02
LMSD-204 (6-12")	9.00E-02	9.00E-02	3.77E-02	5.92E+02	5.32E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.57E+04	8.05E+01	1.70E-01	1.13E+00	2.01E+01	1.10E+03	1.55E-01	1.63E+03	1.23E-02
																						Maximum HQ (Lower Marsh, 6-12")	**1.56E-02**
American Kestral (Insectivorous Birds)																							
Reference Sites																							
BRSD-5 (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.31E+00	9.81E+03	1.35E+02	7.84E-04	7.50E+03	5.88E+00	4.54E-01	1.24E-01	5.15E+02	1.10E+03	1.55E-01	1.05E+03	4.91E-01
BRSD-5 (2-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.31E+00	1.05E+04	1.45E+02	7.84E-04	8.03E+03	6.30E+00	4.54E-01	1.24E-01	5.52E+02	1.10E+03	1.55E-01	1.05E+03	5.26E-01
BRSD-5 (6-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.31E+00	9.96E+03	1.37E+02	7.84E-04	7.62E+03	5.98E+00	4.54E-01	1.24E-01	5.24E+02	1.10E+03	1.55E-01	1.05E+03	4.99E-01
PGBG-1 (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
PGBG-1 (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
PGBG-1 (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
PGBG-2 (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
PGBG-2 (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
PGBG-2 (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
Eastern Upper Marsh (0-2")																						**Minimum HQ (Reference Sites)**	**4.91E-01**
UM-1000S-3500E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSD-15 (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.33E+00	1.24E+04	1.71E+02	7.84E-04	9.34E+03	7.33E+00	4.54E-01	1.24E-01	6.51E+02	1.10E+03	1.55E-01	1.05E+03	6.21E-01
BRSD-4 (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.33E+00	2.22E+04	3.05E+02	7.84E-04	1.67E+04	1.31E+01	4.54E-01	1.24E-01	1.16E+03	1.10E+03	1.55E-01	1.05E+03	1.11E+00
UM-750S-3500E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSD-16 (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-750S-3000E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSD-3 (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.33E+00	1.09E+04	1.50E+02	7.84E-04	8.22E+03	6.45E+00	4.54E-01	1.24E-01	5.73E+02	1.10E+03	1.55E-01	1.05E+03	5.46E-01
UM-500S-3250E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-500S-3000E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-500S-2750E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSD-25 (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-250S-3000E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250S-3250E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSD-24 (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-250S-2750E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250S-2500E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-0N-2500E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-0N-250E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE

TABLE C-12AA: ALUMINUM DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 12 - MARSH, TERRESTRIAL RECEPTORS (Continued)
Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)
calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 118.73

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
American Kestral (Insectivorous Birds)																							
BRSD-2 (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-500N-2500E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250N-2500E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250N-2250E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
Western Upper Marsh (0-2")																					**Maximum HQ (Eastern Upper Marsh, 0-2")**		**1.11E+00**
UM-500S-2500E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-0N-2000E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-500S-2000E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250N-1750E (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.33E+00	1.43E+04	1.97E+02	7.84E-04	1.08E+04	8.47E+00	4.54E-01	1.24E-01	7.53E+02	1.10E+03	1.55E-01	1.05E+03	7.18E-01
UM-0N-1500E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250S-1500E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250S-1250E (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.33E+00	1.23E+04	1.69E+02	7.84E-04	9.23E+03	7.24E+00	4.54E-01	1.24E-01	6.43E+02	1.10E+03	1.55E-01	1.05E+03	6.13E-01
BRSD-6 (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-1000E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-0N-750E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-0N-500E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250S-500E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250S-250E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSD-7 (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-8 (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.28E+00	2.68E+04	3.69E+02	7.84E-04	2.09E+04	1.64E+01	4.54E-01	1.24E-01	1.41E+03	1.10E+03	1.55E-01	1.05E+03	1.34E+00
UM-500S-500E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSD-9 (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.28E+00	2.99E+04	4.11E+02	7.84E-04	2.33E+04	1.83E+01	4.54E-01	1.24E-01	1.57E+03	1.10E+03	1.55E-01	1.05E+03	1.50E+00
BRSD-10 (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-11 (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.28E+00	3.01E+04	4.15E+02	7.84E-04	2.35E+04	1.84E+01	4.54E-01	1.24E-01	1.58E+03	1.10E+03	1.55E-01	1.05E+03	1.51E+00
Eastern Upper Marsh (2-6")																						**Maximum HQ (Western Upper Marsh, 0-2")**		**1.51E+00**
UM-1000S-3500E (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSD-15 (2-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.33E+00	1.90E+04	2.61E+02	7.84E-04	1.43E+04	1.12E+01	4.54E-01	1.24E-01	9.97E+02	1.10E+03	1.55E-01	1.05E+03	9.50E-01
BRSD-4 (2-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.33E+00	2.34E+04	3.22E+02	7.84E-04	1.76E+04	1.38E+01	4.54E-01	1.24E-01	1.23E+03	1.10E+03	1.55E-01	1.05E+03	1.17E+00
UM-750S-3500E (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSD-16 (2-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.33E+00	1.07E+04	1.48E+02	7.84E-04	8.08E+03	6.34E+00	4.54E-01	1.24E-01	5.63E+02	1.10E+03	1.55E-01	1.05E+03	5.37E-01
UM-750S-3000E (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSD-3 (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-500S-3250E (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-500S-3000E (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-500S-2750E (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSD-25 (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-250S-3000E (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250S-3250E (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSD-24 (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-250S-2750E (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-0N-2500E (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSD-2 (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-500N-2500E (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250N-2500E (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250N-2250E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
Western Upper Marsh (2-6")																						**Maximum HQ (Eastern Upper Marsh, 2-6")**		**1.17E+00**
UM-500S-2500E (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-0N-2000E (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-500S-2000E (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250N-1750E (2-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.28E+00	1.22E+04	1.68E+02	7.84E-04	9.52E+03	7.47E+00	4.54E-01	1.24E-01	6.42E+02	1.10E+03	1.55E-01	1.05E+03	6.12E-01

TABLE C-12AA: ALUMINUM DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 12 - MARSH, TERRESTRIAL RECEPTORS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 118.73

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
American Kestral (Insectivorous Birds)																							
UM-0N-1500E (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250S-1500E (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250S-1250E (2-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.28E+00	1.36E+04	1.87E+02	7.84E-04	1.06E+04	8.31E+00	4.54E-01	1.24E-01	7.15E+02	1.10E+03	1.55E-01	1.05E+03	6.81E-01
BRSD-6 (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-1000E (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-0N-750E (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-0N-500E (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250S-500E (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-0N-250E (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250S-250E (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSD-7 (2-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.28E+00	1.00E+04	1.38E+02	7.84E-04	7.82E+03	6.13E+00	4.54E-01	1.24E-01	5.27E+02	1.10E+03	1.55E-01	1.05E+03	5.03E-01
BRSD-8 (2-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.28E+00	2.09E+04	2.88E+02	7.84E-04	1.63E+04	1.28E+01	4.54E-01	1.24E-01	1.10E+03	1.10E+03	1.55E-01	1.05E+03	1.05E+00
UM-500S-500E (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSD-9 (2-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.28E+00	1.55E+04	2.14E+02	7.84E-04	1.21E+04	9.49E+00	4.54E-01	1.24E-01	8.16E+02	1.10E+03	1.55E-01	1.05E+03	7.78E-01
BRSD-10 (2-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.28E+00	1.08E+04	1.48E+02	7.84E-04	8.40E+03	6.59E+00	4.54E-01	1.24E-01	5.67E+02	1.10E+03	1.55E-01	1.05E+03	5.40E-01
BRSD-11 (2-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.28E+00	1.96E+04	2.70E+02	7.84E-04	1.53E+04	1.20E+01	4.54E-01	1.24E-01	1.03E+03	1.10E+03	1.55E-01	1.05E+03	9.84E-01
Eastern Upper Marsh (6-12")																						**Maximum HQ (Western Upper Marsh, 2-6")**	**1.05E+00**
UM-1000S-3500E (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSD-15 (6-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.33E+00	2.18E+04	3.00E+02	7.84E-04	1.64E+04	1.29E+01	4.54E-01	1.24E-01	1.14E+03	1.10E+03	1.55E-01	1.05E+03	1.09E+00
BRSD-4 (6-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.33E+00	1.57E+04	2.16E+02	7.84E-04	1.18E+04	9.26E+00	4.54E-01	1.24E-01	8.23E+02	1.10E+03	1.55E-01	1.05E+03	7.84E-01
UM-750S-3500E (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSD-16 (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-750S-3000E (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSD-3 (6-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.33E+00	1.03E+04	1.41E+02	7.84E-04	7.74E+03	6.07E+00	4.54E-01	1.24E-01	5.40E+02	1.10E+03	1.55E-01	1.05E+03	5.14E-01
UM-500S-3250E (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-500S-3000E (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-500S-2750E (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSD-25 (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-250S-3000E (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250S-3250E (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSD-24 (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-250S-2750E (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250S-2500E (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSD-2 (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-500N-2500E (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250N-2500E (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250N-2250E (6-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.33E+00	1.08E+04	1.49E+02	7.84E-04	8.17E+03	6.41E+00	4.54E-01	1.24E-01	5.70E+02	1.10E+03	1.55E-01	1.05E+03	5.43E-01
Western Upper Marsh (6-12")																						**Maximum HQ (Eastern Upper Marsh, 6-12")**	**1.09E+00**
UM-500S-2500E (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-0N-2000E (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-500S-2000E (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250N-1750E (6-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.33E+00	1.46E+04	2.01E+02	7.84E-04	1.10E+04	8.63E+00	4.54E-01	1.24E-01	7.67E+02	1.10E+03	1.55E-01	1.05E+03	7.31E-01
UM-0N-1500E (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250S-1500E (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250S-1250E (6-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.33E+00	1.37E+04	1.88E+02	7.84E-04	1.03E+04	8.08E+00	4.54E-01	1.24E-01	7.18E+02	1.10E+03	1.55E-01	1.05E+03	6.84E-01
BRSD-6 (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-1000E (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-0N-750E (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-0N-500E (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250S-500E (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE

TABLE C-12AA: ALUMINUM DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 12 - MARSH, TERRESTRIAL RECEPTORS (Continued)
Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)
calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 118.73

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
American Kestral (Insectivorous Birds)																							
UM-0N-250E (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250S-250E (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSD-7 (6-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.33E+00	1.24E+04	1.70E+02	7.84E-04	9.32E+03	7.31E+00	4.54E-01	1.24E-01	6.50E+02	1.10E+03	1.55E-01	1.05E+03	6.19E-01
BRSD-8 (6-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.28E+00	2.19E+04	3.02E+02	7.84E-04	1.71E+04	1.34E+01	4.54E-01	1.24E-01	1.15E+03	1.10E+03	1.55E-01	1.05E+03	1.10E+00
UM-500S-500E (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSD-9 (6-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.28E+00	1.69E+04	2.33E+02	7.84E-04	1.32E+04	1.04E+01	4.54E-01	1.24E-01	8.90E+02	1.10E+03	1.55E-01	1.05E+03	8.49E-01
BRSD-10 (6-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.28E+00	1.49E+04	2.05E+02	7.84E-04	1.16E+04	9.10E+00	4.54E-01	1.24E-01	7.82E+02	1.10E+03	1.55E-01	1.05E+03	7.46E-01
BRSD-11 (6-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.28E+00	2.01E+04	2.77E+02	7.84E-04	1.57E+04	1.23E+01	4.54E-01	1.24E-01	1.06E+03	1.10E+03	1.55E-01	1.05E+03	1.01E+00
Middle Marsh (0-2")																						**Maximum HQ (Western Upper Marsh, 6-12")**	**1.10E+00**
MMSD-201 (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.28E+00	1.56E+04	2.15E+02	7.84E-04	1.22E+04	9.57E+00	4.54E-01	1.24E-01	8.23E+02	1.10E+03	1.55E-01	1.05E+03	7.84E-01
MMSD-202 (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.28E+00	1.51E+04	2.08E+02	7.84E-04	1.18E+04	9.26E+00	4.54E-01	1.24E-01	7.96E+02	1.10E+03	1.55E-01	1.05E+03	7.59E-01
Middle Marsh (2-6")																						**Maximum HQ (Middle Marsh, 0-2")**	**7.84E-01**
MMSD-201 (2-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.28E+00	1.59E+04	2.19E+02	7.84E-04	1.24E+04	9.73E+00	4.54E-01	1.24E-01	8.36E+02	1.10E+03	1.55E-01	1.05E+03	7.97E-01
MMSD-202 (2-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.28E+00	1.42E+04	1.96E+02	7.84E-04	1.11E+04	8.71E+00	4.54E-01	1.24E-01	7.49E+02	1.10E+03	1.55E-01	1.05E+03	7.14E-01
Middle Marsh (6-12")																						**Maximum HQ (Middle Marsh, 2-6")**	**7.97E-01**
MMSD-201 (6-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.28E+00	1.63E+04	2.24E+02	7.84E-04	1.27E+04	9.96E+00	4.54E-01	1.24E-01	8.57E+02	1.10E+03	1.55E-01	1.05E+03	8.16E-01
MMSD-202 (6-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.28E+00	1.55E+04	2.14E+02	7.84E-04	1.21E+04	9.49E+00	4.54E-01	1.24E-01	8.16E+02	1.10E+03	1.55E-01	1.05E+03	7.78E-01
Lower Marsh (0-2")																						**Maximum HQ (Middle Marsh, 6-12")**	**8.16E-01**
LMSD-201 (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.28E+00	2.00E+04	2.75E+02	7.84E-04	1.56E+04	1.22E+01	4.54E-01	1.24E-01	1.05E+03	1.10E+03	1.55E-01	1.05E+03	1.00E+00
LMSD-202 (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.28E+00	1.56E+04	2.15E+02	7.84E-04	1.22E+04	9.57E+00	4.54E-01	1.24E-01	8.23E+02	1.10E+03	1.55E-01	1.05E+03	7.84E-01
LMSD-203 (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.28E+00	2.71E+04	3.72E+02	7.84E-04	2.11E+04	1.66E+01	4.54E-01	1.24E-01	1.42E+03	1.10E+03	1.55E-01	1.05E+03	1.36E+00
LMSD-204 (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.28E+00	2.09E+04	2.88E+02	7.84E-04	1.63E+04	1.28E+01	4.54E-01	1.24E-01	1.10E+03	1.10E+03	1.55E-01	1.05E+03	1.05E+00
Lower Marsh (2-6")																						**Maximum HQ (Lower Marsh, 0-2")**	**1.36E+00**
LMSD-201 (2-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.28E+00	1.91E+04	2.63E+02	7.84E-04	1.49E+04	1.17E+01	4.54E-01	1.24E-01	1.00E+03	1.10E+03	1.55E-01	1.05E+03	9.58E-01
LMSD-202 (2-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.94E+04	2.66E+02	7.84E-04	1.51E+04	1.18E+01	4.54E-01	1.24E-01	1.02E+03	1.10E+03	1.55E-01	1.05E+03	9.71E-01
LMSD-203 (2-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.28E+00	2.62E+04	3.60E+02	7.84E-04	2.04E+04	1.60E+01	4.54E-01	1.24E-01	1.38E+03	1.10E+03	1.55E-01	1.05E+03	1.31E+00
LMSD-204 (2-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.28E+00	2.14E+04	2.95E+02	7.84E-04	1.67E+04	1.31E+01	4.54E-01	1.24E-01	1.13E+03	1.10E+03	1.55E-01	1.05E+03	1.07E+00
Lower Marsh (6-12")																						**Maximum HQ (Lower Marsh, 2-6")**	**1.31E+00**
LMSD-201 (6-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.33E+00	2.08E+04	2.87E+02	7.84E-04	1.57E+04	1.23E+01	4.54E-01	1.24E-01	1.09E+03	1.10E+03	1.55E-01	1.05E+03	1.04E+00
LMSD-202 (6-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.28E+00	1.99E+04	2.74E+02	7.84E-04	1.55E+04	1.22E+01	4.54E-01	1.24E-01	1.05E+03	1.10E+03	1.55E-01	1.05E+03	9.96E-01
LMSD-203 (6-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.28E+00	2.55E+04	3.51E+02	7.84E-04	1.99E+04	1.56E+01	4.54E-01	1.24E-01	1.34E+03	1.10E+03	1.55E-01	1.05E+03	1.28E+00
LMSD-204 (6-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.28E+00	2.01E+04	2.77E+02	7.84E-04	1.57E+04	1.23E+01	4.54E-01	1.24E-01	1.06E+03	1.10E+03	1.55E-01	1.05E+03	1.01E+00
																						Maximum HQ (Lower Marsh, 6-12")	**1.28E+00**
Meadow Vole (Small Herbivorous Mammals)																							
Reference Sites																							
BRSD-5 (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	2.15E-02	1.62E+02	7.58E-01	NA	NA	NA	NA	1.13E-04	7.50E+03	8.44E-01	1.00E+00	3.06E-02	5.23E+01	1.93E+01	3.00E-02	1.93E+01	2.72E+00
BRSD-5 (2-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	2.15E-02	1.73E+02	8.11E-01	NA	NA	NA	NA	1.13E-04	8.03E+03	9.04E-01	1.00E+00	3.06E-02	5.60E+01	1.93E+01	3.00E-02	1.93E+01	2.91E+00
BRSD-5 (6-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	2.15E-02	1.64E+02	7.70E-01	NA	NA	NA	NA	1.13E-04	7.62E+03	8.58E-01	1.00E+00	3.06E-02	5.32E+01	1.93E+01	3.00E-02	1.93E+01	2.76E+00
PGBG-1 (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
PGBG-1 (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
PGBG-1 (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
PGBG-2 (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
PGBG-2 (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
PGBG-2 (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
Eastern Upper Marsh (0-2")																						**Minimum HQ (Reference Sites)**	**2.72E+00**
UM-1000S-3500E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSD-15 (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	5.89E-02	5.50E+02	2.58E+00	NA	NA	NA	NA	1.13E-04	9.34E+03	1.05E+00	1.00E+00	3.06E-02	1.19E+02	1.93E+01	3.00E-02	1.93E+01	6.15E+00
BRSD-4 (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	5.89E-02	9.83E+02	4.61E+00	NA	NA	NA	NA	1.13E-04	1.67E+04	1.88E+00	1.00E+00	3.06E-02	2.12E+02	1.93E+01	3.00E-02	1.93E+01	1.10E+01
UM-750S-3500E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSD-16 (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-750S-3000E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSD-3 (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	5.89E-02	4.84E+02	2.27E+00	NA	NA	NA	NA	1.13E-04	8.22E+03	9.25E-01	1.00E+00	3.06E-02	1.04E+02	1.93E+01	3.00E-02	1.93E+01	5.41E+00

TABLE C-12AA: ALUMINUM DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 12 - MARSH, TERRESTRIAL RECEPTORS (Continued)
Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)
calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 118.73

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Meadow Vole (Small Herbivorous Mammals)																							
UM-500S-3250E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-500S-3000E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-500S-2750E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSD-25 (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-250S-3000E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250S-3250E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSD-24 (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-250S-2750E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250S-2500E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-0N-2500E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-0N-250E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSD-2 (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-500N-2500E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250N-2500E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250N-2250E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
Western Upper Marsh (0-2")																						**Maximum HQ (Eastern Upper Marsh, 0-2")**	**1.10E+01**
UM-500S-2500E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-0N-2000E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-500S-2000E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250N-1750E (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	5.89E-02	6.36E+02	2.98E+00	NA	NA	NA	NA	1.13E-04	1.08E+04	1.22E+00	1.00E+00	3.06E-02	1.37E+02	1.93E+01	3.00E-02	1.93E+01	7.11E+00
UM-0N-1500E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250S-1500E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250S-1250E (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	5.89E-02	5.43E+02	2.55E+00	NA	NA	NA	NA	1.13E-04	9.23E+03	1.04E+00	1.00E+00	3.06E-02	1.17E+02	1.93E+01	3.00E-02	1.93E+01	6.08E+00
BRSD-6 (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-750E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-0N-500E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250S-500E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250S-250E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSD-7 (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-8 (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	7.74E-03	1.62E+02	7.59E-01	NA	NA	NA	NA	1.13E-04	2.09E+04	2.35E+00	1.00E+00	3.06E-02	1.02E+02	1.93E+01	3.00E-02	1.93E+01	5.27E+00
UM-500S-500E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSD-9 (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	7.74E-03	1.80E+02	8.46E-01	NA	NA	NA	NA	1.13E-04	2.33E+04	2.62E+00	1.00E+00	3.06E-02	1.13E+02	1.93E+01	3.00E-02	1.93E+01	5.88E+00
BRSD-10 (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-11 (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	7.74E-03	1.82E+02	8.53E-01	NA	NA	NA	NA	1.13E-04	2.35E+04	2.64E+00	1.00E+00	3.06E-02	1.14E+02	1.93E+01	3.00E-02	1.93E+01	5.93E+00
Eastern Upper Marsh (2-6")																						**Maximum HQ (Western Upper Marsh, 0-2")**	**7.11E+00**
UM-1000S-3500E (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSD-15 (2-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	5.89E-02	8.42E+02	3.95E+00	NA	NA	NA	NA	1.13E-04	1.43E+04	1.61E+00	1.00E+00	3.06E-02	1.82E+02	1.93E+01	3.00E-02	1.93E+01	9.42E+00
BRSD-4 (2-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	5.89E-02	1.04E+03	4.86E+00	NA	NA	NA	NA	1.13E-04	1.76E+04	1.98E+00	1.00E+00	3.06E-02	2.23E+02	1.93E+01	3.00E-02	1.93E+01	1.16E+01
UM-750S-3500E (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSD-16 (2-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	5.89E-02	4.76E+02	2.23E+00	NA	NA	NA	NA	1.13E-04	8.08E+03	9.09E-01	1.00E+00	3.06E-02	1.03E+02	1.93E+01	3.00E-02	1.93E+01	5.32E+00
UM-750S-3000E (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSD-3 (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-500S-3250E (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-500S-3000E (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-500S-2750E (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSD-25 (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-250S-3000E (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250S-3250E (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSD-24 (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-1000E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE

TABLE C-12AA: ALUMINUM DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 12 - MARSH, TERRESTRIAL RECEPTORS (Continued)
Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)
calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 118.73

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Meadow Vole (Small Herbivorous Mammals)																							
UM-250S-2750E (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-0N-2500E (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSD-2 (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-500N-2500E (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250N-2500E (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250N-2250E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
Western Upper Marsh (2-6")																						**Maximum HQ (Eastern Upper Marsh, 2-6")**	**1.16E+01**
UM-500S-2500E (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-0N-2000E (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-500S-2000E (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250N-1750E (2-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	5.89E-02	5.60E+02	2.63E+00	NA	NA	NA	NA	1.13E-04	9.52E+03	1.07E+00	1.00E+00	3.06E-02	1.21E+02	1.93E+01	3.00E-02	1.93E+01	6.27E+00
UM-0N-1500E (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250S-1500E (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250S-1250E (2-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	5.89E-02	6.24E+02	2.93E+00	NA	NA	NA	NA	1.13E-04	1.06E+04	1.19E+00	1.00E+00	3.06E-02	1.35E+02	1.93E+01	3.00E-02	1.93E+01	6.98E+00
BRSD-6 (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-1000E (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-0N-750E (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-0N-500E (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250S-500E (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-0N-250E (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250S-250E (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSD-7 (2-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	7.74E-03	6.06E+01	2.84E-01	NA	NA	NA	NA	1.13E-04	7.82E+03	8.80E-01	1.00E+00	3.06E-02	3.80E+01	1.93E+01	3.00E-02	1.93E+01	1.97E+00
BRSD-8 (2-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	7.74E-03	1.26E+02	5.92E-01	NA	NA	NA	NA	1.13E-04	1.63E+04	1.83E+00	1.00E+00	3.06E-02	7.93E+01	1.93E+01	3.00E-02	1.93E+01	4.11E+00
UM-500S-500E (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSD-9 (2-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	7.74E-03	9.37E+01	4.39E-01	NA	NA	NA	NA	1.13E-04	1.21E+04	1.36E+00	1.00E+00	3.06E-02	5.89E+01	1.93E+01	3.00E-02	1.93E+01	3.05E+00
BRSD-10 (2-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	7.74E-03	6.50E+01	3.05E-01	NA	NA	NA	NA	1.13E-04	8.40E+03	9.45E-01	1.00E+00	3.06E-02	4.09E+01	1.93E+01	3.00E-02	1.93E+01	2.12E+00
BRSD-11 (2-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	7.74E-03	1.18E+02	5.56E-01	NA	NA	NA	NA	1.13E-04	1.53E+04	1.72E+00	1.00E+00	3.06E-02	7.44E+01	1.93E+01	3.00E-02	1.93E+01	3.86E+00
Eastern Upper Marsh (6-12")																						**Maximum HQ (Western Upper Marsh, 2-6")**	**6.98E+00**
UM-1000S-3500E (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSD-15 (6-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	5.89E-02	9.65E+02	4.53E+00	NA	NA	NA	NA	1.13E-04	1.64E+04	1.85E+00	1.00E+00	3.06E-02	2.08E+02	1.93E+01	3.00E-02	1.93E+01	1.08E+01
BRSD-4 (6-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	5.89E-02	6.95E+02	3.26E+00	NA	NA	NA	NA	1.13E-04	1.18E+04	1.33E+00	1.00E+00	3.06E-02	1.50E+02	1.93E+01	3.00E-02	1.93E+01	7.77E+00
UM-750S-3500E (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSD-16 (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-750S-3000E (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSD-3 (6-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	5.89E-02	4.56E+02	2.14E+00	NA	NA	NA	NA	1.13E-04	7.74E+03	8.71E-01	1.00E+00	3.06E-02	9.83E+01	1.93E+01	3.00E-02	1.93E+01	5.10E+00
UM-500S-3250E (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-500S-3000E (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-500S-2750E (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSD-25 (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-250S-3000E (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250S-3250E (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSD-24 (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-250S-2750E (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250S-2500E (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSD-2 (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-500N-2500E (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250N-2500E (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250N-2250E (6-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	5.89E-02	4.81E+02	2.26E+00	NA	NA	NA	NA	1.13E-04	8.17E+03	9.19E-01	1.00E+00	3.06E-02	1.04E+02	1.93E+01	3.00E-02	1.93E+01	5.38E+00

TABLE C-12AA: ALUMINUM DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 12 - MARSH, TERRESTRIAL RECEPTORS (Continued)
Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)
calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 118.73

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Meadow Vole (Small Herbivorous Mammals)																							
Western Upper Marsh (6-12")																						**Maximum HQ (Eastern Upper Marsh, 6-12")**	**1.08E+01**
UM-500S-2500E (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-0N-2000E (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-500S-2000E (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250N-1750E (6-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	5.89E-02	6.48E+02	3.04E+00	NA	NA	NA	NA	1.13E-04	1.10E+04	1.24E+00	1.00E+00	3.06E-02	1.40E+02	1.93E+01	3.00E-02	1.93E+01	7.25E+00
UM-0N-1500E (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250S-1500E (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250S-1250E (6-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	5.89E-02	6.06E+02	2.84E+00	NA	NA	NA	NA	1.13E-04	1.03E+04	1.16E+00	1.00E+00	3.06E-02	1.31E+02	1.93E+01	3.00E-02	1.93E+01	6.79E+00
BRSD-6 (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-1000E (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-0N-750E (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-0N-500E (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250S-500E (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-0N-250E (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250S-250E (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSD-7 (6-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	5.89E-02	5.49E+02	2.57E+00	NA	NA	NA	NA	1.13E-04	9.32E+03	1.05E+00	1.00E+00	3.06E-02	1.18E+02	1.93E+01	3.00E-02	1.93E+01	6.14E+00
BRSD-8 (6-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	5.89E-02	1.01E+03	4.72E+00	NA	NA	NA	NA	1.13E-04	1.71E+04	1.92E+00	1.00E+00	3.06E-02	2.17E+02	1.93E+01	3.00E-02	1.93E+01	1.13E+01
UM-500S-500E (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSD-9 (6-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	5.89E-02	7.77E+02	3.64E+00	NA	NA	NA	NA	1.13E-04	1.32E+04	1.49E+00	1.00E+00	3.06E-02	1.68E+02	1.93E+01	3.00E-02	1.93E+01	8.70E+00
BRSD-10 (6-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	5.89E-02	6.83E+02	3.20E+00	NA	NA	NA	NA	1.13E-04	1.16E+04	1.31E+00	1.00E+00	3.06E-02	1.47E+02	1.93E+01	3.00E-02	1.93E+01	7.64E+00
BRSD-11 (6-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	7.74E-03	1.22E+02	5.70E-01	NA	NA	NA	NA	1.13E-04	1.57E+04	1.77E+00	1.00E+00	3.06E-02	7.64E+01	1.93E+01	3.00E-02	1.93E+01	3.96E+00
Middle Marsh (0-2")																						**Maximum HQ (Western Upper Marsh, 6-12")**	**1.13E+01**
MMSD-201 (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	7.74E-03	1.14E+01	5.34E-02	NA	NA	NA	NA	1.13E-04	1.47E+03	1.65E-01	1.00E+00	3.06E-02	7.15E+00	1.93E+01	3.00E-02	1.93E+01	3.71E-01
MMSD-202 (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	7.74E-03	3.17E+00	1.49E-02	NA	NA	NA	NA	1.13E-04	4.10E+02	4.61E-02	1.00E+00	3.06E-02	1.99E+00	1.93E+01	3.00E-02	1.93E+01	1.03E-01
Middle Marsh (2-6")																						**Maximum HQ (Middle Marsh, 0-2")**	**3.71E-01**
MMSD-201 (2-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	7.74E-03	1.60E+01	7.48E-02	NA	NA	NA	NA	1.13E-04	2.06E+03	2.32E-01	1.00E+00	3.06E-02	1.00E+01	1.93E+01	3.00E-02	1.93E+01	5.20E-01
MMSD-202 (2-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	7.74E-03	4.17E+00	1.96E-02	NA	NA	NA	NA	1.13E-04	5.39E+02	6.07E-02	1.00E+00	3.06E-02	2.62E+00	1.93E+01	3.00E-02	1.93E+01	1.36E-01
Middle Marsh (6-12")																						**Maximum HQ (Middle Marsh, 2-6")**	**5.20E-01**
MMSD-201 (6-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	7.74E-03	2.01E+01	9.40E-02	NA	NA	NA	NA	1.13E-04	2.59E+03	2.91E-01	1.00E+00	3.06E-02	1.26E+01	1.93E+01	3.00E-02	1.93E+01	6.54E-01
MMSD-202 (6-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	7.74E-03	3.86E+00	1.81E-02	NA	NA	NA	NA	1.13E-04	4.98E+02	5.60E-02	1.00E+00	3.06E-02	2.42E+00	1.93E+01	3.00E-02	1.93E+01	1.26E-01
Lower Marsh (0-2")																						**Maximum HQ (Middle Marsh, 6-12")**	**6.54E-01**
LMSD-201 (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	7.74E-03	8.13E-01	3.81E-03	NA	NA	NA	NA	1.13E-04	1.05E+02	1.18E-02	1.00E+00	3.06E-02	5.11E-01	1.93E+01	3.00E-02	1.93E+01	2.65E-02
LMSD-202 (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	7.74E-03	2.73E+00	1.28E-02	NA	NA	NA	NA	1.13E-04	3.53E+02	3.97E-02	1.00E+00	3.06E-02	1.72E+00	1.93E+01	3.00E-02	1.93E+01	8.91E-02
LMSD-203 (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	7.74E-03	4.03E+00	1.89E-02	NA	NA	NA	NA	1.13E-04	5.21E+02	5.86E-02	1.00E+00	3.06E-02	2.53E+00	1.93E+01	3.00E-02	1.93E+01	1.31E-01
LMSD-204 (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	7.74E-03	2.83E+00	1.33E-02	NA	NA	NA	NA	1.13E-04	3.65E+02	4.11E-02	1.00E+00	3.06E-02	1.78E+00	1.93E+01	3.00E-02	1.93E+01	9.21E-02
Lower Marsh (2-6")																						**Maximum HQ (Lower Marsh, 0-2")**	**1.31E-01**
LMSD-201 (2-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	7.74E-03	7.59E-01	3.56E-03	NA	NA	NA	NA	1.13E-04	9.80E+01	1.10E-02	1.00E+00	3.06E-02	4.77E-01	1.93E+01	3.00E-02	1.93E+01	2.47E-02
LMSD-202 (2-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	7.74E-03	3.02E+00	1.42E-02	NA	NA	NA	NA	1.13E-04	3.90E+02	4.39E-02	1.00E+00	3.06E-02	1.90E+00	1.93E+01	3.00E-02	1.93E+01	9.84E-02
LMSD-203 (2-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	7.74E-03	3.96E+00	1.86E-02	NA	NA	NA	NA	1.13E-04	5.11E+02	5.75E-02	1.00E+00	3.06E-02	2.49E+00	1.93E+01	3.00E-02	1.93E+01	1.29E-01
LMSD-204 (2-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	7.74E-03	2.78E+00	1.30E-02	NA	NA	NA	NA	1.13E-04	3.59E+02	4.04E-02	1.00E+00	3.06E-02	1.75E+00	1.93E+01	3.00E-02	1.93E+01	9.06E-02
Lower Marsh (6-12")																						**Maximum HQ (Lower Marsh, 2-6")**	**1.29E-01**
LMSD-201 (6-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	5.89E-02	9.24E+02	4.33E+00	NA	NA	NA	NA	1.13E-04	1.57E+04	1.77E+00	1.00E+00	3.06E-02	1.99E+02	1.93E+01	3.00E-02	1.93E+01	1.03E+01
LMSD-202 (6-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	7.74E-03	2.19E+00	1.03E-02	NA	NA	NA	NA	1.13E-04	2.83E+02	3.18E-02	1.00E+00	3.06E-02	1.38E+00	1.93E+01	3.00E-02	1.93E+01	7.14E-02
LMSD-203 (6-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	7.74E-03	5.73E+00	2.69E-02	NA	NA	NA	NA	1.13E-04	7.40E+02	8.33E-02	1.00E+00	3.06E-02	3.60E+00	1.93E+01	3.00E-02	1.93E+01	1.87E-01
LMSD-204 (6-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	7.74E-03	2.60E+00	1.22E-02	NA	NA	NA	NA	1.13E-04	3.36E+02	3.78E-02	1.00E+00	3.06E-02	1.63E+00	1.93E+01	3.00E-02	1.93E+01	8.48E-02
																						Maximum HQ (Lower Marsh, 6-12")	**1.03E+01**
White-Tailed Deer (Large Herbivorous Mammals)																							
Reference Sites																							
BRSD-5 (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	2.15E-02	1.62E+02	2.31E+02	NA	NA	NA	NA	2.86E-02	7.50E+03	2.15E+02	6.64E-01	1.35E+02	2.19E+00	1.93E+01	3.00E-02	1.17E+01	1.88E-01
BRSD-5 (2-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	2.15E-02	1.73E+02	2.48E+02	NA	NA	NA	NA	2.86E-02	8.03E+03	2.30E+02	6.64E-01	1.35E+02	2.35E+00	1.93E+01	3.00E-02	1.17E+01	2.02E-01
BRSD-5 (6-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	2.15E-02	1.64E+02	2.35E+02	NA	NA	NA	NA	2.86E-02	7.62E+03	2.18E+02	6.64E-01	1.35E+02	2.23E+00	1.93E+01	3.00E-02	1.17E+01	1.91E-01
PGBG-1 (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE

TABLE C-12AA: ALUMINUM DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 12 - MARSH, TERRESTRIAL RECEPTORS (Continued)
Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)
calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **118.73**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
White-Tailed Deer (Large Herbivorous Mammals)																							
PGBG-1 (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
PGBG-1 (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
PGBG-2 (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
PGBG-2 (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
PGBG-2 (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
Eastern Upper Marsh (0-2")																						**Minimum HQ (Reference Sites)**	**1.88E-01**
UM-1000S-3500E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSD-15 (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	5.89E-02	5.50E+02	7.87E+02	NA	NA	NA	NA	2.86E-02	9.34E+03	2.67E+02	6.64E-01	1.35E+02	5.19E+00	1.93E+01	3.00E-02	1.17E+01	4.45E-01
BRSD-4 (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	5.89E-02	9.83E+02	1.41E+03	NA	NA	NA	NA	2.86E-02	1.67E+04	4.78E+02	6.64E-01	1.35E+02	9.28E+00	1.93E+01	3.00E-02	1.17E+01	7.96E-01
UM-750S-3500E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSD-16 (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-750S-3000E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSD-3 (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	5.89E-02	4.84E+02	6.93E+02	NA	NA	NA	NA	2.86E-02	8.22E+03	2.35E+02	6.64E-01	1.35E+02	4.57E+00	1.93E+01	3.00E-02	1.17E+01	3.92E-01
UM-500S-3250E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-500S-3000E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-500S-2750E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSD-25 (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-250S-3000E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250S-3250E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSD-24 (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-250S-2750E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250S-2500E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-0N-2500E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-0N-250E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-500N-2500E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250N-2500E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250N-2250E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
Western Upper Marsh (0-2")																						**Maximum HQ (Eastern Upper Marsh, 0-2")**	**7.96E-01**
UM-500S-2500E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-0N-2000E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-500S-2000E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250N-1750E (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	5.89E-02	6.36E+02	9.10E+02	NA	NA	NA	NA	2.86E-02	1.08E+04	3.09E+02	6.64E-01	1.35E+02	6.00E+00	1.93E+01	3.00E-02	1.17E+01	5.15E-01
UM-0N-1500E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250S-1500E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250S-1250E (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	5.89E-02	5.43E+02	7.78E+02	NA	NA	NA	NA	2.86E-02	9.23E+03	2.64E+02	6.64E-01	1.35E+02	5.13E+00	1.93E+01	3.00E-02	1.17E+01	4.40E-01
BRSD-6 (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-1000E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-0N-750E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-0N-500E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250S-500E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250S-250E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSD-7 (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-8 (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	5.89E-02	1.23E+03	1.76E+03	NA	NA	NA	NA	2.86E-02	2.09E+04	5.98E+02	6.64E-01	1.35E+02	1.16E+01	1.93E+01	3.00E-02	1.17E+01	9.97E-01
UM-500S-500E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSD-9 (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	5.89E-02	1.37E+03	1.96E+03	NA	NA	NA	NA	2.86E-02	2.33E+04	6.67E+02	6.64E-01	1.35E+02	1.29E+01	1.93E+01	3.00E-02	1.17E+01	1.11E+00
BRSD-10 (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-11 (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	7.74E-03	1.82E+02	2.61E+02	NA	NA	NA	NA	2.86E-02	2.35E+04	6.73E+02	6.64E-01	1.35E+02	4.59E+00	1.93E+01	3.00E-02	1.17E+01	3.94E-01

TABLE C-12AA: ALUMINUM DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 12 - MARSH, TERRESTRIAL RECEPTORS (Continued)
Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)
calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 118.73

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
White-Tailed Deer (Large Herbivorous Mammals)																							
Eastern Upper Marsh (2-6")																						**Maximum HQ (Western Upper Marsh, 0-2")**	**1.11E+00**
UM-1000S-3500E (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSD-15 (2-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	5.89E-02	8.42E+02	1.21E+03	NA	NA	NA	NA	2.86E-02	1.43E+04	4.09E+02	6.64E-01	1.35E+02	7.94E+00	1.93E+01	3.00E-02	1.17E+01	6.82E-01
BRSD-4 (2-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	5.89E-02	1.04E+03	1.48E+03	NA	NA	NA	NA	2.86E-02	1.76E+04	5.04E+02	6.64E-01	1.35E+02	9.78E+00	1.93E+01	3.00E-02	1.17E+01	8.39E-01
UM-750S-3500E (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSD-16 (2-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	5.89E-02	4.76E+02	6.81E+02	NA	NA	NA	NA	2.86E-02	8.08E+03	2.31E+02	6.64E-01	1.35E+02	4.49E+00	1.93E+01	3.00E-02	1.17E+01	3.85E-01
UM-750S-3000E (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSD-3 (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-500S-3250E (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-500S-3000E (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-500S-2750E (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSD-25 (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-250S-3000E (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250S-3250E (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSD-24 (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-250S-2750E (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-0N-2500E (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSD-2 (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-500N-2500E (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250N-2500E (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250N-2250E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
Western Upper Marsh (2-6")																						**Maximum HQ (Eastern Upper Marsh, 2-6")**	**8.39E-01**
UM-500S-2500E (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-0N-2000E (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-500S-2000E (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250N-1750E (2-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	5.89E-02	5.60E+02	8.02E+02	NA	NA	NA	NA	2.86E-02	9.52E+03	2.73E+02	6.64E-01	1.35E+02	5.29E+00	1.93E+01	3.00E-02	1.17E+01	4.54E-01
UM-0N-1500E (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250S-1500E (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250S-1250E (2-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	5.89E-02	6.24E+02	8.93E+02	NA	NA	NA	NA	2.86E-02	1.06E+04	3.04E+02	6.64E-01	1.35E+02	5.89E+00	1.93E+01	3.00E-02	1.17E+01	5.05E-01
BRSD-6 (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-1000E (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-0N-750E (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-0N-500E (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250S-500E (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-0N-250E (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250S-250E (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSD-7 (2-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	7.74E-03	6.06E+01	8.67E+01	NA	NA	NA	NA	2.86E-02	7.82E+03	2.24E+02	6.64E-01	1.35E+02	1.53E+00	1.93E+01	3.00E-02	1.17E+01	1.31E-01
BRSD-8 (2-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	7.74E-03	1.26E+02	1.81E+02	NA	NA	NA	NA	2.86E-02	1.63E+04	4.67E+02	6.64E-01	1.35E+02	3.19E+00	1.93E+01	3.00E-02	1.17E+01	2.73E-01
UM-500S-500E (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSD-9 (2-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	7.74E-03	9.37E+01	1.34E+02	NA	NA	NA	NA	2.86E-02	1.21E+04	3.46E+02	6.64E-01	1.35E+02	2.36E+00	1.93E+01	3.00E-02	1.17E+01	2.03E-01
BRSD-10 (2-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	7.74E-03	6.50E+01	9.31E+01	NA	NA	NA	NA	2.86E-02	8.40E+03	2.41E+02	6.64E-01	1.35E+02	1.64E+00	1.93E+01	3.00E-02	1.17E+01	1.41E-01
BRSD-11 (2-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	7.74E-03	1.18E+02	1.70E+02	NA	NA	NA	NA	2.86E-02	1.53E+04	4.38E+02	6.64E-01	1.35E+02	2.99E+00	1.93E+01	3.00E-02	1.17E+01	2.57E-01
Eastern Upper Marsh (6-12")																						**Maximum HQ (Western Upper Marsh, 2-6")**	**5.05E-01**
UM-1000S-3500E (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSD-15 (6-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	5.89E-02	9.65E+02	1.38E+03	NA	NA	NA	NA	2.86E-02	1.64E+04	4.70E+02	6.64E-01	1.35E+02	9.11E+00	1.93E+01	3.00E-02	1.17E+01	7.82E-01
BRSD-4 (6-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	5.89E-02	6.95E+02	9.95E+02	NA	NA	NA	NA	2.86E-02	1.18E+04	3.38E+02	6.64E-01	1.35E+02	6.56E+00	1.93E+01	3.00E-02	1.17E+01	5.63E-01
UM-750S-3500E (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSD-16 (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-750S-3000E (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSD-3 (6-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	5.89E-02	4.56E+02	6.52E+02	NA	NA	NA	NA	2.86E-02	7.74E+03	2.22E+02	6.64E-01	1.35E+02	4.30E+00	1.93E+01	3.00E-02	1.17E+01	3.69E-01

TABLE C-12AA: ALUMINUM DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 12 - MARSH, TERRESTRIAL RECEPTORS (Continued)
Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)
calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **118.73**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
White-Tailed Deer (Large Herbivorous Mammals)																							
UM-500S-3250E (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-500S-3000E (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-500S-2750E (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSD-25 (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-250S-3000E (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250S-3250E (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSD-24 (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-250S-2750E (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250S-2500E (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSD-2 (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-500N-2500E (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250N-2500E (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250N-2250E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	8.17E+03	BB	BB	BB	BB	BB	BB	BB
Western Upper Marsh (6-12")																						**Maximum HQ (Eastern Upper Marsh, 6-12")**	**7.82E-01**
UM-500S-2500E (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-0N-2000E (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-500S-2000E (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250N-1750E (6-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	5.89E-02	6.48E+02	9.27E+02	NA	NA	NA	NA	2.86E-02	1.10E+04	3.15E+02	6.64E-01	1.35E+02	6.11E+00	1.93E+01	3.00E-02	1.17E+01	5.25E-01
UM-0N-1500E (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250S-1500E (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250S-1250E (6-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	5.89E-02	6.06E+02	8.68E+02	NA	NA	NA	NA	2.86E-02	1.03E+04	2.95E+02	6.64E-01	1.35E+02	5.72E+00	1.93E+01	3.00E-02	1.17E+01	4.91E-01
BRSD-6 (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-1000E (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-0N-750E (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-0N-500E (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250S-500E (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-0N-250E (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250S-250E (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSD-7 (6-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	5.89E-02	5.49E+02	7.86E+02	NA	NA	NA	NA	2.86E-02	9.32E+03	2.67E+02	6.64E-01	1.35E+02	5.18E+00	1.93E+01	3.00E-02	1.17E+01	4.44E-01
BRSD-8 (6-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	5.89E-02	1.01E+03	1.44E+03	NA	NA	NA	NA	2.86E-02	1.71E+04	4.90E+02	6.64E-01	1.35E+02	9.50E+00	1.93E+01	3.00E-02	1.17E+01	8.15E-01
UM-500S-500E (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSD-9 (6-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	7.74E-03	1.02E+02	1.46E+02	NA	NA	NA	NA	2.86E-02	1.32E+04	3.78E+02	6.64E-01	1.35E+02	2.58E+00	1.93E+01	3.00E-02	1.17E+01	2.21E-01
BRSD-10 (6-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	7.74E-03	8.98E+01	1.29E+02	NA	NA	NA	NA	2.86E-02	1.16E+04	3.32E+02	6.64E-01	1.35E+02	2.27E+00	1.93E+01	3.00E-02	1.17E+01	1.95E-01
BRSD-11 (6-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	7.74E-03	1.22E+02	1.74E+02	NA	NA	NA	NA	2.86E-02	1.57E+04	4.50E+02	6.64E-01	1.35E+02	3.07E+00	1.93E+01	3.00E-02	1.17E+01	2.63E-01
Middle Marsh (0-2")																						**Maximum HQ (Western Upper Marsh, 6-12")**	**8.15E-01**
MMSD-201 (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	7.74E-03	9.45E+01	1.35E+02	NA	NA	NA	NA	2.86E-02	1.22E+04	3.49E+02	6.64E-01	1.35E+02	2.38E+00	1.93E+01	3.00E-02	1.17E+01	2.05E-01
MMSD-202 (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	7.74E-03	9.14E+01	1.31E+02	NA	NA	NA	NA	2.86E-02	1.18E+04	3.38E+02	6.64E-01	1.35E+02	2.31E+00	1.93E+01	3.00E-02	1.17E+01	1.98E-01
Middle Marsh (2-6")																						**Maximum HQ (Middle Marsh, 0-2")**	**2.05E-01**
MMSD-201 (2-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	7.74E-03	9.60E+01	1.37E+02	NA	NA	NA	NA	2.86E-02	1.24E+04	3.55E+02	6.64E-01	1.35E+02	2.42E+00	1.93E+01	3.00E-02	1.17E+01	2.08E-01
MMSD-202 (2-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	7.74E-03	8.59E+01	1.23E+02	NA	NA	NA	NA	2.86E-02	1.11E+04	3.18E+02	6.64E-01	1.35E+02	2.17E+00	1.93E+01	3.00E-02	1.17E+01	1.86E-01
Middle Marsh (6-12")																						**Maximum HQ (Middle Marsh, 2-6")**	**2.08E-01**
MMSD-201 (6-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	7.74E-03	9.83E+01	1.41E+02	NA	NA	NA	NA	2.86E-02	1.27E+04	3.64E+02	6.64E-01	1.35E+02	2.48E+00	1.93E+01	3.00E-02	1.17E+01	2.13E-01
MMSD-202 (6-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	7.74E-03	9.37E+01	1.34E+02	NA	NA	NA	NA	2.86E-02	1.21E+04	3.46E+02	6.64E-01	1.35E+02	2.36E+00	1.93E+01	3.00E-02	1.17E+01	2.03E-01
Lower Marsh (0-2")																						**Maximum HQ (Middle Marsh, 6-12")**	**2.13E-01**
LMSD-201 (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	7.74E-03	1.21E+02	1.73E+02	NA	NA	NA	NA	2.86E-02	1.56E+04	4.47E+02	6.64E-01	1.35E+02	3.05E+00	1.93E+01	3.00E-02	1.17E+01	2.62E-01
LMSD-202 (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	7.74E-03	9.45E+01	1.35E+02	NA	NA	NA	NA	2.86E-02	1.22E+04	3.49E+02	6.64E-01	1.35E+02	2.38E+00	1.93E+01	3.00E-02	1.17E+01	2.05E-01
LMSD-203 (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	7.74E-03	1.63E+02	2.34E+02	NA	NA	NA	NA	2.86E-02	2.11E+04	6.04E+02	6.64E-01	1.35E+02	4.12E+00	1.93E+01	3.00E-02	1.17E+01	3.54E-01
LMSD-204 (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	7.74E-03	1.26E+02	1.81E+02	NA	NA	NA	NA	2.86E-02	1.63E+04	4.67E+02	6.64E-01	1.35E+02	3.19E+00	1.93E+01	3.00E-02	1.17E+01	2.73E-01
Lower Marsh (2-6")																						**Maximum HQ (Lower Marsh, 0-2")**	**3.54E-01**
LMSD-201 (2-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	7.74E-03	1.15E+02	1.65E+02	NA	NA	NA	NA	2.86E-02	1.49E+04	4.27E+02	6.64E-01	1.35E+02	2.91E+00	1.93E+01	3.00E-02	1.17E+01	2.50E-01
LMSD-202 (2-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	7.74E-03	1.17E+02	1.67E+02	NA	NA	NA	NA	2.86E-02	1.51E+04	4.32E+02	6.64E-01	1.35E+02	2.95E+00	1.93E+01	3.00E-02	1.17E+01	2.53E-01

TABLE C-12AA: ALUMINUM DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 12 - MARSH, TERRESTRIAL RECEPTORS (Continued)
Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)
calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **118.73**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
White-Tailed Deer (Large Herbivorous Mammals)																							
LMSD-203 (2-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	7.74E-03	1.58E+02	2.26E+02	NA	NA	NA	NA	2.86E-02	2.04E+04	5.84E+02	6.64E-01	1.35E+02	3.99E+00	1.93E+01	3.00E-02	1.17E+01	3.42E-01
LMSD-204 (2-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	7.74E-03	1.29E+02	1.85E+02	NA	NA	NA	NA	2.86E-02	1.67E+04	4.78E+02	6.64E-01	1.35E+02	3.26E+00	1.93E+01	3.00E-02	1.17E+01	2.80E-01
Lower Marsh (6-12")																						**Maximum HQ (Lower Marsh, 2-6")**	**3.42E-01**
LMSD-201 (6-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	5.89E-02	9.24E+02	1.32E+03	NA	NA	NA	NA	2.86E-02	1.57E+04	4.50E+02	6.64E-01	1.35E+02	8.72E+00	1.93E+01	3.00E-02	1.17E+01	7.49E-01
LMSD-202 (6-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	7.74E-03	1.20E+02	1.72E+02	NA	NA	NA	NA	2.86E-02	1.55E+04	4.44E+02	6.64E-01	1.35E+02	3.03E+00	1.93E+01	3.00E-02	1.17E+01	2.60E-01
LMSD-203 (6-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	7.74E-03	1.54E+02	2.21E+02	NA	NA	NA	NA	2.86E-02	1.99E+04	5.70E+02	6.64E-01	1.35E+02	3.89E+00	1.93E+01	3.00E-02	1.17E+01	3.34E-01
LMSD-204 (6-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	7.74E-03	1.22E+02	1.74E+02	NA	NA	NA	NA	2.86E-02	1.57E+04	4.50E+02	6.64E-01	1.35E+02	3.07E+00	1.93E+01	3.00E-02	1.17E+01	2.63E-01
																						Maximum HQ (Lower Marsh, 6-12")	**7.49E-01**
Red Fox (Carnivorous Mammals)																							
Reference Sites																							
BRSD-5 (0-2")	1.72E-01	1.72E-01	1.84E-02	1.38E+02	2.37E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	7.50E+03	3.60E+01	8.77E-02	4.54E+00	1.15E+00	1.93E+01	3.00E-02	1.43E+01	8.09E-02
BRSD-5 (2-6")	1.72E-01	1.72E-01	1.84E-02	1.48E+02	2.54E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	8.03E+03	3.86E+01	8.77E-02	4.54E+00	1.24E+00	1.93E+01	3.00E-02	1.43E+01	8.66E-02
BRSD-5 (6-12")	1.72E-01	1.72E-01	1.84E-02	1.40E+02	2.41E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	7.62E+03	3.66E+01	8.77E-02	4.54E+00	1.17E+00	1.93E+01	3.00E-02	1.43E+01	8.21E-02
PGBG-1 (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
PGBG-1 (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
PGBG-1 (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
PGBG-2 (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
PGBG-2 (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
PGBG-2 (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
Eastern Upper Marsh (0-2")																						**Minimum HQ (Reference Sites)**	**8.09E-02**
UM-1000S-3500E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSD-15 (0-2")	1.72E-01	1.72E-01	3.77E-02	3.52E+02	6.04E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	9.34E+03	4.49E+01	8.77E-02	4.54E+00	2.04E+00	1.93E+01	3.00E-02	1.43E+01	1.42E-01
BRSD-4 (0-2")	1.72E-01	1.72E-01	3.77E-02	6.29E+02	1.08E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.67E+04	8.02E+01	8.77E-02	4.54E+00	3.64E+00	1.93E+01	3.00E-02	1.43E+01	2.55E-01
UM-750S-3500E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-750S-3000E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSD-3 (0-2")	1.72E-01	1.72E-01	3.77E-02	3.10E+02	5.31E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	8.22E+03	3.95E+01	8.77E-02	4.54E+00	1.79E+00	1.93E+01	3.00E-02	1.43E+01	1.25E-01
UM-500S-3250E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-500S-3000E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-500S-2750E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSD-25 (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-250S-3000E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250S-3250E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSD-24 (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-250S-2750E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250S-2500E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-0N-2500E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-0N-250E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSD-2 (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-500N-2500E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250N-2500E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250N-2250E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
Western Upper Marsh (0-2")																						**Maximum HQ (Eastern Upper Marsh, 0-2")**	**2.55E-01**
UM-500S-2500E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-0N-2000E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-500S-2000E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250N-1750E (0-2")	1.72E-01	1.72E-01	3.77E-02	4.07E+02	6.98E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.08E+04	5.19E+01	8.77E-02	4.54E+00	2.35E+00	1.93E+01	3.00E-02	1.43E+01	1.65E-01
UM-0N-1500E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250S-1500E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250S-1250E (0-2")	1.72E-01	1.72E-01	3.77E-02	3.48E+02	5.97E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	9.23E+03	4.43E+01	8.77E-02	4.54E+00	2.01E+00	1.93E+01	3.00E-02	1.43E+01	1.41E-01
BRSD-6 (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-1000E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE

TABLE C-12AA: ALUMINUM DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 12 - MARSH, TERRESTRIAL RECEPTORS (Continued)
Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)
calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **118.73**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Red Fox (Carnivorous Mammals)																							
UM-0N-750E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-0N-500E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250S-500E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250S-250E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSD-7 (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-8 (0-2")	1.72E-01	1.72E-01	3.77E-02	7.88E+02	1.35E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.09E+04	1.00E+02	8.77E-02	4.54E+00	4.55E+00	1.93E+01	3.00E-02	1.43E+01	3.19E-01
UM-500S-500E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSD-9 (0-2")	1.72E-01	1.72E-01	3.77E-02	8.78E+02	1.51E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.33E+04	1.12E+02	8.77E-02	4.54E+00	5.08E+00	1.93E+01	3.00E-02	1.43E+01	3.55E-01
BRSD-10 (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-11 (0-2")	1.72E-01	1.72E-01	3.77E-02	8.86E+02	1.52E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.35E+04	1.13E+02	8.77E-02	4.54E+00	5.12E+00	1.93E+01	3.00E-02	1.43E+01	3.59E-01
Eastern Upper Marsh (2-6")																						**Maximum HQ (Western Upper Marsh, 0-2")**	**3.59E-01**
UM-1000S-3500E (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSD-15 (2-6")	1.72E-01	1.72E-01	3.77E-02	5.39E+02	9.24E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.43E+04	6.87E+01	8.77E-02	4.54E+00	3.12E+00	1.93E+01	3.00E-02	1.43E+01	2.18E-01
BRSD-4 (2-6")	1.72E-01	1.72E-01	3.77E-02	6.63E+02	1.14E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.76E+04	8.45E+01	8.77E-02	4.54E+00	3.83E+00	1.93E+01	3.00E-02	1.43E+01	2.69E-01
UM-750S-3500E (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSD-16 (2-6")	1.72E-01	1.72E-01	3.77E-02	3.04E+02	5.22E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	8.08E+03	3.88E+01	8.77E-02	4.54E+00	1.76E+00	1.93E+01	3.00E-02	1.43E+01	1.23E-01
UM-750S-3000E (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSD-3 (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-500S-3250E (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-500S-3000E (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-500S-2750E (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSD-25 (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-250S-3000E (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250S-3250E (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250S-2750E (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-0N-2500E (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSD-2 (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-500N-2500E (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250N-2500E (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250N-2250E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
Western Upper Marsh (2-6")																						**Maximum HQ (Eastern Upper Marsh, 2-6")**	**2.69E-01**
UM-500S-2500E (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-0N-2000E (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-500S-2000E (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250N-1750E (2-6")	1.72E-01	1.72E-01	3.77E-02	3.59E+02	6.15E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	9.52E+03	4.57E+01	8.77E-02	4.54E+00	2.07E+00	1.93E+01	3.00E-02	1.43E+01	1.45E-01
UM-0N-1500E (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250S-1500E (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250S-1250E (2-6")	1.72E-01	1.72E-01	3.77E-02	3.99E+02	6.85E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.06E+04	5.09E+01	8.77E-02	4.54E+00	2.31E+00	1.93E+01	3.00E-02	1.43E+01	1.62E-01
BRSD-6 (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-1000E (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-0N-750E (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-0N-500E (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250S-500E (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-0N-250E (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250S-250E (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSD-7 (2-6")	1.72E-01	1.72E-01	3.77E-02	2.95E+02	5.06E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	7.82E+03	3.76E+01	8.77E-02	4.54E+00	1.70E+00	1.93E+01	3.00E-02	1.43E+01	1.19E-01
BRSD-8 (2-6")	1.72E-01	1.72E-01	3.77E-02	6.14E+02	1.05E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.63E+04	7.83E+01	8.77E-02	4.54E+00	3.55E+00	1.93E+01	3.00E-02	1.43E+01	2.49E-01
UM-500S-500E (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSD-9 (2-6")	1.72E-01	1.72E-01	3.77E-02	4.56E+02	7.82E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.21E+04	5.81E+01	8.77E-02	4.54E+00	2.64E+00	1.93E+01	3.00E-02	1.43E+01	1.85E-01

TABLE C-12AA: ALUMINUM DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 12 - MARSH, TERRESTRIAL RECEPTORS (Continued)
Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)
calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **118.73**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Red Fox (Carnivorous Mammals)																							
BRSD-10 (2-6")	1.72E-01	1.72E-01	3.77E-02	3.17E+02	5.43E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	8.40E+03	4.03E+01	8.77E-02	4.54E+00	1.83E+00	1.93E+01	3.00E-02	1.43E+01	1.28E-01
BRSD-11 (2-6")	1.72E-01	1.72E-01	3.77E-02	5.77E+02	9.89E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.53E+04	7.35E+01	8.77E-02	4.54E+00	3.33E+00	1.93E+01	3.00E-02	1.43E+01	2.33E-01
Eastern Upper Marsh (6-12")																						**Maximum HQ (Western Upper Marsh, 2-6")**	**2.49E-01**
UM-1000S-3500E (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSD-15 (6-12")	1.72E-01	1.72E-01	3.77E-02	6.18E+02	1.06E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.64E+04	7.88E+01	8.77E-02	4.54E+00	3.57E+00	1.93E+01	3.00E-02	1.43E+01	2.50E-01
BRSD-4 (6-12")	1.72E-01	1.72E-01	3.77E-02	4.45E+02	7.63E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.18E+04	5.67E+01	8.77E-02	4.54E+00	2.57E+00	1.93E+01	3.00E-02	1.43E+01	1.80E-01
UM-750S-3500E (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSD-16 (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-750S-3000E (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSD-3 (6-12")	1.72E-01	1.72E-01	3.77E-02	2.92E+02	5.00E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	7.74E+03	3.72E+01	8.77E-02	4.54E+00	1.69E+00	1.93E+01	3.00E-02	1.43E+01	1.18E-01
UM-500S-3250E (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-500S-3000E (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-500S-2750E (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSD-25 (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-250S-3000E (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250S-3250E (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSD-24 (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-250S-2750E (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250S-2500E (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSD-2 (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-500N-2500E (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250N-2500E (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250N-2250E (6-12")	1.72E-01	1.72E-01	3.77E-02	3.08E+02	5.28E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	8.17E+03	3.92E+01	8.77E-02	4.54E+00	1.78E+00	1.93E+01	3.00E-02	1.43E+01	1.25E-01
Western Upper Marsh (6-12")																						**Maximum HQ (Eastern Upper Marsh, 6-12")**	**2.50E-01**
UM-0N-2000E (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-500S-2000E (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250N-1750E (6-12")	1.72E-01	1.72E-01	3.77E-02	4.15E+02	7.11E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.10E+04	5.28E+01	8.77E-02	4.54E+00	2.40E+00	1.93E+01	3.00E-02	1.43E+01	1.68E-01
UM-0N-1500E (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250S-1500E (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250S-1250E (6-12")	1.72E-01	1.72E-01	3.77E-02	3.88E+02	6.66E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.03E+04	4.95E+01	8.77E-02	4.54E+00	2.24E+00	1.93E+01	3.00E-02	1.43E+01	1.57E-01
BRSD-6 (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-1000E (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-0N-750E (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-0N-500E (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250S-500E (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-0N-250E (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250S-250E (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSD-7 (6-12")	1.72E-01	1.72E-01	3.77E-02	3.51E+02	6.03E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	9.32E+03	4.48E+01	8.77E-02	4.54E+00	2.03E+00	1.93E+01	3.00E-02	1.43E+01	1.42E-01
BRSD-8 (6-12")	1.72E-01	1.72E-01	3.77E-02	6.44E+02	1.11E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.71E+04	8.21E+01	8.77E-02	4.54E+00	3.73E+00	1.93E+01	3.00E-02	1.43E+01	2.61E-01
UM-500S-500E (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSD-9 (6-12")	1.72E-01	1.72E-01	3.77E-02	4.97E+02	8.53E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.32E+04	6.34E+01	8.77E-02	4.54E+00	2.88E+00	1.93E+01	3.00E-02	1.43E+01	2.01E-01
BRSD-10 (6-12")	1.72E-01	1.72E-01	3.77E-02	4.37E+02	7.50E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.16E+04	5.57E+01	8.77E-02	4.54E+00	2.53E+00	1.93E+01	3.00E-02	1.43E+01	1.77E-01
BRSD-11 (6-12")	1.72E-01	1.72E-01	3.77E-02	5.92E+02	1.01E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.57E+04	7.54E+01	8.77E-02	4.54E+00	3.42E+00	1.93E+01	3.00E-02	1.43E+01	2.40E-01
Middle Marsh (0-2")																						**Maximum HQ (Western Upper Marsh, 6-12")**	**2.61E-01**
MMSD-201 (0-2")	1.72E-01	1.72E-01	3.77E-02	4.60E+02	7.89E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.22E+04	5.86E+01	8.77E-02	4.54E+00	2.66E+00	1.93E+01	3.00E-02	1.43E+01	1.86E-01
MMSD-202 (0-2")	1.72E-01	1.72E-01	3.77E-02	4.45E+02	7.63E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.18E+04	5.67E+01	8.77E-02	4.54E+00	2.57E+00	1.93E+01	3.00E-02	1.43E+01	1.80E-01
Middle Marsh (2-6")																						**Maximum HQ (Middle Marsh, 0-2")**	**1.86E-01**
MMSD-201 (2-6")	1.72E-01	1.72E-01	3.77E-02	4.67E+02	8.02E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.24E+04	5.96E+01	8.77E-02	4.54E+00	2.70E+00	1.93E+01	3.00E-02	1.43E+01	1.89E-01
MMSD-202 (2-6")	1.72E-01	1.72E-01	3.77E-02	4.18E+02	7.18E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.11E+04	5.33E+01	8.77E-02	4.54E+00	2.42E+00	1.93E+01	3.00E-02	1.43E+01	1.69E-01

TABLE C-12AA: ALUMINUM DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 12 - MARSH, TERRESTRIAL RECEPTORS (Continued)
Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)
calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **118.73**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Red Fox (Carnivorous Mammals)																							
Middle Marsh (6-12")																						**Maximum HQ (Middle Marsh, 2-6")**	**1.89E-01**
MMSD-201 (6-12")	1.72E-01	1.72E-01	3.77E-02	4.79E+02	8.21E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.27E+04	6.10E+01	8.77E-02	4.54E+00	2.77E+00	1.93E+01	3.00E-02	1.43E+01	1.94E-01
MMSD-202 (6-12")	1.72E-01	1.72E-01	3.77E-02	4.56E+02	7.82E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.21E+04	5.81E+01	8.77E-02	4.54E+00	2.64E+00	1.93E+01	3.00E-02	1.43E+01	1.85E-01
Lower Marsh (0-2")																						**Maximum HQ (Middle Marsh, 6-12")**	**1.94E-01**
LMSD-201 (0-2")	1.72E-01	1.72E-01	3.77E-02	5.88E+02	1.01E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.56E+04	7.49E+01	8.77E-02	4.54E+00	3.40E+00	1.93E+01	3.00E-02	1.43E+01	2.38E-01
LMSD-202 (0-2")	1.72E-01	1.72E-01	3.77E-02	4.60E+02	7.89E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.22E+04	5.86E+01	8.77E-02	4.54E+00	2.66E+00	1.93E+01	3.00E-02	1.43E+01	1.86E-01
LMSD-203 (0-2")	1.72E-01	1.72E-01	3.77E-02	7.95E+02	1.36E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.11E+04	1.01E+02	8.77E-02	4.54E+00	4.60E+00	1.93E+01	3.00E-02	1.43E+01	3.22E-01
LMSD-204 (0-2")	1.72E-01	1.72E-01	3.77E-02	6.14E+02	1.05E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.63E+04	7.83E+01	8.77E-02	4.54E+00	3.55E+00	1.93E+01	3.00E-02	1.43E+01	2.49E-01
Lower Marsh (2-6")																						**Maximum HQ (Lower Marsh, 0-2")**	**3.22E-01**
LMSD-201 (2-6")	1.72E-01	1.72E-01	3.77E-02	5.61E+02	9.63E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.49E+04	7.16E+01	8.77E-02	4.54E+00	3.25E+00	1.93E+01	3.00E-02	1.43E+01	2.27E-01
LMSD-202 (2-6")	1.72E-01	1.72E-01	3.77E-02	5.69E+02	9.76E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.51E+04	7.25E+01	8.77E-02	4.54E+00	3.29E+00	1.93E+01	3.00E-02	1.43E+01	2.30E-01
LMSD-203 (2-6")	1.72E-01	1.72E-01	3.77E-02	7.69E+02	1.32E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.04E+04	9.80E+01	8.77E-02	4.54E+00	4.44E+00	1.93E+01	3.00E-02	1.43E+01	3.11E-01
LMSD-204 (2-6")	1.72E-01	1.72E-01	3.77E-02	6.29E+02	1.08E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.67E+04	8.02E+01	8.77E-02	4.54E+00	3.64E+00	1.93E+01	3.00E-02	1.43E+01	2.55E-01
Lower Marsh (6-12")																						**Maximum HQ (Lower Marsh, 2-6")**	**3.11E-01**
LMSD-201 (6-12")	1.72E-01	1.72E-01	3.77E-02	5.92E+02	1.01E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.57E+04	7.54E+01	8.77E-02	4.54E+00	3.42E+00	1.93E+01	3.00E-02	1.43E+01	2.40E-01
LMSD-202 (6-12")	1.72E-01	1.72E-01	3.77E-02	5.84E+02	1.00E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.55E+04	7.45E+01	8.77E-02	4.54E+00	3.38E+00	1.93E+01	3.00E-02	1.43E+01	2.36E-01
LMSD-203 (6-12")	1.72E-01	1.72E-01	3.77E-02	7.50E+02	1.29E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.99E+04	9.56E+01	8.77E-02	4.54E+00	4.34E+00	1.93E+01	3.00E-02	1.43E+01	3.04E-01
LMSD-204 (6-12")	1.72E-01	1.72E-01	3.77E-02	5.92E+02	1.01E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.57E+04	7.54E+01	8.77E-02	4.54E+00	3.42E+00	1.93E+01	3.00E-02	1.43E+01	2.40E-01
																						Maximum HQ (Lower Marsh, 6-12")	**3.04E-01**
Masked Shrew (Omnivorous Mammals, Wetland)																							
Reference Sites																							
BRSD-5 (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.31E+00	9.81E+03	8.31E+01	1.10E-03	7.50E+03	8.26E+00	1.00E+00	5.50E-03	1.66E+04	1.93E+01	3.00E-02	2.14E+01	7.77E+02
BRSD-5 (2-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.31E+00	1.05E+04	8.89E+01	1.10E-03	8.03E+03	8.84E+00	1.00E+00	5.50E-03	1.78E+04	1.93E+01	3.00E-02	2.14E+01	8.32E+02
BRSD-5 (6-12")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.31E+00	9.96E+03	8.44E+01	1.10E-03	7.62E+03	8.39E+00	1.00E+00	5.50E-03	1.69E+04	1.93E+01	3.00E-02	2.14E+01	7.90E+02
PGBG-1 (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
PGBG-1 (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
PGBG-1 (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
PGBG-2 (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
PGBG-2 (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
PGBG-2 (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
Eastern Upper Marsh (0-2")																						**Minimum HQ (Reference Sites)**	**7.77E+02**
UM-1000S-3500E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSD-15 (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.33E+00	1.24E+04	1.05E+02	1.10E-03	9.34E+03	1.03E+01	1.00E+00	5.50E-03	2.10E+04	1.93E+01	3.00E-02	2.14E+01	9.81E+02
BRSD-4 (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.33E+00	2.22E+04	1.88E+02	1.10E-03	1.67E+04	1.84E+01	1.00E+00	5.50E-03	3.75E+04	1.93E+01	3.00E-02	2.14E+01	1.75E+03
UM-750S-3500E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSD-16 (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-750S-3000E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSD-3 (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.33E+00	1.09E+04	9.24E+01	1.10E-03	8.22E+03	9.05E+00	1.00E+00	5.50E-03	1.85E+04	1.93E+01	3.00E-02	2.14E+01	8.63E+02
UM-500S-3250E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-500S-3000E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-500S-2750E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSD-25 (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-250S-3000E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250S-3250E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSD-24 (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-250S-2750E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250S-2500E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-0N-2500E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-0N-250E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSD-2 (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-500N-2500E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE

TABLE C-12AA: ALUMINUM DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 12 - MARSH, TERRESTRIAL RECEPTORS (Continued)
Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)
calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 118.73

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Masked Shrew (Omnivorous Mammals, Wetland)																							
UM-250N-2500E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250N-2250E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
Western Upper Marsh (0-2")																						**Maximum HQ (Eastern Upper Marsh, 0-2")**	**1.75E+03**
UM-500S-2500E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-0N-2000E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-500S-2000E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250N-1750E (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.33E+00	1.43E+04	1.21E+02	1.10E-03	1.08E+04	1.19E+01	1.00E+00	5.50E-03	2.42E+04	1.93E+01	3.00E-02	2.14E+01	1.13E+03
UM-0N-1500E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250S-1500E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250S-1250E (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.33E+00	1.23E+04	1.04E+02	1.10E-03	9.23E+03	1.02E+01	1.00E+00	5.50E-03	2.07E+04	1.93E+01	3.00E-02	2.14E+01	9.70E+02
BRSD-6 (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-1000E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-0N-750E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-0N-500E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250S-500E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250S-250E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSD-7 (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-8 (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.28E+00	2.68E+04	2.27E+02	1.10E-03	2.09E+04	2.30E+01	1.00E+00	5.50E-03	4.55E+04	1.93E+01	3.00E-02	2.14E+01	2.13E+03
UM-500S-500E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSD-9 (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.28E+00	2.99E+04	2.53E+02	1.10E-03	2.33E+04	2.57E+01	1.00E+00	5.50E-03	5.07E+04	1.93E+01	3.00E-02	2.14E+01	2.37E+03
BRSD-10 (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-11 (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.28E+00	3.01E+04	2.55E+02	1.10E-03	2.35E+04	2.59E+01	1.00E+00	5.50E-03	5.11E+04	1.93E+01	3.00E-02	2.14E+01	2.39E+03
Eastern Upper Marsh (2-6")																						**Maximum HQ (Western Upper Marsh, 0-2")**	**2.39E+03**
UM-1000S-3500E (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSD-4 (2-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.33E+00	2.34E+04	1.98E+02	1.10E-03	1.76E+04	1.94E+01	1.00E+00	5.50E-03	3.95E+04	1.93E+01	3.00E-02	2.14E+01	1.85E+03
UM-750S-3500E (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSD-16 (2-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.33E+00	1.07E+04	9.09E+01	1.10E-03	8.08E+03	8.90E+00	1.00E+00	5.50E-03	1.81E+04	1.93E+01	3.00E-02	2.14E+01	8.49E+02
UM-750S-3000E (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSD-3 (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-500S-3250E (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-500S-3000E (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-500S-2750E (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSD-25 (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-250S-3000E (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250S-3250E (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSD-24 (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-250S-2750E (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-0N-2500E (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSD-2 (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-500N-2500E (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250N-2500E (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250N-2250E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
Western Upper Marsh (2-6")																						**Maximum HQ (Eastern Upper Marsh, 2-6")**	**1.85E+03**
UM-500S-2500E (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-0N-2000E (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-500S-2000E (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250N-1750E (2-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.28E+00	1.22E+04	1.03E+02	1.10E-03	9.52E+03	1.05E+01	1.00E+00	5.50E-03	2.07E+04	1.93E+01	3.00E-02	2.14E+01	9.69E+02
UM-0N-1500E (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250S-1500E (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE

TABLE C-12AA: ALUMINUM DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 12 - MARSH, TERRESTRIAL RECEPTORS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **118.73**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Masked Shrew (Omnivorous Mammals, Wetland)																							
UM-250S-1250E (2-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.28E+00	1.36E+04	1.15E+02	1.10E-03	1.06E+04	1.17E+01	1.00E+00	5.50E-03	2.31E+04	1.93E+01	3.00E-02	2.14E+01	1.08E+03
BRSD-6 (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-1000E (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-0N-750E (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-0N-500E (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250S-500E (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-0N-250E (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250S-250E (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSD-7 (2-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.28E+00	1.00E+04	8.49E+01	1.10E-03	7.82E+03	8.61E+00	1.00E+00	5.50E-03	1.70E+04	1.93E+01	3.00E-02	2.14E+01	7.96E+02
BRSD-8 (2-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.28E+00	2.09E+04	1.77E+02	1.10E-03	1.63E+04	1.79E+01	1.00E+00	5.50E-03	3.55E+04	1.93E+01	3.00E-02	2.14E+01	1.66E+03
UM-500S-500E (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSD-9 (2-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.28E+00	1.55E+04	1.31E+02	1.10E-03	1.21E+04	1.33E+01	1.00E+00	5.50E-03	2.63E+04	1.93E+01	3.00E-02	2.14E+01	1.23E+03
BRSD-10 (2-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.28E+00	1.08E+04	9.12E+01	1.10E-03	8.40E+03	9.25E+00	1.00E+00	5.50E-03	1.83E+04	1.93E+01	3.00E-02	2.14E+01	8.55E+02
BRSD-11 (2-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.28E+00	1.96E+04	1.66E+02	1.10E-03	1.53E+04	1.68E+01	1.00E+00	5.50E-03	3.33E+04	1.93E+01	3.00E-02	2.14E+01	1.56E+03
Eastern Upper Marsh (6-12")																						**Maximum HQ (Western Upper Marsh, 2-6")**	**1.66E+03**
UM-1000S-3500E (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSD-15 (6-12")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.33E+00	2.18E+04	1.84E+02	1.10E-03	1.64E+04	1.81E+01	1.00E+00	5.50E-03	3.68E+04	1.93E+01	3.00E-02	2.14E+01	1.72E+03
BRSD-4 (6-12")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.33E+00	1.57E+04	1.33E+02	1.10E-03	1.18E+04	1.30E+01	1.00E+00	5.50E-03	2.65E+04	1.93E+01	3.00E-02	2.14E+01	1.24E+03
UM-750S-3500E (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSD-16 (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-750S-3000E (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSD-3 (6-12")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.33E+00	1.03E+04	8.70E+01	1.10E-03	7.74E+03	8.52E+00	1.00E+00	5.50E-03	1.74E+04	1.93E+01	3.00E-02	2.14E+01	8.13E+02
UM-500S-3250E (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-500S-3000E (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-500S-2750E (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSD-25 (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-250S-3000E (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250S-3250E (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSD-24 (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-250S-2750E (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250S-2500E (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSD-2 (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-500N-2500E (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250N-2500E (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250N-2250E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	8.17E+03	BB	BB	BB	BB	BB	BB	BB	BB
Western Upper Marsh (6-12")																						**Maximum HQ (Eastern Upper Marsh, 6-12")**	**1.72E+03**
UM-500S-2500E (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-0N-2000E (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-500S-2000E (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250N-1750E (6-12")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.33E+00	1.46E+04	1.24E+02	1.10E-03	1.10E+04	1.21E+01	1.00E+00	5.50E-03	2.47E+04	1.93E+01	3.00E-02	2.14E+01	1.16E+03
UM-0N-1500E (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250S-1500E (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250S-1250E (6-12")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.33E+00	1.37E+04	1.16E+02	1.10E-03	1.03E+04	1.13E+01	1.00E+00	5.50E-03	2.31E+04	1.93E+01	3.00E-02	2.14E+01	1.08E+03
BRSD-6 (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-1000E (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-0N-750E (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-0N-500E (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250S-500E (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-0N-250E (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250S-250E (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE

TABLE C-12AA: ALUMINUM DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 12 - MARSH, TERRESTRIAL RECEPTORS (Continued)
Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)
calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **118.73**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Masked Shrew (Omnivorous Mammals, Wetland)																							
BRSD-7 (6-12")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.33E+00	1.24E+04	1.05E+02	1.10E-03	9.32E+03	1.03E+01	1.00E+00	5.50E-03	2.09E+04	1.93E+01	3.00E-02	2.14E+01	9.79E+02
BRSD-8 (6-12")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.28E+00	2.19E+04	1.86E+02	1.10E-03	1.71E+04	1.88E+01	1.00E+00	5.50E-03	3.72E+04	1.93E+01	3.00E-02	2.14E+01	1.74E+03
UM-500S-500E (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSD-9 (6-12")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.28E+00	1.69E+04	1.43E+02	1.10E-03	1.32E+04	1.45E+01	1.00E+00	5.50E-03	2.87E+04	1.93E+01	3.00E-02	2.14E+01	1.34E+03
BRSD-10 (6-12")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.28E+00	1.49E+04	1.26E+02	1.10E-03	1.16E+04	1.28E+01	1.00E+00	5.50E-03	2.52E+04	1.93E+01	3.00E-02	2.14E+01	1.18E+03
BRSD-11 (6-12")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.28E+00	2.01E+04	1.71E+02	1.10E-03	1.57E+04	1.73E+01	1.00E+00	5.50E-03	3.41E+04	1.93E+01	3.00E-02	2.14E+01	1.60E+03
Middle Marsh (0-2")																						**Maximum HQ (Western Upper Marsh, 6-12")**	**1.74E+03**
MMSD-201 (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.28E+00	1.56E+04	1.33E+02	1.10E-03	1.22E+04	1.34E+01	1.00E+00	5.50E-03	2.65E+04	1.93E+01	3.00E-02	2.14E+01	1.24E+03
MMSD-202 (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.28E+00	1.51E+04	1.28E+02	1.10E-03	1.18E+04	1.30E+01	1.00E+00	5.50E-03	2.57E+04	1.93E+01	3.00E-02	2.14E+01	1.20E+03
Middle Marsh (2-6")																						**Maximum HQ (Middle Marsh, 0-2")**	**1.24E+03**
MMSD-201 (2-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.28E+00	1.59E+04	1.35E+02	1.10E-03	1.24E+04	1.37E+01	1.00E+00	5.50E-03	2.70E+04	1.93E+01	3.00E-02	2.14E+01	1.26E+03
MMSD-202 (2-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.28E+00	1.42E+04	1.21E+02	1.10E-03	1.11E+04	1.22E+01	1.00E+00	5.50E-03	2.41E+04	1.93E+01	3.00E-02	2.14E+01	1.13E+03
Middle Marsh (6-12")																						**Maximum HQ (Middle Marsh, 2-6")**	**1.26E+03**
MMSD-201 (6-12")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.28E+00	1.63E+04	1.38E+02	1.10E-03	1.27E+04	1.40E+01	1.00E+00	5.50E-03	2.76E+04	1.93E+01	3.00E-02	2.14E+01	1.29E+03
MMSD-202 (6-12")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.28E+00	1.55E+04	1.31E+02	1.10E-03	1.21E+04	1.33E+01	1.00E+00	5.50E-03	2.63E+04	1.93E+01	3.00E-02	2.14E+01	1.23E+03
Lower Marsh (0-2")																						**Maximum HQ (Middle Marsh, 6-12")**	**1.29E+03**
LMSD-201 (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.28E+00	2.00E+04	1.69E+02	1.10E-03	1.56E+04	1.72E+01	1.00E+00	5.50E-03	3.39E+04	1.93E+01	3.00E-02	2.14E+01	1.59E+03
LMSD-202 (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.28E+00	1.56E+04	1.33E+02	1.10E-03	1.22E+04	1.34E+01	1.00E+00	5.50E-03	2.65E+04	1.93E+01	3.00E-02	2.14E+01	1.24E+03
LMSD-203 (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.28E+00	2.71E+04	2.29E+02	1.10E-03	2.11E+04	2.32E+01	1.00E+00	5.50E-03	4.59E+04	1.93E+01	3.00E-02	2.14E+01	2.15E+03
LMSD-204 (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.28E+00	2.09E+04	1.77E+02	1.10E-03	1.63E+04	1.79E+01	1.00E+00	5.50E-03	3.55E+04	1.93E+01	3.00E-02	2.14E+01	1.66E+03
Lower Marsh (2-6")																						**Maximum HQ (Lower Marsh, 0-2")**	**2.15E+03**
LMSD-201 (2-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.28E+00	1.91E+04	1.62E+02	1.10E-03	1.49E+04	1.64E+01	1.00E+00	5.50E-03	3.24E+04	1.93E+01	3.00E-02	2.14E+01	1.52E+03
LMSD-202 (2-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.28E+00	1.94E+04	1.64E+02	1.10E-03	1.51E+04	1.66E+01	1.00E+00	5.50E-03	3.28E+04	1.93E+01	3.00E-02	2.14E+01	1.54E+03
LMSD-203 (2-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.28E+00	2.62E+04	2.22E+02	1.10E-03	2.04E+04	2.25E+01	1.00E+00	5.50E-03	4.44E+04	1.93E+01	3.00E-02	2.14E+01	2.08E+03
LMSD-204 (2-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.28E+00	2.14E+04	1.81E+02	1.10E-03	1.67E+04	1.84E+01	1.00E+00	5.50E-03	3.63E+04	1.93E+01	3.00E-02	2.14E+01	1.70E+03
Lower Marsh (6-12")																						**Maximum HQ (Lower Marsh, 2-6")**	**2.08E+03**
LMSD-201 (6-12")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.33E+00	2.08E+04	1.77E+02	1.10E-03	1.57E+04	1.73E+01	1.00E+00	5.50E-03	3.52E+04	1.93E+01	3.00E-02	2.14E+01	1.65E+03
LMSD-202 (6-12")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.28E+00	1.99E+04	1.68E+02	1.10E-03	1.55E+04	1.71E+01	1.00E+00	5.50E-03	3.37E+04	1.93E+01	3.00E-02	2.14E+01	1.58E+03
LMSD-203 (6-12")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.28E+00	2.55E+04	2.16E+02	1.10E-03	1.99E+04	2.19E+01	1.00E+00	5.50E-03	4.33E+04	1.93E+01	3.00E-02	2.14E+01	2.03E+03
LMSD-204 (6-12")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.28E+00	2.01E+04	1.71E+02	1.10E-03	1.57E+04	1.73E+01	1.00E+00	5.50E-03	3.41E+04	1.93E+01	3.00E-02	2.14E+01	1.60E+03
																						Maximum HQ (Lower Marsh, 6-12")	**2.03E+03**

Notes: Results are evaluated in order of upstream to downstream.

1 See Tables 3-1 through 3-13 for ingestion rates, foraging ranges used to calculate the SUF, and body weights.
2 BAFs were calculated by dividing site-collected tissue by collocated soil concentrations. The maximum plant and invertebrate BAF calculated for the eastern transect (UMT1) were used for the Eastern Upper Marsh calculations. The maximum plant and invertebrate BAF calculated for the western transect (UMT2) were used for the Western Upper Marsh calculations. The maximum mammal BAF calculated for the eastern transect (UMT1) was used for the Eastern and Western Upper Marsh calculations because no mammals were collected in the Western Upper Marsh.
3 The mammal, plant, and invertebrate concentrations were calculated by multiplying the soil concentration by the BAF to generate a tissue concentration (see note 2).
4 Mammal, plant, and invertebrate daily doses were calculated by multiplying the ingestion rate (see note 1) by the tissue concentration (see note 3).
5 Soil concentration from specified depths below ground surface at point ID from laboratory analysis. Doses were not calculated for detected and non-detected soil concentrations measured below the minimum reference site concentration (0-12"), as indicated by BB. For results that were measured at less than the detection limit, doses were calculated using half of the detection limit.
6 Soil daily dose was calculated by multiplying the soil ingestion rate (see note 1) by soil concentration (see note 5).
7 Total daily dose is calculated using the following equation: total daily dose = ([mammal daily dose (if applicable) + plant daily dose (if applicable) + invertebrate daily dose (if applicable) + soil daily dose]*SUF)/receptor species body weight.
8 The derivation of TRVs is described in Navy (1998) and Sample, Opresko, and Suter (1996). The high TRV was used for dose calculations.
9 Allometrically adjusted TRVs for birds were calculated using the following equation: receptor species TRV = (test species TRV) x (test species body weight / receptor species body weight) $^{(1-1.2)}$.
10 Allometrically adjusted TRVs for mammals were calculated using the following equation: receptor species TRV = (test species TRV) x (test species body weight / receptor species body weight) $^{(1-0.94)}$.
11 HQs were calculated using the following equation: HQ = total daily dose/allometrically adjusted TRV.
12 Green cells indicate an HQ greater than 1.0

BAF	Bioaccumulation Factor	ID	Identification	NA	Not applicable
BB	Below minimum background reference site concentration	kg	Kilogram	Navy	Department of the Navy
EE/CA	Engineering Evaluation/Cost Analysis	kg/day	Kilogram per day	SUF	Site use factor
EU	Exposure Unit	mg/day	Milligram per day	TRV	Toxicity reference value
HQ	Hazard Quotient	mg/kg	Milligram per kilogram		

Sources:
Department of the Navy. 1998. "Development of Toxicity Reference Values for Conducting Ecological Risk Assessments at Naval Facilities in California, Interim Final." Prepared by Naval Facilities Engineering Command, Engineering Field Activity West (EFA
Sample, B.E., D.M. Opresko, and G.W. Suter, II. 1996. "Toxicological Benchmarks for Wildlife: 1996 Revision." ES/ER/TM-86/R3. Oak Ridge National Laboratory. Oak Ridge, Tennessee.

TABLE C-12AB: ALUMINUM DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 12 - UPPER MARSH, WETLAND RECEPTORS

Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)
calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 118.73

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Canada Goose (Herbivorous Birds)																							
Reference Sites																							
BRSD-5 (0-2")	8.57E-01	NA	NA	NA	NA	8.57E-01	1.99E+00	1.49E+04	1.28E+04	NA	NA	NA	NA	7.03E-02	7.50E+03	5.27E+02	1.21E-01	3.69E+01	4.36E+01	1.72E+02	9.55E-01	3.57E+02	1.22E-01
BRSD-5 (2-6")	8.57E-01	NA	NA	NA	NA	8.57E-01	1.99E+00	1.60E+04	1.37E+04	NA	NA	NA	NA	7.03E-02	8.03E+03	5.64E+02	1.21E-01	3.69E+01	4.67E+01	1.72E+02	9.55E-01	3.57E+02	1.31E-01
BRSD-5 (6-12")	8.57E-01	NA	NA	NA	NA	8.57E-01	1.99E+00	1.52E+04	1.30E+04	NA	NA	NA	NA	7.03E-02	7.62E+03	5.36E+02	1.21E-01	3.69E+01	4.43E+01	1.72E+02	9.55E-01	3.57E+02	1.24E-01
PGBG-1 (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
PGBG-1 (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
PGBG-1 (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
PGBG-2 (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
PGBG-2 (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
PGBG-2 (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
Eastern Upper Marsh (0-2")																						**Minimum HQ (Reference Sites)**	**1.22E-01**
UM-1000S-3500E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSD-15 (0-2")	8.57E-01	NA	NA	NA	NA	8.57E-01	2.32E+00	2.17E+04	1.86E+04	NA	NA	NA	NA	7.03E-02	9.34E+03	6.56E+02	1.21E-01	3.69E+01	6.30E+01	1.72E+02	9.55E-01	3.57E+02	1.76E-01
BRSD-4 (0-2")	8.57E-01	NA	NA	NA	NA	8.57E-01	2.32E+00	3.88E+04	3.32E+04	NA	NA	NA	NA	7.03E-02	1.67E+04	1.17E+03	1.21E-01	3.69E+01	1.13E+02	1.72E+02	9.55E-01	3.57E+02	3.16E-01
UM-750S-3500E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSD-16 (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-750S-3000E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSD-3 (0-2")	8.57E-01	NA	NA	NA	NA	8.57E-01	2.32E+00	1.91E+04	1.64E+04	NA	NA	NA	NA	7.03E-02	8.22E+03	5.78E+02	1.21E-01	3.69E+01	5.55E+01	1.72E+02	9.55E-01	3.57E+02	1.55E-01
UM-500S-3250E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-500S-3000E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-500S-2750E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSD-25 (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-250S-3000E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250S-3250E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSD-24 (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-250S-2750E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250S-2500E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-0N-2500E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-0N-250E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSD-2 (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-500N-2500E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250N-2500E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250N-2250E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
Western Upper Marsh (0-2")																						**Maximum HQ (Eastern Upper Marsh, 0-2")**	**3.16E-01**
UM-500S-2500E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-0N-2000E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-500S-2000E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250N-1750E (0-2")	8.57E-01	NA	NA	NA	NA	8.57E-01	2.32E+00	2.51E+04	2.15E+04	NA	NA	NA	NA	7.03E-02	1.08E+04	7.59E+02	1.21E-01	3.69E+01	7.29E+01	1.72E+02	9.55E-01	3.57E+02	2.04E-01
UM-0N-1500E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250S-1500E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250S-1250E (0-2")	8.57E-01	NA	NA	NA	NA	8.57E-01	2.32E+00	2.14E+04	1.84E+04	NA	NA	NA	NA	7.03E-02	9.23E+03	6.49E+02	1.21E-01	3.69E+01	6.23E+01	1.72E+02	9.55E-01	3.57E+02	1.74E-01
BRSD-6 (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-1000E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-0N-750E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-0N-500E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250S-500E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250S-250E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSD-7 (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-8 (0-2")	8.57E-01	NA	NA	NA	NA	8.57E-01	2.15E+00	4.49E+04	3.85E+04	NA	NA	NA	NA	7.03E-02	2.09E+04	1.47E+03	1.21E-01	3.69E+01	1.31E+02	1.72E+02	9.55E-01	3.57E+02	3.66E-01
UM-500S-500E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE

TABLE C-12AB: ALUMINUM DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 12 - MARSH, WETLAND RECEPTORS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **118.73**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Canada Goose (Herbivorous Birds)																							
BRSD-9 (0-2")	8.57E-01	NA	NA	NA	NA	8.57E-01	2.15E+00	5.01E+04	4.29E+04	NA	NA	NA	NA	7.03E-02	2.33E+04	1.64E+03	1.21E-01	3.69E+01	1.46E+02	1.72E+02	9.55E-01	3.57E+02	4.08E-01
BRSD-10 (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-11 (0-2")	8.57E-01	NA	NA	NA	NA	8.57E-01	2.15E+00	5.05E+04	4.33E+04	NA	NA	NA	NA	7.03E-02	2.35E+04	1.65E+03	1.21E-01	3.69E+01	1.47E+02	1.72E+02	9.55E-01	3.57E+02	4.12E-01
Eastern Upper Marsh (2-6")																						**Maximum HQ (Western Upper Marsh, 0-2")**	**4.12E-01**
UM-1000S-3500E (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSD-15 (2-6")	8.57E-01	NA	NA	NA	NA	8.57E-01	2.32E+00	3.32E+04	2.85E+04	NA	NA	NA	NA	7.03E-02	1.43E+04	1.00E+03	1.21E-01	3.69E+01	9.65E+01	1.72E+02	9.55E-01	3.57E+02	2.70E-01
BRSD-4 (2-6")	8.57E-01	NA	NA	NA	NA	8.57E-01	2.32E+00	4.09E+04	3.50E+04	NA	NA	NA	NA	7.03E-02	1.76E+04	1.24E+03	1.21E-01	3.69E+01	1.19E+02	1.72E+02	9.55E-01	3.57E+02	3.33E-01
UM-750S-3500E (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSD-16 (2-6")	8.57E-01	NA	NA	NA	NA	8.57E-01	2.32E+00	1.88E+04	1.61E+04	NA	NA	NA	NA	7.03E-02	8.08E+03	5.68E+02	1.21E-01	3.69E+01	5.45E+01	1.72E+02	9.55E-01	3.57E+02	1.53E-01
UM-750S-3000E (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSD-3 (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-500S-3250E (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-500S-3000E (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-500S-2750E (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSD-25 (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-250S-3000E (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250S-3250E (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSD-24 (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-250S-2750E (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-0N-2500E (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSD-2 (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-500N-2500E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	NE	BB	BB	BB	BB	BB	BB	BB
UM-250N-2500E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	NE	BB	BB	BB	BB	BB	BB	BB
UM-250N-2250E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
Western Upper Marsh (2-6")																						**Maximum HQ (Eastern Upper Marsh, 2-6")**	**3.33E-01**
UM-500S-2500E (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-0N-2000E (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-500S-2000E (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250N-1750E (2-6")	8.57E-01	NA	NA	NA	NA	8.57E-01	2.32E+00	2.21E+04	1.89E+04	NA	NA	NA	NA	7.03E-02	9.52E+03	6.69E+02	1.21E-01	3.69E+01	6.42E+01	1.72E+02	9.55E-01	3.57E+02	1.80E-01
UM-0N-1500E (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250S-1500E (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250S-1250E (2-6")	8.57E-01	NA	NA	NA	NA	8.57E-01	2.32E+00	2.46E+04	2.11E+04	NA	NA	NA	NA	7.03E-02	1.06E+04	7.45E+02	1.21E-01	3.69E+01	7.15E+01	1.72E+02	9.55E-01	3.57E+02	2.00E-01
BRSD-6 (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-1000E (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-0N-750E (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-0N-500E (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250S-500E (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-0N-250E (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250S-250E (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSD-7 (2-6")	8.57E-01	NA	NA	NA	NA	8.57E-01	2.32E+00	1.82E+04	1.56E+04	NA	NA	NA	NA	7.03E-02	7.82E+03	5.50E+02	1.21E-01	3.69E+01	5.28E+01	1.72E+02	9.55E-01	3.57E+02	1.48E-01
BRSD-8 (2-6")	8.57E-01	NA	NA	NA	NA	8.57E-01	2.32E+00	3.78E+04	3.24E+04	NA	NA	NA	NA	7.03E-02	1.63E+04	1.15E+03	1.21E-01	3.69E+01	1.10E+02	1.72E+02	9.55E-01	3.57E+02	3.08E-01
UM-500S-500E (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSD-9 (2-6")	8.57E-01	NA	NA	NA	NA	8.57E-01	2.32E+00	2.81E+04	2.41E+04	NA	NA	NA	NA	7.03E-02	1.21E+04	8.50E+02	1.21E-01	3.69E+01	8.17E+01	1.72E+02	9.55E-01	3.57E+02	2.29E-01
BRSD-10 (2-6")	8.57E-01	NA	NA	NA	NA	8.57E-01	2.32E+00	1.95E+04	1.67E+04	NA	NA	NA	NA	7.03E-02	8.40E+03	5.90E+02	1.21E-01	3.69E+01	5.67E+01	1.72E+02	9.55E-01	3.57E+02	1.59E-01
BRSD-11 (2-6")	8.57E-01	NA	NA	NA	NA	8.57E-01	2.32E+00	3.55E+04	3.04E+04	NA	NA	NA	NA	7.03E-02	1.53E+04	1.08E+03	1.21E-01	3.69E+01	1.03E+02	1.72E+02	9.55E-01	3.57E+02	2.89E-01
Eastern Upper Marsh (6-12")																						**Maximum HQ (Western Upper Marsh, 2-6")**	**3.08E-01**
UM-1000S-3500E (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSD-15 (6-12")	8.57E-01	NA	NA	NA	NA	8.57E-01	2.32E+00	3.81E+04	3.26E+04	NA	NA	NA	NA	7.03E-02	1.64E+04	1.15E+03	1.21E-01	3.69E+01	1.11E+02	1.72E+02	9.55E-01	3.57E+02	3.10E-01
BRSD-4 (6-12")	8.57E-01	NA	NA	NA	NA	8.57E-01	2.32E+00	2.74E+04	2.35E+04	NA	NA	NA	NA	7.03E-02	1.18E+04	8.29E+02	1.21E-01	3.69E+01	7.96E+01	1.72E+02	9.55E-01	3.57E+02	2.23E-01
UM-750S-3500E (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSD-16 (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-750S-3000E (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSD-3 (6-12")	8.57E-01	NA	NA	NA	NA	8.57E-01	2.32E+00	1.80E+04	1.54E+04	NA	NA	NA	NA	7.03E-02	7.74E+03	5.44E+02	1.21E-01	3.69E+01	5.22E+01	1.72E+02	9.55E-01	3.57E+02	1.46E-01
UM-500S-3250E (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-500S-3000E (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-500S-2750E (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSD-25 (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB

TABLE C-12AB: ALUMINUM DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 12 - MARSH, WETLAND RECEPTORS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **118.73**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Canada Goose (Herbivorous Birds)																							
UM-250S-3000E (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250S-3250E (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSD-24 (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-250S-2750E (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250S-2500E (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSD-2 (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-500N-2500E (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250N-2500E (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250N-2250E (6-12")	8.57E-01	NA	NA	NA	NA	8.57E-01	2.32E+00	1.90E+04	1.63E+04	NA	NA	NA	NA	7.03E-02	8.17E+03	5.74E+02	1.21E-01	3.69E+01	5.51E+01	1.72E+02	9.55E-01	3.57E+02	1.54E-01
Western Upper Marsh (6-12")																						**Maximum HQ (Eastern Upper Marsh, 6-12")**	**3.10E-01**
UM-500S-2500E (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-0N-2000E (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-500S-2000E (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250N-1750E (6-12")	8.57E-01	NA	NA	NA	NA	8.57E-01	2.32E+00	2.55E+04	2.19E+04	NA	NA	NA	NA	7.03E-02	1.10E+04	7.73E+02	1.21E-01	3.69E+01	7.42E+01	1.72E+02	9.55E-01	3.57E+02	2.08E-01
UM-0N-1500E (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250S-1500E (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250S-1250E (6-12")	8.57E-01	NA	NA	NA	NA	8.57E-01	2.32E+00	2.39E+04	2.05E+04	NA	NA	NA	NA	7.03E-02	1.03E+04	7.24E+02	1.21E-01	3.69E+01	6.95E+01	1.72E+02	9.55E-01	3.57E+02	1.95E-01
BRSD-6 (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-1000E (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-0N-750E (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-0N-500E (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250S-500E (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-0N-250E (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250S-250E (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSD-7 (6-12")	8.57E-01	NA	NA	NA	NA	8.57E-01	2.32E+00	2.16E+04	1.85E+04	NA	NA	NA	NA	7.03E-02	9.32E+03	6.55E+02	1.21E-01	3.69E+01	6.29E+01	1.72E+02	9.55E-01	3.57E+02	1.76E-01
BRSD-8 (6-12")	8.57E-01	NA	NA	NA	NA	8.57E-01	2.32E+00	3.97E+04	3.40E+04	NA	NA	NA	NA	7.03E-02	1.71E+04	1.20E+03	1.21E-01	3.69E+01	1.15E+02	1.72E+02	9.55E-01	3.57E+02	3.23E-01
UM-500S-500E (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSD-9 (6-12")	8.57E-01	NA	NA	NA	NA	8.57E-01	2.32E+00	3.06E+04	2.63E+04	NA	NA	NA	NA	7.03E-02	1.32E+04	9.28E+02	1.21E-01	3.69E+01	8.91E+01	1.72E+02	9.55E-01	3.57E+02	2.49E-01
BRSD-10 (6-12")	8.57E-01	NA	NA	NA	NA	8.57E-01	2.32E+00	2.69E+04	2.31E+04	NA	NA	NA	NA	7.03E-02	1.16E+04	8.15E+02	1.21E-01	3.69E+01	7.83E+01	1.72E+02	9.55E-01	3.57E+02	2.19E-01
BRSD-11 (6-12")	8.57E-01	NA	NA	NA	NA	8.57E-01	2.32E+00	3.65E+04	3.12E+04	NA	NA	NA	NA	7.03E-02	1.57E+04	1.10E+03	1.21E-01	3.69E+01	1.06E+02	1.72E+02	9.55E-01	3.57E+02	2.97E-01
Middle Marsh (0-2")																						**Maximum HQ (Western Upper Marsh, 6-12")**	**3.23E-01**
MMSD-201 (0-2")	8.57E-01	NA	NA	NA	NA	8.57E-01	2.32E+00	2.83E+04	2.43E+04	NA	NA	NA	NA	7.03E-02	1.22E+04	8.57E+02	1.21E-01	3.69E+01	8.23E+01	1.72E+02	9.55E-01	3.57E+02	2.31E-01
MMSD-202 (0-2")	8.57E-01	NA	NA	NA	NA	8.57E-01	2.32E+00	2.74E+04	2.35E+04	NA	NA	NA	NA	7.03E-02	1.18E+04	8.29E+02	1.21E-01	3.69E+01	7.96E+01	1.72E+02	9.55E-01	3.57E+02	2.23E-01
Middle Marsh (2-6")																						**Maximum HQ (Middle Marsh, 0-2")**	**2.31E-01**
MMSD-201 (2-6")	8.57E-01	NA	NA	NA	NA	8.57E-01	2.32E+00	2.88E+04	2.47E+04	NA	NA	NA	NA	7.03E-02	1.24E+04	8.71E+02	1.21E-01	3.69E+01	8.37E+01	1.72E+02	9.55E-01	3.57E+02	2.34E-01
MMSD-202 (2-6")	8.57E-01	NA	NA	NA	NA	8.57E-01	2.32E+00	2.58E+04	2.21E+04	NA	NA	NA	NA	7.03E-02	1.11E+04	7.80E+02	1.21E-01	3.69E+01	7.49E+01	1.72E+02	9.55E-01	3.57E+02	2.10E-01
Middle Marsh (6-12")																						**Maximum HQ (Middle Marsh, 2-6")**	**2.34E-01**
MMSD-201 (6-12")	8.57E-01	NA	NA	NA	NA	8.57E-01	2.32E+00	2.95E+04	2.53E+04	NA	NA	NA	NA	7.03E-02	1.27E+04	8.93E+02	1.21E-01	3.69E+01	8.57E+01	1.72E+02	9.55E-01	3.57E+02	2.40E-01
MMSD-202 (6-12")	8.57E-01	NA	NA	NA	NA	8.57E-01	2.32E+00	2.81E+04	2.41E+04	NA	NA	NA	NA	7.03E-02	1.21E+04	8.50E+02	1.21E-01	3.69E+01	8.17E+01	1.72E+02	9.55E-01	3.57E+02	2.29E-01
Lower Marsh (0-2")																						**Maximum HQ (Middle Marsh, 6-12")**	**2.40E-01**
LMSD-201 (0-2")	8.57E-01	NA	NA	NA	NA	8.57E-01	2.32E+00	3.62E+04	3.10E+04	NA	NA	NA	NA	7.03E-02	1.56E+04	1.10E+03	1.21E-01	3.69E+01	1.05E+02	1.72E+02	9.55E-01	3.57E+02	2.95E-01
LMSD-202 (0-2")	8.57E-01	NA	NA	NA	NA	8.57E-01	2.32E+00	2.83E+04	2.43E+04	NA	NA	NA	NA	7.03E-02	1.22E+04	8.57E+02	1.21E-01	3.69E+01	8.23E+01	1.72E+02	9.55E-01	3.57E+02	2.31E-01
LMSD-203 (0-2")	8.57E-01	NA	NA	NA	NA	8.57E-01	2.32E+00	4.90E+04	4.20E+04	NA	NA	NA	NA	7.03E-02	2.11E+04	1.48E+03	1.21E-01	3.69E+01	1.42E+02	1.72E+02	9.55E-01	3.57E+02	3.99E-01
LMSD-204 (0-2")	8.57E-01	NA	NA	NA	NA	8.57E-01	2.32E+00	3.78E+04	3.24E+04	NA	NA	NA	NA	7.03E-02	1.63E+04	1.15E+03	1.21E-01	3.69E+01	1.10E+02	1.72E+02	9.55E-01	3.57E+02	3.08E-01
Lower Marsh (2-6")																						**Maximum HQ (Lower Marsh, 0-2")**	**3.99E-01**
LMSD-201 (2-6")	8.57E-01	NA	NA	NA	NA	8.57E-01	2.32E+00	3.46E+04	2.97E+04	NA	NA	NA	NA	7.03E-02	1.49E+04	1.05E+03	1.21E-01	3.69E+01	1.01E+02	1.72E+02	9.55E-01	3.57E+02	2.82E-01
LMSD-202 (2-6")	8.57E-01	NA	NA	NA	NA	8.57E-01	2.32E+00	3.51E+04	3.00E+04	NA	NA	NA	NA	7.03E-02	1.51E+04	1.06E+03	1.21E-01	3.69E+01	1.02E+02	1.72E+02	9.55E-01	3.57E+02	2.85E-01
LMSD-203 (2-6")	8.57E-01	NA	NA	NA	NA	8.57E-01	2.32E+00	4.74E+04	4.06E+04	NA	NA	NA	NA	7.03E-02	2.04E+04	1.43E+03	1.21E-01	3.69E+01	1.38E+02	1.72E+02	9.55E-01	3.57E+02	3.85E-01
LMSD-204 (2-6")	8.57E-01	NA	NA	NA	NA	8.57E-01	2.32E+00	3.88E+04	3.32E+04	NA	NA	NA	NA	7.03E-02	1.67E+04	1.17E+03	1.21E-01	3.69E+01	1.13E+02	1.72E+02	9.55E-01	3.57E+02	3.16E-01
Lower Marsh (6-12")																						**Maximum HQ (Lower Marsh, 2-6")**	**3.85E-01**
LMSD-201 (6-12")	8.57E-01	NA	NA	NA	NA	8.57E-01	2.32E+00	3.65E+04	3.12E+04	NA	NA	NA	NA	7.03E-02	1.57E+04	1.10E+03	1.21E-01	3.69E+01	1.06E+02	1.72E+02	9.55E-01	3.57E+02	2.97E-01
LMSD-202 (6-12")	8.57E-01	NA	NA	NA	NA	8.57E-01	2.32E+00	3.60E+04	3.08E+04	NA	NA	NA	NA	7.03E-02	1.55E+04	1.09E+03	1.21E-01	3.69E+01	1.05E+02	1.72E+02	9.55E-01	3.57E+02	2.93E-01
LMSD-203 (6-12")	8.57E-01	NA	NA	NA	NA	8.57E-01	2.32E+00	4.62E+04	3.96E+04	NA	NA	NA	NA	7.03E-02	1.99E+04	1.40E+03	1.21E-01	3.69E+01	1.34E+02	1.72E+02	9.55E-01	3.57E+02	3.76E-01
LMSD-204 (6-12")	8.57E-01	NA	NA	NA	NA	8.57E-01	2.32E+00	3.65E+04	3.12E+04	NA	NA	NA	NA	7.03E-02	1.57E+04	1.10E+03	1.21E-01	3.69E+01	1.06E+02	1.72E+02	9.55E-01	3.57E+02	2.97E-01
																						Maximum HQ (Lower Marsh, 6-12")	**3.76E-01**

TABLE C-12AB: ALUMINUM DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 12 - MARSH, WETLAND RECEPTORS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 118.73

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Great Blue Heron (Carnivorous Birds)																							
Reference Sites																							
BRSD-5 (0-2")	1.32E-01	1.32E-01	5.46E+00	4.10E+04	5.39E+03	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	7.50E+03	2.66E+01	1.00E+00	2.39E+00	2.27E+03	1.72E+02	9.55E-01	2.07E+02	1.10E+01
BRSD-5 (2-6")	1.32E-01	1.32E-01	5.46E+00	4.39E+04	5.77E+03	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	8.03E+03	2.85E+01	1.00E+00	2.39E+00	2.43E+03	1.72E+02	9.55E-01	2.07E+02	1.17E+01
BRSD-5 (6-12")	1.32E-01	1.32E-01	5.46E+00	4.16E+04	5.48E+03	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	7.62E+03	2.71E+01	1.00E+00	2.39E+00	2.30E+03	1.72E+02	9.55E-01	2.07E+02	1.11E+01
PGBG-1 (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
PGBG-1 (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
PGBG-1 (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
PGBG-2 (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
PGBG-2 (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
PGBG-2 (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
Eastern Upper Marsh (0-2")																						**Minimum HQ (Reference Sites)**	**1.10E+01**
UM-1000S-3500E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSD-15 (0-2")	1.32E-01	1.32E-01	1.10E+00	1.03E+04	1.36E+03	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	9.34E+03	3.32E+01	1.00E+00	2.39E+00	5.81E+02	1.72E+02	9.55E-01	2.07E+02	2.81E+00
BRSD-4 (0-2")	1.32E-01	1.32E-01	1.10E+00	1.84E+04	2.43E+03	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.67E+04	5.93E+01	1.00E+00	2.39E+00	1.04E+03	1.72E+02	9.55E-01	2.07E+02	5.03E+00
UM-750S-3500E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSD-16 (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-750S-3000E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSD-3 (0-2")	1.32E-01	1.32E-01	1.10E+00	9.08E+03	1.19E+03	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	8.22E+03	2.92E+01	1.00E+00	2.39E+00	5.12E+02	1.72E+02	9.55E-01	2.07E+02	2.48E+00
UM-500S-3250E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-500S-3000E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-500S-2750E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSD-25 (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-250S-3000E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250S-3250E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSD-24 (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-250S-2750E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250S-2500E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-0N-2500E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-0N-250E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSD-2 (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-500N-2500E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250N-2500E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250N-2250E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
Western Upper Marsh (0-2")																						**Maximum HQ (Eastern Upper Marsh, 0-2")**	**5.03E+00**
UM-500S-2500E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-0N-2000E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-500S-2000E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250N-1750E (0-2")	1.32E-01	1.32E-01	1.10E+00	1.19E+04	1.57E+03	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.08E+04	3.84E+01	1.00E+00	2.39E+00	6.72E+02	1.72E+02	9.55E-01	2.07E+02	3.25E+00
UM-0N-1500E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250S-1500E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250S-1250E (0-2")	1.32E-01	1.32E-01	1.10E+00	1.02E+04	1.34E+03	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	9.23E+03	3.28E+01	1.00E+00	2.39E+00	5.75E+02	1.72E+02	9.55E-01	2.07E+02	2.78E+00
BRSD-6 (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-1000E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-0N-750E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-0N-500E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250S-500E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250S-250E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSD-7 (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-8 (0-2")	1.32E-01	1.32E-01	1.10E+00	2.31E+04	3.03E+03	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	2.09E+04	7.42E+01	1.00E+00	2.39E+00	1.30E+03	1.72E+02	9.55E-01	2.07E+02	6.30E+00
UM-500S-500E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSD-9 (0-2")	1.32E-01	1.32E-01	1.10E+00	2.57E+04	3.38E+03	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	2.33E+04	8.27E+01	1.00E+00	2.39E+00	1.45E+03	1.72E+02	9.55E-01	2.07E+02	7.02E+00
BRSD-10 (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-11 (0-2")	1.32E-01	1.32E-01	1.10E+00	2.59E+04	3.41E+03	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	2.35E+04	8.35E+01	1.00E+00	2.39E+00	1.46E+03	1.72E+02	9.55E-01	2.07E+02	7.08E+00
Eastern Upper Marsh (2-6")																						**Maximum HQ (Western Upper Marsh, 0-2")**	**7.08E+00**
UM-1000S-3500E (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSD-15 (2-6")	1.32E-01	1.32E-01	1.10E+00	1.58E+04	2.08E+03	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.43E+04	5.08E+01	1.00E+00	2.39E+00	8.90E+02	1.72E+02	9.55E-01	2.07E+02	4.31E+00
BRSD-4 (2-6")	1.32E-01	1.32E-01	1.10E+00	1.94E+04	2.56E+03	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.76E+04	6.25E+01	1.00E+00	2.39E+00	1.10E+03	1.72E+02	9.55E-01	2.07E+02	5.30E+00

TABLE C-12AB: ALUMINUM DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 12 - MARSH, WETLAND RECEPTORS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **118.73**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Great Blue Heron (Carnivorous Birds)																							
UM-750S-3500E (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSD-16 (2-6")	1.32E-01	1.32E-01	1.10E+00	8.92E+03	1.17E+03	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	8.08E+03	2.87E+01	1.00E+00	2.39E+00	5.03E+02	1.72E+02	9.55E-01	2.07E+02	2.43E+00
UM-750S-3000E (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSD-3 (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-500S-3250E (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-500S-3000E (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-500S-2750E (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSD-25 (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-250S-3000E (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250S-3250E (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSD-24 (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-250S-2750E (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-0N-2500E (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSD-2 (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-500N-2500E (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250N-2500E (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250N-2250E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
Western Upper Marsh (2-6")																						**Maximum HQ (Eastern Upper Marsh, 2-6")**	**5.30E+00**
UM-500S-2500E (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-0N-2000E (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-500S-2000E (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250N-1750E (2-6")	1.32E-01	1.32E-01	1.10E+00	1.05E+04	1.38E+03	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	9.52E+03	3.38E+01	1.00E+00	2.39E+00	5.93E+02	1.72E+02	9.55E-01	2.07E+02	2.87E+00
UM-0N-1500E (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250S-1500E (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250S-1250E (2-6")	1.32E-01	1.32E-01	1.10E+00	1.17E+04	1.54E+03	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.06E+04	3.76E+01	1.00E+00	2.39E+00	6.60E+02	1.72E+02	9.55E-01	2.07E+02	3.19E+00
BRSD-6 (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-1000E (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-0N-750E (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-0N-500E (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250S-500E (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-0N-250E (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250S-250E (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSD-7 (2-6")	1.32E-01	1.32E-01	1.10E+00	8.63E+03	1.14E+03	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	7.82E+03	2.78E+01	1.00E+00	2.39E+00	4.87E+02	1.72E+02	9.55E-01	2.07E+02	2.36E+00
BRSD-8 (2-6")	1.32E-01	1.32E-01	1.10E+00	1.80E+04	2.37E+03	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.63E+04	5.79E+01	1.00E+00	2.39E+00	1.01E+03	1.72E+02	9.55E-01	2.07E+02	4.91E+00
UM-500S-500E (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSD-9 (2-6")	1.32E-01	1.32E-01	1.10E+00	1.34E+04	1.76E+03	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.21E+04	4.30E+01	1.00E+00	2.39E+00	7.53E+02	1.72E+02	9.55E-01	2.07E+02	3.64E+00
BRSD-10 (2-6")	1.32E-01	1.32E-01	1.10E+00	9.27E+03	1.22E+03	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	8.40E+03	2.98E+01	1.00E+00	2.39E+00	5.23E+02	1.72E+02	9.55E-01	2.07E+02	2.53E+00
BRSD-11 (2-6")	1.32E-01	1.32E-01	1.10E+00	1.69E+04	2.22E+03	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.53E+04	5.43E+01	1.00E+00	2.39E+00	9.52E+02	1.72E+02	9.55E-01	2.07E+02	4.61E+00
Eastern Upper Marsh (6-12")																						**Maximum HQ (Western Upper Marsh, 2-6")**	**4.91E+00**
UM-1000S-3500E (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSD-15 (6-12")	1.32E-01	1.32E-01	1.10E+00	1.81E+04	2.38E+03	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.64E+04	5.82E+01	1.00E+00	2.39E+00	1.02E+03	1.72E+02	9.55E-01	2.07E+02	4.94E+00
BRSD-4 (6-12")	1.32E-01	1.32E-01	1.10E+00	1.30E+04	1.71E+03	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.18E+04	4.19E+01	1.00E+00	2.39E+00	7.34E+02	1.72E+02	9.55E-01	2.07E+02	3.55E+00
UM-750S-3500E (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSD-16 (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-750S-3000E (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSD-3 (6-12")	1.32E-01	1.32E-01	1.10E+00	8.55E+03	1.12E+03	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	7.74E+03	2.75E+01	1.00E+00	2.39E+00	4.82E+02	1.72E+02	9.55E-01	2.07E+02	2.33E+00
UM-500S-3250E (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-500S-3000E (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-500S-2750E (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSD-25 (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-250S-3000E (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250S-3250E (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSD-24 (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-250S-2750E (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250S-2500E (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSD-2 (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-500N-2500E (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE

TABLE C-12AB: ALUMINUM DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 12 - MARSH, WETLAND RECEPTORS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 118.73

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Great Blue Heron (Carnivorous Birds)																							
UM-250N-2500E (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250N-2250E (6-12")	1.32E-01	1.32E-01	1.10E+00	9.02E+03	1.19E+03	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	8.17E+03	2.90E+01	1.00E+00	2.39E+00	5.09E+02	1.72E+02	9.55E-01	2.07E+02	2.46E+00
Western Upper Marsh (6-12")																						**Maximum HQ (Eastern Upper Marsh, 6-12")**	**4.94E+00**
UM-500S-2500E (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-0N-2000E (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-500S-2000E (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250N-1750E (6-12")	1.32E-01	1.32E-01	1.10E+00	1.21E+04	1.60E+03	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.10E+04	3.91E+01	1.00E+00	2.39E+00	6.85E+02	1.72E+02	9.55E-01	2.07E+02	3.31E+00
UM-0N-1500E (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250S-1500E (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250S-1250E (6-12")	1.32E-01	1.32E-01	1.10E+00	1.14E+04	1.50E+03	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.03E+04	3.66E+01	1.00E+00	2.39E+00	6.41E+02	1.72E+02	9.55E-01	2.07E+02	3.10E+00
BRSD-6 (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-1000E (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-0N-750E (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-0N-500E (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250S-500E (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-0N-250E (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250S-250E (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSD-7 (6-12")	1.32E-01	1.32E-01	1.10E+00	1.03E+04	1.35E+03	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	9.32E+03	3.31E+01	1.00E+00	2.39E+00	5.80E+02	1.72E+02	9.55E-01	2.07E+02	2.81E+00
BRSD-8 (6-12")	1.32E-01	1.32E-01	1.10E+00	1.89E+04	2.48E+03	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.71E+04	6.07E+01	1.00E+00	2.39E+00	1.06E+03	1.72E+02	9.55E-01	2.07E+02	5.15E+00
UM-500S-500E (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSD-9 (6-12")	1.32E-01	1.32E-01	1.10E+00	1.46E+04	1.92E+03	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.32E+04	4.69E+01	1.00E+00	2.39E+00	8.22E+02	1.72E+02	9.55E-01	2.07E+02	3.98E+00
BRSD-10 (6-12")	1.32E-01	1.32E-01	1.10E+00	1.28E+04	1.68E+03	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.16E+04	4.12E+01	1.00E+00	2.39E+00	7.22E+02	1.72E+02	9.55E-01	2.07E+02	3.49E+00
BRSD-11 (6-12")	1.32E-01	1.32E-01	1.10E+00	1.73E+04	2.28E+03	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.57E+04	5.58E+01	1.00E+00	2.39E+00	9.77E+02	1.72E+02	9.55E-01	2.07E+02	4.73E+00
Middle Marsh (0-2")																						**Maximum HQ (Western Upper Marsh, 6-12")**	**5.15E+00**
MMSD-201 (0-2")	1.32E-01	1.32E-01	1.10E+00	1.35E+04	1.77E+03	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.22E+04	4.33E+01	1.00E+00	2.39E+00	7.59E+02	1.72E+02	9.55E-01	2.07E+02	3.67E+00
MMSD-202 (0-2")	1.32E-01	1.32E-01	1.10E+00	1.30E+04	1.71E+03	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.18E+04	4.19E+01	1.00E+00	2.39E+00	7.34E+02	1.72E+02	9.55E-01	2.07E+02	3.55E+00
Middle Marsh (2-6")																						**Maximum HQ (Middle Marsh, 0-2")**	**3.67E+00**
MMSD-201 (2-6")	1.32E-01	1.32E-01	1.10E+00	1.37E+04	1.80E+03	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.24E+04	4.40E+01	1.00E+00	2.39E+00	7.72E+02	1.72E+02	9.55E-01	2.07E+02	3.74E+00
MMSD-202 (2-6")	1.32E-01	1.32E-01	1.10E+00	1.23E+04	1.61E+03	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.11E+04	3.94E+01	1.00E+00	2.39E+00	6.91E+02	1.72E+02	9.55E-01	2.07E+02	3.34E+00
Middle Marsh (6-12")																						**Maximum HQ (Middle Marsh, 2-6")**	**3.74E+00**
MMSD-201 (6-12")	1.32E-01	1.32E-01	1.10E+00	1.40E+04	1.84E+03	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.27E+04	4.51E+01	1.00E+00	2.39E+00	7.91E+02	1.72E+02	9.55E-01	2.07E+02	3.83E+00
MMSD-202 (6-12")	1.32E-01	1.32E-01	1.10E+00	1.34E+04	1.76E+03	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.21E+04	4.30E+01	1.00E+00	2.39E+00	7.53E+02	1.72E+02	9.55E-01	2.07E+02	3.64E+00
Lower Marsh (0-2")																						**Maximum HQ (Middle Marsh, 6-12")**	**3.83E+00**
LMSD-201 (0-2")	1.32E-01	1.32E-01	1.10E+00	1.72E+04	2.27E+03	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.56E+04	5.54E+01	1.00E+00	2.39E+00	9.71E+02	1.72E+02	9.55E-01	2.07E+02	4.70E+00
LMSD-202 (0-2")	1.32E-01	1.32E-01	1.10E+00	1.35E+04	1.77E+03	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.22E+04	4.33E+01	1.00E+00	2.39E+00	7.59E+02	1.72E+02	9.55E-01	2.07E+02	3.67E+00
LMSD-203 (0-2")	1.32E-01	1.32E-01	1.10E+00	2.33E+04	3.06E+03	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	2.11E+04	7.49E+01	1.00E+00	2.39E+00	1.31E+03	1.72E+02	9.55E-01	2.07E+02	6.36E+00
LMSD-204 (0-2")	1.32E-01	1.32E-01	1.10E+00	1.80E+04	2.37E+03	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.63E+04	5.79E+01	1.00E+00	2.39E+00	1.01E+03	1.72E+02	9.55E-01	2.07E+02	4.91E+00
Lower Marsh (2-6")																						**Maximum HQ (Lower Marsh, 0-2")**	**6.36E+00**
LMSD-201 (2-6")	1.32E-01	1.32E-01	1.10E+00	1.65E+04	2.16E+03	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.49E+04	5.29E+01	1.00E+00	2.39E+00	9.27E+02	1.72E+02	9.55E-01	2.07E+02	4.49E+00
LMSD-202 (2-6")	1.32E-01	1.32E-01	1.10E+00	1.67E+04	2.19E+03	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.51E+04	5.36E+01	1.00E+00	2.39E+00	9.40E+02	1.72E+02	9.55E-01	2.07E+02	4.55E+00
LMSD-203 (2-6")	1.32E-01	1.32E-01	1.10E+00	2.25E+04	2.96E+03	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	2.04E+04	7.24E+01	1.00E+00	2.39E+00	1.27E+03	1.72E+02	9.55E-01	2.07E+02	6.15E+00
LMSD-204 (2-6")	1.32E-01	1.32E-01	1.10E+00	1.84E+04	2.43E+03	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.67E+04	5.93E+01	1.00E+00	2.39E+00	1.04E+03	1.72E+02	9.55E-01	2.07E+02	5.03E+00
Lower Marsh (6-12")																						**Maximum HQ (Lower Marsh, 2-6")**	**6.15E+00**
LMSD-201 (6-12")	1.32E-01	1.32E-01	1.10E+00	1.73E+04	2.28E+03	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.57E+04	5.58E+01	1.00E+00	2.39E+00	9.77E+02	1.72E+02	9.55E-01	2.07E+02	4.73E+00
LMSD-202 (6-12")	1.32E-01	1.32E-01	1.10E+00	1.71E+04	2.25E+03	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.55E+04	5.50E+01	1.00E+00	2.39E+00	9.65E+02	1.72E+02	9.55E-01	2.07E+02	4.67E+00
LMSD-203 (6-12")	1.32E-01	1.32E-01	1.10E+00	2.20E+04	2.89E+03	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.99E+04	7.07E+01	1.00E+00	2.39E+00	1.24E+03	1.72E+02	9.55E-01	2.07E+02	5.99E+00
LMSD-204 (6-12")	1.32E-01	1.32E-01	1.10E+00	1.73E+04	2.28E+03	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.57E+04	5.58E+01	1.00E+00	2.39E+00	9.77E+02	1.72E+02	9.55E-01	2.07E+02	4.73E+00
																						Maximum HQ (Lower Marsh, 6-12")	**5.99E+00**
Mallard (Omnivorous Birds)																							
Reference Sites																							
BRSD-5 (0-2")	7.94E-02	NA	NA	NA	NA	5.00E-02	1.99E+00	1.49E+04	7.46E+02	2.94E-02	1.09E+01	8.19E+04	2.41E+03	2.62E-03	7.50E+03	1.96E+01	3.85E-01	1.14E+00	1.07E+03	1.72E+02	9.55E-01	1.78E+02	6.00E+00
BRSD-5 (2-6")	7.94E-02	NA	NA	NA	NA	5.00E-02	1.99E+00	1.60E+04	7.99E+02	2.94E-02	1.09E+01	8.77E+04	2.58E+03	2.62E-03	8.03E+03	2.10E+01	3.85E-01	1.14E+00	1.15E+03	1.72E+02	9.55E-01	1.78E+02	6.42E+00
BRSD-5 (6-12")	7.94E-02	NA	NA	NA	NA	5.00E-02	1.99E+00	1.52E+04	7.58E+02	2.94E-02	1.09E+01	8.33E+04	2.44E+03	2.62E-03	7.62E+03	2.00E+01	3.85E-01	1.14E+00	1.09E+03	1.72E+02	9.55E-01	1.78E+02	6.10E+00
PGBG-1 (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
PGBG-1 (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
PGBG-1 (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE

TABLE C-12AB: ALUMINUM DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 12 - MARSH, WETLAND RECEPTORS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 118.73

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Mallard (Omnivorous Birds)																							
PGBG-2 (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
PGBG-2 (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
PGBG-2 (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
Eastern Upper Marsh (0-2")																						**Minimum HQ (Reference Sites)**	**6.00E+00**
UM-1000S-3500E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSD-15 (0-2")	7.94E-02	NA	NA	NA	NA	5.00E-02	2.32E+00	2.17E+04	1.08E+03	2.94E-02	2.39E+01	2.23E+05	6.56E+03	2.62E-03	9.34E+03	2.45E+01	3.85E-01	1.14E+00	2.59E+03	1.72E+02	9.55E-01	1.78E+02	1.45E+01
BRSD-4 (0-2")	7.94E-02	NA	NA	NA	NA	5.00E-02	2.32E+00	3.88E+04	1.94E+03	2.94E-02	2.39E+01	3.99E+05	1.17E+04	2.62E-03	1.67E+04	4.37E+01	3.85E-01	1.14E+00	4.62E+03	1.72E+02	9.55E-01	1.78E+02	2.59E+01
UM-750S-3500E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSD-16 (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-750S-3000E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSD-3 (0-2")	7.94E-02	NA	NA	NA	NA	5.00E-02	2.32E+00	1.91E+04	9.54E+02	2.94E-02	2.39E+01	1.97E+05	5.77E+03	2.62E-03	8.22E+03	2.15E+01	3.85E-01	1.14E+00	2.28E+03	1.72E+02	9.55E-01	1.78E+02	1.28E+01
UM-500S-3250E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-500S-3000E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-500S-2750E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSD-25 (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-250S-3000E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250S-3250E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSD-24 (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-250S-2750E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250S-2500E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-0N-2500E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-0N-250E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSD-2 (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-500N-2500E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250N-2500E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250N-2250E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
Western Upper Marsh (0-2")																						**Maximum HQ (Eastern Upper Marsh, 0-2")**	**2.59E+01**
UM-500S-2500E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-0N-2000E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-500S-2000E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250N-1750E (0-2")	7.94E-02	NA	NA	NA	NA	5.00E-02	2.32E+00	2.51E+04	1.25E+03	2.94E-02	2.39E+01	2.58E+05	7.59E+03	2.62E-03	1.08E+04	2.83E+01	3.85E-01	1.14E+00	2.99E+03	1.72E+02	9.55E-01	1.78E+02	1.68E+01
UM-0N-1500E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250S-1500E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250S-1250E (0-2")	7.94E-02	NA	NA	NA	NA	5.00E-02	2.32E+00	2.14E+04	1.07E+03	2.94E-02	2.39E+01	2.21E+05	6.48E+03	2.62E-03	9.23E+03	2.42E+01	3.85E-01	1.14E+00	2.56E+03	1.72E+02	9.55E-01	1.78E+02	1.43E+01
BRSD-6 (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-1000E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-0N-750E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-0N-500E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250S-500E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250S-250E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSD-7 (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-8 (0-2")	7.94E-02	NA	NA	NA	NA	5.00E-02	2.15E+00	4.49E+04	2.24E+03	2.94E-02	1.78E+01	3.72E+05	1.09E+04	2.62E-03	2.09E+04	5.47E+01	3.85E-01	1.14E+00	4.46E+03	1.72E+02	9.55E-01	1.78E+02	2.50E+01
UM-500S-500E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSD-9 (0-2")	7.94E-02	NA	NA	NA	NA	5.00E-02	2.15E+00	5.01E+04	2.50E+03	2.94E-02	1.78E+01	4.14E+05	1.22E+04	2.62E-03	2.33E+04	6.10E+01	3.85E-01	1.14E+00	4.97E+03	1.72E+02	9.55E-01	1.78E+02	2.79E+01
BRSD-10 (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-11 (0-2")	7.94E-02	NA	NA	NA	NA	5.00E-02	2.15E+00	5.05E+04	2.52E+03	2.94E-02	1.78E+01	4.18E+05	1.23E+04	2.62E-03	2.35E+04	6.15E+01	3.85E-01	1.14E+00	5.01E+03	1.72E+02	9.55E-01	1.78E+02	2.81E+01
Eastern Upper Marsh (2-6")																						**Maximum HQ (Western Upper Marsh, 0-2")**	**2.81E+01**
UM-1000S-3500E (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSD-15 (2-6")	7.94E-02	NA	NA	NA	NA	5.00E-02	2.32E+00	3.32E+04	1.66E+03	2.94E-02	2.39E+01	3.42E+05	1.00E+04	2.62E-03	1.43E+04	3.74E+01	3.85E-01	1.14E+00	3.96E+03	1.72E+02	9.55E-01	1.78E+02	2.22E+01
BRSD-4 (2-6")	7.94E-02	NA	NA	NA	NA	5.00E-02	2.32E+00	4.09E+04	2.04E+03	2.94E-02	2.39E+01	4.21E+05	1.24E+04	2.62E-03	1.76E+04	4.61E+01	3.85E-01	1.14E+00	4.87E+03	1.72E+02	9.55E-01	1.78E+02	2.73E+01
UM-750S-3500E (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSD-16 (2-6")	7.94E-02	NA	NA	NA	NA	5.00E-02	2.32E+00	1.88E+04	9.38E+02	2.94E-02	2.39E+01	1.93E+05	5.67E+03	2.62E-03	8.08E+03	2.12E+01	3.85E-01	1.14E+00	2.24E+03	1.72E+02	9.55E-01	1.78E+02	1.25E+01
UM-750S-3000E (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSD-3 (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-500S-3250E (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-500S-3000E (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-500S-2750E (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSD-25 (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB

TABLE C-12AB: ALUMINUM DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 12 - MARSH, WETLAND RECEPTORS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 118.73

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Mallard (Omnivorous Birds)																							
UM-250S-3000E (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250S-3250E (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSD-24 (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-250S-2750E (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-0N-2500E (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSD-2 (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-500N-2500E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	NE	BB	BB	BB	BB	BB	BB	BB	BB
UM-250N-2500E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	NE	BB	BB	BB	BB	BB	BB	BB	BB
UM-250N-2250E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
Western Upper Marsh (2-6")																						**Maximum HQ (Eastern Upper Marsh, 2-6")**	**2.73E+01**
UM-500S-2500E (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-0N-2000E (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-500S-2000E (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250N-1750E (2-6")	7.94E-02	NA	NA	NA	NA	5.00E-02	2.32E+00	2.21E+04	1.11E+03	2.94E-02	2.39E+01	2.28E+05	6.69E+03	2.62E-03	9.52E+03	2.49E+01	3.85E-01	1.14E+00	2.64E+03	1.72E+02	9.55E-01	1.78E+02	1.48E+01
UM-0N-1500E (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250S-1500E (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250S-1250E (2-6")	7.94E-02	NA	NA	NA	NA	5.00E-02	2.32E+00	2.46E+04	1.23E+03	2.94E-02	2.39E+01	2.54E+05	7.44E+03	2.62E-03	1.06E+04	2.78E+01	3.85E-01	1.14E+00	2.94E+03	1.72E+02	9.55E-01	1.78E+02	1.65E+01
BRSD-6 (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-1000E (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-0N-750E (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-0N-500E (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250S-500E (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-0N-250E (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250S-250E (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSD-7 (2-6")	7.94E-02	NA	NA	NA	NA	5.00E-02	2.32E+00	1.82E+04	9.08E+02	2.94E-02	2.39E+01	1.87E+05	5.49E+03	2.62E-03	7.82E+03	2.05E+01	3.85E-01	1.14E+00	2.17E+03	1.72E+02	9.55E-01	1.78E+02	1.21E+01
BRSD-8 (2-6")	7.94E-02	NA	NA	NA	NA	5.00E-02	2.32E+00	3.78E+04	1.89E+03	2.94E-02	2.39E+01	3.90E+05	1.14E+04	2.62E-03	1.63E+04	4.27E+01	3.85E-01	1.14E+00	4.51E+03	1.72E+02	9.55E-01	1.78E+02	2.53E+01
UM-500S-500E (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSD-9 (2-6")	7.94E-02	NA	NA	NA	NA	5.00E-02	2.32E+00	2.81E+04	1.40E+03	2.94E-02	2.39E+01	2.89E+05	8.50E+03	2.62E-03	1.21E+04	3.17E+01	3.85E-01	1.14E+00	3.35E+03	1.72E+02	9.55E-01	1.78E+02	1.88E+01
BRSD-10 (2-6")	7.94E-02	NA	NA	NA	NA	5.00E-02	2.32E+00	1.95E+04	9.75E+02	2.94E-02	2.39E+01	2.01E+05	5.90E+03	2.62E-03	8.40E+03	2.20E+01	3.85E-01	1.14E+00	2.33E+03	1.72E+02	9.55E-01	1.78E+02	1.30E+01
BRSD-11 (2-6")	7.94E-02	NA	NA	NA	NA	5.00E-02	2.32E+00	3.55E+04	1.78E+03	2.94E-02	2.39E+01	3.66E+05	1.07E+04	2.62E-03	1.53E+04	4.01E+01	3.85E-01	1.14E+00	4.24E+03	1.72E+02	9.55E-01	1.78E+02	2.38E+01
Eastern Upper Marsh (6-12")																						**Maximum HQ (Western Upper Marsh, 2-6")**	**2.53E+01**
UM-1000S-3500E (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSD-15 (6-12")	7.94E-02	NA	NA	NA	NA	5.00E-02	2.32E+00	3.81E+04	1.90E+03	2.94E-02	2.39E+01	3.92E+05	1.15E+04	2.62E-03	1.64E+04	4.29E+01	3.85E-01	1.14E+00	4.54E+03	1.72E+02	9.55E-01	1.78E+02	2.55E+01
BRSD-4 (6-12")	7.94E-02	NA	NA	NA	NA	5.00E-02	2.32E+00	2.74E+04	1.37E+03	2.94E-02	2.39E+01	2.82E+05	8.29E+03	2.62E-03	1.18E+04	3.09E+01	3.85E-01	1.14E+00	3.27E+03	1.72E+02	9.55E-01	1.78E+02	1.83E+01
UM-750S-3500E (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSD-16 (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-750S-3000E (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSD-3 (6-12")	7.94E-02	NA	NA	NA	NA	5.00E-02	2.32E+00	1.80E+04	8.98E+02	2.94E-02	2.39E+01	1.85E+05	5.44E+03	2.62E-03	7.74E+03	2.03E+01	3.85E-01	1.14E+00	2.14E+03	1.72E+02	9.55E-01	1.78E+02	1.20E+01
UM-500S-3250E (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-500S-3000E (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-500S-2750E (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSD-25 (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-250S-3000E (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250S-3250E (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSD-24 (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-250S-2750E (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250S-2500E (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSD-2 (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-500N-2500E (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250N-2500E (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250N-2250E (6-12")	7.94E-02	NA	NA	NA	NA	5.00E-02	2.32E+00	1.90E+04	9.48E+02	2.94E-02	2.39E+01	1.95E+05	5.74E+03	2.62E-03	8.17E+03	2.14E+01	3.85E-01	1.14E+00	2.26E+03	1.72E+02	9.55E-01	1.78E+02	1.27E+01
Western Upper Marsh (6-12")																						**Maximum HQ (Eastern Upper Marsh, 6-12")**	**2.55E+01**
UM-500S-2500E (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-0N-2000E (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-500S-2000E (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250N-1750E (6-12")	7.94E-02	NA	NA	NA	NA	5.00E-02	2.32E+00	2.55E+04	1.28E+03	2.94E-02	2.39E+01	2.63E+05	7.73E+03	2.62E-03	1.10E+04	2.88E+01	3.85E-01	1.14E+00	3.05E+03	1.72E+02	9.55E-01	1.78E+02	1.71E+01
UM-0N-1500E (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250S-1500E (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE

TABLE C-12AB: ALUMINUM DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 12 - MARSH, WETLAND RECEPTORS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 118.73

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Mallard (Omnivorous Birds)																							
UM-250S-1250E (6-12")	7.94E-02	NA	NA	NA	NA	5.00E-02	2.32E+00	2.39E+04	1.20E+03	2.94E-02	2.39E+01	2.46E+05	7.23E+03	2.62E-03	1.03E+04	2.70E+01	3.85E-01	1.14E+00	2.85E+03	1.72E+02	9.55E-01	1.78E+02	1.60E+01
BRSD-6 (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-1000E (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-0N-750E (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-0N-500E (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250S-500E (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-0N-250E (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250S-250E (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSD-7 (6-12")	7.94E-02	NA	NA	NA	NA	5.00E-02	2.32E+00	2.16E+04	1.08E+03	2.94E-02	2.39E+01	2.23E+05	6.55E+03	2.62E-03	9.32E+03	2.44E+01	3.85E-01	1.14E+00	2.58E+03	1.72E+02	9.55E-01	1.78E+02	1.45E+01
BRSD-8 (6-12")	7.94E-02	NA	NA	NA	NA	5.00E-02	2.32E+00	3.97E+04	1.98E+03	2.94E-02	2.39E+01	4.09E+05	1.20E+04	2.62E-03	1.71E+04	4.48E+01	3.85E-01	1.14E+00	4.74E+03	1.72E+02	9.55E-01	1.78E+02	2.66E+01
UM-500S-500E (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSD-9 (6-12")	7.94E-02	NA	NA	NA	NA	5.00E-02	2.32E+00	3.06E+04	1.53E+03	2.94E-02	2.39E+01	3.16E+05	9.27E+03	2.62E-03	1.32E+04	3.46E+01	3.85E-01	1.14E+00	3.66E+03	1.72E+02	9.55E-01	1.78E+02	2.05E+01
BRSD-10 (6-12")	7.94E-02	NA	NA	NA	NA	5.00E-02	2.32E+00	2.69E+04	1.35E+03	2.94E-02	2.39E+01	2.77E+05	8.15E+03	2.62E-03	1.16E+04	3.04E+01	3.85E-01	1.14E+00	3.21E+03	1.72E+02	9.55E-01	1.78E+02	1.80E+01
BRSD-11 (6-12")	7.94E-02	NA	NA	NA	NA	5.00E-02	2.32E+00	3.65E+04	1.82E+03	2.94E-02	2.39E+01	3.76E+05	1.10E+04	2.62E-03	1.57E+04	4.11E+01	3.85E-01	1.14E+00	4.35E+03	1.72E+02	9.55E-01	1.78E+02	2.44E+01
Middle Marsh (0-2")																						**Maximum HQ (Western Upper Marsh, 6-12")**	**2.66E+01**
MMSD-201 (0-2")	7.94E-02	NA	NA	NA	NA	5.00E-02	2.32E+00	2.83E+04	1.42E+03	2.94E-02	2.39E+01	2.92E+05	8.57E+03	2.62E-03	1.22E+04	3.19E+01	3.85E-01	1.14E+00	3.38E+03	1.72E+02	9.55E-01	1.78E+02	1.89E+01
MMSD-202 (0-2")	7.94E-02	NA	NA	NA	NA	5.00E-02	2.32E+00	2.74E+04	1.37E+03	2.94E-02	2.39E+01	2.82E+05	8.29E+03	2.62E-03	1.18E+04	3.09E+01	3.85E-01	1.14E+00	3.27E+03	1.72E+02	9.55E-01	1.78E+02	1.83E+01
Middle Marsh (2-6")																						**Maximum HQ (Middle Marsh, 0-2")**	**1.89E+01**
MMSD-201 (2-6")	7.94E-02	NA	NA	NA	NA	5.00E-02	2.32E+00	2.88E+04	1.44E+03	2.94E-02	2.39E+01	2.97E+05	8.71E+03	2.62E-03	1.24E+04	3.25E+01	3.85E-01	1.14E+00	3.43E+03	1.72E+02	9.55E-01	1.78E+02	1.93E+01
MMSD-202 (2-6")	7.94E-02	NA	NA	NA	NA	5.00E-02	2.32E+00	2.58E+04	1.29E+03	2.94E-02	2.39E+01	2.66E+05	7.80E+03	2.62E-03	1.11E+04	2.91E+01	3.85E-01	1.14E+00	3.07E+03	1.72E+02	9.55E-01	1.78E+02	1.72E+01
Middle Marsh (6-12")																						**Maximum HQ (Middle Marsh, 2-6")**	**1.93E+01**
MMSD-201 (6-12")	7.94E-02	NA	NA	NA	NA	5.00E-02	2.32E+00	2.95E+04	1.47E+03	2.94E-02	2.39E+01	3.04E+05	8.92E+03	2.62E-03	1.27E+04	3.33E+01	3.85E-01	1.14E+00	3.52E+03	1.72E+02	9.55E-01	1.78E+02	1.97E+01
MMSD-202 (6-12")	7.94E-02	NA	NA	NA	NA	5.00E-02	2.32E+00	2.81E+04	1.40E+03	2.94E-02	2.39E+01	2.89E+05	8.50E+03	2.62E-03	1.21E+04	3.17E+01	3.85E-01	1.14E+00	3.35E+03	1.72E+02	9.55E-01	1.78E+02	1.88E+01
Lower Marsh (0-2")																						**Maximum HQ (Middle Marsh, 6-12")**	**1.97E+01**
LMSD-201 (0-2")	7.94E-02	NA	NA	NA	NA	5.00E-02	2.32E+00	3.62E+04	1.81E+03	2.94E-02	2.39E+01	3.73E+05	1.10E+04	2.62E-03	1.56E+04	4.09E+01	3.85E-01	1.14E+00	4.32E+03	1.72E+02	9.55E-01	1.78E+02	2.42E+01
LMSD-202 (0-2")	7.94E-02	NA	NA	NA	NA	5.00E-02	2.32E+00	2.83E+04	1.42E+03	2.94E-02	2.39E+01	2.92E+05	8.57E+03	2.62E-03	1.22E+04	3.19E+01	3.85E-01	1.14E+00	3.38E+03	1.72E+02	9.55E-01	1.78E+02	1.89E+01
LMSD-203 (0-2")	7.94E-02	NA	NA	NA	NA	5.00E-02	2.32E+00	4.90E+04	2.45E+03	2.94E-02	2.39E+01	5.05E+05	1.48E+04	2.62E-03	2.11E+04	5.53E+01	3.85E-01	1.14E+00	5.84E+03	1.72E+02	9.55E-01	1.78E+02	3.28E+01
LMSD-204 (0-2")	7.94E-02	NA	NA	NA	NA	5.00E-02	2.32E+00	3.78E+04	1.89E+03	2.94E-02	2.39E+01	3.90E+05	1.14E+04	2.62E-03	1.63E+04	4.27E+01	3.85E-01	1.14E+00	4.51E+03	1.72E+02	9.55E-01	1.78E+02	2.53E+01
Lower Marsh (2-6")																						**Maximum HQ (Lower Marsh, 0-2")**	**3.28E+01**
LMSD-201 (2-6")	7.94E-02	NA	NA	NA	NA	5.00E-02	2.32E+00	3.46E+04	1.73E+03	2.94E-02	2.39E+01	3.56E+05	1.05E+04	2.62E-03	1.49E+04	3.90E+01	3.85E-01	1.14E+00	4.13E+03	1.72E+02	9.55E-01	1.78E+02	2.31E+01
LMSD-202 (2-6")	7.94E-02	NA	NA	NA	NA	5.00E-02	2.32E+00	3.51E+04	1.75E+03	2.94E-02	2.39E+01	3.61E+05	1.06E+04	2.62E-03	1.51E+04	3.95E+01	3.85E-01	1.14E+00	4.18E+03	1.72E+02	9.55E-01	1.78E+02	2.35E+01
LMSD-203 (2-6")	7.94E-02	NA	NA	NA	NA	5.00E-02	2.32E+00	4.74E+04	2.37E+03	2.94E-02	2.39E+01	4.88E+05	1.43E+04	2.62E-03	2.04E+04	5.34E+01	3.85E-01	1.14E+00	5.65E+03	1.72E+02	9.55E-01	1.78E+02	3.17E+01
LMSD-204 (2-6")	7.94E-02	NA	NA	NA	NA	5.00E-02	2.32E+00	3.88E+04	1.94E+03	2.94E-02	2.39E+01	3.99E+05	1.17E+04	2.62E-03	1.67E+04	4.37E+01	3.85E-01	1.14E+00	4.62E+03	1.72E+02	9.55E-01	1.78E+02	2.59E+01
Lower Marsh (6-12")																						**Maximum HQ (Lower Marsh, 2-6")**	**3.17E+01**
LMSD-201 (6-12")	7.94E-02	NA	NA	NA	NA	5.00E-02	2.32E+00	3.65E+04	1.82E+03	2.94E-02	2.39E+01	3.76E+05	1.10E+04	2.62E-03	1.57E+04	4.11E+01	3.85E-01	1.14E+00	4.35E+03	1.72E+02	9.55E-01	1.78E+02	2.44E+01
LMSD-202 (6-12")	7.94E-02	NA	NA	NA	NA	5.00E-02	2.32E+00	3.60E+04	1.80E+03	2.94E-02	2.39E+01	3.71E+05	1.09E+04	2.62E-03	1.55E+04	4.06E+01	3.85E-01	1.14E+00	4.29E+03	1.72E+02	9.55E-01	1.78E+02	2.41E+01
LMSD-203 (6-12")	7.94E-02	NA	NA	NA	NA	5.00E-02	2.32E+00	4.62E+04	2.31E+03	2.94E-02	2.39E+01	4.76E+05	1.40E+04	2.62E-03	1.99E+04	5.21E+01	3.85E-01	1.14E+00	5.51E+03	1.72E+02	9.55E-01	1.78E+02	3.09E+01
LMSD-204 (6-12")	7.94E-02	NA	NA	NA	NA	5.00E-02	2.32E+00	3.65E+04	1.82E+03	2.94E-02	2.39E+01	3.76E+05	1.10E+04	2.62E-03	1.57E+04	4.11E+01	3.85E-01	1.14E+00	4.35E+03	1.72E+02	9.55E-01	1.78E+02	2.44E+01
																						Maximum HQ (Lower Marsh, 6-12")	**3.09E+01**
Muskrat (Herbivorous Mammals)																							
Reference Sites																							
BRSD-5 (0-2")	6.27E-02	NA	NA	NA	NA	6.27E-02	1.99E+00	1.49E+04	9.36E+02	NA	NA	NA	NA	1.51E-03	7.50E+03	1.13E+01	1.00E+00	8.73E-01	1.08E+03	4.11E+02	1.75E-01	3.74E+02	2.90E+00
BRSD-5 (2-6")	6.27E-02	NA	NA	NA	NA	6.27E-02	1.99E+00	1.60E+04	1.00E+03	NA	NA	NA	NA	1.51E-03	8.03E+03	1.21E+01	1.00E+00	8.73E-01	1.16E+03	4.11E+02	1.75E-01	3.74E+02	3.11E+00
BRSD-5 (6-12")	6.27E-02	NA	NA	NA	NA	6.27E-02	1.99E+00	1.52E+04	9.51E+02	NA	NA	NA	NA	1.51E-03	7.62E+03	1.15E+01	1.00E+00	8.73E-01	1.10E+03	4.11E+02	1.75E-01	3.74E+02	2.95E+00
PGBG-1 (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
PGBG-1 (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
PGBG-1 (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
PGBG-2 (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
PGBG-2 (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
PGBG-2 (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
Eastern Upper Marsh (0-2")																						**Minimum HQ (Reference Sites)**	**2.90E+00**
UM-1000S-3500E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSD-15 (0-2")	6.27E-02	NA	NA	NA	NA	6.27E-02	2.32E+00	2.17E+04	1.36E+03	NA	NA	NA	NA	1.51E-03	9.34E+03	1.41E+01	1.00E+00	8.73E-01	1.57E+03	4.11E+02	1.75E-01	3.74E+02	4.21E+00
BRSD-4 (0-2")	6.27E-02	NA	NA	NA	NA	6.27E-02	2.32E+00	3.88E+04	2.43E+03	NA	NA	NA	NA	1.51E-03	1.67E+04	2.51E+01	1.00E+00	8.73E-01	2.82E+03	4.11E+02	1.75E-01	3.74E+02	7.53E+00
UM-750S-3500E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSD-16 (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-750S-3000E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSD-3 (0-2")	6.27E-02	NA	NA	NA	NA	6.27E-02	2.32E+00	1.91E+04	1.20E+03	NA	NA	NA	NA	1.51E-03	8.22E+03	1.24E+01	1.00E+00	8.73E-01	1.39E+03	4.11E+02	1.75E-01	3.74E+02	3.71E+00

TABLE C-12AB: ALUMINUM DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 12 - MARSH, WETLAND RECEPTORS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **118.73**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Muskrat (Herbivorous Mammals)																							
UM-500S-3250E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-500S-3000E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-500S-2750E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSD-25 (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-250S-3000E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250S-3250E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSD-24 (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-250S-2750E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250S-2500E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-0N-2500E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-0N-250E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSD-2 (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-500N-2500E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250N-2500E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250N-2250E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
Western Upper Marsh (0-2")																						**Maximum HQ (Eastern Upper Marsh, 0-2")**	**7.53E+00**
UM-500S-2500E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-0N-2000E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-500S-2000E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250N-1750E (0-2")	6.27E-02	NA	NA	NA	NA	6.27E-02	2.32E+00	2.51E+04	1.57E+03	NA	NA	NA	NA	1.51E-03	1.08E+04	1.63E+01	1.00E+00	8.73E-01	1.82E+03	4.11E+02	1.75E-01	3.74E+02	4.87E+00
UM-0N-1500E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250S-1500E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250S-1250E (0-2")	6.27E-02	NA	NA	NA	NA	6.27E-02	2.32E+00	2.14E+04	1.34E+03	NA	NA	NA	NA	1.51E-03	9.23E+03	1.39E+01	1.00E+00	8.73E-01	1.56E+03	4.11E+02	1.75E-01	3.74E+02	4.16E+00
BRSD-6 (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-1000E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-0N-750E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-0N-500E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250S-500E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250S-250E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSD-7 (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-8 (0-2")	6.27E-02	NA	NA	NA	NA	6.27E-02	2.15E+00	4.49E+04	2.82E+03	NA	NA	NA	NA	1.51E-03	2.09E+04	3.15E+01	1.00E+00	8.73E-01	3.26E+03	4.11E+02	1.75E-01	3.74E+02	8.73E+00
UM-500S-500E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSD-9 (0-2")	6.27E-02	NA	NA	NA	NA	6.27E-02	2.15E+00	5.01E+04	3.14E+03	NA	NA	NA	NA	1.51E-03	2.33E+04	3.51E+01	1.00E+00	8.73E-01	3.64E+03	4.11E+02	1.75E-01	3.74E+02	9.73E+00
BRSD-10 (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-11 (0-2")	6.27E-02	NA	NA	NA	NA	6.27E-02	2.15E+00	5.05E+04	3.17E+03	NA	NA	NA	NA	1.51E-03	2.35E+04	3.54E+01	1.00E+00	8.73E-01	3.67E+03	4.11E+02	1.75E-01	3.74E+02	9.82E+00
Eastern Upper Marsh (2-6")																						**Maximum HQ (Western Upper Marsh, 0-2")**	**9.82E+00**
UM-1000S-3500E (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSD-15 (2-6")	6.27E-02	NA	NA	NA	NA	6.27E-02	2.32E+00	3.32E+04	2.08E+03	NA	NA	NA	NA	1.51E-03	1.43E+04	2.15E+01	1.00E+00	8.73E-01	2.41E+03	4.11E+02	1.75E-01	3.74E+02	6.45E+00
BRSD-4 (2-6")	6.27E-02	NA	NA	NA	NA	6.27E-02	2.32E+00	4.09E+04	2.56E+03	NA	NA	NA	NA	1.51E-03	1.76E+04	2.65E+01	1.00E+00	8.73E-01	2.97E+03	4.11E+02	1.75E-01	3.74E+02	7.94E+00
UM-750S-3500E (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSD-16 (2-6")	6.27E-02	NA	NA	NA	NA	6.27E-02	2.32E+00	1.88E+04	1.18E+03	NA	NA	NA	NA	1.51E-03	8.08E+03	1.22E+01	1.00E+00	8.73E-01	1.36E+03	4.11E+02	1.75E-01	3.74E+02	3.65E+00
UM-750S-3000E (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSD-3 (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-500S-3250E (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-500S-3000E (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-500S-2750E (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSD-25 (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-250S-3000E (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250S-3250E (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSD-24 (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-250S-2750E (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-0N-2500E (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSD-2 (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-500N-2500E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	NE	BB	BB	BB	BB	BB	BB	BB	BB
UM-250N-2500E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	NE	BB	BB	BB	BB	BB	BB	BB	BB
UM-250N-2250E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB

TABLE C-12AB: ALUMINUM DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 12 - MARSH, WETLAND RECEPTORS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **118.73**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Muskrat (Herbivorous Mammals)																							
Western Upper Marsh (2-6")																						**Maximum HQ (Eastern Upper Marsh, 2-6")**	**7.94E+00**
UM-500S-2500E (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-0N-2000E (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-500S-2000E (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250N-1750E (2-6")	6.27E-02	NA	NA	NA	NA	6.27E-02	2.32E+00	2.21E+04	1.39E+03	NA	NA	NA	NA	1.51E-03	9.52E+03	1.43E+01	1.00E+00	8.73E-01	1.60E+03	4.11E+02	1.75E-01	3.74E+02	4.30E+00
UM-0N-1500E (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250S-1500E (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250S-1250E (2-6")	6.27E-02	NA	NA	NA	NA	6.27E-02	2.32E+00	2.46E+04	1.54E+03	NA	NA	NA	NA	1.51E-03	1.06E+04	1.60E+01	1.00E+00	8.73E-01	1.79E+03	4.11E+02	1.75E-01	3.74E+02	4.78E+00
BRSD-6 (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-1000E (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-0N-750E (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-0N-500E (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250S-500E (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-0N-250E (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250S-250E (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSD-7 (2-6")	6.27E-02	NA	NA	NA	NA	6.27E-02	2.32E+00	1.82E+04	1.14E+03	NA	NA	NA	NA	1.51E-03	7.82E+03	1.18E+01	1.00E+00	8.73E-01	1.32E+03	4.11E+02	1.75E-01	3.74E+02	3.53E+00
BRSD-8 (2-6")	6.27E-02	NA	NA	NA	NA	6.27E-02	2.32E+00	3.78E+04	2.37E+03	NA	NA	NA	NA	1.51E-03	1.63E+04	2.45E+01	1.00E+00	8.73E-01	2.75E+03	4.11E+02	1.75E-01	3.74E+02	7.35E+00
UM-500S-500E (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSD-9 (2-6")	6.27E-02	NA	NA	NA	NA	6.27E-02	2.32E+00	2.81E+04	1.76E+03	NA	NA	NA	NA	1.51E-03	1.21E+04	1.82E+01	1.00E+00	8.73E-01	2.04E+03	4.11E+02	1.75E-01	3.74E+02	5.46E+00
BRSD-10 (2-6")	6.27E-02	NA	NA	NA	NA	6.27E-02	2.32E+00	1.95E+04	1.22E+03	NA	NA	NA	NA	1.51E-03	8.40E+03	1.26E+01	1.00E+00	8.73E-01	1.42E+03	4.11E+02	1.75E-01	3.74E+02	3.79E+00
BRSD-11 (2-6")	6.27E-02	NA	NA	NA	NA	6.27E-02	2.32E+00	3.55E+04	2.23E+03	NA	NA	NA	NA	1.51E-03	1.53E+04	2.30E+01	1.00E+00	8.73E-01	2.58E+03	4.11E+02	1.75E-01	3.74E+02	6.90E+00
Eastern Upper Marsh (6-12")																						**Maximum HQ (Western Upper Marsh, 2-6")**	**7.35E+00**
UM-1000S-3500E (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSD-15 (6-12")	6.27E-02	NA	NA	NA	NA	6.27E-02	2.32E+00	3.81E+04	2.39E+03	NA	NA	NA	NA	1.51E-03	1.64E+04	2.47E+01	1.00E+00	8.73E-01	2.76E+03	4.11E+02	1.75E-01	3.74E+02	7.40E+00
BRSD-4 (6-12")	6.27E-02	NA	NA	NA	NA	6.27E-02	2.32E+00	2.74E+04	1.72E+03	NA	NA	NA	NA	1.51E-03	1.18E+04	1.78E+01	1.00E+00	8.73E-01	1.99E+03	4.11E+02	1.75E-01	3.74E+02	5.32E+00
UM-750S-3500E (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSD-16 (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-750S-3000E (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSD-3 (6-12")	6.27E-02	NA	NA	NA	NA	6.27E-02	2.32E+00	1.80E+04	1.13E+03	NA	NA	NA	NA	1.51E-03	7.74E+03	1.17E+01	1.00E+00	8.73E-01	1.30E+03	4.11E+02	1.75E-01	3.74E+02	3.49E+00
UM-500S-3250E (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-500S-3000E (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-500S-2750E (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSD-25 (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-250S-3000E (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250S-3250E (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSD-24 (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-250S-2750E (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250S-2500E (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSD-2 (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-500N-2500E (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250N-2500E (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250N-2250E (6-12")	6.27E-02	NA	NA	NA	NA	6.27E-02	2.32E+00	1.90E+04	1.19E+03	NA	NA	NA	NA	1.51E-03	8.17E+03	1.23E+01	1.00E+00	8.73E-01	1.38E+03	4.11E+02	1.75E-01	3.74E+02	3.69E+00
Western Upper Marsh (6-12")																						**Maximum HQ (Eastern Upper Marsh, 6-12")**	**7.40E+00**
UM-500S-2500E (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-0N-2000E (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-500S-2000E (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250N-1750E (6-12")	6.27E-02	NA	NA	NA	NA	6.27E-02	2.32E+00	2.55E+04	1.60E+03	NA	NA	NA	NA	1.51E-03	1.10E+04	1.66E+01	1.00E+00	8.73E-01	1.85E+03	4.11E+02	1.75E-01	3.74E+02	4.96E+00
UM-0N-1500E (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250S-1500E (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250S-1250E (6-12")	6.27E-02	NA	NA	NA	NA	6.27E-02	2.32E+00	2.39E+04	1.50E+03	NA	NA	NA	NA	1.51E-03	1.03E+04	1.55E+01	1.00E+00	8.73E-01	1.74E+03	4.11E+02	1.75E-01	3.74E+02	4.65E+00
BRSD-6 (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-1000E (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-0N-750E (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-0N-500E (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250S-500E (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-0N-250E (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250S-250E (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSD-7 (6-12")	6.27E-02	NA	NA	NA	NA	6.27E-02	2.32E+00	2.16E+04	1.36E+03	NA	NA	NA	NA	1.51E-03	9.32E+03	1.40E+01	1.00E+00	8.73E-01	1.57E+03	4.11E+02	1.75E-01	3.74E+02	4.21E+00

TABLE C-12AB: ALUMINUM DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 12 - MARSH, WETLAND RECEPTORS (Continued)
Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)
calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 118.73

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Muskrat (Herbivorous Mammals)																							
BRSD-8 (6-12")	6.27E-02	NA	NA	NA	NA	6.27E-02	2.32E+00	3.97E+04	2.49E+03	NA	NA	NA	NA	1.51E-03	1.71E+04	2.57E+01	1.00E+00	8.73E-01	2.88E+03	4.11E+02	1.75E-01	3.74E+02	7.72E+00
UM-500S-500E (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSD-9 (6-12")	6.27E-02	NA	NA	NA	NA	6.27E-02	2.32E+00	3.06E+04	1.92E+03	NA	NA	NA	NA	1.51E-03	1.32E+04	1.99E+01	1.00E+00	8.73E-01	2.23E+03	4.11E+02	1.75E-01	3.74E+02	5.96E+00
BRSD-10 (6-12")	6.27E-02	NA	NA	NA	NA	6.27E-02	2.32E+00	2.69E+04	1.69E+03	NA	NA	NA	NA	1.51E-03	1.16E+04	1.75E+01	1.00E+00	8.73E-01	1.96E+03	4.11E+02	1.75E-01	3.74E+02	5.23E+00
BRSD-11 (6-12")	6.27E-02	NA	NA	NA	NA	6.27E-02	2.32E+00	3.65E+04	2.29E+03	NA	NA	NA	NA	1.51E-03	1.57E+04	2.36E+01	1.00E+00	8.73E-01	2.65E+03	4.11E+02	1.75E-01	3.74E+02	7.08E+00
Middle Marsh (0-2")																						**Maximum HQ (Western Upper Marsh, 6-12")**	**7.72E+00**
MMSD-201 (0-2")	6.27E-02	NA	NA	NA	NA	6.27E-02	2.32E+00	2.83E+04	1.78E+03	NA	NA	NA	NA	1.51E-03	1.22E+04	1.84E+01	1.00E+00	8.73E-01	2.06E+03	4.11E+02	1.75E-01	3.74E+02	5.50E+00
MMSD-202 (0-2")	6.27E-02	NA	NA	NA	NA	6.27E-02	2.32E+00	2.74E+04	1.72E+03	NA	NA	NA	NA	1.51E-03	1.18E+04	1.78E+01	1.00E+00	8.73E-01	1.99E+03	4.11E+02	1.75E-01	3.74E+02	5.32E+00
Middle Marsh (2-6")																						**Maximum HQ (Middle Marsh, 0-2")**	**5.50E+00**
MMSD-201 (2-6")	6.27E-02	NA	NA	NA	NA	6.27E-02	2.32E+00	2.88E+04	1.81E+03	NA	NA	NA	NA	1.51E-03	1.24E+04	1.87E+01	1.00E+00	8.73E-01	2.09E+03	4.11E+02	1.75E-01	3.74E+02	5.59E+00
MMSD-202 (2-6")	6.27E-02	NA	NA	NA	NA	6.27E-02	2.32E+00	2.58E+04	1.62E+03	NA	NA	NA	NA	1.51E-03	1.11E+04	1.67E+01	1.00E+00	8.73E-01	1.87E+03	4.11E+02	1.75E-01	3.74E+02	5.01E+00
Middle Marsh (6-12")																						**Maximum HQ (Middle Marsh, 2-6")**	**5.59E+00**
MMSD-201 (6-12")	6.27E-02	NA	NA	NA	NA	6.27E-02	2.32E+00	2.95E+04	1.85E+03	NA	NA	NA	NA	1.51E-03	1.27E+04	1.91E+01	1.00E+00	8.73E-01	2.14E+03	4.11E+02	1.75E-01	3.74E+02	5.73E+00
MMSD-202 (6-12")	6.27E-02	NA	NA	NA	NA	6.27E-02	2.32E+00	2.81E+04	1.76E+03	NA	NA	NA	NA	1.51E-03	1.21E+04	1.82E+01	1.00E+00	8.73E-01	2.04E+03	4.11E+02	1.75E-01	3.74E+02	5.46E+00
Lower Marsh (0-2")																						**Maximum HQ (Middle Marsh, 6-12")**	**5.73E+00**
LMSD-201 (0-2")	6.27E-02	NA	NA	NA	NA	6.27E-02	2.32E+00	3.62E+04	2.27E+03	NA	NA	NA	NA	1.51E-03	1.56E+04	2.35E+01	1.00E+00	8.73E-01	2.63E+03	4.11E+02	1.75E-01	3.74E+02	7.04E+00
LMSD-202 (0-2")	6.27E-02	NA	NA	NA	NA	6.27E-02	2.32E+00	2.83E+04	1.78E+03	NA	NA	NA	NA	1.51E-03	1.22E+04	1.84E+01	1.00E+00	8.73E-01	2.06E+03	4.11E+02	1.75E-01	3.74E+02	5.50E+00
LMSD-203 (0-2")	6.27E-02	NA	NA	NA	NA	6.27E-02	2.32E+00	4.90E+04	3.07E+03	NA	NA	NA	NA	1.51E-03	2.11E+04	3.18E+01	1.00E+00	8.73E-01	3.56E+03	4.11E+02	1.75E-01	3.74E+02	9.52E+00
LMSD-204 (0-2")	6.27E-02	NA	NA	NA	NA	6.27E-02	2.32E+00	3.78E+04	2.37E+03	NA	NA	NA	NA	1.51E-03	1.63E+04	2.45E+01	1.00E+00	8.73E-01	2.75E+03	4.11E+02	1.75E-01	3.74E+02	7.35E+00
Lower Marsh (2-6")																						**Maximum HQ (Lower Marsh, 0-2")**	**9.52E+00**
LMSD-201 (2-6")	6.27E-02	NA	NA	NA	NA	6.27E-02	2.32E+00	3.46E+04	2.17E+03	NA	NA	NA	NA	1.51E-03	1.49E+04	2.24E+01	1.00E+00	8.73E-01	2.51E+03	4.11E+02	1.75E-01	3.74E+02	6.72E+00
LMSD-202 (2-6")	6.27E-02	NA	NA	NA	NA	6.27E-02	2.32E+00	3.51E+04	2.20E+03	NA	NA	NA	NA	1.51E-03	1.51E+04	2.27E+01	1.00E+00	8.73E-01	2.55E+03	4.11E+02	1.75E-01	3.74E+02	6.81E+00
LMSD-203 (2-6")	6.27E-02	NA	NA	NA	NA	6.27E-02	2.32E+00	4.74E+04	2.97E+03	NA	NA	NA	NA	1.51E-03	2.04E+04	3.07E+01	1.00E+00	8.73E-01	3.44E+03	4.11E+02	1.75E-01	3.74E+02	9.20E+00
LMSD-204 (2-6")	6.27E-02	NA	NA	NA	NA	6.27E-02	2.32E+00	3.88E+04	2.43E+03	NA	NA	NA	NA	1.51E-03	1.67E+04	2.51E+01	1.00E+00	8.73E-01	2.82E+03	4.11E+02	1.75E-01	3.74E+02	7.53E+00
Lower Marsh (6-12")																						**Maximum HQ (Lower Marsh, 2-6")**	**9.20E+00**
LMSD-201 (6-12")	6.27E-02	NA	NA	NA	NA	6.27E-02	2.32E+00	3.65E+04	2.29E+03	NA	NA	NA	NA	1.51E-03	1.57E+04	2.36E+01	1.00E+00	8.73E-01	2.65E+03	4.11E+02	1.75E-01	3.74E+02	7.08E+00
LMSD-202 (6-12")	6.27E-02	NA	NA	NA	NA	6.27E-02	2.32E+00	3.60E+04	2.26E+03	NA	NA	NA	NA	1.51E-03	1.55E+04	2.33E+01	1.00E+00	8.73E-01	2.61E+03	4.11E+02	1.75E-01	3.74E+02	6.99E+00
LMSD-203 (6-12")	6.27E-02	NA	NA	NA	NA	6.27E-02	2.32E+00	4.62E+04	2.90E+03	NA	NA	NA	NA	1.51E-03	1.99E+04	3.00E+01	1.00E+00	8.73E-01	3.35E+03	4.11E+02	1.75E-01	3.74E+02	8.98E+00
LMSD-204 (6-12")	6.27E-02	NA	NA	NA	NA	6.27E-02	2.32E+00	3.65E+04	2.29E+03	NA	NA	NA	NA	1.51E-03	1.57E+04	2.36E+01	1.00E+00	8.73E-01	2.65E+03	4.11E+02	1.75E-01	3.74E+02	7.08E+00
																						Maximum HQ (Lower Marsh, 6-12")	**8.98E+00**
Mink (Carnivorous Mammals)																							
Reference Sites																							
BRSD-5 (0-2")	4.25E-02	4.25E-02	5.46E+00	4.10E+04	1.74E+03	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	7.50E+03	3.19E+00	1.00E+00	8.52E-01	2.05E+03	4.11E+02	1.75E-01	3.74E+02	5.48E+00
BRSD-5 (2-6")	4.25E-02	4.25E-02	5.46E+00	4.39E+04	1.87E+03	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	8.03E+03	3.42E+00	1.00E+00	8.52E-01	2.19E+03	4.11E+02	1.75E-01	3.74E+02	5.86E+00
BRSD-5 (6-12")	4.25E-02	4.25E-02	5.46E+00	4.16E+04	1.77E+03	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	7.62E+03	3.24E+00	1.00E+00	8.52E-01	2.08E+03	4.11E+02	1.75E-01	3.74E+02	5.56E+00
PGBG-1 (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
PGBG-1 (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
PGBG-1 (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
PGBG-2 (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
PGBG-2 (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
PGBG-2 (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
Eastern Upper Marsh (0-2")																						**Minimum HQ (Reference Sites)**	**5.48E+00**
UM-1000S-3500E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSD-15 (0-2")	4.25E-02	4.25E-02	1.10E+00	1.03E+04	4.39E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	9.34E+03	3.97E+00	1.00E+00	8.52E-01	5.19E+02	4.11E+02	1.75E-01	3.74E+02	1.39E+00
BRSD-4 (0-2")	4.25E-02	4.25E-02	1.10E+00	1.84E+04	7.84E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.67E+04	7.10E+00	1.00E+00	8.52E-01	9.29E+02	4.11E+02	1.75E-01	3.74E+02	2.48E+00
UM-750S-3500E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSD-16 (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-750S-3000E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSD-3 (0-2")	4.25E-02	4.25E-02	1.10E+00	9.08E+03	3.86E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	8.22E+03	3.50E+00	1.00E+00	8.52E-01	4.57E+02	4.11E+02	1.75E-01	3.74E+02	1.22E+00
UM-500S-3250E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-500S-3000E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-500S-2750E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSD-25 (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-250S-3000E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250S-3250E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSD-24 (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-250S-2750E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250S-2500E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE

TABLE C-12AB: ALUMINUM DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 12 - MARSH, WETLAND RECEPTORS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 118.73

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Mink (Carnivorous Mammals)																							
UM-0N-2500E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-0N-250E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSD-2 (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-500N-2500E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250N-2500E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250N-2250E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
Western Upper Marsh (0-2")																						**Maximum HQ (Eastern Upper Marsh, 0-2")**	**2.48E+00**
UM-500S-2500E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-0N-2000E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-500S-2000E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250N-1750E (0-2")	4.25E-02	4.25E-02	1.10E+00	1.19E+04	5.07E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.08E+04	4.59E+00	1.00E+00	8.52E-01	6.01E+02	4.11E+02	1.75E-01	3.74E+02	1.61E+00
UM-0N-1500E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250S-1500E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250S-1250E (0-2")	4.25E-02	4.25E-02	1.10E+00	1.02E+04	4.33E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	9.23E+03	3.93E+00	1.00E+00	8.52E-01	5.13E+02	4.11E+02	1.75E-01	3.74E+02	1.37E+00
BRSD-6 (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-1000E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-0N-750E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-0N-500E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250S-500E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250S-250E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSD-7 (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-8 (0-2")	4.25E-02	4.25E-02	1.10E+00	2.31E+04	9.82E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	2.09E+04	8.89E+00	1.00E+00	8.52E-01	1.16E+03	4.11E+02	1.75E-01	3.74E+02	3.11E+00
UM-500S-500E (0-2")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSD-9 (0-2")	4.25E-02	4.25E-02	1.10E+00	2.57E+04	1.09E+03	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	2.33E+04	9.91E+00	1.00E+00	8.52E-01	1.30E+03	4.11E+02	1.75E-01	3.74E+02	3.46E+00
BRSD-10 (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-11 (0-2")	4.25E-02	4.25E-02	1.10E+00	2.59E+04	1.10E+03	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	2.35E+04	1.00E+01	1.00E+00	8.52E-01	1.31E+03	4.11E+02	1.75E-01	3.74E+02	3.49E+00
Eastern Upper Marsh (2-6")																						**Maximum HQ (Western Upper Marsh, 0-2")**	**3.49E+00**
UM-1000S-3500E (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSD-15 (2-6")	4.25E-02	4.25E-02	1.10E+00	1.58E+04	6.72E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.43E+04	6.08E+00	1.00E+00	8.52E-01	7.95E+02	4.11E+02	1.75E-01	3.74E+02	2.13E+00
BRSD-4 (2-6")	4.25E-02	4.25E-02	1.10E+00	1.94E+04	8.27E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.76E+04	7.49E+00	1.00E+00	8.52E-01	9.79E+02	4.11E+02	1.75E-01	3.74E+02	2.62E+00
UM-750S-3500E (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSD-16 (2-6")	4.25E-02	4.25E-02	1.10E+00	8.92E+03	3.79E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	8.08E+03	3.44E+00	1.00E+00	8.52E-01	4.49E+02	4.11E+02	1.75E-01	3.74E+02	1.20E+00
UM-750S-3000E (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSD-3 (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-500S-3250E (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-500S-3000E (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-500S-2750E (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSD-25 (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-250S-3000E (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250S-3250E (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSD-24 (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-250S-2750E (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-0N-2500E (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSD-2 (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-500N-2500E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	NE	BB	BB	BB	BB	BB	BB	BB	BB
UM-250N-2500E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	NE	BB	BB	BB	BB	BB	BB	BB	BB
UM-250N-2250E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
Western Upper Marsh (2-6")																						**Maximum HQ (Eastern Upper Marsh, 2-6")**	**2.62E+00**
UM-500S-2500E (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-0N-2000E (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-500S-2000E (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250N-1750E (2-6")	4.25E-02	4.25E-02	1.10E+00	1.05E+04	4.47E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	9.52E+03	4.05E+00	1.00E+00	8.52E-01	5.29E+02	4.11E+02	1.75E-01	3.74E+02	1.41E+00
UM-0N-1500E (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250S-1500E (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250S-1250E (2-6")	4.25E-02	4.25E-02	1.10E+00	1.17E+04	4.98E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.06E+04	4.51E+00	1.00E+00	8.52E-01	5.89E+02	4.11E+02	1.75E-01	3.74E+02	1.58E+00
BRSD-6 (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-1000E (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-0N-750E (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE

TABLE C-12AB: ALUMINUM DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 12 - MARSH, WETLAND RECEPTORS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **118.73**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Mink (Carnivorous Mammals)																							
UM-0N-500E (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250S-500E (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-0N-250E (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250S-250E (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSD-7 (2-6")	4.25E-02	4.25E-02	1.10E+00	8.63E+03	3.67E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	7.82E+03	3.33E+00	1.00E+00	8.52E-01	4.35E+02	4.11E+02	1.75E-01	3.74E+02	1.16E+00
BRSD-8 (2-6")	4.25E-02	4.25E-02	1.10E+00	1.80E+04	7.66E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.63E+04	6.93E+00	1.00E+00	8.52E-01	9.06E+02	4.11E+02	1.75E-01	3.74E+02	2.42E+00
UM-500S-500E (2-6")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSD-9 (2-6")	4.25E-02	4.25E-02	1.10E+00	1.34E+04	5.68E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.21E+04	5.15E+00	1.00E+00	8.52E-01	6.73E+02	4.11E+02	1.75E-01	3.74E+02	1.80E+00
BRSD-10 (2-6")	4.25E-02	4.25E-02	1.10E+00	9.27E+03	3.94E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	8.40E+03	3.57E+00	1.00E+00	8.52E-01	4.67E+02	4.11E+02	1.75E-01	3.74E+02	1.25E+00
BRSD-11 (2-6")	4.25E-02	4.25E-02	1.10E+00	1.69E+04	7.19E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.53E+04	6.51E+00	1.00E+00	8.52E-01	8.51E+02	4.11E+02	1.75E-01	3.74E+02	2.27E+00
Eastern Upper Marsh (6-12")																						**Maximum HQ (Western Upper Marsh, 2-6")**	**2.42E+00**
UM-1000S-3500E (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSD-15 (6-12")	4.25E-02	4.25E-02	1.10E+00	1.81E+04	7.70E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.64E+04	6.98E+00	1.00E+00	8.52E-01	9.12E+02	4.11E+02	1.75E-01	3.74E+02	2.44E+00
BRSD-4 (6-12")	4.25E-02	4.25E-02	1.10E+00	1.30E+04	5.54E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.18E+04	5.02E+00	1.00E+00	8.52E-01	6.56E+02	4.11E+02	1.75E-01	3.74E+02	1.75E+00
UM-750S-3500E (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSD-16 (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-750S-3000E (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSD-3 (6-12")	4.25E-02	4.25E-02	1.10E+00	8.55E+03	3.64E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	7.74E+03	3.29E+00	1.00E+00	8.52E-01	4.30E+02	4.11E+02	1.75E-01	3.74E+02	1.15E+00
UM-500S-3250E (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-500S-3000E (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-500S-2750E (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSD-25 (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-250S-3000E (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250S-3250E (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSD-24 (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-250S-2750E (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250S-2500E (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSD-2 (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-500N-2500E (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250N-2500E (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250N-2250E (6-12")	4.25E-02	4.25E-02	1.10E+00	9.02E+03	3.84E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	8.17E+03	3.48E+00	1.00E+00	8.52E-01	4.54E+02	4.11E+02	1.75E-01	3.74E+02	1.21E+00
Western Upper Marsh (6-12")																						**Maximum HQ (Eastern Upper Marsh, 6-12")**	**2.44E+00**
UM-500S-2500E (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-0N-2000E (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-500S-2000E (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250N-1750E (6-12")	4.25E-02	4.25E-02	1.10E+00	1.21E+04	5.17E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.10E+04	4.68E+00	1.00E+00	8.52E-01	6.12E+02	4.11E+02	1.75E-01	3.74E+02	1.63E+00
UM-0N-1500E (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250S-1500E (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250S-1250E (6-12")	4.25E-02	4.25E-02	1.10E+00	1.14E+04	4.84E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.03E+04	4.38E+00	1.00E+00	8.52E-01	5.73E+02	4.11E+02	1.75E-01	3.74E+02	1.53E+00
BRSD-6 (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-1000E (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-0N-750E (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-0N-500E (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250S-500E (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-0N-250E (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
UM-250S-250E (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSD-7 (6-12")	4.25E-02	4.25E-02	1.10E+00	1.03E+04	4.38E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	9.32E+03	3.96E+00	1.00E+00	8.52E-01	5.18E+02	4.11E+02	1.75E-01	3.74E+02	1.39E+00
BRSD-8 (6-12")	4.25E-02	4.25E-02	1.10E+00	1.89E+04	8.03E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.71E+04	7.27E+00	1.00E+00	8.52E-01	9.51E+02	4.11E+02	1.75E-01	3.74E+02	2.54E+00
UM-500S-500E (6-12")	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSD-9 (6-12")	4.25E-02	4.25E-02	1.10E+00	1.46E+04	6.20E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.32E+04	5.62E+00	1.00E+00	8.52E-01	7.34E+02	4.11E+02	1.75E-01	3.74E+02	1.96E+00
BRSD-10 (6-12")	4.25E-02	4.25E-02	1.10E+00	1.28E+04	5.45E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.16E+04	4.93E+00	1.00E+00	8.52E-01	6.45E+02	4.11E+02	1.75E-01	3.74E+02	1.72E+00
BRSD-11 (6-12")	4.25E-02	4.25E-02	1.10E+00	1.73E+04	7.37E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.57E+04	6.68E+00	1.00E+00	8.52E-01	8.73E+02	4.11E+02	1.75E-01	3.74E+02	2.33E+00
Middle Marsh (0-2")																						**Maximum HQ (Western Upper Marsh, 6-12")**	**2.54E+00**
MMSD-201 (0-2")	4.25E-02	4.25E-02	1.10E+00	1.35E+04	5.73E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.22E+04	5.19E+00	1.00E+00	8.52E-01	6.78E+02	4.11E+02	1.75E-01	3.74E+02	1.81E+00
MMSD-202 (0-2")	4.25E-02	4.25E-02	1.10E+00	1.30E+04	5.54E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.18E+04	5.02E+00	1.00E+00	8.52E-01	6.56E+02	4.11E+02	1.75E-01	3.74E+02	1.75E+00
Middle Marsh (2-6")																						**Maximum HQ (Middle Marsh, 0-2")**	**1.81E+00**
MMSD-201 (2-6")	4.25E-02	4.25E-02	1.10E+00	1.37E+04	5.82E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.24E+04	5.27E+00	1.00E+00	8.52E-01	6.90E+02	4.11E+02	1.75E-01	3.74E+02	1.84E+00
MMSD-202 (2-6")	4.25E-02	4.25E-02	1.10E+00	1.23E+04	5.21E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.11E+04	4.72E+00	1.00E+00	8.52E-01	6.17E+02	4.11E+02	1.75E-01	3.74E+02	1.65E+00

TABLE C-12AB: ALUMINUM DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 12 - MARSH, WETLAND RECEPTORS (Continued)

Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)
calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **118.73**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Mink (Carnivorous Mammals)																							
Middle Marsh (6-12")																						**Maximum HQ (Middle Marsh, 2-6")**	**1.84E+00**
MMSD-201 (6-12")	4.25E-02	4.25E-02	1.10E+00	1.40E+04	5.96E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.27E+04	5.40E+00	1.00E+00	8.52E-01	7.06E+02	4.11E+02	1.75E-01	3.74E+02	1.89E+00
MMSD-202 (6-12")	4.25E-02	4.25E-02	1.10E+00	1.34E+04	5.68E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.21E+04	5.15E+00	1.00E+00	8.52E-01	6.73E+02	4.11E+02	1.75E-01	3.74E+02	1.80E+00
Lower Marsh (0-2")																						**Maximum HQ (Middle Marsh, 6-12")**	**1.89E+00**
LMSD-201 (0-2")	4.25E-02	4.25E-02	1.10E+00	1.72E+04	7.33E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.56E+04	6.64E+00	1.00E+00	8.52E-01	8.67E+02	4.11E+02	1.75E-01	3.74E+02	2.32E+00
LMSD-202 (0-2")	4.25E-02	4.25E-02	1.10E+00	1.35E+04	5.73E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.22E+04	5.19E+00	1.00E+00	8.52E-01	6.78E+02	4.11E+02	1.75E-01	3.74E+02	1.81E+00
LMSD-203 (0-2")	4.25E-02	4.25E-02	1.10E+00	2.33E+04	9.91E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	2.11E+04	8.98E+00	1.00E+00	8.52E-01	1.17E+03	4.11E+02	1.75E-01	3.74E+02	3.14E+00
LMSD-204 (0-2")	4.25E-02	4.25E-02	1.10E+00	1.80E+04	7.66E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.63E+04	6.93E+00	1.00E+00	8.52E-01	9.06E+02	4.11E+02	1.75E-01	3.74E+02	2.42E+00
Lower Marsh (2-6")																						**Maximum HQ (Lower Marsh, 0-2")**	**3.14E+00**
LMSD-201 (2-6")	4.25E-02	4.25E-02	1.10E+00	1.65E+04	7.00E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.49E+04	6.34E+00	1.00E+00	8.52E-01	8.29E+02	4.11E+02	1.75E-01	3.74E+02	2.21E+00
LMSD-202 (2-6")	4.25E-02	4.25E-02	1.10E+00	1.67E+04	7.09E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.51E+04	6.42E+00	1.00E+00	8.52E-01	8.40E+02	4.11E+02	1.75E-01	3.74E+02	2.24E+00
LMSD-203 (2-6")	4.25E-02	4.25E-02	1.10E+00	2.25E+04	9.58E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	2.04E+04	8.68E+00	1.00E+00	8.52E-01	1.13E+03	4.11E+02	1.75E-01	3.74E+02	3.03E+00
LMSD-204 (2-6")	4.25E-02	4.25E-02	1.10E+00	1.84E+04	7.84E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.67E+04	7.10E+00	1.00E+00	8.52E-01	9.29E+02	4.11E+02	1.75E-01	3.74E+02	2.48E+00
Lower Marsh (6-12")																						**Maximum HQ (Lower Marsh, 2-6")**	**3.03E+00**
LMSD-201 (6-12")	4.25E-02	4.25E-02	1.10E+00	1.73E+04	7.37E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.57E+04	6.68E+00	1.00E+00	8.52E-01	8.73E+02	4.11E+02	1.75E-01	3.74E+02	2.33E+00
LMSD-202 (6-12")	4.25E-02	4.25E-02	1.10E+00	1.71E+04	7.28E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.55E+04	6.59E+00	1.00E+00	8.52E-01	8.62E+02	4.11E+02	1.75E-01	3.74E+02	2.30E+00
LMSD-203 (6-12")	4.25E-02	4.25E-02	1.10E+00	2.20E+04	9.35E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.99E+04	8.47E+00	1.00E+00	8.52E-01	1.11E+03	4.11E+02	1.75E-01	3.74E+02	2.96E+00
LMSD-204 (6-12")	4.25E-02	4.25E-02	1.10E+00	1.73E+04	7.37E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.57E+04	6.68E+00	1.00E+00	8.52E-01	8.73E+02	4.11E+02	1.75E-01	3.74E+02	2.33E+00
																						Maximum HQ (Lower Marsh, 6-12")	**2.96E+00**

Notes: Results are evaluated in order of upstream to downstream.

1 See Tables 3-1 through 3-13 for ingestion rates, foraging ranges used to calculate the SUF, and body weights.

2 Site BAFs were calculated by dividing site-collected tissue by collocated soil concentrations. The maximum plant and invertebrate BAF calculated for the eastern transect (UMT1) were used for the Eastern Upper Marsh dose calculations. The maximum plant and invertebrate BAF calculated for the western transect (UMT2) were used for the Western Upper Marsh dose calculations. The maximum mammal BAF calculated for the eastern transect (UMT1) was used for the Eastern and Western Upper Marsh calculations because no mammals were collected in the Western Upper Marsh. The maximum plant, mammal, and invertebrate BAFs calculated for the Pass Creek reference

3 The mammal, plant, and invertebrate concentrations were calculated by multiplying the soil concentration by the BAF to generate a tissue concentration (see note 2).

4 Mammal, plant, and invertebrate daily doses were calculated by multiplying the ingestion rate (see note 1) by the tissue concentration (see note 3).

5 Soil concentration from specified depth below ground surface at point ID from laboratory analysis. Doses were not calculated for detected and non-detected soil concentrations measured below the minimum reference site concentration (0-12"), as indicated by BB. For results that were measured at less than the detection limit, doses were calculated using half of the detection limit.

6 Soil daily dose was calculated by multiplying the soil ingestion rate (see note 1) by soil concentration (see note 5).

7 Total daily dose is calculated using the following equation: total daily dose = ([mammal daily dose (if applicable) + plant daily dose (if applicable) + invertebrate daily dose (if applicable) + soil daily dose]*SUF)/receptor species body weight.

8 The derivation of TRVs is described in Navy (1998) and Sample, Opresko, and Suter (1996). The high TRV was used for dose calculations.

9 Allometrically adjusted TRVs for birds were calculated using the following equation: receptor species TRV = (test species TRV) x (test species body weight / receptor species body weight) $^{(1-1.2)}$.

10 Allometrically adjusted TRVs for mammals were calculated using the following equation: receptor species TRV = (test species TRV) x (test species body weight / receptor species body weight) $^{(1-0.94)}$.

11 HQs were calculated using the following equation: HQ = total daily dose/allometrically adjusted TRV.

12 Green cells indicate an HQ greater than 1.0

BAF	Bioaccumulation Factor	ID	Identification	NA	Not applicable
BB	Below minimum background reference site concentration	kg	Kilogram	Navy	Department of the Navy
EE/CA	Engineering Evaluation/Cost Analysis	kg/day	Kilogram per day	SUF	Site use factor
EU	Exposure Unit	mg/day	Milligram per day	TRV	Toxicity reference value
HQ	Hazard Quotient	mg/kg	Milligram per kilogram		

Sources:
Department of the Navy. 1998. "Development of Toxicity Reference Values for Conducting Ecological Risk Assessments at Naval Facilities in California, Interim Final." Prepared by Naval Facilities Engineering Command, Engineering Field Activity West (EFA
Sample, B.E., D.M. Opresko, and G.W. Suter, II. 1996. "Toxicological Benchmarks for Wildlife: 1996 Revision." ES/ER/TM-86/R3. Oak Ridge National Laboratory. Oak Ridge, Tennessee.

TABLE C-12BA: ARSENIC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 12 - MARSH, TERRESTRIAL RECEPTORS

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **28.9**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Mourning Dove (Herbivorous Birds)																							
Reference Sites																							
BRSD-5 (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	5.36E-04	1.72E+01	9.22E-03	1.12E-01	1.09E-01	9.42E-03	2.20E+01	1.17E+00	1.37E+01	6.88E-04
BRSD-5 (2-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	5.36E-04	1.92E+01	1.03E-02	1.12E-01	1.09E-01	1.05E-02	2.20E+01	1.17E+00	1.37E+01	7.68E-04
BRSD-5 (6-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	5.36E-04	2.46E+01	1.32E-02	1.12E-01	1.09E-01	1.35E-02	2.20E+01	1.17E+00	1.37E+01	9.84E-04
PGBG-1 (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	5.36E-04	1.24E+01	6.64E-03	1.12E-01	1.09E-01	6.79E-03	2.20E+01	1.17E+00	1.37E+01	4.96E-04
PGBG-1 (2-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	5.36E-04	9.12E+00	4.89E-03	1.12E-01	1.09E-01	4.99E-03	2.20E+01	1.17E+00	1.37E+01	3.65E-04
PGBG-1 (6-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	5.36E-04	9.40E+00	5.04E-03	1.12E-01	1.09E-01	5.15E-03	2.20E+01	1.17E+00	1.37E+01	3.76E-04
PGBG-2 (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	5.36E-04	1.88E+01	1.01E-02	1.12E-01	1.09E-01	1.03E-02	2.20E+01	1.17E+00	1.37E+01	7.52E-04
PGBG-2 (2-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	5.36E-04	1.85E+01	9.91E-03	1.12E-01	1.09E-01	1.01E-02	2.20E+01	1.17E+00	1.37E+01	7.40E-04
PGBG-2 (6-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	5.36E-04	3.23E+01	1.73E-02	1.12E-01	1.09E-01	1.77E-02	2.20E+01	1.17E+00	1.37E+01	1.29E-03
Eastern Upper Marsh (0-2")																						**Minimum HQ (Reference Sites)**	**3.65E-04**
UM-1000S-3500E (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	5.36E-04	2.38E+02	1.28E-01	1.12E-01	1.09E-01	1.30E-01	2.20E+01	1.17E+00	1.37E+01	9.52E-03
BRSD-15 (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	5.36E-04	1.49E+01	7.98E-03	1.12E-01	1.09E-01	8.16E-03	2.20E+01	1.17E+00	1.37E+01	5.96E-04
BRSD-4 (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-750S-3500E (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	5.36E-04	1.16E+02	6.22E-02	1.12E-01	1.09E-01	6.35E-02	2.20E+01	1.17E+00	1.37E+01	4.64E-03
BRSD-16 (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	5.36E-04	1.93E+02	1.03E-01	1.12E-01	1.09E-01	1.06E-01	2.20E+01	1.17E+00	1.37E+01	7.72E-03
UM-750S-3000E (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	5.36E-04	1.64E+02	8.79E-02	1.12E-01	1.09E-01	8.98E-02	2.20E+01	1.17E+00	1.37E+01	6.56E-03
BRSD-3 (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	5.36E-04	3.80E+01	2.04E-02	1.12E-01	1.09E-01	2.08E-02	2.20E+01	1.17E+00	1.37E+01	1.52E-03
UM-500S-3250E (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	5.36E-04	1.38E+02	7.39E-02	1.12E-01	1.09E-01	7.56E-02	2.20E+01	1.17E+00	1.37E+01	5.52E-03
UM-500S-3000E (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	5.36E-04	8.74E+01	4.68E-02	1.12E-01	1.09E-01	4.79E-02	2.20E+01	1.17E+00	1.37E+01	3.49E-03
UM-500S-2750E (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	5.36E-04	1.56E+02	8.36E-02	1.12E-01	1.09E-01	8.54E-02	2.20E+01	1.17E+00	1.37E+01	6.24E-03
BRSD-25 (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	5.36E-04	6.60E+01	3.54E-02	1.12E-01	1.09E-01	3.61E-02	2.20E+01	1.17E+00	1.37E+01	2.64E-03
UM-250S-3000E (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	5.36E-04	1.07E+02	5.73E-02	1.12E-01	1.09E-01	5.86E-02	2.20E+01	1.17E+00	1.37E+01	4.28E-03
UM-250S-3250E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-24 (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	5.36E-04	1.93E+02	1.03E-01	1.12E-01	1.09E-01	1.06E-01	2.20E+01	1.17E+00	1.37E+01	7.72E-03
UM-250S-2750E (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	5.36E-04	1.65E+02	8.84E-02	1.12E-01	1.09E-01	9.03E-02	2.20E+01	1.17E+00	1.37E+01	6.60E-03
UM-250S-2500E (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	5.36E-04	1.23E+01	6.59E-03	1.12E-01	1.09E-01	6.73E-03	2.20E+01	1.17E+00	1.37E+01	4.92E-04
UM-0N-2500E (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	5.36E-04	1.17E+02	6.27E-02	1.12E-01	1.09E-01	6.41E-02	2.20E+01	1.17E+00	1.37E+01	4.68E-03
UM-0N-250E (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	5.36E-04	1.30E+01	6.97E-03	1.12E-01	1.09E-01	7.12E-03	2.20E+01	1.17E+00	1.37E+01	5.20E-04
BRSD-2 (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	5.36E-04	1.77E+02	9.48E-02	1.12E-01	1.09E-01	9.69E-02	2.20E+01	1.17E+00	1.37E+01	7.08E-03
UM-500N-2500E (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	5.36E-04	1.13E+01	6.05E-03	1.12E-01	1.09E-01	6.19E-03	2.20E+01	1.17E+00	1.37E+01	4.52E-04
UM-250N-2500E (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	5.36E-04	9.69E+01	5.19E-02	1.12E-01	1.09E-01	5.31E-02	2.20E+01	1.17E+00	1.37E+01	3.87E-03
UM-250N-2250E (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	5.36E-04	1.77E+02	9.48E-02	1.12E-01	1.09E-01	9.69E-02	2.20E+01	1.17E+00	1.37E+01	7.08E-03
Western Upper Marsh (0-2")																						**Maximum HQ (Eastern Upper Marsh, 0-2")**	**9.52E-03**
UM-500S-2500E (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	5.36E-04	1.22E+01	6.54E-03	1.12E-01	1.09E-01	6.68E-03	2.20E+01	1.17E+00	1.37E+01	4.88E-04
UM-0N-2000E (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	5.36E-04	4.72E+01	2.53E-02	1.12E-01	1.09E-01	2.58E-02	2.20E+01	1.17E+00	1.37E+01	1.89E-03
UM-500S-2000E (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	5.36E-04	2.10E+01	1.13E-02	1.12E-01	1.09E-01	1.15E-02	2.20E+01	1.17E+00	1.37E+01	8.40E-04
UM-250N-1750E (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	5.36E-04	1.26E+01	6.75E-03	1.12E-01	1.09E-01	6.90E-03	2.20E+01	1.17E+00	1.37E+01	5.04E-04
UM-0N-1500E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-250S-1500E (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	5.36E-04	3.33E+01	1.78E-02	1.12E-01	1.09E-01	1.82E-02	2.20E+01	1.17E+00	1.37E+01	1.33E-03
UM-250S-1250E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-6 (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-1000E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-750E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-500E (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	5.36E-04	1.01E+01	5.41E-03	1.12E-01	1.09E-01	5.53E-03	2.20E+01	1.17E+00	1.37E+01	4.04E-04
UM-250S-500E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-250S-250E (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	5.36E-04	1.45E+01	7.77E-03	1.12E-01	1.09E-01	7.94E-03	2.20E+01	1.17E+00	1.37E+01	5.80E-04
BRSD-7 (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB

TABLE C-12BA: ARSENIC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 12 - MARSH, TERRESTRIAL RECEPTORS (Continued)
Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)
calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 28.9

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Mourning Dove (Herbivorous Birds)																							
BRSD-8 (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-500S-500E (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	5.36E-04	1.18E+01	6.32E-03	1.12E-01	1.09E-01	6.46E-03	2.20E+01	1.17E+00	1.37E+01	4.72E-04
BRSD-9 (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	5.36E-04	2.30E+01	1.23E-02	1.12E-01	1.09E-01	1.26E-02	2.20E+01	1.17E+00	1.37E+01	9.20E-04
BRSD-10 (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	5.36E-04	3.03E+01	1.62E-02	1.12E-01	1.09E-01	1.66E-02	2.20E+01	1.17E+00	1.37E+01	1.21E-03
BRSD-11 (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	5.36E-04	1.47E+01	7.88E-03	1.12E-01	1.09E-01	8.05E-03	2.20E+01	1.17E+00	1.37E+01	5.88E-04
Eastern Upper Marsh (2-6")																						**Maximum HQ (Western Upper Marsh, 0-2")**	**1.89E-03**
UM-1000S-3500E (2-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	5.36E-04	3.81E+01	2.04E-02	1.12E-01	1.09E-01	2.09E-02	2.20E+01	1.17E+00	1.37E+01	1.52E-03
BRSD-15 (2-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	5.36E-04	1.56E+01	8.36E-03	1.12E-01	1.09E-01	8.54E-03	2.20E+01	1.17E+00	1.37E+01	6.24E-04
BRSD-4 (2-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	5.36E-04	9.85E+00	5.28E-03	1.12E-01	1.09E-01	5.39E-03	2.20E+01	1.17E+00	1.37E+01	3.94E-04
UM-750S-3500E (2-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	5.36E-04	1.57E+02	8.41E-02	1.12E-01	1.09E-01	8.60E-02	2.20E+01	1.17E+00	1.37E+01	6.28E-03
BRSD-16 (2-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	5.36E-04	5.07E+02	2.72E-01	1.12E-01	1.09E-01	2.78E-01	2.20E+01	1.17E+00	1.37E+01	2.03E-02
UM-750S-3000E (2-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	5.36E-04	1.43E+02	7.66E-02	1.12E-01	1.09E-01	7.83E-02	2.20E+01	1.17E+00	1.37E+01	5.72E-03
BRSD-3 (2-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	5.36E-04	5.42E+01	2.90E-02	1.12E-01	1.09E-01	2.97E-02	2.20E+01	1.17E+00	1.37E+01	2.17E-03
UM-500S-3250E (2-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	5.36E-04	1.50E+02	8.04E-02	1.12E-01	1.09E-01	8.21E-02	2.20E+01	1.17E+00	1.37E+01	6.00E-03
UM-500S-3000E (2-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	5.36E-04	2.26E+01	1.21E-02	1.12E-01	1.09E-01	1.24E-02	2.20E+01	1.17E+00	1.37E+01	9.04E-04
UM-500S-2750E (2-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	5.36E-04	7.42E+01	3.98E-02	1.12E-01	1.09E-01	4.06E-02	2.20E+01	1.17E+00	1.37E+01	2.97E-03
BRSD-25 (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	6.00E+01	BB	BB	BB	BB	BB	BB	BB	BB
UM-250S-3000E (2-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	5.36E-04	1.62E+02	8.68E-02	1.12E-01	1.09E-01	8.87E-02	2.20E+01	1.17E+00	1.37E+01	6.48E-03
UM-250S-3250E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-24 (2-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	5.36E-04	1.19E+02	6.38E-02	1.12E-01	1.09E-01	6.52E-02	2.20E+01	1.17E+00	1.37E+01	4.76E-03
UM-250S-2750E (2-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	5.36E-04	1.41E+02	7.56E-02	1.12E-01	1.09E-01	7.72E-02	2.20E+01	1.17E+00	1.37E+01	5.64E-03
UM-0N-2500E (2-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	5.36E-04	1.03E+02	5.52E-02	1.12E-01	1.09E-01	5.64E-02	2.20E+01	1.17E+00	1.37E+01	4.12E-03
BRSD-2 (2-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	5.36E-04	1.32E+02	7.07E-02	1.12E-01	1.09E-01	7.23E-02	2.20E+01	1.17E+00	1.37E+01	5.28E-03
UM-500N-2500E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-250N-2500E (2-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	5.36E-04	1.16E+02	6.22E-02	1.12E-01	1.09E-01	6.35E-02	2.20E+01	1.17E+00	1.37E+01	4.64E-03
UM-250N-2250E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
Western Upper Marsh (2-6")																						**Maximum HQ (Eastern Upper Marsh, 2-6")**	**2.03E-02**
UM-500S-2500E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-2000E (2-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	5.36E-04	4.94E+01	2.65E-02	1.12E-01	1.09E-01	2.70E-02	2.20E+01	1.17E+00	1.37E+01	1.98E-03
UM-500S-2000E (2-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	5.36E-04	1.79E+01	9.59E-03	1.12E-01	1.09E-01	9.80E-03	2.20E+01	1.17E+00	1.37E+01	7.16E-04
UM-250N-1750E (2-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	5.36E-04	1.22E+01	6.54E-03	1.12E-01	1.09E-01	6.68E-03	2.20E+01	1.17E+00	1.37E+01	4.88E-04
UM-0N-1500E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-250S-1500E (2-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	5.36E-04	3.06E+01	1.64E-02	1.12E-01	1.09E-01	1.68E-02	2.20E+01	1.17E+00	1.37E+01	1.22E-03
UM-250S-1250E (2-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	5.36E-04	2.46E+01	1.32E-02	1.12E-01	1.09E-01	1.35E-02	2.20E+01	1.17E+00	1.37E+01	9.84E-04
BRSD-6 (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-1000E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-750E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-500E (2-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	5.36E-04	1.68E+01	9.00E-03	1.12E-01	1.09E-01	9.20E-03	2.20E+01	1.17E+00	1.37E+01	6.72E-04
UM-250S-500E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-250E (2-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	5.36E-04	1.95E+01	1.04E-02	1.12E-01	1.09E-01	1.07E-02	2.20E+01	1.17E+00	1.37E+01	7.80E-04
UM-250S-250E (2-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	5.36E-04	9.58E+00	5.13E-03	1.12E-01	1.09E-01	5.25E-03	2.20E+01	1.17E+00	1.37E+01	3.83E-04
BRSD-7 (2-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	5.36E-04	1.20E+01	6.43E-03	1.12E-01	1.09E-01	6.57E-03	2.20E+01	1.17E+00	1.37E+01	4.80E-04
BRSD-8 (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-500S-500E (2-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	5.36E-04	9.28E+00	4.97E-03	1.12E-01	1.09E-01	5.08E-03	2.20E+01	1.17E+00	1.37E+01	3.71E-04
BRSD-9 (2-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	5.36E-04	1.74E+01	9.32E-03	1.12E-01	1.09E-01	9.53E-03	2.20E+01	1.17E+00	1.37E+01	6.96E-04
BRSD-10 (2-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	5.36E-04	3.58E+01	1.92E-02	1.12E-01	1.09E-01	1.96E-02	2.20E+01	1.17E+00	1.37E+01	1.43E-03
BRSD-11 (2-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	5.36E-04	1.08E+01	5.79E-03	1.12E-01	1.09E-01	5.91E-03	2.20E+01	1.17E+00	1.37E+01	4.32E-04
Eastern Upper Marsh (6-12")																						**Maximum HQ (Western Upper Marsh, 2-6")**	**1.98E-03**
UM-1000S-3500E (6-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	5.36E-04	1.26E+01	6.75E-03	1.12E-01	1.09E-01	6.90E-03	2.20E+01	1.17E+00	1.37E+01	5.04E-04
BRSD-15 (6-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	5.36E-04	1.68E+01	9.00E-03	1.12E-01	1.09E-01	9.20E-03	2.20E+01	1.17E+00	1.37E+01	6.72E-04
BRSD-4 (6-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	5.36E-04	2.04E+01	1.09E-02	1.12E-01	1.09E-01	1.12E-02	2.20E+01	1.17E+00	1.37E+01	8.16E-04
UM-750S-3500E (6-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	5.36E-04	1.38E+02	7.39E-02	1.12E-01	1.09E-01	7.56E-02	2.20E+01	1.17E+00	1.37E+01	5.52E-03
BRSD-16 (6-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	5.36E-04	9.28E+01	4.97E-02	1.12E-01	1.09E-01	5.08E-02	2.20E+01	1.17E+00	1.37E+01	3.71E-03
UM-750S-3000E (6-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	5.36E-04	1.42E+02	7.61E-02	1.12E-01	1.09E-01	7.77E-02	2.20E+01	1.17E+00	1.37E+01	5.68E-03
BRSD-3 (6-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	5.36E-04	1.99E+01	1.07E-02	1.12E-01	1.09E-01	1.09E-02	2.20E+01	1.17E+00	1.37E+01	7.96E-04
UM-500S-3250E (6-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	5.36E-04	1.00E+02	5.36E-02	1.12E-01	1.09E-01	5.48E-02	2.20E+01	1.17E+00	1.37E+01	4.00E-03

TABLE C-12BA: ARSENIC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 12 - MARSH, TERRESTRIAL RECEPTORS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **28.9**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Mourning Dove (Herbivorous Birds)																							
UM-500S-3000E (6-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	5.36E-04	1.51E+01	8.09E-03	1.12E-01	1.09E-01	8.27E-03	2.20E+01	1.17E+00	1.37E+01	6.04E-04
UM-500S-2750E (6-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	5.36E-04	6.78E+01	3.63E-02	1.12E-01	1.09E-01	3.71E-02	2.20E+01	1.17E+00	1.37E+01	2.71E-03
BRSD-25 (6-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	5.36E-04	2.90E+01	1.55E-02	1.12E-01	1.09E-01	1.59E-02	2.20E+01	1.17E+00	1.37E+01	1.16E-03
UM-250S-3000E (6-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	5.36E-04	1.83E+02	9.81E-02	1.12E-01	1.09E-01	1.00E-01	2.20E+01	1.17E+00	1.37E+01	7.32E-03
UM-250S-3250E (6-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	5.36E-04	1.05E+01	5.63E-03	1.12E-01	1.09E-01	5.75E-03	2.20E+01	1.17E+00	1.37E+01	4.20E-04
BRSD-24 (6-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	5.36E-04	6.34E+01	3.40E-02	1.12E-01	1.09E-01	3.47E-02	2.20E+01	1.17E+00	1.37E+01	2.54E-03
UM-250S-2750E (6-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	5.36E-04	6.60E+01	3.54E-02	1.12E-01	1.09E-01	3.61E-02	2.20E+01	1.17E+00	1.37E+01	2.64E-03
UM-250S-2500E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-2 (6-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	5.36E-04	7.31E+01	3.92E-02	1.12E-01	1.09E-01	4.00E-02	2.20E+01	1.17E+00	1.37E+01	2.92E-03
UM-500N-2500E (6-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	5.36E-04	1.16E+01	6.22E-03	1.12E-01	1.09E-01	6.35E-03	2.20E+01	1.17E+00	1.37E+01	4.64E-04
UM-250N-2500E (6-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	5.36E-04	9.12E+01	4.89E-02	1.12E-01	1.09E-01	4.99E-02	2.20E+01	1.17E+00	1.37E+01	3.65E-03
UM-250N-2250E (6-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	5.36E-04	9.93E+00	5.32E-03	1.12E-01	1.09E-01	5.44E-03	2.20E+01	1.17E+00	1.37E+01	3.97E-04
Western Upper Marsh (6-12")																						**Maximum HQ (Eastern Upper Marsh, 6-12")**	**7.32E-03**
UM-500S-2500E (6-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	5.36E-04	1.10E+01	5.89E-03	1.12E-01	1.09E-01	6.02E-03	2.20E+01	1.17E+00	1.37E+01	4.40E-04
UM-0N-2000E (6-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	5.36E-04	5.90E+01	3.16E-02	1.12E-01	1.09E-01	3.23E-02	2.20E+01	1.17E+00	1.37E+01	2.36E-03
UM-500S-2000E (6-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	5.36E-04	1.53E+01	8.20E-03	1.12E-01	1.09E-01	8.38E-03	2.20E+01	1.17E+00	1.37E+01	6.12E-04
UM-250N-1750E (6-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	5.36E-04	1.16E+01	6.22E-03	1.12E-01	1.09E-01	6.35E-03	2.20E+01	1.17E+00	1.37E+01	4.64E-04
UM-0N-1500E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-250S-1500E (6-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	5.36E-04	1.75E+01	9.38E-03	1.12E-01	1.09E-01	9.58E-03	2.20E+01	1.17E+00	1.37E+01	7.00E-04
UM-250S-1250E (6-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	5.36E-04	1.90E+01	1.02E-02	1.12E-01	1.09E-01	1.04E-02	2.20E+01	1.17E+00	1.37E+01	7.60E-04
BRSD-6 (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-1000E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-750E (6-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	5.36E-04	1.24E+01	6.64E-03	1.12E-01	1.09E-01	6.79E-03	2.20E+01	1.17E+00	1.37E+01	4.96E-04
UM-0N-500E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-250S-500E (6-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	5.36E-04	1.77E+01	9.48E-03	1.12E-01	1.09E-01	9.69E-03	2.20E+01	1.17E+00	1.37E+01	7.08E-04
UM-0N-250E (6-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	5.36E-04	1.47E+01	7.88E-03	1.12E-01	1.09E-01	8.05E-03	2.20E+01	1.17E+00	1.37E+01	5.88E-04
UM-250S-250E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-7 (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-8 (6-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	5.36E-04	1.03E+01	5.52E-03	1.12E-01	1.09E-01	5.64E-03	2.20E+01	1.17E+00	1.37E+01	4.12E-04
UM-500S-500E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-9 (6-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	5.36E-04	1.62E+01	8.68E-03	1.12E-01	1.09E-01	8.87E-03	2.20E+01	1.17E+00	1.37E+01	6.48E-04
BRSD-10 (6-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	5.36E-04	3.83E+01	2.05E-02	1.12E-01	1.09E-01	2.10E-02	2.20E+01	1.17E+00	1.37E+01	1.53E-03
BRSD-11 (6-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	5.36E-04	9.89E+00	5.30E-03	1.12E-01	1.09E-01	5.41E-03	2.20E+01	1.17E+00	1.37E+01	3.95E-04
Middle Marsh (0-2")																						**Maximum HQ (Western Upper Marsh, 6-12")**	**2.36E-03**
MMSD-201 (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	5.36E-04	2.10E+01	1.13E-02	1.12E-01	1.09E-01	1.15E-02	2.20E+01	1.17E+00	1.37E+01	8.40E-04
MMSD-202 (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	5.36E-04	2.20E+01	1.18E-02	1.12E-01	1.09E-01	1.20E-02	2.20E+01	1.17E+00	1.37E+01	8.80E-04
Middle Marsh (2-6")																						**Maximum HQ (Middle Marsh, 0-2")**	**8.80E-04**
MMSD-201 (2-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	5.36E-04	2.10E+01	1.13E-02	1.12E-01	1.09E-01	1.15E-02	2.20E+01	1.17E+00	1.37E+01	8.40E-04
MMSD-202 (2-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	5.36E-04	2.30E+01	1.23E-02	1.12E-01	1.09E-01	1.26E-02	2.20E+01	1.17E+00	1.37E+01	9.20E-04
Middle Marsh (6-12")																						**Maximum HQ (Middle Marsh, 2-6")**	**9.20E-04**
MMSD-201 (6-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	5.36E-04	2.40E+01	1.29E-02	1.12E-01	1.09E-01	1.31E-02	2.20E+01	1.17E+00	1.37E+01	9.60E-04
MMSD-202 (6-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	5.36E-04	1.60E+01	8.57E-03	1.12E-01	1.09E-01	8.76E-03	2.20E+01	1.17E+00	1.37E+01	6.40E-04
Lower Marsh (0-2")																						**Maximum HQ (Middle Marsh, 6-12")**	**9.60E-04**
LMSD-201 (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
LMSD-202 (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
LMSD-203 (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	5.36E-04	2.40E+01	1.29E-02	1.12E-01	1.09E-01	1.31E-02	2.20E+01	1.17E+00	1.37E+01	9.60E-04
LMSD-204 (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	5.36E-04	1.60E+01	8.57E-03	1.12E-01	1.09E-01	8.76E-03	2.20E+01	1.17E+00	1.37E+01	6.40E-04
Lower Marsh (2-6")																						**Maximum HQ (Lower Marsh, 0-2")**	**9.60E-04**
LMSD-201 (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
LMSD-202 (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
LMSD-203 (2-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	5.36E-04	2.30E+01	1.23E-02	1.12E-01	1.09E-01	1.26E-02	2.20E+01	1.17E+00	1.37E+01	9.20E-04
LMSD-204 (2-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	5.36E-04	1.60E+01	8.57E-03	1.12E-01	1.09E-01	8.76E-03	2.20E+01	1.17E+00	1.37E+01	6.40E-04
Lower Marsh (6-12")																						**Maximum HQ (Lower Marsh, 2-6")**	**9.20E-04**
LMSD-201 (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
LMSD-202 (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
LMSD-203 (6-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	5.36E-04	2.50E+01	1.34E-02	1.12E-01	1.09E-01	1.37E-02	2.20E+01	1.17E+00	1.37E+01	1.00E-03
LMSD-204 (6-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	5.36E-04	1.60E+01	8.57E-03	1.12E-01	1.09E-01	8.76E-03	2.20E+01	1.17E+00	1.37E+01	6.40E-04

TABLE C-12BA: ARSENIC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 12 - MARSH, TERRESTRIAL RECEPTORS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **28.9**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Red-Tailed Hawk (Carnivorous Birds)																							
Reference Sites																							
BRSD-5 (0-2")	9.00E-02	9.00E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.72E+01	8.82E-02	4.15E-02	1.13E+00	3.23E-03	2.20E+01	1.17E+00	2.19E+01	1.48E-04
BRSD-5 (2-6")	9.00E-02	9.00E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.92E+01	9.84E-02	4.15E-02	1.13E+00	3.60E-03	2.20E+01	1.17E+00	2.19E+01	1.65E-04
BRSD-5 (6-12")	9.00E-02	9.00E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.46E+01	1.26E-01	4.15E-02	1.13E+00	4.61E-03	2.20E+01	1.17E+00	2.19E+01	2.11E-04
PGBG-1 (0-2")	9.00E-02	9.00E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.24E+01	6.36E-02	4.15E-02	1.13E+00	2.33E-03	2.20E+01	1.17E+00	2.19E+01	1.06E-04
PGBG-1 (2-6")	9.00E-02	9.00E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	9.12E+00	4.68E-02	4.15E-02	1.13E+00	1.71E-03	2.20E+01	1.17E+00	2.19E+01	7.82E-05
PGBG-1 (6-12")	9.00E-02	9.00E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	9.40E+00	4.82E-02	4.15E-02	1.13E+00	1.76E-03	2.20E+01	1.17E+00	2.19E+01	8.06E-05
PGBG-2 (0-2")	9.00E-02	9.00E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.88E+01	9.64E-02	4.15E-02	1.13E+00	3.53E-03	2.20E+01	1.17E+00	2.19E+01	1.61E-04
PGBG-2 (2-6")	9.00E-02	9.00E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.85E+01	9.49E-02	4.15E-02	1.13E+00	3.47E-03	2.20E+01	1.17E+00	2.19E+01	1.59E-04
PGBG-2 (6-12")	9.00E-02	9.00E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.23E+01	1.66E-01	4.15E-02	1.13E+00	6.06E-03	2.20E+01	1.17E+00	2.19E+01	2.77E-04
Eastern Upper Marsh (0-2")																						**Minimum HQ (Reference Sites)**	**7.82E-05**
UM-1000S-3500E (0-2")	9.00E-02	9.00E-02	2.35E-01	5.58E+01	5.02E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.38E+02	1.22E+00	4.15E-02	1.13E+00	2.28E-01	2.20E+01	1.17E+00	2.19E+01	1.04E-02
BRSD-15 (0-2")	9.00E-02	9.00E-02	2.35E-01	3.50E+00	3.14E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.49E+01	7.64E-02	4.15E-02	1.13E+00	1.43E-02	2.20E+01	1.17E+00	2.19E+01	6.54E-04
BRSD-4 (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-750S-3500E (0-2")	9.00E-02	9.00E-02	2.35E-01	2.72E+01	2.45E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.16E+02	5.95E-01	4.15E-02	1.13E+00	1.11E-01	2.20E+01	1.17E+00	2.19E+01	5.09E-03
BRSD-16 (0-2")	9.00E-02	9.00E-02	2.35E-01	4.53E+01	4.07E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.93E+02	9.90E-01	4.15E-02	1.13E+00	1.85E-01	2.20E+01	1.17E+00	2.19E+01	8.47E-03
UM-750S-3000E (0-2")	9.00E-02	9.00E-02	2.35E-01	3.85E+01	3.46E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.64E+02	8.41E-01	4.15E-02	1.13E+00	1.57E-01	2.20E+01	1.17E+00	2.19E+01	7.20E-03
BRSD-3 (0-2")	9.00E-02	9.00E-02	2.35E-01	8.92E+00	8.02E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.80E+01	1.95E-01	4.15E-02	1.13E+00	3.65E-02	2.20E+01	1.17E+00	2.19E+01	1.67E-03
UM-500S-3250E (0-2")	9.00E-02	9.00E-02	2.35E-01	3.24E+01	2.91E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.38E+02	7.08E-01	4.15E-02	1.13E+00	1.32E-01	2.20E+01	1.17E+00	2.19E+01	6.06E-03
UM-500S-3000E (0-2")	9.00E-02	9.00E-02	2.35E-01	2.05E+01	1.84E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	8.74E+01	4.48E-01	4.15E-02	1.13E+00	8.39E-02	2.20E+01	1.17E+00	2.19E+01	3.84E-03
UM-500S-2750E (0-2")	9.00E-02	9.00E-02	2.35E-01	3.66E+01	3.29E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.56E+02	8.00E-01	4.15E-02	1.13E+00	1.50E-01	2.20E+01	1.17E+00	2.19E+01	6.85E-03
BRSD-25 (0-2")	9.00E-02	9.00E-02	2.35E-01	1.55E+01	1.39E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	6.60E+01	3.38E-01	4.15E-02	1.13E+00	6.33E-02	2.20E+01	1.17E+00	2.19E+01	2.90E-03
UM-250S-3000E (0-2")	9.00E-02	9.00E-02	2.35E-01	2.51E+01	2.26E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.07E+02	5.49E-01	4.15E-02	1.13E+00	1.03E-01	2.20E+01	1.17E+00	2.19E+01	4.70E-03
UM-250S-3250E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-24 (0-2")	9.00E-02	9.00E-02	2.35E-01	4.53E+01	4.07E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.93E+02	9.90E-01	4.15E-02	1.13E+00	1.85E-01	2.20E+01	1.17E+00	2.19E+01	8.47E-03
UM-250S-2750E (0-2")	9.00E-02	9.00E-02	2.35E-01	3.87E+01	3.48E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.65E+02	8.46E-01	4.15E-02	1.13E+00	1.58E-01	2.20E+01	1.17E+00	2.19E+01	7.24E-03
UM-250S-2500E (0-2")	9.00E-02	9.00E-02	2.35E-01	2.89E+00	2.60E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.23E+01	6.31E-02	4.15E-02	1.13E+00	1.18E-02	2.20E+01	1.17E+00	2.19E+01	5.40E-04
UM-0N-2500E (0-2")	9.00E-02	9.00E-02	2.35E-01	2.74E+01	2.47E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.17E+02	6.00E-01	4.15E-02	1.13E+00	1.12E-01	2.20E+01	1.17E+00	2.19E+01	5.13E-03
UM-0N-250E (0-2")	9.00E-02	9.00E-02	2.35E-01	3.05E+00	2.74E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.30E+01	6.67E-02	4.15E-02	1.13E+00	1.25E-02	2.20E+01	1.17E+00	2.19E+01	5.70E-04
BRSD-2 (0-2")	9.00E-02	9.00E-02	2.35E-01	4.15E+01	3.74E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.77E+02	9.08E-01	4.15E-02	1.13E+00	1.70E-01	2.20E+01	1.17E+00	2.19E+01	7.77E-03
UM-500N-2500E (0-2")	9.00E-02	9.00E-02	2.35E-01	2.65E+00	2.38E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.13E+01	5.79E-02	4.15E-02	1.13E+00	1.08E-02	2.20E+01	1.17E+00	2.19E+01	4.96E-04
UM-250N-2500E (0-2")	9.00E-02	9.00E-02	2.35E-01	2.27E+01	2.05E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	9.69E+01	4.97E-01	4.15E-02	1.13E+00	9.30E-02	2.20E+01	1.17E+00	2.19E+01	4.25E-03
UM-250N-2250E (0-2")	9.00E-02	9.00E-02	2.35E-01	4.15E+01	3.74E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.77E+02	9.08E-01	4.15E-02	1.13E+00	1.70E-01	2.20E+01	1.17E+00	2.19E+01	7.77E-03
Western Upper Marsh (0-2")																						**Maximum HQ (Eastern Upper Marsh, 0-2")**	**1.04E-02**
UM-500S-2500E (0-2")	9.00E-02	9.00E-02	2.35E-01	2.86E+00	2.57E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.22E+01	6.26E-02	4.15E-02	1.13E+00	1.17E-02	2.20E+01	1.17E+00	2.19E+01	5.35E-04
UM-0N-2000E (0-2")	9.00E-02	9.00E-02	2.35E-01	1.11E+01	9.96E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.72E+01	2.42E-01	4.15E-02	1.13E+00	4.53E-02	2.20E+01	1.17E+00	2.19E+01	2.07E-03
UM-500S-2000E (0-2")	9.00E-02	9.00E-02	2.35E-01	4.93E+00	4.43E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.10E+01	1.08E-01	4.15E-02	1.13E+00	2.01E-02	2.20E+01	1.17E+00	2.19E+01	9.22E-04
UM-250N-1750E (0-2")	9.00E-02	9.00E-02	2.35E-01	2.96E+00	2.66E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.26E+01	6.46E-02	4.15E-02	1.13E+00	1.21E-02	2.20E+01	1.17E+00	2.19E+01	5.53E-04
UM-0N-1500E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-250S-1500E (0-2")	9.00E-02	9.00E-02	2.35E-01	7.81E+00	7.03E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.33E+01	1.71E-01	4.15E-02	1.13E+00	3.19E-02	2.20E+01	1.17E+00	2.19E+01	1.46E-03
UM-250S-1250E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-6 (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-1000E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-750E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-500E (0-2")	9.00E-02	9.00E-02	2.35E-01	2.37E+00	2.13E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.01E+01	5.18E-02	4.15E-02	1.13E+00	9.69E-03	2.20E+01	1.17E+00	2.19E+01	4.43E-04
UM-250S-500E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-250S-250E (0-2")	9.00E-02	9.00E-02	2.35E-01	3.40E+00	3.06E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.45E+01	7.43E-02	4.15E-02	1.13E+00	1.39E-02	2.20E+01	1.17E+00	2.19E+01	6.36E-04
BRSD-7 (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-8 (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-500S-500E (0-2")	9.00E-02	9.00E-02	2.35E-01	2.77E+00	2.49E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.18E+01	6.05E-02	4.15E-02	1.13E+00	1.13E-02	2.20E+01	1.17E+00	2.19E+01	5.18E-04
BRSD-9 (0-2")	9.00E-02	9.00E-02	2.35E-01	5.40E+00	4.85E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.30E+01	1.18E-01	4.15E-02	1.13E+00	2.21E-02	2.20E+01	1.17E+00	2.19E+01	1.01E-03
BRSD-10 (0-2")	9.00E-02	9.00E-02	2.35E-01	7.11E+00	6.39E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.03E+01	1.55E-01	4.15E-02	1.13E+00	2.91E-02	2.20E+01	1.17E+00	2.19E+01	1.33E-03
BRSD-11 (0-2")	9.00E-02	9.00E-02	2.35E-01	3.45E+00	3.10E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.47E+01	7.54E-02	4.15E-02	1.13E+00	1.41E-02	2.20E+01	1.17E+00	2.19E+01	6.45E-04
Eastern Upper Marsh (2-6")																						**Maximum HQ (Western Upper Marsh, 0-2")**	**2.07E-03**
UM-1000S-3500E (2-6")	9.00E-02	9.00E-02	2.35E-01	8.94E+00	8.04E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.81E+01	1.95E-01	4.15E-02	1.13E+00	3.66E-02	2.20E+01	1.17E+00	2.19E+01	1.67E-03
BRSD-15 (2-6")	9.00E-02	9.00E-02	2.35E-01	3.66E+00	3.29E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.56E+01	8.00E-02	4.15E-02	1.13E+00	1.50E-02	2.20E+01	1.17E+00	2.19E+01	6.85E-04
BRSD-4 (2-6")	9.00E-02	9.00E-02	2.35E-01	2.31E+00	2.08E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	9.85E+00	5.05E-02	4.15E-02	1.13E+00	9.45E-03	2.20E+01	1.17E+00	2.19E+01	4.32E-04
UM-750S-3500E (2-6")	9.00E-02	9.00E-02	2.35E-01	3.68E+01	3.31E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.57E+02	8.05E-01	4.15E-02	1.13E+00	1.51E-01	2.20E+01	1.17E+00	2.19E+01	6.89E-03

TABLE C-12BA: ARSENIC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 12 - MARSH, TERRESTRIAL RECEPTORS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **28.9**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Red-Tailed Hawk (Carnivorous Birds)																							
BRSD-16 (2-6")	9.00E-02	9.00E-02	2.35E-01	1.19E+02	1.07E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.07E+02	2.60E+00	4.15E-02	1.13E+00	4.86E-01	2.20E+01	1.17E+00	2.19E+01	2.22E-02
UM-750S-3000E (2-6")	9.00E-02	9.00E-02	2.35E-01	3.35E+01	3.02E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.43E+02	7.33E-01	4.15E-02	1.13E+00	1.37E-01	2.20E+01	1.17E+00	2.19E+01	6.28E-03
BRSD-3 (2-6")	9.00E-02	9.00E-02	2.35E-01	1.27E+01	1.14E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.42E+01	2.78E-01	4.15E-02	1.13E+00	5.20E-02	2.20E+01	1.17E+00	2.19E+01	2.38E-03
UM-500S-3250E (2-6")	9.00E-02	9.00E-02	2.35E-01	3.52E+01	3.17E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.50E+02	7.69E-01	4.15E-02	1.13E+00	1.44E-01	2.20E+01	1.17E+00	2.19E+01	6.58E-03
UM-500S-3000E (2-6")	9.00E-02	9.00E-02	2.35E-01	5.30E+00	4.77E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.26E+01	1.16E-01	4.15E-02	1.13E+00	2.17E-02	2.20E+01	1.17E+00	2.19E+01	9.92E-04
UM-500S-2750E (2-6")	9.00E-02	9.00E-02	2.35E-01	1.74E+01	1.57E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	7.42E+01	3.80E-01	4.15E-02	1.13E+00	7.12E-02	2.20E+01	1.17E+00	2.19E+01	3.26E-03
BRSD-25 (2-6")	9.00E-02	9.00E-02	2.35E-01	1.41E+01	1.27E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	6.00E+01	3.08E-01	4.15E-02	1.13E+00	5.76E-02	2.20E+01	1.17E+00	2.19E+01	2.63E-03
UM-250S-3000E (2-6")	9.00E-02	9.00E-02	2.35E-01	3.80E+01	3.42E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.62E+02	8.31E-01	4.15E-02	1.13E+00	1.55E-01	2.20E+01	1.17E+00	2.19E+01	7.11E-03
UM-250S-3250E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-24 (2-6")	9.00E-02	9.00E-02	2.35E-01	2.79E+01	2.51E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.19E+02	6.10E-01	4.15E-02	1.13E+00	1.14E-01	2.20E+01	1.17E+00	2.19E+01	5.22E-03
UM-250S-2750E (2-6")	9.00E-02	9.00E-02	2.35E-01	3.31E+01	2.98E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.41E+02	7.23E-01	4.15E-02	1.13E+00	1.35E-01	2.20E+01	1.17E+00	2.19E+01	6.19E-03
UM-0N-2500E (2-6")	9.00E-02	9.00E-02	2.35E-01	2.42E+01	2.17E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.03E+02	5.28E-01	4.15E-02	1.13E+00	9.88E-02	2.20E+01	1.17E+00	2.19E+01	4.52E-03
BRSD-2 (2-6")	9.00E-02	9.00E-02	2.35E-01	3.10E+01	2.79E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.32E+02	6.77E-01	4.15E-02	1.13E+00	1.27E-01	2.20E+01	1.17E+00	2.19E+01	5.79E-03
UM-500N-2500E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-250N-2500E (2-6")	9.00E-02	9.00E-02	2.35E-01	2.72E+01	2.45E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.16E+02	5.95E-01	4.15E-02	1.13E+00	1.11E-01	2.20E+01	1.17E+00	2.19E+01	5.09E-03
UM-250N-2250E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
Western Upper Marsh (2-6")																					**Maximum HQ (Eastern Upper Marsh, 2-6")**		**2.22E-02**
UM-500S-2500E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-2000E (2-6")	9.00E-02	9.00E-02	2.35E-01	1.16E+01	1.04E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.94E+01	2.53E-01	4.15E-02	1.13E+00	4.74E-02	2.20E+01	1.17E+00	2.19E+01	2.17E-03
UM-500S-2000E (2-6")	9.00E-02	9.00E-02	2.35E-01	4.20E+00	3.78E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.79E+01	9.18E-02	4.15E-02	1.13E+00	1.72E-02	2.20E+01	1.17E+00	2.19E+01	7.86E-04
UM-250N-1750E (2-6")	9.00E-02	9.00E-02	2.35E-01	2.86E+00	2.57E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.22E+01	6.26E-02	4.15E-02	1.13E+00	1.17E-02	2.20E+01	1.17E+00	2.19E+01	5.35E-04
UM-0N-1500E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-250S-1500E (2-6")	9.00E-02	9.00E-02	2.35E-01	7.18E+00	6.46E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.06E+01	1.57E-01	4.15E-02	1.13E+00	2.94E-02	2.20E+01	1.17E+00	2.19E+01	1.34E-03
UM-250S-1250E (2-6")	9.00E-02	9.00E-02	2.35E-01	5.77E+00	5.19E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.46E+01	1.26E-01	4.15E-02	1.13E+00	2.36E-02	2.20E+01	1.17E+00	2.19E+01	1.08E-03
BRSD-6 (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-1000E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-750E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-500E (2-6")	9.00E-02	9.00E-02	2.35E-01	3.94E+00	3.55E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.68E+01	8.61E-02	4.15E-02	1.13E+00	1.61E-02	2.20E+01	1.17E+00	2.19E+01	7.37E-04
UM-250S-500E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-250E (2-6")	9.00E-02	9.00E-02	2.35E-01	4.57E+00	4.12E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.95E+01	1.00E-01	4.15E-02	1.13E+00	1.87E-02	2.20E+01	1.17E+00	2.19E+01	8.56E-04
UM-250S-250E (2-6")	9.00E-02	9.00E-02	2.35E-01	2.25E+00	2.02E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	9.58E+00	4.91E-02	4.15E-02	1.13E+00	9.19E-03	2.20E+01	1.17E+00	2.19E+01	4.20E-04
BRSD-7 (2-6")	9.00E-02	9.00E-02	2.35E-01	2.82E+00	2.53E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.20E+01	6.15E-02	4.15E-02	1.13E+00	1.15E-02	2.20E+01	1.17E+00	2.19E+01	5.27E-04
BRSD-8 (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-500S-500E (2-6")	9.00E-02	9.00E-02	2.35E-01	2.18E+00	1.96E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	9.28E+00	4.76E-02	4.15E-02	1.13E+00	8.90E-03	2.20E+01	1.17E+00	2.19E+01	4.07E-04
BRSD-9 (2-6")	9.00E-02	9.00E-02	2.35E-01	4.08E+00	3.67E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.74E+01	8.92E-02	4.15E-02	1.13E+00	1.67E-02	2.20E+01	1.17E+00	2.19E+01	7.64E-04
BRSD-10 (2-6")	9.00E-02	9.00E-02	2.35E-01	8.40E+00	7.56E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.58E+01	1.84E-01	4.15E-02	1.13E+00	3.43E-02	2.20E+01	1.17E+00	2.19E+01	1.57E-03
BRSD-11 (2-6")	9.00E-02	9.00E-02	2.35E-01	2.53E+00	2.28E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.08E+01	5.54E-02	4.15E-02	1.13E+00	1.04E-02	2.20E+01	1.17E+00	2.19E+01	4.74E-04
Eastern Upper Marsh (6-12")																					**Maximum HQ (Western Upper Marsh, 2-6")**		**2.17E-03**
UM-1000S-3500E (6-12")	9.00E-02	9.00E-02	2.35E-01	2.96E+00	2.66E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.26E+01	6.46E-02	4.15E-02	1.13E+00	1.21E-02	2.20E+01	1.17E+00	2.19E+01	5.53E-04
BRSD-15 (6-12")	9.00E-02	9.00E-02	2.35E-01	3.94E+00	3.55E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.68E+01	8.61E-02	4.15E-02	1.13E+00	1.61E-02	2.20E+01	1.17E+00	2.19E+01	7.37E-04
BRSD-4 (6-12")	9.00E-02	9.00E-02	2.35E-01	4.79E+00	4.31E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.04E+01	1.05E-01	4.15E-02	1.13E+00	1.96E-02	2.20E+01	1.17E+00	2.19E+01	8.95E-04
UM-750S-3500E (6-12")	9.00E-02	9.00E-02	2.35E-01	3.24E+01	2.91E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.38E+02	7.08E-01	4.15E-02	1.13E+00	1.32E-01	2.20E+01	1.17E+00	2.19E+01	6.06E-03
BRSD-16 (6-12")	9.00E-02	9.00E-02	2.35E-01	2.18E+01	1.96E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	9.28E+01	4.76E-01	4.15E-02	1.13E+00	8.90E-02	2.20E+01	1.17E+00	2.19E+01	4.07E-03
UM-750S-3000E (6-12")	9.00E-02	9.00E-02	2.35E-01	3.33E+01	3.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.42E+02	7.28E-01	4.15E-02	1.13E+00	1.36E-01	2.20E+01	1.17E+00	2.19E+01	6.23E-03
BRSD-3 (6-12")	9.00E-02	9.00E-02	2.35E-01	4.67E+00	4.20E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.99E+01	1.02E-01	4.15E-02	1.13E+00	1.91E-02	2.20E+01	1.17E+00	2.19E+01	8.73E-04
UM-500S-3250E (6-12")	9.00E-02	9.00E-02	2.35E-01	2.35E+01	2.11E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.00E+02	5.13E-01	4.15E-02	1.13E+00	9.59E-02	2.20E+01	1.17E+00	2.19E+01	4.39E-03
UM-500S-3000E (6-12")	9.00E-02	9.00E-02	2.35E-01	3.54E+00	3.19E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.51E+01	7.74E-02	4.15E-02	1.13E+00	1.45E-02	2.20E+01	1.17E+00	2.19E+01	6.63E-04
UM-500S-2750E (6-12")	9.00E-02	9.00E-02	2.35E-01	1.59E+01	1.43E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	6.78E+01	3.48E-01	4.15E-02	1.13E+00	6.50E-02	2.20E+01	1.17E+00	2.19E+01	2.98E-03
BRSD-25 (6-12")	9.00E-02	9.00E-02	2.35E-01	6.80E+00	6.12E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.90E+01	1.49E-01	4.15E-02	1.13E+00	2.78E-02	2.20E+01	1.17E+00	2.19E+01	1.27E-03
UM-250S-3000E (6-12")	9.00E-02	9.00E-02	2.35E-01	4.29E+01	3.86E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.83E+02	9.38E-01	4.15E-02	1.13E+00	1.76E-01	2.20E+01	1.17E+00	2.19E+01	8.03E-03
UM-250S-3250E (6-12")	9.00E-02	9.00E-02	2.35E-01	2.46E+00	2.22E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.05E+01	5.38E-02	4.15E-02	1.13E+00	1.01E-02	2.20E+01	1.17E+00	2.19E+01	4.61E-04
BRSD-24 (6-12")	9.00E-02	9.00E-02	2.35E-01	1.49E+01	1.34E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	6.34E+01	3.25E-01	4.15E-02	1.13E+00	6.08E-02	2.20E+01	1.17E+00	2.19E+01	2.78E-03
UM-250S-2750E (6-12")	9.00E-02	9.00E-02	2.35E-01	1.55E+01	1.39E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	6.60E+01	3.38E-01	4.15E-02	1.13E+00	6.33E-02	2.20E+01	1.17E+00	2.19E+01	2.90E-03
UM-250S-2500E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-2 (6-12")	9.00E-02	9.00E-02	2.35E-01	1.71E+01	1.54E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	7.31E+01	3.75E-01	4.15E-02	1.13E+00	7.01E-02	2.20E+01	1.17E+00	2.19E+01	3.21E-03
UM-500N-2500E (6-12")	9.00E-02	9.00E-02	2.35E-01	2.72E+00	2.45E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.16E+01	5.95E-02	4.15E-02	1.13E+00	1.11E-02	2.20E+01	1.17E+00	2.19E+01	5.09E-04
UM-250N-2500E (6-12")	9.00E-02	9.00E-02	2.35E-01	2.14E+01	1.92E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	9.12E+01	4.68E-01	4.15E-02	1.13E+00	8.75E-02	2.20E+01	1.17E+00	2.19E+01	4.00E-03
UM-250N-2250E (6-12")	9.00E-02	9.00E-02	2.35E-01	2.33E+00	2.10E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	9.93E+00	5.09E-02	4.15E-02	1.13E+00	9.53E-03	2.20E+01	1.17E+00	2.19E+01	4.36E-04

TABLE C-12BA: ARSENIC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 12 - MARSH, TERRESTRIAL RECEPTORS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables; from BAF table; linked to soil or sed concentration table (VLOOKUP)

calculated values; linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **28.9**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Red-Tailed Hawk (Carnivorous Birds)																							
Western Upper Marsh (6-12")																						**Maximum HQ (Eastern Upper Marsh, 6-12")**	**8.03E-03**
UM-500S-2500E (6-12")	9.00E-02	9.00E-02	2.35E-01	2.58E+00	2.32E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.10E+01	5.64E-02	4.15E-02	1.13E+00	1.06E-02	2.20E+01	1.17E+00	2.19E+01	4.83E-04
UM-0N-2000E (6-12")	9.00E-02	9.00E-02	2.35E-01	1.38E+01	1.25E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.90E+01	3.03E-01	4.15E-02	1.13E+00	5.66E-02	2.20E+01	1.17E+00	2.19E+01	2.59E-03
UM-500S-2000E (6-12")	9.00E-02	9.00E-02	2.35E-01	3.59E+00	3.23E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.53E+01	7.85E-02	4.15E-02	1.13E+00	1.47E-02	2.20E+01	1.17E+00	2.19E+01	6.71E-04
UM-250N-1750E (6-12")	9.00E-02	9.00E-02	2.35E-01	2.72E+00	2.45E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.16E+01	5.95E-02	4.15E-02	1.13E+00	1.11E-02	2.20E+01	1.17E+00	2.19E+01	5.09E-04
UM-0N-1500E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-250S-1500E (6-12")	9.00E-02	9.00E-02	2.35E-01	4.11E+00	3.69E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.75E+01	8.97E-02	4.15E-02	1.13E+00	1.68E-02	2.20E+01	1.17E+00	2.19E+01	7.68E-04
UM-250S-1250E (6-12")	9.00E-02	9.00E-02	2.35E-01	4.46E+00	4.01E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.90E+01	9.74E-02	4.15E-02	1.13E+00	1.82E-02	2.20E+01	1.17E+00	2.19E+01	8.34E-04
BRSD-6 (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-1000E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-750E (6-12")	9.00E-02	9.00E-02	2.35E-01	2.91E+00	2.62E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.24E+01	6.36E-02	4.15E-02	1.13E+00	1.19E-02	2.20E+01	1.17E+00	2.19E+01	5.44E-04
UM-0N-500E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-250S-500E (6-12")	9.00E-02	9.00E-02	2.35E-01	4.15E+00	3.74E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.77E+01	9.08E-02	4.15E-02	1.13E+00	1.70E-02	2.20E+01	1.17E+00	2.19E+01	7.77E-04
UM-0N-250E (6-12")	9.00E-02	9.00E-02	2.35E-01	3.45E+00	3.10E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.47E+01	7.54E-02	4.15E-02	1.13E+00	1.41E-02	2.20E+01	1.17E+00	2.19E+01	6.45E-04
UM-250S-250E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-7 (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-8 (6-12")	9.00E-02	9.00E-02	2.35E-01	2.42E+00	2.17E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.03E+01	5.28E-02	4.15E-02	1.13E+00	9.88E-03	2.20E+01	1.17E+00	2.19E+01	4.52E-04
UM-500S-500E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-9 (6-12")	9.00E-02	9.00E-02	2.35E-01	3.80E+00	3.42E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.62E+01	8.31E-02	4.15E-02	1.13E+00	1.55E-02	2.20E+01	1.17E+00	2.19E+01	7.11E-04
BRSD-10 (6-12")	9.00E-02	9.00E-02	2.35E-01	8.99E+00	8.08E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.83E+01	1.96E-01	4.15E-02	1.13E+00	3.67E-02	2.20E+01	1.17E+00	2.19E+01	1.68E-03
BRSD-11 (6-12")	9.00E-02	9.00E-02	2.35E-01	2.32E+00	2.09E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	9.89E+00	5.07E-02	4.15E-02	1.13E+00	9.49E-03	2.20E+01	1.17E+00	2.19E+01	4.34E-04
Middle Marsh (0-2")																						**Maximum HQ (Western Upper Marsh, 6-12")**	**2.59E-03**
MMSD-201 (0-2")	9.00E-02	9.00E-02	2.35E-01	4.93E+00	4.43E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.10E+01	1.08E-01	4.15E-02	1.13E+00	2.01E-02	2.20E+01	1.17E+00	2.19E+01	9.22E-04
MMSD-202 (0-2")	9.00E-02	9.00E-02	2.35E-01	5.16E+00	4.64E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.20E+01	1.13E-01	4.15E-02	1.13E+00	2.11E-02	2.20E+01	1.17E+00	2.19E+01	9.65E-04
Middle Marsh (2-6")																						**Maximum HQ (Middle Marsh, 0-2")**	**9.65E-04**
MMSD-201 (2-6")	9.00E-02	9.00E-02	2.35E-01	4.93E+00	4.43E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.10E+01	1.08E-01	4.15E-02	1.13E+00	2.01E-02	2.20E+01	1.17E+00	2.19E+01	9.22E-04
MMSD-202 (2-6")	9.00E-02	9.00E-02	2.35E-01	5.40E+00	4.85E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.30E+01	1.18E-01	4.15E-02	1.13E+00	2.21E-02	2.20E+01	1.17E+00	2.19E+01	1.01E-03
Middle Marsh (6-12")																						**Maximum HQ (Middle Marsh, 2-6")**	**1.01E-03**
MMSD-201 (6-12")	9.00E-02	9.00E-02	2.35E-01	5.63E+00	5.07E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.40E+01	1.23E-01	4.15E-02	1.13E+00	2.30E-02	2.20E+01	1.17E+00	2.19E+01	1.05E-03
MMSD-202 (6-12")	9.00E-02	9.00E-02	2.35E-01	3.75E+00	3.38E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.60E+01	8.20E-02	4.15E-02	1.13E+00	1.54E-02	2.20E+01	1.17E+00	2.19E+01	7.02E-04
Lower Marsh (0-2")																						**Maximum HQ (Middle Marsh, 6-12")**	**1.05E-03**
LMSD-201 (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
LMSD-202 (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
LMSD-203 (0-2")	9.00E-02	9.00E-02	2.35E-01	5.63E+00	5.07E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.40E+01	1.23E-01	4.15E-02	1.13E+00	2.30E-02	2.20E+01	1.17E+00	2.19E+01	1.05E-03
LMSD-204 (0-2")	9.00E-02	9.00E-02	2.35E-01	3.75E+00	3.38E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.60E+01	8.20E-02	4.15E-02	1.13E+00	1.54E-02	2.20E+01	1.17E+00	2.19E+01	7.02E-04
Lower Marsh (2-6")																						**Maximum HQ (Lower Marsh, 0-2")**	**1.05E-03**
LMSD-201 (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
LMSD-202 (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
LMSD-203 (2-6")	9.00E-02	9.00E-02	2.35E-01	5.40E+00	4.85E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.30E+01	1.18E-01	4.15E-02	1.13E+00	2.21E-02	2.20E+01	1.17E+00	2.19E+01	1.01E-03
LMSD-204 (2-6")	9.00E-02	9.00E-02	2.35E-01	3.75E+00	3.38E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.60E+01	8.20E-02	4.15E-02	1.13E+00	1.54E-02	2.20E+01	1.17E+00	2.19E+01	7.02E-04
Lower Marsh (6-12")																						**Maximum HQ (Lower Marsh, 2-6")**	**1.01E-03**
LMSD-201 (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
LMSD-202 (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
LMSD-203 (6-12")	9.00E-02	9.00E-02	2.35E-01	5.87E+00	5.28E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.50E+01	1.28E-01	4.15E-02	1.13E+00	2.40E-02	2.20E+01	1.17E+00	2.19E+01	1.10E-03
LMSD-204 (6-12")	9.00E-02	9.00E-02	2.35E-01	3.75E+00	3.38E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.60E+01	8.20E-02	4.15E-02	1.13E+00	1.54E-02	2.20E+01	1.17E+00	2.19E+01	7.02E-04
																						Maximum HQ (Lower Marsh, 6-12")	**1.10E-03**
American Kestral (Insectivorous Birds)																							
Reference Sites																							
BRSD-5 (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	3.04E+00	5.22E+01	7.19E-01	7.84E-04	1.72E+01	1.35E-02	1.10E-01	1.24E-01	6.52E-01	2.20E+01	1.17E+00	1.40E+01	4.64E-02
BRSD-5 (2-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	3.04E+00	5.83E+01	8.02E-01	7.84E-04	1.92E+01	1.51E-02	1.10E-01	1.24E-01	7.28E-01	2.20E+01	1.17E+00	1.40E+01	5.18E-02
BRSD-5 (6-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	3.04E+00	7.47E+01	1.03E+00	7.84E-04	2.46E+01	1.93E-02	1.10E-01	1.24E-01	9.33E-01	2.20E+01	1.17E+00	1.40E+01	6.64E-02
PGBG-1 (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	3.04E+00	3.77E+01	5.18E-01	7.84E-04	1.24E+01	9.73E-03	1.10E-01	1.24E-01	4.70E-01	2.20E+01	1.17E+00	1.40E+01	3.35E-02
PGBG-1 (2-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	3.04E+00	2.77E+01	3.81E-01	7.84E-04	9.12E+00	7.15E-03	1.10E-01	1.24E-01	3.46E-01	2.20E+01	1.17E+00	1.40E+01	2.46E-02
PGBG-1 (6-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	3.04E+00	2.85E+01	3.93E-01	7.84E-04	9.40E+00	7.37E-03	1.10E-01	1.24E-01	3.56E-01	2.20E+01	1.17E+00	1.40E+01	2.54E-02
PGBG-2 (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	3.04E+00	5.71E+01	7.86E-01	7.84E-04	1.88E+01	1.47E-02	1.10E-01	1.24E-01	7.13E-01	2.20E+01	1.17E+00	1.40E+01	5.08E-02
PGBG-2 (2-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	3.04E+00	5.62E+01	7.73E-01	7.84E-04	1.85E+01	1.45E-02	1.10E-01	1.24E-01	7.02E-01	2.20E+01	1.17E+00	1.40E+01	5.00E-02
PGBG-2 (6-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	3.04E+00	9.81E+01	1.35E+00	7.84E-04	3.23E+01	2.53E-02	1.10E-01	1.24E-01	1.22E+00	2.20E+01	1.17E+00	1.40E+01	8.72E-02

TABLE C-12BA: ARSENIC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 12 - MARSH, TERRESTRIAL RECEPTORS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **28.9**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
American Kestral (Insectivorous Birds)																							
Eastern Upper Marsh (0-2")																						**Minimum HQ (Reference Sites)**	**2.46E-02**
UM-1000S-3500E (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	8.42E+00	2.00E+03	2.76E+01	7.84E-04	2.38E+02	1.87E-01	1.10E-01	1.24E-01	2.47E+01	2.20E+01	1.17E+00	1.40E+01	1.76E+00
BRSD-15 (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	8.42E+00	1.26E+02	1.73E+00	7.84E-04	1.49E+01	1.17E-02	1.10E-01	1.24E-01	1.55E+00	2.20E+01	1.17E+00	1.40E+01	1.10E-01
BRSD-4 (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-750S-3500E (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	8.42E+00	9.77E+02	1.34E+01	7.84E-04	1.16E+02	9.10E-02	1.10E-01	1.24E-01	1.21E+01	2.20E+01	1.17E+00	1.40E+01	8.58E-01
BRSD-16 (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	8.42E+00	1.63E+03	2.24E+01	7.84E-04	1.93E+02	1.51E-01	1.10E-01	1.24E-01	2.01E+01	2.20E+01	1.17E+00	1.40E+01	1.43E+00
UM-750S-3000E (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	8.42E+00	1.38E+03	1.90E+01	7.84E-04	1.64E+02	1.29E-01	1.10E-01	1.24E-01	1.70E+01	2.20E+01	1.17E+00	1.40E+01	1.21E+00
BRSD-3 (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	8.42E+00	3.20E+02	4.40E+00	7.84E-04	3.80E+01	2.98E-02	1.10E-01	1.24E-01	3.95E+00	2.20E+01	1.17E+00	1.40E+01	2.81E-01
UM-500S-3250E (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	8.42E+00	1.16E+03	1.60E+01	7.84E-04	1.38E+02	1.08E-01	1.10E-01	1.24E-01	1.43E+01	2.20E+01	1.17E+00	1.40E+01	1.02E+00
UM-500S-3000E (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	8.42E+00	7.36E+02	1.01E+01	7.84E-04	8.74E+01	6.86E-02	1.10E-01	1.24E-01	9.08E+00	2.20E+01	1.17E+00	1.40E+01	6.47E-01
UM-500S-2750E (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	8.42E+00	1.31E+03	1.81E+01	7.84E-04	1.56E+02	1.22E-01	1.10E-01	1.24E-01	1.62E+01	2.20E+01	1.17E+00	1.40E+01	1.15E+00
BRSD-25 (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	8.42E+00	5.56E+02	7.65E+00	7.84E-04	6.60E+01	5.18E-02	1.10E-01	1.24E-01	6.86E+00	2.20E+01	1.17E+00	1.40E+01	4.88E-01
UM-250S-3000E (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	8.42E+00	9.01E+02	1.24E+01	7.84E-04	1.07E+02	8.39E-02	1.10E-01	1.24E-01	1.11E+01	2.20E+01	1.17E+00	1.40E+01	7.92E-01
UM-250S-3250E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-24 (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	8.42E+00	1.63E+03	2.24E+01	7.84E-04	1.93E+02	1.51E-01	1.10E-01	1.24E-01	2.01E+01	2.20E+01	1.17E+00	1.40E+01	1.43E+00
UM-250S-2750E (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	8.42E+00	1.39E+03	1.91E+01	7.84E-04	1.65E+02	1.29E-01	1.10E-01	1.24E-01	1.71E+01	2.20E+01	1.17E+00	1.40E+01	1.22E+00
UM-250S-2500E (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	8.42E+00	1.04E+02	1.43E+00	7.84E-04	1.23E+01	9.65E-03	1.10E-01	1.24E-01	1.28E+00	2.20E+01	1.17E+00	1.40E+01	9.10E-02
UM-0N-2500E (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	8.42E+00	9.86E+02	1.36E+01	7.84E-04	1.17E+02	9.18E-02	1.10E-01	1.24E-01	1.22E+01	2.20E+01	1.17E+00	1.40E+01	8.66E-01
UM-0N-250E (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	8.42E+00	1.10E+02	1.51E+00	7.84E-04	1.30E+01	1.02E-02	1.10E-01	1.24E-01	1.35E+00	2.20E+01	1.17E+00	1.40E+01	9.62E-02
BRSD-2 (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	8.42E+00	1.49E+03	2.05E+01	7.84E-04	1.77E+02	1.39E-01	1.10E-01	1.24E-01	1.84E+01	2.20E+01	1.17E+00	1.40E+01	1.31E+00
UM-500N-2500E (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	8.42E+00	9.52E+01	1.31E+00	7.84E-04	1.13E+01	8.86E-03	1.10E-01	1.24E-01	1.17E+00	2.20E+01	1.17E+00	1.40E+01	8.36E-02
UM-250N-2500E (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	8.42E+00	8.16E+02	1.12E+01	7.84E-04	9.69E+01	7.60E-02	1.10E-01	1.24E-01	1.01E+01	2.20E+01	1.17E+00	1.40E+01	7.17E-01
UM-250N-2250E (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	8.42E+00	1.49E+03	2.05E+01	7.84E-04	1.77E+02	1.39E-01	1.10E-01	1.24E-01	1.84E+01	2.20E+01	1.17E+00	1.40E+01	1.31E+00
Western Upper Marsh (0-2")																						**Maximum HQ (Eastern Upper Marsh, 0-2")**	**1.76E+00**
UM-500S-2500E (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	2.33E+00	2.85E+01	3.92E-01	7.84E-04	1.22E+01	9.57E-03	1.10E-01	1.24E-01	3.58E-01	2.20E+01	1.17E+00	1.40E+01	2.55E-02
UM-0N-2000E (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	2.33E+00	1.10E+02	1.52E+00	7.84E-04	4.72E+01	3.70E-02	1.10E-01	1.24E-01	1.38E+00	2.20E+01	1.17E+00	1.40E+01	9.85E-02
UM-500S-2000E (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	2.33E+00	4.90E+01	6.75E-01	7.84E-04	2.10E+01	1.65E-02	1.10E-01	1.24E-01	6.15E-01	2.20E+01	1.17E+00	1.40E+01	4.38E-02
UM-250N-1750E (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	2.33E+00	2.94E+01	4.05E-01	7.84E-04	1.26E+01	9.88E-03	1.10E-01	1.24E-01	3.69E-01	2.20E+01	1.17E+00	1.40E+01	2.63E-02
UM-0N-1500E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-250S-1500E (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	2.33E+00	7.77E+01	1.07E+00	7.84E-04	3.33E+01	2.61E-02	1.10E-01	1.24E-01	9.76E-01	2.20E+01	1.17E+00	1.40E+01	6.95E-02
UM-250S-1250E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-6 (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-1000E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-750E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-500E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	1.01E+01	BB	BB	BB	BB	BB	BB	BB	BB
UM-250S-500E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-250S-250E (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	2.33E+00	3.38E+01	4.66E-01	7.84E-04	1.45E+01	1.14E-02	1.10E-01	1.24E-01	4.25E-01	2.20E+01	1.17E+00	1.40E+01	3.03E-02
BRSD-7 (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-8 (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-500S-500E (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	2.33E+00	2.75E+01	3.79E-01	7.84E-04	1.18E+01	9.26E-03	1.10E-01	1.24E-01	3.46E-01	2.20E+01	1.17E+00	1.40E+01	2.46E-02
BRSD-9 (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	2.33E+00	5.37E+01	7.39E-01	7.84E-04	2.30E+01	1.80E-02	1.10E-01	1.24E-01	6.74E-01	2.20E+01	1.17E+00	1.40E+01	4.80E-02
BRSD-10 (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	2.33E+00	7.07E+01	9.73E-01	7.84E-04	3.03E+01	2.38E-02	1.10E-01	1.24E-01	8.88E-01	2.20E+01	1.17E+00	1.40E+01	6.32E-02
BRSD-11 (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	2.33E+00	3.43E+01	4.72E-01	7.84E-04	1.47E+01	1.15E-02	1.10E-01	1.24E-01	4.31E-01	2.20E+01	1.17E+00	1.40E+01	3.07E-02
Eastern Upper Marsh (2-6")																						**Maximum HQ (Western Upper Marsh, 0-2")**	**9.85E-02**
UM-1000S-3500E (2-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	8.42E+00	3.21E+02	4.42E+00	7.84E-04	3.81E+01	2.99E-02	1.10E-01	1.24E-01	3.96E+00	2.20E+01	1.17E+00	1.40E+01	2.82E-01
BRSD-15 (2-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	8.42E+00	1.31E+02	1.81E+00	7.84E-04	1.56E+01	1.22E-02	1.10E-01	1.24E-01	1.62E+00	2.20E+01	1.17E+00	1.40E+01	1.15E-01
BRSD-4 (2-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	8.42E+00	8.30E+01	1.14E+00	7.84E-04	9.85E+00	7.73E-03	1.10E-01	1.24E-01	1.02E+00	2.20E+01	1.17E+00	1.40E+01	7.29E-02
UM-750S-3500E (2-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	8.42E+00	1.32E+03	1.82E+01	7.84E-04	1.57E+02	1.23E-01	1.10E-01	1.24E-01	1.63E+01	2.20E+01	1.17E+00	1.40E+01	1.16E+00
BRSD-16 (2-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	8.42E+00	4.27E+03	5.88E+01	7.84E-04	5.07E+02	3.98E-01	1.10E-01	1.24E-01	5.27E+01	2.20E+01	1.17E+00	1.40E+01	3.75E+00
UM-750S-3000E (2-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	8.42E+00	1.20E+03	1.66E+01	7.84E-04	1.43E+02	1.12E-01	1.10E-01	1.24E-01	1.49E+01	2.20E+01	1.17E+00	1.40E+01	1.06E+00
BRSD-3 (2-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	8.42E+00	4.57E+02	6.28E+00	7.84E-04	5.42E+01	4.25E-02	1.10E-01	1.24E-01	5.63E+00	2.20E+01	1.17E+00	1.40E+01	4.01E-01
UM-500S-3250E (2-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	8.42E+00	1.26E+03	1.74E+01	7.84E-04	1.50E+02	1.18E-01	1.10E-01	1.24E-01	1.56E+01	2.20E+01	1.17E+00	1.40E+01	1.11E+00
UM-500S-3000E (2-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	8.42E+00	1.90E+02	2.62E+00	7.84E-04	2.26E+01	1.77E-02	1.10E-01	1.24E-01	2.35E+00	2.20E+01	1.17E+00	1.40E+01	1.67E-01
UM-500S-2750E (2-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	8.42E+00	6.25E+02	8.60E+00	7.84E-04	7.42E+01	5.82E-02	1.10E-01	1.24E-01	7.71E+00	2.20E+01	1.17E+00	1.40E+01	5.49E-01
BRSD-25 (2-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	8.42E+00	5.05E+02	6.95E+00	7.84E-04	6.00E+01	4.71E-02	1.10E-01	1.24E-01	6.24E+00	2.20E+01	1.17E+00	1.40E+01	4.44E-01
UM-250S-3000E (2-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	8.42E+00	1.36E+03	1.88E+01	7.84E-04	1.62E+02	1.27E-01	1.10E-01	1.24E-01	1.68E+01	2.20E+01	1.17E+00	1.40E+01	1.20E+00
UM-250S-3250E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-24 (2-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	8.42E+00	1.00E+03	1.38E+01	7.84E-04	1.19E+02	9.33E-02	1.10E-01	1.24E-01	1.24E+01	2.20E+01	1.17E+00	1.40E+01	8.81E-01

TABLE C-12BA: ARSENIC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 12 - MARSH, TERRESTRIAL RECEPTORS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **28.9**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
American Kestral (Insectivorous Birds)																							
UM-250S-2750E (2-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	8.42E+00	1.19E+03	1.63E+01	7.84E-04	1.41E+02	1.11E-01	1.10E-01	1.24E-01	1.47E+01	2.20E+01	1.17E+00	1.40E+01	1.04E+00
UM-0N-2500E (2-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	8.42E+00	8.68E+02	1.19E+01	7.84E-04	1.03E+02	8.08E-02	1.10E-01	1.24E-01	1.07E+01	2.20E+01	1.17E+00	1.40E+01	7.62E-01
BRSD-2 (2-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	8.42E+00	1.11E+03	1.53E+01	7.84E-04	1.32E+02	1.04E-01	1.10E-01	1.24E-01	1.37E+01	2.20E+01	1.17E+00	1.40E+01	9.77E-01
UM-500N-2500E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-250N-2500E (2-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	8.42E+00	9.77E+02	1.34E+01	7.84E-04	1.16E+02	9.10E-02	1.10E-01	1.24E-01	1.21E+01	2.20E+01	1.17E+00	1.40E+01	8.58E-01
UM-250N-2250E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
Western Upper Marsh (2-6")																						**Maximum HQ (Eastern Upper Marsh, 2-6")**	**3.75E+00**
UM-500S-2500E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-2000E (2-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	2.33E+00	1.15E+02	1.59E+00	7.84E-04	4.94E+01	3.87E-02	1.10E-01	1.24E-01	1.45E+00	2.20E+01	1.17E+00	1.40E+01	1.03E-01
UM-500S-2000E (2-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	2.33E+00	4.18E+01	5.75E-01	7.84E-04	1.79E+01	1.40E-02	1.10E-01	1.24E-01	5.25E-01	2.20E+01	1.17E+00	1.40E+01	3.74E-02
UM-250N-1750E (2-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	2.33E+00	2.85E+01	3.92E-01	7.84E-04	1.22E+01	9.57E-03	1.10E-01	1.24E-01	3.58E-01	2.20E+01	1.17E+00	1.40E+01	2.55E-02
UM-0N-1500E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-250S-1500E (2-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	2.33E+00	7.14E+01	9.83E-01	7.84E-04	3.06E+01	2.40E-02	1.10E-01	1.24E-01	8.97E-01	2.20E+01	1.17E+00	1.40E+01	6.39E-02
UM-250S-1250E (2-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	2.33E+00	5.74E+01	7.90E-01	7.84E-04	2.46E+01	1.93E-02	1.10E-01	1.24E-01	7.21E-01	2.20E+01	1.17E+00	1.40E+01	5.13E-02
BRSD-6 (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-1000E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-750E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-500E (2-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	2.33E+00	3.92E+01	5.40E-01	7.84E-04	1.68E+01	1.32E-02	1.10E-01	1.24E-01	4.92E-01	2.20E+01	1.17E+00	1.40E+01	3.51E-02
UM-250S-500E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-250E (2-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	2.33E+00	4.55E+01	6.26E-01	7.84E-04	1.95E+01	1.53E-02	1.10E-01	1.24E-01	5.72E-01	2.20E+01	1.17E+00	1.40E+01	4.07E-02
UM-250S-250E (2-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	2.33E+00	2.24E+01	3.08E-01	7.84E-04	9.58E+00	7.51E-03	1.10E-01	1.24E-01	2.81E-01	2.20E+01	1.17E+00	1.40E+01	2.00E-02
BRSD-7 (2-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	2.33E+00	2.80E+01	3.85E-01	7.84E-04	1.20E+01	9.41E-03	1.10E-01	1.24E-01	3.52E-01	2.20E+01	1.17E+00	1.40E+01	2.50E-02
BRSD-8 (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-500S-500E (2-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	2.33E+00	2.17E+01	2.98E-01	7.84E-04	9.28E+00	7.28E-03	1.10E-01	1.24E-01	2.72E-01	2.20E+01	1.17E+00	1.40E+01	1.94E-02
BRSD-9 (2-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	2.33E+00	4.06E+01	5.59E-01	7.84E-04	1.74E+01	1.36E-02	1.10E-01	1.24E-01	5.10E-01	2.20E+01	1.17E+00	1.40E+01	3.63E-02
BRSD-10 (2-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	2.33E+00	8.36E+01	1.15E+00	7.84E-04	3.58E+01	2.81E-02	1.10E-01	1.24E-01	1.05E+00	2.20E+01	1.17E+00	1.40E+01	7.47E-02
BRSD-11 (2-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	2.33E+00	2.52E+01	3.47E-01	7.84E-04	1.08E+01	8.47E-03	1.10E-01	1.24E-01	3.17E-01	2.20E+01	1.17E+00	1.40E+01	2.25E-02
Eastern Upper Marsh (6-12")																						**Maximum HQ (Western Upper Marsh, 2-6")**	**1.03E-01**
UM-1000S-3500E (6-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	8.42E+00	1.06E+02	1.46E+00	7.84E-04	1.26E+01	9.88E-03	1.10E-01	1.24E-01	1.31E+00	2.20E+01	1.17E+00	1.40E+01	9.32E-02
BRSD-15 (6-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	8.42E+00	1.42E+02	1.95E+00	7.84E-04	1.68E+01	1.32E-02	1.10E-01	1.24E-01	1.75E+00	2.20E+01	1.17E+00	1.40E+01	1.24E-01
BRSD-4 (6-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	8.42E+00	1.72E+02	2.36E+00	7.84E-04	2.04E+01	1.60E-02	1.10E-01	1.24E-01	2.12E+00	2.20E+01	1.17E+00	1.40E+01	1.51E-01
UM-750S-3500E (6-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	8.42E+00	1.16E+03	1.60E+01	7.84E-04	1.38E+02	1.08E-01	1.10E-01	1.24E-01	1.43E+01	2.20E+01	1.17E+00	1.40E+01	1.02E+00
BRSD-16 (6-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	8.42E+00	7.82E+02	1.08E+01	7.84E-04	9.28E+01	7.28E-02	1.10E-01	1.24E-01	9.65E+00	2.20E+01	1.17E+00	1.40E+01	6.87E-01
UM-750S-3000E (6-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	8.42E+00	1.20E+03	1.65E+01	7.84E-04	1.42E+02	1.11E-01	1.10E-01	1.24E-01	1.48E+01	2.20E+01	1.17E+00	1.40E+01	1.05E+00
BRSD-3 (6-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	8.42E+00	1.68E+02	2.31E+00	7.84E-04	1.99E+01	1.56E-02	1.10E-01	1.24E-01	2.07E+00	2.20E+01	1.17E+00	1.40E+01	1.47E-01
UM-500S-3250E (6-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	8.42E+00	8.42E+02	1.16E+01	7.84E-04	1.00E+02	7.84E-02	1.10E-01	1.24E-01	1.04E+01	2.20E+01	1.17E+00	1.40E+01	7.40E-01
UM-500S-3000E (6-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	8.42E+00	1.27E+02	1.75E+00	7.84E-04	1.51E+01	1.18E-02	1.10E-01	1.24E-01	1.57E+00	2.20E+01	1.17E+00	1.40E+01	1.12E-01
UM-500S-2750E (6-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	8.42E+00	5.71E+02	7.86E+00	7.84E-04	6.78E+01	5.32E-02	1.10E-01	1.24E-01	7.05E+00	2.20E+01	1.17E+00	1.40E+01	5.02E-01
BRSD-25 (6-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	8.42E+00	2.44E+02	3.36E+00	7.84E-04	2.90E+01	2.27E-02	1.10E-01	1.24E-01	3.01E+00	2.20E+01	1.17E+00	1.40E+01	2.15E-01
UM-250S-3000E (6-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	8.42E+00	1.54E+03	2.12E+01	7.84E-04	1.83E+02	1.44E-01	1.10E-01	1.24E-01	1.90E+01	2.20E+01	1.17E+00	1.40E+01	1.35E+00
UM-250S-3250E (6-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	8.42E+00	8.84E+01	1.22E+00	7.84E-04	1.05E+01	8.24E-03	1.10E-01	1.24E-01	1.09E+00	2.20E+01	1.17E+00	1.40E+01	7.77E-02
BRSD-24 (6-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	8.42E+00	5.34E+02	7.35E+00	7.84E-04	6.34E+01	4.97E-02	1.10E-01	1.24E-01	6.59E+00	2.20E+01	1.17E+00	1.40E+01	4.69E-01
UM-250S-2750E (6-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	8.42E+00	5.56E+02	7.65E+00	7.84E-04	6.60E+01	5.18E-02	1.10E-01	1.24E-01	6.86E+00	2.20E+01	1.17E+00	1.40E+01	4.88E-01
UM-250S-2500E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-2 (6-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	8.42E+00	6.16E+02	8.47E+00	7.84E-04	7.31E+01	5.73E-02	1.10E-01	1.24E-01	7.60E+00	2.20E+01	1.17E+00	1.40E+01	5.41E-01
UM-500N-2500E (6-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	8.42E+00	9.77E+01	1.34E+00	7.84E-04	1.16E+01	9.10E-03	1.10E-01	1.24E-01	1.21E+00	2.20E+01	1.17E+00	1.40E+01	8.58E-02
UM-250N-2500E (6-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	8.42E+00	7.68E+02	1.06E+01	7.84E-04	9.12E+01	7.15E-02	1.10E-01	1.24E-01	9.48E+00	2.20E+01	1.17E+00	1.40E+01	6.75E-01
UM-250N-2250E (6-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	8.42E+00	8.36E+01	1.15E+00	7.84E-04	9.93E+00	7.79E-03	1.10E-01	1.24E-01	1.03E+00	2.20E+01	1.17E+00	1.40E+01	7.35E-02
Western Upper Marsh (6-12")																						**Maximum HQ (Eastern Upper Marsh, 6-12")**	**1.35E+00**
UM-500S-2500E (6-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	2.33E+00	2.57E+01	3.53E-01	7.84E-04	1.10E+01	8.63E-03	1.10E-01	1.24E-01	3.22E-01	2.20E+01	1.17E+00	1.40E+01	2.30E-02
UM-0N-2000E (6-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	2.33E+00	1.38E+02	1.90E+00	7.84E-04	5.90E+01	4.63E-02	1.10E-01	1.24E-01	1.73E+00	2.20E+01	1.17E+00	1.40E+01	1.23E-01
UM-500S-2000E (6-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	2.33E+00	3.57E+01	4.91E-01	7.84E-04	1.53E+01	1.20E-02	1.10E-01	1.24E-01	4.48E-01	2.20E+01	1.17E+00	1.40E+01	3.19E-02
UM-250N-1750E (6-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	2.33E+00	2.71E+01	3.73E-01	7.84E-04	1.16E+01	9.10E-03	1.10E-01	1.24E-01	3.40E-01	2.20E+01	1.17E+00	1.40E+01	2.42E-02
UM-0N-1500E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-250S-1500E (6-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	2.33E+00	4.08E+01	5.62E-01	7.84E-04	1.75E+01	1.37E-02	1.10E-01	1.24E-01	5.13E-01	2.20E+01	1.17E+00	1.40E+01	3.65E-02
UM-250S-1250E (6-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	2.33E+00	4.44E+01	6.10E-01	7.84E-04	1.90E+01	1.49E-02	1.10E-01	1.24E-01	5.57E-01	2.20E+01	1.17E+00	1.40E+01	3.97E-02
BRSD-6 (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-1000E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB

TABLE C-12BA: ARSENIC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 12 - MARSH, TERRESTRIAL RECEPTORS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **28.9**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
American Kestral (Insectivorous Birds)																							
UM-0N-750E (6-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	2.33E+00	2.89E+01	3.98E-01	7.84E-04	1.24E+01	9.73E-03	1.10E-01	1.24E-01	3.63E-01	2.20E+01	1.17E+00	1.40E+01	2.59E-02
UM-0N-500E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-250S-500E (6-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	2.33E+00	4.13E+01	5.69E-01	7.84E-04	1.77E+01	1.39E-02	1.10E-01	1.24E-01	5.19E-01	2.20E+01	1.17E+00	1.40E+01	3.69E-02
UM-0N-250E (6-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	2.33E+00	3.43E+01	4.72E-01	7.84E-04	1.47E+01	1.15E-02	1.10E-01	1.24E-01	4.31E-01	2.20E+01	1.17E+00	1.40E+01	3.07E-02
UM-250S-250E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-7 (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-8 (6-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	2.33E+00	2.40E+01	3.31E-01	7.84E-04	1.03E+01	8.08E-03	1.10E-01	1.24E-01	3.02E-01	2.20E+01	1.17E+00	1.40E+01	2.15E-02
UM-500S-500E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-9 (6-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	2.33E+00	3.78E+01	5.20E-01	7.84E-04	1.62E+01	1.27E-02	1.10E-01	1.24E-01	4.75E-01	2.20E+01	1.17E+00	1.40E+01	3.38E-02
BRSD-10 (6-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	2.33E+00	8.94E+01	1.23E+00	7.84E-04	3.83E+01	3.00E-02	1.10E-01	1.24E-01	1.12E+00	2.20E+01	1.17E+00	1.40E+01	7.99E-02
BRSD-11 (6-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	2.33E+00	2.31E+01	3.18E-01	7.84E-04	9.89E+00	7.76E-03	1.10E-01	1.24E-01	2.90E-01	2.20E+01	1.17E+00	1.40E+01	2.06E-02
Middle Marsh (0-2")																						**Maximum HQ (Western Upper Marsh, 6-12")**	**1.23E-01**
MMSD-201 (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	2.33E+00	4.90E+01	6.75E-01	7.84E-04	2.10E+01	1.65E-02	1.10E-01	1.24E-01	6.15E-01	2.20E+01	1.17E+00	1.40E+01	4.38E-02
MMSD-202 (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	2.33E+00	5.14E+01	7.07E-01	7.84E-04	2.20E+01	1.73E-02	1.10E-01	1.24E-01	6.45E-01	2.20E+01	1.17E+00	1.40E+01	4.59E-02
Middle Marsh (2-6")																						**Maximum HQ (Middle Marsh, 0-2")**	**4.59E-02**
MMSD-201 (2-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	2.33E+00	4.90E+01	6.75E-01	7.84E-04	2.10E+01	1.65E-02	1.10E-01	1.24E-01	6.15E-01	2.20E+01	1.17E+00	1.40E+01	4.38E-02
MMSD-202 (2-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	2.33E+00	5.37E+01	7.39E-01	7.84E-04	2.30E+01	1.80E-02	1.10E-01	1.24E-01	6.74E-01	2.20E+01	1.17E+00	1.40E+01	4.80E-02
Middle Marsh (6-12")																						**Maximum HQ (Middle Marsh, 2-6")**	**4.80E-02**
MMSD-201 (6-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	2.33E+00	5.60E+01	7.71E-01	7.84E-04	2.40E+01	1.88E-02	1.10E-01	1.24E-01	7.03E-01	2.20E+01	1.17E+00	1.40E+01	5.01E-02
MMSD-202 (6-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	2.33E+00	3.73E+01	5.14E-01	7.84E-04	1.60E+01	1.26E-02	1.10E-01	1.24E-01	4.69E-01	2.20E+01	1.17E+00	1.40E+01	3.34E-02
Lower Marsh (0-2")																						**Maximum HQ (Middle Marsh, 6-12")**	**5.01E-02**
LMSD-201 (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
LMSD-202 (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
LMSD-203 (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	2.33E+00	5.60E+01	7.71E-01	7.84E-04	2.40E+01	1.88E-02	1.10E-01	1.24E-01	7.03E-01	2.20E+01	1.17E+00	1.40E+01	5.01E-02
LMSD-204 (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	2.33E+00	3.73E+01	5.14E-01	7.84E-04	1.60E+01	1.26E-02	1.10E-01	1.24E-01	4.69E-01	2.20E+01	1.17E+00	1.40E+01	3.34E-02
Lower Marsh (2-6")																						**Maximum HQ (Lower Marsh, 0-2")**	**5.01E-02**
LMSD-201 (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
LMSD-202 (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
LMSD-203 (2-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	2.33E+00	5.37E+01	7.39E-01	7.84E-04	2.30E+01	1.80E-02	1.10E-01	1.24E-01	6.74E-01	2.20E+01	1.17E+00	1.40E+01	4.80E-02
LMSD-204 (2-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	2.33E+00	3.73E+01	5.14E-01	7.84E-04	1.60E+01	1.26E-02	1.10E-01	1.24E-01	4.69E-01	2.20E+01	1.17E+00	1.40E+01	3.34E-02
Lower Marsh (6-12")																						**Maximum HQ (Lower Marsh, 2-6")**	**4.80E-02**
LMSD-201 (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
LMSD-202 (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
LMSD-203 (6-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	2.33E+00	5.84E+01	8.03E-01	7.84E-04	2.50E+01	1.96E-02	1.10E-01	1.24E-01	7.33E-01	2.20E+01	1.17E+00	1.40E+01	5.22E-02
LMSD-204 (6-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	2.33E+00	3.73E+01	5.14E-01	7.84E-04	1.60E+01	1.26E-02	1.10E-01	1.24E-01	4.69E-01	2.20E+01	1.17E+00	1.40E+01	3.34E-02
																						Maximum HQ (Lower Marsh, 6-12")	**5.22E-02**
Meadow Vole (Small Herbivorous Mammals)																							
Reference Sites																							
BRSD-5 (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	1.13E-04	1.72E+01	1.94E-03	1.00E+00	3.06E-02	6.33E-02	4.70E+00	1.10E-01	5.08E+00	1.25E-02
BRSD-5 (2-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	1.13E-04	1.92E+01	2.16E-03	1.00E+00	3.06E-02	7.06E-02	4.70E+00	1.10E-01	5.08E+00	1.39E-02
BRSD-5 (6-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	1.13E-04	2.46E+01	2.77E-03	1.00E+00	3.06E-02	9.05E-02	4.70E+00	1.10E-01	5.08E+00	1.78E-02
PGBG-1 (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	1.13E-04	1.24E+01	1.40E-03	1.00E+00	3.06E-02	4.56E-02	4.70E+00	1.10E-01	5.08E+00	8.99E-03
PGBG-1 (2-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	1.13E-04	9.12E+00	1.03E-03	1.00E+00	3.06E-02	3.35E-02	4.70E+00	1.10E-01	5.08E+00	6.61E-03
PGBG-1 (6-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	1.13E-04	9.40E+00	1.06E-03	1.00E+00	3.06E-02	3.46E-02	4.70E+00	1.10E-01	5.08E+00	6.81E-03
PGBG-2 (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	1.13E-04	1.88E+01	2.12E-03	1.00E+00	3.06E-02	6.91E-02	4.70E+00	1.10E-01	5.08E+00	1.36E-02
PGBG-2 (2-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	1.13E-04	1.85E+01	2.08E-03	1.00E+00	3.06E-02	6.80E-02	4.70E+00	1.10E-01	5.08E+00	1.34E-02
PGBG-2 (6-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	1.13E-04	3.23E+01	3.63E-03	1.00E+00	3.06E-02	1.19E-01	4.70E+00	1.10E-01	5.08E+00	2.34E-02
Eastern Upper Marsh (0-2")																						**Minimum HQ (Reference Sites)**	**6.61E-03**
UM-1000S-3500E (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	1.13E-04	2.38E+02	2.68E-02	1.00E+00	3.06E-02	8.75E-01	4.70E+00	1.10E-01	5.08E+00	1.72E-01
BRSD-15 (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	1.13E-04	1.49E+01	1.68E-03	1.00E+00	3.06E-02	5.48E-02	4.70E+00	1.10E-01	5.08E+00	1.08E-02
BRSD-4 (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-750S-3500E (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	1.13E-04	1.16E+02	1.31E-02	1.00E+00	3.06E-02	4.27E-01	4.70E+00	1.10E-01	5.08E+00	8.41E-02
BRSD-16 (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	1.13E-04	1.93E+02	2.17E-02	1.00E+00	3.06E-02	7.10E-01	4.70E+00	1.10E-01	5.08E+00	1.40E-01
UM-750S-3000E (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	1.13E-04	1.64E+02	1.85E-02	1.00E+00	3.06E-02	6.03E-01	4.70E+00	1.10E-01	5.08E+00	1.19E-01
BRSD-3 (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	1.13E-04	3.80E+01	4.28E-03	1.00E+00	3.06E-02	1.40E-01	4.70E+00	1.10E-01	5.08E+00	2.75E-02
UM-500S-3250E (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	1.13E-04	1.38E+02	1.55E-02	1.00E+00	3.06E-02	5.08E-01	4.70E+00	1.10E-01	5.08E+00	1.00E-01
UM-500S-3000E (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	1.13E-04	8.74E+01	9.84E-03	1.00E+00	3.06E-02	3.21E-01	4.70E+00	1.10E-01	5.08E+00	6.33E-02
UM-500S-2750E (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	1.13E-04	1.56E+02	1.76E-02	1.00E+00	3.06E-02	5.74E-01	4.70E+00	1.10E-01	5.08E+00	1.13E-01
Meadow Vole (Small Herbivorous Mammals)																							
BRSD-25 (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	1.13E-04	6.60E+01	7.43E-03	1.00E+00	3.06E-02	2.43E-01	4.70E+00	1.10E-01	5.08E+00	4.78E-02
UM-250S-3000E (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	1.13E-04	1.07E+02	1.20E-02	1.00E+00	3.06E-02	3.94E-01	4.70E+00	1.10E-01	5.08E+00	7.75E-02
UM-250S-3250E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB

TABLE C-12BA: ARSENIC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 12 - MARSH, TERRESTRIAL RECEPTORS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **28.9**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
BRSD-24 (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	1.13E-04	1.93E+02	2.17E-02	1.00E+00	3.06E-02	7.10E-01	4.70E+00	1.10E-01	5.08E+00	1.40E-01
UM-250S-2750E (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	1.13E-04	1.65E+02	1.86E-02	1.00E+00	3.06E-02	6.07E-01	4.70E+00	1.10E-01	5.08E+00	1.20E-01
UM-250S-2500E (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	1.13E-04	1.23E+01	1.38E-03	1.00E+00	3.06E-02	4.52E-02	4.70E+00	1.10E-01	5.08E+00	8.91E-03
UM-0N-2500E (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	1.13E-04	1.17E+02	1.32E-02	1.00E+00	3.06E-02	4.30E-01	4.70E+00	1.10E-01	5.08E+00	8.48E-02
UM-0N-250E (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	1.13E-04	1.30E+01	1.46E-03	1.00E+00	3.06E-02	4.78E-02	4.70E+00	1.10E-01	5.08E+00	9.42E-03
BRSD-2 (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	1.13E-04	1.77E+02	1.99E-02	1.00E+00	3.06E-02	6.51E-01	4.70E+00	1.10E-01	5.08E+00	1.28E-01
UM-500N-2500E (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	1.13E-04	1.13E+01	1.27E-03	1.00E+00	3.06E-02	4.16E-02	4.70E+00	1.10E-01	5.08E+00	8.19E-03
UM-250N-2500E (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	1.13E-04	9.69E+01	1.09E-02	1.00E+00	3.06E-02	3.56E-01	4.70E+00	1.10E-01	5.08E+00	7.02E-02
UM-250N-2250E (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	1.13E-04	1.77E+02	1.99E-02	1.00E+00	3.06E-02	6.51E-01	4.70E+00	1.10E-01	5.08E+00	1.28E-01
Western Upper Marsh (0-2")																						**Maximum HQ (Eastern Upper Marsh, 0-2")**	**1.72E-01**
UM-500S-2500E (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	1.13E-04	1.22E+01	1.37E-03	1.00E+00	3.06E-02	4.49E-02	4.70E+00	1.10E-01	5.08E+00	8.84E-03
UM-0N-2000E (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	1.13E-04	4.72E+01	5.31E-03	1.00E+00	3.06E-02	1.74E-01	4.70E+00	1.10E-01	5.08E+00	3.42E-02
UM-500S-2000E (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	1.13E-04	2.10E+01	2.36E-03	1.00E+00	3.06E-02	7.72E-02	4.70E+00	1.10E-01	5.08E+00	1.52E-02
UM-250N-1750E (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	1.13E-04	1.26E+01	1.42E-03	1.00E+00	3.06E-02	4.63E-02	4.70E+00	1.10E-01	5.08E+00	9.13E-03
UM-0N-1500E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-250S-1500E (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	1.13E-04	3.33E+01	3.75E-03	1.00E+00	3.06E-02	1.22E-01	4.70E+00	1.10E-01	5.08E+00	2.41E-02
UM-250S-1250E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-6 (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-1000E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-750E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-500E (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	1.13E-04	1.01E+01	1.14E-03	1.00E+00	3.06E-02	3.71E-02	4.70E+00	1.10E-01	5.08E+00	7.32E-03
UM-250S-500E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-250S-250E (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	1.13E-04	1.45E+01	1.63E-03	1.00E+00	3.06E-02	5.33E-02	4.70E+00	1.10E-01	5.08E+00	1.05E-02
BRSD-7 (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-8 (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-500S-500E (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	1.13E-04	1.18E+01	1.33E-03	1.00E+00	3.06E-02	4.34E-02	4.70E+00	1.10E-01	5.08E+00	8.55E-03
BRSD-9 (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	1.13E-04	2.30E+01	2.59E-03	1.00E+00	3.06E-02	8.46E-02	4.70E+00	1.10E-01	5.08E+00	1.67E-02
BRSD-10 (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	1.13E-04	3.03E+01	3.41E-03	1.00E+00	3.06E-02	1.11E-01	4.70E+00	1.10E-01	5.08E+00	2.20E-02
BRSD-11 (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	1.13E-04	1.47E+01	1.65E-03	1.00E+00	3.06E-02	5.41E-02	4.70E+00	1.10E-01	5.08E+00	1.07E-02
Eastern Upper Marsh (2-6")																						**Maximum HQ (Western Upper Marsh, 0-2")**	**3.42E-02**
UM-1000S-3500E (2-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	1.13E-04	3.81E+01	4.29E-03	1.00E+00	3.06E-02	1.40E-01	4.70E+00	1.10E-01	5.08E+00	2.76E-02
BRSD-15 (2-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	1.13E-04	1.56E+01	1.76E-03	1.00E+00	3.06E-02	5.74E-02	4.70E+00	1.10E-01	5.08E+00	1.13E-02
BRSD-4 (2-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	1.13E-04	9.85E+00	1.11E-03	1.00E+00	3.06E-02	3.62E-02	4.70E+00	1.10E-01	5.08E+00	7.14E-03
UM-750S-3500E (2-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	1.13E-04	1.57E+02	1.77E-02	1.00E+00	3.06E-02	5.77E-01	4.70E+00	1.10E-01	5.08E+00	1.14E-01
BRSD-16 (2-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	1.13E-04	5.07E+02	5.71E-02	1.00E+00	3.06E-02	1.86E+00	4.70E+00	1.10E-01	5.08E+00	3.67E-01
UM-750S-3000E (2-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	1.13E-04	1.43E+02	1.61E-02	1.00E+00	3.06E-02	5.26E-01	4.70E+00	1.10E-01	5.08E+00	1.04E-01
BRSD-3 (2-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	1.13E-04	5.42E+01	6.10E-03	1.00E+00	3.06E-02	1.99E-01	4.70E+00	1.10E-01	5.08E+00	3.93E-02
UM-500S-3250E (2-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	1.13E-04	1.50E+02	1.69E-02	1.00E+00	3.06E-02	5.52E-01	4.70E+00	1.10E-01	5.08E+00	1.09E-01
UM-500S-3000E (2-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	1.13E-04	2.26E+01	2.54E-03	1.00E+00	3.06E-02	8.31E-02	4.70E+00	1.10E-01	5.08E+00	1.64E-02
UM-500S-2750E (2-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	1.13E-04	7.42E+01	8.35E-03	1.00E+00	3.06E-02	2.73E-01	4.70E+00	1.10E-01	5.08E+00	5.38E-02
BRSD-25 (2-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	1.13E-04	6.00E+01	6.75E-03	1.00E+00	3.06E-02	2.21E-01	4.70E+00	1.10E-01	5.08E+00	4.35E-02
UM-250S-3000E (2-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	1.13E-04	1.62E+02	1.82E-02	1.00E+00	3.06E-02	5.96E-01	4.70E+00	1.10E-01	5.08E+00	1.17E-01
UM-250S-3250E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-24 (2-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	1.13E-04	1.19E+02	1.34E-02	1.00E+00	3.06E-02	4.38E-01	4.70E+00	1.10E-01	5.08E+00	8.62E-02
UM-250S-2750E (2-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	1.13E-04	1.41E+02	1.59E-02	1.00E+00	3.06E-02	5.19E-01	4.70E+00	1.10E-01	5.08E+00	1.02E-01
UM-0N-2500E (2-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	1.13E-04	1.03E+02	1.16E-02	1.00E+00	3.06E-02	3.79E-01	4.70E+00	1.10E-01	5.08E+00	7.46E-02
BRSD-2 (2-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	1.13E-04	1.32E+02	1.49E-02	1.00E+00	3.06E-02	4.85E-01	4.70E+00	1.10E-01	5.08E+00	9.57E-02
UM-500N-2500E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-250N-2500E (2-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	1.13E-04	1.16E+02	1.31E-02	1.00E+00	3.06E-02	4.27E-01	4.70E+00	1.10E-01	5.08E+00	8.41E-02
UM-250N-2250E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
Western Upper Marsh (2-6")																						**Maximum HQ (Eastern Upper Marsh, 2-6")**	**3.67E-01**
UM-500S-2500E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-2000E (2-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	1.13E-04	4.94E+01	5.56E-03	1.00E+00	3.06E-02	1.82E-01	4.70E+00	1.10E-01	5.08E+00	3.58E-02
UM-500S-2000E (2-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	1.13E-04	1.79E+01	2.01E-03	1.00E+00	3.06E-02	6.58E-02	4.70E+00	1.10E-01	5.08E+00	1.30E-02
UM-250N-1750E (2-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	1.13E-04	1.22E+01	1.37E-03	1.00E+00	3.06E-02	4.49E-02	4.70E+00	1.10E-01	5.08E+00	8.84E-03
Meadow Vole (Small Herbivorous Mammals)																							
UM-0N-1500E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-250S-1500E (2-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	1.13E-04	3.06E+01	3.44E-03	1.00E+00	3.06E-02	1.13E-01	4.70E+00	1.10E-01	5.08E+00	2.22E-02
UM-250S-1250E (2-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	1.13E-04	2.46E+01	2.77E-03	1.00E+00	3.06E-02	9.05E-02	4.70E+00	1.10E-01	5.08E+00	1.78E-02
BRSD-6 (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-1000E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-750E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-500E (2-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	1.13E-04	1.68E+01	1.89E-03	1.00E+00	3.06E-02	6.18E-02	4.70E+00	1.10E-01	5.08E+00	1.22E-02

TABLE C-12BA: ARSENIC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 12 - MARSH, TERRESTRIAL RECEPTORS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **28.9**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
UM-250S-500E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-250E (2-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	1.13E-04	1.95E+01	2.19E-03	1.00E+00	3.06E-02	7.17E-02	4.70E+00	1.10E-01	5.08E+00	1.41E-02
UM-250S-250E (2-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	1.13E-04	9.58E+00	1.08E-03	1.00E+00	3.06E-02	3.52E-02	4.70E+00	1.10E-01	5.08E+00	6.94E-03
BRSD-7 (2-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	1.13E-04	1.20E+01	1.35E-03	1.00E+00	3.06E-02	4.41E-02	4.70E+00	1.10E-01	5.08E+00	8.70E-03
BRSD-8 (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-500S-500E (2-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	1.13E-04	9.28E+00	1.04E-03	1.00E+00	3.06E-02	3.41E-02	4.70E+00	1.10E-01	5.08E+00	6.72E-03
BRSD-9 (2-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	1.13E-04	1.74E+01	1.96E-03	1.00E+00	3.06E-02	6.40E-02	4.70E+00	1.10E-01	5.08E+00	1.26E-02
BRSD-10 (2-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	1.13E-04	3.58E+01	4.03E-03	1.00E+00	3.06E-02	1.32E-01	4.70E+00	1.10E-01	5.08E+00	2.59E-02
BRSD-11 (2-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	1.13E-04	1.08E+01	1.22E-03	1.00E+00	3.06E-02	3.97E-02	4.70E+00	1.10E-01	5.08E+00	7.83E-03
Eastern Upper Marsh (6-12")																						**Maximum HQ (Western Upper Marsh, 2-6")**	**3.58E-02**
UM-1000S-3500E (6-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	1.13E-04	1.26E+01	1.42E-03	1.00E+00	3.06E-02	4.63E-02	4.70E+00	1.10E-01	5.08E+00	9.13E-03
BRSD-15 (6-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	1.13E-04	1.68E+01	1.89E-03	1.00E+00	3.06E-02	6.18E-02	4.70E+00	1.10E-01	5.08E+00	1.22E-02
BRSD-4 (6-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	1.13E-04	2.04E+01	2.30E-03	1.00E+00	3.06E-02	7.50E-02	4.70E+00	1.10E-01	5.08E+00	1.48E-02
UM-750S-3500E (6-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	1.13E-04	1.38E+02	1.55E-02	1.00E+00	3.06E-02	5.08E-01	4.70E+00	1.10E-01	5.08E+00	1.00E-01
BRSD-16 (6-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	1.13E-04	9.28E+01	1.04E-02	1.00E+00	3.06E-02	3.41E-01	4.70E+00	1.10E-01	5.08E+00	6.72E-02
UM-750S-3000E (6-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	1.13E-04	1.42E+02	1.60E-02	1.00E+00	3.06E-02	5.22E-01	4.70E+00	1.10E-01	5.08E+00	1.03E-01
BRSD-3 (6-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	1.13E-04	1.99E+01	2.24E-03	1.00E+00	3.06E-02	7.32E-02	4.70E+00	1.10E-01	5.08E+00	1.44E-02
UM-500S-3250E (6-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	1.13E-04	1.00E+02	1.13E-02	1.00E+00	3.06E-02	3.68E-01	4.70E+00	1.10E-01	5.08E+00	7.25E-02
UM-500S-3000E (6-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	1.13E-04	1.51E+01	1.70E-03	1.00E+00	3.06E-02	5.55E-02	4.70E+00	1.10E-01	5.08E+00	1.09E-02
UM-500S-2750E (6-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	1.13E-04	6.78E+01	7.63E-03	1.00E+00	3.06E-02	2.49E-01	4.70E+00	1.10E-01	5.08E+00	4.91E-02
BRSD-25 (6-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	1.13E-04	2.90E+01	3.26E-03	1.00E+00	3.06E-02	1.07E-01	4.70E+00	1.10E-01	5.08E+00	2.10E-02
UM-250S-3000E (6-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	1.13E-04	1.83E+02	2.06E-02	1.00E+00	3.06E-02	6.73E-01	4.70E+00	1.10E-01	5.08E+00	1.33E-01
UM-250S-3250E (6-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	1.13E-04	1.05E+01	1.18E-03	1.00E+00	3.06E-02	3.86E-02	4.70E+00	1.10E-01	5.08E+00	7.61E-03
BRSD-24 (6-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	1.13E-04	6.34E+01	7.13E-03	1.00E+00	3.06E-02	2.33E-01	4.70E+00	1.10E-01	5.08E+00	4.59E-02
UM-250S-2750E (6-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	1.13E-04	6.60E+01	7.43E-03	1.00E+00	3.06E-02	2.43E-01	4.70E+00	1.10E-01	5.08E+00	4.78E-02
BRSD-2 (6-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	1.13E-04	7.31E+01	8.23E-03	1.00E+00	3.06E-02	2.69E-01	4.70E+00	1.10E-01	5.08E+00	5.30E-02
UM-500N-2500E (6-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	1.13E-04	1.16E+01	1.31E-03	1.00E+00	3.06E-02	4.27E-02	4.70E+00	1.10E-01	5.08E+00	8.41E-03
UM-250N-2500E (6-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	1.13E-04	9.12E+01	1.03E-02	1.00E+00	3.06E-02	3.35E-01	4.70E+00	1.10E-01	5.08E+00	6.61E-02
UM-250N-2250E (6-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	1.13E-04	9.93E+00	1.12E-03	1.00E+00	3.06E-02	3.65E-02	4.70E+00	1.10E-01	5.08E+00	7.20E-03
Western Upper Marsh (6-12")																						**Maximum HQ (Eastern Upper Marsh, 6-12")**	**1.33E-01**
UM-500S-2500E (6-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	1.13E-04	1.10E+01	1.24E-03	1.00E+00	3.06E-02	4.05E-02	4.70E+00	1.10E-01	5.08E+00	7.97E-03
UM-0N-2000E (6-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	1.13E-04	5.90E+01	6.64E-03	1.00E+00	3.06E-02	2.17E-01	4.70E+00	1.10E-01	5.08E+00	4.28E-02
UM-500S-2000E (6-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	1.13E-04	1.53E+01	1.72E-03	1.00E+00	3.06E-02	5.63E-02	4.70E+00	1.10E-01	5.08E+00	1.11E-02
UM-250N-1750E (6-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	1.13E-04	1.16E+01	1.31E-03	1.00E+00	3.06E-02	4.27E-02	4.70E+00	1.10E-01	5.08E+00	8.41E-03
UM-0N-1500E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-250S-1500E (6-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	1.13E-04	1.75E+01	1.97E-03	1.00E+00	3.06E-02	6.44E-02	4.70E+00	1.10E-01	5.08E+00	1.27E-02
UM-250S-1250E (6-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	1.13E-04	1.90E+01	2.14E-03	1.00E+00	3.06E-02	6.99E-02	4.70E+00	1.10E-01	5.08E+00	1.38E-02
BRSD-6 (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-1000E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-750E (6-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	1.13E-04	1.24E+01	1.40E-03	1.00E+00	3.06E-02	4.56E-02	4.70E+00	1.10E-01	5.08E+00	8.99E-03
UM-0N-500E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-250S-500E (6-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	1.13E-04	1.77E+01	1.99E-03	1.00E+00	3.06E-02	6.51E-02	4.70E+00	1.10E-01	5.08E+00	1.28E-02
UM-0N-250E (6-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	1.13E-04	1.47E+01	1.65E-03	1.00E+00	3.06E-02	5.41E-02	4.70E+00	1.10E-01	5.08E+00	1.07E-02
UM-250S-250E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-7 (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-8 (6-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	1.13E-04	1.03E+01	1.16E-03	1.00E+00	3.06E-02	3.79E-02	4.70E+00	1.10E-01	5.08E+00	7.46E-03
UM-500S-500E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-9 (6-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	1.13E-04	1.62E+01	1.82E-03	1.00E+00	3.06E-02	5.96E-02	4.70E+00	1.10E-01	5.08E+00	1.17E-02
BRSD-10 (6-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	1.13E-04	3.83E+01	4.31E-03	1.00E+00	3.06E-02	1.41E-01	4.70E+00	1.10E-01	5.08E+00	2.78E-02
BRSD-11 (6-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	1.13E-04	9.89E+00	1.11E-03	1.00E+00	3.06E-02	3.64E-02	4.70E+00	1.10E-01	5.08E+00	7.17E-03
Meadow Vole (Small Herbivorous Mammals)																							
Middle Marsh (0-2")																						**Maximum HQ (Western Upper Marsh, 6-12")**	**4.28E-02**
MMSD-201 (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	1.13E-04	2.10E+01	2.36E-03	1.00E+00	3.06E-02	7.72E-02	4.70E+00	1.10E-01	5.08E+00	1.52E-02
MMSD-202 (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	1.13E-04	2.20E+01	2.48E-03	1.00E+00	3.06E-02	8.09E-02	4.70E+00	1.10E-01	5.08E+00	1.59E-02
Middle Marsh (2-6")																						**Maximum HQ (Middle Marsh, 0-2")**	**1.59E-02**
MMSD-201 (2-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	1.13E-04	2.10E+01	2.36E-03	1.00E+00	3.06E-02	7.72E-02	4.70E+00	1.10E-01	5.08E+00	1.52E-02
MMSD-202 (2-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	1.13E-04	2.30E+01	2.59E-03	1.00E+00	3.06E-02	8.46E-02	4.70E+00	1.10E-01	5.08E+00	1.67E-02
Middle Marsh (6-12")																						**Maximum HQ (Middle Marsh, 2-6")**	**1.67E-02**
MMSD-201 (6-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	1.13E-04	2.40E+01	2.70E-03	1.00E+00	3.06E-02	8.83E-02	4.70E+00	1.10E-01	5.08E+00	1.74E-02
MMSD-202 (6-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	1.13E-04	1.60E+01	1.80E-03	1.00E+00	3.06E-02	5.88E-02	4.70E+00	1.10E-01	5.08E+00	1.16E-02
Lower Marsh (0-2")																						**Maximum HQ (Middle Marsh, 6-12")**	**1.74E-02**
LMSD-201 (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB

TABLE C-12BA: ARSENIC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 12 - MARSH, TERRESTRIAL RECEPTORS (Continued)
Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)
calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **28.9**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
LMSD-202 (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
LMSD-203 (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	1.13E-04	2.40E+01	2.70E-03	1.00E+00	3.06E-02	8.83E-02	4.70E+00	1.10E-01	5.08E+00	1.74E-02
LMSD-204 (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	1.13E-04	1.60E+01	1.80E-03	1.00E+00	3.06E-02	5.88E-02	4.70E+00	1.10E-01	5.08E+00	1.16E-02
Lower Marsh (2-6")																						**Maximum HQ (Lower Marsh, 0-2")**	**1.74E-02**
LMSD-201 (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
LMSD-202 (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
LMSD-203 (2-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	1.13E-04	2.30E+01	2.59E-03	1.00E+00	3.06E-02	8.46E-02	4.70E+00	1.10E-01	5.08E+00	1.67E-02
LMSD-204 (2-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	1.13E-04	1.60E+01	1.80E-03	1.00E+00	3.06E-02	5.88E-02	4.70E+00	1.10E-01	5.08E+00	1.16E-02
Lower Marsh (6-12")																						**Maximum HQ (Lower Marsh, 2-6")**	**1.67E-02**
LMSD-201 (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
LMSD-202 (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
LMSD-203 (6-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	1.13E-04	2.50E+01	2.81E-03	1.00E+00	3.06E-02	9.19E-02	4.70E+00	1.10E-01	5.08E+00	1.81E-02
LMSD-204 (6-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	1.13E-04	1.60E+01	1.80E-03	1.00E+00	3.06E-02	5.88E-02	4.70E+00	1.10E-01	5.08E+00	1.16E-02
																						Maximum HQ (Lower Marsh, 6-12")	**1.81E-02**
White-Tailed Deer (Large Herbivorous Mammals)																							
Reference Sites																							
BRSD-5 (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	2.86E-02	1.72E+01	4.92E-01	1.62E-01	1.35E+02	5.90E-04	4.70E+00	1.10E-01	3.07E+00	1.92E-04
BRSD-5 (2-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	2.86E-02	1.92E+01	5.50E-01	1.62E-01	1.35E+02	6.58E-04	4.70E+00	1.10E-01	3.07E+00	2.15E-04
BRSD-5 (6-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	2.86E-02	2.46E+01	7.04E-01	1.62E-01	1.35E+02	8.44E-04	4.70E+00	1.10E-01	3.07E+00	2.75E-04
PGBG-1 (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	2.86E-02	1.24E+01	3.55E-01	1.62E-01	1.35E+02	4.25E-04	4.70E+00	1.10E-01	3.07E+00	1.39E-04
PGBG-1 (2-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	2.86E-02	9.12E+00	2.61E-01	1.62E-01	1.35E+02	3.13E-04	4.70E+00	1.10E-01	3.07E+00	1.02E-04
PGBG-1 (6-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	2.86E-02	9.40E+00	2.69E-01	1.62E-01	1.35E+02	3.22E-04	4.70E+00	1.10E-01	3.07E+00	1.05E-04
PGBG-2 (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	2.86E-02	1.88E+01	5.38E-01	1.62E-01	1.35E+02	6.45E-04	4.70E+00	1.10E-01	3.07E+00	2.10E-04
PGBG-2 (2-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	2.86E-02	1.85E+01	5.30E-01	1.62E-01	1.35E+02	6.34E-04	4.70E+00	1.10E-01	3.07E+00	2.07E-04
PGBG-2 (6-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	2.86E-02	3.23E+01	9.25E-01	1.62E-01	1.35E+02	1.11E-03	4.70E+00	1.10E-01	3.07E+00	3.61E-04
Eastern Upper Marsh (0-2")																						**Minimum HQ (Reference Sites)**	**1.02E-04**
UM-1000S-3500E (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	2.86E-02	2.38E+02	6.81E+00	1.62E-01	1.35E+02	8.16E-03	4.70E+00	1.10E-01	3.07E+00	2.66E-03
BRSD-15 (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	2.86E-02	1.49E+01	4.27E-01	1.62E-01	1.35E+02	5.11E-04	4.70E+00	1.10E-01	3.07E+00	1.67E-04
BRSD-4 (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-750S-3500E (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	2.86E-02	1.16E+02	3.32E+00	1.62E-01	1.35E+02	3.98E-03	4.70E+00	1.10E-01	3.07E+00	1.30E-03
BRSD-16 (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	2.86E-02	1.93E+02	5.53E+00	1.62E-01	1.35E+02	6.62E-03	4.70E+00	1.10E-01	3.07E+00	2.16E-03
UM-750S-3000E (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	2.86E-02	1.64E+02	4.70E+00	1.62E-01	1.35E+02	5.62E-03	4.70E+00	1.10E-01	3.07E+00	1.83E-03
BRSD-3 (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	2.86E-02	3.80E+01	1.09E+00	1.62E-01	1.35E+02	1.30E-03	4.70E+00	1.10E-01	3.07E+00	4.25E-04
UM-500S-3250E (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	2.86E-02	1.38E+02	3.95E+00	1.62E-01	1.35E+02	4.73E-03	4.70E+00	1.10E-01	3.07E+00	1.54E-03
UM-500S-3000E (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	2.86E-02	8.74E+01	2.50E+00	1.62E-01	1.35E+02	3.00E-03	4.70E+00	1.10E-01	3.07E+00	9.77E-04
UM-500S-2750E (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	2.86E-02	1.56E+02	4.47E+00	1.62E-01	1.35E+02	5.35E-03	4.70E+00	1.10E-01	3.07E+00	1.74E-03
BRSD-25 (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	2.86E-02	6.60E+01	1.89E+00	1.62E-01	1.35E+02	2.26E-03	4.70E+00	1.10E-01	3.07E+00	7.38E-04
UM-250S-3000E (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	2.86E-02	1.07E+02	3.06E+00	1.62E-01	1.35E+02	3.67E-03	4.70E+00	1.10E-01	3.07E+00	1.20E-03
UM-250S-3250E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-24 (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	2.86E-02	1.93E+02	5.53E+00	1.62E-01	1.35E+02	6.62E-03	4.70E+00	1.10E-01	3.07E+00	2.16E-03
UM-250S-2750E (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	2.86E-02	1.65E+02	4.72E+00	1.62E-01	1.35E+02	5.66E-03	4.70E+00	1.10E-01	3.07E+00	1.84E-03
UM-250S-2500E (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	2.86E-02	1.23E+01	3.52E-01	1.62E-01	1.35E+02	4.22E-04	4.70E+00	1.10E-01	3.07E+00	1.38E-04
UM-0N-2500E (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	2.86E-02	1.17E+02	3.35E+00	1.62E-01	1.35E+02	4.01E-03	4.70E+00	1.10E-01	3.07E+00	1.31E-03
UM-0N-250E (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	2.86E-02	1.30E+01	3.72E-01	1.62E-01	1.35E+02	4.46E-04	4.70E+00	1.10E-01	3.07E+00	1.45E-04
BRSD-2 (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	2.86E-02	1.77E+02	5.07E+00	1.62E-01	1.35E+02	6.07E-03	4.70E+00	1.10E-01	3.07E+00	1.98E-03
UM-500N-2500E (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	2.86E-02	1.13E+01	3.24E-01	1.62E-01	1.35E+02	3.87E-04	4.70E+00	1.10E-01	3.07E+00	1.26E-04

TABLE C-12BA: ARSENIC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 12 - MARSH, TERRESTRIAL RECEPTORS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **28.9**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
White-Tailed Deer (Large Herbivorous Mammals)																							
UM-250N-2500E (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	2.86E-02	9.69E+01	2.77E+00	1.62E-01	1.35E+02	3.32E-03	4.70E+00	1.10E-01	3.07E+00	1.08E-03
UM-250N-2250E (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	2.86E-02	1.77E+02	5.07E+00	1.62E-01	1.35E+02	6.07E-03	4.70E+00	1.10E-01	3.07E+00	1.98E-03
Western Upper Marsh (0-2")																						**Maximum HQ (Eastern Upper Marsh, 0-2")**	**2.66E-03**
UM-500S-2500E (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	2.86E-02	1.22E+01	3.49E-01	1.62E-01	1.35E+02	4.18E-04	4.70E+00	1.10E-01	3.07E+00	1.36E-04
UM-0N-2000E (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	2.86E-02	4.72E+01	1.35E+00	1.62E-01	1.35E+02	1.62E-03	4.70E+00	1.10E-01	3.07E+00	5.28E-04
UM-500S-2000E (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	2.86E-02	2.10E+01	6.01E-01	1.62E-01	1.35E+02	7.20E-04	4.70E+00	1.10E-01	3.07E+00	2.35E-04
UM-250N-1750E (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	2.86E-02	1.26E+01	3.61E-01	1.62E-01	1.35E+02	4.32E-04	4.70E+00	1.10E-01	3.07E+00	1.41E-04
UM-0N-1500E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-250S-1500E (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	2.86E-02	3.33E+01	9.53E-01	1.62E-01	1.35E+02	1.14E-03	4.70E+00	1.10E-01	3.07E+00	3.72E-04
UM-250S-1250E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-6 (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-1000E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-750E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-500E (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	2.86E-02	1.01E+01	2.89E-01	1.62E-01	1.35E+02	3.46E-04	4.70E+00	1.10E-01	3.07E+00	1.13E-04
UM-250S-500E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-250S-250E (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	2.86E-02	1.45E+01	4.15E-01	1.62E-01	1.35E+02	4.97E-04	4.70E+00	1.10E-01	3.07E+00	1.62E-04
BRSD-7 (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-8 (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-500S-500E (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	2.86E-02	1.18E+01	3.38E-01	1.62E-01	1.35E+02	4.05E-04	4.70E+00	1.10E-01	3.07E+00	1.32E-04
BRSD-9 (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	2.86E-02	2.30E+01	6.59E-01	1.62E-01	1.35E+02	7.89E-04	4.70E+00	1.10E-01	3.07E+00	2.57E-04
BRSD-10 (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	2.86E-02	3.03E+01	8.68E-01	1.62E-01	1.35E+02	1.04E-03	4.70E+00	1.10E-01	3.07E+00	3.39E-04
BRSD-11 (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	2.86E-02	1.47E+01	4.21E-01	1.62E-01	1.35E+02	5.04E-04	4.70E+00	1.10E-01	3.07E+00	1.64E-04
Eastern Upper Marsh (2-6")																						**Maximum HQ (Western Upper Marsh, 0-2")**	**5.28E-04**
UM-1000S-3500E (2-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	2.86E-02	3.81E+01	1.09E+00	1.62E-01	1.35E+02	1.31E-03	4.70E+00	1.10E-01	3.07E+00	4.26E-04
BRSD-4 (2-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	2.86E-02	9.85E+00	2.82E-01	1.62E-01	1.35E+02	3.38E-04	4.70E+00	1.10E-01	3.07E+00	1.10E-04
UM-750S-3500E (2-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	2.86E-02	1.57E+02	4.50E+00	1.62E-01	1.35E+02	5.38E-03	4.70E+00	1.10E-01	3.07E+00	1.76E-03
BRSD-16 (2-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	2.86E-02	5.07E+02	1.45E+01	1.62E-01	1.35E+02	1.74E-02	4.70E+00	1.10E-01	3.07E+00	5.67E-03
UM-750S-3000E (2-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	2.86E-02	1.43E+02	4.09E+00	1.62E-01	1.35E+02	4.90E-03	4.70E+00	1.10E-01	3.07E+00	1.60E-03
BRSD-3 (2-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	2.86E-02	5.42E+01	1.55E+00	1.62E-01	1.35E+02	1.86E-03	4.70E+00	1.10E-01	3.07E+00	6.06E-04
UM-500S-3250E (2-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	2.86E-02	1.50E+02	4.30E+00	1.62E-01	1.35E+02	5.14E-03	4.70E+00	1.10E-01	3.07E+00	1.68E-03
UM-500S-3000E (2-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	2.86E-02	2.26E+01	6.47E-01	1.62E-01	1.35E+02	7.75E-04	4.70E+00	1.10E-01	3.07E+00	2.53E-04
UM-500S-2750E (2-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	2.86E-02	7.42E+01	2.12E+00	1.62E-01	1.35E+02	2.54E-03	4.70E+00	1.10E-01	3.07E+00	8.30E-04
BRSD-25 (2-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	2.86E-02	6.00E+01	1.72E+00	1.62E-01	1.35E+02	2.06E-03	4.70E+00	1.10E-01	3.07E+00	6.71E-04
UM-250S-3000E (2-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	2.86E-02	1.62E+02	4.64E+00	1.62E-01	1.35E+02	5.56E-03	4.70E+00	1.10E-01	3.07E+00	1.81E-03
UM-250S-3250E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-24 (2-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	2.86E-02	1.19E+02	3.41E+00	1.62E-01	1.35E+02	4.08E-03	4.70E+00	1.10E-01	3.07E+00	1.33E-03
UM-250S-2750E (2-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	2.86E-02	1.41E+02	4.04E+00	1.62E-01	1.35E+02	4.84E-03	4.70E+00	1.10E-01	3.07E+00	1.58E-03
UM-0N-2500E (2-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	2.86E-02	1.03E+02	2.95E+00	1.62E-01	1.35E+02	3.53E-03	4.70E+00	1.10E-01	3.07E+00	1.15E-03
BRSD-2 (2-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	2.86E-02	1.32E+02	3.78E+00	1.62E-01	1.35E+02	4.53E-03	4.70E+00	1.10E-01	3.07E+00	1.48E-03
UM-500N-2500E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-250N-2500E (2-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	2.86E-02	1.16E+02	3.32E+00	1.62E-01	1.35E+02	3.98E-03	4.70E+00	1.10E-01	3.07E+00	1.30E-03
UM-250N-2250E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
Western Upper Marsh (2-6")																						**Maximum HQ (Eastern Upper Marsh, 2-6")**	**5.67E-03**
UM-500S-2500E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-2000E (2-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	2.86E-02	4.94E+01	1.41E+00	1.62E-01	1.35E+02	1.69E-03	4.70E+00	1.10E-01	3.07E+00	5.52E-04
UM-500S-2000E (2-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	2.86E-02	1.79E+01	5.13E-01	1.62E-01	1.35E+02	6.14E-04	4.70E+00	1.10E-01	3.07E+00	2.00E-04
UM-250N-1750E (2-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	2.86E-02	1.22E+01	3.49E-01	1.62E-01	1.35E+02	4.18E-04	4.70E+00	1.10E-01	3.07E+00	1.36E-04
UM-0N-1500E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-250S-1500E (2-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	2.86E-02	3.06E+01	8.76E-01	1.62E-01	1.35E+02	1.05E-03	4.70E+00	1.10E-01	3.07E+00	3.42E-04
UM-250S-1250E (2-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	2.86E-02	2.46E+01	7.04E-01	1.62E-01	1.35E+02	8.44E-04	4.70E+00	1.10E-01	3.07E+00	2.75E-04
BRSD-6 (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-1000E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-750E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-500E (2-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	2.86E-02	1.68E+01	4.81E-01	1.62E-01	1.35E+02	5.76E-04	4.70E+00	1.10E-01	3.07E+00	1.88E-04
UM-250S-500E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-250E (2-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	2.86E-02	1.95E+01	5.58E-01	1.62E-01	1.35E+02	6.69E-04	4.70E+00	1.10E-01	3.07E+00	2.18E-04
UM-250S-250E (2-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	2.86E-02	9.58E+00	2.74E-01	1.62E-01	1.35E+02	3.29E-04	4.70E+00	1.10E-01	3.07E+00	1.07E-04

TABLE C-12BA: ARSENIC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 12 - MARSH, TERRESTRIAL RECEPTORS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **28.9**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
White-Tailed Deer (Large Herbivorous Mammals)																							
BRSD-7 (2-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	2.86E-02	1.20E+01	3.44E-01	1.62E-01	1.35E+02	4.12E-04	4.70E+00	1.10E-01	3.07E+00	1.34E-04
BRSD-8 (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-500S-500E (2-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	2.86E-02	9.28E+00	2.66E-01	1.62E-01	1.35E+02	3.18E-04	4.70E+00	1.10E-01	3.07E+00	1.04E-04
BRSD-9 (2-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	2.86E-02	1.74E+01	4.98E-01	1.62E-01	1.35E+02	5.97E-04	4.70E+00	1.10E-01	3.07E+00	1.95E-04
BRSD-10 (2-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	2.86E-02	3.58E+01	1.03E+00	1.62E-01	1.35E+02	1.23E-03	4.70E+00	1.10E-01	3.07E+00	4.00E-04
BRSD-11 (2-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	2.86E-02	1.08E+01	3.09E-01	1.62E-01	1.35E+02	3.70E-04	4.70E+00	1.10E-01	3.07E+00	1.21E-04
Eastern Upper Marsh (6-12")																						**Maximum HQ (Western Upper Marsh, 2-6")**	**5.52E-04**
UM-1000S-3500E (6-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	2.86E-02	1.26E+01	3.61E-01	1.62E-01	1.35E+02	4.32E-04	4.70E+00	1.10E-01	3.07E+00	1.41E-04
BRSD-15 (6-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	2.86E-02	1.68E+01	4.81E-01	1.62E-01	1.35E+02	5.76E-04	4.70E+00	1.10E-01	3.07E+00	1.88E-04
BRSD-4 (6-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	2.86E-02	2.04E+01	5.84E-01	1.62E-01	1.35E+02	7.00E-04	4.70E+00	1.10E-01	3.07E+00	2.28E-04
UM-750S-3500E (6-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	2.86E-02	1.38E+02	3.95E+00	1.62E-01	1.35E+02	4.73E-03	4.70E+00	1.10E-01	3.07E+00	1.54E-03
BRSD-16 (6-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	2.86E-02	9.28E+01	2.66E+00	1.62E-01	1.35E+02	3.18E-03	4.70E+00	1.10E-01	3.07E+00	1.04E-03
UM-750S-3000E (6-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	2.86E-02	1.42E+02	4.07E+00	1.62E-01	1.35E+02	4.87E-03	4.70E+00	1.10E-01	3.07E+00	1.59E-03
BRSD-3 (6-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	2.86E-02	1.99E+01	5.70E-01	1.62E-01	1.35E+02	6.82E-04	4.70E+00	1.10E-01	3.07E+00	2.22E-04
UM-500S-3250E (6-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	2.86E-02	1.00E+02	2.86E+00	1.62E-01	1.35E+02	3.43E-03	4.70E+00	1.10E-01	3.07E+00	1.12E-03
UM-500S-3000E (6-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	2.86E-02	1.51E+01	4.32E-01	1.62E-01	1.35E+02	5.18E-04	4.70E+00	1.10E-01	3.07E+00	1.69E-04
UM-500S-2750E (6-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	2.86E-02	6.78E+01	1.94E+00	1.62E-01	1.35E+02	2.32E-03	4.70E+00	1.10E-01	3.07E+00	7.58E-04
BRSD-25 (6-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	2.86E-02	2.90E+01	8.30E-01	1.62E-01	1.35E+02	9.94E-04	4.70E+00	1.10E-01	3.07E+00	3.24E-04
UM-250S-3000E (6-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	2.86E-02	1.83E+02	5.24E+00	1.62E-01	1.35E+02	6.28E-03	4.70E+00	1.10E-01	3.07E+00	2.05E-03
UM-250S-3250E (6-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	2.86E-02	1.05E+01	3.01E-01	1.62E-01	1.35E+02	3.60E-04	4.70E+00	1.10E-01	3.07E+00	1.17E-04
BRSD-24 (6-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	2.86E-02	6.34E+01	1.82E+00	1.62E-01	1.35E+02	2.17E-03	4.70E+00	1.10E-01	3.07E+00	7.09E-04
UM-250S-2750E (6-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	2.86E-02	6.60E+01	1.89E+00	1.62E-01	1.35E+02	2.26E-03	4.70E+00	1.10E-01	3.07E+00	7.38E-04
UM-250S-2500E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-2 (6-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	2.86E-02	7.31E+01	2.09E+00	1.62E-01	1.35E+02	2.51E-03	4.70E+00	1.10E-01	3.07E+00	8.17E-04
UM-500N-2500E (6-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	2.86E-02	1.16E+01	3.32E-01	1.62E-01	1.35E+02	3.98E-04	4.70E+00	1.10E-01	3.07E+00	1.30E-04
UM-250N-2500E (6-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	2.86E-02	9.12E+01	2.61E+00	1.62E-01	1.35E+02	3.13E-03	4.70E+00	1.10E-01	3.07E+00	1.02E-03
UM-250N-2250E (6-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	2.86E-02	9.93E+00	2.84E-01	1.62E-01	1.35E+02	3.41E-04	4.70E+00	1.10E-01	3.07E+00	1.11E-04
Western Upper Marsh (6-12")																						**Maximum HQ (Eastern Upper Marsh, 6-12")**	**2.05E-03**
UM-500S-2500E (6-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	2.86E-02	1.10E+01	3.15E-01	1.62E-01	1.35E+02	3.77E-04	4.70E+00	1.10E-01	3.07E+00	1.23E-04
UM-0N-2000E (6-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	2.86E-02	5.90E+01	1.69E+00	1.62E-01	1.35E+02	2.02E-03	4.70E+00	1.10E-01	3.07E+00	6.60E-04
UM-500S-2000E (6-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	2.86E-02	1.53E+01	4.38E-01	1.62E-01	1.35E+02	5.25E-04	4.70E+00	1.10E-01	3.07E+00	1.71E-04
UM-250N-1750E (6-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	2.86E-02	1.16E+01	3.32E-01	1.62E-01	1.35E+02	3.98E-04	4.70E+00	1.10E-01	3.07E+00	1.30E-04
UM-0N-1500E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-250S-1500E (6-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	2.86E-02	1.75E+01	5.01E-01	1.62E-01	1.35E+02	6.00E-04	4.70E+00	1.10E-01	3.07E+00	1.96E-04
UM-250S-1250E (6-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	2.86E-02	1.90E+01	5.44E-01	1.62E-01	1.35E+02	6.52E-04	4.70E+00	1.10E-01	3.07E+00	2.12E-04
BRSD-6 (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-1000E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-750E (6-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	2.86E-02	1.24E+01	3.55E-01	1.62E-01	1.35E+02	4.25E-04	4.70E+00	1.10E-01	3.07E+00	1.39E-04
UM-0N-500E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-250S-500E (6-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	2.86E-02	1.77E+01	5.07E-01	1.62E-01	1.35E+02	6.07E-04	4.70E+00	1.10E-01	3.07E+00	1.98E-04
UM-0N-250E (6-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	2.86E-02	1.47E+01	4.21E-01	1.62E-01	1.35E+02	5.04E-04	4.70E+00	1.10E-01	3.07E+00	1.64E-04
UM-250S-250E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-7 (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-8 (6-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	2.86E-02	1.03E+01	2.95E-01	1.62E-01	1.35E+02	3.53E-04	4.70E+00	1.10E-01	3.07E+00	1.15E-04
UM-500S-500E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-9 (6-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	2.86E-02	1.62E+01	4.64E-01	1.62E-01	1.35E+02	5.56E-04	4.70E+00	1.10E-01	3.07E+00	1.81E-04
BRSD-10 (6-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	2.86E-02	3.83E+01	1.10E+00	1.62E-01	1.35E+02	1.31E-03	4.70E+00	1.10E-01	3.07E+00	4.28E-04
BRSD-11 (6-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	2.86E-02	9.89E+00	2.83E-01	1.62E-01	1.35E+02	3.39E-04	4.70E+00	1.10E-01	3.07E+00	1.11E-04
Middle Marsh (0-2")																						**Maximum HQ (Western Upper Marsh, 6-12")**	**6.60E-04**
MMSD-201 (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	2.86E-02	2.10E+01	6.01E-01	1.62E-01	1.35E+02	7.20E-04	4.70E+00	1.10E-01	3.07E+00	2.35E-04
MMSD-202 (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	2.86E-02	2.20E+01	6.30E-01	1.62E-01	1.35E+02	7.54E-04	4.70E+00	1.10E-01	3.07E+00	2.46E-04
Middle Marsh (2-6")																						**Maximum HQ (Middle Marsh, 0-2")**	**2.46E-04**
MMSD-201 (2-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	2.86E-02	2.10E+01	6.01E-01	1.62E-01	1.35E+02	7.20E-04	4.70E+00	1.10E-01	3.07E+00	2.35E-04
MMSD-202 (2-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	2.86E-02	2.30E+01	6.59E-01	1.62E-01	1.35E+02	7.89E-04	4.70E+00	1.10E-01	3.07E+00	2.57E-04
Middle Marsh (6-12")																						**Maximum HQ (Middle Marsh, 2-6")**	**2.57E-04**
MMSD-201 (6-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	2.86E-02	2.40E+01	6.87E-01	1.62E-01	1.35E+02	8.23E-04	4.70E+00	1.10E-01	3.07E+00	2.68E-04
MMSD-202 (6-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	2.86E-02	1.60E+01	4.58E-01	1.62E-01	1.35E+02	5.49E-04	4.70E+00	1.10E-01	3.07E+00	1.79E-04

TABLE C-12BA: ARSENIC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 12 - MARSH, TERRESTRIAL RECEPTORS (Continued)
Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables; from BAF table; linked to soil or sed concentration table (VLOOKUP)
calculated values; linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 28.9

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
White-Tailed Deer (Large Herbivorous Mammals)																							
Lower Marsh (0-2")																						**Maximum HQ (Middle Marsh, 6-12")**	**2.68E-04**
LMSD-201 (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
LMSD-202 (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
LMSD-203 (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	2.86E-02	2.40E+01	6.87E-01	1.62E-01	1.35E+02	8.23E-04	4.70E+00	1.10E-01	3.07E+00	2.68E-04
LMSD-204 (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	2.86E-02	1.60E+01	4.58E-01	1.62E-01	1.35E+02	5.49E-04	4.70E+00	1.10E-01	3.07E+00	1.79E-04
Lower Marsh (2-6")																						**Maximum HQ (Lower Marsh, 0-2")**	**2.68E-04**
LMSD-201 (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
LMSD-202 (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
LMSD-203 (2-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	2.86E-02	2.30E+01	6.59E-01	1.62E-01	1.35E+02	7.89E-04	4.70E+00	1.10E-01	3.07E+00	2.57E-04
LMSD-204 (2-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	2.86E-02	1.60E+01	4.58E-01	1.62E-01	1.35E+02	5.49E-04	4.70E+00	1.10E-01	3.07E+00	1.79E-04
Lower Marsh (6-12")																						**Maximum HQ (Lower Marsh, 2-6")**	**2.57E-04**
LMSD-201 (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
LMSD-202 (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
LMSD-203 (6-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	2.86E-02	2.50E+01	7.16E-01	1.62E-01	1.35E+02	8.57E-04	4.70E+00	1.10E-01	3.07E+00	2.79E-04
LMSD-204 (6-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	2.86E-02	1.60E+01	4.58E-01	1.62E-01	1.35E+02	5.49E-04	4.70E+00	1.10E-01	3.07E+00	1.79E-04
																						Maximum HQ (Lower Marsh, 6-12")	**2.79E-04**
Red Fox (Carnivorous Mammals)																							
Reference Sites																							
BRSD-5 (0-2")	1.72E-01	1.72E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.72E+01	8.26E-02	2.14E-02	4.54E+00	3.89E-04	4.70E+00	1.10E-01	3.76E+00	1.03E-04
BRSD-5 (2-6")	1.72E-01	1.72E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.92E+01	9.22E-02	2.14E-02	4.54E+00	4.34E-04	4.70E+00	1.10E-01	3.76E+00	1.15E-04
BRSD-5 (6-12")	1.72E-01	1.72E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.46E+01	1.18E-01	2.14E-02	4.54E+00	5.56E-04	4.70E+00	1.10E-01	3.76E+00	1.48E-04
PGBG-1 (0-2")	1.72E-01	1.72E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.24E+01	5.96E-02	2.14E-02	4.54E+00	2.80E-04	4.70E+00	1.10E-01	3.76E+00	7.46E-05
PGBG-1 (2-6")	1.72E-01	1.72E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	9.12E+00	4.38E-02	2.14E-02	4.54E+00	2.06E-04	4.70E+00	1.10E-01	3.76E+00	5.48E-05
PGBG-1 (6-12")	1.72E-01	1.72E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	9.40E+00	4.52E-02	2.14E-02	4.54E+00	2.13E-04	4.70E+00	1.10E-01	3.76E+00	5.65E-05
PGBG-2 (0-2")	1.72E-01	1.72E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.88E+01	9.03E-02	2.14E-02	4.54E+00	4.25E-04	4.70E+00	1.10E-01	3.76E+00	1.13E-04
PGBG-2 (2-6")	1.72E-01	1.72E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.85E+01	8.89E-02	2.14E-02	4.54E+00	4.18E-04	4.70E+00	1.10E-01	3.76E+00	1.11E-04
PGBG-2 (6-12")	1.72E-01	1.72E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.23E+01	1.55E-01	2.14E-02	4.54E+00	7.30E-04	4.70E+00	1.10E-01	3.76E+00	1.94E-04
Eastern Upper Marsh (0-2")																						**Minimum HQ (Reference Sites)**	**5.48E-05**
UM-1000S-3500E (0-2")	1.72E-01	1.72E-01	2.35E-01	5.58E+01	9.58E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.38E+02	1.14E+00	2.14E-02	4.54E+00	5.05E-02	4.70E+00	1.10E-01	3.76E+00	1.34E-02
BRSD-15 (0-2")	1.72E-01	1.72E-01	2.35E-01	3.50E+00	6.00E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.49E+01	7.16E-02	2.14E-02	4.54E+00	3.16E-03	4.70E+00	1.10E-01	3.76E+00	8.40E-04
BRSD-4 (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-750S-3500E (0-2")	1.72E-01	1.72E-01	2.35E-01	2.72E+01	4.67E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.16E+02	5.57E-01	2.14E-02	4.54E+00	2.46E-02	4.70E+00	1.10E-01	3.76E+00	6.54E-03
BRSD-16 (0-2")	1.72E-01	1.72E-01	2.35E-01	4.53E+01	7.77E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.93E+02	9.27E-01	2.14E-02	4.54E+00	4.09E-02	4.70E+00	1.10E-01	3.76E+00	1.09E-02
UM-750S-3000E (0-2")	1.72E-01	1.72E-01	2.35E-01	3.85E+01	6.60E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.64E+02	7.88E-01	2.14E-02	4.54E+00	3.48E-02	4.70E+00	1.10E-01	3.76E+00	9.25E-03
BRSD-3 (0-2")	1.72E-01	1.72E-01	2.35E-01	8.92E+00	1.53E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.80E+01	1.83E-01	2.14E-02	4.54E+00	8.06E-03	4.70E+00	1.10E-01	3.76E+00	2.14E-03
UM-500S-3250E (0-2")	1.72E-01	1.72E-01	2.35E-01	3.24E+01	5.55E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.38E+02	6.63E-01	2.14E-02	4.54E+00	2.93E-02	4.70E+00	1.10E-01	3.76E+00	7.78E-03
UM-500S-3000E (0-2")	1.72E-01	1.72E-01	2.35E-01	2.05E+01	3.52E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	8.74E+01	4.20E-01	2.14E-02	4.54E+00	1.85E-02	4.70E+00	1.10E-01	3.76E+00	4.93E-03
UM-500S-2750E (0-2")	1.72E-01	1.72E-01	2.35E-01	3.66E+01	6.28E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.56E+02	7.49E-01	2.14E-02	4.54E+00	3.31E-02	4.70E+00	1.10E-01	3.76E+00	8.80E-03
BRSD-25 (0-2")	1.72E-01	1.72E-01	2.35E-01	1.55E+01	2.66E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	6.60E+01	3.17E-01	2.14E-02	4.54E+00	1.40E-02	4.70E+00	1.10E-01	3.76E+00	3.72E-03
UM-250S-3000E (0-2")	1.72E-01	1.72E-01	2.35E-01	2.51E+01	4.31E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.07E+02	5.14E-01	2.14E-02	4.54E+00	2.27E-02	4.70E+00	1.10E-01	3.76E+00	6.03E-03
UM-250S-3250E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-24 (0-2")	1.72E-01	1.72E-01	2.35E-01	4.53E+01	7.77E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.93E+02	9.27E-01	2.14E-02	4.54E+00	4.09E-02	4.70E+00	1.10E-01	3.76E+00	1.09E-02
UM-250S-2750E (0-2")	1.72E-01	1.72E-01	2.35E-01	3.87E+01	6.64E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.65E+02	7.93E-01	2.14E-02	4.54E+00	3.50E-02	4.70E+00	1.10E-01	3.76E+00	9.31E-03
UM-250S-2500E (0-2")	1.72E-01	1.72E-01	2.35E-01	2.89E+00	4.95E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.23E+01	5.91E-02	2.14E-02	4.54E+00	2.61E-03	4.70E+00	1.10E-01	3.76E+00	6.94E-04
UM-0N-2500E (0-2")	1.72E-01	1.72E-01	2.35E-01	2.74E+01	4.71E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.17E+02	5.62E-01	2.14E-02	4.54E+00	2.48E-02	4.70E+00	1.10E-01	3.76E+00	6.60E-03
UM-0N-250E (0-2")	1.72E-01	1.72E-01	2.35E-01	3.05E+00	5.23E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.30E+01	6.24E-02	2.14E-02	4.54E+00	2.76E-03	4.70E+00	1.10E-01	3.76E+00	7.33E-04
BRSD-2 (0-2")	1.72E-01	1.72E-01	2.35E-01	4.15E+01	7.12E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.77E+02	8.50E-01	2.14E-02	4.54E+00	3.75E-02	4.70E+00	1.10E-01	3.76E+00	9.98E-03
UM-500N-2500E (0-2")	1.72E-01	1.72E-01	2.35E-01	2.65E+00	4.55E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.13E+01	5.43E-02	2.14E-02	4.54E+00	2.40E-03	4.70E+00	1.10E-01	3.76E+00	6.37E-04
UM-250N-2500E (0-2")	1.72E-01	1.72E-01	2.35E-01	2.27E+01	3.90E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	9.69E+01	4.65E-01	2.14E-02	4.54E+00	2.05E-02	4.70E+00	1.10E-01	3.76E+00	5.46E-03
UM-250N-2250E (0-2")	1.72E-01	1.72E-01	2.35E-01	4.15E+01	7.12E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.77E+02	8.50E-01	2.14E-02	4.54E+00	3.75E-02	4.70E+00	1.10E-01	3.76E+00	9.98E-03
Western Upper Marsh (0-2")																						**Maximum HQ (Eastern Upper Marsh, 0-2")**	**1.34E-02**
UM-500S-2500E (0-2")	1.72E-01	1.72E-01	2.35E-01	2.86E+00	4.91E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.22E+01	5.86E-02	2.14E-02	4.54E+00	2.59E-03	4.70E+00	1.10E-01	3.76E+00	6.88E-04
UM-0N-2000E (0-2")	1.72E-01	1.72E-01	2.35E-01	1.11E+01	1.90E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.72E+01	2.27E-01	2.14E-02	4.54E+00	1.00E-02	4.70E+00	1.10E-01	3.76E+00	2.66E-03
UM-500S-2000E (0-2")	1.72E-01	1.72E-01	2.35E-01	4.93E+00	8.45E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.10E+01	1.01E-01	2.14E-02	4.54E+00	4.45E-03	4.70E+00	1.10E-01	3.76E+00	1.18E-03
UM-250N-1750E (0-2")	1.72E-01	1.72E-01	2.35E-01	2.96E+00	5.07E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.26E+01	6.05E-02	2.14E-02	4.54E+00	2.67E-03	4.70E+00	1.10E-01	3.76E+00	7.11E-04
UM-0N-1500E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-250S-1500E (0-2")	1.72E-01	1.72E-01	2.35E-01	7.81E+00	1.34E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.33E+01	1.60E-01	2.14E-02	4.54E+00	7.06E-03	4.70E+00	1.10E-01	3.76E+00	1.88E-03
UM-250S-1250E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB

TABLE C-12BA: ARSENIC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 12 - MARSH, TERRESTRIAL RECEPTORS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **28.9**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Red Fox (Carnivorous Mammals)																							
BRSD-6 (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-1000E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-750E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-500E (0-2")	1.72E-01	1.72E-01	2.35E-01	2.37E+00	4.07E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.01E+01	4.85E-02	2.14E-02	4.54E+00	2.14E-03	4.70E+00	1.10E-01	3.76E+00	5.70E-04
UM-250S-500E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-250S-250E (0-2")	1.72E-01	1.72E-01	2.35E-01	3.40E+00	5.84E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.45E+01	6.97E-02	2.14E-02	4.54E+00	3.07E-03	4.70E+00	1.10E-01	3.76E+00	8.18E-04
BRSD-7 (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-8 (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-500S-500E (0-2")	1.72E-01	1.72E-01	2.35E-01	2.77E+00	4.75E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.18E+01	5.67E-02	2.14E-02	4.54E+00	2.50E-03	4.70E+00	1.10E-01	3.76E+00	6.65E-04
BRSD-9 (0-2")	1.72E-01	1.72E-01	2.35E-01	5.40E+00	9.26E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.30E+01	1.10E-01	2.14E-02	4.54E+00	4.88E-03	4.70E+00	1.10E-01	3.76E+00	1.30E-03
BRSD-10 (0-2")	1.72E-01	1.72E-01	2.35E-01	7.11E+00	1.22E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.03E+01	1.46E-01	2.14E-02	4.54E+00	6.42E-03	4.70E+00	1.10E-01	3.76E+00	1.71E-03
BRSD-11 (0-2")	1.72E-01	1.72E-01	2.35E-01	3.45E+00	5.92E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.47E+01	7.06E-02	2.14E-02	4.54E+00	3.12E-03	4.70E+00	1.10E-01	3.76E+00	8.29E-04
Eastern Upper Marsh (2-6")																						**Maximum HQ (Western Upper Marsh, 0-2")**	**2.66E-03**
UM-1000S-3500E (2-6")	1.72E-01	1.72E-01	2.35E-01	8.94E+00	1.53E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.81E+01	1.83E-01	2.14E-02	4.54E+00	8.08E-03	4.70E+00	1.10E-01	3.76E+00	2.15E-03
BRSD-15 (2-6")	1.72E-01	1.72E-01	2.35E-01	3.66E+00	6.28E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.56E+01	7.49E-02	2.14E-02	4.54E+00	3.31E-03	4.70E+00	1.10E-01	3.76E+00	8.80E-04
BRSD-4 (2-6")	1.72E-01	1.72E-01	2.35E-01	2.31E+00	3.96E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	9.85E+00	4.73E-02	2.14E-02	4.54E+00	2.09E-03	4.70E+00	1.10E-01	3.76E+00	5.55E-04
UM-750S-3500E (2-6")	1.72E-01	1.72E-01	2.35E-01	3.68E+01	6.32E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.57E+02	7.54E-01	2.14E-02	4.54E+00	3.33E-02	4.70E+00	1.10E-01	3.76E+00	8.85E-03
BRSD-16 (2-6")	1.72E-01	1.72E-01	2.35E-01	1.19E+02	2.04E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.07E+02	2.44E+00	2.14E-02	4.54E+00	1.08E-01	4.70E+00	1.10E-01	3.76E+00	2.86E-02
UM-750S-3000E (2-6")	1.72E-01	1.72E-01	2.35E-01	3.35E+01	5.76E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.43E+02	6.87E-01	2.14E-02	4.54E+00	3.03E-02	4.70E+00	1.10E-01	3.76E+00	8.06E-03
BRSD-3 (2-6")	1.72E-01	1.72E-01	2.35E-01	1.27E+01	2.18E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.42E+01	2.60E-01	2.14E-02	4.54E+00	1.15E-02	4.70E+00	1.10E-01	3.76E+00	3.06E-03
UM-500S-3250E (2-6")	1.72E-01	1.72E-01	2.35E-01	3.52E+01	6.04E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.50E+02	7.21E-01	2.14E-02	4.54E+00	3.18E-02	4.70E+00	1.10E-01	3.76E+00	8.46E-03
UM-500S-3000E (2-6")	1.72E-01	1.72E-01	2.35E-01	5.30E+00	9.10E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.26E+01	1.09E-01	2.14E-02	4.54E+00	4.79E-03	4.70E+00	1.10E-01	3.76E+00	1.27E-03
UM-500S-2750E (2-6")	1.72E-01	1.72E-01	2.35E-01	1.74E+01	2.99E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	7.42E+01	3.56E-01	2.14E-02	4.54E+00	1.57E-02	4.70E+00	1.10E-01	3.76E+00	4.18E-03
BRSD-25 (2-6")	1.72E-01	1.72E-01	2.35E-01	1.41E+01	2.41E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	6.00E+01	2.88E-01	2.14E-02	4.54E+00	1.27E-02	4.70E+00	1.10E-01	3.76E+00	3.38E-03
UM-250S-3000E (2-6")	1.72E-01	1.72E-01	2.35E-01	3.80E+01	6.52E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.62E+02	7.78E-01	2.14E-02	4.54E+00	3.44E-02	4.70E+00	1.10E-01	3.76E+00	9.14E-03
UM-250S-3250E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-24 (2-6")	1.72E-01	1.72E-01	2.35E-01	2.79E+01	4.79E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.19E+02	5.72E-01	2.14E-02	4.54E+00	2.52E-02	4.70E+00	1.10E-01	3.76E+00	6.71E-03
UM-250S-2750E (2-6")	1.72E-01	1.72E-01	2.35E-01	3.31E+01	5.67E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.41E+02	6.77E-01	2.14E-02	4.54E+00	2.99E-02	4.70E+00	1.10E-01	3.76E+00	7.95E-03
UM-0N-2500E (2-6")	1.72E-01	1.72E-01	2.35E-01	2.42E+01	4.15E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.03E+02	4.95E-01	2.14E-02	4.54E+00	2.18E-02	4.70E+00	1.10E-01	3.76E+00	5.81E-03
BRSD-2 (2-6")	1.72E-01	1.72E-01	2.35E-01	3.10E+01	5.31E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.32E+02	6.34E-01	2.14E-02	4.54E+00	2.80E-02	4.70E+00	1.10E-01	3.76E+00	7.44E-03
UM-500N-2500E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-250N-2500E (2-6")	1.72E-01	1.72E-01	2.35E-01	2.72E+01	4.67E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.16E+02	5.57E-01	2.14E-02	4.54E+00	2.46E-02	4.70E+00	1.10E-01	3.76E+00	6.54E-03
UM-250N-2250E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
Western Upper Marsh (2-6")																						**Maximum HQ (Eastern Upper Marsh, 2-6")**	**2.86E-02**
UM-500S-2500E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-2000E (2-6")	1.72E-01	1.72E-01	2.35E-01	1.16E+01	1.99E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.94E+01	2.37E-01	2.14E-02	4.54E+00	1.05E-02	4.70E+00	1.10E-01	3.76E+00	2.79E-03
UM-500S-2000E (2-6")	1.72E-01	1.72E-01	2.35E-01	4.20E+00	7.20E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.79E+01	8.60E-02	2.14E-02	4.54E+00	3.80E-03	4.70E+00	1.10E-01	3.76E+00	1.01E-03
UM-250N-1750E (2-6")	1.72E-01	1.72E-01	2.35E-01	2.86E+00	4.91E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.22E+01	5.86E-02	2.14E-02	4.54E+00	2.59E-03	4.70E+00	1.10E-01	3.76E+00	6.88E-04
UM-0N-1500E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-250S-1500E (2-6")	1.72E-01	1.72E-01	2.35E-01	7.18E+00	1.23E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.06E+01	1.47E-01	2.14E-02	4.54E+00	6.49E-03	4.70E+00	1.10E-01	3.76E+00	1.73E-03
UM-250S-1250E (2-6")	1.72E-01	1.72E-01	2.35E-01	5.77E+00	9.90E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.46E+01	1.18E-01	2.14E-02	4.54E+00	5.22E-03	4.70E+00	1.10E-01	3.76E+00	1.39E-03
BRSD-6 (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-1000E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-750E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-500E (2-6")	1.72E-01	1.72E-01	2.35E-01	3.94E+00	6.76E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.68E+01	8.07E-02	2.14E-02	4.54E+00	3.56E-03	4.70E+00	1.10E-01	3.76E+00	9.47E-04
UM-250S-500E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-250E (2-6")	1.72E-01	1.72E-01	2.35E-01	4.57E+00	7.85E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.95E+01	9.37E-02	2.14E-02	4.54E+00	4.13E-03	4.70E+00	1.10E-01	3.76E+00	1.10E-03
UM-250S-250E (2-6")	1.72E-01	1.72E-01	2.35E-01	2.25E+00	3.86E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	9.58E+00	4.60E-02	2.14E-02	4.54E+00	2.03E-03	4.70E+00	1.10E-01	3.76E+00	5.40E-04
BRSD-7 (2-6")	1.72E-01	1.72E-01	2.35E-01	2.82E+00	4.83E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.20E+01	5.76E-02	2.14E-02	4.54E+00	2.54E-03	4.70E+00	1.10E-01	3.76E+00	6.77E-04
BRSD-8 (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-500S-500E (2-6")	1.72E-01	1.72E-01	2.35E-01	2.18E+00	3.73E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	9.28E+00	4.46E-02	2.14E-02	4.54E+00	1.97E-03	4.70E+00	1.10E-01	3.76E+00	5.23E-04
BRSD-9 (2-6")	1.72E-01	1.72E-01	2.35E-01	4.08E+00	7.00E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.74E+01	8.36E-02	2.14E-02	4.54E+00	3.69E-03	4.70E+00	1.10E-01	3.76E+00	9.81E-04
BRSD-10 (2-6")	1.72E-01	1.72E-01	2.35E-01	8.40E+00	1.44E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.58E+01	1.72E-01	2.14E-02	4.54E+00	7.59E-03	4.70E+00	1.10E-01	3.76E+00	2.02E-03
BRSD-11 (2-6")	1.72E-01	1.72E-01	2.35E-01	2.53E+00	4.35E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.08E+01	5.19E-02	2.14E-02	4.54E+00	2.29E-03	4.70E+00	1.10E-01	3.76E+00	6.09E-04
Eastern Upper Marsh (6-12")																						**Maximum HQ (Western Upper Marsh, 2-6")**	**2.79E-03**
UM-1000S-3500E (6-12")	1.72E-01	1.72E-01	2.35E-01	2.96E+00	5.07E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.26E+01	6.05E-02	2.14E-02	4.54E+00	2.67E-03	4.70E+00	1.10E-01	3.76E+00	7.11E-04
BRSD-15 (6-12")	1.72E-01	1.72E-01	2.35E-01	3.94E+00	6.76E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.68E+01	8.07E-02	2.14E-02	4.54E+00	3.56E-03	4.70E+00	1.10E-01	3.76E+00	9.47E-04
BRSD-4 (6-12")	1.72E-01	1.72E-01	2.35E-01	4.79E+00	8.21E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.04E+01	9.80E-02	2.14E-02	4.54E+00	4.33E-03	4.70E+00	1.10E-01	3.76E+00	1.15E-03

TABLE C-12BA: ARSENIC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 12 - MARSH, TERRESTRIAL RECEPTORS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **28.9**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Red Fox (Carnivorous Mammals)																							
UM-750S-3500E (6-12")	1.72E-01	1.72E-01	2.35E-01	3.24E+01	5.55E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.38E+02	6.63E-01	2.14E-02	4.54E+00	2.93E-02	4.70E+00	1.10E-01	3.76E+00	7.78E-03
BRSD-16 (6-12")	1.72E-01	1.72E-01	2.35E-01	2.18E+01	3.73E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	9.28E+01	4.46E-01	2.14E-02	4.54E+00	1.97E-02	4.70E+00	1.10E-01	3.76E+00	5.23E-03
UM-750S-3000E (6-12")	1.72E-01	1.72E-01	2.35E-01	3.33E+01	5.72E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.42E+02	6.82E-01	2.14E-02	4.54E+00	3.01E-02	4.70E+00	1.10E-01	3.76E+00	8.01E-03
BRSD-3 (6-12")	1.72E-01	1.72E-01	2.35E-01	4.67E+00	8.01E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.99E+01	9.56E-02	2.14E-02	4.54E+00	4.22E-03	4.70E+00	1.10E-01	3.76E+00	1.12E-03
UM-500S-3250E (6-12")	1.72E-01	1.72E-01	2.35E-01	2.35E+01	4.02E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.00E+02	4.80E-01	2.14E-02	4.54E+00	2.12E-02	4.70E+00	1.10E-01	3.76E+00	5.64E-03
UM-500S-3000E (6-12")	1.72E-01	1.72E-01	2.35E-01	3.54E+00	6.08E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.51E+01	7.25E-02	2.14E-02	4.54E+00	3.20E-03	4.70E+00	1.10E-01	3.76E+00	8.52E-04
UM-500S-2750E (6-12")	1.72E-01	1.72E-01	2.35E-01	1.59E+01	2.73E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	6.78E+01	3.26E-01	2.14E-02	4.54E+00	1.44E-02	4.70E+00	1.10E-01	3.76E+00	3.82E-03
BRSD-25 (6-12")	1.72E-01	1.72E-01	2.35E-01	6.80E+00	1.17E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.90E+01	1.39E-01	2.14E-02	4.54E+00	6.15E-03	4.70E+00	1.10E-01	3.76E+00	1.64E-03
UM-250S-3000E (6-12")	1.72E-01	1.72E-01	2.35E-01	4.29E+01	7.37E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.83E+02	8.79E-01	2.14E-02	4.54E+00	3.88E-02	4.70E+00	1.10E-01	3.76E+00	1.03E-02
UM-250S-3250E (6-12")	1.72E-01	1.72E-01	2.35E-01	2.46E+00	4.23E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.05E+01	5.04E-02	2.14E-02	4.54E+00	2.23E-03	4.70E+00	1.10E-01	3.76E+00	5.92E-04
BRSD-24 (6-12")	1.72E-01	1.72E-01	2.35E-01	1.49E+01	2.55E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	6.34E+01	3.05E-01	2.14E-02	4.54E+00	1.34E-02	4.70E+00	1.10E-01	3.76E+00	3.58E-03
UM-250S-2750E (6-12")	1.72E-01	1.72E-01	2.35E-01	1.55E+01	2.66E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	6.60E+01	3.17E-01	2.14E-02	4.54E+00	1.40E-02	4.70E+00	1.10E-01	3.76E+00	3.72E-03
UM-250S-2500E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-2 (6-12")	1.72E-01	1.72E-01	2.35E-01	1.71E+01	2.94E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	7.31E+01	3.51E-01	2.14E-02	4.54E+00	1.55E-02	4.70E+00	1.10E-01	3.76E+00	4.12E-03
UM-500N-2500E (6-12")	1.72E-01	1.72E-01	2.35E-01	2.72E+00	4.67E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.16E+01	5.57E-02	2.14E-02	4.54E+00	2.46E-03	4.70E+00	1.10E-01	3.76E+00	6.54E-04
UM-250N-2500E (6-12")	1.72E-01	1.72E-01	2.35E-01	2.14E+01	3.67E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	9.12E+01	4.38E-01	2.14E-02	4.54E+00	1.93E-02	4.70E+00	1.10E-01	3.76E+00	5.14E-03
UM-250N-2250E (6-12")	1.72E-01	1.72E-01	2.35E-01	2.33E+00	4.00E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	9.93E+00	4.77E-02	2.14E-02	4.54E+00	2.11E-03	4.70E+00	1.10E-01	3.76E+00	5.60E-04
Western Upper Marsh (6-12")																						**Maximum HQ (Eastern Upper Marsh, 6-12")**	**1.03E-02**
UM-500S-2500E (6-12")	1.72E-01	1.72E-01	2.35E-01	2.58E+00	4.43E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.10E+01	5.28E-02	2.14E-02	4.54E+00	2.33E-03	4.70E+00	1.10E-01	3.76E+00	6.20E-04
UM-0N-2000E (6-12")	1.72E-01	1.72E-01	2.35E-01	1.38E+01	2.37E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.90E+01	2.83E-01	2.14E-02	4.54E+00	1.25E-02	4.70E+00	1.10E-01	3.76E+00	3.33E-03
UM-500S-2000E (6-12")	1.72E-01	1.72E-01	2.35E-01	3.59E+00	6.16E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.53E+01	7.35E-02	2.14E-02	4.54E+00	3.24E-03	4.70E+00	1.10E-01	3.76E+00	8.63E-04
UM-250N-1750E (6-12")	1.72E-01	1.72E-01	2.35E-01	2.72E+00	4.67E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.16E+01	5.57E-02	2.14E-02	4.54E+00	2.46E-03	4.70E+00	1.10E-01	3.76E+00	6.54E-04
UM-0N-1500E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-250S-1500E (6-12")	1.72E-01	1.72E-01	2.35E-01	4.11E+00	7.04E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.75E+01	8.41E-02	2.14E-02	4.54E+00	3.71E-03	4.70E+00	1.10E-01	3.76E+00	9.87E-04
UM-250S-1250E (6-12")	1.72E-01	1.72E-01	2.35E-01	4.46E+00	7.65E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.90E+01	9.13E-02	2.14E-02	4.54E+00	4.03E-03	4.70E+00	1.10E-01	3.76E+00	1.07E-03
BRSD-6 (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-1000E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-750E (6-12")	1.72E-01	1.72E-01	2.35E-01	2.91E+00	4.99E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.24E+01	5.96E-02	2.14E-02	4.54E+00	2.63E-03	4.70E+00	1.10E-01	3.76E+00	6.99E-04
UM-0N-500E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-250S-500E (6-12")	1.72E-01	1.72E-01	2.35E-01	4.15E+00	7.12E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.77E+01	8.50E-02	2.14E-02	4.54E+00	3.75E-03	4.70E+00	1.10E-01	3.76E+00	9.98E-04
UM-0N-250E (6-12")	1.72E-01	1.72E-01	2.35E-01	3.45E+00	5.92E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.47E+01	7.06E-02	2.14E-02	4.54E+00	3.12E-03	4.70E+00	1.10E-01	3.76E+00	8.29E-04
UM-250S-250E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-7 (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-8 (6-12")	1.72E-01	1.72E-01	2.35E-01	2.42E+00	4.15E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.03E+01	4.95E-02	2.14E-02	4.54E+00	2.18E-03	4.70E+00	1.10E-01	3.76E+00	5.81E-04
UM-500S-500E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-9 (6-12")	1.72E-01	1.72E-01	2.35E-01	3.80E+00	6.52E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.62E+01	7.78E-02	2.14E-02	4.54E+00	3.44E-03	4.70E+00	1.10E-01	3.76E+00	9.14E-04
BRSD-10 (6-12")	1.72E-01	1.72E-01	2.35E-01	8.99E+00	1.54E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.83E+01	1.84E-01	2.14E-02	4.54E+00	8.12E-03	4.70E+00	1.10E-01	3.76E+00	2.16E-03
BRSD-11 (6-12")	1.72E-01	1.72E-01	2.35E-01	2.32E+00	3.98E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	9.89E+00	4.75E-02	2.14E-02	4.54E+00	2.10E-03	4.70E+00	1.10E-01	3.76E+00	5.58E-04
Middle Marsh (0-2")																						**Maximum HQ (Western Upper Marsh, 6-12")**	**3.33E-03**
MMSD-201 (0-2")	1.72E-01	1.72E-01	2.35E-01	4.93E+00	8.45E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.10E+01	1.01E-01	2.14E-02	4.54E+00	4.45E-03	4.70E+00	1.10E-01	3.76E+00	1.18E-03
MMSD-202 (0-2")	1.72E-01	1.72E-01	2.35E-01	5.16E+00	8.85E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.20E+01	1.06E-01	2.14E-02	4.54E+00	4.66E-03	4.70E+00	1.10E-01	3.76E+00	1.24E-03
Middle Marsh (2-6")																						**Maximum HQ (Middle Marsh, 0-2")**	**1.24E-03**
MMSD-201 (2-6")	1.72E-01	1.72E-01	2.35E-01	4.93E+00	8.45E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.10E+01	1.01E-01	2.14E-02	4.54E+00	4.45E-03	4.70E+00	1.10E-01	3.76E+00	1.18E-03
MMSD-202 (2-6")	1.72E-01	1.72E-01	2.35E-01	5.40E+00	9.26E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.30E+01	1.10E-01	2.14E-02	4.54E+00	4.88E-03	4.70E+00	1.10E-01	3.76E+00	1.30E-03
Middle Marsh (6-12")																						**Maximum HQ (Middle Marsh, 2-6")**	**1.30E-03**
MMSD-201 (6-12")	1.72E-01	1.72E-01	2.35E-01	5.63E+00	9.66E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.40E+01	1.15E-01	2.14E-02	4.54E+00	5.09E-03	4.70E+00	1.10E-01	3.76E+00	1.35E-03
MMSD-202 (6-12")	1.72E-01	1.72E-01	2.35E-01	3.75E+00	6.44E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.60E+01	7.69E-02	2.14E-02	4.54E+00	3.39E-03	4.70E+00	1.10E-01	3.76E+00	9.02E-04
Lower Marsh (0-2")																						**Maximum HQ (Middle Marsh, 6-12")**	**1.35E-03**
LMSD-201 (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
LMSD-202 (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
LMSD-203 (0-2")	1.72E-01	1.72E-01	2.35E-01	5.63E+00	9.66E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.40E+01	1.15E-01	2.14E-02	4.54E+00	5.09E-03	4.70E+00	1.10E-01	3.76E+00	1.35E-03
LMSD-204 (0-2")	1.72E-01	1.72E-01	2.35E-01	3.75E+00	6.44E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.60E+01	7.69E-02	2.14E-02	4.54E+00	3.39E-03	4.70E+00	1.10E-01	3.76E+00	9.02E-04
Lower Marsh (2-6")																						**Maximum HQ (Lower Marsh, 0-2")**	**1.35E-03**
LMSD-201 (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
LMSD-202 (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
LMSD-203 (2-6")	1.72E-01	1.72E-01	2.35E-01	5.40E+00	9.26E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.30E+01	1.10E-01	2.14E-02	4.54E+00	4.88E-03	4.70E+00	1.10E-01	3.76E+00	1.30E-03
LMSD-204 (2-6")	1.72E-01	1.72E-01	2.35E-01	3.75E+00	6.44E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.60E+01	7.69E-02	2.14E-02	4.54E+00	3.39E-03	4.70E+00	1.10E-01	3.76E+00	9.02E-04

TABLE C-12BA: ARSENIC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 12 - MARSH, TERRESTRIAL RECEPTORS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **28.9**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Red Fox (Carnivorous Mammals)																							
Lower Marsh (6-12")																						**Maximum HQ (Lower Marsh, 2-6")**	**1.30E-03**
LMSD-201 (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
LMSD-202 (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
LMSD-203 (6-12")	1.72E-01	1.72E-01	2.35E-01	5.87E+00	1.01E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.50E+01	1.20E-01	2.14E-02	4.54E+00	5.30E-03	4.70E+00	1.10E-01	3.76E+00	1.41E-03
LMSD-204 (6-12")	1.72E-01	1.72E-01	2.35E-01	3.75E+00	6.44E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.60E+01	7.69E-02	2.14E-02	4.54E+00	3.39E-03	4.70E+00	1.10E-01	3.76E+00	9.02E-04
																						Maximum HQ (Lower Marsh, 6-12")	**1.41E-03**
Masked Shrew (Omnivorous Mammals, Wetland)																							
Reference Sites																							
BRSD-5 (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	3.04E+00	5.22E+01	4.42E-01	1.10E-03	1.72E+01	1.89E-02	1.00E+00	5.50E-03	8.39E+01	4.70E+00	1.10E-01	5.63E+00	1.49E+01
BRSD-5 (2-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	3.04E+00	5.83E+01	4.94E-01	1.10E-03	1.92E+01	2.11E-02	1.00E+00	5.50E-03	9.36E+01	4.70E+00	1.10E-01	5.63E+00	1.66E+01
BRSD-5 (6-12")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	3.04E+00	7.47E+01	6.33E-01	1.10E-03	2.46E+01	2.71E-02	1.00E+00	5.50E-03	1.20E+02	4.70E+00	1.10E-01	5.63E+00	2.13E+01
PGBG-1 (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	3.04E+00	3.77E+01	3.19E-01	1.10E-03	1.24E+01	1.37E-02	1.00E+00	5.50E-03	6.05E+01	4.70E+00	1.10E-01	5.63E+00	1.08E+01
PGBG-1 (2-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	3.04E+00	2.77E+01	2.35E-01	1.10E-03	9.12E+00	1.00E-02	1.00E+00	5.50E-03	4.45E+01	4.70E+00	1.10E-01	5.63E+00	7.91E+00
PGBG-1 (6-12")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	3.04E+00	2.85E+01	2.42E-01	1.10E-03	9.40E+00	1.04E-02	1.00E+00	5.50E-03	4.58E+01	4.70E+00	1.10E-01	5.63E+00	8.15E+00
PGBG-2 (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	3.04E+00	5.71E+01	4.84E-01	1.10E-03	1.88E+01	2.07E-02	1.00E+00	5.50E-03	9.17E+01	4.70E+00	1.10E-01	5.63E+00	1.63E+01
PGBG-2 (2-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	3.04E+00	5.62E+01	4.76E-01	1.10E-03	1.85E+01	2.04E-02	1.00E+00	5.50E-03	9.02E+01	4.70E+00	1.10E-01	5.63E+00	1.60E+01
PGBG-2 (6-12")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	3.04E+00	9.81E+01	8.31E-01	1.10E-03	3.23E+01	3.56E-02	1.00E+00	5.50E-03	1.58E+02	4.70E+00	1.10E-01	5.63E+00	2.80E+01
Eastern Upper Marsh (0-2")																						**Minimum HQ (Reference Sites)**	**7.91E+00**
UM-1000S-3500E (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	8.42E+00	2.00E+03	1.70E+01	1.10E-03	2.38E+02	2.62E-01	1.00E+00	5.50E-03	3.13E+03	4.70E+00	1.10E-01	5.63E+00	5.57E+02
BRSD-15 (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	8.42E+00	1.26E+02	1.06E+00	1.10E-03	1.49E+01	1.64E-02	1.00E+00	5.50E-03	1.96E+02	4.70E+00	1.10E-01	5.63E+00	3.49E+01
BRSD-4 (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-750S-3500E (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	8.42E+00	9.77E+02	8.28E+00	1.10E-03	1.16E+02	1.28E-01	1.00E+00	5.50E-03	1.53E+03	4.70E+00	1.10E-01	5.63E+00	2.72E+02
BRSD-16 (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	8.42E+00	1.63E+03	1.38E+01	1.10E-03	1.93E+02	2.13E-01	1.00E+00	5.50E-03	2.54E+03	4.70E+00	1.10E-01	5.63E+00	4.52E+02
UM-750S-3000E (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	8.42E+00	1.38E+03	1.17E+01	1.10E-03	1.64E+02	1.81E-01	1.00E+00	5.50E-03	2.16E+03	4.70E+00	1.10E-01	5.63E+00	3.84E+02
BRSD-3 (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	8.42E+00	3.20E+02	2.71E+00	1.10E-03	3.80E+01	4.18E-02	1.00E+00	5.50E-03	5.01E+02	4.70E+00	1.10E-01	5.63E+00	8.90E+01
UM-500S-3250E (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	8.42E+00	1.16E+03	9.85E+00	1.10E-03	1.38E+02	1.52E-01	1.00E+00	5.50E-03	1.82E+03	4.70E+00	1.10E-01	5.63E+00	3.23E+02
UM-500S-3000E (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	8.42E+00	7.36E+02	6.24E+00	1.10E-03	8.74E+01	9.62E-02	1.00E+00	5.50E-03	1.15E+03	4.70E+00	1.10E-01	5.63E+00	2.05E+02
UM-500S-2750E (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	8.42E+00	1.31E+03	1.11E+01	1.10E-03	1.56E+02	1.72E-01	1.00E+00	5.50E-03	2.05E+03	4.70E+00	1.10E-01	5.63E+00	3.65E+02
BRSD-25 (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	8.42E+00	5.56E+02	4.71E+00	1.10E-03	6.60E+01	7.27E-02	1.00E+00	5.50E-03	8.69E+02	4.70E+00	1.10E-01	5.63E+00	1.55E+02
UM-250S-3000E (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	8.42E+00	9.01E+02	7.63E+00	1.10E-03	1.07E+02	1.18E-01	1.00E+00	5.50E-03	1.41E+03	4.70E+00	1.10E-01	5.63E+00	2.51E+02
UM-250S-3250E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-24 (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	8.42E+00	1.63E+03	1.38E+01	1.10E-03	1.93E+02	2.13E-01	1.00E+00	5.50E-03	2.54E+03	4.70E+00	1.10E-01	5.63E+00	4.52E+02
UM-250S-2750E (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	8.42E+00	1.39E+03	1.18E+01	1.10E-03	1.65E+02	1.82E-01	1.00E+00	5.50E-03	2.17E+03	4.70E+00	1.10E-01	5.63E+00	3.86E+02
UM-250S-2500E (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	8.42E+00	1.04E+02	8.78E-01	1.10E-03	1.23E+01	1.35E-02	1.00E+00	5.50E-03	1.62E+02	4.70E+00	1.10E-01	5.63E+00	2.88E+01
UM-0N-2500E (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	8.42E+00	9.86E+02	8.35E+00	1.10E-03	1.17E+02	1.29E-01	1.00E+00	5.50E-03	1.54E+03	4.70E+00	1.10E-01	5.63E+00	2.74E+02
UM-0N-250E (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	8.42E+00	1.10E+02	9.27E-01	1.10E-03	1.30E+01	1.43E-02	1.00E+00	5.50E-03	1.71E+02	4.70E+00	1.10E-01	5.63E+00	3.04E+01
BRSD-2 (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	8.42E+00	1.49E+03	1.26E+01	1.10E-03	1.77E+02	1.95E-01	1.00E+00	5.50E-03	2.33E+03	4.70E+00	1.10E-01	5.63E+00	4.14E+02
UM-500N-2500E (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	8.42E+00	9.52E+01	8.06E-01	1.10E-03	1.13E+01	1.24E-02	1.00E+00	5.50E-03	1.49E+02	4.70E+00	1.10E-01	5.63E+00	2.65E+01
UM-250N-2500E (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	8.42E+00	8.16E+02	6.91E+00	1.10E-03	9.69E+01	1.07E-01	1.00E+00	5.50E-03	1.28E+03	4.70E+00	1.10E-01	5.63E+00	2.27E+02
UM-250N-2250E (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	8.42E+00	1.49E+03	1.26E+01	1.10E-03	1.77E+02	1.95E-01	1.00E+00	5.50E-03	2.33E+03	4.70E+00	1.10E-01	5.63E+00	4.14E+02
Western Upper Marsh (0-2")																						**Maximum HQ (Eastern Upper Marsh, 0-2")**	**5.57E+02**
UM-500S-2500E (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	2.33E+00	2.85E+01	2.41E-01	1.10E-03	1.22E+01	1.34E-02	1.00E+00	5.50E-03	4.63E+01	4.70E+00	1.10E-01	5.63E+00	8.23E+00
UM-0N-2000E (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	2.33E+00	1.10E+02	9.33E-01	1.10E-03	4.72E+01	5.20E-02	1.00E+00	5.50E-03	1.79E+02	4.70E+00	1.10E-01	5.63E+00	3.18E+01
UM-500S-2000E (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	2.33E+00	4.90E+01	4.15E-01	1.10E-03	2.10E+01	2.31E-02	1.00E+00	5.50E-03	7.97E+01	4.70E+00	1.10E-01	5.63E+00	1.42E+01
UM-250N-1750E (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	2.33E+00	2.94E+01	2.49E-01	1.10E-03	1.26E+01	1.39E-02	1.00E+00	5.50E-03	4.78E+01	4.70E+00	1.10E-01	5.63E+00	8.50E+00
UM-0N-1500E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-250S-1500E (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	2.33E+00	7.77E+01	6.58E-01	1.10E-03	3.33E+01	3.67E-02	1.00E+00	5.50E-03	1.26E+02	4.70E+00	1.10E-01	5.63E+00	2.25E+01
UM-250S-1250E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-6 (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-1000E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-750E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-500E (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	2.33E+00	2.36E+01	2.00E-01	1.10E-03	1.01E+01	1.11E-02	1.00E+00	5.50E-03	3.83E+01	4.70E+00	1.10E-01	5.63E+00	6.81E+00
UM-250S-500E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-250S-250E (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	2.33E+00	3.38E+01	2.87E-01	1.10E-03	1.45E+01	1.60E-02	1.00E+00	5.50E-03	5.50E+01	4.70E+00	1.10E-01	5.63E+00	9.78E+00
BRSD-7 (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-8 (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-500S-500E (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	2.33E+00	2.75E+01	2.33E-01	1.10E-03	1.18E+01	1.30E-02	1.00E+00	5.50E-03	4.48E+01	4.70E+00	1.10E-01	5.63E+00	7.96E+00

TABLE C-12BA: ARSENIC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 12 - MARSH, TERRESTRIAL RECEPTORS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **28.9**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Masked Shrew (Omnivorous Mammals, Wetland)																							
BRSD-9 (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	2.33E+00	5.37E+01	4.55E-01	1.10E-03	2.30E+01	2.53E-02	1.00E+00	5.50E-03	8.73E+01	4.70E+00	1.10E-01	5.63E+00	1.55E+01
BRSD-10 (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	2.33E+00	7.07E+01	5.99E-01	1.10E-03	3.03E+01	3.34E-02	1.00E+00	5.50E-03	1.15E+02	4.70E+00	1.10E-01	5.63E+00	2.04E+01
BRSD-11 (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	2.33E+00	3.43E+01	2.91E-01	1.10E-03	1.47E+01	1.62E-02	1.00E+00	5.50E-03	5.58E+01	4.70E+00	1.10E-01	5.63E+00	9.92E+00
Eastern Upper Marsh (2-6")																						**Maximum HQ (Western Upper Marsh, 0-2")**	**3.18E+01**
UM-1000S-3500E (2-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	8.42E+00	3.21E+02	2.72E+00	1.10E-03	3.81E+01	4.20E-02	1.00E+00	5.50E-03	5.02E+02	4.70E+00	1.10E-01	5.63E+00	8.92E+01
BRSD-15 (2-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	8.42E+00	1.31E+02	1.11E+00	1.10E-03	1.56E+01	1.72E-02	1.00E+00	5.50E-03	2.05E+02	4.70E+00	1.10E-01	5.63E+00	3.65E+01
BRSD-4 (2-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	8.42E+00	8.30E+01	7.03E-01	1.10E-03	9.85E+00	1.08E-02	1.00E+00	5.50E-03	1.30E+02	4.70E+00	1.10E-01	5.63E+00	2.31E+01
UM-750S-3500E (2-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	8.42E+00	1.32E+03	1.12E+01	1.10E-03	1.57E+02	1.73E-01	1.00E+00	5.50E-03	2.07E+03	4.70E+00	1.10E-01	5.63E+00	3.68E+02
BRSD-16 (2-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	8.42E+00	4.27E+03	3.62E+01	1.10E-03	5.07E+02	5.58E-01	1.00E+00	5.50E-03	6.68E+03	4.70E+00	1.10E-01	5.63E+00	1.19E+03
UM-750S-3000E (2-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	8.42E+00	1.20E+03	1.02E+01	1.10E-03	1.43E+02	1.57E-01	1.00E+00	5.50E-03	1.88E+03	4.70E+00	1.10E-01	5.63E+00	3.35E+02
BRSD-3 (2-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	8.42E+00	4.57E+02	3.87E+00	1.10E-03	5.42E+01	5.97E-02	1.00E+00	5.50E-03	7.14E+02	4.70E+00	1.10E-01	5.63E+00	1.27E+02
UM-500S-3250E (2-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	8.42E+00	1.26E+03	1.07E+01	1.10E-03	1.50E+02	1.65E-01	1.00E+00	5.50E-03	1.98E+03	4.70E+00	1.10E-01	5.63E+00	3.51E+02
UM-500S-3000E (2-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	8.42E+00	1.90E+02	1.61E+00	1.10E-03	2.26E+01	2.49E-02	1.00E+00	5.50E-03	2.98E+02	4.70E+00	1.10E-01	5.63E+00	5.29E+01
UM-500S-2750E (2-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	8.42E+00	6.25E+02	5.29E+00	1.10E-03	7.42E+01	8.17E-02	1.00E+00	5.50E-03	9.77E+02	4.70E+00	1.10E-01	5.63E+00	1.74E+02
BRSD-25 (2-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	8.42E+00	5.05E+02	4.28E+00	1.10E-03	6.00E+01	6.61E-02	1.00E+00	5.50E-03	7.90E+02	4.70E+00	1.10E-01	5.63E+00	1.40E+02
UM-250S-3000E (2-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	8.42E+00	1.36E+03	1.16E+01	1.10E-03	1.62E+02	1.78E-01	1.00E+00	5.50E-03	2.13E+03	4.70E+00	1.10E-01	5.63E+00	3.79E+02
UM-250S-3250E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-24 (2-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	8.42E+00	1.00E+03	8.49E+00	1.10E-03	1.19E+02	1.31E-01	1.00E+00	5.50E-03	1.57E+03	4.70E+00	1.10E-01	5.63E+00	2.79E+02
UM-250S-2750E (2-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	8.42E+00	1.19E+03	1.01E+01	1.10E-03	1.41E+02	1.55E-01	1.00E+00	5.50E-03	1.86E+03	4.70E+00	1.10E-01	5.63E+00	3.30E+02
UM-0N-2500E (2-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	8.42E+00	8.68E+02	7.35E+00	1.10E-03	1.03E+02	1.13E-01	1.00E+00	5.50E-03	1.36E+03	4.70E+00	1.10E-01	5.63E+00	2.41E+02
BRSD-2 (2-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	8.42E+00	1.11E+03	9.42E+00	1.10E-03	1.32E+02	1.45E-01	1.00E+00	5.50E-03	1.74E+03	4.70E+00	1.10E-01	5.63E+00	3.09E+02
UM-500N-2500E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-250N-2500E (2-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	8.42E+00	9.77E+02	8.28E+00	1.10E-03	1.16E+02	1.28E-01	1.00E+00	5.50E-03	1.53E+03	4.70E+00	1.10E-01	5.63E+00	2.72E+02
UM-250N-2250E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
Western Upper Marsh (2-6")																						**Maximum HQ (Eastern Upper Marsh, 2-6")**	**1.19E+03**
UM-500S-2500E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-2000E (2-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	2.33E+00	1.15E+02	9.77E-01	1.10E-03	4.94E+01	5.44E-02	1.00E+00	5.50E-03	1.87E+02	4.70E+00	1.10E-01	5.63E+00	3.33E+01
UM-500S-2000E (2-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	2.33E+00	4.18E+01	3.54E-01	1.10E-03	1.79E+01	1.97E-02	1.00E+00	5.50E-03	6.79E+01	4.70E+00	1.10E-01	5.63E+00	1.21E+01
UM-250N-1750E (2-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	2.33E+00	2.85E+01	2.41E-01	1.10E-03	1.22E+01	1.34E-02	1.00E+00	5.50E-03	4.63E+01	4.70E+00	1.10E-01	5.63E+00	8.23E+00
UM-0N-1500E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-250S-1500E (2-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	2.33E+00	7.14E+01	6.05E-01	1.10E-03	3.06E+01	3.37E-02	1.00E+00	5.50E-03	1.16E+02	4.70E+00	1.10E-01	5.63E+00	2.06E+01
UM-250S-1250E (2-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	2.33E+00	5.74E+01	4.86E-01	1.10E-03	2.46E+01	2.71E-02	1.00E+00	5.50E-03	9.34E+01	4.70E+00	1.10E-01	5.63E+00	1.66E+01
BRSD-6 (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-1000E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-750E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-500E (2-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	2.33E+00	3.92E+01	3.32E-01	1.10E-03	1.68E+01	1.85E-02	1.00E+00	5.50E-03	6.38E+01	4.70E+00	1.10E-01	5.63E+00	1.13E+01
UM-250S-500E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-250E (2-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	2.33E+00	4.55E+01	3.86E-01	1.10E-03	1.95E+01	2.15E-02	1.00E+00	5.50E-03	7.40E+01	4.70E+00	1.10E-01	5.63E+00	1.32E+01
UM-250S-250E (2-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	2.33E+00	2.24E+01	1.89E-01	1.10E-03	9.58E+00	1.05E-02	1.00E+00	5.50E-03	3.64E+01	4.70E+00	1.10E-01	5.63E+00	6.46E+00
BRSD-7 (2-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	2.33E+00	2.80E+01	2.37E-01	1.10E-03	1.20E+01	1.32E-02	1.00E+00	5.50E-03	4.55E+01	4.70E+00	1.10E-01	5.63E+00	8.10E+00
BRSD-8 (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-500S-500E (2-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	2.33E+00	2.17E+01	1.83E-01	1.10E-03	9.28E+00	1.02E-02	1.00E+00	5.50E-03	3.52E+01	4.70E+00	1.10E-01	5.63E+00	6.26E+00
BRSD-9 (2-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	2.33E+00	4.06E+01	3.44E-01	1.10E-03	1.74E+01	1.92E-02	1.00E+00	5.50E-03	6.60E+01	4.70E+00	1.10E-01	5.63E+00	1.17E+01
BRSD-10 (2-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	2.33E+00	8.36E+01	7.08E-01	1.10E-03	3.58E+01	3.94E-02	1.00E+00	5.50E-03	1.36E+02	4.70E+00	1.10E-01	5.63E+00	2.42E+01
BRSD-11 (2-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	2.33E+00	2.52E+01	2.14E-01	1.10E-03	1.08E+01	1.19E-02	1.00E+00	5.50E-03	4.10E+01	4.70E+00	1.10E-01	5.63E+00	7.29E+00
Eastern Upper Marsh (6-12")																						**Maximum HQ (Western Upper Marsh, 2-6")**	**3.33E+01**
UM-1000S-3500E (6-12")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	8.42E+00	1.06E+02	8.99E-01	1.10E-03	1.26E+01	1.39E-02	1.00E+00	5.50E-03	1.66E+02	4.70E+00	1.10E-01	5.63E+00	2.95E+01
BRSD-15 (6-12")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	8.42E+00	1.42E+02	1.20E+00	1.10E-03	1.68E+01	1.85E-02	1.00E+00	5.50E-03	2.21E+02	4.70E+00	1.10E-01	5.63E+00	3.93E+01
BRSD-4 (6-12")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	8.42E+00	1.72E+02	1.46E+00	1.10E-03	2.04E+01	2.25E-02	1.00E+00	5.50E-03	2.69E+02	4.70E+00	1.10E-01	5.63E+00	4.78E+01
UM-750S-3500E (6-12")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	8.42E+00	1.16E+03	9.85E+00	1.10E-03	1.38E+02	1.52E-01	1.00E+00	5.50E-03	1.82E+03	4.70E+00	1.10E-01	5.63E+00	3.23E+02
BRSD-16 (6-12")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	8.42E+00	7.82E+02	6.62E+00	1.10E-03	9.28E+01	1.02E-01	1.00E+00	5.50E-03	1.22E+03	4.70E+00	1.10E-01	5.63E+00	2.17E+02
UM-750S-3000E (6-12")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	8.42E+00	1.20E+03	1.01E+01	1.10E-03	1.42E+02	1.56E-01	1.00E+00	5.50E-03	1.87E+03	4.70E+00	1.10E-01	5.63E+00	3.32E+02
BRSD-3 (6-12")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	8.42E+00	1.68E+02	1.42E+00	1.10E-03	1.99E+01	2.19E-02	1.00E+00	5.50E-03	2.62E+02	4.70E+00	1.10E-01	5.63E+00	4.66E+01
UM-500S-3250E (6-12")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	8.42E+00	8.42E+02	7.13E+00	1.10E-03	1.00E+02	1.10E-01	1.00E+00	5.50E-03	1.32E+03	4.70E+00	1.10E-01	5.63E+00	2.34E+02
UM-500S-3000E (6-12")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	8.42E+00	1.27E+02	1.08E+00	1.10E-03	1.51E+01	1.66E-02	1.00E+00	5.50E-03	1.99E+02	4.70E+00	1.10E-01	5.63E+00	3.54E+01
UM-500S-2750E (6-12")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	8.42E+00	5.71E+02	4.84E+00	1.10E-03	6.78E+01	7.47E-02	1.00E+00	5.50E-03	8.93E+02	4.70E+00	1.10E-01	5.63E+00	1.59E+02
BRSD-25 (6-12")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	8.42E+00	2.44E+02	2.07E+00	1.10E-03	2.90E+01	3.19E-02	1.00E+00	5.50E-03	3.82E+02	4.70E+00	1.10E-01	5.63E+00	6.79E+01

TABLE C-12BA: ARSENIC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 12 - MARSH, TERRESTRIAL RECEPTORS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **28.9**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Masked Shrew (Omnivorous Mammals, Wetland)																							
UM-250S-3000E (6-12")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	8.42E+00	1.54E+03	1.31E+01	1.10E-03	1.83E+02	2.02E-01	1.00E+00	5.50E-03	2.41E+03	4.70E+00	1.10E-01	5.63E+00	4.28E+02
UM-250S-3250E (6-12")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	8.42E+00	8.84E+01	7.49E-01	1.10E-03	1.05E+01	1.16E-02	1.00E+00	5.50E-03	1.38E+02	4.70E+00	1.10E-01	5.63E+00	2.46E+01
BRSD-24 (6-12")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	8.42E+00	5.34E+02	4.52E+00	1.10E-03	6.34E+01	6.98E-02	1.00E+00	5.50E-03	8.35E+02	4.70E+00	1.10E-01	5.63E+00	1.48E+02
UM-250S-2750E (6-12")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	8.42E+00	5.56E+02	4.71E+00	1.10E-03	6.60E+01	7.27E-02	1.00E+00	5.50E-03	8.69E+02	4.70E+00	1.10E-01	5.63E+00	1.55E+02
UM-250S-2500E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-2 (6-12")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	8.42E+00	6.16E+02	5.22E+00	1.10E-03	7.31E+01	8.05E-02	1.00E+00	5.50E-03	9.63E+02	4.70E+00	1.10E-01	5.63E+00	1.71E+02
UM-500N-2500E (6-12")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	8.42E+00	9.77E+01	8.28E-01	1.10E-03	1.16E+01	1.28E-02	1.00E+00	5.50E-03	1.53E+02	4.70E+00	1.10E-01	5.63E+00	2.72E+01
UM-250N-2500E (6-12")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	8.42E+00	7.68E+02	6.51E+00	1.10E-03	9.12E+01	1.00E-01	1.00E+00	5.50E-03	1.20E+03	4.70E+00	1.10E-01	5.63E+00	2.14E+02
UM-250N-2250E (6-12")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	8.42E+00	8.36E+01	7.08E-01	1.10E-03	9.93E+00	1.09E-02	1.00E+00	5.50E-03	1.31E+02	4.70E+00	1.10E-01	5.63E+00	2.33E+01
Western Upper Marsh (6-12")																						**Maximum HQ (Eastern Upper Marsh, 6-12")**	**4.28E+02**
UM-500S-2500E (6-12")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	2.33E+00	2.57E+01	2.17E-01	1.10E-03	1.10E+01	1.21E-02	1.00E+00	5.50E-03	4.17E+01	4.70E+00	1.10E-01	5.63E+00	7.42E+00
UM-0N-2000E (6-12")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	2.33E+00	1.38E+02	1.17E+00	1.10E-03	5.90E+01	6.50E-02	1.00E+00	5.50E-03	2.24E+02	4.70E+00	1.10E-01	5.63E+00	3.98E+01
UM-500S-2000E (6-12")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	2.33E+00	3.57E+01	3.02E-01	1.10E-03	1.53E+01	1.68E-02	1.00E+00	5.50E-03	5.81E+01	4.70E+00	1.10E-01	5.63E+00	1.03E+01
UM-250N-1750E (6-12")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	2.33E+00	2.71E+01	2.29E-01	1.10E-03	1.16E+01	1.28E-02	1.00E+00	5.50E-03	4.40E+01	4.70E+00	1.10E-01	5.63E+00	7.83E+00
UM-0N-1500E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-250S-1500E (6-12")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	2.33E+00	4.08E+01	3.46E-01	1.10E-03	1.75E+01	1.93E-02	1.00E+00	5.50E-03	6.64E+01	4.70E+00	1.10E-01	5.63E+00	1.18E+01
UM-250S-1250E (6-12")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	2.33E+00	4.44E+01	3.76E-01	1.10E-03	1.90E+01	2.09E-02	1.00E+00	5.50E-03	7.21E+01	4.70E+00	1.10E-01	5.63E+00	1.28E+01
BRSD-6 (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-1000E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-750E (6-12")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	2.33E+00	2.89E+01	2.45E-01	1.10E-03	1.24E+01	1.37E-02	1.00E+00	5.50E-03	4.71E+01	4.70E+00	1.10E-01	5.63E+00	8.36E+00
UM-0N-500E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-250S-500E (6-12")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	2.33E+00	4.13E+01	3.50E-01	1.10E-03	1.77E+01	1.95E-02	1.00E+00	5.50E-03	6.72E+01	4.70E+00	1.10E-01	5.63E+00	1.19E+01
UM-0N-250E (6-12")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	2.33E+00	3.43E+01	2.91E-01	1.10E-03	1.47E+01	1.62E-02	1.00E+00	5.50E-03	5.58E+01	4.70E+00	1.10E-01	5.63E+00	9.92E+00
UM-250S-250E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-7 (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-8 (6-12")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	2.33E+00	2.40E+01	2.04E-01	1.10E-03	1.03E+01	1.13E-02	1.00E+00	5.50E-03	3.91E+01	4.70E+00	1.10E-01	5.63E+00	6.95E+00
UM-500S-500E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-9 (6-12")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	2.33E+00	3.78E+01	3.20E-01	1.10E-03	1.62E+01	1.78E-02	1.00E+00	5.50E-03	6.15E+01	4.70E+00	1.10E-01	5.63E+00	1.09E+01
BRSD-10 (6-12")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	2.33E+00	8.94E+01	7.57E-01	1.10E-03	3.83E+01	4.22E-02	1.00E+00	5.50E-03	1.45E+02	4.70E+00	1.10E-01	5.63E+00	2.58E+01
BRSD-11 (6-12")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	2.33E+00	2.31E+01	1.96E-01	1.10E-03	9.89E+00	1.09E-02	1.00E+00	5.50E-03	3.75E+01	4.70E+00	1.10E-01	5.63E+00	6.67E+00
Middle Marsh (0-2")																						**Maximum HQ (Western Upper Marsh, 6-12")**	**3.98E+01**
MMSD-201 (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	2.33E+00	4.90E+01	4.15E-01	1.10E-03	2.10E+01	2.31E-02	1.00E+00	5.50E-03	7.97E+01	4.70E+00	1.10E-01	5.63E+00	1.42E+01
MMSD-202 (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	2.33E+00	5.14E+01	4.35E-01	1.10E-03	2.20E+01	2.42E-02	1.00E+00	5.50E-03	8.35E+01	4.70E+00	1.10E-01	5.63E+00	1.48E+01
Middle Marsh (2-6")																						**Maximum HQ (Middle Marsh, 0-2")**	**1.48E+01**
MMSD-201 (2-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	2.33E+00	4.90E+01	4.15E-01	1.10E-03	2.10E+01	2.31E-02	1.00E+00	5.50E-03	7.97E+01	4.70E+00	1.10E-01	5.63E+00	1.42E+01
MMSD-202 (2-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	2.33E+00	5.37E+01	4.55E-01	1.10E-03	2.30E+01	2.53E-02	1.00E+00	5.50E-03	8.73E+01	4.70E+00	1.10E-01	5.63E+00	1.55E+01
Middle Marsh (6-12")																						**Maximum HQ (Middle Marsh, 2-6")**	**1.55E+01**
MMSD-201 (6-12")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	2.33E+00	5.60E+01	4.75E-01	1.10E-03	2.40E+01	2.64E-02	1.00E+00	5.50E-03	9.11E+01	4.70E+00	1.10E-01	5.63E+00	1.62E+01
MMSD-202 (6-12")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	2.33E+00	3.73E+01	3.16E-01	1.10E-03	1.60E+01	1.76E-02	1.00E+00	5.50E-03	6.07E+01	4.70E+00	1.10E-01	5.63E+00	1.08E+01
Lower Marsh (0-2")																						**Maximum HQ (Middle Marsh, 6-12")**	**1.62E+01**
LMSD-201 (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
LMSD-202 (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
LMSD-203 (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	2.33E+00	5.60E+01	4.75E-01	1.10E-03	2.40E+01	2.64E-02	1.00E+00	5.50E-03	9.11E+01	4.70E+00	1.10E-01	5.63E+00	1.62E+01
LMSD-204 (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	2.33E+00	3.73E+01	3.16E-01	1.10E-03	1.60E+01	1.76E-02	1.00E+00	5.50E-03	6.07E+01	4.70E+00	1.10E-01	5.63E+00	1.08E+01
Lower Marsh (2-6")																						**Maximum HQ (Lower Marsh, 0-2")**	**1.62E+01**
LMSD-201 (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
LMSD-202 (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
LMSD-203 (2-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	2.33E+00	5.37E+01	4.55E-01	1.10E-03	2.30E+01	2.53E-02	1.00E+00	5.50E-03	8.73E+01	4.70E+00	1.10E-01	5.63E+00	1.55E+01
LMSD-204 (2-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	2.33E+00	3.73E+01	3.16E-01	1.10E-03	1.60E+01	1.76E-02	1.00E+00	5.50E-03	6.07E+01	4.70E+00	1.10E-01	5.63E+00	1.08E+01
Lower Marsh (6-12")																						**Maximum HQ (Lower Marsh, 2-6")**	**1.55E+01**
LMSD-201 (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
LMSD-202 (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
LMSD-203 (6-12")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	2.33E+00	5.84E+01	4.94E-01	1.10E-03	2.50E+01	2.75E-02	1.00E+00	5.50E-03	9.49E+01	4.70E+00	1.10E-01	5.63E+00	1.69E+01
LMSD-204 (6-12")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	2.33E+00	3.73E+01	3.16E-01	1.10E-03	1.60E+01	1.76E-02	1.00E+00	5.50E-03	6.07E+01	4.70E+00	1.10E-01	5.63E+00	1.08E+01
																						Maximum HQ (Lower Marsh, 6-12")	**1.69E+01**

TABLE C-12BA: ARSENIC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 12 - MARSH, TERRESTRIAL RECEPTORS (Continued)
Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)
calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **28.9**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Notes	Results are evaluated in order of upstream to downstream.																						
1	See Tables 3-1 through 3-13 for ingestion rates, foraging ranges used to calculate the SUF, and body weights.																						
2	Site BAFs were calculated by dividing site-collected tissue by collocated soil concentrations. The maximum plant and invertebrate BAF calculated for the eastern transect (UMT1) were used for the Eastern Upper Marsh dose calculations. The maximum plant and invertebrate BAF calculated for the western transect (UMT2) were used for the Western Upper Marsh dose calculations. The maximum mammal BAF calculated for the eastern transect (UMT1) was used for the Eastern and Western Upper Marsh calculations because no mammals were collected in the Western Upper Marsh. The maximum plant, mammal, and invertebrate BAFs calculated for the Pass Creek																						
3	The mammal, plant, and invertebrate concentrations were calculated by multiplying the soil concentration by the BAF to generate a tissue concentration (see note 2).																						
4	Mammal, plant, and invertebrate daily doses were calculated by multiplying the ingestion rate (see note 1) by the tissue concentration (see note 3).																						
5	Soil concentration from specified depths below ground surface at point ID from laboratory analysis. Doses were not calculated for detected and non-detected soil concentrations measured below the minimum reference site concentration (0-12"), as indicated by BB. For results that were measured at less than the detection limit, doses were calculated using																						
6	Soil daily dose was calculated by multiplying the soil ingestion rate (see note 1) by soil concentration (see note 5).																						
7	Total daily dose is calculated using the following equation: total daily dose = ([mammal daily dose (if applicable) + plant daily dose (if applicable) + invertebrate daily dose (if applicable) + soil daily dose]*SUF)/receptor species body weight.																						
8	The derivation of TRVs is described in Navy (1998). The high TRV was used for dose calculations.																						
9	Allometrically adjusted TRVs for birds were calculated using the following equation: receptor species TRV = (test species TRV) x (test species body weight / receptor species body weight)(1-1.2).																						
10	Allometrically adjusted TRVs for mammals were calculated using the following equation: receptor species TRV = (test species TRV) x (test species body weight / receptor species body weight)(1-0.94).																						
11	HQs were calculated using the following equation: HQ = total daily dose/allometrically adjusted TRV.																						
12	Green cells indicate an HQ greater than 1.0																						

BAF	Bioaccumulation Factor	ID	Identification	NA	Not applicable
BB	Below minimum background reference site concentration	kg	Kilogram	Navy	Department of the Navy
EE/CA	Engineering Evaluation/Cost Analysis	kg/day	Kilogram per day	SUF	Site use factor
EU	Exposure Unit	mg/day	Milligram per day	TRV	Toxicity reference value
HQ	Hazard Quotient	mg/kg	Milligram per kilogram		

Sources: Department of the Navy. 1998. "Development of Toxicity Reference Values for Conducting Ecological Risk Assessments at Naval Facilities in California, Interim Final." Prepared by Naval Facilities Engineering Command, Engineering Field Activity West (EFA

TABLE C-12BB: ARSENIC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 12 - MARSH, WETLAND RECEPTORS

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **118.73**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Canada Goose (Herbivorous Birds)																							
Reference Sites																							
BRSD-5 (0-2")	8.57E-01	NA	NA	NA	NA	8.57E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	7.03E-02	1.72E+01	1.21E+00	1.21E-01	3.69E+01	3.96E-03	2.20E+01	1.17E+00	4.39E+01	9.03E-05
BRSD-5 (2-6")	8.57E-01	NA	NA	NA	NA	8.57E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	7.03E-02	1.92E+01	1.35E+00	1.21E-01	3.69E+01	4.42E-03	2.20E+01	1.17E+00	4.39E+01	1.01E-04
BRSD-5 (6-12")	8.57E-01	NA	NA	NA	NA	8.57E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	7.03E-02	2.46E+01	1.73E+00	1.21E-01	3.69E+01	5.66E-03	2.20E+01	1.17E+00	4.39E+01	1.29E-04
PGBG-1 (0-2")	8.57E-01	NA	NA	NA	NA	8.57E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	7.03E-02	1.24E+01	8.71E-01	1.21E-01	3.69E+01	2.85E-03	2.20E+01	1.17E+00	4.39E+01	6.51E-05
PGBG-1 (2-6")	8.57E-01	NA	NA	NA	NA	8.57E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	7.03E-02	9.12E+00	6.41E-01	1.21E-01	3.69E+01	2.10E-03	2.20E+01	1.17E+00	4.39E+01	4.79E-05
PGBG-1 (6-12")	8.57E-01	NA	NA	NA	NA	8.57E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	7.03E-02	9.40E+00	6.61E-01	1.21E-01	3.69E+01	2.16E-03	2.20E+01	1.17E+00	4.39E+01	4.93E-05
PGBG-2 (0-2")	8.57E-01	NA	NA	NA	NA	8.57E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	7.03E-02	1.88E+01	1.32E+00	1.21E-01	3.69E+01	4.33E-03	2.20E+01	1.17E+00	4.39E+01	9.87E-05
PGBG-2 (2-6")	8.57E-01	NA	NA	NA	NA	8.57E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	7.03E-02	1.85E+01	1.30E+00	1.21E-01	3.69E+01	4.26E-03	2.20E+01	1.17E+00	4.39E+01	9.71E-05
PGBG-2 (6-12")	8.57E-01	NA	NA	NA	NA	8.57E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	7.03E-02	3.23E+01	2.27E+00	1.21E-01	3.69E+01	7.44E-03	2.20E+01	1.17E+00	4.39E+01	1.70E-04
Eastern Upper Marsh (0-2")																						**Minimum HQ (Reference Sites)**	**4.79E-05**
UM-1000S-3500E (0-2")	8.57E-01	NA	NA	NA	NA	8.57E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	7.03E-02	2.38E+02	1.67E+01	1.21E-01	3.69E+01	5.48E-02	2.20E+01	1.17E+00	4.39E+01	1.25E-03
BRSD-15 (0-2")	8.57E-01	NA	NA	NA	NA	8.57E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	7.03E-02	1.49E+01	1.05E+00	1.21E-01	3.69E+01	3.43E-03	2.20E+01	1.17E+00	4.39E+01	7.82E-05
BRSD-4 (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-750S-3500E (0-2")	8.57E-01	NA	NA	NA	NA	8.57E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	7.03E-02	1.16E+02	8.15E+00	1.21E-01	3.69E+01	2.67E-02	2.20E+01	1.17E+00	4.39E+01	6.09E-04
BRSD-16 (0-2")	8.57E-01	NA	NA	NA	NA	8.57E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	7.03E-02	1.93E+02	1.36E+01	1.21E-01	3.69E+01	4.44E-02	2.20E+01	1.17E+00	4.39E+01	1.01E-03
UM-750S-3000E (0-2")	8.57E-01	NA	NA	NA	NA	8.57E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	7.03E-02	1.64E+02	1.15E+01	1.21E-01	3.69E+01	3.78E-02	2.20E+01	1.17E+00	4.39E+01	8.61E-04
BRSD-3 (0-2")	8.57E-01	NA	NA	NA	NA	8.57E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	7.03E-02	3.80E+01	2.67E+00	1.21E-01	3.69E+01	8.75E-03	2.20E+01	1.17E+00	4.39E+01	1.99E-04
UM-500S-3250E (0-2")	8.57E-01	NA	NA	NA	NA	8.57E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	7.03E-02	1.38E+02	9.70E+00	1.21E-01	3.69E+01	3.18E-02	2.20E+01	1.17E+00	4.39E+01	7.24E-04
UM-500S-3000E (0-2")	8.57E-01	NA	NA	NA	NA	8.57E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	7.03E-02	8.74E+01	6.14E+00	1.21E-01	3.69E+01	2.01E-02	2.20E+01	1.17E+00	4.39E+01	4.59E-04
UM-500S-2750E (0-2")	8.57E-01	NA	NA	NA	NA	8.57E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	7.03E-02	1.56E+02	1.10E+01	1.21E-01	3.69E+01	3.59E-02	2.20E+01	1.17E+00	4.39E+01	8.19E-04
BRSD-25 (0-2")	8.57E-01	NA	NA	NA	NA	8.57E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	7.03E-02	6.60E+01	4.64E+00	1.21E-01	3.69E+01	1.52E-02	2.20E+01	1.17E+00	4.39E+01	3.46E-04
UM-250S-3000E (0-2")	8.57E-01	NA	NA	NA	NA	8.57E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	7.03E-02	1.07E+02	7.52E+00	1.21E-01	3.69E+01	2.46E-02	2.20E+01	1.17E+00	4.39E+01	5.62E-04
UM-250S-3250E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-24 (0-2")	8.57E-01	NA	NA	NA	NA	8.57E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	7.03E-02	1.93E+02	1.36E+01	1.21E-01	3.69E+01	4.44E-02	2.20E+01	1.17E+00	4.39E+01	1.01E-03
UM-250S-2750E (0-2")	8.57E-01	NA	NA	NA	NA	8.57E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	7.03E-02	1.65E+02	1.16E+01	1.21E-01	3.69E+01	3.80E-02	2.20E+01	1.17E+00	4.39E+01	8.66E-04
UM-250S-2500E (0-2")	8.57E-01	NA	NA	NA	NA	8.57E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	7.03E-02	1.23E+01	8.64E-01	1.21E-01	3.69E+01	2.83E-03	2.20E+01	1.17E+00	4.39E+01	6.45E-05
UM-0N-2500E (0-2")	8.57E-01	NA	NA	NA	NA	8.57E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	7.03E-02	1.17E+02	8.22E+00	1.21E-01	3.69E+01	2.69E-02	2.20E+01	1.17E+00	4.39E+01	6.14E-04
UM-0N-250E (0-2")	8.57E-01	NA	NA	NA	NA	8.57E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	7.03E-02	1.30E+01	9.14E-01	1.21E-01	3.69E+01	2.99E-03	2.20E+01	1.17E+00	4.39E+01	6.82E-05
BRSD-2 (0-2")	8.57E-01	NA	NA	NA	NA	8.57E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	7.03E-02	1.77E+02	1.24E+01	1.21E-01	3.69E+01	4.07E-02	2.20E+01	1.17E+00	4.39E+01	9.29E-04
UM-500N-2500E (0-2")	8.57E-01	NA	NA	NA	NA	8.57E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	7.03E-02	1.13E+01	7.94E-01	1.21E-01	3.69E+01	2.60E-03	2.20E+01	1.17E+00	4.39E+01	5.93E-05
UM-250N-2500E (0-2")	8.57E-01	NA	NA	NA	NA	8.57E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	7.03E-02	9.69E+01	6.81E+00	1.21E-01	3.69E+01	2.23E-02	2.20E+01	1.17E+00	4.39E+01	5.09E-04
UM-250N-2250E (0-2")	8.57E-01	NA	NA	NA	NA	8.57E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	7.03E-02	1.77E+02	1.24E+01	1.21E-01	3.69E+01	4.07E-02	2.20E+01	1.17E+00	4.39E+01	9.29E-04
Western Upper Marsh (0-2")																						**Maximum HQ (Eastern Upper Marsh, 0-2")**	**1.25E-03**
UM-500S-2500E (0-2")	8.57E-01	NA	NA	NA	NA	8.57E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	7.03E-02	1.22E+01	8.57E-01	1.21E-01	3.69E+01	2.81E-03	2.20E+01	1.17E+00	4.39E+01	6.40E-05
UM-0N-2000E (0-2")	8.57E-01	NA	NA	NA	NA	8.57E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	7.03E-02	4.72E+01	3.32E+00	1.21E-01	3.69E+01	1.09E-02	2.20E+01	1.17E+00	4.39E+01	2.48E-04
UM-500S-2000E (0-2")	8.57E-01	NA	NA	NA	NA	8.57E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	7.03E-02	2.10E+01	1.48E+00	1.21E-01	3.69E+01	4.83E-03	2.20E+01	1.17E+00	4.39E+01	1.10E-04
UM-250N-1750E (0-2")	8.57E-01	NA	NA	NA	NA	8.57E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	7.03E-02	1.26E+01	8.86E-01	1.21E-01	3.69E+01	2.90E-03	2.20E+01	1.17E+00	4.39E+01	6.61E-05
UM-0N-1500E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-250S-1500E (0-2")	8.57E-01	NA	NA	NA	NA	8.57E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	7.03E-02	3.33E+01	2.34E+00	1.21E-01	3.69E+01	7.67E-03	2.20E+01	1.17E+00	4.39E+01	1.75E-04
UM-250S-1250E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-6 (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-1000E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-750E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-500E (0-2")	8.57E-01	NA	NA	NA	NA	8.57E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	7.03E-02	1.01E+01	7.10E-01	1.21E-01	3.69E+01	2.33E-03	2.20E+01	1.17E+00	4.39E+01	5.30E-05
UM-250S-500E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-250S-250E (0-2")	8.57E-01	NA	NA	NA	NA	8.57E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	7.03E-02	1.45E+01	1.02E+00	1.21E-01	3.69E+01	3.34E-03	2.20E+01	1.17E+00	4.39E+01	7.61E-05
BRSD-7 (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-8 (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB

TABLE C-12BB: ARSENIC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 12 - MARSH, WETLAND RECEPTORS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **118.73**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Canada Goose (Herbivorous Birds)																							
UM-500S-500E (0-2")	8.57E-01	NA	NA	NA	NA	8.57E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	7.03E-02	1.18E+01	8.29E-01	1.21E-01	3.69E+01	2.72E-03	2.20E+01	1.17E+00	4.39E+01	6.19E-05
BRSD-9 (0-2")	8.57E-01	NA	NA	NA	NA	8.57E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	7.03E-02	2.30E+01	1.62E+00	1.21E-01	3.69E+01	5.29E-03	2.20E+01	1.17E+00	4.39E+01	1.21E-04
BRSD-10 (0-2")	8.57E-01	NA	NA	NA	NA	8.57E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	7.03E-02	3.03E+01	2.13E+00	1.21E-01	3.69E+01	6.98E-03	2.20E+01	1.17E+00	4.39E+01	1.59E-04
BRSD-11 (0-2")	8.57E-01	NA	NA	NA	NA	8.57E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	7.03E-02	1.47E+01	1.03E+00	1.21E-01	3.69E+01	3.38E-03	2.20E+01	1.17E+00	4.39E+01	7.71E-05
Eastern Upper Marsh (2-6")																						**Maximum HQ (Western Upper Marsh, 0-2")**	**2.48E-04**
UM-1000S-3500E (2-6")	8.57E-01	NA	NA	NA	NA	8.57E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	7.03E-02	3.81E+01	2.68E+00	1.21E-01	3.69E+01	8.77E-03	2.20E+01	1.17E+00	4.39E+01	2.00E-04
BRSD-15 (2-6")	8.57E-01	NA	NA	NA	NA	8.57E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	7.03E-02	1.56E+01	1.10E+00	1.21E-01	3.69E+01	3.59E-03	2.20E+01	1.17E+00	4.39E+01	8.19E-05
BRSD-4 (2-6")	8.57E-01	NA	NA	NA	NA	8.57E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	7.03E-02	9.85E+00	6.92E-01	1.21E-01	3.69E+01	2.27E-03	2.20E+01	1.17E+00	4.39E+01	5.17E-05
UM-750S-3500E (2-6")	8.57E-01	NA	NA	NA	NA	8.57E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	7.03E-02	1.57E+02	1.10E+01	1.21E-01	3.69E+01	3.61E-02	2.20E+01	1.17E+00	4.39E+01	8.24E-04
BRSD-16 (2-6")	8.57E-01	NA	NA	NA	NA	8.57E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	7.03E-02	5.07E+02	3.56E+01	1.21E-01	3.69E+01	1.17E-01	2.20E+01	1.17E+00	4.39E+01	2.66E-03
UM-750S-3000E (2-6")	8.57E-01	NA	NA	NA	NA	8.57E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	7.03E-02	1.43E+02	1.00E+01	1.21E-01	3.69E+01	3.29E-02	2.20E+01	1.17E+00	4.39E+01	7.50E-04
BRSD-3 (2-6")	8.57E-01	NA	NA	NA	NA	8.57E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	7.03E-02	5.42E+01	3.81E+00	1.21E-01	3.69E+01	1.25E-02	2.20E+01	1.17E+00	4.39E+01	2.84E-04
UM-500S-3250E (2-6")	8.57E-01	NA	NA	NA	NA	8.57E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	7.03E-02	1.50E+02	1.05E+01	1.21E-01	3.69E+01	3.45E-02	2.20E+01	1.17E+00	4.39E+01	7.87E-04
UM-500S-3000E (2-6")	8.57E-01	NA	NA	NA	NA	8.57E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	7.03E-02	2.26E+01	1.59E+00	1.21E-01	3.69E+01	5.20E-03	2.20E+01	1.17E+00	4.39E+01	1.19E-04
UM-500S-2750E (2-6")	8.57E-01	NA	NA	NA	NA	8.57E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	7.03E-02	7.42E+01	5.21E+00	1.21E-01	3.69E+01	1.71E-02	2.20E+01	1.17E+00	4.39E+01	3.89E-04
BRSD-25 (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	6.00E+01	BB	BB	BB	BB	BB	BB	BB	BB
UM-250S-3000E (2-6")	8.57E-01	NA	NA	NA	NA	8.57E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	7.03E-02	1.62E+02	1.14E+01	1.21E-01	3.69E+01	3.73E-02	2.20E+01	1.17E+00	4.39E+01	8.50E-04
UM-250S-3250E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-24 (2-6")	8.57E-01	NA	NA	NA	NA	8.57E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	7.03E-02	1.19E+02	8.36E+00	1.21E-01	3.69E+01	2.74E-02	2.20E+01	1.17E+00	4.39E+01	6.24E-04
UM-250S-2750E (2-6")	8.57E-01	NA	NA	NA	NA	8.57E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	7.03E-02	1.41E+02	9.91E+00	1.21E-01	3.69E+01	3.25E-02	2.20E+01	1.17E+00	4.39E+01	7.40E-04
UM-0N-2500E (2-6")	8.57E-01	NA	NA	NA	NA	8.57E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	7.03E-02	1.03E+02	7.24E+00	1.21E-01	3.69E+01	2.37E-02	2.20E+01	1.17E+00	4.39E+01	5.41E-04
BRSD-2 (2-6")	8.57E-01	NA	NA	NA	NA	8.57E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	7.03E-02	1.32E+02	9.28E+00	1.21E-01	3.69E+01	3.04E-02	2.20E+01	1.17E+00	4.39E+01	6.93E-04
UM-500N-2500E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-250N-2500E (2-6")	8.57E-01	NA	NA	NA	NA	8.57E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	7.03E-02	1.16E+02	8.15E+00	1.21E-01	3.69E+01	2.67E-02	2.20E+01	1.17E+00	4.39E+01	6.09E-04
UM-250N-2250E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
Western Upper Marsh (2-6")																						**Maximum HQ (Eastern Upper Marsh, 2-6")**	**2.66E-03**
UM-500S-2500E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-2000E (2-6")	8.57E-01	NA	NA	NA	NA	8.57E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	7.03E-02	4.94E+01	3.47E+00	1.21E-01	3.69E+01	1.14E-02	2.20E+01	1.17E+00	4.39E+01	2.59E-04
UM-500S-2000E (2-6")	8.57E-01	NA	NA	NA	NA	8.57E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	7.03E-02	1.79E+01	1.26E+00	1.21E-01	3.69E+01	4.12E-03	2.20E+01	1.17E+00	4.39E+01	9.39E-05
UM-250N-1750E (2-6")	8.57E-01	NA	NA	NA	NA	8.57E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	7.03E-02	1.22E+01	8.57E-01	1.21E-01	3.69E+01	2.81E-03	2.20E+01	1.17E+00	4.39E+01	6.40E-05
UM-0N-1500E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-250S-1500E (2-6")	8.57E-01	NA	NA	NA	NA	8.57E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	7.03E-02	3.06E+01	2.15E+00	1.21E-01	3.69E+01	7.04E-03	2.20E+01	1.17E+00	4.39E+01	1.61E-04
UM-250S-1250E (2-6")	8.57E-01	NA	NA	NA	NA	8.57E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	7.03E-02	2.46E+01	1.73E+00	1.21E-01	3.69E+01	5.66E-03	2.20E+01	1.17E+00	4.39E+01	1.29E-04
BRSD-6 (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-1000E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-750E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-500E (2-6")	8.57E-01	NA	NA	NA	NA	8.57E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	7.03E-02	1.68E+01	1.18E+00	1.21E-01	3.69E+01	3.87E-03	2.20E+01	1.17E+00	4.39E+01	8.82E-05
UM-250S-500E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-250E (2-6")	8.57E-01	NA	NA	NA	NA	8.57E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	7.03E-02	1.95E+01	1.37E+00	1.21E-01	3.69E+01	4.49E-03	2.20E+01	1.17E+00	4.39E+01	1.02E-04
UM-250S-250E (2-6")	8.57E-01	NA	NA	NA	NA	8.57E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	7.03E-02	9.58E+00	6.73E-01	1.21E-01	3.69E+01	2.21E-03	2.20E+01	1.17E+00	4.39E+01	5.03E-05
BRSD-7 (2-6")	8.57E-01	NA	NA	NA	NA	8.57E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	7.03E-02	1.20E+01	8.43E-01	1.21E-01	3.69E+01	2.76E-03	2.20E+01	1.17E+00	4.39E+01	6.30E-05
BRSD-8 (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-500S-500E (2-6")	8.57E-01	NA	NA	NA	NA	8.57E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	7.03E-02	9.28E+00	6.52E-01	1.21E-01	3.69E+01	2.14E-03	2.20E+01	1.17E+00	4.39E+01	4.87E-05
BRSD-9 (2-6")	8.57E-01	NA	NA	NA	NA	8.57E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	7.03E-02	1.74E+01	1.22E+00	1.21E-01	3.69E+01	4.01E-03	2.20E+01	1.17E+00	4.39E+01	9.13E-05
BRSD-10 (2-6")	8.57E-01	NA	NA	NA	NA	8.57E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	7.03E-02	3.58E+01	2.52E+00	1.21E-01	3.69E+01	8.24E-03	2.20E+01	1.17E+00	4.39E+01	1.88E-04
BRSD-11 (2-6")	8.57E-01	NA	NA	NA	NA	8.57E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	7.03E-02	1.08E+01	7.59E-01	1.21E-01	3.69E+01	2.49E-03	2.20E+01	1.17E+00	4.39E+01	5.67E-05
Eastern Upper Marsh (6-12")																						**Maximum HQ (Western Upper Marsh, 2-6")**	**2.59E-04**
UM-1000S-3500E (6-12")	8.57E-01	NA	NA	NA	NA	8.57E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	7.03E-02	1.26E+01	8.86E-01	1.21E-01	3.69E+01	2.90E-03	2.20E+01	1.17E+00	4.39E+01	6.61E-05
BRSD-15 (6-12")	8.57E-01	NA	NA	NA	NA	8.57E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	7.03E-02	1.68E+01	1.18E+00	1.21E-01	3.69E+01	3.87E-03	2.20E+01	1.17E+00	4.39E+01	8.82E-05
BRSD-4 (6-12")	8.57E-01	NA	NA	NA	NA	8.57E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	7.03E-02	2.04E+01	1.43E+00	1.21E-01	3.69E+01	4.70E-03	2.20E+01	1.17E+00	4.39E+01	1.07E-04
UM-750S-3500E (6-12")	8.57E-01	NA	NA	NA	NA	8.57E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	7.03E-02	1.38E+02	9.70E+00	1.21E-01	3.69E+01	3.18E-02	2.20E+01	1.17E+00	4.39E+01	7.24E-04
BRSD-16 (6-12")	8.57E-01	NA	NA	NA	NA	8.57E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	7.03E-02	9.28E+01	6.52E+00	1.21E-01	3.69E+01	2.14E-02	2.20E+01	1.17E+00	4.39E+01	4.87E-04
UM-750S-3000E (6-12")	8.57E-01	NA	NA	NA	NA	8.57E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	7.03E-02	1.42E+02	9.98E+00	1.21E-01	3.69E+01	3.27E-02	2.20E+01	1.17E+00	4.39E+01	7.45E-04
BRSD-3 (6-12")	8.57E-01	NA	NA	NA	NA	8.57E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	7.03E-02	1.99E+01	1.40E+00	1.21E-01	3.69E+01	4.58E-03	2.20E+01	1.17E+00	4.39E+01	1.04E-04
UM-500S-3250E (6-12")	8.57E-01	NA	NA	NA	NA	8.57E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	7.03E-02	1.00E+02	7.03E+00	1.21E-01	3.69E+01	2.30E-02	2.20E+01	1.17E+00	4.39E+01	5.25E-04

TABLE C-12BB: ARSENIC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 12 - MARSH, WETLAND RECEPTORS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **118.73**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Canada Goose (Herbivorous Birds)																							
UM-500S-3000E (6-12")	8.57E-01	NA	NA	NA	NA	8.57E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	7.03E-02	1.51E+01	1.06E+00	1.21E-01	3.69E+01	3.48E-03	2.20E+01	1.17E+00	4.39E+01	7.92E-05
UM-500S-2750E (6-12")	8.57E-01	NA	NA	NA	NA	8.57E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	7.03E-02	6.78E+01	4.76E+00	1.21E-01	3.69E+01	1.56E-02	2.20E+01	1.17E+00	4.39E+01	3.56E-04
BRSD-25 (6-12")	8.57E-01	NA	NA	NA	NA	8.57E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	7.03E-02	2.90E+01	2.04E+00	1.21E-01	3.69E+01	6.68E-03	2.20E+01	1.17E+00	4.39E+01	1.52E-04
UM-250S-3000E (6-12")	8.57E-01	NA	NA	NA	NA	8.57E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	7.03E-02	1.83E+02	1.29E+01	1.21E-01	3.69E+01	4.21E-02	2.20E+01	1.17E+00	4.39E+01	9.60E-04
UM-250S-3250E (6-12")	8.57E-01	NA	NA	NA	NA	8.57E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	7.03E-02	1.05E+01	7.38E-01	1.21E-01	3.69E+01	2.42E-03	2.20E+01	1.17E+00	4.39E+01	5.51E-05
BRSD-24 (6-12")	8.57E-01	NA	NA	NA	NA	8.57E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	7.03E-02	6.34E+01	4.46E+00	1.21E-01	3.69E+01	1.46E-02	2.20E+01	1.17E+00	4.39E+01	3.33E-04
UM-250S-2750E (6-12")	8.57E-01	NA	NA	NA	NA	8.57E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	7.03E-02	6.60E+01	4.64E+00	1.21E-01	3.69E+01	1.52E-02	2.20E+01	1.17E+00	4.39E+01	3.46E-04
UM-250S-2500E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-2 (6-12")	8.57E-01	NA	NA	NA	NA	8.57E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	7.03E-02	7.31E+01	5.14E+00	1.21E-01	3.69E+01	1.68E-02	2.20E+01	1.17E+00	4.39E+01	3.84E-04
UM-500N-2500E (6-12")	8.57E-01	NA	NA	NA	NA	8.57E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	7.03E-02	1.16E+01	8.15E-01	1.21E-01	3.69E+01	2.67E-03	2.20E+01	1.17E+00	4.39E+01	6.09E-05
UM-250N-2500E (6-12")	8.57E-01	NA	NA	NA	NA	8.57E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	7.03E-02	9.12E+01	6.41E+00	1.21E-01	3.69E+01	2.10E-02	2.20E+01	1.17E+00	4.39E+01	4.79E-04
UM-250N-2250E (6-12")	8.57E-01	NA	NA	NA	NA	8.57E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	7.03E-02	9.93E+00	6.98E-01	1.21E-01	3.69E+01	2.29E-03	2.20E+01	1.17E+00	4.39E+01	5.21E-05
Western Upper Marsh (6-12")																						**Maximum HQ (Eastern Upper Marsh, 6-12")**	**9.60E-04**
UM-500S-2500E (6-12")	8.57E-01	NA	NA	NA	NA	8.57E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	7.03E-02	1.10E+01	7.73E-01	1.21E-01	3.69E+01	2.53E-03	2.20E+01	1.17E+00	4.39E+01	5.77E-05
UM-0N-2000E (6-12")	8.57E-01	NA	NA	NA	NA	8.57E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	7.03E-02	5.90E+01	4.15E+00	1.21E-01	3.69E+01	1.36E-02	2.20E+01	1.17E+00	4.39E+01	3.10E-04
UM-500S-2000E (6-12")	8.57E-01	NA	NA	NA	NA	8.57E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	7.03E-02	1.53E+01	1.08E+00	1.21E-01	3.69E+01	3.52E-03	2.20E+01	1.17E+00	4.39E+01	8.03E-05
UM-250N-1750E (6-12")	8.57E-01	NA	NA	NA	NA	8.57E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	7.03E-02	1.16E+01	8.15E-01	1.21E-01	3.69E+01	2.67E-03	2.20E+01	1.17E+00	4.39E+01	6.09E-05
UM-0N-1500E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-250S-1500E (6-12")	8.57E-01	NA	NA	NA	NA	8.57E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	7.03E-02	1.75E+01	1.23E+00	1.21E-01	3.69E+01	4.03E-03	2.20E+01	1.17E+00	4.39E+01	9.18E-05
UM-250S-1250E (6-12")	8.57E-01	NA	NA	NA	NA	8.57E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	7.03E-02	1.90E+01	1.34E+00	1.21E-01	3.69E+01	4.37E-03	2.20E+01	1.17E+00	4.39E+01	9.97E-05
BRSD-6 (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-1000E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-750E (6-12")	8.57E-01	NA	NA	NA	NA	8.57E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	7.03E-02	1.24E+01	8.71E-01	1.21E-01	3.69E+01	2.85E-03	2.20E+01	1.17E+00	4.39E+01	6.51E-05
UM-0N-500E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-250S-500E (6-12")	8.57E-01	NA	NA	NA	NA	8.57E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	7.03E-02	1.77E+01	1.24E+00	1.21E-01	3.69E+01	4.07E-03	2.20E+01	1.17E+00	4.39E+01	9.29E-05
UM-0N-250E (6-12")	8.57E-01	NA	NA	NA	NA	8.57E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	7.03E-02	1.47E+01	1.03E+00	1.21E-01	3.69E+01	3.38E-03	2.20E+01	1.17E+00	4.39E+01	7.71E-05
UM-250S-250E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-7 (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-8 (6-12")	8.57E-01	NA	NA	NA	NA	8.57E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	7.03E-02	1.03E+01	7.24E-01	1.21E-01	3.69E+01	2.37E-03	2.20E+01	1.17E+00	4.39E+01	5.41E-05
UM-500S-500E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-9 (6-12")	8.57E-01	NA	NA	NA	NA	8.57E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	7.03E-02	1.62E+01	1.14E+00	1.21E-01	3.69E+01	3.73E-03	2.20E+01	1.17E+00	4.39E+01	8.50E-05
BRSD-10 (6-12")	8.57E-01	NA	NA	NA	NA	8.57E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	7.03E-02	3.83E+01	2.69E+00	1.21E-01	3.69E+01	8.82E-03	2.20E+01	1.17E+00	4.39E+01	2.01E-04
BRSD-11 (6-12")	8.57E-01	NA	NA	NA	NA	8.57E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	7.03E-02	9.89E+00	6.95E-01	1.21E-01	3.69E+01	2.28E-03	2.20E+01	1.17E+00	4.39E+01	5.19E-05
Middle Marsh (0-2")																						**Maximum HQ (Western Upper Marsh, 6-12")**	**3.10E-04**
MMSD-201 (0-2")	8.57E-01	NA	NA	NA	NA	8.57E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	7.03E-02	2.10E+01	1.48E+00	1.21E-01	3.69E+01	4.83E-03	2.20E+01	1.17E+00	4.39E+01	1.10E-04
MMSD-202 (0-2")	8.57E-01	NA	NA	NA	NA	8.57E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	7.03E-02	2.20E+01	1.55E+00	1.21E-01	3.69E+01	5.06E-03	2.20E+01	1.17E+00	4.39E+01	1.15E-04
Middle Marsh (2-6")																						**Maximum HQ (Middle Marsh, 0-2")**	**1.15E-04**
MMSD-201 (2-6")	8.57E-01	NA	NA	NA	NA	8.57E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	7.03E-02	2.10E+01	1.48E+00	1.21E-01	3.69E+01	4.83E-03	2.20E+01	1.17E+00	4.39E+01	1.10E-04
MMSD-202 (2-6")	8.57E-01	NA	NA	NA	NA	8.57E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	7.03E-02	2.30E+01	1.62E+00	1.21E-01	3.69E+01	5.29E-03	2.20E+01	1.17E+00	4.39E+01	1.21E-04
Middle Marsh (6-12")																						**Maximum HQ (Middle Marsh, 2-6")**	**1.21E-04**
MMSD-201 (6-12")	8.57E-01	NA	NA	NA	NA	8.57E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	7.03E-02	2.40E+01	1.69E+00	1.21E-01	3.69E+01	5.53E-03	2.20E+01	1.17E+00	4.39E+01	1.26E-04
MMSD-202 (6-12")	8.57E-01	NA	NA	NA	NA	8.57E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	7.03E-02	1.60E+01	1.12E+00	1.21E-01	3.69E+01	3.68E-03	2.20E+01	1.17E+00	4.39E+01	8.40E-05
Lower Marsh (0-2")																						**Maximum HQ (Middle Marsh, 6-12")**	**1.26E-04**
LMSD-201 (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
LMSD-202 (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
LMSD-203 (0-2")	8.57E-01	NA	NA	NA	NA	8.57E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	7.03E-02	2.40E+01	1.69E+00	1.21E-01	3.69E+01	5.53E-03	2.20E+01	1.17E+00	4.39E+01	1.26E-04
LMSD-204 (0-2")	8.57E-01	NA	NA	NA	NA	8.57E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	7.03E-02	1.60E+01	1.12E+00	1.21E-01	3.69E+01	3.68E-03	2.20E+01	1.17E+00	4.39E+01	8.40E-05
Lower Marsh (2-6")																						**Maximum HQ (Lower Marsh, 0-2")**	**1.26E-04**
LMSD-201 (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
LMSD-202 (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
LMSD-203 (2-6")	8.57E-01	NA	NA	NA	NA	8.57E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	7.03E-02	2.30E+01	1.62E+00	1.21E-01	3.69E+01	5.29E-03	2.20E+01	1.17E+00	4.39E+01	1.21E-04
LMSD-204 (2-6")	8.57E-01	NA	NA	NA	NA	8.57E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	7.03E-02	1.60E+01	1.12E+00	1.21E-01	3.69E+01	3.68E-03	2.20E+01	1.17E+00	4.39E+01	8.40E-05
Lower Marsh (6-12")																						**Maximum HQ (Lower Marsh, 2-6")**	**1.21E-04**
LMSD-201 (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
LMSD-202 (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB

TABLE C-12BB: ARSENIC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 12 - MARSH, WETLAND RECEPTORS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **118.73**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Canada Goose (Herbivorous Birds)																							
LMSD-203 (6-12")	8.57E-01	NA	NA	NA	NA	8.57E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	7.03E-02	2.50E+01	1.76E+00	1.21E-01	3.69E+01	5.76E-03	2.20E+01	1.17E+00	4.39E+01	1.31E-04
LMSD-204 (6-12")	8.57E-01	NA	NA	NA	NA	8.57E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	7.03E-02	1.60E+01	1.12E+00	1.21E-01	3.69E+01	3.68E-03	2.20E+01	1.17E+00	4.39E+01	8.40E-05
																						Maximum HQ (Lower Marsh, 6-12")	**1.31E-04**
Great Blue Heron (Carnivorous Birds)																							
Reference Sites																							
BRSD-5 (0-2")	1.32E-01	1.32E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.72E+01	6.11E-02	1.00E+00	2.39E+00	2.56E-02	2.20E+01	1.17E+00	2.54E+01	1.01E-03
BRSD-5 (2-6")	1.32E-01	1.32E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.92E+01	6.82E-02	1.00E+00	2.39E+00	2.85E-02	2.20E+01	1.17E+00	2.54E+01	1.12E-03
BRSD-5 (6-12")	1.32E-01	1.32E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	2.46E+01	8.74E-02	1.00E+00	2.39E+00	3.66E-02	2.20E+01	1.17E+00	2.54E+01	1.44E-03
PGBG-1 (0-2")	1.32E-01	1.32E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.24E+01	4.40E-02	1.00E+00	2.39E+00	1.84E-02	2.20E+01	1.17E+00	2.54E+01	7.26E-04
PGBG-1 (2-6")	1.32E-01	1.32E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	9.12E+00	3.24E-02	1.00E+00	2.39E+00	1.36E-02	2.20E+01	1.17E+00	2.54E+01	5.34E-04
PGBG-1 (6-12")	1.32E-01	1.32E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	9.40E+00	3.34E-02	1.00E+00	2.39E+00	1.40E-02	2.20E+01	1.17E+00	2.54E+01	5.50E-04
PGBG-2 (0-2")	1.32E-01	1.32E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.88E+01	6.68E-02	1.00E+00	2.39E+00	2.79E-02	2.20E+01	1.17E+00	2.54E+01	1.10E-03
PGBG-2 (2-6")	1.32E-01	1.32E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.85E+01	6.57E-02	1.00E+00	2.39E+00	2.75E-02	2.20E+01	1.17E+00	2.54E+01	1.08E-03
PGBG-2 (6-12")	1.32E-01	1.32E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	3.23E+01	1.15E-01	1.00E+00	2.39E+00	4.80E-02	2.20E+01	1.17E+00	2.54E+01	1.89E-03
Eastern Upper Marsh (0-2")																						**Minimum HQ (Reference Sites)**	**5.34E-04**
UM-1000S-3500E (0-2")	1.32E-01	1.32E-01	2.35E-01	5.58E+01	7.34E+00	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	2.38E+02	8.45E-01	1.00E+00	2.39E+00	3.43E+00	2.20E+01	1.17E+00	2.54E+01	1.35E-01
BRSD-15 (0-2")	1.32E-01	1.32E-01	2.35E-01	3.50E+00	4.60E-01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.49E+01	5.29E-02	1.00E+00	2.39E+00	2.15E-01	2.20E+01	1.17E+00	2.54E+01	8.45E-03
BRSD-4 (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-750S-3500E (0-2")	1.32E-01	1.32E-01	2.35E-01	2.72E+01	3.58E+00	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.16E+02	4.12E-01	1.00E+00	2.39E+00	1.67E+00	2.20E+01	1.17E+00	2.54E+01	6.58E-02
BRSD-16 (0-2")	1.32E-01	1.32E-01	2.35E-01	4.53E+01	5.96E+00	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.93E+02	6.85E-01	1.00E+00	2.39E+00	2.78E+00	2.20E+01	1.17E+00	2.54E+01	1.09E-01
UM-750S-3000E (0-2")	1.32E-01	1.32E-01	2.35E-01	3.85E+01	5.06E+00	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.64E+02	5.82E-01	1.00E+00	2.39E+00	2.36E+00	2.20E+01	1.17E+00	2.54E+01	9.30E-02
BRSD-3 (0-2")	1.32E-01	1.32E-01	2.35E-01	8.92E+00	1.17E+00	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	3.80E+01	1.35E-01	1.00E+00	2.39E+00	5.47E-01	2.20E+01	1.17E+00	2.54E+01	2.16E-02
UM-500S-3250E (0-2")	1.32E-01	1.32E-01	2.35E-01	3.24E+01	4.26E+00	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.38E+02	4.90E-01	1.00E+00	2.39E+00	1.99E+00	2.20E+01	1.17E+00	2.54E+01	7.83E-02
UM-500S-3000E (0-2")	1.32E-01	1.32E-01	2.35E-01	2.05E+01	2.70E+00	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	8.74E+01	3.10E-01	1.00E+00	2.39E+00	1.26E+00	2.20E+01	1.17E+00	2.54E+01	4.96E-02
UM-250S-3000E (0-2")	1.32E-01	1.32E-01	2.35E-01	2.51E+01	3.30E+00	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.07E+02	3.80E-01	1.00E+00	2.39E+00	1.54E+00	2.20E+01	1.17E+00	2.54E+01	6.07E-02
UM-250S-3250E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-24 (0-2")	1.32E-01	1.32E-01	2.35E-01	4.53E+01	5.96E+00	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.93E+02	6.85E-01	1.00E+00	2.39E+00	2.78E+00	2.20E+01	1.17E+00	2.54E+01	1.09E-01
UM-250S-2750E (0-2")	1.32E-01	1.32E-01	2.35E-01	3.87E+01	5.09E+00	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.65E+02	5.86E-01	1.00E+00	2.39E+00	2.38E+00	2.20E+01	1.17E+00	2.54E+01	9.36E-02
UM-250S-2500E (0-2")	1.32E-01	1.32E-01	2.35E-01	2.89E+00	3.80E-01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.23E+01	4.37E-02	1.00E+00	2.39E+00	1.77E-01	2.20E+01	1.17E+00	2.54E+01	6.98E-03
UM-0N-2500E (0-2")	1.32E-01	1.32E-01	2.35E-01	2.74E+01	3.61E+00	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.17E+02	4.16E-01	1.00E+00	2.39E+00	1.68E+00	2.20E+01	1.17E+00	2.54E+01	6.64E-02
UM-0N-250E (0-2")	1.32E-01	1.32E-01	2.35E-01	3.05E+00	4.01E-01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.30E+01	4.62E-02	1.00E+00	2.39E+00	1.87E-01	2.20E+01	1.17E+00	2.54E+01	7.37E-03
BRSD-2 (0-2")	1.32E-01	1.32E-01	2.35E-01	4.15E+01	5.46E+00	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.77E+02	6.29E-01	1.00E+00	2.39E+00	2.55E+00	2.20E+01	1.17E+00	2.54E+01	1.00E-01
UM-500N-2500E (0-2")	1.32E-01	1.32E-01	2.35E-01	2.65E+00	3.49E-01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.13E+01	4.01E-02	1.00E+00	2.39E+00	1.63E-01	2.20E+01	1.17E+00	2.54E+01	6.41E-03
UM-250N-2500E (0-2")	1.32E-01	1.32E-01	2.35E-01	2.27E+01	2.99E+00	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	9.69E+01	3.44E-01	1.00E+00	2.39E+00	1.40E+00	2.20E+01	1.17E+00	2.54E+01	5.50E-02
UM-250N-2250E (0-2")	1.32E-01	1.32E-01	2.35E-01	4.15E+01	5.46E+00	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.77E+02	6.29E-01	1.00E+00	2.39E+00	2.55E+00	2.20E+01	1.17E+00	2.54E+01	1.00E-01
Western Upper Marsh (0-2")																						**Maximum HQ (Eastern Upper Marsh, 0-2")**	**1.35E-01**
UM-500S-2500E (0-2")	1.32E-01	1.32E-01	2.35E-01	2.86E+00	3.76E-01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.22E+01	4.33E-02	1.00E+00	2.39E+00	1.76E-01	2.20E+01	1.17E+00	2.54E+01	6.92E-03
UM-0N-2000E (0-2")	1.32E-01	1.32E-01	2.35E-01	1.11E+01	1.46E+00	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	4.72E+01	1.68E-01	1.00E+00	2.39E+00	6.80E-01	2.20E+01	1.17E+00	2.54E+01	2.68E-02
UM-500S-2000E (0-2")	1.32E-01	1.32E-01	2.35E-01	4.93E+00	6.48E-01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	2.10E+01	7.46E-02	1.00E+00	2.39E+00	3.02E-01	2.20E+01	1.17E+00	2.54E+01	1.19E-02
UM-250N-1750E (0-2")	1.32E-01	1.32E-01	2.35E-01	2.96E+00	3.89E-01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.26E+01	4.47E-02	1.00E+00	2.39E+00	1.81E-01	2.20E+01	1.17E+00	2.54E+01	7.15E-03
UM-0N-1500E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-250S-1500E (0-2")	1.32E-01	1.32E-01	2.35E-01	7.81E+00	1.03E+00	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	3.33E+01	1.18E-01	1.00E+00	2.39E+00	4.79E-01	2.20E+01	1.17E+00	2.54E+01	1.89E-02
UM-250S-1250E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-6 (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-1000E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-750E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-500E (0-2")	1.32E-01	1.32E-01	2.35E-01	2.37E+00	3.12E-01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.01E+01	3.59E-02	1.00E+00	2.39E+00	1.45E-01	2.20E+01	1.17E+00	2.54E+01	5.73E-03
UM-250S-500E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-250S-250E (0-2")	1.32E-01	1.32E-01	2.35E-01	3.40E+00	4.47E-01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.45E+01	5.15E-02	1.00E+00	2.39E+00	2.09E-01	2.20E+01	1.17E+00	2.54E+01	8.23E-03
BRSD-7 (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-8 (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-500S-500E (0-2")	1.32E-01	1.32E-01	2.35E-01	2.77E+00	3.64E-01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.18E+01	4.19E-02	1.00E+00	2.39E+00	1.70E-01	2.20E+01	1.17E+00	2.54E+01	6.69E-03
BRSD-9 (0-2")	1.32E-01	1.32E-01	2.35E-01	5.40E+00	7.10E-01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	2.30E+01	8.17E-02	1.00E+00	2.39E+00	3.31E-01	2.20E+01	1.17E+00	2.54E+01	1.30E-02

TABLE C-12BB: ARSENIC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 12 - MARSH, WETLAND RECEPTORS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 118.73

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Great Blue Heron (Carnivorous Birds)																							
BRSD-10 (0-2")	1.32E-01	1.32E-01	2.35E-01	7.11E+00	9.35E-01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	3.03E+01	1.08E-01	1.00E+00	2.39E+00	4.36E-01	2.20E+01	1.17E+00	2.54E+01	1.72E-02
BRSD-11 (0-2")	1.32E-01	1.32E-01	2.35E-01	3.45E+00	4.54E-01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.47E+01	5.22E-02	1.00E+00	2.39E+00	2.12E-01	2.20E+01	1.17E+00	2.54E+01	8.34E-03
Eastern Upper Marsh (2-6")																						**Maximum HQ (Western Upper Marsh, 0-2")**	**2.68E-02**
UM-1000S-3500E (2-6")	1.32E-01	1.32E-01	2.35E-01	8.94E+00	1.18E+00	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	3.81E+01	1.35E-01	1.00E+00	2.39E+00	5.49E-01	2.20E+01	1.17E+00	2.54E+01	2.16E-02
BRSD-15 (2-6")	1.32E-01	1.32E-01	2.35E-01	3.66E+00	4.81E-01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.56E+01	5.54E-02	1.00E+00	2.39E+00	2.25E-01	2.20E+01	1.17E+00	2.54E+01	8.85E-03
BRSD-4 (2-6")	1.32E-01	1.32E-01	2.35E-01	2.31E+00	3.04E-01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	9.85E+00	3.50E-02	1.00E+00	2.39E+00	1.42E-01	2.20E+01	1.17E+00	2.54E+01	5.59E-03
UM-750S-3500E (2-6")	1.32E-01	1.32E-01	2.35E-01	3.68E+01	4.84E+00	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.57E+02	5.58E-01	1.00E+00	2.39E+00	2.26E+00	2.20E+01	1.17E+00	2.54E+01	8.91E-02
BRSD-16 (2-6")	1.32E-01	1.32E-01	2.35E-01	1.19E+02	1.56E+01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	5.07E+02	1.80E+00	1.00E+00	2.39E+00	7.30E+00	2.20E+01	1.17E+00	2.54E+01	2.88E-01
UM-750S-3000E (2-6")	1.32E-01	1.32E-01	2.35E-01	3.35E+01	4.41E+00	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.43E+02	5.08E-01	1.00E+00	2.39E+00	2.06E+00	2.20E+01	1.17E+00	2.54E+01	8.11E-02
BRSD-3 (2-6")	1.32E-01	1.32E-01	2.35E-01	1.27E+01	1.67E+00	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	5.42E+01	1.92E-01	1.00E+00	2.39E+00	7.80E-01	2.20E+01	1.17E+00	2.54E+01	3.07E-02
UM-500S-3250E (2-6")	1.32E-01	1.32E-01	2.35E-01	3.52E+01	4.63E+00	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.50E+02	5.33E-01	1.00E+00	2.39E+00	2.16E+00	2.20E+01	1.17E+00	2.54E+01	8.51E-02
UM-500S-3000E (2-6")	1.32E-01	1.32E-01	2.35E-01	5.30E+00	6.97E-01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	2.26E+01	8.03E-02	1.00E+00	2.39E+00	3.25E-01	2.20E+01	1.17E+00	2.54E+01	1.28E-02
UM-500S-2750E (2-6")	1.32E-01	1.32E-01	2.35E-01	1.74E+01	2.29E+00	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	7.42E+01	2.64E-01	1.00E+00	2.39E+00	1.07E+00	2.20E+01	1.17E+00	2.54E+01	4.21E-02
BRSD-25 (2-6")	1.32E-01	1.32E-01	2.35E-01	1.41E+01	1.85E+00	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	6.00E+01	2.13E-01	1.00E+00	2.39E+00	8.64E-01	2.20E+01	1.17E+00	2.54E+01	3.40E-02
UM-250S-3000E (2-6")	1.32E-01	1.32E-01	2.35E-01	3.80E+01	5.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.62E+02	5.75E-01	1.00E+00	2.39E+00	2.33E+00	2.20E+01	1.17E+00	2.54E+01	9.19E-02
UM-250S-3250E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-24 (2-6")	1.32E-01	1.32E-01	2.35E-01	2.79E+01	3.67E+00	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.19E+02	4.23E-01	1.00E+00	2.39E+00	1.71E+00	2.20E+01	1.17E+00	2.54E+01	6.75E-02
UM-250S-2750E (2-6")	1.32E-01	1.32E-01	2.35E-01	3.31E+01	4.35E+00	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.41E+02	5.01E-01	1.00E+00	2.39E+00	2.03E+00	2.20E+01	1.17E+00	2.54E+01	8.00E-02
UM-0N-2500E (2-6")	1.32E-01	1.32E-01	2.35E-01	2.42E+01	3.18E+00	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.03E+02	3.66E-01	1.00E+00	2.39E+00	1.48E+00	2.20E+01	1.17E+00	2.54E+01	5.84E-02
BRSD-2 (2-6")	1.32E-01	1.32E-01	2.35E-01	3.10E+01	4.07E+00	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.32E+02	4.69E-01	1.00E+00	2.39E+00	1.90E+00	2.20E+01	1.17E+00	2.54E+01	7.49E-02
UM-500N-2500E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-250N-2500E (2-6")	1.32E-01	1.32E-01	2.35E-01	2.72E+01	3.58E+00	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.16E+02	4.12E-01	1.00E+00	2.39E+00	1.67E+00	2.20E+01	1.17E+00	2.54E+01	6.58E-02
UM-250N-2250E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
Western Upper Marsh (2-6")																						**Maximum HQ (Eastern Upper Marsh, 2-6")**	**2.88E-01**
UM-500S-2500E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-2000E (2-6")	1.32E-01	1.32E-01	2.35E-01	1.16E+01	1.52E+00	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	4.94E+01	1.75E-01	1.00E+00	2.39E+00	7.11E-01	2.20E+01	1.17E+00	2.54E+01	2.80E-02
UM-500S-2000E (2-6")	1.32E-01	1.32E-01	2.35E-01	4.20E+00	5.52E-01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.79E+01	6.36E-02	1.00E+00	2.39E+00	2.58E-01	2.20E+01	1.17E+00	2.54E+01	1.02E-02
UM-250N-1750E (2-6")	1.32E-01	1.32E-01	2.35E-01	2.86E+00	3.76E-01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.22E+01	4.33E-02	1.00E+00	2.39E+00	1.76E-01	2.20E+01	1.17E+00	2.54E+01	6.92E-03
UM-0N-1500E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-250S-1500E (2-6")	1.32E-01	1.32E-01	2.35E-01	7.18E+00	9.44E-01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	3.06E+01	1.09E-01	1.00E+00	2.39E+00	4.41E-01	2.20E+01	1.17E+00	2.54E+01	1.74E-02
UM-250S-1250E (2-6")	1.32E-01	1.32E-01	2.35E-01	5.77E+00	7.59E-01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	2.46E+01	8.74E-02	1.00E+00	2.39E+00	3.54E-01	2.20E+01	1.17E+00	2.54E+01	1.40E-02
BRSD-6 (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-1000E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-750E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-500E (2-6")	1.32E-01	1.32E-01	2.35E-01	3.94E+00	5.18E-01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.68E+01	5.97E-02	1.00E+00	2.39E+00	2.42E-01	2.20E+01	1.17E+00	2.54E+01	9.53E-03
UM-250S-500E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-250E (2-6")	1.32E-01	1.32E-01	2.35E-01	4.57E+00	6.02E-01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.95E+01	6.93E-02	1.00E+00	2.39E+00	2.81E-01	2.20E+01	1.17E+00	2.54E+01	1.11E-02
UM-250S-250E (2-6")	1.32E-01	1.32E-01	2.35E-01	2.25E+00	2.96E-01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	9.58E+00	3.40E-02	1.00E+00	2.39E+00	1.38E-01	2.20E+01	1.17E+00	2.54E+01	5.43E-03
BRSD-7 (2-6")	1.32E-01	1.32E-01	2.35E-01	2.82E+00	3.70E-01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.20E+01	4.26E-02	1.00E+00	2.39E+00	1.73E-01	2.20E+01	1.17E+00	2.54E+01	6.81E-03
BRSD-8 (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-500S-500E (2-6")	1.32E-01	1.32E-01	2.35E-01	2.18E+00	2.86E-01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	9.28E+00	3.30E-02	1.00E+00	2.39E+00	1.34E-01	2.20E+01	1.17E+00	2.54E+01	5.26E-03
BRSD-9 (2-6")	1.32E-01	1.32E-01	2.35E-01	4.08E+00	5.37E-01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.74E+01	6.18E-02	1.00E+00	2.39E+00	2.51E-01	2.20E+01	1.17E+00	2.54E+01	9.87E-03
BRSD-10 (2-6")	1.32E-01	1.32E-01	2.35E-01	8.40E+00	1.10E+00	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	3.58E+01	1.27E-01	1.00E+00	2.39E+00	5.15E-01	2.20E+01	1.17E+00	2.54E+01	2.03E-02
BRSD-11 (2-6")	1.32E-01	1.32E-01	2.35E-01	2.53E+00	3.33E-01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.08E+01	3.84E-02	1.00E+00	2.39E+00	1.55E-01	2.20E+01	1.17E+00	2.54E+01	6.13E-03
Eastern Upper Marsh (6-12")																						**Maximum HQ (Western Upper Marsh, 2-6")**	**2.80E-02**
UM-1000S-3500E (6-12")	1.32E-01	1.32E-01	2.35E-01	2.96E+00	3.89E-01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.26E+01	4.47E-02	1.00E+00	2.39E+00	1.81E-01	2.20E+01	1.17E+00	2.54E+01	7.15E-03
BRSD-15 (6-12")	1.32E-01	1.32E-01	2.35E-01	3.94E+00	5.18E-01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.68E+01	5.97E-02	1.00E+00	2.39E+00	2.42E-01	2.20E+01	1.17E+00	2.54E+01	9.53E-03
BRSD-4 (6-12")	1.32E-01	1.32E-01	2.35E-01	4.79E+00	6.30E-01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	2.04E+01	7.24E-02	1.00E+00	2.39E+00	2.94E-01	2.20E+01	1.17E+00	2.54E+01	1.16E-02
UM-750S-3500E (6-12")	1.32E-01	1.32E-01	2.35E-01	3.24E+01	4.26E+00	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.38E+02	4.90E-01	1.00E+00	2.39E+00	1.99E+00	2.20E+01	1.17E+00	2.54E+01	7.83E-02
BRSD-16 (6-12")	1.32E-01	1.32E-01	2.35E-01	2.18E+01	2.86E+00	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	9.28E+01	3.30E-01	1.00E+00	2.39E+00	1.34E+00	2.20E+01	1.17E+00	2.54E+01	5.26E-02
UM-750S-3000E (6-12")	1.32E-01	1.32E-01	2.35E-01	3.33E+01	4.38E+00	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.42E+02	5.04E-01	1.00E+00	2.39E+00	2.04E+00	2.20E+01	1.17E+00	2.54E+01	8.06E-02
BRSD-3 (6-12")	1.32E-01	1.32E-01	2.35E-01	4.67E+00	6.14E-01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.99E+01	7.07E-02	1.00E+00	2.39E+00	2.87E-01	2.20E+01	1.17E+00	2.54E+01	1.13E-02
UM-500S-3250E (6-12")	1.32E-01	1.32E-01	2.35E-01	2.35E+01	3.09E+00	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.00E+02	3.55E-01	1.00E+00	2.39E+00	1.44E+00	2.20E+01	1.17E+00	2.54E+01	5.67E-02
UM-500S-3000E (6-12")	1.32E-01	1.32E-01	2.35E-01	3.54E+00	4.66E-01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.51E+01	5.36E-02	1.00E+00	2.39E+00	2.17E-01	2.20E+01	1.17E+00	2.54E+01	8.57E-03
UM-500S-2750E (6-12")	1.32E-01	1.32E-01	2.35E-01	1.59E+01	2.09E+00	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	6.78E+01	2.41E-01	1.00E+00	2.39E+00	9.76E-01	2.20E+01	1.17E+00	2.54E+01	3.85E-02

TABLE C-12BB: ARSENIC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 12 - MARSH, WETLAND RECEPTORS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **118.73**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Great Blue Heron (Carnivorous Birds)																							
BRSD-25 (6-12")	1.32E-01	1.32E-01	2.35E-01	6.80E+00	8.95E-01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	2.90E+01	1.03E-01	1.00E+00	2.39E+00	4.18E-01	2.20E+01	1.17E+00	2.54E+01	1.65E-02
UM-250S-3000E (6-12")	1.32E-01	1.32E-01	2.35E-01	4.29E+01	5.65E+00	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.83E+02	6.50E-01	1.00E+00	2.39E+00	2.63E+00	2.20E+01	1.17E+00	2.54E+01	1.04E-01
UM-250S-3250E (6-12")	1.32E-01	1.32E-01	2.35E-01	2.46E+00	3.24E-01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.05E+01	3.73E-02	1.00E+00	2.39E+00	1.51E-01	2.20E+01	1.17E+00	2.54E+01	5.96E-03
BRSD-24 (6-12")	1.32E-01	1.32E-01	2.35E-01	1.49E+01	1.96E+00	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	6.34E+01	2.25E-01	1.00E+00	2.39E+00	9.13E-01	2.20E+01	1.17E+00	2.54E+01	3.60E-02
UM-250S-2750E (6-12")	1.32E-01	1.32E-01	2.35E-01	1.55E+01	2.04E+00	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	6.60E+01	2.34E-01	1.00E+00	2.39E+00	9.50E-01	2.20E+01	1.17E+00	2.54E+01	3.74E-02
UM-250S-2500E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-2 (6-12")	1.32E-01	1.32E-01	2.35E-01	1.71E+01	2.26E+00	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	7.31E+01	2.60E-01	1.00E+00	2.39E+00	1.05E+00	2.20E+01	1.17E+00	2.54E+01	4.15E-02
UM-500N-2500E (6-12")	1.32E-01	1.32E-01	2.35E-01	2.72E+00	3.58E-01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.16E+01	4.12E-02	1.00E+00	2.39E+00	1.67E-01	2.20E+01	1.17E+00	2.54E+01	6.58E-03
UM-250N-2500E (6-12")	1.32E-01	1.32E-01	2.35E-01	2.14E+01	2.81E+00	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	9.12E+01	3.24E-01	1.00E+00	2.39E+00	1.31E+00	2.20E+01	1.17E+00	2.54E+01	5.17E-02
UM-250N-2250E (6-12")	1.32E-01	1.32E-01	2.35E-01	2.33E+00	3.06E-01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	9.93E+00	3.53E-02	1.00E+00	2.39E+00	1.43E-01	2.20E+01	1.17E+00	2.54E+01	5.63E-03
Western Upper Marsh (6-12")																						**Maximum HQ (Eastern Upper Marsh, 6-12")**	**1.04E-01**
UM-500S-2500E (6-12")	1.32E-01	1.32E-01	2.35E-01	2.58E+00	3.39E-01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.10E+01	3.91E-02	1.00E+00	2.39E+00	1.58E-01	2.20E+01	1.17E+00	2.54E+01	6.24E-03
UM-0N-2000E (6-12")	1.32E-01	1.32E-01	2.35E-01	1.38E+01	1.82E+00	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	5.90E+01	2.10E-01	1.00E+00	2.39E+00	8.49E-01	2.20E+01	1.17E+00	2.54E+01	3.35E-02
UM-500S-2000E (6-12")	1.32E-01	1.32E-01	2.35E-01	3.59E+00	4.72E-01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.53E+01	5.43E-02	1.00E+00	2.39E+00	2.20E-01	2.20E+01	1.17E+00	2.54E+01	8.68E-03
UM-250N-1750E (6-12")	1.32E-01	1.32E-01	2.35E-01	2.72E+00	3.58E-01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.16E+01	4.12E-02	1.00E+00	2.39E+00	1.67E-01	2.20E+01	1.17E+00	2.54E+01	6.58E-03
UM-0N-1500E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-250S-1500E (6-12")	1.32E-01	1.32E-01	2.35E-01	4.11E+00	5.40E-01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.75E+01	6.21E-02	1.00E+00	2.39E+00	2.52E-01	2.20E+01	1.17E+00	2.54E+01	9.93E-03
UM-250S-1250E (6-12")	1.32E-01	1.32E-01	2.35E-01	4.46E+00	5.86E-01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.90E+01	6.75E-02	1.00E+00	2.39E+00	2.74E-01	2.20E+01	1.17E+00	2.54E+01	1.08E-02
BRSD-6 (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-1000E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-750E (6-12")	1.32E-01	1.32E-01	2.35E-01	2.91E+00	3.83E-01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.24E+01	4.40E-02	1.00E+00	2.39E+00	1.79E-01	2.20E+01	1.17E+00	2.54E+01	7.03E-03
UM-0N-500E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-250S-500E (6-12")	1.32E-01	1.32E-01	2.35E-01	4.15E+00	5.46E-01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.77E+01	6.29E-02	1.00E+00	2.39E+00	2.55E-01	2.20E+01	1.17E+00	2.54E+01	1.00E-02
UM-250S-250E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-7 (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-8 (6-12")	1.32E-01	1.32E-01	2.35E-01	2.42E+00	3.18E-01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.03E+01	3.66E-02	1.00E+00	2.39E+00	1.48E-01	2.20E+01	1.17E+00	2.54E+01	5.84E-03
UM-500S-500E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-9 (6-12")	1.32E-01	1.32E-01	2.35E-01	3.80E+00	5.00E-01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.62E+01	5.75E-02	1.00E+00	2.39E+00	2.33E-01	2.20E+01	1.17E+00	2.54E+01	9.19E-03
BRSD-10 (6-12")	1.32E-01	1.32E-01	2.35E-01	8.99E+00	1.18E+00	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	3.83E+01	1.36E-01	1.00E+00	2.39E+00	5.51E-01	2.20E+01	1.17E+00	2.54E+01	2.17E-02
BRSD-11 (6-12")	1.32E-01	1.32E-01	2.35E-01	2.32E+00	3.05E-01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	9.89E+00	3.51E-02	1.00E+00	2.39E+00	1.42E-01	2.20E+01	1.17E+00	2.54E+01	5.61E-03
Middle Marsh (0-2")																						**Maximum HQ (Western Upper Marsh, 6-12")**	**3.35E-02**
MMSD-201 (0-2")	1.32E-01	1.32E-01	2.35E-01	4.93E+00	6.48E-01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	2.10E+01	7.46E-02	1.00E+00	2.39E+00	3.02E-01	2.20E+01	1.17E+00	2.54E+01	1.19E-02
MMSD-202 (0-2")	1.32E-01	1.32E-01	2.35E-01	5.16E+00	6.79E-01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	2.20E+01	7.81E-02	1.00E+00	2.39E+00	3.17E-01	2.20E+01	1.17E+00	2.54E+01	1.25E-02
Middle Marsh (2-6")																						**Maximum HQ (Middle Marsh, 0-2")**	**1.25E-02**
MMSD-201 (2-6")	1.32E-01	1.32E-01	2.35E-01	4.93E+00	6.48E-01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	2.10E+01	7.46E-02	1.00E+00	2.39E+00	3.02E-01	2.20E+01	1.17E+00	2.54E+01	1.19E-02
MMSD-202 (2-6")	1.32E-01	1.32E-01	2.35E-01	5.40E+00	7.10E-01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	2.30E+01	8.17E-02	1.00E+00	2.39E+00	3.31E-01	2.20E+01	1.17E+00	2.54E+01	1.30E-02
Middle Marsh (6-12")																						**Maximum HQ (Middle Marsh, 2-6")**	**1.30E-02**
MMSD-201 (6-12")	1.32E-01	1.32E-01	2.35E-01	5.63E+00	7.41E-01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	2.40E+01	8.52E-02	1.00E+00	2.39E+00	3.46E-01	2.20E+01	1.17E+00	2.54E+01	1.36E-02
MMSD-202 (6-12")	1.32E-01	1.32E-01	2.35E-01	3.75E+00	4.94E-01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.60E+01	5.68E-02	1.00E+00	2.39E+00	2.30E-01	2.20E+01	1.17E+00	2.54E+01	9.08E-03
Lower Marsh (0-2")																						**Maximum HQ (Middle Marsh, 6-12")**	**1.36E-02**
LMSD-201 (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
LMSD-202 (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
LMSD-203 (0-2")	1.32E-01	1.32E-01	2.35E-01	5.63E+00	7.41E-01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	2.40E+01	8.52E-02	1.00E+00	2.39E+00	3.46E-01	2.20E+01	1.17E+00	2.54E+01	1.36E-02
LMSD-204 (0-2")	1.32E-01	1.32E-01	2.35E-01	3.75E+00	4.94E-01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.60E+01	5.68E-02	1.00E+00	2.39E+00	2.30E-01	2.20E+01	1.17E+00	2.54E+01	9.08E-03
Lower Marsh (2-6")																						**Maximum HQ (Lower Marsh, 0-2")**	**1.36E-02**
LMSD-201 (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
LMSD-202 (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
LMSD-203 (2-6")	1.32E-01	1.32E-01	2.35E-01	5.40E+00	7.10E-01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	2.30E+01	8.17E-02	1.00E+00	2.39E+00	3.31E-01	2.20E+01	1.17E+00	2.54E+01	1.30E-02
LMSD-204 (2-6")	1.32E-01	1.32E-01	2.35E-01	3.75E+00	4.94E-01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.60E+01	5.68E-02	1.00E+00	2.39E+00	2.30E-01	2.20E+01	1.17E+00	2.54E+01	9.08E-03
Lower Marsh (6-12")																						**Maximum HQ (Lower Marsh, 2-6")**	**1.30E-02**
LMSD-201 (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
LMSD-202 (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
LMSD-203 (6-12")	1.32E-01	1.32E-01	2.35E-01	5.87E+00	7.71E-01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	2.50E+01	8.88E-02	1.00E+00	2.39E+00	3.60E-01	2.20E+01	1.17E+00	2.54E+01	1.42E-02
LMSD-204 (6-12")	1.32E-01	1.32E-01	2.35E-01	3.75E+00	4.94E-01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.60E+01	5.68E-02	1.00E+00	2.39E+00	2.30E-01	2.20E+01	1.17E+00	2.54E+01	9.08E-03
																						Maximum HQ (Lower Marsh, 6-12")	**1.42E-02**

TABLE C-12BB: ARSENIC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 12 - MARSH, WETLAND RECEPTORS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **118.73**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Mallard (Omnivorous Birds)																							
Reference Sites																							
BRSD-5 (0-2")	7.94E-02	NA	NA	NA	NA	5.00E-02	0.00E+00	0.00E+00	0.00E+00	2.94E-02	3.04E+00	5.22E+01	1.53E+00	2.62E-03	1.72E+01	4.50E-02	3.85E-01	1.14E+00	5.32E-01	2.20E+01	1.17E+00	2.19E+01	2.43E-02
BRSD-5 (2-6")	7.94E-02	NA	NA	NA	NA	5.00E-02	0.00E+00	0.00E+00	0.00E+00	2.94E-02	3.04E+00	5.83E+01	1.71E+00	2.62E-03	1.92E+01	5.03E-02	3.85E-01	1.14E+00	5.94E-01	2.20E+01	1.17E+00	2.19E+01	2.71E-02
BRSD-5 (6-12")	7.94E-02	NA	NA	NA	NA	5.00E-02	0.00E+00	0.00E+00	0.00E+00	2.94E-02	3.04E+00	7.47E+01	2.19E+00	2.62E-03	2.46E+01	6.44E-02	3.85E-01	1.14E+00	7.62E-01	2.20E+01	1.17E+00	2.19E+01	3.48E-02
PGBG-1 (0-2")	7.94E-02	NA	NA	NA	NA	5.00E-02	0.00E+00	0.00E+00	0.00E+00	2.94E-02	3.04E+00	3.77E+01	1.11E+00	2.62E-03	1.24E+01	3.25E-02	3.85E-01	1.14E+00	3.84E-01	2.20E+01	1.17E+00	2.19E+01	1.75E-02
PGBG-1 (2-6")	7.94E-02	NA	NA	NA	NA	5.00E-02	0.00E+00	0.00E+00	0.00E+00	2.94E-02	3.04E+00	2.77E+01	8.13E-01	2.62E-03	9.12E+00	2.39E-02	3.85E-01	1.14E+00	2.82E-01	2.20E+01	1.17E+00	2.19E+01	1.29E-02
PGBG-1 (6-12")	7.94E-02	NA	NA	NA	NA	5.00E-02	0.00E+00	0.00E+00	0.00E+00	2.94E-02	3.04E+00	2.85E+01	8.38E-01	2.62E-03	9.40E+00	2.46E-02	3.85E-01	1.14E+00	2.91E-01	2.20E+01	1.17E+00	2.19E+01	1.33E-02
PGBG-2 (0-2")	7.94E-02	NA	NA	NA	NA	5.00E-02	0.00E+00	0.00E+00	0.00E+00	2.94E-02	3.04E+00	5.71E+01	1.68E+00	2.62E-03	1.88E+01	4.92E-02	3.85E-01	1.14E+00	5.82E-01	2.20E+01	1.17E+00	2.19E+01	2.66E-02
PGBG-2 (2-6")	7.94E-02	NA	NA	NA	NA	5.00E-02	0.00E+00	0.00E+00	0.00E+00	2.94E-02	3.04E+00	5.62E+01	1.65E+00	2.62E-03	1.85E+01	4.84E-02	3.85E-01	1.14E+00	5.73E-01	2.20E+01	1.17E+00	2.19E+01	2.62E-02
PGBG-2 (6-12")	7.94E-02	NA	NA	NA	NA	5.00E-02	0.00E+00	0.00E+00	0.00E+00	2.94E-02	3.04E+00	9.81E+01	2.88E+00	2.62E-03	3.23E+01	8.46E-02	3.85E-01	1.14E+00	1.00E+00	2.20E+01	1.17E+00	2.19E+01	4.57E-02
Eastern Upper Marsh (0-2")																						**Minimum HQ (Reference Sites)**	**1.29E-02**
UM-1000S-3500E (0-2")	7.94E-02	NA	NA	NA	NA	5.00E-02	0.00E+00	0.00E+00	0.00E+00	2.94E-02	8.42E+00	2.00E+03	5.89E+01	2.62E-03	2.38E+02	6.23E-01	3.85E-01	1.14E+00	2.01E+01	2.20E+01	1.17E+00	2.19E+01	9.16E-01
BRSD-15 (0-2")	7.94E-02	NA	NA	NA	NA	5.00E-02	0.00E+00	0.00E+00	0.00E+00	2.94E-02	8.42E+00	1.26E+02	3.69E+00	2.62E-03	1.49E+01	3.90E-02	3.85E-01	1.14E+00	1.26E+00	2.20E+01	1.17E+00	2.19E+01	5.74E-02
BRSD-4 (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-750S-3500E (0-2")	7.94E-02	NA	NA	NA	NA	5.00E-02	0.00E+00	0.00E+00	0.00E+00	2.94E-02	8.42E+00	9.77E+02	2.87E+01	2.62E-03	1.16E+02	3.04E-01	3.85E-01	1.14E+00	9.78E+00	2.20E+01	1.17E+00	2.19E+01	4.47E-01
BRSD-16 (0-2")	7.94E-02	NA	NA	NA	NA	5.00E-02	0.00E+00	0.00E+00	0.00E+00	2.94E-02	8.42E+00	1.63E+03	4.77E+01	2.62E-03	1.93E+02	5.05E-01	3.85E-01	1.14E+00	1.63E+01	2.20E+01	1.17E+00	2.19E+01	7.43E-01
UM-750S-3000E (0-2")	7.94E-02	NA	NA	NA	NA	5.00E-02	0.00E+00	0.00E+00	0.00E+00	2.94E-02	8.42E+00	1.38E+03	4.06E+01	2.62E-03	1.64E+02	4.29E-01	3.85E-01	1.14E+00	1.38E+01	2.20E+01	1.17E+00	2.19E+01	6.31E-01
BRSD-3 (0-2")	7.94E-02	NA	NA	NA	NA	5.00E-02	0.00E+00	0.00E+00	0.00E+00	2.94E-02	8.42E+00	3.20E+02	9.40E+00	2.62E-03	3.80E+01	9.95E-02	3.85E-01	1.14E+00	3.20E+00	2.20E+01	1.17E+00	2.19E+01	1.46E-01
UM-500S-3250E (0-2")	7.94E-02	NA	NA	NA	NA	5.00E-02	0.00E+00	0.00E+00	0.00E+00	2.94E-02	8.42E+00	1.16E+03	3.41E+01	2.62E-03	1.38E+02	3.61E-01	3.85E-01	1.14E+00	1.16E+01	2.20E+01	1.17E+00	2.19E+01	5.31E-01
UM-500S-3000E (0-2")	7.94E-02	NA	NA	NA	NA	5.00E-02	0.00E+00	0.00E+00	0.00E+00	2.94E-02	8.42E+00	7.36E+02	2.16E+01	2.62E-03	8.74E+01	2.29E-01	3.85E-01	1.14E+00	7.37E+00	2.20E+01	1.17E+00	2.19E+01	3.36E-01
UM-500S-2750E (0-2")	7.94E-02	NA	NA	NA	NA	5.00E-02	0.00E+00	0.00E+00	0.00E+00	2.94E-02	8.42E+00	1.31E+03	3.86E+01	2.62E-03	1.56E+02	4.09E-01	3.85E-01	1.14E+00	1.31E+01	2.20E+01	1.17E+00	2.19E+01	6.00E-01
BRSD-25 (0-2")	7.94E-02	NA	NA	NA	NA	5.00E-02	0.00E+00	0.00E+00	0.00E+00	2.94E-02	8.42E+00	5.56E+02	1.63E+01	2.62E-03	6.60E+01	1.73E-01	3.85E-01	1.14E+00	5.56E+00	2.20E+01	1.17E+00	2.19E+01	2.54E-01
UM-250S-3000E (0-2")	7.94E-02	NA	NA	NA	NA	5.00E-02	0.00E+00	0.00E+00	0.00E+00	2.94E-02	8.42E+00	9.01E+02	2.65E+01	2.62E-03	1.07E+02	2.80E-01	3.85E-01	1.14E+00	9.02E+00	2.20E+01	1.17E+00	2.19E+01	4.12E-01
UM-250S-3250E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-250S-2750E (0-2")	7.94E-02	NA	NA	NA	NA	5.00E-02	0.00E+00	0.00E+00	0.00E+00	2.94E-02	8.42E+00	1.39E+03	4.08E+01	2.62E-03	1.65E+02	4.32E-01	3.85E-01	1.14E+00	1.39E+01	2.20E+01	1.17E+00	2.19E+01	6.35E-01
UM-250S-2500E (0-2")	7.94E-02	NA	NA	NA	NA	5.00E-02	0.00E+00	0.00E+00	0.00E+00	2.94E-02	8.42E+00	1.04E+02	3.04E+00	2.62E-03	1.23E+01	3.22E-02	3.85E-01	1.14E+00	1.04E+00	2.20E+01	1.17E+00	2.19E+01	4.73E-02
UM-0N-2500E (0-2")	7.94E-02	NA	NA	NA	NA	5.00E-02	0.00E+00	0.00E+00	0.00E+00	2.94E-02	8.42E+00	9.86E+02	2.89E+01	2.62E-03	1.17E+02	3.06E-01	3.85E-01	1.14E+00	9.86E+00	2.20E+01	1.17E+00	2.19E+01	4.50E-01
UM-0N-250E (0-2")	7.94E-02	NA	NA	NA	NA	5.00E-02	0.00E+00	0.00E+00	0.00E+00	2.94E-02	8.42E+00	1.10E+02	3.22E+00	2.62E-03	1.30E+01	3.40E-02	3.85E-01	1.14E+00	1.10E+00	2.20E+01	1.17E+00	2.19E+01	5.00E-02
BRSD-2 (0-2")	7.94E-02	NA	NA	NA	NA	5.00E-02	0.00E+00	0.00E+00	0.00E+00	2.94E-02	8.42E+00	1.49E+03	4.38E+01	2.62E-03	1.77E+02	4.64E-01	3.85E-01	1.14E+00	1.49E+01	2.20E+01	1.17E+00	2.19E+01	6.81E-01
UM-500N-2500E (0-2")	7.94E-02	NA	NA	NA	NA	5.00E-02	0.00E+00	0.00E+00	0.00E+00	2.94E-02	8.42E+00	9.52E+01	2.79E+00	2.62E-03	1.13E+01	2.96E-02	3.85E-01	1.14E+00	9.53E-01	2.20E+01	1.17E+00	2.19E+01	4.35E-02
UM-250N-2500E (0-2")	7.94E-02	NA	NA	NA	NA	5.00E-02	0.00E+00	0.00E+00	0.00E+00	2.94E-02	8.42E+00	8.16E+02	2.40E+01	2.62E-03	9.69E+01	2.54E-01	3.85E-01	1.14E+00	8.17E+00	2.20E+01	1.17E+00	2.19E+01	3.73E-01
UM-250N-2250E (0-2")	7.94E-02	NA	NA	NA	NA	5.00E-02	0.00E+00	0.00E+00	0.00E+00	2.94E-02	8.42E+00	1.49E+03	4.38E+01	2.62E-03	1.77E+02	4.64E-01	3.85E-01	1.14E+00	1.49E+01	2.20E+01	1.17E+00	2.19E+01	6.81E-01
Western Upper Marsh (0-2")																						**Maximum HQ (Eastern Upper Marsh, 0-2")**	**9.16E-01**
UM-500S-2500E (0-2")	7.94E-02	NA	NA	NA	NA	5.00E-02	0.00E+00	0.00E+00	0.00E+00	2.94E-02	2.33E+00	2.85E+01	8.36E-01	2.62E-03	1.22E+01	3.19E-02	3.85E-01	1.14E+00	2.93E-01	2.20E+01	1.17E+00	2.19E+01	1.34E-02
UM-0N-2000E (0-2")	7.94E-02	NA	NA	NA	NA	5.00E-02	0.00E+00	0.00E+00	0.00E+00	2.94E-02	2.33E+00	1.10E+02	3.23E+00	2.62E-03	4.72E+01	1.24E-01	3.85E-01	1.14E+00	1.13E+00	2.20E+01	1.17E+00	2.19E+01	5.17E-02
UM-500S-2000E (0-2")	7.94E-02	NA	NA	NA	NA	5.00E-02	0.00E+00	0.00E+00	0.00E+00	2.94E-02	2.33E+00	4.90E+01	1.44E+00	2.62E-03	2.10E+01	5.50E-02	3.85E-01	1.14E+00	5.04E-01	2.20E+01	1.17E+00	2.19E+01	2.30E-02
UM-250N-1750E (0-2")	7.94E-02	NA	NA	NA	NA	5.00E-02	0.00E+00	0.00E+00	0.00E+00	2.94E-02	2.33E+00	2.94E+01	8.64E-01	2.62E-03	1.26E+01	3.30E-02	3.85E-01	1.14E+00	3.02E-01	2.20E+01	1.17E+00	2.19E+01	1.38E-02
UM-0N-1500E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-250S-1500E (0-2")	7.94E-02	NA	NA	NA	NA	5.00E-02	0.00E+00	0.00E+00	0.00E+00	2.94E-02	2.33E+00	7.77E+01	2.28E+00	2.62E-03	3.33E+01	8.72E-02	3.85E-01	1.14E+00	7.99E-01	2.20E+01	1.17E+00	2.19E+01	3.65E-02
UM-250S-1250E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-6 (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-1000E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-750E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-500E (0-2")	BB	BB	BB	BB	BB	5.00E-02	0.00E+00	0.00E+00	0.00E+00	BB	BB	BB	BB	BB	1.01E+01	BB	BB	BB	BB	BB	BB	BB	BB
UM-250S-500E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-250S-250E (0-2")	7.94E-02	NA	NA	NA	NA	5.00E-02	0.00E+00	0.00E+00	0.00E+00	2.94E-02	2.33E+00	3.38E+01	9.94E-01	2.62E-03	1.45E+01	3.80E-02	3.85E-01	1.14E+00	3.48E-01	2.20E+01	1.17E+00	2.19E+01	1.59E-02
BRSD-7 (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-8 (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-500S-500E (0-2")	7.94E-02	NA	NA	NA	NA	5.00E-02	0.00E+00	0.00E+00	0.00E+00	2.94E-02	2.33E+00	2.75E+01	8.09E-01	2.62E-03	1.18E+01	3.09E-02	3.85E-01	1.14E+00	2.83E-01	2.20E+01	1.17E+00	2.19E+01	1.29E-02
BRSD-9 (0-2")	7.94E-02	NA	NA	NA	NA	5.00E-02	0.00E+00	0.00E+00	0.00E+00	2.94E-02	2.33E+00	5.37E+01	1.58E+00	2.62E-03	2.30E+01	6.02E-02	3.85E-01	1.14E+00	5.52E-01	2.20E+01	1.17E+00	2.19E+01	2.52E-02
BRSD-10 (0-2")	7.94E-02	NA	NA	NA	NA	5.00E-02	0.00E+00	0.00E+00	0.00E+00	2.94E-02	2.33E+00	7.07E+01	2.08E+00	2.62E-03	3.03E+01	7.93E-02	3.85E-01	1.14E+00	7.27E-01	2.20E+01	1.17E+00	2.19E+01	3.32E-02
BRSD-11 (0-2")	7.94E-02	NA	NA	NA	NA	5.00E-02	0.00E+00	0.00E+00	0.00E+00	2.94E-02	2.33E+00	3.43E+01	1.01E+00	2.62E-03	1.47E+01	3.85E-02	3.85E-01	1.14E+00	3.53E-01	2.20E+01	1.17E+00	2.19E+01	1.61E-02
Eastern Upper Marsh (2-6")																						**Maximum HQ (Western Upper Marsh, 0-2")**	**5.17E-02**
UM-1000S-3500E (2-6")	7.94E-02	NA	NA	NA	NA	5.00E-02	0.00E+00	0.00E+00	0.00E+00	2.94E-02	8.42E+00	3.21E+02	9.42E+00	2.62E-03	3.81E+01	9.98E-02	3.85E-01	1.14E+00	3.21E+00	2.20E+01	1.17E+00	2.19E+01	1.47E-01
BRSD-15 (2-6")	7.94E-02	NA	NA	NA	NA	5.00E-02	0.00E+00	0.00E+00	0.00E+00	2.94E-02	8.42E+00	1.31E+02	3.86E+00	2.62E-03	1.56E+01	4.09E-02	3.85E-01	1.14E+00	1.31E+00	2.20E+01	1.17E+00	2.19E+01	6.00E-02
BRSD-4 (2-6")	7.94E-02	NA	NA	NA	NA	5.00E-02	0.00E+00	0.00E+00	0.00E+00	2.94E-02	8.42E+00	8.30E+01	2.44E+00	2.62E-03	9.85E+00	2.58E-02	3.85E-01	1.14E+00	8.30E-01	2.20E+01	1.17E+00	2.19E+01	3.79E-02

TABLE C-12BB: ARSENIC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 12 - MARSH, WETLAND RECEPTORS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **118.73**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Mallard (Omnivorous Birds)																							
UM-750S-3500E (2-6")	7.94E-02	NA	NA	NA	NA	5.00E-02	0.00E+00	0.00E+00	0.00E+00	2.94E-02	8.42E+00	1.32E+03	3.88E+01	2.62E-03	1.57E+02	4.11E-01	3.85E-01	1.14E+00	1.32E+01	2.20E+01	1.17E+00	2.19E+01	6.04E-01
BRSD-16 (2-6")	7.94E-02	NA	NA	NA	NA	5.00E-02	0.00E+00	0.00E+00	0.00E+00	2.94E-02	8.42E+00	4.27E+03	1.25E+02	2.62E-03	5.07E+02	1.33E+00	3.85E-01	1.14E+00	4.27E+01	2.20E+01	1.17E+00	2.19E+01	1.95E+00
UM-750S-3000E (2-6")	7.94E-02	NA	NA	NA	NA	5.00E-02	0.00E+00	0.00E+00	0.00E+00	2.94E-02	8.42E+00	1.20E+03	3.54E+01	2.62E-03	1.43E+02	3.74E-01	3.85E-01	1.14E+00	1.21E+01	2.20E+01	1.17E+00	2.19E+01	5.50E-01
BRSD-3 (2-6")	7.94E-02	NA	NA	NA	NA	5.00E-02	0.00E+00	0.00E+00	0.00E+00	2.94E-02	8.42E+00	4.57E+02	1.34E+01	2.62E-03	5.42E+01	1.42E-01	3.85E-01	1.14E+00	4.57E+00	2.20E+01	1.17E+00	2.19E+01	2.09E-01
UM-500S-3250E (2-6")	7.94E-02	NA	NA	NA	NA	5.00E-02	0.00E+00	0.00E+00	0.00E+00	2.94E-02	8.42E+00	1.26E+03	3.71E+01	2.62E-03	1.50E+02	3.93E-01	3.85E-01	1.14E+00	1.26E+01	2.20E+01	1.17E+00	2.19E+01	5.77E-01
UM-500S-3000E (2-6")	7.94E-02	NA	NA	NA	NA	5.00E-02	0.00E+00	0.00E+00	0.00E+00	2.94E-02	8.42E+00	1.90E+02	5.59E+00	2.62E-03	2.26E+01	5.92E-02	3.85E-01	1.14E+00	1.91E+00	2.20E+01	1.17E+00	2.19E+01	8.70E-02
UM-500S-2750E (2-6")	7.94E-02	NA	NA	NA	NA	5.00E-02	0.00E+00	0.00E+00	0.00E+00	2.94E-02	8.42E+00	6.25E+02	1.84E+01	2.62E-03	7.42E+01	1.94E-01	3.85E-01	1.14E+00	6.25E+00	2.20E+01	1.17E+00	2.19E+01	2.86E-01
BRSD-25 (2-6")	7.94E-02	NA	NA	NA	NA	5.00E-02	0.00E+00	0.00E+00	0.00E+00	2.94E-02	8.42E+00	5.05E+02	1.48E+01	2.62E-03	6.00E+01	1.57E-01	3.85E-01	1.14E+00	5.06E+00	2.20E+01	1.17E+00	2.19E+01	2.31E-01
UM-250S-3000E (2-6")	7.94E-02	NA	NA	NA	NA	5.00E-02	0.00E+00	0.00E+00	0.00E+00	2.94E-02	8.42E+00	1.36E+03	4.01E+01	2.62E-03	1.62E+02	4.24E-01	3.85E-01	1.14E+00	1.37E+01	2.20E+01	1.17E+00	2.19E+01	6.24E-01
UM-250S-3250E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-24 (2-6")	7.94E-02	NA	NA	NA	NA	5.00E-02	0.00E+00	0.00E+00	0.00E+00	2.94E-02	8.42E+00	1.00E+03	2.94E+01	2.62E-03	1.19E+02	3.12E-01	3.85E-01	1.14E+00	1.00E+01	2.20E+01	1.17E+00	2.19E+01	4.58E-01
UM-250S-2750E (2-6")	7.94E-02	NA	NA	NA	NA	5.00E-02	0.00E+00	0.00E+00	0.00E+00	2.94E-02	8.42E+00	1.19E+03	3.49E+01	2.62E-03	1.41E+02	3.69E-01	3.85E-01	1.14E+00	1.19E+01	2.20E+01	1.17E+00	2.19E+01	5.43E-01
UM-0N-2500E (2-6")	7.94E-02	NA	NA	NA	NA	5.00E-02	0.00E+00	0.00E+00	0.00E+00	2.94E-02	8.42E+00	8.68E+02	2.55E+01	2.62E-03	1.03E+02	2.70E-01	3.85E-01	1.14E+00	8.68E+00	2.20E+01	1.17E+00	2.19E+01	3.96E-01
BRSD-2 (2-6")	7.94E-02	NA	NA	NA	NA	5.00E-02	0.00E+00	0.00E+00	0.00E+00	2.94E-02	8.42E+00	1.11E+03	3.26E+01	2.62E-03	1.32E+02	3.46E-01	3.85E-01	1.14E+00	1.11E+01	2.20E+01	1.17E+00	2.19E+01	5.08E-01
UM-500N-2500E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-250N-2500E (2-6")	7.94E-02	NA	NA	NA	NA	5.00E-02	0.00E+00	0.00E+00	0.00E+00	2.94E-02	8.42E+00	9.77E+02	2.87E+01	2.62E-03	1.16E+02	3.04E-01	3.85E-01	1.14E+00	9.78E+00	2.20E+01	1.17E+00	2.19E+01	4.47E-01
UM-250N-2250E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
Western Upper Marsh (2-6")																					**Maximum HQ (Eastern Upper Marsh, 2-6")**		**1.95E+00**
UM-500S-2500E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-2000E (2-6")	7.94E-02	NA	NA	NA	NA	5.00E-02	0.00E+00	0.00E+00	0.00E+00	2.94E-02	2.33E+00	1.15E+02	3.39E+00	2.62E-03	4.94E+01	1.29E-01	3.85E-01	1.14E+00	1.19E+00	2.20E+01	1.17E+00	2.19E+01	5.41E-02
UM-500S-2000E (2-6")	7.94E-02	NA	NA	NA	NA	5.00E-02	0.00E+00	0.00E+00	0.00E+00	2.94E-02	2.33E+00	4.18E+01	1.23E+00	2.62E-03	1.79E+01	4.69E-02	3.85E-01	1.14E+00	4.30E-01	2.20E+01	1.17E+00	2.19E+01	1.96E-02
UM-250N-1750E (2-6")	7.94E-02	NA	NA	NA	NA	5.00E-02	0.00E+00	0.00E+00	0.00E+00	2.94E-02	2.33E+00	2.85E+01	8.36E-01	2.62E-03	1.22E+01	3.19E-02	3.85E-01	1.14E+00	2.93E-01	2.20E+01	1.17E+00	2.19E+01	1.34E-02
UM-0N-1500E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-250S-1500E (2-6")	7.94E-02	NA	NA	NA	NA	5.00E-02	0.00E+00	0.00E+00	0.00E+00	2.94E-02	2.33E+00	7.14E+01	2.10E+00	2.62E-03	3.06E+01	8.01E-02	3.85E-01	1.14E+00	7.34E-01	2.20E+01	1.17E+00	2.19E+01	3.35E-02
UM-250S-1250E (2-6")	7.94E-02	NA	NA	NA	NA	5.00E-02	0.00E+00	0.00E+00	0.00E+00	2.94E-02	2.33E+00	5.74E+01	1.69E+00	2.62E-03	2.46E+01	6.44E-02	3.85E-01	1.14E+00	5.90E-01	2.20E+01	1.17E+00	2.19E+01	2.70E-02
BRSD-6 (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-1000E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-750E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-500E (2-6")	7.94E-02	NA	NA	NA	NA	5.00E-02	0.00E+00	0.00E+00	0.00E+00	2.94E-02	2.33E+00	3.92E+01	1.15E+00	2.62E-03	1.68E+01	4.40E-02	3.85E-01	1.14E+00	4.03E-01	2.20E+01	1.17E+00	2.19E+01	1.84E-02
UM-250S-500E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-250E (2-6")	7.94E-02	NA	NA	NA	NA	5.00E-02	0.00E+00	0.00E+00	0.00E+00	2.94E-02	2.33E+00	4.55E+01	1.34E+00	2.62E-03	1.95E+01	5.11E-02	3.85E-01	1.14E+00	4.68E-01	2.20E+01	1.17E+00	2.19E+01	2.14E-02
UM-250S-250E (2-6")	7.94E-02	NA	NA	NA	NA	5.00E-02	0.00E+00	0.00E+00	0.00E+00	2.94E-02	2.33E+00	2.24E+01	6.57E-01	2.62E-03	9.58E+00	2.51E-02	3.85E-01	1.14E+00	2.30E-01	2.20E+01	1.17E+00	2.19E+01	1.05E-02
BRSD-7 (2-6")	7.94E-02	NA	NA	NA	NA	5.00E-02	0.00E+00	0.00E+00	0.00E+00	2.94E-02	2.33E+00	2.80E+01	8.22E-01	2.62E-03	1.20E+01	3.14E-02	3.85E-01	1.14E+00	2.88E-01	2.20E+01	1.17E+00	2.19E+01	1.32E-02
BRSD-8 (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-500S-500E (2-6")	7.94E-02	NA	NA	NA	NA	5.00E-02	0.00E+00	0.00E+00	0.00E+00	2.94E-02	2.33E+00	2.17E+01	6.36E-01	2.62E-03	9.28E+00	2.43E-02	3.85E-01	1.14E+00	2.23E-01	2.20E+01	1.17E+00	2.19E+01	1.02E-02
BRSD-9 (2-6")	7.94E-02	NA	NA	NA	NA	5.00E-02	0.00E+00	0.00E+00	0.00E+00	2.94E-02	2.33E+00	4.06E+01	1.19E+00	2.62E-03	1.74E+01	4.56E-02	3.85E-01	1.14E+00	4.18E-01	2.20E+01	1.17E+00	2.19E+01	1.91E-02
BRSD-10 (2-6")	7.94E-02	NA	NA	NA	NA	5.00E-02	0.00E+00	0.00E+00	0.00E+00	2.94E-02	2.33E+00	8.36E+01	2.45E+00	2.62E-03	3.58E+01	9.38E-02	3.85E-01	1.14E+00	8.59E-01	2.20E+01	1.17E+00	2.19E+01	3.92E-02
BRSD-11 (2-6")	7.94E-02	NA	NA	NA	NA	5.00E-02	0.00E+00	0.00E+00	0.00E+00	2.94E-02	2.33E+00	2.52E+01	7.40E-01	2.62E-03	1.08E+01	2.83E-02	3.85E-01	1.14E+00	2.59E-01	2.20E+01	1.17E+00	2.19E+01	1.18E-02
Eastern Upper Marsh (6-12")																					**Maximum HQ (Western Upper Marsh, 2-6")**		**5.41E-02**
UM-1000S-3500E (6-12")	7.94E-02	NA	NA	NA	NA	5.00E-02	0.00E+00	0.00E+00	0.00E+00	2.94E-02	8.42E+00	1.06E+02	3.12E+00	2.62E-03	1.26E+01	3.30E-02	3.85E-01	1.14E+00	1.06E+00	2.20E+01	1.17E+00	2.19E+01	4.85E-02
BRSD-15 (6-12")	7.94E-02	NA	NA	NA	NA	5.00E-02	0.00E+00	0.00E+00	0.00E+00	2.94E-02	8.42E+00	1.42E+02	4.15E+00	2.62E-03	1.68E+01	4.40E-02	3.85E-01	1.14E+00	1.42E+00	2.20E+01	1.17E+00	2.19E+01	6.47E-02
BRSD-4 (6-12")	7.94E-02	NA	NA	NA	NA	5.00E-02	0.00E+00	0.00E+00	0.00E+00	2.94E-02	8.42E+00	1.72E+02	5.05E+00	2.62E-03	2.04E+01	5.34E-02	3.85E-01	1.14E+00	1.72E+00	2.20E+01	1.17E+00	2.19E+01	7.85E-02
UM-750S-3500E (6-12")	7.94E-02	NA	NA	NA	NA	5.00E-02	0.00E+00	0.00E+00	0.00E+00	2.94E-02	8.42E+00	1.16E+03	3.41E+01	2.62E-03	1.38E+02	3.61E-01	3.85E-01	1.14E+00	1.16E+01	2.20E+01	1.17E+00	2.19E+01	5.31E-01
BRSD-16 (6-12")	7.94E-02	NA	NA	NA	NA	5.00E-02	0.00E+00	0.00E+00	0.00E+00	2.94E-02	8.42E+00	7.82E+02	2.30E+01	2.62E-03	9.28E+01	2.43E-01	3.85E-01	1.14E+00	7.82E+00	2.20E+01	1.17E+00	2.19E+01	3.57E-01
UM-750S-3000E (6-12")	7.94E-02	NA	NA	NA	NA	5.00E-02	0.00E+00	0.00E+00	0.00E+00	2.94E-02	8.42E+00	1.20E+03	3.51E+01	2.62E-03	1.42E+02	3.72E-01	3.85E-01	1.14E+00	1.20E+01	2.20E+01	1.17E+00	2.19E+01	5.47E-01
BRSD-3 (6-12")	7.94E-02	NA	NA	NA	NA	5.00E-02	0.00E+00	0.00E+00	0.00E+00	2.94E-02	8.42E+00	1.68E+02	4.92E+00	2.62E-03	1.99E+01	5.21E-02	3.85E-01	1.14E+00	1.68E+00	2.20E+01	1.17E+00	2.19E+01	7.66E-02
UM-500S-3250E (6-12")	7.94E-02	NA	NA	NA	NA	5.00E-02	0.00E+00	0.00E+00	0.00E+00	2.94E-02	8.42E+00	8.42E+02	2.47E+01	2.62E-03	1.00E+02	2.62E-01	3.85E-01	1.14E+00	8.43E+00	2.20E+01	1.17E+00	2.19E+01	3.85E-01
UM-500S-3000E (6-12")	7.94E-02	NA	NA	NA	NA	5.00E-02	0.00E+00	0.00E+00	0.00E+00	2.94E-02	8.42E+00	1.27E+02	3.73E+00	2.62E-03	1.51E+01	3.95E-02	3.85E-01	1.14E+00	1.27E+00	2.20E+01	1.17E+00	2.19E+01	5.81E-02
UM-500S-2750E (6-12")	7.94E-02	NA	NA	NA	NA	5.00E-02	0.00E+00	0.00E+00	0.00E+00	2.94E-02	8.42E+00	5.71E+02	1.68E+01	2.62E-03	6.78E+01	1.78E-01	3.85E-01	1.14E+00	5.72E+00	2.20E+01	1.17E+00	2.19E+01	2.61E-01
BRSD-25 (6-12")	7.94E-02	NA	NA	NA	NA	5.00E-02	0.00E+00	0.00E+00	0.00E+00	2.94E-02	8.42E+00	2.44E+02	7.17E+00	2.62E-03	2.90E+01	7.59E-02	3.85E-01	1.14E+00	2.44E+00	2.20E+01	1.17E+00	2.19E+01	1.12E-01
UM-250S-3000E (6-12")	7.94E-02	NA	NA	NA	NA	5.00E-02	0.00E+00	0.00E+00	0.00E+00	2.94E-02	8.42E+00	1.54E+03	4.53E+01	2.62E-03	1.83E+02	4.79E-01	3.85E-01	1.14E+00	1.54E+01	2.20E+01	1.17E+00	2.19E+01	7.04E-01
UM-250S-3250E (6-12")	7.94E-02	NA	NA	NA	NA	5.00E-02	0.00E+00	0.00E+00	0.00E+00	2.94E-02	8.42E+00	8.84E+01	2.60E+00	2.62E-03	1.05E+01	2.75E-02	3.85E-01	1.14E+00	8.85E-01	2.20E+01	1.17E+00	2.19E+01	4.04E-02
BRSD-24 (6-12")	7.94E-02	NA	NA	NA	NA	5.00E-02	0.00E+00	0.00E+00	0.00E+00	2.94E-02	8.42E+00	5.34E+02	1.57E+01	2.62E-03	6.34E+01	1.66E-01	3.85E-01	1.14E+00	5.34E+00	2.20E+01	1.17E+00	2.19E+01	2.44E-01
UM-250S-2750E (6-12")	7.94E-02	NA	NA	NA	NA	5.00E-02	0.00E+00	0.00E+00	0.00E+00	2.94E-02	8.42E+00	5.56E+02	1.63E+01	2.62E-03	6.60E+01	1.73E-01	3.85E-01	1.14E+00	5.56E+00	2.20E+01	1.17E+00	2.19E+01	2.54E-01
UM-250S-2500E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-2 (6-12")	7.94E-02	NA	NA	NA	NA	5.00E-02	0.00E+00	0.00E+00	0.00E+00	2.94E-02	8.42E+00	6.16E+02	1.81E+01	2.62E-03	7.31E+01	1.91E-01	3.85E-01	1.14E+00	6.16E+00	2.20E+01	1.17E+00	2.19E+01	2.81E-01

TABLE C-12BB: ARSENIC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 12 - MARSH, WETLAND RECEPTORS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **118.73**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Mallard (Omnivorous Birds)																							
UM-500N-2500E (6-12")	7.94E-02	NA	NA	NA	NA	5.00E-02	0.00E+00	0.00E+00	0.00E+00	2.94E-02	8.42E+00	9.77E+01	2.87E+00	2.62E-03	1.16E+01	3.04E-02	3.85E-01	1.14E+00	9.78E-01	2.20E+01	1.17E+00	2.19E+01	4.47E-02
UM-250N-2500E (6-12")	7.94E-02	NA	NA	NA	NA	5.00E-02	0.00E+00	0.00E+00	0.00E+00	2.94E-02	8.42E+00	7.68E+02	2.26E+01	2.62E-03	9.12E+01	2.39E-01	3.85E-01	1.14E+00	7.69E+00	2.20E+01	1.17E+00	2.19E+01	3.51E-01
UM-250N-2250E (6-12")	7.94E-02	NA	NA	NA	NA	5.00E-02	0.00E+00	0.00E+00	0.00E+00	2.94E-02	8.42E+00	8.36E+01	2.46E+00	2.62E-03	9.93E+00	2.60E-02	3.85E-01	1.14E+00	8.37E-01	2.20E+01	1.17E+00	2.19E+01	3.82E-02
Western Upper Marsh (6-12")																						**Maximum HQ (Eastern Upper Marsh, 6-12")**	**7.04E-01**
UM-500S-2500E (6-12")	7.94E-02	NA	NA	NA	NA	5.00E-02	0.00E+00	0.00E+00	0.00E+00	2.94E-02	2.33E+00	2.57E+01	7.54E-01	2.62E-03	1.10E+01	2.88E-02	3.85E-01	1.14E+00	2.64E-01	2.20E+01	1.17E+00	2.19E+01	1.21E-02
UM-0N-2000E (6-12")	7.94E-02	NA	NA	NA	NA	5.00E-02	0.00E+00	0.00E+00	0.00E+00	2.94E-02	2.33E+00	1.38E+02	4.04E+00	2.62E-03	5.90E+01	1.55E-01	3.85E-01	1.14E+00	1.42E+00	2.20E+01	1.17E+00	2.19E+01	6.47E-02
UM-500S-2000E (6-12")	7.94E-02	NA	NA	NA	NA	5.00E-02	0.00E+00	0.00E+00	0.00E+00	2.94E-02	2.33E+00	3.57E+01	1.05E+00	2.62E-03	1.53E+01	4.01E-02	3.85E-01	1.14E+00	3.67E-01	2.20E+01	1.17E+00	2.19E+01	1.68E-02
UM-250N-1750E (6-12")	7.94E-02	NA	NA	NA	NA	5.00E-02	0.00E+00	0.00E+00	0.00E+00	2.94E-02	2.33E+00	2.71E+01	7.95E-01	2.62E-03	1.16E+01	3.04E-02	3.85E-01	1.14E+00	2.78E-01	2.20E+01	1.17E+00	2.19E+01	1.27E-02
UM-0N-1500E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-250S-1500E (6-12")	7.94E-02	NA	NA	NA	NA	5.00E-02	0.00E+00	0.00E+00	0.00E+00	2.94E-02	2.33E+00	4.08E+01	1.20E+00	2.62E-03	1.75E+01	4.58E-02	3.85E-01	1.14E+00	4.20E-01	2.20E+01	1.17E+00	2.19E+01	1.92E-02
UM-250S-1250E (6-12")	7.94E-02	NA	NA	NA	NA	5.00E-02	0.00E+00	0.00E+00	0.00E+00	2.94E-02	2.33E+00	4.44E+01	1.30E+00	2.62E-03	1.90E+01	4.98E-02	3.85E-01	1.14E+00	4.56E-01	2.20E+01	1.17E+00	2.19E+01	2.08E-02
BRSD-6 (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-1000E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-750E (6-12")	7.94E-02	NA	NA	NA	NA	5.00E-02	0.00E+00	0.00E+00	0.00E+00	2.94E-02	2.33E+00	2.89E+01	8.50E-01	2.62E-03	1.24E+01	3.25E-02	3.85E-01	1.14E+00	2.98E-01	2.20E+01	1.17E+00	2.19E+01	1.36E-02
UM-0N-500E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-250S-500E (6-12")	7.94E-02	NA	NA	NA	NA	5.00E-02	0.00E+00	0.00E+00	0.00E+00	2.94E-02	2.33E+00	4.13E+01	1.21E+00	2.62E-03	1.77E+01	4.64E-02	3.85E-01	1.14E+00	4.25E-01	2.20E+01	1.17E+00	2.19E+01	1.94E-02
UM-0N-250E (6-12")	7.94E-02	NA	NA	NA	NA	5.00E-02	0.00E+00	0.00E+00	0.00E+00	2.94E-02	2.33E+00	3.43E+01	1.01E+00	2.62E-03	1.47E+01	3.85E-02	3.85E-01	1.14E+00	3.53E-01	2.20E+01	1.17E+00	2.19E+01	1.61E-02
UM-250S-250E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-7 (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-8 (6-12")	7.94E-02	NA	NA	NA	NA	5.00E-02	0.00E+00	0.00E+00	0.00E+00	2.94E-02	2.33E+00	2.40E+01	7.06E-01	2.62E-03	1.03E+01	2.70E-02	3.85E-01	1.14E+00	2.47E-01	2.20E+01	1.17E+00	2.19E+01	1.13E-02
UM-500S-500E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-9 (6-12")	7.94E-02	NA	NA	NA	NA	5.00E-02	0.00E+00	0.00E+00	0.00E+00	2.94E-02	2.33E+00	3.78E+01	1.11E+00	2.62E-03	1.62E+01	4.24E-02	3.85E-01	1.14E+00	3.89E-01	2.20E+01	1.17E+00	2.19E+01	1.78E-02
BRSD-10 (6-12")	7.94E-02	NA	NA	NA	NA	5.00E-02	0.00E+00	0.00E+00	0.00E+00	2.94E-02	2.33E+00	8.94E+01	2.62E+00	2.62E-03	3.83E+01	1.00E-01	3.85E-01	1.14E+00	9.19E-01	2.20E+01	1.17E+00	2.19E+01	4.20E-02
BRSD-11 (6-12")	7.94E-02	NA	NA	NA	NA	5.00E-02	0.00E+00	0.00E+00	0.00E+00	2.94E-02	2.33E+00	2.31E+01	6.78E-01	2.62E-03	9.89E+00	2.59E-02	3.85E-01	1.14E+00	2.37E-01	2.20E+01	1.17E+00	2.19E+01	1.08E-02
Middle Marsh (0-2")																						**Maximum HQ (Western Upper Marsh, 6-12")**	**6.47E-02**
MMSD-201 (0-2")	7.94E-02	NA	NA	NA	NA	5.00E-02	0.00E+00	0.00E+00	0.00E+00	2.94E-02	2.33E+00	4.90E+01	1.44E+00	2.62E-03	2.10E+01	5.50E-02	3.85E-01	1.14E+00	5.04E-01	2.20E+01	1.17E+00	2.19E+01	2.30E-02
MMSD-202 (0-2")	7.94E-02	NA	NA	NA	NA	5.00E-02	0.00E+00	0.00E+00	0.00E+00	2.94E-02	2.33E+00	5.14E+01	1.51E+00	2.62E-03	2.20E+01	5.76E-02	3.85E-01	1.14E+00	5.28E-01	2.20E+01	1.17E+00	2.19E+01	2.41E-02
Middle Marsh (2-6")																						**Maximum HQ (Middle Marsh, 0-2")**	**2.41E-02**
MMSD-201 (2-6")	7.94E-02	NA	NA	NA	NA	5.00E-02	0.00E+00	0.00E+00	0.00E+00	2.94E-02	2.33E+00	4.90E+01	1.44E+00	2.62E-03	2.10E+01	5.50E-02	3.85E-01	1.14E+00	5.04E-01	2.20E+01	1.17E+00	2.19E+01	2.30E-02
MMSD-202 (2-6")	7.94E-02	NA	NA	NA	NA	5.00E-02	0.00E+00	0.00E+00	0.00E+00	2.94E-02	2.33E+00	5.37E+01	1.58E+00	2.62E-03	2.30E+01	6.02E-02	3.85E-01	1.14E+00	5.52E-01	2.20E+01	1.17E+00	2.19E+01	2.52E-02
Middle Marsh (6-12")																						**Maximum HQ (Middle Marsh, 2-6")**	**2.52E-02**
MMSD-201 (6-12")	7.94E-02	NA	NA	NA	NA	5.00E-02	0.00E+00	0.00E+00	0.00E+00	2.94E-02	2.33E+00	5.60E+01	1.64E+00	2.62E-03	2.40E+01	6.29E-02	3.85E-01	1.14E+00	5.76E-01	2.20E+01	1.17E+00	2.19E+01	2.63E-02
MMSD-202 (6-12")	7.94E-02	NA	NA	NA	NA	5.00E-02	0.00E+00	0.00E+00	0.00E+00	2.94E-02	2.33E+00	3.73E+01	1.10E+00	2.62E-03	1.60E+01	4.19E-02	3.85E-01	1.14E+00	3.84E-01	2.20E+01	1.17E+00	2.19E+01	1.75E-02
Lower Marsh (0-2")																						**Maximum HQ (Middle Marsh, 6-12")**	**2.63E-02**
LMSD-201 (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
LMSD-202 (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
LMSD-203 (0-2")	7.94E-02	NA	NA	NA	NA	5.00E-02	0.00E+00	0.00E+00	0.00E+00	2.94E-02	2.33E+00	5.60E+01	1.64E+00	2.62E-03	2.40E+01	6.29E-02	3.85E-01	1.14E+00	5.76E-01	2.20E+01	1.17E+00	2.19E+01	2.63E-02
LMSD-204 (0-2")	7.94E-02	NA	NA	NA	NA	5.00E-02	0.00E+00	0.00E+00	0.00E+00	2.94E-02	2.33E+00	3.73E+01	1.10E+00	2.62E-03	1.60E+01	4.19E-02	3.85E-01	1.14E+00	3.84E-01	2.20E+01	1.17E+00	2.19E+01	1.75E-02
Lower Marsh (2-6")																						**Maximum HQ (Lower Marsh, 0-2")**	**2.63E-02**
LMSD-201 (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
LMSD-202 (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
LMSD-203 (2-6")	7.94E-02	NA	NA	NA	NA	5.00E-02	0.00E+00	0.00E+00	0.00E+00	2.94E-02	2.33E+00	5.37E+01	1.58E+00	2.62E-03	2.30E+01	6.02E-02	3.85E-01	1.14E+00	5.52E-01	2.20E+01	1.17E+00	2.19E+01	2.52E-02
LMSD-204 (2-6")	7.94E-02	NA	NA	NA	NA	5.00E-02	0.00E+00	0.00E+00	0.00E+00	2.94E-02	2.33E+00	3.73E+01	1.10E+00	2.62E-03	1.60E+01	4.19E-02	3.85E-01	1.14E+00	3.84E-01	2.20E+01	1.17E+00	2.19E+01	1.75E-02
Lower Marsh (6-12")																						**Maximum HQ (Lower Marsh, 2-6")**	**2.52E-02**
LMSD-201 (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
LMSD-202 (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
LMSD-203 (6-12")	7.94E-02	NA	NA	NA	NA	5.00E-02	0.00E+00	0.00E+00	0.00E+00	2.94E-02	2.33E+00	5.84E+01	1.71E+00	2.62E-03	2.50E+01	6.55E-02	3.85E-01	1.14E+00	6.00E-01	2.20E+01	1.17E+00	2.19E+01	2.74E-02
LMSD-204 (6-12")	7.94E-02	NA	NA	NA	NA	5.00E-02	0.00E+00	0.00E+00	0.00E+00	2.94E-02	2.33E+00	3.73E+01	1.10E+00	2.62E-03	1.60E+01	4.19E-02	3.85E-01	1.14E+00	3.84E-01	2.20E+01	1.17E+00	2.19E+01	1.75E-02
																						Maximum HQ (Lower Marsh, 6-12")	**2.74E-02**
Muskrat (Herbivorous Mammals)																							
Reference Sites																							
BRSD-5 (0-2")	6.27E-02	NA	NA	NA	NA	6.27E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	1.51E-03	1.72E+01	2.59E-02	1.00E+00	8.73E-01	2.97E-02	4.70E+00	1.10E-01	4.15E+00	7.15E-03
BRSD-5 (2-6")	6.27E-02	NA	NA	NA	NA	6.27E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	1.51E-03	1.92E+01	2.89E-02	1.00E+00	8.73E-01	3.31E-02	4.70E+00	1.10E-01	4.15E+00	7.98E-03
BRSD-5 (6-12")	6.27E-02	NA	NA	NA	NA	6.27E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	1.51E-03	2.46E+01	3.70E-02	1.00E+00	8.73E-01	4.24E-02	4.70E+00	1.10E-01	4.15E+00	1.02E-02
PGBG-1 (0-2")	6.27E-02	NA	NA	NA	NA	6.27E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	1.51E-03	1.24E+01	1.87E-02	1.00E+00	8.73E-01	2.14E-02	4.70E+00	1.10E-01	4.15E+00	5.15E-03
PGBG-1 (2-6")	6.27E-02	NA	NA	NA	NA	6.27E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	1.51E-03	9.12E+00	1.37E-02	1.00E+00	8.73E-01	1.57E-02	4.70E+00	1.10E-01	4.15E+00	3.79E-03
PGBG-1 (6-12")	6.27E-02	NA	NA	NA	NA	6.27E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	1.51E-03	9.40E+00	1.42E-02	1.00E+00	8.73E-01	1.62E-02	4.70E+00	1.10E-01	4.15E+00	3.91E-03

TABLE C-12BB: ARSENIC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 12 - MARSH, WETLAND RECEPTORS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **118.73**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Muskrat (Herbivorous Mammals)																							
PGBG-2 (0-2")	6.27E-02	NA	NA	NA	NA	6.27E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	1.51E-03	1.88E+01	2.83E-02	1.00E+00	8.73E-01	3.24E-02	4.70E+00	1.10E-01	4.15E+00	7.81E-03
PGBG-2 (2-6")	6.27E-02	NA	NA	NA	NA	6.27E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	1.51E-03	1.85E+01	2.79E-02	1.00E+00	8.73E-01	3.19E-02	4.70E+00	1.10E-01	4.15E+00	7.69E-03
PGBG-2 (6-12")	6.27E-02	NA	NA	NA	NA	6.27E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	1.51E-03	3.23E+01	4.86E-02	1.00E+00	8.73E-01	5.57E-02	4.70E+00	1.10E-01	4.15E+00	1.34E-02
Eastern Upper Marsh (0-2")																					**Minimum HQ (Reference Sites)**		**3.79E-03**
UM-1000S-3500E (0-2")	6.27E-02	NA	NA	NA	NA	6.27E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	1.51E-03	2.38E+02	3.58E-01	1.00E+00	8.73E-01	4.10E-01	4.70E+00	1.10E-01	4.15E+00	9.89E-02
BRSD-15 (0-2")	6.27E-02	NA	NA	NA	NA	6.27E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	1.51E-03	1.49E+01	2.24E-02	1.00E+00	8.73E-01	2.57E-02	4.70E+00	1.10E-01	4.15E+00	6.19E-03
BRSD-4 (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-750S-3500E (0-2")	6.27E-02	NA	NA	NA	NA	6.27E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	1.51E-03	1.16E+02	1.75E-01	1.00E+00	8.73E-01	2.00E-01	4.70E+00	1.10E-01	4.15E+00	4.82E-02
BRSD-16 (0-2")	6.27E-02	NA	NA	NA	NA	6.27E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	1.51E-03	1.93E+02	2.91E-01	1.00E+00	8.73E-01	3.33E-01	4.70E+00	1.10E-01	4.15E+00	8.02E-02
UM-750S-3000E (0-2")	6.27E-02	NA	NA	NA	NA	6.27E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	1.51E-03	1.64E+02	2.47E-01	1.00E+00	8.73E-01	2.83E-01	4.70E+00	1.10E-01	4.15E+00	6.81E-02
BRSD-3 (0-2")	6.27E-02	NA	NA	NA	NA	6.27E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	1.51E-03	3.80E+01	5.72E-02	1.00E+00	8.73E-01	6.55E-02	4.70E+00	1.10E-01	4.15E+00	1.58E-02
UM-500S-3250E (0-2")	6.27E-02	NA	NA	NA	NA	6.27E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	1.51E-03	1.38E+02	2.08E-01	1.00E+00	8.73E-01	2.38E-01	4.70E+00	1.10E-01	4.15E+00	5.73E-02
UM-500S-3000E (0-2")	6.27E-02	NA	NA	NA	NA	6.27E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	1.51E-03	8.74E+01	1.32E-01	1.00E+00	8.73E-01	1.51E-01	4.70E+00	1.10E-01	4.15E+00	3.63E-02
UM-500S-2750E (0-2")	6.27E-02	NA	NA	NA	NA	6.27E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	1.51E-03	1.56E+02	2.35E-01	1.00E+00	8.73E-01	2.69E-01	4.70E+00	1.10E-01	4.15E+00	6.48E-02
BRSD-25 (0-2")	6.27E-02	NA	NA	NA	NA	6.27E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	1.51E-03	6.60E+01	9.94E-02	1.00E+00	8.73E-01	1.14E-01	4.70E+00	1.10E-01	4.15E+00	2.74E-02
UM-250S-3000E (0-2")	6.27E-02	NA	NA	NA	NA	6.27E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	1.51E-03	1.07E+02	1.61E-01	1.00E+00	8.73E-01	1.85E-01	4.70E+00	1.10E-01	4.15E+00	4.45E-02
UM-250S-3250E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-24 (0-2")	6.27E-02	NA	NA	NA	NA	6.27E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	1.51E-03	1.93E+02	2.91E-01	1.00E+00	8.73E-01	3.33E-01	4.70E+00	1.10E-01	4.15E+00	8.02E-02
UM-250S-2750E (0-2")	6.27E-02	NA	NA	NA	NA	6.27E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	1.51E-03	1.65E+02	2.48E-01	1.00E+00	8.73E-01	2.85E-01	4.70E+00	1.10E-01	4.15E+00	6.86E-02
UM-250S-2500E (0-2")	6.27E-02	NA	NA	NA	NA	6.27E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	1.51E-03	1.23E+01	1.85E-02	1.00E+00	8.73E-01	2.12E-02	4.70E+00	1.10E-01	4.15E+00	5.11E-03
UM-0N-2500E (0-2")	6.27E-02	NA	NA	NA	NA	6.27E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	1.51E-03	1.17E+02	1.76E-01	1.00E+00	8.73E-01	2.02E-01	4.70E+00	1.10E-01	4.15E+00	4.86E-02
UM-0N-250E (0-2")	6.27E-02	NA	NA	NA	NA	6.27E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	1.51E-03	1.30E+01	1.96E-02	1.00E+00	8.73E-01	2.24E-02	4.70E+00	1.10E-01	4.15E+00	5.40E-03
BRSD-2 (0-2")	6.27E-02	NA	NA	NA	NA	6.27E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	1.51E-03	1.77E+02	2.66E-01	1.00E+00	8.73E-01	3.05E-01	4.70E+00	1.10E-01	4.15E+00	7.35E-02
UM-500N-2500E (0-2")	6.27E-02	NA	NA	NA	NA	6.27E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	1.51E-03	1.13E+01	1.70E-02	1.00E+00	8.73E-01	1.95E-02	4.70E+00	1.10E-01	4.15E+00	4.70E-03
UM-250N-2500E (0-2")	6.27E-02	NA	NA	NA	NA	6.27E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	1.51E-03	9.69E+01	1.46E-01	1.00E+00	8.73E-01	1.67E-01	4.70E+00	1.10E-01	4.15E+00	4.03E-02
UM-250N-2250E (0-2")	6.27E-02	NA	NA	NA	NA	6.27E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	1.51E-03	1.77E+02	2.66E-01	1.00E+00	8.73E-01	3.05E-01	4.70E+00	1.10E-01	4.15E+00	7.35E-02
Western Upper Marsh (0-2")																					**Maximum HQ (Eastern Upper Marsh, 0-2")**		**9.89E-02**
UM-500S-2500E (0-2")	6.27E-02	NA	NA	NA	NA	6.27E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	1.51E-03	1.22E+01	1.84E-02	1.00E+00	8.73E-01	2.10E-02	4.70E+00	1.10E-01	4.15E+00	5.07E-03
UM-0N-2000E (0-2")	6.27E-02	NA	NA	NA	NA	6.27E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	1.51E-03	4.72E+01	7.11E-02	1.00E+00	8.73E-01	8.14E-02	4.70E+00	1.10E-01	4.15E+00	1.96E-02
UM-500S-2000E (0-2")	6.27E-02	NA	NA	NA	NA	6.27E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	1.51E-03	2.10E+01	3.16E-02	1.00E+00	8.73E-01	3.62E-02	4.70E+00	1.10E-01	4.15E+00	8.73E-03
UM-250N-1750E (0-2")	6.27E-02	NA	NA	NA	NA	6.27E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	1.51E-03	1.26E+01	1.90E-02	1.00E+00	8.73E-01	2.17E-02	4.70E+00	1.10E-01	4.15E+00	5.24E-03
UM-0N-1500E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-250S-1500E (0-2")	6.27E-02	NA	NA	NA	NA	6.27E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	1.51E-03	3.33E+01	5.01E-02	1.00E+00	8.73E-01	5.74E-02	4.70E+00	1.10E-01	4.15E+00	1.38E-02
UM-250S-1250E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-6 (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-1000E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-750E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-500E (0-2")	6.27E-02	NA	NA	NA	NA	6.27E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	1.51E-03	1.01E+01	1.52E-02	1.00E+00	8.73E-01	1.74E-02	4.70E+00	1.10E-01	4.15E+00	4.20E-03
UM-250S-500E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-250S-250E (0-2")	6.27E-02	NA	NA	NA	NA	6.27E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	1.51E-03	1.45E+01	2.18E-02	1.00E+00	8.73E-01	2.50E-02	4.70E+00	1.10E-01	4.15E+00	6.02E-03
BRSD-7 (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-8 (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-500S-500E (0-2")	6.27E-02	NA	NA	NA	NA	6.27E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	1.51E-03	1.18E+01	1.78E-02	1.00E+00	8.73E-01	2.03E-02	4.70E+00	1.10E-01	4.15E+00	4.90E-03
BRSD-9 (0-2")	6.27E-02	NA	NA	NA	NA	6.27E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	1.51E-03	2.30E+01	3.46E-02	1.00E+00	8.73E-01	3.97E-02	4.70E+00	1.10E-01	4.15E+00	9.56E-03
BRSD-10 (0-2")	6.27E-02	NA	NA	NA	NA	6.27E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	1.51E-03	3.03E+01	4.56E-02	1.00E+00	8.73E-01	5.23E-02	4.70E+00	1.10E-01	4.15E+00	1.26E-02
BRSD-11 (0-2")	6.27E-02	NA	NA	NA	NA	6.27E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	1.51E-03	1.47E+01	2.21E-02	1.00E+00	8.73E-01	2.54E-02	4.70E+00	1.10E-01	4.15E+00	6.11E-03
Eastern Upper Marsh (2-6")																					**Maximum HQ (Western Upper Marsh, 0-2")**		**1.96E-02**
UM-1000S-3500E (2-6")	6.27E-02	NA	NA	NA	NA	6.27E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	1.51E-03	3.81E+01	5.74E-02	1.00E+00	8.73E-01	6.57E-02	4.70E+00	1.10E-01	4.15E+00	1.58E-02
BRSD-15 (2-6")	6.27E-02	NA	NA	NA	NA	6.27E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	1.51E-03	1.56E+01	2.35E-02	1.00E+00	8.73E-01	2.69E-02	4.70E+00	1.10E-01	4.15E+00	6.48E-03
BRSD-4 (2-6")	6.27E-02	NA	NA	NA	NA	6.27E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	1.51E-03	9.85E+00	1.48E-02	1.00E+00	8.73E-01	1.70E-02	4.70E+00	1.10E-01	4.15E+00	4.09E-03
UM-750S-3500E (2-6")	6.27E-02	NA	NA	NA	NA	6.27E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	1.51E-03	1.57E+02	2.36E-01	1.00E+00	8.73E-01	2.71E-01	4.70E+00	1.10E-01	4.15E+00	6.52E-02
BRSD-16 (2-6")	6.27E-02	NA	NA	NA	NA	6.27E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	1.51E-03	5.07E+02	7.63E-01	1.00E+00	8.73E-01	8.74E-01	4.70E+00	1.10E-01	4.15E+00	2.11E-01
UM-750S-3000E (2-6")	6.27E-02	NA	NA	NA	NA	6.27E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	1.51E-03	1.43E+02	2.15E-01	1.00E+00	8.73E-01	2.47E-01	4.70E+00	1.10E-01	4.15E+00	5.94E-02
BRSD-3 (2-6")	6.27E-02	NA	NA	NA	NA	6.27E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	1.51E-03	5.42E+01	8.16E-02	1.00E+00	8.73E-01	9.35E-02	4.70E+00	1.10E-01	4.15E+00	2.25E-02
UM-500S-3250E (2-6")	6.27E-02	NA	NA	NA	NA	6.27E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	1.51E-03	1.50E+02	2.26E-01	1.00E+00	8.73E-01	2.59E-01	4.70E+00	1.10E-01	4.15E+00	6.23E-02
UM-500S-3000E (2-6")	6.27E-02	NA	NA	NA	NA	6.27E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	1.51E-03	2.26E+01	3.40E-02	1.00E+00	8.73E-01	3.90E-02	4.70E+00	1.10E-01	4.15E+00	9.39E-03
UM-500S-2750E (2-6")	6.27E-02	NA	NA	NA	NA	6.27E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	1.51E-03	7.42E+01	1.12E-01	1.00E+00	8.73E-01	1.28E-01	4.70E+00	1.10E-01	4.15E+00	3.08E-02

TABLE C-12BB: ARSENIC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 12 - MARSH, WETLAND RECEPTORS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 118.73

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Muskrat (Herbivorous Mammals)																							
BRSD-25 (2-6")	6.27E-02	NA	NA	NA	NA	6.27E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	1.51E-03	6.00E+01	9.03E-02	1.00E+00	8.73E-01	1.03E-01	4.70E+00	1.10E-01	4.15E+00	2.49E-02
UM-250S-3000E (2-6")	6.27E-02	NA	NA	NA	NA	6.27E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	1.51E-03	1.62E+02	2.44E-01	1.00E+00	8.73E-01	2.79E-01	4.70E+00	1.10E-01	4.15E+00	6.73E-02
UM-250S-3250E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-24 (2-6")	6.27E-02	NA	NA	NA	NA	6.27E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	1.51E-03	1.19E+02	1.79E-01	1.00E+00	8.73E-01	2.05E-01	4.70E+00	1.10E-01	4.15E+00	4.94E-02
UM-250S-2750E (2-6")	6.27E-02	NA	NA	NA	NA	6.27E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	1.51E-03	1.41E+02	2.12E-01	1.00E+00	8.73E-01	2.43E-01	4.70E+00	1.10E-01	4.15E+00	5.86E-02
UM-0N-2500E (2-6")	6.27E-02	NA	NA	NA	NA	6.27E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	1.51E-03	1.03E+02	1.55E-01	1.00E+00	8.73E-01	1.78E-01	4.70E+00	1.10E-01	4.15E+00	4.28E-02
BRSD-2 (2-6")	6.27E-02	NA	NA	NA	NA	6.27E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	1.51E-03	1.32E+02	1.99E-01	1.00E+00	8.73E-01	2.28E-01	4.70E+00	1.10E-01	4.15E+00	5.48E-02
UM-500N-2500E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-250N-2500E (2-6")	6.27E-02	NA	NA	NA	NA	6.27E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	1.51E-03	1.16E+02	1.75E-01	1.00E+00	8.73E-01	2.00E-01	4.70E+00	1.10E-01	4.15E+00	4.82E-02
UM-250N-2250E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
Western Upper Marsh (2-6")																						**Maximum HQ (Eastern Upper Marsh, 2-6")**	**2.11E-01**
UM-500S-2500E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-2000E (2-6")	6.27E-02	NA	NA	NA	NA	6.27E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	1.51E-03	4.94E+01	7.44E-02	1.00E+00	8.73E-01	8.52E-02	4.70E+00	1.10E-01	4.15E+00	2.05E-02
UM-500S-2000E (2-6")	6.27E-02	NA	NA	NA	NA	6.27E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	1.51E-03	1.79E+01	2.69E-02	1.00E+00	8.73E-01	3.09E-02	4.70E+00	1.10E-01	4.15E+00	7.44E-03
UM-250N-1750E (2-6")	6.27E-02	NA	NA	NA	NA	6.27E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	1.51E-03	1.22E+01	1.84E-02	1.00E+00	8.73E-01	2.10E-02	4.70E+00	1.10E-01	4.15E+00	5.07E-03
UM-0N-1500E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-250S-1500E (2-6")	6.27E-02	NA	NA	NA	NA	6.27E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	1.51E-03	3.06E+01	4.61E-02	1.00E+00	8.73E-01	5.28E-02	4.70E+00	1.10E-01	4.15E+00	1.27E-02
UM-250S-1250E (2-6")	6.27E-02	NA	NA	NA	NA	6.27E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	1.51E-03	2.46E+01	3.70E-02	1.00E+00	8.73E-01	4.24E-02	4.70E+00	1.10E-01	4.15E+00	1.02E-02
BRSD-6 (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-1000E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-750E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-500E (2-6")	6.27E-02	NA	NA	NA	NA	6.27E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	1.51E-03	1.68E+01	2.53E-02	1.00E+00	8.73E-01	2.90E-02	4.70E+00	1.10E-01	4.15E+00	6.98E-03
UM-250S-500E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-250E (2-6")	6.27E-02	NA	NA	NA	NA	6.27E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	1.51E-03	1.95E+01	2.94E-02	1.00E+00	8.73E-01	3.36E-02	4.70E+00	1.10E-01	4.15E+00	8.10E-03
UM-250S-250E (2-6")	6.27E-02	NA	NA	NA	NA	6.27E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	1.51E-03	9.58E+00	1.44E-02	1.00E+00	8.73E-01	1.65E-02	4.70E+00	1.10E-01	4.15E+00	3.98E-03
BRSD-7 (2-6")	6.27E-02	NA	NA	NA	NA	6.27E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	1.51E-03	1.20E+01	1.81E-02	1.00E+00	8.73E-01	2.07E-02	4.70E+00	1.10E-01	4.15E+00	4.99E-03
BRSD-8 (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-500S-500E (2-6")	6.27E-02	NA	NA	NA	NA	6.27E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	1.51E-03	9.28E+00	1.40E-02	1.00E+00	8.73E-01	1.60E-02	4.70E+00	1.10E-01	4.15E+00	3.86E-03
BRSD-9 (2-6")	6.27E-02	NA	NA	NA	NA	6.27E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	1.51E-03	1.74E+01	2.62E-02	1.00E+00	8.73E-01	3.00E-02	4.70E+00	1.10E-01	4.15E+00	7.23E-03
BRSD-10 (2-6")	6.27E-02	NA	NA	NA	NA	6.27E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	1.51E-03	3.58E+01	5.39E-02	1.00E+00	8.73E-01	6.17E-02	4.70E+00	1.10E-01	4.15E+00	1.49E-02
BRSD-11 (2-6")	6.27E-02	NA	NA	NA	NA	6.27E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	1.51E-03	1.08E+01	1.63E-02	1.00E+00	8.73E-01	1.86E-02	4.70E+00	1.10E-01	4.15E+00	4.49E-03
Eastern Upper Marsh (6-12")																						**Maximum HQ (Western Upper Marsh, 2-6")**	**2.05E-02**
UM-1000S-3500E (6-12")	6.27E-02	NA	NA	NA	NA	6.27E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	1.51E-03	1.26E+01	1.90E-02	1.00E+00	8.73E-01	2.17E-02	4.70E+00	1.10E-01	4.15E+00	5.24E-03
BRSD-15 (6-12")	6.27E-02	NA	NA	NA	NA	6.27E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	1.51E-03	1.68E+01	2.53E-02	1.00E+00	8.73E-01	2.90E-02	4.70E+00	1.10E-01	4.15E+00	6.98E-03
BRSD-4 (6-12")	6.27E-02	NA	NA	NA	NA	6.27E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	1.51E-03	2.04E+01	3.07E-02	1.00E+00	8.73E-01	3.52E-02	4.70E+00	1.10E-01	4.15E+00	8.48E-03
UM-750S-3500E (6-12")	6.27E-02	NA	NA	NA	NA	6.27E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	1.51E-03	1.38E+02	2.08E-01	1.00E+00	8.73E-01	2.38E-01	4.70E+00	1.10E-01	4.15E+00	5.73E-02
BRSD-16 (6-12")	6.27E-02	NA	NA	NA	NA	6.27E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	1.51E-03	9.28E+01	1.40E-01	1.00E+00	8.73E-01	1.60E-01	4.70E+00	1.10E-01	4.15E+00	3.86E-02
UM-750S-3000E (6-12")	6.27E-02	NA	NA	NA	NA	6.27E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	1.51E-03	1.42E+02	2.14E-01	1.00E+00	8.73E-01	2.45E-01	4.70E+00	1.10E-01	4.15E+00	5.90E-02
BRSD-3 (6-12")	6.27E-02	NA	NA	NA	NA	6.27E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	1.51E-03	1.99E+01	3.00E-02	1.00E+00	8.73E-01	3.43E-02	4.70E+00	1.10E-01	4.15E+00	8.27E-03
UM-500S-3250E (6-12")	6.27E-02	NA	NA	NA	NA	6.27E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	1.51E-03	1.00E+02	1.51E-01	1.00E+00	8.73E-01	1.72E-01	4.70E+00	1.10E-01	4.15E+00	4.15E-02
UM-500S-3000E (6-12")	6.27E-02	NA	NA	NA	NA	6.27E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	1.51E-03	1.51E+01	2.27E-02	1.00E+00	8.73E-01	2.60E-02	4.70E+00	1.10E-01	4.15E+00	6.27E-03
UM-500S-2750E (6-12")	6.27E-02	NA	NA	NA	NA	6.27E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	1.51E-03	6.78E+01	1.02E-01	1.00E+00	8.73E-01	1.17E-01	4.70E+00	1.10E-01	4.15E+00	2.82E-02
BRSD-25 (6-12")	6.27E-02	NA	NA	NA	NA	6.27E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	1.51E-03	2.90E+01	4.37E-02	1.00E+00	8.73E-01	5.00E-02	4.70E+00	1.10E-01	4.15E+00	1.20E-02
UM-250S-3000E (6-12")	6.27E-02	NA	NA	NA	NA	6.27E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	1.51E-03	1.83E+02	2.76E-01	1.00E+00	8.73E-01	3.16E-01	4.70E+00	1.10E-01	4.15E+00	7.60E-02
UM-250S-3250E (6-12")	6.27E-02	NA	NA	NA	NA	6.27E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	1.51E-03	1.05E+01	1.58E-02	1.00E+00	8.73E-01	1.81E-02	4.70E+00	1.10E-01	4.15E+00	4.36E-03
BRSD-24 (6-12")	6.27E-02	NA	NA	NA	NA	6.27E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	1.51E-03	6.34E+01	9.55E-02	1.00E+00	8.73E-01	1.09E-01	4.70E+00	1.10E-01	4.15E+00	2.63E-02
UM-250S-2750E (6-12")	6.27E-02	NA	NA	NA	NA	6.27E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	1.51E-03	6.60E+01	9.94E-02	1.00E+00	8.73E-01	1.14E-01	4.70E+00	1.10E-01	4.15E+00	2.74E-02
UM-250S-2500E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-2 (6-12")	6.27E-02	NA	NA	NA	NA	6.27E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	1.51E-03	7.31E+01	1.10E-01	1.00E+00	8.73E-01	1.26E-01	4.70E+00	1.10E-01	4.15E+00	3.04E-02
UM-500N-2500E (6-12")	6.27E-02	NA	NA	NA	NA	6.27E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	1.51E-03	1.16E+01	1.75E-02	1.00E+00	8.73E-01	2.00E-02	4.70E+00	1.10E-01	4.15E+00	4.82E-03
UM-250N-2500E (6-12")	6.27E-02	NA	NA	NA	NA	6.27E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	1.51E-03	9.12E+01	1.37E-01	1.00E+00	8.73E-01	1.57E-01	4.70E+00	1.10E-01	4.15E+00	3.79E-02
UM-250N-2250E (6-12")	6.27E-02	NA	NA	NA	NA	6.27E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	1.51E-03	9.93E+00	1.50E-02	1.00E+00	8.73E-01	1.71E-02	4.70E+00	1.10E-01	4.15E+00	4.13E-03
Western Upper Marsh (6-12")																						**Maximum HQ (Eastern Upper Marsh, 6-12")**	**7.60E-02**
UM-500S-2500E (6-12")	6.27E-02	NA	NA	NA	NA	6.27E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	1.51E-03	1.10E+01	1.66E-02	1.00E+00	8.73E-01	1.90E-02	4.70E+00	1.10E-01	4.15E+00	4.57E-03
UM-0N-2000E (6-12")	6.27E-02	NA	NA	NA	NA	6.27E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	1.51E-03	5.90E+01	8.88E-02	1.00E+00	8.73E-01	1.02E-01	4.70E+00	1.10E-01	4.15E+00	2.45E-02
UM-500S-2000E (6-12")	6.27E-02	NA	NA	NA	NA	6.27E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	1.51E-03	1.53E+01	2.30E-02	1.00E+00	8.73E-01	2.64E-02	4.70E+00	1.10E-01	4.15E+00	6.36E-03
UM-250N-1750E (6-12")	6.27E-02	NA	NA	NA	NA	6.27E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	1.51E-03	1.16E+01	1.75E-02	1.00E+00	8.73E-01	2.00E-02	4.70E+00	1.10E-01	4.15E+00	4.82E-03

TABLE C-12BB: ARSENIC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 12 - MARSH, WETLAND RECEPTORS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **118.73**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Muskrat (Herbivorous Mammals)																							
UM-0N-1500E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-250S-1500E (6-12")	6.27E-02	NA	NA	NA	NA	6.27E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	1.51E-03	1.75E+01	2.63E-02	1.00E+00	8.73E-01	3.02E-02	4.70E+00	1.10E-01	4.15E+00	7.27E-03
UM-250S-1250E (6-12")	6.27E-02	NA	NA	NA	NA	6.27E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	1.51E-03	1.90E+01	2.86E-02	1.00E+00	8.73E-01	3.28E-02	4.70E+00	1.10E-01	4.15E+00	7.89E-03
BRSD-6 (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-1000E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-750E (6-12")	6.27E-02	NA	NA	NA	NA	6.27E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	1.51E-03	1.24E+01	1.87E-02	1.00E+00	8.73E-01	2.14E-02	4.70E+00	1.10E-01	4.15E+00	5.15E-03
UM-0N-500E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-250S-500E (6-12")	6.27E-02	NA	NA	NA	NA	6.27E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	1.51E-03	1.77E+01	2.66E-02	1.00E+00	8.73E-01	3.05E-02	4.70E+00	1.10E-01	4.15E+00	7.35E-03
UM-0N-250E (6-12")	6.27E-02	NA	NA	NA	NA	6.27E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	1.51E-03	1.47E+01	2.21E-02	1.00E+00	8.73E-01	2.54E-02	4.70E+00	1.10E-01	4.15E+00	6.11E-03
UM-250S-250E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-7 (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-8 (6-12")	6.27E-02	NA	NA	NA	NA	6.27E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	1.51E-03	1.03E+01	1.55E-02	1.00E+00	8.73E-01	1.78E-02	4.70E+00	1.10E-01	4.15E+00	4.28E-03
UM-500S-500E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-9 (6-12")	6.27E-02	NA	NA	NA	NA	6.27E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	1.51E-03	1.62E+01	2.44E-02	1.00E+00	8.73E-01	2.79E-02	4.70E+00	1.10E-01	4.15E+00	6.73E-03
BRSD-10 (6-12")	6.27E-02	NA	NA	NA	NA	6.27E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	1.51E-03	3.83E+01	5.77E-02	1.00E+00	8.73E-01	6.61E-02	4.70E+00	1.10E-01	4.15E+00	1.59E-02
BRSD-11 (6-12")	6.27E-02	NA	NA	NA	NA	6.27E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	1.51E-03	9.89E+00	1.49E-02	1.00E+00	8.73E-01	1.71E-02	4.70E+00	1.10E-01	4.15E+00	4.11E-03
Middle Marsh (0-2")																			**Maximum HQ (Western Upper Marsh, 6-12")**				**2.45E-02**
MMSD-201 (0-2")	6.27E-02	NA	NA	NA	NA	6.27E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	1.51E-03	2.10E+01	3.16E-02	1.00E+00	8.73E-01	3.62E-02	4.70E+00	1.10E-01	4.15E+00	8.73E-03
MMSD-202 (0-2")	6.27E-02	NA	NA	NA	NA	6.27E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	1.51E-03	2.20E+01	3.31E-02	1.00E+00	8.73E-01	3.79E-02	4.70E+00	1.10E-01	4.15E+00	9.14E-03
Middle Marsh (2-6")																			**Maximum HQ (Middle Marsh, 0-2")**				**9.14E-03**
MMSD-201 (2-6")	6.27E-02	NA	NA	NA	NA	6.27E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	1.51E-03	2.10E+01	3.16E-02	1.00E+00	8.73E-01	3.62E-02	4.70E+00	1.10E-01	4.15E+00	8.73E-03
MMSD-202 (2-6")	6.27E-02	NA	NA	NA	NA	6.27E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	1.51E-03	2.30E+01	3.46E-02	1.00E+00	8.73E-01	3.97E-02	4.70E+00	1.10E-01	4.15E+00	9.56E-03
Middle Marsh (6-12")																			**Maximum HQ (Middle Marsh, 2-6")**				**9.56E-03**
MMSD-201 (6-12")	6.27E-02	NA	NA	NA	NA	6.27E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	1.51E-03	2.40E+01	3.61E-02	1.00E+00	8.73E-01	4.14E-02	4.70E+00	1.10E-01	4.15E+00	9.97E-03
MMSD-202 (6-12")	6.27E-02	NA	NA	NA	NA	6.27E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	1.51E-03	1.60E+01	2.41E-02	1.00E+00	8.73E-01	2.76E-02	4.70E+00	1.10E-01	4.15E+00	6.65E-03
Lower Marsh (0-2")																			**Maximum HQ (Middle Marsh, 6-12")**				**9.97E-03**
LMSD-201 (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
LMSD-202 (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
LMSD-203 (0-2")	6.27E-02	NA	NA	NA	NA	6.27E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	1.51E-03	2.40E+01	3.61E-02	1.00E+00	8.73E-01	4.14E-02	4.70E+00	1.10E-01	4.15E+00	9.97E-03
LMSD-204 (0-2")	6.27E-02	NA	NA	NA	NA	6.27E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	1.51E-03	1.60E+01	2.41E-02	1.00E+00	8.73E-01	2.76E-02	4.70E+00	1.10E-01	4.15E+00	6.65E-03
Lower Marsh (6-12")																			**Maximum HQ (Lower Marsh, 0-2")**				**9.97E-03**
LMSD-201 (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
LMSD-202 (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
LMSD-203 (6-12")	6.27E-02	NA	NA	NA	NA	6.27E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	1.51E-03	2.30E+01	3.46E-02	1.00E+00	8.73E-01	3.97E-02	4.70E+00	1.10E-01	4.15E+00	9.56E-03
LMSD-204 (6-12")	6.27E-02	NA	NA	NA	NA	6.27E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	1.51E-03	1.60E+01	2.41E-02	1.00E+00	8.73E-01	2.76E-02	4.70E+00	1.10E-01	4.15E+00	6.65E-03
Lower Marsh (6-12")																			**Maximum HQ (Lower Marsh, 2-6")**				**9.56E-03**
LMSD-201 (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
LMSD-202 (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
LMSD-203 (6-12")	6.27E-02	NA	NA	NA	NA	6.27E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	1.51E-03	2.50E+01	3.76E-02	1.00E+00	8.73E-01	4.31E-02	4.70E+00	1.10E-01	4.15E+00	1.04E-02
LMSD-204 (6-12")	6.27E-02	NA	NA	NA	NA	6.27E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	1.51E-03	1.60E+01	2.41E-02	1.00E+00	8.73E-01	2.76E-02	4.70E+00	1.10E-01	4.15E+00	6.65E-03
																			Maximum HQ (Lower Marsh, 6-12")				**1.04E-02**
Mink (Carnivorous Mammals)																							
Reference Sites																							
BRSD-5 (0-2")	4.25E-02	4.25E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.72E+01	7.32E-03	1.00E+00	8.52E-01	8.59E-03	4.70E+00	1.10E-01	4.16E+00	2.07E-03
BRSD-5 (2-6")	4.25E-02	4.25E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.92E+01	8.17E-03	1.00E+00	8.52E-01	9.58E-03	4.70E+00	1.10E-01	4.16E+00	2.31E-03
BRSD-5 (6-12")	4.25E-02	4.25E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	2.46E+01	1.05E-02	1.00E+00	8.52E-01	1.23E-02	4.70E+00	1.10E-01	4.16E+00	2.95E-03
PGBG-1 (0-2")	4.25E-02	4.25E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.24E+01	5.27E-03	1.00E+00	8.52E-01	6.19E-03	4.70E+00	1.10E-01	4.16E+00	1.49E-03
PGBG-1 (2-6")	4.25E-02	4.25E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	9.12E+00	3.88E-03	1.00E+00	8.52E-01	4.55E-03	4.70E+00	1.10E-01	4.16E+00	1.10E-03
PGBG-1 (6-12")	4.25E-02	4.25E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	9.40E+00	4.00E-03	1.00E+00	8.52E-01	4.69E-03	4.70E+00	1.10E-01	4.16E+00	1.13E-03
PGBG-2 (0-2")	4.25E-02	4.25E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.88E+01	8.00E-03	1.00E+00	8.52E-01	9.38E-03	4.70E+00	1.10E-01	4.16E+00	2.26E-03
PGBG-2 (2-6")	4.25E-02	4.25E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.85E+01	7.87E-03	1.00E+00	8.52E-01	9.23E-03	4.70E+00	1.10E-01	4.16E+00	2.22E-03
PGBG-2 (6-12")	4.25E-02	4.25E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	3.23E+01	1.37E-02	1.00E+00	8.52E-01	1.61E-02	4.70E+00	1.10E-01	4.16E+00	3.88E-03
Eastern Upper Marsh (0-2")																						**Minimum HQ (Reference Sites)**	**1.10E-03**
UM-1000S-3500E (0-2")	4.25E-02	4.25E-02	2.35E-01	5.58E+01	2.38E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	2.38E+02	1.01E-01	1.00E+00	8.52E-01	2.91E+00	4.70E+00	1.10E-01	4.16E+00	6.99E-01
BRSD-15 (0-2")	4.25E-02	4.25E-02	2.35E-01	3.50E+00	1.49E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.49E+01	6.34E-03	1.00E+00	8.52E-01	1.82E-01	4.70E+00	1.10E-01	4.16E+00	4.38E-02
BRSD-4 (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-750S-3500E (0-2")	4.25E-02	4.25E-02	2.35E-01	2.72E+01	1.16E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.16E+02	4.93E-02	1.00E+00	8.52E-01	1.42E+00	4.70E+00	1.10E-01	4.16E+00	3.41E-01

TABLE C-12BB: ARSENIC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 12 - MARSH, WETLAND RECEPTORS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **118.73**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Mink (Carnivorous Mammals)																							
BRSD-16 (0-2")	4.25E-02	4.25E-02	2.35E-01	4.53E+01	1.93E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.93E+02	8.21E-02	1.00E+00	8.52E-01	2.36E+00	4.70E+00	1.10E-01	4.16E+00	5.67E-01
UM-750S-3000E (0-2")	4.25E-02	4.25E-02	2.35E-01	3.85E+01	1.64E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.64E+02	6.98E-02	1.00E+00	8.52E-01	2.00E+00	4.70E+00	1.10E-01	4.16E+00	4.82E-01
BRSD-3 (0-2")	4.25E-02	4.25E-02	2.35E-01	8.92E+00	3.79E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	3.80E+01	1.62E-02	1.00E+00	8.52E-01	4.64E-01	4.70E+00	1.10E-01	4.16E+00	1.12E-01
UM-500S-3250E (0-2")	4.25E-02	4.25E-02	2.35E-01	3.24E+01	1.38E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.38E+02	5.87E-02	1.00E+00	8.52E-01	1.68E+00	4.70E+00	1.10E-01	4.16E+00	4.05E-01
UM-500S-3000E (0-2")	4.25E-02	4.25E-02	2.35E-01	2.05E+01	8.72E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	8.74E+01	3.72E-02	1.00E+00	8.52E-01	1.07E+00	4.70E+00	1.10E-01	4.16E+00	2.57E-01
UM-500S-2750E (0-2")	4.25E-02	4.25E-02	2.35E-01	3.66E+01	1.56E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.56E+02	6.64E-02	1.00E+00	8.52E-01	1.90E+00	4.70E+00	1.10E-01	4.16E+00	4.58E-01
BRSD-25 (0-2")	4.25E-02	4.25E-02	2.35E-01	1.55E+01	6.59E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	6.60E+01	2.81E-02	1.00E+00	8.52E-01	8.06E-01	4.70E+00	1.10E-01	4.16E+00	1.94E-01
UM-250S-3000E (0-2")	4.25E-02	4.25E-02	2.35E-01	2.51E+01	1.07E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.07E+02	4.55E-02	1.00E+00	8.52E-01	1.31E+00	4.70E+00	1.10E-01	4.16E+00	3.14E-01
UM-250S-3250E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-24 (0-2")	4.25E-02	4.25E-02	2.35E-01	4.53E+01	1.93E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.93E+02	8.21E-02	1.00E+00	8.52E-01	2.36E+00	4.70E+00	1.10E-01	4.16E+00	5.67E-01
UM-250S-2750E (0-2")	4.25E-02	4.25E-02	2.35E-01	3.87E+01	1.65E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.65E+02	7.02E-02	1.00E+00	8.52E-01	2.01E+00	4.70E+00	1.10E-01	4.16E+00	4.85E-01
UM-250S-2500E (0-2")	4.25E-02	4.25E-02	2.35E-01	2.89E+00	1.23E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.23E+01	5.23E-03	1.00E+00	8.52E-01	1.50E-01	4.70E+00	1.10E-01	4.16E+00	3.61E-02
UM-0N-2500E (0-2")	4.25E-02	4.25E-02	2.35E-01	2.74E+01	1.17E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.17E+02	4.98E-02	1.00E+00	8.52E-01	1.43E+00	4.70E+00	1.10E-01	4.16E+00	3.44E-01
UM-0N-250E (0-2")	4.25E-02	4.25E-02	2.35E-01	3.05E+00	1.30E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.30E+01	5.53E-03	1.00E+00	8.52E-01	1.59E-01	4.70E+00	1.10E-01	4.16E+00	3.82E-02
BRSD-2 (0-2")	4.25E-02	4.25E-02	2.35E-01	4.15E+01	1.77E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.77E+02	7.53E-02	1.00E+00	8.52E-01	2.16E+00	4.70E+00	1.10E-01	4.16E+00	5.20E-01
UM-500N-2500E (0-2")	4.25E-02	4.25E-02	2.35E-01	2.65E+00	1.13E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.13E+01	4.81E-03	1.00E+00	8.52E-01	1.38E-01	4.70E+00	1.10E-01	4.16E+00	3.32E-02
UM-250N-2500E (0-2")	4.25E-02	4.25E-02	2.35E-01	2.27E+01	9.67E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	9.69E+01	4.12E-02	1.00E+00	8.52E-01	1.18E+00	4.70E+00	1.10E-01	4.16E+00	2.85E-01
UM-250N-2250E (0-2")	4.25E-02	4.25E-02	2.35E-01	4.15E+01	1.77E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.77E+02	7.53E-02	1.00E+00	8.52E-01	2.16E+00	4.70E+00	1.10E-01	4.16E+00	5.20E-01
Western Upper Marsh (0-2")																						**Maximum HQ (Eastern Upper Marsh, 0-2")**	**6.99E-01**
UM-500S-2500E (0-2")	4.25E-02	4.25E-02	2.35E-01	2.86E+00	1.22E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.22E+01	5.19E-03	1.00E+00	8.52E-01	1.49E-01	4.70E+00	1.10E-01	4.16E+00	3.58E-02
UM-0N-2000E (0-2")	4.25E-02	4.25E-02	2.35E-01	1.11E+01	4.71E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	4.72E+01	2.01E-02	1.00E+00	8.52E-01	5.76E-01	4.70E+00	1.10E-01	4.16E+00	1.39E-01
UM-500S-2000E (0-2")	4.25E-02	4.25E-02	2.35E-01	4.93E+00	2.10E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	2.10E+01	8.93E-03	1.00E+00	8.52E-01	2.56E-01	4.70E+00	1.10E-01	4.16E+00	6.17E-02
UM-250N-1750E (0-2")	4.25E-02	4.25E-02	2.35E-01	2.96E+00	1.26E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.26E+01	5.36E-03	1.00E+00	8.52E-01	1.54E-01	4.70E+00	1.10E-01	4.16E+00	3.70E-02
UM-0N-1500E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-250S-1500E (0-2")	4.25E-02	4.25E-02	2.35E-01	7.81E+00	3.32E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	3.33E+01	1.42E-02	1.00E+00	8.52E-01	4.07E-01	4.70E+00	1.10E-01	4.16E+00	9.78E-02
UM-250S-1250E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-6 (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-1000E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-750E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-500E (0-2")	4.25E-02	4.25E-02	2.35E-01	2.37E+00	1.01E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.01E+01	4.30E-03	1.00E+00	8.52E-01	1.23E-01	4.70E+00	1.10E-01	4.16E+00	2.97E-02
UM-250S-500E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-250S-250E (0-2")	4.25E-02	4.25E-02	2.35E-01	3.40E+00	1.45E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.45E+01	6.17E-03	1.00E+00	8.52E-01	1.77E-01	4.70E+00	1.10E-01	4.16E+00	4.26E-02
BRSD-7 (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-8 (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-500S-500E (0-2")	4.25E-02	4.25E-02	2.35E-01	2.77E+00	1.18E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.18E+01	5.02E-03	1.00E+00	8.52E-01	1.44E-01	4.70E+00	1.10E-01	4.16E+00	3.47E-02
BRSD-9 (0-2")	4.25E-02	4.25E-02	2.35E-01	5.40E+00	2.30E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	2.30E+01	9.78E-03	1.00E+00	8.52E-01	2.81E-01	4.70E+00	1.10E-01	4.16E+00	6.76E-02
BRSD-10 (0-2")	4.25E-02	4.25E-02	2.35E-01	7.11E+00	3.02E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	3.03E+01	1.29E-02	1.00E+00	8.52E-01	3.70E-01	4.70E+00	1.10E-01	4.16E+00	8.90E-02
BRSD-11 (0-2")	4.25E-02	4.25E-02	2.35E-01	3.45E+00	1.47E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.47E+01	6.25E-03	1.00E+00	8.52E-01	1.79E-01	4.70E+00	1.10E-01	4.16E+00	4.32E-02
Eastern Upper Marsh (2-6")																						**Maximum HQ (Western Upper Marsh, 0-2")**	**1.39E-01**
UM-1000S-3500E (2-6")	4.25E-02	4.25E-02	2.35E-01	8.94E+00	3.80E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	3.81E+01	1.62E-02	1.00E+00	8.52E-01	4.65E-01	4.70E+00	1.10E-01	4.16E+00	1.12E-01
BRSD-15 (2-6")	4.25E-02	4.25E-02	2.35E-01	3.66E+00	1.56E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.56E+01	6.64E-03	1.00E+00	8.52E-01	1.90E-01	4.70E+00	1.10E-01	4.16E+00	4.58E-02
BRSD-4 (2-6")	4.25E-02	4.25E-02	2.35E-01	2.31E+00	9.83E-02	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	9.85E+00	4.19E-03	1.00E+00	8.52E-01	1.20E-01	4.70E+00	1.10E-01	4.16E+00	2.89E-02
UM-750S-3500E (2-6")	4.25E-02	4.25E-02	2.35E-01	3.68E+01	1.57E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.57E+02	6.68E-02	1.00E+00	8.52E-01	1.92E+00	4.70E+00	1.10E-01	4.16E+00	4.61E-01
BRSD-16 (2-6")	4.25E-02	4.25E-02	2.35E-01	1.19E+02	5.06E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	5.07E+02	2.16E-01	1.00E+00	8.52E-01	6.19E+00	4.70E+00	1.10E-01	4.16E+00	1.49E+00
UM-750S-3000E (2-6")	4.25E-02	4.25E-02	2.35E-01	3.35E+01	1.43E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.43E+02	6.08E-02	1.00E+00	8.52E-01	1.75E+00	4.70E+00	1.10E-01	4.16E+00	4.20E-01
BRSD-3 (2-6")	4.25E-02	4.25E-02	2.35E-01	1.27E+01	5.41E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	5.42E+01	2.31E-02	1.00E+00	8.52E-01	6.62E-01	4.70E+00	1.10E-01	4.16E+00	1.59E-01
UM-500S-3250E (2-6")	4.25E-02	4.25E-02	2.35E-01	3.52E+01	1.50E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.50E+02	6.38E-02	1.00E+00	8.52E-01	1.83E+00	4.70E+00	1.10E-01	4.16E+00	4.41E-01
UM-500S-3000E (2-6")	4.25E-02	4.25E-02	2.35E-01	5.30E+00	2.26E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	2.26E+01	9.61E-03	1.00E+00	8.52E-01	2.76E-01	4.70E+00	1.10E-01	4.16E+00	6.64E-02
UM-500S-2750E (2-6")	4.25E-02	4.25E-02	2.35E-01	1.74E+01	7.41E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	7.42E+01	3.16E-02	1.00E+00	8.52E-01	9.06E-01	4.70E+00	1.10E-01	4.16E+00	2.18E-01
BRSD-25 (2-6")	4.25E-02	4.25E-02	2.35E-01	1.41E+01	5.99E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	6.00E+01	2.55E-02	1.00E+00	8.52E-01	7.33E-01	4.70E+00	1.10E-01	4.16E+00	1.76E-01
UM-250S-3000E (2-6")	4.25E-02	4.25E-02	2.35E-01	3.80E+01	1.62E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.62E+02	6.89E-02	1.00E+00	8.52E-01	1.98E+00	4.70E+00	1.10E-01	4.16E+00	4.76E-01
UM-250S-3250E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-24 (2-6")	4.25E-02	4.25E-02	2.35E-01	2.79E+01	1.19E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.19E+02	5.06E-02	1.00E+00	8.52E-01	1.45E+00	4.70E+00	1.10E-01	4.16E+00	3.50E-01
UM-250S-2750E (2-6")	4.25E-02	4.25E-02	2.35E-01	3.31E+01	1.41E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.41E+02	6.00E-02	1.00E+00	8.52E-01	1.72E+00	4.70E+00	1.10E-01	4.16E+00	4.14E-01
UM-0N-2500E (2-6")	4.25E-02	4.25E-02	2.35E-01	2.42E+01	1.03E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.03E+02	4.38E-02	1.00E+00	8.52E-01	1.26E+00	4.70E+00	1.10E-01	4.16E+00	3.03E-01
BRSD-2 (2-6")	4.25E-02	4.25E-02	2.35E-01	3.10E+01	1.32E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.32E+02	5.62E-02	1.00E+00	8.52E-01	1.61E+00	4.70E+00	1.10E-01	4.16E+00	3.88E-01

TABLE C-12BB: ARSENIC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 12 - MARSH, WETLAND RECEPTORS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 118.73

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Mink (Carnivorous Mammals)																							
UM-500N-2500E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-250N-2500E (2-6")	4.25E-02	4.25E-02	2.35E-01	2.72E+01	1.16E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.16E+02	4.93E-02	1.00E+00	8.52E-01	1.42E+00	4.70E+00	1.10E-01	4.16E+00	3.41E-01
UM-250N-2250E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
Western Upper Marsh (2-6")																						**Maximum HQ (Eastern Upper Marsh, 2-6")**	**1.49E+00**
UM-500S-2500E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-2000E (2-6")	4.25E-02	4.25E-02	2.35E-01	1.16E+01	4.93E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	4.94E+01	2.10E-02	1.00E+00	8.52E-01	6.03E-01	4.70E+00	1.10E-01	4.16E+00	1.45E-01
UM-500S-2000E (2-6")	4.25E-02	4.25E-02	2.35E-01	4.20E+00	1.79E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.79E+01	7.61E-03	1.00E+00	8.52E-01	2.19E-01	4.70E+00	1.10E-01	4.16E+00	5.26E-02
UM-250N-1750E (2-6")	4.25E-02	4.25E-02	2.35E-01	2.86E+00	1.22E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.22E+01	5.19E-03	1.00E+00	8.52E-01	1.49E-01	4.70E+00	1.10E-01	4.16E+00	3.58E-02
UM-0N-1500E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-250S-1500E (2-6")	4.25E-02	4.25E-02	2.35E-01	7.18E+00	3.05E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	3.06E+01	1.30E-02	1.00E+00	8.52E-01	3.74E-01	4.70E+00	1.10E-01	4.16E+00	8.99E-02
UM-250S-1250E (2-6")	4.25E-02	4.25E-02	2.35E-01	5.77E+00	2.46E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	2.46E+01	1.05E-02	1.00E+00	8.52E-01	3.00E-01	4.70E+00	1.10E-01	4.16E+00	7.23E-02
BRSD-6 (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-1000E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-750E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-500E (2-6")	4.25E-02	4.25E-02	2.35E-01	3.94E+00	1.68E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.68E+01	7.15E-03	1.00E+00	8.52E-01	2.05E-01	4.70E+00	1.10E-01	4.16E+00	4.93E-02
UM-250S-500E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-250E (2-6")	4.25E-02	4.25E-02	2.35E-01	4.57E+00	1.95E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.95E+01	8.30E-03	1.00E+00	8.52E-01	2.38E-01	4.70E+00	1.10E-01	4.16E+00	5.73E-02
UM-250S-250E (2-6")	4.25E-02	4.25E-02	2.35E-01	2.25E+00	9.56E-02	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	9.58E+00	4.08E-03	1.00E+00	8.52E-01	1.17E-01	4.70E+00	1.10E-01	4.16E+00	2.81E-02
BRSD-7 (2-6")	4.25E-02	4.25E-02	2.35E-01	2.82E+00	1.20E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.20E+01	5.10E-03	1.00E+00	8.52E-01	1.47E-01	4.70E+00	1.10E-01	4.16E+00	3.52E-02
BRSD-8 (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-500S-500E (2-6")	4.25E-02	4.25E-02	2.35E-01	2.18E+00	9.26E-02	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	9.28E+00	3.95E-03	1.00E+00	8.52E-01	1.13E-01	4.70E+00	1.10E-01	4.16E+00	2.73E-02
BRSD-9 (2-6")	4.25E-02	4.25E-02	2.35E-01	4.08E+00	1.74E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.74E+01	7.40E-03	1.00E+00	8.52E-01	2.12E-01	4.70E+00	1.10E-01	4.16E+00	5.11E-02
BRSD-10 (2-6")	4.25E-02	4.25E-02	2.35E-01	8.40E+00	3.57E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	3.58E+01	1.52E-02	1.00E+00	8.52E-01	4.37E-01	4.70E+00	1.10E-01	4.16E+00	1.05E-01
BRSD-11 (2-6")	4.25E-02	4.25E-02	2.35E-01	2.53E+00	1.08E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.08E+01	4.59E-03	1.00E+00	8.52E-01	1.32E-01	4.70E+00	1.10E-01	4.16E+00	3.17E-02
Eastern Upper Marsh (6-12")																						**Maximum HQ (Western Upper Marsh, 2-6")**	**1.45E-01**
UM-1000S-3500E (6-12")	4.25E-02	4.25E-02	2.35E-01	2.96E+00	1.26E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.26E+01	5.36E-03	1.00E+00	8.52E-01	1.54E-01	4.70E+00	1.10E-01	4.16E+00	3.70E-02
BRSD-15 (6-12")	4.25E-02	4.25E-02	2.35E-01	3.94E+00	1.68E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.68E+01	7.15E-03	1.00E+00	8.52E-01	2.05E-01	4.70E+00	1.10E-01	4.16E+00	4.93E-02
BRSD-4 (6-12")	4.25E-02	4.25E-02	2.35E-01	4.79E+00	2.04E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	2.04E+01	8.68E-03	1.00E+00	8.52E-01	2.49E-01	4.70E+00	1.10E-01	4.16E+00	5.99E-02
UM-750S-3500E (6-12")	4.25E-02	4.25E-02	2.35E-01	3.24E+01	1.38E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.38E+02	5.87E-02	1.00E+00	8.52E-01	1.68E+00	4.70E+00	1.10E-01	4.16E+00	4.05E-01
BRSD-16 (6-12")	4.25E-02	4.25E-02	2.35E-01	2.18E+01	9.26E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	9.28E+01	3.95E-02	1.00E+00	8.52E-01	1.13E+00	4.70E+00	1.10E-01	4.16E+00	2.73E-01
UM-750S-3000E (6-12")	4.25E-02	4.25E-02	2.35E-01	3.33E+01	1.42E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.42E+02	6.04E-02	1.00E+00	8.52E-01	1.73E+00	4.70E+00	1.10E-01	4.16E+00	4.17E-01
BRSD-3 (6-12")	4.25E-02	4.25E-02	2.35E-01	4.67E+00	1.99E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.99E+01	8.47E-03	1.00E+00	8.52E-01	2.43E-01	4.70E+00	1.10E-01	4.16E+00	5.85E-02
UM-500S-3250E (6-12")	4.25E-02	4.25E-02	2.35E-01	2.35E+01	9.98E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.00E+02	4.25E-02	1.00E+00	8.52E-01	1.22E+00	4.70E+00	1.10E-01	4.16E+00	2.94E-01
UM-500S-3000E (6-12")	4.25E-02	4.25E-02	2.35E-01	3.54E+00	1.51E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.51E+01	6.42E-03	1.00E+00	8.52E-01	1.84E-01	4.70E+00	1.10E-01	4.16E+00	4.44E-02
UM-500S-2750E (6-12")	4.25E-02	4.25E-02	2.35E-01	1.59E+01	6.77E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	6.78E+01	2.88E-02	1.00E+00	8.52E-01	8.28E-01	4.70E+00	1.10E-01	4.16E+00	1.99E-01
BRSD-25 (6-12")	4.25E-02	4.25E-02	2.35E-01	6.80E+00	2.89E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	2.90E+01	1.23E-02	1.00E+00	8.52E-01	3.54E-01	4.70E+00	1.10E-01	4.16E+00	8.52E-02
UM-250S-3000E (6-12")	4.25E-02	4.25E-02	2.35E-01	4.29E+01	1.83E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.83E+02	7.78E-02	1.00E+00	8.52E-01	2.23E+00	4.70E+00	1.10E-01	4.16E+00	5.38E-01
UM-250S-3250E (6-12")	4.25E-02	4.25E-02	2.35E-01	2.46E+00	1.05E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.05E+01	4.47E-03	1.00E+00	8.52E-01	1.28E-01	4.70E+00	1.10E-01	4.16E+00	3.08E-02
BRSD-24 (6-12")	4.25E-02	4.25E-02	2.35E-01	1.49E+01	6.33E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	6.34E+01	2.70E-02	1.00E+00	8.52E-01	7.74E-01	4.70E+00	1.10E-01	4.16E+00	1.86E-01
UM-250S-2750E (6-12")	4.25E-02	4.25E-02	2.35E-01	1.55E+01	6.59E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	6.60E+01	2.81E-02	1.00E+00	8.52E-01	8.06E-01	4.70E+00	1.10E-01	4.16E+00	1.94E-01
UM-250S-2500E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-2 (6-12")	4.25E-02	4.25E-02	2.35E-01	1.71E+01	7.30E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	7.31E+01	3.11E-02	1.00E+00	8.52E-01	8.92E-01	4.70E+00	1.10E-01	4.16E+00	2.15E-01
UM-500N-2500E (6-12")	4.25E-02	4.25E-02	2.35E-01	2.72E+00	1.16E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.16E+01	4.93E-03	1.00E+00	8.52E-01	1.42E-01	4.70E+00	1.10E-01	4.16E+00	3.41E-02
UM-250N-2500E (6-12")	4.25E-02	4.25E-02	2.35E-01	2.14E+01	9.10E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	9.12E+01	3.88E-02	1.00E+00	8.52E-01	1.11E+00	4.70E+00	1.10E-01	4.16E+00	2.68E-01
UM-250N-2250E (6-12")	4.25E-02	4.25E-02	2.35E-01	2.33E+00	9.91E-02	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	9.93E+00	4.22E-03	1.00E+00	8.52E-01	1.21E-01	4.70E+00	1.10E-01	4.16E+00	2.92E-02
Western Upper Marsh (6-12")																						**Maximum HQ (Eastern Upper Marsh, 6-12")**	**5.38E-01**
UM-500S-2500E (6-12")	4.25E-02	4.25E-02	2.35E-01	2.58E+00	1.10E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.10E+01	4.68E-03	1.00E+00	8.52E-01	1.34E-01	4.70E+00	1.10E-01	4.16E+00	3.23E-02
UM-0N-2000E (6-12")	4.25E-02	4.25E-02	2.35E-01	1.38E+01	5.89E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	5.90E+01	2.51E-02	1.00E+00	8.52E-01	7.20E-01	4.70E+00	1.10E-01	4.16E+00	1.73E-01
UM-500S-2000E (6-12")	4.25E-02	4.25E-02	2.35E-01	3.59E+00	1.53E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.53E+01	6.51E-03	1.00E+00	8.52E-01	1.87E-01	4.70E+00	1.10E-01	4.16E+00	4.49E-02
UM-250N-1750E (6-12")	4.25E-02	4.25E-02	2.35E-01	2.72E+00	1.16E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.16E+01	4.93E-03	1.00E+00	8.52E-01	1.42E-01	4.70E+00	1.10E-01	4.16E+00	3.41E-02
UM-0N-1500E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-250S-1500E (6-12")	4.25E-02	4.25E-02	2.35E-01	4.11E+00	1.75E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.75E+01	7.44E-03	1.00E+00	8.52E-01	2.14E-01	4.70E+00	1.10E-01	4.16E+00	5.14E-02
UM-250S-1250E (6-12")	4.25E-02	4.25E-02	2.35E-01	4.46E+00	1.90E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.90E+01	8.08E-03	1.00E+00	8.52E-01	2.32E-01	4.70E+00	1.10E-01	4.16E+00	5.58E-02
BRSD-6 (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-1000E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-750E (6-12")	4.25E-02	4.25E-02	2.35E-01	2.91E+00	1.24E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.24E+01	5.27E-03	1.00E+00	8.52E-01	1.51E-01	4.70E+00	1.10E-01	4.16E+00	3.64E-02
UM-0N-500E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB

TABLE C-12BB: ARSENIC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 12 - MARSH, WETLAND RECEPTORS (Continued)

Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)
calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 118.73

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Mink (Carnivorous Mammals)																							
UM-250S-500E (6-12")	4.25E-02	4.25E-02	2.35E-01	4.15E+00	1.77E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.77E+01	7.53E-03	1.00E+00	8.52E-01	2.16E-01	4.70E+00	1.10E-01	4.16E+00	5.20E-02
UM-0N-250E (6-12")	4.25E-02	4.25E-02	2.35E-01	3.45E+00	1.47E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.47E+01	6.25E-03	1.00E+00	8.52E-01	1.79E-01	4.70E+00	1.10E-01	4.16E+00	4.32E-02
UM-250S-250E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-7 (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-8 (6-12")	4.25E-02	4.25E-02	2.35E-01	2.42E+00	1.03E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.03E+01	4.38E-03	1.00E+00	8.52E-01	1.26E-01	4.70E+00	1.10E-01	4.16E+00	3.03E-02
UM-500S-500E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-9 (6-12")	4.25E-02	4.25E-02	2.35E-01	3.80E+00	1.62E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.62E+01	6.89E-03	1.00E+00	8.52E-01	1.98E-01	4.70E+00	1.10E-01	4.16E+00	4.76E-02
BRSD-10 (6-12")	4.25E-02	4.25E-02	2.35E-01	8.99E+00	3.82E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	3.83E+01	1.63E-02	1.00E+00	8.52E-01	4.68E-01	4.70E+00	1.10E-01	4.16E+00	1.12E-01
BRSD-11 (6-12")	4.25E-02	4.25E-02	2.35E-01	2.32E+00	9.87E-02	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	9.89E+00	4.21E-03	1.00E+00	8.52E-01	1.21E-01	4.70E+00	1.10E-01	4.16E+00	2.90E-02
Middle Marsh (0-2")																						**Maximum HQ (Western Upper Marsh, 6-12")**	**1.73E-01**
MMSD-201 (0-2")	4.25E-02	4.25E-02	2.35E-01	4.93E+00	2.10E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	2.10E+01	8.93E-03	1.00E+00	8.52E-01	2.56E-01	4.70E+00	1.10E-01	4.16E+00	6.17E-02
MMSD-202 (0-2")	4.25E-02	4.25E-02	2.35E-01	5.16E+00	2.20E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	2.20E+01	9.36E-03	1.00E+00	8.52E-01	2.69E-01	4.70E+00	1.10E-01	4.16E+00	6.46E-02
Middle Marsh (2-6")																						**Maximum HQ (Middle Marsh, 0-2")**	**6.46E-02**
MMSD-201 (2-6")	4.25E-02	4.25E-02	2.35E-01	4.93E+00	2.10E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	2.10E+01	8.93E-03	1.00E+00	8.52E-01	2.56E-01	4.70E+00	1.10E-01	4.16E+00	6.17E-02
MMSD-202 (2-6")	4.25E-02	4.25E-02	2.35E-01	5.40E+00	2.30E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	2.30E+01	9.78E-03	1.00E+00	8.52E-01	2.81E-01	4.70E+00	1.10E-01	4.16E+00	6.76E-02
Middle Marsh (6-12")																						**Maximum HQ (Middle Marsh, 2-6")**	**6.76E-02**
MMSD-201 (6-12")	4.25E-02	4.25E-02	2.35E-01	5.63E+00	2.40E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	2.40E+01	1.02E-02	1.00E+00	8.52E-01	2.93E-01	4.70E+00	1.10E-01	4.16E+00	7.05E-02
MMSD-202 (6-12")	4.25E-02	4.25E-02	2.35E-01	3.75E+00	1.60E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.60E+01	6.81E-03	1.00E+00	8.52E-01	1.95E-01	4.70E+00	1.10E-01	4.16E+00	4.70E-02
Lower Marsh (0-2")																						**Maximum HQ (Middle Marsh, 6-12")**	**7.05E-02**
LMSD-201 (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
LMSD-202 (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
LMSD-203 (0-2")	4.25E-02	4.25E-02	2.35E-01	5.63E+00	2.40E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	2.40E+01	1.02E-02	1.00E+00	8.52E-01	2.93E-01	4.70E+00	1.10E-01	4.16E+00	7.05E-02
LMSD-204 (0-2")	4.25E-02	4.25E-02	2.35E-01	3.75E+00	1.60E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.60E+01	6.81E-03	1.00E+00	8.52E-01	1.95E-01	4.70E+00	1.10E-01	4.16E+00	4.70E-02
Lower Marsh (2-6")																						**Maximum HQ (Lower Marsh, 0-2")**	**7.05E-02**
LMSD-201 (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
LMSD-202 (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
LMSD-203 (2-6")	4.25E-02	4.25E-02	2.35E-01	5.40E+00	2.30E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	2.30E+01	9.78E-03	1.00E+00	8.52E-01	2.81E-01	4.70E+00	1.10E-01	4.16E+00	6.76E-02
LMSD-204 (2-6")	4.25E-02	4.25E-02	2.35E-01	3.75E+00	1.60E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.60E+01	6.81E-03	1.00E+00	8.52E-01	1.95E-01	4.70E+00	1.10E-01	4.16E+00	4.70E-02
Lower Marsh (6-12")																						**Maximum HQ (Lower Marsh, 2-6")**	**6.76E-02**
LMSD-201 (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
LMSD-202 (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
LMSD-203 (6-12")	4.25E-02	4.25E-02	2.35E-01	5.87E+00	2.49E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	2.50E+01	1.06E-02	1.00E+00	8.52E-01	3.05E-01	4.70E+00	1.10E-01	4.16E+00	7.34E-02
LMSD-204 (6-12")	4.25E-02	4.25E-02	2.35E-01	3.75E+00	1.60E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.60E+01	6.81E-03	1.00E+00	8.52E-01	1.95E-01	4.70E+00	1.10E-01	4.16E+00	4.70E-02
																						Maximum HQ (Lower Marsh, 6-12")	**7.34E-02**

Notes: Results are evaluated in order of upstream to downstream.

1 See Tables 3-1 through 3-13 for ingestion rates, foraging ranges used to calculate the SUF, and body weights.

2 Site BAFs were calculated by dividing site-collected tissue by collocated soil concentrations. The maximum plant and invertebrate BAF calculated for the eastern transect (UMT1) were used for the Eastern Upper Marsh dose calculations. The maximum plant and invertebrate BAF calculated for the western transect (UMT2) were used for the Western Upper Marsh dose calculations. The maximum mammal BAF calculated for the eastern transect (UMT1) was used for the Eastern and Western Upper Marsh calculations because no mammals were collected in the Western Upper Marsh. The maximum plant, mammal, and invertebrate BAFs calculated for the Pass Creek reference site (PGREF) were used for the reference site dose calculations.

3 The mammal, plant, and invertebrate concentrations were calculated by multiplying the soil concentration by the BAF to generate a tissue concentration (see note 2).

4 Mammal, plant, and invertebrate daily doses were calculated by multiplying the ingestion rate (see note 1) by the tissue concentration (see note 3).

5 Soil concentration from specified depth below ground surface at point ID from laboratory analysis. Doses were not calculated for detected and non-detected soil concentrations measured below the minimum reference site concentration (0-12"), as indicated by BB. For results that were measured at less than the detection limit, doses were calculated using half of the detection limit.

6 Soil daily dose was calculated by multiplying the soil ingestion rate (see note 1) by soil concentration (see note 5).

7 Total daily dose is calculated using the following equation: total daily dose = ([mammal daily dose (if applicable) + plant daily dose (if applicable) + invertebrate daily dose (if applicable) + soil daily dose]*SUF)/receptor species body weight.

8 The derivation of TRVs is described in Navy (1998). The high TRV was used for dose calculations.

9 Allometrically adjusted TRVs for birds were calculated using the following equation: receptor species TRV = (test species TRV) x (test species body weight / receptor species body weight) $^{(1-1.2)}$.

10 Allometrically adjusted TRVs for mammals were calculated using the following equation: receptor species TRV = (test species TRV) x (test species body weight / receptor species body weight) $^{(1-0.94)}$.

11 HQs were calculated using the following equation: HQ = total daily dose/allometrically adjusted TRV.

12 Green cells indicate an HQ greater than 1.0

BAF	Bioaccumulation Factor	ID	Identification	NA	Not applicable
BB	Below minimum background reference site concentration	kg	Kilogram	Navy	Department of the Navy
EE/CA	Engineering Evaluation/Cost Analysis	kg/day	Kilogram per day	SUF	Site use factor
EU	Exposure Unit	mg/day	Milligram per day	TRV	Toxicity reference value
HQ	Hazard Quotient	mg/kg	Milligram per kilogram		

Sources: Department of the Navy. 1998. "Development of Toxicity Reference Values for Conducting Ecological Risk Assessments at Naval Facilities in California, Interim Final." Prepared by Naval Facilities Engineering Command, Engineering Field Activity West (EFA

TABLE C-12CA: CADMIUM DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 12 - MARSH, TERRESTRIAL RECEPTORS

Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)
calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **118.73**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Mourning Dove (Herbivorous Birds)																							
Reference Sites																							
BRSD-5 (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	5.05E+00	3.13E+00	1.80E-02	NA	NA	NA	NA	5.36E-04	6.19E-01	3.32E-04	4.58E-01	1.09E-01	7.70E-02	1.00E+00	1.13E+00	6.27E-01	1.23E-01
BRSD-5 (2-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	5.05E+00	2.63E+00	1.52E-02	NA	NA	NA	NA	5.36E-04	5.21E-01	2.79E-04	4.58E-01	1.09E-01	6.48E-02	1.00E+00	1.13E+00	6.27E-01	1.03E-01
BRSD-5 (6-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	5.05E+00	2.38E+00	1.37E-02	NA	NA	NA	NA	5.36E-04	4.71E-01	2.52E-04	4.58E-01	1.09E-01	5.86E-02	1.00E+00	1.13E+00	6.27E-01	9.35E-02
PGBG-1 (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	5.05E+00	7.63E+00	4.39E-02	NA	NA	NA	NA	5.36E-04	1.51E+00	8.09E-04	4.58E-01	1.09E-01	1.88E-01	1.00E+00	1.13E+00	6.27E-01	3.00E-01
PGBG-1 (2-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	5.05E+00	7.27E+00	4.19E-02	NA	NA	NA	NA	5.36E-04	1.44E+00	7.72E-04	4.58E-01	1.09E-01	1.79E-01	1.00E+00	1.13E+00	6.27E-01	2.86E-01
PGBG-1 (6-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	5.05E+00	3.28E+00	1.89E-02	NA	NA	NA	NA	5.36E-04	6.49E-01	3.48E-04	4.58E-01	1.09E-01	8.07E-02	1.00E+00	1.13E+00	6.27E-01	1.29E-01
PGBG-2 (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	5.05E+00	9.29E+00	5.35E-02	NA	NA	NA	NA	5.36E-04	1.84E+00	9.86E-04	4.58E-01	1.09E-01	2.29E-01	1.00E+00	1.13E+00	6.27E-01	3.65E-01
PGBG-2 (2-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	5.05E+00	7.78E+00	4.48E-02	NA	NA	NA	NA	5.36E-04	1.54E+00	8.25E-04	4.58E-01	1.09E-01	1.92E-01	1.00E+00	1.13E+00	6.27E-01	3.06E-01
PGBG-2 (6-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	5.05E+00	7.93E+00	4.57E-02	NA	NA	NA	NA	5.36E-04	1.57E+00	8.41E-04	4.58E-01	1.09E-01	1.95E-01	1.00E+00	1.13E+00	6.27E-01	3.12E-01
Eastern Upper Marsh (0-2")																						**Minimum HQ (Reference Sites)**	**9.35E-02**
UM-1000S-3500E (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	2.05E+00	4.50E+00	2.59E-02	NA	NA	NA	NA	5.36E-04	2.19E+00	1.17E-03	4.58E-01	1.09E-01	1.14E-01	1.00E+00	1.13E+00	6.27E-01	1.81E-01
BRSD-15 (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	2.05E+00	3.12E+00	1.80E-02	NA	NA	NA	NA	5.36E-04	1.52E+00	8.14E-04	4.58E-01	1.09E-01	7.89E-02	1.00E+00	1.13E+00	6.27E-01	1.26E-01
BRSD-4 (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	2.05E+00	1.56E+00	8.98E-03	NA	NA	NA	NA	5.36E-04	7.59E-01	4.07E-04	4.58E-01	1.09E-01	3.94E-02	1.00E+00	1.13E+00	6.27E-01	6.29E-02
UM-750S-3500E (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	2.05E+00	1.64E+01	9.46E-02	NA	NA	NA	NA	5.36E-04	8.00E+00	4.29E-03	4.58E-01	1.09E-01	4.15E-01	1.00E+00	1.13E+00	6.27E-01	6.63E-01
BRSD-16 (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	2.05E+00	1.07E+01	6.14E-02	NA	NA	NA	NA	5.36E-04	5.19E+00	2.78E-03	4.58E-01	1.09E-01	2.69E-01	1.00E+00	1.13E+00	6.27E-01	4.30E-01
UM-750S-3000E (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	2.05E+00	2.20E+01	1.27E-01	NA	NA	NA	NA	5.36E-04	1.07E+01	5.73E-03	4.58E-01	1.09E-01	5.55E-01	1.00E+00	1.13E+00	6.27E-01	8.86E-01
BRSD-3 (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	2.05E+00	7.43E+00	4.28E-02	NA	NA	NA	NA	5.36E-04	3.62E+00	1.94E-03	4.58E-01	1.09E-01	1.88E-01	1.00E+00	1.13E+00	6.27E-01	3.00E-01
UM-500S-3250E (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	2.05E+00	5.73E+00	3.30E-02	NA	NA	NA	NA	5.36E-04	2.79E+00	1.49E-03	4.58E-01	1.09E-01	1.45E-01	1.00E+00	1.13E+00	6.27E-01	2.31E-01
UM-500S-3000E (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	2.05E+00	1.87E+01	1.08E-01	NA	NA	NA	NA	5.36E-04	9.10E+00	4.88E-03	4.58E-01	1.09E-01	4.72E-01	1.00E+00	1.13E+00	6.27E-01	7.54E-01
UM-500S-2750E (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	2.05E+00	2.26E+01	1.30E-01	NA	NA	NA	NA	5.36E-04	1.10E+01	5.89E-03	4.58E-01	1.09E-01	5.71E-01	1.00E+00	1.13E+00	6.27E-01	9.11E-01
BRSD-25 (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	2.05E+00	1.28E+01	7.39E-02	NA	NA	NA	NA	5.36E-04	6.25E+00	3.35E-03	4.58E-01	1.09E-01	3.24E-01	1.00E+00	1.13E+00	6.27E-01	5.18E-01
UM-250S-3000E (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	2.05E+00	3.67E+01	2.12E-01	NA	NA	NA	NA	5.36E-04	1.79E+01	9.59E-03	4.58E-01	1.09E-01	9.29E-01	1.00E+00	1.13E+00	6.27E-01	1.48E+00
UM-250S-3250E (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	2.05E+00	2.94E+01	1.69E-01	NA	NA	NA	NA	5.36E-04	1.43E+01	7.66E-03	4.58E-01	1.09E-01	7.42E-01	1.00E+00	1.13E+00	6.27E-01	1.18E+00
BRSD-24 (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	2.05E+00	2.81E+01	1.62E-01	NA	NA	NA	NA	5.36E-04	1.37E+01	7.34E-03	4.58E-01	1.09E-01	7.11E-01	1.00E+00	1.13E+00	6.27E-01	1.13E+00
UM-250S-2750E (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	2.05E+00	1.45E+01	8.34E-02	NA	NA	NA	NA	5.36E-04	7.05E+00	3.78E-03	4.58E-01	1.09E-01	3.66E-01	1.00E+00	1.13E+00	6.27E-01	5.84E-01
UM-250S-2500E (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	2.05E+00	6.06E+00	3.49E-02	NA	NA	NA	NA	5.36E-04	2.95E+00	1.58E-03	4.58E-01	1.09E-01	1.53E-01	1.00E+00	1.13E+00	6.27E-01	2.44E-01
UM-0N-2500E (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	2.05E+00	4.74E+01	2.73E-01	NA	NA	NA	NA	5.36E-04	2.31E+01	1.24E-02	4.58E-01	1.09E-01	1.20E+00	1.00E+00	1.13E+00	6.27E-01	1.91E+00
UM-0N-250E (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	2.05E+00	3.94E+01	2.27E-01	NA	NA	NA	NA	5.36E-04	1.92E+01	1.03E-02	4.58E-01	1.09E-01	9.97E-01	1.00E+00	1.13E+00	6.27E-01	1.59E+00
BRSD-2 (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	2.05E+00	2.11E+01	1.22E-01	NA	NA	NA	NA	5.36E-04	1.03E+01	5.52E-03	4.58E-01	1.09E-01	5.35E-01	1.00E+00	1.13E+00	6.27E-01	8.53E-01
UM-500N-2500E (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	2.05E+00	3.61E+00	2.08E-02	NA	NA	NA	NA	5.36E-04	1.76E+00	9.43E-04	4.58E-01	1.09E-01	9.13E-02	1.00E+00	1.13E+00	6.27E-01	1.46E-01
UM-250N-2500E (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	2.05E+00	2.94E+01	1.69E-01	NA	NA	NA	NA	5.36E-04	1.43E+01	7.66E-03	4.58E-01	1.09E-01	7.42E-01	1.00E+00	1.13E+00	6.27E-01	1.18E+00
UM-250N-2250E (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	2.05E+00	2.46E+01	1.42E-01	NA	NA	NA	NA	5.36E-04	1.20E+01	6.43E-03	4.58E-01	1.09E-01	6.23E-01	1.00E+00	1.13E+00	6.27E-01	9.94E-01
Western Upper Marsh (0-2")																						**Maximum HQ (Eastern Upper Marsh, 0-2")**	**1.91E+00**
UM-500S-2500E (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.96E+00	2.45E+00	1.41E-02	NA	NA	NA	NA	5.36E-04	1.25E+00	6.70E-04	4.58E-01	1.09E-01	6.21E-02	1.00E+00	1.13E+00	6.27E-01	9.91E-02
UM-0N-2000E (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.96E+00	2.86E+01	1.65E-01	NA	NA	NA	NA	5.36E-04	1.46E+01	7.82E-03	4.58E-01	1.09E-01	7.25E-01	1.00E+00	1.13E+00	6.27E-01	1.16E+00
UM-500S-2000E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-250N-1750E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	5.52E-01	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-1500E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	6.24E-01	BB	BB	BB	BB	BB	BB	BB	BB
UM-250S-1500E (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.96E+00	3.21E+01	1.85E-01	NA	NA	NA	NA	5.36E-04	1.64E+01	8.79E-03	4.58E-01	1.09E-01	8.14E-01	1.00E+00	1.13E+00	6.27E-01	1.30E+00
UM-250S-1250E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-6 (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.96E+00	1.92E+00	1.11E-02	NA	NA	NA	NA	5.36E-04	9.82E-01	5.26E-04	4.58E-01	1.09E-01	4.88E-02	1.00E+00	1.13E+00	6.27E-01	7.78E-02
UM-0N-1000E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-750E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-500E (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.96E+00	4.12E+00	2.37E-02	NA	NA	NA	NA	5.36E-04	2.10E+00	1.13E-03	4.58E-01	1.09E-01	1.04E-01	1.00E+00	1.13E+00	6.27E-01	1.66E-01
UM-250S-500E (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.96E+00	1.70E+00	9.80E-03	NA	NA	NA	NA	5.36E-04	8.68E-01	4.65E-04	4.58E-01	1.09E-01	4.31E-02	1.00E+00	1.13E+00	6.27E-01	6.88E-02
UM-250S-250E (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.96E+00	1.59E+00	9.14E-03	NA	NA	NA	NA	5.36E-04	8.09E-01	4.33E-04	4.58E-01	1.09E-01	4.02E-02	1.00E+00	1.13E+00	6.27E-01	6.41E-02
BRSD-7 (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.96E+00	3.59E+00	2.07E-02	NA	NA	NA	NA	5.36E-04	1.83E+00	9.81E-04	4.58E-01	1.09E-01	9.09E-02	1.00E+00	1.13E+00	6.27E-01	1.45E-01
BRSD-8 (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.96E+00	1.11E+01	6.37E-02	NA	NA	NA	NA	5.36E-04	5.64E+00	3.02E-03	4.58E-01	1.09E-01	2.80E-01	1.00E+00	1.13E+00	6.27E-01	4.47E-01
UM-500S-500E (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.96E+00	2.08E+00	1.20E-02	NA	NA	NA	NA	5.36E-04	1.06E+00	5.68E-04	4.58E-01	1.09E-01	5.26E-02	1.00E+00	1.13E+00	6.27E-01	8.40E-02

TABLE C-12CA: CADMIUM DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 12 - MARSH, TERRESTRIAL RECEPTORS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **118.73**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Mourning Dove (Herbivorous Birds)																							
BRSD-9 (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.96E+00	9.62E+00	5.55E-02	NA	NA	NA	NA	5.36E-04	4.91E+00	2.63E-03	4.58E-01	1.09E-01	2.44E-01	1.00E+00	1.13E+00	6.27E-01	3.89E-01
BRSD-10 (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.96E+00	3.53E+01	2.03E-01	NA	NA	NA	NA	5.36E-04	1.80E+01	9.64E-03	4.58E-01	1.09E-01	8.94E-01	1.00E+00	1.13E+00	6.27E-01	1.43E+00
BRSD-11 (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.96E+00	1.09E+01	6.27E-02	NA	NA	NA	NA	5.36E-04	5.55E+00	2.97E-03	4.58E-01	1.09E-01	2.76E-01	1.00E+00	1.13E+00	6.27E-01	4.40E-01
Eastern Upper Marsh (2-6")																						**Maximum HQ (Western Upper Marsh, 0-2")**	**1.43E+00**
UM-1000S-3500E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-15 (2-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	2.05E+00	2.65E+00	1.53E-02	NA	NA	NA	NA	5.36E-04	1.29E+00	6.91E-04	4.58E-01	1.09E-01	6.70E-02	1.00E+00	1.13E+00	6.27E-01	1.07E-01
BRSD-4 (2-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	2.05E+00	1.38E+00	7.94E-03	NA	NA	NA	NA	5.36E-04	6.71E-01	3.60E-04	4.58E-01	1.09E-01	3.48E-02	1.00E+00	1.13E+00	6.27E-01	5.56E-02
UM-750S-3500E (2-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	2.05E+00	2.71E+01	1.56E-01	NA	NA	NA	NA	5.36E-04	1.32E+01	7.07E-03	4.58E-01	1.09E-01	6.85E-01	1.00E+00	1.13E+00	6.27E-01	1.09E+00
BRSD-16 (2-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	2.05E+00	7.12E+01	4.10E-01	NA	NA	NA	NA	5.36E-04	3.47E+01	1.86E-02	4.58E-01	1.09E-01	1.80E+00	1.00E+00	1.13E+00	6.27E-01	2.87E+00
UM-750S-3000E (2-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	2.05E+00	1.87E+01	1.08E-01	NA	NA	NA	NA	5.36E-04	9.12E+00	4.89E-03	4.58E-01	1.09E-01	4.73E-01	1.00E+00	1.13E+00	6.27E-01	7.55E-01
BRSD-3 (2-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	2.05E+00	9.90E+00	5.70E-02	NA	NA	NA	NA	5.36E-04	4.82E+00	2.58E-03	4.58E-01	1.09E-01	2.50E-01	1.00E+00	1.13E+00	6.27E-01	3.99E-01
UM-500S-3250E (2-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	2.05E+00	1.69E+00	9.75E-03	NA	NA	NA	NA	5.36E-04	8.24E-01	4.42E-04	4.58E-01	1.09E-01	4.28E-02	1.00E+00	1.13E+00	6.27E-01	6.82E-02
UM-500S-3000E (2-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	2.05E+00	3.74E+00	2.15E-02	NA	NA	NA	NA	5.36E-04	1.82E+00	9.75E-04	4.58E-01	1.09E-01	9.45E-02	1.00E+00	1.13E+00	6.27E-01	1.51E-01
UM-500S-2750E (2-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	2.05E+00	1.81E+01	1.04E-01	NA	NA	NA	NA	5.36E-04	8.80E+00	4.72E-03	4.58E-01	1.09E-01	4.57E-01	1.00E+00	1.13E+00	6.27E-01	7.29E-01
BRSD-25 (2-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	2.05E+00	1.81E+01	1.05E-01	NA	NA	NA	NA	5.36E-04	8.84E+00	4.74E-03	4.58E-01	1.09E-01	4.59E-01	1.00E+00	1.13E+00	6.27E-01	7.32E-01
UM-250S-3000E (2-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	2.05E+00	4.25E+01	2.45E-01	NA	NA	NA	NA	5.36E-04	2.07E+01	1.11E-02	4.58E-01	1.09E-01	1.07E+00	1.00E+00	1.13E+00	6.27E-01	1.71E+00
UM-250S-3250E (2-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	2.05E+00	6.71E+00	3.87E-02	NA	NA	NA	NA	5.36E-04	3.27E+00	1.75E-03	4.58E-01	1.09E-01	1.70E-01	1.00E+00	1.13E+00	6.27E-01	2.71E-01
BRSD-24 (2-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	2.05E+00	5.75E+01	3.31E-01	NA	NA	NA	NA	5.36E-04	2.80E+01	1.50E-02	4.58E-01	1.09E-01	1.45E+00	1.00E+00	1.13E+00	6.27E-01	2.32E+00
UM-250S-2750E (2-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	2.05E+00	2.79E+01	1.61E-01	NA	NA	NA	NA	5.36E-04	1.36E+01	7.29E-03	4.58E-01	1.09E-01	7.06E-01	1.00E+00	1.13E+00	6.27E-01	1.13E+00
UM-0N-2500E (2-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	2.05E+00	2.00E+01	1.15E-01	NA	NA	NA	NA	5.36E-04	9.73E+00	5.21E-03	4.58E-01	1.09E-01	5.05E-01	1.00E+00	1.13E+00	6.27E-01	8.06E-01
BRSD-2 (2-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	2.05E+00	3.47E+01	2.00E-01	NA	NA	NA	NA	5.36E-04	1.69E+01	9.06E-03	4.58E-01	1.09E-01	8.77E-01	1.00E+00	1.13E+00	6.27E-01	1.40E+00
UM-500N-2500E (2-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	2.05E+00	3.26E+00	1.88E-02	NA	NA	NA	NA	5.36E-04	1.59E+00	8.52E-04	4.58E-01	1.09E-01	8.25E-02	1.00E+00	1.13E+00	6.27E-01	1.32E-01
UM-250N-2500E (2-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	2.05E+00	2.96E+01	1.70E-01	NA	NA	NA	NA	5.36E-04	1.44E+01	7.72E-03	4.58E-01	1.09E-01	7.47E-01	1.00E+00	1.13E+00	6.27E-01	1.19E+00
UM-250N-2250E (2-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	2.05E+00	6.94E+00	4.00E-02	NA	NA	NA	NA	5.36E-04	3.38E+00	1.81E-03	4.58E-01	1.09E-01	1.75E-01	1.00E+00	1.13E+00	6.27E-01	2.80E-01
Western Upper Marsh (2-6")																						**Maximum HQ (Eastern Upper Marsh, 2-6")**	**2.87E+00**
UM-500S-2500E (2-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.96E+00	1.45E+00	8.34E-03	NA	NA	NA	NA	5.36E-04	7.38E-01	3.95E-04	4.58E-01	1.09E-01	3.67E-02	1.00E+00	1.13E+00	6.27E-01	5.85E-02
UM-0N-2000E (2-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.96E+00	2.45E+01	1.41E-01	NA	NA	NA	NA	5.36E-04	1.25E+01	6.70E-03	4.58E-01	1.09E-01	6.21E-01	1.00E+00	1.13E+00	6.27E-01	9.91E-01
UM-500S-2000E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	5.48E-01	BB	BB	BB	BB	BB	BB	BB	BB
UM-250N-1750E (2-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.96E+00	1.88E+00	1.08E-02	NA	NA	NA	NA	5.36E-04	9.58E-01	5.13E-04	4.58E-01	1.09E-01	4.76E-02	1.00E+00	1.13E+00	6.27E-01	7.59E-02
UM-0N-1500E (2-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.96E+00	2.22E+00	1.28E-02	NA	NA	NA	NA	5.36E-04	1.13E+00	6.05E-04	4.58E-01	1.09E-01	5.61E-02	1.00E+00	1.13E+00	6.27E-01	8.96E-02
UM-250S-1500E (2-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.96E+00	2.51E+01	1.45E-01	NA	NA	NA	NA	5.36E-04	1.28E+01	6.86E-03	4.58E-01	1.09E-01	6.36E-01	1.00E+00	1.13E+00	6.27E-01	1.01E+00
UM-250S-1250E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-6 (2-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.96E+00	1.76E+00	1.01E-02	NA	NA	NA	NA	5.36E-04	8.98E-01	4.81E-04	4.58E-01	1.09E-01	4.46E-02	1.00E+00	1.13E+00	6.27E-01	7.12E-02
UM-0N-1000E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-750E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-500E (2-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.96E+00	1.53E+02	8.81E-01	NA	NA	NA	NA	5.36E-04	7.80E+01	4.18E-02	4.58E-01	1.09E-01	3.87E+00	1.00E+00	1.13E+00	6.27E-01	6.18E+00
UM-250S-500E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	6.44E-01	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-250E (2-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.96E+00	6.90E+00	3.98E-02	NA	NA	NA	NA	5.36E-04	3.52E+00	1.89E-03	4.58E-01	1.09E-01	1.75E-01	1.00E+00	1.13E+00	6.27E-01	2.79E-01
UM-250S-250E (2-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.96E+00	2.74E+00	1.58E-02	NA	NA	NA	NA	5.36E-04	1.40E+00	7.50E-04	4.58E-01	1.09E-01	6.95E-02	1.00E+00	1.13E+00	6.27E-01	1.11E-01
BRSD-7 (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-8 (2-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.96E+00	1.69E+01	9.71E-02	NA	NA	NA	NA	5.36E-04	8.60E+00	4.61E-03	4.58E-01	1.09E-01	4.27E-01	1.00E+00	1.13E+00	6.27E-01	6.82E-01
UM-500S-500E (2-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.96E+00	1.49E+00	8.58E-03	NA	NA	NA	NA	5.36E-04	7.60E-01	4.07E-04	4.58E-01	1.09E-01	3.77E-02	1.00E+00	1.13E+00	6.27E-01	6.02E-02
BRSD-9 (2-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.96E+00	4.78E+00	2.76E-02	NA	NA	NA	NA	5.36E-04	2.44E+00	1.31E-03	4.58E-01	1.09E-01	1.21E-01	1.00E+00	1.13E+00	6.27E-01	1.93E-01
BRSD-10 (2-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.96E+00	3.10E+01	1.78E-01	NA	NA	NA	NA	5.36E-04	1.58E+01	8.47E-03	4.58E-01	1.09E-01	7.85E-01	1.00E+00	1.13E+00	6.27E-01	1.25E+00
BRSD-11 (2-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.96E+00	4.96E+00	2.86E-02	NA	NA	NA	NA	5.36E-04	2.53E+00	1.36E-03	4.58E-01	1.09E-01	1.26E-01	1.00E+00	1.13E+00	6.27E-01	2.00E-01
Eastern Upper Marsh (6-12")																						**Maximum HQ (Western Upper Marsh, 2-6")**	**6.18E+00**
UM-1000S-3500E (6-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	2.05E+00	2.03E+00	1.17E-02	NA	NA	NA	NA	5.36E-04	9.89E-01	5.30E-04	4.58E-01	1.09E-01	5.13E-02	1.00E+00	1.13E+00	6.27E-01	8.19E-02
BRSD-15 (6-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	2.05E+00	3.59E+00	2.07E-02	NA	NA	NA	NA	5.36E-04	1.75E+00	9.38E-04	4.58E-01	1.09E-01	9.08E-02	1.00E+00	1.13E+00	6.27E-01	1.45E-01
BRSD-4 (6-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	2.05E+00	3.06E+00	1.76E-02	NA	NA	NA	NA	5.36E-04	1.49E+00	7.98E-04	4.58E-01	1.09E-01	7.73E-02	1.00E+00	1.13E+00	6.27E-01	1.23E-01
UM-750S-3500E (6-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	2.05E+00	3.76E+01	2.16E-01	NA	NA	NA	NA	5.36E-04	1.83E+01	9.81E-03	4.58E-01	1.09E-01	9.50E-01	1.00E+00	1.13E+00	6.27E-01	1.52E+00

TABLE C-12CA: CADMIUM DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 12 - MARSH, TERRESTRIAL RECEPTORS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **118.73**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Mourning Dove (Herbivorous Birds)																							
BRSD-16 (6-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	2.05E+00	3.70E+01	2.13E-01	NA	NA	NA	NA	5.36E-04	1.80E+01	9.64E-03	4.58E-01	1.09E-01	9.34E-01	1.00E+00	1.13E+00	6.27E-01	1.49E+00
UM-750S-3000E (6-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	2.05E+00	1.87E+01	1.08E-01	NA	NA	NA	NA	5.36E-04	9.13E+00	4.89E-03	4.58E-01	1.09E-01	4.74E-01	1.00E+00	1.13E+00	6.27E-01	7.56E-01
BRSD-3 (6-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	2.05E+00	4.80E+00	2.77E-02	NA	NA	NA	NA	5.36E-04	2.34E+00	1.25E-03	4.58E-01	1.09E-01	1.21E-01	1.00E+00	1.13E+00	6.27E-01	1.94E-01
UM-500S-3250E (6-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	2.05E+00	2.36E+00	1.36E-02	NA	NA	NA	NA	5.36E-04	1.15E+00	6.16E-04	4.58E-01	1.09E-01	5.97E-02	1.00E+00	1.13E+00	6.27E-01	9.52E-02
UM-500S-3000E (6-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	2.05E+00	3.57E+00	2.06E-02	NA	NA	NA	NA	5.36E-04	1.74E+00	9.32E-04	4.58E-01	1.09E-01	9.03E-02	1.00E+00	1.13E+00	6.27E-01	1.44E-01
UM-500S-2750E (6-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	2.05E+00	1.46E+01	8.43E-02	NA	NA	NA	NA	5.36E-04	7.13E+00	3.82E-03	4.58E-01	1.09E-01	3.70E-01	1.00E+00	1.13E+00	6.27E-01	5.91E-01
BRSD-25 (6-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	2.05E+00	1.58E+01	9.10E-02	NA	NA	NA	NA	5.36E-04	7.69E+00	4.12E-03	4.58E-01	1.09E-01	3.99E-01	1.00E+00	1.13E+00	6.27E-01	6.37E-01
UM-250S-3000E (6-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	2.05E+00	3.08E+01	1.77E-01	NA	NA	NA	NA	5.36E-04	1.50E+01	8.04E-03	4.58E-01	1.09E-01	7.79E-01	1.00E+00	1.13E+00	6.27E-01	1.24E+00
UM-250S-3250E (6-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	2.05E+00	7.14E+00	4.12E-02	NA	NA	NA	NA	5.36E-04	3.48E+00	1.86E-03	4.58E-01	1.09E-01	1.81E-01	1.00E+00	1.13E+00	6.27E-01	2.88E-01
BRSD-24 (6-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	2.05E+00	2.94E+01	1.69E-01	NA	NA	NA	NA	5.36E-04	1.43E+01	7.66E-03	4.58E-01	1.09E-01	7.42E-01	1.00E+00	1.13E+00	6.27E-01	1.18E+00
UM-250S-2750E (6-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	2.05E+00	3.14E+01	1.81E-01	NA	NA	NA	NA	5.36E-04	1.53E+01	8.20E-03	4.58E-01	1.09E-01	7.94E-01	1.00E+00	1.13E+00	6.27E-01	1.27E+00
UM-250S-2500E (6-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	2.05E+00	2.53E+00	1.45E-02	NA	NA	NA	NA	5.36E-04	1.23E+00	6.59E-04	4.58E-01	1.09E-01	6.38E-02	1.00E+00	1.13E+00	6.27E-01	1.02E-01
BRSD-2 (6-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	2.05E+00	5.58E+01	3.22E-01	NA	NA	NA	NA	5.36E-04	2.72E+01	1.46E-02	4.58E-01	1.09E-01	1.41E+00	1.00E+00	1.13E+00	6.27E-01	2.25E+00
UM-500N-2500E (6-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	2.05E+00	1.66E+00	9.57E-03	NA	NA	NA	NA	5.36E-04	8.09E-01	4.33E-04	4.58E-01	1.09E-01	4.20E-02	1.00E+00	1.13E+00	6.27E-01	6.70E-02
UM-250N-2500E (6-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	2.05E+00	2.55E+01	1.47E-01	NA	NA	NA	NA	5.36E-04	1.24E+01	6.64E-03	4.58E-01	1.09E-01	6.44E-01	1.00E+00	1.13E+00	6.27E-01	1.03E+00
UM-250N-2250E (6-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	2.05E+00	4.09E+00	2.35E-02	NA	NA	NA	NA	5.36E-04	1.99E+00	1.07E-03	4.58E-01	1.09E-01	1.03E-01	1.00E+00	1.13E+00	6.27E-01	1.65E-01
Western Upper Marsh (6-12")																						**Maximum HQ (Eastern Upper Marsh, 6-12")**	**2.25E+00**
UM-500S-2500E (6-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.96E+00	1.67E+00	9.61E-03	NA	NA	NA	NA	5.36E-04	8.51E-01	4.56E-04	4.58E-01	1.09E-01	4.23E-02	1.00E+00	1.13E+00	6.27E-01	6.74E-02
UM-0N-2000E (6-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.96E+00	3.84E+01	2.21E-01	NA	NA	NA	NA	5.36E-04	1.96E+01	1.05E-02	4.58E-01	1.09E-01	9.73E-01	1.00E+00	1.13E+00	6.27E-01	1.55E+00
UM-500S-2000E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-250N-1750E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-1500E (6-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.96E+00	5.31E+00	3.06E-02	NA	NA	NA	NA	5.36E-04	2.71E+00	1.45E-03	4.58E-01	1.09E-01	1.35E-01	1.00E+00	1.13E+00	6.27E-01	2.15E-01
UM-250S-1500E (6-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.96E+00	6.14E+00	3.54E-02	NA	NA	NA	NA	5.36E-04	3.13E+00	1.68E-03	4.58E-01	1.09E-01	1.55E-01	1.00E+00	1.13E+00	6.27E-01	2.48E-01
UM-250S-1250E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-6 (6-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.96E+00	1.89E+00	1.09E-02	NA	NA	NA	NA	5.36E-04	9.64E-01	5.17E-04	4.58E-01	1.09E-01	4.79E-02	1.00E+00	1.13E+00	6.27E-01	7.64E-02
UM-0N-1000E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-750E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-500E (6-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.96E+00	2.61E+01	1.50E-01	NA	NA	NA	NA	5.36E-04	1.33E+01	7.13E-03	4.58E-01	1.09E-01	6.61E-01	1.00E+00	1.13E+00	6.27E-01	1.05E+00
UM-250S-500E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-250E (6-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.96E+00	1.18E+01	6.79E-02	NA	NA	NA	NA	5.36E-04	6.01E+00	3.22E-03	4.58E-01	1.09E-01	2.98E-01	1.00E+00	1.13E+00	6.27E-01	4.76E-01
UM-250S-250E (6-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.96E+00	1.82E+00	1.05E-02	NA	NA	NA	NA	5.36E-04	9.28E-01	4.97E-04	4.58E-01	1.09E-01	4.61E-02	1.00E+00	1.13E+00	6.27E-01	7.35E-02
BRSD-7 (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-8 (6-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.96E+00	9.84E+00	5.67E-02	NA	NA	NA	NA	5.36E-04	5.02E+00	2.69E-03	4.58E-01	1.09E-01	2.49E-01	1.00E+00	1.13E+00	6.27E-01	3.98E-01
UM-500S-500E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-9 (6-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.96E+00	3.41E+00	1.97E-02	NA	NA	NA	NA	5.36E-04	1.74E+00	9.32E-04	4.58E-01	1.09E-01	8.64E-02	1.00E+00	1.13E+00	6.27E-01	1.38E-01
BRSD-10 (6-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.96E+00	4.61E+01	2.65E-01	NA	NA	NA	NA	5.36E-04	2.35E+01	1.26E-02	4.58E-01	1.09E-01	1.17E+00	1.00E+00	1.13E+00	6.27E-01	1.86E+00
BRSD-11 (6-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.96E+00	4.00E+00	2.30E-02	NA	NA	NA	NA	5.36E-04	2.04E+00	1.09E-03	4.58E-01	1.09E-01	1.01E-01	1.00E+00	1.13E+00	6.27E-01	1.62E-01
Middle Marsh (0-2")																						**Maximum HQ (Western Upper Marsh, 6-12")**	**1.86E+00**
MMSD-201 (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.96E+00	1.86E+01	1.07E-01	NA	NA	NA	NA	5.36E-04	9.50E+00	5.09E-03	4.58E-01	1.09E-01	4.72E-01	1.00E+00	1.13E+00	6.27E-01	7.53E-01
MMSD-202 (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.96E+00	2.16E+00	1.24E-02	NA	NA	NA	NA	5.36E-04	1.10E+00	5.89E-04	4.58E-01	1.09E-01	5.46E-02	1.00E+00	1.13E+00	6.27E-01	8.72E-02
Middle Marsh (2-6")																						**Maximum HQ (Middle Marsh, 0-2")**	**7.53E-01**
MMSD-201 (2-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.96E+00	2.90E+01	1.67E-01	NA	NA	NA	NA	5.36E-04	1.48E+01	7.93E-03	4.58E-01	1.09E-01	7.35E-01	1.00E+00	1.13E+00	6.27E-01	1.17E+00
MMSD-202 (2-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.96E+00	2.55E+00	1.47E-02	NA	NA	NA	NA	5.36E-04	1.30E+00	6.97E-04	4.58E-01	1.09E-01	6.46E-02	1.00E+00	1.13E+00	6.27E-01	1.03E-01
Middle Marsh (6-12")																						**Maximum HQ (Middle Marsh, 2-6")**	**1.17E+00**
MMSD-201 (6-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.96E+00	3.61E+01	2.08E-01	NA	NA	NA	NA	5.36E-04	1.84E+01	9.86E-03	4.58E-01	1.09E-01	9.14E-01	1.00E+00	1.13E+00	6.27E-01	1.46E+00
MMSD-202 (6-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.96E+00	2.74E+00	1.58E-02	NA	NA	NA	NA	5.36E-04	1.40E+00	7.50E-04	4.58E-01	1.09E-01	6.95E-02	1.00E+00	1.13E+00	6.27E-01	1.11E-01
Lower Marsh (0-2")																						**Maximum HQ (Middle Marsh, 6-12")**	**1.46E+00**
LMSD-201 (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
LMSD-202 (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	2.05E+00	3.08E+00	1.77E-02	NA	NA	NA	NA	5.36E-04	1.50E+00	8.04E-04	4.58E-01	1.09E-01	7.79E-02	1.00E+00	1.13E+00	6.27E-01	1.24E-01
LMSD-203 (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	2.05E+00	1.23E+00	7.10E-03	NA	NA	NA	NA	5.36E-04	6.00E-01	3.21E-04	4.58E-01	1.09E-01	3.11E-02	1.00E+00	1.13E+00	6.27E-01	4.97E-02
LMSD-204 (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	2.05E+00	2.05E+00	1.18E-02	NA	NA	NA	NA	5.36E-04	1.00E+00	5.36E-04	4.58E-01	1.09E-01	5.19E-02	1.00E+00	1.13E+00	6.27E-01	8.28E-02

TABLE C-12CA: CADMIUM DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 12 - MARSH, TERRESTRIAL RECEPTORS (Continued)

Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)
calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **118.73**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Mourning Dove (Herbivorous Birds)																							
Lower Marsh (2-6")																						**Maximum HQ (Lower Marsh, 0-2")**	**1.24E-01**
LMSD-201 (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
LMSD-202 (2-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	2.05E+00	2.46E+00	1.42E-02	NA	NA	NA	NA	5.36E-04	1.20E+00	6.43E-04	4.58E-01	1.09E-01	6.23E-02	1.00E+00	1.13E+00	6.27E-01	9.94E-02
LMSD-203 (2-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	2.05E+00	1.64E+00	9.46E-03	NA	NA	NA	NA	5.36E-04	8.00E-01	4.29E-04	4.58E-01	1.09E-01	4.15E-02	1.00E+00	1.13E+00	6.27E-01	6.63E-02
LMSD-204 (2-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	2.05E+00	1.64E+00	9.46E-03	NA	NA	NA	NA	5.36E-04	8.00E-01	4.29E-04	4.58E-01	1.09E-01	4.15E-02	1.00E+00	1.13E+00	6.27E-01	6.63E-02
Lower Marsh (6-12")																						**Maximum HQ (Lower Marsh, 2-6")**	**9.94E-02**
LMSD-201 (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
LMSD-202 (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
LMSD-203 (6-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	2.05E+00	5.75E+00	3.31E-02	NA	NA	NA	NA	5.36E-04	2.80E+00	1.50E-03	4.58E-01	1.09E-01	1.45E-01	1.00E+00	1.13E+00	6.27E-01	2.32E-01
LMSD-204 (6-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	2.05E+00	1.23E+00	7.10E-03	NA	NA	NA	NA	5.36E-04	6.00E-01	3.21E-04	4.58E-01	1.09E-01	3.11E-02	1.00E+00	1.13E+00	6.27E-01	4.97E-02
																						Maximum HQ (Lower Marsh, 6-12")	**2.32E-01**
Red-Tailed Hawk (Carnivorous Birds)																							
Reference Sites																							
BRSD-5 (0-2")	9.00E-02	9.00E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	6.19E-01	3.17E-03	1.70E-01	1.13E+00	4.77E-04	1.00E+00	1.13E+00	1.00E+00	4.77E-04
BRSD-5 (2-6")	9.00E-02	9.00E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.21E-01	2.67E-03	1.70E-01	1.13E+00	4.01E-04	1.00E+00	1.13E+00	1.00E+00	4.01E-04
BRSD-5 (6-12")	9.00E-02	9.00E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.71E-01	2.42E-03	1.70E-01	1.13E+00	3.63E-04	1.00E+00	1.13E+00	1.00E+00	3.63E-04
PGBG-1 (0-2")	9.00E-02	9.00E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.51E+00	7.74E-03	1.70E-01	1.13E+00	1.16E-03	1.00E+00	1.13E+00	1.00E+00	1.16E-03
PGBG-1 (2-6")	9.00E-02	9.00E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.44E+00	7.38E-03	1.70E-01	1.13E+00	1.11E-03	1.00E+00	1.13E+00	1.00E+00	1.11E-03
PGBG-1 (6-12")	9.00E-02	9.00E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	6.49E-01	3.33E-03	1.70E-01	1.13E+00	5.00E-04	1.00E+00	1.13E+00	1.00E+00	5.00E-04
PGBG-2 (0-2")	9.00E-02	9.00E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.84E+00	9.43E-03	1.70E-01	1.13E+00	1.42E-03	1.00E+00	1.13E+00	1.00E+00	1.42E-03
PGBG-2 (2-6")	9.00E-02	9.00E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.54E+00	7.90E-03	1.70E-01	1.13E+00	1.19E-03	1.00E+00	1.13E+00	1.00E+00	1.19E-03
PGBG-2 (6-12")	9.00E-02	9.00E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.57E+00	8.05E-03	1.70E-01	1.13E+00	1.21E-03	1.00E+00	1.13E+00	1.00E+00	1.21E-03
Eastern Upper Marsh (0-2")																						**Minimum HQ (Reference Sites)**	**3.63E-04**
UM-1000S-3500E (0-2")	9.00E-02	9.00E-02	3.23E-01	7.07E-01	6.36E-02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.19E+00	1.12E-02	1.70E-01	1.13E+00	1.12E-02	1.00E+00	1.13E+00	1.00E+00	1.12E-02
BRSD-15 (0-2")	9.00E-02	9.00E-02	3.23E-01	4.91E-01	4.41E-02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.52E+00	7.79E-03	1.70E-01	1.13E+00	7.80E-03	1.00E+00	1.13E+00	1.00E+00	7.80E-03
BRSD-4 (0-2")	9.00E-02	9.00E-02	3.23E-01	2.45E-01	2.20E-02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	7.59E-01	3.89E-03	1.70E-01	1.13E+00	3.90E-03	1.00E+00	1.13E+00	1.00E+00	3.89E-03
UM-750S-3500E (0-2")	9.00E-02	9.00E-02	3.23E-01	2.58E+00	2.32E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	8.00E+00	4.10E-02	1.70E-01	1.13E+00	4.11E-02	1.00E+00	1.13E+00	1.00E+00	4.10E-02
BRSD-16 (0-2")	9.00E-02	9.00E-02	3.23E-01	1.67E+00	1.51E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.19E+00	2.66E-02	1.70E-01	1.13E+00	2.66E-02	1.00E+00	1.13E+00	1.00E+00	2.66E-02
UM-750S-3000E (0-2")	9.00E-02	9.00E-02	3.23E-01	3.45E+00	3.11E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.07E+01	5.49E-02	1.70E-01	1.13E+00	5.49E-02	1.00E+00	1.13E+00	1.00E+00	5.49E-02
BRSD-3 (0-2")	9.00E-02	9.00E-02	3.23E-01	1.17E+00	1.05E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.62E+00	1.86E-02	1.70E-01	1.13E+00	1.86E-02	1.00E+00	1.13E+00	1.00E+00	1.86E-02
UM-500S-3250E (0-2")	9.00E-02	9.00E-02	3.23E-01	9.00E-01	8.10E-02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.79E+00	1.43E-02	1.70E-01	1.13E+00	1.43E-02	1.00E+00	1.13E+00	1.00E+00	1.43E-02
UM-500S-3000E (0-2")	9.00E-02	9.00E-02	3.23E-01	2.94E+00	2.64E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	9.10E+00	4.67E-02	1.70E-01	1.13E+00	4.67E-02	1.00E+00	1.13E+00	1.00E+00	4.67E-02
UM-500S-2750E (0-2")	9.00E-02	9.00E-02	3.23E-01	3.55E+00	3.19E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.10E+01	5.64E-02	1.70E-01	1.13E+00	5.65E-02	1.00E+00	1.13E+00	1.00E+00	5.64E-02
BRSD-25 (0-2")	9.00E-02	9.00E-02	3.23E-01	2.02E+00	1.81E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	6.25E+00	3.20E-02	1.70E-01	1.13E+00	3.21E-02	1.00E+00	1.13E+00	1.00E+00	3.21E-02
UM-250S-3000E (0-2")	9.00E-02	9.00E-02	3.23E-01	5.78E+00	5.20E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.79E+01	9.18E-02	1.70E-01	1.13E+00	9.19E-02	1.00E+00	1.13E+00	1.00E+00	9.18E-02
UM-250S-3250E (0-2")	9.00E-02	9.00E-02	3.23E-01	4.61E+00	4.15E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.43E+01	7.33E-02	1.70E-01	1.13E+00	7.34E-02	1.00E+00	1.13E+00	1.00E+00	7.33E-02
BRSD-24 (0-2")	9.00E-02	9.00E-02	3.23E-01	4.42E+00	3.98E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.37E+01	7.02E-02	1.70E-01	1.13E+00	7.03E-02	1.00E+00	1.13E+00	1.00E+00	7.03E-02
UM-250S-2750E (0-2")	9.00E-02	9.00E-02	3.23E-01	2.28E+00	2.05E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	7.05E+00	3.61E-02	1.70E-01	1.13E+00	3.62E-02	1.00E+00	1.13E+00	1.00E+00	3.62E-02
UM-250S-2500E (0-2")	9.00E-02	9.00E-02	3.23E-01	9.52E-01	8.56E-02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.95E+00	1.51E-02	1.70E-01	1.13E+00	1.51E-02	1.00E+00	1.13E+00	1.00E+00	1.51E-02
UM-0N-2500E (0-2")	9.00E-02	9.00E-02	3.23E-01	7.45E+00	6.71E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.31E+01	1.18E-01	1.70E-01	1.13E+00	1.19E-01	1.00E+00	1.13E+00	1.00E+00	1.18E-01
UM-0N-250E (0-2")	9.00E-02	9.00E-02	3.23E-01	6.20E+00	5.57E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.92E+01	9.84E-02	1.70E-01	1.13E+00	9.85E-02	1.00E+00	1.13E+00	1.00E+00	9.85E-02
BRSD-2 (0-2")	9.00E-02	9.00E-02	3.23E-01	3.32E+00	2.99E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.03E+01	5.28E-02	1.70E-01	1.13E+00	5.29E-02	1.00E+00	1.13E+00	1.00E+00	5.28E-02
UM-500N-2500E (0-2")	9.00E-02	9.00E-02	3.23E-01	5.68E-01	5.11E-02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.76E+00	9.02E-03	1.70E-01	1.13E+00	9.03E-03	1.00E+00	1.13E+00	1.00E+00	9.03E-03
UM-250N-2500E (0-2")	9.00E-02	9.00E-02	3.23E-01	4.61E+00	4.15E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.43E+01	7.33E-02	1.70E-01	1.13E+00	7.34E-02	1.00E+00	1.13E+00	1.00E+00	7.33E-02
UM-250N-2250E (0-2")	9.00E-02	9.00E-02	3.23E-01	3.87E+00	3.48E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.20E+01	6.15E-02	1.70E-01	1.13E+00	6.16E-02	1.00E+00	1.13E+00	1.00E+00	6.15E-02
Western Upper Marsh (0-2")																						**Maximum HQ (Eastern Upper Marsh, 0-2")**	**1.18E-01**
UM-500S-2500E (0-2")	9.00E-02	9.00E-02	3.23E-01	4.03E-01	3.63E-02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.25E+00	6.41E-03	1.70E-01	1.13E+00	6.42E-03	1.00E+00	1.13E+00	1.00E+00	6.41E-03
UM-0N-2000E (0-2")	9.00E-02	9.00E-02	3.23E-01	4.71E+00	4.24E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.46E+01	7.49E-02	1.70E-01	1.13E+00	7.49E-02	1.00E+00	1.13E+00	1.00E+00	7.49E-02
UM-500S-2000E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-250N-1750E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	5.52E-01	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-1500E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	6.24E-01	BB	BB	BB	BB	BB	BB	BB	BB
UM-250S-1500E (0-2")	9.00E-02	9.00E-02	3.23E-01	5.29E+00	4.76E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.64E+01	8.41E-02	1.70E-01	1.13E+00	8.42E-02	1.00E+00	1.13E+00	1.00E+00	8.41E-02

TABLE C-12CA: CADMIUM DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 12 - MARSH, TERRESTRIAL RECEPTORS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **118.73**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Red-Tailed Hawk (Carnivorous Birds)																							
UM-250S-1250E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-6 (0-2")	9.00E-02	9.00E-02	3.23E-01	3.17E-01	2.85E-02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	9.82E-01	5.04E-03	1.70E-01	1.13E+00	5.04E-03	1.00E+00	1.13E+00	1.00E+00	5.04E-03
UM-0N-1000E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-750E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-500E (0-2")	9.00E-02	9.00E-02	3.23E-01	6.78E-01	6.10E-02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.10E+00	1.08E-02	1.70E-01	1.13E+00	1.08E-02	1.00E+00	1.13E+00	1.00E+00	1.08E-02
UM-250S-500E (0-2")	9.00E-02	9.00E-02	3.23E-01	2.80E-01	2.52E-02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	8.68E-01	4.45E-03	1.70E-01	1.13E+00	4.45E-03	1.00E+00	1.13E+00	1.00E+00	4.45E-03
UM-250S-250E (0-2")	9.00E-02	9.00E-02	3.23E-01	2.61E-01	2.35E-02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	8.09E-01	4.15E-03	1.70E-01	1.13E+00	4.15E-03	1.00E+00	1.13E+00	1.00E+00	4.15E-03
BRSD-7 (0-2")	9.00E-02	9.00E-02	3.23E-01	5.91E-01	5.31E-02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.83E+00	9.38E-03	1.70E-01	1.13E+00	9.39E-03	1.00E+00	1.13E+00	1.00E+00	9.39E-03
BRSD-8 (0-2")	9.00E-02	9.00E-02	3.23E-01	1.82E+00	1.64E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.64E+00	2.89E-02	1.70E-01	1.13E+00	2.89E-02	1.00E+00	1.13E+00	1.00E+00	2.89E-02
UM-500S-500E (0-2")	9.00E-02	9.00E-02	3.23E-01	3.42E-01	3.08E-02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.06E+00	5.44E-03	1.70E-01	1.13E+00	5.44E-03	1.00E+00	1.13E+00	1.00E+00	5.44E-03
BRSD-9 (0-2")	9.00E-02	9.00E-02	3.23E-01	1.58E+00	1.43E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.91E+00	2.52E-02	1.70E-01	1.13E+00	2.52E-02	1.00E+00	1.13E+00	1.00E+00	2.52E-02
BRSD-10 (0-2")	9.00E-02	9.00E-02	3.23E-01	5.81E+00	5.23E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.80E+01	9.23E-02	1.70E-01	1.13E+00	9.24E-02	1.00E+00	1.13E+00	1.00E+00	9.23E-02
BRSD-11 (0-2")	9.00E-02	9.00E-02	3.23E-01	1.79E+00	1.61E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.55E+00	2.85E-02	1.70E-01	1.13E+00	2.85E-02	1.00E+00	1.13E+00	1.00E+00	2.85E-02
Eastern Upper Marsh (2-6")																						**Maximum HQ (Western Upper Marsh, 0-2")**	**9.23E-02**
UM-1000S-3500E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-15 (2-6")	9.00E-02	9.00E-02	3.23E-01	4.16E-01	3.74E-02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.29E+00	6.61E-03	1.70E-01	1.13E+00	6.62E-03	1.00E+00	1.13E+00	1.00E+00	6.62E-03
BRSD-4 (2-6")	9.00E-02	9.00E-02	3.23E-01	2.17E-01	1.95E-02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	6.71E-01	3.44E-03	1.70E-01	1.13E+00	3.44E-03	1.00E+00	1.13E+00	1.00E+00	3.44E-03
UM-750S-3500E (2-6")	9.00E-02	9.00E-02	3.23E-01	4.26E+00	3.83E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.32E+01	6.77E-02	1.70E-01	1.13E+00	6.77E-02	1.00E+00	1.13E+00	1.00E+00	6.77E-02
BRSD-16 (2-6")	9.00E-02	9.00E-02	3.23E-01	1.12E+01	1.01E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.47E+01	1.78E-01	1.70E-01	1.13E+00	1.78E-01	1.00E+00	1.13E+00	1.00E+00	1.78E-01
UM-750S-3000E (2-6")	9.00E-02	9.00E-02	3.23E-01	2.94E+00	2.65E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	9.12E+00	4.68E-02	1.70E-01	1.13E+00	4.68E-02	1.00E+00	1.13E+00	1.00E+00	4.68E-02
BRSD-3 (2-6")	9.00E-02	9.00E-02	3.23E-01	1.56E+00	1.40E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.82E+00	2.47E-02	1.70E-01	1.13E+00	2.47E-02	1.00E+00	1.13E+00	1.00E+00	2.47E-02
UM-500S-3250E (2-6")	9.00E-02	9.00E-02	3.23E-01	2.66E-01	2.39E-02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	8.24E-01	4.23E-03	1.70E-01	1.13E+00	4.23E-03	1.00E+00	1.13E+00	1.00E+00	4.23E-03
UM-500S-3000E (2-6")	9.00E-02	9.00E-02	3.23E-01	5.87E-01	5.28E-02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.82E+00	9.33E-03	1.70E-01	1.13E+00	9.34E-03	1.00E+00	1.13E+00	1.00E+00	9.33E-03
UM-250S-2750E (2-6")	9.00E-02	9.00E-02	3.23E-01	2.84E+00	2.55E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	8.80E+00	4.51E-02	1.70E-01	1.13E+00	4.52E-02	1.00E+00	1.13E+00	1.00E+00	4.51E-02
BRSD-25 (2-6")	9.00E-02	9.00E-02	3.23E-01	2.85E+00	2.57E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	8.84E+00	4.53E-02	1.70E-01	1.13E+00	4.54E-02	1.00E+00	1.13E+00	1.00E+00	4.53E-02
UM-250S-3000E (2-6")	9.00E-02	9.00E-02	3.23E-01	6.68E+00	6.01E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.07E+01	1.06E-01	1.70E-01	1.13E+00	1.06E-01	1.00E+00	1.13E+00	1.00E+00	1.06E-01
UM-250S-3250E (2-6")	9.00E-02	9.00E-02	3.23E-01	1.06E+00	9.49E-02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.27E+00	1.68E-02	1.70E-01	1.13E+00	1.68E-02	1.00E+00	1.13E+00	1.00E+00	1.68E-02
BRSD-24 (2-6")	9.00E-02	9.00E-02	3.23E-01	9.04E+00	8.13E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.80E+01	1.44E-01	1.70E-01	1.13E+00	1.44E-01	1.00E+00	1.13E+00	1.00E+00	1.44E-01
UM-250S-2750E (2-6")	9.00E-02	9.00E-02	3.23E-01	4.39E+00	3.95E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.36E+01	6.97E-02	1.70E-01	1.13E+00	6.98E-02	1.00E+00	1.13E+00	1.00E+00	6.98E-02
UM-0N-2500E (2-6")	9.00E-02	9.00E-02	3.23E-01	3.14E+00	2.82E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	9.73E+00	4.99E-02	1.70E-01	1.13E+00	4.99E-02	1.00E+00	1.13E+00	1.00E+00	4.99E-02
BRSD-2 (2-6")	9.00E-02	9.00E-02	3.23E-01	5.45E+00	4.91E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.69E+01	8.67E-02	1.70E-01	1.13E+00	8.67E-02	1.00E+00	1.13E+00	1.00E+00	8.67E-02
UM-500N-2500E (2-6")	9.00E-02	9.00E-02	3.23E-01	5.13E-01	4.62E-02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.59E+00	8.15E-03	1.70E-01	1.13E+00	8.16E-03	1.00E+00	1.13E+00	1.00E+00	8.16E-03
UM-250N-2500E (2-6")	9.00E-02	9.00E-02	3.23E-01	4.65E+00	4.18E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.44E+01	7.38E-02	1.70E-01	1.13E+00	7.39E-02	1.00E+00	1.13E+00	1.00E+00	7.39E-02
UM-250N-2250E (2-6")	9.00E-02	9.00E-02	3.23E-01	1.09E+00	9.81E-02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.38E+00	1.73E-02	1.70E-01	1.13E+00	1.73E-02	1.00E+00	1.13E+00	1.00E+00	1.73E-02
Western Upper Marsh (2-6")																						**Maximum HQ (Eastern Upper Marsh, 2-6")**	**1.78E-01**
UM-500S-2500E (2-6")	9.00E-02	9.00E-02	3.23E-01	2.38E-01	2.14E-02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	7.38E-01	3.78E-03	1.70E-01	1.13E+00	3.79E-03	1.00E+00	1.13E+00	1.00E+00	3.79E-03
UM-0N-2000E (2-6")	9.00E-02	9.00E-02	3.23E-01	4.03E+00	3.63E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.25E+01	6.41E-02	1.70E-01	1.13E+00	6.42E-02	1.00E+00	1.13E+00	1.00E+00	6.41E-02
UM-500S-2000E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	5.48E-01	BB	BB	BB	BB	BB	BB	BB	BB
UM-250N-1750E (2-6")	9.00E-02	9.00E-02	3.23E-01	3.09E-01	2.78E-02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	9.58E-01	4.91E-03	1.70E-01	1.13E+00	4.92E-03	1.00E+00	1.13E+00	1.00E+00	4.91E-03
UM-0N-1500E (2-6")	9.00E-02	9.00E-02	3.23E-01	3.65E-01	3.28E-02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.13E+00	5.79E-03	1.70E-01	1.13E+00	5.80E-03	1.00E+00	1.13E+00	1.00E+00	5.80E-03
UM-250S-1500E (2-6")	9.00E-02	9.00E-02	3.23E-01	4.13E+00	3.72E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.28E+01	6.56E-02	1.70E-01	1.13E+00	6.57E-02	1.00E+00	1.13E+00	1.00E+00	6.57E-02
UM-250S-1250E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-6 (2-6")	9.00E-02	9.00E-02	3.23E-01	2.90E-01	2.61E-02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	8.98E-01	4.60E-03	1.70E-01	1.13E+00	4.61E-03	1.00E+00	1.13E+00	1.00E+00	4.61E-03
UM-0N-1000E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-750E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-500E (2-6")	9.00E-02	9.00E-02	3.23E-01	2.52E+01	2.26E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	7.80E+01	4.00E-01	1.70E-01	1.13E+00	4.00E-01	1.00E+00	1.13E+00	1.00E+00	4.00E-01
UM-250S-500E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	6.44E-01	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-250E (2-6")	9.00E-02	9.00E-02	3.23E-01	1.14E+00	1.02E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.52E+00	1.80E-02	1.70E-01	1.13E+00	1.81E-02	1.00E+00	1.13E+00	1.00E+00	1.81E-02
UM-250S-250E (2-6")	9.00E-02	9.00E-02	3.23E-01	4.52E-01	4.06E-02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.40E+00	7.18E-03	1.70E-01	1.13E+00	7.19E-03	1.00E+00	1.13E+00	1.00E+00	7.18E-03
BRSD-7 (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB

TABLE C-12CA: CADMIUM DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 12 - MARSH, TERRESTRIAL RECEPTORS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **118.73**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Red-Tailed Hawk (Carnivorous Birds)																							
BRSD-8 (2-6")	9.00E-02	9.00E-02	3.23E-01	2.78E+00	2.50E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	8.60E+00	4.41E-02	1.70E-01	1.13E+00	4.41E-02	1.00E+00	1.13E+00	1.00E+00	4.41E-02
UM-500S-500E (2-6")	9.00E-02	9.00E-02	3.23E-01	2.45E-01	2.21E-02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	7.60E-01	3.90E-03	1.70E-01	1.13E+00	3.90E-03	1.00E+00	1.13E+00	1.00E+00	3.90E-03
BRSD-9 (2-6")	9.00E-02	9.00E-02	3.23E-01	7.87E-01	7.08E-02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.44E+00	1.25E-02	1.70E-01	1.13E+00	1.25E-02	1.00E+00	1.13E+00	1.00E+00	1.25E-02
BRSD-10 (2-6")	9.00E-02	9.00E-02	3.23E-01	5.10E+00	4.59E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.58E+01	8.10E-02	1.70E-01	1.13E+00	8.11E-02	1.00E+00	1.13E+00	1.00E+00	8.10E-02
BRSD-11 (2-6")	9.00E-02	9.00E-02	3.23E-01	8.16E-01	7.34E-02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.53E+00	1.30E-02	1.70E-01	1.13E+00	1.30E-02	1.00E+00	1.13E+00	1.00E+00	1.30E-02
Eastern Upper Marsh (6-12")																						**Maximum HQ (Western Upper Marsh, 2-6")**	**4.00E-01**
UM-1000S-3500E (6-12")	9.00E-02	9.00E-02	3.23E-01	3.19E-01	2.87E-02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	9.89E-01	5.07E-03	1.70E-01	1.13E+00	5.08E-03	1.00E+00	1.13E+00	1.00E+00	5.07E-03
BRSD-15 (6-12")	9.00E-02	9.00E-02	3.23E-01	5.65E-01	5.08E-02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.75E+00	8.97E-03	1.70E-01	1.13E+00	8.98E-03	1.00E+00	1.13E+00	1.00E+00	8.98E-03
BRSD-4 (6-12")	9.00E-02	9.00E-02	3.23E-01	4.81E-01	4.33E-02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.49E+00	7.64E-03	1.70E-01	1.13E+00	7.65E-03	1.00E+00	1.13E+00	1.00E+00	7.64E-03
UM-750S-3500E (6-12")	9.00E-02	9.00E-02	3.23E-01	5.91E+00	5.31E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.83E+01	9.38E-02	1.70E-01	1.13E+00	9.39E-02	1.00E+00	1.13E+00	1.00E+00	9.39E-02
BRSD-16 (6-12")	9.00E-02	9.00E-02	3.23E-01	5.81E+00	5.23E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.80E+01	9.23E-02	1.70E-01	1.13E+00	9.24E-02	1.00E+00	1.13E+00	1.00E+00	9.23E-02
UM-750S-3000E (6-12")	9.00E-02	9.00E-02	3.23E-01	2.95E+00	2.65E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	9.13E+00	4.68E-02	1.70E-01	1.13E+00	4.69E-02	1.00E+00	1.13E+00	1.00E+00	4.68E-02
BRSD-3 (6-12")	9.00E-02	9.00E-02	3.23E-01	7.55E-01	6.79E-02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.34E+00	1.20E-02	1.70E-01	1.13E+00	1.20E-02	1.00E+00	1.13E+00	1.00E+00	1.20E-02
UM-500S-3250E (6-12")	9.00E-02	9.00E-02	3.23E-01	3.71E-01	3.34E-02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.15E+00	5.90E-03	1.70E-01	1.13E+00	5.90E-03	1.00E+00	1.13E+00	1.00E+00	5.90E-03
UM-500S-3000E (6-12")	9.00E-02	9.00E-02	3.23E-01	5.62E-01	5.05E-02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.74E+00	8.92E-03	1.70E-01	1.13E+00	8.93E-03	1.00E+00	1.13E+00	1.00E+00	8.92E-03
UM-500S-2750E (6-12")	9.00E-02	9.00E-02	3.23E-01	2.30E+00	2.07E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	7.13E+00	3.66E-02	1.70E-01	1.13E+00	3.66E-02	1.00E+00	1.13E+00	1.00E+00	3.66E-02
BRSD-25 (6-12")	9.00E-02	9.00E-02	3.23E-01	2.48E+00	2.23E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	7.69E+00	3.94E-02	1.70E-01	1.13E+00	3.95E-02	1.00E+00	1.13E+00	1.00E+00	3.94E-02
UM-250S-3000E (6-12")	9.00E-02	9.00E-02	3.23E-01	4.84E+00	4.35E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.50E+01	7.69E-02	1.70E-01	1.13E+00	7.70E-02	1.00E+00	1.13E+00	1.00E+00	7.69E-02
UM-250S-3250E (6-12")	9.00E-02	9.00E-02	3.23E-01	1.12E+00	1.01E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.48E+00	1.78E-02	1.70E-01	1.13E+00	1.79E-02	1.00E+00	1.13E+00	1.00E+00	1.78E-02
BRSD-24 (6-12")	9.00E-02	9.00E-02	3.23E-01	4.61E+00	4.15E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.43E+01	7.33E-02	1.70E-01	1.13E+00	7.34E-02	1.00E+00	1.13E+00	1.00E+00	7.33E-02
UM-250S-2750E (6-12")	9.00E-02	9.00E-02	3.23E-01	4.94E+00	4.44E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.53E+01	7.85E-02	1.70E-01	1.13E+00	7.85E-02	1.00E+00	1.13E+00	1.00E+00	7.85E-02
UM-250S-2500E (6-12")	9.00E-02	9.00E-02	3.23E-01	3.97E-01	3.57E-02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.23E+00	6.31E-03	1.70E-01	1.13E+00	6.31E-03	1.00E+00	1.13E+00	1.00E+00	6.31E-03
BRSD-2 (6-12")	9.00E-02	9.00E-02	3.23E-01	8.78E+00	7.90E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.72E+01	1.39E-01	1.70E-01	1.13E+00	1.40E-01	1.00E+00	1.13E+00	1.00E+00	1.40E-01
UM-500N-2500E (6-12")	9.00E-02	9.00E-02	3.23E-01	2.61E-01	2.35E-02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	8.09E-01	4.15E-03	1.70E-01	1.13E+00	4.15E-03	1.00E+00	1.13E+00	1.00E+00	4.15E-03
UM-250N-2500E (6-12")	9.00E-02	9.00E-02	3.23E-01	4.00E+00	3.60E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.24E+01	6.36E-02	1.70E-01	1.13E+00	6.36E-02	1.00E+00	1.13E+00	1.00E+00	6.36E-02
UM-250N-2250E (6-12")	9.00E-02	9.00E-02	3.23E-01	6.42E-01	5.78E-02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.99E+00	1.02E-02	1.70E-01	1.13E+00	1.02E-02	1.00E+00	1.13E+00	1.00E+00	1.02E-02
Western Upper Marsh (6-12")																						**Maximum HQ (Eastern Upper Marsh, 6-12")**	**1.40E-01**
UM-500S-2500E (6-12")	9.00E-02	9.00E-02	3.23E-01	2.75E-01	2.47E-02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	8.51E-01	4.36E-03	1.70E-01	1.13E+00	4.37E-03	1.00E+00	1.13E+00	1.00E+00	4.36E-03
UM-0N-2000E (6-12")	9.00E-02	9.00E-02	3.23E-01	6.33E+00	5.69E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.96E+01	1.00E-01	1.70E-01	1.13E+00	1.01E-01	1.00E+00	1.13E+00	1.00E+00	1.01E-01
UM-500S-2000E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-250N-1750E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-1500E (6-12")	9.00E-02	9.00E-02	3.23E-01	8.75E-01	7.87E-02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.71E+00	1.39E-02	1.70E-01	1.13E+00	1.39E-02	1.00E+00	1.13E+00	1.00E+00	1.39E-02
UM-250S-1500E (6-12")	9.00E-02	9.00E-02	3.23E-01	1.01E+00	9.09E-02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.13E+00	1.60E-02	1.70E-01	1.13E+00	1.61E-02	1.00E+00	1.13E+00	1.00E+00	1.61E-02
UM-250S-1250E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-6 (6-12")	9.00E-02	9.00E-02	3.23E-01	3.11E-01	2.80E-02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	9.64E-01	4.94E-03	1.70E-01	1.13E+00	4.95E-03	1.00E+00	1.13E+00	1.00E+00	4.94E-03
UM-0N-1000E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-750E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-500E (6-12")	9.00E-02	9.00E-02	3.23E-01	4.29E+00	3.86E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.33E+01	6.82E-02	1.70E-01	1.13E+00	6.83E-02	1.00E+00	1.13E+00	1.00E+00	6.82E-02
UM-250S-500E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-250E (6-12")	9.00E-02	9.00E-02	3.23E-01	1.94E+00	1.74E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	6.01E+00	3.08E-02	1.70E-01	1.13E+00	3.08E-02	1.00E+00	1.13E+00	1.00E+00	3.08E-02
UM-250S-250E (6-12")	9.00E-02	9.00E-02	3.23E-01	2.99E-01	2.69E-02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	9.28E-01	4.76E-03	1.70E-01	1.13E+00	4.76E-03	1.00E+00	1.13E+00	1.00E+00	4.76E-03
BRSD-7 (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-8 (6-12")	9.00E-02	9.00E-02	3.23E-01	1.62E+00	1.46E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.02E+00	2.57E-02	1.70E-01	1.13E+00	2.58E-02	1.00E+00	1.13E+00	1.00E+00	2.57E-02
UM-500S-500E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	5.50E-01	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-9 (6-12")	9.00E-02	9.00E-02	3.23E-01	5.62E-01	5.05E-02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.74E+00	8.92E-03	1.70E-01	1.13E+00	8.93E-03	1.00E+00	1.13E+00	1.00E+00	8.92E-03
BRSD-10 (6-12")	9.00E-02	9.00E-02	3.23E-01	7.58E+00	6.82E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.35E+01	1.20E-01	1.70E-01	1.13E+00	1.21E-01	1.00E+00	1.13E+00	1.00E+00	1.21E-01
BRSD-11 (6-12")	9.00E-02	9.00E-02	3.23E-01	6.58E-01	5.92E-02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.04E+00	1.05E-02	1.70E-01	1.13E+00	1.05E-02	1.00E+00	1.13E+00	1.00E+00	1.05E-02
Middle Marsh (0-2")																						**Maximum HQ (Western Upper Marsh, 6-12")**	**1.21E-01**
MMSD-201 (0-2")	9.00E-02	9.00E-02	3.23E-01	3.07E+00	2.76E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	9.50E+00	4.87E-02	1.70E-01	1.13E+00	4.88E-02	1.00E+00	1.13E+00	1.00E+00	4.87E-02
MMSD-202 (0-2")	9.00E-02	9.00E-02	3.23E-01	3.55E-01	3.19E-02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.10E+00	5.64E-03	1.70E-01	1.13E+00	5.65E-03	1.00E+00	1.13E+00	1.00E+00	5.64E-03

TABLE C-12CA: CADMIUM DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 12 - MARSH, TERRESTRIAL RECEPTORS (Continued)

Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)
calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **118.73**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Red-Tailed Hawk (Carnivorous Birds)																							
Middle Marsh (2-6")																						**Maximum HQ (Middle Marsh, 0-2")**	**4.87E-02**
MMSD-201 (2-6")	9.00E-02	9.00E-02	3.23E-01	4.78E+00	4.30E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.48E+01	7.59E-02	1.70E-01	1.13E+00	7.60E-02	1.00E+00	1.13E+00	1.00E+00	7.59E-02
MMSD-202 (2-6")	9.00E-02	9.00E-02	3.23E-01	4.20E-01	3.77E-02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.30E+00	6.67E-03	1.70E-01	1.13E+00	6.67E-03	1.00E+00	1.13E+00	1.00E+00	6.67E-03
Middle Marsh (6-12")																						**Maximum HQ (Middle Marsh, 2-6")**	**7.59E-02**
MMSD-201 (6-12")	9.00E-02	9.00E-02	3.23E-01	5.94E+00	5.34E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.84E+01	9.43E-02	1.70E-01	1.13E+00	9.44E-02	1.00E+00	1.13E+00	1.00E+00	9.44E-02
MMSD-202 (6-12")	9.00E-02	9.00E-02	3.23E-01	4.52E-01	4.06E-02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.40E+00	7.18E-03	1.70E-01	1.13E+00	7.19E-03	1.00E+00	1.13E+00	1.00E+00	7.18E-03
Lower Marsh (0-2")																						**Maximum HQ (Middle Marsh, 6-12")**	**9.44E-02**
LMSD-201 (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
LMSD-202 (0-2")	9.00E-02	9.00E-02	3.23E-01	4.84E-01	4.35E-02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.50E+00	7.69E-03	1.70E-01	1.13E+00	7.70E-03	1.00E+00	1.13E+00	1.00E+00	7.69E-03
LMSD-203 (0-2")	9.00E-02	9.00E-02	3.23E-01	1.94E-01	1.74E-02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	6.00E-01	3.08E-03	1.70E-01	1.13E+00	3.08E-03	1.00E+00	1.13E+00	1.00E+00	3.08E-03
LMSD-204 (0-2")	9.00E-02	9.00E-02	3.23E-01	3.23E-01	2.90E-02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.00E+00	5.13E-03	1.70E-01	1.13E+00	5.13E-03	1.00E+00	1.13E+00	1.00E+00	5.13E-03
Lower Marsh (2-6")																						**Maximum HQ (Lower Marsh, 0-2")**	**7.69E-03**
LMSD-201 (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
LMSD-202 (2-6")	9.00E-02	9.00E-02	3.23E-01	3.87E-01	3.48E-02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.20E+00	6.15E-03	1.70E-01	1.13E+00	6.16E-03	1.00E+00	1.13E+00	1.00E+00	6.15E-03
LMSD-203 (2-6")	9.00E-02	9.00E-02	3.23E-01	2.58E-01	2.32E-02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	8.00E-01	4.10E-03	1.70E-01	1.13E+00	4.11E-03	1.00E+00	1.13E+00	1.00E+00	4.10E-03
LMSD-204 (2-6")	9.00E-02	9.00E-02	3.23E-01	2.58E-01	2.32E-02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	8.00E-01	4.10E-03	1.70E-01	1.13E+00	4.11E-03	1.00E+00	1.13E+00	1.00E+00	4.10E-03
Lower Marsh (6-12")																						**Maximum HQ (Lower Marsh, 2-6")**	**6.15E-03**
LMSD-201 (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
LMSD-202 (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
LMSD-203 (6-12")	9.00E-02	9.00E-02	3.23E-01	9.04E-01	8.13E-02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.80E+00	1.44E-02	1.70E-01	1.13E+00	1.44E-02	1.00E+00	1.13E+00	1.00E+00	1.44E-02
LMSD-204 (6-12")	9.00E-02	9.00E-02	3.23E-01	1.94E-01	1.74E-02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	6.00E-01	3.08E-03	1.70E-01	1.13E+00	3.08E-03	1.00E+00	1.13E+00	1.00E+00	3.08E-03
																						Maximum HQ (Lower Marsh, 6-12")	**1.44E-02**
American Kestral (Insectivorous Birds)																							
Reference Sites																							
BRSD-5 (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	3.26E+01	2.02E+01	2.77E-01	7.84E-04	6.19E-01	4.86E-04	4.54E-01	1.24E-01	1.02E+00	1.00E+00	1.13E+00	6.43E-01	1.58E+00
BRSD-5 (2-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	3.26E+01	1.70E+01	2.33E-01	7.84E-04	5.21E-01	4.09E-04	4.54E-01	1.24E-01	8.56E-01	1.00E+00	1.13E+00	6.43E-01	1.33E+00
BRSD-5 (6-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	3.26E+01	1.53E+01	2.11E-01	7.84E-04	4.71E-01	3.69E-04	4.54E-01	1.24E-01	7.74E-01	1.00E+00	1.13E+00	6.43E-01	1.20E+00
PGBG-1 (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	3.26E+01	4.92E+01	6.77E-01	7.84E-04	1.51E+00	1.18E-03	4.54E-01	1.24E-01	2.48E+00	1.00E+00	1.13E+00	6.43E-01	3.86E+00
PGBG-1 (2-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	3.26E+01	4.69E+01	6.45E-01	7.84E-04	1.44E+00	1.13E-03	4.54E-01	1.24E-01	2.37E+00	1.00E+00	1.13E+00	6.43E-01	3.68E+00
PGBG-1 (6-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	3.26E+01	2.11E+01	2.91E-01	7.84E-04	6.49E-01	5.09E-04	4.54E-01	1.24E-01	1.07E+00	1.00E+00	1.13E+00	6.43E-01	1.66E+00
PGBG-2 (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	3.26E+01	5.99E+01	8.25E-01	7.84E-04	1.84E+00	1.44E-03	4.54E-01	1.24E-01	3.02E+00	1.00E+00	1.13E+00	6.43E-01	4.70E+00
PGBG-2 (2-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	3.26E+01	5.02E+01	6.90E-01	7.84E-04	1.54E+00	1.21E-03	4.54E-01	1.24E-01	2.53E+00	1.00E+00	1.13E+00	6.43E-01	3.94E+00
PGBG-2 (6-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	3.26E+01	5.11E+01	7.04E-01	7.84E-04	1.57E+00	1.23E-03	4.54E-01	1.24E-01	2.58E+00	1.00E+00	1.13E+00	6.43E-01	4.01E+00
Eastern Upper Marsh (0-2")																						**Minimum HQ (Reference Sites)**	**1.20E+00**
UM-1000S-3500E (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	5.49E+01	1.20E+02	1.65E+00	7.84E-04	2.19E+00	1.72E-03	4.54E-01	1.24E-01	6.06E+00	1.00E+00	1.13E+00	6.43E-01	9.42E+00
BRSD-15 (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	5.49E+01	8.34E+01	1.15E+00	7.84E-04	1.52E+00	1.19E-03	4.54E-01	1.24E-01	4.20E+00	1.00E+00	1.13E+00	6.43E-01	6.54E+00
BRSD-4 (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	5.49E+01	4.16E+01	5.73E-01	7.84E-04	7.59E-01	5.95E-04	4.54E-01	1.24E-01	2.10E+00	1.00E+00	1.13E+00	6.43E-01	3.26E+00
UM-750S-3500E (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	5.49E+01	4.39E+02	6.04E+00	7.84E-04	8.00E+00	6.28E-03	4.54E-01	1.24E-01	2.21E+01	1.00E+00	1.13E+00	6.43E-01	3.44E+01
BRSD-16 (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	5.49E+01	2.85E+02	3.92E+00	7.84E-04	5.19E+00	4.07E-03	4.54E-01	1.24E-01	1.43E+01	1.00E+00	1.13E+00	6.43E-01	2.23E+01
UM-750S-3000E (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	5.49E+01	5.87E+02	8.08E+00	7.84E-04	1.07E+01	8.39E-03	4.54E-01	1.24E-01	2.96E+01	1.00E+00	1.13E+00	6.43E-01	4.60E+01
BRSD-3 (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	5.49E+01	1.99E+02	2.73E+00	7.84E-04	3.62E+00	2.84E-03	4.54E-01	1.24E-01	1.00E+01	1.00E+00	1.13E+00	6.43E-01	1.56E+01
UM-500S-3250E (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	5.49E+01	1.53E+02	2.11E+00	7.84E-04	2.79E+00	2.19E-03	4.54E-01	1.24E-01	7.71E+00	1.00E+00	1.13E+00	6.43E-01	1.20E+01
UM-500S-3000E (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	5.49E+01	4.99E+02	6.87E+00	7.84E-04	9.10E+00	7.14E-03	4.54E-01	1.24E-01	2.52E+01	1.00E+00	1.13E+00	6.43E-01	3.91E+01
UM-500S-2750E (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	5.49E+01	6.03E+02	8.30E+00	7.84E-04	1.10E+01	8.63E-03	4.54E-01	1.24E-01	3.04E+01	1.00E+00	1.13E+00	6.43E-01	4.73E+01
BRSD-25 (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	5.49E+01	3.43E+02	4.72E+00	7.84E-04	6.25E+00	4.90E-03	4.54E-01	1.24E-01	1.73E+01	1.00E+00	1.13E+00	6.43E-01	2.69E+01
UM-250S-3000E (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	5.49E+01	9.82E+02	1.35E+01	7.84E-04	1.79E+01	1.40E-02	4.54E-01	1.24E-01	4.95E+01	1.00E+00	1.13E+00	6.43E-01	7.70E+01
UM-250S-3250E (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	5.49E+01	7.84E+02	1.08E+01	7.84E-04	1.43E+01	1.12E-02	4.54E-01	1.24E-01	3.95E+01	1.00E+00	1.13E+00	6.43E-01	6.15E+01
BRSD-24 (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	5.49E+01	7.51E+02	1.03E+01	7.84E-04	1.37E+01	1.07E-02	4.54E-01	1.24E-01	3.79E+01	1.00E+00	1.13E+00	6.43E-01	5.89E+01
UM-250S-2750E (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	5.49E+01	3.87E+02	5.32E+00	7.84E-04	7.05E+00	5.53E-03	4.54E-01	1.24E-01	1.95E+01	1.00E+00	1.13E+00	6.43E-01	3.03E+01
UM-250S-2500E (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	5.49E+01	1.62E+02	2.23E+00	7.84E-04	2.95E+00	2.31E-03	4.54E-01	1.24E-01	8.16E+00	1.00E+00	1.13E+00	6.43E-01	1.27E+01
UM-0N-2500E (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	5.49E+01	1.27E+03	1.74E+01	7.84E-04	2.31E+01	1.81E-02	4.54E-01	1.24E-01	6.39E+01	1.00E+00	1.13E+00	6.43E-01	9.94E+01
UM-0N-250E (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	5.49E+01	1.05E+03	1.45E+01	7.84E-04	1.92E+01	1.51E-02	4.54E-01	1.24E-01	5.31E+01	1.00E+00	1.13E+00	6.43E-01	8.26E+01

TABLE C-12CA: CADMIUM DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 12 - MARSH, TERRESTRIAL RECEPTORS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **118.73**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
American Kestral (Insectivorous Birds)																							
BRSD-2 (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	5.49E+01	5.65E+02	7.77E+00	7.84E-04	1.03E+01	8.08E-03	4.54E-01	1.24E-01	2.85E+01	1.00E+00	1.13E+00	6.43E-01	4.43E+01
UM-500N-2500E (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	5.49E+01	9.65E+01	1.33E+00	7.84E-04	1.76E+00	1.38E-03	4.54E-01	1.24E-01	4.87E+00	1.00E+00	1.13E+00	6.43E-01	7.57E+00
UM-250N-2500E (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	5.49E+01	7.84E+02	1.08E+01	7.84E-04	1.43E+01	1.12E-02	4.54E-01	1.24E-01	3.95E+01	1.00E+00	1.13E+00	6.43E-01	6.15E+01
UM-250N-2250E (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	5.49E+01	6.58E+02	9.06E+00	7.84E-04	1.20E+01	9.41E-03	4.54E-01	1.24E-01	3.32E+01	1.00E+00	1.13E+00	6.43E-01	5.16E+01
Western Upper Marsh (0-2")																						**Maximum HQ (Eastern Upper Marsh, 0-2")**	**9.94E+01**
UM-500S-2500E (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	3.16E+01	3.95E+01	5.44E-01	7.84E-04	1.25E+00	9.80E-04	4.54E-01	1.24E-01	1.99E+00	1.00E+00	1.13E+00	6.43E-01	3.10E+00
UM-0N-2000E (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	3.16E+01	4.61E+02	6.35E+00	7.84E-04	1.46E+01	1.15E-02	4.54E-01	1.24E-01	2.33E+01	1.00E+00	1.13E+00	6.43E-01	3.62E+01
UM-500S-2000E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-250N-1750E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	5.52E-01	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-1500E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	6.24E-01	BB	BB	BB	BB	BB	BB	BB	BB
UM-250S-1500E (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	3.16E+01	5.18E+02	7.13E+00	7.84E-04	1.64E+01	1.29E-02	4.54E-01	1.24E-01	2.61E+01	1.00E+00	1.13E+00	6.43E-01	4.07E+01
UM-250S-1250E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-6 (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	3.16E+01	3.10E+01	4.27E-01	7.84E-04	9.82E-01	7.70E-04	4.54E-01	1.24E-01	1.57E+00	1.00E+00	1.13E+00	6.43E-01	2.44E+00
UM-0N-1000E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-750E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-500E (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	3.16E+01	6.64E+01	9.13E-01	7.84E-04	2.10E+00	1.65E-03	4.54E-01	1.24E-01	3.35E+00	1.00E+00	1.13E+00	6.43E-01	5.21E+00
UM-250S-500E (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	3.16E+01	2.74E+01	3.77E-01	7.84E-04	8.68E-01	6.81E-04	4.54E-01	1.24E-01	1.38E+00	1.00E+00	1.13E+00	6.43E-01	2.15E+00
UM-250S-250E (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	3.16E+01	2.56E+01	3.52E-01	7.84E-04	8.09E-01	6.35E-04	4.54E-01	1.24E-01	1.29E+00	1.00E+00	1.13E+00	6.43E-01	2.01E+00
BRSD-7 (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	3.16E+01	5.78E+01	7.96E-01	7.84E-04	1.83E+00	1.44E-03	4.54E-01	1.24E-01	2.92E+00	1.00E+00	1.13E+00	6.43E-01	4.54E+00
BRSD-8 (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	3.16E+01	1.78E+02	2.45E+00	7.84E-04	5.64E+00	4.42E-03	4.54E-01	1.24E-01	8.99E+00	1.00E+00	1.13E+00	6.43E-01	1.40E+01
UM-500S-500E (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	3.16E+01	3.35E+01	4.61E-01	7.84E-04	1.06E+00	8.31E-04	4.54E-01	1.24E-01	1.69E+00	1.00E+00	1.13E+00	6.43E-01	2.63E+00
BRSD-9 (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	3.16E+01	1.55E+02	2.14E+00	7.84E-04	4.91E+00	3.85E-03	4.54E-01	1.24E-01	7.83E+00	1.00E+00	1.13E+00	6.43E-01	1.22E+01
BRSD-10 (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	3.16E+01	5.69E+02	7.83E+00	7.84E-04	1.80E+01	1.41E-02	4.54E-01	1.24E-01	2.87E+01	1.00E+00	1.13E+00	6.43E-01	4.46E+01
BRSD-11 (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	3.16E+01	1.75E+02	2.41E+00	7.84E-04	5.55E+00	4.35E-03	4.54E-01	1.24E-01	8.85E+00	1.00E+00	1.13E+00	6.43E-01	1.38E+01
Eastern Upper Marsh (2-6")																						**Maximum HQ (Western Upper Marsh, 0-2")**	**4.46E+01**
UM-1000S-3500E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-15 (2-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	5.49E+01	7.08E+01	9.74E-01	7.84E-04	1.29E+00	1.01E-03	4.54E-01	1.24E-01	3.57E+00	1.00E+00	1.13E+00	6.43E-01	5.55E+00
BRSD-4 (2-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	5.49E+01	3.68E+01	5.06E-01	7.84E-04	6.71E-01	5.26E-04	4.54E-01	1.24E-01	1.86E+00	1.00E+00	1.13E+00	6.43E-01	2.89E+00
UM-750S-3500E (2-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	5.49E+01	7.24E+02	9.96E+00	7.84E-04	1.32E+01	1.04E-02	4.54E-01	1.24E-01	3.65E+01	1.00E+00	1.13E+00	6.43E-01	5.68E+01
BRSD-16 (2-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	5.49E+01	1.90E+03	2.62E+01	7.84E-04	3.47E+01	2.72E-02	4.54E-01	1.24E-01	9.59E+01	1.00E+00	1.13E+00	6.43E-01	1.49E+02
UM-750S-3000E (2-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	5.49E+01	5.00E+02	6.88E+00	7.84E-04	9.12E+00	7.15E-03	4.54E-01	1.24E-01	2.52E+01	1.00E+00	1.13E+00	6.43E-01	3.92E+01
BRSD-3 (2-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	5.49E+01	2.64E+02	3.64E+00	7.84E-04	4.82E+00	3.78E-03	4.54E-01	1.24E-01	1.33E+01	1.00E+00	1.13E+00	6.43E-01	2.07E+01
UM-500S-3250E (2-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	5.49E+01	4.52E+01	6.22E-01	7.84E-04	8.24E-01	6.46E-04	4.54E-01	1.24E-01	2.28E+00	1.00E+00	1.13E+00	6.43E-01	3.54E+00
UM-500S-3000E (2-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	5.49E+01	9.98E+01	1.37E+00	7.84E-04	1.82E+00	1.43E-03	4.54E-01	1.24E-01	5.03E+00	1.00E+00	1.13E+00	6.43E-01	7.83E+00
UM-500S-2750E (2-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	5.49E+01	4.83E+02	6.64E+00	7.84E-04	8.80E+00	6.90E-03	4.54E-01	1.24E-01	2.43E+01	1.00E+00	1.13E+00	6.43E-01	3.79E+01
BRSD-25 (2-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	5.49E+01	4.85E+02	6.67E+00	7.84E-04	8.84E+00	6.93E-03	4.54E-01	1.24E-01	2.44E+01	1.00E+00	1.13E+00	6.43E-01	3.80E+01
UM-250S-3000E (2-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	5.49E+01	1.14E+03	1.56E+01	7.84E-04	2.07E+01	1.62E-02	4.54E-01	1.24E-01	5.72E+01	1.00E+00	1.13E+00	6.43E-01	8.90E+01
UM-250S-3250E (2-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	5.49E+01	1.79E+02	2.47E+00	7.84E-04	3.27E+00	2.56E-03	4.54E-01	1.24E-01	9.04E+00	1.00E+00	1.13E+00	6.43E-01	1.41E+01
BRSD-24 (2-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	5.49E+01	1.54E+03	2.11E+01	7.84E-04	2.80E+01	2.20E-02	4.54E-01	1.24E-01	7.74E+01	1.00E+00	1.13E+00	6.43E-01	1.20E+02
UM-250S-2750E (2-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	5.49E+01	7.46E+02	1.03E+01	7.84E-04	1.36E+01	1.07E-02	4.54E-01	1.24E-01	3.76E+01	1.00E+00	1.13E+00	6.43E-01	5.85E+01
UM-0N-2500E (2-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	5.49E+01	5.34E+02	7.34E+00	7.84E-04	9.73E+00	7.63E-03	4.54E-01	1.24E-01	2.69E+01	1.00E+00	1.13E+00	6.43E-01	4.19E+01
BRSD-2 (2-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	5.49E+01	9.27E+02	1.28E+01	7.84E-04	1.69E+01	1.33E-02	4.54E-01	1.24E-01	4.67E+01	1.00E+00	1.13E+00	6.43E-01	7.27E+01
UM-500N-2500E (2-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	5.49E+01	8.72E+01	1.20E+00	7.84E-04	1.59E+00	1.25E-03	4.54E-01	1.24E-01	4.40E+00	1.00E+00	1.13E+00	6.43E-01	6.84E+00
UM-250N-2500E (2-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	5.49E+01	7.90E+02	1.09E+01	7.84E-04	1.44E+01	1.13E-02	4.54E-01	1.24E-01	3.98E+01	1.00E+00	1.13E+00	6.43E-01	6.19E+01
UM-250N-2250E (2-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	5.49E+01	1.85E+02	2.55E+00	7.84E-04	3.38E+00	2.65E-03	4.54E-01	1.24E-01	9.35E+00	1.00E+00	1.13E+00	6.43E-01	1.45E+01
Western Upper Marsh (2-6")																						**Maximum HQ (Eastern Upper Marsh, 2-6")**	**1.49E+02**
UM-500S-2500E (2-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	3.16E+01	2.33E+01	3.21E-01	7.84E-04	7.38E-01	5.79E-04	4.54E-01	1.24E-01	1.18E+00	1.00E+00	1.13E+00	6.43E-01	1.83E+00
UM-0N-2000E (2-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	3.16E+01	3.95E+02	5.44E+00	7.84E-04	1.25E+01	9.80E-03	4.54E-01	1.24E-01	1.99E+01	1.00E+00	1.13E+00	6.43E-01	3.10E+01
UM-500S-2000E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	5.48E-01	BB	BB	BB	BB	BB	BB	BB	BB
UM-250N-1750E (2-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	3.16E+01	3.03E+01	4.17E-01	7.84E-04	9.58E-01	7.51E-04	4.54E-01	1.24E-01	1.53E+00	1.00E+00	1.13E+00	6.43E-01	2.38E+00

TABLE C-12CA: CADMIUM DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 12 - MARSH, TERRESTRIAL RECEPTORS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **118.73**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
American Kestral (Insectivorous Birds)																							
UM-0N-1500E (2-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	3.16E+01	3.57E+01	4.91E-01	7.84E-04	1.13E+00	8.86E-04	4.54E-01	1.24E-01	1.80E+00	1.00E+00	1.13E+00	6.43E-01	2.80E+00
UM-250S-1500E (2-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	3.16E+01	4.05E+02	5.57E+00	7.84E-04	1.28E+01	1.00E-02	4.54E-01	1.24E-01	2.04E+01	1.00E+00	1.13E+00	6.43E-01	3.17E+01
UM-250S-1250E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-6 (2-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	3.16E+01	2.84E+01	3.91E-01	7.84E-04	8.98E-01	7.04E-04	4.54E-01	1.24E-01	1.43E+00	1.00E+00	1.13E+00	6.43E-01	2.23E+00
UM-0N-1000E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-750E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-500E (2-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	3.16E+01	2.47E+03	3.39E+01	7.84E-04	7.80E+01	6.12E-02	4.54E-01	1.24E-01	1.24E+02	1.00E+00	1.13E+00	6.43E-01	1.93E+02
UM-250S-500E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	6.44E-01	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-250E (2-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	3.16E+01	1.11E+02	1.53E+00	7.84E-04	3.52E+00	2.76E-03	4.54E-01	1.24E-01	5.61E+00	1.00E+00	1.13E+00	6.43E-01	8.73E+00
UM-250S-250E (2-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	3.16E+01	4.42E+01	6.09E-01	7.84E-04	1.40E+00	1.10E-03	4.54E-01	1.24E-01	2.23E+00	1.00E+00	1.13E+00	6.43E-01	3.47E+00
BRSD-7 (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-8 (2-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	3.16E+01	2.72E+02	3.74E+00	7.84E-04	8.60E+00	6.75E-03	4.54E-01	1.24E-01	1.37E+01	1.00E+00	1.13E+00	6.43E-01	2.13E+01
UM-500S-500E (2-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	3.16E+01	2.40E+01	3.31E-01	7.84E-04	7.60E-01	5.96E-04	4.54E-01	1.24E-01	1.21E+00	1.00E+00	1.13E+00	6.43E-01	1.88E+00
BRSD-9 (2-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	3.16E+01	7.71E+01	1.06E+00	7.84E-04	2.44E+00	1.91E-03	4.54E-01	1.24E-01	3.89E+00	1.00E+00	1.13E+00	6.43E-01	6.05E+00
BRSD-10 (2-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	3.16E+01	4.99E+02	6.87E+00	7.84E-04	1.58E+01	1.24E-02	4.54E-01	1.24E-01	2.52E+01	1.00E+00	1.13E+00	6.43E-01	3.92E+01
BRSD-11 (2-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	3.16E+01	8.00E+01	1.10E+00	7.84E-04	2.53E+00	1.98E-03	4.54E-01	1.24E-01	4.03E+00	1.00E+00	1.13E+00	6.43E-01	6.27E+00
Eastern Upper Marsh (6-12")																						**Maximum HQ (Western Upper Marsh, 2-6")**		**1.93E+02**
UM-1000S-3500E (6-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	5.49E+01	5.42E+01	7.46E-01	7.84E-04	9.89E-01	7.76E-04	4.54E-01	1.24E-01	2.73E+00	1.00E+00	1.13E+00	6.43E-01	4.25E+00
BRSD-15 (6-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	5.49E+01	9.60E+01	1.32E+00	7.84E-04	1.75E+00	1.37E-03	4.54E-01	1.24E-01	4.84E+00	1.00E+00	1.13E+00	6.43E-01	7.53E+00
BRSD-4 (6-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	5.49E+01	8.17E+01	1.12E+00	7.84E-04	1.49E+00	1.17E-03	4.54E-01	1.24E-01	4.12E+00	1.00E+00	1.13E+00	6.43E-01	6.41E+00
UM-750S-3500E (6-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	5.49E+01	1.00E+03	1.38E+01	7.84E-04	1.83E+01	1.44E-02	4.54E-01	1.24E-01	5.06E+01	1.00E+00	1.13E+00	6.43E-01	7.87E+01
BRSD-16 (6-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	5.49E+01	9.87E+02	1.36E+01	7.84E-04	1.80E+01	1.41E-02	4.54E-01	1.24E-01	4.98E+01	1.00E+00	1.13E+00	6.43E-01	7.74E+01
UM-750S-3000E (6-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	5.49E+01	5.01E+02	6.89E+00	7.84E-04	9.13E+00	7.16E-03	4.54E-01	1.24E-01	2.52E+01	1.00E+00	1.13E+00	6.43E-01	3.93E+01
BRSD-3 (6-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	5.49E+01	1.28E+02	1.77E+00	7.84E-04	2.34E+00	1.84E-03	4.54E-01	1.24E-01	6.47E+00	1.00E+00	1.13E+00	6.43E-01	1.01E+01
UM-500S-3250E (6-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	5.49E+01	6.31E+01	8.68E-01	7.84E-04	1.15E+00	9.02E-04	4.54E-01	1.24E-01	3.18E+00	1.00E+00	1.13E+00	6.43E-01	4.95E+00
UM-500S-3000E (6-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	5.49E+01	9.54E+01	1.31E+00	7.84E-04	1.74E+00	1.36E-03	4.54E-01	1.24E-01	4.81E+00	1.00E+00	1.13E+00	6.43E-01	7.48E+00
UM-500S-2750E (6-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	5.49E+01	3.91E+02	5.38E+00	7.84E-04	7.13E+00	5.59E-03	4.54E-01	1.24E-01	1.97E+01	1.00E+00	1.13E+00	6.43E-01	3.07E+01
BRSD-25 (6-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	5.49E+01	4.22E+02	5.80E+00	7.84E-04	7.69E+00	6.03E-03	4.54E-01	1.24E-01	2.13E+01	1.00E+00	1.13E+00	6.43E-01	3.31E+01
UM-250S-3000E (6-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	5.49E+01	8.23E+02	1.13E+01	7.84E-04	1.50E+01	1.18E-02	4.54E-01	1.24E-01	4.15E+01	1.00E+00	1.13E+00	6.43E-01	6.45E+01
UM-250S-3250E (6-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	5.49E+01	1.91E+02	2.63E+00	7.84E-04	3.48E+00	2.73E-03	4.54E-01	1.24E-01	9.62E+00	1.00E+00	1.13E+00	6.43E-01	1.50E+01
BRSD-24 (6-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	5.49E+01	7.84E+02	1.08E+01	7.84E-04	1.43E+01	1.12E-02	4.54E-01	1.24E-01	3.95E+01	1.00E+00	1.13E+00	6.43E-01	6.15E+01
UM-250S-2750E (6-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	5.49E+01	8.39E+02	1.15E+01	7.84E-04	1.53E+01	1.20E-02	4.54E-01	1.24E-01	4.23E+01	1.00E+00	1.13E+00	6.43E-01	6.58E+01
UM-250S-2500E (6-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	5.49E+01	6.75E+01	9.28E-01	7.84E-04	1.23E+00	9.65E-04	4.54E-01	1.24E-01	3.40E+00	1.00E+00	1.13E+00	6.43E-01	5.29E+00
BRSD-2 (6-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	5.49E+01	1.49E+03	2.05E+01	7.84E-04	2.72E+01	2.13E-02	4.54E-01	1.24E-01	7.52E+01	1.00E+00	1.13E+00	6.43E-01	1.17E+02
UM-500N-2500E (6-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	5.49E+01	4.44E+01	6.11E-01	7.84E-04	8.09E-01	6.35E-04	4.54E-01	1.24E-01	2.24E+00	1.00E+00	1.13E+00	6.43E-01	3.48E+00
UM-250N-2500E (6-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	5.49E+01	6.80E+02	9.36E+00	7.84E-04	1.24E+01	9.73E-03	4.54E-01	1.24E-01	3.43E+01	1.00E+00	1.13E+00	6.43E-01	5.33E+01
UM-250N-2250E (6-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	5.49E+01	1.09E+02	1.50E+00	7.84E-04	1.99E+00	1.56E-03	4.54E-01	1.24E-01	5.50E+00	1.00E+00	1.13E+00	6.43E-01	8.56E+00
Western Upper Marsh (6-12")																						**Maximum HQ (Eastern Upper Marsh, 6-12")**		**1.17E+02**
UM-500S-2500E (6-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	3.16E+01	2.69E+01	3.70E-01	7.84E-04	8.51E-01	6.68E-04	4.54E-01	1.24E-01	1.36E+00	1.00E+00	1.13E+00	6.43E-01	2.11E+00
UM-0N-2000E (6-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	3.16E+01	6.19E+02	8.52E+00	7.84E-04	1.96E+01	1.54E-02	4.54E-01	1.24E-01	3.12E+01	1.00E+00	1.13E+00	6.43E-01	4.86E+01
UM-500S-2000E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-250N-1750E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-1500E (6-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	3.16E+01	8.56E+01	1.18E+00	7.84E-04	2.71E+00	2.13E-03	4.54E-01	1.24E-01	4.32E+00	1.00E+00	1.13E+00	6.43E-01	6.72E+00
UM-250S-1500E (6-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	3.16E+01	9.89E+01	1.36E+00	7.84E-04	3.13E+00	2.46E-03	4.54E-01	1.24E-01	4.99E+00	1.00E+00	1.13E+00	6.43E-01	7.76E+00
UM-250S-1250E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-6 (6-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	3.16E+01	3.05E+01	4.19E-01	7.84E-04	9.64E-01	7.56E-04	4.54E-01	1.24E-01	1.54E+00	1.00E+00	1.13E+00	6.43E-01	2.39E+00
UM-0N-1000E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-750E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-500E (6-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	3.16E+01	4.20E+02	5.78E+00	7.84E-04	1.33E+01	1.04E-02	4.54E-01	1.24E-01	2.12E+01	1.00E+00	1.13E+00	6.43E-01	3.30E+01
UM-250S-500E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB

TABLE C-12CA: CADMIUM DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 12 - MARSH, TERRESTRIAL RECEPTORS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **118.73**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
American Kestral (Insectivorous Birds)																							
UM-0N-250E (6-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	3.16E+01	1.90E+02	2.61E+00	7.84E-04	6.01E+00	4.71E-03	4.54E-01	1.24E-01	9.58E+00	1.00E+00	1.13E+00	6.43E-01	1.49E+01
UM-250S-250E (6-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	3.16E+01	2.93E+01	4.04E-01	7.84E-04	9.28E-01	7.28E-04	4.54E-01	1.24E-01	1.48E+00	1.00E+00	1.13E+00	6.43E-01	2.30E+00
BRSD-7 (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-8 (6-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	3.16E+01	1.59E+02	2.18E+00	7.84E-04	5.02E+00	3.94E-03	4.54E-01	1.24E-01	8.00E+00	1.00E+00	1.13E+00	6.43E-01	1.25E+01
UM-500S-500E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	5.50E-01	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-9 (6-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	3.16E+01	5.50E+01	7.57E-01	7.84E-04	1.74E+00	1.36E-03	4.54E-01	1.24E-01	2.77E+00	1.00E+00	1.13E+00	6.43E-01	4.32E+00
BRSD-10 (6-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	3.16E+01	7.43E+02	1.02E+01	7.84E-04	2.35E+01	1.84E-02	4.54E-01	1.24E-01	3.75E+01	1.00E+00	1.13E+00	6.43E-01	5.83E+01
BRSD-11 (6-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	3.16E+01	6.45E+01	8.87E-01	7.84E-04	2.04E+00	1.60E-03	4.54E-01	1.24E-01	3.25E+00	1.00E+00	1.13E+00	6.43E-01	5.06E+00
Middle Marsh (0-2")																						**Maximum HQ (Western Upper Marsh, 6-12")**	**5.83E+01**
MMSD-201 (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	3.16E+01	3.00E+02	4.13E+00	7.84E-04	9.50E+00	7.45E-03	4.54E-01	1.24E-01	1.51E+01	1.00E+00	1.13E+00	6.43E-01	2.36E+01
MMSD-202 (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	3.16E+01	3.48E+01	4.78E-01	7.84E-04	1.10E+00	8.63E-04	4.54E-01	1.24E-01	1.75E+00	1.00E+00	1.13E+00	6.43E-01	2.73E+00
Middle Marsh (2-6")																						**Maximum HQ (Middle Marsh, 0-2")**	**2.36E+01**
MMSD-201 (2-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	3.16E+01	4.68E+02	6.44E+00	7.84E-04	1.48E+01	1.16E-02	4.54E-01	1.24E-01	2.36E+01	1.00E+00	1.13E+00	6.43E-01	3.67E+01
MMSD-202 (2-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	3.16E+01	4.11E+01	5.65E-01	7.84E-04	1.30E+00	1.02E-03	4.54E-01	1.24E-01	2.07E+00	1.00E+00	1.13E+00	6.43E-01	3.22E+00
Middle Marsh (6-12")																						**Maximum HQ (Middle Marsh, 2-6")**	**3.67E+01**
MMSD-201 (6-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	3.16E+01	5.81E+02	8.00E+00	7.84E-04	1.84E+01	1.44E-02	4.54E-01	1.24E-01	2.93E+01	1.00E+00	1.13E+00	6.43E-01	4.56E+01
MMSD-202 (6-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	3.16E+01	4.42E+01	6.09E-01	7.84E-04	1.40E+00	1.10E-03	4.54E-01	1.24E-01	2.23E+00	1.00E+00	1.13E+00	6.43E-01	3.47E+00
Lower Marsh (0-2")																						**Maximum HQ (Middle Marsh, 6-12")**	**4.56E+01**
LMSD-201 (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
LMSD-202 (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	3.16E+01	4.74E+01	6.52E-01	7.84E-04	1.50E+00	1.18E-03	4.54E-01	1.24E-01	2.39E+00	1.00E+00	1.13E+00	6.43E-01	3.72E+00
LMSD-203 (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	3.16E+01	1.90E+01	2.61E-01	7.84E-04	6.00E-01	4.71E-04	4.54E-01	1.24E-01	9.57E-01	1.00E+00	1.13E+00	6.43E-01	1.49E+00
LMSD-204 (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	3.16E+01	3.16E+01	4.35E-01	7.84E-04	1.00E+00	7.84E-04	4.54E-01	1.24E-01	1.59E+00	1.00E+00	1.13E+00	6.43E-01	2.48E+00
Lower Marsh (2-6")																						**Maximum HQ (Lower Marsh, 0-2")**	**3.72E+00**
LMSD-201 (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
LMSD-202 (2-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	3.16E+01	3.79E+01	5.22E-01	7.84E-04	1.20E+00	9.41E-04	4.54E-01	1.24E-01	1.91E+00	1.00E+00	1.13E+00	6.43E-01	2.98E+00
LMSD-203 (2-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	3.16E+01	2.53E+01	3.48E-01	7.84E-04	8.00E-01	6.28E-04	4.54E-01	1.24E-01	1.28E+00	1.00E+00	1.13E+00	6.43E-01	1.98E+00
LMSD-204 (2-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	3.16E+01	2.53E+01	3.48E-01	7.84E-04	8.00E-01	6.28E-04	4.54E-01	1.24E-01	1.28E+00	1.00E+00	1.13E+00	6.43E-01	1.98E+00
Lower Marsh (6-12")																						**Maximum HQ (Lower Marsh, 2-6")**	**2.98E+00**
LMSD-201 (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
LMSD-202 (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
LMSD-203 (6-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	3.16E+01	8.85E+01	1.22E+00	7.84E-04	2.80E+00	2.20E-03	4.54E-01	1.24E-01	4.46E+00	1.00E+00	1.13E+00	6.43E-01	6.94E+00
LMSD-204 (6-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	3.16E+01	1.90E+01	2.61E-01	7.84E-04	6.00E-01	4.71E-04	4.54E-01	1.24E-01	9.57E-01	1.00E+00	1.13E+00	6.43E-01	1.49E+00
																						Maximum HQ (Lower Marsh, 6-12")	**6.94E+00**
Meadow Vole (Small Herbivorous Mammals)																							
Reference Sites																							
BRSD-5 (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	5.05E+00	3.13E+00	1.47E-02	NA	NA	NA	NA	1.13E-04	6.19E-01	6.97E-05	1.00E+00	3.06E-02	4.81E-01	2.64E+00	3.14E-02	2.64E+00	1.82E-01
BRSD-5 (2-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	5.05E+00	2.63E+00	1.23E-02	NA	NA	NA	NA	1.13E-04	5.21E-01	5.86E-05	1.00E+00	3.06E-02	4.05E-01	2.64E+00	3.14E-02	2.64E+00	1.53E-01
BRSD-5 (6-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	5.05E+00	2.38E+00	1.12E-02	NA	NA	NA	NA	1.13E-04	4.71E-01	5.30E-05	1.00E+00	3.06E-02	3.66E-01	2.64E+00	3.14E-02	2.64E+00	1.39E-01
PGBG-1 (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	5.05E+00	7.63E+00	3.58E-02	NA	NA	NA	NA	1.13E-04	1.51E+00	1.70E-04	1.00E+00	3.06E-02	1.17E+00	2.64E+00	3.14E-02	2.64E+00	4.44E-01
PGBG-1 (2-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	5.05E+00	7.27E+00	3.41E-02	NA	NA	NA	NA	1.13E-04	1.44E+00	1.62E-04	1.00E+00	3.06E-02	1.12E+00	2.64E+00	3.14E-02	2.64E+00	4.23E-01
PGBG-1 (6-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	5.05E+00	3.28E+00	1.54E-02	NA	NA	NA	NA	1.13E-04	6.49E-01	7.30E-05	1.00E+00	3.06E-02	5.05E-01	2.64E+00	3.14E-02	2.64E+00	1.91E-01
PGBG-2 (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	5.05E+00	9.29E+00	4.36E-02	NA	NA	NA	NA	1.13E-04	1.84E+00	2.07E-04	1.00E+00	3.06E-02	1.43E+00	2.64E+00	3.14E-02	2.64E+00	5.41E-01
PGBG-2 (2-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	5.05E+00	7.78E+00	3.65E-02	NA	NA	NA	NA	1.13E-04	1.54E+00	1.73E-04	1.00E+00	3.06E-02	1.20E+00	2.64E+00	3.14E-02	2.64E+00	4.53E-01
PGBG-2 (6-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	5.05E+00	7.93E+00	3.72E-02	NA	NA	NA	NA	1.13E-04	1.57E+00	1.77E-04	1.00E+00	3.06E-02	1.22E+00	2.64E+00	3.14E-02	2.64E+00	4.62E-01
Eastern Upper Marsh (0-2")																						**Minimum HQ (Reference Sites)**	**1.39E-01**
UM-1000S-3500E (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	2.05E+00	4.50E+00	2.11E-02	NA	NA	NA	NA	1.13E-04	2.19E+00	2.46E-04	1.00E+00	3.06E-02	6.97E-01	2.64E+00	3.14E-02	2.64E+00	2.64E-01
BRSD-15 (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	2.05E+00	3.12E+00	1.46E-02	NA	NA	NA	NA	1.13E-04	1.52E+00	1.71E-04	1.00E+00	3.06E-02	4.84E-01	2.64E+00	3.14E-02	2.64E+00	1.83E-01
BRSD-4 (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	2.05E+00	1.56E+00	7.31E-03	NA	NA	NA	NA	1.13E-04	7.59E-01	8.54E-05	1.00E+00	3.06E-02	2.42E-01	2.64E+00	3.14E-02	2.64E+00	9.14E-02
UM-750S-3500E (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	2.05E+00	1.64E+01	7.70E-02	NA	NA	NA	NA	1.13E-04	8.00E+00	9.00E-04	1.00E+00	3.06E-02	2.55E+00	2.64E+00	3.14E-02	2.64E+00	9.63E-01
BRSD-16 (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	2.05E+00	1.07E+01	5.00E-02	NA	NA	NA	NA	1.13E-04	5.19E+00	5.84E-04	1.00E+00	3.06E-02	1.65E+00	2.64E+00	3.14E-02	2.64E+00	6.25E-01
UM-750S-3000E (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	2.05E+00	2.20E+01	1.03E-01	NA	NA	NA	NA	1.13E-04	1.07E+01	1.20E-03	1.00E+00	3.06E-02	3.41E+00	2.64E+00	3.14E-02	2.64E+00	1.29E+00
BRSD-3 (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	2.05E+00	7.43E+00	3.48E-02	NA	NA	NA	NA	1.13E-04	3.62E+00	4.07E-04	1.00E+00	3.06E-02	1.15E+00	2.64E+00	3.14E-02	2.64E+00	4.36E-01

TABLE C-12CA: CADMIUM DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 12 - MARSH, TERRESTRIAL RECEPTORS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **118.73**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Meadow Vole (Small Herbivorous Mammals)																							
UM-500S-3250E (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	2.05E+00	5.73E+00	2.69E-02	NA	NA	NA	NA	1.13E-04	2.79E+00	3.14E-04	1.00E+00	3.06E-02	8.88E-01	2.64E+00	3.14E-02	2.64E+00	3.36E-01
UM-500S-3000E (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	2.05E+00	1.87E+01	8.76E-02	NA	NA	NA	NA	1.13E-04	9.10E+00	1.02E-03	1.00E+00	3.06E-02	2.90E+00	2.64E+00	3.14E-02	2.64E+00	1.10E+00
UM-500S-2750E (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	2.05E+00	2.26E+01	1.06E-01	NA	NA	NA	NA	1.13E-04	1.10E+01	1.24E-03	1.00E+00	3.06E-02	3.50E+00	2.64E+00	3.14E-02	2.64E+00	1.32E+00
BRSD-25 (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	2.05E+00	1.28E+01	6.02E-02	NA	NA	NA	NA	1.13E-04	6.25E+00	7.03E-04	1.00E+00	3.06E-02	1.99E+00	2.64E+00	3.14E-02	2.64E+00	7.52E-01
UM-250S-3000E (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	2.05E+00	3.67E+01	1.72E-01	NA	NA	NA	NA	1.13E-04	1.79E+01	2.01E-03	1.00E+00	3.06E-02	5.70E+00	2.64E+00	3.14E-02	2.64E+00	2.15E+00
UM-250S-3250E (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	2.05E+00	2.94E+01	1.38E-01	NA	NA	NA	NA	1.13E-04	1.43E+01	1.61E-03	1.00E+00	3.06E-02	4.55E+00	2.64E+00	3.14E-02	2.64E+00	1.72E+00
BRSD-24 (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	2.05E+00	2.81E+01	1.32E-01	NA	NA	NA	NA	1.13E-04	1.37E+01	1.54E-03	1.00E+00	3.06E-02	4.36E+00	2.64E+00	3.14E-02	2.64E+00	1.65E+00
UM-250S-2750E (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	2.05E+00	1.45E+01	6.79E-02	NA	NA	NA	NA	1.13E-04	7.05E+00	7.93E-04	1.00E+00	3.06E-02	2.24E+00	2.64E+00	3.14E-02	2.64E+00	8.49E-01
UM-250S-2500E (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	2.05E+00	6.06E+00	2.84E-02	NA	NA	NA	NA	1.13E-04	2.95E+00	3.32E-04	1.00E+00	3.06E-02	9.39E-01	2.64E+00	3.14E-02	2.64E+00	3.55E-01
UM-0N-2500E (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	2.05E+00	4.74E+01	2.22E-01	NA	NA	NA	NA	1.13E-04	2.31E+01	2.60E-03	1.00E+00	3.06E-02	7.35E+00	2.64E+00	3.14E-02	2.64E+00	2.78E+00
UM-0N-250E (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	2.05E+00	3.94E+01	1.85E-01	NA	NA	NA	NA	1.13E-04	1.92E+01	2.16E-03	1.00E+00	3.06E-02	6.11E+00	2.64E+00	3.14E-02	2.64E+00	2.31E+00
BRSD-2 (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	2.05E+00	2.11E+01	9.92E-02	NA	NA	NA	NA	1.13E-04	1.03E+01	1.16E-03	1.00E+00	3.06E-02	3.28E+00	2.64E+00	3.14E-02	2.64E+00	1.24E+00
UM-500N-2500E (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	2.05E+00	3.61E+00	1.69E-02	NA	NA	NA	NA	1.13E-04	1.76E+00	1.98E-04	1.00E+00	3.06E-02	5.60E-01	2.64E+00	3.14E-02	2.64E+00	2.12E-01
UM-250N-2500E (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	2.05E+00	2.94E+01	1.38E-01	NA	NA	NA	NA	1.13E-04	1.43E+01	1.61E-03	1.00E+00	3.06E-02	4.55E+00	2.64E+00	3.14E-02	2.64E+00	1.72E+00
UM-250N-2250E (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	2.05E+00	2.46E+01	1.16E-01	NA	NA	NA	NA	1.13E-04	1.20E+01	1.35E-03	1.00E+00	3.06E-02	3.82E+00	2.64E+00	3.14E-02	2.64E+00	1.44E+00
Western Upper Marsh (0-2")																						**Maximum HQ (Eastern Upper Marsh, 0-2")**	**2.78E+00**
UM-500S-2500E (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.96E+00	2.45E+00	1.15E-02	NA	NA	NA	NA	1.13E-04	1.25E+00	1.41E-04	1.00E+00	3.06E-02	3.80E-01	2.64E+00	3.14E-02	2.64E+00	1.44E-01
UM-0N-2000E (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.96E+00	2.86E+01	1.34E-01	NA	NA	NA	NA	1.13E-04	1.46E+01	1.64E-03	1.00E+00	3.06E-02	4.44E+00	2.64E+00	3.14E-02	2.64E+00	1.68E+00
UM-500S-2000E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-250N-1750E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	5.52E-01	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-1500E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	6.24E-01	BB	BB	BB	BB	BB	BB	BB	BB
UM-250S-1500E (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.96E+00	3.21E+01	1.51E-01	NA	NA	NA	NA	1.13E-04	1.64E+01	1.85E-03	1.00E+00	3.06E-02	4.99E+00	2.64E+00	3.14E-02	2.64E+00	1.89E+00
UM-250S-1250E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-6 (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.96E+00	1.92E+00	9.03E-03	NA	NA	NA	NA	1.13E-04	9.82E-01	1.11E-04	1.00E+00	3.06E-02	2.99E-01	2.64E+00	3.14E-02	2.64E+00	1.13E-01
UM-0N-1000E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-750E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-500E (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.96E+00	4.12E+00	1.93E-02	NA	NA	NA	NA	1.13E-04	2.10E+00	2.36E-04	1.00E+00	3.06E-02	6.39E-01	2.64E+00	3.14E-02	2.64E+00	2.41E-01
UM-250S-500E (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.96E+00	1.70E+00	7.98E-03	NA	NA	NA	NA	1.13E-04	8.68E-01	9.77E-05	1.00E+00	3.06E-02	2.64E-01	2.64E+00	3.14E-02	2.64E+00	9.98E-02
UM-250S-250E (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.96E+00	1.59E+00	7.44E-03	NA	NA	NA	NA	1.13E-04	8.09E-01	9.10E-05	1.00E+00	3.06E-02	2.46E-01	2.64E+00	3.14E-02	2.64E+00	9.30E-02
BRSD-7 (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.96E+00	3.59E+00	1.68E-02	NA	NA	NA	NA	1.13E-04	1.83E+00	2.06E-04	1.00E+00	3.06E-02	5.56E-01	2.64E+00	3.14E-02	2.64E+00	2.10E-01
BRSD-8 (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.96E+00	1.11E+01	5.18E-02	NA	NA	NA	NA	1.13E-04	5.64E+00	6.35E-04	1.00E+00	3.06E-02	1.71E+00	2.64E+00	3.14E-02	2.64E+00	6.49E-01
UM-500S-500E (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.96E+00	2.08E+00	9.74E-03	NA	NA	NA	NA	1.13E-04	1.06E+00	1.19E-04	1.00E+00	3.06E-02	3.22E-01	2.64E+00	3.14E-02	2.64E+00	1.22E-01
BRSD-9 (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.96E+00	9.62E+00	4.51E-02	NA	NA	NA	NA	1.13E-04	4.91E+00	5.53E-04	1.00E+00	3.06E-02	1.49E+00	2.64E+00	3.14E-02	2.64E+00	5.65E-01
BRSD-10 (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.96E+00	3.53E+01	1.65E-01	NA	NA	NA	NA	1.13E-04	1.80E+01	2.03E-03	1.00E+00	3.06E-02	5.47E+00	2.64E+00	3.14E-02	2.64E+00	2.07E+00
BRSD-11 (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.96E+00	1.09E+01	5.10E-02	NA	NA	NA	NA	1.13E-04	5.55E+00	6.25E-04	1.00E+00	3.06E-02	1.69E+00	2.64E+00	3.14E-02	2.64E+00	6.38E-01
Eastern Upper Marsh (2-6")																						**Maximum HQ (Western Upper Marsh, 0-2")**	**2.07E+00**
UM-1000S-3500E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-15 (2-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	2.05E+00	2.65E+00	1.24E-02	NA	NA	NA	NA	1.13E-04	1.29E+00	1.45E-04	1.00E+00	3.06E-02	4.11E-01	2.64E+00	3.14E-02	2.64E+00	1.55E-01
BRSD-4 (2-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	2.05E+00	1.38E+00	6.46E-03	NA	NA	NA	NA	1.13E-04	6.71E-01	7.55E-05	1.00E+00	3.06E-02	2.14E-01	2.64E+00	3.14E-02	2.64E+00	8.08E-02
UM-750S-3500E (2-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	2.05E+00	2.71E+01	1.27E-01	NA	NA	NA	NA	1.13E-04	1.32E+01	1.49E-03	1.00E+00	3.06E-02	4.20E+00	2.64E+00	3.14E-02	2.64E+00	1.59E+00
BRSD-16 (2-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	2.05E+00	7.12E+01	3.34E-01	NA	NA	NA	NA	1.13E-04	3.47E+01	3.91E-03	1.00E+00	3.06E-02	1.10E+01	2.64E+00	3.14E-02	2.64E+00	4.18E+00
UM-750S-3000E (2-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	2.05E+00	1.87E+01	8.78E-02	NA	NA	NA	NA	1.13E-04	9.12E+00	1.03E-03	1.00E+00	3.06E-02	2.90E+00	2.64E+00	3.14E-02	2.64E+00	1.10E+00
BRSD-3 (2-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	2.05E+00	9.90E+00	4.64E-02	NA	NA	NA	NA	1.13E-04	4.82E+00	5.42E-04	1.00E+00	3.06E-02	1.53E+00	2.64E+00	3.14E-02	2.64E+00	5.80E-01
UM-500S-3250E (2-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	2.05E+00	1.69E+00	7.93E-03	NA	NA	NA	NA	1.13E-04	8.24E-01	9.27E-05	1.00E+00	3.06E-02	2.62E-01	2.64E+00	3.14E-02	2.64E+00	9.92E-02
UM-500S-3000E (2-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	2.05E+00	3.74E+00	1.75E-02	NA	NA	NA	NA	1.13E-04	1.82E+00	2.05E-04	1.00E+00	3.06E-02	5.79E-01	2.64E+00	3.14E-02	2.64E+00	2.19E-01
UM-500S-2750E (2-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	2.05E+00	1.81E+01	8.47E-02	NA	NA	NA	NA	1.13E-04	8.80E+00	9.90E-04	1.00E+00	3.06E-02	2.80E+00	2.64E+00	3.14E-02	2.64E+00	1.06E+00
BRSD-25 (2-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	2.05E+00	1.81E+01	8.51E-02	NA	NA	NA	NA	1.13E-04	8.84E+00	9.95E-04	1.00E+00	3.06E-02	2.81E+00	2.64E+00	3.14E-02	2.64E+00	1.06E+00
UM-250S-3000E (2-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	2.05E+00	4.25E+01	1.99E-01	NA	NA	NA	NA	1.13E-04	2.07E+01	2.33E-03	1.00E+00	3.06E-02	6.59E+00	2.64E+00	3.14E-02	2.64E+00	2.49E+00
UM-250S-3250E (2-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	2.05E+00	6.71E+00	3.15E-02	NA	NA	NA	NA	1.13E-04	3.27E+00	3.68E-04	1.00E+00	3.06E-02	1.04E+00	2.64E+00	3.14E-02	2.64E+00	3.94E-01
BRSD-24 (2-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	2.05E+00	5.75E+01	2.70E-01	NA	NA	NA	NA	1.13E-04	2.80E+01	3.15E-03	1.00E+00	3.06E-02	8.91E+00	2.64E+00	3.14E-02	2.64E+00	3.37E+00

TABLE C-12CA: CADMIUM DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 12 - MARSH, TERRESTRIAL RECEPTORS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **118.73**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Meadow Vole (Small Herbivorous Mammals)																							
UM-250S-2750E (2-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	2.05E+00	2.79E+01	1.31E-01	NA	NA	NA	NA	1.13E-04	1.36E+01	1.53E-03	1.00E+00	3.06E-02	4.33E+00	2.64E+00	3.14E-02	2.64E+00	1.64E+00
UM-0N-2500E (2-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	2.05E+00	2.00E+01	9.37E-02	NA	NA	NA	NA	1.13E-04	9.73E+00	1.09E-03	1.00E+00	3.06E-02	3.10E+00	2.64E+00	3.14E-02	2.64E+00	1.17E+00
BRSD-2 (2-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	2.05E+00	3.47E+01	1.63E-01	NA	NA	NA	NA	1.13E-04	1.69E+01	1.90E-03	1.00E+00	3.06E-02	5.38E+00	2.64E+00	3.14E-02	2.64E+00	2.03E+00
UM-500N-2500E (2-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	2.05E+00	3.26E+00	1.53E-02	NA	NA	NA	NA	1.13E-04	1.59E+00	1.79E-04	1.00E+00	3.06E-02	5.06E-01	2.64E+00	3.14E-02	2.64E+00	1.91E-01
UM-250N-2500E (2-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	2.05E+00	2.96E+01	1.39E-01	NA	NA	NA	NA	1.13E-04	1.44E+01	1.62E-03	1.00E+00	3.06E-02	4.58E+00	2.64E+00	3.14E-02	2.64E+00	1.73E+00
UM-250N-2250E (2-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	2.05E+00	6.94E+00	3.25E-02	NA	NA	NA	NA	1.13E-04	3.38E+00	3.80E-04	1.00E+00	3.06E-02	1.08E+00	2.64E+00	3.14E-02	2.64E+00	4.07E-01
Western Upper Marsh (2-6")																						**Maximum HQ (Eastern Upper Marsh, 2-6")**	**4.18E+00**
UM-500S-2500E (2-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.96E+00	1.45E+00	6.78E-03	NA	NA	NA	NA	1.13E-04	7.38E-01	8.31E-05	1.00E+00	3.06E-02	2.24E-01	2.64E+00	3.14E-02	2.64E+00	8.49E-02
UM-0N-2000E (2-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.96E+00	2.45E+01	1.15E-01	NA	NA	NA	NA	1.13E-04	1.25E+01	1.41E-03	1.00E+00	3.06E-02	3.80E+00	2.64E+00	3.14E-02	2.64E+00	1.44E+00
UM-500S-2000E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	5.48E-01	BB	BB	BB	BB	BB	BB	BB	BB
UM-250N-1750E (2-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.96E+00	1.88E+00	8.81E-03	NA	NA	NA	NA	1.13E-04	9.58E-01	1.08E-04	1.00E+00	3.06E-02	2.91E-01	2.64E+00	3.14E-02	2.64E+00	1.10E-01
UM-0N-1500E (2-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.96E+00	2.22E+00	1.04E-02	NA	NA	NA	NA	1.13E-04	1.13E+00	1.27E-04	1.00E+00	3.06E-02	3.44E-01	2.64E+00	3.14E-02	2.64E+00	1.30E-01
UM-250S-1500E (2-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.96E+00	2.51E+01	1.18E-01	NA	NA	NA	NA	1.13E-04	1.28E+01	1.44E-03	1.00E+00	3.06E-02	3.89E+00	2.64E+00	3.14E-02	2.64E+00	1.47E+00
UM-250S-1250E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-6 (2-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.96E+00	1.76E+00	8.25E-03	NA	NA	NA	NA	1.13E-04	8.98E-01	1.01E-04	1.00E+00	3.06E-02	2.73E-01	2.64E+00	3.14E-02	2.64E+00	1.03E-01
UM-0N-1000E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-750E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-500E (2-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.96E+00	1.53E+02	7.17E-01	NA	NA	NA	NA	1.13E-04	7.80E+01	8.78E-03	1.00E+00	3.06E-02	2.37E+01	2.64E+00	3.14E-02	2.64E+00	8.97E+00
UM-250S-500E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	6.44E-01	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-250E (2-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.96E+00	6.90E+00	3.24E-02	NA	NA	NA	NA	1.13E-04	3.52E+00	3.96E-04	1.00E+00	3.06E-02	1.07E+00	2.64E+00	3.14E-02	2.64E+00	4.05E-01
UM-250S-250E (2-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.96E+00	2.74E+00	1.29E-02	NA	NA	NA	NA	1.13E-04	1.40E+00	1.58E-04	1.00E+00	3.06E-02	4.26E-01	2.64E+00	3.14E-02	2.64E+00	1.61E-01
BRSD-7 (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-8 (2-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.96E+00	1.69E+01	7.90E-02	NA	NA	NA	NA	1.13E-04	8.60E+00	9.68E-04	1.00E+00	3.06E-02	2.61E+00	2.64E+00	3.14E-02	2.64E+00	9.89E-01
BRSD-9 (2-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.96E+00	4.78E+00	2.24E-02	NA	NA	NA	NA	1.13E-04	2.44E+00	2.75E-04	1.00E+00	3.06E-02	7.42E-01	2.64E+00	3.14E-02	2.64E+00	2.81E-01
BRSD-10 (2-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.96E+00	3.10E+01	1.45E-01	NA	NA	NA	NA	1.13E-04	1.58E+01	1.78E-03	1.00E+00	3.06E-02	4.80E+00	2.64E+00	3.14E-02	2.64E+00	1.82E+00
BRSD-11 (2-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.96E+00	4.96E+00	2.33E-02	NA	NA	NA	NA	1.13E-04	2.53E+00	2.85E-04	1.00E+00	3.06E-02	7.69E-01	2.64E+00	3.14E-02	2.64E+00	2.91E-01
Eastern Upper Marsh (6-12")																						**Maximum HQ (Western Upper Marsh, 2-6")**	**8.97E+00**
UM-1000S-3500E (6-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	2.05E+00	2.03E+00	9.52E-03	NA	NA	NA	NA	1.13E-04	9.89E-01	1.11E-04	1.00E+00	3.06E-02	3.15E-01	2.64E+00	3.14E-02	2.64E+00	1.19E-01
BRSD-15 (6-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	2.05E+00	3.59E+00	1.68E-02	NA	NA	NA	NA	1.13E-04	1.75E+00	1.97E-04	1.00E+00	3.06E-02	5.57E-01	2.64E+00	3.14E-02	2.64E+00	2.11E-01
BRSD-4 (6-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	2.05E+00	3.06E+00	1.43E-02	NA	NA	NA	NA	1.13E-04	1.49E+00	1.68E-04	1.00E+00	3.06E-02	4.74E-01	2.64E+00	3.14E-02	2.64E+00	1.79E-01
UM-750S-3500E (6-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	2.05E+00	3.76E+01	1.76E-01	NA	NA	NA	NA	1.13E-04	1.83E+01	2.06E-03	1.00E+00	3.06E-02	5.82E+00	2.64E+00	3.14E-02	2.64E+00	2.20E+00
BRSD-16 (6-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	2.05E+00	3.70E+01	1.73E-01	NA	NA	NA	NA	1.13E-04	1.80E+01	2.03E-03	1.00E+00	3.06E-02	5.73E+00	2.64E+00	3.14E-02	2.64E+00	2.17E+00
UM-750S-3000E (6-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	2.05E+00	1.87E+01	8.79E-02	NA	NA	NA	NA	1.13E-04	9.13E+00	1.03E-03	1.00E+00	3.06E-02	2.91E+00	2.64E+00	3.14E-02	2.64E+00	1.10E+00
BRSD-3 (6-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	2.05E+00	4.80E+00	2.25E-02	NA	NA	NA	NA	1.13E-04	2.34E+00	2.63E-04	1.00E+00	3.06E-02	7.45E-01	2.64E+00	3.14E-02	2.64E+00	2.82E-01
UM-500S-3250E (6-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	2.05E+00	2.36E+00	1.11E-02	NA	NA	NA	NA	1.13E-04	1.15E+00	1.29E-04	1.00E+00	3.06E-02	3.66E-01	2.64E+00	3.14E-02	2.64E+00	1.38E-01
UM-500S-3000E (6-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	2.05E+00	3.57E+00	1.67E-02	NA	NA	NA	NA	1.13E-04	1.74E+00	1.96E-04	1.00E+00	3.06E-02	5.54E-01	2.64E+00	3.14E-02	2.64E+00	2.09E-01
UM-500S-2750E (6-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	2.05E+00	1.46E+01	6.86E-02	NA	NA	NA	NA	1.13E-04	7.13E+00	8.02E-04	1.00E+00	3.06E-02	2.27E+00	2.64E+00	3.14E-02	2.64E+00	8.58E-01
BRSD-25 (6-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	2.05E+00	1.58E+01	7.40E-02	NA	NA	NA	NA	1.13E-04	7.69E+00	8.65E-04	1.00E+00	3.06E-02	2.45E+00	2.64E+00	3.14E-02	2.64E+00	9.26E-01
UM-250S-3000E (6-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	2.05E+00	3.08E+01	1.44E-01	NA	NA	NA	NA	1.13E-04	1.50E+01	1.69E-03	1.00E+00	3.06E-02	4.77E+00	2.64E+00	3.14E-02	2.64E+00	1.81E+00
UM-250S-3250E (6-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	2.05E+00	7.14E+00	3.35E-02	NA	NA	NA	NA	1.13E-04	3.48E+00	3.92E-04	1.00E+00	3.06E-02	1.11E+00	2.64E+00	3.14E-02	2.64E+00	4.19E-01
BRSD-24 (6-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	2.05E+00	2.94E+01	1.38E-01	NA	NA	NA	NA	1.13E-04	1.43E+01	1.61E-03	1.00E+00	3.06E-02	4.55E+00	2.64E+00	3.14E-02	2.64E+00	1.72E+00
UM-250S-2750E (6-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	2.05E+00	3.14E+01	1.47E-01	NA	NA	NA	NA	1.13E-04	1.53E+01	1.72E-03	1.00E+00	3.06E-02	4.87E+00	2.64E+00	3.14E-02	2.64E+00	1.84E+00
UM-250S-2500E (6-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	2.05E+00	2.53E+00	1.18E-02	NA	NA	NA	NA	1.13E-04	1.23E+00	1.38E-04	1.00E+00	3.06E-02	3.91E-01	2.64E+00	3.14E-02	2.64E+00	1.48E-01
BRSD-2 (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	2.72E+01	BB	BB	BB	BB	BB	BB	BB	BB
UM-500N-2500E (6-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	2.05E+00	1.66E+00	7.79E-03	NA	NA	NA	NA	1.13E-04	8.09E-01	9.10E-05	1.00E+00	3.06E-02	2.57E-01	2.64E+00	3.14E-02	2.64E+00	9.74E-02
UM-250N-2500E (6-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	2.05E+00	2.55E+01	1.19E-01	NA	NA	NA	NA	1.13E-04	1.24E+01	1.40E-03	1.00E+00	3.06E-02	3.95E+00	2.64E+00	3.14E-02	2.64E+00	1.49E+00
UM-250N-2250E (6-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	2.05E+00	4.09E+00	1.92E-02	NA	NA	NA	NA	1.13E-04	1.99E+00	2.24E-04	1.00E+00	3.06E-02	6.33E-01	2.64E+00	3.14E-02	2.64E+00	2.40E-01
UM-500S-500E (2-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.96E+00	1.49E+00	6.99E-03	NA	NA	NA	NA	1.13E-04	7.60E-01	8.55E-05	1.00E+00	3.06E-02	2.31E-01	2.64E+00	3.14E-02	2.64E+00	8.74E-02

TABLE C-12CA: CADMIUM DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 12 - MARSH, TERRESTRIAL RECEPTORS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **118.73**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Meadow Vole (Small Herbivorous Mammals)																							
Western Upper Marsh (6-12")																						**Maximum HQ (Eastern Upper Marsh, 6-12")**	**2.20E+00**
UM-500S-2500E (6-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.96E+00	1.67E+00	7.82E-03	NA	NA	NA	NA	1.13E-04	8.51E-01	9.58E-05	1.00E+00	3.06E-02	2.59E-01	2.64E+00	3.14E-02	2.64E+00	9.79E-02
UM-0N-2000E (6-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.96E+00	3.84E+01	1.80E-01	NA	NA	NA	NA	1.13E-04	1.96E+01	2.21E-03	1.00E+00	3.06E-02	5.96E+00	2.64E+00	3.14E-02	2.64E+00	2.25E+00
UM-500S-2000E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-250N-1750E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-1500E (6-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.96E+00	5.31E+00	2.49E-02	NA	NA	NA	NA	1.13E-04	2.71E+00	3.05E-04	1.00E+00	3.06E-02	8.24E-01	2.64E+00	3.14E-02	2.64E+00	3.12E-01
UM-250S-1500E (6-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.96E+00	6.14E+00	2.88E-02	NA	NA	NA	NA	1.13E-04	3.13E+00	3.52E-04	1.00E+00	3.06E-02	9.52E-01	2.64E+00	3.14E-02	2.64E+00	3.60E-01
UM-250S-1250E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-6 (6-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.96E+00	1.89E+00	8.86E-03	NA	NA	NA	NA	1.13E-04	9.64E-01	1.08E-04	1.00E+00	3.06E-02	2.93E-01	2.64E+00	3.14E-02	2.64E+00	1.11E-01
UM-0N-1000E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-750E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-500E (6-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.96E+00	2.61E+01	1.22E-01	NA	NA	NA	NA	1.13E-04	1.33E+01	1.50E-03	1.00E+00	3.06E-02	4.04E+00	2.64E+00	3.14E-02	2.64E+00	1.53E+00
UM-250S-500E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-250E (6-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.96E+00	1.18E+01	5.52E-02	NA	NA	NA	NA	1.13E-04	6.01E+00	6.76E-04	1.00E+00	3.06E-02	1.83E+00	2.64E+00	3.14E-02	2.64E+00	6.91E-01
UM-250S-250E (6-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.96E+00	1.82E+00	8.53E-03	NA	NA	NA	NA	1.13E-04	9.28E-01	1.04E-04	1.00E+00	3.06E-02	2.82E-01	2.64E+00	3.14E-02	2.64E+00	1.07E-01
BRSD-7 (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-8 (6-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.96E+00	9.84E+00	4.61E-02	NA	NA	NA	NA	1.13E-04	5.02E+00	5.65E-04	1.00E+00	3.06E-02	1.53E+00	2.64E+00	3.14E-02	2.64E+00	5.77E-01
UM-500S-500E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	5.50E-01	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-9 (6-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.96E+00	3.41E+00	1.60E-02	NA	NA	NA	NA	1.13E-04	1.74E+00	1.96E-04	1.00E+00	3.06E-02	5.29E-01	2.64E+00	3.14E-02	2.64E+00	2.00E-01
BRSD-10 (6-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.96E+00	4.61E+01	2.16E-01	NA	NA	NA	NA	1.13E-04	2.35E+01	2.64E-03	1.00E+00	3.06E-02	7.15E+00	2.64E+00	3.14E-02	2.64E+00	2.70E+00
BRSD-11 (6-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.96E+00	4.00E+00	1.88E-02	NA	NA	NA	NA	1.13E-04	2.04E+00	2.30E-04	1.00E+00	3.06E-02	6.20E-01	2.64E+00	3.14E-02	2.64E+00	2.35E-01
Middle Marsh (0-2")																						**Maximum HQ (Western Upper Marsh, 6-12")**	**2.70E+00**
MMSD-201 (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.96E+00	1.86E+01	8.73E-02	NA	NA	NA	NA	1.13E-04	9.50E+00	1.07E-03	1.00E+00	3.06E-02	2.89E+00	2.64E+00	3.14E-02	2.64E+00	1.09E+00
MMSD-202 (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.96E+00	2.16E+00	1.01E-02	NA	NA	NA	NA	1.13E-04	1.10E+00	1.24E-04	1.00E+00	3.06E-02	3.34E-01	2.64E+00	3.14E-02	2.64E+00	1.26E-01
Middle Marsh (2-6")																						**Maximum HQ (Middle Marsh, 0-2")**	**1.09E+00**
MMSD-201 (2-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.96E+00	2.90E+01	1.36E-01	NA	NA	NA	NA	1.13E-04	1.48E+01	1.67E-03	1.00E+00	3.06E-02	4.50E+00	2.64E+00	3.14E-02	2.64E+00	1.70E+00
MMSD-202 (2-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.96E+00	2.55E+00	1.19E-02	NA	NA	NA	NA	1.13E-04	1.30E+00	1.46E-04	1.00E+00	3.06E-02	3.95E-01	2.64E+00	3.14E-02	2.64E+00	1.49E-01
Middle Marsh (6-12")																						**Maximum HQ (Middle Marsh, 2-6")**	**1.70E+00**
MMSD-201 (6-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.96E+00	3.61E+01	1.69E-01	NA	NA	NA	NA	1.13E-04	1.84E+01	2.07E-03	1.00E+00	3.06E-02	5.59E+00	2.64E+00	3.14E-02	2.64E+00	2.12E+00
MMSD-202 (6-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.96E+00	2.74E+00	1.29E-02	NA	NA	NA	NA	1.13E-04	1.40E+00	1.58E-04	1.00E+00	3.06E-02	4.26E-01	2.64E+00	3.14E-02	2.64E+00	1.61E-01
Lower Marsh (0-2")																						**Maximum HQ (Middle Marsh, 6-12")**	**2.12E+00**
LMSD-201 (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
LMSD-202 (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.96E+00	2.94E+00	1.38E-02	NA	NA	NA	NA	1.13E-04	1.50E+00	1.69E-04	1.00E+00	3.06E-02	4.56E-01	2.64E+00	3.14E-02	2.64E+00	1.72E-01
LMSD-203 (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.96E+00	1.18E+00	5.52E-03	NA	NA	NA	NA	1.13E-04	6.00E-01	6.75E-05	1.00E+00	3.06E-02	1.82E-01	2.64E+00	3.14E-02	2.64E+00	6.90E-02
LMSD-204 (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.96E+00	1.96E+00	9.19E-03	NA	NA	NA	NA	1.13E-04	1.00E+00	1.13E-04	1.00E+00	3.06E-02	3.04E-01	2.64E+00	3.14E-02	2.64E+00	1.15E-01
Lower Marsh (2-6")																						**Maximum HQ (Lower Marsh, 0-2")**	**1.72E-01**
LMSD-201 (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
LMSD-202 (2-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.96E+00	2.35E+00	1.10E-02	NA	NA	NA	NA	1.13E-04	1.20E+00	1.35E-04	1.00E+00	3.06E-02	3.65E-01	2.64E+00	3.14E-02	2.64E+00	1.38E-01
LMSD-203 (2-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.96E+00	1.57E+00	7.35E-03	NA	NA	NA	NA	1.13E-04	8.00E-01	9.00E-05	1.00E+00	3.06E-02	2.43E-01	2.64E+00	3.14E-02	2.64E+00	9.20E-02
LMSD-204 (2-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.96E+00	1.57E+00	7.35E-03	NA	NA	NA	NA	1.13E-04	8.00E-01	9.00E-05	1.00E+00	3.06E-02	2.43E-01	2.64E+00	3.14E-02	2.64E+00	9.20E-02
Lower Marsh (6-12")																						**Maximum HQ (Lower Marsh, 2-6")**	**1.38E-01**
LMSD-201 (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
LMSD-202 (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
LMSD-203 (6-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.96E+00	5.49E+00	2.57E-02	NA	NA	NA	NA	1.13E-04	2.80E+00	3.15E-04	1.00E+00	3.06E-02	8.51E-01	2.64E+00	3.14E-02	2.64E+00	3.22E-01
LMSD-204 (6-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.96E+00	1.18E+00	5.52E-03	NA	NA	NA	NA	1.13E-04	6.00E-01	6.75E-05	1.00E+00	3.06E-02	1.82E-01	2.64E+00	3.14E-02	2.64E+00	6.90E-02
																						Maximum HQ (Lower Marsh, 6-12")	**3.22E-01**
White-Tailed Deer (Large Herbivorous Mammals)																							
Reference Sites																							
BRSD-5 (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	5.05E+00	3.13E+00	4.48E+00	NA	NA	NA	NA	2.86E-02	6.19E-01	1.77E-02	6.64E-01	1.35E+02	2.21E-02	2.64E+00	3.14E-02	1.60E+00	1.38E-02
BRSD-5 (2-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	5.05E+00	2.63E+00	3.77E+00	NA	NA	NA	NA	2.86E-02	5.21E-01	1.49E-02	6.64E-01	1.35E+02	1.86E-02	2.64E+00	3.14E-02	1.60E+00	1.16E-02
BRSD-5 (6-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	5.05E+00	2.38E+00	3.41E+00	NA	NA	NA	NA	2.86E-02	4.71E-01	1.35E-02	6.64E-01	1.35E+02	1.68E-02	2.64E+00	3.14E-02	1.60E+00	1.05E-02
PGBG-1 (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	5.05E+00	7.63E+00	1.09E+01	NA	NA	NA	NA	2.86E-02	1.51E+00	4.32E-02	6.64E-01	1.35E+02	5.39E-02	2.64E+00	3.14E-02	1.60E+00	3.37E-02

TABLE C-12CA: CADMIUM DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 12 - MARSH, TERRESTRIAL RECEPTORS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **118.73**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
White-Tailed Deer (Large Herbivorous Mammals)																							
PGBG-1 (2-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	5.05E+00	7.27E+00	1.04E+01	NA	NA	NA	NA	2.86E-02	1.44E+00	4.12E-02	6.64E-01	1.35E+02	5.14E-02	2.64E+00	3.14E-02	1.60E+00	3.22E-02
PGBG-1 (6-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	5.05E+00	3.28E+00	4.69E+00	NA	NA	NA	NA	2.86E-02	6.49E-01	1.86E-02	6.64E-01	1.35E+02	2.32E-02	2.64E+00	3.14E-02	1.60E+00	1.45E-02
PGBG-2 (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	5.05E+00	9.29E+00	1.33E+01	NA	NA	NA	NA	2.86E-02	1.84E+00	5.27E-02	6.64E-01	1.35E+02	6.57E-02	2.64E+00	3.14E-02	1.60E+00	4.11E-02
PGBG-2 (2-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	5.05E+00	7.78E+00	1.11E+01	NA	NA	NA	NA	2.86E-02	1.54E+00	4.41E-02	6.64E-01	1.35E+02	5.50E-02	2.64E+00	3.14E-02	1.60E+00	3.44E-02
PGBG-2 (6-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	5.05E+00	7.93E+00	1.14E+01	NA	NA	NA	NA	2.86E-02	1.57E+00	4.50E-02	6.64E-01	1.35E+02	5.61E-02	2.64E+00	3.14E-02	1.60E+00	3.51E-02
Eastern Upper Marsh (0-2")																						**Minimum HQ (Reference Sites)**	**1.05E-02**
UM-1000S-3500E (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	2.05E+00	4.50E+00	6.44E+00	NA	NA	NA	NA	2.86E-02	2.19E+00	6.27E-02	6.64E-01	1.35E+02	3.20E-02	2.64E+00	3.14E-02	1.60E+00	2.00E-02
BRSD-15 (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	2.05E+00	3.12E+00	4.47E+00	NA	NA	NA	NA	2.86E-02	1.52E+00	4.35E-02	6.64E-01	1.35E+02	2.22E-02	2.64E+00	3.14E-02	1.60E+00	1.39E-02
BRSD-4 (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	2.05E+00	1.56E+00	2.23E+00	NA	NA	NA	NA	2.86E-02	7.59E-01	2.17E-02	6.64E-01	1.35E+02	1.11E-02	2.64E+00	3.14E-02	1.60E+00	6.93E-03
UM-750S-3500E (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	2.05E+00	1.64E+01	2.35E+01	NA	NA	NA	NA	2.86E-02	8.00E+00	2.29E-01	6.64E-01	1.35E+02	1.17E-01	2.64E+00	3.14E-02	1.60E+00	7.31E-02
BRSD-16 (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	2.05E+00	1.07E+01	1.53E+01	NA	NA	NA	NA	2.86E-02	5.19E+00	1.49E-01	6.64E-01	1.35E+02	7.58E-02	2.64E+00	3.14E-02	1.60E+00	4.74E-02
UM-750S-3000E (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	2.05E+00	2.20E+01	3.14E+01	NA	NA	NA	NA	2.86E-02	1.07E+01	3.06E-01	6.64E-01	1.35E+02	1.56E-01	2.64E+00	3.14E-02	1.60E+00	9.78E-02
BRSD-3 (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	2.05E+00	7.43E+00	1.06E+01	NA	NA	NA	NA	2.86E-02	3.62E+00	1.04E-01	6.64E-01	1.35E+02	5.29E-02	2.64E+00	3.14E-02	1.60E+00	3.31E-02
UM-500S-3250E (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	2.05E+00	5.73E+00	8.20E+00	NA	NA	NA	NA	2.86E-02	2.79E+00	7.99E-02	6.64E-01	1.35E+02	4.07E-02	2.64E+00	3.14E-02	1.60E+00	2.55E-02
UM-500S-3000E (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	2.05E+00	1.87E+01	2.67E+01	NA	NA	NA	NA	2.86E-02	9.10E+00	2.61E-01	6.64E-01	1.35E+02	1.33E-01	2.64E+00	3.14E-02	1.60E+00	8.31E-02
UM-500S-2750E (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	2.05E+00	2.26E+01	3.23E+01	NA	NA	NA	NA	2.86E-02	1.10E+01	3.15E-01	6.64E-01	1.35E+02	1.61E-01	2.64E+00	3.14E-02	1.60E+00	1.01E-01
BRSD-25 (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	2.05E+00	1.28E+01	1.84E+01	NA	NA	NA	NA	2.86E-02	6.25E+00	1.79E-01	6.64E-01	1.35E+02	9.13E-02	2.64E+00	3.14E-02	1.60E+00	5.71E-02
UM-250S-3000E (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	2.05E+00	3.67E+01	5.26E+01	NA	NA	NA	NA	2.86E-02	1.79E+01	5.13E-01	6.64E-01	1.35E+02	2.61E-01	2.64E+00	3.14E-02	1.60E+00	1.64E-01
UM-250S-3250E (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	2.05E+00	2.94E+01	4.20E+01	NA	NA	NA	NA	2.86E-02	1.43E+01	4.09E-01	6.64E-01	1.35E+02	2.09E-01	2.64E+00	3.14E-02	1.60E+00	1.31E-01
BRSD-24 (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	2.05E+00	2.81E+01	4.03E+01	NA	NA	NA	NA	2.86E-02	1.37E+01	3.92E-01	6.64E-01	1.35E+02	2.00E-01	2.64E+00	3.14E-02	1.60E+00	1.25E-01
UM-250S-2750E (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	2.05E+00	1.45E+01	2.07E+01	NA	NA	NA	NA	2.86E-02	7.05E+00	2.02E-01	6.64E-01	1.35E+02	1.03E-01	2.64E+00	3.14E-02	1.60E+00	6.44E-02
UM-250S-2500E (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	2.05E+00	6.06E+00	8.67E+00	NA	NA	NA	NA	2.86E-02	2.95E+00	8.45E-02	6.64E-01	1.35E+02	4.31E-02	2.64E+00	3.14E-02	1.60E+00	2.70E-02
UM-0N-2500E (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	2.05E+00	4.74E+01	6.79E+01	NA	NA	NA	NA	2.86E-02	2.31E+01	6.61E-01	6.64E-01	1.35E+02	3.37E-01	2.64E+00	3.14E-02	1.60E+00	2.11E-01
UM-0N-250E (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	2.05E+00	3.94E+01	5.64E+01	NA	NA	NA	NA	2.86E-02	1.92E+01	5.50E-01	6.64E-01	1.35E+02	2.80E-01	2.64E+00	3.14E-02	1.60E+00	1.75E-01
BRSD-2 (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	2.05E+00	2.11E+01	3.03E+01	NA	NA	NA	NA	2.86E-02	1.03E+01	2.95E-01	6.64E-01	1.35E+02	1.50E-01	2.64E+00	3.14E-02	1.60E+00	9.41E-02
UM-500N-2500E (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	2.05E+00	3.61E+00	5.17E+00	NA	NA	NA	NA	2.86E-02	1.76E+00	5.04E-02	6.64E-01	1.35E+02	2.57E-02	2.64E+00	3.14E-02	1.60E+00	1.61E-02
UM-250N-2500E (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	2.05E+00	2.94E+01	4.20E+01	NA	NA	NA	NA	2.86E-02	1.43E+01	4.09E-01	6.64E-01	1.35E+02	2.09E-01	2.64E+00	3.14E-02	1.60E+00	1.31E-01
UM-250N-2250E (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	2.05E+00	2.46E+01	3.53E+01	NA	NA	NA	NA	2.86E-02	1.20E+01	3.44E-01	6.64E-01	1.35E+02	1.75E-01	2.64E+00	3.14E-02	1.60E+00	1.10E-01
Western Upper Marsh (0-2")																						**Maximum HQ (Eastern Upper Marsh, 0-2")**	**2.11E-01**
UM-500S-2500E (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.96E+00	2.45E+00	3.51E+00	NA	NA	NA	NA	2.86E-02	1.25E+00	3.58E-02	6.64E-01	1.35E+02	1.74E-02	2.64E+00	3.14E-02	1.60E+00	1.09E-02
UM-0N-2000E (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.96E+00	2.86E+01	4.10E+01	NA	NA	NA	NA	2.86E-02	1.46E+01	4.18E-01	6.64E-01	1.35E+02	2.04E-01	2.64E+00	3.14E-02	1.60E+00	1.27E-01
UM-500S-2000E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-250N-1750E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	5.52E-01	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-1500E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	6.24E-01	BB	BB	BB	BB	BB	BB	BB	BB
UM-250S-1500E (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.96E+00	3.21E+01	4.60E+01	NA	NA	NA	NA	2.86E-02	1.64E+01	4.70E-01	6.64E-01	1.35E+02	2.29E-01	2.64E+00	3.14E-02	1.60E+00	1.43E-01
UM-250S-1250E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-6 (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.96E+00	1.92E+00	2.76E+00	NA	NA	NA	NA	2.86E-02	9.82E-01	2.81E-02	6.64E-01	1.35E+02	1.37E-02	2.64E+00	3.14E-02	1.60E+00	8.57E-03
UM-0N-1000E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-750E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-500E (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.96E+00	4.12E+00	5.89E+00	NA	NA	NA	NA	2.86E-02	2.10E+00	6.01E-02	6.64E-01	1.35E+02	2.93E-02	2.64E+00	3.14E-02	1.60E+00	1.83E-02
UM-250S-500E (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.96E+00	1.70E+00	2.44E+00	NA	NA	NA	NA	2.86E-02	8.68E-01	2.49E-02	6.64E-01	1.35E+02	1.21E-02	2.64E+00	3.14E-02	1.60E+00	7.58E-03
UM-250S-250E (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.96E+00	1.59E+00	2.27E+00	NA	NA	NA	NA	2.86E-02	8.09E-01	2.32E-02	6.64E-01	1.35E+02	1.13E-02	2.64E+00	3.14E-02	1.60E+00	7.06E-03
BRSD-7 (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.96E+00	3.59E+00	5.14E+00	NA	NA	NA	NA	2.86E-02	1.83E+00	5.24E-02	6.64E-01	1.35E+02	2.55E-02	2.64E+00	3.14E-02	1.60E+00	1.60E-02
BRSD-8 (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.96E+00	1.11E+01	1.58E+01	NA	NA	NA	NA	2.86E-02	5.64E+00	1.61E-01	6.64E-01	1.35E+02	7.87E-02	2.64E+00	3.14E-02	1.60E+00	4.92E-02
UM-500S-500E (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.96E+00	2.08E+00	2.97E+00	NA	NA	NA	NA	2.86E-02	1.06E+00	3.04E-02	6.64E-01	1.35E+02	1.48E-02	2.64E+00	3.14E-02	1.60E+00	9.25E-03
BRSD-9 (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.96E+00	9.62E+00	1.38E+01	NA	NA	NA	NA	2.86E-02	4.91E+00	1.41E-01	6.64E-01	1.35E+02	6.85E-02	2.64E+00	3.14E-02	1.60E+00	4.29E-02
BRSD-10 (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.96E+00	3.53E+01	5.05E+01	NA	NA	NA	NA	2.86E-02	1.80E+01	5.15E-01	6.64E-01	1.35E+02	2.51E-01	2.64E+00	3.14E-02	1.60E+00	1.57E-01
BRSD-11 (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.96E+00	1.09E+01	1.56E+01	NA	NA	NA	NA	2.86E-02	5.55E+00	1.59E-01	6.64E-01	1.35E+02	7.74E-02	2.64E+00	3.14E-02	1.60E+00	4.84E-02

TABLE C-12CA: CADMIUM DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 12 - MARSH, TERRESTRIAL RECEPTORS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **118.73**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
White-Tailed Deer (Large Herbivorous Mammals)																							
Eastern Upper Marsh (2-6")																						**Maximum HQ (Western Upper Marsh, 0-2")**	**1.57E-01**
UM-1000S-3500E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-15 (2-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	2.05E+00	2.65E+00	3.79E+00	NA	NA	NA	NA	2.86E-02	1.29E+00	3.69E-02	6.64E-01	1.35E+02	1.88E-02	2.64E+00	3.14E-02	1.60E+00	1.18E-02
BRSD-4 (2-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	2.05E+00	1.38E+00	1.97E+00	NA	NA	NA	NA	2.86E-02	6.71E-01	1.92E-02	6.64E-01	1.35E+02	9.80E-03	2.64E+00	3.14E-02	1.60E+00	6.13E-03
UM-750S-3500E (2-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	2.05E+00	2.71E+01	3.88E+01	NA	NA	NA	NA	2.86E-02	1.32E+01	3.78E-01	6.64E-01	1.35E+02	1.93E-01	2.64E+00	3.14E-02	1.60E+00	1.21E-01
BRSD-16 (2-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	2.05E+00	7.12E+01	1.02E+02	NA	NA	NA	NA	2.86E-02	3.47E+01	9.94E-01	6.64E-01	1.35E+02	5.07E-01	2.64E+00	3.14E-02	1.60E+00	3.17E-01
UM-750S-3000E (2-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	2.05E+00	1.87E+01	2.68E+01	NA	NA	NA	NA	2.86E-02	9.12E+00	2.61E-01	6.64E-01	1.35E+02	1.33E-01	2.64E+00	3.14E-02	1.60E+00	8.33E-02
BRSD-3 (2-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	2.05E+00	9.90E+00	1.42E+01	NA	NA	NA	NA	2.86E-02	4.82E+00	1.38E-01	6.64E-01	1.35E+02	7.04E-02	2.64E+00	3.14E-02	1.60E+00	4.40E-02
UM-500S-3250E (2-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	2.05E+00	1.69E+00	2.42E+00	NA	NA	NA	NA	2.86E-02	8.24E-01	2.36E-02	6.64E-01	1.35E+02	1.20E-02	2.64E+00	3.14E-02	1.60E+00	7.53E-03
UM-500S-3000E (2-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	2.05E+00	3.74E+00	5.35E+00	NA	NA	NA	NA	2.86E-02	1.82E+00	5.21E-02	6.64E-01	1.35E+02	2.66E-02	2.64E+00	3.14E-02	1.60E+00	1.66E-02
UM-500S-2750E (2-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	2.05E+00	1.81E+01	2.59E+01	NA	NA	NA	NA	2.86E-02	8.80E+00	2.52E-01	6.64E-01	1.35E+02	1.28E-01	2.64E+00	3.14E-02	1.60E+00	8.04E-02
BRSD-25 (2-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	2.05E+00	1.81E+01	2.60E+01	NA	NA	NA	NA	2.86E-02	8.84E+00	2.53E-01	6.64E-01	1.35E+02	1.29E-01	2.64E+00	3.14E-02	1.60E+00	8.08E-02
UM-250S-3000E (2-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	2.05E+00	4.25E+01	6.08E+01	NA	NA	NA	NA	2.86E-02	2.07E+01	5.93E-01	6.64E-01	1.35E+02	3.02E-01	2.64E+00	3.14E-02	1.60E+00	1.89E-01
UM-250S-3250E (2-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	2.05E+00	6.71E+00	9.61E+00	NA	NA	NA	NA	2.86E-02	3.27E+00	9.36E-02	6.64E-01	1.35E+02	4.77E-02	2.64E+00	3.14E-02	1.60E+00	2.99E-02
BRSD-24 (2-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	2.05E+00	5.75E+01	8.23E+01	NA	NA	NA	NA	2.86E-02	2.80E+01	8.02E-01	6.64E-01	1.35E+02	4.09E-01	2.64E+00	3.14E-02	1.60E+00	2.56E-01
UM-250S-2750E (2-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	2.05E+00	2.79E+01	4.00E+01	NA	NA	NA	NA	2.86E-02	1.36E+01	3.89E-01	6.64E-01	1.35E+02	1.99E-01	2.64E+00	3.14E-02	1.60E+00	1.24E-01
UM-0N-2500E (2-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	2.05E+00	2.00E+01	2.86E+01	NA	NA	NA	NA	2.86E-02	9.73E+00	2.79E-01	6.64E-01	1.35E+02	1.42E-01	2.64E+00	3.14E-02	1.60E+00	8.89E-02
BRSD-2 (2-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	2.05E+00	3.47E+01	4.97E+01	NA	NA	NA	NA	2.86E-02	1.69E+01	4.84E-01	6.64E-01	1.35E+02	2.47E-01	2.64E+00	3.14E-02	1.60E+00	1.54E-01
UM-500N-2500E (2-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	2.05E+00	3.26E+00	4.67E+00	NA	NA	NA	NA	2.86E-02	1.59E+00	4.55E-02	6.64E-01	1.35E+02	2.32E-02	2.64E+00	3.14E-02	1.60E+00	1.45E-02
UM-250N-2500E (2-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	2.05E+00	2.96E+01	4.23E+01	NA	NA	NA	NA	2.86E-02	1.44E+01	4.12E-01	6.64E-01	1.35E+02	2.10E-01	2.64E+00	3.14E-02	1.60E+00	1.32E-01
UM-250N-2250E (2-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	2.05E+00	6.94E+00	9.93E+00	NA	NA	NA	NA	2.86E-02	3.38E+00	9.68E-02	6.64E-01	1.35E+02	4.94E-02	2.64E+00	3.14E-02	1.60E+00	3.09E-02
Western Upper Marsh (2-6")																						**Maximum HQ (Eastern Upper Marsh, 2-6")**	**3.17E-01**
UM-500S-2500E (2-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.96E+00	1.45E+00	2.07E+00	NA	NA	NA	NA	2.86E-02	7.38E-01	2.11E-02	6.64E-01	1.35E+02	1.03E-02	2.64E+00	3.14E-02	1.60E+00	6.44E-03
UM-500S-2000E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	5.48E-01	BB	BB	BB	BB	BB	BB	BB	BB
UM-250N-1750E (2-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.96E+00	1.88E+00	2.69E+00	NA	NA	NA	NA	2.86E-02	9.58E-01	2.74E-02	6.64E-01	1.35E+02	1.34E-02	2.64E+00	3.14E-02	1.60E+00	8.36E-03
UM-0N-1500E (2-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.96E+00	2.22E+00	3.17E+00	NA	NA	NA	NA	2.86E-02	1.13E+00	3.24E-02	6.64E-01	1.35E+02	1.58E-02	2.64E+00	3.14E-02	1.60E+00	9.86E-03
UM-250S-1500E (2-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.96E+00	2.51E+01	3.59E+01	NA	NA	NA	NA	2.86E-02	1.28E+01	3.67E-01	6.64E-01	1.35E+02	1.79E-01	2.64E+00	3.14E-02	1.60E+00	1.12E-01
UM-250S-1250E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-6 (2-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.96E+00	1.76E+00	2.52E+00	NA	NA	NA	NA	2.86E-02	8.98E-01	2.57E-02	6.64E-01	1.35E+02	1.25E-02	2.64E+00	3.14E-02	1.60E+00	7.84E-03
UM-0N-1000E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-750E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-500E (2-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.96E+00	1.53E+02	2.19E+02	NA	NA	NA	NA	2.86E-02	7.80E+01	2.23E+00	6.64E-01	1.35E+02	1.09E+00	2.64E+00	3.14E-02	1.60E+00	6.81E-01
UM-250S-500E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	6.44E-01	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-250E (2-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.96E+00	6.90E+00	9.88E+00	NA	NA	NA	NA	2.86E-02	3.52E+00	1.01E-01	6.64E-01	1.35E+02	4.91E-02	2.64E+00	3.14E-02	1.60E+00	3.07E-02
UM-250S-250E (2-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.96E+00	2.74E+00	3.93E+00	NA	NA	NA	NA	2.86E-02	1.40E+00	4.01E-02	6.64E-01	1.35E+02	1.95E-02	2.64E+00	3.14E-02	1.60E+00	1.22E-02
BRSD-7 (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-8 (2-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.96E+00	1.69E+01	2.41E+01	NA	NA	NA	NA	2.86E-02	8.60E+00	2.46E-01	6.64E-01	1.35E+02	1.20E-01	2.64E+00	3.14E-02	1.60E+00	7.51E-02
UM-500S-500E (2-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.96E+00	1.49E+00	2.13E+00	NA	NA	NA	NA	2.86E-02	7.60E-01	2.18E-02	6.64E-01	1.35E+02	1.06E-02	2.64E+00	3.14E-02	1.60E+00	6.63E-03
BRSD-9 (2-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.96E+00	4.78E+00	6.85E+00	NA	NA	NA	NA	2.86E-02	2.44E+00	6.99E-02	6.64E-01	1.35E+02	3.40E-02	2.64E+00	3.14E-02	1.60E+00	2.13E-02
BRSD-10 (2-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.96E+00	3.10E+01	4.43E+01	NA	NA	NA	NA	2.86E-02	1.58E+01	4.52E-01	6.64E-01	1.35E+02	2.20E-01	2.64E+00	3.14E-02	1.60E+00	1.38E-01
BRSD-11 (2-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.96E+00	4.96E+00	7.10E+00	NA	NA	NA	NA	2.86E-02	2.53E+00	7.24E-02	6.64E-01	1.35E+02	3.53E-02	2.64E+00	3.14E-02	1.60E+00	2.21E-02
Eastern Upper Marsh (6-12")																						**Maximum HQ (Western Upper Marsh, 2-6")**	**6.81E-01**
UM-1000S-3500E (6-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	2.05E+00	2.03E+00	2.91E+00	NA	NA	NA	NA	2.86E-02	9.89E-01	2.83E-02	6.64E-01	1.35E+02	1.44E-02	2.64E+00	3.14E-02	1.60E+00	9.04E-03
BRSD-15 (6-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	2.05E+00	3.59E+00	5.14E+00	NA	NA	NA	NA	2.86E-02	1.75E+00	5.01E-02	6.64E-01	1.35E+02	2.56E-02	2.64E+00	3.14E-02	1.60E+00	1.60E-02
BRSD-4 (6-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	2.05E+00	3.06E+00	4.38E+00	NA	NA	NA	NA	2.86E-02	1.49E+00	4.27E-02	6.64E-01	1.35E+02	2.18E-02	2.64E+00	3.14E-02	1.60E+00	1.36E-02
UM-750S-3500E (6-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	2.05E+00	3.76E+01	5.38E+01	NA	NA	NA	NA	2.86E-02	1.83E+01	5.24E-01	6.64E-01	1.35E+02	2.67E-01	2.64E+00	3.14E-02	1.60E+00	1.67E-01
BRSD-16 (6-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	2.05E+00	3.70E+01	5.29E+01	NA	NA	NA	NA	2.86E-02	1.80E+01	5.15E-01	6.64E-01	1.35E+02	2.63E-01	2.64E+00	3.14E-02	1.60E+00	1.64E-01
UM-750S-3000E (6-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	2.05E+00	1.87E+01	2.68E+01	NA	NA	NA	NA	2.86E-02	9.13E+00	2.61E-01	6.64E-01	1.35E+02	1.33E-01	2.64E+00	3.14E-02	1.60E+00	8.34E-02
BRSD-3 (6-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	2.05E+00	4.80E+00	6.88E+00	NA	NA	NA	NA	2.86E-02	2.34E+00	6.70E-02	6.64E-01	1.35E+02	3.42E-02	2.64E+00	3.14E-02	1.60E+00	2.14E-02

TABLE C-12CA: CADMIUM DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 12 - MARSH, TERRESTRIAL RECEPTORS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **118.73**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
White-Tailed Deer (Large Herbivorous Mammals)																							
UM-500S-3250E (6-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	2.05E+00	2.36E+00	3.38E+00	NA	NA	NA	NA	2.86E-02	1.15E+00	3.29E-02	6.64E-01	1.35E+02	1.68E-02	2.64E+00	3.14E-02	1.60E+00	1.05E-02
UM-500S-3000E (6-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	2.05E+00	3.57E+00	5.11E+00	NA	NA	NA	NA	2.86E-02	1.74E+00	4.98E-02	6.64E-01	1.35E+02	2.54E-02	2.64E+00	3.14E-02	1.60E+00	1.59E-02
UM-500S-2750E (6-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	2.05E+00	1.46E+01	2.10E+01	NA	NA	NA	NA	2.86E-02	7.13E+00	2.04E-01	6.64E-01	1.35E+02	1.04E-01	2.64E+00	3.14E-02	1.60E+00	6.51E-02
BRSD-25 (6-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	2.05E+00	1.58E+01	2.26E+01	NA	NA	NA	NA	2.86E-02	7.69E+00	2.20E-01	6.64E-01	1.35E+02	1.12E-01	2.64E+00	3.14E-02	1.60E+00	7.03E-02
UM-250S-3000E (6-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	2.05E+00	3.08E+01	4.41E+01	NA	NA	NA	NA	2.86E-02	1.50E+01	4.30E-01	6.64E-01	1.35E+02	2.19E-01	2.64E+00	3.14E-02	1.60E+00	1.37E-01
UM-250S-3250E (6-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	2.05E+00	7.14E+00	1.02E+01	NA	NA	NA	NA	2.86E-02	3.48E+00	9.96E-02	6.64E-01	1.35E+02	5.08E-02	2.64E+00	3.14E-02	1.60E+00	3.18E-02
BRSD-24 (6-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	2.05E+00	2.94E+01	4.20E+01	NA	NA	NA	NA	2.86E-02	1.43E+01	4.09E-01	6.64E-01	1.35E+02	2.09E-01	2.64E+00	3.14E-02	1.60E+00	1.31E-01
UM-250S-2750E (6-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	2.05E+00	3.14E+01	4.50E+01	NA	NA	NA	NA	2.86E-02	1.53E+01	4.38E-01	6.64E-01	1.35E+02	2.23E-01	2.64E+00	3.14E-02	1.60E+00	1.40E-01
UM-250S-2500E (6-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	2.05E+00	2.53E+00	3.62E+00	NA	NA	NA	NA	2.86E-02	1.23E+00	3.52E-02	6.64E-01	1.35E+02	1.80E-02	2.64E+00	3.14E-02	1.60E+00	1.12E-02
BRSD-2 (6-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	2.05E+00	5.58E+01	7.99E+01	NA	NA	NA	NA	2.86E-02	2.72E+01	7.79E-01	6.64E-01	1.35E+02	3.97E-01	2.64E+00	3.14E-02	1.60E+00	2.49E-01
UM-500N-2500E (6-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	2.05E+00	1.66E+00	2.38E+00	NA	NA	NA	NA	2.86E-02	8.09E-01	2.32E-02	6.64E-01	1.35E+02	1.18E-02	2.64E+00	3.14E-02	1.60E+00	7.39E-03
UM-250N-2500E (6-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	2.05E+00	2.55E+01	3.64E+01	NA	NA	NA	NA	2.86E-02	1.24E+01	3.55E-01	6.64E-01	1.35E+02	1.81E-01	2.64E+00	3.14E-02	1.60E+00	1.13E-01
UM-250N-2250E (6-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	2.05E+00	4.09E+00	5.85E+00	NA	NA	NA	NA	2.86E-02	1.99E+00	5.70E-02	6.64E-01	1.35E+02	2.91E-02	2.64E+00	3.14E-02	1.60E+00	1.82E-02
Western Upper Marsh (6-12")																						**Maximum HQ (Eastern Upper Marsh, 6-12")**	**2.49E-01**
UM-500S-2500E (6-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.96E+00	1.67E+00	2.39E+00	NA	NA	NA	NA	2.86E-02	8.51E-01	2.44E-02	6.64E-01	1.35E+02	1.19E-02	2.64E+00	3.14E-02	1.60E+00	7.43E-03
UM-0N-2000E (6-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.96E+00	3.84E+01	5.50E+01	NA	NA	NA	NA	2.86E-02	1.96E+01	5.61E-01	6.64E-01	1.35E+02	2.73E-01	2.64E+00	3.14E-02	1.60E+00	1.71E-01
UM-500S-2000E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-250N-1750E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-1500E (6-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.96E+00	5.31E+00	7.61E+00	NA	NA	NA	NA	2.86E-02	2.71E+00	7.76E-02	6.64E-01	1.35E+02	3.78E-02	2.64E+00	3.14E-02	1.60E+00	2.37E-02
UM-250S-1500E (6-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.96E+00	6.14E+00	8.78E+00	NA	NA	NA	NA	2.86E-02	3.13E+00	8.96E-02	6.64E-01	1.35E+02	4.37E-02	2.64E+00	3.14E-02	1.60E+00	2.73E-02
UM-250S-1250E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-6 (6-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.96E+00	1.89E+00	2.71E+00	NA	NA	NA	NA	2.86E-02	9.64E-01	2.76E-02	6.64E-01	1.35E+02	1.34E-02	2.64E+00	3.14E-02	1.60E+00	8.41E-03
UM-0N-1000E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-750E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-500E (6-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.96E+00	2.61E+01	3.73E+01	NA	NA	NA	NA	2.86E-02	1.33E+01	3.81E-01	6.64E-01	1.35E+02	1.86E-01	2.64E+00	3.14E-02	1.60E+00	1.16E-01
UM-250S-500E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-250E (6-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.96E+00	1.18E+01	1.69E+01	NA	NA	NA	NA	2.86E-02	6.01E+00	1.72E-01	6.64E-01	1.35E+02	8.38E-02	2.64E+00	3.14E-02	1.60E+00	5.25E-02
UM-250S-250E (6-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.96E+00	1.82E+00	2.60E+00	NA	NA	NA	NA	2.86E-02	9.28E-01	2.66E-02	6.64E-01	1.35E+02	1.29E-02	2.64E+00	3.14E-02	1.60E+00	8.10E-03
BRSD-7 (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-8 (6-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.96E+00	9.84E+00	1.41E+01	NA	NA	NA	NA	2.86E-02	5.02E+00	1.44E-01	6.64E-01	1.35E+02	7.00E-02	2.64E+00	3.14E-02	1.60E+00	4.38E-02
UM-500S-500E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	5.50E-01	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-9 (6-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.96E+00	3.41E+00	4.88E+00	NA	NA	NA	NA	2.86E-02	1.74E+00	4.98E-02	6.64E-01	1.35E+02	2.43E-02	2.64E+00	3.14E-02	1.60E+00	1.52E-02
BRSD-10 (6-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.96E+00	4.61E+01	6.60E+01	NA	NA	NA	NA	2.86E-02	2.35E+01	6.73E-01	6.64E-01	1.35E+02	3.28E-01	2.64E+00	3.14E-02	1.60E+00	2.05E-01
BRSD-11 (6-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.96E+00	4.00E+00	5.73E+00	NA	NA	NA	NA	2.86E-02	2.04E+00	5.84E-02	6.64E-01	1.35E+02	2.85E-02	2.64E+00	3.14E-02	1.60E+00	1.78E-02
Middle Marsh (0-2")																						**Maximum HQ (Western Upper Marsh, 6-12")**	**2.05E-01**
MMSD-201 (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.96E+00	1.86E+01	2.67E+01	NA	NA	NA	NA	2.86E-02	9.50E+00	2.72E-01	6.64E-01	1.35E+02	1.33E-01	2.64E+00	3.14E-02	1.60E+00	8.29E-02
MMSD-202 (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.96E+00	2.16E+00	3.09E+00	NA	NA	NA	NA	2.86E-02	1.10E+00	3.15E-02	6.64E-01	1.35E+02	1.53E-02	2.64E+00	3.14E-02	1.60E+00	9.60E-03
Middle Marsh (2-6")																						**Maximum HQ (Middle Marsh, 0-2")**	**8.29E-02**
MMSD-201 (2-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.96E+00	2.90E+01	4.15E+01	NA	NA	NA	NA	2.86E-02	1.48E+01	4.24E-01	6.64E-01	1.35E+02	2.06E-01	2.64E+00	3.14E-02	1.60E+00	1.29E-01
MMSD-202 (2-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.96E+00	2.55E+00	3.65E+00	NA	NA	NA	NA	2.86E-02	1.30E+00	3.72E-02	6.64E-01	1.35E+02	1.81E-02	2.64E+00	3.14E-02	1.60E+00	1.13E-02
Middle Marsh (6-12")																						**Maximum HQ (Middle Marsh, 2-6")**	**1.29E-01**
MMSD-201 (6-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.96E+00	3.61E+01	5.16E+01	NA	NA	NA	NA	2.86E-02	1.84E+01	5.27E-01	6.64E-01	1.35E+02	2.57E-01	2.64E+00	3.14E-02	1.60E+00	1.61E-01
MMSD-202 (6-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.96E+00	2.74E+00	3.93E+00	NA	NA	NA	NA	2.86E-02	1.40E+00	4.01E-02	6.64E-01	1.35E+02	1.95E-02	2.64E+00	3.14E-02	1.60E+00	1.22E-02
Lower Marsh (0-2")																						**Maximum HQ (Middle Marsh, 6-12")**	**1.61E-01**
LMSD-201 (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
LMSD-202 (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.96E+00	2.94E+00	4.21E+00	NA	NA	NA	NA	2.86E-02	1.50E+00	4.30E-02	6.64E-01	1.35E+02	2.09E-02	2.64E+00	3.14E-02	1.60E+00	1.31E-02
LMSD-203 (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.96E+00	1.18E+00	1.68E+00	NA	NA	NA	NA	2.86E-02	6.00E-01	1.72E-02	6.64E-01	1.35E+02	8.37E-03	2.64E+00	3.14E-02	1.60E+00	5.24E-03
LMSD-204 (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.96E+00	1.96E+00	2.81E+00	NA	NA	NA	NA	2.86E-02	1.00E+00	2.86E-02	6.64E-01	1.35E+02	1.39E-02	2.64E+00	3.14E-02	1.60E+00	8.73E-03

TABLE C-12CA: CADMIUM DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 12 - MARSH, TERRESTRIAL RECEPTORS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **118.73**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
White-Tailed Deer (Large Herbivorous Mammals)																							
Lower Marsh (2-6")																						**Maximum HQ (Lower Marsh, 0-2")**	**1.31E-02**
LMSD-201 (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
LMSD-202 (2-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.96E+00	2.35E+00	3.37E+00	NA	NA	NA	NA	2.86E-02	1.20E+00	3.44E-02	6.64E-01	1.35E+02	1.67E-02	2.64E+00	3.14E-02	1.60E+00	1.05E-02
LMSD-203 (2-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.96E+00	1.57E+00	2.25E+00	NA	NA	NA	NA	2.86E-02	8.00E-01	2.29E-02	6.64E-01	1.35E+02	1.12E-02	2.64E+00	3.14E-02	1.60E+00	6.98E-03
LMSD-204 (2-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.96E+00	1.57E+00	2.25E+00	NA	NA	NA	NA	2.86E-02	8.00E-01	2.29E-02	6.64E-01	1.35E+02	1.12E-02	2.64E+00	3.14E-02	1.60E+00	6.98E-03
Lower Marsh (6-12")																						**Maximum HQ (Lower Marsh, 2-6")**	**1.05E-02**
LMSD-201 (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
LMSD-202 (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
LMSD-203 (6-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.96E+00	5.49E+00	7.86E+00	NA	NA	NA	NA	2.86E-02	2.80E+00	8.02E-02	6.64E-01	1.35E+02	3.91E-02	2.64E+00	3.14E-02	1.60E+00	2.44E-02
LMSD-204 (6-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.96E+00	1.18E+00	1.68E+00	NA	NA	NA	NA	2.86E-02	6.00E-01	1.72E-02	6.64E-01	1.35E+02	8.37E-03	2.64E+00	3.14E-02	1.60E+00	5.24E-03
																						Maximum HQ (Lower Marsh, 6-12")	**2.44E-02**
Red Fox (Carnivorous Mammals)																							
Reference Sites																							
BRSD-5 (0-2")	1.72E-01	1.72E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	6.19E-01	2.97E-03	8.77E-02	4.54E+00	5.75E-05	2.64E+00	3.14E-02	1.96E+00	2.93E-05
BRSD-5 (2-6")	1.72E-01	1.72E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.21E-01	2.50E-03	8.77E-02	4.54E+00	4.84E-05	2.64E+00	3.14E-02	1.96E+00	2.47E-05
BRSD-5 (6-12")	1.72E-01	1.72E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.71E-01	2.26E-03	8.77E-02	4.54E+00	4.37E-05	2.64E+00	3.14E-02	1.96E+00	2.23E-05
PGBG-1 (0-2")	1.72E-01	1.72E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.51E+00	7.25E-03	8.77E-02	4.54E+00	1.40E-04	2.64E+00	3.14E-02	1.96E+00	7.16E-05
PGBG-1 (2-6")	1.72E-01	1.72E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.44E+00	6.92E-03	8.77E-02	4.54E+00	1.34E-04	2.64E+00	3.14E-02	1.96E+00	6.83E-05
PGBG-1 (6-12")	1.72E-01	1.72E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	6.49E-01	3.12E-03	8.77E-02	4.54E+00	6.03E-05	2.64E+00	3.14E-02	1.96E+00	3.08E-05
PGBG-2 (0-2")	1.72E-01	1.72E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.84E+00	8.84E-03	8.77E-02	4.54E+00	1.71E-04	2.64E+00	3.14E-02	1.96E+00	8.72E-05
PGBG-2 (2-6")	1.72E-01	1.72E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.54E+00	7.40E-03	8.77E-02	4.54E+00	1.43E-04	2.64E+00	3.14E-02	1.96E+00	7.30E-05
PGBG-2 (6-12")	1.72E-01	1.72E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.57E+00	7.54E-03	8.77E-02	4.54E+00	1.46E-04	2.64E+00	3.14E-02	1.96E+00	7.44E-05
Eastern Upper Marsh (0-2")																						**Minimum HQ (Reference Sites)**	**2.23E-05**
UM-1000S-3500E (0-2")	1.72E-01	1.72E-01	3.23E-01	7.07E-01	1.21E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.19E+00	1.05E-02	8.77E-02	4.54E+00	2.55E-03	2.64E+00	3.14E-02	1.96E+00	1.30E-03
BRSD-15 (0-2")	1.72E-01	1.72E-01	3.23E-01	4.91E-01	8.41E-02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.52E+00	7.30E-03	8.77E-02	4.54E+00	1.77E-03	2.64E+00	3.14E-02	1.96E+00	9.03E-04
BRSD-4 (0-2")	1.72E-01	1.72E-01	3.23E-01	2.45E-01	4.20E-02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	7.59E-01	3.65E-03	8.77E-02	4.54E+00	8.83E-04	2.64E+00	3.14E-02	1.96E+00	4.51E-04
UM-750S-3500E (0-2")	1.72E-01	1.72E-01	3.23E-01	2.58E+00	4.43E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	8.00E+00	3.84E-02	8.77E-02	4.54E+00	9.31E-03	2.64E+00	3.14E-02	1.96E+00	4.75E-03
BRSD-16 (0-2")	1.72E-01	1.72E-01	3.23E-01	1.67E+00	2.87E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.19E+00	2.49E-02	8.77E-02	4.54E+00	6.04E-03	2.64E+00	3.14E-02	1.96E+00	3.08E-03
UM-750S-3000E (0-2")	1.72E-01	1.72E-01	3.23E-01	3.45E+00	5.92E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.07E+01	5.14E-02	8.77E-02	4.54E+00	1.24E-02	2.64E+00	3.14E-02	1.96E+00	6.35E-03
BRSD-3 (0-2")	1.72E-01	1.72E-01	3.23E-01	1.17E+00	2.00E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.62E+00	1.74E-02	8.77E-02	4.54E+00	4.21E-03	2.64E+00	3.14E-02	1.96E+00	2.15E-03
UM-500S-3250E (0-2")	1.72E-01	1.72E-01	3.23E-01	9.00E-01	1.54E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.79E+00	1.34E-02	8.77E-02	4.54E+00	3.25E-03	2.64E+00	3.14E-02	1.96E+00	1.66E-03
UM-500S-3000E (0-2")	1.72E-01	1.72E-01	3.23E-01	2.94E+00	5.04E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	9.10E+00	4.37E-02	8.77E-02	4.54E+00	1.06E-02	2.64E+00	3.14E-02	1.96E+00	5.40E-03
UM-500S-2750E (0-2")	1.72E-01	1.72E-01	3.23E-01	3.55E+00	6.09E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.10E+01	5.28E-02	8.77E-02	4.54E+00	1.28E-02	2.64E+00	3.14E-02	1.96E+00	6.53E-03
BRSD-25 (0-2")	1.72E-01	1.72E-01	3.23E-01	2.02E+00	3.46E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	6.25E+00	3.00E-02	8.77E-02	4.54E+00	7.27E-03	2.64E+00	3.14E-02	1.96E+00	3.71E-03
UM-250S-3000E (0-2")	1.72E-01	1.72E-01	3.23E-01	5.78E+00	9.91E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.79E+01	8.60E-02	8.77E-02	4.54E+00	2.08E-02	2.64E+00	3.14E-02	1.96E+00	1.06E-02
UM-250S-3250E (0-2")	1.72E-01	1.72E-01	3.23E-01	4.61E+00	7.92E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.43E+01	6.87E-02	8.77E-02	4.54E+00	1.66E-02	2.64E+00	3.14E-02	1.96E+00	8.49E-03
BRSD-24 (0-2")	1.72E-01	1.72E-01	3.23E-01	4.42E+00	7.58E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.37E+01	6.58E-02	8.77E-02	4.54E+00	1.59E-02	2.64E+00	3.14E-02	1.96E+00	8.14E-03
UM-250S-2750E (0-2")	1.72E-01	1.72E-01	3.23E-01	2.28E+00	3.90E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	7.05E+00	3.39E-02	8.77E-02	4.54E+00	8.20E-03	2.64E+00	3.14E-02	1.96E+00	4.19E-03
UM-250S-2500E (0-2")	1.72E-01	1.72E-01	3.23E-01	9.52E-01	1.63E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.95E+00	1.42E-02	8.77E-02	4.54E+00	3.43E-03	2.64E+00	3.14E-02	1.96E+00	1.75E-03
UM-0N-2500E (0-2")	1.72E-01	1.72E-01	3.23E-01	7.45E+00	1.28E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.31E+01	1.11E-01	8.77E-02	4.54E+00	2.69E-02	2.64E+00	3.14E-02	1.96E+00	1.37E-02
UM-0N-250E (0-2")	1.72E-01	1.72E-01	3.23E-01	6.20E+00	1.06E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.92E+01	9.22E-02	8.77E-02	4.54E+00	2.23E-02	2.64E+00	3.14E-02	1.96E+00	1.14E-02
BRSD-2 (0-2")	1.72E-01	1.72E-01	3.23E-01	3.32E+00	5.70E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.03E+01	4.95E-02	8.77E-02	4.54E+00	1.20E-02	2.64E+00	3.14E-02	1.96E+00	6.12E-03
UM-500N-2500E (0-2")	1.72E-01	1.72E-01	3.23E-01	5.68E-01	9.74E-02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.76E+00	8.45E-03	8.77E-02	4.54E+00	2.05E-03	2.64E+00	3.14E-02	1.96E+00	1.05E-03
UM-250N-2500E (0-2")	1.72E-01	1.72E-01	3.23E-01	4.61E+00	7.92E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.43E+01	6.87E-02	8.77E-02	4.54E+00	1.66E-02	2.64E+00	3.14E-02	1.96E+00	8.49E-03
UM-250N-2250E (0-2")	1.72E-01	1.72E-01	3.23E-01	3.87E+00	6.64E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.20E+01	5.76E-02	8.77E-02	4.54E+00	1.40E-02	2.64E+00	3.14E-02	1.96E+00	7.13E-03
Western Upper Marsh (0-2")																						**Maximum HQ (Eastern Upper Marsh, 0-2")**	**1.37E-02**
UM-500S-2500E (0-2")	1.72E-01	1.72E-01	3.23E-01	4.03E-01	6.92E-02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.25E+00	6.00E-03	8.77E-02	4.54E+00	1.45E-03	2.64E+00	3.14E-02	1.96E+00	7.42E-04
UM-0N-2000E (0-2")	1.72E-01	1.72E-01	3.23E-01	4.71E+00	8.08E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.46E+01	7.01E-02	8.77E-02	4.54E+00	1.70E-02	2.64E+00	3.14E-02	1.96E+00	8.67E-03
UM-500S-2000E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-250N-1750E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	5.52E-01	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-1500E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	6.24E-01	BB	BB	BB	BB	BB	BB	BB	BB
UM-250S-1500E (0-2")	1.72E-01	1.72E-01	3.23E-01	5.29E+00	9.08E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.64E+01	7.88E-02	8.77E-02	4.54E+00	1.91E-02	2.64E+00	3.14E-02	1.96E+00	9.74E-03

TABLE C-12CA: CADMIUM DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 12 - MARSH, TERRESTRIAL RECEPTORS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **118.73**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Red Fox (Carnivorous Mammals)																							
UM-250S-1250E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-6 (0-2")	1.72E-01	1.72E-01	3.23E-01	3.17E-01	5.44E-02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	9.82E-01	4.72E-03	8.77E-02	4.54E+00	1.14E-03	2.64E+00	3.14E-02	1.96E+00	5.83E-04
UM-0N-1000E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-750E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-500E (0-2")	1.72E-01	1.72E-01	3.23E-01	6.78E-01	1.16E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.10E+00	1.01E-02	8.77E-02	4.54E+00	2.44E-03	2.64E+00	3.14E-02	1.96E+00	1.25E-03
UM-250S-500E (0-2")	1.72E-01	1.72E-01	3.23E-01	2.80E-01	4.81E-02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	8.68E-01	4.17E-03	8.77E-02	4.54E+00	1.01E-03	2.64E+00	3.14E-02	1.96E+00	5.15E-04
UM-250S-250E (0-2")	1.72E-01	1.72E-01	3.23E-01	2.61E-01	4.48E-02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	8.09E-01	3.89E-03	8.77E-02	4.54E+00	9.41E-04	2.64E+00	3.14E-02	1.96E+00	4.80E-04
BRSD-7 (0-2")	1.72E-01	1.72E-01	3.23E-01	5.91E-01	1.01E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.83E+00	8.79E-03	8.77E-02	4.54E+00	2.13E-03	2.64E+00	3.14E-02	1.96E+00	1.09E-03
BRSD-8 (0-2")	1.72E-01	1.72E-01	3.23E-01	1.82E+00	3.12E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.64E+00	2.71E-02	8.77E-02	4.54E+00	6.56E-03	2.64E+00	3.14E-02	1.96E+00	3.35E-03
UM-500S-500E (0-2")	1.72E-01	1.72E-01	3.23E-01	3.42E-01	5.87E-02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.06E+00	5.09E-03	8.77E-02	4.54E+00	1.23E-03	2.64E+00	3.14E-02	1.96E+00	6.30E-04
BRSD-9 (0-2")	1.72E-01	1.72E-01	3.23E-01	1.58E+00	2.72E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.91E+00	2.36E-02	8.77E-02	4.54E+00	5.71E-03	2.64E+00	3.14E-02	1.96E+00	2.92E-03
BRSD-10 (0-2")	1.72E-01	1.72E-01	3.23E-01	5.81E+00	9.97E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.80E+01	8.65E-02	8.77E-02	4.54E+00	2.09E-02	2.64E+00	3.14E-02	1.96E+00	1.07E-02
BRSD-11 (0-2")	1.72E-01	1.72E-01	3.23E-01	1.79E+00	3.07E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.55E+00	2.67E-02	8.77E-02	4.54E+00	6.46E-03	2.64E+00	3.14E-02	1.96E+00	3.30E-03
Eastern Upper Marsh (2-6")																						**Maximum HQ (Western Upper Marsh, 0-2")**	**1.07E-02**
UM-1000S-3500E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-15 (2-6")	1.72E-01	1.72E-01	3.23E-01	4.16E-01	7.14E-02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.29E+00	6.20E-03	8.77E-02	4.54E+00	1.50E-03	2.64E+00	3.14E-02	1.96E+00	7.66E-04
BRSD-4 (2-6")	1.72E-01	1.72E-01	3.23E-01	2.17E-01	3.71E-02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	6.71E-01	3.22E-03	8.77E-02	4.54E+00	7.81E-04	2.64E+00	3.14E-02	1.96E+00	3.98E-04
UM-750S-3500E (2-6")	1.72E-01	1.72E-01	3.23E-01	4.26E+00	7.31E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.32E+01	6.34E-02	8.77E-02	4.54E+00	1.54E-02	2.64E+00	3.14E-02	1.96E+00	7.84E-03
BRSD-16 (2-6")	1.72E-01	1.72E-01	3.23E-01	1.12E+01	1.92E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.47E+01	1.67E-01	8.77E-02	4.54E+00	4.04E-02	2.64E+00	3.14E-02	1.96E+00	2.06E-02
UM-750S-3000E (2-6")	1.72E-01	1.72E-01	3.23E-01	2.94E+00	5.05E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	9.12E+00	4.38E-02	8.77E-02	4.54E+00	1.06E-02	2.64E+00	3.14E-02	1.96E+00	5.42E-03
BRSD-3 (2-6")	1.72E-01	1.72E-01	3.23E-01	1.56E+00	2.67E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.82E+00	2.32E-02	8.77E-02	4.54E+00	5.61E-03	2.64E+00	3.14E-02	1.96E+00	2.86E-03
UM-500S-3250E (2-6")	1.72E-01	1.72E-01	3.23E-01	2.66E-01	4.56E-02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	8.24E-01	3.96E-03	8.77E-02	4.54E+00	9.59E-04	2.64E+00	3.14E-02	1.96E+00	4.89E-04
UM-500S-3000E (2-6")	1.72E-01	1.72E-01	3.23E-01	5.87E-01	1.01E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.82E+00	8.74E-03	8.77E-02	4.54E+00	2.12E-03	2.64E+00	3.14E-02	1.96E+00	1.08E-03
UM-500S-2750E (2-6")	1.72E-01	1.72E-01	3.23E-01	2.84E+00	4.87E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	8.80E+00	4.23E-02	8.77E-02	4.54E+00	1.02E-02	2.64E+00	3.14E-02	1.96E+00	5.23E-03
BRSD-25 (2-6")	1.72E-01	1.72E-01	3.23E-01	2.85E+00	4.89E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	8.84E+00	4.25E-02	8.77E-02	4.54E+00	1.03E-02	2.64E+00	3.14E-02	1.96E+00	5.25E-03
UM-250S-3000E (2-6")	1.72E-01	1.72E-01	3.23E-01	6.68E+00	1.15E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.07E+01	9.94E-02	8.77E-02	4.54E+00	2.41E-02	2.64E+00	3.14E-02	1.96E+00	1.23E-02
UM-250S-3250E (2-6")	1.72E-01	1.72E-01	3.23E-01	1.06E+00	1.81E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.27E+00	1.57E-02	8.77E-02	4.54E+00	3.80E-03	2.64E+00	3.14E-02	1.96E+00	1.94E-03
BRSD-24 (2-6")	1.72E-01	1.72E-01	3.23E-01	9.04E+00	1.55E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.80E+01	1.34E-01	8.77E-02	4.54E+00	3.26E-02	2.64E+00	3.14E-02	1.96E+00	1.66E-02
UM-250S-2750E (2-6")	1.72E-01	1.72E-01	3.23E-01	4.39E+00	7.53E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.36E+01	6.53E-02	8.77E-02	4.54E+00	1.58E-02	2.64E+00	3.14E-02	1.96E+00	8.08E-03
UM-0N-2500E (2-6")	1.72E-01	1.72E-01	3.23E-01	3.14E+00	5.39E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	9.73E+00	4.67E-02	8.77E-02	4.54E+00	1.13E-02	2.64E+00	3.14E-02	1.96E+00	5.78E-03
BRSD-2 (2-6")	1.72E-01	1.72E-01	3.23E-01	5.45E+00	9.36E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.69E+01	8.12E-02	8.77E-02	4.54E+00	1.97E-02	2.64E+00	3.14E-02	1.96E+00	1.00E-02
UM-500N-2500E (2-6")	1.72E-01	1.72E-01	3.23E-01	5.13E-01	8.80E-02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.59E+00	7.64E-03	8.77E-02	4.54E+00	1.85E-03	2.64E+00	3.14E-02	1.96E+00	9.44E-04
UM-250N-2500E (2-6")	1.72E-01	1.72E-01	3.23E-01	4.65E+00	7.97E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.44E+01	6.92E-02	8.77E-02	4.54E+00	1.68E-02	2.64E+00	3.14E-02	1.96E+00	8.55E-03
UM-250N-2250E (2-6")	1.72E-01	1.72E-01	3.23E-01	1.09E+00	1.87E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.38E+00	1.62E-02	8.77E-02	4.54E+00	3.93E-03	2.64E+00	3.14E-02	1.96E+00	2.01E-03
Western Upper Marsh (2-6")																						**Maximum HQ (Eastern Upper Marsh, 2-6")**	**2.06E-02**
UM-500S-2500E (2-6")	1.72E-01	1.72E-01	3.23E-01	2.38E-01	4.09E-02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	7.38E-01	3.54E-03	8.77E-02	4.54E+00	8.59E-04	2.64E+00	3.14E-02	1.96E+00	4.38E-04
UM-0N-2000E (2-6")	1.72E-01	1.72E-01	3.23E-01	4.03E+00	6.92E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.25E+01	6.00E-02	8.77E-02	4.54E+00	1.45E-02	2.64E+00	3.14E-02	1.96E+00	7.42E-03
UM-500S-2000E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	5.48E-01	BB	BB	BB	BB	BB	BB	BB	BB
UM-250N-1750E (2-6")	1.72E-01	1.72E-01	3.23E-01	3.09E-01	5.30E-02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	9.58E-01	4.60E-03	8.77E-02	4.54E+00	1.11E-03	2.64E+00	3.14E-02	1.96E+00	5.69E-04
UM-0N-1500E (2-6")	1.72E-01	1.72E-01	3.23E-01	3.65E-01	6.26E-02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.13E+00	5.43E-03	8.77E-02	4.54E+00	1.31E-03	2.64E+00	3.14E-02	1.96E+00	6.71E-04
UM-250S-1500E (2-6")	1.72E-01	1.72E-01	3.23E-01	4.13E+00	7.09E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.28E+01	6.15E-02	8.77E-02	4.54E+00	1.49E-02	2.64E+00	3.14E-02	1.96E+00	7.60E-03
UM-250S-1250E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-6 (2-6")	1.72E-01	1.72E-01	3.23E-01	2.90E-01	4.97E-02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	8.98E-01	4.31E-03	8.77E-02	4.54E+00	1.04E-03	2.64E+00	3.14E-02	1.96E+00	5.33E-04
UM-0N-1000E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-750E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-500E (2-6")	1.72E-01	1.72E-01	3.23E-01	2.52E+01	4.32E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	7.80E+01	3.75E-01	8.77E-02	4.54E+00	9.07E-02	2.64E+00	3.14E-02	1.96E+00	4.63E-02
UM-250S-500E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	6.44E-01	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-250E (2-6")	1.72E-01	1.72E-01	3.23E-01	1.14E+00	1.95E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.52E+00	1.69E-02	8.77E-02	4.54E+00	4.10E-03	2.64E+00	3.14E-02	1.96E+00	2.09E-03
UM-250S-250E (2-6")	1.72E-01	1.72E-01	3.23E-01	4.52E-01	7.75E-02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.40E+00	6.72E-03	8.77E-02	4.54E+00	1.63E-03	2.64E+00	3.14E-02	1.96E+00	8.31E-04

TABLE C-12CA: CADMIUM DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 12 - MARSH, TERRESTRIAL RECEPTORS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **118.73**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Red Fox (Carnivorous Mammals)																							
BRSD-7 (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-8 (2-6")	1.72E-01	1.72E-01	3.23E-01	2.78E+00	4.76E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	8.60E+00	4.13E-02	8.77E-02	4.54E+00	1.00E-02	2.64E+00	3.14E-02	1.96E+00	5.11E-03
UM-500S-500E (2-6")	1.72E-01	1.72E-01	3.23E-01	2.45E-01	4.21E-02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	7.60E-01	3.65E-03	8.77E-02	4.54E+00	8.84E-04	2.64E+00	3.14E-02	1.96E+00	4.51E-04
BRSD-9 (2-6")	1.72E-01	1.72E-01	3.23E-01	7.87E-01	1.35E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.44E+00	1.17E-02	8.77E-02	4.54E+00	2.84E-03	2.64E+00	3.14E-02	1.96E+00	1.45E-03
BRSD-10 (2-6")	1.72E-01	1.72E-01	3.23E-01	5.10E+00	8.75E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.58E+01	7.59E-02	8.77E-02	4.54E+00	1.84E-02	2.64E+00	3.14E-02	1.96E+00	9.38E-03
BRSD-11 (2-6")	1.72E-01	1.72E-01	3.23E-01	8.16E-01	1.40E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.53E+00	1.22E-02	8.77E-02	4.54E+00	2.94E-03	2.64E+00	3.14E-02	1.96E+00	1.50E-03
Eastern Upper Marsh (6-12")																				**Maximum HQ (Western Upper Marsh, 2-6")**			**4.63E-02**
UM-1000S-3500E (6-12")	1.72E-01	1.72E-01	3.23E-01	3.19E-01	5.48E-02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	9.89E-01	4.75E-03	8.77E-02	4.54E+00	1.15E-03	2.64E+00	3.14E-02	1.96E+00	5.87E-04
BRSD-15 (6-12")	1.72E-01	1.72E-01	3.23E-01	5.65E-01	9.69E-02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.75E+00	8.41E-03	8.77E-02	4.54E+00	2.04E-03	2.64E+00	3.14E-02	1.96E+00	1.04E-03
BRSD-4 (6-12")	1.72E-01	1.72E-01	3.23E-01	4.81E-01	8.25E-02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.49E+00	7.16E-03	8.77E-02	4.54E+00	1.73E-03	2.64E+00	3.14E-02	1.96E+00	8.85E-04
UM-750S-3500E (6-12")	1.72E-01	1.72E-01	3.23E-01	5.91E+00	1.01E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.83E+01	8.79E-02	8.77E-02	4.54E+00	2.13E-02	2.64E+00	3.14E-02	1.96E+00	1.09E-02
BRSD-16 (6-12")	1.72E-01	1.72E-01	3.23E-01	5.81E+00	9.97E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.80E+01	8.65E-02	8.77E-02	4.54E+00	2.09E-02	2.64E+00	3.14E-02	1.96E+00	1.07E-02
UM-750S-3000E (6-12")	1.72E-01	1.72E-01	3.23E-01	2.95E+00	5.05E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	9.13E+00	4.39E-02	8.77E-02	4.54E+00	1.06E-02	2.64E+00	3.14E-02	1.96E+00	5.42E-03
BRSD-3 (6-12")	1.72E-01	1.72E-01	3.23E-01	7.55E-01	1.30E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.34E+00	1.12E-02	8.77E-02	4.54E+00	2.72E-03	2.64E+00	3.14E-02	1.96E+00	1.39E-03
UM-500S-3250E (6-12")	1.72E-01	1.72E-01	3.23E-01	3.71E-01	6.37E-02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.15E+00	5.52E-03	8.77E-02	4.54E+00	1.34E-03	2.64E+00	3.14E-02	1.96E+00	6.83E-04
UM-500S-3000E (6-12")	1.72E-01	1.72E-01	3.23E-01	5.62E-01	9.63E-02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.74E+00	8.36E-03	8.77E-02	4.54E+00	2.02E-03	2.64E+00	3.14E-02	1.96E+00	1.03E-03
UM-500S-2750E (6-12")	1.72E-01	1.72E-01	3.23E-01	2.30E+00	3.95E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	7.13E+00	3.42E-02	8.77E-02	4.54E+00	8.29E-03	2.64E+00	3.14E-02	1.96E+00	4.23E-03
BRSD-25 (6-12")	1.72E-01	1.72E-01	3.23E-01	2.48E+00	4.26E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	7.69E+00	3.69E-02	8.77E-02	4.54E+00	8.95E-03	2.64E+00	3.14E-02	1.96E+00	4.57E-03
UM-250S-3000E (6-12")	1.72E-01	1.72E-01	3.23E-01	4.84E+00	8.30E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.50E+01	7.21E-02	8.77E-02	4.54E+00	1.75E-02	2.64E+00	3.14E-02	1.96E+00	8.91E-03
UM-250S-3250E (6-12")	1.72E-01	1.72E-01	3.23E-01	1.12E+00	1.93E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.48E+00	1.67E-02	8.77E-02	4.54E+00	4.05E-03	2.64E+00	3.14E-02	1.96E+00	2.07E-03
BRSD-24 (6-12")	1.72E-01	1.72E-01	3.23E-01	4.61E+00	7.92E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.43E+01	6.87E-02	8.77E-02	4.54E+00	1.66E-02	2.64E+00	3.14E-02	1.96E+00	8.49E-03
UM-250S-2750E (6-12")	1.72E-01	1.72E-01	3.23E-01	4.94E+00	8.47E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.53E+01	7.35E-02	8.77E-02	4.54E+00	1.78E-02	2.64E+00	3.14E-02	1.96E+00	9.09E-03
UM-250S-2500E (6-12")	1.72E-01	1.72E-01	3.23E-01	3.97E-01	6.81E-02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.23E+00	5.91E-03	8.77E-02	4.54E+00	1.43E-03	2.64E+00	3.14E-02	1.96E+00	7.30E-04
BRSD-2 (6-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	2.05E+00	5.58E+01	7.99E+01	NA	NA	NA	2.86E-02	2.72E+01	7.79E-01	6.64E-01	1.35E+02	3.97E-01	2.64E+00	3.14E-02	1.60E+00	2.49E-01	
UM-500N-2500E (6-12")	1.72E-01	1.72E-01	3.23E-01	2.61E-01	4.48E-02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	8.09E-01	3.89E-03	8.77E-02	4.54E+00	9.41E-04	2.64E+00	3.14E-02	1.96E+00	4.80E-04
UM-250N-2500E (6-12")	1.72E-01	1.72E-01	3.23E-01	4.00E+00	6.86E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.24E+01	5.96E-02	8.77E-02	4.54E+00	1.44E-02	2.64E+00	3.14E-02	1.96E+00	7.36E-03
UM-250N-2250E (6-12")	1.72E-01	1.72E-01	3.23E-01	6.42E-01	1.10E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.99E+00	9.56E-03	8.77E-02	4.54E+00	2.32E-03	2.64E+00	3.14E-02	1.96E+00	1.18E-03
Western Upper Marsh (6-12")																				**Maximum HQ (Eastern Upper Marsh, 6-12")**			**2.49E-01**
UM-500S-2500E (6-12")	1.72E-01	1.72E-01	3.23E-01	2.75E-01	4.71E-02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	8.51E-01	4.09E-03	8.77E-02	4.54E+00	9.90E-04	2.64E+00	3.14E-02	1.96E+00	5.05E-04
UM-0N-2000E (6-12")	1.72E-01	1.72E-01	3.23E-01	6.33E+00	1.09E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.96E+01	9.41E-02	8.77E-02	4.54E+00	2.28E-02	2.64E+00	3.14E-02	1.96E+00	1.16E-02
UM-500S-2000E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-250N-1750E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-1500E (6-12")	1.72E-01	1.72E-01	3.23E-01	8.75E-01	1.50E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.71E+00	1.30E-02	8.77E-02	4.54E+00	3.15E-03	2.64E+00	3.14E-02	1.96E+00	1.61E-03
UM-250S-1500E (6-12")	1.72E-01	1.72E-01	3.23E-01	1.01E+00	1.73E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.13E+00	1.50E-02	8.77E-02	4.54E+00	3.64E-03	2.64E+00	3.14E-02	1.96E+00	1.86E-03
UM-250S-1250E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-6 (6-12")	1.72E-01	1.72E-01	3.23E-01	3.11E-01	5.34E-02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	9.64E-01	4.63E-03	8.77E-02	4.54E+00	1.12E-03	2.64E+00	3.14E-02	1.96E+00	5.73E-04
UM-0N-1000E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-750E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-500E (6-12")	1.72E-01	1.72E-01	3.23E-01	4.29E+00	7.36E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.33E+01	6.39E-02	8.77E-02	4.54E+00	1.55E-02	2.64E+00	3.14E-02	1.96E+00	7.90E-03
UM-250S-500E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-250E (6-12")	1.72E-01	1.72E-01	3.23E-01	1.94E+00	3.33E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	6.01E+00	2.89E-02	8.77E-02	4.54E+00	6.99E-03	2.64E+00	3.14E-02	1.96E+00	3.57E-03
UM-250S-250E (6-12")	1.72E-01	1.72E-01	3.23E-01	2.99E-01	5.14E-02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	9.28E-01	4.46E-03	8.77E-02	4.54E+00	1.08E-03	2.64E+00	3.14E-02	1.96E+00	5.51E-04
BRSD-7 (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-8 (6-12")	1.72E-01	1.72E-01	3.23E-01	1.62E+00	2.78E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.02E+00	2.41E-02	8.77E-02	4.54E+00	5.84E-03	2.64E+00	3.14E-02	1.96E+00	2.98E-03
UM-500S-500E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	5.50E-01	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-9 (6-12")	1.72E-01	1.72E-01	3.23E-01	5.62E-01	9.63E-02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.74E+00	8.36E-03	8.77E-02	4.54E+00	2.02E-03	2.64E+00	3.14E-02	1.96E+00	1.03E-03
BRSD-10 (6-12")	1.72E-01	1.72E-01	3.23E-01	7.58E+00	1.30E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.35E+01	1.13E-01	8.77E-02	4.54E+00	2.73E-02	2.64E+00	3.14E-02	1.96E+00	1.40E-02
BRSD-11 (6-12")	1.72E-01	1.72E-01	3.23E-01	6.58E-01	1.13E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.04E+00	9.80E-03	8.77E-02	4.54E+00	2.37E-03	2.64E+00	3.14E-02	1.96E+00	1.21E-03

TABLE C-12CA: CADMIUM DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 12 - MARSH, TERRESTRIAL RECEPTORS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **118.73**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Red Fox (Carnivorous Mammals)																							
Middle Marsh (0-2")																						**Maximum HQ (Western Upper Marsh, 6-12")**	**1.40E-02**
MMSD-201 (0-2")	1.72E-01	1.72E-01	3.23E-01	3.07E+00	5.26E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	9.50E+00	4.56E-02	8.77E-02	4.54E+00	1.11E-02	2.64E+00	3.14E-02	1.96E+00	5.64E-03
MMSD-202 (0-2")	1.72E-01	1.72E-01	3.23E-01	3.55E-01	6.09E-02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.10E+00	5.28E-03	8.77E-02	4.54E+00	1.28E-03	2.64E+00	3.14E-02	1.96E+00	6.53E-04
Middle Marsh (2-6")																						**Maximum HQ (Middle Marsh, 0-2")**	**5.64E-03**
MMSD-201 (2-6")	1.72E-01	1.72E-01	3.23E-01	4.78E+00	8.19E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.48E+01	7.11E-02	8.77E-02	4.54E+00	1.72E-02	2.64E+00	3.14E-02	1.96E+00	8.79E-03
MMSD-202 (2-6")	1.72E-01	1.72E-01	3.23E-01	4.20E-01	7.20E-02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.30E+00	6.24E-03	8.77E-02	4.54E+00	1.51E-03	2.64E+00	3.14E-02	1.96E+00	7.72E-04
Middle Marsh (6-12")																						**Maximum HQ (Middle Marsh, 2-6")**	**8.79E-03**
MMSD-201 (6-12")	1.72E-01	1.72E-01	3.23E-01	5.94E+00	1.02E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.84E+01	8.84E-02	8.77E-02	4.54E+00	2.14E-02	2.64E+00	3.14E-02	1.96E+00	1.09E-02
MMSD-202 (6-12")	1.72E-01	1.72E-01	3.23E-01	4.52E-01	7.75E-02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.40E+00	6.72E-03	8.77E-02	4.54E+00	1.63E-03	2.64E+00	3.14E-02	1.96E+00	8.31E-04
Lower Marsh (0-2")																						**Maximum HQ (Middle Marsh, 6-12")**	**1.09E-02**
LMSD-201 (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
LMSD-202 (0-2")	1.72E-01	1.72E-01	3.23E-01	4.84E-01	8.30E-02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.50E+00	7.21E-03	8.77E-02	4.54E+00	1.75E-03	2.64E+00	3.14E-02	1.96E+00	8.91E-04
LMSD-203 (0-2")	1.72E-01	1.72E-01	3.23E-01	1.94E-01	3.32E-02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	6.00E-01	2.88E-03	8.77E-02	4.54E+00	6.98E-04	2.64E+00	3.14E-02	1.96E+00	3.56E-04
LMSD-204 (0-2")	1.72E-01	1.72E-01	3.23E-01	3.23E-01	5.54E-02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.00E+00	4.80E-03	8.77E-02	4.54E+00	1.16E-03	2.64E+00	3.14E-02	1.96E+00	5.94E-04
Lower Marsh (2-6")																						**Maximum HQ (Lower Marsh, 0-2")**	**8.91E-04**
LMSD-201 (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
LMSD-202 (2-6")	1.72E-01	1.72E-01	3.23E-01	3.87E-01	6.64E-02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.20E+00	5.76E-03	8.77E-02	4.54E+00	1.40E-03	2.64E+00	3.14E-02	1.96E+00	7.13E-04
LMSD-203 (2-6")	1.72E-01	1.72E-01	3.23E-01	2.58E-01	4.43E-02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	8.00E-01	3.84E-03	8.77E-02	4.54E+00	9.31E-04	2.64E+00	3.14E-02	1.96E+00	4.75E-04
LMSD-204 (2-6")	1.72E-01	1.72E-01	3.23E-01	2.58E-01	4.43E-02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	8.00E-01	3.84E-03	8.77E-02	4.54E+00	9.31E-04	2.64E+00	3.14E-02	1.96E+00	4.75E-04
Lower Marsh (6-12")																						**Maximum HQ (Lower Marsh, 2-6")**	**7.13E-04**
LMSD-201 (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
LMSD-202 (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
LMSD-203 (6-12")	1.72E-01	1.72E-01	3.23E-01	9.04E-01	1.55E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.80E+00	1.34E-02	8.77E-02	4.54E+00	3.26E-03	2.64E+00	3.14E-02	1.96E+00	1.66E-03
LMSD-204 (6-12")	1.72E-01	1.72E-01	3.23E-01	1.94E-01	3.32E-02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	6.00E-01	2.88E-03	8.77E-02	4.54E+00	6.98E-04	2.64E+00	3.14E-02	1.96E+00	3.56E-04
																						Maximum HQ (Lower Marsh, 6-12")	**1.66E-03**
Masked Shrew (Omnivorous Mammals, Wetland)																							
Reference Sites																							
BRSD-5 (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	3.26E+01	2.02E+01	1.71E-01	1.10E-03	6.19E-01	6.82E-04	1.00E+00	5.50E-03	3.12E+01	2.64E+00	3.14E-02	2.93E+00	1.06E+01
BRSD-5 (2-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	3.26E+01	1.70E+01	1.44E-01	1.10E-03	5.21E-01	5.74E-04	1.00E+00	5.50E-03	2.62E+01	2.64E+00	3.14E-02	2.93E+00	8.95E+00
BRSD-5 (6-12")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	3.26E+01	1.53E+01	1.30E-01	1.10E-03	4.71E-01	5.19E-04	1.00E+00	5.50E-03	2.37E+01	2.64E+00	3.14E-02	2.93E+00	8.09E+00
PGBG-1 (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	3.26E+01	4.92E+01	4.17E-01	1.10E-03	1.51E+00	1.66E-03	1.00E+00	5.50E-03	7.60E+01	2.64E+00	3.14E-02	2.93E+00	2.59E+01
PGBG-1 (2-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	3.26E+01	4.69E+01	3.97E-01	1.10E-03	1.44E+00	1.59E-03	1.00E+00	5.50E-03	7.25E+01	2.64E+00	3.14E-02	2.93E+00	2.47E+01
PGBG-1 (6-12")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	3.26E+01	2.11E+01	1.79E-01	1.10E-03	6.49E-01	7.15E-04	1.00E+00	5.50E-03	3.27E+01	2.64E+00	3.14E-02	2.93E+00	1.11E+01
PGBG-2 (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	3.26E+01	5.99E+01	5.08E-01	1.10E-03	1.84E+00	2.03E-03	1.00E+00	5.50E-03	9.27E+01	2.64E+00	3.14E-02	2.93E+00	3.16E+01
PGBG-2 (2-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	3.26E+01	5.02E+01	4.25E-01	1.10E-03	1.54E+00	1.70E-03	1.00E+00	5.50E-03	7.75E+01	2.64E+00	3.14E-02	2.93E+00	2.65E+01
PGBG-2 (6-12")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	3.26E+01	5.11E+01	4.33E-01	1.10E-03	1.57E+00	1.73E-03	1.00E+00	5.50E-03	7.91E+01	2.64E+00	3.14E-02	2.93E+00	2.70E+01
Eastern Upper Marsh (0-2")																						**Minimum HQ (Reference Sites)**	**8.09E+00**
UM-1000S-3500E (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	5.49E+01	1.20E+02	1.02E+00	1.10E-03	2.19E+00	2.41E-03	1.00E+00	5.50E-03	1.85E+02	2.64E+00	3.14E-02	2.93E+00	6.33E+01
BRSD-15 (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	5.49E+01	8.34E+01	7.06E-01	1.10E-03	1.52E+00	1.67E-03	1.00E+00	5.50E-03	1.29E+02	2.64E+00	3.14E-02	2.93E+00	4.39E+01
BRSD-4 (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	5.49E+01	4.16E+01	3.53E-01	1.10E-03	7.59E-01	8.36E-04	1.00E+00	5.50E-03	6.43E+01	2.64E+00	3.14E-02	2.93E+00	2.19E+01
UM-750S-3500E (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	5.49E+01	4.39E+02	3.72E+00	1.10E-03	8.00E+00	8.81E-03	1.00E+00	5.50E-03	6.77E+02	2.64E+00	3.14E-02	2.93E+00	2.31E+02
BRSD-16 (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	5.49E+01	2.85E+02	2.41E+00	1.10E-03	5.19E+00	5.71E-03	1.00E+00	5.50E-03	4.39E+02	2.64E+00	3.14E-02	2.93E+00	1.50E+02
UM-750S-3000E (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	5.49E+01	5.87E+02	4.97E+00	1.10E-03	1.07E+01	1.18E-02	1.00E+00	5.50E-03	9.06E+02	2.64E+00	3.14E-02	2.93E+00	3.09E+02
BRSD-3 (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	5.49E+01	1.99E+02	1.68E+00	1.10E-03	3.62E+00	3.99E-03	1.00E+00	5.50E-03	3.07E+02	2.64E+00	3.14E-02	2.93E+00	1.05E+02
UM-500S-3250E (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	5.49E+01	1.53E+02	1.30E+00	1.10E-03	2.79E+00	3.07E-03	1.00E+00	5.50E-03	2.36E+02	2.64E+00	3.14E-02	2.93E+00	8.06E+01
UM-500S-3000E (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	5.49E+01	4.99E+02	4.23E+00	1.10E-03	9.10E+00	1.00E-02	1.00E+00	5.50E-03	7.71E+02	2.64E+00	3.14E-02	2.93E+00	2.63E+02
UM-500S-2750E (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	5.49E+01	6.03E+02	5.11E+00	1.10E-03	1.10E+01	1.21E-02	1.00E+00	5.50E-03	9.31E+02	2.64E+00	3.14E-02	2.93E+00	3.18E+02
BRSD-25 (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	5.49E+01	3.43E+02	2.90E+00	1.10E-03	6.25E+00	6.88E-03	1.00E+00	5.50E-03	5.29E+02	2.64E+00	3.14E-02	2.93E+00	1.81E+02
UM-250S-3000E (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	5.49E+01	9.82E+02	8.32E+00	1.10E-03	1.79E+01	1.97E-02	1.00E+00	5.50E-03	1.52E+03	2.64E+00	3.14E-02	2.93E+00	5.17E+02
UM-250S-3250E (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	5.49E+01	7.84E+02	6.64E+00	1.10E-03	1.43E+01	1.57E-02	1.00E+00	5.50E-03	1.21E+03	2.64E+00	3.14E-02	2.93E+00	4.13E+02
BRSD-24 (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	5.49E+01	7.51E+02	6.36E+00	1.10E-03	1.37E+01	1.51E-02	1.00E+00	5.50E-03	1.16E+03	2.64E+00	3.14E-02	2.93E+00	3.96E+02
UM-250S-2750E (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	5.49E+01	3.87E+02	3.28E+00	1.10E-03	7.05E+00	7.76E-03	1.00E+00	5.50E-03	5.97E+02	2.64E+00	3.14E-02	2.93E+00	2.04E+02

TABLE C-12CA: CADMIUM DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 12 - MARSH, TERRESTRIAL RECEPTORS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **118.73**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Masked Shrew (Omnivorous Mammals, Wetland)																							
UM-250S-2500E (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	5.49E+01	1.62E+02	1.37E+00	1.10E-03	2.95E+00	3.25E-03	1.00E+00	5.50E-03	2.50E+02	2.64E+00	3.14E-02	2.93E+00	8.52E+01
UM-0N-2500E (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	5.49E+01	1.27E+03	1.07E+01	1.10E-03	2.31E+01	2.54E-02	1.00E+00	5.50E-03	1.96E+03	2.64E+00	3.14E-02	2.93E+00	6.67E+02
UM-0N-250E (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	5.49E+01	1.05E+03	8.92E+00	1.10E-03	1.92E+01	2.11E-02	1.00E+00	5.50E-03	1.63E+03	2.64E+00	3.14E-02	2.93E+00	5.55E+02
BRSD-2 (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	5.49E+01	5.65E+02	4.79E+00	1.10E-03	1.03E+01	1.13E-02	1.00E+00	5.50E-03	8.72E+02	2.64E+00	3.14E-02	2.93E+00	2.98E+02
UM-500N-2500E (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	5.49E+01	9.65E+01	8.18E-01	1.10E-03	1.76E+00	1.94E-03	1.00E+00	5.50E-03	1.49E+02	2.64E+00	3.14E-02	2.93E+00	5.08E+01
UM-250N-2500E (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	5.49E+01	7.84E+02	6.64E+00	1.10E-03	1.43E+01	1.57E-02	1.00E+00	5.50E-03	1.21E+03	2.64E+00	3.14E-02	2.93E+00	4.13E+02
UM-250N-2250E (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	5.49E+01	6.58E+02	5.58E+00	1.10E-03	1.20E+01	1.32E-02	1.00E+00	5.50E-03	1.02E+03	2.64E+00	3.14E-02	2.93E+00	3.47E+02
Western Upper Marsh (0-2")																						**Maximum HQ (Eastern Upper Marsh, 0-2")**	**6.67E+02**
UM-500S-2500E (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	3.16E+01	3.95E+01	3.35E-01	1.10E-03	1.25E+00	1.38E-03	1.00E+00	5.50E-03	6.11E+01	2.64E+00	3.14E-02	2.93E+00	2.08E+01
UM-0N-2000E (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	3.16E+01	4.61E+02	3.91E+00	1.10E-03	1.46E+01	1.61E-02	1.00E+00	5.50E-03	7.13E+02	2.64E+00	3.14E-02	2.93E+00	2.43E+02
UM-500S-2000E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-250N-1750E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	5.52E-01	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-1500E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	6.24E-01	BB	BB	BB	BB	BB	BB	BB	BB
UM-250S-1500E (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	3.16E+01	5.18E+02	4.39E+00	1.10E-03	1.64E+01	1.81E-02	1.00E+00	5.50E-03	8.01E+02	2.64E+00	3.14E-02	2.93E+00	2.73E+02
UM-250S-1250E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-6 (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	3.16E+01	3.10E+01	2.63E-01	1.10E-03	9.82E-01	1.08E-03	1.00E+00	5.50E-03	4.80E+01	2.64E+00	3.14E-02	2.93E+00	1.64E+01
UM-0N-1000E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-750E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-500E (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	3.16E+01	6.64E+01	5.62E-01	1.10E-03	2.10E+00	2.31E-03	1.00E+00	5.50E-03	1.03E+02	2.64E+00	3.14E-02	2.93E+00	3.50E+01
UM-250S-500E (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	3.16E+01	2.74E+01	2.32E-01	1.10E-03	8.68E-01	9.56E-04	1.00E+00	5.50E-03	4.24E+01	2.64E+00	3.14E-02	2.93E+00	1.45E+01
UM-250S-250E (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	3.16E+01	2.56E+01	2.17E-01	1.10E-03	8.09E-01	8.91E-04	1.00E+00	5.50E-03	3.95E+01	2.64E+00	3.14E-02	2.93E+00	1.35E+01
BRSD-7 (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	3.16E+01	5.78E+01	4.90E-01	1.10E-03	1.83E+00	2.02E-03	1.00E+00	5.50E-03	8.94E+01	2.64E+00	3.14E-02	2.93E+00	3.05E+01
BRSD-8 (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	3.16E+01	1.78E+02	1.51E+00	1.10E-03	5.64E+00	6.21E-03	1.00E+00	5.50E-03	2.76E+02	2.64E+00	3.14E-02	2.93E+00	9.40E+01
UM-500S-500E (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	3.16E+01	3.35E+01	2.84E-01	1.10E-03	1.06E+00	1.17E-03	1.00E+00	5.50E-03	5.18E+01	2.64E+00	3.14E-02	2.93E+00	1.77E+01
BRSD-9 (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	3.16E+01	1.55E+02	1.31E+00	1.10E-03	4.91E+00	5.41E-03	1.00E+00	5.50E-03	2.40E+02	2.64E+00	3.14E-02	2.93E+00	8.19E+01
BRSD-10 (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	3.16E+01	5.69E+02	4.82E+00	1.10E-03	1.80E+01	1.98E-02	1.00E+00	5.50E-03	8.80E+02	2.64E+00	3.14E-02	2.93E+00	3.00E+02
BRSD-11 (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	3.16E+01	1.75E+02	1.49E+00	1.10E-03	5.55E+00	6.11E-03	1.00E+00	5.50E-03	2.71E+02	2.64E+00	3.14E-02	2.93E+00	9.25E+01
Eastern Upper Marsh (2-6")																						**Maximum HQ (Western Upper Marsh, 0-2")**	**3.00E+02**
UM-1000S-3500E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-15 (2-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	5.49E+01	7.08E+01	5.99E-01	1.10E-03	1.29E+00	1.42E-03	1.00E+00	5.50E-03	1.09E+02	2.64E+00	3.14E-02	2.93E+00	3.73E+01
BRSD-4 (2-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	5.49E+01	3.68E+01	3.12E-01	1.10E-03	6.71E-01	7.39E-04	1.00E+00	5.50E-03	5.68E+01	2.64E+00	3.14E-02	2.93E+00	1.94E+01
UM-750S-3500E (2-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	5.49E+01	7.24E+02	6.13E+00	1.10E-03	1.32E+01	1.45E-02	1.00E+00	5.50E-03	1.12E+03	2.64E+00	3.14E-02	2.93E+00	3.81E+02
BRSD-16 (2-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	5.49E+01	1.90E+03	1.61E+01	1.10E-03	3.47E+01	3.82E-02	1.00E+00	5.50E-03	2.94E+03	2.64E+00	3.14E-02	2.93E+00	1.00E+03
UM-750S-3000E (2-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	5.49E+01	5.00E+02	4.24E+00	1.10E-03	9.12E+00	1.00E-02	1.00E+00	5.50E-03	7.72E+02	2.64E+00	3.14E-02	2.93E+00	2.63E+02
BRSD-3 (2-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	5.49E+01	2.64E+02	2.24E+00	1.10E-03	4.82E+00	5.31E-03	1.00E+00	5.50E-03	4.08E+02	2.64E+00	3.14E-02	2.93E+00	1.39E+02
UM-500S-3250E (2-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	5.49E+01	4.52E+01	3.83E-01	1.10E-03	8.24E-01	9.07E-04	1.00E+00	5.50E-03	6.98E+01	2.64E+00	3.14E-02	2.93E+00	2.38E+01
UM-500S-3000E (2-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	5.49E+01	9.98E+01	8.46E-01	1.10E-03	1.82E+00	2.00E-03	1.00E+00	5.50E-03	1.54E+02	2.64E+00	3.14E-02	2.93E+00	5.26E+01
UM-500S-2750E (2-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	5.49E+01	4.83E+02	4.09E+00	1.10E-03	8.80E+00	9.69E-03	1.00E+00	5.50E-03	7.45E+02	2.64E+00	3.14E-02	2.93E+00	2.54E+02
BRSD-25 (2-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	5.49E+01	4.85E+02	4.11E+00	1.10E-03	8.84E+00	9.73E-03	1.00E+00	5.50E-03	7.48E+02	2.64E+00	3.14E-02	2.93E+00	2.55E+02
UM-250S-3000E (2-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	5.49E+01	1.14E+03	9.62E+00	1.10E-03	2.07E+01	2.28E-02	1.00E+00	5.50E-03	1.75E+03	2.64E+00	3.14E-02	2.93E+00	5.98E+02
UM-250S-3250E (2-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	5.49E+01	1.79E+02	1.52E+00	1.10E-03	3.27E+00	3.60E-03	1.00E+00	5.50E-03	2.77E+02	2.64E+00	3.14E-02	2.93E+00	9.45E+01
BRSD-24 (2-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	5.49E+01	1.54E+03	1.30E+01	1.10E-03	2.80E+01	3.08E-02	1.00E+00	5.50E-03	2.37E+03	2.64E+00	3.14E-02	2.93E+00	8.09E+02
UM-250S-2750E (2-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	5.49E+01	7.46E+02	6.32E+00	1.10E-03	1.36E+01	1.50E-02	1.00E+00	5.50E-03	1.15E+03	2.64E+00	3.14E-02	2.93E+00	3.93E+02
UM-0N-2500E (2-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	5.49E+01	5.34E+02	4.52E+00	1.10E-03	9.73E+00	1.07E-02	1.00E+00	5.50E-03	8.24E+02	2.64E+00	3.14E-02	2.93E+00	2.81E+02
BRSD-2 (2-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	5.49E+01	9.27E+02	7.85E+00	1.10E-03	1.69E+01	1.86E-02	1.00E+00	5.50E-03	1.43E+03	2.64E+00	3.14E-02	2.93E+00	4.88E+02
UM-500N-2500E (2-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	5.49E+01	8.72E+01	7.39E-01	1.10E-03	1.59E+00	1.75E-03	1.00E+00	5.50E-03	1.35E+02	2.64E+00	3.14E-02	2.93E+00	4.59E+01
UM-250N-2500E (2-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	5.49E+01	7.90E+02	6.69E+00	1.10E-03	1.44E+01	1.59E-02	1.00E+00	5.50E-03	1.22E+03	2.64E+00	3.14E-02	2.93E+00	4.16E+02
UM-250N-2250E (2-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	5.49E+01	1.85E+02	1.57E+00	1.10E-03	3.38E+00	3.72E-03	1.00E+00	5.50E-03	2.86E+02	2.64E+00	3.14E-02	2.93E+00	9.76E+01

TABLE C-12CA: CADMIUM DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 12 - MARSH, TERRESTRIAL RECEPTORS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **118.73**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Masked Shrew (Omnivorous Mammals, Wetland)																							
Western Upper Marsh (2-6")																						**Maximum HQ (Eastern Upper Marsh, 2-6")**	**1.00E+03**
UM-500S-2500E (2-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	3.16E+01	2.33E+01	1.98E-01	1.10E-03	7.38E-01	8.13E-04	1.00E+00	5.50E-03	3.61E+01	2.64E+00	3.14E-02	2.93E+00	1.23E+01
UM-0N-2000E (2-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	3.16E+01	3.95E+02	3.35E+00	1.10E-03	1.25E+01	1.38E-02	1.00E+00	5.50E-03	6.11E+02	2.64E+00	3.14E-02	2.93E+00	2.08E+02
UM-500S-2000E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	5.48E-01	BB	BB	BB	BB	BB	BB	BB	BB
UM-250N-1750E (2-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	3.16E+01	3.03E+01	2.56E-01	1.10E-03	9.58E-01	1.05E-03	1.00E+00	5.50E-03	4.68E+01	2.64E+00	3.14E-02	2.93E+00	1.60E+01
UM-0N-1500E (2-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	3.16E+01	3.57E+01	3.02E-01	1.10E-03	1.13E+00	1.24E-03	1.00E+00	5.50E-03	5.52E+01	2.64E+00	3.14E-02	2.93E+00	1.88E+01
UM-250S-1500E (2-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	3.16E+01	4.05E+02	3.43E+00	1.10E-03	1.28E+01	1.41E-02	1.00E+00	5.50E-03	6.26E+02	2.64E+00	3.14E-02	2.93E+00	2.13E+02
UM-250S-1250E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-6 (2-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	3.16E+01	2.84E+01	2.40E-01	1.10E-03	8.98E-01	9.89E-04	1.00E+00	5.50E-03	4.39E+01	2.64E+00	3.14E-02	2.93E+00	1.50E+01
UM-0N-1000E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-750E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-500E (2-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	3.16E+01	2.47E+03	2.09E+01	1.10E-03	7.80E+01	8.59E-02	1.00E+00	5.50E-03	3.81E+03	2.64E+00	3.14E-02	2.93E+00	1.30E+03
UM-250S-500E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	6.44E-01	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-250E (2-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	3.16E+01	1.11E+02	9.42E-01	1.10E-03	3.52E+00	3.88E-03	1.00E+00	5.50E-03	1.72E+02	2.64E+00	3.14E-02	2.93E+00	5.87E+01
UM-250S-250E (2-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	3.16E+01	4.42E+01	3.75E-01	1.10E-03	1.40E+00	1.54E-03	1.00E+00	5.50E-03	6.84E+01	2.64E+00	3.14E-02	2.93E+00	2.33E+01
BRSD-7 (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-8 (2-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	3.16E+01	2.72E+02	2.30E+00	1.10E-03	8.60E+00	9.47E-03	1.00E+00	5.50E-03	4.20E+02	2.64E+00	3.14E-02	2.93E+00	1.43E+02
UM-500S-500E (2-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	3.16E+01	2.40E+01	2.03E-01	1.10E-03	7.60E-01	8.37E-04	1.00E+00	5.50E-03	3.71E+01	2.64E+00	3.14E-02	2.93E+00	1.27E+01
BRSD-9 (2-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	3.16E+01	7.71E+01	6.53E-01	1.10E-03	2.44E+00	2.69E-03	1.00E+00	5.50E-03	1.19E+02	2.64E+00	3.14E-02	2.93E+00	4.07E+01
BRSD-10 (2-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	3.16E+01	4.99E+02	4.23E+00	1.10E-03	1.58E+01	1.74E-02	1.00E+00	5.50E-03	7.72E+02	2.64E+00	3.14E-02	2.93E+00	2.63E+02
BRSD-11 (2-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	3.16E+01	8.00E+01	6.77E-01	1.10E-03	2.53E+00	2.79E-03	1.00E+00	5.50E-03	1.24E+02	2.64E+00	3.14E-02	2.93E+00	4.22E+01
Eastern Upper Marsh (6-12")																						**Maximum HQ (Western Upper Marsh, 2-6")**	**1.30E+03**
UM-1000S-3500E (6-12")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	5.49E+01	5.42E+01	4.59E-01	1.10E-03	9.89E-01	1.09E-03	1.00E+00	5.50E-03	8.37E+01	2.64E+00	3.14E-02	2.93E+00	2.86E+01
BRSD-15 (6-12")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	5.49E+01	9.60E+01	8.13E-01	1.10E-03	1.75E+00	1.93E-03	1.00E+00	5.50E-03	1.48E+02	2.64E+00	3.14E-02	2.93E+00	5.06E+01
UM-750S-3500E (6-12")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	5.49E+01	1.00E+03	8.50E+00	1.10E-03	1.83E+01	2.02E-02	1.00E+00	5.50E-03	1.55E+03	2.64E+00	3.14E-02	2.93E+00	5.29E+02
BRSD-16 (6-12")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	5.49E+01	9.87E+02	8.36E+00	1.10E-03	1.80E+01	1.98E-02	1.00E+00	5.50E-03	1.52E+03	2.64E+00	3.14E-02	2.93E+00	5.20E+02
UM-750S-3000E (6-12")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	5.49E+01	5.01E+02	4.24E+00	1.10E-03	9.13E+00	1.01E-02	1.00E+00	5.50E-03	7.73E+02	2.64E+00	3.14E-02	2.93E+00	2.64E+02
BRSD-3 (6-12")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	5.49E+01	1.28E+02	1.09E+00	1.10E-03	2.34E+00	2.58E-03	1.00E+00	5.50E-03	1.98E+02	2.64E+00	3.14E-02	2.93E+00	6.76E+01
UM-500S-3250E (6-12")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	5.49E+01	6.31E+01	5.34E-01	1.10E-03	1.15E+00	1.27E-03	1.00E+00	5.50E-03	9.74E+01	2.64E+00	3.14E-02	2.93E+00	3.32E+01
UM-500S-3000E (6-12")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	5.49E+01	9.54E+01	8.08E-01	1.10E-03	1.74E+00	1.92E-03	1.00E+00	5.50E-03	1.47E+02	2.64E+00	3.14E-02	2.93E+00	5.03E+01
UM-500S-2750E (6-12")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	5.49E+01	3.91E+02	3.31E+00	1.10E-03	7.13E+00	7.85E-03	1.00E+00	5.50E-03	6.04E+02	2.64E+00	3.14E-02	2.93E+00	2.06E+02
BRSD-25 (6-12")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	5.49E+01	4.22E+02	3.57E+00	1.10E-03	7.69E+00	8.47E-03	1.00E+00	5.50E-03	6.51E+02	2.64E+00	3.14E-02	2.93E+00	2.22E+02
UM-250S-3000E (6-12")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	5.49E+01	8.23E+02	6.97E+00	1.10E-03	1.50E+01	1.65E-02	1.00E+00	5.50E-03	1.27E+03	2.64E+00	3.14E-02	2.93E+00	4.33E+02
UM-250S-3250E (6-12")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	5.49E+01	1.91E+02	1.62E+00	1.10E-03	3.48E+00	3.83E-03	1.00E+00	5.50E-03	2.95E+02	2.64E+00	3.14E-02	2.93E+00	1.01E+02
BRSD-24 (6-12")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	5.49E+01	7.84E+02	6.64E+00	1.10E-03	1.43E+01	1.57E-02	1.00E+00	5.50E-03	1.21E+03	2.64E+00	3.14E-02	2.93E+00	4.13E+02
UM-250S-2750E (6-12")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	5.49E+01	8.39E+02	7.11E+00	1.10E-03	1.53E+01	1.68E-02	1.00E+00	5.50E-03	1.30E+03	2.64E+00	3.14E-02	2.93E+00	4.42E+02
UM-250S-2500E (6-12")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	5.49E+01	6.75E+01	5.71E-01	1.10E-03	1.23E+00	1.35E-03	1.00E+00	5.50E-03	1.04E+02	2.64E+00	3.14E-02	2.93E+00	3.55E+01
BRSD-2 (6-12")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	5.49E+01	1.49E+03	1.26E+01	1.10E-03	2.72E+01	2.99E-02	1.00E+00	5.50E-03	2.30E+03	2.64E+00	3.14E-02	2.93E+00	7.86E+02
UM-500N-2500E (6-12")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	5.49E+01	4.44E+01	3.76E-01	1.10E-03	8.09E-01	8.91E-04	1.00E+00	5.50E-03	6.85E+01	2.64E+00	3.14E-02	2.93E+00	2.34E+01
UM-250N-2500E (6-12")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	5.49E+01	6.80E+02	5.76E+00	1.10E-03	1.24E+01	1.37E-02	1.00E+00	5.50E-03	1.05E+03	2.64E+00	3.14E-02	2.93E+00	3.58E+02
UM-250N-2250E (6-12")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	5.49E+01	1.09E+02	9.25E-01	1.10E-03	1.99E+00	2.19E-03	1.00E+00	5.50E-03	1.68E+02	2.64E+00	3.14E-02	2.93E+00	5.75E+01
Western Upper Marsh (6-12")																						**Maximum HQ (Eastern Upper Marsh, 6-12")**	**7.86E+02**
UM-500S-2500E (6-12")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	3.16E+01	2.69E+01	2.28E-01	1.10E-03	8.51E-01	9.37E-04	1.00E+00	5.50E-03	4.16E+01	2.64E+00	3.14E-02	2.93E+00	1.42E+01
UM-0N-2000E (6-12")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	3.16E+01	6.19E+02	5.25E+00	1.10E-03	1.96E+01	2.16E-02	1.00E+00	5.50E-03	9.58E+02	2.64E+00	3.14E-02	2.93E+00	3.27E+02
UM-500S-2000E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-250N-1750E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-1500E (6-12")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	3.16E+01	8.56E+01	7.25E-01	1.10E-03	2.71E+00	2.98E-03	1.00E+00	5.50E-03	1.32E+02	2.64E+00	3.14E-02	2.93E+00	4.52E+01
UM-250S-1500E (6-12")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	3.16E+01	9.89E+01	8.38E-01	1.10E-03	3.13E+00	3.45E-03	1.00E+00	5.50E-03	1.53E+02	2.64E+00	3.14E-02	2.93E+00	5.22E+01
UM-250S-1250E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB

TABLE C-12CA: CADMIUM DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 12 - MARSH, TERRESTRIAL RECEPTORS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **118.73**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Masked Shrew (Omnivorous Mammals, Wetland)																							
BRSD-6 (6-12")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	3.16E+01	3.05E+01	2.58E-01	1.10E-03	9.64E-01	1.06E-03	1.00E+00	5.50E-03	4.71E+01	2.64E+00	3.14E-02	2.93E+00	1.61E+01
UM-0N-1000E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-750E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-500E (6-12")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	3.16E+01	4.20E+02	3.56E+00	1.10E-03	1.33E+01	1.46E-02	1.00E+00	5.50E-03	6.50E+02	2.64E+00	3.14E-02	2.93E+00	2.22E+02
UM-250S-500E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-250E (6-12")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	3.16E+01	1.90E+02	1.61E+00	1.10E-03	6.01E+00	6.62E-03	1.00E+00	5.50E-03	2.94E+02	2.64E+00	3.14E-02	2.93E+00	1.00E+02
UM-250S-250E (6-12")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	3.16E+01	2.93E+01	2.48E-01	1.10E-03	9.28E-01	1.02E-03	1.00E+00	5.50E-03	4.54E+01	2.64E+00	3.14E-02	2.93E+00	1.55E+01
BRSD-7 (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-8 (6-12")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	3.16E+01	1.59E+02	1.34E+00	1.10E-03	5.02E+00	5.53E-03	1.00E+00	5.50E-03	2.45E+02	2.64E+00	3.14E-02	2.93E+00	8.37E+01
UM-500S-500E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	5.50E-01	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-9 (6-12")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	3.16E+01	5.50E+01	4.66E-01	1.10E-03	1.74E+00	1.92E-03	1.00E+00	5.50E-03	8.50E+01	2.64E+00	3.14E-02	2.93E+00	2.90E+01
BRSD-10 (6-12")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	3.16E+01	7.43E+02	6.29E+00	1.10E-03	2.35E+01	2.59E-02	1.00E+00	5.50E-03	1.15E+03	2.64E+00	3.14E-02	2.93E+00	3.92E+02
BRSD-11 (6-12")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	3.16E+01	6.45E+01	5.46E-01	1.10E-03	2.04E+00	2.25E-03	1.00E+00	5.50E-03	9.97E+01	2.64E+00	3.14E-02	2.93E+00	3.40E+01
Middle Marsh (0-2")																						**Maximum HQ (Western Upper Marsh, 6-12")**	**3.92E+02**
MMSD-201 (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	3.16E+01	3.00E+02	2.54E+00	1.10E-03	9.50E+00	1.05E-02	1.00E+00	5.50E-03	4.64E+02	2.64E+00	3.14E-02	2.93E+00	1.58E+02
MMSD-202 (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	3.16E+01	3.48E+01	2.94E-01	1.10E-03	1.10E+00	1.21E-03	1.00E+00	5.50E-03	5.38E+01	2.64E+00	3.14E-02	2.93E+00	1.83E+01
Middle Marsh (2-6")																						**Maximum HQ (Middle Marsh, 0-2")**	**1.58E+02**
MMSD-201 (2-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	3.16E+01	4.68E+02	3.96E+00	1.10E-03	1.48E+01	1.63E-02	1.00E+00	5.50E-03	7.23E+02	2.64E+00	3.14E-02	2.93E+00	2.47E+02
MMSD-202 (2-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	3.16E+01	4.11E+01	3.48E-01	1.10E-03	1.30E+00	1.43E-03	1.00E+00	5.50E-03	6.35E+01	2.64E+00	3.14E-02	2.93E+00	2.17E+01
Middle Marsh (6-12")																						**Maximum HQ (Middle Marsh, 2-6")**	**2.47E+02**
MMSD-201 (6-12")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	3.16E+01	5.81E+02	4.93E+00	1.10E-03	1.84E+01	2.03E-02	1.00E+00	5.50E-03	8.99E+02	2.64E+00	3.14E-02	2.93E+00	3.07E+02
MMSD-202 (6-12")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	3.16E+01	4.42E+01	3.75E-01	1.10E-03	1.40E+00	1.54E-03	1.00E+00	5.50E-03	6.84E+01	2.64E+00	3.14E-02	2.93E+00	2.33E+01
Lower Marsh (0-2")																						**Maximum HQ (Middle Marsh, 6-12")**	**3.07E+02**
LMSD-201 (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
LMSD-202 (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	3.16E+01	4.74E+01	4.02E-01	1.10E-03	1.50E+00	1.65E-03	1.00E+00	5.50E-03	7.33E+01	2.64E+00	3.14E-02	2.93E+00	2.50E+01
LMSD-203 (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	3.16E+01	1.90E+01	1.61E-01	1.10E-03	6.00E-01	6.61E-04	1.00E+00	5.50E-03	2.93E+01	2.64E+00	3.14E-02	2.93E+00	1.00E+01
LMSD-204 (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	3.16E+01	3.16E+01	2.68E-01	1.10E-03	1.00E+00	1.10E-03	1.00E+00	5.50E-03	4.89E+01	2.64E+00	3.14E-02	2.93E+00	1.67E+01
Lower Marsh (2-6")																						**Maximum HQ (Lower Marsh, 0-2")**	**2.50E+01**
LMSD-201 (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
LMSD-202 (2-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	3.16E+01	3.79E+01	3.21E-01	1.10E-03	1.20E+00	1.32E-03	1.00E+00	5.50E-03	5.86E+01	2.64E+00	3.14E-02	2.93E+00	2.00E+01
LMSD-203 (2-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	3.16E+01	2.53E+01	2.14E-01	1.10E-03	8.00E-01	8.81E-04	1.00E+00	5.50E-03	3.91E+01	2.64E+00	3.14E-02	2.93E+00	1.33E+01
LMSD-204 (2-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	3.16E+01	2.53E+01	2.14E-01	1.10E-03	8.00E-01	8.81E-04	1.00E+00	5.50E-03	3.91E+01	2.64E+00	3.14E-02	2.93E+00	1.33E+01
Lower Marsh (6-12")																						**Maximum HQ (Lower Marsh, 2-6")**	**2.00E+01**
LMSD-201 (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
LMSD-202 (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
LMSD-203 (6-12")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	3.16E+01	8.85E+01	7.50E-01	1.10E-03	2.80E+00	3.08E-03	1.00E+00	5.50E-03	1.37E+02	2.64E+00	3.14E-02	2.93E+00	4.67E+01
LMSD-204 (6-12")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	3.16E+01	1.90E+01	1.61E-01	1.10E-03	6.00E-01	6.61E-04	1.00E+00	5.50E-03	2.93E+01	2.64E+00	3.14E-02	2.93E+00	1.00E+01
																						Maximum HQ (Lower Marsh, 6-12")	**4.67E+01**

Notes

Results are evaluated in order of upstream to downstream.

1 See Tables 3-1 through 3-13 for ingestion rates, foraging ranges used to calculate the SUF, and body weights.

2 BAFs were calculated by dividing site-collected tissue by collocated soil concentrations. The maximum plant and invertebrate BAF calculated for the eastern transect (UMT1) were used for the Eastern Upper Marsh calculations. The maximum plant and invertebrate BAF calculated for the western transect (UMT2) were used for the Western Upper Marsh calculations. The maximum mammal BAF calculated for the eastern transect (UMT1) was used for the Eastern and Western Upper Marsh calculations because no mammals were collected in the Western Upper Marsh.

3 The mammal, plant, and invertebrate concentrations were calculated by multiplying the soil concentration by the BAF to generate a tissue concentration (see note 2).

4 Mammal, plant, and invertebrate daily doses were calculated by multiplying the ingestion rate (see note 1) by the tissue concentration (see note 3).

5 Soil concentration from specified depths below ground surface at point ID from laboratory analysis. Doses were not calculated for detected and non-detected soil concentrations measured below the minimum reference site concentration (0-12"), as indicated by BB. For results that were measured at less than the detection limit, doses were

6 Soil daily dose was calculated by multiplying the soil ingestion rate (see note 1) by soil concentration (see note 5).

7 Total daily dose is calculated using the following equation: total daily dose = ([mammal daily dose (if applicable) + plant daily dose (if applicable) + invertebrate daily dose (if applicable) + soil daily dose]*SUF)/receptor species body weight.

8 The derivation of TRVs is described in Navy (1998) and DTSC (2009). The high TRV was used for dose calculations.

9 Allometrically adjusted TRVs for birds were calculated using the following equation: receptor species TRV = (test species TRV) x (test species body weight / receptor species body weight) $^{(1-1.2)}$.

10 Allometrically adjusted TRVs for mammals were calculated using the following equation: receptor species TRV = (test species TRV) x (test species body weight / receptor species body weight) $^{(1-0.94)}$.

11 HQs were calculated using the following equation: HQ = total daily dose/allometrically adjusted TRV.

12 Green cells indicate an HQ greater than 1.0

BAF	Bioaccumulation Factor	ID	Identification	NA	Not applicable
BB	Below minimum background reference site concentration	kg	Kilogram	Navy	Department of the Navy
EE/CA	Engineering Evaluation/Cost Analysis	kg/day	Kilogram per day	SUF	Site use factor
EU	Exposure Unit	mg/day	Milligram per day	TRV	Toxicity reference value
HQ	Hazard Quotient	mg/kg	Milligram per kilogram		

Sources:

Department of the Navy. 1998. "Development of Toxicity Reference Values for Conducting Ecological Risk Assessments at Naval Facilities in California, Interim Final." Prepared by Naval Facilities Engineering Command, Engineering Field Activity West (EFA

DTSC. 2009. HERD Ecological Risk Assessment Note 6. February. Available on-line at: http://www.dtsc.ca.gov/AssessingRisk/upload/CdEconote_Final.pdf.

TABLE C-12CB: CADMIUM DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 12 - MARSH, WETLAND RECEPTORS

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **118.73**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Canada Goose (Herbivorous Birds)																							
Reference Sites																							
BRSD-5 (0-2")	8.57E-01	NA	NA	NA	NA	8.57E-01	5.05E+00	3.13E+00	2.68E+00	NA	NA	NA	NA	7.03E-02	6.19E-01	4.35E-02	1.21E-01	3.69E+01	8.92E-03	1.00E+00	1.13E+00	2.01E+00	4.44E-03
BRSD-5 (2-6")	8.57E-01	NA	NA	NA	NA	8.57E-01	5.05E+00	2.63E+00	2.26E+00	NA	NA	NA	NA	7.03E-02	5.21E-01	3.66E-02	1.21E-01	3.69E+01	7.51E-03	1.00E+00	1.13E+00	2.01E+00	3.74E-03
BRSD-5 (6-12")	8.57E-01	NA	NA	NA	NA	8.57E-01	5.05E+00	2.38E+00	2.04E+00	NA	NA	NA	NA	7.03E-02	4.71E-01	3.31E-02	1.21E-01	3.69E+01	6.79E-03	1.00E+00	1.13E+00	2.01E+00	3.38E-03
PGBG-1 (0-2")	8.57E-01	NA	NA	NA	NA	8.57E-01	5.05E+00	7.63E+00	6.54E+00	NA	NA	NA	NA	7.03E-02	1.51E+00	1.06E-01	1.21E-01	3.69E+01	2.18E-02	1.00E+00	1.13E+00	2.01E+00	1.08E-02
PGBG-1 (2-6")	8.57E-01	NA	NA	NA	NA	8.57E-01	5.05E+00	7.27E+00	6.23E+00	NA	NA	NA	NA	7.03E-02	1.44E+00	1.01E-01	1.21E-01	3.69E+01	2.07E-02	1.00E+00	1.13E+00	2.01E+00	1.03E-02
PGBG-1 (6-12")	8.57E-01	NA	NA	NA	NA	8.57E-01	5.05E+00	3.28E+00	2.81E+00	NA	NA	NA	NA	7.03E-02	6.49E-01	4.56E-02	1.21E-01	3.69E+01	9.35E-03	1.00E+00	1.13E+00	2.01E+00	4.66E-03
PGBG-2 (0-2")	8.57E-01	NA	NA	NA	NA	8.57E-01	5.05E+00	9.29E+00	7.96E+00	NA	NA	NA	NA	7.03E-02	1.84E+00	1.29E-01	1.21E-01	3.69E+01	2.65E-02	1.00E+00	1.13E+00	2.01E+00	1.32E-02
PGBG-2 (2-6")	8.57E-01	NA	NA	NA	NA	8.57E-01	5.05E+00	7.78E+00	6.67E+00	NA	NA	NA	NA	7.03E-02	1.54E+00	1.08E-01	1.21E-01	3.69E+01	2.22E-02	1.00E+00	1.13E+00	2.01E+00	1.11E-02
PGBG-2 (6-12")	8.57E-01	NA	NA	NA	NA	8.57E-01	5.05E+00	7.93E+00	6.80E+00	NA	NA	NA	NA	7.03E-02	1.57E+00	1.10E-01	1.21E-01	3.69E+01	2.26E-02	1.00E+00	1.13E+00	2.01E+00	1.13E-02
Eastern Upper Marsh (0-2")																						**Minimum HQ (Reference Sites)**	**3.38E-03**
UM-1000S-3500E (0-2")	8.57E-01	NA	NA	NA	NA	8.57E-01	2.05E+00	4.50E+00	3.85E+00	NA	NA	NA	NA	7.03E-02	2.19E+00	1.54E-01	1.21E-01	3.69E+01	1.31E-02	1.00E+00	1.13E+00	2.01E+00	6.54E-03
BRSD-15 (0-2")	8.57E-01	NA	NA	NA	NA	8.57E-01	2.05E+00	3.12E+00	2.67E+00	NA	NA	NA	NA	7.03E-02	1.52E+00	1.07E-01	1.21E-01	3.69E+01	9.11E-03	1.00E+00	1.13E+00	2.01E+00	4.54E-03
BRSD-4 (0-2")	8.57E-01	NA	NA	NA	NA	8.57E-01	2.05E+00	1.56E+00	1.34E+00	NA	NA	NA	NA	7.03E-02	7.59E-01	5.33E-02	1.21E-01	3.69E+01	4.55E-03	1.00E+00	1.13E+00	2.01E+00	2.27E-03
UM-750S-3500E (0-2")	8.57E-01	NA	NA	NA	NA	8.57E-01	2.05E+00	1.64E+01	1.41E+01	NA	NA	NA	NA	7.03E-02	8.00E+00	5.62E-01	1.21E-01	3.69E+01	4.80E-02	1.00E+00	1.13E+00	2.01E+00	2.39E-02
BRSD-16 (0-2")	8.57E-01	NA	NA	NA	NA	8.57E-01	2.05E+00	1.07E+01	9.13E+00	NA	NA	NA	NA	7.03E-02	5.19E+00	3.65E-01	1.21E-01	3.69E+01	3.11E-02	1.00E+00	1.13E+00	2.01E+00	1.55E-02
UM-750S-3000E (0-2")	8.57E-01	NA	NA	NA	NA	8.57E-01	2.05E+00	2.20E+01	1.88E+01	NA	NA	NA	NA	7.03E-02	1.07E+01	7.52E-01	1.21E-01	3.69E+01	6.41E-02	1.00E+00	1.13E+00	2.01E+00	3.19E-02
BRSD-3 (0-2")	8.57E-01	NA	NA	NA	NA	8.57E-01	2.05E+00	7.43E+00	6.37E+00	NA	NA	NA	NA	7.03E-02	3.62E+00	2.54E-01	1.21E-01	3.69E+01	2.17E-02	1.00E+00	1.13E+00	2.01E+00	1.08E-02
UM-500S-3250E (0-2")	8.57E-01	NA	NA	NA	NA	8.57E-01	2.05E+00	5.73E+00	4.91E+00	NA	NA	NA	NA	7.03E-02	2.79E+00	1.96E-01	1.21E-01	3.69E+01	1.67E-02	1.00E+00	1.13E+00	2.01E+00	8.33E-03
UM-500S-3000E (0-2")	8.57E-01	NA	NA	NA	NA	8.57E-01	2.05E+00	1.87E+01	1.60E+01	NA	NA	NA	NA	7.03E-02	9.10E+00	6.40E-01	1.21E-01	3.69E+01	5.45E-02	1.00E+00	1.13E+00	2.01E+00	2.72E-02
UM-500S-2750E (0-2")	8.57E-01	NA	NA	NA	NA	8.57E-01	2.05E+00	2.26E+01	1.94E+01	NA	NA	NA	NA	7.03E-02	1.10E+01	7.73E-01	1.21E-01	3.69E+01	6.59E-02	1.00E+00	1.13E+00	2.01E+00	3.28E-02
BRSD-25 (0-2")	8.57E-01	NA	NA	NA	NA	8.57E-01	2.05E+00	1.28E+01	1.10E+01	NA	NA	NA	NA	7.03E-02	6.25E+00	4.39E-01	1.21E-01	3.69E+01	3.75E-02	1.00E+00	1.13E+00	2.01E+00	1.87E-02
UM-250S-3000E (0-2")	8.57E-01	NA	NA	NA	NA	8.57E-01	2.05E+00	3.67E+01	3.15E+01	NA	NA	NA	NA	7.03E-02	1.79E+01	1.26E+00	1.21E-01	3.69E+01	1.07E-01	1.00E+00	1.13E+00	2.01E+00	5.34E-02
UM-250S-3250E (0-2")	8.57E-01	NA	NA	NA	NA	8.57E-01	2.05E+00	2.94E+01	2.52E+01	NA	NA	NA	NA	7.03E-02	1.43E+01	1.00E+00	1.21E-01	3.69E+01	8.57E-02	1.00E+00	1.13E+00	2.01E+00	4.27E-02
BRSD-24 (0-2")	8.57E-01	NA	NA	NA	NA	8.57E-01	2.05E+00	2.81E+01	2.41E+01	NA	NA	NA	NA	7.03E-02	1.37E+01	9.63E-01	1.21E-01	3.69E+01	8.21E-02	1.00E+00	1.13E+00	2.01E+00	4.09E-02
UM-250S-2750E (0-2")	8.57E-01	NA	NA	NA	NA	8.57E-01	2.05E+00	1.45E+01	1.24E+01	NA	NA	NA	NA	7.03E-02	7.05E+00	4.95E-01	1.21E-01	3.69E+01	4.23E-02	1.00E+00	1.13E+00	2.01E+00	2.10E-02
UM-250S-2500E (0-2")	8.57E-01	NA	NA	NA	NA	8.57E-01	2.05E+00	6.06E+00	5.19E+00	NA	NA	NA	NA	7.03E-02	2.95E+00	2.07E-01	1.21E-01	3.69E+01	1.77E-02	1.00E+00	1.13E+00	2.01E+00	8.81E-03
UM-0N-2500E (0-2")	8.57E-01	NA	NA	NA	NA	8.57E-01	2.05E+00	4.74E+01	4.06E+01	NA	NA	NA	NA	7.03E-02	2.31E+01	1.62E+00	1.21E-01	3.69E+01	1.38E-01	1.00E+00	1.13E+00	2.01E+00	6.90E-02
UM-0N-250E (0-2")	8.57E-01	NA	NA	NA	NA	8.57E-01	2.05E+00	3.94E+01	3.38E+01	NA	NA	NA	NA	7.03E-02	1.92E+01	1.35E+00	1.21E-01	3.69E+01	1.15E-01	1.00E+00	1.13E+00	2.01E+00	5.73E-02
BRSD-2 (0-2")	8.57E-01	NA	NA	NA	NA	8.57E-01	2.05E+00	2.11E+01	1.81E+01	NA	NA	NA	NA	7.03E-02	1.03E+01	7.24E-01	1.21E-01	3.69E+01	6.17E-02	1.00E+00	1.13E+00	2.01E+00	3.07E-02
UM-500N-2500E (0-2")	8.57E-01	NA	NA	NA	NA	8.57E-01	2.05E+00	3.61E+00	3.10E+00	NA	NA	NA	NA	7.03E-02	1.76E+00	1.24E-01	1.21E-01	3.69E+01	1.05E-02	1.00E+00	1.13E+00	2.01E+00	5.25E-03
UM-250N-2500E (0-2")	8.57E-01	NA	NA	NA	NA	8.57E-01	2.05E+00	2.94E+01	2.52E+01	NA	NA	NA	NA	7.03E-02	1.43E+01	1.00E+00	1.21E-01	3.69E+01	8.57E-02	1.00E+00	1.13E+00	2.01E+00	4.27E-02
UM-250N-2250E (0-2")	8.57E-01	NA	NA	NA	NA	8.57E-01	2.05E+00	2.46E+01	2.11E+01	NA	NA	NA	NA	7.03E-02	1.20E+01	8.43E-01	1.21E-01	3.69E+01	7.19E-02	1.00E+00	1.13E+00	2.01E+00	3.58E-02
Western Upper Marsh (0-2")																						**Maximum HQ (Eastern Upper Marsh, 0-2")**	**6.90E-02**
UM-500S-2500E (0-2")	8.57E-01	NA	NA	NA	NA	8.57E-01	1.96E+00	2.45E+00	2.10E+00	NA	NA	NA	NA	7.03E-02	1.25E+00	8.78E-02	1.21E-01	3.69E+01	7.17E-03	1.00E+00	1.13E+00	2.01E+00	3.57E-03
UM-0N-2000E (0-2")	8.57E-01	NA	NA	NA	NA	8.57E-01	1.96E+00	2.86E+01	2.45E+01	NA	NA	NA	NA	7.03E-02	1.46E+01	1.03E+00	1.21E-01	3.69E+01	8.37E-02	1.00E+00	1.13E+00	2.01E+00	4.17E-02
UM-500S-2000E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-250N-1750E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	5.52E-01	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-1500E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	6.24E-01	BB	BB	BB	BB	BB	BB	BB	BB
UM-250S-1500E (0-2")	8.57E-01	NA	NA	NA	NA	8.57E-01	1.96E+00	3.21E+01	2.76E+01	NA	NA	NA	NA	7.03E-02	1.64E+01	1.15E+00	1.21E-01	3.69E+01	9.40E-02	1.00E+00	1.13E+00	2.01E+00	4.68E-02
UM-250S-1250E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-6 (0-2")	8.57E-01	NA	NA	NA	NA	8.57E-01	1.96E+00	1.92E+00	1.65E+00	NA	NA	NA	NA	7.03E-02	9.82E-01	6.90E-02	1.21E-01	3.69E+01	5.63E-03	1.00E+00	1.13E+00	2.01E+00	2.80E-03
UM-0N-1000E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-750E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-500E (0-2")	8.57E-01	NA	NA	NA	NA	8.57E-01	1.96E+00	4.12E+00	3.53E+00	NA	NA	NA	NA	7.03E-02	2.10E+00	1.48E-01	1.21E-01	3.69E+01	1.20E-02	1.00E+00	1.13E+00	2.01E+00	6.00E-03
UM-250S-500E (0-2")	8.57E-01	NA	NA	NA	NA	8.57E-01	1.96E+00	1.70E+00	1.46E+00	NA	NA	NA	NA	7.03E-02	8.68E-01	6.10E-02	1.21E-01	3.69E+01	4.98E-03	1.00E+00	1.13E+00	2.01E+00	2.48E-03
UM-250S-250E (0-2")	8.57E-01	NA	NA	NA	NA	8.57E-01	1.96E+00	1.59E+00	1.36E+00	NA	NA	NA	NA	7.03E-02	8.09E-01	5.69E-02	1.21E-01	3.69E+01	4.64E-03	1.00E+00	1.13E+00	2.01E+00	2.31E-03
BRSD-7 (0-2")	8.57E-01	NA	NA	NA	NA	8.57E-01	1.96E+00	3.59E+00	3.07E+00	NA	NA	NA	NA	7.03E-02	1.83E+00	1.29E-01	1.21E-01	3.69E+01	1.05E-02	1.00E+00	1.13E+00	2.01E+00	5.23E-03
BRSD-8 (0-2")	8.57E-01	NA	NA	NA	NA	8.57E-01	1.96E+00	1.11E+01	9.48E+00	NA	NA	NA	NA	7.03E-02	5.64E+00	3.96E-01	1.21E-01	3.69E+01	3.23E-02	1.00E+00	1.13E+00	2.01E+00	1.61E-02
UM-500S-500E (0-2")	8.57E-01	NA	NA	NA	NA	8.57E-01	1.96E+00	2.08E+00	1.78E+00	NA	NA	NA	NA	7.03E-02	1.06E+00	7.45E-02	1.21E-01	3.69E+01	6.08E-03	1.00E+00	1.13E+00	2.01E+00	3.03E-03

TABLE C-12CB: CADMIUM DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 12 - MARSH, WETLAND RECEPTORS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **118.73**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Canada Goose (Herbivorous Birds)																							
BRSD-9 (0-2")	8.57E-01	NA	NA	NA	NA	8.57E-01	1.96E+00	9.62E+00	8.25E+00	NA	NA	NA	NA	7.03E-02	4.91E+00	3.45E-01	1.21E-01	3.69E+01	2.82E-02	1.00E+00	1.13E+00	2.01E+00	1.40E-02
BRSD-10 (0-2")	8.57E-01	NA	NA	NA	NA	8.57E-01	1.96E+00	3.53E+01	3.02E+01	NA	NA	NA	NA	7.03E-02	1.80E+01	1.27E+00	1.21E-01	3.69E+01	1.03E-01	1.00E+00	1.13E+00	2.01E+00	5.14E-02
BRSD-11 (0-2")	8.57E-01	NA	NA	NA	NA	8.57E-01	1.96E+00	1.09E+01	9.32E+00	NA	NA	NA	NA	7.03E-02	5.55E+00	3.90E-01	1.21E-01	3.69E+01	3.18E-02	1.00E+00	1.13E+00	2.01E+00	1.58E-02
Eastern Upper Marsh (2-6")																						**Maximum HQ (Western Upper Marsh, 0-2")**	**5.14E-02**
UM-1000S-3500E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-15 (2-6")	8.57E-01	NA	NA	NA	NA	8.57E-01	2.05E+00	2.65E+00	2.27E+00	NA	NA	NA	NA	7.03E-02	1.29E+00	9.07E-02	1.21E-01	3.69E+01	7.73E-03	1.00E+00	1.13E+00	2.01E+00	3.85E-03
BRSD-4 (2-6")	8.57E-01	NA	NA	NA	NA	8.57E-01	2.05E+00	1.38E+00	1.18E+00	NA	NA	NA	NA	7.03E-02	6.71E-01	4.72E-02	1.21E-01	3.69E+01	4.02E-03	1.00E+00	1.13E+00	2.01E+00	2.00E-03
UM-750S-3500E (2-6")	8.57E-01	NA	NA	NA	NA	8.57E-01	2.05E+00	2.71E+01	2.32E+01	NA	NA	NA	NA	7.03E-02	1.32E+01	9.28E-01	1.21E-01	3.69E+01	7.91E-02	1.00E+00	1.13E+00	2.01E+00	3.94E-02
BRSD-16 (2-6")	8.57E-01	NA	NA	NA	NA	8.57E-01	2.05E+00	7.12E+01	6.11E+01	NA	NA	NA	NA	7.03E-02	3.47E+01	2.44E+00	1.21E-01	3.69E+01	2.08E-01	1.00E+00	1.13E+00	2.01E+00	1.04E-01
UM-750S-3000E (2-6")	8.57E-01	NA	NA	NA	NA	8.57E-01	2.05E+00	1.87E+01	1.60E+01	NA	NA	NA	NA	7.03E-02	9.12E+00	6.41E-01	1.21E-01	3.69E+01	5.47E-02	1.00E+00	1.13E+00	2.01E+00	2.72E-02
BRSD-3 (2-6")	8.57E-01	NA	NA	NA	NA	8.57E-01	2.05E+00	9.90E+00	8.48E+00	NA	NA	NA	NA	7.03E-02	4.82E+00	3.39E-01	1.21E-01	3.69E+01	2.89E-02	1.00E+00	1.13E+00	2.01E+00	1.44E-02
UM-500S-3250E (2-6")	8.57E-01	NA	NA	NA	NA	8.57E-01	2.05E+00	1.69E+00	1.45E+00	NA	NA	NA	NA	7.03E-02	8.24E-01	5.79E-02	1.21E-01	3.69E+01	4.94E-03	1.00E+00	1.13E+00	2.01E+00	2.46E-03
UM-500S-3000E (2-6")	8.57E-01	NA	NA	NA	NA	8.57E-01	2.05E+00	3.74E+00	3.20E+00	NA	NA	NA	NA	7.03E-02	1.82E+00	1.28E-01	1.21E-01	3.69E+01	1.09E-02	1.00E+00	1.13E+00	2.01E+00	5.43E-03
UM-500S-2750E (2-6")	8.57E-01	NA	NA	NA	NA	8.57E-01	2.05E+00	1.81E+01	1.55E+01	NA	NA	NA	NA	7.03E-02	8.80E+00	6.18E-01	1.21E-01	3.69E+01	5.27E-02	1.00E+00	1.13E+00	2.01E+00	2.63E-02
BRSD-25 (2-6")	8.57E-01	NA	NA	NA	NA	8.57E-01	2.05E+00	1.81E+01	1.56E+01	NA	NA	NA	NA	7.03E-02	8.84E+00	6.21E-01	1.21E-01	3.69E+01	5.30E-02	1.00E+00	1.13E+00	2.01E+00	2.64E-02
UM-250S-3000E (2-6")	8.57E-01	NA	NA	NA	NA	8.57E-01	2.05E+00	4.25E+01	3.64E+01	NA	NA	NA	NA	7.03E-02	2.07E+01	1.45E+00	1.21E-01	3.69E+01	1.24E-01	1.00E+00	1.13E+00	2.01E+00	6.18E-02
UM-250S-3250E (2-6")	8.57E-01	NA	NA	NA	NA	8.57E-01	2.05E+00	6.71E+00	5.75E+00	NA	NA	NA	NA	7.03E-02	3.27E+00	2.30E-01	1.21E-01	3.69E+01	1.96E-02	1.00E+00	1.13E+00	2.01E+00	9.76E-03
BRSD-24 (2-6")	8.57E-01	NA	NA	NA	NA	8.57E-01	2.05E+00	5.75E+01	4.93E+01	NA	NA	NA	NA	7.03E-02	2.80E+01	1.97E+00	1.21E-01	3.69E+01	1.68E-01	1.00E+00	1.13E+00	2.01E+00	8.36E-02
UM-250S-2750E (2-6")	8.57E-01	NA	NA	NA	NA	8.57E-01	2.05E+00	2.79E+01	2.39E+01	NA	NA	NA	NA	7.03E-02	1.36E+01	9.56E-01	1.21E-01	3.69E+01	8.15E-02	1.00E+00	1.13E+00	2.01E+00	4.06E-02
UM-0N-2500E (2-6")	8.57E-01	NA	NA	NA	NA	8.57E-01	2.05E+00	2.00E+01	1.71E+01	NA	NA	NA	NA	7.03E-02	9.73E+00	6.84E-01	1.21E-01	3.69E+01	5.83E-02	1.00E+00	1.13E+00	2.01E+00	2.90E-02
BRSD-2 (2-6")	8.57E-01	NA	NA	NA	NA	8.57E-01	2.05E+00	3.47E+01	2.97E+01	NA	NA	NA	NA	7.03E-02	1.69E+01	1.19E+00	1.21E-01	3.69E+01	1.01E-01	1.00E+00	1.13E+00	2.01E+00	5.05E-02
UM-500N-2500E (2-6")	8.57E-01	NA	NA	NA	NA	8.57E-01	2.05E+00	3.26E+00	2.80E+00	NA	NA	NA	NA	7.03E-02	1.59E+00	1.12E-01	1.21E-01	3.69E+01	9.53E-03	1.00E+00	1.13E+00	2.01E+00	4.75E-03
UM-250N-2500E (2-6")	8.57E-01	NA	NA	NA	NA	8.57E-01	2.05E+00	2.96E+01	2.53E+01	NA	NA	NA	NA	7.03E-02	1.44E+01	1.01E+00	1.21E-01	3.69E+01	8.63E-02	1.00E+00	1.13E+00	2.01E+00	4.30E-02
UM-250N-2250E (2-6")	8.57E-01	NA	NA	NA	NA	8.57E-01	2.05E+00	6.94E+00	5.95E+00	NA	NA	NA	NA	7.03E-02	3.38E+00	2.38E-01	1.21E-01	3.69E+01	2.03E-02	1.00E+00	1.13E+00	2.01E+00	1.01E-02
Western Upper Marsh (2-6")																						**Maximum HQ (Eastern Upper Marsh, 2-6")**	**1.04E-01**
UM-500S-2500E (2-6")	8.57E-01	NA	NA	NA	NA	8.57E-01	1.96E+00	1.45E+00	1.24E+00	NA	NA	NA	NA	7.03E-02	7.38E-01	5.19E-02	1.21E-01	3.69E+01	4.23E-03	1.00E+00	1.13E+00	2.01E+00	2.11E-03
UM-0N-2000E (2-6")	8.57E-01	NA	NA	NA	NA	8.57E-01	1.96E+00	2.45E+01	2.10E+01	NA	NA	NA	NA	7.03E-02	1.25E+01	8.78E-01	1.21E-01	3.69E+01	7.17E-02	1.00E+00	1.13E+00	2.01E+00	3.57E-02
UM-500S-2000E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	5.48E-01	BB	BB	BB	BB	BB	BB	BB	BB
UM-250N-1750E (2-6")	8.57E-01	NA	NA	NA	NA	8.57E-01	1.96E+00	1.88E+00	1.61E+00	NA	NA	NA	NA	7.03E-02	9.58E-01	6.73E-02	1.21E-01	3.69E+01	5.49E-03	1.00E+00	1.13E+00	2.01E+00	2.74E-03
UM-0N-1500E (2-6")	8.57E-01	NA	NA	NA	NA	8.57E-01	1.96E+00	2.22E+00	1.90E+00	NA	NA	NA	NA	7.03E-02	1.13E+00	7.94E-02	1.21E-01	3.69E+01	6.48E-03	1.00E+00	1.13E+00	2.01E+00	3.23E-03
UM-250S-1500E (2-6")	8.57E-01	NA	NA	NA	NA	8.57E-01	1.96E+00	2.51E+01	2.15E+01	NA	NA	NA	NA	7.03E-02	1.28E+01	9.00E-01	1.21E-01	3.69E+01	7.34E-02	1.00E+00	1.13E+00	2.01E+00	3.66E-02
UM-250S-1250E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-6 (2-6")	8.57E-01	NA	NA	NA	NA	8.57E-01	1.96E+00	1.76E+00	1.51E+00	NA	NA	NA	NA	7.03E-02	8.98E-01	6.31E-02	1.21E-01	3.69E+01	5.15E-03	1.00E+00	1.13E+00	2.01E+00	2.56E-03
UM-0N-1000E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-750E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-500E (2-6")	8.57E-01	NA	NA	NA	NA	8.57E-01	1.96E+00	1.53E+02	1.31E+02	NA	NA	NA	NA	7.03E-02	7.80E+01	5.48E+00	1.21E-01	3.69E+01	4.47E-01	1.00E+00	1.13E+00	2.01E+00	2.23E-01
UM-250S-500E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	6.44E-01	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-250E (2-6")	8.57E-01	NA	NA	NA	NA	8.57E-01	1.96E+00	6.90E+00	5.91E+00	NA	NA	NA	NA	7.03E-02	3.52E+00	2.47E-01	1.21E-01	3.69E+01	2.02E-02	1.00E+00	1.13E+00	2.01E+00	1.01E-02
UM-250S-250E (2-6")	8.57E-01	NA	NA	NA	NA	8.57E-01	1.96E+00	2.74E+00	2.35E+00	NA	NA	NA	NA	7.03E-02	1.40E+00	9.84E-02	1.21E-01	3.69E+01	8.03E-03	1.00E+00	1.13E+00	2.01E+00	4.00E-03
BRSD-7 (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-8 (2-6")	8.57E-01	NA	NA	NA	NA	8.57E-01	1.96E+00	1.69E+01	1.44E+01	NA	NA	NA	NA	7.03E-02	8.60E+00	6.04E-01	1.21E-01	3.69E+01	4.93E-02	1.00E+00	1.13E+00	2.01E+00	2.46E-02
UM-500S-500E (2-6")	8.57E-01	NA	NA	NA	NA	8.57E-01	1.96E+00	1.49E+00	1.28E+00	NA	NA	NA	NA	7.03E-02	7.60E-01	5.34E-02	1.21E-01	3.69E+01	4.36E-03	1.00E+00	1.13E+00	2.01E+00	2.17E-03
BRSD-9 (2-6")	8.57E-01	NA	NA	NA	NA	8.57E-01	1.96E+00	4.78E+00	4.10E+00	NA	NA	NA	NA	7.03E-02	2.44E+00	1.71E-01	1.21E-01	3.69E+01	1.40E-02	1.00E+00	1.13E+00	2.01E+00	6.97E-03
BRSD-10 (2-6")	8.57E-01	NA	NA	NA	NA	8.57E-01	1.96E+00	3.10E+01	2.65E+01	NA	NA	NA	NA	7.03E-02	1.58E+01	1.11E+00	1.21E-01	3.69E+01	9.06E-02	1.00E+00	1.13E+00	2.01E+00	4.51E-02
BRSD-11 (2-6")	8.57E-01	NA	NA	NA	NA	8.57E-01	1.96E+00	4.96E+00	4.25E+00	NA	NA	NA	NA	7.03E-02	2.53E+00	1.78E-01	1.21E-01	3.69E+01	1.45E-02	1.00E+00	1.13E+00	2.01E+00	7.22E-03
Eastern Upper Marsh (6-12")																						**Maximum HQ (Western Upper Marsh, 2-6")**	**2.23E-01**
UM-1000S-3500E (6-12")	8.57E-01	NA	NA	NA	NA	8.57E-01	2.05E+00	2.03E+00	1.74E+00	NA	NA	NA	NA	7.03E-02	9.89E-01	6.95E-02	1.21E-01	3.69E+01	5.93E-03	1.00E+00	1.13E+00	2.01E+00	2.95E-03
BRSD-15 (6-12")	8.57E-01	NA	NA	NA	NA	8.57E-01	2.05E+00	3.59E+00	3.08E+00	NA	NA	NA	NA	7.03E-02	1.75E+00	1.23E-01	1.21E-01	3.69E+01	1.05E-02	1.00E+00	1.13E+00	2.01E+00	5.22E-03
BRSD-4 (6-12")	8.57E-01	NA	NA	NA	NA	8.57E-01	2.05E+00	3.06E+00	2.62E+00	NA	NA	NA	NA	7.03E-02	1.49E+00	1.05E-01	1.21E-01	3.69E+01	8.93E-03	1.00E+00	1.13E+00	2.01E+00	4.45E-03
UM-750S-3500E (6-12")	8.57E-01	NA	NA	NA	NA	8.57E-01	2.05E+00	3.76E+01	3.22E+01	NA	NA	NA	NA	7.03E-02	1.83E+01	1.29E+00	1.21E-01	3.69E+01	1.10E-01	1.00E+00	1.13E+00	2.01E+00	5.46E-02
BRSD-16 (6-12")	8.57E-01	NA	NA	NA	NA	8.57E-01	2.05E+00	3.70E+01	3.17E+01	NA	NA	NA	NA	7.03E-02	1.80E+01	1.27E+00	1.21E-01	3.69E+01	1.08E-01	1.00E+00	1.13E+00	2.01E+00	5.37E-02
UM-750S-3000E (6-12")	8.57E-01	NA	NA	NA	NA	8.57E-01	2.05E+00	1.87E+01	1.61E+01	NA	NA	NA	NA	7.03E-02	9.13E+00	6.42E-01	1.21E-01	3.69E+01	5.47E-02	1.00E+00	1.13E+00	2.01E+00	2.73E-02
BRSD-3 (6-12")	8.57E-01	NA	NA	NA	NA	8.57E-01	2.05E+00	4.80E+00	4.12E+00	NA	NA	NA	NA	7.03E-02	2.34E+00	1.64E-01	1.21E-01	3.69E+01	1.40E-02	1.00E+00	1.13E+00	2.01E+00	6.99E-03
UM-500S-3250E (6-12")	8.57E-01	NA	NA	NA	NA	8.57E-01	2.05E+00	2.36E+00	2.02E+00	NA	NA	NA	NA	7.03E-02	1.15E+00	8.08E-02	1.21E-01	3.69E+01	6.89E-03	1.00E+00	1.13E+00	2.01E+00	3.43E-03
UM-500S-3000E (6-12")	8.57E-01	NA	NA	NA	NA	8.57E-01	2.05E+00	3.57E+00	3.06E+00	NA	NA	NA	NA	7.03E-02	1.74E+00	1.22E-01	1.21E-01	3.69E+01	1.04E-02	1.00E+00	1.13E+00	2.01E+00	5.19E-03
UM-500S-2750E (6-12")	8.57E-01	NA	NA	NA	NA	8.57E-01	2.05E+00	1.46E+01	1.25E+01	NA	NA	NA	NA	7.03E-02	7.13E+00	5.01E-01	1.21E-01	3.69E+01	4.27E-02	1.00E+00	1.13E+00	2.01E+00	2.13E-02

TABLE C-12CB: CADMIUM DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 12 - MARSH, WETLAND RECEPTORS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **118.73**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Canada Goose (Herbivorous Birds)																							
BRSD-25 (6-12")	8.57E-01	NA	NA	NA	NA	8.57E-01	2.05E+00	1.58E+01	1.35E+01	NA	NA	NA	NA	7.03E-02	7.69E+00	5.40E-01	1.21E-01	3.69E+01	4.61E-02	1.00E+00	1.13E+00	2.01E+00	2.30E-02
UM-250S-3000E (6-12")	8.57E-01	NA	NA	NA	NA	8.57E-01	2.05E+00	3.08E+01	2.64E+01	NA	NA	NA	NA	7.03E-02	1.50E+01	1.05E+00	1.21E-01	3.69E+01	8.99E-02	1.00E+00	1.13E+00	2.01E+00	4.48E-02
UM-250S-3250E (6-12")	8.57E-01	NA	NA	NA	NA	8.57E-01	2.05E+00	7.14E+00	6.12E+00	NA	NA	NA	NA	7.03E-02	3.48E+00	2.45E-01	1.21E-01	3.69E+01	2.09E-02	1.00E+00	1.13E+00	2.01E+00	1.04E-02
BRSD-24 (6-12")	8.57E-01	NA	NA	NA	NA	8.57E-01	2.05E+00	2.94E+01	2.52E+01	NA	NA	NA	NA	7.03E-02	1.43E+01	1.00E+00	1.21E-01	3.69E+01	8.57E-02	1.00E+00	1.13E+00	2.01E+00	4.27E-02
UM-250S-2750E (6-12")	8.57E-01	NA	NA	NA	NA	8.57E-01	2.05E+00	3.14E+01	2.69E+01	NA	NA	NA	NA	7.03E-02	1.53E+01	1.08E+00	1.21E-01	3.69E+01	9.17E-02	1.00E+00	1.13E+00	2.01E+00	4.57E-02
UM-250S-2500E (6-12")	8.57E-01	NA	NA	NA	NA	8.57E-01	2.05E+00	2.53E+00	2.16E+00	NA	NA	NA	NA	7.03E-02	1.23E+00	8.64E-02	1.21E-01	3.69E+01	7.37E-03	1.00E+00	1.13E+00	2.01E+00	3.67E-03
BRSD-2 (6-12")	8.57E-01	NA	NA	NA	NA	8.57E-01	2.05E+00	5.58E+01	4.79E+01	NA	NA	NA	NA	7.03E-02	2.72E+01	1.91E+00	1.21E-01	3.69E+01	1.63E-01	1.00E+00	1.13E+00	2.01E+00	8.12E-02
UM-500N-2500E (6-12")	8.57E-01	NA	NA	NA	NA	8.57E-01	2.05E+00	1.66E+00	1.42E+00	NA	NA	NA	NA	7.03E-02	8.09E-01	5.69E-02	1.21E-01	3.69E+01	4.85E-03	1.00E+00	1.13E+00	2.01E+00	2.42E-03
UM-250N-2500E (6-12")	8.57E-01	NA	NA	NA	NA	8.57E-01	2.05E+00	2.55E+01	2.18E+01	NA	NA	NA	NA	7.03E-02	1.24E+01	8.71E-01	1.21E-01	3.69E+01	7.43E-02	1.00E+00	1.13E+00	2.01E+00	3.70E-02
UM-250N-2250E (6-12")	8.57E-01	NA	NA	NA	NA	8.57E-01	2.05E+00	4.09E+00	3.50E+00	NA	NA	NA	NA	7.03E-02	1.99E+00	1.40E-01	1.21E-01	3.69E+01	1.19E-02	1.00E+00	1.13E+00	2.01E+00	5.94E-03
Western Upper Marsh (6-12")																						**Maximum HQ (Eastern Upper Marsh, 6-12")**	**8.12E-02**
UM-500S-2500E (6-12")	8.57E-01	NA	NA	NA	NA	8.57E-01	1.96E+00	1.67E+00	1.43E+00	NA	NA	NA	NA	7.03E-02	8.51E-01	5.98E-02	1.21E-01	3.69E+01	4.88E-03	1.00E+00	1.13E+00	2.01E+00	2.43E-03
UM-0N-2000E (6-12")	8.57E-01	NA	NA	NA	NA	8.57E-01	1.96E+00	3.84E+01	3.29E+01	NA	NA	NA	NA	7.03E-02	1.96E+01	1.38E+00	1.21E-01	3.69E+01	1.12E-01	1.00E+00	1.13E+00	2.01E+00	5.60E-02
UM-500S-2000E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-250N-1750E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-1500E (6-12")	8.57E-01	NA	NA	NA	NA	8.57E-01	1.96E+00	5.31E+00	4.55E+00	NA	NA	NA	NA	7.03E-02	2.71E+00	1.90E-01	1.21E-01	3.69E+01	1.55E-02	1.00E+00	1.13E+00	2.01E+00	7.74E-03
UM-250S-1500E (6-12")	8.57E-01	NA	NA	NA	NA	8.57E-01	1.96E+00	6.14E+00	5.26E+00	NA	NA	NA	NA	7.03E-02	3.13E+00	2.20E-01	1.21E-01	3.69E+01	1.79E-02	1.00E+00	1.13E+00	2.01E+00	8.94E-03
UM-250S-1250E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-6 (6-12")	8.57E-01	NA	NA	NA	NA	8.57E-01	1.96E+00	1.89E+00	1.62E+00	NA	NA	NA	NA	7.03E-02	9.64E-01	6.77E-02	1.21E-01	3.69E+01	5.53E-03	1.00E+00	1.13E+00	2.01E+00	2.75E-03
UM-0N-1000E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-750E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-500E (6-12")	8.57E-01	NA	NA	NA	NA	8.57E-01	1.96E+00	2.61E+01	2.23E+01	NA	NA	NA	NA	7.03E-02	1.33E+01	9.35E-01	1.21E-01	3.69E+01	7.63E-02	1.00E+00	1.13E+00	2.01E+00	3.80E-02
UM-250S-500E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-250E (6-12")	8.57E-01	NA	NA	NA	NA	8.57E-01	1.96E+00	1.18E+01	1.01E+01	NA	NA	NA	NA	7.03E-02	6.01E+00	4.22E-01	1.21E-01	3.69E+01	3.45E-02	1.00E+00	1.13E+00	2.01E+00	1.72E-02
UM-250S-250E (6-12")	8.57E-01	NA	NA	NA	NA	8.57E-01	1.96E+00	1.82E+00	1.56E+00	NA	NA	NA	NA	7.03E-02	9.28E-01	6.52E-02	1.21E-01	3.69E+01	5.32E-03	1.00E+00	1.13E+00	2.01E+00	2.65E-03
BRSD-7 (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-8 (6-12")	8.57E-01	NA	NA	NA	NA	8.57E-01	1.96E+00	9.84E+00	8.43E+00	NA	NA	NA	NA	7.03E-02	5.02E+00	3.53E-01	1.21E-01	3.69E+01	2.88E-02	1.00E+00	1.13E+00	2.01E+00	1.43E-02
UM-500S-500E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	5.50E-01	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-9 (6-12")	8.57E-01	NA	NA	NA	NA	8.57E-01	1.96E+00	3.41E+00	2.92E+00	NA	NA	NA	NA	7.03E-02	1.74E+00	1.22E-01	1.21E-01	3.69E+01	9.98E-03	1.00E+00	1.13E+00	2.01E+00	4.97E-03
BRSD-10 (6-12")	8.57E-01	NA	NA	NA	NA	8.57E-01	1.96E+00	4.61E+01	3.95E+01	NA	NA	NA	NA	7.03E-02	2.35E+01	1.65E+00	1.21E-01	3.69E+01	1.35E-01	1.00E+00	1.13E+00	2.01E+00	6.71E-02
BRSD-11 (6-12")	8.57E-01	NA	NA	NA	NA	8.57E-01	1.96E+00	4.00E+00	3.43E+00	NA	NA	NA	NA	7.03E-02	2.04E+00	1.43E-01	1.21E-01	3.69E+01	1.17E-02	1.00E+00	1.13E+00	2.01E+00	5.83E-03
Middle Marsh (0-2")																						**Maximum HQ (Western Upper Marsh, 6-12")**	**6.71E-02**
MMSD-201 (0-2")	8.57E-01	NA	NA	NA	NA	8.57E-01	1.96E+00	1.86E+01	1.60E+01	NA	NA	NA	NA	7.03E-02	9.50E+00	6.68E-01	1.21E-01	3.69E+01	5.45E-02	1.00E+00	1.13E+00	2.01E+00	2.71E-02
MMSD-202 (0-2")	8.57E-01	NA	NA	NA	NA	8.57E-01	1.96E+00	2.16E+00	1.85E+00	NA	NA	NA	NA	7.03E-02	1.10E+00	7.73E-02	1.21E-01	3.69E+01	6.31E-03	1.00E+00	1.13E+00	2.01E+00	3.14E-03
Middle Marsh (2-6")																						**Maximum HQ (Middle Marsh, 0-2")**	**2.71E-02**
MMSD-201 (2-6")	8.57E-01	NA	NA	NA	NA	8.57E-01	1.96E+00	2.90E+01	2.49E+01	NA	NA	NA	NA	7.03E-02	1.48E+01	1.04E+00	1.21E-01	3.69E+01	8.49E-02	1.00E+00	1.13E+00	2.01E+00	4.23E-02
MMSD-202 (2-6")	8.57E-01	NA	NA	NA	NA	8.57E-01	1.96E+00	2.55E+00	2.18E+00	NA	NA	NA	NA	7.03E-02	1.30E+00	9.14E-02	1.21E-01	3.69E+01	7.45E-03	1.00E+00	1.13E+00	2.01E+00	3.71E-03
Middle Marsh (6-12")																						**Maximum HQ (Middle Marsh, 2-6")**	**4.23E-02**
MMSD-201 (6-12")	8.57E-01	NA	NA	NA	NA	8.57E-01	1.96E+00	3.61E+01	3.09E+01	NA	NA	NA	NA	7.03E-02	1.84E+01	1.29E+00	1.21E-01	3.69E+01	1.05E-01	1.00E+00	1.13E+00	2.01E+00	5.25E-02
MMSD-202 (6-12")	8.57E-01	NA	NA	NA	NA	8.57E-01	1.96E+00	2.74E+00	2.35E+00	NA	NA	NA	NA	7.03E-02	1.40E+00	9.84E-02	1.21E-01	3.69E+01	8.03E-03	1.00E+00	1.13E+00	2.01E+00	4.00E-03
Lower Marsh (0-2")																						**Maximum HQ (Middle Marsh, 6-12")**	**5.25E-02**
LMSD-201 (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
LMSD-202 (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
LMSD-203 (0-2")	8.57E-01	NA	NA	NA	NA	8.57E-01	1.96E+00	1.18E+00	1.01E+00	NA	NA	NA	NA	7.03E-02	6.00E-01	4.22E-02	1.21E-01	3.69E+01	3.44E-03	1.00E+00	1.13E+00	2.01E+00	1.71E-03
LMSD-204 (0-2")	8.57E-01	NA	NA	NA	NA	8.57E-01	1.96E+00	1.96E+00	1.68E+00	NA	NA	NA	NA	7.03E-02	1.00E+00	7.03E-02	1.21E-01	3.69E+01	5.73E-03	1.00E+00	1.13E+00	2.01E+00	2.86E-03
Lower Marsh (2-6")																						**Maximum HQ (Lower Marsh, 0-2")**	**2.86E-03**
LMSD-201 (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
LMSD-202 (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
LMSD-203 (2-6")	8.57E-01	NA	NA	NA	NA	8.57E-01	1.96E+00	1.57E+00	1.34E+00	NA	NA	NA	NA	7.03E-02	8.00E-01	5.62E-02	1.21E-01	3.69E+01	4.59E-03	1.00E+00	1.13E+00	2.01E+00	2.28E-03
LMSD-204 (2-6")	8.57E-01	NA	NA	NA	NA	8.57E-01	1.96E+00	1.57E+00	1.34E+00	NA	NA	NA	NA	7.03E-02	8.00E-01	5.62E-02	1.21E-01	3.69E+01	4.59E-03	1.00E+00	1.13E+00	2.01E+00	2.28E-03
Lower Marsh (6-12")																						**Maximum HQ (Lower Marsh, 2-6")**	**2.28E-03**
LMSD-201 (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
LMSD-202 (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
LMSD-203 (6-12")	8.57E-01	NA	NA	NA	NA	8.57E-01	1.96E+00	5.49E+00	4.70E+00	NA	NA	NA	NA	7.03E-02	2.80E+00	1.97E-01	1.21E-01	3.69E+01	1.61E-02	1.00E+00	1.13E+00	2.01E+00	8.00E-03
LMSD-204 (6-12")	8.57E-01	NA	NA	NA	NA	8.57E-01	1.96E+00	1.18E+00	1.01E+00	NA	NA	NA	NA	7.03E-02	6.00E-01	4.22E-02	1.21E-01	3.69E+01	3.44E-03	1.00E+00	1.13E+00	2.01E+00	1.71E-03
																						Maximum HQ (Lower Marsh, 6-12")	**8.00E-03**

TABLE C-12CB: CADMIUM DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 12 - MARSH, WETLAND RECEPTORS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **118.73**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Great Blue Heron (Carnivorous Birds)																							
Reference Sites																							
BRSD-5 (0-2")	1.32E-01	1.32E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	6.19E-01	2.20E-03	1.00E+00	2.39E+00	9.20E-04	1.00E+00	1.13E+00	1.16E+00	7.92E-04
BRSD-5 (2-6")	1.32E-01	1.32E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	5.21E-01	1.85E-03	1.00E+00	2.39E+00	7.74E-04	1.00E+00	1.13E+00	1.16E+00	6.66E-04
BRSD-5 (6-12")	1.32E-01	1.32E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	4.71E-01	1.67E-03	1.00E+00	2.39E+00	7.00E-04	1.00E+00	1.13E+00	1.16E+00	6.02E-04
PGBG-1 (0-2")	1.32E-01	1.32E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.51E+00	5.36E-03	1.00E+00	2.39E+00	2.24E-03	1.00E+00	1.13E+00	1.16E+00	1.93E-03
PGBG-1 (2-6")	1.32E-01	1.32E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.44E+00	5.11E-03	1.00E+00	2.39E+00	2.14E-03	1.00E+00	1.13E+00	1.16E+00	1.84E-03
PGBG-1 (6-12")	1.32E-01	1.32E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	6.49E-01	2.30E-03	1.00E+00	2.39E+00	9.64E-04	1.00E+00	1.13E+00	1.16E+00	8.30E-04
PGBG-2 (0-2")	1.32E-01	1.32E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.84E+00	6.53E-03	1.00E+00	2.39E+00	2.73E-03	1.00E+00	1.13E+00	1.16E+00	2.35E-03
PGBG-2 (2-6")	1.32E-01	1.32E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.54E+00	5.47E-03	1.00E+00	2.39E+00	2.29E-03	1.00E+00	1.13E+00	1.16E+00	1.97E-03
PGBG-2 (6-12")	1.32E-01	1.32E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.57E+00	5.58E-03	1.00E+00	2.39E+00	2.33E-03	1.00E+00	1.13E+00	1.16E+00	2.01E-03
Eastern Upper Marsh (0-2")																						**Minimum HQ (Reference Sites)**	**6.02E-04**
UM-1000S-3500E (0-2")	1.32E-01	1.32E-01	3.23E-01	7.07E-01	9.30E-02	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	2.19E+00	7.78E-03	1.00E+00	2.39E+00	4.21E-02	1.00E+00	1.13E+00	1.16E+00	3.63E-02
BRSD-15 (0-2")	1.32E-01	1.32E-01	3.23E-01	4.91E-01	6.45E-02	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.52E+00	5.40E-03	1.00E+00	2.39E+00	2.93E-02	1.00E+00	1.13E+00	1.16E+00	2.52E-02
BRSD-4 (0-2")	1.32E-01	1.32E-01	3.23E-01	2.45E-01	3.22E-02	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	7.59E-01	2.70E-03	1.00E+00	2.39E+00	1.46E-02	1.00E+00	1.13E+00	1.16E+00	1.26E-02
UM-750S-3500E (0-2")	1.32E-01	1.32E-01	3.23E-01	2.58E+00	3.40E-01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	8.00E+00	2.84E-02	1.00E+00	2.39E+00	1.54E-01	1.00E+00	1.13E+00	1.16E+00	1.33E-01
BRSD-16 (0-2")	1.32E-01	1.32E-01	3.23E-01	1.67E+00	2.20E-01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	5.19E+00	1.84E-02	1.00E+00	2.39E+00	9.99E-02	1.00E+00	1.13E+00	1.16E+00	8.60E-02
UM-750S-3000E (0-2")	1.32E-01	1.32E-01	3.23E-01	3.45E+00	4.54E-01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.07E+01	3.80E-02	1.00E+00	2.39E+00	2.06E-01	1.00E+00	1.13E+00	1.16E+00	1.77E-01
BRSD-3 (0-2")	1.32E-01	1.32E-01	3.23E-01	1.17E+00	1.54E-01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	3.62E+00	1.29E-02	1.00E+00	2.39E+00	6.97E-02	1.00E+00	1.13E+00	1.16E+00	6.00E-02
UM-500S-3250E (0-2")	1.32E-01	1.32E-01	3.23E-01	9.00E-01	1.18E-01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	2.79E+00	9.91E-03	1.00E+00	2.39E+00	5.37E-02	1.00E+00	1.13E+00	1.16E+00	4.62E-02
UM-500S-3000E (0-2")	1.32E-01	1.32E-01	3.23E-01	2.94E+00	3.86E-01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	9.10E+00	3.23E-02	1.00E+00	2.39E+00	1.75E-01	1.00E+00	1.13E+00	1.16E+00	1.51E-01
UM-500S-2750E (0-2")	1.32E-01	1.32E-01	3.23E-01	3.55E+00	4.67E-01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.10E+01	3.91E-02	1.00E+00	2.39E+00	2.12E-01	1.00E+00	1.13E+00	1.16E+00	1.82E-01
BRSD-25 (0-2")	1.32E-01	1.32E-01	3.23E-01	2.02E+00	2.65E-01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	6.25E+00	2.22E-02	1.00E+00	2.39E+00	1.20E-01	1.00E+00	1.13E+00	1.16E+00	1.04E-01
UM-250S-3000E (0-2")	1.32E-01	1.32E-01	3.23E-01	5.78E+00	7.60E-01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.79E+01	6.36E-02	1.00E+00	2.39E+00	3.44E-01	1.00E+00	1.13E+00	1.16E+00	2.97E-01
UM-250S-3250E (0-2")	1.32E-01	1.32E-01	3.23E-01	4.61E+00	6.07E-01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.43E+01	5.08E-02	1.00E+00	2.39E+00	2.75E-01	1.00E+00	1.13E+00	1.16E+00	2.37E-01
BRSD-24 (0-2")	1.32E-01	1.32E-01	3.23E-01	4.42E+00	5.82E-01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.37E+01	4.87E-02	1.00E+00	2.39E+00	2.64E-01	1.00E+00	1.13E+00	1.16E+00	2.27E-01
UM-250S-2750E (0-2")	1.32E-01	1.32E-01	3.23E-01	2.28E+00	2.99E-01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	7.05E+00	2.50E-02	1.00E+00	2.39E+00	1.36E-01	1.00E+00	1.13E+00	1.16E+00	1.17E-01
UM-250S-2500E (0-2")	1.32E-01	1.32E-01	3.23E-01	9.52E-01	1.25E-01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	2.95E+00	1.05E-02	1.00E+00	2.39E+00	5.68E-02	1.00E+00	1.13E+00	1.16E+00	4.89E-02
UM-0N-2500E (0-2")	1.32E-01	1.32E-01	3.23E-01	7.45E+00	9.80E-01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	2.31E+01	8.20E-02	1.00E+00	2.39E+00	4.45E-01	1.00E+00	1.13E+00	1.16E+00	3.83E-01
UM-0N-250E (0-2")	1.32E-01	1.32E-01	3.23E-01	6.20E+00	8.15E-01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.92E+01	6.82E-02	1.00E+00	2.39E+00	3.70E-01	1.00E+00	1.13E+00	1.16E+00	3.18E-01
BRSD-2 (0-2")	1.32E-01	1.32E-01	3.23E-01	3.32E+00	4.37E-01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.03E+01	3.66E-02	1.00E+00	2.39E+00	1.98E-01	1.00E+00	1.13E+00	1.16E+00	1.71E-01
UM-500N-2500E (0-2")	1.32E-01	1.32E-01	3.23E-01	5.68E-01	7.47E-02	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.76E+00	6.25E-03	1.00E+00	2.39E+00	3.39E-02	1.00E+00	1.13E+00	1.16E+00	2.92E-02
UM-250N-2500E (0-2")	1.32E-01	1.32E-01	3.23E-01	4.61E+00	6.07E-01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.43E+01	5.08E-02	1.00E+00	2.39E+00	2.75E-01	1.00E+00	1.13E+00	1.16E+00	2.37E-01
UM-250N-2250E (0-2")	1.32E-01	1.32E-01	3.23E-01	3.87E+00	5.09E-01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.20E+01	4.26E-02	1.00E+00	2.39E+00	2.31E-01	1.00E+00	1.13E+00	1.16E+00	1.99E-01
Western Upper Marsh (0-2")																						**Maximum HQ (Eastern Upper Marsh, 0-2")**	**3.83E-01**
UM-500S-2500E (0-2")	1.32E-01	1.32E-01	3.23E-01	4.03E-01	5.31E-02	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.25E+00	4.44E-03	1.00E+00	2.39E+00	2.41E-02	1.00E+00	1.13E+00	1.16E+00	2.07E-02
UM-0N-2000E (0-2")	1.32E-01	1.32E-01	3.23E-01	4.71E+00	6.20E-01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.46E+01	5.18E-02	1.00E+00	2.39E+00	2.81E-01	1.00E+00	1.13E+00	1.16E+00	2.42E-01
UM-500S-2000E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-250N-1750E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	5.52E-01	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-1500E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	6.24E-01	BB	BB	BB	BB	BB	BB	BB	BB
UM-250S-1500E (0-2")	1.32E-01	1.32E-01	3.23E-01	5.29E+00	6.96E-01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.64E+01	5.82E-02	1.00E+00	2.39E+00	3.16E-01	1.00E+00	1.13E+00	1.16E+00	2.72E-01
UM-250S-1250E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-6 (0-2")	1.32E-01	1.32E-01	3.23E-01	3.17E-01	4.17E-02	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	9.82E-01	3.49E-03	1.00E+00	2.39E+00	1.89E-02	1.00E+00	1.13E+00	1.16E+00	1.63E-02
UM-0N-1000E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-750E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-500E (0-2")	1.32E-01	1.32E-01	3.23E-01	6.78E-01	8.91E-02	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	2.10E+00	7.46E-03	1.00E+00	2.39E+00	4.04E-02	1.00E+00	1.13E+00	1.16E+00	3.48E-02
UM-250S-500E (0-2")	1.32E-01	1.32E-01	3.23E-01	2.80E-01	3.68E-02	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	8.68E-01	3.08E-03	1.00E+00	2.39E+00	1.67E-02	1.00E+00	1.13E+00	1.16E+00	1.44E-02
UM-250S-250E (0-2")	1.32E-01	1.32E-01	3.23E-01	2.61E-01	3.43E-02	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	8.09E-01	2.87E-03	1.00E+00	2.39E+00	1.56E-02	1.00E+00	1.13E+00	1.16E+00	1.34E-02
BRSD-7 (0-2")	1.32E-01	1.32E-01	3.23E-01	5.91E-01	7.77E-02	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.83E+00	6.50E-03	1.00E+00	2.39E+00	3.52E-02	1.00E+00	1.13E+00	1.16E+00	3.03E-02
BRSD-8 (0-2")	1.32E-01	1.32E-01	3.23E-01	1.82E+00	2.39E-01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	5.64E+00	2.00E-02	1.00E+00	2.39E+00	1.09E-01	1.00E+00	1.13E+00	1.16E+00	9.34E-02
UM-500S-500E (0-2")	1.32E-01	1.32E-01	3.23E-01	3.42E-01	4.50E-02	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.06E+00	3.76E-03	1.00E+00	2.39E+00	2.04E-02	1.00E+00	1.13E+00	1.16E+00	1.76E-02
BRSD-9 (0-2")	1.32E-01	1.32E-01	3.23E-01	1.58E+00	2.08E-01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	4.91E+00	1.74E-02	1.00E+00	2.39E+00	9.45E-02	1.00E+00	1.13E+00	1.16E+00	8.13E-02
BRSD-10 (0-2")	1.32E-01	1.32E-01	3.23E-01	5.81E+00	7.64E-01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.80E+01	6.39E-02	1.00E+00	2.39E+00	3.46E-01	1.00E+00	1.13E+00	1.16E+00	2.98E-01
BRSD-11 (0-2")	1.32E-01	1.32E-01	3.23E-01	1.79E+00	2.36E-01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	5.55E+00	1.97E-02	1.00E+00	2.39E+00	1.07E-01	1.00E+00	1.13E+00	1.16E+00	9.20E-02
Eastern Upper Marsh (2-6")																						**Maximum HQ (Western Upper Marsh, 0-2")**	**2.98E-01**
UM-1000S-3500E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-15 (2-6")	1.32E-01	1.32E-01	3.23E-01	4.16E-01	5.48E-02	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.29E+00	4.58E-03	1.00E+00	2.39E+00	2.48E-02	1.00E+00	1.13E+00	1.16E+00	2.14E-02
BRSD-4 (2-6")	1.32E-01	1.32E-01	3.23E-01	2.17E-01	2.85E-02	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	6.71E-01	2.38E-03	1.00E+00	2.39E+00	1.29E-02	1.00E+00	1.13E+00	1.16E+00	1.11E-02

TABLE C-12CB: CADMIUM DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 12 - MARSH, WETLAND RECEPTORS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **118.73**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Great Blue Heron (Carnivorous Birds)																							
UM-750S-3500E (2-6")	1.32E-01	1.32E-01	3.23E-01	4.26E+00	5.60E-01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.32E+01	4.69E-02	1.00E+00	2.39E+00	2.54E-01	1.00E+00	1.13E+00	1.16E+00	2.19E-01
BRSD-16 (2-6")	1.32E-01	1.32E-01	3.23E-01	1.12E+01	1.47E+00	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	3.47E+01	1.23E-01	1.00E+00	2.39E+00	6.68E-01	1.00E+00	1.13E+00	1.16E+00	5.75E-01
UM-750S-3000E (2-6")	1.32E-01	1.32E-01	3.23E-01	2.94E+00	3.87E-01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	9.12E+00	3.24E-02	1.00E+00	2.39E+00	1.76E-01	1.00E+00	1.13E+00	1.16E+00	1.51E-01
BRSD-3 (2-6")	1.32E-01	1.32E-01	3.23E-01	1.56E+00	2.05E-01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	4.82E+00	1.71E-02	1.00E+00	2.39E+00	9.28E-02	1.00E+00	1.13E+00	1.16E+00	7.99E-02
UM-500S-3250E (2-6")	1.32E-01	1.32E-01	3.23E-01	2.66E-01	3.50E-02	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	8.24E-01	2.93E-03	1.00E+00	2.39E+00	1.59E-02	1.00E+00	1.13E+00	1.16E+00	1.37E-02
UM-500S-3000E (2-6")	1.32E-01	1.32E-01	3.23E-01	5.87E-01	7.73E-02	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.82E+00	6.46E-03	1.00E+00	2.39E+00	3.50E-02	1.00E+00	1.13E+00	1.16E+00	3.02E-02
UM-500S-2750E (2-6")	1.32E-01	1.32E-01	3.23E-01	2.84E+00	3.74E-01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	8.80E+00	3.13E-02	1.00E+00	2.39E+00	1.69E-01	1.00E+00	1.13E+00	1.16E+00	1.46E-01
BRSD-25 (2-6")	1.32E-01	1.32E-01	3.23E-01	2.85E+00	3.75E-01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	8.84E+00	3.14E-02	1.00E+00	2.39E+00	1.70E-01	1.00E+00	1.13E+00	1.16E+00	1.46E-01
UM-250S-3000E (2-6")	1.32E-01	1.32E-01	3.23E-01	6.68E+00	8.79E-01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	2.07E+01	7.35E-02	1.00E+00	2.39E+00	3.98E-01	1.00E+00	1.13E+00	1.16E+00	3.43E-01
UM-250S-3250E (2-6")	1.32E-01	1.32E-01	3.23E-01	1.06E+00	1.39E-01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	3.27E+00	1.16E-02	1.00E+00	2.39E+00	6.29E-02	1.00E+00	1.13E+00	1.16E+00	5.42E-02
BRSD-24 (2-6")	1.32E-01	1.32E-01	3.23E-01	9.04E+00	1.19E+00	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	2.80E+01	9.94E-02	1.00E+00	2.39E+00	5.39E-01	1.00E+00	1.13E+00	1.16E+00	4.64E-01
UM-250S-2750E (2-6")	1.32E-01	1.32E-01	3.23E-01	4.39E+00	5.77E-01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.36E+01	4.83E-02	1.00E+00	2.39E+00	2.62E-01	1.00E+00	1.13E+00	1.16E+00	2.25E-01
UM-0N-2500E (2-6")	1.32E-01	1.32E-01	3.23E-01	3.14E+00	4.13E-01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	9.73E+00	3.46E-02	1.00E+00	2.39E+00	1.87E-01	1.00E+00	1.13E+00	1.16E+00	1.61E-01
BRSD-2 (2-6")	1.32E-01	1.32E-01	3.23E-01	5.45E+00	7.17E-01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.69E+01	6.00E-02	1.00E+00	2.39E+00	3.25E-01	1.00E+00	1.13E+00	1.16E+00	2.80E-01
UM-500N-2500E (2-6")	1.32E-01	1.32E-01	3.23E-01	5.13E-01	6.75E-02	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.59E+00	5.65E-03	1.00E+00	2.39E+00	3.06E-02	1.00E+00	1.13E+00	1.16E+00	2.63E-02
UM-250N-2500E (2-6")	1.32E-01	1.32E-01	3.23E-01	4.65E+00	6.11E-01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.44E+01	5.11E-02	1.00E+00	2.39E+00	2.77E-01	1.00E+00	1.13E+00	1.16E+00	2.39E-01
UM-250N-2250E (2-6")	1.32E-01	1.32E-01	3.23E-01	1.09E+00	1.43E-01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	3.38E+00	1.20E-02	1.00E+00	2.39E+00	6.51E-02	1.00E+00	1.13E+00	1.16E+00	5.60E-02
Western Upper Marsh (2-6")																						**Maximum HQ (Eastern Upper Marsh, 2-6")**	**5.75E-01**
UM-500S-2500E (2-6")	1.32E-01	1.32E-01	3.23E-01	2.38E-01	3.13E-02	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	7.38E-01	2.62E-03	1.00E+00	2.39E+00	1.42E-02	1.00E+00	1.13E+00	1.16E+00	1.22E-02
UM-0N-2000E (2-6")	1.32E-01	1.32E-01	3.23E-01	4.03E+00	5.31E-01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.25E+01	4.44E-02	1.00E+00	2.39E+00	2.41E-01	1.00E+00	1.13E+00	1.16E+00	2.07E-01
UM-500S-2000E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	5.48E-01	BB	BB	BB	BB	BB	BB	BB	BB
UM-250N-1750E (2-6")	1.32E-01	1.32E-01	3.23E-01	3.09E-01	4.07E-02	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	9.58E-01	3.40E-03	1.00E+00	2.39E+00	1.84E-02	1.00E+00	1.13E+00	1.16E+00	1.59E-02
UM-0N-1500E (2-6")	1.32E-01	1.32E-01	3.23E-01	3.65E-01	4.80E-02	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.13E+00	4.01E-03	1.00E+00	2.39E+00	2.17E-02	1.00E+00	1.13E+00	1.16E+00	1.87E-02
UM-250S-1500E (2-6")	1.32E-01	1.32E-01	3.23E-01	4.13E+00	5.43E-01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.28E+01	4.55E-02	1.00E+00	2.39E+00	2.46E-01	1.00E+00	1.13E+00	1.16E+00	2.12E-01
UM-250S-1250E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-6 (2-6")	1.32E-01	1.32E-01	3.23E-01	2.90E-01	3.81E-02	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	8.98E-01	3.19E-03	1.00E+00	2.39E+00	1.73E-02	1.00E+00	1.13E+00	1.16E+00	1.49E-02
UM-0N-1000E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-750E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-500E (2-6")	1.32E-01	1.32E-01	3.23E-01	2.52E+01	3.31E+00	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	7.80E+01	2.77E-01	1.00E+00	2.39E+00	1.50E+00	1.00E+00	1.13E+00	1.16E+00	1.29E+00
UM-250S-500E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	6.44E-01	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-250E (2-6")	1.32E-01	1.32E-01	3.23E-01	1.14E+00	1.49E-01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	3.52E+00	1.25E-02	1.00E+00	2.39E+00	6.77E-02	1.00E+00	1.13E+00	1.16E+00	5.83E-02
UM-250S-250E (2-6")	1.32E-01	1.32E-01	3.23E-01	4.52E-01	5.94E-02	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.40E+00	4.97E-03	1.00E+00	2.39E+00	2.69E-02	1.00E+00	1.13E+00	1.16E+00	2.32E-02
BRSD-7 (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-8 (2-6")	1.32E-01	1.32E-01	3.23E-01	2.78E+00	3.65E-01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	8.60E+00	3.05E-02	1.00E+00	2.39E+00	1.66E-01	1.00E+00	1.13E+00	1.16E+00	1.42E-01
UM-500S-500E (2-6")	1.32E-01	1.32E-01	3.23E-01	2.45E-01	3.23E-02	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	7.60E-01	2.70E-03	1.00E+00	2.39E+00	1.46E-02	1.00E+00	1.13E+00	1.16E+00	1.26E-02
BRSD-9 (2-6")	1.32E-01	1.32E-01	3.23E-01	7.87E-01	1.04E-01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	2.44E+00	8.67E-03	1.00E+00	2.39E+00	4.70E-02	1.00E+00	1.13E+00	1.16E+00	4.04E-02
BRSD-10 (2-6")	1.32E-01	1.32E-01	3.23E-01	5.10E+00	6.71E-01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.58E+01	5.61E-02	1.00E+00	2.39E+00	3.04E-01	1.00E+00	1.13E+00	1.16E+00	2.62E-01
BRSD-11 (2-6")	1.32E-01	1.32E-01	3.23E-01	8.16E-01	1.07E-01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	2.53E+00	8.98E-03	1.00E+00	2.39E+00	4.87E-02	1.00E+00	1.13E+00	1.16E+00	4.19E-02
Eastern Upper Marsh (6-12")																						**Maximum HQ (Western Upper Marsh, 2-6")**	**1.29E+00**
UM-1000S-3500E (6-12")	1.32E-01	1.32E-01	3.23E-01	3.19E-01	4.20E-02	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	9.89E-01	3.51E-03	1.00E+00	2.39E+00	1.90E-02	1.00E+00	1.13E+00	1.16E+00	1.64E-02
BRSD-15 (6-12")	1.32E-01	1.32E-01	3.23E-01	5.65E-01	7.43E-02	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.75E+00	6.21E-03	1.00E+00	2.39E+00	3.37E-02	1.00E+00	1.13E+00	1.16E+00	2.90E-02
BRSD-4 (6-12")	1.32E-01	1.32E-01	3.23E-01	4.81E-01	6.32E-02	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.49E+00	5.29E-03	1.00E+00	2.39E+00	2.87E-02	1.00E+00	1.13E+00	1.16E+00	2.47E-02
UM-750S-3500E (6-12")	1.32E-01	1.32E-01	3.23E-01	5.91E+00	7.77E-01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.83E+01	6.50E-02	1.00E+00	2.39E+00	3.52E-01	1.00E+00	1.13E+00	1.16E+00	3.03E-01
BRSD-16 (6-12")	1.32E-01	1.32E-01	3.23E-01	5.81E+00	7.64E-01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.80E+01	6.39E-02	1.00E+00	2.39E+00	3.46E-01	1.00E+00	1.13E+00	1.16E+00	2.98E-01
UM-750S-3000E (6-12")	1.32E-01	1.32E-01	3.23E-01	2.95E+00	3.88E-01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	9.13E+00	3.24E-02	1.00E+00	2.39E+00	1.76E-01	1.00E+00	1.13E+00	1.16E+00	1.51E-01
BRSD-3 (6-12")	1.32E-01	1.32E-01	3.23E-01	7.55E-01	9.93E-02	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	2.34E+00	8.31E-03	1.00E+00	2.39E+00	4.50E-02	1.00E+00	1.13E+00	1.16E+00	3.88E-02
UM-500S-3250E (6-12")	1.32E-01	1.32E-01	3.23E-01	3.71E-01	4.88E-02	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.15E+00	4.08E-03	1.00E+00	2.39E+00	2.21E-02	1.00E+00	1.13E+00	1.16E+00	1.91E-02
UM-500S-3000E (6-12")	1.32E-01	1.32E-01	3.23E-01	5.62E-01	7.39E-02	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.74E+00	6.18E-03	1.00E+00	2.39E+00	3.35E-02	1.00E+00	1.13E+00	1.16E+00	2.88E-02
UM-500S-2750E (6-12")	1.32E-01	1.32E-01	3.23E-01	2.30E+00	3.03E-01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	7.13E+00	2.53E-02	1.00E+00	2.39E+00	1.37E-01	1.00E+00	1.13E+00	1.16E+00	1.18E-01
BRSD-25 (6-12")	1.32E-01	1.32E-01	3.23E-01	2.48E+00	3.26E-01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	7.69E+00	2.73E-02	1.00E+00	2.39E+00	1.48E-01	1.00E+00	1.13E+00	1.16E+00	1.27E-01
UM-250S-3000E (6-12")	1.32E-01	1.32E-01	3.23E-01	4.84E+00	6.37E-01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.50E+01	5.33E-02	1.00E+00	2.39E+00	2.89E-01	1.00E+00	1.13E+00	1.16E+00	2.49E-01
UM-250S-3250E (6-12")	1.32E-01	1.32E-01	3.23E-01	1.12E+00	1.48E-01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	3.48E+00	1.24E-02	1.00E+00	2.39E+00	6.70E-02	1.00E+00	1.13E+00	1.16E+00	5.77E-02
BRSD-24 (6-12")	1.32E-01	1.32E-01	3.23E-01	4.61E+00	6.07E-01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.43E+01	5.08E-02	1.00E+00	2.39E+00	2.75E-01	1.00E+00	1.13E+00	1.16E+00	2.37E-01
UM-250S-2750E (6-12")	1.32E-01	1.32E-01	3.23E-01	4.94E+00	6.49E-01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.53E+01	5.43E-02	1.00E+00	2.39E+00	2.94E-01	1.00E+00	1.13E+00	1.16E+00	2.53E-01
UM-250S-2500E (6-12")	1.32E-01	1.32E-01	3.23E-01	3.97E-01	5.22E-02	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.23E+00	4.37E-03	1.00E+00	2.39E+00	2.37E-02	1.00E+00	1.13E+00	1.16E+00	2.04E-02
BRSD-2 (6-12")	1.32E-01	1.32E-01	3.23E-01	8.78E+00	1.15E+00	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	2.72E+01	9.66E-02	1.00E+00	2.39E+00	5.23E-01	1.00E+00	1.13E+00	1.16E+00	4.51E-01

TABLE C-12CB: CADMIUM DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 12 - MARSH, WETLAND RECEPTORS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **118.73**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Great Blue Heron (Carnivorous Birds)																							
UM-500N-2500E (6-12")	1.32E-01	1.32E-01	3.23E-01	2.61E-01	3.43E-02	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	8.09E-01	2.87E-03	1.00E+00	2.39E+00	1.56E-02	1.00E+00	1.13E+00	1.16E+00	1.34E-02
UM-250N-2500E (6-12")	1.32E-01	1.32E-01	3.23E-01	4.00E+00	5.26E-01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.24E+01	4.40E-02	1.00E+00	2.39E+00	2.39E-01	1.00E+00	1.13E+00	1.16E+00	2.05E-01
UM-250N-2250E (6-12")	1.32E-01	1.32E-01	3.23E-01	6.42E-01	8.45E-02	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.99E+00	7.07E-03	1.00E+00	2.39E+00	3.83E-02	1.00E+00	1.13E+00	1.16E+00	3.30E-02
Western Upper Marsh (6-12")																						**Maximum HQ (Eastern Upper Marsh, 6-12")**	**4.51E-01**
UM-500S-2500E (6-12")	1.32E-01	1.32E-01	3.23E-01	2.75E-01	3.61E-02	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	8.51E-01	3.02E-03	1.00E+00	2.39E+00	1.64E-02	1.00E+00	1.13E+00	1.16E+00	1.41E-02
UM-0N-2000E (6-12")	1.32E-01	1.32E-01	3.23E-01	6.33E+00	8.32E-01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.96E+01	6.96E-02	1.00E+00	2.39E+00	3.77E-01	1.00E+00	1.13E+00	1.16E+00	3.25E-01
UM-500S-2000E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-250N-1750E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-1500E (6-12")	1.32E-01	1.32E-01	3.23E-01	8.75E-01	1.15E-01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	2.71E+00	9.62E-03	1.00E+00	2.39E+00	5.22E-02	1.00E+00	1.13E+00	1.16E+00	4.49E-02
UM-250S-1500E (6-12")	1.32E-01	1.32E-01	3.23E-01	1.01E+00	1.33E-01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	3.13E+00	1.11E-02	1.00E+00	2.39E+00	6.02E-02	1.00E+00	1.13E+00	1.16E+00	5.19E-02
UM-250S-1250E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-6 (6-12")	1.32E-01	1.32E-01	3.23E-01	3.11E-01	4.09E-02	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	9.64E-01	3.42E-03	1.00E+00	2.39E+00	1.86E-02	1.00E+00	1.13E+00	1.16E+00	1.60E-02
UM-0N-1000E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-750E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-500E (6-12")	1.32E-01	1.32E-01	3.23E-01	4.29E+00	5.65E-01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.33E+01	4.72E-02	1.00E+00	2.39E+00	2.56E-01	1.00E+00	1.13E+00	1.16E+00	2.20E-01
UM-250S-500E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-250E (6-12")	1.32E-01	1.32E-01	3.23E-01	1.94E+00	2.55E-01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	6.01E+00	2.13E-02	1.00E+00	2.39E+00	1.16E-01	1.00E+00	1.13E+00	1.16E+00	9.96E-02
UM-250S-250E (6-12")	1.32E-01	1.32E-01	3.23E-01	2.99E-01	3.94E-02	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	9.28E-01	3.30E-03	1.00E+00	2.39E+00	1.79E-02	1.00E+00	1.13E+00	1.16E+00	1.54E-02
BRSD-7 (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-8 (6-12")	1.32E-01	1.32E-01	3.23E-01	1.62E+00	2.13E-01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	5.02E+00	1.78E-02	1.00E+00	2.39E+00	9.66E-02	1.00E+00	1.13E+00	1.16E+00	8.32E-02
UM-500S-500E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	5.50E-01	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-9 (6-12")	1.32E-01	1.32E-01	3.23E-01	5.62E-01	7.39E-02	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.74E+00	6.18E-03	1.00E+00	2.39E+00	3.35E-02	1.00E+00	1.13E+00	1.16E+00	2.88E-02
BRSD-10 (6-12")	1.32E-01	1.32E-01	3.23E-01	7.58E+00	9.97E-01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	2.35E+01	8.35E-02	1.00E+00	2.39E+00	4.52E-01	1.00E+00	1.13E+00	1.16E+00	3.89E-01
Middle Marsh (0-2")																						**Maximum HQ (Western Upper Marsh, 6-12")**	**3.89E-01**
MMSD-201 (0-2")	1.32E-01	1.32E-01	3.23E-01	3.07E+00	4.03E-01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	9.50E+00	3.37E-02	1.00E+00	2.39E+00	1.83E-01	1.00E+00	1.13E+00	1.16E+00	1.57E-01
MMSD-202 (0-2")	1.32E-01	1.32E-01	3.23E-01	3.55E-01	4.67E-02	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.10E+00	3.91E-03	1.00E+00	2.39E+00	2.12E-02	1.00E+00	1.13E+00	1.16E+00	1.82E-02
Middle Marsh (2-6")																						**Maximum HQ (Middle Marsh, 0-2")**	**1.57E-01**
MMSD-201 (2-6")	1.32E-01	1.32E-01	3.23E-01	4.78E+00	6.28E-01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.48E+01	5.26E-02	1.00E+00	2.39E+00	2.85E-01	1.00E+00	1.13E+00	1.16E+00	2.45E-01
MMSD-202 (2-6")	1.32E-01	1.32E-01	3.23E-01	4.20E-01	5.52E-02	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.30E+00	4.62E-03	1.00E+00	2.39E+00	2.50E-02	1.00E+00	1.13E+00	1.16E+00	2.15E-02
Middle Marsh (6-12")																						**Maximum HQ (Middle Marsh, 2-6")**	**2.45E-01**
MMSD-201 (6-12")	1.32E-01	1.32E-01	3.23E-01	5.94E+00	7.81E-01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.84E+01	6.53E-02	1.00E+00	2.39E+00	3.54E-01	1.00E+00	1.13E+00	1.16E+00	3.05E-01
MMSD-202 (6-12")	1.32E-01	1.32E-01	3.23E-01	4.52E-01	5.94E-02	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.40E+00	4.97E-03	1.00E+00	2.39E+00	2.69E-02	1.00E+00	1.13E+00	1.16E+00	2.32E-02
Lower Marsh (0-2")																						**Maximum HQ (Middle Marsh, 6-12")**	**3.05E-01**
LMSD-201 (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
LMSD-202 (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
LMSD-203 (0-2")	1.32E-01	1.32E-01	3.23E-01	1.94E-01	2.55E-02	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	6.00E-01	2.13E-03	1.00E+00	2.39E+00	1.15E-02	1.00E+00	1.13E+00	1.16E+00	9.94E-03
LMSD-204 (0-2")	1.32E-01	1.32E-01	3.23E-01	3.23E-01	4.24E-02	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.00E+00	3.55E-03	1.00E+00	2.39E+00	1.92E-02	1.00E+00	1.13E+00	1.16E+00	1.66E-02
Lower Marsh (2-6")																						**Maximum HQ (Lower Marsh, 0-2")**	**1.66E-02**
LMSD-201 (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
LMSD-202 (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
LMSD-203 (2-6")	1.32E-01	1.32E-01	3.23E-01	2.58E-01	3.40E-02	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	8.00E-01	2.84E-03	1.00E+00	2.39E+00	1.54E-02	1.00E+00	1.13E+00	1.16E+00	1.33E-02
LMSD-204 (2-6")	1.32E-01	1.32E-01	3.23E-01	2.58E-01	3.40E-02	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	8.00E-01	2.84E-03	1.00E+00	2.39E+00	1.54E-02	1.00E+00	1.13E+00	1.16E+00	1.33E-02
Lower Marsh (6-12")																						**Maximum HQ (Lower Marsh, 2-6")**	**1.33E-02**
LMSD-201 (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
LMSD-202 (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
LMSD-203 (6-12")	1.32E-01	1.32E-01	3.23E-01	9.04E-01	1.19E-01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	2.80E+00	9.94E-03	1.00E+00	2.39E+00	5.39E-02	1.00E+00	1.13E+00	1.16E+00	4.64E-02
LMSD-204 (6-12")	1.32E-01	1.32E-01	3.23E-01	1.94E-01	2.55E-02	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	6.00E-01	2.13E-03	1.00E+00	2.39E+00	1.15E-02	1.00E+00	1.13E+00	1.16E+00	9.94E-03
																						Maximum HQ (Lower Marsh, 6-12")	**4.64E-02**
Mallard (Omnivorous Birds)																							
Reference Sites																							
BRSD-5 (0-2")	7.94E-02	NA	NA	NA	NA	5.00E-02	5.05E+00	3.13E+00	1.56E-01	2.94E-02	3.26E+01	2.02E+01	5.92E-01	2.62E-03	6.19E-01	1.62E-03	3.85E-01	1.14E+00	2.53E-01	1.00E+00	1.13E+00	1.00E+00	2.52E-01
BRSD-5 (2-6")	7.94E-02	NA	NA	NA	NA	5.00E-02	5.05E+00	2.63E+00	1.32E-01	2.94E-02	3.26E+01	1.70E+01	4.98E-01	2.62E-03	5.21E-01	1.36E-03	3.85E-01	1.14E+00	2.13E-01	1.00E+00	1.13E+00	1.00E+00	2.12E-01
BRSD-5 (6-12")	7.94E-02	NA	NA	NA	NA	5.00E-02	5.05E+00	2.38E+00	1.19E-01	2.94E-02	3.26E+01	1.53E+01	4.50E-01	2.62E-03	4.71E-01	1.23E-03	3.85E-01	1.14E+00	1.92E-01	1.00E+00	1.13E+00	1.00E+00	1.92E-01
PGBG-1 (0-2")	7.94E-02	NA	NA	NA	NA	5.00E-02	5.05E+00	7.63E+00	3.81E-01	2.94E-02	3.26E+01	4.92E+01	1.44E+00	2.62E-03	1.51E+00	3.95E-03	3.85E-01	1.14E+00	6.17E-01	1.00E+00	1.13E+00	1.00E+00	6.15E-01
PGBG-1 (2-6")	7.94E-02	NA	NA	NA	NA	5.00E-02	5.05E+00	7.27E+00	3.64E-01	2.94E-02	3.26E+01	4.69E+01	1.38E+00	2.62E-03	1.44E+00	3.77E-03	3.85E-01	1.14E+00	5.88E-01	1.00E+00	1.13E+00	1.00E+00	5.87E-01
PGBG-1 (6-12")	7.94E-02	NA	NA	NA	NA	5.00E-02	5.05E+00	3.28E+00	1.64E-01	2.94E-02	3.26E+01	2.11E+01	6.21E-01	2.62E-03	6.49E-01	1.70E-03	3.85E-01	1.14E+00	2.65E-01	1.00E+00	1.13E+00	1.00E+00	2.65E-01

TABLE C-12CB: CADMIUM DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 12 - MARSH, WETLAND RECEPTORS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 118.73

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Mallard (Omnivorous Birds)																							
PGBG-2 (0-2")	7.94E-02	NA	NA	NA	NA	5.00E-02	5.05E+00	9.29E+00	4.65E-01	2.94E-02	3.26E+01	5.99E+01	1.76E+00	2.62E-03	1.84E+00	4.82E-03	3.85E-01	1.14E+00	7.52E-01	1.00E+00	1.13E+00	1.00E+00	7.50E-01
PGBG-2 (2-6")	7.94E-02	NA	NA	NA	NA	5.00E-02	5.05E+00	7.78E+00	3.89E-01	2.94E-02	3.26E+01	5.02E+01	1.47E+00	2.62E-03	1.54E+00	4.03E-03	3.85E-01	1.14E+00	6.29E-01	1.00E+00	1.13E+00	1.00E+00	6.28E-01
PGBG-2 (6-12")	7.94E-02	NA	NA	NA	NA	5.00E-02	5.05E+00	7.93E+00	3.96E-01	2.94E-02	3.26E+01	5.11E+01	1.50E+00	2.62E-03	1.57E+00	4.11E-03	3.85E-01	1.14E+00	6.41E-01	1.00E+00	1.13E+00	1.00E+00	6.40E-01
Eastern Upper Marsh (0-2")																					**Minimum HQ (Reference Sites)**		**1.92E-01**
UM-1000S-3500E (0-2")	7.94E-02	NA	NA	NA	NA	5.00E-02	2.05E+00	4.50E+00	2.25E-01	2.94E-02	5.49E+01	1.20E+02	3.53E+00	2.62E-03	2.19E+00	5.74E-03	3.85E-01	1.14E+00	1.27E+00	1.00E+00	1.13E+00	1.00E+00	1.26E+00
BRSD-15 (0-2")	7.94E-02	NA	NA	NA	NA	5.00E-02	2.05E+00	3.12E+00	1.56E-01	2.94E-02	5.49E+01	8.34E+01	2.45E+00	2.62E-03	1.52E+00	3.98E-03	3.85E-01	1.14E+00	8.80E-01	1.00E+00	1.13E+00	1.00E+00	8.78E-01
BRSD-4 (0-2")	7.94E-02	NA	NA	NA	NA	5.00E-02	2.05E+00	1.56E+00	7.79E-02	2.94E-02	5.49E+01	4.16E+01	1.22E+00	2.62E-03	7.59E-01	1.99E-03	3.85E-01	1.14E+00	4.39E-01	1.00E+00	1.13E+00	1.00E+00	4.38E-01
UM-750S-3500E (0-2")	7.94E-02	NA	NA	NA	NA	5.00E-02	2.05E+00	1.64E+01	8.21E-01	2.94E-02	5.49E+01	4.39E+02	1.29E+01	2.62E-03	8.00E+00	2.10E-02	3.85E-01	1.14E+00	4.63E+00	1.00E+00	1.13E+00	1.00E+00	4.62E+00
BRSD-16 (0-2")	7.94E-02	NA	NA	NA	NA	5.00E-02	2.05E+00	1.07E+01	5.33E-01	2.94E-02	5.49E+01	2.85E+02	8.36E+00	2.62E-03	5.19E+00	1.36E-02	3.85E-01	1.14E+00	3.00E+00	1.00E+00	1.13E+00	1.00E+00	3.00E+00
UM-750S-3000E (0-2")	7.94E-02	NA	NA	NA	NA	5.00E-02	2.05E+00	2.20E+01	1.10E+00	2.94E-02	5.49E+01	5.87E+02	1.72E+01	2.62E-03	1.07E+01	2.80E-02	3.85E-01	1.14E+00	6.19E+00	1.00E+00	1.13E+00	1.00E+00	6.18E+00
BRSD-3 (0-2")	7.94E-02	NA	NA	NA	NA	5.00E-02	2.05E+00	7.43E+00	3.72E-01	2.94E-02	5.49E+01	1.99E+02	5.83E+00	2.62E-03	3.62E+00	9.48E-03	3.85E-01	1.14E+00	2.09E+00	1.00E+00	1.13E+00	1.00E+00	2.09E+00
UM-500S-3250E (0-2")	7.94E-02	NA	NA	NA	NA	5.00E-02	2.05E+00	5.73E+00	2.86E-01	2.94E-02	5.49E+01	1.53E+02	4.49E+00	2.62E-03	2.79E+00	7.31E-03	3.85E-01	1.14E+00	1.61E+00	1.00E+00	1.13E+00	1.00E+00	1.61E+00
UM-500S-3000E (0-2")	7.94E-02	NA	NA	NA	NA	5.00E-02	2.05E+00	1.87E+01	9.34E-01	2.94E-02	5.49E+01	4.99E+02	1.47E+01	2.62E-03	9.10E+00	2.38E-02	3.85E-01	1.14E+00	5.27E+00	1.00E+00	1.13E+00	1.00E+00	5.25E+00
UM-500S-2750E (0-2")	7.94E-02	NA	NA	NA	NA	5.00E-02	2.05E+00	2.26E+01	1.13E+00	2.94E-02	5.49E+01	6.03E+02	1.77E+01	2.62E-03	1.10E+01	2.88E-02	3.85E-01	1.14E+00	6.37E+00	1.00E+00	1.13E+00	1.00E+00	6.35E+00
BRSD-25 (0-2")	7.94E-02	NA	NA	NA	NA	5.00E-02	2.05E+00	1.28E+01	6.41E-01	2.94E-02	5.49E+01	3.43E+02	1.01E+01	2.62E-03	6.25E+00	1.64E-02	3.85E-01	1.14E+00	3.62E+00	1.00E+00	1.13E+00	1.00E+00	3.61E+00
UM-250S-3000E (0-2")	7.94E-02	NA	NA	NA	NA	5.00E-02	2.05E+00	3.67E+01	1.84E+00	2.94E-02	5.49E+01	9.82E+02	2.88E+01	2.62E-03	1.79E+01	4.69E-02	3.85E-01	1.14E+00	1.04E+01	1.00E+00	1.13E+00	1.00E+00	1.03E+01
UM-250S-3250E (0-2")	7.94E-02	NA	NA	NA	NA	5.00E-02	2.05E+00	2.94E+01	1.47E+00	2.94E-02	5.49E+01	7.84E+02	2.30E+01	2.62E-03	1.43E+01	3.74E-02	3.85E-01	1.14E+00	8.27E+00	1.00E+00	1.13E+00	1.00E+00	8.26E+00
BRSD-24 (0-2")	7.94E-02	NA	NA	NA	NA	5.00E-02	2.05E+00	2.81E+01	1.41E+00	2.94E-02	5.49E+01	7.51E+02	2.21E+01	2.62E-03	1.37E+01	3.59E-02	3.85E-01	1.14E+00	7.93E+00	1.00E+00	1.13E+00	1.00E+00	7.91E+00
UM-250S-2750E (0-2")	7.94E-02	NA	NA	NA	NA	5.00E-02	2.05E+00	1.45E+01	7.24E-01	2.94E-02	5.49E+01	3.87E+02	1.14E+01	2.62E-03	7.05E+00	1.85E-02	3.85E-01	1.14E+00	4.08E+00	1.00E+00	1.13E+00	1.00E+00	4.07E+00
UM-250S-2500E (0-2")	7.94E-02	NA	NA	NA	NA	5.00E-02	2.05E+00	6.06E+00	3.03E-01	2.94E-02	5.49E+01	1.62E+02	4.75E+00	2.62E-03	2.95E+00	7.73E-03	3.85E-01	1.14E+00	1.71E+00	1.00E+00	1.13E+00	1.00E+00	1.70E+00
UM-0N-2500E (0-2")	7.94E-02	NA	NA	NA	NA	5.00E-02	2.05E+00	4.74E+01	2.37E+00	2.94E-02	5.49E+01	1.27E+03	3.72E+01	2.62E-03	2.31E+01	6.05E-02	3.85E-01	1.14E+00	1.34E+01	1.00E+00	1.13E+00	1.00E+00	1.33E+01
UM-0N-250E (0-2")	7.94E-02	NA	NA	NA	NA	5.00E-02	2.05E+00	3.94E+01	1.97E+00	2.94E-02	5.49E+01	1.05E+03	3.09E+01	2.62E-03	1.92E+01	5.03E-02	3.85E-01	1.14E+00	1.11E+01	1.00E+00	1.13E+00	1.00E+00	1.11E+01
BRSD-2 (0-2")	7.94E-02	NA	NA	NA	NA	5.00E-02	2.05E+00	2.11E+01	1.06E+00	2.94E-02	5.49E+01	5.65E+02	1.66E+01	2.62E-03	1.03E+01	2.70E-02	3.85E-01	1.14E+00	5.96E+00	1.00E+00	1.13E+00	1.00E+00	5.95E+00
UM-500N-2500E (0-2")	7.94E-02	NA	NA	NA	NA	5.00E-02	2.05E+00	3.61E+00	1.81E-01	2.94E-02	5.49E+01	9.65E+01	2.83E+00	2.62E-03	1.76E+00	4.61E-03	3.85E-01	1.14E+00	1.02E+00	1.00E+00	1.13E+00	1.00E+00	1.02E+00
UM-250N-2500E (0-2")	7.94E-02	NA	NA	NA	NA	5.00E-02	2.05E+00	2.94E+01	1.47E+00	2.94E-02	5.49E+01	7.84E+02	2.30E+01	2.62E-03	1.43E+01	3.74E-02	3.85E-01	1.14E+00	8.27E+00	1.00E+00	1.13E+00	1.00E+00	8.26E+00
UM-250N-2250E (0-2")	7.94E-02	NA	NA	NA	NA	5.00E-02	2.05E+00	2.46E+01	1.23E+00	2.94E-02	5.49E+01	6.58E+02	1.93E+01	2.62E-03	1.20E+01	3.14E-02	3.85E-01	1.14E+00	6.94E+00	1.00E+00	1.13E+00	1.00E+00	6.93E+00
Western Upper Marsh (0-2")																						**Maximum HQ (Eastern Upper Marsh, 0-2")**	**1.33E+01**
UM-500S-2500E (0-2")	7.94E-02	NA	NA	NA	NA	5.00E-02	1.96E+00	2.45E+00	1.23E-01	2.94E-02	3.16E+01	3.95E+01	1.16E+00	2.62E-03	1.25E+00	3.27E-03	3.85E-01	1.14E+00	4.34E-01	1.00E+00	1.13E+00	1.00E+00	4.33E-01
UM-0N-2000E (0-2")	7.94E-02	NA	NA	NA	NA	5.00E-02	1.96E+00	2.86E+01	1.43E+00	2.94E-02	3.16E+01	4.61E+02	1.35E+01	2.62E-03	1.46E+01	3.82E-02	3.85E-01	1.14E+00	5.06E+00	1.00E+00	1.13E+00	1.00E+00	5.05E+00
UM-500S-2000E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-250N-1750E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	5.52E-01	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-1500E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	6.24E-01	BB	BB	BB	BB	BB	BB	BB	BB
UM-250S-1500E (0-2")	7.94E-02	NA	NA	NA	NA	5.00E-02	1.96E+00	3.21E+01	1.61E+00	2.94E-02	3.16E+01	5.18E+02	1.52E+01	2.62E-03	1.64E+01	4.29E-02	3.85E-01	1.14E+00	5.69E+00	1.00E+00	1.13E+00	1.00E+00	5.68E+00
UM-250S-1250E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-6 (0-2")	7.94E-02	NA	NA	NA	NA	5.00E-02	1.96E+00	1.92E+00	9.62E-02	2.94E-02	3.16E+01	3.10E+01	9.11E-01	2.62E-03	9.82E-01	2.57E-03	3.85E-01	1.14E+00	3.41E-01	1.00E+00	1.13E+00	1.00E+00	3.40E-01
UM-0N-1000E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-750E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-500E (0-2")	7.94E-02	NA	NA	NA	NA	5.00E-02	1.96E+00	4.12E+00	2.06E-01	2.94E-02	3.16E+01	6.64E+01	1.95E+00	2.62E-03	2.10E+00	5.50E-03	3.85E-01	1.14E+00	7.28E-01	1.00E+00	1.13E+00	1.00E+00	7.27E-01
UM-250S-500E (0-2")	7.94E-02	NA	NA	NA	NA	5.00E-02	1.96E+00	1.70E+00	8.51E-02	2.94E-02	3.16E+01	2.74E+01	8.05E-01	2.62E-03	8.68E-01	2.27E-03	3.85E-01	1.14E+00	3.01E-01	1.00E+00	1.13E+00	1.00E+00	3.00E-01
UM-250S-250E (0-2")	7.94E-02	NA	NA	NA	NA	5.00E-02	1.96E+00	1.59E+00	7.93E-02	2.94E-02	3.16E+01	2.56E+01	7.51E-01	2.62E-03	8.09E-01	2.12E-03	3.85E-01	1.14E+00	2.81E-01	1.00E+00	1.13E+00	1.00E+00	2.80E-01
BRSD-7 (0-2")	7.94E-02	NA	NA	NA	NA	5.00E-02	1.96E+00	3.59E+00	1.79E-01	2.94E-02	3.16E+01	5.78E+01	1.70E+00	2.62E-03	1.83E+00	4.79E-03	3.85E-01	1.14E+00	6.35E-01	1.00E+00	1.13E+00	1.00E+00	6.33E-01
BRSD-8 (0-2")	7.94E-02	NA	NA	NA	NA	5.00E-02	1.96E+00	1.11E+01	5.53E-01	2.94E-02	3.16E+01	1.78E+02	5.23E+00	2.62E-03	5.64E+00	1.48E-02	3.85E-01	1.14E+00	1.96E+00	1.00E+00	1.13E+00	1.00E+00	1.95E+00
UM-500S-500E (0-2")	7.94E-02	NA	NA	NA	NA	5.00E-02	1.96E+00	2.08E+00	1.04E-01	2.94E-02	3.16E+01	3.35E+01	9.84E-01	2.62E-03	1.06E+00	2.78E-03	3.85E-01	1.14E+00	3.68E-01	1.00E+00	1.13E+00	1.00E+00	3.67E-01
BRSD-9 (0-2")	7.94E-02	NA	NA	NA	NA	5.00E-02	1.96E+00	9.62E+00	4.81E-01	2.94E-02	3.16E+01	1.55E+02	4.56E+00	2.62E-03	4.91E+00	1.29E-02	3.85E-01	1.14E+00	1.70E+00	1.00E+00	1.13E+00	1.00E+00	1.70E+00
BRSD-10 (0-2")	7.94E-02	NA	NA	NA	NA	5.00E-02	1.96E+00	3.53E+01	1.76E+00	2.94E-02	3.16E+01	5.69E+02	1.67E+01	2.62E-03	1.80E+01	4.71E-02	3.85E-01	1.14E+00	6.24E+00	1.00E+00	1.13E+00	1.00E+00	6.23E+00
BRSD-11 (0-2")	7.94E-02	NA	NA	NA	NA	5.00E-02	1.96E+00	1.09E+01	5.44E-01	2.94E-02	3.16E+01	1.75E+02	5.15E+00	2.62E-03	5.55E+00	1.45E-02	3.85E-01	1.14E+00	1.93E+00	1.00E+00	1.13E+00	1.00E+00	1.92E+00
Eastern Upper Marsh (2-6")																						**Maximum HQ (Western Upper Marsh, 0-2")**	**6.23E+00**
UM-1000S-3500E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-15 (2-6")	7.94E-02	NA	NA	NA	NA	5.00E-02	2.05E+00	2.65E+00	1.32E-01	2.94E-02	5.49E+01	7.08E+01	2.08E+00	2.62E-03	1.29E+00	3.38E-03	3.85E-01	1.14E+00	7.46E-01	1.00E+00	1.13E+00	1.00E+00	7.45E-01
BRSD-4 (2-6")	7.94E-02	NA	NA	NA	NA	5.00E-02	2.05E+00	1.38E+00	6.89E-02	2.94E-02	5.49E+01	3.68E+01	1.08E+00	2.62E-03	6.71E-01	1.76E-03	3.85E-01	1.14E+00	3.88E-01	1.00E+00	1.13E+00	1.00E+00	3.87E-01
UM-750S-3500E (2-6")	7.94E-02	NA	NA	NA	NA	5.00E-02	2.05E+00	2.71E+01	1.35E+00	2.94E-02	5.49E+01	7.24E+02	2.13E+01	2.62E-03	1.32E+01	3.46E-02	3.85E-01	1.14E+00	7.64E+00	1.00E+00	1.13E+00	1.00E+00	7.62E+00
BRSD-16 (2-6")	7.94E-02	NA	NA	NA	NA	5.00E-02	2.05E+00	7.12E+01	3.56E+00	2.94E-02	5.49E+01	1.90E+03	5.59E+01	2.62E-03	3.47E+01	9.09E-02	3.85E-01	1.14E+00	2.01E+01	1.00E+00	1.13E+00	1.00E+00	2.00E+01
UM-750S-3000E (2-6")	7.94E-02	NA	NA	NA	NA	5.00E-02	2.05E+00	1.87E+01	9.36E-01	2.94E-02	5.49E+01	5.00E+02	1.47E+01	2.62E-03	9.12E+00	2.39E-02	3.85E-01	1.14E+00	5.28E+00	1.00E+00	1.13E+00	1.00E+00	5.27E+00
BRSD-3 (2-6")	7.94E-02	NA	NA	NA	NA	5.00E-02	2.05E+00	9.90E+00	4.95E-01	2.94E-02	5.49E+01	2.64E+02	7.76E+00	2.62E-03	4.82E+00	1.26E-02	3.85E-01	1.14E+00	2.79E+00	1.00E+00	1.13E+00	1.00E+00	2.78E+00
UM-500S-3250E (2-6")	7.94E-02	NA	NA	NA	NA	5.00E-02	2.05E+00	1.69E+00	8.46E-02	2.94E-02	5.49E+01	4.52E+01	1.33E+00	2.62E-03	8.24E-01	2.16E-03	3.85E-01	1.14E+00	4.77E-01	1.00E+00	1.13E+00	1.00E+00	4.76E-01
UM-500S-3000E (2-6")	7.94E-02	NA	NA	NA	NA	5.00E-02	2.05E+00	3.74E+00	1.87E-01	2.94E-02	5.49E+01	9.98E+01	2.93E+00	2.62E-03	1.82E+00	4.77E-03	3.85E-01	1.14E+00	1.05E+00	1.00E+00	1.13E+00	1.00E+00	1.05E+00
UM-500S-2750E (2-6")	7.94E-02	NA	NA	NA	NA	5.00E-02	2.05E+00	1.81E+01	9.03E-01	2.94E-02	5.49E+01	4.83E+02	1.42E+01	2.62E-03	8.80E+00	2.30E-02	3.85E-01	1.14E+00	5.09E+00	1.00E+00	1.13E+00	1.00E+00	5.08E+00

TABLE C-12CB: CADMIUM DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 12 - MARSH, WETLAND RECEPTORS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 118.73

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Mallard (Omnivorous Birds)																							
BRSD-25 (2-6")	7.94E-02	NA	NA	NA	NA	5.00E-02	2.05E+00	1.81E+01	9.07E-01	2.94E-02	5.49E+01	4.85E+02	1.42E+01	2.62E-03	8.84E+00	2.31E-02	3.85E-01	1.14E+00	5.12E+00	1.00E+00	1.13E+00	1.00E+00	5.10E+00
UM-250S-3000E (2-6")	7.94E-02	NA	NA	NA	NA	5.00E-02	2.05E+00	4.25E+01	2.12E+00	2.94E-02	5.49E+01	1.14E+03	3.33E+01	2.62E-03	2.07E+01	5.42E-02	3.85E-01	1.14E+00	1.20E+01	1.00E+00	1.13E+00	1.00E+00	1.20E+01
UM-250S-3250E (2-6")	7.94E-02	NA	NA	NA	NA	5.00E-02	2.05E+00	6.71E+00	3.36E-01	2.94E-02	5.49E+01	1.79E+02	5.27E+00	2.62E-03	3.27E+00	8.56E-03	3.85E-01	1.14E+00	1.89E+00	1.00E+00	1.13E+00	1.00E+00	1.89E+00
BRSD-24 (2-6")	7.94E-02	NA	NA	NA	NA	5.00E-02	2.05E+00	5.75E+01	2.87E+00	2.94E-02	5.49E+01	1.54E+03	4.51E+01	2.62E-03	2.80E+01	7.33E-02	3.85E-01	1.14E+00	1.62E+01	1.00E+00	1.13E+00	1.00E+00	1.62E+01
UM-250S-2750E (2-6")	7.94E-02	NA	NA	NA	NA	5.00E-02	2.05E+00	2.79E+01	1.40E+00	2.94E-02	5.49E+01	7.46E+02	2.19E+01	2.62E-03	1.36E+01	3.56E-02	3.85E-01	1.14E+00	7.87E+00	1.00E+00	1.13E+00	1.00E+00	7.85E+00
UM-0N-2500E (2-6")	7.94E-02	NA	NA	NA	NA	5.00E-02	2.05E+00	2.00E+01	9.99E-01	2.94E-02	5.49E+01	5.34E+02	1.57E+01	2.62E-03	9.73E+00	2.55E-02	3.85E-01	1.14E+00	5.63E+00	1.00E+00	1.13E+00	1.00E+00	5.62E+00
BRSD-2 (2-6")	7.94E-02	NA	NA	NA	NA	5.00E-02	2.05E+00	3.47E+01	1.73E+00	2.94E-02	5.49E+01	9.27E+02	2.72E+01	2.62E-03	1.69E+01	4.43E-02	3.85E-01	1.14E+00	9.78E+00	1.00E+00	1.13E+00	1.00E+00	9.76E+00
UM-500N-2500E (2-6")	7.94E-02	NA	NA	NA	NA	5.00E-02	2.05E+00	3.26E+00	1.63E-01	2.94E-02	5.49E+01	8.72E+01	2.56E+00	2.62E-03	1.59E+00	4.16E-03	3.85E-01	1.14E+00	9.20E-01	1.00E+00	1.13E+00	1.00E+00	9.18E-01
UM-250N-2500E (2-6")	7.94E-02	NA	NA	NA	NA	5.00E-02	2.05E+00	2.96E+01	1.48E+00	2.94E-02	5.49E+01	7.90E+02	2.32E+01	2.62E-03	1.44E+01	3.77E-02	3.85E-01	1.14E+00	8.33E+00	1.00E+00	1.13E+00	1.00E+00	8.31E+00
UM-250N-2250E (2-6")	7.94E-02	NA	NA	NA	NA	5.00E-02	2.05E+00	6.94E+00	3.47E-01	2.94E-02	5.49E+01	1.85E+02	5.44E+00	2.62E-03	3.38E+00	8.85E-03	3.85E-01	1.14E+00	1.96E+00	1.00E+00	1.13E+00	1.00E+00	1.95E+00
Western Upper Marsh (2-6")																						**Maximum HQ (Eastern Upper Marsh, 2-6")**	**2.00E+01**
UM-500S-2500E (2-6")	7.94E-02	NA	NA	NA	NA	5.00E-02	1.96E+00	1.45E+00	7.23E-02	2.94E-02	3.16E+01	2.33E+01	6.85E-01	2.62E-03	7.38E-01	1.93E-03	3.85E-01	1.14E+00	2.56E-01	1.00E+00	1.13E+00	1.00E+00	2.55E-01
UM-0N-2000E (2-6")	7.94E-02	NA	NA	NA	NA	5.00E-02	1.96E+00	2.45E+01	1.23E+00	2.94E-02	3.16E+01	3.95E+02	1.16E+01	2.62E-03	1.25E+01	3.27E-02	3.85E-01	1.14E+00	4.34E+00	1.00E+00	1.13E+00	1.00E+00	4.33E+00
UM-500S-2000E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	5.48E-01	BB	BB	BB	BB	BB	BB	BB	BB
UM-250N-1750E (2-6")	7.94E-02	NA	NA	NA	NA	5.00E-02	1.96E+00	1.88E+00	9.39E-02	2.94E-02	3.16E+01	3.03E+01	8.89E-01	2.62E-03	9.58E-01	2.51E-03	3.85E-01	1.14E+00	3.32E-01	1.00E+00	1.13E+00	1.00E+00	3.32E-01
UM-0N-1500E (2-6")	7.94E-02	NA	NA	NA	NA	5.00E-02	1.96E+00	2.22E+00	1.11E-01	2.94E-02	3.16E+01	3.57E+01	1.05E+00	2.62E-03	1.13E+00	2.96E-03	3.85E-01	1.14E+00	3.92E-01	1.00E+00	1.13E+00	1.00E+00	3.91E-01
UM-250S-1500E (2-6")	7.94E-02	NA	NA	NA	NA	5.00E-02	1.96E+00	2.51E+01	1.25E+00	2.94E-02	3.16E+01	4.05E+02	1.19E+01	2.62E-03	1.28E+01	3.35E-02	3.85E-01	1.14E+00	4.44E+00	1.00E+00	1.13E+00	1.00E+00	4.43E+00
UM-250S-1250E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-6 (2-6")	7.94E-02	NA	NA	NA	NA	5.00E-02	1.96E+00	1.76E+00	8.80E-02	2.94E-02	3.16E+01	2.84E+01	8.33E-01	2.62E-03	8.98E-01	2.35E-03	3.85E-01	1.14E+00	3.12E-01	1.00E+00	1.13E+00	1.00E+00	3.11E-01
UM-0N-1000E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-750E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-500E (2-6")	7.94E-02	NA	NA	NA	NA	5.00E-02	1.96E+00	1.53E+02	7.64E+00	2.94E-02	3.16E+01	2.47E+03	7.24E+01	2.62E-03	7.80E+01	2.04E-01	3.85E-01	1.14E+00	2.71E+01	1.00E+00	1.13E+00	1.00E+00	2.70E+01
UM-250S-500E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	6.44E-01	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-250E (2-6")	7.94E-02	NA	NA	NA	NA	5.00E-02	1.96E+00	6.90E+00	3.45E-01	2.94E-02	3.16E+01	1.11E+02	3.27E+00	2.62E-03	3.52E+00	9.22E-03	3.85E-01	1.14E+00	1.22E+00	1.00E+00	1.13E+00	1.00E+00	1.22E+00
UM-250S-250E (2-6")	7.94E-02	NA	NA	NA	NA	5.00E-02	1.96E+00	2.74E+00	1.37E-01	2.94E-02	3.16E+01	4.42E+01	1.30E+00	2.62E-03	1.40E+00	3.67E-03	3.85E-01	1.14E+00	4.86E-01	1.00E+00	1.13E+00	1.00E+00	4.85E-01
BRSD-7 (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-8 (2-6")	7.94E-02	NA	NA	NA	NA	5.00E-02	1.96E+00	1.69E+01	8.43E-01	2.94E-02	3.16E+01	2.72E+02	7.98E+00	2.62E-03	8.60E+00	2.25E-02	3.85E-01	1.14E+00	2.98E+00	1.00E+00	1.13E+00	1.00E+00	2.98E+00
UM-500S-500E (2-6")	7.94E-02	NA	NA	NA	NA	5.00E-02	1.96E+00	1.49E+00	7.45E-02	2.94E-02	3.16E+01	2.40E+01	7.05E-01	2.62E-03	7.60E-01	1.99E-03	3.85E-01	1.14E+00	2.64E-01	1.00E+00	1.13E+00	1.00E+00	2.63E-01
BRSD-9 (2-6")	7.94E-02	NA	NA	NA	NA	5.00E-02	1.96E+00	4.78E+00	2.39E-01	2.94E-02	3.16E+01	7.71E+01	2.26E+00	2.62E-03	2.44E+00	6.39E-03	3.85E-01	1.14E+00	8.46E-01	1.00E+00	1.13E+00	1.00E+00	8.44E-01
BRSD-10 (2-6")	7.94E-02	NA	NA	NA	NA	5.00E-02	1.96E+00	3.10E+01	1.55E+00	2.94E-02	3.16E+01	4.99E+02	1.47E+01	2.62E-03	1.58E+01	4.14E-02	3.85E-01	1.14E+00	5.48E+00	1.00E+00	1.13E+00	1.00E+00	5.47E+00
BRSD-11 (2-6")	7.94E-02	NA	NA	NA	NA	5.00E-02	1.96E+00	4.96E+00	2.48E-01	2.94E-02	3.16E+01	8.00E+01	2.35E+00	2.62E-03	2.53E+00	6.63E-03	3.85E-01	1.14E+00	8.78E-01	1.00E+00	1.13E+00	1.00E+00	8.76E-01
Eastern Upper Marsh (6-12")																						**Maximum HQ (Western Upper Marsh, 2-6")**	**2.70E+01**
UM-1000S-3500E (6-12")	7.94E-02	NA	NA	NA	NA	5.00E-02	2.05E+00	2.03E+00	1.02E-01	2.94E-02	5.49E+01	5.42E+01	1.59E+00	2.62E-03	9.89E-01	2.59E-03	3.85E-01	1.14E+00	5.72E-01	1.00E+00	1.13E+00	1.00E+00	5.71E-01
BRSD-15 (6-12")	7.94E-02	NA	NA	NA	NA	5.00E-02	2.05E+00	3.59E+00	1.80E-01	2.94E-02	5.49E+01	9.60E+01	2.82E+00	2.62E-03	1.75E+00	4.58E-03	3.85E-01	1.14E+00	1.01E+00	1.00E+00	1.13E+00	1.00E+00	1.01E+00
BRSD-4 (6-12")	7.94E-02	NA	NA	NA	NA	5.00E-02	2.05E+00	3.06E+00	1.53E-01	2.94E-02	5.49E+01	8.17E+01	2.40E+00	2.62E-03	1.49E+00	3.90E-03	3.85E-01	1.14E+00	8.62E-01	1.00E+00	1.13E+00	1.00E+00	8.60E-01
UM-750S-3500E (6-12")	7.94E-02	NA	NA	NA	NA	5.00E-02	2.05E+00	3.76E+01	1.88E+00	2.94E-02	5.49E+01	1.00E+03	2.95E+01	2.62E-03	1.83E+01	4.79E-02	3.85E-01	1.14E+00	1.06E+01	1.00E+00	1.13E+00	1.00E+00	1.06E+01
BRSD-16 (6-12")	7.94E-02	NA	NA	NA	NA	5.00E-02	2.05E+00	3.70E+01	1.85E+00	2.94E-02	5.49E+01	9.87E+02	2.90E+01	2.62E-03	1.80E+01	4.71E-02	3.85E-01	1.14E+00	1.04E+01	1.00E+00	1.13E+00	1.00E+00	1.04E+01
UM-750S-3000E (6-12")	7.94E-02	NA	NA	NA	NA	5.00E-02	2.05E+00	1.87E+01	9.37E-01	2.94E-02	5.49E+01	5.01E+02	1.47E+01	2.62E-03	9.13E+00	2.39E-02	3.85E-01	1.14E+00	5.28E+00	1.00E+00	1.13E+00	1.00E+00	5.27E+00
BRSD-3 (6-12")	7.94E-02	NA	NA	NA	NA	5.00E-02	2.05E+00	4.80E+00	2.40E-01	2.94E-02	5.49E+01	1.28E+02	3.77E+00	2.62E-03	2.34E+00	6.13E-03	3.85E-01	1.14E+00	1.35E+00	1.00E+00	1.13E+00	1.00E+00	1.35E+00
UM-500S-3250E (6-12")	7.94E-02	NA	NA	NA	NA	5.00E-02	2.05E+00	2.36E+00	1.18E-01	2.94E-02	5.49E+01	6.31E+01	1.85E+00	2.62E-03	1.15E+00	3.01E-03	3.85E-01	1.14E+00	6.65E-01	1.00E+00	1.13E+00	1.00E+00	6.64E-01
UM-500S-3000E (6-12")	7.94E-02	NA	NA	NA	NA	5.00E-02	2.05E+00	3.57E+00	1.79E-01	2.94E-02	5.49E+01	9.54E+01	2.80E+00	2.62E-03	1.74E+00	4.56E-03	3.85E-01	1.14E+00	1.01E+00	1.00E+00	1.13E+00	1.00E+00	1.00E+00
UM-500S-2750E (6-12")	7.94E-02	NA	NA	NA	NA	5.00E-02	2.05E+00	1.46E+01	7.32E-01	2.94E-02	5.49E+01	3.91E+02	1.15E+01	2.62E-03	7.13E+00	1.87E-02	3.85E-01	1.14E+00	4.13E+00	1.00E+00	1.13E+00	1.00E+00	4.12E+00
BRSD-25 (6-12")	7.94E-02	NA	NA	NA	NA	5.00E-02	2.05E+00	1.58E+01	7.89E-01	2.94E-02	5.49E+01	4.22E+02	1.24E+01	2.62E-03	7.69E+00	2.01E-02	3.85E-01	1.14E+00	4.45E+00	1.00E+00	1.13E+00	1.00E+00	4.44E+00
UM-250S-3000E (6-12")	7.94E-02	NA	NA	NA	NA	5.00E-02	2.05E+00	3.08E+01	1.54E+00	2.94E-02	5.49E+01	8.23E+02	2.42E+01	2.62E-03	1.50E+01	3.93E-02	3.85E-01	1.14E+00	8.68E+00	1.00E+00	1.13E+00	1.00E+00	8.66E+00
UM-250S-3250E (6-12")	7.94E-02	NA	NA	NA	NA	5.00E-02	2.05E+00	7.14E+00	3.57E-01	2.94E-02	5.49E+01	1.91E+02	5.60E+00	2.62E-03	3.48E+00	9.11E-03	3.85E-01	1.14E+00	2.01E+00	1.00E+00	1.13E+00	1.00E+00	2.01E+00
BRSD-24 (6-12")	7.94E-02	NA	NA	NA	NA	5.00E-02	2.05E+00	2.94E+01	1.47E+00	2.94E-02	5.49E+01	7.84E+02	2.30E+01	2.62E-03	1.43E+01	3.74E-02	3.85E-01	1.14E+00	8.27E+00	1.00E+00	1.13E+00	1.00E+00	8.26E+00
UM-250S-2750E (6-12")	7.94E-02	NA	NA	NA	NA	5.00E-02	2.05E+00	3.14E+01	1.57E+00	2.94E-02	5.49E+01	8.39E+02	2.46E+01	2.62E-03	1.53E+01	4.01E-02	3.85E-01	1.14E+00	8.85E+00	1.00E+00	1.13E+00	1.00E+00	8.83E+00
UM-250S-2500E (6-12")	7.94E-02	NA	NA	NA	NA	5.00E-02	2.05E+00	2.53E+00	1.26E-01	2.94E-02	5.49E+01	6.75E+01	1.98E+00	2.62E-03	1.23E+00	3.22E-03	3.85E-01	1.14E+00	7.12E-01	1.00E+00	1.13E+00	1.00E+00	7.10E-01
BRSD-2 (6-12")	7.94E-02	NA	NA	NA	NA	5.00E-02	2.05E+00	5.58E+01	2.79E+00	2.94E-02	5.49E+01	1.49E+03	4.38E+01	2.62E-03	2.72E+01	7.12E-02	3.85E-01	1.14E+00	1.57E+01	1.00E+00	1.13E+00	1.00E+00	1.57E+01
UM-500N-2500E (6-12")	7.94E-02	NA	NA	NA	NA	5.00E-02	2.05E+00	1.66E+00	8.30E-02	2.94E-02	5.49E+01	4.44E+01	1.30E+00	2.62E-03	8.09E-01	2.12E-03	3.85E-01	1.14E+00	4.68E-01	1.00E+00	1.13E+00	1.00E+00	4.67E-01
UM-250N-2500E (6-12")	7.94E-02	NA	NA	NA	NA	5.00E-02	2.05E+00	2.55E+01	1.27E+00	2.94E-02	5.49E+01	6.80E+02	2.00E+01	2.62E-03	1.24E+01	3.25E-02	3.85E-01	1.14E+00	7.18E+00	1.00E+00	1.13E+00	1.00E+00	7.16E+00
UM-250N-2250E (6-12")	7.94E-02	NA	NA	NA	NA	5.00E-02	2.05E+00	4.09E+00	2.04E-01	2.94E-02	5.49E+01	1.09E+02	3.20E+00	2.62E-03	1.99E+00	5.21E-03	3.85E-01	1.14E+00	1.15E+00	1.00E+00	1.13E+00	1.00E+00	1.15E+00
Western Upper Marsh (6-12")																						**Maximum HQ (Eastern Upper Marsh, 6-12")**	**1.57E+01**
UM-500S-2500E (6-12")	7.94E-02	NA	NA	NA	NA	5.00E-02	1.96E+00	1.67E+00	8.34E-02	2.94E-02	3.16E+01	2.69E+01	7.90E-01	2.62E-03	8.51E-01	2.23E-03	3.85E-01	1.14E+00	2.95E-01	1.00E+00	1.13E+00	1.00E+00	2.95E-01
UM-0N-2000E (6-12")	7.94E-02	NA	NA	NA	NA	5.00E-02	1.96E+00	3.84E+01	1.92E+00	2.94E-02	3.16E+01	6.19E+02	1.82E+01	2.62E-03	1.96E+01	5.13E-02	3.85E-01	1.14E+00	6.80E+00	1.00E+00	1.13E+00	1.00E+00	6.78E+00
UM-500S-2000E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-250N-1750E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB

TABLE C-12CB: CADMIUM DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 12 - MARSH, WETLAND RECEPTORS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 118.73

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Mallard (Omnivorous Birds)																							
UM-0N-1500E (6-12")	7.94E-02	NA	NA	NA	NA	5.00E-02	1.96E+00	5.31E+00	2.66E-01	2.94E-02	3.16E+01	8.56E+01	2.51E+00	2.62E-03	2.71E+00	7.10E-03	3.85E-01	1.14E+00	9.40E-01	1.00E+00	1.13E+00	1.00E+00	9.38E-01
UM-250S-1500E (6-12")	7.94E-02	NA	NA	NA	NA	5.00E-02	1.96E+00	6.14E+00	3.07E-01	2.94E-02	3.16E+01	9.89E+01	2.90E+00	2.62E-03	3.13E+00	8.20E-03	3.85E-01	1.14E+00	1.09E+00	1.00E+00	1.13E+00	1.00E+00	1.08E+00
UM-250S-1250E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-6 (6-12")	7.94E-02	NA	NA	NA	NA	5.00E-02	1.96E+00	1.89E+00	9.45E-02	2.94E-02	3.16E+01	3.05E+01	8.95E-01	2.62E-03	9.64E-01	2.52E-03	3.85E-01	1.14E+00	3.34E-01	1.00E+00	1.13E+00	1.00E+00	3.34E-01
UM-0N-1000E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-750E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-500E (6-12")	7.94E-02	NA	NA	NA	NA	5.00E-02	1.96E+00	2.61E+01	1.30E+00	2.94E-02	3.16E+01	4.20E+02	1.23E+01	2.62E-03	1.33E+01	3.48E-02	3.85E-01	1.14E+00	4.61E+00	1.00E+00	1.13E+00	1.00E+00	4.60E+00
UM-250S-500E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-250E (6-12")	7.94E-02	NA	NA	NA	NA	5.00E-02	1.96E+00	1.18E+01	5.89E-01	2.94E-02	3.16E+01	1.90E+02	5.58E+00	2.62E-03	6.01E+00	1.57E-02	3.85E-01	1.14E+00	2.08E+00	1.00E+00	1.13E+00	1.00E+00	2.08E+00
UM-250S-250E (6-12")	7.94E-02	NA	NA	NA	NA	5.00E-02	1.96E+00	1.82E+00	9.09E-02	2.94E-02	3.16E+01	2.93E+01	8.61E-01	2.62E-03	9.28E-01	2.43E-03	3.85E-01	1.14E+00	3.22E-01	1.00E+00	1.13E+00	1.00E+00	3.21E-01
BRSD-7 (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-8 (6-12")	7.94E-02	NA	NA	NA	NA	5.00E-02	1.96E+00	9.84E+00	4.92E-01	2.94E-02	3.16E+01	1.59E+02	4.66E+00	2.62E-03	5.02E+00	1.31E-02	3.85E-01	1.14E+00	1.74E+00	1.00E+00	1.13E+00	1.00E+00	1.74E+00
UM-500S-500E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	5.50E-01	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-9 (6-12")	7.94E-02	NA	NA	NA	NA	5.00E-02	1.96E+00	3.41E+00	1.71E-01	2.94E-02	3.16E+01	5.50E+01	1.61E+00	2.62E-03	1.74E+00	4.56E-03	3.85E-01	1.14E+00	6.04E-01	1.00E+00	1.13E+00	1.00E+00	6.02E-01
BRSD-10 (6-12")	7.94E-02	NA	NA	NA	NA	5.00E-02	1.96E+00	4.61E+01	2.30E+00	2.94E-02	3.16E+01	7.43E+02	2.18E+01	2.62E-03	2.35E+01	6.15E-02	3.85E-01	1.14E+00	8.15E+00	1.00E+00	1.13E+00	1.00E+00	8.13E+00
BRSD-11 (6-12")	7.94E-02	NA	NA	NA	NA	5.00E-02	1.96E+00	4.00E+00	2.00E-01	2.94E-02	3.16E+01	6.45E+01	1.89E+00	2.62E-03	2.04E+00	5.34E-03	3.85E-01	1.14E+00	7.08E-01	1.00E+00	1.13E+00	1.00E+00	7.06E-01
Middle Marsh (0-2")																						**Maximum HQ (Western Upper Marsh, 6-12")**	**8.13E+00**
MMSD-201 (0-2")	7.94E-02	NA	NA	NA	NA	5.00E-02	1.96E+00	1.86E+01	9.31E-01	2.94E-02	3.16E+01	3.00E+02	8.82E+00	2.62E-03	9.50E+00	2.49E-02	3.85E-01	1.14E+00	3.30E+00	1.00E+00	1.13E+00	1.00E+00	3.29E+00
MMSD-202 (0-2")	7.94E-02	NA	NA	NA	NA	5.00E-02	1.96E+00	2.16E+00	1.08E-01	2.94E-02	3.16E+01	3.48E+01	1.02E+00	2.62E-03	1.10E+00	2.88E-03	3.85E-01	1.14E+00	3.82E-01	1.00E+00	1.13E+00	1.00E+00	3.81E-01
Middle Marsh (2-6")																						**Maximum HQ (Middle Marsh, 0-2")**	**3.29E+00**
MMSD-201 (2-6")	7.94E-02	NA	NA	NA	NA	5.00E-02	1.96E+00	2.90E+01	1.45E+00	2.94E-02	3.16E+01	4.68E+02	1.37E+01	2.62E-03	1.48E+01	3.88E-02	3.85E-01	1.14E+00	5.13E+00	1.00E+00	1.13E+00	1.00E+00	5.12E+00
MMSD-202 (2-6")	7.94E-02	NA	NA	NA	NA	5.00E-02	1.96E+00	2.55E+00	1.27E-01	2.94E-02	3.16E+01	4.11E+01	1.21E+00	2.62E-03	1.30E+00	3.40E-03	3.85E-01	1.14E+00	4.51E-01	1.00E+00	1.13E+00	1.00E+00	4.50E-01
Middle Marsh (6-12")																						**Maximum HQ (Middle Marsh, 2-6")**	**5.12E+00**
MMSD-201 (6-12")	7.94E-02	NA	NA	NA	NA	5.00E-02	1.96E+00	3.61E+01	1.80E+00	2.94E-02	3.16E+01	5.81E+02	1.71E+01	2.62E-03	1.84E+01	4.82E-02	3.85E-01	1.14E+00	6.38E+00	1.00E+00	1.13E+00	1.00E+00	6.37E+00
MMSD-202 (6-12")	7.94E-02	NA	NA	NA	NA	5.00E-02	1.96E+00	2.74E+00	1.37E-01	2.94E-02	3.16E+01	4.42E+01	1.30E+00	2.62E-03	1.40E+00	3.67E-03	3.85E-01	1.14E+00	4.86E-01	1.00E+00	1.13E+00	1.00E+00	4.85E-01
Lower Marsh (0-2")																						**Maximum HQ (Middle Marsh, 6-12")**	**6.37E+00**
LMSD-201 (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
LMSD-202 (0-2")	7.94E-02	NA	NA	NA	NA	5.00E-02	1.96E+00	2.94E+00	1.47E-01	2.94E-02	3.16E+01	4.74E+01	1.39E+00	2.62E-03	1.50E+00	3.93E-03	3.85E-01	1.14E+00	5.20E-01	1.00E+00	1.13E+00	1.00E+00	5.19E-01
LMSD-203 (0-2")	7.94E-02	NA	NA	NA	NA	5.00E-02	1.96E+00	1.18E+00	5.88E-02	2.94E-02	3.16E+01	1.90E+01	5.57E-01	2.62E-03	6.00E-01	1.57E-03	3.85E-01	1.14E+00	2.08E-01	1.00E+00	1.13E+00	1.00E+00	2.08E-01
LMSD-204 (0-2")	7.94E-02	NA	NA	NA	NA	5.00E-02	1.96E+00	1.96E+00	9.80E-02	2.94E-02	3.16E+01	3.16E+01	9.28E-01	2.62E-03	1.00E+00	2.62E-03	3.85E-01	1.14E+00	3.47E-01	1.00E+00	1.13E+00	1.00E+00	3.46E-01
Lower Marsh (2-6")																						**Maximum HQ (Lower Marsh, 0-2")**	**5.19E-01**
LMSD-201 (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
LMSD-202 (2-6")	7.94E-02	NA	NA	NA	NA	5.00E-02	1.96E+00	2.35E+00	1.18E-01	2.94E-02	3.16E+01	3.79E+01	1.11E+00	2.62E-03	1.20E+00	3.14E-03	3.85E-01	1.14E+00	4.16E-01	1.00E+00	1.13E+00	1.00E+00	4.15E-01
LMSD-203 (2-6")	7.94E-02	NA	NA	NA	NA	5.00E-02	1.96E+00	1.57E+00	7.84E-02	2.94E-02	3.16E+01	2.53E+01	7.42E-01	2.62E-03	8.00E-01	2.10E-03	3.85E-01	1.14E+00	2.78E-01	1.00E+00	1.13E+00	1.00E+00	2.77E-01
LMSD-204 (2-6")	7.94E-02	NA	NA	NA	NA	5.00E-02	1.96E+00	1.57E+00	7.84E-02	2.94E-02	3.16E+01	2.53E+01	7.42E-01	2.62E-03	8.00E-01	2.10E-03	3.85E-01	1.14E+00	2.78E-01	1.00E+00	1.13E+00	1.00E+00	2.77E-01
Lower Marsh (6-12")																						**Maximum HQ (Lower Marsh, 2-6")**	**4.15E-01**
LMSD-201 (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
LMSD-202 (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
LMSD-203 (6-12")	7.94E-02	NA	NA	NA	NA	5.00E-02	1.96E+00	5.49E+00	2.74E-01	2.94E-02	3.16E+01	8.85E+01	2.60E+00	2.62E-03	2.80E+00	7.33E-03	3.85E-01	1.14E+00	9.71E-01	1.00E+00	1.13E+00	1.00E+00	9.69E-01
LMSD-204 (6-12")	7.94E-02	NA	NA	NA	NA	5.00E-02	1.96E+00	1.18E+00	5.88E-02	2.94E-02	3.16E+01	1.90E+01	5.57E-01	2.62E-03	6.00E-01	1.57E-03	3.85E-01	1.14E+00	2.08E-01	1.00E+00	1.13E+00	1.00E+00	2.08E-01
																						Maximum HQ (Lower Marsh, 6-12")	**9.69E-01**
Muskrat (Herbivorous Mammals)																							
Reference Sites																							
BRSD-5 (0-2")	6.27E-02	NA	NA	NA	NA	6.27E-02	5.05E+00	3.13E+00	1.96E-01	NA	NA	NA	NA	1.51E-03	6.19E-01	9.32E-04	1.00E+00	8.73E-01	2.26E-01	2.64E+00	3.14E-02	2.16E+00	1.04E-01
BRSD-5 (2-6")	6.27E-02	NA	NA	NA	NA	6.27E-02	5.05E+00	2.63E+00	1.65E-01	NA	NA	NA	NA	1.51E-03	5.21E-01	7.84E-04	1.00E+00	8.73E-01	1.90E-01	2.64E+00	3.14E-02	2.16E+00	8.78E-02
BRSD-5 (6-12")	6.27E-02	NA	NA	NA	NA	6.27E-02	5.05E+00	2.38E+00	1.49E-01	NA	NA	NA	NA	1.51E-03	4.71E-01	7.09E-04	1.00E+00	8.73E-01	1.72E-01	2.64E+00	3.14E-02	2.16E+00	7.94E-02
PGBG-1 (0-2")	6.27E-02	NA	NA	NA	NA	6.27E-02	5.05E+00	7.63E+00	4.78E-01	NA	NA	NA	NA	1.51E-03	1.51E+00	2.27E-03	1.00E+00	8.73E-01	5.51E-01	2.64E+00	3.14E-02	2.16E+00	2.55E-01
PGBG-1 (2-6")	6.27E-02	NA	NA	NA	NA	6.27E-02	5.05E+00	7.27E+00	4.56E-01	NA	NA	NA	NA	1.51E-03	1.44E+00	2.17E-03	1.00E+00	8.73E-01	5.25E-01	2.64E+00	3.14E-02	2.16E+00	2.43E-01
PGBG-1 (6-12")	6.27E-02	NA	NA	NA	NA	6.27E-02	5.05E+00	3.28E+00	2.06E-01	NA	NA	NA	NA	1.51E-03	6.49E-01	9.77E-04	1.00E+00	8.73E-01	2.37E-01	2.64E+00	3.14E-02	2.16E+00	1.09E-01
PGBG-2 (0-2")	6.27E-02	NA	NA	NA	NA	6.27E-02	5.05E+00	9.29E+00	5.83E-01	NA	NA	NA	NA	1.51E-03	1.84E+00	2.77E-03	1.00E+00	8.73E-01	6.71E-01	2.64E+00	3.14E-02	2.16E+00	3.10E-01
PGBG-2 (2-6")	6.27E-02	NA	NA	NA	NA	6.27E-02	5.05E+00	7.78E+00	4.88E-01	NA	NA	NA	NA	1.51E-03	1.54E+00	2.32E-03	1.00E+00	8.73E-01	5.62E-01	2.64E+00	3.14E-02	2.16E+00	2.60E-01
PGBG-2 (6-12")	6.27E-02	NA	NA	NA	NA	6.27E-02	5.05E+00	7.93E+00	4.97E-01	NA	NA	NA	NA	1.51E-03	1.57E+00	2.36E-03	1.00E+00	8.73E-01	5.72E-01	2.64E+00	3.14E-02	2.16E+00	2.65E-01
Eastern Upper Marsh (0-2")																						**Minimum HQ (Reference Sites)**	**7.94E-02**
UM-1000S-3500E (0-2")	6.27E-02	NA	NA	NA	NA	6.27E-02	2.05E+00	4.50E+00	2.82E-01	NA	NA	NA	NA	1.51E-03	2.19E+00	3.30E-03	1.00E+00	8.73E-01	3.27E-01	2.64E+00	3.14E-02	2.16E+00	1.51E-01
BRSD-15 (0-2")	6.27E-02	NA	NA	NA	NA	6.27E-02	2.05E+00	3.12E+00	1.96E-01	NA	NA	NA	NA	1.51E-03	1.52E+00	2.29E-03	1.00E+00	8.73E-01	2.27E-01	2.64E+00	3.14E-02	2.16E+00	1.05E-01
BRSD-4 (0-2")	6.27E-02	NA	NA	NA	NA	6.27E-02	2.05E+00	1.56E+00	9.77E-02	NA	NA	NA	NA	1.51E-03	7.59E-01	1.14E-03	1.00E+00	8.73E-01	1.13E-01	2.64E+00	3.14E-02	2.16E+00	5.24E-02
UM-750S-3500E (0-2")	6.27E-02	NA	NA	NA	NA	6.27E-02	2.05E+00	1.64E+01	1.03E+00	NA	NA	NA	NA	1.51E-03	8.00E+00	1.20E-02	1.00E+00	8.73E-01	1.19E+00	2.64E+00	3.14E-02	2.16E+00	5.52E-01

TABLE C-12CB: CADMIUM DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 12 - MARSH, WETLAND RECEPTORS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 118.73

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Muskrat (Herbivorous Mammals)																							
BRSD-16 (0-2")	6.27E-02	NA	NA	NA	NA	6.27E-02	2.05E+00	1.07E+01	6.68E-01	NA	NA	NA	NA	1.51E-03	5.19E+00	7.81E-03	1.00E+00	8.73E-01	7.75E-01	2.64E+00	3.14E-02	2.16E+00	3.58E-01
UM-750S-3000E (0-2")	6.27E-02	NA	NA	NA	NA	6.27E-02	2.05E+00	2.20E+01	1.38E+00	NA	NA	NA	NA	1.51E-03	1.07E+01	1.61E-02	1.00E+00	8.73E-01	1.60E+00	2.64E+00	3.14E-02	2.16E+00	7.38E-01
BRSD-3 (0-2")	6.27E-02	NA	NA	NA	NA	6.27E-02	2.05E+00	7.43E+00	4.66E-01	NA	NA	NA	NA	1.51E-03	3.62E+00	5.45E-03	1.00E+00	8.73E-01	5.40E-01	2.64E+00	3.14E-02	2.16E+00	2.50E-01
UM-500S-3250E (0-2")	6.27E-02	NA	NA	NA	NA	6.27E-02	2.05E+00	5.73E+00	3.59E-01	NA	NA	NA	NA	1.51E-03	2.79E+00	4.20E-03	1.00E+00	8.73E-01	4.16E-01	2.64E+00	3.14E-02	2.16E+00	1.93E-01
UM-500S-3000E (0-2")	6.27E-02	NA	NA	NA	NA	6.27E-02	2.05E+00	1.87E+01	1.17E+00	NA	NA	NA	NA	1.51E-03	9.10E+00	1.37E-02	1.00E+00	8.73E-01	1.36E+00	2.64E+00	3.14E-02	2.16E+00	6.28E-01
UM-500S-2750E (0-2")	6.27E-02	NA	NA	NA	NA	6.27E-02	2.05E+00	2.26E+01	1.42E+00	NA	NA	NA	NA	1.51E-03	1.10E+01	1.66E-02	1.00E+00	8.73E-01	1.64E+00	2.64E+00	3.14E-02	2.16E+00	7.59E-01
BRSD-25 (0-2")	6.27E-02	NA	NA	NA	NA	6.27E-02	2.05E+00	1.28E+01	8.05E-01	NA	NA	NA	NA	1.51E-03	6.25E+00	9.41E-03	1.00E+00	8.73E-01	9.33E-01	2.64E+00	3.14E-02	2.16E+00	4.31E-01
UM-250S-3000E (0-2")	6.27E-02	NA	NA	NA	NA	6.27E-02	2.05E+00	3.67E+01	2.31E+00	NA	NA	NA	NA	1.51E-03	1.79E+01	2.69E-02	1.00E+00	8.73E-01	2.67E+00	2.64E+00	3.14E-02	2.16E+00	1.24E+00
UM-250S-3250E (0-2")	6.27E-02	NA	NA	NA	NA	6.27E-02	2.05E+00	2.94E+01	1.84E+00	NA	NA	NA	NA	1.51E-03	1.43E+01	2.15E-02	1.00E+00	8.73E-01	2.13E+00	2.64E+00	3.14E-02	2.16E+00	9.87E-01
BRSD-24 (0-2")	6.27E-02	NA	NA	NA	NA	6.27E-02	2.05E+00	2.81E+01	1.76E+00	NA	NA	NA	NA	1.51E-03	1.37E+01	2.06E-02	1.00E+00	8.73E-01	2.04E+00	2.64E+00	3.14E-02	2.16E+00	9.45E-01
UM-250S-2750E (0-2")	6.27E-02	NA	NA	NA	NA	6.27E-02	2.05E+00	1.45E+01	9.08E-01	NA	NA	NA	NA	1.51E-03	7.05E+00	1.06E-02	1.00E+00	8.73E-01	1.05E+00	2.64E+00	3.14E-02	2.16E+00	4.87E-01
UM-250S-2500E (0-2")	6.27E-02	NA	NA	NA	NA	6.27E-02	2.05E+00	6.06E+00	3.80E-01	NA	NA	NA	NA	1.51E-03	2.95E+00	4.44E-03	1.00E+00	8.73E-01	4.40E-01	2.64E+00	3.14E-02	2.16E+00	2.04E-01
UM-0N-2500E (0-2")	6.27E-02	NA	NA	NA	NA	6.27E-02	2.05E+00	4.74E+01	2.97E+00	NA	NA	NA	NA	1.51E-03	2.31E+01	3.48E-02	1.00E+00	8.73E-01	3.45E+00	2.64E+00	3.14E-02	2.16E+00	1.59E+00
UM-0N-250E (0-2")	6.27E-02	NA	NA	NA	NA	6.27E-02	2.05E+00	3.94E+01	2.47E+00	NA	NA	NA	NA	1.51E-03	1.92E+01	2.89E-02	1.00E+00	8.73E-01	2.87E+00	2.64E+00	3.14E-02	2.16E+00	1.33E+00
BRSD-2 (0-2")	6.27E-02	NA	NA	NA	NA	6.27E-02	2.05E+00	2.11E+01	1.33E+00	NA	NA	NA	NA	1.51E-03	1.03E+01	1.55E-02	1.00E+00	8.73E-01	1.54E+00	2.64E+00	3.14E-02	2.16E+00	7.11E-01
UM-500N-2500E (0-2")	6.27E-02	NA	NA	NA	NA	6.27E-02	2.05E+00	3.61E+00	2.27E-01	NA	NA	NA	NA	1.51E-03	1.76E+00	2.65E-03	1.00E+00	8.73E-01	2.63E-01	2.64E+00	3.14E-02	2.16E+00	1.21E-01
UM-250N-2500E (0-2")	6.27E-02	NA	NA	NA	NA	6.27E-02	2.05E+00	2.94E+01	1.84E+00	NA	NA	NA	NA	1.51E-03	1.43E+01	2.15E-02	1.00E+00	8.73E-01	2.13E+00	2.64E+00	3.14E-02	2.16E+00	9.87E-01
UM-250N-2250E (0-2")	6.27E-02	NA	NA	NA	NA	6.27E-02	2.05E+00	2.46E+01	1.55E+00	NA	NA	NA	NA	1.51E-03	1.20E+01	1.81E-02	1.00E+00	8.73E-01	1.79E+00	2.64E+00	3.14E-02	2.16E+00	8.28E-01
Western Upper Marsh (0-2")																						**Maximum HQ (Eastern Upper Marsh, 0-2")**	**1.59E+00**
UM-500S-2500E (0-2")	6.27E-02	NA	NA	NA	NA	6.27E-02	1.96E+00	2.45E+00	1.54E-01	NA	NA	NA	NA	1.51E-03	1.25E+00	1.88E-03	1.00E+00	8.73E-01	1.78E-01	2.64E+00	3.14E-02	2.16E+00	8.24E-02
UM-0N-2000E (0-2")	6.27E-02	NA	NA	NA	NA	6.27E-02	1.96E+00	2.86E+01	1.80E+00	NA	NA	NA	NA	1.51E-03	1.46E+01	2.20E-02	1.00E+00	8.73E-01	2.08E+00	2.64E+00	3.14E-02	2.16E+00	9.63E-01
UM-500S-2000E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-250N-1750E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	5.52E-01	BB	BB	BB	BB	BB	BB	BB	BB
UM-250S-1500E (0-2")	6.27E-02	NA	NA	NA	NA	6.27E-02	1.96E+00	3.21E+01	2.02E+00	NA	NA	NA	NA	1.51E-03	1.64E+01	2.47E-02	1.00E+00	8.73E-01	2.34E+00	2.64E+00	3.14E-02	2.16E+00	1.08E+00
UM-250S-1250E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-6 (0-2")	6.27E-02	NA	NA	NA	NA	6.27E-02	1.96E+00	1.92E+00	1.21E-01	NA	NA	NA	NA	1.51E-03	9.82E-01	1.48E-03	1.00E+00	8.73E-01	1.40E-01	2.64E+00	3.14E-02	2.16E+00	6.47E-02
UM-0N-1000E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-750E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-500E (0-2")	6.27E-02	NA	NA	NA	NA	6.27E-02	1.96E+00	4.12E+00	2.58E-01	NA	NA	NA	NA	1.51E-03	2.10E+00	3.16E-03	1.00E+00	8.73E-01	2.99E-01	2.64E+00	3.14E-02	2.16E+00	1.38E-01
UM-250S-500E (0-2")	6.27E-02	NA	NA	NA	NA	6.27E-02	1.96E+00	1.70E+00	1.07E-01	NA	NA	NA	NA	1.51E-03	8.68E-01	1.31E-03	1.00E+00	8.73E-01	1.24E-01	2.64E+00	3.14E-02	2.16E+00	5.72E-02
UM-250S-250E (0-2")	6.27E-02	NA	NA	NA	NA	6.27E-02	1.96E+00	1.59E+00	9.95E-02	NA	NA	NA	NA	1.51E-03	8.09E-01	1.22E-03	1.00E+00	8.73E-01	1.15E-01	2.64E+00	3.14E-02	2.16E+00	5.33E-02
BRSD-7 (0-2")	6.27E-02	NA	NA	NA	NA	6.27E-02	1.96E+00	3.59E+00	2.25E-01	NA	NA	NA	NA	1.51E-03	1.83E+00	2.76E-03	1.00E+00	8.73E-01	2.61E-01	2.64E+00	3.14E-02	2.16E+00	1.21E-01
BRSD-8 (0-2")	6.27E-02	NA	NA	NA	NA	6.27E-02	1.96E+00	1.11E+01	6.94E-01	NA	NA	NA	NA	1.51E-03	5.64E+00	8.49E-03	1.00E+00	8.73E-01	8.04E-01	2.64E+00	3.14E-02	2.16E+00	3.72E-01
UM-500S-500E (0-2")	6.27E-02	NA	NA	NA	NA	6.27E-02	1.96E+00	2.08E+00	1.30E-01	NA	NA	NA	NA	1.51E-03	1.06E+00	1.60E-03	1.00E+00	8.73E-01	1.51E-01	2.64E+00	3.14E-02	2.16E+00	6.99E-02
BRSD-9 (0-2")	6.27E-02	NA	NA	NA	NA	6.27E-02	1.96E+00	9.62E+00	6.04E-01	NA	NA	NA	NA	1.51E-03	4.91E+00	7.39E-03	1.00E+00	8.73E-01	7.00E-01	2.64E+00	3.14E-02	2.16E+00	3.24E-01
BRSD-10 (0-2")	6.27E-02	NA	NA	NA	NA	6.27E-02	1.96E+00	3.53E+01	2.21E+00	NA	NA	NA	NA	1.51E-03	1.80E+01	2.71E-02	1.00E+00	8.73E-01	2.57E+00	2.64E+00	3.14E-02	2.16E+00	1.19E+00
BRSD-11 (0-2")	6.27E-02	NA	NA	NA	NA	6.27E-02	1.96E+00	1.09E+01	6.82E-01	NA	NA	NA	NA	1.51E-03	5.55E+00	8.36E-03	1.00E+00	8.73E-01	7.91E-01	2.64E+00	3.14E-02	2.16E+00	3.66E-01
Eastern Upper Marsh (2-6")																						**Maximum HQ (Western Upper Marsh, 0-2")**	**1.19E+00**
UM-1000S-3500E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-15 (2-6")	6.27E-02	NA	NA	NA	NA	6.27E-02	2.05E+00	2.65E+00	1.66E-01	NA	NA	NA	NA	1.51E-03	1.29E+00	1.94E-03	1.00E+00	8.73E-01	1.93E-01	2.64E+00	3.14E-02	2.16E+00	8.90E-02
BRSD-4 (2-6")	6.27E-02	NA	NA	NA	NA	6.27E-02	2.05E+00	1.38E+00	8.64E-02	NA	NA	NA	NA	1.51E-03	6.71E-01	1.01E-03	1.00E+00	8.73E-01	1.00E-01	2.64E+00	3.14E-02	2.16E+00	4.63E-02
UM-750S-3500E (2-6")	6.27E-02	NA	NA	NA	NA	6.27E-02	2.05E+00	2.71E+01	1.70E+00	NA	NA	NA	NA	1.51E-03	1.32E+01	1.99E-02	1.00E+00	8.73E-01	1.97E+00	2.64E+00	3.14E-02	2.16E+00	9.11E-01
BRSD-16 (2-6")	6.27E-02	NA	NA	NA	NA	6.27E-02	2.05E+00	7.12E+01	4.47E+00	NA	NA	NA	NA	1.51E-03	3.47E+01	5.22E-02	1.00E+00	8.73E-01	5.18E+00	2.64E+00	3.14E-02	2.16E+00	2.39E+00
UM-750S-3000E (2-6")	6.27E-02	NA	NA	NA	NA	6.27E-02	2.05E+00	1.87E+01	1.17E+00	NA	NA	NA	NA	1.51E-03	9.12E+00	1.37E-02	1.00E+00	8.73E-01	1.36E+00	2.64E+00	3.14E-02	2.16E+00	6.29E-01
BRSD-3 (2-6")	6.27E-02	NA	NA	NA	NA	6.27E-02	2.05E+00	9.90E+00	6.21E-01	NA	NA	NA	NA	1.51E-03	4.82E+00	7.26E-03	1.00E+00	8.73E-01	7.19E-01	2.64E+00	3.14E-02	2.16E+00	3.33E-01
UM-500S-3250E (2-6")	6.27E-02	NA	NA	NA	NA	6.27E-02	2.05E+00	1.69E+00	1.06E-01	NA	NA	NA	NA	1.51E-03	8.24E-01	1.24E-03	1.00E+00	8.73E-01	1.23E-01	2.64E+00	3.14E-02	2.16E+00	5.69E-02
UM-500S-3000E (2-6")	6.27E-02	NA	NA	NA	NA	6.27E-02	2.05E+00	3.74E+00	2.34E-01	NA	NA	NA	NA	1.51E-03	1.82E+00	2.74E-03	1.00E+00	8.73E-01	2.72E-01	2.64E+00	3.14E-02	2.16E+00	1.26E-01
UM-500S-2750E (2-6")	6.27E-02	NA	NA	NA	NA	6.27E-02	2.05E+00	1.81E+01	1.13E+00	NA	NA	NA	NA	1.51E-03	8.80E+00	1.32E-02	1.00E+00	8.73E-01	1.31E+00	2.64E+00	3.14E-02	2.16E+00	6.07E-01
BRSD-25 (2-6")	6.27E-02	NA	NA	NA	NA	6.27E-02	2.05E+00	1.81E+01	1.14E+00	NA	NA	NA	NA	1.51E-03	8.84E+00	1.33E-02	1.00E+00	8.73E-01	1.32E+00	2.64E+00	3.14E-02	2.16E+00	6.10E-01
UM-250S-3000E (2-6")	6.27E-02	NA	NA	NA	NA	6.27E-02	2.05E+00	4.25E+01	2.67E+00	NA	NA	NA	NA	1.51E-03	2.07E+01	3.12E-02	1.00E+00	8.73E-01	3.09E+00	2.64E+00	3.14E-02	2.16E+00	1.43E+00
UM-250S-3250E (2-6")	6.27E-02	NA	NA	NA	NA	6.27E-02	2.05E+00	6.71E+00	4.21E-01	NA	NA	NA	NA	1.51E-03	3.27E+00	4.92E-03	1.00E+00	8.73E-01	4.88E-01	2.64E+00	3.14E-02	2.16E+00	2.26E-01
BRSD-24 (2-6")	6.27E-02	NA	NA	NA	NA	6.27E-02	2.05E+00	5.75E+01	3.61E+00	NA	NA	NA	NA	1.51E-03	2.80E+01	4.22E-02	1.00E+00	8.73E-01	4.18E+00	2.64E+00	3.14E-02	2.16E+00	1.93E+00
UM-250S-2750E (2-6")	6.27E-02	NA	NA	NA	NA	6.27E-02	2.05E+00	2.79E+01	1.75E+00	NA	NA	NA	NA	1.51E-03	1.36E+01	2.05E-02	1.00E+00	8.73E-01	2.03E+00	2.64E+00	3.14E-02	2.16E+00	9.39E-01
UM-0N-2500E (2-6")	6.27E-02	NA	NA	NA	NA	6.27E-02	2.05E+00	2.00E+01	1.25E+00	NA	NA	NA	NA	1.51E-03	9.73E+00	1.46E-02	1.00E+00	8.73E-01	1.45E+00	2.64E+00	3.14E-02	2.16E+00	6.71E-01
BRSD-2 (2-6")	6.27E-02	NA	NA	NA	NA	6.27E-02	2.05E+00	3.47E+01	2.18E+00	NA	NA	NA	NA	1.51E-03	1.69E+01	2.54E-02	1.00E+00	8.73E-01	2.52E+00	2.64E+00	3.14E-02	2.16E+00	1.17E+00

TABLE C-12CB: CADMIUM DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 12 - MARSH, WETLAND RECEPTORS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 118.73

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Muskrat (Herbivorous Mammals)																							
UM-500N-2500E (2-6")	6.27E-02	NA	NA	NA	NA	6.27E-02	2.05E+00	3.26E+00	2.05E-01	NA	NA	NA	NA	1.51E-03	1.59E+00	2.39E-03	1.00E+00	8.73E-01	2.37E-01	2.64E+00	3.14E-02	2.16E+00	1.10E-01
UM-250N-2500E (2-6")	6.27E-02	NA	NA	NA	NA	6.27E-02	2.05E+00	2.96E+01	1.85E+00	NA	NA	NA	NA	1.51E-03	1.44E+01	2.17E-02	1.00E+00	8.73E-01	2.15E+00	2.64E+00	3.14E-02	2.16E+00	9.94E-01
UM-250N-2250E (2-6")	6.27E-02	NA	NA	NA	NA	6.27E-02	2.05E+00	6.94E+00	4.35E-01	NA	NA	NA	NA	1.51E-03	3.38E+00	5.09E-03	1.00E+00	8.73E-01	5.04E-01	2.64E+00	3.14E-02	2.16E+00	2.33E-01
Western Upper Marsh (2-6")																						**Maximum HQ (Eastern Upper Marsh, 2-6")**	**2.39E+00**
UM-500S-2500E (2-6")	6.27E-02	NA	NA	NA	NA	6.27E-02	1.96E+00	1.45E+00	9.08E-02	NA	NA	NA	NA	1.51E-03	7.38E-01	1.11E-03	1.00E+00	8.73E-01	1.05E-01	2.64E+00	3.14E-02	2.16E+00	4.87E-02
UM-0N-2000E (2-6")	6.27E-02	NA	NA	NA	NA	6.27E-02	1.96E+00	2.45E+01	1.54E+00	NA	NA	NA	NA	1.51E-03	1.25E+01	1.88E-02	1.00E+00	8.73E-01	1.78E+00	2.64E+00	3.14E-02	2.16E+00	8.24E-01
UM-500S-2000E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	5.48E-01	BB	BB	BB	BB	BB	BB	BB	BB
UM-250N-1750E (2-6")	6.27E-02	NA	NA	NA	NA	6.27E-02	1.96E+00	1.88E+00	1.18E-01	NA	NA	NA	NA	1.51E-03	9.58E-01	1.44E-03	1.00E+00	8.73E-01	1.37E-01	2.64E+00	3.14E-02	2.16E+00	6.32E-02
UM-0N-1500E (2-6")	6.27E-02	NA	NA	NA	NA	6.27E-02	1.96E+00	2.22E+00	1.39E-01	NA	NA	NA	NA	1.51E-03	1.13E+00	1.70E-03	1.00E+00	8.73E-01	1.61E-01	2.64E+00	3.14E-02	2.16E+00	7.45E-02
UM-250S-1500E (2-6")	6.27E-02	NA	NA	NA	NA	6.27E-02	1.96E+00	2.51E+01	1.57E+00	NA	NA	NA	NA	1.51E-03	1.28E+01	1.93E-02	1.00E+00	8.73E-01	1.83E+00	2.64E+00	3.14E-02	2.16E+00	8.44E-01
UM-250S-1250E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-6 (2-6")	6.27E-02	NA	NA	NA	NA	6.27E-02	1.96E+00	1.76E+00	1.10E-01	NA	NA	NA	NA	1.51E-03	8.98E-01	1.35E-03	1.00E+00	8.73E-01	1.28E-01	2.64E+00	3.14E-02	2.16E+00	5.92E-02
UM-0N-1000E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-750E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-500E (2-6")	6.27E-02	NA	NA	NA	NA	6.27E-02	1.96E+00	1.53E+02	9.59E+00	NA	NA	NA	NA	1.51E-03	7.80E+01	1.17E-01	1.00E+00	8.73E-01	1.11E+01	2.64E+00	3.14E-02	2.16E+00	5.14E+00
UM-250S-500E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	6.44E-01	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-250E (2-6")	6.27E-02	NA	NA	NA	NA	6.27E-02	1.96E+00	6.90E+00	4.33E-01	NA	NA	NA	NA	1.51E-03	3.52E+00	5.30E-03	1.00E+00	8.73E-01	5.02E-01	2.64E+00	3.14E-02	2.16E+00	2.32E-01
UM-250S-250E (2-6")	6.27E-02	NA	NA	NA	NA	6.27E-02	1.96E+00	2.74E+00	1.72E-01	NA	NA	NA	NA	1.51E-03	1.40E+00	2.11E-03	1.00E+00	8.73E-01	2.00E-01	2.64E+00	3.14E-02	2.16E+00	9.23E-02
BRSD-7 (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-8 (2-6")	6.27E-02	NA	NA	NA	NA	6.27E-02	1.96E+00	1.69E+01	1.06E+00	NA	NA	NA	NA	1.51E-03	8.60E+00	1.29E-02	1.00E+00	8.73E-01	1.23E+00	2.64E+00	3.14E-02	2.16E+00	5.67E-01
UM-500S-500E (2-6")	6.27E-02	NA	NA	NA	NA	6.27E-02	1.96E+00	1.49E+00	9.35E-02	NA	NA	NA	NA	1.51E-03	7.60E-01	1.14E-03	1.00E+00	8.73E-01	1.08E-01	2.64E+00	3.14E-02	2.16E+00	5.01E-02
BRSD-9 (2-6")	6.27E-02	NA	NA	NA	NA	6.27E-02	1.96E+00	4.78E+00	3.00E-01	NA	NA	NA	NA	1.51E-03	2.44E+00	3.67E-03	1.00E+00	8.73E-01	3.48E-01	2.64E+00	3.14E-02	2.16E+00	1.61E-01
BRSD-10 (2-6")	6.27E-02	NA	NA	NA	NA	6.27E-02	1.96E+00	3.10E+01	1.94E+00	NA	NA	NA	NA	1.51E-03	1.58E+01	2.38E-02	1.00E+00	8.73E-01	2.25E+00	2.64E+00	3.14E-02	2.16E+00	1.04E+00
BRSD-11 (2-6")	6.27E-02	NA	NA	NA	NA	6.27E-02	1.96E+00	4.96E+00	3.11E-01	NA	NA	NA	NA	1.51E-03	2.53E+00	3.81E-03	1.00E+00	8.73E-01	3.61E-01	2.64E+00	3.14E-02	2.16E+00	1.67E-01
Eastern Upper Marsh (6-12")																						**Maximum HQ (Western Upper Marsh, 2-6")**	**5.14E+00**
UM-1000S-3500E (6-12")	6.27E-02	NA	NA	NA	NA	6.27E-02	2.05E+00	2.03E+00	1.27E-01	NA	NA	NA	NA	1.51E-03	9.89E-01	1.49E-03	1.00E+00	8.73E-01	1.48E-01	2.64E+00	3.14E-02	2.16E+00	6.83E-02
BRSD-15 (6-12")	6.27E-02	NA	NA	NA	NA	6.27E-02	2.05E+00	3.59E+00	2.25E-01	NA	NA	NA	NA	1.51E-03	1.75E+00	2.63E-03	1.00E+00	8.73E-01	2.61E-01	2.64E+00	3.14E-02	2.16E+00	1.21E-01
BRSD-4 (6-12")	6.27E-02	NA	NA	NA	NA	6.27E-02	2.05E+00	3.06E+00	1.92E-01	NA	NA	NA	NA	1.51E-03	1.49E+00	2.24E-03	1.00E+00	8.73E-01	2.22E-01	2.64E+00	3.14E-02	2.16E+00	1.03E-01
UM-750S-3500E (6-12")	6.27E-02	NA	NA	NA	NA	6.27E-02	2.05E+00	3.76E+01	2.36E+00	NA	NA	NA	NA	1.51E-03	1.83E+01	2.76E-02	1.00E+00	8.73E-01	2.73E+00	2.64E+00	3.14E-02	2.16E+00	1.26E+00
BRSD-16 (6-12")	6.27E-02	NA	NA	NA	NA	6.27E-02	2.05E+00	3.70E+01	2.32E+00	NA	NA	NA	NA	1.51E-03	1.80E+01	2.71E-02	1.00E+00	8.73E-01	2.69E+00	2.64E+00	3.14E-02	2.16E+00	1.24E+00
UM-750S-3000E (6-12")	6.27E-02	NA	NA	NA	NA	6.27E-02	2.05E+00	1.87E+01	1.18E+00	NA	NA	NA	NA	1.51E-03	9.13E+00	1.37E-02	1.00E+00	8.73E-01	1.36E+00	2.64E+00	3.14E-02	2.16E+00	6.30E-01
BRSD-3 (6-12")	6.27E-02	NA	NA	NA	NA	6.27E-02	2.05E+00	4.80E+00	3.01E-01	NA	NA	NA	NA	1.51E-03	2.34E+00	3.52E-03	1.00E+00	8.73E-01	3.49E-01	2.64E+00	3.14E-02	2.16E+00	1.61E-01
UM-500S-3250E (6-12")	6.27E-02	NA	NA	NA	NA	6.27E-02	2.05E+00	2.36E+00	1.48E-01	NA	NA	NA	NA	1.51E-03	1.15E+00	1.73E-03	1.00E+00	8.73E-01	1.72E-01	2.64E+00	3.14E-02	2.16E+00	7.94E-02
UM-500S-3000E (6-12")	6.27E-02	NA	NA	NA	NA	6.27E-02	2.05E+00	3.57E+00	2.24E-01	NA	NA	NA	NA	1.51E-03	1.74E+00	2.62E-03	1.00E+00	8.73E-01	2.60E-01	2.64E+00	3.14E-02	2.16E+00	1.20E-01
UM-500S-2750E (6-12")	6.27E-02	NA	NA	NA	NA	6.27E-02	2.05E+00	1.46E+01	9.18E-01	NA	NA	NA	NA	1.51E-03	7.13E+00	1.07E-02	1.00E+00	8.73E-01	1.06E+00	2.64E+00	3.14E-02	2.16E+00	4.92E-01
BRSD-25 (6-12")	6.27E-02	NA	NA	NA	NA	6.27E-02	2.05E+00	1.58E+01	9.90E-01	NA	NA	NA	NA	1.51E-03	7.69E+00	1.16E-02	1.00E+00	8.73E-01	1.15E+00	2.64E+00	3.14E-02	2.16E+00	5.31E-01
UM-250S-3000E (6-12")	6.27E-02	NA	NA	NA	NA	6.27E-02	2.05E+00	3.08E+01	1.93E+00	NA	NA	NA	NA	1.51E-03	1.50E+01	2.26E-02	1.00E+00	8.73E-01	2.24E+00	2.64E+00	3.14E-02	2.16E+00	1.04E+00
UM-250S-3250E (6-12")	6.27E-02	NA	NA	NA	NA	6.27E-02	2.05E+00	7.14E+00	4.48E-01	NA	NA	NA	NA	1.51E-03	3.48E+00	5.24E-03	1.00E+00	8.73E-01	5.19E-01	2.64E+00	3.14E-02	2.16E+00	2.40E-01
BRSD-24 (6-12")	6.27E-02	NA	NA	NA	NA	6.27E-02	2.05E+00	2.94E+01	1.84E+00	NA	NA	NA	NA	1.51E-03	1.43E+01	2.15E-02	1.00E+00	8.73E-01	2.13E+00	2.64E+00	3.14E-02	2.16E+00	9.87E-01
UM-250S-2750E (6-12")	6.27E-02	NA	NA	NA	NA	6.27E-02	2.05E+00	3.14E+01	1.97E+00	NA	NA	NA	NA	1.51E-03	1.53E+01	2.30E-02	1.00E+00	8.73E-01	2.28E+00	2.64E+00	3.14E-02	2.16E+00	1.06E+00
UM-250S-2500E (6-12")	6.27E-02	NA	NA	NA	NA	6.27E-02	2.05E+00	2.53E+00	1.58E-01	NA	NA	NA	NA	1.51E-03	1.23E+00	1.85E-03	1.00E+00	8.73E-01	1.84E-01	2.64E+00	3.14E-02	2.16E+00	8.49E-02
BRSD-2 (6-12")	6.27E-02	NA	NA	NA	NA	6.27E-02	2.05E+00	5.58E+01	3.50E+00	NA	NA	NA	NA	1.51E-03	2.72E+01	4.10E-02	1.00E+00	8.73E-01	4.06E+00	2.64E+00	3.14E-02	2.16E+00	1.88E+00
UM-500N-2500E (6-12")	6.27E-02	NA	NA	NA	NA	6.27E-02	2.05E+00	1.66E+00	1.04E-01	NA	NA	NA	NA	1.51E-03	8.09E-01	1.22E-03	1.00E+00	8.73E-01	1.21E-01	2.64E+00	3.14E-02	2.16E+00	5.58E-02
UM-250N-2500E (6-12")	6.27E-02	NA	NA	NA	NA	6.27E-02	2.05E+00	2.55E+01	1.60E+00	NA	NA	NA	NA	1.51E-03	1.24E+01	1.87E-02	1.00E+00	8.73E-01	1.85E+00	2.64E+00	3.14E-02	2.16E+00	8.56E-01
UM-250N-2250E (6-12")	6.27E-02	NA	NA	NA	NA	6.27E-02	2.05E+00	4.09E+00	2.56E-01	NA	NA	NA	NA	1.51E-03	1.99E+00	3.00E-03	1.00E+00	8.73E-01	2.97E-01	2.64E+00	3.14E-02	2.16E+00	1.37E-01
Western Upper Marsh (6-12")																						**Maximum HQ (Eastern Upper Marsh, 6-12")**	**1.88E+00**
UM-500S-2500E (6-12")	6.27E-02	NA	NA	NA	NA	6.27E-02	1.96E+00	1.67E+00	1.05E-01	NA	NA	NA	NA	1.51E-03	8.51E-01	1.28E-03	1.00E+00	8.73E-01	1.21E-01	2.64E+00	3.14E-02	2.16E+00	5.61E-02
UM-0N-2000E (6-12")	6.27E-02	NA	NA	NA	NA	6.27E-02	1.96E+00	3.84E+01	2.41E+00	NA	NA	NA	NA	1.51E-03	1.96E+01	2.95E-02	1.00E+00	8.73E-01	2.79E+00	2.64E+00	3.14E-02	2.16E+00	1.29E+00
UM-500S-2000E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-250N-1750E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-1500E (6-12")	6.27E-02	NA	NA	NA	NA	6.27E-02	1.96E+00	5.31E+00	3.33E-01	NA	NA	NA	NA	1.51E-03	2.71E+00	4.08E-03	1.00E+00	8.73E-01	3.86E-01	2.64E+00	3.14E-02	2.16E+00	1.79E-01
UM-250S-1500E (6-12")	6.27E-02	NA	NA	NA	NA	6.27E-02	1.96E+00	6.14E+00	3.85E-01	NA	NA	NA	NA	1.51E-03	3.13E+00	4.71E-03	1.00E+00	8.73E-01	4.46E-01	2.64E+00	3.14E-02	2.16E+00	2.06E-01
UM-250S-1250E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-6 (6-12")	6.27E-02	NA	NA	NA	NA	6.27E-02	1.96E+00	1.89E+00	1.19E-01	NA	NA	NA	NA	1.51E-03	9.64E-01	1.45E-03	1.00E+00	8.73E-01	1.37E-01	2.64E+00	3.14E-02	2.16E+00	6.36E-02
UM-0N-1000E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-750E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-500E (6-12")	6.27E-02	NA	NA	NA	NA	6.27E-02	1.96E+00	2.61E+01	1.64E+00	NA	NA	NA	NA	1.51E-03	1.33E+01	2.00E-02	1.00E+00	8.73E-01	1.90E+00	2.64E+00	3.14E-02	2.16E+00	8.77E-01

TABLE C-12CB: CADMIUM DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 12 - MARSH, WETLAND RECEPTORS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 118.73

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Muskrat (Herbivorous Mammals)																							
UM-250S-500E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-250E (6-12")	6.27E-02	NA	NA	NA	NA	6.27E-02	1.96E+00	1.18E+01	7.39E-01	NA	NA	NA	NA	1.51E-03	6.01E+00	9.05E-03	1.00E+00	8.73E-01	8.57E-01	2.64E+00	3.14E-02	2.16E+00	3.96E-01
UM-250S-250E (6-12")	6.27E-02	NA	NA	NA	NA	6.27E-02	1.96E+00	1.82E+00	1.14E-01	NA	NA	NA	NA	1.51E-03	9.28E-01	1.40E-03	1.00E+00	8.73E-01	1.32E-01	2.64E+00	3.14E-02	2.16E+00	6.12E-02
BRSD-7 (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-8 (6-12")	6.27E-02	NA	NA	NA	NA	6.27E-02	1.96E+00	9.84E+00	6.17E-01	NA	NA	NA	NA	1.51E-03	5.02E+00	7.56E-03	1.00E+00	8.73E-01	7.16E-01	2.64E+00	3.14E-02	2.16E+00	3.31E-01
UM-500S-500E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	5.50E-01	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-9 (6-12")	6.27E-02	NA	NA	NA	NA	6.27E-02	1.96E+00	3.41E+00	2.14E-01	NA	NA	NA	NA	1.51E-03	1.74E+00	2.62E-03	1.00E+00	8.73E-01	2.48E-01	2.64E+00	3.14E-02	2.16E+00	1.15E-01
BRSD-10 (6-12")	6.27E-02	NA	NA	NA	NA	6.27E-02	1.96E+00	4.61E+01	2.89E+00	NA	NA	NA	NA	1.51E-03	2.35E+01	3.54E-02	1.00E+00	8.73E-01	3.35E+00	2.64E+00	3.14E-02	2.16E+00	1.55E+00
BRSD-11 (6-12")	6.27E-02	NA	NA	NA	NA	6.27E-02	1.96E+00	4.00E+00	2.51E-01	NA	NA	NA	NA	1.51E-03	2.04E+00	3.07E-03	1.00E+00	8.73E-01	2.91E-01	2.64E+00	3.14E-02	2.16E+00	1.35E-01
Middle Marsh (0-2")																						**Maximum HQ (Western Upper Marsh, 6-12")**	**1.55E+00**
MMSD-201 (0-2")	6.27E-02	NA	NA	NA	NA	6.27E-02	1.96E+00	1.86E+01	1.17E+00	NA	NA	NA	NA	1.51E-03	9.50E+00	1.43E-02	1.00E+00	8.73E-01	1.35E+00	2.64E+00	3.14E-02	2.16E+00	6.26E-01
MMSD-202 (0-2")	6.27E-02	NA	NA	NA	NA	6.27E-02	1.96E+00	2.16E+00	1.35E-01	NA	NA	NA	NA	1.51E-03	1.10E+00	1.66E-03	1.00E+00	8.73E-01	1.57E-01	2.64E+00	3.14E-02	2.16E+00	7.25E-02
Middle Marsh (2-6")																						**Maximum HQ (Middle Marsh, 0-2")**	**6.26E-01**
MMSD-201 (2-6")	6.27E-02	NA	NA	NA	NA	6.27E-02	1.96E+00	2.90E+01	1.82E+00	NA	NA	NA	NA	1.51E-03	1.48E+01	2.23E-02	1.00E+00	8.73E-01	2.11E+00	2.64E+00	3.14E-02	2.16E+00	9.76E-01
MMSD-202 (2-6")	6.27E-02	NA	NA	NA	NA	6.27E-02	1.96E+00	2.55E+00	1.60E-01	NA	NA	NA	NA	1.51E-03	1.30E+00	1.96E-03	1.00E+00	8.73E-01	1.85E-01	2.64E+00	3.14E-02	2.16E+00	8.57E-02
Middle Marsh (6-12")																						**Maximum HQ (Middle Marsh, 2-6")**	**9.76E-01**
MMSD-201 (6-12")	6.27E-02	NA	NA	NA	NA	6.27E-02	1.96E+00	3.61E+01	2.26E+00	NA	NA	NA	NA	1.51E-03	1.84E+01	2.77E-02	1.00E+00	8.73E-01	2.62E+00	2.64E+00	3.14E-02	2.16E+00	1.21E+00
MMSD-202 (6-12")	6.27E-02	NA	NA	NA	NA	6.27E-02	1.96E+00	2.74E+00	1.72E-01	NA	NA	NA	NA	1.51E-03	1.40E+00	2.11E-03	1.00E+00	8.73E-01	2.00E-01	2.64E+00	3.14E-02	2.16E+00	9.23E-02
Lower Marsh (0-2")																						**Maximum HQ (Middle Marsh, 6-12")**	**1.21E+00**
LMSD-201 (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
LMSD-202 (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
LMSD-203 (0-2")	6.27E-02	NA	NA	NA	NA	6.27E-02	1.96E+00	1.18E+00	7.38E-02	NA	NA	NA	NA	1.51E-03	6.00E-01	9.03E-04	1.00E+00	8.73E-01	8.55E-02	2.64E+00	3.14E-02	2.16E+00	3.96E-02
LMSD-204 (0-2")	6.27E-02	NA	NA	NA	NA	6.27E-02	1.96E+00	1.96E+00	1.23E-01	NA	NA	NA	NA	1.51E-03	1.00E+00	1.51E-03	1.00E+00	8.73E-01	1.43E-01	2.64E+00	3.14E-02	2.16E+00	6.59E-02
Lower Marsh (2-6")																						**Maximum HQ (Lower Marsh, 0-2")**	**6.59E-02**
LMSD-201 (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
LMSD-202 (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
LMSD-203 (2-6")	6.27E-02	NA	NA	NA	NA	6.27E-02	1.96E+00	1.57E+00	9.84E-02	NA	NA	NA	NA	1.51E-03	8.00E-01	1.20E-03	1.00E+00	8.73E-01	1.14E-01	2.64E+00	3.14E-02	2.16E+00	5.27E-02
LMSD-204 (2-6")	6.27E-02	NA	NA	NA	NA	6.27E-02	1.96E+00	1.57E+00	9.84E-02	NA	NA	NA	NA	1.51E-03	8.00E-01	1.20E-03	1.00E+00	8.73E-01	1.14E-01	2.64E+00	3.14E-02	2.16E+00	5.27E-02
Lower Marsh (6-12")																						**Maximum HQ (Lower Marsh, 2-6")**	**5.27E-02**
LMSD-201 (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
LMSD-202 (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
LMSD-203 (6-12")	6.27E-02	NA	NA	NA	NA	6.27E-02	1.96E+00	5.49E+00	3.44E-01	NA	NA	NA	NA	1.51E-03	2.80E+00	4.22E-03	1.00E+00	8.73E-01	3.99E-01	2.64E+00	3.14E-02	2.16E+00	1.85E-01
LMSD-204 (6-12")	6.27E-02	NA	NA	NA	NA	6.27E-02	1.96E+00	1.18E+00	7.38E-02	NA	NA	NA	NA	1.51E-03	6.00E-01	9.03E-04	1.00E+00	8.73E-01	8.55E-02	2.64E+00	3.14E-02	2.16E+00	3.96E-02
																						Maximum HQ (Lower Marsh, 6-12")	**1.85E-01**
Mink (Carnivorous Mammals)																							
Reference Sites																							
BRSD-5 (0-2")	4.25E-02	4.25E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	6.19E-01	2.63E-04	1.00E+00	8.52E-01	3.09E-04	2.64E+00	3.14E-02	2.17E+00	1.43E-04
BRSD-5 (2-6")	4.25E-02	4.25E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	5.21E-01	2.22E-04	1.00E+00	8.52E-01	2.60E-04	2.64E+00	3.14E-02	2.17E+00	1.20E-04
BRSD-5 (6-12")	4.25E-02	4.25E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	4.71E-01	2.00E-04	1.00E+00	8.52E-01	2.35E-04	2.64E+00	3.14E-02	2.17E+00	1.09E-04
PGBG-1 (0-2")	4.25E-02	4.25E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.51E+00	6.42E-04	1.00E+00	8.52E-01	7.54E-04	2.64E+00	3.14E-02	2.17E+00	3.48E-04
PGBG-1 (2-6")	4.25E-02	4.25E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.44E+00	6.13E-04	1.00E+00	8.52E-01	7.19E-04	2.64E+00	3.14E-02	2.17E+00	3.32E-04
PGBG-1 (6-12")	4.25E-02	4.25E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	6.49E-01	2.76E-04	1.00E+00	8.52E-01	3.24E-04	2.64E+00	3.14E-02	2.17E+00	1.50E-04
PGBG-2 (0-2")	4.25E-02	4.25E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.84E+00	7.83E-04	1.00E+00	8.52E-01	9.18E-04	2.64E+00	3.14E-02	2.17E+00	4.24E-04
PGBG-2 (2-6")	4.25E-02	4.25E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.54E+00	6.55E-04	1.00E+00	8.52E-01	7.69E-04	2.64E+00	3.14E-02	2.17E+00	3.55E-04
PGBG-2 (6-12")	4.25E-02	4.25E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.57E+00	6.68E-04	1.00E+00	8.52E-01	7.84E-04	2.64E+00	3.14E-02	2.17E+00	3.62E-04
Eastern Upper Marsh (0-2")																						**Minimum HQ (Reference Sites)**	**1.09E-04**
UM-1000S-3500E (0-2")	4.25E-02	4.25E-02	3.23E-01	7.07E-01	3.01E-02	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	2.19E+00	9.32E-04	1.00E+00	8.52E-01	3.64E-02	2.64E+00	3.14E-02	2.17E+00	1.68E-02
BRSD-15 (0-2")	4.25E-02	4.25E-02	3.23E-01	4.91E-01	2.09E-02	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.52E+00	6.47E-04	1.00E+00	8.52E-01	2.52E-02	2.64E+00	3.14E-02	2.17E+00	1.17E-02
BRSD-4 (0-2")	4.25E-02	4.25E-02	3.23E-01	2.45E-01	1.04E-02	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	7.59E-01	3.23E-04	1.00E+00	8.52E-01	1.26E-02	2.64E+00	3.14E-02	2.17E+00	5.82E-03
UM-750S-3500E (0-2")	4.25E-02	4.25E-02	3.23E-01	2.58E+00	1.10E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	8.00E+00	3.40E-03	1.00E+00	8.52E-01	1.33E-01	2.64E+00	3.14E-02	2.17E+00	6.13E-02
BRSD-16 (0-2")	4.25E-02	4.25E-02	3.23E-01	1.67E+00	7.12E-02	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	5.19E+00	2.21E-03	1.00E+00	8.52E-01	8.62E-02	2.64E+00	3.14E-02	2.17E+00	3.98E-02
UM-750S-3000E (0-2")	4.25E-02	4.25E-02	3.23E-01	3.45E+00	1.47E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.07E+01	4.55E-03	1.00E+00	8.52E-01	1.78E-01	2.64E+00	3.14E-02	2.17E+00	8.20E-02
BRSD-3 (0-2")	4.25E-02	4.25E-02	3.23E-01	1.17E+00	4.97E-02	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	3.62E+00	1.54E-03	1.00E+00	8.52E-01	6.01E-02	2.64E+00	3.14E-02	2.17E+00	2.78E-02
UM-500S-3250E (0-2")	4.25E-02	4.25E-02	3.23E-01	9.00E-01	3.83E-02	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	2.79E+00	1.19E-03	1.00E+00	8.52E-01	4.63E-02	2.64E+00	3.14E-02	2.17E+00	2.14E-02
UM-500S-3000E (0-2")	4.25E-02	4.25E-02	3.23E-01	2.94E+00	1.25E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	9.10E+00	3.87E-03	1.00E+00	8.52E-01	1.51E-01	2.64E+00	3.14E-02	2.17E+00	6.98E-02
UM-500S-2750E (0-2")	4.25E-02	4.25E-02	3.23E-01	3.55E+00	1.51E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.10E+01	4.68E-03	1.00E+00	8.52E-01	1.83E-01	2.64E+00	3.14E-02	2.17E+00	8.43E-02
BRSD-25 (0-2")	4.25E-02	4.25E-02	3.23E-01	2.02E+00	8.58E-02	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	6.25E+00	2.66E-03	1.00E+00	8.52E-01	1.04E-01	2.64E+00	3.14E-02	2.17E+00	4.79E-02

TABLE C-12CB: CADMIUM DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 12 - MARSH, WETLAND RECEPTORS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **118.73**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Mink (Carnivorous Mammals)																							
UM-250S-3000E (0-2")	4.25E-02	4.25E-02	3.23E-01	5.78E+00	2.46E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.79E+01	7.61E-03	1.00E+00	8.52E-01	2.97E-01	2.64E+00	3.14E-02	2.17E+00	1.37E-01
UM-250S-3250E (0-2")	4.25E-02	4.25E-02	3.23E-01	4.61E+00	1.96E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.43E+01	6.08E-03	1.00E+00	8.52E-01	2.37E-01	2.64E+00	3.14E-02	2.17E+00	1.10E-01
BRSD-24 (0-2")	4.25E-02	4.25E-02	3.23E-01	4.42E+00	1.88E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.37E+01	5.83E-03	1.00E+00	8.52E-01	2.28E-01	2.64E+00	3.14E-02	2.17E+00	1.05E-01
UM-250S-2750E (0-2")	4.25E-02	4.25E-02	3.23E-01	2.28E+00	9.68E-02	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	7.05E+00	3.00E-03	1.00E+00	8.52E-01	1.17E-01	2.64E+00	3.14E-02	2.17E+00	5.41E-02
UM-250S-2500E (0-2")	4.25E-02	4.25E-02	3.23E-01	9.52E-01	4.05E-02	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	2.95E+00	1.25E-03	1.00E+00	8.52E-01	4.90E-02	2.64E+00	3.14E-02	2.17E+00	2.26E-02
UM-0N-2500E (0-2")	4.25E-02	4.25E-02	3.23E-01	7.45E+00	3.17E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	2.31E+01	9.83E-03	1.00E+00	8.52E-01	3.84E-01	2.64E+00	3.14E-02	2.17E+00	1.77E-01
UM-0N-250E (0-2")	4.25E-02	4.25E-02	3.23E-01	6.20E+00	2.64E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.92E+01	8.17E-03	1.00E+00	8.52E-01	3.19E-01	2.64E+00	3.14E-02	2.17E+00	1.47E-01
BRSD-2 (0-2")	4.25E-02	4.25E-02	3.23E-01	3.32E+00	1.41E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.03E+01	4.38E-03	1.00E+00	8.52E-01	1.71E-01	2.64E+00	3.14E-02	2.17E+00	7.90E-02
UM-500N-2500E (0-2")	4.25E-02	4.25E-02	3.23E-01	5.68E-01	2.42E-02	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.76E+00	7.49E-04	1.00E+00	8.52E-01	2.92E-02	2.64E+00	3.14E-02	2.17E+00	1.35E-02
UM-250N-2500E (0-2")	4.25E-02	4.25E-02	3.23E-01	4.61E+00	1.96E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.43E+01	6.08E-03	1.00E+00	8.52E-01	2.37E-01	2.64E+00	3.14E-02	2.17E+00	1.10E-01
UM-250N-2250E (0-2")	4.25E-02	4.25E-02	3.23E-01	3.87E+00	1.65E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.20E+01	5.10E-03	1.00E+00	8.52E-01	1.99E-01	2.64E+00	3.14E-02	2.17E+00	9.20E-02
Western Upper Marsh (0-2")																					**Maximum HQ (Eastern Upper Marsh, 0-2")**		**1.77E-01**
UM-500S-2500E (0-2")	4.25E-02	4.25E-02	3.23E-01	4.03E-01	1.72E-02	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.25E+00	5.32E-04	1.00E+00	8.52E-01	2.08E-02	2.64E+00	3.14E-02	2.17E+00	9.59E-03
UM-0N-2000E (0-2")	4.25E-02	4.25E-02	3.23E-01	4.71E+00	2.00E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.46E+01	6.21E-03	1.00E+00	8.52E-01	2.42E-01	2.64E+00	3.14E-02	2.17E+00	1.12E-01
UM-500S-2000E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-250N-1750E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	5.52E-01	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-1500E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	6.24E-01	BB	BB	BB	BB	BB	BB	BB	BB
UM-250S-1500E (0-2")	4.25E-02	4.25E-02	3.23E-01	5.29E+00	2.25E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.64E+01	6.98E-03	1.00E+00	8.52E-01	2.72E-01	2.64E+00	3.14E-02	2.17E+00	1.26E-01
UM-250S-1250E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-6 (0-2")	4.25E-02	4.25E-02	3.23E-01	3.17E-01	1.35E-02	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	9.82E-01	4.18E-04	1.00E+00	8.52E-01	1.63E-02	2.64E+00	3.14E-02	2.17E+00	7.53E-03
UM-0N-1000E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-750E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-500E (0-2")	4.25E-02	4.25E-02	3.23E-01	6.78E-01	2.88E-02	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	2.10E+00	8.93E-04	1.00E+00	8.52E-01	3.49E-02	2.64E+00	3.14E-02	2.17E+00	1.61E-02
UM-250S-500E (0-2")	4.25E-02	4.25E-02	3.23E-01	2.80E-01	1.19E-02	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	8.68E-01	3.69E-04	1.00E+00	8.52E-01	1.44E-02	2.64E+00	3.14E-02	2.17E+00	6.66E-03
UM-250S-250E (0-2")	4.25E-02	4.25E-02	3.23E-01	2.61E-01	1.11E-02	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	8.09E-01	3.44E-04	1.00E+00	8.52E-01	1.34E-02	2.64E+00	3.14E-02	2.17E+00	6.20E-03
BRSD-7 (0-2")	4.25E-02	4.25E-02	3.23E-01	5.91E-01	2.51E-02	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.83E+00	7.78E-04	1.00E+00	8.52E-01	3.04E-02	2.64E+00	3.14E-02	2.17E+00	1.40E-02
BRSD-8 (0-2")	4.25E-02	4.25E-02	3.23E-01	1.82E+00	7.74E-02	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	5.64E+00	2.40E-03	1.00E+00	8.52E-01	9.37E-02	2.64E+00	3.14E-02	2.17E+00	4.32E-02
UM-500S-500E (0-2")	4.25E-02	4.25E-02	3.23E-01	3.42E-01	1.46E-02	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.06E+00	4.51E-04	1.00E+00	8.52E-01	1.76E-02	2.64E+00	3.14E-02	2.17E+00	8.13E-03
BRSD-9 (0-2")	4.25E-02	4.25E-02	3.23E-01	1.58E+00	6.74E-02	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	4.91E+00	2.09E-03	1.00E+00	8.52E-01	8.15E-02	2.64E+00	3.14E-02	2.17E+00	3.77E-02
BRSD-10 (0-2")	4.25E-02	4.25E-02	3.23E-01	5.81E+00	2.47E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.80E+01	7.66E-03	1.00E+00	8.52E-01	2.99E-01	2.64E+00	3.14E-02	2.17E+00	1.38E-01
BRSD-11 (0-2")	4.25E-02	4.25E-02	3.23E-01	1.79E+00	7.62E-02	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	5.55E+00	2.36E-03	1.00E+00	8.52E-01	9.22E-02	2.64E+00	3.14E-02	2.17E+00	4.26E-02
Eastern Upper Marsh (2-6")																					**Maximum HQ (Western Upper Marsh, 0-2")**		**1.38E-01**
UM-1000S-3500E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-15 (2-6")	4.25E-02	4.25E-02	3.23E-01	4.16E-01	1.77E-02	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.29E+00	5.49E-04	1.00E+00	8.52E-01	2.14E-02	2.64E+00	3.14E-02	2.17E+00	9.89E-03
BRSD-4 (2-6")	4.25E-02	4.25E-02	3.23E-01	2.17E-01	9.21E-03	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	6.71E-01	2.85E-04	1.00E+00	8.52E-01	1.11E-02	2.64E+00	3.14E-02	2.17E+00	5.15E-03
UM-750S-3500E (2-6")	4.25E-02	4.25E-02	3.23E-01	4.26E+00	1.81E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.32E+01	5.62E-03	1.00E+00	8.52E-01	2.19E-01	2.64E+00	3.14E-02	2.17E+00	1.01E-01
BRSD-16 (2-6")	4.25E-02	4.25E-02	3.23E-01	1.12E+01	4.76E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	3.47E+01	1.48E-02	1.00E+00	8.52E-01	5.76E-01	2.64E+00	3.14E-02	2.17E+00	2.66E-01
UM-750S-3000E (2-6")	4.25E-02	4.25E-02	3.23E-01	2.94E+00	1.25E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	9.12E+00	3.88E-03	1.00E+00	8.52E-01	1.51E-01	2.64E+00	3.14E-02	2.17E+00	6.99E-02
BRSD-3 (2-6")	4.25E-02	4.25E-02	3.23E-01	1.56E+00	6.62E-02	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	4.82E+00	2.05E-03	1.00E+00	8.52E-01	8.00E-02	2.64E+00	3.14E-02	2.17E+00	3.70E-02
UM-500S-3250E (2-6")	4.25E-02	4.25E-02	3.23E-01	2.66E-01	1.13E-02	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	8.24E-01	3.51E-04	1.00E+00	8.52E-01	1.37E-02	2.64E+00	3.14E-02	2.17E+00	6.32E-03
UM-500S-3000E (2-6")	4.25E-02	4.25E-02	3.23E-01	5.87E-01	2.50E-02	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.82E+00	7.74E-04	1.00E+00	8.52E-01	3.02E-02	2.64E+00	3.14E-02	2.17E+00	1.40E-02
UM-500S-2750E (2-6")	4.25E-02	4.25E-02	3.23E-01	2.84E+00	1.21E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	8.80E+00	3.74E-03	1.00E+00	8.52E-01	1.46E-01	2.64E+00	3.14E-02	2.17E+00	6.75E-02
BRSD-25 (2-6")	4.25E-02	4.25E-02	3.23E-01	2.85E+00	1.21E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	8.84E+00	3.76E-03	1.00E+00	8.52E-01	1.47E-01	2.64E+00	3.14E-02	2.17E+00	6.78E-02
UM-250S-3000E (2-6")	4.25E-02	4.25E-02	3.23E-01	6.68E+00	2.84E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	2.07E+01	8.81E-03	1.00E+00	8.52E-01	3.44E-01	2.64E+00	3.14E-02	2.17E+00	1.59E-01
UM-250S-3250E (2-6")	4.25E-02	4.25E-02	3.23E-01	1.06E+00	4.49E-02	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	3.27E+00	1.39E-03	1.00E+00	8.52E-01	5.43E-02	2.64E+00	3.14E-02	2.17E+00	2.51E-02
BRSD-24 (2-6")	4.25E-02	4.25E-02	3.23E-01	9.04E+00	3.84E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	2.80E+01	1.19E-02	1.00E+00	8.52E-01	4.65E-01	2.64E+00	3.14E-02	2.17E+00	2.15E-01
UM-250S-2750E (2-6")	4.25E-02	4.25E-02	3.23E-01	4.39E+00	1.87E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.36E+01	5.79E-03	1.00E+00	8.52E-01	2.26E-01	2.64E+00	3.14E-02	2.17E+00	1.04E-01
UM-0N-2500E (2-6")	4.25E-02	4.25E-02	3.23E-01	3.14E+00	1.34E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	9.73E+00	4.14E-03	1.00E+00	8.52E-01	1.62E-01	2.64E+00	3.14E-02	2.17E+00	7.46E-02
BRSD-2 (2-6")	4.25E-02	4.25E-02	3.23E-01	5.45E+00	2.32E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.69E+01	7.19E-03	1.00E+00	8.52E-01	2.81E-01	2.64E+00	3.14E-02	2.17E+00	1.30E-01
UM-500N-2500E (2-6")	4.25E-02	4.25E-02	3.23E-01	5.13E-01	2.18E-02	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.59E+00	6.76E-04	1.00E+00	8.52E-01	2.64E-02	2.64E+00	3.14E-02	2.17E+00	1.22E-02
UM-250N-2500E (2-6")	4.25E-02	4.25E-02	3.23E-01	4.65E+00	1.98E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.44E+01	6.13E-03	1.00E+00	8.52E-01	2.39E-01	2.64E+00	3.14E-02	2.17E+00	1.10E-01
UM-250N-2250E (2-6")	4.25E-02	4.25E-02	3.23E-01	1.09E+00	4.64E-02	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	3.38E+00	1.44E-03	1.00E+00	8.52E-01	5.61E-02	2.64E+00	3.14E-02	2.17E+00	2.59E-02
Western Upper Marsh (2-6")																					**Maximum HQ (Eastern Upper Marsh, 2-6")**		**2.66E-01**
UM-500S-2500E (2-6")	4.25E-02	4.25E-02	3.23E-01	2.38E-01	1.01E-02	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	7.38E-01	3.14E-04	1.00E+00	8.52E-01	1.23E-02	2.64E+00	3.14E-02	2.17E+00	5.66E-03
UM-0N-2000E (2-6")	4.25E-02	4.25E-02	3.23E-01	4.03E+00	1.72E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.25E+01	5.32E-03	1.00E+00	8.52E-01	2.08E-01	2.64E+00	3.14E-02	2.17E+00	9.59E-02
UM-500S-2000E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	5.48E-01	BB	BB	BB	BB	BB	BB	BB	BB
UM-250N-1750E (2-6")	4.25E-02	4.25E-02	3.23E-01	3.09E-01	1.32E-02	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	9.58E-01	4.08E-04	1.00E+00	8.52E-01	1.59E-02	2.64E+00	3.14E-02	2.17E+00	7.35E-03

TABLE C-12CB: CADMIUM DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 12 - MARSH, WETLAND RECEPTORS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **118.73**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Mink (Carnivorous Mammals)																							
UM-0N-1500E (2-6")	4.25E-02	4.25E-02	3.23E-01	3.65E-01	1.55E-02	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.13E+00	4.81E-04	1.00E+00	8.52E-01	1.88E-02	2.64E+00	3.14E-02	2.17E+00	8.66E-03
UM-250S-1500E (2-6")	4.25E-02	4.25E-02	3.23E-01	4.13E+00	1.76E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.28E+01	5.44E-03	1.00E+00	8.52E-01	2.13E-01	2.64E+00	3.14E-02	2.17E+00	9.82E-02
UM-250S-1250E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-6 (2-6")	4.25E-02	4.25E-02	3.23E-01	2.90E-01	1.23E-02	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	8.98E-01	3.82E-04	1.00E+00	8.52E-01	1.49E-02	2.64E+00	3.14E-02	2.17E+00	6.89E-03
UM-0N-1000E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-750E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-500E (2-6")	4.25E-02	4.25E-02	3.23E-01	2.52E+01	1.07E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	7.80E+01	3.32E-02	1.00E+00	8.52E-01	1.30E+00	2.64E+00	3.14E-02	2.17E+00	5.98E-01
UM-250S-500E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	6.44E-01	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-250E (2-6")	4.25E-02	4.25E-02	3.23E-01	1.14E+00	4.83E-02	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	3.52E+00	1.50E-03	1.00E+00	8.52E-01	5.85E-02	2.64E+00	3.14E-02	2.17E+00	2.70E-02
UM-250S-250E (2-6")	4.25E-02	4.25E-02	3.23E-01	4.52E-01	1.92E-02	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.40E+00	5.96E-04	1.00E+00	8.52E-01	2.32E-02	2.64E+00	3.14E-02	2.17E+00	1.07E-02
BRSD-7 (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-8 (2-6")	4.25E-02	4.25E-02	3.23E-01	2.78E+00	1.18E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	8.60E+00	3.66E-03	1.00E+00	8.52E-01	1.43E-01	2.64E+00	3.14E-02	2.17E+00	6.59E-02
UM-500S-500E (2-6")	4.25E-02	4.25E-02	3.23E-01	2.45E-01	1.04E-02	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	7.60E-01	3.23E-04	1.00E+00	8.52E-01	1.26E-02	2.64E+00	3.14E-02	2.17E+00	5.83E-03
BRSD-9 (2-6")	4.25E-02	4.25E-02	3.23E-01	7.87E-01	3.35E-02	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	2.44E+00	1.04E-03	1.00E+00	8.52E-01	4.05E-02	2.64E+00	3.14E-02	2.17E+00	1.87E-02
BRSD-10 (2-6")	4.25E-02	4.25E-02	3.23E-01	5.10E+00	2.17E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.58E+01	6.72E-03	1.00E+00	8.52E-01	2.62E-01	2.64E+00	3.14E-02	2.17E+00	1.21E-01
BRSD-11 (2-6")	4.25E-02	4.25E-02	3.23E-01	8.16E-01	3.47E-02	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	2.53E+00	1.08E-03	1.00E+00	8.52E-01	4.20E-02	2.64E+00	3.14E-02	2.17E+00	1.94E-02
Eastern Upper Marsh (6-12")																						**Maximum HQ (Western Upper Marsh, 2-6")**	**5.98E-01**
UM-1000S-3500E (6-12")	4.25E-02	4.25E-02	3.23E-01	3.19E-01	1.36E-02	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	9.89E-01	4.21E-04	1.00E+00	8.52E-01	1.64E-02	2.64E+00	3.14E-02	2.17E+00	7.58E-03
BRSD-15 (6-12")	4.25E-02	4.25E-02	3.23E-01	5.65E-01	2.40E-02	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.75E+00	7.44E-04	1.00E+00	8.52E-01	2.91E-02	2.64E+00	3.14E-02	2.17E+00	1.34E-02
BRSD-4 (6-12")	4.25E-02	4.25E-02	3.23E-01	4.81E-01	2.05E-02	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.49E+00	6.34E-04	1.00E+00	8.52E-01	2.47E-02	2.64E+00	3.14E-02	2.17E+00	1.14E-02
UM-750S-3500E (6-12")	4.25E-02	4.25E-02	3.23E-01	5.91E+00	2.51E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.83E+01	7.78E-03	1.00E+00	8.52E-01	3.04E-01	2.64E+00	3.14E-02	2.17E+00	1.40E-01
BRSD-16 (6-12")	4.25E-02	4.25E-02	3.23E-01	5.81E+00	2.47E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.80E+01	7.66E-03	1.00E+00	8.52E-01	2.99E-01	2.64E+00	3.14E-02	2.17E+00	1.38E-01
UM-750S-3000E (6-12")	4.25E-02	4.25E-02	3.23E-01	2.95E+00	1.25E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	9.13E+00	3.88E-03	1.00E+00	8.52E-01	1.52E-01	2.64E+00	3.14E-02	2.17E+00	7.00E-02
UM-500S-3250E (6-12")	4.25E-02	4.25E-02	3.23E-01	3.71E-01	1.58E-02	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.15E+00	4.89E-04	1.00E+00	8.52E-01	1.91E-02	2.64E+00	3.14E-02	2.17E+00	8.82E-03
UM-500S-3000E (6-12")	4.25E-02	4.25E-02	3.23E-01	5.62E-01	2.39E-02	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.74E+00	7.40E-04	1.00E+00	8.52E-01	2.89E-02	2.64E+00	3.14E-02	2.17E+00	1.33E-02
UM-500S-2750E (6-12")	4.25E-02	4.25E-02	3.23E-01	2.30E+00	9.79E-02	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	7.13E+00	3.03E-03	1.00E+00	8.52E-01	1.18E-01	2.64E+00	3.14E-02	2.17E+00	5.47E-02
BRSD-25 (6-12")	4.25E-02	4.25E-02	3.23E-01	2.48E+00	1.06E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	7.69E+00	3.27E-03	1.00E+00	8.52E-01	1.28E-01	2.64E+00	3.14E-02	2.17E+00	5.90E-02
UM-250S-3000E (6-12")	4.25E-02	4.25E-02	3.23E-01	4.84E+00	2.06E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.50E+01	6.38E-03	1.00E+00	8.52E-01	2.49E-01	2.64E+00	3.14E-02	2.17E+00	1.15E-01
UM-250S-3250E (6-12")	4.25E-02	4.25E-02	3.23E-01	1.12E+00	4.78E-02	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	3.48E+00	1.48E-03	1.00E+00	8.52E-01	5.78E-02	2.64E+00	3.14E-02	2.17E+00	2.67E-02
BRSD-24 (6-12")	4.25E-02	4.25E-02	3.23E-01	4.61E+00	1.96E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.43E+01	6.08E-03	1.00E+00	8.52E-01	2.37E-01	2.64E+00	3.14E-02	2.17E+00	1.10E-01
UM-250S-2750E (6-12")	4.25E-02	4.25E-02	3.23E-01	4.94E+00	2.10E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.53E+01	6.51E-03	1.00E+00	8.52E-01	2.54E-01	2.64E+00	3.14E-02	2.17E+00	1.17E-01
UM-250S-2500E (6-12")	4.25E-02	4.25E-02	3.23E-01	3.97E-01	1.69E-02	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.23E+00	5.23E-04	1.00E+00	8.52E-01	2.04E-02	2.64E+00	3.14E-02	2.17E+00	9.43E-03
BRSD-2 (6-12")	6.27E-02	NA	NA	NA	NA	6.27E-02	2.05E+00	5.58E+01	3.50E+00	NA	NA	NA	NA	1.51E-03	2.72E+01	4.10E-02	1.00E+00	8.73E-01	4.06E+00	2.64E+00	3.14E-02	2.16E+00	1.88E+00
UM-500N-2500E (6-12")	4.25E-02	4.25E-02	3.23E-01	2.61E-01	1.11E-02	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	8.09E-01	3.44E-04	1.00E+00	8.52E-01	1.34E-02	2.64E+00	3.14E-02	2.17E+00	6.20E-03
UM-250N-2500E (6-12")	4.25E-02	4.25E-02	3.23E-01	4.00E+00	1.70E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.24E+01	5.27E-03	1.00E+00	8.52E-01	2.06E-01	2.64E+00	3.14E-02	2.17E+00	9.51E-02
UM-250N-2250E (6-12")	4.25E-02	4.25E-02	3.23E-01	6.42E-01	2.73E-02	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.99E+00	8.47E-04	1.00E+00	8.52E-01	3.30E-02	2.64E+00	3.14E-02	2.17E+00	1.53E-02
Western Upper Marsh (6-12")																						**Maximum HQ (Eastern Upper Marsh, 6-12")**	**1.88E+00**
UM-500S-2500E (6-12")	4.25E-02	4.25E-02	3.23E-01	2.75E-01	1.17E-02	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	8.51E-01	3.62E-04	1.00E+00	8.52E-01	1.41E-02	2.64E+00	3.14E-02	2.17E+00	6.53E-03
UM-0N-2000E (6-12")	4.25E-02	4.25E-02	3.23E-01	6.33E+00	2.69E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.96E+01	8.34E-03	1.00E+00	8.52E-01	3.25E-01	2.64E+00	3.14E-02	2.17E+00	1.50E-01
UM-500S-2000E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-250N-1750E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-1500E (6-12")	4.25E-02	4.25E-02	3.23E-01	8.75E-01	3.72E-02	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	2.71E+00	1.15E-03	1.00E+00	8.52E-01	4.50E-02	2.64E+00	3.14E-02	2.17E+00	2.08E-02
UM-250S-1500E (6-12")	4.25E-02	4.25E-02	3.23E-01	1.01E+00	4.30E-02	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	3.13E+00	1.33E-03	1.00E+00	8.52E-01	5.20E-02	2.64E+00	3.14E-02	2.17E+00	2.40E-02
UM-250S-1250E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-6 (6-12")	4.25E-02	4.25E-02	3.23E-01	3.11E-01	1.32E-02	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	9.64E-01	4.10E-04	1.00E+00	8.52E-01	1.60E-02	2.64E+00	3.14E-02	2.17E+00	7.39E-03
UM-0N-1000E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-750E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-500E (6-12")	4.25E-02	4.25E-02	3.23E-01	4.29E+00	1.83E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.33E+01	5.66E-03	1.00E+00	8.52E-01	2.21E-01	2.64E+00	3.14E-02	2.17E+00	1.02E-01
UM-250S-500E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-250E (6-12")	4.25E-02	4.25E-02	3.23E-01	1.94E+00	8.25E-02	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	6.01E+00	2.56E-03	1.00E+00	8.52E-01	9.98E-02	2.64E+00	3.14E-02	2.17E+00	4.61E-02
UM-250S-250E (6-12")	4.25E-02	4.25E-02	3.23E-01	2.99E-01	1.27E-02	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	9.28E-01	3.95E-04	1.00E+00	8.52E-01	1.54E-02	2.64E+00	3.14E-02	2.17E+00	7.12E-03
BRSD-7 (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-8 (6-12")	4.25E-02	4.25E-02	3.23E-01	1.62E+00	6.89E-02	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	5.02E+00	2.14E-03	1.00E+00	8.52E-01	8.34E-02	2.64E+00	3.14E-02	2.17E+00	3.85E-02
UM-500S-500E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	5.50E-01	BB	BB	BB	BB	BB	BB	BB	BB	BB

TABLE C-12CB: CADMIUM DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 12 - MARSH, WETLAND RECEPTORS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **118.73**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Mink (Carnivorous Mammals)																							
BRSD-9 (6-12")	4.25E-02	4.25E-02	3.23E-01	5.62E-01	2.39E-02	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.74E+00	7.40E-04	1.00E+00	8.52E-01	2.89E-02	2.64E+00	3.14E-02	2.17E+00	1.33E-02
BRSD-10 (6-12")	4.25E-02	4.25E-02	3.23E-01	7.58E+00	3.23E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	2.35E+01	1.00E-02	1.00E+00	8.52E-01	3.90E-01	2.64E+00	3.14E-02	2.17E+00	1.80E-01
BRSD-11 (6-12")	4.25E-02	4.25E-02	3.23E-01	6.58E-01	2.80E-02	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	2.04E+00	8.68E-04	1.00E+00	8.52E-01	3.39E-02	2.64E+00	3.14E-02	2.17E+00	1.56E-02
Middle Marsh (0-2")																						**Maximum HQ (Western Upper Marsh, 6-12")**	**1.80E-01**
MMSD-201 (0-2")	4.25E-02	4.25E-02	3.23E-01	3.07E+00	1.30E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	9.50E+00	4.04E-03	1.00E+00	8.52E-01	1.58E-01	2.64E+00	3.14E-02	2.17E+00	7.28E-02
MMSD-202 (0-2")	4.25E-02	4.25E-02	3.23E-01	3.55E-01	1.51E-02	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.10E+00	4.68E-04	1.00E+00	8.52E-01	1.83E-02	2.64E+00	3.14E-02	2.17E+00	8.43E-03
Middle Marsh (2-6")																						**Maximum HQ (Middle Marsh, 0-2")**	**7.28E-02**
MMSD-201 (2-6")	4.25E-02	4.25E-02	3.23E-01	4.78E+00	2.03E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.48E+01	6.30E-03	1.00E+00	8.52E-01	2.46E-01	2.64E+00	3.14E-02	2.17E+00	1.13E-01
MMSD-202 (2-6")	4.25E-02	4.25E-02	3.23E-01	4.20E-01	1.78E-02	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.30E+00	5.53E-04	1.00E+00	8.52E-01	2.16E-02	2.64E+00	3.14E-02	2.17E+00	9.97E-03
Middle Marsh (6-12")																						**Maximum HQ (Middle Marsh, 2-6")**	**1.13E-01**
MMSD-201 (6-12")	4.25E-02	4.25E-02	3.23E-01	5.94E+00	2.53E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.84E+01	7.83E-03	1.00E+00	8.52E-01	3.06E-01	2.64E+00	3.14E-02	2.17E+00	1.41E-01
MMSD-202 (6-12")	4.25E-02	4.25E-02	3.23E-01	4.52E-01	1.92E-02	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.40E+00	5.96E-04	1.00E+00	8.52E-01	2.32E-02	2.64E+00	3.14E-02	2.17E+00	1.07E-02
Lower Marsh (0-2")																						**Maximum HQ (Middle Marsh, 6-12")**	**1.41E-01**
LMSD-201 (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
LMSD-202 (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
LMSD-203 (0-2")	4.25E-02	4.25E-02	3.23E-01	1.94E-01	8.24E-03	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	6.00E-01	2.55E-04	1.00E+00	8.52E-01	9.96E-03	2.64E+00	3.14E-02	2.17E+00	4.60E-03
LMSD-204 (0-2")	4.25E-02	4.25E-02	3.23E-01	3.23E-01	1.37E-02	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.00E+00	4.25E-04	1.00E+00	8.52E-01	1.66E-02	2.64E+00	3.14E-02	2.17E+00	7.67E-03
Lower Marsh (2-6")																						**Maximum HQ (Lower Marsh, 0-2")**	**7.67E-03**
LMSD-201 (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
LMSD-202 (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
LMSD-203 (2-6")	4.25E-02	4.25E-02	3.23E-01	2.58E-01	1.10E-02	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	8.00E-01	3.40E-04	1.00E+00	8.52E-01	1.33E-02	2.64E+00	3.14E-02	2.17E+00	6.13E-03
LMSD-204 (2-6")	4.25E-02	4.25E-02	3.23E-01	2.58E-01	1.10E-02	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	8.00E-01	3.40E-04	1.00E+00	8.52E-01	1.33E-02	2.64E+00	3.14E-02	2.17E+00	6.13E-03
Lower Marsh (6-12")																						**Maximum HQ (Lower Marsh, 2-6")**	**6.13E-03**
LMSD-201 (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
LMSD-202 (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
LMSD-203 (6-12")	4.25E-02	4.25E-02	3.23E-01	9.04E-01	3.84E-02	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	2.80E+00	1.19E-03	1.00E+00	8.52E-01	4.65E-02	2.64E+00	3.14E-02	2.17E+00	2.15E-02
LMSD-204 (6-12")	4.25E-02	4.25E-02	3.23E-01	1.94E-01	8.24E-03	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	6.00E-01	2.55E-04	1.00E+00	8.52E-01	9.96E-03	2.64E+00	3.14E-02	2.17E+00	4.60E-03
																						Maximum HQ (Lower Marsh, 6-12")	**2.15E-02**

Notes

Results are evaluated in order of upstream to downstream.

1 See Tables 3-1 through 3-13 for ingestion rates, foraging ranges used to calculate the SUF, and body weights.

2 Site BAFs were calculated by dividing site-collected tissue by collocated soil concentrations. The maximum plant and invertebrate BAF calculated for the eastern transect (UMT1) were used for the Eastern Upper Marsh dose calculations. The maximum plant and invertebrate BAF calculated for the western transect (UMT2) were used for the Western Upper Marsh dose calculations. The maximum mammal BAF calculated for the eastern transect (UMT1) was used for the Eastern and Western Upper Marsh calculations because no mammals were collected in the Western Upper Marsh. The maximum plant, mammal, and invertebrate BAFs calculated for the Pass Creek reference

3 The mammal, plant, and invertebrate concentrations were calculated by multiplying the soil concentration by the BAF to generate a tissue concentration (see note 2).

4 Mammal, plant, and invertebrate daily doses were calculated by multiplying the ingestion rate (see note 1) by the tissue concentration (see note 3).

5 Soil concentration from specified depth below ground surface at point ID from laboratory analysis. Doses were not calculated for detected and non-detected soil concentrations measured below the minimum reference site concentration (0-12"), as indicated by BB. For results that were measured at less than the detection limit, doses were calculated using half of the detection limit.

6 Soil daily dose was calculated by multiplying the soil ingestion rate (see note 1) by soil concentration (see note 5).

7 Total daily dose is calculated using the following equation: total daily dose = ([mammal daily dose (if applicable) + plant daily dose (if applicable) + invertebrate daily dose (if applicable) + soil daily dose]*SUF)/receptor species body weight.

8 The derivation of TRVs is described in Navy (1998) and DTSC (2009). The high TRV was used for dose calculations.

9 Allometrically adjusted TRVs for birds were calculated using the following equation: receptor species TRV = (test species TRV) x (test species body weight / receptor species body weight) $^{(1-1.2)}$.

10 Allometrically adjusted TRVs for mammals were calculated using the following equation: receptor species TRV = (test species TRV) x (test species body weight / receptor species body weight) $^{(1-0.94)}$.

11 HQs were calculated using the following equation: HQ = total daily dose/allometrically adjusted TRV.

12 Green cells indicate an HQ greater than 1.0

BAF	Bioaccumulation Factor	ID	Identification	NA	Not applicable
BB	Below minimum background reference site concentration	kg	Kilogram	Navy	Department of the Navy
EE/CA	Engineering Evaluation/Cost Analysis	kg/day	Kilogram per day	SUF	Site use factor
EU	Exposure Unit	mg/day	Milligram per day	TRV	Toxicity reference value
HQ	Hazard Quotient	mg/kg	Milligram per kilogram		

Sources:

Department of the Navy. 1998. "Development of Toxicity Reference Values for Conducting Ecological Risk Assessments at Naval Facilities in California, Interim Final." Prepared by Naval Facilities Engineering Command, Engineering Field Activity West (EFA

DTSC. 2009. HERD Ecological Risk Assessment Note 6. February. Available on-line at: http://www.dtsc.ca.gov/AssessingRisk/upload/CdEconote_Final.pdf.

TABLE C-12DA: COPPER DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 12 - MARSH, TERRESTRIAL RECEPTORS

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **118.73**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Mourning Dove (Herbivorous Birds)																							
Reference Sites																							
BRSD-5 (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.42E+00	5.58E+01	3.22E-01	NA	NA	NA	NA	5.36E-04	3.92E+01	2.10E-02	4.58E-01	1.09E-01	1.44E+00	5.23E+01	4.09E-01	4.01E+01	3.58E-02
BRSD-5 (2-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.42E+00	5.94E+01	3.42E-01	NA	NA	NA	NA	5.36E-04	4.17E+01	2.23E-02	4.58E-01	1.09E-01	1.53E+00	5.23E+01	4.09E-01	4.01E+01	3.81E-02
BRSD-5 (6-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.42E+00	6.45E+01	3.72E-01	NA	NA	NA	NA	5.36E-04	4.53E+01	2.43E-02	4.58E-01	1.09E-01	1.66E+00	5.23E+01	4.09E-01	4.01E+01	4.14E-02
PGBG-1 (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.42E+00	4.94E+01	2.85E-01	NA	NA	NA	NA	5.36E-04	3.47E+01	1.86E-02	4.58E-01	1.09E-01	1.27E+00	5.23E+01	4.09E-01	4.01E+01	3.17E-02
PGBG-1 (2-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.42E+00	5.27E+01	3.03E-01	NA	NA	NA	NA	5.36E-04	3.70E+01	1.98E-02	4.58E-01	1.09E-01	1.36E+00	5.23E+01	4.09E-01	4.01E+01	3.38E-02
PGBG-1 (6-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.42E+00	3.13E+01	1.80E-01	NA	NA	NA	NA	5.36E-04	2.20E+01	1.18E-02	4.58E-01	1.09E-01	8.07E-01	5.23E+01	4.09E-01	4.01E+01	2.01E-02
PGBG-2 (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.42E+00	7.40E+01	4.27E-01	NA	NA	NA	NA	5.36E-04	5.20E+01	2.79E-02	4.58E-01	1.09E-01	1.91E+00	5.23E+01	4.09E-01	4.01E+01	4.75E-02
PGBG-2 (2-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.42E+00	7.83E+01	4.51E-01	NA	NA	NA	NA	5.36E-04	5.50E+01	2.95E-02	4.58E-01	1.09E-01	2.02E+00	5.23E+01	4.09E-01	4.01E+01	5.03E-02
PGBG-2 (6-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.42E+00	9.60E+01	5.53E-01	NA	NA	NA	NA	5.36E-04	6.74E+01	3.61E-02	4.58E-01	1.09E-01	2.47E+00	5.23E+01	4.09E-01	4.01E+01	6.16E-02
Eastern Upper Marsh (0-2")																						**Minimum HQ (Reference Sites)**	**2.01E-02**
UM-1000S-3500E (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	3.30E-01	7.30E+01	4.21E-01	NA	NA	NA	NA	5.36E-04	2.21E+02	1.18E-01	4.58E-01	1.09E-01	2.26E+00	5.23E+01	4.09E-01	4.01E+01	5.64E-02
BRSD-15 (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	3.30E-01	2.95E+01	1.70E-01	NA	NA	NA	NA	5.36E-04	8.92E+01	4.78E-02	4.58E-01	1.09E-01	9.13E-01	5.23E+01	4.09E-01	4.01E+01	2.28E-02
BRSD-4 (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	3.30E-01	2.06E+01	1.19E-01	NA	NA	NA	NA	5.36E-04	6.23E+01	3.34E-02	4.58E-01	1.09E-01	6.38E-01	5.23E+01	4.09E-01	4.01E+01	1.59E-02
UM-750S-3500E (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	3.30E-01	2.95E+02	1.70E+00	NA	NA	NA	NA	5.36E-04	8.94E+02	4.79E-01	4.58E-01	1.09E-01	9.15E+00	5.23E+01	4.09E-01	4.01E+01	2.28E-01
BRSD-16 (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	3.30E-01	1.23E+02	7.06E-01	NA	NA	NA	NA	5.36E-04	3.71E+02	1.99E-01	4.58E-01	1.09E-01	3.80E+00	5.23E+01	4.09E-01	4.01E+01	9.47E-02
UM-750S-3000E (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	3.30E-01	1.34E+02	7.71E-01	NA	NA	NA	NA	5.36E-04	4.05E+02	2.17E-01	4.58E-01	1.09E-01	4.15E+00	5.23E+01	4.09E-01	4.01E+01	1.03E-01
BRSD-3 (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	3.30E-01	3.70E+02	2.13E+00	NA	NA	NA	NA	5.36E-04	1.12E+03	6.00E-01	4.58E-01	1.09E-01	1.15E+01	5.23E+01	4.09E-01	4.01E+01	2.86E-01
UM-500S-3250E (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	3.30E-01	1.74E+02	1.00E+00	NA	NA	NA	NA	5.36E-04	5.28E+02	2.83E-01	4.58E-01	1.09E-01	5.41E+00	5.23E+01	4.09E-01	4.01E+01	1.35E-01
UM-500S-3000E (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	3.30E-01	1.45E+02	8.34E-01	NA	NA	NA	NA	5.36E-04	4.38E+02	2.35E-01	4.58E-01	1.09E-01	4.48E+00	5.23E+01	4.09E-01	4.01E+01	1.12E-01
UM-500S-2750E (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	3.30E-01	1.66E+02	9.59E-01	NA	NA	NA	NA	5.36E-04	5.04E+02	2.70E-01	4.58E-01	1.09E-01	5.16E+00	5.23E+01	4.09E-01	4.01E+01	1.29E-01
BRSD-25 (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	3.30E-01	8.75E+01	5.04E-01	NA	NA	NA	NA	5.36E-04	2.65E+02	1.42E-01	4.58E-01	1.09E-01	2.71E+00	5.23E+01	4.09E-01	4.01E+01	6.76E-02
UM-250S-3000E (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	3.30E-01	3.21E+02	1.85E+00	NA	NA	NA	NA	5.36E-04	9.71E+02	5.20E-01	4.58E-01	1.09E-01	9.94E+00	5.23E+01	4.09E-01	4.01E+01	2.48E-01
UM-250S-3250E (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	3.30E-01	1.04E+02	6.00E-01	NA	NA	NA	NA	5.36E-04	3.15E+02	1.69E-01	4.58E-01	1.09E-01	3.23E+00	5.23E+01	4.09E-01	4.01E+01	8.04E-02
BRSD-24 (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	3.30E-01	1.29E+02	7.46E-01	NA	NA	NA	NA	5.36E-04	3.92E+02	2.10E-01	4.58E-01	1.09E-01	4.01E+00	5.23E+01	4.09E-01	4.01E+01	1.00E-01
UM-250S-2750E (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	3.30E-01	9.02E+01	5.20E-01	NA	NA	NA	NA	5.36E-04	2.73E+02	1.46E-01	4.58E-01	1.09E-01	2.80E+00	5.23E+01	4.09E-01	4.01E+01	6.97E-02
UM-250S-2500E (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	3.30E-01	6.74E+01	3.88E-01	NA	NA	NA	NA	5.36E-04	2.04E+02	1.09E-01	4.58E-01	1.09E-01	2.09E+00	5.23E+01	4.09E-01	4.01E+01	5.21E-02
UM-0N-2500E (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	3.30E-01	1.68E+02	9.71E-01	NA	NA	NA	NA	5.36E-04	5.10E+02	2.73E-01	4.58E-01	1.09E-01	5.22E+00	5.23E+01	4.09E-01	4.01E+01	1.30E-01
UM-0N-250E (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	3.30E-01	1.93E+02	1.11E+00	NA	NA	NA	NA	5.36E-04	5.85E+02	3.13E-01	4.58E-01	1.09E-01	5.99E+00	5.23E+01	4.09E-01	4.01E+01	1.49E-01
BRSD-2 (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	3.30E-01	1.13E+02	6.53E-01	NA	NA	NA	NA	5.36E-04	3.43E+02	1.84E-01	4.58E-01	1.09E-01	3.51E+00	5.23E+01	4.09E-01	4.01E+01	8.75E-02
UM-500N-2500E (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	3.30E-01	1.96E+01	1.13E-01	NA	NA	NA	NA	5.36E-04	5.93E+01	3.18E-02	4.58E-01	1.09E-01	6.07E-01	5.23E+01	4.09E-01	4.01E+01	1.51E-02
UM-250N-2500E (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	3.30E-01	1.83E+02	1.06E+00	NA	NA	NA	NA	5.36E-04	5.55E+02	2.97E-01	4.58E-01	1.09E-01	5.68E+00	5.23E+01	4.09E-01	4.01E+01	1.42E-01
UM-250N-2250E (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	3.30E-01	1.20E+02	6.93E-01	NA	NA	NA	NA	5.36E-04	3.64E+02	1.95E-01	4.58E-01	1.09E-01	3.73E+00	5.23E+01	4.09E-01	4.01E+01	9.29E-02
Western Upper Marsh (0-2")																						**Maximum HQ (Eastern Upper Marsh, 0-2")**	**2.86E-01**
UM-500S-2500E (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.96E-01	7.31E+01	4.21E-01	NA	NA	NA	NA	5.36E-04	3.73E+02	2.00E-01	4.58E-01	1.09E-01	2.61E+00	5.23E+01	4.09E-01	4.01E+01	6.50E-02
UM-0N-2000E (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.96E-01	1.54E+02	8.90E-01	NA	NA	NA	NA	5.36E-04	7.88E+02	4.22E-01	4.58E-01	1.09E-01	5.51E+00	5.23E+01	4.09E-01	4.01E+01	1.37E-01
UM-500S-2000E (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.96E-01	3.59E+01	2.07E-01	NA	NA	NA	NA	5.36E-04	1.83E+02	9.81E-02	4.58E-01	1.09E-01	1.28E+00	5.23E+01	4.09E-01	4.01E+01	3.19E-02
UM-250N-1750E (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.96E-01	3.00E+01	1.73E-01	NA	NA	NA	NA	5.36E-04	1.53E+02	8.20E-02	4.58E-01	1.09E-01	1.07E+00	5.23E+01	4.09E-01	4.01E+01	2.67E-02
UM-0N-1500E (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.96E-01	1.78E+01	1.03E-01	NA	NA	NA	NA	5.36E-04	9.08E+01	4.87E-02	4.58E-01	1.09E-01	6.35E-01	5.23E+01	4.09E-01	4.01E+01	1.58E-02
UM-250S-1500E (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.96E-01	1.12E+02	6.45E-01	NA	NA	NA	NA	5.36E-04	5.71E+02	3.06E-01	4.58E-01	1.09E-01	3.99E+00	5.23E+01	4.09E-01	4.01E+01	9.95E-02
UM-250S-1250E (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.96E-01	1.79E+01	1.03E-01	NA	NA	NA	NA	5.36E-04	9.11E+01	4.88E-02	4.58E-01	1.09E-01	6.37E-01	5.23E+01	4.09E-01	4.01E+01	1.59E-02
BRSD-6 (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-1000E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-750E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-500E (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.96E-01	8.82E+01	5.08E-01	NA	NA	NA	NA	5.36E-04	4.50E+02	2.41E-01	4.58E-01	1.09E-01	3.15E+00	5.23E+01	4.09E-01	4.01E+01	7.84E-02
UM-250S-500E (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.96E-01	1.58E+01	9.13E-02	NA	NA	NA	NA	5.36E-04	8.08E+01	4.33E-02	4.58E-01	1.09E-01	5.65E-01	5.23E+01	4.09E-01	4.01E+01	1.41E-02
UM-250S-250E (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.96E-01	4.70E+01	2.71E-01	NA	NA	NA	NA	5.36E-04	2.40E+02	1.29E-01	4.58E-01	1.09E-01	1.68E+00	5.23E+01	4.09E-01	4.01E+01	4.18E-02
BRSD-7 (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-8 (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.96E-01	3.80E+01	2.19E-01	NA	NA	NA	NA	5.36E-04	1.94E+02	1.04E-01	4.58E-01	1.09E-01	1.36E+00	5.23E+01	4.09E-01	4.01E+01	3.38E-02

TABLE C-12DA: COPPER DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 12 - MARSH, TERRESTRIAL RECEPTORS (Continued)
Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)
calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **118.73**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Mourning Dove (Herbivorous Birds)																							
UM-500S-500E (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.96E-01	1.89E+01	1.09E-01	NA	NA	NA	NA	5.36E-04	9.63E+01	5.16E-02	4.58E-01	1.09E-01	6.73E-01	5.23E+01	4.09E-01	4.01E+01	1.68E-02
BRSD-9 (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.96E-01	1.64E+01	9.48E-02	NA	NA	NA	NA	5.36E-04	8.39E+01	4.50E-02	4.58E-01	1.09E-01	5.86E-01	5.23E+01	4.09E-01	4.01E+01	1.46E-02
BRSD-10 (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.96E-01	1.28E+02	7.35E-01	NA	NA	NA	NA	5.36E-04	6.51E+02	3.49E-01	4.58E-01	1.09E-01	4.55E+00	5.23E+01	4.09E-01	4.01E+01	1.13E-01
BRSD-11 (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.96E-01	2.61E+01	1.50E-01	NA	NA	NA	NA	5.36E-04	1.33E+02	7.13E-02	4.58E-01	1.09E-01	9.30E-01	5.23E+01	4.09E-01	4.01E+01	2.32E-02
Eastern Upper Marsh (2-6")																						**Maximum HQ (Western Upper Marsh, 0-2")**	**1.37E-01**
UM-1000S-3500E (2-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	3.30E-01	3.50E+01	2.02E-01	NA	NA	NA	NA	5.36E-04	1.06E+02	5.68E-02	4.58E-01	1.09E-01	1.09E+00	5.23E+01	4.09E-01	4.01E+01	2.70E-02
BRSD-15 (2-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	3.30E-01	3.22E+01	1.85E-01	NA	NA	NA	NA	5.36E-04	9.74E+01	5.22E-02	4.58E-01	1.09E-01	9.97E-01	5.23E+01	4.09E-01	4.01E+01	2.49E-02
BRSD-4 (2-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	3.30E-01	4.26E+01	2.46E-01	NA	NA	NA	NA	5.36E-04	1.29E+02	6.91E-02	4.58E-01	1.09E-01	1.32E+00	5.23E+01	4.09E-01	4.01E+01	3.29E-02
UM-750S-3500E (2-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	3.30E-01	1.13E+02	6.51E-01	NA	NA	NA	NA	5.36E-04	3.42E+02	1.83E-01	4.58E-01	1.09E-01	3.50E+00	5.23E+01	4.09E-01	4.01E+01	8.73E-02
BRSD-16 (2-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	3.30E-01	3.70E+02	2.13E+00	NA	NA	NA	NA	5.36E-04	1.12E+03	6.00E-01	4.58E-01	1.09E-01	1.15E+01	5.23E+01	4.09E-01	4.01E+01	2.86E-01
UM-750S-3000E (2-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	3.30E-01	1.17E+02	6.74E-01	NA	NA	NA	NA	5.36E-04	3.54E+02	1.90E-01	4.58E-01	1.09E-01	3.62E+00	5.23E+01	4.09E-01	4.01E+01	9.03E-02
BRSD-3 (2-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	3.30E-01	4.69E+02	2.70E+00	NA	NA	NA	NA	5.36E-04	1.42E+03	7.61E-01	4.58E-01	1.09E-01	1.45E+01	5.23E+01	4.09E-01	4.01E+01	3.62E-01
UM-500S-3250E (2-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	3.30E-01	9.45E+01	5.44E-01	NA	NA	NA	NA	5.36E-04	2.86E+02	1.53E-01	4.58E-01	1.09E-01	2.93E+00	5.23E+01	4.09E-01	4.01E+01	7.30E-02
UM-500S-3000E (2-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	3.30E-01	2.71E+01	1.56E-01	NA	NA	NA	NA	5.36E-04	8.20E+01	4.39E-02	4.58E-01	1.09E-01	8.40E-01	5.23E+01	4.09E-01	4.01E+01	2.09E-02
UM-500S-2750E (2-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	3.30E-01	1.05E+02	6.05E-01	NA	NA	NA	NA	5.36E-04	3.18E+02	1.70E-01	4.58E-01	1.09E-01	3.26E+00	5.23E+01	4.09E-01	4.01E+01	8.11E-02
BRSD-25 (2-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	3.30E-01	1.33E+02	7.65E-01	NA	NA	NA	NA	5.36E-04	4.02E+02	2.15E-01	4.58E-01	1.09E-01	4.12E+00	5.23E+01	4.09E-01	4.01E+01	1.03E-01
UM-250S-3000E (2-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	3.30E-01	2.65E+02	1.52E+00	NA	NA	NA	NA	5.36E-04	8.01E+02	4.29E-01	4.58E-01	1.09E-01	8.20E+00	5.23E+01	4.09E-01	4.01E+01	2.04E-01
UM-250S-3250E (2-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	3.30E-01	2.70E+01	1.56E-01	NA	NA	NA	NA	5.36E-04	8.18E+01	4.38E-02	4.58E-01	1.09E-01	8.38E-01	5.23E+01	4.09E-01	4.01E+01	2.09E-02
BRSD-24 (2-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	3.30E-01	2.44E+02	1.41E+00	NA	NA	NA	NA	5.36E-04	7.40E+02	3.97E-01	4.58E-01	1.09E-01	7.58E+00	5.23E+01	4.09E-01	4.01E+01	1.89E-01
UM-250S-2750E (2-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	3.30E-01	1.46E+02	8.41E-01	NA	NA	NA	NA	5.36E-04	4.42E+02	2.37E-01	4.58E-01	1.09E-01	4.53E+00	5.23E+01	4.09E-01	4.01E+01	1.13E-01
UM-0N-2500E (2-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	3.30E-01	8.65E+01	4.99E-01	NA	NA	NA	NA	5.36E-04	2.62E+02	1.40E-01	4.58E-01	1.09E-01	2.68E+00	5.23E+01	4.09E-01	4.01E+01	6.68E-02
BRSD-2 (2-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	3.30E-01	1.35E+02	7.78E-01	NA	NA	NA	NA	5.36E-04	4.09E+02	2.19E-01	4.58E-01	1.09E-01	4.19E+00	5.23E+01	4.09E-01	4.01E+01	1.04E-01
UM-500N-2500E (2-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	3.30E-01	2.45E+01	1.41E-01	NA	NA	NA	NA	5.36E-04	7.43E+01	3.98E-02	4.58E-01	1.09E-01	7.61E-01	5.23E+01	4.09E-01	4.01E+01	1.90E-02
UM-250N-2500E (2-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	3.30E-01	1.69E+02	9.74E-01	NA	NA	NA	NA	5.36E-04	5.12E+02	2.74E-01	4.58E-01	1.09E-01	5.24E+00	5.23E+01	4.09E-01	4.01E+01	1.31E-01
UM-250N-2250E (2-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	3.30E-01	4.72E+01	2.72E-01	NA	NA	NA	NA	5.36E-04	1.43E+02	7.66E-02	4.58E-01	1.09E-01	1.46E+00	5.23E+01	4.09E-01	4.01E+01	3.65E-02
Western Upper Marsh (2-6")																						**Maximum HQ (Eastern Upper Marsh, 2-6")**	**3.62E-01**
UM-500S-2500E (2-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.96E-01	6.96E+01	4.01E-01	NA	NA	NA	NA	5.36E-04	3.55E+02	1.90E-01	4.58E-01	1.09E-01	2.48E+00	5.23E+01	4.09E-01	4.01E+01	6.18E-02
UM-0N-2000E (2-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.96E-01	1.39E+02	8.03E-01	NA	NA	NA	NA	5.36E-04	7.11E+02	3.81E-01	4.58E-01	1.09E-01	4.97E+00	5.23E+01	4.09E-01	4.01E+01	1.24E-01
UM-500S-2000E (2-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.96E-01	4.65E+01	2.68E-01	NA	NA	NA	NA	5.36E-04	2.37E+02	1.27E-01	4.58E-01	1.09E-01	1.66E+00	5.23E+01	4.09E-01	4.01E+01	4.13E-02
UM-250N-1750E (2-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.96E-01	2.12E+01	1.22E-01	NA	NA	NA	NA	5.36E-04	1.08E+02	5.79E-02	4.58E-01	1.09E-01	7.55E-01	5.23E+01	4.09E-01	4.01E+01	1.88E-02
UM-0N-1500E (2-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.96E-01	2.65E+01	1.52E-01	NA	NA	NA	NA	5.36E-04	1.35E+02	7.23E-02	4.58E-01	1.09E-01	9.44E-01	5.23E+01	4.09E-01	4.01E+01	2.35E-02
UM-250S-1500E (2-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.96E-01	1.66E+02	9.59E-01	NA	NA	NA	NA	5.36E-04	8.49E+02	4.55E-01	4.58E-01	1.09E-01	5.93E+00	5.23E+01	4.09E-01	4.01E+01	1.48E-01
UM-250S-1250E (2-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.96E-01	1.56E+01	8.97E-02	NA	NA	NA	NA	5.36E-04	7.94E+01	4.25E-02	4.58E-01	1.09E-01	5.55E-01	5.23E+01	4.09E-01	4.01E+01	1.38E-02
BRSD-6 (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-1000E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-750E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-500E (2-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.96E-01	5.41E+02	3.12E+00	NA	NA	NA	NA	5.36E-04	2.76E+03	1.48E+00	4.58E-01	1.09E-01	1.93E+01	5.23E+01	4.09E-01	4.01E+01	4.81E-01
UM-250S-500E (2-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.96E-01	1.77E+01	1.02E-01	NA	NA	NA	NA	5.36E-04	9.02E+01	4.83E-02	4.58E-01	1.09E-01	6.31E-01	5.23E+01	4.09E-01	4.01E+01	1.57E-02
UM-0N-250E (2-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.96E-01	5.92E+01	3.41E-01	NA	NA	NA	NA	5.36E-04	3.02E+02	1.62E-01	4.58E-01	1.09E-01	2.11E+00	5.23E+01	4.09E-01	4.01E+01	5.26E-02
UM-250S-250E (2-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.96E-01	4.08E+01	2.35E-01	NA	NA	NA	NA	5.36E-04	2.08E+02	1.11E-01	4.58E-01	1.09E-01	1.45E+00	5.23E+01	4.09E-01	4.01E+01	3.62E-02
BRSD-7 (2-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.96E-01	1.11E+01	6.38E-02	NA	NA	NA	NA	5.36E-04	5.65E+01	3.03E-02	4.58E-01	1.09E-01	3.95E-01	5.23E+01	4.09E-01	4.01E+01	9.84E-03
BRSD-8 (2-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.96E-01	3.69E+01	2.12E-01	NA	NA	NA	NA	5.36E-04	1.88E+02	1.01E-01	4.58E-01	1.09E-01	1.31E+00	5.23E+01	4.09E-01	4.01E+01	3.27E-02
UM-500S-500E (2-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.96E-01	1.73E+01	9.97E-02	NA	NA	NA	NA	5.36E-04	8.83E+01	4.73E-02	4.58E-01	1.09E-01	6.17E-01	5.23E+01	4.09E-01	4.01E+01	1.54E-02
BRSD-9 (2-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.96E-01	1.04E+01	5.97E-02	NA	NA	NA	NA	5.36E-04	5.29E+01	2.83E-02	4.58E-01	1.09E-01	3.70E-01	5.23E+01	4.09E-01	4.01E+01	9.21E-03
BRSD-10 (2-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.96E-01	1.35E+02	7.79E-01	NA	NA	NA	NA	5.36E-04	6.90E+02	3.70E-01	4.58E-01	1.09E-01	4.82E+00	5.23E+01	4.09E-01	4.01E+01	1.20E-01
BRSD-11 (2-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.96E-01	3.02E+01	1.74E-01	NA	NA	NA	NA	5.36E-04	1.54E+02	8.25E-02	4.58E-01	1.09E-01	1.08E+00	5.23E+01	4.09E-01	4.01E+01	2.68E-02

TABLE C-12DA: COPPER DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 12 - MARSH, TERRESTRIAL RECEPTORS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **118.73**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Mourning Dove (Herbivorous Birds)																							
Eastern Upper Marsh (6-12")																						**Maximum HQ (Western Upper Marsh, 2-6")**	**4.81E-01**
UM-1000S-3500E (6-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	3.30E-01	2.86E+01	1.65E-01	NA	NA	NA	NA	5.36E-04	8.66E+01	4.64E-02	4.58E-01	1.09E-01	8.87E-01	5.23E+01	4.09E-01	4.01E+01	2.21E-02
BRSD-15 (6-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	3.30E-01	3.23E+01	1.86E-01	NA	NA	NA	NA	5.36E-04	9.79E+01	5.25E-02	4.58E-01	1.09E-01	1.00E+00	5.23E+01	4.09E-01	4.01E+01	2.50E-02
BRSD-4 (6-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	3.30E-01	3.06E+01	1.76E-01	NA	NA	NA	NA	5.36E-04	9.25E+01	4.96E-02	4.58E-01	1.09E-01	9.47E-01	5.23E+01	4.09E-01	4.01E+01	2.36E-02
UM-750S-3500E (6-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	3.30E-01	1.35E+02	7.78E-01	NA	NA	NA	NA	5.36E-04	4.09E+02	2.19E-01	4.58E-01	1.09E-01	4.19E+00	5.23E+01	4.09E-01	4.01E+01	1.04E-01
BRSD-16 (6-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	3.30E-01	1.88E+02	1.08E+00	NA	NA	NA	NA	5.36E-04	5.68E+02	3.04E-01	4.58E-01	1.09E-01	5.82E+00	5.23E+01	4.09E-01	4.01E+01	1.45E-01
UM-750S-3000E (6-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	3.30E-01	1.13E+02	6.53E-01	NA	NA	NA	NA	5.36E-04	3.43E+02	1.84E-01	4.58E-01	1.09E-01	3.51E+00	5.23E+01	4.09E-01	4.01E+01	8.75E-02
BRSD-3 (6-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	3.30E-01	4.10E+02	2.36E+00	NA	NA	NA	NA	5.36E-04	1.24E+03	6.64E-01	4.58E-01	1.09E-01	1.27E+01	5.23E+01	4.09E-01	4.01E+01	3.16E-01
UM-500S-3250E (6-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	3.30E-01	7.07E+01	4.07E-01	NA	NA	NA	NA	5.36E-04	2.14E+02	1.15E-01	4.58E-01	1.09E-01	2.19E+00	5.23E+01	4.09E-01	4.01E+01	5.46E-02
UM-500S-3000E (6-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	3.30E-01	2.93E+01	1.69E-01	NA	NA	NA	NA	5.36E-04	8.86E+01	4.75E-02	4.58E-01	1.09E-01	9.07E-01	5.23E+01	4.09E-01	4.01E+01	2.26E-02
UM-500S-2750E (6-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	3.30E-01	9.58E+01	5.52E-01	NA	NA	NA	NA	5.36E-04	2.90E+02	1.55E-01	4.58E-01	1.09E-01	2.97E+00	5.23E+01	4.09E-01	4.01E+01	7.40E-02
BRSD-25 (6-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	3.30E-01	6.31E+01	3.64E-01	NA	NA	NA	NA	5.36E-04	1.91E+02	1.02E-01	4.58E-01	1.09E-01	1.96E+00	5.23E+01	4.09E-01	4.01E+01	4.87E-02
UM-250S-3000E (6-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	3.30E-01	2.41E+02	1.39E+00	NA	NA	NA	NA	5.36E-04	7.30E+02	3.91E-01	4.58E-01	1.09E-01	7.47E+00	5.23E+01	4.09E-01	4.01E+01	1.86E-01
UM-250S-3250E (6-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	3.30E-01	2.87E+01	1.65E-01	NA	NA	NA	NA	5.36E-04	8.69E+01	4.66E-02	4.58E-01	1.09E-01	8.90E-01	5.23E+01	4.09E-01	4.01E+01	2.22E-02
BRSD-24 (6-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	3.30E-01	1.83E+02	1.05E+00	NA	NA	NA	NA	5.36E-04	5.53E+02	2.96E-01	4.58E-01	1.09E-01	5.66E+00	5.23E+01	4.09E-01	4.01E+01	1.41E-01
UM-250S-2750E (6-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	3.30E-01	1.70E+02	9.78E-01	NA	NA	NA	NA	5.36E-04	5.14E+02	2.75E-01	4.58E-01	1.09E-01	5.26E+00	5.23E+01	4.09E-01	4.01E+01	1.31E-01
UM-250S-2500E (6-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	3.30E-01	4.86E+01	2.80E-01	NA	NA	NA	NA	5.36E-04	1.47E+02	7.88E-02	4.58E-01	1.09E-01	1.51E+00	5.23E+01	4.09E-01	4.01E+01	3.75E-02
BRSD-2 (6-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	3.30E-01	3.03E+02	1.75E+00	NA	NA	NA	NA	5.36E-04	9.18E+02	4.92E-01	4.58E-01	1.09E-01	9.40E+00	5.23E+01	4.09E-01	4.01E+01	2.34E-01
UM-500N-2500E (6-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	3.30E-01	1.08E+01	6.22E-02	NA	NA	NA	NA	5.36E-04	3.27E+01	1.75E-02	4.58E-01	1.09E-01	3.35E-01	5.23E+01	4.09E-01	4.01E+01	8.34E-03
UM-250N-2500E (6-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	3.30E-01	1.24E+02	7.12E-01	NA	NA	NA	NA	5.36E-04	3.74E+02	2.00E-01	4.58E-01	1.09E-01	3.83E+00	5.23E+01	4.09E-01	4.01E+01	9.54E-02
UM-250N-2250E (6-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	3.30E-01	5.95E+01	3.43E-01	NA	NA	NA	NA	5.36E-04	1.80E+02	9.64E-02	4.58E-01	1.09E-01	1.84E+00	5.23E+01	4.09E-01	4.01E+01	4.59E-02
Western Upper Marsh (6-12")																						**Maximum HQ (Eastern Upper Marsh, 6-12")**	**3.16E-01**
UM-500S-2500E (6-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.96E-01	7.14E+01	4.11E-01	NA	NA	NA	NA	5.36E-04	3.64E+02	1.95E-01	4.58E-01	1.09E-01	2.54E+00	5.23E+01	4.09E-01	4.01E+01	6.34E-02
UM-500S-2000E (6-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.96E-01	4.55E+01	2.62E-01	NA	NA	NA	NA	5.36E-04	2.32E+02	1.24E-01	4.58E-01	1.09E-01	1.62E+00	5.23E+01	4.09E-01	4.01E+01	4.04E-02
UM-250N-1750E (6-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.96E-01	2.80E+01	1.61E-01	NA	NA	NA	NA	5.36E-04	1.43E+02	7.66E-02	4.58E-01	1.09E-01	1.00E+00	5.23E+01	4.09E-01	4.01E+01	2.49E-02
UM-0N-1500E (6-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.96E-01	3.61E+01	2.08E-01	NA	NA	NA	NA	5.36E-04	1.84E+02	9.86E-02	4.58E-01	1.09E-01	1.29E+00	5.23E+01	4.09E-01	4.01E+01	3.21E-02
UM-250S-1500E (6-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.96E-01	1.01E+02	5.79E-01	NA	NA	NA	NA	5.36E-04	5.13E+02	2.75E-01	4.58E-01	1.09E-01	3.59E+00	5.23E+01	4.09E-01	4.01E+01	8.94E-02
UM-250S-1250E (6-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.96E-01	1.52E+01	8.75E-02	NA	NA	NA	NA	5.36E-04	7.75E+01	4.15E-02	4.58E-01	1.09E-01	5.42E-01	5.23E+01	4.09E-01	4.01E+01	1.35E-02
BRSD-6 (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-1000E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-750E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-500E (6-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.96E-01	1.43E+02	8.23E-01	NA	NA	NA	NA	5.36E-04	7.29E+02	3.91E-01	4.58E-01	1.09E-01	5.10E+00	5.23E+01	4.09E-01	4.01E+01	1.27E-01
UM-250S-500E (6-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.96E-01	2.23E+01	1.29E-01	NA	NA	NA	NA	5.36E-04	1.14E+02	6.11E-02	4.58E-01	1.09E-01	7.97E-01	5.23E+01	4.09E-01	4.01E+01	1.99E-02
UM-0N-250E (6-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.96E-01	6.74E+01	3.89E-01	NA	NA	NA	NA	5.36E-04	3.44E+02	1.84E-01	4.58E-01	1.09E-01	2.40E+00	5.23E+01	4.09E-01	4.01E+01	5.99E-02
UM-250S-250E (6-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.96E-01	2.51E+01	1.45E-01	NA	NA	NA	NA	5.36E-04	1.28E+02	6.86E-02	4.58E-01	1.09E-01	8.95E-01	5.23E+01	4.09E-01	4.01E+01	2.23E-02
BRSD-7 (6-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.96E-01	9.53E+00	5.49E-02	NA	NA	NA	NA	5.36E-04	4.86E+01	2.60E-02	4.58E-01	1.09E-01	3.40E-01	5.23E+01	4.09E-01	4.01E+01	8.47E-03
BRSD-8 (6-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.96E-01	3.92E+01	2.26E-01	NA	NA	NA	NA	5.36E-04	2.00E+02	1.07E-01	4.58E-01	1.09E-01	1.40E+00	5.23E+01	4.09E-01	4.01E+01	3.48E-02
UM-500S-500E (6-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.96E-01	1.61E+01	9.26E-02	NA	NA	NA	NA	5.36E-04	8.20E+01	4.39E-02	4.58E-01	1.09E-01	5.73E-01	5.23E+01	4.09E-01	4.01E+01	1.43E-02
BRSD-9 (6-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.96E-01	1.65E+01	9.50E-02	NA	NA	NA	NA	5.36E-04	8.41E+01	4.51E-02	4.58E-01	1.09E-01	5.88E-01	5.23E+01	4.09E-01	4.01E+01	1.46E-02
BRSD-10 (6-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.96E-01	1.90E+02	1.10E+00	NA	NA	NA	NA	5.36E-04	9.71E+02	5.20E-01	4.58E-01	1.09E-01	6.79E+00	5.23E+01	4.09E-01	4.01E+01	1.69E-01
BRSD-11 (6-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.96E-01	2.90E+01	1.67E-01	NA	NA	NA	NA	5.36E-04	1.48E+02	7.93E-02	4.58E-01	1.09E-01	1.03E+00	5.23E+01	4.09E-01	4.01E+01	2.58E-02
Middle Marsh (0-2")																						**Maximum HQ (Western Upper Marsh, 6-12")**	**1.88E-01**
MMSD-201 (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.96E-01	8.53E+01	4.91E-01	NA	NA	NA	NA	5.36E-04	4.35E+02	2.33E-01	4.58E-01	1.09E-01	3.04E+00	5.23E+01	4.09E-01	4.01E+01	7.58E-02
MMSD-202 (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.96E-01	8.59E+01	4.95E-01	NA	NA	NA	NA	5.36E-04	4.38E+02	2.35E-01	4.58E-01	1.09E-01	3.06E+00	5.23E+01	4.09E-01	4.01E+01	7.63E-02
Middle Marsh (2-6")																						**Maximum HQ (Middle Marsh, 0-2")**	**7.63E-02**
MMSD-201 (2-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.96E-01	1.18E+02	6.78E-01	NA	NA	NA	NA	5.36E-04	6.00E+02	3.21E-01	4.58E-01	1.09E-01	4.19E+00	5.23E+01	4.09E-01	4.01E+01	1.05E-01
MMSD-202 (2-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.96E-01	1.01E+02	5.83E-01	NA	NA	NA	NA	5.36E-04	5.16E+02	2.76E-01	4.58E-01	1.09E-01	3.61E+00	5.23E+01	4.09E-01	4.01E+01	8.99E-02

TABLE C-12DA: COPPER DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 12 - MARSH, TERRESTRIAL RECEPTORS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **118.73**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Mourning Dove (Herbivorous Birds)																							
Middle Marsh (6-12")																						**Maximum HQ (Middle Marsh, 2-6")**	**1.05E-01**
MMSD-201 (6-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.96E-01	1.42E+02	8.20E-01	NA	NA	NA	NA	5.36E-04	7.26E+02	3.89E-01	4.58E-01	1.09E-01	5.08E+00	5.23E+01	4.09E-01	4.01E+01	1.26E-01
MMSD-202 (6-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.96E-01	5.72E+01	3.30E-01	NA	NA	NA	NA	5.36E-04	2.92E+02	1.56E-01	4.58E-01	1.09E-01	2.04E+00	5.23E+01	4.09E-01	4.01E+01	5.09E-02
Lower Marsh (0-2")																						**Maximum HQ (Middle Marsh, 6-12")**	**1.26E-01**
LMSD-201 (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	3.30E-01	2.70E+01	1.55E-01	NA	NA	NA	NA	5.36E-04	8.17E+01	4.38E-02	4.58E-01	1.09E-01	8.37E-01	5.23E+01	4.09E-01	4.01E+01	2.08E-02
LMSD-202 (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	3.30E-01	2.14E+01	1.23E-01	NA	NA	NA	NA	5.36E-04	6.48E+01	3.47E-02	4.58E-01	1.09E-01	6.63E-01	5.23E+01	4.09E-01	4.01E+01	1.65E-02
LMSD-203 (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	3.30E-01	9.48E+01	5.46E-01	NA	NA	NA	NA	5.36E-04	2.87E+02	1.54E-01	4.58E-01	1.09E-01	2.94E+00	5.23E+01	4.09E-01	4.01E+01	7.32E-02
LMSD-204 (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	3.30E-01	7.40E+01	4.26E-01	NA	NA	NA	NA	5.36E-04	2.24E+02	1.20E-01	4.58E-01	1.09E-01	2.29E+00	5.23E+01	4.09E-01	4.01E+01	5.72E-02
Lower Marsh (2-6")																						**Maximum HQ (Lower Marsh, 0-2")**	**7.32E-02**
LMSD-201 (2-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	3.30E-01	2.67E+01	1.54E-01	NA	NA	NA	NA	5.36E-04	8.09E+01	4.33E-02	4.58E-01	1.09E-01	8.28E-01	5.23E+01	4.09E-01	4.01E+01	2.06E-02
LMSD-202 (2-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	3.30E-01	1.59E+01	9.14E-02	NA	NA	NA	NA	5.36E-04	4.80E+01	2.57E-02	4.58E-01	1.09E-01	4.91E-01	5.23E+01	4.09E-01	4.01E+01	1.22E-02
LMSD-203 (2-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	3.30E-01	9.41E+01	5.42E-01	NA	NA	NA	NA	5.36E-04	2.85E+02	1.53E-01	4.58E-01	1.09E-01	2.92E+00	5.23E+01	4.09E-01	4.01E+01	7.27E-02
LMSD-204 (2-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	3.30E-01	7.50E+01	4.32E-01	NA	NA	NA	NA	5.36E-04	2.27E+02	1.22E-01	4.58E-01	1.09E-01	2.32E+00	5.23E+01	4.09E-01	4.01E+01	5.79E-02
Lower Marsh (6-12")																						**Maximum HQ (Lower Marsh, 2-6")**	**7.27E-02**
LMSD-201 (6-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	3.30E-01	2.79E+01	1.61E-01	NA	NA	NA	NA	5.36E-04	8.44E+01	4.52E-02	4.58E-01	1.09E-01	8.64E-01	5.23E+01	4.09E-01	4.01E+01	2.15E-02
LMSD-202 (6-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	3.30E-01	1.72E+01	9.93E-02	NA	NA	NA	NA	5.36E-04	5.22E+01	2.80E-02	4.58E-01	1.09E-01	5.34E-01	5.23E+01	4.09E-01	4.01E+01	1.33E-02
LMSD-203 (6-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	3.30E-01	1.19E+02	6.85E-01	NA	NA	NA	NA	5.36E-04	3.60E+02	1.93E-01	4.58E-01	1.09E-01	3.69E+00	5.23E+01	4.09E-01	4.01E+01	9.19E-02
LMSD-204 (6-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	3.30E-01	7.47E+01	4.30E-01	NA	NA	NA	NA	5.36E-04	2.26E+02	1.21E-01	4.58E-01	1.09E-01	2.31E+00	5.23E+01	4.09E-01	4.01E+01	5.77E-02
																						Maximum HQ (Lower Marsh, 6-12")	**9.19E-02**
Red-Tailed Hawk (Carnivorous Birds)																							
Reference Sites																							
BRSD-5 (0-2")	9.00E-02	9.00E-02	9.20E-01	3.61E+01	3.25E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.92E+01	2.01E-01	1.70E-01	1.13E+00	5.18E-01	5.23E+01	4.09E-01	6.41E+01	8.08E-03
BRSD-5 (2-6")	9.00E-02	9.00E-02	9.20E-01	3.84E+01	3.45E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.17E+01	2.14E-01	1.70E-01	1.13E+00	5.51E-01	5.23E+01	4.09E-01	6.41E+01	8.60E-03
BRSD-5 (6-12")	9.00E-02	9.00E-02	9.20E-01	4.17E+01	3.75E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.53E+01	2.32E-01	1.70E-01	1.13E+00	5.98E-01	5.23E+01	4.09E-01	6.41E+01	9.34E-03
PGBG-1 (0-2")	9.00E-02	9.00E-02	9.20E-01	3.19E+01	2.87E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.47E+01	1.78E-01	1.70E-01	1.13E+00	4.58E-01	5.23E+01	4.09E-01	6.41E+01	7.15E-03
PGBG-1 (2-6")	9.00E-02	9.00E-02	9.20E-01	3.41E+01	3.06E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.70E+01	1.90E-01	1.70E-01	1.13E+00	4.89E-01	5.23E+01	4.09E-01	6.41E+01	7.63E-03
PGBG-1 (6-12")	9.00E-02	9.00E-02	9.20E-01	2.02E+01	1.82E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.20E+01	1.13E-01	1.70E-01	1.13E+00	2.91E-01	5.23E+01	4.09E-01	6.41E+01	4.54E-03
PGBG-2 (0-2")	9.00E-02	9.00E-02	9.20E-01	4.79E+01	4.31E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.20E+01	2.67E-01	1.70E-01	1.13E+00	6.87E-01	5.23E+01	4.09E-01	6.41E+01	1.07E-02
PGBG-2 (2-6")	9.00E-02	9.00E-02	9.20E-01	5.06E+01	4.55E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.50E+01	2.82E-01	1.70E-01	1.13E+00	7.27E-01	5.23E+01	4.09E-01	6.41E+01	1.13E-02
PGBG-2 (6-12")	9.00E-02	9.00E-02	9.20E-01	6.20E+01	5.58E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	6.74E+01	3.46E-01	1.70E-01	1.13E+00	8.90E-01	5.23E+01	4.09E-01	6.41E+01	1.39E-02
Eastern Upper Marsh (0-2")																						**Minimum HQ (Reference Sites)**	**4.54E-03**
UM-1000S-3500E (0-2")	9.00E-02	9.00E-02	1.39E-01	3.07E+01	2.76E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.21E+02	1.13E+00	1.70E-01	1.13E+00	5.86E-01	5.23E+01	4.09E-01	6.41E+01	9.14E-03
BRSD-15 (0-2")	9.00E-02	9.00E-02	1.39E-01	1.24E+01	1.12E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	8.92E+01	4.57E-01	1.70E-01	1.13E+00	2.36E-01	5.23E+01	4.09E-01	6.41E+01	3.69E-03
BRSD-4 (0-2")	9.00E-02	9.00E-02	1.39E-01	8.66E+00	7.79E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	6.23E+01	3.19E-01	1.70E-01	1.13E+00	1.65E-01	5.23E+01	4.09E-01	6.41E+01	2.58E-03
UM-750S-3500E (0-2")	9.00E-02	9.00E-02	1.39E-01	1.24E+02	1.12E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	8.94E+02	4.58E+00	1.70E-01	1.13E+00	2.37E+00	5.23E+01	4.09E-01	6.41E+01	3.70E-02
BRSD-16 (0-2")	9.00E-02	9.00E-02	1.39E-01	5.16E+01	4.64E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.71E+02	1.90E+00	1.70E-01	1.13E+00	9.83E-01	5.23E+01	4.09E-01	6.41E+01	1.53E-02
UM-750S-3000E (0-2")	9.00E-02	9.00E-02	1.39E-01	5.63E+01	5.06E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.05E+02	2.08E+00	1.70E-01	1.13E+00	1.07E+00	5.23E+01	4.09E-01	6.41E+01	1.67E-02
BRSD-3 (0-2")	9.00E-02	9.00E-02	1.39E-01	1.56E+02	1.40E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.12E+03	5.74E+00	1.70E-01	1.13E+00	2.97E+00	5.23E+01	4.09E-01	6.41E+01	4.63E-02
UM-500S-3250E (0-2")	9.00E-02	9.00E-02	1.39E-01	7.34E+01	6.60E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.28E+02	2.71E+00	1.70E-01	1.13E+00	1.40E+00	5.23E+01	4.09E-01	6.41E+01	2.18E-02
UM-500S-3000E (0-2")	9.00E-02	9.00E-02	1.39E-01	6.09E+01	5.48E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.38E+02	2.25E+00	1.70E-01	1.13E+00	1.16E+00	5.23E+01	4.09E-01	6.41E+01	1.81E-02
UM-500S-2750E (0-2")	9.00E-02	9.00E-02	1.39E-01	7.01E+01	6.30E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.04E+02	2.58E+00	1.70E-01	1.13E+00	1.34E+00	5.23E+01	4.09E-01	6.41E+01	2.08E-02
BRSD-25 (0-2")	9.00E-02	9.00E-02	1.39E-01	3.68E+01	3.31E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.65E+02	1.36E+00	1.70E-01	1.13E+00	7.02E-01	5.23E+01	4.09E-01	6.41E+01	1.10E-02
UM-250S-3000E (0-2")	9.00E-02	9.00E-02	1.39E-01	1.35E+02	1.21E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	9.71E+02	4.98E+00	1.70E-01	1.13E+00	2.57E+00	5.23E+01	4.09E-01	6.41E+01	4.01E-02
UM-250S-3250E (0-2")	9.00E-02	9.00E-02	1.39E-01	4.38E+01	3.94E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.15E+02	1.62E+00	1.70E-01	1.13E+00	8.35E-01	5.23E+01	4.09E-01	6.41E+01	1.30E-02
BRSD-24 (0-2")	9.00E-02	9.00E-02	1.39E-01	5.45E+01	4.90E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.92E+02	2.01E+00	1.70E-01	1.13E+00	1.04E+00	5.23E+01	4.09E-01	6.41E+01	1.62E-02
UM-250S-2750E (0-2")	9.00E-02	9.00E-02	1.39E-01	3.80E+01	3.41E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.73E+02	1.40E+00	1.70E-01	1.13E+00	7.23E-01	5.23E+01	4.09E-01	6.41E+01	1.13E-02
UM-250S-2500E (0-2")	9.00E-02	9.00E-02	1.39E-01	2.84E+01	2.55E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.04E+02	1.05E+00	1.70E-01	1.13E+00	5.41E-01	5.23E+01	4.09E-01	6.41E+01	8.43E-03
UM-0N-2500E (0-2")	9.00E-02	9.00E-02	1.39E-01	7.09E+01	6.38E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.10E+02	2.62E+00	1.70E-01	1.13E+00	1.35E+00	5.23E+01	4.09E-01	6.41E+01	2.11E-02
UM-0N-250E (0-2")	9.00E-02	9.00E-02	1.39E-01	8.13E+01	7.32E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.85E+02	3.00E+00	1.70E-01	1.13E+00	1.55E+00	5.23E+01	4.09E-01	6.41E+01	2.42E-02
BRSD-2 (0-2")	9.00E-02	9.00E-02	1.39E-01	4.77E+01	4.29E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.43E+02	1.76E+00	1.70E-01	1.13E+00	9.09E-01	5.23E+01	4.09E-01	6.41E+01	1.42E-02

TABLE C-12DA: COPPER DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 12 - MARSH, TERRESTRIAL RECEPTORS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **118.73**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Red-Tailed Hawk (Carnivorous Birds)																							
UM-500N-2500E (0-2")	9.00E-02	9.00E-02	1.39E-01	8.24E+00	7.42E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.93E+01	3.04E-01	1.70E-01	1.13E+00	1.57E-01	5.23E+01	4.09E-01	6.41E+01	2.45E-03
UM-250N-2500E (0-2")	9.00E-02	9.00E-02	1.39E-01	7.72E+01	6.94E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.55E+02	2.85E+00	1.70E-01	1.13E+00	1.47E+00	5.23E+01	4.09E-01	6.41E+01	2.29E-02
UM-250N-2250E (0-2")	9.00E-02	9.00E-02	1.39E-01	5.06E+01	4.55E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.64E+02	1.87E+00	1.70E-01	1.13E+00	9.64E-01	5.23E+01	4.09E-01	6.41E+01	1.51E-02
Western Upper Marsh (0-2")																						**Maximum HQ (Eastern Upper Marsh, 0-2")**	**4.63E-02**
UM-500S-2500E (0-2")	9.00E-02	9.00E-02	1.39E-01	5.19E+01	4.66E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.73E+02	1.91E+00	1.70E-01	1.13E+00	9.88E-01	5.23E+01	4.09E-01	6.41E+01	1.54E-02
UM-0N-2000E (0-2")	9.00E-02	9.00E-02	1.39E-01	1.10E+02	9.85E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	7.88E+02	4.04E+00	1.70E-01	1.13E+00	2.09E+00	5.23E+01	4.09E-01	6.41E+01	3.26E-02
UM-500S-2000E (0-2")	9.00E-02	9.00E-02	1.39E-01	2.54E+01	2.29E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.83E+02	9.38E-01	1.70E-01	1.13E+00	4.85E-01	5.23E+01	4.09E-01	6.41E+01	7.57E-03
UM-250N-1750E (0-2")	9.00E-02	9.00E-02	1.39E-01	2.13E+01	1.91E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.53E+02	7.85E-01	1.70E-01	1.13E+00	4.05E-01	5.23E+01	4.09E-01	6.41E+01	6.33E-03
UM-0N-1500E (0-2")	9.00E-02	9.00E-02	1.39E-01	1.26E+01	1.14E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	9.08E+01	4.66E-01	1.70E-01	1.13E+00	2.41E-01	5.23E+01	4.09E-01	6.41E+01	3.75E-03
UM-250S-1500E (0-2")	9.00E-02	9.00E-02	1.39E-01	7.94E+01	7.14E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.71E+02	2.93E+00	1.70E-01	1.13E+00	1.51E+00	5.23E+01	4.09E-01	6.41E+01	2.36E-02
UM-250S-1250E (0-2")	9.00E-02	9.00E-02	1.39E-01	1.27E+01	1.14E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	9.11E+01	4.67E-01	1.70E-01	1.13E+00	2.41E-01	5.23E+01	4.09E-01	6.41E+01	3.77E-03
BRSD-6 (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-1000E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-750E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-500E (0-2")	9.00E-02	9.00E-02	1.39E-01	6.26E+01	5.63E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.50E+02	2.31E+00	1.70E-01	1.13E+00	1.19E+00	5.23E+01	4.09E-01	6.41E+01	1.86E-02
UM-250S-500E (0-2")	9.00E-02	9.00E-02	1.39E-01	1.12E+01	1.01E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	8.08E+01	4.14E-01	1.70E-01	1.13E+00	2.14E-01	5.23E+01	4.09E-01	6.41E+01	3.34E-03
UM-250S-250E (0-2")	9.00E-02	9.00E-02	1.39E-01	3.34E+01	3.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.40E+02	1.23E+00	1.70E-01	1.13E+00	6.36E-01	5.23E+01	4.09E-01	6.41E+01	9.92E-03
BRSD-7 (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-8 (0-2")	9.00E-02	9.00E-02	1.39E-01	2.70E+01	2.43E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.94E+02	9.95E-01	1.70E-01	1.13E+00	5.14E-01	5.23E+01	4.09E-01	6.41E+01	8.02E-03
UM-500S-500E (0-2")	9.00E-02	9.00E-02	1.39E-01	1.34E+01	1.20E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	9.63E+01	4.94E-01	1.70E-01	1.13E+00	2.55E-01	5.23E+01	4.09E-01	6.41E+01	3.98E-03
BRSD-9 (0-2")	9.00E-02	9.00E-02	1.39E-01	1.17E+01	1.05E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	8.39E+01	4.30E-01	1.70E-01	1.13E+00	2.22E-01	5.23E+01	4.09E-01	6.41E+01	3.47E-03
BRSD-10 (0-2")	9.00E-02	9.00E-02	1.39E-01	9.05E+01	8.14E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	6.51E+02	3.34E+00	1.70E-01	1.13E+00	1.72E+00	5.23E+01	4.09E-01	6.41E+01	2.69E-02
BRSD-11 (0-2")	9.00E-02	9.00E-02	1.39E-01	1.85E+01	1.66E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.33E+02	6.82E-01	1.70E-01	1.13E+00	3.52E-01	5.23E+01	4.09E-01	6.41E+01	5.50E-03
Eastern Upper Marsh (2-6")																						**Maximum HQ (Western Upper Marsh, 0-2")**	**3.26E-02**
UM-1000S-3500E (2-6")	9.00E-02	9.00E-02	1.39E-01	1.47E+01	1.33E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.06E+02	5.44E-01	1.70E-01	1.13E+00	2.81E-01	5.23E+01	4.09E-01	6.41E+01	4.38E-03
BRSD-15 (2-6")	9.00E-02	9.00E-02	1.39E-01	1.35E+01	1.22E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	9.74E+01	4.99E-01	1.70E-01	1.13E+00	2.58E-01	5.23E+01	4.09E-01	6.41E+01	4.03E-03
BRSD-4 (2-6")	9.00E-02	9.00E-02	1.39E-01	1.79E+01	1.61E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.29E+02	6.61E-01	1.70E-01	1.13E+00	3.42E-01	5.23E+01	4.09E-01	6.41E+01	5.33E-03
UM-750S-3500E (2-6")	9.00E-02	9.00E-02	1.39E-01	4.75E+01	4.28E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.42E+02	1.75E+00	1.70E-01	1.13E+00	9.06E-01	5.23E+01	4.09E-01	6.41E+01	1.41E-02
BRSD-16 (2-6")	9.00E-02	9.00E-02	1.39E-01	1.56E+02	1.40E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.12E+03	5.74E+00	1.70E-01	1.13E+00	2.97E+00	5.23E+01	4.09E-01	6.41E+01	4.63E-02
UM-750S-3000E (2-6")	9.00E-02	9.00E-02	1.39E-01	4.92E+01	4.43E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.54E+02	1.82E+00	1.70E-01	1.13E+00	9.38E-01	5.23E+01	4.09E-01	6.41E+01	1.46E-02
BRSD-3 (2-6")	9.00E-02	9.00E-02	1.39E-01	1.97E+02	1.78E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.42E+03	7.28E+00	1.70E-01	1.13E+00	3.76E+00	5.23E+01	4.09E-01	6.41E+01	5.87E-02
UM-500S-3250E (2-6")	9.00E-02	9.00E-02	1.39E-01	3.98E+01	3.58E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.86E+02	1.47E+00	1.70E-01	1.13E+00	7.58E-01	5.23E+01	4.09E-01	6.41E+01	1.18E-02
UM-500S-3000E (2-6")	9.00E-02	9.00E-02	1.39E-01	1.14E+01	1.03E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	8.20E+01	4.20E-01	1.70E-01	1.13E+00	2.17E-01	5.23E+01	4.09E-01	6.41E+01	3.39E-03
UM-500S-2750E (2-6")	9.00E-02	9.00E-02	1.39E-01	4.42E+01	3.98E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.18E+02	1.63E+00	1.70E-01	1.13E+00	8.43E-01	5.23E+01	4.09E-01	6.41E+01	1.31E-02
BRSD-25 (2-6")	9.00E-02	9.00E-02	1.39E-01	5.59E+01	5.03E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.02E+02	2.06E+00	1.70E-01	1.13E+00	1.07E+00	5.23E+01	4.09E-01	6.41E+01	1.66E-02
UM-250S-3000E (2-6")	9.00E-02	9.00E-02	1.39E-01	1.11E+02	1.00E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	8.01E+02	4.11E+00	1.70E-01	1.13E+00	2.12E+00	5.23E+01	4.09E-01	6.41E+01	3.31E-02
UM-250S-3250E (2-6")	9.00E-02	9.00E-02	1.39E-01	1.14E+01	1.02E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	8.18E+01	4.19E-01	1.70E-01	1.13E+00	2.17E-01	5.23E+01	4.09E-01	6.41E+01	3.38E-03
BRSD-24 (2-6")	9.00E-02	9.00E-02	1.39E-01	1.03E+02	9.25E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	7.40E+02	3.79E+00	1.70E-01	1.13E+00	1.96E+00	5.23E+01	4.09E-01	6.41E+01	3.06E-02
UM-250S-2750E (2-6")	9.00E-02	9.00E-02	1.39E-01	6.14E+01	5.53E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.42E+02	2.27E+00	1.70E-01	1.13E+00	1.17E+00	5.23E+01	4.09E-01	6.41E+01	1.83E-02
UM-0N-2500E (2-6")	9.00E-02	9.00E-02	1.39E-01	3.64E+01	3.28E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.62E+02	1.34E+00	1.70E-01	1.13E+00	6.94E-01	5.23E+01	4.09E-01	6.41E+01	1.08E-02
BRSD-2 (2-6")	9.00E-02	9.00E-02	1.39E-01	5.69E+01	5.11E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.09E+02	2.10E+00	1.70E-01	1.13E+00	1.08E+00	5.23E+01	4.09E-01	6.41E+01	1.69E-02
UM-500N-2500E (2-6")	9.00E-02	9.00E-02	1.39E-01	1.03E+01	9.29E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	7.43E+01	3.81E-01	1.70E-01	1.13E+00	1.97E-01	5.23E+01	4.09E-01	6.41E+01	3.07E-03
UM-250N-2500E (2-6")	9.00E-02	9.00E-02	1.39E-01	7.12E+01	6.40E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.12E+02	2.63E+00	1.70E-01	1.13E+00	1.36E+00	5.23E+01	4.09E-01	6.41E+01	2.12E-02
UM-250N-2250E (2-6")	9.00E-02	9.00E-02	1.39E-01	1.99E+01	1.79E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.43E+02	7.33E-01	1.70E-01	1.13E+00	3.79E-01	5.23E+01	4.09E-01	6.41E+01	5.91E-03
Western Upper Marsh (2-6")																						**Maximum HQ (Eastern Upper Marsh, 2-6")**	**5.87E-02**
UM-500S-2500E (2-6")	9.00E-02	9.00E-02	1.39E-01	4.94E+01	4.44E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.55E+02	1.82E+00	1.70E-01	1.13E+00	9.41E-01	5.23E+01	4.09E-01	6.41E+01	1.47E-02
UM-0N-2000E (2-6")	9.00E-02	9.00E-02	1.39E-01	9.88E+01	8.89E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	7.11E+02	3.65E+00	1.70E-01	1.13E+00	1.88E+00	5.23E+01	4.09E-01	6.41E+01	2.94E-02
UM-500S-2000E (2-6")	9.00E-02	9.00E-02	1.39E-01	3.29E+01	2.96E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.37E+02	1.22E+00	1.70E-01	1.13E+00	6.28E-01	5.23E+01	4.09E-01	6.41E+01	9.80E-03
UM-250N-1750E (2-6")	9.00E-02	9.00E-02	1.39E-01	1.50E+01	1.35E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.08E+02	5.54E-01	1.70E-01	1.13E+00	2.86E-01	5.23E+01	4.09E-01	6.41E+01	4.47E-03
UM-0N-1500E (2-6")	9.00E-02	9.00E-02	1.39E-01	1.88E+01	1.69E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.35E+02	6.92E-01	1.70E-01	1.13E+00	3.58E-01	5.23E+01	4.09E-01	6.41E+01	5.58E-03

TABLE C-12DA: COPPER DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 12 - MARSH, TERRESTRIAL RECEPTORS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **118.73**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Red-Tailed Hawk (Carnivorous Birds)																							
UM-250S-1500E (2-6")	9.00E-02	9.00E-02	1.39E-01	1.18E+02	1.06E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	8.49E+02	4.35E+00	1.70E-01	1.13E+00	2.25E+00	5.23E+01	4.09E-01	6.41E+01	3.51E-02
UM-250S-1250E (2-6")	9.00E-02	9.00E-02	1.39E-01	1.10E+01	9.93E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	7.94E+01	4.07E-01	1.70E-01	1.13E+00	2.10E-01	5.23E+01	4.09E-01	6.41E+01	3.28E-03
BRSD-6 (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-1000E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-750E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-500E (2-6")	9.00E-02	9.00E-02	1.39E-01	3.84E+02	3.45E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.76E+03	1.42E+01	1.70E-01	1.13E+00	7.31E+00	5.23E+01	4.09E-01	6.41E+01	1.14E-01
UM-250S-500E (2-6")	9.00E-02	9.00E-02	1.39E-01	1.25E+01	1.13E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	9.02E+01	4.63E-01	1.70E-01	1.13E+00	2.39E-01	5.23E+01	4.09E-01	6.41E+01	3.73E-03
UM-0N-250E (2-6")	9.00E-02	9.00E-02	1.39E-01	4.20E+01	3.78E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.02E+02	1.55E+00	1.70E-01	1.13E+00	8.00E-01	5.23E+01	4.09E-01	6.41E+01	1.25E-02
UM-250S-250E (2-6")	9.00E-02	9.00E-02	1.39E-01	2.89E+01	2.60E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.08E+02	1.07E+00	1.70E-01	1.13E+00	5.51E-01	5.23E+01	4.09E-01	6.41E+01	8.60E-03
BRSD-7 (2-6")	9.00E-02	9.00E-02	1.39E-01	7.85E+00	7.07E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.65E+01	2.90E-01	1.70E-01	1.13E+00	1.50E-01	5.23E+01	4.09E-01	6.41E+01	2.34E-03
BRSD-8 (2-6")	9.00E-02	9.00E-02	1.39E-01	2.61E+01	2.35E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.88E+02	9.64E-01	1.70E-01	1.13E+00	4.98E-01	5.23E+01	4.09E-01	6.41E+01	7.77E-03
UM-500S-500E (2-6")	9.00E-02	9.00E-02	1.39E-01	1.23E+01	1.10E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	8.83E+01	4.53E-01	1.70E-01	1.13E+00	2.34E-01	5.23E+01	4.09E-01	6.41E+01	3.65E-03
BRSD-9 (2-6")	9.00E-02	9.00E-02	1.39E-01	7.35E+00	6.62E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.29E+01	2.71E-01	1.70E-01	1.13E+00	1.40E-01	5.23E+01	4.09E-01	6.41E+01	2.19E-03
BRSD-10 (2-6")	9.00E-02	9.00E-02	1.39E-01	9.59E+01	8.63E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	6.90E+02	3.54E+00	1.70E-01	1.13E+00	1.83E+00	5.23E+01	4.09E-01	6.41E+01	2.85E-02
BRSD-11 (2-6")	9.00E-02	9.00E-02	1.39E-01	2.14E+01	1.93E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.54E+02	7.90E-01	1.70E-01	1.13E+00	4.08E-01	5.23E+01	4.09E-01	6.41E+01	6.37E-03
Eastern Upper Marsh (6-12")																						**Maximum HQ (Western Upper Marsh, 2-6")**	**1.14E-01**
UM-1000S-3500E (6-12")	9.00E-02	9.00E-02	1.39E-01	1.20E+01	1.08E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	8.66E+01	4.44E-01	1.70E-01	1.13E+00	2.29E-01	5.23E+01	4.09E-01	6.41E+01	3.58E-03
BRSD-15 (6-12")	9.00E-02	9.00E-02	1.39E-01	1.36E+01	1.22E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	9.79E+01	5.02E-01	1.70E-01	1.13E+00	2.59E-01	5.23E+01	4.09E-01	6.41E+01	4.05E-03
BRSD-4 (6-12")	9.00E-02	9.00E-02	1.39E-01	1.29E+01	1.16E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	9.25E+01	4.74E-01	1.70E-01	1.13E+00	2.45E-01	5.23E+01	4.09E-01	6.41E+01	3.82E-03
UM-750S-3500E (6-12")	9.00E-02	9.00E-02	1.39E-01	5.69E+01	5.11E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.09E+02	2.10E+00	1.70E-01	1.13E+00	1.08E+00	5.23E+01	4.09E-01	6.41E+01	1.69E-02
BRSD-16 (6-12")	9.00E-02	9.00E-02	1.39E-01	7.90E+01	7.10E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.68E+02	2.91E+00	1.70E-01	1.13E+00	1.50E+00	5.23E+01	4.09E-01	6.41E+01	2.35E-02
UM-750S-3000E (6-12")	9.00E-02	9.00E-02	1.39E-01	4.77E+01	4.29E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.43E+02	1.76E+00	1.70E-01	1.13E+00	9.09E-01	5.23E+01	4.09E-01	6.41E+01	1.42E-02
BRSD-3 (6-12")	9.00E-02	9.00E-02	1.39E-01	1.72E+02	1.55E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.24E+03	6.36E+00	1.70E-01	1.13E+00	3.29E+00	5.23E+01	4.09E-01	6.41E+01	5.13E-02
UM-500S-3250E (6-12")	9.00E-02	9.00E-02	1.39E-01	2.98E+01	2.68E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.14E+02	1.10E+00	1.70E-01	1.13E+00	5.67E-01	5.23E+01	4.09E-01	6.41E+01	8.85E-03
UM-500S-3000E (6-12")	9.00E-02	9.00E-02	1.39E-01	1.23E+01	1.11E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	8.86E+01	4.54E-01	1.70E-01	1.13E+00	2.35E-01	5.23E+01	4.09E-01	6.41E+01	3.66E-03
UM-500S-2750E (6-12")	9.00E-02	9.00E-02	1.39E-01	4.03E+01	3.63E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.90E+02	1.49E+00	1.70E-01	1.13E+00	7.68E-01	5.23E+01	4.09E-01	6.41E+01	1.20E-02
BRSD-25 (6-12")	9.00E-02	9.00E-02	1.39E-01	2.66E+01	2.39E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.91E+02	9.79E-01	1.70E-01	1.13E+00	5.06E-01	5.23E+01	4.09E-01	6.41E+01	7.90E-03
UM-250S-3000E (6-12")	9.00E-02	9.00E-02	1.39E-01	1.01E+02	9.13E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	7.30E+02	3.74E+00	1.70E-01	1.13E+00	1.93E+00	5.23E+01	4.09E-01	6.41E+01	3.02E-02
UM-250S-3250E (6-12")	9.00E-02	9.00E-02	1.39E-01	1.21E+01	1.09E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	8.69E+01	4.46E-01	1.70E-01	1.13E+00	2.30E-01	5.23E+01	4.09E-01	6.41E+01	3.59E-03
BRSD-24 (6-12")	9.00E-02	9.00E-02	1.39E-01	7.69E+01	6.92E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.53E+02	2.84E+00	1.70E-01	1.13E+00	1.47E+00	5.23E+01	4.09E-01	6.41E+01	2.29E-02
UM-250S-2750E (6-12")	9.00E-02	9.00E-02	1.39E-01	7.15E+01	6.43E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.14E+02	2.64E+00	1.70E-01	1.13E+00	1.36E+00	5.23E+01	4.09E-01	6.41E+01	2.13E-02
UM-250S-2500E (6-12")	9.00E-02	9.00E-02	1.39E-01	2.04E+01	1.84E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.47E+02	7.54E-01	1.70E-01	1.13E+00	3.89E-01	5.23E+01	4.09E-01	6.41E+01	6.08E-03
BRSD-2 (6-12")	9.00E-02	9.00E-02	1.39E-01	1.28E+02	1.15E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	9.18E+02	4.71E+00	1.70E-01	1.13E+00	2.43E+00	5.23E+01	4.09E-01	6.41E+01	3.80E-02
UM-500N-2500E (6-12")	9.00E-02	9.00E-02	1.39E-01	4.55E+00	4.09E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.27E+01	1.68E-01	1.70E-01	1.13E+00	8.66E-02	5.23E+01	4.09E-01	6.41E+01	1.35E-03
UM-250N-2500E (6-12")	9.00E-02	9.00E-02	1.39E-01	5.20E+01	4.68E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.74E+02	1.92E+00	1.70E-01	1.13E+00	9.91E-01	5.23E+01	4.09E-01	6.41E+01	1.55E-02
UM-250N-2250E (6-12")	9.00E-02	9.00E-02	1.39E-01	2.50E+01	2.25E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.80E+02	9.23E-01	1.70E-01	1.13E+00	4.77E-01	5.23E+01	4.09E-01	6.41E+01	7.44E-03
Western Upper Marsh (6-12")																						**Maximum HQ (Eastern Upper Marsh, 6-12")**	**5.13E-02**
UM-500S-2500E (6-12")	9.00E-02	9.00E-02	1.39E-01	5.06E+01	4.55E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.64E+02	1.87E+00	1.70E-01	1.13E+00	9.64E-01	5.23E+01	4.09E-01	6.41E+01	1.51E-02
UM-0N-2000E (6-12")	9.00E-02	9.00E-02	1.39E-01	1.50E+02	1.35E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.08E+03	5.54E+00	1.70E-01	1.13E+00	2.86E+00	5.23E+01	4.09E-01	6.41E+01	4.47E-02
UM-500S-2000E (6-12")	9.00E-02	9.00E-02	1.39E-01	3.23E+01	2.90E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.32E+02	1.19E+00	1.70E-01	1.13E+00	6.15E-01	5.23E+01	4.09E-01	6.41E+01	9.59E-03
UM-250N-1750E (6-12")	9.00E-02	9.00E-02	1.39E-01	1.99E+01	1.79E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.43E+02	7.33E-01	1.70E-01	1.13E+00	3.79E-01	5.23E+01	4.09E-01	6.41E+01	5.91E-03
UM-0N-1500E (6-12")	9.00E-02	9.00E-02	1.39E-01	2.56E+01	2.30E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.84E+02	9.43E-01	1.70E-01	1.13E+00	4.88E-01	5.23E+01	4.09E-01	6.41E+01	7.61E-03
UM-250S-1500E (6-12")	9.00E-02	9.00E-02	1.39E-01	7.13E+01	6.42E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.13E+02	2.63E+00	1.70E-01	1.13E+00	1.36E+00	5.23E+01	4.09E-01	6.41E+01	2.12E-02
UM-250S-1250E (6-12")	9.00E-02	9.00E-02	1.39E-01	1.08E+01	9.69E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	7.75E+01	3.97E-01	1.70E-01	1.13E+00	2.05E-01	5.23E+01	4.09E-01	6.41E+01	3.20E-03
BRSD-6 (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-1000E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-750E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-500E (6-12")	9.00E-02	9.00E-02	1.39E-01	1.01E+02	9.12E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	7.29E+02	3.74E+00	1.70E-01	1.13E+00	1.93E+00	5.23E+01	4.09E-01	6.41E+01	3.01E-02
UM-250S-500E (6-12")	9.00E-02	9.00E-02	1.39E-01	1.58E+01	1.43E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.14E+02	5.85E-01	1.70E-01	1.13E+00	3.02E-01	5.23E+01	4.09E-01	6.41E+01	4.71E-03
UM-0N-250E (6-12")	9.00E-02	9.00E-02	1.39E-01	4.78E+01	4.30E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.44E+02	1.76E+00	1.70E-01	1.13E+00	9.11E-01	5.23E+01	4.09E-01	6.41E+01	1.42E-02

TABLE C-12DA: COPPER DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 12 - MARSH, TERRESTRIAL RECEPTORS (Continued)
Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)
calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **118.73**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Red-Tailed Hawk (Carnivorous Birds)																							
UM-250S-250E (6-12")	9.00E-02	9.00E-02	1.39E-01	1.78E+01	1.60E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.28E+02	6.56E-01	1.70E-01	1.13E+00	3.39E-01	5.23E+01	4.09E-01	6.41E+01	5.29E-03
BRSD-7 (6-12")	9.00E-02	9.00E-02	1.39E-01	6.76E+00	6.08E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.86E+01	2.49E-01	1.70E-01	1.13E+00	1.29E-01	5.23E+01	4.09E-01	6.41E+01	2.01E-03
BRSD-8 (6-12")	9.00E-02	9.00E-02	1.39E-01	2.78E+01	2.50E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.00E+02	1.03E+00	1.70E-01	1.13E+00	5.30E-01	5.23E+01	4.09E-01	6.41E+01	8.27E-03
UM-500S-500E (6-12")	9.00E-02	9.00E-02	1.39E-01	1.14E+01	1.03E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	8.20E+01	4.20E-01	1.70E-01	1.13E+00	2.17E-01	5.23E+01	4.09E-01	6.41E+01	3.39E-03
BRSD-9 (6-12")	9.00E-02	9.00E-02	1.39E-01	1.17E+01	1.05E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	8.41E+01	4.31E-01	1.70E-01	1.13E+00	2.23E-01	5.23E+01	4.09E-01	6.41E+01	3.48E-03
BRSD-10 (6-12")	9.00E-02	9.00E-02	1.39E-01	1.35E+02	1.21E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	9.71E+02	4.98E+00	1.70E-01	1.13E+00	2.57E+00	5.23E+01	4.09E-01	6.41E+01	4.01E-02
BRSD-11 (6-12")	9.00E-02	9.00E-02	1.39E-01	2.06E+01	1.85E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.48E+02	7.59E-01	1.70E-01	1.13E+00	3.92E-01	5.23E+01	4.09E-01	6.41E+01	6.12E-03
Middle Marsh (0-2")																						**Maximum HQ (Western Upper Marsh, 6-12")**	**4.47E-02**
MMSD-201 (0-2")	9.00E-02	9.00E-02	1.39E-01	6.05E+01	5.44E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.35E+02	2.23E+00	1.70E-01	1.13E+00	1.15E+00	5.23E+01	4.09E-01	6.41E+01	1.80E-02
MMSD-202 (0-2")	9.00E-02	9.00E-02	1.39E-01	6.09E+01	5.48E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.38E+02	2.25E+00	1.70E-01	1.13E+00	1.16E+00	5.23E+01	4.09E-01	6.41E+01	1.81E-02
Middle Marsh (2-6")																						**Maximum HQ (Middle Marsh, 0-2")**	**1.81E-02**
MMSD-201 (2-6")	9.00E-02	9.00E-02	1.39E-01	8.34E+01	7.50E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	6.00E+02	3.08E+00	1.70E-01	1.13E+00	1.59E+00	5.23E+01	4.09E-01	6.41E+01	2.48E-02
MMSD-202 (2-6")	9.00E-02	9.00E-02	1.39E-01	7.17E+01	6.45E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.16E+02	2.65E+00	1.70E-01	1.13E+00	1.37E+00	5.23E+01	4.09E-01	6.41E+01	2.13E-02
Middle Marsh (6-12")																						**Maximum HQ (Middle Marsh, 2-6")**	**2.48E-02**
MMSD-201 (6-12")	9.00E-02	9.00E-02	1.39E-01	1.01E+02	9.08E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	7.26E+02	3.72E+00	1.70E-01	1.13E+00	1.92E+00	5.23E+01	4.09E-01	6.41E+01	3.00E-02
MMSD-202 (6-12")	9.00E-02	9.00E-02	1.39E-01	4.06E+01	3.65E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.92E+02	1.50E+00	1.70E-01	1.13E+00	7.74E-01	5.23E+01	4.09E-01	6.41E+01	1.21E-02
Lower Marsh (0-2")																						**Maximum HQ (Middle Marsh, 6-12")**	**3.00E-02**
LMSD-201 (0-2")	9.00E-02	9.00E-02	1.39E-01	1.14E+01	1.02E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	8.17E+01	4.19E-01	1.70E-01	1.13E+00	2.16E-01	5.23E+01	4.09E-01	6.41E+01	3.38E-03
LMSD-202 (0-2")	9.00E-02	9.00E-02	1.39E-01	9.01E+00	8.10E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	6.48E+01	3.32E-01	1.70E-01	1.13E+00	1.72E-01	5.23E+01	4.09E-01	6.41E+01	2.68E-03
LMSD-203 (0-2")	9.00E-02	9.00E-02	1.39E-01	3.99E+01	3.59E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.87E+02	1.47E+00	1.70E-01	1.13E+00	7.60E-01	5.23E+01	4.09E-01	6.41E+01	1.19E-02
LMSD-204 (0-2")	9.00E-02	9.00E-02	1.39E-01	3.11E+01	2.80E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.24E+02	1.15E+00	1.70E-01	1.13E+00	5.94E-01	5.23E+01	4.09E-01	6.41E+01	9.26E-03
Lower Marsh (2-6")																						**Maximum HQ (Lower Marsh, 0-2")**	**1.19E-02**
LMSD-201 (2-6")	9.00E-02	9.00E-02	1.39E-01	1.12E+01	1.01E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	8.09E+01	4.15E-01	1.70E-01	1.13E+00	2.14E-01	5.23E+01	4.09E-01	6.41E+01	3.35E-03
LMSD-202 (2-6")	9.00E-02	9.00E-02	1.39E-01	6.67E+00	6.00E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.80E+01	2.46E-01	1.70E-01	1.13E+00	1.27E-01	5.23E+01	4.09E-01	6.41E+01	1.98E-03
LMSD-203 (2-6")	9.00E-02	9.00E-02	1.39E-01	3.96E+01	3.56E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.85E+02	1.46E+00	1.70E-01	1.13E+00	7.55E-01	5.23E+01	4.09E-01	6.41E+01	1.18E-02
LMSD-204 (2-6")	9.00E-02	9.00E-02	1.39E-01	3.16E+01	2.84E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.27E+02	1.16E+00	1.70E-01	1.13E+00	6.01E-01	5.23E+01	4.09E-01	6.41E+01	9.39E-03
Lower Marsh (6-12")																						**Maximum HQ (Lower Marsh, 2-6")**	**1.18E-02**
LMSD-201 (6-12")	9.00E-02	9.00E-02	1.39E-01	1.17E+01	1.06E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	8.44E+01	4.33E-01	1.70E-01	1.13E+00	2.24E-01	5.23E+01	4.09E-01	6.41E+01	3.49E-03
LMSD-202 (6-12")	9.00E-02	9.00E-02	1.39E-01	7.26E+00	6.53E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.22E+01	2.68E-01	1.70E-01	1.13E+00	1.38E-01	5.23E+01	4.09E-01	6.41E+01	2.16E-03
LMSD-203 (6-12")	9.00E-02	9.00E-02	1.39E-01	5.00E+01	4.50E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.60E+02	1.85E+00	1.70E-01	1.13E+00	9.54E-01	5.23E+01	4.09E-01	6.41E+01	1.49E-02
LMSD-204 (6-12")	9.00E-02	9.00E-02	1.39E-01	3.14E+01	2.83E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.26E+02	1.16E+00	1.70E-01	1.13E+00	5.99E-01	5.23E+01	4.09E-01	6.41E+01	9.34E-03
																						Maximum HQ (Lower Marsh, 6-12")	**1.49E-02**
American Kestral (Insectivorous Birds)																							
Reference Sites																							
BRSD-5 (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.26E+01	4.92E+02	6.77E+00	7.84E-04	3.92E+01	3.07E-02	4.54E-01	1.24E-01	2.49E+01	5.23E+01	4.09E-01	4.12E+01	6.05E-01
BRSD-5 (2-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.26E+01	5.24E+02	7.20E+00	7.84E-04	4.17E+01	3.27E-02	4.54E-01	1.24E-01	2.65E+01	5.23E+01	4.09E-01	4.12E+01	6.43E-01
BRSD-5 (6-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.26E+01	5.69E+02	7.83E+00	7.84E-04	4.53E+01	3.55E-02	4.54E-01	1.24E-01	2.88E+01	5.23E+01	4.09E-01	4.12E+01	6.99E-01
PGBG-1 (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.26E+01	4.36E+02	5.99E+00	7.84E-04	3.47E+01	2.72E-02	4.54E-01	1.24E-01	2.20E+01	5.23E+01	4.09E-01	4.12E+01	5.35E-01
PGBG-1 (2-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.26E+01	4.65E+02	6.39E+00	7.84E-04	3.70E+01	2.90E-02	4.54E-01	1.24E-01	2.35E+01	5.23E+01	4.09E-01	4.12E+01	5.71E-01
PGBG-1 (6-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.26E+01	2.76E+02	3.80E+00	7.84E-04	2.20E+01	1.73E-02	4.54E-01	1.24E-01	1.40E+01	5.23E+01	4.09E-01	4.12E+01	3.39E-01
PGBG-2 (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.26E+01	6.53E+02	8.98E+00	7.84E-04	5.20E+01	4.08E-02	4.54E-01	1.24E-01	3.30E+01	5.23E+01	4.09E-01	4.12E+01	8.02E-01
PGBG-2 (2-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.26E+01	6.90E+02	9.50E+00	7.84E-04	5.50E+01	4.31E-02	4.54E-01	1.24E-01	3.49E+01	5.23E+01	4.09E-01	4.12E+01	8.48E-01
PGBG-2 (6-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.26E+01	8.46E+02	1.16E+01	7.84E-04	6.74E+01	5.29E-02	4.54E-01	1.24E-01	4.28E+01	5.23E+01	4.09E-01	4.12E+01	1.04E+00
Eastern Upper Marsh (0-2")																						**Minimum HQ (Reference Sites)**	**3.39E-01**
UM-1000S-3500E (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.44E+01	3.18E+03	4.37E+01	7.84E-04	2.21E+02	1.73E-01	4.54E-01	1.24E-01	1.61E+02	5.23E+01	4.09E-01	4.12E+01	3.90E+00
BRSD-15 (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.44E+01	1.28E+03	1.76E+01	7.84E-04	8.92E+01	7.00E-02	4.54E-01	1.24E-01	6.48E+01	5.23E+01	4.09E-01	4.12E+01	1.57E+00
BRSD-4 (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.44E+01	8.95E+02	1.23E+01	7.84E-04	6.23E+01	4.89E-02	4.54E-01	1.24E-01	4.52E+01	5.23E+01	4.09E-01	4.12E+01	1.10E+00
UM-750S-3500E (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.44E+01	1.28E+04	1.77E+02	7.84E-04	8.94E+02	7.01E-01	4.54E-01	1.24E-01	6.49E+02	5.23E+01	4.09E-01	4.12E+01	1.58E+01
BRSD-16 (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.44E+01	5.33E+03	7.33E+01	7.84E-04	3.71E+02	2.91E-01	4.54E-01	1.24E-01	2.69E+02	5.23E+01	4.09E-01	4.12E+01	6.55E+00
UM-750S-3000E (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.44E+01	5.82E+03	8.01E+01	7.84E-04	4.05E+02	3.18E-01	4.54E-01	1.24E-01	2.94E+02	5.23E+01	4.09E-01	4.12E+01	7.15E+00
BRSD-3 (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.44E+01	1.61E+04	2.21E+02	7.84E-04	1.12E+03	8.79E-01	4.54E-01	1.24E-01	8.13E+02	5.23E+01	4.09E-01	4.12E+01	1.98E+01
UM-500S-3250E (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.44E+01	7.59E+03	1.04E+02	7.84E-04	5.28E+02	4.14E-01	4.54E-01	1.24E-01	3.83E+02	5.23E+01	4.09E-01	4.12E+01	9.32E+00

TABLE C-12DA: COPPER DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 12 - MARSH, TERRESTRIAL RECEPTORS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **118.73**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
American Kestral (Insectivorous Birds)																							
UM-500S-3000E (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.44E+01	6.29E+03	8.66E+01	7.84E-04	4.38E+02	3.44E-01	4.54E-01	1.24E-01	3.18E+02	5.23E+01	4.09E-01	4.12E+01	7.73E+00
UM-500S-2750E (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.44E+01	7.24E+03	9.96E+01	7.84E-04	5.04E+02	3.95E-01	4.54E-01	1.24E-01	3.66E+02	5.23E+01	4.09E-01	4.12E+01	8.89E+00
BRSD-25 (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.44E+01	3.81E+03	5.24E+01	7.84E-04	2.65E+02	2.08E-01	4.54E-01	1.24E-01	1.92E+02	5.23E+01	4.09E-01	4.12E+01	4.68E+00
UM-250S-3000E (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.44E+01	1.40E+04	1.92E+02	7.84E-04	9.71E+02	7.62E-01	4.54E-01	1.24E-01	7.05E+02	5.23E+01	4.09E-01	4.12E+01	1.71E+01
UM-250S-3250E (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.44E+01	4.53E+03	6.23E+01	7.84E-04	3.15E+02	2.47E-01	4.54E-01	1.24E-01	2.29E+02	5.23E+01	4.09E-01	4.12E+01	5.56E+00
BRSD-24 (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.44E+01	5.63E+03	7.75E+01	7.84E-04	3.92E+02	3.07E-01	4.54E-01	1.24E-01	2.85E+02	5.23E+01	4.09E-01	4.12E+01	6.92E+00
UM-250S-2750E (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.44E+01	3.92E+03	5.40E+01	7.84E-04	2.73E+02	2.14E-01	4.54E-01	1.24E-01	1.98E+02	5.23E+01	4.09E-01	4.12E+01	4.82E+00
UM-250S-2500E (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.44E+01	2.93E+03	4.03E+01	7.84E-04	2.04E+02	1.60E-01	4.54E-01	1.24E-01	1.48E+02	5.23E+01	4.09E-01	4.12E+01	3.60E+00
UM-0N-2500E (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.44E+01	7.33E+03	1.01E+02	7.84E-04	5.10E+02	4.00E-01	4.54E-01	1.24E-01	3.70E+02	5.23E+01	4.09E-01	4.12E+01	9.00E+00
UM-0N-250E (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.44E+01	8.40E+03	1.16E+02	7.84E-04	5.85E+02	4.59E-01	4.54E-01	1.24E-01	4.25E+02	5.23E+01	4.09E-01	4.12E+01	1.03E+01
BRSD-2 (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.44E+01	4.93E+03	6.78E+01	7.84E-04	3.43E+02	2.69E-01	4.54E-01	1.24E-01	2.49E+02	5.23E+01	4.09E-01	4.12E+01	6.05E+00
UM-500N-2500E (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.44E+01	8.52E+02	1.17E+01	7.84E-04	5.93E+01	4.65E-02	4.54E-01	1.24E-01	4.31E+01	5.23E+01	4.09E-01	4.12E+01	1.05E+00
UM-250N-2500E (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.44E+01	7.97E+03	1.10E+02	7.84E-04	5.55E+02	4.35E-01	4.54E-01	1.24E-01	4.03E+02	5.23E+01	4.09E-01	4.12E+01	9.79E+00
UM-250N-2250E (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.44E+01	5.23E+03	7.20E+01	7.84E-04	3.64E+02	2.86E-01	4.54E-01	1.24E-01	2.64E+02	5.23E+01	4.09E-01	4.12E+01	6.42E+00
Western Upper Marsh (0-2")																						**Maximum HQ (Eastern Upper Marsh, 0-2")**	**1.98E+01**
UM-500S-2500E (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	6.28E+00	2.34E+03	3.23E+01	7.84E-04	3.73E+02	2.93E-01	4.54E-01	1.24E-01	1.19E+02	5.23E+01	4.09E-01	4.12E+01	2.89E+00
UM-0N-2000E (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	6.28E+00	4.95E+03	6.81E+01	7.84E-04	7.88E+02	6.18E-01	4.54E-01	1.24E-01	2.52E+02	5.23E+01	4.09E-01	4.12E+01	6.11E+00
UM-500S-2000E (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	6.28E+00	1.15E+03	1.58E+01	7.84E-04	1.83E+02	1.44E-01	4.54E-01	1.24E-01	5.84E+01	5.23E+01	4.09E-01	4.12E+01	1.42E+00
UM-250N-1750E (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	6.28E+00	9.62E+02	1.32E+01	7.84E-04	1.53E+02	1.20E-01	4.54E-01	1.24E-01	4.89E+01	5.23E+01	4.09E-01	4.12E+01	1.19E+00
UM-0N-1500E (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	6.28E+00	5.71E+02	7.85E+00	7.84E-04	9.08E+01	7.12E-02	4.54E-01	1.24E-01	2.90E+01	5.23E+01	4.09E-01	4.12E+01	7.04E-01
UM-250S-1500E (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	6.28E+00	3.59E+03	4.94E+01	7.84E-04	5.71E+02	4.48E-01	4.54E-01	1.24E-01	1.82E+02	5.23E+01	4.09E-01	4.12E+01	4.43E+00
UM-250S-1250E (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	6.28E+00	5.73E+02	7.88E+00	7.84E-04	9.11E+01	7.15E-02	4.54E-01	1.24E-01	2.91E+01	5.23E+01	4.09E-01	4.12E+01	7.07E-01
BRSD-6 (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-1000E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-750E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-500E (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	6.28E+00	2.83E+03	3.89E+01	7.84E-04	4.50E+02	3.53E-01	4.54E-01	1.24E-01	1.44E+02	5.23E+01	4.09E-01	4.12E+01	3.49E+00
UM-250S-500E (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	6.28E+00	5.08E+02	6.99E+00	7.84E-04	8.08E+01	6.34E-02	4.54E-01	1.24E-01	2.58E+01	5.23E+01	4.09E-01	4.12E+01	6.27E-01
UM-250S-250E (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	6.28E+00	1.51E+03	2.08E+01	7.84E-04	2.40E+02	1.88E-01	4.54E-01	1.24E-01	7.66E+01	5.23E+01	4.09E-01	4.12E+01	1.86E+00
BRSD-7 (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-8 (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	6.28E+00	1.22E+03	1.68E+01	7.84E-04	1.94E+02	1.52E-01	4.54E-01	1.24E-01	6.19E+01	5.23E+01	4.09E-01	4.12E+01	1.50E+00
UM-500S-500E (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	6.28E+00	6.05E+02	8.33E+00	7.84E-04	9.63E+01	7.55E-02	4.54E-01	1.24E-01	3.08E+01	5.23E+01	4.09E-01	4.12E+01	7.47E-01
BRSD-9 (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	6.28E+00	5.27E+02	7.26E+00	7.84E-04	8.39E+01	6.58E-02	4.54E-01	1.24E-01	2.68E+01	5.23E+01	4.09E-01	4.12E+01	6.51E-01
BRSD-10 (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	6.28E+00	4.09E+03	5.63E+01	7.84E-04	6.51E+02	5.11E-01	4.54E-01	1.24E-01	2.08E+02	5.23E+01	4.09E-01	4.12E+01	5.05E+00
BRSD-11 (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	6.28E+00	8.36E+02	1.15E+01	7.84E-04	1.33E+02	1.04E-01	4.54E-01	1.24E-01	4.25E+01	5.23E+01	4.09E-01	4.12E+01	1.03E+00
Eastern Upper Marsh (2-6")																						**Maximum HQ (Western Upper Marsh, 0-2")**	**6.11E+00**
UM-1000S-3500E (2-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.44E+01	1.52E+03	2.10E+01	7.84E-04	1.06E+02	8.31E-02	4.54E-01	1.24E-01	7.70E+01	5.23E+01	4.09E-01	4.12E+01	1.87E+00
BRSD-15 (2-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.44E+01	1.40E+03	1.93E+01	7.84E-04	9.74E+01	7.64E-02	4.54E-01	1.24E-01	7.07E+01	5.23E+01	4.09E-01	4.12E+01	1.72E+00
BRSD-4 (2-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.44E+01	1.85E+03	2.55E+01	7.84E-04	1.29E+02	1.01E-01	4.54E-01	1.24E-01	9.37E+01	5.23E+01	4.09E-01	4.12E+01	2.28E+00
UM-750S-3500E (2-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.44E+01	4.91E+03	6.76E+01	7.84E-04	3.42E+02	2.68E-01	4.54E-01	1.24E-01	2.48E+02	5.23E+01	4.09E-01	4.12E+01	6.03E+00
BRSD-16 (2-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.44E+01	1.61E+04	2.21E+02	7.84E-04	1.12E+03	8.79E-01	4.54E-01	1.24E-01	8.13E+02	5.23E+01	4.09E-01	4.12E+01	1.98E+01
UM-750S-3000E (2-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.44E+01	5.09E+03	7.00E+01	7.84E-04	3.54E+02	2.78E-01	4.54E-01	1.24E-01	2.57E+02	5.23E+01	4.09E-01	4.12E+01	6.25E+00
BRSD-3 (2-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.44E+01	2.04E+04	2.81E+02	7.84E-04	1.42E+03	1.11E+00	4.54E-01	1.24E-01	1.03E+03	5.23E+01	4.09E-01	4.12E+01	2.51E+01
UM-500S-3250E (2-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.44E+01	4.11E+03	5.65E+01	7.84E-04	2.86E+02	2.24E-01	4.54E-01	1.24E-01	2.08E+02	5.23E+01	4.09E-01	4.12E+01	5.05E+00
UM-500S-3000E (2-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.44E+01	1.18E+03	1.62E+01	7.84E-04	8.20E+01	6.43E-02	4.54E-01	1.24E-01	5.96E+01	5.23E+01	4.09E-01	4.12E+01	1.45E+00
UM-500S-2750E (2-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.44E+01	4.57E+03	6.29E+01	7.84E-04	3.18E+02	2.49E-01	4.54E-01	1.24E-01	2.31E+02	5.23E+01	4.09E-01	4.12E+01	5.61E+00
BRSD-25 (2-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.44E+01	5.78E+03	7.95E+01	7.84E-04	4.02E+02	3.15E-01	4.54E-01	1.24E-01	2.92E+02	5.23E+01	4.09E-01	4.12E+01	7.09E+00
UM-250S-3000E (2-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.44E+01	1.15E+04	1.58E+02	7.84E-04	8.01E+02	6.28E-01	4.54E-01	1.24E-01	5.82E+02	5.23E+01	4.09E-01	4.12E+01	1.41E+01
UM-250S-3250E (2-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.44E+01	1.18E+03	1.62E+01	7.84E-04	8.18E+01	6.42E-02	4.54E-01	1.24E-01	5.94E+01	5.23E+01	4.09E-01	4.12E+01	1.44E+00
BRSD-24 (2-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.44E+01	1.06E+04	1.46E+02	7.84E-04	7.40E+02	5.80E-01	4.54E-01	1.24E-01	5.37E+02	5.23E+01	4.09E-01	4.12E+01	1.31E+01
UM-250S-2750E (2-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.44E+01	6.35E+03	8.74E+01	7.84E-04	4.42E+02	3.47E-01	4.54E-01	1.24E-01	3.21E+02	5.23E+01	4.09E-01	4.12E+01	7.80E+00

TABLE C-12DA: COPPER DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 12 - MARSH, TERRESTRIAL RECEPTORS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **118.73**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
American Kestral (Insectivorous Birds)																							
UM-0N-2500E (2-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.44E+01	3.76E+03	5.18E+01	7.84E-04	2.62E+02	2.06E-01	4.54E-01	1.24E-01	1.90E+02	5.23E+01	4.09E-01	4.12E+01	4.62E+00
BRSD-2 (2-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.44E+01	5.88E+03	8.09E+01	7.84E-04	4.09E+02	3.21E-01	4.54E-01	1.24E-01	2.97E+02	5.23E+01	4.09E-01	4.12E+01	7.22E+00
UM-500N-2500E (2-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.44E+01	1.07E+03	1.47E+01	7.84E-04	7.43E+01	5.83E-02	4.54E-01	1.24E-01	5.40E+01	5.23E+01	4.09E-01	4.12E+01	1.31E+00
UM-250N-2500E (2-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.44E+01	7.36E+03	1.01E+02	7.84E-04	5.12E+02	4.02E-01	4.54E-01	1.24E-01	3.72E+02	5.23E+01	4.09E-01	4.12E+01	9.03E+00
UM-250N-2250E (2-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.44E+01	2.05E+03	2.83E+01	7.84E-04	1.43E+02	1.12E-01	4.54E-01	1.24E-01	1.04E+02	5.23E+01	4.09E-01	4.12E+01	2.52E+00
Western Upper Marsh (2-6")																						**Maximum HQ (Eastern Upper Marsh, 2-6")**	**2.51E+01**
UM-500S-2500E (2-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	6.28E+00	2.23E+03	3.07E+01	7.84E-04	3.55E+02	2.78E-01	4.54E-01	1.24E-01	1.13E+02	5.23E+01	4.09E-01	4.12E+01	2.75E+00
UM-0N-2000E (2-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	6.28E+00	4.47E+03	6.15E+01	7.84E-04	7.11E+02	5.58E-01	4.54E-01	1.24E-01	2.27E+02	5.23E+01	4.09E-01	4.12E+01	5.52E+00
UM-500S-2000E (2-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	6.28E+00	1.49E+03	2.05E+01	7.84E-04	2.37E+02	1.86E-01	4.54E-01	1.24E-01	7.57E+01	5.23E+01	4.09E-01	4.12E+01	1.84E+00
UM-250N-1750E (2-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	6.28E+00	6.79E+02	9.34E+00	7.84E-04	1.08E+02	8.47E-02	4.54E-01	1.24E-01	3.45E+01	5.23E+01	4.09E-01	4.12E+01	8.38E-01
UM-0N-1500E (2-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	6.28E+00	8.48E+02	1.17E+01	7.84E-04	1.35E+02	1.06E-01	4.54E-01	1.24E-01	4.31E+01	5.23E+01	4.09E-01	4.12E+01	1.05E+00
UM-250S-1500E (2-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	6.28E+00	5.34E+03	7.34E+01	7.84E-04	8.49E+02	6.66E-01	4.54E-01	1.24E-01	2.71E+02	5.23E+01	4.09E-01	4.12E+01	6.59E+00
UM-250S-1250E (2-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	6.28E+00	4.99E+02	6.87E+00	7.84E-04	7.94E+01	6.23E-02	4.54E-01	1.24E-01	2.54E+01	5.23E+01	4.09E-01	4.12E+01	6.16E-01
BRSD-6 (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-1000E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-750E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-500E (2-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	6.28E+00	1.73E+04	2.39E+02	7.84E-04	2.76E+03	2.16E+00	4.54E-01	1.24E-01	8.81E+02	5.23E+01	4.09E-01	4.12E+01	2.14E+01
UM-250S-500E (2-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	6.28E+00	5.67E+02	7.80E+00	7.84E-04	9.02E+01	7.08E-02	4.54E-01	1.24E-01	2.88E+01	5.23E+01	4.09E-01	4.12E+01	7.00E-01
UM-0N-250E (2-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	6.28E+00	1.90E+03	2.61E+01	7.84E-04	3.02E+02	2.37E-01	4.54E-01	1.24E-01	9.64E+01	5.23E+01	4.09E-01	4.12E+01	2.34E+00
UM-250S-250E (2-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	6.28E+00	1.31E+03	1.80E+01	7.84E-04	2.08E+02	1.63E-01	4.54E-01	1.24E-01	6.64E+01	5.23E+01	4.09E-01	4.12E+01	1.61E+00
BRSD-7 (2-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	6.28E+00	3.55E+02	4.89E+00	7.84E-04	5.65E+01	4.43E-02	4.54E-01	1.24E-01	1.80E+01	5.23E+01	4.09E-01	4.12E+01	4.38E-01
BRSD-8 (2-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	6.28E+00	1.18E+03	1.63E+01	7.84E-04	1.88E+02	1.47E-01	4.54E-01	1.24E-01	6.00E+01	5.23E+01	4.09E-01	4.12E+01	1.46E+00
UM-500S-500E (2-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	6.28E+00	5.55E+02	7.64E+00	7.84E-04	8.83E+01	6.93E-02	4.54E-01	1.24E-01	2.82E+01	5.23E+01	4.09E-01	4.12E+01	6.85E-01
BRSD-10 (2-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	6.28E+00	4.34E+03	5.97E+01	7.84E-04	6.90E+02	5.41E-01	4.54E-01	1.24E-01	2.20E+02	5.23E+01	4.09E-01	4.12E+01	5.35E+00
BRSD-11 (2-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	6.28E+00	9.68E+02	1.33E+01	7.84E-04	1.54E+02	1.21E-01	4.54E-01	1.24E-01	4.92E+01	5.23E+01	4.09E-01	4.12E+01	1.19E+00
Eastern Upper Marsh (6-12")																						**Maximum HQ (Western Upper Marsh, 2-6")**	**2.14E+01**
UM-1000S-3500E (6-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.44E+01	1.24E+03	1.71E+01	7.84E-04	8.66E+01	6.79E-02	4.54E-01	1.24E-01	6.29E+01	5.23E+01	4.09E-01	4.12E+01	1.53E+00
BRSD-15 (6-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.44E+01	1.41E+03	1.94E+01	7.84E-04	9.79E+01	7.68E-02	4.54E-01	1.24E-01	7.11E+01	5.23E+01	4.09E-01	4.12E+01	1.73E+00
BRSD-4 (6-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.44E+01	1.33E+03	1.83E+01	7.84E-04	9.25E+01	7.26E-02	4.54E-01	1.24E-01	6.72E+01	5.23E+01	4.09E-01	4.12E+01	1.63E+00
UM-750S-3500E (6-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.44E+01	5.88E+03	8.09E+01	7.84E-04	4.09E+02	3.21E-01	4.54E-01	1.24E-01	2.97E+02	5.23E+01	4.09E-01	4.12E+01	7.22E+00
BRSD-16 (6-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.44E+01	8.16E+03	1.12E+02	7.84E-04	5.68E+02	4.46E-01	4.54E-01	1.24E-01	4.13E+02	5.23E+01	4.09E-01	4.12E+01	1.00E+01
UM-750S-3000E (6-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.44E+01	4.93E+03	6.78E+01	7.84E-04	3.43E+02	2.69E-01	4.54E-01	1.24E-01	2.49E+02	5.23E+01	4.09E-01	4.12E+01	6.05E+00
BRSD-3 (6-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.44E+01	1.78E+04	2.45E+02	7.84E-04	1.24E+03	9.73E-01	4.54E-01	1.24E-01	9.01E+02	5.23E+01	4.09E-01	4.12E+01	2.19E+01
UM-500S-3250E (6-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.44E+01	3.07E+03	4.23E+01	7.84E-04	2.14E+02	1.68E-01	4.54E-01	1.24E-01	1.55E+02	5.23E+01	4.09E-01	4.12E+01	3.78E+00
UM-500S-3000E (6-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.44E+01	1.27E+03	1.75E+01	7.84E-04	8.86E+01	6.95E-02	4.54E-01	1.24E-01	6.44E+01	5.23E+01	4.09E-01	4.12E+01	1.56E+00
UM-500S-2750E (6-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.44E+01	4.17E+03	5.73E+01	7.84E-04	2.90E+02	2.27E-01	4.54E-01	1.24E-01	2.11E+02	5.23E+01	4.09E-01	4.12E+01	5.12E+00
BRSD-25 (6-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.44E+01	2.74E+03	3.78E+01	7.84E-04	1.91E+02	1.50E-01	4.54E-01	1.24E-01	1.39E+02	5.23E+01	4.09E-01	4.12E+01	3.37E+00
UM-250S-3000E (6-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.44E+01	1.05E+04	1.44E+02	7.84E-04	7.30E+02	5.73E-01	4.54E-01	1.24E-01	5.30E+02	5.23E+01	4.09E-01	4.12E+01	1.29E+01
UM-250S-3250E (6-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.44E+01	1.25E+03	1.72E+01	7.84E-04	8.69E+01	6.82E-02	4.54E-01	1.24E-01	6.31E+01	5.23E+01	4.09E-01	4.12E+01	1.53E+00
BRSD-24 (6-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.44E+01	7.95E+03	1.09E+02	7.84E-04	5.53E+02	4.34E-01	4.54E-01	1.24E-01	4.02E+02	5.23E+01	4.09E-01	4.12E+01	9.76E+00
UM-250S-2750E (6-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.44E+01	7.38E+03	1.02E+02	7.84E-04	5.14E+02	4.03E-01	4.54E-01	1.24E-01	3.73E+02	5.23E+01	4.09E-01	4.12E+01	9.07E+00
UM-250S-2500E (6-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.44E+01	2.11E+03	2.91E+01	7.84E-04	1.47E+02	1.15E-01	4.54E-01	1.24E-01	1.07E+02	5.23E+01	4.09E-01	4.12E+01	2.59E+00
BRSD-2 (6-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.44E+01	1.32E+04	1.81E+02	7.84E-04	9.18E+02	7.20E-01	4.54E-01	1.24E-01	6.67E+02	5.23E+01	4.09E-01	4.12E+01	1.62E+01
UM-500N-2500E (6-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.44E+01	4.70E+02	6.46E+00	7.84E-04	3.27E+01	2.56E-02	4.54E-01	1.24E-01	2.38E+01	5.23E+01	4.09E-01	4.12E+01	5.77E-01
UM-250N-2500E (6-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.44E+01	5.37E+03	7.39E+01	7.84E-04	3.74E+02	2.93E-01	4.54E-01	1.24E-01	2.72E+02	5.23E+01	4.09E-01	4.12E+01	6.60E+00
UM-250N-2250E (6-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.44E+01	2.59E+03	3.56E+01	7.84E-04	1.80E+02	1.41E-01	4.54E-01	1.24E-01	1.31E+02	5.23E+01	4.09E-01	4.12E+01	3.18E+00

TABLE C-12DA: COPPER DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 12 - MARSH, TERRESTRIAL RECEPTORS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **118.73**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
American Kestral (Insectivorous Birds)																							
Western Upper Marsh (6-12")																						**Maximum HQ (Eastern Upper Marsh, 6-12")**	**2.19E+01**
UM-500S-2500E (6-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	6.28E+00	2.29E+03	3.15E+01	7.84E-04	3.64E+02	2.86E-01	4.54E-01	1.24E-01	1.16E+02	5.23E+01	4.09E-01	4.12E+01	2.82E+00
UM-0N-2000E (6-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	6.28E+00	6.79E+03	9.34E+01	7.84E-04	1.08E+03	8.47E-01	4.54E-01	1.24E-01	3.45E+02	5.23E+01	4.09E-01	4.12E+01	8.38E+00
UM-500S-2000E (6-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	6.28E+00	1.46E+03	2.01E+01	7.84E-04	2.32E+02	1.82E-01	4.54E-01	1.24E-01	7.41E+01	5.23E+01	4.09E-01	4.12E+01	1.80E+00
UM-250N-1750E (6-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	6.28E+00	8.99E+02	1.24E+01	7.84E-04	1.43E+02	1.12E-01	4.54E-01	1.24E-01	4.57E+01	5.23E+01	4.09E-01	4.12E+01	1.11E+00
UM-0N-1500E (6-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	6.28E+00	1.16E+03	1.59E+01	7.84E-04	1.84E+02	1.44E-01	4.54E-01	1.24E-01	5.88E+01	5.23E+01	4.09E-01	4.12E+01	1.43E+00
UM-250S-1500E (6-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	6.28E+00	3.22E+03	4.44E+01	7.84E-04	5.13E+02	4.02E-01	4.54E-01	1.24E-01	1.64E+02	5.23E+01	4.09E-01	4.12E+01	3.98E+00
UM-250S-1250E (6-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	6.28E+00	4.87E+02	6.70E+00	7.84E-04	7.75E+01	6.08E-02	4.54E-01	1.24E-01	2.47E+01	5.23E+01	4.09E-01	4.12E+01	6.01E-01
BRSD-6 (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-1000E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-750E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-500E (6-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	6.28E+00	4.58E+03	6.30E+01	7.84E-04	7.29E+02	5.72E-01	4.54E-01	1.24E-01	2.33E+02	5.23E+01	4.09E-01	4.12E+01	5.66E+00
UM-250S-500E (6-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	6.28E+00	7.16E+02	9.86E+00	7.84E-04	1.14E+02	8.94E-02	4.54E-01	1.24E-01	3.64E+01	5.23E+01	4.09E-01	4.12E+01	8.84E-01
UM-0N-250E (6-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	6.28E+00	2.16E+03	2.97E+01	7.84E-04	3.44E+02	2.70E-01	4.54E-01	1.24E-01	1.10E+02	5.23E+01	4.09E-01	4.12E+01	2.67E+00
UM-250S-250E (6-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	6.28E+00	8.04E+02	1.11E+01	7.84E-04	1.28E+02	1.00E-01	4.54E-01	1.24E-01	4.09E+01	5.23E+01	4.09E-01	4.12E+01	9.93E-01
BRSD-7 (6-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	6.28E+00	3.05E+02	4.20E+00	7.84E-04	4.86E+01	3.81E-02	4.54E-01	1.24E-01	1.55E+01	5.23E+01	4.09E-01	4.12E+01	3.77E-01
BRSD-8 (6-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	6.28E+00	1.26E+03	1.73E+01	7.84E-04	2.00E+02	1.57E-01	4.54E-01	1.24E-01	6.39E+01	5.23E+01	4.09E-01	4.12E+01	1.55E+00
UM-500S-500E (6-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	6.28E+00	5.15E+02	7.09E+00	7.84E-04	8.20E+01	6.43E-02	4.54E-01	1.24E-01	2.62E+01	5.23E+01	4.09E-01	4.12E+01	6.36E-01
BRSD-9 (6-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	6.28E+00	5.29E+02	7.27E+00	7.84E-04	8.41E+01	6.60E-02	4.54E-01	1.24E-01	2.69E+01	5.23E+01	4.09E-01	4.12E+01	6.52E-01
BRSD-10 (6-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	6.28E+00	6.10E+03	8.40E+01	7.84E-04	9.71E+02	7.62E-01	4.54E-01	1.24E-01	3.10E+02	5.23E+01	4.09E-01	4.12E+01	7.53E+00
BRSD-11 (6-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	6.28E+00	9.30E+02	1.28E+01	7.84E-04	1.48E+02	1.16E-01	4.54E-01	1.24E-01	4.73E+01	5.23E+01	4.09E-01	4.12E+01	1.15E+00
Middle Marsh (0-2")																						**Maximum HQ (Western Upper Marsh, 6-12")**	**8.38E+00**
MMSD-201 (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	6.28E+00	2.73E+03	3.76E+01	7.84E-04	4.35E+02	3.41E-01	4.54E-01	1.24E-01	1.39E+02	5.23E+01	4.09E-01	4.12E+01	3.37E+00
MMSD-202 (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	6.28E+00	2.75E+03	3.79E+01	7.84E-04	4.38E+02	3.44E-01	4.54E-01	1.24E-01	1.40E+02	5.23E+01	4.09E-01	4.12E+01	3.40E+00
Middle Marsh (2-6")																						**Maximum HQ (Middle Marsh, 0-2")**	**3.40E+00**
MMSD-201 (2-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	6.28E+00	3.77E+03	5.19E+01	7.84E-04	6.00E+02	4.71E-01	4.54E-01	1.24E-01	1.92E+02	5.23E+01	4.09E-01	4.12E+01	4.65E+00
MMSD-202 (2-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	6.28E+00	3.24E+03	4.46E+01	7.84E-04	5.16E+02	4.05E-01	4.54E-01	1.24E-01	1.65E+02	5.23E+01	4.09E-01	4.12E+01	4.00E+00
Middle Marsh (6-12")																						**Maximum HQ (Middle Marsh, 2-6")**	**4.65E+00**
MMSD-201 (6-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	6.28E+00	4.56E+03	6.28E+01	7.84E-04	7.26E+02	5.69E-01	4.54E-01	1.24E-01	2.32E+02	5.23E+01	4.09E-01	4.12E+01	5.63E+00
MMSD-202 (6-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	6.28E+00	1.84E+03	2.53E+01	7.84E-04	2.92E+02	2.29E-01	4.54E-01	1.24E-01	9.32E+01	5.23E+01	4.09E-01	4.12E+01	2.27E+00
Lower Marsh (0-2")																						**Maximum HQ (Middle Marsh, 6-12")**	**5.63E+00**
LMSD-201 (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	6.28E+00	5.13E+02	7.07E+00	7.84E-04	8.17E+01	6.41E-02	4.54E-01	1.24E-01	2.61E+01	5.23E+01	4.09E-01	4.12E+01	6.34E-01
LMSD-202 (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	6.28E+00	4.07E+02	5.60E+00	7.84E-04	6.48E+01	5.08E-02	4.54E-01	1.24E-01	2.07E+01	5.23E+01	4.09E-01	4.12E+01	5.03E-01
LMSD-203 (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	6.28E+00	1.80E+03	2.48E+01	7.84E-04	2.87E+02	2.25E-01	4.54E-01	1.24E-01	9.16E+01	5.23E+01	4.09E-01	4.12E+01	2.23E+00
LMSD-204 (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	6.28E+00	1.41E+03	1.94E+01	7.84E-04	2.24E+02	1.76E-01	4.54E-01	1.24E-01	7.15E+01	5.23E+01	4.09E-01	4.12E+01	1.74E+00
Lower Marsh (2-6")																						**Maximum HQ (Lower Marsh, 0-2")**	**2.23E+00**
LMSD-201 (2-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	6.28E+00	5.08E+02	7.00E+00	7.84E-04	8.09E+01	6.35E-02	4.54E-01	1.24E-01	2.58E+01	5.23E+01	4.09E-01	4.12E+01	6.28E-01
LMSD-202 (2-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	6.28E+00	3.02E+02	4.15E+00	7.84E-04	4.80E+01	3.77E-02	4.54E-01	1.24E-01	1.53E+01	5.23E+01	4.09E-01	4.12E+01	3.72E-01
LMSD-203 (2-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	6.28E+00	1.79E+03	2.46E+01	7.84E-04	2.85E+02	2.24E-01	4.54E-01	1.24E-01	9.10E+01	5.23E+01	4.09E-01	4.12E+01	2.21E+00
LMSD-204 (2-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	6.28E+00	1.43E+03	1.96E+01	7.84E-04	2.27E+02	1.78E-01	4.54E-01	1.24E-01	7.25E+01	5.23E+01	4.09E-01	4.12E+01	1.76E+00
Lower Marsh (6-12")																						**Maximum HQ (Lower Marsh, 2-6")**	**2.21E+00**
LMSD-201 (6-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	6.28E+00	5.30E+02	7.30E+00	7.84E-04	8.44E+01	6.62E-02	4.54E-01	1.24E-01	2.70E+01	5.23E+01	4.09E-01	4.12E+01	6.55E-01
LMSD-202 (6-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	6.28E+00	3.28E+02	4.51E+00	7.84E-04	5.22E+01	4.09E-02	4.54E-01	1.24E-01	1.67E+01	5.23E+01	4.09E-01	4.12E+01	4.05E-01
LMSD-203 (6-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	6.28E+00	2.26E+03	3.11E+01	7.84E-04	3.60E+02	2.82E-01	4.54E-01	1.24E-01	1.15E+02	5.23E+01	4.09E-01	4.12E+01	2.79E+00
LMSD-204 (6-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	6.28E+00	1.42E+03	1.95E+01	7.84E-04	2.26E+02	1.77E-01	4.54E-01	1.24E-01	7.22E+01	5.23E+01	4.09E-01	4.12E+01	1.75E+00
																						Maximum HQ (Lower Marsh, 6-12")	**2.79E+00**
Meadow Vole (Small Herbivorous Mammals)																							
Reference Sites																							
BRSD-5 (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.42E+00	5.58E+01	2.62E-01	NA	NA	NA	NA	1.13E-04	3.92E+01	4.41E-03	1.00E+00	3.06E-02	8.70E+00	6.32E+02	2.47E-02	6.24E+02	1.39E-02
BRSD-5 (2-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.42E+00	5.94E+01	2.78E-01	NA	NA	NA	NA	1.13E-04	4.17E+01	4.69E-03	1.00E+00	3.06E-02	9.25E+00	6.32E+02	2.47E-02	6.24E+02	1.48E-02
BRSD-5 (6-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.42E+00	6.45E+01	3.02E-01	NA	NA	NA	NA	1.13E-04	4.53E+01	5.10E-03	1.00E+00	3.06E-02	1.00E+01	6.32E+02	2.47E-02	6.24E+02	1.61E-02

TABLE C-12DA: COPPER DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 12 - MARSH, TERRESTRIAL RECEPTORS (Continued)
Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)
calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **118.73**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Meadow Vole (Small Herbivorous Mammals)																							
PGBG-1 (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.42E+00	4.94E+01	2.32E-01	NA	NA	NA	NA	1.13E-04	3.47E+01	3.91E-03	1.00E+00	3.06E-02	7.70E+00	6.32E+02	2.47E-02	6.24E+02	1.23E-02
PGBG-1 (2-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.42E+00	5.27E+01	2.47E-01	NA	NA	NA	NA	1.13E-04	3.70E+01	4.16E-03	1.00E+00	3.06E-02	8.21E+00	6.32E+02	2.47E-02	6.24E+02	1.32E-02
PGBG-1 (6-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.42E+00	3.13E+01	1.47E-01	NA	NA	NA	NA	1.13E-04	2.20E+01	2.48E-03	1.00E+00	3.06E-02	4.88E+00	6.32E+02	2.47E-02	6.24E+02	7.83E-03
PGBG-2 (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.42E+00	7.40E+01	3.47E-01	NA	NA	NA	NA	1.13E-04	5.20E+01	5.85E-03	1.00E+00	3.06E-02	1.15E+01	6.32E+02	2.47E-02	6.24E+02	1.85E-02
PGBG-2 (2-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.42E+00	7.83E+01	3.67E-01	NA	NA	NA	NA	1.13E-04	5.50E+01	6.19E-03	1.00E+00	3.06E-02	1.22E+01	6.32E+02	2.47E-02	6.24E+02	1.96E-02
PGBG-2 (6-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.42E+00	9.60E+01	4.50E-01	NA	NA	NA	NA	1.13E-04	6.74E+01	7.59E-03	1.00E+00	3.06E-02	1.50E+01	6.32E+02	2.47E-02	6.24E+02	2.40E-02
Eastern Upper Marsh (0-2")																						**Minimum HQ (Reference Sites)**	**7.83E-03**
UM-1000S-3500E (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	3.30E-01	7.30E+01	3.42E-01	NA	NA	NA	NA	1.13E-04	2.21E+02	2.49E-02	1.00E+00	3.06E-02	1.20E+01	6.32E+02	2.47E-02	6.24E+02	1.92E-02
BRSD-15 (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	3.30E-01	2.95E+01	1.38E-01	NA	NA	NA	NA	1.13E-04	8.92E+01	1.00E-02	1.00E+00	3.06E-02	4.84E+00	6.32E+02	2.47E-02	6.24E+02	7.77E-03
BRSD-4 (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	3.30E-01	2.06E+01	9.65E-02	NA	NA	NA	NA	1.13E-04	6.23E+01	7.01E-03	1.00E+00	3.06E-02	3.38E+00	6.32E+02	2.47E-02	6.24E+02	5.43E-03
UM-750S-3500E (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	3.30E-01	2.95E+02	1.38E+00	NA	NA	NA	NA	1.13E-04	8.94E+02	1.01E-01	1.00E+00	3.06E-02	4.85E+01	6.32E+02	2.47E-02	6.24E+02	7.79E-02
BRSD-16 (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	3.30E-01	1.23E+02	5.75E-01	NA	NA	NA	NA	1.13E-04	3.71E+02	4.18E-02	1.00E+00	3.06E-02	2.01E+01	6.32E+02	2.47E-02	6.24E+02	3.23E-02
UM-750S-3000E (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	3.30E-01	1.34E+02	6.27E-01	NA	NA	NA	NA	1.13E-04	4.05E+02	4.56E-02	1.00E+00	3.06E-02	2.20E+01	6.32E+02	2.47E-02	6.24E+02	3.53E-02
BRSD-3 (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	3.30E-01	3.70E+02	1.73E+00	NA	NA	NA	NA	1.13E-04	1.12E+03	1.26E-01	1.00E+00	3.06E-02	6.08E+01	6.32E+02	2.47E-02	6.24E+02	9.75E-02
UM-500S-3250E (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	3.30E-01	1.74E+02	8.18E-01	NA	NA	NA	NA	1.13E-04	5.28E+02	5.94E-02	1.00E+00	3.06E-02	2.87E+01	6.32E+02	2.47E-02	6.24E+02	4.60E-02
UM-500S-3000E (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	3.30E-01	1.45E+02	6.78E-01	NA	NA	NA	NA	1.13E-04	4.38E+02	4.93E-02	1.00E+00	3.06E-02	2.38E+01	6.32E+02	2.47E-02	6.24E+02	3.81E-02
UM-500S-2750E (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	3.30E-01	1.66E+02	7.81E-01	NA	NA	NA	NA	1.13E-04	5.04E+02	5.67E-02	1.00E+00	3.06E-02	2.74E+01	6.32E+02	2.47E-02	6.24E+02	4.39E-02
BRSD-25 (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	3.30E-01	8.75E+01	4.10E-01	NA	NA	NA	NA	1.13E-04	2.65E+02	2.98E-02	1.00E+00	3.06E-02	1.44E+01	6.32E+02	2.47E-02	6.24E+02	2.31E-02
UM-250S-3000E (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	3.30E-01	3.21E+02	1.50E+00	NA	NA	NA	NA	1.13E-04	9.71E+02	1.09E-01	1.00E+00	3.06E-02	5.27E+01	6.32E+02	2.47E-02	6.24E+02	8.46E-02
UM-250S-3250E (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	3.30E-01	1.04E+02	4.88E-01	NA	NA	NA	NA	1.13E-04	3.15E+02	3.54E-02	1.00E+00	3.06E-02	1.71E+01	6.32E+02	2.47E-02	6.24E+02	2.74E-02
BRSD-24 (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	3.30E-01	1.29E+02	6.07E-01	NA	NA	NA	NA	1.13E-04	3.92E+02	4.41E-02	1.00E+00	3.06E-02	2.13E+01	6.32E+02	2.47E-02	6.24E+02	3.41E-02
UM-250S-2750E (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	3.30E-01	9.02E+01	4.23E-01	NA	NA	NA	NA	1.13E-04	2.73E+02	3.07E-02	1.00E+00	3.06E-02	1.48E+01	6.32E+02	2.47E-02	6.24E+02	2.38E-02
UM-250S-2500E (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	3.30E-01	6.74E+01	3.16E-01	NA	NA	NA	NA	1.13E-04	2.04E+02	2.30E-02	1.00E+00	3.06E-02	1.11E+01	6.32E+02	2.47E-02	6.24E+02	1.78E-02
UM-0N-2500E (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	3.30E-01	1.68E+02	7.90E-01	NA	NA	NA	NA	1.13E-04	5.10E+02	5.74E-02	1.00E+00	3.06E-02	2.77E+01	6.32E+02	2.47E-02	6.24E+02	4.44E-02
UM-0N-250E (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	3.30E-01	1.93E+02	9.06E-01	NA	NA	NA	NA	1.13E-04	5.85E+02	6.58E-02	1.00E+00	3.06E-02	3.18E+01	6.32E+02	2.47E-02	6.24E+02	5.09E-02
BRSD-2 (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	3.30E-01	1.13E+02	5.31E-01	NA	NA	NA	NA	1.13E-04	3.43E+02	3.86E-02	1.00E+00	3.06E-02	1.86E+01	6.32E+02	2.47E-02	6.24E+02	2.99E-02
UM-500N-2500E (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	3.30E-01	1.96E+01	9.19E-02	NA	NA	NA	NA	1.13E-04	5.93E+01	6.67E-03	1.00E+00	3.06E-02	3.22E+00	6.32E+02	2.47E-02	6.24E+02	5.16E-03
UM-250N-2500E (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	3.30E-01	1.83E+02	8.60E-01	NA	NA	NA	NA	1.13E-04	5.55E+02	6.25E-02	1.00E+00	3.06E-02	3.01E+01	6.32E+02	2.47E-02	6.24E+02	4.83E-02
UM-250N-2250E (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	3.30E-01	1.20E+02	5.64E-01	NA	NA	NA	NA	1.13E-04	3.64E+02	4.10E-02	1.00E+00	3.06E-02	1.98E+01	6.32E+02	2.47E-02	6.24E+02	3.17E-02
Western Upper Marsh (0-2")																						**Maximum HQ (Eastern Upper Marsh, 0-2")**	**9.75E-02**
UM-500S-2500E (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.96E-01	7.31E+01	3.43E-01	NA	NA	NA	NA	1.13E-04	3.73E+02	4.20E-02	1.00E+00	3.06E-02	1.26E+01	6.32E+02	2.47E-02	6.24E+02	2.02E-02
UM-0N-2000E (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.96E-01	1.54E+02	7.24E-01	NA	NA	NA	NA	1.13E-04	7.88E+02	8.87E-02	1.00E+00	3.06E-02	2.66E+01	6.32E+02	2.47E-02	6.24E+02	4.26E-02
UM-500S-2000E (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.96E-01	3.59E+01	1.68E-01	NA	NA	NA	NA	1.13E-04	1.83E+02	2.06E-02	1.00E+00	3.06E-02	6.17E+00	6.32E+02	2.47E-02	6.24E+02	9.90E-03
UM-250N-1750E (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.96E-01	3.00E+01	1.41E-01	NA	NA	NA	NA	1.13E-04	1.53E+02	1.72E-02	1.00E+00	3.06E-02	5.16E+00	6.32E+02	2.47E-02	6.24E+02	8.27E-03
UM-0N-1500E (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.96E-01	1.78E+01	8.35E-02	NA	NA	NA	NA	1.13E-04	9.08E+01	1.02E-02	1.00E+00	3.06E-02	3.06E+00	6.32E+02	2.47E-02	6.24E+02	4.91E-03
UM-250S-1500E (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.96E-01	1.12E+02	5.25E-01	NA	NA	NA	NA	1.13E-04	5.71E+02	6.43E-02	1.00E+00	3.06E-02	1.93E+01	6.32E+02	2.47E-02	6.24E+02	3.09E-02
UM-250S-1250E (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.96E-01	1.79E+01	8.37E-02	NA	NA	NA	NA	1.13E-04	9.11E+01	1.03E-02	1.00E+00	3.06E-02	3.07E+00	6.32E+02	2.47E-02	6.24E+02	4.93E-03
BRSD-6 (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-1000E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-750E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-500E (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.96E-01	8.82E+01	4.14E-01	NA	NA	NA	NA	1.13E-04	4.50E+02	5.06E-02	1.00E+00	3.06E-02	1.52E+01	6.32E+02	2.47E-02	6.24E+02	2.43E-02
UM-250S-500E (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.96E-01	1.58E+01	7.43E-02	NA	NA	NA	NA	1.13E-04	8.08E+01	9.09E-03	1.00E+00	3.06E-02	2.72E+00	6.32E+02	2.47E-02	6.24E+02	4.37E-03
UM-250S-250E (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.96E-01	4.70E+01	2.21E-01	NA	NA	NA	NA	1.13E-04	2.40E+02	2.70E-02	1.00E+00	3.06E-02	8.09E+00	6.32E+02	2.47E-02	6.24E+02	1.30E-02
BRSD-7 (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-8 (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.96E-01	3.80E+01	1.78E-01	NA	NA	NA	NA	1.13E-04	1.94E+02	2.18E-02	1.00E+00	3.06E-02	6.54E+00	6.32E+02	2.47E-02	6.24E+02	1.05E-02
UM-500S-500E (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.96E-01	1.89E+01	8.85E-02	NA	NA	NA	NA	1.13E-04	9.63E+01	1.08E-02	1.00E+00	3.06E-02	3.25E+00	6.32E+02	2.47E-02	6.24E+02	5.21E-03
BRSD-9 (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.96E-01	1.64E+01	7.71E-02	NA	NA	NA	NA	1.13E-04	8.39E+01	9.44E-03	1.00E+00	3.06E-02	2.83E+00	6.32E+02	2.47E-02	6.24E+02	4.54E-03
BRSD-10 (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.96E-01	1.28E+02	5.98E-01	NA	NA	NA	NA	1.13E-04	6.51E+02	7.33E-02	1.00E+00	3.06E-02	2.19E+01	6.32E+02	2.47E-02	6.24E+02	3.52E-02
BRSD-11 (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.96E-01	2.61E+01	1.22E-01	NA	NA	NA	NA	1.13E-04	1.33E+02	1.50E-02	1.00E+00	3.06E-02	4.48E+00	6.32E+02	2.47E-02	6.24E+02	7.19E-03

TABLE C-12DA: COPPER DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 12 - MARSH, TERRESTRIAL RECEPTORS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **118.73**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Meadow Vole (Small Herbivorous Mammals)																							
Eastern Upper Marsh (2-6")																					**Maximum HQ (Western Upper Marsh, 0-2")**		**4.26E-02**
UM-1000S-3500E (2-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	3.30E-01	3.50E+01	1.64E-01	NA	NA	NA	NA	1.13E-04	1.06E+02	1.19E-02	1.00E+00	3.06E-02	5.76E+00	6.32E+02	2.47E-02	6.24E+02	9.23E-03
BRSD-15 (2-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	3.30E-01	3.22E+01	1.51E-01	NA	NA	NA	NA	1.13E-04	9.74E+01	1.10E-02	1.00E+00	3.06E-02	5.29E+00	6.32E+02	2.47E-02	6.24E+02	8.48E-03
BRSD-4 (2-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	3.30E-01	4.26E+01	2.00E-01	NA	NA	NA	NA	1.13E-04	1.29E+02	1.45E-02	1.00E+00	3.06E-02	7.00E+00	6.32E+02	2.47E-02	6.24E+02	1.12E-02
UM-750S-3500E (2-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	3.30E-01	1.13E+02	5.30E-01	NA	NA	NA	NA	1.13E-04	3.42E+02	3.85E-02	1.00E+00	3.06E-02	1.86E+01	6.32E+02	2.47E-02	6.24E+02	2.98E-02
BRSD-16 (2-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	3.30E-01	3.70E+02	1.73E+00	NA	NA	NA	NA	1.13E-04	1.12E+03	1.26E-01	1.00E+00	3.06E-02	6.08E+01	6.32E+02	2.47E-02	6.24E+02	9.75E-02
UM-750S-3000E (2-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	3.30E-01	1.17E+02	5.48E-01	NA	NA	NA	NA	1.13E-04	3.54E+02	3.98E-02	1.00E+00	3.06E-02	1.92E+01	6.32E+02	2.47E-02	6.24E+02	3.08E-02
BRSD-3 (2-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	3.30E-01	4.69E+02	2.20E+00	NA	NA	NA	NA	1.13E-04	1.42E+03	1.60E-01	1.00E+00	3.06E-02	7.71E+01	6.32E+02	2.47E-02	6.24E+02	1.24E-01
UM-500S-3250E (2-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	3.30E-01	9.45E+01	4.43E-01	NA	NA	NA	NA	1.13E-04	2.86E+02	3.22E-02	1.00E+00	3.06E-02	1.55E+01	6.32E+02	2.47E-02	6.24E+02	2.49E-02
UM-500S-3000E (2-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	3.30E-01	2.71E+01	1.27E-01	NA	NA	NA	NA	1.13E-04	8.20E+01	9.23E-03	1.00E+00	3.06E-02	4.45E+00	6.32E+02	2.47E-02	6.24E+02	7.14E-03
UM-500S-2750E (2-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	3.30E-01	1.05E+02	4.93E-01	NA	NA	NA	NA	1.13E-04	3.18E+02	3.58E-02	1.00E+00	3.06E-02	1.73E+01	6.32E+02	2.47E-02	6.24E+02	2.77E-02
BRSD-25 (2-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	3.30E-01	1.33E+02	6.23E-01	NA	NA	NA	NA	1.13E-04	4.02E+02	4.52E-02	1.00E+00	3.06E-02	2.18E+01	6.32E+02	2.47E-02	6.24E+02	3.50E-02
UM-250S-3000E (2-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	3.30E-01	2.65E+02	1.24E+00	NA	NA	NA	NA	1.13E-04	8.01E+02	9.01E-02	1.00E+00	3.06E-02	4.35E+01	6.32E+02	2.47E-02	6.24E+02	6.98E-02
UM-250S-3250E (2-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	3.30E-01	2.70E+01	1.27E-01	NA	NA	NA	NA	1.13E-04	8.18E+01	9.21E-03	1.00E+00	3.06E-02	4.44E+00	6.32E+02	2.47E-02	6.24E+02	7.12E-03
BRSD-24 (2-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	3.30E-01	2.44E+02	1.15E+00	NA	NA	NA	NA	1.13E-04	7.40E+02	8.33E-02	1.00E+00	3.06E-02	4.02E+01	6.32E+02	2.47E-02	6.24E+02	6.44E-02
UM-250S-2750E (2-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	3.30E-01	1.46E+02	6.85E-01	NA	NA	NA	NA	1.13E-04	4.42E+02	4.97E-02	1.00E+00	3.06E-02	2.40E+01	6.32E+02	2.47E-02	6.24E+02	3.85E-02
UM-0N-2500E (2-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	3.30E-01	8.65E+01	4.06E-01	NA	NA	NA	NA	1.13E-04	2.62E+02	2.95E-02	1.00E+00	3.06E-02	1.42E+01	6.32E+02	2.47E-02	6.24E+02	2.28E-02
BRSD-2 (2-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	3.30E-01	1.35E+02	6.34E-01	NA	NA	NA	NA	1.13E-04	4.09E+02	4.60E-02	1.00E+00	3.06E-02	2.22E+01	6.32E+02	2.47E-02	6.24E+02	3.56E-02
UM-500N-2500E (2-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	3.30E-01	2.45E+01	1.15E-01	NA	NA	NA	NA	1.13E-04	7.43E+01	8.36E-03	1.00E+00	3.06E-02	4.03E+00	6.32E+02	2.47E-02	6.24E+02	6.47E-03
UM-250N-2500E (2-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	3.30E-01	1.69E+02	7.93E-01	NA	NA	NA	NA	1.13E-04	5.12E+02	5.76E-02	1.00E+00	3.06E-02	2.78E+01	6.32E+02	2.47E-02	6.24E+02	4.46E-02
UM-250N-2250E (2-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	3.30E-01	4.72E+01	2.22E-01	NA	NA	NA	NA	1.13E-04	1.43E+02	1.61E-02	1.00E+00	3.06E-02	7.76E+00	6.32E+02	2.47E-02	6.24E+02	1.25E-02
Western Upper Marsh (2-6")																					**Maximum HQ (Eastern Upper Marsh, 2-6")**		**1.24E-01**
UM-500S-2500E (2-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.96E-01	6.96E+01	3.26E-01	NA	NA	NA	NA	1.13E-04	3.55E+02	4.00E-02	1.00E+00	3.06E-02	1.20E+01	6.32E+02	2.47E-02	6.24E+02	1.92E-02
UM-0N-2000E (2-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.96E-01	1.39E+02	6.54E-01	NA	NA	NA	NA	1.13E-04	7.11E+02	8.00E-02	1.00E+00	3.06E-02	2.40E+01	6.32E+02	2.47E-02	6.24E+02	3.84E-02
UM-500S-2000E (2-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.96E-01	4.65E+01	2.18E-01	NA	NA	NA	NA	1.13E-04	2.37E+02	2.67E-02	1.00E+00	3.06E-02	7.99E+00	6.32E+02	2.47E-02	6.24E+02	1.28E-02
UM-250N-1750E (2-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.96E-01	2.12E+01	9.93E-02	NA	NA	NA	NA	1.13E-04	1.08E+02	1.22E-02	1.00E+00	3.06E-02	3.64E+00	6.32E+02	2.47E-02	6.24E+02	5.84E-03
UM-0N-1500E (2-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.96E-01	2.65E+01	1.24E-01	NA	NA	NA	NA	1.13E-04	1.35E+02	1.52E-02	1.00E+00	3.06E-02	4.55E+00	6.32E+02	2.47E-02	6.24E+02	7.30E-03
UM-250S-1500E (2-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.96E-01	1.66E+02	7.80E-01	NA	NA	NA	NA	1.13E-04	8.49E+02	9.55E-02	1.00E+00	3.06E-02	2.86E+01	6.32E+02	2.47E-02	6.24E+02	4.59E-02
UM-250S-1250E (2-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.96E-01	1.56E+01	7.30E-02	NA	NA	NA	NA	1.13E-04	7.94E+01	8.94E-03	1.00E+00	3.06E-02	2.68E+00	6.32E+02	2.47E-02	6.24E+02	4.29E-03
BRSD-6 (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-1000E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-750E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-500E (2-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.96E-01	5.41E+02	2.54E+00	NA	NA	NA	NA	1.13E-04	2.76E+03	3.11E-01	1.00E+00	3.06E-02	9.31E+01	6.32E+02	2.47E-02	6.24E+02	1.49E-01
UM-250S-500E (2-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.96E-01	1.77E+01	8.29E-02	NA	NA	NA	NA	1.13E-04	9.02E+01	1.02E-02	1.00E+00	3.06E-02	3.04E+00	6.32E+02	2.47E-02	6.24E+02	4.88E-03
UM-0N-250E (2-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.96E-01	5.92E+01	2.78E-01	NA	NA	NA	NA	1.13E-04	3.02E+02	3.40E-02	1.00E+00	3.06E-02	1.02E+01	6.32E+02	2.47E-02	6.24E+02	1.63E-02
UM-250S-250E (2-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.96E-01	4.08E+01	1.91E-01	NA	NA	NA	NA	1.13E-04	2.08E+02	2.34E-02	1.00E+00	3.06E-02	7.01E+00	6.32E+02	2.47E-02	6.24E+02	1.12E-02
BRSD-7 (2-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.96E-01	1.11E+01	5.19E-02	NA	NA	NA	NA	1.13E-04	5.65E+01	6.36E-03	1.00E+00	3.06E-02	1.90E+00	6.32E+02	2.47E-02	6.24E+02	3.06E-03
BRSD-8 (2-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.96E-01	3.69E+01	1.73E-01	NA	NA	NA	NA	1.13E-04	1.88E+02	2.12E-02	1.00E+00	3.06E-02	6.34E+00	6.32E+02	2.47E-02	6.24E+02	1.02E-02
UM-500S-500E (2-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.96E-01	1.73E+01	8.12E-02	NA	NA	NA	NA	1.13E-04	8.83E+01	9.94E-03	1.00E+00	3.06E-02	2.98E+00	6.32E+02	2.47E-02	6.24E+02	4.77E-03
BRSD-9 (2-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.96E-01	1.04E+01	4.86E-02	NA	NA	NA	NA	1.13E-04	5.29E+01	5.95E-03	1.00E+00	3.06E-02	1.78E+00	6.32E+02	2.47E-02	6.24E+02	2.86E-03
BRSD-10 (2-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.96E-01	1.35E+02	6.34E-01	NA	NA	NA	NA	1.13E-04	6.90E+02	7.77E-02	1.00E+00	3.06E-02	2.33E+01	6.32E+02	2.47E-02	6.24E+02	3.73E-02
BRSD-11 (2-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.96E-01	3.02E+01	1.42E-01	NA	NA	NA	NA	1.13E-04	1.54E+02	1.73E-02	1.00E+00	3.06E-02	5.19E+00	6.32E+02	2.47E-02	6.24E+02	8.33E-03
Eastern Upper Marsh (6-12")																					**Maximum HQ (Western Upper Marsh, 2-6")**		**1.49E-01**
UM-1000S-3500E (6-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	3.30E-01	2.86E+01	1.34E-01	NA	NA	NA	NA	1.13E-04	8.66E+01	9.75E-03	1.00E+00	3.06E-02	4.70E+00	6.32E+02	2.47E-02	6.24E+02	7.54E-03
BRSD-15 (6-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	3.30E-01	3.23E+01	1.52E-01	NA	NA	NA	NA	1.13E-04	9.79E+01	1.10E-02	1.00E+00	3.06E-02	5.32E+00	6.32E+02	2.47E-02	6.24E+02	8.53E-03
BRSD-4 (6-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	3.30E-01	3.06E+01	1.43E-01	NA	NA	NA	NA	1.13E-04	9.25E+01	1.04E-02	1.00E+00	3.06E-02	5.02E+00	6.32E+02	2.47E-02	6.24E+02	8.06E-03
UM-750S-3500E (6-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	3.30E-01	1.35E+02	6.34E-01	NA	NA	NA	NA	1.13E-04	4.09E+02	4.60E-02	1.00E+00	3.06E-02	2.22E+01	6.32E+02	2.47E-02	6.24E+02	3.56E-02
BRSD-16 (6-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	3.30E-01	1.88E+02	8.80E-01	NA	NA	NA	NA	1.13E-04	5.68E+02	6.39E-02	1.00E+00	3.06E-02	3.08E+01	6.32E+02	2.47E-02	6.24E+02	4.95E-02
UM-750S-3000E (6-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	3.30E-01	1.13E+02	5.31E-01	NA	NA	NA	NA	1.13E-04	3.43E+02	3.86E-02	1.00E+00	3.06E-02	1.86E+01	6.32E+02	2.47E-02	6.24E+02	2.99E-02

TABLE C-12DA: COPPER DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 12 - MARSH, TERRESTRIAL RECEPTORS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **118.73**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Meadow Vole (Small Herbivorous Mammals)																							
BRSD-3 (6-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	3.30E-01	4.10E+02	1.92E+00	NA	NA	NA	NA	1.13E-04	1.24E+03	1.40E-01	1.00E+00	3.06E-02	6.73E+01	6.32E+02	2.47E-02	6.24E+02	1.08E-01
UM-500S-3250E (6-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	3.30E-01	7.07E+01	3.31E-01	NA	NA	NA	NA	1.13E-04	2.14E+02	2.41E-02	1.00E+00	3.06E-02	1.16E+01	6.32E+02	2.47E-02	6.24E+02	1.86E-02
UM-500S-3000E (6-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	3.30E-01	2.93E+01	1.37E-01	NA	NA	NA	NA	1.13E-04	8.86E+01	9.97E-03	1.00E+00	3.06E-02	4.81E+00	6.32E+02	2.47E-02	6.24E+02	7.72E-03
UM-500S-2750E (6-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	3.30E-01	9.58E+01	4.49E-01	NA	NA	NA	NA	1.13E-04	2.90E+02	3.26E-02	1.00E+00	3.06E-02	1.57E+01	6.32E+02	2.47E-02	6.24E+02	2.53E-02
BRSD-25 (6-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	3.30E-01	6.31E+01	2.96E-01	NA	NA	NA	NA	1.13E-04	1.91E+02	2.15E-02	1.00E+00	3.06E-02	1.04E+01	6.32E+02	2.47E-02	6.24E+02	1.66E-02
UM-250S-3000E (6-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	3.30E-01	2.41E+02	1.13E+00	NA	NA	NA	NA	1.13E-04	7.30E+02	8.22E-02	1.00E+00	3.06E-02	3.96E+01	6.32E+02	2.47E-02	6.24E+02	6.36E-02
UM-250S-3250E (6-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	3.30E-01	2.87E+01	1.35E-01	NA	NA	NA	NA	1.13E-04	8.69E+01	9.78E-03	1.00E+00	3.06E-02	4.72E+00	6.32E+02	2.47E-02	6.24E+02	7.57E-03
BRSD-24 (6-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	3.30E-01	1.83E+02	8.57E-01	NA	NA	NA	NA	1.13E-04	5.53E+02	6.22E-02	1.00E+00	3.06E-02	3.00E+01	6.32E+02	2.47E-02	6.24E+02	4.82E-02
UM-250S-2750E (6-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	3.30E-01	1.70E+02	7.96E-01	NA	NA	NA	NA	1.13E-04	5.14E+02	5.78E-02	1.00E+00	3.06E-02	2.79E+01	6.32E+02	2.47E-02	6.24E+02	4.48E-02
UM-250S-2500E (6-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	3.30E-01	4.86E+01	2.28E-01	NA	NA	NA	NA	1.13E-04	1.47E+02	1.65E-02	1.00E+00	3.06E-02	7.98E+00	6.32E+02	2.47E-02	6.24E+02	1.28E-02
BRSD-2 (6-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	3.30E-01	3.03E+02	1.42E+00	NA	NA	NA	NA	1.13E-04	9.18E+02	1.03E-01	1.00E+00	3.06E-02	4.98E+01	6.32E+02	2.47E-02	6.24E+02	7.99E-02
UM-500N-2500E (6-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	3.30E-01	1.08E+01	5.07E-02	NA	NA	NA	NA	1.13E-04	3.27E+01	3.68E-03	1.00E+00	3.06E-02	1.78E+00	6.32E+02	2.47E-02	6.24E+02	2.85E-03
UM-250N-2500E (6-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	3.30E-01	1.24E+02	5.79E-01	NA	NA	NA	NA	1.13E-04	3.74E+02	4.21E-02	1.00E+00	3.06E-02	2.03E+01	6.32E+02	2.47E-02	6.24E+02	3.26E-02
UM-250N-2250E (6-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	3.30E-01	5.95E+01	2.79E-01	NA	NA	NA	NA	1.13E-04	1.80E+02	2.03E-02	1.00E+00	3.06E-02	9.77E+00	6.32E+02	2.47E-02	6.24E+02	1.57E-02
Western Upper Marsh (6-12")																						**Maximum HQ (Eastern Upper Marsh, 6-12")**	**1.08E-01**
UM-500S-2500E (6-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.96E-01	7.14E+01	3.35E-01	NA	NA	NA	NA	1.13E-04	3.64E+02	4.10E-02	1.00E+00	3.06E-02	1.23E+01	6.32E+02	2.47E-02	6.24E+02	1.97E-02
UM-0N-2000E (6-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.96E-01	2.12E+02	9.93E-01	NA	NA	NA	NA	1.13E-04	1.08E+03	1.22E-01	1.00E+00	3.06E-02	3.64E+01	6.32E+02	2.47E-02	6.24E+02	5.84E-02
UM-500S-2000E (6-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.96E-01	4.55E+01	2.13E-01	NA	NA	NA	NA	1.13E-04	2.32E+02	2.61E-02	1.00E+00	3.06E-02	7.82E+00	6.32E+02	2.47E-02	6.24E+02	1.25E-02
UM-250N-1750E (6-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.96E-01	2.80E+01	1.31E-01	NA	NA	NA	NA	1.13E-04	1.43E+02	1.61E-02	1.00E+00	3.06E-02	4.82E+00	6.32E+02	2.47E-02	6.24E+02	7.73E-03
UM-0N-1500E (6-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.96E-01	3.61E+01	1.69E-01	NA	NA	NA	NA	1.13E-04	1.84E+02	2.07E-02	1.00E+00	3.06E-02	6.20E+00	6.32E+02	2.47E-02	6.24E+02	9.95E-03
UM-250S-1500E (6-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.96E-01	1.01E+02	4.72E-01	NA	NA	NA	NA	1.13E-04	5.13E+02	5.77E-02	1.00E+00	3.06E-02	1.73E+01	6.32E+02	2.47E-02	6.24E+02	2.77E-02
UM-250S-1250E (6-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.96E-01	1.52E+01	7.12E-02	NA	NA	NA	NA	1.13E-04	7.75E+01	8.72E-03	1.00E+00	3.06E-02	2.61E+00	6.32E+02	2.47E-02	6.24E+02	4.19E-03
BRSD-6 (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-750E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-500E (6-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.96E-01	1.43E+02	6.70E-01	NA	NA	NA	NA	1.13E-04	7.29E+02	8.20E-02	1.00E+00	3.06E-02	2.46E+01	6.32E+02	2.47E-02	6.24E+02	3.94E-02
UM-250S-500E (6-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.96E-01	2.23E+01	1.05E-01	NA	NA	NA	NA	1.13E-04	1.14E+02	1.28E-02	1.00E+00	3.06E-02	3.84E+00	6.32E+02	2.47E-02	6.24E+02	6.16E-03
UM-0N-250E (6-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.96E-01	6.74E+01	3.16E-01	NA	NA	NA	NA	1.13E-04	3.44E+02	3.87E-02	1.00E+00	3.06E-02	1.16E+01	6.32E+02	2.47E-02	6.24E+02	1.86E-02
UM-250S-250E (6-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.96E-01	2.51E+01	1.18E-01	NA	NA	NA	NA	1.13E-04	1.28E+02	1.44E-02	1.00E+00	3.06E-02	4.32E+00	6.32E+02	2.47E-02	6.24E+02	6.92E-03
BRSD-7 (6-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.96E-01	9.53E+00	4.47E-02	NA	NA	NA	NA	1.13E-04	4.86E+01	5.47E-03	1.00E+00	3.06E-02	1.64E+00	6.32E+02	2.47E-02	6.24E+02	2.63E-03
BRSD-8 (6-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.96E-01	3.92E+01	1.84E-01	NA	NA	NA	NA	1.13E-04	2.00E+02	2.25E-02	1.00E+00	3.06E-02	6.74E+00	6.32E+02	2.47E-02	6.24E+02	1.08E-02
UM-500S-500E (6-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.96E-01	1.61E+01	7.54E-02	NA	NA	NA	NA	1.13E-04	8.20E+01	9.23E-03	1.00E+00	3.06E-02	2.76E+00	6.32E+02	2.47E-02	6.24E+02	4.43E-03
BRSD-9 (6-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.96E-01	1.65E+01	7.73E-02	NA	NA	NA	NA	1.13E-04	8.41E+01	9.46E-03	1.00E+00	3.06E-02	2.84E+00	6.32E+02	2.47E-02	6.24E+02	4.55E-03
BRSD-10 (6-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.96E-01	1.90E+02	8.92E-01	NA	NA	NA	NA	1.13E-04	9.71E+02	1.09E-01	1.00E+00	3.06E-02	3.27E+01	6.32E+02	2.47E-02	6.24E+02	5.25E-02
BRSD-11 (6-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.96E-01	2.90E+01	1.36E-01	NA	NA	NA	NA	1.13E-04	1.48E+02	1.67E-02	1.00E+00	3.06E-02	4.99E+00	6.32E+02	2.47E-02	6.24E+02	8.00E-03
Middle Marsh (0-2")																						**Maximum HQ (Western Upper Marsh, 6-12")**	**5.84E-02**
MMSD-201 (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.96E-01	8.53E+01	4.00E-01	NA	NA	NA	NA	1.13E-04	4.35E+02	4.90E-02	1.00E+00	3.06E-02	1.47E+01	6.32E+02	2.47E-02	6.24E+02	2.35E-02
MMSD-202 (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.96E-01	8.59E+01	4.03E-01	NA	NA	NA	NA	1.13E-04	4.38E+02	4.93E-02	1.00E+00	3.06E-02	1.48E+01	6.32E+02	2.47E-02	6.24E+02	2.37E-02
Middle Marsh (2-6")																						**Maximum HQ (Middle Marsh, 0-2")**	**2.37E-02**
MMSD-201 (2-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.96E-01	1.18E+02	5.51E-01	NA	NA	NA	NA	1.13E-04	6.00E+02	6.75E-02	1.00E+00	3.06E-02	2.02E+01	6.32E+02	2.47E-02	6.24E+02	3.24E-02
MMSD-202 (2-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.96E-01	1.01E+02	4.74E-01	NA	NA	NA	NA	1.13E-04	5.16E+02	5.81E-02	1.00E+00	3.06E-02	1.74E+01	6.32E+02	2.47E-02	6.24E+02	2.79E-02
Middle Marsh (6-12")																						**Maximum HQ (Middle Marsh, 2-6")**	**3.24E-02**
MMSD-201 (6-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.96E-01	1.42E+02	6.67E-01	NA	NA	NA	NA	1.13E-04	7.26E+02	8.17E-02	1.00E+00	3.06E-02	2.45E+01	6.32E+02	2.47E-02	6.24E+02	3.93E-02
MMSD-202 (6-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.96E-01	5.72E+01	2.68E-01	NA	NA	NA	NA	1.13E-04	2.92E+02	3.29E-02	1.00E+00	3.06E-02	9.84E+00	6.32E+02	2.47E-02	6.24E+02	1.58E-02
Lower Marsh (0-2")																						**Maximum HQ (Middle Marsh, 6-12")**	**3.93E-02**
LMSD-201 (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.96E-01	1.60E+01	7.51E-02	NA	NA	NA	NA	1.13E-04	8.17E+01	9.19E-03	1.00E+00	3.06E-02	2.75E+00	6.32E+02	2.47E-02	6.24E+02	4.42E-03
LMSD-202 (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.96E-01	1.27E+01	5.96E-02	NA	NA	NA	NA	1.13E-04	6.48E+01	7.29E-03	1.00E+00	3.06E-02	2.18E+00	6.32E+02	2.47E-02	6.24E+02	3.50E-03
LMSD-203 (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.96E-01	5.63E+01	2.64E-01	NA	NA	NA	NA	1.13E-04	2.87E+02	3.23E-02	1.00E+00	3.06E-02	9.68E+00	6.32E+02	2.47E-02	6.24E+02	1.55E-02
LMSD-204 (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.96E-01	4.39E+01	2.06E-01	NA	NA	NA	NA	1.13E-04	2.24E+02	2.52E-02	1.00E+00	3.06E-02	7.55E+00	6.32E+02	2.47E-02	6.24E+02	1.21E-02

TABLE C-12DA: COPPER DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 12 - MARSH, TERRESTRIAL RECEPTORS (Continued)
Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)
calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **118.73**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Meadow Vole (Small Herbivorous Mammals)																							
Lower Marsh (2-6")																						**Maximum HQ (Lower Marsh, 0-2")**	**1.55E-02**
LMSD-201 (2-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.96E-01	1.59E+01	7.44E-02	NA	NA	NA	NA	1.13E-04	8.09E+01	9.10E-03	1.00E+00	3.06E-02	2.73E+00	6.32E+02	2.47E-02	6.24E+02	4.37E-03
LMSD-202 (2-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.96E-01	9.41E+00	4.41E-02	NA	NA	NA	NA	1.13E-04	4.80E+01	5.40E-03	1.00E+00	3.06E-02	1.62E+00	6.32E+02	2.47E-02	6.24E+02	2.60E-03
LMSD-203 (2-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.96E-01	5.59E+01	2.62E-01	NA	NA	NA	NA	1.13E-04	2.85E+02	3.21E-02	1.00E+00	3.06E-02	9.61E+00	6.32E+02	2.47E-02	6.24E+02	1.54E-02
LMSD-204 (2-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.96E-01	4.45E+01	2.09E-01	NA	NA	NA	NA	1.13E-04	2.27E+02	2.55E-02	1.00E+00	3.06E-02	7.65E+00	6.32E+02	2.47E-02	6.24E+02	1.23E-02
Lower Marsh (6-12")																						**Maximum HQ (Lower Marsh, 2-6")**	**1.54E-02**
LMSD-201 (6-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.96E-01	1.65E+01	7.76E-02	NA	NA	NA	NA	1.13E-04	8.44E+01	9.50E-03	1.00E+00	3.06E-02	2.85E+00	6.32E+02	2.47E-02	6.24E+02	4.56E-03
LMSD-202 (6-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.96E-01	1.02E+01	4.80E-02	NA	NA	NA	NA	1.13E-04	5.22E+01	5.87E-03	1.00E+00	3.06E-02	1.76E+00	6.32E+02	2.47E-02	6.24E+02	2.82E-03
LMSD-203 (6-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.96E-01	7.06E+01	3.31E-01	NA	NA	NA	NA	1.13E-04	3.60E+02	4.05E-02	1.00E+00	3.06E-02	1.21E+01	6.32E+02	2.47E-02	6.24E+02	1.95E-02
LMSD-204 (6-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.96E-01	4.43E+01	2.08E-01	NA	NA	NA	NA	1.13E-04	2.26E+02	2.54E-02	1.00E+00	3.06E-02	7.62E+00	6.32E+02	2.47E-02	6.24E+02	1.22E-02
																						Maximum HQ (Lower Marsh, 6-12")	**1.95E-02**
White-Tailed Deer (Large Herbivorous Mammals)																							
Reference Sites																							
BRSD-5 (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.42E+00	5.58E+01	7.99E+01	NA	NA	NA	NA	2.86E-02	3.92E+01	1.12E+00	6.64E-01	1.35E+02	3.99E-01	6.32E+02	2.47E-02	3.77E+02	1.06E-03
BRSD-5 (2-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.42E+00	5.94E+01	8.50E+01	NA	NA	NA	NA	2.86E-02	4.17E+01	1.19E+00	6.64E-01	1.35E+02	4.24E-01	6.32E+02	2.47E-02	3.77E+02	1.13E-03
BRSD-5 (6-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.42E+00	6.45E+01	9.23E+01	NA	NA	NA	NA	2.86E-02	4.53E+01	1.30E+00	6.64E-01	1.35E+02	4.61E-01	6.32E+02	2.47E-02	3.77E+02	1.22E-03
PGBG-1 (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.42E+00	4.94E+01	7.07E+01	NA	NA	NA	NA	2.86E-02	3.47E+01	9.94E-01	6.64E-01	1.35E+02	3.53E-01	6.32E+02	2.47E-02	3.77E+02	9.36E-04
PGBG-1 (2-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.42E+00	5.27E+01	7.54E+01	NA	NA	NA	NA	2.86E-02	3.70E+01	1.06E+00	6.64E-01	1.35E+02	3.76E-01	6.32E+02	2.47E-02	3.77E+02	9.98E-04
PGBG-1 (6-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.42E+00	3.13E+01	4.48E+01	NA	NA	NA	NA	2.86E-02	2.20E+01	6.30E-01	6.64E-01	1.35E+02	2.24E-01	6.32E+02	2.47E-02	3.77E+02	5.94E-04
PGBG-2 (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.42E+00	7.40E+01	1.06E+02	NA	NA	NA	NA	2.86E-02	5.20E+01	1.49E+00	6.64E-01	1.35E+02	5.29E-01	6.32E+02	2.47E-02	3.77E+02	1.40E-03
PGBG-2 (2-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.42E+00	7.83E+01	1.12E+02	NA	NA	NA	NA	2.86E-02	5.50E+01	1.57E+00	6.64E-01	1.35E+02	5.59E-01	6.32E+02	2.47E-02	3.77E+02	1.48E-03
PGBG-2 (6-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.42E+00	9.60E+01	1.37E+02	NA	NA	NA	NA	2.86E-02	6.74E+01	1.93E+00	6.64E-01	1.35E+02	6.85E-01	6.32E+02	2.47E-02	3.77E+02	1.82E-03
Eastern Upper Marsh (0-2")																						**Minimum HQ (Reference Sites)**	**5.94E-04**
UM-1000S-3500E (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	3.30E-01	7.30E+01	1.05E+02	NA	NA	NA	NA	2.86E-02	2.21E+02	6.33E+00	6.64E-01	1.35E+02	5.45E-01	6.32E+02	2.47E-02	3.77E+02	1.45E-03
BRSD-15 (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	3.30E-01	2.95E+01	4.22E+01	NA	NA	NA	NA	2.86E-02	8.92E+01	2.55E+00	6.64E-01	1.35E+02	2.20E-01	6.32E+02	2.47E-02	3.77E+02	5.84E-04
BRSD-4 (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	3.30E-01	2.06E+01	2.95E+01	NA	NA	NA	NA	2.86E-02	6.23E+01	1.78E+00	6.64E-01	1.35E+02	1.54E-01	6.32E+02	2.47E-02	3.77E+02	4.08E-04
UM-750S-3500E (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	3.30E-01	2.95E+02	4.23E+02	NA	NA	NA	NA	2.86E-02	8.94E+02	2.56E+01	6.64E-01	1.35E+02	2.21E+00	6.32E+02	2.47E-02	3.77E+02	5.85E-03
BRSD-16 (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	3.30E-01	1.23E+02	1.75E+02	NA	NA	NA	NA	2.86E-02	3.71E+02	1.06E+01	6.64E-01	1.35E+02	9.16E-01	6.32E+02	2.47E-02	3.77E+02	2.43E-03
UM-750S-3000E (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	3.30E-01	1.34E+02	1.92E+02	NA	NA	NA	NA	2.86E-02	4.05E+02	1.16E+01	6.64E-01	1.35E+02	9.99E-01	6.32E+02	2.47E-02	3.77E+02	2.65E-03
BRSD-3 (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	3.30E-01	3.70E+02	5.30E+02	NA	NA	NA	NA	2.86E-02	1.12E+03	3.21E+01	6.64E-01	1.35E+02	2.76E+00	6.32E+02	2.47E-02	3.77E+02	7.33E-03
UM-500S-3250E (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	3.30E-01	1.74E+02	2.50E+02	NA	NA	NA	NA	2.86E-02	5.28E+02	1.51E+01	6.64E-01	1.35E+02	1.30E+00	6.32E+02	2.47E-02	3.77E+02	3.46E-03
UM-500S-3000E (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	3.30E-01	1.45E+02	2.07E+02	NA	NA	NA	NA	2.86E-02	4.38E+02	1.25E+01	6.64E-01	1.35E+02	1.08E+00	6.32E+02	2.47E-02	3.77E+02	2.87E-03
UM-500S-2750E (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	3.30E-01	1.66E+02	2.38E+02	NA	NA	NA	NA	2.86E-02	5.04E+02	1.44E+01	6.64E-01	1.35E+02	1.24E+00	6.32E+02	2.47E-02	3.77E+02	3.30E-03
BRSD-25 (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	3.30E-01	8.75E+01	1.25E+02	NA	NA	NA	NA	2.86E-02	2.65E+02	7.59E+00	6.64E-01	1.35E+02	6.54E-01	6.32E+02	2.47E-02	3.77E+02	1.74E-03
UM-250S-3000E (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	3.30E-01	3.21E+02	4.59E+02	NA	NA	NA	NA	2.86E-02	9.71E+02	2.78E+01	6.64E-01	1.35E+02	2.40E+00	6.32E+02	2.47E-02	3.77E+02	6.36E-03
UM-250S-3250E (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	3.30E-01	1.04E+02	1.49E+02	NA	NA	NA	NA	2.86E-02	3.15E+02	9.02E+00	6.64E-01	1.35E+02	7.77E-01	6.32E+02	2.47E-02	3.77E+02	2.06E-03
BRSD-24 (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	3.30E-01	1.29E+02	1.85E+02	NA	NA	NA	NA	2.86E-02	3.92E+02	1.12E+01	6.64E-01	1.35E+02	9.67E-01	6.32E+02	2.47E-02	3.77E+02	2.57E-03
UM-250S-2750E (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	3.30E-01	9.02E+01	1.29E+02	NA	NA	NA	NA	2.86E-02	2.73E+02	7.82E+00	6.64E-01	1.35E+02	6.74E-01	6.32E+02	2.47E-02	3.77E+02	1.79E-03
UM-250S-2500E (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	3.30E-01	6.74E+01	9.65E+01	NA	NA	NA	NA	2.86E-02	2.04E+02	5.84E+00	6.64E-01	1.35E+02	5.03E-01	6.32E+02	2.47E-02	3.77E+02	1.34E-03
UM-0N-2500E (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	3.30E-01	1.68E+02	2.41E+02	NA	NA	NA	NA	2.86E-02	5.10E+02	1.46E+01	6.64E-01	1.35E+02	1.26E+00	6.32E+02	2.47E-02	3.77E+02	3.34E-03
UM-0N-250E (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	3.30E-01	1.93E+02	2.77E+02	NA	NA	NA	NA	2.86E-02	5.85E+02	1.68E+01	6.64E-01	1.35E+02	1.44E+00	6.32E+02	2.47E-02	3.77E+02	3.83E-03
BRSD-2 (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	3.30E-01	1.13E+02	1.62E+02	NA	NA	NA	NA	2.86E-02	3.43E+02	9.82E+00	6.64E-01	1.35E+02	8.46E-01	6.32E+02	2.47E-02	3.77E+02	2.25E-03
UM-500N-2500E (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	3.30E-01	1.96E+01	2.80E+01	NA	NA	NA	NA	2.86E-02	5.93E+01	1.70E+00	6.64E-01	1.35E+02	1.46E-01	6.32E+02	2.47E-02	3.77E+02	3.88E-04
UM-250N-2500E (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	3.30E-01	1.83E+02	2.62E+02	NA	NA	NA	NA	2.86E-02	5.55E+02	1.59E+01	6.64E-01	1.35E+02	1.37E+00	6.32E+02	2.47E-02	3.77E+02	3.63E-03
UM-250N-2250E (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	3.30E-01	1.20E+02	1.72E+02	NA	NA	NA	NA	2.86E-02	3.64E+02	1.04E+01	6.64E-01	1.35E+02	8.98E-01	6.32E+02	2.47E-02	3.77E+02	2.38E-03
Western Upper Marsh (0-2")																						**Maximum HQ (Eastern Upper Marsh, 0-2")**	**7.33E-03**
UM-500S-2500E (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.96E-01	7.31E+01	1.05E+02	NA	NA	NA	NA	2.86E-02	3.73E+02	1.07E+01	6.64E-01	1.35E+02	5.68E-01	6.32E+02	2.47E-02	3.77E+02	1.51E-03
UM-0N-2000E (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.96E-01	1.54E+02	2.21E+02	NA	NA	NA	NA	2.86E-02	7.88E+02	2.26E+01	6.64E-01	1.35E+02	1.20E+00	6.32E+02	2.47E-02	3.77E+02	3.18E-03
UM-500S-2000E (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.96E-01	3.59E+01	5.14E+01	NA	NA	NA	NA	2.86E-02	1.83E+02	5.24E+00	6.64E-01	1.35E+02	2.78E-01	6.32E+02	2.47E-02	3.77E+02	7.39E-04
UM-250N-1750E (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.96E-01	3.00E+01	4.29E+01	NA	NA	NA	NA	2.86E-02	1.53E+02	4.38E+00	6.64E-01	1.35E+02	2.33E-01	6.32E+02	2.47E-02	3.77E+02	6.18E-04

TABLE C-12DA: COPPER DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 12 - MARSH, TERRESTRIAL RECEPTORS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **118.73**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
White-Tailed Deer (Large Herbivorous Mammals)																							
UM-0N-1500E (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.96E-01	1.78E+01	2.55E+01	NA	NA	NA	NA	2.86E-02	9.08E+01	2.60E+00	6.64E-01	1.35E+02	1.38E-01	6.32E+02	2.47E-02	3.77E+02	3.67E-04
UM-250S-1500E (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.96E-01	1.12E+02	1.60E+02	NA	NA	NA	NA	2.86E-02	5.71E+02	1.63E+01	6.64E-01	1.35E+02	8.69E-01	6.32E+02	2.47E-02	3.77E+02	2.31E-03
UM-250S-1250E (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.96E-01	1.79E+01	2.56E+01	NA	NA	NA	NA	2.86E-02	9.11E+01	2.61E+00	6.64E-01	1.35E+02	1.39E-01	6.32E+02	2.47E-02	3.77E+02	3.68E-04
BRSD-6 (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-1000E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-750E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-500E (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.96E-01	8.82E+01	1.26E+02	NA	NA	NA	NA	2.86E-02	4.50E+02	1.29E+01	6.64E-01	1.35E+02	6.85E-01	6.32E+02	2.47E-02	3.77E+02	1.82E-03
UM-250S-500E (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.96E-01	1.58E+01	2.27E+01	NA	NA	NA	NA	2.86E-02	8.08E+01	2.31E+00	6.64E-01	1.35E+02	1.23E-01	6.32E+02	2.47E-02	3.77E+02	3.26E-04
UM-250S-250E (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.96E-01	4.70E+01	6.74E+01	NA	NA	NA	NA	2.86E-02	2.40E+02	6.87E+00	6.64E-01	1.35E+02	3.65E-01	6.32E+02	2.47E-02	3.77E+02	9.69E-04
BRSD-7 (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-8 (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.96E-01	3.80E+01	5.44E+01	NA	NA	NA	NA	2.86E-02	1.94E+02	5.55E+00	6.64E-01	1.35E+02	2.95E-01	6.32E+02	2.47E-02	3.77E+02	7.83E-04
UM-500S-500E (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.96E-01	1.89E+01	2.70E+01	NA	NA	NA	NA	2.86E-02	9.63E+01	2.76E+00	6.64E-01	1.35E+02	1.47E-01	6.32E+02	2.47E-02	3.77E+02	3.89E-04
BRSD-9 (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.96E-01	1.64E+01	2.35E+01	NA	NA	NA	NA	2.86E-02	8.39E+01	2.40E+00	6.64E-01	1.35E+02	1.28E-01	6.32E+02	2.47E-02	3.77E+02	3.39E-04
BRSD-10 (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.96E-01	1.28E+02	1.83E+02	NA	NA	NA	NA	2.86E-02	6.51E+02	1.86E+01	6.64E-01	1.35E+02	9.91E-01	6.32E+02	2.47E-02	3.77E+02	2.63E-03
BRSD-11 (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.96E-01	2.61E+01	3.73E+01	NA	NA	NA	NA	2.86E-02	1.33E+02	3.81E+00	6.64E-01	1.35E+02	2.02E-01	6.32E+02	2.47E-02	3.77E+02	5.37E-04
Eastern Upper Marsh (2-6")																						**Maximum HQ (Western Upper Marsh, 0-2")**	**3.18E-03**
UM-1000S-3500E (2-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	3.30E-01	3.50E+01	5.01E+01	NA	NA	NA	NA	2.86E-02	1.06E+02	3.04E+00	6.64E-01	1.35E+02	2.62E-01	6.32E+02	2.47E-02	3.77E+02	6.94E-04
BRSD-15 (2-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	3.30E-01	3.22E+01	4.61E+01	NA	NA	NA	NA	2.86E-02	9.74E+01	2.79E+00	6.64E-01	1.35E+02	2.40E-01	6.32E+02	2.47E-02	3.77E+02	6.38E-04
BRSD-4 (2-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	3.30E-01	4.26E+01	6.10E+01	NA	NA	NA	NA	2.86E-02	1.29E+02	3.69E+00	6.64E-01	1.35E+02	3.18E-01	6.32E+02	2.47E-02	3.77E+02	8.45E-04
UM-750S-3500E (2-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	3.30E-01	1.13E+02	1.62E+02	NA	NA	NA	NA	2.86E-02	3.42E+02	9.79E+00	6.64E-01	1.35E+02	8.44E-01	6.32E+02	2.47E-02	3.77E+02	2.24E-03
BRSD-16 (2-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	3.30E-01	3.70E+02	5.30E+02	NA	NA	NA	NA	2.86E-02	1.12E+03	3.21E+01	6.64E-01	1.35E+02	2.76E+00	6.32E+02	2.47E-02	3.77E+02	7.33E-03
UM-750S-3000E (2-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	3.30E-01	1.17E+02	1.67E+02	NA	NA	NA	NA	2.86E-02	3.54E+02	1.01E+01	6.64E-01	1.35E+02	8.74E-01	6.32E+02	2.47E-02	3.77E+02	2.32E-03
BRSD-3 (2-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	3.30E-01	4.69E+02	6.72E+02	NA	NA	NA	NA	2.86E-02	1.42E+03	4.07E+01	6.64E-01	1.35E+02	3.50E+00	6.32E+02	2.47E-02	3.77E+02	9.30E-03
UM-500S-3250E (2-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	3.30E-01	9.45E+01	1.35E+02	NA	NA	NA	NA	2.86E-02	2.86E+02	8.19E+00	6.64E-01	1.35E+02	7.06E-01	6.32E+02	2.47E-02	3.77E+02	1.87E-03
UM-500S-3000E (2-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	3.30E-01	2.71E+01	3.88E+01	NA	NA	NA	NA	2.86E-02	8.20E+01	2.35E+00	6.64E-01	1.35E+02	2.02E-01	6.32E+02	2.47E-02	3.77E+02	5.37E-04
UM-500S-2750E (2-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	3.30E-01	1.05E+02	1.50E+02	NA	NA	NA	NA	2.86E-02	3.18E+02	9.11E+00	6.64E-01	1.35E+02	7.85E-01	6.32E+02	2.47E-02	3.77E+02	2.08E-03
BRSD-25 (2-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	3.30E-01	1.33E+02	1.90E+02	NA	NA	NA	NA	2.86E-02	4.02E+02	1.15E+01	6.64E-01	1.35E+02	9.92E-01	6.32E+02	2.47E-02	3.77E+02	2.63E-03
UM-250S-3000E (2-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	3.30E-01	2.65E+02	3.79E+02	NA	NA	NA	NA	2.86E-02	8.01E+02	2.29E+01	6.64E-01	1.35E+02	1.98E+00	6.32E+02	2.47E-02	3.77E+02	5.25E-03
UM-250S-3250E (2-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	3.30E-01	2.70E+01	3.87E+01	NA	NA	NA	NA	2.86E-02	8.18E+01	2.34E+00	6.64E-01	1.35E+02	2.02E-01	6.32E+02	2.47E-02	3.77E+02	5.36E-04
BRSD-24 (2-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	3.30E-01	2.44E+02	3.50E+02	NA	NA	NA	NA	2.86E-02	7.40E+02	2.12E+01	6.64E-01	1.35E+02	1.83E+00	6.32E+02	2.47E-02	3.77E+02	4.85E-03
UM-250S-2750E (2-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	3.30E-01	1.46E+02	2.09E+02	NA	NA	NA	NA	2.86E-02	4.42E+02	1.27E+01	6.64E-01	1.35E+02	1.09E+00	6.32E+02	2.47E-02	3.77E+02	2.89E-03
UM-0N-2500E (2-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	3.30E-01	8.65E+01	1.24E+02	NA	NA	NA	NA	2.86E-02	2.62E+02	7.50E+00	6.64E-01	1.35E+02	6.47E-01	6.32E+02	2.47E-02	3.77E+02	1.72E-03
BRSD-2 (2-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	3.30E-01	1.35E+02	1.93E+02	NA	NA	NA	NA	2.86E-02	4.09E+02	1.17E+01	6.64E-01	1.35E+02	1.01E+00	6.32E+02	2.47E-02	3.77E+02	2.68E-03
UM-500N-2500E (2-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	3.30E-01	2.45E+01	3.51E+01	NA	NA	NA	NA	2.86E-02	7.43E+01	2.13E+00	6.64E-01	1.35E+02	1.83E-01	6.32E+02	2.47E-02	3.77E+02	4.87E-04
UM-250N-2500E (2-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	3.30E-01	1.69E+02	2.42E+02	NA	NA	NA	NA	2.86E-02	5.12E+02	1.47E+01	6.64E-01	1.35E+02	1.26E+00	6.32E+02	2.47E-02	3.77E+02	3.35E-03
UM-250N-2250E (2-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	3.30E-01	4.72E+01	6.76E+01	NA	NA	NA	NA	2.86E-02	1.43E+02	4.09E+00	6.64E-01	1.35E+02	3.53E-01	6.32E+02	2.47E-02	3.77E+02	9.36E-04
Western Upper Marsh (2-6")																						**Maximum HQ (Eastern Upper Marsh, 2-6")**	**9.30E-03**
UM-500S-2500E (2-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.96E-01	6.96E+01	9.96E+01	NA	NA	NA	NA	2.86E-02	3.55E+02	1.02E+01	6.64E-01	1.35E+02	5.40E-01	6.32E+02	2.47E-02	3.77E+02	1.43E-03
UM-0N-2000E (2-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.96E-01	1.39E+02	2.00E+02	NA	NA	NA	NA	2.86E-02	7.11E+02	2.04E+01	6.64E-01	1.35E+02	1.08E+00	6.32E+02	2.47E-02	3.77E+02	2.87E-03
UM-500S-2000E (2-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.96E-01	4.65E+01	6.65E+01	NA	NA	NA	NA	2.86E-02	2.37E+02	6.79E+00	6.64E-01	1.35E+02	3.61E-01	6.32E+02	2.47E-02	3.77E+02	9.57E-04
UM-250N-1750E (2-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.96E-01	2.12E+01	3.03E+01	NA	NA	NA	NA	2.86E-02	1.08E+02	3.09E+00	6.64E-01	1.35E+02	1.64E-01	6.32E+02	2.47E-02	3.77E+02	4.36E-04
UM-0N-1500E (2-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.96E-01	2.65E+01	3.79E+01	NA	NA	NA	NA	2.86E-02	1.35E+02	3.87E+00	6.64E-01	1.35E+02	2.05E-01	6.32E+02	2.47E-02	3.77E+02	5.45E-04
UM-250S-1500E (2-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.96E-01	1.66E+02	2.38E+02	NA	NA	NA	NA	2.86E-02	8.49E+02	2.43E+01	6.64E-01	1.35E+02	1.29E+00	6.32E+02	2.47E-02	3.77E+02	3.43E-03
UM-250S-1250E (2-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.96E-01	1.56E+01	2.23E+01	NA	NA	NA	NA	2.86E-02	7.94E+01	2.27E+00	6.64E-01	1.35E+02	1.21E-01	6.32E+02	2.47E-02	3.77E+02	3.21E-04
BRSD-6 (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-1000E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-750E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-500E (2-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.96E-01	5.41E+02	7.75E+02	NA	NA	NA	NA	2.86E-02	2.76E+03	7.90E+01	6.64E-01	1.35E+02	4.20E+00	6.32E+02	2.47E-02	3.77E+02	1.11E-02
UM-250S-500E (2-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.96E-01	1.77E+01	2.53E+01	NA	NA	NA	NA	2.86E-02	9.02E+01	2.58E+00	6.64E-01	1.35E+02	1.37E-01	6.32E+02	2.47E-02	3.77E+02	3.64E-04
UM-0N-250E (2-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.96E-01	5.92E+01	8.48E+01	NA	NA	NA	NA	2.86E-02	3.02E+02	8.65E+00	6.64E-01	1.35E+02	4.60E-01	6.32E+02	2.47E-02	3.77E+02	1.22E-03

TABLE C-12DA: COPPER DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 12 - MARSH, TERRESTRIAL RECEPTORS (Continued)
Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)
calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **118.73**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
White-Tailed Deer (Large Herbivorous Mammals)																							
UM-250S-250E (2-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.96E-01	4.08E+01	5.84E+01	NA	NA	NA	NA	2.86E-02	2.08E+02	5.96E+00	6.64E-01	1.35E+02	3.17E-01	6.32E+02	2.47E-02	3.77E+02	8.40E-04
BRSD-7 (2-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.96E-01	1.11E+01	1.59E+01	NA	NA	NA	NA	2.86E-02	5.65E+01	1.62E+00	6.64E-01	1.35E+02	8.60E-02	6.32E+02	2.47E-02	3.77E+02	2.28E-04
BRSD-8 (2-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.96E-01	3.69E+01	5.28E+01	NA	NA	NA	NA	2.86E-02	1.88E+02	5.38E+00	6.64E-01	1.35E+02	2.86E-01	6.32E+02	2.47E-02	3.77E+02	7.59E-04
UM-500S-500E (2-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.96E-01	1.73E+01	2.48E+01	NA	NA	NA	NA	2.86E-02	8.83E+01	2.53E+00	6.64E-01	1.35E+02	1.34E-01	6.32E+02	2.47E-02	3.77E+02	3.57E-04
BRSD-9 (2-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.96E-01	1.04E+01	1.48E+01	NA	NA	NA	NA	2.86E-02	5.29E+01	1.51E+00	6.64E-01	1.35E+02	8.05E-02	6.32E+02	2.47E-02	3.77E+02	2.14E-04
BRSD-10 (2-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.96E-01	1.35E+02	1.94E+02	NA	NA	NA	NA	2.86E-02	6.90E+02	1.98E+01	6.64E-01	1.35E+02	1.05E+00	6.32E+02	2.47E-02	3.77E+02	2.79E-03
BRSD-11 (2-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.96E-01	3.02E+01	4.32E+01	NA	NA	NA	NA	2.86E-02	1.54E+02	4.41E+00	6.64E-01	1.35E+02	2.34E-01	6.32E+02	2.47E-02	3.77E+02	6.22E-04
Eastern Upper Marsh (6-12")																						**Maximum HQ (Western Upper Marsh, 2-6")**	**1.11E-02**
UM-1000S-3500E (6-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	3.30E-01	2.86E+01	4.10E+01	NA	NA	NA	NA	2.86E-02	8.66E+01	2.48E+00	6.64E-01	1.35E+02	2.14E-01	6.32E+02	2.47E-02	3.77E+02	5.67E-04
BRSD-15 (6-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	3.30E-01	3.23E+01	4.63E+01	NA	NA	NA	NA	2.86E-02	9.79E+01	2.80E+00	6.64E-01	1.35E+02	2.42E-01	6.32E+02	2.47E-02	3.77E+02	6.41E-04
BRSD-4 (6-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	3.30E-01	3.06E+01	4.37E+01	NA	NA	NA	NA	2.86E-02	9.25E+01	2.65E+00	6.64E-01	1.35E+02	2.28E-01	6.32E+02	2.47E-02	3.77E+02	6.06E-04
UM-750S-3500E (6-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	3.30E-01	1.35E+02	1.93E+02	NA	NA	NA	NA	2.86E-02	4.09E+02	1.17E+01	6.64E-01	1.35E+02	1.01E+00	6.32E+02	2.47E-02	3.77E+02	2.68E-03
BRSD-16 (6-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	3.30E-01	1.88E+02	2.69E+02	NA	NA	NA	NA	2.86E-02	5.68E+02	1.63E+01	6.64E-01	1.35E+02	1.40E+00	6.32E+02	2.47E-02	3.77E+02	3.72E-03
UM-750S-3000E (6-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	3.30E-01	1.13E+02	1.62E+02	NA	NA	NA	NA	2.86E-02	3.43E+02	9.82E+00	6.64E-01	1.35E+02	8.46E-01	6.32E+02	2.47E-02	3.77E+02	2.25E-03
BRSD-3 (6-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	3.30E-01	4.10E+02	5.86E+02	NA	NA	NA	NA	2.86E-02	1.24E+03	3.55E+01	6.64E-01	1.35E+02	3.06E+00	6.32E+02	2.47E-02	3.77E+02	8.12E-03
UM-500S-3250E (6-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	3.30E-01	7.07E+01	1.01E+02	NA	NA	NA	NA	2.86E-02	2.14E+02	6.13E+00	6.64E-01	1.35E+02	5.28E-01	6.32E+02	2.47E-02	3.77E+02	1.40E-03
UM-500S-3000E (6-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	3.30E-01	2.93E+01	4.19E+01	NA	NA	NA	NA	2.86E-02	8.86E+01	2.54E+00	6.64E-01	1.35E+02	2.19E-01	6.32E+02	2.47E-02	3.77E+02	5.80E-04
UM-500S-2750E (6-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	3.30E-01	9.58E+01	1.37E+02	NA	NA	NA	NA	2.86E-02	2.90E+02	8.30E+00	6.64E-01	1.35E+02	7.16E-01	6.32E+02	2.47E-02	3.77E+02	1.90E-03
BRSD-25 (6-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	3.30E-01	6.31E+01	9.03E+01	NA	NA	NA	NA	2.86E-02	1.91E+02	5.47E+00	6.64E-01	1.35E+02	4.71E-01	6.32E+02	2.47E-02	3.77E+02	1.25E-03
UM-250S-3000E (6-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	3.30E-01	2.41E+02	3.45E+02	NA	NA	NA	NA	2.86E-02	7.30E+02	2.09E+01	6.64E-01	1.35E+02	1.80E+00	6.32E+02	2.47E-02	3.77E+02	4.78E-03
UM-250S-3250E (6-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	3.30E-01	2.87E+01	4.11E+01	NA	NA	NA	NA	2.86E-02	8.69E+01	2.49E+00	6.64E-01	1.35E+02	2.14E-01	6.32E+02	2.47E-02	3.77E+02	5.69E-04
BRSD-24 (6-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	3.30E-01	1.83E+02	2.62E+02	NA	NA	NA	NA	2.86E-02	5.53E+02	1.58E+01	6.64E-01	1.35E+02	1.36E+00	6.32E+02	2.47E-02	3.77E+02	3.62E-03
UM-250S-2750E (6-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	3.30E-01	1.70E+02	2.43E+02	NA	NA	NA	NA	2.86E-02	5.14E+02	1.47E+01	6.64E-01	1.35E+02	1.27E+00	6.32E+02	2.47E-02	3.77E+02	3.37E-03
UM-250S-2500E (6-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	3.30E-01	4.86E+01	6.95E+01	NA	NA	NA	NA	2.86E-02	1.47E+02	4.21E+00	6.64E-01	1.35E+02	3.63E-01	6.32E+02	2.47E-02	3.77E+02	9.63E-04
BRSD-2 (6-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	3.30E-01	3.03E+02	4.34E+02	NA	NA	NA	NA	2.86E-02	9.18E+02	2.63E+01	6.64E-01	1.35E+02	2.27E+00	6.32E+02	2.47E-02	3.77E+02	6.01E-03
UM-500N-2500E (6-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	3.30E-01	1.08E+01	1.55E+01	NA	NA	NA	NA	2.86E-02	3.27E+01	9.36E-01	6.64E-01	1.35E+02	8.07E-02	6.32E+02	2.47E-02	3.77E+02	2.14E-04
UM-250N-2500E (6-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	3.30E-01	1.24E+02	1.77E+02	NA	NA	NA	NA	2.86E-02	3.74E+02	1.07E+01	6.64E-01	1.35E+02	9.23E-01	6.32E+02	2.47E-02	3.77E+02	2.45E-03
UM-250N-2250E (6-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	3.30E-01	5.95E+01	8.51E+01	NA	NA	NA	NA	2.86E-02	1.80E+02	5.15E+00	6.64E-01	1.35E+02	4.44E-01	6.32E+02	2.47E-02	3.77E+02	1.18E-03
Western Upper Marsh (6-12")																						**Maximum HQ (Eastern Upper Marsh, 6-12")**	**8.12E-03**
UM-500S-2500E (6-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.96E-01	7.14E+01	1.02E+02	NA	NA	NA	NA	2.86E-02	3.64E+02	1.04E+01	6.64E-01	1.35E+02	5.54E-01	6.32E+02	2.47E-02	3.77E+02	1.47E-03
UM-0N-2000E (6-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.96E-01	2.12E+02	3.03E+02	NA	NA	NA	NA	2.86E-02	1.08E+03	3.09E+01	6.64E-01	1.35E+02	1.64E+00	6.32E+02	2.47E-02	3.77E+02	4.36E-03
UM-500S-2000E (6-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.96E-01	4.55E+01	6.51E+01	NA	NA	NA	NA	2.86E-02	2.32E+02	6.64E+00	6.64E-01	1.35E+02	3.53E-01	6.32E+02	2.47E-02	3.77E+02	9.37E-04
UM-250N-1750E (6-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.96E-01	2.80E+01	4.01E+01	NA	NA	NA	NA	2.86E-02	1.43E+02	4.09E+00	6.64E-01	1.35E+02	2.18E-01	6.32E+02	2.47E-02	3.77E+02	5.77E-04
UM-0N-1500E (6-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.96E-01	3.61E+01	5.16E+01	NA	NA	NA	NA	2.86E-02	1.84E+02	5.27E+00	6.64E-01	1.35E+02	2.80E-01	6.32E+02	2.47E-02	3.77E+02	7.43E-04
UM-250S-1500E (6-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.96E-01	1.01E+02	1.44E+02	NA	NA	NA	NA	2.86E-02	5.13E+02	1.47E+01	6.64E-01	1.35E+02	7.81E-01	6.32E+02	2.47E-02	3.77E+02	2.07E-03
UM-250S-1250E (6-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.96E-01	1.52E+01	2.17E+01	NA	NA	NA	NA	2.86E-02	7.75E+01	2.22E+00	6.64E-01	1.35E+02	1.18E-01	6.32E+02	2.47E-02	3.77E+02	3.13E-04
BRSD-6 (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-1000E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-750E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-500E (6-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.96E-01	1.43E+02	2.05E+02	NA	NA	NA	NA	2.86E-02	7.29E+02	2.09E+01	6.64E-01	1.35E+02	1.11E+00	6.32E+02	2.47E-02	3.77E+02	2.94E-03
UM-250S-500E (6-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.96E-01	2.23E+01	3.20E+01	NA	NA	NA	NA	2.86E-02	1.14E+02	3.26E+00	6.64E-01	1.35E+02	1.73E-01	6.32E+02	2.47E-02	3.77E+02	4.60E-04
UM-0N-250E (6-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.96E-01	6.74E+01	9.65E+01	NA	NA	NA	NA	2.86E-02	3.44E+02	9.85E+00	6.64E-01	1.35E+02	5.23E-01	6.32E+02	2.47E-02	3.77E+02	1.39E-03
UM-250S-250E (6-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.96E-01	2.51E+01	3.59E+01	NA	NA	NA	NA	2.86E-02	1.28E+02	3.67E+00	6.64E-01	1.35E+02	1.95E-01	6.32E+02	2.47E-02	3.77E+02	5.17E-04
BRSD-7 (6-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.96E-01	9.53E+00	1.36E+01	NA	NA	NA	NA	2.86E-02	4.86E+01	1.39E+00	6.64E-01	1.35E+02	7.40E-02	6.32E+02	2.47E-02	3.77E+02	1.96E-04
BRSD-8 (6-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.96E-01	3.92E+01	5.61E+01	NA	NA	NA	NA	2.86E-02	2.00E+02	5.73E+00	6.64E-01	1.35E+02	3.04E-01	6.32E+02	2.47E-02	3.77E+02	8.08E-04
UM-500S-500E (6-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.96E-01	1.61E+01	2.30E+01	NA	NA	NA	NA	2.86E-02	8.20E+01	2.35E+00	6.64E-01	1.35E+02	1.25E-01	6.32E+02	2.47E-02	3.77E+02	3.31E-04
BRSD-9 (6-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.96E-01	1.65E+01	2.36E+01	NA	NA	NA	NA	2.86E-02	8.41E+01	2.41E+00	6.64E-01	1.35E+02	1.28E-01	6.32E+02	2.47E-02	3.77E+02	3.40E-04
BRSD-10 (6-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.96E-01	1.90E+02	2.72E+02	NA	NA	NA	NA	2.86E-02	9.71E+02	2.78E+01	6.64E-01	1.35E+02	1.48E+00	6.32E+02	2.47E-02	3.77E+02	3.92E-03
BRSD-11 (6-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.96E-01	2.90E+01	4.15E+01	NA	NA	NA	NA	2.86E-02	1.48E+02	4.24E+00	6.64E-01	1.35E+02	2.25E-01	6.32E+02	2.47E-02	3.77E+02	5.98E-04

TABLE C-12DA: COPPER DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 12 - MARSH, TERRESTRIAL RECEPTORS (Continued)
Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)
calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **118.73**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
White-Tailed Deer (Large Herbivorous Mammals)																							
Middle Marsh (0-2")																						**Maximum HQ (Western Upper Marsh, 6-12")**	**4.36E-03**
MMSD-201 (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.96E-01	8.53E+01	1.22E+02	NA	NA	NA	NA	2.86E-02	4.35E+02	1.25E+01	6.64E-01	1.35E+02	6.62E-01	6.32E+02	2.47E-02	3.77E+02	1.76E-03
MMSD-202 (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.96E-01	8.59E+01	1.23E+02	NA	NA	NA	NA	2.86E-02	4.38E+02	1.25E+01	6.64E-01	1.35E+02	6.66E-01	6.32E+02	2.47E-02	3.77E+02	1.77E-03
Middle Marsh (2-6")																						**Maximum HQ (Middle Marsh, 0-2")**	**1.77E-03**
MMSD-201 (2-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.96E-01	1.18E+02	1.68E+02	NA	NA	NA	NA	2.86E-02	6.00E+02	1.72E+01	6.64E-01	1.35E+02	9.13E-01	6.32E+02	2.47E-02	3.77E+02	2.42E-03
MMSD-202 (2-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.96E-01	1.01E+02	1.45E+02	NA	NA	NA	NA	2.86E-02	5.16E+02	1.48E+01	6.64E-01	1.35E+02	7.85E-01	6.32E+02	2.47E-02	3.77E+02	2.08E-03
Middle Marsh (6-12")																						**Maximum HQ (Middle Marsh, 2-6")**	**2.42E-03**
MMSD-201 (6-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.96E-01	1.42E+02	2.04E+02	NA	NA	NA	NA	2.86E-02	7.26E+02	2.08E+01	6.64E-01	1.35E+02	1.10E+00	6.32E+02	2.47E-02	3.77E+02	2.93E-03
MMSD-202 (6-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.96E-01	5.72E+01	8.19E+01	NA	NA	NA	NA	2.86E-02	2.92E+02	8.36E+00	6.64E-01	1.35E+02	4.44E-01	6.32E+02	2.47E-02	3.77E+02	1.18E-03
Lower Marsh (0-2")																						**Maximum HQ (Middle Marsh, 6-12")**	**2.93E-03**
LMSD-201 (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.96E-01	1.60E+01	2.29E+01	NA	NA	NA	NA	2.86E-02	8.17E+01	2.34E+00	6.64E-01	1.35E+02	1.24E-01	6.32E+02	2.47E-02	3.77E+02	3.30E-04
LMSD-202 (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.96E-01	1.27E+01	1.82E+01	NA	NA	NA	NA	2.86E-02	6.48E+01	1.86E+00	6.64E-01	1.35E+02	9.86E-02	6.32E+02	2.47E-02	3.77E+02	2.62E-04
LMSD-203 (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.96E-01	5.63E+01	8.05E+01	NA	NA	NA	NA	2.86E-02	2.87E+02	8.22E+00	6.64E-01	1.35E+02	4.37E-01	6.32E+02	2.47E-02	3.77E+02	1.16E-03
LMSD-204 (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.96E-01	4.39E+01	6.29E+01	NA	NA	NA	NA	2.86E-02	2.24E+02	6.41E+00	6.64E-01	1.35E+02	3.41E-01	6.32E+02	2.47E-02	3.77E+02	9.04E-04
Lower Marsh (2-6")																						**Maximum HQ (Lower Marsh, 0-2")**	**1.16E-03**
LMSD-201 (2-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.96E-01	1.59E+01	2.27E+01	NA	NA	NA	NA	2.86E-02	8.09E+01	2.32E+00	6.64E-01	1.35E+02	1.23E-01	6.32E+02	2.47E-02	3.77E+02	3.27E-04
LMSD-202 (2-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.96E-01	9.41E+00	1.35E+01	NA	NA	NA	NA	2.86E-02	4.80E+01	1.37E+00	6.64E-01	1.35E+02	7.30E-02	6.32E+02	2.47E-02	3.77E+02	1.94E-04
LMSD-203 (2-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.96E-01	5.59E+01	8.00E+01	NA	NA	NA	NA	2.86E-02	2.85E+02	8.16E+00	6.64E-01	1.35E+02	4.34E-01	6.32E+02	2.47E-02	3.77E+02	1.15E-03
LMSD-204 (2-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.96E-01	4.45E+01	6.37E+01	NA	NA	NA	NA	2.86E-02	2.27E+02	6.50E+00	6.64E-01	1.35E+02	3.45E-01	6.32E+02	2.47E-02	3.77E+02	9.17E-04
Lower Marsh (6-12")																						**Maximum HQ (Lower Marsh, 2-6")**	**1.15E-03**
LMSD-201 (6-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.96E-01	1.65E+01	2.37E+01	NA	NA	NA	NA	2.86E-02	8.44E+01	2.42E+00	6.64E-01	1.35E+02	1.28E-01	6.32E+02	2.47E-02	3.77E+02	3.41E-04
LMSD-202 (6-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.96E-01	1.02E+01	1.46E+01	NA	NA	NA	NA	2.86E-02	5.22E+01	1.49E+00	6.64E-01	1.35E+02	7.94E-02	6.32E+02	2.47E-02	3.77E+02	2.11E-04
LMSD-203 (6-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.96E-01	7.06E+01	1.01E+02	NA	NA	NA	NA	2.86E-02	3.60E+02	1.03E+01	6.64E-01	1.35E+02	5.48E-01	6.32E+02	2.47E-02	3.77E+02	1.45E-03
LMSD-204 (6-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.96E-01	4.43E+01	6.34E+01	NA	NA	NA	NA	2.86E-02	2.26E+02	6.47E+00	6.64E-01	1.35E+02	3.44E-01	6.32E+02	2.47E-02	3.77E+02	9.13E-04
																						Maximum HQ (Lower Marsh, 6-12")	**1.45E-03**
Red Fox (Carnivorous Mammals)																							
Reference Sites																							
BRSD-5 (0-2")	1.72E-01	1.72E-01	9.20E-01	3.61E+01	6.19E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.92E+01	1.88E-01	8.77E-02	4.54E+00	1.23E-01	6.32E+02	2.47E-02	4.62E+02	2.67E-04
BRSD-5 (2-6")	1.72E-01	1.72E-01	9.20E-01	3.84E+01	6.58E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.17E+01	2.00E-01	8.77E-02	4.54E+00	1.31E-01	6.32E+02	2.47E-02	4.62E+02	2.84E-04
BRSD-5 (6-12")	1.72E-01	1.72E-01	9.20E-01	4.17E+01	7.15E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.53E+01	2.18E-01	8.77E-02	4.54E+00	1.43E-01	6.32E+02	2.47E-02	4.62E+02	3.09E-04
PGBG-1 (0-2")	1.72E-01	1.72E-01	9.20E-01	3.19E+01	5.48E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.47E+01	1.67E-01	8.77E-02	4.54E+00	1.09E-01	6.32E+02	2.47E-02	4.62E+02	2.36E-04
PGBG-1 (2-6")	1.72E-01	1.72E-01	9.20E-01	3.41E+01	5.84E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.70E+01	1.78E-01	8.77E-02	4.54E+00	1.16E-01	6.32E+02	2.47E-02	4.62E+02	2.52E-04
PGBG-1 (6-12")	1.72E-01	1.72E-01	9.20E-01	2.02E+01	3.47E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.20E+01	1.06E-01	8.77E-02	4.54E+00	6.92E-02	6.32E+02	2.47E-02	4.62E+02	1.50E-04
PGBG-2 (0-2")	1.72E-01	1.72E-01	9.20E-01	4.79E+01	8.21E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.20E+01	2.50E-01	8.77E-02	4.54E+00	1.64E-01	6.32E+02	2.47E-02	4.62E+02	3.54E-04
PGBG-2 (2-6")	1.72E-01	1.72E-01	9.20E-01	5.06E+01	8.68E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.50E+01	2.64E-01	8.77E-02	4.54E+00	1.73E-01	6.32E+02	2.47E-02	4.62E+02	3.75E-04
PGBG-2 (6-12")	1.72E-01	1.72E-01	9.20E-01	6.20E+01	1.06E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	6.74E+01	3.24E-01	8.77E-02	4.54E+00	2.12E-01	6.32E+02	2.47E-02	4.62E+02	4.59E-04
Eastern Upper Marsh (0-2")																						**Minimum HQ (Reference Sites)**	**1.50E-04**
UM-1000S-3500E (0-2")	1.72E-01	1.72E-01	1.39E-01	3.07E+01	5.27E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.21E+02	1.06E+00	8.77E-02	4.54E+00	1.22E-01	6.32E+02	2.47E-02	4.62E+02	2.65E-04
BRSD-15 (0-2")	1.72E-01	1.72E-01	1.39E-01	1.24E+01	2.13E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	8.92E+01	4.28E-01	8.77E-02	4.54E+00	4.94E-02	6.32E+02	2.47E-02	4.62E+02	1.07E-04
BRSD-4 (0-2")	1.72E-01	1.72E-01	1.39E-01	8.66E+00	1.49E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	6.23E+01	2.99E-01	8.77E-02	4.54E+00	3.45E-02	6.32E+02	2.47E-02	4.62E+02	7.47E-05
UM-750S-3500E (0-2")	1.72E-01	1.72E-01	1.39E-01	1.24E+02	2.13E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	8.94E+02	4.29E+00	8.77E-02	4.54E+00	4.95E-01	6.32E+02	2.47E-02	4.62E+02	1.07E-03
BRSD-16 (0-2")	1.72E-01	1.72E-01	1.39E-01	5.16E+01	8.85E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.71E+02	1.78E+00	8.77E-02	4.54E+00	2.06E-01	6.32E+02	2.47E-02	4.62E+02	4.45E-04
UM-750S-3000E (0-2")	1.72E-01	1.72E-01	1.39E-01	5.63E+01	9.66E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.05E+02	1.95E+00	8.77E-02	4.54E+00	2.24E-01	6.32E+02	2.47E-02	4.62E+02	4.86E-04
BRSD-3 (0-2")	1.72E-01	1.72E-01	1.39E-01	1.56E+02	2.67E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.12E+03	5.38E+00	8.77E-02	4.54E+00	6.21E-01	6.32E+02	2.47E-02	4.62E+02	1.34E-03
UM-500S-3250E (0-2")	1.72E-01	1.72E-01	1.39E-01	7.34E+01	1.26E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.28E+02	2.54E+00	8.77E-02	4.54E+00	2.93E-01	6.32E+02	2.47E-02	4.62E+02	6.33E-04
UM-500S-3000E (0-2")	1.72E-01	1.72E-01	1.39E-01	6.09E+01	1.04E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.38E+02	2.10E+00	8.77E-02	4.54E+00	2.43E-01	6.32E+02	2.47E-02	4.62E+02	5.25E-04
UM-500S-2750E (0-2")	1.72E-01	1.72E-01	1.39E-01	7.01E+01	1.20E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.04E+02	2.42E+00	8.77E-02	4.54E+00	2.79E-01	6.32E+02	2.47E-02	4.62E+02	6.04E-04
BRSD-25 (0-2")	1.72E-01	1.72E-01	1.39E-01	3.68E+01	6.32E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.65E+02	1.27E+00	8.77E-02	4.54E+00	1.47E-01	6.32E+02	2.47E-02	4.62E+02	3.18E-04
UM-250S-3000E (0-2")	1.72E-01	1.72E-01	1.39E-01	1.35E+02	2.32E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	9.71E+02	4.66E+00	8.77E-02	4.54E+00	5.38E-01	6.32E+02	2.47E-02	4.62E+02	1.16E-03
UM-250S-3250E (0-2")	1.72E-01	1.72E-01	1.39E-01	4.38E+01	7.51E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.15E+02	1.51E+00	8.77E-02	4.54E+00	1.75E-01	6.32E+02	2.47E-02	4.62E+02	3.78E-04
BRSD-24 (0-2")	1.72E-01	1.72E-01	1.39E-01	5.45E+01	9.35E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.92E+02	1.88E+00	8.77E-02	4.54E+00	2.17E-01	6.32E+02	2.47E-02	4.62E+02	4.70E-04
UM-250S-2750E (0-2")	1.72E-01	1.72E-01	1.39E-01	3.80E+01	6.51E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.73E+02	1.31E+00	8.77E-02	4.54E+00	1.51E-01	6.32E+02	2.47E-02	4.62E+02	3.27E-04

TABLE C-12DA: COPPER DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 12 - MARSH, TERRESTRIAL RECEPTORS (Continued)
Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)
calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **118.73**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Red Fox (Carnivorous Mammals)																							
UM-250S-2500E (0-2")	1.72E-01	1.72E-01	1.39E-01	2.84E+01	4.87E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.04E+02	9.80E-01	8.77E-02	4.54E+00	1.13E-01	6.32E+02	2.47E-02	4.62E+02	2.45E-04
UM-0N-2500E (0-2")	1.72E-01	1.72E-01	1.39E-01	7.09E+01	1.22E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.10E+02	2.45E+00	8.77E-02	4.54E+00	2.83E-01	6.32E+02	2.47E-02	4.62E+02	6.12E-04
UM-0N-250E (0-2")	1.72E-01	1.72E-01	1.39E-01	8.13E+01	1.40E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.85E+02	2.81E+00	8.77E-02	4.54E+00	3.24E-01	6.32E+02	2.47E-02	4.62E+02	7.02E-04
BRSD-2 (0-2")	1.72E-01	1.72E-01	1.39E-01	4.77E+01	8.18E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.43E+02	1.65E+00	8.77E-02	4.54E+00	1.90E-01	6.32E+02	2.47E-02	4.62E+02	4.11E-04
UM-500N-2500E (0-2")	1.72E-01	1.72E-01	1.39E-01	8.24E+00	1.41E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.93E+01	2.85E-01	8.77E-02	4.54E+00	3.29E-02	6.32E+02	2.47E-02	4.62E+02	7.11E-05
UM-250N-2500E (0-2")	1.72E-01	1.72E-01	1.39E-01	7.72E+01	1.32E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.55E+02	2.67E+00	8.77E-02	4.54E+00	3.07E-01	6.32E+02	2.47E-02	4.62E+02	6.66E-04
UM-250N-2250E (0-2")	1.72E-01	1.72E-01	1.39E-01	5.06E+01	8.68E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.64E+02	1.75E+00	8.77E-02	4.54E+00	2.02E-01	6.32E+02	2.47E-02	4.62E+02	4.37E-04
Western Upper Marsh (0-2")																						**Maximum HQ (Eastern Upper Marsh, 0-2")**	**1.34E-03**
UM-500S-2500E (0-2")	1.72E-01	1.72E-01	1.39E-01	5.19E+01	8.90E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.73E+02	1.79E+00	8.77E-02	4.54E+00	2.07E-01	6.32E+02	2.47E-02	4.62E+02	4.47E-04
UM-0N-2000E (0-2")	1.72E-01	1.72E-01	1.39E-01	1.10E+02	1.88E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	7.88E+02	3.79E+00	8.77E-02	4.54E+00	4.37E-01	6.32E+02	2.47E-02	4.62E+02	9.45E-04
UM-500S-2000E (0-2")	1.72E-01	1.72E-01	1.39E-01	2.54E+01	4.36E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.83E+02	8.79E-01	8.77E-02	4.54E+00	1.01E-01	6.32E+02	2.47E-02	4.62E+02	2.19E-04
UM-250N-1750E (0-2")	1.72E-01	1.72E-01	1.39E-01	2.13E+01	3.65E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.53E+02	7.35E-01	8.77E-02	4.54E+00	8.48E-02	6.32E+02	2.47E-02	4.62E+02	1.84E-04
UM-0N-1500E (0-2")	1.72E-01	1.72E-01	1.39E-01	1.26E+01	2.17E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	9.08E+01	4.36E-01	8.77E-02	4.54E+00	5.03E-02	6.32E+02	2.47E-02	4.62E+02	1.09E-04
UM-250S-1500E (0-2")	1.72E-01	1.72E-01	1.39E-01	7.94E+01	1.36E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.71E+02	2.74E+00	8.77E-02	4.54E+00	3.16E-01	6.32E+02	2.47E-02	4.62E+02	6.85E-04
UM-250S-1250E (0-2")	1.72E-01	1.72E-01	1.39E-01	1.27E+01	2.17E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	9.11E+01	4.38E-01	8.77E-02	4.54E+00	5.05E-02	6.32E+02	2.47E-02	4.62E+02	1.09E-04
BRSD-6 (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-1000E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-750E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-500E (0-2")	1.72E-01	1.72E-01	1.39E-01	6.26E+01	1.07E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.50E+02	2.16E+00	8.77E-02	4.54E+00	2.49E-01	6.32E+02	2.47E-02	4.62E+02	5.40E-04
UM-250S-500E (0-2")	1.72E-01	1.72E-01	1.39E-01	1.12E+01	1.93E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	8.08E+01	3.88E-01	8.77E-02	4.54E+00	4.48E-02	6.32E+02	2.47E-02	4.62E+02	9.69E-05
UM-250S-250E (0-2")	1.72E-01	1.72E-01	1.39E-01	3.34E+01	5.72E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.40E+02	1.15E+00	8.77E-02	4.54E+00	1.33E-01	6.32E+02	2.47E-02	4.62E+02	2.88E-04
BRSD-7 (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-8 (0-2")	1.72E-01	1.72E-01	1.39E-01	2.70E+01	4.63E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.94E+02	9.32E-01	8.77E-02	4.54E+00	1.07E-01	6.32E+02	2.47E-02	4.62E+02	2.33E-04
UM-500S-500E (0-2")	1.72E-01	1.72E-01	1.39E-01	1.34E+01	2.30E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	9.63E+01	4.63E-01	8.77E-02	4.54E+00	5.34E-02	6.32E+02	2.47E-02	4.62E+02	1.16E-04
BRSD-9 (0-2")	1.72E-01	1.72E-01	1.39E-01	1.17E+01	2.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	8.39E+01	4.03E-01	8.77E-02	4.54E+00	4.65E-02	6.32E+02	2.47E-02	4.62E+02	1.01E-04
BRSD-10 (0-2")	1.72E-01	1.72E-01	1.39E-01	9.05E+01	1.55E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	6.51E+02	3.13E+00	8.77E-02	4.54E+00	3.61E-01	6.32E+02	2.47E-02	4.62E+02	7.81E-04
BRSD-11 (0-2")	1.72E-01	1.72E-01	1.39E-01	1.85E+01	3.17E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.33E+02	6.39E-01	8.77E-02	4.54E+00	7.37E-02	6.32E+02	2.47E-02	4.62E+02	1.60E-04
Eastern Upper Marsh (2-6")																						**Maximum HQ (Western Upper Marsh, 0-2")**	**9.45E-04**
UM-1000S-3500E (2-6")	1.72E-01	1.72E-01	1.39E-01	1.47E+01	2.53E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.06E+02	5.09E-01	8.77E-02	4.54E+00	5.87E-02	6.32E+02	2.47E-02	4.62E+02	1.27E-04
BRSD-15 (2-6")	1.72E-01	1.72E-01	1.39E-01	1.35E+01	2.32E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	9.74E+01	4.68E-01	8.77E-02	4.54E+00	5.40E-02	6.32E+02	2.47E-02	4.62E+02	1.17E-04
BRSD-4 (2-6")	1.72E-01	1.72E-01	1.39E-01	1.79E+01	3.08E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.29E+02	6.20E-01	8.77E-02	4.54E+00	7.15E-02	6.32E+02	2.47E-02	4.62E+02	1.55E-04
UM-750S-3500E (2-6")	1.72E-01	1.72E-01	1.39E-01	4.75E+01	8.16E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.42E+02	1.64E+00	8.77E-02	4.54E+00	1.89E-01	6.32E+02	2.47E-02	4.62E+02	4.10E-04
BRSD-16 (2-6")	1.72E-01	1.72E-01	1.39E-01	1.56E+02	2.67E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.12E+03	5.38E+00	8.77E-02	4.54E+00	6.21E-01	6.32E+02	2.47E-02	4.62E+02	1.34E-03
UM-750S-3000E (2-6")	1.72E-01	1.72E-01	1.39E-01	4.92E+01	8.44E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.54E+02	1.70E+00	8.77E-02	4.54E+00	1.96E-01	6.32E+02	2.47E-02	4.62E+02	4.25E-04
BRSD-3 (2-6")	1.72E-01	1.72E-01	1.39E-01	1.97E+02	3.39E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.42E+03	6.82E+00	8.77E-02	4.54E+00	7.87E-01	6.32E+02	2.47E-02	4.62E+02	1.70E-03
UM-500S-3250E (2-6")	1.72E-01	1.72E-01	1.39E-01	3.98E+01	6.82E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.86E+02	1.37E+00	8.77E-02	4.54E+00	1.58E-01	6.32E+02	2.47E-02	4.62E+02	3.43E-04
UM-500S-3000E (2-6")	1.72E-01	1.72E-01	1.39E-01	1.14E+01	1.96E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	8.20E+01	3.94E-01	8.77E-02	4.54E+00	4.54E-02	6.32E+02	2.47E-02	4.62E+02	9.84E-05
UM-500S-2750E (2-6")	1.72E-01	1.72E-01	1.39E-01	4.42E+01	7.58E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.18E+02	1.53E+00	8.77E-02	4.54E+00	1.76E-01	6.32E+02	2.47E-02	4.62E+02	3.81E-04
BRSD-25 (2-6")	1.72E-01	1.72E-01	1.39E-01	5.59E+01	9.59E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.02E+02	1.93E+00	8.77E-02	4.54E+00	2.23E-01	6.32E+02	2.47E-02	4.62E+02	4.82E-04
UM-250S-3000E (2-6")	1.72E-01	1.72E-01	1.39E-01	1.11E+02	1.91E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	8.01E+02	3.85E+00	8.77E-02	4.54E+00	4.44E-01	6.32E+02	2.47E-02	4.62E+02	9.61E-04
UM-250S-3250E (2-6")	1.72E-01	1.72E-01	1.39E-01	1.14E+01	1.95E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	8.18E+01	3.93E-01	8.77E-02	4.54E+00	4.53E-02	6.32E+02	2.47E-02	4.62E+02	9.81E-05
BRSD-24 (2-6")	1.72E-01	1.72E-01	1.39E-01	1.03E+02	1.76E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	7.40E+02	3.55E+00	8.77E-02	4.54E+00	4.10E-01	6.32E+02	2.47E-02	4.62E+02	8.88E-04
UM-250S-2750E (2-6")	1.72E-01	1.72E-01	1.39E-01	6.14E+01	1.05E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.42E+02	2.12E+00	8.77E-02	4.54E+00	2.45E-01	6.32E+02	2.47E-02	4.62E+02	5.30E-04
UM-0N-2500E (2-6")	1.72E-01	1.72E-01	1.39E-01	3.64E+01	6.25E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.62E+02	1.26E+00	8.77E-02	4.54E+00	1.45E-01	6.32E+02	2.47E-02	4.62E+02	3.14E-04
BRSD-2 (2-6")	1.72E-01	1.72E-01	1.39E-01	5.69E+01	9.75E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.09E+02	1.96E+00	8.77E-02	4.54E+00	2.27E-01	6.32E+02	2.47E-02	4.62E+02	4.91E-04
UM-500N-2500E (2-6")	1.72E-01	1.72E-01	1.39E-01	1.03E+01	1.77E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	7.43E+01	3.57E-01	8.77E-02	4.54E+00	4.12E-02	6.32E+02	2.47E-02	4.62E+02	8.91E-05
UM-250N-2500E (2-6")	1.72E-01	1.72E-01	1.39E-01	7.12E+01	1.22E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.12E+02	2.46E+00	8.77E-02	4.54E+00	2.84E-01	6.32E+02	2.47E-02	4.62E+02	6.14E-04
UM-250N-2250E (2-6")	1.72E-01	1.72E-01	1.39E-01	1.99E+01	3.41E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.43E+02	6.87E-01	8.77E-02	4.54E+00	7.92E-02	6.32E+02	2.47E-02	4.62E+02	1.72E-04

TABLE C-12DA: COPPER DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 12 - MARSH, TERRESTRIAL RECEPTORS (Continued)
Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)
calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **118.73**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Red Fox (Carnivorous Mammals)																							
Western Upper Marsh (2-6")																					**Maximum HQ (Eastern Upper Marsh, 2-6")**		**1.70E-03**
UM-500S-2500E (2-6")	1.72E-01	1.72E-01	1.39E-01	4.94E+01	8.47E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.55E+02	1.71E+00	8.77E-02	4.54E+00	1.97E-01	6.32E+02	2.47E-02	4.62E+02	4.26E-04
UM-0N-2000E (2-6")	1.72E-01	1.72E-01	1.39E-01	9.88E+01	1.70E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	7.11E+02	3.42E+00	8.77E-02	4.54E+00	3.94E-01	6.32E+02	2.47E-02	4.62E+02	8.53E-04
UM-500S-2000E (2-6")	1.72E-01	1.72E-01	1.39E-01	3.29E+01	5.65E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.37E+02	1.14E+00	8.77E-02	4.54E+00	1.31E-01	6.32E+02	2.47E-02	4.62E+02	2.84E-04
UM-250N-1750E (2-6")	1.72E-01	1.72E-01	1.39E-01	1.50E+01	2.58E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.08E+02	5.19E-01	8.77E-02	4.54E+00	5.98E-02	6.32E+02	2.47E-02	4.62E+02	1.30E-04
UM-0N-1500E (2-6")	1.72E-01	1.72E-01	1.39E-01	1.88E+01	3.22E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.35E+02	6.48E-01	8.77E-02	4.54E+00	7.48E-02	6.32E+02	2.47E-02	4.62E+02	1.62E-04
UM-250S-1500E (2-6")	1.72E-01	1.72E-01	1.39E-01	1.18E+02	2.02E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	8.49E+02	4.08E+00	8.77E-02	4.54E+00	4.70E-01	6.32E+02	2.47E-02	4.62E+02	1.02E-03
UM-250S-1250E (2-6")	1.72E-01	1.72E-01	1.39E-01	1.10E+01	1.89E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	7.94E+01	3.81E-01	8.77E-02	4.54E+00	4.40E-02	6.32E+02	2.47E-02	4.62E+02	9.52E-05
BRSD-6 (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-1000E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-750E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-500E (2-6")	1.72E-01	1.72E-01	1.39E-01	3.84E+02	6.58E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.76E+03	1.33E+01	8.77E-02	4.54E+00	1.53E+00	6.32E+02	2.47E-02	4.62E+02	3.31E-03
UM-250S-500E (2-6")	1.72E-01	1.72E-01	1.39E-01	1.25E+01	2.15E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	9.02E+01	4.33E-01	8.77E-02	4.54E+00	5.00E-02	6.32E+02	2.47E-02	4.62E+02	1.08E-04
UM-0N-250E (2-6")	1.72E-01	1.72E-01	1.39E-01	4.20E+01	7.20E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.02E+02	1.45E+00	8.77E-02	4.54E+00	1.67E-01	6.32E+02	2.47E-02	4.62E+02	3.62E-04
UM-250S-250E (2-6")	1.72E-01	1.72E-01	1.39E-01	2.89E+01	4.96E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.08E+02	9.99E-01	8.77E-02	4.54E+00	1.15E-01	6.32E+02	2.47E-02	4.62E+02	2.49E-04
BRSD-7 (2-6")	1.72E-01	1.72E-01	1.39E-01	7.85E+00	1.35E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.65E+01	2.71E-01	8.77E-02	4.54E+00	3.13E-02	6.32E+02	2.47E-02	4.62E+02	6.78E-05
BRSD-8 (2-6")	1.72E-01	1.72E-01	1.39E-01	2.61E+01	4.48E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.88E+02	9.03E-01	8.77E-02	4.54E+00	1.04E-01	6.32E+02	2.47E-02	4.62E+02	2.25E-04
UM-500S-500E (2-6")	1.72E-01	1.72E-01	1.39E-01	1.23E+01	2.11E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	8.83E+01	4.24E-01	8.77E-02	4.54E+00	4.89E-02	6.32E+02	2.47E-02	4.62E+02	1.06E-04
BRSD-9 (2-6")	1.72E-01	1.72E-01	1.39E-01	7.35E+00	1.26E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.29E+01	2.54E-01	8.77E-02	4.54E+00	2.93E-02	6.32E+02	2.47E-02	4.62E+02	6.34E-05
BRSD-10 (2-6")	1.72E-01	1.72E-01	1.39E-01	9.59E+01	1.65E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	6.90E+02	3.31E+00	8.77E-02	4.54E+00	3.82E-01	6.32E+02	2.47E-02	4.62E+02	8.28E-04
BRSD-11 (2-6")	1.72E-01	1.72E-01	1.39E-01	2.14E+01	3.67E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.54E+02	7.40E-01	8.77E-02	4.54E+00	8.53E-02	6.32E+02	2.47E-02	4.62E+02	1.85E-04
Eastern Upper Marsh (6-12")																					**Maximum HQ (Western Upper Marsh, 2-6")**		**3.31E-03**
UM-1000S-3500E (6-12")	1.72E-01	1.72E-01	1.39E-01	1.20E+01	2.07E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	8.66E+01	4.16E-01	8.77E-02	4.54E+00	4.80E-02	6.32E+02	2.47E-02	4.62E+02	1.04E-04
BRSD-15 (6-12")	1.72E-01	1.72E-01	1.39E-01	1.36E+01	2.33E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	9.79E+01	4.70E-01	8.77E-02	4.54E+00	5.42E-02	6.32E+02	2.47E-02	4.62E+02	1.17E-04
BRSD-4 (6-12")	1.72E-01	1.72E-01	1.39E-01	1.29E+01	2.21E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	9.25E+01	4.44E-01	8.77E-02	4.54E+00	5.12E-02	6.32E+02	2.47E-02	4.62E+02	1.11E-04
UM-750S-3500E (6-12")	1.72E-01	1.72E-01	1.39E-01	5.69E+01	9.75E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.09E+02	1.96E+00	8.77E-02	4.54E+00	2.27E-01	6.32E+02	2.47E-02	4.62E+02	4.91E-04
BRSD-16 (6-12")	1.72E-01	1.72E-01	1.39E-01	7.90E+01	1.35E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.68E+02	2.73E+00	8.77E-02	4.54E+00	3.15E-01	6.32E+02	2.47E-02	4.62E+02	6.81E-04
UM-750S-3000E (6-12")	1.72E-01	1.72E-01	1.39E-01	4.77E+01	8.18E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.43E+02	1.65E+00	8.77E-02	4.54E+00	1.90E-01	6.32E+02	2.47E-02	4.62E+02	4.11E-04
BRSD-3 (6-12")	1.72E-01	1.72E-01	1.39E-01	1.72E+02	2.96E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.24E+03	5.96E+00	8.77E-02	4.54E+00	6.87E-01	6.32E+02	2.47E-02	4.62E+02	1.49E-03
UM-500S-3250E (6-12")	1.72E-01	1.72E-01	1.39E-01	2.98E+01	5.10E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.14E+02	1.03E+00	8.77E-02	4.54E+00	1.19E-01	6.32E+02	2.47E-02	4.62E+02	2.57E-04
UM-500S-3000E (6-12")	1.72E-01	1.72E-01	1.39E-01	1.23E+01	2.11E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	8.86E+01	4.26E-01	8.77E-02	4.54E+00	4.91E-02	6.32E+02	2.47E-02	4.62E+02	1.06E-04
UM-500S-2750E (6-12")	1.72E-01	1.72E-01	1.39E-01	4.03E+01	6.92E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.90E+02	1.39E+00	8.77E-02	4.54E+00	1.61E-01	6.32E+02	2.47E-02	4.62E+02	3.48E-04
BRSD-25 (6-12")	1.72E-01	1.72E-01	1.39E-01	2.66E+01	4.56E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.91E+02	9.17E-01	8.77E-02	4.54E+00	1.06E-01	6.32E+02	2.47E-02	4.62E+02	2.29E-04
UM-250S-3000E (6-12")	1.72E-01	1.72E-01	1.39E-01	1.01E+02	1.74E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	7.30E+02	3.51E+00	8.77E-02	4.54E+00	4.04E-01	6.32E+02	2.47E-02	4.62E+02	8.76E-04
UM-250S-3250E (6-12")	1.72E-01	1.72E-01	1.39E-01	1.21E+01	2.07E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	8.69E+01	4.17E-01	8.77E-02	4.54E+00	4.81E-02	6.32E+02	2.47E-02	4.62E+02	1.04E-04
BRSD-24 (6-12")	1.72E-01	1.72E-01	1.39E-01	7.69E+01	1.32E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.53E+02	2.66E+00	8.77E-02	4.54E+00	3.06E-01	6.32E+02	2.47E-02	4.62E+02	6.63E-04
UM-250S-2750E (6-12")	1.72E-01	1.72E-01	1.39E-01	7.15E+01	1.23E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.14E+02	2.47E+00	8.77E-02	4.54E+00	2.85E-01	6.32E+02	2.47E-02	4.62E+02	6.16E-04
UM-250S-2500E (6-12")	1.72E-01	1.72E-01	1.39E-01	2.04E+01	3.51E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.47E+02	7.06E-01	8.77E-02	4.54E+00	8.14E-02	6.32E+02	2.47E-02	4.62E+02	1.76E-04
BRSD-2 (6-12")	1.72E-01	1.72E-01	1.39E-01	1.28E+02	2.19E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	9.18E+02	4.41E+00	8.77E-02	4.54E+00	5.09E-01	6.32E+02	2.47E-02	4.62E+02	1.10E-03
UM-500N-2500E (6-12")	1.72E-01	1.72E-01	1.39E-01	4.55E+00	7.80E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.27E+01	1.57E-01	8.77E-02	4.54E+00	1.81E-02	6.32E+02	2.47E-02	4.62E+02	3.92E-05
UM-250N-2500E (6-12")	1.72E-01	1.72E-01	1.39E-01	5.20E+01	8.92E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.74E+02	1.80E+00	8.77E-02	4.54E+00	2.07E-01	6.32E+02	2.47E-02	4.62E+02	4.49E-04
UM-250N-2250E (6-12")	1.72E-01	1.72E-01	1.39E-01	2.50E+01	4.29E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.80E+02	8.65E-01	8.77E-02	4.54E+00	9.97E-02	6.32E+02	2.47E-02	4.62E+02	2.16E-04
Western Upper Marsh (6-12")																					**Maximum HQ (Eastern Upper Marsh, 6-12")**		**1.49E-03**
UM-500S-2500E (6-12")	1.72E-01	1.72E-01	1.39E-01	5.06E+01	8.68E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.64E+02	1.75E+00	8.77E-02	4.54E+00	2.02E-01	6.32E+02	2.47E-02	4.62E+02	4.37E-04
UM-0N-2000E (6-12")	1.72E-01	1.72E-01	1.39E-01	1.50E+02	2.58E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.08E+03	5.19E+00	8.77E-02	4.54E+00	5.98E-01	6.32E+02	2.47E-02	4.62E+02	1.30E-03
UM-500S-2000E (6-12")	1.72E-01	1.72E-01	1.39E-01	3.23E+01	5.53E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.32E+02	1.11E+00	8.77E-02	4.54E+00	1.29E-01	6.32E+02	2.47E-02	4.62E+02	2.78E-04
UM-250N-1750E (6-12")	1.72E-01	1.72E-01	1.39E-01	1.99E+01	3.41E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.43E+02	6.87E-01	8.77E-02	4.54E+00	7.92E-02	6.32E+02	2.47E-02	4.62E+02	1.72E-04
UM-0N-1500E (6-12")	1.72E-01	1.72E-01	1.39E-01	2.56E+01	4.39E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.84E+02	8.84E-01	8.77E-02	4.54E+00	1.02E-01	6.32E+02	2.47E-02	4.62E+02	2.21E-04
UM-250S-1500E (6-12")	1.72E-01	1.72E-01	1.39E-01	7.13E+01	1.22E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.13E+02	2.46E+00	8.77E-02	4.54E+00	2.84E-01	6.32E+02	2.47E-02	4.62E+02	6.15E-04
UM-250S-1250E (6-12")	1.72E-01	1.72E-01	1.39E-01	1.08E+01	1.85E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	7.75E+01	3.72E-01	8.77E-02	4.54E+00	4.29E-02	6.32E+02	2.47E-02	4.62E+02	9.30E-05

TABLE C-12DA: COPPER DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 12 - MARSH, TERRESTRIAL RECEPTORS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **118.73**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Red Fox (Carnivorous Mammals)																							
BRSD-6 (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-1000E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-750E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-500E (6-12")	1.72E-01	1.72E-01	1.39E-01	1.01E+02	1.74E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	7.29E+02	3.50E+00	8.77E-02	4.54E+00	4.04E-01	6.32E+02	2.47E-02	4.62E+02	8.74E-04
UM-250S-500E (6-12")	1.72E-01	1.72E-01	1.39E-01	1.58E+01	2.72E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.14E+02	5.48E-01	8.77E-02	4.54E+00	6.32E-02	6.32E+02	2.47E-02	4.62E+02	1.37E-04
UM-0N-250E (6-12")	1.72E-01	1.72E-01	1.39E-01	4.78E+01	8.20E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.44E+02	1.65E+00	8.77E-02	4.54E+00	1.91E-01	6.32E+02	2.47E-02	4.62E+02	4.13E-04
UM-250S-250E (6-12")	1.72E-01	1.72E-01	1.39E-01	1.78E+01	3.05E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.28E+02	6.15E-01	8.77E-02	4.54E+00	7.09E-02	6.32E+02	2.47E-02	4.62E+02	1.54E-04
BRSD-7 (6-12")	1.72E-01	1.72E-01	1.39E-01	6.76E+00	1.16E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.86E+01	2.33E-01	8.77E-02	4.54E+00	2.69E-02	6.32E+02	2.47E-02	4.62E+02	5.83E-05
BRSD-8 (6-12")	1.72E-01	1.72E-01	1.39E-01	2.78E+01	4.77E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.00E+02	9.61E-01	8.77E-02	4.54E+00	1.11E-01	6.32E+02	2.47E-02	4.62E+02	2.40E-04
UM-500S-500E (6-12")	1.72E-01	1.72E-01	1.39E-01	1.14E+01	1.96E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	8.20E+01	3.94E-01	8.77E-02	4.54E+00	4.54E-02	6.32E+02	2.47E-02	4.62E+02	9.84E-05
BRSD-9 (6-12")	1.72E-01	1.72E-01	1.39E-01	1.17E+01	2.01E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	8.41E+01	4.04E-01	8.77E-02	4.54E+00	4.66E-02	6.32E+02	2.47E-02	4.62E+02	1.01E-04
BRSD-10 (6-12")	1.72E-01	1.72E-01	1.39E-01	1.35E+02	2.32E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	9.71E+02	4.66E+00	8.77E-02	4.54E+00	5.38E-01	6.32E+02	2.47E-02	4.62E+02	1.16E-03
BRSD-11 (6-12")	1.72E-01	1.72E-01	1.39E-01	2.06E+01	3.53E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.48E+02	7.11E-01	8.77E-02	4.54E+00	8.20E-02	6.32E+02	2.47E-02	4.62E+02	1.78E-04
Middle Marsh (0-2")																						**Maximum HQ (Western Upper Marsh, 6-12")**	**1.30E-03**
MMSD-201 (0-2")	1.72E-01	1.72E-01	1.39E-01	6.05E+01	1.04E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.35E+02	2.09E+00	8.77E-02	4.54E+00	2.41E-01	6.32E+02	2.47E-02	4.62E+02	5.22E-04
MMSD-202 (0-2")	1.72E-01	1.72E-01	1.39E-01	6.09E+01	1.04E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.38E+02	2.10E+00	8.77E-02	4.54E+00	2.43E-01	6.32E+02	2.47E-02	4.62E+02	5.25E-04
Middle Marsh (2-6")																						**Maximum HQ (Middle Marsh, 0-2")**	**5.25E-04**
MMSD-201 (2-6")	1.72E-01	1.72E-01	1.39E-01	8.34E+01	1.43E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	6.00E+02	2.88E+00	8.77E-02	4.54E+00	3.32E-01	6.32E+02	2.47E-02	4.62E+02	7.20E-04
MMSD-202 (2-6")	1.72E-01	1.72E-01	1.39E-01	7.17E+01	1.23E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.16E+02	2.48E+00	8.77E-02	4.54E+00	2.86E-01	6.32E+02	2.47E-02	4.62E+02	6.19E-04
Middle Marsh (6-12")																						**Maximum HQ (Middle Marsh, 2-6")**	**7.20E-04**
MMSD-201 (6-12")	1.72E-01	1.72E-01	1.39E-01	1.01E+02	1.73E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	7.26E+02	3.49E+00	8.77E-02	4.54E+00	4.02E-01	6.32E+02	2.47E-02	4.62E+02	8.71E-04
MMSD-202 (6-12")	1.72E-01	1.72E-01	1.39E-01	4.06E+01	6.96E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.92E+02	1.40E+00	8.77E-02	4.54E+00	1.62E-01	6.32E+02	2.47E-02	4.62E+02	3.50E-04
Lower Marsh (0-2")																						**Maximum HQ (Middle Marsh, 6-12")**	**8.71E-04**
LMSD-201 (0-2")	1.72E-01	1.72E-01	1.39E-01	1.14E+01	1.95E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	8.17E+01	3.92E-01	8.77E-02	4.54E+00	4.53E-02	6.32E+02	2.47E-02	4.62E+02	9.80E-05
LMSD-202 (0-2")	1.72E-01	1.72E-01	1.39E-01	9.01E+00	1.55E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	6.48E+01	3.11E-01	8.77E-02	4.54E+00	3.59E-02	6.32E+02	2.47E-02	4.62E+02	7.77E-05
LMSD-203 (0-2")	1.72E-01	1.72E-01	1.39E-01	3.99E+01	6.84E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.87E+02	1.38E+00	8.77E-02	4.54E+00	1.59E-01	6.32E+02	2.47E-02	4.62E+02	3.44E-04
LMSD-204 (0-2")	1.72E-01	1.72E-01	1.39E-01	3.11E+01	5.34E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.24E+02	1.08E+00	8.77E-02	4.54E+00	1.24E-01	6.32E+02	2.47E-02	4.62E+02	2.69E-04
Lower Marsh (2-6")																						**Maximum HQ (Lower Marsh, 0-2")**	**3.44E-04**
LMSD-201 (2-6")	1.72E-01	1.72E-01	1.39E-01	1.12E+01	1.93E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	8.09E+01	3.89E-01	8.77E-02	4.54E+00	4.48E-02	6.32E+02	2.47E-02	4.62E+02	9.70E-05
LMSD-202 (2-6")	1.72E-01	1.72E-01	1.39E-01	6.67E+00	1.14E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.80E+01	2.31E-01	8.77E-02	4.54E+00	2.66E-02	6.32E+02	2.47E-02	4.62E+02	5.76E-05
LMSD-203 (2-6")	1.72E-01	1.72E-01	1.39E-01	3.96E+01	6.80E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.85E+02	1.37E+00	8.77E-02	4.54E+00	1.58E-01	6.32E+02	2.47E-02	4.62E+02	3.42E-04
LMSD-204 (2-6")	1.72E-01	1.72E-01	1.39E-01	3.16E+01	5.41E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.27E+02	1.09E+00	8.77E-02	4.54E+00	1.26E-01	6.32E+02	2.47E-02	4.62E+02	2.72E-04
Lower Marsh (6-12")																						**Maximum HQ (Lower Marsh, 2-6")**	**3.42E-04**
LMSD-201 (6-12")	1.72E-01	1.72E-01	1.39E-01	1.17E+01	2.01E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	8.44E+01	4.05E-01	8.77E-02	4.54E+00	4.68E-02	6.32E+02	2.47E-02	4.62E+02	1.01E-04
LMSD-202 (6-12")	1.72E-01	1.72E-01	1.39E-01	7.26E+00	1.24E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.22E+01	2.51E-01	8.77E-02	4.54E+00	2.89E-02	6.32E+02	2.47E-02	4.62E+02	6.26E-05
LMSD-203 (6-12")	1.72E-01	1.72E-01	1.39E-01	5.00E+01	8.59E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.60E+02	1.73E+00	8.77E-02	4.54E+00	1.99E-01	6.32E+02	2.47E-02	4.62E+02	4.32E-04
LMSD-204 (6-12")	1.72E-01	1.72E-01	1.39E-01	3.14E+01	5.39E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.26E+02	1.09E+00	8.77E-02	4.54E+00	1.25E-01	6.32E+02	2.47E-02	4.62E+02	2.71E-04
																						Maximum HQ (Lower Marsh, 6-12")	**4.32E-04**
Masked Shrew (Omnivorous Mammals, Wetland)																							
Reference Sites																							
BRSD-5 (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.26E+01	4.92E+02	4.17E+00	1.10E-03	3.92E+01	4.32E-02	1.00E+00	5.50E-03	7.66E+02	6.32E+02	2.47E-02	6.91E+02	1.11E+00
BRSD-5 (2-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.26E+01	5.24E+02	4.43E+00	1.10E-03	4.17E+01	4.59E-02	1.00E+00	5.50E-03	8.15E+02	6.32E+02	2.47E-02	6.91E+02	1.18E+00
BRSD-5 (6-12")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.26E+01	5.69E+02	4.82E+00	1.10E-03	4.53E+01	4.99E-02	1.00E+00	5.50E-03	8.85E+02	6.32E+02	2.47E-02	6.91E+02	1.28E+00
PGBG-1 (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.26E+01	4.36E+02	3.69E+00	1.10E-03	3.47E+01	3.82E-02	1.00E+00	5.50E-03	6.78E+02	6.32E+02	2.47E-02	6.91E+02	9.81E-01
PGBG-1 (2-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.26E+01	4.65E+02	3.93E+00	1.10E-03	3.70E+01	4.07E-02	1.00E+00	5.50E-03	7.23E+02	6.32E+02	2.47E-02	6.91E+02	1.05E+00
PGBG-1 (6-12")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.26E+01	2.76E+02	2.34E+00	1.10E-03	2.20E+01	2.42E-02	1.00E+00	5.50E-03	4.30E+02	6.32E+02	2.47E-02	6.91E+02	6.22E-01
PGBG-2 (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.26E+01	6.53E+02	5.53E+00	1.10E-03	5.20E+01	5.73E-02	1.00E+00	5.50E-03	1.02E+03	6.32E+02	2.47E-02	6.91E+02	1.47E+00
PGBG-2 (2-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.26E+01	6.90E+02	5.85E+00	1.10E-03	5.50E+01	6.06E-02	1.00E+00	5.50E-03	1.07E+03	6.32E+02	2.47E-02	6.91E+02	1.55E+00
PGBG-2 (6-12")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.26E+01	8.46E+02	7.17E+00	1.10E-03	6.74E+01	7.42E-02	1.00E+00	5.50E-03	1.32E+03	6.32E+02	2.47E-02	6.91E+02	1.90E+00

TABLE C-12DA: COPPER DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 12 - MARSH, TERRESTRIAL RECEPTORS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **118.73**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Masked Shrew (Omnivorous Mammals, Wetland)																							
Eastern Upper Marsh (0-2")																					**Minimum HQ (Reference Sites)**		**6.22E-01**
UM-1000S-3500E (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.44E+01	3.18E+03	2.69E+01	1.10E-03	2.21E+02	2.43E-01	1.00E+00	5.50E-03	4.93E+03	6.32E+02	2.47E-02	6.91E+02	7.14E+00
BRSD-15 (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.44E+01	1.28E+03	1.09E+01	1.10E-03	8.92E+01	9.82E-02	1.00E+00	5.50E-03	1.99E+03	6.32E+02	2.47E-02	6.91E+02	2.88E+00
BRSD-4 (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.44E+01	8.95E+02	7.58E+00	1.10E-03	6.23E+01	6.86E-02	1.00E+00	5.50E-03	1.39E+03	6.32E+02	2.47E-02	6.91E+02	2.01E+00
UM-750S-3500E (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.44E+01	1.28E+04	1.09E+02	1.10E-03	8.94E+02	9.84E-01	1.00E+00	5.50E-03	2.00E+04	6.32E+02	2.47E-02	6.91E+02	2.89E+01
BRSD-16 (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.44E+01	5.33E+03	4.51E+01	1.10E-03	3.71E+02	4.09E-01	1.00E+00	5.50E-03	8.28E+03	6.32E+02	2.47E-02	6.91E+02	1.20E+01
UM-750S-3000E (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.44E+01	5.82E+03	4.93E+01	1.10E-03	4.05E+02	4.46E-01	1.00E+00	5.50E-03	9.04E+03	6.32E+02	2.47E-02	6.91E+02	1.31E+01
BRSD-3 (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.44E+01	1.61E+04	1.36E+02	1.10E-03	1.12E+03	1.23E+00	1.00E+00	5.50E-03	2.50E+04	6.32E+02	2.47E-02	6.91E+02	3.62E+01
UM-500S-3250E (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.44E+01	7.59E+03	6.43E+01	1.10E-03	5.28E+02	5.81E-01	1.00E+00	5.50E-03	1.18E+04	6.32E+02	2.47E-02	6.91E+02	1.71E+01
UM-500S-3000E (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.44E+01	6.29E+03	5.33E+01	1.10E-03	4.38E+02	4.82E-01	1.00E+00	5.50E-03	9.78E+03	6.32E+02	2.47E-02	6.91E+02	1.41E+01
UM-500S-2750E (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.44E+01	7.24E+03	6.13E+01	1.10E-03	5.04E+02	5.55E-01	1.00E+00	5.50E-03	1.13E+04	6.32E+02	2.47E-02	6.91E+02	1.63E+01
BRSD-25 (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.44E+01	3.81E+03	3.22E+01	1.10E-03	2.65E+02	2.92E-01	1.00E+00	5.50E-03	5.92E+03	6.32E+02	2.47E-02	6.91E+02	8.56E+00
UM-250S-3000E (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.44E+01	1.40E+04	1.18E+02	1.10E-03	9.71E+02	1.07E+00	1.00E+00	5.50E-03	2.17E+04	6.32E+02	2.47E-02	6.91E+02	3.14E+01
UM-250S-3250E (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.44E+01	4.53E+03	3.83E+01	1.10E-03	3.15E+02	3.47E-01	1.00E+00	5.50E-03	7.03E+03	6.32E+02	2.47E-02	6.91E+02	1.02E+01
BRSD-24 (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.44E+01	5.63E+03	4.77E+01	1.10E-03	3.92E+02	4.32E-01	1.00E+00	5.50E-03	8.75E+03	6.32E+02	2.47E-02	6.91E+02	1.27E+01
UM-250S-2750E (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.44E+01	3.92E+03	3.32E+01	1.10E-03	2.73E+02	3.01E-01	1.00E+00	5.50E-03	6.09E+03	6.32E+02	2.47E-02	6.91E+02	8.82E+00
UM-250S-2500E (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.44E+01	2.93E+03	2.48E+01	1.10E-03	2.04E+02	2.25E-01	1.00E+00	5.50E-03	4.55E+03	6.32E+02	2.47E-02	6.91E+02	6.59E+00
UM-0N-2500E (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.44E+01	7.33E+03	6.21E+01	1.10E-03	5.10E+02	5.62E-01	1.00E+00	5.50E-03	1.14E+04	6.32E+02	2.47E-02	6.91E+02	1.65E+01
UM-0N-250E (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.44E+01	8.40E+03	7.12E+01	1.10E-03	5.85E+02	6.44E-01	1.00E+00	5.50E-03	1.31E+04	6.32E+02	2.47E-02	6.91E+02	1.89E+01
BRSD-2 (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.44E+01	4.93E+03	4.17E+01	1.10E-03	3.43E+02	3.78E-01	1.00E+00	5.50E-03	7.66E+03	6.32E+02	2.47E-02	6.91E+02	1.11E+01
UM-500N-2500E (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.44E+01	8.52E+02	7.22E+00	1.10E-03	5.93E+01	6.53E-02	1.00E+00	5.50E-03	1.32E+03	6.32E+02	2.47E-02	6.91E+02	1.92E+00
UM-250N-2500E (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.44E+01	7.97E+03	6.75E+01	1.10E-03	5.55E+02	6.11E-01	1.00E+00	5.50E-03	1.24E+04	6.32E+02	2.47E-02	6.91E+02	1.79E+01
UM-250N-2250E (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.44E+01	5.23E+03	4.43E+01	1.10E-03	3.64E+02	4.01E-01	1.00E+00	5.50E-03	8.13E+03	6.32E+02	2.47E-02	6.91E+02	1.18E+01
Western Upper Marsh (0-2")																					**Maximum HQ (Eastern Upper Marsh, 0-2")**		**3.62E+01**
UM-500S-2500E (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	6.28E+00	2.34E+03	1.99E+01	1.10E-03	3.73E+02	4.11E-01	1.00E+00	5.50E-03	3.68E+03	6.32E+02	2.47E-02	6.91E+02	5.33E+00
UM-0N-2000E (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	6.28E+00	4.95E+03	4.19E+01	1.10E-03	7.88E+02	8.68E-01	1.00E+00	5.50E-03	7.78E+03	6.32E+02	2.47E-02	6.91E+02	1.13E+01
UM-500S-2000E (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	6.28E+00	1.15E+03	9.74E+00	1.10E-03	1.83E+02	2.02E-01	1.00E+00	5.50E-03	1.81E+03	6.32E+02	2.47E-02	6.91E+02	2.62E+00
UM-250N-1750E (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	6.28E+00	9.62E+02	8.14E+00	1.10E-03	1.53E+02	1.68E-01	1.00E+00	5.50E-03	1.51E+03	6.32E+02	2.47E-02	6.91E+02	2.19E+00
UM-0N-1500E (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	6.28E+00	5.71E+02	4.83E+00	1.10E-03	9.08E+01	1.00E-01	1.00E+00	5.50E-03	8.97E+02	6.32E+02	2.47E-02	6.91E+02	1.30E+00
UM-250S-1500E (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	6.28E+00	3.59E+03	3.04E+01	1.10E-03	5.71E+02	6.29E-01	1.00E+00	5.50E-03	5.64E+03	6.32E+02	2.47E-02	6.91E+02	8.16E+00
UM-250S-1250E (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	6.28E+00	5.73E+02	4.85E+00	1.10E-03	9.11E+01	1.00E-01	1.00E+00	5.50E-03	9.00E+02	6.32E+02	2.47E-02	6.91E+02	1.30E+00
BRSD-6 (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-1000E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-750E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-500E (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	6.28E+00	2.83E+03	2.40E+01	1.10E-03	4.50E+02	4.95E-01	1.00E+00	5.50E-03	4.45E+03	6.32E+02	2.47E-02	6.91E+02	6.43E+00
UM-250S-500E (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	6.28E+00	5.08E+02	4.30E+00	1.10E-03	8.08E+01	8.90E-02	1.00E+00	5.50E-03	7.98E+02	6.32E+02	2.47E-02	6.91E+02	1.15E+00
UM-250S-250E (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	6.28E+00	1.51E+03	1.28E+01	1.10E-03	2.40E+02	2.64E-01	1.00E+00	5.50E-03	2.37E+03	6.32E+02	2.47E-02	6.91E+02	3.43E+00
BRSD-7 (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-8 (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	6.28E+00	1.22E+03	1.03E+01	1.10E-03	1.94E+02	2.14E-01	1.00E+00	5.50E-03	1.92E+03	6.32E+02	2.47E-02	6.91E+02	2.77E+00
UM-500S-500E (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	6.28E+00	6.05E+02	5.13E+00	1.10E-03	9.63E+01	1.06E-01	1.00E+00	5.50E-03	9.51E+02	6.32E+02	2.47E-02	6.91E+02	1.38E+00
BRSD-9 (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	6.28E+00	5.27E+02	4.47E+00	1.10E-03	8.39E+01	9.24E-02	1.00E+00	5.50E-03	8.29E+02	6.32E+02	2.47E-02	6.91E+02	1.20E+00
BRSD-10 (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	6.28E+00	4.09E+03	3.47E+01	1.10E-03	6.51E+02	7.17E-01	1.00E+00	5.50E-03	6.43E+03	6.32E+02	2.47E-02	6.91E+02	9.30E+00
BRSD-11 (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	6.28E+00	8.36E+02	7.08E+00	1.10E-03	1.33E+02	1.46E-01	1.00E+00	5.50E-03	1.31E+03	6.32E+02	2.47E-02	6.91E+02	1.90E+00
Eastern Upper Marsh (2-6")																					**Maximum HQ (Western Upper Marsh, 0-2")**		**1.13E+01**
UM-1000S-3500E (2-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.44E+01	1.52E+03	1.29E+01	1.10E-03	1.06E+02	1.17E-01	1.00E+00	5.50E-03	2.37E+03	6.32E+02	2.47E-02	6.91E+02	3.42E+00
BRSD-15 (2-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.44E+01	1.40E+03	1.19E+01	1.10E-03	9.74E+01	1.07E-01	1.00E+00	5.50E-03	2.17E+03	6.32E+02	2.47E-02	6.91E+02	3.15E+00
BRSD-4 (2-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.44E+01	1.85E+03	1.57E+01	1.10E-03	1.29E+02	1.42E-01	1.00E+00	5.50E-03	2.88E+03	6.32E+02	2.47E-02	6.91E+02	4.17E+00
UM-750S-3500E (2-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.44E+01	4.91E+03	4.16E+01	1.10E-03	3.42E+02	3.77E-01	1.00E+00	5.50E-03	7.64E+03	6.32E+02	2.47E-02	6.91E+02	1.10E+01
BRSD-16 (2-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.44E+01	1.61E+04	1.36E+02	1.10E-03	1.12E+03	1.23E+00	1.00E+00	5.50E-03	2.50E+04	6.32E+02	2.47E-02	6.91E+02	3.62E+01

TABLE C-12DA: COPPER DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 12 - MARSH, TERRESTRIAL RECEPTORS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **118.73**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Masked Shrew (Omnivorous Mammals, Wetland)																							
UM-750S-3000E (2-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.44E+01	5.09E+03	4.31E+01	1.10E-03	3.54E+02	3.90E-01	1.00E+00	5.50E-03	7.90E+03	6.32E+02	2.47E-02	6.91E+02	1.14E+01
BRSD-3 (2-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.44E+01	2.04E+04	1.73E+02	1.10E-03	1.42E+03	1.56E+00	1.00E+00	5.50E-03	3.17E+04	6.32E+02	2.47E-02	6.91E+02	4.59E+01
UM-500S-3250E (2-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.44E+01	4.11E+03	3.48E+01	1.10E-03	2.86E+02	3.15E-01	1.00E+00	5.50E-03	6.39E+03	6.32E+02	2.47E-02	6.91E+02	9.24E+00
UM-500S-3000E (2-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.44E+01	1.18E+03	9.98E+00	1.10E-03	8.20E+01	9.03E-02	1.00E+00	5.50E-03	1.83E+03	6.32E+02	2.47E-02	6.91E+02	2.65E+00
UM-500S-2750E (2-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.44E+01	4.57E+03	3.87E+01	1.10E-03	3.18E+02	3.50E-01	1.00E+00	5.50E-03	7.10E+03	6.32E+02	2.47E-02	6.91E+02	1.03E+01
BRSD-25 (2-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.44E+01	5.78E+03	4.89E+01	1.10E-03	4.02E+02	4.43E-01	1.00E+00	5.50E-03	8.97E+03	6.32E+02	2.47E-02	6.91E+02	1.30E+01
UM-250S-3000E (2-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.44E+01	1.15E+04	9.75E+01	1.10E-03	8.01E+02	8.82E-01	1.00E+00	5.50E-03	1.79E+04	6.32E+02	2.47E-02	6.91E+02	2.59E+01
UM-250S-3250E (2-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.44E+01	1.18E+03	9.95E+00	1.10E-03	8.18E+01	9.01E-02	1.00E+00	5.50E-03	1.83E+03	6.32E+02	2.47E-02	6.91E+02	2.64E+00
BRSD-24 (2-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.44E+01	1.06E+04	9.01E+01	1.10E-03	7.40E+02	8.15E-01	1.00E+00	5.50E-03	1.65E+04	6.32E+02	2.47E-02	6.91E+02	2.39E+01
UM-250S-2750E (2-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.44E+01	6.35E+03	5.38E+01	1.10E-03	4.42E+02	4.87E-01	1.00E+00	5.50E-03	9.87E+03	6.32E+02	2.47E-02	6.91E+02	1.43E+01
UM-0N-2500E (2-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.44E+01	3.76E+03	3.19E+01	1.10E-03	2.62E+02	2.88E-01	1.00E+00	5.50E-03	5.85E+03	6.32E+02	2.47E-02	6.91E+02	8.46E+00
BRSD-2 (2-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.44E+01	5.88E+03	4.98E+01	1.10E-03	4.09E+02	4.50E-01	1.00E+00	5.50E-03	9.13E+03	6.32E+02	2.47E-02	6.91E+02	1.32E+01
UM-500N-2500E (2-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.44E+01	1.07E+03	9.04E+00	1.10E-03	7.43E+01	8.18E-02	1.00E+00	5.50E-03	1.66E+03	6.32E+02	2.47E-02	6.91E+02	2.40E+00
UM-250N-2500E (2-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.44E+01	7.36E+03	6.23E+01	1.10E-03	5.12E+02	5.64E-01	1.00E+00	5.50E-03	1.14E+04	6.32E+02	2.47E-02	6.91E+02	1.65E+01
UM-250N-2250E (2-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.44E+01	2.05E+03	1.74E+01	1.10E-03	1.43E+02	1.57E-01	1.00E+00	5.50E-03	3.19E+03	6.32E+02	2.47E-02	6.91E+02	4.62E+00
Western Upper Marsh (2-6")																						**Maximum HQ (Eastern Upper Marsh, 2-6")**	**4.59E+01**
UM-500S-2500E (2-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	6.28E+00	2.23E+03	1.89E+01	1.10E-03	3.55E+02	3.91E-01	1.00E+00	5.50E-03	3.51E+03	6.32E+02	2.47E-02	6.91E+02	5.07E+00
UM-0N-2000E (2-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	6.28E+00	4.47E+03	3.78E+01	1.10E-03	7.11E+02	7.83E-01	1.00E+00	5.50E-03	7.02E+03	6.32E+02	2.47E-02	6.91E+02	1.02E+01
UM-500S-2000E (2-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	6.28E+00	1.49E+03	1.26E+01	1.10E-03	2.37E+02	2.61E-01	1.00E+00	5.50E-03	2.34E+03	6.32E+02	2.47E-02	6.91E+02	3.39E+00
UM-250N-1750E (2-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	6.28E+00	6.79E+02	5.75E+00	1.10E-03	1.08E+02	1.19E-01	1.00E+00	5.50E-03	1.07E+03	6.32E+02	2.47E-02	6.91E+02	1.54E+00
UM-0N-1500E (2-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	6.28E+00	8.48E+02	7.19E+00	1.10E-03	1.35E+02	1.49E-01	1.00E+00	5.50E-03	1.33E+03	6.32E+02	2.47E-02	6.91E+02	1.93E+00
UM-250S-1500E (2-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	6.28E+00	5.34E+03	4.52E+01	1.10E-03	8.49E+02	9.35E-01	1.00E+00	5.50E-03	8.39E+03	6.32E+02	2.47E-02	6.91E+02	1.21E+01
UM-250S-1250E (2-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	6.28E+00	4.99E+02	4.23E+00	1.10E-03	7.94E+01	8.74E-02	1.00E+00	5.50E-03	7.84E+02	6.32E+02	2.47E-02	6.91E+02	1.13E+00
UM-0N-1000E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-750E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-500E (2-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	6.28E+00	1.73E+04	1.47E+02	1.10E-03	2.76E+03	3.04E+00	1.00E+00	5.50E-03	2.73E+04	6.32E+02	2.47E-02	6.91E+02	3.94E+01
UM-250S-500E (2-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	6.28E+00	5.67E+02	4.80E+00	1.10E-03	9.02E+01	9.93E-02	1.00E+00	5.50E-03	8.91E+02	6.32E+02	2.47E-02	6.91E+02	1.29E+00
UM-0N-250E (2-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	6.28E+00	1.90E+03	1.61E+01	1.10E-03	3.02E+02	3.33E-01	1.00E+00	5.50E-03	2.98E+03	6.32E+02	2.47E-02	6.91E+02	4.32E+00
UM-250S-250E (2-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	6.28E+00	1.31E+03	1.11E+01	1.10E-03	2.08E+02	2.29E-01	1.00E+00	5.50E-03	2.05E+03	6.32E+02	2.47E-02	6.91E+02	2.97E+00
BRSD-7 (2-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	6.28E+00	3.55E+02	3.01E+00	1.10E-03	5.65E+01	6.22E-02	1.00E+00	5.50E-03	5.58E+02	6.32E+02	2.47E-02	6.91E+02	8.08E-01
BRSD-8 (2-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	6.28E+00	1.18E+03	1.00E+01	1.10E-03	1.88E+02	2.07E-01	1.00E+00	5.50E-03	1.86E+03	6.32E+02	2.47E-02	6.91E+02	2.69E+00
UM-500S-500E (2-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	6.28E+00	5.55E+02	4.70E+00	1.10E-03	8.83E+01	9.72E-02	1.00E+00	5.50E-03	8.72E+02	6.32E+02	2.47E-02	6.91E+02	1.26E+00
BRSD-9 (2-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	6.28E+00	3.32E+02	2.82E+00	1.10E-03	5.29E+01	5.82E-02	1.00E+00	5.50E-03	5.23E+02	6.32E+02	2.47E-02	6.91E+02	7.56E-01
BRSD-10 (2-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	6.28E+00	4.34E+03	3.67E+01	1.10E-03	6.90E+02	7.60E-01	1.00E+00	5.50E-03	6.82E+03	6.32E+02	2.47E-02	6.91E+02	9.86E+00
BRSD-11 (2-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	6.28E+00	9.68E+02	8.20E+00	1.10E-03	1.54E+02	1.70E-01	1.00E+00	5.50E-03	1.52E+03	6.32E+02	2.47E-02	6.91E+02	2.20E+00
Eastern Upper Marsh (6-12")																						**Maximum HQ (Western Upper Marsh, 2-6")**	**3.94E+01**
UM-1000S-3500E (6-12")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.44E+01	1.24E+03	1.05E+01	1.10E-03	8.66E+01	9.54E-02	1.00E+00	5.50E-03	1.93E+03	6.32E+02	2.47E-02	6.91E+02	2.80E+00
BRSD-15 (6-12")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.44E+01	1.41E+03	1.19E+01	1.10E-03	9.79E+01	1.08E-01	1.00E+00	5.50E-03	2.19E+03	6.32E+02	2.47E-02	6.91E+02	3.16E+00
BRSD-4 (6-12")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.44E+01	1.33E+03	1.13E+01	1.10E-03	9.25E+01	1.02E-01	1.00E+00	5.50E-03	2.07E+03	6.32E+02	2.47E-02	6.91E+02	2.99E+00
UM-750S-3500E (6-12")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.44E+01	5.88E+03	4.98E+01	1.10E-03	4.09E+02	4.50E-01	1.00E+00	5.50E-03	9.13E+03	6.32E+02	2.47E-02	6.91E+02	1.32E+01
BRSD-16 (6-12")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.44E+01	8.16E+03	6.91E+01	1.10E-03	5.68E+02	6.25E-01	1.00E+00	5.50E-03	1.27E+04	6.32E+02	2.47E-02	6.91E+02	1.83E+01
UM-750S-3000E (6-12")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.44E+01	4.93E+03	4.17E+01	1.10E-03	3.43E+02	3.78E-01	1.00E+00	5.50E-03	7.66E+03	6.32E+02	2.47E-02	6.91E+02	1.11E+01
BRSD-3 (6-12")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.44E+01	1.78E+04	1.51E+02	1.10E-03	1.24E+03	1.37E+00	1.00E+00	5.50E-03	2.77E+04	6.32E+02	2.47E-02	6.91E+02	4.01E+01
UM-500S-3250E (6-12")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.44E+01	3.07E+03	2.60E+01	1.10E-03	2.14E+02	2.36E-01	1.00E+00	5.50E-03	4.78E+03	6.32E+02	2.47E-02	6.91E+02	6.91E+00
UM-500S-3000E (6-12")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.44E+01	1.27E+03	1.08E+01	1.10E-03	8.86E+01	9.76E-02	1.00E+00	5.50E-03	1.98E+03	6.32E+02	2.47E-02	6.91E+02	2.86E+00
UM-500S-2750E (6-12")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.44E+01	4.17E+03	3.53E+01	1.10E-03	2.90E+02	3.19E-01	1.00E+00	5.50E-03	6.47E+03	6.32E+02	2.47E-02	6.91E+02	9.37E+00
BRSD-25 (6-12")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.44E+01	2.74E+03	2.32E+01	1.10E-03	1.91E+02	2.10E-01	1.00E+00	5.50E-03	4.26E+03	6.32E+02	2.47E-02	6.91E+02	6.17E+00
UM-250S-3000E (6-12")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.44E+01	1.05E+04	8.88E+01	1.10E-03	7.30E+02	8.04E-01	1.00E+00	5.50E-03	1.63E+04	6.32E+02	2.47E-02	6.91E+02	2.36E+01

TABLE C-12DA: COPPER DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 12 - MARSH, TERRESTRIAL RECEPTORS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **118.73**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Masked Shrew (Omnivorous Mammals, Wetland)																							
UM-250S-3250E (6-12")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.44E+01	1.25E+03	1.06E+01	1.10E-03	8.69E+01	9.57E-02	1.00E+00	5.50E-03	1.94E+03	6.32E+02	2.47E-02	6.91E+02	2.81E+00
BRSD-24 (6-12")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.44E+01	7.95E+03	6.73E+01	1.10E-03	5.53E+02	6.09E-01	1.00E+00	5.50E-03	1.23E+04	6.32E+02	2.47E-02	6.91E+02	1.79E+01
UM-250S-2750E (6-12")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.44E+01	7.38E+03	6.25E+01	1.10E-03	5.14E+02	5.66E-01	1.00E+00	5.50E-03	1.15E+04	6.32E+02	2.47E-02	6.91E+02	1.66E+01
UM-250S-2500E (6-12")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.44E+01	2.11E+03	1.79E+01	1.10E-03	1.47E+02	1.62E-01	1.00E+00	5.50E-03	3.28E+03	6.32E+02	2.47E-02	6.91E+02	4.75E+00
BRSD-2 (6-12")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.44E+01	1.32E+04	1.12E+02	1.10E-03	9.18E+02	1.01E+00	1.00E+00	5.50E-03	2.05E+04	6.32E+02	2.47E-02	6.91E+02	2.97E+01
UM-500N-2500E (6-12")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.44E+01	4.70E+02	3.98E+00	1.10E-03	3.27E+01	3.60E-02	1.00E+00	5.50E-03	7.30E+02	6.32E+02	2.47E-02	6.91E+02	1.06E+00
UM-250N-2500E (6-12")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.44E+01	5.37E+03	4.55E+01	1.10E-03	3.74E+02	4.12E-01	1.00E+00	5.50E-03	8.35E+03	6.32E+02	2.47E-02	6.91E+02	1.21E+01
UM-250N-2250E (6-12")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.44E+01	2.59E+03	2.19E+01	1.10E-03	1.80E+02	1.98E-01	1.00E+00	5.50E-03	4.02E+03	6.32E+02	2.47E-02	6.91E+02	5.81E+00
Western Upper Marsh (6-12")																						**Maximum HQ (Eastern Upper Marsh, 6-12")**	**4.01E+01**
UM-500S-2500E (6-12")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	6.28E+00	2.29E+03	1.94E+01	1.10E-03	3.64E+02	4.01E-01	1.00E+00	5.50E-03	3.60E+03	6.32E+02	2.47E-02	6.91E+02	5.20E+00
UM-0N-2000E (6-12")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	6.28E+00	6.79E+03	5.75E+01	1.10E-03	1.08E+03	1.19E+00	1.00E+00	5.50E-03	1.07E+04	6.32E+02	2.47E-02	6.91E+02	1.54E+01
UM-500S-2000E (6-12")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	6.28E+00	1.46E+03	1.23E+01	1.10E-03	2.32E+02	2.55E-01	1.00E+00	5.50E-03	2.29E+03	6.32E+02	2.47E-02	6.91E+02	3.32E+00
UM-250N-1750E (6-12")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	6.28E+00	8.99E+02	7.61E+00	1.10E-03	1.43E+02	1.57E-01	1.00E+00	5.50E-03	1.41E+03	6.32E+02	2.47E-02	6.91E+02	2.04E+00
UM-0N-1500E (6-12")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	6.28E+00	1.16E+03	9.79E+00	1.10E-03	1.84E+02	2.03E-01	1.00E+00	5.50E-03	1.82E+03	6.32E+02	2.47E-02	6.91E+02	2.63E+00
UM-250S-1500E (6-12")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	6.28E+00	3.22E+03	2.73E+01	1.10E-03	5.13E+02	5.65E-01	1.00E+00	5.50E-03	5.07E+03	6.32E+02	2.47E-02	6.91E+02	7.33E+00
UM-250S-1250E (6-12")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	6.28E+00	4.87E+02	4.13E+00	1.10E-03	7.75E+01	8.53E-02	1.00E+00	5.50E-03	7.66E+02	6.32E+02	2.47E-02	6.91E+02	1.11E+00
BRSD-6 (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-1000E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-750E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-500E (6-12")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	6.28E+00	4.58E+03	3.88E+01	1.10E-03	7.29E+02	8.03E-01	1.00E+00	5.50E-03	7.20E+03	6.32E+02	2.47E-02	6.91E+02	1.04E+01
UM-250S-500E (6-12")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	6.28E+00	7.16E+02	6.07E+00	1.10E-03	1.14E+02	1.26E-01	1.00E+00	5.50E-03	1.13E+03	6.32E+02	2.47E-02	6.91E+02	1.63E+00
UM-0N-250E (6-12")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	6.28E+00	2.16E+03	1.83E+01	1.10E-03	3.44E+02	3.79E-01	1.00E+00	5.50E-03	3.40E+03	6.32E+02	2.47E-02	6.91E+02	4.92E+00
UM-250S-250E (6-12")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	6.28E+00	8.04E+02	6.81E+00	1.10E-03	1.28E+02	1.41E-01	1.00E+00	5.50E-03	1.26E+03	6.32E+02	2.47E-02	6.91E+02	1.83E+00
BRSD-7 (6-12")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	6.28E+00	3.05E+02	2.59E+00	1.10E-03	4.86E+01	5.35E-02	1.00E+00	5.50E-03	4.80E+02	6.32E+02	2.47E-02	6.91E+02	6.95E-01
BRSD-8 (6-12")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	6.28E+00	1.26E+03	1.06E+01	1.10E-03	2.00E+02	2.20E-01	1.00E+00	5.50E-03	1.98E+03	6.32E+02	2.47E-02	6.91E+02	2.86E+00
UM-500S-500E (6-12")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	6.28E+00	5.15E+02	4.36E+00	1.10E-03	8.20E+01	9.03E-02	1.00E+00	5.50E-03	8.10E+02	6.32E+02	2.47E-02	6.91E+02	1.17E+00
BRSD-9 (6-12")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	6.28E+00	5.29E+02	4.48E+00	1.10E-03	8.41E+01	9.26E-02	1.00E+00	5.50E-03	8.31E+02	6.32E+02	2.47E-02	6.91E+02	1.20E+00
BRSD-10 (6-12")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	6.28E+00	6.10E+03	5.17E+01	1.10E-03	9.71E+02	1.07E+00	1.00E+00	5.50E-03	9.59E+03	6.32E+02	2.47E-02	6.91E+02	1.39E+01
BRSD-11 (6-12")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	6.28E+00	9.30E+02	7.88E+00	1.10E-03	1.48E+02	1.63E-01	1.00E+00	5.50E-03	1.46E+03	6.32E+02	2.47E-02	6.91E+02	2.12E+00
Middle Marsh (0-2")																						**Maximum HQ (Western Upper Marsh, 6-12")**	**1.54E+01**
MMSD-201 (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	6.28E+00	2.73E+03	2.32E+01	1.10E-03	4.35E+02	4.79E-01	1.00E+00	5.50E-03	4.30E+03	6.32E+02	2.47E-02	6.91E+02	6.22E+00
MMSD-202 (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	6.28E+00	2.75E+03	2.33E+01	1.10E-03	4.38E+02	4.82E-01	1.00E+00	5.50E-03	4.33E+03	6.32E+02	2.47E-02	6.91E+02	6.26E+00
Middle Marsh (2-6")																						**Maximum HQ (Middle Marsh, 0-2")**	**6.26E+00**
MMSD-201 (2-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	6.28E+00	3.77E+03	3.19E+01	1.10E-03	6.00E+02	6.61E-01	1.00E+00	5.50E-03	5.93E+03	6.32E+02	2.47E-02	6.91E+02	8.58E+00
MMSD-202 (2-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	6.28E+00	3.24E+03	2.75E+01	1.10E-03	5.16E+02	5.68E-01	1.00E+00	5.50E-03	5.10E+03	6.32E+02	2.47E-02	6.91E+02	7.37E+00
Middle Marsh (6-12")																						**Maximum HQ (Middle Marsh, 2-6")**	**8.58E+00**
MMSD-201 (6-12")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	6.28E+00	4.56E+03	3.86E+01	1.10E-03	7.26E+02	7.99E-01	1.00E+00	5.50E-03	7.17E+03	6.32E+02	2.47E-02	6.91E+02	1.04E+01
MMSD-202 (6-12")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	6.28E+00	1.84E+03	1.55E+01	1.10E-03	2.92E+02	3.22E-01	1.00E+00	5.50E-03	2.88E+03	6.32E+02	2.47E-02	6.91E+02	4.17E+00
Lower Marsh (0-2")																						**Maximum HQ (Middle Marsh, 6-12")**	**1.04E+01**
LMSD-201 (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	6.28E+00	5.13E+02	4.35E+00	1.10E-03	8.17E+01	9.00E-02	1.00E+00	5.50E-03	8.07E+02	6.32E+02	2.47E-02	6.91E+02	1.17E+00
LMSD-202 (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	6.28E+00	4.07E+02	3.45E+00	1.10E-03	6.48E+01	7.14E-02	1.00E+00	5.50E-03	6.40E+02	6.32E+02	2.47E-02	6.91E+02	9.26E-01
LMSD-203 (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	6.28E+00	1.80E+03	1.53E+01	1.10E-03	2.87E+02	3.16E-01	1.00E+00	5.50E-03	2.84E+03	6.32E+02	2.47E-02	6.91E+02	4.10E+00
LMSD-204 (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	6.28E+00	1.41E+03	1.19E+01	1.10E-03	2.24E+02	2.47E-01	1.00E+00	5.50E-03	2.21E+03	6.32E+02	2.47E-02	6.91E+02	3.20E+00
Lower Marsh (2-6")																						**Maximum HQ (Lower Marsh, 0-2")**	**4.10E+00**
LMSD-201 (2-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	6.28E+00	5.08E+02	4.31E+00	1.10E-03	8.09E+01	8.91E-02	1.00E+00	5.50E-03	7.99E+02	6.32E+02	2.47E-02	6.91E+02	1.16E+00
LMSD-202 (2-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	6.28E+00	3.02E+02	2.55E+00	1.10E-03	4.80E+01	5.29E-02	1.00E+00	5.50E-03	4.74E+02	6.32E+02	2.47E-02	6.91E+02	6.86E-01
LMSD-203 (2-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	6.28E+00	1.79E+03	1.52E+01	1.10E-03	2.85E+02	3.14E-01	1.00E+00	5.50E-03	2.82E+03	6.32E+02	2.47E-02	6.91E+02	4.07E+00
LMSD-204 (2-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	6.28E+00	1.43E+03	1.21E+01	1.10E-03	2.27E+02	2.50E-01	1.00E+00	5.50E-03	2.24E+03	6.32E+02	2.47E-02	6.91E+02	3.24E+00

TABLE C-12DA: COPPER DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 12 - MARSH, TERRESTRIAL RECEPTORS (Continued)
Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)
calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **118.73**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Masked Shrew (Omnivorous Mammals, Wetland)																							
Lower Marsh (6-12")																						**Maximum HQ (Lower Marsh, 2-6")**	**4.07E+00**
LMSD-201 (6-12")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	6.28E+00	5.30E+02	4.49E+00	1.10E-03	8.44E+01	9.29E-02	1.00E+00	5.50E-03	8.34E+02	6.32E+02	2.47E-02	6.91E+02	1.21E+00
LMSD-202 (6-12")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	6.28E+00	3.28E+02	2.78E+00	1.10E-03	5.22E+01	5.75E-02	1.00E+00	5.50E-03	5.16E+02	6.32E+02	2.47E-02	6.91E+02	7.46E-01
LMSD-203 (6-12")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	6.28E+00	2.26E+03	1.92E+01	1.10E-03	3.60E+02	3.96E-01	1.00E+00	5.50E-03	3.56E+03	6.32E+02	2.47E-02	6.91E+02	5.15E+00
LMSD-204 (6-12")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	6.28E+00	1.42E+03	1.20E+01	1.10E-03	2.26E+02	2.49E-01	1.00E+00	5.50E-03	2.23E+03	6.32E+02	2.47E-02	6.91E+02	3.23E+00
																						Maximum HQ (Lower Marsh, 6-12")	**5.15E+00**

Notes: Results are evaluated in order of upstream to downstream.

1 See Tables 3-1 through 3-13 for ingestion rates, foraging ranges used to calculate the SUF, and body weights.
2 BAFs were calculated by dividing site-collected tissue by collocated soil concentrations. The maximum plant and invertebrate BAF calculated for the eastern transect (UMT1) were used for the Eastern Upper Marsh calculations. The maximum plant and invertebrate BAF calculated for the western transect (UMT2) were used for the Western Upper Marsh calculations. The maximum mammal BAF calculated for the eastern transect (UMT1) was used for the Eastern and Western Upper Marsh calculations because no mammals were collected in the Western Upper Marsh.
3 The mammal, plant, and invertebrate concentrations were calculated by multiplying the soil concentration by the BAF to generate a tissue concentration (see note 2).
4 Mammal, plant, and invertebrate daily doses were calculated by multiplying the ingestion rate (see note 1) by the tissue concentration (see note 3).
5 Soil concentration from specified depths below ground surface at point ID from laboratory analysis. Doses were not calculated for detected and non-detected soil concentrations measured below the minimum reference site concentration (0-12"), as indicated by BB. For results that were measured at less than the detection limit, doses were calculated using half of the detection limit.
6 Soil daily dose was calculated by multiplying the soil ingestion rate (see note 1) by soil concentration (see note 5).
7 Total daily dose is calculated using the following equation: total daily dose = ([mammal daily dose (if applicable) + plant daily dose (if applicable) + invertebrate daily dose (if applicable) + soil daily dose]*SUF)/receptor species body weight.
8 The derivation of TRVs is described in Navy (1998). The high TRV was used for dose calculations.
9 Allometrically adjusted TRVs for birds were calculated using the following equation: receptor species TRV = (test species TRV) x (test species body weight / receptor species body weight) $^{(1-1.2)}$.
10 Allometrically adjusted TRVs for mammals were calculated using the following equation: receptor species TRV = (test species TRV) x (test species body weight / receptor species body weight) $^{(1-0.94)}$.
11 HQs were calculated using the following equation: HQ = total daily dose/allometrically adjusted TRV.
12 Green cells indicate an HQ greater than 1.0

BAF	Bioaccumulation Factor	ID	Identification	NA	Not applicable
BB	Below minimum background reference site concentration	kg	Kilogram	Navy	Department of the Navy
EE/CA	Engineering Evaluation/Cost Analysis	kg/day	Kilogram per day	SUF	Site use factor
EU	Exposure Unit	mg/day	Milligram per day	TRV	Toxicity reference value
HQ	Hazard Quotient	mg/kg	Milligram per kilogram		

Sources: Department of the Navy. 1998. "Development of Toxicity Reference Values for Conducting Ecological Risk Assessments at Naval Facilities in California, Interim Final." Prepared by Naval Facilities Engineering Command, Engineering Field Activity West (EFA

TABLE C-12DB: COPPER DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 12 - MARSH, WETLAND RECEPTORS

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **118.73**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Canada Goose (Herbivorous Birds)																							
Reference Sites																							
BRSD-5 (0-2")	8.57E-01	NA	NA	NA	NA	8.57E-01	1.42E+00	5.58E+01	4.78E+01	NA	NA	NA	NA	7.03E-02	3.92E+01	2.75E+00	1.21E-01	3.69E+01	1.66E-01	5.23E+01	4.09E-01	1.29E+02	1.29E-03
BRSD-5 (2-6")	8.57E-01	NA	NA	NA	NA	8.57E-01	1.42E+00	5.94E+01	5.09E+01	NA	NA	NA	NA	7.03E-02	4.17E+01	2.93E+00	1.21E-01	3.69E+01	1.76E-01	5.23E+01	4.09E-01	1.29E+02	1.37E-03
BRSD-5 (6-12")	8.57E-01	NA	NA	NA	NA	8.57E-01	1.42E+00	6.45E+01	5.53E+01	NA	NA	NA	NA	7.03E-02	4.53E+01	3.18E+00	1.21E-01	3.69E+01	1.91E-01	5.23E+01	4.09E-01	1.29E+02	1.49E-03
PGBG-1 (0-2")	8.57E-01	NA	NA	NA	NA	8.57E-01	1.42E+00	4.94E+01	4.23E+01	NA	NA	NA	NA	7.03E-02	3.47E+01	2.44E+00	1.21E-01	3.69E+01	1.47E-01	5.23E+01	4.09E-01	1.29E+02	1.14E-03
PGBG-1 (2-6")	8.57E-01	NA	NA	NA	NA	8.57E-01	1.42E+00	5.27E+01	4.51E+01	NA	NA	NA	NA	7.03E-02	3.70E+01	2.60E+00	1.21E-01	3.69E+01	1.56E-01	5.23E+01	4.09E-01	1.29E+02	1.22E-03
PGBG-1 (6-12")	8.57E-01	NA	NA	NA	NA	8.57E-01	1.42E+00	3.13E+01	2.68E+01	NA	NA	NA	NA	7.03E-02	2.20E+01	1.55E+00	1.21E-01	3.69E+01	9.30E-02	5.23E+01	4.09E-01	1.29E+02	7.23E-04
PGBG-2 (0-2")	8.57E-01	NA	NA	NA	NA	8.57E-01	1.42E+00	7.40E+01	6.34E+01	NA	NA	NA	NA	7.03E-02	5.20E+01	3.65E+00	1.21E-01	3.69E+01	2.20E-01	5.23E+01	4.09E-01	1.29E+02	1.71E-03
PGBG-2 (2-6")	8.57E-01	NA	NA	NA	NA	8.57E-01	1.42E+00	7.83E+01	6.71E+01	NA	NA	NA	NA	7.03E-02	5.50E+01	3.87E+00	1.21E-01	3.69E+01	2.32E-01	5.23E+01	4.09E-01	1.29E+02	1.81E-03
PGBG-2 (6-12")	8.57E-01	NA	NA	NA	NA	8.57E-01	1.42E+00	9.60E+01	8.22E+01	NA	NA	NA	NA	7.03E-02	6.74E+01	4.74E+00	1.21E-01	3.69E+01	2.85E-01	5.23E+01	4.09E-01	1.29E+02	2.22E-03
Eastern Upper Marsh (0-2")																						**Minimum HQ (Reference Sites)**	**7.23E-04**
UM-1000S-3500E (0-2")	8.57E-01	NA	NA	NA	NA	8.57E-01	3.30E-01	7.30E+01	6.26E+01	NA	NA	NA	NA	7.03E-02	2.21E+02	1.55E+01	1.21E-01	3.69E+01	2.56E-01	5.23E+01	4.09E-01	1.29E+02	1.99E-03
BRSD-15 (0-2")	8.57E-01	NA	NA	NA	NA	8.57E-01	3.30E-01	2.95E+01	2.53E+01	NA	NA	NA	NA	7.03E-02	8.92E+01	6.27E+00	1.21E-01	3.69E+01	1.03E-01	5.23E+01	4.09E-01	1.29E+02	8.03E-04
BRSD-4 (0-2")	8.57E-01	NA	NA	NA	NA	8.57E-01	3.30E-01	2.06E+01	1.76E+01	NA	NA	NA	NA	7.03E-02	6.23E+01	4.38E+00	1.21E-01	3.69E+01	7.21E-02	5.23E+01	4.09E-01	1.29E+02	5.61E-04
UM-750S-3500E (0-2")	8.57E-01	NA	NA	NA	NA	8.57E-01	3.30E-01	2.95E+02	2.53E+02	NA	NA	NA	NA	7.03E-02	8.94E+02	6.28E+01	1.21E-01	3.69E+01	1.03E+00	5.23E+01	4.09E-01	1.29E+02	8.05E-03
BRSD-16 (0-2")	8.57E-01	NA	NA	NA	NA	8.57E-01	3.30E-01	1.23E+02	1.05E+02	NA	NA	NA	NA	7.03E-02	3.71E+02	2.61E+01	1.21E-01	3.69E+01	4.29E-01	5.23E+01	4.09E-01	1.29E+02	3.34E-03
UM-750S-3000E (0-2")	8.57E-01	NA	NA	NA	NA	8.57E-01	3.30E-01	1.34E+02	1.15E+02	NA	NA	NA	NA	7.03E-02	4.05E+02	2.85E+01	1.21E-01	3.69E+01	4.69E-01	5.23E+01	4.09E-01	1.29E+02	3.65E-03
BRSD-3 (0-2")	8.57E-01	NA	NA	NA	NA	8.57E-01	3.30E-01	3.70E+02	3.17E+02	NA	NA	NA	NA	7.03E-02	1.12E+03	7.87E+01	1.21E-01	3.69E+01	1.30E+00	5.23E+01	4.09E-01	1.29E+02	1.01E-02
UM-500S-3250E (0-2")	8.57E-01	NA	NA	NA	NA	8.57E-01	3.30E-01	1.74E+02	1.49E+02	NA	NA	NA	NA	7.03E-02	5.28E+02	3.71E+01	1.21E-01	3.69E+01	6.11E-01	5.23E+01	4.09E-01	1.29E+02	4.75E-03
UM-500S-3000E (0-2")	8.57E-01	NA	NA	NA	NA	8.57E-01	3.30E-01	1.45E+02	1.24E+02	NA	NA	NA	NA	7.03E-02	4.38E+02	3.08E+01	1.21E-01	3.69E+01	5.07E-01	5.23E+01	4.09E-01	1.29E+02	3.94E-03
UM-500S-2750E (0-2")	8.57E-01	NA	NA	NA	NA	8.57E-01	3.30E-01	1.66E+02	1.43E+02	NA	NA	NA	NA	7.03E-02	5.04E+02	3.54E+01	1.21E-01	3.69E+01	5.83E-01	5.23E+01	4.09E-01	1.29E+02	4.54E-03
BRSD-25 (0-2")	8.57E-01	NA	NA	NA	NA	8.57E-01	3.30E-01	8.75E+01	7.50E+01	NA	NA	NA	NA	7.03E-02	2.65E+02	1.86E+01	1.21E-01	3.69E+01	3.07E-01	5.23E+01	4.09E-01	1.29E+02	2.39E-03
UM-250S-3000E (0-2")	8.57E-01	NA	NA	NA	NA	8.57E-01	3.30E-01	3.21E+02	2.75E+02	NA	NA	NA	NA	7.03E-02	9.71E+02	6.82E+01	1.21E-01	3.69E+01	1.12E+00	5.23E+01	4.09E-01	1.29E+02	8.74E-03
UM-250S-3250E (0-2")	8.57E-01	NA	NA	NA	NA	8.57E-01	3.30E-01	1.04E+02	8.92E+01	NA	NA	NA	NA	7.03E-02	3.15E+02	2.21E+01	1.21E-01	3.69E+01	3.65E-01	5.23E+01	4.09E-01	1.29E+02	2.84E-03
BRSD-24 (0-2")	8.57E-01	NA	NA	NA	NA	8.57E-01	3.30E-01	1.29E+02	1.11E+02	NA	NA	NA	NA	7.03E-02	3.92E+02	2.75E+01	1.21E-01	3.69E+01	4.54E-01	5.23E+01	4.09E-01	1.29E+02	3.53E-03
UM-250S-2750E (0-2")	8.57E-01	NA	NA	NA	NA	8.57E-01	3.30E-01	9.02E+01	7.73E+01	NA	NA	NA	NA	7.03E-02	2.73E+02	1.92E+01	1.21E-01	3.69E+01	3.16E-01	5.23E+01	4.09E-01	1.29E+02	2.46E-03
UM-250S-2500E (0-2")	8.57E-01	NA	NA	NA	NA	8.57E-01	3.30E-01	6.74E+01	5.78E+01	NA	NA	NA	NA	7.03E-02	2.04E+02	1.43E+01	1.21E-01	3.69E+01	2.36E-01	5.23E+01	4.09E-01	1.29E+02	1.84E-03
UM-0N-2500E (0-2")	8.57E-01	NA	NA	NA	NA	8.57E-01	3.30E-01	1.68E+02	1.44E+02	NA	NA	NA	NA	7.03E-02	5.10E+02	3.58E+01	1.21E-01	3.69E+01	5.90E-01	5.23E+01	4.09E-01	1.29E+02	4.59E-03
UM-0N-250E (0-2")	8.57E-01	NA	NA	NA	NA	8.57E-01	3.30E-01	1.93E+02	1.66E+02	NA	NA	NA	NA	7.03E-02	5.85E+02	4.11E+01	1.21E-01	3.69E+01	6.77E-01	5.23E+01	4.09E-01	1.29E+02	5.27E-03
BRSD-2 (0-2")	8.57E-01	NA	NA	NA	NA	8.57E-01	3.30E-01	1.13E+02	9.71E+01	NA	NA	NA	NA	7.03E-02	3.43E+02	2.41E+01	1.21E-01	3.69E+01	3.97E-01	5.23E+01	4.09E-01	1.29E+02	3.09E-03
UM-500N-2500E (0-2")	8.57E-01	NA	NA	NA	NA	8.57E-01	3.30E-01	1.96E+01	1.68E+01	NA	NA	NA	NA	7.03E-02	5.93E+01	4.17E+00	1.21E-01	3.69E+01	6.86E-02	5.23E+01	4.09E-01	1.29E+02	5.34E-04
UM-250N-2500E (0-2")	8.57E-01	NA	NA	NA	NA	8.57E-01	3.30E-01	1.83E+02	1.57E+02	NA	NA	NA	NA	7.03E-02	5.55E+02	3.90E+01	1.21E-01	3.69E+01	6.42E-01	5.23E+01	4.09E-01	1.29E+02	5.00E-03
UM-250N-2250E (0-2")	8.57E-01	NA	NA	NA	NA	8.57E-01	3.30E-01	1.20E+02	1.03E+02	NA	NA	NA	NA	7.03E-02	3.64E+02	2.56E+01	1.21E-01	3.69E+01	4.21E-01	5.23E+01	4.09E-01	1.29E+02	3.28E-03
Western Upper Marsh (0-2")																						**Maximum HQ (Eastern Upper Marsh, 0-2")**	**1.01E-02**
UM-500S-2500E (0-2")	8.57E-01	NA	NA	NA	NA	8.57E-01	1.96E-01	7.31E+01	6.27E+01	NA	NA	NA	NA	7.03E-02	3.73E+02	2.62E+01	1.21E-01	3.69E+01	2.91E-01	5.23E+01	4.09E-01	1.29E+02	2.26E-03
UM-0N-2000E (0-2")	8.57E-01	NA	NA	NA	NA	8.57E-01	1.96E-01	1.54E+02	1.32E+02	NA	NA	NA	NA	7.03E-02	7.88E+02	5.54E+01	1.21E-01	3.69E+01	6.15E-01	5.23E+01	4.09E-01	1.29E+02	4.78E-03
UM-500S-2000E (0-2")	8.57E-01	NA	NA	NA	NA	8.57E-01	1.96E-01	3.59E+01	3.07E+01	NA	NA	NA	NA	7.03E-02	1.83E+02	1.29E+01	1.21E-01	3.69E+01	1.43E-01	5.23E+01	4.09E-01	1.29E+02	1.11E-03
UM-250N-1750E (0-2")	8.57E-01	NA	NA	NA	NA	8.57E-01	1.96E-01	3.00E+01	2.57E+01	NA	NA	NA	NA	7.03E-02	1.53E+02	1.08E+01	1.21E-01	3.69E+01	1.19E-01	5.23E+01	4.09E-01	1.29E+02	9.29E-04
UM-0N-1500E (0-2")	8.57E-01	NA	NA	NA	NA	8.57E-01	1.96E-01	1.78E+01	1.53E+01	NA	NA	NA	NA	7.03E-02	9.08E+01	6.38E+00	1.21E-01	3.69E+01	7.09E-02	5.23E+01	4.09E-01	1.29E+02	5.51E-04
UM-250S-1500E (0-2")	8.57E-01	NA	NA	NA	NA	8.57E-01	1.96E-01	1.12E+02	9.59E+01	NA	NA	NA	NA	7.03E-02	5.71E+02	4.01E+01	1.21E-01	3.69E+01	4.46E-01	5.23E+01	4.09E-01	1.29E+02	3.47E-03
UM-250S-1250E (0-2")	8.57E-01	NA	NA	NA	NA	8.57E-01	1.96E-01	1.79E+01	1.53E+01	NA	NA	NA	NA	7.03E-02	9.11E+01	6.40E+00	1.21E-01	3.69E+01	7.11E-02	5.23E+01	4.09E-01	1.29E+02	5.53E-04
BRSD-6 (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-1000E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-750E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-500E (0-2")	8.57E-01	NA	NA	NA	NA	8.57E-01	1.96E-01	8.82E+01	7.56E+01	NA	NA	NA	NA	7.03E-02	4.50E+02	3.16E+01	1.21E-01	3.69E+01	3.51E-01	5.23E+01	4.09E-01	1.29E+02	2.73E-03
UM-250S-500E (0-2")	8.57E-01	NA	NA	NA	NA	8.57E-01	1.96E-01	1.58E+01	1.36E+01	NA	NA	NA	NA	7.03E-02	8.08E+01	5.68E+00	1.21E-01	3.69E+01	6.31E-02	5.23E+01	4.09E-01	1.29E+02	4.91E-04
UM-250S-250E (0-2")	8.57E-01	NA	NA	NA	NA	8.57E-01	1.96E-01	4.70E+01	4.03E+01	NA	NA	NA	NA	7.03E-02	2.40E+02	1.69E+01	1.21E-01	3.69E+01	1.87E-01	5.23E+01	4.09E-01	1.29E+02	1.46E-03
BRSD-7 (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB

TABLE C-12DB: COPPER DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 12 - MARSH, WETLAND RECEPTORS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **118.73**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Canada Goose (Herbivorous Birds)																							
BRSD-8 (0-2")	8.57E-01	NA	NA	NA	NA	8.57E-01	1.96E-01	3.80E+01	3.26E+01	NA	NA	NA	NA	7.03E-02	1.94E+02	1.36E+01	1.21E-01	3.69E+01	1.51E-01	5.23E+01	4.09E-01	1.29E+02	1.18E-03
UM-500S-500E (0-2")	8.57E-01	NA	NA	NA	NA	8.57E-01	1.96E-01	1.89E+01	1.62E+01	NA	NA	NA	NA	7.03E-02	9.63E+01	6.77E+00	1.21E-01	3.69E+01	7.52E-02	5.23E+01	4.09E-01	1.29E+02	5.85E-04
BRSD-9 (0-2")	8.57E-01	NA	NA	NA	NA	8.57E-01	1.96E-01	1.64E+01	1.41E+01	NA	NA	NA	NA	7.03E-02	8.39E+01	5.90E+00	1.21E-01	3.69E+01	6.55E-02	5.23E+01	4.09E-01	1.29E+02	5.09E-04
BRSD-10 (0-2")	8.57E-01	NA	NA	NA	NA	8.57E-01	1.96E-01	1.28E+02	1.09E+02	NA	NA	NA	NA	7.03E-02	6.51E+02	4.58E+01	1.21E-01	3.69E+01	5.08E-01	5.23E+01	4.09E-01	1.29E+02	3.95E-03
BRSD-11 (0-2")	8.57E-01	NA	NA	NA	NA	8.57E-01	1.96E-01	2.61E+01	2.23E+01	NA	NA	NA	NA	7.03E-02	1.33E+02	9.35E+00	1.21E-01	3.69E+01	1.04E-01	5.23E+01	4.09E-01	1.29E+02	8.07E-04
Eastern Upper Marsh (2-6")																						**Maximum HQ (Western Upper Marsh, 0-2")**	**4.78E-03**
UM-1000S-3500E (2-6")	8.57E-01	NA	NA	NA	NA	8.57E-01	3.30E-01	3.50E+01	3.00E+01	NA	NA	NA	NA	7.03E-02	1.06E+02	7.45E+00	1.21E-01	3.69E+01	1.23E-01	5.23E+01	4.09E-01	1.29E+02	9.54E-04
BRSD-15 (2-6")	8.57E-01	NA	NA	NA	NA	8.57E-01	3.30E-01	3.22E+01	2.76E+01	NA	NA	NA	NA	7.03E-02	9.74E+01	6.85E+00	1.21E-01	3.69E+01	1.13E-01	5.23E+01	4.09E-01	1.29E+02	8.77E-04
BRSD-4 (2-6")	8.57E-01	NA	NA	NA	NA	8.57E-01	3.30E-01	4.26E+01	3.65E+01	NA	NA	NA	NA	7.03E-02	1.29E+02	9.07E+00	1.21E-01	3.69E+01	1.49E-01	5.23E+01	4.09E-01	1.29E+02	1.16E-03
UM-750S-3500E (2-6")	8.57E-01	NA	NA	NA	NA	8.57E-01	3.30E-01	1.13E+02	9.68E+01	NA	NA	NA	NA	7.03E-02	3.42E+02	2.40E+01	1.21E-01	3.69E+01	3.96E-01	5.23E+01	4.09E-01	1.29E+02	3.08E-03
BRSD-16 (2-6")	8.57E-01	NA	NA	NA	NA	8.57E-01	3.30E-01	3.70E+02	3.17E+02	NA	NA	NA	NA	7.03E-02	1.12E+03	7.87E+01	1.21E-01	3.69E+01	1.30E+00	5.23E+01	4.09E-01	1.29E+02	1.01E-02
UM-750S-3000E (2-6")	8.57E-01	NA	NA	NA	NA	8.57E-01	3.30E-01	1.17E+02	1.00E+02	NA	NA	NA	NA	7.03E-02	3.54E+02	2.49E+01	1.21E-01	3.69E+01	4.10E-01	5.23E+01	4.09E-01	1.29E+02	3.19E-03
BRSD-3 (2-6")	8.57E-01	NA	NA	NA	NA	8.57E-01	3.30E-01	4.69E+02	4.02E+02	NA	NA	NA	NA	7.03E-02	1.42E+03	9.98E+01	1.21E-01	3.69E+01	1.64E+00	5.23E+01	4.09E-01	1.29E+02	1.28E-02
UM-500S-3250E (2-6")	8.57E-01	NA	NA	NA	NA	8.57E-01	3.30E-01	9.45E+01	8.10E+01	NA	NA	NA	NA	7.03E-02	2.86E+02	2.01E+01	1.21E-01	3.69E+01	3.31E-01	5.23E+01	4.09E-01	1.29E+02	2.57E-03
UM-500S-3000E (2-6")	8.57E-01	NA	NA	NA	NA	8.57E-01	3.30E-01	2.71E+01	2.32E+01	NA	NA	NA	NA	7.03E-02	8.20E+01	5.76E+00	1.21E-01	3.69E+01	9.49E-02	5.23E+01	4.09E-01	1.29E+02	7.38E-04
UM-500S-2750E (2-6")	8.57E-01	NA	NA	NA	NA	8.57E-01	3.30E-01	1.05E+02	9.00E+01	NA	NA	NA	NA	7.03E-02	3.18E+02	2.23E+01	1.21E-01	3.69E+01	3.68E-01	5.23E+01	4.09E-01	1.29E+02	2.86E-03
BRSD-25 (2-6")	8.57E-01	NA	NA	NA	NA	8.57E-01	3.30E-01	1.33E+02	1.14E+02	NA	NA	NA	NA	7.03E-02	4.02E+02	2.83E+01	1.21E-01	3.69E+01	4.65E-01	5.23E+01	4.09E-01	1.29E+02	3.62E-03
UM-250S-3000E (2-6")	8.57E-01	NA	NA	NA	NA	8.57E-01	3.30E-01	2.65E+02	2.27E+02	NA	NA	NA	NA	7.03E-02	8.01E+02	5.63E+01	1.21E-01	3.69E+01	9.27E-01	5.23E+01	4.09E-01	1.29E+02	7.21E-03
UM-250S-3250E (2-6")	8.57E-01	NA	NA	NA	NA	8.57E-01	3.30E-01	2.70E+01	2.32E+01	NA	NA	NA	NA	7.03E-02	8.18E+01	5.75E+00	1.21E-01	3.69E+01	9.47E-02	5.23E+01	4.09E-01	1.29E+02	7.36E-04
BRSD-24 (2-6")	8.57E-01	NA	NA	NA	NA	8.57E-01	3.30E-01	2.44E+02	2.10E+02	NA	NA	NA	NA	7.03E-02	7.40E+02	5.20E+01	1.21E-01	3.69E+01	8.57E-01	5.23E+01	4.09E-01	1.29E+02	6.66E-03
UM-250S-2750E (2-6")	8.57E-01	NA	NA	NA	NA	8.57E-01	3.30E-01	1.46E+02	1.25E+02	NA	NA	NA	NA	7.03E-02	4.42E+02	3.11E+01	1.21E-01	3.69E+01	5.12E-01	5.23E+01	4.09E-01	1.29E+02	3.98E-03
UM-0N-2500E (2-6")	8.57E-01	NA	NA	NA	NA	8.57E-01	3.30E-01	8.65E+01	7.42E+01	NA	NA	NA	NA	7.03E-02	2.62E+02	1.84E+01	1.21E-01	3.69E+01	3.03E-01	5.23E+01	4.09E-01	1.29E+02	2.36E-03
BRSD-2 (2-6")	8.57E-01	NA	NA	NA	NA	8.57E-01	3.30E-01	1.35E+02	1.16E+02	NA	NA	NA	NA	7.03E-02	4.09E+02	2.87E+01	1.21E-01	3.69E+01	4.73E-01	5.23E+01	4.09E-01	1.29E+02	3.68E-03
UM-500N-2500E (2-6")	8.57E-01	NA	NA	NA	NA	8.57E-01	3.30E-01	2.45E+01	2.10E+01	NA	NA	NA	NA	7.03E-02	7.43E+01	5.22E+00	1.21E-01	3.69E+01	8.60E-02	5.23E+01	4.09E-01	1.29E+02	6.69E-04
UM-250N-2500E (2-6")	8.57E-01	NA	NA	NA	NA	8.57E-01	3.30E-01	1.69E+02	1.45E+02	NA	NA	NA	NA	7.03E-02	5.12E+02	3.60E+01	1.21E-01	3.69E+01	5.93E-01	5.23E+01	4.09E-01	1.29E+02	4.61E-03
UM-250N-2250E (2-6")	8.57E-01	NA	NA	NA	NA	8.57E-01	3.30E-01	4.72E+01	4.05E+01	NA	NA	NA	NA	7.03E-02	1.43E+02	1.00E+01	1.21E-01	3.69E+01	1.66E-01	5.23E+01	4.09E-01	1.29E+02	1.29E-03
Western Upper Marsh (2-6")																						**Maximum HQ (Eastern Upper Marsh, 2-6")**	**1.28E-02**
UM-500S-2500E (2-6")	8.57E-01	NA	NA	NA	NA	8.57E-01	1.96E-01	6.96E+01	5.96E+01	NA	NA	NA	NA	7.03E-02	3.55E+02	2.49E+01	1.21E-01	3.69E+01	2.77E-01	5.23E+01	4.09E-01	1.29E+02	2.16E-03
UM-0N-2000E (2-6")	8.57E-01	NA	NA	NA	NA	8.57E-01	1.96E-01	1.39E+02	1.19E+02	NA	NA	NA	NA	7.03E-02	7.11E+02	5.00E+01	1.21E-01	3.69E+01	5.55E-01	5.23E+01	4.09E-01	1.29E+02	4.32E-03
UM-500S-2000E (2-6")	8.57E-01	NA	NA	NA	NA	8.57E-01	1.96E-01	4.65E+01	3.98E+01	NA	NA	NA	NA	7.03E-02	2.37E+02	1.67E+01	1.21E-01	3.69E+01	1.85E-01	5.23E+01	4.09E-01	1.29E+02	1.44E-03
UM-250N-1750E (2-6")	8.57E-01	NA	NA	NA	NA	8.57E-01	1.96E-01	2.12E+01	1.81E+01	NA	NA	NA	NA	7.03E-02	1.08E+02	7.59E+00	1.21E-01	3.69E+01	8.43E-02	5.23E+01	4.09E-01	1.29E+02	6.56E-04
UM-0N-1500E (2-6")	8.57E-01	NA	NA	NA	NA	8.57E-01	1.96E-01	2.65E+01	2.27E+01	NA	NA	NA	NA	7.03E-02	1.35E+02	9.49E+00	1.21E-01	3.69E+01	1.05E-01	5.23E+01	4.09E-01	1.29E+02	8.20E-04
UM-250S-1500E (2-6")	8.57E-01	NA	NA	NA	NA	8.57E-01	1.96E-01	1.66E+02	1.43E+02	NA	NA	NA	NA	7.03E-02	8.49E+02	5.97E+01	1.21E-01	3.69E+01	6.63E-01	5.23E+01	4.09E-01	1.29E+02	5.15E-03
UM-250S-1250E (2-6")	8.57E-01	NA	NA	NA	NA	8.57E-01	1.96E-01	1.56E+01	1.33E+01	NA	NA	NA	NA	7.03E-02	7.94E+01	5.58E+00	1.21E-01	3.69E+01	6.20E-02	5.23E+01	4.09E-01	1.29E+02	4.82E-04
BRSD-6 (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-1000E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-750E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-500E (2-6")	8.57E-01	NA	NA	NA	NA	8.57E-01	1.96E-01	5.41E+02	4.64E+02	NA	NA	NA	NA	7.03E-02	2.76E+03	1.94E+02	1.21E-01	3.69E+01	2.15E+00	5.23E+01	4.09E-01	1.29E+02	1.68E-02
UM-250S-500E (2-6")	8.57E-01	NA	NA	NA	NA	8.57E-01	1.96E-01	1.77E+01	1.52E+01	NA	NA	NA	NA	7.03E-02	9.02E+01	6.34E+00	1.21E-01	3.69E+01	7.04E-02	5.23E+01	4.09E-01	1.29E+02	5.48E-04
UM-0N-250E (2-6")	8.57E-01	NA	NA	NA	NA	8.57E-01	1.96E-01	5.92E+01	5.07E+01	NA	NA	NA	NA	7.03E-02	3.02E+02	2.12E+01	1.21E-01	3.69E+01	2.36E-01	5.23E+01	4.09E-01	1.29E+02	1.83E-03
UM-250S-250E (2-6")	8.57E-01	NA	NA	NA	NA	8.57E-01	1.96E-01	4.08E+01	3.49E+01	NA	NA	NA	NA	7.03E-02	2.08E+02	1.46E+01	1.21E-01	3.69E+01	1.62E-01	5.23E+01	4.09E-01	1.29E+02	1.26E-03
BRSD-7 (2-6")	8.57E-01	NA	NA	NA	NA	8.57E-01	1.96E-01	1.11E+01	9.49E+00	NA	NA	NA	NA	7.03E-02	5.65E+01	3.97E+00	1.21E-01	3.69E+01	4.41E-02	5.23E+01	4.09E-01	1.29E+02	3.43E-04
BRSD-8 (2-6")	8.57E-01	NA	NA	NA	NA	8.57E-01	1.96E-01	3.69E+01	3.16E+01	NA	NA	NA	NA	7.03E-02	1.88E+02	1.32E+01	1.21E-01	3.69E+01	1.47E-01	5.23E+01	4.09E-01	1.29E+02	1.14E-03
UM-500S-500E (2-6")	8.57E-01	NA	NA	NA	NA	8.57E-01	1.96E-01	1.73E+01	1.48E+01	NA	NA	NA	NA	7.03E-02	8.83E+01	6.21E+00	1.21E-01	3.69E+01	6.89E-02	5.23E+01	4.09E-01	1.29E+02	5.36E-04
BRSD-9 (2-6")	8.57E-01	NA	NA	NA	NA	8.57E-01	1.96E-01	1.04E+01	8.89E+00	NA	NA	NA	NA	7.03E-02	5.29E+01	3.72E+00	1.21E-01	3.69E+01	4.13E-02	5.23E+01	4.09E-01	1.29E+02	3.21E-04
BRSD-10 (2-6")	8.57E-01	NA	NA	NA	NA	8.57E-01	1.96E-01	1.35E+02	1.16E+02	NA	NA	NA	NA	7.03E-02	6.90E+02	4.85E+01	1.21E-01	3.69E+01	5.39E-01	5.23E+01	4.09E-01	1.29E+02	4.19E-03
BRSD-11 (2-6")	8.57E-01	NA	NA	NA	NA	8.57E-01	1.96E-01	3.02E+01	2.59E+01	NA	NA	NA	NA	7.03E-02	1.54E+02	1.08E+01	1.21E-01	3.69E+01	1.20E-01	5.23E+01	4.09E-01	1.29E+02	9.35E-04
Eastern Upper Marsh (6-12")																						**Maximum HQ (Western Upper Marsh, 2-6")**	**1.68E-02**
UM-1000S-3500E (6-12")	8.57E-01	NA	NA	NA	NA	8.57E-01	3.30E-01	2.86E+01	2.45E+01	NA	NA	NA	NA	7.03E-02	8.66E+01	6.09E+00	1.21E-01	3.69E+01	1.00E-01	5.23E+01	4.09E-01	1.29E+02	7.80E-04
BRSD-15 (6-12")	8.57E-01	NA	NA	NA	NA	8.57E-01	3.30E-01	3.23E+01	2.77E+01	NA	NA	NA	NA	7.03E-02	9.79E+01	6.88E+00	1.21E-01	3.69E+01	1.13E-01	5.23E+01	4.09E-01	1.29E+02	8.81E-04
BRSD-4 (6-12")	8.57E-01	NA	NA	NA	NA	8.57E-01	3.30E-01	3.06E+01	2.62E+01	NA	NA	NA	NA	7.03E-02	9.25E+01	6.50E+00	1.21E-01	3.69E+01	1.07E-01	5.23E+01	4.09E-01	1.29E+02	8.33E-04
UM-750S-3500E (6-12")	8.57E-01	NA	NA	NA	NA	8.57E-01	3.30E-01	1.35E+02	1.16E+02	NA	NA	NA	NA	7.03E-02	4.09E+02	2.87E+01	1.21E-01	3.69E+01	4.73E-01	5.23E+01	4.09E-01	1.29E+02	3.68E-03
BRSD-16 (6-12")	8.57E-01	NA	NA	NA	NA	8.57E-01	3.30E-01	1.88E+02	1.61E+02	NA	NA	NA	NA	7.03E-02	5.68E+02	3.99E+01	1.21E-01	3.69E+01	6.58E-01	5.23E+01	4.09E-01	1.29E+02	5.11E-03
UM-750S-3000E (6-12")	8.57E-01	NA	NA	NA	NA	8.57E-01	3.30E-01	1.13E+02	9.71E+01	NA	NA	NA	NA	7.03E-02	3.43E+02	2.41E+01	1.21E-01	3.69E+01	3.97E-01	5.23E+01	4.09E-01	1.29E+02	3.09E-03
BRSD-3 (6-12")	8.57E-01	NA	NA	NA	NA	8.57E-01	3.30E-01	4.10E+02	3.51E+02	NA	NA	NA	NA	7.03E-02	1.24E+03	8.71E+01	1.21E-01	3.69E+01	1.44E+00	5.23E+01	4.09E-01	1.29E+02	1.12E-02

TABLE C-12DB: COPPER DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 12 - MARSH, WETLAND RECEPTORS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **118.73**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Canada Goose (Herbivorous Birds)																							
UM-500S-3250E (6-12")	8.57E-01	NA	NA	NA	NA	8.57E-01	3.30E-01	7.07E+01	6.06E+01	NA	NA	NA	NA	7.03E-02	2.14E+02	1.50E+01	1.21E-01	3.69E+01	2.48E-01	5.23E+01	4.09E-01	1.29E+02	1.93E-03
UM-500S-3000E (6-12")	8.57E-01	NA	NA	NA	NA	8.57E-01	3.30E-01	2.93E+01	2.51E+01	NA	NA	NA	NA	7.03E-02	8.86E+01	6.23E+00	1.21E-01	3.69E+01	1.03E-01	5.23E+01	4.09E-01	1.29E+02	7.98E-04
UM-500S-2750E (6-12")	8.57E-01	NA	NA	NA	NA	8.57E-01	3.30E-01	9.58E+01	8.21E+01	NA	NA	NA	NA	7.03E-02	2.90E+02	2.04E+01	1.21E-01	3.69E+01	3.36E-01	5.23E+01	4.09E-01	1.29E+02	2.61E-03
BRSD-25 (6-12")	8.57E-01	NA	NA	NA	NA	8.57E-01	3.30E-01	6.31E+01	5.41E+01	NA	NA	NA	NA	7.03E-02	1.91E+02	1.34E+01	1.21E-01	3.69E+01	2.21E-01	5.23E+01	4.09E-01	1.29E+02	1.72E-03
UM-250S-3000E (6-12")	8.57E-01	NA	NA	NA	NA	8.57E-01	3.30E-01	2.41E+02	2.07E+02	NA	NA	NA	NA	7.03E-02	7.30E+02	5.13E+01	1.21E-01	3.69E+01	8.45E-01	5.23E+01	4.09E-01	1.29E+02	6.57E-03
UM-250S-3250E (6-12")	8.57E-01	NA	NA	NA	NA	8.57E-01	3.30E-01	2.87E+01	2.46E+01	NA	NA	NA	NA	7.03E-02	8.69E+01	6.11E+00	1.21E-01	3.69E+01	1.01E-01	5.23E+01	4.09E-01	1.29E+02	7.82E-04
BRSD-24 (6-12")	8.57E-01	NA	NA	NA	NA	8.57E-01	3.30E-01	1.83E+02	1.57E+02	NA	NA	NA	NA	7.03E-02	5.53E+02	3.89E+01	1.21E-01	3.69E+01	6.40E-01	5.23E+01	4.09E-01	1.29E+02	4.98E-03
UM-250S-2750E (6-12")	8.57E-01	NA	NA	NA	NA	8.57E-01	3.30E-01	1.70E+02	1.46E+02	NA	NA	NA	NA	7.03E-02	5.14E+02	3.61E+01	1.21E-01	3.69E+01	5.95E-01	5.23E+01	4.09E-01	1.29E+02	4.63E-03
UM-250S-2500E (6-12")	8.57E-01	NA	NA	NA	NA	8.57E-01	3.30E-01	4.86E+01	4.16E+01	NA	NA	NA	NA	7.03E-02	1.47E+02	1.03E+01	1.21E-01	3.69E+01	1.70E-01	5.23E+01	4.09E-01	1.29E+02	1.32E-03
BRSD-2 (6-12")	8.57E-01	NA	NA	NA	NA	8.57E-01	3.30E-01	3.03E+02	2.60E+02	NA	NA	NA	NA	7.03E-02	9.18E+02	6.45E+01	1.21E-01	3.69E+01	1.06E+00	5.23E+01	4.09E-01	1.29E+02	8.27E-03
UM-500N-2500E (6-12")	8.57E-01	NA	NA	NA	NA	8.57E-01	3.30E-01	1.08E+01	9.26E+00	NA	NA	NA	NA	7.03E-02	3.27E+01	2.30E+00	1.21E-01	3.69E+01	3.79E-02	5.23E+01	4.09E-01	1.29E+02	2.94E-04
UM-250N-2500E (6-12")	8.57E-01	NA	NA	NA	NA	8.57E-01	3.30E-01	1.24E+02	1.06E+02	NA	NA	NA	NA	7.03E-02	3.74E+02	2.63E+01	1.21E-01	3.69E+01	4.33E-01	5.23E+01	4.09E-01	1.29E+02	3.37E-03
UM-250N-2250E (6-12")	8.57E-01	NA	NA	NA	NA	8.57E-01	3.30E-01	5.95E+01	5.10E+01	NA	NA	NA	NA	7.03E-02	1.80E+02	1.27E+01	1.21E-01	3.69E+01	2.08E-01	5.23E+01	4.09E-01	1.29E+02	1.62E-03
Western Upper Marsh (6-12")																						**Maximum HQ (Eastern Upper Marsh, 6-12")**	**1.12E-02**
UM-500S-2500E (6-12")	8.57E-01	NA	NA	NA	NA	8.57E-01	1.96E-01	7.14E+01	6.12E+01	NA	NA	NA	NA	7.03E-02	3.64E+02	2.56E+01	1.21E-01	3.69E+01	2.84E-01	5.23E+01	4.09E-01	1.29E+02	2.21E-03
UM-0N-2000E (6-12")	8.57E-01	NA	NA	NA	NA	8.57E-01	1.96E-01	2.12E+02	1.81E+02	NA	NA	NA	NA	7.03E-02	1.08E+03	7.59E+01	1.21E-01	3.69E+01	8.43E-01	5.23E+01	4.09E-01	1.29E+02	6.56E-03
UM-500S-2000E (6-12")	8.57E-01	NA	NA	NA	NA	8.57E-01	1.96E-01	4.55E+01	3.90E+01	NA	NA	NA	NA	7.03E-02	2.32E+02	1.63E+01	1.21E-01	3.69E+01	1.81E-01	5.23E+01	4.09E-01	1.29E+02	1.41E-03
UM-250N-1750E (6-12")	8.57E-01	NA	NA	NA	NA	8.57E-01	1.96E-01	2.80E+01	2.40E+01	NA	NA	NA	NA	7.03E-02	1.43E+02	1.00E+01	1.21E-01	3.69E+01	1.12E-01	5.23E+01	4.09E-01	1.29E+02	8.68E-04
UM-0N-1500E (6-12")	8.57E-01	NA	NA	NA	NA	8.57E-01	1.96E-01	3.61E+01	3.09E+01	NA	NA	NA	NA	7.03E-02	1.84E+02	1.29E+01	1.21E-01	3.69E+01	1.44E-01	5.23E+01	4.09E-01	1.29E+02	1.12E-03
UM-250S-1500E (6-12")	8.57E-01	NA	NA	NA	NA	8.57E-01	1.96E-01	1.01E+02	8.62E+01	NA	NA	NA	NA	7.03E-02	5.13E+02	3.61E+01	1.21E-01	3.69E+01	4.00E-01	5.23E+01	4.09E-01	1.29E+02	3.11E-03
UM-250S-1250E (6-12")	8.57E-01	NA	NA	NA	NA	8.57E-01	1.96E-01	1.52E+01	1.30E+01	NA	NA	NA	NA	7.03E-02	7.75E+01	5.45E+00	1.21E-01	3.69E+01	6.05E-02	5.23E+01	4.09E-01	1.29E+02	4.70E-04
BRSD-6 (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-1000E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-750E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-250S-500E (6-12")	8.57E-01	NA	NA	NA	NA	8.57E-01	1.96E-01	2.23E+01	1.92E+01	NA	NA	NA	NA	7.03E-02	1.14E+02	8.01E+00	1.21E-01	3.69E+01	8.90E-02	5.23E+01	4.09E-01	1.29E+02	6.92E-04
UM-0N-250E (6-12")	8.57E-01	NA	NA	NA	NA	8.57E-01	1.96E-01	6.74E+01	5.78E+01	NA	NA	NA	NA	7.03E-02	3.44E+02	2.42E+01	1.21E-01	3.69E+01	2.69E-01	5.23E+01	4.09E-01	1.29E+02	2.09E-03
UM-250S-250E (6-12")	8.57E-01	NA	NA	NA	NA	8.57E-01	1.96E-01	2.51E+01	2.15E+01	NA	NA	NA	NA	7.03E-02	1.28E+02	9.00E+00	1.21E-01	3.69E+01	9.99E-02	5.23E+01	4.09E-01	1.29E+02	7.77E-04
BRSD-7 (6-12")	8.57E-01	NA	NA	NA	NA	8.57E-01	1.96E-01	9.53E+00	8.16E+00	NA	NA	NA	NA	7.03E-02	4.86E+01	3.42E+00	1.21E-01	3.69E+01	3.79E-02	5.23E+01	4.09E-01	1.29E+02	2.95E-04
BRSD-8 (6-12")	8.57E-01	NA	NA	NA	NA	8.57E-01	1.96E-01	3.92E+01	3.36E+01	NA	NA	NA	NA	7.03E-02	2.00E+02	1.41E+01	1.21E-01	3.69E+01	1.56E-01	5.23E+01	4.09E-01	1.29E+02	1.21E-03
UM-500S-500E (6-12")	8.57E-01	NA	NA	NA	NA	8.57E-01	1.96E-01	1.61E+01	1.38E+01	NA	NA	NA	NA	7.03E-02	8.20E+01	5.76E+00	1.21E-01	3.69E+01	6.40E-02	5.23E+01	4.09E-01	1.29E+02	4.98E-04
BRSD-9 (6-12")	8.57E-01	NA	NA	NA	NA	8.57E-01	1.96E-01	1.65E+01	1.41E+01	NA	NA	NA	NA	7.03E-02	8.41E+01	5.91E+00	1.21E-01	3.69E+01	6.56E-02	5.23E+01	4.09E-01	1.29E+02	5.11E-04
BRSD-10 (6-12")	8.57E-01	NA	NA	NA	NA	8.57E-01	1.96E-01	1.90E+02	1.63E+02	NA	NA	NA	NA	7.03E-02	9.71E+02	6.82E+01	1.21E-01	3.69E+01	7.58E-01	5.23E+01	4.09E-01	1.29E+02	5.89E-03
BRSD-11 (6-12")	8.57E-01	NA	NA	NA	NA	8.57E-01	1.96E-01	2.90E+01	2.49E+01	NA	NA	NA	NA	7.03E-02	1.48E+02	1.04E+01	1.21E-01	3.69E+01	1.16E-01	5.23E+01	4.09E-01	1.29E+02	8.98E-04
Middle Marsh (0-2")																						**Maximum HQ (Western Upper Marsh, 6-12")**	**6.56E-03**
MMSD-201 (0-2")	8.57E-01	NA	NA	NA	NA	8.57E-01	1.96E-01	8.53E+01	7.31E+01	NA	NA	NA	NA	7.03E-02	4.35E+02	3.06E+01	1.21E-01	3.69E+01	3.40E-01	5.23E+01	4.09E-01	1.29E+02	2.64E-03
MMSD-202 (0-2")	8.57E-01	NA	NA	NA	NA	8.57E-01	1.96E-01	8.59E+01	7.36E+01	NA	NA	NA	NA	7.03E-02	4.38E+02	3.08E+01	1.21E-01	3.69E+01	3.42E-01	5.23E+01	4.09E-01	1.29E+02	2.66E-03
Middle Marsh (2-6")																						**Maximum HQ (Middle Marsh, 0-2")**	**2.66E-03**
MMSD-201 (2-6")	8.57E-01	NA	NA	NA	NA	8.57E-01	1.96E-01	1.18E+02	1.01E+02	NA	NA	NA	NA	7.03E-02	6.00E+02	4.22E+01	1.21E-01	3.69E+01	4.68E-01	5.23E+01	4.09E-01	1.29E+02	3.64E-03
MMSD-202 (2-6")	8.57E-01	NA	NA	NA	NA	8.57E-01	1.96E-01	1.01E+02	8.67E+01	NA	NA	NA	NA	7.03E-02	5.16E+02	3.63E+01	1.21E-01	3.69E+01	4.03E-01	5.23E+01	4.09E-01	1.29E+02	3.13E-03
Middle Marsh (6-12")																						**Maximum HQ (Middle Marsh, 2-6")**	**3.64E-03**
MMSD-201 (6-12")	8.57E-01	NA	NA	NA	NA	8.57E-01	1.96E-01	1.42E+02	1.22E+02	NA	NA	NA	NA	7.03E-02	7.26E+02	5.10E+01	1.21E-01	3.69E+01	5.67E-01	5.23E+01	4.09E-01	1.29E+02	4.41E-03
MMSD-202 (6-12")	8.57E-01	NA	NA	NA	NA	8.57E-01	1.96E-01	5.72E+01	4.91E+01	NA	NA	NA	NA	7.03E-02	2.92E+02	2.05E+01	1.21E-01	3.69E+01	2.28E-01	5.23E+01	4.09E-01	1.29E+02	1.77E-03
Lower Marsh (0-2")																						**Maximum HQ (Middle Marsh, 6-12")**	**4.41E-03**
LMSD-201 (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
LMSD-202 (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
LMSD-203 (0-2")	8.57E-01	NA	NA	NA	NA	8.57E-01	1.96E-01	5.63E+01	4.82E+01	NA	NA	NA	NA	7.03E-02	2.87E+02	2.02E+01	1.21E-01	3.69E+01	2.24E-01	5.23E+01	4.09E-01	1.29E+02	1.74E-03
LMSD-204 (0-2")	8.57E-01	NA	NA	NA	NA	8.57E-01	1.96E-01	4.39E+01	3.76E+01	NA	NA	NA	NA	7.03E-02	2.24E+02	1.57E+01	1.21E-01	3.69E+01	1.75E-01	5.23E+01	4.09E-01	1.29E+02	1.36E-03
Lower Marsh (2-6")																						**Maximum HQ (Lower Marsh, 0-2")**	**1.74E-03**
LMSD-201 (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
LMSD-202 (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
LMSD-203 (2-6")	8.57E-01	NA	NA	NA	NA	8.57E-01	1.96E-01	5.59E+01	4.79E+01	NA	NA	NA	NA	7.03E-02	2.85E+02	2.00E+01	1.21E-01	3.69E+01	2.22E-01	5.23E+01	4.09E-01	1.29E+02	1.73E-03
LMSD-204 (2-6")	8.57E-01	NA	NA	NA	NA	8.57E-01	1.96E-01	4.45E+01	3.81E+01	NA	NA	NA	NA	7.03E-02	2.27E+02	1.60E+01	1.21E-01	3.69E+01	1.77E-01	5.23E+01	4.09E-01	1.29E+02	1.38E-03

TABLE C-12DB: COPPER DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 12 - MARSH, WETLAND RECEPTORS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **118.73**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Canada Goose (Herbivorous Birds)																							
Lower Marsh (6-12")																						**Maximum HQ (Lower Marsh, 2-6")**	**1.73E-03**
LMSD-201 (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
LMSD-202 (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
LMSD-203 (6-12")	8.57E-01	NA	NA	NA	NA	8.57E-01	1.96E-01	7.06E+01	6.05E+01	NA	NA	NA	NA	7.03E-02	3.60E+02	2.53E+01	1.21E-01	3.69E+01	2.81E-01	5.23E+01	4.09E-01	1.29E+02	2.19E-03
LMSD-204 (6-12")	8.57E-01	NA	NA	NA	NA	8.57E-01	1.96E-01	4.43E+01	3.80E+01	NA	NA	NA	NA	7.03E-02	2.26E+02	1.59E+01	1.21E-01	3.69E+01	1.76E-01	5.23E+01	4.09E-01	1.29E+02	1.37E-03
																						Maximum HQ (Lower Marsh, 6-12")	**2.19E-03**
Great Blue Heron (Carnivorous Birds)																							
Reference Sites																							
BRSD-5 (0-2")	1.32E-01	1.32E-01	9.20E-01	3.61E+01	4.75E+00	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	3.92E+01	1.39E-01	1.00E+00	2.39E+00	2.04E+00	5.23E+01	4.09E-01	7.44E+01	2.75E-02
BRSD-5 (2-6")	1.32E-01	1.32E-01	9.20E-01	3.84E+01	5.05E+00	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	4.17E+01	1.48E-01	1.00E+00	2.39E+00	2.17E+00	5.23E+01	4.09E-01	7.44E+01	2.92E-02
BRSD-5 (6-12")	1.32E-01	1.32E-01	9.20E-01	4.17E+01	5.48E+00	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	4.53E+01	1.61E-01	1.00E+00	2.39E+00	2.36E+00	5.23E+01	4.09E-01	7.44E+01	3.18E-02
PGBG-1 (0-2")	1.32E-01	1.32E-01	9.20E-01	3.19E+01	4.20E+00	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	3.47E+01	1.23E-01	1.00E+00	2.39E+00	1.81E+00	5.23E+01	4.09E-01	7.44E+01	2.43E-02
PGBG-1 (2-6")	1.32E-01	1.32E-01	9.20E-01	3.41E+01	4.48E+00	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	3.70E+01	1.31E-01	1.00E+00	2.39E+00	1.93E+00	5.23E+01	4.09E-01	7.44E+01	2.59E-02
PGBG-1 (6-12")	1.32E-01	1.32E-01	9.20E-01	2.02E+01	2.66E+00	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	2.20E+01	7.81E-02	1.00E+00	2.39E+00	1.15E+00	5.23E+01	4.09E-01	7.44E+01	1.54E-02
PGBG-2 (0-2")	1.32E-01	1.32E-01	9.20E-01	4.79E+01	6.30E+00	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	5.20E+01	1.85E-01	1.00E+00	2.39E+00	2.71E+00	5.23E+01	4.09E-01	7.44E+01	3.64E-02
PGBG-2 (2-6")	1.32E-01	1.32E-01	9.20E-01	5.06E+01	6.66E+00	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	5.50E+01	1.95E-01	1.00E+00	2.39E+00	2.87E+00	5.23E+01	4.09E-01	7.44E+01	3.85E-02
PGBG-2 (6-12")	1.32E-01	1.32E-01	9.20E-01	6.20E+01	8.16E+00	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	6.74E+01	2.39E-01	1.00E+00	2.39E+00	3.51E+00	5.23E+01	4.09E-01	7.44E+01	4.72E-02
Eastern Upper Marsh (0-2")																						**Minimum HQ (Reference Sites)**	**1.54E-02**
UM-1000S-3500E (0-2")	1.32E-01	1.32E-01	1.39E-01	3.07E+01	4.04E+00	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	2.21E+02	7.85E-01	1.00E+00	2.39E+00	2.02E+00	5.23E+01	4.09E-01	7.44E+01	2.71E-02
BRSD-15 (0-2")	1.32E-01	1.32E-01	1.39E-01	1.24E+01	1.63E+00	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	8.92E+01	3.17E-01	1.00E+00	2.39E+00	8.15E-01	5.23E+01	4.09E-01	7.44E+01	1.10E-02
BRSD-4 (0-2")	1.32E-01	1.32E-01	1.39E-01	8.66E+00	1.14E+00	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	6.23E+01	2.21E-01	1.00E+00	2.39E+00	5.69E-01	5.23E+01	4.09E-01	7.44E+01	7.65E-03
UM-750S-3500E (0-2")	1.32E-01	1.32E-01	1.39E-01	1.24E+02	1.63E+01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	8.94E+02	3.17E+00	1.00E+00	2.39E+00	8.17E+00	5.23E+01	4.09E-01	7.44E+01	1.10E-01
BRSD-16 (0-2")	1.32E-01	1.32E-01	1.39E-01	5.16E+01	6.78E+00	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	3.71E+02	1.32E+00	1.00E+00	2.39E+00	3.39E+00	5.23E+01	4.09E-01	7.44E+01	4.56E-02
UM-750S-3000E (0-2")	1.32E-01	1.32E-01	1.39E-01	5.63E+01	7.41E+00	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	4.05E+02	1.44E+00	1.00E+00	2.39E+00	3.70E+00	5.23E+01	4.09E-01	7.44E+01	4.97E-02
UM-500S-3250E (0-2")	1.32E-01	1.32E-01	1.39E-01	7.34E+01	9.65E+00	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	5.28E+02	1.88E+00	1.00E+00	2.39E+00	4.82E+00	5.23E+01	4.09E-01	7.44E+01	6.49E-02
UM-500S-3000E (0-2")	1.32E-01	1.32E-01	1.39E-01	6.09E+01	8.01E+00	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	4.38E+02	1.56E+00	1.00E+00	2.39E+00	4.00E+00	5.23E+01	4.09E-01	7.44E+01	5.38E-02
UM-500S-2750E (0-2")	1.32E-01	1.32E-01	1.39E-01	7.01E+01	9.22E+00	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	5.04E+02	1.79E+00	1.00E+00	2.39E+00	4.60E+00	5.23E+01	4.09E-01	7.44E+01	6.19E-02
BRSD-25 (0-2")	1.32E-01	1.32E-01	1.39E-01	3.68E+01	4.85E+00	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	2.65E+02	9.41E-01	1.00E+00	2.39E+00	2.42E+00	5.23E+01	4.09E-01	7.44E+01	3.25E-02
UM-250S-3000E (0-2")	1.32E-01	1.32E-01	1.39E-01	1.35E+02	1.78E+01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	9.71E+02	3.45E+00	1.00E+00	2.39E+00	8.87E+00	5.23E+01	4.09E-01	7.44E+01	1.19E-01
UM-250S-3250E (0-2")	1.32E-01	1.32E-01	1.39E-01	4.38E+01	5.76E+00	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	3.15E+02	1.12E+00	1.00E+00	2.39E+00	2.88E+00	5.23E+01	4.09E-01	7.44E+01	3.87E-02
BRSD-24 (0-2")	1.32E-01	1.32E-01	1.39E-01	5.45E+01	7.17E+00	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	3.92E+02	1.39E+00	1.00E+00	2.39E+00	3.58E+00	5.23E+01	4.09E-01	7.44E+01	4.81E-02
UM-250S-2750E (0-2")	1.32E-01	1.32E-01	1.39E-01	3.80E+01	4.99E+00	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	2.73E+02	9.70E-01	1.00E+00	2.39E+00	2.49E+00	5.23E+01	4.09E-01	7.44E+01	3.35E-02
UM-250S-2500E (0-2")	1.32E-01	1.32E-01	1.39E-01	2.84E+01	3.73E+00	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	2.04E+02	7.24E-01	1.00E+00	2.39E+00	1.86E+00	5.23E+01	4.09E-01	7.44E+01	2.51E-02
UM-0N-2500E (0-2")	1.32E-01	1.32E-01	1.39E-01	7.09E+01	9.33E+00	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	5.10E+02	1.81E+00	1.00E+00	2.39E+00	4.66E+00	5.23E+01	4.09E-01	7.44E+01	6.26E-02
UM-0N-250E (0-2")	1.32E-01	1.32E-01	1.39E-01	8.13E+01	1.07E+01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	5.85E+02	2.08E+00	1.00E+00	2.39E+00	5.34E+00	5.23E+01	4.09E-01	7.44E+01	7.19E-02
BRSD-2 (0-2")	1.32E-01	1.32E-01	1.39E-01	4.77E+01	6.27E+00	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	3.43E+02	1.22E+00	1.00E+00	2.39E+00	3.13E+00	5.23E+01	4.09E-01	7.44E+01	4.21E-02
UM-500N-2500E (0-2")	1.32E-01	1.32E-01	1.39E-01	8.24E+00	1.08E+00	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	5.93E+01	2.11E-01	1.00E+00	2.39E+00	5.42E-01	5.23E+01	4.09E-01	7.44E+01	7.28E-03
UM-250N-2500E (0-2")	1.32E-01	1.32E-01	1.39E-01	7.72E+01	1.01E+01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	5.55E+02	1.97E+00	1.00E+00	2.39E+00	5.07E+00	5.23E+01	4.09E-01	7.44E+01	6.82E-02
UM-250N-2250E (0-2")	1.32E-01	1.32E-01	1.39E-01	5.06E+01	6.66E+00	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	3.64E+02	1.29E+00	1.00E+00	2.39E+00	3.33E+00	5.23E+01	4.09E-01	7.44E+01	4.47E-02
Western Upper Marsh (0-2")																						**Maximum HQ (Eastern Upper Marsh, 0-2")**	**1.38E-01**
UM-500S-2500E (0-2")	1.32E-01	1.32E-01	1.39E-01	5.19E+01	6.82E+00	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	3.73E+02	1.32E+00	1.00E+00	2.39E+00	3.41E+00	5.23E+01	4.09E-01	7.44E+01	4.58E-02
UM-0N-2000E (0-2")	1.32E-01	1.32E-01	1.39E-01	1.10E+02	1.44E+01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	7.88E+02	2.80E+00	1.00E+00	2.39E+00	7.20E+00	5.23E+01	4.09E-01	7.44E+01	9.68E-02
UM-500S-2000E (0-2")	1.32E-01	1.32E-01	1.39E-01	2.54E+01	3.35E+00	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.83E+02	6.50E-01	1.00E+00	2.39E+00	1.67E+00	5.23E+01	4.09E-01	7.44E+01	2.25E-02
UM-250N-1750E (0-2")	1.32E-01	1.32E-01	1.39E-01	2.13E+01	2.80E+00	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.53E+02	5.43E-01	1.00E+00	2.39E+00	1.40E+00	5.23E+01	4.09E-01	7.44E+01	1.88E-02
UM-0N-1500E (0-2")	1.32E-01	1.32E-01	1.39E-01	1.26E+01	1.66E+00	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	9.08E+01	3.22E-01	1.00E+00	2.39E+00	8.30E-01	5.23E+01	4.09E-01	7.44E+01	1.12E-02
UM-250S-1500E (0-2")	1.32E-01	1.32E-01	1.39E-01	7.94E+01	1.04E+01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	5.71E+02	2.03E+00	1.00E+00	2.39E+00	5.22E+00	5.23E+01	4.09E-01	7.44E+01	7.01E-02
UM-250S-1250E (0-2")	1.32E-01	1.32E-01	1.39E-01	1.27E+01	1.67E+00	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	9.11E+01	3.24E-01	1.00E+00	2.39E+00	8.32E-01	5.23E+01	4.09E-01	7.44E+01	1.12E-02
BRSD-6 (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-1000E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-750E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-500E (0-2")	1.32E-01	1.32E-01	1.39E-01	6.26E+01	8.23E+00	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	4.50E+02	1.60E+00	1.00E+00	2.39E+00	4.11E+00	5.23E+01	4.09E-01	7.44E+01	5.53E-02
UM-250S-500E (0-2")	1.32E-01	1.32E-01	1.39E-01	1.12E+01	1.48E+00	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	8.08E+01	2.87E-01	1.00E+00	2.39E+00	7.38E-01	5.23E+01	4.09E-01	7.44E+01	9.92E-03
UM-250S-250E (0-2")	1.32E-01	1.32E-01	1.39E-01	3.34E+01	4.39E+00	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	2.40E+02	8.52E-01	1.00E+00	2.39E+00	2.19E+00	5.23E+01	4.09E-01	7.44E+01	2.95E-02
BRSD-7 (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB

TABLE C-12DB: COPPER DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 12 - MARSH, WETLAND RECEPTORS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **118.73**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Great Blue Heron (Carnivorous Birds)																							
BRSD-8 (0-2")	1.32E-01	1.32E-01	1.39E-01	2.70E+01	3.55E+00	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.94E+02	6.89E-01	1.00E+00	2.39E+00	1.77E+00	5.23E+01	4.09E-01	7.44E+01	2.38E-02
UM-500S-500E (0-2")	1.32E-01	1.32E-01	1.39E-01	1.34E+01	1.76E+00	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	9.63E+01	3.42E-01	1.00E+00	2.39E+00	8.80E-01	5.23E+01	4.09E-01	7.44E+01	1.18E-02
BRSD-9 (0-2")	1.32E-01	1.32E-01	1.39E-01	1.17E+01	1.53E+00	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	8.39E+01	2.98E-01	1.00E+00	2.39E+00	7.67E-01	5.23E+01	4.09E-01	7.44E+01	1.03E-02
BRSD-10 (0-2")	1.32E-01	1.32E-01	1.39E-01	9.05E+01	1.19E+01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	6.51E+02	2.31E+00	1.00E+00	2.39E+00	5.95E+00	5.23E+01	4.09E-01	7.44E+01	8.00E-02
BRSD-11 (0-2")	1.32E-01	1.32E-01	1.39E-01	1.85E+01	2.43E+00	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.33E+02	4.72E-01	1.00E+00	2.39E+00	1.22E+00	5.23E+01	4.09E-01	7.44E+01	1.63E-02
Eastern Upper Marsh (2-6")																						**Maximum HQ (Western Upper Marsh, 0-2")**	**9.68E-02**
UM-1000S-3500E (2-6")	1.32E-01	1.32E-01	1.39E-01	1.47E+01	1.94E+00	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.06E+02	3.76E-01	1.00E+00	2.39E+00	9.68E-01	5.23E+01	4.09E-01	7.44E+01	1.30E-02
BRSD-15 (2-6")	1.32E-01	1.32E-01	1.39E-01	1.35E+01	1.78E+00	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	9.74E+01	3.46E-01	1.00E+00	2.39E+00	8.90E-01	5.23E+01	4.09E-01	7.44E+01	1.20E-02
BRSD-4 (2-6")	1.32E-01	1.32E-01	1.39E-01	1.79E+01	2.36E+00	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.29E+02	4.58E-01	1.00E+00	2.39E+00	1.18E+00	5.23E+01	4.09E-01	7.44E+01	1.58E-02
UM-750S-3500E (2-6")	1.32E-01	1.32E-01	1.39E-01	4.75E+01	6.25E+00	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	3.42E+02	1.21E+00	1.00E+00	2.39E+00	3.12E+00	5.23E+01	4.09E-01	7.44E+01	4.20E-02
BRSD-16 (2-6")	1.32E-01	1.32E-01	1.39E-01	1.56E+02	2.05E+01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.12E+03	3.98E+00	1.00E+00	2.39E+00	1.02E+01	5.23E+01	4.09E-01	7.44E+01	1.38E-01
UM-750S-3000E (2-6")	1.32E-01	1.32E-01	1.39E-01	4.92E+01	6.47E+00	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	3.54E+02	1.26E+00	1.00E+00	2.39E+00	3.23E+00	5.23E+01	4.09E-01	7.44E+01	4.35E-02
BRSD-3 (2-6")	1.32E-01	1.32E-01	1.39E-01	1.97E+02	2.60E+01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.42E+03	5.04E+00	1.00E+00	2.39E+00	1.30E+01	5.23E+01	4.09E-01	7.44E+01	1.74E-01
UM-500S-3250E (2-6")	1.32E-01	1.32E-01	1.39E-01	3.98E+01	5.23E+00	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	2.86E+02	1.02E+00	1.00E+00	2.39E+00	2.61E+00	5.23E+01	4.09E-01	7.44E+01	3.51E-02
UM-500S-3000E (2-6")	1.32E-01	1.32E-01	1.39E-01	1.14E+01	1.50E+00	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	8.20E+01	2.91E-01	1.00E+00	2.39E+00	7.49E-01	5.23E+01	4.09E-01	7.44E+01	1.01E-02
UM-500S-2750E (2-6")	1.32E-01	1.32E-01	1.39E-01	4.42E+01	5.81E+00	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	3.18E+02	1.13E+00	1.00E+00	2.39E+00	2.91E+00	5.23E+01	4.09E-01	7.44E+01	3.91E-02
BRSD-25 (2-6")	1.32E-01	1.32E-01	1.39E-01	5.59E+01	7.35E+00	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	4.02E+02	1.43E+00	1.00E+00	2.39E+00	3.67E+00	5.23E+01	4.09E-01	7.44E+01	4.94E-02
UM-250S-3000E (2-6")	1.32E-01	1.32E-01	1.39E-01	1.11E+02	1.46E+01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	8.01E+02	2.84E+00	1.00E+00	2.39E+00	7.32E+00	5.23E+01	4.09E-01	7.44E+01	9.84E-02
UM-250S-3250E (2-6")	1.32E-01	1.32E-01	1.39E-01	1.14E+01	1.50E+00	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	8.18E+01	2.90E-01	1.00E+00	2.39E+00	7.47E-01	5.23E+01	4.09E-01	7.44E+01	1.00E-02
BRSD-24 (2-6")	1.32E-01	1.32E-01	1.39E-01	1.03E+02	1.35E+01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	7.40E+02	2.63E+00	1.00E+00	2.39E+00	6.76E+00	5.23E+01	4.09E-01	7.44E+01	9.09E-02
UM-250S-2750E (2-6")	1.32E-01	1.32E-01	1.39E-01	6.14E+01	8.08E+00	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	4.42E+02	1.57E+00	1.00E+00	2.39E+00	4.04E+00	5.23E+01	4.09E-01	7.44E+01	5.43E-02
UM-0N-2500E (2-6")	1.32E-01	1.32E-01	1.39E-01	3.64E+01	4.79E+00	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	2.62E+02	9.30E-01	1.00E+00	2.39E+00	2.39E+00	5.23E+01	4.09E-01	7.44E+01	3.22E-02
BRSD-2 (2-6")	1.32E-01	1.32E-01	1.39E-01	5.69E+01	7.48E+00	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	4.09E+02	1.45E+00	1.00E+00	2.39E+00	3.74E+00	5.23E+01	4.09E-01	7.44E+01	5.02E-02
UM-500N-2500E (2-6")	1.32E-01	1.32E-01	1.39E-01	1.03E+01	1.36E+00	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	7.43E+01	2.64E-01	1.00E+00	2.39E+00	6.79E-01	5.23E+01	4.09E-01	7.44E+01	9.13E-03
UM-250N-2500E (2-6")	1.32E-01	1.32E-01	1.39E-01	7.12E+01	9.36E+00	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	5.12E+02	1.82E+00	1.00E+00	2.39E+00	4.68E+00	5.23E+01	4.09E-01	7.44E+01	6.29E-02
UM-250N-2250E (2-6")	1.32E-01	1.32E-01	1.39E-01	1.99E+01	2.61E+00	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.43E+02	5.08E-01	1.00E+00	2.39E+00	1.31E+00	5.23E+01	4.09E-01	7.44E+01	1.76E-02
Western Upper Marsh (2-6")																						**Maximum HQ (Eastern Upper Marsh, 2-6")**	**1.74E-01**
UM-500S-2500E (2-6")	1.32E-01	1.32E-01	1.39E-01	4.94E+01	6.49E+00	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	3.55E+02	1.26E+00	1.00E+00	2.39E+00	3.24E+00	5.23E+01	4.09E-01	7.44E+01	4.36E-02
UM-0N-2000E (2-6")	1.32E-01	1.32E-01	1.39E-01	9.88E+01	1.30E+01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	7.11E+02	2.52E+00	1.00E+00	2.39E+00	6.50E+00	5.23E+01	4.09E-01	7.44E+01	8.73E-02
UM-500S-2000E (2-6")	1.32E-01	1.32E-01	1.39E-01	3.29E+01	4.33E+00	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	2.37E+02	8.42E-01	1.00E+00	2.39E+00	2.17E+00	5.23E+01	4.09E-01	7.44E+01	2.91E-02
UM-250N-1750E (2-6")	1.32E-01	1.32E-01	1.39E-01	1.50E+01	1.97E+00	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.08E+02	3.84E-01	1.00E+00	2.39E+00	9.87E-01	5.23E+01	4.09E-01	7.44E+01	1.33E-02
UM-0N-1500E (2-6")	1.32E-01	1.32E-01	1.39E-01	1.88E+01	2.47E+00	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.35E+02	4.79E-01	1.00E+00	2.39E+00	1.23E+00	5.23E+01	4.09E-01	7.44E+01	1.66E-02
UM-250S-1500E (2-6")	1.32E-01	1.32E-01	1.39E-01	1.18E+02	1.55E+01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	8.49E+02	3.02E+00	1.00E+00	2.39E+00	7.76E+00	5.23E+01	4.09E-01	7.44E+01	1.04E-01
UM-250S-1250E (2-6")	1.32E-01	1.32E-01	1.39E-01	1.10E+01	1.45E+00	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	7.94E+01	2.82E-01	1.00E+00	2.39E+00	7.25E-01	5.23E+01	4.09E-01	7.44E+01	9.75E-03
BRSD-6 (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-1000E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-750E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-500E (2-6")	1.32E-01	1.32E-01	1.39E-01	3.84E+02	5.05E+01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	2.76E+03	9.80E+00	1.00E+00	2.39E+00	2.52E+01	5.23E+01	4.09E-01	7.44E+01	3.39E-01
UM-250S-500E (2-6")	1.32E-01	1.32E-01	1.39E-01	1.25E+01	1.65E+00	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	9.02E+01	3.20E-01	1.00E+00	2.39E+00	8.24E-01	5.23E+01	4.09E-01	7.44E+01	1.11E-02
UM-0N-250E (2-6")	1.32E-01	1.32E-01	1.39E-01	4.20E+01	5.52E+00	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	3.02E+02	1.07E+00	1.00E+00	2.39E+00	2.76E+00	5.23E+01	4.09E-01	7.44E+01	3.71E-02
UM-250S-250E (2-6")	1.32E-01	1.32E-01	1.39E-01	2.89E+01	3.80E+00	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	2.08E+02	7.39E-01	1.00E+00	2.39E+00	1.90E+00	5.23E+01	4.09E-01	7.44E+01	2.55E-02
BRSD-7 (2-6")	1.32E-01	1.32E-01	1.39E-01	7.85E+00	1.03E+00	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	5.65E+01	2.01E-01	1.00E+00	2.39E+00	5.16E-01	5.23E+01	4.09E-01	7.44E+01	6.94E-03
BRSD-8 (2-6")	1.32E-01	1.32E-01	1.39E-01	2.61E+01	3.44E+00	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.88E+02	6.68E-01	1.00E+00	2.39E+00	1.72E+00	5.23E+01	4.09E-01	7.44E+01	2.31E-02
UM-500S-500E (2-6")	1.32E-01	1.32E-01	1.39E-01	1.23E+01	1.61E+00	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	8.83E+01	3.14E-01	1.00E+00	2.39E+00	8.07E-01	5.23E+01	4.09E-01	7.44E+01	1.08E-02
BRSD-9 (2-6")	1.32E-01	1.32E-01	1.39E-01	7.35E+00	9.67E-01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	5.29E+01	1.88E-01	1.00E+00	2.39E+00	4.83E-01	5.23E+01	4.09E-01	7.44E+01	6.50E-03
BRSD-10 (2-6")	1.32E-01	1.32E-01	1.39E-01	9.59E+01	1.26E+01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	6.90E+02	2.45E+00	1.00E+00	2.39E+00	6.30E+00	5.23E+01	4.09E-01	7.44E+01	8.47E-02
BRSD-11 (2-6")	1.32E-01	1.32E-01	1.39E-01	2.14E+01	2.82E+00	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.54E+02	5.47E-01	1.00E+00	2.39E+00	1.41E+00	5.23E+01	4.09E-01	7.44E+01	1.89E-02
Eastern Upper Marsh (6-12")																						**Maximum HQ (Western Upper Marsh, 2-6")**	**3.39E-01**
UM-1000S-3500E (6-12")	1.32E-01	1.32E-01	1.39E-01	1.20E+01	1.58E+00	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	8.66E+01	3.08E-01	1.00E+00	2.39E+00	7.91E-01	5.23E+01	4.09E-01	7.44E+01	1.06E-02
BRSD-15 (6-12")	1.32E-01	1.32E-01	1.39E-01	1.36E+01	1.79E+00	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	9.79E+01	3.48E-01	1.00E+00	2.39E+00	8.94E-01	5.23E+01	4.09E-01	7.44E+01	1.20E-02
BRSD-4 (6-12")	1.32E-01	1.32E-01	1.39E-01	1.29E+01	1.69E+00	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	9.25E+01	3.28E-01	1.00E+00	2.39E+00	8.45E-01	5.23E+01	4.09E-01	7.44E+01	1.14E-02
UM-750S-3500E (6-12")	1.32E-01	1.32E-01	1.39E-01	5.69E+01	7.48E+00	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	4.09E+02	1.45E+00	1.00E+00	2.39E+00	3.74E+00	5.23E+01	4.09E-01	7.44E+01	5.02E-02
BRSD-16 (6-12")	1.32E-01	1.32E-01	1.39E-01	7.90E+01	1.04E+01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	5.68E+02	2.02E+00	1.00E+00	2.39E+00	5.19E+00	5.23E+01	4.09E-01	7.44E+01	6.98E-02
UM-750S-3000E (6-12")	1.32E-01	1.32E-01	1.39E-01	4.77E+01	6.27E+00	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	3.43E+02	1.22E+00	1.00E+00	2.39E+00	3.13E+00	5.23E+01	4.09E-01	7.44E+01	4.21E-02
BRSD-3 (6-12")	1.32E-01	1.32E-01	1.39E-01	1.72E+02	2.27E+01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.24E+03	4.40E+00	1.00E+00	2.39E+00	1.13E+01	5.23E+01	4.09E-01	7.44E+01	1.52E-01

TABLE C-12DB: COPPER DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 12 - MARSH, WETLAND RECEPTORS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **118.73**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Great Blue Heron (Carnivorous Birds)																							
UM-500S-3250E (6-12")	1.32E-01	1.32E-01	1.39E-01	2.98E+01	3.91E+00	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	2.14E+02	7.60E-01	1.00E+00	2.39E+00	1.96E+00	5.23E+01	4.09E-01	7.44E+01	2.63E-02
UM-500S-3000E (6-12")	1.32E-01	1.32E-01	1.39E-01	1.23E+01	1.62E+00	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	8.86E+01	3.15E-01	1.00E+00	2.39E+00	8.10E-01	5.23E+01	4.09E-01	7.44E+01	1.09E-02
UM-500S-2750E (6-12")	1.32E-01	1.32E-01	1.39E-01	4.03E+01	5.30E+00	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	2.90E+02	1.03E+00	1.00E+00	2.39E+00	2.65E+00	5.23E+01	4.09E-01	7.44E+01	3.56E-02
BRSD-25 (6-12")	1.32E-01	1.32E-01	1.39E-01	2.66E+01	3.49E+00	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.91E+02	6.78E-01	1.00E+00	2.39E+00	1.75E+00	5.23E+01	4.09E-01	7.44E+01	2.35E-02
UM-250S-3000E (6-12")	1.32E-01	1.32E-01	1.39E-01	1.01E+02	1.33E+01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	7.30E+02	2.59E+00	1.00E+00	2.39E+00	6.67E+00	5.23E+01	4.09E-01	7.44E+01	8.97E-02
UM-250S-3250E (6-12")	1.32E-01	1.32E-01	1.39E-01	1.21E+01	1.59E+00	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	8.69E+01	3.09E-01	1.00E+00	2.39E+00	7.94E-01	5.23E+01	4.09E-01	7.44E+01	1.07E-02
BRSD-24 (6-12")	1.32E-01	1.32E-01	1.39E-01	7.69E+01	1.01E+01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	5.53E+02	1.96E+00	1.00E+00	2.39E+00	5.05E+00	5.23E+01	4.09E-01	7.44E+01	6.79E-02
UM-250S-2750E (6-12")	1.32E-01	1.32E-01	1.39E-01	7.15E+01	9.40E+00	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	5.14E+02	1.83E+00	1.00E+00	2.39E+00	4.70E+00	5.23E+01	4.09E-01	7.44E+01	6.31E-02
UM-250S-2500E (6-12")	1.32E-01	1.32E-01	1.39E-01	2.04E+01	2.69E+00	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.47E+02	5.22E-01	1.00E+00	2.39E+00	1.34E+00	5.23E+01	4.09E-01	7.44E+01	1.81E-02
BRSD-2 (6-12")	1.32E-01	1.32E-01	1.39E-01	1.28E+02	1.68E+01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	9.18E+02	3.26E+00	1.00E+00	2.39E+00	8.39E+00	5.23E+01	4.09E-01	7.44E+01	1.13E-01
UM-500N-2500E (6-12")	1.32E-01	1.32E-01	1.39E-01	4.55E+00	5.98E-01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	3.27E+01	1.16E-01	1.00E+00	2.39E+00	2.99E-01	5.23E+01	4.09E-01	7.44E+01	4.02E-03
UM-250N-2500E (6-12")	1.32E-01	1.32E-01	1.39E-01	5.20E+01	6.84E+00	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	3.74E+02	1.33E+00	1.00E+00	2.39E+00	3.42E+00	5.23E+01	4.09E-01	7.44E+01	4.59E-02
UM-250N-2250E (6-12")	1.32E-01	1.32E-01	1.39E-01	2.50E+01	3.29E+00	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.80E+02	6.39E-01	1.00E+00	2.39E+00	1.64E+00	5.23E+01	4.09E-01	7.44E+01	2.21E-02
Western Upper Marsh (6-12")																						**Maximum HQ (Eastern Upper Marsh, 6-12")**	**1.52E-01**
UM-500S-2500E (6-12")	1.32E-01	1.32E-01	1.39E-01	5.06E+01	6.66E+00	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	3.64E+02	1.29E+00	1.00E+00	2.39E+00	3.33E+00	5.23E+01	4.09E-01	7.44E+01	4.47E-02
UM-0N-2000E (6-12")	1.32E-01	1.32E-01	1.39E-01	1.50E+02	1.97E+01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.08E+03	3.84E+00	1.00E+00	2.39E+00	9.87E+00	5.23E+01	4.09E-01	7.44E+01	1.33E-01
UM-500S-2000E (6-12")	1.32E-01	1.32E-01	1.39E-01	3.23E+01	4.24E+00	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	2.32E+02	8.24E-01	1.00E+00	2.39E+00	2.12E+00	5.23E+01	4.09E-01	7.44E+01	2.85E-02
UM-250N-1750E (6-12")	1.32E-01	1.32E-01	1.39E-01	1.99E+01	2.61E+00	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.43E+02	5.08E-01	1.00E+00	2.39E+00	1.31E+00	5.23E+01	4.09E-01	7.44E+01	1.76E-02
UM-0N-1500E (6-12")	1.32E-01	1.32E-01	1.39E-01	2.56E+01	3.36E+00	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.84E+02	6.53E-01	1.00E+00	2.39E+00	1.68E+00	5.23E+01	4.09E-01	7.44E+01	2.26E-02
UM-250S-1500E (6-12")	1.32E-01	1.32E-01	1.39E-01	7.13E+01	9.38E+00	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	5.13E+02	1.82E+00	1.00E+00	2.39E+00	4.69E+00	5.23E+01	4.09E-01	7.44E+01	6.30E-02
UM-250S-1250E (6-12")	1.32E-01	1.32E-01	1.39E-01	1.08E+01	1.42E+00	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	7.75E+01	2.75E-01	1.00E+00	2.39E+00	7.08E-01	5.23E+01	4.09E-01	7.44E+01	9.52E-03
BRSD-6 (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-1000E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-750E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-250S-500E (6-12")	1.32E-01	1.32E-01	1.39E-01	1.58E+01	2.08E+00	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.14E+02	4.05E-01	1.00E+00	2.39E+00	1.04E+00	5.23E+01	4.09E-01	7.44E+01	1.40E-02
UM-0N-250E (6-12")	1.32E-01	1.32E-01	1.39E-01	4.78E+01	6.29E+00	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	3.44E+02	1.22E+00	1.00E+00	2.39E+00	3.14E+00	5.23E+01	4.09E-01	7.44E+01	4.23E-02
UM-250S-250E (6-12")	1.32E-01	1.32E-01	1.39E-01	1.78E+01	2.34E+00	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.28E+02	4.55E-01	1.00E+00	2.39E+00	1.17E+00	5.23E+01	4.09E-01	7.44E+01	1.57E-02
BRSD-7 (6-12")	1.32E-01	1.32E-01	1.39E-01	6.76E+00	8.89E-01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	4.86E+01	1.73E-01	1.00E+00	2.39E+00	4.44E-01	5.23E+01	4.09E-01	7.44E+01	5.97E-03
BRSD-8 (6-12")	1.32E-01	1.32E-01	1.39E-01	2.78E+01	3.66E+00	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	2.00E+02	7.10E-01	1.00E+00	2.39E+00	1.83E+00	5.23E+01	4.09E-01	7.44E+01	2.46E-02
UM-500S-500E (6-12")	1.32E-01	1.32E-01	1.39E-01	1.14E+01	1.50E+00	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	8.20E+01	2.91E-01	1.00E+00	2.39E+00	7.49E-01	5.23E+01	4.09E-01	7.44E+01	1.01E-02
BRSD-9 (6-12")	1.32E-01	1.32E-01	1.39E-01	1.17E+01	1.54E+00	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	8.41E+01	2.99E-01	1.00E+00	2.39E+00	7.68E-01	5.23E+01	4.09E-01	7.44E+01	1.03E-02
BRSD-10 (6-12")	1.32E-01	1.32E-01	1.39E-01	1.35E+02	1.78E+01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	9.71E+02	3.45E+00	1.00E+00	2.39E+00	8.87E+00	5.23E+01	4.09E-01	7.44E+01	1.19E-01
BRSD-11 (6-12")	1.32E-01	1.32E-01	1.39E-01	2.06E+01	2.71E+00	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.48E+02	5.26E-01	1.00E+00	2.39E+00	1.35E+00	5.23E+01	4.09E-01	7.44E+01	1.82E-02
Middle Marsh (0-2")																						**Maximum HQ (Western Upper Marsh, 6-12")**	**1.33E-01**
MMSD-201 (0-2")	1.32E-01	1.32E-01	1.39E-01	6.05E+01	7.95E+00	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	4.35E+02	1.54E+00	1.00E+00	2.39E+00	3.97E+00	5.23E+01	4.09E-01	7.44E+01	5.34E-02
MMSD-202 (0-2")	1.32E-01	1.32E-01	1.39E-01	6.09E+01	8.01E+00	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	4.38E+02	1.56E+00	1.00E+00	2.39E+00	4.00E+00	5.23E+01	4.09E-01	7.44E+01	5.38E-02
Middle Marsh (2-6")																						**Maximum HQ (Middle Marsh, 0-2")**	**5.38E-02**
MMSD-201 (2-6")	1.32E-01	1.32E-01	1.39E-01	8.34E+01	1.10E+01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	6.00E+02	2.13E+00	1.00E+00	2.39E+00	5.48E+00	5.23E+01	4.09E-01	7.44E+01	7.37E-02
MMSD-202 (2-6")	1.32E-01	1.32E-01	1.39E-01	7.17E+01	9.44E+00	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	5.16E+02	1.83E+00	1.00E+00	2.39E+00	4.71E+00	5.23E+01	4.09E-01	7.44E+01	6.34E-02
Middle Marsh (6-12")																						**Maximum HQ (Middle Marsh, 2-6")**	**7.37E-02**
MMSD-201 (6-12")	1.32E-01	1.32E-01	1.39E-01	1.01E+02	1.33E+01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	7.26E+02	2.58E+00	1.00E+00	2.39E+00	6.63E+00	5.23E+01	4.09E-01	7.44E+01	8.92E-02
MMSD-202 (6-12")	1.32E-01	1.32E-01	1.39E-01	4.06E+01	5.34E+00	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	2.92E+02	1.04E+00	1.00E+00	2.39E+00	2.67E+00	5.23E+01	4.09E-01	7.44E+01	3.59E-02
Lower Marsh (0-2")																						**Maximum HQ (Middle Marsh, 6-12")**	**8.92E-02**
LMSD-201 (0-2")	1.32E-01	1.32E-01	1.39E-01	1.14E+01	1.49E+00	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	8.17E+01	2.90E-01	1.00E+00	2.39E+00	7.46E-01	5.23E+01	4.09E-01	7.44E+01	1.00E-02
LMSD-202 (0-2")	1.32E-01	1.32E-01	1.39E-01	9.01E+00	1.18E+00	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	6.48E+01	2.30E-01	1.00E+00	2.39E+00	5.92E-01	5.23E+01	4.09E-01	7.44E+01	7.96E-03
LMSD-203 (0-2")	1.32E-01	1.32E-01	1.39E-01	3.99E+01	5.25E+00	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	2.87E+02	1.02E+00	1.00E+00	2.39E+00	2.62E+00	5.23E+01	4.09E-01	7.44E+01	3.53E-02
LMSD-204 (0-2")	1.32E-01	1.32E-01	1.39E-01	3.11E+01	4.10E+00	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	2.24E+02	7.95E-01	1.00E+00	2.39E+00	2.05E+00	5.23E+01	4.09E-01	7.44E+01	2.75E-02
Lower Marsh (2-6")																						**Maximum HQ (Lower Marsh, 0-2")**	**3.53E-02**
LMSD-201 (2-6")	1.32E-01	1.32E-01	1.39E-01	1.12E+01	1.48E+00	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	8.09E+01	2.87E-01	1.00E+00	2.39E+00	7.39E-01	5.23E+01	4.09E-01	7.44E+01	9.94E-03
LMSD-202 (2-6")	1.32E-01	1.32E-01	1.39E-01	6.67E+00	8.78E-01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	4.80E+01	1.70E-01	1.00E+00	2.39E+00	4.39E-01	5.23E+01	4.09E-01	7.44E+01	5.90E-03
LMSD-203 (2-6")	1.32E-01	1.32E-01	1.39E-01	3.96E+01	5.21E+00	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	2.85E+02	1.01E+00	1.00E+00	2.39E+00	2.60E+00	5.23E+01	4.09E-01	7.44E+01	3.50E-02
LMSD-204 (2-6")	1.32E-01	1.32E-01	1.39E-01	3.16E+01	4.15E+00	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	2.27E+02	8.06E-01	1.00E+00	2.39E+00	2.07E+00	5.23E+01	4.09E-01	7.44E+01	2.79E-02

TABLE C-12DB: COPPER DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 12 - MARSH, WETLAND RECEPTORS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **118.73**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Great Blue Heron (Carnivorous Birds)																							
Lower Marsh (6-12")																						**Maximum HQ (Lower Marsh, 2-6")**	**3.50E-02**
LMSD-201 (6-12")	1.32E-01	1.32E-01	1.39E-01	1.17E+01	1.54E+00	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	8.44E+01	3.00E-01	1.00E+00	2.39E+00	7.71E-01	5.23E+01	4.09E-01	7.44E+01	1.04E-02
LMSD-202 (6-12")	1.32E-01	1.32E-01	1.39E-01	7.26E+00	9.54E-01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	5.22E+01	1.85E-01	1.00E+00	2.39E+00	4.77E-01	5.23E+01	4.09E-01	7.44E+01	6.41E-03
LMSD-203 (6-12")	1.32E-01	1.32E-01	1.39E-01	5.00E+01	6.58E+00	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	3.60E+02	1.28E+00	1.00E+00	2.39E+00	3.29E+00	5.23E+01	4.09E-01	7.44E+01	4.42E-02
LMSD-204 (6-12")	1.32E-01	1.32E-01	1.39E-01	3.14E+01	4.13E+00	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	2.26E+02	8.03E-01	1.00E+00	2.39E+00	2.06E+00	5.23E+01	4.09E-01	7.44E+01	2.78E-02
																						Maximum HQ (Lower Marsh, 6-12")	**4.42E-02**
Mallard (Omnivorous Birds)																							
Reference Sites																							
BRSD-5 (0-2")	7.94E-02	NA	NA	NA	NA	5.00E-02	1.42E+00	5.58E+01	2.79E+00	2.94E-02	1.26E+01	4.92E+02	1.44E+01	2.62E-03	3.92E+01	1.03E-01	3.85E-01	1.14E+00	5.85E+00	5.23E+01	4.09E-01	6.42E+01	9.11E-02
BRSD-5 (2-6")	7.94E-02	NA	NA	NA	NA	5.00E-02	1.42E+00	5.94E+01	2.97E+00	2.94E-02	1.26E+01	5.24E+02	1.54E+01	2.62E-03	4.17E+01	1.09E-01	3.85E-01	1.14E+00	6.22E+00	5.23E+01	4.09E-01	6.42E+01	9.69E-02
BRSD-5 (6-12")	7.94E-02	NA	NA	NA	NA	5.00E-02	1.42E+00	6.45E+01	3.22E+00	2.94E-02	1.26E+01	5.69E+02	1.67E+01	2.62E-03	4.53E+01	1.19E-01	3.85E-01	1.14E+00	6.76E+00	5.23E+01	4.09E-01	6.42E+01	1.05E-01
PGBG-1 (0-2")	7.94E-02	NA	NA	NA	NA	5.00E-02	1.42E+00	4.94E+01	2.47E+00	2.94E-02	1.26E+01	4.36E+02	1.28E+01	2.62E-03	3.47E+01	9.09E-02	3.85E-01	1.14E+00	5.18E+00	5.23E+01	4.09E-01	6.42E+01	8.07E-02
PGBG-1 (2-6")	7.94E-02	NA	NA	NA	NA	5.00E-02	1.42E+00	5.27E+01	2.63E+00	2.94E-02	1.26E+01	4.65E+02	1.36E+01	2.62E-03	3.70E+01	9.69E-02	3.85E-01	1.14E+00	5.52E+00	5.23E+01	4.09E-01	6.42E+01	8.60E-02
PGBG-1 (6-12")	7.94E-02	NA	NA	NA	NA	5.00E-02	1.42E+00	3.13E+01	1.57E+00	2.94E-02	1.26E+01	2.76E+02	8.11E+00	2.62E-03	2.20E+01	5.76E-02	3.85E-01	1.14E+00	3.28E+00	5.23E+01	4.09E-01	6.42E+01	5.11E-02
PGBG-2 (0-2")	7.94E-02	NA	NA	NA	NA	5.00E-02	1.42E+00	7.40E+01	3.70E+00	2.94E-02	1.26E+01	6.53E+02	1.92E+01	2.62E-03	5.20E+01	1.36E-01	3.85E-01	1.14E+00	7.76E+00	5.23E+01	4.09E-01	6.42E+01	1.21E-01
PGBG-2 (2-6")	7.94E-02	NA	NA	NA	NA	5.00E-02	1.42E+00	7.83E+01	3.91E+00	2.94E-02	1.26E+01	6.90E+02	2.03E+01	2.62E-03	5.50E+01	1.44E-01	3.85E-01	1.14E+00	8.21E+00	5.23E+01	4.09E-01	6.42E+01	1.28E-01
PGBG-2 (6-12")	7.94E-02	NA	NA	NA	NA	5.00E-02	1.42E+00	9.60E+01	4.80E+00	2.94E-02	1.26E+01	8.46E+02	2.48E+01	2.62E-03	6.74E+01	1.77E-01	3.85E-01	1.14E+00	1.01E+01	5.23E+01	4.09E-01	6.42E+01	1.57E-01
Eastern Upper Marsh (0-2")																						**Minimum HQ (Reference Sites)**	**5.11E-02**
UM-1000S-3500E (0-2")	7.94E-02	NA	NA	NA	NA	5.00E-02	3.30E-01	7.30E+01	3.65E+00	2.94E-02	1.44E+01	3.18E+03	9.32E+01	2.62E-03	2.21E+02	5.79E-01	3.85E-01	1.14E+00	3.29E+01	5.23E+01	4.09E-01	6.42E+01	5.12E-01
BRSD-15 (0-2")	7.94E-02	NA	NA	NA	NA	5.00E-02	3.30E-01	2.95E+01	1.47E+00	2.94E-02	1.44E+01	1.28E+03	3.76E+01	2.62E-03	8.92E+01	2.34E-01	3.85E-01	1.14E+00	1.33E+01	5.23E+01	4.09E-01	6.42E+01	2.07E-01
BRSD-4 (0-2")	7.94E-02	NA	NA	NA	NA	5.00E-02	3.30E-01	2.06E+01	1.03E+00	2.94E-02	1.44E+01	8.95E+02	2.63E+01	2.62E-03	6.23E+01	1.63E-01	3.85E-01	1.14E+00	9.27E+00	5.23E+01	4.09E-01	6.42E+01	1.44E-01
UM-750S-3500E (0-2")	7.94E-02	NA	NA	NA	NA	5.00E-02	3.30E-01	2.95E+02	1.48E+01	2.94E-02	1.44E+01	1.28E+04	3.77E+02	2.62E-03	8.94E+02	2.34E+00	3.85E-01	1.14E+00	1.33E+02	5.23E+01	4.09E-01	6.42E+01	2.07E+00
BRSD-16 (0-2")	7.94E-02	NA	NA	NA	NA	5.00E-02	3.30E-01	1.23E+02	6.13E+00	2.94E-02	1.44E+01	5.33E+03	1.57E+02	2.62E-03	3.71E+02	9.72E-01	3.85E-01	1.14E+00	5.52E+01	5.23E+01	4.09E-01	6.42E+01	8.60E-01
UM-750S-3000E (0-2")	7.94E-02	NA	NA	NA	NA	5.00E-02	3.30E-01	1.34E+02	6.69E+00	2.94E-02	1.44E+01	5.82E+03	1.71E+02	2.62E-03	4.05E+02	1.06E+00	3.85E-01	1.14E+00	6.02E+01	5.23E+01	4.09E-01	6.42E+01	9.38E-01
BRSD-3 (0-2")	7.94E-02	NA	NA	NA	NA	5.00E-02	3.30E-01	3.70E+02	1.85E+01	2.94E-02	1.44E+01	1.61E+04	4.72E+02	2.62E-03	1.12E+03	2.93E+00	3.85E-01	1.14E+00	1.67E+02	5.23E+01	4.09E-01	6.42E+01	2.60E+00
UM-500S-3250E (0-2")	7.94E-02	NA	NA	NA	NA	5.00E-02	3.30E-01	1.74E+02	8.72E+00	2.94E-02	1.44E+01	7.59E+03	2.23E+02	2.62E-03	5.28E+02	1.38E+00	3.85E-01	1.14E+00	7.85E+01	5.23E+01	4.09E-01	6.42E+01	1.22E+00
UM-500S-3000E (0-2")	7.94E-02	NA	NA	NA	NA	5.00E-02	3.30E-01	1.45E+02	7.23E+00	2.94E-02	1.44E+01	6.29E+03	1.85E+02	2.62E-03	4.38E+02	1.15E+00	3.85E-01	1.14E+00	6.51E+01	5.23E+01	4.09E-01	6.42E+01	1.01E+00
UM-500S-2750E (0-2")	7.94E-02	NA	NA	NA	NA	5.00E-02	3.30E-01	1.66E+02	8.32E+00	2.94E-02	1.44E+01	7.24E+03	2.13E+02	2.62E-03	5.04E+02	1.32E+00	3.85E-01	1.14E+00	7.50E+01	5.23E+01	4.09E-01	6.42E+01	1.17E+00
BRSD-25 (0-2")	7.94E-02	NA	NA	NA	NA	5.00E-02	3.30E-01	8.75E+01	4.38E+00	2.94E-02	1.44E+01	3.81E+03	1.12E+02	2.62E-03	2.65E+02	6.94E-01	3.85E-01	1.14E+00	3.94E+01	5.23E+01	4.09E-01	6.42E+01	6.14E-01
UM-250S-3000E (0-2")	7.94E-02	NA	NA	NA	NA	5.00E-02	3.30E-01	3.21E+02	1.60E+01	2.94E-02	1.44E+01	1.40E+04	4.10E+02	2.62E-03	9.71E+02	2.54E+00	3.85E-01	1.14E+00	1.44E+02	5.23E+01	4.09E-01	6.42E+01	2.25E+00
UM-250S-3250E (0-2")	7.94E-02	NA	NA	NA	NA	5.00E-02	3.30E-01	1.04E+02	5.20E+00	2.94E-02	1.44E+01	4.53E+03	1.33E+02	2.62E-03	3.15E+02	8.25E-01	3.85E-01	1.14E+00	4.68E+01	5.23E+01	4.09E-01	6.42E+01	7.30E-01
BRSD-24 (0-2")	7.94E-02	NA	NA	NA	NA	5.00E-02	3.30E-01	1.29E+02	6.47E+00	2.94E-02	1.44E+01	5.63E+03	1.65E+02	2.62E-03	3.92E+02	1.03E+00	3.85E-01	1.14E+00	5.83E+01	5.23E+01	4.09E-01	6.42E+01	9.08E-01
UM-250S-2750E (0-2")	7.94E-02	NA	NA	NA	NA	5.00E-02	3.30E-01	9.02E+01	4.51E+00	2.94E-02	1.44E+01	3.92E+03	1.15E+02	2.62E-03	2.73E+02	7.15E-01	3.85E-01	1.14E+00	4.06E+01	5.23E+01	4.09E-01	6.42E+01	6.33E-01
UM-250S-2500E (0-2")	7.94E-02	NA	NA	NA	NA	5.00E-02	3.30E-01	6.74E+01	3.37E+00	2.94E-02	1.44E+01	2.93E+03	8.61E+01	2.62E-03	2.04E+02	5.34E-01	3.85E-01	1.14E+00	3.03E+01	5.23E+01	4.09E-01	6.42E+01	4.73E-01
UM-0N-2500E (0-2")	7.94E-02	NA	NA	NA	NA	5.00E-02	3.30E-01	1.68E+02	8.42E+00	2.94E-02	1.44E+01	7.33E+03	2.15E+02	2.62E-03	5.10E+02	1.34E+00	3.85E-01	1.14E+00	7.58E+01	5.23E+01	4.09E-01	6.42E+01	1.18E+00
UM-0N-250E (0-2")	7.94E-02	NA	NA	NA	NA	5.00E-02	3.30E-01	1.93E+02	9.66E+00	2.94E-02	1.44E+01	8.40E+03	2.47E+02	2.62E-03	5.85E+02	1.53E+00	3.85E-01	1.14E+00	8.70E+01	5.23E+01	4.09E-01	6.42E+01	1.36E+00
BRSD-2 (0-2")	7.94E-02	NA	NA	NA	NA	5.00E-02	3.30E-01	1.13E+02	5.66E+00	2.94E-02	1.44E+01	4.93E+03	1.45E+02	2.62E-03	3.43E+02	8.98E-01	3.85E-01	1.14E+00	5.10E+01	5.23E+01	4.09E-01	6.42E+01	7.95E-01
UM-500N-2500E (0-2")	7.94E-02	NA	NA	NA	NA	5.00E-02	3.30E-01	1.96E+01	9.79E-01	2.94E-02	1.44E+01	8.52E+02	2.50E+01	2.62E-03	5.93E+01	1.55E-01	3.85E-01	1.14E+00	8.82E+00	5.23E+01	4.09E-01	6.42E+01	1.37E-01
UM-250N-2500E (0-2")	7.94E-02	NA	NA	NA	NA	5.00E-02	3.30E-01	1.83E+02	9.17E+00	2.94E-02	1.44E+01	7.97E+03	2.34E+02	2.62E-03	5.55E+02	1.45E+00	3.85E-01	1.14E+00	8.25E+01	5.23E+01	4.09E-01	6.42E+01	1.29E+00
UM-250N-2250E (0-2")	7.94E-02	NA	NA	NA	NA	5.00E-02	3.30E-01	1.20E+02	6.01E+00	2.94E-02	1.44E+01	5.23E+03	1.54E+02	2.62E-03	3.64E+02	9.53E-01	3.85E-01	1.14E+00	5.41E+01	5.23E+01	4.09E-01	6.42E+01	8.43E-01
Western Upper Marsh (0-2")																						**Maximum HQ (Eastern Upper Marsh, 0-2")**	**2.60E+00**
UM-500S-2500E (0-2")	7.94E-02	NA	NA	NA	NA	5.00E-02	1.96E-01	7.31E+01	3.66E+00	2.94E-02	6.28E+00	2.34E+03	6.88E+01	2.62E-03	3.73E+02	9.77E-01	3.85E-01	1.14E+00	2.48E+01	5.23E+01	4.09E-01	6.42E+01	3.86E-01
UM-0N-2000E (0-2")	7.94E-02	NA	NA	NA	NA	5.00E-02	1.96E-01	1.54E+02	7.72E+00	2.94E-02	6.28E+00	4.95E+03	1.45E+02	2.62E-03	7.88E+02	2.06E+00	3.85E-01	1.14E+00	5.23E+01	5.23E+01	4.09E-01	6.42E+01	8.15E-01
UM-500S-2000E (0-2")	7.94E-02	NA	NA	NA	NA	5.00E-02	1.96E-01	3.59E+01	1.79E+00	2.94E-02	6.28E+00	1.15E+03	3.38E+01	2.62E-03	1.83E+02	4.79E-01	3.85E-01	1.14E+00	1.22E+01	5.23E+01	4.09E-01	6.42E+01	1.89E-01
UM-250N-1750E (0-2")	7.94E-02	NA	NA	NA	NA	5.00E-02	1.96E-01	3.00E+01	1.50E+00	2.94E-02	6.28E+00	9.62E+02	2.82E+01	2.62E-03	1.53E+02	4.01E-01	3.85E-01	1.14E+00	1.02E+01	5.23E+01	4.09E-01	6.42E+01	1.58E-01
UM-0N-1500E (0-2")	7.94E-02	NA	NA	NA	NA	5.00E-02	1.96E-01	1.78E+01	8.90E-01	2.94E-02	6.28E+00	5.71E+02	1.68E+01	2.62E-03	9.08E+01	2.38E-01	3.85E-01	1.14E+00	6.03E+00	5.23E+01	4.09E-01	6.42E+01	9.40E-02
UM-250S-1500E (0-2")	7.94E-02	NA	NA	NA	NA	5.00E-02	1.96E-01	1.12E+02	5.60E+00	2.94E-02	6.28E+00	3.59E+03	1.05E+02	2.62E-03	5.71E+02	1.50E+00	3.85E-01	1.14E+00	3.79E+01	5.23E+01	4.09E-01	6.42E+01	5.91E-01
UM-250S-1250E (0-2")	7.94E-02	NA	NA	NA	NA	5.00E-02	1.96E-01	1.79E+01	8.93E-01	2.94E-02	6.28E+00	5.73E+02	1.68E+01	2.62E-03	9.11E+01	2.39E-01	3.85E-01	1.14E+00	6.05E+00	5.23E+01	4.09E-01	6.42E+01	9.43E-02
BRSD-6 (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-1000E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-750E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-500E (0-2")	7.94E-02	NA	NA	NA	NA	5.00E-02	1.96E-01	8.82E+01	4.41E+00	2.94E-02	6.28E+00	2.83E+03	8.30E+01	2.62E-03	4.50E+02	1.18E+00	3.85E-01	1.14E+00	2.99E+01	5.23E+01	4.09E-01	6.42E+01	4.66E-01
UM-250S-500E (0-2")	7.94E-02	NA	NA	NA	NA	5.00E-02	1.96E-01	1.58E+01	7.92E-01	2.94E-02	6.28E+00	5.08E+02	1.49E+01	2.62E-03	8.08E+01	2.12E-01	3.85E-01	1.14E+00	5.37E+00	5.23E+01	4.09E-01	6.42E+01	8.36E-02
UM-250S-250E (0-2")	7.94E-02	NA	NA	NA	NA	5.00E-02	1.96E-01	4.70E+01	2.35E+00	2.94E-02	6.28E+00	1.51E+03	4.43E+01	2.62E-03	2.40E+02	6.29E-01	3.85E-01	1.14E+00	1.59E+01	5.23E+01	4.09E-01	6.42E+01	2.48E-01
BRSD-7 (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-8 (0-2")	7.94E-02	NA	NA	NA	NA	5.00E-02	1.96E-01	3.80E+01	1.90E+00	2.94E-02	6.28E+00	1.22E+03	3.58E+01	2.62E-03	1.94E+02	5.08E-01	3.85E-01	1.14E+00	1.29E+01	5.23E+01	4.09E-01	6.42E+01	2.01E-01

TABLE C-12DB: COPPER DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 12 - MARSH, WETLAND RECEPTORS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **118.73**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Mallard (Omnivorous Birds)																							
UM-500S-500E (0-2")	7.94E-02	NA	NA	NA	NA	5.00E-02	1.96E-01	1.89E+01	9.44E-01	2.94E-02	6.28E+00	6.05E+02	1.78E+01	2.62E-03	9.63E+01	2.52E-01	3.85E-01	1.14E+00	6.40E+00	5.23E+01	4.09E-01	6.42E+01	9.97E-02
BRSD-9 (0-2")	7.94E-02	NA	NA	NA	NA	5.00E-02	1.96E-01	1.64E+01	8.22E-01	2.94E-02	6.28E+00	5.27E+02	1.55E+01	2.62E-03	8.39E+01	2.20E-01	3.85E-01	1.14E+00	5.57E+00	5.23E+01	4.09E-01	6.42E+01	8.68E-02
BRSD-10 (0-2")	7.94E-02	NA	NA	NA	NA	5.00E-02	1.96E-01	1.28E+02	6.38E+00	2.94E-02	6.28E+00	4.09E+03	1.20E+02	2.62E-03	6.51E+02	1.70E+00	3.85E-01	1.14E+00	4.32E+01	5.23E+01	4.09E-01	6.42E+01	6.74E-01
BRSD-11 (0-2")	7.94E-02	NA	NA	NA	NA	5.00E-02	1.96E-01	2.61E+01	1.30E+00	2.94E-02	6.28E+00	8.36E+02	2.45E+01	2.62E-03	1.33E+02	3.48E-01	3.85E-01	1.14E+00	8.83E+00	5.23E+01	4.09E-01	6.42E+01	1.38E-01
Eastern Upper Marsh (2-6")																						**Maximum HQ (Western Upper Marsh, 0-2")**	**8.15E-01**
UM-1000S-3500E (2-6")	7.94E-02	NA	NA	NA	NA	5.00E-02	3.30E-01	3.50E+01	1.75E+00	2.94E-02	1.44E+01	1.52E+03	4.47E+01	2.62E-03	1.06E+02	2.78E-01	3.85E-01	1.14E+00	1.58E+01	5.23E+01	4.09E-01	6.42E+01	2.46E-01
BRSD-15 (2-6")	7.94E-02	NA	NA	NA	NA	5.00E-02	3.30E-01	3.22E+01	1.61E+00	2.94E-02	1.44E+01	1.40E+03	4.11E+01	2.62E-03	9.74E+01	2.55E-01	3.85E-01	1.14E+00	1.45E+01	5.23E+01	4.09E-01	6.42E+01	2.26E-01
BRSD-4 (2-6")	7.94E-02	NA	NA	NA	NA	5.00E-02	3.30E-01	4.26E+01	2.13E+00	2.94E-02	1.44E+01	1.85E+03	5.44E+01	2.62E-03	1.29E+02	3.38E-01	3.85E-01	1.14E+00	1.92E+01	5.23E+01	4.09E-01	6.42E+01	2.99E-01
UM-750S-3500E (2-6")	7.94E-02	NA	NA	NA	NA	5.00E-02	3.30E-01	1.13E+02	5.65E+00	2.94E-02	1.44E+01	4.91E+03	1.44E+02	2.62E-03	3.42E+02	8.96E-01	3.85E-01	1.14E+00	5.09E+01	5.23E+01	4.09E-01	6.42E+01	7.92E-01
BRSD-16 (2-6")	7.94E-02	NA	NA	NA	NA	5.00E-02	3.30E-01	3.70E+02	1.85E+01	2.94E-02	1.44E+01	1.61E+04	4.72E+02	2.62E-03	1.12E+03	2.93E+00	3.85E-01	1.14E+00	1.67E+02	5.23E+01	4.09E-01	6.42E+01	2.60E+00
UM-750S-3000E (2-6")	7.94E-02	NA	NA	NA	NA	5.00E-02	3.30E-01	1.17E+02	5.85E+00	2.94E-02	1.44E+01	5.09E+03	1.49E+02	2.62E-03	3.54E+02	9.27E-01	3.85E-01	1.14E+00	5.26E+01	5.23E+01	4.09E-01	6.42E+01	8.20E-01
BRSD-3 (2-6")	7.94E-02	NA	NA	NA	NA	5.00E-02	3.30E-01	4.69E+02	2.35E+01	2.94E-02	1.44E+01	2.04E+04	5.99E+02	2.62E-03	1.42E+03	3.72E+00	3.85E-01	1.14E+00	2.11E+02	5.23E+01	4.09E-01	6.42E+01	3.29E+00
UM-500S-3250E (2-6")	7.94E-02	NA	NA	NA	NA	5.00E-02	3.30E-01	9.45E+01	4.72E+00	2.94E-02	1.44E+01	4.11E+03	1.21E+02	2.62E-03	2.86E+02	7.49E-01	3.85E-01	1.14E+00	4.25E+01	5.23E+01	4.09E-01	6.42E+01	6.63E-01
UM-500S-3000E (2-6")	7.94E-02	NA	NA	NA	NA	5.00E-02	3.30E-01	2.71E+01	1.35E+00	2.94E-02	1.44E+01	1.18E+03	3.46E+01	2.62E-03	8.20E+01	2.15E-01	3.85E-01	1.14E+00	1.22E+01	5.23E+01	4.09E-01	6.42E+01	1.90E-01
UM-500S-2750E (2-6")	7.94E-02	NA	NA	NA	NA	5.00E-02	3.30E-01	1.05E+02	5.25E+00	2.94E-02	1.44E+01	4.57E+03	1.34E+02	2.62E-03	3.18E+02	8.33E-01	3.85E-01	1.14E+00	4.73E+01	5.23E+01	4.09E-01	6.42E+01	7.37E-01
BRSD-25 (2-6")	7.94E-02	NA	NA	NA	NA	5.00E-02	3.30E-01	1.33E+02	6.64E+00	2.94E-02	1.44E+01	5.78E+03	1.70E+02	2.62E-03	4.02E+02	1.05E+00	3.85E-01	1.14E+00	5.98E+01	5.23E+01	4.09E-01	6.42E+01	9.31E-01
UM-250S-3000E (2-6")	7.94E-02	NA	NA	NA	NA	5.00E-02	3.30E-01	2.65E+02	1.32E+01	2.94E-02	1.44E+01	1.15E+04	3.38E+02	2.62E-03	8.01E+02	2.10E+00	3.85E-01	1.14E+00	1.19E+02	5.23E+01	4.09E-01	6.42E+01	1.86E+00
UM-250S-3250E (2-6")	7.94E-02	NA	NA	NA	NA	5.00E-02	3.30E-01	2.70E+01	1.35E+00	2.94E-02	1.44E+01	1.18E+03	3.45E+01	2.62E-03	8.18E+01	2.14E-01	3.85E-01	1.14E+00	1.22E+01	5.23E+01	4.09E-01	6.42E+01	1.90E-01
BRSD-24 (2-6")	7.94E-02	NA	NA	NA	NA	5.00E-02	3.30E-01	2.44E+02	1.22E+01	2.94E-02	1.44E+01	1.06E+04	3.12E+02	2.62E-03	7.40E+02	1.94E+00	3.85E-01	1.14E+00	1.10E+02	5.23E+01	4.09E-01	6.42E+01	1.71E+00
UM-250S-2750E (2-6")	7.94E-02	NA	NA	NA	NA	5.00E-02	3.30E-01	1.46E+02	7.30E+00	2.94E-02	1.44E+01	6.35E+03	1.86E+02	2.62E-03	4.42E+02	1.16E+00	3.85E-01	1.14E+00	6.57E+01	5.23E+01	4.09E-01	6.42E+01	1.02E+00
UM-0N-2500E (2-6")	7.94E-02	NA	NA	NA	NA	5.00E-02	3.30E-01	8.65E+01	4.33E+00	2.94E-02	1.44E+01	3.76E+03	1.11E+02	2.62E-03	2.62E+02	6.86E-01	3.85E-01	1.14E+00	3.90E+01	5.23E+01	4.09E-01	6.42E+01	6.07E-01
BRSD-2 (2-6")	7.94E-02	NA	NA	NA	NA	5.00E-02	3.30E-01	1.35E+02	6.75E+00	2.94E-02	1.44E+01	5.88E+03	1.73E+02	2.62E-03	4.09E+02	1.07E+00	3.85E-01	1.14E+00	6.08E+01	5.23E+01	4.09E-01	6.42E+01	9.48E-01
UM-500N-2500E (2-6")	7.94E-02	NA	NA	NA	NA	5.00E-02	3.30E-01	2.45E+01	1.23E+00	2.94E-02	1.44E+01	1.07E+03	3.13E+01	2.62E-03	7.43E+01	1.95E-01	3.85E-01	1.14E+00	1.11E+01	5.23E+01	4.09E-01	6.42E+01	1.72E-01
UM-250N-2500E (2-6")	7.94E-02	NA	NA	NA	NA	5.00E-02	3.30E-01	1.69E+02	8.46E+00	2.94E-02	1.44E+01	7.36E+03	2.16E+02	2.62E-03	5.12E+02	1.34E+00	3.85E-01	1.14E+00	7.61E+01	5.23E+01	4.09E-01	6.42E+01	1.19E+00
UM-250N-2250E (2-6")	7.94E-02	NA	NA	NA	NA	5.00E-02	3.30E-01	4.72E+01	2.36E+00	2.94E-02	1.44E+01	2.05E+03	6.03E+01	2.62E-03	1.43E+02	3.74E-01	3.85E-01	1.14E+00	2.13E+01	5.23E+01	4.09E-01	6.42E+01	3.31E-01
Western Upper Marsh (2-6")																						**Maximum HQ (Eastern Upper Marsh, 2-6")**	**3.29E+00**
UM-500S-2500E (2-6")	7.94E-02	NA	NA	NA	NA	5.00E-02	1.96E-01	6.96E+01	3.48E+00	2.94E-02	6.28E+00	2.23E+03	6.55E+01	2.62E-03	3.55E+02	9.30E-01	3.85E-01	1.14E+00	2.36E+01	5.23E+01	4.09E-01	6.42E+01	3.67E-01
UM-0N-2000E (2-6")	7.94E-02	NA	NA	NA	NA	5.00E-02	1.96E-01	1.39E+02	6.97E+00	2.94E-02	6.28E+00	4.47E+03	1.31E+02	2.62E-03	7.11E+02	1.86E+00	3.85E-01	1.14E+00	4.72E+01	5.23E+01	4.09E-01	6.42E+01	7.36E-01
UM-500S-2000E (2-6")	7.94E-02	NA	NA	NA	NA	5.00E-02	1.96E-01	4.65E+01	2.32E+00	2.94E-02	6.28E+00	1.49E+03	4.37E+01	2.62E-03	2.37E+02	6.21E-01	3.85E-01	1.14E+00	1.57E+01	5.23E+01	4.09E-01	6.42E+01	2.45E-01
UM-250N-1750E (2-6")	7.94E-02	NA	NA	NA	NA	5.00E-02	1.96E-01	2.12E+01	1.06E+00	2.94E-02	6.28E+00	6.79E+02	1.99E+01	2.62E-03	1.08E+02	2.83E-01	3.85E-01	1.14E+00	7.17E+00	5.23E+01	4.09E-01	6.42E+01	1.12E-01
UM-0N-1500E (2-6")	7.94E-02	NA	NA	NA	NA	5.00E-02	1.96E-01	2.65E+01	1.32E+00	2.94E-02	6.28E+00	8.48E+02	2.49E+01	2.62E-03	1.35E+02	3.54E-01	3.85E-01	1.14E+00	8.97E+00	5.23E+01	4.09E-01	6.42E+01	1.40E-01
UM-250S-1500E (2-6")	7.94E-02	NA	NA	NA	NA	5.00E-02	1.96E-01	1.66E+02	8.32E+00	2.94E-02	6.28E+00	5.34E+03	1.57E+02	2.62E-03	8.49E+02	2.22E+00	3.85E-01	1.14E+00	5.64E+01	5.23E+01	4.09E-01	6.42E+01	8.79E-01
UM-250S-1250E (2-6")	7.94E-02	NA	NA	NA	NA	5.00E-02	1.96E-01	1.56E+01	7.78E-01	2.94E-02	6.28E+00	4.99E+02	1.47E+01	2.62E-03	7.94E+01	2.08E-01	3.85E-01	1.14E+00	5.27E+00	5.23E+01	4.09E-01	6.42E+01	8.22E-02
BRSD-6 (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-1000E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-750E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-500E (2-6")	7.94E-02	NA	NA	NA	NA	5.00E-02	1.96E-01	5.41E+02	2.70E+01	2.94E-02	6.28E+00	1.73E+04	5.09E+02	2.62E-03	2.76E+03	7.23E+00	3.85E-01	1.14E+00	1.83E+02	5.23E+01	4.09E-01	6.42E+01	2.86E+00
UM-250S-500E (2-6")	7.94E-02	NA	NA	NA	NA	5.00E-02	1.96E-01	1.77E+01	8.84E-01	2.94E-02	6.28E+00	5.67E+02	1.66E+01	2.62E-03	9.02E+01	2.36E-01	3.85E-01	1.14E+00	5.99E+00	5.23E+01	4.09E-01	6.42E+01	9.33E-02
UM-0N-250E (2-6")	7.94E-02	NA	NA	NA	NA	5.00E-02	1.96E-01	5.92E+01	2.96E+00	2.94E-02	6.28E+00	1.90E+03	5.57E+01	2.62E-03	3.02E+02	7.91E-01	3.85E-01	1.14E+00	2.01E+01	5.23E+01	4.09E-01	6.42E+01	3.13E-01
UM-250S-250E (2-6")	7.94E-02	NA	NA	NA	NA	5.00E-02	1.96E-01	4.08E+01	2.04E+00	2.94E-02	6.28E+00	1.31E+03	3.84E+01	2.62E-03	2.08E+02	5.45E-01	3.85E-01	1.14E+00	1.38E+01	5.23E+01	4.09E-01	6.42E+01	2.15E-01
BRSD-7 (2-6")	7.94E-02	NA	NA	NA	NA	5.00E-02	1.96E-01	1.11E+01	5.54E-01	2.94E-02	6.28E+00	3.55E+02	1.04E+01	2.62E-03	5.65E+01	1.48E-01	3.85E-01	1.14E+00	3.75E+00	5.23E+01	4.09E-01	6.42E+01	5.85E-02
BRSD-8 (2-6")	7.94E-02	NA	NA	NA	NA	5.00E-02	1.96E-01	3.69E+01	1.84E+00	2.94E-02	6.28E+00	1.18E+03	3.47E+01	2.62E-03	1.88E+02	4.92E-01	3.85E-01	1.14E+00	1.25E+01	5.23E+01	4.09E-01	6.42E+01	1.95E-01
UM-500S-500E (2-6")	7.94E-02	NA	NA	NA	NA	5.00E-02	1.96E-01	1.73E+01	8.65E-01	2.94E-02	6.28E+00	5.55E+02	1.63E+01	2.62E-03	8.83E+01	2.31E-01	3.85E-01	1.14E+00	5.86E+00	5.23E+01	4.09E-01	6.42E+01	9.14E-02
BRSD-9 (2-6")	7.94E-02	NA	NA	NA	NA	5.00E-02	1.96E-01	1.04E+01	5.18E-01	2.94E-02	6.28E+00	3.32E+02	9.76E+00	2.62E-03	5.29E+01	1.39E-01	3.85E-01	1.14E+00	3.51E+00	5.23E+01	4.09E-01	6.42E+01	5.47E-02
BRSD-10 (2-6")	7.94E-02	NA	NA	NA	NA	5.00E-02	1.96E-01	1.35E+02	6.76E+00	2.94E-02	6.28E+00	4.34E+03	1.27E+02	2.62E-03	6.90E+02	1.81E+00	3.85E-01	1.14E+00	4.58E+01	5.23E+01	4.09E-01	6.42E+01	7.14E-01
BRSD-11 (2-6")	7.94E-02	NA	NA	NA	NA	5.00E-02	1.96E-01	3.02E+01	1.51E+00	2.94E-02	6.28E+00	9.68E+02	2.84E+01	2.62E-03	1.54E+02	4.03E-01	3.85E-01	1.14E+00	1.02E+01	5.23E+01	4.09E-01	6.42E+01	1.59E-01
Eastern Upper Marsh (6-12")																						**Maximum HQ (Western Upper Marsh, 2-6")**	**2.86E+00**
UM-1000S-3500E (6-12")	7.94E-02	NA	NA	NA	NA	5.00E-02	3.30E-01	2.86E+01	1.43E+00	2.94E-02	1.44E+01	1.24E+03	3.65E+01	2.62E-03	8.66E+01	2.27E-01	3.85E-01	1.14E+00	1.29E+01	5.23E+01	4.09E-01	6.42E+01	2.01E-01
BRSD-15 (6-12")	7.94E-02	NA	NA	NA	NA	5.00E-02	3.30E-01	3.23E+01	1.62E+00	2.94E-02	1.44E+01	1.41E+03	4.13E+01	2.62E-03	9.79E+01	2.56E-01	3.85E-01	1.14E+00	1.46E+01	5.23E+01	4.09E-01	6.42E+01	2.27E-01
BRSD-4 (6-12")	7.94E-02	NA	NA	NA	NA	5.00E-02	3.30E-01	3.06E+01	1.53E+00	2.94E-02	1.44E+01	1.33E+03	3.90E+01	2.62E-03	9.25E+01	2.42E-01	3.85E-01	1.14E+00	1.38E+01	5.23E+01	4.09E-01	6.42E+01	2.14E-01
UM-750S-3500E (6-12")	7.94E-02	NA	NA	NA	NA	5.00E-02	3.30E-01	1.35E+02	6.75E+00	2.94E-02	1.44E+01	5.88E+03	1.73E+02	2.62E-03	4.09E+02	1.07E+00	3.85E-01	1.14E+00	6.08E+01	5.23E+01	4.09E-01	6.42E+01	9.48E-01
BRSD-16 (6-12")	7.94E-02	NA	NA	NA	NA	5.00E-02	3.30E-01	1.88E+02	9.38E+00	2.94E-02	1.44E+01	8.16E+03	2.40E+02	2.62E-03	5.68E+02	1.49E+00	3.85E-01	1.14E+00	8.45E+01	5.23E+01	4.09E-01	6.42E+01	1.32E+00
UM-750S-3000E (6-12")	7.94E-02	NA	NA	NA	NA	5.00E-02	3.30E-01	1.13E+02	5.66E+00	2.94E-02	1.44E+01	4.93E+03	1.45E+02	2.62E-03	3.43E+02	8.98E-01	3.85E-01	1.14E+00	5.10E+01	5.23E+01	4.09E-01	6.42E+01	7.95E-01
BRSD-3 (6-12")	7.94E-02	NA	NA	NA	NA	5.00E-02	3.30E-01	4.10E+02	2.05E+01	2.94E-02	1.44E+01	1.78E+04	5.23E+02	2.62E-03	1.24E+03	3.25E+00	3.85E-01	1.14E+00	1.84E+02	5.23E+01	4.09E-01	6.42E+01	2.87E+00
UM-500S-3250E (6-12")	7.94E-02	NA	NA	NA	NA	5.00E-02	3.30E-01	7.07E+01	3.53E+00	2.94E-02	1.44E+01	3.07E+03	9.03E+01	2.62E-03	2.14E+02	5.60E-01	3.85E-01	1.14E+00	3.18E+01	5.23E+01	4.09E-01	6.42E+01	4.96E-01
UM-500S-3000E (6-12")	7.94E-02	NA	NA	NA	NA	5.00E-02	3.30E-01	2.93E+01	1.46E+00	2.94E-02	1.44E+01	1.27E+03	3.74E+01	2.62E-03	8.86E+01	2.32E-01	3.85E-01	1.14E+00	1.32E+01	5.23E+01	4.09E-01	6.42E+01	2.05E-01

TABLE C-12DB: COPPER DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 12 - MARSH, WETLAND RECEPTORS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **118.73**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Mallard (Omnivorous Birds)																							
UM-500S-2750E (6-12")	7.94E-02	NA	NA	NA	NA	5.00E-02	3.30E-01	9.58E+01	4.79E+00	2.94E-02	1.44E+01	4.17E+03	1.22E+02	2.62E-03	2.90E+02	7.59E-01	3.85E-01	1.14E+00	4.31E+01	5.23E+01	4.09E-01	6.42E+01	6.72E-01
BRSD-25 (6-12")	7.94E-02	NA	NA	NA	NA	5.00E-02	3.30E-01	6.31E+01	3.15E+00	2.94E-02	1.44E+01	2.74E+03	8.06E+01	2.62E-03	1.91E+02	5.00E-01	3.85E-01	1.14E+00	2.84E+01	5.23E+01	4.09E-01	6.42E+01	4.43E-01
UM-250S-3000E (6-12")	7.94E-02	NA	NA	NA	NA	5.00E-02	3.30E-01	2.41E+02	1.21E+01	2.94E-02	1.44E+01	1.05E+04	3.08E+02	2.62E-03	7.30E+02	1.91E+00	3.85E-01	1.14E+00	1.09E+02	5.23E+01	4.09E-01	6.42E+01	1.69E+00
UM-250S-3250E (6-12")	7.94E-02	NA	NA	NA	NA	5.00E-02	3.30E-01	2.87E+01	1.44E+00	2.94E-02	1.44E+01	1.25E+03	3.67E+01	2.62E-03	8.69E+01	2.28E-01	3.85E-01	1.14E+00	1.29E+01	5.23E+01	4.09E-01	6.42E+01	2.01E-01
BRSD-24 (6-12")	7.94E-02	NA	NA	NA	NA	5.00E-02	3.30E-01	1.83E+02	9.13E+00	2.94E-02	1.44E+01	7.95E+03	2.33E+02	2.62E-03	5.53E+02	1.45E+00	3.85E-01	1.14E+00	8.22E+01	5.23E+01	4.09E-01	6.42E+01	1.28E+00
UM-250S-2750E (6-12")	7.94E-02	NA	NA	NA	NA	5.00E-02	3.30E-01	1.70E+02	8.49E+00	2.94E-02	1.44E+01	7.38E+03	2.17E+02	2.62E-03	5.14E+02	1.35E+00	3.85E-01	1.14E+00	7.64E+01	5.23E+01	4.09E-01	6.42E+01	1.19E+00
UM-250S-2500E (6-12")	7.94E-02	NA	NA	NA	NA	5.00E-02	3.30E-01	4.86E+01	2.43E+00	2.94E-02	1.44E+01	2.11E+03	6.20E+01	2.62E-03	1.47E+02	3.85E-01	3.85E-01	1.14E+00	2.19E+01	5.23E+01	4.09E-01	6.42E+01	3.41E-01
BRSD-2 (6-12")	7.94E-02	NA	NA	NA	NA	5.00E-02	3.30E-01	3.03E+02	1.52E+01	2.94E-02	1.44E+01	1.32E+04	3.87E+02	2.62E-03	9.18E+02	2.40E+00	3.85E-01	1.14E+00	1.37E+02	5.23E+01	4.09E-01	6.42E+01	2.13E+00
UM-500N-2500E (6-12")	7.94E-02	NA	NA	NA	NA	5.00E-02	3.30E-01	1.08E+01	5.40E-01	2.94E-02	1.44E+01	4.70E+02	1.38E+01	2.62E-03	3.27E+01	8.56E-02	3.85E-01	1.14E+00	4.86E+00	5.23E+01	4.09E-01	6.42E+01	7.58E-02
UM-250N-2500E (6-12")	7.94E-02	NA	NA	NA	NA	5.00E-02	3.30E-01	1.24E+02	6.18E+00	2.94E-02	1.44E+01	5.37E+03	1.58E+02	2.62E-03	3.74E+02	9.79E-01	3.85E-01	1.14E+00	5.56E+01	5.23E+01	4.09E-01	6.42E+01	8.67E-01
UM-250N-2250E (6-12")	7.94E-02	NA	NA	NA	NA	5.00E-02	3.30E-01	5.95E+01	2.97E+00	2.94E-02	1.44E+01	2.59E+03	7.59E+01	2.62E-03	1.80E+02	4.71E-01	3.85E-01	1.14E+00	2.68E+01	5.23E+01	4.09E-01	6.42E+01	4.17E-01
Western Upper Marsh (6-12")																						**Maximum HQ (Eastern Upper Marsh, 6-12")**	**2.87E+00**
UM-500S-2500E (6-12")	7.94E-02	NA	NA	NA	NA	5.00E-02	1.96E-01	7.14E+01	3.57E+00	2.94E-02	6.28E+00	2.29E+03	6.72E+01	2.62E-03	3.64E+02	9.53E-01	3.85E-01	1.14E+00	2.42E+01	5.23E+01	4.09E-01	6.42E+01	3.77E-01
UM-0N-2000E (6-12")	7.94E-02	NA	NA	NA	NA	5.00E-02	1.96E-01	2.12E+02	1.06E+01	2.94E-02	6.28E+00	6.79E+03	1.99E+02	2.62E-03	1.08E+03	2.83E+00	3.85E-01	1.14E+00	7.17E+01	5.23E+01	4.09E-01	6.42E+01	1.12E+00
UM-500S-2000E (6-12")	7.94E-02	NA	NA	NA	NA	5.00E-02	1.96E-01	4.55E+01	2.27E+00	2.94E-02	6.28E+00	1.46E+03	4.28E+01	2.62E-03	2.32E+02	6.08E-01	3.85E-01	1.14E+00	1.54E+01	5.23E+01	4.09E-01	6.42E+01	2.40E-01
UM-250N-1750E (6-12")	7.94E-02	NA	NA	NA	NA	5.00E-02	1.96E-01	2.80E+01	1.40E+00	2.94E-02	6.28E+00	8.99E+02	2.64E+01	2.62E-03	1.43E+02	3.74E-01	3.85E-01	1.14E+00	9.50E+00	5.23E+01	4.09E-01	6.42E+01	1.48E-01
UM-0N-1500E (6-12")	7.94E-02	NA	NA	NA	NA	5.00E-02	1.96E-01	3.61E+01	1.80E+00	2.94E-02	6.28E+00	1.16E+03	3.40E+01	2.62E-03	1.84E+02	4.82E-01	3.85E-01	1.14E+00	1.22E+01	5.23E+01	4.09E-01	6.42E+01	1.90E-01
UM-250S-1500E (6-12")	7.94E-02	NA	NA	NA	NA	5.00E-02	1.96E-01	1.01E+02	5.03E+00	2.94E-02	6.28E+00	3.22E+03	9.47E+01	2.62E-03	5.13E+02	1.34E+00	3.85E-01	1.14E+00	3.41E+01	5.23E+01	4.09E-01	6.42E+01	5.31E-01
UM-250S-1250E (6-12")	7.94E-02	NA	NA	NA	NA	5.00E-02	1.96E-01	1.52E+01	7.59E-01	2.94E-02	6.28E+00	4.87E+02	1.43E+01	2.62E-03	7.75E+01	2.03E-01	3.85E-01	1.14E+00	5.15E+00	5.23E+01	4.09E-01	6.42E+01	8.02E-02
BRSD-6 (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-1000E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-750E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-500E (6-12")	7.94E-02	NA	NA	NA	NA	5.00E-02	1.96E-01	1.43E+02	7.14E+00	2.94E-02	6.28E+00	4.58E+03	1.35E+02	2.62E-03	7.29E+02	1.91E+00	3.85E-01	1.14E+00	4.84E+01	5.23E+01	4.09E-01	6.42E+01	7.54E-01
UM-250S-500E (6-12")	7.94E-02	NA	NA	NA	NA	5.00E-02	1.96E-01	2.23E+01	1.12E+00	2.94E-02	6.28E+00	7.16E+02	2.10E+01	2.62E-03	1.14E+02	2.99E-01	3.85E-01	1.14E+00	7.57E+00	5.23E+01	4.09E-01	6.42E+01	1.18E-01
UM-250S-250E (6-12")	7.94E-02	NA	NA	NA	NA	5.00E-02	1.96E-01	2.51E+01	1.25E+00	2.94E-02	6.28E+00	8.04E+02	2.36E+01	2.62E-03	1.28E+02	3.35E-01	3.85E-01	1.14E+00	8.50E+00	5.23E+01	4.09E-01	6.42E+01	1.32E-01
BRSD-7 (6-12")	7.94E-02	NA	NA	NA	NA	5.00E-02	1.96E-01	9.53E+00	4.76E-01	2.94E-02	6.28E+00	3.05E+02	8.97E+00	2.62E-03	4.86E+01	1.27E-01	3.85E-01	1.14E+00	3.23E+00	5.23E+01	4.09E-01	6.42E+01	5.03E-02
BRSD-8 (6-12")	7.94E-02	NA	NA	NA	NA	5.00E-02	1.96E-01	3.92E+01	1.96E+00	2.94E-02	6.28E+00	1.26E+03	3.69E+01	2.62E-03	2.00E+02	5.24E-01	3.85E-01	1.14E+00	1.33E+01	5.23E+01	4.09E-01	6.42E+01	2.07E-01
UM-500S-500E (6-12")	7.94E-02	NA	NA	NA	NA	5.00E-02	1.96E-01	1.61E+01	8.04E-01	2.94E-02	6.28E+00	5.15E+02	1.51E+01	2.62E-03	8.20E+01	2.15E-01	3.85E-01	1.14E+00	5.45E+00	5.23E+01	4.09E-01	6.42E+01	8.49E-02
BRSD-9 (6-12")	7.94E-02	NA	NA	NA	NA	5.00E-02	1.96E-01	1.65E+01	8.24E-01	2.94E-02	6.28E+00	5.29E+02	1.55E+01	2.62E-03	8.41E+01	2.20E-01	3.85E-01	1.14E+00	5.59E+00	5.23E+01	4.09E-01	6.42E+01	8.70E-02
BRSD-10 (6-12")	7.94E-02	NA	NA	NA	NA	5.00E-02	1.96E-01	1.90E+02	9.52E+00	2.94E-02	6.28E+00	6.10E+03	1.79E+02	2.62E-03	9.71E+02	2.54E+00	3.85E-01	1.14E+00	6.45E+01	5.23E+01	4.09E-01	6.42E+01	1.00E+00
BRSD-11 (6-12")	7.94E-02	NA	NA	NA	NA	5.00E-02	1.96E-01	2.90E+01	1.45E+00	2.94E-02	6.28E+00	9.30E+02	2.73E+01	2.62E-03	1.48E+02	3.88E-01	3.85E-01	1.14E+00	9.83E+00	5.23E+01	4.09E-01	6.42E+01	1.53E-01
Middle Marsh (0-2")																						**Maximum HQ (Western Upper Marsh, 6-12")**	**1.12E+00**
MMSD-201 (0-2")	7.94E-02	NA	NA	NA	NA	5.00E-02	1.96E-01	8.53E+01	4.26E+00	2.94E-02	6.28E+00	2.73E+03	8.03E+01	2.62E-03	4.35E+02	1.14E+00	3.85E-01	1.14E+00	2.89E+01	5.23E+01	4.09E-01	6.42E+01	4.50E-01
MMSD-202 (0-2")	7.94E-02	NA	NA	NA	NA	5.00E-02	1.96E-01	8.59E+01	4.29E+00	2.94E-02	6.28E+00	2.75E+03	8.08E+01	2.62E-03	4.38E+02	1.15E+00	3.85E-01	1.14E+00	2.91E+01	5.23E+01	4.09E-01	6.42E+01	4.53E-01
Middle Marsh (2-6")																						**Maximum HQ (Middle Marsh, 0-2")**	**4.53E-01**
MMSD-201 (2-6")	7.94E-02	NA	NA	NA	NA	5.00E-02	1.96E-01	1.18E+02	5.88E+00	2.94E-02	6.28E+00	3.77E+03	1.11E+02	2.62E-03	6.00E+02	1.57E+00	3.85E-01	1.14E+00	3.99E+01	5.23E+01	4.09E-01	6.42E+01	6.21E-01
MMSD-202 (2-6")	7.94E-02	NA	NA	NA	NA	5.00E-02	1.96E-01	1.01E+02	5.06E+00	2.94E-02	6.28E+00	3.24E+03	9.52E+01	2.62E-03	5.16E+02	1.35E+00	3.85E-01	1.14E+00	3.43E+01	5.23E+01	4.09E-01	6.42E+01	5.34E-01
Middle Marsh (6-12")																						**Maximum HQ (Middle Marsh, 2-6")**	**6.21E-01**
MMSD-201 (6-12")	7.94E-02	NA	NA	NA	NA	5.00E-02	1.96E-01	1.42E+02	7.11E+00	2.94E-02	6.28E+00	4.56E+03	1.34E+02	2.62E-03	7.26E+02	1.90E+00	3.85E-01	1.14E+00	4.82E+01	5.23E+01	4.09E-01	6.42E+01	7.51E-01
MMSD-202 (6-12")	7.94E-02	NA	NA	NA	NA	5.00E-02	1.96E-01	5.72E+01	2.86E+00	2.94E-02	6.28E+00	1.84E+03	5.39E+01	2.62E-03	2.92E+02	7.65E-01	3.85E-01	1.14E+00	1.94E+01	5.23E+01	4.09E-01	6.42E+01	3.02E-01
Lower Marsh (0-2")																						**Maximum HQ (Middle Marsh, 6-12")**	**7.51E-01**
LMSD-201 (0-2")	7.94E-02	NA	NA	NA	NA	5.00E-02	1.96E-01	1.60E+01	8.01E-01	2.94E-02	6.28E+00	5.13E+02	1.51E+01	2.62E-03	8.17E+01	2.14E-01	3.85E-01	1.14E+00	5.43E+00	5.23E+01	4.09E-01	6.42E+01	8.45E-02
LMSD-202 (0-2")	7.94E-02	NA	NA	NA	NA	5.00E-02	1.96E-01	1.27E+01	6.35E-01	2.94E-02	6.28E+00	4.07E+02	1.20E+01	2.62E-03	6.48E+01	1.70E-01	3.85E-01	1.14E+00	4.30E+00	5.23E+01	4.09E-01	6.42E+01	6.71E-02
LMSD-203 (0-2")	7.94E-02	NA	NA	NA	NA	5.00E-02	1.96E-01	5.63E+01	2.81E+00	2.94E-02	6.28E+00	1.80E+03	5.30E+01	2.62E-03	2.87E+02	7.52E-01	3.85E-01	1.14E+00	1.91E+01	5.23E+01	4.09E-01	6.42E+01	2.97E-01
LMSD-204 (0-2")	7.94E-02	NA	NA	NA	NA	5.00E-02	1.96E-01	4.39E+01	2.20E+00	2.94E-02	6.28E+00	1.41E+03	4.13E+01	2.62E-03	2.24E+02	5.87E-01	3.85E-01	1.14E+00	1.49E+01	5.23E+01	4.09E-01	6.42E+01	2.32E-01
Lower Marsh (2-6")																						**Maximum HQ (Lower Marsh, 0-2")**	**2.97E-01**
LMSD-201 (2-6")	7.94E-02	NA	NA	NA	NA	5.00E-02	1.96E-01	1.59E+01	7.93E-01	2.94E-02	6.28E+00	5.08E+02	1.49E+01	2.62E-03	8.09E+01	2.12E-01	3.85E-01	1.14E+00	5.37E+00	5.23E+01	4.09E-01	6.42E+01	8.37E-02
LMSD-202 (2-6")	7.94E-02	NA	NA	NA	NA	5.00E-02	1.96E-01	9.41E+00	4.70E-01	2.94E-02	6.28E+00	3.02E+02	8.86E+00	2.62E-03	4.80E+01	1.26E-01	3.85E-01	1.14E+00	3.19E+00	5.23E+01	4.09E-01	6.42E+01	4.97E-02
LMSD-203 (2-6")	7.94E-02	NA	NA	NA	NA	5.00E-02	1.96E-01	5.59E+01	2.79E+00	2.94E-02	6.28E+00	1.79E+03	5.26E+01	2.62E-03	2.85E+02	7.46E-01	3.85E-01	1.14E+00	1.89E+01	5.23E+01	4.09E-01	6.42E+01	2.95E-01
LMSD-204 (2-6")	7.94E-02	NA	NA	NA	NA	5.00E-02	1.96E-01	4.45E+01	2.22E+00	2.94E-02	6.28E+00	1.43E+03	4.19E+01	2.62E-03	2.27E+02	5.94E-01	3.85E-01	1.14E+00	1.51E+01	5.23E+01	4.09E-01	6.42E+01	2.35E-01
Lower Marsh (6-12")																						**Maximum HQ (Lower Marsh, 2-6")**	**2.95E-01**
LMSD-201 (6-12")	7.94E-02	NA	NA	NA	NA	5.00E-02	1.96E-01	1.65E+01	8.27E-01	2.94E-02	6.28E+00	5.30E+02	1.56E+01	2.62E-03	8.44E+01	2.21E-01	3.85E-01	1.14E+00	5.61E+00	5.23E+01	4.09E-01	6.42E+01	8.73E-02
LMSD-202 (6-12")	7.94E-02	NA	NA	NA	NA	5.00E-02	1.96E-01	1.02E+01	5.12E-01	2.94E-02	6.28E+00	3.28E+02	9.63E+00	2.62E-03	5.22E+01	1.37E-01	3.85E-01	1.14E+00	3.47E+00	5.23E+01	4.09E-01	6.42E+01	5.40E-02
LMSD-203 (6-12")	7.94E-02	NA	NA	NA	NA	5.00E-02	1.96E-01	7.06E+01	3.53E+00	2.94E-02	6.28E+00	2.26E+03	6.64E+01	2.62E-03	3.60E+02	9.43E-01	3.85E-01	1.14E+00	2.39E+01	5.23E+01	4.09E-01	6.42E+01	3.73E-01
LMSD-204 (6-12")	7.94E-02	NA	NA	NA	NA	5.00E-02	1.96E-01	4.43E+01	2.21E+00	2.94E-02	6.28E+00	1.42E+03	4.17E+01	2.62E-03	2.26E+02	5.92E-01	3.85E-01	1.14E+00	1.50E+01	5.23E+01	4.09E-01	6.42E+01	2.34E-01
																						Maximum HQ (Lower Marsh, 6-12")	**3.73E-01**

TABLE C-12DB: COPPER DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 12 - MARSH, WETLAND RECEPTORS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **118.73**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Muskrat (Herbivorous Mammals)																							
Reference Sites																							
BRSD-5 (0-2")	6.27E-02	NA	NA	NA	NA	6.27E-02	1.42E+00	5.58E+01	3.50E+00	NA	NA	NA	NA	1.51E-03	3.92E+01	5.90E-02	1.00E+00	8.73E-01	4.08E+00	6.32E+02	2.47E-02	5.10E+02	8.00E-03
BRSD-5 (2-6")	6.27E-02	NA	NA	NA	NA	6.27E-02	1.42E+00	5.94E+01	3.72E+00	NA	NA	NA	NA	1.51E-03	4.17E+01	6.28E-02	1.00E+00	8.73E-01	4.34E+00	6.32E+02	2.47E-02	5.10E+02	8.51E-03
BRSD-5 (6-12")	6.27E-02	NA	NA	NA	NA	6.27E-02	1.42E+00	6.45E+01	4.05E+00	NA	NA	NA	NA	1.51E-03	4.53E+01	6.82E-02	1.00E+00	8.73E-01	4.71E+00	6.32E+02	2.47E-02	5.10E+02	9.24E-03
PGBG-1 (0-2")	6.27E-02	NA	NA	NA	NA	6.27E-02	1.42E+00	4.94E+01	3.10E+00	NA	NA	NA	NA	1.51E-03	3.47E+01	5.22E-02	1.00E+00	8.73E-01	3.61E+00	6.32E+02	2.47E-02	5.10E+02	7.08E-03
PGBG-1 (2-6")	6.27E-02	NA	NA	NA	NA	6.27E-02	1.42E+00	5.27E+01	3.30E+00	NA	NA	NA	NA	1.51E-03	3.70E+01	5.57E-02	1.00E+00	8.73E-01	3.85E+00	6.32E+02	2.47E-02	5.10E+02	7.55E-03
PGBG-1 (6-12")	6.27E-02	NA	NA	NA	NA	6.27E-02	1.42E+00	3.13E+01	1.96E+00	NA	NA	NA	NA	1.51E-03	2.20E+01	3.31E-02	1.00E+00	8.73E-01	2.29E+00	6.32E+02	2.47E-02	5.10E+02	4.49E-03
PGBG-2 (0-2")	6.27E-02	NA	NA	NA	NA	6.27E-02	1.42E+00	7.40E+01	4.64E+00	NA	NA	NA	NA	1.51E-03	5.20E+01	7.83E-02	1.00E+00	8.73E-01	5.41E+00	6.32E+02	2.47E-02	5.10E+02	1.06E-02
PGBG-2 (2-6")	6.27E-02	NA	NA	NA	NA	6.27E-02	1.42E+00	7.83E+01	4.91E+00	NA	NA	NA	NA	1.51E-03	5.50E+01	8.28E-02	1.00E+00	8.73E-01	5.72E+00	6.32E+02	2.47E-02	5.10E+02	1.12E-02
PGBG-2 (6-12")	6.27E-02	NA	NA	NA	NA	6.27E-02	1.42E+00	9.60E+01	6.02E+00	NA	NA	NA	NA	1.51E-03	6.74E+01	1.01E-01	1.00E+00	8.73E-01	7.01E+00	6.32E+02	2.47E-02	5.10E+02	1.37E-02
Eastern Upper Marsh (0-2")																						**Minimum HQ (Reference Sites)**	**4.49E-03**
UM-1000S-3500E (0-2")	6.27E-02	NA	NA	NA	NA	6.27E-02	3.30E-01	7.30E+01	4.58E+00	NA	NA	NA	NA	1.51E-03	2.21E+02	3.33E-01	1.00E+00	8.73E-01	5.63E+00	6.32E+02	2.47E-02	5.10E+02	1.10E-02
BRSD-15 (0-2")	6.27E-02	NA	NA	NA	NA	6.27E-02	3.30E-01	2.95E+01	1.85E+00	NA	NA	NA	NA	1.51E-03	8.92E+01	1.34E-01	1.00E+00	8.73E-01	2.27E+00	6.32E+02	2.47E-02	5.10E+02	4.45E-03
BRSD-4 (0-2")	6.27E-02	NA	NA	NA	NA	6.27E-02	3.30E-01	2.06E+01	1.29E+00	NA	NA	NA	NA	1.51E-03	6.23E+01	9.38E-02	1.00E+00	8.73E-01	1.59E+00	6.32E+02	2.47E-02	5.10E+02	3.11E-03
UM-750S-3500E (0-2")	6.27E-02	NA	NA	NA	NA	6.27E-02	3.30E-01	2.95E+02	1.85E+01	NA	NA	NA	NA	1.51E-03	8.94E+02	1.35E+00	1.00E+00	8.73E-01	2.28E+01	6.32E+02	2.47E-02	5.10E+02	4.46E-02
BRSD-16 (0-2")	6.27E-02	NA	NA	NA	NA	6.27E-02	3.30E-01	1.23E+02	7.69E+00	NA	NA	NA	NA	1.51E-03	3.71E+02	5.59E-01	1.00E+00	8.73E-01	9.45E+00	6.32E+02	2.47E-02	5.10E+02	1.85E-02
UM-750S-3000E (0-2")	6.27E-02	NA	NA	NA	NA	6.27E-02	3.30E-01	1.34E+02	8.39E+00	NA	NA	NA	NA	1.51E-03	4.05E+02	6.10E-01	1.00E+00	8.73E-01	1.03E+01	6.32E+02	2.47E-02	5.10E+02	2.02E-02
BRSD-3 (0-2")	6.27E-02	NA	NA	NA	NA	6.27E-02	3.30E-01	3.70E+02	2.32E+01	NA	NA	NA	NA	1.51E-03	1.12E+03	1.69E+00	1.00E+00	8.73E-01	2.85E+01	6.32E+02	2.47E-02	5.10E+02	5.59E-02
UM-500S-3250E (0-2")	6.27E-02	NA	NA	NA	NA	6.27E-02	3.30E-01	1.74E+02	1.09E+01	NA	NA	NA	NA	1.51E-03	5.28E+02	7.95E-01	1.00E+00	8.73E-01	1.34E+01	6.32E+02	2.47E-02	5.10E+02	2.64E-02
UM-500S-3000E (0-2")	6.27E-02	NA	NA	NA	NA	6.27E-02	3.30E-01	1.45E+02	9.08E+00	NA	NA	NA	NA	1.51E-03	4.38E+02	6.59E-01	1.00E+00	8.73E-01	1.12E+01	6.32E+02	2.47E-02	5.10E+02	2.19E-02
UM-500S-2750E (0-2")	6.27E-02	NA	NA	NA	NA	6.27E-02	3.30E-01	1.66E+02	1.04E+01	NA	NA	NA	NA	1.51E-03	5.04E+02	7.59E-01	1.00E+00	8.73E-01	1.28E+01	6.32E+02	2.47E-02	5.10E+02	2.52E-02
BRSD-25 (0-2")	6.27E-02	NA	NA	NA	NA	6.27E-02	3.30E-01	8.75E+01	5.49E+00	NA	NA	NA	NA	1.51E-03	2.65E+02	3.99E-01	1.00E+00	8.73E-01	6.75E+00	6.32E+02	2.47E-02	5.10E+02	1.32E-02
UM-250S-3000E (0-2")	6.27E-02	NA	NA	NA	NA	6.27E-02	3.30E-01	3.21E+02	2.01E+01	NA	NA	NA	NA	1.51E-03	9.71E+02	1.46E+00	1.00E+00	8.73E-01	2.47E+01	6.32E+02	2.47E-02	5.10E+02	4.85E-02
UM-250S-3250E (0-2")	6.27E-02	NA	NA	NA	NA	6.27E-02	3.30E-01	1.04E+02	6.53E+00	NA	NA	NA	NA	1.51E-03	3.15E+02	4.74E-01	1.00E+00	8.73E-01	8.02E+00	6.32E+02	2.47E-02	5.10E+02	1.57E-02
UM-250S-2750E (0-2")	6.27E-02	NA	NA	NA	NA	6.27E-02	3.30E-01	9.02E+01	5.66E+00	NA	NA	NA	NA	1.51E-03	2.73E+02	4.11E-01	1.00E+00	8.73E-01	6.95E+00	6.32E+02	2.47E-02	5.10E+02	1.36E-02
UM-250S-2500E (0-2")	6.27E-02	NA	NA	NA	NA	6.27E-02	3.30E-01	6.74E+01	4.23E+00	NA	NA	NA	NA	1.51E-03	2.04E+02	3.07E-01	1.00E+00	8.73E-01	5.19E+00	6.32E+02	2.47E-02	5.10E+02	1.02E-02
UM-0N-2500E (0-2")	6.27E-02	NA	NA	NA	NA	6.27E-02	3.30E-01	1.68E+02	1.06E+01	NA	NA	NA	NA	1.51E-03	5.10E+02	7.68E-01	1.00E+00	8.73E-01	1.30E+01	6.32E+02	2.47E-02	5.10E+02	2.55E-02
UM-0N-250E (0-2")	6.27E-02	NA	NA	NA	NA	6.27E-02	3.30E-01	1.93E+02	1.21E+01	NA	NA	NA	NA	1.51E-03	5.85E+02	8.81E-01	1.00E+00	8.73E-01	1.49E+01	6.32E+02	2.47E-02	5.10E+02	2.92E-02
BRSD-2 (0-2")	6.27E-02	NA	NA	NA	NA	6.27E-02	3.30E-01	1.13E+02	7.11E+00	NA	NA	NA	NA	1.51E-03	3.43E+02	5.16E-01	1.00E+00	8.73E-01	8.73E+00	6.32E+02	2.47E-02	5.10E+02	1.71E-02
UM-500N-2500E (0-2")	6.27E-02	NA	NA	NA	NA	6.27E-02	3.30E-01	1.96E+01	1.23E+00	NA	NA	NA	NA	1.51E-03	5.93E+01	8.93E-02	1.00E+00	8.73E-01	1.51E+00	6.32E+02	2.47E-02	5.10E+02	2.96E-03
UM-250N-2500E (0-2")	6.27E-02	NA	NA	NA	NA	6.27E-02	3.30E-01	1.83E+02	1.15E+01	NA	NA	NA	NA	1.51E-03	5.55E+02	8.36E-01	1.00E+00	8.73E-01	1.41E+01	6.32E+02	2.47E-02	5.10E+02	2.77E-02
UM-250N-2250E (0-2")	6.27E-02	NA	NA	NA	NA	6.27E-02	3.30E-01	1.20E+02	7.54E+00	NA	NA	NA	NA	1.51E-03	3.64E+02	5.48E-01	1.00E+00	8.73E-01	9.27E+00	6.32E+02	2.47E-02	5.10E+02	1.82E-02
Western Upper Marsh (0-2")																						**Maximum HQ (Eastern Upper Marsh, 0-2")**	**5.59E-02**
UM-500S-2500E (0-2")	6.27E-02	NA	NA	NA	NA	6.27E-02	1.96E-01	7.31E+01	4.59E+00	NA	NA	NA	NA	1.51E-03	3.73E+02	5.62E-01	1.00E+00	8.73E-01	5.90E+00	6.32E+02	2.47E-02	5.10E+02	1.16E-02
UM-0N-2000E (0-2")	6.27E-02	NA	NA	NA	NA	6.27E-02	1.96E-01	1.54E+02	9.69E+00	NA	NA	NA	NA	1.51E-03	7.88E+02	1.19E+00	1.00E+00	8.73E-01	1.25E+01	6.32E+02	2.47E-02	5.10E+02	2.44E-02
UM-500S-2000E (0-2")	6.27E-02	NA	NA	NA	NA	6.27E-02	1.96E-01	3.59E+01	2.25E+00	NA	NA	NA	NA	1.51E-03	1.83E+02	2.76E-01	1.00E+00	8.73E-01	2.89E+00	6.32E+02	2.47E-02	5.10E+02	5.67E-03
UM-250N-1750E (0-2")	6.27E-02	NA	NA	NA	NA	6.27E-02	1.96E-01	3.00E+01	1.88E+00	NA	NA	NA	NA	1.51E-03	1.53E+02	2.30E-01	1.00E+00	8.73E-01	2.42E+00	6.32E+02	2.47E-02	5.10E+02	4.74E-03
UM-0N-1500E (0-2")	6.27E-02	NA	NA	NA	NA	6.27E-02	1.96E-01	1.78E+01	1.12E+00	NA	NA	NA	NA	1.51E-03	9.08E+01	1.37E-01	1.00E+00	8.73E-01	1.44E+00	6.32E+02	2.47E-02	5.10E+02	2.82E-03
UM-250S-1500E (0-2")	6.27E-02	NA	NA	NA	NA	6.27E-02	1.96E-01	1.12E+02	7.02E+00	NA	NA	NA	NA	1.51E-03	5.71E+02	8.60E-01	1.00E+00	8.73E-01	9.03E+00	6.32E+02	2.47E-02	5.10E+02	1.77E-02
UM-250S-1250E (0-2")	6.27E-02	NA	NA	NA	NA	6.27E-02	1.96E-01	1.79E+01	1.12E+00	NA	NA	NA	NA	1.51E-03	9.11E+01	1.37E-01	1.00E+00	8.73E-01	1.44E+00	6.32E+02	2.47E-02	5.10E+02	2.82E-03
BRSD-6 (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-1000E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-750E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-500E (0-2")	6.27E-02	NA	NA	NA	NA	6.27E-02	1.96E-01	8.82E+01	5.53E+00	NA	NA	NA	NA	1.51E-03	4.50E+02	6.77E-01	1.00E+00	8.73E-01	7.11E+00	6.32E+02	2.47E-02	5.10E+02	1.40E-02
UM-250S-500E (0-2")	6.27E-02	NA	NA	NA	NA	6.27E-02	1.96E-01	1.58E+01	9.94E-01	NA	NA	NA	NA	1.51E-03	8.08E+01	1.22E-01	1.00E+00	8.73E-01	1.28E+00	6.32E+02	2.47E-02	5.10E+02	2.51E-03
UM-250S-250E (0-2")	6.27E-02	NA	NA	NA	NA	6.27E-02	1.96E-01	4.70E+01	2.95E+00	NA	NA	NA	NA	1.51E-03	2.40E+02	3.61E-01	1.00E+00	8.73E-01	3.79E+00	6.32E+02	2.47E-02	5.10E+02	7.44E-03
BRSD-7 (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-8 (0-2")	6.27E-02	NA	NA	NA	NA	6.27E-02	1.96E-01	3.80E+01	2.39E+00	NA	NA	NA	NA	1.51E-03	1.94E+02	2.92E-01	1.00E+00	8.73E-01	3.07E+00	6.32E+02	2.47E-02	5.10E+02	6.01E-03
UM-500S-500E (0-2")	6.27E-02	NA	NA	NA	NA	6.27E-02	1.96E-01	1.89E+01	1.18E+00	NA	NA	NA	NA	1.51E-03	9.63E+01	1.45E-01	1.00E+00	8.73E-01	1.52E+00	6.32E+02	2.47E-02	5.10E+02	2.99E-03
BRSD-9 (0-2")	6.27E-02	NA	NA	NA	NA	6.27E-02	1.96E-01	1.64E+01	1.03E+00	NA	NA	NA	NA	1.51E-03	8.39E+01	1.26E-01	1.00E+00	8.73E-01	1.33E+00	6.32E+02	2.47E-02	5.10E+02	2.60E-03
BRSD-10 (0-2")	6.27E-02	NA	NA	NA	NA	6.27E-02	1.96E-01	1.28E+02	8.00E+00	NA	NA	NA	NA	1.51E-03	6.51E+02	9.80E-01	1.00E+00	8.73E-01	1.03E+01	6.32E+02	2.47E-02	5.10E+02	2.02E-02
BRSD-11 (0-2")	6.27E-02	NA	NA	NA	NA	6.27E-02	1.96E-01	2.61E+01	1.64E+00	NA	NA	NA	NA	1.51E-03	1.33E+02	2.00E-01	1.00E+00	8.73E-01	2.10E+00	6.32E+02	2.47E-02	5.10E+02	4.12E-03
Eastern Upper Marsh (2-6")																						**Maximum HQ (Western Upper Marsh, 0-2")**	**2.44E-02**
UM-1000S-3500E (2-6")	6.27E-02	NA	NA	NA	NA	6.27E-02	3.30E-01	3.50E+01	2.20E+00	NA	NA	NA	NA	1.51E-03	1.06E+02	1.60E-01	1.00E+00	8.73E-01	2.70E+00	6.32E+02	2.47E-02	5.10E+02	5.29E-03
BRSD-15 (2-6")	6.27E-02	NA	NA	NA	NA	6.27E-02	3.30E-01	3.22E+01	2.02E+00	NA	NA	NA	NA	1.51E-03	9.74E+01	1.47E-01	1.00E+00	8.73E-01	2.48E+00	6.32E+02	2.47E-02	5.10E+02	4.86E-03
BRSD-4 (2-6")	6.27E-02	NA	NA	NA	NA	6.27E-02	3.30E-01	4.26E+01	2.67E+00	NA	NA	NA	NA	1.51E-03	1.29E+02	1.94E-01	1.00E+00	8.73E-01	3.28E+00	6.32E+02	2.47E-02	5.10E+02	6.44E-03

TABLE C-12DB: COPPER DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 12 - MARSH, WETLAND RECEPTORS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **118.73**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Muskrat (Herbivorous Mammals)																							
UM-750S-3500E (2-6")	6.27E-02	NA	NA	NA	NA	6.27E-02	3.30E-01	1.13E+02	7.09E+00	NA	NA	NA	NA	1.51E-03	3.42E+02	5.15E-01	1.00E+00	8.73E-01	8.71E+00	6.32E+02	2.47E-02	5.10E+02	1.71E-02
BRSD-16 (2-6")	6.27E-02	NA	NA	NA	NA	6.27E-02	3.30E-01	3.70E+02	2.32E+01	NA	NA	NA	NA	1.51E-03	1.12E+03	1.69E+00	1.00E+00	8.73E-01	2.85E+01	6.32E+02	2.47E-02	5.10E+02	5.59E-02
UM-750S-3000E (2-6")	6.27E-02	NA	NA	NA	NA	6.27E-02	3.30E-01	1.17E+02	7.34E+00	NA	NA	NA	NA	1.51E-03	3.54E+02	5.33E-01	1.00E+00	8.73E-01	9.01E+00	6.32E+02	2.47E-02	5.10E+02	1.77E-02
BRSD-3 (2-6")	6.27E-02	NA	NA	NA	NA	6.27E-02	3.30E-01	4.69E+02	2.94E+01	NA	NA	NA	NA	1.51E-03	1.42E+03	2.14E+00	1.00E+00	8.73E-01	3.62E+01	6.32E+02	2.47E-02	5.10E+02	7.09E-02
UM-500S-3250E (2-6")	6.27E-02	NA	NA	NA	NA	6.27E-02	3.30E-01	9.45E+01	5.93E+00	NA	NA	NA	NA	1.51E-03	2.86E+02	4.31E-01	1.00E+00	8.73E-01	7.28E+00	6.32E+02	2.47E-02	5.10E+02	1.43E-02
UM-500S-3000E (2-6")	6.27E-02	NA	NA	NA	NA	6.27E-02	3.30E-01	2.71E+01	1.70E+00	NA	NA	NA	NA	1.51E-03	8.20E+01	1.23E-01	1.00E+00	8.73E-01	2.09E+00	6.32E+02	2.47E-02	5.10E+02	4.09E-03
UM-500S-2750E (2-6")	6.27E-02	NA	NA	NA	NA	6.27E-02	3.30E-01	1.05E+02	6.59E+00	NA	NA	NA	NA	1.51E-03	3.18E+02	4.79E-01	1.00E+00	8.73E-01	8.10E+00	6.32E+02	2.47E-02	5.10E+02	1.59E-02
BRSD-25 (2-6")	6.27E-02	NA	NA	NA	NA	6.27E-02	3.30E-01	1.33E+02	8.33E+00	NA	NA	NA	NA	1.51E-03	4.02E+02	6.05E-01	1.00E+00	8.73E-01	1.02E+01	6.32E+02	2.47E-02	5.10E+02	2.01E-02
UM-250S-3000E (2-6")	6.27E-02	NA	NA	NA	NA	6.27E-02	3.30E-01	2.65E+02	1.66E+01	NA	NA	NA	NA	1.51E-03	8.01E+02	1.21E+00	1.00E+00	8.73E-01	2.04E+01	6.32E+02	2.47E-02	5.10E+02	4.00E-02
UM-250S-3250E (2-6")	6.27E-02	NA	NA	NA	NA	6.27E-02	3.30E-01	2.70E+01	1.70E+00	NA	NA	NA	NA	1.51E-03	8.18E+01	1.23E-01	1.00E+00	8.73E-01	2.08E+00	6.32E+02	2.47E-02	5.10E+02	4.08E-03
BRSD-24 (2-6")	6.27E-02	NA	NA	NA	NA	6.27E-02	3.30E-01	2.44E+02	1.53E+01	NA	NA	NA	NA	1.51E-03	7.40E+02	1.11E+00	1.00E+00	8.73E-01	1.88E+01	6.32E+02	2.47E-02	5.10E+02	3.69E-02
UM-250S-2750E (2-6")	6.27E-02	NA	NA	NA	NA	6.27E-02	3.30E-01	1.46E+02	9.16E+00	NA	NA	NA	NA	1.51E-03	4.42E+02	6.65E-01	1.00E+00	8.73E-01	1.13E+01	6.32E+02	2.47E-02	5.10E+02	2.21E-02
UM-0N-2500E (2-6")	6.27E-02	NA	NA	NA	NA	6.27E-02	3.30E-01	8.65E+01	5.43E+00	NA	NA	NA	NA	1.51E-03	2.62E+02	3.94E-01	1.00E+00	8.73E-01	6.67E+00	6.32E+02	2.47E-02	5.10E+02	1.31E-02
BRSD-2 (2-6")	6.27E-02	NA	NA	NA	NA	6.27E-02	3.30E-01	1.35E+02	8.48E+00	NA	NA	NA	NA	1.51E-03	4.09E+02	6.16E-01	1.00E+00	8.73E-01	1.04E+01	6.32E+02	2.47E-02	5.10E+02	2.04E-02
UM-500N-2500E (2-6")	6.27E-02	NA	NA	NA	NA	6.27E-02	3.30E-01	2.45E+01	1.54E+00	NA	NA	NA	NA	1.51E-03	7.43E+01	1.12E-01	1.00E+00	8.73E-01	1.89E+00	6.32E+02	2.47E-02	5.10E+02	3.71E-03
UM-250N-2500E (2-6")	6.27E-02	NA	NA	NA	NA	6.27E-02	3.30E-01	1.69E+02	1.06E+01	NA	NA	NA	NA	1.51E-03	5.12E+02	7.71E-01	1.00E+00	8.73E-01	1.30E+01	6.32E+02	2.47E-02	5.10E+02	2.56E-02
UM-250N-2250E (2-6")	6.27E-02	NA	NA	NA	NA	6.27E-02	3.30E-01	4.72E+01	2.96E+00	NA	NA	NA	NA	1.51E-03	1.43E+02	2.15E-01	1.00E+00	8.73E-01	3.64E+00	6.32E+02	2.47E-02	5.10E+02	7.14E-03
Western Upper Marsh (2-6")																						**Maximum HQ (Eastern Upper Marsh, 2-6")**	**7.09E-02**
UM-500S-2500E (2-6")	6.27E-02	NA	NA	NA	NA	6.27E-02	1.96E-01	6.96E+01	4.37E+00	NA	NA	NA	NA	1.51E-03	3.55E+02	5.34E-01	1.00E+00	8.73E-01	5.61E+00	6.32E+02	2.47E-02	5.10E+02	1.10E-02
UM-0N-2000E (2-6")	6.27E-02	NA	NA	NA	NA	6.27E-02	1.96E-01	1.39E+02	8.74E+00	NA	NA	NA	NA	1.51E-03	7.11E+02	1.07E+00	1.00E+00	8.73E-01	1.12E+01	6.32E+02	2.47E-02	5.10E+02	2.20E-02
UM-500S-2000E (2-6")	6.27E-02	NA	NA	NA	NA	6.27E-02	1.96E-01	4.65E+01	2.91E+00	NA	NA	NA	NA	1.51E-03	2.37E+02	3.57E-01	1.00E+00	8.73E-01	3.75E+00	6.32E+02	2.47E-02	5.10E+02	7.35E-03
UM-250N-1750E (2-6")	6.27E-02	NA	NA	NA	NA	6.27E-02	1.96E-01	2.12E+01	1.33E+00	NA	NA	NA	NA	1.51E-03	1.08E+02	1.63E-01	1.00E+00	8.73E-01	1.71E+00	6.32E+02	2.47E-02	5.10E+02	3.35E-03
UM-0N-1500E (2-6")	6.27E-02	NA	NA	NA	NA	6.27E-02	1.96E-01	2.65E+01	1.66E+00	NA	NA	NA	NA	1.51E-03	1.35E+02	2.03E-01	1.00E+00	8.73E-01	2.13E+00	6.32E+02	2.47E-02	5.10E+02	4.19E-03
UM-250S-1500E (2-6")	6.27E-02	NA	NA	NA	NA	6.27E-02	1.96E-01	1.66E+02	1.04E+01	NA	NA	NA	NA	1.51E-03	8.49E+02	1.28E+00	1.00E+00	8.73E-01	1.34E+01	6.32E+02	2.47E-02	5.10E+02	2.63E-02
UM-250S-1250E (2-6")	6.27E-02	NA	NA	NA	NA	6.27E-02	1.96E-01	1.56E+01	9.76E-01	NA	NA	NA	NA	1.51E-03	7.94E+01	1.20E-01	1.00E+00	8.73E-01	1.26E+00	6.32E+02	2.47E-02	5.10E+02	2.46E-03
BRSD-6 (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-1000E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-750E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-500E (2-6")	6.27E-02	NA	NA	NA	NA	6.27E-02	1.96E-01	5.41E+02	3.39E+01	NA	NA	NA	NA	1.51E-03	2.76E+03	4.16E+00	1.00E+00	8.73E-01	4.36E+01	6.32E+02	2.47E-02	5.10E+02	8.56E-02
UM-250S-500E (2-6")	6.27E-02	NA	NA	NA	NA	6.27E-02	1.96E-01	1.77E+01	1.11E+00	NA	NA	NA	NA	1.51E-03	9.02E+01	1.36E-01	1.00E+00	8.73E-01	1.43E+00	6.32E+02	2.47E-02	5.10E+02	2.80E-03
UM-0N-250E (2-6")	6.27E-02	NA	NA	NA	NA	6.27E-02	1.96E-01	5.92E+01	3.71E+00	NA	NA	NA	NA	1.51E-03	3.02E+02	4.55E-01	1.00E+00	8.73E-01	4.77E+00	6.32E+02	2.47E-02	5.10E+02	9.36E-03
UM-250S-250E (2-6")	6.27E-02	NA	NA	NA	NA	6.27E-02	1.96E-01	4.08E+01	2.56E+00	NA	NA	NA	NA	1.51E-03	2.08E+02	3.13E-01	1.00E+00	8.73E-01	3.29E+00	6.32E+02	2.47E-02	5.10E+02	6.45E-03
BRSD-7 (2-6")	6.27E-02	NA	NA	NA	NA	6.27E-02	1.96E-01	1.11E+01	6.95E-01	NA	NA	NA	NA	1.51E-03	5.65E+01	8.51E-02	1.00E+00	8.73E-01	8.93E-01	6.32E+02	2.47E-02	5.10E+02	1.75E-03
BRSD-8 (2-6")	6.27E-02	NA	NA	NA	NA	6.27E-02	1.96E-01	3.69E+01	2.31E+00	NA	NA	NA	NA	1.51E-03	1.88E+02	2.83E-01	1.00E+00	8.73E-01	2.97E+00	6.32E+02	2.47E-02	5.10E+02	5.83E-03
UM-500S-500E (2-6")	6.27E-02	NA	NA	NA	NA	6.27E-02	1.96E-01	1.73E+01	1.09E+00	NA	NA	NA	NA	1.51E-03	8.83E+01	1.33E-01	1.00E+00	8.73E-01	1.40E+00	6.32E+02	2.47E-02	5.10E+02	2.74E-03
BRSD-9 (2-6")	6.27E-02	NA	NA	NA	NA	6.27E-02	1.96E-01	1.04E+01	6.50E-01	NA	NA	NA	NA	1.51E-03	5.29E+01	7.96E-02	1.00E+00	8.73E-01	8.36E-01	6.32E+02	2.47E-02	5.10E+02	1.64E-03
BRSD-10 (2-6")	6.27E-02	NA	NA	NA	NA	6.27E-02	1.96E-01	1.35E+02	8.48E+00	NA	NA	NA	NA	1.51E-03	6.90E+02	1.04E+00	1.00E+00	8.73E-01	1.09E+01	6.32E+02	2.47E-02	5.10E+02	2.14E-02
BRSD-11 (2-6")	6.27E-02	NA	NA	NA	NA	6.27E-02	1.96E-01	3.02E+01	1.89E+00	NA	NA	NA	NA	1.51E-03	1.54E+02	2.32E-01	1.00E+00	8.73E-01	2.43E+00	6.32E+02	2.47E-02	5.10E+02	4.77E-03
Eastern Upper Marsh (6-12")																						**Maximum HQ (Western Upper Marsh, 2-6")**	**8.56E-02**
UM-1000S-3500E (6-12")	6.27E-02	NA	NA	NA	NA	6.27E-02	3.30E-01	2.86E+01	1.79E+00	NA	NA	NA	NA	1.51E-03	8.66E+01	1.30E-01	1.00E+00	8.73E-01	2.20E+00	6.32E+02	2.47E-02	5.10E+02	4.32E-03
BRSD-15 (6-12")	6.27E-02	NA	NA	NA	NA	6.27E-02	3.30E-01	3.23E+01	2.03E+00	NA	NA	NA	NA	1.51E-03	9.79E+01	1.47E-01	1.00E+00	8.73E-01	2.49E+00	6.32E+02	2.47E-02	5.10E+02	4.89E-03
BRSD-4 (6-12")	6.27E-02	NA	NA	NA	NA	6.27E-02	3.30E-01	3.06E+01	1.92E+00	NA	NA	NA	NA	1.51E-03	9.25E+01	1.39E-01	1.00E+00	8.73E-01	2.36E+00	6.32E+02	2.47E-02	5.10E+02	4.62E-03
UM-750S-3500E (6-12")	6.27E-02	NA	NA	NA	NA	6.27E-02	3.30E-01	1.35E+02	8.48E+00	NA	NA	NA	NA	1.51E-03	4.09E+02	6.16E-01	1.00E+00	8.73E-01	1.04E+01	6.32E+02	2.47E-02	5.10E+02	2.04E-02
BRSD-16 (6-12")	6.27E-02	NA	NA	NA	NA	6.27E-02	3.30E-01	1.88E+02	1.18E+01	NA	NA	NA	NA	1.51E-03	5.68E+02	8.55E-01	1.00E+00	8.73E-01	1.45E+01	6.32E+02	2.47E-02	5.10E+02	2.84E-02
UM-750S-3000E (6-12")	6.27E-02	NA	NA	NA	NA	6.27E-02	3.30E-01	1.13E+02	7.11E+00	NA	NA	NA	NA	1.51E-03	3.43E+02	5.16E-01	1.00E+00	8.73E-01	8.73E+00	6.32E+02	2.47E-02	5.10E+02	1.71E-02
BRSD-3 (6-12")	6.27E-02	NA	NA	NA	NA	6.27E-02	3.30E-01	4.10E+02	2.57E+01	NA	NA	NA	NA	1.51E-03	1.24E+03	1.87E+00	1.00E+00	8.73E-01	3.16E+01	6.32E+02	2.47E-02	5.10E+02	6.19E-02
UM-500S-3250E (6-12")	6.27E-02	NA	NA	NA	NA	6.27E-02	3.30E-01	7.07E+01	4.43E+00	NA	NA	NA	NA	1.51E-03	2.14E+02	3.22E-01	1.00E+00	8.73E-01	5.45E+00	6.32E+02	2.47E-02	5.10E+02	1.07E-02
UM-500S-3000E (6-12")	6.27E-02	NA	NA	NA	NA	6.27E-02	3.30E-01	2.93E+01	1.84E+00	NA	NA	NA	NA	1.51E-03	8.86E+01	1.33E-01	1.00E+00	8.73E-01	2.26E+00	6.32E+02	2.47E-02	5.10E+02	4.42E-03
UM-500S-2750E (6-12")	6.27E-02	NA	NA	NA	NA	6.27E-02	3.30E-01	9.58E+01	6.01E+00	NA	NA	NA	NA	1.51E-03	2.90E+02	4.37E-01	1.00E+00	8.73E-01	7.38E+00	6.32E+02	2.47E-02	5.10E+02	1.45E-02
BRSD-25 (6-12")	6.27E-02	NA	NA	NA	NA	6.27E-02	3.30E-01	6.31E+01	3.96E+00	NA	NA	NA	NA	1.51E-03	1.91E+02	2.88E-01	1.00E+00	8.73E-01	4.86E+00	6.32E+02	2.47E-02	5.10E+02	9.54E-03
UM-250S-3000E (6-12")	6.27E-02	NA	NA	NA	NA	6.27E-02	3.30E-01	2.41E+02	1.51E+01	NA	NA	NA	NA	1.51E-03	7.30E+02	1.10E+00	1.00E+00	8.73E-01	1.86E+01	6.32E+02	2.47E-02	5.10E+02	3.64E-02
UM-250S-3250E (6-12")	6.27E-02	NA	NA	NA	NA	6.27E-02	3.30E-01	2.87E+01	1.80E+00	NA	NA	NA	NA	1.51E-03	8.69E+01	1.31E-01	1.00E+00	8.73E-01	2.21E+00	6.32E+02	2.47E-02	5.10E+02	4.34E-03
BRSD-24 (6-12")	6.27E-02	NA	NA	NA	NA	6.27E-02	3.30E-01	1.83E+02	1.15E+01	NA	NA	NA	NA	1.51E-03	5.53E+02	8.33E-01	1.00E+00	8.73E-01	1.41E+01	6.32E+02	2.47E-02	5.10E+02	2.76E-02
UM-250S-2750E (6-12")	6.27E-02	NA	NA	NA	NA	6.27E-02	3.30E-01	1.70E+02	1.07E+01	NA	NA	NA	NA	1.51E-03	5.14E+02	7.74E-01	1.00E+00	8.73E-01	1.31E+01	6.32E+02	2.47E-02	5.10E+02	2.57E-02
UM-250S-2500E (6-12")	6.27E-02	NA	NA	NA	NA	6.27E-02	3.30E-01	4.86E+01	3.05E+00	NA	NA	NA	NA	1.51E-03	1.47E+02	2.21E-01	1.00E+00	8.73E-01	3.74E+00	6.32E+02	2.47E-02	5.10E+02	7.34E-03
BRSD-2 (6-12")	6.27E-02	NA	NA	NA	NA	6.27E-02	3.30E-01	3.03E+02	1.90E+01	NA	NA	NA	NA	1.51E-03	9.18E+02	1.38E+00	1.00E+00	8.73E-01	2.34E+01	6.32E+02	2.47E-02	5.10E+02	4.58E-02

TABLE C-12DB: COPPER DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 12 - MARSH, WETLAND RECEPTORS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **118.73**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Muskrat (Herbivorous Mammals)																							
UM-500N-2500E (6-12")	6.27E-02	NA	NA	NA	NA	6.27E-02	3.30E-01	1.08E+01	6.78E-01	NA	NA	NA	NA	1.51E-03	3.27E+01	4.92E-02	1.00E+00	8.73E-01	8.33E-01	6.32E+02	2.47E-02	5.10E+02	1.63E-03
UM-250N-2500E (6-12")	6.27E-02	NA	NA	NA	NA	6.27E-02	3.30E-01	1.24E+02	7.75E+00	NA	NA	NA	NA	1.51E-03	3.74E+02	5.63E-01	1.00E+00	8.73E-01	9.52E+00	6.32E+02	2.47E-02	5.10E+02	1.87E-02
UM-250N-2250E (6-12")	6.27E-02	NA	NA	NA	NA	6.27E-02	3.30E-01	5.95E+01	3.73E+00	NA	NA	NA	NA	1.51E-03	1.80E+02	2.71E-01	1.00E+00	8.73E-01	4.58E+00	6.32E+02	2.47E-02	5.10E+02	8.99E-03
Western Upper Marsh (6-12")																						**Maximum HQ (Eastern Upper Marsh, 6-12")**	**6.19E-02**
UM-500S-2500E (6-12")	6.27E-02	NA	NA	NA	NA	6.27E-02	1.96E-01	7.14E+01	4.48E+00	NA	NA	NA	NA	1.51E-03	3.64E+02	5.48E-01	1.00E+00	8.73E-01	5.75E+00	6.32E+02	2.47E-02	5.10E+02	1.13E-02
UM-0N-2000E (6-12")	6.27E-02	NA	NA	NA	NA	6.27E-02	1.96E-01	2.12E+02	1.33E+01	NA	NA	NA	NA	1.51E-03	1.08E+03	1.63E+00	1.00E+00	8.73E-01	1.71E+01	6.32E+02	2.47E-02	5.10E+02	3.35E-02
UM-500S-2000E (6-12")	6.27E-02	NA	NA	NA	NA	6.27E-02	1.96E-01	4.55E+01	2.85E+00	NA	NA	NA	NA	1.51E-03	2.32E+02	3.49E-01	1.00E+00	8.73E-01	3.67E+00	6.32E+02	2.47E-02	5.10E+02	7.19E-03
UM-250N-1750E (6-12")	6.27E-02	NA	NA	NA	NA	6.27E-02	1.96E-01	2.80E+01	1.76E+00	NA	NA	NA	NA	1.51E-03	1.43E+02	2.15E-01	1.00E+00	8.73E-01	2.26E+00	6.32E+02	2.47E-02	5.10E+02	4.43E-03
UM-0N-1500E (6-12")	6.27E-02	NA	NA	NA	NA	6.27E-02	1.96E-01	3.61E+01	2.26E+00	NA	NA	NA	NA	1.51E-03	1.84E+02	2.77E-01	1.00E+00	8.73E-01	2.91E+00	6.32E+02	2.47E-02	5.10E+02	5.70E-03
UM-250S-1500E (6-12")	6.27E-02	NA	NA	NA	NA	6.27E-02	1.96E-01	1.01E+02	6.31E+00	NA	NA	NA	NA	1.51E-03	5.13E+02	7.72E-01	1.00E+00	8.73E-01	8.11E+00	6.32E+02	2.47E-02	5.10E+02	1.59E-02
UM-250S-1250E (6-12")	6.27E-02	NA	NA	NA	NA	6.27E-02	1.96E-01	1.52E+01	9.53E-01	NA	NA	NA	NA	1.51E-03	7.75E+01	1.17E-01	1.00E+00	8.73E-01	1.23E+00	6.32E+02	2.47E-02	5.10E+02	2.40E-03
BRSD-6 (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-1000E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-750E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-500E (6-12")	6.27E-02	NA	NA	NA	NA	6.27E-02	1.96E-01	1.43E+02	8.96E+00	NA	NA	NA	NA	1.51E-03	7.29E+02	1.10E+00	1.00E+00	8.73E-01	1.15E+01	6.32E+02	2.47E-02	5.10E+02	2.26E-02
UM-250S-500E (6-12")	6.27E-02	NA	NA	NA	NA	6.27E-02	1.96E-01	2.23E+01	1.40E+00	NA	NA	NA	NA	1.51E-03	1.14E+02	1.72E-01	1.00E+00	8.73E-01	1.80E+00	6.32E+02	2.47E-02	5.10E+02	3.53E-03
UM-0N-250E (6-12")	6.27E-02	NA	NA	NA	NA	6.27E-02	1.96E-01	6.74E+01	4.23E+00	NA	NA	NA	NA	1.51E-03	3.44E+02	5.18E-01	1.00E+00	8.73E-01	5.44E+00	6.32E+02	2.47E-02	5.10E+02	1.07E-02
UM-250S-250E (6-12")	6.27E-02	NA	NA	NA	NA	6.27E-02	1.96E-01	2.51E+01	1.57E+00	NA	NA	NA	NA	1.51E-03	1.28E+02	1.93E-01	1.00E+00	8.73E-01	2.02E+00	6.32E+02	2.47E-02	5.10E+02	3.97E-03
BRSD-7 (6-12")	6.27E-02	NA	NA	NA	NA	6.27E-02	1.96E-01	9.53E+00	5.98E-01	NA	NA	NA	NA	1.51E-03	4.86E+01	7.32E-02	1.00E+00	8.73E-01	7.68E-01	6.32E+02	2.47E-02	5.10E+02	1.51E-03
BRSD-8 (6-12")	6.27E-02	NA	NA	NA	NA	6.27E-02	1.96E-01	3.92E+01	2.46E+00	NA	NA	NA	NA	1.51E-03	2.00E+02	3.01E-01	1.00E+00	8.73E-01	3.16E+00	6.32E+02	2.47E-02	5.10E+02	6.20E-03
UM-500S-500E (6-12")	6.27E-02	NA	NA	NA	NA	6.27E-02	1.96E-01	1.61E+01	1.01E+00	NA	NA	NA	NA	1.51E-03	8.20E+01	1.23E-01	1.00E+00	8.73E-01	1.30E+00	6.32E+02	2.47E-02	5.10E+02	2.54E-03
BRSD-9 (6-12")	6.27E-02	NA	NA	NA	NA	6.27E-02	1.96E-01	1.65E+01	1.03E+00	NA	NA	NA	NA	1.51E-03	8.41E+01	1.27E-01	1.00E+00	8.73E-01	1.33E+00	6.32E+02	2.47E-02	5.10E+02	2.61E-03
BRSD-10 (6-12")	6.27E-02	NA	NA	NA	NA	6.27E-02	1.96E-01	1.90E+02	1.19E+01	NA	NA	NA	NA	1.51E-03	9.71E+02	1.46E+00	1.00E+00	8.73E-01	1.54E+01	6.32E+02	2.47E-02	5.10E+02	3.01E-02
BRSD-11 (6-12")	6.27E-02	NA	NA	NA	NA	6.27E-02	1.96E-01	2.90E+01	1.82E+00	NA	NA	NA	NA	1.51E-03	1.48E+02	2.23E-01	1.00E+00	8.73E-01	2.34E+00	6.32E+02	2.47E-02	5.10E+02	4.59E-03
Middle Marsh (0-2")																						**Maximum HQ (Western Upper Marsh, 6-12")**	**3.35E-02**
MMSD-201 (0-2")	6.27E-02	NA	NA	NA	NA	6.27E-02	1.96E-01	8.53E+01	5.35E+00	NA	NA	NA	NA	1.51E-03	4.35E+02	6.55E-01	1.00E+00	8.73E-01	6.88E+00	6.32E+02	2.47E-02	5.10E+02	1.35E-02
MMSD-202 (0-2")	6.27E-02	NA	NA	NA	NA	6.27E-02	1.96E-01	8.59E+01	5.39E+00	NA	NA	NA	NA	1.51E-03	4.38E+02	6.59E-01	1.00E+00	8.73E-01	6.92E+00	6.32E+02	2.47E-02	5.10E+02	1.36E-02
Middle Marsh (2-6")																						**Maximum HQ (Middle Marsh, 0-2")**	**1.36E-02**
MMSD-201 (2-6")	6.27E-02	NA	NA	NA	NA	6.27E-02	1.96E-01	1.18E+02	7.38E+00	NA	NA	NA	NA	1.51E-03	6.00E+02	9.03E-01	1.00E+00	8.73E-01	9.49E+00	6.32E+02	2.47E-02	5.10E+02	1.86E-02
MMSD-202 (2-6")	6.27E-02	NA	NA	NA	NA	6.27E-02	1.96E-01	1.01E+02	6.34E+00	NA	NA	NA	NA	1.51E-03	5.16E+02	7.77E-01	1.00E+00	8.73E-01	8.16E+00	6.32E+02	2.47E-02	5.10E+02	1.60E-02
Middle Marsh (6-12")																						**Maximum HQ (Middle Marsh, 2-6")**	**1.86E-02**
MMSD-201 (6-12")	6.27E-02	NA	NA	NA	NA	6.27E-02	1.96E-01	1.42E+02	8.93E+00	NA	NA	NA	NA	1.51E-03	7.26E+02	1.09E+00	1.00E+00	8.73E-01	1.15E+01	6.32E+02	2.47E-02	5.10E+02	2.25E-02
MMSD-202 (6-12")	6.27E-02	NA	NA	NA	NA	6.27E-02	1.96E-01	5.72E+01	3.59E+00	NA	NA	NA	NA	1.51E-03	2.92E+02	4.40E-01	1.00E+00	8.73E-01	4.62E+00	6.32E+02	2.47E-02	5.10E+02	9.05E-03
Lower Marsh (0-2")																						**Maximum HQ (Middle Marsh, 6-12")**	**2.25E-02**
LMSD-201 (0-2")	6.27E-02	NA	NA	NA	NA	6.27E-02	1.96E-01	1.60E+01	1.00E+00	NA	NA	NA	NA	1.51E-03	8.17E+01	1.23E-01	1.00E+00	8.73E-01	1.29E+00	6.32E+02	2.47E-02	5.10E+02	2.53E-03
LMSD-202 (0-2")	6.27E-02	NA	NA	NA	NA	6.27E-02	1.96E-01	1.27E+01	7.97E-01	NA	NA	NA	NA	1.51E-03	6.48E+01	9.76E-02	1.00E+00	8.73E-01	1.02E+00	6.32E+02	2.47E-02	5.10E+02	2.01E-03
LMSD-203 (0-2")	6.27E-02	NA	NA	NA	NA	6.27E-02	1.96E-01	5.63E+01	3.53E+00	NA	NA	NA	NA	1.51E-03	2.87E+02	4.32E-01	1.00E+00	8.73E-01	4.54E+00	6.32E+02	2.47E-02	5.10E+02	8.90E-03
LMSD-204 (0-2")	6.27E-02	NA	NA	NA	NA	6.27E-02	1.96E-01	4.39E+01	2.75E+00	NA	NA	NA	NA	1.51E-03	2.24E+02	3.37E-01	1.00E+00	8.73E-01	3.54E+00	6.32E+02	2.47E-02	5.10E+02	6.94E-03
Lower Marsh (2-6")																						**Maximum HQ (Lower Marsh, 0-2")**	**8.90E-03**
LMSD-201 (2-6")	6.27E-02	NA	NA	NA	NA	6.27E-02	1.96E-01	1.59E+01	9.95E-01	NA	NA	NA	NA	1.51E-03	8.09E+01	1.22E-01	1.00E+00	8.73E-01	1.28E+00	6.32E+02	2.47E-02	5.10E+02	2.51E-03
LMSD-202 (2-6")	6.27E-02	NA	NA	NA	NA	6.27E-02	1.96E-01	9.41E+00	5.90E-01	NA	NA	NA	NA	1.51E-03	4.80E+01	7.23E-02	1.00E+00	8.73E-01	7.59E-01	6.32E+02	2.47E-02	5.10E+02	1.49E-03
LMSD-203 (2-6")	6.27E-02	NA	NA	NA	NA	6.27E-02	1.96E-01	5.59E+01	3.50E+00	NA	NA	NA	NA	1.51E-03	2.85E+02	4.29E-01	1.00E+00	8.73E-01	4.51E+00	6.32E+02	2.47E-02	5.10E+02	8.84E-03
LMSD-204 (2-6")	6.27E-02	NA	NA	NA	NA	6.27E-02	1.96E-01	4.45E+01	2.79E+00	NA	NA	NA	NA	1.51E-03	2.27E+02	3.42E-01	1.00E+00	8.73E-01	3.59E+00	6.32E+02	2.47E-02	5.10E+02	7.04E-03
Lower Marsh (6-12")																						**Maximum HQ (Lower Marsh, 2-6")**	**8.84E-03**
LMSD-201 (6-12")	6.27E-02	NA	NA	NA	NA	6.27E-02	1.96E-01	1.65E+01	1.04E+00	NA	NA	NA	NA	1.51E-03	8.44E+01	1.27E-01	1.00E+00	8.73E-01	1.33E+00	6.32E+02	2.47E-02	5.10E+02	2.62E-03
LMSD-202 (6-12")	6.27E-02	NA	NA	NA	NA	6.27E-02	1.96E-01	1.02E+01	6.42E-01	NA	NA	NA	NA	1.51E-03	5.22E+01	7.86E-02	1.00E+00	8.73E-01	8.25E-01	6.32E+02	2.47E-02	5.10E+02	1.62E-03
LMSD-203 (6-12")	6.27E-02	NA	NA	NA	NA	6.27E-02	1.96E-01	7.06E+01	4.43E+00	NA	NA	NA	NA	1.51E-03	3.60E+02	5.42E-01	1.00E+00	8.73E-01	5.69E+00	6.32E+02	2.47E-02	5.10E+02	1.12E-02
LMSD-204 (6-12")	6.27E-02	NA	NA	NA	NA	6.27E-02	1.96E-01	4.43E+01	2.78E+00	NA	NA	NA	NA	1.51E-03	2.26E+02	3.40E-01	1.00E+00	8.73E-01	3.57E+00	6.32E+02	2.47E-02	5.10E+02	7.01E-03
																						Maximum HQ (Lower Marsh, 6-12")	**1.12E-02**
Mink (Carnivorous Mammals)																							
Reference Sites																							
BRSD-5 (0-2")	4.25E-02	4.25E-02	9.20E-01	3.61E+01	1.53E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	3.92E+01	1.67E-02	1.00E+00	8.52E-01	1.82E+00	6.32E+02	2.47E-02	5.11E+02	3.56E-03
BRSD-5 (2-6")	4.25E-02	4.25E-02	9.20E-01	3.84E+01	1.63E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	4.17E+01	1.77E-02	1.00E+00	8.52E-01	1.94E+00	6.32E+02	2.47E-02	5.11E+02	3.79E-03
BRSD-5 (6-12")	4.25E-02	4.25E-02	9.20E-01	4.17E+01	1.77E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	4.53E+01	1.93E-02	1.00E+00	8.52E-01	2.10E+00	6.32E+02	2.47E-02	5.11E+02	4.12E-03
PGBG-1 (0-2")	4.25E-02	4.25E-02	9.20E-01	3.19E+01	1.36E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	3.47E+01	1.48E-02	1.00E+00	8.52E-01	1.61E+00	6.32E+02	2.47E-02	5.11E+02	3.16E-03
PGBG-1 (2-6")	4.25E-02	4.25E-02	9.20E-01	3.41E+01	1.45E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	3.70E+01	1.57E-02	1.00E+00	8.52E-01	1.72E+00	6.32E+02	2.47E-02	5.11E+02	3.36E-03
PGBG-1 (6-12")	4.25E-02	4.25E-02	9.20E-01	2.02E+01	8.61E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	2.20E+01	9.36E-03	1.00E+00	8.52E-01	1.02E+00	6.32E+02	2.47E-02	5.11E+02	2.00E-03

TABLE C-12DB: COPPER DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 12 - MARSH, WETLAND RECEPTORS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 118.73

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Mink (Carnivorous Mammals)																							
PGBG-2 (0-2")	4.25E-02	4.25E-02	9.20E-01	4.79E+01	2.04E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	5.20E+01	2.21E-02	1.00E+00	8.52E-01	2.41E+00	6.32E+02	2.47E-02	5.11E+02	4.73E-03
PGBG-2 (2-6")	4.25E-02	4.25E-02	9.20E-01	5.06E+01	2.15E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	5.50E+01	2.34E-02	1.00E+00	8.52E-01	2.55E+00	6.32E+02	2.47E-02	5.11E+02	5.00E-03
PGBG-2 (6-12")	4.25E-02	4.25E-02	9.20E-01	6.20E+01	2.64E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	6.74E+01	2.87E-02	1.00E+00	8.52E-01	3.13E+00	6.32E+02	2.47E-02	5.11E+02	6.13E-03
Eastern Upper Marsh (0-2")																						**Minimum HQ (Reference Sites)**	**2.00E-03**
UM-1000S-3500E (0-2")	4.25E-02	4.25E-02	1.39E-01	3.07E+01	1.31E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	2.21E+02	9.40E-02	1.00E+00	8.52E-01	1.64E+00	6.32E+02	2.47E-02	5.11E+02	3.22E-03
BRSD-15 (0-2")	4.25E-02	4.25E-02	1.39E-01	1.24E+01	5.28E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	8.92E+01	3.79E-02	1.00E+00	8.52E-01	6.63E-01	6.32E+02	2.47E-02	5.11E+02	1.30E-03
BRSD-4 (0-2")	4.25E-02	4.25E-02	1.39E-01	8.66E+00	3.68E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	6.23E+01	2.65E-02	1.00E+00	8.52E-01	4.63E-01	6.32E+02	2.47E-02	5.11E+02	9.07E-04
UM-750S-3500E (0-2")	4.25E-02	4.25E-02	1.39E-01	1.24E+02	5.29E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	8.94E+02	3.80E-01	1.00E+00	8.52E-01	6.65E+00	6.32E+02	2.47E-02	5.11E+02	1.30E-02
BRSD-16 (0-2")	4.25E-02	4.25E-02	1.39E-01	5.16E+01	2.19E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	3.71E+02	1.58E-01	1.00E+00	8.52E-01	2.76E+00	6.32E+02	2.47E-02	5.11E+02	5.40E-03
UM-750S-3000E (0-2")	4.25E-02	4.25E-02	1.39E-01	5.63E+01	2.40E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	4.05E+02	1.72E-01	1.00E+00	8.52E-01	3.01E+00	6.32E+02	2.47E-02	5.11E+02	5.90E-03
BRSD-3 (0-2")	4.25E-02	4.25E-02	1.39E-01	1.56E+02	6.62E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.12E+03	4.76E-01	1.00E+00	8.52E-01	8.33E+00	6.32E+02	2.47E-02	5.11E+02	1.63E-02
UM-500S-3250E (0-2")	4.25E-02	4.25E-02	1.39E-01	7.34E+01	3.12E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	5.28E+02	2.25E-01	1.00E+00	8.52E-01	3.93E+00	6.32E+02	2.47E-02	5.11E+02	7.69E-03
UM-500S-3000E (0-2")	4.25E-02	4.25E-02	1.39E-01	6.09E+01	2.59E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	4.38E+02	1.86E-01	1.00E+00	8.52E-01	3.26E+00	6.32E+02	2.47E-02	5.11E+02	6.38E-03
UM-500S-2750E (0-2")	4.25E-02	4.25E-02	1.39E-01	7.01E+01	2.98E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	5.04E+02	2.14E-01	1.00E+00	8.52E-01	3.75E+00	6.32E+02	2.47E-02	5.11E+02	7.34E-03
BRSD-25 (0-2")	4.25E-02	4.25E-02	1.39E-01	3.68E+01	1.57E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	2.65E+02	1.13E-01	1.00E+00	8.52E-01	1.97E+00	6.32E+02	2.47E-02	5.11E+02	3.86E-03
UM-250S-3000E (0-2")	4.25E-02	4.25E-02	1.39E-01	1.35E+02	5.74E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	9.71E+02	4.13E-01	1.00E+00	8.52E-01	7.22E+00	6.32E+02	2.47E-02	5.11E+02	1.41E-02
UM-250S-3250E (0-2")	4.25E-02	4.25E-02	1.39E-01	4.38E+01	1.86E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	3.15E+02	1.34E-01	1.00E+00	8.52E-01	2.34E+00	6.32E+02	2.47E-02	5.11E+02	4.59E-03
BRSD-24 (0-2")	4.25E-02	4.25E-02	1.39E-01	5.45E+01	2.32E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	3.92E+02	1.67E-01	1.00E+00	8.52E-01	2.92E+00	6.32E+02	2.47E-02	5.11E+02	5.71E-03
UM-250S-2750E (0-2")	4.25E-02	4.25E-02	1.39E-01	3.80E+01	1.61E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	2.73E+02	1.16E-01	1.00E+00	8.52E-01	2.03E+00	6.32E+02	2.47E-02	5.11E+02	3.98E-03
UM-250S-2500E (0-2")	4.25E-02	4.25E-02	1.39E-01	2.84E+01	1.21E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	2.04E+02	8.68E-02	1.00E+00	8.52E-01	1.52E+00	6.32E+02	2.47E-02	5.11E+02	2.97E-03
UM-0N-2500E (0-2")	4.25E-02	4.25E-02	1.39E-01	7.09E+01	3.02E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	5.10E+02	2.17E-01	1.00E+00	8.52E-01	3.79E+00	6.32E+02	2.47E-02	5.11E+02	7.43E-03
UM-0N-250E (0-2")	4.25E-02	4.25E-02	1.39E-01	8.13E+01	3.46E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	5.85E+02	2.49E-01	1.00E+00	8.52E-01	4.35E+00	6.32E+02	2.47E-02	5.11E+02	8.52E-03
BRSD-2 (0-2")	4.25E-02	4.25E-02	1.39E-01	4.77E+01	2.03E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	3.43E+02	1.46E-01	1.00E+00	8.52E-01	2.55E+00	6.32E+02	2.47E-02	5.11E+02	5.00E-03
UM-500N-2500E (0-2")	4.25E-02	4.25E-02	1.39E-01	8.24E+00	3.51E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	5.93E+01	2.52E-02	1.00E+00	8.52E-01	4.41E-01	6.32E+02	2.47E-02	5.11E+02	8.64E-04
UM-250N-2500E (0-2")	4.25E-02	4.25E-02	1.39E-01	7.72E+01	3.28E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	5.55E+02	2.36E-01	1.00E+00	8.52E-01	4.13E+00	6.32E+02	2.47E-02	5.11E+02	8.08E-03
UM-250N-2250E (0-2")	4.25E-02	4.25E-02	1.39E-01	5.06E+01	2.15E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	3.64E+02	1.55E-01	1.00E+00	8.52E-01	2.71E+00	6.32E+02	2.47E-02	5.11E+02	5.30E-03
Western Upper Marsh (0-2")																						**Maximum HQ (Eastern Upper Marsh, 0-2")**	**1.63E-02**
UM-500S-2500E (0-2")	4.25E-02	4.25E-02	1.39E-01	5.19E+01	2.21E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	3.73E+02	1.59E-01	1.00E+00	8.52E-01	2.77E+00	6.32E+02	2.47E-02	5.11E+02	5.43E-03
UM-0N-2000E (0-2")	4.25E-02	4.25E-02	1.39E-01	1.10E+02	4.66E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	7.88E+02	3.35E-01	1.00E+00	8.52E-01	5.86E+00	6.32E+02	2.47E-02	5.11E+02	1.15E-02
UM-500S-2000E (0-2")	4.25E-02	4.25E-02	1.39E-01	2.54E+01	1.08E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.83E+02	7.78E-02	1.00E+00	8.52E-01	1.36E+00	6.32E+02	2.47E-02	5.11E+02	2.67E-03
UM-250N-1750E (0-2")	4.25E-02	4.25E-02	1.39E-01	2.13E+01	9.05E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.53E+02	6.51E-02	1.00E+00	8.52E-01	1.14E+00	6.32E+02	2.47E-02	5.11E+02	2.23E-03
UM-0N-1500E (0-2")	4.25E-02	4.25E-02	1.39E-01	1.26E+01	5.37E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	9.08E+01	3.86E-02	1.00E+00	8.52E-01	6.75E-01	6.32E+02	2.47E-02	5.11E+02	1.32E-03
UM-250S-1500E (0-2")	4.25E-02	4.25E-02	1.39E-01	7.94E+01	3.38E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	5.71E+02	2.43E-01	1.00E+00	8.52E-01	4.25E+00	6.32E+02	2.47E-02	5.11E+02	8.32E-03
UM-250S-1250E (0-2")	4.25E-02	4.25E-02	1.39E-01	1.27E+01	5.39E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	9.11E+01	3.88E-02	1.00E+00	8.52E-01	6.78E-01	6.32E+02	2.47E-02	5.11E+02	1.33E-03
BRSD-6 (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-1000E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-750E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-500E (0-2")	4.25E-02	4.25E-02	1.39E-01	6.26E+01	2.66E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	4.50E+02	1.91E-01	1.00E+00	8.52E-01	3.35E+00	6.32E+02	2.47E-02	5.11E+02	6.55E-03
UM-250S-500E (0-2")	4.25E-02	4.25E-02	1.39E-01	1.12E+01	4.78E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	8.08E+01	3.44E-02	1.00E+00	8.52E-01	6.01E-01	6.32E+02	2.47E-02	5.11E+02	1.18E-03
UM-250S-250E (0-2")	4.25E-02	4.25E-02	1.39E-01	3.34E+01	1.42E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	2.40E+02	1.02E-01	1.00E+00	8.52E-01	1.79E+00	6.32E+02	2.47E-02	5.11E+02	3.50E-03
BRSD-7 (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-8 (0-2")	4.25E-02	4.25E-02	1.39E-01	2.70E+01	1.15E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.94E+02	8.25E-02	1.00E+00	8.52E-01	1.44E+00	6.32E+02	2.47E-02	5.11E+02	2.83E-03
UM-500S-500E (0-2")	4.25E-02	4.25E-02	1.39E-01	1.34E+01	5.69E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	9.63E+01	4.10E-02	1.00E+00	8.52E-01	7.16E-01	6.32E+02	2.47E-02	5.11E+02	1.40E-03
BRSD-9 (0-2")	4.25E-02	4.25E-02	1.39E-01	1.17E+01	4.96E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	8.39E+01	3.57E-02	1.00E+00	8.52E-01	6.24E-01	6.32E+02	2.47E-02	5.11E+02	1.22E-03
BRSD-10 (0-2")	4.25E-02	4.25E-02	1.39E-01	9.05E+01	3.85E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	6.51E+02	2.77E-01	1.00E+00	8.52E-01	4.84E+00	6.32E+02	2.47E-02	5.11E+02	9.48E-03
BRSD-11 (0-2")	4.25E-02	4.25E-02	1.39E-01	1.85E+01	7.87E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.33E+02	5.66E-02	1.00E+00	8.52E-01	9.89E-01	6.32E+02	2.47E-02	5.11E+02	1.94E-03
Eastern Upper Marsh (2-6")																						**Maximum HQ (Western Upper Marsh, 0-2")**	**1.15E-02**
UM-1000S-3500E (2-6")	4.25E-02	4.25E-02	1.39E-01	1.47E+01	6.27E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.06E+02	4.51E-02	1.00E+00	8.52E-01	7.88E-01	6.32E+02	2.47E-02	5.11E+02	1.54E-03
BRSD-15 (2-6")	4.25E-02	4.25E-02	1.39E-01	1.35E+01	5.76E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	9.74E+01	4.14E-02	1.00E+00	8.52E-01	7.24E-01	6.32E+02	2.47E-02	5.11E+02	1.42E-03
BRSD-4 (2-6")	4.25E-02	4.25E-02	1.39E-01	1.79E+01	7.63E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.29E+02	5.49E-02	1.00E+00	8.52E-01	9.60E-01	6.32E+02	2.47E-02	5.11E+02	1.88E-03
UM-750S-3500E (2-6")	4.25E-02	4.25E-02	1.39E-01	4.75E+01	2.02E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	3.42E+02	1.45E-01	1.00E+00	8.52E-01	2.54E+00	6.32E+02	2.47E-02	5.11E+02	4.98E-03
BRSD-16 (2-6")	4.25E-02	4.25E-02	1.39E-01	1.56E+02	6.62E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.12E+03	4.76E-01	1.00E+00	8.52E-01	8.33E+00	6.32E+02	2.47E-02	5.11E+02	1.63E-02
UM-750S-3000E (2-6")	4.25E-02	4.25E-02	1.39E-01	4.92E+01	2.09E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	3.54E+02	1.51E-01	1.00E+00	8.52E-01	2.63E+00	6.32E+02	2.47E-02	5.11E+02	5.16E-03
BRSD-3 (2-6")	4.25E-02	4.25E-02	1.39E-01	1.97E+02	8.40E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.42E+03	6.04E-01	1.00E+00	8.52E-01	1.06E+01	6.32E+02	2.47E-02	5.11E+02	2.07E-02
UM-500S-3250E (2-6")	4.25E-02	4.25E-02	1.39E-01	3.98E+01	1.69E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	2.86E+02	1.22E-01	1.00E+00	8.52E-01	2.13E+00	6.32E+02	2.47E-02	5.11E+02	4.17E-03
UM-500S-3000E (2-6")	4.25E-02	4.25E-02	1.39E-01	1.14E+01	4.85E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	8.20E+01	3.49E-02	1.00E+00	8.52E-01	6.10E-01	6.32E+02	2.47E-02	5.11E+02	1.19E-03
UM-500S-2750E (2-6")	4.25E-02	4.25E-02	1.39E-01	4.42E+01	1.88E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	3.18E+02	1.35E-01	1.00E+00	8.52E-01	2.37E+00	6.32E+02	2.47E-02	5.11E+02	4.63E-03

TABLE C-12DB: COPPER DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 12 - MARSH, WETLAND RECEPTORS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **118.73**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Mink (Carnivorous Mammals)																							
BRSD-25 (2-6")	4.25E-02	4.25E-02	1.39E-01	5.59E+01	2.38E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	4.02E+02	1.71E-01	1.00E+00	8.52E-01	2.99E+00	6.32E+02	2.47E-02	5.11E+02	5.86E-03
UM-250S-3000E (2-6")	4.25E-02	4.25E-02	1.39E-01	1.11E+02	4.74E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	8.01E+02	3.41E-01	1.00E+00	8.52E-01	5.96E+00	6.32E+02	2.47E-02	5.11E+02	1.17E-02
UM-250S-3250E (2-6")	4.25E-02	4.25E-02	1.39E-01	1.14E+01	4.84E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	8.18E+01	3.48E-02	1.00E+00	8.52E-01	6.08E-01	6.32E+02	2.47E-02	5.11E+02	1.19E-03
BRSD-24 (2-6")	4.25E-02	4.25E-02	1.39E-01	1.03E+02	4.38E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	7.40E+02	3.15E-01	1.00E+00	8.52E-01	5.50E+00	6.32E+02	2.47E-02	5.11E+02	1.08E-02
UM-250S-2750E (2-6")	4.25E-02	4.25E-02	1.39E-01	6.14E+01	2.61E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	4.42E+02	1.88E-01	1.00E+00	8.52E-01	3.29E+00	6.32E+02	2.47E-02	5.11E+02	6.44E-03
UM-0N-2500E (2-6")	4.25E-02	4.25E-02	1.39E-01	3.64E+01	1.55E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	2.62E+02	1.11E-01	1.00E+00	8.52E-01	1.95E+00	6.32E+02	2.47E-02	5.11E+02	3.82E-03
BRSD-2 (2-6")	4.25E-02	4.25E-02	1.39E-01	5.69E+01	2.42E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	4.09E+02	1.74E-01	1.00E+00	8.52E-01	3.04E+00	6.32E+02	2.47E-02	5.11E+02	5.96E-03
UM-500N-2500E (2-6")	4.25E-02	4.25E-02	1.39E-01	1.03E+01	4.39E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	7.43E+01	3.16E-02	1.00E+00	8.52E-01	5.53E-01	6.32E+02	2.47E-02	5.11E+02	1.08E-03
UM-250N-2500E (2-6")	4.25E-02	4.25E-02	1.39E-01	7.12E+01	3.03E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	5.12E+02	2.18E-01	1.00E+00	8.52E-01	3.81E+00	6.32E+02	2.47E-02	5.11E+02	7.46E-03
UM-250N-2250E (2-6")	4.25E-02	4.25E-02	1.39E-01	1.99E+01	8.46E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.43E+02	6.08E-02	1.00E+00	8.52E-01	1.06E+00	6.32E+02	2.47E-02	5.11E+02	2.08E-03
Western Upper Marsh (2-6")																						**Maximum HQ (Eastern Upper Marsh, 2-6")**	**2.07E-02**
UM-500S-2500E (2-6")	4.25E-02	4.25E-02	1.39E-01	4.94E+01	2.10E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	3.55E+02	1.51E-01	1.00E+00	8.52E-01	2.64E+00	6.32E+02	2.47E-02	5.11E+02	5.17E-03
UM-0N-2000E (2-6")	4.25E-02	4.25E-02	1.39E-01	9.88E+01	4.20E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	7.11E+02	3.02E-01	1.00E+00	8.52E-01	5.29E+00	6.32E+02	2.47E-02	5.11E+02	1.04E-02
UM-500S-2000E (2-6")	4.25E-02	4.25E-02	1.39E-01	3.29E+01	1.40E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	2.37E+02	1.01E-01	1.00E+00	8.52E-01	1.76E+00	6.32E+02	2.47E-02	5.11E+02	3.45E-03
UM-250N-1750E (2-6")	4.25E-02	4.25E-02	1.39E-01	1.50E+01	6.39E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.08E+02	4.59E-02	1.00E+00	8.52E-01	8.03E-01	6.32E+02	2.47E-02	5.11E+02	1.57E-03
UM-0N-1500E (2-6")	4.25E-02	4.25E-02	1.39E-01	1.88E+01	7.98E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.35E+02	5.74E-02	1.00E+00	8.52E-01	1.00E+00	6.32E+02	2.47E-02	5.11E+02	1.97E-03
UM-250S-1500E (2-6")	4.25E-02	4.25E-02	1.39E-01	1.18E+02	5.02E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	8.49E+02	3.61E-01	1.00E+00	8.52E-01	6.31E+00	6.32E+02	2.47E-02	5.11E+02	1.24E-02
UM-250S-1250E (2-6")	4.25E-02	4.25E-02	1.39E-01	1.10E+01	4.70E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	7.94E+01	3.38E-02	1.00E+00	8.52E-01	5.91E-01	6.32E+02	2.47E-02	5.11E+02	1.16E-03
BRSD-6 (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-1000E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-750E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-500E (2-6")	4.25E-02	4.25E-02	1.39E-01	3.84E+02	1.63E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	2.76E+03	1.17E+00	1.00E+00	8.52E-01	2.05E+01	6.32E+02	2.47E-02	5.11E+02	4.02E-02
UM-250S-500E (2-6")	4.25E-02	4.25E-02	1.39E-01	1.25E+01	5.33E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	9.02E+01	3.84E-02	1.00E+00	8.52E-01	6.71E-01	6.32E+02	2.47E-02	5.11E+02	1.31E-03
UM-0N-250E (2-6")	4.25E-02	4.25E-02	1.39E-01	4.20E+01	1.79E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	3.02E+02	1.28E-01	1.00E+00	8.52E-01	2.25E+00	6.32E+02	2.47E-02	5.11E+02	4.40E-03
UM-250S-250E (2-6")	4.25E-02	4.25E-02	1.39E-01	2.89E+01	1.23E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	2.08E+02	8.85E-02	1.00E+00	8.52E-01	1.55E+00	6.32E+02	2.47E-02	5.11E+02	3.03E-03
BRSD-7 (2-6")	4.25E-02	4.25E-02	1.39E-01	7.85E+00	3.34E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	5.65E+01	2.40E-02	1.00E+00	8.52E-01	4.20E-01	6.32E+02	2.47E-02	5.11E+02	8.23E-04
BRSD-8 (2-6")	4.25E-02	4.25E-02	1.39E-01	2.61E+01	1.11E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.88E+02	8.00E-02	1.00E+00	8.52E-01	1.40E+00	6.32E+02	2.47E-02	5.11E+02	2.74E-03
UM-500S-500E (2-6")	4.25E-02	4.25E-02	1.39E-01	1.23E+01	5.22E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	8.83E+01	3.76E-02	1.00E+00	8.52E-01	6.57E-01	6.32E+02	2.47E-02	5.11E+02	1.29E-03
BRSD-9 (2-6")	4.25E-02	4.25E-02	1.39E-01	7.35E+00	3.13E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	5.29E+01	2.25E-02	1.00E+00	8.52E-01	3.93E-01	6.32E+02	2.47E-02	5.11E+02	7.70E-04
BRSD-10 (2-6")	4.25E-02	4.25E-02	1.39E-01	9.59E+01	4.08E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	6.90E+02	2.94E-01	1.00E+00	8.52E-01	5.13E+00	6.32E+02	2.47E-02	5.11E+02	1.00E-02
BRSD-11 (2-6")	4.25E-02	4.25E-02	1.39E-01	2.14E+01	9.11E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.54E+02	6.55E-02	1.00E+00	8.52E-01	1.15E+00	6.32E+02	2.47E-02	5.11E+02	2.24E-03
Eastern Upper Marsh (6-12")																						**Maximum HQ (Western Upper Marsh, 2-6")**	**4.02E-02**
UM-1000S-3500E (6-12")	4.25E-02	4.25E-02	1.39E-01	1.20E+01	5.12E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	8.66E+01	3.68E-02	1.00E+00	8.52E-01	6.44E-01	6.32E+02	2.47E-02	5.11E+02	1.26E-03
BRSD-15 (6-12")	4.25E-02	4.25E-02	1.39E-01	1.36E+01	5.79E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	9.79E+01	4.16E-02	1.00E+00	8.52E-01	7.28E-01	6.32E+02	2.47E-02	5.11E+02	1.43E-03
BRSD-4 (6-12")	4.25E-02	4.25E-02	1.39E-01	1.29E+01	5.47E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	9.25E+01	3.93E-02	1.00E+00	8.52E-01	6.88E-01	6.32E+02	2.47E-02	5.11E+02	1.35E-03
UM-750S-3500E (6-12")	4.25E-02	4.25E-02	1.39E-01	5.69E+01	2.42E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	4.09E+02	1.74E-01	1.00E+00	8.52E-01	3.04E+00	6.32E+02	2.47E-02	5.11E+02	5.96E-03
BRSD-16 (6-12")	4.25E-02	4.25E-02	1.39E-01	7.90E+01	3.36E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	5.68E+02	2.42E-01	1.00E+00	8.52E-01	4.22E+00	6.32E+02	2.47E-02	5.11E+02	8.27E-03
UM-750S-3000E (6-12")	4.25E-02	4.25E-02	1.39E-01	4.77E+01	2.03E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	3.43E+02	1.46E-01	1.00E+00	8.52E-01	2.55E+00	6.32E+02	2.47E-02	5.11E+02	5.00E-03
BRSD-3 (6-12")	4.25E-02	4.25E-02	1.39E-01	1.72E+02	7.33E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.24E+03	5.27E-01	1.00E+00	8.52E-01	9.22E+00	6.32E+02	2.47E-02	5.11E+02	1.81E-02
UM-500S-3250E (6-12")	4.25E-02	4.25E-02	1.39E-01	2.98E+01	1.27E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	2.14E+02	9.10E-02	1.00E+00	8.52E-01	1.59E+00	6.32E+02	2.47E-02	5.11E+02	3.12E-03
UM-500S-3000E (6-12")	4.25E-02	4.25E-02	1.39E-01	1.23E+01	5.24E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	8.86E+01	3.77E-02	1.00E+00	8.52E-01	6.59E-01	6.32E+02	2.47E-02	5.11E+02	1.29E-03
UM-500S-2750E (6-12")	4.25E-02	4.25E-02	1.39E-01	4.03E+01	1.71E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	2.90E+02	1.23E-01	1.00E+00	8.52E-01	2.16E+00	6.32E+02	2.47E-02	5.11E+02	4.22E-03
BRSD-25 (6-12")	4.25E-02	4.25E-02	1.39E-01	2.66E+01	1.13E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.91E+02	8.12E-02	1.00E+00	8.52E-01	1.42E+00	6.32E+02	2.47E-02	5.11E+02	2.78E-03
UM-250S-3000E (6-12")	4.25E-02	4.25E-02	1.39E-01	1.01E+02	4.32E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	7.30E+02	3.11E-01	1.00E+00	8.52E-01	5.43E+00	6.32E+02	2.47E-02	5.11E+02	1.06E-02
UM-250S-3250E (6-12")	4.25E-02	4.25E-02	1.39E-01	1.21E+01	5.14E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	8.69E+01	3.70E-02	1.00E+00	8.52E-01	6.46E-01	6.32E+02	2.47E-02	5.11E+02	1.27E-03
BRSD-24 (6-12")	4.25E-02	4.25E-02	1.39E-01	7.69E+01	3.27E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	5.53E+02	2.35E-01	1.00E+00	8.52E-01	4.11E+00	6.32E+02	2.47E-02	5.11E+02	8.05E-03
UM-250S-2750E (6-12")	4.25E-02	4.25E-02	1.39E-01	7.15E+01	3.04E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	5.14E+02	2.19E-01	1.00E+00	8.52E-01	3.82E+00	6.32E+02	2.47E-02	5.11E+02	7.49E-03
UM-250S-2500E (6-12")	4.25E-02	4.25E-02	1.39E-01	2.04E+01	8.69E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.47E+02	6.25E-02	1.00E+00	8.52E-01	1.09E+00	6.32E+02	2.47E-02	5.11E+02	2.14E-03
BRSD-2 (6-12")	4.25E-02	4.25E-02	1.39E-01	1.28E+02	5.43E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	9.18E+02	3.91E-01	1.00E+00	8.52E-01	6.83E+00	6.32E+02	2.47E-02	5.11E+02	1.34E-02
UM-500N-2500E (6-12")	4.25E-02	4.25E-02	1.39E-01	4.55E+00	1.93E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	3.27E+01	1.39E-02	1.00E+00	8.52E-01	2.43E-01	6.32E+02	2.47E-02	5.11E+02	4.76E-04
UM-250N-2500E (6-12")	4.25E-02	4.25E-02	1.39E-01	5.20E+01	2.21E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	3.74E+02	1.59E-01	1.00E+00	8.52E-01	2.78E+00	6.32E+02	2.47E-02	5.11E+02	5.45E-03
UM-250N-2250E (6-12")	4.25E-02	4.25E-02	1.39E-01	2.50E+01	1.06E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.80E+02	7.66E-02	1.00E+00	8.52E-01	1.34E+00	6.32E+02	2.47E-02	5.11E+02	2.62E-03
Western Upper Marsh (6-12")																						**Maximum HQ (Eastern Upper Marsh, 6-12")**	**1.81E-02**
UM-500S-2500E (6-12")	4.25E-02	4.25E-02	1.39E-01	5.06E+01	2.15E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	3.64E+02	1.55E-01	1.00E+00	8.52E-01	2.71E+00	6.32E+02	2.47E-02	5.11E+02	5.30E-03
UM-0N-2000E (6-12")	4.25E-02	4.25E-02	1.39E-01	1.50E+02	6.39E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.08E+03	4.59E-01	1.00E+00	8.52E-01	8.03E+00	6.32E+02	2.47E-02	5.11E+02	1.57E-02
UM-500S-2000E (6-12")	4.25E-02	4.25E-02	1.39E-01	3.23E+01	1.37E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	2.32E+02	9.87E-02	1.00E+00	8.52E-01	1.73E+00	6.32E+02	2.47E-02	5.11E+02	3.38E-03
UM-250N-1750E (6-12")	4.25E-02	4.25E-02	1.39E-01	1.99E+01	8.46E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.43E+02	6.08E-02	1.00E+00	8.52E-01	1.06E+00	6.32E+02	2.47E-02	5.11E+02	2.08E-03

TABLE C-12DB: COPPER DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 12 - MARSH, WETLAND RECEPTORS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **118.73**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Mink (Carnivorous Mammals)																							
UM-0N-1500E (6-12")	4.25E-02	4.25E-02	1.39E-01	2.56E+01	1.09E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.84E+02	7.83E-02	1.00E+00	8.52E-01	1.37E+00	6.32E+02	2.47E-02	5.11E+02	2.68E-03
UM-250S-1500E (6-12")	4.25E-02	4.25E-02	1.39E-01	7.13E+01	3.03E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	5.13E+02	2.18E-01	1.00E+00	8.52E-01	3.82E+00	6.32E+02	2.47E-02	5.11E+02	7.47E-03
UM-250S-1250E (6-12")	4.25E-02	4.25E-02	1.39E-01	1.08E+01	4.58E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	7.75E+01	3.30E-02	1.00E+00	8.52E-01	5.76E-01	6.32E+02	2.47E-02	5.11E+02	1.13E-03
BRSD-6 (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-1000E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-750E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-500E (6-12")	4.25E-02	4.25E-02	1.39E-01	1.01E+02	4.31E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	7.29E+02	3.10E-01	1.00E+00	8.52E-01	5.42E+00	6.32E+02	2.47E-02	5.11E+02	1.06E-02
UM-250S-500E (6-12")	4.25E-02	4.25E-02	1.39E-01	1.58E+01	6.74E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.14E+02	4.85E-02	1.00E+00	8.52E-01	8.48E-01	6.32E+02	2.47E-02	5.11E+02	1.66E-03
UM-0N-250E (6-12")	4.25E-02	4.25E-02	1.39E-01	4.78E+01	2.03E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	3.44E+02	1.46E-01	1.00E+00	8.52E-01	2.56E+00	6.32E+02	2.47E-02	5.11E+02	5.01E-03
UM-250S-250E (6-12")	4.25E-02	4.25E-02	1.39E-01	1.78E+01	7.57E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.28E+02	5.44E-02	1.00E+00	8.52E-01	9.52E-01	6.32E+02	2.47E-02	5.11E+02	1.86E-03
BRSD-7 (6-12")	4.25E-02	4.25E-02	1.39E-01	6.76E+00	2.87E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	4.86E+01	2.07E-02	1.00E+00	8.52E-01	3.61E-01	6.32E+02	2.47E-02	5.11E+02	7.08E-04
BRSD-8 (6-12")	4.25E-02	4.25E-02	1.39E-01	2.78E+01	1.18E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	2.00E+02	8.51E-02	1.00E+00	8.52E-01	1.49E+00	6.32E+02	2.47E-02	5.11E+02	2.91E-03
UM-500S-500E (6-12")	4.25E-02	4.25E-02	1.39E-01	1.14E+01	4.85E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	8.20E+01	3.49E-02	1.00E+00	8.52E-01	6.10E-01	6.32E+02	2.47E-02	5.11E+02	1.19E-03
BRSD-9 (6-12")	4.25E-02	4.25E-02	1.39E-01	1.17E+01	4.97E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	8.41E+01	3.58E-02	1.00E+00	8.52E-01	6.26E-01	6.32E+02	2.47E-02	5.11E+02	1.22E-03
BRSD-10 (6-12")	4.25E-02	4.25E-02	1.39E-01	1.35E+02	5.74E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	9.71E+02	4.13E-01	1.00E+00	8.52E-01	7.22E+00	6.32E+02	2.47E-02	5.11E+02	1.41E-02
BRSD-11 (6-12")	4.25E-02	4.25E-02	1.39E-01	2.06E+01	8.75E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.48E+02	6.30E-02	1.00E+00	8.52E-01	1.10E+00	6.32E+02	2.47E-02	5.11E+02	2.16E-03
Middle Marsh (0-2")																						**Maximum HQ (Western Upper Marsh, 6-12")**	**1.57E-02**
MMSD-201 (0-2")	4.25E-02	4.25E-02	1.39E-01	6.05E+01	2.57E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	4.35E+02	1.85E-01	1.00E+00	8.52E-01	3.24E+00	6.32E+02	2.47E-02	5.11E+02	6.34E-03
MMSD-202 (0-2")	4.25E-02	4.25E-02	1.39E-01	6.09E+01	2.59E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	4.38E+02	1.86E-01	1.00E+00	8.52E-01	3.26E+00	6.32E+02	2.47E-02	5.11E+02	6.38E-03
Middle Marsh (2-6")																						**Maximum HQ (Middle Marsh, 0-2")**	**6.38E-03**
MMSD-201 (2-6")	4.25E-02	4.25E-02	1.39E-01	8.34E+01	3.55E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	6.00E+02	2.55E-01	1.00E+00	8.52E-01	4.46E+00	6.32E+02	2.47E-02	5.11E+02	8.74E-03
MMSD-202 (2-6")	4.25E-02	4.25E-02	1.39E-01	7.17E+01	3.05E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	5.16E+02	2.19E-01	1.00E+00	8.52E-01	3.84E+00	6.32E+02	2.47E-02	5.11E+02	7.52E-03
Middle Marsh (6-12")																						**Maximum HQ (Middle Marsh, 2-6")**	**8.74E-03**
MMSD-201 (6-12")	4.25E-02	4.25E-02	1.39E-01	1.01E+02	4.29E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	7.26E+02	3.09E-01	1.00E+00	8.52E-01	5.40E+00	6.32E+02	2.47E-02	5.11E+02	1.06E-02
MMSD-202 (6-12")	4.25E-02	4.25E-02	1.39E-01	4.06E+01	1.73E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	2.92E+02	1.24E-01	1.00E+00	8.52E-01	2.17E+00	6.32E+02	2.47E-02	5.11E+02	4.25E-03
Lower Marsh (0-2")																						**Maximum HQ (Middle Marsh, 6-12")**	**1.06E-02**
LMSD-201 (0-2")	4.25E-02	4.25E-02	1.39E-01	1.14E+01	4.83E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	8.17E+01	3.48E-02	1.00E+00	8.52E-01	6.08E-01	6.32E+02	2.47E-02	5.11E+02	1.19E-03
LMSD-202 (0-2")	4.25E-02	4.25E-02	1.39E-01	9.01E+00	3.83E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	6.48E+01	2.76E-02	1.00E+00	8.52E-01	4.82E-01	6.32E+02	2.47E-02	5.11E+02	9.44E-04
LMSD-203 (0-2")	4.25E-02	4.25E-02	1.39E-01	3.99E+01	1.70E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	2.87E+02	1.22E-01	1.00E+00	8.52E-01	2.13E+00	6.32E+02	2.47E-02	5.11E+02	4.18E-03
LMSD-204 (0-2")	4.25E-02	4.25E-02	1.39E-01	3.11E+01	1.32E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	2.24E+02	9.53E-02	1.00E+00	8.52E-01	1.67E+00	6.32E+02	2.47E-02	5.11E+02	3.26E-03
Lower Marsh (2-6")																						**Maximum HQ (Lower Marsh, 0-2")**	**4.18E-03**
LMSD-201 (2-6")	4.25E-02	4.25E-02	1.39E-01	1.12E+01	4.78E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	8.09E+01	3.44E-02	1.00E+00	8.52E-01	6.02E-01	6.32E+02	2.47E-02	5.11E+02	1.18E-03
LMSD-202 (2-6")	4.25E-02	4.25E-02	1.39E-01	6.67E+00	2.84E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	4.80E+01	2.04E-02	1.00E+00	8.52E-01	3.57E-01	6.32E+02	2.47E-02	5.11E+02	6.99E-04
LMSD-203 (2-6")	4.25E-02	4.25E-02	1.39E-01	3.96E+01	1.69E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	2.85E+02	1.21E-01	1.00E+00	8.52E-01	2.12E+00	6.32E+02	2.47E-02	5.11E+02	4.15E-03
LMSD-204 (2-6")	4.25E-02	4.25E-02	1.39E-01	3.16E+01	1.34E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	2.27E+02	9.66E-02	1.00E+00	8.52E-01	1.69E+00	6.32E+02	2.47E-02	5.11E+02	3.31E-03
Lower Marsh (6-12")																						**Maximum HQ (Lower Marsh, 2-6")**	**4.15E-03**
LMSD-201 (6-12")	4.25E-02	4.25E-02	1.39E-01	1.17E+01	4.99E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	8.44E+01	3.59E-02	1.00E+00	8.52E-01	6.28E-01	6.32E+02	2.47E-02	5.11E+02	1.23E-03
LMSD-202 (6-12")	4.25E-02	4.25E-02	1.39E-01	7.26E+00	3.09E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	5.22E+01	2.22E-02	1.00E+00	8.52E-01	3.88E-01	6.32E+02	2.47E-02	5.11E+02	7.60E-04
LMSD-203 (6-12")	4.25E-02	4.25E-02	1.39E-01	5.00E+01	2.13E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	3.60E+02	1.53E-01	1.00E+00	8.52E-01	2.68E+00	6.32E+02	2.47E-02	5.11E+02	5.24E-03
LMSD-204 (6-12")	4.25E-02	4.25E-02	1.39E-01	3.14E+01	1.34E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	2.26E+02	9.61E-02	1.00E+00	8.52E-01	1.68E+00	6.32E+02	2.47E-02	5.11E+02	3.29E-03
																						Maximum HQ (Lower Marsh, 6-12")	**5.24E-03**

Notes: Results are evaluated in order of upstream to downstream.

1 See Tables 3-1 through 3-13 for ingestion rates, foraging ranges used to calculate the SUF, and body weights.

2 Site BAFs were calculated by dividing site-collected tissue by collocated soil concentrations. The maximum plant and invertebrate BAF calculated for the eastern transect (UMT1) were used for the Eastern Upper Marsh dose calculations. The maximum plant and invertebrate BAF calculated for the western transect (UMT2) were used for the Western Upper Marsh dose calculations. The maximum mammal BAF calculated for the eastern transect (UMT1) was used for the Eastern and Western Upper Marsh calculations because no mammals were collected in the Western Upper Marsh. The maximum plant, mammal, and invertebrate BAFs calculated for the Pass Creek reference site (PGREF) were used for the reference site dose calculations.

3 The mammal, plant, and invertebrate concentrations were calculated by multiplying the soil concentration by the BAF to generate a tissue concentration (see note 2).

4 Mammal, plant, and invertebrate daily doses were calculated by multiplying the ingestion rate (see note 1) by the tissue concentration (see note 3).

5 Soil concentration from specified depth below ground surface at point ID from laboratory analysis. Doses were not calculated for detected and non-detected soil concentrations measured below the minimum reference site concentration (0-12"), as indicated by BB. For results that were measured at less than the detection limit, doses were calculated using half of the detection limit.

6 Soil daily dose was calculated by multiplying the soil ingestion rate (see note 1) by soil concentration (see note 5).

7 Total daily dose is calculated using the following equation: total daily dose = ([mammal daily dose (if applicable) + plant daily dose (if applicable) + invertebrate daily dose (if applicable) + soil daily dose]*SUF)/receptor species body weight.

8 The derivation of TRVs is described in Navy (1998). The high TRV was used for dose calculations.

9 Allometrically adjusted TRVs for birds were calculated using the following equation: receptor species TRV = (test species TRV) x (test species body weight / receptor species body weight)$^{(1-1.2)}$.

10 Allometrically adjusted TRVs for mammals were calculated using the following equation: receptor species TRV = (test species TRV) x (test species body weight / receptor species body weight)$^{(1-0.94)}$.

11 HQs were calculated using the following equation: HQ = total daily dose/allometrically adjusted TRV.

12 Green cells indicate an HQ greater than 1.0

BAF	Bioaccumulation Factor	ID	Identification	NA	Not applicable
BB	Below minimum background reference site concentration	kg	Kilogram	Navy	Department of the Navy
EE/CA	Engineering Evaluation/Cost Analysis	kg/day	Kilogram per day	SUF	Site use factor
EU	Exposure Unit	mg/day	Milligram per day	TRV	Toxicity reference value
HQ	Hazard Quotient	mg/kg	Milligram per kilogram		

Sources: Department of the Navy. 1998. "Development of Toxicity Reference Values for Conducting Ecological Risk Assessments at Naval Facilities in California, Interim Final." Prepared by Naval Facilities Engineering Command, Engineering Field Activity West (EFA

TABLE C-12EA: LEAD DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 12 - MARSH, TERRESTRIAL RECEPTORS

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **118.73**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Mourning Dove (Herbivorous Birds)																							
Reference Sites																							
BRSD-5 (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	5.36E-04	6.47E+01	3.47E-02	4.58E-01	1.09E-01	1.46E-01	8.75E+00	8.00E-01	5.88E+00	2.48E-02
BRSD-5 (2-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	5.36E-04	6.17E+01	3.31E-02	4.58E-01	1.09E-01	1.39E-01	8.75E+00	8.00E-01	5.88E+00	2.36E-02
BRSD-5 (6-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	5.36E-04	7.90E+01	4.23E-02	4.58E-01	1.09E-01	1.78E-01	8.75E+00	8.00E-01	5.88E+00	3.02E-02
PGBG-1 (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	5.36E-04	5.50E+01	2.95E-02	4.58E-01	1.09E-01	1.24E-01	8.75E+00	8.00E-01	5.88E+00	2.11E-02
PGBG-1 (2-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	5.36E-04	1.01E+02	5.41E-02	4.58E-01	1.09E-01	2.27E-01	8.75E+00	8.00E-01	5.88E+00	3.87E-02
PGBG-1 (6-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	5.36E-04	1.74E+02	9.32E-02	4.58E-01	1.09E-01	3.91E-01	8.75E+00	8.00E-01	5.88E+00	6.66E-02
PGBG-2 (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	5.36E-04	1.05E+02	5.63E-02	4.58E-01	1.09E-01	2.36E-01	8.75E+00	8.00E-01	5.88E+00	4.02E-02
PGBG-2 (2-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	5.36E-04	1.08E+02	5.79E-02	4.58E-01	1.09E-01	2.43E-01	8.75E+00	8.00E-01	5.88E+00	4.13E-02
PGBG-2 (6-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	5.36E-04	1.13E+02	6.05E-02	4.58E-01	1.09E-01	2.54E-01	8.75E+00	8.00E-01	5.88E+00	4.33E-02
Eastern Upper Marsh (0-2")																						**Minimum HQ (Reference Sites)**	**2.11E-02**
UM-1000S-3500E (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.91E-01	3.38E+02	1.95E+00	NA	NA	NA	NA	5.36E-04	1.77E+03	9.48E-01	4.58E-01	1.09E-01	1.22E+01	8.75E+00	8.00E-01	5.88E+00	2.07E+00
BRSD-15 (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.91E-01	1.28E+01	7.36E-02	NA	NA	NA	NA	5.36E-04	6.69E+01	3.58E-02	4.58E-01	1.09E-01	4.60E-01	8.75E+00	8.00E-01	5.88E+00	7.82E-02
BRSD-4 (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.91E-01	2.12E+01	1.22E-01	NA	NA	NA	NA	5.36E-04	1.11E+02	5.95E-02	4.58E-01	1.09E-01	7.62E-01	8.75E+00	8.00E-01	5.88E+00	1.30E-01
UM-750S-3500E (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.91E-01	4.28E+02	2.46E+00	NA	NA	NA	NA	5.36E-04	2.24E+03	1.20E+00	4.58E-01	1.09E-01	1.54E+01	8.75E+00	8.00E-01	5.88E+00	2.62E+00
BRSD-16 (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.91E-01	4.01E+02	2.31E+00	NA	NA	NA	NA	5.36E-04	2.10E+03	1.13E+00	4.58E-01	1.09E-01	1.44E+01	8.75E+00	8.00E-01	5.88E+00	2.45E+00
UM-750S-3000E (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.91E-01	2.29E+02	1.32E+00	NA	NA	NA	NA	5.36E-04	1.20E+03	6.43E-01	4.58E-01	1.09E-01	8.24E+00	8.75E+00	8.00E-01	5.88E+00	1.40E+00
BRSD-3 (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.91E-01	2.08E+02	1.20E+00	NA	NA	NA	NA	5.36E-04	1.09E+03	5.84E-01	4.58E-01	1.09E-01	7.49E+00	8.75E+00	8.00E-01	5.88E+00	1.27E+00
UM-500S-3250E (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.91E-01	4.22E+02	2.43E+00	NA	NA	NA	NA	5.36E-04	2.21E+03	1.18E+00	4.58E-01	1.09E-01	1.52E+01	8.75E+00	8.00E-01	5.88E+00	2.58E+00
UM-500S-3000E (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.91E-01	4.05E+02	2.33E+00	NA	NA	NA	NA	5.36E-04	2.12E+03	1.14E+00	4.58E-01	1.09E-01	1.46E+01	8.75E+00	8.00E-01	5.88E+00	2.48E+00
UM-500S-2750E (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.91E-01	2.31E+02	1.33E+00	NA	NA	NA	NA	5.36E-04	1.21E+03	6.48E-01	4.58E-01	1.09E-01	8.31E+00	8.75E+00	8.00E-01	5.88E+00	1.41E+00
BRSD-25 (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.91E-01	1.60E+02	9.20E-01	NA	NA	NA	NA	5.36E-04	8.36E+02	4.48E-01	4.58E-01	1.09E-01	5.74E+00	8.75E+00	8.00E-01	5.88E+00	9.77E-01
UM-250S-3000E (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.91E-01	3.21E+02	1.85E+00	NA	NA	NA	NA	5.36E-04	1.68E+03	9.00E-01	4.58E-01	1.09E-01	1.15E+01	8.75E+00	8.00E-01	5.88E+00	1.96E+00
UM-250S-3250E (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.91E-01	3.21E+01	1.85E-01	NA	NA	NA	NA	5.36E-04	1.68E+02	9.00E-02	4.58E-01	1.09E-01	1.15E+00	8.75E+00	8.00E-01	5.88E+00	1.96E-01
BRSD-24 (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.91E-01	2.06E+02	1.19E+00	NA	NA	NA	NA	5.36E-04	1.08E+03	5.79E-01	4.58E-01	1.09E-01	7.42E+00	8.75E+00	8.00E-01	5.88E+00	1.26E+00
UM-250S-2750E (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.91E-01	1.85E+02	1.07E+00	NA	NA	NA	NA	5.36E-04	9.68E+02	5.19E-01	4.58E-01	1.09E-01	6.65E+00	8.75E+00	8.00E-01	5.88E+00	1.13E+00
UM-250S-2500E (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.91E-01	2.20E+01	1.27E-01	NA	NA	NA	NA	5.36E-04	1.15E+02	6.16E-02	4.58E-01	1.09E-01	7.90E-01	8.75E+00	8.00E-01	5.88E+00	1.34E-01
UM-0N-2500E (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.91E-01	3.82E+02	2.20E+00	NA	NA	NA	NA	5.36E-04	2.00E+03	1.07E+00	4.58E-01	1.09E-01	1.37E+01	8.75E+00	8.00E-01	5.88E+00	2.34E+00
UM-0N-250E (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.91E-01	5.82E+01	3.36E-01	NA	NA	NA	NA	5.36E-04	3.05E+02	1.63E-01	4.58E-01	1.09E-01	2.09E+00	8.75E+00	8.00E-01	5.88E+00	3.57E-01
BRSD-2 (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.91E-01	2.46E+02	1.42E+00	NA	NA	NA	NA	5.36E-04	1.29E+03	6.91E-01	4.58E-01	1.09E-01	8.86E+00	8.75E+00	8.00E-01	5.88E+00	1.51E+00
UM-500N-2500E (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.91E-01	1.74E+01	1.00E-01	NA	NA	NA	NA	5.36E-04	9.12E+01	4.89E-02	4.58E-01	1.09E-01	6.26E-01	8.75E+00	8.00E-01	5.88E+00	1.07E-01
UM-250N-2500E (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.91E-01	2.90E+02	1.67E+00	NA	NA	NA	NA	5.36E-04	1.52E+03	8.14E-01	4.58E-01	1.09E-01	1.04E+01	8.75E+00	8.00E-01	5.88E+00	1.78E+00
UM-250N-2250E (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.91E-01	2.56E+02	1.47E+00	NA	NA	NA	NA	5.36E-04	1.34E+03	7.18E-01	4.58E-01	1.09E-01	9.20E+00	8.75E+00	8.00E-01	5.88E+00	1.57E+00
Western Upper Marsh (0-2")																						**Maximum HQ (Eastern Upper Marsh, 0-2")**	**2.62E+00**
UM-500S-2500E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-2000E (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.32E-01	3.27E+02	1.89E+00	NA	NA	NA	NA	5.36E-04	2.48E+03	1.33E+00	4.58E-01	1.09E-01	1.35E+01	8.75E+00	8.00E-01	5.88E+00	2.30E+00
UM-500S-2000E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-250N-1750E (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.32E-01	1.27E+01	7.31E-02	NA	NA	NA	NA	5.36E-04	9.62E+01	5.15E-02	4.58E-01	1.09E-01	5.23E-01	8.75E+00	8.00E-01	5.88E+00	8.91E-02
UM-0N-1500E (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.32E-01	1.35E+01	7.75E-02	NA	NA	NA	NA	5.36E-04	1.02E+02	5.47E-02	4.58E-01	1.09E-01	5.55E-01	8.75E+00	8.00E-01	5.88E+00	9.45E-02
UM-250S-1500E (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.32E-01	2.28E+02	1.32E+00	NA	NA	NA	NA	5.36E-04	1.73E+03	9.27E-01	4.58E-01	1.09E-01	9.41E+00	8.75E+00	8.00E-01	5.88E+00	1.60E+00
UM-250S-1250E (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.32E-01	1.25E+01	7.21E-02	NA	NA	NA	NA	5.36E-04	9.48E+01	5.08E-02	4.58E-01	1.09E-01	5.16E-01	8.75E+00	8.00E-01	5.88E+00	8.78E-02
BRSD-6 (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-1000E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-750E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-500E (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.32E-01	2.15E+01	1.24E-01	NA	NA	NA	NA	5.36E-04	1.63E+02	8.73E-02	4.58E-01	1.09E-01	8.87E-01	8.75E+00	8.00E-01	5.88E+00	1.51E-01
UM-250S-500E (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.32E-01	9.25E+00	5.33E-02	NA	NA	NA	NA	5.36E-04	7.01E+01	3.76E-02	4.58E-01	1.09E-01	3.81E-01	8.75E+00	8.00E-01	5.88E+00	6.49E-02
UM-250S-250E (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.32E-01	1.73E+01	9.96E-02	NA	NA	NA	NA	5.36E-04	1.31E+02	7.02E-02	4.58E-01	1.09E-01	7.13E-01	8.75E+00	8.00E-01	5.88E+00	1.21E-01
BRSD-7 (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-8 (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.32E-01	2.98E+01	1.72E-01	NA	NA	NA	NA	5.36E-04	2.26E+02	1.21E-01	4.58E-01	1.09E-01	1.23E+00	8.75E+00	8.00E-01	5.88E+00	2.09E-01

TABLE C-12EA: LEAD DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 12 - MARSH, TERRESTRIAL RECEPTORS (Continued)
Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)
calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 118.73

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Mourning Dove (Herbivorous Birds)																							
UM-500S-500E (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.32E-01	8.76E+00	5.05E-02	NA	NA	NA	NA	5.36E-04	6.64E+01	3.56E-02	4.58E-01	1.09E-01	3.61E-01	8.75E+00	8.00E-01	5.88E+00	6.15E-02
BRSD-9 (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.32E-01	3.76E+01	2.17E-01	NA	NA	NA	NA	5.36E-04	2.85E+02	1.53E-01	4.58E-01	1.09E-01	1.55E+00	8.75E+00	8.00E-01	5.88E+00	2.64E-01
BRSD-10 (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.32E-01	8.34E+01	4.80E-01	NA	NA	NA	NA	5.36E-04	6.32E+02	3.39E-01	4.58E-01	1.09E-01	3.44E+00	8.75E+00	8.00E-01	5.88E+00	5.85E-01
BRSD-11 (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.32E-01	1.22E+01	7.02E-02	NA	NA	NA	NA	5.36E-04	9.24E+01	4.95E-02	4.58E-01	1.09E-01	5.03E-01	8.75E+00	8.00E-01	5.88E+00	8.56E-02
Eastern Upper Marsh (2-6")																						**Maximum HQ (Western Upper Marsh, 0-2")**	**2.30E+00**
UM-1000S-3500E (2-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.91E-01	6.11E+01	3.52E-01	NA	NA	NA	NA	5.36E-04	3.20E+02	1.71E-01	4.58E-01	1.09E-01	2.20E+00	8.75E+00	8.00E-01	5.88E+00	3.74E-01
BRSD-15 (2-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.91E-01	2.14E+01	1.23E-01	NA	NA	NA	NA	5.36E-04	1.12E+02	6.00E-02	4.58E-01	1.09E-01	7.69E-01	8.75E+00	8.00E-01	5.88E+00	1.31E-01
BRSD-4 (2-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.91E-01	2.18E+01	1.25E-01	NA	NA	NA	NA	5.36E-04	1.14E+02	6.11E-02	4.58E-01	1.09E-01	7.83E-01	8.75E+00	8.00E-01	5.88E+00	1.33E-01
UM-750S-3500E (2-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.91E-01	1.90E+02	1.10E+00	NA	NA	NA	NA	5.36E-04	9.96E+02	5.34E-01	4.58E-01	1.09E-01	6.84E+00	8.75E+00	8.00E-01	5.88E+00	1.16E+00
BRSD-16 (2-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.91E-01	5.98E+02	3.44E+00	NA	NA	NA	NA	5.36E-04	3.13E+03	1.68E+00	4.58E-01	1.09E-01	2.15E+01	8.75E+00	8.00E-01	5.88E+00	3.66E+00
UM-750S-3000E (2-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.91E-01	2.04E+02	1.18E+00	NA	NA	NA	NA	5.36E-04	1.07E+03	5.73E-01	4.58E-01	1.09E-01	7.35E+00	8.75E+00	8.00E-01	5.88E+00	1.25E+00
BRSD-3 (2-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.91E-01	4.13E+02	2.38E+00	NA	NA	NA	NA	5.36E-04	2.16E+03	1.16E+00	4.58E-01	1.09E-01	1.48E+01	8.75E+00	8.00E-01	5.88E+00	2.53E+00
UM-500S-3250E (2-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.91E-01	2.79E+02	1.61E+00	NA	NA	NA	NA	5.36E-04	1.46E+03	7.82E-01	4.58E-01	1.09E-01	1.00E+01	8.75E+00	8.00E-01	5.88E+00	1.71E+00
UM-500S-3000E (2-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.91E-01	2.64E+01	1.52E-01	NA	NA	NA	NA	5.36E-04	1.38E+02	7.39E-02	4.58E-01	1.09E-01	9.48E-01	8.75E+00	8.00E-01	5.88E+00	1.61E-01
UM-500S-2750E (2-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.91E-01	1.52E+02	8.74E-01	NA	NA	NA	NA	5.36E-04	7.94E+02	4.25E-01	4.58E-01	1.09E-01	5.45E+00	8.75E+00	8.00E-01	5.88E+00	9.28E-01
BRSD-25 (2-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.91E-01	2.79E+02	1.61E+00	NA	NA	NA	NA	5.36E-04	1.46E+03	7.82E-01	4.58E-01	1.09E-01	1.00E+01	8.75E+00	8.00E-01	5.88E+00	1.71E+00
UM-250S-3000E (2-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.91E-01	3.72E+02	2.15E+00	NA	NA	NA	NA	5.36E-04	1.95E+03	1.04E+00	4.58E-01	1.09E-01	1.34E+01	8.75E+00	8.00E-01	5.88E+00	2.28E+00
UM-250S-3250E (2-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.91E-01	1.79E+01	1.03E-01	NA	NA	NA	NA	5.36E-04	9.35E+01	5.01E-02	4.58E-01	1.09E-01	6.42E-01	8.75E+00	8.00E-01	5.88E+00	1.09E-01
BRSD-24 (2-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.91E-01	5.08E+02	2.93E+00	NA	NA	NA	NA	5.36E-04	2.66E+03	1.43E+00	4.58E-01	1.09E-01	1.83E+01	8.75E+00	8.00E-01	5.88E+00	3.11E+00
UM-250S-2750E (2-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.91E-01	3.97E+02	2.29E+00	NA	NA	NA	NA	5.36E-04	2.08E+03	1.11E+00	4.58E-01	1.09E-01	1.43E+01	8.75E+00	8.00E-01	5.88E+00	2.43E+00
UM-0N-2500E (2-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.91E-01	2.41E+02	1.39E+00	NA	NA	NA	NA	5.36E-04	1.26E+03	6.75E-01	4.58E-01	1.09E-01	8.65E+00	8.75E+00	8.00E-01	5.88E+00	1.47E+00
BRSD-2 (2-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.91E-01	3.04E+02	1.75E+00	NA	NA	NA	NA	5.36E-04	1.59E+03	8.52E-01	4.58E-01	1.09E-01	1.09E+01	8.75E+00	8.00E-01	5.88E+00	1.86E+00
UM-500N-2500E (2-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.91E-01	1.70E+01	9.78E-02	NA	NA	NA	NA	5.36E-04	8.89E+01	4.76E-02	4.58E-01	1.09E-01	6.11E-01	8.75E+00	8.00E-01	5.88E+00	1.04E-01
UM-250N-2500E (2-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.91E-01	2.04E+02	1.18E+00	NA	NA	NA	NA	5.36E-04	1.07E+03	5.73E-01	4.58E-01	1.09E-01	7.35E+00	8.75E+00	8.00E-01	5.88E+00	1.25E+00
UM-250N-2250E (2-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.91E-01	3.67E+01	2.11E-01	NA	NA	NA	NA	5.36E-04	1.92E+02	1.03E-01	4.58E-01	1.09E-01	1.32E+00	8.75E+00	8.00E-01	5.88E+00	2.24E-01
Western Upper Marsh (2-6")																						**Maximum HQ (Eastern Upper Marsh, 2-6")**	**3.66E+00**
UM-500S-2500E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-2000E (2-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.32E-01	3.25E+02	1.87E+00	NA	NA	NA	NA	5.36E-04	2.46E+03	1.32E+00	4.58E-01	1.09E-01	1.34E+01	8.75E+00	8.00E-01	5.88E+00	2.28E+00
UM-500S-2000E (2-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.32E-01	1.22E+01	7.01E-02	NA	NA	NA	NA	5.36E-04	9.22E+01	4.94E-02	4.58E-01	1.09E-01	5.02E-01	8.75E+00	8.00E-01	5.88E+00	8.54E-02
UM-250N-1750E (2-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.32E-01	1.23E+01	7.12E-02	NA	NA	NA	NA	5.36E-04	9.36E+01	5.02E-02	4.58E-01	1.09E-01	5.09E-01	8.75E+00	8.00E-01	5.88E+00	8.67E-02
UM-0N-1500E (2-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.32E-01	1.46E+01	8.44E-02	NA	NA	NA	NA	5.36E-04	1.11E+02	5.95E-02	4.58E-01	1.09E-01	6.04E-01	8.75E+00	8.00E-01	5.88E+00	1.03E-01
UM-250S-1500E (2-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.32E-01	2.19E+02	1.26E+00	NA	NA	NA	NA	5.36E-04	1.66E+03	8.89E-01	4.58E-01	1.09E-01	9.03E+00	8.75E+00	8.00E-01	5.88E+00	1.54E+00
UM-250S-1250E (2-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.32E-01	1.23E+01	7.09E-02	NA	NA	NA	NA	5.36E-04	9.33E+01	5.00E-02	4.58E-01	1.09E-01	5.08E-01	8.75E+00	8.00E-01	5.88E+00	8.64E-02
BRSD-6 (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-1000E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-750E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-500E (2-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.32E-01	6.89E+01	3.97E-01	NA	NA	NA	NA	5.36E-04	5.22E+02	2.80E-01	4.58E-01	1.09E-01	2.84E+00	8.75E+00	8.00E-01	5.88E+00	4.83E-01
UM-250S-500E (2-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.32E-01	1.26E+01	7.25E-02	NA	NA	NA	NA	5.36E-04	9.54E+01	5.11E-02	4.58E-01	1.09E-01	5.19E-01	8.75E+00	8.00E-01	5.88E+00	8.83E-02
UM-0N-250E (2-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.32E-01	3.72E+01	2.14E-01	NA	NA	NA	NA	5.36E-04	2.82E+02	1.51E-01	4.58E-01	1.09E-01	1.53E+00	8.75E+00	8.00E-01	5.88E+00	2.61E-01
UM-250S-250E (2-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.32E-01	1.60E+01	9.20E-02	NA	NA	NA	NA	5.36E-04	1.21E+02	6.48E-02	4.58E-01	1.09E-01	6.58E-01	8.75E+00	8.00E-01	5.88E+00	1.12E-01
BRSD-7 (2-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.32E-01	8.22E+00	4.74E-02	NA	NA	NA	NA	5.36E-04	6.23E+01	3.34E-02	4.58E-01	1.09E-01	3.39E-01	8.75E+00	8.00E-01	5.88E+00	5.77E-02
BRSD-8 (2-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.32E-01	4.38E+01	2.52E-01	NA	NA	NA	NA	5.36E-04	3.32E+02	1.78E-01	4.58E-01	1.09E-01	1.81E+00	8.75E+00	8.00E-01	5.88E+00	3.07E-01
UM-500S-500E (2-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.32E-01	1.01E+01	5.80E-02	NA	NA	NA	NA	5.36E-04	7.63E+01	4.09E-02	4.58E-01	1.09E-01	4.15E-01	8.75E+00	8.00E-01	5.88E+00	7.07E-02
BRSD-9 (2-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.32E-01	7.76E+00	4.47E-02	NA	NA	NA	NA	5.36E-04	5.88E+01	3.15E-02	4.58E-01	1.09E-01	3.20E-01	8.75E+00	8.00E-01	5.88E+00	5.44E-02
BRSD-10 (2-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.32E-01	1.06E+02	6.11E-01	NA	NA	NA	NA	5.36E-04	8.04E+02	4.31E-01	4.58E-01	1.09E-01	4.37E+00	8.75E+00	8.00E-01	5.88E+00	7.44E-01
BRSD-11 (2-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.32E-01	1.22E+01	7.04E-02	NA	NA	NA	NA	5.36E-04	9.26E+01	4.96E-02	4.58E-01	1.09E-01	5.04E-01	8.75E+00	8.00E-01	5.88E+00	8.57E-02
Eastern Upper Marsh (6-12")																						**Maximum HQ (Western Upper Marsh, 2-6")**	**2.28E+00**
UM-1000S-3500E (6-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.91E-01	1.56E+01	8.99E-02	NA	NA	NA	NA	5.36E-04	8.17E+01	4.38E-02	4.58E-01	1.09E-01	5.61E-01	8.75E+00	8.00E-01	5.88E+00	9.55E-02
BRSD-15 (6-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.91E-01	1.66E+01	9.57E-02	NA	NA	NA	NA	5.36E-04	8.70E+01	4.66E-02	4.58E-01	1.09E-01	5.98E-01	8.75E+00	8.00E-01	5.88E+00	1.02E-01
BRSD-4 (6-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.91E-01	4.05E+01	2.33E-01	NA	NA	NA	NA	5.36E-04	2.12E+02	1.14E-01	4.58E-01	1.09E-01	1.46E+00	8.75E+00	8.00E-01	5.88E+00	2.48E-01

TABLE C-12EA: LEAD DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 12 - MARSH, TERRESTRIAL RECEPTORS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **118.73**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Mourning Dove (Herbivorous Birds)																							
UM-750S-3500E (6-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.91E-01	2.31E+02	1.33E+00	NA	NA	NA	NA	5.36E-04	1.21E+03	6.48E-01	4.58E-01	1.09E-01	8.31E+00	8.75E+00	8.00E-01	5.88E+00	1.41E+00
BRSD-16 (6-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.91E-01	6.15E+02	3.54E+00	NA	NA	NA	NA	5.36E-04	3.22E+03	1.73E+00	4.58E-01	1.09E-01	2.21E+01	8.75E+00	8.00E-01	5.88E+00	3.76E+00
UM-750S-3000E (6-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.91E-01	2.14E+02	1.23E+00	NA	NA	NA	NA	5.36E-04	1.12E+03	6.00E-01	4.58E-01	1.09E-01	7.69E+00	8.75E+00	8.00E-01	5.88E+00	1.31E+00
BRSD-3 (6-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.91E-01	6.65E+01	3.83E-01	NA	NA	NA	NA	5.36E-04	3.48E+02	1.86E-01	4.58E-01	1.09E-01	2.39E+00	8.75E+00	8.00E-01	5.88E+00	4.07E-01
UM-500S-3250E (6-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.91E-01	1.16E+02	6.69E-01	NA	NA	NA	NA	5.36E-04	6.08E+02	3.26E-01	4.58E-01	1.09E-01	4.18E+00	8.75E+00	8.00E-01	5.88E+00	7.11E-01
UM-500S-3000E (6-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.91E-01	2.14E+01	1.23E-01	NA	NA	NA	NA	5.36E-04	1.12E+02	6.00E-02	4.58E-01	1.09E-01	7.69E-01	8.75E+00	8.00E-01	5.88E+00	1.31E-01
UM-500S-2750E (6-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.91E-01	1.29E+02	7.46E-01	NA	NA	NA	NA	5.36E-04	6.78E+02	3.63E-01	4.58E-01	1.09E-01	4.66E+00	8.75E+00	8.00E-01	5.88E+00	7.93E-01
BRSD-25 (6-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.91E-01	2.01E+02	1.16E+00	NA	NA	NA	NA	5.36E-04	1.05E+03	5.63E-01	4.58E-01	1.09E-01	7.21E+00	8.75E+00	8.00E-01	5.88E+00	1.23E+00
UM-250S-3000E (6-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.91E-01	2.44E+02	1.41E+00	NA	NA	NA	NA	5.36E-04	1.28E+03	6.86E-01	4.58E-01	1.09E-01	8.79E+00	8.75E+00	8.00E-01	5.88E+00	1.50E+00
UM-250S-3250E (6-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.91E-01	2.04E+01	1.18E-01	NA	NA	NA	NA	5.36E-04	1.07E+02	5.73E-02	4.58E-01	1.09E-01	7.35E-01	8.75E+00	8.00E-01	5.88E+00	1.25E-01
BRSD-24 (6-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.91E-01	4.37E+02	2.52E+00	NA	NA	NA	NA	5.36E-04	2.29E+03	1.23E+00	4.58E-01	1.09E-01	1.57E+01	8.75E+00	8.00E-01	5.88E+00	2.68E+00
UM-250S-2750E (6-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.91E-01	4.60E+02	2.65E+00	NA	NA	NA	NA	5.36E-04	2.41E+03	1.29E+00	4.58E-01	1.09E-01	1.66E+01	8.75E+00	8.00E-01	5.88E+00	2.82E+00
UM-250S-2500E (6-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.91E-01	1.63E+01	9.40E-02	NA	NA	NA	NA	5.36E-04	8.54E+01	4.58E-02	4.58E-01	1.09E-01	5.87E-01	8.75E+00	8.00E-01	5.88E+00	9.98E-02
BRSD-2 (6-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.91E-01	8.06E+02	4.64E+00	NA	NA	NA	NA	5.36E-04	4.22E+03	2.26E+00	4.58E-01	1.09E-01	2.90E+01	8.75E+00	8.00E-01	5.88E+00	4.93E+00
UM-500N-2500E (6-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.91E-01	1.46E+01	8.41E-02	NA	NA	NA	NA	5.36E-04	7.64E+01	4.09E-02	4.58E-01	1.09E-01	5.25E-01	8.75E+00	8.00E-01	5.88E+00	8.93E-02
UM-250N-2500E (6-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.91E-01	1.86E+02	1.07E+00	NA	NA	NA	NA	5.36E-04	9.75E+02	5.22E-01	4.58E-01	1.09E-01	6.70E+00	8.75E+00	8.00E-01	5.88E+00	1.14E+00
UM-250N-2250E (6-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.91E-01	3.70E+01	2.13E-01	NA	NA	NA	NA	5.36E-04	1.94E+02	1.04E-01	4.58E-01	1.09E-01	1.33E+00	8.75E+00	8.00E-01	5.88E+00	2.27E-01
Western Upper Marsh (6-12")																						**Maximum HQ (Eastern Upper Marsh, 6-12")**	**4.93E+00**
UM-500S-2500E (6-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.32E-01	1.61E+01	9.27E-02	NA	NA	NA	NA	5.36E-04	1.22E+02	6.54E-02	4.58E-01	1.09E-01	6.64E-01	8.75E+00	8.00E-01	5.88E+00	1.13E-01
UM-0N-2000E (6-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.32E-01	4.33E+02	2.49E+00	NA	NA	NA	NA	5.36E-04	3.28E+03	1.76E+00	4.58E-01	1.09E-01	1.78E+01	8.75E+00	8.00E-01	5.88E+00	3.04E+00
UM-500S-2000E (6-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.32E-01	1.24E+01	7.15E-02	NA	NA	NA	NA	5.36E-04	9.40E+01	5.04E-02	4.58E-01	1.09E-01	5.11E-01	8.75E+00	8.00E-01	5.88E+00	8.70E-02
UM-250N-1750E (6-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.32E-01	1.30E+01	7.50E-02	NA	NA	NA	NA	5.36E-04	9.87E+01	5.29E-02	4.58E-01	1.09E-01	5.37E-01	8.75E+00	8.00E-01	5.88E+00	9.14E-02
UM-0N-1500E (6-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.32E-01	1.46E+01	8.44E-02	NA	NA	NA	NA	5.36E-04	1.11E+02	5.95E-02	4.58E-01	1.09E-01	6.04E-01	8.75E+00	8.00E-01	5.88E+00	1.03E-01
UM-250S-1500E (6-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.32E-01	1.23E+02	7.08E-01	NA	NA	NA	NA	5.36E-04	9.31E+02	4.99E-01	4.58E-01	1.09E-01	5.07E+00	8.75E+00	8.00E-01	5.88E+00	8.62E-01
UM-250S-1250E (6-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.32E-01	1.35E+01	7.75E-02	NA	NA	NA	NA	5.36E-04	1.02E+02	5.47E-02	4.58E-01	1.09E-01	5.55E-01	8.75E+00	8.00E-01	5.88E+00	9.45E-02
BRSD-6 (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-1000E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-750E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-500E (6-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.32E-01	2.03E+01	1.17E-01	NA	NA	NA	NA	5.36E-04	1.54E+02	8.25E-02	4.58E-01	1.09E-01	8.38E-01	8.75E+00	8.00E-01	5.88E+00	1.43E-01
UM-250S-500E (6-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.32E-01	1.29E+01	7.45E-02	NA	NA	NA	NA	5.36E-04	9.80E+01	5.25E-02	4.58E-01	1.09E-01	5.33E-01	8.75E+00	8.00E-01	5.88E+00	9.07E-02
UM-0N-250E (6-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.32E-01	3.55E+01	2.04E-01	NA	NA	NA	NA	5.36E-04	2.69E+02	1.44E-01	4.58E-01	1.09E-01	1.46E+00	8.75E+00	8.00E-01	5.88E+00	2.49E-01
UM-250S-250E (6-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.32E-01	1.26E+01	7.24E-02	NA	NA	NA	NA	5.36E-04	9.53E+01	5.11E-02	4.58E-01	1.09E-01	5.18E-01	8.75E+00	8.00E-01	5.88E+00	8.82E-02
BRSD-7 (6-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.32E-01	1.52E+01	8.74E-02	NA	NA	NA	NA	5.36E-04	1.15E+02	6.16E-02	4.58E-01	1.09E-01	6.26E-01	8.75E+00	8.00E-01	5.88E+00	1.06E-01
BRSD-8 (6-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.32E-01	3.96E+01	2.28E-01	NA	NA	NA	NA	5.36E-04	3.00E+02	1.61E-01	4.58E-01	1.09E-01	1.63E+00	8.75E+00	8.00E-01	5.88E+00	2.78E-01
UM-500S-500E (6-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.32E-01	9.58E+00	5.52E-02	NA	NA	NA	NA	5.36E-04	7.26E+01	3.89E-02	4.58E-01	1.09E-01	3.95E-01	8.75E+00	8.00E-01	5.88E+00	6.72E-02
BRSD-9 (6-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.32E-01	1.12E+01	6.45E-02	NA	NA	NA	NA	5.36E-04	8.49E+01	4.55E-02	4.58E-01	1.09E-01	4.62E-01	8.75E+00	8.00E-01	5.88E+00	7.86E-02
BRSD-10 (6-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.32E-01	1.81E+02	1.04E+00	NA	NA	NA	NA	5.36E-04	1.37E+03	7.34E-01	4.58E-01	1.09E-01	7.45E+00	8.75E+00	8.00E-01	5.88E+00	1.27E+00
BRSD-11 (6-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.32E-01	1.37E+01	7.91E-02	NA	NA	NA	NA	5.36E-04	1.04E+02	5.57E-02	4.58E-01	1.09E-01	5.66E-01	8.75E+00	8.00E-01	5.88E+00	9.63E-02
Middle Marsh (0-2")																						**Maximum HQ (Western Upper Marsh, 6-12")**	**3.04E+00**
MMSD-201 (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.32E-01	6.65E+01	3.83E-01	NA	NA	NA	NA	5.36E-04	5.04E+02	2.70E-01	4.58E-01	1.09E-01	2.74E+00	8.75E+00	8.00E-01	5.88E+00	4.67E-01
MMSD-202 (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.32E-01	9.17E+01	5.28E-01	NA	NA	NA	NA	5.36E-04	6.95E+02	3.72E-01	4.58E-01	1.09E-01	3.78E+00	8.75E+00	8.00E-01	5.88E+00	6.44E-01
Middle Marsh (2-6")																						**Maximum HQ (Middle Marsh, 0-2")**	**6.44E-01**
MMSD-201 (2-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.32E-01	8.21E+01	4.73E-01	NA	NA	NA	NA	5.36E-04	6.22E+02	3.33E-01	4.58E-01	1.09E-01	3.38E+00	8.75E+00	8.00E-01	5.88E+00	5.76E-01
MMSD-202 (2-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.32E-01	1.09E+02	6.29E-01	NA	NA	NA	NA	5.36E-04	8.28E+02	4.44E-01	4.58E-01	1.09E-01	4.50E+00	8.75E+00	8.00E-01	5.88E+00	7.67E-01
Middle Marsh (6-12")																						**Maximum HQ (Middle Marsh, 2-6")**	**7.67E-01**
MMSD-201 (6-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.32E-01	1.28E+02	7.35E-01	NA	NA	NA	NA	5.36E-04	9.67E+02	5.18E-01	4.58E-01	1.09E-01	5.26E+00	8.75E+00	8.00E-01	5.88E+00	8.95E-01
MMSD-202 (6-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.32E-01	3.46E+01	1.99E-01	NA	NA	NA	NA	5.36E-04	2.62E+02	1.40E-01	4.58E-01	1.09E-01	1.43E+00	8.75E+00	8.00E-01	5.88E+00	2.43E-01

TABLE C-12EA: LEAD DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 12 - MARSH, TERRESTRIAL RECEPTORS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **118.73**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Mourning Dove (Herbivorous Birds)																							
Lower Marsh (0-2")																						**Maximum HQ (Middle Marsh, 6-12")**	**8.95E-01**
LMSD-201 (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
LMSD-202 (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
LMSD-203 (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.91E-01	1.53E+01	8.80E-02	NA	NA	NA	NA	5.36E-04	8.00E+01	4.29E-02	4.58E-01	1.09E-01	5.49E-01	8.75E+00	8.00E-01	5.88E+00	9.35E-02
LMSD-204 (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.91E-01	1.72E+01	9.90E-02	NA	NA	NA	NA	5.36E-04	9.00E+01	4.82E-02	4.58E-01	1.09E-01	6.18E-01	8.75E+00	8.00E-01	5.88E+00	1.05E-01
Lower Marsh (2-6")																						**Maximum HQ (Lower Marsh, 0-2")**	**1.05E-01**
LMSD-201 (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
LMSD-202 (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
LMSD-203 (2-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.91E-01	1.62E+01	9.35E-02	NA	NA	NA	NA	5.36E-04	8.50E+01	4.55E-02	4.58E-01	1.09E-01	5.84E-01	8.75E+00	8.00E-01	5.88E+00	9.94E-02
LMSD-204 (2-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.91E-01	1.66E+01	9.57E-02	NA	NA	NA	NA	5.36E-04	8.70E+01	4.66E-02	4.58E-01	1.09E-01	5.98E-01	8.75E+00	8.00E-01	5.88E+00	1.02E-01
Lower Marsh (6-12")																						**Maximum HQ (Lower Marsh, 2-6")**	**1.02E-01**
LMSD-201 (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
LMSD-202 (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
LMSD-203 (6-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.91E-01	1.55E+01	8.91E-02	NA	NA	NA	NA	5.36E-04	8.10E+01	4.34E-02	4.58E-01	1.09E-01	5.56E-01	8.75E+00	8.00E-01	5.88E+00	9.47E-02
LMSD-204 (6-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.91E-01	1.60E+01	9.24E-02	NA	NA	NA	NA	5.36E-04	8.40E+01	4.50E-02	4.58E-01	1.09E-01	5.77E-01	8.75E+00	8.00E-01	5.88E+00	9.82E-02
																						Maximum HQ (Lower Marsh, 6-12")	**9.82E-02**
Red-Tailed Hawk (Carnivorous Birds)																							
Reference Sites																							
BRSD-5 (0-2")	9.00E-02	9.00E-02	1.20E-01	7.78E+00	7.00E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	6.47E+01	3.32E-01	1.70E-01	1.13E+00	1.55E-01	8.75E+00	8.00E-01	9.38E+00	1.65E-02
BRSD-5 (2-6")	9.00E-02	9.00E-02	1.20E-01	7.42E+00	6.67E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	6.17E+01	3.16E-01	1.70E-01	1.13E+00	1.48E-01	8.75E+00	8.00E-01	9.38E+00	1.58E-02
BRSD-5 (6-12")	9.00E-02	9.00E-02	1.20E-01	9.50E+00	8.54E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	7.90E+01	4.05E-01	1.70E-01	1.13E+00	1.89E-01	8.75E+00	8.00E-01	9.38E+00	2.02E-02
PGBG-1 (0-2")	9.00E-02	9.00E-02	1.20E-01	6.61E+00	5.95E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.50E+01	2.82E-01	1.70E-01	1.13E+00	1.32E-01	8.75E+00	8.00E-01	9.38E+00	1.40E-02
PGBG-1 (2-6")	9.00E-02	9.00E-02	1.20E-01	1.21E+01	1.09E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.01E+02	5.18E-01	1.70E-01	1.13E+00	2.42E-01	8.75E+00	8.00E-01	9.38E+00	2.58E-02
PGBG-2 (0-2")	9.00E-02	9.00E-02	1.20E-01	1.26E+01	1.14E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.05E+02	5.38E-01	1.70E-01	1.13E+00	2.51E-01	8.75E+00	8.00E-01	9.38E+00	2.68E-02
PGBG-2 (2-6")	9.00E-02	9.00E-02	1.20E-01	1.30E+01	1.17E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.08E+02	5.54E-01	1.70E-01	1.13E+00	2.59E-01	8.75E+00	8.00E-01	9.38E+00	2.76E-02
PGBG-2 (6-12")	9.00E-02	9.00E-02	1.20E-01	1.36E+01	1.22E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.13E+02	5.79E-01	1.70E-01	1.13E+00	2.71E-01	8.75E+00	8.00E-01	9.38E+00	2.88E-02
Eastern Upper Marsh (0-2")																						**Minimum HQ (Reference Sites)**	**1.40E-02**
UM-1000S-3500E (0-2")	9.00E-02	9.00E-02	1.23E-01	2.18E+02	1.96E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.77E+03	9.08E+00	1.70E-01	1.13E+00	4.32E+00	8.75E+00	8.00E-01	9.38E+00	4.60E-01
BRSD-15 (0-2")	9.00E-02	9.00E-02	1.23E-01	8.25E+00	7.43E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	6.69E+01	3.43E-01	1.70E-01	1.13E+00	1.63E-01	8.75E+00	8.00E-01	9.38E+00	1.74E-02
BRSD-4 (0-2")	9.00E-02	9.00E-02	1.23E-01	1.37E+01	1.23E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.11E+02	5.69E-01	1.70E-01	1.13E+00	2.71E-01	8.75E+00	8.00E-01	9.38E+00	2.88E-02
UM-750S-3500E (0-2")	9.00E-02	9.00E-02	1.23E-01	2.76E+02	2.49E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.24E+03	1.15E+01	1.70E-01	1.13E+00	5.46E+00	8.75E+00	8.00E-01	9.38E+00	5.82E-01
BRSD-16 (0-2")	9.00E-02	9.00E-02	1.23E-01	2.59E+02	2.33E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.10E+03	1.08E+01	1.70E-01	1.13E+00	5.12E+00	8.75E+00	8.00E-01	9.38E+00	5.46E-01
UM-750S-3000E (0-2")	9.00E-02	9.00E-02	1.23E-01	1.48E+02	1.33E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.20E+03	6.15E+00	1.70E-01	1.13E+00	2.93E+00	8.75E+00	8.00E-01	9.38E+00	3.12E-01
BRSD-3 (0-2")	9.00E-02	9.00E-02	1.23E-01	1.34E+02	1.21E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.09E+03	5.59E+00	1.70E-01	1.13E+00	2.66E+00	8.75E+00	8.00E-01	9.38E+00	2.83E-01
UM-500S-3250E (0-2")	9.00E-02	9.00E-02	1.23E-01	2.73E+02	2.45E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.21E+03	1.13E+01	1.70E-01	1.13E+00	5.39E+00	8.75E+00	8.00E-01	9.38E+00	5.74E-01
UM-500S-3000E (0-2")	9.00E-02	9.00E-02	1.23E-01	2.62E+02	2.35E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.12E+03	1.09E+01	1.70E-01	1.13E+00	5.17E+00	8.75E+00	8.00E-01	9.38E+00	5.51E-01
UM-500S-2750E (0-2")	9.00E-02	9.00E-02	1.23E-01	1.49E+02	1.34E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.21E+03	6.20E+00	1.70E-01	1.13E+00	2.95E+00	8.75E+00	8.00E-01	9.38E+00	3.14E-01
BRSD-25 (0-2")	9.00E-02	9.00E-02	1.23E-01	1.03E+02	9.28E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	8.36E+02	4.29E+00	1.70E-01	1.13E+00	2.04E+00	8.75E+00	8.00E-01	9.38E+00	2.17E-01
UM-250S-3000E (0-2")	9.00E-02	9.00E-02	1.23E-01	2.07E+02	1.86E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.68E+03	8.61E+00	1.70E-01	1.13E+00	4.10E+00	8.75E+00	8.00E-01	9.38E+00	4.37E-01
UM-250S-3250E (0-2")	9.00E-02	9.00E-02	1.23E-01	2.07E+01	1.86E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.68E+02	8.61E-01	1.70E-01	1.13E+00	4.10E-01	8.75E+00	8.00E-01	9.38E+00	4.37E-02
BRSD-24 (0-2")	9.00E-02	9.00E-02	1.23E-01	1.33E+02	1.20E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.08E+03	5.54E+00	1.70E-01	1.13E+00	2.63E+00	8.75E+00	8.00E-01	9.38E+00	2.81E-01
UM-250S-2750E (0-2")	9.00E-02	9.00E-02	1.23E-01	1.19E+02	1.07E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	9.68E+02	4.96E+00	1.70E-01	1.13E+00	2.36E+00	8.75E+00	8.00E-01	9.38E+00	2.52E-01
UM-250S-2500E (0-2")	9.00E-02	9.00E-02	1.23E-01	1.42E+01	1.28E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.15E+02	5.90E-01	1.70E-01	1.13E+00	2.80E-01	8.75E+00	8.00E-01	9.38E+00	2.99E-02
UM-0N-2500E (0-2")	9.00E-02	9.00E-02	1.23E-01	2.47E+02	2.22E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.00E+03	1.03E+01	1.70E-01	1.13E+00	4.88E+00	8.75E+00	8.00E-01	9.38E+00	5.20E-01
UM-0N-250E (0-2")	9.00E-02	9.00E-02	1.23E-01	3.76E+01	3.39E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.05E+02	1.56E+00	1.70E-01	1.13E+00	7.44E-01	8.75E+00	8.00E-01	9.38E+00	7.93E-02
BRSD-2 (0-2")	9.00E-02	9.00E-02	1.23E-01	1.59E+02	1.43E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.29E+03	6.61E+00	1.70E-01	1.13E+00	3.15E+00	8.75E+00	8.00E-01	9.38E+00	3.35E-01
UM-500N-2500E (0-2")	9.00E-02	9.00E-02	1.23E-01	1.13E+01	1.01E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	9.12E+01	4.68E-01	1.70E-01	1.13E+00	2.22E-01	8.75E+00	8.00E-01	9.38E+00	2.37E-02
UM-250N-2500E (0-2")	9.00E-02	9.00E-02	1.23E-01	1.88E+02	1.69E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.52E+03	7.79E+00	1.70E-01	1.13E+00	3.71E+00	8.75E+00	8.00E-01	9.38E+00	3.95E-01
UM-250N-2250E (0-2")	9.00E-02	9.00E-02	1.23E-01	1.65E+02	1.49E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.34E+03	6.87E+00	1.70E-01	1.13E+00	3.27E+00	8.75E+00	8.00E-01	9.38E+00	3.48E-01

TABLE C-12EA: LEAD DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 12 - MARSH, TERRESTRIAL RECEPTORS (Continued)
Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)
calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 118.73

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Red-Tailed Hawk (Carnivorous Birds)																							
Western Upper Marsh (0-2")																						**Maximum HQ (Eastern Upper Marsh, 0-2")**	**5.82E-01**
UM-500S-2500E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-2000E (0-2")	9.00E-02	9.00E-02	1.23E-01	3.06E+02	2.75E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.48E+03	1.27E+01	1.70E-01	1.13E+00	6.05E+00	8.75E+00	8.00E-01	9.38E+00	6.45E-01
UM-500S-2000E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-250N-1750E (0-2")	9.00E-02	9.00E-02	1.23E-01	1.19E+01	1.07E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	9.62E+01	4.93E-01	1.70E-01	1.13E+00	2.35E-01	8.75E+00	8.00E-01	9.38E+00	2.50E-02
UM-0N-1500E (0-2")	9.00E-02	9.00E-02	1.23E-01	1.26E+01	1.13E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.02E+02	5.23E-01	1.70E-01	1.13E+00	2.49E-01	8.75E+00	8.00E-01	9.38E+00	2.65E-02
UM-250S-1500E (0-2")	9.00E-02	9.00E-02	1.23E-01	2.13E+02	1.92E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.73E+03	8.87E+00	1.70E-01	1.13E+00	4.22E+00	8.75E+00	8.00E-01	9.38E+00	4.50E-01
UM-250S-1250E (0-2")	9.00E-02	9.00E-02	1.23E-01	1.17E+01	1.05E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	9.48E+01	4.86E-01	1.70E-01	1.13E+00	2.31E-01	8.75E+00	8.00E-01	9.38E+00	2.46E-02
BRSD-6 (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-1000E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-750E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-500E (0-2")	9.00E-02	9.00E-02	1.23E-01	2.01E+01	1.81E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.63E+02	8.36E-01	1.70E-01	1.13E+00	3.97E-01	8.75E+00	8.00E-01	9.38E+00	4.24E-02
UM-250S-500E (0-2")	9.00E-02	9.00E-02	1.23E-01	8.65E+00	7.78E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	7.01E+01	3.59E-01	1.70E-01	1.13E+00	1.71E-01	8.75E+00	8.00E-01	9.38E+00	1.82E-02
UM-250S-250E (0-2")	9.00E-02	9.00E-02	1.23E-01	1.62E+01	1.45E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.31E+02	6.72E-01	1.70E-01	1.13E+00	3.19E-01	8.75E+00	8.00E-01	9.38E+00	3.40E-02
BRSD-7 (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-8 (0-2")	9.00E-02	9.00E-02	1.23E-01	2.79E+01	2.51E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.26E+02	1.16E+00	1.70E-01	1.13E+00	5.51E-01	8.75E+00	8.00E-01	9.38E+00	5.87E-02
UM-500S-500E (0-2")	9.00E-02	9.00E-02	1.23E-01	8.19E+00	7.37E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	6.64E+01	3.40E-01	1.70E-01	1.13E+00	1.62E-01	8.75E+00	8.00E-01	9.38E+00	1.73E-02
BRSD-9 (0-2")	9.00E-02	9.00E-02	1.23E-01	3.52E+01	3.16E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.85E+02	1.46E+00	1.70E-01	1.13E+00	6.95E-01	8.75E+00	8.00E-01	9.38E+00	7.41E-02
BRSD-10 (0-2")	9.00E-02	9.00E-02	1.23E-01	7.80E+01	7.01E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	6.32E+02	3.24E+00	1.70E-01	1.13E+00	1.54E+00	8.75E+00	8.00E-01	9.38E+00	1.64E-01
BRSD-11 (0-2")	9.00E-02	9.00E-02	1.23E-01	1.14E+01	1.03E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	9.24E+01	4.74E-01	1.70E-01	1.13E+00	2.25E-01	8.75E+00	8.00E-01	9.38E+00	2.40E-02
Eastern Upper Marsh (2-6")																						**Maximum HQ (Western Upper Marsh, 0-2")**	**6.45E-01**
UM-1000S-3500E (2-6")	9.00E-02	9.00E-02	1.23E-01	3.95E+01	3.55E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.20E+02	1.64E+00	1.70E-01	1.13E+00	7.80E-01	8.75E+00	8.00E-01	9.38E+00	8.32E-02
BRSD-15 (2-6")	9.00E-02	9.00E-02	1.23E-01	1.38E+01	1.24E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.12E+02	5.74E-01	1.70E-01	1.13E+00	2.73E-01	8.75E+00	8.00E-01	9.38E+00	2.91E-02
UM-750S-3500E (2-6")	9.00E-02	9.00E-02	1.23E-01	1.23E+02	1.11E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	9.96E+02	5.11E+00	1.70E-01	1.13E+00	2.43E+00	8.75E+00	8.00E-01	9.38E+00	2.59E-01
BRSD-16 (2-6")	9.00E-02	9.00E-02	1.23E-01	3.86E+02	3.47E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.13E+03	1.60E+01	1.70E-01	1.13E+00	7.63E+00	8.75E+00	8.00E-01	9.38E+00	8.13E-01
UM-750S-3000E (2-6")	9.00E-02	9.00E-02	1.23E-01	1.32E+02	1.19E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.07E+03	5.49E+00	1.70E-01	1.13E+00	2.61E+00	8.75E+00	8.00E-01	9.38E+00	2.78E-01
BRSD-3 (2-6")	9.00E-02	9.00E-02	1.23E-01	2.67E+02	2.40E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.16E+03	1.11E+01	1.70E-01	1.13E+00	5.27E+00	8.75E+00	8.00E-01	9.38E+00	5.61E-01
UM-500S-3250E (2-6")	9.00E-02	9.00E-02	1.23E-01	1.80E+02	1.62E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.46E+03	7.49E+00	1.70E-01	1.13E+00	3.56E+00	8.75E+00	8.00E-01	9.38E+00	3.79E-01
UM-500S-3000E (2-6")	9.00E-02	9.00E-02	1.23E-01	1.70E+01	1.53E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.38E+02	7.08E-01	1.70E-01	1.13E+00	3.36E-01	8.75E+00	8.00E-01	9.38E+00	3.59E-02
UM-500S-2750E (2-6")	9.00E-02	9.00E-02	1.23E-01	9.80E+01	8.81E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	7.94E+02	4.07E+00	1.70E-01	1.13E+00	1.94E+00	8.75E+00	8.00E-01	9.38E+00	2.06E-01
BRSD-25 (2-6")	9.00E-02	9.00E-02	1.23E-01	1.80E+02	1.62E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.46E+03	7.49E+00	1.70E-01	1.13E+00	3.56E+00	8.75E+00	8.00E-01	9.38E+00	3.79E-01
UM-250S-3000E (2-6")	9.00E-02	9.00E-02	1.23E-01	2.41E+02	2.16E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.95E+03	1.00E+01	1.70E-01	1.13E+00	4.75E+00	8.75E+00	8.00E-01	9.38E+00	5.07E-01
UM-250S-3250E (2-6")	9.00E-02	9.00E-02	1.23E-01	1.15E+01	1.04E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	9.35E+01	4.79E-01	1.70E-01	1.13E+00	2.28E-01	8.75E+00	8.00E-01	9.38E+00	2.43E-02
BRSD-24 (2-6")	9.00E-02	9.00E-02	1.23E-01	3.28E+02	2.95E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.66E+03	1.36E+01	1.70E-01	1.13E+00	6.49E+00	8.75E+00	8.00E-01	9.38E+00	6.91E-01
UM-250S-2750E (2-6")	9.00E-02	9.00E-02	1.23E-01	2.57E+02	2.31E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.08E+03	1.07E+01	1.70E-01	1.13E+00	5.07E+00	8.75E+00	8.00E-01	9.38E+00	5.41E-01
UM-0N-2500E (2-6")	9.00E-02	9.00E-02	1.23E-01	1.55E+02	1.40E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.26E+03	6.46E+00	1.70E-01	1.13E+00	3.07E+00	8.75E+00	8.00E-01	9.38E+00	3.27E-01
BRSD-2 (2-6")	9.00E-02	9.00E-02	1.23E-01	1.96E+02	1.76E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.59E+03	8.15E+00	1.70E-01	1.13E+00	3.88E+00	8.75E+00	8.00E-01	9.38E+00	4.13E-01
UM-500N-2500E (2-6")	9.00E-02	9.00E-02	1.23E-01	1.10E+01	9.87E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	8.89E+01	4.56E-01	1.70E-01	1.13E+00	2.17E-01	8.75E+00	8.00E-01	9.38E+00	2.31E-02
UM-250N-2500E (2-6")	9.00E-02	9.00E-02	1.23E-01	1.32E+02	1.19E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.07E+03	5.49E+00	1.70E-01	1.13E+00	2.61E+00	8.75E+00	8.00E-01	9.38E+00	2.78E-01
UM-250N-2250E (2-6")	9.00E-02	9.00E-02	1.23E-01	2.37E+01	2.13E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.92E+02	9.84E-01	1.70E-01	1.13E+00	4.68E-01	8.75E+00	8.00E-01	9.38E+00	4.99E-02
Western Upper Marsh (2-6")																						**Maximum HQ (Eastern Upper Marsh, 2-6")**	**8.13E-01**
UM-500S-2500E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-2000E (2-6")	9.00E-02	9.00E-02	1.23E-01	3.04E+02	2.73E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.46E+03	1.26E+01	1.70E-01	1.13E+00	6.00E+00	8.75E+00	8.00E-01	9.38E+00	6.39E-01
UM-500S-2000E (2-6")	9.00E-02	9.00E-02	1.23E-01	1.14E+01	1.02E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	9.22E+01	4.73E-01	1.70E-01	1.13E+00	2.25E-01	8.75E+00	8.00E-01	9.38E+00	2.40E-02
UM-250N-1750E (2-6")	9.00E-02	9.00E-02	1.23E-01	1.15E+01	1.04E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	9.36E+01	4.80E-01	1.70E-01	1.13E+00	2.28E-01	8.75E+00	8.00E-01	9.38E+00	2.43E-02
UM-0N-1500E (2-6")	9.00E-02	9.00E-02	1.23E-01	1.37E+01	1.23E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.11E+02	5.69E-01	1.70E-01	1.13E+00	2.71E-01	8.75E+00	8.00E-01	9.38E+00	2.88E-02
UM-250S-1500E (2-6")	9.00E-02	9.00E-02	1.23E-01	2.05E+02	1.84E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.66E+03	8.51E+00	1.70E-01	1.13E+00	4.05E+00	8.75E+00	8.00E-01	9.38E+00	4.31E-01
UM-250S-1250E (2-6")	9.00E-02	9.00E-02	1.23E-01	1.15E+01	1.04E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	9.33E+01	4.78E-01	1.70E-01	1.13E+00	2.27E-01	8.75E+00	8.00E-01	9.38E+00	2.42E-02

TABLE C-12EA: LEAD DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 12 - MARSH, TERRESTRIAL RECEPTORS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 118.73

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Red-Tailed Hawk (Carnivorous Birds)																							
BRSD-6 (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-1000E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-750E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-500E (2-6")	9.00E-02	9.00E-02	1.23E-01	6.44E+01	5.79E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.22E+02	2.68E+00	1.70E-01	1.13E+00	1.27E+00	8.75E+00	8.00E-01	9.38E+00	1.36E-01
UM-250S-500E (2-6")	9.00E-02	9.00E-02	1.23E-01	1.18E+01	1.06E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	9.54E+01	4.89E-01	1.70E-01	1.13E+00	2.33E-01	8.75E+00	8.00E-01	9.38E+00	2.48E-02
UM-0N-250E (2-6")	9.00E-02	9.00E-02	1.23E-01	3.48E+01	3.13E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.82E+02	1.45E+00	1.70E-01	1.13E+00	6.88E-01	8.75E+00	8.00E-01	9.38E+00	7.33E-02
UM-250S-250E (2-6")	9.00E-02	9.00E-02	1.23E-01	1.49E+01	1.34E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.21E+02	6.20E-01	1.70E-01	1.13E+00	2.95E-01	8.75E+00	8.00E-01	9.38E+00	3.14E-02
BRSD-7 (2-6")	9.00E-02	9.00E-02	1.23E-01	7.69E+00	6.91E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	6.23E+01	3.19E-01	1.70E-01	1.13E+00	1.52E-01	8.75E+00	8.00E-01	9.38E+00	1.62E-02
BRSD-8 (2-6")	9.00E-02	9.00E-02	1.23E-01	4.10E+01	3.68E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.32E+02	1.70E+00	1.70E-01	1.13E+00	8.09E-01	8.75E+00	8.00E-01	9.38E+00	8.63E-02
UM-500S-500E (2-6")	9.00E-02	9.00E-02	1.23E-01	9.41E+00	8.47E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	7.63E+01	3.91E-01	1.70E-01	1.13E+00	1.86E-01	8.75E+00	8.00E-01	9.38E+00	1.98E-02
BRSD-9 (2-6")	9.00E-02	9.00E-02	1.23E-01	7.25E+00	6.53E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.88E+01	3.01E-01	1.70E-01	1.13E+00	1.43E-01	8.75E+00	8.00E-01	9.38E+00	1.53E-02
BRSD-10 (2-6")	9.00E-02	9.00E-02	1.23E-01	9.92E+01	8.92E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	8.04E+02	4.12E+00	1.70E-01	1.13E+00	1.96E+00	8.75E+00	8.00E-01	9.38E+00	2.09E-01
BRSD-11 (2-6")	9.00E-02	9.00E-02	1.23E-01	1.14E+01	1.03E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	9.26E+01	4.75E-01	1.70E-01	1.13E+00	2.26E-01	8.75E+00	8.00E-01	9.38E+00	2.41E-02
Eastern Upper Marsh (6-12")																						**Maximum HQ (Western Upper Marsh, 2-6")**	**6.39E-01**
UM-1000S-3500E (6-12")	9.00E-02	9.00E-02	1.23E-01	1.01E+01	9.07E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	8.17E+01	4.19E-01	1.70E-01	1.13E+00	1.99E-01	8.75E+00	8.00E-01	9.38E+00	2.12E-02
BRSD-15 (6-12")	9.00E-02	9.00E-02	1.23E-01	1.07E+01	9.66E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	8.70E+01	4.46E-01	1.70E-01	1.13E+00	2.12E-01	8.75E+00	8.00E-01	9.38E+00	2.26E-02
BRSD-4 (6-12")	9.00E-02	9.00E-02	1.23E-01	2.62E+01	2.35E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.12E+02	1.09E+00	1.70E-01	1.13E+00	5.17E-01	8.75E+00	8.00E-01	9.38E+00	5.51E-02
UM-750S-3500E (6-12")	9.00E-02	9.00E-02	1.23E-01	1.49E+02	1.34E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.21E+03	6.20E+00	1.70E-01	1.13E+00	2.95E+00	8.75E+00	8.00E-01	9.38E+00	3.14E-01
BRSD-16 (6-12")	9.00E-02	9.00E-02	1.23E-01	3.97E+02	3.57E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.22E+03	1.65E+01	1.70E-01	1.13E+00	7.85E+00	8.75E+00	8.00E-01	9.38E+00	8.37E-01
UM-750S-3000E (6-12")	9.00E-02	9.00E-02	1.23E-01	1.38E+02	1.24E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.12E+03	5.74E+00	1.70E-01	1.13E+00	2.73E+00	8.75E+00	8.00E-01	9.38E+00	2.91E-01
BRSD-3 (6-12")	9.00E-02	9.00E-02	1.23E-01	4.29E+01	3.86E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.48E+02	1.78E+00	1.70E-01	1.13E+00	8.48E-01	8.75E+00	8.00E-01	9.38E+00	9.04E-02
UM-500S-3250E (6-12")	9.00E-02	9.00E-02	1.23E-01	7.50E+01	6.75E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	6.08E+02	3.12E+00	1.70E-01	1.13E+00	1.48E+00	8.75E+00	8.00E-01	9.38E+00	1.58E-01
UM-500S-3000E (6-12")	9.00E-02	9.00E-02	1.23E-01	1.38E+01	1.24E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.12E+02	5.74E-01	1.70E-01	1.13E+00	2.73E-01	8.75E+00	8.00E-01	9.38E+00	2.91E-02
UM-500S-2750E (6-12")	9.00E-02	9.00E-02	1.23E-01	8.37E+01	7.53E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	6.78E+02	3.48E+00	1.70E-01	1.13E+00	1.65E+00	8.75E+00	8.00E-01	9.38E+00	1.76E-01
BRSD-25 (6-12")	9.00E-02	9.00E-02	1.23E-01	1.30E+02	1.17E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.05E+03	5.38E+00	1.70E-01	1.13E+00	2.56E+00	8.75E+00	8.00E-01	9.38E+00	2.73E-01
UM-250S-3000E (6-12")	9.00E-02	9.00E-02	1.23E-01	1.58E+02	1.42E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.28E+03	6.56E+00	1.70E-01	1.13E+00	3.12E+00	8.75E+00	8.00E-01	9.38E+00	3.33E-01
UM-250S-3250E (6-12")	9.00E-02	9.00E-02	1.23E-01	1.32E+01	1.19E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.07E+02	5.49E-01	1.70E-01	1.13E+00	2.61E-01	8.75E+00	8.00E-01	9.38E+00	2.78E-02
BRSD-24 (6-12")	9.00E-02	9.00E-02	1.23E-01	2.83E+02	2.54E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.29E+03	1.17E+01	1.70E-01	1.13E+00	5.58E+00	8.75E+00	8.00E-01	9.38E+00	5.95E-01
UM-250S-2750E (6-12")	9.00E-02	9.00E-02	1.23E-01	2.97E+02	2.67E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.41E+03	1.24E+01	1.70E-01	1.13E+00	5.88E+00	8.75E+00	8.00E-01	9.38E+00	6.26E-01
UM-250S-2500E (6-12")	9.00E-02	9.00E-02	1.23E-01	1.05E+01	9.48E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	8.54E+01	4.38E-01	1.70E-01	1.13E+00	2.08E-01	8.75E+00	8.00E-01	9.38E+00	2.22E-02
BRSD-2 (6-12")	9.00E-02	9.00E-02	1.23E-01	5.21E+02	4.68E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.22E+03	2.16E+01	1.70E-01	1.13E+00	1.03E+01	8.75E+00	8.00E-01	9.38E+00	1.10E+00
UM-500N-2500E (6-12")	9.00E-02	9.00E-02	1.23E-01	9.43E+00	8.48E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	7.64E+01	3.92E-01	1.70E-01	1.13E+00	1.86E-01	8.75E+00	8.00E-01	9.38E+00	1.99E-02
UM-250N-2500E (6-12")	9.00E-02	9.00E-02	1.23E-01	1.20E+02	1.08E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	9.75E+02	5.00E+00	1.70E-01	1.13E+00	2.38E+00	8.75E+00	8.00E-01	9.38E+00	2.53E-01
UM-250N-2250E (6-12")	9.00E-02	9.00E-02	1.23E-01	2.39E+01	2.15E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.94E+02	9.95E-01	1.70E-01	1.13E+00	4.73E-01	8.75E+00	8.00E-01	9.38E+00	5.04E-02
Western Upper Marsh (6-12")																						**Maximum HQ (Eastern Upper Marsh, 6-12")**	**1.10E+00**
UM-500S-2500E (6-12")	9.00E-02	9.00E-02	1.23E-01	1.51E+01	1.35E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.22E+02	6.26E-01	1.70E-01	1.13E+00	2.97E-01	8.75E+00	8.00E-01	9.38E+00	3.17E-02
UM-0N-2000E (6-12")	9.00E-02	9.00E-02	1.23E-01	4.05E+02	3.64E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.28E+03	1.68E+01	1.70E-01	1.13E+00	8.00E+00	8.75E+00	8.00E-01	9.38E+00	8.52E-01
UM-500S-2000E (6-12")	9.00E-02	9.00E-02	1.23E-01	1.16E+01	1.04E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	9.40E+01	4.82E-01	1.70E-01	1.13E+00	2.29E-01	8.75E+00	8.00E-01	9.38E+00	2.44E-02
UM-250N-1750E (6-12")	9.00E-02	9.00E-02	1.23E-01	1.22E+01	1.10E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	9.87E+01	5.06E-01	1.70E-01	1.13E+00	2.41E-01	8.75E+00	8.00E-01	9.38E+00	2.57E-02
UM-0N-1500E (6-12")	9.00E-02	9.00E-02	1.23E-01	1.37E+01	1.23E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.11E+02	5.69E-01	1.70E-01	1.13E+00	2.71E-01	8.75E+00	8.00E-01	9.38E+00	2.88E-02
UM-250S-1500E (6-12")	9.00E-02	9.00E-02	1.23E-01	1.15E+02	1.03E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	9.31E+02	4.77E+00	1.70E-01	1.13E+00	2.27E+00	8.75E+00	8.00E-01	9.38E+00	2.42E-01
UM-250S-1250E (6-12")	9.00E-02	9.00E-02	1.23E-01	1.26E+01	1.13E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.02E+02	5.23E-01	1.70E-01	1.13E+00	2.49E-01	8.75E+00	8.00E-01	9.38E+00	2.65E-02
BRSD-6 (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-1000E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-750E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-500E (6-12")	9.00E-02	9.00E-02	1.23E-01	1.90E+01	1.71E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.54E+02	7.90E-01	1.70E-01	1.13E+00	3.75E-01	8.75E+00	8.00E-01	9.38E+00	4.00E-02
UM-250S-500E (6-12")	9.00E-02	9.00E-02	1.23E-01	1.21E+01	1.09E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	9.80E+01	5.02E-01	1.70E-01	1.13E+00	2.39E-01	8.75E+00	8.00E-01	9.38E+00	2.55E-02
UM-0N-250E (6-12")	9.00E-02	9.00E-02	1.23E-01	3.32E+01	2.99E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.69E+02	1.38E+00	1.70E-01	1.13E+00	6.56E-01	8.75E+00	8.00E-01	9.38E+00	6.99E-02
UM-250S-250E (6-12")	9.00E-02	9.00E-02	1.23E-01	1.18E+01	1.06E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	9.53E+01	4.89E-01	1.70E-01	1.13E+00	2.32E-01	8.75E+00	8.00E-01	9.38E+00	2.48E-02

TABLE C-12EA: LEAD DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 12 - MARSH, TERRESTRIAL RECEPTORS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 118.73

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Red-Tailed Hawk (Carnivorous Birds)																							
BRSD-7 (6-12")	9.00E-02	9.00E-02	1.23E-01	1.42E+01	1.28E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.15E+02	5.90E-01	1.70E-01	1.13E+00	2.80E-01	8.75E+00	8.00E-01	9.38E+00	2.99E-02
BRSD-8 (6-12")	9.00E-02	9.00E-02	1.23E-01	3.70E+01	3.33E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.00E+02	1.54E+00	1.70E-01	1.13E+00	7.31E-01	8.75E+00	8.00E-01	9.38E+00	7.80E-02
UM-500S-500E (6-12")	9.00E-02	9.00E-02	1.23E-01	8.96E+00	8.06E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	7.26E+01	3.72E-01	1.70E-01	1.13E+00	1.77E-01	8.75E+00	8.00E-01	9.38E+00	1.89E-02
BRSD-9 (6-12")	9.00E-02	9.00E-02	1.23E-01	1.05E+01	9.42E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	8.49E+01	4.35E-01	1.70E-01	1.13E+00	2.07E-01	8.75E+00	8.00E-01	9.38E+00	2.21E-02
BRSD-10 (6-12")	9.00E-02	9.00E-02	1.23E-01	1.69E+02	1.52E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.37E+03	7.02E+00	1.70E-01	1.13E+00	3.34E+00	8.75E+00	8.00E-01	9.38E+00	3.56E-01
BRSD-11 (6-12")	9.00E-02	9.00E-02	1.23E-01	1.28E+01	1.15E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.04E+02	5.33E-01	1.70E-01	1.13E+00	2.54E-01	8.75E+00	8.00E-01	9.38E+00	2.70E-02
Middle Marsh (0-2")																						**Maximum HQ (Western Upper Marsh, 6-12")**	**8.52E-01**
MMSD-201 (0-2")	9.00E-02	9.00E-02	1.23E-01	6.22E+01	5.59E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.04E+02	2.58E+00	1.70E-01	1.13E+00	1.23E+00	8.75E+00	8.00E-01	9.38E+00	1.31E-01
MMSD-202 (0-2")	9.00E-02	9.00E-02	1.23E-01	8.57E+01	7.71E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	6.95E+02	3.56E+00	1.70E-01	1.13E+00	1.69E+00	8.75E+00	8.00E-01	9.38E+00	1.81E-01
Middle Marsh (2-6")																						**Maximum HQ (Middle Marsh, 0-2")**	**1.81E-01**
MMSD-201 (2-6")	9.00E-02	9.00E-02	1.23E-01	7.67E+01	6.90E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	6.22E+02	3.19E+00	1.70E-01	1.13E+00	1.52E+00	8.75E+00	8.00E-01	9.38E+00	1.62E-01
MMSD-202 (2-6")	9.00E-02	9.00E-02	1.23E-01	1.02E+02	9.19E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	8.28E+02	4.25E+00	1.70E-01	1.13E+00	2.02E+00	8.75E+00	8.00E-01	9.38E+00	2.15E-01
Middle Marsh (6-12")																						**Maximum HQ (Middle Marsh, 2-6")**	**2.15E-01**
MMSD-201 (6-12")	9.00E-02	9.00E-02	1.23E-01	1.19E+02	1.07E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	9.67E+02	4.96E+00	1.70E-01	1.13E+00	2.36E+00	8.75E+00	8.00E-01	9.38E+00	2.51E-01
MMSD-202 (6-12")	9.00E-02	9.00E-02	1.23E-01	3.23E+01	2.91E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.62E+02	1.34E+00	1.70E-01	1.13E+00	6.39E-01	8.75E+00	8.00E-01	9.38E+00	6.81E-02
Lower Marsh (0-2")																						**Maximum HQ (Middle Marsh, 6-12")**	**2.51E-01**
LMSD-201 (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
LMSD-202 (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
LMSD-203 (0-2")	9.00E-02	9.00E-02	1.23E-01	9.87E+00	8.88E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	8.00E+01	4.10E-01	1.70E-01	1.13E+00	1.95E-01	8.75E+00	8.00E-01	9.38E+00	2.08E-02
LMSD-204 (0-2")	9.00E-02	9.00E-02	1.23E-01	1.11E+01	9.99E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	9.00E+01	4.61E-01	1.70E-01	1.13E+00	2.19E-01	8.75E+00	8.00E-01	9.38E+00	2.34E-02
Lower Marsh (2-6")																						**Maximum HQ (Lower Marsh, 0-2")**	**2.34E-02**
LMSD-201 (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
LMSD-202 (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
LMSD-203 (2-6")	9.00E-02	9.00E-02	1.23E-01	1.05E+01	9.43E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	8.50E+01	4.36E-01	1.70E-01	1.13E+00	2.07E-01	8.75E+00	8.00E-01	9.38E+00	2.21E-02
LMSD-204 (2-6")	9.00E-02	9.00E-02	1.23E-01	1.07E+01	9.66E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	8.70E+01	4.46E-01	1.70E-01	1.13E+00	2.12E-01	8.75E+00	8.00E-01	9.38E+00	2.26E-02
Lower Marsh (6-12")																						**Maximum HQ (Lower Marsh, 2-6")**	**2.26E-02**
LMSD-201 (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
LMSD-202 (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
LMSD-203 (6-12")	9.00E-02	9.00E-02	1.23E-01	9.99E+00	8.99E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	8.10E+01	4.15E-01	1.70E-01	1.13E+00	1.97E-01	8.75E+00	8.00E-01	9.38E+00	2.11E-02
LMSD-204 (6-12")	9.00E-02	9.00E-02	1.23E-01	1.04E+01	9.32E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	8.40E+01	4.31E-01	1.70E-01	1.13E+00	2.05E-01	8.75E+00	8.00E-01	9.38E+00	2.18E-02
																						Maximum HQ (Lower Marsh, 6-12")	**2.18E-02**
American Kestral (Insectivorous Birds)																							
Reference Sites																							
BRSD-5 (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	2.22E+00	1.44E+02	1.98E+00	7.84E-04	6.47E+01	5.07E-02	4.54E-01	1.24E-01	7.42E+00	8.75E+00	8.00E-01	6.03E+00	1.23E+00
BRSD-5 (2-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	2.22E+00	1.37E+02	1.88E+00	7.84E-04	6.17E+01	4.84E-02	4.54E-01	1.24E-01	7.07E+00	8.75E+00	8.00E-01	6.03E+00	1.17E+00
BRSD-5 (6-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	2.22E+00	1.75E+02	2.41E+00	7.84E-04	7.90E+01	6.20E-02	4.54E-01	1.24E-01	9.06E+00	8.75E+00	8.00E-01	6.03E+00	1.50E+00
PGBG-1 (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	2.22E+00	1.22E+02	1.68E+00	7.84E-04	5.50E+01	4.31E-02	4.54E-01	1.24E-01	6.31E+00	8.75E+00	8.00E-01	6.03E+00	1.05E+00
PGBG-1 (2-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	2.22E+00	2.24E+02	3.09E+00	7.84E-04	1.01E+02	7.92E-02	4.54E-01	1.24E-01	1.16E+01	8.75E+00	8.00E-01	6.03E+00	1.92E+00
PGBG-1 (6-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	2.22E+00	3.86E+02	5.32E+00	7.84E-04	1.74E+02	1.36E-01	4.54E-01	1.24E-01	2.00E+01	8.75E+00	8.00E-01	6.03E+00	3.31E+00
PGBG-2 (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	2.22E+00	2.33E+02	3.21E+00	7.84E-04	1.05E+02	8.24E-02	4.54E-01	1.24E-01	1.20E+01	8.75E+00	8.00E-01	6.03E+00	2.00E+00
PGBG-2 (2-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	2.22E+00	2.40E+02	3.30E+00	7.84E-04	1.08E+02	8.47E-02	4.54E-01	1.24E-01	1.24E+01	8.75E+00	8.00E-01	6.03E+00	2.05E+00
PGBG-2 (6-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	2.22E+00	2.51E+02	3.45E+00	7.84E-04	1.13E+02	8.86E-02	4.54E-01	1.24E-01	1.30E+01	8.75E+00	8.00E-01	6.03E+00	2.15E+00
Eastern Upper Marsh (0-2")																						**Minimum HQ (Reference Sites)**	**1.05E+00**
UM-1000S-3500E (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	2.94E+01	5.20E+04	7.16E+02	7.84E-04	1.77E+03	1.39E+00	4.54E-01	1.24E-01	2.63E+03	8.75E+00	8.00E-01	6.03E+00	4.36E+02
BRSD-15 (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	2.94E+01	1.97E+03	2.71E+01	7.84E-04	6.69E+01	5.25E-02	4.54E-01	1.24E-01	9.92E+01	8.75E+00	8.00E-01	6.03E+00	1.65E+01
BRSD-4 (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	2.94E+01	3.26E+03	4.49E+01	7.84E-04	1.11E+02	8.71E-02	4.54E-01	1.24E-01	1.65E+02	8.75E+00	8.00E-01	6.03E+00	2.73E+01
UM-750S-3500E (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	2.94E+01	6.59E+04	9.06E+02	7.84E-04	2.24E+03	1.76E+00	4.54E-01	1.24E-01	3.32E+03	8.75E+00	8.00E-01	6.03E+00	5.51E+02
BRSD-16 (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	2.94E+01	6.17E+04	8.50E+02	7.84E-04	2.10E+03	1.65E+00	4.54E-01	1.24E-01	3.12E+03	8.75E+00	8.00E-01	6.03E+00	5.17E+02
UM-750S-3000E (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	2.94E+01	3.53E+04	4.86E+02	7.84E-04	1.20E+03	9.41E-01	4.54E-01	1.24E-01	1.78E+03	8.75E+00	8.00E-01	6.03E+00	2.95E+02
BRSD-3 (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	2.94E+01	3.20E+04	4.41E+02	7.84E-04	1.09E+03	8.55E-01	4.54E-01	1.24E-01	1.62E+03	8.75E+00	8.00E-01	6.03E+00	2.68E+02
UM-500S-3250E (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	2.94E+01	6.50E+04	8.94E+02	7.84E-04	2.21E+03	1.73E+00	4.54E-01	1.24E-01	3.28E+03	8.75E+00	8.00E-01	6.03E+00	5.44E+02
UM-500S-3000E (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	2.94E+01	6.23E+04	8.58E+02	7.84E-04	2.12E+03	1.66E+00	4.54E-01	1.24E-01	3.14E+03	8.75E+00	8.00E-01	6.03E+00	5.22E+02

TABLE C-12EA: LEAD DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 12 - MARSH, TERRESTRIAL RECEPTORS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **118.73**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
American Kestral (Insectivorous Birds)																							
UM-500S-2750E (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	2.94E+01	3.56E+04	4.90E+02	7.84E-04	1.21E+03	9.49E-01	4.54E-01	1.24E-01	1.79E+03	8.75E+00	8.00E-01	6.03E+00	2.98E+02
BRSD-25 (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	2.94E+01	2.46E+04	3.38E+02	7.84E-04	8.36E+02	6.56E-01	4.54E-01	1.24E-01	1.24E+03	8.75E+00	8.00E-01	6.03E+00	2.06E+02
UM-250S-3000E (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	2.94E+01	4.94E+04	6.80E+02	7.84E-04	1.68E+03	1.32E+00	4.54E-01	1.24E-01	2.49E+03	8.75E+00	8.00E-01	6.03E+00	4.14E+02
UM-250S-3250E (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	2.94E+01	4.94E+03	6.80E+01	7.84E-04	1.68E+02	1.32E-01	4.54E-01	1.24E-01	2.49E+02	8.75E+00	8.00E-01	6.03E+00	4.14E+01
BRSD-24 (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	2.94E+01	3.18E+04	4.37E+02	7.84E-04	1.08E+03	8.47E-01	4.54E-01	1.24E-01	1.60E+03	8.75E+00	8.00E-01	6.03E+00	2.66E+02
UM-250S-2750E (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	2.94E+01	2.85E+04	3.92E+02	7.84E-04	9.68E+02	7.59E-01	4.54E-01	1.24E-01	1.44E+03	8.75E+00	8.00E-01	6.03E+00	2.38E+02
UM-250S-2500E (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	2.94E+01	3.38E+03	4.65E+01	7.84E-04	1.15E+02	9.02E-02	4.54E-01	1.24E-01	1.71E+02	8.75E+00	8.00E-01	6.03E+00	2.83E+01
UM-0N-2500E (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	2.94E+01	5.88E+04	8.09E+02	7.84E-04	2.00E+03	1.57E+00	4.54E-01	1.24E-01	2.97E+03	8.75E+00	8.00E-01	6.03E+00	4.92E+02
UM-0N-250E (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	2.94E+01	8.97E+03	1.23E+02	7.84E-04	3.05E+02	2.39E-01	4.54E-01	1.24E-01	4.52E+02	8.75E+00	8.00E-01	6.03E+00	7.51E+01
BRSD-2 (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	2.94E+01	3.79E+04	5.22E+02	7.84E-04	1.29E+03	1.01E+00	4.54E-01	1.24E-01	1.91E+03	8.75E+00	8.00E-01	6.03E+00	3.18E+02
UM-500N-2500E (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	2.94E+01	2.68E+03	3.69E+01	7.84E-04	9.12E+01	7.15E-02	4.54E-01	1.24E-01	1.35E+02	8.75E+00	8.00E-01	6.03E+00	2.24E+01
UM-250N-2500E (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	2.94E+01	4.47E+04	6.15E+02	7.84E-04	1.52E+03	1.19E+00	4.54E-01	1.24E-01	2.25E+03	8.75E+00	8.00E-01	6.03E+00	3.74E+02
UM-250N-2250E (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	2.94E+01	3.94E+04	5.42E+02	7.84E-04	1.34E+03	1.05E+00	4.54E-01	1.24E-01	1.99E+03	8.75E+00	8.00E-01	6.03E+00	3.30E+02
Western Upper Marsh (0-2")																						**Maximum HQ (Eastern Upper Marsh, 0-2")**	**5.51E+02**
UM-500S-2500E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-2000E (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	8.65E+00	2.14E+04	2.95E+02	7.84E-04	2.48E+03	1.95E+00	4.54E-01	1.24E-01	1.09E+03	8.75E+00	8.00E-01	6.03E+00	1.80E+02
UM-500S-2000E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-250N-1750E (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	8.65E+00	8.32E+02	1.14E+01	7.84E-04	9.62E+01	7.55E-02	4.54E-01	1.24E-01	4.22E+01	8.75E+00	8.00E-01	6.03E+00	7.00E+00
UM-0N-1500E (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	8.65E+00	8.82E+02	1.21E+01	7.84E-04	1.02E+02	8.00E-02	4.54E-01	1.24E-01	4.47E+01	8.75E+00	8.00E-01	6.03E+00	7.42E+00
UM-250S-1500E (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	8.65E+00	1.50E+04	2.06E+02	7.84E-04	1.73E+03	1.36E+00	4.54E-01	1.24E-01	7.58E+02	8.75E+00	8.00E-01	6.03E+00	1.26E+02
UM-250S-1250E (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	8.65E+00	8.20E+02	1.13E+01	7.84E-04	9.48E+01	7.44E-02	4.54E-01	1.24E-01	4.15E+01	8.75E+00	8.00E-01	6.03E+00	6.89E+00
BRSD-6 (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-1000E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-750E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-500E (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	8.65E+00	1.41E+03	1.94E+01	7.84E-04	1.63E+02	1.28E-01	4.54E-01	1.24E-01	7.14E+01	8.75E+00	8.00E-01	6.03E+00	1.19E+01
UM-250S-500E (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	8.65E+00	6.06E+02	8.34E+00	7.84E-04	7.01E+01	5.50E-02	4.54E-01	1.24E-01	3.07E+01	8.75E+00	8.00E-01	6.03E+00	5.10E+00
UM-250S-250E (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	8.65E+00	1.13E+03	1.56E+01	7.84E-04	1.31E+02	1.03E-01	4.54E-01	1.24E-01	5.74E+01	8.75E+00	8.00E-01	6.03E+00	9.53E+00
BRSD-7 (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-8 (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	8.65E+00	1.95E+03	2.69E+01	7.84E-04	2.26E+02	1.77E-01	4.54E-01	1.24E-01	9.90E+01	8.75E+00	8.00E-01	6.03E+00	1.64E+01
UM-500S-500E (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	8.65E+00	5.74E+02	7.90E+00	7.84E-04	6.64E+01	5.21E-02	4.54E-01	1.24E-01	2.91E+01	8.75E+00	8.00E-01	6.03E+00	4.83E+00
BRSD-9 (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	8.65E+00	2.46E+03	3.39E+01	7.84E-04	2.85E+02	2.24E-01	4.54E-01	1.24E-01	1.25E+02	8.75E+00	8.00E-01	6.03E+00	2.07E+01
BRSD-10 (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	8.65E+00	5.46E+03	7.52E+01	7.84E-04	6.32E+02	4.96E-01	4.54E-01	1.24E-01	2.77E+02	8.75E+00	8.00E-01	6.03E+00	4.60E+01
BRSD-11 (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	8.65E+00	7.99E+02	1.10E+01	7.84E-04	9.24E+01	7.25E-02	4.54E-01	1.24E-01	4.05E+01	8.75E+00	8.00E-01	6.03E+00	6.72E+00
Eastern Upper Marsh (2-6")																						**Maximum HQ (Western Upper Marsh, 0-2")**	**1.80E+02**
UM-1000S-3500E (2-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	2.94E+01	9.41E+03	1.29E+02	7.84E-04	3.20E+02	2.51E-01	4.54E-01	1.24E-01	4.75E+02	8.75E+00	8.00E-01	6.03E+00	7.88E+01
BRSD-15 (2-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	2.94E+01	3.29E+03	4.53E+01	7.84E-04	1.12E+02	8.79E-02	4.54E-01	1.24E-01	1.66E+02	8.75E+00	8.00E-01	6.03E+00	2.76E+01
BRSD-4 (2-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	2.94E+01	3.35E+03	4.61E+01	7.84E-04	1.14E+02	8.94E-02	4.54E-01	1.24E-01	1.69E+02	8.75E+00	8.00E-01	6.03E+00	2.81E+01
UM-750S-3500E (2-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	2.94E+01	2.93E+04	4.03E+02	7.84E-04	9.96E+02	7.81E-01	4.54E-01	1.24E-01	1.48E+03	8.75E+00	8.00E-01	6.03E+00	2.45E+02
BRSD-16 (2-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	2.94E+01	9.20E+04	1.27E+03	7.84E-04	3.13E+03	2.46E+00	4.54E-01	1.24E-01	4.64E+03	8.75E+00	8.00E-01	6.03E+00	7.70E+02
UM-750S-3000E (2-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	2.94E+01	3.15E+04	4.33E+02	7.84E-04	1.07E+03	8.39E-01	4.54E-01	1.24E-01	1.59E+03	8.75E+00	8.00E-01	6.03E+00	2.63E+02
BRSD-3 (2-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	2.94E+01	6.35E+04	8.74E+02	7.84E-04	2.16E+03	1.69E+00	4.54E-01	1.24E-01	3.20E+03	8.75E+00	8.00E-01	6.03E+00	5.32E+02
UM-500S-3250E (2-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	2.94E+01	4.29E+04	5.91E+02	7.84E-04	1.46E+03	1.15E+00	4.54E-01	1.24E-01	2.17E+03	8.75E+00	8.00E-01	6.03E+00	3.59E+02
UM-500S-3000E (2-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	2.94E+01	4.06E+03	5.58E+01	7.84E-04	1.38E+02	1.08E-01	4.54E-01	1.24E-01	2.05E+02	8.75E+00	8.00E-01	6.03E+00	3.40E+01
UM-500S-2750E (2-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	2.94E+01	2.33E+04	3.21E+02	7.84E-04	7.94E+02	6.23E-01	4.54E-01	1.24E-01	1.18E+03	8.75E+00	8.00E-01	6.03E+00	1.95E+02
BRSD-25 (2-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	2.94E+01	4.29E+04	5.91E+02	7.84E-04	1.46E+03	1.15E+00	4.54E-01	1.24E-01	2.17E+03	8.75E+00	8.00E-01	6.03E+00	3.59E+02
UM-250S-3000E (2-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	2.94E+01	5.73E+04	7.89E+02	7.84E-04	1.95E+03	1.53E+00	4.54E-01	1.24E-01	2.89E+03	8.75E+00	8.00E-01	6.03E+00	4.80E+02
UM-250S-3250E (2-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	2.94E+01	2.75E+03	3.78E+01	7.84E-04	9.35E+01	7.33E-02	4.54E-01	1.24E-01	1.39E+02	8.75E+00	8.00E-01	6.03E+00	2.30E+01
BRSD-24 (2-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	2.94E+01	7.82E+04	1.08E+03	7.84E-04	2.66E+03	2.09E+00	4.54E-01	1.24E-01	3.95E+03	8.75E+00	8.00E-01	6.03E+00	6.55E+02
UM-250S-2750E (2-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	2.94E+01	6.12E+04	8.42E+02	7.84E-04	2.08E+03	1.63E+00	4.54E-01	1.24E-01	3.09E+03	8.75E+00	8.00E-01	6.03E+00	5.12E+02
UM-0N-2500E (2-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	2.94E+01	3.70E+04	5.10E+02	7.84E-04	1.26E+03	9.88E-01	4.54E-01	1.24E-01	1.87E+03	8.75E+00	8.00E-01	6.03E+00	3.10E+02
BRSD-2 (2-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	2.94E+01	4.67E+04	6.43E+02	7.84E-04	1.59E+03	1.25E+00	4.54E-01	1.24E-01	2.36E+03	8.75E+00	8.00E-01	6.03E+00	3.91E+02

TABLE C-12EA: LEAD DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 12 - MARSH, TERRESTRIAL RECEPTORS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 118.73

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
American Kestral (Insectivorous Birds)																							
UM-500N-2500E (2-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	2.94E+01	2.61E+03	3.60E+01	7.84E-04	8.89E+01	6.97E-02	4.54E-01	1.24E-01	1.32E+02	8.75E+00	8.00E-01	6.03E+00	2.19E+01
UM-250N-2500E (2-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	2.94E+01	3.15E+04	4.33E+02	7.84E-04	1.07E+03	8.39E-01	4.54E-01	1.24E-01	1.59E+03	8.75E+00	8.00E-01	6.03E+00	2.63E+02
UM-250N-2250E (2-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	2.94E+01	5.65E+03	7.77E+01	7.84E-04	1.92E+02	1.51E-01	4.54E-01	1.24E-01	2.85E+02	8.75E+00	8.00E-01	6.03E+00	4.73E+01
Western Upper Marsh (2-6")																						**Maximum HQ (Eastern Upper Marsh, 2-6")**	**7.70E+02**
UM-500S-2500E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-2000E (2-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	8.65E+00	2.13E+04	2.93E+02	7.84E-04	2.46E+03	1.93E+00	4.54E-01	1.24E-01	1.08E+03	8.75E+00	8.00E-01	6.03E+00	1.79E+02
UM-500S-2000E (2-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	8.65E+00	7.97E+02	1.10E+01	7.84E-04	9.22E+01	7.23E-02	4.54E-01	1.24E-01	4.04E+01	8.75E+00	8.00E-01	6.03E+00	6.70E+00
UM-250N-1750E (2-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	8.65E+00	8.09E+02	1.11E+01	7.84E-04	9.36E+01	7.34E-02	4.54E-01	1.24E-01	4.10E+01	8.75E+00	8.00E-01	6.03E+00	6.81E+00
UM-0N-1500E (2-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	8.65E+00	9.60E+02	1.32E+01	7.84E-04	1.11E+02	8.71E-02	4.54E-01	1.24E-01	4.86E+01	8.75E+00	8.00E-01	6.03E+00	8.07E+00
UM-250S-1500E (2-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	8.65E+00	1.44E+04	1.98E+02	7.84E-04	1.66E+03	1.30E+00	4.54E-01	1.24E-01	7.27E+02	8.75E+00	8.00E-01	6.03E+00	1.21E+02
UM-250S-1250E (2-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	8.65E+00	8.07E+02	1.11E+01	7.84E-04	9.33E+01	7.32E-02	4.54E-01	1.24E-01	4.09E+01	8.75E+00	8.00E-01	6.03E+00	6.78E+00
BRSD-6 (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-1000E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-750E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-500E (2-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	8.65E+00	4.51E+03	6.21E+01	7.84E-04	5.22E+02	4.09E-01	4.54E-01	1.24E-01	2.29E+02	8.75E+00	8.00E-01	6.03E+00	3.80E+01
UM-250S-500E (2-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	8.65E+00	8.25E+02	1.14E+01	7.84E-04	9.54E+01	7.48E-02	4.54E-01	1.24E-01	4.18E+01	8.75E+00	8.00E-01	6.03E+00	6.94E+00
UM-0N-250E (2-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	8.65E+00	2.44E+03	3.36E+01	7.84E-04	2.82E+02	2.21E-01	4.54E-01	1.24E-01	1.24E+02	8.75E+00	8.00E-01	6.03E+00	2.05E+01
UM-250S-250E (2-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	8.65E+00	1.05E+03	1.44E+01	7.84E-04	1.21E+02	9.49E-02	4.54E-01	1.24E-01	5.30E+01	8.75E+00	8.00E-01	6.03E+00	8.80E+00
BRSD-7 (2-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	8.65E+00	5.39E+02	7.41E+00	7.84E-04	6.23E+01	4.89E-02	4.54E-01	1.24E-01	2.73E+01	8.75E+00	8.00E-01	6.03E+00	4.53E+00
BRSD-8 (2-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	8.65E+00	2.87E+03	3.95E+01	7.84E-04	3.32E+02	2.60E-01	4.54E-01	1.24E-01	1.45E+02	8.75E+00	8.00E-01	6.03E+00	2.41E+01
UM-500S-500E (2-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	8.65E+00	6.60E+02	9.08E+00	7.84E-04	7.63E+01	5.98E-02	4.54E-01	1.24E-01	3.34E+01	8.75E+00	8.00E-01	6.03E+00	5.55E+00
BRSD-9 (2-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	8.65E+00	5.08E+02	7.00E+00	7.84E-04	5.88E+01	4.61E-02	4.54E-01	1.24E-01	2.58E+01	8.75E+00	8.00E-01	6.03E+00	4.28E+00
BRSD-10 (2-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	8.65E+00	6.95E+03	9.57E+01	7.84E-04	8.04E+02	6.31E-01	4.54E-01	1.24E-01	3.52E+02	8.75E+00	8.00E-01	6.03E+00	5.85E+01
BRSD-11 (2-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	8.65E+00	8.01E+02	1.10E+01	7.84E-04	9.26E+01	7.26E-02	4.54E-01	1.24E-01	4.06E+01	8.75E+00	8.00E-01	6.03E+00	6.73E+00
Eastern Upper Marsh (6-12")																						**Maximum HQ (Western Upper Marsh, 2-6")**	**1.79E+02**
UM-1000S-3500E (6-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	2.94E+01	2.40E+03	3.31E+01	7.84E-04	8.17E+01	6.41E-02	4.54E-01	1.24E-01	1.21E+02	8.75E+00	8.00E-01	6.03E+00	2.01E+01
BRSD-15 (6-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	2.94E+01	2.56E+03	3.52E+01	7.84E-04	8.70E+01	6.82E-02	4.54E-01	1.24E-01	1.29E+02	8.75E+00	8.00E-01	6.03E+00	2.14E+01
BRSD-4 (6-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	2.94E+01	6.23E+03	8.58E+01	7.84E-04	2.12E+02	1.66E-01	4.54E-01	1.24E-01	3.14E+02	8.75E+00	8.00E-01	6.03E+00	5.22E+01
UM-750S-3500E (6-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	2.94E+01	3.56E+04	4.90E+02	7.84E-04	1.21E+03	9.49E-01	4.54E-01	1.24E-01	1.79E+03	8.75E+00	8.00E-01	6.03E+00	2.98E+02
BRSD-16 (6-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	2.94E+01	9.47E+04	1.30E+03	7.84E-04	3.22E+03	2.53E+00	4.54E-01	1.24E-01	4.78E+03	8.75E+00	8.00E-01	6.03E+00	7.93E+02
UM-750S-3000E (6-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	2.94E+01	3.29E+04	4.53E+02	7.84E-04	1.12E+03	8.79E-01	4.54E-01	1.24E-01	1.66E+03	8.75E+00	8.00E-01	6.03E+00	2.76E+02
BRSD-3 (6-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	2.94E+01	1.02E+04	1.41E+02	7.84E-04	3.48E+02	2.73E-01	4.54E-01	1.24E-01	5.16E+02	8.75E+00	8.00E-01	6.03E+00	8.57E+01
UM-500S-3250E (6-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	2.94E+01	1.79E+04	2.46E+02	7.84E-04	6.08E+02	4.77E-01	4.54E-01	1.24E-01	9.02E+02	8.75E+00	8.00E-01	6.03E+00	1.50E+02
UM-500S-3000E (6-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	2.94E+01	3.29E+03	4.53E+01	7.84E-04	1.12E+02	8.79E-02	4.54E-01	1.24E-01	1.66E+02	8.75E+00	8.00E-01	6.03E+00	2.76E+01
UM-500S-2750E (6-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	2.94E+01	1.99E+04	2.74E+02	7.84E-04	6.78E+02	5.32E-01	4.54E-01	1.24E-01	1.01E+03	8.75E+00	8.00E-01	6.03E+00	1.67E+02
BRSD-25 (6-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	2.94E+01	3.09E+04	4.25E+02	7.84E-04	1.05E+03	8.24E-01	4.54E-01	1.24E-01	1.56E+03	8.75E+00	8.00E-01	6.03E+00	2.58E+02
UM-250S-3000E (6-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	2.94E+01	3.76E+04	5.18E+02	7.84E-04	1.28E+03	1.00E+00	4.54E-01	1.24E-01	1.90E+03	8.75E+00	8.00E-01	6.03E+00	3.15E+02
UM-250S-3250E (6-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	2.94E+01	3.15E+03	4.33E+01	7.84E-04	1.07E+02	8.39E-02	4.54E-01	1.24E-01	1.59E+02	8.75E+00	8.00E-01	6.03E+00	2.63E+01
BRSD-24 (6-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	2.94E+01	6.73E+04	9.27E+02	7.84E-04	2.29E+03	1.80E+00	4.54E-01	1.24E-01	3.40E+03	8.75E+00	8.00E-01	6.03E+00	5.64E+02
UM-250S-2750E (6-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	2.94E+01	7.09E+04	9.75E+02	7.84E-04	2.41E+03	1.89E+00	4.54E-01	1.24E-01	3.58E+03	8.75E+00	8.00E-01	6.03E+00	5.93E+02
UM-250S-2500E (6-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	2.94E+01	2.51E+03	3.46E+01	7.84E-04	8.54E+01	6.70E-02	4.54E-01	1.24E-01	1.27E+02	8.75E+00	8.00E-01	6.03E+00	2.10E+01
BRSD-2 (6-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	2.94E+01	1.24E+05	1.71E+03	7.84E-04	4.22E+03	3.31E+00	4.54E-01	1.24E-01	6.26E+03	8.75E+00	8.00E-01	6.03E+00	1.04E+03
UM-500N-2500E (6-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	2.94E+01	2.25E+03	3.09E+01	7.84E-04	7.64E+01	5.99E-02	4.54E-01	1.24E-01	1.13E+02	8.75E+00	8.00E-01	6.03E+00	1.88E+01
UM-250N-2500E (6-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	2.94E+01	2.87E+04	3.94E+02	7.84E-04	9.75E+02	7.65E-01	4.54E-01	1.24E-01	1.45E+03	8.75E+00	8.00E-01	6.03E+00	2.40E+02
UM-250N-2250E (6-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	2.94E+01	5.70E+03	7.85E+01	7.84E-04	1.94E+02	1.52E-01	4.54E-01	1.24E-01	2.88E+02	8.75E+00	8.00E-01	6.03E+00	4.78E+01
Western Upper Marsh (6-12")																						**Maximum HQ (Eastern Upper Marsh, 6-12")**	**1.04E+03**
UM-500S-2500E (6-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	8.65E+00	1.05E+03	1.45E+01	7.84E-04	1.22E+02	9.57E-02	4.54E-01	1.24E-01	5.35E+01	8.75E+00	8.00E-01	6.03E+00	8.87E+00
UM-0N-2000E (6-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	8.65E+00	2.84E+04	3.90E+02	7.84E-04	3.28E+03	2.57E+00	4.54E-01	1.24E-01	1.44E+03	8.75E+00	8.00E-01	6.03E+00	2.39E+02
UM-500S-2000E (6-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	8.65E+00	8.13E+02	1.12E+01	7.84E-04	9.40E+01	7.37E-02	4.54E-01	1.24E-01	4.12E+01	8.75E+00	8.00E-01	6.03E+00	6.84E+00

TABLE C-12EA: LEAD DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 12 - MARSH, TERRESTRIAL RECEPTORS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **118.73**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
American Kestral (Insectivorous Birds)																							
UM-250N-1750E (6-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	8.65E+00	8.53E+02	1.17E+01	7.84E-04	9.87E+01	7.74E-02	4.54E-01	1.24E-01	4.33E+01	8.75E+00	8.00E-01	6.03E+00	7.18E+00
UM-0N-1500E (6-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	8.65E+00	9.60E+02	1.32E+01	7.84E-04	1.11E+02	8.71E-02	4.54E-01	1.24E-01	4.86E+01	8.75E+00	8.00E-01	6.03E+00	8.07E+00
UM-250S-1500E (6-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	8.65E+00	8.05E+03	1.11E+02	7.84E-04	9.31E+02	7.30E-01	4.54E-01	1.24E-01	4.08E+02	8.75E+00	8.00E-01	6.03E+00	6.77E+01
UM-250S-1250E (6-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	8.65E+00	8.82E+02	1.21E+01	7.84E-04	1.02E+02	8.00E-02	4.54E-01	1.24E-01	4.47E+01	8.75E+00	8.00E-01	6.03E+00	7.42E+00
BRSD-6 (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-1000E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-750E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-500E (6-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	8.65E+00	1.33E+03	1.83E+01	7.84E-04	1.54E+02	1.21E-01	4.54E-01	1.24E-01	6.75E+01	8.75E+00	8.00E-01	6.03E+00	1.12E+01
UM-250S-500E (6-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	8.65E+00	8.47E+02	1.17E+01	7.84E-04	9.80E+01	7.69E-02	4.54E-01	1.24E-01	4.29E+01	8.75E+00	8.00E-01	6.03E+00	7.13E+00
UM-0N-250E (6-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	8.65E+00	2.33E+03	3.20E+01	7.84E-04	2.69E+02	2.11E-01	4.54E-01	1.24E-01	1.18E+02	8.75E+00	8.00E-01	6.03E+00	1.96E+01
UM-250S-250E (6-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	8.65E+00	8.24E+02	1.13E+01	7.84E-04	9.53E+01	7.48E-02	4.54E-01	1.24E-01	4.18E+01	8.75E+00	8.00E-01	6.03E+00	6.93E+00
BRSD-7 (6-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	8.65E+00	9.94E+02	1.37E+01	7.84E-04	1.15E+02	9.02E-02	4.54E-01	1.24E-01	5.04E+01	8.75E+00	8.00E-01	6.03E+00	8.36E+00
BRSD-8 (6-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	8.65E+00	2.59E+03	3.57E+01	7.84E-04	3.00E+02	2.35E-01	4.54E-01	1.24E-01	1.31E+02	8.75E+00	8.00E-01	6.03E+00	2.18E+01
UM-500S-500E (6-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	8.65E+00	6.28E+02	8.64E+00	7.84E-04	7.26E+01	5.69E-02	4.54E-01	1.24E-01	3.18E+01	8.75E+00	8.00E-01	6.03E+00	5.28E+00
BRSD-9 (6-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	8.65E+00	7.34E+02	1.01E+01	7.84E-04	8.49E+01	6.66E-02	4.54E-01	1.24E-01	3.72E+01	8.75E+00	8.00E-01	6.03E+00	6.17E+00
BRSD-10 (6-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	8.65E+00	1.18E+04	1.63E+02	7.84E-04	1.37E+03	1.07E+00	4.54E-01	1.24E-01	6.00E+02	8.75E+00	8.00E-01	6.03E+00	9.96E+01
BRSD-11 (6-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	8.65E+00	8.99E+02	1.24E+01	7.84E-04	1.04E+02	8.16E-02	4.54E-01	1.24E-01	4.56E+01	8.75E+00	8.00E-01	6.03E+00	7.56E+00
Middle Marsh (0-2")																						**Maximum HQ (Western Upper Marsh, 6-12")**	**2.39E+02**
MMSD-201 (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	8.65E+00	4.36E+03	6.00E+01	7.84E-04	5.04E+02	3.95E-01	4.54E-01	1.24E-01	2.21E+02	8.75E+00	8.00E-01	6.03E+00	3.67E+01
MMSD-202 (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	8.65E+00	6.01E+03	8.27E+01	7.84E-04	6.95E+02	5.45E-01	4.54E-01	1.24E-01	3.05E+02	8.75E+00	8.00E-01	6.03E+00	5.05E+01
Middle Marsh (2-6")																						**Maximum HQ (Middle Marsh, 0-2")**	**5.05E+01**
MMSD-201 (2-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	8.65E+00	5.38E+03	7.40E+01	7.84E-04	6.22E+02	4.88E-01	4.54E-01	1.24E-01	2.73E+02	8.75E+00	8.00E-01	6.03E+00	4.52E+01
MMSD-202 (2-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	8.65E+00	7.16E+03	9.85E+01	7.84E-04	8.28E+02	6.49E-01	4.54E-01	1.24E-01	3.63E+02	8.75E+00	8.00E-01	6.03E+00	6.02E+01
Middle Marsh (6-12")																						**Maximum HQ (Middle Marsh, 2-6")**	**6.02E+01**
MMSD-201 (6-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	8.65E+00	8.36E+03	1.15E+02	7.84E-04	9.67E+02	7.58E-01	4.54E-01	1.24E-01	4.24E+02	8.75E+00	8.00E-01	6.03E+00	7.03E+01
MMSD-202 (6-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	8.65E+00	2.27E+03	3.12E+01	7.84E-04	2.62E+02	2.06E-01	4.54E-01	1.24E-01	1.15E+02	8.75E+00	8.00E-01	6.03E+00	1.91E+01
Lower Marsh (0-2")																						**Maximum HQ (Middle Marsh, 6-12")**	**7.03E+01**
LMSD-201 (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
LMSD-202 (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
LMSD-203 (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	8.65E+00	6.92E+02	9.52E+00	7.84E-04	8.00E+01	6.28E-02	4.54E-01	1.24E-01	3.51E+01	8.75E+00	8.00E-01	6.03E+00	5.82E+00
LMSD-204 (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	8.65E+00	7.78E+02	1.07E+01	7.84E-04	9.00E+01	7.06E-02	4.54E-01	1.24E-01	3.94E+01	8.75E+00	8.00E-01	6.03E+00	6.54E+00
Lower Marsh (2-6")																						**Maximum HQ (Lower Marsh, 0-2")**	**6.54E+00**
LMSD-201 (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
LMSD-202 (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
LMSD-203 (2-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	8.65E+00	7.35E+02	1.01E+01	7.84E-04	8.50E+01	6.67E-02	4.54E-01	1.24E-01	3.73E+01	8.75E+00	8.00E-01	6.03E+00	6.18E+00
LMSD-204 (2-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	8.65E+00	7.52E+02	1.04E+01	7.84E-04	8.70E+01	6.82E-02	4.54E-01	1.24E-01	3.81E+01	8.75E+00	8.00E-01	6.03E+00	6.33E+00
Lower Marsh (6-12")																						**Maximum HQ (Lower Marsh, 2-6")**	**6.33E+00**
LMSD-201 (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
LMSD-202 (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
LMSD-203 (6-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	8.65E+00	7.00E+02	9.64E+00	7.84E-04	8.10E+01	6.35E-02	4.54E-01	1.24E-01	3.55E+01	8.75E+00	8.00E-01	6.03E+00	5.89E+00
LMSD-204 (6-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	8.65E+00	7.26E+02	9.99E+00	7.84E-04	8.40E+01	6.59E-02	4.54E-01	1.24E-01	3.68E+01	8.75E+00	8.00E-01	6.03E+00	6.11E+00
																						Maximum HQ (Lower Marsh, 6-12")	**6.11E+00**
Meadow Vole (Small Herbivorous Mammals)																							
Reference Sites																							
BRSD-5 (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	1.13E-04	6.47E+01	7.28E-03	1.00E+00	3.06E-02	2.38E-01	2.41E+02	1.87E-02	2.34E+02	1.02E-03
BRSD-5 (2-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	1.13E-04	6.17E+01	6.94E-03	1.00E+00	3.06E-02	2.27E-01	2.41E+02	1.87E-02	2.34E+02	9.71E-04
BRSD-5 (6-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	1.13E-04	7.90E+01	8.89E-03	1.00E+00	3.06E-02	2.91E-01	2.41E+02	1.87E-02	2.34E+02	1.24E-03
PGBG-1 (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	1.13E-04	5.50E+01	6.19E-03	1.00E+00	3.06E-02	2.02E-01	2.41E+02	1.87E-02	2.34E+02	8.66E-04
PGBG-1 (2-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	1.13E-04	1.01E+02	1.14E-02	1.00E+00	3.06E-02	3.71E-01	2.41E+02	1.87E-02	2.34E+02	1.59E-03
PGBG-1 (6-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	1.13E-04	1.74E+02	1.96E-02	1.00E+00	3.06E-02	6.40E-01	2.41E+02	1.87E-02	2.34E+02	2.74E-03
PGBG-2 (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	1.13E-04	1.05E+02	1.18E-02	1.00E+00	3.06E-02	3.86E-01	2.41E+02	1.87E-02	2.34E+02	1.65E-03
PGBG-2 (2-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	1.13E-04	1.08E+02	1.22E-02	1.00E+00	3.06E-02	3.97E-01	2.41E+02	1.87E-02	2.34E+02	1.70E-03
PGBG-2 (6-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	1.13E-04	1.13E+02	1.27E-02	1.00E+00	3.06E-02	4.16E-01	2.41E+02	1.87E-02	2.34E+02	1.78E-03

TABLE C-12EA: LEAD DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 12 - MARSH, TERRESTRIAL RECEPTORS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **118.73**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Meadow Vole (Small Herbivorous Mammals)																							
Eastern Upper Marsh (0-2")																						**Minimum HQ (Reference Sites)**	**8.66E-04**
UM-1000S-3500E (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.91E-01	3.38E+02	1.59E+00	NA	NA	NA	NA	1.13E-04	1.77E+03	1.99E-01	1.00E+00	3.06E-02	5.83E+01	2.41E+02	1.87E-02	2.34E+02	2.50E-01
BRSD-15 (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.91E-01	1.28E+01	5.99E-02	NA	NA	NA	NA	1.13E-04	6.69E+01	7.53E-03	1.00E+00	3.06E-02	2.20E+00	2.41E+02	1.87E-02	2.34E+02	9.43E-03
BRSD-4 (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.91E-01	2.12E+01	9.94E-02	NA	NA	NA	NA	1.13E-04	1.11E+02	1.25E-02	1.00E+00	3.06E-02	3.66E+00	2.41E+02	1.87E-02	2.34E+02	1.57E-02
UM-750S-3500E (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.91E-01	4.28E+02	2.01E+00	NA	NA	NA	NA	1.13E-04	2.24E+03	2.52E-01	1.00E+00	3.06E-02	7.38E+01	2.41E+02	1.87E-02	2.34E+02	3.16E-01
BRSD-16 (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.91E-01	4.01E+02	1.88E+00	NA	NA	NA	NA	1.13E-04	2.10E+03	2.36E-01	1.00E+00	3.06E-02	6.92E+01	2.41E+02	1.87E-02	2.34E+02	2.96E-01
UM-750S-3000E (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.91E-01	2.29E+02	1.07E+00	NA	NA	NA	NA	1.13E-04	1.20E+03	1.35E-01	1.00E+00	3.06E-02	3.95E+01	2.41E+02	1.87E-02	2.34E+02	1.69E-01
BRSD-3 (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.91E-01	2.08E+02	9.76E-01	NA	NA	NA	NA	1.13E-04	1.09E+03	1.23E-01	1.00E+00	3.06E-02	3.59E+01	2.41E+02	1.87E-02	2.34E+02	1.54E-01
UM-500S-3250E (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.91E-01	4.22E+02	1.98E+00	NA	NA	NA	NA	1.13E-04	2.21E+03	2.49E-01	1.00E+00	3.06E-02	7.28E+01	2.41E+02	1.87E-02	2.34E+02	3.12E-01
UM-500S-3000E (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.91E-01	4.05E+02	1.90E+00	NA	NA	NA	NA	1.13E-04	2.12E+03	2.39E-01	1.00E+00	3.06E-02	6.98E+01	2.41E+02	1.87E-02	2.34E+02	2.99E-01
UM-500S-2750E (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.91E-01	2.31E+02	1.08E+00	NA	NA	NA	NA	1.13E-04	1.21E+03	1.36E-01	1.00E+00	3.06E-02	3.99E+01	2.41E+02	1.87E-02	2.34E+02	1.71E-01
BRSD-25 (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.91E-01	1.60E+02	7.49E-01	NA	NA	NA	NA	1.13E-04	8.36E+02	9.41E-02	1.00E+00	3.06E-02	2.75E+01	2.41E+02	1.87E-02	2.34E+02	1.18E-01
UM-250S-3000E (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.91E-01	3.21E+02	1.50E+00	NA	NA	NA	NA	1.13E-04	1.68E+03	1.89E-01	1.00E+00	3.06E-02	5.53E+01	2.41E+02	1.87E-02	2.34E+02	2.37E-01
UM-250S-3250E (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.91E-01	3.21E+01	1.50E-01	NA	NA	NA	NA	1.13E-04	1.68E+02	1.89E-02	1.00E+00	3.06E-02	5.53E+00	2.41E+02	1.87E-02	2.34E+02	2.37E-02
BRSD-24 (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.91E-01	2.06E+02	9.67E-01	NA	NA	NA	NA	1.13E-04	1.08E+03	1.22E-01	1.00E+00	3.06E-02	3.56E+01	2.41E+02	1.87E-02	2.34E+02	1.52E-01
UM-250S-2750E (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.91E-01	1.85E+02	8.67E-01	NA	NA	NA	NA	1.13E-04	9.68E+02	1.09E-01	1.00E+00	3.06E-02	3.19E+01	2.41E+02	1.87E-02	2.34E+02	1.36E-01
UM-250S-2500E (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.91E-01	2.20E+01	1.03E-01	NA	NA	NA	NA	1.13E-04	1.15E+02	1.29E-02	1.00E+00	3.06E-02	3.79E+00	2.41E+02	1.87E-02	2.34E+02	1.62E-02
UM-0N-2500E (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.91E-01	3.82E+02	1.79E+00	NA	NA	NA	NA	1.13E-04	2.00E+03	2.25E-01	1.00E+00	3.06E-02	6.59E+01	2.41E+02	1.87E-02	2.34E+02	2.82E-01
UM-0N-250E (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.91E-01	5.82E+01	2.73E-01	NA	NA	NA	NA	1.13E-04	3.05E+02	3.43E-02	1.00E+00	3.06E-02	1.00E+01	2.41E+02	1.87E-02	2.34E+02	4.30E-02
BRSD-2 (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.91E-01	2.46E+02	1.16E+00	NA	NA	NA	NA	1.13E-04	1.29E+03	1.45E-01	1.00E+00	3.06E-02	4.25E+01	2.41E+02	1.87E-02	2.34E+02	1.82E-01
UM-500N-2500E (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.91E-01	1.74E+01	8.17E-02	NA	NA	NA	NA	1.13E-04	9.12E+01	1.03E-02	1.00E+00	3.06E-02	3.00E+00	2.41E+02	1.87E-02	2.34E+02	1.29E-02
UM-250N-2500E (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.91E-01	2.90E+02	1.36E+00	NA	NA	NA	NA	1.13E-04	1.52E+03	1.71E-01	1.00E+00	3.06E-02	5.01E+01	2.41E+02	1.87E-02	2.34E+02	2.14E-01
UM-250N-2250E (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.91E-01	2.56E+02	1.20E+00	NA	NA	NA	NA	1.13E-04	1.34E+03	1.51E-01	1.00E+00	3.06E-02	4.41E+01	2.41E+02	1.87E-02	2.34E+02	1.89E-01
Western Upper Marsh (0-2")																						**Maximum HQ (Eastern Upper Marsh, 0-2")**	**3.16E-01**
UM-500S-2500E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-2000E (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.32E-01	3.27E+02	1.53E+00	NA	NA	NA	NA	1.13E-04	2.48E+03	2.79E-01	1.00E+00	3.06E-02	5.93E+01	2.41E+02	1.87E-02	2.34E+02	2.54E-01
UM-500S-2000E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-250N-1750E (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.32E-01	1.27E+01	5.95E-02	NA	NA	NA	NA	1.13E-04	9.62E+01	1.08E-02	1.00E+00	3.06E-02	2.30E+00	2.41E+02	1.87E-02	2.34E+02	9.84E-03
UM-0N-1500E (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.32E-01	1.35E+01	6.31E-02	NA	NA	NA	NA	1.13E-04	1.02E+02	1.15E-02	1.00E+00	3.06E-02	2.44E+00	2.41E+02	1.87E-02	2.34E+02	1.04E-02
UM-250S-1500E (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.32E-01	2.28E+02	1.07E+00	NA	NA	NA	NA	1.13E-04	1.73E+03	1.95E-01	1.00E+00	3.06E-02	4.13E+01	2.41E+02	1.87E-02	2.34E+02	1.77E-01
UM-250S-1250E (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.32E-01	1.25E+01	5.86E-02	NA	NA	NA	NA	1.13E-04	9.48E+01	1.07E-02	1.00E+00	3.06E-02	2.27E+00	2.41E+02	1.87E-02	2.34E+02	9.70E-03
BRSD-6 (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-1000E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-750E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-500E (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.32E-01	2.15E+01	1.01E-01	NA	NA	NA	NA	1.13E-04	1.63E+02	1.83E-02	1.00E+00	3.06E-02	3.89E+00	2.41E+02	1.87E-02	2.34E+02	1.67E-02
UM-250S-500E (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.32E-01	9.25E+00	4.34E-02	NA	NA	NA	NA	1.13E-04	7.01E+01	7.89E-03	1.00E+00	3.06E-02	1.68E+00	2.41E+02	1.87E-02	2.34E+02	7.17E-03
UM-250S-250E (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.32E-01	1.73E+01	8.10E-02	NA	NA	NA	NA	1.13E-04	1.31E+02	1.47E-02	1.00E+00	3.06E-02	3.13E+00	2.41E+02	1.87E-02	2.34E+02	1.34E-02
BRSD-7 (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-8 (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.32E-01	2.98E+01	1.40E-01	NA	NA	NA	NA	1.13E-04	2.26E+02	2.54E-02	1.00E+00	3.06E-02	5.40E+00	2.41E+02	1.87E-02	2.34E+02	2.31E-02
UM-500S-500E (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.32E-01	8.76E+00	4.11E-02	NA	NA	NA	NA	1.13E-04	6.64E+01	7.47E-03	1.00E+00	3.06E-02	1.59E+00	2.41E+02	1.87E-02	2.34E+02	6.79E-03
BRSD-9 (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.32E-01	3.76E+01	1.76E-01	NA	NA	NA	NA	1.13E-04	2.85E+02	3.21E-02	1.00E+00	3.06E-02	6.81E+00	2.41E+02	1.87E-02	2.34E+02	2.91E-02
BRSD-10 (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.32E-01	8.34E+01	3.91E-01	NA	NA	NA	NA	1.13E-04	6.32E+02	7.11E-02	1.00E+00	3.06E-02	1.51E+01	2.41E+02	1.87E-02	2.34E+02	6.46E-02
BRSD-11 (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.32E-01	1.22E+01	5.72E-02	NA	NA	NA	NA	1.13E-04	9.24E+01	1.04E-02	1.00E+00	3.06E-02	2.21E+00	2.41E+02	1.87E-02	2.34E+02	9.45E-03
Eastern Upper Marsh (2-6")																						**Maximum HQ (Western Upper Marsh, 0-2")**	**2.54E-01**
UM-1000S-3500E (2-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.91E-01	6.11E+01	2.87E-01	NA	NA	NA	NA	1.13E-04	3.20E+02	3.60E-02	1.00E+00	3.06E-02	1.05E+01	2.41E+02	1.87E-02	2.34E+02	4.51E-02
BRSD-15 (2-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.91E-01	2.14E+01	1.00E-01	NA	NA	NA	NA	1.13E-04	1.12E+02	1.26E-02	1.00E+00	3.06E-02	3.69E+00	2.41E+02	1.87E-02	2.34E+02	1.58E-02
BRSD-4 (2-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.91E-01	2.18E+01	1.02E-01	NA	NA	NA	NA	1.13E-04	1.14E+02	1.28E-02	1.00E+00	3.06E-02	3.76E+00	2.41E+02	1.87E-02	2.34E+02	1.61E-02
UM-750S-3500E (2-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.91E-01	1.90E+02	8.92E-01	NA	NA	NA	NA	1.13E-04	9.96E+02	1.12E-01	1.00E+00	3.06E-02	3.28E+01	2.41E+02	1.87E-02	2.34E+02	1.40E-01
BRSD-16 (2-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.91E-01	5.98E+02	2.80E+00	NA	NA	NA	NA	1.13E-04	3.13E+03	3.52E-01	1.00E+00	3.06E-02	1.03E+02	2.41E+02	1.87E-02	2.34E+02	4.41E-01
UM-750S-3000E (2-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.91E-01	2.04E+02	9.58E-01	NA	NA	NA	NA	1.13E-04	1.07E+03	1.20E-01	1.00E+00	3.06E-02	3.52E+01	2.41E+02	1.87E-02	2.34E+02	1.51E-01
BRSD-3 (2-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.91E-01	4.13E+02	1.93E+00	NA	NA	NA	NA	1.13E-04	2.16E+03	2.43E-01	1.00E+00	3.06E-02	7.12E+01	2.41E+02	1.87E-02	2.34E+02	3.05E-01

TABLE C-12EA: LEAD DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 12 - MARSH, TERRESTRIAL RECEPTORS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **118.73**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Meadow Vole (Small Herbivorous Mammals)																							
UM-500S-3250E (2-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.91E-01	2.79E+02	1.31E+00	NA	NA	NA	NA	1.13E-04	1.46E+03	1.64E-01	1.00E+00	3.06E-02	4.81E+01	2.41E+02	1.87E-02	2.34E+02	2.06E-01
UM-500S-3000E (2-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.91E-01	2.64E+01	1.24E-01	NA	NA	NA	NA	1.13E-04	1.38E+02	1.55E-02	1.00E+00	3.06E-02	4.55E+00	2.41E+02	1.87E-02	2.34E+02	1.95E-02
UM-500S-2750E (2-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.91E-01	1.52E+02	7.11E-01	NA	NA	NA	NA	1.13E-04	7.94E+02	8.94E-02	1.00E+00	3.06E-02	2.62E+01	2.41E+02	1.87E-02	2.34E+02	1.12E-01
BRSD-25 (2-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.91E-01	2.79E+02	1.31E+00	NA	NA	NA	NA	1.13E-04	1.46E+03	1.64E-01	1.00E+00	3.06E-02	4.81E+01	2.41E+02	1.87E-02	2.34E+02	2.06E-01
UM-250S-3000E (2-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.91E-01	3.72E+02	1.75E+00	NA	NA	NA	NA	1.13E-04	1.95E+03	2.19E-01	1.00E+00	3.06E-02	6.42E+01	2.41E+02	1.87E-02	2.34E+02	2.75E-01
UM-250S-3250E (2-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.91E-01	1.79E+01	8.37E-02	NA	NA	NA	NA	1.13E-04	9.35E+01	1.05E-02	1.00E+00	3.06E-02	3.08E+00	2.41E+02	1.87E-02	2.34E+02	1.32E-02
BRSD-24 (2-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.91E-01	5.08E+02	2.38E+00	NA	NA	NA	NA	1.13E-04	2.66E+03	2.99E-01	1.00E+00	3.06E-02	8.76E+01	2.41E+02	1.87E-02	2.34E+02	3.75E-01
UM-250S-2750E (2-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.91E-01	3.97E+02	1.86E+00	NA	NA	NA	NA	1.13E-04	2.08E+03	2.34E-01	1.00E+00	3.06E-02	6.85E+01	2.41E+02	1.87E-02	2.34E+02	2.93E-01
UM-0N-2500E (2-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.91E-01	2.41E+02	1.13E+00	NA	NA	NA	NA	1.13E-04	1.26E+03	1.42E-01	1.00E+00	3.06E-02	4.15E+01	2.41E+02	1.87E-02	2.34E+02	1.78E-01
BRSD-2 (2-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.91E-01	3.04E+02	1.42E+00	NA	NA	NA	NA	1.13E-04	1.59E+03	1.79E-01	1.00E+00	3.06E-02	5.24E+01	2.41E+02	1.87E-02	2.34E+02	2.24E-01
UM-500N-2500E (2-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.91E-01	1.70E+01	7.96E-02	NA	NA	NA	NA	1.13E-04	8.89E+01	1.00E-02	1.00E+00	3.06E-02	2.93E+00	2.41E+02	1.87E-02	2.34E+02	1.25E-02
UM-250N-2500E (2-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.91E-01	2.04E+02	9.58E-01	NA	NA	NA	NA	1.13E-04	1.07E+03	1.20E-01	1.00E+00	3.06E-02	3.52E+01	2.41E+02	1.87E-02	2.34E+02	1.51E-01
UM-250N-2250E (2-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.91E-01	3.67E+01	1.72E-01	NA	NA	NA	NA	1.13E-04	1.92E+02	2.16E-02	1.00E+00	3.06E-02	6.33E+00	2.41E+02	1.87E-02	2.34E+02	2.71E-02
Western Upper Marsh (2-6")																						**Maximum HQ (Eastern Upper Marsh, 2-6")**	**4.41E-01**
UM-500S-2500E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-2000E (2-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.32E-01	3.25E+02	1.52E+00	NA	NA	NA	NA	1.13E-04	2.46E+03	2.77E-01	1.00E+00	3.06E-02	5.88E+01	2.41E+02	1.87E-02	2.34E+02	2.52E-01
UM-500S-2000E (2-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.32E-01	1.22E+01	5.70E-02	NA	NA	NA	NA	1.13E-04	9.22E+01	1.04E-02	1.00E+00	3.06E-02	2.20E+00	2.41E+02	1.87E-02	2.34E+02	9.43E-03
UM-250N-1750E (2-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.32E-01	1.23E+01	5.79E-02	NA	NA	NA	NA	1.13E-04	9.36E+01	1.05E-02	1.00E+00	3.06E-02	2.24E+00	2.41E+02	1.87E-02	2.34E+02	9.57E-03
UM-0N-1500E (2-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.32E-01	1.46E+01	6.87E-02	NA	NA	NA	NA	1.13E-04	1.11E+02	1.25E-02	1.00E+00	3.06E-02	2.65E+00	2.41E+02	1.87E-02	2.34E+02	1.14E-02
UM-250S-1500E (2-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.32E-01	2.19E+02	1.03E+00	NA	NA	NA	NA	1.13E-04	1.66E+03	1.87E-01	1.00E+00	3.06E-02	3.97E+01	2.41E+02	1.87E-02	2.34E+02	1.70E-01
UM-250S-1250E (2-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.32E-01	1.23E+01	5.77E-02	NA	NA	NA	NA	1.13E-04	9.33E+01	1.05E-02	1.00E+00	3.06E-02	2.23E+00	2.41E+02	1.87E-02	2.34E+02	9.54E-03
BRSD-6 (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-1000E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-750E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-500E (2-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.32E-01	6.89E+01	3.23E-01	NA	NA	NA	NA	1.13E-04	5.22E+02	5.87E-02	1.00E+00	3.06E-02	1.25E+01	2.41E+02	1.87E-02	2.34E+02	5.34E-02
UM-250S-500E (2-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.32E-01	1.26E+01	5.90E-02	NA	NA	NA	NA	1.13E-04	9.54E+01	1.07E-02	1.00E+00	3.06E-02	2.28E+00	2.41E+02	1.87E-02	2.34E+02	9.76E-03
UM-0N-250E (2-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.32E-01	3.72E+01	1.74E-01	NA	NA	NA	NA	1.13E-04	2.82E+02	3.17E-02	1.00E+00	3.06E-02	6.74E+00	2.41E+02	1.87E-02	2.34E+02	2.88E-02
UM-250S-250E (2-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.32E-01	1.60E+01	7.49E-02	NA	NA	NA	NA	1.13E-04	1.21E+02	1.36E-02	1.00E+00	3.06E-02	2.89E+00	2.41E+02	1.87E-02	2.34E+02	1.24E-02
BRSD-7 (2-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.32E-01	8.22E+00	3.85E-02	NA	NA	NA	NA	1.13E-04	6.23E+01	7.01E-03	1.00E+00	3.06E-02	1.49E+00	2.41E+02	1.87E-02	2.34E+02	6.37E-03
BRSD-8 (2-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.32E-01	4.38E+01	2.05E-01	NA	NA	NA	NA	1.13E-04	3.32E+02	3.74E-02	1.00E+00	3.06E-02	7.93E+00	2.41E+02	1.87E-02	2.34E+02	3.40E-02
UM-500S-500E (2-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.32E-01	1.01E+01	4.72E-02	NA	NA	NA	NA	1.13E-04	7.63E+01	8.59E-03	1.00E+00	3.06E-02	1.82E+00	2.41E+02	1.87E-02	2.34E+02	7.80E-03
BRSD-9 (2-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.32E-01	7.76E+00	3.64E-02	NA	NA	NA	NA	1.13E-04	5.88E+01	6.62E-03	1.00E+00	3.06E-02	1.41E+00	2.41E+02	1.87E-02	2.34E+02	6.01E-03
BRSD-10 (2-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.32E-01	1.06E+02	4.97E-01	NA	NA	NA	NA	1.13E-04	8.04E+02	9.05E-02	1.00E+00	3.06E-02	1.92E+01	2.41E+02	1.87E-02	2.34E+02	8.22E-02
BRSD-11 (2-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.32E-01	1.22E+01	5.73E-02	NA	NA	NA	NA	1.13E-04	9.26E+01	1.04E-02	1.00E+00	3.06E-02	2.21E+00	2.41E+02	1.87E-02	2.34E+02	9.47E-03
Eastern Upper Marsh (6-12")																						**Maximum HQ (Western Upper Marsh, 2-6")**	**2.52E-01**
UM-1000S-3500E (6-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.91E-01	1.56E+01	7.32E-02	NA	NA	NA	NA	1.13E-04	8.17E+01	9.19E-03	1.00E+00	3.06E-02	2.69E+00	2.41E+02	1.87E-02	2.34E+02	1.15E-02
BRSD-15 (6-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.91E-01	1.66E+01	7.79E-02	NA	NA	NA	NA	1.13E-04	8.70E+01	9.79E-03	1.00E+00	3.06E-02	2.87E+00	2.41E+02	1.87E-02	2.34E+02	1.23E-02
BRSD-4 (6-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.91E-01	4.05E+01	1.90E-01	NA	NA	NA	NA	1.13E-04	2.12E+02	2.39E-02	1.00E+00	3.06E-02	6.98E+00	2.41E+02	1.87E-02	2.34E+02	2.99E-02
UM-750S-3500E (6-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.91E-01	2.31E+02	1.08E+00	NA	NA	NA	NA	1.13E-04	1.21E+03	1.36E-01	1.00E+00	3.06E-02	3.99E+01	2.41E+02	1.87E-02	2.34E+02	1.71E-01
BRSD-16 (6-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.91E-01	6.15E+02	2.88E+00	NA	NA	NA	NA	1.13E-04	3.22E+03	3.62E-01	1.00E+00	3.06E-02	1.06E+02	2.41E+02	1.87E-02	2.34E+02	4.54E-01
UM-750S-3000E (6-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.91E-01	2.14E+02	1.00E+00	NA	NA	NA	NA	1.13E-04	1.12E+03	1.26E-01	1.00E+00	3.06E-02	3.69E+01	2.41E+02	1.87E-02	2.34E+02	1.58E-01
BRSD-3 (6-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.91E-01	6.65E+01	3.12E-01	NA	NA	NA	NA	1.13E-04	3.48E+02	3.92E-02	1.00E+00	3.06E-02	1.15E+01	2.41E+02	1.87E-02	2.34E+02	4.91E-02
UM-500S-3250E (6-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.91E-01	1.16E+02	5.44E-01	NA	NA	NA	NA	1.13E-04	6.08E+02	6.84E-02	1.00E+00	3.06E-02	2.00E+01	2.41E+02	1.87E-02	2.34E+02	8.57E-02
UM-500S-3000E (6-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.91E-01	2.14E+01	1.00E-01	NA	NA	NA	NA	1.13E-04	1.12E+02	1.26E-02	1.00E+00	3.06E-02	3.69E+00	2.41E+02	1.87E-02	2.34E+02	1.58E-02
UM-500S-2750E (6-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.91E-01	1.29E+02	6.07E-01	NA	NA	NA	NA	1.13E-04	6.78E+02	7.63E-02	1.00E+00	3.06E-02	2.23E+01	2.41E+02	1.87E-02	2.34E+02	9.56E-02
BRSD-25 (6-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.91E-01	2.01E+02	9.40E-01	NA	NA	NA	NA	1.13E-04	1.05E+03	1.18E-01	1.00E+00	3.06E-02	3.46E+01	2.41E+02	1.87E-02	2.34E+02	1.48E-01
UM-250S-3000E (6-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.91E-01	2.44E+02	1.15E+00	NA	NA	NA	NA	1.13E-04	1.28E+03	1.44E-01	1.00E+00	3.06E-02	4.22E+01	2.41E+02	1.87E-02	2.34E+02	1.80E-01
UM-250S-3250E (6-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.91E-01	2.04E+01	9.58E-02	NA	NA	NA	NA	1.13E-04	1.07E+02	1.20E-02	1.00E+00	3.06E-02	3.52E+00	2.41E+02	1.87E-02	2.34E+02	1.51E-02
BRSD-24 (6-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.91E-01	4.37E+02	2.05E+00	NA	NA	NA	NA	1.13E-04	2.29E+03	2.58E-01	1.00E+00	3.06E-02	7.54E+01	2.41E+02	1.87E-02	2.34E+02	3.23E-01
UM-250S-2750E (6-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.91E-01	4.60E+02	2.16E+00	NA	NA	NA	NA	1.13E-04	2.41E+03	2.71E-01	1.00E+00	3.06E-02	7.94E+01	2.41E+02	1.87E-02	2.34E+02	3.40E-01
UM-250S-2500E (6-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.91E-01	1.63E+01	7.65E-02	NA	NA	NA	NA	1.13E-04	8.54E+01	9.61E-03	1.00E+00	3.06E-02	2.81E+00	2.41E+02	1.87E-02	2.34E+02	1.20E-02

TABLE C-12EA: LEAD DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 12 - MARSH, TERRESTRIAL RECEPTORS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **118.73**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Meadow Vole (Small Herbivorous Mammals)																							
BRSD-2 (6-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.91E-01	8.06E+02	3.78E+00	NA	NA	NA	NA	1.13E-04	4.22E+03	4.75E-01	1.00E+00	3.06E-02	1.39E+02	2.41E+02	1.87E-02	2.34E+02	5.95E-01
UM-500N-2500E (6-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.91E-01	1.46E+01	6.84E-02	NA	NA	NA	NA	1.13E-04	7.64E+01	8.60E-03	1.00E+00	3.06E-02	2.52E+00	2.41E+02	1.87E-02	2.34E+02	1.08E-02
UM-250N-2500E (6-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.91E-01	1.86E+02	8.73E-01	NA	NA	NA	NA	1.13E-04	9.75E+02	1.10E-01	1.00E+00	3.06E-02	3.21E+01	2.41E+02	1.87E-02	2.34E+02	1.37E-01
UM-250N-2250E (6-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.91E-01	3.70E+01	1.74E-01	NA	NA	NA	NA	1.13E-04	1.94E+02	2.18E-02	1.00E+00	3.06E-02	6.39E+00	2.41E+02	1.87E-02	2.34E+02	2.74E-02
Western Upper Marsh (6-12")																						**Maximum HQ (Eastern Upper Marsh, 6-12")**	**5.95E-01**
UM-500S-2500E (6-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.32E-01	1.61E+01	7.55E-02	NA	NA	NA	NA	1.13E-04	1.22E+02	1.37E-02	1.00E+00	3.06E-02	2.92E+00	2.41E+02	1.87E-02	2.34E+02	1.25E-02
UM-0N-2000E (6-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.32E-01	4.33E+02	2.03E+00	NA	NA	NA	NA	1.13E-04	3.28E+03	3.69E-01	1.00E+00	3.06E-02	7.84E+01	2.41E+02	1.87E-02	2.34E+02	3.35E-01
UM-500S-2000E (6-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.32E-01	1.24E+01	5.82E-02	NA	NA	NA	NA	1.13E-04	9.40E+01	1.06E-02	1.00E+00	3.06E-02	2.25E+00	2.41E+02	1.87E-02	2.34E+02	9.61E-03
UM-250N-1750E (6-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.32E-01	1.30E+01	6.11E-02	NA	NA	NA	NA	1.13E-04	9.87E+01	1.11E-02	1.00E+00	3.06E-02	2.36E+00	2.41E+02	1.87E-02	2.34E+02	1.01E-02
UM-0N-1500E (6-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.32E-01	1.46E+01	6.87E-02	NA	NA	NA	NA	1.13E-04	1.11E+02	1.25E-02	1.00E+00	3.06E-02	2.65E+00	2.41E+02	1.87E-02	2.34E+02	1.14E-02
UM-250S-1500E (6-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.32E-01	1.23E+02	5.76E-01	NA	NA	NA	NA	1.13E-04	9.31E+02	1.05E-01	1.00E+00	3.06E-02	2.22E+01	2.41E+02	1.87E-02	2.34E+02	9.52E-02
UM-250S-1250E (6-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.32E-01	1.35E+01	6.31E-02	NA	NA	NA	NA	1.13E-04	1.02E+02	1.15E-02	1.00E+00	3.06E-02	2.44E+00	2.41E+02	1.87E-02	2.34E+02	1.04E-02
BRSD-6 (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-1000E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-750E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-500E (6-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.32E-01	2.03E+01	9.53E-02	NA	NA	NA	NA	1.13E-04	1.54E+02	1.73E-02	1.00E+00	3.06E-02	3.68E+00	2.41E+02	1.87E-02	2.34E+02	1.58E-02
UM-250S-500E (6-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.32E-01	1.29E+01	6.06E-02	NA	NA	NA	NA	1.13E-04	9.80E+01	1.10E-02	1.00E+00	3.06E-02	2.34E+00	2.41E+02	1.87E-02	2.34E+02	1.00E-02
UM-0N-250E (6-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.32E-01	3.55E+01	1.66E-01	NA	NA	NA	NA	1.13E-04	2.69E+02	3.03E-02	1.00E+00	3.06E-02	6.43E+00	2.41E+02	1.87E-02	2.34E+02	2.75E-02
UM-250S-250E (6-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.32E-01	1.26E+01	5.90E-02	NA	NA	NA	NA	1.13E-04	9.53E+01	1.07E-02	1.00E+00	3.06E-02	2.28E+00	2.41E+02	1.87E-02	2.34E+02	9.75E-03
BRSD-7 (6-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.32E-01	1.52E+01	7.11E-02	NA	NA	NA	NA	1.13E-04	1.15E+02	1.29E-02	1.00E+00	3.06E-02	2.75E+00	2.41E+02	1.87E-02	2.34E+02	1.18E-02
BRSD-8 (6-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.32E-01	3.96E+01	1.86E-01	NA	NA	NA	NA	1.13E-04	3.00E+02	3.38E-02	1.00E+00	3.06E-02	7.17E+00	2.41E+02	1.87E-02	2.34E+02	3.07E-02
UM-500S-500E (6-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.32E-01	9.58E+00	4.49E-02	NA	NA	NA	NA	1.13E-04	7.26E+01	8.17E-03	1.00E+00	3.06E-02	1.73E+00	2.41E+02	1.87E-02	2.34E+02	7.43E-03
BRSD-9 (6-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.32E-01	1.12E+01	5.25E-02	NA	NA	NA	NA	1.13E-04	8.49E+01	9.55E-03	1.00E+00	3.06E-02	2.03E+00	2.41E+02	1.87E-02	2.34E+02	8.68E-03
BRSD-10 (6-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.32E-01	1.81E+02	8.48E-01	NA	NA	NA	NA	1.13E-04	1.37E+03	1.54E-01	1.00E+00	3.06E-02	3.27E+01	2.41E+02	1.87E-02	2.34E+02	1.40E-01
BRSD-11 (6-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.32E-01	1.37E+01	6.43E-02	NA	NA	NA	NA	1.13E-04	1.04E+02	1.17E-02	1.00E+00	3.06E-02	2.49E+00	2.41E+02	1.87E-02	2.34E+02	1.06E-02
Middle Marsh (0-2")																						**Maximum HQ (Western Upper Marsh, 6-12")**	**3.35E-01**
MMSD-201 (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.32E-01	6.65E+01	3.12E-01	NA	NA	NA	NA	1.13E-04	5.04E+02	5.67E-02	1.00E+00	3.06E-02	1.20E+01	2.41E+02	1.87E-02	2.34E+02	5.15E-02
MMSD-202 (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.32E-01	9.17E+01	4.30E-01	NA	NA	NA	NA	1.13E-04	6.95E+02	7.82E-02	1.00E+00	3.06E-02	1.66E+01	2.41E+02	1.87E-02	2.34E+02	7.11E-02
Middle Marsh (2-6")																						**Maximum HQ (Middle Marsh, 0-2")**	**7.11E-02**
MMSD-201 (2-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.32E-01	8.21E+01	3.85E-01	NA	NA	NA	NA	1.13E-04	6.22E+02	7.00E-02	1.00E+00	3.06E-02	1.49E+01	2.41E+02	1.87E-02	2.34E+02	6.36E-02
MMSD-202 (2-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.32E-01	1.09E+02	5.12E-01	NA	NA	NA	NA	1.13E-04	8.28E+02	9.32E-02	1.00E+00	3.06E-02	1.98E+01	2.41E+02	1.87E-02	2.34E+02	8.47E-02
Middle Marsh (6-12")																						**Maximum HQ (Middle Marsh, 2-6")**	**8.47E-02**
MMSD-201 (6-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.32E-01	1.28E+02	5.98E-01	NA	NA	NA	NA	1.13E-04	9.67E+02	1.09E-01	1.00E+00	3.06E-02	2.31E+01	2.41E+02	1.87E-02	2.34E+02	9.89E-02
MMSD-202 (6-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.32E-01	3.46E+01	1.62E-01	NA	NA	NA	NA	1.13E-04	2.62E+02	2.95E-02	1.00E+00	3.06E-02	6.26E+00	2.41E+02	1.87E-02	2.34E+02	2.68E-02
Lower Marsh (0-2")																						**Maximum HQ (Middle Marsh, 6-12")**	**9.89E-02**
LMSD-201 (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
LMSD-202 (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
LMSD-203 (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.32E-01	1.06E+01	4.95E-02	NA	NA	NA	NA	1.13E-04	8.00E+01	9.00E-03	1.00E+00	3.06E-02	1.91E+00	2.41E+02	1.87E-02	2.34E+02	8.18E-03
LMSD-204 (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.32E-01	1.19E+01	5.57E-02	NA	NA	NA	NA	1.13E-04	9.00E+01	1.01E-02	1.00E+00	3.06E-02	2.15E+00	2.41E+02	1.87E-02	2.34E+02	9.20E-03
Lower Marsh (2-6")																						**Maximum HQ (Lower Marsh, 0-2")**	**9.20E-03**
LMSD-201 (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
LMSD-202 (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
LMSD-203 (2-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.32E-01	1.12E+01	5.26E-02	NA	NA	NA	NA	1.13E-04	8.50E+01	9.57E-03	1.00E+00	3.06E-02	2.03E+00	2.41E+02	1.87E-02	2.34E+02	8.69E-03
LMSD-204 (2-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.32E-01	1.15E+01	5.38E-02	NA	NA	NA	NA	1.13E-04	8.70E+01	9.79E-03	1.00E+00	3.06E-02	2.08E+00	2.41E+02	1.87E-02	2.34E+02	8.90E-03
Lower Marsh (6-12")																						**Maximum HQ (Lower Marsh, 2-6")**	**8.90E-03**
LMSD-201 (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
LMSD-202 (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
LMSD-203 (6-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.32E-01	1.07E+01	5.01E-02	NA	NA	NA	NA	1.13E-04	8.10E+01	9.12E-03	1.00E+00	3.06E-02	1.94E+00	2.41E+02	1.87E-02	2.34E+02	8.28E-03
LMSD-204 (6-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.32E-01	1.11E+01	5.20E-02	NA	NA	NA	NA	1.13E-04	8.40E+01	9.45E-03	1.00E+00	3.06E-02	2.01E+00	2.41E+02	1.87E-02	2.34E+02	8.59E-03
																						Maximum HQ (Lower Marsh, 6-12")	**8.59E-03**

TABLE C-12EA: LEAD DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 12 - MARSH, TERRESTRIAL RECEPTORS (Continued)
Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)
calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **118.73**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
White-Tailed Deer (Large Herbivorous Mammals)																							
Reference Sites																							
BRSD-5 (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	2.86E-02	6.47E+01	1.85E+00	6.64E-01	1.35E+02	9.12E-03	2.41E+02	1.87E-02	1.41E+02	6.46E-05
BRSD-5 (2-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	2.86E-02	6.17E+01	1.77E+00	6.64E-01	1.35E+02	8.69E-03	2.41E+02	1.87E-02	1.41E+02	6.16E-05
BRSD-5 (6-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	2.86E-02	7.90E+01	2.26E+00	6.64E-01	1.35E+02	1.11E-02	2.41E+02	1.87E-02	1.41E+02	7.88E-05
PGBG-1 (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	2.86E-02	5.50E+01	1.57E+00	6.64E-01	1.35E+02	7.75E-03	2.41E+02	1.87E-02	1.41E+02	5.49E-05
PGBG-1 (2-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	2.86E-02	1.01E+02	2.89E+00	6.64E-01	1.35E+02	1.42E-02	2.41E+02	1.87E-02	1.41E+02	1.01E-04
PGBG-1 (6-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	2.86E-02	1.74E+02	4.98E+00	6.64E-01	1.35E+02	2.45E-02	2.41E+02	1.87E-02	1.41E+02	1.74E-04
PGBG-2 (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	2.86E-02	1.05E+02	3.01E+00	6.64E-01	1.35E+02	1.48E-02	2.41E+02	1.87E-02	1.41E+02	1.05E-04
PGBG-2 (2-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	2.86E-02	1.08E+02	3.09E+00	6.64E-01	1.35E+02	1.52E-02	2.41E+02	1.87E-02	1.41E+02	1.08E-04
PGBG-2 (6-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	2.86E-02	1.13E+02	3.24E+00	6.64E-01	1.35E+02	1.59E-02	2.41E+02	1.87E-02	1.41E+02	1.13E-04
Eastern Upper Marsh (0-2")																						**Minimum HQ (Reference Sites)**	**5.49E-05**
UM-1000S-3500E (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.91E-01	3.38E+02	4.84E+02	NA	NA	NA	NA	2.86E-02	1.77E+03	5.07E+01	6.64E-01	1.35E+02	2.63E+00	2.41E+02	1.87E-02	1.41E+02	1.86E-02
BRSD-15 (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.91E-01	1.28E+01	1.83E+01	NA	NA	NA	NA	2.86E-02	6.69E+01	1.92E+00	6.64E-01	1.35E+02	9.94E-02	2.41E+02	1.87E-02	1.41E+02	7.04E-04
BRSD-4 (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.91E-01	2.12E+01	3.03E+01	NA	NA	NA	NA	2.86E-02	1.11E+02	3.18E+00	6.64E-01	1.35E+02	1.65E-01	2.41E+02	1.87E-02	1.41E+02	1.17E-03
UM-750S-3500E (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.91E-01	4.28E+02	6.12E+02	NA	NA	NA	NA	2.86E-02	2.24E+03	6.41E+01	6.64E-01	1.35E+02	3.33E+00	2.41E+02	1.87E-02	1.41E+02	2.36E-02
BRSD-16 (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.91E-01	4.01E+02	5.74E+02	NA	NA	NA	NA	2.86E-02	2.10E+03	6.01E+01	6.64E-01	1.35E+02	3.12E+00	2.41E+02	1.87E-02	1.41E+02	2.21E-02
UM-750S-3000E (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.91E-01	2.29E+02	3.28E+02	NA	NA	NA	NA	2.86E-02	1.20E+03	3.44E+01	6.64E-01	1.35E+02	1.78E+00	2.41E+02	1.87E-02	1.41E+02	1.26E-02
BRSD-3 (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.91E-01	2.08E+02	2.98E+02	NA	NA	NA	NA	2.86E-02	1.09E+03	3.12E+01	6.64E-01	1.35E+02	1.62E+00	2.41E+02	1.87E-02	1.41E+02	1.15E-02
UM-500S-3250E (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.91E-01	4.22E+02	6.04E+02	NA	NA	NA	NA	2.86E-02	2.21E+03	6.33E+01	6.64E-01	1.35E+02	3.28E+00	2.41E+02	1.87E-02	1.41E+02	2.33E-02
UM-500S-3000E (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.91E-01	4.05E+02	5.80E+02	NA	NA	NA	NA	2.86E-02	2.12E+03	6.07E+01	6.64E-01	1.35E+02	3.15E+00	2.41E+02	1.87E-02	1.41E+02	2.23E-02
UM-500S-2750E (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.91E-01	2.31E+02	3.31E+02	NA	NA	NA	NA	2.86E-02	1.21E+03	3.46E+01	6.64E-01	1.35E+02	1.80E+00	2.41E+02	1.87E-02	1.41E+02	1.27E-02
BRSD-25 (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.91E-01	1.60E+02	2.29E+02	NA	NA	NA	NA	2.86E-02	8.36E+02	2.39E+01	6.64E-01	1.35E+02	1.24E+00	2.41E+02	1.87E-02	1.41E+02	8.80E-03
UM-250S-3000E (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.91E-01	3.21E+02	4.59E+02	NA	NA	NA	NA	2.86E-02	1.68E+03	4.81E+01	6.64E-01	1.35E+02	2.50E+00	2.41E+02	1.87E-02	1.41E+02	1.77E-02
UM-250S-3250E (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.91E-01	3.21E+01	4.59E+01	NA	NA	NA	NA	2.86E-02	1.68E+02	4.81E+00	6.64E-01	1.35E+02	2.50E-01	2.41E+02	1.87E-02	1.41E+02	1.77E-03
BRSD-24 (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.91E-01	2.06E+02	2.95E+02	NA	NA	NA	NA	2.86E-02	1.08E+03	3.09E+01	6.64E-01	1.35E+02	1.61E+00	2.41E+02	1.87E-02	1.41E+02	1.14E-02
UM-250S-2750E (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.91E-01	1.85E+02	2.65E+02	NA	NA	NA	NA	2.86E-02	9.68E+02	2.77E+01	6.64E-01	1.35E+02	1.44E+00	2.41E+02	1.87E-02	1.41E+02	1.02E-02
UM-250S-2500E (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.91E-01	2.20E+01	3.14E+01	NA	NA	NA	NA	2.86E-02	1.15E+02	3.29E+00	6.64E-01	1.35E+02	1.71E-01	2.41E+02	1.87E-02	1.41E+02	1.21E-03
UM-0N-2500E (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.91E-01	3.82E+02	5.47E+02	NA	NA	NA	NA	2.86E-02	2.00E+03	5.73E+01	6.64E-01	1.35E+02	2.97E+00	2.41E+02	1.87E-02	1.41E+02	2.10E-02
UM-0N-250E (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.91E-01	5.82E+01	8.34E+01	NA	NA	NA	NA	2.86E-02	3.05E+02	8.73E+00	6.64E-01	1.35E+02	4.53E-01	2.41E+02	1.87E-02	1.41E+02	3.21E-03
BRSD-2 (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.91E-01	2.46E+02	3.53E+02	NA	NA	NA	NA	2.86E-02	1.29E+03	3.69E+01	6.64E-01	1.35E+02	1.92E+00	2.41E+02	1.87E-02	1.41E+02	1.36E-02
UM-500N-2500E (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.91E-01	1.74E+01	2.49E+01	NA	NA	NA	NA	2.86E-02	9.12E+01	2.61E+00	6.64E-01	1.35E+02	1.36E-01	2.41E+02	1.87E-02	1.41E+02	9.60E-04
UM-250N-2500E (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.91E-01	2.90E+02	4.16E+02	NA	NA	NA	NA	2.86E-02	1.52E+03	4.35E+01	6.64E-01	1.35E+02	2.26E+00	2.41E+02	1.87E-02	1.41E+02	1.60E-02
UM-250N-2250E (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.91E-01	2.56E+02	3.66E+02	NA	NA	NA	NA	2.86E-02	1.34E+03	3.84E+01	6.64E-01	1.35E+02	1.99E+00	2.41E+02	1.87E-02	1.41E+02	1.41E-02
Western Upper Marsh (0-2")																						**Maximum HQ (Eastern Upper Marsh, 0-2")**	**2.36E-02**
UM-500S-2500E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-2000E (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.32E-01	3.27E+02	4.68E+02	NA	NA	NA	NA	2.86E-02	2.48E+03	7.10E+01	6.64E-01	1.35E+02	2.65E+00	2.41E+02	1.87E-02	1.41E+02	1.88E-02
UM-500S-2000E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-250N-1750E (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.32E-01	1.27E+01	1.82E+01	NA	NA	NA	NA	2.86E-02	9.62E+01	2.75E+00	6.64E-01	1.35E+02	1.03E-01	2.41E+02	1.87E-02	1.41E+02	7.29E-04
UM-0N-1500E (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.32E-01	1.35E+01	1.93E+01	NA	NA	NA	NA	2.86E-02	1.02E+02	2.92E+00	6.64E-01	1.35E+02	1.09E-01	2.41E+02	1.87E-02	1.41E+02	7.73E-04
UM-250S-1500E (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.32E-01	2.28E+02	3.27E+02	NA	NA	NA	NA	2.86E-02	1.73E+03	4.95E+01	6.64E-01	1.35E+02	1.85E+00	2.41E+02	1.87E-02	1.41E+02	1.31E-02
UM-250S-1250E (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.32E-01	1.25E+01	1.79E+01	NA	NA	NA	NA	2.86E-02	9.48E+01	2.71E+00	6.64E-01	1.35E+02	1.01E-01	2.41E+02	1.87E-02	1.41E+02	7.19E-04
BRSD-6 (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-1000E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-750E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-500E (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.32E-01	2.15E+01	3.08E+01	NA	NA	NA	NA	2.86E-02	1.63E+02	4.67E+00	6.64E-01	1.35E+02	1.74E-01	2.41E+02	1.87E-02	1.41E+02	1.24E-03
UM-250S-500E (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.32E-01	9.25E+00	1.32E+01	NA	NA	NA	NA	2.86E-02	7.01E+01	2.01E+00	6.64E-01	1.35E+02	7.50E-02	2.41E+02	1.87E-02	1.41E+02	5.31E-04
UM-250S-250E (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.32E-01	1.73E+01	2.47E+01	NA	NA	NA	NA	2.86E-02	1.31E+02	3.75E+00	6.64E-01	1.35E+02	1.40E-01	2.41E+02	1.87E-02	1.41E+02	9.93E-04
BRSD-7 (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-8 (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.32E-01	2.98E+01	4.27E+01	NA	NA	NA	NA	2.86E-02	2.26E+02	6.47E+00	6.64E-01	1.35E+02	2.42E-01	2.41E+02	1.87E-02	1.41E+02	1.71E-03
UM-500S-500E (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.32E-01	8.76E+00	1.25E+01	NA	NA	NA	NA	2.86E-02	6.64E+01	1.90E+00	6.64E-01	1.35E+02	7.11E-02	2.41E+02	1.87E-02	1.41E+02	5.03E-04
BRSD-9 (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.32E-01	3.76E+01	5.38E+01	NA	NA	NA	NA	2.86E-02	2.85E+02	8.16E+00	6.64E-01	1.35E+02	3.05E-01	2.41E+02	1.87E-02	1.41E+02	2.16E-03

TABLE C-12EA: LEAD DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 12 - MARSH, TERRESTRIAL RECEPTORS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **118.73**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
White-Tailed Deer (Large Herbivorous Mammals)																							
BRSD-10 (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.32E-01	8.34E+01	1.19E+02	NA	NA	NA	NA	2.86E-02	6.32E+02	1.81E+01	6.64E-01	1.35E+02	6.76E-01	2.41E+02	1.87E-02	1.41E+02	4.79E-03
BRSD-11 (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.32E-01	1.22E+01	1.75E+01	NA	NA	NA	NA	2.86E-02	9.24E+01	2.65E+00	6.64E-01	1.35E+02	9.89E-02	2.41E+02	1.87E-02	1.41E+02	7.00E-04
Eastern Upper Marsh (2-6")																						**Maximum HQ (Western Upper Marsh, 0-2")**	**1.88E-02**
UM-1000S-3500E (2-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.91E-01	6.11E+01	8.75E+01	NA	NA	NA	NA	2.86E-02	3.20E+02	9.16E+00	6.64E-01	1.35E+02	4.76E-01	2.41E+02	1.87E-02	1.41E+02	3.37E-03
BRSD-15 (2-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.91E-01	2.14E+01	3.06E+01	NA	NA	NA	NA	2.86E-02	1.12E+02	3.21E+00	6.64E-01	1.35E+02	1.66E-01	2.41E+02	1.87E-02	1.41E+02	1.18E-03
BRSD-4 (2-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.91E-01	2.18E+01	3.12E+01	NA	NA	NA	NA	2.86E-02	1.14E+02	3.26E+00	6.64E-01	1.35E+02	1.69E-01	2.41E+02	1.87E-02	1.41E+02	1.20E-03
UM-750S-3500E (2-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.91E-01	1.90E+02	2.72E+02	NA	NA	NA	NA	2.86E-02	9.96E+02	2.85E+01	6.64E-01	1.35E+02	1.48E+00	2.41E+02	1.87E-02	1.41E+02	1.05E-02
BRSD-16 (2-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.91E-01	5.98E+02	8.56E+02	NA	NA	NA	NA	2.86E-02	3.13E+03	8.96E+01	6.64E-01	1.35E+02	4.65E+00	2.41E+02	1.87E-02	1.41E+02	3.29E-02
UM-750S-3000E (2-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.91E-01	2.04E+02	2.93E+02	NA	NA	NA	NA	2.86E-02	1.07E+03	3.06E+01	6.64E-01	1.35E+02	1.59E+00	2.41E+02	1.87E-02	1.41E+02	1.13E-02
BRSD-3 (2-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.91E-01	4.13E+02	5.91E+02	NA	NA	NA	NA	2.86E-02	2.16E+03	6.18E+01	6.64E-01	1.35E+02	3.21E+00	2.41E+02	1.87E-02	1.41E+02	2.27E-02
UM-500S-3250E (2-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.91E-01	2.79E+02	3.99E+02	NA	NA	NA	NA	2.86E-02	1.46E+03	4.18E+01	6.64E-01	1.35E+02	2.17E+00	2.41E+02	1.87E-02	1.41E+02	1.54E-02
UM-500S-3000E (2-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.91E-01	2.64E+01	3.77E+01	NA	NA	NA	NA	2.86E-02	1.38E+02	3.95E+00	6.64E-01	1.35E+02	2.05E-01	2.41E+02	1.87E-02	1.41E+02	1.45E-03
UM-500S-2750E (2-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.91E-01	1.52E+02	2.17E+02	NA	NA	NA	NA	2.86E-02	7.94E+02	2.27E+01	6.64E-01	1.35E+02	1.18E+00	2.41E+02	1.87E-02	1.41E+02	8.36E-03
BRSD-25 (2-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.91E-01	2.79E+02	3.99E+02	NA	NA	NA	NA	2.86E-02	1.46E+03	4.18E+01	6.64E-01	1.35E+02	2.17E+00	2.41E+02	1.87E-02	1.41E+02	1.54E-02
UM-250S-3000E (2-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.91E-01	3.72E+02	5.33E+02	NA	NA	NA	NA	2.86E-02	1.95E+03	5.58E+01	6.64E-01	1.35E+02	2.90E+00	2.41E+02	1.87E-02	1.41E+02	2.05E-02
UM-250S-3250E (2-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.91E-01	1.79E+01	2.56E+01	NA	NA	NA	NA	2.86E-02	9.35E+01	2.68E+00	6.64E-01	1.35E+02	1.39E-01	2.41E+02	1.87E-02	1.41E+02	9.84E-04
BRSD-24 (2-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.91E-01	5.08E+02	7.27E+02	NA	NA	NA	NA	2.86E-02	2.66E+03	7.62E+01	6.64E-01	1.35E+02	3.95E+00	2.41E+02	1.87E-02	1.41E+02	2.80E-02
UM-250S-2750E (2-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.91E-01	3.97E+02	5.69E+02	NA	NA	NA	NA	2.86E-02	2.08E+03	5.96E+01	6.64E-01	1.35E+02	3.09E+00	2.41E+02	1.87E-02	1.41E+02	2.19E-02
UM-0N-2500E (2-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.91E-01	2.41E+02	3.45E+02	NA	NA	NA	NA	2.86E-02	1.26E+03	3.61E+01	6.64E-01	1.35E+02	1.87E+00	2.41E+02	1.87E-02	1.41E+02	1.33E-02
BRSD-2 (2-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.91E-01	3.04E+02	4.35E+02	NA	NA	NA	NA	2.86E-02	1.59E+03	4.55E+01	6.64E-01	1.35E+02	2.36E+00	2.41E+02	1.87E-02	1.41E+02	1.67E-02
UM-500N-2500E (2-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.91E-01	1.70E+01	2.43E+01	NA	NA	NA	NA	2.86E-02	8.89E+01	2.55E+00	6.64E-01	1.35E+02	1.32E-01	2.41E+02	1.87E-02	1.41E+02	9.36E-04
UM-250N-2500E (2-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.91E-01	2.04E+02	2.93E+02	NA	NA	NA	NA	2.86E-02	1.07E+03	3.06E+01	6.64E-01	1.35E+02	1.59E+00	2.41E+02	1.87E-02	1.41E+02	1.13E-02
UM-250N-2250E (2-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.91E-01	3.67E+01	5.25E+01	NA	NA	NA	NA	2.86E-02	1.92E+02	5.50E+00	6.64E-01	1.35E+02	2.85E-01	2.41E+02	1.87E-02	1.41E+02	2.02E-03
Western Upper Marsh (2-6")																						**Maximum HQ (Eastern Upper Marsh, 2-6")**	**3.29E-02**
UM-500S-2500E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-2000E (2-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.32E-01	3.25E+02	4.65E+02	NA	NA	NA	NA	2.86E-02	2.46E+03	7.04E+01	6.64E-01	1.35E+02	2.63E+00	2.41E+02	1.87E-02	1.41E+02	1.86E-02
UM-500S-2000E (2-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.32E-01	1.22E+01	1.74E+01	NA	NA	NA	NA	2.86E-02	9.22E+01	2.64E+00	6.64E-01	1.35E+02	9.87E-02	2.41E+02	1.87E-02	1.41E+02	6.99E-04
UM-250N-1750E (2-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.32E-01	1.23E+01	1.77E+01	NA	NA	NA	NA	2.86E-02	9.36E+01	2.68E+00	6.64E-01	1.35E+02	1.00E-01	2.41E+02	1.87E-02	1.41E+02	7.09E-04
UM-0N-1500E (2-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.32E-01	1.46E+01	2.10E+01	NA	NA	NA	NA	2.86E-02	1.11E+02	3.18E+00	6.64E-01	1.35E+02	1.19E-01	2.41E+02	1.87E-02	1.41E+02	8.41E-04
UM-250S-1500E (2-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.32E-01	2.19E+02	3.14E+02	NA	NA	NA	NA	2.86E-02	1.66E+03	4.75E+01	6.64E-01	1.35E+02	1.78E+00	2.41E+02	1.87E-02	1.41E+02	1.26E-02
UM-250S-1250E (2-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.32E-01	1.23E+01	1.76E+01	NA	NA	NA	NA	2.86E-02	9.33E+01	2.67E+00	6.64E-01	1.35E+02	9.99E-02	2.41E+02	1.87E-02	1.41E+02	7.07E-04
BRSD-6 (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-1000E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-750E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-500E (2-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.32E-01	6.89E+01	9.86E+01	NA	NA	NA	NA	2.86E-02	5.22E+02	1.49E+01	6.64E-01	1.35E+02	5.59E-01	2.41E+02	1.87E-02	1.41E+02	3.96E-03
UM-250S-500E (2-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.32E-01	1.26E+01	1.80E+01	NA	NA	NA	NA	2.86E-02	9.54E+01	2.73E+00	6.64E-01	1.35E+02	1.02E-01	2.41E+02	1.87E-02	1.41E+02	7.23E-04
UM-0N-250E (2-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.32E-01	3.72E+01	5.33E+01	NA	NA	NA	NA	2.86E-02	2.82E+02	8.07E+00	6.64E-01	1.35E+02	3.02E-01	2.41E+02	1.87E-02	1.41E+02	2.14E-03
UM-250S-250E (2-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.32E-01	1.60E+01	2.29E+01	NA	NA	NA	NA	2.86E-02	1.21E+02	3.46E+00	6.64E-01	1.35E+02	1.30E-01	2.41E+02	1.87E-02	1.41E+02	9.17E-04
BRSD-7 (2-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.32E-01	8.22E+00	1.18E+01	NA	NA	NA	NA	2.86E-02	6.23E+01	1.78E+00	6.64E-01	1.35E+02	6.67E-02	2.41E+02	1.87E-02	1.41E+02	4.72E-04
BRSD-8 (2-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.32E-01	4.38E+01	6.27E+01	NA	NA	NA	NA	2.86E-02	3.32E+02	9.51E+00	6.64E-01	1.35E+02	3.55E-01	2.41E+02	1.87E-02	1.41E+02	2.52E-03
UM-500S-500E (2-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.32E-01	1.01E+01	1.44E+01	NA	NA	NA	NA	2.86E-02	7.63E+01	2.18E+00	6.64E-01	1.35E+02	8.17E-02	2.41E+02	1.87E-02	1.41E+02	5.78E-04
BRSD-9 (2-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.32E-01	7.76E+00	1.11E+01	NA	NA	NA	NA	2.86E-02	5.88E+01	1.68E+00	6.64E-01	1.35E+02	6.29E-02	2.41E+02	1.87E-02	1.41E+02	4.46E-04
BRSD-10 (2-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.32E-01	1.06E+02	1.52E+02	NA	NA	NA	NA	2.86E-02	8.04E+02	2.30E+01	6.64E-01	1.35E+02	8.60E-01	2.41E+02	1.87E-02	1.41E+02	6.09E-03
BRSD-11 (2-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.32E-01	1.22E+01	1.75E+01	NA	NA	NA	NA	2.86E-02	9.26E+01	2.65E+00	6.64E-01	1.35E+02	9.91E-02	2.41E+02	1.87E-02	1.41E+02	7.02E-04
Eastern Upper Marsh (6-12")																						**Maximum HQ (Western Upper Marsh, 2-6")**	**1.86E-02**
UM-1000S-3500E (6-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.91E-01	1.56E+01	2.23E+01	NA	NA	NA	NA	2.86E-02	8.17E+01	2.34E+00	6.64E-01	1.35E+02	1.21E-01	2.41E+02	1.87E-02	1.41E+02	8.60E-04
BRSD-15 (6-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.91E-01	1.66E+01	2.38E+01	NA	NA	NA	NA	2.86E-02	8.70E+01	2.49E+00	6.64E-01	1.35E+02	1.29E-01	2.41E+02	1.87E-02	1.41E+02	9.16E-04
BRSD-4 (6-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.91E-01	4.05E+01	5.80E+01	NA	NA	NA	NA	2.86E-02	2.12E+02	6.07E+00	6.64E-01	1.35E+02	3.15E-01	2.41E+02	1.87E-02	1.41E+02	2.23E-03
UM-750S-3500E (6-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.91E-01	2.31E+02	3.31E+02	NA	NA	NA	NA	2.86E-02	1.21E+03	3.46E+01	6.64E-01	1.35E+02	1.80E+00	2.41E+02	1.87E-02	1.41E+02	1.27E-02
BRSD-16 (6-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.91E-01	6.15E+02	8.80E+02	NA	NA	NA	NA	2.86E-02	3.22E+03	9.22E+01	6.64E-01	1.35E+02	4.79E+00	2.41E+02	1.87E-02	1.41E+02	3.39E-02
UM-750S-3000E (6-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.91E-01	2.14E+02	3.06E+02	NA	NA	NA	NA	2.86E-02	1.12E+03	3.21E+01	6.64E-01	1.35E+02	1.66E+00	2.41E+02	1.87E-02	1.41E+02	1.18E-02

TABLE C-12EA: LEAD DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 12 - MARSH, TERRESTRIAL RECEPTORS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **118.73**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
White-Tailed Deer (Large Herbivorous Mammals)																							
BRSD-3 (6-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.91E-01	6.65E+01	9.51E+01	NA	NA	NA	NA	2.86E-02	3.48E+02	9.96E+00	6.64E-01	1.35E+02	5.17E-01	2.41E+02	1.87E-02	1.41E+02	3.66E-03
UM-500S-3250E (6-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.91E-01	1.16E+02	1.66E+02	NA	NA	NA	NA	2.86E-02	6.08E+02	1.74E+01	6.64E-01	1.35E+02	9.04E-01	2.41E+02	1.87E-02	1.41E+02	6.40E-03
UM-500S-3000E (6-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.91E-01	2.14E+01	3.06E+01	NA	NA	NA	NA	2.86E-02	1.12E+02	3.21E+00	6.64E-01	1.35E+02	1.66E-01	2.41E+02	1.87E-02	1.41E+02	1.18E-03
UM-500S-2750E (6-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.91E-01	1.29E+02	1.85E+02	NA	NA	NA	NA	2.86E-02	6.78E+02	1.94E+01	6.64E-01	1.35E+02	1.01E+00	2.41E+02	1.87E-02	1.41E+02	7.14E-03
BRSD-25 (6-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.91E-01	2.01E+02	2.87E+02	NA	NA	NA	NA	2.86E-02	1.05E+03	3.01E+01	6.64E-01	1.35E+02	1.56E+00	2.41E+02	1.87E-02	1.41E+02	1.11E-02
UM-250S-3000E (6-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.91E-01	2.44E+02	3.50E+02	NA	NA	NA	NA	2.86E-02	1.28E+03	3.67E+01	6.64E-01	1.35E+02	1.90E+00	2.41E+02	1.87E-02	1.41E+02	1.35E-02
UM-250S-3250E (6-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.91E-01	2.04E+01	2.93E+01	NA	NA	NA	NA	2.86E-02	1.07E+02	3.06E+00	6.64E-01	1.35E+02	1.59E-01	2.41E+02	1.87E-02	1.41E+02	1.13E-03
BRSD-24 (6-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.91E-01	4.37E+02	6.26E+02	NA	NA	NA	NA	2.86E-02	2.29E+03	6.56E+01	6.64E-01	1.35E+02	3.40E+00	2.41E+02	1.87E-02	1.41E+02	2.41E-02
UM-250S-2750E (6-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.91E-01	4.60E+02	6.59E+02	NA	NA	NA	NA	2.86E-02	2.41E+03	6.90E+01	6.64E-01	1.35E+02	3.58E+00	2.41E+02	1.87E-02	1.41E+02	2.54E-02
UM-250S-2500E (6-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.91E-01	1.63E+01	2.33E+01	NA	NA	NA	NA	2.86E-02	8.54E+01	2.45E+00	6.64E-01	1.35E+02	1.27E-01	2.41E+02	1.87E-02	1.41E+02	8.99E-04
BRSD-2 (6-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.91E-01	8.06E+02	1.15E+03	NA	NA	NA	NA	2.86E-02	4.22E+03	1.21E+02	6.64E-01	1.35E+02	6.27E+00	2.41E+02	1.87E-02	1.41E+02	4.44E-02
UM-500N-2500E (6-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.91E-01	1.46E+01	2.09E+01	NA	NA	NA	NA	2.86E-02	7.64E+01	2.19E+00	6.64E-01	1.35E+02	1.14E-01	2.41E+02	1.87E-02	1.41E+02	8.04E-04
UM-250N-2500E (6-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.91E-01	1.86E+02	2.67E+02	NA	NA	NA	NA	2.86E-02	9.75E+02	2.79E+01	6.64E-01	1.35E+02	1.45E+00	2.41E+02	1.87E-02	1.41E+02	1.03E-02
UM-250N-2250E (6-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.91E-01	3.70E+01	5.30E+01	NA	NA	NA	NA	2.86E-02	1.94E+02	5.55E+00	6.64E-01	1.35E+02	2.88E-01	2.41E+02	1.87E-02	1.41E+02	2.04E-03
Western Upper Marsh (6-12")																						**Maximum HQ (Eastern Upper Marsh, 6-12")**	**4.44E-02**
UM-500S-2500E (6-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.32E-01	1.61E+01	2.30E+01	NA	NA	NA	NA	2.86E-02	1.22E+02	3.49E+00	6.64E-01	1.35E+02	1.31E-01	2.41E+02	1.87E-02	1.41E+02	9.25E-04
UM-0N-2000E (6-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.32E-01	4.33E+02	6.20E+02	NA	NA	NA	NA	2.86E-02	3.28E+03	9.39E+01	6.64E-01	1.35E+02	3.51E+00	2.41E+02	1.87E-02	1.41E+02	2.49E-02
UM-500S-2000E (6-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.32E-01	1.24E+01	1.78E+01	NA	NA	NA	NA	2.86E-02	9.40E+01	2.69E+00	6.64E-01	1.35E+02	1.01E-01	2.41E+02	1.87E-02	1.41E+02	7.12E-04
UM-250N-1750E (6-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.32E-01	1.30E+01	1.86E+01	NA	NA	NA	NA	2.86E-02	9.87E+01	2.83E+00	6.64E-01	1.35E+02	1.06E-01	2.41E+02	1.87E-02	1.41E+02	7.48E-04
UM-0N-1500E (6-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.32E-01	1.46E+01	2.10E+01	NA	NA	NA	NA	2.86E-02	1.11E+02	3.18E+00	6.64E-01	1.35E+02	1.19E-01	2.41E+02	1.87E-02	1.41E+02	8.41E-04
UM-250S-1500E (6-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.32E-01	1.23E+02	1.76E+02	NA	NA	NA	NA	2.86E-02	9.31E+02	2.67E+01	6.64E-01	1.35E+02	9.96E-01	2.41E+02	1.87E-02	1.41E+02	7.06E-03
UM-250S-1250E (6-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.32E-01	1.35E+01	1.93E+01	NA	NA	NA	NA	2.86E-02	1.02E+02	2.92E+00	6.64E-01	1.35E+02	1.09E-01	2.41E+02	1.87E-02	1.41E+02	7.73E-04
BRSD-6 (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-1000E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-750E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-500E (6-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.32E-01	2.03E+01	2.91E+01	NA	NA	NA	NA	2.86E-02	1.54E+02	4.41E+00	6.64E-01	1.35E+02	1.65E-01	2.41E+02	1.87E-02	1.41E+02	1.17E-03
UM-250S-500E (6-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.32E-01	1.29E+01	1.85E+01	NA	NA	NA	NA	2.86E-02	9.80E+01	2.81E+00	6.64E-01	1.35E+02	1.05E-01	2.41E+02	1.87E-02	1.41E+02	7.43E-04
UM-0N-250E (6-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.32E-01	3.55E+01	5.08E+01	NA	NA	NA	NA	2.86E-02	2.69E+02	7.70E+00	6.64E-01	1.35E+02	2.88E-01	2.41E+02	1.87E-02	1.41E+02	2.04E-03
UM-250S-250E (6-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.32E-01	1.26E+01	1.80E+01	NA	NA	NA	NA	2.86E-02	9.53E+01	2.73E+00	6.64E-01	1.35E+02	1.02E-01	2.41E+02	1.87E-02	1.41E+02	7.22E-04
BRSD-7 (6-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.32E-01	1.52E+01	2.17E+01	NA	NA	NA	NA	2.86E-02	1.15E+02	3.29E+00	6.64E-01	1.35E+02	1.23E-01	2.41E+02	1.87E-02	1.41E+02	8.72E-04
BRSD-8 (6-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.32E-01	3.96E+01	5.67E+01	NA	NA	NA	NA	2.86E-02	3.00E+02	8.59E+00	6.64E-01	1.35E+02	3.21E-01	2.41E+02	1.87E-02	1.41E+02	2.27E-03
UM-500S-500E (6-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.32E-01	9.58E+00	1.37E+01	NA	NA	NA	NA	2.86E-02	7.26E+01	2.08E+00	6.64E-01	1.35E+02	7.77E-02	2.41E+02	1.87E-02	1.41E+02	5.50E-04
BRSD-9 (6-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.32E-01	1.12E+01	1.60E+01	NA	NA	NA	NA	2.86E-02	8.49E+01	2.43E+00	6.64E-01	1.35E+02	9.09E-02	2.41E+02	1.87E-02	1.41E+02	6.43E-04
BRSD-10 (6-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.32E-01	1.81E+02	2.59E+02	NA	NA	NA	NA	2.86E-02	1.37E+03	3.92E+01	6.64E-01	1.35E+02	1.47E+00	2.41E+02	1.87E-02	1.41E+02	1.04E-02
BRSD-11 (6-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.32E-01	1.37E+01	1.96E+01	NA	NA	NA	NA	2.86E-02	1.04E+02	2.98E+00	6.64E-01	1.35E+02	1.11E-01	2.41E+02	1.87E-02	1.41E+02	7.88E-04
Middle Marsh (0-2")																						**Maximum HQ (Western Upper Marsh, 6-12")**	**2.49E-02**
MMSD-201 (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.32E-01	6.65E+01	9.52E+01	NA	NA	NA	NA	2.86E-02	5.04E+02	1.44E+01	6.64E-01	1.35E+02	5.39E-01	2.41E+02	1.87E-02	1.41E+02	3.82E-03
MMSD-202 (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.32E-01	9.17E+01	1.31E+02	NA	NA	NA	NA	2.86E-02	6.95E+02	1.99E+01	6.64E-01	1.35E+02	7.44E-01	2.41E+02	1.87E-02	1.41E+02	5.27E-03
Middle Marsh (2-6")																						**Maximum HQ (Middle Marsh, 0-2")**	**5.27E-03**
MMSD-201 (2-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.32E-01	8.21E+01	1.17E+02	NA	NA	NA	NA	2.86E-02	6.22E+02	1.78E+01	6.64E-01	1.35E+02	6.66E-01	2.41E+02	1.87E-02	1.41E+02	4.71E-03
MMSD-202 (2-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.32E-01	1.09E+02	1.56E+02	NA	NA	NA	NA	2.86E-02	8.28E+02	2.37E+01	6.64E-01	1.35E+02	8.86E-01	2.41E+02	1.87E-02	1.41E+02	6.28E-03
Middle Marsh (6-12")																						**Maximum HQ (Middle Marsh, 2-6")**	**6.28E-03**
MMSD-201 (6-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.32E-01	1.28E+02	1.83E+02	NA	NA	NA	NA	2.86E-02	9.67E+02	2.77E+01	6.64E-01	1.35E+02	1.03E+00	2.41E+02	1.87E-02	1.41E+02	7.33E-03
MMSD-202 (6-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.32E-01	3.46E+01	4.95E+01	NA	NA	NA	NA	2.86E-02	2.62E+02	7.50E+00	6.64E-01	1.35E+02	2.80E-01	2.41E+02	1.87E-02	1.41E+02	1.99E-03
Lower Marsh (0-2")																						**Maximum HQ (Middle Marsh, 6-12")**	**7.33E-03**
LMSD-201 (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
LMSD-202 (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
LMSD-203 (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.32E-01	1.06E+01	1.51E+01	NA	NA	NA	NA	2.86E-02	8.00E+01	2.29E+00	6.64E-01	1.35E+02	8.56E-02	2.41E+02	1.87E-02	1.41E+02	6.06E-04
LMSD-204 (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.32E-01	1.19E+01	1.70E+01	NA	NA	NA	NA	2.86E-02	9.00E+01	2.58E+00	6.64E-01	1.35E+02	9.63E-02	2.41E+02	1.87E-02	1.41E+02	6.82E-04

TABLE C-12EA: LEAD DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 12 - MARSH, TERRESTRIAL RECEPTORS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **118.73**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
White-Tailed Deer (Large Herbivorous Mammals)																							
Lower Marsh (2-6")																						**Maximum HQ (Lower Marsh, 0-2")**	**6.82E-04**
LMSD-201 (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
LMSD-202 (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
LMSD-203 (2-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.32E-01	1.12E+01	1.61E+01	NA	NA	NA	NA	2.86E-02	8.50E+01	2.43E+00	6.64E-01	1.35E+02	9.10E-02	2.41E+02	1.87E-02	1.41E+02	6.44E-04
LMSD-204 (2-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.32E-01	1.15E+01	1.64E+01	NA	NA	NA	NA	2.86E-02	8.70E+01	2.49E+00	6.64E-01	1.35E+02	9.31E-02	2.41E+02	1.87E-02	1.41E+02	6.59E-04
Lower Marsh (6-12")																						**Maximum HQ (Lower Marsh, 2-6")**	**6.59E-04**
LMSD-201 (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
LMSD-202 (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
LMSD-203 (6-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.32E-01	1.07E+01	1.53E+01	NA	NA	NA	NA	2.86E-02	8.10E+01	2.32E+00	6.64E-01	1.35E+02	8.67E-02	2.41E+02	1.87E-02	1.41E+02	6.14E-04
LMSD-204 (6-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.32E-01	1.11E+01	1.59E+01	NA	NA	NA	NA	2.86E-02	8.40E+01	2.41E+00	6.64E-01	1.35E+02	8.99E-02	2.41E+02	1.87E-02	1.41E+02	6.37E-04
																						Maximum HQ (Lower Marsh, 6-12")	**6.37E-04**
Red Fox (Carnivorous Mammals)																							
Reference Sites																							
BRSD-5 (0-2")	1.72E-01	1.72E-01	1.20E-01	7.78E+00	1.33E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	6.47E+01	3.11E-01	8.77E-02	4.54E+00	3.18E-02	2.41E+02	1.87E-02	1.73E+02	1.84E-04
BRSD-5 (2-6")	1.72E-01	1.72E-01	1.20E-01	7.42E+00	1.27E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	6.17E+01	2.96E-01	8.77E-02	4.54E+00	3.03E-02	2.41E+02	1.87E-02	1.73E+02	1.75E-04
BRSD-5 (6-12")	1.72E-01	1.72E-01	1.20E-01	9.50E+00	1.63E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	7.90E+01	3.79E-01	8.77E-02	4.54E+00	3.88E-02	2.41E+02	1.87E-02	1.73E+02	2.24E-04
PGBG-1 (0-2")	1.72E-01	1.72E-01	1.20E-01	6.61E+00	1.13E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.50E+01	2.64E-01	8.77E-02	4.54E+00	2.70E-02	2.41E+02	1.87E-02	1.73E+02	1.56E-04
PGBG-1 (2-6")	1.72E-01	1.72E-01	1.20E-01	1.21E+01	2.08E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.01E+02	4.85E-01	8.77E-02	4.54E+00	4.97E-02	2.41E+02	1.87E-02	1.73E+02	2.87E-04
PGBG-1 (6-12")	1.72E-01	1.72E-01	1.20E-01	2.09E+01	3.59E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.74E+02	8.36E-01	8.77E-02	4.54E+00	8.55E-02	2.41E+02	1.87E-02	1.73E+02	4.94E-04
PGBG-2 (0-2")	1.72E-01	1.72E-01	1.20E-01	1.26E+01	2.17E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.05E+02	5.04E-01	8.77E-02	4.54E+00	5.16E-02	2.41E+02	1.87E-02	1.73E+02	2.98E-04
PGBG-2 (2-6")	1.72E-01	1.72E-01	1.20E-01	1.30E+01	2.23E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.08E+02	5.19E-01	8.77E-02	4.54E+00	5.31E-02	2.41E+02	1.87E-02	1.73E+02	3.07E-04
PGBG-2 (6-12")	1.72E-01	1.72E-01	1.20E-01	1.36E+01	2.33E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.13E+02	5.43E-01	8.77E-02	4.54E+00	5.55E-02	2.41E+02	1.87E-02	1.73E+02	3.21E-04
Eastern Upper Marsh (0-2")																						**Minimum HQ (Reference Sites)**	**1.56E-04**
UM-1000S-3500E (0-2")	1.72E-01	1.72E-01	1.23E-01	2.18E+02	3.75E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.77E+03	8.50E+00	8.77E-02	4.54E+00	8.89E-01	2.41E+02	1.87E-02	1.73E+02	5.14E-03
BRSD-15 (0-2")	1.72E-01	1.72E-01	1.23E-01	8.25E+00	1.42E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	6.69E+01	3.21E-01	8.77E-02	4.54E+00	3.36E-02	2.41E+02	1.87E-02	1.73E+02	1.94E-04
BRSD-4 (0-2")	1.72E-01	1.72E-01	1.23E-01	1.37E+01	2.35E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.11E+02	5.33E-01	8.77E-02	4.54E+00	5.57E-02	2.41E+02	1.87E-02	1.73E+02	3.22E-04
UM-750S-3500E (0-2")	1.72E-01	1.72E-01	1.23E-01	2.76E+02	4.74E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.24E+03	1.08E+01	8.77E-02	4.54E+00	1.12E+00	2.41E+02	1.87E-02	1.73E+02	6.50E-03
BRSD-16 (0-2")	1.72E-01	1.72E-01	1.23E-01	2.59E+02	4.44E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.10E+03	1.01E+01	8.77E-02	4.54E+00	1.05E+00	2.41E+02	1.87E-02	1.73E+02	6.09E-03
UM-750S-3000E (0-2")	1.72E-01	1.72E-01	1.23E-01	1.48E+02	2.54E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.20E+03	5.76E+00	8.77E-02	4.54E+00	6.03E-01	2.41E+02	1.87E-02	1.73E+02	3.48E-03
BRSD-3 (0-2")	1.72E-01	1.72E-01	1.23E-01	1.34E+02	2.31E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.09E+03	5.24E+00	8.77E-02	4.54E+00	5.47E-01	2.41E+02	1.87E-02	1.73E+02	3.16E-03
UM-500S-3250E (0-2")	1.72E-01	1.72E-01	1.23E-01	2.73E+02	4.68E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.21E+03	1.06E+01	8.77E-02	4.54E+00	1.11E+00	2.41E+02	1.87E-02	1.73E+02	6.41E-03
UM-500S-3000E (0-2")	1.72E-01	1.72E-01	1.23E-01	2.62E+02	4.49E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.12E+03	1.02E+01	8.77E-02	4.54E+00	1.06E+00	2.41E+02	1.87E-02	1.73E+02	6.15E-03
UM-500S-2750E (0-2")	1.72E-01	1.72E-01	1.23E-01	1.49E+02	2.56E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.21E+03	5.81E+00	8.77E-02	4.54E+00	6.08E-01	2.41E+02	1.87E-02	1.73E+02	3.51E-03
BRSD-25 (0-2")	1.72E-01	1.72E-01	1.23E-01	1.03E+02	1.77E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	8.36E+02	4.02E+00	8.77E-02	4.54E+00	4.20E-01	2.41E+02	1.87E-02	1.73E+02	2.43E-03
UM-250S-3000E (0-2")	1.72E-01	1.72E-01	1.23E-01	2.07E+02	3.56E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.68E+03	8.07E+00	8.77E-02	4.54E+00	8.44E-01	2.41E+02	1.87E-02	1.73E+02	4.87E-03
UM-250S-3250E (0-2")	1.72E-01	1.72E-01	1.23E-01	2.07E+01	3.56E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.68E+02	8.07E-01	8.77E-02	4.54E+00	8.44E-02	2.41E+02	1.87E-02	1.73E+02	4.87E-04
BRSD-24 (0-2")	1.72E-01	1.72E-01	1.23E-01	1.33E+02	2.29E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.08E+03	5.19E+00	8.77E-02	4.54E+00	5.42E-01	2.41E+02	1.87E-02	1.73E+02	3.13E-03
UM-250S-2750E (0-2")	1.72E-01	1.72E-01	1.23E-01	1.19E+02	2.05E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	9.68E+02	4.65E+00	8.77E-02	4.54E+00	4.86E-01	2.41E+02	1.87E-02	1.73E+02	2.81E-03
UM-250S-2500E (0-2")	1.72E-01	1.72E-01	1.23E-01	1.42E+01	2.43E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.15E+02	5.52E-01	8.77E-02	4.54E+00	5.77E-02	2.41E+02	1.87E-02	1.73E+02	3.34E-04
UM-0N-2500E (0-2")	1.72E-01	1.72E-01	1.23E-01	2.47E+02	4.23E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.00E+03	9.61E+00	8.77E-02	4.54E+00	1.00E+00	2.41E+02	1.87E-02	1.73E+02	5.80E-03
UM-0N-250E (0-2")	1.72E-01	1.72E-01	1.23E-01	3.76E+01	6.46E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.05E+02	1.47E+00	8.77E-02	4.54E+00	1.53E-01	2.41E+02	1.87E-02	1.73E+02	8.85E-04
BRSD-2 (0-2")	1.72E-01	1.72E-01	1.23E-01	1.59E+02	2.73E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.29E+03	6.20E+00	8.77E-02	4.54E+00	6.48E-01	2.41E+02	1.87E-02	1.73E+02	3.74E-03
UM-500N-2500E (0-2")	1.72E-01	1.72E-01	1.23E-01	1.13E+01	1.93E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	9.12E+01	4.38E-01	8.77E-02	4.54E+00	4.58E-02	2.41E+02	1.87E-02	1.73E+02	2.65E-04
UM-250N-2500E (0-2")	1.72E-01	1.72E-01	1.23E-01	1.88E+02	3.22E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.52E+03	7.30E+00	8.77E-02	4.54E+00	7.63E-01	2.41E+02	1.87E-02	1.73E+02	4.41E-03
UM-250N-2250E (0-2")	1.72E-01	1.72E-01	1.23E-01	1.65E+02	2.84E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.34E+03	6.44E+00	8.77E-02	4.54E+00	6.73E-01	2.41E+02	1.87E-02	1.73E+02	3.89E-03
Western Upper Marsh (0-2")																						**Maximum HQ (Eastern Upper Marsh, 0-2")**	**6.50E-03**
UM-500S-2500E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-2000E (0-2")	1.72E-01	1.72E-01	1.23E-01	3.06E+02	5.25E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.48E+03	1.19E+01	8.77E-02	4.54E+00	1.25E+00	2.41E+02	1.87E-02	1.73E+02	7.19E-03
UM-500S-2000E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-250N-1750E (0-2")	1.72E-01	1.72E-01	1.23E-01	1.19E+01	2.04E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	9.62E+01	4.62E-01	8.77E-02	4.54E+00	4.83E-02	2.41E+02	1.87E-02	1.73E+02	2.79E-04
UM-0N-1500E (0-2")	1.72E-01	1.72E-01	1.23E-01	1.26E+01	2.16E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.02E+02	4.90E-01	8.77E-02	4.54E+00	5.12E-02	2.41E+02	1.87E-02	1.73E+02	2.96E-04
UM-250S-1500E (0-2")	1.72E-01	1.72E-01	1.23E-01	2.13E+02	3.66E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.73E+03	8.31E+00	8.77E-02	4.54E+00	8.69E-01	2.41E+02	1.87E-02	1.73E+02	5.02E-03

TABLE C-12EA: LEAD DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 12 - MARSH, TERRESTRIAL RECEPTORS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **118.73**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Red Fox (Carnivorous Mammals)																							
UM-250S-1250E (0-2")	1.72E-01	1.72E-01	1.23E-01	1.17E+01	2.01E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	9.48E+01	4.55E-01	8.77E-02	4.54E+00	4.76E-02	2.41E+02	1.87E-02	1.73E+02	2.75E-04
BRSD-6 (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-1000E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-750E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-500E (0-2")	1.72E-01	1.72E-01	1.23E-01	2.01E+01	3.45E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.63E+02	7.83E-01	8.77E-02	4.54E+00	8.19E-02	2.41E+02	1.87E-02	1.73E+02	4.73E-04
UM-250S-500E (0-2")	1.72E-01	1.72E-01	1.23E-01	8.65E+00	1.48E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	7.01E+01	3.37E-01	8.77E-02	4.54E+00	3.52E-02	2.41E+02	1.87E-02	1.73E+02	2.03E-04
UM-250S-250E (0-2")	1.72E-01	1.72E-01	1.23E-01	1.62E+01	2.77E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.31E+02	6.29E-01	8.77E-02	4.54E+00	6.58E-02	2.41E+02	1.87E-02	1.73E+02	3.80E-04
BRSD-7 (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-8 (0-2")	1.72E-01	1.72E-01	1.23E-01	2.79E+01	4.78E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.26E+02	1.09E+00	8.77E-02	4.54E+00	1.13E-01	2.41E+02	1.87E-02	1.73E+02	6.56E-04
UM-500S-500E (0-2")	1.72E-01	1.72E-01	1.23E-01	8.19E+00	1.41E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	6.64E+01	3.19E-01	8.77E-02	4.54E+00	3.33E-02	2.41E+02	1.87E-02	1.73E+02	1.93E-04
BRSD-9 (0-2")	1.72E-01	1.72E-01	1.23E-01	3.52E+01	6.03E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.85E+02	1.37E+00	8.77E-02	4.54E+00	1.43E-01	2.41E+02	1.87E-02	1.73E+02	8.27E-04
BRSD-10 (0-2")	1.72E-01	1.72E-01	1.23E-01	7.80E+01	1.34E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	6.32E+02	3.04E+00	8.77E-02	4.54E+00	3.17E-01	2.41E+02	1.87E-02	1.73E+02	1.83E-03
BRSD-11 (0-2")	1.72E-01	1.72E-01	1.23E-01	1.14E+01	1.96E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	9.24E+01	4.44E-01	8.77E-02	4.54E+00	4.64E-02	2.41E+02	1.87E-02	1.73E+02	2.68E-04
Eastern Upper Marsh (2-6")																						**Maximum HQ (Western Upper Marsh, 0-2")**	**7.19E-03**
UM-1000S-3500E (2-6")	1.72E-01	1.72E-01	1.23E-01	3.95E+01	6.77E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.20E+02	1.54E+00	8.77E-02	4.54E+00	1.61E-01	2.41E+02	1.87E-02	1.73E+02	9.28E-04
BRSD-15 (2-6")	1.72E-01	1.72E-01	1.23E-01	1.38E+01	2.37E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.12E+02	5.38E-01	8.77E-02	4.54E+00	5.62E-02	2.41E+02	1.87E-02	1.73E+02	3.25E-04
BRSD-4 (2-6")	1.72E-01	1.72E-01	1.23E-01	1.41E+01	2.41E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.14E+02	5.48E-01	8.77E-02	4.54E+00	5.72E-02	2.41E+02	1.87E-02	1.73E+02	3.31E-04
UM-750S-3500E (2-6")	1.72E-01	1.72E-01	1.23E-01	1.23E+02	2.11E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	9.96E+02	4.78E+00	8.77E-02	4.54E+00	5.00E-01	2.41E+02	1.87E-02	1.73E+02	2.89E-03
BRSD-16 (2-6")	1.72E-01	1.72E-01	1.23E-01	3.86E+02	6.63E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.13E+03	1.50E+01	8.77E-02	4.54E+00	1.57E+00	2.41E+02	1.87E-02	1.73E+02	9.08E-03
UM-750S-3000E (2-6")	1.72E-01	1.72E-01	1.23E-01	1.32E+02	2.26E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.07E+03	5.14E+00	8.77E-02	4.54E+00	5.37E-01	2.41E+02	1.87E-02	1.73E+02	3.10E-03
BRSD-3 (2-6")	1.72E-01	1.72E-01	1.23E-01	2.67E+02	4.57E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.16E+03	1.04E+01	8.77E-02	4.54E+00	1.08E+00	2.41E+02	1.87E-02	1.73E+02	6.27E-03
UM-500S-3250E (2-6")	1.72E-01	1.72E-01	1.23E-01	1.80E+02	3.09E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.46E+03	7.01E+00	8.77E-02	4.54E+00	7.33E-01	2.41E+02	1.87E-02	1.73E+02	4.24E-03
UM-500S-3000E (2-6")	1.72E-01	1.72E-01	1.23E-01	1.70E+01	2.92E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.38E+02	6.63E-01	8.77E-02	4.54E+00	6.93E-02	2.41E+02	1.87E-02	1.73E+02	4.00E-04
UM-500S-2750E (2-6")	1.72E-01	1.72E-01	1.23E-01	9.80E+01	1.68E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	7.94E+02	3.81E+00	8.77E-02	4.54E+00	3.99E-01	2.41E+02	1.87E-02	1.73E+02	2.30E-03
BRSD-25 (2-6")	1.72E-01	1.72E-01	1.23E-01	1.80E+02	3.09E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.46E+03	7.01E+00	8.77E-02	4.54E+00	7.33E-01	2.41E+02	1.87E-02	1.73E+02	4.24E-03
UM-250S-3000E (2-6")	1.72E-01	1.72E-01	1.23E-01	2.41E+02	4.13E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.95E+03	9.37E+00	8.77E-02	4.54E+00	9.79E-01	2.41E+02	1.87E-02	1.73E+02	5.66E-03
UM-250S-3250E (2-6")	1.72E-01	1.72E-01	1.23E-01	1.15E+01	1.98E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	9.35E+01	4.49E-01	8.77E-02	4.54E+00	4.70E-02	2.41E+02	1.87E-02	1.73E+02	2.71E-04
BRSD-24 (2-6")	1.72E-01	1.72E-01	1.23E-01	3.28E+02	5.63E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.66E+03	1.28E+01	8.77E-02	4.54E+00	1.34E+00	2.41E+02	1.87E-02	1.73E+02	7.72E-03
UM-250S-2750E (2-6")	1.72E-01	1.72E-01	1.23E-01	2.57E+02	4.40E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.08E+03	9.99E+00	8.77E-02	4.54E+00	1.04E+00	2.41E+02	1.87E-02	1.73E+02	6.03E-03
UM-0N-2500E (2-6")	1.72E-01	1.72E-01	1.23E-01	1.55E+02	2.67E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.26E+03	6.05E+00	8.77E-02	4.54E+00	6.33E-01	2.41E+02	1.87E-02	1.73E+02	3.66E-03
BRSD-2 (2-6")	1.72E-01	1.72E-01	1.23E-01	1.96E+02	3.37E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.59E+03	7.64E+00	8.77E-02	4.54E+00	7.98E-01	2.41E+02	1.87E-02	1.73E+02	4.61E-03
UM-500N-2500E (2-6")	1.72E-01	1.72E-01	1.23E-01	1.10E+01	1.88E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	8.89E+01	4.27E-01	8.77E-02	4.54E+00	4.46E-02	2.41E+02	1.87E-02	1.73E+02	2.58E-04
UM-250N-2500E (2-6")	1.72E-01	1.72E-01	1.23E-01	1.32E+02	2.26E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.07E+03	5.14E+00	8.77E-02	4.54E+00	5.37E-01	2.41E+02	1.87E-02	1.73E+02	3.10E-03
UM-250N-2250E (2-6")	1.72E-01	1.72E-01	1.23E-01	2.37E+01	4.06E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.92E+02	9.22E-01	8.77E-02	4.54E+00	9.64E-02	2.41E+02	1.87E-02	1.73E+02	5.57E-04
Western Upper Marsh (2-6")																						**Maximum HQ (Eastern Upper Marsh, 2-6")**	**9.08E-03**
UM-500S-2500E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-2000E (2-6")	1.72E-01	1.72E-01	1.23E-01	3.04E+02	5.21E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.46E+03	1.18E+01	8.77E-02	4.54E+00	1.24E+00	2.41E+02	1.87E-02	1.73E+02	7.14E-03
UM-500S-2000E (2-6")	1.72E-01	1.72E-01	1.23E-01	1.14E+01	1.95E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	9.22E+01	4.43E-01	8.77E-02	4.54E+00	4.63E-02	2.41E+02	1.87E-02	1.73E+02	2.67E-04
UM-250N-1750E (2-6")	1.72E-01	1.72E-01	1.23E-01	1.15E+01	1.98E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	9.36E+01	4.50E-01	8.77E-02	4.54E+00	4.70E-02	2.41E+02	1.87E-02	1.73E+02	2.72E-04
UM-0N-1500E (2-6")	1.72E-01	1.72E-01	1.23E-01	1.37E+01	2.35E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.11E+02	5.33E-01	8.77E-02	4.54E+00	5.57E-02	2.41E+02	1.87E-02	1.73E+02	3.22E-04
UM-250S-1500E (2-6")	1.72E-01	1.72E-01	1.23E-01	2.05E+02	3.51E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.66E+03	7.97E+00	8.77E-02	4.54E+00	8.34E-01	2.41E+02	1.87E-02	1.73E+02	4.82E-03
UM-250S-1250E (2-6")	1.72E-01	1.72E-01	1.23E-01	1.15E+01	1.97E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	9.33E+01	4.48E-01	8.77E-02	4.54E+00	4.69E-02	2.41E+02	1.87E-02	1.73E+02	2.71E-04
BRSD-6 (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-1000E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-750E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-500E (2-6")	1.72E-01	1.72E-01	1.23E-01	6.44E+01	1.10E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.22E+02	2.51E+00	8.77E-02	4.54E+00	2.62E-01	2.41E+02	1.87E-02	1.73E+02	1.51E-03
UM-250S-500E (2-6")	1.72E-01	1.72E-01	1.23E-01	1.18E+01	2.02E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	9.54E+01	4.58E-01	8.77E-02	4.54E+00	4.79E-02	2.41E+02	1.87E-02	1.73E+02	2.77E-04
UM-0N-250E (2-6")	1.72E-01	1.72E-01	1.23E-01	3.48E+01	5.97E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.82E+02	1.35E+00	8.77E-02	4.54E+00	1.42E-01	2.41E+02	1.87E-02	1.73E+02	8.18E-04
UM-250S-250E (2-6")	1.72E-01	1.72E-01	1.23E-01	1.49E+01	2.56E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.21E+02	5.81E-01	8.77E-02	4.54E+00	6.08E-02	2.41E+02	1.87E-02	1.73E+02	3.51E-04
BRSD-7 (2-6")	1.72E-01	1.72E-01	1.23E-01	7.69E+00	1.32E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	6.23E+01	2.99E-01	8.77E-02	4.54E+00	3.13E-02	2.41E+02	1.87E-02	1.73E+02	1.81E-04
BRSD-8 (2-6")	1.72E-01	1.72E-01	1.23E-01	4.10E+01	7.03E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.32E+02	1.59E+00	8.77E-02	4.54E+00	1.67E-01	2.41E+02	1.87E-02	1.73E+02	9.63E-04

TABLE C-12EA: LEAD DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 12 - MARSH, TERRESTRIAL RECEPTORS (Continued)
Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)
calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **118.73**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Red Fox (Carnivorous Mammals)																							
UM-500S-500E (2-6")	1.72E-01	1.72E-01	1.23E-01	9.41E+00	1.61E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	7.63E+01	3.67E-01	8.77E-02	4.54E+00	3.83E-02	2.41E+02	1.87E-02	1.73E+02	2.21E-04
BRSD-9 (2-6")	1.72E-01	1.72E-01	1.23E-01	7.25E+00	1.24E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.88E+01	2.82E-01	8.77E-02	4.54E+00	2.95E-02	2.41E+02	1.87E-02	1.73E+02	1.71E-04
BRSD-10 (2-6")	1.72E-01	1.72E-01	1.23E-01	9.92E+01	1.70E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	8.04E+02	3.86E+00	8.77E-02	4.54E+00	4.04E-01	2.41E+02	1.87E-02	1.73E+02	2.33E-03
BRSD-11 (2-6")	1.72E-01	1.72E-01	1.23E-01	1.14E+01	1.96E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	9.26E+01	4.45E-01	8.77E-02	4.54E+00	4.65E-02	2.41E+02	1.87E-02	1.73E+02	2.69E-04
Eastern Upper Marsh (6-12")																						**Maximum HQ (Western Upper Marsh, 2-6")**	**7.14E-03**
UM-1000S-3500E (6-12")	1.72E-01	1.72E-01	1.23E-01	1.01E+01	1.73E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	8.17E+01	3.92E-01	8.77E-02	4.54E+00	4.10E-02	2.41E+02	1.87E-02	1.73E+02	2.37E-04
BRSD-15 (6-12")	1.72E-01	1.72E-01	1.23E-01	1.07E+01	1.84E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	8.70E+01	4.18E-01	8.77E-02	4.54E+00	4.37E-02	2.41E+02	1.87E-02	1.73E+02	2.52E-04
BRSD-4 (6-12")	1.72E-01	1.72E-01	1.23E-01	2.62E+01	4.49E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.12E+02	1.02E+00	8.77E-02	4.54E+00	1.06E-01	2.41E+02	1.87E-02	1.73E+02	6.15E-04
UM-750S-3500E (6-12")	1.72E-01	1.72E-01	1.23E-01	1.49E+02	2.56E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.21E+03	5.81E+00	8.77E-02	4.54E+00	6.08E-01	2.41E+02	1.87E-02	1.73E+02	3.51E-03
BRSD-16 (6-12")	1.72E-01	1.72E-01	1.23E-01	3.97E+02	6.82E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.22E+03	1.55E+01	8.77E-02	4.54E+00	1.62E+00	2.41E+02	1.87E-02	1.73E+02	9.34E-03
UM-750S-3000E (6-12")	1.72E-01	1.72E-01	1.23E-01	1.38E+02	2.37E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.12E+03	5.38E+00	8.77E-02	4.54E+00	5.62E-01	2.41E+02	1.87E-02	1.73E+02	3.25E-03
BRSD-3 (6-12")	1.72E-01	1.72E-01	1.23E-01	4.29E+01	7.37E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.48E+02	1.67E+00	8.77E-02	4.54E+00	1.75E-01	2.41E+02	1.87E-02	1.73E+02	1.01E-03
UM-500S-3250E (6-12")	1.72E-01	1.72E-01	1.23E-01	7.50E+01	1.29E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	6.08E+02	2.92E+00	8.77E-02	4.54E+00	3.05E-01	2.41E+02	1.87E-02	1.73E+02	1.76E-03
UM-500S-3000E (6-12")	1.72E-01	1.72E-01	1.23E-01	1.38E+01	2.37E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.12E+02	5.38E-01	8.77E-02	4.54E+00	5.62E-02	2.41E+02	1.87E-02	1.73E+02	3.25E-04
UM-500S-2750E (6-12")	1.72E-01	1.72E-01	1.23E-01	8.37E+01	1.44E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	6.78E+02	3.26E+00	8.77E-02	4.54E+00	3.40E-01	2.41E+02	1.87E-02	1.73E+02	1.97E-03
BRSD-25 (6-12")	1.72E-01	1.72E-01	1.23E-01	1.30E+02	2.22E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.05E+03	5.04E+00	8.77E-02	4.54E+00	5.27E-01	2.41E+02	1.87E-02	1.73E+02	3.05E-03
UM-250S-3000E (6-12")	1.72E-01	1.72E-01	1.23E-01	1.58E+02	2.71E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.28E+03	6.15E+00	8.77E-02	4.54E+00	6.43E-01	2.41E+02	1.87E-02	1.73E+02	3.71E-03
UM-250S-3250E (6-12")	1.72E-01	1.72E-01	1.23E-01	1.32E+01	2.26E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.07E+02	5.14E-01	8.77E-02	4.54E+00	5.37E-02	2.41E+02	1.87E-02	1.73E+02	3.10E-04
BRSD-24 (6-12")	1.72E-01	1.72E-01	1.23E-01	2.83E+02	4.85E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.29E+03	1.10E+01	8.77E-02	4.54E+00	1.15E+00	2.41E+02	1.87E-02	1.73E+02	6.64E-03
UM-250S-2750E (6-12")	1.72E-01	1.72E-01	1.23E-01	2.97E+02	5.10E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.41E+03	1.16E+01	8.77E-02	4.54E+00	1.21E+00	2.41E+02	1.87E-02	1.73E+02	6.99E-03
UM-250S-2500E (6-12")	1.72E-01	1.72E-01	1.23E-01	1.05E+01	1.81E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	8.54E+01	4.10E-01	8.77E-02	4.54E+00	4.29E-02	2.41E+02	1.87E-02	1.73E+02	2.48E-04
BRSD-2 (6-12")	1.72E-01	1.72E-01	1.23E-01	5.21E+02	8.93E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.22E+03	2.03E+01	8.77E-02	4.54E+00	2.12E+00	2.41E+02	1.87E-02	1.73E+02	1.22E-02
UM-500N-2500E (6-12")	1.72E-01	1.72E-01	1.23E-01	9.43E+00	1.62E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	7.64E+01	3.67E-01	8.77E-02	4.54E+00	3.84E-02	2.41E+02	1.87E-02	1.73E+02	2.22E-04
UM-250N-2500E (6-12")	1.72E-01	1.72E-01	1.23E-01	1.20E+02	2.06E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	9.75E+02	4.68E+00	8.77E-02	4.54E+00	4.90E-01	2.41E+02	1.87E-02	1.73E+02	2.83E-03
UM-250N-2250E (6-12")	1.72E-01	1.72E-01	1.23E-01	2.39E+01	4.11E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.94E+02	9.32E-01	8.77E-02	4.54E+00	9.74E-02	2.41E+02	1.87E-02	1.73E+02	5.63E-04
Western Upper Marsh (6-12")																						**Maximum HQ (Eastern Upper Marsh, 6-12")**	**1.22E-02**
UM-500S-2500E (6-12")	1.72E-01	1.72E-01	1.23E-01	1.51E+01	2.58E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.22E+02	5.86E-01	8.77E-02	4.54E+00	6.13E-02	2.41E+02	1.87E-02	1.73E+02	3.54E-04
UM-0N-2000E (6-12")	1.72E-01	1.72E-01	1.23E-01	4.05E+02	6.94E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.28E+03	1.58E+01	8.77E-02	4.54E+00	1.65E+00	2.41E+02	1.87E-02	1.73E+02	9.52E-03
UM-500S-2000E (6-12")	1.72E-01	1.72E-01	1.23E-01	1.16E+01	1.99E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	9.40E+01	4.52E-01	8.77E-02	4.54E+00	4.72E-02	2.41E+02	1.87E-02	1.73E+02	2.73E-04
UM-250N-1750E (6-12")	1.72E-01	1.72E-01	1.23E-01	1.22E+01	2.09E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	9.87E+01	4.74E-01	8.77E-02	4.54E+00	4.96E-02	2.41E+02	1.87E-02	1.73E+02	2.86E-04
UM-0N-1500E (6-12")	1.72E-01	1.72E-01	1.23E-01	1.37E+01	2.35E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.11E+02	5.33E-01	8.77E-02	4.54E+00	5.57E-02	2.41E+02	1.87E-02	1.73E+02	3.22E-04
UM-250S-1500E (6-12")	1.72E-01	1.72E-01	1.23E-01	1.15E+02	1.97E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	9.31E+02	4.47E+00	8.77E-02	4.54E+00	4.68E-01	2.41E+02	1.87E-02	1.73E+02	2.70E-03
UM-250S-1250E (6-12")	1.72E-01	1.72E-01	1.23E-01	1.26E+01	2.16E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.02E+02	4.90E-01	8.77E-02	4.54E+00	5.12E-02	2.41E+02	1.87E-02	1.73E+02	2.96E-04
BRSD-6 (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-1000E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-750E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-500E (6-12")	1.72E-01	1.72E-01	1.23E-01	1.90E+01	3.26E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.54E+02	7.40E-01	8.77E-02	4.54E+00	7.73E-02	2.41E+02	1.87E-02	1.73E+02	4.47E-04
UM-250S-500E (6-12")	1.72E-01	1.72E-01	1.23E-01	1.21E+01	2.07E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	9.80E+01	4.71E-01	8.77E-02	4.54E+00	4.92E-02	2.41E+02	1.87E-02	1.73E+02	2.84E-04
UM-0N-250E (6-12")	1.72E-01	1.72E-01	1.23E-01	3.32E+01	5.69E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.69E+02	1.29E+00	8.77E-02	4.54E+00	1.35E-01	2.41E+02	1.87E-02	1.73E+02	7.80E-04
UM-250S-250E (6-12")	1.72E-01	1.72E-01	1.23E-01	1.18E+01	2.02E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	9.53E+01	4.58E-01	8.77E-02	4.54E+00	4.79E-02	2.41E+02	1.87E-02	1.73E+02	2.76E-04
BRSD-7 (6-12")	1.72E-01	1.72E-01	1.23E-01	1.42E+01	2.43E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.15E+02	5.52E-01	8.77E-02	4.54E+00	5.77E-02	2.41E+02	1.87E-02	1.73E+02	3.34E-04
BRSD-8 (6-12")	1.72E-01	1.72E-01	1.23E-01	3.70E+01	6.35E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.00E+02	1.44E+00	8.77E-02	4.54E+00	1.51E-01	2.41E+02	1.87E-02	1.73E+02	8.70E-04
UM-500S-500E (6-12")	1.72E-01	1.72E-01	1.23E-01	8.96E+00	1.54E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	7.26E+01	3.49E-01	8.77E-02	4.54E+00	3.65E-02	2.41E+02	1.87E-02	1.73E+02	2.11E-04
BRSD-9 (6-12")	1.72E-01	1.72E-01	1.23E-01	1.05E+01	1.80E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	8.49E+01	4.08E-01	8.77E-02	4.54E+00	4.26E-02	2.41E+02	1.87E-02	1.73E+02	2.46E-04
BRSD-10 (6-12")	1.72E-01	1.72E-01	1.23E-01	1.69E+02	2.90E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.37E+03	6.58E+00	8.77E-02	4.54E+00	6.88E-01	2.41E+02	1.87E-02	1.73E+02	3.97E-03
BRSD-11 (6-12")	1.72E-01	1.72E-01	1.23E-01	1.28E+01	2.20E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.04E+02	5.00E-01	8.77E-02	4.54E+00	5.22E-02	2.41E+02	1.87E-02	1.73E+02	3.02E-04
Middle Marsh (0-2")																						**Maximum HQ (Western Upper Marsh, 6-12")**	**9.52E-03**
MMSD-201 (0-2")	1.72E-01	1.72E-01	1.23E-01	6.22E+01	1.07E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.04E+02	2.42E+00	8.77E-02	4.54E+00	2.53E-01	2.41E+02	1.87E-02	1.73E+02	1.46E-03
MMSD-202 (0-2")	1.72E-01	1.72E-01	1.23E-01	8.57E+01	1.47E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	6.95E+02	3.34E+00	8.77E-02	4.54E+00	3.49E-01	2.41E+02	1.87E-02	1.73E+02	2.02E-03

TABLE C-12EA: LEAD DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 12 - MARSH, TERRESTRIAL RECEPTORS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 118.73

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Red Fox (Carnivorous Mammals)																							
Middle Marsh (2-6")																						**Maximum HQ (Middle Marsh, 0-2")**	**2.02E-03**
MMSD-201 (2-6")	1.72E-01	1.72E-01	1.23E-01	7.67E+01	1.32E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	6.22E+02	2.99E+00	8.77E-02	4.54E+00	3.12E-01	2.41E+02	1.87E-02	1.73E+02	1.80E-03
MMSD-202 (2-6")	1.72E-01	1.72E-01	1.23E-01	1.02E+02	1.75E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	8.28E+02	3.98E+00	8.77E-02	4.54E+00	4.16E-01	2.41E+02	1.87E-02	1.73E+02	2.40E-03
Middle Marsh (6-12")																						**Maximum HQ (Middle Marsh, 2-6")**	**2.40E-03**
MMSD-201 (6-12")	1.72E-01	1.72E-01	1.23E-01	1.19E+02	2.05E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	9.67E+02	4.64E+00	8.77E-02	4.54E+00	4.86E-01	2.41E+02	1.87E-02	1.73E+02	2.81E-03
MMSD-202 (6-12")	1.72E-01	1.72E-01	1.23E-01	3.23E+01	5.55E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.62E+02	1.26E+00	8.77E-02	4.54E+00	1.32E-01	2.41E+02	1.87E-02	1.73E+02	7.60E-04
Lower Marsh (0-2")																						**Maximum HQ (Middle Marsh, 6-12")**	**2.81E-03**
LMSD-201 (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
LMSD-202 (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
LMSD-203 (0-2")	1.72E-01	1.72E-01	1.23E-01	9.87E+00	1.69E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	8.00E+01	3.84E-01	8.77E-02	4.54E+00	4.02E-02	2.41E+02	1.87E-02	1.73E+02	2.32E-04
LMSD-204 (0-2")	1.72E-01	1.72E-01	1.23E-01	1.11E+01	1.90E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	9.00E+01	4.32E-01	8.77E-02	4.54E+00	4.52E-02	2.41E+02	1.87E-02	1.73E+02	2.61E-04
Lower Marsh (2-6")																						**Maximum HQ (Lower Marsh, 0-2")**	**2.61E-04**
LMSD-201 (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
LMSD-202 (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
LMSD-203 (2-6")	1.72E-01	1.72E-01	1.23E-01	1.05E+01	1.80E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	8.50E+01	4.08E-01	8.77E-02	4.54E+00	4.27E-02	2.41E+02	1.87E-02	1.73E+02	2.47E-04
LMSD-204 (2-6")	1.72E-01	1.72E-01	1.23E-01	1.07E+01	1.84E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	8.70E+01	4.18E-01	8.77E-02	4.54E+00	4.37E-02	2.41E+02	1.87E-02	1.73E+02	2.52E-04
Lower Marsh (6-12")																						**Maximum HQ (Lower Marsh, 2-6")**	**2.52E-04**
LMSD-201 (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
LMSD-202 (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
LMSD-203 (6-12")	1.72E-01	1.72E-01	1.23E-01	9.99E+00	1.71E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	8.10E+01	3.89E-01	8.77E-02	4.54E+00	4.07E-02	2.41E+02	1.87E-02	1.73E+02	2.35E-04
LMSD-204 (6-12")	1.72E-01	1.72E-01	1.23E-01	1.04E+01	1.78E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	8.40E+01	4.03E-01	8.77E-02	4.54E+00	4.22E-02	2.41E+02	1.87E-02	1.73E+02	2.44E-04
																						Maximum HQ (Lower Marsh, 6-12")	**2.44E-04**
Masked Shrew (Omnivorous Mammals, Wetland)																							
Reference Sites																							
BRSD-5 (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	2.22E+00	1.44E+02	1.22E+00	1.10E-03	6.47E+01	7.12E-02	1.00E+00	5.50E-03	2.34E+02	2.41E+02	1.87E-02	2.59E+02	9.04E-01
BRSD-5 (2-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	2.22E+00	1.37E+02	1.16E+00	1.10E-03	6.17E+01	6.79E-02	1.00E+00	5.50E-03	2.23E+02	2.41E+02	1.87E-02	2.59E+02	8.62E-01
BRSD-5 (6-12")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	2.22E+00	1.75E+02	1.49E+00	1.10E-03	7.90E+01	8.70E-02	1.00E+00	5.50E-03	2.86E+02	2.41E+02	1.87E-02	2.59E+02	1.10E+00
PGBG-1 (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	2.22E+00	1.22E+02	1.03E+00	1.10E-03	5.50E+01	6.06E-02	1.00E+00	5.50E-03	1.99E+02	2.41E+02	1.87E-02	2.59E+02	7.69E-01
PGBG-1 (2-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	2.22E+00	2.24E+02	1.90E+00	1.10E-03	1.01E+02	1.11E-01	1.00E+00	5.50E-03	3.66E+02	2.41E+02	1.87E-02	2.59E+02	1.41E+00
PGBG-1 (6-12")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	2.22E+00	3.86E+02	3.27E+00	1.10E-03	1.74E+02	1.92E-01	1.00E+00	5.50E-03	6.30E+02	2.41E+02	1.87E-02	2.59E+02	2.43E+00
PGBG-2 (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	2.22E+00	2.33E+02	1.97E+00	1.10E-03	1.05E+02	1.16E-01	1.00E+00	5.50E-03	3.80E+02	2.41E+02	1.87E-02	2.59E+02	1.47E+00
PGBG-2 (2-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	2.22E+00	2.40E+02	2.03E+00	1.10E-03	1.08E+02	1.19E-01	1.00E+00	5.50E-03	3.91E+02	2.41E+02	1.87E-02	2.59E+02	1.51E+00
PGBG-2 (6-12")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	2.22E+00	2.51E+02	2.12E+00	1.10E-03	1.13E+02	1.24E-01	1.00E+00	5.50E-03	4.09E+02	2.41E+02	1.87E-02	2.59E+02	1.58E+00
Eastern Upper Marsh (0-2")																						**Minimum HQ (Reference Sites)**	**7.69E-01**
UM-1000S-3500E (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	2.94E+01	5.20E+04	4.41E+02	1.10E-03	1.77E+03	1.95E+00	1.00E+00	5.50E-03	8.05E+04	2.41E+02	1.87E-02	2.59E+02	3.11E+02
BRSD-15 (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	2.94E+01	1.97E+03	1.67E+01	1.10E-03	6.69E+01	7.37E-02	1.00E+00	5.50E-03	3.04E+03	2.41E+02	1.87E-02	2.59E+02	1.17E+01
BRSD-4 (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	2.94E+01	3.26E+03	2.76E+01	1.10E-03	1.11E+02	1.22E-01	1.00E+00	5.50E-03	5.05E+03	2.41E+02	1.87E-02	2.59E+02	1.95E+01
UM-750S-3500E (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	2.94E+01	6.59E+04	5.58E+02	1.10E-03	2.24E+03	2.47E+00	1.00E+00	5.50E-03	1.02E+05	2.41E+02	1.87E-02	2.59E+02	3.93E+02
BRSD-16 (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	2.94E+01	6.17E+04	5.23E+02	1.10E-03	2.10E+03	2.31E+00	1.00E+00	5.50E-03	9.55E+04	2.41E+02	1.87E-02	2.59E+02	3.69E+02
UM-750S-3000E (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	2.94E+01	3.53E+04	2.99E+02	1.10E-03	1.20E+03	1.32E+00	1.00E+00	5.50E-03	5.46E+04	2.41E+02	1.87E-02	2.59E+02	2.11E+02
BRSD-3 (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	2.94E+01	3.20E+04	2.71E+02	1.10E-03	1.09E+03	1.20E+00	1.00E+00	5.50E-03	4.96E+04	2.41E+02	1.87E-02	2.59E+02	1.91E+02
UM-500S-3250E (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	2.94E+01	6.50E+04	5.50E+02	1.10E-03	2.21E+03	2.43E+00	1.00E+00	5.50E-03	1.01E+05	2.41E+02	1.87E-02	2.59E+02	3.88E+02
UM-500S-3000E (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	2.94E+01	6.23E+04	5.28E+02	1.10E-03	2.12E+03	2.33E+00	1.00E+00	5.50E-03	9.64E+04	2.41E+02	1.87E-02	2.59E+02	3.72E+02
UM-500S-2750E (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	2.94E+01	3.56E+04	3.01E+02	1.10E-03	1.21E+03	1.33E+00	1.00E+00	5.50E-03	5.50E+04	2.41E+02	1.87E-02	2.59E+02	2.12E+02
BRSD-25 (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	2.94E+01	2.46E+04	2.08E+02	1.10E-03	8.36E+02	9.21E-01	1.00E+00	5.50E-03	3.80E+04	2.41E+02	1.87E-02	2.59E+02	1.47E+02
UM-250S-3000E (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	2.94E+01	4.94E+04	4.18E+02	1.10E-03	1.68E+03	1.85E+00	1.00E+00	5.50E-03	7.64E+04	2.41E+02	1.87E-02	2.59E+02	2.95E+02
UM-250S-3250E (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	2.94E+01	4.94E+03	4.18E+01	1.10E-03	1.68E+02	1.85E-01	1.00E+00	5.50E-03	7.64E+03	2.41E+02	1.87E-02	2.59E+02	2.95E+01
BRSD-24 (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	2.94E+01	3.18E+04	2.69E+02	1.10E-03	1.08E+03	1.19E+00	1.00E+00	5.50E-03	4.91E+04	2.41E+02	1.87E-02	2.59E+02	1.90E+02
UM-250S-2750E (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	2.94E+01	2.85E+04	2.41E+02	1.10E-03	9.68E+02	1.07E+00	1.00E+00	5.50E-03	4.40E+04	2.41E+02	1.87E-02	2.59E+02	1.70E+02
UM-250S-2500E (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	2.94E+01	3.38E+03	2.86E+01	1.10E-03	1.15E+02	1.27E-01	1.00E+00	5.50E-03	5.23E+03	2.41E+02	1.87E-02	2.59E+02	2.02E+01
UM-0N-2500E (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	2.94E+01	5.88E+04	4.98E+02	1.10E-03	2.00E+03	2.20E+00	1.00E+00	5.50E-03	9.10E+04	2.41E+02	1.87E-02	2.59E+02	3.51E+02
UM-0N-250E (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	2.94E+01	8.97E+03	7.60E+01	1.10E-03	3.05E+02	3.36E-01	1.00E+00	5.50E-03	1.39E+04	2.41E+02	1.87E-02	2.59E+02	5.36E+01
BRSD-2 (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	2.94E+01	3.79E+04	3.21E+02	1.10E-03	1.29E+03	1.42E+00	1.00E+00	5.50E-03	5.87E+04	2.41E+02	1.87E-02	2.59E+02	2.27E+02

TABLE C-12EA: LEAD DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 12 - MARSH, TERRESTRIAL RECEPTORS (Continued)
Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)
calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 118.73

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Masked Shrew (Omnivorous Mammals, Wetland)																							
UM-500N-2500E (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	2.94E+01	2.68E+03	2.27E+01	1.10E-03	9.12E+01	1.00E-01	1.00E+00	5.50E-03	4.15E+03	2.41E+02	1.87E-02	2.59E+02	1.60E+01
UM-250N-2500E (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	2.94E+01	4.47E+04	3.79E+02	1.10E-03	1.52E+03	1.67E+00	1.00E+00	5.50E-03	6.91E+04	2.41E+02	1.87E-02	2.59E+02	2.67E+02
UM-250N-2250E (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	2.94E+01	3.94E+04	3.34E+02	1.10E-03	1.34E+03	1.48E+00	1.00E+00	5.50E-03	6.09E+04	2.41E+02	1.87E-02	2.59E+02	2.35E+02
Western Upper Marsh (0-2")																						**Maximum HQ (Eastern Upper Marsh, 0-2")**	**3.93E+02**
UM-500S-2500E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-2000E (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	8.65E+00	2.14E+04	1.82E+02	1.10E-03	2.48E+03	2.73E+00	1.00E+00	5.50E-03	3.35E+04	2.41E+02	1.87E-02	2.59E+02	1.29E+02
UM-500S-2000E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-250N-1750E (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	8.65E+00	8.32E+02	7.05E+00	1.10E-03	9.62E+01	1.06E-01	1.00E+00	5.50E-03	1.30E+03	2.41E+02	1.87E-02	2.59E+02	5.02E+00
UM-0N-1500E (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	8.65E+00	8.82E+02	7.47E+00	1.10E-03	1.02E+02	1.12E-01	1.00E+00	5.50E-03	1.38E+03	2.41E+02	1.87E-02	2.59E+02	5.32E+00
UM-250S-1500E (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	8.65E+00	1.50E+04	1.27E+02	1.10E-03	1.73E+03	1.90E+00	1.00E+00	5.50E-03	2.34E+04	2.41E+02	1.87E-02	2.59E+02	9.03E+01
UM-250S-1250E (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	8.65E+00	8.20E+02	6.94E+00	1.10E-03	9.48E+01	1.04E-01	1.00E+00	5.50E-03	1.28E+03	2.41E+02	1.87E-02	2.59E+02	4.95E+00
BRSD-6 (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-1000E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-750E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-500E (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	8.65E+00	1.41E+03	1.19E+01	1.10E-03	1.63E+02	1.79E-01	1.00E+00	5.50E-03	2.20E+03	2.41E+02	1.87E-02	2.59E+02	8.51E+00
UM-250S-500E (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	8.65E+00	6.06E+02	5.13E+00	1.10E-03	7.01E+01	7.72E-02	1.00E+00	5.50E-03	9.47E+02	2.41E+02	1.87E-02	2.59E+02	3.66E+00
UM-250S-250E (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	8.65E+00	1.13E+03	9.59E+00	1.10E-03	1.31E+02	1.44E-01	1.00E+00	5.50E-03	1.77E+03	2.41E+02	1.87E-02	2.59E+02	6.84E+00
BRSD-7 (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-8 (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	8.65E+00	1.95E+03	1.66E+01	1.10E-03	2.26E+02	2.49E-01	1.00E+00	5.50E-03	3.05E+03	2.41E+02	1.87E-02	2.59E+02	1.18E+01
UM-500S-500E (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	8.65E+00	5.74E+02	4.86E+00	1.10E-03	6.64E+01	7.31E-02	1.00E+00	5.50E-03	8.97E+02	2.41E+02	1.87E-02	2.59E+02	3.47E+00
BRSD-9 (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	8.65E+00	2.46E+03	2.09E+01	1.10E-03	2.85E+02	3.14E-01	1.00E+00	5.50E-03	3.85E+03	2.41E+02	1.87E-02	2.59E+02	1.49E+01
BRSD-10 (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	8.65E+00	5.46E+03	4.63E+01	1.10E-03	6.32E+02	6.96E-01	1.00E+00	5.50E-03	8.54E+03	2.41E+02	1.87E-02	2.59E+02	3.30E+01
BRSD-11 (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	8.65E+00	7.99E+02	6.77E+00	1.10E-03	9.24E+01	1.02E-01	1.00E+00	5.50E-03	1.25E+03	2.41E+02	1.87E-02	2.59E+02	4.82E+00
Eastern Upper Marsh (2-6")																						**Maximum HQ (Western Upper Marsh, 0-2")**	**1.29E+02**
UM-1000S-3500E (2-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	2.94E+01	9.41E+03	7.97E+01	1.10E-03	3.20E+02	3.52E-01	1.00E+00	5.50E-03	1.46E+04	2.41E+02	1.87E-02	2.59E+02	5.62E+01
BRSD-15 (2-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	2.94E+01	3.29E+03	2.79E+01	1.10E-03	1.12E+02	1.23E-01	1.00E+00	5.50E-03	5.09E+03	2.41E+02	1.87E-02	2.59E+02	1.97E+01
BRSD-4 (2-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	2.94E+01	3.35E+03	2.84E+01	1.10E-03	1.14E+02	1.26E-01	1.00E+00	5.50E-03	5.18E+03	2.41E+02	1.87E-02	2.59E+02	2.00E+01
UM-750S-3500E (2-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	2.94E+01	2.93E+04	2.48E+02	1.10E-03	9.96E+02	1.10E+00	1.00E+00	5.50E-03	4.53E+04	2.41E+02	1.87E-02	2.59E+02	1.75E+02
BRSD-16 (2-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	2.94E+01	9.20E+04	7.79E+02	1.10E-03	3.13E+03	3.45E+00	1.00E+00	5.50E-03	1.42E+05	2.41E+02	1.87E-02	2.59E+02	5.50E+02
UM-750S-3000E (2-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	2.94E+01	3.15E+04	2.66E+02	1.10E-03	1.07E+03	1.18E+00	1.00E+00	5.50E-03	4.87E+04	2.41E+02	1.87E-02	2.59E+02	1.88E+02
BRSD-3 (2-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	2.94E+01	6.35E+04	5.38E+02	1.10E-03	2.16E+03	2.38E+00	1.00E+00	5.50E-03	9.82E+04	2.41E+02	1.87E-02	2.59E+02	3.79E+02
UM-500S-3250E (2-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	2.94E+01	4.29E+04	3.64E+02	1.10E-03	1.46E+03	1.61E+00	1.00E+00	5.50E-03	6.64E+04	2.41E+02	1.87E-02	2.59E+02	2.56E+02
UM-500S-3000E (2-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	2.94E+01	4.06E+03	3.44E+01	1.10E-03	1.38E+02	1.52E-01	1.00E+00	5.50E-03	6.28E+03	2.41E+02	1.87E-02	2.59E+02	2.42E+01
UM-500S-2750E (2-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	2.94E+01	2.33E+04	1.98E+02	1.10E-03	7.94E+02	8.74E-01	1.00E+00	5.50E-03	3.61E+04	2.41E+02	1.87E-02	2.59E+02	1.39E+02
BRSD-25 (2-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	2.94E+01	4.29E+04	3.64E+02	1.10E-03	1.46E+03	1.61E+00	1.00E+00	5.50E-03	6.64E+04	2.41E+02	1.87E-02	2.59E+02	2.56E+02
UM-250S-3000E (2-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	2.94E+01	5.73E+04	4.86E+02	1.10E-03	1.95E+03	2.15E+00	1.00E+00	5.50E-03	8.87E+04	2.41E+02	1.87E-02	2.59E+02	3.42E+02
UM-250S-3250E (2-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	2.94E+01	2.75E+03	2.33E+01	1.10E-03	9.35E+01	1.03E-01	1.00E+00	5.50E-03	4.25E+03	2.41E+02	1.87E-02	2.59E+02	1.64E+01
BRSD-24 (2-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	2.94E+01	7.82E+04	6.62E+02	1.10E-03	2.66E+03	2.93E+00	1.00E+00	5.50E-03	1.21E+05	2.41E+02	1.87E-02	2.59E+02	4.67E+02
UM-250S-2750E (2-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	2.94E+01	6.12E+04	5.18E+02	1.10E-03	2.08E+03	2.29E+00	1.00E+00	5.50E-03	9.46E+04	2.41E+02	1.87E-02	2.59E+02	3.65E+02
UM-0N-2500E (2-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	2.94E+01	3.70E+04	3.14E+02	1.10E-03	1.26E+03	1.39E+00	1.00E+00	5.50E-03	5.73E+04	2.41E+02	1.87E-02	2.59E+02	2.21E+02
BRSD-2 (2-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	2.94E+01	4.67E+04	3.96E+02	1.10E-03	1.59E+03	1.75E+00	1.00E+00	5.50E-03	7.23E+04	2.41E+02	1.87E-02	2.59E+02	2.79E+02
UM-500N-2500E (2-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	2.94E+01	2.61E+03	2.21E+01	1.10E-03	8.89E+01	9.79E-02	1.00E+00	5.50E-03	4.04E+03	2.41E+02	1.87E-02	2.59E+02	1.56E+01
UM-250N-2500E (2-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	2.94E+01	3.15E+04	2.66E+02	1.10E-03	1.07E+03	1.18E+00	1.00E+00	5.50E-03	4.87E+04	2.41E+02	1.87E-02	2.59E+02	1.88E+02
UM-250N-2250E (2-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	2.94E+01	5.65E+03	4.78E+01	1.10E-03	1.92E+02	2.11E-01	1.00E+00	5.50E-03	8.73E+03	2.41E+02	1.87E-02	2.59E+02	3.37E+01
Western Upper Marsh (2-6")																						**Maximum HQ (Eastern Upper Marsh, 2-6")**	**5.50E+02**
UM-500S-2500E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-2000E (2-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	8.65E+00	2.13E+04	1.80E+02	1.10E-03	2.46E+03	2.71E+00	1.00E+00	5.50E-03	3.32E+04	2.41E+02	1.87E-02	2.59E+02	1.28E+02
UM-500S-2000E (2-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	8.65E+00	7.97E+02	6.75E+00	1.10E-03	9.22E+01	1.02E-01	1.00E+00	5.50E-03	1.25E+03	2.41E+02	1.87E-02	2.59E+02	4.81E+00
UM-250N-1750E (2-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	8.65E+00	8.09E+02	6.85E+00	1.10E-03	9.36E+01	1.03E-01	1.00E+00	5.50E-03	1.27E+03	2.41E+02	1.87E-02	2.59E+02	4.88E+00
UM-0N-1500E (2-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	8.65E+00	9.60E+02	8.13E+00	1.10E-03	1.11E+02	1.22E-01	1.00E+00	5.50E-03	1.50E+03	2.41E+02	1.87E-02	2.59E+02	5.79E+00
UM-250S-1500E (2-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	8.65E+00	1.44E+04	1.22E+02	1.10E-03	1.66E+03	1.83E+00	1.00E+00	5.50E-03	2.24E+04	2.41E+02	1.87E-02	2.59E+02	8.66E+01

TABLE C-12EA: LEAD DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 12 - MARSH, TERRESTRIAL RECEPTORS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 118.73

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Masked Shrew (Omnivorous Mammals, Wetland)																							
UM-250S-1250E (2-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	8.65E+00	8.07E+02	6.83E+00	1.10E-03	9.33E+01	1.03E-01	1.00E+00	5.50E-03	1.26E+03	2.41E+02	1.87E-02	2.59E+02	4.87E+00
BRSD-6 (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-1000E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-750E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-500E (2-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	8.65E+00	4.51E+03	3.82E+01	1.10E-03	5.22E+02	5.75E-01	1.00E+00	5.50E-03	7.06E+03	2.41E+02	1.87E-02	2.59E+02	2.72E+01
UM-250S-500E (2-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	8.65E+00	8.25E+02	6.99E+00	1.10E-03	9.54E+01	1.05E-01	1.00E+00	5.50E-03	1.29E+03	2.41E+02	1.87E-02	2.59E+02	4.98E+00
UM-0N-250E (2-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	8.65E+00	2.44E+03	2.07E+01	1.10E-03	2.82E+02	3.11E-01	1.00E+00	5.50E-03	3.81E+03	2.41E+02	1.87E-02	2.59E+02	1.47E+01
UM-250S-250E (2-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	8.65E+00	1.05E+03	8.86E+00	1.10E-03	1.21E+02	1.33E-01	1.00E+00	5.50E-03	1.64E+03	2.41E+02	1.87E-02	2.59E+02	6.31E+00
BRSD-7 (2-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	8.65E+00	5.39E+02	4.56E+00	1.10E-03	6.23E+01	6.86E-02	1.00E+00	5.50E-03	8.42E+02	2.41E+02	1.87E-02	2.59E+02	3.25E+00
BRSD-8 (2-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	8.65E+00	2.87E+03	2.43E+01	1.10E-03	3.32E+02	3.66E-01	1.00E+00	5.50E-03	4.49E+03	2.41E+02	1.87E-02	2.59E+02	1.73E+01
UM-500S-500E (2-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	8.65E+00	6.60E+02	5.59E+00	1.10E-03	7.63E+01	8.40E-02	1.00E+00	5.50E-03	1.03E+03	2.41E+02	1.87E-02	2.59E+02	3.98E+00
BRSD-9 (2-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	8.65E+00	5.08E+02	4.31E+00	1.10E-03	5.88E+01	6.47E-02	1.00E+00	5.50E-03	7.95E+02	2.41E+02	1.87E-02	2.59E+02	3.07E+00
BRSD-10 (2-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	8.65E+00	6.95E+03	5.89E+01	1.10E-03	8.04E+02	8.85E-01	1.00E+00	5.50E-03	1.09E+04	2.41E+02	1.87E-02	2.59E+02	4.20E+01
BRSD-11 (2-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	8.65E+00	8.01E+02	6.78E+00	1.10E-03	9.26E+01	1.02E-01	1.00E+00	5.50E-03	1.25E+03	2.41E+02	1.87E-02	2.59E+02	4.83E+00
Eastern Upper Marsh (6-12")																						**Maximum HQ (Western Upper Marsh, 2-6")**	**1.28E+02**
UM-1000S-3500E (6-12")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	2.94E+01	2.40E+03	2.03E+01	1.10E-03	8.17E+01	9.00E-02	1.00E+00	5.50E-03	3.72E+03	2.41E+02	1.87E-02	2.59E+02	1.43E+01
BRSD-15 (6-12")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	2.94E+01	2.56E+03	2.17E+01	1.10E-03	8.70E+01	9.58E-02	1.00E+00	5.50E-03	3.96E+03	2.41E+02	1.87E-02	2.59E+02	1.53E+01
BRSD-4 (6-12")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	2.94E+01	6.23E+03	5.28E+01	1.10E-03	2.12E+02	2.33E-01	1.00E+00	5.50E-03	9.64E+03	2.41E+02	1.87E-02	2.59E+02	3.72E+01
UM-750S-3500E (6-12")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	2.94E+01	3.56E+04	3.01E+02	1.10E-03	1.21E+03	1.33E+00	1.00E+00	5.50E-03	5.50E+04	2.41E+02	1.87E-02	2.59E+02	2.12E+02
BRSD-16 (6-12")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	2.94E+01	9.47E+04	8.02E+02	1.10E-03	3.22E+03	3.55E+00	1.00E+00	5.50E-03	1.46E+05	2.41E+02	1.87E-02	2.59E+02	5.65E+02
UM-750S-3000E (6-12")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	2.94E+01	3.29E+04	2.79E+02	1.10E-03	1.12E+03	1.23E+00	1.00E+00	5.50E-03	5.09E+04	2.41E+02	1.87E-02	2.59E+02	1.97E+02
BRSD-3 (6-12")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	2.94E+01	1.02E+04	8.67E+01	1.10E-03	3.48E+02	3.83E-01	1.00E+00	5.50E-03	1.58E+04	2.41E+02	1.87E-02	2.59E+02	6.11E+01
UM-500S-3250E (6-12")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	2.94E+01	1.79E+04	1.51E+02	1.10E-03	6.08E+02	6.69E-01	1.00E+00	5.50E-03	2.77E+04	2.41E+02	1.87E-02	2.59E+02	1.07E+02
UM-500S-3000E (6-12")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	2.94E+01	3.29E+03	2.79E+01	1.10E-03	1.12E+02	1.23E-01	1.00E+00	5.50E-03	5.09E+03	2.41E+02	1.87E-02	2.59E+02	1.97E+01
UM-500S-2750E (6-12")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	2.94E+01	1.99E+04	1.69E+02	1.10E-03	6.78E+02	7.47E-01	1.00E+00	5.50E-03	3.08E+04	2.41E+02	1.87E-02	2.59E+02	1.19E+02
BRSD-25 (6-12")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	2.94E+01	3.09E+04	2.61E+02	1.10E-03	1.05E+03	1.16E+00	1.00E+00	5.50E-03	4.78E+04	2.41E+02	1.87E-02	2.59E+02	1.84E+02
UM-250S-3000E (6-12")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	2.94E+01	3.76E+04	3.19E+02	1.10E-03	1.28E+03	1.41E+00	1.00E+00	5.50E-03	5.82E+04	2.41E+02	1.87E-02	2.59E+02	2.25E+02
UM-250S-3250E (6-12")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	2.94E+01	3.15E+03	2.66E+01	1.10E-03	1.07E+02	1.18E-01	1.00E+00	5.50E-03	4.87E+03	2.41E+02	1.87E-02	2.59E+02	1.88E+01
BRSD-24 (6-12")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	2.94E+01	6.73E+04	5.70E+02	1.10E-03	2.29E+03	2.52E+00	1.00E+00	5.50E-03	1.04E+05	2.41E+02	1.87E-02	2.59E+02	4.02E+02
UM-250S-2750E (6-12")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	2.94E+01	7.09E+04	6.00E+02	1.10E-03	2.41E+03	2.65E+00	1.00E+00	5.50E-03	1.10E+05	2.41E+02	1.87E-02	2.59E+02	4.23E+02
UM-250S-2500E (6-12")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	2.94E+01	2.51E+03	2.13E+01	1.10E-03	8.54E+01	9.40E-02	1.00E+00	5.50E-03	3.88E+03	2.41E+02	1.87E-02	2.59E+02	1.50E+01
BRSD-2 (6-12")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	2.94E+01	1.24E+05	1.05E+03	1.10E-03	4.22E+03	4.65E+00	1.00E+00	5.50E-03	1.92E+05	2.41E+02	1.87E-02	2.59E+02	7.41E+02
UM-500N-2500E (6-12")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	2.94E+01	2.25E+03	1.90E+01	1.10E-03	7.64E+01	8.41E-02	1.00E+00	5.50E-03	3.47E+03	2.41E+02	1.87E-02	2.59E+02	1.34E+01
UM-250N-2500E (6-12")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	2.94E+01	2.87E+04	2.43E+02	1.10E-03	9.75E+02	1.07E+00	1.00E+00	5.50E-03	4.43E+04	2.41E+02	1.87E-02	2.59E+02	1.71E+02
UM-250N-2250E (6-12")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	2.94E+01	5.70E+03	4.83E+01	1.10E-03	1.94E+02	2.14E-01	1.00E+00	5.50E-03	8.82E+03	2.41E+02	1.87E-02	2.59E+02	3.41E+01
Western Upper Marsh (6-12")																						**Maximum HQ (Eastern Upper Marsh, 6-12")**	**7.41E+02**
UM-500S-2500E (6-12")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	8.65E+00	1.05E+03	8.93E+00	1.10E-03	1.22E+02	1.34E-01	1.00E+00	5.50E-03	1.65E+03	2.41E+02	1.87E-02	2.59E+02	6.37E+00
UM-0N-2000E (6-12")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	8.65E+00	2.84E+04	2.40E+02	1.10E-03	3.28E+03	3.61E+00	1.00E+00	5.50E-03	4.43E+04	2.41E+02	1.87E-02	2.59E+02	1.71E+02
UM-500S-2000E (6-12")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	8.65E+00	8.13E+02	6.88E+00	1.10E-03	9.40E+01	1.04E-01	1.00E+00	5.50E-03	1.27E+03	2.41E+02	1.87E-02	2.59E+02	4.91E+00
UM-250N-1750E (6-12")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	8.65E+00	8.53E+02	7.23E+00	1.10E-03	9.87E+01	1.09E-01	1.00E+00	5.50E-03	1.33E+03	2.41E+02	1.87E-02	2.59E+02	5.15E+00
UM-0N-1500E (6-12")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	8.65E+00	9.60E+02	8.13E+00	1.10E-03	1.11E+02	1.22E-01	1.00E+00	5.50E-03	1.50E+03	2.41E+02	1.87E-02	2.59E+02	5.79E+00
UM-250S-1500E (6-12")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	8.65E+00	8.05E+03	6.82E+01	1.10E-03	9.31E+02	1.03E+00	1.00E+00	5.50E-03	1.26E+04	2.41E+02	1.87E-02	2.59E+02	4.86E+01
UM-250S-1250E (6-12")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	8.65E+00	8.82E+02	7.47E+00	1.10E-03	1.02E+02	1.12E-01	1.00E+00	5.50E-03	1.38E+03	2.41E+02	1.87E-02	2.59E+02	5.32E+00
BRSD-6 (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-1000E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-750E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-500E (6-12")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	8.65E+00	1.33E+03	1.13E+01	1.10E-03	1.54E+02	1.70E-01	1.00E+00	5.50E-03	2.08E+03	2.41E+02	1.87E-02	2.59E+02	8.04E+00
UM-250S-500E (6-12")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	8.65E+00	8.47E+02	7.18E+00	1.10E-03	9.80E+01	1.08E-01	1.00E+00	5.50E-03	1.32E+03	2.41E+02	1.87E-02	2.59E+02	5.11E+00
UM-0N-250E (6-12")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	8.65E+00	2.33E+03	1.97E+01	1.10E-03	2.69E+02	2.96E-01	1.00E+00	5.50E-03	3.64E+03	2.41E+02	1.87E-02	2.59E+02	1.40E+01
UM-250S-250E (6-12")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	8.65E+00	8.24E+02	6.98E+00	1.10E-03	9.53E+01	1.05E-01	1.00E+00	5.50E-03	1.29E+03	2.41E+02	1.87E-02	2.59E+02	4.97E+00
BRSD-7 (6-12")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	8.65E+00	9.94E+02	8.42E+00	1.10E-03	1.15E+02	1.27E-01	1.00E+00	5.50E-03	1.55E+03	2.41E+02	1.87E-02	2.59E+02	6.00E+00

TABLE C-12EA: LEAD DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 12 - MARSH, TERRESTRIAL RECEPTORS (Continued)
Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)
calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 118.73

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Masked Shrew (Omnivorous Mammals, Wetland)																							
BRSD-8 (6-12")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	8.65E+00	2.59E+03	2.20E+01	1.10E-03	3.00E+02	3.30E-01	1.00E+00	5.50E-03	4.05E+03	2.41E+02	1.87E-02	2.59E+02	1.57E+01
UM-500S-500E (6-12")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	8.65E+00	6.28E+02	5.32E+00	1.10E-03	7.26E+01	7.99E-02	1.00E+00	5.50E-03	9.81E+02	2.41E+02	1.87E-02	2.59E+02	3.79E+00
BRSD-9 (6-12")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	8.65E+00	7.34E+02	6.22E+00	1.10E-03	8.49E+01	9.35E-02	1.00E+00	5.50E-03	1.15E+03	2.41E+02	1.87E-02	2.59E+02	4.43E+00
BRSD-10 (6-12")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	8.65E+00	1.18E+04	1.00E+02	1.10E-03	1.37E+03	1.51E+00	1.00E+00	5.50E-03	1.85E+04	2.41E+02	1.87E-02	2.59E+02	7.15E+01
BRSD-11 (6-12")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	8.65E+00	8.99E+02	7.62E+00	1.10E-03	1.04E+02	1.15E-01	1.00E+00	5.50E-03	1.41E+03	2.41E+02	1.87E-02	2.59E+02	5.43E+00
Middle Marsh (0-2")																						**Maximum HQ (Western Upper Marsh, 6-12")**	**1.71E+02**
MMSD-201 (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	8.65E+00	4.36E+03	3.69E+01	1.10E-03	5.04E+02	5.55E-01	1.00E+00	5.50E-03	6.81E+03	2.41E+02	1.87E-02	2.59E+02	2.63E+01
MMSD-202 (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	8.65E+00	6.01E+03	5.09E+01	1.10E-03	6.95E+02	7.65E-01	1.00E+00	5.50E-03	9.39E+03	2.41E+02	1.87E-02	2.59E+02	3.63E+01
Middle Marsh (2-6")																						**Maximum HQ (Middle Marsh, 0-2")**	**3.63E+01**
MMSD-201 (2-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	8.65E+00	5.38E+03	4.56E+01	1.10E-03	6.22E+02	6.85E-01	1.00E+00	5.50E-03	8.41E+03	2.41E+02	1.87E-02	2.59E+02	3.25E+01
MMSD-202 (2-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	8.65E+00	7.16E+03	6.06E+01	1.10E-03	8.28E+02	9.12E-01	1.00E+00	5.50E-03	1.12E+04	2.41E+02	1.87E-02	2.59E+02	4.32E+01
Middle Marsh (6-12")																						**Maximum HQ (Middle Marsh, 2-6")**	**4.32E+01**
MMSD-201 (6-12")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	8.65E+00	8.36E+03	7.08E+01	1.10E-03	9.67E+02	1.06E+00	1.00E+00	5.50E-03	1.31E+04	2.41E+02	1.87E-02	2.59E+02	5.05E+01
MMSD-202 (6-12")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	8.65E+00	2.27E+03	1.92E+01	1.10E-03	2.62E+02	2.88E-01	1.00E+00	5.50E-03	3.54E+03	2.41E+02	1.87E-02	2.59E+02	1.37E+01
Lower Marsh (0-2")																						**Maximum HQ (Middle Marsh, 6-12")**	**5.05E+01**
LMSD-201 (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
LMSD-202 (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
LMSD-203 (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	8.65E+00	6.92E+02	5.86E+00	1.10E-03	8.00E+01	8.81E-02	1.00E+00	5.50E-03	1.08E+03	2.41E+02	1.87E-02	2.59E+02	4.18E+00
LMSD-204 (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	8.65E+00	7.78E+02	6.59E+00	1.10E-03	9.00E+01	9.91E-02	1.00E+00	5.50E-03	1.22E+03	2.41E+02	1.87E-02	2.59E+02	4.70E+00
Lower Marsh (2-6")																						**Maximum HQ (Lower Marsh, 0-2")**	**4.70E+00**
LMSD-201 (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
LMSD-202 (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
LMSD-203 (2-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	8.65E+00	7.35E+02	6.22E+00	1.10E-03	8.50E+01	9.36E-02	1.00E+00	5.50E-03	1.15E+03	2.41E+02	1.87E-02	2.59E+02	4.44E+00
LMSD-204 (2-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	8.65E+00	7.52E+02	6.37E+00	1.10E-03	8.70E+01	9.58E-02	1.00E+00	5.50E-03	1.18E+03	2.41E+02	1.87E-02	2.59E+02	4.54E+00
Lower Marsh (6-12")																						**Maximum HQ (Lower Marsh, 2-6")**	**4.54E+00**
LMSD-201 (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
LMSD-202 (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
LMSD-203 (6-12")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	8.65E+00	7.00E+02	5.93E+00	1.10E-03	8.10E+01	8.92E-02	1.00E+00	5.50E-03	1.09E+03	2.41E+02	1.87E-02	2.59E+02	4.23E+00
LMSD-204 (6-12")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	8.65E+00	7.26E+02	6.15E+00	1.10E-03	8.40E+01	9.25E-02	1.00E+00	5.50E-03	1.14E+03	2.41E+02	1.87E-02	2.59E+02	4.38E+00
																						Maximum HQ (Lower Marsh, 6-12")	**4.38E+00**

Notes: Results are evaluated in order of upstream to downstream.

1 See Tables 3-1 through 3-13 for ingestion rates, foraging ranges used to calculate the SUF, and body weights.
2 BAFs were calculated by dividing site-collected tissue by collocated soil concentrations. The maximum plant and invertebrate BAF calculated for the eastern transect (UMT1) were used for the Eastern Upper Marsh calculations. The maximum plant and invertebrate BAF calculated for the western transect (UMT2) were used for the Western Upper Marsh calculations. The maximum mammal BAF calculated for the eastern transect (UMT1) was used for the Eastern and Western Upper Marsh calculations because no mammals were collected in the Western Upper Marsh.
3 The mammal, plant, and invertebrate concentrations were calculated by multiplying the soil concentration by the BAF to generate a tissue concentration (see note 2).
4 Mammal, plant, and invertebrate daily doses were calculated by multiplying the ingestion rate (see note 1) by the tissue concentration (see note 3).
5 Soil concentration from specified depths below ground surface at point ID from laboratory analysis. Doses were not calculated for detected and non-detected soil concentrations measured below the minimum reference site concentration (0-12"), as indicated by BB. For results that were measured at less than the detection limit, doses were calculated using half of the detection limit.
6 Soil daily dose was calculated by multiplying the soil ingestion rate (see note 1) by soil concentration (see note 5).
7 Total daily dose is calculated using the following equation: total daily dose = ([mammal daily dose (if applicable) + plant daily dose (if applicable) + invertebrate daily dose (if applicable) + soil daily dose]*SUF)/receptor species body weight.
8 The derivation of TRVs is described in Navy (1998). The high TRV was used for dose calculations.
9 Allometrically adjusted TRVs for birds were calculated using the following equation: receptor species TRV = (test species TRV) x (test species body weight / receptor species body weight) $^{(1-1.2)}$.
10 Allometrically adjusted TRVs for mammals were calculated using the following equation: receptor species TRV = (test species TRV) x (test species body weight / receptor species body weight) $^{(1-0.94)}$.
11 HQs were calculated using the following equation: HQ = total daily dose/allometrically adjusted TRV.
12 Green cells indicate an HQ greater than 1.0

BAF	Bioaccumulation Factor	ID	Identification	NA	Not applicable
BB	Below minimum background reference site concentration	kg	Kilogram	Navy	Department of the Navy
EE/CA	Engineering Evaluation/Cost Analysis	kg/day	Kilogram per day	SUF	Site use factor
EU	Exposure Unit	mg/day	Milligram per day	TRV	Toxicity reference value
HQ	Hazard Quotient	mg/kg	Milligram per kilogram		

Sources: Department of the Navy. 1998. "Development of Toxicity Reference Values for Conducting Ecological Risk Assessments at Naval Facilities in California, Interim Final." Prepared by Naval Facilities Engineering Command, Engineering Field Activity West (EFA

TABLE C-12EB: LEAD DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 12 - MARSH, WETLAND RECEPTORS

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **118.73**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Canada Goose (Herbivorous Birds)																							
Reference Sites																							
BRSD-5 (0-2")	8.57E-01	NA	NA	NA	NA	8.57E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	7.03E-02	6.47E+01	4.55E+00	1.21E-01	3.69E+01	1.49E-02	8.75E+00	8.00E-01	1.88E+01	7.91E-04
BRSD-5 (2-6")	8.57E-01	NA	NA	NA	NA	8.57E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	7.03E-02	6.17E+01	4.34E+00	1.21E-01	3.69E+01	1.42E-02	8.75E+00	8.00E-01	1.88E+01	7.55E-04
BRSD-5 (6-12")	8.57E-01	NA	NA	NA	NA	8.57E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	7.03E-02	7.90E+01	5.55E+00	1.21E-01	3.69E+01	1.82E-02	8.75E+00	8.00E-01	1.88E+01	9.66E-04
PGBG-1 (0-2")	8.57E-01	NA	NA	NA	NA	8.57E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	7.03E-02	5.50E+01	3.87E+00	1.21E-01	3.69E+01	1.27E-02	8.75E+00	8.00E-01	1.88E+01	6.73E-04
PGBG-1 (2-6")	8.57E-01	NA	NA	NA	NA	8.57E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	7.03E-02	1.01E+02	7.10E+00	1.21E-01	3.69E+01	2.33E-02	8.75E+00	8.00E-01	1.88E+01	1.24E-03
PGBG-1 (6-12")	8.57E-01	NA	NA	NA	NA	8.57E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	7.03E-02	1.74E+02	1.22E+01	1.21E-01	3.69E+01	4.01E-02	8.75E+00	8.00E-01	1.88E+01	2.13E-03
PGBG-2 (0-2")	8.57E-01	NA	NA	NA	NA	8.57E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	7.03E-02	1.05E+02	7.38E+00	1.21E-01	3.69E+01	2.42E-02	8.75E+00	8.00E-01	1.88E+01	1.28E-03
PGBG-2 (2-6")	8.57E-01	NA	NA	NA	NA	8.57E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	7.03E-02	1.08E+02	7.59E+00	1.21E-01	3.69E+01	2.49E-02	8.75E+00	8.00E-01	1.88E+01	1.32E-03
PGBG-2 (6-12")	8.57E-01	NA	NA	NA	NA	8.57E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	7.03E-02	1.13E+02	7.94E+00	1.21E-01	3.69E+01	2.60E-02	8.75E+00	8.00E-01	1.88E+01	1.38E-03
Eastern Upper Marsh (0-2")																					**Minimum HQ (Reference Sites)**		**6.73E-04**
UM-1000S-3500E (0-2")	8.57E-01	NA	NA	NA	NA	8.57E-01	1.91E-01	3.38E+02	2.90E+02	NA	NA	NA	NA	7.03E-02	1.77E+03	1.24E+02	1.21E-01	3.69E+01	1.36E+00	8.75E+00	8.00E-01	1.88E+01	7.21E-02
BRSD-15 (0-2")	8.57E-01	NA	NA	NA	NA	8.57E-01	1.91E-01	1.28E+01	1.10E+01	NA	NA	NA	NA	7.03E-02	6.69E+01	4.70E+00	1.21E-01	3.69E+01	5.13E-02	8.75E+00	8.00E-01	1.88E+01	2.72E-03
BRSD-4 (0-2")	8.57E-01	NA	NA	NA	NA	8.57E-01	1.91E-01	2.12E+01	1.82E+01	NA	NA	NA	NA	7.03E-02	1.11E+02	7.80E+00	1.21E-01	3.69E+01	8.51E-02	8.75E+00	8.00E-01	1.88E+01	4.52E-03
UM-750S-3500E (0-2")	8.57E-01	NA	NA	NA	NA	8.57E-01	1.91E-01	4.28E+02	3.67E+02	NA	NA	NA	NA	7.03E-02	2.24E+03	1.57E+02	1.21E-01	3.69E+01	1.72E+00	8.75E+00	8.00E-01	1.88E+01	9.12E-02
BRSD-16 (0-2")	8.57E-01	NA	NA	NA	NA	8.57E-01	1.91E-01	4.01E+02	3.44E+02	NA	NA	NA	NA	7.03E-02	2.10E+03	1.48E+02	1.21E-01	3.69E+01	1.61E+00	8.75E+00	8.00E-01	1.88E+01	8.55E-02
UM-750S-3000E (0-2")	8.57E-01	NA	NA	NA	NA	8.57E-01	1.91E-01	2.29E+02	1.96E+02	NA	NA	NA	NA	7.03E-02	1.20E+03	8.43E+01	1.21E-01	3.69E+01	9.20E-01	8.75E+00	8.00E-01	1.88E+01	4.89E-02
BRSD-3 (0-2")	8.57E-01	NA	NA	NA	NA	8.57E-01	1.91E-01	2.08E+02	1.78E+02	NA	NA	NA	NA	7.03E-02	1.09E+03	7.66E+01	1.21E-01	3.69E+01	8.35E-01	8.75E+00	8.00E-01	1.88E+01	4.44E-02
UM-500S-3250E (0-2")	8.57E-01	NA	NA	NA	NA	8.57E-01	1.91E-01	4.22E+02	3.62E+02	NA	NA	NA	NA	7.03E-02	2.21E+03	1.55E+02	1.21E-01	3.69E+01	1.69E+00	8.75E+00	8.00E-01	1.88E+01	9.00E-02
UM-500S-3000E (0-2")	8.57E-01	NA	NA	NA	NA	8.57E-01	1.91E-01	4.05E+02	3.47E+02	NA	NA	NA	NA	7.03E-02	2.12E+03	1.49E+02	1.21E-01	3.69E+01	1.62E+00	8.75E+00	8.00E-01	1.88E+01	8.63E-02
UM-500S-2750E (0-2")	8.57E-01	NA	NA	NA	NA	8.57E-01	1.91E-01	2.31E+02	1.98E+02	NA	NA	NA	NA	7.03E-02	1.21E+03	8.50E+01	1.21E-01	3.69E+01	9.27E-01	8.75E+00	8.00E-01	1.88E+01	4.93E-02
BRSD-25 (0-2")	8.57E-01	NA	NA	NA	NA	8.57E-01	1.91E-01	1.60E+02	1.37E+02	NA	NA	NA	NA	7.03E-02	8.36E+02	5.88E+01	1.21E-01	3.69E+01	6.41E-01	8.75E+00	8.00E-01	1.88E+01	3.40E-02
UM-250S-3000E (0-2")	8.57E-01	NA	NA	NA	NA	8.57E-01	1.91E-01	3.21E+02	2.75E+02	NA	NA	NA	NA	7.03E-02	1.68E+03	1.18E+02	1.21E-01	3.69E+01	1.29E+00	8.75E+00	8.00E-01	1.88E+01	6.84E-02
UM-250S-3250E (0-2")	8.57E-01	NA	NA	NA	NA	8.57E-01	1.91E-01	3.21E+01	2.75E+01	NA	NA	NA	NA	7.03E-02	1.68E+02	1.18E+01	1.21E-01	3.69E+01	1.29E-01	8.75E+00	8.00E-01	1.88E+01	6.84E-03
BRSD-24 (0-2")	8.57E-01	NA	NA	NA	NA	8.57E-01	1.91E-01	2.06E+02	1.77E+02	NA	NA	NA	NA	7.03E-02	1.08E+03	7.59E+01	1.21E-01	3.69E+01	8.28E-01	8.75E+00	8.00E-01	1.88E+01	4.40E-02
UM-250S-2750E (0-2")	8.57E-01	NA	NA	NA	NA	8.57E-01	1.91E-01	1.85E+02	1.58E+02	NA	NA	NA	NA	7.03E-02	9.68E+02	6.80E+01	1.21E-01	3.69E+01	7.42E-01	8.75E+00	8.00E-01	1.88E+01	3.94E-02
UM-250S-2500E (0-2")	8.57E-01	NA	NA	NA	NA	8.57E-01	1.91E-01	2.20E+01	1.88E+01	NA	NA	NA	NA	7.03E-02	1.15E+02	8.08E+00	1.21E-01	3.69E+01	8.81E-02	8.75E+00	8.00E-01	1.88E+01	4.68E-03
UM-0N-2500E (0-2")	8.57E-01	NA	NA	NA	NA	8.57E-01	1.91E-01	3.82E+02	3.27E+02	NA	NA	NA	NA	7.03E-02	2.00E+03	1.41E+02	1.21E-01	3.69E+01	1.53E+00	8.75E+00	8.00E-01	1.88E+01	8.14E-02
UM-0N-250E (0-2")	8.57E-01	NA	NA	NA	NA	8.57E-01	1.91E-01	5.82E+01	4.99E+01	NA	NA	NA	NA	7.03E-02	3.05E+02	2.14E+01	1.21E-01	3.69E+01	2.34E-01	8.75E+00	8.00E-01	1.88E+01	1.24E-02
BRSD-2 (0-2")	8.57E-01	NA	NA	NA	NA	8.57E-01	1.91E-01	2.46E+02	2.11E+02	NA	NA	NA	NA	7.03E-02	1.29E+03	9.07E+01	1.21E-01	3.69E+01	9.89E-01	8.75E+00	8.00E-01	1.88E+01	5.25E-02
UM-500N-2500E (0-2")	8.57E-01	NA	NA	NA	NA	8.57E-01	1.91E-01	1.74E+01	1.49E+01	NA	NA	NA	NA	7.03E-02	9.12E+01	6.41E+00	1.21E-01	3.69E+01	6.99E-02	8.75E+00	8.00E-01	1.88E+01	3.71E-03
UM-250N-2500E (0-2")	8.57E-01	NA	NA	NA	NA	8.57E-01	1.91E-01	2.90E+02	2.49E+02	NA	NA	NA	NA	7.03E-02	1.52E+03	1.07E+02	1.21E-01	3.69E+01	1.16E+00	8.75E+00	8.00E-01	1.88E+01	6.19E-02
UM-250N-2250E (0-2")	8.57E-01	NA	NA	NA	NA	8.57E-01	1.91E-01	2.56E+02	2.19E+02	NA	NA	NA	NA	7.03E-02	1.34E+03	9.42E+01	1.21E-01	3.69E+01	1.03E+00	8.75E+00	8.00E-01	1.88E+01	5.46E-02
Western Upper Marsh (0-2")																					**Maximum HQ (Eastern Upper Marsh, 0-2")**		**9.12E-02**
UM-500S-2500E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-2000E (0-2")	8.57E-01	NA	NA	NA	NA	8.57E-01	1.32E-01	3.27E+02	2.80E+02	NA	NA	NA	NA	7.03E-02	2.48E+03	1.74E+02	1.21E-01	3.69E+01	1.49E+00	8.75E+00	8.00E-01	1.88E+01	7.91E-02
UM-500S-2000E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-250N-1750E (0-2")	8.57E-01	NA	NA	NA	NA	8.57E-01	1.32E-01	1.27E+01	1.09E+01	NA	NA	NA	NA	7.03E-02	9.62E+01	6.76E+00	1.21E-01	3.69E+01	5.78E-02	8.75E+00	8.00E-01	1.88E+01	3.07E-03
UM-0N-1500E (0-2")	8.57E-01	NA	NA	NA	NA	8.57E-01	1.32E-01	1.35E+01	1.15E+01	NA	NA	NA	NA	7.03E-02	1.02E+02	7.17E+00	1.21E-01	3.69E+01	6.13E-02	8.75E+00	8.00E-01	1.88E+01	3.25E-03
UM-250S-1500E (0-2")	8.57E-01	NA	NA	NA	NA	8.57E-01	1.32E-01	2.28E+02	1.96E+02	NA	NA	NA	NA	7.03E-02	1.73E+03	1.22E+02	1.21E-01	3.69E+01	1.04E+00	8.75E+00	8.00E-01	1.88E+01	5.52E-02
UM-250S-1250E (0-2")	8.57E-01	NA	NA	NA	NA	8.57E-01	1.32E-01	1.25E+01	1.07E+01	NA	NA	NA	NA	7.03E-02	9.48E+01	6.66E+00	1.21E-01	3.69E+01	5.69E-02	8.75E+00	8.00E-01	1.88E+01	3.02E-03
BRSD-6 (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-1000E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-750E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-500E (0-2")	8.57E-01	NA	NA	NA	NA	8.57E-01	1.32E-01	2.15E+01	1.84E+01	NA	NA	NA	NA	7.03E-02	1.63E+02	1.15E+01	1.21E-01	3.69E+01	9.79E-02	8.75E+00	8.00E-01	1.88E+01	5.20E-03
UM-250S-500E (0-2")	8.57E-01	NA	NA	NA	NA	8.57E-01	1.32E-01	9.25E+00	7.93E+00	NA	NA	NA	NA	7.03E-02	7.01E+01	4.93E+00	1.21E-01	3.69E+01	4.21E-02	8.75E+00	8.00E-01	1.88E+01	2.24E-03
UM-250S-250E (0-2")	8.57E-01	NA	NA	NA	NA	8.57E-01	1.32E-01	1.73E+01	1.48E+01	NA	NA	NA	NA	7.03E-02	1.31E+02	9.21E+00	1.21E-01	3.69E+01	7.87E-02	8.75E+00	8.00E-01	1.88E+01	4.18E-03
BRSD-7 (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-8 (0-2")	8.57E-01	NA	NA	NA	NA	8.57E-01	1.32E-01	2.98E+01	2.56E+01	NA	NA	NA	NA	7.03E-02	2.26E+02	1.59E+01	1.21E-01	3.69E+01	1.36E-01	8.75E+00	8.00E-01	1.88E+01	7.21E-03

TABLE C-12EB: LEAD DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 12 - MARSH, WETLAND RECEPTORS (Continued)
Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)
calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 118.73

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Canada Goose (Herbivorous Birds)																							
UM-500S-500E (0-2")	8.57E-01	NA	NA	NA	NA	8.57E-01	1.32E-01	8.76E+00	7.51E+00	NA	NA	NA	NA	7.03E-02	6.64E+01	4.67E+00	1.21E-01	3.69E+01	3.99E-02	8.75E+00	8.00E-01	1.88E+01	2.12E-03
BRSD-9 (0-2")	8.57E-01	NA	NA	NA	NA	8.57E-01	1.32E-01	3.76E+01	3.22E+01	NA	NA	NA	NA	7.03E-02	2.85E+02	2.00E+01	1.21E-01	3.69E+01	1.71E-01	8.75E+00	8.00E-01	1.88E+01	9.09E-03
BRSD-10 (0-2")	8.57E-01	NA	NA	NA	NA	8.57E-01	1.32E-01	8.34E+01	7.15E+01	NA	NA	NA	NA	7.03E-02	6.32E+02	4.44E+01	1.21E-01	3.69E+01	3.80E-01	8.75E+00	8.00E-01	1.88E+01	2.02E-02
BRSD-11 (0-2")	8.57E-01	NA	NA	NA	NA	8.57E-01	1.32E-01	1.22E+01	1.04E+01	NA	NA	NA	NA	7.03E-02	9.24E+01	6.49E+00	1.21E-01	3.69E+01	5.55E-02	8.75E+00	8.00E-01	1.88E+01	2.95E-03
Eastern Upper Marsh (2-6")																				**Maximum HQ (Western Upper Marsh, 0-2")**			**7.91E-02**
UM-1000S-3500E (2-6")	8.57E-01	NA	NA	NA	NA	8.57E-01	1.91E-01	6.11E+01	5.24E+01	NA	NA	NA	NA	7.03E-02	3.20E+02	2.25E+01	1.21E-01	3.69E+01	2.45E-01	8.75E+00	8.00E-01	1.88E+01	1.30E-02
BRSD-15 (2-6")	8.57E-01	NA	NA	NA	NA	8.57E-01	1.91E-01	2.14E+01	1.83E+01	NA	NA	NA	NA	7.03E-02	1.12E+02	7.87E+00	1.21E-01	3.69E+01	8.58E-02	8.75E+00	8.00E-01	1.88E+01	4.56E-03
BRSD-4 (2-6")	8.57E-01	NA	NA	NA	NA	8.57E-01	1.91E-01	2.18E+01	1.87E+01	NA	NA	NA	NA	7.03E-02	1.14E+02	8.01E+00	1.21E-01	3.69E+01	8.74E-02	8.75E+00	8.00E-01	1.88E+01	4.64E-03
UM-750S-3500E (2-6")	8.57E-01	NA	NA	NA	NA	8.57E-01	1.91E-01	1.90E+02	1.63E+02	NA	NA	NA	NA	7.03E-02	9.96E+02	7.00E+01	1.21E-01	3.69E+01	7.63E-01	8.75E+00	8.00E-01	1.88E+01	4.05E-02
BRSD-16 (2-6")	8.57E-01	NA	NA	NA	NA	8.57E-01	1.91E-01	5.98E+02	5.12E+02	NA	NA	NA	NA	7.03E-02	3.13E+03	2.20E+02	1.21E-01	3.69E+01	2.40E+00	8.75E+00	8.00E-01	1.88E+01	1.27E-01
UM-750S-3000E (2-6")	8.57E-01	NA	NA	NA	NA	8.57E-01	1.91E-01	2.04E+02	1.75E+02	NA	NA	NA	NA	7.03E-02	1.07E+03	7.52E+01	1.21E-01	3.69E+01	8.20E-01	8.75E+00	8.00E-01	1.88E+01	4.36E-02
BRSD-3 (2-6")	8.57E-01	NA	NA	NA	NA	8.57E-01	1.91E-01	4.13E+02	3.54E+02	NA	NA	NA	NA	7.03E-02	2.16E+03	1.52E+02	1.21E-01	3.69E+01	1.66E+00	8.75E+00	8.00E-01	1.88E+01	8.79E-02
UM-500S-3250E (2-6")	8.57E-01	NA	NA	NA	NA	8.57E-01	1.91E-01	2.79E+02	2.39E+02	NA	NA	NA	NA	7.03E-02	1.46E+03	1.03E+02	1.21E-01	3.69E+01	1.12E+00	8.75E+00	8.00E-01	1.88E+01	5.94E-02
UM-500S-3000E (2-6")	8.57E-01	NA	NA	NA	NA	8.57E-01	1.91E-01	2.64E+01	2.26E+01	NA	NA	NA	NA	7.03E-02	1.38E+02	9.70E+00	1.21E-01	3.69E+01	1.06E-01	8.75E+00	8.00E-01	1.88E+01	5.62E-03
UM-500S-2750E (2-6")	8.57E-01	NA	NA	NA	NA	8.57E-01	1.91E-01	1.52E+02	1.30E+02	NA	NA	NA	NA	7.03E-02	7.94E+02	5.58E+01	1.21E-01	3.69E+01	6.09E-01	8.75E+00	8.00E-01	1.88E+01	3.23E-02
BRSD-25 (2-6")	8.57E-01	NA	NA	NA	NA	8.57E-01	1.91E-01	2.79E+02	2.39E+02	NA	NA	NA	NA	7.03E-02	1.46E+03	1.03E+02	1.21E-01	3.69E+01	1.12E+00	8.75E+00	8.00E-01	1.88E+01	5.94E-02
UM-250S-3000E (2-6")	8.57E-01	NA	NA	NA	NA	8.57E-01	1.91E-01	3.72E+02	3.19E+02	NA	NA	NA	NA	7.03E-02	1.95E+03	1.37E+02	1.21E-01	3.69E+01	1.49E+00	8.75E+00	8.00E-01	1.88E+01	7.94E-02
UM-250S-3250E (2-6")	8.57E-01	NA	NA	NA	NA	8.57E-01	1.91E-01	1.79E+01	1.53E+01	NA	NA	NA	NA	7.03E-02	9.35E+01	6.57E+00	1.21E-01	3.69E+01	7.17E-02	8.75E+00	8.00E-01	1.88E+01	3.81E-03
BRSD-24 (2-6")	8.57E-01	NA	NA	NA	NA	8.57E-01	1.91E-01	5.08E+02	4.35E+02	NA	NA	NA	NA	7.03E-02	2.66E+03	1.87E+02	1.21E-01	3.69E+01	2.04E+00	8.75E+00	8.00E-01	1.88E+01	1.08E-01
UM-250S-2750E (2-6")	8.57E-01	NA	NA	NA	NA	8.57E-01	1.91E-01	3.97E+02	3.40E+02	NA	NA	NA	NA	7.03E-02	2.08E+03	1.46E+02	1.21E-01	3.69E+01	1.59E+00	8.75E+00	8.00E-01	1.88E+01	8.47E-02
UM-0N-2500E (2-6")	8.57E-01	NA	NA	NA	NA	8.57E-01	1.91E-01	2.41E+02	2.06E+02	NA	NA	NA	NA	7.03E-02	1.26E+03	8.86E+01	1.21E-01	3.69E+01	9.66E-01	8.75E+00	8.00E-01	1.88E+01	5.13E-02
BRSD-2 (2-6")	8.57E-01	NA	NA	NA	NA	8.57E-01	1.91E-01	3.04E+02	2.60E+02	NA	NA	NA	NA	7.03E-02	1.59E+03	1.12E+02	1.21E-01	3.69E+01	1.22E+00	8.75E+00	8.00E-01	1.88E+01	6.47E-02
UM-500N-2500E (2-6")	8.57E-01	NA	NA	NA	NA	8.57E-01	1.91E-01	1.70E+01	1.46E+01	NA	NA	NA	NA	7.03E-02	8.89E+01	6.25E+00	1.21E-01	3.69E+01	6.81E-02	8.75E+00	8.00E-01	1.88E+01	3.62E-03
UM-250N-2500E (2-6")	8.57E-01	NA	NA	NA	NA	8.57E-01	1.91E-01	2.04E+02	1.75E+02	NA	NA	NA	NA	7.03E-02	1.07E+03	7.52E+01	1.21E-01	3.69E+01	8.20E-01	8.75E+00	8.00E-01	1.88E+01	4.36E-02
UM-250N-2250E (2-6")	8.57E-01	NA	NA	NA	NA	8.57E-01	1.91E-01	3.67E+01	3.14E+01	NA	NA	NA	NA	7.03E-02	1.92E+02	1.35E+01	1.21E-01	3.69E+01	1.47E-01	8.75E+00	8.00E-01	1.88E+01	7.82E-03
Western Upper Marsh (2-6")																				**Maximum HQ (Eastern Upper Marsh, 2-6")**			**1.27E-01**
UM-500S-2500E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-2000E (2-6")	8.57E-01	NA	NA	NA	NA	8.57E-01	1.32E-01	3.25E+02	2.78E+02	NA	NA	NA	NA	7.03E-02	2.46E+03	1.73E+02	1.21E-01	3.69E+01	1.48E+00	8.75E+00	8.00E-01	1.88E+01	7.85E-02
UM-500S-2000E (2-6")	8.57E-01	NA	NA	NA	NA	8.57E-01	1.32E-01	1.22E+01	1.04E+01	NA	NA	NA	NA	7.03E-02	9.22E+01	6.48E+00	1.21E-01	3.69E+01	5.54E-02	8.75E+00	8.00E-01	1.88E+01	2.94E-03
UM-250N-1750E (2-6")	8.57E-01	NA	NA	NA	NA	8.57E-01	1.32E-01	1.23E+01	1.06E+01	NA	NA	NA	NA	7.03E-02	9.36E+01	6.58E+00	1.21E-01	3.69E+01	5.62E-02	8.75E+00	8.00E-01	1.88E+01	2.99E-03
UM-0N-1500E (2-6")	8.57E-01	NA	NA	NA	NA	8.57E-01	1.32E-01	1.46E+01	1.26E+01	NA	NA	NA	NA	7.03E-02	1.11E+02	7.80E+00	1.21E-01	3.69E+01	6.67E-02	8.75E+00	8.00E-01	1.88E+01	3.54E-03
UM-250S-1500E (2-6")	8.57E-01	NA	NA	NA	NA	8.57E-01	1.32E-01	2.19E+02	1.88E+02	NA	NA	NA	NA	7.03E-02	1.66E+03	1.17E+02	1.21E-01	3.69E+01	9.97E-01	8.75E+00	8.00E-01	1.88E+01	5.30E-02
UM-250S-1250E (2-6")	8.57E-01	NA	NA	NA	NA	8.57E-01	1.32E-01	1.23E+01	1.05E+01	NA	NA	NA	NA	7.03E-02	9.33E+01	6.56E+00	1.21E-01	3.69E+01	5.60E-02	8.75E+00	8.00E-01	1.88E+01	2.98E-03
BRSD-6 (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-1000E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-750E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-500E (2-6")	8.57E-01	NA	NA	NA	NA	8.57E-01	1.32E-01	6.89E+01	5.90E+01	NA	NA	NA	NA	7.03E-02	5.22E+02	3.67E+01	1.21E-01	3.69E+01	3.14E-01	8.75E+00	8.00E-01	1.88E+01	1.67E-02
UM-250S-500E (2-6")	8.57E-01	NA	NA	NA	NA	8.57E-01	1.32E-01	1.26E+01	1.08E+01	NA	NA	NA	NA	7.03E-02	9.54E+01	6.70E+00	1.21E-01	3.69E+01	5.73E-02	8.75E+00	8.00E-01	1.88E+01	3.04E-03
UM-0N-250E (2-6")	8.57E-01	NA	NA	NA	NA	8.57E-01	1.32E-01	3.72E+01	3.19E+01	NA	NA	NA	NA	7.03E-02	2.82E+02	1.98E+01	1.21E-01	3.69E+01	1.69E-01	8.75E+00	8.00E-01	1.88E+01	9.00E-03
UM-250S-250E (2-6")	8.57E-01	NA	NA	NA	NA	8.57E-01	1.32E-01	1.60E+01	1.37E+01	NA	NA	NA	NA	7.03E-02	1.21E+02	8.50E+00	1.21E-01	3.69E+01	7.27E-02	8.75E+00	8.00E-01	1.88E+01	3.86E-03
BRSD-7 (2-6")	8.57E-01	NA	NA	NA	NA	8.57E-01	1.32E-01	8.22E+00	7.04E+00	NA	NA	NA	NA	7.03E-02	6.23E+01	4.38E+00	1.21E-01	3.69E+01	3.74E-02	8.75E+00	8.00E-01	1.88E+01	1.99E-03
BRSD-8 (2-6")	8.57E-01	NA	NA	NA	NA	8.57E-01	1.32E-01	4.38E+01	3.75E+01	NA	NA	NA	NA	7.03E-02	3.32E+02	2.33E+01	1.21E-01	3.69E+01	1.99E-01	8.75E+00	8.00E-01	1.88E+01	1.06E-02
UM-500S-500E (2-6")	8.57E-01	NA	NA	NA	NA	8.57E-01	1.32E-01	1.01E+01	8.63E+00	NA	NA	NA	NA	7.03E-02	7.63E+01	5.36E+00	1.21E-01	3.69E+01	4.58E-02	8.75E+00	8.00E-01	1.88E+01	2.43E-03
BRSD-9 (2-6")	8.57E-01	NA	NA	NA	NA	8.57E-01	1.32E-01	7.76E+00	6.65E+00	NA	NA	NA	NA	7.03E-02	5.88E+01	4.13E+00	1.21E-01	3.69E+01	3.53E-02	8.75E+00	8.00E-01	1.88E+01	1.88E-03
BRSD-10 (2-6")	8.57E-01	NA	NA	NA	NA	8.57E-01	1.32E-01	1.06E+02	9.09E+01	NA	NA	NA	NA	7.03E-02	8.04E+02	5.65E+01	1.21E-01	3.69E+01	4.83E-01	8.75E+00	8.00E-01	1.88E+01	2.57E-02
BRSD-11 (2-6")	8.57E-01	NA	NA	NA	NA	8.57E-01	1.32E-01	1.22E+01	1.05E+01	NA	NA	NA	NA	7.03E-02	9.26E+01	6.51E+00	1.21E-01	3.69E+01	5.56E-02	8.75E+00	8.00E-01	1.88E+01	2.95E-03
Eastern Upper Marsh (6-12")																				**Maximum HQ (Western Upper Marsh, 2-6")**			**7.85E-02**
UM-1000S-3500E (6-12")	8.57E-01	NA	NA	NA	NA	8.57E-01	1.91E-01	1.56E+01	1.34E+01	NA	NA	NA	NA	7.03E-02	8.17E+01	5.74E+00	1.21E-01	3.69E+01	6.26E-02	8.75E+00	8.00E-01	1.88E+01	3.33E-03
BRSD-15 (6-12")	8.57E-01	NA	NA	NA	NA	8.57E-01	1.91E-01	1.66E+01	1.42E+01	NA	NA	NA	NA	7.03E-02	8.70E+01	6.11E+00	1.21E-01	3.69E+01	6.67E-02	8.75E+00	8.00E-01	1.88E+01	3.54E-03
BRSD-4 (6-12")	8.57E-01	NA	NA	NA	NA	8.57E-01	1.91E-01	4.05E+01	3.47E+01	NA	NA	NA	NA	7.03E-02	2.12E+02	1.49E+01	1.21E-01	3.69E+01	1.62E-01	8.75E+00	8.00E-01	1.88E+01	8.63E-03
UM-750S-3500E (6-12")	8.57E-01	NA	NA	NA	NA	8.57E-01	1.91E-01	2.31E+02	1.98E+02	NA	NA	NA	NA	7.03E-02	1.21E+03	8.50E+01	1.21E-01	3.69E+01	9.27E-01	8.75E+00	8.00E-01	1.88E+01	4.93E-02
BRSD-16 (6-12")	8.57E-01	NA	NA	NA	NA	8.57E-01	1.91E-01	6.15E+02	5.27E+02	NA	NA	NA	NA	7.03E-02	3.22E+03	2.26E+02	1.21E-01	3.69E+01	2.47E+00	8.75E+00	8.00E-01	1.88E+01	1.31E-01
UM-750S-3000E (6-12")	8.57E-01	NA	NA	NA	NA	8.57E-01	1.91E-01	2.14E+02	1.83E+02	NA	NA	NA	NA	7.03E-02	1.12E+03	7.87E+01	1.21E-01	3.69E+01	8.58E-01	8.75E+00	8.00E-01	1.88E+01	4.56E-02
BRSD-3 (6-12")	8.57E-01	NA	NA	NA	NA	8.57E-01	1.91E-01	6.65E+01	5.70E+01	NA	NA	NA	NA	7.03E-02	3.48E+02	2.45E+01	1.21E-01	3.69E+01	2.67E-01	8.75E+00	8.00E-01	1.88E+01	1.42E-02
UM-500S-3250E (6-12")	8.57E-01	NA	NA	NA	NA	8.57E-01	1.91E-01	1.16E+02	9.95E+01	NA	NA	NA	NA	7.03E-02	6.08E+02	4.27E+01	1.21E-01	3.69E+01	4.66E-01	8.75E+00	8.00E-01	1.88E+01	2.48E-02
UM-500S-3000E (6-12")	8.57E-01	NA	NA	NA	NA	8.57E-01	1.91E-01	2.14E+01	1.83E+01	NA	NA	NA	NA	7.03E-02	1.12E+02	7.87E+00	1.21E-01	3.69E+01	8.58E-02	8.75E+00	8.00E-01	1.88E+01	4.56E-03

TABLE C-12EB: LEAD DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 12 - MARSH, WETLAND RECEPTORS (Continued)
Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)
calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **118.73**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Canada Goose (Herbivorous Birds)																							
UM-500S-2750E (6-12")	8.57E-01	NA	NA	NA	NA	8.57E-01	1.91E-01	1.29E+02	1.11E+02	NA	NA	NA	NA	7.03E-02	6.78E+02	4.76E+01	1.21E-01	3.69E+01	5.20E-01	8.75E+00	8.00E-01	1.88E+01	2.76E-02
BRSD-25 (6-12")	8.57E-01	NA	NA	NA	NA	8.57E-01	1.91E-01	2.01E+02	1.72E+02	NA	NA	NA	NA	7.03E-02	1.05E+03	7.38E+01	1.21E-01	3.69E+01	8.05E-01	8.75E+00	8.00E-01	1.88E+01	4.27E-02
UM-250S-3000E (6-12")	8.57E-01	NA	NA	NA	NA	8.57E-01	1.91E-01	2.44E+02	2.10E+02	NA	NA	NA	NA	7.03E-02	1.28E+03	9.00E+01	1.21E-01	3.69E+01	9.81E-01	8.75E+00	8.00E-01	1.88E+01	5.21E-02
UM-250S-3250E (6-12")	8.57E-01	NA	NA	NA	NA	8.57E-01	1.91E-01	2.04E+01	1.75E+01	NA	NA	NA	NA	7.03E-02	1.07E+02	7.52E+00	1.21E-01	3.69E+01	8.20E-02	8.75E+00	8.00E-01	1.88E+01	4.36E-03
BRSD-24 (6-12")	8.57E-01	NA	NA	NA	NA	8.57E-01	1.91E-01	4.37E+02	3.75E+02	NA	NA	NA	NA	7.03E-02	2.29E+03	1.61E+02	1.21E-01	3.69E+01	1.76E+00	8.75E+00	8.00E-01	1.88E+01	9.32E-02
UM-250S-2750E (6-12")	8.57E-01	NA	NA	NA	NA	8.57E-01	1.91E-01	4.60E+02	3.94E+02	NA	NA	NA	NA	7.03E-02	2.41E+03	1.69E+02	1.21E-01	3.69E+01	1.85E+00	8.75E+00	8.00E-01	1.88E+01	9.81E-02
UM-250S-2500E (6-12")	8.57E-01	NA	NA	NA	NA	8.57E-01	1.91E-01	1.63E+01	1.40E+01	NA	NA	NA	NA	7.03E-02	8.54E+01	6.00E+00	1.21E-01	3.69E+01	6.54E-02	8.75E+00	8.00E-01	1.88E+01	3.48E-03
BRSD-2 (6-12")	8.57E-01	NA	NA	NA	NA	8.57E-01	1.91E-01	8.06E+02	6.91E+02	NA	NA	NA	NA	7.03E-02	4.22E+03	2.97E+02	1.21E-01	3.69E+01	3.23E+00	8.75E+00	8.00E-01	1.88E+01	1.72E-01
UM-500N-2500E (6-12")	8.57E-01	NA	NA	NA	NA	8.57E-01	1.91E-01	1.46E+01	1.25E+01	NA	NA	NA	NA	7.03E-02	7.64E+01	5.37E+00	1.21E-01	3.69E+01	5.86E-02	8.75E+00	8.00E-01	1.88E+01	3.11E-03
UM-250N-2500E (6-12")	8.57E-01	NA	NA	NA	NA	8.57E-01	1.91E-01	1.86E+02	1.60E+02	NA	NA	NA	NA	7.03E-02	9.75E+02	6.85E+01	1.21E-01	3.69E+01	7.47E-01	8.75E+00	8.00E-01	1.88E+01	3.97E-02
UM-250N-2250E (6-12")	8.57E-01	NA	NA	NA	NA	8.57E-01	1.91E-01	3.70E+01	3.18E+01	NA	NA	NA	NA	7.03E-02	1.94E+02	1.36E+01	1.21E-01	3.69E+01	1.49E-01	8.75E+00	8.00E-01	1.88E+01	7.90E-03
Western Upper Marsh (6-12")																						**Maximum HQ (Eastern Upper Marsh, 6-12")**	**1.72E-01**
UM-500S-2500E (6-12")	8.57E-01	NA	NA	NA	NA	8.57E-01	1.32E-01	1.61E+01	1.38E+01	NA	NA	NA	NA	7.03E-02	1.22E+02	8.57E+00	1.21E-01	3.69E+01	7.33E-02	8.75E+00	8.00E-01	1.88E+01	3.89E-03
UM-0N-2000E (6-12")	8.57E-01	NA	NA	NA	NA	8.57E-01	1.32E-01	4.33E+02	3.71E+02	NA	NA	NA	NA	7.03E-02	3.28E+03	2.31E+02	1.21E-01	3.69E+01	1.97E+00	8.75E+00	8.00E-01	1.88E+01	1.05E-01
UM-500S-2000E (6-12")	8.57E-01	NA	NA	NA	NA	8.57E-01	1.32E-01	1.24E+01	1.06E+01	NA	NA	NA	NA	7.03E-02	9.40E+01	6.61E+00	1.21E-01	3.69E+01	5.65E-02	8.75E+00	8.00E-01	1.88E+01	3.00E-03
UM-250N-1750E (6-12")	8.57E-01	NA	NA	NA	NA	8.57E-01	1.32E-01	1.30E+01	1.12E+01	NA	NA	NA	NA	7.03E-02	9.87E+01	6.94E+00	1.21E-01	3.69E+01	5.93E-02	8.75E+00	8.00E-01	1.88E+01	3.15E-03
UM-0N-1500E (6-12")	8.57E-01	NA	NA	NA	NA	8.57E-01	1.32E-01	1.46E+01	1.26E+01	NA	NA	NA	NA	7.03E-02	1.11E+02	7.80E+00	1.21E-01	3.69E+01	6.67E-02	8.75E+00	8.00E-01	1.88E+01	3.54E-03
UM-250S-1500E (6-12")	8.57E-01	NA	NA	NA	NA	8.57E-01	1.32E-01	1.23E+02	1.05E+02	NA	NA	NA	NA	7.03E-02	9.31E+02	6.54E+01	1.21E-01	3.69E+01	5.59E-01	8.75E+00	8.00E-01	1.88E+01	2.97E-02
UM-250S-1250E (6-12")	8.57E-01	NA	NA	NA	NA	8.57E-01	1.32E-01	1.35E+01	1.15E+01	NA	NA	NA	NA	7.03E-02	1.02E+02	7.17E+00	1.21E-01	3.69E+01	6.13E-02	8.75E+00	8.00E-01	1.88E+01	3.25E-03
BRSD-6 (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-1000E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-750E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-500E (6-12")	8.57E-01	NA	NA	NA	NA	8.57E-01	1.32E-01	2.03E+01	1.74E+01	NA	NA	NA	NA	7.03E-02	1.54E+02	1.08E+01	1.21E-01	3.69E+01	9.25E-02	8.75E+00	8.00E-01	1.88E+01	4.91E-03
UM-250S-500E (6-12")	8.57E-01	NA	NA	NA	NA	8.57E-01	1.32E-01	1.29E+01	1.11E+01	NA	NA	NA	NA	7.03E-02	9.80E+01	6.89E+00	1.21E-01	3.69E+01	5.89E-02	8.75E+00	8.00E-01	1.88E+01	3.13E-03
UM-0N-250E (6-12")	8.57E-01	NA	NA	NA	NA	8.57E-01	1.32E-01	3.55E+01	3.04E+01	NA	NA	NA	NA	7.03E-02	2.69E+02	1.89E+01	1.21E-01	3.69E+01	1.62E-01	8.75E+00	8.00E-01	1.88E+01	8.58E-03
UM-250S-250E (6-12")	8.57E-01	NA	NA	NA	NA	8.57E-01	1.32E-01	1.26E+01	1.08E+01	NA	NA	NA	NA	7.03E-02	9.53E+01	6.70E+00	1.21E-01	3.69E+01	5.72E-02	8.75E+00	8.00E-01	1.88E+01	3.04E-03
BRSD-7 (6-12")	8.57E-01	NA	NA	NA	NA	8.57E-01	1.32E-01	1.52E+01	1.30E+01	NA	NA	NA	NA	7.03E-02	1.15E+02	8.08E+00	1.21E-01	3.69E+01	6.91E-02	8.75E+00	8.00E-01	1.88E+01	3.67E-03
BRSD-8 (6-12")	8.57E-01	NA	NA	NA	NA	8.57E-01	1.32E-01	3.96E+01	3.39E+01	NA	NA	NA	NA	7.03E-02	3.00E+02	2.11E+01	1.21E-01	3.69E+01	1.80E-01	8.75E+00	8.00E-01	1.88E+01	9.57E-03
UM-500S-500E (6-12")	8.57E-01	NA	NA	NA	NA	8.57E-01	1.32E-01	9.58E+00	8.21E+00	NA	NA	NA	NA	7.03E-02	7.26E+01	5.10E+00	1.21E-01	3.69E+01	4.36E-02	8.75E+00	8.00E-01	1.88E+01	2.32E-03
BRSD-9 (6-12")	8.57E-01	NA	NA	NA	NA	8.57E-01	1.32E-01	1.12E+01	9.60E+00	NA	NA	NA	NA	7.03E-02	8.49E+01	5.97E+00	1.21E-01	3.69E+01	5.10E-02	8.75E+00	8.00E-01	1.88E+01	2.71E-03
BRSD-10 (6-12")	8.57E-01	NA	NA	NA	NA	8.57E-01	1.32E-01	1.81E+02	1.55E+02	NA	NA	NA	NA	7.03E-02	1.37E+03	9.63E+01	1.21E-01	3.69E+01	8.23E-01	8.75E+00	8.00E-01	1.88E+01	4.37E-02
BRSD-11 (6-12")	8.57E-01	NA	NA	NA	NA	8.57E-01	1.32E-01	1.37E+01	1.18E+01	NA	NA	NA	NA	7.03E-02	1.04E+02	7.31E+00	1.21E-01	3.69E+01	6.25E-02	8.75E+00	8.00E-01	1.88E+01	3.32E-03
Middle Marsh (0-2")																						**Maximum HQ (Western Upper Marsh, 6-12")**	**1.05E-01**
MMSD-201 (0-2")	8.57E-01	NA	NA	NA	NA	8.57E-01	1.32E-01	6.65E+01	5.70E+01	NA	NA	NA	NA	7.03E-02	5.04E+02	3.54E+01	1.21E-01	3.69E+01	3.03E-01	8.75E+00	8.00E-01	1.88E+01	1.61E-02
MMSD-202 (0-2")	8.57E-01	NA	NA	NA	NA	8.57E-01	1.32E-01	9.17E+01	7.86E+01	NA	NA	NA	NA	7.03E-02	6.95E+02	4.88E+01	1.21E-01	3.69E+01	4.17E-01	8.75E+00	8.00E-01	1.88E+01	2.22E-02
Middle Marsh (2-6")																						**Maximum HQ (Middle Marsh, 0-2")**	**2.22E-02**
MMSD-201 (2-6")	8.57E-01	NA	NA	NA	NA	8.57E-01	1.32E-01	8.21E+01	7.03E+01	NA	NA	NA	NA	7.03E-02	6.22E+02	4.37E+01	1.21E-01	3.69E+01	3.74E-01	8.75E+00	8.00E-01	1.88E+01	1.98E-02
MMSD-202 (2-6")	8.57E-01	NA	NA	NA	NA	8.57E-01	1.32E-01	1.09E+02	9.36E+01	NA	NA	NA	NA	7.03E-02	8.28E+02	5.82E+01	1.21E-01	3.69E+01	4.97E-01	8.75E+00	8.00E-01	1.88E+01	2.64E-02
Middle Marsh (6-12")																						**Maximum HQ (Middle Marsh, 2-6")**	**2.64E-02**
MMSD-201 (6-12")	8.57E-01	NA	NA	NA	NA	8.57E-01	1.32E-01	1.28E+02	1.09E+02	NA	NA	NA	NA	7.03E-02	9.67E+02	6.80E+01	1.21E-01	3.69E+01	5.81E-01	8.75E+00	8.00E-01	1.88E+01	3.09E-02
MMSD-202 (6-12")	8.57E-01	NA	NA	NA	NA	8.57E-01	1.32E-01	3.46E+01	2.96E+01	NA	NA	NA	NA	7.03E-02	2.62E+02	1.84E+01	1.21E-01	3.69E+01	1.57E-01	8.75E+00	8.00E-01	1.88E+01	8.36E-03
Lower Marsh (0-2")																						**Maximum HQ (Middle Marsh, 6-12")**	**3.09E-02**
LMSD-201 (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
LMSD-202 (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
LMSD-203 (0-2")	8.57E-01	NA	NA	NA	NA	8.57E-01	1.32E-01	1.06E+01	9.05E+00	NA	NA	NA	NA	7.03E-02	8.00E+01	5.62E+00	1.21E-01	3.69E+01	4.81E-02	8.75E+00	8.00E-01	1.88E+01	2.55E-03
LMSD-204 (0-2")	8.57E-01	NA	NA	NA	NA	8.57E-01	1.32E-01	1.19E+01	1.02E+01	NA	NA	NA	NA	7.03E-02	9.00E+01	6.33E+00	1.21E-01	3.69E+01	5.41E-02	8.75E+00	8.00E-01	1.88E+01	2.87E-03
Lower Marsh (2-6")																						**Maximum HQ (Lower Marsh, 0-2")**	**2.87E-03**
LMSD-201 (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
LMSD-202 (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
LMSD-203 (2-6")	8.57E-01	NA	NA	NA	NA	8.57E-01	1.32E-01	1.12E+01	9.61E+00	NA	NA	NA	NA	7.03E-02	8.50E+01	5.97E+00	1.21E-01	3.69E+01	5.11E-02	8.75E+00	8.00E-01	1.88E+01	2.71E-03
LMSD-204 (2-6")	8.57E-01	NA	NA	NA	NA	8.57E-01	1.32E-01	1.15E+01	9.84E+00	NA	NA	NA	NA	7.03E-02	8.70E+01	6.11E+00	1.21E-01	3.69E+01	5.23E-02	8.75E+00	8.00E-01	1.88E+01	2.78E-03
Lower Marsh (6-12")																						**Maximum HQ (Lower Marsh, 2-6")**	**2.78E-03**
LMSD-201 (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
LMSD-202 (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
LMSD-203 (6-12")	8.57E-01	NA	NA	NA	NA	8.57E-01	1.32E-01	1.07E+01	9.16E+00	NA	NA	NA	NA	7.03E-02	8.10E+01	5.69E+00	1.21E-01	3.69E+01	4.87E-02	8.75E+00	8.00E-01	1.88E+01	2.58E-03
LMSD-204 (6-12")	8.57E-01	NA	NA	NA	NA	8.57E-01	1.32E-01	1.11E+01	9.50E+00	NA	NA	NA	NA	7.03E-02	8.40E+01	5.90E+00	1.21E-01	3.69E+01	5.05E-02	8.75E+00	8.00E-01	1.88E+01	2.68E-03
																						Maximum HQ (Lower Marsh, 6-12")	**2.68E-03**

TABLE C-12EB: LEAD DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 12 - MARSH, WETLAND RECEPTORS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **118.73**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Great Blue Heron (Carnivorous Birds)																							
Reference Sites																							
BRSD-5 (0-2")	1.32E-01	1.32E-01	1.20E-01	7.78E+00	1.02E+00	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	6.47E+01	2.30E-01	1.00E+00	2.39E+00	5.24E-01	8.75E+00	8.00E-01	1.09E+01	4.81E-02
BRSD-5 (2-6")	1.32E-01	1.32E-01	1.20E-01	7.42E+00	9.75E-01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	6.17E+01	2.19E-01	1.00E+00	2.39E+00	5.00E-01	8.75E+00	8.00E-01	1.09E+01	4.59E-02
BRSD-5 (6-12")	1.32E-01	1.32E-01	1.20E-01	9.50E+00	1.25E+00	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	7.90E+01	2.81E-01	1.00E+00	2.39E+00	6.40E-01	8.75E+00	8.00E-01	1.09E+01	5.88E-02
PGBG-1 (0-2")	1.32E-01	1.32E-01	1.20E-01	6.61E+00	8.69E-01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	5.50E+01	1.95E-01	1.00E+00	2.39E+00	4.46E-01	8.75E+00	8.00E-01	1.09E+01	4.09E-02
PGBG-1 (2-6")	1.32E-01	1.32E-01	1.20E-01	1.21E+01	1.60E+00	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.01E+02	3.59E-01	1.00E+00	2.39E+00	8.18E-01	8.75E+00	8.00E-01	1.09E+01	7.51E-02
PGBG-1 (6-12")	1.32E-01	1.32E-01	1.20E-01	2.09E+01	2.75E+00	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.74E+02	6.18E-01	1.00E+00	2.39E+00	1.41E+00	8.75E+00	8.00E-01	1.09E+01	1.29E-01
PGBG-2 (0-2")	1.32E-01	1.32E-01	1.20E-01	1.26E+01	1.66E+00	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.05E+02	3.73E-01	1.00E+00	2.39E+00	8.51E-01	8.75E+00	8.00E-01	1.09E+01	7.81E-02
PGBG-2 (2-6")	1.32E-01	1.32E-01	1.20E-01	1.30E+01	1.71E+00	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.08E+02	3.84E-01	1.00E+00	2.39E+00	8.75E-01	8.75E+00	8.00E-01	1.09E+01	8.03E-02
PGBG-2 (6-12")	1.32E-01	1.32E-01	1.20E-01	1.36E+01	1.79E+00	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.13E+02	4.01E-01	1.00E+00	2.39E+00	9.15E-01	8.75E+00	8.00E-01	1.09E+01	8.40E-02
Eastern Upper Marsh (0-2")																						**Minimum HQ (Reference Sites)**	**4.09E-02**
UM-1000S-3500E (0-2")	1.32E-01	1.32E-01	1.23E-01	2.18E+02	2.87E+01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.77E+03	6.29E+00	1.00E+00	2.39E+00	1.46E+01	8.75E+00	8.00E-01	1.09E+01	1.34E+00
BRSD-15 (0-2")	1.32E-01	1.32E-01	1.23E-01	8.25E+00	1.09E+00	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	6.69E+01	2.38E-01	1.00E+00	2.39E+00	5.54E-01	8.75E+00	8.00E-01	1.09E+01	5.08E-02
BRSD-4 (0-2")	1.32E-01	1.32E-01	1.23E-01	1.37E+01	1.80E+00	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.11E+02	3.94E-01	1.00E+00	2.39E+00	9.19E-01	8.75E+00	8.00E-01	1.09E+01	8.43E-02
UM-750S-3500E (0-2")	1.32E-01	1.32E-01	1.23E-01	2.76E+02	3.64E+01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	2.24E+03	7.95E+00	1.00E+00	2.39E+00	1.85E+01	8.75E+00	8.00E-01	1.09E+01	1.70E+00
BRSD-16 (0-2")	1.32E-01	1.32E-01	1.23E-01	2.59E+02	3.41E+01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	2.10E+03	7.46E+00	1.00E+00	2.39E+00	1.74E+01	8.75E+00	8.00E-01	1.09E+01	1.60E+00
UM-750S-3000E (0-2")	1.32E-01	1.32E-01	1.23E-01	1.48E+02	1.95E+01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.20E+03	4.26E+00	1.00E+00	2.39E+00	9.93E+00	8.75E+00	8.00E-01	1.09E+01	9.12E-01
BRSD-3 (0-2")	1.32E-01	1.32E-01	1.23E-01	1.34E+02	1.77E+01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.09E+03	3.87E+00	1.00E+00	2.39E+00	9.02E+00	8.75E+00	8.00E-01	1.09E+01	8.28E-01
UM-500S-3250E (0-2")	1.32E-01	1.32E-01	1.23E-01	2.73E+02	3.59E+01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	2.21E+03	7.85E+00	1.00E+00	2.39E+00	1.83E+01	8.75E+00	8.00E-01	1.09E+01	1.68E+00
UM-500S-3000E (0-2")	1.32E-01	1.32E-01	1.23E-01	2.62E+02	3.44E+01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	2.12E+03	7.53E+00	1.00E+00	2.39E+00	1.75E+01	8.75E+00	8.00E-01	1.09E+01	1.61E+00
UM-500S-2750E (0-2")	1.32E-01	1.32E-01	1.23E-01	1.49E+02	1.96E+01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.21E+03	4.30E+00	1.00E+00	2.39E+00	1.00E+01	8.75E+00	8.00E-01	1.09E+01	9.19E-01
BRSD-25 (0-2")	1.32E-01	1.32E-01	1.23E-01	1.03E+02	1.36E+01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	8.36E+02	2.97E+00	1.00E+00	2.39E+00	6.92E+00	8.75E+00	8.00E-01	1.09E+01	6.35E-01
UM-250S-3000E (0-2")	1.32E-01	1.32E-01	1.23E-01	2.07E+02	2.73E+01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.68E+03	5.97E+00	1.00E+00	2.39E+00	1.39E+01	8.75E+00	8.00E-01	1.09E+01	1.28E+00
UM-250S-3250E (0-2")	1.32E-01	1.32E-01	1.23E-01	2.07E+01	2.73E+00	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.68E+02	5.97E-01	1.00E+00	2.39E+00	1.39E+00	8.75E+00	8.00E-01	1.09E+01	1.28E-01
BRSD-24 (0-2")	1.32E-01	1.32E-01	1.23E-01	1.33E+02	1.75E+01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.08E+03	3.84E+00	1.00E+00	2.39E+00	8.94E+00	8.75E+00	8.00E-01	1.09E+01	8.21E-01
UM-250S-2750E (0-2")	1.32E-01	1.32E-01	1.23E-01	1.19E+02	1.57E+01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	9.68E+02	3.44E+00	1.00E+00	2.39E+00	8.01E+00	8.75E+00	8.00E-01	1.09E+01	7.36E-01
UM-250S-2500E (0-2")	1.32E-01	1.32E-01	1.23E-01	1.42E+01	1.87E+00	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.15E+02	4.08E-01	1.00E+00	2.39E+00	9.52E-01	8.75E+00	8.00E-01	1.09E+01	8.74E-02
UM-0N-2500E (0-2")	1.32E-01	1.32E-01	1.23E-01	2.47E+02	3.25E+01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	2.00E+03	7.10E+00	1.00E+00	2.39E+00	1.66E+01	8.75E+00	8.00E-01	1.09E+01	1.52E+00
UM-0N-250E (0-2")	1.32E-01	1.32E-01	1.23E-01	3.76E+01	4.95E+00	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	3.05E+02	1.08E+00	1.00E+00	2.39E+00	2.52E+00	8.75E+00	8.00E-01	1.09E+01	2.32E-01
BRSD-2 (0-2")	1.32E-01	1.32E-01	1.23E-01	1.59E+02	2.09E+01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.29E+03	4.58E+00	1.00E+00	2.39E+00	1.07E+01	8.75E+00	8.00E-01	1.09E+01	9.80E-01
UM-500N-2500E (0-2")	1.32E-01	1.32E-01	1.23E-01	1.13E+01	1.48E+00	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	9.12E+01	3.24E-01	1.00E+00	2.39E+00	7.55E-01	8.75E+00	8.00E-01	1.09E+01	6.93E-02
UM-250N-2500E (0-2")	1.32E-01	1.32E-01	1.23E-01	1.88E+02	2.47E+01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.52E+03	5.40E+00	1.00E+00	2.39E+00	1.26E+01	8.75E+00	8.00E-01	1.09E+01	1.16E+00
UM-250N-2250E (0-2")	1.32E-01	1.32E-01	1.23E-01	1.65E+02	2.17E+01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.34E+03	4.76E+00	1.00E+00	2.39E+00	1.11E+01	8.75E+00	8.00E-01	1.09E+01	1.02E+00
Western Upper Marsh (0-2")																						**Maximum HQ (Eastern Upper Marsh, 0-2")**	**1.70E+00**
UM-500S-2500E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-2000E (0-2")	1.32E-01	1.32E-01	1.23E-01	3.06E+02	4.02E+01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	2.48E+03	8.81E+00	1.00E+00	2.39E+00	2.05E+01	8.75E+00	8.00E-01	1.09E+01	1.88E+00
UM-500S-2000E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-250N-1750E (0-2")	1.32E-01	1.32E-01	1.23E-01	1.19E+01	1.56E+00	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	9.62E+01	3.42E-01	1.00E+00	2.39E+00	7.96E-01	8.75E+00	8.00E-01	1.09E+01	7.31E-02
UM-0N-1500E (0-2")	1.32E-01	1.32E-01	1.23E-01	1.26E+01	1.66E+00	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.02E+02	3.62E-01	1.00E+00	2.39E+00	8.44E-01	8.75E+00	8.00E-01	1.09E+01	7.75E-02
UM-250S-1500E (0-2")	1.32E-01	1.32E-01	1.23E-01	2.13E+02	2.81E+01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.73E+03	6.14E+00	1.00E+00	2.39E+00	1.43E+01	8.75E+00	8.00E-01	1.09E+01	1.31E+00
UM-250S-1250E (0-2")	1.32E-01	1.32E-01	1.23E-01	1.17E+01	1.54E+00	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	9.48E+01	3.37E-01	1.00E+00	2.39E+00	7.85E-01	8.75E+00	8.00E-01	1.09E+01	7.20E-02
BRSD-6 (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-1000E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-750E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-500E (0-2")	1.32E-01	1.32E-01	1.23E-01	2.01E+01	2.65E+00	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.63E+02	5.79E-01	1.00E+00	2.39E+00	1.35E+00	8.75E+00	8.00E-01	1.09E+01	1.24E-01
UM-250S-500E (0-2")	1.32E-01	1.32E-01	1.23E-01	8.65E+00	1.14E+00	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	7.01E+01	2.49E-01	1.00E+00	2.39E+00	5.80E-01	8.75E+00	8.00E-01	1.09E+01	5.33E-02
UM-250S-250E (0-2")	1.32E-01	1.32E-01	1.23E-01	1.62E+01	2.13E+00	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.31E+02	4.65E-01	1.00E+00	2.39E+00	1.08E+00	8.75E+00	8.00E-01	1.09E+01	9.95E-02
BRSD-7 (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-8 (0-2")	1.32E-01	1.32E-01	1.23E-01	2.79E+01	3.67E+00	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	2.26E+02	8.03E-01	1.00E+00	2.39E+00	1.87E+00	8.75E+00	8.00E-01	1.09E+01	1.72E-01
UM-500S-500E (0-2")	1.32E-01	1.32E-01	1.23E-01	8.19E+00	1.08E+00	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	6.64E+01	2.36E-01	1.00E+00	2.39E+00	5.50E-01	8.75E+00	8.00E-01	1.09E+01	5.05E-02
BRSD-9 (0-2")	1.32E-01	1.32E-01	1.23E-01	3.52E+01	4.63E+00	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	2.85E+02	1.01E+00	1.00E+00	2.39E+00	2.36E+00	8.75E+00	8.00E-01	1.09E+01	2.17E-01
BRSD-10 (0-2")	1.32E-01	1.32E-01	1.23E-01	7.80E+01	1.03E+01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	6.32E+02	2.24E+00	1.00E+00	2.39E+00	5.23E+00	8.75E+00	8.00E-01	1.09E+01	4.80E-01
BRSD-11 (0-2")	1.32E-01	1.32E-01	1.23E-01	1.14E+01	1.50E+00	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	9.24E+01	3.28E-01	1.00E+00	2.39E+00	7.65E-01	8.75E+00	8.00E-01	1.09E+01	7.02E-02
Eastern Upper Marsh (2-6")																						**Maximum HQ (Western Upper Marsh, 0-2")**	**1.88E+00**
UM-1000S-3500E (2-6")	1.32E-01	1.32E-01	1.23E-01	3.95E+01	5.19E+00	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	3.20E+02	1.14E+00	1.00E+00	2.39E+00	2.65E+00	8.75E+00	8.00E-01	1.09E+01	2.43E-01
BRSD-15 (2-6")	1.32E-01	1.32E-01	1.23E-01	1.38E+01	1.82E+00	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.12E+02	3.98E-01	1.00E+00	2.39E+00	9.27E-01	8.75E+00	8.00E-01	1.09E+01	8.51E-02
BRSD-4 (2-6")	1.32E-01	1.32E-01	1.23E-01	1.41E+01	1.85E+00	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.14E+02	4.05E-01	1.00E+00	2.39E+00	9.43E-01	8.75E+00	8.00E-01	1.09E+01	8.66E-02

TABLE C-12EB: LEAD DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 12 - MARSH, WETLAND RECEPTORS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **118.73**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Great Blue Heron (Carnivorous Birds)																							
UM-750S-3500E (2-6")	1.32E-01	1.32E-01	1.23E-01	1.23E+02	1.62E+01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	9.96E+02	3.54E+00	1.00E+00	2.39E+00	8.24E+00	8.75E+00	8.00E-01	1.09E+01	7.57E-01
BRSD-16 (2-6")	1.32E-01	1.32E-01	1.23E-01	3.86E+02	5.08E+01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	3.13E+03	1.11E+01	1.00E+00	2.39E+00	2.59E+01	8.75E+00	8.00E-01	1.09E+01	2.38E+00
UM-750S-3000E (2-6")	1.32E-01	1.32E-01	1.23E-01	1.32E+02	1.74E+01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.07E+03	3.80E+00	1.00E+00	2.39E+00	8.86E+00	8.75E+00	8.00E-01	1.09E+01	8.13E-01
BRSD-3 (2-6")	1.32E-01	1.32E-01	1.23E-01	2.67E+02	3.51E+01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	2.16E+03	7.67E+00	1.00E+00	2.39E+00	1.79E+01	8.75E+00	8.00E-01	1.09E+01	1.64E+00
UM-500S-3250E (2-6")	1.32E-01	1.32E-01	1.23E-01	1.80E+02	2.37E+01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.46E+03	5.18E+00	1.00E+00	2.39E+00	1.21E+01	8.75E+00	8.00E-01	1.09E+01	1.11E+00
UM-500S-3000E (2-6")	1.32E-01	1.32E-01	1.23E-01	1.70E+01	2.24E+00	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.38E+02	4.90E-01	1.00E+00	2.39E+00	1.14E+00	8.75E+00	8.00E-01	1.09E+01	1.05E-01
UM-500S-2750E (2-6")	1.32E-01	1.32E-01	1.23E-01	9.80E+01	1.29E+01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	7.94E+02	2.82E+00	1.00E+00	2.39E+00	6.57E+00	8.75E+00	8.00E-01	1.09E+01	6.03E-01
BRSD-25 (2-6")	1.32E-01	1.32E-01	1.23E-01	1.80E+02	2.37E+01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.46E+03	5.18E+00	1.00E+00	2.39E+00	1.21E+01	8.75E+00	8.00E-01	1.09E+01	1.11E+00
UM-250S-3000E (2-6")	1.32E-01	1.32E-01	1.23E-01	2.41E+02	3.16E+01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.95E+03	6.93E+00	1.00E+00	2.39E+00	1.61E+01	8.75E+00	8.00E-01	1.09E+01	1.48E+00
UM-250S-3250E (2-6")	1.32E-01	1.32E-01	1.23E-01	1.15E+01	1.52E+00	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	9.35E+01	3.32E-01	1.00E+00	2.39E+00	7.74E-01	8.75E+00	8.00E-01	1.09E+01	7.10E-02
BRSD-24 (2-6")	1.32E-01	1.32E-01	1.23E-01	3.28E+02	4.32E+01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	2.66E+03	9.45E+00	1.00E+00	2.39E+00	2.20E+01	8.75E+00	8.00E-01	1.09E+01	2.02E+00
UM-250S-2750E (2-6")	1.32E-01	1.32E-01	1.23E-01	2.57E+02	3.38E+01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	2.08E+03	7.39E+00	1.00E+00	2.39E+00	1.72E+01	8.75E+00	8.00E-01	1.09E+01	1.58E+00
UM-0N-2500E (2-6")	1.32E-01	1.32E-01	1.23E-01	1.55E+02	2.04E+01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.26E+03	4.47E+00	1.00E+00	2.39E+00	1.04E+01	8.75E+00	8.00E-01	1.09E+01	9.57E-01
BRSD-2 (2-6")	1.32E-01	1.32E-01	1.23E-01	1.96E+02	2.58E+01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.59E+03	5.65E+00	1.00E+00	2.39E+00	1.32E+01	8.75E+00	8.00E-01	1.09E+01	1.21E+00
UM-500N-2500E (2-6")	1.32E-01	1.32E-01	1.23E-01	1.10E+01	1.44E+00	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	8.89E+01	3.16E-01	1.00E+00	2.39E+00	7.36E-01	8.75E+00	8.00E-01	1.09E+01	6.76E-02
UM-250N-2500E (2-6")	1.32E-01	1.32E-01	1.23E-01	1.32E+02	1.74E+01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.07E+03	3.80E+00	1.00E+00	2.39E+00	8.86E+00	8.75E+00	8.00E-01	1.09E+01	8.13E-01
UM-250N-2250E (2-6")	1.32E-01	1.32E-01	1.23E-01	2.37E+01	3.12E+00	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.92E+02	6.82E-01	1.00E+00	2.39E+00	1.59E+00	8.75E+00	8.00E-01	1.09E+01	1.46E-01
Western Upper Marsh (2-6")																						**Maximum HQ (Eastern Upper Marsh, 2-6")**	**2.38E+00**
UM-500S-2500E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-2000E (2-6")	1.32E-01	1.32E-01	1.23E-01	3.04E+02	3.99E+01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	2.46E+03	8.74E+00	1.00E+00	2.39E+00	2.04E+01	8.75E+00	8.00E-01	1.09E+01	1.87E+00
UM-500S-2000E (2-6")	1.32E-01	1.32E-01	1.23E-01	1.14E+01	1.50E+00	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	9.22E+01	3.27E-01	1.00E+00	2.39E+00	7.63E-01	8.75E+00	8.00E-01	1.09E+01	7.01E-02
UM-250N-1750E (2-6")	1.32E-01	1.32E-01	1.23E-01	1.15E+01	1.52E+00	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	9.36E+01	3.32E-01	1.00E+00	2.39E+00	7.75E-01	8.75E+00	8.00E-01	1.09E+01	7.11E-02
UM-0N-1500E (2-6")	1.32E-01	1.32E-01	1.23E-01	1.37E+01	1.80E+00	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.11E+02	3.94E-01	1.00E+00	2.39E+00	9.19E-01	8.75E+00	8.00E-01	1.09E+01	8.43E-02
UM-250S-1500E (2-6")	1.32E-01	1.32E-01	1.23E-01	2.05E+02	2.69E+01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.66E+03	5.90E+00	1.00E+00	2.39E+00	1.37E+01	8.75E+00	8.00E-01	1.09E+01	1.26E+00
UM-250S-1250E (2-6")	1.32E-01	1.32E-01	1.23E-01	1.15E+01	1.51E+00	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	9.33E+01	3.31E-01	1.00E+00	2.39E+00	7.72E-01	8.75E+00	8.00E-01	1.09E+01	7.09E-02
BRSD-6 (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-1000E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-750E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-500E (2-6")	1.32E-01	1.32E-01	1.23E-01	6.44E+01	8.47E+00	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	5.22E+02	1.85E+00	1.00E+00	2.39E+00	4.32E+00	8.75E+00	8.00E-01	1.09E+01	3.97E-01
UM-250S-500E (2-6")	1.32E-01	1.32E-01	1.23E-01	1.18E+01	1.55E+00	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	9.54E+01	3.39E-01	1.00E+00	2.39E+00	7.90E-01	8.75E+00	8.00E-01	1.09E+01	7.25E-02
UM-0N-250E (2-6")	1.32E-01	1.32E-01	1.23E-01	3.48E+01	4.58E+00	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	2.82E+02	1.00E+00	1.00E+00	2.39E+00	2.33E+00	8.75E+00	8.00E-01	1.09E+01	2.14E-01
UM-250S-250E (2-6")	1.32E-01	1.32E-01	1.23E-01	1.49E+01	1.96E+00	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.21E+02	4.30E-01	1.00E+00	2.39E+00	1.00E+00	8.75E+00	8.00E-01	1.09E+01	9.19E-02
BRSD-7 (2-6")	1.32E-01	1.32E-01	1.23E-01	7.69E+00	1.01E+00	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	6.23E+01	2.21E-01	1.00E+00	2.39E+00	5.16E-01	8.75E+00	8.00E-01	1.09E+01	4.73E-02
BRSD-8 (2-6")	1.32E-01	1.32E-01	1.23E-01	4.10E+01	5.39E+00	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	3.32E+02	1.18E+00	1.00E+00	2.39E+00	2.75E+00	8.75E+00	8.00E-01	1.09E+01	2.52E-01
UM-500S-500E (2-6")	1.32E-01	1.32E-01	1.23E-01	9.41E+00	1.24E+00	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	7.63E+01	2.71E-01	1.00E+00	2.39E+00	6.31E-01	8.75E+00	8.00E-01	1.09E+01	5.80E-02
BRSD-9 (2-6")	1.32E-01	1.32E-01	1.23E-01	7.25E+00	9.54E-01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	5.88E+01	2.09E-01	1.00E+00	2.39E+00	4.87E-01	8.75E+00	8.00E-01	1.09E+01	4.47E-02
BRSD-10 (2-6")	1.32E-01	1.32E-01	1.23E-01	9.92E+01	1.30E+01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	8.04E+02	2.86E+00	1.00E+00	2.39E+00	6.65E+00	8.75E+00	8.00E-01	1.09E+01	6.11E-01
BRSD-11 (2-6")	1.32E-01	1.32E-01	1.23E-01	1.14E+01	1.50E+00	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	9.26E+01	3.29E-01	1.00E+00	2.39E+00	7.66E-01	8.75E+00	8.00E-01	1.09E+01	7.04E-02
Eastern Upper Marsh (6-12")																						**Maximum HQ (Western Upper Marsh, 2-6")**	**1.87E+00**
UM-1000S-3500E (6-12")	1.32E-01	1.32E-01	1.23E-01	1.01E+01	1.33E+00	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	8.17E+01	2.90E-01	1.00E+00	2.39E+00	6.76E-01	8.75E+00	8.00E-01	1.09E+01	6.21E-02
BRSD-15 (6-12")	1.32E-01	1.32E-01	1.23E-01	1.07E+01	1.41E+00	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	8.70E+01	3.09E-01	1.00E+00	2.39E+00	7.20E-01	8.75E+00	8.00E-01	1.09E+01	6.61E-02
BRSD-4 (6-12")	1.32E-01	1.32E-01	1.23E-01	2.62E+01	3.44E+00	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	2.12E+02	7.53E-01	1.00E+00	2.39E+00	1.75E+00	8.75E+00	8.00E-01	1.09E+01	1.61E-01
UM-750S-3500E (6-12")	1.32E-01	1.32E-01	1.23E-01	1.49E+02	1.96E+01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.21E+03	4.30E+00	1.00E+00	2.39E+00	1.00E+01	8.75E+00	8.00E-01	1.09E+01	9.19E-01
BRSD-16 (6-12")	1.32E-01	1.32E-01	1.23E-01	3.97E+02	5.23E+01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	3.22E+03	1.14E+01	1.00E+00	2.39E+00	2.66E+01	8.75E+00	8.00E-01	1.09E+01	2.45E+00
UM-750S-3000E (6-12")	1.32E-01	1.32E-01	1.23E-01	1.38E+02	1.82E+01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.12E+03	3.98E+00	1.00E+00	2.39E+00	9.27E+00	8.75E+00	8.00E-01	1.09E+01	8.51E-01
BRSD-3 (6-12")	1.32E-01	1.32E-01	1.23E-01	4.29E+01	5.65E+00	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	3.48E+02	1.24E+00	1.00E+00	2.39E+00	2.88E+00	8.75E+00	8.00E-01	1.09E+01	2.64E-01
UM-500S-3250E (6-12")	1.32E-01	1.32E-01	1.23E-01	7.50E+01	9.87E+00	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	6.08E+02	2.16E+00	1.00E+00	2.39E+00	5.03E+00	8.75E+00	8.00E-01	1.09E+01	4.62E-01
UM-500S-3000E (6-12")	1.32E-01	1.32E-01	1.23E-01	1.38E+01	1.82E+00	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.12E+02	3.98E-01	1.00E+00	2.39E+00	9.27E-01	8.75E+00	8.00E-01	1.09E+01	8.51E-02
UM-500S-2750E (6-12")	1.32E-01	1.32E-01	1.23E-01	8.37E+01	1.10E+01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	6.78E+02	2.41E+00	1.00E+00	2.39E+00	5.61E+00	8.75E+00	8.00E-01	1.09E+01	5.15E-01
BRSD-25 (6-12")	1.32E-01	1.32E-01	1.23E-01	1.30E+02	1.70E+01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.05E+03	3.73E+00	1.00E+00	2.39E+00	8.69E+00	8.75E+00	8.00E-01	1.09E+01	7.98E-01
UM-250S-3000E (6-12")	1.32E-01	1.32E-01	1.23E-01	1.58E+02	2.08E+01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.28E+03	4.55E+00	1.00E+00	2.39E+00	1.06E+01	8.75E+00	8.00E-01	1.09E+01	9.73E-01
UM-250S-3250E (6-12")	1.32E-01	1.32E-01	1.23E-01	1.32E+01	1.74E+00	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.07E+02	3.80E-01	1.00E+00	2.39E+00	8.86E-01	8.75E+00	8.00E-01	1.09E+01	8.13E-02
BRSD-24 (6-12")	1.32E-01	1.32E-01	1.23E-01	2.83E+02	3.72E+01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	2.29E+03	8.13E+00	1.00E+00	2.39E+00	1.90E+01	8.75E+00	8.00E-01	1.09E+01	1.74E+00
UM-250S-2750E (6-12")	1.32E-01	1.32E-01	1.23E-01	2.97E+02	3.91E+01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	2.41E+03	8.56E+00	1.00E+00	2.39E+00	1.99E+01	8.75E+00	8.00E-01	1.09E+01	1.83E+00
UM-250S-2500E (6-12")	1.32E-01	1.32E-01	1.23E-01	1.05E+01	1.39E+00	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	8.54E+01	3.03E-01	1.00E+00	2.39E+00	7.07E-01	8.75E+00	8.00E-01	1.09E+01	6.49E-02
BRSD-2 (6-12")	1.32E-01	1.32E-01	1.23E-01	5.21E+02	6.85E+01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	4.22E+03	1.50E+01	1.00E+00	2.39E+00	3.49E+01	8.75E+00	8.00E-01	1.09E+01	3.21E+00

TABLE C-12EB: LEAD DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 12 - MARSH, WETLAND RECEPTORS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **118.73**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Great Blue Heron (Carnivorous Birds)																							
UM-500N-2500E (6-12")	1.32E-01	1.32E-01	1.23E-01	9.43E+00	1.24E+00	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	7.64E+01	2.71E-01	1.00E+00	2.39E+00	6.32E-01	8.75E+00	8.00E-01	1.09E+01	5.81E-02
UM-250N-2500E (6-12")	1.32E-01	1.32E-01	1.23E-01	1.20E+02	1.58E+01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	9.75E+02	3.46E+00	1.00E+00	2.39E+00	8.07E+00	8.75E+00	8.00E-01	1.09E+01	7.41E-01
UM-250N-2250E (6-12")	1.32E-01	1.32E-01	1.23E-01	2.39E+01	3.15E+00	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.94E+02	6.89E-01	1.00E+00	2.39E+00	1.61E+00	8.75E+00	8.00E-01	1.09E+01	1.47E-01
Western Upper Marsh (6-12")																						**Maximum HQ (Eastern Upper Marsh, 6-12")**	**3.21E+00**
UM-500S-2500E (6-12")	1.32E-01	1.32E-01	1.23E-01	1.51E+01	1.98E+00	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.22E+02	4.33E-01	1.00E+00	2.39E+00	1.01E+00	8.75E+00	8.00E-01	1.09E+01	9.27E-02
UM-0N-2000E (6-12")	1.32E-01	1.32E-01	1.23E-01	4.05E+02	5.32E+01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	3.28E+03	1.16E+01	1.00E+00	2.39E+00	2.71E+01	8.75E+00	8.00E-01	1.09E+01	2.49E+00
UM-500S-2000E (6-12")	1.32E-01	1.32E-01	1.23E-01	1.16E+01	1.53E+00	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	9.40E+01	3.34E-01	1.00E+00	2.39E+00	7.78E-01	8.75E+00	8.00E-01	1.09E+01	7.14E-02
UM-250N-1750E (6-12")	1.32E-01	1.32E-01	1.23E-01	1.22E+01	1.60E+00	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	9.87E+01	3.51E-01	1.00E+00	2.39E+00	8.17E-01	8.75E+00	8.00E-01	1.09E+01	7.50E-02
UM-0N-1500E (6-12")	1.32E-01	1.32E-01	1.23E-01	1.37E+01	1.80E+00	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.11E+02	3.94E-01	1.00E+00	2.39E+00	9.19E-01	8.75E+00	8.00E-01	1.09E+01	8.43E-02
UM-250S-1500E (6-12")	1.32E-01	1.32E-01	1.23E-01	1.15E+02	1.51E+01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	9.31E+02	3.31E+00	1.00E+00	2.39E+00	7.70E+00	8.75E+00	8.00E-01	1.09E+01	7.07E-01
UM-250S-1250E (6-12")	1.32E-01	1.32E-01	1.23E-01	1.26E+01	1.66E+00	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.02E+02	3.62E-01	1.00E+00	2.39E+00	8.44E-01	8.75E+00	8.00E-01	1.09E+01	7.75E-02
BRSD-6 (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-1000E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-750E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-500E (6-12")	1.32E-01	1.32E-01	1.23E-01	1.90E+01	2.50E+00	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.54E+02	5.47E-01	1.00E+00	2.39E+00	1.27E+00	8.75E+00	8.00E-01	1.09E+01	1.17E-01
UM-250S-500E (6-12")	1.32E-01	1.32E-01	1.23E-01	1.21E+01	1.59E+00	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	9.80E+01	3.48E-01	1.00E+00	2.39E+00	8.11E-01	8.75E+00	8.00E-01	1.09E+01	7.45E-02
UM-0N-250E (6-12")	1.32E-01	1.32E-01	1.23E-01	3.32E+01	4.37E+00	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	2.69E+02	9.55E-01	1.00E+00	2.39E+00	2.23E+00	8.75E+00	8.00E-01	1.09E+01	2.04E-01
UM-250S-250E (6-12")	1.32E-01	1.32E-01	1.23E-01	1.18E+01	1.55E+00	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	9.53E+01	3.38E-01	1.00E+00	2.39E+00	7.89E-01	8.75E+00	8.00E-01	1.09E+01	7.24E-02
BRSD-7 (6-12")	1.32E-01	1.32E-01	1.23E-01	1.42E+01	1.87E+00	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.15E+02	4.08E-01	1.00E+00	2.39E+00	9.52E-01	8.75E+00	8.00E-01	1.09E+01	8.74E-02
BRSD-8 (6-12")	1.32E-01	1.32E-01	1.23E-01	3.70E+01	4.87E+00	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	3.00E+02	1.07E+00	1.00E+00	2.39E+00	2.48E+00	8.75E+00	8.00E-01	1.09E+01	2.28E-01
UM-500S-500E (6-12")	1.32E-01	1.32E-01	1.23E-01	8.96E+00	1.18E+00	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	7.26E+01	2.58E-01	1.00E+00	2.39E+00	6.01E-01	8.75E+00	8.00E-01	1.09E+01	5.52E-02
BRSD-9 (6-12")	1.32E-01	1.32E-01	1.23E-01	1.05E+01	1.38E+00	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	8.49E+01	3.02E-01	1.00E+00	2.39E+00	7.03E-01	8.75E+00	8.00E-01	1.09E+01	6.45E-02
BRSD-10 (6-12")	1.32E-01	1.32E-01	1.23E-01	1.69E+02	2.22E+01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.37E+03	4.87E+00	1.00E+00	2.39E+00	1.13E+01	8.75E+00	8.00E-01	1.09E+01	1.04E+00
BRSD-11 (6-12")	1.32E-01	1.32E-01	1.23E-01	1.28E+01	1.69E+00	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.04E+02	3.69E-01	1.00E+00	2.39E+00	8.61E-01	8.75E+00	8.00E-01	1.09E+01	7.90E-02
Middle Marsh (0-2")																						**Maximum HQ (Western Upper Marsh, 6-12")**	**2.49E+00**
MMSD-201 (0-2")	1.32E-01	1.32E-01	1.23E-01	6.22E+01	8.18E+00	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	5.04E+02	1.79E+00	1.00E+00	2.39E+00	4.17E+00	8.75E+00	8.00E-01	1.09E+01	3.83E-01
MMSD-202 (0-2")	1.32E-01	1.32E-01	1.23E-01	8.57E+01	1.13E+01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	6.95E+02	2.47E+00	1.00E+00	2.39E+00	5.75E+00	8.75E+00	8.00E-01	1.09E+01	5.28E-01
Middle Marsh (2-6")																						**Maximum HQ (Middle Marsh, 0-2")**	**5.28E-01**
MMSD-201 (2-6")	1.32E-01	1.32E-01	1.23E-01	7.67E+01	1.01E+01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	6.22E+02	2.21E+00	1.00E+00	2.39E+00	5.15E+00	8.75E+00	8.00E-01	1.09E+01	4.73E-01
MMSD-202 (2-6")	1.32E-01	1.32E-01	1.23E-01	1.02E+02	1.34E+01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	8.28E+02	2.94E+00	1.00E+00	2.39E+00	6.85E+00	8.75E+00	8.00E-01	1.09E+01	6.29E-01
Middle Marsh (6-12")																						**Maximum HQ (Middle Marsh, 2-6")**	**6.29E-01**
MMSD-201 (6-12")	1.32E-01	1.32E-01	1.23E-01	1.19E+02	1.57E+01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	9.67E+02	3.43E+00	1.00E+00	2.39E+00	8.00E+00	8.75E+00	8.00E-01	1.09E+01	7.35E-01
MMSD-202 (6-12")	1.32E-01	1.32E-01	1.23E-01	3.23E+01	4.25E+00	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	2.62E+02	9.30E-01	1.00E+00	2.39E+00	2.17E+00	8.75E+00	8.00E-01	1.09E+01	1.99E-01
Lower Marsh (0-2")																						**Maximum HQ (Middle Marsh, 6-12")**	**7.35E-01**
LMSD-201 (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
LMSD-202 (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
LMSD-203 (0-2")	1.32E-01	1.32E-01	1.23E-01	9.87E+00	1.30E+00	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	8.00E+01	2.84E-01	1.00E+00	2.39E+00	6.62E-01	8.75E+00	8.00E-01	1.09E+01	6.08E-02
LMSD-204 (0-2")	1.32E-01	1.32E-01	1.23E-01	1.11E+01	1.46E+00	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	9.00E+01	3.20E-01	1.00E+00	2.39E+00	7.45E-01	8.75E+00	8.00E-01	1.09E+01	6.84E-02
Lower Marsh (2-6")																						**Maximum HQ (Lower Marsh, 0-2")**	**6.84E-02**
LMSD-201 (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
LMSD-202 (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
LMSD-203 (2-6")	1.32E-01	1.32E-01	1.23E-01	1.05E+01	1.38E+00	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	8.50E+01	3.02E-01	1.00E+00	2.39E+00	7.03E-01	8.75E+00	8.00E-01	1.09E+01	6.46E-02
LMSD-204 (2-6")	1.32E-01	1.32E-01	1.23E-01	1.07E+01	1.41E+00	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	8.70E+01	3.09E-01	1.00E+00	2.39E+00	7.20E-01	8.75E+00	8.00E-01	1.09E+01	6.61E-02
Lower Marsh (6-12")																						**Maximum HQ (Lower Marsh, 2-6")**	**6.61E-02**
LMSD-201 (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
LMSD-202 (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
LMSD-203 (6-12")	1.32E-01	1.32E-01	1.23E-01	9.99E+00	1.31E+00	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	8.10E+01	2.88E-01	1.00E+00	2.39E+00	6.70E-01	8.75E+00	8.00E-01	1.09E+01	6.16E-02
LMSD-204 (6-12")	1.32E-01	1.32E-01	1.23E-01	1.04E+01	1.36E+00	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	8.40E+01	2.98E-01	1.00E+00	2.39E+00	6.95E-01	8.75E+00	8.00E-01	1.09E+01	6.38E-02
																						Maximum HQ (Lower Marsh, 6-12")	**6.38E-02**
Mallard (Omnivorous Birds)																							
Reference Sites																							
BRSD-5 (0-2")	7.94E-02	NA	NA	NA	NA	5.00E-02	0.00E+00	0.00E+00	0.00E+00	2.94E-02	2.22E+00	1.44E+02	4.22E+00	2.62E-03	6.47E+01	1.69E-01	3.85E-01	1.14E+00	1.48E+00	8.75E+00	8.00E-01	9.40E+00	1.57E-01
BRSD-5 (2-6")	7.94E-02	NA	NA	NA	NA	5.00E-02	0.00E+00	0.00E+00	0.00E+00	2.94E-02	2.22E+00	1.37E+02	4.02E+00	2.62E-03	6.17E+01	1.62E-01	3.85E-01	1.14E+00	1.41E+00	8.75E+00	8.00E-01	9.40E+00	1.50E-01
BRSD-5 (6-12")	7.94E-02	NA	NA	NA	NA	5.00E-02	0.00E+00	0.00E+00	0.00E+00	2.94E-02	2.22E+00	1.75E+02	5.15E+00	2.62E-03	7.90E+01	2.07E-01	3.85E-01	1.14E+00	1.81E+00	8.75E+00	8.00E-01	9.40E+00	1.92E-01
PGBG-1 (0-2")	7.94E-02	NA	NA	NA	NA	5.00E-02	0.00E+00	0.00E+00	0.00E+00	2.94E-02	2.22E+00	1.22E+02	3.59E+00	2.62E-03	5.50E+01	1.44E-01	3.85E-01	1.14E+00	1.26E+00	8.75E+00	8.00E-01	9.40E+00	1.34E-01
PGBG-1 (2-6")	7.94E-02	NA	NA	NA	NA	5.00E-02	0.00E+00	0.00E+00	0.00E+00	2.94E-02	2.22E+00	2.24E+02	6.58E+00	2.62E-03	1.01E+02	2.64E-01	3.85E-01	1.14E+00	2.31E+00	8.75E+00	8.00E-01	9.40E+00	2.46E-01
PGBG-1 (6-12")	7.94E-02	NA	NA	NA	NA	5.00E-02	0.00E+00	0.00E+00	0.00E+00	2.94E-02	2.22E+00	3.86E+02	1.13E+01	2.62E-03	1.74E+02	4.56E-01	3.85E-01	1.14E+00	3.98E+00	8.75E+00	8.00E-01	9.40E+00	4.23E-01

TABLE C-12EB: LEAD DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 12 - MARSH, WETLAND RECEPTORS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **118.73**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Mallard (Omnivorous Birds)																							
PGBG-2 (0-2")	7.94E-02	NA	NA	NA	NA	5.00E-02	0.00E+00	0.00E+00	0.00E+00	2.94E-02	2.22E+00	2.33E+02	6.84E+00	2.62E-03	1.05E+02	2.75E-01	3.85E-01	1.14E+00	2.40E+00	8.75E+00	8.00E-01	9.40E+00	2.56E-01
PGBG-2 (2-6")	7.94E-02	NA	NA	NA	NA	5.00E-02	0.00E+00	0.00E+00	0.00E+00	2.94E-02	2.22E+00	2.40E+02	7.04E+00	2.62E-03	1.08E+02	2.83E-01	3.85E-01	1.14E+00	2.47E+00	8.75E+00	8.00E-01	9.40E+00	2.63E-01
PGBG-2 (6-12")	7.94E-02	NA	NA	NA	NA	5.00E-02	0.00E+00	0.00E+00	0.00E+00	2.94E-02	2.22E+00	2.51E+02	7.37E+00	2.62E-03	1.13E+02	2.96E-01	3.85E-01	1.14E+00	2.58E+00	8.75E+00	8.00E-01	9.40E+00	2.75E-01
Eastern Upper Marsh (0-2")																						**Minimum HQ (Reference Sites)**	**1.34E-01**
UM-1000S-3500E (0-2")	7.94E-02	NA	NA	NA	NA	5.00E-02	1.91E-01	3.38E+02	1.69E+01	2.94E-02	2.94E+01	5.20E+04	1.53E+03	2.62E-03	1.77E+03	4.64E+00	3.85E-01	1.14E+00	5.23E+02	8.75E+00	8.00E-01	9.40E+00	5.56E+01
BRSD-15 (0-2")	7.94E-02	NA	NA	NA	NA	5.00E-02	1.91E-01	1.28E+01	6.39E-01	2.94E-02	2.94E+01	1.97E+03	5.78E+01	2.62E-03	6.69E+01	1.75E-01	3.85E-01	1.14E+00	1.98E+01	8.75E+00	8.00E-01	9.40E+00	2.10E+00
BRSD-4 (0-2")	7.94E-02	NA	NA	NA	NA	5.00E-02	1.91E-01	2.12E+01	1.06E+00	2.94E-02	2.94E+01	3.26E+03	9.58E+01	2.62E-03	1.11E+02	2.91E-01	3.85E-01	1.14E+00	3.28E+01	8.75E+00	8.00E-01	9.40E+00	3.49E+00
UM-750S-3500E (0-2")	7.94E-02	NA	NA	NA	NA	5.00E-02	1.91E-01	4.28E+02	2.14E+01	2.94E-02	2.94E+01	6.59E+04	1.93E+03	2.62E-03	2.24E+03	5.87E+00	3.85E-01	1.14E+00	6.61E+02	8.75E+00	8.00E-01	9.40E+00	7.04E+01
BRSD-16 (0-2")	7.94E-02	NA	NA	NA	NA	5.00E-02	1.91E-01	4.01E+02	2.01E+01	2.94E-02	2.94E+01	6.17E+04	1.81E+03	2.62E-03	2.10E+03	5.50E+00	3.85E-01	1.14E+00	6.20E+02	8.75E+00	8.00E-01	9.40E+00	6.60E+01
UM-750S-3000E (0-2")	7.94E-02	NA	NA	NA	NA	5.00E-02	1.91E-01	2.29E+02	1.15E+01	2.94E-02	2.94E+01	3.53E+04	1.04E+03	2.62E-03	1.20E+03	3.14E+00	3.85E-01	1.14E+00	3.54E+02	8.75E+00	8.00E-01	9.40E+00	3.77E+01
BRSD-3 (0-2")	7.94E-02	NA	NA	NA	NA	5.00E-02	1.91E-01	2.08E+02	1.04E+01	2.94E-02	2.94E+01	3.20E+04	9.41E+02	2.62E-03	1.09E+03	2.85E+00	3.85E-01	1.14E+00	3.22E+02	8.75E+00	8.00E-01	9.40E+00	3.42E+01
UM-500S-3250E (0-2")	7.94E-02	NA	NA	NA	NA	5.00E-02	1.91E-01	4.22E+02	2.11E+01	2.94E-02	2.94E+01	6.50E+04	1.91E+03	2.62E-03	2.21E+03	5.79E+00	3.85E-01	1.14E+00	6.53E+02	8.75E+00	8.00E-01	9.40E+00	6.94E+01
UM-500S-3000E (0-2")	7.94E-02	NA	NA	NA	NA	5.00E-02	1.91E-01	4.05E+02	2.02E+01	2.94E-02	2.94E+01	6.23E+04	1.83E+03	2.62E-03	2.12E+03	5.55E+00	3.85E-01	1.14E+00	6.26E+02	8.75E+00	8.00E-01	9.40E+00	6.66E+01
UM-500S-2750E (0-2")	7.94E-02	NA	NA	NA	NA	5.00E-02	1.91E-01	2.31E+02	1.16E+01	2.94E-02	2.94E+01	3.56E+04	1.04E+03	2.62E-03	1.21E+03	3.17E+00	3.85E-01	1.14E+00	3.57E+02	8.75E+00	8.00E-01	9.40E+00	3.80E+01
BRSD-25 (0-2")	7.94E-02	NA	NA	NA	NA	5.00E-02	1.91E-01	1.60E+02	7.98E+00	2.94E-02	2.94E+01	2.46E+04	7.22E+02	2.62E-03	8.36E+02	2.19E+00	3.85E-01	1.14E+00	2.47E+02	8.75E+00	8.00E-01	9.40E+00	2.63E+01
UM-250S-3000E (0-2")	7.94E-02	NA	NA	NA	NA	5.00E-02	1.91E-01	3.21E+02	1.60E+01	2.94E-02	2.94E+01	4.94E+04	1.45E+03	2.62E-03	1.68E+03	4.40E+00	3.85E-01	1.14E+00	4.96E+02	8.75E+00	8.00E-01	9.40E+00	5.28E+01
UM-250S-3250E (0-2")	7.94E-02	NA	NA	NA	NA	5.00E-02	1.91E-01	3.21E+01	1.60E+00	2.94E-02	2.94E+01	4.94E+03	1.45E+02	2.62E-03	1.68E+02	4.40E-01	3.85E-01	1.14E+00	4.96E+01	8.75E+00	8.00E-01	9.40E+00	5.28E+00
BRSD-24 (0-2")	7.94E-02	NA	NA	NA	NA	5.00E-02	1.91E-01	2.06E+02	1.03E+01	2.94E-02	2.94E+01	3.18E+04	9.32E+02	2.62E-03	1.08E+03	2.83E+00	3.85E-01	1.14E+00	3.19E+02	8.75E+00	8.00E-01	9.40E+00	3.39E+01
UM-250S-2750E (0-2")	7.94E-02	NA	NA	NA	NA	5.00E-02	1.91E-01	1.85E+02	9.24E+00	2.94E-02	2.94E+01	2.85E+04	8.36E+02	2.62E-03	9.68E+02	2.53E+00	3.85E-01	1.14E+00	2.86E+02	8.75E+00	8.00E-01	9.40E+00	3.04E+01
UM-250S-2500E (0-2")	7.94E-02	NA	NA	NA	NA	5.00E-02	1.91E-01	2.20E+01	1.10E+00	2.94E-02	2.94E+01	3.38E+03	9.93E+01	2.62E-03	1.15E+02	3.01E-01	3.85E-01	1.14E+00	3.40E+01	8.75E+00	8.00E-01	9.40E+00	3.61E+00
UM-0N-2500E (0-2")	7.94E-02	NA	NA	NA	NA	5.00E-02	1.91E-01	3.82E+02	1.91E+01	2.94E-02	2.94E+01	5.88E+04	1.73E+03	2.62E-03	2.00E+03	5.24E+00	3.85E-01	1.14E+00	5.91E+02	8.75E+00	8.00E-01	9.40E+00	6.28E+01
UM-0N-250E (0-2")	7.94E-02	NA	NA	NA	NA	5.00E-02	1.91E-01	5.82E+01	2.91E+00	2.94E-02	2.94E+01	8.97E+03	2.63E+02	2.62E-03	3.05E+02	7.99E-01	3.85E-01	1.14E+00	9.01E+01	8.75E+00	8.00E-01	9.40E+00	9.58E+00
BRSD-2 (0-2")	7.94E-02	NA	NA	NA	NA	5.00E-02	1.91E-01	2.46E+02	1.23E+01	2.94E-02	2.94E+01	3.79E+04	1.11E+03	2.62E-03	1.29E+03	3.38E+00	3.85E-01	1.14E+00	3.81E+02	8.75E+00	8.00E-01	9.40E+00	4.05E+01
UM-500N-2500E (0-2")	7.94E-02	NA	NA	NA	NA	5.00E-02	1.91E-01	1.74E+01	8.71E-01	2.94E-02	2.94E+01	2.68E+03	7.87E+01	2.62E-03	9.12E+01	2.39E-01	3.85E-01	1.14E+00	2.69E+01	8.75E+00	8.00E-01	9.40E+00	2.87E+00
UM-250N-2500E (0-2")	7.94E-02	NA	NA	NA	NA	5.00E-02	1.91E-01	2.90E+02	1.45E+01	2.94E-02	2.94E+01	4.47E+04	1.31E+03	2.62E-03	1.52E+03	3.98E+00	3.85E-01	1.14E+00	4.49E+02	8.75E+00	8.00E-01	9.40E+00	4.78E+01
UM-250N-2250E (0-2")	7.94E-02	NA	NA	NA	NA	5.00E-02	1.91E-01	2.56E+02	1.28E+01	2.94E-02	2.94E+01	3.94E+04	1.16E+03	2.62E-03	1.34E+03	3.51E+00	3.85E-01	1.14E+00	3.96E+02	8.75E+00	8.00E-01	9.40E+00	4.21E+01
Western Upper Marsh (0-2")																						**Maximum HQ (Eastern Upper Marsh, 0-2")**	**7.04E+01**
UM-500S-2500E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-2000E (0-2")	7.94E-02	NA	NA	NA	NA	5.00E-02	1.32E-01	3.27E+02	1.64E+01	2.94E-02	8.65E+00	2.14E+04	6.30E+02	2.62E-03	2.48E+03	6.49E+00	3.85E-01	1.14E+00	2.20E+02	8.75E+00	8.00E-01	9.40E+00	2.34E+01
UM-500S-2000E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-250N-1750E (0-2")	7.94E-02	NA	NA	NA	NA	5.00E-02	1.32E-01	1.27E+01	6.35E-01	2.94E-02	8.65E+00	8.32E+02	2.44E+01	2.62E-03	9.62E+01	2.52E-01	3.85E-01	1.14E+00	8.54E+00	8.75E+00	8.00E-01	9.40E+00	9.08E-01
UM-0N-1500E (0-2")	7.94E-02	NA	NA	NA	NA	5.00E-02	1.32E-01	1.35E+01	6.73E-01	2.94E-02	8.65E+00	8.82E+02	2.59E+01	2.62E-03	1.02E+02	2.67E-01	3.85E-01	1.14E+00	9.05E+00	8.75E+00	8.00E-01	9.40E+00	9.63E-01
UM-250S-1500E (0-2")	7.94E-02	NA	NA	NA	NA	5.00E-02	1.32E-01	2.28E+02	1.14E+01	2.94E-02	8.65E+00	1.50E+04	4.39E+02	2.62E-03	1.73E+03	4.53E+00	3.85E-01	1.14E+00	1.53E+02	8.75E+00	8.00E-01	9.40E+00	1.63E+01
UM-250S-1250E (0-2")	7.94E-02	NA	NA	NA	NA	5.00E-02	1.32E-01	1.25E+01	6.25E-01	2.94E-02	8.65E+00	8.20E+02	2.41E+01	2.62E-03	9.48E+01	2.48E-01	3.85E-01	1.14E+00	8.41E+00	8.75E+00	8.00E-01	9.40E+00	8.95E-01
BRSD-6 (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-1000E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-750E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-500E (0-2")	7.94E-02	NA	NA	NA	NA	5.00E-02	1.32E-01	2.15E+01	1.08E+00	2.94E-02	8.65E+00	1.41E+03	4.14E+01	2.62E-03	1.63E+02	4.27E-01	3.85E-01	1.14E+00	1.45E+01	8.75E+00	8.00E-01	9.40E+00	1.54E+00
UM-250S-500E (0-2")	7.94E-02	NA	NA	NA	NA	5.00E-02	1.32E-01	9.25E+00	4.62E-01	2.94E-02	8.65E+00	6.06E+02	1.78E+01	2.62E-03	7.01E+01	1.84E-01	3.85E-01	1.14E+00	6.22E+00	8.75E+00	8.00E-01	9.40E+00	6.62E-01
UM-250S-250E (0-2")	7.94E-02	NA	NA	NA	NA	5.00E-02	1.32E-01	1.73E+01	8.64E-01	2.94E-02	8.65E+00	1.13E+03	3.33E+01	2.62E-03	1.31E+02	3.43E-01	3.85E-01	1.14E+00	1.16E+01	8.75E+00	8.00E-01	9.40E+00	1.24E+00
BRSD-7 (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-8 (0-2")	7.94E-02	NA	NA	NA	NA	5.00E-02	1.32E-01	2.98E+01	1.49E+00	2.94E-02	8.65E+00	1.95E+03	5.74E+01	2.62E-03	2.26E+02	5.92E-01	3.85E-01	1.14E+00	2.01E+01	8.75E+00	8.00E-01	9.40E+00	2.13E+00
UM-500S-500E (0-2")	7.94E-02	NA	NA	NA	NA	5.00E-02	1.32E-01	8.76E+00	4.38E-01	2.94E-02	8.65E+00	5.74E+02	1.69E+01	2.62E-03	6.64E+01	1.74E-01	3.85E-01	1.14E+00	5.89E+00	8.75E+00	8.00E-01	9.40E+00	6.27E-01
BRSD-9 (0-2")	7.94E-02	NA	NA	NA	NA	5.00E-02	1.32E-01	3.76E+01	1.88E+00	2.94E-02	8.65E+00	2.46E+03	7.24E+01	2.62E-03	2.85E+02	7.46E-01	3.85E-01	1.14E+00	2.53E+01	8.75E+00	8.00E-01	9.40E+00	2.69E+00
BRSD-10 (0-2")	7.94E-02	NA	NA	NA	NA	5.00E-02	1.32E-01	8.34E+01	4.17E+00	2.94E-02	8.65E+00	5.46E+03	1.60E+02	2.62E-03	6.32E+02	1.66E+00	3.85E-01	1.14E+00	5.61E+01	8.75E+00	8.00E-01	9.40E+00	5.97E+00
BRSD-11 (0-2")	7.94E-02	NA	NA	NA	NA	5.00E-02	1.32E-01	1.22E+01	6.09E-01	2.94E-02	8.65E+00	7.99E+02	2.35E+01	2.62E-03	9.24E+01	2.42E-01	3.85E-01	1.14E+00	8.20E+00	8.75E+00	8.00E-01	9.40E+00	8.72E-01
Eastern Upper Marsh (2-6")																						**Maximum HQ (Western Upper Marsh, 0-2")**	**2.34E+01**
UM-1000S-3500E (2-6")	7.94E-02	NA	NA	NA	NA	5.00E-02	1.91E-01	6.11E+01	3.06E+00	2.94E-02	2.94E+01	9.41E+03	2.76E+02	2.62E-03	3.20E+02	8.38E-01	3.85E-01	1.14E+00	9.45E+01	8.75E+00	8.00E-01	9.40E+00	1.01E+01
BRSD-15 (2-6")	7.94E-02	NA	NA	NA	NA	5.00E-02	1.91E-01	2.14E+01	1.07E+00	2.94E-02	2.94E+01	3.29E+03	9.67E+01	2.62E-03	1.12E+02	2.93E-01	3.85E-01	1.14E+00	3.31E+01	8.75E+00	8.00E-01	9.40E+00	3.52E+00
BRSD-4 (2-6")	7.94E-02	NA	NA	NA	NA	5.00E-02	1.91E-01	2.18E+01	1.09E+00	2.94E-02	2.94E+01	3.35E+03	9.84E+01	2.62E-03	1.14E+02	2.99E-01	3.85E-01	1.14E+00	3.37E+01	8.75E+00	8.00E-01	9.40E+00	3.58E+00
UM-750S-3500E (2-6")	7.94E-02	NA	NA	NA	NA	5.00E-02	1.91E-01	1.90E+02	9.51E+00	2.94E-02	2.94E+01	2.93E+04	8.60E+02	2.62E-03	9.96E+02	2.61E+00	3.85E-01	1.14E+00	2.94E+02	8.75E+00	8.00E-01	9.40E+00	3.13E+01
BRSD-16 (2-6")	7.94E-02	NA	NA	NA	NA	5.00E-02	1.91E-01	5.98E+02	2.99E+01	2.94E-02	2.94E+01	9.20E+04	2.70E+03	2.62E-03	3.13E+03	8.20E+00	3.85E-01	1.14E+00	9.24E+02	8.75E+00	8.00E-01	9.40E+00	9.83E+01
UM-750S-3000E (2-6")	7.94E-02	NA	NA	NA	NA	5.00E-02	1.91E-01	2.04E+02	1.02E+01	2.94E-02	2.94E+01	3.15E+04	9.24E+02	2.62E-03	1.07E+03	2.80E+00	3.85E-01	1.14E+00	3.16E+02	8.75E+00	8.00E-01	9.40E+00	3.36E+01
BRSD-3 (2-6")	7.94E-02	NA	NA	NA	NA	5.00E-02	1.91E-01	4.13E+02	2.06E+01	2.94E-02	2.94E+01	6.35E+04	1.86E+03	2.62E-03	2.16E+03	5.66E+00	3.85E-01	1.14E+00	6.38E+02	8.75E+00	8.00E-01	9.40E+00	6.79E+01
UM-500S-3250E (2-6")	7.94E-02	NA	NA	NA	NA	5.00E-02	1.91E-01	2.79E+02	1.39E+01	2.94E-02	2.94E+01	4.29E+04	1.26E+03	2.62E-03	1.46E+03	3.82E+00	3.85E-01	1.14E+00	4.31E+02	8.75E+00	8.00E-01	9.40E+00	4.59E+01
UM-500S-3000E (2-6")	7.94E-02	NA	NA	NA	NA	5.00E-02	1.91E-01	2.64E+01	1.32E+00	2.94E-02	2.94E+01	4.06E+03	1.19E+02	2.62E-03	1.38E+02	3.61E-01	3.85E-01	1.14E+00	4.07E+01	8.75E+00	8.00E-01	9.40E+00	4.34E+00
UM-500S-2750E (2-6")	7.94E-02	NA	NA	NA	NA	5.00E-02	1.91E-01	1.52E+02	7.58E+00	2.94E-02	2.94E+01	2.33E+04	6.85E+02	2.62E-03	7.94E+02	2.08E+00	3.85E-01	1.14E+00	2.34E+02	8.75E+00	8.00E-01	9.40E+00	2.49E+01

TABLE C-12EB: LEAD DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 12 - MARSH, WETLAND RECEPTORS (Continued)
Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)
calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **118.73**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Mallard (Omnivorous Birds)																							
BRSD-25 (2-6")	7.94E-02	NA	NA	NA	NA	5.00E-02	1.91E-01	2.79E+02	1.39E+01	2.94E-02	2.94E+01	4.29E+04	1.26E+03	2.62E-03	1.46E+03	3.82E+00	3.85E-01	1.14E+00	4.31E+02	8.75E+00	8.00E-01	9.40E+00	4.59E+01
UM-250S-3000E (2-6")	7.94E-02	NA	NA	NA	NA	5.00E-02	1.91E-01	3.72E+02	1.86E+01	2.94E-02	2.94E+01	5.73E+04	1.68E+03	2.62E-03	1.95E+03	5.11E+00	3.85E-01	1.14E+00	5.76E+02	8.75E+00	8.00E-01	9.40E+00	6.13E+01
UM-250S-3250E (2-6")	7.94E-02	NA	NA	NA	NA	5.00E-02	1.91E-01	1.79E+01	8.93E-01	2.94E-02	2.94E+01	2.75E+03	8.07E+01	2.62E-03	9.35E+01	2.45E-01	3.85E-01	1.14E+00	2.76E+01	8.75E+00	8.00E-01	9.40E+00	2.94E+00
BRSD-24 (2-6")	7.94E-02	NA	NA	NA	NA	5.00E-02	1.91E-01	5.08E+02	2.54E+01	2.94E-02	2.94E+01	7.82E+04	2.30E+03	2.62E-03	2.66E+03	6.97E+00	3.85E-01	1.14E+00	7.85E+02	8.75E+00	8.00E-01	9.40E+00	8.36E+01
UM-250S-2750E (2-6")	7.94E-02	NA	NA	NA	NA	5.00E-02	1.91E-01	3.97E+02	1.99E+01	2.94E-02	2.94E+01	6.12E+04	1.80E+03	2.62E-03	2.08E+03	5.45E+00	3.85E-01	1.14E+00	6.14E+02	8.75E+00	8.00E-01	9.40E+00	6.54E+01
UM-0N-2500E (2-6")	7.94E-02	NA	NA	NA	NA	5.00E-02	1.91E-01	2.41E+02	1.20E+01	2.94E-02	2.94E+01	3.70E+04	1.09E+03	2.62E-03	1.26E+03	3.30E+00	3.85E-01	1.14E+00	3.72E+02	8.75E+00	8.00E-01	9.40E+00	3.96E+01
BRSD-2 (2-6")	7.94E-02	NA	NA	NA	NA	5.00E-02	1.91E-01	3.04E+02	1.52E+01	2.94E-02	2.94E+01	4.67E+04	1.37E+03	2.62E-03	1.59E+03	4.16E+00	3.85E-01	1.14E+00	4.69E+02	8.75E+00	8.00E-01	9.40E+00	5.00E+01
UM-500N-2500E (2-6")	7.94E-02	NA	NA	NA	NA	5.00E-02	1.91E-01	1.70E+01	8.49E-01	2.94E-02	2.94E+01	2.61E+03	7.67E+01	2.62E-03	8.89E+01	2.33E-01	3.85E-01	1.14E+00	2.62E+01	8.75E+00	8.00E-01	9.40E+00	2.79E+00
UM-250N-2500E (2-6")	7.94E-02	NA	NA	NA	NA	5.00E-02	1.91E-01	2.04E+02	1.02E+01	2.94E-02	2.94E+01	3.15E+04	9.24E+02	2.62E-03	1.07E+03	2.80E+00	3.85E-01	1.14E+00	3.16E+02	8.75E+00	8.00E-01	9.40E+00	3.36E+01
UM-250N-2250E (2-6")	7.94E-02	NA	NA	NA	NA	5.00E-02	1.91E-01	3.67E+01	1.83E+00	2.94E-02	2.94E+01	5.65E+03	1.66E+02	2.62E-03	1.92E+02	5.03E-01	3.85E-01	1.14E+00	5.67E+01	8.75E+00	8.00E-01	9.40E+00	6.03E+00
Western Upper Marsh (2-6")																						**Maximum HQ (Eastern Upper Marsh, 2-6")**	**9.83E+01**
UM-500S-2500E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-2000E (2-6")	7.94E-02	NA	NA	NA	NA	5.00E-02	1.32E-01	3.25E+02	1.62E+01	2.94E-02	8.65E+00	2.13E+04	6.25E+02	2.62E-03	2.46E+03	6.44E+00	3.85E-01	1.14E+00	2.18E+02	8.75E+00	8.00E-01	9.40E+00	2.32E+01
UM-500S-2000E (2-6")	7.94E-02	NA	NA	NA	NA	5.00E-02	1.32E-01	1.22E+01	6.08E-01	2.94E-02	8.65E+00	7.97E+02	2.34E+01	2.62E-03	9.22E+01	2.41E-01	3.85E-01	1.14E+00	8.18E+00	8.75E+00	8.00E-01	9.40E+00	8.71E-01
UM-250N-1750E (2-6")	7.94E-02	NA	NA	NA	NA	5.00E-02	1.32E-01	1.23E+01	6.17E-01	2.94E-02	8.65E+00	8.09E+02	2.38E+01	2.62E-03	9.36E+01	2.45E-01	3.85E-01	1.14E+00	8.30E+00	8.75E+00	8.00E-01	9.40E+00	8.84E-01
UM-0N-1500E (2-6")	7.94E-02	NA	NA	NA	NA	5.00E-02	1.32E-01	1.46E+01	7.32E-01	2.94E-02	8.65E+00	9.60E+02	2.82E+01	2.62E-03	1.11E+02	2.91E-01	3.85E-01	1.14E+00	9.85E+00	8.75E+00	8.00E-01	9.40E+00	1.05E+00
UM-250S-1500E (2-6")	7.94E-02	NA	NA	NA	NA	5.00E-02	1.32E-01	2.19E+02	1.09E+01	2.94E-02	8.65E+00	1.44E+04	4.21E+02	2.62E-03	1.66E+03	4.35E+00	3.85E-01	1.14E+00	1.47E+02	8.75E+00	8.00E-01	9.40E+00	1.57E+01
UM-250S-1250E (2-6")	7.94E-02	NA	NA	NA	NA	5.00E-02	1.32E-01	1.23E+01	6.15E-01	2.94E-02	8.65E+00	8.07E+02	2.37E+01	2.62E-03	9.33E+01	2.44E-01	3.85E-01	1.14E+00	8.28E+00	8.75E+00	8.00E-01	9.40E+00	8.81E-01
BRSD-6 (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-1000E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-750E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-500E (2-6")	7.94E-02	NA	NA	NA	NA	5.00E-02	1.32E-01	6.89E+01	3.44E+00	2.94E-02	8.65E+00	4.51E+03	1.33E+02	2.62E-03	5.22E+02	1.37E+00	3.85E-01	1.14E+00	4.63E+01	8.75E+00	8.00E-01	9.40E+00	4.93E+00
UM-250S-500E (2-6")	7.94E-02	NA	NA	NA	NA	5.00E-02	1.32E-01	1.26E+01	6.29E-01	2.94E-02	8.65E+00	8.25E+02	2.42E+01	2.62E-03	9.54E+01	2.50E-01	3.85E-01	1.14E+00	8.46E+00	8.75E+00	8.00E-01	9.40E+00	9.01E-01
UM-0N-250E (2-6")	7.94E-02	NA	NA	NA	NA	5.00E-02	1.32E-01	3.72E+01	1.86E+00	2.94E-02	8.65E+00	2.44E+03	7.16E+01	2.62E-03	2.82E+02	7.38E-01	3.85E-01	1.14E+00	2.50E+01	8.75E+00	8.00E-01	9.40E+00	2.66E+00
UM-250S-250E (2-6")	7.94E-02	NA	NA	NA	NA	5.00E-02	1.32E-01	1.60E+01	7.98E-01	2.94E-02	8.65E+00	1.05E+03	3.07E+01	2.62E-03	1.21E+02	3.17E-01	3.85E-01	1.14E+00	1.07E+01	8.75E+00	8.00E-01	9.40E+00	1.14E+00
BRSD-7 (2-6")	7.94E-02	NA	NA	NA	NA	5.00E-02	1.32E-01	8.22E+00	4.11E-01	2.94E-02	8.65E+00	5.39E+02	1.58E+01	2.62E-03	6.23E+01	1.63E-01	3.85E-01	1.14E+00	5.53E+00	8.75E+00	8.00E-01	9.40E+00	5.88E-01
BRSD-8 (2-6")	7.94E-02	NA	NA	NA	NA	5.00E-02	1.32E-01	4.38E+01	2.19E+00	2.94E-02	8.65E+00	2.87E+03	8.43E+01	2.62E-03	3.32E+02	8.69E-01	3.85E-01	1.14E+00	2.95E+01	8.75E+00	8.00E-01	9.40E+00	3.13E+00
UM-500S-500E (2-6")	7.94E-02	NA	NA	NA	NA	5.00E-02	1.32E-01	1.01E+01	5.03E-01	2.94E-02	8.65E+00	6.60E+02	1.94E+01	2.62E-03	7.63E+01	2.00E-01	3.85E-01	1.14E+00	6.77E+00	8.75E+00	8.00E-01	9.40E+00	7.20E-01
BRSD-9 (2-6")	7.94E-02	NA	NA	NA	NA	5.00E-02	1.32E-01	7.76E+00	3.88E-01	2.94E-02	8.65E+00	5.08E+02	1.49E+01	2.62E-03	5.88E+01	1.54E-01	3.85E-01	1.14E+00	5.22E+00	8.75E+00	8.00E-01	9.40E+00	5.55E-01
BRSD-10 (2-6")	7.94E-02	NA	NA	NA	NA	5.00E-02	1.32E-01	1.06E+02	5.30E+00	2.94E-02	8.65E+00	6.95E+03	2.04E+02	2.62E-03	8.04E+02	2.11E+00	3.85E-01	1.14E+00	7.13E+01	8.75E+00	8.00E-01	9.40E+00	7.59E+00
BRSD-11 (2-6")	7.94E-02	NA	NA	NA	NA	5.00E-02	1.32E-01	1.22E+01	6.11E-01	2.94E-02	8.65E+00	8.01E+02	2.35E+01	2.62E-03	9.26E+01	2.42E-01	3.85E-01	1.14E+00	8.22E+00	8.75E+00	8.00E-01	9.40E+00	8.74E-01
Eastern Upper Marsh (6-12")																						**Maximum HQ (Western Upper Marsh, 2-6")**	**2.32E+01**
UM-1000S-3500E (6-12")	7.94E-02	NA	NA	NA	NA	5.00E-02	1.91E-01	1.56E+01	7.80E-01	2.94E-02	2.94E+01	2.40E+03	7.05E+01	2.62E-03	8.17E+01	2.14E-01	3.85E-01	1.14E+00	2.41E+01	8.75E+00	8.00E-01	9.40E+00	2.57E+00
BRSD-15 (6-12")	7.94E-02	NA	NA	NA	NA	5.00E-02	1.91E-01	1.66E+01	8.31E-01	2.94E-02	2.94E+01	2.56E+03	7.51E+01	2.62E-03	8.70E+01	2.28E-01	3.85E-01	1.14E+00	2.57E+01	8.75E+00	8.00E-01	9.40E+00	2.73E+00
BRSD-4 (6-12")	7.94E-02	NA	NA	NA	NA	5.00E-02	1.91E-01	4.05E+01	2.02E+00	2.94E-02	2.94E+01	6.23E+03	1.83E+02	2.62E-03	2.12E+02	5.55E-01	3.85E-01	1.14E+00	6.26E+01	8.75E+00	8.00E-01	9.40E+00	6.66E+00
UM-750S-3500E (6-12")	7.94E-02	NA	NA	NA	NA	5.00E-02	1.91E-01	2.31E+02	1.16E+01	2.94E-02	2.94E+01	3.56E+04	1.04E+03	2.62E-03	1.21E+03	3.17E+00	3.85E-01	1.14E+00	3.57E+02	8.75E+00	8.00E-01	9.40E+00	3.80E+01
BRSD-16 (6-12")	7.94E-02	NA	NA	NA	NA	5.00E-02	1.91E-01	6.15E+02	3.07E+01	2.94E-02	2.94E+01	9.47E+04	2.78E+03	2.62E-03	3.22E+03	8.43E+00	3.85E-01	1.14E+00	9.51E+02	8.75E+00	8.00E-01	9.40E+00	1.01E+02
UM-750S-3000E (6-12")	7.94E-02	NA	NA	NA	NA	5.00E-02	1.91E-01	2.14E+02	1.07E+01	2.94E-02	2.94E+01	3.29E+04	9.67E+02	2.62E-03	1.12E+03	2.93E+00	3.85E-01	1.14E+00	3.31E+02	8.75E+00	8.00E-01	9.40E+00	3.52E+01
BRSD-3 (6-12")	7.94E-02	NA	NA	NA	NA	5.00E-02	1.91E-01	6.65E+01	3.32E+00	2.94E-02	2.94E+01	1.02E+04	3.00E+02	2.62E-03	3.48E+02	9.11E-01	3.85E-01	1.14E+00	1.03E+02	8.75E+00	8.00E-01	9.40E+00	1.09E+01
UM-500S-3250E (6-12")	7.94E-02	NA	NA	NA	NA	5.00E-02	1.91E-01	1.16E+02	5.81E+00	2.94E-02	2.94E+01	1.79E+04	5.25E+02	2.62E-03	6.08E+02	1.59E+00	3.85E-01	1.14E+00	1.80E+02	8.75E+00	8.00E-01	9.40E+00	1.91E+01
UM-500S-3000E (6-12")	7.94E-02	NA	NA	NA	NA	5.00E-02	1.91E-01	2.14E+01	1.07E+00	2.94E-02	2.94E+01	3.29E+03	9.67E+01	2.62E-03	1.12E+02	2.93E-01	3.85E-01	1.14E+00	3.31E+01	8.75E+00	8.00E-01	9.40E+00	3.52E+00
UM-500S-2750E (6-12")	7.94E-02	NA	NA	NA	NA	5.00E-02	1.91E-01	1.29E+02	6.47E+00	2.94E-02	2.94E+01	1.99E+04	5.85E+02	2.62E-03	6.78E+02	1.78E+00	3.85E-01	1.14E+00	2.00E+02	8.75E+00	8.00E-01	9.40E+00	2.13E+01
BRSD-25 (6-12")	7.94E-02	NA	NA	NA	NA	5.00E-02	1.91E-01	2.01E+02	1.00E+01	2.94E-02	2.94E+01	3.09E+04	9.06E+02	2.62E-03	1.05E+03	2.75E+00	3.85E-01	1.14E+00	3.10E+02	8.75E+00	8.00E-01	9.40E+00	3.30E+01
UM-250S-3000E (6-12")	7.94E-02	NA	NA	NA	NA	5.00E-02	1.91E-01	2.44E+02	1.22E+01	2.94E-02	2.94E+01	3.76E+04	1.11E+03	2.62E-03	1.28E+03	3.35E+00	3.85E-01	1.14E+00	3.78E+02	8.75E+00	8.00E-01	9.40E+00	4.02E+01
UM-250S-3250E (6-12")	7.94E-02	NA	NA	NA	NA	5.00E-02	1.91E-01	2.04E+01	1.02E+00	2.94E-02	2.94E+01	3.15E+03	9.24E+01	2.62E-03	1.07E+02	2.80E-01	3.85E-01	1.14E+00	3.16E+01	8.75E+00	8.00E-01	9.40E+00	3.36E+00
BRSD-24 (6-12")	7.94E-02	NA	NA	NA	NA	5.00E-02	1.91E-01	4.37E+02	2.19E+01	2.94E-02	2.94E+01	6.73E+04	1.98E+03	2.62E-03	2.29E+03	6.00E+00	3.85E-01	1.14E+00	6.76E+02	8.75E+00	8.00E-01	9.40E+00	7.20E+01
UM-250S-2750E (6-12")	7.94E-02	NA	NA	NA	NA	5.00E-02	1.91E-01	4.60E+02	2.30E+01	2.94E-02	2.94E+01	7.09E+04	2.08E+03	2.62E-03	2.41E+03	6.31E+00	3.85E-01	1.14E+00	7.12E+02	8.75E+00	8.00E-01	9.40E+00	7.57E+01
UM-250S-2500E (6-12")	7.94E-02	NA	NA	NA	NA	5.00E-02	1.91E-01	1.63E+01	8.15E-01	2.94E-02	2.94E+01	2.51E+03	7.37E+01	2.62E-03	8.54E+01	2.24E-01	3.85E-01	1.14E+00	2.52E+01	8.75E+00	8.00E-01	9.40E+00	2.68E+00
BRSD-2 (6-12")	7.94E-02	NA	NA	NA	NA	5.00E-02	1.91E-01	8.06E+02	4.03E+01	2.94E-02	2.94E+01	1.24E+05	3.64E+03	2.62E-03	4.22E+03	1.11E+01	3.85E-01	1.14E+00	1.25E+03	8.75E+00	8.00E-01	9.40E+00	1.33E+02
UM-500N-2500E (6-12")	7.94E-02	NA	NA	NA	NA	5.00E-02	1.91E-01	1.46E+01	7.29E-01	2.94E-02	2.94E+01	2.25E+03	6.60E+01	2.62E-03	7.64E+01	2.00E-01	3.85E-01	1.14E+00	2.26E+01	8.75E+00	8.00E-01	9.40E+00	2.40E+00
UM-250N-2500E (6-12")	7.94E-02	NA	NA	NA	NA	5.00E-02	1.91E-01	1.86E+02	9.31E+00	2.94E-02	2.94E+01	2.87E+04	8.42E+02	2.62E-03	9.75E+02	2.55E+00	3.85E-01	1.14E+00	2.88E+02	8.75E+00	8.00E-01	9.40E+00	3.06E+01
UM-250N-2250E (6-12")	7.94E-02	NA	NA	NA	NA	5.00E-02	1.91E-01	3.70E+01	1.85E+00	2.94E-02	2.94E+01	5.70E+03	1.67E+02	2.62E-03	1.94E+02	5.08E-01	3.85E-01	1.14E+00	5.73E+01	8.75E+00	8.00E-01	9.40E+00	6.10E+00
Western Upper Marsh (6-12")																						**Maximum HQ (Eastern Upper Marsh, 6-12")**	**1.33E+02**
UM-500S-2500E (6-12")	7.94E-02	NA	NA	NA	NA	5.00E-02	1.32E-01	1.61E+01	8.05E-01	2.94E-02	8.65E+00	1.05E+03	3.10E+01	2.62E-03	1.22E+02	3.19E-01	3.85E-01	1.14E+00	1.08E+01	8.75E+00	8.00E-01	9.40E+00	1.15E+00
UM-0N-2000E (6-12")	7.94E-02	NA	NA	NA	NA	5.00E-02	1.32E-01	4.33E+02	2.16E+01	2.94E-02	8.65E+00	2.84E+04	8.33E+02	2.62E-03	3.28E+03	8.59E+00	3.85E-01	1.14E+00	2.91E+02	8.75E+00	8.00E-01	9.40E+00	3.10E+01
UM-500S-2000E (6-12")	7.94E-02	NA	NA	NA	NA	5.00E-02	1.32E-01	1.24E+01	6.20E-01	2.94E-02	8.65E+00	8.13E+02	2.39E+01	2.62E-03	9.40E+01	2.46E-01	3.85E-01	1.14E+00	8.34E+00	8.75E+00	8.00E-01	9.40E+00	8.88E-01
UM-250N-1750E (6-12")	7.94E-02	NA	NA	NA	NA	5.00E-02	1.32E-01	1.30E+01	6.51E-01	2.94E-02	8.65E+00	8.53E+02	2.51E+01	2.62E-03	9.87E+01	2.58E-01	3.85E-01	1.14E+00	8.76E+00	8.75E+00	8.00E-01	9.40E+00	9.32E-01

TABLE C-12EB: LEAD DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 12 - MARSH, WETLAND RECEPTORS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **118.73**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Mallard (Omnivorous Birds)																							
UM-0N-1500E (6-12")	7.94E-02	NA	NA	NA	NA	5.00E-02	1.32E-01	1.46E+01	7.32E-01	2.94E-02	8.65E+00	9.60E+02	2.82E+01	2.62E-03	1.11E+02	2.91E-01	3.85E-01	1.14E+00	9.85E+00	8.75E+00	8.00E-01	9.40E+00	1.05E+00
UM-250S-1500E (6-12")	7.94E-02	NA	NA	NA	NA	5.00E-02	1.32E-01	1.23E+02	6.14E+00	2.94E-02	8.65E+00	8.05E+03	2.36E+02	2.62E-03	9.31E+02	2.44E+00	3.85E-01	1.14E+00	8.26E+01	8.75E+00	8.00E-01	9.40E+00	8.79E+00
UM-250S-1250E (6-12")	7.94E-02	NA	NA	NA	NA	5.00E-02	1.32E-01	1.35E+01	6.73E-01	2.94E-02	8.65E+00	8.82E+02	2.59E+01	2.62E-03	1.02E+02	2.67E-01	3.85E-01	1.14E+00	9.05E+00	8.75E+00	8.00E-01	9.40E+00	9.63E-01
BRSD-6 (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-1000E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-750E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-500E (6-12")	7.94E-02	NA	NA	NA	NA	5.00E-02	1.32E-01	2.03E+01	1.02E+00	2.94E-02	8.65E+00	1.33E+03	3.91E+01	2.62E-03	1.54E+02	4.03E-01	3.85E-01	1.14E+00	1.37E+01	8.75E+00	8.00E-01	9.40E+00	1.45E+00
UM-250S-500E (6-12")	7.94E-02	NA	NA	NA	NA	5.00E-02	1.32E-01	1.29E+01	6.46E-01	2.94E-02	8.65E+00	8.47E+02	2.49E+01	2.62E-03	9.80E+01	2.57E-01	3.85E-01	1.14E+00	8.70E+00	8.75E+00	8.00E-01	9.40E+00	9.25E-01
UM-0N-250E (6-12")	7.94E-02	NA	NA	NA	NA	5.00E-02	1.32E-01	3.55E+01	1.77E+00	2.94E-02	8.65E+00	2.33E+03	6.83E+01	2.62E-03	2.69E+02	7.04E-01	3.85E-01	1.14E+00	2.39E+01	8.75E+00	8.00E-01	9.40E+00	2.54E+00
UM-250S-250E (6-12")	7.94E-02	NA	NA	NA	NA	5.00E-02	1.32E-01	1.26E+01	6.29E-01	2.94E-02	8.65E+00	8.24E+02	2.42E+01	2.62E-03	9.53E+01	2.50E-01	3.85E-01	1.14E+00	8.46E+00	8.75E+00	8.00E-01	9.40E+00	9.00E-01
BRSD-7 (6-12")	7.94E-02	NA	NA	NA	NA	5.00E-02	1.32E-01	1.52E+01	7.59E-01	2.94E-02	8.65E+00	9.94E+02	2.92E+01	2.62E-03	1.15E+02	3.01E-01	3.85E-01	1.14E+00	1.02E+01	8.75E+00	8.00E-01	9.40E+00	1.09E+00
BRSD-8 (6-12")	7.94E-02	NA	NA	NA	NA	5.00E-02	1.32E-01	3.96E+01	1.98E+00	2.94E-02	8.65E+00	2.59E+03	7.62E+01	2.62E-03	3.00E+02	7.86E-01	3.85E-01	1.14E+00	2.66E+01	8.75E+00	8.00E-01	9.40E+00	2.83E+00
UM-500S-500E (6-12")	7.94E-02	NA	NA	NA	NA	5.00E-02	1.32E-01	9.58E+00	4.79E-01	2.94E-02	8.65E+00	6.28E+02	1.84E+01	2.62E-03	7.26E+01	1.90E-01	3.85E-01	1.14E+00	6.44E+00	8.75E+00	8.00E-01	9.40E+00	6.85E-01
BRSD-9 (6-12")	7.94E-02	NA	NA	NA	NA	5.00E-02	1.32E-01	1.12E+01	5.60E-01	2.94E-02	8.65E+00	7.34E+02	2.16E+01	2.62E-03	8.49E+01	2.22E-01	3.85E-01	1.14E+00	7.53E+00	8.75E+00	8.00E-01	9.40E+00	8.02E-01
BRSD-10 (6-12")	7.94E-02	NA	NA	NA	NA	5.00E-02	1.32E-01	1.81E+02	9.04E+00	2.94E-02	8.65E+00	1.18E+04	3.48E+02	2.62E-03	1.37E+03	3.59E+00	3.85E-01	1.14E+00	1.22E+02	8.75E+00	8.00E-01	9.40E+00	1.29E+01
BRSD-11 (6-12")	7.94E-02	NA	NA	NA	NA	5.00E-02	1.32E-01	1.37E+01	6.86E-01	2.94E-02	8.65E+00	8.99E+02	2.64E+01	2.62E-03	1.04E+02	2.72E-01	3.85E-01	1.14E+00	9.23E+00	8.75E+00	8.00E-01	9.40E+00	9.82E-01
Middle Marsh (0-2")																						**Maximum HQ (Western Upper Marsh, 6-12")**	**3.10E+01**
MMSD-201 (0-2")	7.94E-02	NA	NA	NA	NA	5.00E-02	1.32E-01	6.65E+01	3.32E+00	2.94E-02	8.65E+00	4.36E+03	1.28E+02	2.62E-03	5.04E+02	1.32E+00	3.85E-01	1.14E+00	4.47E+01	8.75E+00	8.00E-01	9.40E+00	4.76E+00
MMSD-202 (0-2")	7.94E-02	NA	NA	NA	NA	5.00E-02	1.32E-01	9.17E+01	4.58E+00	2.94E-02	8.65E+00	6.01E+03	1.76E+02	2.62E-03	6.95E+02	1.82E+00	3.85E-01	1.14E+00	6.17E+01	8.75E+00	8.00E-01	9.40E+00	6.56E+00
Middle Marsh (2-6")																						**Maximum HQ (Middle Marsh, 0-2")**	**6.56E+00**
MMSD-201 (2-6")	7.94E-02	NA	NA	NA	NA	5.00E-02	1.32E-01	8.21E+01	4.10E+00	2.94E-02	8.65E+00	5.38E+03	1.58E+02	2.62E-03	6.22E+02	1.63E+00	3.85E-01	1.14E+00	5.52E+01	8.75E+00	8.00E-01	9.40E+00	5.87E+00
MMSD-202 (2-6")	7.94E-02	NA	NA	NA	NA	5.00E-02	1.32E-01	1.09E+02	5.46E+00	2.94E-02	8.65E+00	7.16E+03	2.10E+02	2.62E-03	8.28E+02	2.17E+00	3.85E-01	1.14E+00	7.35E+01	8.75E+00	8.00E-01	9.40E+00	7.82E+00
Middle Marsh (6-12")																						**Maximum HQ (Middle Marsh, 2-6")**	**7.82E+00**
MMSD-201 (6-12")	7.94E-02	NA	NA	NA	NA	5.00E-02	1.32E-01	1.28E+02	6.38E+00	2.94E-02	8.65E+00	8.36E+03	2.45E+02	2.62E-03	9.67E+02	2.53E+00	3.85E-01	1.14E+00	8.58E+01	8.75E+00	8.00E-01	9.40E+00	9.13E+00
MMSD-202 (6-12")	7.94E-02	NA	NA	NA	NA	5.00E-02	1.32E-01	3.46E+01	1.73E+00	2.94E-02	8.65E+00	2.27E+03	6.65E+01	2.62E-03	2.62E+02	6.86E-01	3.85E-01	1.14E+00	2.32E+01	8.75E+00	8.00E-01	9.40E+00	2.47E+00
Lower Marsh (0-2")																						**Maximum HQ (Middle Marsh, 6-12")**	**9.13E+00**
LMSD-201 (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
LMSD-202 (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
LMSD-203 (0-2")	7.94E-02	NA	NA	NA	NA	5.00E-02	1.32E-01	1.06E+01	5.28E-01	2.94E-02	8.65E+00	6.92E+02	2.03E+01	2.62E-03	8.00E+01	2.10E-01	3.85E-01	1.14E+00	7.10E+00	8.75E+00	8.00E-01	9.40E+00	7.55E-01
LMSD-204 (0-2")	7.94E-02	NA	NA	NA	NA	5.00E-02	1.32E-01	1.19E+01	5.94E-01	2.94E-02	8.65E+00	7.78E+02	2.28E+01	2.62E-03	9.00E+01	2.36E-01	3.85E-01	1.14E+00	7.99E+00	8.75E+00	8.00E-01	9.40E+00	8.50E-01
Lower Marsh (2-6")																						**Maximum HQ (Lower Marsh, 0-2")**	**8.50E-01**
LMSD-201 (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
LMSD-202 (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
LMSD-203 (2-6")	7.94E-02	NA	NA	NA	NA	5.00E-02	1.32E-01	1.12E+01	5.61E-01	2.94E-02	8.65E+00	7.35E+02	2.16E+01	2.62E-03	8.50E+01	2.23E-01	3.85E-01	1.14E+00	7.54E+00	8.75E+00	8.00E-01	9.40E+00	8.03E-01
LMSD-204 (2-6")	7.94E-02	NA	NA	NA	NA	5.00E-02	1.32E-01	1.15E+01	5.74E-01	2.94E-02	8.65E+00	7.52E+02	2.21E+01	2.62E-03	8.70E+01	2.28E-01	3.85E-01	1.14E+00	7.72E+00	8.75E+00	8.00E-01	9.40E+00	8.21E-01
Lower Marsh (6-12")																						**Maximum HQ (Lower Marsh, 2-6")**	**8.21E-01**
LMSD-201 (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
LMSD-202 (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
LMSD-203 (6-12")	7.94E-02	NA	NA	NA	NA	5.00E-02	1.32E-01	1.07E+01	5.34E-01	2.94E-02	8.65E+00	7.00E+02	2.06E+01	2.62E-03	8.10E+01	2.12E-01	3.85E-01	1.14E+00	7.19E+00	8.75E+00	8.00E-01	9.40E+00	7.65E-01
LMSD-204 (6-12")	7.94E-02	NA	NA	NA	NA	5.00E-02	1.32E-01	1.11E+01	5.54E-01	2.94E-02	8.65E+00	7.26E+02	2.13E+01	2.62E-03	8.40E+01	2.20E-01	3.85E-01	1.14E+00	7.45E+00	8.75E+00	8.00E-01	9.40E+00	7.93E-01
																						Maximum HQ (Lower Marsh, 6-12")	**7.93E-01**
Muskrat (Herbivorous Mammals)																							
Reference Sites																							
BRSD-5 (0-2")	6.27E-02	NA	NA	NA	NA	6.27E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	1.51E-03	6.47E+01	9.74E-02	1.00E+00	8.73E-01	1.12E-01	2.41E+02	1.87E-02	1.91E+02	5.84E-04
BRSD-5 (2-6")	6.27E-02	NA	NA	NA	NA	6.27E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	1.51E-03	6.17E+01	9.29E-02	1.00E+00	8.73E-01	1.06E-01	2.41E+02	1.87E-02	1.91E+02	5.57E-04
BRSD-5 (6-12")	6.27E-02	NA	NA	NA	NA	6.27E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	1.51E-03	7.90E+01	1.19E-01	1.00E+00	8.73E-01	1.36E-01	2.41E+02	1.87E-02	1.91E+02	7.13E-04
PGBG-1 (0-2")	6.27E-02	NA	NA	NA	NA	6.27E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	1.51E-03	5.50E+01	8.28E-02	1.00E+00	8.73E-01	9.49E-02	2.41E+02	1.87E-02	1.91E+02	4.96E-04
PGBG-1 (2-6")	6.27E-02	NA	NA	NA	NA	6.27E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	1.51E-03	1.01E+02	1.52E-01	1.00E+00	8.73E-01	1.74E-01	2.41E+02	1.87E-02	1.91E+02	9.12E-04
PGBG-1 (6-12")	6.27E-02	NA	NA	NA	NA	6.27E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	1.51E-03	1.74E+02	2.62E-01	1.00E+00	8.73E-01	3.00E-01	2.41E+02	1.87E-02	1.91E+02	1.57E-03
PGBG-2 (0-2")	6.27E-02	NA	NA	NA	NA	6.27E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	1.51E-03	1.05E+02	1.58E-01	1.00E+00	8.73E-01	1.81E-01	2.41E+02	1.87E-02	1.91E+02	9.48E-04
PGBG-2 (2-6")	6.27E-02	NA	NA	NA	NA	6.27E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	1.51E-03	1.08E+02	1.63E-01	1.00E+00	8.73E-01	1.86E-01	2.41E+02	1.87E-02	1.91E+02	9.75E-04
PGBG-2 (6-12")	6.27E-02	NA	NA	NA	NA	6.27E-02	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	1.51E-03	1.13E+02	1.70E-01	1.00E+00	8.73E-01	1.95E-01	2.41E+02	1.87E-02	1.91E+02	1.02E-03
Eastern Upper Marsh (0-2")																						**Minimum HQ (Reference Sites)**	**4.96E-04**
UM-1000S-3500E (0-2")	6.27E-02	NA	NA	NA	NA	6.27E-02	1.91E-01	3.38E+02	2.12E+01	NA	NA	NA	NA	1.51E-03	1.77E+03	2.66E+00	1.00E+00	8.73E-01	2.73E+01	2.41E+02	1.87E-02	1.91E+02	1.43E-01
BRSD-15 (0-2")	6.27E-02	NA	NA	NA	NA	6.27E-02	1.91E-01	1.28E+01	8.01E-01	NA	NA	NA	NA	1.51E-03	6.69E+01	1.01E-01	1.00E+00	8.73E-01	1.03E+00	2.41E+02	1.87E-02	1.91E+02	5.41E-03
BRSD-4 (0-2")	6.27E-02	NA	NA	NA	NA	6.27E-02	1.91E-01	2.12E+01	1.33E+00	NA	NA	NA	NA	1.51E-03	1.11E+02	1.67E-01	1.00E+00	8.73E-01	1.71E+00	2.41E+02	1.87E-02	1.91E+02	8.97E-03
UM-750S-3500E (0-2")	6.27E-02	NA	NA	NA	NA	6.27E-02	1.91E-01	4.28E+02	2.68E+01	NA	NA	NA	NA	1.51E-03	2.24E+03	3.37E+00	1.00E+00	8.73E-01	3.46E+01	2.41E+02	1.87E-02	1.91E+02	1.81E-01

TABLE C-12EB: LEAD DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 12 - MARSH, WETLAND RECEPTORS (Continued)
Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)
calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **118.73**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Muskrat (Herbivorous Mammals)																							
BRSD-16 (0-2")	6.27E-02	NA	NA	NA	NA	6.27E-02	1.91E-01	4.01E+02	2.52E+01	NA	NA	NA	NA	1.51E-03	2.10E+03	3.16E+00	1.00E+00	8.73E-01	3.24E+01	2.41E+02	1.87E-02	1.91E+02	1.70E-01
UM-750S-3000E (0-2")	6.27E-02	NA	NA	NA	NA	6.27E-02	1.91E-01	2.29E+02	1.44E+01	NA	NA	NA	NA	1.51E-03	1.20E+03	1.81E+00	1.00E+00	8.73E-01	1.85E+01	2.41E+02	1.87E-02	1.91E+02	9.70E-02
BRSD-3 (0-2")	6.27E-02	NA	NA	NA	NA	6.27E-02	1.91E-01	2.08E+02	1.31E+01	NA	NA	NA	NA	1.51E-03	1.09E+03	1.64E+00	1.00E+00	8.73E-01	1.68E+01	2.41E+02	1.87E-02	1.91E+02	8.81E-02
UM-500S-3250E (0-2")	6.27E-02	NA	NA	NA	NA	6.27E-02	1.91E-01	4.22E+02	2.65E+01	NA	NA	NA	NA	1.51E-03	2.21E+03	3.33E+00	1.00E+00	8.73E-01	3.41E+01	2.41E+02	1.87E-02	1.91E+02	1.79E-01
UM-500S-3000E (0-2")	6.27E-02	NA	NA	NA	NA	6.27E-02	1.91E-01	4.05E+02	2.54E+01	NA	NA	NA	NA	1.51E-03	2.12E+03	3.19E+00	1.00E+00	8.73E-01	3.27E+01	2.41E+02	1.87E-02	1.91E+02	1.71E-01
UM-500S-2750E (0-2")	6.27E-02	NA	NA	NA	NA	6.27E-02	1.91E-01	2.31E+02	1.45E+01	NA	NA	NA	NA	1.51E-03	1.21E+03	1.82E+00	1.00E+00	8.73E-01	1.87E+01	2.41E+02	1.87E-02	1.91E+02	9.78E-02
BRSD-25 (0-2")	6.27E-02	NA	NA	NA	NA	6.27E-02	1.91E-01	1.60E+02	1.00E+01	NA	NA	NA	NA	1.51E-03	8.36E+02	1.26E+00	1.00E+00	8.73E-01	1.29E+01	2.41E+02	1.87E-02	1.91E+02	6.76E-02
UM-250S-3000E (0-2")	6.27E-02	NA	NA	NA	NA	6.27E-02	1.91E-01	3.21E+02	2.01E+01	NA	NA	NA	NA	1.51E-03	1.68E+03	2.53E+00	1.00E+00	8.73E-01	2.60E+01	2.41E+02	1.87E-02	1.91E+02	1.36E-01
UM-250S-3250E (0-2")	6.27E-02	NA	NA	NA	NA	6.27E-02	1.91E-01	3.21E+01	2.01E+00	NA	NA	NA	NA	1.51E-03	1.68E+02	2.53E-01	1.00E+00	8.73E-01	2.60E+00	2.41E+02	1.87E-02	1.91E+02	1.36E-02
BRSD-24 (0-2")	6.27E-02	NA	NA	NA	NA	6.27E-02	1.91E-01	2.06E+02	1.29E+01	NA	NA	NA	NA	1.51E-03	1.08E+03	1.63E+00	1.00E+00	8.73E-01	1.67E+01	2.41E+02	1.87E-02	1.91E+02	8.73E-02
UM-250S-2750E (0-2")	6.27E-02	NA	NA	NA	NA	6.27E-02	1.91E-01	1.85E+02	1.16E+01	NA	NA	NA	NA	1.51E-03	9.68E+02	1.46E+00	1.00E+00	8.73E-01	1.50E+01	2.41E+02	1.87E-02	1.91E+02	7.83E-02
UM-250S-2500E (0-2")	6.27E-02	NA	NA	NA	NA	6.27E-02	1.91E-01	2.20E+01	1.38E+00	NA	NA	NA	NA	1.51E-03	1.15E+02	1.73E-01	1.00E+00	8.73E-01	1.78E+00	2.41E+02	1.87E-02	1.91E+02	9.30E-03
UM-0N-2500E (0-2")	6.27E-02	NA	NA	NA	NA	6.27E-02	1.91E-01	3.82E+02	2.40E+01	NA	NA	NA	NA	1.51E-03	2.00E+03	3.01E+00	1.00E+00	8.73E-01	3.09E+01	2.41E+02	1.87E-02	1.91E+02	1.62E-01
UM-0N-250E (0-2")	6.27E-02	NA	NA	NA	NA	6.27E-02	1.91E-01	5.82E+01	3.65E+00	NA	NA	NA	NA	1.51E-03	3.05E+02	4.59E-01	1.00E+00	8.73E-01	4.71E+00	2.41E+02	1.87E-02	1.91E+02	2.47E-02
BRSD-2 (0-2")	6.27E-02	NA	NA	NA	NA	6.27E-02	1.91E-01	2.46E+02	1.55E+01	NA	NA	NA	NA	1.51E-03	1.29E+03	1.94E+00	1.00E+00	8.73E-01	1.99E+01	2.41E+02	1.87E-02	1.91E+02	1.04E-01
UM-500N-2500E (0-2")	6.27E-02	NA	NA	NA	NA	6.27E-02	1.91E-01	1.74E+01	1.09E+00	NA	NA	NA	NA	1.51E-03	9.12E+01	1.37E-01	1.00E+00	8.73E-01	1.41E+00	2.41E+02	1.87E-02	1.91E+02	7.37E-03
UM-250N-2500E (0-2")	6.27E-02	NA	NA	NA	NA	6.27E-02	1.91E-01	2.90E+02	1.82E+01	NA	NA	NA	NA	1.51E-03	1.52E+03	2.29E+00	1.00E+00	8.73E-01	2.35E+01	2.41E+02	1.87E-02	1.91E+02	1.23E-01
UM-250N-2250E (0-2")	6.27E-02	NA	NA	NA	NA	6.27E-02	1.91E-01	2.56E+02	1.61E+01	NA	NA	NA	NA	1.51E-03	1.34E+03	2.02E+00	1.00E+00	8.73E-01	2.07E+01	2.41E+02	1.87E-02	1.91E+02	1.08E-01
Western Upper Marsh (0-2")																						**Maximum HQ (Eastern Upper Marsh, 0-2")**	**1.81E-01**
UM-500S-2500E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-2000E (0-2")	6.27E-02	NA	NA	NA	NA	6.27E-02	1.32E-01	3.27E+02	2.05E+01	NA	NA	NA	NA	1.51E-03	2.48E+03	3.73E+00	1.00E+00	8.73E-01	2.78E+01	2.41E+02	1.87E-02	1.91E+02	1.45E-01
UM-500S-2000E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-250N-1750E (0-2")	6.27E-02	NA	NA	NA	NA	6.27E-02	1.32E-01	1.27E+01	7.96E-01	NA	NA	NA	NA	1.51E-03	9.62E+01	1.45E-01	1.00E+00	8.73E-01	1.08E+00	2.41E+02	1.87E-02	1.91E+02	5.64E-03
UM-0N-1500E (0-2")	6.27E-02	NA	NA	NA	NA	6.27E-02	1.32E-01	1.35E+01	8.44E-01	NA	NA	NA	NA	1.51E-03	1.02E+02	1.54E-01	1.00E+00	8.73E-01	1.14E+00	2.41E+02	1.87E-02	1.91E+02	5.98E-03
UM-250S-1500E (0-2")	6.27E-02	NA	NA	NA	NA	6.27E-02	1.32E-01	2.28E+02	1.43E+01	NA	NA	NA	NA	1.51E-03	1.73E+03	2.60E+00	1.00E+00	8.73E-01	1.94E+01	2.41E+02	1.87E-02	1.91E+02	1.01E-01
UM-250S-1250E (0-2")	6.27E-02	NA	NA	NA	NA	6.27E-02	1.32E-01	1.25E+01	7.85E-01	NA	NA	NA	NA	1.51E-03	9.48E+01	1.43E-01	1.00E+00	8.73E-01	1.06E+00	2.41E+02	1.87E-02	1.91E+02	5.56E-03
BRSD-6 (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-1000E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-750E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-500E (0-2")	6.27E-02	NA	NA	NA	NA	6.27E-02	1.32E-01	2.15E+01	1.35E+00	NA	NA	NA	NA	1.51E-03	1.63E+02	2.45E-01	1.00E+00	8.73E-01	1.83E+00	2.41E+02	1.87E-02	1.91E+02	9.56E-03
UM-250S-500E (0-2")	6.27E-02	NA	NA	NA	NA	6.27E-02	1.32E-01	9.25E+00	5.80E-01	NA	NA	NA	NA	1.51E-03	7.01E+01	1.06E-01	1.00E+00	8.73E-01	7.85E-01	2.41E+02	1.87E-02	1.91E+02	4.11E-03
UM-250S-250E (0-2")	6.27E-02	NA	NA	NA	NA	6.27E-02	1.32E-01	1.73E+01	1.08E+00	NA	NA	NA	NA	1.51E-03	1.31E+02	1.97E-01	1.00E+00	8.73E-01	1.47E+00	2.41E+02	1.87E-02	1.91E+02	7.68E-03
BRSD-7 (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-8 (0-2")	6.27E-02	NA	NA	NA	NA	6.27E-02	1.32E-01	2.98E+01	1.87E+00	NA	NA	NA	NA	1.51E-03	2.26E+02	3.40E-01	1.00E+00	8.73E-01	2.53E+00	2.41E+02	1.87E-02	1.91E+02	1.33E-02
UM-500S-500E (0-2")	6.27E-02	NA	NA	NA	NA	6.27E-02	1.32E-01	8.76E+00	5.50E-01	NA	NA	NA	NA	1.51E-03	6.64E+01	1.00E-01	1.00E+00	8.73E-01	7.44E-01	2.41E+02	1.87E-02	1.91E+02	3.89E-03
BRSD-9 (0-2")	6.27E-02	NA	NA	NA	NA	6.27E-02	1.32E-01	3.76E+01	2.36E+00	NA	NA	NA	NA	1.51E-03	2.85E+02	4.29E-01	1.00E+00	8.73E-01	3.19E+00	2.41E+02	1.87E-02	1.91E+02	1.67E-02
BRSD-10 (0-2")	6.27E-02	NA	NA	NA	NA	6.27E-02	1.32E-01	8.34E+01	5.23E+00	NA	NA	NA	NA	1.51E-03	6.32E+02	9.52E-01	1.00E+00	8.73E-01	7.08E+00	2.41E+02	1.87E-02	1.91E+02	3.71E-02
BRSD-11 (0-2")	6.27E-02	NA	NA	NA	NA	6.27E-02	1.32E-01	1.22E+01	7.65E-01	NA	NA	NA	NA	1.51E-03	9.24E+01	1.39E-01	1.00E+00	8.73E-01	1.04E+00	2.41E+02	1.87E-02	1.91E+02	5.42E-03
Eastern Upper Marsh (2-6")																						**Maximum HQ (Western Upper Marsh, 0-2")**	**1.45E-01**
UM-1000S-3500E (2-6")	6.27E-02	NA	NA	NA	NA	6.27E-02	1.91E-01	6.11E+01	3.83E+00	NA	NA	NA	NA	1.51E-03	3.20E+02	4.82E-01	1.00E+00	8.73E-01	4.94E+00	2.41E+02	1.87E-02	1.91E+02	2.59E-02
BRSD-15 (2-6")	6.27E-02	NA	NA	NA	NA	6.27E-02	1.91E-01	2.14E+01	1.34E+00	NA	NA	NA	NA	1.51E-03	1.12E+02	1.69E-01	1.00E+00	8.73E-01	1.73E+00	2.41E+02	1.87E-02	1.91E+02	9.05E-03
BRSD-4 (2-6")	6.27E-02	NA	NA	NA	NA	6.27E-02	1.91E-01	2.18E+01	1.37E+00	NA	NA	NA	NA	1.51E-03	1.14E+02	1.72E-01	1.00E+00	8.73E-01	1.76E+00	2.41E+02	1.87E-02	1.91E+02	9.22E-03
UM-750S-3500E (2-6")	6.27E-02	NA	NA	NA	NA	6.27E-02	1.91E-01	1.90E+02	1.19E+01	NA	NA	NA	NA	1.51E-03	9.96E+02	1.50E+00	1.00E+00	8.73E-01	1.54E+01	2.41E+02	1.87E-02	1.91E+02	8.05E-02
BRSD-16 (2-6")	6.27E-02	NA	NA	NA	NA	6.27E-02	1.91E-01	5.98E+02	3.75E+01	NA	NA	NA	NA	1.51E-03	3.13E+03	4.71E+00	1.00E+00	8.73E-01	4.84E+01	2.41E+02	1.87E-02	1.91E+02	2.53E-01
UM-750S-3000E (2-6")	6.27E-02	NA	NA	NA	NA	6.27E-02	1.91E-01	2.04E+02	1.28E+01	NA	NA	NA	NA	1.51E-03	1.07E+03	1.61E+00	1.00E+00	8.73E-01	1.65E+01	2.41E+02	1.87E-02	1.91E+02	8.65E-02
BRSD-3 (2-6")	6.27E-02	NA	NA	NA	NA	6.27E-02	1.91E-01	4.13E+02	2.59E+01	NA	NA	NA	NA	1.51E-03	2.16E+03	3.25E+00	1.00E+00	8.73E-01	3.34E+01	2.41E+02	1.87E-02	1.91E+02	1.75E-01
UM-500S-3250E (2-6")	6.27E-02	NA	NA	NA	NA	6.27E-02	1.91E-01	2.79E+02	1.75E+01	NA	NA	NA	NA	1.51E-03	1.46E+03	2.20E+00	1.00E+00	8.73E-01	2.26E+01	2.41E+02	1.87E-02	1.91E+02	1.18E-01
UM-500S-3000E (2-6")	6.27E-02	NA	NA	NA	NA	6.27E-02	1.91E-01	2.64E+01	1.65E+00	NA	NA	NA	NA	1.51E-03	1.38E+02	2.08E-01	1.00E+00	8.73E-01	2.13E+00	2.41E+02	1.87E-02	1.91E+02	1.12E-02
UM-500S-2750E (2-6")	6.27E-02	NA	NA	NA	NA	6.27E-02	1.91E-01	1.52E+02	9.51E+00	NA	NA	NA	NA	1.51E-03	7.94E+02	1.20E+00	1.00E+00	8.73E-01	1.23E+01	2.41E+02	1.87E-02	1.91E+02	6.42E-02
BRSD-25 (2-6")	6.27E-02	NA	NA	NA	NA	6.27E-02	1.91E-01	2.79E+02	1.75E+01	NA	NA	NA	NA	1.51E-03	1.46E+03	2.20E+00	1.00E+00	8.73E-01	2.26E+01	2.41E+02	1.87E-02	1.91E+02	1.18E-01
UM-250S-3000E (2-6")	6.27E-02	NA	NA	NA	NA	6.27E-02	1.91E-01	3.72E+02	2.34E+01	NA	NA	NA	NA	1.51E-03	1.95E+03	2.94E+00	1.00E+00	8.73E-01	3.01E+01	2.41E+02	1.87E-02	1.91E+02	1.58E-01
UM-250S-3250E (2-6")	6.27E-02	NA	NA	NA	NA	6.27E-02	1.91E-01	1.79E+01	1.12E+00	NA	NA	NA	NA	1.51E-03	9.35E+01	1.41E-01	1.00E+00	8.73E-01	1.44E+00	2.41E+02	1.87E-02	1.91E+02	7.56E-03
BRSD-24 (2-6")	6.27E-02	NA	NA	NA	NA	6.27E-02	1.91E-01	5.08E+02	3.19E+01	NA	NA	NA	NA	1.51E-03	2.66E+03	4.00E+00	1.00E+00	8.73E-01	4.11E+01	2.41E+02	1.87E-02	1.91E+02	2.15E-01
UM-250S-2750E (2-6")	6.27E-02	NA	NA	NA	NA	6.27E-02	1.91E-01	3.97E+02	2.49E+01	NA	NA	NA	NA	1.51E-03	2.08E+03	3.13E+00	1.00E+00	8.73E-01	3.21E+01	2.41E+02	1.87E-02	1.91E+02	1.68E-01
UM-0N-2500E (2-6")	6.27E-02	NA	NA	NA	NA	6.27E-02	1.91E-01	2.41E+02	1.51E+01	NA	NA	NA	NA	1.51E-03	1.26E+03	1.90E+00	1.00E+00	8.73E-01	1.95E+01	2.41E+02	1.87E-02	1.91E+02	1.02E-01
BRSD-2 (2-6")	6.27E-02	NA	NA	NA	NA	6.27E-02	1.91E-01	3.04E+02	1.90E+01	NA	NA	NA	NA	1.51E-03	1.59E+03	2.39E+00	1.00E+00	8.73E-01	2.46E+01	2.41E+02	1.87E-02	1.91E+02	1.29E-01

TABLE C-12EB: LEAD DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 12 - MARSH, WETLAND RECEPTORS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **118.73**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Muskrat (Herbivorous Mammals)																							
UM-500N-2500E (2-6")	6.27E-02	NA	NA	NA	NA	6.27E-02	1.91E-01	1.70E+01	1.07E+00	NA	NA	NA	NA	1.51E-03	8.89E+01	1.34E-01	1.00E+00	8.73E-01	1.37E+00	2.41E+02	1.87E-02	1.91E+02	7.19E-03
UM-250N-2500E (2-6")	6.27E-02	NA	NA	NA	NA	6.27E-02	1.91E-01	2.04E+02	1.28E+01	NA	NA	NA	NA	1.51E-03	1.07E+03	1.61E+00	1.00E+00	8.73E-01	1.65E+01	2.41E+02	1.87E-02	1.91E+02	8.65E-02
UM-250N-2250E (2-6")	6.27E-02	NA	NA	NA	NA	6.27E-02	1.91E-01	3.67E+01	2.30E+00	NA	NA	NA	NA	1.51E-03	1.92E+02	2.89E-01	1.00E+00	8.73E-01	2.97E+00	2.41E+02	1.87E-02	1.91E+02	1.55E-02
Western Upper Marsh (2-6")																						**Maximum HQ (Eastern Upper Marsh, 2-6")**	**2.53E-01**
UM-500S-2500E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-2000E (2-6")	6.27E-02	NA	NA	NA	NA	6.27E-02	1.32E-01	3.25E+02	2.04E+01	NA	NA	NA	NA	1.51E-03	2.46E+03	3.70E+00	1.00E+00	8.73E-01	2.76E+01	2.41E+02	1.87E-02	1.91E+02	1.44E-01
UM-500S-2000E (2-6")	6.27E-02	NA	NA	NA	NA	6.27E-02	1.32E-01	1.22E+01	7.63E-01	NA	NA	NA	NA	1.51E-03	9.22E+01	1.39E-01	1.00E+00	8.73E-01	1.03E+00	2.41E+02	1.87E-02	1.91E+02	5.41E-03
UM-250N-1750E (2-6")	6.27E-02	NA	NA	NA	NA	6.27E-02	1.32E-01	1.23E+01	7.75E-01	NA	NA	NA	NA	1.51E-03	9.36E+01	1.41E-01	1.00E+00	8.73E-01	1.05E+00	2.41E+02	1.87E-02	1.91E+02	5.49E-03
UM-0N-1500E (2-6")	6.27E-02	NA	NA	NA	NA	6.27E-02	1.32E-01	1.46E+01	9.19E-01	NA	NA	NA	NA	1.51E-03	1.11E+02	1.67E-01	1.00E+00	8.73E-01	1.24E+00	2.41E+02	1.87E-02	1.91E+02	6.51E-03
UM-250S-1500E (2-6")	6.27E-02	NA	NA	NA	NA	6.27E-02	1.32E-01	2.19E+02	1.37E+01	NA	NA	NA	NA	1.51E-03	1.66E+03	2.50E+00	1.00E+00	8.73E-01	1.86E+01	2.41E+02	1.87E-02	1.91E+02	9.73E-02
UM-250S-1250E (2-6")	6.27E-02	NA	NA	NA	NA	6.27E-02	1.32E-01	1.23E+01	7.72E-01	NA	NA	NA	NA	1.51E-03	9.33E+01	1.40E-01	1.00E+00	8.73E-01	1.05E+00	2.41E+02	1.87E-02	1.91E+02	5.47E-03
BRSD-6 (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-1000E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-750E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-500E (2-6")	6.27E-02	NA	NA	NA	NA	6.27E-02	1.32E-01	6.89E+01	4.32E+00	NA	NA	NA	NA	1.51E-03	5.22E+02	7.86E-01	1.00E+00	8.73E-01	5.85E+00	2.41E+02	1.87E-02	1.91E+02	3.06E-02
UM-250S-500E (2-6")	6.27E-02	NA	NA	NA	NA	6.27E-02	1.32E-01	1.26E+01	7.90E-01	NA	NA	NA	NA	1.51E-03	9.54E+01	1.44E-01	1.00E+00	8.73E-01	1.07E+00	2.41E+02	1.87E-02	1.91E+02	5.59E-03
UM-0N-250E (2-6")	6.27E-02	NA	NA	NA	NA	6.27E-02	1.32E-01	3.72E+01	2.33E+00	NA	NA	NA	NA	1.51E-03	2.82E+02	4.25E-01	1.00E+00	8.73E-01	3.16E+00	2.41E+02	1.87E-02	1.91E+02	1.65E-02
UM-250S-250E (2-6")	6.27E-02	NA	NA	NA	NA	6.27E-02	1.32E-01	1.60E+01	1.00E+00	NA	NA	NA	NA	1.51E-03	1.21E+02	1.82E-01	1.00E+00	8.73E-01	1.36E+00	2.41E+02	1.87E-02	1.91E+02	7.10E-03
BRSD-7 (2-6")	6.27E-02	NA	NA	NA	NA	6.27E-02	1.32E-01	8.22E+00	5.16E-01	NA	NA	NA	NA	1.51E-03	6.23E+01	9.38E-02	1.00E+00	8.73E-01	6.98E-01	2.41E+02	1.87E-02	1.91E+02	3.65E-03
BRSD-8 (2-6")	6.27E-02	NA	NA	NA	NA	6.27E-02	1.32E-01	4.38E+01	2.75E+00	NA	NA	NA	NA	1.51E-03	3.32E+02	5.00E-01	1.00E+00	8.73E-01	3.72E+00	2.41E+02	1.87E-02	1.91E+02	1.95E-02
UM-500S-500E (2-6")	6.27E-02	NA	NA	NA	NA	6.27E-02	1.32E-01	1.01E+01	6.31E-01	NA	NA	NA	NA	1.51E-03	7.63E+01	1.15E-01	1.00E+00	8.73E-01	8.55E-01	2.41E+02	1.87E-02	1.91E+02	4.47E-03
BRSD-9 (2-6")	6.27E-02	NA	NA	NA	NA	6.27E-02	1.32E-01	7.76E+00	4.87E-01	NA	NA	NA	NA	1.51E-03	5.88E+01	8.85E-02	1.00E+00	8.73E-01	6.59E-01	2.41E+02	1.87E-02	1.91E+02	3.45E-03
BRSD-10 (2-6")	6.27E-02	NA	NA	NA	NA	6.27E-02	1.32E-01	1.06E+02	6.65E+00	NA	NA	NA	NA	1.51E-03	8.04E+02	1.21E+00	1.00E+00	8.73E-01	9.01E+00	2.41E+02	1.87E-02	1.91E+02	4.71E-02
BRSD-11 (2-6")	6.27E-02	NA	NA	NA	NA	6.27E-02	1.32E-01	1.22E+01	7.66E-01	NA	NA	NA	NA	1.51E-03	9.26E+01	1.39E-01	1.00E+00	8.73E-01	1.04E+00	2.41E+02	1.87E-02	1.91E+02	5.43E-03
Eastern Upper Marsh (6-12")																						**Maximum HQ (Western Upper Marsh, 2-6")**	**1.44E-01**
UM-1000S-3500E (6-12")	6.27E-02	NA	NA	NA	NA	6.27E-02	1.91E-01	1.56E+01	9.79E-01	NA	NA	NA	NA	1.51E-03	8.17E+01	1.23E-01	1.00E+00	8.73E-01	1.26E+00	2.41E+02	1.87E-02	1.91E+02	6.60E-03
BRSD-15 (6-12")	6.27E-02	NA	NA	NA	NA	6.27E-02	1.91E-01	1.66E+01	1.04E+00	NA	NA	NA	NA	1.51E-03	8.70E+01	1.31E-01	1.00E+00	8.73E-01	1.34E+00	2.41E+02	1.87E-02	1.91E+02	7.03E-03
BRSD-4 (6-12")	6.27E-02	NA	NA	NA	NA	6.27E-02	1.91E-01	4.05E+01	2.54E+00	NA	NA	NA	NA	1.51E-03	2.12E+02	3.19E-01	1.00E+00	8.73E-01	3.27E+00	2.41E+02	1.87E-02	1.91E+02	1.71E-02
UM-750S-3500E (6-12")	6.27E-02	NA	NA	NA	NA	6.27E-02	1.91E-01	2.31E+02	1.45E+01	NA	NA	NA	NA	1.51E-03	1.21E+03	1.82E+00	1.00E+00	8.73E-01	1.87E+01	2.41E+02	1.87E-02	1.91E+02	9.78E-02
BRSD-16 (6-12")	6.27E-02	NA	NA	NA	NA	6.27E-02	1.91E-01	6.15E+02	3.86E+01	NA	NA	NA	NA	1.51E-03	3.22E+03	4.85E+00	1.00E+00	8.73E-01	4.97E+01	2.41E+02	1.87E-02	1.91E+02	2.60E-01
UM-750S-3000E (6-12")	6.27E-02	NA	NA	NA	NA	6.27E-02	1.91E-01	2.14E+02	1.34E+01	NA	NA	NA	NA	1.51E-03	1.12E+03	1.69E+00	1.00E+00	8.73E-01	1.73E+01	2.41E+02	1.87E-02	1.91E+02	9.05E-02
BRSD-3 (6-12")	6.27E-02	NA	NA	NA	NA	6.27E-02	1.91E-01	6.65E+01	4.17E+00	NA	NA	NA	NA	1.51E-03	3.48E+02	5.24E-01	1.00E+00	8.73E-01	5.38E+00	2.41E+02	1.87E-02	1.91E+02	2.81E-02
UM-500S-3250E (6-12")	6.27E-02	NA	NA	NA	NA	6.27E-02	1.91E-01	1.16E+02	7.28E+00	NA	NA	NA	NA	1.51E-03	6.08E+02	9.15E-01	1.00E+00	8.73E-01	9.39E+00	2.41E+02	1.87E-02	1.91E+02	4.92E-02
UM-500S-3000E (6-12")	6.27E-02	NA	NA	NA	NA	6.27E-02	1.91E-01	2.14E+01	1.34E+00	NA	NA	NA	NA	1.51E-03	1.12E+02	1.69E-01	1.00E+00	8.73E-01	1.73E+00	2.41E+02	1.87E-02	1.91E+02	9.05E-03
UM-500S-2750E (6-12")	6.27E-02	NA	NA	NA	NA	6.27E-02	1.91E-01	1.29E+02	8.12E+00	NA	NA	NA	NA	1.51E-03	6.78E+02	1.02E+00	1.00E+00	8.73E-01	1.05E+01	2.41E+02	1.87E-02	1.91E+02	5.48E-02
BRSD-25 (6-12")	6.27E-02	NA	NA	NA	NA	6.27E-02	1.91E-01	2.01E+02	1.26E+01	NA	NA	NA	NA	1.51E-03	1.05E+03	1.58E+00	1.00E+00	8.73E-01	1.62E+01	2.41E+02	1.87E-02	1.91E+02	8.49E-02
UM-250S-3000E (6-12")	6.27E-02	NA	NA	NA	NA	6.27E-02	1.91E-01	2.44E+02	1.53E+01	NA	NA	NA	NA	1.51E-03	1.28E+03	1.93E+00	1.00E+00	8.73E-01	1.98E+01	2.41E+02	1.87E-02	1.91E+02	1.03E-01
UM-250S-3250E (6-12")	6.27E-02	NA	NA	NA	NA	6.27E-02	1.91E-01	2.04E+01	1.28E+00	NA	NA	NA	NA	1.51E-03	1.07E+02	1.61E-01	1.00E+00	8.73E-01	1.65E+00	2.41E+02	1.87E-02	1.91E+02	8.65E-03
BRSD-24 (6-12")	6.27E-02	NA	NA	NA	NA	6.27E-02	1.91E-01	4.37E+02	2.74E+01	NA	NA	NA	NA	1.51E-03	2.29E+03	3.45E+00	1.00E+00	8.73E-01	3.54E+01	2.41E+02	1.87E-02	1.91E+02	1.85E-01
UM-250S-2750E (6-12")	6.27E-02	NA	NA	NA	NA	6.27E-02	1.91E-01	4.60E+02	2.89E+01	NA	NA	NA	NA	1.51E-03	2.41E+03	3.63E+00	1.00E+00	8.73E-01	3.72E+01	2.41E+02	1.87E-02	1.91E+02	1.95E-01
UM-250S-2500E (6-12")	6.27E-02	NA	NA	NA	NA	6.27E-02	1.91E-01	1.63E+01	1.02E+00	NA	NA	NA	NA	1.51E-03	8.54E+01	1.29E-01	1.00E+00	8.73E-01	1.32E+00	2.41E+02	1.87E-02	1.91E+02	6.90E-03
BRSD-2 (6-12")	6.27E-02	NA	NA	NA	NA	6.27E-02	1.91E-01	8.06E+02	5.06E+01	NA	NA	NA	NA	1.51E-03	4.22E+03	6.35E+00	1.00E+00	8.73E-01	6.52E+01	2.41E+02	1.87E-02	1.91E+02	3.41E-01
UM-500N-2500E (6-12")	6.27E-02	NA	NA	NA	NA	6.27E-02	1.91E-01	1.46E+01	9.15E-01	NA	NA	NA	NA	1.51E-03	7.64E+01	1.15E-01	1.00E+00	8.73E-01	1.18E+00	2.41E+02	1.87E-02	1.91E+02	6.18E-03
UM-250N-2500E (6-12")	6.27E-02	NA	NA	NA	NA	6.27E-02	1.91E-01	1.86E+02	1.17E+01	NA	NA	NA	NA	1.51E-03	9.75E+02	1.47E+00	1.00E+00	8.73E-01	1.51E+01	2.41E+02	1.87E-02	1.91E+02	7.88E-02
UM-250N-2250E (6-12")	6.27E-02	NA	NA	NA	NA	6.27E-02	1.91E-01	3.70E+01	2.32E+00	NA	NA	NA	NA	1.51E-03	1.94E+02	2.92E-01	1.00E+00	8.73E-01	3.00E+00	2.41E+02	1.87E-02	1.91E+02	1.57E-02
Western Upper Marsh (6-12")																						**Maximum HQ (Eastern Upper Marsh, 6-12")**	**3.41E-01**
UM-500S-2500E (6-12")	6.27E-02	NA	NA	NA	NA	6.27E-02	1.32E-01	1.61E+01	1.01E+00	NA	NA	NA	NA	1.51E-03	1.22E+02	1.84E-01	1.00E+00	8.73E-01	1.37E+00	2.41E+02	1.87E-02	1.91E+02	7.15E-03
UM-0N-2000E (6-12")	6.27E-02	NA	NA	NA	NA	6.27E-02	1.32E-01	4.33E+02	2.71E+01	NA	NA	NA	NA	1.51E-03	3.28E+03	4.94E+00	1.00E+00	8.73E-01	3.68E+01	2.41E+02	1.87E-02	1.91E+02	1.92E-01
UM-500S-2000E (6-12")	6.27E-02	NA	NA	NA	NA	6.27E-02	1.32E-01	1.24E+01	7.78E-01	NA	NA	NA	NA	1.51E-03	9.40E+01	1.42E-01	1.00E+00	8.73E-01	1.05E+00	2.41E+02	1.87E-02	1.91E+02	5.51E-03
UM-250N-1750E (6-12")	6.27E-02	NA	NA	NA	NA	6.27E-02	1.32E-01	1.30E+01	8.17E-01	NA	NA	NA	NA	1.51E-03	9.87E+01	1.49E-01	1.00E+00	8.73E-01	1.11E+00	2.41E+02	1.87E-02	1.91E+02	5.79E-03
UM-0N-1500E (6-12")	6.27E-02	NA	NA	NA	NA	6.27E-02	1.32E-01	1.46E+01	9.19E-01	NA	NA	NA	NA	1.51E-03	1.11E+02	1.67E-01	1.00E+00	8.73E-01	1.24E+00	2.41E+02	1.87E-02	1.91E+02	6.51E-03
UM-250S-1500E (6-12")	6.27E-02	NA	NA	NA	NA	6.27E-02	1.32E-01	1.23E+02	7.71E+00	NA	NA	NA	NA	1.51E-03	9.31E+02	1.40E+00	1.00E+00	8.73E-01	1.04E+01	2.41E+02	1.87E-02	1.91E+02	5.46E-02
UM-250S-1250E (6-12")	6.27E-02	NA	NA	NA	NA	6.27E-02	1.32E-01	1.35E+01	8.44E-01	NA	NA	NA	NA	1.51E-03	1.02E+02	1.54E-01	1.00E+00	8.73E-01	1.14E+00	2.41E+02	1.87E-02	1.91E+02	5.98E-03
BRSD-6 (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-1000E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-750E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-500E (6-12")	6.27E-02	NA	NA	NA	NA	6.27E-02	1.32E-01	2.03E+01	1.27E+00	NA	NA	NA	NA	1.51E-03	1.54E+02	2.32E-01	1.00E+00	8.73E-01	1.73E+00	2.41E+02	1.87E-02	1.91E+02	9.03E-03

TABLE C-12EB: LEAD DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 12 - MARSH, WETLAND RECEPTORS (Continued)
Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)
calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **118.73**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Muskrat (Herbivorous Mammals)																							
UM-250S-500E (6-12")	6.27E-02	NA	NA	NA	NA	6.27E-02	1.32E-01	1.29E+01	8.11E-01	NA	NA	NA	NA	1.51E-03	9.80E+01	1.48E-01	1.00E+00	8.73E-01	1.10E+00	2.41E+02	1.87E-02	1.91E+02	5.75E-03
UM-0N-250E (6-12")	6.27E-02	NA	NA	NA	NA	6.27E-02	1.32E-01	3.55E+01	2.23E+00	NA	NA	NA	NA	1.51E-03	2.69E+02	4.05E-01	1.00E+00	8.73E-01	3.01E+00	2.41E+02	1.87E-02	1.91E+02	1.58E-02
UM-250S-250E (6-12")	6.27E-02	NA	NA	NA	NA	6.27E-02	1.32E-01	1.26E+01	7.89E-01	NA	NA	NA	NA	1.51E-03	9.53E+01	1.43E-01	1.00E+00	8.73E-01	1.07E+00	2.41E+02	1.87E-02	1.91E+02	5.59E-03
BRSD-7 (6-12")	6.27E-02	NA	NA	NA	NA	6.27E-02	1.32E-01	1.52E+01	9.52E-01	NA	NA	NA	NA	1.51E-03	1.15E+02	1.73E-01	1.00E+00	8.73E-01	1.29E+00	2.41E+02	1.87E-02	1.91E+02	6.74E-03
BRSD-8 (6-12")	6.27E-02	NA	NA	NA	NA	6.27E-02	1.32E-01	3.96E+01	2.48E+00	NA	NA	NA	NA	1.51E-03	3.00E+02	4.52E-01	1.00E+00	8.73E-01	3.36E+00	2.41E+02	1.87E-02	1.91E+02	1.76E-02
UM-500S-500E (6-12")	6.27E-02	NA	NA	NA	NA	6.27E-02	1.32E-01	9.58E+00	6.01E-01	NA	NA	NA	NA	1.51E-03	7.26E+01	1.09E-01	1.00E+00	8.73E-01	8.13E-01	2.41E+02	1.87E-02	1.91E+02	4.26E-03
BRSD-9 (6-12")	6.27E-02	NA	NA	NA	NA	6.27E-02	1.32E-01	1.12E+01	7.03E-01	NA	NA	NA	NA	1.51E-03	8.49E+01	1.28E-01	1.00E+00	8.73E-01	9.51E-01	2.41E+02	1.87E-02	1.91E+02	4.98E-03
BRSD-10 (6-12")	6.27E-02	NA	NA	NA	NA	6.27E-02	1.32E-01	1.81E+02	1.13E+01	NA	NA	NA	NA	1.51E-03	1.37E+03	2.06E+00	1.00E+00	8.73E-01	1.54E+01	2.41E+02	1.87E-02	1.91E+02	8.03E-02
BRSD-11 (6-12")	6.27E-02	NA	NA	NA	NA	6.27E-02	1.32E-01	1.37E+01	8.61E-01	NA	NA	NA	NA	1.51E-03	1.04E+02	1.57E-01	1.00E+00	8.73E-01	1.17E+00	2.41E+02	1.87E-02	1.91E+02	6.10E-03
Middle Marsh (0-2")																						**Maximum HQ (Western Upper Marsh, 6-12")**	**1.92E-01**
MMSD-201 (0-2")	6.27E-02	NA	NA	NA	NA	6.27E-02	1.32E-01	6.65E+01	4.17E+00	NA	NA	NA	NA	1.51E-03	5.04E+02	7.59E-01	1.00E+00	8.73E-01	5.65E+00	2.41E+02	1.87E-02	1.91E+02	2.96E-02
MMSD-202 (0-2")	6.27E-02	NA	NA	NA	NA	6.27E-02	1.32E-01	9.17E+01	5.75E+00	NA	NA	NA	NA	1.51E-03	6.95E+02	1.05E+00	1.00E+00	8.73E-01	7.79E+00	2.41E+02	1.87E-02	1.91E+02	4.08E-02
Middle Marsh (2-6")																						**Maximum HQ (Middle Marsh, 0-2")**	**4.08E-02**
MMSD-201 (2-6")	6.27E-02	NA	NA	NA	NA	6.27E-02	1.32E-01	8.21E+01	5.15E+00	NA	NA	NA	NA	1.51E-03	6.22E+02	9.36E-01	1.00E+00	8.73E-01	6.97E+00	2.41E+02	1.87E-02	1.91E+02	3.65E-02
MMSD-202 (2-6")	6.27E-02	NA	NA	NA	NA	6.27E-02	1.32E-01	1.09E+02	6.85E+00	NA	NA	NA	NA	1.51E-03	8.28E+02	1.25E+00	1.00E+00	8.73E-01	9.28E+00	2.41E+02	1.87E-02	1.91E+02	4.86E-02
Middle Marsh (6-12")																						**Maximum HQ (Middle Marsh, 2-6")**	**4.86E-02**
MMSD-201 (6-12")	6.27E-02	NA	NA	NA	NA	6.27E-02	1.32E-01	1.28E+02	8.00E+00	NA	NA	NA	NA	1.51E-03	9.67E+02	1.46E+00	1.00E+00	8.73E-01	1.08E+01	2.41E+02	1.87E-02	1.91E+02	5.67E-02
MMSD-202 (6-12")	6.27E-02	NA	NA	NA	NA	6.27E-02	1.32E-01	3.46E+01	2.17E+00	NA	NA	NA	NA	1.51E-03	2.62E+02	3.94E-01	1.00E+00	8.73E-01	2.94E+00	2.41E+02	1.87E-02	1.91E+02	1.54E-02
Lower Marsh (0-2")																						**Maximum HQ (Middle Marsh, 6-12")**	**5.67E-02**
LMSD-201 (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
LMSD-202 (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
LMSD-203 (0-2")	6.27E-02	NA	NA	NA	NA	6.27E-02	1.32E-01	1.06E+01	6.62E-01	NA	NA	NA	NA	1.51E-03	8.00E+01	1.20E-01	1.00E+00	8.73E-01	8.96E-01	2.41E+02	1.87E-02	1.91E+02	4.69E-03
LMSD-204 (0-2")	6.27E-02	NA	NA	NA	NA	6.27E-02	1.32E-01	1.19E+01	7.45E-01	NA	NA	NA	NA	1.51E-03	9.00E+01	1.35E-01	1.00E+00	8.73E-01	1.01E+00	2.41E+02	1.87E-02	1.91E+02	5.28E-03
Lower Marsh (2-6")																						**Maximum HQ (Lower Marsh, 0-2")**	**5.28E-03**
LMSD-201 (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
LMSD-202 (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
LMSD-203 (2-6")	6.27E-02	NA	NA	NA	NA	6.27E-02	1.32E-01	1.12E+01	7.04E-01	NA	NA	NA	NA	1.51E-03	8.50E+01	1.28E-01	1.00E+00	8.73E-01	9.52E-01	2.41E+02	1.87E-02	1.91E+02	4.98E-03
LMSD-204 (2-6")	6.27E-02	NA	NA	NA	NA	6.27E-02	1.32E-01	1.15E+01	7.20E-01	NA	NA	NA	NA	1.51E-03	8.70E+01	1.31E-01	1.00E+00	8.73E-01	9.75E-01	2.41E+02	1.87E-02	1.91E+02	5.10E-03
Lower Marsh (6-12")																						**Maximum HQ (Lower Marsh, 2-6")**	**5.10E-03**
LMSD-201 (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
LMSD-202 (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
LMSD-203 (6-12")	6.27E-02	NA	NA	NA	NA	6.27E-02	1.32E-01	1.07E+01	6.70E-01	NA	NA	NA	NA	1.51E-03	8.10E+01	1.22E-01	1.00E+00	8.73E-01	9.08E-01	2.41E+02	1.87E-02	1.91E+02	4.75E-03
LMSD-204 (6-12")	6.27E-02	NA	NA	NA	NA	6.27E-02	1.32E-01	1.11E+01	6.95E-01	NA	NA	NA	NA	1.51E-03	8.40E+01	1.26E-01	1.00E+00	8.73E-01	9.41E-01	2.41E+02	1.87E-02	1.91E+02	4.93E-03
																						Maximum HQ (Lower Marsh, 6-12")	**4.93E-03**
Mink (Carnivorous Mammals)																							
Reference Sites																							
BRSD-5 (0-2")	4.25E-02	4.25E-02	1.20E-01	7.78E+00	3.31E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	6.47E+01	2.75E-02	1.00E+00	8.52E-01	4.20E-01	2.41E+02	1.87E-02	1.91E+02	2.20E-03
BRSD-5 (2-6")	4.25E-02	4.25E-02	1.20E-01	7.42E+00	3.15E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	6.17E+01	2.62E-02	1.00E+00	8.52E-01	4.01E-01	2.41E+02	1.87E-02	1.91E+02	2.10E-03
BRSD-5 (6-12")	4.25E-02	4.25E-02	1.20E-01	9.50E+00	4.04E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	7.90E+01	3.36E-02	1.00E+00	8.52E-01	5.13E-01	2.41E+02	1.87E-02	1.91E+02	2.68E-03
PGBG-1 (0-2")	4.25E-02	4.25E-02	1.20E-01	6.61E+00	2.81E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	5.50E+01	2.34E-02	1.00E+00	8.52E-01	3.57E-01	2.41E+02	1.87E-02	1.91E+02	1.87E-03
PGBG-1 (2-6")	4.25E-02	4.25E-02	1.20E-01	1.21E+01	5.16E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.01E+02	4.30E-02	1.00E+00	8.52E-01	6.56E-01	2.41E+02	1.87E-02	1.91E+02	3.43E-03
PGBG-1 (6-12")	4.25E-02	4.25E-02	1.20E-01	2.09E+01	8.90E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.74E+02	7.40E-02	1.00E+00	8.52E-01	1.13E+00	2.41E+02	1.87E-02	1.91E+02	5.91E-03
PGBG-2 (0-2")	4.25E-02	4.25E-02	1.20E-01	1.26E+01	5.37E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.05E+02	4.47E-02	1.00E+00	8.52E-01	6.82E-01	2.41E+02	1.87E-02	1.91E+02	3.57E-03
PGBG-2 (2-6")	4.25E-02	4.25E-02	1.20E-01	1.30E+01	5.52E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.08E+02	4.59E-02	1.00E+00	8.52E-01	7.02E-01	2.41E+02	1.87E-02	1.91E+02	3.67E-03
PGBG-2 (6-12")	4.25E-02	4.25E-02	1.20E-01	1.36E+01	5.78E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.13E+02	4.81E-02	1.00E+00	8.52E-01	7.34E-01	2.41E+02	1.87E-02	1.91E+02	3.84E-03
Eastern Upper Marsh (0-2")																						**Minimum HQ (Reference Sites)**	**1.87E-03**
UM-1000S-3500E (0-2")	4.25E-02	4.25E-02	1.23E-01	2.18E+02	9.29E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.77E+03	7.53E-01	1.00E+00	8.52E-01	1.18E+01	2.41E+02	1.87E-02	1.91E+02	6.16E-02
BRSD-15 (0-2")	4.25E-02	4.25E-02	1.23E-01	8.25E+00	3.51E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	6.69E+01	2.85E-02	1.00E+00	8.52E-01	4.45E-01	2.41E+02	1.87E-02	1.91E+02	2.33E-03
BRSD-4 (0-2")	4.25E-02	4.25E-02	1.23E-01	1.37E+01	5.83E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.11E+02	4.72E-02	1.00E+00	8.52E-01	7.39E-01	2.41E+02	1.87E-02	1.91E+02	3.86E-03
UM-750S-3500E (0-2")	4.25E-02	4.25E-02	1.23E-01	2.76E+02	1.18E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	2.24E+03	9.53E-01	1.00E+00	8.52E-01	1.49E+01	2.41E+02	1.87E-02	1.91E+02	7.79E-02
BRSD-16 (0-2")	4.25E-02	4.25E-02	1.23E-01	2.59E+02	1.10E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	2.10E+03	8.93E-01	1.00E+00	8.52E-01	1.40E+01	2.41E+02	1.87E-02	1.91E+02	7.31E-02
UM-750S-3000E (0-2")	4.25E-02	4.25E-02	1.23E-01	1.48E+02	6.30E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.20E+03	5.10E-01	1.00E+00	8.52E-01	7.99E+00	2.41E+02	1.87E-02	1.91E+02	4.17E-02
BRSD-3 (0-2")	4.25E-02	4.25E-02	1.23E-01	1.34E+02	5.72E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.09E+03	4.64E-01	1.00E+00	8.52E-01	7.26E+00	2.41E+02	1.87E-02	1.91E+02	3.79E-02
UM-500S-3250E (0-2")	4.25E-02	4.25E-02	1.23E-01	2.73E+02	1.16E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	2.21E+03	9.40E-01	1.00E+00	8.52E-01	1.47E+01	2.41E+02	1.87E-02	1.91E+02	7.69E-02
UM-500S-3000E (0-2")	4.25E-02	4.25E-02	1.23E-01	2.62E+02	1.11E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	2.12E+03	9.02E-01	1.00E+00	8.52E-01	1.41E+01	2.41E+02	1.87E-02	1.91E+02	7.38E-02
UM-500S-2750E (0-2")	4.25E-02	4.25E-02	1.23E-01	1.49E+02	6.35E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.21E+03	5.15E-01	1.00E+00	8.52E-01	8.06E+00	2.41E+02	1.87E-02	1.91E+02	4.21E-02
BRSD-25 (0-2")	4.25E-02	4.25E-02	1.23E-01	1.03E+02	4.39E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	8.36E+02	3.56E-01	1.00E+00	8.52E-01	5.57E+00	2.41E+02	1.87E-02	1.91E+02	2.91E-02

TABLE C-12EB: LEAD DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 12 - MARSH, WETLAND RECEPTORS (Continued)
Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)
calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 118.73

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Mink (Carnivorous Mammals)																							
UM-250S-3000E (0-2")	4.25E-02	4.25E-02	1.23E-01	2.07E+02	8.82E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.68E+03	7.15E-01	1.00E+00	8.52E-01	1.12E+01	2.41E+02	1.87E-02	1.91E+02	5.84E-02
UM-250S-3250E (0-2")	4.25E-02	4.25E-02	1.23E-01	2.07E+01	8.82E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.68E+02	7.15E-02	1.00E+00	8.52E-01	1.12E+00	2.41E+02	1.87E-02	1.91E+02	5.84E-03
BRSD-24 (0-2")	4.25E-02	4.25E-02	1.23E-01	1.33E+02	5.67E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.08E+03	4.59E-01	1.00E+00	8.52E-01	7.19E+00	2.41E+02	1.87E-02	1.91E+02	3.76E-02
UM-250S-2750E (0-2")	4.25E-02	4.25E-02	1.23E-01	1.19E+02	5.08E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	9.68E+02	4.12E-01	1.00E+00	8.52E-01	6.44E+00	2.41E+02	1.87E-02	1.91E+02	3.37E-02
UM-250S-2500E (0-2")	4.25E-02	4.25E-02	1.23E-01	1.42E+01	6.04E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.15E+02	4.89E-02	1.00E+00	8.52E-01	7.66E-01	2.41E+02	1.87E-02	1.91E+02	4.00E-03
UM-0N-2500E (0-2")	4.25E-02	4.25E-02	1.23E-01	2.47E+02	1.05E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	2.00E+03	8.51E-01	1.00E+00	8.52E-01	1.33E+01	2.41E+02	1.87E-02	1.91E+02	6.96E-02
UM-0N-250E (0-2")	4.25E-02	4.25E-02	1.23E-01	3.76E+01	1.60E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	3.05E+02	1.30E-01	1.00E+00	8.52E-01	2.03E+00	2.41E+02	1.87E-02	1.91E+02	1.06E-02
BRSD-2 (0-2")	4.25E-02	4.25E-02	1.23E-01	1.59E+02	6.77E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.29E+03	5.49E-01	1.00E+00	8.52E-01	8.59E+00	2.41E+02	1.87E-02	1.91E+02	4.49E-02
UM-500N-2500E (0-2")	4.25E-02	4.25E-02	1.23E-01	1.13E+01	4.79E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	9.12E+01	3.88E-02	1.00E+00	8.52E-01	6.07E-01	2.41E+02	1.87E-02	1.91E+02	3.17E-03
UM-250N-2500E (0-2")	4.25E-02	4.25E-02	1.23E-01	1.88E+02	7.98E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.52E+03	6.47E-01	1.00E+00	8.52E-01	1.01E+01	2.41E+02	1.87E-02	1.91E+02	5.29E-02
UM-250N-2250E (0-2")	4.25E-02	4.25E-02	1.23E-01	1.65E+02	7.03E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.34E+03	5.70E-01	1.00E+00	8.52E-01	8.92E+00	2.41E+02	1.87E-02	1.91E+02	4.66E-02
Western Upper Marsh (0-2")																						**Maximum HQ (Eastern Upper Marsh, 0-2")**	**7.79E-02**
UM-500S-2500E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-2000E (0-2")	4.25E-02	4.25E-02	1.23E-01	3.06E+02	1.30E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	2.48E+03	1.05E+00	1.00E+00	8.52E-01	1.65E+01	2.41E+02	1.87E-02	1.91E+02	8.63E-02
UM-500S-2000E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-250N-1750E (0-2")	4.25E-02	4.25E-02	1.23E-01	1.19E+01	5.05E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	9.62E+01	4.09E-02	1.00E+00	8.52E-01	6.40E-01	2.41E+02	1.87E-02	1.91E+02	3.35E-03
UM-0N-1500E (0-2")	4.25E-02	4.25E-02	1.23E-01	1.26E+01	5.35E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.02E+02	4.34E-02	1.00E+00	8.52E-01	6.79E-01	2.41E+02	1.87E-02	1.91E+02	3.55E-03
UM-250S-1500E (0-2")	4.25E-02	4.25E-02	1.23E-01	2.13E+02	9.08E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.73E+03	7.36E-01	1.00E+00	8.52E-01	1.15E+01	2.41E+02	1.87E-02	1.91E+02	6.02E-02
UM-250S-1250E (0-2")	4.25E-02	4.25E-02	1.23E-01	1.17E+01	4.98E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	9.48E+01	4.03E-02	1.00E+00	8.52E-01	6.31E-01	2.41E+02	1.87E-02	1.91E+02	3.30E-03
BRSD-6 (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-1000E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-750E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-500E (0-2")	4.25E-02	4.25E-02	1.23E-01	2.01E+01	8.55E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.63E+02	6.93E-02	1.00E+00	8.52E-01	1.09E+00	2.41E+02	1.87E-02	1.91E+02	5.67E-03
UM-250S-500E (0-2")	4.25E-02	4.25E-02	1.23E-01	8.65E+00	3.68E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	7.01E+01	2.98E-02	1.00E+00	8.52E-01	4.67E-01	2.41E+02	1.87E-02	1.91E+02	2.44E-03
UM-250S-250E (0-2")	4.25E-02	4.25E-02	1.23E-01	1.62E+01	6.88E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.31E+02	5.57E-02	1.00E+00	8.52E-01	8.72E-01	2.41E+02	1.87E-02	1.91E+02	4.56E-03
BRSD-7 (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-8 (0-2")	4.25E-02	4.25E-02	1.23E-01	2.79E+01	1.19E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	2.26E+02	9.61E-02	1.00E+00	8.52E-01	1.50E+00	2.41E+02	1.87E-02	1.91E+02	7.86E-03
UM-500S-500E (0-2")	4.25E-02	4.25E-02	1.23E-01	8.19E+00	3.48E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	6.64E+01	2.82E-02	1.00E+00	8.52E-01	4.42E-01	2.41E+02	1.87E-02	1.91E+02	2.31E-03
BRSD-9 (0-2")	4.25E-02	4.25E-02	1.23E-01	3.52E+01	1.50E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	2.85E+02	1.21E-01	1.00E+00	8.52E-01	1.90E+00	2.41E+02	1.87E-02	1.91E+02	9.92E-03
BRSD-10 (0-2")	4.25E-02	4.25E-02	1.23E-01	7.80E+01	3.32E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	6.32E+02	2.69E-01	1.00E+00	8.52E-01	4.21E+00	2.41E+02	1.87E-02	1.91E+02	2.20E-02
BRSD-11 (0-2")	4.25E-02	4.25E-02	1.23E-01	1.14E+01	4.85E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	9.24E+01	3.93E-02	1.00E+00	8.52E-01	6.15E-01	2.41E+02	1.87E-02	1.91E+02	3.21E-03
Eastern Upper Marsh (2-6")																						**Maximum HQ (Western Upper Marsh, 0-2")**	**8.63E-02**
UM-1000S-3500E (2-6")	4.25E-02	4.25E-02	1.23E-01	3.95E+01	1.68E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	3.20E+02	1.36E-01	1.00E+00	8.52E-01	2.13E+00	2.41E+02	1.87E-02	1.91E+02	1.11E-02
BRSD-15 (2-6")	4.25E-02	4.25E-02	1.23E-01	1.38E+01	5.88E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.12E+02	4.76E-02	1.00E+00	8.52E-01	7.46E-01	2.41E+02	1.87E-02	1.91E+02	3.90E-03
BRSD-4 (2-6")	4.25E-02	4.25E-02	1.23E-01	1.41E+01	5.98E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.14E+02	4.85E-02	1.00E+00	8.52E-01	7.59E-01	2.41E+02	1.87E-02	1.91E+02	3.97E-03
UM-750S-3500E (2-6")	4.25E-02	4.25E-02	1.23E-01	1.23E+02	5.23E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	9.96E+02	4.24E-01	1.00E+00	8.52E-01	6.63E+00	2.41E+02	1.87E-02	1.91E+02	3.47E-02
BRSD-16 (2-6")	4.25E-02	4.25E-02	1.23E-01	3.86E+02	1.64E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	3.13E+03	1.33E+00	1.00E+00	8.52E-01	2.08E+01	2.41E+02	1.87E-02	1.91E+02	1.09E-01
UM-750S-3000E (2-6")	4.25E-02	4.25E-02	1.23E-01	1.32E+02	5.62E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.07E+03	4.55E-01	1.00E+00	8.52E-01	7.12E+00	2.41E+02	1.87E-02	1.91E+02	3.72E-02
BRSD-3 (2-6")	4.25E-02	4.25E-02	1.23E-01	2.67E+02	1.13E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	2.16E+03	9.19E-01	1.00E+00	8.52E-01	1.44E+01	2.41E+02	1.87E-02	1.91E+02	7.51E-02
UM-500S-3250E (2-6")	4.25E-02	4.25E-02	1.23E-01	1.80E+02	7.66E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.46E+03	6.21E-01	1.00E+00	8.52E-01	9.72E+00	2.41E+02	1.87E-02	1.91E+02	5.08E-02
UM-500S-3000E (2-6")	4.25E-02	4.25E-02	1.23E-01	1.70E+01	7.24E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.38E+02	5.87E-02	1.00E+00	8.52E-01	9.19E-01	2.41E+02	1.87E-02	1.91E+02	4.80E-03
UM-500S-2750E (2-6")	4.25E-02	4.25E-02	1.23E-01	9.80E+01	4.17E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	7.94E+02	3.38E-01	1.00E+00	8.52E-01	5.29E+00	2.41E+02	1.87E-02	1.91E+02	2.76E-02
BRSD-25 (2-6")	4.25E-02	4.25E-02	1.23E-01	1.80E+02	7.66E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.46E+03	6.21E-01	1.00E+00	8.52E-01	9.72E+00	2.41E+02	1.87E-02	1.91E+02	5.08E-02
UM-250S-3000E (2-6")	4.25E-02	4.25E-02	1.23E-01	2.41E+02	1.02E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.95E+03	8.30E-01	1.00E+00	8.52E-01	1.30E+01	2.41E+02	1.87E-02	1.91E+02	6.78E-02
UM-250S-3250E (2-6")	4.25E-02	4.25E-02	1.23E-01	1.15E+01	4.91E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	9.35E+01	3.98E-02	1.00E+00	8.52E-01	6.22E-01	2.41E+02	1.87E-02	1.91E+02	3.25E-03
BRSD-24 (2-6")	4.25E-02	4.25E-02	1.23E-01	3.28E+02	1.40E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	2.66E+03	1.13E+00	1.00E+00	8.52E-01	1.77E+01	2.41E+02	1.87E-02	1.91E+02	9.25E-02
UM-250S-2750E (2-6")	4.25E-02	4.25E-02	1.23E-01	2.57E+02	1.09E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	2.08E+03	8.85E-01	1.00E+00	8.52E-01	1.38E+01	2.41E+02	1.87E-02	1.91E+02	7.24E-02
UM-0N-2500E (2-6")	4.25E-02	4.25E-02	1.23E-01	1.55E+02	6.61E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.26E+03	5.36E-01	1.00E+00	8.52E-01	8.39E+00	2.41E+02	1.87E-02	1.91E+02	4.38E-02
BRSD-2 (2-6")	4.25E-02	4.25E-02	1.23E-01	1.96E+02	8.35E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.59E+03	6.76E-01	1.00E+00	8.52E-01	1.06E+01	2.41E+02	1.87E-02	1.91E+02	5.53E-02
UM-500N-2500E (2-6")	4.25E-02	4.25E-02	1.23E-01	1.10E+01	4.67E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	8.89E+01	3.78E-02	1.00E+00	8.52E-01	5.92E-01	2.41E+02	1.87E-02	1.91E+02	3.09E-03
UM-250N-2500E (2-6")	4.25E-02	4.25E-02	1.23E-01	1.32E+02	5.62E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.07E+03	4.55E-01	1.00E+00	8.52E-01	7.12E+00	2.41E+02	1.87E-02	1.91E+02	3.72E-02
UM-250N-2250E (2-6")	4.25E-02	4.25E-02	1.23E-01	2.37E+01	1.01E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.92E+02	8.17E-02	1.00E+00	8.52E-01	1.28E+00	2.41E+02	1.87E-02	1.91E+02	6.68E-03
Western Upper Marsh (2-6")																						**Maximum HQ (Eastern Upper Marsh, 2-6")**	**1.09E-01**
UM-500S-2500E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-2000E (2-6")	4.25E-02	4.25E-02	1.23E-01	3.04E+02	1.29E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	2.46E+03	1.05E+00	1.00E+00	8.52E-01	1.64E+01	2.41E+02	1.87E-02	1.91E+02	8.56E-02
UM-500S-2000E (2-6")	4.25E-02	4.25E-02	1.23E-01	1.14E+01	4.84E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	9.22E+01	3.92E-02	1.00E+00	8.52E-01	6.14E-01	2.41E+02	1.87E-02	1.91E+02	3.21E-03
UM-250N-1750E (2-6")	4.25E-02	4.25E-02	1.23E-01	1.15E+01	4.91E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	9.36E+01	3.98E-02	1.00E+00	8.52E-01	6.23E-01	2.41E+02	1.87E-02	1.91E+02	3.26E-03

TABLE C-12EB: LEAD DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 12 - MARSH, WETLAND RECEPTORS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **118.73**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Mink (Carnivorous Mammals)																							
UM-0N-1500E (2-6")	4.25E-02	4.25E-02	1.23E-01	1.37E+01	5.83E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.11E+02	4.72E-02	1.00E+00	8.52E-01	7.39E-01	2.41E+02	1.87E-02	1.91E+02	3.86E-03
UM-250S-1500E (2-6")	4.25E-02	4.25E-02	1.23E-01	2.05E+02	8.71E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.66E+03	7.06E-01	1.00E+00	8.52E-01	1.11E+01	2.41E+02	1.87E-02	1.91E+02	5.78E-02
UM-250S-1250E (2-6")	4.25E-02	4.25E-02	1.23E-01	1.15E+01	4.90E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	9.33E+01	3.97E-02	1.00E+00	8.52E-01	6.21E-01	2.41E+02	1.87E-02	1.91E+02	3.25E-03
BRSD-6 (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-1000E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-750E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-500E (2-6")	4.25E-02	4.25E-02	1.23E-01	6.44E+01	2.74E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	5.22E+02	2.22E-01	1.00E+00	8.52E-01	3.48E+00	2.41E+02	1.87E-02	1.91E+02	1.82E-02
UM-250S-500E (2-6")	4.25E-02	4.25E-02	1.23E-01	1.18E+01	5.01E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	9.54E+01	4.06E-02	1.00E+00	8.52E-01	6.35E-01	2.41E+02	1.87E-02	1.91E+02	3.32E-03
UM-0N-250E (2-6")	4.25E-02	4.25E-02	1.23E-01	3.48E+01	1.48E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	2.82E+02	1.20E-01	1.00E+00	8.52E-01	1.88E+00	2.41E+02	1.87E-02	1.91E+02	9.81E-03
UM-250S-250E (2-6")	4.25E-02	4.25E-02	1.23E-01	1.49E+01	6.35E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.21E+02	5.15E-02	1.00E+00	8.52E-01	8.06E-01	2.41E+02	1.87E-02	1.91E+02	4.21E-03
BRSD-7 (2-6")	4.25E-02	4.25E-02	1.23E-01	7.69E+00	3.27E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	6.23E+01	2.65E-02	1.00E+00	8.52E-01	4.15E-01	2.41E+02	1.87E-02	1.91E+02	2.17E-03
BRSD-8 (2-6")	4.25E-02	4.25E-02	1.23E-01	4.10E+01	1.74E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	3.32E+02	1.41E-01	1.00E+00	8.52E-01	2.21E+00	2.41E+02	1.87E-02	1.91E+02	1.16E-02
UM-500S-500E (2-6")	4.25E-02	4.25E-02	1.23E-01	9.41E+00	4.00E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	7.63E+01	3.25E-02	1.00E+00	8.52E-01	5.08E-01	2.41E+02	1.87E-02	1.91E+02	2.65E-03
BRSD-9 (2-6")	4.25E-02	4.25E-02	1.23E-01	7.25E+00	3.09E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	5.88E+01	2.50E-02	1.00E+00	8.52E-01	3.91E-01	2.41E+02	1.87E-02	1.91E+02	2.05E-03
BRSD-10 (2-6")	4.25E-02	4.25E-02	1.23E-01	9.92E+01	4.22E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	8.04E+02	3.42E-01	1.00E+00	8.52E-01	5.35E+00	2.41E+02	1.87E-02	1.91E+02	2.80E-02
BRSD-11 (2-6")	4.25E-02	4.25E-02	1.23E-01	1.14E+01	4.86E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	9.26E+01	3.94E-02	1.00E+00	8.52E-01	6.16E-01	2.41E+02	1.87E-02	1.91E+02	3.22E-03
Eastern Upper Marsh (6-12")																						**Maximum HQ (Western Upper Marsh, 2-6")**		**8.56E-02**
UM-1000S-3500E (6-12")	4.25E-02	4.25E-02	1.23E-01	1.01E+01	4.29E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	8.17E+01	3.48E-02	1.00E+00	8.52E-01	5.44E-01	2.41E+02	1.87E-02	1.91E+02	2.84E-03
BRSD-15 (6-12")	4.25E-02	4.25E-02	1.23E-01	1.07E+01	4.57E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	8.70E+01	3.70E-02	1.00E+00	8.52E-01	5.79E-01	2.41E+02	1.87E-02	1.91E+02	3.03E-03
BRSD-4 (6-12")	4.25E-02	4.25E-02	1.23E-01	2.62E+01	1.11E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	2.12E+02	9.02E-02	1.00E+00	8.52E-01	1.41E+00	2.41E+02	1.87E-02	1.91E+02	7.38E-03
UM-750S-3500E (6-12")	4.25E-02	4.25E-02	1.23E-01	1.49E+02	6.35E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.21E+03	5.15E-01	1.00E+00	8.52E-01	8.06E+00	2.41E+02	1.87E-02	1.91E+02	4.21E-02
BRSD-16 (6-12")	4.25E-02	4.25E-02	1.23E-01	3.97E+02	1.69E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	3.22E+03	1.37E+00	1.00E+00	8.52E-01	2.14E+01	2.41E+02	1.87E-02	1.91E+02	1.12E-01
UM-750S-3000E (6-12")	4.25E-02	4.25E-02	1.23E-01	1.38E+02	5.88E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.12E+03	4.76E-01	1.00E+00	8.52E-01	7.46E+00	2.41E+02	1.87E-02	1.91E+02	3.90E-02
UM-500S-3250E (6-12")	4.25E-02	4.25E-02	1.23E-01	7.50E+01	3.19E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	6.08E+02	2.59E-01	1.00E+00	8.52E-01	4.05E+00	2.41E+02	1.87E-02	1.91E+02	2.12E-02
UM-500S-3000E (6-12")	4.25E-02	4.25E-02	1.23E-01	1.38E+01	5.88E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.12E+02	4.76E-02	1.00E+00	8.52E-01	7.46E-01	2.41E+02	1.87E-02	1.91E+02	3.90E-03
UM-500S-2750E (6-12")	4.25E-02	4.25E-02	1.23E-01	8.37E+01	3.56E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	6.78E+02	2.88E-01	1.00E+00	8.52E-01	4.51E+00	2.41E+02	1.87E-02	1.91E+02	2.36E-02
BRSD-25 (6-12")	4.25E-02	4.25E-02	1.23E-01	1.30E+02	5.51E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.05E+03	4.47E-01	1.00E+00	8.52E-01	6.99E+00	2.41E+02	1.87E-02	1.91E+02	3.65E-02
UM-250S-3000E (6-12")	4.25E-02	4.25E-02	1.23E-01	1.58E+02	6.72E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.28E+03	5.44E-01	1.00E+00	8.52E-01	8.52E+00	2.41E+02	1.87E-02	1.91E+02	4.45E-02
UM-250S-3250E (6-12")	4.25E-02	4.25E-02	1.23E-01	1.32E+01	5.62E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.07E+02	4.55E-02	1.00E+00	8.52E-01	7.12E-01	2.41E+02	1.87E-02	1.91E+02	3.72E-03
BRSD-24 (6-12")	4.25E-02	4.25E-02	1.23E-01	2.83E+02	1.20E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	2.29E+03	9.74E-01	1.00E+00	8.52E-01	1.52E+01	2.41E+02	1.87E-02	1.91E+02	7.97E-02
UM-250S-2750E (6-12")	4.25E-02	4.25E-02	1.23E-01	2.97E+02	1.26E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	2.41E+03	1.03E+00	1.00E+00	8.52E-01	1.60E+01	2.41E+02	1.87E-02	1.91E+02	8.38E-02
UM-250S-2500E (6-12")	4.25E-02	4.25E-02	1.23E-01	1.05E+01	4.48E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	8.54E+01	3.63E-02	1.00E+00	8.52E-01	5.69E-01	2.41E+02	1.87E-02	1.91E+02	2.97E-03
BRSD-2 (6-12")	4.25E-02	4.25E-02	1.23E-01	5.21E+02	2.21E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	4.22E+03	1.80E+00	1.00E+00	8.52E-01	2.81E+01	2.41E+02	1.87E-02	1.91E+02	1.47E-01
UM-500N-2500E (6-12")	4.25E-02	4.25E-02	1.23E-01	9.43E+00	4.01E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	7.64E+01	3.25E-02	1.00E+00	8.52E-01	5.09E-01	2.41E+02	1.87E-02	1.91E+02	2.66E-03
UM-250N-2500E (6-12")	4.25E-02	4.25E-02	1.23E-01	1.20E+02	5.12E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	9.75E+02	4.15E-01	1.00E+00	8.52E-01	6.49E+00	2.41E+02	1.87E-02	1.91E+02	3.39E-02
UM-250N-2250E (6-12")	4.25E-02	4.25E-02	1.23E-01	2.39E+01	1.02E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.94E+02	8.25E-02	1.00E+00	8.52E-01	1.29E+00	2.41E+02	1.87E-02	1.91E+02	6.75E-03
Western Upper Marsh (6-12")																						**Maximum HQ (Eastern Upper Marsh, 6-12")**		**1.47E-01**
UM-500S-2500E (6-12")	4.25E-02	4.25E-02	1.23E-01	1.51E+01	6.40E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.22E+02	5.19E-02	1.00E+00	8.52E-01	8.12E-01	2.41E+02	1.87E-02	1.91E+02	4.24E-03
UM-0N-2000E (6-12")	4.25E-02	4.25E-02	1.23E-01	4.05E+02	1.72E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	3.28E+03	1.40E+00	1.00E+00	8.52E-01	2.18E+01	2.41E+02	1.87E-02	1.91E+02	1.14E-01
UM-500S-2000E (6-12")	4.25E-02	4.25E-02	1.23E-01	1.16E+01	4.93E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	9.40E+01	4.00E-02	1.00E+00	8.52E-01	6.26E-01	2.41E+02	1.87E-02	1.91E+02	3.27E-03
UM-250N-1750E (6-12")	4.25E-02	4.25E-02	1.23E-01	1.22E+01	5.18E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	9.87E+01	4.20E-02	1.00E+00	8.52E-01	6.57E-01	2.41E+02	1.87E-02	1.91E+02	3.43E-03
UM-0N-1500E (6-12")	4.25E-02	4.25E-02	1.23E-01	1.37E+01	5.83E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.11E+02	4.72E-02	1.00E+00	8.52E-01	7.39E-01	2.41E+02	1.87E-02	1.91E+02	3.86E-03
UM-250S-1500E (6-12")	4.25E-02	4.25E-02	1.23E-01	1.15E+02	4.89E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	9.31E+02	3.96E-01	1.00E+00	8.52E-01	6.20E+00	2.41E+02	1.87E-02	1.91E+02	3.24E-02
UM-250S-1250E (6-12")	4.25E-02	4.25E-02	1.23E-01	1.26E+01	5.35E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.02E+02	4.34E-02	1.00E+00	8.52E-01	6.79E-01	2.41E+02	1.87E-02	1.91E+02	3.55E-03
BRSD-6 (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-1000E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-750E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-500E (6-12")	4.25E-02	4.25E-02	1.23E-01	1.90E+01	8.08E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.54E+02	6.55E-02	1.00E+00	8.52E-01	1.03E+00	2.41E+02	1.87E-02	1.91E+02	5.36E-03
UM-250S-500E (6-12")	4.25E-02	4.25E-02	1.23E-01	1.21E+01	5.14E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	9.80E+01	4.17E-02	1.00E+00	8.52E-01	6.52E-01	2.41E+02	1.87E-02	1.91E+02	3.41E-03
UM-0N-250E (6-12")	4.25E-02	4.25E-02	1.23E-01	3.32E+01	1.41E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	2.69E+02	1.14E-01	1.00E+00	8.52E-01	1.79E+00	2.41E+02	1.87E-02	1.91E+02	9.36E-03
UM-250S-250E (6-12")	4.25E-02	4.25E-02	1.23E-01	1.18E+01	5.00E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	9.53E+01	4.05E-02	1.00E+00	8.52E-01	6.34E-01	2.41E+02	1.87E-02	1.91E+02	3.32E-03
BRSD-7 (6-12")	4.25E-02	4.25E-02	1.23E-01	1.42E+01	6.04E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.15E+02	4.89E-02	1.00E+00	8.52E-01	7.66E-01	2.41E+02	1.87E-02	1.91E+02	4.00E-03
BRSD-8 (6-12")	4.25E-02	4.25E-02	1.23E-01	3.70E+01	1.57E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	3.00E+02	1.28E-01	1.00E+00	8.52E-01	2.00E+00	2.41E+02	1.87E-02	1.91E+02	1.04E-02
UM-500S-500E (6-12")	4.25E-02	4.25E-02	1.23E-01	8.96E+00	3.81E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	7.26E+01	3.09E-02	1.00E+00	8.52E-01	4.83E-01	2.41E+02	1.87E-02	1.91E+02	2.53E-03

TABLE C-12EB: LEAD DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 12 - MARSH, WETLAND RECEPTORS (Continued)
Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)
calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **118.73**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Mink (Carnivorous Mammals)																							
BRSD-9 (6-12")	4.25E-02	4.25E-02	1.23E-01	1.05E+01	4.46E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	8.49E+01	3.61E-02	1.00E+00	8.52E-01	5.65E-01	2.41E+02	1.87E-02	1.91E+02	2.95E-03
BRSD-10 (6-12")	4.25E-02	4.25E-02	1.23E-01	1.69E+02	7.19E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.37E+03	5.83E-01	1.00E+00	8.52E-01	9.12E+00	2.41E+02	1.87E-02	1.91E+02	4.77E-02
BRSD-11 (6-12")	4.25E-02	4.25E-02	1.23E-01	1.28E+01	5.46E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.04E+02	4.42E-02	1.00E+00	8.52E-01	6.92E-01	2.41E+02	1.87E-02	1.91E+02	3.62E-03
Middle Marsh (0-2")																						**Maximum HQ (Western Upper Marsh, 6-12")**	**1.14E-01**
MMSD-201 (0-2")	4.25E-02	4.25E-02	1.23E-01	6.22E+01	2.65E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	5.04E+02	2.14E-01	1.00E+00	8.52E-01	3.36E+00	2.41E+02	1.87E-02	1.91E+02	1.75E-02
MMSD-202 (0-2")	4.25E-02	4.25E-02	1.23E-01	8.57E+01	3.65E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	6.95E+02	2.96E-01	1.00E+00	8.52E-01	4.63E+00	2.41E+02	1.87E-02	1.91E+02	2.42E-02
Middle Marsh (2-6")																						**Maximum HQ (Middle Marsh, 0-2")**	**2.42E-02**
MMSD-201 (2-6")	4.25E-02	4.25E-02	1.23E-01	7.67E+01	3.26E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	6.22E+02	2.65E-01	1.00E+00	8.52E-01	4.14E+00	2.41E+02	1.87E-02	1.91E+02	2.16E-02
MMSD-202 (2-6")	4.25E-02	4.25E-02	1.23E-01	1.02E+02	4.35E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	8.28E+02	3.52E-01	1.00E+00	8.52E-01	5.51E+00	2.41E+02	1.87E-02	1.91E+02	2.88E-02
Middle Marsh (6-12")																						**Maximum HQ (Middle Marsh, 2-6")**	**2.88E-02**
MMSD-201 (6-12")	4.25E-02	4.25E-02	1.23E-01	1.19E+02	5.08E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	9.67E+02	4.11E-01	1.00E+00	8.52E-01	6.44E+00	2.41E+02	1.87E-02	1.91E+02	3.36E-02
MMSD-202 (6-12")	4.25E-02	4.25E-02	1.23E-01	3.23E+01	1.38E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	2.62E+02	1.11E-01	1.00E+00	8.52E-01	1.74E+00	2.41E+02	1.87E-02	1.91E+02	9.12E-03
Lower Marsh (0-2")																						**Maximum HQ (Middle Marsh, 6-12")**	**3.36E-02**
LMSD-201 (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
LMSD-202 (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
LMSD-203 (0-2")	4.25E-02	4.25E-02	1.23E-01	9.87E+00	4.20E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	8.00E+01	3.40E-02	1.00E+00	8.52E-01	5.33E-01	2.41E+02	1.87E-02	1.91E+02	2.78E-03
LMSD-204 (0-2")	4.25E-02	4.25E-02	1.23E-01	1.11E+01	4.72E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	9.00E+01	3.83E-02	1.00E+00	8.52E-01	5.99E-01	2.41E+02	1.87E-02	1.91E+02	3.13E-03
Lower Marsh (2-6")																						**Maximum HQ (Lower Marsh, 0-2")**	**3.13E-03**
LMSD-201 (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
LMSD-202 (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
LMSD-203 (2-6")	4.25E-02	4.25E-02	1.23E-01	1.05E+01	4.46E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	8.50E+01	3.62E-02	1.00E+00	8.52E-01	5.66E-01	2.41E+02	1.87E-02	1.91E+02	2.96E-03
LMSD-204 (2-6")	4.25E-02	4.25E-02	1.23E-01	1.07E+01	4.57E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	8.70E+01	3.70E-02	1.00E+00	8.52E-01	5.79E-01	2.41E+02	1.87E-02	1.91E+02	3.03E-03
Lower Marsh (6-12")																						**Maximum HQ (Lower Marsh, 2-6")**	**3.03E-03**
LMSD-201 (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
LMSD-202 (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
LMSD-203 (6-12")	4.25E-02	4.25E-02	1.23E-01	9.99E+00	4.25E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	8.10E+01	3.45E-02	1.00E+00	8.52E-01	5.39E-01	2.41E+02	1.87E-02	1.91E+02	2.82E-03
LMSD-204 (6-12")	4.25E-02	4.25E-02	1.23E-01	1.04E+01	4.41E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	8.40E+01	3.57E-02	1.00E+00	8.52E-01	5.59E-01	2.41E+02	1.87E-02	1.91E+02	2.92E-03
																						Maximum HQ (Lower Marsh, 6-12")	**2.92E-03**

Notes

1 See Tables 3-1 through 3-13 for ingestion rates, foraging ranges used to calculate the SUF, and body weights.

2 Site BAFs were calculated by dividing site-collected tissue by collocated soil concentrations. The maximum plant and invertebrate BAF calculated for the eastern transect (UMT1) were used for the Eastern Upper Marsh dose calculations. The maximum plant and invertebrate BAF calculated for the western transect (UMT2) were used for the Western Upper Marsh dose calculations. The maximum mammal BAF calculated for the eastern transect (UMT1) was used for the Eastern and Western Upper Marsh calculations because no mammals were collected in the Western Upper Marsh. The maximum plant, mammal, and invertebrate BAFs calculated for the Pass Creek reference site (PGREF) were used for the reference site dose calculations.

3 The mammal, plant, and invertebrate concentrations were calculated by multiplying the soil concentration by the BAF to generate a tissue concentration (see note 2).

4 Mammal, plant, and invertebrate daily doses were calculated by multiplying the ingestion rate (see note 1) by the tissue concentration (see note 3).

5 Soil concentration from specified depth below ground surface at point ID from laboratory analysis. Doses were not calculated for detected and non-detected soil concentrations measured below the minimum reference site concentration (0-12"), as indicated by BB. For results that were measured at less than the detection limit, doses were calculated using half of the detection limit.

6 Soil daily dose was calculated by multiplying the soil ingestion rate (see note 1) by soil concentration (see note 5).

7 Total daily dose is calculated using the following equation: total daily dose = ([mammal daily dose (if applicable) + plant daily dose (if applicable) + invertebrate daily dose (if applicable) + soil daily dose]*SUF)/receptor species body weight.

8 The derivation of TRVs is described in Navy (1998). The high TRV was used for dose calculations.

9 Allometrically adjusted TRVs for birds were calculated using the following equation: receptor species TRV = (test species TRV) x (test species body weight / receptor species body weight) $^{(1-1.2)}$.

10 Allometrically adjusted TRVs for mammals were calculated using the following equation: receptor species TRV = (test species TRV) x (test species body weight / receptor species body weight) $^{(1-0.94)}$.

11 HQs were calculated using the following equation: HQ = total daily dose/allometrically adjusted TRV.

12 Green cells indicate an HQ greater than 1.0

BAF	Bioaccumulation Factor	ID	Identification	NA	Not applicable
BB	Below minimum background reference site concentration	kg	Kilogram	Navy	Department of the Navy
EE/CA	Engineering Evaluation/Cost Analysis	kg/day	Kilogram per day	SUF	Site use factor
EU	Exposure Unit	mg/day	Milligram per day	TRV	Toxicity reference value
HQ	Hazard Quotient	mg/kg	Milligram per kilogram		

Sources:

Department of the Navy. 1998. "Development of Toxicity Reference Values for Conducting Ecological Risk Assessments at Naval Facilities in California, Interim Final." Prepared by Naval Facilities Engineering Command, Engineering Field Activity West (EFA

TABLE C-12FA: MANGANESE DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 12 - MARSH, TERRESTRIAL RECEPTORS

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **118.73**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Mourning Dove (Herbivorous Birds)																							
Reference Sites																							
BRSD-5 (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	3.24E+00	1.04E+03	5.98E+00	NA	NA	NA	NA	5.36E-04	3.20E+02	1.71E-01	4.58E-01	1.09E-01	2.58E+01	7.76E+02	1.97E-01	6.90E+02	3.74E-02
BRSD-5 (2-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	3.24E+00	8.10E+02	4.67E+00	NA	NA	NA	NA	5.36E-04	2.50E+02	1.34E-01	4.58E-01	1.09E-01	2.02E+01	7.76E+02	1.97E-01	6.90E+02	2.92E-02
BRSD-5 (6-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	3.24E+00	7.91E+02	4.56E+00	NA	NA	NA	NA	5.36E-04	2.44E+02	1.31E-01	4.58E-01	1.09E-01	1.97E+01	7.76E+02	1.97E-01	6.90E+02	2.85E-02
PGBG-1 (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	3.24E+00	2.26E+03	1.30E+01	NA	NA	NA	NA	5.36E-04	6.96E+02	3.73E-01	4.58E-01	1.09E-01	5.61E+01	7.76E+02	1.97E-01	6.90E+02	8.14E-02
PGBG-1 (2-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	3.24E+00	6.45E+02	3.72E+00	NA	NA	NA	NA	5.36E-04	1.99E+02	1.07E-01	4.58E-01	1.09E-01	1.61E+01	7.76E+02	1.97E-01	6.90E+02	2.33E-02
PGBG-1 (6-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	3.24E+00	2.85E+02	1.64E+00	NA	NA	NA	NA	5.36E-04	8.80E+01	4.72E-02	4.58E-01	1.09E-01	7.10E+00	7.76E+02	1.97E-01	6.90E+02	1.03E-02
PGBG-2 (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	3.24E+00	1.90E+03	1.09E+01	NA	NA	NA	NA	5.36E-04	5.86E+02	3.14E-01	4.58E-01	1.09E-01	4.73E+01	7.76E+02	1.97E-01	6.90E+02	6.85E-02
PGBG-2 (2-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	3.24E+00	1.61E+03	9.30E+00	NA	NA	NA	NA	5.36E-04	4.98E+02	2.67E-01	4.58E-01	1.09E-01	4.02E+01	7.76E+02	1.97E-01	6.90E+02	5.82E-02
PGBG-2 (6-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	3.24E+00	9.50E+02	5.47E+00	NA	NA	NA	NA	5.36E-04	2.93E+02	1.57E-01	4.58E-01	1.09E-01	2.36E+01	7.76E+02	1.97E-01	6.90E+02	3.43E-02
Eastern Upper Marsh (0-2")																						**Minimum HQ (Reference Sites)**	**1.03E-02**
UM-1000S-3500E (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	3.62E+00	1.02E+03	5.90E+00	NA	NA	NA	NA	5.36E-04	2.83E+02	1.52E-01	4.58E-01	1.09E-01	2.54E+01	7.76E+02	1.97E-01	6.90E+02	3.68E-02
BRSD-15 (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	3.62E+00	2.30E+03	1.32E+01	NA	NA	NA	NA	5.36E-04	6.35E+02	3.40E-01	4.58E-01	1.09E-01	5.70E+01	7.76E+02	1.97E-01	6.90E+02	8.26E-02
BRSD-4 (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	3.62E+00	7.59E+02	4.37E+00	NA	NA	NA	NA	5.36E-04	2.10E+02	1.13E-01	4.58E-01	1.09E-01	1.88E+01	7.76E+02	1.97E-01	6.90E+02	2.73E-02
UM-750S-3500E (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	3.62E+00	2.69E+04	1.55E+02	NA	NA	NA	NA	5.36E-04	7.43E+03	3.98E+00	4.58E-01	1.09E-01	6.67E+02	7.76E+02	1.97E-01	6.90E+02	9.66E-01
BRSD-16 (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	3.62E+00	3.76E+03	2.17E+01	NA	NA	NA	NA	5.36E-04	1.04E+03	5.57E-01	4.58E-01	1.09E-01	9.33E+01	7.76E+02	1.97E-01	6.90E+02	1.35E-01
UM-750S-3000E (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	3.62E+00	2.57E+04	1.48E+02	NA	NA	NA	NA	5.36E-04	7.11E+03	3.81E+00	4.58E-01	1.09E-01	6.38E+02	7.76E+02	1.97E-01	6.90E+02	9.24E-01
BRSD-3 (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	3.62E+00	4.48E+03	2.58E+01	NA	NA	NA	NA	5.36E-04	1.24E+03	6.64E-01	4.58E-01	1.09E-01	1.11E+02	7.76E+02	1.97E-01	6.90E+02	1.61E-01
UM-500S-3250E (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	3.62E+00	9.36E+03	5.40E+01	NA	NA	NA	NA	5.36E-04	2.59E+03	1.39E+00	4.58E-01	1.09E-01	2.32E+02	7.76E+02	1.97E-01	6.90E+02	3.37E-01
UM-500S-3000E (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	3.62E+00	4.27E+03	2.46E+01	NA	NA	NA	NA	5.36E-04	1.18E+03	6.32E-01	4.58E-01	1.09E-01	1.06E+02	7.76E+02	1.97E-01	6.90E+02	1.53E-01
UM-500S-2750E (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	3.62E+00	2.59E+04	1.49E+02	NA	NA	NA	NA	5.36E-04	7.16E+03	3.84E+00	4.58E-01	1.09E-01	6.42E+02	7.76E+02	1.97E-01	6.90E+02	9.31E-01
BRSD-25 (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	3.62E+00	5.42E+03	3.12E+01	NA	NA	NA	NA	5.36E-04	1.50E+03	8.04E-01	4.58E-01	1.09E-01	1.35E+02	7.76E+02	1.97E-01	6.90E+02	1.95E-01
UM-250S-3000E (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	3.62E+00	1.59E+04	9.17E+01	NA	NA	NA	NA	5.36E-04	4.40E+03	2.36E+00	4.58E-01	1.09E-01	3.95E+02	7.76E+02	1.97E-01	6.90E+02	5.72E-01
UM-250S-3250E (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	3.62E+00	5.32E+03	3.06E+01	NA	NA	NA	NA	5.36E-04	1.47E+03	7.88E-01	4.58E-01	1.09E-01	1.32E+02	7.76E+02	1.97E-01	6.90E+02	1.91E-01
BRSD-24 (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	3.62E+00	2.89E+04	1.66E+02	NA	NA	NA	NA	5.36E-04	7.99E+03	4.28E+00	4.58E-01	1.09E-01	7.17E+02	7.76E+02	1.97E-01	6.90E+02	1.04E+00
UM-250S-2750E (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	3.62E+00	2.82E+04	1.63E+02	NA	NA	NA	NA	5.36E-04	7.81E+03	4.18E+00	4.58E-01	1.09E-01	7.01E+02	7.76E+02	1.97E-01	6.90E+02	1.02E+00
UM-250S-2500E (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	3.62E+00	8.50E+02	4.90E+00	NA	NA	NA	NA	5.36E-04	2.35E+02	1.26E-01	4.58E-01	1.09E-01	2.11E+01	7.76E+02	1.97E-01	6.90E+02	3.06E-02
UM-0N-2500E (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	3.62E+00	7.41E+03	4.27E+01	NA	NA	NA	NA	5.36E-04	2.05E+03	1.10E+00	4.58E-01	1.09E-01	1.84E+02	7.76E+02	1.97E-01	6.90E+02	2.67E-01
UM-0N-250E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-2 (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	3.62E+00	2.78E+04	1.60E+02	NA	NA	NA	NA	5.36E-04	7.69E+03	4.12E+00	4.58E-01	1.09E-01	6.90E+02	7.76E+02	1.97E-01	6.90E+02	1.00E+00
UM-500N-2500E (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	3.62E+00	5.89E+02	3.40E+00	NA	NA	NA	NA	5.36E-04	1.63E+02	8.73E-02	4.58E-01	1.09E-01	1.46E+01	7.76E+02	1.97E-01	6.90E+02	2.12E-02
UM-250N-2500E (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	3.62E+00	1.37E+04	7.92E+01	NA	NA	NA	NA	5.36E-04	3.80E+03	2.04E+00	4.58E-01	1.09E-01	3.41E+02	7.76E+02	1.97E-01	6.90E+02	4.94E-01
UM-250N-2250E (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	3.62E+00	2.76E+04	1.59E+02	NA	NA	NA	NA	5.36E-04	7.62E+03	4.08E+00	4.58E-01	1.09E-01	6.84E+02	7.76E+02	1.97E-01	6.90E+02	9.91E-01
Western Upper Marsh (0-2")																						**Maximum HQ (Eastern Upper Marsh, 0-2")**	**1.04E+00**
UM-500S-2500E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-2000E (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	5.04E+00	2.18E+04	1.26E+02	NA	NA	NA	NA	5.36E-04	4.32E+03	2.31E+00	4.58E-01	1.09E-01	5.37E+02	7.76E+02	1.97E-01	6.90E+02	7.78E-01
UM-500S-2000E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-250N-1750E (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	5.04E+00	6.35E+02	3.66E+00	NA	NA	NA	NA	5.36E-04	1.26E+02	6.75E-02	4.58E-01	1.09E-01	1.57E+01	7.76E+02	1.97E-01	6.90E+02	2.27E-02
UM-0N-1500E (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	5.04E+00	6.71E+02	3.86E+00	NA	NA	NA	NA	5.36E-04	1.33E+02	7.13E-02	4.58E-01	1.09E-01	1.65E+01	7.76E+02	1.97E-01	6.90E+02	2.39E-02
UM-250S-1500E (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	5.04E+00	5.90E+03	3.40E+01	NA	NA	NA	NA	5.36E-04	1.17E+03	6.27E-01	4.58E-01	1.09E-01	1.45E+02	7.76E+02	1.97E-01	6.90E+02	2.11E-01
UM-250S-1250E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-6 (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-1000E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-750E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-500E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-250S-500E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-250S-250E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-7 (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-8 (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	5.04E+00	2.49E+03	1.43E+01	NA	NA	NA	NA	5.36E-04	4.93E+02	2.64E-01	4.58E-01	1.09E-01	6.12E+01	7.76E+02	1.97E-01	6.90E+02	8.88E-02

TABLE C-12FA: MANGANESE DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 12 - MARSH, TERRESTRIAL RECEPTORS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **118.73**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Mourning Dove (Herbivorous Birds)																							
UM-500S-500E (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	5.04E+00	4.90E+02	2.82E+00	NA	NA	NA	NA	5.36E-04	9.71E+01	5.20E-02	4.58E-01	1.09E-01	1.21E+01	7.76E+02	1.97E-01	6.90E+02	1.75E-02
BRSD-9 (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	5.04E+00	2.80E+04	1.61E+02	NA	NA	NA	NA	5.36E-04	5.55E+03	2.97E+00	4.58E-01	1.09E-01	6.89E+02	7.76E+02	1.97E-01	6.90E+02	9.99E-01
BRSD-10 (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	5.04E+00	1.72E+04	9.91E+01	NA	NA	NA	NA	5.36E-04	3.41E+03	1.83E+00	4.58E-01	1.09E-01	4.24E+02	7.76E+02	1.97E-01	6.90E+02	6.14E-01
BRSD-11 (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	5.04E+00	6.86E+03	3.95E+01	NA	NA	NA	NA	5.36E-04	1.36E+03	7.29E-01	4.58E-01	1.09E-01	1.69E+02	7.76E+02	1.97E-01	6.90E+02	2.45E-01
Eastern Upper Marsh (2-6")																						**Maximum HQ (Western Upper Marsh, 0-2")**	**9.99E-01**
UM-1000S-3500E (2-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	3.62E+00	1.55E+03	8.96E+00	NA	NA	NA	NA	5.36E-04	4.30E+02	2.30E-01	4.58E-01	1.09E-01	3.86E+01	7.76E+02	1.97E-01	6.90E+02	5.59E-02
BRSD-15 (2-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	3.62E+00	3.62E+03	2.08E+01	NA	NA	NA	NA	5.36E-04	1.00E+03	5.36E-01	4.58E-01	1.09E-01	8.97E+01	7.76E+02	1.97E-01	6.90E+02	1.30E-01
BRSD-4 (2-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	3.62E+00	3.45E+02	1.99E+00	NA	NA	NA	NA	5.36E-04	9.54E+01	5.11E-02	4.58E-01	1.09E-01	8.56E+00	7.76E+02	1.97E-01	6.90E+02	1.24E-02
UM-750S-3500E (2-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	3.62E+00	2.56E+04	1.48E+02	NA	NA	NA	NA	5.36E-04	7.09E+03	3.80E+00	4.58E-01	1.09E-01	6.36E+02	7.76E+02	1.97E-01	6.90E+02	9.22E-01
BRSD-16 (2-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	3.62E+00	3.65E+04	2.10E+02	NA	NA	NA	NA	5.36E-04	1.01E+04	5.41E+00	4.58E-01	1.09E-01	9.06E+02	7.76E+02	1.97E-01	6.90E+02	1.31E+00
UM-750S-3000E (2-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	3.62E+00	2.69E+04	1.55E+02	NA	NA	NA	NA	5.36E-04	7.44E+03	3.99E+00	4.58E-01	1.09E-01	6.67E+02	7.76E+02	1.97E-01	6.90E+02	9.67E-01
BRSD-3 (2-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	3.62E+00	6.11E+03	3.52E+01	NA	NA	NA	NA	5.36E-04	1.69E+03	9.06E-01	4.58E-01	1.09E-01	1.52E+02	7.76E+02	1.97E-01	6.90E+02	2.20E-01
UM-500S-3250E (2-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	3.62E+00	1.55E+03	8.92E+00	NA	NA	NA	NA	5.36E-04	4.28E+02	2.29E-01	4.58E-01	1.09E-01	3.84E+01	7.76E+02	1.97E-01	6.90E+02	5.56E-02
UM-500S-3000E (2-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	3.62E+00	1.15E+03	6.60E+00	NA	NA	NA	NA	5.36E-04	3.17E+02	1.70E-01	4.58E-01	1.09E-01	2.84E+01	7.76E+02	1.97E-01	6.90E+02	4.12E-02
UM-500S-2750E (2-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	3.62E+00	3.02E+04	1.74E+02	NA	NA	NA	NA	5.36E-04	8.36E+03	4.48E+00	4.58E-01	1.09E-01	7.50E+02	7.76E+02	1.97E-01	6.90E+02	1.09E+00
BRSD-25 (2-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	3.62E+00	3.83E+03	2.21E+01	NA	NA	NA	NA	5.36E-04	1.06E+03	5.68E-01	4.58E-01	1.09E-01	9.51E+01	7.76E+02	1.97E-01	6.90E+02	1.38E-01
UM-250S-3000E (2-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	3.62E+00	9.29E+03	5.35E+01	NA	NA	NA	NA	5.36E-04	2.57E+03	1.38E+00	4.58E-01	1.09E-01	2.31E+02	7.76E+02	1.97E-01	6.90E+02	3.34E-01
UM-250S-3250E (2-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	3.62E+00	4.66E+02	2.69E+00	NA	NA	NA	NA	5.36E-04	1.29E+02	6.91E-02	4.58E-01	1.09E-01	1.16E+01	7.76E+02	1.97E-01	6.90E+02	1.68E-02
BRSD-24 (2-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	3.62E+00	1.03E+04	5.96E+01	NA	NA	NA	NA	5.36E-04	2.86E+03	1.53E+00	4.58E-01	1.09E-01	2.57E+02	7.76E+02	1.97E-01	6.90E+02	3.72E-01
UM-250S-2750E (2-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	3.62E+00	2.12E+04	1.22E+02	NA	NA	NA	NA	5.36E-04	5.85E+03	3.13E+00	4.58E-01	1.09E-01	5.25E+02	7.76E+02	1.97E-01	6.90E+02	7.61E-01
UM-0N-2500E (2-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	3.62E+00	1.16E+04	6.71E+01	NA	NA	NA	NA	5.36E-04	3.22E+03	1.73E+00	4.58E-01	1.09E-01	2.89E+02	7.76E+02	1.97E-01	6.90E+02	4.19E-01
BRSD-2 (2-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	3.62E+00	2.20E+04	1.27E+02	NA	NA	NA	NA	5.36E-04	6.09E+03	3.26E+00	4.58E-01	1.09E-01	5.46E+02	7.76E+02	1.97E-01	6.90E+02	7.92E-01
UM-500N-2500E (2-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	3.62E+00	6.73E+02	3.87E+00	NA	NA	NA	NA	5.36E-04	1.86E+02	9.97E-02	4.58E-01	1.09E-01	1.67E+01	7.76E+02	1.97E-01	6.90E+02	2.42E-02
UM-250N-2500E (2-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	3.62E+00	2.89E+04	1.66E+02	NA	NA	NA	NA	5.36E-04	7.98E+03	4.28E+00	4.58E-01	1.09E-01	7.16E+02	7.76E+02	1.97E-01	6.90E+02	1.04E+00
UM-250N-2250E (2-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	3.62E+00	1.01E+03	5.81E+00	NA	NA	NA	NA	5.36E-04	2.79E+02	1.49E-01	4.58E-01	1.09E-01	2.50E+01	7.76E+02	1.97E-01	6.90E+02	3.63E-02
Western Upper Marsh (2-6")																						**Maximum HQ (Eastern Upper Marsh, 2-6")**	**1.31E+00**
UM-500S-2500E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-2000E (2-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	5.04E+00	1.93E+04	1.11E+02	NA	NA	NA	NA	5.36E-04	3.82E+03	2.05E+00	4.58E-01	1.09E-01	4.75E+02	7.76E+02	1.97E-01	6.90E+02	6.88E-01
UM-500S-2000E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-250N-1750E (2-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	5.04E+00	8.98E+02	5.17E+00	NA	NA	NA	NA	5.36E-04	1.78E+02	9.54E-02	4.58E-01	1.09E-01	2.21E+01	7.76E+02	1.97E-01	6.90E+02	3.20E-02
UM-0N-1500E (2-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	5.04E+00	6.61E+02	3.81E+00	NA	NA	NA	NA	5.36E-04	1.31E+02	7.02E-02	4.58E-01	1.09E-01	1.63E+01	7.76E+02	1.97E-01	6.90E+02	2.36E-02
UM-250S-1500E (2-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	5.04E+00	7.36E+03	4.24E+01	NA	NA	NA	NA	5.36E-04	1.46E+03	7.82E-01	4.58E-01	1.09E-01	1.81E+02	7.76E+02	1.97E-01	6.90E+02	2.63E-01
UM-250S-1250E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-6 (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-1000E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-750E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-500E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-250S-500E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-250E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-250S-250E (2-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	5.04E+00	4.49E+02	2.59E+00	NA	NA	NA	NA	5.36E-04	8.91E+01	4.77E-02	4.58E-01	1.09E-01	1.11E+01	7.76E+02	1.97E-01	6.90E+02	1.60E-02
BRSD-7 (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-8 (2-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	5.04E+00	7.11E+03	4.10E+01	NA	NA	NA	NA	5.36E-04	1.41E+03	7.56E-01	4.58E-01	1.09E-01	1.75E+02	7.76E+02	1.97E-01	6.90E+02	2.54E-01
UM-500S-500E (2-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	5.04E+00	5.09E+02	2.93E+00	NA	NA	NA	NA	5.36E-04	1.01E+02	5.41E-02	4.58E-01	1.09E-01	1.25E+01	7.76E+02	1.97E-01	6.90E+02	1.82E-02
BRSD-9 (2-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	5.04E+00	1.06E+04	6.13E+01	NA	NA	NA	NA	5.36E-04	2.11E+03	1.13E+00	4.58E-01	1.09E-01	2.62E+02	7.76E+02	1.97E-01	6.90E+02	3.80E-01
BRSD-10 (2-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	5.04E+00	1.68E+04	9.68E+01	NA	NA	NA	NA	5.36E-04	3.33E+03	1.78E+00	4.58E-01	1.09E-01	4.14E+02	7.76E+02	1.97E-01	6.90E+02	6.00E-01
BRSD-11 (2-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	5.04E+00	1.60E+03	9.21E+00	NA	NA	NA	NA	5.36E-04	3.17E+02	1.70E-01	4.58E-01	1.09E-01	3.94E+01	7.76E+02	1.97E-01	6.90E+02	5.71E-02

TABLE C-12FA: MANGANESE DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 12 - MARSH, TERRESTRIAL RECEPTORS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 118.73

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Mourning Dove (Herbivorous Birds)																							
Eastern Upper Marsh (6-12")																						**Maximum HQ (Western Upper Marsh, 2-6")**	**6.88E-01**
UM-1000S-3500E (6-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	3.62E+00	5.53E+02	3.19E+00	NA	NA	NA	NA	5.36E-04	1.53E+02	8.20E-02	4.58E-01	1.09E-01	1.37E+01	7.76E+02	1.97E-01	6.90E+02	1.99E-02
BRSD-15 (6-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	3.62E+00	4.74E+03	2.73E+01	NA	NA	NA	NA	5.36E-04	1.31E+03	7.02E-01	4.58E-01	1.09E-01	1.18E+02	7.76E+02	1.97E-01	6.90E+02	1.70E-01
BRSD-4 (6-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	3.62E+00	1.71E+03	9.85E+00	NA	NA	NA	NA	5.36E-04	4.73E+02	2.53E-01	4.58E-01	1.09E-01	4.24E+01	7.76E+02	1.97E-01	6.90E+02	6.15E-02
UM-750S-3500E (6-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	3.62E+00	2.30E+04	1.32E+02	NA	NA	NA	NA	5.36E-04	6.35E+03	3.40E+00	4.58E-01	1.09E-01	5.70E+02	7.76E+02	1.97E-01	6.90E+02	8.26E-01
BRSD-16 (6-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	3.62E+00	8.61E+03	4.96E+01	NA	NA	NA	NA	5.36E-04	2.38E+03	1.28E+00	4.58E-01	1.09E-01	2.13E+02	7.76E+02	1.97E-01	6.90E+02	3.09E-01
UM-750S-3000E (6-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	3.62E+00	2.63E+04	1.52E+02	NA	NA	NA	NA	5.36E-04	7.28E+03	3.90E+00	4.58E-01	1.09E-01	6.53E+02	7.76E+02	1.97E-01	6.90E+02	9.46E-01
BRSD-3 (6-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	3.62E+00	2.34E+03	1.35E+01	NA	NA	NA	NA	5.36E-04	6.48E+02	3.47E-01	4.58E-01	1.09E-01	5.81E+01	7.76E+02	1.97E-01	6.90E+02	8.42E-02
UM-500S-3250E (6-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	3.62E+00	9.98E+02	5.75E+00	NA	NA	NA	NA	5.36E-04	2.76E+02	1.48E-01	4.58E-01	1.09E-01	2.48E+01	7.76E+02	1.97E-01	6.90E+02	3.59E-02
UM-500S-3000E (6-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	3.62E+00	1.41E+03	8.10E+00	NA	NA	NA	NA	5.36E-04	3.89E+02	2.08E-01	4.58E-01	1.09E-01	3.49E+01	7.76E+02	1.97E-01	6.90E+02	5.06E-02
UM-500S-2750E (6-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	3.62E+00	2.95E+04	1.70E+02	NA	NA	NA	NA	5.36E-04	8.16E+03	4.37E+00	4.58E-01	1.09E-01	7.32E+02	7.76E+02	1.97E-01	6.90E+02	1.06E+00
BRSD-25 (6-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	3.62E+00	6.29E+02	3.62E+00	NA	NA	NA	NA	5.36E-04	1.74E+02	9.32E-02	4.58E-01	1.09E-01	1.56E+01	7.76E+02	1.97E-01	6.90E+02	2.26E-02
UM-250S-3000E (6-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	3.62E+00	1.81E+04	1.04E+02	NA	NA	NA	NA	5.36E-04	5.00E+03	2.68E+00	4.58E-01	1.09E-01	4.49E+02	7.76E+02	1.97E-01	6.90E+02	6.50E-01
UM-250S-3250E (6-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	3.62E+00	7.95E+02	4.58E+00	NA	NA	NA	NA	5.36E-04	2.20E+02	1.18E-01	4.58E-01	1.09E-01	1.97E+01	7.76E+02	1.97E-01	6.90E+02	2.86E-02
BRSD-24 (6-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	3.62E+00	4.34E+03	2.50E+01	NA	NA	NA	NA	5.36E-04	1.20E+03	6.43E-01	4.58E-01	1.09E-01	1.08E+02	7.76E+02	1.97E-01	6.90E+02	1.56E-01
UM-250S-2750E (6-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	3.62E+00	5.93E+03	3.42E+01	NA	NA	NA	NA	5.36E-04	1.64E+03	8.79E-01	4.58E-01	1.09E-01	1.47E+02	7.76E+02	1.97E-01	6.90E+02	2.13E-01
UM-250S-2500E (6-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	3.62E+00	5.42E+02	3.12E+00	NA	NA	NA	NA	5.36E-04	1.50E+02	8.04E-02	4.58E-01	1.09E-01	1.35E+01	7.76E+02	1.97E-01	6.90E+02	1.95E-02
BRSD-2 (6-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	3.62E+00	4.45E+03	2.56E+01	NA	NA	NA	NA	5.36E-04	1.23E+03	6.59E-01	4.58E-01	1.09E-01	1.10E+02	7.76E+02	1.97E-01	6.90E+02	1.60E-01
UM-500N-2500E (6-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	3.62E+00	7.45E+02	4.29E+00	NA	NA	NA	NA	5.36E-04	2.06E+02	1.10E-01	4.58E-01	1.09E-01	1.85E+01	7.76E+02	1.97E-01	6.90E+02	2.68E-02
UM-250N-2500E (6-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	3.62E+00	2.44E+04	1.40E+02	NA	NA	NA	NA	5.36E-04	6.74E+03	3.61E+00	4.58E-01	1.09E-01	6.05E+02	7.76E+02	1.97E-01	6.90E+02	8.76E-01
UM-250N-2250E (6-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	3.62E+00	1.25E+03	7.23E+00	NA	NA	NA	NA	5.36E-04	3.47E+02	1.86E-01	4.58E-01	1.09E-01	3.11E+01	7.76E+02	1.97E-01	6.90E+02	4.51E-02
Western Upper Marsh (6-12")																						**Maximum HQ (Eastern Upper Marsh, 6-12")**	**1.06E+00**
UM-500S-2500E (6-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	5.04E+00	7.67E+02	4.42E+00	NA	NA	NA	NA	5.36E-04	1.52E+02	8.14E-02	4.58E-01	1.09E-01	1.89E+01	7.76E+02	1.97E-01	6.90E+02	2.74E-02
UM-500S-2000E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-250N-1750E (6-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	5.04E+00	5.02E+02	2.89E+00	NA	NA	NA	NA	5.36E-04	9.96E+01	5.34E-02	4.58E-01	1.09E-01	1.24E+01	7.76E+02	1.97E-01	6.90E+02	1.79E-02
UM-0N-1500E (6-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	5.04E+00	8.17E+02	4.71E+00	NA	NA	NA	NA	5.36E-04	1.62E+02	8.68E-02	4.58E-01	1.09E-01	2.01E+01	7.76E+02	1.97E-01	6.90E+02	2.92E-02
UM-250S-1500E (6-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	5.04E+00	2.25E+03	1.30E+01	NA	NA	NA	NA	5.36E-04	4.46E+02	2.39E-01	4.58E-01	1.09E-01	5.54E+01	7.76E+02	1.97E-01	6.90E+02	8.03E-02
UM-250S-1250E (6-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	5.04E+00	4.72E+02	2.72E+00	NA	NA	NA	NA	5.36E-04	9.35E+01	5.01E-02	4.58E-01	1.09E-01	1.16E+01	7.76E+02	1.97E-01	6.90E+02	1.68E-02
BRSD-6 (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-1000E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-750E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-500E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-250S-500E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-250E (6-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	5.04E+00	4.91E+02	2.83E+00	NA	NA	NA	NA	5.36E-04	9.74E+01	5.22E-02	4.58E-01	1.09E-01	1.21E+01	7.76E+02	1.97E-01	6.90E+02	1.75E-02
UM-250S-250E (6-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	5.04E+00	1.42E+03	8.16E+00	NA	NA	NA	NA	5.36E-04	2.81E+02	1.51E-01	4.58E-01	1.09E-01	3.49E+01	7.76E+02	1.97E-01	6.90E+02	5.06E-02
BRSD-7 (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-8 (6-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	5.04E+00	5.70E+03	3.28E+01	NA	NA	NA	NA	5.36E-04	1.13E+03	6.05E-01	4.58E-01	1.09E-01	1.40E+02	7.76E+02	1.97E-01	6.90E+02	2.03E-01
UM-500S-500E (6-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	5.04E+00	5.09E+02	2.93E+00	NA	NA	NA	NA	5.36E-04	1.01E+02	5.41E-02	4.58E-01	1.09E-01	1.25E+01	7.76E+02	1.97E-01	6.90E+02	1.82E-02
BRSD-9 (6-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	5.04E+00	8.88E+03	5.11E+01	NA	NA	NA	NA	5.36E-04	1.76E+03	9.43E-01	4.58E-01	1.09E-01	2.19E+02	7.76E+02	1.97E-01	6.90E+02	3.17E-01
BRSD-10 (6-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	5.04E+00	2.48E+04	1.43E+02	NA	NA	NA	NA	5.36E-04	4.92E+03	2.64E+00	4.58E-01	1.09E-01	6.11E+02	7.76E+02	1.97E-01	6.90E+02	8.86E-01
BRSD-11 (6-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	5.04E+00	1.47E+03	8.48E+00	NA	NA	NA	NA	5.36E-04	2.92E+02	1.56E-01	4.58E-01	1.09E-01	3.63E+01	7.76E+02	1.97E-01	6.90E+02	5.26E-02
Middle Marsh (0-2")																						**Maximum HQ (Western Upper Marsh, 6-12")**	**1.38E+00**
MMSD-201 (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	5.04E+00	1.01E+04	5.84E+01	NA	NA	NA	NA	5.36E-04	2.01E+03	1.08E+00	4.58E-01	1.09E-01	2.50E+02	7.76E+02	1.97E-01	6.90E+02	3.62E-01
MMSD-202 (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	5.04E+00	7.97E+02	4.59E+00	NA	NA	NA	NA	5.36E-04	1.58E+02	8.47E-02	4.58E-01	1.09E-01	1.96E+01	7.76E+02	1.97E-01	6.90E+02	2.84E-02
Middle Marsh (2-6")																						**Maximum HQ (Middle Marsh, 0-2")**	**3.62E-01**
MMSD-201 (2-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	5.04E+00	7.46E+03	4.30E+01	NA	NA	NA	NA	5.36E-04	1.48E+03	7.93E-01	4.58E-01	1.09E-01	1.84E+02	7.76E+02	1.97E-01	6.90E+02	2.66E-01
MMSD-202 (2-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	5.04E+00	1.13E+03	6.54E+00	NA	NA	NA	NA	5.36E-04	2.25E+02	1.21E-01	4.58E-01	1.09E-01	2.80E+01	7.76E+02	1.97E-01	6.90E+02	4.05E-02

TABLE C-12FA: MANGANESE DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 12 - MARSH, TERRESTRIAL RECEPTORS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 118.73

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Mourning Dove (Herbivorous Birds)																							
Middle Marsh (6-12")																						**Maximum HQ (Middle Marsh, 2-6")**	**2.66E-01**
MMSD-201 (6-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	5.04E+00	8.98E+03	5.17E+01	NA	NA	NA	NA	5.36E-04	1.78E+03	9.54E-01	4.58E-01	1.09E-01	2.21E+02	7.76E+02	1.97E-01	6.90E+02	3.20E-01
MMSD-202 (6-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	5.04E+00	1.37E+03	7.90E+00	NA	NA	NA	NA	5.36E-04	2.72E+02	1.46E-01	4.58E-01	1.09E-01	3.38E+01	7.76E+02	1.97E-01	6.90E+02	4.90E-02
Lower Marsh (0-2")																						**Maximum HQ (Middle Marsh, 6-12")**	**3.20E-01**
LMSD-201 (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	3.62E+00	7.30E+02	4.21E+00	NA	NA	NA	NA	5.36E-04	2.02E+02	1.08E-01	4.58E-01	1.09E-01	1.81E+01	7.76E+02	1.97E-01	6.90E+02	2.63E-02
LMSD-202 (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
LMSD-203 (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	3.62E+00	7.38E+03	4.25E+01	NA	NA	NA	NA	5.36E-04	2.04E+03	1.09E+00	4.58E-01	1.09E-01	1.83E+02	7.76E+02	1.97E-01	6.90E+02	2.65E-01
LMSD-204 (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	3.62E+00	1.16E+03	6.71E+00	NA	NA	NA	NA	5.36E-04	3.22E+02	1.73E-01	4.58E-01	1.09E-01	2.89E+01	7.76E+02	1.97E-01	6.90E+02	4.19E-02
Lower Marsh (2-6")																						**Maximum HQ (Lower Marsh, 0-2")**	**2.65E-01**
LMSD-201 (2-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	3.62E+00	6.33E+02	3.65E+00	NA	NA	NA	NA	5.36E-04	1.75E+02	9.38E-02	4.58E-01	1.09E-01	1.57E+01	7.76E+02	1.97E-01	6.90E+02	2.28E-02
LMSD-202 (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
LMSD-203 (2-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	3.62E+00	8.32E+03	4.79E+01	NA	NA	NA	NA	5.36E-04	2.30E+03	1.23E+00	4.58E-01	1.09E-01	2.06E+02	7.76E+02	1.97E-01	6.90E+02	2.99E-01
LMSD-204 (2-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	3.62E+00	1.75E+03	1.01E+01	NA	NA	NA	NA	5.36E-04	4.84E+02	2.59E-01	4.58E-01	1.09E-01	4.34E+01	7.76E+02	1.97E-01	6.90E+02	6.29E-02
Lower Marsh (6-12")																						**Maximum HQ (Lower Marsh, 2-6")**	**2.99E-01**
LMSD-201 (6-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	3.62E+00	6.58E+02	3.79E+00	NA	NA	NA	NA	5.36E-04	1.82E+02	9.75E-02	4.58E-01	1.09E-01	1.63E+01	7.76E+02	1.97E-01	6.90E+02	2.37E-02
LMSD-202 (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
LMSD-203 (6-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	3.62E+00	2.60E+04	1.50E+02	NA	NA	NA	NA	5.36E-04	7.18E+03	3.85E+00	4.58E-01	1.09E-01	6.44E+02	7.76E+02	1.97E-01	6.90E+02	9.33E-01
LMSD-204 (6-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	3.62E+00	2.10E+03	1.21E+01	NA	NA	NA	NA	5.36E-04	5.80E+02	3.11E-01	4.58E-01	1.09E-01	5.20E+01	7.76E+02	1.97E-01	6.90E+02	7.54E-02
																						Maximum HQ (Lower Marsh, 6-12")	**9.33E-01**
Red-Tailed Hawk (Carnivorous Birds)																							
Reference Sites																							
BRSD-5 (0-2")	9.00E-02	9.00E-02	1.13E-01	3.62E+01	3.25E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.20E+02	1.64E+00	1.70E-01	1.13E+00	7.35E-01	7.76E+02	1.97E-01	1.10E+03	6.67E-04
BRSD-5 (2-6")	9.00E-02	9.00E-02	1.13E-01	2.82E+01	2.54E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.50E+02	1.28E+00	1.70E-01	1.13E+00	5.74E-01	7.76E+02	1.97E-01	1.10E+03	5.21E-04
PGBG-1 (0-2")	9.00E-02	9.00E-02	1.13E-01	7.86E+01	7.07E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	6.96E+02	3.57E+00	1.70E-01	1.13E+00	1.60E+00	7.76E+02	1.97E-01	1.10E+03	1.45E-03
PGBG-1 (2-6")	9.00E-02	9.00E-02	1.13E-01	2.25E+01	2.02E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.99E+02	1.02E+00	1.70E-01	1.13E+00	4.57E-01	7.76E+02	1.97E-01	1.10E+03	4.15E-04
PGBG-1 (6-12")	9.00E-02	9.00E-02	1.13E-01	9.94E+00	8.94E-01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	8.80E+01	4.51E-01	1.70E-01	1.13E+00	2.02E-01	7.76E+02	1.97E-01	1.10E+03	1.84E-04
PGBG-2 (0-2")	9.00E-02	9.00E-02	1.13E-01	6.62E+01	5.96E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.86E+02	3.00E+00	1.70E-01	1.13E+00	1.35E+00	7.76E+02	1.97E-01	1.10E+03	1.22E-03
PGBG-2 (2-6")	9.00E-02	9.00E-02	1.13E-01	5.63E+01	5.06E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.98E+02	2.55E+00	1.70E-01	1.13E+00	1.14E+00	7.76E+02	1.97E-01	1.10E+03	1.04E-03
PGBG-2 (6-12")	9.00E-02	9.00E-02	1.13E-01	3.31E+01	2.98E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.93E+02	1.50E+00	1.70E-01	1.13E+00	6.73E-01	7.76E+02	1.97E-01	1.10E+03	6.11E-04
Eastern Upper Marsh (0-2")																						**Minimum HQ (Reference Sites)**	**1.84E-04**
UM-1000S-3500E (0-2")	9.00E-02	9.00E-02	2.07E-01	5.85E+01	5.26E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.83E+02	1.45E+00	1.70E-01	1.13E+00	1.01E+00	7.76E+02	1.97E-01	1.10E+03	9.15E-04
BRSD-15 (0-2")	9.00E-02	9.00E-02	2.07E-01	1.31E+02	1.18E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	6.35E+02	3.26E+00	1.70E-01	1.13E+00	2.26E+00	7.76E+02	1.97E-01	1.10E+03	2.05E-03
BRSD-4 (0-2")	9.00E-02	9.00E-02	2.07E-01	4.34E+01	3.90E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.10E+02	1.08E+00	1.70E-01	1.13E+00	7.48E-01	7.76E+02	1.97E-01	1.10E+03	6.79E-04
UM-750S-3500E (0-2")	9.00E-02	9.00E-02	2.07E-01	1.54E+03	1.38E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	7.43E+03	3.81E+01	1.70E-01	1.13E+00	2.65E+01	7.76E+02	1.97E-01	1.10E+03	2.40E-02
BRSD-16 (0-2")	9.00E-02	9.00E-02	2.07E-01	2.15E+02	1.93E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.04E+03	5.33E+00	1.70E-01	1.13E+00	3.71E+00	7.76E+02	1.97E-01	1.10E+03	3.36E-03
UM-750S-3000E (0-2")	9.00E-02	9.00E-02	2.07E-01	1.47E+03	1.32E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	7.11E+03	3.65E+01	1.70E-01	1.13E+00	2.53E+01	7.76E+02	1.97E-01	1.10E+03	2.30E-02
BRSD-3 (0-2")	9.00E-02	9.00E-02	2.07E-01	2.56E+02	2.30E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.24E+03	6.36E+00	1.70E-01	1.13E+00	4.42E+00	7.76E+02	1.97E-01	1.10E+03	4.01E-03
UM-500S-3250E (0-2")	9.00E-02	9.00E-02	2.07E-01	5.35E+02	4.81E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.59E+03	1.33E+01	1.70E-01	1.13E+00	9.23E+00	7.76E+02	1.97E-01	1.10E+03	8.38E-03
UM-500S-3000E (0-2")	9.00E-02	9.00E-02	2.07E-01	2.44E+02	2.19E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.18E+03	6.05E+00	1.70E-01	1.13E+00	4.20E+00	7.76E+02	1.97E-01	1.10E+03	3.82E-03
UM-500S-2750E (0-2")	9.00E-02	9.00E-02	2.07E-01	1.48E+03	1.33E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	7.16E+03	3.67E+01	1.70E-01	1.13E+00	2.55E+01	7.76E+02	1.97E-01	1.10E+03	2.32E-02
BRSD-25 (0-2")	9.00E-02	9.00E-02	2.07E-01	3.10E+02	2.79E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.50E+03	7.69E+00	1.70E-01	1.13E+00	5.34E+00	7.76E+02	1.97E-01	1.10E+03	4.85E-03
UM-250S-3000E (0-2")	9.00E-02	9.00E-02	2.07E-01	9.09E+02	8.18E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.40E+03	2.26E+01	1.70E-01	1.13E+00	1.57E+01	7.76E+02	1.97E-01	1.10E+03	1.42E-02
UM-250S-3250E (0-2")	9.00E-02	9.00E-02	2.07E-01	3.04E+02	2.73E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.47E+03	7.54E+00	1.70E-01	1.13E+00	5.24E+00	7.76E+02	1.97E-01	1.10E+03	4.75E-03
BRSD-24 (0-2")	9.00E-02	9.00E-02	2.07E-01	1.65E+03	1.49E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	7.99E+03	4.10E+01	1.70E-01	1.13E+00	2.85E+01	7.76E+02	1.97E-01	1.10E+03	2.58E-02
UM-250S-2750E (0-2")	9.00E-02	9.00E-02	2.07E-01	1.61E+03	1.45E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	7.81E+03	4.00E+01	1.70E-01	1.13E+00	2.78E+01	7.76E+02	1.97E-01	1.10E+03	2.53E-02
UM-250S-2500E (0-2")	9.00E-02	9.00E-02	2.07E-01	4.86E+01	4.37E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.35E+02	1.20E+00	1.70E-01	1.13E+00	8.37E-01	7.76E+02	1.97E-01	1.10E+03	7.60E-04
UM-0N-2500E (0-2")	9.00E-02	9.00E-02	2.07E-01	4.24E+02	3.81E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.05E+03	1.05E+01	1.70E-01	1.13E+00	7.30E+00	7.76E+02	1.97E-01	1.10E+03	6.63E-03
UM-0N-250E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-2 (0-2")	9.00E-02	9.00E-02	2.07E-01	1.59E+03	1.43E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	7.69E+03	3.94E+01	1.70E-01	1.13E+00	2.74E+01	7.76E+02	1.97E-01	1.10E+03	2.49E-02
UM-500N-2500E (0-2")	9.00E-02	9.00E-02	2.07E-01	3.37E+01	3.03E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.63E+02	8.36E-01	1.70E-01	1.13E+00	5.81E-01	7.76E+02	1.97E-01	1.10E+03	5.27E-04

TABLE C-12FA: MANGANESE DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 12 - MARSH, TERRESTRIAL RECEPTORS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **118.73**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Red-Tailed Hawk (Carnivorous Birds)																							
UM-250N-2500E (0-2")	9.00E-02	9.00E-02	2.07E-01	7.85E+02	7.06E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.80E+03	1.95E+01	1.70E-01	1.13E+00	1.35E+01	7.76E+02	1.97E-01	1.10E+03	1.23E-02
UM-250N-2250E (0-2")	9.00E-02	9.00E-02	2.07E-01	1.57E+03	1.42E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	7.62E+03	3.91E+01	1.70E-01	1.13E+00	2.72E+01	7.76E+02	1.97E-01	1.10E+03	2.46E-02
Western Upper Marsh (0-2")																					**Maximum HQ (Eastern Upper Marsh, 0-2")**		**2.58E-02**
UM-500S-2500E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-2000E (0-2")	9.00E-02	9.00E-02	2.07E-01	8.93E+02	8.03E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.32E+03	2.22E+01	1.70E-01	1.13E+00	1.54E+01	7.76E+02	1.97E-01	1.10E+03	1.40E-02
UM-500S-2000E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-250N-1750E (0-2")	9.00E-02	9.00E-02	2.07E-01	2.60E+01	2.34E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.26E+02	6.46E-01	1.70E-01	1.13E+00	4.49E-01	7.76E+02	1.97E-01	1.10E+03	4.07E-04
UM-0N-1500E (0-2")	9.00E-02	9.00E-02	2.07E-01	2.75E+01	2.47E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.33E+02	6.82E-01	1.70E-01	1.13E+00	4.74E-01	7.76E+02	1.97E-01	1.10E+03	4.30E-04
UM-250S-1500E (0-2")	9.00E-02	9.00E-02	2.07E-01	2.42E+02	2.17E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.17E+03	6.00E+00	1.70E-01	1.13E+00	4.17E+00	7.76E+02	1.97E-01	1.10E+03	3.78E-03
UM-250S-1250E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-6 (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-1000E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-750E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-500E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-250S-500E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-250S-250E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-7 (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-8 (0-2")	9.00E-02	9.00E-02	2.07E-01	1.02E+02	9.16E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.93E+02	2.53E+00	1.70E-01	1.13E+00	1.76E+00	7.76E+02	1.97E-01	1.10E+03	1.59E-03
UM-500S-500E (0-2")	9.00E-02	9.00E-02	2.07E-01	2.01E+01	1.80E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	9.71E+01	4.98E-01	1.70E-01	1.13E+00	3.46E-01	7.76E+02	1.97E-01	1.10E+03	3.14E-04
BRSD-9 (0-2")	9.00E-02	9.00E-02	2.07E-01	1.15E+03	1.03E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.55E+03	2.85E+01	1.70E-01	1.13E+00	1.98E+01	7.76E+02	1.97E-01	1.10E+03	1.79E-02
BRSD-10 (0-2")	9.00E-02	9.00E-02	2.07E-01	7.05E+02	6.34E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.41E+03	1.75E+01	1.70E-01	1.13E+00	1.22E+01	7.76E+02	1.97E-01	1.10E+03	1.10E-02
BRSD-11 (0-2")	9.00E-02	9.00E-02	2.07E-01	2.81E+02	2.53E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.36E+03	6.97E+00	1.70E-01	1.13E+00	4.85E+00	7.76E+02	1.97E-01	1.10E+03	4.40E-03
Eastern Upper Marsh (2-6")																					**Maximum HQ (Western Upper Marsh, 0-2")**		**1.79E-02**
UM-1000S-3500E (2-6")	9.00E-02	9.00E-02	2.07E-01	8.88E+01	7.99E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.30E+02	2.20E+00	1.70E-01	1.13E+00	1.53E+00	7.76E+02	1.97E-01	1.10E+03	1.39E-03
BRSD-15 (2-6")	9.00E-02	9.00E-02	2.07E-01	2.07E+02	1.86E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.00E+03	5.13E+00	1.70E-01	1.13E+00	3.56E+00	7.76E+02	1.97E-01	1.10E+03	3.23E-03
BRSD-4 (2-6")	9.00E-02	9.00E-02	2.07E-01	1.97E+01	1.77E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	9.54E+01	4.89E-01	1.70E-01	1.13E+00	3.40E-01	7.76E+02	1.97E-01	1.10E+03	3.09E-04
UM-750S-3500E (2-6")	9.00E-02	9.00E-02	2.07E-01	1.46E+03	1.32E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	7.09E+03	3.64E+01	1.70E-01	1.13E+00	2.53E+01	7.76E+02	1.97E-01	1.10E+03	2.29E-02
BRSD-16 (2-6")	9.00E-02	9.00E-02	2.07E-01	2.09E+03	1.88E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.01E+04	5.18E+01	1.70E-01	1.13E+00	3.60E+01	7.76E+02	1.97E-01	1.10E+03	3.27E-02
UM-750S-3000E (2-6")	9.00E-02	9.00E-02	2.07E-01	1.54E+03	1.38E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	7.44E+03	3.81E+01	1.70E-01	1.13E+00	2.65E+01	7.76E+02	1.97E-01	1.10E+03	2.41E-02
BRSD-3 (2-6")	9.00E-02	9.00E-02	2.07E-01	3.49E+02	3.14E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.69E+03	8.67E+00	1.70E-01	1.13E+00	6.02E+00	7.76E+02	1.97E-01	1.10E+03	5.47E-03
UM-500S-3250E (2-6")	9.00E-02	9.00E-02	2.07E-01	8.84E+01	7.95E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.28E+02	2.19E+00	1.70E-01	1.13E+00	1.53E+00	7.76E+02	1.97E-01	1.10E+03	1.38E-03
UM-500S-3000E (2-6")	9.00E-02	9.00E-02	2.07E-01	6.55E+01	5.89E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.17E+02	1.63E+00	1.70E-01	1.13E+00	1.13E+00	7.76E+02	1.97E-01	1.10E+03	1.03E-03
UM-500S-2750E (2-6")	9.00E-02	9.00E-02	2.07E-01	1.73E+03	1.55E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	8.36E+03	4.29E+01	1.70E-01	1.13E+00	2.98E+01	7.76E+02	1.97E-01	1.10E+03	2.70E-02
BRSD-25 (2-6")	9.00E-02	9.00E-02	2.07E-01	2.19E+02	1.97E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.06E+03	5.44E+00	1.70E-01	1.13E+00	3.78E+00	7.76E+02	1.97E-01	1.10E+03	3.43E-03
UM-250S-3000E (2-6")	9.00E-02	9.00E-02	2.07E-01	5.31E+02	4.78E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.57E+03	1.32E+01	1.70E-01	1.13E+00	9.16E+00	7.76E+02	1.97E-01	1.10E+03	8.31E-03
UM-250S-3250E (2-6")	9.00E-02	9.00E-02	2.07E-01	2.67E+01	2.40E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.29E+02	6.61E-01	1.70E-01	1.13E+00	4.60E-01	7.76E+02	1.97E-01	1.10E+03	4.17E-04
BRSD-24 (2-6")	9.00E-02	9.00E-02	2.07E-01	5.91E+02	5.32E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.86E+03	1.47E+01	1.70E-01	1.13E+00	1.02E+01	7.76E+02	1.97E-01	1.10E+03	9.25E-03
UM-250S-2750E (2-6")	9.00E-02	9.00E-02	2.07E-01	1.21E+03	1.09E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.85E+03	3.00E+01	1.70E-01	1.13E+00	2.08E+01	7.76E+02	1.97E-01	1.10E+03	1.89E-02
UM-0N-2500E (2-6")	9.00E-02	9.00E-02	2.07E-01	6.65E+02	5.98E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.22E+03	1.65E+01	1.70E-01	1.13E+00	1.15E+01	7.76E+02	1.97E-01	1.10E+03	1.04E-02
BRSD-2 (2-6")	9.00E-02	9.00E-02	2.07E-01	1.26E+03	1.13E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	6.09E+03	3.12E+01	1.70E-01	1.13E+00	2.17E+01	7.76E+02	1.97E-01	1.10E+03	1.97E-02
UM-500N-2500E (2-6")	9.00E-02	9.00E-02	2.07E-01	3.84E+01	3.46E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.86E+02	9.54E-01	1.70E-01	1.13E+00	6.63E-01	7.76E+02	1.97E-01	1.10E+03	6.02E-04
UM-250N-2500E (2-6")	9.00E-02	9.00E-02	2.07E-01	1.65E+03	1.48E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	7.98E+03	4.09E+01	1.70E-01	1.13E+00	2.84E+01	7.76E+02	1.97E-01	1.10E+03	2.58E-02
UM-250N-2250E (2-6")	9.00E-02	9.00E-02	2.07E-01	5.76E+01	5.19E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.79E+02	1.43E+00	1.70E-01	1.13E+00	9.94E-01	7.76E+02	1.97E-01	1.10E+03	9.02E-04
Western Upper Marsh (2-6")																					**Maximum HQ (Eastern Upper Marsh, 2-6")**		**3.27E-02**
UM-500S-2500E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-2000E (2-6")	9.00E-02	9.00E-02	2.07E-01	7.89E+02	7.10E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.82E+03	1.96E+01	1.70E-01	1.13E+00	1.36E+01	7.76E+02	1.97E-01	1.10E+03	1.24E-02
UM-500S-2000E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-250N-1750E (2-6")	9.00E-02	9.00E-02	2.07E-01	3.68E+01	3.31E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.78E+02	9.13E-01	1.70E-01	1.13E+00	6.34E-01	7.76E+02	1.97E-01	1.10E+03	5.76E-04
UM-0N-1500E (2-6")	9.00E-02	9.00E-02	2.07E-01	2.71E+01	2.43E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.31E+02	6.72E-01	1.70E-01	1.13E+00	4.67E-01	7.76E+02	1.97E-01	1.10E+03	4.24E-04

TABLE C-12FA: MANGANESE DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 12 - MARSH, TERRESTRIAL RECEPTORS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 118.73

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Red-Tailed Hawk (Carnivorous Birds)																							
UM-250S-1500E (2-6")	9.00E-02	9.00E-02	2.07E-01	3.02E+02	2.71E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.46E+03	7.49E+00	1.70E-01	1.13E+00	5.20E+00	7.76E+02	1.97E-01	1.10E+03	4.72E-03
UM-250S-1250E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-6 (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-1000E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-750E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-500E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-250S-500E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-250E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-250S-250E (2-6")	9.00E-02	9.00E-02	2.07E-01	1.84E+01	1.66E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	8.91E+01	4.57E-01	1.70E-01	1.13E+00	3.17E-01	7.76E+02	1.97E-01	1.10E+03	2.88E-04
BRSD-7 (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-8 (2-6")	9.00E-02	9.00E-02	2.07E-01	2.91E+02	2.62E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.41E+03	7.23E+00	1.70E-01	1.13E+00	5.02E+00	7.76E+02	1.97E-01	1.10E+03	4.56E-03
UM-500S-500E (2-6")	9.00E-02	9.00E-02	2.07E-01	2.09E+01	1.88E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.01E+02	5.18E-01	1.70E-01	1.13E+00	3.60E-01	7.76E+02	1.97E-01	1.10E+03	3.27E-04
BRSD-9 (2-6")	9.00E-02	9.00E-02	2.07E-01	4.36E+02	3.92E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.11E+03	1.08E+01	1.70E-01	1.13E+00	7.52E+00	7.76E+02	1.97E-01	1.10E+03	6.82E-03
BRSD-10 (2-6")	9.00E-02	9.00E-02	2.07E-01	6.88E+02	6.19E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.33E+03	1.71E+01	1.70E-01	1.13E+00	1.19E+01	7.76E+02	1.97E-01	1.10E+03	1.08E-02
BRSD-11 (2-6")	9.00E-02	9.00E-02	2.07E-01	6.55E+01	5.89E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.17E+02	1.63E+00	1.70E-01	1.13E+00	1.13E+00	7.76E+02	1.97E-01	1.10E+03	1.03E-03
Eastern Upper Marsh (6-12")																						**Maximum HQ (Western Upper Marsh, 2-6")**	**1.24E-02**
UM-1000S-3500E (6-12")	9.00E-02	9.00E-02	2.07E-01	3.16E+01	2.84E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.53E+02	7.85E-01	1.70E-01	1.13E+00	5.45E-01	7.76E+02	1.97E-01	1.10E+03	4.95E-04
BRSD-15 (6-12")	9.00E-02	9.00E-02	2.07E-01	2.71E+02	2.43E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.31E+03	6.72E+00	1.70E-01	1.13E+00	4.67E+00	7.76E+02	1.97E-01	1.10E+03	4.24E-03
BRSD-4 (6-12")	9.00E-02	9.00E-02	2.07E-01	9.77E+01	8.79E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.73E+02	2.43E+00	1.70E-01	1.13E+00	1.69E+00	7.76E+02	1.97E-01	1.10E+03	1.53E-03
UM-750S-3500E (6-12")	9.00E-02	9.00E-02	2.07E-01	1.31E+03	1.18E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	6.35E+03	3.26E+01	1.70E-01	1.13E+00	2.26E+01	7.76E+02	1.97E-01	1.10E+03	2.05E-02
BRSD-16 (6-12")	9.00E-02	9.00E-02	2.07E-01	4.92E+02	4.42E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.38E+03	1.22E+01	1.70E-01	1.13E+00	8.48E+00	7.76E+02	1.97E-01	1.10E+03	7.70E-03
UM-750S-3000E (6-12")	9.00E-02	9.00E-02	2.07E-01	1.50E+03	1.35E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	7.28E+03	3.73E+01	1.70E-01	1.13E+00	2.59E+01	7.76E+02	1.97E-01	1.10E+03	2.35E-02
BRSD-3 (6-12")	9.00E-02	9.00E-02	2.07E-01	1.34E+02	1.20E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	6.48E+02	3.32E+00	1.70E-01	1.13E+00	2.31E+00	7.76E+02	1.97E-01	1.10E+03	2.10E-03
UM-500S-3250E (6-12")	9.00E-02	9.00E-02	2.07E-01	5.70E+01	5.13E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.76E+02	1.42E+00	1.70E-01	1.13E+00	9.83E-01	7.76E+02	1.97E-01	1.10E+03	8.93E-04
UM-500S-3000E (6-12")	9.00E-02	9.00E-02	2.07E-01	8.04E+01	7.23E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.89E+02	1.99E+00	1.70E-01	1.13E+00	1.39E+00	7.76E+02	1.97E-01	1.10E+03	1.26E-03
UM-500S-2750E (6-12")	9.00E-02	9.00E-02	2.07E-01	1.69E+03	1.52E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	8.16E+03	4.18E+01	1.70E-01	1.13E+00	2.91E+01	7.76E+02	1.97E-01	1.10E+03	2.64E-02
BRSD-25 (6-12")	9.00E-02	9.00E-02	2.07E-01	3.60E+01	3.23E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.74E+02	8.92E-01	1.70E-01	1.13E+00	6.20E-01	7.76E+02	1.97E-01	1.10E+03	5.63E-04
UM-250S-3000E (6-12")	9.00E-02	9.00E-02	2.07E-01	1.03E+03	9.29E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.00E+03	2.56E+01	1.70E-01	1.13E+00	1.78E+01	7.76E+02	1.97E-01	1.10E+03	1.62E-02
UM-250S-3250E (6-12")	9.00E-02	9.00E-02	2.07E-01	4.55E+01	4.09E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.20E+02	1.13E+00	1.70E-01	1.13E+00	7.84E-01	7.76E+02	1.97E-01	1.10E+03	7.11E-04
BRSD-24 (6-12")	9.00E-02	9.00E-02	2.07E-01	2.48E+02	2.23E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.20E+03	6.15E+00	1.70E-01	1.13E+00	4.28E+00	7.76E+02	1.97E-01	1.10E+03	3.88E-03
UM-250S-2750E (6-12")	9.00E-02	9.00E-02	2.07E-01	3.39E+02	3.05E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.64E+03	8.41E+00	1.70E-01	1.13E+00	5.84E+00	7.76E+02	1.97E-01	1.10E+03	5.30E-03
UM-250S-2500E (6-12")	9.00E-02	9.00E-02	2.07E-01	3.10E+01	2.79E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.50E+02	7.69E-01	1.70E-01	1.13E+00	5.34E-01	7.76E+02	1.97E-01	1.10E+03	4.85E-04
BRSD-2 (6-12")	9.00E-02	9.00E-02	2.07E-01	2.54E+02	2.29E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.23E+03	6.31E+00	1.70E-01	1.13E+00	4.38E+00	7.76E+02	1.97E-01	1.10E+03	3.98E-03
UM-500N-2500E (6-12")	9.00E-02	9.00E-02	2.07E-01	4.26E+01	3.83E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.06E+02	1.06E+00	1.70E-01	1.13E+00	7.34E-01	7.76E+02	1.97E-01	1.10E+03	6.66E-04
UM-250N-2500E (6-12")	9.00E-02	9.00E-02	2.07E-01	1.39E+03	1.25E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	6.74E+03	3.46E+01	1.70E-01	1.13E+00	2.40E+01	7.76E+02	1.97E-01	1.10E+03	2.18E-02
UM-250N-2250E (6-12")	9.00E-02	9.00E-02	2.07E-01	7.17E+01	6.45E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.47E+02	1.78E+00	1.70E-01	1.13E+00	1.24E+00	7.76E+02	1.97E-01	1.10E+03	1.12E-03
Western Upper Marsh (6-12")																						**Maximum HQ (Eastern Upper Marsh, 6-12")**	**2.64E-02**
UM-500S-2500E (6-12")	9.00E-02	9.00E-02	2.07E-01	3.14E+01	2.83E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.52E+02	7.79E-01	1.70E-01	1.13E+00	5.42E-01	7.76E+02	1.97E-01	1.10E+03	4.92E-04
UM-0N-2000E (6-12")	9.00E-02	9.00E-02	2.07E-01	1.58E+03	1.43E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	7.67E+03	3.93E+01	1.70E-01	1.13E+00	2.73E+01	7.76E+02	1.97E-01	1.10E+03	2.48E-02
UM-500S-2000E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-250N-1750E (6-12")	9.00E-02	9.00E-02	2.07E-01	2.06E+01	1.85E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	9.96E+01	5.11E-01	1.70E-01	1.13E+00	3.55E-01	7.76E+02	1.97E-01	1.10E+03	3.22E-04
UM-0N-1500E (6-12")	9.00E-02	9.00E-02	2.07E-01	3.35E+01	3.01E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.62E+02	8.31E-01	1.70E-01	1.13E+00	5.77E-01	7.76E+02	1.97E-01	1.10E+03	5.24E-04
UM-250S-1500E (6-12")	9.00E-02	9.00E-02	2.07E-01	9.21E+01	8.29E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.46E+02	2.29E+00	1.70E-01	1.13E+00	1.59E+00	7.76E+02	1.97E-01	1.10E+03	1.44E-03
UM-250S-1250E (6-12")	9.00E-02	9.00E-02	2.07E-01	1.93E+01	1.74E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	9.35E+01	4.79E-01	1.70E-01	1.13E+00	3.33E-01	7.76E+02	1.97E-01	1.10E+03	3.02E-04
BRSD-6 (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-1000E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-750E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-500E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-250S-500E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-250E (6-12")	9.00E-02	9.00E-02	2.07E-01	2.01E+01	1.81E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	9.74E+01	4.99E-01	1.70E-01	1.13E+00	3.47E-01	7.76E+02	1.97E-01	1.10E+03	3.15E-04

TABLE C-12FA: MANGANESE DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 12 - MARSH, TERRESTRIAL RECEPTORS (Continued)
Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)
calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 118.73

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Red-Tailed Hawk (Carnivorous Birds)																							
UM-250S-250E (6-12")	9.00E-02	9.00E-02	2.07E-01	5.81E+01	5.22E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.81E+02	1.44E+00	1.70E-01	1.13E+00	1.00E+00	7.76E+02	1.97E-01	1.10E+03	9.09E-04
BRSD-7 (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-8 (6-12")	9.00E-02	9.00E-02	2.07E-01	2.33E+02	2.10E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.13E+03	5.79E+00	1.70E-01	1.13E+00	4.03E+00	7.76E+02	1.97E-01	1.10E+03	3.65E-03
UM-500S-500E (6-12")	9.00E-02	9.00E-02	2.07E-01	2.09E+01	1.88E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.01E+02	5.18E-01	1.70E-01	1.13E+00	3.60E-01	7.76E+02	1.97E-01	1.10E+03	3.27E-04
BRSD-9 (6-12")	9.00E-02	9.00E-02	2.07E-01	3.64E+02	3.27E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.76E+03	9.02E+00	1.70E-01	1.13E+00	6.27E+00	7.76E+02	1.97E-01	1.10E+03	5.69E-03
BRSD-10 (6-12")	9.00E-02	9.00E-02	2.07E-01	1.02E+03	9.14E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.92E+03	2.52E+01	1.70E-01	1.13E+00	1.75E+01	7.76E+02	1.97E-01	1.10E+03	1.59E-02
BRSD-11 (6-12")	9.00E-02	9.00E-02	2.07E-01	6.03E+01	5.43E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.92E+02	1.50E+00	1.70E-01	1.13E+00	1.04E+00	7.76E+02	1.97E-01	1.10E+03	9.44E-04
Middle Marsh (0-2")																						**Maximum HQ (Western Upper Marsh, 6-12")**	**2.48E-02**
MMSD-201 (0-2")	9.00E-02	9.00E-02	2.07E-01	4.15E+02	3.74E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.01E+03	1.03E+01	1.70E-01	1.13E+00	7.16E+00	7.76E+02	1.97E-01	1.10E+03	6.50E-03
MMSD-202 (0-2")	9.00E-02	9.00E-02	2.07E-01	3.26E+01	2.94E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.58E+02	8.10E-01	1.70E-01	1.13E+00	5.63E-01	7.76E+02	1.97E-01	1.10E+03	5.11E-04
Middle Marsh (2-6")																						**Maximum HQ (Middle Marsh, 0-2")**	**6.50E-03**
MMSD-201 (2-6")	9.00E-02	9.00E-02	2.07E-01	3.06E+02	2.75E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.48E+03	7.59E+00	1.70E-01	1.13E+00	5.27E+00	7.76E+02	1.97E-01	1.10E+03	4.79E-03
MMSD-202 (2-6")	9.00E-02	9.00E-02	2.07E-01	4.65E+01	4.18E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.25E+02	1.15E+00	1.70E-01	1.13E+00	8.02E-01	7.76E+02	1.97E-01	1.10E+03	7.28E-04
Middle Marsh (6-12")																						**Maximum HQ (Middle Marsh, 2-6")**	**4.79E-03**
MMSD-201 (6-12")	9.00E-02	9.00E-02	2.07E-01	3.68E+02	3.31E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.78E+03	9.13E+00	1.70E-01	1.13E+00	6.34E+00	7.76E+02	1.97E-01	1.10E+03	5.76E-03
MMSD-202 (6-12")	9.00E-02	9.00E-02	2.07E-01	5.62E+01	5.06E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.72E+02	1.39E+00	1.70E-01	1.13E+00	9.69E-01	7.76E+02	1.97E-01	1.10E+03	8.80E-04
Lower Marsh (0-2")																						**Maximum HQ (Middle Marsh, 6-12")**	**5.76E-03**
LMSD-201 (0-2")	9.00E-02	9.00E-02	2.07E-01	4.17E+01	3.75E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.02E+02	1.04E+00	1.70E-01	1.13E+00	7.20E-01	7.76E+02	1.97E-01	1.10E+03	6.53E-04
LMSD-202 (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
LMSD-203 (0-2")	9.00E-02	9.00E-02	2.07E-01	4.21E+02	3.79E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.04E+03	1.05E+01	1.70E-01	1.13E+00	7.27E+00	7.76E+02	1.97E-01	1.10E+03	6.60E-03
LMSD-204 (0-2")	9.00E-02	9.00E-02	2.07E-01	6.65E+01	5.98E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.22E+02	1.65E+00	1.70E-01	1.13E+00	1.15E+00	7.76E+02	1.97E-01	1.10E+03	1.04E-03
Lower Marsh (2-6")																						**Maximum HQ (Lower Marsh, 0-2")**	**6.60E-03**
LMSD-201 (2-6")	9.00E-02	9.00E-02	2.07E-01	3.62E+01	3.25E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.75E+02	8.97E-01	1.70E-01	1.13E+00	6.24E-01	7.76E+02	1.97E-01	1.10E+03	5.66E-04
LMSD-202 (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
LMSD-203 (2-6")	9.00E-02	9.00E-02	2.07E-01	4.75E+02	4.27E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.30E+03	1.18E+01	1.70E-01	1.13E+00	8.20E+00	7.76E+02	1.97E-01	1.10E+03	7.44E-03
LMSD-204 (2-6")	9.00E-02	9.00E-02	2.07E-01	1.00E+02	9.00E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.84E+02	2.48E+00	1.70E-01	1.13E+00	1.72E+00	7.76E+02	1.97E-01	1.10E+03	1.57E-03
Lower Marsh (6-12")																						**Maximum HQ (Lower Marsh, 2-6")**	**7.44E-03**
LMSD-201 (6-12")	9.00E-02	9.00E-02	2.07E-01	3.76E+01	3.38E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.82E+02	9.33E-01	1.70E-01	1.13E+00	6.48E-01	7.76E+02	1.97E-01	1.10E+03	5.89E-04
LMSD-202 (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
LMSD-203 (6-12")	9.00E-02	9.00E-02	2.07E-01	1.48E+03	1.33E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	7.18E+03	3.68E+01	1.70E-01	1.13E+00	2.56E+01	7.76E+02	1.97E-01	1.10E+03	2.32E-02
LMSD-204 (6-12")	9.00E-02	9.00E-02	2.07E-01	1.20E+02	1.08E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.80E+02	2.97E+00	1.70E-01	1.13E+00	2.07E+00	7.76E+02	1.97E-01	1.10E+03	1.88E-03
																						Maximum HQ (Lower Marsh, 6-12")	**2.32E-02**
American Kestral (Insectivorous Birds)																							
Reference Sites																							
BRSD-5 (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.33E+01	4.26E+03	5.86E+01	7.84E-04	3.20E+02	2.51E-01	4.54E-01	1.24E-01	2.15E+02	7.76E+02	1.97E-01	7.08E+02	3.04E-01
BRSD-5 (2-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.33E+01	3.33E+03	4.58E+01	7.84E-04	2.50E+02	1.96E-01	4.54E-01	1.24E-01	1.68E+02	7.76E+02	1.97E-01	7.08E+02	2.38E-01
BRSD-5 (6-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.33E+01	3.25E+03	4.47E+01	7.84E-04	2.44E+02	1.91E-01	4.54E-01	1.24E-01	1.64E+02	7.76E+02	1.97E-01	7.08E+02	2.32E-01
PGBG-1 (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.33E+01	9.26E+03	1.27E+02	7.84E-04	6.96E+02	5.46E-01	4.54E-01	1.24E-01	4.68E+02	7.76E+02	1.97E-01	7.08E+02	6.61E-01
PGBG-1 (2-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.33E+01	2.65E+03	3.64E+01	7.84E-04	1.99E+02	1.56E-01	4.54E-01	1.24E-01	1.34E+02	7.76E+02	1.97E-01	7.08E+02	1.89E-01
PGBG-1 (6-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.33E+01	1.17E+03	1.61E+01	7.84E-04	8.80E+01	6.90E-02	4.54E-01	1.24E-01	5.92E+01	7.76E+02	1.97E-01	7.08E+02	8.36E-02
PGBG-2 (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.33E+01	7.79E+03	1.07E+02	7.84E-04	5.86E+02	4.60E-01	4.54E-01	1.24E-01	3.94E+02	7.76E+02	1.97E-01	7.08E+02	5.57E-01
PGBG-2 (2-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.33E+01	6.62E+03	9.11E+01	7.84E-04	4.98E+02	3.91E-01	4.54E-01	1.24E-01	3.35E+02	7.76E+02	1.97E-01	7.08E+02	4.73E-01
PGBG-2 (6-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.33E+01	3.90E+03	5.36E+01	7.84E-04	2.93E+02	2.30E-01	4.54E-01	1.24E-01	1.97E+02	7.76E+02	1.97E-01	7.08E+02	2.78E-01
Eastern Upper Marsh (0-2")																						**Minimum HQ (Reference Sites)**	**8.36E-02**
UM-1000S-3500E (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	3.50E+01	9.89E+03	1.36E+02	7.84E-04	2.83E+02	2.22E-01	4.54E-01	1.24E-01	4.99E+02	7.76E+02	1.97E-01	7.08E+02	7.05E-01
BRSD-15 (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	3.50E+01	2.22E+04	3.05E+02	7.84E-04	6.35E+02	4.98E-01	4.54E-01	1.24E-01	1.12E+03	7.76E+02	1.97E-01	7.08E+02	1.58E+00
BRSD-4 (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	3.50E+01	7.34E+03	1.01E+02	7.84E-04	2.10E+02	1.65E-01	4.54E-01	1.24E-01	3.70E+02	7.76E+02	1.97E-01	7.08E+02	5.23E-01
UM-750S-3500E (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	3.50E+01	2.60E+05	3.57E+03	7.84E-04	7.43E+03	5.83E+00	4.54E-01	1.24E-01	1.31E+04	7.76E+02	1.97E-01	7.08E+02	1.85E+01
BRSD-16 (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	3.50E+01	3.64E+04	5.00E+02	7.84E-04	1.04E+03	8.16E-01	4.54E-01	1.24E-01	1.83E+03	7.76E+02	1.97E-01	7.08E+02	2.59E+00
UM-750S-3000E (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	3.50E+01	2.49E+05	3.42E+03	7.84E-04	7.11E+03	5.58E+00	4.54E-01	1.24E-01	1.25E+04	7.76E+02	1.97E-01	7.08E+02	1.77E+01
BRSD-3 (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	3.50E+01	4.34E+04	5.97E+02	7.84E-04	1.24E+03	9.73E-01	4.54E-01	1.24E-01	2.19E+03	7.76E+02	1.97E-01	7.08E+02	3.09E+00
UM-500S-3250E (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	3.50E+01	9.05E+04	1.25E+03	7.84E-04	2.59E+03	2.03E+00	4.54E-01	1.24E-01	4.57E+03	7.76E+02	1.97E-01	7.08E+02	6.45E+00

TABLE C-12FA: MANGANESE DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 12 - MARSH, TERRESTRIAL RECEPTORS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 118.73

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
American Kestral (Insectivorous Birds)																							
UM-500S-3000E (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	3.50E+01	4.13E+04	5.68E+02	7.84E-04	1.18E+03	9.26E-01	4.54E-01	1.24E-01	2.08E+03	7.76E+02	1.97E-01	7.08E+02	2.94E+00
UM-500S-2750E (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	3.50E+01	2.50E+05	3.44E+03	7.84E-04	7.16E+03	5.62E+00	4.54E-01	1.24E-01	1.26E+04	7.76E+02	1.97E-01	7.08E+02	1.78E+01
BRSD-25 (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	3.50E+01	5.24E+04	7.22E+02	7.84E-04	1.50E+03	1.18E+00	4.54E-01	1.24E-01	2.64E+03	7.76E+02	1.97E-01	7.08E+02	3.74E+00
UM-250S-3000E (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	3.50E+01	1.54E+05	2.12E+03	7.84E-04	4.40E+03	3.45E+00	4.54E-01	1.24E-01	7.76E+03	7.76E+02	1.97E-01	7.08E+02	1.10E+01
UM-250S-3250E (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	3.50E+01	5.14E+04	7.07E+02	7.84E-04	1.47E+03	1.15E+00	4.54E-01	1.24E-01	2.59E+03	7.76E+02	1.97E-01	7.08E+02	3.66E+00
BRSD-24 (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	3.50E+01	2.79E+05	3.84E+03	7.84E-04	7.99E+03	6.27E+00	4.54E-01	1.24E-01	1.41E+04	7.76E+02	1.97E-01	7.08E+02	1.99E+01
UM-250S-2750E (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	3.50E+01	2.73E+05	3.76E+03	7.84E-04	7.81E+03	6.13E+00	4.54E-01	1.24E-01	1.38E+04	7.76E+02	1.97E-01	7.08E+02	1.95E+01
UM-250S-2500E (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	3.50E+01	8.22E+03	1.13E+02	7.84E-04	2.35E+02	1.84E-01	4.54E-01	1.24E-01	4.14E+02	7.76E+02	1.97E-01	7.08E+02	5.85E-01
UM-0N-2500E (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	3.50E+01	7.17E+04	9.86E+02	7.84E-04	2.05E+03	1.61E+00	4.54E-01	1.24E-01	3.61E+03	7.76E+02	1.97E-01	7.08E+02	5.11E+00
UM-0N-250E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-2 (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	3.50E+01	2.69E+05	3.70E+03	7.84E-04	7.69E+03	6.03E+00	4.54E-01	1.24E-01	1.36E+04	7.76E+02	1.97E-01	7.08E+02	1.92E+01
UM-500N-2500E (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	3.50E+01	5.70E+03	7.84E+01	7.84E-04	1.63E+02	1.28E-01	4.54E-01	1.24E-01	2.87E+02	7.76E+02	1.97E-01	7.08E+02	4.06E-01
UM-250N-2500E (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	3.50E+01	1.33E+05	1.83E+03	7.84E-04	3.80E+03	2.98E+00	4.54E-01	1.24E-01	6.70E+03	7.76E+02	1.97E-01	7.08E+02	9.47E+00
UM-250N-2250E (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	3.50E+01	2.66E+05	3.67E+03	7.84E-04	7.62E+03	5.98E+00	4.54E-01	1.24E-01	1.34E+04	7.76E+02	1.97E-01	7.08E+02	1.90E+01
Western Upper Marsh (0-2")																						**Maximum HQ (Eastern Upper Marsh, 0-2")**	**1.99E+01**
UM-500S-2500E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-2000E (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	2.72E+01	1.18E+05	1.62E+03	7.84E-04	4.32E+03	3.39E+00	4.54E-01	1.24E-01	5.94E+03	7.76E+02	1.97E-01	7.08E+02	8.39E+00
UM-500S-2000E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-250N-1750E (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	2.72E+01	3.43E+03	4.72E+01	7.84E-04	1.26E+02	9.88E-02	4.54E-01	1.24E-01	1.73E+02	7.76E+02	1.97E-01	7.08E+02	2.45E-01
UM-0N-1500E (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	2.72E+01	3.62E+03	4.98E+01	7.84E-04	1.33E+02	1.04E-01	4.54E-01	1.24E-01	1.83E+02	7.76E+02	1.97E-01	7.08E+02	2.58E-01
UM-250S-1500E (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	2.72E+01	3.19E+04	4.38E+02	7.84E-04	1.17E+03	9.18E-01	4.54E-01	1.24E-01	1.61E+03	7.76E+02	1.97E-01	7.08E+02	2.27E+00
UM-250S-1250E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-6 (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-1000E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-750E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-500E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-250S-500E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-250S-250E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-7 (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-8 (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	2.72E+01	1.34E+04	1.85E+02	7.84E-04	4.93E+02	3.87E-01	4.54E-01	1.24E-01	6.77E+02	7.76E+02	1.97E-01	7.08E+02	9.57E-01
UM-500S-500E (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	2.72E+01	2.64E+03	3.64E+01	7.84E-04	9.71E+01	7.62E-02	4.54E-01	1.24E-01	1.33E+02	7.76E+02	1.97E-01	7.08E+02	1.88E-01
BRSD-9 (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	2.72E+01	1.51E+05	2.08E+03	7.84E-04	5.55E+03	4.35E+00	4.54E-01	1.24E-01	7.63E+03	7.76E+02	1.97E-01	7.08E+02	1.08E+01
BRSD-10 (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	2.72E+01	9.28E+04	1.28E+03	7.84E-04	3.41E+03	2.67E+00	4.54E-01	1.24E-01	4.69E+03	7.76E+02	1.97E-01	7.08E+02	6.62E+00
BRSD-11 (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	2.72E+01	3.70E+04	5.10E+02	7.84E-04	1.36E+03	1.07E+00	4.54E-01	1.24E-01	1.87E+03	7.76E+02	1.97E-01	7.08E+02	2.64E+00
Eastern Upper Marsh (2-6")																						**Maximum HQ (Western Upper Marsh, 0-2")**	**1.08E+01**
UM-1000S-3500E (2-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	3.50E+01	1.50E+04	2.07E+02	7.84E-04	4.30E+02	3.37E-01	4.54E-01	1.24E-01	7.58E+02	7.76E+02	1.97E-01	7.08E+02	1.07E+00
BRSD-15 (2-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	3.50E+01	3.50E+04	4.81E+02	7.84E-04	1.00E+03	7.84E-01	4.54E-01	1.24E-01	1.76E+03	7.76E+02	1.97E-01	7.08E+02	2.49E+00
BRSD-4 (2-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	3.50E+01	3.34E+03	4.59E+01	7.84E-04	9.54E+01	7.48E-02	4.54E-01	1.24E-01	1.68E+02	7.76E+02	1.97E-01	7.08E+02	2.38E-01
UM-750S-3500E (2-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	3.50E+01	2.48E+05	3.41E+03	7.84E-04	7.09E+03	5.56E+00	4.54E-01	1.24E-01	1.25E+04	7.76E+02	1.97E-01	7.08E+02	1.77E+01
BRSD-16 (2-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	3.50E+01	3.53E+05	4.86E+03	7.84E-04	1.01E+04	7.92E+00	4.54E-01	1.24E-01	1.78E+04	7.76E+02	1.97E-01	7.08E+02	2.52E+01
UM-750S-3000E (2-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	3.50E+01	2.60E+05	3.58E+03	7.84E-04	7.44E+03	5.84E+00	4.54E-01	1.24E-01	1.31E+04	7.76E+02	1.97E-01	7.08E+02	1.85E+01
BRSD-3 (2-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	3.50E+01	5.91E+04	8.13E+02	7.84E-04	1.69E+03	1.33E+00	4.54E-01	1.24E-01	2.98E+03	7.76E+02	1.97E-01	7.08E+02	4.21E+00
UM-500S-3250E (2-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	3.50E+01	1.50E+04	2.06E+02	7.84E-04	4.28E+02	3.36E-01	4.54E-01	1.24E-01	7.55E+02	7.76E+02	1.97E-01	7.08E+02	1.07E+00
UM-500S-3000E (2-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	3.50E+01	1.11E+04	1.53E+02	7.84E-04	3.17E+02	2.49E-01	4.54E-01	1.24E-01	5.59E+02	7.76E+02	1.97E-01	7.08E+02	7.90E-01
UM-500S-2750E (2-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	3.50E+01	2.92E+05	4.02E+03	7.84E-04	8.36E+03	6.56E+00	4.54E-01	1.24E-01	1.47E+04	7.76E+02	1.97E-01	7.08E+02	2.08E+01
BRSD-25 (2-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	3.50E+01	3.71E+04	5.10E+02	7.84E-04	1.06E+03	8.31E-01	4.54E-01	1.24E-01	1.87E+03	7.76E+02	1.97E-01	7.08E+02	2.64E+00
UM-250S-3000E (2-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	3.50E+01	8.98E+04	1.24E+03	7.84E-04	2.57E+03	2.02E+00	4.54E-01	1.24E-01	4.53E+03	7.76E+02	1.97E-01	7.08E+02	6.40E+00
UM-250S-3250E (2-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	3.50E+01	4.51E+03	6.21E+01	7.84E-04	1.29E+02	1.01E-01	4.54E-01	1.24E-01	2.27E+02	7.76E+02	1.97E-01	7.08E+02	3.21E-01
BRSD-24 (2-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	3.50E+01	1.00E+05	1.38E+03	7.84E-04	2.86E+03	2.24E+00	4.54E-01	1.24E-01	5.04E+03	7.76E+02	1.97E-01	7.08E+02	7.13E+00

TABLE C-12FA: MANGANESE DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 12 - MARSH, TERRESTRIAL RECEPTORS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 118.73

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
American Kestral (Insectivorous Birds)																							
UM-250S-2750E (2-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	3.50E+01	2.05E+05	2.81E+03	7.84E-04	5.85E+03	4.59E+00	4.54E-01	1.24E-01	1.03E+04	7.76E+02	1.97E-01	7.08E+02	1.46E+01
UM-0N-2500E (2-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	3.50E+01	1.13E+05	1.55E+03	7.84E-04	3.22E+03	2.53E+00	4.54E-01	1.24E-01	5.68E+03	7.76E+02	1.97E-01	7.08E+02	8.02E+00
BRSD-2 (2-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	3.50E+01	2.13E+05	2.93E+03	7.84E-04	6.09E+03	4.78E+00	4.54E-01	1.24E-01	1.07E+04	7.76E+02	1.97E-01	7.08E+02	1.52E+01
UM-500N-2500E (2-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	3.50E+01	6.50E+03	8.95E+01	7.84E-04	1.86E+02	1.46E-01	4.54E-01	1.24E-01	3.28E+02	7.76E+02	1.97E-01	7.08E+02	4.63E-01
UM-250N-2500E (2-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	3.50E+01	2.79E+05	3.84E+03	7.84E-04	7.98E+03	6.26E+00	4.54E-01	1.24E-01	1.41E+04	7.76E+02	1.97E-01	7.08E+02	1.99E+01
UM-250N-2250E (2-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	3.50E+01	9.75E+03	1.34E+02	7.84E-04	2.79E+02	2.19E-01	4.54E-01	1.24E-01	4.92E+02	7.76E+02	1.97E-01	7.08E+02	6.95E-01
Western Upper Marsh (2-6")																						**Maximum HQ (Eastern Upper Marsh, 2-6")**	**2.52E+01**
UM-500S-2500E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-2000E (2-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	2.72E+01	1.04E+05	1.43E+03	7.84E-04	3.82E+03	3.00E+00	4.54E-01	1.24E-01	5.25E+03	7.76E+02	1.97E-01	7.08E+02	7.42E+00
UM-500S-2000E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-250N-1750E (2-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	2.72E+01	4.85E+03	6.67E+01	7.84E-04	1.78E+02	1.40E-01	4.54E-01	1.24E-01	2.45E+02	7.76E+02	1.97E-01	7.08E+02	3.46E-01
UM-0N-1500E (2-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	2.72E+01	3.57E+03	4.91E+01	7.84E-04	1.31E+02	1.03E-01	4.54E-01	1.24E-01	1.80E+02	7.76E+02	1.97E-01	7.08E+02	2.54E-01
UM-250S-1500E (2-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	2.72E+01	3.98E+04	5.47E+02	7.84E-04	1.46E+03	1.15E+00	4.54E-01	1.24E-01	2.01E+03	7.76E+02	1.97E-01	7.08E+02	2.83E+00
UM-250S-1250E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-6 (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-1000E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-750E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-500E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-250S-500E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-250E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-250S-250E (2-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	2.72E+01	2.43E+03	3.34E+01	7.84E-04	8.91E+01	6.99E-02	4.54E-01	1.24E-01	1.22E+02	7.76E+02	1.97E-01	7.08E+02	1.73E-01
BRSD-7 (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-8 (2-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	2.72E+01	3.84E+04	5.28E+02	7.84E-04	1.41E+03	1.11E+00	4.54E-01	1.24E-01	1.94E+03	7.76E+02	1.97E-01	7.08E+02	2.74E+00
UM-500S-500E (2-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	2.72E+01	2.75E+03	3.78E+01	7.84E-04	1.01E+02	7.92E-02	4.54E-01	1.24E-01	1.39E+02	7.76E+02	1.97E-01	7.08E+02	1.96E-01
BRSD-9 (2-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	2.72E+01	5.75E+04	7.91E+02	7.84E-04	2.11E+03	1.66E+00	4.54E-01	1.24E-01	2.90E+03	7.76E+02	1.97E-01	7.08E+02	4.10E+00
BRSD-10 (2-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	2.72E+01	9.07E+04	1.25E+03	7.84E-04	3.33E+03	2.61E+00	4.54E-01	1.24E-01	4.58E+03	7.76E+02	1.97E-01	7.08E+02	6.46E+00
BRSD-11 (2-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	2.72E+01	8.63E+03	1.19E+02	7.84E-04	3.17E+02	2.49E-01	4.54E-01	1.24E-01	4.36E+02	7.76E+02	1.97E-01	7.08E+02	6.15E-01
Eastern Upper Marsh (6-12")																						**Maximum HQ (Western Upper Marsh, 2-6")**	**7.42E+00**
UM-1000S-3500E (6-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	3.50E+01	5.35E+03	7.36E+01	7.84E-04	1.53E+02	1.20E-01	4.54E-01	1.24E-01	2.70E+02	7.76E+02	1.97E-01	7.08E+02	3.81E-01
BRSD-15 (6-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	3.50E+01	4.58E+04	6.30E+02	7.84E-04	1.31E+03	1.03E+00	4.54E-01	1.24E-01	2.31E+03	7.76E+02	1.97E-01	7.08E+02	3.26E+00
BRSD-4 (6-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	3.50E+01	1.65E+04	2.28E+02	7.84E-04	4.73E+02	3.71E-01	4.54E-01	1.24E-01	8.34E+02	7.76E+02	1.97E-01	7.08E+02	1.18E+00
UM-750S-3500E (6-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	3.50E+01	2.22E+05	3.05E+03	7.84E-04	6.35E+03	4.98E+00	4.54E-01	1.24E-01	1.12E+04	7.76E+02	1.97E-01	7.08E+02	1.58E+01
BRSD-16 (6-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	3.50E+01	8.32E+04	1.15E+03	7.84E-04	2.38E+03	1.87E+00	4.54E-01	1.24E-01	4.20E+03	7.76E+02	1.97E-01	7.08E+02	5.93E+00
UM-750S-3000E (6-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	3.50E+01	2.55E+05	3.50E+03	7.84E-04	7.28E+03	5.71E+00	4.54E-01	1.24E-01	1.28E+04	7.76E+02	1.97E-01	7.08E+02	1.81E+01
BRSD-3 (6-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	3.50E+01	2.27E+04	3.12E+02	7.84E-04	6.48E+02	5.08E-01	4.54E-01	1.24E-01	1.14E+03	7.76E+02	1.97E-01	7.08E+02	1.61E+00
UM-500S-3250E (6-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	3.50E+01	9.65E+03	1.33E+02	7.84E-04	2.76E+02	2.16E-01	4.54E-01	1.24E-01	4.87E+02	7.76E+02	1.97E-01	7.08E+02	6.88E-01
UM-500S-3000E (6-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	3.50E+01	1.36E+04	1.87E+02	7.84E-04	3.89E+02	3.05E-01	4.54E-01	1.24E-01	6.86E+02	7.76E+02	1.97E-01	7.08E+02	9.69E-01
UM-500S-2750E (6-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	3.50E+01	2.85E+05	3.93E+03	7.84E-04	8.16E+03	6.40E+00	4.54E-01	1.24E-01	1.44E+04	7.76E+02	1.97E-01	7.08E+02	2.03E+01
BRSD-25 (6-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	3.50E+01	6.08E+03	8.37E+01	7.84E-04	1.74E+02	1.36E-01	4.54E-01	1.24E-01	3.07E+02	7.76E+02	1.97E-01	7.08E+02	4.34E-01
UM-250S-3000E (6-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	3.50E+01	1.75E+05	2.41E+03	7.84E-04	5.00E+03	3.92E+00	4.54E-01	1.24E-01	8.82E+03	7.76E+02	1.97E-01	7.08E+02	1.25E+01
UM-250S-3250E (6-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	3.50E+01	7.69E+03	1.06E+02	7.84E-04	2.20E+02	1.73E-01	4.54E-01	1.24E-01	3.88E+02	7.76E+02	1.97E-01	7.08E+02	5.48E-01
BRSD-24 (6-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	3.50E+01	4.20E+04	5.77E+02	7.84E-04	1.20E+03	9.41E-01	4.54E-01	1.24E-01	2.12E+03	7.76E+02	1.97E-01	7.08E+02	2.99E+00
UM-250S-2750E (6-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	3.50E+01	5.73E+04	7.89E+02	7.84E-04	1.64E+03	1.29E+00	4.54E-01	1.24E-01	2.89E+03	7.76E+02	1.97E-01	7.08E+02	4.09E+00
UM-250S-2500E (6-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	3.50E+01	5.24E+03	7.22E+01	7.84E-04	1.50E+02	1.18E-01	4.54E-01	1.24E-01	2.64E+02	7.76E+02	1.97E-01	7.08E+02	3.74E-01
BRSD-2 (6-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	3.50E+01	4.30E+04	5.92E+02	7.84E-04	1.23E+03	9.65E-01	4.54E-01	1.24E-01	2.17E+03	7.76E+02	1.97E-01	7.08E+02	3.06E+00
UM-500N-2500E (6-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	3.50E+01	7.20E+03	9.91E+01	7.84E-04	2.06E+02	1.62E-01	4.54E-01	1.24E-01	3.63E+02	7.76E+02	1.97E-01	7.08E+02	5.13E-01
UM-250N-2500E (6-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	3.50E+01	2.36E+05	3.24E+03	7.84E-04	6.74E+03	5.29E+00	4.54E-01	1.24E-01	1.19E+04	7.76E+02	1.97E-01	7.08E+02	1.68E+01
UM-250N-2250E (6-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	3.50E+01	1.21E+04	1.67E+02	7.84E-04	3.47E+02	2.72E-01	4.54E-01	1.24E-01	6.12E+02	7.76E+02	1.97E-01	7.08E+02	8.65E-01

TABLE C-12FA: MANGANESE DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 12 - MARSH, TERRESTRIAL RECEPTORS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 118.73

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
American Kestral (Insectivorous Birds)																							
Western Upper Marsh (6-12")																						**Maximum HQ (Eastern Upper Marsh, 6-12")**	**2.03E+01**
UM-500S-2500E (6-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	2.72E+01	4.14E+03	5.70E+01	7.84E-04	1.52E+02	1.19E-01	4.54E-01	1.24E-01	2.09E+02	7.76E+02	1.97E-01	7.08E+02	2.95E-01
UM-0N-2000E (6-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	2.72E+01	2.09E+05	2.87E+03	7.84E-04	7.67E+03	6.02E+00	4.54E-01	1.24E-01	1.05E+04	7.76E+02	1.97E-01	7.08E+02	1.49E+01
UM-500S-2000E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-250N-1750E (6-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	2.72E+01	2.71E+03	3.73E+01	7.84E-04	9.96E+01	7.81E-02	4.54E-01	1.24E-01	1.37E+02	7.76E+02	1.97E-01	7.08E+02	1.93E-01
UM-0N-1500E (6-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	2.72E+01	4.41E+03	6.07E+01	7.84E-04	1.62E+02	1.27E-01	4.54E-01	1.24E-01	2.23E+02	7.76E+02	1.97E-01	7.08E+02	3.14E-01
UM-250S-1500E (6-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	2.72E+01	1.21E+04	1.67E+02	7.84E-04	4.46E+02	3.50E-01	4.54E-01	1.24E-01	6.13E+02	7.76E+02	1.97E-01	7.08E+02	8.66E-01
UM-250S-1250E (6-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	2.72E+01	2.55E+03	3.50E+01	7.84E-04	9.35E+01	7.33E-02	4.54E-01	1.24E-01	1.28E+02	7.76E+02	1.97E-01	7.08E+02	1.82E-01
BRSD-6 (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-1000E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-750E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-500E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-250S-500E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-250E (6-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	2.72E+01	2.65E+03	3.65E+01	7.84E-04	9.74E+01	7.64E-02	4.54E-01	1.24E-01	1.34E+02	7.76E+02	1.97E-01	7.08E+02	1.89E-01
UM-250S-250E (6-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	2.72E+01	7.65E+03	1.05E+02	7.84E-04	2.81E+02	2.20E-01	4.54E-01	1.24E-01	3.86E+02	7.76E+02	1.97E-01	7.08E+02	5.45E-01
BRSD-7 (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-8 (6-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	2.72E+01	3.08E+04	4.23E+02	7.84E-04	1.13E+03	8.86E-01	4.54E-01	1.24E-01	1.55E+03	7.76E+02	1.97E-01	7.08E+02	2.19E+00
UM-500S-500E (6-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	2.72E+01	2.75E+03	3.78E+01	7.84E-04	1.01E+02	7.92E-02	4.54E-01	1.24E-01	1.39E+02	7.76E+02	1.97E-01	7.08E+02	1.96E-01
BRSD-9 (6-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	2.72E+01	4.79E+04	6.59E+02	7.84E-04	1.76E+03	1.38E+00	4.54E-01	1.24E-01	2.42E+03	7.76E+02	1.97E-01	7.08E+02	3.42E+00
BRSD-10 (6-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	2.72E+01	1.34E+05	1.84E+03	7.84E-04	4.92E+03	3.86E+00	4.54E-01	1.24E-01	6.76E+03	7.76E+02	1.97E-01	7.08E+02	9.55E+00
BRSD-11 (6-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	2.72E+01	7.95E+03	1.09E+02	7.84E-04	2.92E+02	2.29E-01	4.54E-01	1.24E-01	4.01E+02	7.76E+02	1.97E-01	7.08E+02	5.67E-01
Middle Marsh (0-2")																						**Maximum HQ (Western Upper Marsh, 6-12")**	**1.49E+01**
MMSD-201 (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	2.72E+01	5.47E+04	7.53E+02	7.84E-04	2.01E+03	1.58E+00	4.54E-01	1.24E-01	2.76E+03	7.76E+02	1.97E-01	7.08E+02	3.90E+00
MMSD-202 (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	2.72E+01	4.30E+03	5.92E+01	7.84E-04	1.58E+02	1.24E-01	4.54E-01	1.24E-01	2.17E+02	7.76E+02	1.97E-01	7.08E+02	3.07E-01
Middle Marsh (2-6")																						**Maximum HQ (Middle Marsh, 0-2")**	**3.90E+00**
MMSD-201 (2-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	2.72E+01	4.03E+04	5.55E+02	7.84E-04	1.48E+03	1.16E+00	4.54E-01	1.24E-01	2.03E+03	7.76E+02	1.97E-01	7.08E+02	2.87E+00
MMSD-202 (2-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	2.72E+01	6.13E+03	8.43E+01	7.84E-04	2.25E+02	1.76E-01	4.54E-01	1.24E-01	3.09E+02	7.76E+02	1.97E-01	7.08E+02	4.37E-01
Middle Marsh (6-12")																						**Maximum HQ (Middle Marsh, 2-6")**	**2.87E+00**
MMSD-201 (6-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	2.72E+01	4.85E+04	6.67E+02	7.84E-04	1.78E+03	1.40E+00	4.54E-01	1.24E-01	2.45E+03	7.76E+02	1.97E-01	7.08E+02	3.46E+00
MMSD-202 (6-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	2.72E+01	7.41E+03	1.02E+02	7.84E-04	2.72E+02	2.13E-01	4.54E-01	1.24E-01	3.74E+02	7.76E+02	1.97E-01	7.08E+02	5.28E-01
Lower Marsh (0-2")																						**Maximum HQ (Middle Marsh, 6-12")**	**3.46E+00**
LMSD-201 (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	2.72E+01	5.50E+03	7.57E+01	7.84E-04	2.02E+02	1.58E-01	4.54E-01	1.24E-01	2.78E+02	7.76E+02	1.97E-01	7.08E+02	3.92E-01
LMSD-202 (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
LMSD-203 (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	2.72E+01	5.55E+04	7.64E+02	7.84E-04	2.04E+03	1.60E+00	4.54E-01	1.24E-01	2.80E+03	7.76E+02	1.97E-01	7.08E+02	3.96E+00
LMSD-204 (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	2.72E+01	8.77E+03	1.21E+02	7.84E-04	3.22E+02	2.53E-01	4.54E-01	1.24E-01	4.42E+02	7.76E+02	1.97E-01	7.08E+02	6.25E-01
Lower Marsh (2-6")																						**Maximum HQ (Lower Marsh, 0-2")**	**3.96E+00**
LMSD-201 (2-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	2.72E+01	4.76E+03	6.56E+01	7.84E-04	1.75E+02	1.37E-01	4.54E-01	1.24E-01	2.40E+02	7.76E+02	1.97E-01	7.08E+02	3.40E-01
LMSD-202 (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
LMSD-203 (2-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	2.72E+01	6.26E+04	8.62E+02	7.84E-04	2.30E+03	1.80E+00	4.54E-01	1.24E-01	3.16E+03	7.76E+02	1.97E-01	7.08E+02	4.46E+00
LMSD-204 (2-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	2.72E+01	1.32E+04	1.81E+02	7.84E-04	4.84E+02	3.80E-01	4.54E-01	1.24E-01	6.65E+02	7.76E+02	1.97E-01	7.08E+02	9.40E-01
Lower Marsh (6-12")																						**Maximum HQ (Lower Marsh, 2-6")**	**4.46E+00**
LMSD-201 (6-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	2.72E+01	4.96E+03	6.82E+01	7.84E-04	1.82E+02	1.43E-01	4.54E-01	1.24E-01	2.50E+02	7.76E+02	1.97E-01	7.08E+02	3.53E-01
LMSD-202 (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
LMSD-203 (6-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	2.72E+01	1.95E+05	2.69E+03	7.84E-04	7.18E+03	5.63E+00	4.54E-01	1.24E-01	9.86E+03	7.76E+02	1.97E-01	7.08E+02	1.39E+01
LMSD-204 (6-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	2.72E+01	1.58E+04	2.17E+02	7.84E-04	5.80E+02	4.55E-01	4.54E-01	1.24E-01	7.97E+02	7.76E+02	1.97E-01	7.08E+02	1.13E+00
																						Maximum HQ (Lower Marsh, 6-12")	**1.39E+01**
Meadow Vole (Small Herbivorous Mammals)																							
Reference Sites																							
BRSD-5 (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	3.24E+00	1.04E+03	4.86E+00	NA	NA	NA	NA	1.13E-04	3.20E+02	3.60E-02	1.00E+00	3.06E-02	1.60E+02	1.59E+02	2.97E-02	1.59E+02	1.01E+00
BRSD-5 (2-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	3.24E+00	8.10E+02	3.80E+00	NA	NA	NA	NA	1.13E-04	2.50E+02	2.81E-02	1.00E+00	3.06E-02	1.25E+02	1.59E+02	2.97E-02	1.59E+02	7.88E-01
BRSD-5 (6-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	3.24E+00	7.91E+02	3.71E+00	NA	NA	NA	NA	1.13E-04	2.44E+02	2.75E-02	1.00E+00	3.06E-02	1.22E+02	1.59E+02	2.97E-02	1.59E+02	7.69E-01

TABLE C-12FA: MANGANESE DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 12 - MARSH, TERRESTRIAL RECEPTORS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **118.73**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Meadow Vole (Small Herbivorous Mammals)																							
PGBG-1 (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	3.24E+00	2.26E+03	1.06E+01	NA	NA	NA	NA	1.13E-04	6.96E+02	7.83E-02	1.00E+00	3.06E-02	3.48E+02	1.59E+02	2.97E-02	1.59E+02	2.19E+00
PGBG-1 (2-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	3.24E+00	6.45E+02	3.02E+00	NA	NA	NA	NA	1.13E-04	1.99E+02	2.24E-02	1.00E+00	3.06E-02	9.96E+01	1.59E+02	2.97E-02	1.59E+02	6.27E-01
PGBG-1 (6-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	3.24E+00	2.85E+02	1.34E+00	NA	NA	NA	NA	1.13E-04	8.80E+01	9.90E-03	1.00E+00	3.06E-02	4.40E+01	1.59E+02	2.97E-02	1.59E+02	2.77E-01
PGBG-2 (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	3.24E+00	1.90E+03	8.91E+00	NA	NA	NA	NA	1.13E-04	5.86E+02	6.59E-02	1.00E+00	3.06E-02	2.93E+02	1.59E+02	2.97E-02	1.59E+02	1.85E+00
PGBG-2 (2-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	3.24E+00	1.61E+03	7.57E+00	NA	NA	NA	NA	1.13E-04	4.98E+02	5.60E-02	1.00E+00	3.06E-02	2.49E+02	1.59E+02	2.97E-02	1.59E+02	1.57E+00
PGBG-2 (6-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	3.24E+00	9.50E+02	4.45E+00	NA	NA	NA	NA	1.13E-04	2.93E+02	3.30E-02	1.00E+00	3.06E-02	1.47E+02	1.59E+02	2.97E-02	1.59E+02	9.23E-01
Eastern Upper Marsh (0-2")																						**Minimum HQ (Reference Sites)**	**2.77E-01**
UM-1000S-3500E (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	3.62E+00	1.02E+03	4.80E+00	NA	NA	NA	NA	1.13E-04	2.83E+02	3.18E-02	1.00E+00	3.06E-02	1.58E+02	1.59E+02	2.97E-02	1.59E+02	9.94E-01
BRSD-15 (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	3.62E+00	2.30E+03	1.08E+01	NA	NA	NA	NA	1.13E-04	6.35E+02	7.15E-02	1.00E+00	3.06E-02	3.54E+02	1.59E+02	2.97E-02	1.59E+02	2.23E+00
BRSD-4 (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	3.62E+00	7.59E+02	3.56E+00	NA	NA	NA	NA	1.13E-04	2.10E+02	2.36E-02	1.00E+00	3.06E-02	1.17E+02	1.59E+02	2.97E-02	1.59E+02	7.38E-01
UM-750S-3500E (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	3.62E+00	2.69E+04	1.26E+02	NA	NA	NA	NA	1.13E-04	7.43E+03	8.36E-01	1.00E+00	3.06E-02	4.14E+03	1.59E+02	2.97E-02	1.59E+02	2.61E+01
BRSD-16 (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	3.62E+00	3.76E+03	1.76E+01	NA	NA	NA	NA	1.13E-04	1.04E+03	1.17E-01	1.00E+00	3.06E-02	5.80E+02	1.59E+02	2.97E-02	1.59E+02	3.65E+00
UM-750S-3000E (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	3.62E+00	2.57E+04	1.21E+02	NA	NA	NA	NA	1.13E-04	7.11E+03	8.00E-01	1.00E+00	3.06E-02	3.97E+03	1.59E+02	2.97E-02	1.59E+02	2.50E+01
BRSD-3 (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	3.62E+00	4.48E+03	2.10E+01	NA	NA	NA	NA	1.13E-04	1.24E+03	1.40E-01	1.00E+00	3.06E-02	6.92E+02	1.59E+02	2.97E-02	1.59E+02	4.36E+00
UM-500S-3250E (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	3.62E+00	9.36E+03	4.39E+01	NA	NA	NA	NA	1.13E-04	2.59E+03	2.91E-01	1.00E+00	3.06E-02	1.44E+03	1.59E+02	2.97E-02	1.59E+02	9.10E+00
UM-500S-3000E (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	3.62E+00	4.27E+03	2.00E+01	NA	NA	NA	NA	1.13E-04	1.18E+03	1.33E-01	1.00E+00	3.06E-02	6.58E+02	1.59E+02	2.97E-02	1.59E+02	4.14E+00
UM-500S-2750E (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	3.62E+00	2.59E+04	1.21E+02	NA	NA	NA	NA	1.13E-04	7.16E+03	8.06E-01	1.00E+00	3.06E-02	3.99E+03	1.59E+02	2.97E-02	1.59E+02	2.51E+01
BRSD-25 (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	3.62E+00	5.42E+03	2.54E+01	NA	NA	NA	NA	1.13E-04	1.50E+03	1.69E-01	1.00E+00	3.06E-02	8.37E+02	1.59E+02	2.97E-02	1.59E+02	5.27E+00
UM-250S-3000E (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	3.62E+00	1.59E+04	7.46E+01	NA	NA	NA	NA	1.13E-04	4.40E+03	4.95E-01	1.00E+00	3.06E-02	2.45E+03	1.59E+02	2.97E-02	1.59E+02	1.55E+01
UM-250S-3250E (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	3.62E+00	5.32E+03	2.49E+01	NA	NA	NA	NA	1.13E-04	1.47E+03	1.65E-01	1.00E+00	3.06E-02	8.20E+02	1.59E+02	2.97E-02	1.59E+02	5.16E+00
BRSD-24 (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	3.62E+00	2.89E+04	1.35E+02	NA	NA	NA	NA	1.13E-04	7.99E+03	8.99E-01	1.00E+00	3.06E-02	4.46E+03	1.59E+02	2.97E-02	1.59E+02	2.81E+01
UM-250S-2750E (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	3.62E+00	2.82E+04	1.32E+02	NA	NA	NA	NA	1.13E-04	7.81E+03	8.79E-01	1.00E+00	3.06E-02	4.36E+03	1.59E+02	2.97E-02	1.59E+02	2.74E+01
UM-250S-2500E (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	3.62E+00	8.50E+02	3.98E+00	NA	NA	NA	NA	1.13E-04	2.35E+02	2.64E-02	1.00E+00	3.06E-02	1.31E+02	1.59E+02	2.97E-02	1.59E+02	8.25E-01
UM-0N-2500E (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	3.62E+00	7.41E+03	3.48E+01	NA	NA	NA	NA	1.13E-04	2.05E+03	2.31E-01	1.00E+00	3.06E-02	1.14E+03	1.59E+02	2.97E-02	1.59E+02	7.20E+00
UM-0N-250E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-2 (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	3.62E+00	2.78E+04	1.30E+02	NA	NA	NA	NA	1.13E-04	7.69E+03	8.65E-01	1.00E+00	3.06E-02	4.29E+03	1.59E+02	2.97E-02	1.59E+02	2.70E+01
UM-500N-2500E (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	3.62E+00	5.89E+02	2.76E+00	NA	NA	NA	NA	1.13E-04	1.63E+02	1.83E-02	1.00E+00	3.06E-02	9.09E+01	1.59E+02	2.97E-02	1.59E+02	5.72E-01
UM-250N-2500E (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	3.62E+00	1.37E+04	6.44E+01	NA	NA	NA	NA	1.13E-04	3.80E+03	4.28E-01	1.00E+00	3.06E-02	2.12E+03	1.59E+02	2.97E-02	1.59E+02	1.33E+01
UM-250N-2250E (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	3.62E+00	2.76E+04	1.29E+02	NA	NA	NA	NA	1.13E-04	7.62E+03	8.58E-01	1.00E+00	3.06E-02	4.25E+03	1.59E+02	2.97E-02	1.59E+02	2.68E+01
Western Upper Marsh (0-2")																						**Maximum HQ (Eastern Upper Marsh, 0-2")**	**2.81E+01**
UM-500S-2500E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-2000E (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	5.04E+00	2.18E+04	1.02E+02	NA	NA	NA	NA	1.13E-04	4.32E+03	4.86E-01	1.00E+00	3.06E-02	3.35E+03	1.59E+02	2.97E-02	1.59E+02	2.11E+01
UM-500S-2000E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-250N-1750E (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	5.04E+00	6.35E+02	2.98E+00	NA	NA	NA	NA	1.13E-04	1.26E+02	1.42E-02	1.00E+00	3.06E-02	9.78E+01	1.59E+02	2.97E-02	1.59E+02	6.16E-01
UM-0N-1500E (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	5.04E+00	6.71E+02	3.15E+00	NA	NA	NA	NA	1.13E-04	1.33E+02	1.50E-02	1.00E+00	3.06E-02	1.03E+02	1.59E+02	2.97E-02	1.59E+02	6.50E-01
UM-250S-1500E (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	5.04E+00	5.90E+03	2.77E+01	NA	NA	NA	NA	1.13E-04	1.17E+03	1.32E-01	1.00E+00	3.06E-02	9.08E+02	1.59E+02	2.97E-02	1.59E+02	5.72E+00
UM-250S-1250E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-6 (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-1000E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-750E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-500E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-250S-500E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-250S-250E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-7 (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-8 (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	5.04E+00	2.49E+03	1.17E+01	NA	NA	NA	NA	1.13E-04	4.93E+02	5.55E-02	1.00E+00	3.06E-02	3.83E+02	1.59E+02	2.97E-02	1.59E+02	2.41E+00
UM-500S-500E (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	5.04E+00	4.90E+02	2.30E+00	NA	NA	NA	NA	1.13E-04	9.71E+01	1.09E-02	1.00E+00	3.06E-02	7.54E+01	1.59E+02	2.97E-02	1.59E+02	4.75E-01
BRSD-9 (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	5.04E+00	2.80E+04	1.31E+02	NA	NA	NA	NA	1.13E-04	5.55E+03	6.25E-01	1.00E+00	3.06E-02	4.31E+03	1.59E+02	2.97E-02	1.59E+02	2.71E+01
BRSD-10 (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	5.04E+00	1.72E+04	8.06E+01	NA	NA	NA	NA	1.13E-04	3.41E+03	3.84E-01	1.00E+00	3.06E-02	2.65E+03	1.59E+02	2.97E-02	1.59E+02	1.67E+01
BRSD-11 (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	5.04E+00	6.86E+03	3.22E+01	NA	NA	NA	NA	1.13E-04	1.36E+03	1.53E-01	1.00E+00	3.06E-02	1.06E+03	1.59E+02	2.97E-02	1.59E+02	6.65E+00

TABLE C-12FA: MANGANESE DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 12 - MARSH, TERRESTRIAL RECEPTORS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 118.73

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Meadow Vole (Small Herbivorous Mammals)																							
Eastern Upper Marsh (2-6")																						**Maximum HQ (Western Upper Marsh, 0-2")**	**2.71E+01**
UM-1000S-3500E (2-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	3.62E+00	1.55E+03	7.29E+00	NA	NA	NA	NA	1.13E-04	4.30E+02	4.84E-02	1.00E+00	3.06E-02	2.40E+02	1.59E+02	2.97E-02	1.59E+02	1.51E+00
BRSD-15 (2-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	3.62E+00	3.62E+03	1.70E+01	NA	NA	NA	NA	1.13E-04	1.00E+03	1.13E-01	1.00E+00	3.06E-02	5.58E+02	1.59E+02	2.97E-02	1.59E+02	3.51E+00
BRSD-4 (2-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	3.62E+00	3.45E+02	1.62E+00	NA	NA	NA	NA	1.13E-04	9.54E+01	1.07E-02	1.00E+00	3.06E-02	5.32E+01	1.59E+02	2.97E-02	1.59E+02	3.35E-01
UM-750S-3500E (2-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	3.62E+00	2.56E+04	1.20E+02	NA	NA	NA	NA	1.13E-04	7.09E+03	7.98E-01	1.00E+00	3.06E-02	3.95E+03	1.59E+02	2.97E-02	1.59E+02	2.49E+01
BRSD-16 (2-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	3.62E+00	3.65E+04	1.71E+02	NA	NA	NA	NA	1.13E-04	1.01E+04	1.14E+00	1.00E+00	3.06E-02	5.63E+03	1.59E+02	2.97E-02	1.59E+02	3.55E+01
UM-750S-3000E (2-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	3.62E+00	2.69E+04	1.26E+02	NA	NA	NA	NA	1.13E-04	7.44E+03	8.37E-01	1.00E+00	3.06E-02	4.15E+03	1.59E+02	2.97E-02	1.59E+02	2.61E+01
BRSD-3 (2-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	3.62E+00	6.11E+03	2.87E+01	NA	NA	NA	NA	1.13E-04	1.69E+03	1.90E-01	1.00E+00	3.06E-02	9.43E+02	1.59E+02	2.97E-02	1.59E+02	5.94E+00
UM-500S-3250E (2-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	3.62E+00	1.55E+03	7.26E+00	NA	NA	NA	NA	1.13E-04	4.28E+02	4.82E-02	1.00E+00	3.06E-02	2.39E+02	1.59E+02	2.97E-02	1.59E+02	1.50E+00
UM-500S-3000E (2-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	3.62E+00	1.15E+03	5.37E+00	NA	NA	NA	NA	1.13E-04	3.17E+02	3.57E-02	1.00E+00	3.06E-02	1.77E+02	1.59E+02	2.97E-02	1.59E+02	1.11E+00
UM-500S-2750E (2-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	3.62E+00	3.02E+04	1.42E+02	NA	NA	NA	NA	1.13E-04	8.36E+03	9.41E-01	1.00E+00	3.06E-02	4.66E+03	1.59E+02	2.97E-02	1.59E+02	2.94E+01
BRSD-25 (2-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	3.62E+00	3.83E+03	1.80E+01	NA	NA	NA	NA	1.13E-04	1.06E+03	1.19E-01	1.00E+00	3.06E-02	5.91E+02	1.59E+02	2.97E-02	1.59E+02	3.72E+00
UM-250S-3000E (2-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	3.62E+00	9.29E+03	4.36E+01	NA	NA	NA	NA	1.13E-04	2.57E+03	2.89E-01	1.00E+00	3.06E-02	1.43E+03	1.59E+02	2.97E-02	1.59E+02	9.03E+00
UM-250S-3250E (2-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	3.62E+00	4.66E+02	2.19E+00	NA	NA	NA	NA	1.13E-04	1.29E+02	1.45E-02	1.00E+00	3.06E-02	7.20E+01	1.59E+02	2.97E-02	1.59E+02	4.53E-01
BRSD-24 (2-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	3.62E+00	1.03E+04	4.85E+01	NA	NA	NA	NA	1.13E-04	2.86E+03	3.22E-01	1.00E+00	3.06E-02	1.60E+03	1.59E+02	2.97E-02	1.59E+02	1.00E+01
UM-250S-2750E (2-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	3.62E+00	2.12E+04	9.92E+01	NA	NA	NA	NA	1.13E-04	5.85E+03	6.58E-01	1.00E+00	3.06E-02	3.26E+03	1.59E+02	2.97E-02	1.59E+02	2.05E+01
UM-0N-2500E (2-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	3.62E+00	1.16E+04	5.46E+01	NA	NA	NA	NA	1.13E-04	3.22E+03	3.62E-01	1.00E+00	3.06E-02	1.80E+03	1.59E+02	2.97E-02	1.59E+02	1.13E+01
BRSD-2 (2-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	3.62E+00	2.20E+04	1.03E+02	NA	NA	NA	NA	1.13E-04	6.09E+03	6.85E-01	1.00E+00	3.06E-02	3.40E+03	1.59E+02	2.97E-02	1.59E+02	2.14E+01
UM-500N-2500E (2-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	3.62E+00	6.73E+02	3.15E+00	NA	NA	NA	NA	1.13E-04	1.86E+02	2.09E-02	1.00E+00	3.06E-02	1.04E+02	1.59E+02	2.97E-02	1.59E+02	6.53E-01
UM-250N-2500E (2-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	3.62E+00	2.89E+04	1.35E+02	NA	NA	NA	NA	1.13E-04	7.98E+03	8.98E-01	1.00E+00	3.06E-02	4.45E+03	1.59E+02	2.97E-02	1.59E+02	2.80E+01
UM-250N-2250E (2-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	3.62E+00	1.01E+03	4.73E+00	NA	NA	NA	NA	1.13E-04	2.79E+02	3.14E-02	1.00E+00	3.06E-02	1.56E+02	1.59E+02	2.97E-02	1.59E+02	9.80E-01
Western Upper Marsh (2-6")																						**Maximum HQ (Eastern Upper Marsh, 2-6")**	**3.55E+01**
UM-500S-2500E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-500S-2000E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-250N-1750E (2-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	5.04E+00	8.98E+02	4.21E+00	NA	NA	NA	NA	1.13E-04	1.78E+02	2.00E-02	1.00E+00	3.06E-02	1.38E+02	1.59E+02	2.97E-02	1.59E+02	8.70E-01
UM-0N-1500E (2-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	5.04E+00	6.61E+02	3.10E+00	NA	NA	NA	NA	1.13E-04	1.31E+02	1.47E-02	1.00E+00	3.06E-02	1.02E+02	1.59E+02	2.97E-02	1.59E+02	6.41E-01
UM-250S-1500E (2-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	5.04E+00	7.36E+03	3.45E+01	NA	NA	NA	NA	1.13E-04	1.46E+03	1.64E-01	1.00E+00	3.06E-02	1.13E+03	1.59E+02	2.97E-02	1.59E+02	7.14E+00
UM-250S-1250E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-6 (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-1000E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-750E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-500E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-250S-500E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-250E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-250S-250E (2-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	5.04E+00	4.49E+02	2.11E+00	NA	NA	NA	NA	1.13E-04	8.91E+01	1.00E-02	1.00E+00	3.06E-02	6.92E+01	1.59E+02	2.97E-02	1.59E+02	4.36E-01
BRSD-7 (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-8 (2-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	5.04E+00	7.11E+03	3.33E+01	NA	NA	NA	NA	1.13E-04	1.41E+03	1.59E-01	1.00E+00	3.06E-02	1.09E+03	1.59E+02	2.97E-02	1.59E+02	6.89E+00
UM-500S-500E (2-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	5.04E+00	5.09E+02	2.39E+00	NA	NA	NA	NA	1.13E-04	1.01E+02	1.14E-02	1.00E+00	3.06E-02	7.84E+01	1.59E+02	2.97E-02	1.59E+02	4.94E-01
BRSD-9 (2-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	5.04E+00	1.06E+04	4.99E+01	NA	NA	NA	NA	1.13E-04	2.11E+03	2.37E-01	1.00E+00	3.06E-02	1.64E+03	1.59E+02	2.97E-02	1.59E+02	1.03E+01
BRSD-10 (2-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	5.04E+00	1.68E+04	7.87E+01	NA	NA	NA	NA	1.13E-04	3.33E+03	3.75E-01	1.00E+00	3.06E-02	2.59E+03	1.59E+02	2.97E-02	1.59E+02	1.63E+01
BRSD-11 (2-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	5.04E+00	1.60E+03	7.50E+00	NA	NA	NA	NA	1.13E-04	3.17E+02	3.57E-02	1.00E+00	3.06E-02	2.46E+02	1.59E+02	2.97E-02	1.59E+02	1.55E+00
Eastern Upper Marsh (6-12")																						**Maximum HQ (Western Upper Marsh, 2-6")**	**1.87E+01**
UM-1000S-3500E (6-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	3.62E+00	5.53E+02	2.59E+00	NA	NA	NA	NA	1.13E-04	1.53E+02	1.72E-02	1.00E+00	3.06E-02	8.53E+01	1.59E+02	2.97E-02	1.59E+02	5.37E-01
BRSD-15 (6-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	3.62E+00	4.74E+03	2.22E+01	NA	NA	NA	NA	1.13E-04	1.31E+03	1.47E-01	1.00E+00	3.06E-02	7.31E+02	1.59E+02	2.97E-02	1.59E+02	4.60E+00
BRSD-4 (6-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	3.62E+00	1.71E+03	8.02E+00	NA	NA	NA	NA	1.13E-04	4.73E+02	5.32E-02	1.00E+00	3.06E-02	2.64E+02	1.59E+02	2.97E-02	1.59E+02	1.66E+00
UM-750S-3500E (6-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	3.62E+00	2.30E+04	1.08E+02	NA	NA	NA	NA	1.13E-04	6.35E+03	7.15E-01	1.00E+00	3.06E-02	3.54E+03	1.59E+02	2.97E-02	1.59E+02	2.23E+01
BRSD-16 (6-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	3.62E+00	8.61E+03	4.04E+01	NA	NA	NA	NA	1.13E-04	2.38E+03	2.68E-01	1.00E+00	3.06E-02	1.33E+03	1.59E+02	2.97E-02	1.59E+02	8.36E+00
UM-750S-3000E (6-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	3.62E+00	2.63E+04	1.23E+02	NA	NA	NA	NA	1.13E-04	7.28E+03	8.19E-01	1.00E+00	3.06E-02	4.06E+03	1.59E+02	2.97E-02	1.59E+02	2.56E+01
BRSD-3 (6-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	3.62E+00	2.34E+03	1.10E+01	NA	NA	NA	NA	1.13E-04	6.48E+02	7.29E-02	1.00E+00	3.06E-02	3.61E+02	1.59E+02	2.97E-02	1.59E+02	2.28E+00

TABLE C-12FA: MANGANESE DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 12 - MARSH, TERRESTRIAL RECEPTORS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **118.73**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Meadow Vole (Small Herbivorous Mammals)																							
UM-500S-3250E (6-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	3.62E+00	9.98E+02	4.68E+00	NA	NA	NA	NA	1.13E-04	2.76E+02	3.11E-02	1.00E+00	3.06E-02	1.54E+02	1.59E+02	2.97E-02	1.59E+02	9.69E-01
UM-500S-3000E (6-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	3.62E+00	1.41E+03	6.60E+00	NA	NA	NA	NA	1.13E-04	3.89E+02	4.38E-02	1.00E+00	3.06E-02	2.17E+02	1.59E+02	2.97E-02	1.59E+02	1.37E+00
UM-500S-2750E (6-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	3.62E+00	2.95E+04	1.38E+02	NA	NA	NA	NA	1.13E-04	8.16E+03	9.18E-01	1.00E+00	3.06E-02	4.55E+03	1.59E+02	2.97E-02	1.59E+02	2.87E+01
BRSD-25 (6-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	3.62E+00	6.29E+02	2.95E+00	NA	NA	NA	NA	1.13E-04	1.74E+02	1.96E-02	1.00E+00	3.06E-02	9.70E+01	1.59E+02	2.97E-02	1.59E+02	6.11E-01
UM-250S-3000E (6-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	3.62E+00	1.81E+04	8.48E+01	NA	NA	NA	NA	1.13E-04	5.00E+03	5.63E-01	1.00E+00	3.06E-02	2.79E+03	1.59E+02	2.97E-02	1.59E+02	1.76E+01
UM-250S-3250E (6-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	3.62E+00	7.95E+02	3.73E+00	NA	NA	NA	NA	1.13E-04	2.20E+02	2.48E-02	1.00E+00	3.06E-02	1.23E+02	1.59E+02	2.97E-02	1.59E+02	7.73E-01
BRSD-24 (6-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	3.62E+00	4.34E+03	2.03E+01	NA	NA	NA	NA	1.13E-04	1.20E+03	1.35E-01	1.00E+00	3.06E-02	6.69E+02	1.59E+02	2.97E-02	1.59E+02	4.21E+00
UM-250S-2750E (6-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	3.62E+00	5.93E+03	2.78E+01	NA	NA	NA	NA	1.13E-04	1.64E+03	1.85E-01	1.00E+00	3.06E-02	9.15E+02	1.59E+02	2.97E-02	1.59E+02	5.76E+00
UM-250S-2500E (6-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	3.62E+00	5.42E+02	2.54E+00	NA	NA	NA	NA	1.13E-04	1.50E+02	1.69E-02	1.00E+00	3.06E-02	8.37E+01	1.59E+02	2.97E-02	1.59E+02	5.27E-01
BRSD-2 (6-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	3.62E+00	4.45E+03	2.09E+01	NA	NA	NA	NA	1.13E-04	1.23E+03	1.38E-01	1.00E+00	3.06E-02	6.86E+02	1.59E+02	2.97E-02	1.59E+02	4.32E+00
UM-500N-2500E (6-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	3.62E+00	7.45E+02	3.49E+00	NA	NA	NA	NA	1.13E-04	2.06E+02	2.32E-02	1.00E+00	3.06E-02	1.15E+02	1.59E+02	2.97E-02	1.59E+02	7.24E-01
UM-250N-2500E (6-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	3.62E+00	2.44E+04	1.14E+02	NA	NA	NA	NA	1.13E-04	6.74E+03	7.59E-01	1.00E+00	3.06E-02	3.76E+03	1.59E+02	2.97E-02	1.59E+02	2.37E+01
UM-250N-2250E (6-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	3.62E+00	1.25E+03	5.88E+00	NA	NA	NA	NA	1.13E-04	3.47E+02	3.91E-02	1.00E+00	3.06E-02	1.94E+02	1.59E+02	2.97E-02	1.59E+02	1.22E+00
Western Upper Marsh (6-12")																						**Maximum HQ (Eastern Upper Marsh, 6-12")**	**2.87E+01**
UM-500S-2500E (6-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	5.04E+00	7.67E+02	3.59E+00	NA	NA	NA	NA	1.13E-04	1.52E+02	1.71E-02	1.00E+00	3.06E-02	1.18E+02	1.59E+02	2.97E-02	1.59E+02	7.43E-01
UM-0N-2000E (6-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	5.04E+00	3.87E+04	1.81E+02	NA	NA	NA	NA	1.13E-04	7.67E+03	8.63E-01	1.00E+00	3.06E-02	5.96E+03	1.59E+02	2.97E-02	1.59E+02	3.75E+01
UM-500S-2000E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-250N-1750E (6-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	5.04E+00	5.02E+02	2.36E+00	NA	NA	NA	NA	1.13E-04	9.96E+01	1.12E-02	1.00E+00	3.06E-02	7.73E+01	1.59E+02	2.97E-02	1.59E+02	4.87E-01
UM-0N-1500E (6-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	5.04E+00	8.17E+02	3.83E+00	NA	NA	NA	NA	1.13E-04	1.62E+02	1.82E-02	1.00E+00	3.06E-02	1.26E+02	1.59E+02	2.97E-02	1.59E+02	7.92E-01
UM-250S-1500E (6-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	5.04E+00	2.25E+03	1.05E+01	NA	NA	NA	NA	1.13E-04	4.46E+02	5.02E-02	1.00E+00	3.06E-02	3.46E+02	1.59E+02	2.97E-02	1.59E+02	2.18E+00
UM-250S-1250E (6-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	5.04E+00	4.72E+02	2.21E+00	NA	NA	NA	NA	1.13E-04	9.35E+01	1.05E-02	1.00E+00	3.06E-02	7.26E+01	1.59E+02	2.97E-02	1.59E+02	4.57E-01
BRSD-6 (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-1000E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-750E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-500E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-250S-500E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-250E (6-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	5.04E+00	4.91E+02	2.30E+00	NA	NA	NA	NA	1.13E-04	9.74E+01	1.10E-02	1.00E+00	3.06E-02	7.56E+01	1.59E+02	2.97E-02	1.59E+02	4.76E-01
UM-250S-250E (6-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	5.04E+00	1.42E+03	6.64E+00	NA	NA	NA	NA	1.13E-04	2.81E+02	3.16E-02	1.00E+00	3.06E-02	2.18E+02	1.59E+02	2.97E-02	1.59E+02	1.37E+00
BRSD-7 (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-8 (6-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	5.04E+00	5.70E+03	2.67E+01	NA	NA	NA	NA	1.13E-04	1.13E+03	1.27E-01	1.00E+00	3.06E-02	8.77E+02	1.59E+02	2.97E-02	1.59E+02	5.52E+00
UM-500S-500E (6-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	5.04E+00	5.09E+02	2.39E+00	NA	NA	NA	NA	1.13E-04	1.01E+02	1.14E-02	1.00E+00	3.06E-02	7.84E+01	1.59E+02	2.97E-02	1.59E+02	4.94E-01
BRSD-9 (6-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	5.04E+00	8.88E+03	4.16E+01	NA	NA	NA	NA	1.13E-04	1.76E+03	1.98E-01	1.00E+00	3.06E-02	1.37E+03	1.59E+02	2.97E-02	1.59E+02	8.61E+00
BRSD-10 (6-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	5.04E+00	2.48E+04	1.16E+02	NA	NA	NA	NA	1.13E-04	4.92E+03	5.54E-01	1.00E+00	3.06E-02	3.82E+03	1.59E+02	2.97E-02	1.59E+02	2.41E+01
BRSD-11 (6-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	5.04E+00	1.47E+03	6.90E+00	NA	NA	NA	NA	1.13E-04	2.92E+02	3.29E-02	1.00E+00	3.06E-02	2.27E+02	1.59E+02	2.97E-02	1.59E+02	1.43E+00
Middle Marsh (0-2")																						**Maximum HQ (Western Upper Marsh, 6-12")**	**3.75E+01**
MMSD-201 (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	5.04E+00	1.01E+04	4.75E+01	NA	NA	NA	NA	1.13E-04	2.01E+03	2.26E-01	1.00E+00	3.06E-02	1.56E+03	1.59E+02	2.97E-02	1.59E+02	9.83E+00
MMSD-202 (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	5.04E+00	7.97E+02	3.74E+00	NA	NA	NA	NA	1.13E-04	1.58E+02	1.78E-02	1.00E+00	3.06E-02	1.23E+02	1.59E+02	2.97E-02	1.59E+02	7.73E-01
Middle Marsh (2-6")																						**Maximum HQ (Middle Marsh, 0-2")**	**9.83E+00**
MMSD-201 (2-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	5.04E+00	7.46E+03	3.50E+01	NA	NA	NA	NA	1.13E-04	1.48E+03	1.67E-01	1.00E+00	3.06E-02	1.15E+03	1.59E+02	2.97E-02	1.59E+02	7.24E+00
MMSD-202 (2-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	5.04E+00	1.13E+03	5.32E+00	NA	NA	NA	NA	1.13E-04	2.25E+02	2.53E-02	1.00E+00	3.06E-02	1.75E+02	1.59E+02	2.97E-02	1.59E+02	1.10E+00
Middle Marsh (6-12")																						**Maximum HQ (Middle Marsh, 2-6")**	**7.24E+00**
MMSD-201 (6-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	5.04E+00	8.98E+03	4.21E+01	NA	NA	NA	NA	1.13E-04	1.78E+03	2.00E-01	1.00E+00	3.06E-02	1.38E+03	1.59E+02	2.97E-02	1.59E+02	8.70E+00
MMSD-202 (6-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	5.04E+00	1.37E+03	6.43E+00	NA	NA	NA	NA	1.13E-04	2.72E+02	3.06E-02	1.00E+00	3.06E-02	2.11E+02	1.59E+02	2.97E-02	1.59E+02	1.33E+00
Lower Marsh (0-2")																						**Maximum HQ (Middle Marsh, 6-12")**	**8.70E+00**
LMSD-201 (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	5.04E+00	1.02E+03	4.78E+00	NA	NA	NA	NA	1.13E-04	2.02E+02	2.27E-02	1.00E+00	3.06E-02	1.57E+02	1.59E+02	2.97E-02	1.59E+02	9.88E-01
LMSD-202 (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
LMSD-203 (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	5.04E+00	1.03E+04	4.82E+01	NA	NA	NA	NA	1.13E-04	2.04E+03	2.30E-01	1.00E+00	3.06E-02	1.58E+03	1.59E+02	2.97E-02	1.59E+02	9.97E+00
LMSD-204 (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	5.04E+00	1.62E+03	7.61E+00	NA	NA	NA	NA	1.13E-04	3.22E+02	3.62E-02	1.00E+00	3.06E-02	2.50E+02	1.59E+02	2.97E-02	1.59E+02	1.57E+00

TABLE C-12FA: MANGANESE DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 12 - MARSH, TERRESTRIAL RECEPTORS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 118.73

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Meadow Vole (Small Herbivorous Mammals)																							
Lower Marsh (2-6")																						**Maximum HQ (Lower Marsh, 0-2")**	**9.97E+00**
LMSD-201 (2-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	5.04E+00	8.83E+02	4.14E+00	NA	NA	NA	NA	1.13E-04	1.75E+02	1.97E-02	1.00E+00	3.06E-02	1.36E+02	1.59E+02	2.97E-02	1.59E+02	8.56E-01
LMSD-202 (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
LMSD-203 (2-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	5.04E+00	1.16E+04	5.44E+01	NA	NA	NA	NA	1.13E-04	2.30E+03	2.59E-01	1.00E+00	3.06E-02	1.79E+03	1.59E+02	2.97E-02	1.59E+02	1.12E+01
LMSD-204 (2-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	5.04E+00	2.44E+03	1.14E+01	NA	NA	NA	NA	1.13E-04	4.84E+02	5.45E-02	1.00E+00	3.06E-02	3.76E+02	1.59E+02	2.97E-02	1.59E+02	2.37E+00
Lower Marsh (6-12")																						**Maximum HQ (Lower Marsh, 2-6")**	**1.12E+01**
LMSD-201 (6-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	5.04E+00	9.18E+02	4.30E+00	NA	NA	NA	NA	1.13E-04	1.82E+02	2.05E-02	1.00E+00	3.06E-02	1.41E+02	1.59E+02	2.97E-02	1.59E+02	8.90E-01
LMSD-202 (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
LMSD-203 (6-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	5.04E+00	3.62E+04	1.70E+02	NA	NA	NA	NA	1.13E-04	7.18E+03	8.08E-01	1.00E+00	3.06E-02	5.57E+03	1.59E+02	2.97E-02	1.59E+02	3.51E+01
LMSD-204 (6-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	5.04E+00	2.92E+03	1.37E+01	NA	NA	NA	NA	1.13E-04	5.80E+02	6.53E-02	1.00E+00	3.06E-02	4.50E+02	1.59E+02	2.97E-02	1.59E+02	2.84E+00
																						Maximum HQ (Lower Marsh, 6-12")	**3.51E+01**
White-Tailed Deer (Large Herbivorous Mammals)																							
Reference Sites																							
BRSD-5 (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	3.24E+00	1.04E+03	1.49E+03	NA	NA	NA	NA	2.86E-02	3.20E+02	9.16E+00	6.64E-01	1.35E+02	7.35E+00	1.59E+02	2.97E-02	9.60E+01	7.66E-02
BRSD-5 (2-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	3.24E+00	8.10E+02	1.16E+03	NA	NA	NA	NA	2.86E-02	2.50E+02	7.16E+00	6.64E-01	1.35E+02	5.74E+00	1.59E+02	2.97E-02	9.60E+01	5.98E-02
BRSD-5 (6-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	3.24E+00	7.91E+02	1.13E+03	NA	NA	NA	NA	2.86E-02	2.44E+02	6.99E+00	6.64E-01	1.35E+02	5.61E+00	1.59E+02	2.97E-02	9.60E+01	5.84E-02
PGBG-1 (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	3.24E+00	2.26E+03	3.23E+03	NA	NA	NA	NA	2.86E-02	6.96E+02	1.99E+01	6.64E-01	1.35E+02	1.60E+01	1.59E+02	2.97E-02	9.60E+01	1.67E-01
PGBG-1 (2-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	3.24E+00	6.45E+02	9.24E+02	NA	NA	NA	NA	2.86E-02	1.99E+02	5.70E+00	6.64E-01	1.35E+02	4.57E+00	1.59E+02	2.97E-02	9.60E+01	4.76E-02
PGBG-1 (6-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	3.24E+00	2.85E+02	4.08E+02	NA	NA	NA	NA	2.86E-02	8.80E+01	2.52E+00	6.64E-01	1.35E+02	2.02E+00	1.59E+02	2.97E-02	9.60E+01	2.11E-02
PGBG-2 (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	3.24E+00	1.90E+03	2.72E+03	NA	NA	NA	NA	2.86E-02	5.86E+02	1.68E+01	6.64E-01	1.35E+02	1.35E+01	1.59E+02	2.97E-02	9.60E+01	1.40E-01
PGBG-2 (2-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	3.24E+00	1.61E+03	2.31E+03	NA	NA	NA	NA	2.86E-02	4.98E+02	1.43E+01	6.64E-01	1.35E+02	1.14E+01	1.59E+02	2.97E-02	9.60E+01	1.19E-01
PGBG-2 (6-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	3.24E+00	9.50E+02	1.36E+03	NA	NA	NA	NA	2.86E-02	2.93E+02	8.39E+00	6.64E-01	1.35E+02	6.73E+00	1.59E+02	2.97E-02	9.60E+01	7.01E-02
Eastern Upper Marsh (0-2")																						**Minimum HQ (Reference Sites)**	**2.11E-02**
UM-1000S-3500E (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	3.62E+00	1.02E+03	1.46E+03	NA	NA	NA	NA	2.86E-02	2.83E+02	8.10E+00	6.64E-01	1.35E+02	7.25E+00	1.59E+02	2.97E-02	9.60E+01	7.55E-02
BRSD-15 (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	3.62E+00	2.30E+03	3.29E+03	NA	NA	NA	NA	2.86E-02	6.35E+02	1.82E+01	6.64E-01	1.35E+02	1.63E+01	1.59E+02	2.97E-02	9.60E+01	1.69E-01
BRSD-4 (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	3.62E+00	7.59E+02	1.09E+03	NA	NA	NA	NA	2.86E-02	2.10E+02	6.01E+00	6.64E-01	1.35E+02	5.38E+00	1.59E+02	2.97E-02	9.60E+01	5.60E-02
UM-750S-3500E (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	3.62E+00	2.69E+04	3.85E+04	NA	NA	NA	NA	2.86E-02	7.43E+03	2.13E+02	6.64E-01	1.35E+02	1.90E+02	1.59E+02	2.97E-02	9.60E+01	1.98E+00
BRSD-16 (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	3.62E+00	3.76E+03	5.38E+03	NA	NA	NA	NA	2.86E-02	1.04E+03	2.98E+01	6.64E-01	1.35E+02	2.66E+01	1.59E+02	2.97E-02	9.60E+01	2.78E-01
UM-750S-3000E (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	3.62E+00	2.57E+04	3.68E+04	NA	NA	NA	NA	2.86E-02	7.11E+03	2.04E+02	6.64E-01	1.35E+02	1.82E+02	1.59E+02	2.97E-02	9.60E+01	1.90E+00
BRSD-3 (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	3.62E+00	4.48E+03	6.42E+03	NA	NA	NA	NA	2.86E-02	1.24E+03	3.55E+01	6.64E-01	1.35E+02	3.18E+01	1.59E+02	2.97E-02	9.60E+01	3.31E-01
UM-500S-3250E (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	3.62E+00	9.36E+03	1.34E+04	NA	NA	NA	NA	2.86E-02	2.59E+03	7.42E+01	6.64E-01	1.35E+02	6.63E+01	1.59E+02	2.97E-02	9.60E+01	6.91E-01
UM-500S-3000E (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	3.62E+00	4.27E+03	6.11E+03	NA	NA	NA	NA	2.86E-02	1.18E+03	3.38E+01	6.64E-01	1.35E+02	3.02E+01	1.59E+02	2.97E-02	9.60E+01	3.15E-01
UM-500S-2750E (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	3.62E+00	2.59E+04	3.71E+04	NA	NA	NA	NA	2.86E-02	7.16E+03	2.05E+02	6.64E-01	1.35E+02	1.83E+02	1.59E+02	2.97E-02	9.60E+01	1.91E+00
BRSD-25 (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	3.62E+00	5.42E+03	7.76E+03	NA	NA	NA	NA	2.86E-02	1.50E+03	4.30E+01	6.64E-01	1.35E+02	3.84E+01	1.59E+02	2.97E-02	9.60E+01	4.00E-01
UM-250S-3000E (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	3.62E+00	1.59E+04	2.28E+04	NA	NA	NA	NA	2.86E-02	4.40E+03	1.26E+02	6.64E-01	1.35E+02	1.13E+02	1.59E+02	2.97E-02	9.60E+01	1.17E+00
UM-250S-3250E (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	3.62E+00	5.32E+03	7.61E+03	NA	NA	NA	NA	2.86E-02	1.47E+03	4.21E+01	6.64E-01	1.35E+02	3.76E+01	1.59E+02	2.97E-02	9.60E+01	3.92E-01
BRSD-24 (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	3.62E+00	2.89E+04	4.14E+04	NA	NA	NA	NA	2.86E-02	7.99E+03	2.29E+02	6.64E-01	1.35E+02	2.05E+02	1.59E+02	2.97E-02	9.60E+01	2.13E+00
UM-250S-2750E (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	3.62E+00	2.82E+04	4.04E+04	NA	NA	NA	NA	2.86E-02	7.81E+03	2.24E+02	6.64E-01	1.35E+02	2.00E+02	1.59E+02	2.97E-02	9.60E+01	2.08E+00
UM-250S-2500E (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	3.62E+00	8.50E+02	1.22E+03	NA	NA	NA	NA	2.86E-02	2.35E+02	6.73E+00	6.64E-01	1.35E+02	6.02E+00	1.59E+02	2.97E-02	9.60E+01	6.27E-02
UM-0N-2500E (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	3.62E+00	7.41E+03	1.06E+04	NA	NA	NA	NA	2.86E-02	2.05E+03	5.87E+01	6.64E-01	1.35E+02	5.25E+01	1.59E+02	2.97E-02	9.60E+01	5.47E-01
UM-0N-250E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-2 (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	3.62E+00	2.78E+04	3.98E+04	NA	NA	NA	NA	2.86E-02	7.69E+03	2.20E+02	6.64E-01	1.35E+02	1.97E+02	1.59E+02	2.97E-02	9.60E+01	2.05E+00
UM-500N-2500E (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	3.62E+00	5.89E+02	8.44E+02	NA	NA	NA	NA	2.86E-02	1.63E+02	4.67E+00	6.64E-01	1.35E+02	4.17E+00	1.59E+02	2.97E-02	9.60E+01	4.35E-02
UM-250N-2500E (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	3.62E+00	1.37E+04	1.97E+04	NA	NA	NA	NA	2.86E-02	3.80E+03	1.09E+02	6.64E-01	1.35E+02	9.73E+01	1.59E+02	2.97E-02	9.60E+01	1.01E+00
UM-250N-2250E (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	3.62E+00	2.76E+04	3.94E+04	NA	NA	NA	NA	2.86E-02	7.62E+03	2.18E+02	6.64E-01	1.35E+02	1.95E+02	1.59E+02	2.97E-02	9.60E+01	2.03E+00
Western Upper Marsh (0-2")																						**Maximum HQ (Eastern Upper Marsh, 0-2")**	**2.13E+00**
UM-500S-2500E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-2000E (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	5.04E+00	2.18E+04	3.12E+04	NA	NA	NA	NA	2.86E-02	4.32E+03	1.24E+02	6.64E-01	1.35E+02	1.54E+02	1.59E+02	2.97E-02	9.60E+01	1.61E+00
UM-500S-2000E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-250N-1750E (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	5.04E+00	6.35E+02	9.10E+02	NA	NA	NA	NA	2.86E-02	1.26E+02	3.61E+00	6.64E-01	1.35E+02	4.49E+00	1.59E+02	2.97E-02	9.60E+01	4.68E-02
UM-0N-1500E (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	5.04E+00	6.71E+02	9.60E+02	NA	NA	NA	NA	2.86E-02	1.33E+02	3.81E+00	6.64E-01	1.35E+02	4.74E+00	1.59E+02	2.97E-02	9.60E+01	4.94E-02

TABLE C-12FA: MANGANESE DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 12 - MARSH, TERRESTRIAL RECEPTORS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **118.73**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
White-Tailed Deer (Large Herbivorous Mammals)																							
UM-250S-1500E (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	5.04E+00	5.90E+03	8.45E+03	NA	NA	NA	NA	2.86E-02	1.17E+03	3.35E+01	6.64E-01	1.35E+02	4.17E+01	1.59E+02	2.97E-02	9.60E+01	4.35E-01
UM-250S-1250E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-6 (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-1000E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-750E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-500E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-250S-500E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-250S-250E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-7 (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-8 (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	5.04E+00	2.49E+03	3.56E+03	NA	NA	NA	NA	2.86E-02	4.93E+02	1.41E+01	6.64E-01	1.35E+02	1.76E+01	1.59E+02	2.97E-02	9.60E+01	1.83E-01
UM-500S-500E (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	5.04E+00	4.90E+02	7.01E+02	NA	NA	NA	NA	2.86E-02	9.71E+01	2.78E+00	6.64E-01	1.35E+02	3.46E+00	1.59E+02	2.97E-02	9.60E+01	3.61E-02
BRSD-9 (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	5.04E+00	2.80E+04	4.01E+04	NA	NA	NA	NA	2.86E-02	5.55E+03	1.59E+02	6.64E-01	1.35E+02	1.98E+02	1.59E+02	2.97E-02	9.60E+01	2.06E+00
BRSD-10 (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	5.04E+00	1.72E+04	2.46E+04	NA	NA	NA	NA	2.86E-02	3.41E+03	9.76E+01	6.64E-01	1.35E+02	1.22E+02	1.59E+02	2.97E-02	9.60E+01	1.27E+00
BRSD-11 (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	5.04E+00	6.86E+03	9.82E+03	NA	NA	NA	NA	2.86E-02	1.36E+03	3.89E+01	6.64E-01	1.35E+02	4.85E+01	1.59E+02	2.97E-02	9.60E+01	5.05E-01
Eastern Upper Marsh (2-6")																						**Maximum HQ (Western Upper Marsh, 0-2")**	**2.06E+00**
UM-1000S-3500E (2-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	3.62E+00	1.55E+03	2.23E+03	NA	NA	NA	NA	2.86E-02	4.30E+02	1.23E+01	6.64E-01	1.35E+02	1.10E+01	1.59E+02	2.97E-02	9.60E+01	1.15E-01
BRSD-15 (2-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	3.62E+00	3.62E+03	5.18E+03	NA	NA	NA	NA	2.86E-02	1.00E+03	2.86E+01	6.64E-01	1.35E+02	2.56E+01	1.59E+02	2.97E-02	9.60E+01	2.67E-01
BRSD-4 (2-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	3.62E+00	3.45E+02	4.94E+02	NA	NA	NA	NA	2.86E-02	9.54E+01	2.73E+00	6.64E-01	1.35E+02	2.44E+00	1.59E+02	2.97E-02	9.60E+01	2.55E-02
UM-750S-3500E (2-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	3.62E+00	2.56E+04	3.67E+04	NA	NA	NA	NA	2.86E-02	7.09E+03	2.03E+02	6.64E-01	1.35E+02	1.82E+02	1.59E+02	2.97E-02	9.60E+01	1.89E+00
BRSD-16 (2-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	3.62E+00	3.65E+04	5.23E+04	NA	NA	NA	NA	2.86E-02	1.01E+04	2.89E+02	6.64E-01	1.35E+02	2.59E+02	1.59E+02	2.97E-02	9.60E+01	2.70E+00
UM-750S-3000E (2-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	3.62E+00	2.69E+04	3.85E+04	NA	NA	NA	NA	2.86E-02	7.44E+03	2.13E+02	6.64E-01	1.35E+02	1.91E+02	1.59E+02	2.97E-02	9.60E+01	1.99E+00
BRSD-3 (2-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	3.62E+00	6.11E+03	8.75E+03	NA	NA	NA	NA	2.86E-02	1.69E+03	4.84E+01	6.64E-01	1.35E+02	4.33E+01	1.59E+02	2.97E-02	9.60E+01	4.51E-01
UM-500S-3250E (2-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	3.62E+00	1.55E+03	2.22E+03	NA	NA	NA	NA	2.86E-02	4.28E+02	1.23E+01	6.64E-01	1.35E+02	1.10E+01	1.59E+02	2.97E-02	9.60E+01	1.14E-01
UM-500S-3000E (2-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	3.62E+00	1.15E+03	1.64E+03	NA	NA	NA	NA	2.86E-02	3.17E+02	9.08E+00	6.64E-01	1.35E+02	8.12E+00	1.59E+02	2.97E-02	9.60E+01	8.46E-02
UM-500S-2750E (2-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	3.62E+00	3.02E+04	4.33E+04	NA	NA	NA	NA	2.86E-02	8.36E+03	2.39E+02	6.64E-01	1.35E+02	2.14E+02	1.59E+02	2.97E-02	9.60E+01	2.23E+00
BRSD-25 (2-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	3.62E+00	3.83E+03	5.49E+03	NA	NA	NA	NA	2.86E-02	1.06E+03	3.04E+01	6.64E-01	1.35E+02	2.71E+01	1.59E+02	2.97E-02	9.60E+01	2.83E-01
UM-250S-3000E (2-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	3.62E+00	9.29E+03	1.33E+04	NA	NA	NA	NA	2.86E-02	2.57E+03	7.36E+01	6.64E-01	1.35E+02	6.58E+01	1.59E+02	2.97E-02	9.60E+01	6.86E-01
UM-250S-3250E (2-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	3.62E+00	4.66E+02	6.68E+02	NA	NA	NA	NA	2.86E-02	1.29E+02	3.69E+00	6.64E-01	1.35E+02	3.30E+00	1.59E+02	2.97E-02	9.60E+01	3.44E-02
BRSD-24 (2-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	3.62E+00	1.03E+04	1.48E+04	NA	NA	NA	NA	2.86E-02	2.86E+03	8.19E+01	6.64E-01	1.35E+02	7.32E+01	1.59E+02	2.97E-02	9.60E+01	7.63E-01
UM-250S-2750E (2-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	3.62E+00	2.12E+04	3.03E+04	NA	NA	NA	NA	2.86E-02	5.85E+03	1.68E+02	6.64E-01	1.35E+02	1.50E+02	1.59E+02	2.97E-02	9.60E+01	1.56E+00
UM-0N-2500E (2-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	3.62E+00	1.16E+04	1.67E+04	NA	NA	NA	NA	2.86E-02	3.22E+03	9.22E+01	6.64E-01	1.35E+02	8.25E+01	1.59E+02	2.97E-02	9.60E+01	8.59E-01
BRSD-2 (2-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	3.62E+00	2.20E+04	3.15E+04	NA	NA	NA	NA	2.86E-02	6.09E+03	1.74E+02	6.64E-01	1.35E+02	1.56E+02	1.59E+02	2.97E-02	9.60E+01	1.63E+00
UM-500N-2500E (2-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	3.62E+00	6.73E+02	9.63E+02	NA	NA	NA	NA	2.86E-02	1.86E+02	5.33E+00	6.64E-01	1.35E+02	4.76E+00	1.59E+02	2.97E-02	9.60E+01	4.96E-02
UM-250N-2500E (2-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	3.62E+00	2.89E+04	4.13E+04	NA	NA	NA	NA	2.86E-02	7.98E+03	2.28E+02	6.64E-01	1.35E+02	2.04E+02	1.59E+02	2.97E-02	9.60E+01	2.13E+00
UM-250N-2250E (2-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	3.62E+00	1.01E+03	1.44E+03	NA	NA	NA	NA	2.86E-02	2.79E+02	7.99E+00	6.64E-01	1.35E+02	7.15E+00	1.59E+02	2.97E-02	9.60E+01	7.44E-02
Western Upper Marsh (2-6")																						**Maximum HQ (Eastern Upper Marsh, 2-6")**	**2.70E+00**
UM-500S-2500E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-2000E (2-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	5.04E+00	1.93E+04	2.76E+04	NA	NA	NA	NA	2.86E-02	3.82E+03	1.09E+02	6.64E-01	1.35E+02	1.36E+02	1.59E+02	2.97E-02	9.60E+01	1.42E+00
UM-500S-2000E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-250N-1750E (2-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	5.04E+00	8.98E+02	1.29E+03	NA	NA	NA	NA	2.86E-02	1.78E+02	5.10E+00	6.64E-01	1.35E+02	6.35E+00	1.59E+02	2.97E-02	9.60E+01	6.61E-02
UM-0N-1500E (2-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	5.04E+00	6.61E+02	9.46E+02	NA	NA	NA	NA	2.86E-02	1.31E+02	3.75E+00	6.64E-01	1.35E+02	4.67E+00	1.59E+02	2.97E-02	9.60E+01	4.87E-02
UM-250S-1500E (2-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	5.04E+00	7.36E+03	1.05E+04	NA	NA	NA	NA	2.86E-02	1.46E+03	4.18E+01	6.64E-01	1.35E+02	5.21E+01	1.59E+02	2.97E-02	9.60E+01	5.42E-01
UM-250S-1250E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-6 (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-1000E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-750E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-500E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-250S-500E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-250E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-250S-250E (2-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	5.04E+00	4.49E+02	6.43E+02	NA	NA	NA	NA	2.86E-02	8.91E+01	2.55E+00	6.64E-01	1.35E+02	3.18E+00	1.59E+02	2.97E-02	9.60E+01	3.31E-02

TABLE C-12FA: MANGANESE DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 12 - MARSH, TERRESTRIAL RECEPTORS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 118.73

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
White-Tailed Deer (Large Herbivorous Mammals)																							
BRSD-7 (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-8 (2-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	5.04E+00	7.11E+03	1.02E+04	NA	NA	NA	NA	2.86E-02	1.41E+03	4.04E+01	6.64E-01	1.35E+02	5.03E+01	1.59E+02	2.97E-02	9.60E+01	5.24E-01
UM-500S-500E (2-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	5.04E+00	5.09E+02	7.29E+02	NA	NA	NA	NA	2.86E-02	1.01E+02	2.89E+00	6.64E-01	1.35E+02	3.60E+00	1.59E+02	2.97E-02	9.60E+01	3.75E-02
BRSD-9 (2-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	5.04E+00	1.06E+04	1.52E+04	NA	NA	NA	NA	2.86E-02	2.11E+03	6.04E+01	6.64E-01	1.35E+02	7.53E+01	1.59E+02	2.97E-02	9.60E+01	7.84E-01
BRSD-10 (2-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	5.04E+00	1.68E+04	2.40E+04	NA	NA	NA	NA	2.86E-02	3.33E+03	9.53E+01	6.64E-01	1.35E+02	1.19E+02	1.59E+02	2.97E-02	9.60E+01	1.24E+00
BRSD-11 (2-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	5.04E+00	1.60E+03	2.29E+03	NA	NA	NA	NA	2.86E-02	3.17E+02	9.08E+00	6.64E-01	1.35E+02	1.13E+01	1.59E+02	2.97E-02	9.60E+01	1.18E-01
Eastern Upper Marsh (6-12")																						**Maximum HQ (Western Upper Marsh, 2-6")**	**1.42E+00**
UM-1000S-3500E (6-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	3.62E+00	5.53E+02	7.92E+02	NA	NA	NA	NA	2.86E-02	1.53E+02	4.38E+00	6.64E-01	1.35E+02	3.92E+00	1.59E+02	2.97E-02	9.60E+01	4.08E-02
BRSD-15 (6-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	3.62E+00	4.74E+03	6.78E+03	NA	NA	NA	NA	2.86E-02	1.31E+03	3.75E+01	6.64E-01	1.35E+02	3.36E+01	1.59E+02	2.97E-02	9.60E+01	3.50E-01
BRSD-4 (6-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	3.62E+00	1.71E+03	2.45E+03	NA	NA	NA	NA	2.86E-02	4.73E+02	1.35E+01	6.64E-01	1.35E+02	1.21E+01	1.59E+02	2.97E-02	9.60E+01	1.26E-01
UM-750S-3500E (6-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	3.62E+00	2.30E+04	3.29E+04	NA	NA	NA	NA	2.86E-02	6.35E+03	1.82E+02	6.64E-01	1.35E+02	1.63E+02	1.59E+02	2.97E-02	9.60E+01	1.69E+00
BRSD-16 (6-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	3.62E+00	8.61E+03	1.23E+04	NA	NA	NA	NA	2.86E-02	2.38E+03	6.81E+01	6.64E-01	1.35E+02	6.10E+01	1.59E+02	2.97E-02	9.60E+01	6.35E-01
UM-750S-3000E (6-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	3.62E+00	2.63E+04	3.77E+04	NA	NA	NA	NA	2.86E-02	7.28E+03	2.08E+02	6.64E-01	1.35E+02	1.86E+02	1.59E+02	2.97E-02	9.60E+01	1.94E+00
BRSD-3 (6-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	3.62E+00	2.34E+03	3.35E+03	NA	NA	NA	NA	2.86E-02	6.48E+02	1.86E+01	6.64E-01	1.35E+02	1.66E+01	1.59E+02	2.97E-02	9.60E+01	1.73E-01
UM-500S-3250E (6-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	3.62E+00	9.98E+02	1.43E+03	NA	NA	NA	NA	2.86E-02	2.76E+02	7.90E+00	6.64E-01	1.35E+02	7.07E+00	1.59E+02	2.97E-02	9.60E+01	7.36E-02
UM-500S-3000E (6-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	3.62E+00	1.41E+03	2.01E+03	NA	NA	NA	NA	2.86E-02	3.89E+02	1.11E+01	6.64E-01	1.35E+02	9.96E+00	1.59E+02	2.97E-02	9.60E+01	1.04E-01
UM-500S-2750E (6-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	3.62E+00	2.95E+04	4.22E+04	NA	NA	NA	NA	2.86E-02	8.16E+03	2.34E+02	6.64E-01	1.35E+02	2.09E+02	1.59E+02	2.97E-02	9.60E+01	2.18E+00
BRSD-25 (6-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	3.62E+00	6.29E+02	9.01E+02	NA	NA	NA	NA	2.86E-02	1.74E+02	4.98E+00	6.64E-01	1.35E+02	4.46E+00	1.59E+02	2.97E-02	9.60E+01	4.64E-02
UM-250S-3000E (6-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	3.62E+00	1.81E+04	2.59E+04	NA	NA	NA	NA	2.86E-02	5.00E+03	1.43E+02	6.64E-01	1.35E+02	1.28E+02	1.59E+02	2.97E-02	9.60E+01	1.33E+00
UM-250S-3250E (6-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	3.62E+00	7.95E+02	1.14E+03	NA	NA	NA	NA	2.86E-02	2.20E+02	6.30E+00	6.64E-01	1.35E+02	5.63E+00	1.59E+02	2.97E-02	9.60E+01	5.87E-02
BRSD-24 (6-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	3.62E+00	4.34E+03	6.21E+03	NA	NA	NA	NA	2.86E-02	1.20E+03	3.44E+01	6.64E-01	1.35E+02	3.07E+01	1.59E+02	2.97E-02	9.60E+01	3.20E-01
UM-250S-2750E (6-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	3.62E+00	5.93E+03	8.49E+03	NA	NA	NA	NA	2.86E-02	1.64E+03	4.70E+01	6.64E-01	1.35E+02	4.20E+01	1.59E+02	2.97E-02	9.60E+01	4.38E-01
UM-250S-2500E (6-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	3.62E+00	5.42E+02	7.76E+02	NA	NA	NA	NA	2.86E-02	1.50E+02	4.30E+00	6.64E-01	1.35E+02	3.84E+00	1.59E+02	2.97E-02	9.60E+01	4.00E-02
UM-500N-2500E (6-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	3.62E+00	7.45E+02	1.07E+03	NA	NA	NA	NA	2.86E-02	2.06E+02	5.90E+00	6.64E-01	1.35E+02	5.28E+00	1.59E+02	2.97E-02	9.60E+01	5.50E-02
UM-250N-2500E (6-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	3.62E+00	2.44E+04	3.49E+04	NA	NA	NA	NA	2.86E-02	6.74E+03	1.93E+02	6.64E-01	1.35E+02	1.73E+02	1.59E+02	2.97E-02	9.60E+01	1.80E+00
UM-250N-2250E (6-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	3.62E+00	1.25E+03	1.80E+03	NA	NA	NA	NA	2.86E-02	3.47E+02	9.94E+00	6.64E-01	1.35E+02	8.89E+00	1.59E+02	2.97E-02	9.60E+01	9.26E-02
Western Upper Marsh (6-12")																						**Maximum HQ (Eastern Upper Marsh, 6-12")**	**2.18E+00**
UM-500S-2500E (6-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	5.04E+00	7.67E+02	1.10E+03	NA	NA	NA	NA	2.86E-02	1.52E+02	4.35E+00	6.64E-01	1.35E+02	5.42E+00	1.59E+02	2.97E-02	9.60E+01	5.65E-02
UM-0N-2000E (6-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	5.04E+00	3.87E+04	5.54E+04	NA	NA	NA	NA	2.86E-02	7.67E+03	2.20E+02	6.64E-01	1.35E+02	2.74E+02	1.59E+02	2.97E-02	9.60E+01	2.85E+00
UM-500S-2000E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-250N-1750E (6-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	5.04E+00	5.02E+02	7.19E+02	NA	NA	NA	NA	2.86E-02	9.96E+01	2.85E+00	6.64E-01	1.35E+02	3.55E+00	1.59E+02	2.97E-02	9.60E+01	3.70E-02
UM-0N-1500E (6-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	5.04E+00	8.17E+02	1.17E+03	NA	NA	NA	NA	2.86E-02	1.62E+02	4.64E+00	6.64E-01	1.35E+02	5.78E+00	1.59E+02	2.97E-02	9.60E+01	6.02E-02
UM-250S-1500E (6-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	5.04E+00	2.25E+03	3.22E+03	NA	NA	NA	NA	2.86E-02	4.46E+02	1.28E+01	6.64E-01	1.35E+02	1.59E+01	1.59E+02	2.97E-02	9.60E+01	1.66E-01
UM-250S-1250E (6-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	5.04E+00	4.72E+02	6.75E+02	NA	NA	NA	NA	2.86E-02	9.35E+01	2.68E+00	6.64E-01	1.35E+02	3.33E+00	1.59E+02	2.97E-02	9.60E+01	3.47E-02
BRSD-6 (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-1000E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-750E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-500E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-250S-500E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-250E (6-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	5.04E+00	4.91E+02	7.03E+02	NA	NA	NA	NA	2.86E-02	9.74E+01	2.79E+00	6.64E-01	1.35E+02	3.47E+00	1.59E+02	2.97E-02	9.60E+01	3.62E-02
UM-250S-250E (6-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	5.04E+00	1.42E+03	2.03E+03	NA	NA	NA	NA	2.86E-02	2.81E+02	8.05E+00	6.64E-01	1.35E+02	1.00E+01	1.59E+02	2.97E-02	9.60E+01	1.04E-01
BRSD-7 (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-8 (6-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	5.04E+00	5.70E+03	8.16E+03	NA	NA	NA	NA	2.86E-02	1.13E+03	3.24E+01	6.64E-01	1.35E+02	4.03E+01	1.59E+02	2.97E-02	9.60E+01	4.20E-01
UM-500S-500E (6-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	5.04E+00	5.09E+02	7.29E+02	NA	NA	NA	NA	2.86E-02	1.01E+02	2.89E+00	6.64E-01	1.35E+02	3.60E+00	1.59E+02	2.97E-02	9.60E+01	3.75E-02
BRSD-9 (6-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	5.04E+00	8.88E+03	1.27E+04	NA	NA	NA	NA	2.86E-02	1.76E+03	5.04E+01	6.64E-01	1.35E+02	6.28E+01	1.59E+02	2.97E-02	9.60E+01	6.54E-01
BRSD-10 (6-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	5.04E+00	2.48E+04	3.55E+04	NA	NA	NA	NA	2.86E-02	4.92E+03	1.41E+02	6.64E-01	1.35E+02	1.75E+02	1.59E+02	2.97E-02	9.60E+01	1.83E+00
BRSD-11 (6-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	5.04E+00	1.47E+03	2.11E+03	NA	NA	NA	NA	2.86E-02	2.92E+02	8.36E+00	6.64E-01	1.35E+02	1.04E+01	1.59E+02	2.97E-02	9.60E+01	1.08E-01

TABLE C-12FA: MANGANESE DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 12 - MARSH, TERRESTRIAL RECEPTORS (Continued)
Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)
calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 118.73

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
White-Tailed Deer (Large Herbivorous Mammals)																							
Middle Marsh (0-2")																						**Maximum HQ (Western Upper Marsh, 6-12")**	**2.85E+00**
MMSD-201 (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	5.04E+00	1.01E+04	1.45E+04	NA	NA	NA	NA	2.86E-02	2.01E+03	5.76E+01	6.64E-01	1.35E+02	7.17E+01	1.59E+02	2.97E-02	9.60E+01	7.47E-01
MMSD-202 (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	5.04E+00	7.97E+02	1.14E+03	NA	NA	NA	NA	2.86E-02	1.58E+02	4.52E+00	6.64E-01	1.35E+02	5.63E+00	1.59E+02	2.97E-02	9.60E+01	5.87E-02
Middle Marsh (2-6")																						**Maximum HQ (Middle Marsh, 0-2")**	**7.47E-01**
MMSD-201 (2-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	5.04E+00	7.46E+03	1.07E+04	NA	NA	NA	NA	2.86E-02	1.48E+03	4.24E+01	6.64E-01	1.35E+02	5.28E+01	1.59E+02	2.97E-02	9.60E+01	5.50E-01
MMSD-202 (2-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	5.04E+00	1.13E+03	1.62E+03	NA	NA	NA	NA	2.86E-02	2.25E+02	6.44E+00	6.64E-01	1.35E+02	8.02E+00	1.59E+02	2.97E-02	9.60E+01	8.36E-02
Middle Marsh (6-12")																						**Maximum HQ (Middle Marsh, 2-6")**	**5.50E-01**
MMSD-201 (6-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	5.04E+00	8.98E+03	1.29E+04	NA	NA	NA	NA	2.86E-02	1.78E+03	5.10E+01	6.64E-01	1.35E+02	6.35E+01	1.59E+02	2.97E-02	9.60E+01	6.61E-01
MMSD-202 (6-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	5.04E+00	1.37E+03	1.96E+03	NA	NA	NA	NA	2.86E-02	2.72E+02	7.79E+00	6.64E-01	1.35E+02	9.70E+00	1.59E+02	2.97E-02	9.60E+01	1.01E-01
Lower Marsh (0-2")																						**Maximum HQ (Middle Marsh, 6-12")**	**6.61E-01**
LMSD-201 (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	5.04E+00	1.02E+03	1.46E+03	NA	NA	NA	NA	2.86E-02	2.02E+02	5.78E+00	6.64E-01	1.35E+02	7.20E+00	1.59E+02	2.97E-02	9.60E+01	7.51E-02
LMSD-202 (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
LMSD-203 (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	5.04E+00	1.03E+04	1.47E+04	NA	NA	NA	NA	2.86E-02	2.04E+03	5.84E+01	6.64E-01	1.35E+02	7.28E+01	1.59E+02	2.97E-02	9.60E+01	7.58E-01
LMSD-204 (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	5.04E+00	1.62E+03	2.32E+03	NA	NA	NA	NA	2.86E-02	3.22E+02	9.22E+00	6.64E-01	1.35E+02	1.15E+01	1.59E+02	2.97E-02	9.60E+01	1.20E-01
Lower Marsh (2-6")																						**Maximum HQ (Lower Marsh, 0-2")**	**7.58E-01**
LMSD-201 (2-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	5.04E+00	8.83E+02	1.26E+03	NA	NA	NA	NA	2.86E-02	1.75E+02	5.01E+00	6.64E-01	1.35E+02	6.24E+00	1.59E+02	2.97E-02	9.60E+01	6.50E-02
LMSD-202 (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
LMSD-203 (2-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	5.04E+00	1.16E+04	1.66E+04	NA	NA	NA	NA	2.86E-02	2.30E+03	6.59E+01	6.64E-01	1.35E+02	8.20E+01	1.59E+02	2.97E-02	9.60E+01	8.55E-01
LMSD-204 (2-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	5.04E+00	2.44E+03	3.49E+03	NA	NA	NA	NA	2.86E-02	4.84E+02	1.39E+01	6.64E-01	1.35E+02	1.73E+01	1.59E+02	2.97E-02	9.60E+01	1.80E-01
Lower Marsh (6-12")																						**Maximum HQ (Lower Marsh, 2-6")**	**8.55E-01**
LMSD-201 (6-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	5.04E+00	9.18E+02	1.31E+03	NA	NA	NA	NA	2.86E-02	1.82E+02	5.21E+00	6.64E-01	1.35E+02	6.49E+00	1.59E+02	2.97E-02	9.60E+01	6.76E-02
LMSD-202 (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
LMSD-203 (6-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	5.04E+00	3.62E+04	5.18E+04	NA	NA	NA	NA	2.86E-02	7.18E+03	2.06E+02	6.64E-01	1.35E+02	2.56E+02	1.59E+02	2.97E-02	9.60E+01	2.67E+00
LMSD-204 (6-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	5.04E+00	2.92E+03	4.19E+03	NA	NA	NA	NA	2.86E-02	5.80E+02	1.66E+01	6.64E-01	1.35E+02	2.07E+01	1.59E+02	2.97E-02	9.60E+01	2.16E-01
																						Maximum HQ (Lower Marsh, 6-12")	**2.67E+00**
Red Fox (Carnivorous Mammals)																							
Reference Sites																							
BRSD-5 (0-2")	1.72E-01	1.72E-01	1.13E-01	3.62E+01	6.20E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.20E+02	1.54E+00	8.77E-02	4.54E+00	1.50E-01	1.59E+02	2.97E-02	1.18E+02	1.27E-03
BRSD-5 (2-6")	1.72E-01	1.72E-01	1.13E-01	2.82E+01	4.85E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.50E+02	1.20E+00	8.77E-02	4.54E+00	1.17E-01	1.59E+02	2.97E-02	1.18E+02	9.94E-04
BRSD-5 (6-12")	1.72E-01	1.72E-01	1.13E-01	2.76E+01	4.73E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.44E+02	1.17E+00	8.77E-02	4.54E+00	1.14E-01	1.59E+02	2.97E-02	1.18E+02	9.70E-04
PGBG-1 (0-2")	1.72E-01	1.72E-01	1.13E-01	7.86E+01	1.35E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	6.96E+02	3.34E+00	8.77E-02	4.54E+00	3.25E-01	1.59E+02	2.97E-02	1.18E+02	2.77E-03
PGBG-1 (2-6")	1.72E-01	1.72E-01	1.13E-01	2.25E+01	3.86E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.99E+02	9.56E-01	8.77E-02	4.54E+00	9.31E-02	1.59E+02	2.97E-02	1.18E+02	7.91E-04
PGBG-1 (6-12")	1.72E-01	1.72E-01	1.13E-01	9.94E+00	1.71E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	8.80E+01	4.23E-01	8.77E-02	4.54E+00	4.12E-02	1.59E+02	2.97E-02	1.18E+02	3.50E-04
PGBG-2 (0-2")	1.72E-01	1.72E-01	1.13E-01	6.62E+01	1.14E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.86E+02	2.81E+00	8.77E-02	4.54E+00	2.74E-01	1.59E+02	2.97E-02	1.18E+02	2.33E-03
PGBG-2 (2-6")	1.72E-01	1.72E-01	1.13E-01	5.63E+01	9.65E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.98E+02	2.39E+00	8.77E-02	4.54E+00	2.33E-01	1.59E+02	2.97E-02	1.18E+02	1.98E-03
PGBG-2 (6-12")	1.72E-01	1.72E-01	1.13E-01	3.31E+01	5.68E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.93E+02	1.41E+00	8.77E-02	4.54E+00	1.37E-01	1.59E+02	2.97E-02	1.18E+02	1.16E-03
Eastern Upper Marsh (0-2")																						**Minimum HQ (Reference Sites)**	**3.50E-04**
UM-1000S-3500E (0-2")	1.72E-01	1.72E-01	2.07E-01	5.85E+01	1.00E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.83E+02	1.36E+00	8.77E-02	4.54E+00	2.20E-01	1.59E+02	2.97E-02	1.18E+02	1.87E-03
BRSD-15 (0-2")	1.72E-01	1.72E-01	2.07E-01	1.31E+02	2.25E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	6.35E+02	3.05E+00	8.77E-02	4.54E+00	4.94E-01	1.59E+02	2.97E-02	1.18E+02	4.20E-03
BRSD-4 (0-2")	1.72E-01	1.72E-01	2.07E-01	4.34E+01	7.44E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.10E+02	1.01E+00	8.77E-02	4.54E+00	1.63E-01	1.59E+02	2.97E-02	1.18E+02	1.39E-03
UM-750S-3500E (0-2")	1.72E-01	1.72E-01	2.07E-01	1.54E+03	2.63E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	7.43E+03	3.57E+01	8.77E-02	4.54E+00	5.78E+00	1.59E+02	2.97E-02	1.18E+02	4.91E-02
BRSD-16 (0-2")	1.72E-01	1.72E-01	2.07E-01	2.15E+02	3.69E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.04E+03	5.00E+00	8.77E-02	4.54E+00	8.09E-01	1.59E+02	2.97E-02	1.18E+02	6.88E-03
UM-750S-3000E (0-2")	1.72E-01	1.72E-01	2.07E-01	1.47E+03	2.52E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	7.11E+03	3.42E+01	8.77E-02	4.54E+00	5.53E+00	1.59E+02	2.97E-02	1.18E+02	4.70E-02
BRSD-3 (0-2")	1.72E-01	1.72E-01	2.07E-01	2.56E+02	4.40E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.24E+03	5.96E+00	8.77E-02	4.54E+00	9.65E-01	1.59E+02	2.97E-02	1.18E+02	8.20E-03
UM-500S-3250E (0-2")	1.72E-01	1.72E-01	2.07E-01	5.35E+02	9.18E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.59E+03	1.24E+01	8.77E-02	4.54E+00	2.02E+00	1.59E+02	2.97E-02	1.18E+02	1.71E-02
UM-500S-3000E (0-2")	1.72E-01	1.72E-01	2.07E-01	2.44E+02	4.18E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.18E+03	5.67E+00	8.77E-02	4.54E+00	9.18E-01	1.59E+02	2.97E-02	1.18E+02	7.81E-03
UM-500S-2750E (0-2")	1.72E-01	1.72E-01	2.07E-01	1.48E+03	2.54E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	7.16E+03	3.44E+01	8.77E-02	4.54E+00	5.57E+00	1.59E+02	2.97E-02	1.18E+02	4.74E-02
BRSD-25 (0-2")	1.72E-01	1.72E-01	2.07E-01	3.10E+02	5.32E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.50E+03	7.21E+00	8.77E-02	4.54E+00	1.17E+00	1.59E+02	2.97E-02	1.18E+02	9.92E-03
UM-250S-3000E (0-2")	1.72E-01	1.72E-01	2.07E-01	9.09E+02	1.56E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.40E+03	2.11E+01	8.77E-02	4.54E+00	3.42E+00	1.59E+02	2.97E-02	1.18E+02	2.91E-02
UM-250S-3250E (0-2")	1.72E-01	1.72E-01	2.07E-01	3.04E+02	5.21E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.47E+03	7.06E+00	8.77E-02	4.54E+00	1.14E+00	1.59E+02	2.97E-02	1.18E+02	9.72E-03
BRSD-24 (0-2")	1.72E-01	1.72E-01	2.07E-01	1.65E+03	2.83E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	7.99E+03	3.84E+01	8.77E-02	4.54E+00	6.22E+00	1.59E+02	2.97E-02	1.18E+02	5.29E-02
UM-250S-2750E (0-2")	1.72E-01	1.72E-01	2.07E-01	1.61E+03	2.77E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	7.81E+03	3.75E+01	8.77E-02	4.54E+00	6.08E+00	1.59E+02	2.97E-02	1.18E+02	5.17E-02

TABLE C-12FA: MANGANESE DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 12 - MARSH, TERRESTRIAL RECEPTORS (Continued)
Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)
calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 118.73

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Red Fox (Carnivorous Mammals)																							
UM-250S-2500E (0-2")	1.72E-01	1.72E-01	2.07E-01	4.86E+01	8.33E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.35E+02	1.13E+00	8.77E-02	4.54E+00	1.83E-01	1.59E+02	2.97E-02	1.18E+02	1.55E-03
UM-0N-2500E (0-2")	1.72E-01	1.72E-01	2.07E-01	4.24E+02	7.27E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.05E+03	9.85E+00	8.77E-02	4.54E+00	1.60E+00	1.59E+02	2.97E-02	1.18E+02	1.36E-02
UM-0N-250E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-2 (0-2")	1.72E-01	1.72E-01	2.07E-01	1.59E+03	2.73E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	7.69E+03	3.69E+01	8.77E-02	4.54E+00	5.98E+00	1.59E+02	2.97E-02	1.18E+02	5.09E-02
UM-500N-2500E (0-2")	1.72E-01	1.72E-01	2.07E-01	3.37E+01	5.78E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.63E+02	7.83E-01	8.77E-02	4.54E+00	1.27E-01	1.59E+02	2.97E-02	1.18E+02	1.08E-03
UM-250N-2500E (0-2")	1.72E-01	1.72E-01	2.07E-01	7.85E+02	1.35E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.80E+03	1.83E+01	8.77E-02	4.54E+00	2.96E+00	1.59E+02	2.97E-02	1.18E+02	2.51E-02
UM-250N-2250E (0-2")	1.72E-01	1.72E-01	2.07E-01	1.57E+03	2.70E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	7.62E+03	3.66E+01	8.77E-02	4.54E+00	5.93E+00	1.59E+02	2.97E-02	1.18E+02	5.04E-02
Western Upper Marsh (0-2")																						**Maximum HQ (Eastern Upper Marsh, 0-2")**	**5.29E-02**
UM-500S-2500E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-2000E (0-2")	1.72E-01	1.72E-01	2.07E-01	8.93E+02	1.53E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.32E+03	2.08E+01	8.77E-02	4.54E+00	3.36E+00	1.59E+02	2.97E-02	1.18E+02	2.86E-02
UM-500S-2000E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-250N-1750E (0-2")	1.72E-01	1.72E-01	2.07E-01	2.60E+01	4.47E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.26E+02	6.05E-01	8.77E-02	4.54E+00	9.81E-02	1.59E+02	2.97E-02	1.18E+02	8.33E-04
UM-0N-1500E (0-2")	1.72E-01	1.72E-01	2.07E-01	2.75E+01	4.71E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.33E+02	6.39E-01	8.77E-02	4.54E+00	1.04E-01	1.59E+02	2.97E-02	1.18E+02	8.80E-04
UM-250S-1500E (0-2")	1.72E-01	1.72E-01	2.07E-01	2.42E+02	4.15E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.17E+03	5.62E+00	8.77E-02	4.54E+00	9.11E-01	1.59E+02	2.97E-02	1.18E+02	7.74E-03
UM-250S-1250E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-6 (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-1000E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-750E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-500E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-250S-500E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-250S-250E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-7 (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-8 (0-2")	1.72E-01	1.72E-01	2.07E-01	1.02E+02	1.75E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.93E+02	2.37E+00	8.77E-02	4.54E+00	3.84E-01	1.59E+02	2.97E-02	1.18E+02	3.26E-03
UM-500S-500E (0-2")	1.72E-01	1.72E-01	2.07E-01	2.01E+01	3.44E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	9.71E+01	4.66E-01	8.77E-02	4.54E+00	7.56E-02	1.59E+02	2.97E-02	1.18E+02	6.42E-04
BRSD-9 (0-2")	1.72E-01	1.72E-01	2.07E-01	1.15E+03	1.97E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.55E+03	2.67E+01	8.77E-02	4.54E+00	4.32E+00	1.59E+02	2.97E-02	1.18E+02	3.67E-02
BRSD-10 (0-2")	1.72E-01	1.72E-01	2.07E-01	7.05E+02	1.21E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.41E+03	1.64E+01	8.77E-02	4.54E+00	2.65E+00	1.59E+02	2.97E-02	1.18E+02	2.26E-02
BRSD-11 (0-2")	1.72E-01	1.72E-01	2.07E-01	2.81E+02	4.82E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.36E+03	6.53E+00	8.77E-02	4.54E+00	1.06E+00	1.59E+02	2.97E-02	1.18E+02	9.00E-03
Eastern Upper Marsh (2-6")																						**Maximum HQ (Western Upper Marsh, 0-2")**	**3.67E-02**
UM-1000S-3500E (2-6")	1.72E-01	1.72E-01	2.07E-01	8.88E+01	1.52E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.30E+02	2.07E+00	8.77E-02	4.54E+00	3.35E-01	1.59E+02	2.97E-02	1.18E+02	2.84E-03
BRSD-15 (2-6")	1.72E-01	1.72E-01	2.07E-01	2.07E+02	3.54E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.00E+03	4.80E+00	8.77E-02	4.54E+00	7.78E-01	1.59E+02	2.97E-02	1.18E+02	6.61E-03
BRSD-4 (2-6")	1.72E-01	1.72E-01	2.07E-01	1.97E+01	3.38E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	9.54E+01	4.58E-01	8.77E-02	4.54E+00	7.42E-02	1.59E+02	2.97E-02	1.18E+02	6.31E-04
UM-750S-3500E (2-6")	1.72E-01	1.72E-01	2.07E-01	1.46E+03	2.51E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	7.09E+03	3.41E+01	8.77E-02	4.54E+00	5.52E+00	1.59E+02	2.97E-02	1.18E+02	4.69E-02
BRSD-16 (2-6")	1.72E-01	1.72E-01	2.07E-01	2.09E+03	3.58E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.01E+04	4.85E+01	8.77E-02	4.54E+00	7.86E+00	1.59E+02	2.97E-02	1.18E+02	6.68E-02
UM-750S-3000E (2-6")	1.72E-01	1.72E-01	2.07E-01	1.54E+03	2.64E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	7.44E+03	3.57E+01	8.77E-02	4.54E+00	5.79E+00	1.59E+02	2.97E-02	1.18E+02	4.92E-02
BRSD-3 (2-6")	1.72E-01	1.72E-01	2.07E-01	3.49E+02	5.99E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.69E+03	8.12E+00	8.77E-02	4.54E+00	1.32E+00	1.59E+02	2.97E-02	1.18E+02	1.12E-02
UM-500S-3250E (2-6")	1.72E-01	1.72E-01	2.07E-01	8.84E+01	1.52E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.28E+02	2.06E+00	8.77E-02	4.54E+00	3.33E-01	1.59E+02	2.97E-02	1.18E+02	2.83E-03
UM-500S-3000E (2-6")	1.72E-01	1.72E-01	2.07E-01	6.55E+01	1.12E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.17E+02	1.52E+00	8.77E-02	4.54E+00	2.47E-01	1.59E+02	2.97E-02	1.18E+02	2.10E-03
UM-500S-2750E (2-6")	1.72E-01	1.72E-01	2.07E-01	1.73E+03	2.96E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	8.36E+03	4.02E+01	8.77E-02	4.54E+00	6.51E+00	1.59E+02	2.97E-02	1.18E+02	5.53E-02
BRSD-25 (2-6")	1.72E-01	1.72E-01	2.07E-01	2.19E+02	3.76E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.06E+03	5.09E+00	8.77E-02	4.54E+00	8.25E-01	1.59E+02	2.97E-02	1.18E+02	7.01E-03
UM-250S-3000E (2-6")	1.72E-01	1.72E-01	2.07E-01	5.31E+02	9.11E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.57E+03	1.23E+01	8.77E-02	4.54E+00	2.00E+00	1.59E+02	2.97E-02	1.18E+02	1.70E-02
UM-250S-3250E (2-6")	1.72E-01	1.72E-01	2.07E-01	2.67E+01	4.57E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.29E+02	6.20E-01	8.77E-02	4.54E+00	1.00E-01	1.59E+02	2.97E-02	1.18E+02	8.53E-04
BRSD-24 (2-6")	1.72E-01	1.72E-01	2.07E-01	5.91E+02	1.01E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.86E+03	1.37E+01	8.77E-02	4.54E+00	2.23E+00	1.59E+02	2.97E-02	1.18E+02	1.89E-02
UM-250S-2750E (2-6")	1.72E-01	1.72E-01	2.07E-01	1.21E+03	2.07E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.85E+03	2.81E+01	8.77E-02	4.54E+00	4.55E+00	1.59E+02	2.97E-02	1.18E+02	3.87E-02
UM-0N-2500E (2-6")	1.72E-01	1.72E-01	2.07E-01	6.65E+02	1.14E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.22E+03	1.55E+01	8.77E-02	4.54E+00	2.51E+00	1.59E+02	2.97E-02	1.18E+02	2.13E-02
BRSD-2 (2-6")	1.72E-01	1.72E-01	2.07E-01	1.26E+03	2.16E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	6.09E+03	2.93E+01	8.77E-02	4.54E+00	4.74E+00	1.59E+02	2.97E-02	1.18E+02	4.03E-02
UM-500N-2500E (2-6")	1.72E-01	1.72E-01	2.07E-01	3.84E+01	6.59E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.86E+02	8.93E-01	8.77E-02	4.54E+00	1.45E-01	1.59E+02	2.97E-02	1.18E+02	1.23E-03
UM-250N-2500E (2-6")	1.72E-01	1.72E-01	2.07E-01	1.65E+03	2.83E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	7.98E+03	3.83E+01	8.77E-02	4.54E+00	6.21E+00	1.59E+02	2.97E-02	1.18E+02	5.28E-02
UM-250N-2250E (2-6")	1.72E-01	1.72E-01	2.07E-01	5.76E+01	9.89E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.79E+02	1.34E+00	8.77E-02	4.54E+00	2.17E-01	1.59E+02	2.97E-02	1.18E+02	1.85E-03

TABLE C-12FA: MANGANESE DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 12 - MARSH, TERRESTRIAL RECEPTORS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 118.73

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Red Fox (Carnivorous Mammals)																							
Western Upper Marsh (2-6")																						**Maximum HQ (Eastern Upper Marsh, 2-6")**	**6.68E-02**
UM-500S-2500E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-2000E (2-6")	1.72E-01	1.72E-01	2.07E-01	7.89E+02	1.35E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.82E+03	1.83E+01	8.77E-02	4.54E+00	2.97E+00	1.59E+02	2.97E-02	1.18E+02	2.53E-02
UM-500S-2000E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-250N-1750E (2-6")	1.72E-01	1.72E-01	2.07E-01	3.68E+01	6.31E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.78E+02	8.55E-01	8.77E-02	4.54E+00	1.39E-01	1.59E+02	2.97E-02	1.18E+02	1.18E-03
UM-0N-1500E (2-6")	1.72E-01	1.72E-01	2.07E-01	2.71E+01	4.64E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.31E+02	6.29E-01	8.77E-02	4.54E+00	1.02E-01	1.59E+02	2.97E-02	1.18E+02	8.67E-04
UM-250S-1500E (2-6")	1.72E-01	1.72E-01	2.07E-01	3.02E+02	5.17E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.46E+03	7.01E+00	8.77E-02	4.54E+00	1.14E+00	1.59E+02	2.97E-02	1.18E+02	9.66E-03
UM-250S-1250E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-6 (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-1000E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-750E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-500E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-250S-500E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-250E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-250S-250E (2-6")	1.72E-01	1.72E-01	2.07E-01	1.84E+01	3.16E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	8.91E+01	4.28E-01	8.77E-02	4.54E+00	6.93E-02	1.59E+02	2.97E-02	1.18E+02	5.89E-04
BRSD-7 (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-8 (2-6")	1.72E-01	1.72E-01	2.07E-01	2.91E+02	5.00E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.41E+03	6.77E+00	8.77E-02	4.54E+00	1.10E+00	1.59E+02	2.97E-02	1.18E+02	9.33E-03
UM-500S-500E (2-6")	1.72E-01	1.72E-01	2.07E-01	2.09E+01	3.58E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.01E+02	4.85E-01	8.77E-02	4.54E+00	7.86E-02	1.59E+02	2.97E-02	1.18E+02	6.68E-04
BRSD-9 (2-6")	1.72E-01	1.72E-01	2.07E-01	4.36E+02	7.48E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.11E+03	1.01E+01	8.77E-02	4.54E+00	1.64E+00	1.59E+02	2.97E-02	1.18E+02	1.40E-02
BRSD-10 (2-6")	1.72E-01	1.72E-01	2.07E-01	6.88E+02	1.18E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.33E+03	1.60E+01	8.77E-02	4.54E+00	2.59E+00	1.59E+02	2.97E-02	1.18E+02	2.20E-02
BRSD-11 (2-6")	1.72E-01	1.72E-01	2.07E-01	6.55E+01	1.12E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.17E+02	1.52E+00	8.77E-02	4.54E+00	2.47E-01	1.59E+02	2.97E-02	1.18E+02	2.10E-03
Eastern Upper Marsh (6-12")																						**Maximum HQ (Western Upper Marsh, 2-6")**	**2.53E-02**
UM-1000S-3500E (6-12")	1.72E-01	1.72E-01	2.07E-01	3.16E+01	5.42E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.53E+02	7.35E-01	8.77E-02	4.54E+00	1.19E-01	1.59E+02	2.97E-02	1.18E+02	1.01E-03
BRSD-4 (6-12")	1.72E-01	1.72E-01	2.07E-01	9.77E+01	1.68E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.73E+02	2.27E+00	8.77E-02	4.54E+00	3.68E-01	1.59E+02	2.97E-02	1.18E+02	3.13E-03
UM-750S-3500E (6-12")	1.72E-01	1.72E-01	2.07E-01	1.31E+03	2.25E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	6.35E+03	3.05E+01	8.77E-02	4.54E+00	4.94E+00	1.59E+02	2.97E-02	1.18E+02	4.20E-02
BRSD-16 (6-12")	1.72E-01	1.72E-01	2.07E-01	4.92E+02	8.44E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.38E+03	1.14E+01	8.77E-02	4.54E+00	1.85E+00	1.59E+02	2.97E-02	1.18E+02	1.57E-02
UM-750S-3000E (6-12")	1.72E-01	1.72E-01	2.07E-01	1.50E+03	2.58E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	7.28E+03	3.50E+01	8.77E-02	4.54E+00	5.67E+00	1.59E+02	2.97E-02	1.18E+02	4.82E-02
BRSD-3 (6-12")	1.72E-01	1.72E-01	2.07E-01	1.34E+02	2.30E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	6.48E+02	3.11E+00	8.77E-02	4.54E+00	5.04E-01	1.59E+02	2.97E-02	1.18E+02	4.29E-03
UM-500S-3250E (6-12")	1.72E-01	1.72E-01	2.07E-01	5.70E+01	9.78E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.76E+02	1.33E+00	8.77E-02	4.54E+00	2.15E-01	1.59E+02	2.97E-02	1.18E+02	1.83E-03
UM-500S-3000E (6-12")	1.72E-01	1.72E-01	2.07E-01	8.04E+01	1.38E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.89E+02	1.87E+00	8.77E-02	4.54E+00	3.03E-01	1.59E+02	2.97E-02	1.18E+02	2.57E-03
UM-500S-2750E (6-12")	1.72E-01	1.72E-01	2.07E-01	1.69E+03	2.89E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	8.16E+03	3.92E+01	8.77E-02	4.54E+00	6.35E+00	1.59E+02	2.97E-02	1.18E+02	5.40E-02
BRSD-25 (6-12")	1.72E-01	1.72E-01	2.07E-01	3.60E+01	6.17E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.74E+02	8.36E-01	8.77E-02	4.54E+00	1.35E-01	1.59E+02	2.97E-02	1.18E+02	1.15E-03
UM-250S-3000E (6-12")	1.72E-01	1.72E-01	2.07E-01	1.03E+03	1.77E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.00E+03	2.40E+01	8.77E-02	4.54E+00	3.89E+00	1.59E+02	2.97E-02	1.18E+02	3.31E-02
UM-250S-3250E (6-12")	1.72E-01	1.72E-01	2.07E-01	4.55E+01	7.80E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.20E+02	1.06E+00	8.77E-02	4.54E+00	1.71E-01	1.59E+02	2.97E-02	1.18E+02	1.46E-03
BRSD-24 (6-12")	1.72E-01	1.72E-01	2.07E-01	2.48E+02	4.25E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.20E+03	5.76E+00	8.77E-02	4.54E+00	9.34E-01	1.59E+02	2.97E-02	1.18E+02	7.94E-03
UM-250S-2750E (6-12")	1.72E-01	1.72E-01	2.07E-01	3.39E+02	5.81E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.64E+03	7.88E+00	8.77E-02	4.54E+00	1.28E+00	1.59E+02	2.97E-02	1.18E+02	1.08E-02
UM-250S-2500E (6-12")	1.72E-01	1.72E-01	2.07E-01	3.10E+01	5.32E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.50E+02	7.21E-01	8.77E-02	4.54E+00	1.17E-01	1.59E+02	2.97E-02	1.18E+02	9.92E-04
BRSD-2 (6-12")	1.72E-01	1.72E-01	2.07E-01	2.54E+02	4.36E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.23E+03	5.91E+00	8.77E-02	4.54E+00	9.57E-01	1.59E+02	2.97E-02	1.18E+02	8.14E-03
UM-500N-2500E (6-12")	1.72E-01	1.72E-01	2.07E-01	4.26E+01	7.30E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.06E+02	9.90E-01	8.77E-02	4.54E+00	1.60E-01	1.59E+02	2.97E-02	1.18E+02	1.36E-03
UM-250N-2500E (6-12")	1.72E-01	1.72E-01	2.07E-01	1.39E+03	2.39E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	6.74E+03	3.24E+01	8.77E-02	4.54E+00	5.25E+00	1.59E+02	2.97E-02	1.18E+02	4.46E-02
UM-250N-2250E (6-12")	1.72E-01	1.72E-01	2.07E-01	7.17E+01	1.23E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.47E+02	1.67E+00	8.77E-02	4.54E+00	2.70E-01	1.59E+02	2.97E-02	1.18E+02	2.30E-03
Western Upper Marsh (6-12")																						**Maximum HQ (Eastern Upper Marsh, 6-12")**	**5.40E-02**
UM-500S-2500E (6-12")	1.72E-01	1.72E-01	2.07E-01	3.14E+01	5.39E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.52E+02	7.30E-01	8.77E-02	4.54E+00	1.18E-01	1.59E+02	2.97E-02	1.18E+02	1.01E-03
UM-0N-2000E (6-12")	1.72E-01	1.72E-01	2.07E-01	1.58E+03	2.72E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	7.67E+03	3.68E+01	8.77E-02	4.54E+00	5.97E+00	1.59E+02	2.97E-02	1.18E+02	5.07E-02
UM-500S-2000E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-250N-1750E (6-12")	1.72E-01	1.72E-01	2.07E-01	2.06E+01	3.53E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	9.96E+01	4.78E-01	8.77E-02	4.54E+00	7.75E-02	1.59E+02	2.97E-02	1.18E+02	6.59E-04
UM-0N-1500E (6-12")	1.72E-01	1.72E-01	2.07E-01	3.35E+01	5.74E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.62E+02	7.78E-01	8.77E-02	4.54E+00	1.26E-01	1.59E+02	2.97E-02	1.18E+02	1.07E-03
UM-250S-1500E (6-12")	1.72E-01	1.72E-01	2.07E-01	9.21E+01	1.58E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.46E+02	2.14E+00	8.77E-02	4.54E+00	3.47E-01	1.59E+02	2.97E-02	1.18E+02	2.95E-03
UM-250S-1250E (6-12")	1.72E-01	1.72E-01	2.07E-01	1.93E+01	3.31E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	9.35E+01	4.49E-01	8.77E-02	4.54E+00	7.28E-02	1.59E+02	2.97E-02	1.18E+02	6.18E-04

TABLE C-12FA: MANGANESE DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 12 - MARSH, TERRESTRIAL RECEPTORS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables; from BAF table; linked to soil or sed concentration table (VLOOKUP)

calculated values; linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 118.73

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Red Fox (Carnivorous Mammals)																							
BRSD-6 (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-1000E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-750E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-500E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-250S-500E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-250E (6-12")	1.72E-01	1.72E-01	2.07E-01	2.01E+01	3.45E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	9.74E+01	4.68E-01	8.77E-02	4.54E+00	7.58E-02	1.59E+02	2.97E-02	1.18E+02	6.44E-04
UM-250S-250E (6-12")	1.72E-01	1.72E-01	2.07E-01	5.81E+01	9.96E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.81E+02	1.35E+00	8.77E-02	4.54E+00	2.19E-01	1.59E+02	2.97E-02	1.18E+02	1.86E-03
BRSD-7 (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-8 (6-12")	1.72E-01	1.72E-01	2.07E-01	2.33E+02	4.01E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.13E+03	5.43E+00	8.77E-02	4.54E+00	8.79E-01	1.59E+02	2.97E-02	1.18E+02	7.47E-03
UM-500S-500E (6-12")	1.72E-01	1.72E-01	2.07E-01	2.09E+01	3.58E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.01E+02	4.85E-01	8.77E-02	4.54E+00	7.86E-02	1.59E+02	2.97E-02	1.18E+02	6.68E-04
BRSD-9 (6-12")	1.72E-01	1.72E-01	2.07E-01	3.64E+02	6.24E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.76E+03	8.45E+00	8.77E-02	4.54E+00	1.37E+00	1.59E+02	2.97E-02	1.18E+02	1.16E-02
BRSD-10 (6-12")	1.72E-01	1.72E-01	2.07E-01	1.02E+03	1.74E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.92E+03	2.36E+01	8.77E-02	4.54E+00	3.83E+00	1.59E+02	2.97E-02	1.18E+02	3.25E-02
BRSD-11 (6-12")	1.72E-01	1.72E-01	2.07E-01	6.03E+01	1.03E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.92E+02	1.40E+00	8.77E-02	4.54E+00	2.27E-01	1.59E+02	2.97E-02	1.18E+02	1.93E-03
Middle Marsh (0-2")																						**Maximum HQ (Western Upper Marsh, 6-12")**	**5.07E-02**
MMSD-201 (0-2")	1.72E-01	1.72E-01	2.07E-01	4.15E+02	7.12E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.01E+03	9.65E+00	8.77E-02	4.54E+00	1.56E+00	1.59E+02	2.97E-02	1.18E+02	1.33E-02
MMSD-202 (0-2")	1.72E-01	1.72E-01	2.07E-01	3.26E+01	5.60E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.58E+02	7.59E-01	8.77E-02	4.54E+00	1.23E-01	1.59E+02	2.97E-02	1.18E+02	1.05E-03
Middle Marsh (2-6")																						**Maximum HQ (Middle Marsh, 0-2")**	**1.33E-02**
MMSD-201 (2-6")	1.72E-01	1.72E-01	2.07E-01	3.06E+02	5.25E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.48E+03	7.11E+00	8.77E-02	4.54E+00	1.15E+00	1.59E+02	2.97E-02	1.18E+02	9.79E-03
MMSD-202 (2-6")	1.72E-01	1.72E-01	2.07E-01	4.65E+01	7.98E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.25E+02	1.08E+00	8.77E-02	4.54E+00	1.75E-01	1.59E+02	2.97E-02	1.18E+02	1.49E-03
Middle Marsh (6-12")																						**Maximum HQ (Middle Marsh, 2-6")**	**9.79E-03**
MMSD-201 (6-12")	1.72E-01	1.72E-01	2.07E-01	3.68E+02	6.31E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.78E+03	8.55E+00	8.77E-02	4.54E+00	1.39E+00	1.59E+02	2.97E-02	1.18E+02	1.18E-02
MMSD-202 (6-12")	1.72E-01	1.72E-01	2.07E-01	5.62E+01	9.64E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.72E+02	1.31E+00	8.77E-02	4.54E+00	2.12E-01	1.59E+02	2.97E-02	1.18E+02	1.80E-03
Lower Marsh (0-2")																						**Maximum HQ (Middle Marsh, 6-12")**	**1.18E-02**
LMSD-201 (0-2")	1.72E-01	1.72E-01	2.07E-01	4.17E+01	7.16E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.02E+02	9.70E-01	8.77E-02	4.54E+00	1.57E-01	1.59E+02	2.97E-02	1.18E+02	1.34E-03
LMSD-202 (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
LMSD-203 (0-2")	1.72E-01	1.72E-01	2.07E-01	4.21E+02	7.23E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.04E+03	9.80E+00	8.77E-02	4.54E+00	1.59E+00	1.59E+02	2.97E-02	1.18E+02	1.35E-02
LMSD-204 (0-2")	1.72E-01	1.72E-01	2.07E-01	6.65E+01	1.14E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.22E+02	1.55E+00	8.77E-02	4.54E+00	2.51E-01	1.59E+02	2.97E-02	1.18E+02	2.13E-03
Lower Marsh (2-6")																						**Maximum HQ (Lower Marsh, 0-2")**	**1.35E-02**
LMSD-201 (2-6")	1.72E-01	1.72E-01	2.07E-01	3.62E+01	6.20E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.75E+02	8.41E-01	8.77E-02	4.54E+00	1.36E-01	1.59E+02	2.97E-02	1.18E+02	1.16E-03
LMSD-202 (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
LMSD-203 (2-6")	1.72E-01	1.72E-01	2.07E-01	4.75E+02	8.15E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.30E+03	1.10E+01	8.77E-02	4.54E+00	1.79E+00	1.59E+02	2.97E-02	1.18E+02	1.52E-02
LMSD-204 (2-6")	1.72E-01	1.72E-01	2.07E-01	1.00E+02	1.72E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.84E+02	2.32E+00	8.77E-02	4.54E+00	3.77E-01	1.59E+02	2.97E-02	1.18E+02	3.20E-03
Lower Marsh (6-12")																						**Maximum HQ (Lower Marsh, 2-6")**	**1.52E-02**
LMSD-201 (6-12")	1.72E-01	1.72E-01	2.07E-01	3.76E+01	6.45E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.82E+02	8.74E-01	8.77E-02	4.54E+00	1.42E-01	1.59E+02	2.97E-02	1.18E+02	1.20E-03
LMSD-202 (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
LMSD-203 (6-12")	1.72E-01	1.72E-01	2.07E-01	1.48E+03	2.54E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	7.18E+03	3.45E+01	8.77E-02	4.54E+00	5.59E+00	1.59E+02	2.97E-02	1.18E+02	4.75E-02
LMSD-204 (6-12")	1.72E-01	1.72E-01	2.07E-01	1.20E+02	2.06E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.80E+02	2.79E+00	8.77E-02	4.54E+00	4.51E-01	1.59E+02	2.97E-02	1.18E+02	3.84E-03
																						Maximum HQ (Lower Marsh, 6-12")	**4.75E-02**
Masked Shrew (Omnivorous Mammals, Wetland)																							
Reference Sites																							
BRSD-5 (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.33E+01	4.26E+03	3.60E+01	1.10E-03	3.20E+02	3.52E-01	1.00E+00	5.50E-03	6.62E+03	1.59E+02	2.97E-02	1.76E+02	3.76E+01
BRSD-5 (2-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.33E+01	3.33E+03	2.82E+01	1.10E-03	2.50E+02	2.75E-01	1.00E+00	5.50E-03	5.17E+03	1.59E+02	2.97E-02	1.76E+02	2.94E+01
BRSD-5 (6-12")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.33E+01	3.25E+03	2.75E+01	1.10E-03	2.44E+02	2.69E-01	1.00E+00	5.50E-03	5.05E+03	1.59E+02	2.97E-02	1.76E+02	2.87E+01
PGBG-1 (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.33E+01	9.26E+03	7.84E+01	1.10E-03	6.96E+02	7.66E-01	1.00E+00	5.50E-03	1.44E+04	1.59E+02	2.97E-02	1.76E+02	8.18E+01
PGBG-1 (2-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.33E+01	2.65E+03	2.24E+01	1.10E-03	1.99E+02	2.19E-01	1.00E+00	5.50E-03	4.12E+03	1.59E+02	2.97E-02	1.76E+02	2.34E+01
PGBG-1 (6-12")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.33E+01	1.17E+03	9.91E+00	1.10E-03	8.80E+01	9.69E-02	1.00E+00	5.50E-03	1.82E+03	1.59E+02	2.97E-02	1.76E+02	1.03E+01
PGBG-2 (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.33E+01	7.79E+03	6.60E+01	1.10E-03	5.86E+02	6.45E-01	1.00E+00	5.50E-03	1.21E+04	1.59E+02	2.97E-02	1.76E+02	6.89E+01
PGBG-2 (2-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.33E+01	6.62E+03	5.61E+01	1.10E-03	4.98E+02	5.48E-01	1.00E+00	5.50E-03	1.03E+04	1.59E+02	2.97E-02	1.76E+02	5.85E+01
PGBG-2 (6-12")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.33E+01	3.90E+03	3.30E+01	1.10E-03	2.93E+02	3.23E-01	1.00E+00	5.50E-03	6.06E+03	1.59E+02	2.97E-02	1.76E+02	3.44E+01

TABLE C-12FA: MANGANESE DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 12 - MARSH, TERRESTRIAL RECEPTORS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 118.73

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Masked Shrew (Omnivorous Mammals, Wetland)																							
Eastern Upper Marsh (0-2")																						**Minimum HQ (Reference Sites)**	**1.03E+01**
UM-1000S-3500E (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	3.50E+01	9.89E+03	8.38E+01	1.10E-03	2.83E+02	3.12E-01	1.00E+00	5.50E-03	1.53E+04	1.59E+02	2.97E-02	1.76E+02	8.69E+01
BRSD-15 (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	3.50E+01	2.22E+04	1.88E+02	1.10E-03	6.35E+02	6.99E-01	1.00E+00	5.50E-03	3.43E+04	1.59E+02	2.97E-02	1.76E+02	1.95E+02
BRSD-4 (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	3.50E+01	7.34E+03	6.22E+01	1.10E-03	2.10E+02	2.31E-01	1.00E+00	5.50E-03	1.13E+04	1.59E+02	2.97E-02	1.76E+02	6.45E+01
UM-750S-3500E (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	3.50E+01	2.60E+05	2.20E+03	1.10E-03	7.43E+03	8.18E+00	1.00E+00	5.50E-03	4.02E+05	1.59E+02	2.97E-02	1.76E+02	2.28E+03
BRSD-16 (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	3.50E+01	3.64E+04	3.08E+02	1.10E-03	1.04E+03	1.15E+00	1.00E+00	5.50E-03	5.62E+04	1.59E+02	2.97E-02	1.76E+02	3.19E+02
UM-750S-3000E (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	3.50E+01	2.49E+05	2.11E+03	1.10E-03	7.11E+03	7.83E+00	1.00E+00	5.50E-03	3.84E+05	1.59E+02	2.97E-02	1.76E+02	2.18E+03
BRSD-3 (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	3.50E+01	4.34E+04	3.67E+02	1.10E-03	1.24E+03	1.37E+00	1.00E+00	5.50E-03	6.70E+04	1.59E+02	2.97E-02	1.76E+02	3.81E+02
UM-500S-3250E (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	3.50E+01	9.05E+04	7.67E+02	1.10E-03	2.59E+03	2.85E+00	1.00E+00	5.50E-03	1.40E+05	1.59E+02	2.97E-02	1.76E+02	7.95E+02
UM-500S-3000E (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	3.50E+01	4.13E+04	3.49E+02	1.10E-03	1.18E+03	1.30E+00	1.00E+00	5.50E-03	6.38E+04	1.59E+02	2.97E-02	1.76E+02	3.62E+02
UM-500S-2750E (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	3.50E+01	2.50E+05	2.12E+03	1.10E-03	7.16E+03	7.88E+00	1.00E+00	5.50E-03	3.87E+05	1.59E+02	2.97E-02	1.76E+02	2.20E+03
BRSD-25 (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	3.50E+01	5.24E+04	4.44E+02	1.10E-03	1.50E+03	1.65E+00	1.00E+00	5.50E-03	8.11E+04	1.59E+02	2.97E-02	1.76E+02	4.60E+02
UM-250S-3000E (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	3.50E+01	1.54E+05	1.30E+03	1.10E-03	4.40E+03	4.84E+00	1.00E+00	5.50E-03	2.38E+05	1.59E+02	2.97E-02	1.76E+02	1.35E+03
UM-250S-3250E (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	3.50E+01	5.14E+04	4.35E+02	1.10E-03	1.47E+03	1.62E+00	1.00E+00	5.50E-03	7.94E+04	1.59E+02	2.97E-02	1.76E+02	4.51E+02
BRSD-24 (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	3.50E+01	2.79E+05	2.37E+03	1.10E-03	7.99E+03	8.80E+00	1.00E+00	5.50E-03	4.32E+05	1.59E+02	2.97E-02	1.76E+02	2.45E+03
UM-250S-2750E (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	3.50E+01	2.73E+05	2.31E+03	1.10E-03	7.81E+03	8.60E+00	1.00E+00	5.50E-03	4.22E+05	1.59E+02	2.97E-02	1.76E+02	2.40E+03
UM-250S-2500E (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	3.50E+01	8.22E+03	6.96E+01	1.10E-03	2.35E+02	2.59E-01	1.00E+00	5.50E-03	1.27E+04	1.59E+02	2.97E-02	1.76E+02	7.21E+01
UM-0N-2500E (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	3.50E+01	7.17E+04	6.07E+02	1.10E-03	2.05E+03	2.26E+00	1.00E+00	5.50E-03	1.11E+05	1.59E+02	2.97E-02	1.76E+02	6.29E+02
UM-0N-250E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-2 (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	3.50E+01	2.69E+05	2.28E+03	1.10E-03	7.69E+03	8.47E+00	1.00E+00	5.50E-03	4.16E+05	1.59E+02	2.97E-02	1.76E+02	2.36E+03
UM-500N-2500E (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	3.50E+01	5.70E+03	4.83E+01	1.10E-03	1.63E+02	1.79E-01	1.00E+00	5.50E-03	8.81E+03	1.59E+02	2.97E-02	1.76E+02	5.00E+01
UM-250N-2500E (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	3.50E+01	1.33E+05	1.13E+03	1.10E-03	3.80E+03	4.18E+00	1.00E+00	5.50E-03	2.05E+05	1.59E+02	2.97E-02	1.76E+02	1.17E+03
UM-250N-2250E (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	3.50E+01	2.66E+05	2.26E+03	1.10E-03	7.62E+03	8.39E+00	1.00E+00	5.50E-03	4.12E+05	1.59E+02	2.97E-02	1.76E+02	2.34E+03
Western Upper Marsh (0-2")																						**Maximum HQ (Eastern Upper Marsh, 0-2")**	**2.45E+03**
UM-500S-2500E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-2000E (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	2.72E+01	1.18E+05	9.96E+02	1.10E-03	4.32E+03	4.76E+00	1.00E+00	5.50E-03	1.82E+05	1.59E+02	2.97E-02	1.76E+02	1.03E+03
UM-500S-2000E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-250N-1750E (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	2.72E+01	3.43E+03	2.91E+01	1.10E-03	1.26E+02	1.39E-01	1.00E+00	5.50E-03	5.31E+03	1.59E+02	2.97E-02	1.76E+02	3.02E+01
UM-0N-1500E (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	2.72E+01	3.62E+03	3.07E+01	1.10E-03	1.33E+02	1.46E-01	1.00E+00	5.50E-03	5.60E+03	1.59E+02	2.97E-02	1.76E+02	3.18E+01
UM-250S-1500E (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	2.72E+01	3.19E+04	2.70E+02	1.10E-03	1.17E+03	1.29E+00	1.00E+00	5.50E-03	4.93E+04	1.59E+02	2.97E-02	1.76E+02	2.80E+02
UM-250S-1250E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-6 (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-1000E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-750E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-500E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-250S-500E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-250S-250E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-7 (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-8 (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	2.72E+01	1.34E+04	1.14E+02	1.10E-03	4.93E+02	5.43E-01	1.00E+00	5.50E-03	2.08E+04	1.59E+02	2.97E-02	1.76E+02	1.18E+02
UM-500S-500E (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	2.72E+01	2.64E+03	2.24E+01	1.10E-03	9.71E+01	1.07E-01	1.00E+00	5.50E-03	4.09E+03	1.59E+02	2.97E-02	1.76E+02	2.32E+01
BRSD-9 (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	2.72E+01	1.51E+05	1.28E+03	1.10E-03	5.55E+03	6.11E+00	1.00E+00	5.50E-03	2.34E+05	1.59E+02	2.97E-02	1.76E+02	1.33E+03
BRSD-10 (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	2.72E+01	9.28E+04	7.86E+02	1.10E-03	3.41E+03	3.75E+00	1.00E+00	5.50E-03	1.44E+05	1.59E+02	2.97E-02	1.76E+02	8.16E+02
BRSD-11 (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	2.72E+01	3.70E+04	3.14E+02	1.10E-03	1.36E+03	1.50E+00	1.00E+00	5.50E-03	5.73E+04	1.59E+02	2.97E-02	1.76E+02	3.26E+02
Eastern Upper Marsh (2-6")																						**Maximum HQ (Western Upper Marsh, 0-2")**	**1.33E+03**
UM-1000S-3500E (2-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	3.50E+01	1.50E+04	1.27E+02	1.10E-03	4.30E+02	4.73E-01	1.00E+00	5.50E-03	2.32E+04	1.59E+02	2.97E-02	1.76E+02	1.32E+02
BRSD-15 (2-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	3.50E+01	3.50E+04	2.96E+02	1.10E-03	1.00E+03	1.10E+00	1.00E+00	5.50E-03	5.40E+04	1.59E+02	2.97E-02	1.76E+02	3.07E+02
BRSD-4 (2-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	3.50E+01	3.34E+03	2.82E+01	1.10E-03	9.54E+01	1.05E-01	1.00E+00	5.50E-03	5.16E+03	1.59E+02	2.97E-02	1.76E+02	2.93E+01
UM-750S-3500E (2-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	3.50E+01	2.48E+05	2.10E+03	1.10E-03	7.09E+03	7.81E+00	1.00E+00	5.50E-03	3.83E+05	1.59E+02	2.97E-02	1.76E+02	2.18E+03
BRSD-16 (2-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	3.50E+01	3.53E+05	2.99E+03	1.10E-03	1.01E+04	1.11E+01	1.00E+00	5.50E-03	5.46E+05	1.59E+02	2.97E-02	1.76E+02	3.10E+03
UM-750S-3000E (2-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	3.50E+01	2.60E+05	2.20E+03	1.10E-03	7.44E+03	8.19E+00	1.00E+00	5.50E-03	4.02E+05	1.59E+02	2.97E-02	1.76E+02	2.28E+03

TABLE C-12FA: MANGANESE DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 12 - MARSH, TERRESTRIAL RECEPTORS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 118.73

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Masked Shrew (Omnivorous Mammals, Wetland)																							
BRSD-3 (2-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	3.50E+01	5.91E+04	5.00E+02	1.10E-03	1.69E+03	1.86E+00	1.00E+00	5.50E-03	9.13E+04	1.59E+02	2.97E-02	1.76E+02	5.19E+02
UM-500S-3250E (2-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	3.50E+01	1.50E+04	1.27E+02	1.10E-03	4.28E+02	4.71E-01	1.00E+00	5.50E-03	2.31E+04	1.59E+02	2.97E-02	1.76E+02	1.31E+02
UM-500S-3000E (2-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	3.50E+01	1.11E+04	9.39E+01	1.10E-03	3.17E+02	3.49E-01	1.00E+00	5.50E-03	1.71E+04	1.59E+02	2.97E-02	1.76E+02	9.73E+01
UM-500S-2750E (2-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	3.50E+01	2.92E+05	2.48E+03	1.10E-03	8.36E+03	9.21E+00	1.00E+00	5.50E-03	4.52E+05	1.59E+02	2.97E-02	1.76E+02	2.57E+03
BRSD-25 (2-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	3.50E+01	3.71E+04	3.14E+02	1.10E-03	1.06E+03	1.17E+00	1.00E+00	5.50E-03	5.73E+04	1.59E+02	2.97E-02	1.76E+02	3.25E+02
UM-250S-3000E (2-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	3.50E+01	8.98E+04	7.61E+02	1.10E-03	2.57E+03	2.83E+00	1.00E+00	5.50E-03	1.39E+05	1.59E+02	2.97E-02	1.76E+02	7.89E+02
UM-250S-3250E (2-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	3.50E+01	4.51E+03	3.82E+01	1.10E-03	1.29E+02	1.42E-01	1.00E+00	5.50E-03	6.97E+03	1.59E+02	2.97E-02	1.76E+02	3.96E+01
BRSD-24 (2-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	3.50E+01	1.00E+05	8.47E+02	1.10E-03	2.86E+03	3.15E+00	1.00E+00	5.50E-03	1.55E+05	1.59E+02	2.97E-02	1.76E+02	8.78E+02
UM-250S-2750E (2-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	3.50E+01	2.05E+05	1.73E+03	1.10E-03	5.85E+03	6.44E+00	1.00E+00	5.50E-03	3.16E+05	1.59E+02	2.97E-02	1.76E+02	1.80E+03
UM-0N-2500E (2-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	3.50E+01	1.13E+05	9.54E+02	1.10E-03	3.22E+03	3.55E+00	1.00E+00	5.50E-03	1.74E+05	1.59E+02	2.97E-02	1.76E+02	9.89E+02
BRSD-2 (2-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	3.50E+01	2.13E+05	1.80E+03	1.10E-03	6.09E+03	6.71E+00	1.00E+00	5.50E-03	3.29E+05	1.59E+02	2.97E-02	1.76E+02	1.87E+03
UM-500N-2500E (2-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	3.50E+01	6.50E+03	5.51E+01	1.10E-03	1.86E+02	2.05E-01	1.00E+00	5.50E-03	1.01E+04	1.59E+02	2.97E-02	1.76E+02	5.71E+01
UM-250N-2500E (2-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	3.50E+01	2.79E+05	2.36E+03	1.10E-03	7.98E+03	8.79E+00	1.00E+00	5.50E-03	4.31E+05	1.59E+02	2.97E-02	1.76E+02	2.45E+03
UM-250N-2250E (2-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	3.50E+01	9.75E+03	8.26E+01	1.10E-03	2.79E+02	3.07E-01	1.00E+00	5.50E-03	1.51E+04	1.59E+02	2.97E-02	1.76E+02	8.57E+01
Western Upper Marsh (2-6")																						**Maximum HQ (Eastern Upper Marsh, 2-6")**	**3.10E+03**
UM-500S-2500E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-2000E (2-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	2.72E+01	1.04E+05	8.81E+02	1.10E-03	3.82E+03	4.21E+00	1.00E+00	5.50E-03	1.61E+05	1.59E+02	2.97E-02	1.76E+02	9.14E+02
UM-500S-2000E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-250N-1750E (2-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	2.72E+01	4.85E+03	4.11E+01	1.10E-03	1.78E+02	1.96E-01	1.00E+00	5.50E-03	7.50E+03	1.59E+02	2.97E-02	1.76E+02	4.26E+01
UM-0N-1500E (2-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	2.72E+01	3.57E+03	3.02E+01	1.10E-03	1.31E+02	1.44E-01	1.00E+00	5.50E-03	5.52E+03	1.59E+02	2.97E-02	1.76E+02	3.14E+01
UM-250S-1500E (2-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	2.72E+01	3.98E+04	3.37E+02	1.10E-03	1.46E+03	1.61E+00	1.00E+00	5.50E-03	6.15E+04	1.59E+02	2.97E-02	1.76E+02	3.49E+02
UM-250S-1250E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-6 (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-1000E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-750E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-500E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-250S-500E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-250E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-250S-250E (2-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	2.72E+01	2.43E+03	2.05E+01	1.10E-03	8.91E+01	9.81E-02	1.00E+00	5.50E-03	3.75E+03	1.59E+02	2.97E-02	1.76E+02	2.13E+01
BRSD-7 (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-8 (2-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	2.72E+01	3.84E+04	3.25E+02	1.10E-03	1.41E+03	1.55E+00	1.00E+00	5.50E-03	5.94E+04	1.59E+02	2.97E-02	1.76E+02	3.37E+02
UM-500S-500E (2-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	2.72E+01	2.75E+03	2.33E+01	1.10E-03	1.01E+02	1.11E-01	1.00E+00	5.50E-03	4.26E+03	1.59E+02	2.97E-02	1.76E+02	2.42E+01
BRSD-9 (2-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	2.72E+01	5.75E+04	4.87E+02	1.10E-03	2.11E+03	2.32E+00	1.00E+00	5.50E-03	8.89E+04	1.59E+02	2.97E-02	1.76E+02	5.05E+02
BRSD-10 (2-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	2.72E+01	9.07E+04	7.68E+02	1.10E-03	3.33E+03	3.67E+00	1.00E+00	5.50E-03	1.40E+05	1.59E+02	2.97E-02	1.76E+02	7.97E+02
BRSD-11 (2-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	2.72E+01	8.63E+03	7.31E+01	1.10E-03	3.17E+02	3.49E-01	1.00E+00	5.50E-03	1.34E+04	1.59E+02	2.97E-02	1.76E+02	7.59E+01
Eastern Upper Marsh (6-12")																						**Maximum HQ (Western Upper Marsh, 2-6")**	**9.14E+02**
UM-1000S-3500E (6-12")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	3.50E+01	5.35E+03	4.53E+01	1.10E-03	1.53E+02	1.68E-01	1.00E+00	5.50E-03	8.27E+03	1.59E+02	2.97E-02	1.76E+02	4.70E+01
BRSD-15 (6-12")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	3.50E+01	4.58E+04	3.88E+02	1.10E-03	1.31E+03	1.44E+00	1.00E+00	5.50E-03	7.08E+04	1.59E+02	2.97E-02	1.76E+02	4.02E+02
BRSD-4 (6-12")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	3.50E+01	1.65E+04	1.40E+02	1.10E-03	4.73E+02	5.21E-01	1.00E+00	5.50E-03	2.56E+04	1.59E+02	2.97E-02	1.76E+02	1.45E+02
UM-750S-3500E (6-12")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	3.50E+01	2.22E+05	1.88E+03	1.10E-03	6.35E+03	6.99E+00	1.00E+00	5.50E-03	3.43E+05	1.59E+02	2.97E-02	1.76E+02	1.95E+03
BRSD-16 (6-12")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	3.50E+01	8.32E+04	7.05E+02	1.10E-03	2.38E+03	2.62E+00	1.00E+00	5.50E-03	1.29E+05	1.59E+02	2.97E-02	1.76E+02	7.31E+02
UM-750S-3000E (6-12")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	3.50E+01	2.55E+05	2.16E+03	1.10E-03	7.28E+03	8.02E+00	1.00E+00	5.50E-03	3.93E+05	1.59E+02	2.97E-02	1.76E+02	2.23E+03
BRSD-3 (6-12")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	3.50E+01	2.27E+04	1.92E+02	1.10E-03	6.48E+02	7.14E-01	1.00E+00	5.50E-03	3.50E+04	1.59E+02	2.97E-02	1.76E+02	1.99E+02
UM-500S-3250E (6-12")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	3.50E+01	9.65E+03	8.17E+01	1.10E-03	2.76E+02	3.04E-01	1.00E+00	5.50E-03	1.49E+04	1.59E+02	2.97E-02	1.76E+02	8.47E+01
UM-500S-3000E (6-12")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	3.50E+01	1.36E+04	1.15E+02	1.10E-03	3.89E+02	4.28E-01	1.00E+00	5.50E-03	2.10E+04	1.59E+02	2.97E-02	1.76E+02	1.19E+02
UM-500S-2750E (6-12")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	3.50E+01	2.85E+05	2.42E+03	1.10E-03	8.16E+03	8.98E+00	1.00E+00	5.50E-03	4.41E+05	1.59E+02	2.97E-02	1.76E+02	2.51E+03
BRSD-25 (6-12")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	3.50E+01	6.08E+03	5.15E+01	1.10E-03	1.74E+02	1.92E-01	1.00E+00	5.50E-03	9.40E+03	1.59E+02	2.97E-02	1.76E+02	5.34E+01
UM-250S-3000E (6-12")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	3.50E+01	1.75E+05	1.48E+03	1.10E-03	5.00E+03	5.51E+00	1.00E+00	5.50E-03	2.70E+05	1.59E+02	2.97E-02	1.76E+02	1.53E+03
UM-250S-3250E (6-12")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	3.50E+01	7.69E+03	6.51E+01	1.10E-03	2.20E+02	2.42E-01	1.00E+00	5.50E-03	1.19E+04	1.59E+02	2.97E-02	1.76E+02	6.75E+01
BRSD-24 (6-12")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	3.50E+01	4.20E+04	3.55E+02	1.10E-03	1.20E+03	1.32E+00	1.00E+00	5.50E-03	6.48E+04	1.59E+02	2.97E-02	1.76E+02	3.68E+02

TABLE C-12FA: MANGANESE DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 12 - MARSH, TERRESTRIAL RECEPTORS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **118.73**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Masked Shrew (Omnivorous Mammals, Wetland)																							
UM-250S-2750E (6-12")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	3.50E+01	5.73E+04	4.86E+02	1.10E-03	1.64E+03	1.81E+00	1.00E+00	5.50E-03	8.86E+04	1.59E+02	2.97E-02	1.76E+02	5.03E+02
UM-250S-2500E (6-12")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	3.50E+01	5.24E+03	4.44E+01	1.10E-03	1.50E+02	1.65E-01	1.00E+00	5.50E-03	8.11E+03	1.59E+02	2.97E-02	1.76E+02	4.60E+01
BRSD-2 (6-12")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	3.50E+01	4.30E+04	3.64E+02	1.10E-03	1.23E+03	1.35E+00	1.00E+00	5.50E-03	6.65E+04	1.59E+02	2.97E-02	1.76E+02	3.78E+02
UM-500N-2500E (6-12")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	3.50E+01	7.20E+03	6.10E+01	1.10E-03	2.06E+02	2.27E-01	1.00E+00	5.50E-03	1.11E+04	1.59E+02	2.97E-02	1.76E+02	6.32E+01
UM-250N-2500E (6-12")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	3.50E+01	2.36E+05	2.00E+03	1.10E-03	6.74E+03	7.42E+00	1.00E+00	5.50E-03	3.64E+05	1.59E+02	2.97E-02	1.76E+02	2.07E+03
UM-250N-2250E (6-12")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	3.50E+01	1.21E+04	1.03E+02	1.10E-03	3.47E+02	3.82E-01	1.00E+00	5.50E-03	1.88E+04	1.59E+02	2.97E-02	1.76E+02	1.07E+02
Western Upper Marsh (6-12")																						**Maximum HQ (Eastern Upper Marsh, 6-12")**	**2.51E+03**
UM-500S-2500E (6-12")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	2.72E+01	4.14E+03	3.51E+01	1.10E-03	1.52E+02	1.67E-01	1.00E+00	5.50E-03	6.40E+03	1.59E+02	2.97E-02	1.76E+02	3.64E+01
UM-0N-2000E (6-12")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	2.72E+01	2.09E+05	1.77E+03	1.10E-03	7.67E+03	8.45E+00	1.00E+00	5.50E-03	3.23E+05	1.59E+02	2.97E-02	1.76E+02	1.84E+03
UM-500S-2000E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-250N-1750E (6-12")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	2.72E+01	2.71E+03	2.30E+01	1.10E-03	9.96E+01	1.10E-01	1.00E+00	5.50E-03	4.20E+03	1.59E+02	2.97E-02	1.76E+02	2.38E+01
UM-0N-1500E (6-12")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	2.72E+01	4.41E+03	3.74E+01	1.10E-03	1.62E+02	1.78E-01	1.00E+00	5.50E-03	6.83E+03	1.59E+02	2.97E-02	1.76E+02	3.88E+01
UM-250S-1500E (6-12")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	2.72E+01	1.21E+04	1.03E+02	1.10E-03	4.46E+02	4.91E-01	1.00E+00	5.50E-03	1.88E+04	1.59E+02	2.97E-02	1.76E+02	1.07E+02
UM-250S-1250E (6-12")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	2.72E+01	2.55E+03	2.16E+01	1.10E-03	9.35E+01	1.03E-01	1.00E+00	5.50E-03	3.94E+03	1.59E+02	2.97E-02	1.76E+02	2.24E+01
BRSD-6 (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-1000E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-750E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-500E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-250S-500E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-250E (6-12")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	2.72E+01	2.65E+03	2.25E+01	1.10E-03	9.74E+01	1.07E-01	1.00E+00	5.50E-03	4.10E+03	1.59E+02	2.97E-02	1.76E+02	2.33E+01
UM-250S-250E (6-12")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	2.72E+01	7.65E+03	6.48E+01	1.10E-03	2.81E+02	3.09E-01	1.00E+00	5.50E-03	1.18E+04	1.59E+02	2.97E-02	1.76E+02	6.73E+01
BRSD-7 (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-8 (6-12")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	2.72E+01	3.08E+04	2.61E+02	1.10E-03	1.13E+03	1.24E+00	1.00E+00	5.50E-03	4.76E+04	1.59E+02	2.97E-02	1.76E+02	2.70E+02
BRSD-9 (6-12")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	2.72E+01	4.79E+04	4.06E+02	1.10E-03	1.76E+03	1.94E+00	1.00E+00	5.50E-03	7.42E+04	1.59E+02	2.97E-02	1.76E+02	4.21E+02
BRSD-10 (6-12")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	2.72E+01	1.34E+05	1.13E+03	1.10E-03	4.92E+03	5.42E+00	1.00E+00	5.50E-03	2.07E+05	1.59E+02	2.97E-02	1.76E+02	1.18E+03
BRSD-11 (6-12")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	2.72E+01	7.95E+03	6.73E+01	1.10E-03	2.92E+02	3.22E-01	1.00E+00	5.50E-03	1.23E+04	1.59E+02	2.97E-02	1.76E+02	6.99E+01
Middle Marsh (0-2")																						**Maximum HQ (Western Upper Marsh, 6-12")**	**1.84E+03**
MMSD-201 (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	2.72E+01	5.47E+04	4.64E+02	1.10E-03	2.01E+03	2.21E+00	1.00E+00	5.50E-03	8.47E+04	1.59E+02	2.97E-02	1.76E+02	4.81E+02
MMSD-202 (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	2.72E+01	4.30E+03	3.64E+01	1.10E-03	1.58E+02	1.74E-01	1.00E+00	5.50E-03	6.66E+03	1.59E+02	2.97E-02	1.76E+02	3.78E+01
Middle Marsh (2-6")																						**Maximum HQ (Middle Marsh, 0-2")**	**4.81E+02**
MMSD-201 (2-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	2.72E+01	4.03E+04	3.41E+02	1.10E-03	1.48E+03	1.63E+00	1.00E+00	5.50E-03	6.24E+04	1.59E+02	2.97E-02	1.76E+02	3.54E+02
MMSD-202 (2-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	2.72E+01	6.13E+03	5.19E+01	1.10E-03	2.25E+02	2.48E-01	1.00E+00	5.50E-03	9.48E+03	1.59E+02	2.97E-02	1.76E+02	5.39E+01
Middle Marsh (6-12")																						**Maximum HQ (Middle Marsh, 2-6")**	**3.54E+02**
MMSD-201 (6-12")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	2.72E+01	4.85E+04	4.11E+02	1.10E-03	1.78E+03	1.96E+00	1.00E+00	5.50E-03	7.50E+04	1.59E+02	2.97E-02	1.76E+02	4.26E+02
MMSD-202 (6-12")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	2.72E+01	7.41E+03	6.27E+01	1.10E-03	2.72E+02	2.99E-01	1.00E+00	5.50E-03	1.15E+04	1.59E+02	2.97E-02	1.76E+02	6.51E+01
Lower Marsh (0-2")																						**Maximum HQ (Middle Marsh, 6-12")**	**4.26E+02**
LMSD-201 (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	2.72E+01	5.50E+03	4.66E+01	1.10E-03	2.02E+02	2.22E-01	1.00E+00	5.50E-03	8.51E+03	1.59E+02	2.97E-02	1.76E+02	4.83E+01
LMSD-202 (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
LMSD-203 (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	2.72E+01	5.55E+04	4.70E+02	1.10E-03	2.04E+03	2.25E+00	1.00E+00	5.50E-03	8.59E+04	1.59E+02	2.97E-02	1.76E+02	4.88E+02
LMSD-204 (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	2.72E+01	8.77E+03	7.43E+01	1.10E-03	3.22E+02	3.55E-01	1.00E+00	5.50E-03	1.36E+04	1.59E+02	2.97E-02	1.76E+02	7.71E+01
Lower Marsh (2-6")																						**Maximum HQ (Lower Marsh, 0-2")**	**4.88E+02**
LMSD-201 (2-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	2.72E+01	4.76E+03	4.04E+01	1.10E-03	1.75E+02	1.93E-01	1.00E+00	5.50E-03	7.37E+03	1.59E+02	2.97E-02	1.76E+02	4.19E+01
LMSD-202 (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
LMSD-203 (2-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	2.72E+01	6.26E+04	5.30E+02	1.10E-03	2.30E+03	2.53E+00	1.00E+00	5.50E-03	9.69E+04	1.59E+02	2.97E-02	1.76E+02	5.50E+02
LMSD-204 (2-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	2.72E+01	1.32E+04	1.12E+02	1.10E-03	4.84E+02	5.33E-01	1.00E+00	5.50E-03	2.04E+04	1.59E+02	2.97E-02	1.76E+02	1.16E+02
UM-500S-500E (6-12")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	2.72E+01	2.75E+03	2.33E+01	1.10E-03	1.01E+02	1.11E-01	1.00E+00	5.50E-03	4.26E+03	1.59E+02	2.97E-02	1.76E+02	2.42E+01

TABLE C-12FA: MANGANESE DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 12 - MARSH, TERRESTRIAL RECEPTORS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 118.73

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Masked Shrew (Omnivorous Mammals, Wetland)																							
Lower Marsh (6-12")																						**Maximum HQ (Lower Marsh, 2-6")**	**5.50E+02**
LMSD-201 (6-12")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	2.72E+01	4.96E+03	4.20E+01	1.10E-03	1.82E+02	2.00E-01	1.00E+00	5.50E-03	7.67E+03	1.59E+02	2.97E-02	1.76E+02	4.36E+01
LMSD-202 (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
LMSD-203 (6-12")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	2.72E+01	1.95E+05	1.66E+03	1.10E-03	7.18E+03	7.91E+00	1.00E+00	5.50E-03	3.02E+05	1.59E+02	2.97E-02	1.76E+02	1.72E+03
LMSD-204 (6-12")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	2.72E+01	1.58E+04	1.34E+02	1.10E-03	5.80E+02	6.39E-01	1.00E+00	5.50E-03	2.44E+04	1.59E+02	2.97E-02	1.76E+02	1.39E+02
																						Maximum HQ (Lower Marsh, 6-12")	**1.72E+03**

Notes: Results are evaluated in order of upstream to downstream.

1. See Tables A-1 through A-13 for ingestion rates, foraging ranges used to calculate the SUF, and body weights.
2. BAFs were calculated by dividing site-collected tissue by collocated soil concentrations. The maximum plant and invertebrate BAF calculated for the eastern transect (UMT1) were used for the Eastern Upper Marsh calculations. The maximum plant and invertebrate BAF calculated for the western transect (UMT2) were used for the Western Upper Marsh calculations. The maximum mammal BAF calculated for the eastern transect (UMT1) was used for the Eastern and Western Upper Marsh calculations because no mammals were collected in the Western Upper Marsh.
3. The mammal, plant, and invertebrate concentrations were calculated by multiplying the soil concentration by the BAF to generate a tissue concentration (see note 2).
4. Mammal, plant, and invertebrate daily doses were calculated by multiplying the ingestion rate (see note 1) by the tissue concentration (see note 3).
5. Soil concentration from specified depths below ground surface at point ID from laboratory analysis. Doses were not calculated for detected and non-detected soil concentrations measured below the minimum reference site concentration (0-12"), as indicated by BB. For results that were measured at less than the detection limit, doses were calculated using half of the detection limit.
6. Soil daily dose was calculated by multiplying the soil ingestion rate (see note 1) by soil concentration (see note 5).
7. Total daily dose is calculated using the following equation: total daily dose = ([mammal daily dose (if applicable) + plant daily dose (if applicable) + invertebrate daily dose (if applicable) + soil daily dose]*SUF)/receptor species body weight.
8. The derivation of TRVs is described in Navy (1998). The high TRV was used for dose calculations.
9. Allometrically adjusted TRVs for birds were calculated using the following equation: receptor species TRV = (test species TRV) x (test species body weight / receptor species body weight) $^{(1-1.2)}$.
10. Allometrically adjusted TRVs for mammals were calculated using the following equation: receptor species TRV = (test species TRV) x (test species body weight / receptor species body weight) $^{(1-0.94)}$.
11. HQs were calculated using the following equation: HQ = total daily dose/allometrically adjusted TRV.
12. Green cells indicate an HQ greater than 1.0

BAF	Bioaccumulation Factor	ID	Identification	NA	Not applicable
BB	Below minimum background reference site concentration	kg	Kilogram	Navy	Department of the Navy
EE/CA	Engineering Evaluation/Cost Analysis	kg/day	Kilogram per day	SUF	Site use factor
EU	Exposure Unit	mg/day	Milligram per day	TRV	Toxicity reference value
HQ	Hazard Quotient	mg/kg	Milligram per kilogram		

Sources: Department of the Navy. 1998. "Development of Toxicity Reference Values for Conducting Ecological Risk Assessments at Naval Facilities in California, Interim Final." Prepared by Naval Facilities Engineering Command, Engineering Field Activity West (EFA

TABLE C-12FB: MANGANESE DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 12 - MARSH, WETLAND RECEPTORS

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **118.73**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Canada Goose (Herbivorous Birds)																							
Reference Sites																							
BRSD-5 (0-2")	8.57E-01	NA	NA	NA	NA	8.57E-01	3.24E+00	1.04E+03	8.89E+02	NA	NA	NA	NA	7.03E-02	3.20E+02	2.25E+01	1.21E-01	3.69E+01	2.99E+00	7.76E+02	1.97E-01	2.21E+03	1.35E-03
BRSD-5 (2-6")	8.57E-01	NA	NA	NA	NA	8.57E-01	3.24E+00	8.10E+02	6.95E+02	NA	NA	NA	NA	7.03E-02	2.50E+02	1.76E+01	1.21E-01	3.69E+01	2.33E+00	7.76E+02	1.97E-01	2.21E+03	1.06E-03
BRSD-5 (6-12")	8.57E-01	NA	NA	NA	NA	8.57E-01	3.24E+00	7.91E+02	6.78E+02	NA	NA	NA	NA	7.03E-02	2.44E+02	1.71E+01	1.21E-01	3.69E+01	2.28E+00	7.76E+02	1.97E-01	2.21E+03	1.03E-03
PGBG-1 (0-2")	8.57E-01	NA	NA	NA	NA	8.57E-01	3.24E+00	2.26E+03	1.93E+03	NA	NA	NA	NA	7.03E-02	6.96E+02	4.89E+01	1.21E-01	3.69E+01	6.49E+00	7.76E+02	1.97E-01	2.21E+03	2.94E-03
PGBG-1 (2-6")	8.57E-01	NA	NA	NA	NA	8.57E-01	3.24E+00	6.45E+02	5.53E+02	NA	NA	NA	NA	7.03E-02	1.99E+02	1.40E+01	1.21E-01	3.69E+01	1.86E+00	7.76E+02	1.97E-01	2.21E+03	8.40E-04
PGBG-1 (6-12")	8.57E-01	NA	NA	NA	NA	8.57E-01	3.24E+00	2.85E+02	2.44E+02	NA	NA	NA	NA	7.03E-02	8.80E+01	6.18E+00	1.21E-01	3.69E+01	8.21E-01	7.76E+02	1.97E-01	2.21E+03	3.71E-04
PGBG-2 (0-2")	8.57E-01	NA	NA	NA	NA	8.57E-01	3.24E+00	1.90E+03	1.63E+03	NA	NA	NA	NA	7.03E-02	5.86E+02	4.12E+01	1.21E-01	3.69E+01	5.47E+00	7.76E+02	1.97E-01	2.21E+03	2.47E-03
PGBG-2 (2-6")	8.57E-01	NA	NA	NA	NA	8.57E-01	3.24E+00	1.61E+03	1.38E+03	NA	NA	NA	NA	7.03E-02	4.98E+02	3.50E+01	1.21E-01	3.69E+01	4.65E+00	7.76E+02	1.97E-01	2.21E+03	2.10E-03
PGBG-2 (6-12")	8.57E-01	NA	NA	NA	NA	8.57E-01	3.24E+00	9.50E+02	8.14E+02	NA	NA	NA	NA	7.03E-02	2.93E+02	2.06E+01	1.21E-01	3.69E+01	2.73E+00	7.76E+02	1.97E-01	2.21E+03	1.24E-03
Eastern Upper Marsh (0-2")																						**Minimum HQ (Reference Sites)**	**3.71E-04**
UM-1000S-3500E (0-2")	8.57E-01	NA	NA	NA	NA	8.57E-01	3.62E+00	1.02E+03	8.77E+02	NA	NA	NA	NA	7.03E-02	2.83E+02	1.99E+01	1.21E-01	3.69E+01	2.94E+00	7.76E+02	1.97E-01	2.21E+03	1.33E-03
BRSD-15 (0-2")	8.57E-01	NA	NA	NA	NA	8.57E-01	3.62E+00	2.30E+03	1.97E+03	NA	NA	NA	NA	7.03E-02	6.35E+02	4.46E+01	1.21E-01	3.69E+01	6.59E+00	7.76E+02	1.97E-01	2.21E+03	2.98E-03
BRSD-4 (0-2")	8.57E-01	NA	NA	NA	NA	8.57E-01	3.62E+00	7.59E+02	6.51E+02	NA	NA	NA	NA	7.03E-02	2.10E+02	1.48E+01	1.21E-01	3.69E+01	2.18E+00	7.76E+02	1.97E-01	2.21E+03	9.86E-04
UM-750S-3500E (0-2")	8.57E-01	NA	NA	NA	NA	8.57E-01	3.62E+00	2.69E+04	2.30E+04	NA	NA	NA	NA	7.03E-02	7.43E+03	5.22E+02	1.21E-01	3.69E+01	7.71E+01	7.76E+02	1.97E-01	2.21E+03	3.49E-02
BRSD-16 (0-2")	8.57E-01	NA	NA	NA	NA	8.57E-01	3.62E+00	3.76E+03	3.22E+03	NA	NA	NA	NA	7.03E-02	1.04E+03	7.31E+01	1.21E-01	3.69E+01	1.08E+01	7.76E+02	1.97E-01	2.21E+03	4.88E-03
UM-750S-3000E (0-2")	8.57E-01	NA	NA	NA	NA	8.57E-01	3.62E+00	2.57E+04	2.20E+04	NA	NA	NA	NA	7.03E-02	7.11E+03	5.00E+02	1.21E-01	3.69E+01	7.38E+01	7.76E+02	1.97E-01	2.21E+03	3.34E-02
BRSD-3 (0-2")	8.57E-01	NA	NA	NA	NA	8.57E-01	3.62E+00	4.48E+03	3.84E+03	NA	NA	NA	NA	7.03E-02	1.24E+03	8.71E+01	1.21E-01	3.69E+01	1.29E+01	7.76E+02	1.97E-01	2.21E+03	5.82E-03
UM-500S-3250E (0-2")	8.57E-01	NA	NA	NA	NA	8.57E-01	3.62E+00	9.36E+03	8.03E+03	NA	NA	NA	NA	7.03E-02	2.59E+03	1.82E+02	1.21E-01	3.69E+01	2.69E+01	7.76E+02	1.97E-01	2.21E+03	1.22E-02
UM-500S-3000E (0-2")	8.57E-01	NA	NA	NA	NA	8.57E-01	3.62E+00	4.27E+03	3.66E+03	NA	NA	NA	NA	7.03E-02	1.18E+03	8.29E+01	1.21E-01	3.69E+01	1.23E+01	7.76E+02	1.97E-01	2.21E+03	5.54E-03
UM-500S-2750E (0-2")	8.57E-01	NA	NA	NA	NA	8.57E-01	3.62E+00	2.59E+04	2.22E+04	NA	NA	NA	NA	7.03E-02	7.16E+03	5.03E+02	1.21E-01	3.69E+01	7.43E+01	7.76E+02	1.97E-01	2.21E+03	3.36E-02
BRSD-25 (0-2")	8.57E-01	NA	NA	NA	NA	8.57E-01	3.62E+00	5.42E+03	4.65E+03	NA	NA	NA	NA	7.03E-02	1.50E+03	1.05E+02	1.21E-01	3.69E+01	1.56E+01	7.76E+02	1.97E-01	2.21E+03	7.04E-03
UM-250S-3000E (0-2")	8.57E-01	NA	NA	NA	NA	8.57E-01	3.62E+00	1.59E+04	1.36E+04	NA	NA	NA	NA	7.03E-02	4.40E+03	3.09E+02	1.21E-01	3.69E+01	4.57E+01	7.76E+02	1.97E-01	2.21E+03	2.07E-02
UM-250S-3250E (0-2")	8.57E-01	NA	NA	NA	NA	8.57E-01	3.62E+00	5.32E+03	4.56E+03	NA	NA	NA	NA	7.03E-02	1.47E+03	1.03E+02	1.21E-01	3.69E+01	1.53E+01	7.76E+02	1.97E-01	2.21E+03	6.90E-03
BRSD-24 (0-2")	8.57E-01	NA	NA	NA	NA	8.57E-01	3.62E+00	2.89E+04	2.48E+04	NA	NA	NA	NA	7.03E-02	7.99E+03	5.62E+02	1.21E-01	3.69E+01	8.29E+01	7.76E+02	1.97E-01	2.21E+03	3.75E-02
UM-250S-2750E (0-2")	8.57E-01	NA	NA	NA	NA	8.57E-01	3.62E+00	2.82E+04	2.42E+04	NA	NA	NA	NA	7.03E-02	7.81E+03	5.49E+02	1.21E-01	3.69E+01	8.11E+01	7.76E+02	1.97E-01	2.21E+03	3.67E-02
UM-250S-2500E (0-2")	8.57E-01	NA	NA	NA	NA	8.57E-01	3.62E+00	8.50E+02	7.28E+02	NA	NA	NA	NA	7.03E-02	2.35E+02	1.65E+01	1.21E-01	3.69E+01	2.44E+00	7.76E+02	1.97E-01	2.21E+03	1.10E-03
UM-0N-2500E (0-2")	8.57E-01	NA	NA	NA	NA	8.57E-01	3.62E+00	7.41E+03	6.35E+03	NA	NA	NA	NA	7.03E-02	2.05E+03	1.44E+02	1.21E-01	3.69E+01	2.13E+01	7.76E+02	1.97E-01	2.21E+03	9.63E-03
UM-0N-250E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-2 (0-2")	8.57E-01	NA	NA	NA	NA	8.57E-01	3.62E+00	2.78E+04	2.38E+04	NA	NA	NA	NA	7.03E-02	7.69E+03	5.40E+02	1.21E-01	3.69E+01	7.98E+01	7.76E+02	1.97E-01	2.21E+03	3.61E-02
UM-500N-2500E (0-2")	8.57E-01	NA	NA	NA	NA	8.57E-01	3.62E+00	5.89E+02	5.05E+02	NA	NA	NA	NA	7.03E-02	1.63E+02	1.15E+01	1.21E-01	3.69E+01	1.69E+00	7.76E+02	1.97E-01	2.21E+03	7.65E-04
UM-250N-2500E (0-2")	8.57E-01	NA	NA	NA	NA	8.57E-01	3.62E+00	1.37E+04	1.18E+04	NA	NA	NA	NA	7.03E-02	3.80E+03	2.67E+02	1.21E-01	3.69E+01	3.95E+01	7.76E+02	1.97E-01	2.21E+03	1.78E-02
UM-250N-2250E (0-2")	8.57E-01	NA	NA	NA	NA	8.57E-01	3.62E+00	2.76E+04	2.36E+04	NA	NA	NA	NA	7.03E-02	7.62E+03	5.36E+02	1.21E-01	3.69E+01	7.91E+01	7.76E+02	1.97E-01	2.21E+03	3.58E-02
Western Upper Marsh (0-2")																						**Maximum HQ (Eastern Upper Marsh, 0-2")**	**3.75E-02**
UM-500S-2500E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-2000E (0-2")	8.57E-01	NA	NA	NA	NA	8.57E-01	5.04E+00	2.18E+04	1.87E+04	NA	NA	NA	NA	7.03E-02	4.32E+03	3.04E+02	1.21E-01	3.69E+01	6.22E+01	7.76E+02	1.97E-01	2.21E+03	2.81E-02
UM-500S-2000E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-250N-1750E (0-2")	8.57E-01	NA	NA	NA	NA	8.57E-01	5.04E+00	6.35E+02	5.45E+02	NA	NA	NA	NA	7.03E-02	1.26E+02	8.86E+00	1.21E-01	3.69E+01	1.81E+00	7.76E+02	1.97E-01	2.21E+03	8.20E-04
UM-0N-1500E (0-2")	8.57E-01	NA	NA	NA	NA	8.57E-01	5.04E+00	6.71E+02	5.75E+02	NA	NA	NA	NA	7.03E-02	1.33E+02	9.35E+00	1.21E-01	3.69E+01	1.91E+00	7.76E+02	1.97E-01	2.21E+03	8.66E-04
UM-250S-1500E (0-2")	8.57E-01	NA	NA	NA	NA	8.57E-01	5.04E+00	5.90E+03	5.06E+03	NA	NA	NA	NA	7.03E-02	1.17E+03	8.22E+01	1.21E-01	3.69E+01	1.68E+01	7.76E+02	1.97E-01	2.21E+03	7.62E-03
UM-250S-1250E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-6 (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-1000E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-750E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-500E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-250S-500E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-250S-250E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-7 (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-8 (0-2")	8.57E-01	NA	NA	NA	NA	8.57E-01	5.04E+00	2.49E+03	2.13E+03	NA	NA	NA	NA	7.03E-02	4.93E+02	3.46E+01	1.21E-01	3.69E+01	7.09E+00	7.76E+02	1.97E-01	2.21E+03	3.21E-03
UM-500S-500E (0-2")	8.57E-01	NA	NA	NA	NA	8.57E-01	5.04E+00	4.90E+02	4.20E+02	NA	NA	NA	NA	7.03E-02	9.71E+01	6.82E+00	1.21E-01	3.69E+01	1.40E+00	7.76E+02	1.97E-01	2.21E+03	6.32E-04

TABLE C-12FB: MANGANESE DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 12 - MARSH, WETLAND RECEPTORS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **118.73**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Canada Goose (Herbivorous Birds)																							
BRSD-9 (0-2")	8.57E-01	NA	NA	NA	NA	8.57E-01	5.04E+00	2.80E+04	2.40E+04	NA	NA	NA	NA	7.03E-02	5.55E+03	3.90E+02	1.21E-01	3.69E+01	7.99E+01	7.76E+02	1.97E-01	2.21E+03	3.61E-02
BRSD-10 (0-2")	8.57E-01	NA	NA	NA	NA	8.57E-01	5.04E+00	1.72E+04	1.47E+04	NA	NA	NA	NA	7.03E-02	3.41E+03	2.40E+02	1.21E-01	3.69E+01	4.91E+01	7.76E+02	1.97E-01	2.21E+03	2.22E-02
BRSD-11 (0-2")	8.57E-01	NA	NA	NA	NA	8.57E-01	5.04E+00	6.86E+03	5.88E+03	NA	NA	NA	NA	7.03E-02	1.36E+03	9.56E+01	1.21E-01	3.69E+01	1.96E+01	7.76E+02	1.97E-01	2.21E+03	8.85E-03
Eastern Upper Marsh (2-6")																					**Maximum HQ (Western Upper Marsh, 0-2")**		**3.61E-02**
UM-1000S-3500E (2-6")	8.57E-01	NA	NA	NA	NA	8.57E-01	3.62E+00	1.55E+03	1.33E+03	NA	NA	NA	NA	7.03E-02	4.30E+02	3.02E+01	1.21E-01	3.69E+01	4.46E+00	7.76E+02	1.97E-01	2.21E+03	2.02E-03
BRSD-15 (2-6")	8.57E-01	NA	NA	NA	NA	8.57E-01	3.62E+00	3.62E+03	3.10E+03	NA	NA	NA	NA	7.03E-02	1.00E+03	7.03E+01	1.21E-01	3.69E+01	1.04E+01	7.76E+02	1.97E-01	2.21E+03	4.70E-03
BRSD-4 (2-6")	8.57E-01	NA	NA	NA	NA	8.57E-01	3.62E+00	3.45E+02	2.96E+02	NA	NA	NA	NA	7.03E-02	9.54E+01	6.70E+00	1.21E-01	3.69E+01	9.90E-01	7.76E+02	1.97E-01	2.21E+03	4.48E-04
UM-750S-3500E (2-6")	8.57E-01	NA	NA	NA	NA	8.57E-01	3.62E+00	2.56E+04	2.20E+04	NA	NA	NA	NA	7.03E-02	7.09E+03	4.98E+02	1.21E-01	3.69E+01	7.36E+01	7.76E+02	1.97E-01	2.21E+03	3.33E-02
BRSD-16 (2-6")	8.57E-01	NA	NA	NA	NA	8.57E-01	3.62E+00	3.65E+04	3.13E+04	NA	NA	NA	NA	7.03E-02	1.01E+04	7.10E+02	1.21E-01	3.69E+01	1.05E+02	7.76E+02	1.97E-01	2.21E+03	4.74E-02
UM-750S-3000E (2-6")	8.57E-01	NA	NA	NA	NA	8.57E-01	3.62E+00	2.69E+04	2.31E+04	NA	NA	NA	NA	7.03E-02	7.44E+03	5.23E+02	1.21E-01	3.69E+01	7.72E+01	7.76E+02	1.97E-01	2.21E+03	3.49E-02
BRSD-3 (2-6")	8.57E-01	NA	NA	NA	NA	8.57E-01	3.62E+00	6.11E+03	5.24E+03	NA	NA	NA	NA	7.03E-02	1.69E+03	1.19E+02	1.21E-01	3.69E+01	1.75E+01	7.76E+02	1.97E-01	2.21E+03	7.94E-03
UM-500S-3250E (2-6")	8.57E-01	NA	NA	NA	NA	8.57E-01	3.62E+00	1.55E+03	1.33E+03	NA	NA	NA	NA	7.03E-02	4.28E+02	3.01E+01	1.21E-01	3.69E+01	4.44E+00	7.76E+02	1.97E-01	2.21E+03	2.01E-03
UM-500S-3000E (2-6")	8.57E-01	NA	NA	NA	NA	8.57E-01	3.62E+00	1.15E+03	9.82E+02	NA	NA	NA	NA	7.03E-02	3.17E+02	2.23E+01	1.21E-01	3.69E+01	3.29E+00	7.76E+02	1.97E-01	2.21E+03	1.49E-03
UM-500S-2750E (2-6")	8.57E-01	NA	NA	NA	NA	8.57E-01	3.62E+00	3.02E+04	2.59E+04	NA	NA	NA	NA	7.03E-02	8.36E+03	5.88E+02	1.21E-01	3.69E+01	8.68E+01	7.76E+02	1.97E-01	2.21E+03	3.93E-02
BRSD-25 (2-6")	8.57E-01	NA	NA	NA	NA	8.57E-01	3.62E+00	3.83E+03	3.28E+03	NA	NA	NA	NA	7.03E-02	1.06E+03	7.45E+01	1.21E-01	3.69E+01	1.10E+01	7.76E+02	1.97E-01	2.21E+03	4.98E-03
UM-250S-3000E (2-6")	8.57E-01	NA	NA	NA	NA	8.57E-01	3.62E+00	9.29E+03	7.96E+03	NA	NA	NA	NA	7.03E-02	2.57E+03	1.81E+02	1.21E-01	3.69E+01	2.67E+01	7.76E+02	1.97E-01	2.21E+03	1.21E-02
UM-250S-3250E (2-6")	8.57E-01	NA	NA	NA	NA	8.57E-01	3.62E+00	4.66E+02	4.00E+02	NA	NA	NA	NA	7.03E-02	1.29E+02	9.07E+00	1.21E-01	3.69E+01	1.34E+00	7.76E+02	1.97E-01	2.21E+03	6.06E-04
BRSD-24 (2-6")	8.57E-01	NA	NA	NA	NA	8.57E-01	3.62E+00	1.03E+04	8.86E+03	NA	NA	NA	NA	7.03E-02	2.86E+03	2.01E+02	1.21E-01	3.69E+01	2.97E+01	7.76E+02	1.97E-01	2.21E+03	1.34E-02
UM-250S-2750E (2-6")	8.57E-01	NA	NA	NA	NA	8.57E-01	3.62E+00	2.12E+04	1.81E+04	NA	NA	NA	NA	7.03E-02	5.85E+03	4.11E+02	1.21E-01	3.69E+01	6.07E+01	7.76E+02	1.97E-01	2.21E+03	2.75E-02
UM-0N-2500E (2-6")	8.57E-01	NA	NA	NA	NA	8.57E-01	3.62E+00	1.16E+04	9.98E+03	NA	NA	NA	NA	7.03E-02	3.22E+03	2.26E+02	1.21E-01	3.69E+01	3.34E+01	7.76E+02	1.97E-01	2.21E+03	1.51E-02
BRSD-2 (2-6")	8.57E-01	NA	NA	NA	NA	8.57E-01	3.62E+00	2.20E+04	1.89E+04	NA	NA	NA	NA	7.03E-02	6.09E+03	4.28E+02	1.21E-01	3.69E+01	6.32E+01	7.76E+02	1.97E-01	2.21E+03	2.86E-02
UM-500N-2500E (2-6")	8.57E-01	NA	NA	NA	NA	8.57E-01	3.62E+00	6.73E+02	5.76E+02	NA	NA	NA	NA	7.03E-02	1.86E+02	1.31E+01	1.21E-01	3.69E+01	1.93E+00	7.76E+02	1.97E-01	2.21E+03	8.73E-04
UM-250N-2500E (2-6")	8.57E-01	NA	NA	NA	NA	8.57E-01	3.62E+00	2.89E+04	2.47E+04	NA	NA	NA	NA	7.03E-02	7.98E+03	5.61E+02	1.21E-01	3.69E+01	8.28E+01	7.76E+02	1.97E-01	2.21E+03	3.75E-02
UM-250N-2250E (2-6")	8.57E-01	NA	NA	NA	NA	8.57E-01	3.62E+00	1.01E+03	8.65E+02	NA	NA	NA	NA	7.03E-02	2.79E+02	1.96E+01	1.21E-01	3.69E+01	2.90E+00	7.76E+02	1.97E-01	2.21E+03	1.31E-03
Western Upper Marsh (2-6")																					**Maximum HQ (Eastern Upper Marsh, 2-6")**		**4.74E-02**
UM-500S-2500E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-2000E (2-6")	8.57E-01	NA	NA	NA	NA	8.57E-01	5.04E+00	1.93E+04	1.65E+04	NA	NA	NA	NA	7.03E-02	3.82E+03	2.68E+02	1.21E-01	3.69E+01	5.50E+01	7.76E+02	1.97E-01	2.21E+03	2.49E-02
UM-500S-2000E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-250N-1750E (2-6")	8.57E-01	NA	NA	NA	NA	8.57E-01	5.04E+00	8.98E+02	7.69E+02	NA	NA	NA	NA	7.03E-02	1.78E+02	1.25E+01	1.21E-01	3.69E+01	2.56E+00	7.76E+02	1.97E-01	2.21E+03	1.16E-03
UM-0N-1500E (2-6")	8.57E-01	NA	NA	NA	NA	8.57E-01	5.04E+00	6.61E+02	5.66E+02	NA	NA	NA	NA	7.03E-02	1.31E+02	9.21E+00	1.21E-01	3.69E+01	1.88E+00	7.76E+02	1.97E-01	2.21E+03	8.53E-04
UM-250S-1500E (2-6")	8.57E-01	NA	NA	NA	NA	8.57E-01	5.04E+00	7.36E+03	6.31E+03	NA	NA	NA	NA	7.03E-02	1.46E+03	1.03E+02	1.21E-01	3.69E+01	2.10E+01	7.76E+02	1.97E-01	2.21E+03	9.50E-03
UM-250S-1250E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-6 (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-1000E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-750E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-500E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-250S-500E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-250E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-250S-250E (2-6")	8.57E-01	NA	NA	NA	NA	8.57E-01	5.04E+00	4.49E+02	3.85E+02	NA	NA	NA	NA	7.03E-02	8.91E+01	6.26E+00	1.21E-01	3.69E+01	1.28E+00	7.76E+02	1.97E-01	2.21E+03	5.80E-04
BRSD-7 (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-8 (2-6")	8.57E-01	NA	NA	NA	NA	8.57E-01	5.04E+00	7.11E+03	6.09E+03	NA	NA	NA	NA	7.03E-02	1.41E+03	9.91E+01	1.21E-01	3.69E+01	2.03E+01	7.76E+02	1.97E-01	2.21E+03	9.18E-03
UM-500S-500E (2-6")	8.57E-01	NA	NA	NA	NA	8.57E-01	5.04E+00	5.09E+02	4.37E+02	NA	NA	NA	NA	7.03E-02	1.01E+02	7.10E+00	1.21E-01	3.69E+01	1.45E+00	7.76E+02	1.97E-01	2.21E+03	6.57E-04
BRSD-9 (2-6")	8.57E-01	NA	NA	NA	NA	8.57E-01	5.04E+00	1.06E+04	9.12E+03	NA	NA	NA	NA	7.03E-02	2.11E+03	1.48E+02	1.21E-01	3.69E+01	3.04E+01	7.76E+02	1.97E-01	2.21E+03	1.37E-02
BRSD-10 (2-6")	8.57E-01	NA	NA	NA	NA	8.57E-01	5.04E+00	1.68E+04	1.44E+04	NA	NA	NA	NA	7.03E-02	3.33E+03	2.34E+02	1.21E-01	3.69E+01	4.79E+01	7.76E+02	1.97E-01	2.21E+03	2.17E-02
BRSD-11 (2-6")	8.57E-01	NA	NA	NA	NA	8.57E-01	5.04E+00	1.60E+03	1.37E+03	NA	NA	NA	NA	7.03E-02	3.17E+02	2.23E+01	1.21E-01	3.69E+01	4.56E+00	7.76E+02	1.97E-01	2.21E+03	2.06E-03
Eastern Upper Marsh (6-12")																					**Maximum HQ (Western Upper Marsh, 2-6")**		**2.49E-02**
UM-1000S-3500E (6-12")	8.57E-01	NA	NA	NA	NA	8.57E-01	3.62E+00	5.53E+02	4.74E+02	NA	NA	NA	NA	7.03E-02	1.53E+02	1.08E+01	1.21E-01	3.69E+01	1.59E+00	7.76E+02	1.97E-01	2.21E+03	7.19E-04
BRSD-15 (6-12")	8.57E-01	NA	NA	NA	NA	8.57E-01	3.62E+00	4.74E+03	4.06E+03	NA	NA	NA	NA	7.03E-02	1.31E+03	9.21E+01	1.21E-01	3.69E+01	1.36E+01	7.76E+02	1.97E-01	2.21E+03	6.15E-03
BRSD-4 (6-12")	8.57E-01	NA	NA	NA	NA	8.57E-01	3.62E+00	1.71E+03	1.47E+03	NA	NA	NA	NA	7.03E-02	4.73E+02	3.32E+01	1.21E-01	3.69E+01	4.91E+00	7.76E+02	1.97E-01	2.21E+03	2.22E-03
UM-750S-3500E (6-12")	8.57E-01	NA	NA	NA	NA	8.57E-01	3.62E+00	2.30E+04	1.97E+04	NA	NA	NA	NA	7.03E-02	6.35E+03	4.46E+02	1.21E-01	3.69E+01	6.59E+01	7.76E+02	1.97E-01	2.21E+03	2.98E-02
BRSD-16 (6-12")	8.57E-01	NA	NA	NA	NA	8.57E-01	3.62E+00	8.61E+03	7.38E+03	NA	NA	NA	NA	7.03E-02	2.38E+03	1.67E+02	1.21E-01	3.69E+01	2.47E+01	7.76E+02	1.97E-01	2.21E+03	1.12E-02
UM-750S-3000E (6-12")	8.57E-01	NA	NA	NA	NA	8.57E-01	3.62E+00	2.63E+04	2.26E+04	NA	NA	NA	NA	7.03E-02	7.28E+03	5.12E+02	1.21E-01	3.69E+01	7.56E+01	7.76E+02	1.97E-01	2.21E+03	3.42E-02
BRSD-3 (6-12")	8.57E-01	NA	NA	NA	NA	8.57E-01	3.62E+00	2.34E+03	2.01E+03	NA	NA	NA	NA	7.03E-02	6.48E+02	4.55E+01	1.21E-01	3.69E+01	6.73E+00	7.76E+02	1.97E-01	2.21E+03	3.04E-03
UM-500S-3250E (6-12")	8.57E-01	NA	NA	NA	NA	8.57E-01	3.62E+00	9.98E+02	8.55E+02	NA	NA	NA	NA	7.03E-02	2.76E+02	1.94E+01	1.21E-01	3.69E+01	2.87E+00	7.76E+02	1.97E-01	2.21E+03	1.30E-03
UM-500S-3000E (6-12")	8.57E-01	NA	NA	NA	NA	8.57E-01	3.62E+00	1.41E+03	1.21E+03	NA	NA	NA	NA	7.03E-02	3.89E+02	2.73E+01	1.21E-01	3.69E+01	4.04E+00	7.76E+02	1.97E-01	2.21E+03	1.83E-03
UM-500S-2750E (6-12")	8.57E-01	NA	NA	NA	NA	8.57E-01	3.62E+00	2.95E+04	2.53E+04	NA	NA	NA	NA	7.03E-02	8.16E+03	5.73E+02	1.21E-01	3.69E+01	8.47E+01	7.76E+02	1.97E-01	2.21E+03	3.83E-02

TABLE C-12FB: MANGANESE DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 12 - MARSH, WETLAND RECEPTORS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **118.73**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Canada Goose (Herbivorous Birds)																							
BRSD-25 (6-12")	8.57E-01	NA	NA	NA	NA	8.57E-01	3.62E+00	6.29E+02	5.39E+02	NA	NA	NA	NA	7.03E-02	1.74E+02	1.22E+01	1.21E-01	3.69E+01	1.81E+00	7.76E+02	1.97E-01	2.21E+03	8.17E-04
UM-250S-3000E (6-12")	8.57E-01	NA	NA	NA	NA	8.57E-01	3.62E+00	1.81E+04	1.55E+04	NA	NA	NA	NA	7.03E-02	5.00E+03	3.51E+02	1.21E-01	3.69E+01	5.19E+01	7.76E+02	1.97E-01	2.21E+03	2.35E-02
UM-250S-3250E (6-12")	8.57E-01	NA	NA	NA	NA	8.57E-01	3.62E+00	7.95E+02	6.82E+02	NA	NA	NA	NA	7.03E-02	2.20E+02	1.55E+01	1.21E-01	3.69E+01	2.28E+00	7.76E+02	1.97E-01	2.21E+03	1.03E-03
BRSD-24 (6-12")	8.57E-01	NA	NA	NA	NA	8.57E-01	3.62E+00	4.34E+03	3.72E+03	NA	NA	NA	NA	7.03E-02	1.20E+03	8.43E+01	1.21E-01	3.69E+01	1.25E+01	7.76E+02	1.97E-01	2.21E+03	5.64E-03
UM-250S-2750E (6-12")	8.57E-01	NA	NA	NA	NA	8.57E-01	3.62E+00	5.93E+03	5.08E+03	NA	NA	NA	NA	7.03E-02	1.64E+03	1.15E+02	1.21E-01	3.69E+01	1.70E+01	7.76E+02	1.97E-01	2.21E+03	7.70E-03
UM-250S-2500E (6-12")	8.57E-01	NA	NA	NA	NA	8.57E-01	3.62E+00	5.42E+02	4.65E+02	NA	NA	NA	NA	7.03E-02	1.50E+02	1.05E+01	1.21E-01	3.69E+01	1.56E+00	7.76E+02	1.97E-01	2.21E+03	7.04E-04
BRSD-2 (6-12")	8.57E-01	NA	NA	NA	NA	8.57E-01	3.62E+00	4.45E+03	3.81E+03	NA	NA	NA	NA	7.03E-02	1.23E+03	8.64E+01	1.21E-01	3.69E+01	1.28E+01	7.76E+02	1.97E-01	2.21E+03	5.78E-03
UM-500N-2500E (6-12")	8.57E-01	NA	NA	NA	NA	8.57E-01	3.62E+00	7.45E+02	6.38E+02	NA	NA	NA	NA	7.03E-02	2.06E+02	1.45E+01	1.21E-01	3.69E+01	2.14E+00	7.76E+02	1.97E-01	2.21E+03	9.67E-04
UM-250N-2500E (6-12")	8.57E-01	NA	NA	NA	NA	8.57E-01	3.62E+00	2.44E+04	2.09E+04	NA	NA	NA	NA	7.03E-02	6.74E+03	4.74E+02	1.21E-01	3.69E+01	7.00E+01	7.76E+02	1.97E-01	2.21E+03	3.17E-02
UM-250N-2250E (6-12")	8.57E-01	NA	NA	NA	NA	8.57E-01	3.62E+00	1.25E+03	1.08E+03	NA	NA	NA	NA	7.03E-02	3.47E+02	2.44E+01	1.21E-01	3.69E+01	3.60E+00	7.76E+02	1.97E-01	2.21E+03	1.63E-03
Western Upper Marsh (6-12")																						**Maximum HQ (Eastern Upper Marsh, 6-12")**	**3.83E-02**
UM-500S-2500E (6-12")	8.57E-01	NA	NA	NA	NA	8.57E-01	5.04E+00	7.67E+02	6.57E+02	NA	NA	NA	NA	7.03E-02	1.52E+02	1.07E+01	1.21E-01	3.69E+01	2.19E+00	7.76E+02	1.97E-01	2.21E+03	9.89E-04
UM-0N-2000E (6-12")	8.57E-01	NA	NA	NA	NA	8.57E-01	5.04E+00	3.87E+04	3.32E+04	NA	NA	NA	NA	7.03E-02	7.67E+03	5.39E+02	1.21E-01	3.69E+01	1.10E+02	7.76E+02	1.97E-01	2.21E+03	4.99E-02
UM-500S-2000E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	7.03E-02	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-250N-1750E (6-12")	8.57E-01	NA	NA	NA	NA	8.57E-01	5.04E+00	5.02E+02	4.30E+02	NA	NA	NA	NA	7.03E-02	9.96E+01	7.00E+00	1.21E-01	3.69E+01	1.43E+00	7.76E+02	1.97E-01	2.21E+03	6.48E-04
UM-0N-1500E (6-12")	8.57E-01	NA	NA	NA	NA	8.57E-01	5.04E+00	8.17E+02	7.00E+02	NA	NA	NA	NA	7.03E-02	1.62E+02	1.14E+01	1.21E-01	3.69E+01	2.33E+00	7.76E+02	1.97E-01	2.21E+03	1.05E-03
UM-250S-1500E (6-12")	8.57E-01	NA	NA	NA	NA	8.57E-01	5.04E+00	2.25E+03	1.93E+03	NA	NA	NA	NA	7.03E-02	4.46E+02	3.13E+01	1.21E-01	3.69E+01	6.42E+00	7.76E+02	1.97E-01	2.21E+03	2.90E-03
UM-250S-1250E (6-12")	8.57E-01	NA	NA	NA	NA	8.57E-01	5.04E+00	4.72E+02	4.04E+02	NA	NA	NA	NA	7.03E-02	9.35E+01	6.57E+00	1.21E-01	3.69E+01	1.35E+00	7.76E+02	1.97E-01	2.21E+03	6.09E-04
BRSD-6 (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-1000E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-750E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-500E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-250S-500E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-250E (6-12")	8.57E-01	NA	NA	NA	NA	8.57E-01	5.04E+00	4.91E+02	4.21E+02	NA	NA	NA	NA	7.03E-02	9.74E+01	6.85E+00	1.21E-01	3.69E+01	1.40E+00	7.76E+02	1.97E-01	2.21E+03	6.34E-04
UM-250S-250E (6-12")	8.57E-01	NA	NA	NA	NA	8.57E-01	5.04E+00	1.42E+03	1.21E+03	NA	NA	NA	NA	7.03E-02	2.81E+02	1.97E+01	1.21E-01	3.69E+01	4.04E+00	7.76E+02	1.97E-01	2.21E+03	1.83E-03
BRSD-7 (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-8 (6-12")	8.57E-01	NA	NA	NA	NA	8.57E-01	5.04E+00	5.70E+03	4.88E+03	NA	NA	NA	NA	7.03E-02	1.13E+03	7.94E+01	1.21E-01	3.69E+01	1.63E+01	7.76E+02	1.97E-01	2.21E+03	7.35E-03
UM-500S-500E (6-12")	8.57E-01	NA	NA	NA	NA	8.57E-01	5.04E+00	5.09E+02	4.37E+02	NA	NA	NA	NA	7.03E-02	1.01E+02	7.10E+00	1.21E-01	3.69E+01	1.45E+00	7.76E+02	1.97E-01	2.21E+03	6.57E-04
BRSD-9 (6-12")	8.57E-01	NA	NA	NA	NA	8.57E-01	5.04E+00	8.88E+03	7.61E+03	NA	NA	NA	NA	7.03E-02	1.76E+03	1.24E+02	1.21E-01	3.69E+01	2.53E+01	7.76E+02	1.97E-01	2.21E+03	1.15E-02
BRSD-10 (6-12")	8.57E-01	NA	NA	NA	NA	8.57E-01	5.04E+00	2.48E+04	2.13E+04	NA	NA	NA	NA	7.03E-02	4.92E+03	3.46E+02	1.21E-01	3.69E+01	7.08E+01	7.76E+02	1.97E-01	2.21E+03	3.20E-02
BRSD-11 (6-12")	8.57E-01	NA	NA	NA	NA	8.57E-01	5.04E+00	1.47E+03	1.26E+03	NA	NA	NA	NA	7.03E-02	2.92E+02	2.05E+01	1.21E-01	3.69E+01	4.20E+00	7.76E+02	1.97E-01	2.21E+03	1.90E-03
Middle Marsh (0-2")																						**Maximum HQ (Western Upper Marsh, 6-12")**	**4.99E-02**
MMSD-201 (0-2")	8.57E-01	NA	NA	NA	NA	8.57E-01	5.04E+00	1.01E+04	8.69E+03	NA	NA	NA	NA	7.03E-02	2.01E+03	1.41E+02	1.21E-01	3.69E+01	2.89E+01	7.76E+02	1.97E-01	2.21E+03	1.31E-02
MMSD-202 (0-2")	8.57E-01	NA	NA	NA	NA	8.57E-01	5.04E+00	7.97E+02	6.83E+02	NA	NA	NA	NA	7.03E-02	1.58E+02	1.11E+01	1.21E-01	3.69E+01	2.27E+00	7.76E+02	1.97E-01	2.21E+03	1.03E-03
Middle Marsh (2-6")																						**Maximum HQ (Middle Marsh, 0-2")**	**1.31E-02**
MMSD-201 (2-6")	8.57E-01	NA	NA	NA	NA	8.57E-01	5.04E+00	7.46E+03	6.40E+03	NA	NA	NA	NA	7.03E-02	1.48E+03	1.04E+02	1.21E-01	3.69E+01	2.13E+01	7.76E+02	1.97E-01	2.21E+03	9.63E-03
MMSD-202 (2-6")	8.57E-01	NA	NA	NA	NA	8.57E-01	5.04E+00	1.13E+03	9.72E+02	NA	NA	NA	NA	7.03E-02	2.25E+02	1.58E+01	1.21E-01	3.69E+01	3.24E+00	7.76E+02	1.97E-01	2.21E+03	1.46E-03
Middle Marsh (6-12")																						**Maximum HQ (Middle Marsh, 2-6")**	**9.63E-03**
MMSD-201 (6-12")	8.57E-01	NA	NA	NA	NA	8.57E-01	5.04E+00	8.98E+03	7.69E+03	NA	NA	NA	NA	7.03E-02	1.78E+03	1.25E+02	1.21E-01	3.69E+01	2.56E+01	7.76E+02	1.97E-01	2.21E+03	1.16E-02
MMSD-202 (6-12")	8.57E-01	NA	NA	NA	NA	8.57E-01	5.04E+00	1.37E+03	1.18E+03	NA	NA	NA	NA	7.03E-02	2.72E+02	1.91E+01	1.21E-01	3.69E+01	3.91E+00	7.76E+02	1.97E-01	2.21E+03	1.77E-03
Lower Marsh (0-2")																						**Maximum HQ (Middle Marsh, 6-12")**	**1.16E-02**
LMSD-201 (0-2")	8.57E-01	NA	NA	NA	NA	8.57E-01	5.04E+00	1.02E+03	8.73E+02	NA	NA	NA	NA	7.03E-02	2.02E+02	1.42E+01	1.21E-01	3.69E+01	2.91E+00	7.76E+02	1.97E-01	2.21E+03	1.31E-03
LMSD-202 (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
LMSD-203 (0-2")	8.57E-01	NA	NA	NA	NA	8.57E-01	5.04E+00	1.03E+04	8.82E+03	NA	NA	NA	NA	7.03E-02	2.04E+03	1.43E+02	1.21E-01	3.69E+01	2.94E+01	7.76E+02	1.97E-01	2.21E+03	1.33E-02
LMSD-204 (0-2")	8.57E-01	NA	NA	NA	NA	8.57E-01	5.04E+00	1.62E+03	1.39E+03	NA	NA	NA	NA	7.03E-02	3.22E+02	2.26E+01	1.21E-01	3.69E+01	4.63E+00	7.76E+02	1.97E-01	2.21E+03	2.10E-03
Lower Marsh (2-6")																						**Maximum HQ (Lower Marsh, 0-2")**	**1.33E-02**
LMSD-201 (2-6")	8.57E-01	NA	NA	NA	NA	8.57E-01	5.04E+00	8.83E+02	7.56E+02	NA	NA	NA	NA	7.03E-02	1.75E+02	1.23E+01	1.21E-01	3.69E+01	2.52E+00	7.76E+02	1.97E-01	2.21E+03	1.14E-03
LMSD-202 (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
LMSD-203 (2-6")	8.57E-01	NA	NA	NA	NA	8.57E-01	5.04E+00	1.16E+04	9.94E+03	NA	NA	NA	NA	7.03E-02	2.30E+03	1.62E+02	1.21E-01	3.69E+01	3.31E+01	7.76E+02	1.97E-01	2.21E+03	1.50E-02
LMSD-204 (2-6")	8.57E-01	NA	NA	NA	NA	8.57E-01	5.04E+00	2.44E+03	2.09E+03	NA	NA	NA	NA	7.03E-02	4.84E+02	3.40E+01	1.21E-01	3.69E+01	6.96E+00	7.76E+02	1.97E-01	2.21E+03	3.15E-03
Lower Marsh (6-12")																						**Maximum HQ (Lower Marsh, 2-6")**	**1.50E-02**
LMSD-201 (6-12")	8.57E-01	NA	NA	NA	NA	8.57E-01	5.04E+00	9.18E+02	7.87E+02	NA	NA	NA	NA	7.03E-02	1.82E+02	1.28E+01	1.21E-01	3.69E+01	2.62E+00	7.76E+02	1.97E-01	2.21E+03	1.18E-03
LMSD-202 (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
LMSD-203 (6-12")	8.57E-01	NA	NA	NA	NA	8.57E-01	5.04E+00	3.62E+04	3.10E+04	NA	NA	NA	NA	7.03E-02	7.18E+03	5.05E+02	1.21E-01	3.69E+01	1.03E+02	7.76E+02	1.97E-01	2.21E+03	4.67E-02
LMSD-204 (6-12")	8.57E-01	NA	NA	NA	NA	8.57E-01	5.04E+00	2.92E+03	2.51E+03	NA	NA	NA	NA	7.03E-02	5.80E+02	4.08E+01	1.21E-01	3.69E+01	8.35E+00	7.76E+02	1.97E-01	2.21E+03	3.77E-03
																						Maximum HQ (Lower Marsh, 6-12")	**4.67E-02**

TABLE C-12FB: MANGANESE DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 12 - MARSH, WETLAND RECEPTORS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **118.73**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Great Blue Heron (Carnivorous Birds)																							
Reference Sites																							
BRSD-5 (0-2")	1.32E-01	1.32E-01	1.13E-01	3.62E+01	4.75E+00	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	3.20E+02	1.14E+00	1.00E+00	2.39E+00	2.46E+00	7.76E+02	1.97E-01	1.28E+03	1.93E-03
BRSD-5 (2-6")	1.32E-01	1.32E-01	1.13E-01	2.82E+01	3.71E+00	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	2.50E+02	8.88E-01	1.00E+00	2.39E+00	1.93E+00	7.76E+02	1.97E-01	1.28E+03	1.51E-03
BRSD-5 (6-12")	1.32E-01	1.32E-01	1.13E-01	2.76E+01	3.63E+00	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	2.44E+02	8.67E-01	1.00E+00	2.39E+00	1.88E+00	7.76E+02	1.97E-01	1.28E+03	1.47E-03
PGBG-1 (0-2")	1.32E-01	1.32E-01	1.13E-01	7.86E+01	1.03E+01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	6.96E+02	2.47E+00	1.00E+00	2.39E+00	5.36E+00	7.76E+02	1.97E-01	1.28E+03	4.19E-03
PGBG-1 (2-6")	1.32E-01	1.32E-01	1.13E-01	2.25E+01	2.96E+00	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.99E+02	7.07E-01	1.00E+00	2.39E+00	1.53E+00	7.76E+02	1.97E-01	1.28E+03	1.20E-03
PGBG-1 (6-12")	1.32E-01	1.32E-01	1.13E-01	9.94E+00	1.31E+00	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	8.80E+01	3.13E-01	1.00E+00	2.39E+00	6.78E-01	7.76E+02	1.97E-01	1.28E+03	5.30E-04
PGBG-2 (0-2")	1.32E-01	1.32E-01	1.13E-01	6.62E+01	8.71E+00	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	5.86E+02	2.08E+00	1.00E+00	2.39E+00	4.51E+00	7.76E+02	1.97E-01	1.28E+03	3.53E-03
PGBG-2 (2-6")	1.32E-01	1.32E-01	1.13E-01	5.63E+01	7.40E+00	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	4.98E+02	1.77E+00	1.00E+00	2.39E+00	3.84E+00	7.76E+02	1.97E-01	1.28E+03	3.00E-03
PGBG-2 (6-12")	1.32E-01	1.32E-01	1.13E-01	3.31E+01	4.35E+00	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	2.93E+02	1.04E+00	1.00E+00	2.39E+00	2.26E+00	7.76E+02	1.97E-01	1.28E+03	1.76E-03
Eastern Upper Marsh (0-2")																						**Minimum HQ (Reference Sites)**	**5.30E-04**
UM-1000S-3500E (0-2")	1.32E-01	1.32E-01	2.07E-01	5.85E+01	7.69E+00	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	2.83E+02	1.01E+00	1.00E+00	2.39E+00	3.64E+00	7.76E+02	1.97E-01	1.28E+03	2.84E-03
BRSD-15 (0-2")	1.32E-01	1.32E-01	2.07E-01	1.31E+02	1.73E+01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	6.35E+02	2.26E+00	1.00E+00	2.39E+00	8.16E+00	7.76E+02	1.97E-01	1.28E+03	6.38E-03
BRSD-4 (0-2")	1.32E-01	1.32E-01	2.07E-01	4.34E+01	5.71E+00	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	2.10E+02	7.46E-01	1.00E+00	2.39E+00	2.70E+00	7.76E+02	1.97E-01	1.28E+03	2.11E-03
UM-750S-3500E (0-2")	1.32E-01	1.32E-01	2.07E-01	1.54E+03	2.02E+02	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	7.43E+03	2.64E+01	1.00E+00	2.39E+00	9.55E+01	7.76E+02	1.97E-01	1.28E+03	7.47E-02
BRSD-16 (0-2")	1.32E-01	1.32E-01	2.07E-01	2.15E+02	2.83E+01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.04E+03	3.69E+00	1.00E+00	2.39E+00	1.34E+01	7.76E+02	1.97E-01	1.28E+03	1.05E-02
UM-750S-3000E (0-2")	1.32E-01	1.32E-01	2.07E-01	1.47E+03	1.93E+02	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	7.11E+03	2.52E+01	1.00E+00	2.39E+00	9.14E+01	7.76E+02	1.97E-01	1.28E+03	7.15E-02
BRSD-3 (0-2")	1.32E-01	1.32E-01	2.07E-01	2.56E+02	3.37E+01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.24E+03	4.40E+00	1.00E+00	2.39E+00	1.59E+01	7.76E+02	1.97E-01	1.28E+03	1.25E-02
UM-500S-3250E (0-2")	1.32E-01	1.32E-01	2.07E-01	5.35E+02	7.04E+01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	2.59E+03	9.20E+00	1.00E+00	2.39E+00	3.33E+01	7.76E+02	1.97E-01	1.28E+03	2.60E-02
UM-500S-3000E (0-2")	1.32E-01	1.32E-01	2.07E-01	2.44E+02	3.21E+01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.18E+03	4.19E+00	1.00E+00	2.39E+00	1.52E+01	7.76E+02	1.97E-01	1.28E+03	1.19E-02
UM-500S-2750E (0-2")	1.32E-01	1.32E-01	2.07E-01	1.48E+03	1.95E+02	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	7.16E+03	2.54E+01	1.00E+00	2.39E+00	9.21E+01	7.76E+02	1.97E-01	1.28E+03	7.20E-02
BRSD-25 (0-2")	1.32E-01	1.32E-01	2.07E-01	3.10E+02	4.08E+01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.50E+03	5.33E+00	1.00E+00	2.39E+00	1.93E+01	7.76E+02	1.97E-01	1.28E+03	1.51E-02
UM-250S-3000E (0-2")	1.32E-01	1.32E-01	2.07E-01	9.09E+02	1.20E+02	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	4.40E+03	1.56E+01	1.00E+00	2.39E+00	5.66E+01	7.76E+02	1.97E-01	1.28E+03	4.42E-02
UM-250S-3250E (0-2")	1.32E-01	1.32E-01	2.07E-01	3.04E+02	3.99E+01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.47E+03	5.22E+00	1.00E+00	2.39E+00	1.89E+01	7.76E+02	1.97E-01	1.28E+03	1.48E-02
BRSD-24 (0-2")	1.32E-01	1.32E-01	2.07E-01	1.65E+03	2.17E+02	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	7.99E+03	2.84E+01	1.00E+00	2.39E+00	1.03E+02	7.76E+02	1.97E-01	1.28E+03	8.03E-02
UM-250S-2750E (0-2")	1.32E-01	1.32E-01	2.07E-01	1.61E+03	2.12E+02	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	7.81E+03	2.77E+01	1.00E+00	2.39E+00	1.00E+02	7.76E+02	1.97E-01	1.28E+03	7.85E-02
UM-250S-2500E (0-2")	1.32E-01	1.32E-01	2.07E-01	4.86E+01	6.39E+00	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	2.35E+02	8.35E-01	1.00E+00	2.39E+00	3.02E+00	7.76E+02	1.97E-01	1.28E+03	2.36E-03
UM-0N-2500E (0-2")	1.32E-01	1.32E-01	2.07E-01	4.24E+02	5.57E+01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	2.05E+03	7.28E+00	1.00E+00	2.39E+00	2.64E+01	7.76E+02	1.97E-01	1.28E+03	2.06E-02
UM-0N-250E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-2 (0-2")	1.32E-01	1.32E-01	2.07E-01	1.59E+03	2.09E+02	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	7.69E+03	2.73E+01	1.00E+00	2.39E+00	9.89E+01	7.76E+02	1.97E-01	1.28E+03	7.73E-02
UM-500N-2500E (0-2")	1.32E-01	1.32E-01	2.07E-01	3.37E+01	4.43E+00	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.63E+02	5.79E-01	1.00E+00	2.39E+00	2.10E+00	7.76E+02	1.97E-01	1.28E+03	1.64E-03
UM-250N-2500E (0-2")	1.32E-01	1.32E-01	2.07E-01	7.85E+02	1.03E+02	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	3.80E+03	1.35E+01	1.00E+00	2.39E+00	4.89E+01	7.76E+02	1.97E-01	1.28E+03	3.82E-02
UM-250N-2250E (0-2")	1.32E-01	1.32E-01	2.07E-01	1.57E+03	2.07E+02	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	7.62E+03	2.71E+01	1.00E+00	2.39E+00	9.80E+01	7.76E+02	1.97E-01	1.28E+03	7.66E-02
Western Upper Marsh (0-2")																						**Maximum HQ (Eastern Upper Marsh, 0-2")**	**8.03E-02**
UM-500S-2500E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-2000E (0-2")	1.32E-01	1.32E-01	2.07E-01	8.93E+02	1.17E+02	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	4.32E+03	1.53E+01	1.00E+00	2.39E+00	5.55E+01	7.76E+02	1.97E-01	1.28E+03	4.34E-02
UM-500S-2000E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-250N-1750E (0-2")	1.32E-01	1.32E-01	2.07E-01	2.60E+01	3.42E+00	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.26E+02	4.47E-01	1.00E+00	2.39E+00	1.62E+00	7.76E+02	1.97E-01	1.28E+03	1.27E-03
UM-0N-1500E (0-2")	1.32E-01	1.32E-01	2.07E-01	2.75E+01	3.61E+00	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.33E+02	4.72E-01	1.00E+00	2.39E+00	1.71E+00	7.76E+02	1.97E-01	1.28E+03	1.34E-03
UM-250S-1500E (0-2")	1.32E-01	1.32E-01	2.07E-01	2.42E+02	3.18E+01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.17E+03	4.16E+00	1.00E+00	2.39E+00	1.50E+01	7.76E+02	1.97E-01	1.28E+03	1.18E-02
UM-250S-1250E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-6 (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-1000E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-750E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-500E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-250S-500E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-250S-250E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-7 (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-8 (0-2")	1.32E-01	1.32E-01	2.07E-01	1.02E+02	1.34E+01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	4.93E+02	1.75E+00	1.00E+00	2.39E+00	6.34E+00	7.76E+02	1.97E-01	1.28E+03	4.96E-03
UM-500S-500E (0-2")	1.32E-01	1.32E-01	2.07E-01	2.01E+01	2.64E+00	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	9.71E+01	3.45E-01	1.00E+00	2.39E+00	1.25E+00	7.76E+02	1.97E-01	1.28E+03	9.76E-04
BRSD-9 (0-2")	1.32E-01	1.32E-01	2.07E-01	1.15E+03	1.51E+02	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	5.55E+03	1.97E+01	1.00E+00	2.39E+00	7.14E+01	7.76E+02	1.97E-01	1.28E+03	5.58E-02
BRSD-10 (0-2")	1.32E-01	1.32E-01	2.07E-01	7.05E+02	9.27E+01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	3.41E+03	1.21E+01	1.00E+00	2.39E+00	4.38E+01	7.76E+02	1.97E-01	1.28E+03	3.43E-02
BRSD-11 (0-2")	1.32E-01	1.32E-01	2.07E-01	2.81E+02	3.70E+01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.36E+03	4.83E+00	1.00E+00	2.39E+00	1.75E+01	7.76E+02	1.97E-01	1.28E+03	1.37E-02
Eastern Upper Marsh (2-6")																						**Maximum HQ (Western Upper Marsh, 0-2")**	**5.58E-02**
UM-1000S-3500E (2-6")	1.32E-01	1.32E-01	2.07E-01	8.88E+01	1.17E+01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	4.30E+02	1.53E+00	1.00E+00	2.39E+00	5.53E+00	7.76E+02	1.97E-01	1.28E+03	4.32E-03
BRSD-15 (2-6")	1.32E-01	1.32E-01	2.07E-01	2.07E+02	2.72E+01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.00E+03	3.55E+00	1.00E+00	2.39E+00	1.29E+01	7.76E+02	1.97E-01	1.28E+03	1.01E-02

TABLE C-12FB: MANGANESE DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 12 - MARSH, WETLAND RECEPTORS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **118.73**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Great Blue Heron (Carnivorous Birds)																							
BRSD-4 (2-6")	1.32E-01	1.32E-01	2.07E-01	1.97E+01	2.59E+00	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	9.54E+01	3.39E-01	1.00E+00	2.39E+00	1.23E+00	7.76E+02	1.97E-01	1.28E+03	9.59E-04
UM-750S-3500E (2-6")	1.32E-01	1.32E-01	2.07E-01	1.46E+03	1.93E+02	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	7.09E+03	2.52E+01	1.00E+00	2.39E+00	9.12E+01	7.76E+02	1.97E-01	1.28E+03	7.13E-02
BRSD-16 (2-6")	1.32E-01	1.32E-01	2.07E-01	2.09E+03	2.74E+02	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.01E+04	3.59E+01	1.00E+00	2.39E+00	1.30E+02	7.76E+02	1.97E-01	1.28E+03	1.02E-01
UM-750S-3000E (2-6")	1.32E-01	1.32E-01	2.07E-01	1.54E+03	2.02E+02	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	7.44E+03	2.64E+01	1.00E+00	2.39E+00	9.57E+01	7.76E+02	1.97E-01	1.28E+03	7.48E-02
BRSD-3 (2-6")	1.32E-01	1.32E-01	2.07E-01	3.49E+02	4.59E+01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.69E+03	6.00E+00	1.00E+00	2.39E+00	2.17E+01	7.76E+02	1.97E-01	1.28E+03	1.70E-02
UM-500S-3250E (2-6")	1.32E-01	1.32E-01	2.07E-01	8.84E+01	1.16E+01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	4.28E+02	1.52E+00	1.00E+00	2.39E+00	5.50E+00	7.76E+02	1.97E-01	1.28E+03	4.30E-03
UM-500S-3000E (2-6")	1.32E-01	1.32E-01	2.07E-01	6.55E+01	8.61E+00	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	3.17E+02	1.13E+00	1.00E+00	2.39E+00	4.08E+00	7.76E+02	1.97E-01	1.28E+03	3.19E-03
UM-500S-2750E (2-6")	1.32E-01	1.32E-01	2.07E-01	1.73E+03	2.27E+02	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	8.36E+03	2.97E+01	1.00E+00	2.39E+00	1.07E+02	7.76E+02	1.97E-01	1.28E+03	8.40E-02
BRSD-25 (2-6")	1.32E-01	1.32E-01	2.07E-01	2.19E+02	2.88E+01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.06E+03	3.76E+00	1.00E+00	2.39E+00	1.36E+01	7.76E+02	1.97E-01	1.28E+03	1.07E-02
UM-250S-3000E (2-6")	1.32E-01	1.32E-01	2.07E-01	5.31E+02	6.98E+01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	2.57E+03	9.13E+00	1.00E+00	2.39E+00	3.30E+01	7.76E+02	1.97E-01	1.28E+03	2.58E-02
UM-250S-3250E (2-6")	1.32E-01	1.32E-01	2.07E-01	2.67E+01	3.51E+00	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.29E+02	4.58E-01	1.00E+00	2.39E+00	1.66E+00	7.76E+02	1.97E-01	1.28E+03	1.30E-03
BRSD-24 (2-6")	1.32E-01	1.32E-01	2.07E-01	5.91E+02	7.77E+01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	2.86E+03	1.02E+01	1.00E+00	2.39E+00	3.68E+01	7.76E+02	1.97E-01	1.28E+03	2.87E-02
UM-250S-2750E (2-6")	1.32E-01	1.32E-01	2.07E-01	1.21E+03	1.59E+02	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	5.85E+03	2.08E+01	1.00E+00	2.39E+00	7.52E+01	7.76E+02	1.97E-01	1.28E+03	5.88E-02
UM-0N-2500E (2-6")	1.32E-01	1.32E-01	2.07E-01	6.65E+02	8.75E+01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	3.22E+03	1.14E+01	1.00E+00	2.39E+00	4.14E+01	7.76E+02	1.97E-01	1.28E+03	3.24E-02
BRSD-2 (2-6")	1.32E-01	1.32E-01	2.07E-01	1.26E+03	1.65E+02	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	6.09E+03	2.16E+01	1.00E+00	2.39E+00	7.83E+01	7.76E+02	1.97E-01	1.28E+03	6.12E-02
UM-500N-2500E (2-6")	1.32E-01	1.32E-01	2.07E-01	3.84E+01	5.05E+00	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.86E+02	6.61E-01	1.00E+00	2.39E+00	2.39E+00	7.76E+02	1.97E-01	1.28E+03	1.87E-03
UM-250N-2500E (2-6")	1.32E-01	1.32E-01	2.07E-01	1.65E+03	2.17E+02	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	7.98E+03	2.83E+01	1.00E+00	2.39E+00	1.03E+02	7.76E+02	1.97E-01	1.28E+03	8.02E-02
UM-250N-2250E (2-6")	1.32E-01	1.32E-01	2.07E-01	5.76E+01	7.58E+00	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	2.79E+02	9.91E-01	1.00E+00	2.39E+00	3.59E+00	7.76E+02	1.97E-01	1.28E+03	2.80E-03
Western Upper Marsh (2-6")																						**Maximum HQ (Eastern Upper Marsh, 2-6")**	**1.02E-01**
UM-500S-2500E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-2000E (2-6")	1.32E-01	1.32E-01	2.07E-01	7.89E+02	1.04E+02	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	3.82E+03	1.36E+01	1.00E+00	2.39E+00	4.91E+01	7.76E+02	1.97E-01	1.28E+03	3.84E-02
UM-500S-2000E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-250N-1750E (2-6")	1.32E-01	1.32E-01	2.07E-01	3.68E+01	4.84E+00	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.78E+02	6.32E-01	1.00E+00	2.39E+00	2.29E+00	7.76E+02	1.97E-01	1.28E+03	1.79E-03
UM-0N-1500E (2-6")	1.32E-01	1.32E-01	2.07E-01	2.71E+01	3.56E+00	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.31E+02	4.65E-01	1.00E+00	2.39E+00	1.68E+00	7.76E+02	1.97E-01	1.28E+03	1.32E-03
UM-250S-1500E (2-6")	1.32E-01	1.32E-01	2.07E-01	3.02E+02	3.97E+01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.46E+03	5.18E+00	1.00E+00	2.39E+00	1.88E+01	7.76E+02	1.97E-01	1.28E+03	1.47E-02
UM-250S-1250E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-6 (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-1000E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-750E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-500E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-250S-500E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-250E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-250S-250E (2-6")	1.32E-01	1.32E-01	2.07E-01	1.84E+01	2.42E+00	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	8.91E+01	3.16E-01	1.00E+00	2.39E+00	1.15E+00	7.76E+02	1.97E-01	1.28E+03	8.96E-04
BRSD-7 (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-8 (2-6")	1.32E-01	1.32E-01	2.07E-01	2.91E+02	3.83E+01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.41E+03	5.01E+00	1.00E+00	2.39E+00	1.81E+01	7.76E+02	1.97E-01	1.28E+03	1.42E-02
UM-500S-500E (2-6")	1.32E-01	1.32E-01	2.07E-01	2.09E+01	2.74E+00	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.01E+02	3.59E-01	1.00E+00	2.39E+00	1.30E+00	7.76E+02	1.97E-01	1.28E+03	1.02E-03
BRSD-9 (2-6")	1.32E-01	1.32E-01	2.07E-01	4.36E+02	5.73E+01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	2.11E+03	7.49E+00	1.00E+00	2.39E+00	2.71E+01	7.76E+02	1.97E-01	1.28E+03	2.12E-02
BRSD-10 (2-6")	1.32E-01	1.32E-01	2.07E-01	6.88E+02	9.05E+01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	3.33E+03	1.18E+01	1.00E+00	2.39E+00	4.28E+01	7.76E+02	1.97E-01	1.28E+03	3.35E-02
BRSD-11 (2-6")	1.32E-01	1.32E-01	2.07E-01	6.55E+01	8.61E+00	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	3.17E+02	1.13E+00	1.00E+00	2.39E+00	4.08E+00	7.76E+02	1.97E-01	1.28E+03	3.19E-03
Eastern Upper Marsh (6-12")																						**Maximum HQ (Western Upper Marsh, 2-6")**	**3.84E-02**
UM-1000S-3500E (6-12")	1.32E-01	1.32E-01	2.07E-01	3.16E+01	4.16E+00	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.53E+02	5.43E-01	1.00E+00	2.39E+00	1.97E+00	7.76E+02	1.97E-01	1.28E+03	1.54E-03
BRSD-15 (6-12")	1.32E-01	1.32E-01	2.07E-01	2.71E+02	3.56E+01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.31E+03	4.65E+00	1.00E+00	2.39E+00	1.68E+01	7.76E+02	1.97E-01	1.28E+03	1.32E-02
BRSD-4 (6-12")	1.32E-01	1.32E-01	2.07E-01	9.77E+01	1.29E+01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	4.73E+02	1.68E+00	1.00E+00	2.39E+00	6.08E+00	7.76E+02	1.97E-01	1.28E+03	4.75E-03
UM-750S-3500E (6-12")	1.32E-01	1.32E-01	2.07E-01	1.31E+03	1.73E+02	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	6.35E+03	2.26E+01	1.00E+00	2.39E+00	8.16E+01	7.76E+02	1.97E-01	1.28E+03	6.38E-02
BRSD-16 (6-12")	1.32E-01	1.32E-01	2.07E-01	4.92E+02	6.47E+01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	2.38E+03	8.45E+00	1.00E+00	2.39E+00	3.06E+01	7.76E+02	1.97E-01	1.28E+03	2.39E-02
UM-750S-3000E (6-12")	1.32E-01	1.32E-01	2.07E-01	1.50E+03	1.98E+02	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	7.28E+03	2.59E+01	1.00E+00	2.39E+00	9.36E+01	7.76E+02	1.97E-01	1.28E+03	7.32E-02
BRSD-3 (6-12")	1.32E-01	1.32E-01	2.07E-01	1.34E+02	1.76E+01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	6.48E+02	2.30E+00	1.00E+00	2.39E+00	8.33E+00	7.76E+02	1.97E-01	1.28E+03	6.51E-03
UM-500S-3250E (6-12")	1.32E-01	1.32E-01	2.07E-01	5.70E+01	7.50E+00	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	2.76E+02	9.80E-01	1.00E+00	2.39E+00	3.55E+00	7.76E+02	1.97E-01	1.28E+03	2.77E-03
UM-500S-3000E (6-12")	1.32E-01	1.32E-01	2.07E-01	8.04E+01	1.06E+01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	3.89E+02	1.38E+00	1.00E+00	2.39E+00	5.00E+00	7.76E+02	1.97E-01	1.28E+03	3.91E-03
UM-500S-2750E (6-12")	1.32E-01	1.32E-01	2.07E-01	1.69E+03	2.22E+02	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	8.16E+03	2.90E+01	1.00E+00	2.39E+00	1.05E+02	7.76E+02	1.97E-01	1.28E+03	8.20E-02
BRSD-25 (6-12")	1.32E-01	1.32E-01	2.07E-01	3.60E+01	4.73E+00	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.74E+02	6.18E-01	1.00E+00	2.39E+00	2.24E+00	7.76E+02	1.97E-01	1.28E+03	1.75E-03
UM-250S-3000E (6-12")	1.32E-01	1.32E-01	2.07E-01	1.03E+03	1.36E+02	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	5.00E+03	1.78E+01	1.00E+00	2.39E+00	6.43E+01	7.76E+02	1.97E-01	1.28E+03	5.03E-02
UM-250S-3250E (6-12")	1.32E-01	1.32E-01	2.07E-01	4.55E+01	5.98E+00	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	2.20E+02	7.81E-01	1.00E+00	2.39E+00	2.83E+00	7.76E+02	1.97E-01	1.28E+03	2.21E-03
BRSD-24 (6-12")	1.32E-01	1.32E-01	2.07E-01	2.48E+02	3.26E+01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.20E+03	4.26E+00	1.00E+00	2.39E+00	1.54E+01	7.76E+02	1.97E-01	1.28E+03	1.21E-02
UM-250S-2750E (6-12")	1.32E-01	1.32E-01	2.07E-01	3.39E+02	4.46E+01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.64E+03	5.82E+00	1.00E+00	2.39E+00	2.11E+01	7.76E+02	1.97E-01	1.28E+03	1.65E-02
UM-250S-2500E (6-12")	1.32E-01	1.32E-01	2.07E-01	3.10E+01	4.08E+00	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.50E+02	5.33E-01	1.00E+00	2.39E+00	1.93E+00	7.76E+02	1.97E-01	1.28E+03	1.51E-03

TABLE C-12FB: MANGANESE DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 12 - MARSH, WETLAND RECEPTORS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **118.73**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Great Blue Heron (Carnivorous Birds)																							
BRSD-2 (6-12")	1.32E-01	1.32E-01	2.07E-01	2.54E+02	3.34E+01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.23E+03	4.37E+00	1.00E+00	2.39E+00	1.58E+01	7.76E+02	1.97E-01	1.28E+03	1.24E-02
UM-500N-2500E (6-12")	1.32E-01	1.32E-01	2.07E-01	4.26E+01	5.60E+00	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	2.06E+02	7.32E-01	1.00E+00	2.39E+00	2.65E+00	7.76E+02	1.97E-01	1.28E+03	2.07E-03
UM-250N-2500E (6-12")	1.32E-01	1.32E-01	2.07E-01	1.39E+03	1.83E+02	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	6.74E+03	2.39E+01	1.00E+00	2.39E+00	8.67E+01	7.76E+02	1.97E-01	1.28E+03	6.78E-02
UM-250N-2250E (6-12")	1.32E-01	1.32E-01	2.07E-01	7.17E+01	9.43E+00	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	3.47E+02	1.23E+00	1.00E+00	2.39E+00	4.46E+00	7.76E+02	1.97E-01	1.28E+03	3.49E-03
Western Upper Marsh (6-12")																						**Maximum HQ (Eastern Upper Marsh, 6-12")**	**8.20E-02**
UM-500S-2500E (6-12")	1.32E-01	1.32E-01	2.07E-01	3.14E+01	4.13E+00	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.52E+02	5.40E-01	1.00E+00	2.39E+00	1.95E+00	7.76E+02	1.97E-01	1.28E+03	1.53E-03
UM-0N-2000E (6-12")	1.32E-01	1.32E-01	2.07E-01	1.58E+03	2.08E+02	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	7.67E+03	2.72E+01	1.00E+00	2.39E+00	9.86E+01	7.76E+02	1.97E-01	1.28E+03	7.71E-02
UM-500S-2000E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-250N-1750E (6-12")	1.32E-01	1.32E-01	2.07E-01	2.06E+01	2.71E+00	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	9.96E+01	3.54E-01	1.00E+00	2.39E+00	1.28E+00	7.76E+02	1.97E-01	1.28E+03	1.00E-03
UM-0N-1500E (6-12")	1.32E-01	1.32E-01	2.07E-01	3.35E+01	4.40E+00	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.62E+02	5.75E-01	1.00E+00	2.39E+00	2.08E+00	7.76E+02	1.97E-01	1.28E+03	1.63E-03
UM-250S-1500E (6-12")	1.32E-01	1.32E-01	2.07E-01	9.21E+01	1.21E+01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	4.46E+02	1.58E+00	1.00E+00	2.39E+00	5.73E+00	7.76E+02	1.97E-01	1.28E+03	4.48E-03
UM-250S-1250E (6-12")	1.32E-01	1.32E-01	2.07E-01	1.93E+01	2.54E+00	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	9.35E+01	3.32E-01	1.00E+00	2.39E+00	1.20E+00	7.76E+02	1.97E-01	1.28E+03	9.40E-04
BRSD-6 (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-1000E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-750E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-500E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-250S-500E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-250E (6-12")	1.32E-01	1.32E-01	2.07E-01	2.01E+01	2.65E+00	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	9.74E+01	3.46E-01	1.00E+00	2.39E+00	1.25E+00	7.76E+02	1.97E-01	1.28E+03	9.79E-04
UM-250S-250E (6-12")	1.32E-01	1.32E-01	2.07E-01	5.81E+01	7.64E+00	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	2.81E+02	9.98E-01	1.00E+00	2.39E+00	3.61E+00	7.76E+02	1.97E-01	1.28E+03	2.82E-03
BRSD-7 (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-8 (6-12")	1.32E-01	1.32E-01	2.07E-01	2.33E+02	3.07E+01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.13E+03	4.01E+00	1.00E+00	2.39E+00	1.45E+01	7.76E+02	1.97E-01	1.28E+03	1.14E-02
UM-500S-500E (6-12")	1.32E-01	1.32E-01	2.07E-01	2.09E+01	2.74E+00	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.01E+02	3.59E-01	1.00E+00	2.39E+00	1.30E+00	7.76E+02	1.97E-01	1.28E+03	1.02E-03
BRSD-9 (6-12")	1.32E-01	1.32E-01	2.07E-01	3.64E+02	4.78E+01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.76E+03	6.25E+00	1.00E+00	2.39E+00	2.26E+01	7.76E+02	1.97E-01	1.28E+03	1.77E-02
BRSD-10 (6-12")	1.32E-01	1.32E-01	2.07E-01	1.02E+03	1.34E+02	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	4.92E+03	1.75E+01	1.00E+00	2.39E+00	6.33E+01	7.76E+02	1.97E-01	1.28E+03	4.95E-02
BRSD-11 (6-12")	1.32E-01	1.32E-01	2.07E-01	6.03E+01	7.94E+00	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	2.92E+02	1.04E+00	1.00E+00	2.39E+00	3.75E+00	7.76E+02	1.97E-01	1.28E+03	2.94E-03
Middle Marsh (0-2")																						**Maximum HQ (Western Upper Marsh, 6-12")**	**7.71E-02**
MMSD-201 (0-2")	1.32E-01	1.32E-01	2.07E-01	4.15E+02	5.46E+01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	2.01E+03	7.14E+00	1.00E+00	2.39E+00	2.58E+01	7.76E+02	1.97E-01	1.28E+03	2.02E-02
MMSD-202 (0-2")	1.32E-01	1.32E-01	2.07E-01	3.26E+01	4.29E+00	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.58E+02	5.61E-01	1.00E+00	2.39E+00	2.03E+00	7.76E+02	1.97E-01	1.28E+03	1.59E-03
Middle Marsh (2-6")																						**Maximum HQ (Middle Marsh, 0-2")**	**2.02E-02**
MMSD-201 (2-6")	1.32E-01	1.32E-01	2.07E-01	3.06E+02	4.02E+01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.48E+03	5.26E+00	1.00E+00	2.39E+00	1.90E+01	7.76E+02	1.97E-01	1.28E+03	1.49E-02
MMSD-202 (2-6")	1.32E-01	1.32E-01	2.07E-01	4.65E+01	6.11E+00	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	2.25E+02	7.99E-01	1.00E+00	2.39E+00	2.89E+00	7.76E+02	1.97E-01	1.28E+03	2.26E-03
Middle Marsh (6-12")																						**Maximum HQ (Middle Marsh, 2-6")**	**1.49E-02**
MMSD-201 (6-12")	1.32E-01	1.32E-01	2.07E-01	3.68E+02	4.84E+01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.78E+03	6.32E+00	1.00E+00	2.39E+00	2.29E+01	7.76E+02	1.97E-01	1.28E+03	1.79E-02
MMSD-202 (6-12")	1.32E-01	1.32E-01	2.07E-01	5.62E+01	7.39E+00	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	2.72E+02	9.66E-01	1.00E+00	2.39E+00	3.50E+00	7.76E+02	1.97E-01	1.28E+03	2.73E-03
Lower Marsh (0-2")																						**Maximum HQ (Middle Marsh, 6-12")**	**1.79E-02**
LMSD-201 (0-2")	1.32E-01	1.32E-01	2.07E-01	4.17E+01	5.49E+00	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	2.02E+02	7.17E-01	1.00E+00	2.39E+00	2.60E+00	7.76E+02	1.97E-01	1.28E+03	2.03E-03
LMSD-202 (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
LMSD-203 (0-2")	1.32E-01	1.32E-01	2.07E-01	4.21E+02	5.54E+01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	2.04E+03	7.24E+00	1.00E+00	2.39E+00	2.62E+01	7.76E+02	1.97E-01	1.28E+03	2.05E-02
LMSD-204 (0-2")	1.32E-01	1.32E-01	2.07E-01	6.65E+01	8.75E+00	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	3.22E+02	1.14E+00	1.00E+00	2.39E+00	4.14E+00	7.76E+02	1.97E-01	1.28E+03	3.24E-03
Lower Marsh (2-6")																						**Maximum HQ (Lower Marsh, 0-2")**	**2.05E-02**
LMSD-201 (2-6")	1.32E-01	1.32E-01	2.07E-01	3.62E+01	4.76E+00	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.75E+02	6.21E-01	1.00E+00	2.39E+00	2.25E+00	7.76E+02	1.97E-01	1.28E+03	1.76E-03
LMSD-202 (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
LMSD-203 (2-6")	1.32E-01	1.32E-01	2.07E-01	4.75E+02	6.25E+01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	2.30E+03	8.17E+00	1.00E+00	2.39E+00	2.96E+01	7.76E+02	1.97E-01	1.28E+03	2.31E-02
LMSD-204 (2-6")	1.32E-01	1.32E-01	2.07E-01	1.00E+02	1.32E+01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	4.84E+02	1.72E+00	1.00E+00	2.39E+00	6.22E+00	7.76E+02	1.97E-01	1.28E+03	4.87E-03
Lower Marsh (6-12")																						**Maximum HQ (Lower Marsh, 2-6")**	**2.31E-02**
LMSD-201 (6-12")	1.32E-01	1.32E-01	2.07E-01	3.76E+01	4.95E+00	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.82E+02	6.46E-01	1.00E+00	2.39E+00	2.34E+00	7.76E+02	1.97E-01	1.28E+03	1.83E-03
LMSD-202 (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
LMSD-203 (6-12")	1.32E-01	1.32E-01	2.07E-01	1.48E+03	1.95E+02	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	7.18E+03	2.55E+01	1.00E+00	2.39E+00	9.23E+01	7.76E+02	1.97E-01	1.28E+03	7.22E-02
LMSD-204 (6-12")	1.32E-01	1.32E-01	2.07E-01	1.20E+02	1.58E+01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	5.80E+02	2.06E+00	1.00E+00	2.39E+00	7.46E+00	7.76E+02	1.97E-01	1.28E+03	5.83E-03
																						Maximum HQ (Lower Marsh, 6-12")	**7.22E-02**
Mallard (Omnivorous Birds)																							
Reference Sites																							
BRSD-5 (0-2")	7.94E-02	NA	NA	NA	NA	5.00E-02	3.24E+00	1.04E+03	5.19E+01	2.94E-02	1.33E+01	4.26E+03	1.25E+02	2.62E-03	3.20E+02	8.38E-01	3.85E-01	1.14E+00	5.99E+01	7.76E+02	1.97E-01	1.10E+03	5.43E-02
BRSD-5 (2-6")	7.94E-02	NA	NA	NA	NA	5.00E-02	3.24E+00	8.10E+02	4.05E+01	2.94E-02	1.33E+01	3.33E+03	9.76E+01	2.62E-03	2.50E+02	6.55E-01	3.85E-01	1.14E+00	4.68E+01	7.76E+02	1.97E-01	1.10E+03	4.24E-02
BRSD-5 (6-12")	7.94E-02	NA	NA	NA	NA	5.00E-02	3.24E+00	7.91E+02	3.95E+01	2.94E-02	1.33E+01	3.25E+03	9.53E+01	2.62E-03	2.44E+02	6.39E-01	3.85E-01	1.14E+00	4.57E+01	7.76E+02	1.97E-01	1.10E+03	4.14E-02
PGBG-1 (0-2")	7.94E-02	NA	NA	NA	NA	5.00E-02	3.24E+00	2.26E+03	1.13E+02	2.94E-02	1.33E+01	9.26E+03	2.72E+02	2.62E-03	6.96E+02	1.82E+00	3.85E-01	1.14E+00	1.30E+02	7.76E+02	1.97E-01	1.10E+03	1.18E-01
PGBG-1 (2-6")	7.94E-02	NA	NA	NA	NA	5.00E-02	3.24E+00	6.45E+02	3.23E+01	2.94E-02	1.33E+01	2.65E+03	7.77E+01	2.62E-03	1.99E+02	5.21E-01	3.85E-01	1.14E+00	3.73E+01	7.76E+02	1.97E-01	1.10E+03	3.38E-02

TABLE C-12FB: MANGANESE DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 12 - MARSH, WETLAND RECEPTORS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **118.73**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Mallard (Omnivorous Birds)																							
PGBG-1 (6-12")	7.94E-02	NA	NA	NA	NA	5.00E-02	3.24E+00	2.85E+02	1.43E+01	2.94E-02	1.33E+01	1.17E+03	3.44E+01	2.62E-03	8.80E+01	2.30E-01	3.85E-01	1.14E+00	1.65E+01	7.76E+02	1.97E-01	1.10E+03	1.49E-02
PGBG-2 (0-2")	7.94E-02	NA	NA	NA	NA	5.00E-02	3.24E+00	1.90E+03	9.50E+01	2.94E-02	1.33E+01	7.79E+03	2.29E+02	2.62E-03	5.86E+02	1.53E+00	3.85E-01	1.14E+00	1.10E+02	7.76E+02	1.97E-01	1.10E+03	9.94E-02
PGBG-2 (2-6")	7.94E-02	NA	NA	NA	NA	5.00E-02	3.24E+00	1.61E+03	8.07E+01	2.94E-02	1.33E+01	6.62E+03	1.94E+02	2.62E-03	4.98E+02	1.30E+00	3.85E-01	1.14E+00	9.32E+01	7.76E+02	1.97E-01	1.10E+03	8.45E-02
PGBG-2 (6-12")	7.94E-02	NA	NA	NA	NA	5.00E-02	3.24E+00	9.50E+02	4.75E+01	2.94E-02	1.33E+01	3.90E+03	1.14E+02	2.62E-03	2.93E+02	7.67E-01	3.85E-01	1.14E+00	5.49E+01	7.76E+02	1.97E-01	1.10E+03	4.97E-02
Eastern Upper Marsh (0-2")																						**Minimum HQ (Reference Sites)**	**1.49E-02**
UM-1000S-3500E (0-2")	7.94E-02	NA	NA	NA	NA	5.00E-02	3.62E+00	1.02E+03	5.12E+01	2.94E-02	3.50E+01	9.89E+03	2.91E+02	2.62E-03	2.83E+02	7.41E-01	3.85E-01	1.14E+00	1.15E+02	7.76E+02	1.97E-01	1.10E+03	1.05E-01
BRSD-15 (0-2")	7.94E-02	NA	NA	NA	NA	5.00E-02	3.62E+00	2.30E+03	1.15E+02	2.94E-02	3.50E+01	2.22E+04	6.52E+02	2.62E-03	6.35E+02	1.66E+00	3.85E-01	1.14E+00	2.59E+02	7.76E+02	1.97E-01	1.10E+03	2.35E-01
BRSD-4 (0-2")	7.94E-02	NA	NA	NA	NA	5.00E-02	3.62E+00	7.59E+02	3.80E+01	2.94E-02	3.50E+01	7.34E+03	2.16E+02	2.62E-03	2.10E+02	5.50E-01	3.85E-01	1.14E+00	8.57E+01	7.76E+02	1.97E-01	1.10E+03	7.76E-02
UM-750S-3500E (0-2")	7.94E-02	NA	NA	NA	NA	5.00E-02	3.62E+00	2.69E+04	1.34E+03	2.94E-02	3.50E+01	2.60E+05	7.63E+03	2.62E-03	7.43E+03	1.95E+01	3.85E-01	1.14E+00	3.03E+03	7.76E+02	1.97E-01	1.10E+03	2.75E+00
BRSD-16 (0-2")	7.94E-02	NA	NA	NA	NA	5.00E-02	3.62E+00	3.76E+03	1.88E+02	2.94E-02	3.50E+01	3.64E+04	1.07E+03	2.62E-03	1.04E+03	2.72E+00	3.85E-01	1.14E+00	4.24E+02	7.76E+02	1.97E-01	1.10E+03	3.85E-01
UM-750S-3000E (0-2")	7.94E-02	NA	NA	NA	NA	5.00E-02	3.62E+00	2.57E+04	1.29E+03	2.94E-02	3.50E+01	2.49E+05	7.30E+03	2.62E-03	7.11E+03	1.86E+01	3.85E-01	1.14E+00	2.90E+03	7.76E+02	1.97E-01	1.10E+03	2.63E+00
BRSD-3 (0-2")	7.94E-02	NA	NA	NA	NA	5.00E-02	3.62E+00	4.48E+03	2.24E+02	2.94E-02	3.50E+01	4.34E+04	1.27E+03	2.62E-03	1.24E+03	3.25E+00	3.85E-01	1.14E+00	5.06E+02	7.76E+02	1.97E-01	1.10E+03	4.59E-01
UM-500S-3250E (0-2")	7.94E-02	NA	NA	NA	NA	5.00E-02	3.62E+00	9.36E+03	4.68E+02	2.94E-02	3.50E+01	9.05E+04	2.66E+03	2.62E-03	2.59E+03	6.78E+00	3.85E-01	1.14E+00	1.06E+03	7.76E+02	1.97E-01	1.10E+03	9.58E-01
UM-500S-3000E (0-2")	7.94E-02	NA	NA	NA	NA	5.00E-02	3.62E+00	4.27E+03	2.13E+02	2.94E-02	3.50E+01	4.13E+04	1.21E+03	2.62E-03	1.18E+03	3.09E+00	3.85E-01	1.14E+00	4.82E+02	7.76E+02	1.97E-01	1.10E+03	4.36E-01
UM-500S-2750E (0-2")	7.94E-02	NA	NA	NA	NA	5.00E-02	3.62E+00	2.59E+04	1.29E+03	2.94E-02	3.50E+01	2.50E+05	7.35E+03	2.62E-03	7.16E+03	1.88E+01	3.85E-01	1.14E+00	2.92E+03	7.76E+02	1.97E-01	1.10E+03	2.65E+00
BRSD-25 (0-2")	7.94E-02	NA	NA	NA	NA	5.00E-02	3.62E+00	5.42E+03	2.71E+02	2.94E-02	3.50E+01	5.24E+04	1.54E+03	2.62E-03	1.50E+03	3.93E+00	3.85E-01	1.14E+00	6.12E+02	7.76E+02	1.97E-01	1.10E+03	5.55E-01
UM-250S-3000E (0-2")	7.94E-02	NA	NA	NA	NA	5.00E-02	3.62E+00	1.59E+04	7.95E+02	2.94E-02	3.50E+01	1.54E+05	4.52E+03	2.62E-03	4.40E+03	1.15E+01	3.85E-01	1.14E+00	1.80E+03	7.76E+02	1.97E-01	1.10E+03	1.63E+00
UM-250S-3250E (0-2")	7.94E-02	NA	NA	NA	NA	5.00E-02	3.62E+00	5.32E+03	2.66E+02	2.94E-02	3.50E+01	5.14E+04	1.51E+03	2.62E-03	1.47E+03	3.85E+00	3.85E-01	1.14E+00	6.00E+02	7.76E+02	1.97E-01	1.10E+03	5.44E-01
BRSD-24 (0-2")	7.94E-02	NA	NA	NA	NA	5.00E-02	3.62E+00	2.89E+04	1.44E+03	2.94E-02	3.50E+01	2.79E+05	8.20E+03	2.62E-03	7.99E+03	2.09E+01	3.85E-01	1.14E+00	3.26E+03	7.76E+02	1.97E-01	1.10E+03	2.95E+00
UM-250S-2750E (0-2")	7.94E-02	NA	NA	NA	NA	5.00E-02	3.62E+00	2.82E+04	1.41E+03	2.94E-02	3.50E+01	2.73E+05	8.02E+03	2.62E-03	7.81E+03	2.05E+01	3.85E-01	1.14E+00	3.19E+03	7.76E+02	1.97E-01	1.10E+03	2.89E+00
UM-250S-2500E (0-2")	7.94E-02	NA	NA	NA	NA	5.00E-02	3.62E+00	8.50E+02	4.25E+01	2.94E-02	3.50E+01	8.22E+03	2.41E+02	2.62E-03	2.35E+02	6.15E-01	3.85E-01	1.14E+00	9.59E+01	7.76E+02	1.97E-01	1.10E+03	8.69E-02
UM-0N-2500E (0-2")	7.94E-02	NA	NA	NA	NA	5.00E-02	3.62E+00	7.41E+03	3.71E+02	2.94E-02	3.50E+01	7.17E+04	2.10E+03	2.62E-03	2.05E+03	5.37E+00	3.85E-01	1.14E+00	8.37E+02	7.76E+02	1.97E-01	1.10E+03	7.58E-01
UM-0N-250E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-2 (0-2")	7.94E-02	NA	NA	NA	NA	5.00E-02	3.62E+00	2.78E+04	1.39E+03	2.94E-02	3.50E+01	2.69E+05	7.89E+03	2.62E-03	7.69E+03	2.01E+01	3.85E-01	1.14E+00	3.14E+03	7.76E+02	1.97E-01	1.10E+03	2.84E+00
UM-500N-2500E (0-2")	7.94E-02	NA	NA	NA	NA	5.00E-02	3.62E+00	5.89E+02	2.95E+01	2.94E-02	3.50E+01	5.70E+03	1.67E+02	2.62E-03	1.63E+02	4.27E-01	3.85E-01	1.14E+00	6.65E+01	7.76E+02	1.97E-01	1.10E+03	6.03E-02
UM-250N-2500E (0-2")	7.94E-02	NA	NA	NA	NA	5.00E-02	3.62E+00	1.37E+04	6.87E+02	2.94E-02	3.50E+01	1.33E+05	3.90E+03	2.62E-03	3.80E+03	9.95E+00	3.85E-01	1.14E+00	1.55E+03	7.76E+02	1.97E-01	1.10E+03	1.41E+00
UM-250N-2250E (0-2")	7.94E-02	NA	NA	NA	NA	5.00E-02	3.62E+00	2.76E+04	1.38E+03	2.94E-02	3.50E+01	2.66E+05	7.82E+03	2.62E-03	7.62E+03	2.00E+01	3.85E-01	1.14E+00	3.11E+03	7.76E+02	1.97E-01	1.10E+03	2.82E+00
Western Upper Marsh (0-2")																						**Maximum HQ (Eastern Upper Marsh, 0-2")**	**2.95E+00**
UM-500S-2500E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-2000E (0-2")	7.94E-02	NA	NA	NA	NA	5.00E-02	5.04E+00	2.18E+04	1.09E+03	2.94E-02	2.72E+01	1.18E+05	3.45E+03	2.62E-03	4.32E+03	1.13E+01	3.85E-01	1.14E+00	1.54E+03	7.76E+02	1.97E-01	1.10E+03	1.39E+00
UM-500S-2000E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-250N-1750E (0-2")	7.94E-02	NA	NA	NA	NA	5.00E-02	5.04E+00	6.35E+02	3.18E+01	2.94E-02	2.72E+01	3.43E+03	1.01E+02	2.62E-03	1.26E+02	3.30E-01	3.85E-01	1.14E+00	4.48E+01	7.76E+02	1.97E-01	1.10E+03	4.06E-02
UM-0N-1500E (0-2")	7.94E-02	NA	NA	NA	NA	5.00E-02	5.04E+00	6.71E+02	3.35E+01	2.94E-02	2.72E+01	3.62E+03	1.06E+02	2.62E-03	1.33E+02	3.48E-01	3.85E-01	1.14E+00	4.73E+01	7.76E+02	1.97E-01	1.10E+03	4.28E-02
UM-250S-1500E (0-2")	7.94E-02	NA	NA	NA	NA	5.00E-02	5.04E+00	5.90E+03	2.95E+02	2.94E-02	2.72E+01	3.19E+04	9.35E+02	2.62E-03	1.17E+03	3.06E+00	3.85E-01	1.14E+00	4.16E+02	7.76E+02	1.97E-01	1.10E+03	3.77E-01
UM-250S-1250E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-6 (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-1000E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-750E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-500E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-250S-500E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-250S-250E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-7 (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-8 (0-2")	7.94E-02	NA	NA	NA	NA	5.00E-02	5.04E+00	2.49E+03	1.24E+02	2.94E-02	2.72E+01	1.34E+04	3.94E+02	2.62E-03	4.93E+02	1.29E+00	3.85E-01	1.14E+00	1.75E+02	7.76E+02	1.97E-01	1.10E+03	1.59E-01
UM-500S-500E (0-2")	7.94E-02	NA	NA	NA	NA	5.00E-02	5.04E+00	4.90E+02	2.45E+01	2.94E-02	2.72E+01	2.64E+03	7.76E+01	2.62E-03	9.71E+01	2.54E-01	3.85E-01	1.14E+00	3.45E+01	7.76E+02	1.97E-01	1.10E+03	3.13E-02
BRSD-9 (0-2")	7.94E-02	NA	NA	NA	NA	5.00E-02	5.04E+00	2.80E+04	1.40E+03	2.94E-02	2.72E+01	1.51E+05	4.44E+03	2.62E-03	5.55E+03	1.45E+01	3.85E-01	1.14E+00	1.97E+03	7.76E+02	1.97E-01	1.10E+03	1.79E+00
BRSD-10 (0-2")	7.94E-02	NA	NA	NA	NA	5.00E-02	5.04E+00	1.72E+04	8.60E+02	2.94E-02	2.72E+01	9.28E+04	2.73E+03	2.62E-03	3.41E+03	8.93E+00	3.85E-01	1.14E+00	1.21E+03	7.76E+02	1.97E-01	1.10E+03	1.10E+00
BRSD-11 (0-2")	7.94E-02	NA	NA	NA	NA	5.00E-02	5.04E+00	6.86E+03	3.43E+02	2.94E-02	2.72E+01	3.70E+04	1.09E+03	2.62E-03	1.36E+03	3.56E+00	3.85E-01	1.14E+00	4.84E+02	7.76E+02	1.97E-01	1.10E+03	4.38E-01
Eastern Upper Marsh (2-6")																						**Maximum HQ (Western Upper Marsh, 0-2")**	**1.79E+00**
UM-1000S-3500E (2-6")	7.94E-02	NA	NA	NA	NA	5.00E-02	3.62E+00	1.55E+03	7.77E+01	2.94E-02	3.50E+01	1.50E+04	4.41E+02	2.62E-03	4.30E+02	1.13E+00	3.85E-01	1.14E+00	1.75E+02	7.76E+02	1.97E-01	1.10E+03	1.59E-01
BRSD-15 (2-6")	7.94E-02	NA	NA	NA	NA	5.00E-02	3.62E+00	3.62E+03	1.81E+02	2.94E-02	3.50E+01	3.50E+04	1.03E+03	2.62E-03	1.00E+03	2.62E+00	3.85E-01	1.14E+00	4.08E+02	7.76E+02	1.97E-01	1.10E+03	3.70E-01
BRSD-4 (2-6")	7.94E-02	NA	NA	NA	NA	5.00E-02	3.62E+00	3.45E+02	1.72E+01	2.94E-02	3.50E+01	3.34E+03	9.79E+01	2.62E-03	9.54E+01	2.50E-01	3.85E-01	1.14E+00	3.89E+01	7.76E+02	1.97E-01	1.10E+03	3.53E-02
UM-750S-3500E (2-6")	7.94E-02	NA	NA	NA	NA	5.00E-02	3.62E+00	2.56E+04	1.28E+03	2.94E-02	3.50E+01	2.48E+05	7.28E+03	2.62E-03	7.09E+03	1.86E+01	3.85E-01	1.14E+00	2.89E+03	7.76E+02	1.97E-01	1.10E+03	2.62E+00
BRSD-16 (2-6")	7.94E-02	NA	NA	NA	NA	5.00E-02	3.62E+00	3.65E+04	1.83E+03	2.94E-02	3.50E+01	3.53E+05	1.04E+04	2.62E-03	1.01E+04	2.64E+01	3.85E-01	1.14E+00	4.12E+03	7.76E+02	1.97E-01	1.10E+03	3.73E+00
UM-750S-3000E (2-6")	7.94E-02	NA	NA	NA	NA	5.00E-02	3.62E+00	2.69E+04	1.34E+03	2.94E-02	3.50E+01	2.60E+05	7.64E+03	2.62E-03	7.44E+03	1.95E+01	3.85E-01	1.14E+00	3.04E+03	7.76E+02	1.97E-01	1.10E+03	2.75E+00
BRSD-3 (2-6")	7.94E-02	NA	NA	NA	NA	5.00E-02	3.62E+00	6.11E+03	3.06E+02	2.94E-02	3.50E+01	5.91E+04	1.73E+03	2.62E-03	1.69E+03	4.43E+00	3.85E-01	1.14E+00	6.90E+02	7.76E+02	1.97E-01	1.10E+03	6.25E-01
UM-500S-3250E (2-6")	7.94E-02	NA	NA	NA	NA	5.00E-02	3.62E+00	1.55E+03	7.74E+01	2.94E-02	3.50E+01	1.50E+04	4.39E+02	2.62E-03	4.28E+02	1.12E+00	3.85E-01	1.14E+00	1.75E+02	7.76E+02	1.97E-01	1.10E+03	1.58E-01
UM-500S-3000E (2-6")	7.94E-02	NA	NA	NA	NA	5.00E-02	3.62E+00	1.15E+03	5.73E+01	2.94E-02	3.50E+01	1.11E+04	3.25E+02	2.62E-03	3.17E+02	8.30E-01	3.85E-01	1.14E+00	1.29E+02	7.76E+02	1.97E-01	1.10E+03	1.17E-01

TABLE C-12FB: MANGANESE DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 12 - MARSH, WETLAND RECEPTORS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **118.73**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Mallard (Omnivorous Birds)																							
UM-500S-2750E (2-6")	7.94E-02	NA	NA	NA	NA	5.00E-02	3.62E+00	3.02E+04	1.51E+03	2.94E-02	3.50E+01	2.92E+05	8.58E+03	2.62E-03	8.36E+03	2.19E+01	3.85E-01	1.14E+00	3.41E+03	7.76E+02	1.97E-01	1.10E+03	3.09E+00
BRSD-25 (2-6")	7.94E-02	NA	NA	NA	NA	5.00E-02	3.62E+00	3.83E+03	1.92E+02	2.94E-02	3.50E+01	3.71E+04	1.09E+03	2.62E-03	1.06E+03	2.78E+00	3.85E-01	1.14E+00	4.33E+02	7.76E+02	1.97E-01	1.10E+03	3.92E-01
UM-250S-3000E (2-6")	7.94E-02	NA	NA	NA	NA	5.00E-02	3.62E+00	9.29E+03	4.65E+02	2.94E-02	3.50E+01	8.98E+04	2.64E+03	2.62E-03	2.57E+03	6.73E+00	3.85E-01	1.14E+00	1.05E+03	7.76E+02	1.97E-01	1.10E+03	9.50E-01
UM-250S-3250E (2-6")	7.94E-02	NA	NA	NA	NA	5.00E-02	3.62E+00	4.66E+02	2.33E+01	2.94E-02	3.50E+01	4.51E+03	1.32E+02	2.62E-03	1.29E+02	3.38E-01	3.85E-01	1.14E+00	5.26E+01	7.76E+02	1.97E-01	1.10E+03	4.77E-02
BRSD-24 (2-6")	7.94E-02	NA	NA	NA	NA	5.00E-02	3.62E+00	1.03E+04	5.17E+02	2.94E-02	3.50E+01	1.00E+05	2.94E+03	2.62E-03	2.86E+03	7.49E+00	3.85E-01	1.14E+00	1.17E+03	7.76E+02	1.97E-01	1.10E+03	1.06E+00
UM-250S-2750E (2-6")	7.94E-02	NA	NA	NA	NA	5.00E-02	3.62E+00	2.12E+04	1.06E+03	2.94E-02	3.50E+01	2.05E+05	6.01E+03	2.62E-03	5.85E+03	1.53E+01	3.85E-01	1.14E+00	2.39E+03	7.76E+02	1.97E-01	1.10E+03	2.16E+00
UM-0N-2500E (2-6")	7.94E-02	NA	NA	NA	NA	5.00E-02	3.62E+00	1.16E+04	5.82E+02	2.94E-02	3.50E+01	1.13E+05	3.31E+03	2.62E-03	3.22E+03	8.43E+00	3.85E-01	1.14E+00	1.31E+03	7.76E+02	1.97E-01	1.10E+03	1.19E+00
BRSD-2 (2-6")	7.94E-02	NA	NA	NA	NA	5.00E-02	3.62E+00	2.20E+04	1.10E+03	2.94E-02	3.50E+01	2.13E+05	6.25E+03	2.62E-03	6.09E+03	1.59E+01	3.85E-01	1.14E+00	2.49E+03	7.76E+02	1.97E-01	1.10E+03	2.25E+00
UM-500N-2500E (2-6")	7.94E-02	NA	NA	NA	NA	5.00E-02	3.62E+00	6.73E+02	3.36E+01	2.94E-02	3.50E+01	6.50E+03	1.91E+02	2.62E-03	1.86E+02	4.87E-01	3.85E-01	1.14E+00	7.59E+01	7.76E+02	1.97E-01	1.10E+03	6.88E-02
UM-250N-2500E (2-6")	7.94E-02	NA	NA	NA	NA	5.00E-02	3.62E+00	2.89E+04	1.44E+03	2.94E-02	3.50E+01	2.79E+05	8.19E+03	2.62E-03	7.98E+03	2.09E+01	3.85E-01	1.14E+00	3.26E+03	7.76E+02	1.97E-01	1.10E+03	2.95E+00
UM-250N-2250E (2-6")	7.94E-02	NA	NA	NA	NA	5.00E-02	3.62E+00	1.01E+03	5.04E+01	2.94E-02	3.50E+01	9.75E+03	2.86E+02	2.62E-03	2.79E+02	7.31E-01	3.85E-01	1.14E+00	1.14E+02	7.76E+02	1.97E-01	1.10E+03	1.03E-01
Western Upper Marsh (2-6")																						**Maximum HQ (Eastern Upper Marsh, 2-6")**	**3.73E+00**
UM-500S-2500E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-2000E (2-6")	7.94E-02	NA	NA	NA	NA	5.00E-02	5.04E+00	1.93E+04	9.63E+02	2.94E-02	2.72E+01	1.04E+05	3.05E+03	2.62E-03	3.82E+03	1.00E+01	3.85E-01	1.14E+00	1.36E+03	7.76E+02	1.97E-01	1.10E+03	1.23E+00
UM-500S-2000E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-250N-1750E (2-6")	7.94E-02	NA	NA	NA	NA	5.00E-02	5.04E+00	8.98E+02	4.49E+01	2.94E-02	2.72E+01	4.85E+03	1.42E+02	2.62E-03	1.78E+02	4.66E-01	3.85E-01	1.14E+00	6.33E+01	7.76E+02	1.97E-01	1.10E+03	5.73E-02
UM-0N-1500E (2-6")	7.94E-02	NA	NA	NA	NA	5.00E-02	5.04E+00	6.61E+02	3.30E+01	2.94E-02	2.72E+01	3.57E+03	1.05E+02	2.62E-03	1.31E+02	3.43E-01	3.85E-01	1.14E+00	4.66E+01	7.76E+02	1.97E-01	1.10E+03	4.22E-02
UM-250S-1500E (2-6")	7.94E-02	NA	NA	NA	NA	5.00E-02	5.04E+00	7.36E+03	3.68E+02	2.94E-02	2.72E+01	3.98E+04	1.17E+03	2.62E-03	1.46E+03	3.82E+00	3.85E-01	1.14E+00	5.19E+02	7.76E+02	1.97E-01	1.10E+03	4.70E-01
UM-250S-1250E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-6 (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-1000E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-750E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-500E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-250S-500E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-250E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-250S-250E (2-6")	7.94E-02	NA	NA	NA	NA	5.00E-02	5.04E+00	4.49E+02	2.25E+01	2.94E-02	2.72E+01	2.43E+03	7.12E+01	2.62E-03	8.91E+01	2.33E-01	3.85E-01	1.14E+00	3.17E+01	7.76E+02	1.97E-01	1.10E+03	2.87E-02
BRSD-7 (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-8 (2-6")	7.94E-02	NA	NA	NA	NA	5.00E-02	5.04E+00	7.11E+03	3.55E+02	2.94E-02	2.72E+01	3.84E+04	1.13E+03	2.62E-03	1.41E+03	3.69E+00	3.85E-01	1.14E+00	5.01E+02	7.76E+02	1.97E-01	1.10E+03	4.54E-01
UM-500S-500E (2-6")	7.94E-02	NA	NA	NA	NA	5.00E-02	5.04E+00	5.09E+02	2.55E+01	2.94E-02	2.72E+01	2.75E+03	8.07E+01	2.62E-03	1.01E+02	2.64E-01	3.85E-01	1.14E+00	3.59E+01	7.76E+02	1.97E-01	1.10E+03	3.25E-02
BRSD-9 (2-6")	7.94E-02	NA	NA	NA	NA	5.00E-02	5.04E+00	1.06E+04	5.32E+02	2.94E-02	2.72E+01	5.75E+04	1.69E+03	2.62E-03	2.11E+03	5.53E+00	3.85E-01	1.14E+00	7.50E+02	7.76E+02	1.97E-01	1.10E+03	6.80E-01
BRSD-10 (2-6")	7.94E-02	NA	NA	NA	NA	5.00E-02	5.04E+00	1.68E+04	8.40E+02	2.94E-02	2.72E+01	9.07E+04	2.66E+03	2.62E-03	3.33E+03	8.72E+00	3.85E-01	1.14E+00	1.18E+03	7.76E+02	1.97E-01	1.10E+03	1.07E+00
BRSD-11 (2-6")	7.94E-02	NA	NA	NA	NA	5.00E-02	5.04E+00	1.60E+03	7.99E+01	2.94E-02	2.72E+01	8.63E+03	2.53E+02	2.62E-03	3.17E+02	8.30E-01	3.85E-01	1.14E+00	1.13E+02	7.76E+02	1.97E-01	1.10E+03	1.02E-01
Eastern Upper Marsh (6-12")																						**Maximum HQ (Western Upper Marsh, 2-6")**	**1.23E+00**
UM-1000S-3500E (6-12")	7.94E-02	NA	NA	NA	NA	5.00E-02	3.62E+00	5.53E+02	2.77E+01	2.94E-02	3.50E+01	5.35E+03	1.57E+02	2.62E-03	1.53E+02	4.01E-01	3.85E-01	1.14E+00	6.24E+01	7.76E+02	1.97E-01	1.10E+03	5.66E-02
BRSD-15 (6-12")	7.94E-02	NA	NA	NA	NA	5.00E-02	3.62E+00	4.74E+03	2.37E+02	2.94E-02	3.50E+01	4.58E+04	1.34E+03	2.62E-03	1.31E+03	3.43E+00	3.85E-01	1.14E+00	5.35E+02	7.76E+02	1.97E-01	1.10E+03	4.84E-01
BRSD-4 (6-12")	7.94E-02	NA	NA	NA	NA	5.00E-02	3.62E+00	1.71E+03	8.55E+01	2.94E-02	3.50E+01	1.65E+04	4.86E+02	2.62E-03	4.73E+02	1.24E+00	3.85E-01	1.14E+00	1.93E+02	7.76E+02	1.97E-01	1.10E+03	1.75E-01
UM-750S-3500E (6-12")	7.94E-02	NA	NA	NA	NA	5.00E-02	3.62E+00	2.30E+04	1.15E+03	2.94E-02	3.50E+01	2.22E+05	6.52E+03	2.62E-03	6.35E+03	1.66E+01	3.85E-01	1.14E+00	2.59E+03	7.76E+02	1.97E-01	1.10E+03	2.35E+00
BRSD-16 (6-12")	7.94E-02	NA	NA	NA	NA	5.00E-02	3.62E+00	8.61E+03	4.30E+02	2.94E-02	3.50E+01	8.32E+04	2.44E+03	2.62E-03	2.38E+03	6.23E+00	3.85E-01	1.14E+00	9.71E+02	7.76E+02	1.97E-01	1.10E+03	8.80E-01
UM-750S-3000E (6-12")	7.94E-02	NA	NA	NA	NA	5.00E-02	3.62E+00	2.63E+04	1.32E+03	2.94E-02	3.50E+01	2.55E+05	7.47E+03	2.62E-03	7.28E+03	1.91E+01	3.85E-01	1.14E+00	2.97E+03	7.76E+02	1.97E-01	1.10E+03	2.69E+00
BRSD-3 (6-12")	7.94E-02	NA	NA	NA	NA	5.00E-02	3.62E+00	2.34E+03	1.17E+02	2.94E-02	3.50E+01	2.27E+04	6.65E+02	2.62E-03	6.48E+02	1.70E+00	3.85E-01	1.14E+00	2.64E+02	7.76E+02	1.97E-01	1.10E+03	2.40E-01
UM-500S-3250E (6-12")	7.94E-02	NA	NA	NA	NA	5.00E-02	3.62E+00	9.98E+02	4.99E+01	2.94E-02	3.50E+01	9.65E+03	2.83E+02	2.62E-03	2.76E+02	7.23E-01	3.85E-01	1.14E+00	1.13E+02	7.76E+02	1.97E-01	1.10E+03	1.02E-01
UM-500S-3000E (6-12")	7.94E-02	NA	NA	NA	NA	5.00E-02	3.62E+00	1.41E+03	7.03E+01	2.94E-02	3.50E+01	1.36E+04	3.99E+02	2.62E-03	3.89E+02	1.02E+00	3.85E-01	1.14E+00	1.59E+02	7.76E+02	1.97E-01	1.10E+03	1.44E-01
UM-500S-2750E (6-12")	7.94E-02	NA	NA	NA	NA	5.00E-02	3.62E+00	2.95E+04	1.48E+03	2.94E-02	3.50E+01	2.85E+05	8.38E+03	2.62E-03	8.16E+03	2.14E+01	3.85E-01	1.14E+00	3.33E+03	7.76E+02	1.97E-01	1.10E+03	3.02E+00
BRSD-25 (6-12")	7.94E-02	NA	NA	NA	NA	5.00E-02	3.62E+00	6.29E+02	3.15E+01	2.94E-02	3.50E+01	6.08E+03	1.79E+02	2.62E-03	1.74E+02	4.56E-01	3.85E-01	1.14E+00	7.10E+01	7.76E+02	1.97E-01	1.10E+03	6.43E-02
UM-250S-3000E (6-12")	7.94E-02	NA	NA	NA	NA	5.00E-02	3.62E+00	1.81E+04	9.04E+02	2.94E-02	3.50E+01	1.75E+05	5.13E+03	2.62E-03	5.00E+03	1.31E+01	3.85E-01	1.14E+00	2.04E+03	7.76E+02	1.97E-01	1.10E+03	1.85E+00
UM-250S-3250E (6-12")	7.94E-02	NA	NA	NA	NA	5.00E-02	3.62E+00	7.95E+02	3.98E+01	2.94E-02	3.50E+01	7.69E+03	2.26E+02	2.62E-03	2.20E+02	5.76E-01	3.85E-01	1.14E+00	8.98E+01	7.76E+02	1.97E-01	1.10E+03	8.13E-02
BRSD-24 (6-12")	7.94E-02	NA	NA	NA	NA	5.00E-02	3.62E+00	4.34E+03	2.17E+02	2.94E-02	3.50E+01	4.20E+04	1.23E+03	2.62E-03	1.20E+03	3.14E+00	3.85E-01	1.14E+00	4.90E+02	7.76E+02	1.97E-01	1.10E+03	4.44E-01
UM-250S-2750E (6-12")	7.94E-02	NA	NA	NA	NA	5.00E-02	3.62E+00	5.93E+03	2.96E+02	2.94E-02	3.50E+01	5.73E+04	1.68E+03	2.62E-03	1.64E+03	4.29E+00	3.85E-01	1.14E+00	6.69E+02	7.76E+02	1.97E-01	1.10E+03	6.06E-01
UM-250S-2500E (6-12")	7.94E-02	NA	NA	NA	NA	5.00E-02	3.62E+00	5.42E+02	2.71E+01	2.94E-02	3.50E+01	5.24E+03	1.54E+02	2.62E-03	1.50E+02	3.93E-01	3.85E-01	1.14E+00	6.12E+01	7.76E+02	1.97E-01	1.10E+03	5.55E-02
BRSD-2 (6-12")	7.94E-02	NA	NA	NA	NA	5.00E-02	3.62E+00	4.45E+03	2.22E+02	2.94E-02	3.50E+01	4.30E+04	1.26E+03	2.62E-03	1.23E+03	3.22E+00	3.85E-01	1.14E+00	5.02E+02	7.76E+02	1.97E-01	1.10E+03	4.55E-01
UM-500N-2500E (6-12")	7.94E-02	NA	NA	NA	NA	5.00E-02	3.62E+00	7.45E+02	3.72E+01	2.94E-02	3.50E+01	7.20E+03	2.11E+02	2.62E-03	2.06E+02	5.39E-01	3.85E-01	1.14E+00	8.41E+01	7.76E+02	1.97E-01	1.10E+03	7.62E-02
UM-250N-2500E (6-12")	7.94E-02	NA	NA	NA	NA	5.00E-02	3.62E+00	2.44E+04	1.22E+03	2.94E-02	3.50E+01	2.36E+05	6.92E+03	2.62E-03	6.74E+03	1.77E+01	3.85E-01	1.14E+00	2.75E+03	7.76E+02	1.97E-01	1.10E+03	2.49E+00
UM-250N-2250E (6-12")	7.94E-02	NA	NA	NA	NA	5.00E-02	3.62E+00	1.25E+03	6.27E+01	2.94E-02	3.50E+01	1.21E+04	3.56E+02	2.62E-03	3.47E+02	9.09E-01	3.85E-01	1.14E+00	1.42E+02	7.76E+02	1.97E-01	1.10E+03	1.28E-01
Western Upper Marsh (6-12")																						**Maximum HQ (Eastern Upper Marsh, 6-12")**	**3.02E+00**
UM-500S-2500E (6-12")	7.94E-02	NA	NA	NA	NA	5.00E-02	5.04E+00	7.67E+02	3.83E+01	2.94E-02	2.72E+01	4.14E+03	1.22E+02	2.62E-03	1.52E+02	3.98E-01	3.85E-01	1.14E+00	5.40E+01	7.76E+02	1.97E-01	1.10E+03	4.90E-02
UM-0N-2000E (6-12")	7.94E-02	NA	NA	NA	NA	5.00E-02	5.04E+00	3.87E+04	1.93E+03	2.94E-02	2.72E+01	2.09E+05	6.13E+03	2.62E-03	7.67E+03	2.01E+01	3.85E-01	1.14E+00	2.73E+03	7.76E+02	1.97E-01	1.10E+03	2.47E+00
UM-500S-2000E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB

TABLE C-12FB: MANGANESE DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 12 - MARSH, WETLAND RECEPTORS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **118.73**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Mallard (Omnivorous Birds)																							
UM-250N-1750E (6-12")	7.94E-02	NA	NA	NA	NA	5.00E-02	5.04E+00	5.02E+02	2.51E+01	2.94E-02	2.72E+01	2.71E+03	7.96E+01	2.62E-03	9.96E+01	2.61E-01	3.85E-01	1.14E+00	3.54E+01	7.76E+02	1.97E-01	1.10E+03	3.21E-02
UM-0N-1500E (6-12")	7.94E-02	NA	NA	NA	NA	5.00E-02	5.04E+00	8.17E+02	4.08E+01	2.94E-02	2.72E+01	4.41E+03	1.30E+02	2.62E-03	1.62E+02	4.24E-01	3.85E-01	1.14E+00	5.76E+01	7.76E+02	1.97E-01	1.10E+03	5.22E-02
UM-250S-1500E (6-12")	7.94E-02	NA	NA	NA	NA	5.00E-02	5.04E+00	2.25E+03	1.12E+02	2.94E-02	2.72E+01	1.21E+04	3.57E+02	2.62E-03	4.46E+02	1.17E+00	3.85E-01	1.14E+00	1.59E+02	7.76E+02	1.97E-01	1.10E+03	1.44E-01
UM-250S-1250E (6-12")	7.94E-02	NA	NA	NA	NA	5.00E-02	5.04E+00	4.72E+02	2.36E+01	2.94E-02	2.72E+01	2.55E+03	7.47E+01	2.62E-03	9.35E+01	2.45E-01	3.85E-01	1.14E+00	3.32E+01	7.76E+02	1.97E-01	1.10E+03	3.01E-02
BRSD-6 (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-1000E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-750E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-500E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-250S-500E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-250E (6-12")	7.94E-02	NA	NA	NA	NA	5.00E-02	5.04E+00	4.91E+02	2.46E+01	2.94E-02	2.72E+01	2.65E+03	7.79E+01	2.62E-03	9.74E+01	2.55E-01	3.85E-01	1.14E+00	3.46E+01	7.76E+02	1.97E-01	1.10E+03	3.14E-02
UM-250S-250E (6-12")	7.94E-02	NA	NA	NA	NA	5.00E-02	5.04E+00	1.42E+03	7.08E+01	2.94E-02	2.72E+01	7.65E+03	2.25E+02	2.62E-03	2.81E+02	7.36E-01	3.85E-01	1.14E+00	9.99E+01	7.76E+02	1.97E-01	1.10E+03	9.05E-02
BRSD-7 (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-8 (6-12")	7.94E-02	NA	NA	NA	NA	5.00E-02	5.04E+00	5.70E+03	2.85E+02	2.94E-02	2.72E+01	3.08E+04	9.03E+02	2.62E-03	1.13E+03	2.96E+00	3.85E-01	1.14E+00	4.02E+02	7.76E+02	1.97E-01	1.10E+03	3.64E-01
UM-500S-500E (6-12")	7.94E-02	NA	NA	NA	NA	5.00E-02	5.04E+00	5.09E+02	2.55E+01	2.94E-02	2.72E+01	2.75E+03	8.07E+01	2.62E-03	1.01E+02	2.64E-01	3.85E-01	1.14E+00	3.59E+01	7.76E+02	1.97E-01	1.10E+03	3.25E-02
BRSD-9 (6-12")	7.94E-02	NA	NA	NA	NA	5.00E-02	5.04E+00	8.88E+03	4.44E+02	2.94E-02	2.72E+01	4.79E+04	1.41E+03	2.62E-03	1.76E+03	4.61E+00	3.85E-01	1.14E+00	6.26E+02	7.76E+02	1.97E-01	1.10E+03	5.67E-01
BRSD-10 (6-12")	7.94E-02	NA	NA	NA	NA	5.00E-02	5.04E+00	2.48E+04	1.24E+03	2.94E-02	2.72E+01	1.34E+05	3.93E+03	2.62E-03	4.92E+03	1.29E+01	3.85E-01	1.14E+00	1.75E+03	7.76E+02	1.97E-01	1.10E+03	1.59E+00
BRSD-11 (6-12")	7.94E-02	NA	NA	NA	NA	5.00E-02	5.04E+00	1.47E+03	7.36E+01	2.94E-02	2.72E+01	7.95E+03	2.33E+02	2.62E-03	2.92E+02	7.65E-01	3.85E-01	1.14E+00	1.04E+02	7.76E+02	1.97E-01	1.10E+03	9.41E-02
Middle Marsh (0-2")																						**Maximum HQ (Western Upper Marsh, 6-12")**	**2.47E+00**
MMSD-201 (0-2")	7.94E-02	NA	NA	NA	NA	5.00E-02	5.04E+00	1.01E+04	5.07E+02	2.94E-02	2.72E+01	5.47E+04	1.61E+03	2.62E-03	2.01E+03	5.26E+00	3.85E-01	1.14E+00	7.15E+02	7.76E+02	1.97E-01	1.10E+03	6.48E-01
MMSD-202 (0-2")	7.94E-02	NA	NA	NA	NA	5.00E-02	5.04E+00	7.97E+02	3.98E+01	2.94E-02	2.72E+01	4.30E+03	1.26E+02	2.62E-03	1.58E+02	4.14E-01	3.85E-01	1.14E+00	5.62E+01	7.76E+02	1.97E-01	1.10E+03	5.09E-02
Middle Marsh (2-6")																						**Maximum HQ (Middle Marsh, 0-2")**	**6.48E-01**
MMSD-201 (2-6")	7.94E-02	NA	NA	NA	NA	5.00E-02	5.04E+00	7.46E+03	3.73E+02	2.94E-02	2.72E+01	4.03E+04	1.18E+03	2.62E-03	1.48E+03	3.88E+00	3.85E-01	1.14E+00	5.26E+02	7.76E+02	1.97E-01	1.10E+03	4.77E-01
MMSD-202 (2-6")	7.94E-02	NA	NA	NA	NA	5.00E-02	5.04E+00	1.13E+03	5.67E+01	2.94E-02	2.72E+01	6.13E+03	1.80E+02	2.62E-03	2.25E+02	5.89E-01	3.85E-01	1.14E+00	8.00E+01	7.76E+02	1.97E-01	1.10E+03	7.25E-02
Middle Marsh (6-12")																						**Maximum HQ (Middle Marsh, 2-6")**	**4.77E-01**
MMSD-201 (6-12")	7.94E-02	NA	NA	NA	NA	5.00E-02	5.04E+00	8.98E+03	4.49E+02	2.94E-02	2.72E+01	4.85E+04	1.42E+03	2.62E-03	1.78E+03	4.66E+00	3.85E-01	1.14E+00	6.33E+02	7.76E+02	1.97E-01	1.10E+03	5.73E-01
MMSD-202 (6-12")	7.94E-02	NA	NA	NA	NA	5.00E-02	5.04E+00	1.37E+03	6.86E+01	2.94E-02	2.72E+01	7.41E+03	2.17E+02	2.62E-03	2.72E+02	7.12E-01	3.85E-01	1.14E+00	9.67E+01	7.76E+02	1.97E-01	1.10E+03	8.76E-02
Lower Marsh (0-2")																						**Maximum HQ (Middle Marsh, 6-12")**	**5.73E-01**
LMSD-201 (0-2")	7.94E-02	NA	NA	NA	NA	5.00E-02	5.04E+00	1.02E+03	5.09E+01	2.94E-02	2.72E+01	5.50E+03	1.61E+02	2.62E-03	2.02E+02	5.29E-01	3.85E-01	1.14E+00	7.18E+01	7.76E+02	1.97E-01	1.10E+03	6.51E-02
LMSD-202 (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
LMSD-203 (0-2")	7.94E-02	NA	NA	NA	NA	5.00E-02	5.04E+00	1.03E+04	5.14E+02	2.94E-02	2.72E+01	5.55E+04	1.63E+03	2.62E-03	2.04E+03	5.34E+00	3.85E-01	1.14E+00	7.25E+02	7.76E+02	1.97E-01	1.10E+03	6.57E-01
LMSD-204 (0-2")	7.94E-02	NA	NA	NA	NA	5.00E-02	5.04E+00	1.62E+03	8.12E+01	2.94E-02	2.72E+01	8.77E+03	2.57E+02	2.62E-03	3.22E+02	8.43E-01	3.85E-01	1.14E+00	1.14E+02	7.76E+02	1.97E-01	1.10E+03	1.04E-01
Lower Marsh (2-6")																						**Maximum HQ (Lower Marsh, 0-2")**	**6.57E-01**
LMSD-201 (2-6")	7.94E-02	NA	NA	NA	NA	5.00E-02	5.04E+00	8.83E+02	4.41E+01	2.94E-02	2.72E+01	4.76E+03	1.40E+02	2.62E-03	1.75E+02	4.58E-01	3.85E-01	1.14E+00	6.22E+01	7.76E+02	1.97E-01	1.10E+03	5.64E-02
LMSD-202 (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
LMSD-203 (2-6")	7.94E-02	NA	NA	NA	NA	5.00E-02	5.04E+00	1.16E+04	5.80E+02	2.94E-02	2.72E+01	6.26E+04	1.84E+03	2.62E-03	2.30E+03	6.02E+00	3.85E-01	1.14E+00	8.18E+02	7.76E+02	1.97E-01	1.10E+03	7.41E-01
LMSD-204 (2-6")	7.94E-02	NA	NA	NA	NA	5.00E-02	5.04E+00	2.44E+03	1.22E+02	2.94E-02	2.72E+01	1.32E+04	3.87E+02	2.62E-03	4.84E+02	1.27E+00	3.85E-01	1.14E+00	1.72E+02	7.76E+02	1.97E-01	1.10E+03	1.56E-01
Lower Marsh (6-12")																						**Maximum HQ (Lower Marsh, 2-6")**	**7.41E-01**
LMSD-201 (6-12")	7.94E-02	NA	NA	NA	NA	5.00E-02	5.04E+00	9.18E+02	4.59E+01	2.94E-02	2.72E+01	4.96E+03	1.46E+02	2.62E-03	1.82E+02	4.77E-01	3.85E-01	1.14E+00	6.47E+01	7.76E+02	1.97E-01	1.10E+03	5.86E-02
LMSD-202 (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
LMSD-203 (6-12")	7.94E-02	NA	NA	NA	NA	5.00E-02	5.04E+00	3.62E+04	1.81E+03	2.94E-02	2.72E+01	1.95E+05	5.74E+03	2.62E-03	7.18E+03	1.88E+01	3.85E-01	1.14E+00	2.55E+03	7.76E+02	1.97E-01	1.10E+03	2.31E+00
LMSD-204 (6-12")	7.94E-02	NA	NA	NA	NA	5.00E-02	5.04E+00	2.92E+03	1.46E+02	2.94E-02	2.72E+01	1.58E+04	4.64E+02	2.62E-03	5.80E+02	1.52E+00	3.85E-01	1.14E+00	2.06E+02	7.76E+02	1.97E-01	1.10E+03	1.87E-01
																						Maximum HQ (Lower Marsh, 6-12")	**2.31E+00**
Muskrat (Herbivorous Mammals)																							
Reference Sites																							
BRSD-5 (0-2")	6.27E-02	NA	NA	NA	NA	6.27E-02	3.24E+00	1.04E+03	6.51E+01	NA	NA	NA	NA	1.51E-03	3.20E+02	4.82E-01	1.00E+00	8.73E-01	7.51E+01	1.59E+02	2.97E-02	1.30E+02	5.78E-01
BRSD-5 (2-6")	6.27E-02	NA	NA	NA	NA	6.27E-02	3.24E+00	8.10E+02	5.08E+01	NA	NA	NA	NA	1.51E-03	2.50E+02	3.76E-01	1.00E+00	8.73E-01	5.87E+01	1.59E+02	2.97E-02	1.30E+02	4.52E-01
BRSD-5 (6-12")	6.27E-02	NA	NA	NA	NA	6.27E-02	3.24E+00	7.91E+02	4.96E+01	NA	NA	NA	NA	1.51E-03	2.44E+02	3.67E-01	1.00E+00	8.73E-01	5.73E+01	1.59E+02	2.97E-02	1.30E+02	4.41E-01
PGBG-1 (0-2")	6.27E-02	NA	NA	NA	NA	6.27E-02	3.24E+00	2.26E+03	1.42E+02	NA	NA	NA	NA	1.51E-03	6.96E+02	1.05E+00	1.00E+00	8.73E-01	1.63E+02	1.59E+02	2.97E-02	1.30E+02	1.26E+00
PGBG-1 (2-6")	6.27E-02	NA	NA	NA	NA	6.27E-02	3.24E+00	6.45E+02	4.05E+01	NA	NA	NA	NA	1.51E-03	1.99E+02	3.00E-01	1.00E+00	8.73E-01	4.67E+01	1.59E+02	2.97E-02	1.30E+02	3.60E-01
PGBG-1 (6-12")	6.27E-02	NA	NA	NA	NA	6.27E-02	3.24E+00	2.85E+02	1.79E+01	NA	NA	NA	NA	1.51E-03	8.80E+01	1.32E-01	1.00E+00	8.73E-01	2.07E+01	1.59E+02	2.97E-02	1.30E+02	1.59E-01
PGBG-2 (0-2")	6.27E-02	NA	NA	NA	NA	6.27E-02	3.24E+00	1.90E+03	1.19E+02	NA	NA	NA	NA	1.51E-03	5.86E+02	8.82E-01	1.00E+00	8.73E-01	1.38E+02	1.59E+02	2.97E-02	1.30E+02	1.06E+00
PGBG-2 (2-6")	6.27E-02	NA	NA	NA	NA	6.27E-02	3.24E+00	1.61E+03	1.01E+02	NA	NA	NA	NA	1.51E-03	4.98E+02	7.50E-01	1.00E+00	8.73E-01	1.17E+02	1.59E+02	2.97E-02	1.30E+02	9.00E-01
PGBG-2 (6-12")	6.27E-02	NA	NA	NA	NA	6.27E-02	3.24E+00	9.50E+02	5.96E+01	NA	NA	NA	NA	1.51E-03	2.93E+02	4.41E-01	1.00E+00	8.73E-01	6.88E+01	1.59E+02	2.97E-02	1.30E+02	5.29E-01
Eastern Upper Marsh (0-2")																						**Minimum HQ (Reference Sites)**	**1.59E-01**
UM-1000S-3500E (0-2")	6.27E-02	NA	NA	NA	NA	6.27E-02	3.62E+00	1.02E+03	6.42E+01	NA	NA	NA	NA	1.51E-03	2.83E+02	4.26E-01	1.00E+00	8.73E-01	7.40E+01	1.59E+02	2.97E-02	1.30E+02	5.70E-01
BRSD-15 (0-2")	6.27E-02	NA	NA	NA	NA	6.27E-02	3.62E+00	2.30E+03	1.44E+02	NA	NA	NA	NA	1.51E-03	6.35E+02	9.56E-01	1.00E+00	8.73E-01	1.66E+02	1.59E+02	2.97E-02	1.30E+02	1.28E+00
BRSD-4 (0-2")	6.27E-02	NA	NA	NA	NA	6.27E-02	3.62E+00	7.59E+02	4.76E+01	NA	NA	NA	NA	1.51E-03	2.10E+02	3.16E-01	1.00E+00	8.73E-01	5.49E+01	1.59E+02	2.97E-02	1.30E+02	4.23E-01

TABLE C-12FB: MANGANESE DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 12 - MARSH, WETLAND RECEPTORS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 118.73

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Muskrat (Herbivorous Mammals)																							
UM-750S-3500E (0-2")	6.27E-02	NA	NA	NA	NA	6.27E-02	3.62E+00	2.69E+04	1.69E+03	NA	NA	NA	NA	1.51E-03	7.43E+03	1.12E+01	1.00E+00	8.73E-01	1.94E+03	1.59E+02	2.97E-02	1.30E+02	1.50E+01
BRSD-16 (0-2")	6.27E-02	NA	NA	NA	NA	6.27E-02	3.62E+00	3.76E+03	2.36E+02	NA	NA	NA	NA	1.51E-03	1.04E+03	1.57E+00	1.00E+00	8.73E-01	2.72E+02	1.59E+02	2.97E-02	1.30E+02	2.09E+00
UM-750S-3000E (0-2")	6.27E-02	NA	NA	NA	NA	6.27E-02	3.62E+00	2.57E+04	1.61E+03	NA	NA	NA	NA	1.51E-03	7.11E+03	1.07E+01	1.00E+00	8.73E-01	1.86E+03	1.59E+02	2.97E-02	1.30E+02	1.43E+01
BRSD-3 (0-2")	6.27E-02	NA	NA	NA	NA	6.27E-02	3.62E+00	4.48E+03	2.81E+02	NA	NA	NA	NA	1.51E-03	1.24E+03	1.87E+00	1.00E+00	8.73E-01	3.24E+02	1.59E+02	2.97E-02	1.30E+02	2.50E+00
UM-500S-3250E (0-2")	6.27E-02	NA	NA	NA	NA	6.27E-02	3.62E+00	9.36E+03	5.87E+02	NA	NA	NA	NA	1.51E-03	2.59E+03	3.90E+00	1.00E+00	8.73E-01	6.77E+02	1.59E+02	2.97E-02	1.30E+02	5.22E+00
UM-500S-3000E (0-2")	6.27E-02	NA	NA	NA	NA	6.27E-02	3.62E+00	4.27E+03	2.68E+02	NA	NA	NA	NA	1.51E-03	1.18E+03	1.78E+00	1.00E+00	8.73E-01	3.09E+02	1.59E+02	2.97E-02	1.30E+02	2.38E+00
UM-500S-2750E (0-2")	6.27E-02	NA	NA	NA	NA	6.27E-02	3.62E+00	2.59E+04	1.62E+03	NA	NA	NA	NA	1.51E-03	7.16E+03	1.08E+01	1.00E+00	8.73E-01	1.87E+03	1.59E+02	2.97E-02	1.30E+02	1.44E+01
BRSD-25 (0-2")	6.27E-02	NA	NA	NA	NA	6.27E-02	3.62E+00	5.42E+03	3.40E+02	NA	NA	NA	NA	1.51E-03	1.50E+03	2.26E+00	1.00E+00	8.73E-01	3.92E+02	1.59E+02	2.97E-02	1.30E+02	3.02E+00
UM-250S-3000E (0-2")	6.27E-02	NA	NA	NA	NA	6.27E-02	3.62E+00	1.59E+04	9.98E+02	NA	NA	NA	NA	1.51E-03	4.40E+03	6.62E+00	1.00E+00	8.73E-01	1.15E+03	1.59E+02	2.97E-02	1.30E+02	8.86E+00
UM-250S-3250E (0-2")	6.27E-02	NA	NA	NA	NA	6.27E-02	3.62E+00	5.32E+03	3.33E+02	NA	NA	NA	NA	1.51E-03	1.47E+03	2.21E+00	1.00E+00	8.73E-01	3.84E+02	1.59E+02	2.97E-02	1.30E+02	2.96E+00
BRSD-24 (0-2")	6.27E-02	NA	NA	NA	NA	6.27E-02	3.62E+00	2.89E+04	1.81E+03	NA	NA	NA	NA	1.51E-03	7.99E+03	1.20E+01	1.00E+00	8.73E-01	2.09E+03	1.59E+02	2.97E-02	1.30E+02	1.61E+01
UM-250S-2750E (0-2")	6.27E-02	NA	NA	NA	NA	6.27E-02	3.62E+00	2.82E+04	1.77E+03	NA	NA	NA	NA	1.51E-03	7.81E+03	1.18E+01	1.00E+00	8.73E-01	2.04E+03	1.59E+02	2.97E-02	1.30E+02	1.57E+01
UM-250S-2500E (0-2")	6.27E-02	NA	NA	NA	NA	6.27E-02	3.62E+00	8.50E+02	5.33E+01	NA	NA	NA	NA	1.51E-03	2.35E+02	3.54E-01	1.00E+00	8.73E-01	6.15E+01	1.59E+02	2.97E-02	1.30E+02	4.73E-01
UM-0N-2500E (0-2")	6.27E-02	NA	NA	NA	NA	6.27E-02	3.62E+00	7.41E+03	4.65E+02	NA	NA	NA	NA	1.51E-03	2.05E+03	3.09E+00	1.00E+00	8.73E-01	5.36E+02	1.59E+02	2.97E-02	1.30E+02	4.13E+00
UM-0N-250E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-2 (0-2")	6.27E-02	NA	NA	NA	NA	6.27E-02	3.62E+00	2.78E+04	1.74E+03	NA	NA	NA	NA	1.51E-03	7.69E+03	1.16E+01	1.00E+00	8.73E-01	2.01E+03	1.59E+02	2.97E-02	1.30E+02	1.55E+01
UM-500N-2500E (0-2")	6.27E-02	NA	NA	NA	NA	6.27E-02	3.62E+00	5.89E+02	3.70E+01	NA	NA	NA	NA	1.51E-03	1.63E+02	2.45E-01	1.00E+00	8.73E-01	4.26E+01	1.59E+02	2.97E-02	1.30E+02	3.28E-01
UM-250N-2500E (0-2")	6.27E-02	NA	NA	NA	NA	6.27E-02	3.62E+00	1.37E+04	8.62E+02	NA	NA	NA	NA	1.51E-03	3.80E+03	5.72E+00	1.00E+00	8.73E-01	9.94E+02	1.59E+02	2.97E-02	1.30E+02	7.65E+00
UM-250N-2250E (0-2")	6.27E-02	NA	NA	NA	NA	6.27E-02	3.62E+00	2.76E+04	1.73E+03	NA	NA	NA	NA	1.51E-03	7.62E+03	1.15E+01	1.00E+00	8.73E-01	1.99E+03	1.59E+02	2.97E-02	1.30E+02	1.53E+01
Western Upper Marsh (0-2")																						**Maximum HQ (Eastern Upper Marsh, 0-2")**	**1.61E+01**
UM-500S-2500E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-2000E (0-2")	6.27E-02	NA	NA	NA	NA	6.27E-02	5.04E+00	2.18E+04	1.37E+03	NA	NA	NA	NA	1.51E-03	4.32E+03	6.50E+00	1.00E+00	8.73E-01	1.57E+03	1.59E+02	2.97E-02	1.30E+02	1.21E+01
UM-500S-2000E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-250N-1750E (0-2")	6.27E-02	NA	NA	NA	NA	6.27E-02	5.04E+00	6.35E+02	3.99E+01	NA	NA	NA	NA	1.51E-03	1.26E+02	1.90E-01	1.00E+00	8.73E-01	4.59E+01	1.59E+02	2.97E-02	1.30E+02	3.53E-01
UM-0N-1500E (0-2")	6.27E-02	NA	NA	NA	NA	6.27E-02	5.04E+00	6.71E+02	4.21E+01	NA	NA	NA	NA	1.51E-03	1.33E+02	2.00E-01	1.00E+00	8.73E-01	4.84E+01	1.59E+02	2.97E-02	1.30E+02	3.73E-01
UM-250S-1500E (0-2")	6.27E-02	NA	NA	NA	NA	6.27E-02	5.04E+00	5.90E+03	3.70E+02	NA	NA	NA	NA	1.51E-03	1.17E+03	1.76E+00	1.00E+00	8.73E-01	4.26E+02	1.59E+02	2.97E-02	1.30E+02	3.28E+00
UM-250S-1250E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-6 (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-1000E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-750E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-500E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-250S-500E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-250S-250E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-7 (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-8 (0-2")	6.27E-02	NA	NA	NA	NA	6.27E-02	5.04E+00	2.49E+03	1.56E+02	NA	NA	NA	NA	1.51E-03	4.93E+02	7.42E-01	1.00E+00	8.73E-01	1.80E+02	1.59E+02	2.97E-02	1.30E+02	1.38E+00
UM-500S-500E (0-2")	6.27E-02	NA	NA	NA	NA	6.27E-02	5.04E+00	4.90E+02	3.07E+01	NA	NA	NA	NA	1.51E-03	9.71E+01	1.46E-01	1.00E+00	8.73E-01	3.54E+01	1.59E+02	2.97E-02	1.30E+02	2.72E-01
BRSD-9 (0-2")	6.27E-02	NA	NA	NA	NA	6.27E-02	5.04E+00	2.80E+04	1.76E+03	NA	NA	NA	NA	1.51E-03	5.55E+03	8.36E+00	1.00E+00	8.73E-01	2.02E+03	1.59E+02	2.97E-02	1.30E+02	1.56E+01
BRSD-10 (0-2")	6.27E-02	NA	NA	NA	NA	6.27E-02	5.04E+00	1.72E+04	1.08E+03	NA	NA	NA	NA	1.51E-03	3.41E+03	5.13E+00	1.00E+00	8.73E-01	1.24E+03	1.59E+02	2.97E-02	1.30E+02	9.56E+00
BRSD-11 (0-2")	6.27E-02	NA	NA	NA	NA	6.27E-02	5.04E+00	6.86E+03	4.30E+02	NA	NA	NA	NA	1.51E-03	1.36E+03	2.05E+00	1.00E+00	8.73E-01	4.95E+02	1.59E+02	2.97E-02	1.30E+02	3.81E+00
Eastern Upper Marsh (2-6")																						**Maximum HQ (Western Upper Marsh, 0-2")**	**1.56E+01**
UM-1000S-3500E (2-6")	6.27E-02	NA	NA	NA	NA	6.27E-02	3.62E+00	1.55E+03	9.75E+01	NA	NA	NA	NA	1.51E-03	4.30E+02	6.47E-01	1.00E+00	8.73E-01	1.12E+02	1.59E+02	2.97E-02	1.30E+02	8.66E-01
BRSD-15 (2-6")	6.27E-02	NA	NA	NA	NA	6.27E-02	3.62E+00	3.62E+03	2.27E+02	NA	NA	NA	NA	1.51E-03	1.00E+03	1.51E+00	1.00E+00	8.73E-01	2.62E+02	1.59E+02	2.97E-02	1.30E+02	2.01E+00
BRSD-4 (2-6")	6.27E-02	NA	NA	NA	NA	6.27E-02	3.62E+00	3.45E+02	2.16E+01	NA	NA	NA	NA	1.51E-03	9.54E+01	1.44E-01	1.00E+00	8.73E-01	2.50E+01	1.59E+02	2.97E-02	1.30E+02	1.92E-01
UM-750S-3500E (2-6")	6.27E-02	NA	NA	NA	NA	6.27E-02	3.62E+00	2.56E+04	1.61E+03	NA	NA	NA	NA	1.51E-03	7.09E+03	1.07E+01	1.00E+00	8.73E-01	1.85E+03	1.59E+02	2.97E-02	1.30E+02	1.43E+01
BRSD-16 (2-6")	6.27E-02	NA	NA	NA	NA	6.27E-02	3.62E+00	3.65E+04	2.29E+03	NA	NA	NA	NA	1.51E-03	1.01E+04	1.52E+01	1.00E+00	8.73E-01	2.64E+03	1.59E+02	2.97E-02	1.30E+02	2.03E+01
UM-750S-3000E (2-6")	6.27E-02	NA	NA	NA	NA	6.27E-02	3.62E+00	2.69E+04	1.69E+03	NA	NA	NA	NA	1.51E-03	7.44E+03	1.12E+01	1.00E+00	8.73E-01	1.95E+03	1.59E+02	2.97E-02	1.30E+02	1.50E+01
BRSD-3 (2-6")	6.27E-02	NA	NA	NA	NA	6.27E-02	3.62E+00	6.11E+03	3.83E+02	NA	NA	NA	NA	1.51E-03	1.69E+03	2.54E+00	1.00E+00	8.73E-01	4.42E+02	1.59E+02	2.97E-02	1.30E+02	3.40E+00
UM-500S-3250E (2-6")	6.27E-02	NA	NA	NA	NA	6.27E-02	3.62E+00	1.55E+03	9.71E+01	NA	NA	NA	NA	1.51E-03	4.28E+02	6.44E-01	1.00E+00	8.73E-01	1.12E+02	1.59E+02	2.97E-02	1.30E+02	8.62E-01
UM-500S-3000E (2-6")	6.27E-02	NA	NA	NA	NA	6.27E-02	3.62E+00	1.15E+03	7.19E+01	NA	NA	NA	NA	1.51E-03	3.17E+02	4.77E-01	1.00E+00	8.73E-01	8.29E+01	1.59E+02	2.97E-02	1.30E+02	6.38E-01
UM-500S-2750E (2-6")	6.27E-02	NA	NA	NA	NA	6.27E-02	3.62E+00	3.02E+04	1.90E+03	NA	NA	NA	NA	1.51E-03	8.36E+03	1.26E+01	1.00E+00	8.73E-01	2.19E+03	1.59E+02	2.97E-02	1.30E+02	1.68E+01
BRSD-25 (2-6")	6.27E-02	NA	NA	NA	NA	6.27E-02	3.62E+00	3.83E+03	2.40E+02	NA	NA	NA	NA	1.51E-03	1.06E+03	1.60E+00	1.00E+00	8.73E-01	2.77E+02	1.59E+02	2.97E-02	1.30E+02	2.13E+00
UM-250S-3000E (2-6")	6.27E-02	NA	NA	NA	NA	6.27E-02	3.62E+00	9.29E+03	5.83E+02	NA	NA	NA	NA	1.51E-03	2.57E+03	3.87E+00	1.00E+00	8.73E-01	6.72E+02	1.59E+02	2.97E-02	1.30E+02	5.18E+00
UM-250S-3250E (2-6")	6.27E-02	NA	NA	NA	NA	6.27E-02	3.62E+00	4.66E+02	2.93E+01	NA	NA	NA	NA	1.51E-03	1.29E+02	1.94E-01	1.00E+00	8.73E-01	3.37E+01	1.59E+02	2.97E-02	1.30E+02	2.60E-01
BRSD-24 (2-6")	6.27E-02	NA	NA	NA	NA	6.27E-02	3.62E+00	1.03E+04	6.49E+02	NA	NA	NA	NA	1.51E-03	2.86E+03	4.31E+00	1.00E+00	8.73E-01	7.48E+02	1.59E+02	2.97E-02	1.30E+02	5.76E+00
UM-250S-2750E (2-6")	6.27E-02	NA	NA	NA	NA	6.27E-02	3.62E+00	2.12E+04	1.33E+03	NA	NA	NA	NA	1.51E-03	5.85E+03	8.81E+00	1.00E+00	8.73E-01	1.53E+03	1.59E+02	2.97E-02	1.30E+02	1.18E+01
UM-0N-2500E (2-6")	6.27E-02	NA	NA	NA	NA	6.27E-02	3.62E+00	1.16E+04	7.30E+02	NA	NA	NA	NA	1.51E-03	3.22E+03	4.85E+00	1.00E+00	8.73E-01	8.42E+02	1.59E+02	2.97E-02	1.30E+02	6.48E+00

TABLE C-12FB: MANGANESE DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 12 - MARSH, WETLAND RECEPTORS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **118.73**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Muskrat (Herbivorous Mammals)																							
BRSD-2 (2-6")	6.27E-02	NA	NA	NA	NA	6.27E-02	3.62E+00	2.20E+04	1.38E+03	NA	NA	NA	NA	1.51E-03	6.09E+03	9.17E+00	1.00E+00	8.73E-01	1.59E+03	1.59E+02	2.97E-02	1.30E+02	1.23E+01
UM-500N-2500E (2-6")	6.27E-02	NA	NA	NA	NA	6.27E-02	3.62E+00	6.73E+02	4.22E+01	NA	NA	NA	NA	1.51E-03	1.86E+02	2.80E-01	1.00E+00	8.73E-01	4.86E+01	1.59E+02	2.97E-02	1.30E+02	3.75E-01
UM-250N-2500E (2-6")	6.27E-02	NA	NA	NA	NA	6.27E-02	3.62E+00	2.89E+04	1.81E+03	NA	NA	NA	NA	1.51E-03	7.98E+03	1.20E+01	1.00E+00	8.73E-01	2.09E+03	1.59E+02	2.97E-02	1.30E+02	1.61E+01
UM-250N-2250E (2-6")	6.27E-02	NA	NA	NA	NA	6.27E-02	3.62E+00	1.01E+03	6.33E+01	NA	NA	NA	NA	1.51E-03	2.79E+02	4.20E-01	1.00E+00	8.73E-01	7.30E+01	1.59E+02	2.97E-02	1.30E+02	5.62E-01
Western Upper Marsh (2-6")																						**Maximum HQ (Eastern Upper Marsh, 2-6")**	**2.03E+01**
UM-500S-2500E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-2000E (2-6")	6.27E-02	NA	NA	NA	NA	6.27E-02	5.04E+00	1.93E+04	1.21E+03	NA	NA	NA	NA	1.51E-03	3.82E+03	5.75E+00	1.00E+00	8.73E-01	1.39E+03	1.59E+02	2.97E-02	1.30E+02	1.07E+01
UM-500S-2000E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-250N-1750E (2-6")	6.27E-02	NA	NA	NA	NA	6.27E-02	5.04E+00	8.98E+02	5.63E+01	NA	NA	NA	NA	1.51E-03	1.78E+02	2.68E-01	1.00E+00	8.73E-01	6.48E+01	1.59E+02	2.97E-02	1.30E+02	4.99E-01
UM-0N-1500E (2-6")	6.27E-02	NA	NA	NA	NA	6.27E-02	5.04E+00	6.61E+02	4.14E+01	NA	NA	NA	NA	1.51E-03	1.31E+02	1.97E-01	1.00E+00	8.73E-01	4.77E+01	1.59E+02	2.97E-02	1.30E+02	3.67E-01
UM-250S-1500E (2-6")	6.27E-02	NA	NA	NA	NA	6.27E-02	5.04E+00	7.36E+03	4.62E+02	NA	NA	NA	NA	1.51E-03	1.46E+03	2.20E+00	1.00E+00	8.73E-01	5.32E+02	1.59E+02	2.97E-02	1.30E+02	4.09E+00
UM-250S-1250E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-6 (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-1000E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-750E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-500E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-250S-500E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-250E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-250S-250E (2-6")	6.27E-02	NA	NA	NA	NA	6.27E-02	5.04E+00	4.49E+02	2.82E+01	NA	NA	NA	NA	1.51E-03	8.91E+01	1.34E-01	1.00E+00	8.73E-01	3.24E+01	1.59E+02	2.97E-02	1.30E+02	2.50E-01
BRSD-7 (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-8 (2-6")	6.27E-02	NA	NA	NA	NA	6.27E-02	5.04E+00	7.11E+03	4.46E+02	NA	NA	NA	NA	1.51E-03	1.41E+03	2.12E+00	1.00E+00	8.73E-01	5.13E+02	1.59E+02	2.97E-02	1.30E+02	3.95E+00
UM-500S-500E (2-6")	6.27E-02	NA	NA	NA	NA	6.27E-02	5.04E+00	5.09E+02	3.20E+01	NA	NA	NA	NA	1.51E-03	1.01E+02	1.52E-01	1.00E+00	8.73E-01	3.68E+01	1.59E+02	2.97E-02	1.30E+02	2.83E-01
BRSD-9 (2-6")	6.27E-02	NA	NA	NA	NA	6.27E-02	5.04E+00	1.06E+04	6.68E+02	NA	NA	NA	NA	1.51E-03	2.11E+03	3.18E+00	1.00E+00	8.73E-01	7.68E+02	1.59E+02	2.97E-02	1.30E+02	5.91E+00
BRSD-10 (2-6")	6.27E-02	NA	NA	NA	NA	6.27E-02	5.04E+00	1.68E+04	1.05E+03	NA	NA	NA	NA	1.51E-03	3.33E+03	5.01E+00	1.00E+00	8.73E-01	1.21E+03	1.59E+02	2.97E-02	1.30E+02	9.34E+00
BRSD-11 (2-6")	6.27E-02	NA	NA	NA	NA	6.27E-02	5.04E+00	1.60E+03	1.00E+02	NA	NA	NA	NA	1.51E-03	3.17E+02	4.77E-01	1.00E+00	8.73E-01	1.15E+02	1.59E+02	2.97E-02	1.30E+02	8.89E-01
Eastern Upper Marsh (6-12")																						**Maximum HQ (Western Upper Marsh, 2-6")**	**1.07E+01**
UM-1000S-3500E (6-12")	6.27E-02	NA	NA	NA	NA	6.27E-02	3.62E+00	5.53E+02	3.47E+01	NA	NA	NA	NA	1.51E-03	1.53E+02	2.30E-01	1.00E+00	8.73E-01	4.00E+01	1.59E+02	2.97E-02	1.30E+02	3.08E-01
BRSD-15 (6-12")	6.27E-02	NA	NA	NA	NA	6.27E-02	3.62E+00	4.74E+03	2.97E+02	NA	NA	NA	NA	1.51E-03	1.31E+03	1.97E+00	1.00E+00	8.73E-01	3.43E+02	1.59E+02	2.97E-02	1.30E+02	2.64E+00
BRSD-4 (6-12")	6.27E-02	NA	NA	NA	NA	6.27E-02	3.62E+00	1.71E+03	1.07E+02	NA	NA	NA	NA	1.51E-03	4.73E+02	7.12E-01	1.00E+00	8.73E-01	1.24E+02	1.59E+02	2.97E-02	1.30E+02	9.52E-01
UM-750S-3500E (6-12")	6.27E-02	NA	NA	NA	NA	6.27E-02	3.62E+00	2.30E+04	1.44E+03	NA	NA	NA	NA	1.51E-03	6.35E+03	9.56E+00	1.00E+00	8.73E-01	1.66E+03	1.59E+02	2.97E-02	1.30E+02	1.28E+01
BRSD-16 (6-12")	6.27E-02	NA	NA	NA	NA	6.27E-02	3.62E+00	8.61E+03	5.40E+02	NA	NA	NA	NA	1.51E-03	2.38E+03	3.58E+00	1.00E+00	8.73E-01	6.22E+02	1.59E+02	2.97E-02	1.30E+02	4.79E+00
UM-750S-3000E (6-12")	6.27E-02	NA	NA	NA	NA	6.27E-02	3.62E+00	2.63E+04	1.65E+03	NA	NA	NA	NA	1.51E-03	7.28E+03	1.10E+01	1.00E+00	8.73E-01	1.90E+03	1.59E+02	2.97E-02	1.30E+02	1.47E+01
BRSD-3 (6-12")	6.27E-02	NA	NA	NA	NA	6.27E-02	3.62E+00	2.34E+03	1.47E+02	NA	NA	NA	NA	1.51E-03	6.48E+02	9.76E-01	1.00E+00	8.73E-01	1.69E+02	1.59E+02	2.97E-02	1.30E+02	1.30E+00
UM-500S-3250E (6-12")	6.27E-02	NA	NA	NA	NA	6.27E-02	3.62E+00	9.98E+02	6.26E+01	NA	NA	NA	NA	1.51E-03	2.76E+02	4.16E-01	1.00E+00	8.73E-01	7.22E+01	1.59E+02	2.97E-02	1.30E+02	5.56E-01
UM-500S-3000E (6-12")	6.27E-02	NA	NA	NA	NA	6.27E-02	3.62E+00	1.41E+03	8.82E+01	NA	NA	NA	NA	1.51E-03	3.89E+02	5.86E-01	1.00E+00	8.73E-01	1.02E+02	1.59E+02	2.97E-02	1.30E+02	7.83E-01
UM-500S-2750E (6-12")	6.27E-02	NA	NA	NA	NA	6.27E-02	3.62E+00	2.95E+04	1.85E+03	NA	NA	NA	NA	1.51E-03	8.16E+03	1.23E+01	1.00E+00	8.73E-01	2.13E+03	1.59E+02	2.97E-02	1.30E+02	1.64E+01
BRSD-25 (6-12")	6.27E-02	NA	NA	NA	NA	6.27E-02	3.62E+00	6.29E+02	3.95E+01	NA	NA	NA	NA	1.51E-03	1.74E+02	2.62E-01	1.00E+00	8.73E-01	4.55E+01	1.59E+02	2.97E-02	1.30E+02	3.50E-01
UM-250S-3000E (6-12")	6.27E-02	NA	NA	NA	NA	6.27E-02	3.62E+00	1.81E+04	1.13E+03	NA	NA	NA	NA	1.51E-03	5.00E+03	7.53E+00	1.00E+00	8.73E-01	1.31E+03	1.59E+02	2.97E-02	1.30E+02	1.01E+01
UM-250S-3250E (6-12")	6.27E-02	NA	NA	NA	NA	6.27E-02	3.62E+00	7.95E+02	4.99E+01	NA	NA	NA	NA	1.51E-03	2.20E+02	3.31E-01	1.00E+00	8.73E-01	5.75E+01	1.59E+02	2.97E-02	1.30E+02	4.43E-01
BRSD-24 (6-12")	6.27E-02	NA	NA	NA	NA	6.27E-02	3.62E+00	4.34E+03	2.72E+02	NA	NA	NA	NA	1.51E-03	1.20E+03	1.81E+00	1.00E+00	8.73E-01	3.14E+02	1.59E+02	2.97E-02	1.30E+02	2.42E+00
UM-250S-2750E (6-12")	6.27E-02	NA	NA	NA	NA	6.27E-02	3.62E+00	5.93E+03	3.72E+02	NA	NA	NA	NA	1.51E-03	1.64E+03	2.47E+00	1.00E+00	8.73E-01	4.29E+02	1.59E+02	2.97E-02	1.30E+02	3.30E+00
UM-250S-2500E (6-12")	6.27E-02	NA	NA	NA	NA	6.27E-02	3.62E+00	5.42E+02	3.40E+01	NA	NA	NA	NA	1.51E-03	1.50E+02	2.26E-01	1.00E+00	8.73E-01	3.92E+01	1.59E+02	2.97E-02	1.30E+02	3.02E-01
BRSD-2 (6-12")	6.27E-02	NA	NA	NA	NA	6.27E-02	3.62E+00	4.45E+03	2.79E+02	NA	NA	NA	NA	1.51E-03	1.23E+03	1.85E+00	1.00E+00	8.73E-01	3.22E+02	1.59E+02	2.97E-02	1.30E+02	2.48E+00
UM-500N-2500E (6-12")	6.27E-02	NA	NA	NA	NA	6.27E-02	3.62E+00	7.45E+02	4.67E+01	NA	NA	NA	NA	1.51E-03	2.06E+02	3.10E-01	1.00E+00	8.73E-01	5.39E+01	1.59E+02	2.97E-02	1.30E+02	4.15E-01
UM-250N-2500E (6-12")	6.27E-02	NA	NA	NA	NA	6.27E-02	3.62E+00	2.44E+04	1.53E+03	NA	NA	NA	NA	1.51E-03	6.74E+03	1.01E+01	1.00E+00	8.73E-01	1.76E+03	1.59E+02	2.97E-02	1.30E+02	1.36E+01
UM-250N-2250E (6-12")	6.27E-02	NA	NA	NA	NA	6.27E-02	3.62E+00	1.25E+03	7.87E+01	NA	NA	NA	NA	1.51E-03	3.47E+02	5.22E-01	1.00E+00	8.73E-01	9.08E+01	1.59E+02	2.97E-02	1.30E+02	6.99E-01
Western Upper Marsh (6-12")																						**Maximum HQ (Eastern Upper Marsh, 6-12")**	**1.64E+01**
UM-500S-2500E (6-12")	6.27E-02	NA	NA	NA	NA	6.27E-02	5.04E+00	7.67E+02	4.81E+01	NA	NA	NA	NA	1.51E-03	1.52E+02	2.29E-01	1.00E+00	8.73E-01	5.53E+01	1.59E+02	2.97E-02	1.30E+02	4.26E-01
UM-0N-2000E (6-12")	6.27E-02	NA	NA	NA	NA	6.27E-02	5.04E+00	3.87E+04	2.43E+03	NA	NA	NA	NA	1.51E-03	7.67E+03	1.15E+01	1.00E+00	8.73E-01	2.79E+03	1.59E+02	2.97E-02	1.30E+02	2.15E+01
UM-500S-2000E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-250N-1750E (6-12")	6.27E-02	NA	NA	NA	NA	6.27E-02	5.04E+00	5.02E+02	3.15E+01	NA	NA	NA	NA	1.51E-03	9.96E+01	1.50E-01	1.00E+00	8.73E-01	3.63E+01	1.59E+02	2.97E-02	1.30E+02	2.79E-01
UM-0N-1500E (6-12")	6.27E-02	NA	NA	NA	NA	6.27E-02	5.04E+00	8.17E+02	5.12E+01	NA	NA	NA	NA	1.51E-03	1.62E+02	2.44E-01	1.00E+00	8.73E-01	5.90E+01	1.59E+02	2.97E-02	1.30E+02	4.54E-01
UM-250S-1500E (6-12")	6.27E-02	NA	NA	NA	NA	6.27E-02	5.04E+00	2.25E+03	1.41E+02	NA	NA	NA	NA	1.51E-03	4.46E+02	6.71E-01	1.00E+00	8.73E-01	1.62E+02	1.59E+02	2.97E-02	1.30E+02	1.25E+00
UM-250S-1250E (6-12")	6.27E-02	NA	NA	NA	NA	6.27E-02	5.04E+00	4.72E+02	2.96E+01	NA	NA	NA	NA	1.51E-03	9.35E+01	1.41E-01	1.00E+00	8.73E-01	3.40E+01	1.59E+02	2.97E-02	1.30E+02	2.62E-01
BRSD-6 (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-1000E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-750E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB

TABLE C-12FB: MANGANESE DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 12 - MARSH, WETLAND RECEPTORS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 118.73

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Muskrat (Herbivorous Mammals)																							
UM-0N-500E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-250S-500E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-250E (6-12")	6.27E-02	NA	NA	NA	NA	6.27E-02	5.04E+00	4.91E+02	3.08E+01	NA	NA	NA	NA	1.51E-03	9.74E+01	1.47E-01	1.00E+00	8.73E-01	3.55E+01	1.59E+02	2.97E-02	1.30E+02	2.73E-01
UM-250S-250E (6-12")	6.27E-02	NA	NA	NA	NA	6.27E-02	5.04E+00	1.42E+03	8.89E+01	NA	NA	NA	NA	1.51E-03	2.81E+02	4.23E-01	1.00E+00	8.73E-01	1.02E+02	1.59E+02	2.97E-02	1.30E+02	7.88E-01
BRSD-7 (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-8 (6-12")	6.27E-02	NA	NA	NA	NA	6.27E-02	5.04E+00	5.70E+03	3.57E+02	NA	NA	NA	NA	1.51E-03	1.13E+03	1.70E+00	1.00E+00	8.73E-01	4.11E+02	1.59E+02	2.97E-02	1.30E+02	3.17E+00
UM-500S-500E (6-12")	6.27E-02	NA	NA	NA	NA	6.27E-02	5.04E+00	5.09E+02	3.20E+01	NA	NA	NA	NA	1.51E-03	1.01E+02	1.52E-01	1.00E+00	8.73E-01	3.68E+01	1.59E+02	2.97E-02	1.30E+02	2.83E-01
BRSD-9 (6-12")	6.27E-02	NA	NA	NA	NA	6.27E-02	5.04E+00	8.88E+03	5.57E+02	NA	NA	NA	NA	1.51E-03	1.76E+03	2.65E+00	1.00E+00	8.73E-01	6.41E+02	1.59E+02	2.97E-02	1.30E+02	4.93E+00
BRSD-10 (6-12")	6.27E-02	NA	NA	NA	NA	6.27E-02	5.04E+00	2.48E+04	1.56E+03	NA	NA	NA	NA	1.51E-03	4.92E+03	7.41E+00	1.00E+00	8.73E-01	1.79E+03	1.59E+02	2.97E-02	1.30E+02	1.38E+01
BRSD-11 (6-12")	6.27E-02	NA	NA	NA	NA	6.27E-02	5.04E+00	1.47E+03	9.24E+01	NA	NA	NA	NA	1.51E-03	2.92E+02	4.40E-01	1.00E+00	8.73E-01	1.06E+02	1.59E+02	2.97E-02	1.30E+02	8.19E-01
Middle Marsh (0-2")																						**Maximum HQ (Western Upper Marsh, 6-12")**	**2.15E+01**
MMSD-201 (0-2")	6.27E-02	NA	NA	NA	NA	6.27E-02	5.04E+00	1.01E+04	6.36E+02	NA	NA	NA	NA	1.51E-03	2.01E+03	3.03E+00	1.00E+00	8.73E-01	7.32E+02	1.59E+02	2.97E-02	1.30E+02	5.63E+00
MMSD-202 (0-2")	6.27E-02	NA	NA	NA	NA	6.27E-02	5.04E+00	7.97E+02	5.00E+01	NA	NA	NA	NA	1.51E-03	1.58E+02	2.38E-01	1.00E+00	8.73E-01	5.75E+01	1.59E+02	2.97E-02	1.30E+02	4.43E-01
Middle Marsh (2-6")																						**Maximum HQ (Middle Marsh, 0-2")**	**5.63E+00**
MMSD-201 (2-6")	6.27E-02	NA	NA	NA	NA	6.27E-02	5.04E+00	7.46E+03	4.68E+02	NA	NA	NA	NA	1.51E-03	1.48E+03	2.23E+00	1.00E+00	8.73E-01	5.39E+02	1.59E+02	2.97E-02	1.30E+02	4.15E+00
MMSD-202 (2-6")	6.27E-02	NA	NA	NA	NA	6.27E-02	5.04E+00	1.13E+03	7.12E+01	NA	NA	NA	NA	1.51E-03	2.25E+02	3.39E-01	1.00E+00	8.73E-01	8.19E+01	1.59E+02	2.97E-02	1.30E+02	6.31E-01
Middle Marsh (6-12")																						**Maximum HQ (Middle Marsh, 2-6")**	**4.15E+00**
MMSD-201 (6-12")	6.27E-02	NA	NA	NA	NA	6.27E-02	5.04E+00	8.98E+03	5.63E+02	NA	NA	NA	NA	1.51E-03	1.78E+03	2.68E+00	1.00E+00	8.73E-01	6.48E+02	1.59E+02	2.97E-02	1.30E+02	4.99E+00
MMSD-202 (6-12")	6.27E-02	NA	NA	NA	NA	6.27E-02	5.04E+00	1.37E+03	8.60E+01	NA	NA	NA	NA	1.51E-03	2.72E+02	4.10E-01	1.00E+00	8.73E-01	9.90E+01	1.59E+02	2.97E-02	1.30E+02	7.63E-01
Lower Marsh (0-2")																						**Maximum HQ (Middle Marsh, 6-12")**	**4.99E+00**
LMSD-201 (0-2")	6.27E-02	NA	NA	NA	NA	6.27E-02	5.04E+00	1.02E+03	6.39E+01	NA	NA	NA	NA	1.51E-03	2.02E+02	3.04E-01	1.00E+00	8.73E-01	7.35E+01	1.59E+02	2.97E-02	1.30E+02	5.66E-01
LMSD-202 (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
LMSD-203 (0-2")	6.27E-02	NA	NA	NA	NA	6.27E-02	5.04E+00	1.03E+04	6.45E+02	NA	NA	NA	NA	1.51E-03	2.04E+03	3.07E+00	1.00E+00	8.73E-01	7.43E+02	1.59E+02	2.97E-02	1.30E+02	5.72E+00
LMSD-204 (0-2")	6.27E-02	NA	NA	NA	NA	6.27E-02	5.04E+00	1.62E+03	1.02E+02	NA	NA	NA	NA	1.51E-03	3.22E+02	4.85E-01	1.00E+00	8.73E-01	1.17E+02	1.59E+02	2.97E-02	1.30E+02	9.03E-01
Lower Marsh (2-6")																						**Maximum HQ (Lower Marsh, 0-2")**	**5.72E+00**
LMSD-201 (2-6")	6.27E-02	NA	NA	NA	NA	6.27E-02	5.04E+00	8.83E+02	5.54E+01	NA	NA	NA	NA	1.51E-03	1.75E+02	2.63E-01	1.00E+00	8.73E-01	6.37E+01	1.59E+02	2.97E-02	1.30E+02	4.91E-01
LMSD-202 (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
LMSD-203 (2-6")	6.27E-02	NA	NA	NA	NA	6.27E-02	5.04E+00	1.16E+04	7.28E+02	NA	NA	NA	NA	1.51E-03	2.30E+03	3.46E+00	1.00E+00	8.73E-01	8.37E+02	1.59E+02	2.97E-02	1.30E+02	6.45E+00
LMSD-204 (2-6")	6.27E-02	NA	NA	NA	NA	6.27E-02	5.04E+00	2.44E+03	1.53E+02	NA	NA	NA	NA	1.51E-03	4.84E+02	7.29E-01	1.00E+00	8.73E-01	1.76E+02	1.59E+02	2.97E-02	1.30E+02	1.36E+00
Lower Marsh (6-12")																						**Maximum HQ (Lower Marsh, 2-6")**	**6.45E+00**
LMSD-201 (6-12")	6.27E-02	NA	NA	NA	NA	6.27E-02	5.04E+00	9.18E+02	5.76E+01	NA	NA	NA	NA	1.51E-03	1.82E+02	2.74E-01	1.00E+00	8.73E-01	6.63E+01	1.59E+02	2.97E-02	1.30E+02	5.10E-01
LMSD-202 (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
LMSD-203 (6-12")	6.27E-02	NA	NA	NA	NA	6.27E-02	5.04E+00	3.62E+04	2.27E+03	NA	NA	NA	NA	1.51E-03	7.18E+03	1.08E+01	1.00E+00	8.73E-01	2.61E+03	1.59E+02	2.97E-02	1.30E+02	2.01E+01
LMSD-204 (6-12")	6.27E-02	NA	NA	NA	NA	6.27E-02	5.04E+00	2.92E+03	1.83E+02	NA	NA	NA	NA	1.51E-03	5.80E+02	8.73E-01	1.00E+00	8.73E-01	2.11E+02	1.59E+02	2.97E-02	1.30E+02	1.63E+00
																						Maximum HQ (Lower Marsh, 6-12")	**2.01E+01**
Mink (Carnivorous Mammals)																							
Reference Sites																							
BRSD-5 (0-2")	4.25E-02	4.25E-02	1.13E-01	3.62E+01	1.54E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	3.20E+02	1.36E-01	1.00E+00	8.52E-01	1.96E+00	1.59E+02	2.97E-02	1.30E+02	1.51E-02
BRSD-5 (2-6")	4.25E-02	4.25E-02	1.13E-01	2.82E+01	1.20E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	2.50E+02	1.06E-01	1.00E+00	8.52E-01	1.53E+00	1.59E+02	2.97E-02	1.30E+02	1.18E-02
BRSD-5 (6-12")	4.25E-02	4.25E-02	1.13E-01	2.76E+01	1.17E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	2.44E+02	1.04E-01	1.00E+00	8.52E-01	1.50E+00	1.59E+02	2.97E-02	1.30E+02	1.15E-02
PGBG-1 (0-2")	4.25E-02	4.25E-02	1.13E-01	7.86E+01	3.34E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	6.96E+02	2.96E-01	1.00E+00	8.52E-01	4.27E+00	1.59E+02	2.97E-02	1.30E+02	3.28E-02
PGBG-1 (2-6")	4.25E-02	4.25E-02	1.13E-01	2.25E+01	9.56E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.99E+02	8.47E-02	1.00E+00	8.52E-01	1.22E+00	1.59E+02	2.97E-02	1.30E+02	9.39E-03
PGBG-1 (6-12")	4.25E-02	4.25E-02	1.13E-01	9.94E+00	4.23E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	8.80E+01	3.74E-02	1.00E+00	8.52E-01	5.40E-01	1.59E+02	2.97E-02	1.30E+02	4.15E-03
PGBG-2 (0-2")	4.25E-02	4.25E-02	1.13E-01	6.62E+01	2.82E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	5.86E+02	2.49E-01	1.00E+00	8.52E-01	3.60E+00	1.59E+02	2.97E-02	1.30E+02	2.77E-02
PGBG-2 (2-6")	4.25E-02	4.25E-02	1.13E-01	5.63E+01	2.39E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	4.98E+02	2.12E-01	1.00E+00	8.52E-01	3.06E+00	1.59E+02	2.97E-02	1.30E+02	2.35E-02
PGBG-2 (6-12")	4.25E-02	4.25E-02	1.13E-01	3.31E+01	1.41E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	2.93E+02	1.25E-01	1.00E+00	8.52E-01	1.80E+00	1.59E+02	2.97E-02	1.30E+02	1.38E-02
Eastern Upper Marsh (0-2")																						**Minimum HQ (Reference Sites)**	**4.15E-03**
UM-1000S-3500E (0-2")	4.25E-02	4.25E-02	2.07E-01	5.85E+01	2.49E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	2.83E+02	1.20E-01	1.00E+00	8.52E-01	3.06E+00	1.59E+02	2.97E-02	1.30E+02	2.35E-02
BRSD-15 (0-2")	4.25E-02	4.25E-02	2.07E-01	1.31E+02	5.58E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	6.35E+02	2.70E-01	1.00E+00	8.52E-01	6.87E+00	1.59E+02	2.97E-02	1.30E+02	5.28E-02
BRSD-4 (0-2")	4.25E-02	4.25E-02	2.07E-01	4.34E+01	1.85E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	2.10E+02	8.93E-02	1.00E+00	8.52E-01	2.27E+00	1.59E+02	2.97E-02	1.30E+02	1.75E-02
UM-750S-3500E (0-2")	4.25E-02	4.25E-02	2.07E-01	1.54E+03	6.53E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	7.43E+03	3.16E+00	1.00E+00	8.52E-01	8.03E+01	1.59E+02	2.97E-02	1.30E+02	6.18E-01
BRSD-16 (0-2")	4.25E-02	4.25E-02	2.07E-01	2.15E+02	9.14E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.04E+03	4.42E-01	1.00E+00	8.52E-01	1.12E+01	1.59E+02	2.97E-02	1.30E+02	8.64E-02
UM-750S-3000E (0-2")	4.25E-02	4.25E-02	2.07E-01	1.47E+03	6.25E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	7.11E+03	3.02E+00	1.00E+00	8.52E-01	7.69E+01	1.59E+02	2.97E-02	1.30E+02	5.91E-01
BRSD-3 (0-2")	4.25E-02	4.25E-02	2.07E-01	2.56E+02	1.09E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.24E+03	5.27E-01	1.00E+00	8.52E-01	1.34E+01	1.59E+02	2.97E-02	1.30E+02	1.03E-01
UM-500S-3250E (0-2")	4.25E-02	4.25E-02	2.07E-01	5.35E+02	2.28E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	2.59E+03	1.10E+00	1.00E+00	8.52E-01	2.80E+01	1.59E+02	2.97E-02	1.30E+02	2.15E-01
UM-500S-3000E (0-2")	4.25E-02	4.25E-02	2.07E-01	2.44E+02	1.04E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.18E+03	5.02E-01	1.00E+00	8.52E-01	1.28E+01	1.59E+02	2.97E-02	1.30E+02	9.81E-02
UM-500S-2750E (0-2")	4.25E-02	4.25E-02	2.07E-01	1.48E+03	6.29E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	7.16E+03	3.05E+00	1.00E+00	8.52E-01	7.74E+01	1.59E+02	2.97E-02	1.30E+02	5.95E-01

TABLE C-12FB: MANGANESE DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 12 - MARSH, WETLAND RECEPTORS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **118.73**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Mink (Carnivorous Mammals)																							
BRSD-25 (0-2")	4.25E-02	4.25E-02	2.07E-01	3.10E+02	1.32E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.50E+03	6.38E-01	1.00E+00	8.52E-01	1.62E+01	1.59E+02	2.97E-02	1.30E+02	1.25E-01
UM-250S-3000E (0-2")	4.25E-02	4.25E-02	2.07E-01	9.09E+02	3.87E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	4.40E+03	1.87E+00	1.00E+00	8.52E-01	4.76E+01	1.59E+02	2.97E-02	1.30E+02	3.66E-01
UM-250S-3250E (0-2")	4.25E-02	4.25E-02	2.07E-01	3.04E+02	1.29E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.47E+03	6.25E-01	1.00E+00	8.52E-01	1.59E+01	1.59E+02	2.97E-02	1.30E+02	1.22E-01
BRSD-24 (0-2")	4.25E-02	4.25E-02	2.07E-01	1.65E+03	7.02E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	7.99E+03	3.40E+00	1.00E+00	8.52E-01	8.64E+01	1.59E+02	2.97E-02	1.30E+02	6.64E-01
UM-250S-2750E (0-2")	4.25E-02	4.25E-02	2.07E-01	1.61E+03	6.86E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	7.81E+03	3.32E+00	1.00E+00	8.52E-01	8.44E+01	1.59E+02	2.97E-02	1.30E+02	6.49E-01
UM-250S-2500E (0-2")	4.25E-02	4.25E-02	2.07E-01	4.86E+01	2.07E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	2.35E+02	1.00E-01	1.00E+00	8.52E-01	2.54E+00	1.59E+02	2.97E-02	1.30E+02	1.95E-02
UM-0N-2500E (0-2")	4.25E-02	4.25E-02	2.07E-01	4.24E+02	1.80E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	2.05E+03	8.72E-01	1.00E+00	8.52E-01	2.22E+01	1.59E+02	2.97E-02	1.30E+02	1.70E-01
UM-0N-250E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-2 (0-2")	4.25E-02	4.25E-02	2.07E-01	1.59E+03	6.76E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	7.69E+03	3.27E+00	1.00E+00	8.52E-01	8.31E+01	1.59E+02	2.97E-02	1.30E+02	6.39E-01
UM-500N-2500E (0-2")	4.25E-02	4.25E-02	2.07E-01	3.37E+01	1.43E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.63E+02	6.93E-02	1.00E+00	8.52E-01	1.76E+00	1.59E+02	2.97E-02	1.30E+02	1.35E-02
UM-250N-2500E (0-2")	4.25E-02	4.25E-02	2.07E-01	7.85E+02	3.34E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	3.80E+03	1.62E+00	1.00E+00	8.52E-01	4.11E+01	1.59E+02	2.97E-02	1.30E+02	3.16E-01
UM-250N-2250E (0-2")	4.25E-02	4.25E-02	2.07E-01	1.57E+03	6.70E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	7.62E+03	3.24E+00	1.00E+00	8.52E-01	8.24E+01	1.59E+02	2.97E-02	1.30E+02	6.33E-01
Western Upper Marsh (0-2")																						**Maximum HQ (Eastern Upper Marsh, 0-2")**	**6.64E-01**
UM-500S-2500E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-2000E (0-2")	4.25E-02	4.25E-02	2.07E-01	8.93E+02	3.80E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	4.32E+03	1.84E+00	1.00E+00	8.52E-01	4.67E+01	1.59E+02	2.97E-02	1.30E+02	3.59E-01
UM-500S-2000E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-250N-1750E (0-2")	4.25E-02	4.25E-02	2.07E-01	2.60E+01	1.11E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.26E+02	5.36E-02	1.00E+00	8.52E-01	1.36E+00	1.59E+02	2.97E-02	1.30E+02	1.05E-02
UM-0N-1500E (0-2")	4.25E-02	4.25E-02	2.07E-01	2.75E+01	1.17E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.33E+02	5.66E-02	1.00E+00	8.52E-01	1.44E+00	1.59E+02	2.97E-02	1.30E+02	1.11E-02
UM-250S-1500E (0-2")	4.25E-02	4.25E-02	2.07E-01	2.42E+02	1.03E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.17E+03	4.98E-01	1.00E+00	8.52E-01	1.26E+01	1.59E+02	2.97E-02	1.30E+02	9.73E-02
UM-250S-1250E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-6 (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-1000E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-750E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-500E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-250S-500E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-250S-250E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-7 (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-8 (0-2")	4.25E-02	4.25E-02	2.07E-01	1.02E+02	4.33E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	4.93E+02	2.10E-01	1.00E+00	8.52E-01	5.33E+00	1.59E+02	2.97E-02	1.30E+02	4.10E-02
UM-500S-500E (0-2")	4.25E-02	4.25E-02	2.07E-01	2.01E+01	8.53E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	9.71E+01	4.13E-02	1.00E+00	8.52E-01	1.05E+00	1.59E+02	2.97E-02	1.30E+02	8.07E-03
BRSD-9 (0-2")	4.25E-02	4.25E-02	2.07E-01	1.15E+03	4.88E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	5.55E+03	2.36E+00	1.00E+00	8.52E-01	6.00E+01	1.59E+02	2.97E-02	1.30E+02	4.61E-01
BRSD-10 (0-2")	4.25E-02	4.25E-02	2.07E-01	7.05E+02	3.00E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	3.41E+03	1.45E+00	1.00E+00	8.52E-01	3.69E+01	1.59E+02	2.97E-02	1.30E+02	2.83E-01
BRSD-11 (0-2")	4.25E-02	4.25E-02	2.07E-01	2.81E+02	1.20E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.36E+03	5.79E-01	1.00E+00	8.52E-01	1.47E+01	1.59E+02	2.97E-02	1.30E+02	1.13E-01
Eastern Upper Marsh (2-6")																						**Maximum HQ (Western Upper Marsh, 0-2")**	**4.61E-01**
UM-1000S-3500E (2-6")	4.25E-02	4.25E-02	2.07E-01	8.88E+01	3.78E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	4.30E+02	1.83E-01	1.00E+00	8.52E-01	4.65E+00	1.59E+02	2.97E-02	1.30E+02	3.57E-02
BRSD-15 (2-6")	4.25E-02	4.25E-02	2.07E-01	2.07E+02	8.79E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.00E+03	4.25E-01	1.00E+00	8.52E-01	1.08E+01	1.59E+02	2.97E-02	1.30E+02	8.31E-02
BRSD-4 (2-6")	4.25E-02	4.25E-02	2.07E-01	1.97E+01	8.38E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	9.54E+01	4.06E-02	1.00E+00	8.52E-01	1.03E+00	1.59E+02	2.97E-02	1.30E+02	7.93E-03
UM-750S-3500E (2-6")	4.25E-02	4.25E-02	2.07E-01	1.46E+03	6.23E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	7.09E+03	3.02E+00	1.00E+00	8.52E-01	7.67E+01	1.59E+02	2.97E-02	1.30E+02	5.89E-01
BRSD-16 (2-6")	4.25E-02	4.25E-02	2.07E-01	2.09E+03	8.88E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.01E+04	4.30E+00	1.00E+00	8.52E-01	1.09E+02	1.59E+02	2.97E-02	1.30E+02	8.40E-01
UM-750S-3000E (2-6")	4.25E-02	4.25E-02	2.07E-01	1.54E+03	6.54E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	7.44E+03	3.16E+00	1.00E+00	8.52E-01	8.04E+01	1.59E+02	2.97E-02	1.30E+02	6.18E-01
BRSD-3 (2-6")	4.25E-02	4.25E-02	2.07E-01	3.49E+02	1.49E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.69E+03	7.19E-01	1.00E+00	8.52E-01	1.83E+01	1.59E+02	2.97E-02	1.30E+02	1.40E-01
UM-500S-3250E (2-6")	4.25E-02	4.25E-02	2.07E-01	8.84E+01	3.76E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	4.28E+02	1.82E-01	1.00E+00	8.52E-01	4.63E+00	1.59E+02	2.97E-02	1.30E+02	3.56E-02
UM-500S-3000E (2-6")	4.25E-02	4.25E-02	2.07E-01	6.55E+01	2.79E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	3.17E+02	1.35E-01	1.00E+00	8.52E-01	3.43E+00	1.59E+02	2.97E-02	1.30E+02	2.64E-02
UM-500S-2750E (2-6")	4.25E-02	4.25E-02	2.07E-01	1.73E+03	7.35E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	8.36E+03	3.56E+00	1.00E+00	8.52E-01	9.04E+01	1.59E+02	2.97E-02	1.30E+02	6.95E-01
BRSD-25 (2-6")	4.25E-02	4.25E-02	2.07E-01	2.19E+02	9.32E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.06E+03	4.51E-01	1.00E+00	8.52E-01	1.15E+01	1.59E+02	2.97E-02	1.30E+02	8.81E-02
UM-250S-3000E (2-6")	4.25E-02	4.25E-02	2.07E-01	5.31E+02	2.26E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	2.57E+03	1.09E+00	1.00E+00	8.52E-01	2.78E+01	1.59E+02	2.97E-02	1.30E+02	2.14E-01
UM-250S-3250E (2-6")	4.25E-02	4.25E-02	2.07E-01	2.67E+01	1.13E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.29E+02	5.49E-02	1.00E+00	8.52E-01	1.39E+00	1.59E+02	2.97E-02	1.30E+02	1.07E-02
BRSD-24 (2-6")	4.25E-02	4.25E-02	2.07E-01	5.91E+02	2.51E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	2.86E+03	1.22E+00	1.00E+00	8.52E-01	3.09E+01	1.59E+02	2.97E-02	1.30E+02	2.38E-01
UM-250S-2750E (2-6")	4.25E-02	4.25E-02	2.07E-01	1.21E+03	5.14E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	5.85E+03	2.49E+00	1.00E+00	8.52E-01	6.32E+01	1.59E+02	2.97E-02	1.30E+02	4.86E-01
UM-0N-2500E (2-6")	4.25E-02	4.25E-02	2.07E-01	6.65E+02	2.83E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	3.22E+03	1.37E+00	1.00E+00	8.52E-01	3.48E+01	1.59E+02	2.97E-02	1.30E+02	2.68E-01
BRSD-2 (2-6")	4.25E-02	4.25E-02	2.07E-01	1.26E+03	5.35E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	6.09E+03	2.59E+00	1.00E+00	8.52E-01	6.58E+01	1.59E+02	2.97E-02	1.30E+02	5.06E-01
UM-500N-2500E (2-6")	4.25E-02	4.25E-02	2.07E-01	3.84E+01	1.63E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.86E+02	7.91E-02	1.00E+00	8.52E-01	2.01E+00	1.59E+02	2.97E-02	1.30E+02	1.55E-02
UM-250N-2500E (2-6")	4.25E-02	4.25E-02	2.07E-01	1.65E+03	7.01E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	7.98E+03	3.39E+00	1.00E+00	8.52E-01	8.63E+01	1.59E+02	2.97E-02	1.30E+02	6.63E-01
UM-250N-2250E (2-6")	4.25E-02	4.25E-02	2.07E-01	5.76E+01	2.45E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	2.79E+02	1.19E-01	1.00E+00	8.52E-01	3.02E+00	1.59E+02	2.97E-02	1.30E+02	2.32E-02

TABLE C-12FB: MANGANESE DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 12 - MARSH, WETLAND RECEPTORS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **118.73**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Mink (Carnivorous Mammals)																							
Western Upper Marsh (2-6")																				**Maximum HQ (Eastern Upper Marsh, 2-6")**			**8.40E-01**
UM-500S-2500E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-2000E (2-6")	4.25E-02	4.25E-02	2.07E-01	7.89E+02	3.36E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	3.82E+03	1.62E+00	1.00E+00	8.52E-01	4.13E+01	1.59E+02	2.97E-02	1.30E+02	3.18E-01
UM-500S-2000E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-250N-1750E (2-6")	4.25E-02	4.25E-02	2.07E-01	3.68E+01	1.56E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.78E+02	7.57E-02	1.00E+00	8.52E-01	1.92E+00	1.59E+02	2.97E-02	1.30E+02	1.48E-02
UM-0N-1500E (2-6")	4.25E-02	4.25E-02	2.07E-01	2.71E+01	1.15E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.31E+02	5.57E-02	1.00E+00	8.52E-01	1.42E+00	1.59E+02	2.97E-02	1.30E+02	1.09E-02
UM-250S-1500E (2-6")	4.25E-02	4.25E-02	2.07E-01	3.02E+02	1.28E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.46E+03	6.21E-01	1.00E+00	8.52E-01	1.58E+01	1.59E+02	2.97E-02	1.30E+02	1.21E-01
UM-250S-1250E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-6 (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-1000E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-750E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-500E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-250S-500E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-250E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-250S-250E (2-6")	4.25E-02	4.25E-02	2.07E-01	1.84E+01	7.83E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	8.91E+01	3.79E-02	1.00E+00	8.52E-01	9.63E-01	1.59E+02	2.97E-02	1.30E+02	7.41E-03
BRSD-7 (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-8 (2-6")	4.25E-02	4.25E-02	2.07E-01	2.91E+02	1.24E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.41E+03	6.00E-01	1.00E+00	8.52E-01	1.52E+01	1.59E+02	2.97E-02	1.30E+02	1.17E-01
UM-500S-500E (2-6")	4.25E-02	4.25E-02	2.07E-01	2.09E+01	8.88E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.01E+02	4.30E-02	1.00E+00	8.52E-01	1.09E+00	1.59E+02	2.97E-02	1.30E+02	8.40E-03
BRSD-9 (2-6")	4.25E-02	4.25E-02	2.07E-01	4.36E+02	1.85E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	2.11E+03	8.98E-01	1.00E+00	8.52E-01	2.28E+01	1.59E+02	2.97E-02	1.30E+02	1.75E-01
BRSD-10 (2-6")	4.25E-02	4.25E-02	2.07E-01	6.88E+02	2.93E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	3.33E+03	1.42E+00	1.00E+00	8.52E-01	3.60E+01	1.59E+02	2.97E-02	1.30E+02	2.77E-01
BRSD-11 (2-6")	4.25E-02	4.25E-02	2.07E-01	6.55E+01	2.79E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	3.17E+02	1.35E-01	1.00E+00	8.52E-01	3.43E+00	1.59E+02	2.97E-02	1.30E+02	2.64E-02
Eastern Upper Marsh (6-12")																				**Maximum HQ (Western Upper Marsh, 2-6")**			**3.18E-01**
UM-1000S-3500E (6-12")	4.25E-02	4.25E-02	2.07E-01	3.16E+01	1.34E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.53E+02	6.51E-02	1.00E+00	8.52E-01	1.65E+00	1.59E+02	2.97E-02	1.30E+02	1.27E-02
BRSD-4 (6-12")	4.25E-02	4.25E-02	2.07E-01	9.77E+01	4.16E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	4.73E+02	2.01E-01	1.00E+00	8.52E-01	5.11E+00	1.59E+02	2.97E-02	1.30E+02	3.93E-02
UM-750S-3500E (6-12")	4.25E-02	4.25E-02	2.07E-01	1.31E+03	5.58E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	6.35E+03	2.70E+00	1.00E+00	8.52E-01	6.87E+01	1.59E+02	2.97E-02	1.30E+02	5.28E-01
BRSD-16 (6-12")	4.25E-02	4.25E-02	2.07E-01	4.92E+02	2.09E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	2.38E+03	1.01E+00	1.00E+00	8.52E-01	2.57E+01	1.59E+02	2.97E-02	1.30E+02	1.98E-01
UM-750S-3000E (6-12")	4.25E-02	4.25E-02	2.07E-01	1.50E+03	6.40E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	7.28E+03	3.10E+00	1.00E+00	8.52E-01	7.87E+01	1.59E+02	2.97E-02	1.30E+02	6.05E-01
BRSD-3 (6-12")	4.25E-02	4.25E-02	2.07E-01	1.34E+02	5.70E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	6.48E+02	2.76E-01	1.00E+00	8.52E-01	7.01E+00	1.59E+02	2.97E-02	1.30E+02	5.39E-02
UM-500S-3250E (6-12")	4.25E-02	4.25E-02	2.07E-01	5.70E+01	2.43E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	2.76E+02	1.17E-01	1.00E+00	8.52E-01	2.98E+00	1.59E+02	2.97E-02	1.30E+02	2.29E-02
UM-500S-3000E (6-12")	4.25E-02	4.25E-02	2.07E-01	8.04E+01	3.42E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	3.89E+02	1.65E-01	1.00E+00	8.52E-01	4.21E+00	1.59E+02	2.97E-02	1.30E+02	3.23E-02
UM-500S-2750E (6-12")	4.25E-02	4.25E-02	2.07E-01	1.69E+03	7.17E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	8.16E+03	3.47E+00	1.00E+00	8.52E-01	8.82E+01	1.59E+02	2.97E-02	1.30E+02	6.78E-01
BRSD-25 (6-12")	4.25E-02	4.25E-02	2.07E-01	3.60E+01	1.53E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.74E+02	7.40E-02	1.00E+00	8.52E-01	1.88E+00	1.59E+02	2.97E-02	1.30E+02	1.45E-02
UM-250S-3000E (6-12")	4.25E-02	4.25E-02	2.07E-01	1.03E+03	4.39E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	5.00E+03	2.13E+00	1.00E+00	8.52E-01	5.41E+01	1.59E+02	2.97E-02	1.30E+02	4.16E-01
UM-250S-3250E (6-12")	4.25E-02	4.25E-02	2.07E-01	4.55E+01	1.93E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	2.20E+02	9.36E-02	1.00E+00	8.52E-01	2.38E+00	1.59E+02	2.97E-02	1.30E+02	1.83E-02
BRSD-24 (6-12")	4.25E-02	4.25E-02	2.07E-01	2.48E+02	1.05E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.20E+03	5.10E-01	1.00E+00	8.52E-01	1.30E+01	1.59E+02	2.97E-02	1.30E+02	9.97E-02
UM-250S-2750E (6-12")	4.25E-02	4.25E-02	2.07E-01	3.39E+02	1.44E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.64E+03	6.98E-01	1.00E+00	8.52E-01	1.77E+01	1.59E+02	2.97E-02	1.30E+02	1.36E-01
UM-250S-2500E (6-12")	4.25E-02	4.25E-02	2.07E-01	3.10E+01	1.32E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.50E+02	6.38E-02	1.00E+00	8.52E-01	1.62E+00	1.59E+02	2.97E-02	1.30E+02	1.25E-02
BRSD-2 (6-12")	4.25E-02	4.25E-02	2.07E-01	2.54E+02	1.08E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.23E+03	5.23E-01	1.00E+00	8.52E-01	1.33E+01	1.59E+02	2.97E-02	1.30E+02	1.02E-01
UM-500N-2500E (6-12")	4.25E-02	4.25E-02	2.07E-01	4.26E+01	1.81E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	2.06E+02	8.76E-02	1.00E+00	8.52E-01	2.23E+00	1.59E+02	2.97E-02	1.30E+02	1.71E-02
UM-250N-2500E (6-12")	4.25E-02	4.25E-02	2.07E-01	1.39E+03	5.92E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	6.74E+03	2.87E+00	1.00E+00	8.52E-01	7.29E+01	1.59E+02	2.97E-02	1.30E+02	5.60E-01
UM-250N-2250E (6-12")	4.25E-02	4.25E-02	2.07E-01	7.17E+01	3.05E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	3.47E+02	1.48E-01	1.00E+00	8.52E-01	3.75E+00	1.59E+02	2.97E-02	1.30E+02	2.88E-02
Western Upper Marsh (6-12")																				**Maximum HQ (Eastern Upper Marsh, 6-12")**			**6.78E-01**
UM-500S-2500E (6-12")	4.25E-02	4.25E-02	2.07E-01	3.14E+01	1.34E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.52E+02	6.47E-02	1.00E+00	8.52E-01	1.64E+00	1.59E+02	2.97E-02	1.30E+02	1.26E-02
UM-0N-2000E (6-12")	4.25E-02	4.25E-02	2.07E-01	1.58E+03	6.74E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	7.67E+03	3.26E+00	1.00E+00	8.52E-01	8.29E+01	1.59E+02	2.97E-02	1.30E+02	6.38E-01
UM-500S-2000E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-250N-1750E (6-12")	4.25E-02	4.25E-02	2.07E-01	2.06E+01	8.75E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	9.96E+01	4.24E-02	1.00E+00	8.52E-01	1.08E+00	1.59E+02	2.97E-02	1.30E+02	8.28E-03
UM-0N-1500E (6-12")	4.25E-02	4.25E-02	2.07E-01	3.35E+01	1.42E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.62E+02	6.89E-02	1.00E+00	8.52E-01	1.75E+00	1.59E+02	2.97E-02	1.30E+02	1.35E-02
UM-250S-1500E (6-12")	4.25E-02	4.25E-02	2.07E-01	9.21E+01	3.92E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	4.46E+02	1.90E-01	1.00E+00	8.52E-01	4.82E+00	1.59E+02	2.97E-02	1.30E+02	3.71E-02
UM-250S-1250E (6-12")	4.25E-02	4.25E-02	2.07E-01	1.93E+01	8.22E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	9.35E+01	3.98E-02	1.00E+00	8.52E-01	1.01E+00	1.59E+02	2.97E-02	1.30E+02	7.77E-03
BRSD-6 (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-1000E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-750E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-500E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-250S-500E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-250E (6-12")	4.25E-02	4.25E-02	2.07E-01	2.01E+01	8.56E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	9.74E+01	4.14E-02	1.00E+00	8.52E-01	1.05E+00	1.59E+02	2.97E-02	1.30E+02	8.10E-03
UM-250S-250E (6-12")	4.25E-02	4.25E-02	2.07E-01	5.81E+01	2.47E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	2.81E+02	1.20E-01	1.00E+00	8.52E-01	3.04E+00	1.59E+02	2.97E-02	1.30E+02	2.34E-02

TABLE C-12FB: MANGANESE DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 12 - MARSH, WETLAND RECEPTORS (Continued)
Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)
calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **118.73**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Mink (Carnivorous Mammals)																							
BRSD-7 (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-8 (6-12")	4.25E-02	4.25E-02	2.07E-01	2.33E+02	9.93E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.13E+03	4.81E-01	1.00E+00	8.52E-01	1.22E+01	1.59E+02	2.97E-02	1.30E+02	9.39E-02
UM-500S-500E (6-12")	4.25E-02	4.25E-02	2.07E-01	2.09E+01	8.88E-01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.01E+02	4.30E-02	1.00E+00	8.52E-01	1.09E+00	1.59E+02	2.97E-02	1.30E+02	8.40E-03
BRSD-9 (6-12")	4.25E-02	4.25E-02	2.07E-01	3.64E+02	1.55E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.76E+03	7.49E-01	1.00E+00	8.52E-01	1.90E+01	1.59E+02	2.97E-02	1.30E+02	1.46E-01
BRSD-10 (6-12")	4.25E-02	4.25E-02	2.07E-01	1.02E+03	4.32E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	4.92E+03	2.09E+00	1.00E+00	8.52E-01	5.32E+01	1.59E+02	2.97E-02	1.30E+02	4.09E-01
BRSD-11 (6-12")	4.25E-02	4.25E-02	2.07E-01	6.03E+01	2.57E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	2.92E+02	1.24E-01	1.00E+00	8.52E-01	3.16E+00	1.59E+02	2.97E-02	1.30E+02	2.43E-02
Middle Marsh (0-2")																						**Maximum HQ (Western Upper Marsh, 6-12")**	**6.38E-01**
MMSD-201 (0-2")	4.25E-02	4.25E-02	2.07E-01	4.15E+02	1.77E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	2.01E+03	8.55E-01	1.00E+00	8.52E-01	2.17E+01	1.59E+02	2.97E-02	1.30E+02	1.67E-01
MMSD-202 (0-2")	4.25E-02	4.25E-02	2.07E-01	3.26E+01	1.39E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.58E+02	6.72E-02	1.00E+00	8.52E-01	1.71E+00	1.59E+02	2.97E-02	1.30E+02	1.31E-02
Middle Marsh (2-6")																						**Maximum HQ (Middle Marsh, 0-2")**	**1.67E-01**
MMSD-201 (2-6")	4.25E-02	4.25E-02	2.07E-01	3.06E+02	1.30E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.48E+03	6.30E-01	1.00E+00	8.52E-01	1.60E+01	1.59E+02	2.97E-02	1.30E+02	1.23E-01
MMSD-202 (2-6")	4.25E-02	4.25E-02	2.07E-01	4.65E+01	1.98E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	2.25E+02	9.57E-02	1.00E+00	8.52E-01	2.43E+00	1.59E+02	2.97E-02	1.30E+02	1.87E-02
Middle Marsh (6-12")																						**Maximum HQ (Middle Marsh, 2-6")**	**1.23E-01**
MMSD-201 (6-12")	4.25E-02	4.25E-02	2.07E-01	3.68E+02	1.56E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.78E+03	7.57E-01	1.00E+00	8.52E-01	1.92E+01	1.59E+02	2.97E-02	1.30E+02	1.48E-01
MMSD-202 (6-12")	4.25E-02	4.25E-02	2.07E-01	5.62E+01	2.39E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	2.72E+02	1.16E-01	1.00E+00	8.52E-01	2.94E+00	1.59E+02	2.97E-02	1.30E+02	2.26E-02
Lower Marsh (0-2")																						**Maximum HQ (Middle Marsh, 6-12")**	**1.48E-01**
LMSD-201 (0-2")	4.25E-02	4.25E-02	2.07E-01	4.17E+01	1.78E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	2.02E+02	8.59E-02	1.00E+00	8.52E-01	2.18E+00	1.59E+02	2.97E-02	1.30E+02	1.68E-02
LMSD-202 (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
LMSD-203 (0-2")	4.25E-02	4.25E-02	2.07E-01	4.21E+02	1.79E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	2.04E+03	8.68E-01	1.00E+00	8.52E-01	2.21E+01	1.59E+02	2.97E-02	1.30E+02	1.70E-01
LMSD-204 (0-2")	4.25E-02	4.25E-02	2.07E-01	6.65E+01	2.83E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	3.22E+02	1.37E-01	1.00E+00	8.52E-01	3.48E+00	1.59E+02	2.97E-02	1.30E+02	2.68E-02
Lower Marsh (2-6")																						**Maximum HQ (Lower Marsh, 0-2")**	**1.70E-01**
LMSD-201 (2-6")	4.25E-02	4.25E-02	2.07E-01	3.62E+01	1.54E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.75E+02	7.44E-02	1.00E+00	8.52E-01	1.89E+00	1.59E+02	2.97E-02	1.30E+02	1.45E-02
LMSD-202 (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
LMSD-203 (2-6")	4.25E-02	4.25E-02	2.07E-01	4.75E+02	2.02E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	2.30E+03	9.78E-01	1.00E+00	8.52E-01	2.49E+01	1.59E+02	2.97E-02	1.30E+02	1.91E-01
LMSD-204 (2-6")	4.25E-02	4.25E-02	2.07E-01	1.00E+02	4.25E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	4.84E+02	2.06E-01	1.00E+00	8.52E-01	5.23E+00	1.59E+02	2.97E-02	1.30E+02	4.02E-02
Lower Marsh (6-12")																						**Maximum HQ (Lower Marsh, 2-6")**	**1.91E-01**
LMSD-201 (6-12")	4.25E-02	4.25E-02	2.07E-01	3.76E+01	1.60E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.82E+02	7.74E-02	1.00E+00	8.52E-01	1.97E+00	1.59E+02	2.97E-02	1.30E+02	1.51E-02
LMSD-202 (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
LMSD-203 (6-12")	4.25E-02	4.25E-02	2.07E-01	1.48E+03	6.31E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	7.18E+03	3.05E+00	1.00E+00	8.52E-01	7.76E+01	1.59E+02	2.97E-02	1.30E+02	5.97E-01
LMSD-204 (6-12")	4.25E-02	4.25E-02	2.07E-01	1.20E+02	5.10E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	5.80E+02	2.47E-01	1.00E+00	8.52E-01	6.27E+00	1.59E+02	2.97E-02	1.30E+02	4.82E-02
																						Maximum HQ (Lower Marsh, 6-12")	**5.97E-01**

Notes: Results are evaluated in order of upstream to downstream.

1 See Tables 3-1 through 3-13 for ingestion rates, foraging ranges used to calculate the SUF, and body weights.
2 Site BAFs were calculated by dividing site-collected tissue by collocated soil concentrations. The maximum plant and invertebrate BAF calculated for the eastern transect (UMT1) were used for the Eastern Upper Marsh dose calculations. The maximum plant and invertebrate BAF calculated for the western transect (UMT2) were used for the Western Upper Marsh dose calculations. The maximum mammal BAF calculated for the eastern transect (UMT1) was used for the Eastern and Western Upper Marsh calculations because no mammals were collected in the Western Upper Marsh. The maximum plant, mammal, and invertebrate BAFs calculated for the Pass Creek reference
3 The mammal, plant, and invertebrate concentrations were calculated by multiplying the soil concentration by the BAF to generate a tissue concentration (see note 2).
4 Mammal, plant, and invertebrate daily doses were calculated by multiplying the ingestion rate (see note 1) by the tissue concentration (see note 3).
5 Soil concentration from specified depth below ground surface at point ID from laboratory analysis. Doses were not calculated for detected and non-detected soil concentrations measured below the minimum reference site concentration (0-12"), as indicated by BB. For results that were measured at less than the detection limit, doses were calculated using half of the detection limit.
6 Soil daily dose was calculated by multiplying the soil ingestion rate (see note 1) by soil concentration (see note 5).
7 Total daily dose is calculated using the following equation: total daily dose = ([mammal daily dose (if applicable) + plant daily dose (if applicable) + invertebrate daily dose (if applicable) + soil daily dose]*SUF)/receptor species body weight.
8 The derivation of TRVs is described in Navy (1998). The high TRV was used for dose calculations.
9 Allometrically adjusted TRVs for birds were calculated using the following equation: receptor species TRV = (test species TRV) x (test species body weight / receptor species body weight) $^{(1-1.2)}$.
10 Allometrically adjusted TRVs for mammals were calculated using the following equation: receptor species TRV = (test species TRV) x (test species body weight / receptor species body weight) $^{(1-0.94)}$.
11 HQs were calculated using the following equation: HQ = total daily dose/allometrically adjusted TRV.
12 Green cells indicate an HQ greater than 1.0

BAF	Bioaccumulation Factor	ID	Identification	NA	Not applicable
BB	Below minimum background reference site concentration	kg	Kilogram	Navy	Department of the Navy
EE/CA	Engineering Evaluation/Cost Analysis	kg/day	Kilogram per day	SUF	Site use factor
EU	Exposure Unit	mg/day	Milligram per day	TRV	Toxicity reference value
HQ	Hazard Quotient	mg/kg	Milligram per kilogram		

Sources: Department of the Navy. 1998. "Development of Toxicity Reference Values for Conducting Ecological Risk Assessments at Naval Facilities in California, Interim Final." Prepared by Naval Facilities Engineering Command, Engineering Field Activity West (EFA

TABLE C-12GA: ZINC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 12 - MARSH, TERRESTRIAL RECEPTORS

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **118.73**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Mourning Dove (Herbivorous Birds)																							
Reference Sites																							
BRSD-5 (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.99E+00	2.13E+02	1.23E+00	NA	NA	NA	NA	5.36E-04	1.07E+02	5.73E-02	4.58E-01	1.09E-01	5.39E+00	1.72E+02	9.55E-01	1.11E+02	4.83E-02
BRSD-5 (2-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.99E+00	1.99E+02	1.15E+00	NA	NA	NA	NA	5.36E-04	1.00E+02	5.36E-02	4.58E-01	1.09E-01	5.04E+00	1.72E+02	9.55E-01	1.11E+02	4.52E-02
BRSD-5 (6-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.99E+00	1.95E+02	1.12E+00	NA	NA	NA	NA	5.36E-04	9.78E+01	5.24E-02	4.58E-01	1.09E-01	4.93E+00	1.72E+02	9.55E-01	1.11E+02	4.42E-02
PGBG-1 (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.99E+00	3.14E+02	1.81E+00	NA	NA	NA	NA	5.36E-04	1.58E+02	8.47E-02	4.58E-01	1.09E-01	7.96E+00	1.72E+02	9.55E-01	1.11E+02	7.14E-02
PGBG-1 (2-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.99E+00	3.46E+02	1.99E+00	NA	NA	NA	NA	5.36E-04	1.74E+02	9.32E-02	4.58E-01	1.09E-01	8.76E+00	1.72E+02	9.55E-01	1.11E+02	7.86E-02
PGBG-1 (6-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.99E+00	2.65E+02	1.52E+00	NA	NA	NA	NA	5.36E-04	1.33E+02	7.13E-02	4.58E-01	1.09E-01	6.70E+00	1.72E+02	9.55E-01	1.11E+02	6.01E-02
PGBG-2 (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.99E+00	5.23E+02	3.01E+00	NA	NA	NA	NA	5.36E-04	2.63E+02	1.41E-01	4.58E-01	1.09E-01	1.32E+01	1.72E+02	9.55E-01	1.11E+02	1.19E-01
PGBG-2 (2-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.99E+00	5.01E+02	2.89E+00	NA	NA	NA	NA	5.36E-04	2.52E+02	1.35E-01	4.58E-01	1.09E-01	1.27E+01	1.72E+02	9.55E-01	1.11E+02	1.14E-01
PGBG-2 (6-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	1.99E+00	5.47E+02	3.15E+00	NA	NA	NA	NA	5.36E-04	2.75E+02	1.47E-01	4.58E-01	1.09E-01	1.38E+01	1.72E+02	9.55E-01	1.11E+02	1.24E-01
Eastern Upper Marsh (0-2")																						**Minimum HQ (Reference Sites)**	**4.42E-02**
UM-1000S-3500E (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	2.32E+00	3.99E+03	2.30E+01	NA	NA	NA	NA	5.36E-04	1.72E+03	9.22E-01	4.58E-01	1.09E-01	1.00E+02	1.72E+02	9.55E-01	1.11E+02	9.01E-01
BRSD-15 (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	2.32E+00	3.88E+02	2.23E+00	NA	NA	NA	NA	5.36E-04	1.67E+02	8.95E-02	4.58E-01	1.09E-01	9.75E+00	1.72E+02	9.55E-01	1.11E+02	8.75E-02
BRSD-4 (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	2.32E+00	4.20E+02	2.42E+00	NA	NA	NA	NA	5.36E-04	1.81E+02	9.70E-02	4.58E-01	1.09E-01	1.06E+01	1.72E+02	9.55E-01	1.11E+02	9.48E-02
UM-750S-3500E (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	2.32E+00	2.90E+03	1.67E+01	NA	NA	NA	NA	5.36E-04	1.25E+03	6.70E-01	4.58E-01	1.09E-01	7.30E+01	1.72E+02	9.55E-01	1.11E+02	6.55E-01
BRSD-16 (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	2.32E+00	1.91E+03	1.10E+01	NA	NA	NA	NA	5.36E-04	8.22E+02	4.40E-01	4.58E-01	1.09E-01	4.80E+01	1.72E+02	9.55E-01	1.11E+02	4.31E-01
UM-750S-3000E (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	2.32E+00	4.95E+03	2.85E+01	NA	NA	NA	NA	5.36E-04	2.13E+03	1.14E+00	4.58E-01	1.09E-01	1.24E+02	1.72E+02	9.55E-01	1.11E+02	1.12E+00
BRSD-3 (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	2.32E+00	2.37E+03	1.36E+01	NA	NA	NA	NA	5.36E-04	1.02E+03	5.47E-01	4.58E-01	1.09E-01	5.96E+01	1.72E+02	9.55E-01	1.11E+02	5.34E-01
UM-500S-3250E (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	2.32E+00	2.18E+03	1.26E+01	NA	NA	NA	NA	5.36E-04	9.40E+02	5.04E-01	4.58E-01	1.09E-01	5.49E+01	1.72E+02	9.55E-01	1.11E+02	4.93E-01
UM-500S-3000E (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	2.32E+00	3.27E+03	1.89E+01	NA	NA	NA	NA	5.36E-04	1.41E+03	7.56E-01	4.58E-01	1.09E-01	8.24E+01	1.72E+02	9.55E-01	1.11E+02	7.39E-01
UM-500S-2750E (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	2.32E+00	5.08E+03	2.93E+01	NA	NA	NA	NA	5.36E-04	2.19E+03	1.17E+00	4.58E-01	1.09E-01	1.28E+02	1.72E+02	9.55E-01	1.11E+02	1.15E+00
BRSD-25 (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	2.32E+00	1.94E+03	1.12E+01	NA	NA	NA	NA	5.36E-04	8.36E+02	4.48E-01	4.58E-01	1.09E-01	4.88E+01	1.72E+02	9.55E-01	1.11E+02	4.38E-01
UM-250S-3000E (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	2.32E+00	9.47E+03	5.46E+01	NA	NA	NA	NA	5.36E-04	4.08E+03	2.19E+00	4.58E-01	1.09E-01	2.38E+02	1.72E+02	9.55E-01	1.11E+02	2.14E+00
UM-250S-3250E (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	2.32E+00	2.20E+03	1.27E+01	NA	NA	NA	NA	5.36E-04	9.48E+02	5.08E-01	4.58E-01	1.09E-01	5.54E+01	1.72E+02	9.55E-01	1.11E+02	4.97E-01
BRSD-24 (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	2.32E+00	4.74E+03	2.73E+01	NA	NA	NA	NA	5.36E-04	2.04E+03	1.09E+00	4.58E-01	1.09E-01	1.19E+02	1.72E+02	9.55E-01	1.11E+02	1.07E+00
UM-250S-2750E (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	2.32E+00	3.51E+03	2.02E+01	NA	NA	NA	NA	5.36E-04	1.51E+03	8.09E-01	4.58E-01	1.09E-01	8.82E+01	1.72E+02	9.55E-01	1.11E+02	7.91E-01
UM-250S-2500E (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	2.32E+00	1.34E+03	7.71E+00	NA	NA	NA	NA	5.36E-04	5.76E+02	3.09E-01	4.58E-01	1.09E-01	3.36E+01	1.72E+02	9.55E-01	1.11E+02	3.02E-01
UM-0N-2500E (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	2.32E+00	7.76E+03	4.47E+01	NA	NA	NA	NA	5.36E-04	3.34E+03	1.79E+00	4.58E-01	1.09E-01	1.95E+02	1.72E+02	9.55E-01	1.11E+02	1.75E+00
UM-0N-250E (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	2.32E+00	3.48E+03	2.01E+01	NA	NA	NA	NA	5.36E-04	1.50E+03	8.04E-01	4.58E-01	1.09E-01	8.76E+01	1.72E+02	9.55E-01	1.11E+02	7.86E-01
BRSD-2 (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	2.32E+00	4.06E+03	2.34E+01	NA	NA	NA	NA	5.36E-04	1.75E+03	9.38E-01	4.58E-01	1.09E-01	1.02E+02	1.72E+02	9.55E-01	1.11E+02	9.17E-01
UM-500N-2500E (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	2.32E+00	6.27E+02	3.61E+00	NA	NA	NA	NA	5.36E-04	2.70E+02	1.45E-01	4.58E-01	1.09E-01	1.58E+01	1.72E+02	9.55E-01	1.11E+02	1.41E-01
UM-250N-2500E (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	2.32E+00	6.94E+03	4.00E+01	NA	NA	NA	NA	5.36E-04	2.99E+03	1.60E+00	4.58E-01	1.09E-01	1.75E+02	1.72E+02	9.55E-01	1.11E+02	1.57E+00
UM-250N-2250E (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	2.32E+00	4.78E+03	2.76E+01	NA	NA	NA	NA	5.36E-04	2.06E+03	1.10E+00	4.58E-01	1.09E-01	1.20E+02	1.72E+02	9.55E-01	1.11E+02	1.08E+00
Western Upper Marsh (0-2")																						**Maximum HQ (Eastern Upper Marsh, 0-2")**	**2.14E+00**
UM-500S-2500E (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	2.15E+00	4.77E+02	2.75E+00	NA	NA	NA	NA	5.36E-04	2.22E+02	1.19E-01	4.58E-01	1.09E-01	1.20E+01	1.72E+02	9.55E-01	1.11E+02	1.08E-01
UM-0N-2000E (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	2.15E+00	5.93E+03	3.42E+01	NA	NA	NA	NA	5.36E-04	2.76E+03	1.48E+00	4.58E-01	1.09E-01	1.50E+02	1.72E+02	9.55E-01	1.11E+02	1.34E+00
UM-500S-2000E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-250N-1750E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	1.26E+02	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-1500E (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	2.15E+00	6.14E+02	3.54E+00	NA	NA	NA	NA	5.36E-04	2.86E+02	1.53E-01	4.58E-01	1.09E-01	1.55E+01	1.72E+02	9.55E-01	1.11E+02	1.39E-01
UM-250S-1500E (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	2.15E+00	5.93E+03	3.42E+01	NA	NA	NA	NA	5.36E-04	2.76E+03	1.48E+00	4.58E-01	1.09E-01	1.50E+02	1.72E+02	9.55E-01	1.11E+02	1.34E+00
UM-250S-1250E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	9.88E+01	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-6 (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-1000E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-750E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-500E (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	2.15E+00	4.68E+02	2.70E+00	NA	NA	NA	NA	5.36E-04	2.18E+02	1.17E-01	4.58E-01	1.09E-01	1.18E+01	1.72E+02	9.55E-01	1.11E+02	1.06E-01
UM-250S-500E (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	2.15E+00	3.18E+02	1.83E+00	NA	NA	NA	NA	5.36E-04	1.48E+02	7.93E-02	4.58E-01	1.09E-01	8.02E+00	1.72E+02	9.55E-01	1.11E+02	7.20E-02
UM-250S-250E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	1.31E+02	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-7 (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	2.15E+00	1.42E+03	8.21E+00	NA	NA	NA	NA	5.36E-04	6.63E+02	3.55E-01	4.58E-01	1.09E-01	3.59E+01	1.72E+02	9.55E-01	1.11E+02	3.22E-01
BRSD-8 (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	2.15E+00	1.12E+03	6.45E+00	NA	NA	NA	NA	5.36E-04	5.21E+02	2.79E-01	4.58E-01	1.09E-01	2.82E+01	1.72E+02	9.55E-01	1.11E+02	2.53E-01
UM-500S-500E (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	2.15E+00	4.04E+02	2.33E+00	NA	NA	NA	NA	5.36E-04	1.88E+02	1.01E-01	4.58E-01	1.09E-01	1.02E+01	1.72E+02	9.55E-01	1.11E+02	9.14E-02

TABLE C-12GA: ZINC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 12 - MARSH, TERRESTRIAL RECEPTORS (Continued)
Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)
calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 118.73

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Mourning Dove (Herbivorous Birds)																							
BRSD-9 (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	2.15E+00	1.40E+03	8.07E+00	NA	NA	NA	NA	5.36E-04	6.52E+02	3.49E-01	4.58E-01	1.09E-01	3.53E+01	1.72E+02	9.55E-01	1.11E+02	3.17E-01
BRSD-10 (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	2.15E+00	6.17E+03	3.55E+01	NA	NA	NA	NA	5.36E-04	2.87E+03	1.54E+00	4.58E-01	1.09E-01	1.56E+02	1.72E+02	9.55E-01	1.11E+02	1.40E+00
BRSD-11 (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	2.15E+00	9.80E+02	5.64E+00	NA	NA	NA	NA	5.36E-04	4.56E+02	2.44E-01	4.58E-01	1.09E-01	2.47E+01	1.72E+02	9.55E-01	1.11E+02	2.22E-01
Eastern Upper Marsh (2-6")																						**Maximum HQ (Western Upper Marsh, 0-2")**	**1.40E+00**
UM-1000S-3500E (2-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	2.32E+00	9.19E+02	5.30E+00	NA	NA	NA	NA	5.36E-04	3.96E+02	2.12E-01	4.58E-01	1.09E-01	2.31E+01	1.72E+02	9.55E-01	1.11E+02	2.07E-01
BRSD-15 (2-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	2.32E+00	5.64E+02	3.25E+00	NA	NA	NA	NA	5.36E-04	2.43E+02	1.30E-01	4.58E-01	1.09E-01	1.42E+01	1.72E+02	9.55E-01	1.11E+02	1.27E-01
BRSD-4 (2-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	2.32E+00	4.97E+02	2.86E+00	NA	NA	NA	NA	5.36E-04	2.14E+02	1.15E-01	4.58E-01	1.09E-01	1.25E+01	1.72E+02	9.55E-01	1.11E+02	1.12E-01
UM-750S-3500E (2-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	2.32E+00	6.99E+03	4.03E+01	NA	NA	NA	NA	5.36E-04	3.01E+03	1.61E+00	4.58E-01	1.09E-01	1.76E+02	1.72E+02	9.55E-01	1.11E+02	1.58E+00
BRSD-16 (2-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	2.32E+00	9.03E+03	5.20E+01	NA	NA	NA	NA	5.36E-04	3.89E+03	2.08E+00	4.58E-01	1.09E-01	2.27E+02	1.72E+02	9.55E-01	1.11E+02	2.04E+00
UM-750S-3000E (2-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	2.32E+00	4.11E+03	2.37E+01	NA	NA	NA	NA	5.36E-04	1.77E+03	9.48E-01	4.58E-01	1.09E-01	1.03E+02	1.72E+02	9.55E-01	1.11E+02	9.27E-01
BRSD-3 (2-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	2.32E+00	2.65E+03	1.53E+01	NA	NA	NA	NA	5.36E-04	1.14E+03	6.11E-01	4.58E-01	1.09E-01	6.66E+01	1.72E+02	9.55E-01	1.11E+02	5.97E-01
UM-500S-3250E (2-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	2.32E+00	1.55E+03	8.94E+00	NA	NA	NA	NA	5.36E-04	6.68E+02	3.58E-01	4.58E-01	1.09E-01	3.90E+01	1.72E+02	9.55E-01	1.11E+02	3.50E-01
UM-500S-3000E (2-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	2.32E+00	6.15E+02	3.55E+00	NA	NA	NA	NA	5.36E-04	2.65E+02	1.42E-01	4.58E-01	1.09E-01	1.55E+01	1.72E+02	9.55E-01	1.11E+02	1.39E-01
UM-500S-2750E (2-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	2.32E+00	3.51E+03	2.02E+01	NA	NA	NA	NA	5.36E-04	1.51E+03	8.09E-01	4.58E-01	1.09E-01	8.82E+01	1.72E+02	9.55E-01	1.11E+02	7.91E-01
BRSD-25 (2-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	2.32E+00	2.60E+03	1.50E+01	NA	NA	NA	NA	5.36E-04	1.12E+03	6.00E-01	4.58E-01	1.09E-01	6.54E+01	1.72E+02	9.55E-01	1.11E+02	5.87E-01
UM-250S-3000E (2-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	2.32E+00	8.24E+03	4.75E+01	NA	NA	NA	NA	5.36E-04	3.55E+03	1.90E+00	4.58E-01	1.09E-01	2.07E+02	1.72E+02	9.55E-01	1.11E+02	1.86E+00
UM-250S-3250E (2-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	2.32E+00	1.76E+03	1.02E+01	NA	NA	NA	NA	5.36E-04	7.60E+02	4.07E-01	4.58E-01	1.09E-01	4.44E+01	1.72E+02	9.55E-01	1.11E+02	3.98E-01
BRSD-24 (2-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	2.32E+00	8.01E+03	4.62E+01	NA	NA	NA	NA	5.36E-04	3.45E+03	1.85E+00	4.58E-01	1.09E-01	2.02E+02	1.72E+02	9.55E-01	1.11E+02	1.81E+00
UM-250S-2750E (2-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	2.32E+00	4.67E+03	2.69E+01	NA	NA	NA	NA	5.36E-04	2.01E+03	1.08E+00	4.58E-01	1.09E-01	1.17E+02	1.72E+02	9.55E-01	1.11E+02	1.05E+00
UM-0N-2500E (2-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	2.32E+00	3.39E+03	1.95E+01	NA	NA	NA	NA	5.36E-04	1.46E+03	7.82E-01	4.58E-01	1.09E-01	8.53E+01	1.72E+02	9.55E-01	1.11E+02	7.65E-01
BRSD-2 (2-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	2.32E+00	4.62E+03	2.66E+01	NA	NA	NA	NA	5.36E-04	1.99E+03	1.07E+00	4.58E-01	1.09E-01	1.16E+02	1.72E+02	9.55E-01	1.11E+02	1.04E+00
UM-500N-2500E (2-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	2.32E+00	6.32E+02	3.64E+00	NA	NA	NA	NA	5.36E-04	2.72E+02	1.46E-01	4.58E-01	1.09E-01	1.59E+01	1.72E+02	9.55E-01	1.11E+02	1.43E-01
UM-250N-2500E (2-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	2.32E+00	5.76E+03	3.32E+01	NA	NA	NA	NA	5.36E-04	2.48E+03	1.33E+00	4.58E-01	1.09E-01	1.45E+02	1.72E+02	9.55E-01	1.11E+02	1.30E+00
UM-250N-2250E (2-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	2.32E+00	1.49E+03	8.56E+00	NA	NA	NA	NA	5.36E-04	6.40E+02	3.43E-01	4.58E-01	1.09E-01	3.74E+01	1.72E+02	9.55E-01	1.11E+02	3.35E-01
Western Upper Marsh (2-6")																						**Maximum HQ (Eastern Upper Marsh, 2-6")**	**2.04E+00**
UM-500S-2500E (2-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	2.15E+00	4.73E+02	2.72E+00	NA	NA	NA	NA	5.36E-04	2.20E+02	1.18E-01	4.58E-01	1.09E-01	1.19E+01	1.72E+02	9.55E-01	1.11E+02	1.07E-01
UM-0N-2000E (2-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	2.15E+00	5.93E+03	3.42E+01	NA	NA	NA	NA	5.36E-04	2.76E+03	1.48E+00	4.58E-01	1.09E-01	1.50E+02	1.72E+02	9.55E-01	1.11E+02	1.34E+00
UM-500S-2000E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	1.11E+02	BB	BB	BB	BB	BB	BB	BB	BB
UM-250N-1750E (2-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	2.15E+00	6.14E+02	3.54E+00	NA	NA	NA	NA	5.36E-04	2.86E+02	1.53E-01	4.58E-01	1.09E-01	1.55E+01	1.72E+02	9.55E-01	1.11E+02	1.39E-01
UM-0N-1500E (2-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	2.15E+00	5.48E+02	3.16E+00	NA	NA	NA	NA	5.36E-04	2.55E+02	1.37E-01	4.58E-01	1.09E-01	1.38E+01	1.72E+02	9.55E-01	1.11E+02	1.24E-01
UM-250S-1500E (2-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	2.15E+00	4.32E+03	2.49E+01	NA	NA	NA	NA	5.36E-04	2.01E+03	1.08E+00	4.58E-01	1.09E-01	1.09E+02	1.72E+02	9.55E-01	1.11E+02	9.77E-01
UM-250S-1250E (2-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	2.15E+00	3.01E+02	1.73E+00	NA	NA	NA	NA	5.36E-04	1.40E+02	7.50E-02	4.58E-01	1.09E-01	7.59E+00	1.72E+02	9.55E-01	1.11E+02	6.81E-02
BRSD-6 (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-1000E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-750E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-500E (2-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	2.15E+00	5.20E+03	3.00E+01	NA	NA	NA	NA	5.36E-04	2.42E+03	1.30E+00	4.58E-01	1.09E-01	1.31E+02	1.72E+02	9.55E-01	1.11E+02	1.18E+00
UM-250S-500E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	9.88E+01	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-250E (2-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	2.15E+00	3.59E+03	2.07E+01	NA	NA	NA	NA	5.36E-04	1.67E+03	8.95E-01	4.58E-01	1.09E-01	9.05E+01	1.72E+02	9.55E-01	1.11E+02	8.12E-01
UM-250S-250E (2-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	2.15E+00	3.69E+02	2.13E+00	NA	NA	NA	NA	5.36E-04	1.72E+02	9.22E-02	4.58E-01	1.09E-01	9.32E+00	1.72E+02	9.55E-01	1.11E+02	8.36E-02
BRSD-7 (2-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	2.15E+00	3.18E+02	1.83E+00	NA	NA	NA	NA	5.36E-04	1.48E+02	7.93E-02	4.58E-01	1.09E-01	8.02E+00	1.72E+02	9.55E-01	1.11E+02	7.20E-02
BRSD-8 (2-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	2.15E+00	1.24E+03	7.17E+00	NA	NA	NA	NA	5.36E-04	5.79E+02	3.10E-01	4.58E-01	1.09E-01	3.14E+01	1.72E+02	9.55E-01	1.11E+02	2.82E-01
UM-500S-500E (2-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	2.15E+00	3.80E+02	2.19E+00	NA	NA	NA	NA	5.36E-04	1.77E+02	9.48E-02	4.58E-01	1.09E-01	9.59E+00	1.72E+02	9.55E-01	1.11E+02	8.61E-02
BRSD-9 (2-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	2.15E+00	6.44E+02	3.71E+00	NA	NA	NA	NA	5.36E-04	3.00E+02	1.61E-01	4.58E-01	1.09E-01	1.63E+01	1.72E+02	9.55E-01	1.11E+02	1.46E-01
BRSD-10 (2-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	2.15E+00	5.03E+03	2.90E+01	NA	NA	NA	NA	5.36E-04	2.34E+03	1.25E+00	4.58E-01	1.09E-01	1.27E+02	1.72E+02	9.55E-01	1.11E+02	1.14E+00
BRSD-11 (2-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	2.15E+00	6.38E+02	3.68E+00	NA	NA	NA	NA	5.36E-04	2.97E+02	1.59E-01	4.58E-01	1.09E-01	1.61E+01	1.72E+02	9.55E-01	1.11E+02	1.44E-01
Eastern Upper Marsh (6-12")																						**Maximum HQ (Western Upper Marsh, 2-6")**	**1.34E+00**
UM-1000S-3500E (6-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	2.32E+00	4.23E+02	2.43E+00	NA	NA	NA	NA	5.36E-04	1.82E+02	9.75E-02	4.58E-01	1.09E-01	1.06E+01	1.72E+02	9.55E-01	1.11E+02	9.54E-02
BRSD-15 (6-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	2.32E+00	6.55E+02	3.77E+00	NA	NA	NA	NA	5.36E-04	2.82E+02	1.51E-01	4.58E-01	1.09E-01	1.65E+01	1.72E+02	9.55E-01	1.11E+02	1.48E-01
BRSD-4 (6-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	2.32E+00	7.38E+02	4.25E+00	NA	NA	NA	NA	5.36E-04	3.18E+02	1.70E-01	4.58E-01	1.09E-01	1.86E+01	1.72E+02	9.55E-01	1.11E+02	1.67E-01
UM-750S-3500E (6-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	2.32E+00	6.55E+03	3.77E+01	NA	NA	NA	NA	5.36E-04	2.82E+03	1.51E+00	4.58E-01	1.09E-01	1.65E+02	1.72E+02	9.55E-01	1.11E+02	1.48E+00

TABLE C-12GA: ZINC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 12 - MARSH, TERRESTRIAL RECEPTORS (Continued)
Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)
calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **118.73**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Mourning Dove (Herbivorous Birds)																							
BRSD-16 (6-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	2.32E+00	5.36E+03	3.09E+01	NA	NA	NA	NA	5.36E-04	2.31E+03	1.24E+00	4.58E-01	1.09E-01	1.35E+02	1.72E+02	9.55E-01	1.11E+02	1.21E+00
UM-750S-3000E (6-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	2.32E+00	3.97E+03	2.29E+01	NA	NA	NA	NA	5.36E-04	1.71E+03	9.16E-01	4.58E-01	1.09E-01	9.99E+01	1.72E+02	9.55E-01	1.11E+02	8.96E-01
BRSD-3 (6-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	2.32E+00	1.25E+03	7.20E+00	NA	NA	NA	NA	5.36E-04	5.38E+02	2.88E-01	4.58E-01	1.09E-01	3.14E+01	1.72E+02	9.55E-01	1.11E+02	2.82E-01
UM-500S-3250E (6-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	2.32E+00	1.33E+03	7.67E+00	NA	NA	NA	NA	5.36E-04	5.73E+02	3.07E-01	4.58E-01	1.09E-01	3.35E+01	1.72E+02	9.55E-01	1.11E+02	3.00E-01
UM-500S-3000E (6-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	2.32E+00	7.43E+02	4.28E+00	NA	NA	NA	NA	5.36E-04	3.20E+02	1.71E-01	4.58E-01	1.09E-01	1.87E+01	1.72E+02	9.55E-01	1.11E+02	1.68E-01
UM-500S-2750E (6-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	2.32E+00	3.11E+03	1.79E+01	NA	NA	NA	NA	5.36E-04	1.34E+03	7.18E-01	4.58E-01	1.09E-01	7.83E+01	1.72E+02	9.55E-01	1.11E+02	7.02E-01
BRSD-25 (6-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	2.32E+00	2.39E+03	1.38E+01	NA	NA	NA	NA	5.36E-04	1.03E+03	5.52E-01	4.58E-01	1.09E-01	6.02E+01	1.72E+02	9.55E-01	1.11E+02	5.40E-01
UM-250S-3000E (6-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	2.32E+00	6.85E+03	3.95E+01	NA	NA	NA	NA	5.36E-04	2.95E+03	1.58E+00	4.58E-01	1.09E-01	1.72E+02	1.72E+02	9.55E-01	1.11E+02	1.55E+00
UM-250S-3250E (6-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	2.32E+00	1.51E+03	8.72E+00	NA	NA	NA	NA	5.36E-04	6.52E+02	3.49E-01	4.58E-01	1.09E-01	3.81E+01	1.72E+02	9.55E-01	1.11E+02	3.42E-01
BRSD-24 (6-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	2.32E+00	4.04E+03	2.33E+01	NA	NA	NA	NA	5.36E-04	1.74E+03	9.32E-01	4.58E-01	1.09E-01	1.02E+02	1.72E+02	9.55E-01	1.11E+02	9.12E-01
UM-250S-2750E (6-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	2.32E+00	4.48E+03	2.58E+01	NA	NA	NA	NA	5.36E-04	1.93E+03	1.03E+00	4.58E-01	1.09E-01	1.13E+02	1.72E+02	9.55E-01	1.11E+02	1.01E+00
UM-250S-2500E (6-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	2.32E+00	5.87E+02	3.38E+00	NA	NA	NA	NA	5.36E-04	2.53E+02	1.36E-01	4.58E-01	1.09E-01	1.48E+01	1.72E+02	9.55E-01	1.11E+02	1.33E-01
BRSD-2 (6-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	2.32E+00	9.80E+03	5.65E+01	NA	NA	NA	NA	5.36E-04	4.22E+03	2.26E+00	4.58E-01	1.09E-01	2.46E+02	1.72E+02	9.55E-01	1.11E+02	2.21E+00
UM-500N-2500E (6-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	2.32E+00	4.09E+02	2.35E+00	NA	NA	NA	NA	5.36E-04	1.76E+02	9.43E-02	4.58E-01	1.09E-01	1.03E+01	1.72E+02	9.55E-01	1.11E+02	9.22E-02
UM-250N-2500E (6-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	2.32E+00	4.34E+03	2.50E+01	NA	NA	NA	NA	5.36E-04	1.87E+03	1.00E+00	4.58E-01	1.09E-01	1.09E+02	1.72E+02	9.55E-01	1.11E+02	9.80E-01
UM-250N-2250E (6-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	2.32E+00	9.06E+02	5.22E+00	NA	NA	NA	NA	5.36E-04	3.90E+02	2.09E-01	4.58E-01	1.09E-01	2.28E+01	1.72E+02	9.55E-01	1.11E+02	2.04E-01
Western Upper Marsh (6-12")																						**Maximum HQ (Eastern Upper Marsh, 6-12")**	**2.21E+00**
UM-500S-2500E (6-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	2.15E+00	4.04E+02	2.33E+00	NA	NA	NA	NA	5.36E-04	1.88E+02	1.01E-01	4.58E-01	1.09E-01	1.02E+01	1.72E+02	9.55E-01	1.11E+02	9.14E-02
UM-0N-2000E (6-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	2.15E+00	6.68E+03	3.85E+01	NA	NA	NA	NA	5.36E-04	3.11E+03	1.67E+00	4.58E-01	1.09E-01	1.69E+02	1.72E+02	9.55E-01	1.11E+02	1.51E+00
UM-500S-2000E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-250N-1750E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	9.95E+01	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-1500E (6-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	2.15E+00	1.23E+03	7.08E+00	NA	NA	NA	NA	5.36E-04	5.72E+02	3.06E-01	4.58E-01	1.09E-01	3.10E+01	1.72E+02	9.55E-01	1.11E+02	2.78E-01
UM-250S-1500E (6-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	2.15E+00	1.89E+03	1.09E+01	NA	NA	NA	NA	5.36E-04	8.82E+02	4.73E-01	4.58E-01	1.09E-01	4.78E+01	1.72E+02	9.55E-01	1.11E+02	4.29E-01
UM-250S-1250E (6-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	2.15E+00	3.14E+02	1.81E+00	NA	NA	NA	NA	5.36E-04	1.46E+02	7.82E-02	4.58E-01	1.09E-01	7.91E+00	1.72E+02	9.55E-01	1.11E+02	7.10E-02
BRSD-6 (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-1000E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-750E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-500E (6-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	2.15E+00	3.74E+03	2.15E+01	NA	NA	NA	NA	5.36E-04	1.74E+03	9.32E-01	4.58E-01	1.09E-01	9.43E+01	1.72E+02	9.55E-01	1.11E+02	8.46E-01
UM-250S-500E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	1.12E+02	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-250E (6-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	2.15E+00	2.26E+03	1.30E+01	NA	NA	NA	NA	5.36E-04	1.05E+03	5.63E-01	4.58E-01	1.09E-01	5.69E+01	1.72E+02	9.55E-01	1.11E+02	5.11E-01
UM-250S-250E (6-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	2.15E+00	5.26E+02	3.03E+00	NA	NA	NA	NA	5.36E-04	2.45E+02	1.31E-01	4.58E-01	1.09E-01	1.33E+01	1.72E+02	9.55E-01	1.11E+02	1.19E-01
BRSD-7 (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	1.16E+02	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-8 (6-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	2.15E+00	1.27E+03	7.30E+00	NA	NA	NA	NA	5.36E-04	5.90E+02	3.16E-01	4.58E-01	1.09E-01	3.20E+01	1.72E+02	9.55E-01	1.11E+02	2.87E-01
UM-500S-500E (6-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	2.15E+00	3.76E+02	2.17E+00	NA	NA	NA	NA	5.36E-04	1.75E+02	9.38E-02	4.58E-01	1.09E-01	9.49E+00	1.72E+02	9.55E-01	1.11E+02	8.51E-02
BRSD-9 (6-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	2.15E+00	7.56E+02	4.36E+00	NA	NA	NA	NA	5.36E-04	3.52E+02	1.89E-01	4.58E-01	1.09E-01	1.91E+01	1.72E+02	9.55E-01	1.11E+02	1.71E-01
BRSD-10 (6-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	2.15E+00	7.78E+03	4.48E+01	NA	NA	NA	NA	5.36E-04	3.62E+03	1.94E+00	4.58E-01	1.09E-01	1.96E+02	1.72E+02	9.55E-01	1.11E+02	1.76E+00
BRSD-11 (6-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	2.15E+00	6.47E+02	3.73E+00	NA	NA	NA	NA	5.36E-04	3.01E+02	1.61E-01	4.58E-01	1.09E-01	1.63E+01	1.72E+02	9.55E-01	1.11E+02	1.46E-01
Middle Marsh (0-2")																						**Maximum HQ (Western Upper Marsh, 6-12")**	**1.76E+00**
MMSD-201 (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	2.15E+00	3.16E+03	1.82E+01	NA	NA	NA	NA	5.36E-04	1.47E+03	7.88E-01	4.58E-01	1.09E-01	7.97E+01	1.72E+02	9.55E-01	1.11E+02	7.15E-01
MMSD-202 (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	2.15E+00	8.81E+02	5.07E+00	NA	NA	NA	NA	5.36E-04	4.10E+02	2.20E-01	4.58E-01	1.09E-01	2.22E+01	1.72E+02	9.55E-01	1.11E+02	1.99E-01
Middle Marsh (2-6")																						**Maximum HQ (Middle Marsh, 0-2")**	**7.15E-01**
MMSD-201 (2-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	2.15E+00	4.43E+03	2.55E+01	NA	NA	NA	NA	5.36E-04	2.06E+03	1.10E+00	4.58E-01	1.09E-01	1.12E+02	1.72E+02	9.55E-01	1.11E+02	1.00E+00
MMSD-202 (2-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	2.15E+00	1.16E+03	6.67E+00	NA	NA	NA	NA	5.36E-04	5.39E+02	2.89E-01	4.58E-01	1.09E-01	2.92E+01	1.72E+02	9.55E-01	1.11E+02	2.62E-01
Middle Marsh (6-12")																						**Maximum HQ (Middle Marsh, 2-6")**	**1.00E+00**
MMSD-201 (6-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	2.15E+00	5.56E+03	3.21E+01	NA	NA	NA	NA	5.36E-04	2.59E+03	1.39E+00	4.58E-01	1.09E-01	1.40E+02	1.72E+02	9.55E-01	1.11E+02	1.26E+00
MMSD-202 (6-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	2.15E+00	1.07E+03	6.16E+00	NA	NA	NA	NA	5.36E-04	4.98E+02	2.67E-01	4.58E-01	1.09E-01	2.70E+01	1.72E+02	9.55E-01	1.11E+02	2.42E-01
Lower Marsh (0-2")																						**Maximum HQ (Middle Marsh, 6-12")**	**1.26E+00**
LMSD-201 (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	2.32E+00	2.44E+02	1.40E+00	NA	NA	NA	NA	5.36E-04	1.05E+02	5.63E-02	4.58E-01	1.09E-01	6.13E+00	1.72E+02	9.55E-01	1.11E+02	5.50E-02
LMSD-202 (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	2.32E+00	8.20E+02	4.72E+00	NA	NA	NA	NA	5.36E-04	3.53E+02	1.89E-01	4.58E-01	1.09E-01	2.06E+01	1.72E+02	9.55E-01	1.11E+02	1.85E-01
LMSD-203 (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	2.32E+00	1.21E+03	6.97E+00	NA	NA	NA	NA	5.36E-04	5.21E+02	2.79E-01	4.58E-01	1.09E-01	3.04E+01	1.72E+02	9.55E-01	1.11E+02	2.73E-01
LMSD-204 (0-2")	5.76E-03	NA	NA	NA	NA	5.76E-03	2.32E+00	8.47E+02	4.88E+00	NA	NA	NA	NA	5.36E-04	3.65E+02	1.96E-01	4.58E-01	1.09E-01	2.13E+01	1.72E+02	9.55E-01	1.11E+02	1.91E-01

TABLE C-12GA: ZINC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 12 - MARSH, TERRESTRIAL RECEPTORS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **118.73**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Mourning Dove (Herbivorous Birds)																							
Lower Marsh (2-6")																						**Maximum HQ (Lower Marsh, 0-2")**	**2.73E-01**
LMSD-201 (2-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	2.32E+00	2.28E+02	1.31E+00	NA	NA	NA	NA	5.36E-04	9.80E+01	5.25E-02	4.58E-01	1.09E-01	5.72E+00	1.72E+02	9.55E-01	1.11E+02	5.13E-02
LMSD-202 (2-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	2.32E+00	9.06E+02	5.22E+00	NA	NA	NA	NA	5.36E-04	3.90E+02	2.09E-01	4.58E-01	1.09E-01	2.28E+01	1.72E+02	9.55E-01	1.11E+02	2.04E-01
LMSD-203 (2-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	2.32E+00	1.19E+03	6.84E+00	NA	NA	NA	NA	5.36E-04	5.11E+02	2.74E-01	4.58E-01	1.09E-01	2.98E+01	1.72E+02	9.55E-01	1.11E+02	2.68E-01
LMSD-204 (2-6")	5.76E-03	NA	NA	NA	NA	5.76E-03	2.32E+00	8.34E+02	4.80E+00	NA	NA	NA	NA	5.36E-04	3.59E+02	1.92E-01	4.58E-01	1.09E-01	2.10E+01	1.72E+02	9.55E-01	1.11E+02	1.88E-01
Lower Marsh (6-12")																						**Maximum HQ (Lower Marsh, 2-6")**	**2.68E-01**
LMSD-201 (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
LMSD-202 (6-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	2.32E+00	6.57E+02	3.79E+00	NA	NA	NA	NA	5.36E-04	2.83E+02	1.52E-01	4.58E-01	1.09E-01	1.65E+01	1.72E+02	9.55E-01	1.11E+02	1.48E-01
LMSD-203 (6-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	2.32E+00	1.72E+03	9.90E+00	NA	NA	NA	NA	5.36E-04	7.40E+02	3.97E-01	4.58E-01	1.09E-01	4.32E+01	1.72E+02	9.55E-01	1.11E+02	3.88E-01
LMSD-204 (6-12")	5.76E-03	NA	NA	NA	NA	5.76E-03	2.32E+00	7.80E+02	4.49E+00	NA	NA	NA	NA	5.36E-04	3.36E+02	1.80E-01	4.58E-01	1.09E-01	1.96E+01	1.72E+02	9.55E-01	1.11E+02	1.76E-01
																						Maximum HQ (Lower Marsh, 6-12")	**3.88E-01**
Red-Tailed Hawk (Carnivorous Birds)																							
Reference Sites																							
BRSD-5 (0-2")	9.00E-02	9.00E-02	5.46E+00	5.85E+02	5.26E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.07E+02	5.49E-01	1.70E-01	1.13E+00	7.98E+00	1.72E+02	9.55E-01	1.78E+02	4.49E-02
BRSD-5 (2-6")	9.00E-02	9.00E-02	5.46E+00	5.46E+02	4.91E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.00E+02	5.13E-01	1.70E-01	1.13E+00	7.46E+00	1.72E+02	9.55E-01	1.78E+02	4.19E-02
BRSD-5 (6-12")	9.00E-02	9.00E-02	5.46E+00	5.34E+02	4.81E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	9.78E+01	5.01E-01	1.70E-01	1.13E+00	7.30E+00	1.72E+02	9.55E-01	1.78E+02	4.10E-02
PGBG-1 (0-2")	9.00E-02	9.00E-02	5.46E+00	8.63E+02	7.76E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.58E+02	8.10E-01	1.70E-01	1.13E+00	1.18E+01	1.72E+02	9.55E-01	1.78E+02	6.62E-02
PGBG-1 (2-6")	9.00E-02	9.00E-02	5.46E+00	9.51E+02	8.55E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.74E+02	8.92E-01	1.70E-01	1.13E+00	1.30E+01	1.72E+02	9.55E-01	1.78E+02	7.29E-02
PGBG-1 (6-12")	9.00E-02	9.00E-02	5.46E+00	7.27E+02	6.54E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.33E+02	6.82E-01	1.70E-01	1.13E+00	9.92E+00	1.72E+02	9.55E-01	1.78E+02	5.57E-02
PGBG-2 (0-2")	9.00E-02	9.00E-02	5.46E+00	1.44E+03	1.29E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.63E+02	1.35E+00	1.70E-01	1.13E+00	1.96E+01	1.72E+02	9.55E-01	1.78E+02	1.10E-01
PGBG-2 (2-6")	9.00E-02	9.00E-02	5.46E+00	1.38E+03	1.24E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.52E+02	1.29E+00	1.70E-01	1.13E+00	1.88E+01	1.72E+02	9.55E-01	1.78E+02	1.06E-01
PGBG-2 (6-12")	9.00E-02	9.00E-02	5.46E+00	1.50E+03	1.35E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.75E+02	1.41E+00	1.70E-01	1.13E+00	2.05E+01	1.72E+02	9.55E-01	1.78E+02	1.15E-01
Eastern Upper Marsh (0-2")																						**Minimum HQ (Reference Sites)**	**4.10E-02**
UM-1000S-3500E (0-2")	9.00E-02	9.00E-02	1.10E+00	1.90E+03	1.71E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.72E+03	8.82E+00	1.70E-01	1.13E+00	2.70E+01	1.72E+02	9.55E-01	1.78E+02	1.52E-01
BRSD-15 (0-2")	9.00E-02	9.00E-02	1.10E+00	1.84E+02	1.66E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.67E+02	8.56E-01	1.70E-01	1.13E+00	2.62E+00	1.72E+02	9.55E-01	1.78E+02	1.47E-02
BRSD-4 (0-2")	9.00E-02	9.00E-02	1.10E+00	2.00E+02	1.80E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.81E+02	9.28E-01	1.70E-01	1.13E+00	2.84E+00	1.72E+02	9.55E-01	1.78E+02	1.60E-02
UM-750S-3500E (0-2")	9.00E-02	9.00E-02	1.10E+00	1.38E+03	1.24E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.25E+03	6.41E+00	1.70E-01	1.13E+00	1.96E+01	1.72E+02	9.55E-01	1.78E+02	1.10E-01
BRSD-16 (0-2")	9.00E-02	9.00E-02	1.10E+00	9.08E+02	8.16E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	8.22E+02	4.21E+00	1.70E-01	1.13E+00	1.29E+01	1.72E+02	9.55E-01	1.78E+02	7.25E-02
UM-750S-3000E (0-2")	9.00E-02	9.00E-02	1.10E+00	2.35E+03	2.12E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.13E+03	1.09E+01	1.70E-01	1.13E+00	3.34E+01	1.72E+02	9.55E-01	1.78E+02	1.88E-01
BRSD-3 (0-2")	9.00E-02	9.00E-02	1.10E+00	1.13E+03	1.01E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.02E+03	5.23E+00	1.70E-01	1.13E+00	1.60E+01	1.72E+02	9.55E-01	1.78E+02	8.99E-02
UM-500S-3250E (0-2")	9.00E-02	9.00E-02	1.10E+00	1.04E+03	9.34E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	9.40E+02	4.82E+00	1.70E-01	1.13E+00	1.48E+01	1.72E+02	9.55E-01	1.78E+02	8.29E-02
UM-500S-3000E (0-2")	9.00E-02	9.00E-02	1.10E+00	1.56E+03	1.40E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.41E+03	7.23E+00	1.70E-01	1.13E+00	2.21E+01	1.72E+02	9.55E-01	1.78E+02	1.24E-01
UM-500S-2750E (0-2")	9.00E-02	9.00E-02	1.10E+00	2.42E+03	2.17E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.19E+03	1.12E+01	1.70E-01	1.13E+00	3.44E+01	1.72E+02	9.55E-01	1.78E+02	1.93E-01
BRSD-25 (0-2")	9.00E-02	9.00E-02	1.10E+00	9.23E+02	8.30E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	8.36E+02	4.29E+00	1.70E-01	1.13E+00	1.31E+01	1.72E+02	9.55E-01	1.78E+02	7.37E-02
UM-250S-3000E (0-2")	9.00E-02	9.00E-02	1.10E+00	4.50E+03	4.05E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.08E+03	2.09E+01	1.70E-01	1.13E+00	6.40E+01	1.72E+02	9.55E-01	1.78E+02	3.60E-01
UM-250S-3250E (0-2")	9.00E-02	9.00E-02	1.10E+00	1.05E+03	9.42E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	9.48E+02	4.86E+00	1.70E-01	1.13E+00	1.49E+01	1.72E+02	9.55E-01	1.78E+02	8.36E-02
BRSD-24 (0-2")	9.00E-02	9.00E-02	1.10E+00	2.25E+03	2.03E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.04E+03	1.05E+01	1.70E-01	1.13E+00	3.20E+01	1.72E+02	9.55E-01	1.78E+02	1.80E-01
UM-250S-2750E (0-2")	9.00E-02	9.00E-02	1.10E+00	1.67E+03	1.50E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.51E+03	7.74E+00	1.70E-01	1.13E+00	2.37E+01	1.72E+02	9.55E-01	1.78E+02	1.33E-01
UM-250S-2500E (0-2")	9.00E-02	9.00E-02	1.10E+00	6.36E+02	5.72E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.76E+02	2.95E+00	1.70E-01	1.13E+00	9.04E+00	1.72E+02	9.55E-01	1.78E+02	5.08E-02
UM-0N-2500E (0-2")	9.00E-02	9.00E-02	1.10E+00	3.69E+03	3.32E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.34E+03	1.71E+01	1.70E-01	1.13E+00	5.24E+01	1.72E+02	9.55E-01	1.78E+02	2.94E-01
UM-0N-250E (0-2")	9.00E-02	9.00E-02	1.10E+00	1.66E+03	1.49E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.50E+03	7.69E+00	1.70E-01	1.13E+00	2.35E+01	1.72E+02	9.55E-01	1.78E+02	1.32E-01
BRSD-2 (0-2")	9.00E-02	9.00E-02	1.10E+00	1.93E+03	1.74E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.75E+03	8.97E+00	1.70E-01	1.13E+00	2.75E+01	1.72E+02	9.55E-01	1.78E+02	1.54E-01
UM-500N-2500E (0-2")	9.00E-02	9.00E-02	1.10E+00	2.98E+02	2.68E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.70E+02	1.38E+00	1.70E-01	1.13E+00	4.24E+00	1.72E+02	9.55E-01	1.78E+02	2.38E-02
UM-250N-2500E (0-2")	9.00E-02	9.00E-02	1.10E+00	3.30E+03	2.97E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.99E+03	1.53E+01	1.70E-01	1.13E+00	4.69E+01	1.72E+02	9.55E-01	1.78E+02	2.64E-01
UM-250N-2250E (0-2")	9.00E-02	9.00E-02	1.10E+00	2.27E+03	2.05E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.06E+03	1.06E+01	1.70E-01	1.13E+00	3.23E+01	1.72E+02	9.55E-01	1.78E+02	1.82E-01
Western Upper Marsh (0-2")																						**Maximum HQ (Eastern Upper Marsh, 0-2")**	**3.60E-01**
UM-500S-2500E (0-2")	9.00E-02	9.00E-02	1.10E+00	2.45E+02	2.20E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.22E+02	1.14E+00	1.70E-01	1.13E+00	3.48E+00	1.72E+02	9.55E-01	1.78E+02	1.96E-02
UM-0N-2000E (0-2")	9.00E-02	9.00E-02	1.10E+00	3.05E+03	2.74E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.76E+03	1.42E+01	1.70E-01	1.13E+00	4.33E+01	1.72E+02	9.55E-01	1.78E+02	2.43E-01
UM-500S-2000E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-250N-1750E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	1.26E+02	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-1500E (0-2")	9.00E-02	9.00E-02	1.10E+00	3.16E+02	2.84E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.86E+02	1.47E+00	1.70E-01	1.13E+00	4.49E+00	1.72E+02	9.55E-01	1.78E+02	2.52E-02
UM-250S-1500E (0-2")	9.00E-02	9.00E-02	1.10E+00	3.05E+03	2.74E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.76E+03	1.42E+01	1.70E-01	1.13E+00	4.33E+01	1.72E+02	9.55E-01	1.78E+02	2.43E-01

TABLE C-12GA: ZINC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 12 - MARSH, TERRESTRIAL RECEPTORS (Continued)
Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)
calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **118.73**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Red-Tailed Hawk (Carnivorous Birds)																							
UM-250S-1250E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	9.88E+01	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-6 (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-1000E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-750E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-500E (0-2")	9.00E-02	9.00E-02	1.10E+00	2.41E+02	2.17E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.18E+02	1.12E+00	1.70E-01	1.13E+00	3.42E+00	1.72E+02	9.55E-01	1.78E+02	1.92E-02
UM-250S-500E (0-2")	9.00E-02	9.00E-02	1.10E+00	1.63E+02	1.47E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.48E+02	7.59E-01	1.70E-01	1.13E+00	2.32E+00	1.72E+02	9.55E-01	1.78E+02	1.30E-02
UM-250S-250E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	1.31E+02	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-7 (0-2")	9.00E-02	9.00E-02	1.10E+00	7.32E+02	6.58E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	6.63E+02	3.40E+00	1.70E-01	1.13E+00	1.04E+01	1.72E+02	9.55E-01	1.78E+02	5.85E-02
BRSD-8 (0-2")	9.00E-02	9.00E-02	1.10E+00	5.75E+02	5.17E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.21E+02	2.67E+00	1.70E-01	1.13E+00	8.18E+00	1.72E+02	9.55E-01	1.78E+02	4.59E-02
UM-500S-500E (0-2")	9.00E-02	9.00E-02	1.10E+00	2.08E+02	1.87E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.88E+02	9.64E-01	1.70E-01	1.13E+00	2.95E+00	1.72E+02	9.55E-01	1.78E+02	1.66E-02
BRSD-9 (0-2")	9.00E-02	9.00E-02	1.10E+00	7.20E+02	6.48E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	6.52E+02	3.34E+00	1.70E-01	1.13E+00	1.02E+01	1.72E+02	9.55E-01	1.78E+02	5.75E-02
BRSD-10 (0-2")	9.00E-02	9.00E-02	1.10E+00	3.17E+03	2.85E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.87E+03	1.47E+01	1.70E-01	1.13E+00	4.50E+01	1.72E+02	9.55E-01	1.78E+02	2.53E-01
BRSD-11 (0-2")	9.00E-02	9.00E-02	1.10E+00	5.03E+02	4.53E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.56E+02	2.34E+00	1.70E-01	1.13E+00	7.16E+00	1.72E+02	9.55E-01	1.78E+02	4.02E-02
Eastern Upper Marsh (2-6")																						**Maximum HQ (Western Upper Marsh, 0-2")**	**2.53E-01**
UM-1000S-3500E (2-6")	9.00E-02	9.00E-02	1.10E+00	4.37E+02	3.93E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.96E+02	2.03E+00	1.70E-01	1.13E+00	6.21E+00	1.72E+02	9.55E-01	1.78E+02	3.49E-02
BRSD-15 (2-6")	9.00E-02	9.00E-02	1.10E+00	2.68E+02	2.41E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.43E+02	1.25E+00	1.70E-01	1.13E+00	3.81E+00	1.72E+02	9.55E-01	1.78E+02	2.14E-02
BRSD-4 (2-6")	9.00E-02	9.00E-02	1.10E+00	2.36E+02	2.13E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.14E+02	1.10E+00	1.70E-01	1.13E+00	3.36E+00	1.72E+02	9.55E-01	1.78E+02	1.89E-02
UM-750S-3500E (2-6")	9.00E-02	9.00E-02	1.10E+00	3.32E+03	2.99E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.01E+03	1.54E+01	1.70E-01	1.13E+00	4.72E+01	1.72E+02	9.55E-01	1.78E+02	2.65E-01
BRSD-16 (2-6")	9.00E-02	9.00E-02	1.10E+00	4.29E+03	3.86E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.89E+03	1.99E+01	1.70E-01	1.13E+00	6.10E+01	1.72E+02	9.55E-01	1.78E+02	3.43E-01
UM-750S-3000E (2-6")	9.00E-02	9.00E-02	1.10E+00	1.95E+03	1.76E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.77E+03	9.08E+00	1.70E-01	1.13E+00	2.78E+01	1.72E+02	9.55E-01	1.78E+02	1.56E-01
BRSD-3 (2-6")	9.00E-02	9.00E-02	1.10E+00	1.26E+03	1.13E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.14E+03	5.85E+00	1.70E-01	1.13E+00	1.79E+01	1.72E+02	9.55E-01	1.78E+02	1.01E-01
UM-500S-3250E (2-6")	9.00E-02	9.00E-02	1.10E+00	7.37E+02	6.63E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	6.68E+02	3.43E+00	1.70E-01	1.13E+00	1.05E+01	1.72E+02	9.55E-01	1.78E+02	5.89E-02
UM-500S-3000E (2-6")	9.00E-02	9.00E-02	1.10E+00	2.93E+02	2.63E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.65E+02	1.36E+00	1.70E-01	1.13E+00	4.16E+00	1.72E+02	9.55E-01	1.78E+02	2.34E-02
UM-500S-2750E (2-6")	9.00E-02	9.00E-02	1.10E+00	1.67E+03	1.50E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.51E+03	7.74E+00	1.70E-01	1.13E+00	2.37E+01	1.72E+02	9.55E-01	1.78E+02	1.33E-01
BRSD-25 (2-6")	9.00E-02	9.00E-02	1.10E+00	1.24E+03	1.11E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.12E+03	5.74E+00	1.70E-01	1.13E+00	1.76E+01	1.72E+02	9.55E-01	1.78E+02	9.87E-02
UM-250S-3000E (2-6")	9.00E-02	9.00E-02	1.10E+00	3.92E+03	3.53E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.55E+03	1.82E+01	1.70E-01	1.13E+00	5.57E+01	1.72E+02	9.55E-01	1.78E+02	3.13E-01
UM-250S-3250E (2-6")	9.00E-02	9.00E-02	1.10E+00	8.39E+02	7.55E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	7.60E+02	3.90E+00	1.70E-01	1.13E+00	1.19E+01	1.72E+02	9.55E-01	1.78E+02	6.70E-02
BRSD-24 (2-6")	9.00E-02	9.00E-02	1.10E+00	3.81E+03	3.43E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.45E+03	1.77E+01	1.70E-01	1.13E+00	5.41E+01	1.72E+02	9.55E-01	1.78E+02	3.04E-01
UM-250S-2750E (2-6")	9.00E-02	9.00E-02	1.10E+00	2.22E+03	2.00E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.01E+03	1.03E+01	1.70E-01	1.13E+00	3.15E+01	1.72E+02	9.55E-01	1.78E+02	1.77E-01
UM-0N-2500E (2-6")	9.00E-02	9.00E-02	1.10E+00	1.61E+03	1.45E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.46E+03	7.49E+00	1.70E-01	1.13E+00	2.29E+01	1.72E+02	9.55E-01	1.78E+02	1.29E-01
BRSD-2 (2-6")	9.00E-02	9.00E-02	1.10E+00	2.20E+03	1.98E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.99E+03	1.02E+01	1.70E-01	1.13E+00	3.12E+01	1.72E+02	9.55E-01	1.78E+02	1.75E-01
UM-500N-2500E (2-6")	9.00E-02	9.00E-02	1.10E+00	3.00E+02	2.70E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.72E+02	1.39E+00	1.70E-01	1.13E+00	4.27E+00	1.72E+02	9.55E-01	1.78E+02	2.40E-02
UM-250N-2500E (2-6")	9.00E-02	9.00E-02	1.10E+00	2.74E+03	2.46E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.48E+03	1.27E+01	1.70E-01	1.13E+00	3.89E+01	1.72E+02	9.55E-01	1.78E+02	2.19E-01
UM-250N-2250E (2-6")	9.00E-02	9.00E-02	1.10E+00	7.07E+02	6.36E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	6.40E+02	3.28E+00	1.70E-01	1.13E+00	1.00E+01	1.72E+02	9.55E-01	1.78E+02	5.64E-02
Western Upper Marsh (2-6")																						**Maximum HQ (Eastern Upper Marsh, 2-6")**	**3.43E-01**
UM-500S-2500E (2-6")	9.00E-02	9.00E-02	1.10E+00	2.43E+02	2.18E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.20E+02	1.13E+00	1.70E-01	1.13E+00	3.45E+00	1.72E+02	9.55E-01	1.78E+02	1.94E-02
UM-0N-2000E (2-6")	9.00E-02	9.00E-02	1.10E+00	3.05E+03	2.74E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.76E+03	1.42E+01	1.70E-01	1.13E+00	4.33E+01	1.72E+02	9.55E-01	1.78E+02	2.43E-01
UM-500S-2000E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	1.11E+02	BB	BB	BB	BB	BB	BB	BB	BB
UM-250N-1750E (2-6")	9.00E-02	9.00E-02	1.10E+00	3.16E+02	2.84E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.86E+02	1.47E+00	1.70E-01	1.13E+00	4.49E+00	1.72E+02	9.55E-01	1.78E+02	2.52E-02
UM-0N-1500E (2-6")	9.00E-02	9.00E-02	1.10E+00	2.82E+02	2.53E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.55E+02	1.31E+00	1.70E-01	1.13E+00	4.00E+00	1.72E+02	9.55E-01	1.78E+02	2.25E-02
UM-250S-1500E (2-6")	9.00E-02	9.00E-02	1.10E+00	2.22E+03	2.00E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.01E+03	1.03E+01	1.70E-01	1.13E+00	3.15E+01	1.72E+02	9.55E-01	1.78E+02	1.77E-01
UM-250S-1250E (2-6")	9.00E-02	9.00E-02	1.10E+00	1.55E+02	1.39E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.40E+02	7.18E-01	1.70E-01	1.13E+00	2.20E+00	1.72E+02	9.55E-01	1.78E+02	1.23E-02
BRSD-6 (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-1000E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-750E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-500E (2-6")	9.00E-02	9.00E-02	1.10E+00	2.67E+03	2.40E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.42E+03	1.24E+01	1.70E-01	1.13E+00	3.80E+01	1.72E+02	9.55E-01	1.78E+02	2.13E-01
UM-250S-500E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	9.88E+01	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-250E (2-6")	9.00E-02	9.00E-02	1.10E+00	1.84E+03	1.66E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.67E+03	8.56E+00	1.70E-01	1.13E+00	2.62E+01	1.72E+02	9.55E-01	1.78E+02	1.47E-01
UM-250S-250E (2-6")	9.00E-02	9.00E-02	1.10E+00	1.90E+02	1.71E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.72E+02	8.82E-01	1.70E-01	1.13E+00	2.70E+00	1.72E+02	9.55E-01	1.78E+02	1.52E-02
BRSD-7 (2-6")	9.00E-02	9.00E-02	1.10E+00	1.63E+02	1.47E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.48E+02	7.59E-01	1.70E-01	1.13E+00	2.32E+00	1.72E+02	9.55E-01	1.78E+02	1.30E-02

TABLE C-12GA: ZINC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 12 - MARSH, TERRESTRIAL RECEPTORS (Continued)
Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)
calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **118.73**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Red-Tailed Hawk (Carnivorous Birds)																							
BRSD-8 (2-6")	9.00E-02	9.00E-02	1.10E+00	6.39E+02	5.75E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.79E+02	2.97E+00	1.70E-01	1.13E+00	9.09E+00	1.72E+02	9.55E-01	1.78E+02	5.10E-02
UM-500S-500E (2-6")	9.00E-02	9.00E-02	1.10E+00	1.95E+02	1.76E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.77E+02	9.08E-01	1.70E-01	1.13E+00	2.78E+00	1.72E+02	9.55E-01	1.78E+02	1.56E-02
BRSD-9 (2-6")	9.00E-02	9.00E-02	1.10E+00	3.31E+02	2.98E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.00E+02	1.54E+00	1.70E-01	1.13E+00	4.71E+00	1.72E+02	9.55E-01	1.78E+02	2.64E-02
BRSD-10 (2-6")	9.00E-02	9.00E-02	1.10E+00	2.58E+03	2.32E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.34E+03	1.20E+01	1.70E-01	1.13E+00	3.67E+01	1.72E+02	9.55E-01	1.78E+02	2.06E-01
BRSD-11 (2-6")	9.00E-02	9.00E-02	1.10E+00	3.28E+02	2.95E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.97E+02	1.52E+00	1.70E-01	1.13E+00	4.66E+00	1.72E+02	9.55E-01	1.78E+02	2.62E-02
Eastern Upper Marsh (6-12")																						**Maximum HQ (Western Upper Marsh, 2-6")**	**2.43E-01**
UM-1000S-3500E (6-12")	9.00E-02	9.00E-02	1.10E+00	2.01E+02	1.81E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.82E+02	9.33E-01	1.70E-01	1.13E+00	2.86E+00	1.72E+02	9.55E-01	1.78E+02	1.60E-02
BRSD-15 (6-12")	9.00E-02	9.00E-02	1.10E+00	3.11E+02	2.80E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.82E+02	1.45E+00	1.70E-01	1.13E+00	4.43E+00	1.72E+02	9.55E-01	1.78E+02	2.49E-02
BRSD-4 (6-12")	9.00E-02	9.00E-02	1.10E+00	3.51E+02	3.16E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.18E+02	1.63E+00	1.70E-01	1.13E+00	4.99E+00	1.72E+02	9.55E-01	1.78E+02	2.80E-02
UM-750S-3500E (6-12")	9.00E-02	9.00E-02	1.10E+00	3.11E+03	2.80E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.82E+03	1.45E+01	1.70E-01	1.13E+00	4.43E+01	1.72E+02	9.55E-01	1.78E+02	2.49E-01
BRSD-16 (6-12")	9.00E-02	9.00E-02	1.10E+00	2.55E+03	2.29E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.31E+03	1.18E+01	1.70E-01	1.13E+00	3.63E+01	1.72E+02	9.55E-01	1.78E+02	2.04E-01
UM-750S-3000E (6-12")	9.00E-02	9.00E-02	1.10E+00	1.89E+03	1.70E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.71E+03	8.77E+00	1.70E-01	1.13E+00	2.68E+01	1.72E+02	9.55E-01	1.78E+02	1.51E-01
BRSD-3 (6-12")	9.00E-02	9.00E-02	1.10E+00	5.94E+02	5.34E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.38E+02	2.76E+00	1.70E-01	1.13E+00	8.44E+00	1.72E+02	9.55E-01	1.78E+02	4.74E-02
UM-500S-3250E (6-12")	9.00E-02	9.00E-02	1.10E+00	6.33E+02	5.69E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.73E+02	2.94E+00	1.70E-01	1.13E+00	8.99E+00	1.72E+02	9.55E-01	1.78E+02	5.05E-02
UM-500S-3000E (6-12")	9.00E-02	9.00E-02	1.10E+00	3.53E+02	3.18E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.20E+02	1.64E+00	1.70E-01	1.13E+00	5.02E+00	1.72E+02	9.55E-01	1.78E+02	2.82E-02
UM-500S-2750E (6-12")	9.00E-02	9.00E-02	1.10E+00	1.48E+03	1.33E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.34E+03	6.87E+00	1.70E-01	1.13E+00	2.10E+01	1.72E+02	9.55E-01	1.78E+02	1.18E-01
BRSD-25 (6-12")	9.00E-02	9.00E-02	1.10E+00	1.14E+03	1.02E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.03E+03	5.28E+00	1.70E-01	1.13E+00	1.62E+01	1.72E+02	9.55E-01	1.78E+02	9.08E-02
UM-250S-3000E (6-12")	9.00E-02	9.00E-02	1.10E+00	3.26E+03	2.93E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.95E+03	1.51E+01	1.70E-01	1.13E+00	4.63E+01	1.72E+02	9.55E-01	1.78E+02	2.60E-01
UM-250S-3250E (6-12")	9.00E-02	9.00E-02	1.10E+00	7.20E+02	6.48E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	6.52E+02	3.34E+00	1.70E-01	1.13E+00	1.02E+01	1.72E+02	9.55E-01	1.78E+02	5.75E-02
BRSD-24 (6-12")	9.00E-02	9.00E-02	1.10E+00	1.92E+03	1.73E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.74E+03	8.92E+00	1.70E-01	1.13E+00	2.73E+01	1.72E+02	9.55E-01	1.78E+02	1.53E-01
UM-250S-2750E (6-12")	9.00E-02	9.00E-02	1.10E+00	2.13E+03	1.92E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.93E+03	9.90E+00	1.70E-01	1.13E+00	3.03E+01	1.72E+02	9.55E-01	1.78E+02	1.70E-01
UM-250S-2500E (6-12")	9.00E-02	9.00E-02	1.10E+00	2.79E+02	2.51E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.53E+02	1.30E+00	1.70E-01	1.13E+00	3.97E+00	1.72E+02	9.55E-01	1.78E+02	2.23E-02
BRSD-2 (6-12")	9.00E-02	9.00E-02	1.10E+00	4.66E+03	4.19E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.22E+03	2.16E+01	1.70E-01	1.13E+00	6.62E+01	1.72E+02	9.55E-01	1.78E+02	3.72E-01
UM-250N-2500E (6-12")	9.00E-02	9.00E-02	1.10E+00	2.06E+03	1.86E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.87E+03	9.59E+00	1.70E-01	1.13E+00	2.93E+01	1.72E+02	9.55E-01	1.78E+02	1.65E-01
UM-250N-2250E (6-12")	9.00E-02	9.00E-02	1.10E+00	4.31E+02	3.87E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.90E+02	2.00E+00	1.70E-01	1.13E+00	6.12E+00	1.72E+02	9.55E-01	1.78E+02	3.44E-02
Western Upper Marsh (6-12")																						**Maximum HQ (Eastern Upper Marsh, 6-12")**	**3.72E-01**
UM-500S-2500E (6-12")	9.00E-02	9.00E-02	1.10E+00	2.08E+02	1.87E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.88E+02	9.64E-01	1.70E-01	1.13E+00	2.95E+00	1.72E+02	9.55E-01	1.78E+02	1.66E-02
UM-0N-2000E (6-12")	9.00E-02	9.00E-02	1.10E+00	3.43E+03	3.09E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.11E+03	1.59E+01	1.70E-01	1.13E+00	4.88E+01	1.72E+02	9.55E-01	1.78E+02	2.74E-01
UM-500S-2000E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-250N-1750E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	9.95E+01	BB	BB	BB	BB	BB	BB	BB
UM-0N-1500E (6-12")	9.00E-02	9.00E-02	1.10E+00	6.32E+02	5.68E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.72E+02	2.93E+00	1.70E-01	1.13E+00	8.98E+00	1.72E+02	9.55E-01	1.78E+02	5.04E-02
UM-250S-1500E (6-12")	9.00E-02	9.00E-02	1.10E+00	9.74E+02	8.76E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	8.82E+02	4.52E+00	1.70E-01	1.13E+00	1.38E+01	1.72E+02	9.55E-01	1.78E+02	7.78E-02
UM-250S-1250E (6-12")	9.00E-02	9.00E-02	1.10E+00	1.61E+02	1.45E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.46E+02	7.49E-01	1.70E-01	1.13E+00	2.29E+00	1.72E+02	9.55E-01	1.78E+02	1.29E-02
BRSD-6 (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-1000E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-750E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-500E (6-12")	9.00E-02	9.00E-02	1.10E+00	1.92E+03	1.73E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.74E+03	8.92E+00	1.70E-01	1.13E+00	2.73E+01	1.72E+02	9.55E-01	1.78E+02	1.53E-01
UM-250S-500E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	1.12E+02	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-250E (6-12")	9.00E-02	9.00E-02	1.10E+00	1.16E+03	1.04E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.05E+03	5.38E+00	1.70E-01	1.13E+00	1.65E+01	1.72E+02	9.55E-01	1.78E+02	9.26E-02
UM-250S-250E (6-12")	9.00E-02	9.00E-02	1.10E+00	2.70E+02	2.43E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.45E+02	1.26E+00	1.70E-01	1.13E+00	3.84E+00	1.72E+02	9.55E-01	1.78E+02	2.16E-02
BRSD-7 (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	1.16E+02	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-8 (6-12")	9.00E-02	9.00E-02	1.10E+00	6.51E+02	5.86E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.90E+02	3.03E+00	1.70E-01	1.13E+00	9.26E+00	1.72E+02	9.55E-01	1.78E+02	5.20E-02
UM-500S-500E (6-12")	9.00E-02	9.00E-02	1.10E+00	1.93E+02	1.74E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.75E+02	8.97E-01	1.70E-01	1.13E+00	2.75E+00	1.72E+02	9.55E-01	1.78E+02	1.54E-02
BRSD-9 (6-12")	9.00E-02	9.00E-02	1.10E+00	3.89E+02	3.50E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.52E+02	1.80E+00	1.70E-01	1.13E+00	5.52E+00	1.72E+02	9.55E-01	1.78E+02	3.10E-02
BRSD-10 (6-12")	9.00E-02	9.00E-02	1.10E+00	4.00E+03	3.60E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.62E+03	1.86E+01	1.70E-01	1.13E+00	5.68E+01	1.72E+02	9.55E-01	1.78E+02	3.19E-01
BRSD-11 (6-12")	9.00E-02	9.00E-02	1.10E+00	3.32E+02	2.99E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.01E+02	1.54E+00	1.70E-01	1.13E+00	4.72E+00	1.72E+02	9.55E-01	1.78E+02	2.65E-02
Middle Marsh (0-2")																						**Maximum HQ (Western Upper Marsh, 6-12")**	**3.19E-01**
MMSD-201 (0-2")	9.00E-02	9.00E-02	1.10E+00	1.62E+03	1.46E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.47E+03	7.54E+00	1.70E-01	1.13E+00	2.31E+01	1.72E+02	9.55E-01	1.78E+02	1.30E-01
MMSD-202 (0-2")	9.00E-02	9.00E-02	1.10E+00	4.53E+02	4.07E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.10E+02	2.10E+00	1.70E-01	1.13E+00	6.43E+00	1.72E+02	9.55E-01	1.78E+02	3.61E-02

TABLE C-12GA: ZINC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 12 - MARSH, TERRESTRIAL RECEPTORS (Continued)
Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)
calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **118.73**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Red-Tailed Hawk (Carnivorous Birds)																							
Middle Marsh (2-6")																						**Maximum HQ (Middle Marsh, 0-2")**	**1.30E-01**
MMSD-201 (2-6")	9.00E-02	9.00E-02	1.10E+00	2.27E+03	2.05E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.06E+03	1.06E+01	1.70E-01	1.13E+00	3.23E+01	1.72E+02	9.55E-01	1.78E+02	1.82E-01
MMSD-202 (2-6")	9.00E-02	9.00E-02	1.10E+00	5.95E+02	5.35E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.39E+02	2.76E+00	1.70E-01	1.13E+00	8.46E+00	1.72E+02	9.55E-01	1.78E+02	4.75E-02
Middle Marsh (6-12")																						**Maximum HQ (Middle Marsh, 2-6")**	**1.82E-01**
MMSD-201 (6-12")	9.00E-02	9.00E-02	1.10E+00	2.86E+03	2.57E+02	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.59E+03	1.33E+01	1.70E-01	1.13E+00	4.06E+01	1.72E+02	9.55E-01	1.78E+02	2.28E-01
MMSD-202 (6-12")	9.00E-02	9.00E-02	1.10E+00	5.50E+02	4.95E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	4.98E+02	2.55E+00	1.70E-01	1.13E+00	7.82E+00	1.72E+02	9.55E-01	1.78E+02	4.39E-02
Lower Marsh (0-2")																						**Maximum HQ (Middle Marsh, 6-12")**	**2.28E-01**
LMSD-201 (0-2")	9.00E-02	9.00E-02	1.10E+00	1.16E+02	1.04E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	1.05E+02	5.38E-01	1.70E-01	1.13E+00	1.65E+00	1.72E+02	9.55E-01	1.78E+02	9.26E-03
LMSD-202 (0-2")	9.00E-02	9.00E-02	1.10E+00	3.90E+02	3.51E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.53E+02	1.81E+00	1.70E-01	1.13E+00	5.54E+00	1.72E+02	9.55E-01	1.78E+02	3.11E-02
LMSD-203 (0-2")	9.00E-02	9.00E-02	1.10E+00	5.75E+02	5.17E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.21E+02	2.67E+00	1.70E-01	1.13E+00	8.18E+00	1.72E+02	9.55E-01	1.78E+02	4.59E-02
LMSD-204 (0-2")	9.00E-02	9.00E-02	1.10E+00	4.03E+02	3.62E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.65E+02	1.87E+00	1.70E-01	1.13E+00	5.73E+00	1.72E+02	9.55E-01	1.78E+02	3.22E-02
Lower Marsh (2-6")																						**Maximum HQ (Lower Marsh, 0-2")**	**4.59E-02**
LMSD-201 (2-6")	9.00E-02	9.00E-02	1.10E+00	1.08E+02	9.73E+00	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	9.80E+01	5.02E-01	1.70E-01	1.13E+00	1.54E+00	1.72E+02	9.55E-01	1.78E+02	8.64E-03
LMSD-202 (2-6")	9.00E-02	9.00E-02	1.10E+00	4.31E+02	3.87E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.90E+02	2.00E+00	1.70E-01	1.13E+00	6.12E+00	1.72E+02	9.55E-01	1.78E+02	3.44E-02
LMSD-203 (2-6")	9.00E-02	9.00E-02	1.10E+00	5.64E+02	5.07E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	5.11E+02	2.62E+00	1.70E-01	1.13E+00	8.02E+00	1.72E+02	9.55E-01	1.78E+02	4.51E-02
LMSD-204 (2-6")	9.00E-02	9.00E-02	1.10E+00	3.96E+02	3.57E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.59E+02	1.84E+00	1.70E-01	1.13E+00	5.63E+00	1.72E+02	9.55E-01	1.78E+02	3.17E-02
Lower Marsh (6-12")																						**Maximum HQ (Lower Marsh, 2-6")**	**4.51E-02**
LMSD-201 (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
LMSD-202 (6-12")	9.00E-02	9.00E-02	1.10E+00	3.12E+02	2.81E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	2.83E+02	1.45E+00	1.70E-01	1.13E+00	4.44E+00	1.72E+02	9.55E-01	1.78E+02	2.50E-02
LMSD-203 (6-12")	9.00E-02	9.00E-02	1.10E+00	8.17E+02	7.35E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	7.40E+02	3.79E+00	1.70E-01	1.13E+00	1.16E+01	1.72E+02	9.55E-01	1.78E+02	6.52E-02
LMSD-204 (6-12")	9.00E-02	9.00E-02	1.10E+00	3.71E+02	3.34E+01	NA	NA	NA	NA	NA	NA	NA	NA	5.13E-03	3.36E+02	1.72E+00	1.70E-01	1.13E+00	5.27E+00	1.72E+02	9.55E-01	1.78E+02	2.96E-02
																						Maximum HQ (Lower Marsh, 6-12")	**6.52E-02**
American Kestral (Insectivorous Birds)																							
Reference Sites																							
BRSD-5 (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.09E+01	1.17E+03	1.61E+01	7.84E-04	1.07E+02	8.39E-02	4.54E-01	1.24E-01	5.92E+01	1.72E+02	9.55E-01	1.14E+02	5.18E-01
BRSD-5 (2-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.09E+01	1.09E+03	1.50E+01	7.84E-04	1.00E+02	7.84E-02	4.54E-01	1.24E-01	5.53E+01	1.72E+02	9.55E-01	1.14E+02	4.84E-01
BRSD-5 (6-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.09E+01	1.07E+03	1.47E+01	7.84E-04	9.78E+01	7.67E-02	4.54E-01	1.24E-01	5.41E+01	1.72E+02	9.55E-01	1.14E+02	4.73E-01
PGBG-1 (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.09E+01	1.73E+03	2.38E+01	7.84E-04	1.58E+02	1.24E-01	4.54E-01	1.24E-01	8.74E+01	1.72E+02	9.55E-01	1.14E+02	7.64E-01
PGBG-1 (2-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.09E+01	1.90E+03	2.62E+01	7.84E-04	1.74E+02	1.36E-01	4.54E-01	1.24E-01	9.62E+01	1.72E+02	9.55E-01	1.14E+02	8.42E-01
PGBG-1 (6-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.09E+01	1.45E+03	2.00E+01	7.84E-04	1.33E+02	1.04E-01	4.54E-01	1.24E-01	7.36E+01	1.72E+02	9.55E-01	1.14E+02	6.43E-01
PGBG-2 (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.09E+01	2.87E+03	3.95E+01	7.84E-04	2.63E+02	2.06E-01	4.54E-01	1.24E-01	1.45E+02	1.72E+02	9.55E-01	1.14E+02	1.27E+00
PGBG-2 (2-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.09E+01	2.75E+03	3.79E+01	7.84E-04	2.52E+02	1.98E-01	4.54E-01	1.24E-01	1.39E+02	1.72E+02	9.55E-01	1.14E+02	1.22E+00
PGBG-2 (6-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.09E+01	3.00E+03	4.13E+01	7.84E-04	2.75E+02	2.16E-01	4.54E-01	1.24E-01	1.52E+02	1.72E+02	9.55E-01	1.14E+02	1.33E+00
Eastern Upper Marsh (0-2")																						**Minimum HQ (Reference Sites)**	**4.73E-01**
UM-1000S-3500E (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	2.39E+01	4.11E+04	5.66E+02	7.84E-04	1.72E+03	1.35E+00	4.54E-01	1.24E-01	2.08E+03	1.72E+02	9.55E-01	1.14E+02	1.82E+01
BRSD-15 (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	2.39E+01	3.99E+03	5.50E+01	7.84E-04	1.67E+02	1.31E-01	4.54E-01	1.24E-01	2.02E+02	1.72E+02	9.55E-01	1.14E+02	1.76E+00
BRSD-4 (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	2.39E+01	4.33E+03	5.96E+01	7.84E-04	1.81E+02	1.42E-01	4.54E-01	1.24E-01	2.19E+02	1.72E+02	9.55E-01	1.14E+02	1.91E+00
UM-750S-3500E (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	2.39E+01	2.99E+04	4.11E+02	7.84E-04	1.25E+03	9.80E-01	4.54E-01	1.24E-01	1.51E+03	1.72E+02	9.55E-01	1.14E+02	1.32E+01
BRSD-16 (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	2.39E+01	1.97E+04	2.71E+02	7.84E-04	8.22E+02	6.45E-01	4.54E-01	1.24E-01	9.92E+02	1.72E+02	9.55E-01	1.14E+02	8.68E+00
UM-750S-3000E (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	2.39E+01	5.10E+04	7.01E+02	7.84E-04	2.13E+03	1.67E+00	4.54E-01	1.24E-01	2.57E+03	1.72E+02	9.55E-01	1.14E+02	2.25E+01
BRSD-3 (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	2.39E+01	2.44E+04	3.36E+02	7.84E-04	1.02E+03	8.00E-01	4.54E-01	1.24E-01	1.23E+03	1.72E+02	9.55E-01	1.14E+02	1.08E+01
UM-500S-3250E (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	2.39E+01	2.25E+04	3.09E+02	7.84E-04	9.40E+02	7.37E-01	4.54E-01	1.24E-01	1.13E+03	1.72E+02	9.55E-01	1.14E+02	9.93E+00
UM-500S-3000E (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	2.39E+01	3.37E+04	4.64E+02	7.84E-04	1.41E+03	1.11E+00	4.54E-01	1.24E-01	1.70E+03	1.72E+02	9.55E-01	1.14E+02	1.49E+01
UM-500S-2750E (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	2.39E+01	5.24E+04	7.21E+02	7.84E-04	2.19E+03	1.72E+00	4.54E-01	1.24E-01	2.64E+03	1.72E+02	9.55E-01	1.14E+02	2.31E+01
BRSD-25 (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	2.39E+01	2.00E+04	2.75E+02	7.84E-04	8.36E+02	6.56E-01	4.54E-01	1.24E-01	1.01E+03	1.72E+02	9.55E-01	1.14E+02	8.83E+00
UM-250S-3000E (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	2.39E+01	9.76E+04	1.34E+03	7.84E-04	4.08E+03	3.20E+00	4.54E-01	1.24E-01	4.93E+03	1.72E+02	9.55E-01	1.14E+02	4.31E+01
UM-250S-3250E (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	2.39E+01	2.27E+04	3.12E+02	7.84E-04	9.48E+02	7.44E-01	4.54E-01	1.24E-01	1.14E+03	1.72E+02	9.55E-01	1.14E+02	1.00E+01
BRSD-24 (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	2.39E+01	4.88E+04	6.72E+02	7.84E-04	2.04E+03	1.60E+00	4.54E-01	1.24E-01	2.46E+03	1.72E+02	9.55E-01	1.14E+02	2.15E+01
UM-250S-2750E (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	2.39E+01	3.61E+04	4.97E+02	7.84E-04	1.51E+03	1.18E+00	4.54E-01	1.24E-01	1.82E+03	1.72E+02	9.55E-01	1.14E+02	1.59E+01
UM-250S-2500E (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	2.39E+01	1.38E+04	1.90E+02	7.84E-04	5.76E+02	4.52E-01	4.54E-01	1.24E-01	6.95E+02	1.72E+02	9.55E-01	1.14E+02	6.08E+00
UM-0N-2500E (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	2.39E+01	7.99E+04	1.10E+03	7.84E-04	3.34E+03	2.62E+00	4.54E-01	1.24E-01	4.03E+03	1.72E+02	9.55E-01	1.14E+02	3.53E+01
UM-0N-250E (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	2.39E+01	3.59E+04	4.94E+02	7.84E-04	1.50E+03	1.18E+00	4.54E-01	1.24E-01	1.81E+03	1.72E+02	9.55E-01	1.14E+02	1.58E+01

TABLE C-12GA: ZINC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 12 - MARSH, TERRESTRIAL RECEPTORS (Continued)
Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)
calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 118.73

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
American Kestral (Insectivorous Birds)																							
BRSD-2 (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	2.39E+01	4.19E+04	5.76E+02	7.84E-04	1.75E+03	1.37E+00	4.54E-01	1.24E-01	2.11E+03	1.72E+02	9.55E-01	1.14E+02	1.85E+01
UM-500N-2500E (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	2.39E+01	6.46E+03	8.89E+01	7.84E-04	2.70E+02	2.12E-01	4.54E-01	1.24E-01	3.26E+02	1.72E+02	9.55E-01	1.14E+02	2.85E+00
UM-250N-2500E (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	2.39E+01	7.15E+04	9.84E+02	7.84E-04	2.99E+03	2.35E+00	4.54E-01	1.24E-01	3.61E+03	1.72E+02	9.55E-01	1.14E+02	3.16E+01
UM-250N-2250E (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	2.39E+01	4.93E+04	6.78E+02	7.84E-04	2.06E+03	1.62E+00	4.54E-01	1.24E-01	2.49E+03	1.72E+02	9.55E-01	1.14E+02	2.18E+01
Western Upper Marsh (0-2")																						**Maximum HQ (Eastern Upper Marsh, 0-2")**	**4.31E+01**
UM-500S-2500E (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.78E+01	3.95E+03	5.43E+01	7.84E-04	2.22E+02	1.74E-01	4.54E-01	1.24E-01	1.99E+02	1.72E+02	9.55E-01	1.14E+02	1.74E+00
UM-0N-2000E (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.78E+01	4.91E+04	6.75E+02	7.84E-04	2.76E+03	2.16E+00	4.54E-01	1.24E-01	2.48E+03	1.72E+02	9.55E-01	1.14E+02	2.17E+01
UM-500S-2000E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-250N-1750E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	1.26E+02	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-1500E (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.78E+01	5.09E+03	7.00E+01	7.84E-04	2.86E+02	2.24E-01	4.54E-01	1.24E-01	2.57E+02	1.72E+02	9.55E-01	1.14E+02	2.25E+00
UM-250S-1500E (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.78E+01	4.91E+04	6.75E+02	7.84E-04	2.76E+03	2.16E+00	4.54E-01	1.24E-01	2.48E+03	1.72E+02	9.55E-01	1.14E+02	2.17E+01
UM-250S-1250E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	9.88E+01	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-6 (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-1000E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-750E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-500E (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.78E+01	3.88E+03	5.34E+01	7.84E-04	2.18E+02	1.71E-01	4.54E-01	1.24E-01	1.96E+02	1.72E+02	9.55E-01	1.14E+02	1.71E+00
UM-250S-500E (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.78E+01	2.63E+03	3.62E+01	7.84E-04	1.48E+02	1.16E-01	4.54E-01	1.24E-01	1.33E+02	1.72E+02	9.55E-01	1.14E+02	1.16E+00
UM-250S-250E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	1.31E+02	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-7 (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.78E+01	1.18E+04	1.62E+02	7.84E-04	6.63E+02	5.20E-01	4.54E-01	1.24E-01	5.96E+02	1.72E+02	9.55E-01	1.14E+02	5.21E+00
BRSD-8 (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.78E+01	9.27E+03	1.28E+02	7.84E-04	5.21E+02	4.09E-01	4.54E-01	1.24E-01	4.68E+02	1.72E+02	9.55E-01	1.14E+02	4.09E+00
UM-500S-500E (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.78E+01	3.34E+03	4.60E+01	7.84E-04	1.88E+02	1.47E-01	4.54E-01	1.24E-01	1.69E+02	1.72E+02	9.55E-01	1.14E+02	1.48E+00
BRSD-9 (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.78E+01	1.16E+04	1.60E+02	7.84E-04	6.52E+02	5.11E-01	4.54E-01	1.24E-01	5.86E+02	1.72E+02	9.55E-01	1.14E+02	5.12E+00
BRSD-10 (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.78E+01	5.10E+04	7.02E+02	7.84E-04	2.87E+03	2.25E+00	4.54E-01	1.24E-01	2.58E+03	1.72E+02	9.55E-01	1.14E+02	2.25E+01
BRSD-11 (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.78E+01	8.11E+03	1.12E+02	7.84E-04	4.56E+02	3.58E-01	4.54E-01	1.24E-01	4.10E+02	1.72E+02	9.55E-01	1.14E+02	3.58E+00
Eastern Upper Marsh (2-6")																						**Maximum HQ (Western Upper Marsh, 0-2")**	**2.25E+01**
UM-1000S-3500E (2-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	2.39E+01	9.47E+03	1.30E+02	7.84E-04	3.96E+02	3.11E-01	4.54E-01	1.24E-01	4.78E+02	1.72E+02	9.55E-01	1.14E+02	4.18E+00
BRSD-15 (2-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	2.39E+01	5.81E+03	8.00E+01	7.84E-04	2.43E+02	1.91E-01	4.54E-01	1.24E-01	2.93E+02	1.72E+02	9.55E-01	1.14E+02	2.57E+00
BRSD-4 (2-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	2.39E+01	5.12E+03	7.04E+01	7.84E-04	2.14E+02	1.68E-01	4.54E-01	1.24E-01	2.58E+02	1.72E+02	9.55E-01	1.14E+02	2.26E+00
UM-750S-3500E (2-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	2.39E+01	7.20E+04	9.91E+02	7.84E-04	3.01E+03	2.36E+00	4.54E-01	1.24E-01	3.63E+03	1.72E+02	9.55E-01	1.14E+02	3.18E+01
BRSD-16 (2-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	2.39E+01	9.30E+04	1.28E+03	7.84E-04	3.89E+03	3.05E+00	4.54E-01	1.24E-01	4.70E+03	1.72E+02	9.55E-01	1.14E+02	4.11E+01
UM-750S-3000E (2-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	2.39E+01	4.23E+04	5.83E+02	7.84E-04	1.77E+03	1.39E+00	4.54E-01	1.24E-01	2.14E+03	1.72E+02	9.55E-01	1.14E+02	1.87E+01
BRSD-3 (2-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	2.39E+01	2.73E+04	3.75E+02	7.84E-04	1.14E+03	8.94E-01	4.54E-01	1.24E-01	1.38E+03	1.72E+02	9.55E-01	1.14E+02	1.20E+01
UM-500S-3250E (2-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	2.39E+01	1.60E+04	2.20E+02	7.84E-04	6.68E+02	5.24E-01	4.54E-01	1.24E-01	8.07E+02	1.72E+02	9.55E-01	1.14E+02	7.05E+00
UM-500S-3000E (2-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	2.39E+01	6.34E+03	8.72E+01	7.84E-04	2.65E+02	2.08E-01	4.54E-01	1.24E-01	3.20E+02	1.72E+02	9.55E-01	1.14E+02	2.80E+00
UM-500S-2750E (2-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	2.39E+01	3.61E+04	4.97E+02	7.84E-04	1.51E+03	1.18E+00	4.54E-01	1.24E-01	1.82E+03	1.72E+02	9.55E-01	1.14E+02	1.59E+01
BRSD-25 (2-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	2.39E+01	2.68E+04	3.69E+02	7.84E-04	1.12E+03	8.79E-01	4.54E-01	1.24E-01	1.35E+03	1.72E+02	9.55E-01	1.14E+02	1.18E+01
UM-250S-3000E (2-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	2.39E+01	8.49E+04	1.17E+03	7.84E-04	3.55E+03	2.78E+00	4.54E-01	1.24E-01	4.29E+03	1.72E+02	9.55E-01	1.14E+02	3.75E+01
UM-250S-3250E (2-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	2.39E+01	1.82E+04	2.50E+02	7.84E-04	7.60E+02	5.96E-01	4.54E-01	1.24E-01	9.18E+02	1.72E+02	9.55E-01	1.14E+02	8.02E+00
BRSD-24 (2-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	2.39E+01	8.25E+04	1.14E+03	7.84E-04	3.45E+03	2.71E+00	4.54E-01	1.24E-01	4.17E+03	1.72E+02	9.55E-01	1.14E+02	3.64E+01
UM-250S-2750E (2-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	2.39E+01	4.81E+04	6.62E+02	7.84E-04	2.01E+03	1.58E+00	4.54E-01	1.24E-01	2.43E+03	1.72E+02	9.55E-01	1.14E+02	2.12E+01
UM-0N-2500E (2-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	2.39E+01	3.49E+04	4.81E+02	7.84E-04	1.46E+03	1.15E+00	4.54E-01	1.24E-01	1.76E+03	1.72E+02	9.55E-01	1.14E+02	1.54E+01
BRSD-2 (2-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	2.39E+01	4.76E+04	6.55E+02	7.84E-04	1.99E+03	1.56E+00	4.54E-01	1.24E-01	2.40E+03	1.72E+02	9.55E-01	1.14E+02	2.10E+01
UM-500N-2500E (2-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	2.39E+01	6.51E+03	8.95E+01	7.84E-04	2.72E+02	2.13E-01	4.54E-01	1.24E-01	3.28E+02	1.72E+02	9.55E-01	1.14E+02	2.87E+00
UM-250N-2500E (2-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	2.39E+01	5.93E+04	8.16E+02	7.84E-04	2.48E+03	1.95E+00	4.54E-01	1.24E-01	2.99E+03	1.72E+02	9.55E-01	1.14E+02	2.62E+01
UM-250N-2250E (2-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	2.39E+01	1.53E+04	2.11E+02	7.84E-04	6.40E+02	5.02E-01	4.54E-01	1.24E-01	7.73E+02	1.72E+02	9.55E-01	1.14E+02	6.76E+00
Western Upper Marsh (2-6")																						**Maximum HQ (Eastern Upper Marsh, 2-6")**	**4.11E+01**
UM-500S-2500E (2-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.78E+01	3.91E+03	5.38E+01	7.84E-04	2.20E+02	1.73E-01	4.54E-01	1.24E-01	1.98E+02	1.72E+02	9.55E-01	1.14E+02	1.73E+00
UM-0N-2000E (2-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.78E+01	4.91E+04	6.75E+02	7.84E-04	2.76E+03	2.16E+00	4.54E-01	1.24E-01	2.48E+03	1.72E+02	9.55E-01	1.14E+02	2.17E+01
UM-500S-2000E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	1.11E+02	BB	BB	BB	BB	BB	BB	BB	BB
UM-250N-1750E (2-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.78E+01	5.09E+03	7.00E+01	7.84E-04	2.86E+02	2.24E-01	4.54E-01	1.24E-01	2.57E+02	1.72E+02	9.55E-01	1.14E+02	2.25E+00

TABLE C-12GA: ZINC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 12 - MARSH, TERRESTRIAL RECEPTORS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **118.73**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
American Kestral (Insectivorous Birds)																							
UM-0N-1500E (2-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.78E+01	4.53E+03	6.24E+01	7.84E-04	2.55E+02	2.00E-01	4.54E-01	1.24E-01	2.29E+02	1.72E+02	9.55E-01	1.14E+02	2.00E+00
UM-250S-1500E (2-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.78E+01	3.57E+04	4.92E+02	7.84E-04	2.01E+03	1.58E+00	4.54E-01	1.24E-01	1.81E+03	1.72E+02	9.55E-01	1.14E+02	1.58E+01
UM-250S-1250E (2-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.78E+01	2.49E+03	3.43E+01	7.84E-04	1.40E+02	1.10E-01	4.54E-01	1.24E-01	1.26E+02	1.72E+02	9.55E-01	1.14E+02	1.10E+00
BRSD-6 (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-1000E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-750E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-500E (2-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.78E+01	4.30E+04	5.92E+02	7.84E-04	2.42E+03	1.90E+00	4.54E-01	1.24E-01	2.17E+03	1.72E+02	9.55E-01	1.14E+02	1.90E+01
UM-250S-500E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	9.88E+01	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-250E (2-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.78E+01	2.97E+04	4.09E+02	7.84E-04	1.67E+03	1.31E+00	4.54E-01	1.24E-01	1.50E+03	1.72E+02	9.55E-01	1.14E+02	1.31E+01
UM-250S-250E (2-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.78E+01	3.06E+03	4.21E+01	7.84E-04	1.72E+02	1.35E-01	4.54E-01	1.24E-01	1.55E+02	1.72E+02	9.55E-01	1.14E+02	1.35E+00
BRSD-7 (2-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.78E+01	2.63E+03	3.62E+01	7.84E-04	1.48E+02	1.16E-01	4.54E-01	1.24E-01	1.33E+02	1.72E+02	9.55E-01	1.14E+02	1.16E+00
BRSD-8 (2-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.78E+01	1.03E+04	1.42E+02	7.84E-04	5.79E+02	4.54E-01	4.54E-01	1.24E-01	5.20E+02	1.72E+02	9.55E-01	1.14E+02	4.55E+00
UM-500S-500E (2-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.78E+01	3.15E+03	4.33E+01	7.84E-04	1.77E+02	1.39E-01	4.54E-01	1.24E-01	1.59E+02	1.72E+02	9.55E-01	1.14E+02	1.39E+00
BRSD-9 (2-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.78E+01	5.34E+03	7.34E+01	7.84E-04	3.00E+02	2.35E-01	4.54E-01	1.24E-01	2.70E+02	1.72E+02	9.55E-01	1.14E+02	2.36E+00
BRSD-10 (2-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.78E+01	4.16E+04	5.73E+02	7.84E-04	2.34E+03	1.84E+00	4.54E-01	1.24E-01	2.10E+03	1.72E+02	9.55E-01	1.14E+02	1.84E+01
BRSD-11 (2-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.78E+01	5.28E+03	7.27E+01	7.84E-04	2.97E+02	2.33E-01	4.54E-01	1.24E-01	2.67E+02	1.72E+02	9.55E-01	1.14E+02	2.33E+00
Eastern Upper Marsh (6-12")																						**Maximum HQ (Western Upper Marsh, 2-6")**		**2.17E+01**
UM-1000S-3500E (6-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	2.39E+01	4.35E+03	5.99E+01	7.84E-04	1.82E+02	1.43E-01	4.54E-01	1.24E-01	2.20E+02	1.72E+02	9.55E-01	1.14E+02	1.92E+00
BRSD-15 (6-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	2.39E+01	6.75E+03	9.28E+01	7.84E-04	2.82E+02	2.21E-01	4.54E-01	1.24E-01	3.40E+02	1.72E+02	9.55E-01	1.14E+02	2.98E+00
BRSD-4 (6-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	2.39E+01	7.61E+03	1.05E+02	7.84E-04	3.18E+02	2.49E-01	4.54E-01	1.24E-01	3.84E+02	1.72E+02	9.55E-01	1.14E+02	3.36E+00
UM-750S-3500E (6-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	2.39E+01	6.75E+04	9.28E+02	7.84E-04	2.82E+03	2.21E+00	4.54E-01	1.24E-01	3.40E+03	1.72E+02	9.55E-01	1.14E+02	2.98E+01
BRSD-16 (6-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	2.39E+01	5.53E+04	7.60E+02	7.84E-04	2.31E+03	1.81E+00	4.54E-01	1.24E-01	2.79E+03	1.72E+02	9.55E-01	1.14E+02	2.44E+01
UM-750S-3000E (6-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	2.39E+01	4.09E+04	5.63E+02	7.84E-04	1.71E+03	1.34E+00	4.54E-01	1.24E-01	2.06E+03	1.72E+02	9.55E-01	1.14E+02	1.81E+01
UM-500S-3250E (6-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	2.39E+01	1.37E+04	1.89E+02	7.84E-04	5.73E+02	4.49E-01	4.54E-01	1.24E-01	6.92E+02	1.72E+02	9.55E-01	1.14E+02	6.05E+00
UM-500S-3000E (6-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	2.39E+01	7.65E+03	1.05E+02	7.84E-04	3.20E+02	2.51E-01	4.54E-01	1.24E-01	3.86E+02	1.72E+02	9.55E-01	1.14E+02	3.38E+00
UM-500S-2750E (6-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	2.39E+01	3.21E+04	4.41E+02	7.84E-04	1.34E+03	1.05E+00	4.54E-01	1.24E-01	1.62E+03	1.72E+02	9.55E-01	1.14E+02	1.41E+01
BRSD-25 (6-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	2.39E+01	2.46E+04	3.39E+02	7.84E-04	1.03E+03	8.08E-01	4.54E-01	1.24E-01	1.24E+03	1.72E+02	9.55E-01	1.14E+02	1.09E+01
UM-250S-3000E (6-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	2.39E+01	7.06E+04	9.71E+02	7.84E-04	2.95E+03	2.31E+00	4.54E-01	1.24E-01	3.56E+03	1.72E+02	9.55E-01	1.14E+02	3.11E+01
UM-250S-3250E (6-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	2.39E+01	1.56E+04	2.15E+02	7.84E-04	6.52E+02	5.11E-01	4.54E-01	1.24E-01	7.87E+02	1.72E+02	9.55E-01	1.14E+02	6.88E+00
BRSD-24 (6-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	2.39E+01	4.16E+04	5.73E+02	7.84E-04	1.74E+03	1.36E+00	4.54E-01	1.24E-01	2.10E+03	1.72E+02	9.55E-01	1.14E+02	1.84E+01
UM-250S-2750E (6-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	2.39E+01	4.62E+04	6.35E+02	7.84E-04	1.93E+03	1.51E+00	4.54E-01	1.24E-01	2.33E+03	1.72E+02	9.55E-01	1.14E+02	2.04E+01
UM-250S-2500E (6-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	2.39E+01	6.05E+03	8.33E+01	7.84E-04	2.53E+02	1.98E-01	4.54E-01	1.24E-01	3.05E+02	1.72E+02	9.55E-01	1.14E+02	2.67E+00
BRSD-2 (6-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	2.39E+01	1.01E+05	1.39E+03	7.84E-04	4.22E+03	3.31E+00	4.54E-01	1.24E-01	5.10E+03	1.72E+02	9.55E-01	1.14E+02	4.46E+01
UM-500N-2500E (6-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	2.39E+01	4.21E+03	5.79E+01	7.84E-04	1.76E+02	1.38E-01	4.54E-01	1.24E-01	2.12E+02	1.72E+02	9.55E-01	1.14E+02	1.86E+00
UM-250N-2500E (6-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	2.39E+01	4.47E+04	6.16E+02	7.84E-04	1.87E+03	1.47E+00	4.54E-01	1.24E-01	2.26E+03	1.72E+02	9.55E-01	1.14E+02	1.97E+01
UM-250N-2250E (6-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	2.39E+01	9.33E+03	1.28E+02	7.84E-04	3.90E+02	3.06E-01	4.54E-01	1.24E-01	4.71E+02	1.72E+02	9.55E-01	1.14E+02	4.12E+00
Western Upper Marsh (6-12")																						**Maximum HQ (Eastern Upper Marsh, 6-12")**		**4.46E+01**
UM-500S-2500E (6-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.78E+01	3.34E+03	4.60E+01	7.84E-04	1.88E+02	1.47E-01	4.54E-01	1.24E-01	1.69E+02	1.72E+02	9.55E-01	1.14E+02	1.48E+00
UM-0N-2000E (6-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.78E+01	5.53E+04	7.61E+02	7.84E-04	3.11E+03	2.44E+00	4.54E-01	1.24E-01	2.79E+03	1.72E+02	9.55E-01	1.14E+02	2.44E+01
UM-500S-2000E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-250N-1750E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	9.95E+01	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-1500E (6-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.78E+01	1.02E+04	1.40E+02	7.84E-04	5.72E+02	4.49E-01	4.54E-01	1.24E-01	5.14E+02	1.72E+02	9.55E-01	1.14E+02	4.49E+00
UM-250S-1500E (6-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.78E+01	1.57E+04	2.16E+02	7.84E-04	8.82E+02	6.92E-01	4.54E-01	1.24E-01	7.92E+02	1.72E+02	9.55E-01	1.14E+02	6.93E+00
UM-250S-1250E (6-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.78E+01	2.60E+03	3.57E+01	7.84E-04	1.46E+02	1.15E-01	4.54E-01	1.24E-01	1.31E+02	1.72E+02	9.55E-01	1.14E+02	1.15E+00
BRSD-6 (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-1000E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-750E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-500E (6-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.78E+01	3.09E+04	4.26E+02	7.84E-04	1.74E+03	1.36E+00	4.54E-01	1.24E-01	1.56E+03	1.72E+02	9.55E-01	1.14E+02	1.37E+01
UM-250S-500E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	1.12E+02	BB	BB	BB	BB	BB	BB	BB	BB	BB

TABLE C-12GA: ZINC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 12 - MARSH, TERRESTRIAL RECEPTORS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **118.73**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
American Kestral (Insectivorous Birds)																							
UM-0N-250E (6-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.78E+01	1.87E+04	2.57E+02	7.84E-04	1.05E+03	8.24E-01	4.54E-01	1.24E-01	9.43E+02	1.72E+02	9.55E-01	1.14E+02	8.25E+00
UM-250S-250E (6-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.78E+01	4.36E+03	6.00E+01	7.84E-04	2.45E+02	1.92E-01	4.54E-01	1.24E-01	2.20E+02	1.72E+02	9.55E-01	1.14E+02	1.92E+00
BRSD-7 (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	1.16E+02	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-8 (6-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.78E+01	1.05E+04	1.44E+02	7.84E-04	5.90E+02	4.63E-01	4.54E-01	1.24E-01	5.30E+02	1.72E+02	9.55E-01	1.14E+02	4.64E+00
UM-500S-500E (6-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.78E+01	3.11E+03	4.28E+01	7.84E-04	1.75E+02	1.37E-01	4.54E-01	1.24E-01	1.57E+02	1.72E+02	9.55E-01	1.14E+02	1.37E+00
BRSD-9 (6-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.78E+01	6.26E+03	8.61E+01	7.84E-04	3.52E+02	2.76E-01	4.54E-01	1.24E-01	3.16E+02	1.72E+02	9.55E-01	1.14E+02	2.77E+00
BRSD-10 (6-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.78E+01	6.44E+04	8.86E+02	7.84E-04	3.62E+03	2.84E+00	4.54E-01	1.24E-01	3.25E+03	1.72E+02	9.55E-01	1.14E+02	2.84E+01
BRSD-11 (6-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.78E+01	5.35E+03	7.37E+01	7.84E-04	3.01E+02	2.36E-01	4.54E-01	1.24E-01	2.70E+02	1.72E+02	9.55E-01	1.14E+02	2.36E+00
Middle Marsh (0-2")																						**Maximum HQ (Western Upper Marsh, 6-12")**	**2.84E+01**
MMSD-201 (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.78E+01	2.61E+04	3.60E+02	7.84E-04	1.47E+03	1.15E+00	4.54E-01	1.24E-01	1.32E+03	1.72E+02	9.55E-01	1.14E+02	1.15E+01
MMSD-202 (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.78E+01	7.29E+03	1.00E+02	7.84E-04	4.10E+02	3.22E-01	4.54E-01	1.24E-01	3.68E+02	1.72E+02	9.55E-01	1.14E+02	3.22E+00
Middle Marsh (2-6")																						**Maximum HQ (Middle Marsh, 0-2")**	**1.15E+01**
MMSD-201 (2-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.78E+01	3.66E+04	5.04E+02	7.84E-04	2.06E+03	1.62E+00	4.54E-01	1.24E-01	1.85E+03	1.72E+02	9.55E-01	1.14E+02	1.62E+01
MMSD-202 (2-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.78E+01	9.59E+03	1.32E+02	7.84E-04	5.39E+02	4.23E-01	4.54E-01	1.24E-01	4.84E+02	1.72E+02	9.55E-01	1.14E+02	4.23E+00
Middle Marsh (6-12")																						**Maximum HQ (Middle Marsh, 2-6")**	**1.62E+01**
MMSD-201 (6-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.78E+01	4.61E+04	6.34E+02	7.84E-04	2.59E+03	2.03E+00	4.54E-01	1.24E-01	2.33E+03	1.72E+02	9.55E-01	1.14E+02	2.03E+01
MMSD-202 (6-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.78E+01	8.86E+03	1.22E+02	7.84E-04	4.98E+02	3.91E-01	4.54E-01	1.24E-01	4.47E+02	1.72E+02	9.55E-01	1.14E+02	3.91E+00
Lower Marsh (0-2")																						**Maximum HQ (Middle Marsh, 6-12")**	**2.03E+01**
LMSD-201 (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.78E+01	1.87E+03	2.57E+01	7.84E-04	1.05E+02	8.24E-02	4.54E-01	1.24E-01	9.43E+01	1.72E+02	9.55E-01	1.14E+02	8.25E-01
LMSD-202 (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.78E+01	6.28E+03	8.64E+01	7.84E-04	3.53E+02	2.77E-01	4.54E-01	1.24E-01	3.17E+02	1.72E+02	9.55E-01	1.14E+02	2.77E+00
LMSD-203 (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.78E+01	9.27E+03	1.28E+02	7.84E-04	5.21E+02	4.09E-01	4.54E-01	1.24E-01	4.68E+02	1.72E+02	9.55E-01	1.14E+02	4.09E+00
LMSD-204 (0-2")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.78E+01	6.49E+03	8.93E+01	7.84E-04	3.65E+02	2.86E-01	4.54E-01	1.24E-01	3.28E+02	1.72E+02	9.55E-01	1.14E+02	2.87E+00
Lower Marsh (2-6")																						**Maximum HQ (Lower Marsh, 0-2")**	**4.09E+00**
LMSD-201 (2-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.78E+01	1.74E+03	2.40E+01	7.84E-04	9.80E+01	7.69E-02	4.54E-01	1.24E-01	8.80E+01	1.72E+02	9.55E-01	1.14E+02	7.70E-01
LMSD-202 (2-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.78E+01	6.94E+03	9.54E+01	7.84E-04	3.90E+02	3.06E-01	4.54E-01	1.24E-01	3.50E+02	1.72E+02	9.55E-01	1.14E+02	3.06E+00
LMSD-203 (2-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.78E+01	9.09E+03	1.25E+02	7.84E-04	5.11E+02	4.01E-01	4.54E-01	1.24E-01	4.59E+02	1.72E+02	9.55E-01	1.14E+02	4.01E+00
LMSD-204 (2-6")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.78E+01	6.38E+03	8.79E+01	7.84E-04	3.59E+02	2.82E-01	4.54E-01	1.24E-01	3.23E+02	1.72E+02	9.55E-01	1.14E+02	2.82E+00
Lower Marsh (6-12")																						**Maximum HQ (Lower Marsh, 2-6")**	**4.01E+00**
LMSD-201 (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
LMSD-202 (6-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.78E+01	5.03E+03	6.93E+01	7.84E-04	2.83E+02	2.22E-01	4.54E-01	1.24E-01	2.54E+02	1.72E+02	9.55E-01	1.14E+02	2.22E+00
LMSD-203 (6-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.78E+01	1.32E+04	1.81E+02	7.84E-04	7.40E+02	5.80E-01	4.54E-01	1.24E-01	6.65E+02	1.72E+02	9.55E-01	1.14E+02	5.81E+00
LMSD-204 (6-12")	1.38E-02	NA	NA	NA	NA	NA	NA	NA	NA	1.38E-02	1.78E+01	5.98E+03	8.22E+01	7.84E-04	3.36E+02	2.64E-01	4.54E-01	1.24E-01	3.02E+02	1.72E+02	9.55E-01	1.14E+02	2.64E+00
																						Maximum HQ (Lower Marsh, 6-12")	**5.81E+00**
Meadow Vole (Small Herbivorous Mammals)																							
Reference Sites																							
BRSD-5 (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.99E+00	2.13E+02	9.98E-01	NA	NA	NA	NA	1.13E-04	1.07E+02	1.20E-02	1.00E+00	3.06E-02	3.30E+01	4.11E+02	1.75E-01	4.57E+02	7.23E-02
BRSD-5 (2-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.99E+00	1.99E+02	9.33E-01	NA	NA	NA	NA	1.13E-04	1.00E+02	1.13E-02	1.00E+00	3.06E-02	3.08E+01	4.11E+02	1.75E-01	4.57E+02	6.75E-02
BRSD-5 (6-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.99E+00	1.95E+02	9.12E-01	NA	NA	NA	NA	1.13E-04	9.78E+01	1.10E-02	1.00E+00	3.06E-02	3.02E+01	4.11E+02	1.75E-01	4.57E+02	6.60E-02
PGBG-1 (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.99E+00	3.14E+02	1.47E+00	NA	NA	NA	NA	1.13E-04	1.58E+02	1.78E-02	1.00E+00	3.06E-02	4.87E+01	4.11E+02	1.75E-01	4.57E+02	1.07E-01
PGBG-1 (2-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.99E+00	3.46E+02	1.62E+00	NA	NA	NA	NA	1.13E-04	1.74E+02	1.96E-02	1.00E+00	3.06E-02	5.37E+01	4.11E+02	1.75E-01	4.57E+02	1.18E-01
PGBG-1 (6-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.99E+00	2.65E+02	1.24E+00	NA	NA	NA	NA	1.13E-04	1.33E+02	1.50E-02	1.00E+00	3.06E-02	4.10E+01	4.11E+02	1.75E-01	4.57E+02	8.98E-02
PGBG-2 (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.99E+00	5.23E+02	2.45E+00	NA	NA	NA	NA	1.13E-04	2.63E+02	2.96E-02	1.00E+00	3.06E-02	8.11E+01	4.11E+02	1.75E-01	4.57E+02	1.78E-01
PGBG-2 (2-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.99E+00	5.01E+02	2.35E+00	NA	NA	NA	NA	1.13E-04	2.52E+02	2.84E-02	1.00E+00	3.06E-02	7.77E+01	4.11E+02	1.75E-01	4.57E+02	1.70E-01
PGBG-2 (6-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	1.99E+00	5.47E+02	2.56E+00	NA	NA	NA	NA	1.13E-04	2.75E+02	3.09E-02	1.00E+00	3.06E-02	8.48E+01	4.11E+02	1.75E-01	4.57E+02	1.86E-01
Eastern Upper Marsh (0-2")																						**Minimum HQ (Reference Sites)**	**6.60E-02**
UM-1000S-3500E (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	2.32E+00	3.99E+03	1.87E+01	NA	NA	NA	NA	1.13E-04	1.72E+03	1.94E-01	1.00E+00	3.06E-02	6.18E+02	4.11E+02	1.75E-01	4.57E+02	1.35E+00
BRSD-15 (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	2.32E+00	3.88E+02	1.82E+00	NA	NA	NA	NA	1.13E-04	1.67E+02	1.88E-02	1.00E+00	3.06E-02	6.00E+01	4.11E+02	1.75E-01	4.57E+02	1.31E-01
BRSD-4 (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	2.32E+00	4.20E+02	1.97E+00	NA	NA	NA	NA	1.13E-04	1.81E+02	2.04E-02	1.00E+00	3.06E-02	6.51E+01	4.11E+02	1.75E-01	4.57E+02	1.42E-01
UM-750S-3500E (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	2.32E+00	2.90E+03	1.36E+01	NA	NA	NA	NA	1.13E-04	1.25E+03	1.41E-01	1.00E+00	3.06E-02	4.49E+02	4.11E+02	1.75E-01	4.57E+02	9.84E-01
BRSD-16 (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	2.32E+00	1.91E+03	8.95E+00	NA	NA	NA	NA	1.13E-04	8.22E+02	9.25E-02	1.00E+00	3.06E-02	2.95E+02	4.11E+02	1.75E-01	4.57E+02	6.47E-01
UM-750S-3000E (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	2.32E+00	4.95E+03	2.32E+01	NA	NA	NA	NA	1.13E-04	2.13E+03	2.40E-01	1.00E+00	3.06E-02	7.66E+02	4.11E+02	1.75E-01	4.57E+02	1.68E+00
BRSD-3 (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	2.32E+00	2.37E+03	1.11E+01	NA	NA	NA	NA	1.13E-04	1.02E+03	1.15E-01	1.00E+00	3.06E-02	3.67E+02	4.11E+02	1.75E-01	4.57E+02	8.03E-01

TABLE C-12GA: ZINC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 12 - MARSH, TERRESTRIAL RECEPTORS (Continued)
Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)
calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 118.73

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Meadow Vole (Small Herbivorous Mammals)																							
UM-500S-3250E (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	2.32E+00	2.18E+03	1.02E+01	NA	NA	NA	NA	1.13E-04	9.40E+02	1.06E-01	1.00E+00	3.06E-02	3.38E+02	4.11E+02	1.75E-01	4.57E+02	7.40E-01
UM-500S-3000E (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	2.32E+00	3.27E+03	1.54E+01	NA	NA	NA	NA	1.13E-04	1.41E+03	1.59E-01	1.00E+00	3.06E-02	5.07E+02	4.11E+02	1.75E-01	4.57E+02	1.11E+00
UM-500S-2750E (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	2.32E+00	5.08E+03	2.38E+01	NA	NA	NA	NA	1.13E-04	2.19E+03	2.46E-01	1.00E+00	3.06E-02	7.87E+02	4.11E+02	1.75E-01	4.57E+02	1.72E+00
BRSD-25 (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	2.32E+00	1.94E+03	9.10E+00	NA	NA	NA	NA	1.13E-04	8.36E+02	9.41E-02	1.00E+00	3.06E-02	3.01E+02	4.11E+02	1.75E-01	4.57E+02	6.58E-01
UM-250S-3000E (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	2.32E+00	9.47E+03	4.44E+01	NA	NA	NA	NA	1.13E-04	4.08E+03	4.59E-01	1.00E+00	3.06E-02	1.47E+03	4.11E+02	1.75E-01	4.57E+02	3.21E+00
UM-250S-3250E (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	2.32E+00	2.20E+03	1.03E+01	NA	NA	NA	NA	1.13E-04	9.48E+02	1.07E-01	1.00E+00	3.06E-02	3.41E+02	4.11E+02	1.75E-01	4.57E+02	7.46E-01
BRSD-24 (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	2.32E+00	4.74E+03	2.22E+01	NA	NA	NA	NA	1.13E-04	2.04E+03	2.30E-01	1.00E+00	3.06E-02	7.33E+02	4.11E+02	1.75E-01	4.57E+02	1.61E+00
UM-250S-2750E (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	2.32E+00	3.51E+03	1.64E+01	NA	NA	NA	NA	1.13E-04	1.51E+03	1.70E-01	1.00E+00	3.06E-02	5.43E+02	4.11E+02	1.75E-01	4.57E+02	1.19E+00
UM-250S-2500E (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	2.32E+00	1.34E+03	6.27E+00	NA	NA	NA	NA	1.13E-04	5.76E+02	6.48E-02	1.00E+00	3.06E-02	2.07E+02	4.11E+02	1.75E-01	4.57E+02	4.53E-01
UM-0N-2500E (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	2.32E+00	7.76E+03	3.64E+01	NA	NA	NA	NA	1.13E-04	3.34E+03	3.76E-01	1.00E+00	3.06E-02	1.20E+03	4.11E+02	1.75E-01	4.57E+02	2.63E+00
UM-0N-250E (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	2.32E+00	3.48E+03	1.63E+01	NA	NA	NA	NA	1.13E-04	1.50E+03	1.69E-01	1.00E+00	3.06E-02	5.39E+02	4.11E+02	1.75E-01	4.57E+02	1.18E+00
BRSD-2 (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	2.32E+00	4.06E+03	1.91E+01	NA	NA	NA	NA	1.13E-04	1.75E+03	1.97E-01	1.00E+00	3.06E-02	6.29E+02	4.11E+02	1.75E-01	4.57E+02	1.38E+00
UM-500N-2500E (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	2.32E+00	6.27E+02	2.94E+00	NA	NA	NA	NA	1.13E-04	2.70E+02	3.04E-02	1.00E+00	3.06E-02	9.71E+01	4.11E+02	1.75E-01	4.57E+02	2.12E-01
UM-250N-2500E (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	2.32E+00	6.94E+03	3.26E+01	NA	NA	NA	NA	1.13E-04	2.99E+03	3.36E-01	1.00E+00	3.06E-02	1.07E+03	4.11E+02	1.75E-01	4.57E+02	2.35E+00
UM-250N-2250E (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	2.32E+00	4.78E+03	2.24E+01	NA	NA	NA	NA	1.13E-04	2.06E+03	2.32E-01	1.00E+00	3.06E-02	7.41E+02	4.11E+02	1.75E-01	4.57E+02	1.62E+00
Western Upper Marsh (0-2")																						**Maximum HQ (Eastern Upper Marsh, 0-2")**	**3.21E+00**
UM-500S-2500E (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	2.15E+00	4.77E+02	2.24E+00	NA	NA	NA	NA	1.13E-04	2.22E+02	2.50E-02	1.00E+00	3.06E-02	7.39E+01	4.11E+02	1.75E-01	4.57E+02	1.62E-01
UM-0N-2000E (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	2.15E+00	5.93E+03	2.78E+01	NA	NA	NA	NA	1.13E-04	2.76E+03	3.11E-01	1.00E+00	3.06E-02	9.19E+02	4.11E+02	1.75E-01	4.57E+02	2.01E+00
UM-500S-2000E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-250N-1750E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	1.26E+02	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-1500E (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	2.15E+00	6.14E+02	2.88E+00	NA	NA	NA	NA	1.13E-04	2.86E+02	3.22E-02	1.00E+00	3.06E-02	9.52E+01	4.11E+02	1.75E-01	4.57E+02	2.08E-01
UM-250S-1500E (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	2.15E+00	5.93E+03	2.78E+01	NA	NA	NA	NA	1.13E-04	2.76E+03	3.11E-01	1.00E+00	3.06E-02	9.19E+02	4.11E+02	1.75E-01	4.57E+02	2.01E+00
UM-250S-1250E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	9.88E+01	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-1000E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-750E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-500E (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	2.15E+00	4.68E+02	2.20E+00	NA	NA	NA	NA	1.13E-04	2.18E+02	2.45E-02	1.00E+00	3.06E-02	7.26E+01	4.11E+02	1.75E-01	4.57E+02	1.59E-01
UM-250S-500E (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	2.15E+00	3.18E+02	1.49E+00	NA	NA	NA	NA	1.13E-04	1.48E+02	1.67E-02	1.00E+00	3.06E-02	4.93E+01	4.11E+02	1.75E-01	4.57E+02	1.08E-01
UM-250S-250E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	1.31E+02	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-7 (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	2.15E+00	1.42E+03	6.68E+00	NA	NA	NA	NA	1.13E-04	6.63E+02	7.46E-02	1.00E+00	3.06E-02	2.21E+02	4.11E+02	1.75E-01	4.57E+02	4.83E-01
BRSD-8 (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	2.15E+00	1.12E+03	5.25E+00	NA	NA	NA	NA	1.13E-04	5.21E+02	5.86E-02	1.00E+00	3.06E-02	1.73E+02	4.11E+02	1.75E-01	4.57E+02	3.80E-01
UM-500S-500E (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	2.15E+00	4.04E+02	1.89E+00	NA	NA	NA	NA	1.13E-04	1.88E+02	2.12E-02	1.00E+00	3.06E-02	6.26E+01	4.11E+02	1.75E-01	4.57E+02	1.37E-01
BRSD-9 (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	2.15E+00	1.40E+03	6.57E+00	NA	NA	NA	NA	1.13E-04	6.52E+02	7.34E-02	1.00E+00	3.06E-02	2.17E+02	4.11E+02	1.75E-01	4.57E+02	4.75E-01
BRSD-10 (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	2.15E+00	6.17E+03	2.89E+01	NA	NA	NA	NA	1.13E-04	2.87E+03	3.23E-01	1.00E+00	3.06E-02	9.55E+02	4.11E+02	1.75E-01	4.57E+02	2.09E+00
BRSD-11 (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	2.15E+00	9.80E+02	4.59E+00	NA	NA	NA	NA	1.13E-04	4.56E+02	5.13E-02	1.00E+00	3.06E-02	1.52E+02	4.11E+02	1.75E-01	4.57E+02	3.32E-01
Eastern Upper Marsh (2-6")																						**Maximum HQ (Western Upper Marsh, 0-2")**	**2.09E+00**
UM-1000S-3500E (2-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	2.32E+00	9.19E+02	4.31E+00	NA	NA	NA	NA	1.13E-04	3.96E+02	4.46E-02	1.00E+00	3.06E-02	1.42E+02	4.11E+02	1.75E-01	4.57E+02	3.12E-01
BRSD-15 (2-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	2.32E+00	5.64E+02	2.65E+00	NA	NA	NA	NA	1.13E-04	2.43E+02	2.73E-02	1.00E+00	3.06E-02	8.74E+01	4.11E+02	1.75E-01	4.57E+02	1.91E-01
BRSD-4 (2-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	2.32E+00	4.97E+02	2.33E+00	NA	NA	NA	NA	1.13E-04	2.14E+02	2.41E-02	1.00E+00	3.06E-02	7.69E+01	4.11E+02	1.75E-01	4.57E+02	1.68E-01
UM-750S-3500E (2-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	2.32E+00	6.99E+03	3.28E+01	NA	NA	NA	NA	1.13E-04	3.01E+03	3.39E-01	1.00E+00	3.06E-02	1.08E+03	4.11E+02	1.75E-01	4.57E+02	2.37E+00
BRSD-16 (2-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	2.32E+00	9.03E+03	4.24E+01	NA	NA	NA	NA	1.13E-04	3.89E+03	4.38E-01	1.00E+00	3.06E-02	1.40E+03	4.11E+02	1.75E-01	4.57E+02	3.06E+00
UM-750S-3000E (2-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	2.32E+00	4.11E+03	1.93E+01	NA	NA	NA	NA	1.13E-04	1.77E+03	1.99E-01	1.00E+00	3.06E-02	6.36E+02	4.11E+02	1.75E-01	4.57E+02	1.39E+00
BRSD-3 (2-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	2.32E+00	2.65E+03	1.24E+01	NA	NA	NA	NA	1.13E-04	1.14E+03	1.28E-01	1.00E+00	3.06E-02	4.10E+02	4.11E+02	1.75E-01	4.57E+02	8.97E-01
UM-500S-3250E (2-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	2.32E+00	1.55E+03	7.27E+00	NA	NA	NA	NA	1.13E-04	6.68E+02	7.52E-02	1.00E+00	3.06E-02	2.40E+02	4.11E+02	1.75E-01	4.57E+02	5.26E-01
UM-500S-3000E (2-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	2.32E+00	6.15E+02	2.89E+00	NA	NA	NA	NA	1.13E-04	2.65E+02	2.98E-02	1.00E+00	3.06E-02	9.53E+01	4.11E+02	1.75E-01	4.57E+02	2.09E-01
UM-500S-2750E (2-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	2.32E+00	3.51E+03	1.64E+01	NA	NA	NA	NA	1.13E-04	1.51E+03	1.70E-01	1.00E+00	3.06E-02	5.43E+02	4.11E+02	1.75E-01	4.57E+02	1.19E+00
BRSD-25 (2-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	2.32E+00	2.60E+03	1.22E+01	NA	NA	NA	NA	1.13E-04	1.12E+03	1.26E-01	1.00E+00	3.06E-02	4.03E+02	4.11E+02	1.75E-01	4.57E+02	8.81E-01
UM-250S-3000E (2-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	2.32E+00	8.24E+03	3.87E+01	NA	NA	NA	NA	1.13E-04	3.55E+03	4.00E-01	1.00E+00	3.06E-02	1.28E+03	4.11E+02	1.75E-01	4.57E+02	2.79E+00
UM-250S-3250E (2-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	2.32E+00	1.76E+03	8.27E+00	NA	NA	NA	NA	1.13E-04	7.60E+02	8.55E-02	1.00E+00	3.06E-02	2.73E+02	4.11E+02	1.75E-01	4.57E+02	5.98E-01
BRSD-24 (2-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	2.32E+00	8.01E+03	3.76E+01	NA	NA	NA	NA	1.13E-04	3.45E+03	3.88E-01	1.00E+00	3.06E-02	1.24E+03	4.11E+02	1.75E-01	4.57E+02	2.71E+00
BRSD-6 (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB

TABLE C-12GA: ZINC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 12 - MARSH, TERRESTRIAL RECEPTORS (Continued)
Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)
calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **118.73**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Meadow Vole (Small Herbivorous Mammals)																							
UM-250S-2750E (2-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	2.32E+00	4.67E+03	2.19E+01	NA	NA	NA	NA	1.13E-04	2.01E+03	2.26E-01	1.00E+00	3.06E-02	7.23E+02	4.11E+02	1.75E-01	4.57E+02	1.58E+00
UM-0N-2500E (2-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	2.32E+00	3.39E+03	1.59E+01	NA	NA	NA	NA	1.13E-04	1.46E+03	1.64E-01	1.00E+00	3.06E-02	5.25E+02	4.11E+02	1.75E-01	4.57E+02	1.15E+00
BRSD-2 (2-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	2.32E+00	4.62E+03	2.17E+01	NA	NA	NA	NA	1.13E-04	1.99E+03	2.24E-01	1.00E+00	3.06E-02	7.15E+02	4.11E+02	1.75E-01	4.57E+02	1.57E+00
UM-500N-2500E (2-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	2.32E+00	6.32E+02	2.96E+00	NA	NA	NA	NA	1.13E-04	2.72E+02	3.06E-02	1.00E+00	3.06E-02	9.78E+01	4.11E+02	1.75E-01	4.57E+02	2.14E-01
UM-250N-2500E (2-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	2.32E+00	5.76E+03	2.70E+01	NA	NA	NA	NA	1.13E-04	2.48E+03	2.79E-01	1.00E+00	3.06E-02	8.92E+02	4.11E+02	1.75E-01	4.57E+02	1.95E+00
UM-250N-2250E (2-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	2.32E+00	1.49E+03	6.97E+00	NA	NA	NA	NA	1.13E-04	6.40E+02	7.20E-02	1.00E+00	3.06E-02	2.30E+02	4.11E+02	1.75E-01	4.57E+02	5.04E-01
Western Upper Marsh (2-6")																						**Maximum HQ (Eastern Upper Marsh, 2-6")**	**3.06E+00**
UM-500S-2500E (2-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	2.15E+00	4.73E+02	2.22E+00	NA	NA	NA	NA	1.13E-04	2.20E+02	2.48E-02	1.00E+00	3.06E-02	7.32E+01	4.11E+02	1.75E-01	4.57E+02	1.60E-01
UM-0N-2000E (2-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	2.15E+00	5.93E+03	2.78E+01	NA	NA	NA	NA	1.13E-04	2.76E+03	3.11E-01	1.00E+00	3.06E-02	9.19E+02	4.11E+02	1.75E-01	4.57E+02	2.01E+00
UM-500S-2000E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	1.11E+02	BB	BB	BB	BB	BB	BB	BB	BB
UM-250N-1750E (2-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	2.15E+00	6.14E+02	2.88E+00	NA	NA	NA	NA	1.13E-04	2.86E+02	3.22E-02	1.00E+00	3.06E-02	9.52E+01	4.11E+02	1.75E-01	4.57E+02	2.08E-01
UM-0N-1500E (2-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	2.15E+00	5.48E+02	2.57E+00	NA	NA	NA	NA	1.13E-04	2.55E+02	2.87E-02	1.00E+00	3.06E-02	8.49E+01	4.11E+02	1.75E-01	4.57E+02	1.86E-01
UM-250S-1500E (2-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	2.15E+00	4.32E+03	2.02E+01	NA	NA	NA	NA	1.13E-04	2.01E+03	2.26E-01	1.00E+00	3.06E-02	6.69E+02	4.11E+02	1.75E-01	4.57E+02	1.46E+00
UM-250S-1250E (2-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	2.15E+00	3.01E+02	1.41E+00	NA	NA	NA	NA	1.13E-04	1.40E+02	1.58E-02	1.00E+00	3.06E-02	4.66E+01	4.11E+02	1.75E-01	4.57E+02	1.02E-01
BRSD-6 (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-1000E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-750E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-500E (2-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	2.15E+00	5.20E+03	2.44E+01	NA	NA	NA	NA	1.13E-04	2.42E+03	2.72E-01	1.00E+00	3.06E-02	8.06E+02	4.11E+02	1.75E-01	4.57E+02	1.76E+00
UM-250S-500E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	9.88E+01	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-250E (2-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	2.15E+00	3.59E+03	1.68E+01	NA	NA	NA	NA	1.13E-04	1.67E+03	1.88E-01	1.00E+00	3.06E-02	5.56E+02	4.11E+02	1.75E-01	4.57E+02	1.22E+00
UM-250S-250E (2-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	2.15E+00	3.69E+02	1.73E+00	NA	NA	NA	NA	1.13E-04	1.72E+02	1.94E-02	1.00E+00	3.06E-02	5.73E+01	4.11E+02	1.75E-01	4.57E+02	1.25E-01
BRSD-7 (2-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	2.15E+00	3.18E+02	1.49E+00	NA	NA	NA	NA	1.13E-04	1.48E+02	1.67E-02	1.00E+00	3.06E-02	4.93E+01	4.11E+02	1.75E-01	4.57E+02	1.08E-01
BRSD-8 (2-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	2.15E+00	1.24E+03	5.83E+00	NA	NA	NA	NA	1.13E-04	5.79E+02	6.52E-02	1.00E+00	3.06E-02	1.93E+02	4.11E+02	1.75E-01	4.57E+02	4.22E-01
UM-500S-500E (2-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	2.15E+00	3.80E+02	1.78E+00	NA	NA	NA	NA	1.13E-04	1.77E+02	1.99E-02	1.00E+00	3.06E-02	5.89E+01	4.11E+02	1.75E-01	4.57E+02	1.29E-01
BRSD-9 (2-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	2.15E+00	6.44E+02	3.02E+00	NA	NA	NA	NA	1.13E-04	3.00E+02	3.38E-02	1.00E+00	3.06E-02	9.99E+01	4.11E+02	1.75E-01	4.57E+02	2.19E-01
BRSD-10 (2-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	2.15E+00	5.03E+03	2.36E+01	NA	NA	NA	NA	1.13E-04	2.34E+03	2.63E-01	1.00E+00	3.06E-02	7.79E+02	4.11E+02	1.75E-01	4.57E+02	1.71E+00
BRSD-11 (2-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	2.15E+00	6.38E+02	2.99E+00	NA	NA	NA	NA	1.13E-04	2.97E+02	3.34E-02	1.00E+00	3.06E-02	9.89E+01	4.11E+02	1.75E-01	4.57E+02	2.16E-01
Eastern Upper Marsh (6-12")																						**Maximum HQ (Western Upper Marsh, 2-6")**	**2.01E+00**
UM-1000S-3500E (6-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	2.32E+00	4.23E+02	1.98E+00	NA	NA	NA	NA	1.13E-04	1.82E+02	2.05E-02	1.00E+00	3.06E-02	6.54E+01	4.11E+02	1.75E-01	4.57E+02	1.43E-01
BRSD-15 (6-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	2.32E+00	6.55E+02	3.07E+00	NA	NA	NA	NA	1.13E-04	2.82E+02	3.17E-02	1.00E+00	3.06E-02	1.01E+02	4.11E+02	1.75E-01	4.57E+02	2.22E-01
BRSD-4 (6-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	2.32E+00	7.38E+02	3.46E+00	NA	NA	NA	NA	1.13E-04	3.18E+02	3.58E-02	1.00E+00	3.06E-02	1.14E+02	4.11E+02	1.75E-01	4.57E+02	2.50E-01
UM-750S-3500E (6-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	2.32E+00	6.55E+03	3.07E+01	NA	NA	NA	NA	1.13E-04	2.82E+03	3.17E-01	1.00E+00	3.06E-02	1.01E+03	4.11E+02	1.75E-01	4.57E+02	2.22E+00
BRSD-16 (6-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	2.32E+00	5.36E+03	2.51E+01	NA	NA	NA	NA	1.13E-04	2.31E+03	2.60E-01	1.00E+00	3.06E-02	8.30E+02	4.11E+02	1.75E-01	4.57E+02	1.82E+00
UM-750S-3000E (6-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	2.32E+00	3.97E+03	1.86E+01	NA	NA	NA	NA	1.13E-04	1.71E+03	1.92E-01	1.00E+00	3.06E-02	6.15E+02	4.11E+02	1.75E-01	4.57E+02	1.35E+00
BRSD-3 (6-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	2.32E+00	1.25E+03	5.86E+00	NA	NA	NA	NA	1.13E-04	5.38E+02	6.05E-02	1.00E+00	3.06E-02	1.93E+02	4.11E+02	1.75E-01	4.57E+02	4.23E-01
UM-500S-3250E (6-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	2.32E+00	1.33E+03	6.24E+00	NA	NA	NA	NA	1.13E-04	5.73E+02	6.45E-02	1.00E+00	3.06E-02	2.06E+02	4.11E+02	1.75E-01	4.57E+02	4.51E-01
UM-500S-3000E (6-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	2.32E+00	7.43E+02	3.48E+00	NA	NA	NA	NA	1.13E-04	3.20E+02	3.60E-02	1.00E+00	3.06E-02	1.15E+02	4.11E+02	1.75E-01	4.57E+02	2.52E-01
UM-500S-2750E (6-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	2.32E+00	3.11E+03	1.46E+01	NA	NA	NA	NA	1.13E-04	1.34E+03	1.51E-01	1.00E+00	3.06E-02	4.82E+02	4.11E+02	1.75E-01	4.57E+02	1.05E+00
BRSD-25 (6-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	2.32E+00	2.39E+03	1.12E+01	NA	NA	NA	NA	1.13E-04	1.03E+03	1.16E-01	1.00E+00	3.06E-02	3.70E+02	4.11E+02	1.75E-01	4.57E+02	8.11E-01
UM-250S-3000E (6-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	2.32E+00	6.85E+03	3.21E+01	NA	NA	NA	NA	1.13E-04	2.95E+03	3.32E-01	1.00E+00	3.06E-02	1.06E+03	4.11E+02	1.75E-01	4.57E+02	2.32E+00
UM-250S-3250E (6-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	2.32E+00	1.51E+03	7.10E+00	NA	NA	NA	NA	1.13E-04	6.52E+02	7.34E-02	1.00E+00	3.06E-02	2.34E+02	4.11E+02	1.75E-01	4.57E+02	5.13E-01
BRSD-24 (6-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	2.32E+00	4.04E+03	1.89E+01	NA	NA	NA	NA	1.13E-04	1.74E+03	1.96E-01	1.00E+00	3.06E-02	6.25E+02	4.11E+02	1.75E-01	4.57E+02	1.37E+00
UM-250S-2750E (6-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	2.32E+00	4.48E+03	2.10E+01	NA	NA	NA	NA	1.13E-04	1.93E+03	2.17E-01	1.00E+00	3.06E-02	6.94E+02	4.11E+02	1.75E-01	4.57E+02	1.52E+00
UM-250S-2500E (6-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	2.32E+00	5.87E+02	2.75E+00	NA	NA	NA	NA	1.13E-04	2.53E+02	2.85E-02	1.00E+00	3.06E-02	9.09E+01	4.11E+02	1.75E-01	4.57E+02	1.99E-01
BRSD-2 (6-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	2.32E+00	9.80E+03	4.59E+01	NA	NA	NA	NA	1.13E-04	4.22E+03	4.75E-01	1.00E+00	3.06E-02	1.52E+03	4.11E+02	1.75E-01	4.57E+02	3.32E+00
UM-500N-2500E (6-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	2.32E+00	4.09E+02	1.92E+00	NA	NA	NA	NA	1.13E-04	1.76E+02	1.98E-02	1.00E+00	3.06E-02	6.33E+01	4.11E+02	1.75E-01	4.57E+02	1.38E-01
UM-250N-2500E (6-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	2.32E+00	4.34E+03	2.04E+01	NA	NA	NA	NA	1.13E-04	1.87E+03	2.10E-01	1.00E+00	3.06E-02	6.72E+02	4.11E+02	1.75E-01	4.57E+02	1.47E+00
UM-250N-2250E (6-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	2.32E+00	9.06E+02	4.25E+00	NA	NA	NA	NA	1.13E-04	3.90E+02	4.39E-02	1.00E+00	3.06E-02	1.40E+02	4.11E+02	1.75E-01	4.57E+02	3.07E-01

TABLE C-12GA: ZINC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 12 - MARSH, TERRESTRIAL RECEPTORS (Continued)
Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)
calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 118.73

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Meadow Vole (Small Herbivorous Mammals)																							
Western Upper Marsh (6-12")																						**Maximum HQ (Eastern Upper Marsh, 6-12")**	**3.32E+00**
UM-500S-2500E (6-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	2.15E+00	4.04E+02	1.89E+00	NA	NA	NA	NA	1.13E-04	1.88E+02	2.12E-02	1.00E+00	3.06E-02	6.26E+01	4.11E+02	1.75E-01	4.57E+02	1.37E-01
UM-0N-2000E (6-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	2.15E+00	6.68E+03	3.13E+01	NA	NA	NA	NA	1.13E-04	3.11E+03	3.50E-01	1.00E+00	3.06E-02	1.04E+03	4.11E+02	1.75E-01	4.57E+02	2.27E+00
UM-500S-2000E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-250N-1750E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	9.95E+01	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-1500E (6-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	2.15E+00	1.23E+03	5.76E+00	NA	NA	NA	NA	1.13E-04	5.72E+02	6.44E-02	1.00E+00	3.06E-02	1.90E+02	4.11E+02	1.75E-01	4.57E+02	4.17E-01
UM-250S-1500E (6-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	2.15E+00	1.89E+03	8.88E+00	NA	NA	NA	NA	1.13E-04	8.82E+02	9.93E-02	1.00E+00	3.06E-02	2.94E+02	4.11E+02	1.75E-01	4.57E+02	6.43E-01
UM-250S-1250E (6-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	2.15E+00	3.14E+02	1.47E+00	NA	NA	NA	NA	1.13E-04	1.46E+02	1.64E-02	1.00E+00	3.06E-02	4.86E+01	4.11E+02	1.75E-01	4.57E+02	1.06E-01
BRSD-6 (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-1000E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-750E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-500E (6-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	2.15E+00	3.74E+03	1.75E+01	NA	NA	NA	NA	1.13E-04	1.74E+03	1.96E-01	1.00E+00	3.06E-02	5.79E+02	4.11E+02	1.75E-01	4.57E+02	1.27E+00
UM-250S-500E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	1.12E+02	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-250E (6-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	2.15E+00	2.26E+03	1.06E+01	NA	NA	NA	NA	1.13E-04	1.05E+03	1.18E-01	1.00E+00	3.06E-02	3.50E+02	4.11E+02	1.75E-01	4.57E+02	7.65E-01
UM-250S-250E (6-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	2.15E+00	5.26E+02	2.47E+00	NA	NA	NA	NA	1.13E-04	2.45E+02	2.76E-02	1.00E+00	3.06E-02	8.16E+01	4.11E+02	1.75E-01	4.57E+02	1.79E-01
BRSD-7 (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	1.16E+02	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-8 (6-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	2.15E+00	1.27E+03	5.94E+00	NA	NA	NA	NA	1.13E-04	5.90E+02	6.64E-02	1.00E+00	3.06E-02	1.96E+02	4.11E+02	1.75E-01	4.57E+02	4.30E-01
UM-500S-500E (6-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	2.15E+00	3.76E+02	1.76E+00	NA	NA	NA	NA	1.13E-04	1.75E+02	1.97E-02	1.00E+00	3.06E-02	5.83E+01	4.11E+02	1.75E-01	4.57E+02	1.28E-01
BRSD-9 (6-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	2.15E+00	7.56E+02	3.55E+00	NA	NA	NA	NA	1.13E-04	3.52E+02	3.96E-02	1.00E+00	3.06E-02	1.17E+02	4.11E+02	1.75E-01	4.57E+02	2.56E-01
BRSD-10 (6-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	2.15E+00	7.78E+03	3.65E+01	NA	NA	NA	NA	1.13E-04	3.62E+03	4.07E-01	1.00E+00	3.06E-02	1.20E+03	4.11E+02	1.75E-01	4.57E+02	2.64E+00
BRSD-11 (6-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	2.15E+00	6.47E+02	3.03E+00	NA	NA	NA	NA	1.13E-04	3.01E+02	3.39E-02	1.00E+00	3.06E-02	1.00E+02	4.11E+02	1.75E-01	4.57E+02	2.19E-01
Middle Marsh (0-2")																						**Maximum HQ (Western Upper Marsh, 6-12")**	**2.64E+00**
MMSD-201 (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	2.15E+00	3.16E+03	1.48E+01	NA	NA	NA	NA	1.13E-04	1.47E+03	1.65E-01	1.00E+00	3.06E-02	4.89E+02	4.11E+02	1.75E-01	4.57E+02	1.07E+00
Middle Marsh (2-6")																						**Maximum HQ (Middle Marsh, 0-2")**	**1.07E+00**
MMSD-201 (2-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	2.15E+00	4.43E+03	2.08E+01	NA	NA	NA	NA	1.13E-04	2.06E+03	2.32E-01	1.00E+00	3.06E-02	6.86E+02	4.11E+02	1.75E-01	4.57E+02	1.50E+00
MMSD-202 (2-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	2.15E+00	1.16E+03	5.43E+00	NA	NA	NA	NA	1.13E-04	5.39E+02	6.07E-02	1.00E+00	3.06E-02	1.79E+02	4.11E+02	1.75E-01	4.57E+02	3.93E-01
Middle Marsh (6-12")																						**Maximum HQ (Middle Marsh, 2-6")**	**1.50E+00**
MMSD-201 (6-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	2.15E+00	5.56E+03	2.61E+01	NA	NA	NA	NA	1.13E-04	2.59E+03	2.91E-01	1.00E+00	3.06E-02	8.62E+02	4.11E+02	1.75E-01	4.57E+02	1.89E+00
MMSD-202 (6-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	2.15E+00	1.07E+03	5.02E+00	NA	NA	NA	NA	1.13E-04	4.98E+02	5.60E-02	1.00E+00	3.06E-02	1.66E+02	4.11E+02	1.75E-01	4.57E+02	3.63E-01
Lower Marsh (0-2")																						**Maximum HQ (Middle Marsh, 6-12")**	**1.89E+00**
LMSD-201 (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	2.15E+00	2.26E+02	1.06E+00	NA	NA	NA	NA	1.13E-04	1.05E+02	1.18E-02	1.00E+00	3.06E-02	3.50E+01	4.11E+02	1.75E-01	4.57E+02	7.65E-02
LMSD-202 (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	2.15E+00	7.58E+02	3.56E+00	NA	NA	NA	NA	1.13E-04	3.53E+02	3.97E-02	1.00E+00	3.06E-02	1.18E+02	4.11E+02	1.75E-01	4.57E+02	2.57E-01
LMSD-203 (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	2.15E+00	1.12E+03	5.25E+00	NA	NA	NA	NA	1.13E-04	5.21E+02	5.86E-02	1.00E+00	3.06E-02	1.73E+02	4.11E+02	1.75E-01	4.57E+02	3.80E-01
LMSD-204 (0-2")	4.69E-03	NA	NA	NA	NA	4.69E-03	2.15E+00	7.84E+02	3.68E+00	NA	NA	NA	NA	1.13E-04	3.65E+02	4.11E-02	1.00E+00	3.06E-02	1.21E+02	4.11E+02	1.75E-01	4.57E+02	2.66E-01
Lower Marsh (2-6")																						**Maximum HQ (Lower Marsh, 0-2")**	**3.80E-01**
LMSD-201 (2-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	2.15E+00	2.11E+02	9.87E-01	NA	NA	NA	NA	1.13E-04	9.80E+01	1.10E-02	1.00E+00	3.06E-02	3.26E+01	4.11E+02	1.75E-01	4.57E+02	7.14E-02
LMSD-202 (2-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	2.15E+00	8.38E+02	3.93E+00	NA	NA	NA	NA	1.13E-04	3.90E+02	4.39E-02	1.00E+00	3.06E-02	1.30E+02	4.11E+02	1.75E-01	4.57E+02	2.84E-01
LMSD-203 (2-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	2.15E+00	1.10E+03	5.15E+00	NA	NA	NA	NA	1.13E-04	5.11E+02	5.75E-02	1.00E+00	3.06E-02	1.70E+02	4.11E+02	1.75E-01	4.57E+02	3.72E-01
LMSD-204 (2-6")	4.69E-03	NA	NA	NA	NA	4.69E-03	2.15E+00	7.71E+02	3.62E+00	NA	NA	NA	NA	1.13E-04	3.59E+02	4.04E-02	1.00E+00	3.06E-02	1.19E+02	4.11E+02	1.75E-01	4.57E+02	2.62E-01
Lower Marsh (6-12")																						**Maximum HQ (Lower Marsh, 2-6")**	**3.72E-01**
LMSD-201 (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
LMSD-202 (6-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	2.15E+00	6.08E+02	2.85E+00	NA	NA	NA	NA	1.13E-04	2.83E+02	3.18E-02	1.00E+00	3.06E-02	9.42E+01	4.11E+02	1.75E-01	4.57E+02	2.06E-01
LMSD-203 (6-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	2.15E+00	1.59E+03	7.45E+00	NA	NA	NA	NA	1.13E-04	7.40E+02	8.33E-02	1.00E+00	3.06E-02	2.46E+02	4.11E+02	1.75E-01	4.57E+02	5.39E-01
LMSD-204 (6-12")	4.69E-03	NA	NA	NA	NA	4.69E-03	2.15E+00	7.22E+02	3.38E+00	NA	NA	NA	NA	1.13E-04	3.36E+02	3.78E-02	1.00E+00	3.06E-02	1.12E+02	4.11E+02	1.75E-01	4.57E+02	2.45E-01
																						Maximum HQ (Lower Marsh, 6-12")	**5.39E-01**
White-Tailed Deer (Large Herbivorous Mammals)																							
Reference Sites																							
BRSD-5 (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.99E+00	2.13E+02	3.05E+02	NA	NA	NA	NA	2.86E-02	1.07E+02	3.06E+00	6.64E-01	1.35E+02	1.51E+00	4.11E+02	1.75E-01	2.76E+02	5.48E-03
BRSD-5 (2-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.99E+00	1.99E+02	2.85E+02	NA	NA	NA	NA	2.86E-02	1.00E+02	2.86E+00	6.64E-01	1.35E+02	1.42E+00	4.11E+02	1.75E-01	2.76E+02	5.13E-03
BRSD-5 (6-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.99E+00	1.95E+02	2.79E+02	NA	NA	NA	NA	2.86E-02	9.78E+01	2.80E+00	6.64E-01	1.35E+02	1.38E+00	4.11E+02	1.75E-01	2.76E+02	5.01E-03
PGBG-1 (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.99E+00	3.14E+02	4.50E+02	NA	NA	NA	NA	2.86E-02	1.58E+02	4.52E+00	6.64E-01	1.35E+02	2.24E+00	4.11E+02	1.75E-01	2.76E+02	8.10E-03

TABLE C-12GA: ZINC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 12 - MARSH, TERRESTRIAL RECEPTORS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **118.73**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
White-Tailed Deer (Large Herbivorous Mammals)																							
PGBG-1 (2-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.99E+00	3.46E+02	4.96E+02	NA	NA	NA	NA	2.86E-02	1.74E+02	4.98E+00	6.64E-01	1.35E+02	2.46E+00	4.11E+02	1.75E-01	2.76E+02	8.92E-03
PGBG-1 (6-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.99E+00	2.65E+02	3.79E+02	NA	NA	NA	NA	2.86E-02	1.33E+02	3.81E+00	6.64E-01	1.35E+02	1.88E+00	4.11E+02	1.75E-01	2.76E+02	6.82E-03
PGBG-2 (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.99E+00	5.23E+02	7.49E+02	NA	NA	NA	NA	2.86E-02	2.63E+02	7.53E+00	6.64E-01	1.35E+02	3.72E+00	4.11E+02	1.75E-01	2.76E+02	1.35E-02
PGBG-2 (2-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.99E+00	5.01E+02	7.18E+02	NA	NA	NA	NA	2.86E-02	2.52E+02	7.22E+00	6.64E-01	1.35E+02	3.57E+00	4.11E+02	1.75E-01	2.76E+02	1.29E-02
PGBG-2 (6-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	1.99E+00	5.47E+02	7.83E+02	NA	NA	NA	NA	2.86E-02	2.75E+02	7.87E+00	6.64E-01	1.35E+02	3.89E+00	4.11E+02	1.75E-01	2.76E+02	1.41E-02
Eastern Upper Marsh (0-2")																						**Minimum HQ (Reference Sites)**	**5.01E-03**
UM-1000S-3500E (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	2.32E+00	3.99E+03	5.72E+03	NA	NA	NA	NA	2.86E-02	1.72E+03	4.92E+01	6.64E-01	1.35E+02	2.84E+01	4.11E+02	1.75E-01	2.76E+02	1.03E-01
BRSD-15 (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	2.32E+00	3.88E+02	5.55E+02	NA	NA	NA	NA	2.86E-02	1.67E+02	4.78E+00	6.64E-01	1.35E+02	2.75E+00	4.11E+02	1.75E-01	2.76E+02	9.98E-03
BRSD-4 (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	2.32E+00	4.20E+02	6.02E+02	NA	NA	NA	NA	2.86E-02	1.81E+02	5.18E+00	6.64E-01	1.35E+02	2.99E+00	4.11E+02	1.75E-01	2.76E+02	1.08E-02
UM-750S-3500E (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	2.32E+00	2.90E+03	4.16E+03	NA	NA	NA	NA	2.86E-02	1.25E+03	3.58E+01	6.64E-01	1.35E+02	2.06E+01	4.11E+02	1.75E-01	2.76E+02	7.47E-02
BRSD-16 (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	2.32E+00	1.91E+03	2.73E+03	NA	NA	NA	NA	2.86E-02	8.22E+02	2.35E+01	6.64E-01	1.35E+02	1.36E+01	4.11E+02	1.75E-01	2.76E+02	4.91E-02
UM-750S-3000E (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	2.32E+00	4.95E+03	7.08E+03	NA	NA	NA	NA	2.86E-02	2.13E+03	6.10E+01	6.64E-01	1.35E+02	3.51E+01	4.11E+02	1.75E-01	2.76E+02	1.27E-01
BRSD-3 (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	2.32E+00	2.37E+03	3.39E+03	NA	NA	NA	NA	2.86E-02	1.02E+03	2.92E+01	6.64E-01	1.35E+02	1.68E+01	4.11E+02	1.75E-01	2.76E+02	6.09E-02
UM-500S-3250E (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	2.32E+00	2.18E+03	3.12E+03	NA	NA	NA	NA	2.86E-02	9.40E+02	2.69E+01	6.64E-01	1.35E+02	1.55E+01	4.11E+02	1.75E-01	2.76E+02	5.62E-02
UM-500S-3000E (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	2.32E+00	3.27E+03	4.69E+03	NA	NA	NA	NA	2.86E-02	1.41E+03	4.04E+01	6.64E-01	1.35E+02	2.33E+01	4.11E+02	1.75E-01	2.76E+02	8.42E-02
UM-500S-2750E (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	2.32E+00	5.08E+03	7.28E+03	NA	NA	NA	NA	2.86E-02	2.19E+03	6.27E+01	6.64E-01	1.35E+02	3.61E+01	4.11E+02	1.75E-01	2.76E+02	1.31E-01
BRSD-25 (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	2.32E+00	1.94E+03	2.78E+03	NA	NA	NA	NA	2.86E-02	8.36E+02	2.39E+01	6.64E-01	1.35E+02	1.38E+01	4.11E+02	1.75E-01	2.76E+02	4.99E-02
UM-250S-3000E (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	2.32E+00	9.47E+03	1.36E+04	NA	NA	NA	NA	2.86E-02	4.08E+03	1.17E+02	6.64E-01	1.35E+02	6.73E+01	4.11E+02	1.75E-01	2.76E+02	2.44E-01
UM-250S-3250E (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	2.32E+00	2.20E+03	3.15E+03	NA	NA	NA	NA	2.86E-02	9.48E+02	2.71E+01	6.64E-01	1.35E+02	1.56E+01	4.11E+02	1.75E-01	2.76E+02	5.66E-02
BRSD-24 (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	2.32E+00	4.74E+03	6.78E+03	NA	NA	NA	NA	2.86E-02	2.04E+03	5.84E+01	6.64E-01	1.35E+02	3.37E+01	4.11E+02	1.75E-01	2.76E+02	1.22E-01
UM-250S-2750E (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	2.32E+00	3.51E+03	5.02E+03	NA	NA	NA	NA	2.86E-02	1.51E+03	4.32E+01	6.64E-01	1.35E+02	2.49E+01	4.11E+02	1.75E-01	2.76E+02	9.02E-02
UM-250S-2500E (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	2.32E+00	1.34E+03	1.91E+03	NA	NA	NA	NA	2.86E-02	5.76E+02	1.65E+01	6.64E-01	1.35E+02	9.50E+00	4.11E+02	1.75E-01	2.76E+02	3.44E-02
UM-0N-2500E (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	2.32E+00	7.76E+03	1.11E+04	NA	NA	NA	NA	2.86E-02	3.34E+03	9.56E+01	6.64E-01	1.35E+02	5.51E+01	4.11E+02	1.75E-01	2.76E+02	2.00E-01
UM-0N-250E (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	2.32E+00	3.48E+03	4.99E+03	NA	NA	NA	NA	2.86E-02	1.50E+03	4.30E+01	6.64E-01	1.35E+02	2.47E+01	4.11E+02	1.75E-01	2.76E+02	8.96E-02
BRSD-2 (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	2.32E+00	4.06E+03	5.82E+03	NA	NA	NA	NA	2.86E-02	1.75E+03	5.01E+01	6.64E-01	1.35E+02	2.89E+01	4.11E+02	1.75E-01	2.76E+02	1.05E-01
UM-500N-2500E (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	2.32E+00	6.27E+02	8.98E+02	NA	NA	NA	NA	2.86E-02	2.70E+02	7.73E+00	6.64E-01	1.35E+02	4.45E+00	4.11E+02	1.75E-01	2.76E+02	1.61E-02
UM-250N-2500E (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	2.32E+00	6.94E+03	9.94E+03	NA	NA	NA	NA	2.86E-02	2.99E+03	8.56E+01	6.64E-01	1.35E+02	4.93E+01	4.11E+02	1.75E-01	2.76E+02	1.79E-01
UM-250N-2250E (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	2.32E+00	4.78E+03	6.85E+03	NA	NA	NA	NA	2.86E-02	2.06E+03	5.90E+01	6.64E-01	1.35E+02	3.40E+01	4.11E+02	1.75E-01	2.76E+02	1.23E-01
Western Upper Marsh (0-2")																						**Maximum HQ (Eastern Upper Marsh, 0-2")**	**2.44E-01**
UM-500S-2500E (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	2.15E+00	4.77E+02	6.83E+02	NA	NA	NA	NA	2.86E-02	2.22E+02	6.36E+00	6.64E-01	1.35E+02	3.39E+00	4.11E+02	1.75E-01	2.76E+02	1.23E-02
UM-0N-2000E (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	2.15E+00	5.93E+03	8.49E+03	NA	NA	NA	NA	2.86E-02	2.76E+03	7.90E+01	6.64E-01	1.35E+02	4.22E+01	4.11E+02	1.75E-01	2.76E+02	1.53E-01
UM-500S-2000E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-250N-1750E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	1.26E+02	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-1500E (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	2.15E+00	6.14E+02	8.80E+02	NA	NA	NA	NA	2.86E-02	2.86E+02	8.19E+00	6.64E-01	1.35E+02	4.37E+00	4.11E+02	1.75E-01	2.76E+02	1.58E-02
UM-250S-1500E (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	2.15E+00	5.93E+03	8.49E+03	NA	NA	NA	NA	2.86E-02	2.76E+03	7.90E+01	6.64E-01	1.35E+02	4.22E+01	4.11E+02	1.75E-01	2.76E+02	1.53E-01
UM-250S-1250E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	9.88E+01	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-6 (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-1000E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-750E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-500E (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	2.15E+00	4.68E+02	6.70E+02	NA	NA	NA	NA	2.86E-02	2.18E+02	6.24E+00	6.64E-01	1.35E+02	3.33E+00	4.11E+02	1.75E-01	2.76E+02	1.21E-02
UM-250S-500E (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	2.15E+00	3.18E+02	4.55E+02	NA	NA	NA	NA	2.86E-02	1.48E+02	4.24E+00	6.64E-01	1.35E+02	2.26E+00	4.11E+02	1.75E-01	2.76E+02	8.19E-03
UM-250S-250E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	1.31E+02	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-7 (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	2.15E+00	1.42E+03	2.04E+03	NA	NA	NA	NA	2.86E-02	6.63E+02	1.90E+01	6.64E-01	1.35E+02	1.01E+01	4.11E+02	1.75E-01	2.76E+02	3.67E-02
BRSD-8 (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	2.15E+00	1.12E+03	1.60E+03	NA	NA	NA	NA	2.86E-02	5.21E+02	1.49E+01	6.64E-01	1.35E+02	7.96E+00	4.11E+02	1.75E-01	2.76E+02	2.88E-02
UM-500S-500E (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	2.15E+00	4.04E+02	5.78E+02	NA	NA	NA	NA	2.86E-02	1.88E+02	5.38E+00	6.64E-01	1.35E+02	2.87E+00	4.11E+02	1.75E-01	2.76E+02	1.04E-02
BRSD-9 (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	2.15E+00	1.40E+03	2.01E+03	NA	NA	NA	NA	2.86E-02	6.52E+02	1.87E+01	6.64E-01	1.35E+02	9.96E+00	4.11E+02	1.75E-01	2.76E+02	3.61E-02
BRSD-10 (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	2.15E+00	6.17E+03	8.83E+03	NA	NA	NA	NA	2.86E-02	2.87E+03	8.22E+01	6.64E-01	1.35E+02	4.38E+01	4.11E+02	1.75E-01	2.76E+02	1.59E-01
BRSD-11 (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	2.15E+00	9.80E+02	1.40E+03	NA	NA	NA	NA	2.86E-02	4.56E+02	1.31E+01	6.64E-01	1.35E+02	6.96E+00	4.11E+02	1.75E-01	2.76E+02	2.52E-02

TABLE C-12GA: ZINC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 12 - MARSH, TERRESTRIAL RECEPTORS (Continued)
Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)
calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **118.73**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
White-Tailed Deer (Large Herbivorous Mammals)																							
Eastern Upper Marsh (2-6")																						**Maximum HQ (Western Upper Marsh, 0-2")**	**1.59E-01**
UM-1000S-3500E (2-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	2.32E+00	9.19E+02	1.32E+03	NA	NA	NA	NA	2.86E-02	3.96E+02	1.13E+01	6.64E-01	1.35E+02	6.53E+00	4.11E+02	1.75E-01	2.76E+02	2.37E-02
BRSD-15 (2-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	2.32E+00	5.64E+02	8.08E+02	NA	NA	NA	NA	2.86E-02	2.43E+02	6.96E+00	6.64E-01	1.35E+02	4.01E+00	4.11E+02	1.75E-01	2.76E+02	1.45E-02
BRSD-4 (2-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	2.32E+00	4.97E+02	7.11E+02	NA	NA	NA	NA	2.86E-02	2.14E+02	6.13E+00	6.64E-01	1.35E+02	3.53E+00	4.11E+02	1.75E-01	2.76E+02	1.28E-02
UM-750S-3500E (2-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	2.32E+00	6.99E+03	1.00E+04	NA	NA	NA	NA	2.86E-02	3.01E+03	8.62E+01	6.64E-01	1.35E+02	4.97E+01	4.11E+02	1.75E-01	2.76E+02	1.80E-01
BRSD-16 (2-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	2.32E+00	9.03E+03	1.29E+04	NA	NA	NA	NA	2.86E-02	3.89E+03	1.11E+02	6.64E-01	1.35E+02	6.42E+01	4.11E+02	1.75E-01	2.76E+02	2.32E-01
UM-750S-3000E (2-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	2.32E+00	4.11E+03	5.88E+03	NA	NA	NA	NA	2.86E-02	1.77E+03	5.07E+01	6.64E-01	1.35E+02	2.92E+01	4.11E+02	1.75E-01	2.76E+02	1.06E-01
BRSD-3 (2-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	2.32E+00	2.65E+03	3.79E+03	NA	NA	NA	NA	2.86E-02	1.14E+03	3.26E+01	6.64E-01	1.35E+02	1.88E+01	4.11E+02	1.75E-01	2.76E+02	6.81E-02
UM-500S-3250E (2-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	2.32E+00	1.55E+03	2.22E+03	NA	NA	NA	NA	2.86E-02	6.68E+02	1.91E+01	6.64E-01	1.35E+02	1.10E+01	4.11E+02	1.75E-01	2.76E+02	3.99E-02
UM-500S-3000E (2-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	2.32E+00	6.15E+02	8.81E+02	NA	NA	NA	NA	2.86E-02	2.65E+02	7.59E+00	6.64E-01	1.35E+02	4.37E+00	4.11E+02	1.75E-01	2.76E+02	1.58E-02
UM-500S-2750E (2-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	2.32E+00	3.51E+03	5.02E+03	NA	NA	NA	NA	2.86E-02	1.51E+03	4.32E+01	6.64E-01	1.35E+02	2.49E+01	4.11E+02	1.75E-01	2.76E+02	9.02E-02
BRSD-25 (2-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	2.32E+00	2.60E+03	3.72E+03	NA	NA	NA	NA	2.86E-02	1.12E+03	3.21E+01	6.64E-01	1.35E+02	1.85E+01	4.11E+02	1.75E-01	2.76E+02	6.69E-02
UM-250S-3000E (2-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	2.32E+00	8.24E+03	1.18E+04	NA	NA	NA	NA	2.86E-02	3.55E+03	1.02E+02	6.64E-01	1.35E+02	5.86E+01	4.11E+02	1.75E-01	2.76E+02	2.12E-01
UM-250S-3250E (2-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	2.32E+00	1.76E+03	2.53E+03	NA	NA	NA	NA	2.86E-02	7.60E+02	2.18E+01	6.64E-01	1.35E+02	1.25E+01	4.11E+02	1.75E-01	2.76E+02	4.54E-02
BRSD-24 (2-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	2.32E+00	8.01E+03	1.15E+04	NA	NA	NA	NA	2.86E-02	3.45E+03	9.88E+01	6.64E-01	1.35E+02	5.69E+01	4.11E+02	1.75E-01	2.76E+02	2.06E-01
UM-250S-2750E (2-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	2.32E+00	4.67E+03	6.68E+03	NA	NA	NA	NA	2.86E-02	2.01E+03	5.76E+01	6.64E-01	1.35E+02	3.32E+01	4.11E+02	1.75E-01	2.76E+02	1.20E-01
UM-0N-2500E (2-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	2.32E+00	3.39E+03	4.85E+03	NA	NA	NA	NA	2.86E-02	1.46E+03	4.18E+01	6.64E-01	1.35E+02	2.41E+01	4.11E+02	1.75E-01	2.76E+02	8.72E-02
BRSD-2 (2-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	2.32E+00	4.62E+03	6.62E+03	NA	NA	NA	NA	2.86E-02	1.99E+03	5.70E+01	6.64E-01	1.35E+02	3.28E+01	4.11E+02	1.75E-01	2.76E+02	1.19E-01
UM-500N-2500E (2-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	2.32E+00	6.32E+02	9.04E+02	NA	NA	NA	NA	2.86E-02	2.72E+02	7.79E+00	6.64E-01	1.35E+02	4.49E+00	4.11E+02	1.75E-01	2.76E+02	1.63E-02
UM-250N-2500E (2-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	2.32E+00	5.76E+03	8.24E+03	NA	NA	NA	NA	2.86E-02	2.48E+03	7.10E+01	6.64E-01	1.35E+02	4.09E+01	4.11E+02	1.75E-01	2.76E+02	1.48E-01
UM-250N-2250E (2-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	2.32E+00	1.49E+03	2.13E+03	NA	NA	NA	NA	2.86E-02	6.40E+02	1.83E+01	6.64E-01	1.35E+02	1.06E+01	4.11E+02	1.75E-01	2.76E+02	3.82E-02
Western Upper Marsh (2-6")																						**Maximum HQ (Eastern Upper Marsh, 2-6")**	**2.32E-01**
UM-500S-2500E (2-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	2.15E+00	4.73E+02	6.77E+02	NA	NA	NA	NA	2.86E-02	2.20E+02	6.30E+00	6.64E-01	1.35E+02	3.36E+00	4.11E+02	1.75E-01	2.76E+02	1.22E-02
UM-500S-2000E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	1.11E+02	BB	BB	BB	BB	BB	BB	BB	BB
UM-250N-1750E (2-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	2.15E+00	6.14E+02	8.80E+02	NA	NA	NA	NA	2.86E-02	2.86E+02	8.19E+00	6.64E-01	1.35E+02	4.37E+00	4.11E+02	1.75E-01	2.76E+02	1.58E-02
UM-0N-1500E (2-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	2.15E+00	5.48E+02	7.84E+02	NA	NA	NA	NA	2.86E-02	2.55E+02	7.30E+00	6.64E-01	1.35E+02	3.89E+00	4.11E+02	1.75E-01	2.76E+02	1.41E-02
UM-250S-1500E (2-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	2.15E+00	4.32E+03	6.18E+03	NA	NA	NA	NA	2.86E-02	2.01E+03	5.76E+01	6.64E-01	1.35E+02	3.07E+01	4.11E+02	1.75E-01	2.76E+02	1.11E-01
UM-250S-1250E (2-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	2.15E+00	3.01E+02	4.31E+02	NA	NA	NA	NA	2.86E-02	1.40E+02	4.01E+00	6.64E-01	1.35E+02	2.14E+00	4.11E+02	1.75E-01	2.76E+02	7.74E-03
BRSD-6 (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-1000E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-750E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-500E (2-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	2.15E+00	5.20E+03	7.44E+03	NA	NA	NA	NA	2.86E-02	2.42E+03	6.93E+01	6.64E-01	1.35E+02	3.70E+01	4.11E+02	1.75E-01	2.76E+02	1.34E-01
UM-250S-500E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	9.88E+01	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-250E (2-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	2.15E+00	3.59E+03	5.14E+03	NA	NA	NA	NA	2.86E-02	1.67E+03	4.78E+01	6.64E-01	1.35E+02	2.55E+01	4.11E+02	1.75E-01	2.76E+02	9.24E-02
UM-250S-250E (2-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	2.15E+00	3.69E+02	5.29E+02	NA	NA	NA	NA	2.86E-02	1.72E+02	4.92E+00	6.64E-01	1.35E+02	2.63E+00	4.11E+02	1.75E-01	2.76E+02	9.51E-03
BRSD-7 (2-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	2.15E+00	3.18E+02	4.55E+02	NA	NA	NA	NA	2.86E-02	1.48E+02	4.24E+00	6.64E-01	1.35E+02	2.26E+00	4.11E+02	1.75E-01	2.76E+02	8.19E-03
BRSD-8 (2-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	2.15E+00	1.24E+03	1.78E+03	NA	NA	NA	NA	2.86E-02	5.79E+02	1.66E+01	6.64E-01	1.35E+02	8.84E+00	4.11E+02	1.75E-01	2.76E+02	3.20E-02
UM-500S-500E (2-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	2.15E+00	3.80E+02	5.44E+02	NA	NA	NA	NA	2.86E-02	1.77E+02	5.07E+00	6.64E-01	1.35E+02	2.70E+00	4.11E+02	1.75E-01	2.76E+02	9.79E-03
BRSD-9 (2-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	2.15E+00	6.44E+02	9.23E+02	NA	NA	NA	NA	2.86E-02	3.00E+02	8.59E+00	6.64E-01	1.35E+02	4.58E+00	4.11E+02	1.75E-01	2.76E+02	1.66E-02
BRSD-10 (2-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	2.15E+00	5.03E+03	7.20E+03	NA	NA	NA	NA	2.86E-02	2.34E+03	6.70E+01	6.64E-01	1.35E+02	3.57E+01	4.11E+02	1.75E-01	2.76E+02	1.29E-01
BRSD-11 (2-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	2.15E+00	6.38E+02	9.13E+02	NA	NA	NA	NA	2.86E-02	2.97E+02	8.50E+00	6.64E-01	1.35E+02	4.54E+00	4.11E+02	1.75E-01	2.76E+02	1.64E-02
Eastern Upper Marsh (6-12")																						**Maximum HQ (Western Upper Marsh, 2-6")**	**1.53E-01**
UM-1000S-3500E (6-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	2.32E+00	4.23E+02	6.05E+02	NA	NA	NA	NA	2.86E-02	1.82E+02	5.21E+00	6.64E-01	1.35E+02	3.00E+00	4.11E+02	1.75E-01	2.76E+02	1.09E-02
BRSD-15 (6-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	2.32E+00	6.55E+02	9.37E+02	NA	NA	NA	NA	2.86E-02	2.82E+02	8.07E+00	6.64E-01	1.35E+02	4.65E+00	4.11E+02	1.75E-01	2.76E+02	1.68E-02
BRSD-4 (6-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	2.32E+00	7.38E+02	1.06E+03	NA	NA	NA	NA	2.86E-02	3.18E+02	9.11E+00	6.64E-01	1.35E+02	5.25E+00	4.11E+02	1.75E-01	2.76E+02	1.90E-02
UM-750S-3500E (6-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	2.32E+00	6.55E+03	9.37E+03	NA	NA	NA	NA	2.86E-02	2.82E+03	8.07E+01	6.64E-01	1.35E+02	4.65E+01	4.11E+02	1.75E-01	2.76E+02	1.68E-01
BRSD-16 (6-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	2.32E+00	5.36E+03	7.68E+03	NA	NA	NA	NA	2.86E-02	2.31E+03	6.61E+01	6.64E-01	1.35E+02	3.81E+01	4.11E+02	1.75E-01	2.76E+02	1.38E-01
UM-750S-3000E (6-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	2.32E+00	3.97E+03	5.68E+03	NA	NA	NA	NA	2.86E-02	1.71E+03	4.90E+01	6.64E-01	1.35E+02	2.82E+01	4.11E+02	1.75E-01	2.76E+02	1.02E-01
BRSD-3 (6-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	2.32E+00	1.25E+03	1.79E+03	NA	NA	NA	NA	2.86E-02	5.38E+02	1.54E+01	6.64E-01	1.35E+02	8.88E+00	4.11E+02	1.75E-01	2.76E+02	3.21E-02

TABLE C-12GA: ZINC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 12 - MARSH, TERRESTRIAL RECEPTORS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **118.73**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
White-Tailed Deer (Large Herbivorous Mammals)																							
UM-500S-3250E (6-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	2.32E+00	1.33E+03	1.90E+03	NA	NA	NA	NA	2.86E-02	5.73E+02	1.64E+01	6.64E-01	1.35E+02	9.45E+00	4.11E+02	1.75E-01	2.76E+02	3.42E-02
UM-500S-3000E (6-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	2.32E+00	7.43E+02	1.06E+03	NA	NA	NA	NA	2.86E-02	3.20E+02	9.16E+00	6.64E-01	1.35E+02	5.28E+00	4.11E+02	1.75E-01	2.76E+02	1.91E-02
UM-500S-2750E (6-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	2.32E+00	3.11E+03	4.45E+03	NA	NA	NA	NA	2.86E-02	1.34E+03	3.84E+01	6.64E-01	1.35E+02	2.21E+01	4.11E+02	1.75E-01	2.76E+02	8.01E-02
BRSD-25 (6-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	2.32E+00	2.39E+03	3.42E+03	NA	NA	NA	NA	2.86E-02	1.03E+03	2.95E+01	6.64E-01	1.35E+02	1.70E+01	4.11E+02	1.75E-01	2.76E+02	6.15E-02
UM-250S-3000E (6-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	2.32E+00	6.85E+03	9.81E+03	NA	NA	NA	NA	2.86E-02	2.95E+03	8.45E+01	6.64E-01	1.35E+02	4.87E+01	4.11E+02	1.75E-01	2.76E+02	1.76E-01
UM-250S-3250E (6-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	2.32E+00	1.51E+03	2.17E+03	NA	NA	NA	NA	2.86E-02	6.52E+02	1.87E+01	6.64E-01	1.35E+02	1.08E+01	4.11E+02	1.75E-01	2.76E+02	3.90E-02
BRSD-24 (6-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	2.32E+00	4.04E+03	5.78E+03	NA	NA	NA	NA	2.86E-02	1.74E+03	4.98E+01	6.64E-01	1.35E+02	2.87E+01	4.11E+02	1.75E-01	2.76E+02	1.04E-01
UM-250S-2750E (6-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	2.32E+00	4.48E+03	6.42E+03	NA	NA	NA	NA	2.86E-02	1.93E+03	5.53E+01	6.64E-01	1.35E+02	3.18E+01	4.11E+02	1.75E-01	2.76E+02	1.15E-01
UM-250S-2500E (6-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	2.32E+00	5.87E+02	8.41E+02	NA	NA	NA	NA	2.86E-02	2.53E+02	7.24E+00	6.64E-01	1.35E+02	4.17E+00	4.11E+02	1.75E-01	2.76E+02	1.51E-02
BRSD-2 (6-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	2.32E+00	9.80E+03	1.40E+04	NA	NA	NA	NA	2.86E-02	4.22E+03	1.21E+02	6.64E-01	1.35E+02	6.96E+01	4.11E+02	1.75E-01	2.76E+02	2.52E-01
UM-500N-2500E (6-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	2.32E+00	4.09E+02	5.85E+02	NA	NA	NA	NA	2.86E-02	1.76E+02	5.04E+00	6.64E-01	1.35E+02	2.90E+00	4.11E+02	1.75E-01	2.76E+02	1.05E-02
UM-250N-2500E (6-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	2.32E+00	4.34E+03	6.22E+03	NA	NA	NA	NA	2.86E-02	1.87E+03	5.35E+01	6.64E-01	1.35E+02	3.08E+01	4.11E+02	1.75E-01	2.76E+02	1.12E-01
UM-250N-2250E (6-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	2.32E+00	9.06E+02	1.30E+03	NA	NA	NA	NA	2.86E-02	3.90E+02	1.12E+01	6.64E-01	1.35E+02	6.43E+00	4.11E+02	1.75E-01	2.76E+02	2.33E-02
Western Upper Marsh (6-12")																						**Maximum HQ (Eastern Upper Marsh, 6-12")**	**2.52E-01**
UM-500S-2500E (6-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	2.15E+00	4.04E+02	5.78E+02	NA	NA	NA	NA	2.86E-02	1.88E+02	5.38E+00	6.64E-01	1.35E+02	2.87E+00	4.11E+02	1.75E-01	2.76E+02	1.04E-02
UM-0N-2000E (6-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	2.15E+00	6.68E+03	9.56E+03	NA	NA	NA	NA	2.86E-02	3.11E+03	8.90E+01	6.64E-01	1.35E+02	4.75E+01	4.11E+02	1.75E-01	2.76E+02	1.72E-01
UM-500S-2000E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-250N-1750E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	9.95E+01	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-1500E (6-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	2.15E+00	1.23E+03	1.76E+03	NA	NA	NA	NA	2.86E-02	5.72E+02	1.64E+01	6.64E-01	1.35E+02	8.74E+00	4.11E+02	1.75E-01	2.76E+02	3.16E-02
UM-250S-1500E (6-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	2.15E+00	1.89E+03	2.71E+03	NA	NA	NA	NA	2.86E-02	8.82E+02	2.53E+01	6.64E-01	1.35E+02	1.35E+01	4.11E+02	1.75E-01	2.76E+02	4.88E-02
UM-250S-1250E (6-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	2.15E+00	3.14E+02	4.49E+02	NA	NA	NA	NA	2.86E-02	1.46E+02	4.18E+00	6.64E-01	1.35E+02	2.23E+00	4.11E+02	1.75E-01	2.76E+02	8.08E-03
BRSD-6 (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-1000E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-750E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-500E (6-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	2.15E+00	3.74E+03	5.35E+03	NA	NA	NA	NA	2.86E-02	1.74E+03	4.98E+01	6.64E-01	1.35E+02	2.66E+01	4.11E+02	1.75E-01	2.76E+02	9.63E-02
UM-250S-500E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	1.12E+02	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-250E (6-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	2.15E+00	2.26E+03	3.23E+03	NA	NA	NA	NA	2.86E-02	1.05E+03	3.01E+01	6.64E-01	1.35E+02	1.60E+01	4.11E+02	1.75E-01	2.76E+02	5.81E-02
UM-250S-250E (6-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	2.15E+00	5.26E+02	7.54E+02	NA	NA	NA	NA	2.86E-02	2.45E+02	7.02E+00	6.64E-01	1.35E+02	3.74E+00	4.11E+02	1.75E-01	2.76E+02	1.36E-02
BRSD-7 (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	1.16E+02	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-8 (6-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	2.15E+00	1.27E+03	1.81E+03	NA	NA	NA	NA	2.86E-02	5.90E+02	1.69E+01	6.64E-01	1.35E+02	9.01E+00	4.11E+02	1.75E-01	2.76E+02	3.26E-02
UM-500S-500E (6-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	2.15E+00	3.76E+02	5.38E+02	NA	NA	NA	NA	2.86E-02	1.75E+02	5.01E+00	6.64E-01	1.35E+02	2.67E+00	4.11E+02	1.75E-01	2.76E+02	9.68E-03
BRSD-9 (6-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	2.15E+00	7.56E+02	1.08E+03	NA	NA	NA	NA	2.86E-02	3.52E+02	1.01E+01	6.64E-01	1.35E+02	5.38E+00	4.11E+02	1.75E-01	2.76E+02	1.95E-02
BRSD-10 (6-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	2.15E+00	7.78E+03	1.11E+04	NA	NA	NA	NA	2.86E-02	3.62E+03	1.04E+02	6.64E-01	1.35E+02	5.53E+01	4.11E+02	1.75E-01	2.76E+02	2.00E-01
BRSD-11 (6-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	2.15E+00	6.47E+02	9.26E+02	NA	NA	NA	NA	2.86E-02	3.01E+02	8.62E+00	6.64E-01	1.35E+02	4.60E+00	4.11E+02	1.75E-01	2.76E+02	1.67E-02
Middle Marsh (0-2")																						**Maximum HQ (Western Upper Marsh, 6-12")**	**2.00E-01**
MMSD-201 (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	2.15E+00	3.16E+03	4.52E+03	NA	NA	NA	NA	2.86E-02	1.47E+03	4.21E+01	6.64E-01	1.35E+02	2.25E+01	4.11E+02	1.75E-01	2.76E+02	8.13E-02
MMSD-202 (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	2.15E+00	8.81E+02	1.26E+03	NA	NA	NA	NA	2.86E-02	4.10E+02	1.17E+01	6.64E-01	1.35E+02	6.26E+00	4.11E+02	1.75E-01	2.76E+02	2.27E-02
Middle Marsh (2-6")																						**Maximum HQ (Middle Marsh, 0-2")**	**8.13E-02**
MMSD-201 (2-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	2.15E+00	4.43E+03	6.34E+03	NA	NA	NA	NA	2.86E-02	2.06E+03	5.90E+01	6.64E-01	1.35E+02	3.15E+01	4.11E+02	1.75E-01	2.76E+02	1.14E-01
MMSD-202 (2-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	2.15E+00	1.16E+03	1.66E+03	NA	NA	NA	NA	2.86E-02	5.39E+02	1.54E+01	6.64E-01	1.35E+02	8.23E+00	4.11E+02	1.75E-01	2.76E+02	2.98E-02
Middle Marsh (6-12")																						**Maximum HQ (Middle Marsh, 2-6")**	**1.14E-01**
MMSD-201 (6-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	2.15E+00	5.56E+03	7.97E+03	NA	NA	NA	NA	2.86E-02	2.59E+03	7.42E+01	6.64E-01	1.35E+02	3.96E+01	4.11E+02	1.75E-01	2.76E+02	1.43E-01
MMSD-202 (6-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	2.15E+00	1.07E+03	1.53E+03	NA	NA	NA	NA	2.86E-02	4.98E+02	1.43E+01	6.64E-01	1.35E+02	7.61E+00	4.11E+02	1.75E-01	2.76E+02	2.75E-02
Lower Marsh (0-2")																						**Maximum HQ (Middle Marsh, 6-12")**	**1.43E-01**
LMSD-201 (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	2.15E+00	2.26E+02	3.23E+02	NA	NA	NA	NA	2.86E-02	1.05E+02	3.01E+00	6.64E-01	1.35E+02	1.60E+00	4.11E+02	1.75E-01	2.76E+02	5.81E-03
LMSD-202 (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	2.15E+00	7.58E+02	1.09E+03	NA	NA	NA	NA	2.86E-02	3.53E+02	1.01E+01	6.64E-01	1.35E+02	5.39E+00	4.11E+02	1.75E-01	2.76E+02	1.95E-02
LMSD-203 (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	2.15E+00	1.12E+03	1.60E+03	NA	NA	NA	NA	2.86E-02	5.21E+02	1.49E+01	6.64E-01	1.35E+02	7.96E+00	4.11E+02	1.75E-01	2.76E+02	2.88E-02
LMSD-204 (0-2")	1.43E+00	NA	NA	NA	NA	1.43E+00	2.15E+00	7.84E+02	1.12E+03	NA	NA	NA	NA	2.86E-02	3.65E+02	1.05E+01	6.64E-01	1.35E+02	5.57E+00	4.11E+02	1.75E-01	2.76E+02	2.02E-02
Lower Marsh (2-6")																						**Maximum HQ (Lower Marsh, 0-2")**	**2.88E-02**
LMSD-201 (2-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	2.15E+00	2.11E+02	3.01E+02	NA	NA	NA	NA	2.86E-02	9.80E+01	2.81E+00	6.64E-01	1.35E+02	1.50E+00	4.11E+02	1.75E-01	2.76E+02	5.42E-03
LMSD-202 (2-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	2.15E+00	8.38E+02	1.20E+03	NA	NA	NA	NA	2.86E-02	3.90E+02	1.12E+01	6.64E-01	1.35E+02	5.96E+00	4.11E+02	1.75E-01	2.76E+02	2.16E-02

TABLE C-12GA: ZINC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 12 - MARSH, TERRESTRIAL RECEPTORS (Continued)
Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)
calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **118.73**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
White-Tailed Deer (Large Herbivorous Mammals)																							
LMSD-203 (2-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	2.15E+00	1.10E+03	1.57E+03	NA	NA	NA	NA	2.86E-02	5.11E+02	1.46E+01	6.64E-01	1.35E+02	7.80E+00	4.11E+02	1.75E-01	2.76E+02	2.83E-02
LMSD-204 (2-6")	1.43E+00	NA	NA	NA	NA	1.43E+00	2.15E+00	7.71E+02	1.10E+03	NA	NA	NA	NA	2.86E-02	3.59E+02	1.03E+01	6.64E-01	1.35E+02	5.48E+00	4.11E+02	1.75E-01	2.76E+02	1.99E-02
Lower Marsh (6-12")																						**Maximum HQ (Lower Marsh, 2-6")**	**2.83E-02**
LMSD-201 (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
LMSD-202 (6-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	2.15E+00	6.08E+02	8.70E+02	NA	NA	NA	NA	2.86E-02	2.83E+02	8.10E+00	6.64E-01	1.35E+02	4.32E+00	4.11E+02	1.75E-01	2.76E+02	1.57E-02
LMSD-203 (6-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	2.15E+00	1.59E+03	2.28E+03	NA	NA	NA	NA	2.86E-02	7.40E+02	2.12E+01	6.64E-01	1.35E+02	1.13E+01	4.11E+02	1.75E-01	2.76E+02	4.09E-02
LMSD-204 (6-12")	1.43E+00	NA	NA	NA	NA	1.43E+00	2.15E+00	7.22E+02	1.03E+03	NA	NA	NA	NA	2.86E-02	3.36E+02	9.62E+00	6.64E-01	1.35E+02	5.13E+00	4.11E+02	1.75E-01	2.76E+02	1.86E-02
																						Maximum HQ (Lower Marsh, 6-12")	**4.09E-02**
Red Fox (Carnivorous Mammals)																							
Reference Sites																							
BRSD-5 (0-2")	1.72E-01	1.72E-01	5.46E+00	5.85E+02	1.00E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.07E+02	5.14E-01	8.77E-02	4.54E+00	1.95E+00	4.11E+02	1.75E-01	3.38E+02	5.76E-03
BRSD-5 (2-6")	1.72E-01	1.72E-01	5.46E+00	5.46E+02	9.37E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.00E+02	4.80E-01	8.77E-02	4.54E+00	1.82E+00	4.11E+02	1.75E-01	3.38E+02	5.38E-03
BRSD-5 (6-12")	1.72E-01	1.72E-01	5.46E+00	5.34E+02	9.17E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	9.78E+01	4.70E-01	8.77E-02	4.54E+00	1.78E+00	4.11E+02	1.75E-01	3.38E+02	5.26E-03
PGBG-1 (0-2")	1.72E-01	1.72E-01	5.46E+00	8.63E+02	1.48E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.58E+02	7.59E-01	8.77E-02	4.54E+00	2.88E+00	4.11E+02	1.75E-01	3.38E+02	8.50E-03
PGBG-1 (2-6")	1.72E-01	1.72E-01	5.46E+00	9.51E+02	1.63E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.74E+02	8.36E-01	8.77E-02	4.54E+00	3.17E+00	4.11E+02	1.75E-01	3.38E+02	9.36E-03
PGBG-1 (6-12")	1.72E-01	1.72E-01	5.46E+00	7.27E+02	1.25E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.33E+02	6.39E-01	8.77E-02	4.54E+00	2.42E+00	4.11E+02	1.75E-01	3.38E+02	7.16E-03
PGBG-2 (0-2")	1.72E-01	1.72E-01	5.46E+00	1.44E+03	2.46E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.63E+02	1.26E+00	8.77E-02	4.54E+00	4.79E+00	4.11E+02	1.75E-01	3.38E+02	1.42E-02
PGBG-2 (2-6")	1.72E-01	1.72E-01	5.46E+00	1.38E+03	2.36E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.52E+02	1.21E+00	8.77E-02	4.54E+00	4.59E+00	4.11E+02	1.75E-01	3.38E+02	1.36E-02
PGBG-2 (6-12")	1.72E-01	1.72E-01	5.46E+00	1.50E+03	2.58E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.75E+02	1.32E+00	8.77E-02	4.54E+00	5.01E+00	4.11E+02	1.75E-01	3.38E+02	1.48E-02
Eastern Upper Marsh (0-2")																						**Minimum HQ (Reference Sites)**	**5.26E-03**
UM-1000S-3500E (0-2")	1.72E-01	1.72E-01	1.10E+00	1.90E+03	3.26E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.72E+03	8.26E+00	8.77E-02	4.54E+00	6.46E+00	4.11E+02	1.75E-01	3.38E+02	1.91E-02
BRSD-15 (0-2")	1.72E-01	1.72E-01	1.10E+00	1.84E+02	3.16E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.67E+02	8.02E-01	8.77E-02	4.54E+00	6.27E-01	4.11E+02	1.75E-01	3.38E+02	1.85E-03
BRSD-4 (0-2")	1.72E-01	1.72E-01	1.10E+00	2.00E+02	3.43E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.81E+02	8.69E-01	8.77E-02	4.54E+00	6.80E-01	4.11E+02	1.75E-01	3.38E+02	2.01E-03
UM-750S-3500E (0-2")	1.72E-01	1.72E-01	1.10E+00	1.38E+03	2.37E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.25E+03	6.00E+00	8.77E-02	4.54E+00	4.69E+00	4.11E+02	1.75E-01	3.38E+02	1.39E-02
BRSD-16 (0-2")	1.72E-01	1.72E-01	1.10E+00	9.08E+02	1.56E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	8.22E+02	3.95E+00	8.77E-02	4.54E+00	3.09E+00	4.11E+02	1.75E-01	3.38E+02	9.12E-03
UM-750S-3000E (0-2")	1.72E-01	1.72E-01	1.10E+00	2.35E+03	4.03E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.13E+03	1.02E+01	8.77E-02	4.54E+00	8.00E+00	4.11E+02	1.75E-01	3.38E+02	2.36E-02
BRSD-3 (0-2")	1.72E-01	1.72E-01	1.10E+00	1.13E+03	1.93E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.02E+03	4.90E+00	8.77E-02	4.54E+00	3.83E+00	4.11E+02	1.75E-01	3.38E+02	1.13E-02
UM-500S-3250E (0-2")	1.72E-01	1.72E-01	1.10E+00	1.04E+03	1.78E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	9.40E+02	4.52E+00	8.77E-02	4.54E+00	3.53E+00	4.11E+02	1.75E-01	3.38E+02	1.04E-02
UM-500S-3000E (0-2")	1.72E-01	1.72E-01	1.10E+00	1.56E+03	2.67E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.41E+03	6.77E+00	8.77E-02	4.54E+00	5.29E+00	4.11E+02	1.75E-01	3.38E+02	1.56E-02
UM-500S-2750E (0-2")	1.72E-01	1.72E-01	1.10E+00	2.42E+03	4.15E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.19E+03	1.05E+01	8.77E-02	4.54E+00	8.22E+00	4.11E+02	1.75E-01	3.38E+02	2.43E-02
BRSD-25 (0-2")	1.72E-01	1.72E-01	1.10E+00	9.23E+02	1.58E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	8.36E+02	4.02E+00	8.77E-02	4.54E+00	3.14E+00	4.11E+02	1.75E-01	3.38E+02	9.28E-03
UM-250S-3000E (0-2")	1.72E-01	1.72E-01	1.10E+00	4.50E+03	7.73E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.08E+03	1.96E+01	8.77E-02	4.54E+00	1.53E+01	4.11E+02	1.75E-01	3.38E+02	4.53E-02
UM-250S-3250E (0-2")	1.72E-01	1.72E-01	1.10E+00	1.05E+03	1.80E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	9.48E+02	4.55E+00	8.77E-02	4.54E+00	3.56E+00	4.11E+02	1.75E-01	3.38E+02	1.05E-02
BRSD-24 (0-2")	1.72E-01	1.72E-01	1.10E+00	2.25E+03	3.86E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.04E+03	9.80E+00	8.77E-02	4.54E+00	7.66E+00	4.11E+02	1.75E-01	3.38E+02	2.26E-02
UM-250S-2750E (0-2")	1.72E-01	1.72E-01	1.10E+00	1.67E+03	2.86E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.51E+03	7.25E+00	8.77E-02	4.54E+00	5.67E+00	4.11E+02	1.75E-01	3.38E+02	1.68E-02
UM-250S-2500E (0-2")	1.72E-01	1.72E-01	1.10E+00	6.36E+02	1.09E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.76E+02	2.77E+00	8.77E-02	4.54E+00	2.16E+00	4.11E+02	1.75E-01	3.38E+02	6.39E-03
UM-0N-2500E (0-2")	1.72E-01	1.72E-01	1.10E+00	3.69E+03	6.33E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.34E+03	1.60E+01	8.77E-02	4.54E+00	1.25E+01	4.11E+02	1.75E-01	3.38E+02	3.71E-02
UM-0N-250E (0-2")	1.72E-01	1.72E-01	1.10E+00	1.66E+03	2.84E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.50E+03	7.21E+00	8.77E-02	4.54E+00	5.63E+00	4.11E+02	1.75E-01	3.38E+02	1.66E-02
BRSD-2 (0-2")	1.72E-01	1.72E-01	1.10E+00	1.93E+03	3.31E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.75E+03	8.41E+00	8.77E-02	4.54E+00	6.57E+00	4.11E+02	1.75E-01	3.38E+02	1.94E-02
UM-500N-2500E (0-2")	1.72E-01	1.72E-01	1.10E+00	2.98E+02	5.11E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.70E+02	1.30E+00	8.77E-02	4.54E+00	1.01E+00	4.11E+02	1.75E-01	3.38E+02	3.00E-03
UM-250N-2500E (0-2")	1.72E-01	1.72E-01	1.10E+00	3.30E+03	5.66E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.99E+03	1.44E+01	8.77E-02	4.54E+00	1.12E+01	4.11E+02	1.75E-01	3.38E+02	3.32E-02
UM-250N-2250E (0-2")	1.72E-01	1.72E-01	1.10E+00	2.27E+03	3.90E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.06E+03	9.90E+00	8.77E-02	4.54E+00	7.74E+00	4.11E+02	1.75E-01	3.38E+02	2.29E-02
Western Upper Marsh (0-2")																						**Maximum HQ (Eastern Upper Marsh, 0-2")**	**4.53E-02**
UM-500S-2500E (0-2")	1.72E-01	1.72E-01	1.10E+00	2.45E+02	4.20E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.22E+02	1.07E+00	8.77E-02	4.54E+00	8.34E-01	4.11E+02	1.75E-01	3.38E+02	2.46E-03
UM-0N-2000E (0-2")	1.72E-01	1.72E-01	1.10E+00	3.05E+03	5.23E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.76E+03	1.33E+01	8.77E-02	4.54E+00	1.04E+01	4.11E+02	1.75E-01	3.38E+02	3.06E-02
UM-500S-2000E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-250N-1750E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	1.26E+02	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-1500E (0-2")	1.72E-01	1.72E-01	1.10E+00	3.16E+02	5.42E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.86E+02	1.37E+00	8.77E-02	4.54E+00	1.07E+00	4.11E+02	1.75E-01	3.38E+02	3.17E-03
UM-250S-1500E (0-2")	1.72E-01	1.72E-01	1.10E+00	3.05E+03	5.23E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.76E+03	1.33E+01	8.77E-02	4.54E+00	1.04E+01	4.11E+02	1.75E-01	3.38E+02	3.06E-02
UM-250S-1250E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	9.88E+01	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-6 (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-1000E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB

TABLE C-12GA: ZINC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 12 - MARSH, TERRESTRIAL RECEPTORS (Continued)
Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)
calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 118.73

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Red Fox (Carnivorous Mammals)																							
UM-0N-750E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-500E (0-2")	1.72E-01	1.72E-01	1.10E+00	2.41E+02	4.13E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.18E+02	1.05E+00	8.77E-02	4.54E+00	8.19E-01	4.11E+02	1.75E-01	3.38E+02	2.42E-03
UM-250S-500E (0-2")	1.72E-01	1.72E-01	1.10E+00	1.63E+02	2.80E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.48E+02	7.11E-01	8.77E-02	4.54E+00	5.56E-01	4.11E+02	1.75E-01	3.38E+02	1.64E-03
UM-250S-250E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	1.31E+02	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-7 (0-2")	1.72E-01	1.72E-01	1.10E+00	7.32E+02	1.26E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	6.63E+02	3.18E+00	8.77E-02	4.54E+00	2.49E+00	4.11E+02	1.75E-01	3.38E+02	7.36E-03
BRSD-8 (0-2")	1.72E-01	1.72E-01	1.10E+00	5.75E+02	9.87E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.21E+02	2.50E+00	8.77E-02	4.54E+00	1.96E+00	4.11E+02	1.75E-01	3.38E+02	5.78E-03
UM-500S-500E (0-2")	1.72E-01	1.72E-01	1.10E+00	2.08E+02	3.56E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.88E+02	9.03E-01	8.77E-02	4.54E+00	7.06E-01	4.11E+02	1.75E-01	3.38E+02	2.09E-03
BRSD-9 (0-2")	1.72E-01	1.72E-01	1.10E+00	7.20E+02	1.23E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	6.52E+02	3.13E+00	8.77E-02	4.54E+00	2.45E+00	4.11E+02	1.75E-01	3.38E+02	7.23E-03
BRSD-10 (0-2")	1.72E-01	1.72E-01	1.10E+00	3.17E+03	5.44E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.87E+03	1.38E+01	8.77E-02	4.54E+00	1.08E+01	4.11E+02	1.75E-01	3.38E+02	3.18E-02
BRSD-11 (0-2")	1.72E-01	1.72E-01	1.10E+00	5.03E+02	8.64E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.56E+02	2.19E+00	8.77E-02	4.54E+00	1.71E+00	4.11E+02	1.75E-01	3.38E+02	5.06E-03
Eastern Upper Marsh (2-6")																						**Maximum HQ (Western Upper Marsh, 0-2")**	**3.18E-02**
UM-1000S-3500E (2-6")	1.72E-01	1.72E-01	1.10E+00	4.37E+02	7.50E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.96E+02	1.90E+00	8.77E-02	4.54E+00	1.49E+00	4.11E+02	1.75E-01	3.38E+02	4.39E-03
BRSD-15 (2-6")	1.72E-01	1.72E-01	1.10E+00	2.68E+02	4.60E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.43E+02	1.17E+00	8.77E-02	4.54E+00	9.13E-01	4.11E+02	1.75E-01	3.38E+02	2.70E-03
BRSD-4 (2-6")	1.72E-01	1.72E-01	1.10E+00	2.36E+02	4.05E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.14E+02	1.03E+00	8.77E-02	4.54E+00	8.04E-01	4.11E+02	1.75E-01	3.38E+02	2.37E-03
UM-750S-3500E (2-6")	1.72E-01	1.72E-01	1.10E+00	3.32E+03	5.70E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.01E+03	1.45E+01	8.77E-02	4.54E+00	1.13E+01	4.11E+02	1.75E-01	3.38E+02	3.34E-02
BRSD-16 (2-6")	1.72E-01	1.72E-01	1.10E+00	4.29E+03	7.37E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.89E+03	1.87E+01	8.77E-02	4.54E+00	1.46E+01	4.11E+02	1.75E-01	3.38E+02	4.32E-02
UM-750S-3000E (2-6")	1.72E-01	1.72E-01	1.10E+00	1.95E+03	3.35E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.77E+03	8.50E+00	8.77E-02	4.54E+00	6.65E+00	4.11E+02	1.75E-01	3.38E+02	1.96E-02
BRSD-3 (2-6")	1.72E-01	1.72E-01	1.10E+00	1.26E+03	2.16E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.14E+03	5.48E+00	8.77E-02	4.54E+00	4.28E+00	4.11E+02	1.75E-01	3.38E+02	1.26E-02
UM-500S-3250E (2-6")	1.72E-01	1.72E-01	1.10E+00	7.37E+02	1.27E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	6.68E+02	3.21E+00	8.77E-02	4.54E+00	2.51E+00	4.11E+02	1.75E-01	3.38E+02	7.41E-03
UM-500S-3000E (2-6")	1.72E-01	1.72E-01	1.10E+00	2.93E+02	5.02E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.65E+02	1.27E+00	8.77E-02	4.54E+00	9.95E-01	4.11E+02	1.75E-01	3.38E+02	2.94E-03
UM-500S-2750E (2-6")	1.72E-01	1.72E-01	1.10E+00	1.67E+03	2.86E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.51E+03	7.25E+00	8.77E-02	4.54E+00	5.67E+00	4.11E+02	1.75E-01	3.38E+02	1.68E-02
BRSD-25 (2-6")	1.72E-01	1.72E-01	1.10E+00	1.24E+03	2.12E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.12E+03	5.38E+00	8.77E-02	4.54E+00	4.21E+00	4.11E+02	1.75E-01	3.38E+02	1.24E-02
UM-250S-3000E (2-6")	1.72E-01	1.72E-01	1.10E+00	3.92E+03	6.72E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.55E+03	1.71E+01	8.77E-02	4.54E+00	1.33E+01	4.11E+02	1.75E-01	3.38E+02	3.94E-02
UM-250S-3250E (2-6")	1.72E-01	1.72E-01	1.10E+00	8.39E+02	1.44E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	7.60E+02	3.65E+00	8.77E-02	4.54E+00	2.85E+00	4.11E+02	1.75E-01	3.38E+02	8.43E-03
BRSD-24 (2-6")	1.72E-01	1.72E-01	1.10E+00	3.81E+03	6.53E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.45E+03	1.66E+01	8.77E-02	4.54E+00	1.30E+01	4.11E+02	1.75E-01	3.38E+02	3.83E-02
UM-250S-2750E (2-6")	1.72E-01	1.72E-01	1.10E+00	2.22E+03	3.81E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.01E+03	9.65E+00	8.77E-02	4.54E+00	7.55E+00	4.11E+02	1.75E-01	3.38E+02	2.23E-02
UM-0N-2500E (2-6")	1.72E-01	1.72E-01	1.10E+00	1.61E+03	2.77E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.46E+03	7.01E+00	8.77E-02	4.54E+00	5.48E+00	4.11E+02	1.75E-01	3.38E+02	1.62E-02
BRSD-2 (2-6")	1.72E-01	1.72E-01	1.10E+00	2.20E+03	3.77E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.99E+03	9.56E+00	8.77E-02	4.54E+00	7.47E+00	4.11E+02	1.75E-01	3.38E+02	2.21E-02
UM-500N-2500E (2-6")	1.72E-01	1.72E-01	1.10E+00	3.00E+02	5.15E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.72E+02	1.31E+00	8.77E-02	4.54E+00	1.02E+00	4.11E+02	1.75E-01	3.38E+02	3.02E-03
UM-250N-2500E (2-6")	1.72E-01	1.72E-01	1.10E+00	2.74E+03	4.70E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.48E+03	1.19E+01	8.77E-02	4.54E+00	9.31E+00	4.11E+02	1.75E-01	3.38E+02	2.75E-02
UM-250N-2250E (2-6")	1.72E-01	1.72E-01	1.10E+00	7.07E+02	1.21E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	6.40E+02	3.07E+00	8.77E-02	4.54E+00	2.40E+00	4.11E+02	1.75E-01	3.38E+02	7.10E-03
Western Upper Marsh (2-6")																						**Maximum HQ (Eastern Upper Marsh, 2-6")**	**4.32E-02**
UM-500S-2500E (2-6")	1.72E-01	1.72E-01	1.10E+00	2.43E+02	4.17E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.20E+02	1.06E+00	8.77E-02	4.54E+00	8.26E-01	4.11E+02	1.75E-01	3.38E+02	2.44E-03
UM-0N-2000E (2-6")	1.72E-01	1.72E-01	1.10E+00	3.05E+03	5.23E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.76E+03	1.33E+01	8.77E-02	4.54E+00	1.04E+01	4.11E+02	1.75E-01	3.38E+02	3.06E-02
UM-500S-2000E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	1.11E+02	BB	BB	BB	BB	BB	BB	BB	BB
UM-250N-1750E (2-6")	1.72E-01	1.72E-01	1.10E+00	3.16E+02	5.42E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.86E+02	1.37E+00	8.77E-02	4.54E+00	1.07E+00	4.11E+02	1.75E-01	3.38E+02	3.17E-03
UM-0N-1500E (2-6")	1.72E-01	1.72E-01	1.10E+00	2.82E+02	4.83E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.55E+02	1.22E+00	8.77E-02	4.54E+00	9.58E-01	4.11E+02	1.75E-01	3.38E+02	2.83E-03
UM-250S-1500E (2-6")	1.72E-01	1.72E-01	1.10E+00	2.22E+03	3.81E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.01E+03	9.65E+00	8.77E-02	4.54E+00	7.55E+00	4.11E+02	1.75E-01	3.38E+02	2.23E-02
UM-250S-1250E (2-6")	1.72E-01	1.72E-01	1.10E+00	1.55E+02	2.65E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.40E+02	6.72E-01	8.77E-02	4.54E+00	5.26E-01	4.11E+02	1.75E-01	3.38E+02	1.55E-03
BRSD-6 (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-1000E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-750E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-500E (2-6")	1.72E-01	1.72E-01	1.10E+00	2.67E+03	4.58E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.42E+03	1.16E+01	8.77E-02	4.54E+00	9.09E+00	4.11E+02	1.75E-01	3.38E+02	2.69E-02
UM-250S-500E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	9.88E+01	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-250E (2-6")	1.72E-01	1.72E-01	1.10E+00	1.84E+03	3.16E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.67E+03	8.02E+00	8.77E-02	4.54E+00	6.27E+00	4.11E+02	1.75E-01	3.38E+02	1.85E-02
UM-250S-250E (2-6")	1.72E-01	1.72E-01	1.10E+00	1.90E+02	3.26E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.72E+02	8.26E-01	8.77E-02	4.54E+00	6.46E-01	4.11E+02	1.75E-01	3.38E+02	1.91E-03
BRSD-7 (2-6")	1.72E-01	1.72E-01	1.10E+00	1.63E+02	2.80E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.48E+02	7.11E-01	8.77E-02	4.54E+00	5.56E-01	4.11E+02	1.75E-01	3.38E+02	1.64E-03
BRSD-8 (2-6")	1.72E-01	1.72E-01	1.10E+00	6.39E+02	1.10E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.79E+02	2.78E+00	8.77E-02	4.54E+00	2.17E+00	4.11E+02	1.75E-01	3.38E+02	6.42E-03
UM-500S-500E (2-6")	1.72E-01	1.72E-01	1.10E+00	1.95E+02	3.35E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.77E+02	8.50E-01	8.77E-02	4.54E+00	6.65E-01	4.11E+02	1.75E-01	3.38E+02	1.96E-03
BRSD-9 (2-6")	1.72E-01	1.72E-01	1.10E+00	3.31E+02	5.68E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.00E+02	1.44E+00	8.77E-02	4.54E+00	1.13E+00	4.11E+02	1.75E-01	3.38E+02	3.33E-03

TABLE C-12GA: ZINC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 12 - MARSH, TERRESTRIAL RECEPTORS (Continued)
Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)
calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **118.73**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Red Fox (Carnivorous Mammals)																							
BRSD-10 (2-6")	1.72E-01	1.72E-01	1.10E+00	2.58E+03	4.43E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.34E+03	1.12E+01	8.77E-02	4.54E+00	8.79E+00	4.11E+02	1.75E-01	3.38E+02	2.60E-02
BRSD-11 (2-6")	1.72E-01	1.72E-01	1.10E+00	3.28E+02	5.63E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.97E+02	1.43E+00	8.77E-02	4.54E+00	1.12E+00	4.11E+02	1.75E-01	3.38E+02	3.30E-03
Eastern Upper Marsh (6-12")																						**Maximum HQ (Western Upper Marsh, 2-6")**	**3.06E-02**
UM-1000S-3500E (6-12")	1.72E-01	1.72E-01	1.10E+00	2.01E+02	3.45E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.82E+02	8.74E-01	8.77E-02	4.54E+00	6.83E-01	4.11E+02	1.75E-01	3.38E+02	2.02E-03
BRSD-15 (6-12")	1.72E-01	1.72E-01	1.10E+00	3.11E+02	5.34E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.82E+02	1.35E+00	8.77E-02	4.54E+00	1.06E+00	4.11E+02	1.75E-01	3.38E+02	3.13E-03
BRSD-4 (6-12")	1.72E-01	1.72E-01	1.10E+00	3.51E+02	6.02E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.18E+02	1.53E+00	8.77E-02	4.54E+00	1.19E+00	4.11E+02	1.75E-01	3.38E+02	3.53E-03
UM-750S-3500E (6-12")	1.72E-01	1.72E-01	1.10E+00	3.11E+03	5.34E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.82E+03	1.35E+01	8.77E-02	4.54E+00	1.06E+01	4.11E+02	1.75E-01	3.38E+02	3.13E-02
BRSD-16 (6-12")	1.72E-01	1.72E-01	1.10E+00	2.55E+03	4.38E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.31E+03	1.11E+01	8.77E-02	4.54E+00	8.67E+00	4.11E+02	1.75E-01	3.38E+02	2.56E-02
UM-750S-3000E (6-12")	1.72E-01	1.72E-01	1.10E+00	1.89E+03	3.24E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.71E+03	8.21E+00	8.77E-02	4.54E+00	6.42E+00	4.11E+02	1.75E-01	3.38E+02	1.90E-02
BRSD-3 (6-12")	1.72E-01	1.72E-01	1.10E+00	5.94E+02	1.02E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.38E+02	2.58E+00	8.77E-02	4.54E+00	2.02E+00	4.11E+02	1.75E-01	3.38E+02	5.97E-03
UM-500S-3250E (6-12")	1.72E-01	1.72E-01	1.10E+00	6.33E+02	1.09E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.73E+02	2.75E+00	8.77E-02	4.54E+00	2.15E+00	4.11E+02	1.75E-01	3.38E+02	6.36E-03
UM-500S-3000E (6-12")	1.72E-01	1.72E-01	1.10E+00	3.53E+02	6.06E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.20E+02	1.54E+00	8.77E-02	4.54E+00	1.20E+00	4.11E+02	1.75E-01	3.38E+02	3.55E-03
UM-500S-2750E (6-12")	1.72E-01	1.72E-01	1.10E+00	1.48E+03	2.54E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.34E+03	6.44E+00	8.77E-02	4.54E+00	5.03E+00	4.11E+02	1.75E-01	3.38E+02	1.49E-02
BRSD-25 (6-12")	1.72E-01	1.72E-01	1.10E+00	1.14E+03	1.95E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.03E+03	4.95E+00	8.77E-02	4.54E+00	3.87E+00	4.11E+02	1.75E-01	3.38E+02	1.14E-02
UM-250S-3000E (6-12")	1.72E-01	1.72E-01	1.10E+00	3.26E+03	5.59E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.95E+03	1.42E+01	8.77E-02	4.54E+00	1.11E+01	4.11E+02	1.75E-01	3.38E+02	3.27E-02
UM-250S-3250E (6-12")	1.72E-01	1.72E-01	1.10E+00	7.20E+02	1.23E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	6.52E+02	3.13E+00	8.77E-02	4.54E+00	2.45E+00	4.11E+02	1.75E-01	3.38E+02	7.23E-03
BRSD-24 (6-12")	1.72E-01	1.72E-01	1.10E+00	1.92E+03	3.30E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.74E+03	8.36E+00	8.77E-02	4.54E+00	6.53E+00	4.11E+02	1.75E-01	3.38E+02	1.93E-02
UM-250S-2750E (6-12")	1.72E-01	1.72E-01	1.10E+00	2.13E+03	3.66E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.93E+03	9.27E+00	8.77E-02	4.54E+00	7.25E+00	4.11E+02	1.75E-01	3.38E+02	2.14E-02
UM-250S-2500E (6-12")	1.72E-01	1.72E-01	1.10E+00	2.79E+02	4.79E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.53E+02	1.22E+00	8.77E-02	4.54E+00	9.50E-01	4.11E+02	1.75E-01	3.38E+02	2.81E-03
BRSD-2 (6-12")	1.72E-01	1.72E-01	1.10E+00	4.66E+03	7.99E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.22E+03	2.03E+01	8.77E-02	4.54E+00	1.58E+01	4.11E+02	1.75E-01	3.38E+02	4.68E-02
UM-500N-2500E (6-12")	1.72E-01	1.72E-01	1.10E+00	1.94E+02	3.33E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.76E+02	8.45E-01	8.77E-02	4.54E+00	6.61E-01	4.11E+02	1.75E-01	3.38E+02	1.95E-03
UM-250N-2500E (6-12")	1.72E-01	1.72E-01	1.10E+00	2.06E+03	3.54E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.87E+03	8.98E+00	8.77E-02	4.54E+00	7.02E+00	4.11E+02	1.75E-01	3.38E+02	2.07E-02
UM-250N-2250E (6-12")	1.72E-01	1.72E-01	1.10E+00	4.31E+02	7.39E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.90E+02	1.87E+00	8.77E-02	4.54E+00	1.46E+00	4.11E+02	1.75E-01	3.38E+02	4.33E-03
Western Upper Marsh (6-12")																						**Maximum HQ (Eastern Upper Marsh, 6-12")**	**4.68E-02**
UM-500S-2500E (6-12")	1.72E-01	1.72E-01	1.10E+00	2.08E+02	3.56E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.88E+02	9.03E-01	8.77E-02	4.54E+00	7.06E-01	4.11E+02	1.75E-01	3.38E+02	2.09E-03
UM-0N-2000E (6-12")	1.72E-01	1.72E-01	1.10E+00	3.43E+03	5.89E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.11E+03	1.49E+01	8.77E-02	4.54E+00	1.17E+01	4.11E+02	1.75E-01	3.38E+02	3.45E-02
UM-500S-2000E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-250N-1750E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	9.95E+01	BB	BB	BB	BB	BB	BB	BB
UM-0N-1500E (6-12")	1.72E-01	1.72E-01	1.10E+00	6.32E+02	1.08E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.72E+02	2.75E+00	8.77E-02	4.54E+00	2.15E+00	4.11E+02	1.75E-01	3.38E+02	6.35E-03
UM-250S-1500E (6-12")	1.72E-01	1.72E-01	1.10E+00	9.74E+02	1.67E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	8.82E+02	4.24E+00	8.77E-02	4.54E+00	3.31E+00	4.11E+02	1.75E-01	3.38E+02	9.79E-03
UM-250S-1250E (6-12")	1.72E-01	1.72E-01	1.10E+00	1.61E+02	2.77E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.46E+02	7.01E-01	8.77E-02	4.54E+00	5.48E-01	4.11E+02	1.75E-01	3.38E+02	1.62E-03
BRSD-6 (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-1000E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-750E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-500E (6-12")	1.72E-01	1.72E-01	1.10E+00	1.92E+03	3.30E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.74E+03	8.36E+00	8.77E-02	4.54E+00	6.53E+00	4.11E+02	1.75E-01	3.38E+02	1.93E-02
UM-250S-500E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	1.12E+02	BB	BB	BB	BB	BB	BB	BB
UM-0N-250E (6-12")	1.72E-01	1.72E-01	1.10E+00	1.16E+03	1.99E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.05E+03	5.04E+00	8.77E-02	4.54E+00	3.94E+00	4.11E+02	1.75E-01	3.38E+02	1.17E-02
UM-250S-250E (6-12")	1.72E-01	1.72E-01	1.10E+00	2.70E+02	4.64E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.45E+02	1.18E+00	8.77E-02	4.54E+00	9.20E-01	4.11E+02	1.75E-01	3.38E+02	2.72E-03
BRSD-7 (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	1.16E+02	BB	BB	BB	BB	BB	BB	BB
BRSD-8 (6-12")	1.72E-01	1.72E-01	1.10E+00	6.51E+02	1.12E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.90E+02	2.83E+00	8.77E-02	4.54E+00	2.22E+00	4.11E+02	1.75E-01	3.38E+02	6.55E-03
UM-500S-500E (6-12")	1.72E-01	1.72E-01	1.10E+00	1.93E+02	3.31E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.75E+02	8.41E-01	8.77E-02	4.54E+00	6.57E-01	4.11E+02	1.75E-01	3.38E+02	1.94E-03
BRSD-9 (6-12")	1.72E-01	1.72E-01	1.10E+00	3.89E+02	6.67E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.52E+02	1.69E+00	8.77E-02	4.54E+00	1.32E+00	4.11E+02	1.75E-01	3.38E+02	3.91E-03
BRSD-10 (6-12")	1.72E-01	1.72E-01	1.10E+00	4.00E+03	6.86E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.62E+03	1.74E+01	8.77E-02	4.54E+00	1.36E+01	4.11E+02	1.75E-01	3.38E+02	4.02E-02
BRSD-11 (6-12")	1.72E-01	1.72E-01	1.10E+00	3.32E+02	5.70E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.01E+02	1.45E+00	8.77E-02	4.54E+00	1.13E+00	4.11E+02	1.75E-01	3.38E+02	3.34E-03
Middle Marsh (0-2")																						**Maximum HQ (Western Upper Marsh, 6-12")**	**4.02E-02**
MMSD-201 (0-2")	1.72E-01	1.72E-01	1.10E+00	1.62E+03	2.78E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.47E+03	7.06E+00	8.77E-02	4.54E+00	5.52E+00	4.11E+02	1.75E-01	3.38E+02	1.63E-02
MMSD-202 (0-2")	1.72E-01	1.72E-01	1.10E+00	4.53E+02	7.77E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.10E+02	1.97E+00	8.77E-02	4.54E+00	1.54E+00	4.11E+02	1.75E-01	3.38E+02	4.55E-03
Middle Marsh (2-6")																						**Maximum HQ (Middle Marsh, 0-2")**	**1.63E-02**
MMSD-201 (2-6")	1.72E-01	1.72E-01	1.10E+00	2.27E+03	3.90E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.06E+03	9.90E+00	8.77E-02	4.54E+00	7.74E+00	4.11E+02	1.75E-01	3.38E+02	2.29E-02
MMSD-202 (2-6")	1.72E-01	1.72E-01	1.10E+00	5.95E+02	1.02E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.39E+02	2.59E+00	8.77E-02	4.54E+00	2.02E+00	4.11E+02	1.75E-01	3.38E+02	5.98E-03

TABLE C-12GA: ZINC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 12 - MARSH, TERRESTRIAL RECEPTORS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **118.73**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Red Fox (Carnivorous Mammals)																							
Middle Marsh (6-12")																						**Maximum HQ (Middle Marsh, 2-6")**	**2.29E-02**
MMSD-201 (6-12")	1.72E-01	1.72E-01	1.10E+00	2.86E+03	4.91E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.59E+03	1.24E+01	8.77E-02	4.54E+00	9.73E+00	4.11E+02	1.75E-01	3.38E+02	2.87E-02
MMSD-202 (6-12")	1.72E-01	1.72E-01	1.10E+00	5.50E+02	9.43E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	4.98E+02	2.39E+00	8.77E-02	4.54E+00	1.87E+00	4.11E+02	1.75E-01	3.38E+02	5.53E-03
Lower Marsh (0-2")																						**Maximum HQ (Middle Marsh, 6-12")**	**2.87E-02**
LMSD-201 (0-2")	1.72E-01	1.72E-01	1.10E+00	1.16E+02	1.99E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	1.05E+02	5.04E-01	8.77E-02	4.54E+00	3.94E-01	4.11E+02	1.75E-01	3.38E+02	1.17E-03
LMSD-202 (0-2")	1.72E-01	1.72E-01	1.10E+00	3.90E+02	6.69E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.53E+02	1.70E+00	8.77E-02	4.54E+00	1.33E+00	4.11E+02	1.75E-01	3.38E+02	3.92E-03
LMSD-203 (0-2")	1.72E-01	1.72E-01	1.10E+00	5.75E+02	9.87E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.21E+02	2.50E+00	8.77E-02	4.54E+00	1.96E+00	4.11E+02	1.75E-01	3.38E+02	5.78E-03
LMSD-204 (0-2")	1.72E-01	1.72E-01	1.10E+00	4.03E+02	6.91E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.65E+02	1.75E+00	8.77E-02	4.54E+00	1.37E+00	4.11E+02	1.75E-01	3.38E+02	4.05E-03
Lower Marsh (2-6")																						**Maximum HQ (Lower Marsh, 0-2")**	**5.78E-03**
LMSD-201 (2-6")	1.72E-01	1.72E-01	1.10E+00	1.08E+02	1.86E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	9.80E+01	4.71E-01	8.77E-02	4.54E+00	3.68E-01	4.11E+02	1.75E-01	3.38E+02	1.09E-03
LMSD-202 (2-6")	1.72E-01	1.72E-01	1.10E+00	4.31E+02	7.39E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.90E+02	1.87E+00	8.77E-02	4.54E+00	1.46E+00	4.11E+02	1.75E-01	3.38E+02	4.33E-03
LMSD-203 (2-6")	1.72E-01	1.72E-01	1.10E+00	5.64E+02	9.68E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	5.11E+02	2.45E+00	8.77E-02	4.54E+00	1.92E+00	4.11E+02	1.75E-01	3.38E+02	5.67E-03
LMSD-204 (2-6")	1.72E-01	1.72E-01	1.10E+00	3.96E+02	6.80E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.59E+02	1.72E+00	8.77E-02	4.54E+00	1.35E+00	4.11E+02	1.75E-01	3.38E+02	3.98E-03
Lower Marsh (6-12")																						**Maximum HQ (Lower Marsh, 2-6")**	**5.67E-03**
LMSD-201 (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
LMSD-202 (6-12")	1.72E-01	1.72E-01	1.10E+00	3.12E+02	5.36E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	2.83E+02	1.36E+00	8.77E-02	4.54E+00	1.06E+00	4.11E+02	1.75E-01	3.38E+02	3.14E-03
LMSD-203 (6-12")	1.72E-01	1.72E-01	1.10E+00	8.17E+02	1.40E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	7.40E+02	3.55E+00	8.77E-02	4.54E+00	2.78E+00	4.11E+02	1.75E-01	3.38E+02	8.21E-03
LMSD-204 (6-12")	1.72E-01	1.72E-01	1.10E+00	3.71E+02	6.36E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.80E-03	3.36E+02	1.61E+00	8.77E-02	4.54E+00	1.26E+00	4.11E+02	1.75E-01	3.38E+02	3.73E-03
																						Maximum HQ (Lower Marsh, 6-12")	**8.21E-03**
Masked Shrew (Omnivorous Mammals, Wetland)																							
Reference Sites																							
BRSD-5 (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.09E+01	1.17E+03	9.90E+00	1.10E-03	1.07E+02	1.18E-01	1.00E+00	5.50E-03	1.82E+03	4.11E+02	1.75E-01	5.06E+02	3.60E+00
BRSD-5 (2-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.09E+01	1.09E+03	9.25E+00	1.10E-03	1.00E+02	1.10E-01	1.00E+00	5.50E-03	1.70E+03	4.11E+02	1.75E-01	5.06E+02	3.36E+00
PGBG-1 (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.09E+01	1.73E+03	1.46E+01	1.10E-03	1.58E+02	1.74E-01	1.00E+00	5.50E-03	2.69E+03	4.11E+02	1.75E-01	5.06E+02	5.31E+00
PGBG-1 (2-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.09E+01	1.90E+03	1.61E+01	1.10E-03	1.74E+02	1.92E-01	1.00E+00	5.50E-03	2.96E+03	4.11E+02	1.75E-01	5.06E+02	5.85E+00
PGBG-1 (6-12")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.09E+01	1.45E+03	1.23E+01	1.10E-03	1.33E+02	1.46E-01	1.00E+00	5.50E-03	2.26E+03	4.11E+02	1.75E-01	5.06E+02	4.47E+00
PGBG-2 (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.09E+01	2.87E+03	2.43E+01	1.10E-03	2.63E+02	2.90E-01	1.00E+00	5.50E-03	4.48E+03	4.11E+02	1.75E-01	5.06E+02	8.84E+00
PGBG-2 (2-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.09E+01	2.75E+03	2.33E+01	1.10E-03	2.52E+02	2.77E-01	1.00E+00	5.50E-03	4.29E+03	4.11E+02	1.75E-01	5.06E+02	8.47E+00
PGBG-2 (6-12")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.09E+01	3.00E+03	2.54E+01	1.10E-03	2.75E+02	3.03E-01	1.00E+00	5.50E-03	4.68E+03	4.11E+02	1.75E-01	5.06E+02	9.25E+00
Eastern Upper Marsh (0-2")																						**Minimum HQ (Reference Sites)**	**3.29E+00**
UM-1000S-3500E (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	2.39E+01	4.11E+04	3.48E+02	1.10E-03	1.72E+03	1.89E+00	1.00E+00	5.50E-03	6.37E+04	4.11E+02	1.75E-01	5.06E+02	1.26E+02
BRSD-15 (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	2.39E+01	3.99E+03	3.38E+01	1.10E-03	1.67E+02	1.84E-01	1.00E+00	5.50E-03	6.19E+03	4.11E+02	1.75E-01	5.06E+02	1.22E+01
BRSD-4 (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	2.39E+01	4.33E+03	3.67E+01	1.10E-03	1.81E+02	1.99E-01	1.00E+00	5.50E-03	6.70E+03	4.11E+02	1.75E-01	5.06E+02	1.32E+01
UM-750S-3500E (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	2.39E+01	2.99E+04	2.53E+02	1.10E-03	1.25E+03	1.38E+00	1.00E+00	5.50E-03	4.63E+04	4.11E+02	1.75E-01	5.06E+02	9.14E+01
BRSD-16 (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	2.39E+01	1.97E+04	1.67E+02	1.10E-03	8.22E+02	9.05E-01	1.00E+00	5.50E-03	3.04E+04	4.11E+02	1.75E-01	5.06E+02	6.01E+01
UM-750S-3000E (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	2.39E+01	5.10E+04	4.32E+02	1.10E-03	2.13E+03	2.35E+00	1.00E+00	5.50E-03	7.89E+04	4.11E+02	1.75E-01	5.06E+02	1.56E+02
BRSD-3 (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	2.39E+01	2.44E+04	2.07E+02	1.10E-03	1.02E+03	1.12E+00	1.00E+00	5.50E-03	3.78E+04	4.11E+02	1.75E-01	5.06E+02	7.46E+01
UM-500S-3250E (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	2.39E+01	2.25E+04	1.90E+02	1.10E-03	9.40E+02	1.04E+00	1.00E+00	5.50E-03	3.48E+04	4.11E+02	1.75E-01	5.06E+02	6.88E+01
UM-500S-3000E (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	2.39E+01	3.37E+04	2.86E+02	1.10E-03	1.41E+03	1.55E+00	1.00E+00	5.50E-03	5.22E+04	4.11E+02	1.75E-01	5.06E+02	1.03E+02
UM-500S-2750E (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	2.39E+01	5.24E+04	4.44E+02	1.10E-03	2.19E+03	2.41E+00	1.00E+00	5.50E-03	8.11E+04	4.11E+02	1.75E-01	5.06E+02	1.60E+02
BRSD-25 (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	2.39E+01	2.00E+04	1.69E+02	1.10E-03	8.36E+02	9.21E-01	1.00E+00	5.50E-03	3.10E+04	4.11E+02	1.75E-01	5.06E+02	6.11E+01
UM-250S-3000E (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	2.39E+01	9.76E+04	8.27E+02	1.10E-03	4.08E+03	4.49E+00	1.00E+00	5.50E-03	1.51E+05	4.11E+02	1.75E-01	5.06E+02	2.98E+02
UM-250S-3250E (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	2.39E+01	2.27E+04	1.92E+02	1.10E-03	9.48E+02	1.04E+00	1.00E+00	5.50E-03	3.51E+04	4.11E+02	1.75E-01	5.06E+02	6.93E+01
BRSD-24 (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	2.39E+01	4.88E+04	4.13E+02	1.10E-03	2.04E+03	2.25E+00	1.00E+00	5.50E-03	7.56E+04	4.11E+02	1.75E-01	5.06E+02	1.49E+02
UM-250S-2750E (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	2.39E+01	3.61E+04	3.06E+02	1.10E-03	1.51E+03	1.66E+00	1.00E+00	5.50E-03	5.59E+04	4.11E+02	1.75E-01	5.06E+02	1.10E+02
UM-250S-2500E (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	2.39E+01	1.38E+04	1.17E+02	1.10E-03	5.76E+02	6.34E-01	1.00E+00	5.50E-03	2.13E+04	4.11E+02	1.75E-01	5.06E+02	4.21E+01
UM-0N-2500E (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	2.39E+01	7.99E+04	6.77E+02	1.10E-03	3.34E+03	3.68E+00	1.00E+00	5.50E-03	1.24E+05	4.11E+02	1.75E-01	5.06E+02	2.44E+02
UM-0N-250E (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	2.39E+01	3.59E+04	3.04E+02	1.10E-03	1.50E+03	1.65E+00	1.00E+00	5.50E-03	5.56E+04	4.11E+02	1.75E-01	5.06E+02	1.10E+02
BRSD-2 (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	2.39E+01	4.19E+04	3.55E+02	1.10E-03	1.75E+03	1.93E+00	1.00E+00	5.50E-03	6.48E+04	4.11E+02	1.75E-01	5.06E+02	1.28E+02
UM-500N-2500E (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	2.39E+01	6.46E+03	5.47E+01	1.10E-03	2.70E+02	2.97E-01	1.00E+00	5.50E-03	1.00E+04	4.11E+02	1.75E-01	5.06E+02	1.97E+01

TABLE C-12GA: ZINC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 12 - MARSH, TERRESTRIAL RECEPTORS (Continued)
Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)
calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 118.73

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Masked Shrew (Omnivorous Mammals, Wetland)																							
UM-250N-2500E (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	2.39E+01	7.15E+04	6.06E+02	1.10E-03	2.99E+03	3.29E+00	1.00E+00	5.50E-03	1.11E+05	4.11E+02	1.75E-01	5.06E+02	2.19E+02
UM-250N-2250E (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	2.39E+01	4.93E+04	4.17E+02	1.10E-03	2.06E+03	2.27E+00	1.00E+00	5.50E-03	7.63E+04	4.11E+02	1.75E-01	5.06E+02	1.51E+02
Western Upper Marsh (0-2")																						**Maximum HQ (Eastern Upper Marsh, 0-2")**	**2.98E+02**
UM-500S-2500E (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.78E+01	3.95E+03	3.34E+01	1.10E-03	2.22E+02	2.44E-01	1.00E+00	5.50E-03	6.12E+03	4.11E+02	1.75E-01	5.06E+02	1.21E+01
UM-0N-2000E (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.78E+01	4.91E+04	4.16E+02	1.10E-03	2.76E+03	3.04E+00	1.00E+00	5.50E-03	7.61E+04	4.11E+02	1.75E-01	5.06E+02	1.50E+02
UM-500S-2000E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-250N-1750E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	1.26E+02	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-1500E (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.78E+01	5.09E+03	4.31E+01	1.10E-03	2.86E+02	3.15E-01	1.00E+00	5.50E-03	7.89E+03	4.11E+02	1.75E-01	5.06E+02	1.56E+01
UM-250S-1500E (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.78E+01	4.91E+04	4.16E+02	1.10E-03	2.76E+03	3.04E+00	1.00E+00	5.50E-03	7.61E+04	4.11E+02	1.75E-01	5.06E+02	1.50E+02
UM-250S-1250E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	9.88E+01	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-6 (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-1000E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-750E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-500E (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.78E+01	3.88E+03	3.28E+01	1.10E-03	2.18E+02	2.40E-01	1.00E+00	5.50E-03	6.01E+03	4.11E+02	1.75E-01	5.06E+02	1.19E+01
UM-250S-500E (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.78E+01	2.63E+03	2.23E+01	1.10E-03	1.48E+02	1.63E-01	1.00E+00	5.50E-03	4.08E+03	4.11E+02	1.75E-01	5.06E+02	8.06E+00
UM-250S-250E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	1.31E+02	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-7 (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.78E+01	1.18E+04	9.99E+01	1.10E-03	6.63E+02	7.30E-01	1.00E+00	5.50E-03	1.83E+04	4.11E+02	1.75E-01	5.06E+02	3.61E+01
BRSD-8 (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.78E+01	9.27E+03	7.85E+01	1.10E-03	5.21E+02	5.74E-01	1.00E+00	5.50E-03	1.44E+04	4.11E+02	1.75E-01	5.06E+02	2.84E+01
UM-500S-500E (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.78E+01	3.34E+03	2.83E+01	1.10E-03	1.88E+02	2.07E-01	1.00E+00	5.50E-03	5.19E+03	4.11E+02	1.75E-01	5.06E+02	1.02E+01
BRSD-9 (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.78E+01	1.16E+04	9.82E+01	1.10E-03	6.52E+02	7.18E-01	1.00E+00	5.50E-03	1.80E+04	4.11E+02	1.75E-01	5.06E+02	3.55E+01
BRSD-10 (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.78E+01	5.10E+04	4.32E+02	1.10E-03	2.87E+03	3.16E+00	1.00E+00	5.50E-03	7.92E+04	4.11E+02	1.75E-01	5.06E+02	1.56E+02
BRSD-11 (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.78E+01	8.11E+03	6.87E+01	1.10E-03	4.56E+02	5.02E-01	1.00E+00	5.50E-03	1.26E+04	4.11E+02	1.75E-01	5.06E+02	2.48E+01
Eastern Upper Marsh (2-6")																						**Maximum HQ (Western Upper Marsh, 0-2")**	**1.56E+02**
UM-1000S-3500E (2-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	2.39E+01	9.47E+03	8.02E+01	1.10E-03	3.96E+02	4.36E-01	1.00E+00	5.50E-03	1.47E+04	4.11E+02	1.75E-01	5.06E+02	2.90E+01
BRSD-15 (2-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	2.39E+01	5.81E+03	4.92E+01	1.10E-03	2.43E+02	2.68E-01	1.00E+00	5.50E-03	9.00E+03	4.11E+02	1.75E-01	5.06E+02	1.78E+01
BRSD-4 (2-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	2.39E+01	5.12E+03	4.34E+01	1.10E-03	2.14E+02	2.36E-01	1.00E+00	5.50E-03	7.93E+03	4.11E+02	1.75E-01	5.06E+02	1.57E+01
UM-750S-3500E (2-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	2.39E+01	7.20E+04	6.10E+02	1.10E-03	3.01E+03	3.31E+00	1.00E+00	5.50E-03	1.11E+05	4.11E+02	1.75E-01	5.06E+02	2.20E+02
BRSD-16 (2-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	2.39E+01	9.30E+04	7.88E+02	1.10E-03	3.89E+03	4.28E+00	1.00E+00	5.50E-03	1.44E+05	4.11E+02	1.75E-01	5.06E+02	2.85E+02
UM-750S-3000E (2-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	2.39E+01	4.23E+04	3.59E+02	1.10E-03	1.77E+03	1.95E+00	1.00E+00	5.50E-03	6.56E+04	4.11E+02	1.75E-01	5.06E+02	1.29E+02
BRSD-3 (2-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	2.39E+01	2.73E+04	2.31E+02	1.10E-03	1.14E+03	1.26E+00	1.00E+00	5.50E-03	4.22E+04	4.11E+02	1.75E-01	5.06E+02	8.34E+01
UM-500S-3250E (2-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	2.39E+01	1.60E+04	1.35E+02	1.10E-03	6.68E+02	7.36E-01	1.00E+00	5.50E-03	2.47E+04	4.11E+02	1.75E-01	5.06E+02	4.89E+01
UM-500S-3000E (2-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	2.39E+01	6.34E+03	5.37E+01	1.10E-03	2.65E+02	2.92E-01	1.00E+00	5.50E-03	9.81E+03	4.11E+02	1.75E-01	5.06E+02	1.94E+01
UM-500S-2750E (2-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	2.39E+01	3.61E+04	3.06E+02	1.10E-03	1.51E+03	1.66E+00	1.00E+00	5.50E-03	5.59E+04	4.11E+02	1.75E-01	5.06E+02	1.10E+02
BRSD-25 (2-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	2.39E+01	2.68E+04	2.27E+02	1.10E-03	1.12E+03	1.23E+00	1.00E+00	5.50E-03	4.15E+04	4.11E+02	1.75E-01	5.06E+02	8.19E+01
UM-250S-3000E (2-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	2.39E+01	8.49E+04	7.19E+02	1.10E-03	3.55E+03	3.91E+00	1.00E+00	5.50E-03	1.31E+05	4.11E+02	1.75E-01	5.06E+02	2.60E+02
UM-250S-3250E (2-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	2.39E+01	1.82E+04	1.54E+02	1.10E-03	7.60E+02	8.37E-01	1.00E+00	5.50E-03	2.81E+04	4.11E+02	1.75E-01	5.06E+02	5.56E+01
BRSD-24 (2-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	2.39E+01	8.25E+04	6.99E+02	1.10E-03	3.45E+03	3.80E+00	1.00E+00	5.50E-03	1.28E+05	4.11E+02	1.75E-01	5.06E+02	2.52E+02
UM-250S-2750E (2-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	2.39E+01	4.81E+04	4.07E+02	1.10E-03	2.01E+03	2.21E+00	1.00E+00	5.50E-03	7.44E+04	4.11E+02	1.75E-01	5.06E+02	1.47E+02
UM-0N-2500E (2-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	2.39E+01	3.49E+04	2.96E+02	1.10E-03	1.46E+03	1.61E+00	1.00E+00	5.50E-03	5.41E+04	4.11E+02	1.75E-01	5.06E+02	1.07E+02
BRSD-2 (2-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	2.39E+01	4.76E+04	4.03E+02	1.10E-03	1.99E+03	2.19E+00	1.00E+00	5.50E-03	7.37E+04	4.11E+02	1.75E-01	5.06E+02	1.46E+02
UM-500N-2500E (2-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	2.39E+01	6.51E+03	5.51E+01	1.10E-03	2.72E+02	2.99E-01	1.00E+00	5.50E-03	1.01E+04	4.11E+02	1.75E-01	5.06E+02	1.99E+01
UM-250N-2500E (2-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	2.39E+01	5.93E+04	5.02E+02	1.10E-03	2.48E+03	2.73E+00	1.00E+00	5.50E-03	9.19E+04	4.11E+02	1.75E-01	5.06E+02	1.81E+02
UM-250N-2250E (2-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	2.39E+01	1.53E+04	1.30E+02	1.10E-03	6.40E+02	7.05E-01	1.00E+00	5.50E-03	2.37E+04	4.11E+02	1.75E-01	5.06E+02	4.68E+01
Western Upper Marsh (2-6")																						**Maximum HQ (Eastern Upper Marsh, 2-6")**	**2.85E+02**
UM-500S-2500E (2-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.78E+01	3.91E+03	3.31E+01	1.10E-03	2.20E+02	2.42E-01	1.00E+00	5.50E-03	6.07E+03	4.11E+02	1.75E-01	5.06E+02	1.20E+01
UM-0N-2000E (2-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.78E+01	4.91E+04	4.16E+02	1.10E-03	2.76E+03	3.04E+00	1.00E+00	5.50E-03	7.61E+04	4.11E+02	1.75E-01	5.06E+02	1.50E+02
UM-500S-2000E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	1.11E+02	BB	BB	BB	BB	BB	BB	BB	BB
UM-250N-1750E (2-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.78E+01	5.09E+03	4.31E+01	1.10E-03	2.86E+02	3.15E-01	1.00E+00	5.50E-03	7.89E+03	4.11E+02	1.75E-01	5.06E+02	1.56E+01
UM-0N-1500E (2-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.78E+01	4.53E+03	3.84E+01	1.10E-03	2.55E+02	2.81E-01	1.00E+00	5.50E-03	7.03E+03	4.11E+02	1.75E-01	5.06E+02	1.39E+01
UM-250S-1500E (2-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.78E+01	3.57E+04	3.03E+02	1.10E-03	2.01E+03	2.21E+00	1.00E+00	5.50E-03	5.55E+04	4.11E+02	1.75E-01	5.06E+02	1.10E+02

TABLE C-12GA: ZINC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 12 - MARSH, TERRESTRIAL RECEPTORS (Continued)
Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)
calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 118.73

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Masked Shrew (Omnivorous Mammals, Wetland)																							
UM-250S-1250E (2-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.78E+01	2.49E+03	2.11E+01	1.10E-03	1.40E+02	1.54E-01	1.00E+00	5.50E-03	3.86E+03	4.11E+02	1.75E-01	5.06E+02	7.63E+00
BRSD-6 (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-1000E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-750E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-500E (2-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.78E+01	4.30E+04	3.65E+02	1.10E-03	2.42E+03	2.66E+00	1.00E+00	5.50E-03	6.68E+04	4.11E+02	1.75E-01	5.06E+02	1.32E+02
UM-250S-500E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	9.88E+01	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-250E (2-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.78E+01	2.97E+04	2.52E+02	1.10E-03	1.67E+03	1.84E+00	1.00E+00	5.50E-03	4.61E+04	4.11E+02	1.75E-01	5.06E+02	9.10E+01
UM-250S-250E (2-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.78E+01	3.06E+03	2.59E+01	1.10E-03	1.72E+02	1.89E-01	1.00E+00	5.50E-03	4.75E+03	4.11E+02	1.75E-01	5.06E+02	9.37E+00
BRSD-7 (2-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.78E+01	2.63E+03	2.23E+01	1.10E-03	1.48E+02	1.63E-01	1.00E+00	5.50E-03	4.08E+03	4.11E+02	1.75E-01	5.06E+02	8.06E+00
BRSD-8 (2-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.78E+01	1.03E+04	8.72E+01	1.10E-03	5.79E+02	6.38E-01	1.00E+00	5.50E-03	1.60E+04	4.11E+02	1.75E-01	5.06E+02	3.15E+01
UM-500S-500E (2-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.78E+01	3.15E+03	2.67E+01	1.10E-03	1.77E+02	1.95E-01	1.00E+00	5.50E-03	4.88E+03	4.11E+02	1.75E-01	5.06E+02	9.64E+00
BRSD-9 (2-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.78E+01	5.34E+03	4.52E+01	1.10E-03	3.00E+02	3.30E-01	1.00E+00	5.50E-03	8.28E+03	4.11E+02	1.75E-01	5.06E+02	1.63E+01
BRSD-10 (2-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.78E+01	4.16E+04	3.52E+02	1.10E-03	2.34E+03	2.58E+00	1.00E+00	5.50E-03	6.46E+04	4.11E+02	1.75E-01	5.06E+02	1.27E+02
BRSD-11 (2-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.78E+01	5.28E+03	4.47E+01	1.10E-03	2.97E+02	3.27E-01	1.00E+00	5.50E-03	8.19E+03	4.11E+02	1.75E-01	5.06E+02	1.62E+01
Eastern Upper Marsh (6-12")																						**Maximum HQ (Western Upper Marsh, 2-6")**	**1.50E+02**
UM-1000S-3500E (6-12")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	2.39E+01	4.35E+03	3.69E+01	1.10E-03	1.82E+02	2.00E-01	1.00E+00	5.50E-03	6.74E+03	4.11E+02	1.75E-01	5.06E+02	1.33E+01
BRSD-15 (6-12")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	2.39E+01	6.75E+03	5.71E+01	1.10E-03	2.82E+02	3.11E-01	1.00E+00	5.50E-03	1.04E+04	4.11E+02	1.75E-01	5.06E+02	2.06E+01
BRSD-4 (6-12")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	2.39E+01	7.61E+03	6.44E+01	1.10E-03	3.18E+02	3.50E-01	1.00E+00	5.50E-03	1.18E+04	4.11E+02	1.75E-01	5.06E+02	2.33E+01
UM-750S-3500E (6-12")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	2.39E+01	6.75E+04	5.71E+02	1.10E-03	2.82E+03	3.11E+00	1.00E+00	5.50E-03	1.04E+05	4.11E+02	1.75E-01	5.06E+02	2.06E+02
BRSD-16 (6-12")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	2.39E+01	5.53E+04	4.68E+02	1.10E-03	2.31E+03	2.54E+00	1.00E+00	5.50E-03	8.56E+04	4.11E+02	1.75E-01	5.06E+02	1.69E+02
UM-750S-3000E (6-12")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	2.39E+01	4.09E+04	3.46E+02	1.10E-03	1.71E+03	1.88E+00	1.00E+00	5.50E-03	6.33E+04	4.11E+02	1.75E-01	5.06E+02	1.25E+02
BRSD-3 (6-12")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	2.39E+01	1.29E+04	1.09E+02	1.10E-03	5.38E+02	5.92E-01	1.00E+00	5.50E-03	1.99E+04	4.11E+02	1.75E-01	5.06E+02	3.94E+01
UM-500S-3250E (6-12")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	2.39E+01	1.37E+04	1.16E+02	1.10E-03	5.73E+02	6.31E-01	1.00E+00	5.50E-03	2.12E+04	4.11E+02	1.75E-01	5.06E+02	4.19E+01
UM-500S-2750E (6-12")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	2.39E+01	3.21E+04	2.71E+02	1.10E-03	1.34E+03	1.48E+00	1.00E+00	5.50E-03	4.96E+04	4.11E+02	1.75E-01	5.06E+02	9.80E+01
BRSD-25 (6-12")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	2.39E+01	2.46E+04	2.09E+02	1.10E-03	1.03E+03	1.13E+00	1.00E+00	5.50E-03	3.81E+04	4.11E+02	1.75E-01	5.06E+02	7.53E+01
UM-250S-3000E (6-12")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	2.39E+01	7.06E+04	5.98E+02	1.10E-03	2.95E+03	3.25E+00	1.00E+00	5.50E-03	1.09E+05	4.11E+02	1.75E-01	5.06E+02	2.16E+02
UM-250S-3250E (6-12")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	2.39E+01	1.56E+04	1.32E+02	1.10E-03	6.52E+02	7.18E-01	1.00E+00	5.50E-03	2.41E+04	4.11E+02	1.75E-01	5.06E+02	4.77E+01
BRSD-24 (6-12")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	2.39E+01	4.16E+04	3.53E+02	1.10E-03	1.74E+03	1.92E+00	1.00E+00	5.50E-03	6.44E+04	4.11E+02	1.75E-01	5.06E+02	1.27E+02
UM-250S-2750E (6-12")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	2.39E+01	4.62E+04	3.91E+02	1.10E-03	1.93E+03	2.13E+00	1.00E+00	5.50E-03	7.15E+04	4.11E+02	1.75E-01	5.06E+02	1.41E+02
UM-250S-2500E (6-12")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	2.39E+01	6.05E+03	5.13E+01	1.10E-03	2.53E+02	2.79E-01	1.00E+00	5.50E-03	9.37E+03	4.11E+02	1.75E-01	5.06E+02	1.85E+01
BRSD-2 (6-12")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	2.39E+01	1.01E+05	8.55E+02	1.10E-03	4.22E+03	4.65E+00	1.00E+00	5.50E-03	1.56E+05	4.11E+02	1.75E-01	5.06E+02	3.09E+02
UM-500N-2500E (6-12")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	2.39E+01	4.21E+03	3.57E+01	1.10E-03	1.76E+02	1.94E-01	1.00E+00	5.50E-03	6.52E+03	4.11E+02	1.75E-01	5.06E+02	1.29E+01
UM-250N-2500E (6-12")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	2.39E+01	4.47E+04	3.79E+02	1.10E-03	1.87E+03	2.06E+00	1.00E+00	5.50E-03	6.93E+04	4.11E+02	1.75E-01	5.06E+02	1.37E+02
UM-250N-2250E (6-12")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	2.39E+01	9.33E+03	7.90E+01	1.10E-03	3.90E+02	4.29E-01	1.00E+00	5.50E-03	1.44E+04	4.11E+02	1.75E-01	5.06E+02	2.85E+01
Western Upper Marsh (6-12")																						**Maximum HQ (Eastern Upper Marsh, 6-12")**	**3.09E+02**
UM-500S-2500E (6-12")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.78E+01	3.34E+03	2.83E+01	1.10E-03	1.88E+02	2.07E-01	1.00E+00	5.50E-03	5.19E+03	4.11E+02	1.75E-01	5.06E+02	1.02E+01
UM-0N-2000E (6-12")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.78E+01	5.53E+04	4.68E+02	1.10E-03	3.11E+03	3.42E+00	1.00E+00	5.50E-03	8.58E+04	4.11E+02	1.75E-01	5.06E+02	1.69E+02
UM-500S-2000E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-250N-1750E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	9.95E+01	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-1500E (6-12")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.78E+01	1.02E+04	8.62E+01	1.10E-03	5.72E+02	6.30E-01	1.00E+00	5.50E-03	1.58E+04	4.11E+02	1.75E-01	5.06E+02	3.12E+01
UM-250S-1500E (6-12")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.78E+01	1.57E+04	1.33E+02	1.10E-03	8.82E+02	9.71E-01	1.00E+00	5.50E-03	2.43E+04	4.11E+02	1.75E-01	5.06E+02	4.81E+01
UM-250S-1250E (6-12")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.78E+01	2.60E+03	2.20E+01	1.10E-03	1.46E+02	1.61E-01	1.00E+00	5.50E-03	4.03E+03	4.11E+02	1.75E-01	5.06E+02	7.95E+00
BRSD-6 (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-1000E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-750E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-500E (6-12")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.78E+01	3.09E+04	2.62E+02	1.10E-03	1.74E+03	1.92E+00	1.00E+00	5.50E-03	4.80E+04	4.11E+02	1.75E-01	5.06E+02	9.48E+01
UM-250S-500E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	1.12E+02	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-250E (6-12")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.78E+01	1.87E+04	1.58E+02	1.10E-03	1.05E+03	1.16E+00	1.00E+00	5.50E-03	2.90E+04	4.11E+02	1.75E-01	5.06E+02	5.72E+01
UM-250S-250E (6-12")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.78E+01	4.36E+03	3.69E+01	1.10E-03	2.45E+02	2.70E-01	1.00E+00	5.50E-03	6.76E+03	4.11E+02	1.75E-01	5.06E+02	1.33E+01

TABLE C-12GA: ZINC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 12 - MARSH, TERRESTRIAL RECEPTORS (Continued)
Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)
calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **118.73**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Masked Shrew (Omnivorous Mammals, Wetland)																							
BRSD-7 (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	1.16E+02	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-8 (6-12")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.78E+01	1.05E+04	8.89E+01	1.10E-03	5.90E+02	6.50E-01	1.00E+00	5.50E-03	1.63E+04	4.11E+02	1.75E-01	5.06E+02	3.21E+01
UM-500S-500E (6-12")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.78E+01	3.11E+03	2.64E+01	1.10E-03	1.75E+02	1.93E-01	1.00E+00	5.50E-03	4.83E+03	4.11E+02	1.75E-01	5.06E+02	9.53E+00
BRSD-9 (6-12")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.78E+01	6.26E+03	5.30E+01	1.10E-03	3.52E+02	3.88E-01	1.00E+00	5.50E-03	9.71E+03	4.11E+02	1.75E-01	5.06E+02	1.92E+01
BRSD-10 (6-12")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.78E+01	6.44E+04	5.45E+02	1.10E-03	3.62E+03	3.99E+00	1.00E+00	5.50E-03	9.99E+04	4.11E+02	1.75E-01	5.06E+02	1.97E+02
BRSD-11 (6-12")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.78E+01	5.35E+03	4.53E+01	1.10E-03	3.01E+02	3.31E-01	1.00E+00	5.50E-03	8.30E+03	4.11E+02	1.75E-01	5.06E+02	1.64E+01
Middle Marsh (0-2")																						**Maximum HQ (Western Upper Marsh, 6-12")**	**1.97E+02**
MMSD-201 (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.78E+01	2.61E+04	2.21E+02	1.10E-03	1.47E+03	1.62E+00	1.00E+00	5.50E-03	4.06E+04	4.11E+02	1.75E-01	5.06E+02	8.01E+01
MMSD-202 (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.78E+01	7.29E+03	6.18E+01	1.10E-03	4.10E+02	4.51E-01	1.00E+00	5.50E-03	1.13E+04	4.11E+02	1.75E-01	5.06E+02	2.23E+01
Middle Marsh (2-6")																						**Maximum HQ (Middle Marsh, 0-2")**	**8.01E+01**
MMSD-201 (2-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.78E+01	3.66E+04	3.10E+02	1.10E-03	2.06E+03	2.27E+00	1.00E+00	5.50E-03	5.68E+04	4.11E+02	1.75E-01	5.06E+02	1.12E+02
MMSD-202 (2-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.78E+01	9.59E+03	8.12E+01	1.10E-03	5.39E+02	5.93E-01	1.00E+00	5.50E-03	1.49E+04	4.11E+02	1.75E-01	5.06E+02	2.94E+01
Middle Marsh (6-12")																						**Maximum HQ (Middle Marsh, 2-6")**	**1.12E+02**
MMSD-201 (6-12")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.78E+01	4.61E+04	3.90E+02	1.10E-03	2.59E+03	2.85E+00	1.00E+00	5.50E-03	7.15E+04	4.11E+02	1.75E-01	5.06E+02	1.41E+02
MMSD-202 (6-12")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.78E+01	8.86E+03	7.50E+01	1.10E-03	4.98E+02	5.48E-01	1.00E+00	5.50E-03	1.37E+04	4.11E+02	1.75E-01	5.06E+02	2.71E+01
Lower Marsh (0-2")																						**Maximum HQ (Middle Marsh, 6-12")**	**1.41E+02**
LMSD-201 (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.78E+01	1.87E+03	1.58E+01	1.10E-03	1.05E+02	1.16E-01	1.00E+00	5.50E-03	2.90E+03	4.11E+02	1.75E-01	5.06E+02	5.72E+00
LMSD-202 (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.78E+01	6.28E+03	5.32E+01	1.10E-03	3.53E+02	3.89E-01	1.00E+00	5.50E-03	9.74E+03	4.11E+02	1.75E-01	5.06E+02	1.92E+01
LMSD-203 (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.78E+01	9.27E+03	7.85E+01	1.10E-03	5.21E+02	5.74E-01	1.00E+00	5.50E-03	1.44E+04	4.11E+02	1.75E-01	5.06E+02	2.84E+01
LMSD-204 (0-2")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.78E+01	6.49E+03	5.50E+01	1.10E-03	3.65E+02	4.02E-01	1.00E+00	5.50E-03	1.01E+04	4.11E+02	1.75E-01	5.06E+02	1.99E+01
Lower Marsh (2-6")																						**Maximum HQ (Lower Marsh, 0-2")**	**2.84E+01**
LMSD-201 (2-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.78E+01	1.74E+03	1.48E+01	1.10E-03	9.80E+01	1.08E-01	1.00E+00	5.50E-03	2.70E+03	4.11E+02	1.75E-01	5.06E+02	5.34E+00
LMSD-202 (2-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.78E+01	6.94E+03	5.87E+01	1.10E-03	3.90E+02	4.29E-01	1.00E+00	5.50E-03	1.08E+04	4.11E+02	1.75E-01	5.06E+02	2.12E+01
LMSD-203 (2-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.78E+01	9.09E+03	7.70E+01	1.10E-03	5.11E+02	5.63E-01	1.00E+00	5.50E-03	1.41E+04	4.11E+02	1.75E-01	5.06E+02	2.78E+01
LMSD-204 (2-6")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.78E+01	6.38E+03	5.41E+01	1.10E-03	3.59E+02	3.95E-01	1.00E+00	5.50E-03	9.90E+03	4.11E+02	1.75E-01	5.06E+02	1.96E+01
Lower Marsh (6-12")																						**Maximum HQ (Lower Marsh, 2-6")**	**2.78E+01**
LMSD-201 (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
LMSD-202 (6-12")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.78E+01	5.03E+03	4.26E+01	1.10E-03	2.83E+02	3.12E-01	1.00E+00	5.50E-03	7.81E+03	4.11E+02	1.75E-01	5.06E+02	1.54E+01
LMSD-203 (6-12")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.78E+01	1.32E+04	1.11E+02	1.10E-03	7.40E+02	8.15E-01	1.00E+00	5.50E-03	2.04E+04	4.11E+02	1.75E-01	5.06E+02	4.03E+01
LMSD-204 (6-12")	8.47E-03	NA	NA	NA	NA	NA	NA	NA	NA	8.47E-03	1.78E+01	5.98E+03	5.06E+01	1.10E-03	3.36E+02	3.70E-01	1.00E+00	5.50E-03	9.27E+03	4.11E+02	1.75E-01	5.06E+02	1.83E+01
																						Maximum HQ (Lower Marsh, 6-12")	**4.03E+01**

Notes: Results are evaluated in order of upstream to downstream.

1 See Tables 3-1 through 3-13 for ingestion rates, foraging ranges used to calculate the SUF, and body weights.

2 BAFs were calculated by dividing site-collected tissue by collocated soil concentrations. The maximum plant and invertebrate BAF calculated for the eastern transect (UMT1) were used for the Eastern Upper Marsh calculations. The maximum plant and invertebrate BAF calculated for the western transect (UMT2) were used for the Western Upper Marsh calculations. The maximum mammal BAF calculated for the eastern transect (UMT1) was used for the Eastern and Western Upper Marsh calculations because no mammals were collected in the Western Upper Marsh.

3 The mammal, plant, and invertebrate concentrations were calculated by multiplying the soil concentration by the BAF to generate a tissue concentration (see note 2).

4 Mammal, plant, and invertebrate daily doses were calculated by multiplying the ingestion rate (see note 1) by the tissue concentration (see note 3).

5 Soil concentration from specified depths below ground surface at point ID from laboratory analysis. Doses were not calculated for detected and non-detected soil concentrations measured below the minimum reference site concentration (0-12"), as indicated by BB. For results that were measured at less than the detection limit, doses were calculated using half of the detection limit.

6 Soil daily dose was calculated by multiplying the soil ingestion rate (see note 1) by soil concentration (see note 5).

7 Total daily dose is calculated using the following equation: total daily dose = ([mammal daily dose (if applicable) + plant daily dose (if applicable) + invertebrate daily dose (if applicable) + soil daily dose]*SUF)/receptor species body weight.

8 The derivation of TRVs is described in Navy (1998). The high TRV was used for dose calculations.

9 Allometrically adjusted TRVs for birds were calculated using the following equation: receptor species TRV = (test species TRV) x (test species body weight / receptor species body weight) $^{(1-1.2)}$.

10 Allometrically adjusted TRVs for mammals were calculated using the following equation: receptor species TRV = (test species TRV) x (test species body weight / receptor species body weight) $^{(1-0.94)}$.

11 HQs were calculated using the following equation: HQ = total daily dose/allometrically adjusted TRV.

12 Green cells indicate an HQ greater than 1.0

BAF	Bioaccumulation Factor	ID	Identification	NA	Not applicable
BB	Below minimum background reference site concentration	kg	Kilogram	Navy	Department of the Navy
EE/CA	Engineering Evaluation/Cost Analysis	kg/day	Kilogram per day	SUF	Site use factor
EU	Exposure Unit	mg/day	Milligram per day	TRV	Toxicity reference value
HQ	Hazard Quotient	mg/kg	Milligram per kilogram		

Sources: Department of the Navy. 1998. "Development of Toxicity Reference Values for Conducting Ecological Risk Assessments at Naval Facilities in California, Interim Final." Prepared by Naval Facilities Engineering Command, Engineering Field Activity West (EFA

TABLE C-12GB: ZINC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 12 - MARSH, WETLAND RECEPTORS

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **118.73**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Canada Goose (Herbivorous Birds)																							
Reference Sites																							
BRSD-5 (0-2")	8.57E-01	NA	NA	NA	NA	8.57E-01	1.99E+00	2.13E+02	1.82E+02	NA	NA	NA	NA	7.03E-02	1.07E+02	7.52E+00	1.21E-01	3.69E+01	6.22E-01	1.72E+02	9.55E-01	3.57E+02	1.74E-03
BRSD-5 (2-6")	8.57E-01	NA	NA	NA	NA	8.57E-01	1.99E+00	1.99E+02	1.70E+02	NA	NA	NA	NA	7.03E-02	1.00E+02	7.03E+00	1.21E-01	3.69E+01	5.81E-01	1.72E+02	9.55E-01	3.57E+02	1.63E-03
BRSD-5 (6-12")	8.57E-01	NA	NA	NA	NA	8.57E-01	1.99E+00	1.95E+02	1.67E+02	NA	NA	NA	NA	7.03E-02	9.78E+01	6.87E+00	1.21E-01	3.69E+01	5.69E-01	1.72E+02	9.55E-01	3.57E+02	1.59E-03
PGBG-1 (0-2")	8.57E-01	NA	NA	NA	NA	8.57E-01	1.99E+00	3.14E+02	2.69E+02	NA	NA	NA	NA	7.03E-02	1.58E+02	1.11E+01	1.21E-01	3.69E+01	9.19E-01	1.72E+02	9.55E-01	3.57E+02	2.57E-03
PGBG-1 (2-6")	8.57E-01	NA	NA	NA	NA	8.57E-01	1.99E+00	3.46E+02	2.97E+02	NA	NA	NA	NA	7.03E-02	1.74E+02	1.22E+01	1.21E-01	3.69E+01	1.01E+00	1.72E+02	9.55E-01	3.57E+02	2.83E-03
PGBG-1 (6-12")	8.57E-01	NA	NA	NA	NA	8.57E-01	1.99E+00	2.65E+02	2.27E+02	NA	NA	NA	NA	7.03E-02	1.33E+02	9.35E+00	1.21E-01	3.69E+01	7.73E-01	1.72E+02	9.55E-01	3.57E+02	2.17E-03
PGBG-2 (0-2")	8.57E-01	NA	NA	NA	NA	8.57E-01	1.99E+00	5.23E+02	4.48E+02	NA	NA	NA	NA	7.03E-02	2.63E+02	1.85E+01	1.21E-01	3.69E+01	1.53E+00	1.72E+02	9.55E-01	3.57E+02	4.28E-03
PGBG-2 (2-6")	8.57E-01	NA	NA	NA	NA	8.57E-01	1.99E+00	5.01E+02	4.30E+02	NA	NA	NA	NA	7.03E-02	2.52E+02	1.77E+01	1.21E-01	3.69E+01	1.47E+00	1.72E+02	9.55E-01	3.57E+02	4.10E-03
PGBG-2 (6-12")	8.57E-01	NA	NA	NA	NA	8.57E-01	1.99E+00	5.47E+02	4.69E+02	NA	NA	NA	NA	7.03E-02	2.75E+02	1.93E+01	1.21E-01	3.69E+01	1.60E+00	1.72E+02	9.55E-01	3.57E+02	4.48E-03
Eastern Upper Marsh (0-2")																						**Minimum HQ (Reference Sites)**	**1.59E-03**
UM-1000S-3500E (0-2")	8.57E-01	NA	NA	NA	NA	8.57E-01	2.32E+00	3.99E+03	3.42E+03	NA	NA	NA	NA	7.03E-02	1.72E+03	1.21E+02	1.21E-01	3.69E+01	1.16E+01	1.72E+02	9.55E-01	3.57E+02	3.25E-02
BRSD-15 (0-2")	8.57E-01	NA	NA	NA	NA	8.57E-01	2.32E+00	3.88E+02	3.32E+02	NA	NA	NA	NA	7.03E-02	1.67E+02	1.17E+01	1.21E-01	3.69E+01	1.13E+00	1.72E+02	9.55E-01	3.57E+02	3.16E-03
BRSD-4 (0-2")	8.57E-01	NA	NA	NA	NA	8.57E-01	2.32E+00	4.20E+02	3.60E+02	NA	NA	NA	NA	7.03E-02	1.81E+02	1.27E+01	1.21E-01	3.69E+01	1.22E+00	1.72E+02	9.55E-01	3.57E+02	3.42E-03
UM-750S-3500E (0-2")	8.57E-01	NA	NA	NA	NA	8.57E-01	2.32E+00	2.90E+03	2.49E+03	NA	NA	NA	NA	7.03E-02	1.25E+03	8.78E+01	1.21E-01	3.69E+01	8.44E+00	1.72E+02	9.55E-01	3.57E+02	2.36E-02
BRSD-16 (0-2")	8.57E-01	NA	NA	NA	NA	8.57E-01	2.32E+00	1.91E+03	1.64E+03	NA	NA	NA	NA	7.03E-02	8.22E+02	5.78E+01	1.21E-01	3.69E+01	5.55E+00	1.72E+02	9.55E-01	3.57E+02	1.55E-02
UM-750S-3000E (0-2")	8.57E-01	NA	NA	NA	NA	8.57E-01	2.32E+00	4.95E+03	4.24E+03	NA	NA	NA	NA	7.03E-02	2.13E+03	1.50E+02	1.21E-01	3.69E+01	1.44E+01	1.72E+02	9.55E-01	3.57E+02	4.02E-02
BRSD-3 (0-2")	8.57E-01	NA	NA	NA	NA	8.57E-01	2.32E+00	2.37E+03	2.03E+03	NA	NA	NA	NA	7.03E-02	1.02E+03	7.17E+01	1.21E-01	3.69E+01	6.88E+00	1.72E+02	9.55E-01	3.57E+02	1.93E-02
UM-500S-3250E (0-2")	8.57E-01	NA	NA	NA	NA	8.57E-01	2.32E+00	2.18E+03	1.87E+03	NA	NA	NA	NA	7.03E-02	9.40E+02	6.61E+01	1.21E-01	3.69E+01	6.34E+00	1.72E+02	9.55E-01	3.57E+02	1.78E-02
UM-500S-3000E (0-2")	8.57E-01	NA	NA	NA	NA	8.57E-01	2.32E+00	3.27E+03	2.81E+03	NA	NA	NA	NA	7.03E-02	1.41E+03	9.91E+01	1.21E-01	3.69E+01	9.52E+00	1.72E+02	9.55E-01	3.57E+02	2.66E-02
UM-500S-2750E (0-2")	8.57E-01	NA	NA	NA	NA	8.57E-01	2.32E+00	5.08E+03	4.36E+03	NA	NA	NA	NA	7.03E-02	2.19E+03	1.54E+02	1.21E-01	3.69E+01	1.48E+01	1.72E+02	9.55E-01	3.57E+02	4.14E-02
BRSD-25 (0-2")	8.57E-01	NA	NA	NA	NA	8.57E-01	2.32E+00	1.94E+03	1.66E+03	NA	NA	NA	NA	7.03E-02	8.36E+02	5.88E+01	1.21E-01	3.69E+01	5.64E+00	1.72E+02	9.55E-01	3.57E+02	1.58E-02
UM-250S-3000E (0-2")	8.57E-01	NA	NA	NA	NA	8.57E-01	2.32E+00	9.47E+03	8.12E+03	NA	NA	NA	NA	7.03E-02	4.08E+03	2.87E+02	1.21E-01	3.69E+01	2.75E+01	1.72E+02	9.55E-01	3.57E+02	7.71E-02
UM-250S-3250E (0-2")	8.57E-01	NA	NA	NA	NA	8.57E-01	2.32E+00	2.20E+03	1.89E+03	NA	NA	NA	NA	7.03E-02	9.48E+02	6.66E+01	1.21E-01	3.69E+01	6.40E+00	1.72E+02	9.55E-01	3.57E+02	1.79E-02
BRSD-24 (0-2")	8.57E-01	NA	NA	NA	NA	8.57E-01	2.32E+00	4.74E+03	4.06E+03	NA	NA	NA	NA	7.03E-02	2.04E+03	1.43E+02	1.21E-01	3.69E+01	1.38E+01	1.72E+02	9.55E-01	3.57E+02	3.85E-02
UM-250S-2750E (0-2")	8.57E-01	NA	NA	NA	NA	8.57E-01	2.32E+00	3.51E+03	3.00E+03	NA	NA	NA	NA	7.03E-02	1.51E+03	1.06E+02	1.21E-01	3.69E+01	1.02E+01	1.72E+02	9.55E-01	3.57E+02	2.85E-02
UM-250S-2500E (0-2")	8.57E-01	NA	NA	NA	NA	8.57E-01	2.32E+00	1.34E+03	1.15E+03	NA	NA	NA	NA	7.03E-02	5.76E+02	4.05E+01	1.21E-01	3.69E+01	3.89E+00	1.72E+02	9.55E-01	3.57E+02	1.09E-02
UM-0N-2500E (0-2")	8.57E-01	NA	NA	NA	NA	8.57E-01	2.32E+00	7.76E+03	6.65E+03	NA	NA	NA	NA	7.03E-02	3.34E+03	2.35E+02	1.21E-01	3.69E+01	2.25E+01	1.72E+02	9.55E-01	3.57E+02	6.31E-02
UM-0N-250E (0-2")	8.57E-01	NA	NA	NA	NA	8.57E-01	2.32E+00	3.48E+03	2.98E+03	NA	NA	NA	NA	7.03E-02	1.50E+03	1.05E+02	1.21E-01	3.69E+01	1.01E+01	1.72E+02	9.55E-01	3.57E+02	2.83E-02
BRSD-2 (0-2")	8.57E-01	NA	NA	NA	NA	8.57E-01	2.32E+00	4.06E+03	3.48E+03	NA	NA	NA	NA	7.03E-02	1.75E+03	1.23E+02	1.21E-01	3.69E+01	1.18E+01	1.72E+02	9.55E-01	3.57E+02	3.31E-02
UM-500N-2500E (0-2")	8.57E-01	NA	NA	NA	NA	8.57E-01	2.32E+00	6.27E+02	5.37E+02	NA	NA	NA	NA	7.03E-02	2.70E+02	1.90E+01	1.21E-01	3.69E+01	1.82E+00	1.72E+02	9.55E-01	3.57E+02	5.10E-03
UM-250N-2500E (0-2")	8.57E-01	NA	NA	NA	NA	8.57E-01	2.32E+00	6.94E+03	5.95E+03	NA	NA	NA	NA	7.03E-02	2.99E+03	2.10E+02	1.21E-01	3.69E+01	2.02E+01	1.72E+02	9.55E-01	3.57E+02	5.65E-02
UM-250N-2250E (0-2")	8.57E-01	NA	NA	NA	NA	8.57E-01	2.32E+00	4.78E+03	4.10E+03	NA	NA	NA	NA	7.03E-02	2.06E+03	1.45E+02	1.21E-01	3.69E+01	1.39E+01	1.72E+02	9.55E-01	3.57E+02	3.89E-02
Western Upper Marsh (0-2")																						**Maximum HQ (Eastern Upper Marsh, 0-2")**	**7.71E-02**
UM-500S-2500E (0-2")	8.57E-01	NA	NA	NA	NA	8.57E-01	2.15E+00	4.77E+02	4.09E+02	NA	NA	NA	NA	7.03E-02	2.22E+02	1.56E+01	1.21E-01	3.69E+01	1.39E+00	1.72E+02	9.55E-01	3.57E+02	3.89E-03
UM-0N-2000E (0-2")	8.57E-01	NA	NA	NA	NA	8.57E-01	2.15E+00	5.93E+03	5.08E+03	NA	NA	NA	NA	7.03E-02	2.76E+03	1.94E+02	1.21E-01	3.69E+01	1.73E+01	1.72E+02	9.55E-01	3.57E+02	4.84E-02
UM-500S-2000E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-250N-1750E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	1.26E+02	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-1500E (0-2")	8.57E-01	NA	NA	NA	NA	8.57E-01	2.15E+00	6.14E+02	5.27E+02	NA	NA	NA	NA	7.03E-02	2.86E+02	2.01E+01	1.21E-01	3.69E+01	1.79E+00	1.72E+02	9.55E-01	3.57E+02	5.01E-03
UM-250S-1500E (0-2")	8.57E-01	NA	NA	NA	NA	8.57E-01	2.15E+00	5.93E+03	5.08E+03	NA	NA	NA	NA	7.03E-02	2.76E+03	1.94E+02	1.21E-01	3.69E+01	1.73E+01	1.72E+02	9.55E-01	3.57E+02	4.84E-02
UM-250S-1250E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	9.88E+01	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-6 (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-1000E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-750E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-500E (0-2")	8.57E-01	NA	NA	NA	NA	8.57E-01	2.15E+00	4.68E+02	4.01E+02	NA	NA	NA	NA	7.03E-02	2.18E+02	1.53E+01	1.21E-01	3.69E+01	1.36E+00	1.72E+02	9.55E-01	3.57E+02	3.82E-03
UM-250S-500E (0-2")	8.57E-01	NA	NA	NA	NA	8.57E-01	2.15E+00	3.18E+02	2.72E+02	NA	NA	NA	NA	7.03E-02	1.48E+02	1.04E+01	1.21E-01	3.69E+01	9.27E-01	1.72E+02	9.55E-01	3.57E+02	2.59E-03
UM-250S-250E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	1.31E+02	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-7 (0-2")	8.57E-01	NA	NA	NA	NA	8.57E-01	2.15E+00	1.42E+03	1.22E+03	NA	NA	NA	NA	7.03E-02	6.63E+02	4.66E+01	1.21E-01	3.69E+01	4.15E+00	1.72E+02	9.55E-01	3.57E+02	1.16E-02
BRSD-8 (0-2")	8.57E-01	NA	NA	NA	NA	8.57E-01	2.15E+00	1.12E+03	9.59E+02	NA	NA	NA	NA	7.03E-02	5.21E+02	3.66E+01	1.21E-01	3.69E+01	3.26E+00	1.72E+02	9.55E-01	3.57E+02	9.13E-03
UM-500S-500E (0-2")	8.57E-01	NA	NA	NA	NA	8.57E-01	2.15E+00	4.04E+02	3.46E+02	NA	NA	NA	NA	7.03E-02	1.88E+02	1.32E+01	1.21E-01	3.69E+01	1.18E+00	1.72E+02	9.55E-01	3.57E+02	3.30E-03

TABLE C-12GB: ZINC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 12 - MARSH, WETLAND RECEPTORS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **118.73**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Canada Goose (Herbivorous Birds)																							
BRSD-9 (0-2")	8.57E-01	NA	NA	NA	NA	8.57E-01	2.15E+00	1.40E+03	1.20E+03	NA	NA	NA	NA	7.03E-02	6.52E+02	4.58E+01	1.21E-01	3.69E+01	4.08E+00	1.72E+02	9.55E-01	3.57E+02	1.14E-02
BRSD-10 (0-2")	8.57E-01	NA	NA	NA	NA	8.57E-01	2.15E+00	6.17E+03	5.28E+03	NA	NA	NA	NA	7.03E-02	2.87E+03	2.02E+02	1.21E-01	3.69E+01	1.80E+01	1.72E+02	9.55E-01	3.57E+02	5.03E-02
BRSD-11 (0-2")	8.57E-01	NA	NA	NA	NA	8.57E-01	2.15E+00	9.80E+02	8.40E+02	NA	NA	NA	NA	7.03E-02	4.56E+02	3.20E+01	1.21E-01	3.69E+01	2.86E+00	1.72E+02	9.55E-01	3.57E+02	7.99E-03
Eastern Upper Marsh (2-6")																						**Maximum HQ (Western Upper Marsh, 0-2")**	**5.03E-02**
UM-1000S-3500E (2-6")	8.57E-01	NA	NA	NA	NA	8.57E-01	2.32E+00	9.19E+02	7.88E+02	NA	NA	NA	NA	7.03E-02	3.96E+02	2.78E+01	1.21E-01	3.69E+01	2.67E+00	1.72E+02	9.55E-01	3.57E+02	7.48E-03
BRSD-15 (2-6")	8.57E-01	NA	NA	NA	NA	8.57E-01	2.32E+00	5.64E+02	4.84E+02	NA	NA	NA	NA	7.03E-02	2.43E+02	1.71E+01	1.21E-01	3.69E+01	1.64E+00	1.72E+02	9.55E-01	3.57E+02	4.59E-03
BRSD-4 (2-6")	8.57E-01	NA	NA	NA	NA	8.57E-01	2.32E+00	4.97E+02	4.26E+02	NA	NA	NA	NA	7.03E-02	2.14E+02	1.50E+01	1.21E-01	3.69E+01	1.44E+00	1.72E+02	9.55E-01	3.57E+02	4.04E-03
UM-750S-3500E (2-6")	8.57E-01	NA	NA	NA	NA	8.57E-01	2.32E+00	6.99E+03	5.99E+03	NA	NA	NA	NA	7.03E-02	3.01E+03	2.12E+02	1.21E-01	3.69E+01	2.03E+01	1.72E+02	9.55E-01	3.57E+02	5.69E-02
BRSD-16 (2-6")	8.57E-01	NA	NA	NA	NA	8.57E-01	2.32E+00	9.03E+03	7.74E+03	NA	NA	NA	NA	7.03E-02	3.89E+03	2.73E+02	1.21E-01	3.69E+01	2.63E+01	1.72E+02	9.55E-01	3.57E+02	7.35E-02
UM-750S-3000E (2-6")	8.57E-01	NA	NA	NA	NA	8.57E-01	2.32E+00	4.11E+03	3.52E+03	NA	NA	NA	NA	7.03E-02	1.77E+03	1.24E+02	1.21E-01	3.69E+01	1.19E+01	1.72E+02	9.55E-01	3.57E+02	3.34E-02
BRSD-3 (2-6")	8.57E-01	NA	NA	NA	NA	8.57E-01	2.32E+00	2.65E+03	2.27E+03	NA	NA	NA	NA	7.03E-02	1.14E+03	8.01E+01	1.21E-01	3.69E+01	7.69E+00	1.72E+02	9.55E-01	3.57E+02	2.15E-02
UM-500S-3250E (2-6")	8.57E-01	NA	NA	NA	NA	8.57E-01	2.32E+00	1.55E+03	1.33E+03	NA	NA	NA	NA	7.03E-02	6.68E+02	4.69E+01	1.21E-01	3.69E+01	4.51E+00	1.72E+02	9.55E-01	3.57E+02	1.26E-02
UM-500S-3000E (2-6")	8.57E-01	NA	NA	NA	NA	8.57E-01	2.32E+00	6.15E+02	5.27E+02	NA	NA	NA	NA	7.03E-02	2.65E+02	1.86E+01	1.21E-01	3.69E+01	1.79E+00	1.72E+02	9.55E-01	3.57E+02	5.01E-03
UM-500S-2750E (2-6")	8.57E-01	NA	NA	NA	NA	8.57E-01	2.32E+00	3.51E+03	3.00E+03	NA	NA	NA	NA	7.03E-02	1.51E+03	1.06E+02	1.21E-01	3.69E+01	1.02E+01	1.72E+02	9.55E-01	3.57E+02	2.85E-02
BRSD-25 (2-6")	8.57E-01	NA	NA	NA	NA	8.57E-01	2.32E+00	2.60E+03	2.23E+03	NA	NA	NA	NA	7.03E-02	1.12E+03	7.87E+01	1.21E-01	3.69E+01	7.56E+00	1.72E+02	9.55E-01	3.57E+02	2.12E-02
UM-250S-3000E (2-6")	8.57E-01	NA	NA	NA	NA	8.57E-01	2.32E+00	8.24E+03	7.06E+03	NA	NA	NA	NA	7.03E-02	3.55E+03	2.49E+02	1.21E-01	3.69E+01	2.40E+01	1.72E+02	9.55E-01	3.57E+02	6.71E-02
UM-250S-3250E (2-6")	8.57E-01	NA	NA	NA	NA	8.57E-01	2.32E+00	1.76E+03	1.51E+03	NA	NA	NA	NA	7.03E-02	7.60E+02	5.34E+01	1.21E-01	3.69E+01	5.13E+00	1.72E+02	9.55E-01	3.57E+02	1.44E-02
BRSD-24 (2-6")	8.57E-01	NA	NA	NA	NA	8.57E-01	2.32E+00	8.01E+03	6.87E+03	NA	NA	NA	NA	7.03E-02	3.45E+03	2.42E+02	1.21E-01	3.69E+01	2.33E+01	1.72E+02	9.55E-01	3.57E+02	6.52E-02
UM-250S-2750E (2-6")	8.57E-01	NA	NA	NA	NA	8.57E-01	2.32E+00	4.67E+03	4.00E+03	NA	NA	NA	NA	7.03E-02	2.01E+03	1.41E+02	1.21E-01	3.69E+01	1.36E+01	1.72E+02	9.55E-01	3.57E+02	3.80E-02
UM-0N-2500E (2-6")	8.57E-01	NA	NA	NA	NA	8.57E-01	2.32E+00	3.39E+03	2.91E+03	NA	NA	NA	NA	7.03E-02	1.46E+03	1.03E+02	1.21E-01	3.69E+01	9.85E+00	1.72E+02	9.55E-01	3.57E+02	2.76E-02
BRSD-2 (2-6")	8.57E-01	NA	NA	NA	NA	8.57E-01	2.32E+00	4.62E+03	3.96E+03	NA	NA	NA	NA	7.03E-02	1.99E+03	1.40E+02	1.21E-01	3.69E+01	1.34E+01	1.72E+02	9.55E-01	3.57E+02	3.76E-02
UM-500N-2500E (2-6")	8.57E-01	NA	NA	NA	NA	8.57E-01	2.32E+00	6.32E+02	5.41E+02	NA	NA	NA	NA	7.03E-02	2.72E+02	1.91E+01	1.21E-01	3.69E+01	1.84E+00	1.72E+02	9.55E-01	3.57E+02	5.14E-03
UM-250N-2500E (2-6")	8.57E-01	NA	NA	NA	NA	8.57E-01	2.32E+00	5.76E+03	4.94E+03	NA	NA	NA	NA	7.03E-02	2.48E+03	1.74E+02	1.21E-01	3.69E+01	1.67E+01	1.72E+02	9.55E-01	3.57E+02	4.69E-02
UM-250N-2250E (2-6")	8.57E-01	NA	NA	NA	NA	8.57E-01	2.32E+00	1.49E+03	1.27E+03	NA	NA	NA	NA	7.03E-02	6.40E+02	4.50E+01	1.21E-01	3.69E+01	4.32E+00	1.72E+02	9.55E-01	3.57E+02	1.21E-02
Western Upper Marsh (2-6")																						**Maximum HQ (Eastern Upper Marsh, 2-6")**	**7.35E-02**
UM-500S-2500E (2-6")	8.57E-01	NA	NA	NA	NA	8.57E-01	2.15E+00	4.73E+02	4.05E+02	NA	NA	NA	NA	7.03E-02	2.20E+02	1.55E+01	1.21E-01	3.69E+01	1.38E+00	1.72E+02	9.55E-01	3.57E+02	3.86E-03
UM-0N-2000E (2-6")	8.57E-01	NA	NA	NA	NA	8.57E-01	2.15E+00	5.93E+03	5.08E+03	NA	NA	NA	NA	7.03E-02	2.76E+03	1.94E+02	1.21E-01	3.69E+01	1.73E+01	1.72E+02	9.55E-01	3.57E+02	4.84E-02
UM-500S-2000E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	1.11E+02	BB	BB	BB	BB	BB	BB	BB	BB
UM-250N-1750E (2-6")	8.57E-01	NA	NA	NA	NA	8.57E-01	2.15E+00	6.14E+02	5.27E+02	NA	NA	NA	NA	7.03E-02	2.86E+02	2.01E+01	1.21E-01	3.69E+01	1.79E+00	1.72E+02	9.55E-01	3.57E+02	5.01E-03
UM-0N-1500E (2-6")	8.57E-01	NA	NA	NA	NA	8.57E-01	2.15E+00	5.48E+02	4.69E+02	NA	NA	NA	NA	7.03E-02	2.55E+02	1.79E+01	1.21E-01	3.69E+01	1.60E+00	1.72E+02	9.55E-01	3.57E+02	4.47E-03
UM-250S-1500E (2-6")	8.57E-01	NA	NA	NA	NA	8.57E-01	2.15E+00	4.32E+03	3.70E+03	NA	NA	NA	NA	7.03E-02	2.01E+03	1.41E+02	1.21E-01	3.69E+01	1.26E+01	1.72E+02	9.55E-01	3.57E+02	3.52E-02
UM-250S-1250E (2-6")	8.57E-01	NA	NA	NA	NA	8.57E-01	2.15E+00	3.01E+02	2.58E+02	NA	NA	NA	NA	7.03E-02	1.40E+02	9.84E+00	1.21E-01	3.69E+01	8.77E-01	1.72E+02	9.55E-01	3.57E+02	2.45E-03
BRSD-6 (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-1000E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-750E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-500E (2-6")	8.57E-01	NA	NA	NA	NA	8.57E-01	2.15E+00	5.20E+03	4.46E+03	NA	NA	NA	NA	7.03E-02	2.42E+03	1.70E+02	1.21E-01	3.69E+01	1.52E+01	1.72E+02	9.55E-01	3.57E+02	4.24E-02
UM-250S-500E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	9.88E+01	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-250E (2-6")	8.57E-01	NA	NA	NA	NA	8.57E-01	2.15E+00	3.59E+03	3.07E+03	NA	NA	NA	NA	7.03E-02	1.67E+03	1.17E+02	1.21E-01	3.69E+01	1.05E+01	1.72E+02	9.55E-01	3.57E+02	2.93E-02
UM-250S-250E (2-6")	8.57E-01	NA	NA	NA	NA	8.57E-01	2.15E+00	3.69E+02	3.17E+02	NA	NA	NA	NA	7.03E-02	1.72E+02	1.21E+01	1.21E-01	3.69E+01	1.08E+00	1.72E+02	9.55E-01	3.57E+02	3.02E-03
BRSD-7 (2-6")	8.57E-01	NA	NA	NA	NA	8.57E-01	2.15E+00	3.18E+02	2.72E+02	NA	NA	NA	NA	7.03E-02	1.48E+02	1.04E+01	1.21E-01	3.69E+01	9.27E-01	1.72E+02	9.55E-01	3.57E+02	2.59E-03
BRSD-8 (2-6")	8.57E-01	NA	NA	NA	NA	8.57E-01	2.15E+00	1.24E+03	1.07E+03	NA	NA	NA	NA	7.03E-02	5.79E+02	4.07E+01	1.21E-01	3.69E+01	3.63E+00	1.72E+02	9.55E-01	3.57E+02	1.02E-02
UM-500S-500E (2-6")	8.57E-01	NA	NA	NA	NA	8.57E-01	2.15E+00	3.80E+02	3.26E+02	NA	NA	NA	NA	7.03E-02	1.77E+02	1.24E+01	1.21E-01	3.69E+01	1.11E+00	1.72E+02	9.55E-01	3.57E+02	3.10E-03
BRSD-9 (2-6")	8.57E-01	NA	NA	NA	NA	8.57E-01	2.15E+00	6.44E+02	5.52E+02	NA	NA	NA	NA	7.03E-02	3.00E+02	2.11E+01	1.21E-01	3.69E+01	1.88E+00	1.72E+02	9.55E-01	3.57E+02	5.26E-03
BRSD-10 (2-6")	8.57E-01	NA	NA	NA	NA	8.57E-01	2.15E+00	5.03E+03	4.31E+03	NA	NA	NA	NA	7.03E-02	2.34E+03	1.64E+02	1.21E-01	3.69E+01	1.47E+01	1.72E+02	9.55E-01	3.57E+02	4.10E-02
BRSD-11 (2-6")	8.57E-01	NA	NA	NA	NA	8.57E-01	2.15E+00	6.38E+02	5.47E+02	NA	NA	NA	NA	7.03E-02	2.97E+02	2.09E+01	1.21E-01	3.69E+01	1.86E+00	1.72E+02	9.55E-01	3.57E+02	5.21E-03
Eastern Upper Marsh (6-12")																						**Maximum HQ (Western Upper Marsh, 2-6")**	**4.84E-02**
UM-1000S-3500E (6-12")	8.57E-01	NA	NA	NA	NA	8.57E-01	2.32E+00	4.23E+02	3.62E+02	NA	NA	NA	NA	7.03E-02	1.82E+02	1.28E+01	1.21E-01	3.69E+01	1.23E+00	1.72E+02	9.55E-01	3.57E+02	3.44E-03
BRSD-15 (6-12")	8.57E-01	NA	NA	NA	NA	8.57E-01	2.32E+00	6.55E+02	5.61E+02	NA	NA	NA	NA	7.03E-02	2.82E+02	1.98E+01	1.21E-01	3.69E+01	1.90E+00	1.72E+02	9.55E-01	3.57E+02	5.33E-03
BRSD-4 (6-12")	8.57E-01	NA	NA	NA	NA	8.57E-01	2.32E+00	7.38E+02	6.33E+02	NA	NA	NA	NA	7.03E-02	3.18E+02	2.23E+01	1.21E-01	3.69E+01	2.15E+00	1.72E+02	9.55E-01	3.57E+02	6.01E-03
UM-750S-3500E (6-12")	8.57E-01	NA	NA	NA	NA	8.57E-01	2.32E+00	6.55E+03	5.61E+03	NA	NA	NA	NA	7.03E-02	2.82E+03	1.98E+02	1.21E-01	3.69E+01	1.90E+01	1.72E+02	9.55E-01	3.57E+02	5.33E-02
BRSD-16 (6-12")	8.57E-01	NA	NA	NA	NA	8.57E-01	2.32E+00	5.36E+03	4.60E+03	NA	NA	NA	NA	7.03E-02	2.31E+03	1.62E+02	1.21E-01	3.69E+01	1.56E+01	1.72E+02	9.55E-01	3.57E+02	4.36E-02
UM-750S-3000E (6-12")	8.57E-01	NA	NA	NA	NA	8.57E-01	2.32E+00	3.97E+03	3.40E+03	NA	NA	NA	NA	7.03E-02	1.71E+03	1.20E+02	1.21E-01	3.69E+01	1.15E+01	1.72E+02	9.55E-01	3.57E+02	3.23E-02
BRSD-3 (6-12")	8.57E-01	NA	NA	NA	NA	8.57E-01	2.32E+00	1.25E+03	1.07E+03	NA	NA	NA	NA	7.03E-02	5.38E+02	3.78E+01	1.21E-01	3.69E+01	3.63E+00	1.72E+02	9.55E-01	3.57E+02	1.02E-02
UM-500S-3250E (6-12")	8.57E-01	NA	NA	NA	NA	8.57E-01	2.32E+00	1.33E+03	1.14E+03	NA	NA	NA	NA	7.03E-02	5.73E+02	4.03E+01	1.21E-01	3.69E+01	3.87E+00	1.72E+02	9.55E-01	3.57E+02	1.08E-02
UM-500S-3000E (6-12")	8.57E-01	NA	NA	NA	NA	8.57E-01	2.32E+00	7.43E+02	6.37E+02	NA	NA	NA	NA	7.03E-02	3.20E+02	2.25E+01	1.21E-01	3.69E+01	2.16E+00	1.72E+02	9.55E-01	3.57E+02	6.05E-03
UM-500S-2750E (6-12")	8.57E-01	NA	NA	NA	NA	8.57E-01	2.32E+00	3.11E+03	2.67E+03	NA	NA	NA	NA	7.03E-02	1.34E+03	9.42E+01	1.21E-01	3.69E+01	9.04E+00	1.72E+02	9.55E-01	3.57E+02	2.53E-02
BRSD-25 (6-12")	8.57E-01	NA	NA	NA	NA	8.57E-01	2.32E+00	2.39E+03	2.05E+03	NA	NA	NA	NA	7.03E-02	1.03E+03	7.24E+01	1.21E-01	3.69E+01	6.95E+00	1.72E+02	9.55E-01	3.57E+02	1.95E-02

TABLE C-12GB: ZINC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 12 - MARSH, WETLAND RECEPTORS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **118.73**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Canada Goose (Herbivorous Birds)																							
UM-250S-3000E (6-12")	8.57E-01	NA	NA	NA	NA	8.57E-01	2.32E+00	6.85E+03	5.87E+03	NA	NA	NA	NA	7.03E-02	2.95E+03	2.07E+02	1.21E-01	3.69E+01	1.99E+01	1.72E+02	9.55E-01	3.57E+02	5.57E-02
UM-250S-3250E (6-12")	8.57E-01	NA	NA	NA	NA	8.57E-01	2.32E+00	1.51E+03	1.30E+03	NA	NA	NA	NA	7.03E-02	6.52E+02	4.58E+01	1.21E-01	3.69E+01	4.40E+00	1.72E+02	9.55E-01	3.57E+02	1.23E-02
BRSD-24 (6-12")	8.57E-01	NA	NA	NA	NA	8.57E-01	2.32E+00	4.04E+03	3.46E+03	NA	NA	NA	NA	7.03E-02	1.74E+03	1.22E+02	1.21E-01	3.69E+01	1.17E+01	1.72E+02	9.55E-01	3.57E+02	3.29E-02
UM-250S-2750E (6-12")	8.57E-01	NA	NA	NA	NA	8.57E-01	2.32E+00	4.48E+03	3.84E+03	NA	NA	NA	NA	7.03E-02	1.93E+03	1.36E+02	1.21E-01	3.69E+01	1.30E+01	1.72E+02	9.55E-01	3.57E+02	3.65E-02
UM-250S-2500E (6-12")	8.57E-01	NA	NA	NA	NA	8.57E-01	2.32E+00	5.87E+02	5.03E+02	NA	NA	NA	NA	7.03E-02	2.53E+02	1.78E+01	1.21E-01	3.69E+01	1.71E+00	1.72E+02	9.55E-01	3.57E+02	4.78E-03
BRSD-2 (6-12")	8.57E-01	NA	NA	NA	NA	8.57E-01	2.32E+00	9.80E+03	8.40E+03	NA	NA	NA	NA	7.03E-02	4.22E+03	2.97E+02	1.21E-01	3.69E+01	2.85E+01	1.72E+02	9.55E-01	3.57E+02	7.97E-02
UM-500N-2500E (6-12")	8.57E-01	NA	NA	NA	NA	8.57E-01	2.32E+00	4.09E+02	3.50E+02	NA	NA	NA	NA	7.03E-02	1.76E+02	1.24E+01	1.21E-01	3.69E+01	1.19E+00	1.72E+02	9.55E-01	3.57E+02	3.33E-03
UM-250N-2500E (6-12")	8.57E-01	NA	NA	NA	NA	8.57E-01	2.32E+00	4.34E+03	3.72E+03	NA	NA	NA	NA	7.03E-02	1.87E+03	1.31E+02	1.21E-01	3.69E+01	1.26E+01	1.72E+02	9.55E-01	3.57E+02	3.53E-02
UM-250N-2250E (6-12")	8.57E-01	NA	NA	NA	NA	8.57E-01	2.32E+00	9.06E+02	7.76E+02	NA	NA	NA	NA	7.03E-02	3.90E+02	2.74E+01	1.21E-01	3.69E+01	2.63E+00	1.72E+02	9.55E-01	3.57E+02	7.37E-03
Western Upper Marsh (6-12")																						**Maximum HQ (Eastern Upper Marsh, 6-12")**	**7.97E-02**
UM-500S-2500E (6-12")	8.57E-01	NA	NA	NA	NA	8.57E-01	2.15E+00	4.04E+02	3.46E+02	NA	NA	NA	NA	7.03E-02	1.88E+02	1.32E+01	1.21E-01	3.69E+01	1.18E+00	1.72E+02	9.55E-01	3.57E+02	3.30E-03
UM-0N-2000E (6-12")	8.57E-01	NA	NA	NA	NA	8.57E-01	2.15E+00	6.68E+03	5.73E+03	NA	NA	NA	NA	7.03E-02	3.11E+03	2.19E+02	1.21E-01	3.69E+01	1.95E+01	1.72E+02	9.55E-01	3.57E+02	5.45E-02
UM-500S-2000E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-250N-1750E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	9.95E+01	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-1500E (6-12")	8.57E-01	NA	NA	NA	NA	8.57E-01	2.15E+00	1.23E+03	1.05E+03	NA	NA	NA	NA	7.03E-02	5.72E+02	4.02E+01	1.21E-01	3.69E+01	3.58E+00	1.72E+02	9.55E-01	3.57E+02	1.00E-02
UM-250S-1500E (6-12")	8.57E-01	NA	NA	NA	NA	8.57E-01	2.15E+00	1.89E+03	1.62E+03	NA	NA	NA	NA	7.03E-02	8.82E+02	6.20E+01	1.21E-01	3.69E+01	5.52E+00	1.72E+02	9.55E-01	3.57E+02	1.55E-02
UM-250S-1250E (6-12")	8.57E-01	NA	NA	NA	NA	8.57E-01	2.15E+00	3.14E+02	2.69E+02	NA	NA	NA	NA	7.03E-02	1.46E+02	1.03E+01	1.21E-01	3.69E+01	9.14E-01	1.72E+02	9.55E-01	3.57E+02	2.56E-03
BRSD-6 (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-1000E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-750E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-500E (6-12")	8.57E-01	NA	NA	NA	NA	8.57E-01	2.15E+00	3.74E+03	3.20E+03	NA	NA	NA	NA	7.03E-02	1.74E+03	1.22E+02	1.21E-01	3.69E+01	1.09E+01	1.72E+02	9.55E-01	3.57E+02	3.05E-02
UM-250S-500E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	1.12E+02	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-250E (6-12")	8.57E-01	NA	NA	NA	NA	8.57E-01	2.15E+00	2.26E+03	1.93E+03	NA	NA	NA	NA	7.03E-02	1.05E+03	7.38E+01	1.21E-01	3.69E+01	6.57E+00	1.72E+02	9.55E-01	3.57E+02	1.84E-02
UM-250S-250E (6-12")	8.57E-01	NA	NA	NA	NA	8.57E-01	2.15E+00	5.26E+02	4.51E+02	NA	NA	NA	NA	7.03E-02	2.45E+02	1.72E+01	1.21E-01	3.69E+01	1.53E+00	1.72E+02	9.55E-01	3.57E+02	4.30E-03
BRSD-7 (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	1.16E+02	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-8 (6-12")	8.57E-01	NA	NA	NA	NA	8.57E-01	2.15E+00	1.27E+03	1.09E+03	NA	NA	NA	NA	7.03E-02	5.90E+02	4.15E+01	1.21E-01	3.69E+01	3.69E+00	1.72E+02	9.55E-01	3.57E+02	1.03E-02
UM-500S-500E (6-12")	8.57E-01	NA	NA	NA	NA	8.57E-01	2.15E+00	3.76E+02	3.22E+02	NA	NA	NA	NA	7.03E-02	1.75E+02	1.23E+01	1.21E-01	3.69E+01	1.10E+00	1.72E+02	9.55E-01	3.57E+02	3.07E-03
BRSD-9 (6-12")	8.57E-01	NA	NA	NA	NA	8.57E-01	2.15E+00	7.56E+02	6.48E+02	NA	NA	NA	NA	7.03E-02	3.52E+02	2.47E+01	1.21E-01	3.69E+01	2.20E+00	1.72E+02	9.55E-01	3.57E+02	6.17E-03
BRSD-10 (6-12")	8.57E-01	NA	NA	NA	NA	8.57E-01	2.15E+00	7.78E+03	6.66E+03	NA	NA	NA	NA	7.03E-02	3.62E+03	2.54E+02	1.21E-01	3.69E+01	2.27E+01	1.72E+02	9.55E-01	3.57E+02	6.35E-02
BRSD-11 (6-12")	8.57E-01	NA	NA	NA	NA	8.57E-01	2.15E+00	6.47E+02	5.54E+02	NA	NA	NA	NA	7.03E-02	3.01E+02	2.12E+01	1.21E-01	3.69E+01	1.88E+00	1.72E+02	9.55E-01	3.57E+02	5.28E-03
Middle Marsh (0-2")																						**Maximum HQ (Western Upper Marsh, 6-12")**	**6.35E-02**
MMSD-201 (0-2")	8.57E-01	NA	NA	NA	NA	8.57E-01	2.15E+00	3.16E+03	2.71E+03	NA	NA	NA	NA	7.03E-02	1.47E+03	1.03E+02	1.21E-01	3.69E+01	9.20E+00	1.72E+02	9.55E-01	3.57E+02	2.58E-02
MMSD-202 (0-2")	8.57E-01	NA	NA	NA	NA	8.57E-01	2.15E+00	8.81E+02	7.55E+02	NA	NA	NA	NA	7.03E-02	4.10E+02	2.88E+01	1.21E-01	3.69E+01	2.57E+00	1.72E+02	9.55E-01	3.57E+02	7.19E-03
Middle Marsh (2-6")																						**Maximum HQ (Middle Marsh, 0-2")**	**2.58E-02**
MMSD-201 (2-6")	8.57E-01	NA	NA	NA	NA	8.57E-01	2.15E+00	4.43E+03	3.79E+03	NA	NA	NA	NA	7.03E-02	2.06E+03	1.45E+02	1.21E-01	3.69E+01	1.29E+01	1.72E+02	9.55E-01	3.57E+02	3.61E-02
MMSD-202 (2-6")	8.57E-01	NA	NA	NA	NA	8.57E-01	2.15E+00	1.16E+03	9.92E+02	NA	NA	NA	NA	7.03E-02	5.39E+02	3.79E+01	1.21E-01	3.69E+01	3.37E+00	1.72E+02	9.55E-01	3.57E+02	9.45E-03
Middle Marsh (6-12")																						**Maximum HQ (Middle Marsh, 2-6")**	**3.61E-02**
MMSD-201 (6-12")	8.57E-01	NA	NA	NA	NA	8.57E-01	2.15E+00	5.56E+03	4.77E+03	NA	NA	NA	NA	7.03E-02	2.59E+03	1.82E+02	1.21E-01	3.69E+01	1.62E+01	1.72E+02	9.55E-01	3.57E+02	4.54E-02
MMSD-202 (6-12")	8.57E-01	NA	NA	NA	NA	8.57E-01	2.15E+00	1.07E+03	9.17E+02	NA	NA	NA	NA	7.03E-02	4.98E+02	3.50E+01	1.21E-01	3.69E+01	3.12E+00	1.72E+02	9.55E-01	3.57E+02	8.73E-03
Lower Marsh (0-2")																						**Maximum HQ (Middle Marsh, 6-12")**	**4.54E-02**
LMSD-201 (0-2")	8.57E-01	NA	NA	NA	NA	8.57E-01	2.15E+00	2.26E+02	1.93E+02	NA	NA	NA	NA	7.03E-02	1.05E+02	7.38E+00	1.21E-01	3.69E+01	6.57E-01	1.72E+02	9.55E-01	3.57E+02	1.84E-03
LMSD-202 (0-2")	8.57E-01	NA	NA	NA	NA	8.57E-01	2.15E+00	7.58E+02	6.50E+02	NA	NA	NA	NA	7.03E-02	3.53E+02	2.48E+01	1.21E-01	3.69E+01	2.21E+00	1.72E+02	9.55E-01	3.57E+02	6.19E-03
LMSD-203 (0-2")	8.57E-01	NA	NA	NA	NA	8.57E-01	2.15E+00	1.12E+03	9.59E+02	NA	NA	NA	NA	7.03E-02	5.21E+02	3.66E+01	1.21E-01	3.69E+01	3.26E+00	1.72E+02	9.55E-01	3.57E+02	9.13E-03
LMSD-204 (0-2")	8.57E-01	NA	NA	NA	NA	8.57E-01	2.15E+00	7.84E+02	6.72E+02	NA	NA	NA	NA	7.03E-02	3.65E+02	2.57E+01	1.21E-01	3.69E+01	2.29E+00	1.72E+02	9.55E-01	3.57E+02	6.40E-03
Lower Marsh (2-6")																						**Maximum HQ (Lower Marsh, 0-2")**	**9.13E-03**
LMSD-201 (2-6")	8.57E-01	NA	NA	NA	NA	8.57E-01	2.15E+00	2.11E+02	1.80E+02	NA	NA	NA	NA	7.03E-02	9.80E+01	6.89E+00	1.21E-01	3.69E+01	6.14E-01	1.72E+02	9.55E-01	3.57E+02	1.72E-03
LMSD-202 (2-6")	8.57E-01	NA	NA	NA	NA	8.57E-01	2.15E+00	8.38E+02	7.18E+02	NA	NA	NA	NA	7.03E-02	3.90E+02	2.74E+01	1.21E-01	3.69E+01	2.44E+00	1.72E+02	9.55E-01	3.57E+02	6.84E-03
LMSD-203 (2-6")	8.57E-01	NA	NA	NA	NA	8.57E-01	2.15E+00	1.10E+03	9.41E+02	NA	NA	NA	NA	7.03E-02	5.11E+02	3.59E+01	1.21E-01	3.69E+01	3.20E+00	1.72E+02	9.55E-01	3.57E+02	8.96E-03
LMSD-204 (2-6")	8.57E-01	NA	NA	NA	NA	8.57E-01	2.15E+00	7.71E+02	6.61E+02	NA	NA	NA	NA	7.03E-02	3.59E+02	2.52E+01	1.21E-01	3.69E+01	2.25E+00	1.72E+02	9.55E-01	3.57E+02	6.29E-03
Lower Marsh (6-12")																						**Maximum HQ (Lower Marsh, 2-6")**	**8.96E-03**
LMSD-201 (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
LMSD-202 (6-12")	8.57E-01	NA	NA	NA	NA	8.57E-01	2.15E+00	6.08E+02	5.21E+02	NA	NA	NA	NA	7.03E-02	2.83E+02	1.99E+01	1.21E-01	3.69E+01	1.77E+00	1.72E+02	9.55E-01	3.57E+02	4.96E-03
LMSD-203 (6-12")	8.57E-01	NA	NA	NA	NA	8.57E-01	2.15E+00	1.59E+03	1.36E+03	NA	NA	NA	NA	7.03E-02	7.40E+02	5.20E+01	1.21E-01	3.69E+01	4.63E+00	1.72E+02	9.55E-01	3.57E+02	1.30E-02
LMSD-204 (6-12")	8.57E-01	NA	NA	NA	NA	8.57E-01	2.15E+00	7.22E+02	6.19E+02	NA	NA	NA	NA	7.03E-02	3.36E+02	2.36E+01	1.21E-01	3.69E+01	2.10E+00	1.72E+02	9.55E-01	3.57E+02	5.89E-03
																						Maximum HQ (Lower Marsh, 6-12")	**1.30E-02**

TABLE C-12GB: ZINC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 12 - MARSH, WETLAND RECEPTORS (Continued)
Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)
calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **118.73**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Great Blue Heron (Carnivorous Birds)																							
Reference Sites																							
BRSD-5 (0-2")	1.32E-01	1.32E-01	5.46E+00	5.85E+02	7.69E+01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.07E+02	3.80E-01	1.00E+00	2.39E+00	3.23E+01	1.72E+02	9.55E-01	2.07E+02	1.56E-01
BRSD-5 (2-6")	1.32E-01	1.32E-01	5.46E+00	5.46E+02	7.19E+01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.00E+02	3.55E-01	1.00E+00	2.39E+00	3.02E+01	1.72E+02	9.55E-01	2.07E+02	1.46E-01
BRSD-5 (6-12")	1.32E-01	1.32E-01	5.46E+00	5.34E+02	7.03E+01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	9.78E+01	3.47E-01	1.00E+00	2.39E+00	2.95E+01	1.72E+02	9.55E-01	2.07E+02	1.43E-01
PGBG-1 (0-2")	1.32E-01	1.32E-01	5.46E+00	8.63E+02	1.14E+02	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.58E+02	5.61E-01	1.00E+00	2.39E+00	4.77E+01	1.72E+02	9.55E-01	2.07E+02	2.31E-01
PGBG-1 (2-6")	1.32E-01	1.32E-01	5.46E+00	9.51E+02	1.25E+02	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.74E+02	6.18E-01	1.00E+00	2.39E+00	5.26E+01	1.72E+02	9.55E-01	2.07E+02	2.54E-01
PGBG-1 (6-12")	1.32E-01	1.32E-01	5.46E+00	7.27E+02	9.56E+01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.33E+02	4.72E-01	1.00E+00	2.39E+00	4.02E+01	1.72E+02	9.55E-01	2.07E+02	1.94E-01
PGBG-2 (0-2")	1.32E-01	1.32E-01	5.46E+00	1.44E+03	1.89E+02	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	2.63E+02	9.34E-01	1.00E+00	2.39E+00	7.95E+01	1.72E+02	9.55E-01	2.07E+02	3.85E-01
PGBG-2 (2-6")	1.32E-01	1.32E-01	5.46E+00	1.38E+03	1.81E+02	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	2.52E+02	8.95E-01	1.00E+00	2.39E+00	7.61E+01	1.72E+02	9.55E-01	2.07E+02	3.68E-01
PGBG-2 (6-12")	1.32E-01	1.32E-01	5.46E+00	1.50E+03	1.98E+02	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	2.75E+02	9.77E-01	1.00E+00	2.39E+00	8.31E+01	1.72E+02	9.55E-01	2.07E+02	4.02E-01
Eastern Upper Marsh (0-2")																						**Minimum HQ (Reference Sites)**	**1.43E-01**
UM-1000S-3500E (0-2")	1.32E-01	1.32E-01	1.10E+00	1.90E+03	2.50E+02	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.72E+03	6.11E+00	1.00E+00	2.39E+00	1.07E+02	1.72E+02	9.55E-01	2.07E+02	5.18E-01
BRSD-15 (0-2")	1.32E-01	1.32E-01	1.10E+00	1.84E+02	2.43E+01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.67E+02	5.93E-01	1.00E+00	2.39E+00	1.04E+01	1.72E+02	9.55E-01	2.07E+02	5.03E-02
BRSD-4 (0-2")	1.32E-01	1.32E-01	1.10E+00	2.00E+02	2.63E+01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.81E+02	6.43E-01	1.00E+00	2.39E+00	1.13E+01	1.72E+02	9.55E-01	2.07E+02	5.45E-02
UM-750S-3500E (0-2")	1.32E-01	1.32E-01	1.10E+00	1.38E+03	1.82E+02	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.25E+03	4.44E+00	1.00E+00	2.39E+00	7.78E+01	1.72E+02	9.55E-01	2.07E+02	3.77E-01
BRSD-16 (0-2")	1.32E-01	1.32E-01	1.10E+00	9.08E+02	1.19E+02	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	8.22E+02	2.92E+00	1.00E+00	2.39E+00	5.12E+01	1.72E+02	9.55E-01	2.07E+02	2.48E-01
UM-750S-3000E (0-2")	1.32E-01	1.32E-01	1.10E+00	2.35E+03	3.09E+02	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	2.13E+03	7.56E+00	1.00E+00	2.39E+00	1.33E+02	1.72E+02	9.55E-01	2.07E+02	6.42E-01
BRSD-3 (0-2")	1.32E-01	1.32E-01	1.10E+00	1.13E+03	1.48E+02	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.02E+03	3.62E+00	1.00E+00	2.39E+00	6.35E+01	1.72E+02	9.55E-01	2.07E+02	3.07E-01
UM-500S-3250E (0-2")	1.32E-01	1.32E-01	1.10E+00	1.04E+03	1.36E+02	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	9.40E+02	3.34E+00	1.00E+00	2.39E+00	5.85E+01	1.72E+02	9.55E-01	2.07E+02	2.83E-01
UM-500S-3000E (0-2")	1.32E-01	1.32E-01	1.10E+00	1.56E+03	2.05E+02	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.41E+03	5.01E+00	1.00E+00	2.39E+00	8.78E+01	1.72E+02	9.55E-01	2.07E+02	4.25E-01
UM-500S-2750E (0-2")	1.32E-01	1.32E-01	1.10E+00	2.42E+03	3.18E+02	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	2.19E+03	7.78E+00	1.00E+00	2.39E+00	1.36E+02	1.72E+02	9.55E-01	2.07E+02	6.60E-01
BRSD-25 (0-2")	1.32E-01	1.32E-01	1.10E+00	9.23E+02	1.21E+02	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	8.36E+02	2.97E+00	1.00E+00	2.39E+00	5.20E+01	1.72E+02	9.55E-01	2.07E+02	2.52E-01
UM-250S-3000E (0-2")	1.32E-01	1.32E-01	1.10E+00	4.50E+03	5.92E+02	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	4.08E+03	1.45E+01	1.00E+00	2.39E+00	2.54E+02	1.72E+02	9.55E-01	2.07E+02	1.23E+00
UM-250S-3250E (0-2")	1.32E-01	1.32E-01	1.10E+00	1.05E+03	1.38E+02	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	9.48E+02	3.37E+00	1.00E+00	2.39E+00	5.90E+01	1.72E+02	9.55E-01	2.07E+02	2.86E-01
BRSD-24 (0-2")	1.32E-01	1.32E-01	1.10E+00	2.25E+03	2.96E+02	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	2.04E+03	7.24E+00	1.00E+00	2.39E+00	1.27E+02	1.72E+02	9.55E-01	2.07E+02	6.15E-01
UM-250S-2750E (0-2")	1.32E-01	1.32E-01	1.10E+00	1.67E+03	2.19E+02	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.51E+03	5.36E+00	1.00E+00	2.39E+00	9.40E+01	1.72E+02	9.55E-01	2.07E+02	4.55E-01
UM-250S-2500E (0-2")	1.32E-01	1.32E-01	1.10E+00	6.36E+02	8.36E+01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	5.76E+02	2.05E+00	1.00E+00	2.39E+00	3.59E+01	1.72E+02	9.55E-01	2.07E+02	1.74E-01
UM-0N-2500E (0-2")	1.32E-01	1.32E-01	1.10E+00	3.69E+03	4.85E+02	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	3.34E+03	1.19E+01	1.00E+00	2.39E+00	2.08E+02	1.72E+02	9.55E-01	2.07E+02	1.01E+00
UM-0N-250E (0-2")	1.32E-01	1.32E-01	1.10E+00	1.66E+03	2.18E+02	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.50E+03	5.33E+00	1.00E+00	2.39E+00	9.34E+01	1.72E+02	9.55E-01	2.07E+02	4.52E-01
BRSD-2 (0-2")	1.32E-01	1.32E-01	1.10E+00	1.93E+03	2.54E+02	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.75E+03	6.21E+00	1.00E+00	2.39E+00	1.09E+02	1.72E+02	9.55E-01	2.07E+02	5.27E-01
UM-500N-2500E (0-2")	1.32E-01	1.32E-01	1.10E+00	2.98E+02	3.92E+01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	2.70E+02	9.59E-01	1.00E+00	2.39E+00	1.68E+01	1.72E+02	9.55E-01	2.07E+02	8.13E-02
UM-250N-2500E (0-2")	1.32E-01	1.32E-01	1.10E+00	3.30E+03	4.34E+02	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	2.99E+03	1.06E+01	1.00E+00	2.39E+00	1.86E+02	1.72E+02	9.55E-01	2.07E+02	9.01E-01
UM-250N-2250E (0-2")	1.32E-01	1.32E-01	1.10E+00	2.27E+03	2.99E+02	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	2.06E+03	7.32E+00	1.00E+00	2.39E+00	1.28E+02	1.72E+02	9.55E-01	2.07E+02	6.21E-01
Western Upper Marsh (0-2")																						**Maximum HQ (Eastern Upper Marsh, 0-2")**	**1.23E+00**
UM-500S-2500E (0-2")	1.32E-01	1.32E-01	1.10E+00	2.45E+02	3.22E+01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	2.22E+02	7.88E-01	1.00E+00	2.39E+00	1.38E+01	1.72E+02	9.55E-01	2.07E+02	6.69E-02
UM-0N-2000E (0-2")	1.32E-01	1.32E-01	1.10E+00	3.05E+03	4.01E+02	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	2.76E+03	9.80E+00	1.00E+00	2.39E+00	1.72E+02	1.72E+02	9.55E-01	2.07E+02	8.31E-01
UM-500S-2000E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-250N-1750E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	1.26E+02	BB	BB	BB	BB	BB	BB	BB
UM-0N-1500E (0-2")	1.32E-01	1.32E-01	1.10E+00	3.16E+02	4.15E+01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	2.86E+02	1.02E+00	1.00E+00	2.39E+00	1.78E+01	1.72E+02	9.55E-01	2.07E+02	8.62E-02
UM-250S-1500E (0-2")	1.32E-01	1.32E-01	1.10E+00	3.05E+03	4.01E+02	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	2.76E+03	9.80E+00	1.00E+00	2.39E+00	1.72E+02	1.72E+02	9.55E-01	2.07E+02	8.31E-01
UM-250S-1250E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	9.88E+01	BB	BB	BB	BB	BB	BB	BB
BRSD-6 (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-1000E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-750E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-500E (0-2")	1.32E-01	1.32E-01	1.10E+00	2.41E+02	3.17E+01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	2.18E+02	7.74E-01	1.00E+00	2.39E+00	1.36E+01	1.72E+02	9.55E-01	2.07E+02	6.57E-02
UM-250S-500E (0-2")	1.32E-01	1.32E-01	1.10E+00	1.63E+02	2.15E+01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.48E+02	5.26E-01	1.00E+00	2.39E+00	9.21E+00	1.72E+02	9.55E-01	2.07E+02	4.46E-02
UM-250S-250E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	1.31E+02	BB	BB	BB	BB	BB	BB	BB
BRSD-7 (0-2")	1.32E-01	1.32E-01	1.10E+00	7.32E+02	9.63E+01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	6.63E+02	2.35E+00	1.00E+00	2.39E+00	4.13E+01	1.72E+02	9.55E-01	2.07E+02	2.00E-01
BRSD-8 (0-2")	1.32E-01	1.32E-01	1.10E+00	5.75E+02	7.57E+01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	5.21E+02	1.85E+00	1.00E+00	2.39E+00	3.24E+01	1.72E+02	9.55E-01	2.07E+02	1.57E-01
UM-500S-500E (0-2")	1.32E-01	1.32E-01	1.10E+00	2.08E+02	2.73E+01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.88E+02	6.68E-01	1.00E+00	2.39E+00	1.17E+01	1.72E+02	9.55E-01	2.07E+02	5.66E-02
BRSD-9 (0-2")	1.32E-01	1.32E-01	1.10E+00	7.20E+02	9.47E+01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	6.52E+02	2.32E+00	1.00E+00	2.39E+00	4.06E+01	1.72E+02	9.55E-01	2.07E+02	1.96E-01
BRSD-10 (0-2")	1.32E-01	1.32E-01	1.10E+00	3.17E+03	4.17E+02	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	2.87E+03	1.02E+01	1.00E+00	2.39E+00	1.79E+02	1.72E+02	9.55E-01	2.07E+02	8.65E-01
BRSD-11 (0-2")	1.32E-01	1.32E-01	1.10E+00	5.03E+02	6.62E+01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	4.56E+02	1.62E+00	1.00E+00	2.39E+00	2.84E+01	1.72E+02	9.55E-01	2.07E+02	1.37E-01
Eastern Upper Marsh (2-6")																						**Maximum HQ (Western Upper Marsh, 0-2")**	**8.65E-01**
UM-1000S-3500E (2-6")	1.32E-01	1.32E-01	1.10E+00	4.37E+02	5.75E+01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	3.96E+02	1.41E+00	1.00E+00	2.39E+00	2.46E+01	1.72E+02	9.55E-01	2.07E+02	1.19E-01
BRSD-15 (2-6")	1.32E-01	1.32E-01	1.10E+00	2.68E+02	3.53E+01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	2.43E+02	8.63E-01	1.00E+00	2.39E+00	1.51E+01	1.72E+02	9.55E-01	2.07E+02	7.32E-02
BRSD-4 (2-6")	1.32E-01	1.32E-01	1.10E+00	2.36E+02	3.11E+01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	2.14E+02	7.60E-01	1.00E+00	2.39E+00	1.33E+01	1.72E+02	9.55E-01	2.07E+02	6.45E-02

TABLE C-12GB: ZINC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 12 - MARSH, WETLAND RECEPTORS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **118.73**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Great Blue Heron (Carnivorous Birds)																							
UM-750S-3500E (2-6")	1.32E-01	1.32E-01	1.10E+00	3.32E+03	4.37E+02	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	3.01E+03	1.07E+01	1.00E+00	2.39E+00	1.87E+02	1.72E+02	9.55E-01	2.07E+02	9.07E-01
BRSD-16 (2-6")	1.32E-01	1.32E-01	1.10E+00	4.29E+03	5.65E+02	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	3.89E+03	1.38E+01	1.00E+00	2.39E+00	2.42E+02	1.72E+02	9.55E-01	2.07E+02	1.17E+00
UM-750S-3000E (2-6")	1.32E-01	1.32E-01	1.10E+00	1.95E+03	2.57E+02	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.77E+03	6.29E+00	1.00E+00	2.39E+00	1.10E+02	1.72E+02	9.55E-01	2.07E+02	5.33E-01
BRSD-3 (2-6")	1.32E-01	1.32E-01	1.10E+00	1.26E+03	1.66E+02	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.14E+03	4.05E+00	1.00E+00	2.39E+00	7.10E+01	1.72E+02	9.55E-01	2.07E+02	3.43E-01
UM-500S-3250E (2-6")	1.32E-01	1.32E-01	1.10E+00	7.37E+02	9.70E+01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	6.68E+02	2.37E+00	1.00E+00	2.39E+00	4.16E+01	1.72E+02	9.55E-01	2.07E+02	2.01E-01
UM-500S-3000E (2-6")	1.32E-01	1.32E-01	1.10E+00	2.93E+02	3.85E+01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	2.65E+02	9.41E-01	1.00E+00	2.39E+00	1.65E+01	1.72E+02	9.55E-01	2.07E+02	7.98E-02
UM-500S-2750E (2-6")	1.32E-01	1.32E-01	1.10E+00	1.67E+03	2.19E+02	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.51E+03	5.36E+00	1.00E+00	2.39E+00	9.40E+01	1.72E+02	9.55E-01	2.07E+02	4.55E-01
BRSD-25 (2-6")	1.32E-01	1.32E-01	1.10E+00	1.24E+03	1.63E+02	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.12E+03	3.98E+00	1.00E+00	2.39E+00	6.97E+01	1.72E+02	9.55E-01	2.07E+02	3.37E-01
UM-250S-3000E (2-6")	1.32E-01	1.32E-01	1.10E+00	3.92E+03	5.16E+02	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	3.55E+03	1.26E+01	1.00E+00	2.39E+00	2.21E+02	1.72E+02	9.55E-01	2.07E+02	1.07E+00
UM-250S-3250E (2-6")	1.32E-01	1.32E-01	1.10E+00	8.39E+02	1.10E+02	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	7.60E+02	2.70E+00	1.00E+00	2.39E+00	4.73E+01	1.72E+02	9.55E-01	2.07E+02	2.29E-01
BRSD-24 (2-6")	1.32E-01	1.32E-01	1.10E+00	3.81E+03	5.01E+02	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	3.45E+03	1.23E+01	1.00E+00	2.39E+00	2.15E+02	1.72E+02	9.55E-01	2.07E+02	1.04E+00
UM-250S-2750E (2-6")	1.32E-01	1.32E-01	1.10E+00	2.22E+03	2.92E+02	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	2.01E+03	7.14E+00	1.00E+00	2.39E+00	1.25E+02	1.72E+02	9.55E-01	2.07E+02	6.05E-01
UM-0N-2500E (2-6")	1.32E-01	1.32E-01	1.10E+00	1.61E+03	2.12E+02	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.46E+03	5.18E+00	1.00E+00	2.39E+00	9.09E+01	1.72E+02	9.55E-01	2.07E+02	4.40E-01
BRSD-2 (2-6")	1.32E-01	1.32E-01	1.10E+00	2.20E+03	2.89E+02	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.99E+03	7.07E+00	1.00E+00	2.39E+00	1.24E+02	1.72E+02	9.55E-01	2.07E+02	5.99E-01
UM-500N-2500E (2-6")	1.32E-01	1.32E-01	1.10E+00	3.00E+02	3.95E+01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	2.72E+02	9.66E-01	1.00E+00	2.39E+00	1.69E+01	1.72E+02	9.55E-01	2.07E+02	8.19E-02
UM-250N-2500E (2-6")	1.32E-01	1.32E-01	1.10E+00	2.74E+03	3.60E+02	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	2.48E+03	8.81E+00	1.00E+00	2.39E+00	1.54E+02	1.72E+02	9.55E-01	2.07E+02	7.47E-01
UM-250N-2250E (2-6")	1.32E-01	1.32E-01	1.10E+00	7.07E+02	9.29E+01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	6.40E+02	2.27E+00	1.00E+00	2.39E+00	3.98E+01	1.72E+02	9.55E-01	2.07E+02	1.93E-01
Western Upper Marsh (2-6")																						**Maximum HQ (Eastern Upper Marsh, 2-6")**	**1.17E+00**
UM-500S-2500E (2-6")	1.32E-01	1.32E-01	1.10E+00	2.43E+02	3.19E+01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	2.20E+02	7.81E-01	1.00E+00	2.39E+00	1.37E+01	1.72E+02	9.55E-01	2.07E+02	6.63E-02
UM-0N-2000E (2-6")	1.32E-01	1.32E-01	1.10E+00	3.05E+03	4.01E+02	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	2.76E+03	9.80E+00	1.00E+00	2.39E+00	1.72E+02	1.72E+02	9.55E-01	2.07E+02	8.31E-01
UM-500S-2000E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	1.11E+02	BB	BB	BB	BB	BB	BB	BB	BB
UM-250N-1750E (2-6")	1.32E-01	1.32E-01	1.10E+00	3.16E+02	4.15E+01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	2.86E+02	1.02E+00	1.00E+00	2.39E+00	1.78E+01	1.72E+02	9.55E-01	2.07E+02	8.62E-02
UM-0N-1500E (2-6")	1.32E-01	1.32E-01	1.10E+00	2.82E+02	3.70E+01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	2.55E+02	9.06E-01	1.00E+00	2.39E+00	1.59E+01	1.72E+02	9.55E-01	2.07E+02	7.68E-02
UM-250S-1500E (2-6")	1.32E-01	1.32E-01	1.10E+00	2.22E+03	2.92E+02	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	2.01E+03	7.14E+00	1.00E+00	2.39E+00	1.25E+02	1.72E+02	9.55E-01	2.07E+02	6.05E-01
UM-250S-1250E (2-6")	1.32E-01	1.32E-01	1.10E+00	1.55E+02	2.03E+01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.40E+02	4.97E-01	1.00E+00	2.39E+00	8.71E+00	1.72E+02	9.55E-01	2.07E+02	4.22E-02
BRSD-6 (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-1000E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-750E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-500E (2-6")	1.32E-01	1.32E-01	1.10E+00	2.67E+03	3.51E+02	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	2.42E+03	8.59E+00	1.00E+00	2.39E+00	1.51E+02	1.72E+02	9.55E-01	2.07E+02	7.29E-01
UM-250S-500E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	9.88E+01	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-250E (2-6")	1.32E-01	1.32E-01	1.10E+00	1.84E+03	2.43E+02	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.67E+03	5.93E+00	1.00E+00	2.39E+00	1.04E+02	1.72E+02	9.55E-01	2.07E+02	5.03E-01
UM-250S-250E (2-6")	1.32E-01	1.32E-01	1.10E+00	1.90E+02	2.50E+01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.72E+02	6.11E-01	1.00E+00	2.39E+00	1.07E+01	1.72E+02	9.55E-01	2.07E+02	5.18E-02
BRSD-7 (2-6")	1.32E-01	1.32E-01	1.10E+00	1.63E+02	2.15E+01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.48E+02	5.26E-01	1.00E+00	2.39E+00	9.21E+00	1.72E+02	9.55E-01	2.07E+02	4.46E-02
BRSD-8 (2-6")	1.32E-01	1.32E-01	1.10E+00	6.39E+02	8.41E+01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	5.79E+02	2.06E+00	1.00E+00	2.39E+00	3.60E+01	1.72E+02	9.55E-01	2.07E+02	1.74E-01
UM-500S-500E (2-6")	1.32E-01	1.32E-01	1.10E+00	1.95E+02	2.57E+01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.77E+02	6.29E-01	1.00E+00	2.39E+00	1.10E+01	1.72E+02	9.55E-01	2.07E+02	5.33E-02
BRSD-9 (2-6")	1.32E-01	1.32E-01	1.10E+00	3.31E+02	4.36E+01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	3.00E+02	1.07E+00	1.00E+00	2.39E+00	1.87E+01	1.72E+02	9.55E-01	2.07E+02	9.04E-02
BRSD-10 (2-6")	1.32E-01	1.32E-01	1.10E+00	2.58E+03	3.40E+02	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	2.34E+03	8.31E+00	1.00E+00	2.39E+00	1.46E+02	1.72E+02	9.55E-01	2.07E+02	7.05E-01
BRSD-11 (2-6")	1.32E-01	1.32E-01	1.10E+00	3.28E+02	4.31E+01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	2.97E+02	1.05E+00	1.00E+00	2.39E+00	1.85E+01	1.72E+02	9.55E-01	2.07E+02	8.95E-02
Eastern Upper Marsh (6-12")																						**Maximum HQ (Western Upper Marsh, 2-6")**	**8.31E-01**
UM-1000S-3500E (6-12")	1.32E-01	1.32E-01	1.10E+00	2.01E+02	2.64E+01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.82E+02	6.46E-01	1.00E+00	2.39E+00	1.13E+01	1.72E+02	9.55E-01	2.07E+02	5.48E-02
BRSD-15 (6-12")	1.32E-01	1.32E-01	1.10E+00	3.11E+02	4.09E+01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	2.82E+02	1.00E+00	1.00E+00	2.39E+00	1.76E+01	1.72E+02	9.55E-01	2.07E+02	8.49E-02
BRSD-4 (6-12")	1.32E-01	1.32E-01	1.10E+00	3.51E+02	4.62E+01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	3.18E+02	1.13E+00	1.00E+00	2.39E+00	1.98E+01	1.72E+02	9.55E-01	2.07E+02	9.58E-02
UM-750S-3500E (6-12")	1.32E-01	1.32E-01	1.10E+00	3.11E+03	4.09E+02	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	2.82E+03	1.00E+01	1.00E+00	2.39E+00	1.76E+02	1.72E+02	9.55E-01	2.07E+02	8.49E-01
BRSD-16 (6-12")	1.32E-01	1.32E-01	1.10E+00	2.55E+03	3.35E+02	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	2.31E+03	8.20E+00	1.00E+00	2.39E+00	1.44E+02	1.72E+02	9.55E-01	2.07E+02	6.96E-01
UM-750S-3000E (6-12")	1.32E-01	1.32E-01	1.10E+00	1.89E+03	2.48E+02	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.71E+03	6.07E+00	1.00E+00	2.39E+00	1.06E+02	1.72E+02	9.55E-01	2.07E+02	5.15E-01
BRSD-3 (6-12")	1.32E-01	1.32E-01	1.10E+00	5.94E+02	7.81E+01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	5.38E+02	1.91E+00	1.00E+00	2.39E+00	3.35E+01	1.72E+02	9.55E-01	2.07E+02	1.62E-01
UM-500S-3250E (6-12")	1.32E-01	1.32E-01	1.10E+00	6.33E+02	8.32E+01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	5.73E+02	2.03E+00	1.00E+00	2.39E+00	3.57E+01	1.72E+02	9.55E-01	2.07E+02	1.73E-01
UM-500S-3000E (6-12")	1.32E-01	1.32E-01	1.10E+00	3.53E+02	4.65E+01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	3.20E+02	1.14E+00	1.00E+00	2.39E+00	1.99E+01	1.72E+02	9.55E-01	2.07E+02	9.64E-02
UM-500S-2750E (6-12")	1.32E-01	1.32E-01	1.10E+00	1.48E+03	1.95E+02	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.34E+03	4.76E+00	1.00E+00	2.39E+00	8.34E+01	1.72E+02	9.55E-01	2.07E+02	4.04E-01
BRSD-25 (6-12")	1.32E-01	1.32E-01	1.10E+00	1.14E+03	1.50E+02	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.03E+03	3.66E+00	1.00E+00	2.39E+00	6.41E+01	1.72E+02	9.55E-01	2.07E+02	3.10E-01
UM-250S-3000E (6-12")	1.32E-01	1.32E-01	1.10E+00	3.26E+03	4.28E+02	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	2.95E+03	1.05E+01	1.00E+00	2.39E+00	1.84E+02	1.72E+02	9.55E-01	2.07E+02	8.89E-01
UM-250S-3250E (6-12")	1.32E-01	1.32E-01	1.10E+00	7.20E+02	9.47E+01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	6.52E+02	2.32E+00	1.00E+00	2.39E+00	4.06E+01	1.72E+02	9.55E-01	2.07E+02	1.96E-01
BRSD-24 (6-12")	1.32E-01	1.32E-01	1.10E+00	1.92E+03	2.53E+02	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.74E+03	6.18E+00	1.00E+00	2.39E+00	1.08E+02	1.72E+02	9.55E-01	2.07E+02	5.24E-01
UM-250S-2750E (6-12")	1.32E-01	1.32E-01	1.10E+00	2.13E+03	2.80E+02	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.93E+03	6.85E+00	1.00E+00	2.39E+00	1.20E+02	1.72E+02	9.55E-01	2.07E+02	5.81E-01
UM-250S-2500E (6-12")	1.32E-01	1.32E-01	1.10E+00	2.79E+02	3.67E+01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	2.53E+02	8.98E-01	1.00E+00	2.39E+00	1.57E+01	1.72E+02	9.55E-01	2.07E+02	7.62E-02
BRSD-2 (6-12")	1.32E-01	1.32E-01	1.10E+00	4.66E+03	6.13E+02	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	4.22E+03	1.50E+01	1.00E+00	2.39E+00	2.63E+02	1.72E+02	9.55E-01	2.07E+02	1.27E+00
UM-500N-2500E (6-12")	1.32E-01	1.32E-01	1.10E+00	1.94E+02	2.56E+01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.76E+02	6.25E-01	1.00E+00	2.39E+00	1.10E+01	1.72E+02	9.55E-01	2.07E+02	5.30E-02

TABLE C-12GB: ZINC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 12 - MARSH, WETLAND RECEPTORS (Continued)
Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)
calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 118.73

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Great Blue Heron (Carnivorous Birds)																							
UM-250N-2500E (6-12")	1.32E-01	1.32E-01	1.10E+00	2.06E+03	2.72E+02	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.87E+03	6.64E+00	1.00E+00	2.39E+00	1.16E+02	1.72E+02	9.55E-01	2.07E+02	5.63E-01
UM-250N-2250E (6-12")	1.32E-01	1.32E-01	1.10E+00	4.31E+02	5.66E+01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	3.90E+02	1.39E+00	1.00E+00	2.39E+00	2.43E+01	1.72E+02	9.55E-01	2.07E+02	1.17E-01
Western Upper Marsh (6-12")																						**Maximum HQ (Eastern Upper Marsh, 6-12")**	**1.27E+00**
UM-500S-2500E (6-12")	1.32E-01	1.32E-01	1.10E+00	2.08E+02	2.73E+01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.88E+02	6.68E-01	1.00E+00	2.39E+00	1.17E+01	1.72E+02	9.55E-01	2.07E+02	5.66E-02
UM-0N-2000E (6-12")	1.32E-01	1.32E-01	1.10E+00	3.43E+03	4.52E+02	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	3.11E+03	1.10E+01	1.00E+00	2.39E+00	1.94E+02	1.72E+02	9.55E-01	2.07E+02	9.37E-01
UM-500S-2000E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-250N-1750E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	9.95E+01	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-1500E (6-12")	1.32E-01	1.32E-01	1.10E+00	6.32E+02	8.31E+01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	5.72E+02	2.03E+00	1.00E+00	2.39E+00	3.56E+01	1.72E+02	9.55E-01	2.07E+02	1.72E-01
UM-250S-1500E (6-12")	1.32E-01	1.32E-01	1.10E+00	9.74E+02	1.28E+02	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	8.82E+02	3.13E+00	1.00E+00	2.39E+00	5.49E+01	1.72E+02	9.55E-01	2.07E+02	2.66E-01
UM-250S-1250E (6-12")	1.32E-01	1.32E-01	1.10E+00	1.61E+02	2.12E+01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.46E+02	5.18E-01	1.00E+00	2.39E+00	9.09E+00	1.72E+02	9.55E-01	2.07E+02	4.40E-02
BRSD-6 (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-1000E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-750E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-500E (6-12")	1.32E-01	1.32E-01	1.10E+00	1.92E+03	2.53E+02	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.74E+03	6.18E+00	1.00E+00	2.39E+00	1.08E+02	1.72E+02	9.55E-01	2.07E+02	5.24E-01
UM-250S-500E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	1.12E+02	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-250E (6-12")	1.32E-01	1.32E-01	1.10E+00	1.16E+03	1.52E+02	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.05E+03	3.73E+00	1.00E+00	2.39E+00	6.54E+01	1.72E+02	9.55E-01	2.07E+02	3.16E-01
UM-250S-250E (6-12")	1.32E-01	1.32E-01	1.10E+00	2.70E+02	3.56E+01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	2.45E+02	8.70E-01	1.00E+00	2.39E+00	1.52E+01	1.72E+02	9.55E-01	2.07E+02	7.38E-02
BRSD-7 (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	1.16E+02	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-8 (6-12")	1.32E-01	1.32E-01	1.10E+00	6.51E+02	8.57E+01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	5.90E+02	2.10E+00	1.00E+00	2.39E+00	3.67E+01	1.72E+02	9.55E-01	2.07E+02	1.78E-01
UM-500S-500E (6-12")	1.32E-01	1.32E-01	1.10E+00	1.93E+02	2.54E+01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.75E+02	6.21E-01	1.00E+00	2.39E+00	1.09E+01	1.72E+02	9.55E-01	2.07E+02	5.27E-02
BRSD-9 (6-12")	1.32E-01	1.32E-01	1.10E+00	3.89E+02	5.11E+01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	3.52E+02	1.25E+00	1.00E+00	2.39E+00	2.19E+01	1.72E+02	9.55E-01	2.07E+02	1.06E-01
BRSD-10 (6-12")	1.32E-01	1.32E-01	1.10E+00	4.00E+03	5.26E+02	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	3.62E+03	1.29E+01	1.00E+00	2.39E+00	2.25E+02	1.72E+02	9.55E-01	2.07E+02	1.09E+00
BRSD-11 (6-12")	1.32E-01	1.32E-01	1.10E+00	3.32E+02	4.37E+01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	3.01E+02	1.07E+00	1.00E+00	2.39E+00	1.87E+01	1.72E+02	9.55E-01	2.07E+02	9.07E-02
Middle Marsh (0-2")																						**Maximum HQ (Western Upper Marsh, 6-12")**	**1.09E+00**
MMSD-201 (0-2")	1.32E-01	1.32E-01	1.10E+00	1.62E+03	2.13E+02	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.47E+03	5.22E+00	1.00E+00	2.39E+00	9.15E+01	1.72E+02	9.55E-01	2.07E+02	4.43E-01
MMSD-202 (0-2")	1.32E-01	1.32E-01	1.10E+00	4.53E+02	5.95E+01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	4.10E+02	1.46E+00	1.00E+00	2.39E+00	2.55E+01	1.72E+02	9.55E-01	2.07E+02	1.24E-01
Middle Marsh (2-6")																						**Maximum HQ (Middle Marsh, 0-2")**	**4.43E-01**
MMSD-201 (2-6")	1.32E-01	1.32E-01	1.10E+00	2.27E+03	2.99E+02	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	2.06E+03	7.32E+00	1.00E+00	2.39E+00	1.28E+02	1.72E+02	9.55E-01	2.07E+02	6.21E-01
MMSD-202 (2-6")	1.32E-01	1.32E-01	1.10E+00	5.95E+02	7.83E+01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	5.39E+02	1.91E+00	1.00E+00	2.39E+00	3.35E+01	1.72E+02	9.55E-01	2.07E+02	1.62E-01
Middle Marsh (6-12")																						**Maximum HQ (Middle Marsh, 2-6")**	**6.21E-01**
MMSD-201 (6-12")	1.32E-01	1.32E-01	1.10E+00	2.86E+03	3.76E+02	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	2.59E+03	9.20E+00	1.00E+00	2.39E+00	1.61E+02	1.72E+02	9.55E-01	2.07E+02	7.80E-01
MMSD-202 (6-12")	1.32E-01	1.32E-01	1.10E+00	5.50E+02	7.23E+01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	4.98E+02	1.77E+00	1.00E+00	2.39E+00	3.10E+01	1.72E+02	9.55E-01	2.07E+02	1.50E-01
Lower Marsh (0-2")																						**Maximum HQ (Middle Marsh, 6-12")**	**7.80E-01**
LMSD-201 (0-2")	1.32E-01	1.32E-01	1.10E+00	1.16E+02	1.52E+01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	1.05E+02	3.73E-01	1.00E+00	2.39E+00	6.54E+00	1.72E+02	9.55E-01	2.07E+02	3.16E-02
LMSD-202 (0-2")	1.32E-01	1.32E-01	1.10E+00	3.90E+02	5.13E+01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	3.53E+02	1.25E+00	1.00E+00	2.39E+00	2.20E+01	1.72E+02	9.55E-01	2.07E+02	1.06E-01
LMSD-203 (0-2")	1.32E-01	1.32E-01	1.10E+00	5.75E+02	7.57E+01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	5.21E+02	1.85E+00	1.00E+00	2.39E+00	3.24E+01	1.72E+02	9.55E-01	2.07E+02	1.57E-01
LMSD-204 (0-2")	1.32E-01	1.32E-01	1.10E+00	4.03E+02	5.30E+01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	3.65E+02	1.30E+00	1.00E+00	2.39E+00	2.27E+01	1.72E+02	9.55E-01	2.07E+02	1.10E-01
Lower Marsh (2-6")																						**Maximum HQ (Lower Marsh, 0-2")**	**1.57E-01**
LMSD-201 (2-6")	1.32E-01	1.32E-01	1.10E+00	1.08E+02	1.42E+01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	9.80E+01	3.48E-01	1.00E+00	2.39E+00	6.10E+00	1.72E+02	9.55E-01	2.07E+02	2.95E-02
LMSD-202 (2-6")	1.32E-01	1.32E-01	1.10E+00	4.31E+02	5.66E+01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	3.90E+02	1.39E+00	1.00E+00	2.39E+00	2.43E+01	1.72E+02	9.55E-01	2.07E+02	1.17E-01
LMSD-203 (2-6")	1.32E-01	1.32E-01	1.10E+00	5.64E+02	7.42E+01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	5.11E+02	1.81E+00	1.00E+00	2.39E+00	3.18E+01	1.72E+02	9.55E-01	2.07E+02	1.54E-01
LMSD-204 (2-6")	1.32E-01	1.32E-01	1.10E+00	3.96E+02	5.21E+01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	3.59E+02	1.27E+00	1.00E+00	2.39E+00	2.23E+01	1.72E+02	9.55E-01	2.07E+02	1.08E-01
Lower Marsh (6-12")																						**Maximum HQ (Lower Marsh, 2-6")**	**1.54E-01**
LMSD-201 (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
LMSD-202 (6-12")	1.32E-01	1.32E-01	1.10E+00	3.12E+02	4.11E+01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	2.83E+02	1.01E+00	1.00E+00	2.39E+00	1.76E+01	1.72E+02	9.55E-01	2.07E+02	8.52E-02
LMSD-203 (6-12")	1.32E-01	1.32E-01	1.10E+00	8.17E+02	1.07E+02	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	7.40E+02	2.63E+00	1.00E+00	2.39E+00	4.61E+01	1.72E+02	9.55E-01	2.07E+02	2.23E-01
LMSD-204 (6-12")	1.32E-01	1.32E-01	1.10E+00	3.71E+02	4.88E+01	NA	NA	NA	NA	NA	NA	NA	NA	3.55E-03	3.36E+02	1.19E+00	1.00E+00	2.39E+00	2.09E+01	1.72E+02	9.55E-01	2.07E+02	1.01E-01
																						Maximum HQ (Lower Marsh, 6-12")	**2.23E-01**
Mallard (Omnivorous Birds)																							
Reference Sites																							
BRSD-5 (0-2")	7.94E-02	NA	NA	NA	NA	5.00E-02	1.99E+00	2.13E+02	1.06E+01	2.94E-02	1.09E+01	1.17E+03	3.43E+01	2.62E-03	1.07E+02	2.80E-01	3.85E-01	1.14E+00	1.53E+01	1.72E+02	9.55E-01	1.78E+02	8.56E-02
BRSD-5 (2-6")	7.94E-02	NA	NA	NA	NA	5.00E-02	1.99E+00	1.99E+02	9.94E+00	2.94E-02	1.09E+01	1.09E+03	3.21E+01	2.62E-03	1.00E+02	2.62E-01	3.85E-01	1.14E+00	1.43E+01	1.72E+02	9.55E-01	1.78E+02	8.00E-02
BRSD-5 (6-12")	7.94E-02	NA	NA	NA	NA	5.00E-02	1.99E+00	1.95E+02	9.73E+00	2.94E-02	1.09E+01	1.07E+03	3.14E+01	2.62E-03	9.78E+01	2.56E-01	3.85E-01	1.14E+00	1.39E+01	1.72E+02	9.55E-01	1.78E+02	7.82E-02
PGBG-1 (0-2")	7.94E-02	NA	NA	NA	NA	5.00E-02	1.99E+00	3.14E+02	1.57E+01	2.94E-02	1.09E+01	1.73E+03	5.07E+01	2.62E-03	1.58E+02	4.14E-01	3.85E-01	1.14E+00	2.25E+01	1.72E+02	9.55E-01	1.78E+02	1.26E-01
PGBG-1 (2-6")	7.94E-02	NA	NA	NA	NA	5.00E-02	1.99E+00	3.46E+02	1.73E+01	2.94E-02	1.09E+01	1.90E+03	5.58E+01	2.62E-03	1.74E+02	4.56E-01	3.85E-01	1.14E+00	2.48E+01	1.72E+02	9.55E-01	1.78E+02	1.39E-01
PGBG-1 (6-12")	7.94E-02	NA	NA	NA	NA	5.00E-02	1.99E+00	2.65E+02	1.32E+01	2.94E-02	1.09E+01	1.45E+03	4.27E+01	2.62E-03	1.33E+02	3.48E-01	3.85E-01	1.14E+00	1.90E+01	1.72E+02	9.55E-01	1.78E+02	1.06E-01

TABLE C-12GB: ZINC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 12 - MARSH, WETLAND RECEPTORS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **118.73**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Mallard (Omnivorous Birds)																							
PGBG-2 (0-2")	7.94E-02	NA	NA	NA	NA	5.00E-02	1.99E+00	5.23E+02	2.62E+01	2.94E-02	1.09E+01	2.87E+03	8.44E+01	2.62E-03	2.63E+02	6.89E-01	3.85E-01	1.14E+00	3.75E+01	1.72E+02	9.55E-01	1.78E+02	2.10E-01
PGBG-2 (2-6")	7.94E-02	NA	NA	NA	NA	5.00E-02	1.99E+00	5.01E+02	2.51E+01	2.94E-02	1.09E+01	2.75E+03	8.08E+01	2.62E-03	2.52E+02	6.60E-01	3.85E-01	1.14E+00	3.59E+01	1.72E+02	9.55E-01	1.78E+02	2.02E-01
PGBG-2 (6-12")	7.94E-02	NA	NA	NA	NA	5.00E-02	1.99E+00	5.47E+02	2.73E+01	2.94E-02	1.09E+01	3.00E+03	8.82E+01	2.62E-03	2.75E+02	7.20E-01	3.85E-01	1.14E+00	3.92E+01	1.72E+02	9.55E-01	1.78E+02	2.20E-01
Eastern Upper Marsh (0-2")																					**Minimum HQ (Reference Sites)**		**7.82E-02**
UM-1000S-3500E (0-2")	7.94E-02	NA	NA	NA	NA	5.00E-02	2.32E+00	3.99E+03	2.00E+02	2.94E-02	2.39E+01	4.11E+04	1.21E+03	2.62E-03	1.72E+03	4.50E+00	3.85E-01	1.14E+00	4.76E+02	1.72E+02	9.55E-01	1.78E+02	2.67E+00
BRSD-15 (0-2")	7.94E-02	NA	NA	NA	NA	5.00E-02	2.32E+00	3.88E+02	1.94E+01	2.94E-02	2.39E+01	3.99E+03	1.17E+02	2.62E-03	1.67E+02	4.37E-01	3.85E-01	1.14E+00	4.62E+01	1.72E+02	9.55E-01	1.78E+02	2.59E-01
BRSD-4 (0-2")	7.94E-02	NA	NA	NA	NA	5.00E-02	2.32E+00	4.20E+02	2.10E+01	2.94E-02	2.39E+01	4.33E+03	1.27E+02	2.62E-03	1.81E+02	4.74E-01	3.85E-01	1.14E+00	5.01E+01	1.72E+02	9.55E-01	1.78E+02	2.81E-01
UM-750S-3500E (0-2")	7.94E-02	NA	NA	NA	NA	5.00E-02	2.32E+00	2.90E+03	1.45E+02	2.94E-02	2.39E+01	2.99E+04	8.78E+02	2.62E-03	1.25E+03	3.27E+00	3.85E-01	1.14E+00	3.46E+02	1.72E+02	9.55E-01	1.78E+02	1.94E+00
BRSD-16 (0-2")	7.94E-02	NA	NA	NA	NA	5.00E-02	2.32E+00	1.91E+03	9.54E+01	2.94E-02	2.39E+01	1.97E+04	5.77E+02	2.62E-03	8.22E+02	2.15E+00	3.85E-01	1.14E+00	2.28E+02	1.72E+02	9.55E-01	1.78E+02	1.28E+00
UM-750S-3000E (0-2")	7.94E-02	NA	NA	NA	NA	5.00E-02	2.32E+00	4.95E+03	2.47E+02	2.94E-02	2.39E+01	5.10E+04	1.50E+03	2.62E-03	2.13E+03	5.58E+00	3.85E-01	1.14E+00	5.90E+02	1.72E+02	9.55E-01	1.78E+02	3.31E+00
BRSD-3 (0-2")	7.94E-02	NA	NA	NA	NA	5.00E-02	2.32E+00	2.37E+03	1.18E+02	2.94E-02	2.39E+01	2.44E+04	7.16E+02	2.62E-03	1.02E+03	2.67E+00	3.85E-01	1.14E+00	2.82E+02	1.72E+02	9.55E-01	1.78E+02	1.58E+00
UM-500S-3250E (0-2")	7.94E-02	NA	NA	NA	NA	5.00E-02	2.32E+00	2.18E+03	1.09E+02	2.94E-02	2.39E+01	2.25E+04	6.60E+02	2.62E-03	9.40E+02	2.46E+00	3.85E-01	1.14E+00	2.60E+02	1.72E+02	9.55E-01	1.78E+02	1.46E+00
UM-500S-3000E (0-2")	7.94E-02	NA	NA	NA	NA	5.00E-02	2.32E+00	3.27E+03	1.64E+02	2.94E-02	2.39E+01	3.37E+04	9.90E+02	2.62E-03	1.41E+03	3.69E+00	3.85E-01	1.14E+00	3.90E+02	1.72E+02	9.55E-01	1.78E+02	2.19E+00
UM-500S-2750E (0-2")	7.94E-02	NA	NA	NA	NA	5.00E-02	2.32E+00	5.08E+03	2.54E+02	2.94E-02	2.39E+01	5.24E+04	1.54E+03	2.62E-03	2.19E+03	5.74E+00	3.85E-01	1.14E+00	6.06E+02	1.72E+02	9.55E-01	1.78E+02	3.40E+00
BRSD-25 (0-2")	7.94E-02	NA	NA	NA	NA	5.00E-02	2.32E+00	1.94E+03	9.70E+01	2.94E-02	2.39E+01	2.00E+04	5.87E+02	2.62E-03	8.36E+02	2.19E+00	3.85E-01	1.14E+00	2.31E+02	1.72E+02	9.55E-01	1.78E+02	1.30E+00
UM-250S-3000E (0-2")	7.94E-02	NA	NA	NA	NA	5.00E-02	2.32E+00	9.47E+03	4.74E+02	2.94E-02	2.39E+01	9.76E+04	2.87E+03	2.62E-03	4.08E+03	1.07E+01	3.85E-01	1.14E+00	1.13E+03	1.72E+02	9.55E-01	1.78E+02	6.34E+00
UM-250S-3250E (0-2")	7.94E-02	NA	NA	NA	NA	5.00E-02	2.32E+00	2.20E+03	1.10E+02	2.94E-02	2.39E+01	2.27E+04	6.66E+02	2.62E-03	9.48E+02	2.48E+00	3.85E-01	1.14E+00	2.63E+02	1.72E+02	9.55E-01	1.78E+02	1.47E+00
BRSD-24 (0-2")	7.94E-02	NA	NA	NA	NA	5.00E-02	2.32E+00	4.74E+03	2.37E+02	2.94E-02	2.39E+01	4.88E+04	1.43E+03	2.62E-03	2.04E+03	5.34E+00	3.85E-01	1.14E+00	5.65E+02	1.72E+02	9.55E-01	1.78E+02	3.17E+00
UM-250S-2750E (0-2")	7.94E-02	NA	NA	NA	NA	5.00E-02	2.32E+00	3.51E+03	1.75E+02	2.94E-02	2.39E+01	3.61E+04	1.06E+03	2.62E-03	1.51E+03	3.95E+00	3.85E-01	1.14E+00	4.18E+02	1.72E+02	9.55E-01	1.78E+02	2.35E+00
UM-250S-2500E (0-2")	7.94E-02	NA	NA	NA	NA	5.00E-02	2.32E+00	1.34E+03	6.69E+01	2.94E-02	2.39E+01	1.38E+04	4.05E+02	2.62E-03	5.76E+02	1.51E+00	3.85E-01	1.14E+00	1.59E+02	1.72E+02	9.55E-01	1.78E+02	8.95E-01
UM-0N-2500E (0-2")	7.94E-02	NA	NA	NA	NA	5.00E-02	2.32E+00	7.76E+03	3.88E+02	2.94E-02	2.39E+01	7.99E+04	2.35E+03	2.62E-03	3.34E+03	8.75E+00	3.85E-01	1.14E+00	9.25E+02	1.72E+02	9.55E-01	1.78E+02	5.19E+00
UM-0N-250E (0-2")	7.94E-02	NA	NA	NA	NA	5.00E-02	2.32E+00	3.48E+03	1.74E+02	2.94E-02	2.39E+01	3.59E+04	1.05E+03	2.62E-03	1.50E+03	3.93E+00	3.85E-01	1.14E+00	4.15E+02	1.72E+02	9.55E-01	1.78E+02	2.33E+00
BRSD-2 (0-2")	7.94E-02	NA	NA	NA	NA	5.00E-02	2.32E+00	4.06E+03	2.03E+02	2.94E-02	2.39E+01	4.19E+04	1.23E+03	2.62E-03	1.75E+03	4.58E+00	3.85E-01	1.14E+00	4.85E+02	1.72E+02	9.55E-01	1.78E+02	2.72E+00
UM-500N-2500E (0-2")	7.94E-02	NA	NA	NA	NA	5.00E-02	2.32E+00	6.27E+02	3.13E+01	2.94E-02	2.39E+01	6.46E+03	1.90E+02	2.62E-03	2.70E+02	7.07E-01	3.85E-01	1.14E+00	7.48E+01	1.72E+02	9.55E-01	1.78E+02	4.19E-01
UM-250N-2500E (0-2")	7.94E-02	NA	NA	NA	NA	5.00E-02	2.32E+00	6.94E+03	3.47E+02	2.94E-02	2.39E+01	7.15E+04	2.10E+03	2.62E-03	2.99E+03	7.83E+00	3.85E-01	1.14E+00	8.28E+02	1.72E+02	9.55E-01	1.78E+02	4.64E+00
UM-250N-2250E (0-2")	7.94E-02	NA	NA	NA	NA	5.00E-02	2.32E+00	4.78E+03	2.39E+02	2.94E-02	2.39E+01	4.93E+04	1.45E+03	2.62E-03	2.06E+03	5.39E+00	3.85E-01	1.14E+00	5.70E+02	1.72E+02	9.55E-01	1.78E+02	3.20E+00
Western Upper Marsh (0-2")																						**Maximum HQ (Eastern Upper Marsh, 0-2")**	**6.34E+00**
UM-500S-2500E (0-2")	7.94E-02	NA	NA	NA	NA	5.00E-02	2.15E+00	4.77E+02	2.38E+01	2.94E-02	1.78E+01	3.95E+03	1.16E+02	2.62E-03	2.22E+02	5.81E-01	3.85E-01	1.14E+00	4.73E+01	1.72E+02	9.55E-01	1.78E+02	2.65E-01
UM-0N-2000E (0-2")	7.94E-02	NA	NA	NA	NA	5.00E-02	2.15E+00	5.93E+03	2.96E+02	2.94E-02	1.78E+01	4.91E+04	1.44E+03	2.62E-03	2.76E+03	7.23E+00	3.85E-01	1.14E+00	5.88E+02	1.72E+02	9.55E-01	1.78E+02	3.30E+00
UM-500S-2000E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-250N-1750E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	1.26E+02	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-1500E (0-2")	7.94E-02	NA	NA	NA	NA	5.00E-02	2.15E+00	6.14E+02	3.07E+01	2.94E-02	1.78E+01	5.09E+03	1.49E+02	2.62E-03	2.86E+02	7.49E-01	3.85E-01	1.14E+00	6.10E+01	1.72E+02	9.55E-01	1.78E+02	3.42E-01
UM-250S-1500E (0-2")	7.94E-02	NA	NA	NA	NA	5.00E-02	2.15E+00	5.93E+03	2.96E+02	2.94E-02	1.78E+01	4.91E+04	1.44E+03	2.62E-03	2.76E+03	7.23E+00	3.85E-01	1.14E+00	5.88E+02	1.72E+02	9.55E-01	1.78E+02	3.30E+00
UM-250S-1250E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	9.88E+01	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-6 (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-1000E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-750E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-500E (0-2")	7.94E-02	NA	NA	NA	NA	5.00E-02	2.15E+00	4.68E+02	2.34E+01	2.94E-02	1.78E+01	3.88E+03	1.14E+02	2.62E-03	2.18E+02	5.71E-01	3.85E-01	1.14E+00	4.65E+01	1.72E+02	9.55E-01	1.78E+02	2.61E-01
UM-250S-500E (0-2")	7.94E-02	NA	NA	NA	NA	5.00E-02	2.15E+00	3.18E+02	1.59E+01	2.94E-02	1.78E+01	2.63E+03	7.73E+01	2.62E-03	1.48E+02	3.88E-01	3.85E-01	1.14E+00	3.16E+01	1.72E+02	9.55E-01	1.78E+02	1.77E-01
UM-250S-250E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	1.31E+02	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-7 (0-2")	7.94E-02	NA	NA	NA	NA	5.00E-02	2.15E+00	1.42E+03	7.12E+01	2.94E-02	1.78E+01	1.18E+04	3.46E+02	2.62E-03	6.63E+02	1.74E+00	3.85E-01	1.14E+00	1.41E+02	1.72E+02	9.55E-01	1.78E+02	7.93E-01
BRSD-8 (0-2")	7.94E-02	NA	NA	NA	NA	5.00E-02	2.15E+00	1.12E+03	5.60E+01	2.94E-02	1.78E+01	9.27E+03	2.72E+02	2.62E-03	5.21E+02	1.36E+00	3.85E-01	1.14E+00	1.11E+02	1.72E+02	9.55E-01	1.78E+02	6.23E-01
UM-500S-500E (0-2")	7.94E-02	NA	NA	NA	NA	5.00E-02	2.15E+00	4.04E+02	2.02E+01	2.94E-02	1.78E+01	3.34E+03	9.82E+01	2.62E-03	1.88E+02	4.92E-01	3.85E-01	1.14E+00	4.01E+01	1.72E+02	9.55E-01	1.78E+02	2.25E-01
BRSD-9 (0-2")	7.94E-02	NA	NA	NA	NA	5.00E-02	2.15E+00	1.40E+03	7.00E+01	2.94E-02	1.78E+01	1.16E+04	3.40E+02	2.62E-03	6.52E+02	1.71E+00	3.85E-01	1.14E+00	1.39E+02	1.72E+02	9.55E-01	1.78E+02	7.80E-01
BRSD-10 (0-2")	7.94E-02	NA	NA	NA	NA	5.00E-02	2.15E+00	6.17E+03	3.08E+02	2.94E-02	1.78E+01	5.10E+04	1.50E+03	2.62E-03	2.87E+03	7.52E+00	3.85E-01	1.14E+00	6.12E+02	1.72E+02	9.55E-01	1.78E+02	3.43E+00
BRSD-11 (0-2")	7.94E-02	NA	NA	NA	NA	5.00E-02	2.15E+00	9.80E+02	4.90E+01	2.94E-02	1.78E+01	8.11E+03	2.38E+02	2.62E-03	4.56E+02	1.19E+00	3.85E-01	1.14E+00	9.72E+01	1.72E+02	9.55E-01	1.78E+02	5.45E-01
Eastern Upper Marsh (2-6")																						**Maximum HQ (Western Upper Marsh, 0-2")**	**3.43E+00**
UM-1000S-3500E (2-6")	7.94E-02	NA	NA	NA	NA	5.00E-02	2.32E+00	9.19E+02	4.60E+01	2.94E-02	2.39E+01	9.47E+03	2.78E+02	2.62E-03	3.96E+02	1.04E+00	3.85E-01	1.14E+00	1.10E+02	1.72E+02	9.55E-01	1.78E+02	6.15E-01
BRSD-15 (2-6")	7.94E-02	NA	NA	NA	NA	5.00E-02	2.32E+00	5.64E+02	2.82E+01	2.94E-02	2.39E+01	5.81E+03	1.71E+02	2.62E-03	2.43E+02	6.36E-01	3.85E-01	1.14E+00	6.73E+01	1.72E+02	9.55E-01	1.78E+02	3.77E-01
BRSD-4 (2-6")	7.94E-02	NA	NA	NA	NA	5.00E-02	2.32E+00	4.97E+02	2.48E+01	2.94E-02	2.39E+01	5.12E+03	1.50E+02	2.62E-03	2.14E+02	5.60E-01	3.85E-01	1.14E+00	5.93E+01	1.72E+02	9.55E-01	1.78E+02	3.32E-01
UM-750S-3500E (2-6")	7.94E-02	NA	NA	NA	NA	5.00E-02	2.32E+00	6.99E+03	3.49E+02	2.94E-02	2.39E+01	7.20E+04	2.11E+03	2.62E-03	3.01E+03	7.88E+00	3.85E-01	1.14E+00	8.33E+02	1.72E+02	9.55E-01	1.78E+02	4.67E+00
BRSD-16 (2-6")	7.94E-02	NA	NA	NA	NA	5.00E-02	2.32E+00	9.03E+03	4.52E+02	2.94E-02	2.39E+01	9.30E+04	2.73E+03	2.62E-03	3.89E+03	1.02E+01	3.85E-01	1.14E+00	1.08E+03	1.72E+02	9.55E-01	1.78E+02	6.04E+00
UM-750S-3000E (2-6")	7.94E-02	NA	NA	NA	NA	5.00E-02	2.32E+00	4.11E+03	2.05E+02	2.94E-02	2.39E+01	4.23E+04	1.24E+03	2.62E-03	1.77E+03	4.64E+00	3.85E-01	1.14E+00	4.90E+02	1.72E+02	9.55E-01	1.78E+02	2.75E+00
BRSD-3 (2-6")	7.94E-02	NA	NA	NA	NA	5.00E-02	2.32E+00	2.65E+03	1.32E+02	2.94E-02	2.39E+01	2.73E+04	8.01E+02	2.62E-03	1.14E+03	2.99E+00	3.85E-01	1.14E+00	3.16E+02	1.72E+02	9.55E-01	1.78E+02	1.77E+00
UM-500S-3250E (2-6")	7.94E-02	NA	NA	NA	NA	5.00E-02	2.32E+00	1.55E+03	7.75E+01	2.94E-02	2.39E+01	1.60E+04	4.69E+02	2.62E-03	6.68E+02	1.75E+00	3.85E-01	1.14E+00	1.85E+02	1.72E+02	9.55E-01	1.78E+02	1.04E+00
UM-500S-3000E (2-6")	7.94E-02	NA	NA	NA	NA	5.00E-02	2.32E+00	6.15E+02	3.08E+01	2.94E-02	2.39E+01	6.34E+03	1.86E+02	2.62E-03	2.65E+02	6.94E-01	3.85E-01	1.14E+00	7.34E+01	1.72E+02	9.55E-01	1.78E+02	4.12E-01
UM-500S-2750E (2-6")	7.94E-02	NA	NA	NA	NA	5.00E-02	2.32E+00	3.51E+03	1.75E+02	2.94E-02	2.39E+01	3.61E+04	1.06E+03	2.62E-03	1.51E+03	3.95E+00	3.85E-01	1.14E+00	4.18E+02	1.72E+02	9.55E-01	1.78E+02	2.35E+00
BRSD-25 (2-6")	7.94E-02	NA	NA	NA	NA	5.00E-02	2.32E+00	2.60E+03	1.30E+02	2.94E-02	2.39E+01	2.68E+04	7.87E+02	2.62E-03	1.12E+03	2.93E+00	3.85E-01	1.14E+00	3.10E+02	1.72E+02	9.55E-01	1.78E+02	1.74E+00

TABLE C-12GB: ZINC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 12 - MARSH, WETLAND RECEPTORS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **118.73**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Mallard (Omnivorous Birds)																							
UM-250S-3000E (2-6")	7.94E-02	NA	NA	NA	NA	5.00E-02	2.32E+00	8.24E+03	4.12E+02	2.94E-02	2.39E+01	8.49E+04	2.49E+03	2.62E-03	3.55E+03	9.30E+00	3.85E-01	1.14E+00	9.83E+02	1.72E+02	9.55E-01	1.78E+02	5.51E+00
UM-250S-3250E (2-6")	7.94E-02	NA	NA	NA	NA	5.00E-02	2.32E+00	1.76E+03	8.82E+01	2.94E-02	2.39E+01	1.82E+04	5.34E+02	2.62E-03	7.60E+02	1.99E+00	3.85E-01	1.14E+00	2.10E+02	1.72E+02	9.55E-01	1.78E+02	1.18E+00
BRSD-24 (2-6")	7.94E-02	NA	NA	NA	NA	5.00E-02	2.32E+00	8.01E+03	4.00E+02	2.94E-02	2.39E+01	8.25E+04	2.42E+03	2.62E-03	3.45E+03	9.03E+00	3.85E-01	1.14E+00	9.55E+02	1.72E+02	9.55E-01	1.78E+02	5.36E+00
UM-250S-2750E (2-6")	7.94E-02	NA	NA	NA	NA	5.00E-02	2.32E+00	4.67E+03	2.33E+02	2.94E-02	2.39E+01	4.81E+04	1.41E+03	2.62E-03	2.01E+03	5.26E+00	3.85E-01	1.14E+00	5.57E+02	1.72E+02	9.55E-01	1.78E+02	3.12E+00
UM-0N-2500E (2-6")	7.94E-02	NA	NA	NA	NA	5.00E-02	2.32E+00	3.39E+03	1.69E+02	2.94E-02	2.39E+01	3.49E+04	1.03E+03	2.62E-03	1.46E+03	3.82E+00	3.85E-01	1.14E+00	4.04E+02	1.72E+02	9.55E-01	1.78E+02	2.27E+00
BRSD-2 (2-6")	7.94E-02	NA	NA	NA	NA	5.00E-02	2.32E+00	4.62E+03	2.31E+02	2.94E-02	2.39E+01	4.76E+04	1.40E+03	2.62E-03	1.99E+03	5.21E+00	3.85E-01	1.14E+00	5.51E+02	1.72E+02	9.55E-01	1.78E+02	3.09E+00
UM-500N-2500E (2-6")	7.94E-02	NA	NA	NA	NA	5.00E-02	2.32E+00	6.32E+02	3.16E+01	2.94E-02	2.39E+01	6.51E+03	1.91E+02	2.62E-03	2.72E+02	7.12E-01	3.85E-01	1.14E+00	7.53E+01	1.72E+02	9.55E-01	1.78E+02	4.22E-01
UM-250N-2500E (2-6")	7.94E-02	NA	NA	NA	NA	5.00E-02	2.32E+00	5.76E+03	2.88E+02	2.94E-02	2.39E+01	5.93E+04	1.74E+03	2.62E-03	2.48E+03	6.49E+00	3.85E-01	1.14E+00	6.87E+02	1.72E+02	9.55E-01	1.78E+02	3.85E+00
UM-250N-2250E (2-6")	7.94E-02	NA	NA	NA	NA	5.00E-02	2.32E+00	1.49E+03	7.43E+01	2.94E-02	2.39E+01	1.53E+04	4.50E+02	2.62E-03	6.40E+02	1.68E+00	3.85E-01	1.14E+00	1.77E+02	1.72E+02	9.55E-01	1.78E+02	9.94E-01
Western Upper Marsh (2-6")																						**Maximum HQ (Eastern Upper Marsh, 2-6")**	**6.04E+00**
UM-500S-2500E (2-6")	7.94E-02	NA	NA	NA	NA	5.00E-02	2.15E+00	4.73E+02	2.36E+01	2.94E-02	1.78E+01	3.91E+03	1.15E+02	2.62E-03	2.20E+02	5.76E-01	3.85E-01	1.14E+00	4.69E+01	1.72E+02	9.55E-01	1.78E+02	2.63E-01
UM-0N-2000E (2-6")	7.94E-02	NA	NA	NA	NA	5.00E-02	2.15E+00	5.93E+03	2.96E+02	2.94E-02	1.78E+01	4.91E+04	1.44E+03	2.62E-03	2.76E+03	7.23E+00	3.85E-01	1.14E+00	5.88E+02	1.72E+02	9.55E-01	1.78E+02	3.30E+00
UM-500S-2000E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	1.11E+02	BB	BB	BB	BB	BB	BB	BB	BB
UM-250N-1750E (2-6")	7.94E-02	NA	NA	NA	NA	5.00E-02	2.15E+00	6.14E+02	3.07E+01	2.94E-02	1.78E+01	5.09E+03	1.49E+02	2.62E-03	2.86E+02	7.49E-01	3.85E-01	1.14E+00	6.10E+01	1.72E+02	9.55E-01	1.78E+02	3.42E-01
UM-0N-1500E (2-6")	7.94E-02	NA	NA	NA	NA	5.00E-02	2.15E+00	5.48E+02	2.74E+01	2.94E-02	1.78E+01	4.53E+03	1.33E+02	2.62E-03	2.55E+02	6.68E-01	3.85E-01	1.14E+00	5.44E+01	1.72E+02	9.55E-01	1.78E+02	3.05E-01
UM-250S-1500E (2-6")	7.94E-02	NA	NA	NA	NA	5.00E-02	2.15E+00	4.32E+03	2.16E+02	2.94E-02	1.78E+01	3.57E+04	1.05E+03	2.62E-03	2.01E+03	5.26E+00	3.85E-01	1.14E+00	4.29E+02	1.72E+02	9.55E-01	1.78E+02	2.40E+00
UM-250S-1250E (2-6")	7.94E-02	NA	NA	NA	NA	5.00E-02	2.15E+00	3.01E+02	1.50E+01	2.94E-02	1.78E+01	2.49E+03	7.31E+01	2.62E-03	1.40E+02	3.67E-01	3.85E-01	1.14E+00	2.98E+01	1.72E+02	9.55E-01	1.78E+02	1.67E-01
BRSD-6 (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-1000E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-750E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-500E (2-6")	7.94E-02	NA	NA	NA	NA	5.00E-02	2.15E+00	5.20E+03	2.60E+02	2.94E-02	1.78E+01	4.30E+04	1.26E+03	2.62E-03	2.42E+03	6.34E+00	3.85E-01	1.14E+00	5.16E+02	1.72E+02	9.55E-01	1.78E+02	2.89E+00
UM-250S-500E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	9.88E+01	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-250E (2-6")	7.94E-02	NA	NA	NA	NA	5.00E-02	2.15E+00	3.59E+03	1.79E+02	2.94E-02	1.78E+01	2.97E+04	8.72E+02	2.62E-03	1.67E+03	4.37E+00	3.85E-01	1.14E+00	3.56E+02	1.72E+02	9.55E-01	1.78E+02	2.00E+00
UM-250S-250E (2-6")	7.94E-02	NA	NA	NA	NA	5.00E-02	2.15E+00	3.69E+02	1.85E+01	2.94E-02	1.78E+01	3.06E+03	8.98E+01	2.62E-03	1.72E+02	4.50E-01	3.85E-01	1.14E+00	3.67E+01	1.72E+02	9.55E-01	1.78E+02	2.06E-01
BRSD-7 (2-6")	7.94E-02	NA	NA	NA	NA	5.00E-02	2.15E+00	3.18E+02	1.59E+01	2.94E-02	1.78E+01	2.63E+03	7.73E+01	2.62E-03	1.48E+02	3.88E-01	3.85E-01	1.14E+00	3.16E+01	1.72E+02	9.55E-01	1.78E+02	1.77E-01
BRSD-8 (2-6")	7.94E-02	NA	NA	NA	NA	5.00E-02	2.15E+00	1.24E+03	6.22E+01	2.94E-02	1.78E+01	1.03E+04	3.02E+02	2.62E-03	5.79E+02	1.52E+00	3.85E-01	1.14E+00	1.23E+02	1.72E+02	9.55E-01	1.78E+02	6.92E-01
UM-500S-500E (2-6")	7.94E-02	NA	NA	NA	NA	5.00E-02	2.15E+00	3.80E+02	1.90E+01	2.94E-02	1.78E+01	3.15E+03	9.24E+01	2.62E-03	1.77E+02	4.64E-01	3.85E-01	1.14E+00	3.77E+01	1.72E+02	9.55E-01	1.78E+02	2.12E-01
BRSD-9 (2-6")	7.94E-02	NA	NA	NA	NA	5.00E-02	2.15E+00	6.44E+02	3.22E+01	2.94E-02	1.78E+01	5.34E+03	1.57E+02	2.62E-03	3.00E+02	7.86E-01	3.85E-01	1.14E+00	6.40E+01	1.72E+02	9.55E-01	1.78E+02	3.59E-01
BRSD-10 (2-6")	7.94E-02	NA	NA	NA	NA	5.00E-02	2.15E+00	5.03E+03	2.51E+02	2.94E-02	1.78E+01	4.16E+04	1.22E+03	2.62E-03	2.34E+03	6.13E+00	3.85E-01	1.14E+00	4.99E+02	1.72E+02	9.55E-01	1.78E+02	2.80E+00
BRSD-11 (2-6")	7.94E-02	NA	NA	NA	NA	5.00E-02	2.15E+00	6.38E+02	3.19E+01	2.94E-02	1.78E+01	5.28E+03	1.55E+02	2.62E-03	2.97E+02	7.78E-01	3.85E-01	1.14E+00	6.33E+01	1.72E+02	9.55E-01	1.78E+02	3.55E-01
Eastern Upper Marsh (6-12")																						**Maximum HQ (Western Upper Marsh, 2-6")**	**3.30E+00**
UM-1000S-3500E (6-12")	7.94E-02	NA	NA	NA	NA	5.00E-02	2.32E+00	4.23E+02	2.11E+01	2.94E-02	2.39E+01	4.35E+03	1.28E+02	2.62E-03	1.82E+02	4.77E-01	3.85E-01	1.14E+00	5.04E+01	1.72E+02	9.55E-01	1.78E+02	2.83E-01
BRSD-15 (6-12")	7.94E-02	NA	NA	NA	NA	5.00E-02	2.32E+00	6.55E+02	3.27E+01	2.94E-02	2.39E+01	6.75E+03	1.98E+02	2.62E-03	2.82E+02	7.38E-01	3.85E-01	1.14E+00	7.81E+01	1.72E+02	9.55E-01	1.78E+02	4.38E-01
BRSD-4 (6-12")	7.94E-02	NA	NA	NA	NA	5.00E-02	2.32E+00	7.38E+02	3.69E+01	2.94E-02	2.39E+01	7.61E+03	2.23E+02	2.62E-03	3.18E+02	8.33E-01	3.85E-01	1.14E+00	8.81E+01	1.72E+02	9.55E-01	1.78E+02	4.94E-01
UM-750S-3500E (6-12")	7.94E-02	NA	NA	NA	NA	5.00E-02	2.32E+00	6.55E+03	3.27E+02	2.94E-02	2.39E+01	6.75E+04	1.98E+03	2.62E-03	2.82E+03	7.38E+00	3.85E-01	1.14E+00	7.81E+02	1.72E+02	9.55E-01	1.78E+02	4.38E+00
BRSD-16 (6-12")	7.94E-02	NA	NA	NA	NA	5.00E-02	2.32E+00	5.36E+03	2.68E+02	2.94E-02	2.39E+01	5.53E+04	1.62E+03	2.62E-03	2.31E+03	6.05E+00	3.85E-01	1.14E+00	6.40E+02	1.72E+02	9.55E-01	1.78E+02	3.59E+00
UM-750S-3000E (6-12")	7.94E-02	NA	NA	NA	NA	5.00E-02	2.32E+00	3.97E+03	1.98E+02	2.94E-02	2.39E+01	4.09E+04	1.20E+03	2.62E-03	1.71E+03	4.48E+00	3.85E-01	1.14E+00	4.74E+02	1.72E+02	9.55E-01	1.78E+02	2.66E+00
BRSD-3 (6-12")	7.94E-02	NA	NA	NA	NA	5.00E-02	2.32E+00	1.25E+03	6.25E+01	2.94E-02	2.39E+01	1.29E+04	3.78E+02	2.62E-03	5.38E+02	1.41E+00	3.85E-01	1.14E+00	1.49E+02	1.72E+02	9.55E-01	1.78E+02	8.36E-01
UM-500S-3250E (6-12")	7.94E-02	NA	NA	NA	NA	5.00E-02	2.32E+00	1.33E+03	6.65E+01	2.94E-02	2.39E+01	1.37E+04	4.02E+02	2.62E-03	5.73E+02	1.50E+00	3.85E-01	1.14E+00	1.59E+02	1.72E+02	9.55E-01	1.78E+02	8.90E-01
UM-500S-3000E (6-12")	7.94E-02	NA	NA	NA	NA	5.00E-02	2.32E+00	7.43E+02	3.71E+01	2.94E-02	2.39E+01	7.65E+03	2.25E+02	2.62E-03	3.20E+02	8.38E-01	3.85E-01	1.14E+00	8.86E+01	1.72E+02	9.55E-01	1.78E+02	4.97E-01
UM-500S-2750E (6-12")	7.94E-02	NA	NA	NA	NA	5.00E-02	2.32E+00	3.11E+03	1.56E+02	2.94E-02	2.39E+01	3.21E+04	9.41E+02	2.62E-03	1.34E+03	3.51E+00	3.85E-01	1.14E+00	3.71E+02	1.72E+02	9.55E-01	1.78E+02	2.08E+00
BRSD-25 (6-12")	7.94E-02	NA	NA	NA	NA	5.00E-02	2.32E+00	2.39E+03	1.20E+02	2.94E-02	2.39E+01	2.46E+04	7.23E+02	2.62E-03	1.03E+03	2.70E+00	3.85E-01	1.14E+00	2.85E+02	1.72E+02	9.55E-01	1.78E+02	1.60E+00
UM-250S-3000E (6-12")	7.94E-02	NA	NA	NA	NA	5.00E-02	2.32E+00	6.85E+03	3.42E+02	2.94E-02	2.39E+01	7.06E+04	2.07E+03	2.62E-03	2.95E+03	7.73E+00	3.85E-01	1.14E+00	8.17E+02	1.72E+02	9.55E-01	1.78E+02	4.58E+00
UM-250S-3250E (6-12")	7.94E-02	NA	NA	NA	NA	5.00E-02	2.32E+00	1.51E+03	7.57E+01	2.94E-02	2.39E+01	1.56E+04	4.58E+02	2.62E-03	6.52E+02	1.71E+00	3.85E-01	1.14E+00	1.81E+02	1.72E+02	9.55E-01	1.78E+02	1.01E+00
BRSD-24 (6-12")	7.94E-02	NA	NA	NA	NA	5.00E-02	2.32E+00	4.04E+03	2.02E+02	2.94E-02	2.39E+01	4.16E+04	1.22E+03	2.62E-03	1.74E+03	4.56E+00	3.85E-01	1.14E+00	4.82E+02	1.72E+02	9.55E-01	1.78E+02	2.70E+00
UM-250S-2750E (6-12")	7.94E-02	NA	NA	NA	NA	5.00E-02	2.32E+00	4.48E+03	2.24E+02	2.94E-02	2.39E+01	4.62E+04	1.36E+03	2.62E-03	1.93E+03	5.05E+00	3.85E-01	1.14E+00	5.34E+02	1.72E+02	9.55E-01	1.78E+02	3.00E+00
UM-250S-2500E (6-12")	7.94E-02	NA	NA	NA	NA	5.00E-02	2.32E+00	5.87E+02	2.94E+01	2.94E-02	2.39E+01	6.05E+03	1.78E+02	2.62E-03	2.53E+02	6.63E-01	3.85E-01	1.14E+00	7.01E+01	1.72E+02	9.55E-01	1.78E+02	3.93E-01
BRSD-2 (6-12")	7.94E-02	NA	NA	NA	NA	5.00E-02	2.32E+00	9.80E+03	4.90E+02	2.94E-02	2.39E+01	1.01E+05	2.96E+03	2.62E-03	4.22E+03	1.11E+01	3.85E-01	1.14E+00	1.17E+03	1.72E+02	9.55E-01	1.78E+02	6.55E+00
UM-500N-2500E (6-12")	7.94E-02	NA	NA	NA	NA	5.00E-02	2.32E+00	4.09E+02	2.04E+01	2.94E-02	2.39E+01	4.21E+03	1.24E+02	2.62E-03	1.76E+02	4.61E-01	3.85E-01	1.14E+00	4.87E+01	1.72E+02	9.55E-01	1.78E+02	2.73E-01
UM-250N-2500E (6-12")	7.94E-02	NA	NA	NA	NA	5.00E-02	2.32E+00	4.34E+03	2.17E+02	2.94E-02	2.39E+01	4.47E+04	1.31E+03	2.62E-03	1.87E+03	4.90E+00	3.85E-01	1.14E+00	5.18E+02	1.72E+02	9.55E-01	1.78E+02	2.90E+00
UM-250N-2250E (6-12")	7.94E-02	NA	NA	NA	NA	5.00E-02	2.32E+00	9.06E+02	4.53E+01	2.94E-02	2.39E+01	9.33E+03	2.74E+02	2.62E-03	3.90E+02	1.02E+00	3.85E-01	1.14E+00	1.08E+02	1.72E+02	9.55E-01	1.78E+02	6.06E-01
Western Upper Marsh (6-12")																						**Maximum HQ (Eastern Upper Marsh, 6-12")**	**6.55E+00**
UM-500S-2500E (6-12")	7.94E-02	NA	NA	NA	NA	5.00E-02	2.15E+00	4.04E+02	2.02E+01	2.94E-02	1.78E+01	3.34E+03	9.82E+01	2.62E-03	1.88E+02	4.92E-01	3.85E-01	1.14E+00	4.01E+01	1.72E+02	9.55E-01	1.78E+02	2.25E-01
UM-0N-2000E (6-12")	7.94E-02	NA	NA	NA	NA	5.00E-02	2.15E+00	6.68E+03	3.34E+02	2.94E-02	1.78E+01	5.53E+04	1.62E+03	2.62E-03	3.11E+03	8.14E+00	3.85E-01	1.14E+00	6.63E+02	1.72E+02	9.55E-01	1.78E+02	3.72E+00
UM-500S-2000E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-250N-1750E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	9.95E+01	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-1500E (6-12")	7.94E-02	NA	NA	NA	NA	5.00E-02	2.15E+00	1.23E+03	6.14E+01	2.94E-02	1.78E+01	1.02E+04	2.99E+02	2.62E-03	5.72E+02	1.50E+00	3.85E-01	1.14E+00	1.22E+02	1.72E+02	9.55E-01	1.78E+02	6.84E-01
UM-250S-1500E (6-12")	7.94E-02	NA	NA	NA	NA	5.00E-02	2.15E+00	1.89E+03	9.47E+01	2.94E-02	1.78E+01	1.57E+04	4.61E+02	2.62E-03	8.82E+02	2.31E+00	3.85E-01	1.14E+00	1.88E+02	1.72E+02	9.55E-01	1.78E+02	1.05E+00

TABLE C-12GB: ZINC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 12 - MARSH, WETLAND RECEPTORS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **118.73**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Mallard (Omnivorous Birds)																							
UM-250S-1250E (6-12")	7.94E-02	NA	NA	NA	NA	5.00E-02	2.15E+00	3.14E+02	1.57E+01	2.94E-02	1.78E+01	2.60E+03	7.62E+01	2.62E-03	1.46E+02	3.82E-01	3.85E-01	1.14E+00	3.11E+01	1.72E+02	9.55E-01	1.78E+02	1.75E-01
BRSD-6 (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-1000E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-750E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-500E (6-12")	7.94E-02	NA	NA	NA	NA	5.00E-02	2.15E+00	3.74E+03	1.87E+02	2.94E-02	1.78E+01	3.09E+04	9.09E+02	2.62E-03	1.74E+03	4.56E+00	3.85E-01	1.14E+00	3.71E+02	1.72E+02	9.55E-01	1.78E+02	2.08E+00
UM-250S-500E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	1.12E+02	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-250E (6-12")	7.94E-02	NA	NA	NA	NA	5.00E-02	2.15E+00	2.26E+03	1.13E+02	2.94E-02	1.78E+01	1.87E+04	5.48E+02	2.62E-03	1.05E+03	2.75E+00	3.85E-01	1.14E+00	2.24E+02	1.72E+02	9.55E-01	1.78E+02	1.26E+00
UM-250S-250E (6-12")	7.94E-02	NA	NA	NA	NA	5.00E-02	2.15E+00	5.26E+02	2.63E+01	2.94E-02	1.78E+01	4.36E+03	1.28E+02	2.62E-03	2.45E+02	6.42E-01	3.85E-01	1.14E+00	5.22E+01	1.72E+02	9.55E-01	1.78E+02	2.93E-01
BRSD-7 (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	1.16E+02	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-8 (6-12")	7.94E-02	NA	NA	NA	NA	5.00E-02	2.15E+00	1.27E+03	6.34E+01	2.94E-02	1.78E+01	1.05E+04	3.08E+02	2.62E-03	5.90E+02	1.55E+00	3.85E-01	1.14E+00	1.26E+02	1.72E+02	9.55E-01	1.78E+02	7.06E-01
UM-500S-500E (6-12")	7.94E-02	NA	NA	NA	NA	5.00E-02	2.15E+00	3.76E+02	1.88E+01	2.94E-02	1.78E+01	3.11E+03	9.14E+01	2.62E-03	1.75E+02	4.58E-01	3.85E-01	1.14E+00	3.73E+01	1.72E+02	9.55E-01	1.78E+02	2.09E-01
BRSD-9 (6-12")	7.94E-02	NA	NA	NA	NA	5.00E-02	2.15E+00	7.56E+02	3.78E+01	2.94E-02	1.78E+01	6.26E+03	1.84E+02	2.62E-03	3.52E+02	9.22E-01	3.85E-01	1.14E+00	7.51E+01	1.72E+02	9.55E-01	1.78E+02	4.21E-01
BRSD-10 (6-12")	7.94E-02	NA	NA	NA	NA	5.00E-02	2.15E+00	7.78E+03	3.89E+02	2.94E-02	1.78E+01	6.44E+04	1.89E+03	2.62E-03	3.62E+03	9.48E+00	3.85E-01	1.14E+00	7.72E+02	1.72E+02	9.55E-01	1.78E+02	4.33E+00
BRSD-11 (6-12")	7.94E-02	NA	NA	NA	NA	5.00E-02	2.15E+00	6.47E+02	3.23E+01	2.94E-02	1.78E+01	5.35E+03	1.57E+02	2.62E-03	3.01E+02	7.88E-01	3.85E-01	1.14E+00	6.42E+01	1.72E+02	9.55E-01	1.78E+02	3.60E-01
Middle Marsh (0-2")																						**Maximum HQ (Western Upper Marsh, 6-12")**	**4.33E+00**
MMSD-201 (0-2")	7.94E-02	NA	NA	NA	NA	5.00E-02	2.15E+00	3.16E+03	1.58E+02	2.94E-02	1.78E+01	2.61E+04	7.68E+02	2.62E-03	1.47E+03	3.85E+00	3.85E-01	1.14E+00	3.13E+02	1.72E+02	9.55E-01	1.78E+02	1.76E+00
MMSD-202 (0-2")	7.94E-02	NA	NA	NA	NA	5.00E-02	2.15E+00	8.81E+02	4.40E+01	2.94E-02	1.78E+01	7.29E+03	2.14E+02	2.62E-03	4.10E+02	1.07E+00	3.85E-01	1.14E+00	8.74E+01	1.72E+02	9.55E-01	1.78E+02	4.90E-01
Middle Marsh (2-6")																						**Maximum HQ (Middle Marsh, 0-2")**	**1.76E+00**
MMSD-201 (2-6")	7.94E-02	NA	NA	NA	NA	5.00E-02	2.15E+00	4.43E+03	2.21E+02	2.94E-02	1.78E+01	3.66E+04	1.08E+03	2.62E-03	2.06E+03	5.39E+00	3.85E-01	1.14E+00	4.39E+02	1.72E+02	9.55E-01	1.78E+02	2.46E+00
MMSD-202 (2-6")	7.94E-02	NA	NA	NA	NA	5.00E-02	2.15E+00	1.16E+03	5.79E+01	2.94E-02	1.78E+01	9.59E+03	2.81E+02	2.62E-03	5.39E+02	1.41E+00	3.85E-01	1.14E+00	1.15E+02	1.72E+02	9.55E-01	1.78E+02	6.45E-01
Middle Marsh (6-12")																						**Maximum HQ (Middle Marsh, 2-6")**	**2.46E+00**
MMSD-201 (6-12")	7.94E-02	NA	NA	NA	NA	5.00E-02	2.15E+00	5.56E+03	2.78E+02	2.94E-02	1.78E+01	4.61E+04	1.35E+03	2.62E-03	2.59E+03	6.78E+00	3.85E-01	1.14E+00	5.52E+02	1.72E+02	9.55E-01	1.78E+02	3.10E+00
MMSD-202 (6-12")	7.94E-02	NA	NA	NA	NA	5.00E-02	2.15E+00	1.07E+03	5.35E+01	2.94E-02	1.78E+01	8.86E+03	2.60E+02	2.62E-03	4.98E+02	1.30E+00	3.85E-01	1.14E+00	1.06E+02	1.72E+02	9.55E-01	1.78E+02	5.96E-01
Lower Marsh (0-2")																						**Maximum HQ (Middle Marsh, 6-12")**	**3.10E+00**
LMSD-201 (0-2")	7.94E-02	NA	NA	NA	NA	5.00E-02	2.15E+00	2.26E+02	1.13E+01	2.94E-02	1.78E+01	1.87E+03	5.48E+01	2.62E-03	1.05E+02	2.75E-01	3.85E-01	1.14E+00	2.24E+01	1.72E+02	9.55E-01	1.78E+02	1.26E-01
LMSD-202 (0-2")	7.94E-02	NA	NA	NA	NA	5.00E-02	2.15E+00	7.58E+02	3.79E+01	2.94E-02	1.78E+01	6.28E+03	1.84E+02	2.62E-03	3.53E+02	9.24E-01	3.85E-01	1.14E+00	7.53E+01	1.72E+02	9.55E-01	1.78E+02	4.22E-01
LMSD-203 (0-2")	7.94E-02	NA	NA	NA	NA	5.00E-02	2.15E+00	1.12E+03	5.60E+01	2.94E-02	1.78E+01	9.27E+03	2.72E+02	2.62E-03	5.21E+02	1.36E+00	3.85E-01	1.14E+00	1.11E+02	1.72E+02	9.55E-01	1.78E+02	6.23E-01
LMSD-204 (0-2")	7.94E-02	NA	NA	NA	NA	5.00E-02	2.15E+00	7.84E+02	3.92E+01	2.94E-02	1.78E+01	6.49E+03	1.91E+02	2.62E-03	3.65E+02	9.56E-01	3.85E-01	1.14E+00	7.78E+01	1.72E+02	9.55E-01	1.78E+02	4.36E-01
Lower Marsh (2-6")																						**Maximum HQ (Lower Marsh, 0-2")**	**6.23E-01**
LMSD-201 (2-6")	7.94E-02	NA	NA	NA	NA	5.00E-02	2.15E+00	2.11E+02	1.05E+01	2.94E-02	1.78E+01	1.74E+03	5.12E+01	2.62E-03	9.80E+01	2.57E-01	3.85E-01	1.14E+00	2.09E+01	1.72E+02	9.55E-01	1.78E+02	1.17E-01
LMSD-202 (2-6")	7.94E-02	NA	NA	NA	NA	5.00E-02	2.15E+00	8.38E+02	4.19E+01	2.94E-02	1.78E+01	6.94E+03	2.04E+02	2.62E-03	3.90E+02	1.02E+00	3.85E-01	1.14E+00	8.32E+01	1.72E+02	9.55E-01	1.78E+02	4.66E-01
LMSD-203 (2-6")	7.94E-02	NA	NA	NA	NA	5.00E-02	2.15E+00	1.10E+03	5.49E+01	2.94E-02	1.78E+01	9.09E+03	2.67E+02	2.62E-03	5.11E+02	1.34E+00	3.85E-01	1.14E+00	1.09E+02	1.72E+02	9.55E-01	1.78E+02	6.11E-01
LMSD-204 (2-6")	7.94E-02	NA	NA	NA	NA	5.00E-02	2.15E+00	7.71E+02	3.86E+01	2.94E-02	1.78E+01	6.38E+03	1.87E+02	2.62E-03	3.59E+02	9.40E-01	3.85E-01	1.14E+00	7.65E+01	1.72E+02	9.55E-01	1.78E+02	4.29E-01
Lower Marsh (6-12")																						**Maximum HQ (Lower Marsh, 2-6")**	**6.11E-01**
LMSD-201 (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
LMSD-202 (6-12")	7.94E-02	NA	NA	NA	NA	5.00E-02	2.15E+00	6.08E+02	3.04E+01	2.94E-02	1.78E+01	5.03E+03	1.48E+02	2.62E-03	2.83E+02	7.41E-01	3.85E-01	1.14E+00	6.03E+01	1.72E+02	9.55E-01	1.78E+02	3.38E-01
LMSD-203 (6-12")	7.94E-02	NA	NA	NA	NA	5.00E-02	2.15E+00	1.59E+03	7.95E+01	2.94E-02	1.78E+01	1.32E+04	3.86E+02	2.62E-03	7.40E+02	1.94E+00	3.85E-01	1.14E+00	1.58E+02	1.72E+02	9.55E-01	1.78E+02	8.85E-01
LMSD-204 (6-12")	7.94E-02	NA	NA	NA	NA	5.00E-02	2.15E+00	7.22E+02	3.61E+01	2.94E-02	1.78E+01	5.98E+03	1.75E+02	2.62E-03	3.36E+02	8.80E-01	3.85E-01	1.14E+00	7.16E+01	1.72E+02	9.55E-01	1.78E+02	4.02E-01
																						Maximum HQ (Lower Marsh, 6-12")	**8.85E-01**
Muskrat (Herbivorous Mammals)																							
Reference Sites																							
BRSD-5 (0-2")	6.27E-02	NA	NA	NA	NA	6.27E-02	1.99E+00	2.13E+02	1.34E+01	NA	NA	NA	NA	1.51E-03	1.07E+02	1.61E-01	1.00E+00	8.73E-01	1.55E+01	4.11E+02	1.75E-01	3.74E+02	4.14E-02
BRSD-5 (2-6")	6.27E-02	NA	NA	NA	NA	6.27E-02	1.99E+00	1.99E+02	1.25E+01	NA	NA	NA	NA	1.51E-03	1.00E+02	1.51E-01	1.00E+00	8.73E-01	1.45E+01	4.11E+02	1.75E-01	3.74E+02	3.87E-02
BRSD-5 (6-12")	6.27E-02	NA	NA	NA	NA	6.27E-02	1.99E+00	1.95E+02	1.22E+01	NA	NA	NA	NA	1.51E-03	9.78E+01	1.47E-01	1.00E+00	8.73E-01	1.41E+01	4.11E+02	1.75E-01	3.74E+02	3.79E-02
PGBG-1 (0-2")	6.27E-02	NA	NA	NA	NA	6.27E-02	1.99E+00	3.14E+02	1.97E+01	NA	NA	NA	NA	1.51E-03	1.58E+02	2.38E-01	1.00E+00	8.73E-01	2.29E+01	4.11E+02	1.75E-01	3.74E+02	6.12E-02
PGBG-1 (2-6")	6.27E-02	NA	NA	NA	NA	6.27E-02	1.99E+00	3.46E+02	2.17E+01	NA	NA	NA	NA	1.51E-03	1.74E+02	2.62E-01	1.00E+00	8.73E-01	2.52E+01	4.11E+02	1.75E-01	3.74E+02	6.74E-02
PGBG-1 (6-12")	6.27E-02	NA	NA	NA	NA	6.27E-02	1.99E+00	2.65E+02	1.66E+01	NA	NA	NA	NA	1.51E-03	1.33E+02	2.00E-01	1.00E+00	8.73E-01	1.92E+01	4.11E+02	1.75E-01	3.74E+02	5.15E-02
PGBG-2 (0-2")	6.27E-02	NA	NA	NA	NA	6.27E-02	1.99E+00	5.23E+02	3.28E+01	NA	NA	NA	NA	1.51E-03	2.63E+02	3.96E-01	1.00E+00	8.73E-01	3.80E+01	4.11E+02	1.75E-01	3.74E+02	1.02E-01
PGBG-2 (2-6")	6.27E-02	NA	NA	NA	NA	6.27E-02	1.99E+00	5.01E+02	3.14E+01	NA	NA	NA	NA	1.51E-03	2.52E+02	3.79E-01	1.00E+00	8.73E-01	3.65E+01	4.11E+02	1.75E-01	3.74E+02	9.76E-02
PGBG-2 (6-12")	6.27E-02	NA	NA	NA	NA	6.27E-02	1.99E+00	5.47E+02	3.43E+01	NA	NA	NA	NA	1.51E-03	2.75E+02	4.14E-01	1.00E+00	8.73E-01	3.98E+01	4.11E+02	1.75E-01	3.74E+02	1.06E-01
Eastern Upper Marsh (0-2")																						**Minimum HQ (Reference Sites)**	**3.79E-02**
UM-1000S-3500E (0-2")	6.27E-02	NA	NA	NA	NA	6.27E-02	2.32E+00	3.99E+03	2.51E+02	NA	NA	NA	NA	1.51E-03	1.72E+03	2.59E+00	1.00E+00	8.73E-01	2.90E+02	4.11E+02	1.75E-01	3.74E+02	7.76E-01
BRSD-15 (0-2")	6.27E-02	NA	NA	NA	NA	6.27E-02	2.32E+00	3.88E+02	2.43E+01	NA	NA	NA	NA	1.51E-03	1.67E+02	2.51E-01	1.00E+00	8.73E-01	2.82E+01	4.11E+02	1.75E-01	3.74E+02	7.53E-02
BRSD-4 (0-2")	6.27E-02	NA	NA	NA	NA	6.27E-02	2.32E+00	4.20E+02	2.64E+01	NA	NA	NA	NA	1.51E-03	1.81E+02	2.73E-01	1.00E+00	8.73E-01	3.05E+01	4.11E+02	1.75E-01	3.74E+02	8.17E-02
UM-750S-3500E (0-2")	6.27E-02	NA	NA	NA	NA	6.27E-02	2.32E+00	2.90E+03	1.82E+02	NA	NA	NA	NA	1.51E-03	1.25E+03	1.88E+00	1.00E+00	8.73E-01	2.11E+02	4.11E+02	1.75E-01	3.74E+02	5.64E-01
BRSD-16 (0-2")	6.27E-02	NA	NA	NA	NA	6.27E-02	2.32E+00	1.91E+03	1.20E+02	NA	NA	NA	NA	1.51E-03	8.22E+02	1.24E+00	1.00E+00	8.73E-01	1.39E+02	4.11E+02	1.75E-01	3.74E+02	3.71E-01
UM-750S-3000E (0-2")	6.27E-02	NA	NA	NA	NA	6.27E-02	2.32E+00	4.95E+03	3.10E+02	NA	NA	NA	NA	1.51E-03	2.13E+03	3.21E+00	1.00E+00	8.73E-01	3.59E+02	4.11E+02	1.75E-01	3.74E+02	9.61E-01
BRSD-3 (0-2")	6.27E-02	NA	NA	NA	NA	6.27E-02	2.32E+00	2.37E+03	1.49E+02	NA	NA	NA	NA	1.51E-03	1.02E+03	1.54E+00	1.00E+00	8.73E-01	1.72E+02	4.11E+02	1.75E-01	3.74E+02	4.60E-01

TABLE C-12GB: ZINC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 12 - MARSH, WETLAND RECEPTORS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 118.73

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Muskrat (Herbivorous Mammals)																							
UM-500S-3250E (0-2")	6.27E-02	NA	NA	NA	NA	6.27E-02	2.32E+00	2.18E+03	1.37E+02	NA	NA	NA	NA	1.51E-03	9.40E+02	1.42E+00	1.00E+00	8.73E-01	1.58E+02	4.11E+02	1.75E-01	3.74E+02	4.24E-01
UM-500S-3000E (0-2")	6.27E-02	NA	NA	NA	NA	6.27E-02	2.32E+00	3.27E+03	2.05E+02	NA	NA	NA	NA	1.51E-03	1.41E+03	2.12E+00	1.00E+00	8.73E-01	2.38E+02	4.11E+02	1.75E-01	3.74E+02	6.36E-01
UM-500S-2750E (0-2")	6.27E-02	NA	NA	NA	NA	6.27E-02	2.32E+00	5.08E+03	3.19E+02	NA	NA	NA	NA	1.51E-03	2.19E+03	3.30E+00	1.00E+00	8.73E-01	3.69E+02	4.11E+02	1.75E-01	3.74E+02	9.88E-01
BRSD-25 (0-2")	6.27E-02	NA	NA	NA	NA	6.27E-02	2.32E+00	1.94E+03	1.22E+02	NA	NA	NA	NA	1.51E-03	8.36E+02	1.26E+00	1.00E+00	8.73E-01	1.41E+02	4.11E+02	1.75E-01	3.74E+02	3.77E-01
UM-250S-3000E (0-2")	6.27E-02	NA	NA	NA	NA	6.27E-02	2.32E+00	9.47E+03	5.94E+02	NA	NA	NA	NA	1.51E-03	4.08E+03	6.14E+00	1.00E+00	8.73E-01	6.88E+02	4.11E+02	1.75E-01	3.74E+02	1.84E+00
UM-250S-3250E (0-2")	6.27E-02	NA	NA	NA	NA	6.27E-02	2.32E+00	2.20E+03	1.38E+02	NA	NA	NA	NA	1.51E-03	9.48E+02	1.43E+00	1.00E+00	8.73E-01	1.60E+02	4.11E+02	1.75E-01	3.74E+02	4.28E-01
BRSD-24 (0-2")	6.27E-02	NA	NA	NA	NA	6.27E-02	2.32E+00	4.74E+03	2.97E+02	NA	NA	NA	NA	1.51E-03	2.04E+03	3.07E+00	1.00E+00	8.73E-01	3.44E+02	4.11E+02	1.75E-01	3.74E+02	9.20E-01
UM-250S-2750E (0-2")	6.27E-02	NA	NA	NA	NA	6.27E-02	2.32E+00	3.51E+03	2.20E+02	NA	NA	NA	NA	1.51E-03	1.51E+03	2.27E+00	1.00E+00	8.73E-01	2.55E+02	4.11E+02	1.75E-01	3.74E+02	6.81E-01
UM-250S-2500E (0-2")	6.27E-02	NA	NA	NA	NA	6.27E-02	2.32E+00	1.34E+03	8.39E+01	NA	NA	NA	NA	1.51E-03	5.76E+02	8.67E-01	1.00E+00	8.73E-01	9.71E+01	4.11E+02	1.75E-01	3.74E+02	2.60E-01
UM-0N-2500E (0-2")	6.27E-02	NA	NA	NA	NA	6.27E-02	2.32E+00	7.76E+03	4.86E+02	NA	NA	NA	NA	1.51E-03	3.34E+03	5.03E+00	1.00E+00	8.73E-01	5.63E+02	4.11E+02	1.75E-01	3.74E+02	1.51E+00
UM-0N-250E (0-2")	6.27E-02	NA	NA	NA	NA	6.27E-02	2.32E+00	3.48E+03	2.18E+02	NA	NA	NA	NA	1.51E-03	1.50E+03	2.26E+00	1.00E+00	8.73E-01	2.53E+02	4.11E+02	1.75E-01	3.74E+02	6.77E-01
BRSD-2 (0-2")	6.27E-02	NA	NA	NA	NA	6.27E-02	2.32E+00	4.06E+03	2.55E+02	NA	NA	NA	NA	1.51E-03	1.75E+03	2.63E+00	1.00E+00	8.73E-01	2.95E+02	4.11E+02	1.75E-01	3.74E+02	7.90E-01
UM-500N-2500E (0-2")	6.27E-02	NA	NA	NA	NA	6.27E-02	2.32E+00	6.27E+02	3.93E+01	NA	NA	NA	NA	1.51E-03	2.70E+02	4.06E-01	1.00E+00	8.73E-01	4.55E+01	4.11E+02	1.75E-01	3.74E+02	1.22E-01
UM-250N-2500E (0-2")	6.27E-02	NA	NA	NA	NA	6.27E-02	2.32E+00	6.94E+03	4.36E+02	NA	NA	NA	NA	1.51E-03	2.99E+03	4.50E+00	1.00E+00	8.73E-01	5.04E+02	4.11E+02	1.75E-01	3.74E+02	1.35E+00
UM-250N-2250E (0-2")	6.27E-02	NA	NA	NA	NA	6.27E-02	2.32E+00	4.78E+03	3.00E+02	NA	NA	NA	NA	1.51E-03	2.06E+03	3.10E+00	1.00E+00	8.73E-01	3.47E+02	4.11E+02	1.75E-01	3.74E+02	9.29E-01
Western Upper Marsh (0-2")																						**Maximum HQ (Eastern Upper Marsh, 0-2")**	**1.84E+00**
UM-500S-2500E (0-2")	6.27E-02	NA	NA	NA	NA	6.27E-02	2.15E+00	4.77E+02	2.99E+01	NA	NA	NA	NA	1.51E-03	2.22E+02	3.34E-01	1.00E+00	8.73E-01	3.47E+01	4.11E+02	1.75E-01	3.74E+02	9.27E-02
UM-0N-2000E (0-2")	6.27E-02	NA	NA	NA	NA	6.27E-02	2.15E+00	5.93E+03	3.72E+02	NA	NA	NA	NA	1.51E-03	2.76E+03	4.16E+00	1.00E+00	8.73E-01	4.31E+02	4.11E+02	1.75E-01	3.74E+02	1.15E+00
UM-500S-2000E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-250N-1750E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	1.26E+02	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-1500E (0-2")	6.27E-02	NA	NA	NA	NA	6.27E-02	2.15E+00	6.14E+02	3.85E+01	NA	NA	NA	NA	1.51E-03	2.86E+02	4.31E-01	1.00E+00	8.73E-01	4.46E+01	4.11E+02	1.75E-01	3.74E+02	1.19E-01
UM-250S-1500E (0-2")	6.27E-02	NA	NA	NA	NA	6.27E-02	2.15E+00	5.93E+03	3.72E+02	NA	NA	NA	NA	1.51E-03	2.76E+03	4.16E+00	1.00E+00	8.73E-01	4.31E+02	4.11E+02	1.75E-01	3.74E+02	1.15E+00
UM-250S-1250E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	9.88E+01	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-6 (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-1000E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-750E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-500E (0-2")	6.27E-02	NA	NA	NA	NA	6.27E-02	2.15E+00	4.68E+02	2.94E+01	NA	NA	NA	NA	1.51E-03	2.18E+02	3.28E-01	1.00E+00	8.73E-01	3.40E+01	4.11E+02	1.75E-01	3.74E+02	9.11E-02
UM-250S-500E (0-2")	6.27E-02	NA	NA	NA	NA	6.27E-02	2.15E+00	3.18E+02	1.99E+01	NA	NA	NA	NA	1.51E-03	1.48E+02	2.23E-01	1.00E+00	8.73E-01	2.31E+01	4.11E+02	1.75E-01	3.74E+02	6.18E-02
UM-250S-250E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	1.31E+02	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-7 (0-2")	6.27E-02	NA	NA	NA	NA	6.27E-02	2.15E+00	1.42E+03	8.93E+01	NA	NA	NA	NA	1.51E-03	6.63E+02	9.98E-01	1.00E+00	8.73E-01	1.03E+02	4.11E+02	1.75E-01	3.74E+02	2.77E-01
BRSD-8 (0-2")	6.27E-02	NA	NA	NA	NA	6.27E-02	2.15E+00	1.12E+03	7.02E+01	NA	NA	NA	NA	1.51E-03	5.21E+02	7.84E-01	1.00E+00	8.73E-01	8.13E+01	4.11E+02	1.75E-01	3.74E+02	2.18E-01
UM-500S-500E (0-2")	6.27E-02	NA	NA	NA	NA	6.27E-02	2.15E+00	4.04E+02	2.53E+01	NA	NA	NA	NA	1.51E-03	1.88E+02	2.83E-01	1.00E+00	8.73E-01	2.93E+01	4.11E+02	1.75E-01	3.74E+02	7.85E-02
BRSD-9 (0-2")	6.27E-02	NA	NA	NA	NA	6.27E-02	2.15E+00	1.40E+03	8.79E+01	NA	NA	NA	NA	1.51E-03	6.52E+02	9.82E-01	1.00E+00	8.73E-01	1.02E+02	4.11E+02	1.75E-01	3.74E+02	2.72E-01
BRSD-10 (0-2")	6.27E-02	NA	NA	NA	NA	6.27E-02	2.15E+00	6.17E+03	3.87E+02	NA	NA	NA	NA	1.51E-03	2.87E+03	4.32E+00	1.00E+00	8.73E-01	4.48E+02	4.11E+02	1.75E-01	3.74E+02	1.20E+00
BRSD-11 (0-2")	6.27E-02	NA	NA	NA	NA	6.27E-02	2.15E+00	9.80E+02	6.15E+01	NA	NA	NA	NA	1.51E-03	4.56E+02	6.87E-01	1.00E+00	8.73E-01	7.12E+01	4.11E+02	1.75E-01	3.74E+02	1.91E-01
Eastern Upper Marsh (2-6")																						**Maximum HQ (Western Upper Marsh, 0-2")**	**1.20E+00**
UM-1000S-3500E (2-6")	6.27E-02	NA	NA	NA	NA	6.27E-02	2.32E+00	9.19E+02	5.77E+01	NA	NA	NA	NA	1.51E-03	3.96E+02	5.96E-01	1.00E+00	8.73E-01	6.68E+01	4.11E+02	1.75E-01	3.74E+02	1.79E-01
BRSD-15 (2-6")	6.27E-02	NA	NA	NA	NA	6.27E-02	2.32E+00	5.64E+02	3.54E+01	NA	NA	NA	NA	1.51E-03	2.43E+02	3.66E-01	1.00E+00	8.73E-01	4.10E+01	4.11E+02	1.75E-01	3.74E+02	1.10E-01
BRSD-4 (2-6")	6.27E-02	NA	NA	NA	NA	6.27E-02	2.32E+00	4.97E+02	3.12E+01	NA	NA	NA	NA	1.51E-03	2.14E+02	3.22E-01	1.00E+00	8.73E-01	3.61E+01	4.11E+02	1.75E-01	3.74E+02	9.66E-02
UM-750S-3500E (2-6")	6.27E-02	NA	NA	NA	NA	6.27E-02	2.32E+00	6.99E+03	4.38E+02	NA	NA	NA	NA	1.51E-03	3.01E+03	4.53E+00	1.00E+00	8.73E-01	5.07E+02	4.11E+02	1.75E-01	3.74E+02	1.36E+00
BRSD-16 (2-6")	6.27E-02	NA	NA	NA	NA	6.27E-02	2.32E+00	9.03E+03	5.67E+02	NA	NA	NA	NA	1.51E-03	3.89E+03	5.86E+00	1.00E+00	8.73E-01	6.56E+02	4.11E+02	1.75E-01	3.74E+02	1.76E+00
UM-750S-3000E (2-6")	6.27E-02	NA	NA	NA	NA	6.27E-02	2.32E+00	4.11E+03	2.58E+02	NA	NA	NA	NA	1.51E-03	1.77E+03	2.66E+00	1.00E+00	8.73E-01	2.98E+02	4.11E+02	1.75E-01	3.74E+02	7.99E-01
BRSD-3 (2-6")	6.27E-02	NA	NA	NA	NA	6.27E-02	2.32E+00	2.65E+03	1.66E+02	NA	NA	NA	NA	1.51E-03	1.14E+03	1.72E+00	1.00E+00	8.73E-01	1.92E+02	4.11E+02	1.75E-01	3.74E+02	5.14E-01
UM-500S-3250E (2-6")	6.27E-02	NA	NA	NA	NA	6.27E-02	2.32E+00	1.55E+03	9.73E+01	NA	NA	NA	NA	1.51E-03	6.68E+02	1.01E+00	1.00E+00	8.73E-01	1.13E+02	4.11E+02	1.75E-01	3.74E+02	3.01E-01
UM-500S-3000E (2-6")	6.27E-02	NA	NA	NA	NA	6.27E-02	2.32E+00	6.15E+02	3.86E+01	NA	NA	NA	NA	1.51E-03	2.65E+02	3.99E-01	1.00E+00	8.73E-01	4.47E+01	4.11E+02	1.75E-01	3.74E+02	1.20E-01
UM-500S-2750E (2-6")	6.27E-02	NA	NA	NA	NA	6.27E-02	2.32E+00	3.51E+03	2.20E+02	NA	NA	NA	NA	1.51E-03	1.51E+03	2.27E+00	1.00E+00	8.73E-01	2.55E+02	4.11E+02	1.75E-01	3.74E+02	6.81E-01
BRSD-25 (2-6")	6.27E-02	NA	NA	NA	NA	6.27E-02	2.32E+00	2.60E+03	1.63E+02	NA	NA	NA	NA	1.51E-03	1.12E+03	1.69E+00	1.00E+00	8.73E-01	1.89E+02	4.11E+02	1.75E-01	3.74E+02	5.05E-01
UM-250S-3000E (2-6")	6.27E-02	NA	NA	NA	NA	6.27E-02	2.32E+00	8.24E+03	5.17E+02	NA	NA	NA	NA	1.51E-03	3.55E+03	5.34E+00	1.00E+00	8.73E-01	5.98E+02	4.11E+02	1.75E-01	3.74E+02	1.60E+00
UM-250S-3250E (2-6")	6.27E-02	NA	NA	NA	NA	6.27E-02	2.32E+00	1.76E+03	1.11E+02	NA	NA	NA	NA	1.51E-03	7.60E+02	1.14E+00	1.00E+00	8.73E-01	1.28E+02	4.11E+02	1.75E-01	3.74E+02	3.43E-01
BRSD-24 (2-6")	6.27E-02	NA	NA	NA	NA	6.27E-02	2.32E+00	8.01E+03	5.03E+02	NA	NA	NA	NA	1.51E-03	3.45E+03	5.19E+00	1.00E+00	8.73E-01	5.82E+02	4.11E+02	1.75E-01	3.74E+02	1.56E+00
UM-250S-2750E (2-6")	6.27E-02	NA	NA	NA	NA	6.27E-02	2.32E+00	4.67E+03	2.93E+02	NA	NA	NA	NA	1.51E-03	2.01E+03	3.03E+00	1.00E+00	8.73E-01	3.39E+02	4.11E+02	1.75E-01	3.74E+02	9.07E-01
UM-0N-2500E (2-6")	6.27E-02	NA	NA	NA	NA	6.27E-02	2.32E+00	3.39E+03	2.13E+02	NA	NA	NA	NA	1.51E-03	1.46E+03	2.20E+00	1.00E+00	8.73E-01	2.46E+02	4.11E+02	1.75E-01	3.74E+02	6.59E-01
BRSD-2 (2-6")	6.27E-02	NA	NA	NA	NA	6.27E-02	2.32E+00	4.62E+03	2.90E+02	NA	NA	NA	NA	1.51E-03	1.99E+03	3.00E+00	1.00E+00	8.73E-01	3.35E+02	4.11E+02	1.75E-01	3.74E+02	8.98E-01
UM-500N-2500E (2-6")	6.27E-02	NA	NA	NA	NA	6.27E-02	2.32E+00	6.32E+02	3.96E+01	NA	NA	NA	NA	1.51E-03	2.72E+02	4.10E-01	1.00E+00	8.73E-01	4.59E+01	4.11E+02	1.75E-01	3.74E+02	1.23E-01
UM-250N-2500E (2-6")	6.27E-02	NA	NA	NA	NA	6.27E-02	2.32E+00	5.76E+03	3.61E+02	NA	NA	NA	NA	1.51E-03	2.48E+03	3.73E+00	1.00E+00	8.73E-01	4.18E+02	4.11E+02	1.75E-01	3.74E+02	1.12E+00
UM-250N-2250E (2-6")	6.27E-02	NA	NA	NA	NA	6.27E-02	2.32E+00	1.49E+03	9.32E+01	NA	NA	NA	NA	1.51E-03	6.40E+02	9.64E-01	1.00E+00	8.73E-01	1.08E+02	4.11E+02	1.75E-01	3.74E+02	2.89E-01

TABLE C-12GB: ZINC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 12 - MARSH, WETLAND RECEPTORS (Continued)

Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)
calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 118.73

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Muskrat (Herbivorous Mammals)																							
Western Upper Marsh (2-6")																						**Maximum HQ (Eastern Upper Marsh, 2-6")**	**1.76E+00**
UM-500S-2500E (2-6")	6.27E-02	NA	NA	NA	NA	6.27E-02	2.15E+00	4.73E+02	2.96E+01	NA	NA	NA	NA	1.51E-03	2.20E+02	3.31E-01	1.00E+00	8.73E-01	3.43E+01	4.11E+02	1.75E-01	3.74E+02	9.19E-02
UM-0N-2000E (2-6")	6.27E-02	NA	NA	NA	NA	6.27E-02	2.15E+00	5.93E+03	3.72E+02	NA	NA	NA	NA	1.51E-03	2.76E+03	4.16E+00	1.00E+00	8.73E-01	4.31E+02	4.11E+02	1.75E-01	3.74E+02	1.15E+00
UM-500S-2000E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	1.11E+02	BB	BB	BB	BB	BB	BB	BB	BB
UM-250N-1750E (2-6")	6.27E-02	NA	NA	NA	NA	6.27E-02	2.15E+00	6.14E+02	3.85E+01	NA	NA	NA	NA	1.51E-03	2.86E+02	4.31E-01	1.00E+00	8.73E-01	4.46E+01	4.11E+02	1.75E-01	3.74E+02	1.19E-01
UM-0N-1500E (2-6")	6.27E-02	NA	NA	NA	NA	6.27E-02	2.15E+00	5.48E+02	3.44E+01	NA	NA	NA	NA	1.51E-03	2.55E+02	3.84E-01	1.00E+00	8.73E-01	3.98E+01	4.11E+02	1.75E-01	3.74E+02	1.07E-01
UM-250S-1500E (2-6")	6.27E-02	NA	NA	NA	NA	6.27E-02	2.15E+00	4.32E+03	2.71E+02	NA	NA	NA	NA	1.51E-03	2.01E+03	3.03E+00	1.00E+00	8.73E-01	3.14E+02	4.11E+02	1.75E-01	3.74E+02	8.40E-01
UM-250S-1250E (2-6")	6.27E-02	NA	NA	NA	NA	6.27E-02	2.15E+00	3.01E+02	1.89E+01	NA	NA	NA	NA	1.51E-03	1.40E+02	2.11E-01	1.00E+00	8.73E-01	2.19E+01	4.11E+02	1.75E-01	3.74E+02	5.85E-02
BRSD-6 (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-1000E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-750E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-500E (2-6")	6.27E-02	NA	NA	NA	NA	6.27E-02	2.15E+00	5.20E+03	3.26E+02	NA	NA	NA	NA	1.51E-03	2.42E+03	3.64E+00	1.00E+00	8.73E-01	3.78E+02	4.11E+02	1.75E-01	3.74E+02	1.01E+00
UM-250S-500E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	9.88E+01	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-250E (2-6")	6.27E-02	NA	NA	NA	NA	6.27E-02	2.15E+00	3.59E+03	2.25E+02	NA	NA	NA	NA	1.51E-03	1.67E+03	2.51E+00	1.00E+00	8.73E-01	2.61E+02	4.11E+02	1.75E-01	3.74E+02	6.98E-01
UM-250S-250E (2-6")	6.27E-02	NA	NA	NA	NA	6.27E-02	2.15E+00	3.69E+02	2.32E+01	NA	NA	NA	NA	1.51E-03	1.72E+02	2.59E-01	1.00E+00	8.73E-01	2.68E+01	4.11E+02	1.75E-01	3.74E+02	7.19E-02
BRSD-7 (2-6")	6.27E-02	NA	NA	NA	NA	6.27E-02	2.15E+00	3.18E+02	1.99E+01	NA	NA	NA	NA	1.51E-03	1.48E+02	2.23E-01	1.00E+00	8.73E-01	2.31E+01	4.11E+02	1.75E-01	3.74E+02	6.18E-02
BRSD-8 (2-6")	6.27E-02	NA	NA	NA	NA	6.27E-02	2.15E+00	1.24E+03	7.80E+01	NA	NA	NA	NA	1.51E-03	5.79E+02	8.72E-01	1.00E+00	8.73E-01	9.04E+01	4.11E+02	1.75E-01	3.74E+02	2.42E-01
UM-500S-500E (2-6")	6.27E-02	NA	NA	NA	NA	6.27E-02	2.15E+00	3.80E+02	2.39E+01	NA	NA	NA	NA	1.51E-03	1.77E+02	2.66E-01	1.00E+00	8.73E-01	2.76E+01	4.11E+02	1.75E-01	3.74E+02	7.39E-02
BRSD-9 (2-6")	6.27E-02	NA	NA	NA	NA	6.27E-02	2.15E+00	6.44E+02	4.04E+01	NA	NA	NA	NA	1.51E-03	3.00E+02	4.52E-01	1.00E+00	8.73E-01	4.68E+01	4.11E+02	1.75E-01	3.74E+02	1.25E-01
BRSD-10 (2-6")	6.27E-02	NA	NA	NA	NA	6.27E-02	2.15E+00	5.03E+03	3.15E+02	NA	NA	NA	NA	1.51E-03	2.34E+03	3.52E+00	1.00E+00	8.73E-01	3.65E+02	4.11E+02	1.75E-01	3.74E+02	9.78E-01
BRSD-11 (2-6")	6.27E-02	NA	NA	NA	NA	6.27E-02	2.15E+00	6.38E+02	4.00E+01	NA	NA	NA	NA	1.51E-03	2.97E+02	4.47E-01	1.00E+00	8.73E-01	4.64E+01	4.11E+02	1.75E-01	3.74E+02	1.24E-01
Eastern Upper Marsh (6-12")																						**Maximum HQ (Western Upper Marsh, 2-6")**	**1.15E+00**
UM-1000S-3500E (6-12")	6.27E-02	NA	NA	NA	NA	6.27E-02	2.32E+00	4.23E+02	2.65E+01	NA	NA	NA	NA	1.51E-03	1.82E+02	2.74E-01	1.00E+00	8.73E-01	3.07E+01	4.11E+02	1.75E-01	3.74E+02	8.21E-02
BRSD-15 (6-12")	6.27E-02	NA	NA	NA	NA	6.27E-02	2.32E+00	6.55E+02	4.11E+01	NA	NA	NA	NA	1.51E-03	2.82E+02	4.25E-01	1.00E+00	8.73E-01	4.75E+01	4.11E+02	1.75E-01	3.74E+02	1.27E-01
BRSD-4 (6-12")	6.27E-02	NA	NA	NA	NA	6.27E-02	2.32E+00	7.38E+02	4.63E+01	NA	NA	NA	NA	1.51E-03	3.18E+02	4.79E-01	1.00E+00	8.73E-01	5.36E+01	4.11E+02	1.75E-01	3.74E+02	1.43E-01
UM-750S-3500E (6-12")	6.27E-02	NA	NA	NA	NA	6.27E-02	2.32E+00	6.55E+03	4.11E+02	NA	NA	NA	NA	1.51E-03	2.82E+03	4.25E+00	1.00E+00	8.73E-01	4.75E+02	4.11E+02	1.75E-01	3.74E+02	1.27E+00
BRSD-16 (6-12")	6.27E-02	NA	NA	NA	NA	6.27E-02	2.32E+00	5.36E+03	3.36E+02	NA	NA	NA	NA	1.51E-03	2.31E+03	3.48E+00	1.00E+00	8.73E-01	3.89E+02	4.11E+02	1.75E-01	3.74E+02	1.04E+00
UM-750S-3000E (6-12")	6.27E-02	NA	NA	NA	NA	6.27E-02	2.32E+00	3.97E+03	2.49E+02	NA	NA	NA	NA	1.51E-03	1.71E+03	2.57E+00	1.00E+00	8.73E-01	2.88E+02	4.11E+02	1.75E-01	3.74E+02	7.72E-01
BRSD-3 (6-12")	6.27E-02	NA	NA	NA	NA	6.27E-02	2.32E+00	1.25E+03	7.84E+01	NA	NA	NA	NA	1.51E-03	5.38E+02	8.10E-01	1.00E+00	8.73E-01	9.07E+01	4.11E+02	1.75E-01	3.74E+02	2.43E-01
UM-500S-3250E (6-12")	6.27E-02	NA	NA	NA	NA	6.27E-02	2.32E+00	1.33E+03	8.35E+01	NA	NA	NA	NA	1.51E-03	5.73E+02	8.63E-01	1.00E+00	8.73E-01	9.66E+01	4.11E+02	1.75E-01	3.74E+02	2.59E-01
UM-500S-3000E (6-12")	6.27E-02	NA	NA	NA	NA	6.27E-02	2.32E+00	7.43E+02	4.66E+01	NA	NA	NA	NA	1.51E-03	3.20E+02	4.82E-01	1.00E+00	8.73E-01	5.39E+01	4.11E+02	1.75E-01	3.74E+02	1.44E-01
UM-500S-2750E (6-12")	6.27E-02	NA	NA	NA	NA	6.27E-02	2.32E+00	3.11E+03	1.95E+02	NA	NA	NA	NA	1.51E-03	1.34E+03	2.02E+00	1.00E+00	8.73E-01	2.26E+02	4.11E+02	1.75E-01	3.74E+02	6.05E-01
BRSD-25 (6-12")	6.27E-02	NA	NA	NA	NA	6.27E-02	2.32E+00	2.39E+03	1.50E+02	NA	NA	NA	NA	1.51E-03	1.03E+03	1.55E+00	1.00E+00	8.73E-01	1.74E+02	4.11E+02	1.75E-01	3.74E+02	4.65E-01
UM-250S-3000E (6-12")	6.27E-02	NA	NA	NA	NA	6.27E-02	2.32E+00	6.85E+03	4.30E+02	NA	NA	NA	NA	1.51E-03	2.95E+03	4.44E+00	1.00E+00	8.73E-01	4.97E+02	4.11E+02	1.75E-01	3.74E+02	1.33E+00
UM-250S-3250E (6-12")	6.27E-02	NA	NA	NA	NA	6.27E-02	2.32E+00	1.51E+03	9.50E+01	NA	NA	NA	NA	1.51E-03	6.52E+02	9.82E-01	1.00E+00	8.73E-01	1.10E+02	4.11E+02	1.75E-01	3.74E+02	2.94E-01
BRSD-24 (6-12")	6.27E-02	NA	NA	NA	NA	6.27E-02	2.32E+00	4.04E+03	2.53E+02	NA	NA	NA	NA	1.51E-03	1.74E+03	2.62E+00	1.00E+00	8.73E-01	2.93E+02	4.11E+02	1.75E-01	3.74E+02	7.85E-01
UM-250S-2750E (6-12")	6.27E-02	NA	NA	NA	NA	6.27E-02	2.32E+00	4.48E+03	2.81E+02	NA	NA	NA	NA	1.51E-03	1.93E+03	2.91E+00	1.00E+00	8.73E-01	3.25E+02	4.11E+02	1.75E-01	3.74E+02	8.71E-01
UM-250S-2500E (6-12")	6.27E-02	NA	NA	NA	NA	6.27E-02	2.32E+00	5.87E+02	3.69E+01	NA	NA	NA	NA	1.51E-03	2.53E+02	3.81E-01	1.00E+00	8.73E-01	4.26E+01	4.11E+02	1.75E-01	3.74E+02	1.14E-01
BRSD-2 (6-12")	6.27E-02	NA	NA	NA	NA	6.27E-02	2.32E+00	9.80E+03	6.15E+02	NA	NA	NA	NA	1.51E-03	4.22E+03	6.35E+00	1.00E+00	8.73E-01	7.11E+02	4.11E+02	1.75E-01	3.74E+02	1.90E+00
UM-500N-2500E (6-12")	6.27E-02	NA	NA	NA	NA	6.27E-02	2.32E+00	4.09E+02	2.56E+01	NA	NA	NA	NA	1.51E-03	1.76E+02	2.65E-01	1.00E+00	8.73E-01	2.97E+01	4.11E+02	1.75E-01	3.74E+02	7.94E-02
UM-250N-2500E (6-12")	6.27E-02	NA	NA	NA	NA	6.27E-02	2.32E+00	4.34E+03	2.72E+02	NA	NA	NA	NA	1.51E-03	1.87E+03	2.82E+00	1.00E+00	8.73E-01	3.15E+02	4.11E+02	1.75E-01	3.74E+02	8.44E-01
UM-250N-2250E (6-12")	6.27E-02	NA	NA	NA	NA	6.27E-02	2.32E+00	9.06E+02	5.68E+01	NA	NA	NA	NA	1.51E-03	3.90E+02	5.87E-01	1.00E+00	8.73E-01	6.57E+01	4.11E+02	1.75E-01	3.74E+02	1.76E-01
Western Upper Marsh (6-12")																						**Maximum HQ (Eastern Upper Marsh, 6-12")**	**1.90E+00**
UM-500S-2500E (6-12")	6.27E-02	NA	NA	NA	NA	6.27E-02	2.15E+00	4.04E+02	2.53E+01	NA	NA	NA	NA	1.51E-03	1.88E+02	2.83E-01	1.00E+00	8.73E-01	2.93E+01	4.11E+02	1.75E-01	3.74E+02	7.85E-02
UM-0N-2000E (6-12")	6.27E-02	NA	NA	NA	NA	6.27E-02	2.15E+00	6.68E+03	4.19E+02	NA	NA	NA	NA	1.51E-03	3.11E+03	4.68E+00	1.00E+00	8.73E-01	4.85E+02	4.11E+02	1.75E-01	3.74E+02	1.30E+00
UM-500S-2000E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-250N-1750E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	9.95E+01	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-1500E (6-12")	6.27E-02	NA	NA	NA	NA	6.27E-02	2.15E+00	1.23E+03	7.71E+01	NA	NA	NA	NA	1.51E-03	5.72E+02	8.61E-01	1.00E+00	8.73E-01	8.93E+01	4.11E+02	1.75E-01	3.74E+02	2.39E-01
UM-250S-1500E (6-12")	6.27E-02	NA	NA	NA	NA	6.27E-02	2.15E+00	1.89E+03	1.19E+02	NA	NA	NA	NA	1.51E-03	8.82E+02	1.33E+00	1.00E+00	8.73E-01	1.38E+02	4.11E+02	1.75E-01	3.74E+02	3.68E-01
UM-250S-1250E (6-12")	6.27E-02	NA	NA	NA	NA	6.27E-02	2.15E+00	3.14E+02	1.97E+01	NA	NA	NA	NA	1.51E-03	1.46E+02	2.20E-01	1.00E+00	8.73E-01	2.28E+01	4.11E+02	1.75E-01	3.74E+02	6.10E-02
BRSD-6 (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-1000E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-750E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-500E (6-12")	6.27E-02	NA	NA	NA	NA	6.27E-02	2.15E+00	3.74E+03	2.34E+02	NA	NA	NA	NA	1.51E-03	1.74E+03	2.62E+00	1.00E+00	8.73E-01	2.72E+02	4.11E+02	1.75E-01	3.74E+02	7.27E-01
UM-250S-500E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	1.12E+02	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-250E (6-12")	6.27E-02	NA	NA	NA	NA	6.27E-02	2.15E+00	2.26E+03	1.41E+02	NA	NA	NA	NA	1.51E-03	1.05E+03	1.58E+00	1.00E+00	8.73E-01	1.64E+02	4.11E+02	1.75E-01	3.74E+02	4.39E-01
UM-250S-250E (6-12")	6.27E-02	NA	NA	NA	NA	6.27E-02	2.15E+00	5.26E+02	3.30E+01	NA	NA	NA	NA	1.51E-03	2.45E+02	3.69E-01	1.00E+00	8.73E-01	3.82E+01	4.11E+02	1.75E-01	3.74E+02	1.02E-01
BRSD-7 (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	1.16E+02	BB	BB	BB	BB	BB	BB	BB	BB

TABLE C-12GB: ZINC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 12 - MARSH, WETLAND RECEPTORS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **118.73**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Muskrat (Herbivorous Mammals)																							
BRSD-8 (6-12")	6.27E-02	NA	NA	NA	NA	6.27E-02	2.15E+00	1.27E+03	7.95E+01	NA	NA	NA	NA	1.51E-03	5.90E+02	8.88E-01	1.00E+00	8.73E-01	9.21E+01	4.11E+02	1.75E-01	3.74E+02	2.46E-01
UM-500S-500E (6-12")	6.27E-02	NA	NA	NA	NA	6.27E-02	2.15E+00	3.76E+02	2.36E+01	NA	NA	NA	NA	1.51E-03	1.75E+02	2.63E-01	1.00E+00	8.73E-01	2.73E+01	4.11E+02	1.75E-01	3.74E+02	7.31E-02
BRSD-9 (6-12")	6.27E-02	NA	NA	NA	NA	6.27E-02	2.15E+00	7.56E+02	4.74E+01	NA	NA	NA	NA	1.51E-03	3.52E+02	5.30E-01	1.00E+00	8.73E-01	5.49E+01	4.11E+02	1.75E-01	3.74E+02	1.47E-01
BRSD-10 (6-12")	6.27E-02	NA	NA	NA	NA	6.27E-02	2.15E+00	7.78E+03	4.88E+02	NA	NA	NA	NA	1.51E-03	3.62E+03	5.45E+00	1.00E+00	8.73E-01	5.65E+02	4.11E+02	1.75E-01	3.74E+02	1.51E+00
BRSD-11 (6-12")	6.27E-02	NA	NA	NA	NA	6.27E-02	2.15E+00	6.47E+02	4.06E+01	NA	NA	NA	NA	1.51E-03	3.01E+02	4.53E-01	1.00E+00	8.73E-01	4.70E+01	4.11E+02	1.75E-01	3.74E+02	1.26E-01
Middle Marsh (0-2")																						**Maximum HQ (Western Upper Marsh, 6-12")**	**1.51E+00**
MMSD-201 (0-2")	6.27E-02	NA	NA	NA	NA	6.27E-02	2.15E+00	3.16E+03	1.98E+02	NA	NA	NA	NA	1.51E-03	1.47E+03	2.21E+00	1.00E+00	8.73E-01	2.29E+02	4.11E+02	1.75E-01	3.74E+02	6.14E-01
MMSD-202 (0-2")	6.27E-02	NA	NA	NA	NA	6.27E-02	2.15E+00	8.81E+02	5.53E+01	NA	NA	NA	NA	1.51E-03	4.10E+02	6.17E-01	1.00E+00	8.73E-01	6.40E+01	4.11E+02	1.75E-01	3.74E+02	1.71E-01
Middle Marsh (2-6")																						**Maximum HQ (Middle Marsh, 0-2")**	**6.14E-01**
MMSD-201 (2-6")	6.27E-02	NA	NA	NA	NA	6.27E-02	2.15E+00	4.43E+03	2.78E+02	NA	NA	NA	NA	1.51E-03	2.06E+03	3.10E+00	1.00E+00	8.73E-01	3.22E+02	4.11E+02	1.75E-01	3.74E+02	8.61E-01
MMSD-202 (2-6")	6.27E-02	NA	NA	NA	NA	6.27E-02	2.15E+00	1.16E+03	7.26E+01	NA	NA	NA	NA	1.51E-03	5.39E+02	8.11E-01	1.00E+00	8.73E-01	8.41E+01	4.11E+02	1.75E-01	3.74E+02	2.25E-01
Middle Marsh (6-12")																						**Maximum HQ (Middle Marsh, 2-6")**	**8.61E-01**
MMSD-201 (6-12")	6.27E-02	NA	NA	NA	NA	6.27E-02	2.15E+00	5.56E+03	3.49E+02	NA	NA	NA	NA	1.51E-03	2.59E+03	3.90E+00	1.00E+00	8.73E-01	4.04E+02	4.11E+02	1.75E-01	3.74E+02	1.08E+00
MMSD-202 (6-12")	6.27E-02	NA	NA	NA	NA	6.27E-02	2.15E+00	1.07E+03	6.71E+01	NA	NA	NA	NA	1.51E-03	4.98E+02	7.50E-01	1.00E+00	8.73E-01	7.77E+01	4.11E+02	1.75E-01	3.74E+02	2.08E-01
Lower Marsh (0-2")																						**Maximum HQ (Middle Marsh, 6-12")**	**1.08E+00**
LMSD-201 (0-2")	6.27E-02	NA	NA	NA	NA	6.27E-02	2.15E+00	2.26E+02	1.41E+01	NA	NA	NA	NA	1.51E-03	1.05E+02	1.58E-01	1.00E+00	8.73E-01	1.64E+01	4.11E+02	1.75E-01	3.74E+02	4.39E-02
LMSD-202 (0-2")	6.27E-02	NA	NA	NA	NA	6.27E-02	2.15E+00	7.58E+02	4.76E+01	NA	NA	NA	NA	1.51E-03	3.53E+02	5.31E-01	1.00E+00	8.73E-01	5.51E+01	4.11E+02	1.75E-01	3.74E+02	1.47E-01
LMSD-203 (0-2")	6.27E-02	NA	NA	NA	NA	6.27E-02	2.15E+00	1.12E+03	7.02E+01	NA	NA	NA	NA	1.51E-03	5.21E+02	7.84E-01	1.00E+00	8.73E-01	8.13E+01	4.11E+02	1.75E-01	3.74E+02	2.18E-01
LMSD-204 (0-2")	6.27E-02	NA	NA	NA	NA	6.27E-02	2.15E+00	7.84E+02	4.92E+01	NA	NA	NA	NA	1.51E-03	3.65E+02	5.50E-01	1.00E+00	8.73E-01	5.70E+01	4.11E+02	1.75E-01	3.74E+02	1.52E-01
Lower Marsh (2-6")																						**Maximum HQ (Lower Marsh, 0-2")**	**2.18E-01**
LMSD-201 (2-6")	6.27E-02	NA	NA	NA	NA	6.27E-02	2.15E+00	2.11E+02	1.32E+01	NA	NA	NA	NA	1.51E-03	9.80E+01	1.48E-01	1.00E+00	8.73E-01	1.53E+01	4.11E+02	1.75E-01	3.74E+02	4.09E-02
LMSD-202 (2-6")	6.27E-02	NA	NA	NA	NA	6.27E-02	2.15E+00	8.38E+02	5.26E+01	NA	NA	NA	NA	1.51E-03	3.90E+02	5.87E-01	1.00E+00	8.73E-01	6.09E+01	4.11E+02	1.75E-01	3.74E+02	1.63E-01
LMSD-203 (2-6")	6.27E-02	NA	NA	NA	NA	6.27E-02	2.15E+00	1.10E+03	6.89E+01	NA	NA	NA	NA	1.51E-03	5.11E+02	7.69E-01	1.00E+00	8.73E-01	7.98E+01	4.11E+02	1.75E-01	3.74E+02	2.13E-01
LMSD-204 (2-6")	6.27E-02	NA	NA	NA	NA	6.27E-02	2.15E+00	7.71E+02	4.84E+01	NA	NA	NA	NA	1.51E-03	3.59E+02	5.40E-01	1.00E+00	8.73E-01	5.60E+01	4.11E+02	1.75E-01	3.74E+02	1.50E-01
Lower Marsh (6-12")																						**Maximum HQ (Lower Marsh, 2-6")**	**2.13E-01**
LMSD-201 (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
LMSD-202 (6-12")	6.27E-02	NA	NA	NA	NA	6.27E-02	2.15E+00	6.08E+02	3.81E+01	NA	NA	NA	NA	1.51E-03	2.83E+02	4.26E-01	1.00E+00	8.73E-01	4.42E+01	4.11E+02	1.75E-01	3.74E+02	1.18E-01
LMSD-203 (6-12")	6.27E-02	NA	NA	NA	NA	6.27E-02	2.15E+00	1.59E+03	9.97E+01	NA	NA	NA	NA	1.51E-03	7.40E+02	1.11E+00	1.00E+00	8.73E-01	1.16E+02	4.11E+02	1.75E-01	3.74E+02	3.09E-01
LMSD-204 (6-12")	6.27E-02	NA	NA	NA	NA	6.27E-02	2.15E+00	7.22E+02	4.53E+01	NA	NA	NA	NA	1.51E-03	3.36E+02	5.06E-01	1.00E+00	8.73E-01	5.24E+01	4.11E+02	1.75E-01	3.74E+02	1.40E-01
																						Maximum HQ (Lower Marsh, 6-12")	**3.09E-01**
Mink (Carnivorous Mammals)																							
Reference Sites																							
BRSD-5 (0-2")	4.25E-02	4.25E-02	5.46E+00	5.85E+02	2.49E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.07E+02	4.55E-02	1.00E+00	8.52E-01	2.92E+01	4.11E+02	1.75E-01	3.74E+02	7.81E-02
BRSD-5 (2-6")	4.25E-02	4.25E-02	5.46E+00	5.46E+02	2.32E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.00E+02	4.25E-02	1.00E+00	8.52E-01	2.73E+01	4.11E+02	1.75E-01	3.74E+02	7.30E-02
BRSD-5 (6-12")	4.25E-02	4.25E-02	5.46E+00	5.34E+02	2.27E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	9.78E+01	4.16E-02	1.00E+00	8.52E-01	2.67E+01	4.11E+02	1.75E-01	3.74E+02	7.14E-02
PGBG-1 (0-2")	4.25E-02	4.25E-02	5.46E+00	8.63E+02	3.67E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.58E+02	6.72E-02	1.00E+00	8.52E-01	4.32E+01	4.11E+02	1.75E-01	3.74E+02	1.15E-01
PGBG-1 (2-6")	4.25E-02	4.25E-02	5.46E+00	9.51E+02	4.04E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.74E+02	7.40E-02	1.00E+00	8.52E-01	4.75E+01	4.11E+02	1.75E-01	3.74E+02	1.27E-01
PGBG-1 (6-12")	4.25E-02	4.25E-02	5.46E+00	7.27E+02	3.09E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.33E+02	5.66E-02	1.00E+00	8.52E-01	3.63E+01	4.11E+02	1.75E-01	3.74E+02	9.71E-02
PGBG-2 (0-2")	4.25E-02	4.25E-02	5.46E+00	1.44E+03	6.11E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	2.63E+02	1.12E-01	1.00E+00	8.52E-01	7.18E+01	4.11E+02	1.75E-01	3.74E+02	1.92E-01
PGBG-2 (2-6")	4.25E-02	4.25E-02	5.46E+00	1.38E+03	5.86E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	2.52E+02	1.07E-01	1.00E+00	8.52E-01	6.88E+01	4.11E+02	1.75E-01	3.74E+02	1.84E-01
PGBG-2 (6-12")	4.25E-02	4.25E-02	5.46E+00	1.50E+03	6.39E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	2.75E+02	1.17E-01	1.00E+00	8.52E-01	7.51E+01	4.11E+02	1.75E-01	3.74E+02	2.01E-01
Eastern Upper Marsh (0-2")																						**Minimum HQ (Reference Sites)**	**7.14E-02**
UM-1000S-3500E (0-2")	4.25E-02	4.25E-02	1.10E+00	1.90E+03	8.08E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.72E+03	7.32E-01	1.00E+00	8.52E-01	9.56E+01	4.11E+02	1.75E-01	3.74E+02	2.56E-01
BRSD-15 (0-2")	4.25E-02	4.25E-02	1.10E+00	1.84E+02	7.84E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.67E+02	7.10E-02	1.00E+00	8.52E-01	9.29E+00	4.11E+02	1.75E-01	3.74E+02	2.48E-02
BRSD-4 (0-2")	4.25E-02	4.25E-02	1.10E+00	2.00E+02	8.50E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.81E+02	7.70E-02	1.00E+00	8.52E-01	1.01E+01	4.11E+02	1.75E-01	3.74E+02	2.69E-02
UM-750S-3500E (0-2")	4.25E-02	4.25E-02	1.10E+00	1.38E+03	5.87E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.25E+03	5.32E-01	1.00E+00	8.52E-01	6.95E+01	4.11E+02	1.75E-01	3.74E+02	1.86E-01
BRSD-16 (0-2")	4.25E-02	4.25E-02	1.10E+00	9.08E+02	3.86E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	8.22E+02	3.50E-01	1.00E+00	8.52E-01	4.57E+01	4.11E+02	1.75E-01	3.74E+02	1.22E-01
UM-750S-3000E (0-2")	4.25E-02	4.25E-02	1.10E+00	2.35E+03	1.00E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	2.13E+03	9.06E-01	1.00E+00	8.52E-01	1.18E+02	4.11E+02	1.75E-01	3.74E+02	3.17E-01
BRSD-3 (0-2")	4.25E-02	4.25E-02	1.10E+00	1.13E+03	4.79E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.02E+03	4.34E-01	1.00E+00	8.52E-01	5.67E+01	4.11E+02	1.75E-01	3.74E+02	1.52E-01
UM-500S-3250E (0-2")	4.25E-02	4.25E-02	1.10E+00	1.04E+03	4.41E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	9.40E+02	4.00E-01	1.00E+00	8.52E-01	5.23E+01	4.11E+02	1.75E-01	3.74E+02	1.40E-01
UM-500S-3000E (0-2")	4.25E-02	4.25E-02	1.10E+00	1.56E+03	6.62E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.41E+03	6.00E-01	1.00E+00	8.52E-01	7.84E+01	4.11E+02	1.75E-01	3.74E+02	2.10E-01
UM-500S-2750E (0-2")	4.25E-02	4.25E-02	1.10E+00	2.42E+03	1.03E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	2.19E+03	9.32E-01	1.00E+00	8.52E-01	1.22E+02	4.11E+02	1.75E-01	3.74E+02	3.25E-01
BRSD-25 (0-2")	4.25E-02	4.25E-02	1.10E+00	9.23E+02	3.93E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	8.36E+02	3.56E-01	1.00E+00	8.52E-01	4.65E+01	4.11E+02	1.75E-01	3.74E+02	1.24E-01
UM-250S-3000E (0-2")	4.25E-02	4.25E-02	1.10E+00	4.50E+03	1.92E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	4.08E+03	1.74E+00	1.00E+00	8.52E-01	2.27E+02	4.11E+02	1.75E-01	3.74E+02	6.06E-01
UM-250S-3250E (0-2")	4.25E-02	4.25E-02	1.10E+00	1.05E+03	4.45E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	9.48E+02	4.03E-01	1.00E+00	8.52E-01	5.27E+01	4.11E+02	1.75E-01	3.74E+02	1.41E-01
BRSD-24 (0-2")	4.25E-02	4.25E-02	1.10E+00	2.25E+03	9.58E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	2.04E+03	8.68E-01	1.00E+00	8.52E-01	1.13E+02	4.11E+02	1.75E-01	3.74E+02	3.03E-01
UM-250S-2750E (0-2")	4.25E-02	4.25E-02	1.10E+00	1.67E+03	7.09E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.51E+03	6.42E-01	1.00E+00	8.52E-01	8.40E+01	4.11E+02	1.75E-01	3.74E+02	2.24E-01
UM-250S-2500E (0-2")	4.25E-02	4.25E-02	1.10E+00	6.36E+02	2.71E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	5.76E+02	2.45E-01	1.00E+00	8.52E-01	3.20E+01	4.11E+02	1.75E-01	3.74E+02	8.56E-02

TABLE C-12GB: ZINC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 12 - MARSH, WETLAND RECEPTORS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **118.73**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Mink (Carnivorous Mammals)																							
UM-0N-2500E (0-2")	4.25E-02	4.25E-02	1.10E+00	3.69E+03	1.57E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	3.34E+03	1.42E+00	1.00E+00	8.52E-01	1.86E+02	4.11E+02	1.75E-01	3.74E+02	4.96E-01
UM-0N-250E (0-2")	4.25E-02	4.25E-02	1.10E+00	1.66E+03	7.04E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.50E+03	6.38E-01	1.00E+00	8.52E-01	8.34E+01	4.11E+02	1.75E-01	3.74E+02	2.23E-01
BRSD-2 (0-2")	4.25E-02	4.25E-02	1.10E+00	1.93E+03	8.22E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.75E+03	7.44E-01	1.00E+00	8.52E-01	9.73E+01	4.11E+02	1.75E-01	3.74E+02	2.60E-01
UM-500N-2500E (0-2")	4.25E-02	4.25E-02	1.10E+00	2.98E+02	1.27E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	2.70E+02	1.15E-01	1.00E+00	8.52E-01	1.50E+01	4.11E+02	1.75E-01	3.74E+02	4.01E-02
UM-250N-2500E (0-2")	4.25E-02	4.25E-02	1.10E+00	3.30E+03	1.40E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	2.99E+03	1.27E+00	1.00E+00	8.52E-01	1.66E+02	4.11E+02	1.75E-01	3.74E+02	4.44E-01
UM-250N-2250E (0-2")	4.25E-02	4.25E-02	1.10E+00	2.27E+03	9.67E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	2.06E+03	8.76E-01	1.00E+00	8.52E-01	1.15E+02	4.11E+02	1.75E-01	3.74E+02	3.06E-01
Western Upper Marsh (0-2")																						**Maximum HQ (Eastern Upper Marsh, 0-2")**	**6.06E-01**
UM-500S-2500E (0-2")	4.25E-02	4.25E-02	1.10E+00	2.45E+02	1.04E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	2.22E+02	9.44E-02	1.00E+00	8.52E-01	1.23E+01	4.11E+02	1.75E-01	3.74E+02	3.30E-02
UM-0N-2000E (0-2")	4.25E-02	4.25E-02	1.10E+00	3.05E+03	1.30E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	2.76E+03	1.17E+00	1.00E+00	8.52E-01	1.53E+02	4.11E+02	1.75E-01	3.74E+02	4.10E-01
UM-500S-2000E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-250N-1750E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	1.26E+02	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-1500E (0-2")	4.25E-02	4.25E-02	1.10E+00	3.16E+02	1.34E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	2.86E+02	1.22E-01	1.00E+00	8.52E-01	1.59E+01	4.11E+02	1.75E-01	3.74E+02	4.25E-02
UM-250S-1500E (0-2")	4.25E-02	4.25E-02	1.10E+00	3.05E+03	1.30E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	2.76E+03	1.17E+00	1.00E+00	8.52E-01	1.53E+02	4.11E+02	1.75E-01	3.74E+02	4.10E-01
UM-250S-1250E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	9.88E+01	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-6 (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-1000E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-750E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-500E (0-2")	4.25E-02	4.25E-02	1.10E+00	2.41E+02	1.02E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	2.18E+02	9.27E-02	1.00E+00	8.52E-01	1.21E+01	4.11E+02	1.75E-01	3.74E+02	3.24E-02
UM-250S-500E (0-2")	4.25E-02	4.25E-02	1.10E+00	1.63E+02	6.95E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.48E+02	6.30E-02	1.00E+00	8.52E-01	8.23E+00	4.11E+02	1.75E-01	3.74E+02	2.20E-02
UM-250S-250E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	1.31E+02	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-7 (0-2")	4.25E-02	4.25E-02	1.10E+00	7.32E+02	3.11E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	6.63E+02	2.82E-01	1.00E+00	8.52E-01	3.69E+01	4.11E+02	1.75E-01	3.74E+02	9.85E-02
BRSD-8 (0-2")	4.25E-02	4.25E-02	1.10E+00	5.75E+02	2.45E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	5.21E+02	2.22E-01	1.00E+00	8.52E-01	2.90E+01	4.11E+02	1.75E-01	3.74E+02	7.74E-02
UM-500S-500E (0-2")	4.25E-02	4.25E-02	1.10E+00	2.08E+02	8.83E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.88E+02	8.00E-02	1.00E+00	8.52E-01	1.05E+01	4.11E+02	1.75E-01	3.74E+02	2.79E-02
BRSD-9 (0-2")	4.25E-02	4.25E-02	1.10E+00	7.20E+02	3.06E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	6.52E+02	2.77E-01	1.00E+00	8.52E-01	3.63E+01	4.11E+02	1.75E-01	3.74E+02	9.69E-02
BRSD-10 (0-2")	4.25E-02	4.25E-02	1.10E+00	3.17E+03	1.35E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	2.87E+03	1.22E+00	1.00E+00	8.52E-01	1.60E+02	4.11E+02	1.75E-01	3.74E+02	4.27E-01
BRSD-11 (0-2")	4.25E-02	4.25E-02	1.10E+00	5.03E+02	2.14E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	4.56E+02	1.94E-01	1.00E+00	8.52E-01	2.54E+01	4.11E+02	1.75E-01	3.74E+02	6.78E-02
Eastern Upper Marsh (2-6")																						**Maximum HQ (Western Upper Marsh, 0-2")**	**4.27E-01**
UM-1000S-3500E (2-6")	4.25E-02	4.25E-02	1.10E+00	4.37E+02	1.86E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	3.96E+02	1.68E-01	1.00E+00	8.52E-01	2.20E+01	4.11E+02	1.75E-01	3.74E+02	5.89E-02
BRSD-15 (2-6")	4.25E-02	4.25E-02	1.10E+00	2.68E+02	1.14E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	2.43E+02	1.03E-01	1.00E+00	8.52E-01	1.35E+01	4.11E+02	1.75E-01	3.74E+02	3.61E-02
BRSD-4 (2-6")	4.25E-02	4.25E-02	1.10E+00	2.36E+02	1.01E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	2.14E+02	9.10E-02	1.00E+00	8.52E-01	1.19E+01	4.11E+02	1.75E-01	3.74E+02	3.18E-02
UM-750S-3500E (2-6")	4.25E-02	4.25E-02	1.10E+00	3.32E+03	1.41E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	3.01E+03	1.28E+00	1.00E+00	8.52E-01	1.67E+02	4.11E+02	1.75E-01	3.74E+02	4.47E-01
BRSD-16 (2-6")	4.25E-02	4.25E-02	1.10E+00	4.29E+03	1.83E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	3.89E+03	1.65E+00	1.00E+00	8.52E-01	2.16E+02	4.11E+02	1.75E-01	3.74E+02	5.78E-01
UM-750S-3000E (2-6")	4.25E-02	4.25E-02	1.10E+00	1.95E+03	8.31E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.77E+03	7.53E-01	1.00E+00	8.52E-01	9.84E+01	4.11E+02	1.75E-01	3.74E+02	2.63E-01
BRSD-3 (2-6")	4.25E-02	4.25E-02	1.10E+00	1.26E+03	5.35E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.14E+03	4.85E-01	1.00E+00	8.52E-01	6.34E+01	4.11E+02	1.75E-01	3.74E+02	1.69E-01
UM-500S-3250E (2-6")	4.25E-02	4.25E-02	1.10E+00	7.37E+02	3.14E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	6.68E+02	2.84E-01	1.00E+00	8.52E-01	3.71E+01	4.11E+02	1.75E-01	3.74E+02	9.93E-02
UM-500S-3000E (2-6")	4.25E-02	4.25E-02	1.10E+00	2.93E+02	1.24E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	2.65E+02	1.13E-01	1.00E+00	8.52E-01	1.47E+01	4.11E+02	1.75E-01	3.74E+02	3.94E-02
UM-500S-2750E (2-6")	4.25E-02	4.25E-02	1.10E+00	1.67E+03	7.09E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.51E+03	6.42E-01	1.00E+00	8.52E-01	8.40E+01	4.11E+02	1.75E-01	3.74E+02	2.24E-01
BRSD-25 (2-6")	4.25E-02	4.25E-02	1.10E+00	1.24E+03	5.26E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.12E+03	4.76E-01	1.00E+00	8.52E-01	6.23E+01	4.11E+02	1.75E-01	3.74E+02	1.66E-01
UM-250S-3000E (2-6")	4.25E-02	4.25E-02	1.10E+00	3.92E+03	1.67E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	3.55E+03	1.51E+00	1.00E+00	8.52E-01	1.97E+02	4.11E+02	1.75E-01	3.74E+02	5.28E-01
UM-250S-3250E (2-6")	4.25E-02	4.25E-02	1.10E+00	8.39E+02	3.57E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	7.60E+02	3.23E-01	1.00E+00	8.52E-01	4.23E+01	4.11E+02	1.75E-01	3.74E+02	1.13E-01
BRSD-24 (2-6")	4.25E-02	4.25E-02	1.10E+00	3.81E+03	1.62E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	3.45E+03	1.47E+00	1.00E+00	8.52E-01	1.92E+02	4.11E+02	1.75E-01	3.74E+02	5.13E-01
UM-250S-2750E (2-6")	4.25E-02	4.25E-02	1.10E+00	2.22E+03	9.44E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	2.01E+03	8.55E-01	1.00E+00	8.52E-01	1.12E+02	4.11E+02	1.75E-01	3.74E+02	2.99E-01
UM-0N-2500E (2-6")	4.25E-02	4.25E-02	1.10E+00	1.61E+03	6.86E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.46E+03	6.21E-01	1.00E+00	8.52E-01	8.12E+01	4.11E+02	1.75E-01	3.74E+02	2.17E-01
BRSD-2 (2-6")	4.25E-02	4.25E-02	1.10E+00	2.20E+03	9.35E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.99E+03	8.47E-01	1.00E+00	8.52E-01	1.11E+02	4.11E+02	1.75E-01	3.74E+02	2.96E-01
UM-500N-2500E (2-6")	4.25E-02	4.25E-02	1.10E+00	3.00E+02	1.28E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	2.72E+02	1.16E-01	1.00E+00	8.52E-01	1.51E+01	4.11E+02	1.75E-01	3.74E+02	4.04E-02
UM-250N-2500E (2-6")	4.25E-02	4.25E-02	1.10E+00	2.74E+03	1.16E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	2.48E+03	1.05E+00	1.00E+00	8.52E-01	1.38E+02	4.11E+02	1.75E-01	3.74E+02	3.69E-01
UM-250N-2250E (2-6")	4.25E-02	4.25E-02	1.10E+00	7.07E+02	3.01E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	6.40E+02	2.72E-01	1.00E+00	8.52E-01	3.56E+01	4.11E+02	1.75E-01	3.74E+02	9.51E-02
Western Upper Marsh (2-6")																						**Maximum HQ (Eastern Upper Marsh, 2-6")**	**5.78E-01**
UM-500S-2500E (2-6")	4.25E-02	4.25E-02	1.10E+00	2.43E+02	1.03E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	2.20E+02	9.36E-02	1.00E+00	8.52E-01	1.22E+01	4.11E+02	1.75E-01	3.74E+02	3.27E-02
UM-0N-2000E (2-6")	4.25E-02	4.25E-02	1.10E+00	3.05E+03	1.30E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	2.76E+03	1.17E+00	1.00E+00	8.52E-01	1.53E+02	4.11E+02	1.75E-01	3.74E+02	4.10E-01
UM-500S-2000E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	1.11E+02	BB	BB	BB	BB	BB	BB	BB	BB
UM-250N-1750E (2-6")	4.25E-02	4.25E-02	1.10E+00	3.16E+02	1.34E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	2.86E+02	1.22E-01	1.00E+00	8.52E-01	1.59E+01	4.11E+02	1.75E-01	3.74E+02	4.25E-02
UM-0N-1500E (2-6")	4.25E-02	4.25E-02	1.10E+00	2.82E+02	1.20E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	2.55E+02	1.08E-01	1.00E+00	8.52E-01	1.42E+01	4.11E+02	1.75E-01	3.74E+02	3.79E-02
UM-250S-1500E (2-6")	4.25E-02	4.25E-02	1.10E+00	2.22E+03	9.44E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	2.01E+03	8.55E-01	1.00E+00	8.52E-01	1.12E+02	4.11E+02	1.75E-01	3.74E+02	2.99E-01
UM-250S-1250E (2-6")	4.25E-02	4.25E-02	1.10E+00	1.55E+02	6.57E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.40E+02	5.96E-02	1.00E+00	8.52E-01	7.78E+00	4.11E+02	1.75E-01	3.74E+02	2.08E-02
BRSD-6 (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-1000E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-750E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB

TABLE C-12GB: ZINC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 12 - MARSH, WETLAND RECEPTORS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **118.73**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Mink (Carnivorous Mammals)																							
UM-0N-500E (2-6")	4.25E-02	4.25E-02	1.10E+00	2.67E+03	1.14E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	2.42E+03	1.03E+00	1.00E+00	8.52E-01	1.35E+02	4.11E+02	1.75E-01	3.74E+02	3.60E-01
UM-250S-500E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	9.88E+01	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-250E (2-6")	4.25E-02	4.25E-02	1.10E+00	1.84E+03	7.84E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.67E+03	7.10E-01	1.00E+00	8.52E-01	9.29E+01	4.11E+02	1.75E-01	3.74E+02	2.48E-01
UM-250S-250E (2-6")	4.25E-02	4.25E-02	1.10E+00	1.90E+02	8.08E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.72E+02	7.32E-02	1.00E+00	8.52E-01	9.56E+00	4.11E+02	1.75E-01	3.74E+02	2.56E-02
BRSD-7 (2-6")	4.25E-02	4.25E-02	1.10E+00	1.63E+02	6.95E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.48E+02	6.30E-02	1.00E+00	8.52E-01	8.23E+00	4.11E+02	1.75E-01	3.74E+02	2.20E-02
BRSD-8 (2-6")	4.25E-02	4.25E-02	1.10E+00	6.39E+02	2.72E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	5.79E+02	2.46E-01	1.00E+00	8.52E-01	3.22E+01	4.11E+02	1.75E-01	3.74E+02	8.60E-02
UM-500S-500E (2-6")	4.25E-02	4.25E-02	1.10E+00	1.95E+02	8.31E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.77E+02	7.53E-02	1.00E+00	8.52E-01	9.84E+00	4.11E+02	1.75E-01	3.74E+02	2.63E-02
BRSD-9 (2-6")	4.25E-02	4.25E-02	1.10E+00	3.31E+02	1.41E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	3.00E+02	1.28E-01	1.00E+00	8.52E-01	1.67E+01	4.11E+02	1.75E-01	3.74E+02	4.46E-02
BRSD-10 (2-6")	4.25E-02	4.25E-02	1.10E+00	2.58E+03	1.10E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	2.34E+03	9.95E-01	1.00E+00	8.52E-01	1.30E+02	4.11E+02	1.75E-01	3.74E+02	3.48E-01
BRSD-11 (2-6")	4.25E-02	4.25E-02	1.10E+00	3.28E+02	1.39E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	2.97E+02	1.26E-01	1.00E+00	8.52E-01	1.65E+01	4.11E+02	1.75E-01	3.74E+02	4.41E-02
Eastern Upper Marsh (6-12")																						**Maximum HQ (Western Upper Marsh, 2-6")**	**4.10E-01**
UM-1000S-3500E (6-12")	4.25E-02	4.25E-02	1.10E+00	2.01E+02	8.55E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.82E+02	7.74E-02	1.00E+00	8.52E-01	1.01E+01	4.11E+02	1.75E-01	3.74E+02	2.70E-02
BRSD-15 (6-12")	4.25E-02	4.25E-02	1.10E+00	3.11E+02	1.32E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	2.82E+02	1.20E-01	1.00E+00	8.52E-01	1.57E+01	4.11E+02	1.75E-01	3.74E+02	4.19E-02
BRSD-4 (6-12")	4.25E-02	4.25E-02	1.10E+00	3.51E+02	1.49E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	3.18E+02	1.35E-01	1.00E+00	8.52E-01	1.77E+01	4.11E+02	1.75E-01	3.74E+02	4.73E-02
UM-750S-3500E (6-12")	4.25E-02	4.25E-02	1.10E+00	3.11E+03	1.32E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	2.82E+03	1.20E+00	1.00E+00	8.52E-01	1.57E+02	4.11E+02	1.75E-01	3.74E+02	4.19E-01
BRSD-16 (6-12")	4.25E-02	4.25E-02	1.10E+00	2.55E+03	1.08E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	2.31E+03	9.83E-01	1.00E+00	8.52E-01	1.28E+02	4.11E+02	1.75E-01	3.74E+02	3.43E-01
UM-750S-3000E (6-12")	4.25E-02	4.25E-02	1.10E+00	1.89E+03	8.03E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.71E+03	7.27E-01	1.00E+00	8.52E-01	9.51E+01	4.11E+02	1.75E-01	3.74E+02	2.54E-01
BRSD-3 (6-12")	4.25E-02	4.25E-02	1.10E+00	5.94E+02	2.53E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	5.38E+02	2.29E-01	1.00E+00	8.52E-01	2.99E+01	4.11E+02	1.75E-01	3.74E+02	8.00E-02
UM-500S-3250E (6-12")	4.25E-02	4.25E-02	1.10E+00	6.33E+02	2.69E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	5.73E+02	2.44E-01	1.00E+00	8.52E-01	3.19E+01	4.11E+02	1.75E-01	3.74E+02	8.52E-02
UM-500S-3000E (6-12")	4.25E-02	4.25E-02	1.10E+00	3.53E+02	1.50E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	3.20E+02	1.36E-01	1.00E+00	8.52E-01	1.78E+01	4.11E+02	1.75E-01	3.74E+02	4.76E-02
UM-500S-2750E (6-12")	4.25E-02	4.25E-02	1.10E+00	1.48E+03	6.29E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.34E+03	5.70E-01	1.00E+00	8.52E-01	7.45E+01	4.11E+02	1.75E-01	3.74E+02	1.99E-01
BRSD-25 (6-12")	4.25E-02	4.25E-02	1.10E+00	1.14E+03	4.84E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.03E+03	4.38E-01	1.00E+00	8.52E-01	5.73E+01	4.11E+02	1.75E-01	3.74E+02	1.53E-01
UM-250S-3000E (6-12")	4.25E-02	4.25E-02	1.10E+00	3.26E+03	1.39E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	2.95E+03	1.25E+00	1.00E+00	8.52E-01	1.64E+02	4.11E+02	1.75E-01	3.74E+02	4.38E-01
UM-250S-3250E (6-12")	4.25E-02	4.25E-02	1.10E+00	7.20E+02	3.06E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	6.52E+02	2.77E-01	1.00E+00	8.52E-01	3.63E+01	4.11E+02	1.75E-01	3.74E+02	9.69E-02
BRSD-24 (6-12")	4.25E-02	4.25E-02	1.10E+00	1.92E+03	8.17E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.74E+03	7.40E-01	1.00E+00	8.52E-01	9.68E+01	4.11E+02	1.75E-01	3.74E+02	2.59E-01
UM-250S-2750E (6-12")	4.25E-02	4.25E-02	1.10E+00	2.13E+03	9.06E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.93E+03	8.21E-01	1.00E+00	8.52E-01	1.07E+02	4.11E+02	1.75E-01	3.74E+02	2.87E-01
UM-250S-2500E (6-12")	4.25E-02	4.25E-02	1.10E+00	2.79E+02	1.19E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	2.53E+02	1.08E-01	1.00E+00	8.52E-01	1.41E+01	4.11E+02	1.75E-01	3.74E+02	3.76E-02
BRSD-2 (6-12")	4.25E-02	4.25E-02	1.10E+00	4.66E+03	1.98E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	4.22E+03	1.80E+00	1.00E+00	8.52E-01	2.35E+02	4.11E+02	1.75E-01	3.74E+02	6.27E-01
UM-500N-2500E (6-12")	4.25E-02	4.25E-02	1.10E+00	1.94E+02	8.27E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.76E+02	7.49E-02	1.00E+00	8.52E-01	9.79E+00	4.11E+02	1.75E-01	3.74E+02	2.62E-02
UM-250N-2500E (6-12")	4.25E-02	4.25E-02	1.10E+00	2.06E+03	8.78E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.87E+03	7.95E-01	1.00E+00	8.52E-01	1.04E+02	4.11E+02	1.75E-01	3.74E+02	2.78E-01
UM-250N-2250E (6-12")	4.25E-02	4.25E-02	1.10E+00	4.31E+02	1.83E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	3.90E+02	1.66E-01	1.00E+00	8.52E-01	2.17E+01	4.11E+02	1.75E-01	3.74E+02	5.80E-02
Western Upper Marsh (6-12")																						**Maximum HQ (Eastern Upper Marsh, 6-12")**	**6.27E-01**
UM-500S-2500E (6-12")	4.25E-02	4.25E-02	1.10E+00	2.08E+02	8.83E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.88E+02	8.00E-02	1.00E+00	8.52E-01	1.05E+01	4.11E+02	1.75E-01	3.74E+02	2.79E-02
UM-0N-2000E (6-12")	4.25E-02	4.25E-02	1.10E+00	3.43E+03	1.46E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	3.11E+03	1.32E+00	1.00E+00	8.52E-01	1.73E+02	4.11E+02	1.75E-01	3.74E+02	4.62E-01
UM-500S-2000E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-250N-1750E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	9.95E+01	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-1500E (6-12")	4.25E-02	4.25E-02	1.10E+00	6.32E+02	2.69E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	5.72E+02	2.43E-01	1.00E+00	8.52E-01	3.18E+01	4.11E+02	1.75E-01	3.74E+02	8.50E-02
UM-250S-1500E (6-12")	4.25E-02	4.25E-02	1.10E+00	9.74E+02	4.14E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	8.82E+02	3.75E-01	1.00E+00	8.52E-01	4.90E+01	4.11E+02	1.75E-01	3.74E+02	1.31E-01
UM-250S-1250E (6-12")	4.25E-02	4.25E-02	1.10E+00	1.61E+02	6.86E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.46E+02	6.21E-02	1.00E+00	8.52E-01	8.12E+00	4.11E+02	1.75E-01	3.74E+02	2.17E-02
BRSD-6 (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-1000E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-750E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-500E (6-12")	4.25E-02	4.25E-02	1.10E+00	1.92E+03	8.17E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.74E+03	7.40E-01	1.00E+00	8.52E-01	9.68E+01	4.11E+02	1.75E-01	3.74E+02	2.59E-01
UM-250S-500E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	1.12E+02	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-250E (6-12")	4.25E-02	4.25E-02	1.10E+00	1.16E+03	4.93E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.05E+03	4.47E-01	1.00E+00	8.52E-01	5.84E+01	4.11E+02	1.75E-01	3.74E+02	1.56E-01
UM-250S-250E (6-12")	4.25E-02	4.25E-02	1.10E+00	2.70E+02	1.15E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	2.45E+02	1.04E-01	1.00E+00	8.52E-01	1.36E+01	4.11E+02	1.75E-01	3.74E+02	3.64E-02
BRSD-7 (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	1.16E+02	BB	BB	BB	BB	BB	BB	BB	BB
BRSD-8 (6-12")	4.25E-02	4.25E-02	1.10E+00	6.51E+02	2.77E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	5.90E+02	2.51E-01	1.00E+00	8.52E-01	3.28E+01	4.11E+02	1.75E-01	3.74E+02	8.77E-02
UM-500S-500E (6-12")	4.25E-02	4.25E-02	1.10E+00	1.93E+02	8.22E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.75E+02	7.44E-02	1.00E+00	8.52E-01	9.73E+00	4.11E+02	1.75E-01	3.74E+02	2.60E-02
BRSD-9 (6-12")	4.25E-02	4.25E-02	1.10E+00	3.89E+02	1.65E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	3.52E+02	1.50E-01	1.00E+00	8.52E-01	1.96E+01	4.11E+02	1.75E-01	3.74E+02	5.23E-02
BRSD-10 (6-12")	4.25E-02	4.25E-02	1.10E+00	4.00E+03	1.70E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	3.62E+03	1.54E+00	1.00E+00	8.52E-01	2.01E+02	4.11E+02	1.75E-01	3.74E+02	5.38E-01
BRSD-11 (6-12")	4.25E-02	4.25E-02	1.10E+00	3.32E+02	1.41E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	3.01E+02	1.28E-01	1.00E+00	8.52E-01	1.67E+01	4.11E+02	1.75E-01	3.74E+02	4.47E-02
Middle Marsh (0-2")																						**Maximum HQ (Western Upper Marsh, 6-12")**	**5.38E-01**
MMSD-201 (0-2")	4.25E-02	4.25E-02	1.10E+00	1.62E+03	6.90E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.47E+03	6.25E-01	1.00E+00	8.52E-01	8.17E+01	4.11E+02	1.75E-01	3.74E+02	2.18E-01
MMSD-202 (0-2")	4.25E-02	4.25E-02	1.10E+00	4.53E+02	1.93E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	4.10E+02	1.74E-01	1.00E+00	8.52E-01	2.28E+01	4.11E+02	1.75E-01	3.74E+02	6.09E-02
Middle Marsh (2-6")																						**Maximum HQ (Middle Marsh, 0-2")**	**2.18E-01**
MMSD-201 (2-6")	4.25E-02	4.25E-02	1.10E+00	2.27E+03	9.67E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	2.06E+03	8.76E-01	1.00E+00	8.52E-01	1.15E+02	4.11E+02	1.75E-01	3.74E+02	3.06E-01
MMSD-202 (2-6")	4.25E-02	4.25E-02	1.10E+00	5.95E+02	2.53E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	5.39E+02	2.29E-01	1.00E+00	8.52E-01	3.00E+01	4.11E+02	1.75E-01	3.74E+02	8.01E-02

TABLE C-12GB: ZINC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS AND MAMMALS, EU 12 - MARSH, WETLAND RECEPTORS (Continued)

Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)
calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **118.73**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Plant Ingestion Rate[1] (kg/day)	Plant BAF[2] (unitless)	Plant Concentration[3] (mg/kg)	Plant Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Mink (Carnivorous Mammals)																							
Middle Marsh (6-12")																						**Maximum HQ (Middle Marsh, 2-6")**	**3.06E-01**
MMSD-201 (6-12")	4.25E-02	4.25E-02	1.10E+00	2.86E+03	1.22E+02	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	2.59E+03	1.10E+00	1.00E+00	8.52E-01	1.44E+02	4.11E+02	1.75E-01	3.74E+02	3.85E-01
MMSD-202 (6-12")	4.25E-02	4.25E-02	1.10E+00	5.50E+02	2.34E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	4.98E+02	2.12E-01	1.00E+00	8.52E-01	2.77E+01	4.11E+02	1.75E-01	3.74E+02	7.40E-02
Lower Marsh (0-2")																						**Maximum HQ (Middle Marsh, 6-12")**	**3.85E-01**
LMSD-201 (0-2")	4.25E-02	4.25E-02	1.10E+00	1.16E+02	4.93E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	1.05E+02	4.47E-02	1.00E+00	8.52E-01	5.84E+00	4.11E+02	1.75E-01	3.74E+02	1.56E-02
LMSD-202 (0-2")	4.25E-02	4.25E-02	1.10E+00	3.90E+02	1.66E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	3.53E+02	1.50E-01	1.00E+00	8.52E-01	1.96E+01	4.11E+02	1.75E-01	3.74E+02	5.25E-02
LMSD-203 (0-2")	4.25E-02	4.25E-02	1.10E+00	5.75E+02	2.45E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	5.21E+02	2.22E-01	1.00E+00	8.52E-01	2.90E+01	4.11E+02	1.75E-01	3.74E+02	7.74E-02
LMSD-204 (0-2")	4.25E-02	4.25E-02	1.10E+00	4.03E+02	1.71E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	3.65E+02	1.55E-01	1.00E+00	8.52E-01	2.03E+01	4.11E+02	1.75E-01	3.74E+02	5.42E-02
Lower Marsh (2-6")																						**Maximum HQ (Lower Marsh, 0-2")**	**7.74E-02**
LMSD-201 (2-6")	4.25E-02	4.25E-02	1.10E+00	1.08E+02	4.60E+00	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	9.80E+01	4.17E-02	1.00E+00	8.52E-01	5.45E+00	4.11E+02	1.75E-01	3.74E+02	1.46E-02
LMSD-202 (2-6")	4.25E-02	4.25E-02	1.10E+00	4.31E+02	1.83E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	3.90E+02	1.66E-01	1.00E+00	8.52E-01	2.17E+01	4.11E+02	1.75E-01	3.74E+02	5.80E-02
LMSD-203 (2-6")	4.25E-02	4.25E-02	1.10E+00	5.64E+02	2.40E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	5.11E+02	2.17E-01	1.00E+00	8.52E-01	2.84E+01	4.11E+02	1.75E-01	3.74E+02	7.59E-02
LMSD-204 (2-6")	4.25E-02	4.25E-02	1.10E+00	3.96E+02	1.69E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	3.59E+02	1.53E-01	1.00E+00	8.52E-01	2.00E+01	4.11E+02	1.75E-01	3.74E+02	5.34E-02
Lower Marsh (6-12")																						**Maximum HQ (Lower Marsh, 2-6")**	**7.59E-02**
LMSD-201 (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
LMSD-202 (6-12")	4.25E-02	4.25E-02	1.10E+00	3.12E+02	1.33E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	2.83E+02	1.20E-01	1.00E+00	8.52E-01	1.57E+01	4.11E+02	1.75E-01	3.74E+02	4.21E-02
LMSD-203 (6-12")	4.25E-02	4.25E-02	1.10E+00	8.17E+02	3.48E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	7.40E+02	3.15E-01	1.00E+00	8.52E-01	4.11E+01	4.11E+02	1.75E-01	3.74E+02	1.10E-01
LMSD-204 (6-12")	4.25E-02	4.25E-02	1.10E+00	3.71E+02	1.58E+01	NA	NA	NA	NA	NA	NA	NA	NA	4.25E-04	3.36E+02	1.43E-01	1.00E+00	8.52E-01	1.87E+01	4.11E+02	1.75E-01	3.74E+02	4.99E-02
																						Maximum HQ (Lower Marsh, 6-12")	**1.10E-01**

Notes: Results are evaluated in order of upstream to downstream.

1 See Tables 3-1 through 3-13 for ingestion rates, foraging ranges used to calculate the SUF, and body weights.

2 Site BAFs were calculated by dividing site-collected tissue by collocated soil concentrations. The maximum plant and invertebrate BAF calculated for the eastern transect (UMT1) were used for the Eastern Upper Marsh dose calculations. The maximum plant and invertebrate BAF calculated for the western transect (UMT2) were used for the Western Upper Marsh dose calculations. The maximum mammal BAF calculated for the eastern transect (UMT1) was used for the Eastern and Western Upper Marsh calculations because no mammals were collected in the Western Upper Marsh. The maximum plant, mammal, and invertebrate BAFs calculated for the Pass Creek reference

3 The mammal, plant, and invertebrate concentrations were calculated by multiplying the soil concentration by the BAF to generate a tissue concentration (see note 2).

4 Mammal, plant, and invertebrate daily doses were calculated by multiplying the ingestion rate (see note 1) by the tissue concentration (see note 3).

5 Soil concentration from specified depth below ground surface at point ID from laboratory analysis. Doses were not calculated for detected and non-detected soil concentrations measured below the minimum reference site concentration (0-12"), as indicated by BB. For results that were measured at less than the detection limit, doses were calculated using half of the detection limit.

6 Soil daily dose was calculated by multiplying the soil ingestion rate (see note 1) by soil concentration (see note 5).

7 Total daily dose is calculated using the following equation: total daily dose = ([mammal daily dose (if applicable) + plant daily dose (if applicable) + invertebrate daily dose (if applicable) + soil daily dose]*SUF)/receptor species body weight.

8 The derivation of TRVs is described in Navy (1998). The high TRV was used for dose calculations.

9 Allometrically adjusted TRVs for birds were calculated using the following equation: receptor species TRV = (test species TRV) x (test species body weight / receptor species body weight) $^{(1-1.2)}$.

10 Allometrically adjusted TRVs for mammals were calculated using the following equation: receptor species TRV = (test species TRV) x (test species body weight / receptor species body weight) $^{(1-0.94)}$.

11 HQs were calculated using the following equation: HQ = total daily dose/allometrically adjusted TRV.

12 Green cells indicate an HQ greater than 1.0

BAF	Bioaccumulation Factor	ID	Identification	NA	Not applicable
BB	Below minimum background reference site concentration	kg	Kilogram	Navy	Department of the Navy
EE/CA	Engineering Evaluation/Cost Analysis	kg/day	Kilogram per day	SUF	Site use factor
EU	Exposure Unit	mg/day	Milligram per day	TRV	Toxicity reference value
HQ	Hazard Quotient	mg/kg	Milligram per kilogram		

Sources: Department of the Navy. 1998. "Development of Toxicity Reference Values for Conducting Ecological Risk Assessments at Naval Facilities in California, Interim Final." Prepared by Naval Facilities Engineering Command, Engineering Field Activity West (EFA

TABLE C-13A: ALUMINUM DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS, EU 13 - STREAM

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **13.8**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9] (mg/kg/day)	HQ[10,11] (based on adjusted TRV)
Great Blue Heron (Carnivorous Birds - Stream)																			
Reference Sites																			
BRSW-6 SE (2007) (0-2)	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSW-6 SE (2008) (0-2)	1.32E-01	1.32E-01	1.09E-02	9.82E+01	1.29E+01	NA	NA	NA	NA	3.55E-03	8.98E+03	3.19E+01	1.00E+00	2.39E+00	1.87E+01	1.10E+03	1.55E-01	1.90E+03	9.89E-03
BRSW-11 SE (0-2)	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
Streambed Sediments (0-2")																	**Minimum HQ (Reference Sites)**		**9.89E-03**
BRSW-109 SE (0-2)	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSW-9 SE (0-2)	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSW-108 SE (0-2)	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSW-36 SE (0-2)	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSW-33 SE (0-2)	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSW-12 SE (0-2)	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSW-21 SE (2007) (0-2)	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSW-13 SE (0-2)	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSW-110 SE (0-2)	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	NE	BB	BB	BB	BB	BB	BB	BB	BB
BRSW-107 SE (2007) (0-2)	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSW-107 SE (2008) (0-2)	1.32E-01	1.32E-01	5.13E-03	5.23E+01	6.88E+00	NA	NA	NA	NA	3.55E-03	1.02E+04	3.62E+01	1.00E+00	2.39E+00	1.80E+01	1.10E+03	1.55E-01	1.90E+03	9.51E-03
BRSW-31 SE (2007) (0-2)	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSW-31 SE (2008) (0-2)	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSW-106 SE (2007) (0-2)	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSW-106 SE (2008) (0-2)	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSW-105 SE (2007) (0-2)	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSW-105 SE (2008) (0-2)	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSW-16 SE (2007) (0-2)	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSW-16 SE (2008) (0-2)	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSW-104 SE (2007) (0-2)	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSW-104 SE (2008) (0-2)	1.32E-01	1.32E-01	5.13E-03	1.17E+02	1.54E+01	NA	NA	NA	NA	3.55E-03	2.28E+04	8.10E+01	1.00E+00	2.39E+00	4.03E+01	1.10E+03	1.55E-01	1.90E+03	2.13E-02
BRSW-103 SE (2007) (0-2)	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSW-103 SE (2008) (0-2)	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSW-17 SE (0-2)	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSW-102 SE (2007) (0-2)	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSW-102 SE (2008) (0-2)	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSW-101 SE (2007) (0-2)	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSW-101 SE (2008) (0-2)	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSW-201 (0-2)	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSW-202 (0-2)	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSW-203 (0-2)	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSW-204 (0-2)	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSW-205 (0-2)	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSW-206 (0-2)	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
Streambed Sediments (2-6")																	**Maximum HQ (Streambed Sediments, 0-2")**		**2.13E-02**
BRSW-12 SE (2-6)	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSW-21 SE (2-6)	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSW-13 SE (2-6)	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSW-110 SE (2-6)	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	NE	BB	BB	BB	BB	BB	BB	BB	BB
BRSW-106 SE (2007) (2-6)	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSW-106 SE (2008) (2-6)	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	BB	NE	NE	NE	NE	NE	NE	NE	NE
BRSW-105 SE (2007) (2-6)	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	NE	BB	BB	BB	BB	BB	BB	BB	BB

TABLE C-13A: ALUMINUM DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS, EU 13 - STREAM (Continued)
Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)
calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 13.8

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9] (mg/kg/day)	HQ[10,11] (based on adjusted TRV)
Great Blue Heron (Carnivorous Birds - Stream)																			
BRSW-105 SE (2008) (2-6)	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSW-104 SE (2-6)	1.32E-01	1.32E-01	5.13E-03	1.18E+02	1.55E+01	NA	NA	NA	NA	3.55E-03	2.30E+04	8.17E+01	1.00E+00	2.39E+00	4.07E+01	1.10E+03	1.55E-01	1.90E+03	2.15E-02
BRSW-102 SE (2-6)	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
Streambed Sediments (6-12")																	**Maximum HQ (Streambed Sediments, 2-6")**		**2.15E-02**
BRSW-12 SE (6-12)	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSW-13 SE (6-12)	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSW-110 SE (6-12)	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
																	Maximum HQ (Streambed Sediments, 6-12")		**0.00E+00**
American Dipper (Insectivorous Birds - Stream)																			
Reference Sites																			
BRSW-6 SE (2007) (0-2)	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSW-6 SE (2008) (0-2)	1.14E-02	NA	NA	NA	NA	1.14E-02	2.78E-01	2.50E+03	2.84E+01	2.05E-03	8.98E+03	1.84E+01	1.00E+00	5.50E-02	8.50E+02	1.10E+03	1.55E-01	8.92E+02	9.54E-01
BRSW-11 SE (0-2)	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
Streambed Sediments (0-2")																		**Minimum HQ (Reference Sites)**	**9.54E-01**
BRSW-109 SE (0-2)	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSW-9 SE (0-2)	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSW-108 SE (0-2)	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSW-36 SE (0-2)	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSW-33 SE (0-2)	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSW-12 SE (0-2)	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSW-21 SE (2007) (0-2)	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSW-13 SE (0-2)	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSW-110 SE (0-2)	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	NE	BB	BB	BB	BB	BB	BB	BB	BB
BRSW-107 SE (2007) (0-2)	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSW-107 SE (2008) (0-2)	1.14E-02	NA	NA	NA	NA	1.14E-02	6.73E-02	6.86E+02	7.80E+00	2.05E-03	1.02E+04	2.09E+01	1.00E+00	5.50E-02	5.22E+02	1.10E+03	1.55E-01	8.92E+02	5.85E-01
BRSW-31 SE (2007) (0-2)	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSW-31 SE (2008) (0-2)	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSW-106 SE (2007) (0-2)	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSW-106 SE (2008) (0-2)	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSW-105 SE (2007) (0-2)	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSW-105 SE (2008) (0-2)	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSW-16 SE (2007) (0-2)	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSW-16 SE (2008) (0-2)	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSW-104 SE (2007) (0-2)	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSW-104 SE (2008) (0-2)	1.14E-02	NA	NA	NA	NA	1.14E-02	6.73E-02	1.53E+03	1.74E+01	2.05E-03	2.28E+04	4.67E+01	1.00E+00	5.50E-02	1.17E+03	1.10E+03	1.55E-01	8.92E+02	1.31E+00
BRSW-103 SE (2007) (0-2)	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSW-103 SE (2008) (0-2)	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSW-17 SE (0-2)	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSW-102 SE (2007) (0-2)	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE

TABLE C-13A: ALUMINUM DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS, EU 13 - STREAM (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 13.8

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9] (mg/kg/day)	HQ[10,11] (based on adjusted TRV)
American Dipper (Insectivorous Birds - Stream)																			
BRSW-102 SE (2008) (0-2)	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSW-101 SE (2007) (0-2)	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSW-101 SE (2008) (0-2)	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSW-201 (0-2)	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSW-202 (0-2)	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSW-203 (0-2)	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSW-204 (0-2)	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSW-205 (0-2)	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSW-206 (0-2)	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
Streambed Sediments (2-6")																	**Maximum HQ (Streambed Sediments, 0-2")**		**1.31E+00**
BRSW-12 SE (2-6)	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSW-21 SE (2-6)	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSW-13 SE (2-6)	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSW-110 SE (2-6)	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSW-106 SE (2007) (2-6)	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSW-106 SE (2008) (2-6)	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSW-105 SE (2007) (2-6)	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSW-105 SE (2008) (2-6)	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSW-104 SE (2-6)	1.14E-02	NA	NA	NA	NA	1.14E-02	6.73E-02	1.55E+03	1.76E+01	2.05E-03	2.30E+04	4.71E+01	1.00E+00	5.50E-02	1.18E+03	1.10E+03	1.55E-01	8.92E+02	1.32E+00
BRSW-102 SE (2-6)	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
Streambed Sediments (6-12")																	**Maximum HQ (Streambed Sediments, 2-6")**		**1.32E+00**
BRSW-12 SE (6-12)	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSW-13 SE (6-12)	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
BRSW-110 SE (6-12)	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
																	Maximum HQ (Streambed Sediments, 6-12")		**0.00E+00**

Notes

1 See Tables 3-1 through 3-13 for ingestion rates, foraging ranges used to calculate the SUF, and body weights.

2 BAFs were calculated by dividing site-collected tissue by collocated soil concentrations (BAFs are in dry weight). The maximum stream invertebrate BAF calculated from collocated sample locations in the Blackfoot River and Stevens Gulch was used for site dose calculations. The maximum BAF from the stream reference site (BRSW-6) was used for reference site dose calculations. The maximum mammal BAF calculated from the Beartrap Creek and Blackfoot River transects was used for site dose calculations, and the maximum mammal BAF from the terrestrial reference site was used for reference site dose calculations.

3 The mammal and invertebrate concentrations were calculated by multiplying the soil concentration by the BAF to generate a tissue concentration (see note 2).

4 Mammal and invertebrate daily doses were calculated by multiplying the ingestion rate (see note 1) by the tissue concentration (see note 3).

5 Soil concentration measured at the specified depth below ground surface at point ID from laboratory analysis. Doses were not calculated for detected and non-detected soil concentrations measured below the minimum reference site concentration, as indicated by BB. For results that were measured at less than the detection limit, doses were calculated using half of the detection limit.

6 Soil daily dose was calculated by multiplying the soil ingestion rate (see note 1) by soil concentration (see note 5).

7 Total daily dose is calculated using the following equation: total daily dose = ([mammal daily dose (if applicable) + invertebrate daily dose (if applicable) + soil daily dose]*SUF)/receptor species body weight.

8 The TRVs used in this risk assessment represent a mid-range effects level. The derivation of TRVs is described in Sample and others (1996).

9 Allometrically adjusted TRVs for birds were calculated using the following equation: receptor species TRV = (test species TRV) x (test species body weight / receptor species body weight)$^{(1-1.2)}$.

10 HQs were calculated using the following equation: HQ = total daily dose/allometrically adjusted TRV.

11 Highlighted cells indicate an HQ greater than 1.0.

BAF	Bioaccumulation Factor	kg/day	Kilogram per day
BB	Below minimum background reference site concentration	mg/day	Milligram per day
EE/CA	Engineering Evaluation/Cost Analysis	mg/kg	Milligram per kilogram
EU	Exposure Unit	NA	Not applicable
HQ	Hazard quotient	Navy	Department of the Navy
ID	Identification	SUF	Site use factor
kg	Kilogram	TRV	Toxicity reference value

Sources: Sample, B.E., D.M. Opresko, and G.W. Suter, II. 1996. "Toxicological Benchmarks for Wildlife: 1996 Revision." ES/ER/TM-86/R3. Oak Ridge National Laboratory. Oak Ridge, Tennessee.

TABLE C-13B: ARSENIC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS, EU 13 - STREAM

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **13.8**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9] (mg/kg/day)	HQ[10,11] (based on adjusted TRV)
Great Blue Heron (Carnivorous Birds - Stream)																			
Reference Sites																			
BRSW-6 SE (2007) (0-2)	1.32E-01	1.32E-01	4.84E-01	2.69E+00	3.54E-01	NA	NA	NA	NA	3.55E-03	5.56E+00	1.97E-02	1.00E+00	2.39E+00	1.56E-01	2.20E+01	1.17E+00	2.54E+01	6.16E-03
BRSW-6 SE (2008) (0-2)	1.32E-01	1.32E-01	4.84E-01	7.45E+00	9.80E-01	NA	NA	NA	NA	3.55E-03	1.54E+01	5.47E-02	1.00E+00	2.39E+00	4.33E-01	2.20E+01	1.17E+00	2.54E+01	1.71E-02
BRSW-11 SE (0-2)	1.32E-01	1.32E-01	4.84E-01	3.81E+00	5.01E-01	NA	NA	NA	NA	3.55E-03	7.87E+00	2.79E-02	1.00E+00	2.39E+00	2.21E-01	2.20E+01	1.17E+00	2.54E+01	8.72E-03
Streambed Sediments (0-2")																		**Minimum HQ (Reference Sites)**	**6.16E-03**
BRSW-109 SE (0-2)	1.32E-01	1.32E-01	4.84E-01	1.52E+01	2.00E+00	NA	NA	NA	NA	3.55E-03	3.14E+01	1.12E-01	1.00E+00	2.39E+00	8.83E-01	2.20E+01	1.17E+00	2.54E+01	3.48E-02
BRSW-9 SE (0-2)	1.32E-01	1.32E-01	4.84E-01	1.20E+01	1.58E+00	NA	NA	NA	NA	3.55E-03	2.49E+01	8.84E-02	1.00E+00	2.39E+00	7.00E-01	2.20E+01	1.17E+00	2.54E+01	2.76E-02
BRSW-108 SE (0-2)	1.32E-01	1.32E-01	4.84E-01	2.86E+01	3.77E+00	NA	NA	NA	NA	3.55E-03	5.92E+01	2.10E-01	1.00E+00	2.39E+00	1.66E+00	2.20E+01	1.17E+00	2.54E+01	6.56E-02
BRSW-36 SE (0-2)	1.32E-01	1.32E-01	4.84E-01	1.30E+01	1.71E+00	NA	NA	NA	NA	3.55E-03	2.69E+01	9.55E-02	1.00E+00	2.39E+00	7.56E-01	2.20E+01	1.17E+00	2.54E+01	2.98E-02
BRSW-33 SE (0-2)	1.32E-01	1.32E-01	4.84E-01	1.19E+01	1.57E+00	NA	NA	NA	NA	3.55E-03	2.46E+01	8.74E-02	1.00E+00	2.39E+00	6.92E-01	2.20E+01	1.17E+00	2.54E+01	2.72E-02
BRSW-12 SE (0-2)	1.32E-01	1.32E-01	4.84E-01	9.19E+00	1.21E+00	NA	NA	NA	NA	3.55E-03	1.90E+01	6.75E-02	1.00E+00	2.39E+00	5.34E-01	2.20E+01	1.17E+00	2.54E+01	2.10E-02
BRSW-21 SE (2007) (0-2)	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSW-13 SE (0-2)	1.32E-01	1.32E-01	4.84E-01	16.400366	2.16E+00	NA	NA	NA	NA	3.55E-03	3.39E+01	1.20E-01	1.00E+00	2.39E+00	9.53E-01	2.20E+01	1.17E+00	2.54E+01	3.75E-02
BRSW-110 SE (0-2)	1.32E-01	1.32E-01	4.84E-01	6.43E+00	8.46E-01	NA	NA	NA	NA	3.55E-03	1.33E+01	4.72E-02	1.00E+00	2.39E+00	3.74E-01	2.20E+01	1.17E+00	2.54E+01	1.47E-02
BRSW-107 SE (2007) (0-2)	1.32E-01	1.32E-01	4.84E-01	1.01E+01	1.33E+00	NA	NA	NA	NA	3.55E-03	2.09E+01	7.42E-02	1.00E+00	2.39E+00	5.88E-01	2.20E+01	1.17E+00	2.54E+01	2.31E-02
BRSW-107 SE (2008) (0-2)	1.32E-01	1.32E-01	4.84E-01	9.53E+00	1.25E+00	NA	NA	NA	NA	3.55E-03	1.97E+01	7.00E-02	1.00E+00	2.39E+00	5.54E-01	2.20E+01	1.17E+00	2.54E+01	2.18E-02
BRSW-31 SE (2007) (0-2)	1.32E-01	1.32E-01	4.84E-01	3.74E+00	4.93E-01	NA	NA	NA	NA	3.55E-03	7.74E+00	2.75E-02	1.00E+00	2.39E+00	2.18E-01	2.20E+01	1.17E+00	2.54E+01	8.57E-03
BRSW-31 SE (2008) (0-2)	1.32E-01	1.32E-01	4.84E-01	7.01E+00	9.23E-01	NA	NA	NA	NA	3.55E-03	1.45E+01	5.15E-02	1.00E+00	2.39E+00	4.08E-01	2.20E+01	1.17E+00	2.54E+01	1.61E-02
BRSW-106 SE (2007) (0-2)	1.32E-01	1.32E-01	4.84E-01	4.59E+00	6.03E-01	NA	NA	NA	NA	3.55E-03	9.48E+00	3.37E-02	1.00E+00	2.39E+00	2.66E-01	2.20E+01	1.17E+00	2.54E+01	1.05E-02
BRSW-106 SE (2008) (0-2)	1.32E-01	1.32E-01	4.84E-01	7.11E+00	9.35E-01	NA	NA	NA	NA	3.55E-03	1.47E+01	5.22E-02	1.00E+00	2.39E+00	4.13E-01	2.20E+01	1.17E+00	2.54E+01	1.63E-02
BRSW-105 SE (2007) (0-2)	1.32E-01	1.32E-01	4.84E-01	4.79E+00	6.30E-01	NA	NA	NA	NA	3.55E-03	9.90E+00	3.52E-02	1.00E+00	2.39E+00	2.78E-01	2.20E+01	1.17E+00	2.54E+01	1.10E-02
BRSW-105 SE (2008) (0-2)	1.32E-01	1.32E-01	4.84E-01	6.87E+00	9.04E-01	NA	NA	NA	NA	3.55E-03	1.42E+01	5.04E-02	1.00E+00	2.39E+00	3.99E-01	2.20E+01	1.17E+00	2.54E+01	1.57E-02
BRSW-16 SE (2007) (0-2)	1.32E-01	1.32E-01	4.84E-01	3.00E+00	3.95E-01	NA	NA	NA	NA	3.55E-03	6.21E+00	2.21E-02	1.00E+00	2.39E+00	1.75E-01	2.20E+01	1.17E+00	2.54E+01	6.88E-03
BRSW-16 SE (2008) (0-2)	1.32E-01	1.32E-01	4.84E-01	5.13E+00	6.75E-01	NA	NA	NA	NA	3.55E-03	1.06E+01	3.76E-02	1.00E+00	2.39E+00	2.98E-01	2.20E+01	1.17E+00	2.54E+01	1.17E-02
BRSW-104 SE (2007) (0-2)	1.32E-01	1.32E-01	4.84E-01	6.72E+00	8.84E-01	NA	NA	NA	NA	3.55E-03	1.39E+01	4.94E-02	1.00E+00	2.39E+00	3.91E-01	2.20E+01	1.17E+00	2.54E+01	1.54E-02
BRSW-104 SE (2008) (0-2)	1.32E-01	1.32E-01	4.84E-01	8.18E+00	1.08E+00	NA	NA	NA	NA	3.55E-03	1.69E+01	6.00E-02	1.00E+00	2.39E+00	4.75E-01	2.20E+01	1.17E+00	2.54E+01	1.87E-02
BRSW-103 SE (2007) (0-2)	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSW-103 SE (2008) (0-2)	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSW-17 SE (0-2)	1.32E-01	1.32E-01	4.84E-01	3.01E+00	3.96E-01	NA	NA	NA	NA	3.55E-03	6.22E+00	2.21E-02	1.00E+00	2.39E+00	1.75E-01	2.20E+01	1.17E+00	2.54E+01	6.89E-03
BRSW-102 SE (2007) (0-2)	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSW-102 SE (2008) (0-2)	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSW-101 SE (2007) (0-2)	1.32E-01	1.32E-01	4.84E-01	4.30E+00	5.65E-01	NA	NA	NA	NA	3.55E-03	8.88E+00	3.15E-02	1.00E+00	2.39E+00	2.50E-01	2.20E+01	1.17E+00	2.54E+01	9.84E-03
BRSW-101 SE (2008) (0-2)	1.32E-01	1.32E-01	4.84E-01	4.77E+00	6.28E-01	NA	NA	NA	NA	3.55E-03	9.87E+00	3.51E-02	1.00E+00	2.39E+00	2.77E-01	2.20E+01	1.17E+00	2.54E+01	1.09E-02
BRSW-201 (0-2)	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSW-202 (0-2)	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSW-203 (0-2)	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSW-204 (0-2)	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSW-205 (0-2)	1.32E-01	1.32E-01	4.84E-01	3.87E+00	5.09E-01	NA	NA	NA	NA	3.55E-03	8.00E+00	2.84E-02	1.00E+00	2.39E+00	2.25E-01	2.20E+01	1.17E+00	2.54E+01	8.86E-03
BRSW-206 (0-2)	1.32E-01	1.32E-01	4.84E-01	2.76E+00	3.63E-01	NA	NA	NA	NA	3.55E-03	5.70E+00	2.02E-02	1.00E+00	2.39E+00	1.60E-01	2.20E+01	1.17E+00	2.54E+01	6.31E-03
Streambed Sediments (2-6")																		**Maximum HQ (Streambed Sediments, 0-2")**	**6.56E-02**
BRSW-12 SE (2-6)	1.32E-01	1.32E-01	4.84E-01	1.05E+01	1.38E+00	NA	NA	NA	NA	3.55E-03	2.17E+01	7.71E-02	1.00E+00	2.39E+00	6.10E-01	2.20E+01	1.17E+00	2.54E+01	2.40E-02
BRSW-21 SE (2-6)	1.32E-01	1.32E-01	4.84E-01	8.76E+00	1.15E+00	NA	NA	NA	NA	3.55E-03	1.81E+01	6.43E-02	1.00E+00	2.39E+00	5.09E-01	2.20E+01	1.17E+00	2.54E+01	2.00E-02
BRSW-13 SE (2-6)	1.32E-01	1.32E-01	4.84E-01	4.20E+01	5.52E+00	NA	NA	NA	NA	3.55E-03	8.68E+01	3.08E-01	1.00E+00	2.39E+00	2.44E+00	2.20E+01	1.17E+00	2.54E+01	9.61E-02
BRSW-110 SE (2-6)	1.32E-01	1.32E-01	4.84E-01	6.24E+00	8.21E-01	NA	NA	NA	NA	3.55E-03	1.29E+01	4.58E-02	1.00E+00	2.39E+00	3.63E-01	2.20E+01	1.17E+00	2.54E+01	1.43E-02
BRSW-106 SE (2007) (2-6)	1.32E-01	1.32E-01	4.84E-01	4.30E+00	5.65E-01	NA	NA	NA	NA	3.55E-03	8.88E+00	3.15E-02	1.00E+00	2.39E+00	2.50E-01	2.20E+01	1.17E+00	2.54E+01	9.84E-03
BRSW-106 SE (2008) (2-6)	1.32E-01	1.32E-01	4.84E-01	5.32E+00	7.00E-01	NA	NA	NA	NA	3.55E-03	1.10E+01	3.91E-02	1.00E+00	2.39E+00	3.09E-01	2.20E+01	1.17E+00	2.54E+01	1.22E-02
BRSW-105 SE (2007) (2-6)	1.32E-01	1.32E-01	4.84E-01	5.71E+00	7.51E-01	NA	NA	NA	NA	3.55E-03	1.18E+01	4.19E-02	1.00E+00	2.39E+00	3.32E-01	2.20E+01	1.17E+00	2.54E+01	1.31E-02

TABLE C-13B: ARSENIC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS, EU 13 - STREAM (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **13.8**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9] (mg/kg/day)	HQ[10,11] (based on adjusted TRV)
Great Blue Heron (Carnivorous Birds - Stream)																			
BRSW-105 SE (2008) (2-6)	1.32E-01	1.32E-01	4.84E-01	6.82E+00	8.97E-01	NA	NA	NA	NA	3.55E-03	1.41E+01	5.01E-02	1.00E+00	2.39E+00	3.96E-01	2.20E+01	1.17E+00	2.54E+01	1.56E-02
BRSW-104 SE (2-6)	1.32E-01	1.32E-01	4.84E-01	8.76E+00	1.15E+00	NA	NA	NA	NA	3.55E-03	1.81E+01	6.43E-02	1.00E+00	2.39E+00	5.09E-01	2.20E+01	1.17E+00	2.54E+01	2.00E-02
BRSW-102 SE (2-6)	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
Streambed Sediments (6-12")																		**Maximum HQ (Streambed Sediments, 2-6")**	**9.61E-02**
BRSW-12 SE (6-12)	1.32E-01	1.32E-01	4.84E-01	1.27E+01	1.67E+00	NA	NA	NA	NA	3.55E-03	2.62E+01	9.30E-02	1.00E+00	2.39E+00	7.36E-01	2.20E+01	1.17E+00	2.54E+01	2.90E-02
BRSW-13 SE (6-12)	1.32E-01	1.32E-01	4.84E-01	2.27E+01	2.99E+00	NA	NA	NA	NA	3.55E-03	4.70E+01	1.67E-01	1.00E+00	2.39E+00	1.32E+00	2.20E+01	1.17E+00	2.54E+01	5.21E-02
BRSW-110 SE (6-12)	1.32E-01	1.32E-01	4.84E-01	7.16E+00	9.42E-01	NA	NA	NA	NA	3.55E-03	1.48E+01	5.26E-02	1.00E+00	2.39E+00	4.16E-01	2.20E+01	1.17E+00	2.54E+01	1.64E-02
																		Maximum HQ (Streambed Sediments, 6-12")	**5.21E-02**
American Dipper (Insectivorous Birds - Stream)																			
Reference Sites																			
BRSW-6 SE (2007) (0-2)	1.14E-02	NA	NA	NA	NA	1.14E-02	5.67E-01	3.15E+00	3.58E-02	2.05E-03	5.56E+00	1.14E-02	1.00E+00	5.50E-02	8.59E-01	2.20E+01	1.17E+00	1.19E+01	7.19E-02
BRSW-6 SE (2008) (0-2)	1.14E-02	NA	NA	NA	NA	1.14E-02	5.67E-01	8.72E+00	9.93E-02	2.05E-03	1.54E+01	3.15E-02	1.00E+00	5.50E-02	2.38E+00	2.20E+01	1.17E+00	1.19E+01	1.99E-01
BRSW-11 SE (0-2)	1.14E-02	NA	NA	NA	NA	1.14E-02	5.67E-01	4.46E+00	5.07E-02	2.05E-03	7.87E+00	1.61E-02	1.00E+00	5.50E-02	1.22E+00	2.20E+01	1.17E+00	1.19E+01	1.02E-01
Streambed Sediments (0-2")																		**Minimum HQ (Reference Sites)**	**7.19E-02**
BRSW-109 SE (0-2)	1.14E-02	NA	NA	NA	NA	1.14E-02	1.23E+00	3.85E+01	4.38E-01	2.05E-03	3.14E+01	6.43E-02	1.00E+00	5.50E-02	9.13E+00	2.20E+01	1.17E+00	1.19E+01	7.65E-01
BRSW-9 SE (0-2)	1.14E-02	NA	NA	NA	NA	1.14E-02	1.23E+00	3.05E+01	3.47E-01	2.05E-03	2.49E+01	5.10E-02	1.00E+00	5.50E-02	7.24E+00	2.20E+01	1.17E+00	1.19E+01	6.06E-01
BRSW-108 SE (0-2)	1.14E-02	NA	NA	NA	NA	1.14E-02	1.23E+00	7.26E+01	8.25E-01	2.05E-03	5.92E+01	1.21E-01	1.00E+00	5.50E-02	1.72E+01	2.20E+01	1.17E+00	1.19E+01	1.44E+00
BRSW-36 SE (0-2)	1.14E-02	NA	NA	NA	NA	1.14E-02	1.23E+00	3.30E+01	3.75E-01	2.05E-03	2.69E+01	5.51E-02	1.00E+00	5.50E-02	7.82E+00	2.20E+01	1.17E+00	1.19E+01	6.55E-01
BRSW-33 SE (0-2)	1.14E-02	NA	NA	NA	NA	1.14E-02	1.23E+00	3.02E+01	3.43E-01	2.05E-03	2.46E+01	5.04E-02	1.00E+00	5.50E-02	7.15E+00	2.20E+01	1.17E+00	1.19E+01	5.99E-01
BRSW-12 SE (0-2)	1.14E-02	NA	NA	NA	NA	1.14E-02	1.23E+00	2.33E+01	2.65E-01	2.05E-03	1.90E+01	3.89E-02	1.00E+00	5.50E-02	5.52E+00	2.20E+01	1.17E+00	1.19E+01	4.63E-01
BRSW-21 SE (2007) (0-2)	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSW-13 SE (0-2)	1.14E-02	NA	NA	NA	NA	1.14E-02	1.23E+00	4.15E+01	4.73E-01	2.05E-03	3.39E+01	6.94E-02	1.00E+00	5.50E-02	9.86E+00	2.20E+01	1.17E+00	1.19E+01	8.26E-01
BRSW-110 SE (0-2)	1.14E-02	NA	NA	NA	NA	1.14E-02	1.23E+00	1.63E+01	1.85E-01	2.05E-03	1.33E+01	2.72E-02	1.00E+00	5.50E-02	3.87E+00	2.20E+01	1.17E+00	1.19E+01	3.24E-01
BRSW-107 SE (2007) (0-2)	1.14E-02	NA	NA	NA	NA	1.14E-02	1.23E+00	2.56E+01	2.91E-01	2.05E-03	2.09E+01	4.28E-02	1.00E+00	5.50E-02	6.08E+00	2.20E+01	1.17E+00	1.19E+01	5.09E-01
BRSW-107 SE (2008) (0-2)	1.14E-02	NA	NA	NA	NA	1.14E-02	1.23E+00	2.41E+01	2.75E-01	2.05E-03	1.97E+01	4.03E-02	1.00E+00	5.50E-02	5.73E+00	2.20E+01	1.17E+00	1.19E+01	4.80E-01
BRSW-31 SE (2007) (0-2)	1.14E-02	NA	NA	NA	NA	1.14E-02	1.23E+00	9.49E+00	1.08E-01	2.05E-03	7.74E+00	1.58E-02	1.00E+00	5.50E-02	2.25E+00	2.20E+01	1.17E+00	1.19E+01	1.89E-01
BRSW-31 SE (2008) (0-2)	1.14E-02	NA	NA	NA	NA	1.14E-02	1.23E+00	1.78E+01	2.02E-01	2.05E-03	1.45E+01	2.97E-02	1.00E+00	5.50E-02	4.22E+00	2.20E+01	1.17E+00	1.19E+01	3.53E-01
BRSW-106 SE (2007) (0-2)	1.14E-02	NA	NA	NA	NA	1.14E-02	1.23E+00	1.16E+01	1.32E-01	2.05E-03	9.48E+00	1.94E-02	1.00E+00	5.50E-02	2.76E+00	2.20E+01	1.17E+00	1.19E+01	2.31E-01
BRSW-106 SE (2008) (0-2)	1.14E-02	NA	NA	NA	NA	1.14E-02	1.23E+00	1.80E+01	2.05E-01	2.05E-03	1.47E+01	3.01E-02	1.00E+00	5.50E-02	4.27E+00	2.20E+01	1.17E+00	1.19E+01	3.58E-01
BRSW-105 SE (2007) (0-2)	1.14E-02	NA	NA	NA	NA	1.14E-02	1.23E+00	1.21E+01	1.38E-01	2.05E-03	9.90E+00	2.03E-02	1.00E+00	5.50E-02	2.88E+00	2.20E+01	1.17E+00	1.19E+01	2.41E-01
BRSW-105 SE (2008) (0-2)	1.14E-02	NA	NA	NA	NA	1.14E-02	1.23E+00	1.74E+01	1.98E-01	2.05E-03	1.42E+01	2.91E-02	1.00E+00	5.50E-02	4.13E+00	2.20E+01	1.17E+00	1.19E+01	3.46E-01
BRSW-16 SE (2007) (0-2)	1.14E-02	NA	NA	NA	NA	1.14E-02	1.23E+00	7.61E+00	8.66E-02	2.05E-03	6.21E+00	1.27E-02	1.00E+00	5.50E-02	1.81E+00	2.20E+01	1.17E+00	1.19E+01	1.51E-01
BRSW-16 SE (2008) (0-2)	1.14E-02	NA	NA	NA	NA	1.14E-02	1.23E+00	1.30E+01	1.48E-01	2.05E-03	1.06E+01	2.17E-02	1.00E+00	5.50E-02	3.08E+00	2.20E+01	1.17E+00	1.19E+01	2.58E-01
BRSW-104 SE (2007) (0-2)	1.14E-02	NA	NA	NA	NA	1.14E-02	1.23E+00	1.70E+01	1.94E-01	2.05E-03	1.39E+01	2.85E-02	1.00E+00	5.50E-02	4.04E+00	2.20E+01	1.17E+00	1.19E+01	3.39E-01
BRSW-104 SE (2008) (0-2)	1.14E-02	NA	NA	NA	NA	1.14E-02	1.23E+00	2.07E+01	2.36E-01	2.05E-03	1.69E+01	3.46E-02	1.00E+00	5.50E-02	4.91E+00	2.20E+01	1.17E+00	1.19E+01	4.12E-01
BRSW-103 SE (2007) (0-2)	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSW-103 SE (2008) (0-2)	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSW-17 SE (0-2)	1.14E-02	NA	NA	NA	NA	1.14E-02	1.23E+00	7.62E+00	8.67E-02	2.05E-03	6.22E+00	1.27E-02	1.00E+00	5.50E-02	1.81E+00	2.20E+01	1.17E+00	1.19E+01	1.51E-01
BRSW-102 SE (2007) (0-2)	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSW-102 SE (2008) (0-2)	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB

TABLE C-13B: ARSENIC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS, EU 13 - STREAM (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

Site Area (hectares) 13.8

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9] (mg/kg/day)	HQ[10,11] (based on adjusted TRV)
American Dipper (Insectivorous Birds - Stream)																			
BRSW-101 SE (2007) (0-2)	1.14E-02	NA	NA	NA	NA	1.14E-02	1.23E+00	1.09E+01	1.24E-01	2.05E-03	8.88E+00	1.82E-02	1.00E+00	5.50E-02	2.58E+00	2.20E+01	1.17E+00	1.19E+01	2.16E-01
BRSW-101 SE (2008) (0-2)	1.14E-02	NA	NA	NA	NA	1.14E-02	1.23E+00	1.21E+01	1.38E-01	2.05E-03	9.87E+00	2.02E-02	1.00E+00	5.50E-02	2.87E+00	2.20E+01	1.17E+00	1.19E+01	2.40E-01
BRSW-201 (0-2)	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSW-202 (0-2)	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSW-203 (0-2)	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSW-204 (0-2)	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSW-205 (0-2)	1.14E-02	NA	NA	NA	NA	1.14E-02	1.23E+00	9.80E+00	1.12E-01	2.05E-03	8.00E+00	1.64E-02	1.00E+00	5.50E-02	2.33E+00	2.20E+01	1.17E+00	1.19E+01	1.95E-01
BRSW-206 (0-2)	1.14E-02	NA	NA	NA	NA	1.14E-02	1.23E+00	6.99E+00	7.95E-02	2.05E-03	5.70E+00	1.17E-02	1.00E+00	5.50E-02	1.66E+00	2.20E+01	1.17E+00	1.19E+01	1.39E-01
Streambed Sediments (2-6")																		**Maximum HQ (Streambed Sediments, 0-2")**	**1.44E+00**
BRSW-12 SE (2-6)	1.14E-02	NA	NA	NA	NA	1.14E-02	1.23E+00	2.66E+01	3.03E-01	2.05E-03	2.17E+01	4.44E-02	1.00E+00	5.50E-02	6.31E+00	2.20E+01	1.17E+00	1.19E+01	5.29E-01
BRSW-21 SE (2-6)	1.14E-02	NA	NA	NA	NA	1.14E-02	1.23E+00	2.22E+01	2.52E-01	2.05E-03	1.81E+01	3.71E-02	1.00E+00	5.50E-02	5.26E+00	2.20E+01	1.17E+00	1.19E+01	4.41E-01
BRSW-13 SE (2-6)	1.14E-02	NA	NA	NA	NA	1.14E-02	1.23E+00	1.06E+02	1.21E+00	2.05E-03	8.68E+01	1.78E-01	1.00E+00	5.50E-02	2.52E+01	2.20E+01	1.17E+00	1.19E+01	2.11E+00
BRSW-110 SE (2-6)	1.14E-02	NA	NA	NA	NA	1.14E-02	1.23E+00	1.58E+01	1.80E-01	2.05E-03	1.29E+01	2.64E-02	1.00E+00	5.50E-02	3.75E+00	2.20E+01	1.17E+00	1.19E+01	3.14E-01
BRSW-106 SE (2007) (2-6)	1.14E-02	NA	NA	NA	NA	1.14E-02	1.23E+00	1.09E+01	1.24E-01	2.05E-03	8.88E+00	1.82E-02	1.00E+00	5.50E-02	2.58E+00	2.20E+01	1.17E+00	1.19E+01	2.16E-01
BRSW-106 SE (2008) (2-6)	1.14E-02	NA	NA	NA	NA	1.14E-02	1.23E+00	1.35E+01	1.53E-01	2.05E-03	1.10E+01	2.25E-02	1.00E+00	5.50E-02	3.20E+00	2.20E+01	1.17E+00	1.19E+01	2.68E-01
BRSW-105 SE (2007) (2-6)	1.14E-02	NA	NA	NA	NA	1.14E-02	1.23E+00	1.45E+01	1.65E-01	2.05E-03	1.18E+01	2.42E-02	1.00E+00	5.50E-02	3.43E+00	2.20E+01	1.17E+00	1.19E+01	2.87E-01
BRSW-105 SE (2008) (2-6)	1.14E-02	NA	NA	NA	NA	1.14E-02	1.23E+00	1.73E+01	1.97E-01	2.05E-03	1.41E+01	2.89E-02	1.00E+00	5.50E-02	4.10E+00	2.20E+01	1.17E+00	1.19E+01	3.43E-01
BRSW-104 SE (2-6)	1.14E-02	NA	NA	NA	NA	1.14E-02	1.23E+00	2.22E+01	2.52E-01	2.05E-03	1.81E+01	3.71E-02	1.00E+00	5.50E-02	5.26E+00	2.20E+01	1.17E+00	1.19E+01	4.41E-01
BRSW-102 SE (2-6)	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
Streambed Sediments (6-12")																		**Maximum HQ (Streambed Sediments, 2-6")**	**2.11E+00**
BRSW-12 SE (6-12)	1.14E-02	NA	NA	NA	NA	1.14E-02	1.23E+00	3.21E+01	3.65E-01	2.05E-03	2.62E+01	5.37E-02	1.00E+00	5.50E-02	7.62E+00	2.20E+01	1.17E+00	1.19E+01	6.38E-01
BRSW-13 SE (6-12)	1.14E-02	NA	NA	NA	NA	1.14E-02	1.23E+00	5.76E+01	6.55E-01	2.05E-03	4.70E+01	9.62E-02	1.00E+00	5.50E-02	1.37E+01	2.20E+01	1.17E+00	1.19E+01	1.14E+00
BRSW-110 SE (6-12)	1.14E-02	NA	NA	NA	NA	1.14E-02	1.23E+00	1.81E+01	2.06E-01	2.05E-03	1.48E+01	3.03E-02	1.00E+00	5.50E-02	4.30E+00	2.20E+01	1.17E+00	1.19E+01	3.60E-01
																		Maximum HQ (Streambed Sediments, 6-12")	**1.14E+00**

Notes

1 See Tables 3-1 through 3-13 for ingestion rates, foraging ranges used to calculate the SUF, and body weights.

2 BAFs were calculated by dividing site-collected tissue by collocated soil concentrations (BAFs are in dry weight). The maximum stream invertebrate BAF calculated from collocated sample locations in the Blackfoot River and Stevens Gulch was used for site dose calculations. The maximum BAF from the stream reference site (BRSW-6) was used for reference site dose calculations. The maximum mammal BAF calculated from the Beartrap Creek and Blackfoot River transects was used for site dose calculations, and the maximum mammal BAF from the terrestrial reference site was used for reference site dose calculations.

3 The mammal and invertebrate concentrations were calculated by multiplying the soil concentration by the BAF to generate a tissue concentration (see note 2).

4 Mammal and invertebrate daily doses were calculated by multiplying the ingestion rate (see note 1) by the tissue concentration (see note 3).

5 Soil concentration measured at the specified depth below ground surface at point ID from laboratory analysis. Doses were not calculated for detected and non-detected soil concentrations measured below the minimum reference site concentration, as indicated by BB. For results that were measured at less than the detection limit, doses were calculated using half of the detection limit.

6 Soil daily dose was calculated by multiplying the soil ingestion rate (see note 1) by soil concentration (see note 5).

7 Total daily dose is calculated using the following equation: total daily dose = ([mammal daily dose (if applicable) + invertebrate daily dose (if applicable) + soil daily dose]*SUF)/receptor species body weight.

8 The TRVs used in this risk assessment represent a mid-range effects level. The derivation of TRVs is described in Navy (1998).

9 Allometrically adjusted TRVs for birds were calculated using the following equation: receptor species TRV = (test species TRV) x (test species body weight / receptor species body weight)$^{(1-1.2)}$.

10 HQs were calculated using the following equation: HQ = total daily dose/allometrically adjusted TRV.

11 Highlighted cells indicate an HQ greater than 1.0.

BAF	Bioaccumulation Factor	kg/day	Kilogram per day
BB	Below minimum background reference site concentration	mg/day	Milligram per day
EE/CA	Engineering Evaluation/Cost Analysis	mg/kg	Milligram per kilogram
EU	Exposure Unit	NA	Not applicable
HQ	Hazard quotient	Navy	Department of the Navy
ID	Identification	SUF	Site use factor
kg	Kilogram	TRV	Toxicity reference value

Sources: Department of the Navy. 1998. "Development of Toxicity Reference Values for Conducting Ecological Risk Assessments at Naval Facilities in California, Interim Final." Prepared by Naval Facilities Engineering Command, Engineering Field Activity West (EFA West). San Bruno, California.

TABLE C-13C: CADMIUM DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS, EU 13 - STREAM

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 13.8

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Great Blue Heron (Carnivorous Birds - Stream)																			
Reference Sites																			
BRSW-6 SE (2007) (0-2)	1.32E-01	1.32E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	3.55E-03	5.00E-01	1.78E-03	1.00E+00	2.39E+00	7.43E-04	1.00E+00	1.13E+00	1.16E+00	6.40E-04
BRSW-6 SE (2008) (0-2)	1.32E-01	1.32E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	3.55E-03	5.00E-01	1.78E-03	1.00E+00	2.39E+00	7.43E-04	1.00E+00	1.13E+00	1.16E+00	6.40E-04
BRSW-11 SE (0-2)	1.32E-01	1.32E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	3.55E-03	5.00E-01	1.78E-03	1.00E+00	2.39E+00	7.43E-04	1.00E+00	1.13E+00	1.16E+00	6.40E-04
Streambed Sediments (0-2")																		**Minimum HQ (Reference Sites)**	**6.40E-04**
BRSW-109 SE (0-2)	1.32E-01	1.32E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	3.55E-03	1.05E+01	3.73E-02	1.00E+00	2.39E+00	1.56E-02	1.00E+00	1.13E+00	1.16E+00	1.34E-02
BRSW-9 SE (0-2)	1.32E-01	1.32E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	3.55E-03	1.81E+01	6.43E-02	1.00E+00	2.39E+00	2.69E-02	1.00E+00	1.13E+00	1.16E+00	2.32E-02
BRSW-108 SE (0-2)	1.32E-01	1.32E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	3.55E-03	6.27E-01	2.23E-03	1.00E+00	2.39E+00	9.32E-04	1.00E+00	1.13E+00	1.16E+00	8.02E-04
BRSW-36 SE (0-2)	1.32E-01	1.32E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	3.55E-03	1.64E+01	5.82E-02	1.00E+00	2.39E+00	2.44E-02	1.00E+00	1.13E+00	1.16E+00	2.10E-02
BRSW-33 SE (0-2)	1.32E-01	1.32E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	3.55E-03	8.33E+00	2.96E-02	1.00E+00	2.39E+00	1.24E-02	1.00E+00	1.13E+00	1.16E+00	1.07E-02
BRSW-12 SE (0-2)	1.32E-01	1.32E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	3.55E-03	1.04E+01	3.69E-02	1.00E+00	2.39E+00	1.55E-02	1.00E+00	1.13E+00	1.16E+00	1.33E-02
BRSW-21 SE (2007) (0-2)	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSW-13 SE (0-2)	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSW-110 SE (0-2)	1.32E-01	1.32E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	3.55E-03	4.35E+00	1.54E-02	1.00E+00	2.39E+00	6.46E-03	1.00E+00	1.13E+00	1.16E+00	5.56E-03
BRSW-107 SE (2007) (0-2)	1.32E-01	1.32E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	3.55E-03	1.05E+01	3.73E-02	1.00E+00	2.39E+00	1.56E-02	1.00E+00	1.13E+00	1.16E+00	1.34E-02
BRSW-107 SE (2008) (0-2)	1.32E-01	1.32E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	3.55E-03	1.93E+00	6.85E-03	1.00E+00	2.39E+00	2.87E-03	1.00E+00	1.13E+00	1.16E+00	2.47E-03
BRSW-31 SE (2007) (0-2)	1.32E-01	1.32E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	3.55E-03	8.80E+00	3.13E-02	1.00E+00	2.39E+00	1.31E-02	1.00E+00	1.13E+00	1.16E+00	1.13E-02
BRSW-31 SE (2008) (0-2)	1.32E-01	1.32E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	3.55E-03	8.49E+00	3.02E-02	1.00E+00	2.39E+00	1.26E-02	1.00E+00	1.13E+00	1.16E+00	1.09E-02
BRSW-106 SE (2007) (0-2)	1.32E-01	1.32E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	3.55E-03	5.19E+00	1.84E-02	1.00E+00	2.39E+00	7.71E-03	1.00E+00	1.13E+00	1.16E+00	6.64E-03
BRSW-106 SE (2008) (0-2)	1.32E-01	1.32E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	3.55E-03	3.51E+00	1.25E-02	1.00E+00	2.39E+00	5.22E-03	1.00E+00	1.13E+00	1.16E+00	4.49E-03
BRSW-105 SE (2007) (0-2)	1.32E-01	1.32E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	3.55E-03	8.10E+00	2.88E-02	1.00E+00	2.39E+00	1.20E-02	1.00E+00	1.13E+00	1.16E+00	1.04E-02
BRSW-105 SE (2008) (0-2)	1.32E-01	1.32E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	3.55E-03	7.49E+00	2.66E-02	1.00E+00	2.39E+00	1.11E-02	1.00E+00	1.13E+00	1.16E+00	9.58E-03
BRSW-16 SE (2007) (0-2)	1.32E-01	1.32E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	3.55E-03	5.34E+00	1.90E-02	1.00E+00	2.39E+00	7.93E-03	1.00E+00	1.13E+00	1.16E+00	6.83E-03
BRSW-16 SE (2008) (0-2)	1.32E-01	1.32E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	3.55E-03	2.75E+00	9.77E-03	1.00E+00	2.39E+00	4.09E-03	1.00E+00	1.13E+00	1.16E+00	3.52E-03
BRSW-104 SE (2007) (0-2)	1.32E-01	1.32E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	3.55E-03	9.39E+00	3.33E-02	1.00E+00	2.39E+00	1.40E-02	1.00E+00	1.13E+00	1.16E+00	1.20E-02
BRSW-104 SE (2008) (0-2)	1.32E-01	1.32E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	3.55E-03	1.82E+01	6.46E-02	1.00E+00	2.39E+00	2.70E-02	1.00E+00	1.13E+00	1.16E+00	2.33E-02
BRSW-103 SE (2007) (0-2)	1.32E-01	1.32E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	3.55E-03	8.70E-01	3.09E-03	1.00E+00	2.39E+00	1.29E-03	1.00E+00	1.13E+00	1.16E+00	1.11E-03
BRSW-103 SE (2008) (0-2)	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSW-17 SE (0-2)	1.32E-01	1.32E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	3.55E-03	3.86E+00	1.37E-02	1.00E+00	2.39E+00	5.74E-03	1.00E+00	1.13E+00	1.16E+00	4.94E-03
BRSW-102 SE (2007) (0-2)	1.32E-01	1.32E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	3.55E-03	1.99E+00	7.07E-03	1.00E+00	2.39E+00	2.96E-03	1.00E+00	1.13E+00	1.16E+00	2.55E-03
BRSW-102 SE (2008) (0-2)	1.32E-01	1.32E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	3.55E-03	1.21E+00	4.30E-03	1.00E+00	2.39E+00	1.80E-03	1.00E+00	1.13E+00	1.16E+00	1.55E-03
BRSW-101 SE (2007) (0-2)	1.32E-01	1.32E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	3.55E-03	1.91E+00	6.78E-03	1.00E+00	2.39E+00	2.84E-03	1.00E+00	1.13E+00	1.16E+00	2.44E-03
BRSW-101 SE (2008) (0-2)	1.32E-01	1.32E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	3.55E-03	8.39E-01	2.98E-03	1.00E+00	2.39E+00	1.25E-03	1.00E+00	1.13E+00	1.16E+00	1.07E-03
BRSW-201 (0-2)	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSW-202 (0-2)	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSW-203 (0-2)	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSW-204 (0-2)	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSW-205 (0-2)	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSW-206 (0-2)	1.32E-01	1.32E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	3.55E-03	1.30E+00	4.62E-03	1.00E+00	2.39E+00	1.93E-03	1.00E+00	1.13E+00	1.16E+00	1.66E-03
Streambed Sediments (2-6")																		**Maximum HQ (Streambed Sediments, 0-2")**	**2.33E-02**
BRSW-12 SE (2-6)	1.32E-01	1.32E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	3.55E-03	1.33E+01	4.72E-02	1.00E+00	2.39E+00	1.98E-02	1.00E+00	1.13E+00	1.16E+00	1.70E-02
BRSW-21 SE (2-6)	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSW-13 SE (2-6)	1.32E-01	1.32E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	3.55E-03	5.50E-01	1.95E-03	1.00E+00	2.39E+00	8.17E-04	1.00E+00	1.13E+00	1.16E+00	7.04E-04
BRSW-110 SE (2-6)	1.32E-01	1.32E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	3.55E-03	5.48E+00	1.95E-02	1.00E+00	2.39E+00	8.14E-03	1.00E+00	1.13E+00	1.16E+00	7.01E-03
BRSW-106 SE (2007) (2-6)	1.32E-01	1.32E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	3.55E-03	4.62E+00	1.64E-02	1.00E+00	2.39E+00	6.86E-03	1.00E+00	1.13E+00	1.16E+00	5.91E-03
BRSW-106 SE (2008) (2-6)	1.32E-01	1.32E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	3.55E-03	3.08E+00	1.09E-02	1.00E+00	2.39E+00	4.58E-03	1.00E+00	1.13E+00	1.16E+00	3.94E-03
BRSW-105 SE (2007) (2-6)	1.32E-01	1.32E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	3.55E-03	8.02E+00	2.85E-02	1.00E+00	2.39E+00	1.19E-02	1.00E+00	1.13E+00	1.16E+00	1.03E-02

TABLE C-13C: CADMIUM DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS, EU 13 - STREAM (Continued)
Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables; from BAF table; linked to soil or sed concentration table (VLOOKUP)
calculated values; linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 13.8

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Great Blue Heron (Carnivorous Birds - Stream)																			
BRSW-105 SE (2008) (2-6)	1.32E-01	1.32E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	3.55E-03	6.97E+00	2.48E-02	1.00E+00	2.39E+00	1.04E-02	1.00E+00	1.13E+00	1.16E+00	8.92E-03
BRSW-104 SE (2-6)	1.32E-01	1.32E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	3.55E-03	2.03E+01	7.21E-02	1.00E+00	2.39E+00	3.02E-02	1.00E+00	1.13E+00	1.16E+00	2.60E-02
BRSW-102 SE (2-6)	1.32E-01	1.32E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	3.55E-03	7.67E-01	2.72E-03	1.00E+00	2.39E+00	1.14E-03	1.00E+00	1.13E+00	1.16E+00	9.81E-04
Streambed Sediments (6-12")																		**Maximum HQ (Streambed Sediments, 2-6")**	**2.60E-02**
BRSW-12 SE (6-12)	1.32E-01	1.32E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	3.55E-03	9.97E+00	3.54E-02	1.00E+00	2.39E+00	1.48E-02	1.00E+00	1.13E+00	1.16E+00	1.28E-02
BRSW-13 SE (6-12)	1.32E-01	1.32E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	3.55E-03	1.37E+00	4.87E-03	1.00E+00	2.39E+00	2.04E-03	1.00E+00	1.13E+00	1.16E+00	1.75E-03
BRSW-110 SE (6-12)	1.32E-01	1.32E-01	0.00E+00	0.00E+00	0.00E+00	NA	NA	NA	NA	3.55E-03	4.94E+00	1.75E-02	1.00E+00	2.39E+00	7.34E-03	1.00E+00	1.13E+00	1.16E+00	6.32E-03
																		Maximum HQ (Streambed Sediments, 6-12")	**1.28E-02**
American Dipper (Insectivorous Birds - Stream)																			
Reference Sites																			
BRSW-6 SE (2007) (0-2)	1.14E-02	NA	NA	NA	NA	1.14E-02	0.00E+00	0.00E+00	0.00E+00	2.05E-03	5.00E-01	1.02E-03	1.00E+00	5.50E-02	1.86E-02	1.00E+00	1.13E+00	5.46E-01	3.41E-02
BRSW-6 SE (2008) (0-2)	1.14E-02	NA	NA	NA	NA	1.14E-02	0.00E+00	0.00E+00	0.00E+00	2.05E-03	5.00E-01	1.02E-03	1.00E+00	5.50E-02	1.86E-02	1.00E+00	1.13E+00	5.46E-01	3.41E-02
BRSW-11 SE (0-2)	1.14E-02	NA	NA	NA	NA	1.14E-02	0.00E+00	0.00E+00	0.00E+00	2.05E-03	5.00E-01	1.02E-03	1.00E+00	5.50E-02	1.86E-02	1.00E+00	1.13E+00	5.46E-01	3.41E-02
Streambed Sediments (0-2")																		**Minimum HQ (Reference Sites)**	**3.41E-02**
BRSW-109 SE (0-2)	1.14E-02	NA	NA	NA	NA	1.14E-02	1.60E+01	1.68E+02	1.91E+00	2.05E-03	1.05E+01	2.15E-02	1.00E+00	5.50E-02	3.52E+01	1.00E+00	1.13E+00	5.46E-01	6.44E+01
BRSW-9 SE (0-2)	1.14E-02	NA	NA	NA	NA	1.14E-02	1.60E+01	2.90E+02	3.30E+00	2.05E-03	1.81E+01	3.71E-02	1.00E+00	5.50E-02	6.07E+01	1.00E+00	1.13E+00	5.46E-01	1.11E+02
BRSW-108 SE (0-2)	1.14E-02	NA	NA	NA	NA	1.14E-02	1.60E+01	1.01E+01	1.14E-01	2.05E-03	6.27E-01	1.28E-03	1.00E+00	5.50E-02	2.10E+00	1.00E+00	1.13E+00	5.46E-01	3.85E+00
BRSW-36 SE (0-2)	1.14E-02	NA	NA	NA	NA	1.14E-02	1.60E+01	2.63E+02	2.99E+00	2.05E-03	1.64E+01	3.36E-02	1.00E+00	5.50E-02	5.50E+01	1.00E+00	1.13E+00	5.46E-01	1.01E+02
BRSW-33 SE (0-2)	1.14E-02	NA	NA	NA	NA	1.14E-02	1.60E+01	1.34E+02	1.52E+00	2.05E-03	8.33E+00	1.71E-02	1.00E+00	5.50E-02	2.79E+01	1.00E+00	1.13E+00	5.46E-01	5.11E+01
BRSW-12 SE (0-2)	1.14E-02	NA	NA	NA	NA	1.14E-02	1.60E+01	1.67E+02	1.90E+00	2.05E-03	1.04E+01	2.13E-02	1.00E+00	5.50E-02	3.49E+01	1.00E+00	1.13E+00	5.46E-01	6.38E+01
BRSW-21 SE (2007) (0-2)	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSW-13 SE (0-2)	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSW-110 SE (0-2)	1.14E-02	NA	NA	NA	NA	1.14E-02	1.60E+01	6.97E+01	7.93E-01	2.05E-03	4.35E+00	8.91E-03	1.00E+00	5.50E-02	1.46E+01	1.00E+00	1.13E+00	5.46E-01	2.67E+01
BRSW-107 SE (2007) (0-2)	1.14E-02	NA	NA	NA	NA	1.14E-02	1.60E+01	1.68E+02	1.91E+00	2.05E-03	1.05E+01	2.15E-02	1.00E+00	5.50E-02	3.52E+01	1.00E+00	1.13E+00	5.46E-01	6.44E+01
BRSW-107 SE (2008) (0-2)	1.14E-02	NA	NA	NA	NA	1.14E-02	1.60E+01	3.09E+01	3.52E-01	2.05E-03	1.93E+00	3.95E-03	1.00E+00	5.50E-02	6.47E+00	1.00E+00	1.13E+00	5.46E-01	1.18E+01
BRSW-31 SE (2007) (0-2)	1.14E-02	NA	NA	NA	NA	1.14E-02	1.60E+01	1.41E+02	1.60E+00	2.05E-03	8.80E+00	1.80E-02	1.00E+00	5.50E-02	2.95E+01	1.00E+00	1.13E+00	5.46E-01	5.40E+01
BRSW-31 SE (2008) (0-2)	1.14E-02	NA	NA	NA	NA	1.14E-02	1.60E+01	1.36E+02	1.55E+00	2.05E-03	8.49E+00	1.74E-02	1.00E+00	5.50E-02	2.85E+01	1.00E+00	1.13E+00	5.46E-01	5.21E+01
BRSW-106 SE (2007) (0-2)	1.14E-02	NA	NA	NA	NA	1.14E-02	1.60E+01	8.32E+01	9.46E-01	2.05E-03	5.19E+00	1.06E-02	1.00E+00	5.50E-02	1.74E+01	1.00E+00	1.13E+00	5.46E-01	3.18E+01
BRSW-106 SE (2008) (0-2)	1.14E-02	NA	NA	NA	NA	1.14E-02	1.60E+01	5.63E+01	6.40E-01	2.05E-03	3.51E+00	7.19E-03	1.00E+00	5.50E-02	1.18E+01	1.00E+00	1.13E+00	5.46E-01	2.15E+01
BRSW-105 SE (2007) (0-2)	1.14E-02	NA	NA	NA	NA	1.14E-02	1.60E+01	1.30E+02	1.48E+00	2.05E-03	8.10E+00	1.66E-02	1.00E+00	5.50E-02	2.72E+01	1.00E+00	1.13E+00	5.46E-01	4.97E+01
BRSW-105 SE (2008) (0-2)	1.14E-02	NA	NA	NA	NA	1.14E-02	1.60E+01	1.20E+02	1.37E+00	2.05E-03	7.49E+00	1.53E-02	1.00E+00	5.50E-02	2.51E+01	1.00E+00	1.13E+00	5.46E-01	4.60E+01
BRSW-16 SE (2007) (0-2)	1.14E-02	NA	NA	NA	NA	1.14E-02	1.60E+01	8.56E+01	9.74E-01	2.05E-03	5.34E+00	1.09E-02	1.00E+00	5.50E-02	1.79E+01	1.00E+00	1.13E+00	5.46E-01	3.28E+01
BRSW-16 SE (2008) (0-2)	1.14E-02	NA	NA	NA	NA	1.14E-02	1.60E+01	4.41E+01	5.01E-01	2.05E-03	2.75E+00	5.63E-03	1.00E+00	5.50E-02	9.22E+00	1.00E+00	1.13E+00	5.46E-01	1.69E+01
BRSW-104 SE (2007) (0-2)	1.14E-02	NA	NA	NA	NA	1.14E-02	1.60E+01	1.51E+02	1.71E+00	2.05E-03	9.39E+00	1.92E-02	1.00E+00	5.50E-02	3.15E+01	1.00E+00	1.13E+00	5.46E-01	5.76E+01
BRSW-104 SE (2008) (0-2)	1.14E-02	NA	NA	NA	NA	1.14E-02	1.60E+01	2.92E+02	3.32E+00	2.05E-03	1.82E+01	3.73E-02	1.00E+00	5.50E-02	6.10E+01	1.00E+00	1.13E+00	5.46E-01	1.12E+02
BRSW-103 SE (2007) (0-2)	1.14E-02	NA	NA	NA	NA	1.14E-02	1.60E+01	1.39E+01	1.59E-01	2.05E-03	8.70E-01	1.78E-03	1.00E+00	5.50E-02	2.92E+00	1.00E+00	1.13E+00	5.46E-01	5.34E+00
BRSW-103 SE (2008) (0-2)	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSW-17 SE (0-2)	1.14E-02	NA	NA	NA	NA	1.14E-02	1.60E+01	6.19E+01	7.04E-01	2.05E-03	3.86E+00	7.90E-03	1.00E+00	5.50E-02	1.29E+01	1.00E+00	1.13E+00	5.46E-01	2.37E+01
BRSW-102 SE (2007) (0-2)	1.14E-02	NA	NA	NA	NA	1.14E-02	1.60E+01	3.19E+01	3.63E-01	2.05E-03	1.99E+00	4.08E-03	1.00E+00	5.50E-02	6.67E+00	1.00E+00	1.13E+00	5.46E-01	1.22E+01

TABLE C-13C: CADMIUM DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS, EU 13 - STREAM (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 13.8

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
American Dipper (Insectivorous Birds - Stream)																			
BRSW-102 SE (2008) (0-2)	1.14E-02	NA	NA	NA	NA	1.14E-02	1.60E+01	1.94E+01	2.21E-01	2.05E-03	1.21E+00	2.48E-03	1.00E+00	5.50E-02	4.06E+00	1.00E+00	1.13E+00	5.46E-01	7.43E+00
BRSW-101 SE (2007) (0-2)	1.14E-02	NA	NA	NA	NA	1.14E-02	1.60E+01	3.06E+01	3.48E-01	2.05E-03	1.91E+00	3.91E-03	1.00E+00	5.50E-02	6.40E+00	1.00E+00	1.13E+00	5.46E-01	1.17E+01
BRSW-101 SE (2008) (0-2)	1.14E-02	NA	NA	NA	NA	1.14E-02	1.60E+01	1.34E+01	1.53E-01	2.05E-03	8.39E-01	1.72E-03	1.00E+00	5.50E-02	2.81E+00	1.00E+00	1.13E+00	5.46E-01	5.15E+00
BRSW-201 (0-2)	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSW-202 (0-2)	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSW-203 (0-2)	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSW-204 (0-2)	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSW-205 (0-2)	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSW-206 (0-2)	1.14E-02	NA	NA	NA	NA	1.14E-02	1.60E+01	2.08E+01	2.37E-01	2.05E-03	1.30E+00	2.66E-03	1.00E+00	5.50E-02	4.36E+00	1.00E+00	1.13E+00	5.46E-01	7.98E+00
Streambed Sediments (2-6")																		**Maximum HQ (Streambed Sediments, 0-2")**	**1.12E+02**
BRSW-12 SE (2-6)	1.14E-02	NA	NA	NA	NA	1.14E-02	1.60E+01	2.13E+02	2.43E+00	2.05E-03	1.33E+01	2.72E-02	1.00E+00	5.50E-02	4.46E+01	1.00E+00	1.13E+00	5.46E-01	8.16E+01
BRSW-21 SE (2-6)	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSW-13 SE (2-6)	1.14E-02	NA	NA	NA	NA	1.14E-02	1.60E+01	8.82E+00	1.00E-01	2.05E-03	5.50E-01	1.13E-03	1.00E+00	5.50E-02	1.84E+00	1.00E+00	1.13E+00	5.46E-01	3.38E+00
BRSW-110 SE (2-6)	1.14E-02	NA	NA	NA	NA	1.14E-02	1.60E+01	8.78E+01	9.99E-01	2.05E-03	5.48E+00	1.12E-02	1.00E+00	5.50E-02	1.84E+01	1.00E+00	1.13E+00	5.46E-01	3.36E+01
BRSW-106 SE (2007) (2-6)	1.14E-02	NA	NA	NA	NA	1.14E-02	1.60E+01	7.41E+01	8.42E-01	2.05E-03	4.62E+00	9.46E-03	1.00E+00	5.50E-02	1.55E+01	1.00E+00	1.13E+00	5.46E-01	2.84E+01
BRSW-106 SE (2008) (2-6)	1.14E-02	NA	NA	NA	NA	1.14E-02	1.60E+01	4.94E+01	5.62E-01	2.05E-03	3.08E+00	6.31E-03	1.00E+00	5.50E-02	1.03E+01	1.00E+00	1.13E+00	5.46E-01	1.89E+01
BRSW-105 SE (2007) (2-6)	1.14E-02	NA	NA	NA	NA	1.14E-02	1.60E+01	1.29E+02	1.46E+00	2.05E-03	8.02E+00	1.64E-02	1.00E+00	5.50E-02	2.69E+01	1.00E+00	1.13E+00	5.46E-01	4.92E+01
BRSW-105 SE (2008) (2-6)	1.14E-02	NA	NA	NA	NA	1.14E-02	1.60E+01	1.12E+02	1.27E+00	2.05E-03	6.97E+00	1.43E-02	1.00E+00	5.50E-02	2.34E+01	1.00E+00	1.13E+00	5.46E-01	4.28E+01
BRSW-104 SE (2-6)	1.14E-02	NA	NA	NA	NA	1.14E-02	1.60E+01	3.25E+02	3.70E+00	2.05E-03	2.03E+01	4.16E-02	1.00E+00	5.50E-02	6.81E+01	1.00E+00	1.13E+00	5.46E-01	1.25E+02
BRSW-102 SE (2-6)	1.14E-02	NA	NA	NA	NA	1.14E-02	1.60E+01	1.23E+01	1.40E-01	2.05E-03	7.67E-01	1.57E-03	1.00E+00	5.50E-02	2.57E+00	1.00E+00	1.13E+00	5.46E-01	4.71E+00
Streambed Sediments (6-12")																		**Maximum HQ (Streambed Sediments, 2-6")**	**1.25E+02**
BRSW-12 SE (6-12)	1.14E-02	NA	NA	NA	NA	1.14E-02	1.60E+01	1.60E+02	1.82E+00	2.05E-03	9.97E+00	2.04E-02	1.00E+00	5.50E-02	3.34E+01	1.00E+00	1.13E+00	5.46E-01	6.12E+01
BRSW-13 SE (6-12)	1.14E-02	NA	NA	NA	NA	1.14E-02	1.60E+01	2.20E+01	2.50E-01	2.05E-03	1.37E+00	2.81E-03	1.00E+00	5.50E-02	4.59E+00	1.00E+00	1.13E+00	5.46E-01	8.41E+00
BRSW-110 SE (6-12)	1.14E-02	NA	NA	NA	NA	1.14E-02	1.60E+01	7.92E+01	9.01E-01	2.05E-03	4.94E+00	1.01E-02	1.00E+00	5.50E-02	1.66E+01	1.00E+00	1.13E+00	5.46E-01	3.03E+01
																		Maximum HQ (Streambed Sediments, 6-12")	**6.12E+01**

Notes

1 See Tables 3-1 through 3-13 for ingestion rates, foraging ranges used to calculate the SUF, and body weights.

2 BAFs were calculated by dividing site-collected tissue by collocated soil concentrations (BAFs are in dry weight). The maximum stream invertebrate BAF calculated from collocated sample locations in the Blackfoot River and Stevens Gulch was used for site dose calculations. The maximum BAF from the stream reference site (BRSW-6) was used for reference site dose calculations. The maximum mammal BAF calculated from the Beartrap Creek and Blackfoot River transects was used for site dose calculations, and the maximum mammal BAF from the terrestrial reference site was used for reference site dose calculations.

3 The mammal and invertebrate concentrations were calculated by multiplying the soil concentration by the BAF to generate a tissue concentration (see note 2).

4 Mammal and invertebrate daily doses were calculated by multiplying the ingestion rate (see note 1) by the tissue concentration (see note 3).

5 Soil concentration measured at the specified depth below ground surface at point ID from laboratory analysis. Doses were not calculated for detected and non-detected soil concentrations measured below the minimum reference site concentration, as indicated by BB. For results that were measured at less than the detection limit, doses were calculated using half of the detection limit.

6 Soil daily dose was calculated by multiplying the soil ingestion rate (see note 1) by soil concentration (see note 5).

7 Total daily dose is calculated using the following equation: total daily dose = ([mammal daily dose (if applicable) + invertebrate daily dose (if applicable) + soil daily dose]*SUF)/receptor species body weight.

8 The TRVs used in this risk assessment represent a mid-range effects level. The derivation of TRVs is described in Navy (1998).

9 Allometrically adjusted TRVs for birds were calculated using the following equation: receptor species TRV = (test species TRV) x (test species body weight / receptor species body weight) $^{(1-1.2)}$.

10 HQs were calculated using the following equation: HQ = total daily dose/allometrically adjusted TRV.

11 Highlighted cells indicate an HQ greater than 1.0.

BAF	Bioaccumulation Factor	kg/day	Kilogram per day
BB	Below minimum background reference site concentration	mg/day	Milligram per day
DTSC	California Department of Toxic Substances Control	mg/kg	Milligram per kilogram
EE/CA	Engineering Evaluation/Cost Analysis	NA	Not applicable
EU	Exposure Unit	Navy	Department of the Navy
HQ	Hazard quotient	SUF	Site use factor
ID	Identification	TRV	Toxicity reference value
kg	Kilogram		

Sources: Department of the Navy. 1998. "Development of Toxicity Reference Values for Conducting Ecological Risk Assessments at Naval Facilities in California, Interim Final." Prepared by Naval Facilities Engineering Command, Engineering Field Activity West (EFA West). San Bruno, California.
DTSC. 2009. HERD Ecological Risk Assessment Note 6. February. Available on-line at: http://www.dtsc.ca.gov/AssessingRisk/upload/CdEconote_Final.pdf.

TABLE C-13D: COPPER DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS, EU 13 - STREAM

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 13.8

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Great Blue Heron (Carnivorous Birds - Stream)																			
Reference Sites																			
BRSW-6 SE (2007) (0-2)	1.32E-01	1.32E-01	6.61E-01	2.77E+01	3.64E+00	NA	NA	NA	NA	3.55E-03	4.19E+01	1.49E-01	1.00E+00	2.39E+00	1.59E+00	5.23E+01	4.09E-01	7.44E+01	2.13E-02
BRSW-6 SE (2008) (0-2)	1.32E-01	1.32E-01	6.61E-01	7.53E+01	9.91E+00	NA	NA	NA	NA	3.55E-03	1.14E+02	4.05E-01	1.00E+00	2.39E+00	4.32E+00	5.23E+01	4.09E-01	7.44E+01	5.80E-02
BRSW-11 SE (0-2)	1.32E-01	1.32E-01	6.61E-01	1.94E+01	2.56E+00	NA	NA	NA	NA	3.55E-03	2.94E+01	1.04E-01	1.00E+00	2.39E+00	1.11E+00	5.23E+01	4.09E-01	7.44E+01	1.50E-02
Streambed Sediments (0-2")																		**Minimum HQ (Reference Sites)**	**1.50E-02**
BRSW-109 SE (0-2)	1.32E-01	1.32E-01	1.01E+00	2.65E+02	3.48E+01	NA	NA	NA	NA	3.55E-03	2.62E+02	9.30E-01	1.00E+00	2.39E+00	1.50E+01	5.23E+01	4.09E-01	7.44E+01	2.01E-01
BRSW-9 SE (0-2)	1.32E-01	1.32E-01	1.01E+00	3.25E+02	4.28E+01	NA	NA	NA	NA	3.55E-03	3.22E+02	1.14E+00	1.00E+00	2.39E+00	1.84E+01	5.23E+01	4.09E-01	7.44E+01	2.47E-01
BRSW-108 SE (0-2)	1.32E-01	1.32E-01	1.01E+00	2.86E+02	3.76E+01	NA	NA	NA	NA	3.55E-03	2.83E+02	1.01E+00	1.00E+00	2.39E+00	1.62E+01	5.23E+01	4.09E-01	7.44E+01	2.17E-01
BRSW-36 SE (0-2)	1.32E-01	1.32E-01	1.01E+00	4.08E+02	5.37E+01	NA	NA	NA	NA	3.55E-03	4.04E+02	1.43E+00	1.00E+00	2.39E+00	2.31E+01	5.23E+01	4.09E-01	7.44E+01	3.10E-01
BRSW-33 SE (0-2)	1.32E-01	1.32E-01	1.01E+00	3.23E+02	4.25E+01	NA	NA	NA	NA	3.55E-03	3.20E+02	1.14E+00	1.00E+00	2.39E+00	1.83E+01	5.23E+01	4.09E-01	7.44E+01	2.46E-01
BRSW-12 SE (0-2)	1.32E-01	1.32E-01	1.01E+00	2.56E+02	3.36E+01	NA	NA	NA	NA	3.55E-03	2.53E+02	8.98E-01	1.00E+00	2.39E+00	1.44E+01	5.23E+01	4.09E-01	7.44E+01	1.94E-01
BRSW-21 SE (2007) (0-2)	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSW-13 SE (0-2)	1.32E-01	1.32E-01	1.01E+00	8.45E+01	1.11E+01	NA	NA	NA	NA	3.55E-03	8.36E+01	2.97E-01	1.00E+00	2.39E+00	4.77E+00	5.23E+01	4.09E-01	7.44E+01	6.42E-02
BRSW-110 SE (0-2)	1.32E-01	1.32E-01	1.01E+00	1.28E+02	1.69E+01	NA	NA	NA	NA	3.55E-03	1.27E+02	4.51E-01	1.00E+00	2.39E+00	7.25E+00	5.23E+01	4.09E-01	7.44E+01	9.75E-02
BRSW-107 SE (2007) (0-2)	1.32E-01	1.32E-01	1.01E+00	6.26E+02	8.24E+01	NA	NA	NA	NA	3.55E-03	6.20E+02	2.20E+00	1.00E+00	2.39E+00	3.54E+01	5.23E+01	4.09E-01	7.44E+01	4.76E-01
BRSW-107 SE (2008) (0-2)	1.32E-01	1.32E-01	1.01E+00	3.76E+02	4.94E+01	NA	NA	NA	NA	3.55E-03	3.72E+02	1.32E+00	1.00E+00	2.39E+00	2.12E+01	5.23E+01	4.09E-01	7.44E+01	2.85E-01
BRSW-31 SE (2007) (0-2)	1.32E-01	1.32E-01	1.01E+00	2.65E+02	3.48E+01	NA	NA	NA	NA	3.55E-03	2.62E+02	9.30E-01	1.00E+00	2.39E+00	1.50E+01	5.23E+01	4.09E-01	7.44E+01	2.01E-01
BRSW-31 SE (2008) (0-2)	1.32E-01	1.32E-01	1.01E+00	3.22E+02	4.24E+01	NA	NA	NA	NA	3.55E-03	3.19E+02	1.13E+00	1.00E+00	2.39E+00	1.82E+01	5.23E+01	4.09E-01	7.44E+01	2.45E-01
BRSW-106 SE (2007) (0-2)	1.32E-01	1.32E-01	1.01E+00	1.95E+02	2.56E+01	NA	NA	NA	NA	3.55E-03	1.93E+02	6.85E-01	1.00E+00	2.39E+00	1.10E+01	5.23E+01	4.09E-01	7.44E+01	1.48E-01
BRSW-106 SE (2008) (0-2)	1.32E-01	1.32E-01	1.01E+00	2.16E+02	2.84E+01	NA	NA	NA	NA	3.55E-03	2.14E+02	7.60E-01	1.00E+00	2.39E+00	1.22E+01	5.23E+01	4.09E-01	7.44E+01	1.64E-01
BRSW-105 SE (2007) (0-2)	1.32E-01	1.32E-01	1.01E+00	2.36E+02	3.11E+01	NA	NA	NA	NA	3.55E-03	2.34E+02	8.31E-01	1.00E+00	2.39E+00	1.34E+01	5.23E+01	4.09E-01	7.44E+01	1.80E-01
BRSW-105 SE (2008) (0-2)	1.32E-01	1.32E-01	1.01E+00	2.54E+02	3.34E+01	NA	NA	NA	NA	3.55E-03	2.51E+02	8.91E-01	1.00E+00	2.39E+00	1.43E+01	5.23E+01	4.09E-01	7.44E+01	1.93E-01
BRSW-16 SE (2007) (0-2)	1.32E-01	1.32E-01	1.01E+00	1.46E+02	1.93E+01	NA	NA	NA	NA	3.55E-03	1.45E+02	5.15E-01	1.00E+00	2.39E+00	8.28E+00	5.23E+01	4.09E-01	7.44E+01	1.11E-01
BRSW-16 SE (2008) (0-2)	1.32E-01	1.32E-01	1.01E+00	1.41E+02	1.86E+01	NA	NA	NA	NA	3.55E-03	1.40E+02	4.97E-01	1.00E+00	2.39E+00	7.99E+00	5.23E+01	4.09E-01	7.44E+01	1.07E-01
BRSW-104 SE (2007) (0-2)	1.32E-01	1.32E-01	1.01E+00	3.01E+02	3.96E+01	NA	NA	NA	NA	3.55E-03	2.98E+02	1.06E+00	1.00E+00	2.39E+00	1.70E+01	5.23E+01	4.09E-01	7.44E+01	2.29E-01
BRSW-104 SE (2008) (0-2)	1.32E-01	1.32E-01	1.01E+00	2.66E+03	3.49E+02	NA	NA	NA	NA	3.55E-03	2.63E+03	9.34E+00	1.00E+00	2.39E+00	1.50E+02	5.23E+01	4.09E-01	7.44E+01	2.02E+00
BRSW-103 SE (2007) (0-2)	1.32E-01	1.32E-01	1.01E+00	1.04E+02	1.37E+01	NA	NA	NA	NA	3.55E-03	1.03E+02	3.66E-01	1.00E+00	2.39E+00	5.88E+00	5.23E+01	4.09E-01	7.44E+01	7.90E-02
BRSW-103 SE (2008) (0-2)	1.32E-01	1.32E-01	1.01E+00	7.97E+01	1.05E+01	NA	NA	NA	NA	3.55E-03	7.89E+01	2.80E-01	1.00E+00	2.39E+00	4.50E+00	5.23E+01	4.09E-01	7.44E+01	6.05E-02
BRSW-17 SE (0-2)	1.32E-01	1.32E-01	1.01E+00	5.15E+01	6.78E+00	NA	NA	NA	NA	3.55E-03	5.10E+01	1.81E-01	1.00E+00	2.39E+00	2.91E+00	5.23E+01	4.09E-01	7.44E+01	3.91E-02
BRSW-102 SE (2007) (0-2)	1.32E-01	1.32E-01	1.01E+00	4.13E+01	5.44E+00	NA	NA	NA	NA	3.55E-03	4.09E+01	1.45E-01	1.00E+00	2.39E+00	2.33E+00	5.23E+01	4.09E-01	7.44E+01	3.14E-02
BRSW-102 SE (2008) (0-2)	1.32E-01	1.32E-01	1.01E+00	4.70E+01	6.18E+00	NA	NA	NA	NA	3.55E-03	4.65E+01	1.65E-01	1.00E+00	2.39E+00	2.65E+00	5.23E+01	4.09E-01	7.44E+01	3.57E-02
BRSW-101 SE (2007) (0-2)	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSW-101 SE (2008) (0-2)	1.32E-01	1.32E-01	1.01E+00	3.66E+01	4.81E+00	NA	NA	NA	NA	3.55E-03	3.62E+01	1.29E-01	1.00E+00	2.39E+00	2.07E+00	5.23E+01	4.09E-01	7.44E+01	2.78E-02
BRSW-201 (0-2)	1.32E-01	1.32E-01	1.01E+00	3.99E+01	5.25E+00	NA	NA	NA	NA	3.55E-03	3.95E+01	1.40E-01	1.00E+00	2.39E+00	2.25E+00	5.23E+01	4.09E-01	7.44E+01	3.03E-02
BRSW-202 (0-2)	1.32E-01	1.32E-01	1.01E+00	3.55E+01	4.66E+00	NA	NA	NA	NA	3.55E-03	3.51E+01	1.25E-01	1.00E+00	2.39E+00	2.00E+00	5.23E+01	4.09E-01	7.44E+01	2.69E-02
BRSW-203 (0-2)	1.32E-01	1.32E-01	1.01E+00	4.16E+01	5.47E+00	NA	NA	NA	NA	3.55E-03	4.12E+01	1.46E-01	1.00E+00	2.39E+00	2.35E+00	5.23E+01	4.09E-01	7.44E+01	3.16E-02
BRSW-204 (0-2)	1.32E-01	1.32E-01	1.01E+00	3.01E+01	3.96E+00	NA	NA	NA	NA	3.55E-03	2.98E+01	1.06E-01	1.00E+00	2.39E+00	1.70E+00	5.23E+01	4.09E-01	7.44E+01	2.29E-02
BRSW-205 (0-2)	1.32E-01	1.32E-01	1.01E+00	3.03E+01	3.99E+00	NA	NA	NA	NA	3.55E-03	3.00E+01	1.07E-01	1.00E+00	2.39E+00	1.71E+00	5.23E+01	4.09E-01	7.44E+01	2.30E-02
BRSW-206 (0-2)	1.32E-01	1.32E-01	1.01E+00	3.90E+01	5.13E+00	NA	NA	NA	NA	3.55E-03	3.86E+01	1.37E-01	1.00E+00	2.39E+00	2.20E+00	5.23E+01	4.09E-01	7.44E+01	2.96E-02
Streambed Sediments (2-6")																		**Maximum HQ (Streambed Sediments, 0-2")**	**2.02E+00**
BRSW-12 SE (2-6)	1.32E-01	1.32E-01	1.01E+00	3.37E+02	4.44E+01	NA	NA	NA	NA	3.55E-03	3.34E+02	1.19E+00	1.00E+00	2.39E+00	1.91E+01	5.23E+01	4.09E-01	7.44E+01	2.56E-01
BRSW-21 SE (2-6)	1.32E-01	1.32E-01	1.01E+00	7.17E+01	9.43E+00	NA	NA	NA	NA	3.55E-03	7.10E+01	2.52E-01	1.00E+00	2.39E+00	4.05E+00	5.23E+01	4.09E-01	7.44E+01	5.45E-02
BRSW-13 SE (2-6)	1.32E-01	1.32E-01	1.01E+00	1.80E+02	2.37E+01	NA	NA	NA	NA	3.55E-03	1.78E+02	6.32E-01	1.00E+00	2.39E+00	1.02E+01	5.23E+01	4.09E-01	7.44E+01	1.37E-01
BRSW-110 SE (2-6)	1.32E-01	1.32E-01	1.01E+00	1.60E+02	2.10E+01	NA	NA	NA	NA	3.55E-03	1.58E+02	5.61E-01	1.00E+00	2.39E+00	9.02E+00	5.23E+01	4.09E-01	7.44E+01	1.21E-01
BRSW-106 SE (2007) (2-6)	1.32E-01	1.32E-01	1.01E+00	1.83E+02	2.41E+01	NA	NA	NA	NA	3.55E-03	1.81E+02	6.43E-01	1.00E+00	2.39E+00	1.03E+01	5.23E+01	4.09E-01	7.44E+01	1.39E-01
BRSW-106 SE (2008) (2-6)	1.32E-01	1.32E-01	1.01E+00	1.94E+02	2.55E+01	NA	NA	NA	NA	3.55E-03	1.92E+02	6.82E-01	1.00E+00	2.39E+00	1.10E+01	5.23E+01	4.09E-01	7.44E+01	1.47E-01

TABLE C-13D: COPPER DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS, EU 13 - STREAM (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 13.8

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Great Blue Heron (Carnivorous Birds - Stream)																			
BRSW-105 SE (2007) (2-6)	1.32E-01	1.32E-01	1.01E+00	2.47E+02	3.24E+01	NA	NA	NA	NA	3.55E-03	2.44E+02	8.67E-01	1.00E+00	2.39E+00	1.39E+01	5.23E+01	4.09E-01	7.44E+01	1.87E-01
BRSW-105 SE (2008) (2-6)	1.32E-01	1.32E-01	1.01E+00	2.33E+02	3.07E+01	NA	NA	NA	NA	3.55E-03	2.31E+02	8.20E-01	1.00E+00	2.39E+00	1.32E+01	5.23E+01	4.09E-01	7.44E+01	1.77E-01
BRSW-104 SE (2-6)	1.32E-01	1.32E-01	1.01E+00	3.06E+03	4.03E+02	NA	NA	NA	NA	3.55E-03	3.03E+03	1.08E+01	1.00E+00	2.39E+00	1.73E+02	5.23E+01	4.09E-01	7.44E+01	2.33E+00
BRSW-102 SE (2-6)	1.32E-01	1.32E-01	1.01E+00	3.41E+01	4.49E+00	NA	NA	NA	NA	3.55E-03	3.38E+01	1.20E-01	1.00E+00	2.39E+00	1.93E+00	5.23E+01	4.09E-01	7.44E+01	2.59E-02
Streambed Sediments (6-12")																		**Maximum HQ (Streambed Sediments, 2-6")**	**2.33E+00**
BRSW-12 SE (6-12)	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	2.68E+02	BB	BB	BB	BB	BB	BB	BB	BB
BRSW-13 SE (6-12)	1.32E-01	1.32E-01	1.01E+00	2.50E+02	3.28E+01	NA	NA	NA	NA	3.55E-03	2.47E+02	8.77E-01	1.00E+00	2.39E+00	1.41E+01	5.23E+01	4.09E-01	7.44E+01	1.90E-01
BRSW-110 SE (6-12)	1.32E-01	1.32E-01	1.01E+00	1.31E+02	1.73E+01	NA	NA	NA	NA	3.55E-03	1.30E+02	4.62E-01	1.00E+00	2.39E+00	7.42E+00	5.23E+01	4.09E-01	7.44E+01	9.98E-02
																		Maximum HQ (Streambed Sediments, 6-12")	**1.90E-01**
American Dipper (Insectivorous Birds - Stream)																			
Reference Sites																			
BRSW-6 SE (2007) (0-2)	1.14E-02	NA	NA	NA	NA	1.14E-02	9.91E-01	4.15E+01	4.72E-01	2.05E-03	4.19E+01	8.58E-02	1.00E+00	5.50E-02	1.02E+01	5.23E+01	4.09E-01	3.50E+01	2.90E-01
BRSW-6 SE (2008) (0-2)	1.14E-02	NA	NA	NA	NA	1.14E-02	9.91E-01	1.13E+02	1.29E+00	2.05E-03	1.14E+02	2.33E-01	1.00E+00	5.50E-02	2.76E+01	5.23E+01	4.09E-01	3.50E+01	7.89E-01
BRSW-11 SE (0-2)	1.14E-02	NA	NA	NA	NA	1.14E-02	9.91E-01	2.91E+01	3.32E-01	2.05E-03	2.94E+01	6.02E-02	1.00E+00	5.50E-02	7.12E+00	5.23E+01	4.09E-01	3.50E+01	2.04E-01
Streambed Sediments (0-2")																		**Minimum HQ (Reference Sites)**	**2.04E-01**
BRSW-109 SE (0-2)	1.14E-02	NA	NA	NA	NA	1.14E-02	2.78E+00	7.27E+02	8.28E+00	2.05E-03	2.62E+02	5.37E-01	1.00E+00	5.50E-02	1.60E+02	5.23E+01	4.09E-01	3.50E+01	4.58E+00
BRSW-9 SE (0-2)	1.14E-02	NA	NA	NA	NA	1.14E-02	2.78E+00	8.94E+02	1.02E+01	2.05E-03	3.22E+02	6.59E-01	1.00E+00	5.50E-02	1.97E+02	5.23E+01	4.09E-01	3.50E+01	5.63E+00
BRSW-108 SE (0-2)	1.14E-02	NA	NA	NA	NA	1.14E-02	2.78E+00	7.86E+02	8.94E+00	2.05E-03	2.83E+02	5.80E-01	1.00E+00	5.50E-02	1.73E+02	5.23E+01	4.09E-01	3.50E+01	4.95E+00
BRSW-36 SE (0-2)	1.14E-02	NA	NA	NA	NA	1.14E-02	2.78E+00	1.12E+03	1.28E+01	2.05E-03	4.04E+02	8.27E-01	1.00E+00	5.50E-02	2.47E+02	5.23E+01	4.09E-01	3.50E+01	7.06E+00
BRSW-33 SE (0-2)	1.14E-02	NA	NA	NA	NA	1.14E-02	2.78E+00	8.88E+02	1.01E+01	2.05E-03	3.20E+02	6.55E-01	1.00E+00	5.50E-02	1.96E+02	5.23E+01	4.09E-01	3.50E+01	5.59E+00
BRSW-12 SE (0-2)	1.14E-02	NA	NA	NA	NA	1.14E-02	2.78E+00	7.02E+02	7.99E+00	2.05E-03	2.53E+02	5.18E-01	1.00E+00	5.50E-02	1.55E+02	5.23E+01	4.09E-01	3.50E+01	4.42E+00
BRSW-21 SE (2007) (0-2)	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSW-13 SE (0-2)	1.14E-02	NA	NA	NA	NA	1.14E-02	2.78E+00	2.32E+02	2.64E+00	2.05E-03	8.36E+01	1.71E-01	1.00E+00	5.50E-02	5.11E+01	5.23E+01	4.09E-01	3.50E+01	1.46E+00
BRSW-110 SE (0-2)	1.14E-02	NA	NA	NA	NA	1.14E-02	2.78E+00	3.53E+02	4.01E+00	2.05E-03	1.27E+02	2.60E-01	1.00E+00	5.50E-02	7.77E+01	5.23E+01	4.09E-01	3.50E+01	2.22E+00
BRSW-107 SE (2007) (0-2)	1.14E-02	NA	NA	NA	NA	1.14E-02	2.78E+00	1.72E+03	1.96E+01	2.05E-03	6.20E+02	1.27E+00	1.00E+00	5.50E-02	3.79E+02	5.23E+01	4.09E-01	3.50E+01	1.08E+01
BRSW-107 SE (2008) (0-2)	1.14E-02	NA	NA	NA	NA	1.14E-02	2.78E+00	1.03E+03	1.17E+01	2.05E-03	3.72E+02	7.62E-01	1.00E+00	5.50E-02	2.27E+02	5.23E+01	4.09E-01	3.50E+01	6.50E+00
BRSW-31 SE (2007) (0-2)	1.14E-02	NA	NA	NA	NA	1.14E-02	2.78E+00	7.27E+02	8.28E+00	2.05E-03	2.62E+02	5.37E-01	1.00E+00	5.50E-02	1.60E+02	5.23E+01	4.09E-01	3.50E+01	4.58E+00
BRSW-31 SE (2008) (0-2)	1.14E-02	NA	NA	NA	NA	1.14E-02	2.78E+00	8.86E+02	1.01E+01	2.05E-03	3.19E+02	6.53E-01	1.00E+00	5.50E-02	1.95E+02	5.23E+01	4.09E-01	3.50E+01	5.58E+00
BRSW-106 SE (2007) (0-2)	1.14E-02	NA	NA	NA	NA	1.14E-02	2.78E+00	5.36E+02	6.10E+00	2.05E-03	1.93E+02	3.95E-01	1.00E+00	5.50E-02	1.18E+02	5.23E+01	4.09E-01	3.50E+01	3.37E+00
BRSW-106 SE (2008) (0-2)	1.14E-02	NA	NA	NA	NA	1.14E-02	2.78E+00	5.94E+02	6.76E+00	2.05E-03	2.14E+02	4.38E-01	1.00E+00	5.50E-02	1.31E+02	5.23E+01	4.09E-01	3.50E+01	3.74E+00
BRSW-105 SE (2007) (0-2)	1.14E-02	NA	NA	NA	NA	1.14E-02	2.78E+00	6.50E+02	7.39E+00	2.05E-03	2.34E+02	4.79E-01	1.00E+00	5.50E-02	1.43E+02	5.23E+01	4.09E-01	3.50E+01	4.09E+00
BRSW-105 SE (2008) (0-2)	1.14E-02	NA	NA	NA	NA	1.14E-02	2.78E+00	6.97E+02	7.93E+00	2.05E-03	2.51E+02	5.14E-01	1.00E+00	5.50E-02	1.53E+02	5.23E+01	4.09E-01	3.50E+01	4.39E+00
BRSW-16 SE (2007) (0-2)	1.14E-02	NA	NA	NA	NA	1.14E-02	2.78E+00	4.03E+02	4.58E+00	2.05E-03	1.45E+02	2.97E-01	1.00E+00	5.50E-02	8.87E+01	5.23E+01	4.09E-01	3.50E+01	2.53E+00
BRSW-16 SE (2008) (0-2)	1.14E-02	NA	NA	NA	NA	1.14E-02	2.78E+00	3.89E+02	4.42E+00	2.05E-03	1.40E+02	2.87E-01	1.00E+00	5.50E-02	8.56E+01	5.23E+01	4.09E-01	3.50E+01	2.45E+00
BRSW-104 SE (2007) (0-2)	1.14E-02	NA	NA	NA	NA	1.14E-02	2.78E+00	8.27E+02	9.41E+00	2.05E-03	2.98E+02	6.10E-01	1.00E+00	5.50E-02	1.82E+02	5.23E+01	4.09E-01	3.50E+01	5.21E+00
BRSW-104 SE (2008) (0-2)	1.14E-02	NA	NA	NA	NA	1.14E-02	2.78E+00	7.30E+03	8.31E+01	2.05E-03	2.63E+03	5.39E+00	1.00E+00	5.50E-02	1.61E+03	5.23E+01	4.09E-01	3.50E+01	4.60E+01
BRSW-103 SE (2007) (0-2)	1.14E-02	NA	NA	NA	NA	1.14E-02	2.78E+00	2.86E+02	3.25E+00	2.05E-03	1.03E+02	2.11E-01	1.00E+00	5.50E-02	6.30E+01	5.23E+01	4.09E-01	3.50E+01	1.80E+00
BRSW-103 SE (2008) (0-2)	1.14E-02	NA	NA	NA	NA	1.14E-02	2.78E+00	2.19E+02	2.49E+00	2.05E-03	7.89E+01	1.62E-01	1.00E+00	5.50E-02	4.82E+01	5.23E+01	4.09E-01	3.50E+01	1.38E+00
BRSW-17 SE (0-2)	1.14E-02	NA	NA	NA	NA	1.14E-02	2.78E+00	1.42E+02	1.61E+00	2.05E-03	5.10E+01	1.04E-01	1.00E+00	5.50E-02	3.12E+01	5.23E+01	4.09E-01	3.50E+01	8.91E-01
BRSW-102 SE (2007) (0-2)	1.14E-02	NA	NA	NA	NA	1.14E-02	2.78E+00	1.14E+02	1.29E+00	2.05E-03	4.09E+01	8.38E-02	1.00E+00	5.50E-02	2.50E+01	5.23E+01	4.09E-01	3.50E+01	7.15E-01

TABLE C-13D: COPPER DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS, EU 13 - STREAM (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 13.8

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
American Dipper (Insectivorous Birds - Stream)																			
BRSW-102 SE (2008) (0-2)	1.14E-02	NA	NA	NA	NA	1.14E-02	2.78E+00	1.29E+02	1.47E+00	2.05E-03	4.65E+01	9.52E-02	1.00E+00	5.50E-02	2.84E+01	5.23E+01	4.09E-01	3.50E+01	8.13E-01
BRSW-101 SE (2007) (0-2)	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSW-101 SE (2008) (0-2)	1.14E-02	NA	NA	NA	NA	1.14E-02	2.78E+00	1.01E+02	1.14E+00	2.05E-03	3.62E+01	7.41E-02	1.00E+00	5.50E-02	2.21E+01	5.23E+01	4.09E-01	3.50E+01	6.33E-01
BRSW-201 (0-2)	1.14E-02	NA	NA	NA	NA	1.14E-02	2.78E+00	1.10E+02	1.25E+00	2.05E-03	3.95E+01	8.09E-02	1.00E+00	5.50E-02	2.42E+01	5.23E+01	4.09E-01	3.50E+01	6.90E-01
BRSW-202 (0-2)	1.14E-02	NA	NA	NA	NA	1.14E-02	2.78E+00	9.74E+01	1.11E+00	2.05E-03	3.51E+01	7.19E-02	1.00E+00	5.50E-02	2.15E+01	5.23E+01	4.09E-01	3.50E+01	6.13E-01
BRSW-203 (0-2)	1.14E-02	NA	NA	NA	NA	1.14E-02	2.78E+00	1.14E+02	1.30E+00	2.05E-03	4.12E+01	8.44E-02	1.00E+00	5.50E-02	2.52E+01	5.23E+01	4.09E-01	3.50E+01	7.20E-01
BRSW-204 (0-2)	1.14E-02	NA	NA	NA	NA	1.14E-02	2.78E+00	8.27E+01	9.41E-01	2.05E-03	2.98E+01	6.10E-02	1.00E+00	5.50E-02	1.82E+01	5.23E+01	4.09E-01	3.50E+01	5.21E-01
BRSW-205 (0-2)	1.14E-02	NA	NA	NA	NA	1.14E-02	2.78E+00	8.33E+01	9.48E-01	2.05E-03	3.00E+01	6.14E-02	1.00E+00	5.50E-02	1.83E+01	5.23E+01	4.09E-01	3.50E+01	5.24E-01
BRSW-206 (0-2)	1.14E-02	NA	NA	NA	NA	1.14E-02	2.78E+00	1.07E+02	1.22E+00	2.05E-03	3.86E+01	7.90E-02	1.00E+00	5.50E-02	2.36E+01	5.23E+01	4.09E-01	3.50E+01	6.75E-01
Streambed Sediments (2-6")																		**Maximum HQ (Streambed Sediments, 0-2")**	**4.60E+01**
BRSW-12 SE (2-6)	1.14E-02	NA	NA	NA	NA	1.14E-02	2.78E+00	9.27E+02	1.05E+01	2.05E-03	3.34E+02	6.84E-01	1.00E+00	5.50E-02	2.04E+02	5.23E+01	4.09E-01	3.50E+01	5.84E+00
BRSW-21 SE (2-6)	1.14E-02	NA	NA	NA	NA	1.14E-02	2.78E+00	1.97E+02	2.24E+00	2.05E-03	7.10E+01	1.45E-01	1.00E+00	5.50E-02	4.34E+01	5.23E+01	4.09E-01	3.50E+01	1.24E+00
BRSW-13 SE (2-6)	1.14E-02	NA	NA	NA	NA	1.14E-02	2.78E+00	4.94E+02	5.62E+00	2.05E-03	1.78E+02	3.65E-01	1.00E+00	5.50E-02	1.09E+02	5.23E+01	4.09E-01	3.50E+01	3.11E+00
BRSW-110 SE (2-6)	1.14E-02	NA	NA	NA	NA	1.14E-02	2.78E+00	4.39E+02	4.99E+00	2.05E-03	1.58E+02	3.24E-01	1.00E+00	5.50E-02	9.66E+01	5.23E+01	4.09E-01	3.50E+01	2.76E+00
BRSW-106 SE (2007) (2-6)	1.14E-02	NA	NA	NA	NA	1.14E-02	2.78E+00	5.03E+02	5.72E+00	2.05E-03	1.81E+02	3.71E-01	1.00E+00	5.50E-02	1.11E+02	5.23E+01	4.09E-01	3.50E+01	3.16E+00
BRSW-106 SE (2008) (2-6)	1.14E-02	NA	NA	NA	NA	1.14E-02	2.78E+00	5.33E+02	6.06E+00	2.05E-03	1.92E+02	3.93E-01	1.00E+00	5.50E-02	1.17E+02	5.23E+01	4.09E-01	3.50E+01	3.36E+00
BRSW-105 SE (2007) (2-6)	1.14E-02	NA	NA	NA	NA	1.14E-02	2.78E+00	6.77E+02	7.71E+00	2.05E-03	2.44E+02	5.00E-01	1.00E+00	5.50E-02	1.49E+02	5.23E+01	4.09E-01	3.50E+01	4.26E+00
BRSW-105 SE (2008) (2-6)	1.14E-02	NA	NA	NA	NA	1.14E-02	2.78E+00	6.41E+02	7.30E+00	2.05E-03	2.31E+02	4.73E-01	1.00E+00	5.50E-02	1.41E+02	5.23E+01	4.09E-01	3.50E+01	4.04E+00
BRSW-104 SE (2-6)	1.14E-02	NA	NA	NA	NA	1.14E-02	2.78E+00	8.41E+03	9.57E+01	2.05E-03	3.03E+03	6.20E+00	1.00E+00	5.50E-02	1.85E+03	5.23E+01	4.09E-01	3.50E+01	5.30E+01
BRSW-102 SE (2-6)	1.14E-02	NA	NA	NA	NA	1.14E-02	2.78E+00	9.38E+01	1.07E+00	2.05E-03	3.38E+01	6.92E-02	1.00E+00	5.50E-02	2.07E+01	5.23E+01	4.09E-01	3.50E+01	5.91E-01
Streambed Sediments (6-12")																		**Maximum HQ (Streambed Sediments, 2-6")**	**5.30E+01**
BRSW-12 SE (6-12)	1.14E-02	NA	NA	NA	NA	1.14E-02	2.78E+00	7.44E+02	8.46E+00	2.05E-03	2.68E+02	5.49E-01	1.00E+00	5.50E-02	1.64E+02	5.23E+01	4.09E-01	3.50E+01	4.68E+00
BRSW-13 SE (6-12)	1.14E-02	NA	NA	NA	NA	1.14E-02	2.78E+00	6.86E+02	7.80E+00	2.05E-03	2.47E+02	5.06E-01	1.00E+00	5.50E-02	1.51E+02	5.23E+01	4.09E-01	3.50E+01	4.32E+00
BRSW-110 SE (6-12)	1.14E-02	NA	NA	NA	NA	1.14E-02	2.78E+00	3.61E+02	4.11E+00	2.05E-03	1.30E+02	2.66E-01	1.00E+00	5.50E-02	7.95E+01	5.23E+01	4.09E-01	3.50E+01	2.27E+00
																		Maximum HQ (Streambed Sediments, 6-12")	**4.68E+00**

Notes

1 See Tables 3-1 through 3-13 for ingestion rates, foraging ranges used to calculate the SUF, and body weights.

2 BAFs were calculated by dividing site-collected tissue by collocated soil concentrations (BAFs are in dry weight). The maximum stream invertebrate BAF calculated from collocated sample locations in the Blackfoot River and Stevens Gulch was used for site dose calculations. The maximum BAF from the stream reference site (BRSW-6) was used for reference site dose calculations. The maximum mammal BAF calculated from the Beartrap Creek and Blackfoot River transects was used for site dose calculations, and the maximum mammal BAF from the terrestrial reference site was used for reference site dose calculations.

3 The mammal and invertebrate concentrations were calculated by multiplying the soil concentration by the BAF to generate a tissue concentration (see note 2).

4 Mammal and invertebrate daily doses were calculated by multiplying the ingestion rate (see note 1) by the tissue concentration (see note 3).

5 Soil concentration measured at the specified depth below ground surface at point ID from laboratory analysis. Doses were not calculated for detected and non-detected soil concentrations measured below the minimum reference site concentration, as indicated by BB. For results that were measured at less than the detection limit, doses were calculated using half of the detection limit.

6 Soil daily dose was calculated by multiplying the soil ingestion rate (see note 1) by soil concentration (see note 5).

7 Total daily dose is calculated using the following equation: total daily dose = ([mammal daily dose (if applicable) + invertebrate daily dose (if applicable) + soil daily dose]*SUF)/receptor species body weight.

8 The TRVs used in this risk assessment represent a mid-range effects level. The derivation of TRVs is described in Navy (1998).

9 Allometrically adjusted TRVs for birds were calculated using the following equation: receptor species TRV = (test species TRV) x (test species body weight / receptor species body weight) (1-1.2).

10 HQs were calculated using the following equation: HQ = total daily dose/allometrically adjusted TRV.

11 Highlighted cells indicate an HQ greater than 1.0.

BAF	Bioaccumulation Factor	kg/day	Kilogram per day
BB	Below minimum background reference site concentration	mg/day	Milligram per day
EE/CA	Engineering Evaluation/Cost Analysis	mg/kg	Milligram per kilogram
EU	Exposure Unit	NA	Not applicable
HQ	Hazard quotient	Navy	Department of the Navy
ID	Identification	SUF	Site use factor
kg	Kilogram	TRV	Toxicity reference value

Sources: Department of the Navy. 1998. "Development of Toxicity Reference Values for Conducting Ecological Risk Assessments at Naval Facilities in California, Interim Final." Prepared by Naval Facilities Engineering Command, Engineering Field Activity West (EFA West). San Bruno, California.

TABLE C-13E: LEAD DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS, EU 13 - STREAM

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

Site Area (hectares) 13.8

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Great Blue Heron (Carnivorous Birds - Stream)																			
Reference Sites																			
BRSW-6 SE (2007) (0-2)	1.32E-01	1.32E-01	7.62E-02	1.67E+00	2.20E-01	NA	NA	NA	NA	3.55E-03	2.19E+01	7.78E-02	1.00E+00	2.39E+00	1.24E-01	8.75E+00	8.00E-01	1.09E+01	1.14E-02
BRSW-6 SE (2008) (0-2)	1.32E-01	1.32E-01	7.62E-02	6.21E+00	8.17E-01	NA	NA	NA	NA	3.55E-03	8.15E+01	2.89E-01	1.00E+00	2.39E+00	4.63E-01	8.75E+00	8.00E-01	1.09E+01	4.25E-02
BRSW-11 SE (0-2)	1.32E-01	1.32E-01	7.62E-02	3.62E+00	4.76E-01	NA	NA	NA	NA	3.55E-03	4.75E+01	1.69E-01	1.00E+00	2.39E+00	2.70E-01	8.75E+00	8.00E-01	1.09E+01	2.48E-02
Streambed Sediments (0-2")																		**Minimum HQ (Reference Sites)**	**1.14E-02**
BRSW-109 SE (0-2)	1.32E-01	1.32E-01	9.28E-01	1.23E+03	1.62E+02	NA	NA	NA	NA	3.55E-03	1.33E+03	4.72E+00	1.00E+00	2.39E+00	6.99E+01	8.75E+00	8.00E-01	1.09E+01	6.42E+00
BRSW-9 SE (0-2)	1.32E-01	1.32E-01	9.28E-01	5.36E+02	7.05E+01	NA	NA	NA	NA	3.55E-03	5.78E+02	2.05E+00	1.00E+00	2.39E+00	3.04E+01	8.75E+00	8.00E-01	1.09E+01	2.79E+00
BRSW-108 SE (0-2)	1.32E-01	1.32E-01	9.28E-01	3.66E+02	4.82E+01	NA	NA	NA	NA	3.55E-03	3.95E+02	1.40E+00	1.00E+00	2.39E+00	2.08E+01	8.75E+00	8.00E-01	1.09E+01	1.91E+00
BRSW-36 SE (0-2)	1.32E-01	1.32E-01	9.28E-01	1.39E+03	1.83E+02	NA	NA	NA	NA	3.55E-03	1.50E+03	5.33E+00	1.00E+00	2.39E+00	7.88E+01	8.75E+00	8.00E-01	1.09E+01	7.24E+00
BRSW-33 SE (0-2)	1.32E-01	1.32E-01	9.28E-01	5.03E+02	6.61E+01	NA	NA	NA	NA	3.55E-03	5.42E+02	1.92E+00	1.00E+00	2.39E+00	2.85E+01	8.75E+00	8.00E-01	1.09E+01	2.62E+00
BRSW-12 SE (0-2)	1.32E-01	1.32E-01	9.28E-01	4.92E+02	6.47E+01	NA	NA	NA	NA	3.55E-03	5.30E+02	1.88E+00	1.00E+00	2.39E+00	2.78E+01	8.75E+00	8.00E-01	1.09E+01	2.56E+00
BRSW-21 SE (2007) (0-2)	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSW-13 SE (0-2)	1.32E-01	1.32E-01	9.28E-01	6.36E+01	8.36E+00	NA	NA	NA	NA	3.55E-03	6.85E+01	2.43E-01	1.00E+00	2.39E+00	3.60E+00	8.75E+00	8.00E-01	1.09E+01	3.30E-01
BRSW-110 SE (0-2)	1.32E-01	1.32E-01	9.28E-01	3.26E+02	4.28E+01	NA	NA	NA	NA	3.55E-03	3.51E+02	1.25E+00	1.00E+00	2.39E+00	1.84E+01	8.75E+00	8.00E-01	1.09E+01	1.69E+00
BRSW-107 SE (2007) (0-2)	1.32E-01	1.32E-01	9.28E-01	6.64E+02	8.74E+01	NA	NA	NA	NA	3.55E-03	7.16E+02	2.54E+00	1.00E+00	2.39E+00	3.76E+01	8.75E+00	8.00E-01	1.09E+01	3.45E+00
BRSW-107 SE (2008) (0-2)	1.32E-01	1.32E-01	9.28E-01	3.79E+02	4.99E+01	NA	NA	NA	NA	3.55E-03	4.09E+02	1.45E+00	1.00E+00	2.39E+00	2.15E+01	8.75E+00	8.00E-01	1.09E+01	1.97E+00
BRSW-31 SE (2007) (0-2)	1.32E-01	1.32E-01	9.28E-01	2.26E+02	2.98E+01	NA	NA	NA	NA	3.55E-03	2.44E+02	8.67E-01	1.00E+00	2.39E+00	1.28E+01	8.75E+00	8.00E-01	1.09E+01	1.18E+00
BRSW-31 SE (2008) (0-2)	1.32E-01	1.32E-01	9.28E-01	4.66E+02	6.13E+01	NA	NA	NA	NA	3.55E-03	5.02E+02	1.78E+00	1.00E+00	2.39E+00	2.64E+01	8.75E+00	8.00E-01	1.09E+01	2.42E+00
BRSW-106 SE (2007) (0-2)	1.32E-01	1.32E-01	9.28E-01	1.64E+02	2.16E+01	NA	NA	NA	NA	3.55E-03	1.77E+02	6.29E-01	1.00E+00	2.39E+00	9.30E+00	8.75E+00	8.00E-01	1.09E+01	8.54E-01
BRSW-106 SE (2008) (0-2)	1.32E-01	1.32E-01	9.28E-01	1.22E+02	1.60E+01	NA	NA	NA	NA	3.55E-03	1.31E+02	4.65E-01	1.00E+00	2.39E+00	6.88E+00	8.75E+00	8.00E-01	1.09E+01	6.32E-01
BRSW-105 SE (2007) (0-2)	1.32E-01	1.32E-01	9.28E-01	1.49E+02	1.96E+01	NA	NA	NA	NA	3.55E-03	1.61E+02	5.72E-01	1.00E+00	2.39E+00	8.46E+00	8.75E+00	8.00E-01	1.09E+01	7.77E-01
BRSW-105 SE (2008) (0-2)	1.32E-01	1.32E-01	9.28E-01	1.84E+02	2.42E+01	NA	NA	NA	NA	3.55E-03	1.98E+02	7.03E-01	1.00E+00	2.39E+00	1.04E+01	8.75E+00	8.00E-01	1.09E+01	9.55E-01
BRSW-16 SE (2007) (0-2)	1.32E-01	1.32E-01	9.28E-01	1.25E+02	1.65E+01	NA	NA	NA	NA	3.55E-03	1.35E+02	4.79E-01	1.00E+00	2.39E+00	7.09E+00	8.75E+00	8.00E-01	1.09E+01	6.51E-01
BRSW-16 SE (2008) (0-2)	1.32E-01	1.32E-01	9.28E-01	1.71E+02	2.25E+01	NA	NA	NA	NA	3.55E-03	1.84E+02	6.53E-01	1.00E+00	2.39E+00	9.67E+00	8.75E+00	8.00E-01	1.09E+01	8.88E-01
BRSW-104 SE (2007) (0-2)	1.32E-01	1.32E-01	9.28E-01	9.37E+01	1.23E+01	NA	NA	NA	NA	3.55E-03	1.01E+02	3.59E-01	1.00E+00	2.39E+00	5.31E+00	8.75E+00	8.00E-01	1.09E+01	4.87E-01
BRSW-104 SE (2008) (0-2)	1.32E-01	1.32E-01	9.28E-01	5.53E+01	7.27E+00	NA	NA	NA	NA	3.55E-03	5.96E+01	2.12E-01	1.00E+00	2.39E+00	3.13E+00	8.75E+00	8.00E-01	1.09E+01	2.88E-01
BRSW-103 SE (2007) (0-2)	1.32E-01	1.32E-01	9.28E-01	2.92E+01	3.84E+00	NA	NA	NA	NA	3.55E-03	3.15E+01	1.12E-01	1.00E+00	2.39E+00	1.66E+00	8.75E+00	8.00E-01	1.09E+01	1.52E-01
BRSW-103 SE (2008) (0-2)	1.32E-01	1.32E-01	9.28E-01	2.90E+01	3.82E+00	NA	NA	NA	NA	3.55E-03	3.13E+01	1.11E-01	1.00E+00	2.39E+00	1.64E+00	8.75E+00	8.00E-01	1.09E+01	1.51E-01
BRSW-17 SE (0-2)	1.32E-01	1.32E-01	9.28E-01	6.42E+01	8.44E+00	NA	NA	NA	NA	3.55E-03	6.92E+01	2.46E-01	1.00E+00	2.39E+00	3.64E+00	8.75E+00	8.00E-01	1.09E+01	3.34E-01
BRSW-102 SE (2007) (0-2)	1.32E-01	1.32E-01	9.28E-01	2.66E+01	3.50E+00	NA	NA	NA	NA	3.55E-03	2.87E+01	1.02E-01	1.00E+00	2.39E+00	1.51E+00	8.75E+00	8.00E-01	1.09E+01	1.38E-01
BRSW-102 SE (2008) (0-2)	1.32E-01	1.32E-01	9.28E-01	2.58E+01	3.39E+00	NA	NA	NA	NA	3.55E-03	2.78E+01	9.87E-02	1.00E+00	2.39E+00	1.46E+00	8.75E+00	8.00E-01	1.09E+01	1.34E-01
BRSW-101 SE (2007) (0-2)	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSW-101 SE (2008) (0-2)	1.32E-01	1.32E-01	9.28E-01	2.68E+01	3.53E+00	NA	NA	NA	NA	3.55E-03	2.89E+01	1.03E-01	1.00E+00	2.39E+00	1.52E+00	8.75E+00	8.00E-01	1.09E+01	1.39E-01
BRSW-201 (0-2)	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSW-202 (0-2)	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSW-203 (0-2)	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSW-204 (0-2)	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSW-205 (0-2)	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSW-206 (0-2)	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
Streambed Sediments (2-6")																		**Maximum HQ (Streambed Sediments, 0-2")**	**7.24E+00**
BRSW-12 SE (2-6)	1.32E-01	1.32E-01	9.28E-01	4.40E+02	5.78E+01	NA	NA	NA	NA	3.55E-03	4.74E+02	1.68E+00	1.00E+00	2.39E+00	2.49E+01	8.75E+00	8.00E-01	1.09E+01	2.29E+00
BRSW-21 SE (2-6)	1.32E-01	1.32E-01	9.28E-01	5.23E+01	6.88E+00	NA	NA	NA	NA	3.55E-03	5.64E+01	2.00E-01	1.00E+00	2.39E+00	2.96E+00	8.75E+00	8.00E-01	1.09E+01	2.72E-01
BRSW-13 SE (2-6)	1.32E-01	1.32E-01	9.28E-01	2.18E+02	2.87E+01	NA	NA	NA	NA	3.55E-03	2.35E+02	8.35E-01	1.00E+00	2.39E+00	1.23E+01	8.75E+00	8.00E-01	1.09E+01	1.13E+00
BRSW-110 SE (2-6)	1.32E-01	1.32E-01	9.28E-01	3.66E+02	4.82E+01	NA	NA	NA	NA	3.55E-03	3.95E+02	1.40E+00	1.00E+00	2.39E+00	2.08E+01	8.75E+00	8.00E-01	1.09E+01	1.91E+00
BRSW-106 SE (2007) (2-6)	1.32E-01	1.32E-01	9.28E-01	1.11E+02	1.46E+01	NA	NA	NA	NA	3.55E-03	1.20E+02	4.26E-01	1.00E+00	2.39E+00	6.31E+00	8.75E+00	8.00E-01	1.09E+01	5.79E-01
BRSW-106 SE (2008) (2-6)	1.32E-01	1.32E-01	9.28E-01	1.28E+02	1.68E+01	NA	NA	NA	NA	3.55E-03	1.38E+02	4.90E-01	1.00E+00	2.39E+00	7.25E+00	8.75E+00	8.00E-01	1.09E+01	6.66E-01
BRSW-105 SE (2007) (2-6)	1.32E-01	1.32E-01	9.28E-01	1.74E+02	2.28E+01	NA	NA	NA	NA	3.55E-03	1.87E+02	6.64E-01	1.00E+00	2.39E+00	9.83E+00	8.75E+00	8.00E-01	1.09E+01	9.02E-01

TABLE C-13E: LEAD DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS, EU 13 - STREAM (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **13.8**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Great Blue Heron (Carnivorous Birds - Stream)																			
BRSW-105 SE (2008) (2-6)																			
BRSW-104 SE (2-6)	1.32E-01	1.32E-01	9.28E-01	6.23E+01	8.19E+00	NA	NA	NA	NA	3.55E-03	6.71E+01	2.38E-01	1.00E+00	2.39E+00	3.53E+00	8.75E+00	8.00E-01	1.09E+01	3.24E-01
BRSW-102 SE (2-6)	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
Streambed Sediments (6-12")																		**Maximum HQ (Streambed Sediments, 2-6")**	**2.29E+00**
BRSW-12 SE (6-12)	1.32E-01	1.32E-01	9.28E-01	4.66E+02	6.13E+01	NA	NA	NA	NA	3.55E-03	5.02E+02	1.78E+00	1.00E+00	2.39E+00	2.64E+01	8.75E+00	8.00E-01	1.09E+01	2.42E+00
BRSW-13 SE (6-12)	1.32E-01	1.32E-01	9.28E-01	1.43E+02	1.88E+01	NA	NA	NA	NA	3.55E-03	1.54E+02	5.47E-01	1.00E+00	2.39E+00	8.09E+00	8.75E+00	8.00E-01	1.09E+01	7.43E-01
BRSW-110 SE (6-12)	1.32E-01	1.32E-01	9.28E-01	3.27E+02	4.30E+01	NA	NA	NA	NA	3.55E-03	3.52E+02	1.25E+00	1.00E+00	2.39E+00	1.85E+01	8.75E+00	8.00E-01	1.09E+01	1.70E+00
																		Maximum HQ (Streambed Sediments, 6-12")	**2.42E+00**
American Dipper (Insectivorous Birds - Stream)																			
Reference Sites																			
BRSW-6 SE (2007) (0-2)	1.14E-02	NA	NA	NA	NA	1.14E-02	2.63E-01	5.75E+00	6.54E-02	2.05E-03	2.19E+01	4.48E-02	1.00E+00	5.50E-02	2.00E+00	8.75E+00	8.00E-01	5.12E+00	3.91E-01
BRSW-6 SE (2008) (0-2)	1.14E-02	NA	NA	NA	NA	1.14E-02	2.63E-01	2.14E+01	2.43E-01	2.05E-03	8.15E+01	1.67E-01	1.00E+00	5.50E-02	7.46E+00	8.75E+00	8.00E-01	5.12E+00	1.46E+00
BRSW-11 SE (0-2)	1.14E-02	NA	NA	NA	NA	1.14E-02	2.63E-01	1.25E+01	1.42E-01	2.05E-03	4.75E+01	9.73E-02	1.00E+00	5.50E-02	4.35E+00	8.75E+00	8.00E-01	5.12E+00	8.49E-01
Streambed Sediments (0-2")																		**Minimum HQ (Reference Sites)**	**3.91E-01**
BRSW-109 SE (0-2)	1.14E-02	NA	NA	NA	NA	1.14E-02	1.25E+00	1.67E+03	1.90E+01	2.05E-03	1.33E+03	2.72E+00	1.00E+00	5.50E-02	3.95E+02	8.75E+00	8.00E-01	5.12E+00	7.71E+01
BRSW-9 SE (0-2)	1.14E-02	NA	NA	NA	NA	1.14E-02	1.25E+00	7.25E+02	8.25E+00	2.05E-03	5.78E+02	1.18E+00	1.00E+00	5.50E-02	1.72E+02	8.75E+00	8.00E-01	5.12E+00	3.35E+01
BRSW-108 SE (0-2)	1.14E-02	NA	NA	NA	NA	1.14E-02	1.25E+00	4.96E+02	5.64E+00	2.05E-03	3.95E+02	8.09E-01	1.00E+00	5.50E-02	1.17E+02	8.75E+00	8.00E-01	5.12E+00	2.29E+01
BRSW-36 SE (0-2)	1.14E-02	NA	NA	NA	NA	1.14E-02	1.25E+00	1.88E+03	2.14E+01	2.05E-03	1.50E+03	3.07E+00	1.00E+00	5.50E-02	4.45E+02	8.75E+00	8.00E-01	5.12E+00	8.69E+01
BRSW-33 SE (0-2)	1.14E-02	NA	NA	NA	NA	1.14E-02	1.25E+00	6.80E+02	7.74E+00	2.05E-03	5.42E+02	1.11E+00	1.00E+00	5.50E-02	1.61E+02	8.75E+00	8.00E-01	5.12E+00	3.14E+01
BRSW-12 SE (0-2)	1.14E-02	NA	NA	NA	NA	1.14E-02	1.25E+00	6.65E+02	7.57E+00	2.05E-03	5.30E+02	1.09E+00	1.00E+00	5.50E-02	1.57E+02	8.75E+00	8.00E-01	5.12E+00	3.07E+01
BRSW-21 SE (2007) (0-2)	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSW-13 SE (0-2)	1.14E-02	NA	NA	NA	NA	1.14E-02	1.25E+00	8.59E+01	9.78E-01	2.05E-03	6.85E+01	1.40E-01	1.00E+00	5.50E-02	2.03E+01	8.75E+00	8.00E-01	5.12E+00	3.97E+00
BRSW-110 SE (0-2)	1.14E-02	NA	NA	NA	NA	1.14E-02	1.25E+00	4.40E+02	5.01E+00	2.05E-03	3.51E+02	7.19E-01	1.00E+00	5.50E-02	1.04E+02	8.75E+00	8.00E-01	5.12E+00	2.03E+01
BRSW-107 SE (2007) (0-2)	1.14E-02	NA	NA	NA	NA	1.14E-02	1.25E+00	8.98E+02	1.02E+01	2.05E-03	7.16E+02	1.47E+00	1.00E+00	5.50E-02	2.12E+02	8.75E+00	8.00E-01	5.12E+00	4.15E+01
BRSW-107 SE (2008) (0-2)	1.14E-02	NA	NA	NA	NA	1.14E-02	1.25E+00	5.13E+02	5.84E+00	2.05E-03	4.09E+02	8.38E-01	1.00E+00	5.50E-02	1.21E+02	8.75E+00	8.00E-01	5.12E+00	2.37E+01
BRSW-31 SE (2007) (0-2)	1.14E-02	NA	NA	NA	NA	1.14E-02	1.25E+00	3.06E+02	3.48E+00	2.05E-03	2.44E+02	5.00E-01	1.00E+00	5.50E-02	7.24E+01	8.75E+00	8.00E-01	5.12E+00	1.41E+01
BRSW-31 SE (2008) (0-2)	1.14E-02	NA	NA	NA	NA	1.14E-02	1.25E+00	6.30E+02	7.17E+00	2.05E-03	5.02E+02	1.03E+00	1.00E+00	5.50E-02	1.49E+02	8.75E+00	8.00E-01	5.12E+00	2.91E+01
BRSW-106 SE (2007) (0-2)	1.14E-02	NA	NA	NA	NA	1.14E-02	1.25E+00	2.22E+02	2.53E+00	2.05E-03	1.77E+02	3.62E-01	1.00E+00	5.50E-02	5.25E+01	8.75E+00	8.00E-01	5.12E+00	1.03E+01
BRSW-106 SE (2008) (0-2)	1.14E-02	NA	NA	NA	NA	1.14E-02	1.25E+00	1.64E+02	1.87E+00	2.05E-03	1.31E+02	2.68E-01	1.00E+00	5.50E-02	3.89E+01	8.75E+00	8.00E-01	5.12E+00	7.59E+00
BRSW-105 SE (2007) (0-2)	1.14E-02	NA	NA	NA	NA	1.14E-02	1.25E+00	2.02E+02	2.30E+00	2.05E-03	1.61E+02	3.30E-01	1.00E+00	5.50E-02	4.78E+01	8.75E+00	8.00E-01	5.12E+00	9.33E+00
BRSW-105 SE (2008) (0-2)	1.14E-02	NA	NA	NA	NA	1.14E-02	1.25E+00	2.48E+02	2.83E+00	2.05E-03	1.98E+02	4.05E-01	1.00E+00	5.50E-02	5.88E+01	8.75E+00	8.00E-01	5.12E+00	1.15E+01
BRSW-16 SE (2007) (0-2)	1.14E-02	NA	NA	NA	NA	1.14E-02	1.25E+00	1.69E+02	1.93E+00	2.05E-03	1.35E+02	2.76E-01	1.00E+00	5.50E-02	4.01E+01	8.75E+00	8.00E-01	5.12E+00	7.82E+00
BRSW-16 SE (2008) (0-2)	1.14E-02	NA	NA	NA	NA	1.14E-02	1.25E+00	2.31E+02	2.63E+00	2.05E-03	1.84E+02	3.77E-01	1.00E+00	5.50E-02	5.46E+01	8.75E+00	8.00E-01	5.12E+00	1.07E+01
BRSW-104 SE (2007) (0-2)	1.14E-02	NA	NA	NA	NA	1.14E-02	1.25E+00	1.27E+02	1.44E+00	2.05E-03	1.01E+02	2.07E-01	1.00E+00	5.50E-02	3.00E+01	8.75E+00	8.00E-01	5.12E+00	5.85E+00
BRSW-104 SE (2008) (0-2)	1.14E-02	NA	NA	NA	NA	1.14E-02	1.25E+00	7.48E+01	8.51E-01	2.05E-03	5.96E+01	1.22E-01	1.00E+00	5.50E-02	1.77E+01	8.75E+00	8.00E-01	5.12E+00	3.45E+00
BRSW-103 SE (2007) (0-2)	1.14E-02	NA	NA	NA	NA	1.14E-02	1.25E+00	3.95E+01	4.50E-01	2.05E-03	3.15E+01	6.45E-02	1.00E+00	5.50E-02	9.35E+00	8.75E+00	8.00E-01	5.12E+00	1.82E+00
BRSW-103 SE (2008) (0-2)	1.14E-02	NA	NA	NA	NA	1.14E-02	1.25E+00	3.93E+01	4.47E-01	2.05E-03	3.13E+01	6.41E-02	1.00E+00	5.50E-02	9.29E+00	8.75E+00	8.00E-01	5.12E+00	1.81E+00
BRSW-17 SE (0-2)	1.14E-02	NA	NA	NA	NA	1.14E-02	1.25E+00	8.68E+01	9.88E-01	2.05E-03	6.92E+01	1.42E-01	1.00E+00	5.50E-02	2.05E+01	8.75E+00	8.00E-01	5.12E+00	4.01E+00
BRSW-102 SE (2007) (0-2)	1.14E-02	NA	NA	NA	NA	1.14E-02	1.25E+00	3.60E+01	4.10E-01	2.05E-03	2.87E+01	5.88E-02	1.00E+00	5.50E-02	8.52E+00	8.75E+00	8.00E-01	5.12E+00	1.66E+00

TABLE C-13E: LEAD DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS, EU 13 - STREAM (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

Site Area (hectares) 13.8

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
American Dipper (Insectivorous Birds - Stream)																			
BRSW-102 SE (2008) (0-2)	1.14E-02	NA	NA	NA	NA	1.14E-02	1.25E+00	3.49E+01	3.97E-01	2.05E-03	2.78E+01	5.69E-02	1.00E+00	5.50E-02	8.25E+00	8.75E+00	8.00E-01	5.12E+00	1.61E+00
BRSW-101 SE (2007) (0-2)	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSW-101 SE (2008) (0-2)	1.14E-02	NA	NA	NA	NA	1.14E-02	1.25E+00	3.63E+01	4.13E-01	2.05E-03	2.89E+01	5.92E-02	1.00E+00	5.50E-02	8.58E+00	8.75E+00	8.00E-01	5.12E+00	1.67E+00
BRSW-201 (0-2)	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSW-202 (0-2)	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSW-203 (0-2)	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSW-204 (0-2)	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSW-205 (0-2)	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSW-206 (0-2)	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
Streambed Sediments (2-6")																		**Maximum HQ (Streambed Sediments, 0-2")**	**8.69E+01**
BRSW-12 SE (2-6)	1.14E-02	NA	NA	NA	NA	1.14E-02	1.25E+00	5.95E+02	6.77E+00	2.05E-03	4.74E+02	9.71E-01	1.00E+00	5.50E-02	1.41E+02	8.75E+00	8.00E-01	5.12E+00	2.75E+01
BRSW-21 SE (2-6)	1.14E-02	NA	NA	NA	NA	1.14E-02	1.25E+00	7.08E+01	8.05E-01	2.05E-03	5.64E+01	1.15E-01	1.00E+00	5.50E-02	1.67E+01	8.75E+00	8.00E-01	5.12E+00	3.27E+00
BRSW-13 SE (2-6)	1.14E-02	NA	NA	NA	NA	1.14E-02	1.25E+00	2.95E+02	3.35E+00	2.05E-03	2.35E+02	4.81E-01	1.00E+00	5.50E-02	6.97E+01	8.75E+00	8.00E-01	5.12E+00	1.36E+01
BRSW-110 SE (2-6)	1.14E-02	NA	NA	NA	NA	1.14E-02	1.25E+00	4.96E+02	5.64E+00	2.05E-03	3.95E+02	8.09E-01	1.00E+00	5.50E-02	1.17E+02	8.75E+00	8.00E-01	5.12E+00	2.29E+01
BRSW-106 SE (2007) (2-6)	1.14E-02	NA	NA	NA	NA	1.14E-02	1.25E+00	1.51E+02	1.71E+00	2.05E-03	1.20E+02	2.46E-01	1.00E+00	5.50E-02	3.56E+01	8.75E+00	8.00E-01	5.12E+00	6.95E+00
BRSW-106 SE (2008) (2-6)	1.14E-02	NA	NA	NA	NA	1.14E-02	1.25E+00	1.73E+02	1.97E+00	2.05E-03	1.38E+02	2.83E-01	1.00E+00	5.50E-02	4.10E+01	8.75E+00	8.00E-01	5.12E+00	8.00E+00
BRSW-105 SE (2007) (2-6)	1.14E-02	NA	NA	NA	NA	1.14E-02	1.25E+00	2.35E+02	2.67E+00	2.05E-03	1.87E+02	3.83E-01	1.00E+00	5.50E-02	5.55E+01	8.75E+00	8.00E-01	5.12E+00	1.08E+01
BRSW-105 SE (2008) (2-6)	1.14E-02	NA	NA	NA	NA	1.14E-02	1.25E+00	3.68E+02	4.18E+00	2.05E-03	2.93E+02	6.00E-01	1.00E+00	5.50E-02	8.70E+01	8.75E+00	8.00E-01	5.12E+00	1.70E+01
BRSW-104 SE (2-6)	1.14E-02	NA	NA	NA	NA	1.14E-02	1.25E+00	8.42E+01	9.58E-01	2.05E-03	6.71E+01	1.37E-01	1.00E+00	5.50E-02	1.99E+01	8.75E+00	8.00E-01	5.12E+00	3.89E+00
BRSW-102 SE (2-6)	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
Streambed Sediments (6-12")																		**Maximum HQ (Streambed Sediments, 2-6")**	**2.75E+01**
BRSW-12 SE (6-12)	1.14E-02	NA	NA	NA	NA	1.14E-02	1.25E+00	6.30E+02	7.17E+00	2.05E-03	5.02E+02	1.03E+00	1.00E+00	5.50E-02	1.49E+02	8.75E+00	8.00E-01	5.12E+00	2.91E+01
BRSW-13 SE (6-12)	1.14E-02	NA	NA	NA	NA	1.14E-02	1.25E+00	1.93E+02	2.20E+00	2.05E-03	1.54E+02	3.15E-01	1.00E+00	5.50E-02	4.57E+01	8.75E+00	8.00E-01	5.12E+00	8.92E+00
BRSW-110 SE (6-12)	1.14E-02	NA	NA	NA	NA	1.14E-02	1.25E+00	4.42E+02	5.02E+00	2.05E-03	3.52E+02	7.21E-01	1.00E+00	5.50E-02	1.04E+02	8.75E+00	8.00E-01	5.12E+00	2.04E+01
																		Maximum HQ (Streambed Sediments, 6-12")	**2.91E+01**

Notes

1 See Tables 3-1 through 3-13 for ingestion rates, foraging ranges used to calculate the SUF, and body weights.

2 BAFs were calculated by dividing site-collected tissue by collocated soil concentrations (BAFs are in dry weight). The maximum stream invertebrate BAF calculated from collocated sample locations in the Blackfoot River and Stevens Gulch was used for site dose calculations. The maximum BAF from the stream reference site (BRSW-6) was used for reference site dose calculations. The maximum mammal BAF calculated from the Beartrap Creek and Blackfoot River transects was used for site dose calculations, and the maximum mammal BAF from the terrestrial reference site was used for reference site dose calculations.

3 The mammal and invertebrate concentrations were calculated by multiplying the soil concentration by the BAF to generate a tissue concentration (see note 2).

4 Mammal and invertebrate daily doses were calculated by multiplying the ingestion rate (see note 1) by the tissue concentration (see note 3).

5 Soil concentration measured at the specified depth below ground surface at point ID from laboratory analysis. Doses were not calculated for detected and non-detected soil concentrations measured below the minimum reference site concentration, as indicated by BB. For results that were measured at less than the detection limit, doses were calculated using half of the detection limit.

6 Soil daily dose was calculated by multiplying the soil ingestion rate (see note 1) by soil concentration (see note 5).

7 Total daily dose is calculated using the following equation: total daily dose = ([mammal daily dose (if applicable) + invertebrate daily dose (if applicable) + soil daily dose]*SUF)/receptor species body weight.

8 The TRVs used in this risk assessment represent a mid-range effects level. The derivation of TRVs is described in Navy (1998).

9 Allometrically adjusted TRVs for birds were calculated using the following equation: receptor species TRV = (test species TRV) x (test species body weight / receptor species body weight) $^{(1\text{-}1.2)}$.

10 HQs were calculated using the following equation: HQ = total daily dose/allometrically adjusted TRV.

11 Highlighted cells indicate an HQ greater than 1.0.

BAF	Bioaccumulation Factor	kg/day	Kilogram per day
BB	Below minimum background reference site concentration	mg/day	Milligram per day
EE/CA	Engineering Evaluation/Cost Analysis	mg/kg	Milligram per kilogram
EU	Exposure Unit	NA	Not applicable
HQ	Hazard quotient	Navy	Department of the Navy
ID	Identification	SUF	Site use factor
kg	Kilogram	TRV	Toxicity reference value

Sources: Department of the Navy. 1998. "Development of Toxicity Reference Values for Conducting Ecological Risk Assessments at Naval Facilities in California, Interim Final." Prepared by Naval Facilities Engineering Command, Engineering Field Activity West (EFA West). San Bruno, California.

TABLE C-13F: MANGANESE DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS, EU 13 - STREAM

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **13.8**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Great Blue Heron (Carnivorous Birds - Stream)																			
Reference Sites																			
BRSW-6 SE (2007) (0-2)	1.32E-01	1.32E-01	5.93E-02	1.61E+01	2.12E+00	NA	NA	NA	NA	3.55E-03	2.71E+02	9.62E-01	1.00E+00	2.39E+00	1.29E+00	7.76E+02	1.97E-01	1.28E+03	1.01E-03
BRSW-6 SE (2008) (0-2)	1.32E-01	1.32E-01	5.93E-02	3.43E+01	4.51E+00	NA	NA	NA	NA	3.55E-03	5.78E+02	2.05E+00	1.00E+00	2.39E+00	2.75E+00	7.76E+02	1.97E-01	1.28E+03	2.15E-03
BRSW-11 SE (0-2)	1.32E-01	1.32E-01	5.93E-02	2.42E+01	3.18E+00	NA	NA	NA	NA	3.55E-03	4.08E+02	1.45E+00	1.00E+00	2.39E+00	1.94E+00	7.76E+02	1.97E-01	1.28E+03	1.52E-03
Streambed Sediments (0-2")																		**Minimum HQ (Reference Sites)**	**1.01E-03**
BRSW-109 SE (0-2)	1.32E-01	1.32E-01	2.80E-02	9.66E+01	1.27E+01	NA	NA	NA	NA	3.55E-03	3.45E+03	1.23E+01	1.00E+00	2.39E+00	1.04E+01	7.76E+02	1.97E-01	1.28E+03	8.16E-03
BRSW-9 SE (0-2)	1.32E-01	1.32E-01	2.80E-02	1.23E+02	1.61E+01	NA	NA	NA	NA	3.55E-03	4.38E+03	1.56E+01	1.00E+00	2.39E+00	1.33E+01	7.76E+02	1.97E-01	1.28E+03	1.04E-02
BRSW-108 SE (0-2)	1.32E-01	1.32E-01	2.80E-02	9.41E+00	1.24E+00	NA	NA	NA	NA	3.55E-03	3.36E+02	1.19E+00	1.00E+00	2.39E+00	1.02E+00	7.76E+02	1.97E-01	1.28E+03	7.95E-04
BRSW-36 SE (0-2)	1.32E-01	1.32E-01	2.80E-02	1.09E+02	1.44E+01	NA	NA	NA	NA	3.55E-03	3.90E+03	1.39E+01	1.00E+00	2.39E+00	1.18E+01	7.76E+02	1.97E-01	1.28E+03	9.23E-03
BRSW-33 SE (0-2)	1.32E-01	1.32E-01	2.80E-02	5.49E+01	7.22E+00	NA	NA	NA	NA	3.55E-03	1.96E+03	6.96E+00	1.00E+00	2.39E+00	5.93E+00	7.76E+02	1.97E-01	1.28E+03	4.64E-03
BRSW-12 SE (0-2)	1.32E-01	1.32E-01	2.80E-02	7.75E+01	1.02E+01	NA	NA	NA	NA	3.55E-03	2.77E+03	9.84E+00	1.00E+00	2.39E+00	8.38E+00	7.76E+02	1.97E-01	1.28E+03	6.55E-03
BRSW-21 SE (2007) (0-2)	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSW-13 SE (0-2)	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSW-110 SE (0-2)	1.32E-01	1.32E-01	2.80E-02	2.74E+01	3.60E+00	NA	NA	NA	NA	3.55E-03	9.79E+02	3.48E+00	1.00E+00	2.39E+00	2.96E+00	7.76E+02	1.97E-01	1.28E+03	2.32E-03
BRSW-107 SE (2007) (0-2)	1.32E-01	1.32E-01	2.80E-02	7.22E+01	9.50E+00	NA	NA	NA	NA	3.55E-03	2.58E+03	9.16E+00	1.00E+00	2.39E+00	7.81E+00	7.76E+02	1.97E-01	1.28E+03	6.11E-03
BRSW-107 SE (2008) (0-2)	1.32E-01	1.32E-01	2.80E-02	1.55E+01	2.04E+00	NA	NA	NA	NA	3.55E-03	5.55E+02	1.97E+00	1.00E+00	2.39E+00	1.68E+00	7.76E+02	1.97E-01	1.28E+03	1.31E-03
BRSW-31 SE (2007) (0-2)	1.32E-01	1.32E-01	2.80E-02	7.11E+01	9.35E+00	NA	NA	NA	NA	3.55E-03	2.54E+03	9.02E+00	1.00E+00	2.39E+00	7.69E+00	7.76E+02	1.97E-01	1.28E+03	6.01E-03
BRSW-31 SE (2008) (0-2)	1.32E-01	1.32E-01	2.80E-02	8.62E+01	1.13E+01	NA	NA	NA	NA	3.55E-03	3.08E+03	1.09E+01	1.00E+00	2.39E+00	9.32E+00	7.76E+02	1.97E-01	1.28E+03	7.29E-03
BRSW-106 SE (2007) (0-2)	1.32E-01	1.32E-01	2.80E-02	3.89E+01	5.12E+00	NA	NA	NA	NA	3.55E-03	1.39E+03	4.94E+00	1.00E+00	2.39E+00	4.21E+00	7.76E+02	1.97E-01	1.28E+03	3.29E-03
BRSW-106 SE (2008) (0-2)	1.32E-01	1.32E-01	2.80E-02	3.56E+01	4.68E+00	NA	NA	NA	NA	3.55E-03	1.27E+03	4.51E+00	1.00E+00	2.39E+00	3.84E+00	7.76E+02	1.97E-01	1.28E+03	3.01E-03
BRSW-105 SE (2007) (0-2)	1.32E-01	1.32E-01	2.80E-02	5.77E+01	7.59E+00	NA	NA	NA	NA	3.55E-03	2.06E+03	7.32E+00	1.00E+00	2.39E+00	6.23E+00	7.76E+02	1.97E-01	1.28E+03	4.87E-03
BRSW-105 SE (2008) (0-2)	1.32E-01	1.32E-01	2.80E-02	6.61E+01	8.69E+00	NA	NA	NA	NA	3.55E-03	2.36E+03	8.38E+00	1.00E+00	2.39E+00	7.14E+00	7.76E+02	1.97E-01	1.28E+03	5.58E-03
BRSW-16 SE (2007) (0-2)	1.32E-01	1.32E-01	2.80E-02	4.20E+01	5.52E+00	NA	NA	NA	NA	3.55E-03	1.50E+03	5.33E+00	1.00E+00	2.39E+00	4.54E+00	7.76E+02	1.97E-01	1.28E+03	3.55E-03
BRSW-16 SE (2008) (0-2)	1.32E-01	1.32E-01	2.80E-02	2.61E+01	3.44E+00	NA	NA	NA	NA	3.55E-03	9.34E+02	3.32E+00	1.00E+00	2.39E+00	2.83E+00	7.76E+02	1.97E-01	1.28E+03	2.21E-03
BRSW-104 SE (2007) (0-2)	1.32E-01	1.32E-01	2.80E-02	1.05E+02	1.38E+01	NA	NA	NA	NA	3.55E-03	3.76E+03	1.34E+01	1.00E+00	2.39E+00	1.14E+01	7.76E+02	1.97E-01	1.28E+03	8.90E-03
BRSW-104 SE (2008) (0-2)	1.32E-01	1.32E-01	2.80E-02	2.83E+02	3.72E+01	NA	NA	NA	NA	3.55E-03	1.01E+04	3.59E+01	1.00E+00	2.39E+00	3.06E+01	7.76E+02	1.97E-01	1.28E+03	2.39E-02
BRSW-103 SE (2007) (0-2)	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSW-103 SE (2008) (0-2)	1.32E-01	1.32E-01	2.80E-02	8.20E+00	1.08E+00	NA	NA	NA	NA	3.55E-03	2.93E+02	1.04E+00	1.00E+00	2.39E+00	8.87E-01	7.76E+02	1.97E-01	1.28E+03	6.93E-04
BRSW-17 SE (0-2)	1.32E-01	1.32E-01	2.80E-02	6.38E+01	8.40E+00	NA	NA	NA	NA	3.55E-03	2.28E+03	8.10E+00	1.00E+00	2.39E+00	6.90E+00	7.76E+02	1.97E-01	1.28E+03	5.40E-03
BRSW-102 SE (2007) (0-2)	1.32E-01	1.32E-01	2.80E-02	2.78E+01	3.65E+00	NA	NA	NA	NA	3.55E-03	9.92E+02	3.52E+00	1.00E+00	2.39E+00	3.00E+00	7.76E+02	1.97E-01	1.28E+03	2.35E-03
BRSW-102 SE (2008) (0-2)	1.32E-01	1.32E-01	2.80E-02	2.10E+01	2.76E+00	NA	NA	NA	NA	3.55E-03	7.50E+02	2.66E+00	1.00E+00	2.39E+00	2.27E+00	7.76E+02	1.97E-01	1.28E+03	1.77E-03
BRSW-101 SE (2007) (0-2)	1.32E-01	1.32E-01	2.80E-02	2.15E+01	2.82E+00	NA	NA	NA	NA	3.55E-03	7.67E+02	2.72E+00	1.00E+00	2.39E+00	2.32E+00	7.76E+02	1.97E-01	1.28E+03	1.82E-03
BRSW-101 SE (2008) (0-2)	1.32E-01	1.32E-01	2.80E-02	1.65E+01	2.17E+00	NA	NA	NA	NA	3.55E-03	5.89E+02	2.09E+00	1.00E+00	2.39E+00	1.78E+00	7.76E+02	1.97E-01	1.28E+03	1.39E-03
BRSW-201 (0-2)	1.32E-01	1.32E-01	2.80E-02	8.71E+00	1.15E+00	NA	NA	NA	NA	3.55E-03	3.11E+02	1.10E+00	1.00E+00	2.39E+00	9.41E-01	7.76E+02	1.97E-01	1.28E+03	7.36E-04
BRSW-202 (0-2)	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSW-203 (0-2)	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSW-204 (0-2)	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSW-205 (0-2)	1.32E-01	1.32E-01	2.80E-02	1.11E+01	1.46E+00	NA	NA	NA	NA	3.55E-03	3.96E+02	1.41E+00	1.00E+00	2.39E+00	1.20E+00	7.76E+02	1.97E-01	1.28E+03	9.37E-04
BRSW-206 (0-2)	1.32E-01	1.32E-01	2.80E-02	2.10E+01	2.76E+00	NA	NA	NA	NA	3.55E-03	7.49E+02	2.66E+00	1.00E+00	2.39E+00	2.27E+00	7.76E+02	1.97E-01	1.28E+03	1.77E-03
Streambed Sediments (2-6")																		**Maximum HQ (Streambed Sediments, 0-2")**	**2.39E-02**
BRSW-12 SE (2-6)	1.32E-01	1.32E-01	2.80E-02	8.79E+01	1.16E+01	NA	NA	NA	NA	3.55E-03	3.14E+03	1.12E+01	1.00E+00	2.39E+00	9.50E+00	7.76E+02	1.97E-01	1.28E+03	7.43E-03
BRSW-21 SE (2-6)	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSW-13 SE (2-6)	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSW-110 SE (2-6)	1.32E-01	1.32E-01	2.80E-02	3.36E+01	4.42E+00	NA	NA	NA	NA	3.55E-03	1.20E+03	4.26E+00	1.00E+00	2.39E+00	3.63E+00	7.76E+02	1.97E-01	1.28E+03	2.84E-03
BRSW-106 SE (2007) (2-6)	1.32E-01	1.32E-01	2.80E-02	3.64E+01	4.79E+00	NA	NA	NA	NA	3.55E-03	1.30E+03	4.62E+00	1.00E+00	2.39E+00	3.93E+00	7.76E+02	1.97E-01	1.28E+03	3.08E-03
BRSW-106 SE (2008) (2-6)	1.32E-01	1.32E-01	2.80E-02	3.33E+01	4.38E+00	NA	NA	NA	NA	3.55E-03	1.19E+03	4.23E+00	1.00E+00	2.39E+00	3.60E+00	7.76E+02	1.97E-01	1.28E+03	2.82E-03
BRSW-105 SE (2007) (2-6)	1.32E-01	1.32E-01	2.80E-02	5.12E+01	6.74E+00	NA	NA	NA	NA	3.55E-03	1.83E+03	6.50E+00	1.00E+00	2.39E+00	5.54E+00	7.76E+02	1.97E-01	1.28E+03	4.33E-03

TABLE C-13F: MANGANESE DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS, EU 13 - STREAM (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **13.8**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Great Blue Heron (Carnivorous Birds - Stream)																			
BRSW-105 SE (2008) (2-6)	1.32E-01	1.32E-01	2.80E-02	6.30E+01	8.29E+00	NA	NA	NA	NA	3.55E-03	2.25E+03	7.99E+00	1.00E+00	2.39E+00	6.81E+00	7.76E+02	1.97E-01	1.28E+03	5.32E-03
BRSW-104 SE (2-6)	1.32E-01	1.32E-01	2.80E-02	3.16E+02	4.16E+01	NA	NA	NA	NA	3.55E-03	1.13E+04	4.01E+01	1.00E+00	2.39E+00	3.42E+01	7.76E+02	1.97E-01	1.28E+03	2.67E-02
BRSW-102 SE (2-6)	1.32E-01	1.32E-01	2.80E-02	1.43E+01	1.88E+00	NA	NA	NA	NA	3.55E-03	5.11E+02	1.81E+00	1.00E+00	2.39E+00	1.55E+00	7.76E+02	1.97E-01	1.28E+03	1.21E-03
Streambed Sediments (6-12")																		**Maximum HQ (Streambed Sediments, 2-6")**	**2.67E-02**
BRSW-12 SE (6-12)	1.32E-01	1.32E-01	2.80E-02	7.11E+01	9.35E+00	NA	NA	NA	NA	3.55E-03	2.54E+03	9.02E+00	1.00E+00	2.39E+00	7.69E+00	7.76E+02	1.97E-01	1.28E+03	6.01E-03
BRSW-13 SE (6-12)	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSW-110 SE (6-12)	1.32E-01	1.32E-01	2.80E-02	3.25E+01	4.27E+00	NA	NA	NA	NA	3.55E-03	1.16E+03	4.12E+00	1.00E+00	2.39E+00	3.51E+00	7.76E+02	1.97E-01	1.28E+03	2.75E-03
																		Maximum HQ (Streambed Sediments, 6-12")	**6.01E-03**
American Dipper (Insectivorous Birds - Stream)																			
Reference Sites																			
BRSW-6 SE (2007) (0-2)	1.14E-02	NA	NA	NA	NA	1.14E-02	2.15E+00	5.81E+02	6.61E+00	2.05E-03	2.71E+02	5.55E-01	1.00E+00	5.50E-02	1.30E+02	7.76E+02	1.97E-01	6.02E+02	2.17E-01
BRSW-6 SE (2008) (0-2)	1.14E-02	NA	NA	NA	NA	1.14E-02	2.15E+00	1.24E+03	1.41E+01	2.05E-03	5.78E+02	1.18E+00	1.00E+00	5.50E-02	2.78E+02	7.76E+02	1.97E-01	6.02E+02	4.62E-01
BRSW-11 SE (0-2)	1.14E-02	NA	NA	NA	NA	1.14E-02	2.15E+00	8.75E+02	9.96E+00	2.05E-03	4.08E+02	8.35E-01	1.00E+00	5.50E-02	1.96E+02	7.76E+02	1.97E-01	6.02E+02	3.26E-01
Streambed Sediments (0-2")																		**Minimum HQ (Reference Sites)**	**2.17E-01**
BRSW-109 SE (0-2)	1.14E-02	NA	NA	NA	NA	1.14E-02	4.21E+00	1.45E+04	1.65E+02	2.05E-03	3.45E+03	7.06E+00	1.00E+00	5.50E-02	3.13E+03	7.76E+02	1.97E-01	6.02E+02	5.21E+00
BRSW-9 SE (0-2)	1.14E-02	NA	NA	NA	NA	1.14E-02	4.21E+00	1.84E+04	2.10E+02	2.05E-03	4.38E+03	8.97E+00	1.00E+00	5.50E-02	3.98E+03	7.76E+02	1.97E-01	6.02E+02	6.61E+00
BRSW-108 SE (0-2)	1.14E-02	NA	NA	NA	NA	1.14E-02	4.21E+00	1.42E+03	1.61E+01	2.05E-03	3.36E+02	6.88E-01	1.00E+00	5.50E-02	3.05E+02	7.76E+02	1.97E-01	6.02E+02	5.07E-01
BRSW-36 SE (0-2)	1.14E-02	NA	NA	NA	NA	1.14E-02	4.21E+00	1.64E+04	1.87E+02	2.05E-03	3.90E+03	7.99E+00	1.00E+00	5.50E-02	3.54E+03	7.76E+02	1.97E-01	6.02E+02	5.89E+00
BRSW-33 SE (0-2)	1.14E-02	NA	NA	NA	NA	1.14E-02	4.21E+00	8.25E+03	9.39E+01	2.05E-03	1.96E+03	4.01E+00	1.00E+00	5.50E-02	1.78E+03	7.76E+02	1.97E-01	6.02E+02	2.96E+00
BRSW-12 SE (0-2)	1.14E-02	NA	NA	NA	NA	1.14E-02	4.21E+00	1.17E+04	1.33E+02	2.05E-03	2.77E+03	5.67E+00	1.00E+00	5.50E-02	2.52E+03	7.76E+02	1.97E-01	6.02E+02	4.18E+00
BRSW-21 SE (2007) (0-2)	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSW-13 SE (0-2)	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSW-110 SE (0-2)	1.14E-02	NA	NA	NA	NA	1.14E-02	4.21E+00	4.12E+03	4.69E+01	2.05E-03	9.79E+02	2.00E+00	1.00E+00	5.50E-02	8.89E+02	7.76E+02	1.97E-01	6.02E+02	1.48E+00
BRSW-107 SE (2007) (0-2)	1.14E-02	NA	NA	NA	NA	1.14E-02	4.21E+00	1.09E+04	1.24E+02	2.05E-03	2.58E+03	5.28E+00	1.00E+00	5.50E-02	2.34E+03	7.76E+02	1.97E-01	6.02E+02	3.90E+00
BRSW-107 SE (2008) (0-2)	1.14E-02	NA	NA	NA	NA	1.14E-02	4.21E+00	2.34E+03	2.66E+01	2.05E-03	5.55E+02	1.14E+00	1.00E+00	5.50E-02	5.04E+02	7.76E+02	1.97E-01	6.02E+02	8.38E-01
BRSW-31 SE (2007) (0-2)	1.14E-02	NA	NA	NA	NA	1.14E-02	4.21E+00	1.07E+04	1.22E+02	2.05E-03	2.54E+03	5.20E+00	1.00E+00	5.50E-02	2.31E+03	7.76E+02	1.97E-01	6.02E+02	3.84E+00
BRSW-31 SE (2008) (0-2)	1.14E-02	NA	NA	NA	NA	1.14E-02	4.21E+00	1.30E+04	1.48E+02	2.05E-03	3.08E+03	6.31E+00	1.00E+00	5.50E-02	2.80E+03	7.76E+02	1.97E-01	6.02E+02	4.65E+00
BRSW-106 SE (2007) (0-2)	1.14E-02	NA	NA	NA	NA	1.14E-02	4.21E+00	5.85E+03	6.66E+01	2.05E-03	1.39E+03	2.85E+00	1.00E+00	5.50E-02	1.26E+03	7.76E+02	1.97E-01	6.02E+02	2.10E+00
BRSW-106 SE (2008) (0-2)	1.14E-02	NA	NA	NA	NA	1.14E-02	4.21E+00	5.35E+03	6.08E+01	2.05E-03	1.27E+03	2.60E+00	1.00E+00	5.50E-02	1.15E+03	7.76E+02	1.97E-01	6.02E+02	1.92E+00
BRSW-105 SE (2007) (0-2)	1.14E-02	NA	NA	NA	NA	1.14E-02	4.21E+00	8.68E+03	9.87E+01	2.05E-03	2.06E+03	4.22E+00	1.00E+00	5.50E-02	1.87E+03	7.76E+02	1.97E-01	6.02E+02	3.11E+00
BRSW-105 SE (2008) (0-2)	1.14E-02	NA	NA	NA	NA	1.14E-02	4.21E+00	9.94E+03	1.13E+02	2.05E-03	2.36E+03	4.83E+00	1.00E+00	5.50E-02	2.14E+03	7.76E+02	1.97E-01	6.02E+02	3.56E+00
BRSW-16 SE (2007) (0-2)	1.14E-02	NA	NA	NA	NA	1.14E-02	4.21E+00	6.32E+03	7.19E+01	2.05E-03	1.50E+03	3.07E+00	1.00E+00	5.50E-02	1.36E+03	7.76E+02	1.97E-01	6.02E+02	2.27E+00
BRSW-16 SE (2008) (0-2)	1.14E-02	NA	NA	NA	NA	1.14E-02	4.21E+00	3.93E+03	4.47E+01	2.05E-03	9.34E+02	1.91E+00	1.00E+00	5.50E-02	8.48E+02	7.76E+02	1.97E-01	6.02E+02	1.41E+00
BRSW-104 SE (2007) (0-2)	1.14E-02	NA	NA	NA	NA	1.14E-02	4.21E+00	1.58E+04	1.80E+02	2.05E-03	3.76E+03	7.70E+00	1.00E+00	5.50E-02	3.42E+03	7.76E+02	1.97E-01	6.02E+02	5.68E+00
BRSW-104 SE (2008) (0-2)	1.14E-02	NA	NA	NA	NA	1.14E-02	4.21E+00	4.25E+04	4.84E+02	2.05E-03	1.01E+04	2.07E+01	1.00E+00	5.50E-02	9.17E+03	7.76E+02	1.97E-01	6.02E+02	1.53E+01
BRSW-103 SE (2007) (0-2)	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSW-103 SE (2008) (0-2)	1.14E-02	NA	NA	NA	NA	1.14E-02	4.21E+00	1.23E+03	1.40E+01	2.05E-03	2.93E+02	6.00E-01	1.00E+00	5.50E-02	2.66E+02	7.76E+02	1.97E-01	6.02E+02	4.42E-01
BRSW-17 SE (0-2)	1.14E-02	NA	NA	NA	NA	1.14E-02	4.21E+00	9.60E+03	1.09E+02	2.05E-03	2.28E+03	4.67E+00	1.00E+00	5.50E-02	2.07E+03	7.76E+02	1.97E-01	6.02E+02	3.44E+00
BRSW-102 SE (2007) (0-2)	1.14E-02	NA	NA	NA	NA	1.14E-02	4.21E+00	4.18E+03	4.75E+01	2.05E-03	9.92E+02	2.03E+00	1.00E+00	5.50E-02	9.01E+02	7.76E+02	1.97E-01	6.02E+02	1.50E+00

TABLE C-13F: MANGANESE DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS, EU 13 - STREAM (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **13.8**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
American Dipper (Insectivorous Birds - Stream)																			
BRSW-102 SE (2008) (0-2)	1.14E-02	NA	NA	NA	NA	1.14E-02	4.21E+00	3.16E+03	3.59E+01	2.05E-03	7.50E+02	1.54E+00	1.00E+00	5.50E-02	6.81E+02	7.76E+02	1.97E-01	6.02E+02	1.13E+00
BRSW-101 SE (2007) (0-2)	1.14E-02	NA	NA	NA	NA	1.14E-02	4.21E+00	3.23E+03	3.67E+01	2.05E-03	7.67E+02	1.57E+00	1.00E+00	5.50E-02	6.97E+02	7.76E+02	1.97E-01	6.02E+02	1.16E+00
BRSW-101 SE (2008) (0-2)	1.14E-02	NA	NA	NA	NA	1.14E-02	4.21E+00	2.48E+03	2.82E+01	2.05E-03	5.89E+02	1.21E+00	1.00E+00	5.50E-02	5.35E+02	7.76E+02	1.97E-01	6.02E+02	8.89E-01
BRSW-201 (0-2)	1.14E-02	NA	NA	NA	NA	1.14E-02	4.21E+00	1.31E+03	1.49E+01	2.05E-03	3.11E+02	6.37E-01	1.00E+00	5.50E-02	2.82E+02	7.76E+02	1.97E-01	6.02E+02	4.70E-01
BRSW-202 (0-2)	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSW-203 (0-2)	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSW-204 (0-2)	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSW-205 (0-2)	1.14E-02	NA	NA	NA	NA	1.14E-02	4.21E+00	1.67E+03	1.90E+01	2.05E-03	3.96E+02	8.11E-01	1.00E+00	5.50E-02	3.60E+02	7.76E+02	1.97E-01	6.02E+02	5.98E-01
BRSW-206 (0-2)	1.14E-02	NA	NA	NA	NA	1.14E-02	4.21E+00	3.15E+03	3.59E+01	2.05E-03	7.49E+02	1.53E+00	1.00E+00	5.50E-02	6.80E+02	7.76E+02	1.97E-01	6.02E+02	1.13E+00
Streambed Sediments (2-6")																		**Maximum HQ (Streambed Sediments, 0-2")**	**1.53E+01**
BRSW-12 SE (2-6)	1.14E-02	NA	NA	NA	NA	1.14E-02	4.21E+00	1.32E+04	1.50E+02	2.05E-03	3.14E+03	6.43E+00	1.00E+00	5.50E-02	2.85E+03	7.76E+02	1.97E-01	6.02E+02	4.74E+00
BRSW-21 SE (2-6)	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSW-13 SE (2-6)	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSW-110 SE (2-6)	1.14E-02	NA	NA	NA	NA	1.14E-02	4.21E+00	5.05E+03	5.75E+01	2.05E-03	1.20E+03	2.46E+00	1.00E+00	5.50E-02	1.09E+03	7.76E+02	1.97E-01	6.02E+02	1.81E+00
BRSW-106 SE (2007) (2-6)	1.14E-02	NA	NA	NA	NA	1.14E-02	4.21E+00	5.47E+03	6.23E+01	2.05E-03	1.30E+03	2.66E+00	1.00E+00	5.50E-02	1.18E+03	7.76E+02	1.97E-01	6.02E+02	1.96E+00
BRSW-106 SE (2008) (2-6)	1.14E-02	NA	NA	NA	NA	1.14E-02	4.21E+00	5.01E+03	5.70E+01	2.05E-03	1.19E+03	2.44E+00	1.00E+00	5.50E-02	1.08E+03	7.76E+02	1.97E-01	6.02E+02	1.80E+00
BRSW-105 SE (2007) (2-6)	1.14E-02	NA	NA	NA	NA	1.14E-02	4.21E+00	7.71E+03	8.77E+01	2.05E-03	1.83E+03	3.75E+00	1.00E+00	5.50E-02	1.66E+03	7.76E+02	1.97E-01	6.02E+02	2.76E+00
BRSW-105 SE (2008) (2-6)	1.14E-02	NA	NA	NA	NA	1.14E-02	4.21E+00	9.48E+03	1.08E+02	2.05E-03	2.25E+03	4.61E+00	1.00E+00	5.50E-02	2.04E+03	7.76E+02	1.97E-01	6.02E+02	3.40E+00
BRSW-104 SE (2-6)	1.14E-02	NA	NA	NA	NA	1.14E-02	4.21E+00	4.76E+04	5.41E+02	2.05E-03	1.13E+04	2.31E+01	1.00E+00	5.50E-02	1.03E+04	7.76E+02	1.97E-01	6.02E+02	1.71E+01
BRSW-102 SE (2-6)	1.14E-02	NA	NA	NA	NA	1.14E-02	4.21E+00	2.15E+03	2.45E+01	2.05E-03	5.11E+02	1.05E+00	1.00E+00	5.50E-02	4.64E+02	7.76E+02	1.97E-01	6.02E+02	7.72E-01
Streambed Sediments (6-12")																		**Maximum HQ (Streambed Sediments, 2-6")**	**1.71E+01**
BRSW-12 SE (6-12)	1.14E-02	NA	NA	NA	NA	1.14E-02	4.21E+00	1.07E+04	1.22E+02	2.05E-03	2.54E+03	5.20E+00	1.00E+00	5.50E-02	2.31E+03	7.76E+02	1.97E-01	6.02E+02	3.84E+00
BRSW-13 SE (6-12)	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSW-110 SE (6-12)	1.14E-02	NA	NA	NA	NA	1.14E-02	4.21E+00	4.89E+03	5.56E+01	2.05E-03	1.16E+03	2.38E+00	1.00E+00	5.50E-02	1.05E+03	7.76E+02	1.97E-01	6.02E+02	1.75E+00
																		Maximum HQ (Streambed Sediments, 6-12")	**3.84E+00**

Notes

1 See Tables 3-1 through 3-13 for ingestion rates, foraging ranges used to calculate the SUF, and body weights.

2 BAFs were calculated by dividing site-collected tissue by collocated soil concentrations (BAFs are in dry weight). The maximum stream invertebrate BAF calculated from collocated sample locations in the Blackfoot River and Stevens Gulch was used for site dose calculations. The maximum BAF from the stream reference site (BRSW-6) was used for reference site dose calculations. The maximum mammal BAF calculated from the Beartrap Creek and Blackfoot River transects was used for site dose calculations, and the maximum mammal BAF from the terrestrial reference site was used for reference site dose calculations.

3 The mammal and invertebrate concentrations were calculated by multiplying the soil concentration by the BAF to generate a tissue concentration (see note 2).

4 Mammal and invertebrate daily doses were calculated by multiplying the ingestion rate (see note 1) by the tissue concentration (see note 3).

5 Soil concentration measured at the specified depth below ground surface at point ID from laboratory analysis. Doses were not calculated for detected and non-detected soil concentrations measured below the minimum reference site concentration, as indicated by BB. For results that were measured at less than the detection limit, doses were calculated using half of the detection limit.

6 Soil daily dose was calculated by multiplying the soil ingestion rate (see note 1) by soil concentration (see note 5).

7 Total daily dose is calculated using the following equation: total daily dose = ([mammal daily dose (if applicable) + invertebrate daily dose (if applicable) + soil daily dose]*SUF)/receptor species body weight.

8 The TRVs used in this risk assessment represent a mid-range effects level. The derivation of TRVs is described in Navy (1998).

9 Allometrically adjusted TRVs for birds were calculated using the following equation: receptor species TRV = (test species TRV) x (test species body weight / receptor species body weight)$^{(1-1.2)}$.

10 HQs were calculated using the following equation: HQ = total daily dose/allometrically adjusted TRV.

11 Highlighted cells indicate an HQ greater than 1.0.

BAF	Bioaccumulation Factor	kg/day	Kilogram per day
BB	Below minimum background reference site concentration	mg/day	Milligram per day
EE/CA	Engineering Evaluation/Cost Analysis	mg/kg	Milligram per kilogram
EU	Exposure Unit	NA	Not applicable
HQ	Hazard quotient	Navy	Department of the Navy
ID	Identification	SUF	Site use factor
kg	Kilogram	TRV	Toxicity reference value

Sources: Department of the Navy. 1998. "Development of Toxicity Reference Values for Conducting Ecological Risk Assessments at Naval Facilities in California, Interim Final." Prepared by Naval Facilities Engineering Command, Engineering Field Activity West (EFA West). San Bruno, California.

TABLE C-13G: ZINC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS, EU 13 - STREAM (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)

calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) **13.8**

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Great Blue Heron (Carnivorous Birds - Stream)																			
Reference Sites																			
BRSW-6 SE (2007) (0-2)	1.32E-01	1.32E-01	1.03E+01	6.80E+02	8.94E+01	NA	NA	NA	NA	3.55E-03	6.57E+01	2.33E-01	1.00E+00	2.39E+00	3.75E+01	1.72E+02	9.55E-01	2.07E+02	1.82E-01
BRSW-6 SE (2008) (0-2)	1.32E-01	1.32E-01	1.03E+01	1.32E+03	1.74E+02	NA	NA	NA	NA	3.55E-03	1.28E+02	4.55E-01	1.00E+00	2.39E+00	7.31E+01	1.72E+02	9.55E-01	2.07E+02	3.54E-01
BRSW-11 SE (0-2)	1.32E-01	1.32E-01	1.03E+01	1.41E+03	1.85E+02	NA	NA	NA	NA	3.55E-03	1.36E+02	4.83E-01	1.00E+00	2.39E+00	7.77E+01	1.72E+02	9.55E-01	2.07E+02	3.76E-01
Streambed Sediments (0-2")																		**Minimum HQ (Reference Sites)**	**1.82E-01**
BRSW-109 SE (0-2)	1.32E-01	1.32E-01	6.30E+00	2.04E+04	2.68E+03	NA	NA	NA	NA	3.55E-03	3.24E+03	1.15E+01	1.00E+00	2.39E+00	1.13E+03	1.72E+02	9.55E-01	2.07E+02	5.46E+00
BRSW-9 SE (0-2)	1.32E-01	1.32E-01	6.30E+00	3.03E+04	3.98E+03	NA	NA	NA	NA	3.55E-03	4.81E+03	1.71E+01	1.00E+00	2.39E+00	1.67E+03	1.72E+02	9.55E-01	2.07E+02	8.10E+00
BRSW-108 SE (0-2)	1.32E-01	1.32E-01	6.30E+00	1.22E+03	1.61E+02	NA	NA	NA	NA	3.55E-03	1.94E+02	6.89E-01	1.00E+00	2.39E+00	6.75E+01	1.72E+02	9.55E-01	2.07E+02	3.27E-01
BRSW-36 SE (0-2)	1.32E-01	1.32E-01	6.30E+00	2.23E+04	2.93E+03	NA	NA	NA	NA	3.55E-03	3.54E+03	1.26E+01	1.00E+00	2.39E+00	1.23E+03	1.72E+02	9.55E-01	2.07E+02	5.96E+00
BRSW-33 SE (0-2)	1.32E-01	1.32E-01	6.30E+00	1.05E+04	1.38E+03	NA	NA	NA	NA	3.55E-03	1.67E+03	5.93E+00	1.00E+00	2.39E+00	5.81E+02	1.72E+02	9.55E-01	2.07E+02	2.81E+00
BRSW-12 SE (0-2)	1.32E-01	1.32E-01	6.30E+00	1.26E+04	1.66E+03	NA	NA	NA	NA	3.55E-03	2.00E+03	7.10E+00	1.00E+00	2.39E+00	6.96E+02	1.72E+02	9.55E-01	2.07E+02	3.37E+00
BRSW-21 SE (2007) (0-2)	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSW-13 SE (0-2)	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSW-110 SE (0-2)	1.32E-01	1.32E-01	6.30E+00	5.45E+03	7.16E+02	NA	NA	NA	NA	3.55E-03	8.65E+02	3.07E+00	1.00E+00	2.39E+00	3.01E+02	1.72E+02	9.55E-01	2.07E+02	1.46E+00
BRSW-107 SE (2007) (0-2)	1.32E-01	1.32E-01	6.30E+00	1.48E+04	1.95E+03	NA	NA	NA	NA	3.55E-03	2.35E+03	8.35E+00	1.00E+00	2.39E+00	8.18E+02	1.72E+02	9.55E-01	2.07E+02	3.96E+00
BRSW-107 SE (2008) (0-2)	1.32E-01	1.32E-01	6.30E+00	4.92E+03	6.48E+02	NA	NA	NA	NA	3.55E-03	7.82E+02	2.78E+00	1.00E+00	2.39E+00	2.72E+02	1.72E+02	9.55E-01	2.07E+02	1.32E+00
BRSW-31 SE (2007) (0-2)	1.32E-01	1.32E-01	6.30E+00	1.08E+04	1.42E+03	NA	NA	NA	NA	3.55E-03	1.71E+03	6.07E+00	1.00E+00	2.39E+00	5.95E+02	1.72E+02	9.55E-01	2.07E+02	2.88E+00
BRSW-31 SE (2008) (0-2)	1.32E-01	1.32E-01	6.30E+00	1.04E+04	1.37E+03	NA	NA	NA	NA	3.55E-03	1.65E+03	5.86E+00	1.00E+00	2.39E+00	5.74E+02	1.72E+02	9.55E-01	2.07E+02	2.78E+00
BRSW-106 SE (2007) (0-2)	1.32E-01	1.32E-01	6.30E+00	7.43E+03	9.77E+02	NA	NA	NA	NA	3.55E-03	1.18E+03	4.19E+00	1.00E+00	2.39E+00	4.11E+02	1.72E+02	9.55E-01	2.07E+02	1.99E+00
BRSW-106 SE (2008) (0-2)	1.32E-01	1.32E-01	6.30E+00	5.53E+03	7.27E+02	NA	NA	NA	NA	3.55E-03	8.78E+02	3.12E+00	1.00E+00	2.39E+00	3.06E+02	1.72E+02	9.55E-01	2.07E+02	1.48E+00
BRSW-105 SE (2007) (0-2)	1.32E-01	1.32E-01	6.30E+00	1.27E+04	1.66E+03	NA	NA	NA	NA	3.55E-03	2.01E+03	7.14E+00	1.00E+00	2.39E+00	6.99E+02	1.72E+02	9.55E-01	2.07E+02	3.38E+00
BRSW-105 SE (2008) (0-2)	1.32E-01	1.32E-01	6.30E+00	1.05E+04	1.37E+03	NA	NA	NA	NA	3.55E-03	1.66E+03	5.90E+00	1.00E+00	2.39E+00	5.78E+02	1.72E+02	9.55E-01	2.07E+02	2.80E+00
BRSW-16 SE (2007) (0-2)	1.32E-01	1.32E-01	6.30E+00	7.74E+03	1.02E+03	NA	NA	NA	NA	3.55E-03	1.23E+03	4.37E+00	1.00E+00	2.39E+00	4.28E+02	1.72E+02	9.55E-01	2.07E+02	2.07E+00
BRSW-16 SE (2008) (0-2)	1.32E-01	1.32E-01	6.30E+00	3.25E+03	4.27E+02	NA	NA	NA	NA	3.55E-03	5.16E+02	1.83E+00	1.00E+00	2.39E+00	1.80E+02	1.72E+02	9.55E-01	2.07E+02	8.69E-01
BRSW-104 SE (2007) (0-2)	1.32E-01	1.32E-01	6.30E+00	1.16E+04	1.53E+03	NA	NA	NA	NA	3.55E-03	1.85E+03	6.57E+00	1.00E+00	2.39E+00	6.44E+02	1.72E+02	9.55E-01	2.07E+02	3.12E+00
BRSW-104 SE (2008) (0-2)	1.32E-01	1.32E-01	6.30E+00	1.49E+04	1.96E+03	NA	NA	NA	NA	3.55E-03	2.37E+03	8.42E+00	1.00E+00	2.39E+00	8.25E+02	1.72E+02	9.55E-01	2.07E+02	3.99E+00
BRSW-103 SE (2007) (0-2)	1.32E-01	1.32E-01	6.30E+00	1.42E+03	1.86E+02	NA	NA	NA	NA	3.55E-03	2.25E+02	7.99E-01	1.00E+00	2.39E+00	7.83E+01	1.72E+02	9.55E-01	2.07E+02	3.79E-01
BRSW-103 SE (2008) (0-2)	1.32E-01	1.32E-01	6.30E+00	7.49E+02	9.85E+01	NA	NA	NA	NA	3.55E-03	1.19E+02	4.23E-01	1.00E+00	2.39E+00	4.14E+01	1.72E+02	9.55E-01	2.07E+02	2.00E-01
BRSW-17 SE (0-2)	1.32E-01	1.32E-01	6.30E+00	5.89E+03	7.75E+02	NA	NA	NA	NA	3.55E-03	9.36E+02	3.32E+00	1.00E+00	2.39E+00	3.26E+02	1.72E+02	9.55E-01	2.07E+02	1.58E+00
BRSW-102 SE (2007) (0-2)	1.32E-01	1.32E-01	6.30E+00	4.16E+03	5.47E+02	NA	NA	NA	NA	3.55E-03	6.60E+02	2.34E+00	1.00E+00	2.39E+00	2.30E+02	1.72E+02	9.55E-01	2.07E+02	1.11E+00
BRSW-102 SE (2008) (0-2)	1.32E-01	1.32E-01	6.30E+00	3.03E+03	3.98E+02	NA	NA	NA	NA	3.55E-03	4.81E+02	1.71E+00	1.00E+00	2.39E+00	1.67E+02	1.72E+02	9.55E-01	2.07E+02	8.10E-01
BRSW-101 SE (2007) (0-2)	1.32E-01	1.32E-01	6.30E+00	3.85E+03	5.07E+02	NA	NA	NA	NA	3.55E-03	6.12E+02	2.17E+00	1.00E+00	2.39E+00	2.13E+02	1.72E+02	9.55E-01	2.07E+02	1.03E+00
BRSW-101 SE (2007) (0-2)	1.32E-01	1.32E-01	6.30E+00	3.85E+03	5.07E+02	NA	NA	NA	NA	3.55E-03	6.12E+02	2.17E+00	1.00E+00	2.39E+00	2.13E+02	1.72E+02	9.55E-01	2.07E+02	1.03E+00
BRSW-201 (0-2)	1.32E-01	1.32E-01	6.30E+00	9.44E+02	1.24E+02	NA	NA	NA	NA	3.55E-03	1.50E+02	5.33E-01	1.00E+00	2.39E+00	5.22E+01	1.72E+02	9.55E-01	2.07E+02	2.53E-01
BRSW-202 (0-2)	1.32E-01	1.32E-01	6.30E+00	9.19E+02	1.21E+02	NA	NA	NA	NA	3.55E-03	1.46E+02	5.18E-01	1.00E+00	2.39E+00	5.08E+01	1.72E+02	9.55E-01	2.07E+02	2.46E-01
BRSW-203 (0-2)	1.32E-01	1.32E-01	6.30E+00	7.93E+02	1.04E+02	NA	NA	NA	NA	3.55E-03	1.26E+02	4.47E-01	1.00E+00	2.39E+00	4.38E+01	1.72E+02	9.55E-01	2.07E+02	2.12E-01
BRSW-204 (0-2)	1.32E-01	1.32E-01	6.30E+00	7.87E+02	1.04E+02	NA	NA	NA	NA	3.55E-03	1.25E+02	4.44E-01	1.00E+00	2.39E+00	4.35E+01	1.72E+02	9.55E-01	2.07E+02	2.11E-01
BRSW-205 (0-2)	1.32E-01	1.32E-01	6.30E+00	1.27E+03	1.67E+02	NA	NA	NA	NA	3.55E-03	2.02E+02	7.17E-01	1.00E+00	2.39E+00	7.03E+01	1.72E+02	9.55E-01	2.07E+02	3.40E-01
BRSW-206 (0-2)	1.32E-01	1.32E-01	6.30E+00	3.36E+03	4.42E+02	NA	NA	NA	NA	3.55E-03	5.34E+02	1.90E+00	1.00E+00	2.39E+00	1.86E+02	1.72E+02	9.55E-01	2.07E+02	8.99E-01
Streambed Sediments (2-6")																		**Maximum HQ (Streambed Sediments, 0-2")**	**8.10E+00**
BRSW-12 SE (2-6)	1.32E-01	1.32E-01	6.30E+00	1.48E+04	1.95E+03	NA	NA	NA	NA	3.55E-03	2.35E+03	8.35E+00	1.00E+00	2.39E+00	8.18E+02	1.72E+02	9.55E-01	2.07E+02	3.96E+00
BRSW-21 SE (2-6)	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSW-13 SE (2-6)	1.32E-01	1.32E-01	6.30E+00	7.68E+02	1.01E+02	NA	NA	NA	NA	3.55E-03	1.22E+02	4.33E-01	1.00E+00	2.39E+00	4.25E+01	1.72E+02	9.55E-01	2.07E+02	2.05E-01
BRSW-110 SE (2-6)	1.32E-01	1.32E-01	6.30E+00	6.26E+03	8.23E+02	NA	NA	NA	NA	3.55E-03	9.94E+02	3.53E+00	1.00E+00	2.39E+00	3.46E+02	1.72E+02	9.55E-01	2.07E+02	1.67E+00
BRSW-106 SE (2007) (2-6)	1.32E-01	1.32E-01	6.30E+00	7.05E+03	9.27E+02	NA	NA	NA	NA	3.55E-03	1.12E+03	3.98E+00	1.00E+00	2.39E+00	3.90E+02	1.72E+02	9.55E-01	2.07E+02	1.89E+00
BRSW-106 SE (2008) (2-6)	1.32E-01	1.32E-01	6.30E+00	5.36E+03	7.06E+02	NA	NA	NA	NA	3.55E-03	8.52E+02	3.03E+00	1.00E+00	2.39E+00	2.96E+02	1.72E+02	9.55E-01	2.07E+02	1.43E+00
BRSW-105 SE (2007) (2-6)	1.32E-01	1.32E-01	6.30E+00	1.18E+04	1.56E+03	NA	NA	NA	NA	3.55E-03	1.88E+03	6.68E+00	1.00E+00	2.39E+00	6.54E+02	1.72E+02	9.55E-01	2.07E+02	3.17E+00

TABLE C-13G: ZINC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS, EU 13 - STREAM

Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)
calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

Site Area (hectares) 13.8

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
Great Blue Heron (Carnivorous Birds - Stream)																			
BRSW-105 SE (2008) (2-6)	1.32E-01	1.32E-01	6.30E+00	9.82E+03	1.29E+03	NA	NA	NA	NA	3.55E-03	1.56E+03	5.54E+00	1.00E+00	2.39E+00	5.43E+02	1.72E+02	9.55E-01	2.07E+02	2.63E+00
BRSW-104 SE (2-6)	1.32E-01	1.32E-01	6.30E+00	1.48E+04	1.95E+03	NA	NA	NA	NA	3.55E-03	2.35E+03	8.35E+00	1.00E+00	2.39E+00	8.18E+02	1.72E+02	9.55E-01	2.07E+02	3.96E+00
BRSW-102 SE (2-6)	1.32E-01	1.32E-01	6.30E+00	2.27E+03	2.99E+02	NA	NA	NA	NA	3.55E-03	3.61E+02	1.28E+00	1.00E+00	2.39E+00	1.26E+02	1.72E+02	9.55E-01	2.07E+02	6.08E-01
Streambed Sediments (6-12")																		**Maximum HQ (Streambed Sediments, 2-6")**	**3.96E+00**
BRSW-12 SE (6-12)	1.32E-01	1.32E-01	6.30E+00	1.19E+04	1.57E+03	NA	NA	NA	NA	3.55E-03	1.89E+03	6.71E+00	1.00E+00	2.39E+00	6.58E+02	1.72E+02	9.55E-01	2.07E+02	3.18E+00
BRSW-13 SE (6-12)	1.32E-01	1.32E-01	6.30E+00	1.73E+03	2.28E+02	NA	NA	NA	NA	3.55E-03	2.75E+02	9.77E-01	1.00E+00	2.39E+00	9.57E+01	1.72E+02	9.55E-01	2.07E+02	4.63E-01
BRSW-110 SE (6-12)	1.32E-01	1.32E-01	6.30E+00	5.72E+03	7.52E+02	NA	NA	NA	NA	3.55E-03	9.08E+02	3.22E+00	1.00E+00	2.39E+00	3.16E+02	1.72E+02	9.55E-01	2.07E+02	1.53E+00
																		Maximum HQ (Streambed Sediments, 6-12")	**3.18E+00**
American Dipper (Insectivorous Birds - Stream)																			
Reference Sites																			
BRSW-6 SE (2007) (0-2)	1.14E-02	NA	NA	NA	NA	1.14E-02	7.66E+00	5.03E+02	5.72E+00	2.05E-03	6.57E+01	1.35E-01	1.00E+00	5.50E-02	1.06E+02	1.72E+02	9.55E-01	9.72E+01	1.10E+00
BRSW-6 SE (2008) (0-2)	1.14E-02	NA	NA	NA	NA	1.14E-02	7.66E+00	9.80E+02	1.11E+01	2.05E-03	1.28E+02	2.62E-01	1.00E+00	5.50E-02	2.07E+02	1.72E+02	9.55E-01	9.72E+01	2.13E+00
BRSW-11 SE (0-2)	1.14E-02	NA	NA	NA	NA	1.14E-02	7.66E+00	1.04E+03	1.18E+01	2.05E-03	1.36E+02	2.78E-01	1.00E+00	5.50E-02	2.20E+02	1.72E+02	9.55E-01	9.72E+01	2.27E+00
Streambed Sediments (0-2")																		**Minimum HQ (Reference Sites)**	**1.10E+00**
BRSW-109 SE (0-2)	1.14E-02	NA	NA	NA	NA	1.14E-02	3.09E+01	1.00E+05	1.14E+03	2.05E-03	3.24E+03	6.63E+00	1.00E+00	5.50E-02	2.08E+04	1.72E+02	9.55E-01	9.72E+01	2.15E+02
BRSW-9 SE (0-2)	1.14E-02	NA	NA	NA	NA	1.14E-02	3.09E+01	1.49E+05	1.69E+03	2.05E-03	4.81E+03	9.85E+00	1.00E+00	5.50E-02	3.10E+04	1.72E+02	9.55E-01	9.72E+01	3.18E+02
BRSW-108 SE (0-2)	1.14E-02	NA	NA	NA	NA	1.14E-02	3.09E+01	6.00E+03	6.83E+01	2.05E-03	1.94E+02	3.97E-01	1.00E+00	5.50E-02	1.25E+03	1.72E+02	9.55E-01	9.72E+01	1.28E+01
BRSW-36 SE (0-2)	1.14E-02	NA	NA	NA	NA	1.14E-02	3.09E+01	1.09E+05	1.25E+03	2.05E-03	3.54E+03	7.25E+00	1.00E+00	5.50E-02	2.28E+04	1.72E+02	9.55E-01	9.72E+01	2.34E+02
BRSW-33 SE (0-2)	1.14E-02	NA	NA	NA	NA	1.14E-02	3.09E+01	5.16E+04	5.88E+02	2.05E-03	1.67E+03	3.42E+00	1.00E+00	5.50E-02	1.07E+04	1.72E+02	9.55E-01	9.72E+01	1.11E+02
BRSW-12 SE (0-2)	1.14E-02	NA	NA	NA	NA	1.14E-02	3.09E+01	6.19E+04	7.04E+02	2.05E-03	2.00E+03	4.10E+00	1.00E+00	5.50E-02	1.29E+04	1.72E+02	9.55E-01	9.72E+01	1.32E+02
BRSW-21 SE (2007) (0-2)	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSW-13 SE (0-2)	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSW-110 SE (0-2)	1.14E-02	NA	NA	NA	NA	1.14E-02	3.09E+01	2.68E+04	3.04E+02	2.05E-03	8.65E+02	1.77E+00	1.00E+00	5.50E-02	5.57E+03	1.72E+02	9.55E-01	9.72E+01	5.73E+01
BRSW-107 SE (2007) (0-2)	1.14E-02	NA	NA	NA	NA	1.14E-02	3.09E+01	7.27E+04	8.27E+02	2.05E-03	2.35E+03	4.81E+00	1.00E+00	5.50E-02	1.51E+04	1.72E+02	9.55E-01	9.72E+01	1.56E+02
BRSW-107 SE (2008) (0-2)	1.14E-02	NA	NA	NA	NA	1.14E-02	3.09E+01	2.42E+04	2.75E+02	2.05E-03	7.82E+02	1.60E+00	1.00E+00	5.50E-02	5.03E+03	1.72E+02	9.55E-01	9.72E+01	5.18E+01
BRSW-31 SE (2007) (0-2)	1.14E-02	NA	NA	NA	NA	1.14E-02	3.09E+01	5.29E+04	6.02E+02	2.05E-03	1.71E+03	3.50E+00	1.00E+00	5.50E-02	1.10E+04	1.72E+02	9.55E-01	9.72E+01	1.13E+02
BRSW-31 SE (2008) (0-2)	1.14E-02	NA	NA	NA	NA	1.14E-02	3.09E+01	5.10E+04	5.81E+02	2.05E-03	1.65E+03	3.38E+00	1.00E+00	5.50E-02	1.06E+04	1.72E+02	9.55E-01	9.72E+01	1.09E+02
BRSW-106 SE (2007) (0-2)	1.14E-02	NA	NA	NA	NA	1.14E-02	3.09E+01	3.65E+04	4.15E+02	2.05E-03	1.18E+03	2.42E+00	1.00E+00	5.50E-02	7.59E+03	1.72E+02	9.55E-01	9.72E+01	7.81E+01
BRSW-106 SE (2008) (0-2)	1.14E-02	NA	NA	NA	NA	1.14E-02	3.09E+01	2.72E+04	3.09E+02	2.05E-03	8.78E+02	1.80E+00	1.00E+00	5.50E-02	5.65E+03	1.72E+02	9.55E-01	9.72E+01	5.81E+01
BRSW-105 SE (2007) (0-2)	1.14E-02	NA	NA	NA	NA	1.14E-02	3.09E+01	6.22E+04	7.07E+02	2.05E-03	2.01E+03	4.12E+00	1.00E+00	5.50E-02	1.29E+04	1.72E+02	9.55E-01	9.72E+01	1.33E+02
BRSW-105 SE (2008) (0-2)	1.14E-02	NA	NA	NA	NA	1.14E-02	3.09E+01	5.13E+04	5.84E+02	2.05E-03	1.66E+03	3.40E+00	1.00E+00	5.50E-02	1.07E+04	1.72E+02	9.55E-01	9.72E+01	1.10E+02
BRSW-16 SE (2007) (0-2)	1.14E-02	NA	NA	NA	NA	1.14E-02	3.09E+01	3.80E+04	4.33E+02	2.05E-03	1.23E+03	2.52E+00	1.00E+00	5.50E-02	7.91E+03	1.72E+02	9.55E-01	9.72E+01	8.14E+01
BRSW-16 SE (2008) (0-2)	1.14E-02	NA	NA	NA	NA	1.14E-02	3.09E+01	1.60E+04	1.82E+02	2.05E-03	5.16E+02	1.06E+00	1.00E+00	5.50E-02	3.32E+03	1.72E+02	9.55E-01	9.72E+01	3.42E+01
BRSW-104 SE (2007) (0-2)	1.14E-02	NA	NA	NA	NA	1.14E-02	3.09E+01	5.72E+04	6.51E+02	2.05E-03	1.85E+03	3.79E+00	1.00E+00	5.50E-02	1.19E+04	1.72E+02	9.55E-01	9.72E+01	1.22E+02
BRSW-104 SE (2008) (0-2)	1.14E-02	NA	NA	NA	NA	1.14E-02	3.09E+01	7.33E+04	8.34E+02	2.05E-03	2.37E+03	4.85E+00	1.00E+00	5.50E-02	1.52E+04	1.72E+02	9.55E-01	9.72E+01	1.57E+02
BRSW-103 SE (2007) (0-2)	1.14E-02	NA	NA	NA	NA	1.14E-02	3.09E+01	6.96E+03	7.92E+01	2.05E-03	2.25E+02	4.61E-01	1.00E+00	5.50E-02	1.45E+03	1.72E+02	9.55E-01	9.72E+01	1.49E+01
BRSW-103 SE (2008) (0-2)	1.14E-02	NA	NA	NA	NA	1.14E-02	3.09E+01	3.68E+03	4.19E+01	2.05E-03	1.19E+02	2.44E-01	1.00E+00	5.50E-02	7.66E+02	1.72E+02	9.55E-01	9.72E+01	7.88E+00
BRSW-17 SE (0-2)	1.14E-02	NA	NA	NA	NA	1.14E-02	3.09E+01	2.89E+04	3.29E+02	2.05E-03	9.36E+02	1.92E+00	1.00E+00	5.50E-02	6.02E+03	1.72E+02	9.55E-01	9.72E+01	6.20E+01
BRSW-102 SE (2007) (0-2)	1.14E-02	NA	NA	NA	NA	1.14E-02	3.09E+01	2.04E+04	2.32E+02	2.05E-03	6.60E+02	1.35E+00	1.00E+00	5.50E-02	4.25E+03	1.72E+02	9.55E-01	9.72E+01	4.37E+01

TABLE C-13G: ZINC DOSE CALCULATIONS AND HAZARD QUOTIENTS FOR BIRDS, EU 13 - STREAM (Continued)

Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

Site Area (hectares) 13.8

from dose parameters tables | from BAF table | linked to soil or sed concentration table (VLOOKUP)
calculated values | linked to TRV table (VLOOKUP) - should be same for all birds or mammals

RECEPTOR / POINT ID	Total Prey Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Mammal BAF[2] (unitless)	Mammal Concentration[3] (mg/kg)	Mammal Daily Dose[4] (mg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Invertebrate BAF[2] (unitless)	Invertebrate Concentration[3] (mg/kg)	Invertebrate Daily Dose[4] (mg/day)	Soil Ingestion Rate[1] (kg/day)	Soil Concentration[5] (mg/kg)	Soil Daily Dose[6] (mg/day)	SUF[1]	Body Weight[1] (kg)	Total Daily Dose[7] (mg/kg/day)	TRV[8] (mg/kg/day)	Test Species Body Weight[8] (kg)	Allometrically Adjusted TRV[9,10] (mg/kg/day)	HQ[11,12] (based on adjusted TRV)
American Dipper (Insectivorous Birds - Stream)																			
BRSW-102 SE (2008) (0-2)	1.14E-02	NA	NA	NA	NA	1.14E-02	3.09E+01	1.49E+04	1.69E+02	2.05E-03	4.81E+02	9.85E-01	1.00E+00	5.50E-02	3.10E+03	1.72E+02	9.55E-01	9.72E+01	3.18E+01
BRSW-101 SE (2007) (0-2)	1.14E-02	NA	NA	NA	NA	1.14E-02	3.09E+01	1.89E+04	2.15E+02	2.05E-03	6.12E+02	1.25E+00	1.00E+00	5.50E-02	3.94E+03	1.72E+02	9.55E-01	9.72E+01	4.05E+01
BRSW-101 SE (2008) (0-2)	1.14E-02	NA	NA	NA	NA	1.14E-02	3.09E+01	1.22E+04	1.39E+02	2.05E-03	3.96E+02	8.11E-01	1.00E+00	5.50E-02	2.55E+03	1.72E+02	9.55E-01	9.72E+01	2.62E+01
BRSW-201 (0-2)	1.14E-02	NA	NA	NA	NA	1.14E-02	3.09E+01	4.64E+03	5.28E+01	2.05E-03	1.50E+02	3.07E-01	1.00E+00	5.50E-02	9.65E+02	1.72E+02	9.55E-01	9.72E+01	9.93E+00
BRSW-202 (0-2)	1.14E-02	NA	NA	NA	NA	1.14E-02	3.09E+01	4.52E+03	5.14E+01	2.05E-03	1.46E+02	2.99E-01	1.00E+00	5.50E-02	9.39E+02	1.72E+02	9.55E-01	9.72E+01	9.67E+00
BRSW-203 (0-2)	1.14E-02	NA	NA	NA	NA	1.14E-02	3.09E+01	3.90E+03	4.43E+01	2.05E-03	1.26E+02	2.58E-01	1.00E+00	5.50E-02	8.11E+02	1.72E+02	9.55E-01	9.72E+01	8.34E+00
BRSW-204 (0-2)	1.14E-02	NA	NA	NA	NA	1.14E-02	3.09E+01	3.87E+03	4.40E+01	2.05E-03	1.25E+02	2.56E-01	1.00E+00	5.50E-02	8.04E+02	1.72E+02	9.55E-01	9.72E+01	8.28E+00
BRSW-205 (0-2)	1.14E-02	NA	NA	NA	NA	1.14E-02	3.09E+01	6.25E+03	7.11E+01	2.05E-03	2.02E+02	4.14E-01	1.00E+00	5.50E-02	1.30E+03	1.72E+02	9.55E-01	9.72E+01	1.34E+01
BRSW-206 (0-2)	1.14E-02	NA	NA	NA	NA	1.14E-02	3.09E+01	1.65E+04	1.88E+02	2.05E-03	5.34E+02	1.09E+00	1.00E+00	5.50E-02	3.44E+03	1.72E+02	9.55E-01	9.72E+01	3.54E+01
Streambed Sediments (2-6")																		**Maximum HQ (Streambed Sediments, 0-2")**	**3.18E+02**
BRSW-12 SE (2-6)	1.14E-02	NA	NA	NA	NA	1.14E-02	3.09E+01	7.27E+04	8.27E+02	2.05E-03	2.35E+03	4.81E+00	1.00E+00	5.50E-02	1.51E+04	1.72E+02	9.55E-01	9.72E+01	1.56E+02
BRSW-21 SE (2-6)	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
BRSW-13 SE (2-6)	1.14E-02	NA	NA	NA	NA	1.14E-02	3.09E+01	3.77E+03	4.29E+01	2.05E-03	1.22E+02	2.50E-01	1.00E+00	5.50E-02	7.85E+02	1.72E+02	9.55E-01	9.72E+01	8.08E+00
BRSW-110 SE (2-6)	1.14E-02	NA	NA	NA	NA	1.14E-02	3.09E+01	3.07E+04	3.50E+02	2.05E-03	9.94E+02	2.04E+00	1.00E+00	5.50E-02	6.40E+03	1.72E+02	9.55E-01	9.72E+01	6.58E+01
BRSW-106 SE (2007) (2-6)	1.14E-02	NA	NA	NA	NA	1.14E-02	3.09E+01	3.46E+04	3.94E+02	2.05E-03	1.12E+03	2.29E+00	1.00E+00	5.50E-02	7.21E+03	1.72E+02	9.55E-01	9.72E+01	7.42E+01
BRSW-106 SE (2008) (2-6)	1.14E-02	NA	NA	NA	NA	1.14E-02	3.09E+01	2.64E+04	3.00E+02	2.05E-03	8.52E+02	1.74E+00	1.00E+00	5.50E-02	5.48E+03	1.72E+02	9.55E-01	9.72E+01	5.64E+01
BRSW-105 SE (2007) (2-6)	1.14E-02	NA	NA	NA	NA	1.14E-02	3.09E+01	5.81E+04	6.61E+02	2.05E-03	1.88E+03	3.85E+00	1.00E+00	5.50E-02	1.21E+04	1.72E+02	9.55E-01	9.72E+01	1.24E+02
BRSW-105 SE (2008) (2-6)	1.14E-02	NA	NA	NA	NA	1.14E-02	3.09E+01	4.82E+04	5.49E+02	2.05E-03	1.56E+03	3.19E+00	1.00E+00	5.50E-02	1.00E+04	1.72E+02	9.55E-01	9.72E+01	1.03E+02
BRSW-104 SE (2-6)	1.14E-02	NA	NA	NA	NA	1.14E-02	3.09E+01	7.27E+04	8.27E+02	2.05E-03	2.35E+03	4.81E+00	1.00E+00	5.50E-02	1.51E+04	1.72E+02	9.55E-01	9.72E+01	1.56E+02
BRSW-102 SE (2-6)	1.14E-02	NA	NA	NA	NA	1.14E-02	3.09E+01	1.12E+04	1.27E+02	2.05E-03	3.61E+02	7.39E-01	1.00E+00	5.50E-02	2.32E+03	1.72E+02	9.55E-01	9.72E+01	2.39E+01
Streambed Sediments (6-12")																		**Maximum HQ (Streambed Sediments, 2-6")**	**1.56E+02**
BRSW-12 SE (6-12)	1.14E-02	NA	NA	NA	NA	1.14E-02	3.09E+01	5.85E+04	6.65E+02	2.05E-03	1.89E+03	3.87E+00	1.00E+00	5.50E-02	1.22E+04	1.72E+02	9.55E-01	9.72E+01	1.25E+02
BRSW-13 SE (6-12)	1.14E-02	NA	NA	NA	NA	1.14E-02	3.09E+01	8.51E+03	9.68E+01	2.05E-03	2.75E+02	5.63E-01	1.00E+00	5.50E-02	1.77E+03	1.72E+02	9.55E-01	9.72E+01	1.82E+01
BRSW-110 SE (6-12)	1.14E-02	NA	NA	NA	NA	1.14E-02	3.09E+01	2.81E+04	3.19E+02	2.05E-03	9.08E+02	1.86E+00	1.00E+00	5.50E-02	5.84E+03	1.72E+02	9.55E-01	9.72E+01	6.01E+01
																		Maximum HQ (Streambed Sediments, 6-12")	**1.25E+02**

Notes

1 See Tables A-1 through A-13 for ingestion rates, foraging ranges used to calculate the SUF, and body weights.

2 BAFs were calculated by dividing site-collected tissue by collocated soil concentrations (BAFs are in dry weight). The maximum stream invertebrate BAF calculated from collocated sample locations in the Blackfoot River and Stevens Gulch was used for site dose calculations. The maximum BAF from the stream reference site (BRSW-6) was used for reference site dose calculations. The maximum mammal BAF calculated from the Beartrap Creek and Blackfoot River transects was used for site dose calculations, and the maximum mammal BAF from the terrestrial reference site was used for reference site dose calculations.

3 The mammal and invertebrate concentrations were calculated by multiplying the soil concentration by the BAF to generate a tissue concentration (see note 2).

4 Mammal and invertebrate daily doses were calculated by multiplying the ingestion rate (see note 1) by the tissue concentration (see note 3).

5 Soil concentration measured at the specified depth below ground surface at point ID from laboratory analysis. Doses were not calculated for detected and non-detected soil concentrations measured below the minimum reference site concentration, as indicated by BB. For results that were measured at less than the detection limit, doses were calculated using half of the detection limit.

6 Soil daily dose was calculated by multiplying the soil ingestion rate (see note 1) by soil concentration (see note 5).

7 Total daily dose is calculated using the following equation: total daily dose = ([mammal daily dose (if applicable) + invertebrate daily dose (if applicable) + soil daily dose]*SUF)/receptor species body weight.

8 The TRVs used in this risk assessment represent a mid-range effects level. The derivation of TRVs is described in Navy (1998).

9 Allometrically adjusted TRVs for birds were calculated using the following equation: receptor species TRV = (test species TRV) x (test species body weight / receptor species body weight) $^{(1\text{-}1.2)}$.

10 HQs were calculated using the following equation: HQ = total daily dose/allometrically adjusted TRV.

11 Highlighted cells indicate an HQ greater than 1.0.

BAF	Bioaccumulation Factor	kg/day	Kilogram per day
BB	Below minimum background reference site concentration	mg/day	Milligram per day
EE/CA	Engineering Evaluation/Cost Analysis	mg/kg	Milligram per kilogram
EU	Exposure Unit	NA	Not applicable
HQ	Hazard quotient	Navy	Department of the Navy
ID	Identification	SUF	Site use factor
kg	Kilogram	TRV	Toxicity reference value

Sources: Department of the Navy. 1998. "Development of Toxicity Reference Values for Conducting Ecological Risk Assessments at Naval Facilities in California, Interim Final." Prepared by Naval Facilities Engineering Command, Engineering Field Activity West (EFA West). San Bruno, California.

APPENDIX D
HAZARD QUOTIENT CALCULATIONS FOR PLANTS, INVERTEBRATES, AND SURFACE WATER

LIST OF TABLES

D-1 Terrestrial Plant and Invertebrate Hazard Quotient Summary Table, EU 1 – Upper Anaconda Mine Waste Removal Areas and Waste Piles

D-2 Terrestrial Plant and Invertebrate Hazard Quotient Summary Table, EU 2 – Blackfoot River Dispersed Tailings Associated with EE/CA Removal Action Area and Overbank Deposits

D-3 Terrestrial Plant and Invertebrate Hazard Quotient Summary Table, EU 3 – Capital Mine Waste Area

D-4 Terrestrial Plant and Invertebrate Hazard Quotient Summary Table, EU 4 – Carbonate Mine Waste Area

D-5 Terrestrial Plant and Invertebrate Hazard Quotient Summary Table, EU 5 – Edith Mine Waste Areas

D-6 Terrestrial Plant and Invertebrate Hazard Quotient Summary Table, EU 6 – Consolation Mine Waste Area

D-7 Terrestrial Plant and Invertebrate Hazard Quotient Summary Table, EU 7 – Mary P. Mine Waste Pile

D-8 Terrestrial Plant and Invertebrate Hazard Quotient Summary Table, EU 8 – Mike Horse Mine Waste Piles

D-9 Terrestrial Plant and Invertebrate Hazard Quotient Summary Table, EU 9 – Paymaster Mine Waste Areas

D-10 Terrestrial Plant and Invertebrate Hazard Quotient Summary Table, EU 10 – Number 3 Tunnel Waste Area

D-11 Terrestrial Plant and Invertebrate Hazard Quotient Summary Table, EU 11 – Beartrap Creek Dispersed Tailings Deposits Associated with EE/CA Removal Action Area and Overbank Tailings Deposits and Flossie Louise Mine Waste Pile

D-12A Terrestrial Invertebrate Hazard Quotient Summary Table, EU 12 – Upper Marsh

D-12B Aquatic Invertebrate Hazard Quotient Summary Table, EU 12 – Upper Marsh

D-13 Aquatic Invertebrate and Fish Hazard Quotient Summary Table, EU 13 – Stream

D-14 Surface Water Concentrations and Hazard Quotient Summary Table, EU 13 – Stream

TABLE D-1: TERRESTRIAL PLANT AND INVERTEBRATE HAZARD QUOTIENT SUMMARY TABLE, EU 1 - UPPER ANACONDA MINE WASTE REMOVAL AREAS AND WASTE PILES

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

RECEPTOR / POINT ID	Arsenic Concentration (mg/kg)[1]	Arsenic HQ[2]	Cadmium Concentration (mg/kg)[1]	Cadmium HQ[2]	Copper Concentration (mg/kg)[1]	Copper HQ[2]	Lead Concentration (mg/kg)[1]	Lead HQ[2]	Manganese Concentration (mg/kg)[1]	Manganese HQ[2]	Zinc Concentration (mg/kg)[1]	Zinc HQ[2]
Screening Benchmark - Terrestrial Plants (mg/kg)[3]	**18**		**32**		**70**		**120**		**220**		**160**	
Terrestrial Plants												
Reference Sites												
ACBG-1	26.03	**1.4**	0.49	0.015	79.58	**1.1**	23.09	0.19	294.72	**1.3**	136.91	0.86
ACBG-2	18.33	**1**	0.52	0.016	250.03	**3.6**	38.26	0.32	997.31	**4.5**	83.93	0.52
Upper Anaconda Mine												
UAW1-00 (0-6")	321.02	**18**	NE	NE	133.45	**1.9**	6211.60	**52**	630.71	**2.9**	390.21	**2.4**
UAW1-00+25 (0-6")	22.09	**1.2**	3.50	0.11	BB	BB	340.46	**2.8**	2016.71	**9.2**	480.63	**3**
UAW1-050 (0-6")	116.96	**6.5**	NE	NE	139.15	**2**	1688.61	**14**	2854.17	**13**	832.75	**5.2**
UAW1-100 (0-6")	345.79	**19**	NE	NE	130.39	**1.9**	11077.10	**92**	BB	BB	BB	BB
UAW1-150 (0-6")	208.77	**12**	NE	NE	175.02	**2.5**	2478.43	**21**	477.79	**2.2**	423.28	**2.6**
UAW1-150+75 (0-6")	39.78	**2.2**	6.85	0.21	89.33	**1.3**	767.99	**6.4**	2271.31	**10**	1229.00	**7.7**
UAW1-Comp 1 (0-6")	1201.81	**67**	3.41	0.11	478.81	**6.8**	41468.69	**350**	BB	BB	728.34	**4.6**
UAW2-0000 (0-6")	61.36	**3.4**	NE	NE	351.41	**5**	859.28	**7.2**	1758.51	**8**	385.06	**2.4**
UAW2-0000+225 (0-6")	36.90	**2.1**	NE	NE	148.00	**2.1**	250.10	**2.1**	2227.00	**10**	715.90	**4.5**
UAW2-0050 (0-6")	11.06	0.61	NE	NE	90.58	**1.3**	187.87	**1.6**	823.62	**3.7**	138.05	0.86
UAW2-0100 (0-6")	19.10	**1.1**	NE	NE	215.82	**3.1**	753.63	**6.3**	1333.51	**6.1**	457.53	**2.9**
UAW2-0100+250 (0-6")	38.20	**2.1**	NE	NE	93.00	**1.3**	147.90	**1.2**	3914.00	**18**	433.10	**2.7**
UAW2-0150 (0-6")	BB	BB	NE	NE	91.32	**1.3**	125.46	**1**	436.29	**2**	BB	BB
UAW2-0200 (0-6")	174.07	**9.7**	0.97	0.03	498.16	**7.1**	3708.11	**31**	586.81	**2.7**	263.18	**1.6**
UAW2-0250 (0-6")	57.61	**3.2**	1.01	0.032	487.93	**7**	4393.83	**37**	BB	BB	179.64	**1.1**
UAW2-0250+50 (0-6")	31.90	**1.8**	4.40	0.14	140.00	**2**	508.20	**4.2**	2551.95	**12**	499.40	**3.1**
UAW2-0300 (0-6")	170.37	**9.5**	NE	NE	760.97	**11**	4541.90	**38**	366.76	**1.7**	198.00	**1.2**
UAW2-0350 (0-6")	84.54	**4.7**	NE	NE	317.23	**4.5**	1053.81	**8.8**	3297.61	**15**	666.33	**4.2**
UAW2-0350+50 (0-6")	11.35	0.63	NE	NE	130.00	**1.9**	377.20	**3.1**	774.00	**3.5**	414.20	**2.6**
UAW2-0400 (0-6")	78.86	**4.4**	NE	NE	174.40	**2.5**	1218.52	**10**	562.99	**2.6**	137.03	0.86
UAW2-0400+150 (0-6")	41.40	**2.3**	NE	NE	583.00	**8.3**	274.20	**2.3**	1799.00	**8.2**	315.80	**2**
UAW2-0450 (0-6")	45.26	**2.5**	NE	NE	302.42	**4.3**	925.42	**7.7**	1755.07	**8**	504.10	**3.2**
UAW2-0450+50 (0-6")	32.20	**1.8**	NE	NE	232.00	**3.3**	512.60	**4.3**	1048.00	**4.8**	411.30	**2.6**
UAW2-1000 (0-6")	38.88	**2.2**	1.50	0.047	382.98	**5.5**	316.64	**2.6**	1728.32	**7.9**	428.21	**2.7**
UAW2-Comp (0-6")	12.55	0.7	BB	BB	BB	BB	323.18	**2.7**	473.34	**2.2**	BB	BB
UAW3-Comp 1 (0-6")	2702.70	**150**	15.30	0.48	1560.56	**22**	78258.55	**650**	240.70	**1.1**	10101.98	**63**
UAW4-Comp 1 (0-6")	469.79	**26**	1.40	0.044	673.69	**9.6**	13337.09	**110**	BB	BB	511.41	**3.2**
UAW5-00 (0-6")	34.52	**1.9**	NE	NE	BB	BB	317.00	**2.6**	878.32	**4**	431.92	**2.7**
UAW5-050 (0-6")	13.30	0.74	NE	NE	BB	BB	375.76	**3.1**	1062.18	**4.8**	470.17	**2.9**
UAW5-100 (0-6")	16.64	0.92	NE	NE	123.79	**1.8**	562.84	**4.7**	934.85	**4.2**	421.91	**2.6**
UAW5-100+25 (0-6")	34.30	**1.9**	NE	NE	BB	BB	461.50	**3.8**	1436.00	**6.5**	684.70	**4.3**
UAW5-150 (0-6")	17.42	0.97	NE	NE	100.35	**1.4**	654.30	**5.5**	1142.14	**5.2**	428.91	**2.7**
UAW5-150+50 (0-6")	26.70	**1.5**	NE	NE	BB	BB	474.00	**4**	1908.00	**8.7**	725.00	**4.5**
UAW5-200 (0-6")	19.69	**1.1**	NE	NE	BB	BB	723.53	**6**	484.65	**2.2**	354.25	**2.2**
UAW5-250 (0-6")	68.99	**3.8**	NE	NE	140.12	**2**	1180.38	**9.8**	2551.96	**12**	472.10	**3**
UAW5-250+50 (0-6")	11.80	0.66	NE	NE	BB	BB	462.20	**3.9**	732.00	**3.3**	399.30	**2.5**
UAW5-300 (0-6")	17.84	0.99	NE	NE	BB	BB	680.64	**5.7**	2020.32	**9.2**	923.18	**5.8**
UAW5-300+75 (0-6")	43.20	**2.4**	7.30	0.23	BB	BB	409.60	**3.4**	2551.00	**12**	831.30	**5.2**
UAW5-350 (0-6")	59.06	**3.3**	NE	NE	183.99	**2.6**	755.83	**6.3**	845.08	**3.8**	163.60	**1**
UAW5-400 (0-6")	85.68	**4.8**	NE	NE	370.47	**5.3**	940.45	**7.8**	1702.57	**7.7**	541.71	**3.4**
UAW5-450 (0-6")	47.44	**2.6**	NE	NE	359.50	**5.1**	48.00	0.4	777.82	**3.5**	202.37	**1.3**
UAW5-500 (0-6")	143.48	**8**	NE	NE	455.48	**6.5**	2554.73	**21**	BB	BB	374.64	**2.3**
UAW5-500+50 (0-6")	15.75	0.88	6.70	0.21	304.00	**4.3**	704.10	**5.9**	2483.50	**11**	769.40	**4.8**
UAW5-550 (0-6")	77.16	**4.3**	NE	NE	151.36	**2.2**	820.68	**6.8**	1224.76	**5.6**	705.36	**4.4**
UAW5-600 (0-6")	18.86	**1**	NE	NE	122.65	**1.8**	608.22	**5.1**	1263.97	**5.7**	559.14	**3.5**
UAW5-Comp 1 (0-6")	25.08	**1.4**	2.05	0.064	223.14	**3.2**	980.24	**8.2**	937.28	**4.3**	452.09	**2.8**

TABLE D-1: TERRESTRIAL PLANT AND INVERTEBRATE HAZARD QUOTIENT SUMMARY TABLE, EU 1 - UPPER ANACONDA MINE WASTE REMOVAL AREAS AND WASTE PILES (Continued)
Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

RECEPTOR / POINT ID	Arsenic Concentration (mg/kg)[1]	Arsenic HQ[2]	Cadmium Concentration (mg/kg)[1]	Cadmium HQ[2]	Copper Concentration (mg/kg)[1]	Copper HQ[2]	Lead Concentration (mg/kg)[1]	Lead HQ[2]	Manganese Concentration (mg/kg)[1]	Manganese HQ[2]	Zinc Concentration (mg/kg)[1]	Zinc HQ[2]
Screening Benchmark - Terrestrial Invertebrate(mg/kg)[3]	**60**		**140**		**80**		**1700**		**450**		**120**	
Terrestrial Invertebrates												
Reference Sites												
ACBG-1	26.03	0.43	0.49	0.0035	79.58	0.99	23.09	0.014	294.72	0.65	136.91	**1.1**
ACBG-2	18.33	0.31	0.52	0.0037	250.03	**3.1**	38.26	0.023	997.31	**2.2**	83.93	0.7
Upper Anaconda Mine												
UAW1-00 (0-6")	321.02	**5.4**	NE	NE	133.45	**1.7**	6211.60	**3.7**	630.71	**1.4**	390.21	**3.3**
UAW1-00+25 (0-6")	22.09	0.37	3.50	0.025	BB	BB	340.46	0.2	2016.71	**4.5**	480.63	**4**
UAW1-050 (0-6")	116.96	**1.9**	NE	NE	139.15	**1.7**	1688.61	0.99	2854.17	**6.3**	832.75	**6.9**
UAW1-100 (0-6")	345.79	**5.8**	NE	NE	130.39	**1.6**	11077.10	**6.5**	BB	BB	BB	BB
UAW1-150 (0-6")	208.77	**3.5**	NE	NE	175.02	**2.2**	2478.43	**1.5**	477.79	**1.1**	423.28	**3.5**
UAW1-150+75 (0-6")	39.78	0.66	6.85	0.049	89.33	**1.1**	767.99	0.45	2271.31	**5**	1229.00	**10**
UAW1-Comp 1 (0-6")	1201.81	**20**	3.41	0.024	478.81	**6**	41468.69	**24**	BB	BB	728.34	**6.1**
UAW2-0000 (0-6")	61.36	**1**	NE	NE	351.41	**4.4**	859.28	0.51	1758.51	**3.9**	385.06	**3.2**
UAW2-0000+225 (0-6")	36.90	0.62	NE	NE	148.00	**1.9**	250.10	0.15	2227.00	**4.9**	715.90	**6**
UAW2-0050 (0-6")	11.06	0.18	NE	NE	90.58	**1.1**	187.87	0.11	823.62	**1.8**	138.05	**1.2**
UAW2-0100 (0-6")	19.10	0.32	NE	NE	215.82	**2.7**	753.63	0.44	1333.51	**3**	457.53	**3.8**
UAW2-0100+250 (0-6")	38.20	0.64	NE	NE	93.00	**1.2**	147.90	0.087	3914.00	**8.7**	433.10	**3.6**
UAW2-0150 (0-6")	BB	BB	NE	NE	91.32	**1.1**	125.46	0.074	436.29	0.97	BB	BB
UAW2-0200 (0-6")	174.07	**2.9**	0.97	0.0069	498.16	**6.2**	3708.11	**2.2**	586.81	**1.3**	263.18	**2.2**
UAW2-0250 (0-6")	57.61	0.96	1.01	0.0072	487.93	**6.1**	4393.83	**2.6**	BB	BB	179.64	**1.5**
UAW2-0250+50 (0-6")	31.90	0.53	4.40	0.031	140.00	**1.8**	508.20	0.3	2551.95	**5.7**	499.40	**4.2**
UAW2-0300 (0-6")	170.37	**2.8**	NE	NE	760.97	**9.5**	4541.90	**2.7**	366.76	0.82	198.00	**1.7**
UAW2-0350 (0-6")	84.54	**1.4**	NE	NE	317.23	**4**	1053.81	0.62	3297.61	**7.3**	666.33	**5.6**
UAW2-0350+50 (0-6")	11.35	0.19	NE	NE	130.00	**1.6**	377.20	0.22	774.00	**1.7**	414.20	**3.5**
UAW2-0400 (0-6")	78.86	**1.3**	NE	NE	174.40	**2.2**	1218.52	0.72	562.99	**1.3**	137.03	**1.1**
UAW2-0400+150 (0-6")	41.40	0.69	NE	NE	583.00	**7.3**	274.20	0.16	1799.00	**4**	315.80	**2.6**
UAW2-0450 (0-6")	45.26	0.75	NE	NE	302.42	**3.8**	925.42	0.54	1755.07	**3.9**	504.10	**4.2**
UAW2-0450+50 (0-6")	32.20	0.54	NE	NE	232.00	**2.9**	512.60	0.3	1048.00	**2.3**	411.30	**3.4**
UAW2-1000 (0-6")	38.88	0.65	1.50	0.011	382.98	**4.8**	316.64	0.19	1728.32	**3.8**	428.21	**3.6**
UAW2-Comp (0-6")	12.55	0.21	BB	BB	BB	BB	323.18	0.19	473.34	**1.1**	BB	BB
UAW3-Comp 1 (0-6")	2702.70	**45**	15.30	0.11	1560.56	**20**	78258.55	**46**	240.70	0.53	10101.98	**84**
UAW4-Comp 1 (0-6")	469.79	**7.8**	1.40	0.01	673.69	**8.4**	13337.09	**7.8**	BB	BB	511.41	**4.3**
UAW5-00 (0-6")	34.52	0.58	NE	NE	BB	BB	317.00	0.19	878.32	**2**	431.92	**3.6**
UAW5-050 (0-6")	13.30	0.22	NE	NE	BB	BB	375.76	0.22	1062.18	**2.4**	470.17	**3.9**
UAW5-100 (0-6")	16.64	0.28	NE	NE	123.79	**1.5**	562.84	0.33	934.85	**2.1**	421.91	**3.5**
UAW5-100+25 (0-6")	34.30	0.57	NE	NE	BB	BB	461.50	0.27	1436.00	**3.2**	684.70	**5.7**
UAW5-150 (0-6")	17.42	0.29	NE	NE	100.35	**1.3**	654.30	0.38	1142.14	**2.5**	428.91	**3.6**
UAW5-150+50 (0-6")	26.70	0.45	NE	NE	BB	BB	474.00	0.28	1908.00	**4.2**	725.00	**6**
UAW5-200 (0-6")	19.69	0.33	NE	NE	BB	BB	723.53	0.43	484.65	**1.1**	354.25	**3**
UAW5-250 (0-6")	68.99	**1.1**	NE	NE	140.12	**1.8**	1180.38	0.69	2551.96	**5.7**	472.10	**3.9**
UAW5-250+50 (0-6")	11.80	0.2	NE	NE	BB	BB	462.20	0.27	732.00	**1.6**	399.30	**3.3**
UAW5-300 (0-6")	17.84	0.3	NE	NE	BB	BB	680.64	0.4	2020.32	**4.5**	923.18	**7.7**
UAW5-300+75 (0-6")	43.20	0.72	7.30	0.052	BB	BB	409.60	0.24	2551.00	**5.7**	831.30	**6.9**
UAW5-350 (0-6")	59.06	0.98	NE	NE	183.99	**2.3**	755.83	0.44	845.08	**1.9**	163.60	**1.4**
UAW5-400 (0-6")	85.68	**1.4**	NE	NE	370.47	**4.6**	940.45	0.55	1702.57	**3.8**	541.71	**4.5**
UAW5-450 (0-6")	47.44	0.79	NE	NE	359.50	**4.5**	48.00	0.028	777.82	**1.7**	202.37	**1.7**
UAW5-500 (0-6")	143.48	**2.4**	NE	NE	455.48	**5.7**	2554.73	**1.5**	BB	BB	374.64	**3.1**
UAW5-500+50 (0-6")	15.75	0.26	6.70	0.048	304.00	**3.8**	704.10	0.41	2483.50	**5.5**	769.40	**6.4**
UAW5-550 (0-6")	77.16	**1.3**	NE	NE	151.36	**1.9**	820.68	0.48	1224.76	**2.7**	705.36	**5.9**
UAW5-600 (0-6")	18.86	0.31	NE	NE	122.65	**1.5**	608.22	0.36	1263.97	**2.8**	559.14	**4.7**
UAW5-Comp 1 (0-6")	25.08	0.42	2.05	0.015	223.14	**2.8**	980.24	0.58	937.28	**2.1**	452.09	**3.8**

Notes:

Bold values indicate HQs greater than 1.0.

1 Soil concentration from 0 to 6 inches below ground surface at point ID as measured by XRF 10. Hazard quotients were not calculated for detected and non-detect soil concentrations measured below the minimum reference site concentration, as indicated by BB. For results that were measured at less than the detection limit, HQs were calculated using half of the detection limit.

2 HQs were calculated by dividing the site concentration by the plant or invertebrate screening benchmark.

3 Plant screening benchmarks are from EPA 2007. Invertebrate screening benchmarks are from EPA 2007, with the exception of the screening benchmark for arsenic, which is from Efroymson and others 1997.

BB	Below minimum background reference site concentration	ID	Identification
EPA	U.S. Environmental Protection Agency	mg/kg	Milligrams per kilogram
EU	Exposure Unit	NE	Not evaluated
HQ	Hazard quotient		

Sources:

Efroymson, R.A., M.E, Will, and G.W. Suter II. 1997. "Toxicological Benchmarks for Contaminants of Potential Concern for Effects on Soil and Litter Invertebrates and Heterotrophic Processes: 1997 Revision." Oak Ridge National Laboratory, Oak Ridge TN. ES/ER/TM-126/R2

EPA. 2007. Interim Ecological Soil Screening Levels. Available on-line at: http://www.epa.gov/ecotox/ecossl/

TABLE D-2: TERRESTRIAL PLANT AND INVERTEBRATE HAZARD QUOTIENT SUMMARY TABLE,
EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS
Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

RECEPTOR / POINT ID	Arsenic Concentration (mg/kg)[1]	Arsenic HQ[2]	Cadmium Concentration (mg/kg)[1]	Cadmium HQ[2]	Copper Concentration (mg/kg)[1]	Copper HQ[2]	Lead Concentration (mg/kg)[1]	Lead HQ[2]	Manganese Concentration (mg/kg)[1]	Manganese HQ[2]	Zinc Concentration (mg/kg)[1]	Zinc HQ[2]
Screening Benchmark - Terrestrial Plants (mg/kg)[3]	**18**		**32**		**70**		**120**		**220**		**160**	
Arsenic												
Terrestrial Plants												
Reference Sites												
ACBG-1 (0-6")	26.03	**1.4**	0.49	0.015	79.58	**1.1**	23.09	0.19	294.72	**1.3**	136.91	0.86
ACBG-2 (0-6")	18.33	**1.0**	0.52	0.016	250.03	**3.6**	38.26	0.32	997.31	**4.5**	83.93	0.52
UBRBG-202 (0-6")	13.93	0.77	2.90	0.091	218.49	**3.1**	54.37	0.45	901.15	**4.1**	53.72	0.34
UBRBG-204 (0-6")	19.50	**1.1**	2.70	0.084	104.28	**1.5**	53.20	0.44	693.84	**3.2**	342.67	**2.1**
Inside Tailings												
BREOT-S6-12.5 (0-6")	199.13	**11**	NE	NE	243.71	**3.5**	1550.47	**13**	BB	BB	382.85	**2.4**
BREOT-S2-12.5 (0-6")	259.46	**14**	NE	NE	731.57	**10**	1944.58	**16**	3911.45	**18**	2539.69	**16**
BREOT-S0-12.5 (0-6")	127.73	**7.1**	NE	NE	138.44	**2**	888.73	**7.4**	BB	BB	247.57	**1.5**
BREOT-S1-12.5 (0-6")	92.49	**5.1**	NE	NE	108.70	**1.6**	809.31	**6.7**	551.72	**2.5**	166.30	**1**
BREOT-S7-25 (0-6")	11.98	0.67	NE	NE	191.75	**2.7**	170.67	**1.4**	1375.17	**6.3**	233.17	**1.5**
BREOT-S8-12.5 (0-6")	105.74	**5.9**	NE	NE	161.45	**2.3**	648.55	**5.4**	625.82	**2.8**	144.55	0.9
BREOT-S9-12.5 (0-6")	100.86	**5.6**	NE	NE	216.48	**3.1**	678.76	**5.7**	785.02	**3.6**	331.12	**2.1**
BREOT-N10-12.5 (0-6")	479.81	**27**	NE	NE	1570.12	**22**	9658.18	**80**	3565.84	**16**	4625.95	**29**
BREOT-N11-12.5 (0-6")	244.76	**14**	NE	NE	222.91	**3.2**	2688.98	**22**	493.58	**2.2**	485.28	**3**
BREOT-N11-125 (0-6")	171.66	**9.5**	NE	NE	166.82	**2.4**	2225.06	**19**	319.11	**1.5**	398.80	**2.5**
BREOT-S11-12 (0-6")	281.43	**16**	NE	NE	1096.87	**16**	6520.09	**54**	3300.97	**15**	7092.27	**44**
BREOT-S11-63 (0-6")	145.93	**8.1**	NE	NE	252.21	**3.6**	2051.33	**17**	376.49	**1.7**	400.17	**2.5**
UBDT-TP-6 (0-2")	704.66	**39**	98.70	**3.1**	2506.14	**36**	15558.62	**130**	7051.66	**32**	19805.25	**120**
UBDT-TP-6 (2-12")	637.00	**35**	28.70	0.9	1969.72	**28**	11870.99	**99**	5489.22	**25**	12294.37	**77**
UBDT-TP-6 (12-24")	515.72	**29**	161.00	**5.0**	3721.50	**53**	6640.50	**55**	7270.97	**33**	12541.27	**78**
UBDT-TP-6 (24-36")	122.67	**6.8**	9.75	0.3	215.21	**3.1**	533.32	**4.4**	2805.10	**13**	915.09	**5.7**
UBDT-TP-6 (36-48")	180.03	**10**	13.70	0.43	1578.28	**23**	1202.79	**10**	7680.17	**35**	2486.44	**16**
UBDT-TP-6 (48-60")	59.88	**3.3**	10.50	0.33	912.53	**13**	547.29	**4.6**	4663.84	**21**	1901.90	**12**
BREOT-N12-12.5 (0-6")	115.35	**6.4**	9.13	0.29	292.34	**4.2**	1521.42	**13**	2241.87	**10**	1176.38	**7.4**
BREOT-S12-12.5 (0-6")	110.79	**6.2**	NE	NE	521.31	**7.4**	3367.38	**28**	1880.21	**8.5**	2904.55	**18**
BREOT-S13-12.5 (0-6")	239.13	**13**	NE	NE	1006.99	**14**	5023.64	**42**	2611.95	**12**	5154.71	**32**
BREOT-S14-12.5 (0-6")	67.39	**3.7**	NE	NE	409.08	**5.8**	1393.00	**12**	1351.62	**6.1**	2558.11	**16**
BREOT-N15-12.5 (0-6")	273.10	**15**	NE	NE	289.27	**4.1**	2842.60	**24**	BB	BB	2709.06	**17**
BREOT-S15-12.5 (0-6")	374.23	**21**	3.40	0.11	315.66	**4.5**	2577.77	**21**	BB	BB	350.03	**2.2**
BREOT-N16-12.5 (0-6")	218.83	**12**	NE	NE	370.95	**5.3**	2704.88	**23**	2158.76	**9.8**	891.38	**5.6**
BREOT-N16-25 (0-6")	14.22	0.79	NE	NE	205.35	**2.9**	329.07	**2.7**	1143.50	**5.2**	175.38	**1.1**
BREOT-S16-12.5 (0-6")	147.90	**8.2**	NE	NE	153.70	**2.2**	1917.22	**16**	BB	BB	177.87	**1.1**
BREOT-N17-12.5 (0-6")	160.20	**8.9**	NE	NE	157.39	**2.2**	2330.84	**19**	602.57	**2.7**	384.17	**2.4**
BREOT-S17-12.5 (0-6")	67.01	**3.7**	NE	NE	136.95	**2.0**	703.41	**5.9**	384.72	**1.7**	153.28	0.96
BREOT-S17-25 (0-6")	55.91	**3.1**	NE	NE	98.83	**1.4**	546.41	**4.6**	990.56	**4.5**	233.77	**1.5**
UBDT-TP-4 (0-2")	175.85	**9.8**	18.20	0.57	344.97	**4.9**	1297.49	**11**	6145.04	**28**	2380.90	**15**
UBDT-TP-4 (2-12")	118.65	**6.6**	3.57	0.11	314.91	**4.5**	1222.98	**10**	3891.51	**18**	1430.22	**8.9**
UBDT-TP-4 (12-24")	104.55	**5.8**	3.15	0.098	303.75	**4.3**	826.25	**6.9**	1909.73	**8.7**	781.86	**4.9**
UBDT-TP-4 (24-36")	63.82	**3.5**	4.79	0.15	165.67	**2.4**	670.83	**5.6**	1777.84	**8.1**	1126.52	**7.0**
BREOT-N18-12.5 (0-6")	207.74	**12**	NE	NE	450.44	**6.4**	2015.18	**17**	5987.63	**27**	1599.79	**10**
BREOT-N18-25 (0-6")	22.86	**1.3**	NE	NE	BB	BB	180.30	**1.5**	565.89	**2.6**	307.33	**1.9**
BREOT-S18-12.5 (0-6")	104.90	**5.8**	NE	NE	219.99	**3.1**	822.27	**6.9**	1509.92	**6.9**	571.01	**3.6**
BREOT-N19-10 (0-6")	185.08	**10**	NE	NE	237.52	**3.4**	1881.36	**16**	884.00	**4**	472.82	**3.0**
BREOT-S19-12.5 (0-6")	75.00	**4.2**	NE	NE	256.17	**3.7**	1014.27	**8.5**	2865.56	**13**	1589.57	**9.9**
UBDT-TP-5 (0-2")	95.18	**5.3**	10.10	0.32	410.70	**5.9**	962.22	**8**	4632.92	**21**	2627.39	**16**

TABLE D-2: TERRESTRIAL PLANT AND INVERTEBRATE HAZARD QUOTIENT SUMMARY TABLE,
EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS
Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

RECEPTOR / POINT ID	Arsenic Concentration (mg/kg)[1]	Arsenic HQ[2]	Cadmium Concentration (mg/kg)[1]	Cadmium HQ[2]	Copper Concentration (mg/kg)[1]	Copper HQ[2]	Lead Concentration (mg/kg)[1]	Lead HQ[2]	Manganese Concentration (mg/kg)[1]	Manganese HQ[2]	Zinc Concentration (mg/kg)[1]	Zinc HQ[2]
UBDT-TP-5 (2-12")	92.46	**5.1**	5.74	0.18	325.44	**4.6**	1022.96	**8.5**	3870.41	**18**	1741.41	**11**
UBDT-TP-5 (12-24")	71.97	**4**	7.55	0.24	344.96	**4.9**	1042.02	**8.7**	3529.29	**16**	1550.77	**9.7**
BREOT-N20-12.5 (0-6")	243.16	**14**	NE	NE	169.80	**2.4**	1165.52	**9.7**	765.48	**3.5**	330.85	**2.1**
UBDT-TP-3 (0-2")	170.32	**9.5**	1.82	0.057	283.03	**4.0**	1344.02	**11**	798.38	**3.6**	446.55	**2.8**
UBDT-TP-3 (2-12")	164.22	**9.1**	2.28	0.071	190.65	**2.7**	1815.82	**15**	BB	BB	292.80	**1.8**
UBDT-TP-3 (12-24")	152.33	**8.5**	0.71	0.022	208.28	**3.0**	1247.74	**10**	301.20	**1.4**	228.40	**1.4**
UBDT-TP-3 (24-36")	136.12	**7.6**	2.14	0.067	224.30	**3.2**	1575.09	**13**	360.15	**1.6**	366.31	**2.3**
UBDT-TP-3 (36-48")	223.35	**12**	5.45	0.17	350.14	**5.0**	1744.85	**15**	5541.67	**25**	563.29	**3.5**
UBDT-TP-3 (48-60")	46.26	**2.6**	2.54	0.079	184.12	**2.6**	356.85	**3**	2627.23	**12**	790.23	**4.9**
BREOT-N21-12.5 (0-6")	97.67	**5.4**	NE	NE	283.61	**4.1**	1147.33	**9.6**	6826.54	**31**	2568.01	**16**
BREOT-N22-12.5 (0-6")	184.79	**10**	NE	NE	206.34	**2.9**	1477.50	**12**	671.89	**3.1**	413.84	**2.6**
BREOT-N23-12.5 (0-6")	199.12	**11**	NE	NE	234.05	**3.3**	1233.96	**10**	1464.20	**6.7**	680.85	**4.3**
BREOT-S23-12.5 (0-6")	113.58	**6.3**	NE	NE	795.07	**11**	1722.93	**14**	15887.50	**72**	8416.19	**53**
UBDT-TP-2 (0-2")	220.46	**12**	19.00	0.59	448.18	**6.4**	1186.50	**9.9**	5475.99	**25**	3207.29	**20**
UBDT-TP-2 (2-12")	110.24	**6.1**	12.80	0.4	448.83	**6.4**	875.37	**7.3**	7208.15	**33**	1996.64	**12**
UBDT-TP-2 (12-24")	30.62	**1.7**	17.20	0.54	306.95	**4.4**	1256.05	**10**	5435.65	**25**	1712.09	**11**
UBDT-TP-2 (24-36")	64.17	**3.6**	6.05	0.19	186.57	**2.7**	746.88	**6.2**	2760.12	**13**	1450.98	**9.1**
UBDT-TP-2 (36-48")	70.54	**3.9**	5.40	0.17	245.71	**3.5**	1226.09	**10**	2786.87	**13**	1525.51	**9.5**
BREOT-S24-12.5 (0-6")	141.25	**7.8**	NE	NE	677.22	**9.7**	1779.36	**15**	BB	BB	6368.59	**40**
BREOT-N25-50 (0-6")	337.73	**19**	NE	NE	1619.17	**23**	8799.84	**73**	4818.56	**22**	7971.48	**50**
BREOT-N25-95 (0-6")	274.98	**15**	NE	NE	107.50	**1.5**	1372.31	**11**	BB	BB	101.20	0.63
BREOT-S25-12.5 (0-6")	159.78	**8.9**	NE	NE	388.96	**5.6**	1570.29	**13**	BB	BB	1322.52	**8.3**
BREOT-S25-40 (0-6")	120.74	**6.7**	NE	NE	167.80	**2.4**	2001.59	**17**	BB	BB	204.68	**1.3**
BREOT-N26A-25 (0-6")	18.52	**1**	NE	NE	99.63	**1.4**	75.36	0.63	457.95	**2.1**	152.98	0.96
BREOT-N26B-25 (0-6")	111.59	**6.2**	NE	NE	734.66	**10**	1938.67	**16**	1901.45	**8.6**	2552.45	**16**
BREOT-N26-50 (0-6")	248.11	**14**	NE	NE	1245.76	**18**	6356.76	**53**	4810.68	**22**	11429.52	**71**
BREOT-N26-75 (0-6")	212.11	**12**	NE	NE	1035.92	**15**	4206.52	**35**	2654.83	**12**	5833.52	**36**
BREOT-S26-12.5 (0-6")	101.91	**5.7**	NE	NE	120.02	**1.7**	1146.16	**9.6**	2378.49	**11**	269.12	**1.7**
BREOT-S26-40 (0-6")	146.87	**8.2**	NE	NE	408.45	**5.8**	1421.68	**12**	7172.72	**33**	3621.86	**23**
BREOT-N27-30 (0-6")	414.94	**23**	NE	NE	1230.19	**18**	8804.76	**73**	2657.24	**12**	2635.83	**16**
BREOT-N27-75 (0-6")	411.76	**23**	84.80	**2.7**	2168.38	**31**	10203.90	**85**	7569.65	**34**	10273.20	**64**
BREOT-S27-12.5 (0-6")	128.14	**7.1**	NE	NE	315.63	**4.5**	2396.22	**20**	1518.19	**6.9**	367.11	**2.3**
BREOT-N28-110 (0-6")	115.48	**6.4**	NE	NE	509.19	**7.3**	2353.45	**20**	1403.29	**6.4**	1554.62	**9.7**
BREOT-N28-55 (0-6")	1224.98	**68**	NE	NE	2950.39	**42**	21759.55	**180**	3717.41	**17**	14964.78	**94**
BREOT-S28-12.5 (0-6")	79.51	**4.4**	NE	NE	428.71	**6.1**	1077.29	**9.0**	8379.43	**38**	2980.96	**19**
UBDT-TP-1 (0-2")	394.40	**22**	65.40	**2**	980.56	**14**	7654.77	**64**	5549.95	**25**	8949.42	**56**
UBDT-TP-1 (2-12")	687.03	**38**	66.40	**2.1**	2011.28	**29**	9854.05	**82**	5524.94	**25**	9631.58	**60**
UBDT-TP-1 (12-24")	216.68	**12**	52.30	**1.6**	1818.93	**26**	9202.52	**77**	5673.38	**26**	9081.28	**57**
UBDT-TP-1 (24-36")	165.57	**9.2**	27.50	0.86	1343.83	**19**	2864.20	**24**	7547.27	**34**	6177.70	**39**
UBDT-TP-1 (36-48")	11.76	0.65	10.40	0.33	291.50	**4.2**	174.44	**1.5**	1199.94	**5.5**	1916.20	**12**
UBDT-TP-1 (48-60")	12.59	0.7	2.71	0.085	183.67	**2.6**	208.34	**1.7**	1493.68	**6.8**	637.55	**4.0**
BREOT-N29-30 (0-6")	625.48	**35**	NE	NE	2473.12	**35**	11328.40	**94**	5761.55	**26**	13665.50	**85**
BREOT-S29-12.5 (0-6")	152.09	**8.4**	NE	NE	402.02	**5.7**	1322.57	**11**	7069.93	**32**	916.43	**5.7**
BREOT-N30-12.5 (0-6")	103.32	**5.7**	4.84	0.15	451.91	**6.5**	3253.89	**27**	1971.04	**9**	775.58	**4.8**
BREOT-S30-12.5 (0-6")	147.02	**8.2**	NE	NE	312.86	**4.5**	1544.00	**13**	BB	BB	1205.32	**7.5**
BREOT-N31-12.5 (0-6")	136.72	**7.6**	NE	NE	318.38	**4.5**	3254.74	**27**	BB	BB	586.17	**3.7**
BREOT-S31-25 (0-6")	83.17	**4.6**	2.59	0.081	197.51	**2.8**	888.60	**7.4**	3918.11	**18**	412.50	**2.6**
BREOT-S31-5 (0-6")	169.13	**9.4**	NE	NE	296.71	**4.2**	1132.07	**9.4**	BB	BB	1113.37	**7.0**
BREOT-N32-12.5 (0-6")	303.37	**17**	NE	NE	212.73	**3**	1178.34	**9.8**	BB	BB	1062.19	**6.6**
BREOT-S32-6 (0-6")	177.21	**9.8**	NE	NE	211.29	**3**	1146.52	**9.6**	1381.49	**6.3**	206.88	**1.3**
BREOT-N33-12.5 (0-6")	289.71	**16**	1.29	0.04	236.90	**3.4**	3438.68	**29**	401.88	**1.8**	356.00	**2.2**

TABLE D-2: TERRESTRIAL PLANT AND INVERTEBRATE HAZARD QUOTIENT SUMMARY TABLE,
EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS
Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

RECEPTOR / POINT ID	Arsenic Concentration (mg/kg)[1]	Arsenic HQ[2]	Cadmium Concentration (mg/kg)[1]	Cadmium HQ[2]	Copper Concentration (mg/kg)[1]	Copper HQ[2]	Lead Concentration (mg/kg)[1]	Lead HQ[2]	Manganese Concentration (mg/kg)[1]	Manganese HQ[2]	Zinc Concentration (mg/kg)[1]	Zinc HQ[2]
BREOT-S33-12.5 (0-6")	14.60	0.81	NE	NE	579.88	**8.3**	430.07	**3.6**	BB	BB	543.12	**3.4**
BREOT-N35-12.5 (0-6")	79.02	**4.4**	NE	NE	186.74	**2.7**	597.07	**5.0**	BB	BB	476.49	**3.0**
BREOT-S35-12.5 (0-6")	187.43	**10**	NE	NE	452.95	**6.5**	1553.67	**13**	8469.79	**38**	2205.73	**14**
BREOT-N36-12.5 (0-6")	154.38	**8.6**	NE	NE	305.05	**4.4**	1626.17	**14**	3261.49	**15**	618.89	**3.9**
BREOT-S36-12.5 (0-6")	148.62	**8.3**	NE	NE	201.96	**2.9**	1548.78	**13**	1127.85	**5.1**	470.67	**2.9**
BREOT-N37-12.5 (0-6")	221.20	**12**	NE	NE	184.16	**2.6**	1529.00	**13**	329.81	**1.5**	202.79	**1.3**
BREOT-S37-12.5 (0-6")	107.14	**6**	NE	NE	295.95	**4.2**	779.69	**6.5**	1332.18	**6.1**	520.65	**3.3**
BREOT-N38-12.5 (0-6")	102.30	**5.7**	NE	NE	208.15	**3**	795.42	**6.6**	665.14	**3**	220.84	**1.4**
BREOT-S38-12.5 (0-6")	201.66	**11**	15.70	0.49	695.84	**9.9**	1290.14	**11**	11757.94	**53**	1917.93	**12**
BREOT-N39-12.5 (0-6")	250.00	**14**	NE	NE	303.46	**4.3**	2831.75	**24**	989.39	**4.5**	1094.73	**6.8**
BREOT-S39-12.5 (0-6")	158.20	**8.8**	NE	NE	520.88	**7.4**	1528.85	**13**	4606.88	**21**	1330.47	**8.3**
BREOT-N40-12.5 (0-6")	151.87	**8.4**	NE	NE	404.03	**5.8**	1895.94	**16**	4630.16	**21**	1356.23	**8.5**
BREOT-S40-14 (0-6")	263.91	**15**	NE	NE	494.66	**7.1**	1365.01	**11**	4276.43	**19**	1422.26	**8.9**
BREOT-N41-12.5 (0-6")	28.13	**1.6**	5.11	0.16	300.08	**4.3**	1163.40	**9.7**	3408.44	**15**	1034.53	**6.5**
BREOT-S41-12.5 (0-6")	330.71	**18**	9.99	0.31	451.40	**6.4**	1686.75	**14**	4277.16	**19**	1302.05	**8.1**
BREOT-N42-35 (0-6")	118.57	**6.6**	NE	NE	244.28	**3.5**	1852.91	**15**	785.10	**3.6**	205.76	**1.3**
BREOT-S42-25 (0-6")	198.28	**11**	NE	NE	268.63	**3.8**	2287.00	**19**	1659.77	**7.5**	325.03	**2.0**
BREOT-N43-12.5 (0-6")	168.90	**9.4**	NE	NE	460.30	**6.6**	2116.98	**18**	10092.37	**46**	2591.03	**16**
BREOT-S43-12.5 (0-6")	162.43	**9**	NE	NE	244.68	**3.5**	1284.48	**11**	2218.08	**10**	476.75	**3.0**
BREOT-N44-30 (0-6")	116.27	**6.5**	NE	NE	188.08	**2.7**	979.68	**8.2**	791.45	**3.6**	482.21	**3.0**
BREOT-S44-12.5 (0-6")	139.83	**7.8**	NE	NE	428.06	**6.1**	2715.97	**23**	7438.63	**34**	669.67	**4.2**
BREOT-N45-12.5 (0-6")	164.64	**9.1**	NE	NE	316.49	**4.5**	1084.65	**9**	957.48	**4.4**	237.58	**1.5**
BREOT-N45-25 (0-6")	34.68	**1.9**	NE	NE	443.81	**6.3**	143.04	**1.2**	829.09	**3.8**	349.68	**2.2**
BREOT-S45-6 (0-6")	131.54	**7.3**	NE	NE	304.59	**4.4**	3020.51	**25**	1277.86	**5.8**	379.02	**2.4**
BREOT-N46-12.5 (0-6")	66.02	**3.7**	NE	NE	123.11	**1.8**	778.34	**6.5**	367.40	**1.7**	127.57	0.8
BREOT-S46-12.5 (0-6")	64.02	**3.6**	NE	NE	152.16	**2.2**	1425.48	**12**	365.37	**1.7**	368.02	**2.3**
BREOT-S46-40 (0-6")	93.82	**5.2**	NE	NE	296.99	**4.2**	2997.69	**25**	559.43	**2.5**	551.67	**3.4**
BREOT-N47-12.5 (0-6")	96.64	**5.4**	1.40	0.044	277.83	**4**	1281.62	**11**	703.76	**3.2**	251.86	**1.6**
BREOT-S47-999 (0-6")	152.47	**8.5**	NE	NE	411.98	**5.9**	4007.74	**33**	747.31	**3.4**	400.31	**2.5**
BREOT-S48-12.5 (0-6")	46.54	**2.6**	NE	NE	98.87	**1.4**	122.44	**1.0**	BB	BB	BB	BB
BREOT-S49-2.5 (0-6")	55.27	**3.1**	NE	NE	129.89	**1.9**	115.09	0.96	BB	BB	BB	BB
BREOT-S50-12.5 (0-6")	17.29	0.96	NE	NE	231.47	**3.3**	667.41	**5.6**	BB	BB	BB	BB
BREOT-S50-25 (0-6")	26.05	**1.4**	NE	NE	BB	BB	45.17	0.38	BB	BB	BB	BB
BREOT-N52-60 (0-6")	213.90	**12**	NE	NE	212.06	**3.0**	2822.18	**24**	BB	BB	419.74	**2.6**
BREOT-S52-12.5 (0-6")	96.65	**5.4**	NE	NE	1100.35	**16**	61.47	0.51	BB	BB	59.90	0.37
BREOT-S53-12.5 (0-6")	28.69	**1.6**	NE	NE	255.75	**3.7**	185.40	**1.5**	BB	BB	94.89	0.59
BREOT-S54-12.5 (0-6")	21.09	**1.2**	NE	NE	160.48	**2.3**	88.08	0.73	BB	BB	105.75	0.66
BREOT-N55-12.5 (0-6")	186.67	**10**	NE	NE	433.85	**6.2**	2379.34	**20**	3749.33	**17**	2394.16	**15**
BREOT-S55-12.5 (0-6")	64.85	**3.6**	1.08	0.034	172.93	**2.5**	638.13	**5.3**	1546.70	**7**	210.09	**1.3**
BREOT-N56-12.5 (0-6")	126.72	**7.0**	4.35	0.14	321.29	**4.6**	2220.21	**19**	1788.13	**8.1**	689.53	**4.3**
BREOT-S56-12.5 (0-6")	27.44	**1.5**	NE	NE	149.27	**2.1**	205.82	**1.7**	951.66	**4.3**	349.43	**2.2**
BREOT-N57-12.5 (0-6")	123.09	**6.8**	NE	NE	236.03	**3.4**	1365.89	**11**	1193.93	**5.4**	291.39	**1.8**
BREOT-S57-12.5 (0-6")	72.02	**4.0**	NE	NE	173.02	**2.5**	621.75	**5.2**	1242.41	**5.6**	289.30	**1.8**
BREOT-N58-12.5 (0-6")	52.50	**2.9**	NE	NE	153.30	**2.2**	327.95	**2.7**	2056.66	**9.3**	328.90	**2.1**
BREOT-S58-12 (0-6")	82.66	**4.6**	NE	NE	257.25	**3.7**	522.97	**4.4**	1286.58	**5.8**	757.68	**4.7**
BREOT-N59-18 (0-6")	91.84	**5.1**	NE	NE	105.58	**1.5**	919.82	**7.7**	704.95	**3.2**	224.40	**1.4**
BREOT-N60-12.5 (0-6")	25.98	**1.4**	NE	NE	BB	BB	266.35	**2.2**	1203.67	**5.5**	315.50	**2.0**
BREOT-S60-12.5 (0-6")	79.50	**4.4**	NE	NE	187.98	**2.7**	1113.98	**9.3**	BB	BB	591.30	**3.7**
BREOT-S61-12.5 (0-6")	44.74	**2.5**	NE	NE	258.12	**3.7**	890.89	**7.4**	6387.23	**29**	2339.82	**15**
BREOT-N62-12.5 (0-6")	9.05	0.5	NE	NE	87.44	**1.2**	96.79	0.81	620.79	**2.8**	121.08	0.76
BREOT-S62-12.5 (0-6")	102.10	**5.7**	NE	NE	349.33	**5.0**	1549.38	**13**	7601.47	**35**	2259.20	**14**

TABLE D-2: TERRESTRIAL PLANT AND INVERTEBRATE HAZARD QUOTIENT SUMMARY TABLE,
EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS
Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

RECEPTOR / POINT ID	Arsenic Concentration (mg/kg)[1]	Arsenic HQ[2]	Cadmium Concentration (mg/kg)[1]	Cadmium HQ[2]	Copper Concentration (mg/kg)[1]	Copper HQ[2]	Lead Concentration (mg/kg)[1]	Lead HQ[2]	Manganese Concentration (mg/kg)[1]	Manganese HQ[2]	Zinc Concentration (mg/kg)[1]	Zinc HQ[2]
BREOT-S63-12.5 (0-6")	62.85	**3.5**	NE	NE	141.21	**2.0**	390.83	**3.3**	1089.45	**5**	294.21	**1.8**
BREOT-N64-12.5 (0-6")	39.56	**2.2**	NE	NE	94.63	**1.4**	323.90	**2.7**	1097.41	**5**	286.37	**1.8**
BREOT-N64-20 (0-6")	48.88	**2.7**	NE	NE	114.74	**1.6**	270.37	**2.3**	1064.53	**4.8**	214.43	**1.3**
BREOT-S64-12.5 (0-6")	62.53	**3.5**	NE	NE	167.69	**2.4**	648.58	**5.4**	364.06	**1.7**	193.53	**1.2**
BREOT-N65-12.5 (0-6")	28.10	**1.6**	NE	NE	312.19	**4.5**	312.19	**2.6**	312.19	**1.4**	312.19	**2.0**
BREOT-S65-12.5 (0-6")	121.13	**6.7**	NE	NE	181.44	**2.6**	1764.44	**15**	BB	BB	228.17	**1.4**
BREOT-N66-5 (0-6")	98.58	**5.5**	NE	NE	134.63	**1.9**	688.86	**5.7**	533.21	**2.4**	189.89	**1.2**
BREOT-S66-12.5 (0-6")	69.46	**3.9**	NE	NE	147.83	**2.1**	608.81	**5.1**	905.62	**4.1**	230.09	**1.4**
BREOT-N67-12.5 (0-6")	97.45	**5.4**	NE	NE	563.05	**8.0**	1119.02	**9.3**	10544.95	**48**	3099.17	**19**
BREOT-S67-12.5 (0-6")	12.67	0.7	NE	NE	BB	BB	244.51	**2.0**	588.38	**2.7**	134.47	0.84
At Edge of Tailings				**5**								
BREOT-S0-0 (06)	78.73	**4.4**	NE	NE	120.10	**1.7**	468.40	**3.9**	762.32	**3.5**	456.04	**2.9**
BREOT-S1-0 (0-6")	238.91	**13**	NE	NE	210.69	**3**	2278.72	**19**	846.69	**3.8**	263.49	**1.6**
BREOT-S2-0 (0-6")	68.12	**3.8**	NE	NE	299.17	**4.3**	666.20	**5.6**	2259.84	**10**	290.36	**1.8**
BREOT-S3-0 (0-6")	266.89	**15**	NE	NE	362.11	**5.2**	1479.30	**12**	5701.72	**26**	1653.52	**10**
BREOT-S4-0 (0-6")	242.38	**13**	NE	NE	405.04	**5.8**	1758.45	**15**	6686.60	**30**	1987.07	**12**
BREOT-S6-0 (0-6")	290.69	**16**	NE	NE	327.21	**4.7**	1700.30	**14**	BB	BB	1042.04	**6.5**
BREOT-S7-0 (0-6")	173.78	**9.7**	NE	NE	189.93	**2.7**	1014.57	**8.5**	BB	BB	479.35	**3.0**
BREOT-S8-0 (0-6")	51.98	**2.9**	NE	NE	168.83	**2.4**	373.40	**3.1**	1166.95	**5.3**	321.27	**2.0**
BREOT-S9-0 (0-6")	119.03	**6.6**	NE	NE	150.86	**2.2**	804.79	**6.7**	BB	BB	207.97	**1.3**
BREOT-N10-0 (0-6")	1065.06	**59**	NE	NE	3539.80	**51**	23489.36	**200**	8051.61	**37**	18327.25	**110**
BREOT-N11-0 (0-6")	292.16	**16**	NE	NE	294.95	**4.2**	2858.47	**24**	376.17	**1.7**	635.39	**4.0**
BREOT-S11-0 (0-6")	100.94	**5.6**	NE	NE	230.95	**3.3**	1003.33	**8.4**	1994.30	**9.1**	1300.42	**8.1**
BREOT-N12-0 (0-6")	109.63	**6.1**	NE	NE	256.68	**3.7**	1033.66	**8.6**	1046.75	**4.8**	320.85	**2.0**
BREOT-S12-0 (0-6")	110.32	**6.1**	NE	NE	590.90	**8.4**	3188.48	**27**	2987.20	**14**	1705.48	**11**
BREOT-N13-0 (0-6")	1256.09	**70**	NE	NE	1910.45	**27**	26470.24	**220**	1553.82	**7.1**	10290.07	**64**
BREOT-S13-0 (0-6")	18.14	**1**	NE	NE	140.11	**2**	619.85	**5.2**	865.35	**3.9**	2858.17	**18**
BREOT-N14-0 (0-6")	164.44	**9.1**	NE	NE	428.24	**6.1**	2905.39	**24**	1548.95	**7**	347.73	**2.2**
BREOT-S14-0 (0-6")	708.36	**39**	NE	NE	3260.98	**47**	15428.96	**130**	9152.85	**42**	15980.91	**100**
BREOT-N15-0 (0-6")	322.92	**18**	NE	NE	333.89	**4.8**	3596.13	**30**	810.00	**3.7**	984.09	**6.2**
BREOT-N16-0 (0-6")	202.07	**11**	NE	NE	246.21	**3.5**	1770.53	**15**	613.11	**2.8**	376.59	**2.4**
BREOT-S16-0 (0-6")	32.41	**1.8**	NE	NE	180.52	**2.6**	334.02	**2.8**	1075.94	**4.9**	243.62	**1.5**
BREOT-N17-0 (0-6")	193.64	**11**	NE	NE	260.46	**3.7**	2862.04	**24**	1656.67	**7.5**	434.23	**2.7**
BREOT-S17-0 (0-6")	219.61	**12**	NE	NE	309.09	**4.4**	3357.10	**28**	509.89	**2.3**	420.72	**2.6**
BREOT-N18-0 (0-6")	169.28	**9.4**	NE	NE	240.22	**3.4**	2315.72	**19**	650.34	**3**	522.43	**3.3**
BREOT-S18-0 (0-6")	495.81	**28**	NE	NE	2093.88	**30**	36.49	0.3	406627.25	**1800**	723.47	**4.5**
BREOT-N19-0 (0-6")	241.81	**13**	NE	NE	293.75	**4.2**	1578.85	**13**	4494.90	**20**	1409.23	**8.8**
BREOT-S19-0 (0-6")	60.32	**3.4**	NE	NE	128.58	**1.8**	453.14	**3.8**	1258.18	**5.7**	272.85	**1.7**
BREOT-N20-0 (0-6")	172.31	**9.6**	NE	NE	420.40	**6**	1291.74	**11**	9986.95	**45**	2243.01	**14**
BREOT-S20-0 (0-6")	53.75	**3**	NE	NE	136.10	**1.9**	622.51	**5.2**	797.15	**3.6**	191.21	**1.2**
BREOT-N21-0 (0-6")	481.32	**27**	NE	NE	13483.34	**190**	57.52	0.48	648789.38	**2900**	1242.26	**7.8**
BREOT-S21-0 (0-6")	184.37	**10**	NE	NE	231.10	**3.3**	1731.16	**14**	339.04	**1.5**	386.01	**2.4**
BREOT-N22-0 (0-6")	207.81	**12**	NE	NE	321.38	**4.6**	1455.46	**12**	854.87	**3.9**	952.11	**6.0**
BREOT-S22-0 (0-6")	185.80	**10**	NE	NE	183.05	**2.6**	1751.65	**15**	BB	BB	552.33	**3.5**
BREOT-N23-0 (0-6")	207.62	**12**	17.20	0.54	515.35	**7.4**	1205.43	**10**	2998.84	**14**	1192.53	**7.5**
BREOT-S23-0 (0-6")	235.80	**13**	NE	NE	321.50	**4.6**	2666.37	**22**	1660.51	**7.5**	789.37	**4.9**
BREOT-N24-0 (0-6")	231.38	**13**	NE	NE	493.42	**7**	2555.23	**21**	1334.68	**6.1**	1925.80	**12**
BREOT-S24-0 (0-6")	146.72	**8.2**	NE	NE	947.46	**14**	1498.74	**12**	24125.57	**110**	10498.43	**66**
BREOT-N25-0 (0-6")	219.39	**12**	NE	NE	775.49	**11**	6230.34	**52**	4036.23	**18**	1413.12	**8.8**
BREOT-S25-0 (0-6")	129.23	**7.2**	NE	NE	669.92	**9.6**	3485.39	**29**	5785.47	**26**	2583.70	**16**
BREOT-N26-0 (0-6")	472.42	**26**	30.00	0.94	925.35	**13**	11405.62	**95**	2628.88	**12**	2123.60	**13**

TABLE D-2: TERRESTRIAL PLANT AND INVERTEBRATE HAZARD QUOTIENT SUMMARY TABLE,
EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS
Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

RECEPTOR / POINT ID	Arsenic Concentration (mg/kg)[1]	Arsenic HQ[2]	Cadmium Concentration (mg/kg)[1]	Cadmium HQ[2]	Copper Concentration (mg/kg)[1]	Copper HQ[2]	Lead Concentration (mg/kg)[1]	Lead HQ[2]	Manganese Concentration (mg/kg)[1]	Manganese HQ[2]	Zinc Concentration (mg/kg)[1]	Zinc HQ[2]
BREOT-S26-0 (0-6")	140.56	**7.8**	NE	NE	342.52	**4.9**	1593.55	**13**	3128.20	**14**	870.32	**5.4**
BREOT-N27-0 (0-6")	465.40	**26**	NE	NE	2510.37	**36**	12254.56	**100**	5015.07	**23**	11285.22	**71**
BREOT-S27-0 (0-6")	209.06	**12**	1.51	0.047	227.84	**3.3**	2775.60	**23**	3541.93	**16**	214.66	**1.3**
BREOT-N28-0 (0-6")	123.72	**6.9**	NE	NE	548.05	**7.8**	4728.84	**39**	2166.36	**9.8**	729.80	**4.6**
BREOT-S28-0 (0-6")	115.53	**6.4**	NE	NE	165.31	**2.4**	1164.15	**9.7**	BB	BB	239.41	**1.5**
BREOT-S29-0 (0-6")	16.97	0.94	NE	NE	176.57	**2.5**	481.52	**4.0**	733.98	**3.3**	230.37	**1.4**
BREOT-N30-0 (0-6")	441.08	**25**	NE	NE	1482.71	**21**	8583.87	**72**	3453.89	**16**	5209.78	**33**
BREOT-S30-0 (0-6")	12.39	0.69	BB	BB	129.78	**1.9**	235.40	**2.0**	BB	BB	86.30	0.54
BREOT-N31-0 (0-6")	108.22	**6**	NE	NE	1288.16	**18**	4140.92	**35**	3405.17	**15**	6523.66	**41**
BREOT-S31-0 (0-6")	11.37	0.63	NE	NE	107.24	**1.5**	226.95	**1.9**	BB	BB	405.19	**2.5**
BREOT-N32-0 (0-6")	140.66	**7.8**	NE	NE	530.65	**7.6**	1715.24	**14**	1551.78	**7.1**	2598.36	**16**
BREOT-S32-0 (0-6")	87.86	**4.9**	NE	NE	517.26	**7.4**	1987.72	**17**	1214.87	**5.5**	428.19	**2.7**
BREOT-N33-0 (0-6")	16.44	0.91	NE	NE	199.69	**2.9**	62.30	0.52	958.27	**4.4**	137.00	0.86
BREOT-S33-0 (0-6")	83.73	**4.7**	NE	NE	491.31	**7**	474.77	**4.0**	1831.87	**8.3**	697.13	**4.4**
BREOT-N34-0 (0-6")	24.88	**1.4**	NE	NE	490.06	**7**	164.66	**1.4**	1465.33	**6.7**	346.90	**2.2**
BREOT-S34-0 (0-6")	138.67	**7.7**	NE	NE	479.57	**6.9**	1156.78	**9.6**	7236.47	**33**	3059.99	**19**
BREOT-N35-0 (0-6")	24.73	**1.4**	NE	NE	266.22	**3.8**	103.98	0.87	806.61	**3.7**	123.46	0.77
BREOT-S35-0 (0-6")	109.63	**6.1**	NE	NE	443.04	**6.3**	803.74	**6.7**	1238.99	**5.6**	443.98	**2.8**
BREOT-N36-0 (0-6")	215.91	**12**	NE	NE	433.34	**6.2**	2266.23	**19**	8443.04	**38**	2974.94	**19**
BREOT-S36-0 (0-6")	160.32	**8.9**	NE	NE	477.14	**6.8**	1605.16	**13**	6368.11	**29**	2619.57	**16**
BREOT-N37-0 (0-6")	85.01	**4.7**	2.52	0.079	181.04	**2.6**	506.10	**4.2**	1385.83	**6.3**	414.47	**2.6**
BREOT-S37-0 (0-6")	151.09	**8.4**	NE	NE	532.53	**7.6**	1781.14	**15**	8125.24	**37**	2958.26	**18**
BREOT-N38-0 (0-6")	18.25	**1**	NE	NE	194.60	**2.8**	105.17	0.88	734.58	**3.3**	125.41	0.78
BREOT-S38-0 (0-6")	31.14	**1.7**	NE	NE	840.99	**12**	208.02	**1.7**	4670.15	**21**	1130.16	**7.1**
BREOT-N39-0 (0-6")	19.86	**1.1**	NE	NE	BB	BB	87.85	0.73	865.03	**3.9**	212.89	**1.3**
BREOT-N40-0 (0-6")	41.93	**2.3**	NE	NE	239.16	**3.4**	212.19	**1.8**	930.40	**4.2**	169.12	**1.1**
BREOT-S40-0 (0-6")	169.82	**9.4**	NE	NE	563.00	**8**	1377.10	**11**	8684.76	**39**	2125.03	**13**
BREOT-N41-0 (0-6")	29.39	**1.6**	NE	NE	154.53	**2.2**	136.80	**1.1**	488.76	**2.2**	96.80	0.61
BREOT-S41-0 (0-6")	207.57	**12**	NE	NE	551.62	**7.9**	1365.07	**11**	9280.42	**42**	2296.90	**14**
BREOT-N42-0 (0-6")	BB	BB	NE	NE	BB	BB	27.20	0.23	BB	BB	BB	BB
BREOT-S42-0 (0-6")	216.16	**12**	NE	NE	822.74	**12**	2840.91	**24**	10554.89	**48**	4359.58	**27**
BREOT-N43-0 (0-6")	35.12	**2**	NE	NE	126.88	**1.8**	185.15	**1.5**	619.91	**2.8**	201.76	**1.3**
BREOT-S43-0 (0-6")	20.06	**1.1**	NE	NE	130.35	**1.9**	121.18	**1.0**	983.84	**4.5**	408.51	**2.6**
BREOT-N44-0 (0-6")	65.22	**3.6**	NE	NE	240.88	**3.4**	561.97	**4.7**	1375.09	**6.3**	419.40	**2.6**
BREOT-S44-0 (0-6")	7.30	0.41	NE	NE	126.87	**1.8**	88.93	0.74	1163.37	**5.3**	350.64	**2.2**
BREOT-N45-0 (0-6")	9.87	0.55	NE	NE	378.29	**5.4**	160.56	**1.3**	967.41	**4.4**	338.50	**2.1**
BREOT-S45-0 (0-6")	24.10	**1.3**	NE	NE	106.17	**1.5**	189.66	**1.6**	658.11	**3**	399.37	**2.5**
BREOT-N46-0 (0-6")	9.56	0.53	NE	NE	264.13	**3.8**	137.76	**1.1**	684.82	**3.1**	444.26	**2.8**
BREOT-S46-0 (0-6")	45.54	**2.5**	NE	NE	98.56	**1.4**	1081.13	**9.0**	803.11	**3.7**	168.75	**1.1**
BREOT-N47-0 (0-6")	8.75	0.49	NE	NE	644.26	**9.2**	175.15	**1.5**	852.65	**3.9**	723.00	**4.5**
BREOT-S47-0 (0-6")	20.30	**1.1**	NE	NE	BB	BB	37.56	0.31	BB	BB	114.45	0.72
BREOT-N48-0 (0-6")	11.26	0.63	NE	NE	143.69	**2.1**	243.67	**2.0**	557.77	**2.5**	282.63	**1.8**
BREOT-S48-0 (0-6")	64.12	**3.6**	NE	NE	90.06	**1.3**	191.56	**1.6**	BB	BB	BB	BB
BREOT-N49-0 (0-6")	30.22	**1.7**	NE	NE	171.43	**2.4**	386.57	**3.2**	1011.70	**4.6**	1061.15	**6.6**
BREOT-S49-0 (0-6")	8.49	0.47	NE	NE	BB	BB	120.00	**1.0**	BB	BB	BB	BB
BREOT-S50-0 (0-6")	25.18	**1.4**	NE	NE	105.60	**1.5**	105.61	0.88	BB	BB	BB	BB
BREOT-N51-0 (0-6")	56.88	**3.2**	NE	NE	121.56	**1.7**	422.52	**3.5**	1673.95	**7.6**	336.24	**2.1**
BREOT-S51-0 (0-6")	24.60	**1.4**	NE	NE	770.96	**11**	148.88	**1.2**	BB	BB	190.66	**1.2**
BREOT-N52-0 (0-6")	7.22	0.4	NE	NE	123.10	**1.8**	98.82	0.82	BB	BB	BB	BB
BREOT-S52-0 (0-6")	7.06	0.39	NE	NE	92.86	**1.3**	76.26	0.64	BB	BB	BB	BB
BREOT-N53-0 (0-6")	9.85	0.55	NE	NE	128.43	**1.8**	213.65	**1.8**	563.22	**2.6**	261.47	**1.6**

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Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

RECEPTOR / POINT ID	Arsenic Concentration (mg/kg)[1]	Arsenic HQ[2]	Cadmium Concentration (mg/kg)[1]	Cadmium HQ[2]	Copper Concentration (mg/kg)[1]	Copper HQ[2]	Lead Concentration (mg/kg)[1]	Lead HQ[2]	Manganese Concentration (mg/kg)[1]	Manganese HQ[2]	Zinc Concentration (mg/kg)[1]	Zinc HQ[2]
BREOT-S53-0 (0-6")	17.49	0.97	NE	NE	86.20	**1.2**	79.05	0.66	BB	BB	BB	BB
BREOT-N54-0 (0-6")	10.71	0.59	NE	NE	122.22	**1.7**	215.54	**1.8**	679.13	**3.1**	298.71	**1.9**
BREOT-S54-0 (0-6")	7.94	0.44	BB	BB	82.02	**1.2**	96.56	0.8	BB	BB	BB	BB
BREOT-N55-0 (0-6")	8.86	0.49	NE	NE	103.02	**1.5**	124.06	**1**	1031.58	**4.7**	229.41	**1.4**
BREOT-S55-0 (0-6")	8.96	0.5	NE	NE	143.72	**2.1**	108.12	0.9	BB	BB	67.73	0.42
BREOT-N56-0 (0-6")	83.77	**4.7**	1.46	0.046	92.85	**1.3**	565.16	**4.7**	655.30	**3**	249.69	**1.6**
BREOT-N57-0 (0-6")	10.75	0.6	NE	NE	121.52	**1.7**	245.15	**2**	930.83	**4.2**	178.39	**1.1**
BREOT-S57-0 (0-6")	39.40	**2.2**	NE	NE	179.88	**2.6**	183.29	**1.5**	936.08	**4.3**	369.05	**2.3**
BREOT-N58-0 (0-6")	20.79	**1.2**	NE	NE	119.19	**1.7**	165.60	**1.4**	980.99	**4.5**	217.35	**1.4**
BREOT-S58-0 (0-6")	24.05	**1.3**	NE	NE	162.15	**2.3**	133.10	**1.1**	5159.58	**23**	346.46	**2.2**
BREOT-N59-0 (0-6")	34.78	**1.9**	NE	NE	BB	BB	100.13	0.83	883.13	**4**	244.14	**1.5**
BREOT-N60-0 (0-6")	19.72	**1.1**	2.39	0.075	BB	BB	80.31	0.67	360.09	**1.6**	226.75	**1.4**
BREOT-S60-0 (0-6")	81.30	**4.5**	NE	NE	225.98	**3.2**	518.02	**4.3**	2662.86	**12**	612.29	**3.8**
BREOT-S61-0 (0-6")	9.02	0.5	NE	NE	159.29	**2.3**	82.30	0.69	BB	BB	BB	BB
BREOT-N62-0 (0-6")	18.29	**1**	NE	NE	83.17	**1.2**	129.01	**1.1**	929.38	**4.2**	251.83	**1.6**
BREOT-S62-0 (0-6")	9.35	0.52	NE	NE	156.06	**2.2**	100.58	0.84	BB	BB	95.21	0.6
BREOT-N63-0 (0-6")	55.70	**3.1**	2.96	0.093	156.25	**2.2**	340.33	**2.8**	1137.09	**5.2**	464.62	**2.9**
BREOT-S63-0 (0-6")	29.41	**1.6**	NE	NE	132.12	**1.9**	214.14	**1.8**	1289.07	**5.9**	330.92	**2.1**
BREOT-N64-0 (0-6")	8.70	0.48	NE	NE	86.72	**1.2**	132.95	**1.1**	431.40	**2**	292.59	**1.8**
BREOT-S64-0 (0-6")	10.79	0.6	NE	NE	289.59	**4.1**	97.19	0.81	152.78	0.69	BB	BB
BREOT-N66-0 (0-6")	37.04	**2.1**	NE	NE	BB	BB	176.39	**1.5**	947.49	**4.3**	256.90	**1.6**
BREOT-S66-0 (0-6")	18.46	**1**	NE	NE	177.18	**2.5**	92.65	0.77	1181.81	**5.4**	381.27	**2.4**
BREOT-N67-0 (0-6")	85.03	**4.7**	NE	NE	669.00	**9.6**	1858.91	**15**	7989.94	**36**	3379.49	**21**
BREOT-S67-0 (0-6")	7.90	0.44	NE	NE	99.42	**1.4**	79.68	0.66	589.71	**2.7**	186.01	**1.2**
Outside Tailings												
BREOT-S0+25 (0-6")	37.48	**2.1**	NE	NE	89.44	**1.3**	257.98	**2.1**	957.27	**4.4**	349.15	**2.2**
BREOT-S1+25 (0-6")	9.81	0.54	NE	NE	144.72	**2.1**	141.80	**1.2**	1384.26	**6.3**	448.39	**2.8**
BREOT-S2+95 (0-6")	22.81	**1.3**	NE	NE	338.04	**4.8**	58.49	0.49	893.68	**4.1**	147.40	0.92
BREOT-S3+6 (0-6")	10.45	0.58	NE	NE	163.42	**2.3**	165.03	**1.4**	554.86	**2.5**	193.15	**1.2**
BREOT-S4+10 (0-6")	20.40	**1.1**	NE	NE	81.12	**1.2**	92.25	0.77	1067.54	**4.9**	228.36	**1.4**
BREOT-S6+25 (0-6")	28.97	**1.6**	NE	NE	153.22	**2.2**	253.53	**2.1**	843.42	**3.8**	250.72	**1.6**
BREOT-S8+25 (0-6")	34.73	**1.9**	NE	NE	171.11	**2.4**	262.03	**2.2**	862.70	**3.9**	285.77	**1.8**
BREOT-N10+25 (0-6")	20.80	**1.2**	NE	NE	172.50	**2.5**	131.67	**1.1**	786.61	**3.6**	229.27	**1.4**
BREOT-N11+25 (0-6")	10.28	0.57	NE	NE	301.99	**4.3**	138.02	**1.2**	897.40	**4.1**	182.90	**1.1**
BREOT-N12+25 (0-6")	12.91	0.72	NE	NE	163.64	**2.3**	273.11	**2.3**	981.07	**4.5**	264.87	**1.7**
BREOT-S12+25 (0-6")	254.28	**14**	NE	NE	1378.14	**20**	8704.79	**73**	3164.87	**14**	6452.66	**40**
BREOT-S12+60 (0-6")	85.14	**4.7**	NE	NE	204.49	**2.9**	1092.25	**9.1**	748.70	**3.4**	628.49	**3.9**
BREOT-N13+25 (0-6")	12.95	0.72	NE	NE	233.77	**3.3**	271.91	**2.3**	1313.55	**6**	263.48	**1.6**
BREOT-S13+25 (0-6")	185.17	**10**	NE	NE	609.00	**8.7**	3104.82	**26**	2222.53	**10**	2886.53	**18**
BREOT-S13+65 (0-6")	103.45	**5.7**	NE	NE	302.61	**4.3**	1090.75	**9.1**	1191.08	**5.4**	949.73	**5.9**
BREOT-N14+25 (0-6")	39.54	**2.2**	NE	NE	260.98	**3.7**	293.67	**2.4**	1538.91	**7**	436.24	**2.7**
BREOT-S14+25 (0-6")	698.60	**39**	NE	NE	1644.49	**23**	12764.57	**110**	3069.52	**14**	4443.90	**28**
BREOT-S14+59 (0-6")	100.48	**5.6**	NE	NE	194.01	**2.8**	792.86	**6.6**	337.61	**1.5**	337.83	**2.1**
BREOT-N15+25 (0-6")	104.46	**5.8**	NE	NE	1312.45	**19**	4602.45	**38**	5066.42	**23**	9592.28	**60**
BREOT-N15+50 (0-6")	8.85	0.49	NE	NE	271.00	**3.9**	192.60	**1.6**	1271.00	**5.8**	301.00	**1.9**
BREOT-S16+20 (0-6")	157.50	**8.8**	NE	NE	798.23	**11**	2988.56	**25**	2725.66	**12**	3869.97	**24**
BREOT-S16+75 (0-6")	26.70	**1.5**	NE	NE	128.00	**1.8**	432.60	**3.6**	598.00	**2.7**	456.20	**2.9**
BREOT-N17+25 (0-6")	163.39	**9.1**	NE	NE	792.03	**11**	8164.14	**68**	1434.83	**6.5**	1921.61	**12**
BREOT-S18+25 (0-6")	47.95	**2.7**	NE	NE	156.29	**2.2**	629.20	**5.2**	315.97	**1.4**	202.40	**1.3**
BREOT-N19+25 (0-6")	7.49	0.42	NE	NE	BB	BB	82.27	0.69	721.63	**3.3**	200.04	**1.3**
BREOT-S19+25 (0-6")	416.48	**23**	NE	NE	5996.67	**86**	49.89	0.42	475483.56	**2200**	865.49	**5.4**

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BREOT-S19+85 (0-6")	15.70	0.87	NE	NE	239.00	**3.4**	630.80	**5.3**	728.00	**3.3**	150.70	0.94
BREOT-N20+25 (0-6")	12.25	0.68	NE	NE	522.73	**7.5**	170.39	**1.4**	976.85	**4.4**	286.82	**1.8**
BREOT-S20+25 (0-6")	592.19	**33**	NE	NE	3284.04	**47**	54.89	0.46	676552.00	**3100**	1158.01	**7.2**
BREOT-S20+75 (0-6")	BB	BB	NE	NE	BB	BB	101.20	0.84	763.00	**3.5**	218.00	**1.4**
BREOT-N21+25 (0-6")	207.58	**12**	NE	NE	315.02	**4.5**	3523.56	**29**	BB	BB	428.16	**2.7**
BREOT-S21+25 (0-6")	356.03	**20**	NE	NE	8807.04	**130**	52.90	0.44	335362.81	**1500**	532.19	**3.3**
BREOT-N22+150 (0-6")	8.30	0.46	NE	NE	244.00	**3.5**	280.30	**2.3**	902.00	**4.1**	204.70	**1.3**
BREOT-N22+25 (0-6")	92.00	**5.1**	NE	NE	480.99	**6.9**	2468.14	**21**	2582.15	**12**	2993.38	**19**
BREOT-S22+25 (0-6")	91.95	**5.1**	NE	NE	193.50	**2.8**	1069.84	**8.9**	1652.02	**7.5**	352.11	**2.2**
BREOT-N23+115 (0-6")	23.30	**1.3**	NE	NE	BB	BB	65.80	0.55	698.00	**3.2**	362.50	**2.3**
BREOT-N23+25 (0-6")	328.83	**18**	NE	NE	1266.31	**18**	7213.83	**60**	4784.69	**22**	7374.61	**46**
BREOT-S23+25 (0-6")	105.05	**5.8**	NE	NE	348.81	**5**	1259.10	**10**	1244.66	**5.7**	1763.01	**11**
BREOT-S23+37.5 (0-6")	27.30	**1.5**	NE	NE	127.00	**1.8**	107.90	0.9	974.00	**4.4**	465.70	**2.9**
BREOT-N24+25 (0-6")	157.58	**8.8**	NE	NE	313.27	**4.5**	917.05	**7.6**	9125.91	**41**	1827.29	**11**
BREOT-N24+75 (0-6")	22.10	**1.2**	NE	NE	83.00	**1.2**	108.50	0.9	995.00	**4.5**	290.70	**1.8**
BREOT-S24+25 (0-6")	82.75	**4.6**	NE	NE	187.87	**2.7**	926.92	**7.7**	1837.59	**8.4**	427.43	**2.7**
BREOT-N25+25 (0-6")	7.57	0.42	NE	NE	167.55	**2.4**	67.68	0.56	330.76	**1.5**	104.64	0.65
BREOT-S25+25 (0-6")	57.22	**3.2**	NE	NE	173.54	**2.5**	542.98	**4.5**	1073.24	**4.9**	298.39	**1.9**
BREOT-S25+40 (0-6")	94.27	**5.2**	NE	NE	215.85	**3.1**	2395.38	**20**	728.68	**3.3**	326.40	**2**
BREOT-S26+37 (0-6")	22.62	**1.3**	NE	NE	84.16	**1.2**	209.14	**1.7**	838.78	**3.8**	248.41	**1.6**
BREOT-N27+25 (0-6")	9.49	0.53	NE	NE	198.45	**2.8**	117.04	0.98	749.82	**3.4**	268.08	**1.7**
BREOT-S27+25 (0-6")	35.23	**2**	NE	NE	193.97	**2.8**	396.16	**3.3**	776.07	**3.5**	196.68	**1.2**
BREOT-N28+25 (0-6")	9.43	0.52	NE	NE	BB	BB	137.19	**1.1**	602.78	**2.7**	185.96	**1.2**
BREOT-S28+25 (0-6")	96.07	**5.3**	NE	NE	189.31	**2.7**	776.21	**6.5**	422.44	**1.9**	220.08	**1.4**
BREOT-N29+25 (0-6")	13.08	0.73	NE	NE	195.19	**2.8**	371.10	**3.1**	1444.43	**6.6**	700.85	**4.4**
BREOT-S29+25 (0-6")	21.16	**1.2**	NE	NE	203.33	**2.9**	704.65	**5.9**	893.57	**4.1**	180.92	**1.1**
BREOT-N30+25 (0-6")	15.78	0.88	NE	NE	317.98	**4.5**	552.21	**4.6**	1129.04	**5.1**	395.91	**2.5**
BREOT-S30+25 (0-6")	17.83	0.99	NE	NE	186.10	**2.7**	518.46	**4.3**	878.70	**4**	307.76	**1.9**
BREOT-N31+25 (0-6")	272.98	**15**	NE	NE	2113.74	**30**	9996.43	**83**	6606.73	**30**	10115.01	**63**
BREOT-N31+75 (0-6")	BB	BB	NE	NE	217.00	**3.1**	75.40	0.63	828.00	**3.8**	198.00	**1.2**
BREOT-S31+25 (0-6")	9.05	0.5	2.59	0.081	83.74	**1.2**	175.19	**1.5**	639.52	**2.9**	282.28	**1.8**
BREOT-N32+25 (0-6")	9.04	0.5	NE	NE	265.02	**3.8**	108.72	0.91	1169.61	**5.3**	148.97	0.93
BREOT-S32+25 (0-6")	135.46	**7.5**	NE	NE	403.70	**5.8**	1198.64	**10**	1655.49	**7.5**	406.65	**2.5**
BREOT-S32+300 (0-6")	62.40	**3.5**	NE	NE	791.00	**11**	376.40	**3.1**	2487.00	**11**	522.30	**3.3**
BREOT-N33+25 (0-6")	8.72	0.48	NE	NE	382.97	**5.5**	75.04	0.63	859.55	**3.9**	107.14	0.67
BREOT-S33+25 (0-6")	33.99	**1.9**	NE	NE	890.17	**13**	137.86	**1.1**	3990.06	**18**	1188.03	**7.4**
BREOT-N34+25 (0-6")	9.85	0.55	NE	NE	361.30	**5.2**	114.56	0.95	762.62	**3.5**	138.64	0.87
BREOT-S34+25 (0-6")	51.42	**2.9**	NE	NE	407.88	**5.8**	370.90	**3.1**	1227.23	**5.6**	239.82	**1.5**
BREOT-N35+25 (0-6")	22.74	**1.3**	NE	NE	285.74	**4.1**	84.55	0.7	907.94	**4.1**	156.60	0.98
BREOT-S35+25 (0-6")	32.42	**1.8**	NE	NE	870.37	**12**	135.80	**1.1**	4167.08	**19**	1060.80	**6.6**
BREOT-N36+100 (0-6")	16.20	0.9	NE	NE	158.00	**2.3**	170.60	**1.4**	922.00	**4.2**	225.80	**1.4**
BREOT-N36+25 (0-6")	187.92	**10**	NE	NE	544.90	**7.8**	2018.00	**17**	7537.71	**34**	2366.87	**15**
BREOT-S36+25 (0-6")	35.51	**2**	NE	NE	801.71	**11**	224.40	**1.9**	3822.52	**17**	899.24	**5.6**
BREOT-N37+25 (0-6")	9.05	0.5	NE	NE	178.49	**2.5**	104.43	0.87	372.98	**1.7**	78.59	0.49
BREOT-S37+25 (0-6")	29.11	**1.6**	NE	NE	1103.69	**16**	125.60	**1**	5145.65	**23**	1021.98	**6.4**
BREOT-N38+25 (0-6")	24.25	**1.3**	NE	NE	428.73	**6.1**	150.78	**1.3**	649.96	**3**	84.05	0.53
BREOT-S38+25 (0-6")	28.14	**1.6**	NE	NE	1049.79	**15**	153.02	**1.3**	4916.10	**22**	1190.89	**7.4**
BREOT-N39+25 (0-6")	21.93	**1.2**	NE	NE	157.89	**2.3**	146.12	**1.2**	534.25	**2.4**	115.07	0.72
BREOT-S39+25 (0-6")	47.38	**2.6**	NE	NE	878.21	**13**	165.41	**1.4**	3743.47	**17**	1186.81	**7.4**
BREOT-N40+25 (0-6")	31.94	**1.8**	NE	NE	230.15	**3.3**	150.55	**1.3**	567.06	**2.6**	64.90	0.41
BREOT-S40+25 (0-6")	38.78	**2.2**	NE	NE	817.06	**12**	130.98	**1.1**	3533.00	**16**	1060.65	**6.6**

TABLE D-2: TERRESTRIAL PLANT AND INVERTEBRATE HAZARD QUOTIENT SUMMARY TABLE,
EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS
Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

RECEPTOR / POINT ID	Arsenic Concentration (mg/kg)[1]	Arsenic HQ[2]	Cadmium Concentration (mg/kg)[1]	Cadmium HQ[2]	Copper Concentration (mg/kg)[1]	Copper HQ[2]	Lead Concentration (mg/kg)[1]	Lead HQ[2]	Manganese Concentration (mg/kg)[1]	Manganese HQ[2]	Zinc Concentration (mg/kg)[1]	Zinc HQ[2]
BREOT-N41+25 (0-6")	8.79	0.49	NE	NE	90.99	**1.3**	99.38	0.83	377.70	**1.7**	115.25	0.72
BREOT-S41+25 (0-6")	64.92	**3.6**	NE	NE	316.05	**4.5**	539.44	**4.5**	2255.26	**10**	784.54	**4.9**
BREOT-N42+25 (0-6")	BB	BB	NE	NE	BB	BB	45.00	0.38	BB	BB	57.58	0.36
BREOT-S42+25 (0-6")	8.45	0.47	NE	NE	482.26	**6.9**	121.33	**1**	1968.20	**8.9**	1138.94	**7.1**
BREOT-N43+12.5 (0-6")	39.41	**2.2**	NE	NE	152.41	**2.2**	262.17	**2.2**	744.08	**3.4**	278.97	**1.7**
BREOT-N43+40 (0-6")	8.21	0.46	NE	NE	79.70	**1.1**	116.88	0.97	749.77	**3.4**	220.66	**1.4**
BREOT-S43+25 (0-6")	14.25	0.79	NE	NE	196.91	**2.8**	73.67	0.61	949.76	**4.3**	441.68	**2.8**
BREOT-N44+55 (0-6")	30.56	**1.7**	NE	NE	186.36	**2.7**	154.10	**1.3**	664.38	**3**	225.63	**1.4**
BREOT-S44+25 (0-6")	22.15	**1.2**	NE	NE	BB	BB	71.73	0.6	1258.55	**5.7**	327.27	**2**
BREOT-N45+25 (0-6")	7.97	0.44	NE	NE	85.87	**1.2**	110.40	0.92	650.14	**3**	230.88	**1.4**
BREOT-S45+25 (0-6")	BB	BB	NE	NE	BB	BB	54.77	0.46	303.28	**1.4**	458.52	**2.9**
BREOT-N46+25 (0-6")	42.10	**2.3**	NE	NE	336.04	**4.8**	157.99	**1.3**	966.97	**4.4**	517.75	**3.2**
BREOT-S46+25 (0-6")	BB	BB	NE	NE	153.24	**2.2**	50.48	0.42	BB	BB	346.00	**2.2**
BREOT-N47+25 (0-6")	9.62	0.53	NE	NE	253.31	**3.6**	128.70	**1.1**	779.19	**3.5**	344.27	**2.2**
BREOT-S47+25 (0-6")	20.76	**1.2**	NE	NE	BB	BB	36.70	0.31	BB	BB	105.83	0.66
BREOT-N48+25 (0-6")	7.87	0.44	NE	NE	79.64	**1.1**	109.67	0.91	617.40	**2.8**	132.85	0.83
BREOT-S48+25 (0-6")	41.54	**2.3**	NE	NE	87.68	**1.3**	138.65	**1.2**	BB	BB	BB	BB
BREOT-N49+25 (0-6")	58.18	**3.2**	NE	NE	103.48	**1.5**	407.90	**3.4**	925.79	**4.2**	341.71	**2.1**
BREOT-S49+25 (0-6")	9.40	0.52	NE	NE	BB	BB	138.22	**1.2**	BB	BB	BB	BB
BREOT-N51+25 (0-6")	23.36	**1.3**	NE	NE	91.50	**1.3**	94.58	0.79	783.81	**3.6**	166.35	**1**
BREOT-S51+25 (0-6")	29.97	**1.7**	NE	NE	BB	BB	29.73	0.25	BB	BB	133.95	0.84
BREOT-N52+25 (0-6")	46.68	**2.6**	NE	NE	114.98	**1.6**	214.54	**1.8**	324.11	**1.5**	167.71	**1**
BREOT-S52+25 (0-6")	26.17	**1.5**	NE	NE	BB	BB	61.93	0.52	BB	BB	BB	BB
BREOT-N53+25 (0-6")	BB	BB	NE	NE	111.55	**1.6**	81.51	0.68	BB	BB	166.57	**1**
BREOT-S53+25 (0-6")	8.94	0.5	NE	NE	BB	BB	113.09	0.94	BB	BB	BB	BB
BREOT-S54+25 (0-6")	BB	BB	NE	NE	BB	BB	64.42	0.54	BB	BB	BB	BB
BREOT-N55+25 (0-6")	19.83	**1.1**	NE	NE	BB	BB	80.28	0.67	713.58	**3.2**	146.57	0.92
BREOT-S55+25 (0-6")	BB	BB	NE	NE	88.46	**1.3**	69.48	0.58	BB	BB	BB	BB
BREOT-N56+25 (0-6")	9.11	0.51	NE	NE	BB	BB	110.55	0.92	698.72	**3.2**	144.72	0.9
BREOT-S56+25 (0-6")	22.72	**1.3**	NE	NE	201.37	**2.9**	90.88	0.76	BB	BB	BB	BB
BREOT-N57+25 (0-6")	7.90	0.44	NE	NE	BB	BB	97.96	0.82	736.05	**3.3**	124.54	0.78
BREOT-S57+25 (0-6")	34.53	**1.9**	NE	NE	140.78	**2**	97.18	0.81	2445.48	**11**	203.95	**1.3**
BREOT-N58+25 (0-6")	23.11	**1.3**	NE	NE	81.26	**1.2**	92.80	0.77	973.28	**4.4**	212.21	**1.3**
BREOT-S58+25 (0-6")	9.24	0.51	NE	NE	155.70	**2.2**	125.25	**1**	BB	BB	89.96	0.56
BREOT-N59+25 (0-6")	53.61	**3**	NE	NE	111.10	**1.6**	427.76	**3.6**	1535.26	**7**	351.54	**2.2**
BREOT-N60+25 (0-6")	24.62	**1.4**	NE	NE	BB	BB	91.64	0.76	523.70	**2.4**	235.93	**1.5**
BREOT-S60+25 (0-6")	26.68	**1.5**	NE	NE	200.87	**2.9**	77.00	0.64	BB	BB	BB	BB
BREOT-S61+25 (0-6")	7.88	0.44	NE	NE	162.11	**2.3**	60.92	0.51	BB	BB	BB	BB
BREOT-N62+25 (0-6")	9.24	0.51	NE	NE	107.19	**1.5**	156.97	**1.3**	870.74	**4**	261.02	**1.6**
BREOT-S62+25 (0-6")	BB	BB	NE	NE	BB	BB	34.38	0.29	BB	BB	115.55	0.72
BREOT-N63+25 (0-6")	73.74	**4.1**	NE	NE	264.04	**3.8**	547.67	**4.6**	1368.57	**6.2**	274.29	**1.7**
BREOT-S63+25 (0-6")	BB	BB	NE	NE	97.85	**1.4**	35.19	0.29	BB	BB	193.90	**1.2**
BREOT-N64+25 (0-6")	20.85	**1.2**	NE	NE	99.16	**1.4**	128.10	**1.1**	480.19	**2.2**	307.40	**1.9**
BREOT-S64+25 (0-6")	25.50	**1.4**	NE	NE	289.43	**4.1**	87.66	0.73	189.58	0.86	BB	BB
BREOT-S65+25 (0-6")	9.71	0.54	NE	NE	268.75	**3.8**	73.28	0.61	BB	BB	BB	BB
BREOT-N66+25 (0-6")	29.85	**1.7**	NE	NE	BB	BB	100.81	0.84	745.62	**3.4**	248.03	**1.6**
BREOT-S66+25 (0-6")	38.85	**2.2**	NE	NE	267.49	**3.8**	66.29	0.55	BB	BB	74.23	0.46
BREOT-N67+125 (0-6")	53.20	**3**	NE	NE	148.00	**2.1**	423.90	**3.5**	386.00	**1.8**	363.00	**2.3**
BREOT-S67+25 (0-6")	26.15	**1.5**	NE	NE	305.18	**4.4**	85.63	0.71	BB	BB	BB	BB
BREOT-N67+25 (0-6")	104.37	**5.8**	NE	NE	176.25	**2.5**	1541.10	**13**	904.75	**4.1**	377.36	**2.4**

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Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

RECEPTOR / POINT ID	Arsenic Concentration (mg/kg)[1]	Arsenic HQ[2]	Cadmium Concentration (mg/kg)[1]	Cadmium HQ[2]	Copper Concentration (mg/kg)[1]	Copper HQ[2]	Lead Concentration (mg/kg)[1]	Lead HQ[2]	Manganese Concentration (mg/kg)[1]	Manganese HQ[2]	Zinc Concentration (mg/kg)[1]	Zinc HQ[2]
Screening Benchmark - Terrestrial Invertebrates (mg/kg)[3]	**60**		**140**		**80**		**1700**		**450**		**120**	
Terrestrial Invertebrates												
Reference Sites												
ACBG-1 (0-6")	26.03	0.43	0.49	0.0035	79.58	0.99	23.09	0.014	294.72	0.65	136.91	**1.1**
ACBG-2 (0-6")	18.33	0.31	0.52	0.0037	250.03	**3.1**	38.26	0.023	997.31	**2.2**	83.93	0.7
UBRBG-202 (0-6")	13.93	0.23	2.90	0.021	218.49	**2.7**	54.37	0.032	901.15	**2**	53.72	0.45
UBRBG-204 (0-6")	19.50	0.33	2.70	0.019	104.28	**1.3**	53.20	0.031	693.84	**1.5**	342.67	**2.9**
Inside Tailings												
BREOT-S6-12.5 (0-6")	199.13	**3.3**	NE	NE	243.71	**3**	1550.47	0.91	BB	BB	382.85	**3.2**
BREOT-S2-12.5 (0-6")	259.46	**4.3**	NE	NE	731.57	**9.1**	1944.58	**1.1**	3911.45	**8.7**	2539.69	**21**
BREOT-S0-12.5 (0-6")	127.73	**2.1**	NE	NE	138.44	**1.7**	888.73	0.52	BB	BB	247.57	**2.1**
BREOT-S1-12.5 (0-6")	92.49	**1.5**	NE	NE	108.70	**1.4**	809.31	0.48	551.72	**1.2**	166.30	**1.4**
BREOT-S7-25 (0-6")	11.98	0.2	NE	NE	191.75	**2.4**	170.67	0.1	1375.17	**3.1**	233.17	**1.9**
BREOT-S8-12.5 (0-6")	105.74	**1.8**	NE	NE	161.45	**2**	648.55	0.38	625.82	**1.4**	144.55	**1.2**
BREOT-S9-12.5 (0-6")	100.86	**1.7**	NE	NE	216.48	**2.7**	678.76	0.4	785.02	**1.7**	331.12	**2.8**
BREOT-N10-12.5 (0-6")	479.81	**8**	NE	NE	1570.12	**20**	9658.18	**5.7**	3565.84	**7.9**	4625.95	**39**
BREOT-N11-12.5 (0-6")	244.76	**4.1**	NE	NE	222.91	**2.8**	2688.98	**1.6**	493.58	**1.1**	485.28	**4**
BREOT-N11-125 (0-6")	171.66	**2.9**	NE	NE	166.82	**2.1**	2225.06	**1.3**	319.11	0.71	398.80	**3.3**
BREOT-S11-12 (0-6")	281.43	**4.7**	NE	NE	1096.87	**14**	6520.09	**3.8**	3300.97	**7.3**	7092.27	**59**
BREOT-S11-63 (0-6")	145.93	**2.4**	NE	NE	252.21	**3.2**	2051.33	**1.2**	376.49	0.84	400.17	**3.3**
UBDT-TP-6 (0-2")	704.66	**12**	98.70	0.71	2506.14	**31**	15558.62	**9.2**	7051.66	**16**	19805.25	**170**
UBDT-TP-6 (2-12")	637.00	**11**	28.70	0.21	1969.72	**25**	11870.99	**7**	5489.22	**12**	12294.37	**100**
UBDT-TP-6 (12-24")	515.72	**8.6**	161.00	**1.2**	3721.50	**47**	6640.50	**3.9**	7270.97	**16**	12541.27	**100**
UBDT-TP-6 (24-36")	122.67	**2**	9.75	0.07	215.21	**2.7**	533.32	0.31	2805.10	**6.2**	915.09	**7.6**
UBDT-TP-6 (36-48")	180.03	**3**	13.70	0.098	1578.28	**20**	1202.79	0.71	7680.17	**17**	2486.44	**21**
UBDT-TP-6 (48-60")	59.88	**1**	10.50	0.075	912.53	**11**	547.29	0.32	4663.84	**10**	1901.90	**16**
BREOT-N12-12.5 (0-6")	115.35	**1.9**	9.13	0.065	292.34	**3.7**	1521.42	0.89	2241.87	**5**	1176.38	**9.8**
BREOT-S12-12.5 (0-6")	110.79	**1.8**	NE	NE	521.31	**6.5**	3367.38	**2**	1880.21	**4.2**	2904.55	**24**
BREOT-S13-12.5 (0-6")	239.13	**4**	NE	NE	1006.99	**13**	5023.64	**3**	2611.95	**5.8**	5154.71	**43**
BREOT-S14-12.5 (0-6")	67.39	**1.1**	NE	NE	409.08	**5.1**	1393.00	0.82	1351.62	**3**	2558.11	**21**
BREOT-N15-12.5 (0-6")	273.10	**4.6**	NE	NE	289.27	**3.6**	2842.60	**1.7**	BB	BB	2709.06	**23**
BREOT-S15-12.5 (0-6")	374.23	**6.2**	3.40	0.024	315.66	**3.9**	2577.77	**1.5**	BB	BB	350.03	**2.9**
BREOT-N16-12.5 (0-6")	218.83	**3.6**	NE	NE	370.95	**4.6**	2704.88	**1.6**	2158.76	**4.8**	891.38	**7.4**
BREOT-N16-25 (0-6")	14.22	0.24	NE	NE	205.35	**2.6**	329.07	0.19	1143.50	**2.5**	175.38	**1.5**
BREOT-S16-12.5 (0-6")	147.90	**2.5**	NE	NE	153.70	**1.9**	1917.22	**1.1**	BB	BB	177.87	**1.5**
BREOT-N17-12.5 (0-6")	160.20	**2.7**	NE	NE	157.39	**2**	2330.84	**1.4**	602.57	**1.3**	384.17	**3.2**
BREOT-S17-12.5 (0-6")	67.01	**1.1**	NE	NE	136.95	**1.7**	703.41	0.41	384.72	0.85	153.28	**1.3**
BREOT-S17-25 (0-6")	55.91	0.93	NE	NE	98.83	**1.2**	546.41	0.32	990.56	**2.2**	233.77	**1.9**
UBDT-TP-4 (0-2")	175.85	**2.9**	18.20	0.13	344.97	**4.3**	1297.49	0.76	6145.04	**14**	2380.90	**20**
UBDT-TP-4 (2-12")	118.65	**2**	3.57	0.026	314.91	**3.9**	1222.98	0.72	3891.51	**8.6**	1430.22	**12**
UBDT-TP-4 (12-24")	104.55	**1.7**	3.15	0.023	303.75	**3.8**	826.25	0.49	1909.73	**4.2**	781.86	**6.5**
UBDT-TP-4 (24-36")	63.82	**1.1**	4.79	0.034	165.67	**2.1**	670.83	0.39	1777.84	**4**	1126.52	**9.4**
BREOT-N18-12.5 (0-6")	207.74	**3.5**	NE	NE	450.44	**5.6**	2015.18	**1.2**	5987.63	**13**	1599.79	**13**
BREOT-N18-25 (0-6")	22.86	0.38	NE	NE	BB	BB	180.30	0.11	565.89	**1.3**	307.33	**2.6**
BREOT-S18-12.5 (0-6")	104.90	**1.7**	NE	NE	219.99	**2.7**	822.27	0.48	1509.92	**3.4**	571.01	**4.8**
BREOT-N19-10 (0-6")	185.08	**3.1**	NE	NE	237.52	**3**	1881.36	**1.1**	884.00	**2**	472.82	**3.9**
BREOT-S19-12.5 (0-6")	75.00	**1.3**	NE	NE	256.17	**3.2**	1014.27	0.6	2865.56	**6.4**	1589.57	**13**
UBDT-TP-5 (0-2")	95.18	**1.6**	10.10	0.072	410.70	**5.1**	962.22	0.57	4632.92	**10**	2627.39	**22**
UBDT-TP-5 (2-12")	92.46	**1.5**	5.74	0.041	325.44	**4.1**	1022.96	0.6	3870.41	**8.6**	1741.41	**15**

TABLE D-2: TERRESTRIAL PLANT AND INVERTEBRATE HAZARD QUOTIENT SUMMARY TABLE,
EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS
Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

RECEPTOR / POINT ID	Arsenic Concentration (mg/kg)[1]	Arsenic HQ[2]	Cadmium Concentration (mg/kg)[1]	Cadmium HQ[2]	Copper Concentration (mg/kg)[1]	Copper HQ[2]	Lead Concentration (mg/kg)[1]	Lead HQ[2]	Manganese Concentration (mg/kg)[1]	Manganese HQ[2]	Zinc Concentration (mg/kg)[1]	Zinc HQ[2]
UBDT-TP-5 (12-24")	71.97	**1.2**	7.55	0.054	344.96	**4.3**	1042.02	0.61	3529.29	**7.8**	1550.77	**13**
BREOT-N20-12.5 (0-6")	243.16	**4.1**	NE	NE	169.80	**2.1**	1165.52	0.69	765.48	**1.7**	330.85	**2.8**
UBDT-TP-3 (0-2")	170.32	**2.8**	1.82	0.013	283.03	**3.5**	1344.02	0.79	798.38	**1.8**	446.55	**3.7**
UBDT-TP-3 (2-12")	164.22	**2.7**	2.28	0.016	190.65	**2.4**	1815.82	**1.1**	BB	BB	292.80	**2.4**
UBDT-TP-3 (12-24")	152.33	**2.5**	0.71	0.0051	208.28	**2.6**	1247.74	0.73	301.20	0.67	228.40	**1.9**
UBDT-TP-3 (24-36")	136.12	**2.3**	2.14	0.015	224.30	**2.8**	1575.09	0.93	360.15	0.8	366.31	**3.1**
UBDT-TP-3 (36-48")	223.35	**3.7**	5.45	0.039	350.14	**4.4**	1744.85	**1**	5541.67	**12**	563.29	**4.7**
UBDT-TP-3 (48-60")	46.26	0.77	2.54	0.018	184.12	**2.3**	356.85	0.21	2627.23	**5.8**	790.23	**6.6**
BREOT-N21-12.5 (0-6")	97.67	**1.6**	NE	NE	283.61	**3.5**	1147.33	0.67	6826.54	**15**	2568.01	**21**
BREOT-N22-12.5 (0-6")	184.79	**3.1**	NE	NE	206.34	**2.6**	1477.50	0.87	671.89	**1.5**	413.84	**3.4**
BREOT-N23-12.5 (0-6")	199.12	**3.3**	NE	NE	234.05	**2.9**	1233.96	0.73	1464.20	**3.3**	680.85	**5.7**
BREOT-S23-12.5 (0-6")	113.58	**1.9**	NE	NE	795.07	**9.9**	1722.93	**1**	15887.50	**35**	8416.19	**70**
UBDT-TP-2 (0-2")	220.46	**3.7**	19.00	0.14	448.18	**5.6**	1186.50	0.7	5475.99	**12**	3207.29	**27**
UBDT-TP-2 (2-12")	110.24	**1.8**	12.80	0.091	448.83	**5.6**	875.37	0.51	7208.15	**16**	1996.64	**17**
UBDT-TP-2 (12-24")	30.62	0.51	17.20	0.12	306.95	**3.8**	1256.05	0.74	5435.65	**12**	1712.09	**14**
UBDT-TP-2 (24-36")	64.17	**1.1**	6.05	0.043	186.57	**2.3**	746.88	0.44	2760.12	**6.1**	1450.98	**12**
UBDT-TP-2 (36-48")	70.54	**1.2**	5.40	0.039	245.71	**3.1**	1226.09	0.72	2786.87	**6.2**	1525.51	**13**
BREOT-S24-12.5 (0-6")	141.25	**2.4**	NE	NE	677.22	**8.5**	1779.36	**1**	16270.30	**36**	6368.59	**53**
BREOT-N25-50 (0-6")	337.73	**5.6**	NE	NE	1619.17	**20**	8799.84	**5.2**	4818.56	**11**	7971.48	**66**
BREOT-N25-95 (0-6")	274.98	**4.6**	NE	NE	107.50	**1.3**	1372.31	0.81	BB	BB	101.20	0.84
BREOT-S25-12.5 (0-6")	159.78	**2.7**	NE	NE	388.96	**4.9**	1570.29	0.92	5808.09	**13**	1322.52	**11**
BREOT-S25-40 (0-6")	120.74	**2**	NE	NE	167.80	**2.1**	2001.59	**1.2**	BB	BB	204.68	**1.7**
BREOT-N26A-25 (0-6")	18.52	0.31	NE	NE	99.63	**1.2**	75.36	0.044	457.95	**1**	152.98	**1.3**
BREOT-N26B-25 (0-6")	111.59	**1.9**	NE	NE	734.66	**9.2**	1938.67	**1.1**	1901.45	**4.2**	2552.45	**21**
BREOT-N26-50 (0-6")	248.11	**4.1**	NE	NE	1245.76	**16**	6356.76	**3.7**	4810.68	**11**	11429.52	**95**
BREOT-N26-75 (0-6")	212.11	**3.5**	NE	NE	1035.92	**13**	4206.52	**2.5**	2654.83	**5.9**	5833.52	**49**
BREOT-S26-12.5 (0-6")	101.91	**1.7**	NE	NE	120.02	**1.5**	1146.16	0.67	2378.49	**5.3**	269.12	**2.2**
BREOT-S26-40 (0-6")	146.87	**2.4**	NE	NE	408.45	**5.1**	1421.68	0.84	7172.72	**16**	3621.86	**30**
BREOT-N27-30 (0-6")	414.94	**6.9**	NE	NE	1230.19	**15**	8804.76	**5.2**	2657.24	**5.9**	2635.83	**22**
BREOT-N27-75 (0-6")	411.76	**6.9**	84.80	0.61	2168.38	**27**	10203.90	**6**	7569.65	**17**	10273.20	**86**
BREOT-S27-12.5 (0-6")	128.14	**2.1**	NE	NE	315.63	**3.9**	2396.22	**1.4**	1518.19	**3.4**	367.11	**3.1**
BREOT-N28-110 (0-6")	115.48	**1.9**	NE	NE	509.19	**6.4**	2353.45	**1.4**	1403.29	**3.1**	1554.62	**13**
BREOT-N28-55 (0-6")	1224.98	**20**	NE	NE	2950.39	**37**	21759.55	**13**	3717.41	**8.3**	14964.78	**120**
BREOT-S28-12.5 (0-6")	79.51	**1.3**	NE	NE	428.71	**5.4**	1077.29	0.63	8379.43	**19**	2980.96	**25**
UBDT-TP-1 (0-2")	394.40	**6.6**	65.40	0.47	980.56	**12**	7654.77	**4.5**	5549.95	**12**	8949.42	**75**
UBDT-TP-1 (2-12")	687.03	**11**	66.40	0.47	2011.28	**25**	9854.05	**5.8**	5524.94	**12**	9631.58	**80**
UBDT-TP-1 (12-24")	216.68	**3.6**	52.30	0.37	1818.93	**23**	9202.52	**5.4**	5673.38	**13**	9081.28	**76**
UBDT-TP-1 (24-36")	165.57	**2.8**	27.50	0.2	1343.83	**17**	2864.20	**1.7**	7547.27	**17**	6177.70	**51**
UBDT-TP-1 (36-48")	11.76	0.2	10.40	0.074	291.50	**3.6**	174.44	0.1	1199.94	**2.7**	1916.20	**16**
UBDT-TP-1 (48-60")	12.59	0.21	2.71	0.019	183.67	**2.3**	208.34	0.12	1493.68	**3.3**	637.55	**5.3**
BREOT-N29-30 (0-6")	625.48	**10**	NE	NE	2473.12	**31**	11328.40	**6.7**	5761.55	**13**	13665.50	**110**
BREOT-S29-12.5 (0-6")	152.09	**2.5**	NE	NE	402.02	**5**	1322.57	0.78	7069.93	**16**	916.43	**7.6**
BREOT-N30-12.5 (0-6")	103.32	**1.7**	4.84	0.035	451.91	**5.6**	3253.89	**1.9**	1971.04	**4.4**	775.58	**6.5**
BREOT-S30-12.5 (0-6")	147.02	**2.5**	NE	NE	312.86	**3.9**	1544.00	0.91	4859.08	**11**	1205.32	**10**
BREOT-N31-12.5 (0-6")	136.72	**2.3**	NE	NE	318.38	**4**	3254.74	**1.9**	BB	BB	586.17	**4.9**
BREOT-S31-25 (0-6")	83.17	**1.4**	2.59	0.019	197.51	**2.5**	888.60	0.52	3918.11	**8.7**	412.50	**3.4**
BREOT-S31-5 (0-6")	169.13	**2.8**	NE	NE	296.71	**3.7**	1132.07	0.67	6384.85	**14**	1113.37	**9.3**
BREOT-N32-12.5 (0-6")	303.37	**5.1**	NE	NE	212.73	**2.7**	1178.34	0.69	BB	BB	1062.19	**8.9**
BREOT-S32-6 (0-6")	177.21	**3**	NE	NE	211.29	**2.6**	1146.52	0.67	1381.49	**3.1**	206.88	**1.7**
BREOT-N33-12.5 (0-6")	289.71	**4.8**	1.29	0.0092	236.90	**3**	3438.68	**2**	401.88	0.89	356.00	**3**
BREOT-S33-12.5 (0-6")	14.60	0.24	NE	NE	579.88	**7.2**	430.07	0.25	2695.65	**6**	543.12	**4.5**

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Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

RECEPTOR / POINT ID	Arsenic Concentration (mg/kg)[1]	Arsenic HQ[2]	Cadmium Concentration (mg/kg)[1]	Cadmium HQ[2]	Copper Concentration (mg/kg)[1]	Copper HQ[2]	Lead Concentration (mg/kg)[1]	Lead HQ[2]	Manganese Concentration (mg/kg)[1]	Manganese HQ[2]	Zinc Concentration (mg/kg)[1]	Zinc HQ[2]
BREOT-N35-12.5 (0-6")	79.02	**1.3**	NE	NE	186.74	**2.3**	597.07	0.35	BB	BB	476.49	**4**
BREOT-S35-12.5 (0-6")	187.43	**3.1**	NE	NE	452.95	**5.7**	1553.67	0.91	8469.79	**19**	2205.73	**18**
BREOT-N36-12.5 (0-6")	154.38	**2.6**	NE	NE	305.05	**3.8**	1626.17	0.96	3261.49	**7.2**	618.89	**5.2**
BREOT-S36-12.5 (0-6")	148.62	**2.5**	NE	NE	201.96	**2.5**	1548.78	0.91	1127.85	**2.5**	470.67	**3.9**
BREOT-N37-12.5 (0-6")	221.20	**3.7**	NE	NE	184.16	**2.3**	1529.00	0.9	329.81	0.73	202.79	**1.7**
BREOT-S37-12.5 (0-6")	107.14	**1.8**	NE	NE	295.95	**3.7**	779.69	0.46	1332.18	**3**	520.65	**4.3**
BREOT-N38-12.5 (0-6")	102.30	**1.7**	NE	NE	208.15	**2.6**	795.42	0.47	665.14	**1.5**	220.84	**1.8**
BREOT-S38-12.5 (0-6")	201.66	**3.4**	15.70	0.11	695.84	**8.7**	1290.14	0.76	11757.94	**26**	1917.93	**16**
BREOT-N39-12.5 (0-6")	250.00	**4.2**	NE	NE	303.46	**3.8**	2831.75	**1.7**	989.39	**2.2**	1094.73	**9.1**
BREOT-S39-12.5 (0-6")	158.20	**2.6**	NE	NE	520.88	**6.5**	1528.85	0.9	4606.88	**10**	1330.47	**11**
BREOT-N40-12.5 (0-6")	151.87	**2.5**	NE	NE	404.03	**5.1**	1895.94	**1.1**	4630.16	**10**	1356.23	**11**
BREOT-S40-14 (0-6")	263.91	**4.4**	NE	NE	494.66	**6.2**	1365.01	0.8	4276.43	**9.5**	1422.26	**12**
BREOT-N41-12.5 (0-6")	28.13	0.47	5.11	0.037	300.08	**3.8**	1163.40	0.68	3408.44	**7.6**	1034.53	**8.6**
BREOT-S41-12.5 (0-6")	330.71	**5.5**	9.99	0.071	451.40	**5.6**	1686.75	0.99	4277.16	**9.5**	1302.05	**11**
BREOT-N42-35 (0-6")	118.57	**2**	NE	NE	244.28	**3.1**	1852.91	**1.1**	785.10	**1.7**	205.76	**1.7**
BREOT-S42-25 (0-6")	198.28	**3.3**	NE	NE	268.63	**3.4**	2287.00	**1.3**	1659.77	**3.7**	325.03	**2.7**
BREOT-N43-12.5 (0-6")	168.90	**2.8**	NE	NE	460.30	**5.8**	2116.98	**1.2**	10092.37	**22**	2591.03	**22**
BREOT-S43-12.5 (0-6")	162.43	**2.7**	NE	NE	244.68	**3.1**	1284.48	0.76	2218.08	**4.9**	476.75	**4**
BREOT-N44-30 (0-6")	116.27	**1.9**	NE	NE	188.08	**2.4**	979.68	0.58	791.45	**1.8**	482.21	**4**
BREOT-S44-12.5 (0-6")	139.83	**2.3**	NE	NE	428.06	**5.4**	2715.97	**1.6**	7438.63	**17**	669.67	**5.6**
BREOT-N45-12.5 (0-6")	164.64	**2.7**	NE	NE	316.49	**4**	1084.65	0.64	957.48	**2.1**	237.58	**2**
BREOT-N45-25 (0-6")	34.68	0.58	NE	NE	443.81	**5.5**	143.04	0.084	829.09	**1.8**	349.68	**2.9**
BREOT-S45-6 (0-6")	131.54	**2.2**	NE	NE	304.59	**3.8**	3020.51	**1.8**	1277.86	**2.8**	379.02	**3.2**
BREOT-N46-12.5 (0-6")	66.02	**1.1**	NE	NE	123.11	**1.5**	778.34	0.46	367.40	0.82	127.57	**1.1**
BREOT-S46-12.5 (0-6")	64.02	**1.1**	NE	NE	152.16	**1.9**	1425.48	0.84	365.37	0.81	368.02	**3.1**
BREOT-S46-40 (0-6")	93.82	**1.6**	NE	NE	296.99	**3.7**	2997.69	**1.8**	559.43	**1.2**	551.67	**4.6**
BREOT-N47-12.5 (0-6")	96.64	**1.6**	1.40	0.01	277.83	**3.5**	1281.62	0.75	703.76	**1.6**	251.86	**2.1**
BREOT-S47-999 (0-6")	152.47	**2.5**	NE	NE	411.98	**5.1**	4007.74	**2.4**	747.31	**1.7**	400.31	**3.3**
BREOT-S48-12.5 (0-6")	46.54	0.78	NE	NE	98.87	**1.2**	122.44	0.072	BB	BB	BB	BB
BREOT-S49-2.5 (0-6")	55.27	0.92	NE	NE	129.89	**1.6**	115.09	0.068	BB	BB	BB	BB
BREOT-S50-12.5 (0-6")	17.29	0.29	NE	NE	231.47	**2.9**	667.41	0.39	BB	BB	BB	BB
BREOT-S50-25 (0-6")	26.05	0.43	NE	NE	BB	BB	45.17	0.027	BB	BB	BB	BB
BREOT-N52-60 (0-6")	213.90	**3.6**	NE	NE	212.06	**2.7**	2822.18	**1.7**	BB	BB	419.74	**3.5**
BREOT-S52-12.5 (0-6")	96.65	**1.6**	NE	NE	1100.35	**14**	61.47	0.036	BB	BB	59.90	0.5
BREOT-S53-12.5 (0-6")	28.69	0.48	NE	NE	255.75	**3.2**	185.40	0.11	BB	BB	94.89	0.79
BREOT-S54-12.5 (0-6")	21.09	0.35	NE	NE	160.48	**2**	88.08	0.052	BB	BB	105.75	0.88
BREOT-N55-12.5 (0-6")	186.67	**3.1**	NE	NE	433.85	**5.4**	2379.34	**1.4**	3749.33	**8.3**	2394.16	**20**
BREOT-S55-12.5 (0-6")	64.85	**1.1**	1.08	0.0077	172.93	**2.2**	638.13	0.38	1546.70	**3.4**	210.09	**1.8**
BREOT-N56-12.5 (0-6")	126.72	**2.1**	4.35	0.031	321.29	**4**	2220.21	**1.3**	1788.13	**4**	689.53	**5.7**
BREOT-S56-12.5 (0-6")	27.44	0.46	NE	NE	149.27	**1.9**	205.82	0.12	951.66	**2.1**	349.43	**2.9**
BREOT-N57-12.5 (0-6")	123.09	**2.1**	NE	NE	236.03	**3**	1365.89	0.8	1193.93	**2.7**	291.39	**2.4**
BREOT-S57-12.5 (0-6")	72.02	**1.2**	NE	NE	173.02	**2.2**	621.75	0.37	1242.41	**2.8**	289.30	**2.4**
BREOT-N58-12.5 (0-6")	52.50	0.88	NE	NE	153.30	**1.9**	327.95	0.19	2056.66	**4.6**	328.90	**2.7**
BREOT-S58-12 (0-6")	82.66	**1.4**	NE	NE	257.25	**3.2**	522.97	0.31	1286.58	**2.9**	757.68	**6.3**
BREOT-N59-18 (0-6")	91.84	**1.5**	NE	NE	105.58	**1.3**	919.82	0.54	704.95	**1.6**	224.40	**1.9**
BREOT-N60-12.5 (0-6")	25.98	0.43	NE	NE	BB	BB	266.35	0.16	1203.67	**2.7**	315.50	**2.6**
BREOT-S60-12.5 (0-6")	79.50	**1.3**	NE	NE	187.98	**2.3**	1113.98	0.66	BB	BB	591.30	**4.9**
BREOT-S61-12.5 (0-6")	44.74	0.75	NE	NE	258.12	**3.2**	890.89	0.52	6387.23	**14**	2339.82	**19**
BREOT-N62-12.5 (0-6")	9.05	0.15	NE	NE	87.44	**1.1**	96.79	0.057	620.79	**1.4**	121.08	**1**
BREOT-S62-12.5 (0-6")	102.10	**1.7**	NE	NE	349.33	**4.4**	1549.38	0.91	7601.47	**17**	2259.20	**19**
BREOT-S63-12.5 (0-6")	62.85	**1**	NE	NE	141.21	**1.8**	390.83	0.23	1089.45	**2.4**	294.21	**2.5**

TABLE D-2: TERRESTRIAL PLANT AND INVERTEBRATE HAZARD QUOTIENT SUMMARY TABLE,
EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS
Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

RECEPTOR / POINT ID	Arsenic Concentration (mg/kg)[1]	Arsenic HQ[2]	Cadmium Concentration (mg/kg)[1]	Cadmium HQ[2]	Copper Concentration (mg/kg)[1]	Copper HQ[2]	Lead Concentration (mg/kg)[1]	Lead HQ[2]	Manganese Concentration (mg/kg)[1]	Manganese HQ[2]	Zinc Concentration (mg/kg)[1]	Zinc HQ[2]
BREOT-N64-12.5 (0-6")	39.56	0.66	NE	NE	94.63	**1.2**	323.90	0.19	1097.41	**2.4**	286.37	**2.4**
BREOT-N64-20 (0-6")	48.88	0.81	NE	NE	114.74	**1.4**	270.37	0.16	1064.53	**2.4**	214.43	**1.8**
BREOT-S64-12.5 (0-6")	62.53	**1**	NE	NE	167.69	**2.1**	648.58	0.38	364.06	0.81	193.53	**1.6**
BREOT-N65-12.5 (0-6")	28.10	0.47	NE	NE	122.79	**1.5**	179.45	0.11	944.07	**2.1**	312.19	**2.6**
BREOT-S65-12.5 (0-6")	121.13	**2**	NE	NE	181.44	**2.3**	1764.44	**1**	BB	BB	228.17	**1.9**
BREOT-N66-5 (0-6")	98.58	**1.6**	NE	NE	134.63	**1.7**	688.86	0.41	533.21	**1.2**	189.89	**1.6**
BREOT-S66-12.5 (0-6")	69.46	**1.2**	NE	NE	147.83	**1.8**	608.81	0.36	905.62	**2**	230.09	**1.9**
BREOT-N67-12.5 (0-6")	97.45	**1.6**	NE	NE	563.05	**7**	1119.02	0.66	10544.95	**23**	3099.17	**26**
BREOT-S67-12.5 (0-6")	12.67	0.21	NE	NE	BB	BB	244.51	0.14	588.38	**1.3**	134.47	**1.1**
At Edge of Tailings												
BREOT-S0-0 (06)	78.73	**1.3**	NE	NE	120.10	**1.5**	468.40	0.28	762.32	**1.7**	456.04	**3.8**
BREOT-S1-0 (0-6")	238.91	**4**	NE	NE	210.69	**2.6**	2278.72	**1.3**	846.69	**1.9**	263.49	**2.2**
BREOT-S2-0 (0-6")	68.12	**1.1**	NE	NE	299.17	**3.7**	666.20	0.39	2259.84	**5**	290.36	**2.4**
BREOT-S3-0 (0-6")	266.89	**4.4**	NE	NE	362.11	**4.5**	1479.30	0.87	5701.72	**13**	1653.52	**14**
BREOT-S4-0 (0-6")	242.38	**4**	NE	NE	405.04	**5.1**	1758.45	**1**	6686.60	**15**	1987.07	**17**
BREOT-S6-0 (0-6")	290.69	**4.8**	NE	NE	327.21	**4.1**	1700.30	**1**	BB	BB	1042.04	**8.7**
BREOT-S7-0 (0-6")	173.78	**2.9**	NE	NE	189.93	**2.4**	1014.57	0.6	BB	BB	479.35	**4**
BREOT-S8-0 (0-6")	51.98	0.87	NE	NE	168.83	**2.1**	373.40	0.22	1166.95	**2.6**	321.27	**2.7**
BREOT-S9-0 (0-6")	119.03	**2**	NE	NE	150.86	**1.9**	804.79	0.47	BB	BB	207.97	**1.7**
BREOT-N10-0 (0-6")	1065.06	**18**	NE	NE	3539.80	**44**	23489.36	**14**	8051.61	**18**	18327.25	**150**
BREOT-N11-0 (0-6")	292.16	**4.9**	NE	NE	294.95	**3.7**	2858.47	**1.7**	376.17	0.84	635.39	**5.3**
BREOT-S11-0 (0-6")	100.94	**1.7**	NE	NE	230.95	**2.9**	1003.33	0.59	1994.30	**4.4**	1300.42	**11**
BREOT-N12-0 (0-6")	109.63	**1.8**	NE	NE	256.68	**3.2**	1033.66	0.61	1046.75	**2.3**	320.85	**2.7**
BREOT-S12-0 (0-6")	110.32	**1.8**	NE	NE	590.90	**7.4**	3188.48	**1.9**	2987.20	**6.6**	1705.48	**14**
BREOT-N13-0 (0-6")	1256.09	**21**	NE	NE	1910.45	**24**	26470.24	**16**	1553.82	**3.5**	10290.07	**86**
BREOT-S13-0 (0-6")	18.14	0.3	NE	NE	140.11	**1.8**	619.85	0.36	865.35	**1.9**	2858.17	**24**
BREOT-N14-0 (0-6")	164.44	**2.7**	NE	NE	428.24	**5.4**	2905.39	**1.7**	1548.95	**3.4**	347.73	**2.9**
BREOT-S14-0 (0-6")	708.36	**12**	NE	NE	3260.98	**41**	15428.96	**9.1**	9152.85	**20**	15980.91	**130**
BREOT-N15-0 (0-6")	322.92	**5.4**	NE	NE	333.89	**4.2**	3596.13	**2.1**	810.00	**1.8**	984.09	**8.2**
BREOT-N16-0 (0-6")	202.07	**3.4**	NE	NE	246.21	**3.1**	1770.53	**1**	613.11	**1.4**	376.59	**3.1**
BREOT-S16-0 (0-6")	32.41	0.54	NE	NE	180.52	**2.3**	334.02	0.2	1075.94	**2.4**	243.62	**2**
BREOT-N17-0 (0-6")	193.64	**3.2**	NE	NE	260.46	**3.3**	2862.04	**1.7**	1656.67	**3.7**	434.23	**3.6**
BREOT-S17-0 (0-6")	219.61	**3.7**	NE	NE	309.09	**3.9**	3357.10	**2**	509.89	**1.1**	420.72	**3.5**
BREOT-N18-0 (0-6")	169.28	**2.8**	NE	NE	240.22	**3**	2315.72	**1.4**	650.34	**1.4**	522.43	**4.4**
BREOT-S18-0 (0-6")	495.81	**8.3**	NE	NE	2093.88	**26**	36.49	0.021	406627.25	**900**	723.47	**6**
BREOT-N19-0 (0-6")	241.81	**4**	NE	NE	293.75	**3.7**	1578.85	0.93	4494.90	**10**	1409.23	**12**
BREOT-S19-0 (0-6")	60.32	**1**	NE	NE	128.58	**1.6**	453.14	0.27	1258.18	**2.8**	272.85	**2.3**
BREOT-N20-0 (0-6")	172.31	**2.9**	NE	NE	420.40	**5.3**	1291.74	0.76	9986.95	**22**	2243.01	**19**
BREOT-S20-0 (0-6")	53.75	0.9	NE	NE	136.10	**1.7**	622.51	0.37	797.15	**1.8**	191.21	**1.6**
BREOT-N21-0 (0-6")	481.32	**8**	NE	NE	13483.34	**170**	57.52	0.034	648789.38	**1400**	1242.26	**10**
BREOT-S21-0 (0-6")	184.37	**3.1**	NE	NE	231.10	**2.9**	1731.16	**1**	339.04	0.75	386.01	**3.2**
BREOT-N22-0 (0-6")	207.81	**3.5**	NE	NE	321.38	**4**	1455.46	0.86	854.87	**1.9**	952.11	**7.9**
BREOT-S22-0 (0-6")	185.80	**3.1**	NE	NE	183.05	**2.3**	1751.65	**1**	BB	BB	552.33	**4.6**
BREOT-N23-0 (0-6")	207.62	**3.5**	17.20	0.12	515.35	**6.4**	1205.43	0.71	2998.84	**6.7**	1192.53	**9.9**
BREOT-S23-0 (0-6")	235.80	**3.9**	NE	NE	321.50	**4**	2666.37	**1.6**	1660.51	**3.7**	789.37	**6.6**
BREOT-N24-0 (0-6")	231.38	**3.9**	NE	NE	493.42	**6.2**	2555.23	**1.5**	1334.68	**3**	1925.80	**16**
BREOT-S24-0 (0-6")	146.72	**2.4**	NE	NE	947.46	**12**	1498.74	0.88	24125.57	**54**	10498.43	**87**
BREOT-N25-0 (0-6")	219.39	**3.7**	NE	NE	775.49	**9.7**	6230.34	**3.7**	4036.23	**9**	1413.12	**12**
BREOT-S25-0 (0-6")	129.23	**2.2**	NE	NE	669.92	**8.4**	3485.39	**2.1**	5785.47	**13**	2583.70	**22**
BREOT-N26-0 (0-6")	472.42	**7.9**	30.00	0.21	925.35	**12**	11405.62	**6.7**	2628.88	**5.8**	2123.60	**18**
BREOT-S26-0 (0-6")	140.56	**2.3**	NE	NE	342.52	**4.3**	1593.55	0.94	3128.20	**7**	870.32	**7.3**

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RECEPTOR / POINT ID	Arsenic Concentration (mg/kg)[1]	Arsenic HQ[2]	Cadmium Concentration (mg/kg)[1]	Cadmium HQ[2]	Copper Concentration (mg/kg)[1]	Copper HQ[2]	Lead Concentration (mg/kg)[1]	Lead HQ[2]	Manganese Concentration (mg/kg)[1]	Manganese HQ[2]	Zinc Concentration (mg/kg)[1]	Zinc HQ[2]
BREOT-N27-0 (0-6")	465.40	**7.8**	NE	NE	2510.37	**31**	12254.56	**7.2**	5015.07	**11**	11285.22	**94**
BREOT-S27-0 (0-6")	209.06	**3.5**	1.51	0.011	227.84	**2.8**	2775.60	**1.6**	3541.93	**7.9**	214.66	**1.8**
BREOT-N28-0 (0-6")	123.72	**2.1**	NE	NE	548.05	**6.9**	4728.84	**2.8**	2166.36	**4.8**	729.80	**6.1**
BREOT-S28-0 (0-6")	115.53	**1.9**	NE	NE	165.31	**2.1**	1164.15	0.68	BB	BB	239.41	**2**
BREOT-S29-0 (0-6")	16.97	0.28	NE	NE	176.57	**2.2**	481.52	0.28	733.98	**1.6**	230.37	**1.9**
BREOT-N30-0 (0-6")	441.08	**7.4**	NE	NE	1482.71	**19**	8583.87	**5**	3453.89	**7.7**	5209.78	**43**
BREOT-S30-0 (0-6")	12.39	0.21	BB	BB	129.78	**1.6**	235.40	0.14	BB	BB	86.30	0.72
BREOT-N31-0 (0-6")	108.22	**1.8**	NE	NE	1288.16	**16**	4140.92	**2.4**	3405.17	**7.6**	6523.66	**54**
BREOT-S31-0 (0-6")	11.37	0.19	NE	NE	107.24	**1.3**	226.95	0.13	BB	BB	405.19	**3.4**
BREOT-N32-0 (0-6")	140.66	**2.3**	NE	NE	530.65	**6.6**	1715.24	**1**	1551.78	**3.4**	2598.36	**22**
BREOT-S32-0 (0-6")	87.86	**1.5**	NE	NE	517.26	**6.5**	1987.72	**1.2**	1214.87	**2.7**	428.19	**3.6**
BREOT-N33-0 (0-6")	16.44	0.27	NE	NE	199.69	**2.5**	62.30	0.037	958.27	**2.1**	137.00	**1.1**
BREOT-S33-0 (0-6")	83.73	**1.4**	NE	NE	491.31	**6.1**	474.77	0.28	1831.87	**4.1**	697.13	**5.8**
BREOT-N34-0 (0-6")	24.88	0.41	NE	NE	490.06	**6.1**	164.66	0.097	1465.33	**3.3**	346.90	**2.9**
BREOT-S34-0 (0-6")	138.67	**2.3**	NE	NE	479.57	**6**	1156.78	0.68	7236.47	**16**	3059.99	**25**
BREOT-N35-0 (0-6")	24.73	0.41	NE	NE	266.22	**3.3**	103.98	0.061	806.61	**1.8**	123.46	**1**
BREOT-S35-0 (0-6")	109.63	**1.8**	NE	NE	443.04	**5.5**	803.74	0.47	1238.99	**2.8**	443.98	**3.7**
BREOT-N36-0 (0-6")	215.91	**3.6**	NE	NE	433.34	**5.4**	2266.23	**1.3**	8443.04	**19**	2974.94	**25**
BREOT-S36-0 (0-6")	160.32	**2.7**	NE	NE	477.14	**6**	1605.16	0.94	6368.11	**14**	2619.57	**22**
BREOT-N37-0 (0-6")	85.01	**1.4**	2.52	0.018	181.04	**2.3**	506.10	0.3	1385.83	**3.1**	414.47	**3.5**
BREOT-S37-0 (0-6")	151.09	**2.5**	NE	NE	532.53	**6.7**	1781.14	**1**	8125.24	**18**	2958.26	**25**
BREOT-N38-0 (0-6")	18.25	0.3	NE	NE	194.60	**2.4**	105.17	0.062	734.58	**1.6**	125.41	**1**
BREOT-S38-0 (0-6")	31.14	0.52	NE	NE	840.99	**11**	208.02	0.12	4670.15	**10**	1130.16	**9.4**
BREOT-N39-0 (0-6")	19.86	0.33	NE	NE	BB	BB	87.85	0.052	865.03	**1.9**	212.89	**1.8**
BREOT-N40-0 (0-6")	41.93	0.7	NE	NE	239.16	**3**	212.19	0.12	930.40	**2.1**	169.12	**1.4**
BREOT-S40-0 (0-6")	169.82	**2.8**	NE	NE	563.00	**7**	1377.10	0.81	8684.76	**19**	2125.03	**18**
BREOT-N41-0 (0-6")	29.39	0.49	NE	NE	154.53	**1.9**	136.80	0.08	488.76	**1.1**	96.80	0.81
BREOT-S41-0 (0-6")	207.57	**3.5**	NE	NE	551.62	**6.9**	1365.07	0.8	9280.42	**21**	2296.90	**19**
BREOT-N42-0 (0-6")	BB	BB	NE	NE	BB	BB	27.20	0.016	BB	BB	BB	BB
BREOT-S42-0 (0-6")	216.16	**3.6**	NE	NE	822.74	**10**	2840.91	**1.7**	10554.89	**23**	4359.58	**36**
BREOT-N43-0 (0-6")	35.12	0.59	NE	NE	126.88	**1.6**	185.15	0.11	619.91	**1.4**	201.76	**1.7**
BREOT-S43-0 (0-6")	20.06	0.33	NE	NE	130.35	**1.6**	121.18	0.071	983.84	**2.2**	408.51	**3.4**
BREOT-N44-0 (0-6")	65.22	**1.1**	NE	NE	240.88	**3**	561.97	0.33	1375.09	**3.1**	419.40	**3.5**
BREOT-S44-0 (0-6")	7.30	0.12	NE	NE	126.87	**1.6**	88.93	0.052	1163.37	**2.6**	350.64	**2.9**
BREOT-N45-0 (0-6")	9.87	0.16	NE	NE	378.29	**4.7**	160.56	0.094	967.41	**2.1**	338.50	**2.8**
BREOT-S45-0 (0-6")	24.10	0.4	NE	NE	106.17	**1.3**	189.66	0.11	658.11	**1.5**	399.37	**3.3**
BREOT-N46-0 (0-6")	9.56	0.16	NE	NE	264.13	**3.3**	137.76	0.081	684.82	**1.5**	444.26	**3.7**
BREOT-S46-0 (0-6")	45.54	0.76	NE	NE	98.56	**1.2**	1081.13	0.64	803.11	**1.8**	168.75	**1.4**
BREOT-N47-0 (0-6")	8.75	0.15	NE	NE	644.26	**8.1**	175.15	0.1	852.65	**1.9**	723.00	**6**
BREOT-S47-0 (0-6")	20.30	0.34	NE	NE	BB	BB	37.56	0.022	BB	BB	114.45	0.95
BREOT-N48-0 (0-6")	11.26	0.19	NE	NE	143.69	**1.8**	243.67	0.14	557.77	**1.2**	282.63	**2.4**
BREOT-S48-0 (0-6")	64.12	**1.1**	NE	NE	90.06	**1.1**	191.56	0.11	BB	BB	BB	BB
BREOT-N49-0 (0-6")	30.22	0.5	NE	NE	171.43	**2.1**	386.57	0.23	1011.70	**2.2**	1061.15	**8.8**
BREOT-S49-0 (0-6")	8.49	0.14	NE	NE	BB	BB	120.00	0.071	BB	BB	BB	BB
BREOT-S50-0 (0-6")	25.18	0.42	NE	NE	105.60	**1.3**	105.61	0.062	BB	BB	BB	BB
BREOT-N51-0 (0-6")	56.88	0.95	NE	NE	121.56	**1.5**	422.52	0.25	1673.95	**3.7**	336.24	**2.8**
BREOT-S51-0 (0-6")	24.60	0.41	NE	NE	770.96	**9.6**	148.88	0.088	BB	BB	190.66	**1.6**
BREOT-N52-0 (0-6")	7.22	0.12	NE	NE	123.10	**1.5**	98.82	0.058	BB	BB	BB	BB
BREOT-S52-0 (0-6")	7.06	0.12	NE	NE	92.86	**1.2**	76.26	0.045	BB	BB	BB	BB
BREOT-N53-0 (0-6")	9.85	0.16	NE	NE	128.43	**1.6**	213.65	0.13	563.22	**1.3**	261.47	**2.2**
BREOT-S53-0 (0-6")	17.49	0.29	NE	NE	86.20	**1.1**	79.05	0.047	BB	BB	BB	BB

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BREOT-N54-0 (0-6")	10.71	0.18	NE	NE	122.22	**1.5**	215.54	0.13	679.13	**1.5**	298.71	**2.5**
BREOT-S54-0 (0-6")	7.94	0.13	BB	BB	82.02	**1**	96.56	0.057	BB	BB	BB	BB
BREOT-N55-0 (0-6")	8.86	0.15	NE	NE	103.02	**1.3**	124.06	0.073	1031.58	**2.3**	229.41	**1.9**
BREOT-S55-0 (0-6")	8.96	0.15	NE	NE	143.72	**1.8**	108.12	0.064	BB	BB	67.73	0.56
BREOT-N56-0 (0-6")	83.77	**1.4**	1.46	0.01	92.85	**1.2**	565.16	0.33	655.30	**1.5**	249.69	**2.1**
BREOT-N57-0 (0-6")	10.75	0.18	NE	NE	121.52	**1.5**	245.15	0.14	930.83	**2.1**	178.39	**1.5**
BREOT-S57-0 (0-6")	39.40	0.66	NE	NE	179.88	**2.2**	183.29	0.11	936.08	**2.1**	369.05	**3.1**
BREOT-N58-0 (0-6")	20.79	0.35	NE	NE	119.19	**1.5**	165.60	0.097	980.99	**2.2**	217.35	**1.8**
BREOT-S58-0 (0-6")	24.05	0.4	NE	NE	162.15	**2**	133.10	0.078	5159.58	**11**	346.46	**2.9**
BREOT-N59-0 (0-6")	34.78	0.58	NE	NE	BB	BB	100.13	0.059	883.13	**2**	244.14	**2**
BREOT-N60-0 (0-6")	19.72	0.33	2.39	0.017	BB	BB	80.31	0.047	360.09	0.8	226.75	**1.9**
BREOT-S60-0 (0-6")	81.30	**1.4**	NE	NE	225.98	**2.8**	518.02	0.3	2662.86	**5.9**	612.29	**5.1**
BREOT-S61-0 (0-6")	9.02	0.15	NE	NE	159.29	**2**	82.30	0.048	BB	BB	BB	BB
BREOT-N62-0 (0-6")	18.29	0.3	NE	NE	83.17	**1**	129.01	0.076	929.38	**2.1**	251.83	**2.1**
BREOT-S62-0 (0-6")	9.35	0.16	NE	NE	156.06	**2**	100.58	0.059	BB	BB	95.21	0.79
BREOT-N63-0 (0-6")	55.70	0.93	2.96	0.021	156.25	**2**	340.33	0.2	1137.09	**2.5**	464.62	**3.9**
BREOT-S63-0 (0-6")	29.41	0.49	NE	NE	132.12	**1.7**	214.14	0.13	1289.07	**2.9**	330.92	**2.8**
BREOT-N64-0 (0-6")	8.70	0.14	NE	NE	86.72	**1.1**	132.95	0.078	431.40	0.96	292.59	**2.4**
BREOT-S64-0 (0-6")	10.79	0.18	NE	NE	289.59	**3.6**	97.19	0.057	152.78	0.34	BB	BB
BREOT-N66-0 (0-6")	37.04	0.62	NE	NE	BB	BB	176.39	0.1	947.49	**2.1**	256.90	**2.1**
BREOT-S66-0 (0-6")	18.46	0.31	NE	NE	177.18	**2.2**	92.65	0.055	1181.81	**2.6**	381.27	**3.2**
BREOT-N67-0 (0-6")	85.03	**1.4**	NE	NE	669.00	**8.4**	1858.91	**1.1**	7989.94	**18**	3379.49	**28**
BREOT-S67-0 (0-6")	7.90	0.13	NE	NE	99.42	**1.2**	79.68	0.047	589.71	**1.3**	186.01	**1.6**
Outside Tailings												
BREOT-S0+25 (0-6")	37.48	0.62	NE	NE	89.44	**1.1**	257.98	0.15	957.27	**2.1**	349.15	**2.9**
BREOT-S1+25 (0-6")	9.81	0.16	NE	NE	144.72	**1.8**	141.80	0.083	1384.26	**3.1**	448.39	**3.7**
BREOT-S2+95 (0-6")	22.81	0.38	NE	NE	338.04	**4.2**	58.49	0.034	893.68	**2**	147.40	**1.2**
BREOT-S3+6 (0-6")	10.45	0.17	NE	NE	163.42	**2**	165.03	0.097	554.86	**1.2**	193.15	**1.6**
BREOT-S4+10 (0-6")	20.40	0.34	NE	NE	81.12	**1**	92.25	0.054	1067.54	**2.4**	228.36	**1.9**
BREOT-S6+25 (0-6")	28.97	0.48	NE	NE	153.22	**1.9**	253.53	0.15	843.42	**1.9**	250.72	**2.1**
BREOT-S8+25 (0-6")	34.73	0.58	NE	NE	171.11	**2.1**	262.03	0.15	862.70	**1.9**	285.77	**2.4**
BREOT-N10+25 (0-6")	20.80	0.35	NE	NE	172.50	**2.2**	131.67	0.077	786.61	**1.7**	229.27	**1.9**
BREOT-N11+25 (0-6")	10.28	0.17	NE	NE	301.99	**3.8**	138.02	0.081	897.40	**2**	182.90	**1.5**
BREOT-N12+25 (0-6")	12.91	0.22	NE	NE	163.64	**2**	273.11	0.16	981.07	**2.2**	264.87	**2.2**
BREOT-S12+25 (0-6")	254.28	**4.2**	NE	NE	1378.14	**17**	8704.79	**5.1**	3164.87	**7**	6452.66	**54**
BREOT-S12+60 (0-6")	85.14	**1.4**	NE	NE	204.49	**2.6**	1092.25	0.64	748.70	**1.7**	628.49	**5.2**
BREOT-N13+25 (0-6")	12.95	0.22	NE	NE	233.77	**2.9**	271.91	0.16	1313.55	**2.9**	263.48	**2.2**
BREOT-S13+25 (0-6")	185.17	**3.1**	NE	NE	609.00	**7.6**	3104.82	**1.8**	2222.53	**4.9**	2886.53	**24**
BREOT-S13+65 (0-6")	103.45	**1.7**	NE	NE	302.61	**3.8**	1090.75	0.64	1191.08	**2.6**	949.73	**7.9**
BREOT-N14+25 (0-6")	39.54	0.66	NE	NE	260.98	**3.3**	293.67	0.17	1538.91	**3.4**	436.24	**3.6**
BREOT-S14+25 (0-6")	698.60	**12**	NE	NE	1644.49	**21**	12764.57	**7.5**	3069.52	**6.8**	4443.90	**37**
BREOT-S14+59 (0-6")	100.48	**1.7**	NE	NE	194.01	**2.4**	792.86	0.47	337.61	0.75	337.83	**2.8**
BREOT-N15+25 (0-6")	104.46	**1.7**	NE	NE	1312.45	**16**	4602.45	**2.7**	5066.42	**11**	9592.28	**80**
BREOT-N15+50 (0-6")	8.85	0.15	NE	NE	271.00	**3.4**	192.60	0.11	1271.00	**2.8**	301.00	**2.5**
BREOT-S16+20 (0-6")	157.50	**2.6**	NE	NE	798.23	**10**	2988.56	**1.8**	2725.66	**6.1**	3869.97	**32**
BREOT-S16+75 (0-6")	26.70	0.45	NE	NE	128.00	**1.6**	432.60	0.25	598.00	**1.3**	456.20	**3.8**
BREOT-N17+25 (0-6")	163.39	**2.7**	NE	NE	792.03	**9.9**	8164.14	**4.8**	1434.83	**3.2**	1921.61	**16**
BREOT-S18+25 (0-6")	47.95	0.8	NE	NE	156.29	**2**	629.20	0.37	315.97	0.7	202.40	**1.7**
BREOT-N19+25 (0-6")	7.49	0.12	NE	NE	BB	BB	82.27	0.048	721.63	**1.6**	200.04	**1.7**
BREOT-S19+25 (0-6")	416.48	**6.9**	NE	NE	5996.67	**75**	49.89	0.029	475483.56	**1100**	865.49	**7.2**
BREOT-S19+85 (0-6")	15.70	0.26	NE	NE	239.00	**3**	630.80	0.37	728.00	**1.6**	150.70	**1.3**

TABLE D-2: TERRESTRIAL PLANT AND INVERTEBRATE HAZARD QUOTIENT SUMMARY TABLE,
EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS
Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

RECEPTOR / POINT ID	Arsenic Concentration (mg/kg)[1]	Arsenic HQ[2]	Cadmium Concentration (mg/kg)[1]	Cadmium HQ[2]	Copper Concentration (mg/kg)[1]	Copper HQ[2]	Lead Concentration (mg/kg)[1]	Lead HQ[2]	Manganese Concentration (mg/kg)[1]	Manganese HQ[2]	Zinc Concentration (mg/kg)[1]	Zinc HQ[2]
BREOT-N20+25 (0-6")	12.25	0.2	NE	NE	522.73	**6.5**	170.39	0.1	976.85	**2.2**	286.82	**2.4**
BREOT-S20+25 (0-6")	592.19	**9.9**	NE	NE	3284.04	**41**	54.89	0.032	676552.00	**1500**	1158.01	**9.7**
BREOT-S20+75 (0-6")	BB	BB	NE	NE	BB	BB	101.20	0.06	763.00	**1.7**	218.00	**1.8**
BREOT-N21+25 (0-6")	207.58	**3.5**	NE	NE	315.02	**3.9**	3523.56	**2.1**	BB	BB	428.16	**3.6**
BREOT-S21+25 (0-6")	356.03	**5.9**	NE	NE	8807.04	**110**	52.90	0.031	335362.81	**750**	532.19	**4.4**
BREOT-N22+150 (0-6")	8.30	0.14	NE	NE	244.00	**3.1**	280.30	0.16	902.00	**2**	204.70	**1.7**
BREOT-N22+25 (0-6")	92.00	**1.5**	NE	NE	480.99	**6**	2468.14	**1.5**	2582.15	**5.7**	2993.38	**25**
BREOT-S22+25 (0-6")	91.95	**1.5**	NE	NE	193.50	**2.4**	1069.84	0.63	1652.02	**3.7**	352.11	**2.9**
BREOT-N23+115 (0-6")	23.30	0.39	NE	NE	BB	BB	65.80	0.039	698.00	**1.6**	362.50	**3**
BREOT-N23+25 (0-6")	328.83	**5.5**	NE	NE	1266.31	**16**	7213.83	**4.2**	4784.69	**11**	7374.61	**61**
BREOT-S23+25 (0-6")	105.05	**1.8**	NE	NE	348.81	**4.4**	1259.10	0.74	1244.66	**2.8**	1763.01	**15**
BREOT-S23+37.5 (0-6")	27.30	0.46	NE	NE	127.00	**1.6**	107.90	0.063	974.00	**2.2**	465.70	**3.9**
BREOT-N24+25 (0-6")	157.58	**2.6**	NE	NE	313.27	**3.9**	917.05	0.54	9125.91	**20**	1827.29	**15**
BREOT-N24+75 (0-6")	22.10	0.37	NE	NE	83.00	**1**	108.50	0.064	995.00	**2.2**	290.70	**2.4**
BREOT-S24+25 (0-6")	82.75	**1.4**	NE	NE	187.87	**2.3**	926.92	0.55	1837.59	**4.1**	427.43	**3.6**
BREOT-N25+25 (0-6")	7.57	0.13	NE	NE	167.55	**2.1**	67.68	0.04	330.76	0.74	104.64	0.87
BREOT-S25+25 (0-6")	57.22	0.95	NE	NE	173.54	**2.2**	542.98	0.32	1073.24	**2.4**	298.39	**2.5**
BREOT-S25+40 (0-6")	94.27	**1.6**	NE	NE	215.85	**2.7**	2395.38	**1.4**	728.68	**1.6**	326.40	**2.7**
BREOT-S26+37 (0-6")	22.62	0.38	NE	NE	84.16	**1.1**	209.14	0.12	838.78	**1.9**	248.41	**2.1**
BREOT-N27+25 (0-6")	9.49	0.16	NE	NE	198.45	**2.5**	117.04	0.069	749.82	**1.7**	268.08	**2.2**
BREOT-S27+25 (0-6")	35.23	0.59	NE	NE	193.97	**2.4**	396.16	0.23	776.07	**1.7**	196.68	**1.6**
BREOT-N28+25 (0-6")	9.43	0.16	NE	NE	BB	BB	137.19	0.081	602.78	**1.3**	185.96	**1.5**
BREOT-S28+25 (0-6")	96.07	**1.6**	NE	NE	189.31	**2.4**	776.21	0.46	422.44	0.94	220.08	**1.8**
BREOT-N29+25 (0-6")	13.08	0.22	NE	NE	195.19	**2.4**	371.10	0.22	1444.43	**3.2**	700.85	**5.8**
BREOT-S29+25 (0-6")	21.16	0.35	NE	NE	203.33	**2.5**	704.65	0.41	893.57	**2**	180.92	**1.5**
BREOT-N30+25 (0-6")	15.78	0.26	NE	NE	317.98	**4**	552.21	0.32	1129.04	**2.5**	395.91	**3.3**
BREOT-S30+25 (0-6")	17.83	0.3	NE	NE	186.10	**2.3**	518.46	0.3	878.70	**2**	307.76	**2.6**
BREOT-N31+25 (0-6")	272.98	**4.5**	NE	NE	2113.74	**26**	9996.43	**5.9**	6606.73	**15**	10115.01	**84**
BREOT-N31+75 (0-6")	BB	BB	NE	NE	217.00	**2.7**	75.40	0.044	828.00	**1.8**	198.00	**1.7**
BREOT-S31+25 (0-6")	9.05	0.15	2.59	0.019	83.74	**1**	175.19	0.1	639.52	**1.4**	282.28	**2.4**
BREOT-N32+25 (0-6")	9.04	0.15	NE	NE	265.02	**3.3**	108.72	0.064	1169.61	**2.6**	148.97	**1.2**
BREOT-S32+25 (0-6")	135.46	**2.3**	NE	NE	403.70	**5**	1198.64	0.71	1655.49	**3.7**	406.65	**3.4**
BREOT-S32+300 (0-6")	62.40	**1**	NE	NE	791.00	**9.9**	376.40	0.22	2487.00	**5.5**	522.30	**4.4**
BREOT-N33+25 (0-6")	8.72	0.15	NE	NE	382.97	**4.8**	75.04	0.044	859.55	**1.9**	107.14	0.89
BREOT-S33+25 (0-6")	33.99	0.57	NE	NE	890.17	**11**	137.86	0.081	3990.06	**8.9**	1188.03	**9.9**
BREOT-N34+25 (0-6")	9.85	0.16	NE	NE	361.30	**4.5**	114.56	0.067	762.62	**1.7**	138.64	**1.2**
BREOT-S34+25 (0-6")	51.42	0.86	NE	NE	407.88	**5.1**	370.90	0.22	1227.23	**2.7**	239.82	**2**
BREOT-N35+25 (0-6")	22.74	0.38	NE	NE	285.74	**3.6**	84.55	0.05	907.94	**2**	156.60	**1.3**
BREOT-S35+25 (0-6")	32.42	0.54	NE	NE	870.37	**11**	135.80	0.08	4167.08	**9.3**	1060.80	**8.8**
BREOT-N36+100 (0-6")	16.20	0.27	NE	NE	158.00	**2**	170.60	0.1	922.00	**2**	225.80	**1.9**
BREOT-N36+25 (0-6")	187.92	**3.1**	NE	NE	544.90	**6.8**	2018.00	**1.2**	7537.71	**17**	2366.87	**20**
BREOT-S36+25 (0-6")	35.51	0.59	NE	NE	801.71	**10**	224.40	0.13	3822.52	**8.5**	899.24	**7.5**
BREOT-N37+25 (0-6")	9.05	0.15	NE	NE	178.49	**2.2**	104.43	0.061	372.98	0.83	78.59	0.65
BREOT-S37+25 (0-6")	29.11	0.49	NE	NE	1103.69	**14**	125.60	0.074	5145.65	**11**	1021.98	**8.5**
BREOT-N38+25 (0-6")	24.25	0.4	NE	NE	428.73	**5.4**	150.78	0.089	649.96	**1.4**	84.05	0.7
BREOT-S38+25 (0-6")	28.14	0.47	NE	NE	1049.79	**13**	153.02	0.09	4916.10	**11**	1190.89	**9.9**
BREOT-N39+25 (0-6")	21.93	0.37	NE	NE	157.89	**2**	146.12	0.086	534.25	**1.2**	115.07	0.96
BREOT-S39+25 (0-6")	47.38	0.79	NE	NE	878.21	**11**	165.41	0.097	3743.47	**8.3**	1186.81	**9.9**
BREOT-N40+25 (0-6")	31.94	0.53	NE	NE	230.15	**2.9**	150.55	0.089	567.06	**1.3**	64.90	0.54
BREOT-S40+25 (0-6")	38.78	0.65	NE	NE	817.06	**10**	130.98	0.077	3533.00	**7.9**	1060.65	**8.8**
BREOT-N41+25 (0-6")	8.79	0.15	NE	NE	90.99	**1.1**	99.38	0.058	377.70	0.84	115.25	0.96

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Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

RECEPTOR / POINT ID	Arsenic Concentration (mg/kg)[1]	Arsenic HQ[2]	Cadmium Concentration (mg/kg)[1]	Cadmium HQ[2]	Copper Concentration (mg/kg)[1]	Copper HQ[2]	Lead Concentration (mg/kg)[1]	Lead HQ[2]	Manganese Concentration (mg/kg)[1]	Manganese HQ[2]	Zinc Concentration (mg/kg)[1]	Zinc HQ[2]
BREOT-S41+25 (0-6")	64.92	**1.1**	NE	NE	316.05	**4**	539.44	0.32	2255.26	**5**	784.54	**6.5**
BREOT-N42+25 (0-6")	BB	BB	NE	NE	BB	BB	45.00	0.026	BB	BB	57.58	0.48
BREOT-S42+25 (0-6")	8.45	0.14	NE	NE	482.26	**6**	121.33	0.071	1968.20	**4.4**	1138.94	**9.5**
BREOT-N43+12.5 (0-6")	39.41	0.66	NE	NE	152.41	**1.9**	262.17	0.15	744.08	**1.7**	278.97	**2.3**
BREOT-N43+40 (0-6")	8.21	0.14	NE	NE	79.70	**1**	116.88	0.069	749.77	**1.7**	220.66	**1.8**
BREOT-S43+25 (0-6")	14.25	0.24	NE	NE	196.91	**2.5**	73.67	0.043	949.76	**2.1**	441.68	**3.7**
BREOT-N44+55 (0-6")	30.56	0.51	NE	NE	186.36	**2.3**	154.10	0.091	664.38	**1.5**	225.63	**1.9**
BREOT-S44+25 (0-6")	22.15	0.37	NE	NE	BB	BB	71.73	0.042	1258.55	**2.8**	327.27	**2.7**
BREOT-N45+25 (0-6")	7.97	0.13	NE	NE	85.87	**1.1**	110.40	0.065	650.14	**1.4**	230.88	**1.9**
BREOT-S45+25 (0-6")	BB	BB	NE	NE	BB	BB	54.77	0.032	303.28	0.67	458.52	**3.8**
BREOT-N46+25 (0-6")	42.10	0.7	NE	NE	336.04	**4.2**	157.99	0.093	966.97	**2.1**	517.75	**4.3**
BREOT-S46+25 (0-6")	BB	BB	NE	NE	153.24	**1.9**	50.48	0.03	BB	BB	346.00	**2.9**
BREOT-N47+25 (0-6")	9.62	0.16	NE	NE	253.31	**3.2**	128.70	0.076	779.19	**1.7**	344.27	**2.9**
BREOT-S47+25 (0-6")	20.76	0.35	NE	NE	BB	BB	36.70	0.022	BB	BB	105.83	0.88
BREOT-N48+25 (0-6")	7.87	0.13	NE	NE	79.64	**1**	109.67	0.065	617.40	**1.4**	132.85	**1.1**
BREOT-S48+25 (0-6")	41.54	0.69	NE	NE	87.68	**1.1**	138.65	0.082	BB	BB	BB	BB
BREOT-N49+25 (0-6")	58.18	0.97	NE	NE	103.48	**1.3**	407.90	0.24	925.79	**2.1**	341.71	**2.8**
BREOT-S49+25 (0-6")	9.40	0.16	NE	NE	BB	BB	138.22	0.081	BB	BB	BB	BB
BREOT-N51+25 (0-6")	23.36	0.39	NE	NE	91.50	**1.1**	94.58	0.056	783.81	**1.7**	166.35	**1.4**
BREOT-S51+25 (0-6")	29.97	0.5	NE	NE	BB	BB	29.73	0.017	BB	BB	133.95	**1.1**
BREOT-N52+25 (0-6")	46.68	0.78	NE	NE	114.98	**1.4**	214.54	0.13	324.11	0.72	167.71	**1.4**
BREOT-S52+25 (0-6")	26.17	0.44	NE	NE	BB	BB	61.93	0.036	BB	BB	BB	BB
BREOT-N53+25 (0-6")	BB	BB	NE	NE	111.55	**1.4**	81.51	0.048	BB	BB	166.57	**1.4**
BREOT-S53+25 (0-6")	8.94	0.15	NE	NE	BB	BB	113.09	0.067	BB	BB	BB	BB
BREOT-S54+25 (0-6")	BB	BB	NE	NE	BB	BB	64.42	0.038	BB	BB	BB	BB
BREOT-N55+25 (0-6")	19.83	0.33	NE	NE	BB	BB	80.28	0.047	713.58	**1.6**	146.57	**1.2**
BREOT-S55+25 (0-6")	BB	BB	NE	NE	88.46	**1.1**	69.48	0.041	BB	BB	BB	BB
BREOT-N56+25 (0-6")	9.11	0.15	NE	NE	BB	BB	110.55	0.065	698.72	**1.6**	144.72	**1.2**
BREOT-S56+25 (0-6")	22.72	0.38	NE	NE	201.37	**2.5**	90.88	0.053	BB	BB	BB	BB
BREOT-N57+25 (0-6")	7.90	0.13	NE	NE	BB	BB	97.96	0.058	736.05	**1.6**	124.54	**1**
BREOT-S57+25 (0-6")	34.53	0.58	NE	NE	140.78	**1.8**	97.18	0.057	2445.48	**5.4**	203.95	**1.7**
BREOT-N58+25 (0-6")	23.11	0.39	NE	NE	81.26	**1**	92.80	0.055	973.28	**2.2**	212.21	**1.8**
BREOT-S58+25 (0-6")	9.24	0.15	NE	NE	155.70	**1.9**	125.25	0.074	BB	BB	89.96	0.75
BREOT-N59+25 (0-6")	53.61	0.89	NE	NE	111.10	**1.4**	427.76	0.25	1535.26	**3.4**	351.54	**2.9**
BREOT-N60+25 (0-6")	24.62	0.41	NE	NE	BB	BB	91.64	0.054	523.70	**1.2**	235.93	**2**
BREOT-S60+25 (0-6")	26.68	0.44	NE	NE	200.87	**2.5**	77.00	0.045	BB	BB	BB	BB
BREOT-S61+25 (0-6")	7.88	0.13	NE	NE	162.11	**2**	60.92	0.036	BB	BB	BB	BB
BREOT-N62+25 (0-6")	9.24	0.15	NE	NE	107.19	**1.3**	156.97	0.092	870.74	**1.9**	261.02	**2.2**
BREOT-S62+25 (0-6")	BB	BB	NE	NE	BB	BB	34.38	0.02	BB	BB	115.55	0.96
BREOT-N63+25 (0-6")	73.74	**1.2**	NE	NE	264.04	**3.3**	547.67	0.32	1368.57	**3**	274.29	**2.3**
BREOT-S63+25 (0-6")	BB	BB	NE	NE	97.85	**1.2**	35.19	0.021	BB	BB	193.90	**1.6**
BREOT-N64+25 (0-6")	20.85	0.35	NE	NE	99.16	**1.2**	128.10	0.075	480.19	**1.1**	307.40	**2.6**
BREOT-S64+25 (0-6")	25.50	0.43	NE	NE	289.43	**3.6**	87.66	0.052	189.58	0.42	BB	BB
BREOT-S65+25 (0-6")	9.71	0.16	NE	NE	268.75	**3.4**	73.28	0.043	BB	BB	BB	BB
BREOT-N66+25 (0-6")	29.85	0.5	NE	NE	BB	BB	100.81	0.059	745.62	**1.7**	248.03	**2.1**
BREOT-S66+25 (0-6")	38.85	0.65	NE	NE	267.49	**3.3**	66.29	0.039	BB	BB	74.23	0.62
BREOT-N67+125 (0-6")	53.20	0.89	NE	NE	148.00	**1.9**	423.90	0.25	386.00	0.86	363.00	**3**
BREOT-S67+25 (0-6")	26.15	0.44	NE	NE	305.18	**3.8**	85.63	0.05	BB	BB	BB	BB
BREOT-N67+25 (0-6")	104.37	**1.7**	NE	NE	176.25	**2.2**	1541.10	0.91	904.75	**2**	377.36	**3.1**

TABLE D-2: TERRESTRIAL PLANT AND INVERTEBRATE HAZARD QUOTIENT SUMMARY TABLE,
EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK DEPOSITS
Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

Notes:

Bold values indicate HQs greater than 1.0.

1 Soil concentration from specified depth below ground surface at point ID as measured by XRF 10 for all chemicals except cadmium. XRF 10 results were not available for cadmium, so laboratory results were used. Hazard quotients were not calculated for detected and non-detect soil concentrations measured below the minimum reference site concentration, as indicated by BB. For results that were measured at less than the detection limit, HQs were calculated using half of the detection limit.

2 HQs were calculated by dividing the site concentration by the plant or invertebrate screening benchmark.

3 Plant screening benchmarks are from EPA 2007. Invertebrate screening benchmarks are from EPA 2007, with the exception of the screening benchmark for arsenic, which is from Efroymson and others 1997.

BB	Below minimum background reference site concentration	HQ	Hazard quotient
EE/CA	Engineering Evaluation/Cost Analysis	ID	Identification
EPA	U.S. Environmental Protection Agency	mg/kg	Milligrams per kilogram
EU	Exposure Unit	NE	Not evaluated

Sources:

Efroymson, R.A., M.E, Will, and G.W. Suter II. 1997. "Toxicological Benchmarks for Contaminants of Potential Concern for Effects on Soil and Litter Invertebrates and Heterotrophic Processes: 1997 Revision." Oak Ridge National Laboratory, Oak Ridge TN. ES/ER/TM-126/R2

EPA. 2007. Interim Ecological Soil Screening Levels. Available on-line at: http://www.epa.gov/ecotox/ecossl/

TABLE D-3: TERRESTRIAL PLANT AND INVERTEBRATE HAZARD QUOTIENT SUMMARY TABLE, EU 3 - CAPITOL MINE WASTE AREA

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

RECEPTOR / POINT ID	Arsenic Concentration (mg/kg)[1]	Arsenic HQ[2]	Cadmium Concentration (mg/kg)[1]	Cadmium HQ[2]	Copper Concentration (mg/kg)[1]	Copper HQ[2]	Lead Concentration (mg/kg)[1]	Lead HQ[2]	Manganese Concentration (mg/kg)[1]	Manganese HQ[2]	Zinc Concentration (mg/kg)[1]	Zinc HQ[2]
Screening Benchmark - Terrestrial Plants (mg/kg)[3]	**18**		**32**		**70**		**120**		**220**		**160**	
Terrestrial Plants												
Reference Site												
SGBG-1 (0-6")	34.57	**1.9**	0.284	0.0089	92.51	**1.3**	115.16	0.96	141.05	0.64	40.94	0.26
SGBG-201 (0-6")	16.56	0.92	2.2	0.069	71.85	**1**	62.21	0.52	130.88	0.59	333.04	**2.1**
Capitol Mine												
CMWA-0 (0-6")	153.98	**8.6**	NE	NE	457.21	**6.5**	1269.82	**11**	610.33	**2.8**	713.08	**4.5**
CMWA-0 (0-6")	153.98	**8.6**	NE	NE	457.21	**6.5**	1269.82	**11**	610.33	**2.8**	713.08	**4.5**
CMWA-0+12.5 (0-6")	64.90	**3.6**	2.7	0.084	390	**5.6**	593.8	**4.9**	1216	**5.5**	435.9	**2.7**
CMWA-100 (0-6")	577.49	**32**	NE	NE	467.98	**6.7**	1780.7	**15**	267.37	**1.2**	1834.58	**11**
CMWA-100+12.5 (0-6")	24.60	**1.4**	1.1	0.034	106	**1.5**	144.2	**1.2**	940	**4.3**	242.2	**1.5**
CMWA-150 (0-6")	348.32	**19**	NE	NE	406.88	**5.8**	2554.66	**21**	102.6	0.47	647.9	**4.0**
CMWA-150+12.5 (0-6")	19.20	**1.1**	NE	NE	155	**2.2**	238.7	**2.0**	803	**3.7**	342.8	**2.1**
CMWA-200 (0-6")	1250.57	**69**	NE	NE	BB	BB	358.52	**3.0**	145.52	0.66	45.48	0.28
CMWA2-250 (0-6")	23.84	**1.3**	NE	NE	340.88	**4.9**	808.93	**6.7**	236.21	**1.1**	121.71	0.76
CMWA-250 (0-6")	118.59	**6.6**	0.968	0.03	112.57	**1.6**	401.74	**3.3**	744.47	**3.4**	265.98	**1.7**
CMWA-250+50 (0-6")	NE	NE	0.611	0.019	137.48	**2.0**	314.72	**2.6**	330.8	**1.5**	151.64	0.95
CMWA-300 (0-6")	48.40	**2.7**	NE	NE	414.66	**5.9**	401.4	**3.3**	408.38	**1.9**	575.73	**3.6**
CMWA-300+25 (0-6")	29.20	**1.6**	0.25	0.0078	99	**1.4**	292.1	**2.4**	418	**1.9**	124.7	0.78
CMWA-350 (0-6")	37.17	**2.1**	NE	NE	185.7	**2.7**	405.26	**3.4**	224.39	**1.0**	102.85	0.64
CMWA-350+0 (0-6")	NE	NE	NE	NE	91.33	**1.3**	151.94	**1.3**	278.12	**1.3**	175.14	**1.1**
CMWA-50 (0-6")	110.45	**6.1**	NE	NE	750.18	**11**	950.75	**7.9**	1752.48	**8.0**	1200.07	**7.5**
CMWA-50+12.5 (0-6")	BB	BB	NE	NE	120	**1.7**	206.8	**1.7**	1165	**5.3**	211.1	**1.3**
CMWA-Comp 1 (0-6")	184.00	**10**	3.04	0.095	288.88	**4.1**	1570.95	**13**	334.22	**1.5**	1066.52	**6.7**
CMWA-Comp 2 (0-6")	1103.09	**61**	2.98	0.093	269.55	**3.9**	1986.73	**17**	169.12	0.77	362.67	**2.3**

TABLE D-3: TERRESTRIAL PLANT AND INVERTEBRATE HAZARD QUOTIENT SUMMARY TABLE, EU 3 - CAPITOL MINE WASTE AREA (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

RECEPTOR / POINT ID	Arsenic Concentration (mg/kg)[1]	Arsenic HQ[2]	Cadmium Concentration (mg/kg)[1]	Cadmium HQ[2]	Copper Concentration (mg/kg)[1]	Copper HQ[2]	Lead Concentration (mg/kg)[1]	Lead HQ[2]	Manganese Concentration (mg/kg)[1]	Manganese HQ[2]	Zinc Concentration (mg/kg)[1]	Zinc HQ[2]
Screening Benchmark - Terrestrial Invertebrates (mg/kg)[3]	**60**		**140**		**80**		**1700**		**450**		**120**	
Terrestrial Invertebrates												
Reference Site												
SGBG-1 (0-6")	34.57	0.58	0.284	0.002	92.51	**1.2**	115.16	0.068	141.05	0.31	40.94	0.34
SGBG-201 (0-6")	16.56	0.28	2.2	0.016	71.85	0.9	62.21	0.037	130.88	0.29	333.04	**2.8**
Capitol Mine												
CMWA-0 (0-6")	153.98	**2.6**	NE	NE	457.21	**5.7**	1269.82	0.75	610.33	**1.4**	713.08	**5.9**
CMWA-0 (0-6")	153.98	**2.6**	NE	NE	457.21	**5.7**	1269.82	0.75	610.33	**1.4**	713.08	**5.9**
CMWA-0+12.5 (0-6")	64.90	**1.1**	2.7	0.019	390	**4.9**	593.8	0.35	1216	**2.7**	435.9	**3.6**
CMWA-100 (0-6")	577.49	**9.6**	NE	NE	467.98	**5.8**	1780.7	**1.0**	267.37	0.59	1834.58	**15**
CMWA-100+12.5 (0-6")	24.60	0.41	1.1	0.0079	106	**1.3**	144.2	0.085	940	**2.1**	242.2	**2.0**
CMWA-150 (0-6")	348.32	**5.8**	NE	NE	406.88	**5.1**	2554.66	**1.5**	102.6	0.23	647.9	**5.4**
CMWA-150+12.5 (0-6")	19.20	0.32	NE	NE	155	**1.9**	238.7	0.14	803	**1.8**	342.8	**2.9**
CMWA-200 (0-6")	1250.57	**21**	NE	NE	BB	BB	358.52	0.21	145.52	0.32	45.48	0.38
CMWA2-250 (0-6")	23.84	0.4	NE	NE	340.88	**4.3**	808.93	0.48	236.21	0.52	121.71	**1.0**
CMWA-250 (0-6")	118.59	**2.0**	0.968	0.0069	112.57	**1.4**	401.74	0.24	744.47	**1.7**	265.98	**2.2**
CMWA-250+50 (0-6")	NE	NE	0.611	0.0044	137.48	**1.7**	314.72	0.19	330.8	0.74	151.64	**1.3**
CMWA-300 (0-6")	48.40	0.81	NE	NE	414.66	**5.2**	401.4	0.24	408.38	0.91	575.73	**4.8**
CMWA-300+25 (0-6")	29.20	0.49	0.25	0.0018	99	**1.2**	292.1	0.17	418	0.93	124.7	**1.0**
CMWA-350 (0-6")	37.17	0.62	NE	NE	185.7	**2.3**	405.26	0.24	224.39	0.5	102.85	0.86
CMWA-350+0 (0-6")	NE	NE	NE	NE	91.33	**1.1**	151.94	0.089	278.12	0.62	175.14	**1.5**
CMWA-50 (0-6")	110.45	**1.8**	NE	NE	750.18	**9.4**	950.75	0.56	1752.48	**3.9**	1200.07	**10**
CMWA-50+12.5 (0-6")	BB	BB	NE	NE	120	**1.5**	206.8	0.12	1165	**2.6**	211.1	**1.8**
CMWA-Comp 1 (0-6")	184.00	**3.1**	3.04	0.022	288.88	**3.6**	1570.95	0.92	334.22	0.74	1066.52	**8.9**
CMWA-Comp 2 (0-6")	1103.09	**18**	2.98	0.021	269.55	**3.4**	1986.73	**1.2**	169.12	0.38	362.67	**3.0**

Notes:

Bold values indicate HQs greater than 1.0.

1 Soil concentration from 0 to 6 inches below ground surface at point ID as measured by XRF 10 for all chemicals except cadmium. XRF 10 results were not available for cadmium, so laboratory results were used. Hazard quotients were not calculated for detected and non-detect soil concentrations measured below the minimum reference site concentration, as indicated by BB. For results that were measured at less than the detection limit, HQs were calculated using half of the detection limit.

2 HQs were calculated by dividing the site concentration by the plant or invertebrate screening benchmark.

3 Plant screening benchmarks are from EPA 2007. Invertebrate screening benchmarks are from EPA 2007, with the exception of the screening benchmark for arsenic, which is from Efroymson and others 1997.

BB Below minimum background reference site concentration

EPA U.S. Environmental Protection Agency

EU Exposure Unit

HQ Hazard quotient

ID Identification

mg/kg Milligrams per kilogram

NE Not evaluated

Sources:

Efroymson, R.A., M.E, Will, and G.W. Suter II. 1997. "Toxicological Benchmarks for Contaminants of Potential Concern for Effects on Soil and Litter Invertebrates and Heterotrophic Processes: 1997 Revision." Oak Ridge National Laboratory, Oak Ridge TN. ES/ER/TM-126/R2

EPA. 2007. Interim Ecological Soil Screening Levels. Available on-line at: http://www.epa.gov/ecotox/ecossl/

TABLE D-4: TERRESTRIAL PLANT AND INVERTEBRATE HAZARD QUOTIENT SUMMARY TABLE, EU 4 - CARBONATE MINE WASTE AREA

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

RECEPTOR / POINT ID	Arsenic Concentration (mg/kg)[1]	Arsenic HQ[2]	Cadmium Concentration (mg/kg)[1]	Cadmium HQ[2]	Copper Concentration (mg/kg)[1]	Copper HQ[2]	Lead Concentration (mg/kg)[1]	Lead HQ[2]	Manganese Concentration (mg/kg)[1]	Manganese HQ[2]	Zinc Concentration (mg/kg)[1]	Zinc HQ[2]
Screening Benchmark - Terrestrial Plants (mg/kg)[3]	**18**		**32**		**70**		**120**		**220**		**160**	
Terrestrial Plants												
Reference Site												
SWGBG-1	13.32	0.74	0.83	0.026	29.52	0.42	60.82	0.51	568.95	**2.6**	113.70	0.71
SWGBG-2	17.49	0.97	1.79	0.056	48.02	0.69	125.09	1	755.67	**3.4**	242.31	**1.5**
Carbonate Mine												
CARM-00 (0-6")	26.31	**1.5**	NE	NE	114.51	**1.6**	146.10	**1.2**	943.70	**4.3**	305.74	**1.9**
CARM-50 (0-6")	18.20	1.0	NE	NE	330.08	**4.7**	430.67	**3.6**	966.85	**4.4**	683.49	**4.3**
CARM-50+12.5 (0-6")	15.94	0.89	NE	NE	386.34	**5.5**	578.97	**4.8**	1594.35	**7.2**	809.63	**5.1**
CARM-100 (0-6")	20.49	**1.1**	NE	NE	412.71	**5.9**	526.29	**4.4**	1343.94	**6.1**	599.57	**3.7**
CARM-100+25 (0-6")	17.05	0.95	8.20	0.26	431.00	**6.2**	619.10	**5.2**	1591.00	**7.2**	762.60	**4.8**
CARM-110 (0-6")	15.58	0.87	NE	NE	488.76	**7.0**	326.74	**2.7**	1215.88	**5.5**	294.74	**1.8**
CARM-150 (0-6")	17.86	0.99	NE	NE	376.92	**5.4**	411.87	**3.4**	863.25	**3.9**	540.32	**3.4**
CARM-150+50 (0-6")	12.70	0.71	NE	NE	291.00	**4.2**	417.80	**3.5**	1280.00	**5.8**	498.50	**3.1**
CARM-200 (0-6")	17.58	0.98	NE	NE	391.30	**5.6**	411.61	**3.4**	928.25	**4.2**	372.34	**2.3**
CARM-200+25 (0-6")	27.10	**1.5**	9.50	0.3	544.00	**7.8**	271.80	**2.3**	1522.00	**6.9**	561.70	**3.5**
CARM-250 (0-6")	16.81	0.93	7.71	0.24	329.00	**4.7**	329.57	**2.7**	1094.94	**5**	449.68	**2.8**
CARM-300 (0-6")	16.57	0.92	NE	NE	491.25	**7.0**	311.93	**2.6**	1434.93	**6.5**	545.97	**3.4**
CARM-350 (0-6")	38.28	**2.1**	NE	NE	486.84	**7.0**	260.36	**2.2**	2216.93	**10**	459.08	**2.9**
CARM-400 (0-6")	16.15	0.9	11.10	0.35	548.50	**7.8**	260.31	**2.2**	2576.21	**12**	514.53	**3.2**
CARM-500 (0-6")	BB	BB	NE	NE	BB	BB	BB	BB	BB	BB	BB	BB
CARM-550 (0-6")	17.72	0.98	NE	NE	215.84	**3.1**	468.78	**3.9**	610.41	**2.8**	193.85	**1.2**
CARM-600 (0-6")	15.67	0.87	NE	NE	496.52	**7.1**	343.45	**2.9**	1513.21	**6.9**	398.32	**2.5**
CARM-650 (0-6")	BB	BB	NE	NE	16.31	0.23	BB	BB	BB	BB	BB	BB
CARM-700 (0-6")	8.51	0.47	NE	NE	80.49	**1.1**	108.24	0.9	BB	BB	171.31	**1.1**
CARM-750 (0-6")	16.30	0.91	NE	NE	95.42	**1.4**	63.72	0.53	BB	BB	BB	BB
CARM-800 (0-6")	12.90	0.72	NE	NE	640.96	**9.2**	169.22	**1.4**	760.81	**3.5**	125.17	0.78
CARM-850 (0-6")	BB	BB	NE	NE	93.68	**1.3**	64.86	0.54	BB	BB	BB	BB
CARM-950 (0-6")	BB	BB	NE	NE	133.56	**1.9**	104.01	0.87	BB	BB	BB	BB
CARM-1000 (0-6")	22.91	**1.3**	NE	NE	169.63	**2.4**	77.43	0.65	17005.27	**77**	316.14	**2**
CARM-1050 (0-6")	33.17	**1.8**	NE	NE	299.21	**4.3**	2554.57	**21**	1005.55	**4.6**	273.63	**1.7**
CARM-1050+6.25 (0-6")	9.05	0.50	8.90	0.28	268.00	**3.8**	274.40	**2.3**	13808.00	**63**	814.90	**5.1**
CARM-1150 (0-6")	49.02	**2.7**	3.43	0.11	452.23	**6.5**	496.36	**4.1**	1040.68	**4.7**	278.62	**1.7**
CARM-1150+25 (0-6")	15.97	0.89	NE	NE	574.25	**8.2**	101.90	0.85	1744.76	**7.9**	315.01	**2.0**
CARM-Comp 1 (0-6")	16.19	0.90	NE	NE	570.97	**8.2**	351.30	**2.9**	1378.57	**6.3**	466.13	**2.9**

TABLE D-4: TERRESTRIAL PLANT AND INVERTEBRATE HAZARD QUOTIENT SUMMARY TABLE, EU 4 - CARBONATE MINE WASTE AREA (Continued)
Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

RECEPTOR / POINT ID	Arsenic Concentration (mg/kg)[1]	Arsenic HQ[2]	Cadmium Concentration (mg/kg)[1]	Cadmium HQ[2]	Copper Concentration (mg/kg)[1]	Copper HQ[2]	Lead Concentration (mg/kg)[1]	Lead HQ[2]	Manganese Concentration (mg/kg)[1]	Manganese HQ[2]	Zinc Concentration (mg/kg)[1]	Zinc HQ[2]
Screening Benchmark - Terrestrial Invertebrates (mg/kg)[3]	**60**		**140**		**80**		**1700**		**450**		**120**	
Terrestrial Invertebrates												
Reference Site												
SWGBG-1	13.32	0.22	0.83	0.0059	29.52	0.37	60.82	0.036	568.95	**1.3**	113.70	0.95
SWGBG-2	17.49	0.29	1.79	0.013	48.02	0.6	125.09	0.074	755.67	**1.7**	242.31	**2**
Carbonate Mine												
CARM-00 (0-6")	26.31	0.44	NE	NE	114.51	**1.4**	146.10	0.086	943.70	**2.1**	305.74	**2.5**
CARM-50 (0-6")	18.20	0.3	NE	NE	330.08	**4.1**	430.67	0.25	966.85	**2.1**	683.49	**5.7**
CARM-50+12.5 (0-6")	15.94	0.27	NE	NE	386.34	**4.8**	578.97	0.34	1594.35	**3.5**	809.63	**6.7**
CARM-100 (0-6")	20.49	0.34	NE	NE	412.71	**5.2**	526.29	0.31	1343.94	**3**	599.57	**5**
CARM-100+25 (0-6")	17.05	0.28	8.20	0.059	431.00	**5.4**	619.10	0.36	1591.00	**3.5**	762.60	**6.4**
CARM-110 (0-6")	15.58	0.26	NE	NE	488.76	**6.1**	326.74	0.19	1215.88	**2.7**	294.74	**2.5**
CARM-150 (0-6")	17.86	0.3	NE	NE	376.92	**4.7**	411.87	0.24	863.25	**1.9**	540.32	**4.5**
CARM-150+50 (0-6")	12.70	0.21	NE	NE	291.00	**3.6**	417.80	0.25	1280.00	**2.8**	498.50	**4.2**
CARM-200 (0-6")	17.58	0.29	NE	NE	391.30	**4.9**	411.61	0.24	928.25	**2.1**	372.34	**3.1**
CARM-200+25 (0-6")	27.10	0.45	9.50	0.068	544.00	**6.8**	271.80	0.16	1522.00	**3.4**	561.70	**4.7**
CARM-250 (0-6")	16.81	0.28	7.71	0.055	329.00	**4.1**	329.57	0.19	1094.94	**2.4**	449.68	**3.7**
CARM-300 (0-6")	16.57	0.28	NE	NE	491.25	**6.1**	311.93	0.18	1434.93	**3.2**	545.97	**4.5**
CARM-350 (0-6")	38.28	0.64	NE	NE	486.84	**6.1**	260.36	0.15	2216.93	**4.9**	459.08	**3.8**
CARM-400 (0-6")	16.15	0.27	11.10	0.079	548.50	**6.9**	260.31	0.15	2576.21	**5.7**	514.53	**4.3**
CARM-500 (0-6")	BB	BB	NE	NE	BB	BB	BB	BB	BB	BB	BB	BB
CARM-550 (0-6")	17.72	0.3	NE	NE	215.84	**2.7**	468.78	0.28	610.41	**1.4**	193.85	**1.6**
CARM-600 (0-6")	15.67	0.26	NE	NE	496.52	**6.2**	343.45	0.2	1513.21	**3.4**	398.32	**3.3**
CARM-650 (0-6")	BB	BB	NE	NE	16.31	0.2	BB	BB	BB	BB	BB	BB
CARM-700 (0-6")	8.51	0.14	NE	NE	80.49	1.0	108.24	0.064	BB	BB	171.31	**1.4**
CARM-750 (0-6")	16.30	0.27	NE	NE	95.42	**1.2**	63.72	0.037	BB	BB	BB	BB
CARM-800 (0-6")	12.90	0.22	NE	NE	640.96	**8**	169.22	0.1	760.81	**1.7**	125.17	1
CARM-850 (0-6")	BB	BB	NE	NE	93.68	**1.2**	64.86	0.038	BB	BB	BB	BB
CARM-950 (0-6")	BB	BB	NE	NE	133.56	**1.7**	104.01	0.061	BB	BB	BB	BB
CARM-1000 (0-6")	22.91	0.38	NE	NE	169.63	**2.1**	77.43	0.046	17005.27	**38**	316.14	**2.6**
CARM-1050 (0-6")	33.17	0.55	NE	NE	299.21	**3.7**	2554.57	**1.5**	1005.55	**2.2**	273.63	**2.3**
CARM-1050+6.25 (0-6")	9.05	0.15	8.90	0.064	268.00	**3.4**	274.40	0.16	13808.00	**31**	814.90	**6.8**
CARM-1150 (0-6")	49.02	0.82	3.43	0.025	452.23	**5.7**	496.36	0.29	1040.68	**2.3**	278.62	**2.3**
CARM-1150+25 (0-6")	15.97	0.27	NE	NE	574.25	**7.2**	101.90	0.06	1744.76	**3.9**	315.01	**2.6**
CARM-Comp 1 (0-6")	16.19	0.27	NE	NE	570.97	**7.1**	351.30	0.21	1378.57	**3.1**	466.13	**3.9**

Notes:

Bold values indicate HQs greater than 1.0.

1 Soil concentration from 0 to 6 inches below ground surface at point ID as measured by XRF 10 for all chemicals except cadmium. XRF 10 results were not available for cadmium, so laboratory results were used. Hazard quotients were not calculated for detected and non-detect soil concentrations measured below the minimum reference site concentration, as indicated by BB. For results that were measured at less than the detection limit, HQs were calculated using half of the detection limit.

2 HQs were calculated by dividing the site concentration by the plant or invertebrate screening benchmark.

3 Plant screening benchmarks are from EPA 2007. Invertebrate screening benchmarks are from EPA 2007, with the exception of the screening benchmark for arsenic, which is from Efroymson and others 1997.

BB Below minimum background reference site concentration
EPA U.S. Environmental Protection Agency
EU Exposure Unit
HQ Hazard quotient
ID Identification
mg/kg Milligrams per kilogram
NE Not evaluated

Sources:

Efroymson, R.A., M.E, Will, and G.W. Suter II. 1997. "Toxicological Benchmarks for Contaminants of Potential Concern for Effects on Soil and Litter Invertebrates and Heterotrophic Processes: 1997 Revision." Oak Ridge National Laboratory, Oak Ridge TN. ES/ER/TM-126/R2

EPA. 2007. Interim Ecological Soil Screening Levels. Available on-line at: http://www.epa.gov/ecotox/ecossl/

TABLE D-5: TERRESTRIAL PLANT AND INVERTEBRATE HAZARD QUOTIENT SUMMARY TABLE, EU 5 - EDITH MINE WASTE AREAS

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

RECEPTOR / POINT ID	Arsenic Concentration (mg/kg)[1]	Arsenic HQ[2]	Cadmium Concentration (mg/kg)[1,4]	Cadmium HQ[2]	Copper Concentration (mg/kg)[1]	Copper HQ[2]	Lead Concentration (mg/kg)[1]	Lead HQ[2]	Manganese Concentration (mg/kg)[1]	Manganese HQ[2]	Zinc Concentration (mg/kg)[1]	Zinc HQ[2]
Screening Benchmark - Terrestrial Plants (mg/kg)[3]	**18**		**32**		**70**		**120**		**220**		**160**	
Terrestrial Plants												
Reference Sites												
SHGBG-1 (0-6")	27.38	**1.5**	3.32	0.10	39.55	0.57	321.54	**2.7**	1470.06	**6.7**	290.52	**1.8**
SHGBG-2 (0-6")	16.06	0.89	2.46	0.08	58.61	0.84	32.69	0.27	1008.4	**4.6**	99.21	0.62
SHGBG-201 (0-6")	26.02	**1.4**	2.5	0.08	84.33	**1.2**	45.3	0.38	226.74	**1.0**	131.02	0.82
SHGBG-202 (0-6")	11.5	0.64	2.4	0.075	78.85	**1.1**	36.31	0.3	201.49	0.92	322.6	**2.0**
West Edith Mine Waste Area												
WEA1-00 (0-6")	11.58	0.64	BB	BB	BB	BB	BB	BB	452.56	**2.1**	128.51	0.8
WEA1-100 (0-6")	7.905	0.44	NE	NE	56.03	0.80	103.84	0.87	849.33	**3.9**	306.84	**1.9**
WEA1-150 (0-6")	23.31	**1.3**	NE	NE	349.38	**5.0**	117.24	0.98	1930.43	**8.8**	199.92	**1.2**
WEA1-200 (0-6")	9.87	0.55	NE	NE	187.99	**2.7**	130.68	**1.1**	1512.64	**6.9**	256.56	**1.6**
WEA1-250 (0-6")	26.36	**1.5**	NE	NE	68.7	0.98	113.99	0.95	1372.48	**6.2**	280.93	**1.8**
WEA1-300 (0-6")	26.62	**1.5**	NE	NE	77.19	**1.1**	111.93	0.93	1389.89	**6.3**	236.9	**1.5**
WEA1-350 (0-6")	27.73	**1.5**	NE	NE	447.46	**6.4**	164.89	**1.4**	634.49	**2.9**	154.96	0.97
WEA1-400 (0-6")	11.34	0.63	BB	BB	119.03	**1.7**	211.19	**1.8**	239.38	**1.1**	BB	BB
WEA1-450 (0-6")	10.79	0.60	NE	NE	119.7	**1.7**	181.64	**1.5**	BB	BB	304.94	**1.9**
WEA1-550 (0-6")	9.15	0.51	NE	NE	112.87	**1.6**	138.76	**1.2**	BB	BB	227.23	**1.4**
WEA1-Comp 1 (0-6")	19.88	**1.1**	NE	NE	429.59	**6.1**	113.18	0.94	2581	**12**	148.33	0.93
WEA1-Comp 2 (0-6")	9.82	0.55	NE	NE	196.52	**2.8**	134.24	**1.1**	3347.14	**15**	178.86	**1.1**
Central Edith Mine Waste Area												
CEA1-3-00 (0-6")	37.33	**2.1**	NE	NE	243.65	**3.5**	139.29	**1.2**	1260.28	**5.7**	141.88	0.89
CEA1-3-100 (0-6")	23.36	**1.3**	NE	NE	130.26	**1.9**	126.33	**1.1**	1222.27	**5.6**	191.91	**1.2**
CEA1-3-150 (0-6")	10.69	0.59	NE	NE	489.88	**7.0**	175.93	**1.5**	213.55	0.97	166.1	**1.0**
CEA1-3-200 (0-6")	25.87	**1.4**	NE	NE	111.02	**1.6**	115.74	0.96	594.32	**2.7**	100.98	0.63
CEA1-3-250 (0-6")	27.47	**1.5**	NE	NE	126.37	**1.8**	154.58	**1.3**	263.95	**1.2**	BB	BB
CEA1-3-300 (0-6")	18.58	**1.0**	NE	NE	164.03	**2.3**	94.03	0.78	493.22	**2.2**	223.57	**1.4**
CEA1-3-350 (0-6")	35.5	**2.0**	NE	NE	70.31	**1.0**	95.1	0.79	1049.94	**4.8**	280.86	**1.8**
CEA1-3-400 (0-6")	37.58	**2.1**	NE	NE	140.15	**2.0**	372.13	**3.1**	836.71	**3.8**	214.77	**1.3**
CEA1-3-450 (0-6")	7.87	0.44	NE	NE	93.77	**1.3**	100.26	0.84	BB	BB	173.62	**1.1**
CEA1-3-50 (0-6")	24.04	**1.3**	NE	NE	1158.24	**17**	108.4	0.90	406.49	**1.8**	134.15	0.84
CEA1-3-500 (0-6")	14.64	0.81	NE	NE	94.05	**1.3**	73.71	0.61	695.33	**3.2**	323.29	**2.0**
CEA1-3-550 (0-6")	25.05	**1.4**	BB	BB	79.55	**1.1**	87.59	0.73	459.75	**2.1**	240.4	**1.5**
CEA1-3-600 (0-6")	16.7	0.93	NE	NE	1338.55	**19**	88.48	0.74	1387.08	**6.3**	163.87	**1.0**
CEA1-3-650 (0-6")	21.62	**1.2**	NE	NE	77.11	**1.1**	86.04	0.72	403.92	**1.8**	237	**1.5**
CEA1-3-700 (0-6")	9.42	0.52	NE	NE	99.34	**1.4**	140.23	**1.2**	414.7	**1.9**	110.19	0.69
CEA1-3-750 (0-6")	11.815	0.66	NE	NE	92.05	**1.3**	232.11	**1.9**	BB	BB	BB	BB
CEA1-3-800 (0-6")	10.085	0.56	NE	NE	182.97	**2.6**	156.4	**1.3**	BB	BB	BB	BB
CEA1-3-850 (0-6")	12.425	0.69	BB	BB	112.22	**1.6**	261.67	**2.2**	202.47	0.92	124.1	0.78
CEA1-3-Comp 1 (0-6")	13.765	0.76	BB	BB	166.02	**2.4**	283.22	**2.4**	299.69	**1.4**	BB	BB
CEA1-3-Comp 2 (0-6")	10.525	0.58	BB	BB	108.5	**1.6**	163.05	**1.4**	232	**1.1**	BB	BB
CEA1-3-Comp 3 (0-6")	86.51	**4.8**	4.31	0.13	237.44	**3.4**	1133.01	**9.4**	242.48	**1.1**	188.26	**1.2**
CEA4-00 (0-6")	14.8	0.82	NE	NE	269.39	**3.8**	190.11	**1.6**	159.4	0.72	BB	BB
CEA4-20 (0-6")	26.58	**1.5**	NE	NE	382.86	**5.5**	104.36	0.87	156.055	0.71	BB	BB
CEA4-40 (0-6")	25.96	**1.4**	NE	NE	130.46	**1.9**	234.47	**2.0**	505.31	**2.3**	212.9	**1.3**
CEA4-Comp (0-6")	36.71	**2.0**	NE	NE	168.14	**2.4**	424.71	**3.5**	231.26	**1.1**	101.78	0.64

TABLE D-5: TERRESTRIAL PLANT AND INVERTEBRATE HAZARD QUOTIENT SUMMARY TABLE, EU 5 - EDITH MINE WASTE AREAS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

RECEPTOR / POINT ID	Arsenic Concentration (mg/kg)[1]	Arsenic HQ[2]	Cadmium Concentration (mg/kg)[1,4]	Cadmium HQ[2]	Copper Concentration (mg/kg)[1]	Copper HQ[2]	Lead Concentration (mg/kg)[1]	Lead HQ[2]	Manganese Concentration (mg/kg)[1]	Manganese HQ[2]	Zinc Concentration (mg/kg)[1]	Zinc HQ[2]
Screening Benchmark - Terrestrial Plants (mg/kg)[3]	**18**		**32**		**70**		**120**		**220**		**160**	
East Edith Mine Waste Area												
EEA1-00 (0-6")	16.48	0.92	NE	NE	90.45	**1.3**	88.15	0.73	249.57	**1.1**	BB	BB
EEA1-100 (0-6")	6.36	0.35	NE	NE	77.29	**1.1**	40.17	0.33	446.71	**2.0**	BB	BB
EEA1-150 (0-6")	14.93	0.83	NE	NE	41.2	0.59	BB	BB	340.53	**1.5**	BB	BB
EEA1-200 (0-6")	BB	BB	NE	NE	64.84	0.93	BB	BB	447.34	**2.0**	BB	BB
EEA1-250 (0-6")	13.24	0.74	NE	NE	BB	BB	36.18	0.30	401.96	**1.8**	BB	BB
EEA1-300 (0-6")	15.85	0.88	NE	NE	77.22	**1.1**	62.02	0.52	514.59	**2.3**	BB	BB
EEA1-350 (0-6")	19.02	**1.1**	NE	NE	136.77	**2.0**	99.4	0.83	599.92	**2.7**	121.09	0.76
EEA1-400 (0-6")	11.345	0.63	NE	NE	134.97	**1.9**	188.79	**1.6**	704.9	**3.2**	197.12	**1.2**
EEA1-450 (0-6")	10.25	0.57	NE	NE	86.12	**1.2**	152.12	**1.3**	451.43	**2.1**	BB	BB
EEA1-50 (0-6")	20.96	**1.2**	NE	NE	112.37	**1.6**	89.74	0.75	238.24	**1.1**	BB	BB
EEA1-500 (0-6")	11.305	0.63	NE	NE	102.68	**1.5**	172.91	**1.4**	957.74	**4.4**	178.89	**1.1**
EEA1-Comp 1 (0-6")	5.885	0.33	NE	NE	56.68	0.81	41.47	0.35	430.7	**2.0**	BB	BB
EEA2-00 (0-6")	BB	BB	NE	NE	BB	BB	BB	BB	376.27	**1.7**	BB	BB
EEA2-50 (0-6")	12.085	0.67	NE	NE	107.09	**1.5**	244.35	**2.0**	823.34	**3.7**	207.28	**1.3**
EEA2-100 (0-6")	8.315	0.46	NE	NE	81.53	**1.2**	104.87	0.87	1287.26	**5.9**	138.38	0.86
EEA2-150 (0-6")	6.35	0.35	BB	BB	75.94	**1.1**	52.42	0.44	439.35	**2.0**	BB	BB
EEA2-200 (0-6")	9.705	0.54	BB	BB	81.15	**1.2**	157.32	**1.3**	508.92	**2.3**	BB	BB
EEA2-250 (0-6")	BB	BB	NE	NE	BB	BB	33.89	0.28	559.87	**2.5**	BB	BB
EEA2-300 (0-6")	23.98	**1.3**	NE	NE	165.16	**2.4**	133.29	**1.1**	1183.79	**5.4**	135.65	0.85
EEA2-Comp 1 (0-6")	18.62	**1.0**	NE	NE	133.5	**1.9**	109.13	0.91	523.36	**2.4**	BB	BB

TABLE D-5: TERRESTRIAL PLANT AND INVERTEBRATE HAZARD QUOTIENT SUMMARY TABLE, EU 5 - EDITH MINE WASTE AREAS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

RECEPTOR / POINT ID	Arsenic Concentration (mg/kg)[1]	Arsenic HQ[2]	Cadmium Concentration (mg/kg)[1,4]	Cadmium HQ[2]	Copper Concentration (mg/kg)[1]	Copper HQ[2]	Lead Concentration (mg/kg)[1]	Lead HQ[2]	Manganese Concentration (mg/kg)[1]	Manganese HQ[2]	Zinc Concentration (mg/kg)[1]	Zinc HQ[2]
Screening Benchmark - Terrestrial Invertebrates (mg/kg)[3]	**60**		**140**		**80**		**1700**		**450**		**120**	
Terrestrial Invertebrates												
Reference Sites												
SHGBG-1 (0-6")	27.38	0.46	3.32	0.024	39.55	0.49	321.54	0.19	1470.06	**3.3**	290.52	**2.4**
SHGBG-2 (0-6")	16.06	0.27	2.46	0.018	58.61	0.73	32.69	0.019	1008.4	**2.2**	99.21	0.83
SHGBG-201 (0-6")	26.02	0.43	2.5	0.018	84.33	**1.1**	45.3	0.027	226.74	0.5	131.02	**1.1**
SHGBG-202 (0-6")	11.5	0.19	2.4	0.017	78.85	0.99	36.31	0.021	201.49	0.45	322.6	**2.7**
West Edith Mine Waste Area												
WEA1-00 (0-6")	11.58	0.19	BB	BB	BB	BB	BB	BB	452.56	**1.0**	128.51	**1.1**
WEA1-100 (0-6")	7.905	0.13	NE	NE	56.03	0.70	103.84	0.061	849.33	**1.9**	306.84	**2.6**
WEA1-150 (0-6")	23.31	0.39	NE	NE	349.38	**4.4**	117.24	0.069	1930.43	**4.3**	199.92	**1.7**
WEA1-200 (0-6")	9.87	0.16	NE	NE	187.99	**2.3**	130.68	0.077	1512.64	**3.4**	256.56	**2.1**
WEA1-250 (0-6")	26.36	0.44	NE	NE	68.7	0.86	113.99	0.067	1372.48	**3.0**	280.93	**2.3**
WEA1-300 (0-6")	26.62	0.44	NE	NE	77.19	0.96	111.93	0.066	1389.89	**3.1**	236.9	**2.0**
WEA1-350 (0-6")	27.73	0.46	NE	NE	447.46	**5.6**	164.89	0.097	634.49	**1.4**	154.96	**1.3**
WEA1-400 (0-6")	11.34	0.19	BB	BB	119.03	**1.5**	211.19	0.12	239.38	0.53	BB	BB
WEA1-450 (0-6")	10.79	0.18	NE	NE	119.7	**1.5**	181.64	0.11	BB	BB	304.94	**2.5**
WEA1-550 (0-6")	9.15	0.15	NE	NE	112.87	**1.4**	138.76	0.082	BB	BB	227.23	**1.9**
WEA1-Comp 1 (0-6")	19.88	0.33	NE	NE	429.59	**5.4**	113.18	0.067	2581	**5.7**	148.33	**1.2**
WEA1-Comp 2 (0-6")	9.82	0.16	NE	NE	196.52	**2.5**	134.24	0.079	3347.14	**7.4**	178.86	**1.5**
Central Edith Mine Waste Area												
CEA1-3-00 (0-6")	37.33	0.62	NE	NE	243.65	**3.0**	139.29	0.082	1260.28	**2.8**	141.88	**1.2**
CEA1-3-100 (0-6")	23.36	0.39	NE	NE	130.26	**1.6**	126.33	0.074	1222.27	**2.7**	191.91	**1.6**
CEA1-3-150 (0-6")	10.69	0.18	NE	NE	489.88	**6.1**	175.93	0.10	213.55	0.47	166.1	**1.4**
CEA1-3-200 (0-6")	25.87	0.43	NE	NE	111.02	**1.4**	115.74	0.068	594.32	**1.3**	100.98	0.84
CEA1-3-250 (0-6")	27.47	0.46	NE	NE	126.37	**1.6**	154.58	0.091	263.95	0.59	BB	BB
CEA1-3-300 (0-6")	18.58	0.31	NE	NE	164.03	**2.1**	94.03	0.055	493.22	**1.1**	223.57	**1.9**
CEA1-3-350 (0-6")	35.5	0.59	NE	NE	70.31	0.88	95.1	0.056	1049.94	**2.3**	280.86	**2.3**
CEA1-3-400 (0-6")	37.58	0.63	NE	NE	140.15	**1.8**	372.13	0.22	836.71	**1.9**	214.77	**1.8**
CEA1-3-450 (0-6")	7.87	0.13	NE	NE	93.77	**1.2**	100.26	0.059	BB	BB	173.62	**1.4**
CEA1-3-50 (0-6")	24.04	0.40	NE	NE	1158.24	**14**	108.4	0.064	406.49	0.9	134.15	**1.1**
CEA1-3-500 (0-6")	14.64	0.24	NE	NE	94.05	**1.2**	73.71	0.043	695.33	**1.5**	323.29	**2.7**
CEA1-3-550 (0-6")	25.05	0.42	BB	BB	79.55	0.99	87.59	0.052	459.75	**1.0**	240.4	**2**
CEA1-3-600 (0-6")	16.7	0.28	NE	NE	1338.55	**17**	88.48	0.052	1387.08	**3.1**	163.87	**1.4**
CEA1-3-650 (0-6")	21.62	0.36	NE	NE	77.11	0.96	86.04	0.051	403.92	0.9	237	**2.0**
CEA1-3-700 (0-6")	9.42	0.16	NE	NE	99.34	**1.2**	140.23	0.082	414.7	0.92	110.19	0.92
CEA1-3-750 (0-6")	11.815	0.20	NE	NE	92.05	**1.2**	232.11	0.14	BB	BB	BB	BB
CEA1-3-800 (0-6")	10.085	0.17	NE	NE	182.97	**2.3**	156.4	0.092	BB	BB	BB	BB
CEA1-3-850 (0-6")	12.425	0.21	BB	BB	112.22	**1.4**	261.67	0.15	202.47	0.45	124.1	**1.0**
CEA1-3-Comp 1 (0-6")	13.765	0.23	BB	BB	166.02	**2.1**	283.22	0.17	299.69	0.67	BB	BB
CEA1-3-Comp 2 (0-6")	10.525	0.18	BB	BB	108.5	**1.4**	163.05	0.096	232	0.52	BB	BB
CEA1-3-Comp 3 (0-6")	86.51	**1.4**	4.31	0.031	237.44	**3.0**	1133.01	0.67	242.48	0.54	188.26	**1.6**
CEA4-00 (0-6")	14.8	0.25	NE	NE	269.39	**3.4**	190.11	0.11	159.4	0.35	BB	BB
CEA4-20 (0-6")	26.58	0.44	NE	NE	382.86	**4.8**	104.36	0.061	156.055	0.35	BB	BB
CEA4-40 (0-6")	25.96	0.43	NE	NE	130.46	**1.6**	234.47	0.14	505.31	**1.1**	212.9	**1.8**
CEA4-Comp (0-6")	36.71	0.61	NE	NE	168.14	**2.1**	424.71	0.25	231.26	0.51	101.78	0.85

TABLE D-5: TERRESTRIAL PLANT AND INVERTEBRATE HAZARD QUOTIENT SUMMARY TABLE, EU 5 - EDITH MINE WASTE AREAS (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

RECEPTOR / POINT ID	Arsenic Concentration (mg/kg)[1]	Arsenic HQ[2]	Cadmium Concentration (mg/kg)[1,4]	Cadmium HQ[2]	Copper Concentration (mg/kg)[1]	Copper HQ[2]	Lead Concentration (mg/kg)[1]	Lead HQ[2]	Manganese Concentration (mg/kg)[1]	Manganese HQ[2]	Zinc Concentration (mg/kg)[1]	Zinc HQ[2]
Screening Benchmark - Terrestrial Invertebrates (mg/kg)[3]	**60**		**140**		**80**		**1700**		**450**		**120**	
East Edith Mine Waste Area												
EEA1-00 (0-6")	16.48	0.27	NE	NE	90.45	**1.1**	88.15	0.052	249.57	0.55	BB	BB
EEA1-100 (0-6")	6.36	0.11	NE	NE	77.29	0.97	40.17	0.024	446.71	0.99	BB	BB
EEA1-150 (0-6")	14.93	0.25	NE	NE	41.2	0.52	BB	BB	340.53	0.76	BB	BB
EEA1-200 (0-6")	BB	BB	NE	NE	64.84	0.81	BB	BB	447.34	0.99	BB	BB
EEA1-250 (0-6")	13.24	0.22	NE	NE	BB	BB	36.18	0.021	401.96	0.89	BB	BB
EEA1-300 (0-6")	15.85	0.26	NE	NE	77.22	0.97	62.02	0.036	514.59	**1.1**	BB	BB
EEA1-350 (0-6")	19.02	0.32	NE	NE	136.77	**1.7**	99.4	0.058	599.92	**1.3**	121.09	**1.0**
EEA1-400 (0-6")	11.345	0.19	NE	NE	134.97	**1.7**	188.79	0.11	704.9	**1.6**	197.12	**1.6**
EEA1-450 (0-6")	10.25	0.17	NE	NE	86.12	**1.1**	152.12	0.089	451.43	**1.0**	BB	BB
EEA1-50 (0-6")	20.96	0.35	NE	NE	112.37	**1.4**	89.74	0.053	238.24	0.53	BB	BB
EEA1-500 (0-6")	11.305	0.19	NE	NE	102.68	**1.3**	172.91	0.10	957.74	**2.1**	178.89	**1.5**
EEA1-Comp 1 (0-6")	5.885	0.098	NE	NE	56.68	0.71	41.47	0.024	430.7	0.96	BB	BB
EEA2-00 (0-6")	BB	BB	NE	NE	BB	BB	BB	BB	376.27	0.84	BB	BB
EEA2-50 (0-6")	12.085	0.20	NE	NE	107.09	**1.3**	244.35	0.14	823.34	**1.8**	207.28	**1.7**
EEA2-100 (0-6")	8.315	0.14	NE	NE	81.53	**1.0**	104.87	0.062	1287.26	**2.9**	138.38	**1.2**
EEA2-150 (0-6")	6.35	0.11	BB	BB	75.94	0.95	52.42	0.031	439.35	0.98	BB	BB
EEA2-200 (0-6")	9.705	0.16	BB	BB	81.15	**1.0**	157.32	0.093	508.92	**1.1**	BB	BB
EEA2-250 (0-6")	BB	BB	NE	NE	BB	BB	33.89	0.020	559.87	**1.2**	BB	BB
EEA2-300 (0-6")	23.98	0.40	NE	NE	165.16	**2.1**	133.29	0.078	1183.79	**2.6**	135.65	**1.1**
EEA2-Comp 1 (0-6")	18.62	0.31	NE	NE	133.5	**1.7**	109.13	0.064	523.36	**1.2**	BB	BB

Notes:

Bold values indicate HQs greater than 1.0.

1 Soil concentration from 0 to 6 inches below ground surface at point ID as measured by XRF 10 for all chemicals except cadmium. XRF 10 results were not available for cadmium, so laboratory results were used. Hazard quotients were not calculated for detected and non-detect soil concentrations measured below the minimum reference site concentration, as indicated by BB. For results that were measured at less than the detection limit, HQs were calculated using half of the detection limit.

2 HQs were calculated by dividing the site concentration by the plant or invertebrate screening benchmark.

3 Plant screening benchmarks are from EPA 2007. Invertebrate screening benchmarks are from EPA 2007, with the exception of the screening benchmark for arsenic, which is from Efroymson and others 1997.

4 All detected results for West Edith Mine Waste Area and East Edith Mine Waste Area were below the minimum background reference site concentration for cadmium

BB	Below minimum background reference site concentration	ID	Identification
EPA	U.S. Environmental Protection Agency	mg/kg	Milligrams per kilogram
EU	Exposure Unit	NE	Not evaluated
HQ	Hazard quotient		

Sources:

Efroymson, R.A., M.E, Will, and G.W. Suter II. 1997. "Toxicological Benchmarks for Contaminants of Potential Concern for Effects on Soil and Litter Invertebrates and Heterotrophic Processes: 1997 Revision." Oak Ridge National Laboratory, Oak Ridge TN. ES/ER/TM-126/R2

EPA. 2007. Interim Ecological Soil Screening Levels. Available on-line at: http://www.epa.gov/ecotox/ecossl/

TABLE D-6: TERRESTRIAL PLANT AND INVERTEBRATE HAZARD QUOTIENT SUMMARY TABLE, EU 6 - CONSOLATION MINE WASTE AREA

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

RECEPTOR / POINT ID	Arsenic Concentration (mg/kg)[1]	Arsenic HQ[2]	Cadmiuim Concentration (mg/kg)[1]	Cadmium HQ[2]	Copper Concentration (mg/kg)[1]	Copper HQ[2]	Lead Concentration (mg/kg)[1]	Lead HQ[2]	Manganese Concentration (mg/kg)[1]	Manganese HQ[2]	Zinc Concentration (mg/kg)[1]	Zinc HQ[2]
Screening Benchmark - Terrestrial Plants (mg/kg)[3]	**18**		**32**		**70**		**120**		**220**		**160**	
Terrestrial Plants												
Reference Sites												
SHGBG-1	27.38	**1.5**	3.32	0.10	39.55	0.57	321.54	**2.7**	1470.06	**6.7**	290.52	**1.8**
SHGBG-2	16.06	0.89	2.46	0.077	58.61	0.84	32.69	0.27	1008.4	**4.6**	99.21	0.62
Consolation Mine												
CONM-000 (0-6")	30.84	**1.7**	NE	NE	40.59	0.58	206.08	**1.7**	BB	BB	224.53	**1.4**
CONM-100 (0-6")	17.075	0.95	NE	NE	141.5	**2.0**	552.46	**4.6**	BB	BB	330.88	**2.1**
CONM-100+25 (0-6")	26.4	**1.5**	NE	NE	51	0.73	346.1	**2.9**	1441	**6.6**	417.5	**2.6**
CONM-1000 (0-6")	71.92	**4.0**	NE	NE	186.92	**2.7**	1206.06	**10**	BB	BB	252.26	**1.6**
CONM-1000+35 (0-6")	29	**1.6**	NE	NE	233	**3.3**	407.1	**3.4**	BB	BB	315.8	**2.0**
CONM-150 (0-6")	35.37	**2.0**	NE	NE	57.97	0.83	BB	BB	BB	BB	335.43	**2.1**
CONM-200 (0-6")	33.01	**1.8**	NE	NE	41.93	0.60	BB	BB	BB	BB	349.92	**2.2**
CONM-250 (0-6")	1087.56	**60**	BB	BB	318.42	**4.5**	4696.69	**39**	BB	BB	494.42	**3.1**
CONM-250+25 (0-6")	73.3	**4.1**	3.2	0.10	178	**2.5**	872.6	**7.3**	1385	**6.3**	607.4	**3.8**
CONM-300 (0-6")	20.735	**1.2**	NE	NE	129.33	**1.8**	722.26	**6.0**	BB	BB	460.93	**2.9**
CONM-300+25 (0-6")	26.5	**1.5**	NE	NE	BB	BB	BB	BB	1180	**5.4**	378.7	**2.4**
CONM-350 (0-6")	18.905	**1.1**	NE	NE	216.87	**3.1**	546.01	**4.6**	BB	BB	249.12	**1.6**
CONM-350+50 (0-6")	29.9	**1.7**	NE	NE	61	0.87	BB	BB	2400	**11**	402.7	**2.5**
CONM-400 (0-6")	37.04	**2.1**	NE	NE	145.11	**2.1**	565.76	**4.7**	BB	BB	205.02	**1.3**
CONM-400+25 (0-6")	10.45	0.58	BB	BB	64	0.91	348.7	**2.9**	BB	BB	337.6	**2.1**
CONM-450 (0-6")	45.36	**2.5**	NE	NE	108.92	**1.6**	413.53	**3.4**	BB	BB	511.25	**3.2**
CONM-450+25 (0-6")	29.7	**1.7**	NE	NE	78	**1.1**	567.7	**4.7**	BB	BB	328.7	**2.1**
CONM-50 (0-6")	45.36	**2.5**	NE	NE	202.95	**2.9**	637.03	**5.3**	BB	BB	255.68	**1.6**
CONM-50+50 (0-6")	37.6	**2.1**	BB	BB	93	**1.3**	385.1	**3.2**	1525	**6.9**	479.9	**3.0**
CONM-500 (0-6")	21.73	**1.2**	NE	NE	BB	BB	BB	BB	BB	BB	143.28	0.90
CONM-550 (0-6")	12.985	0.72	NE	NE	58	0.83	336.38	**2.8**	BB	BB	388.19	**2.4**
CONM-600 (0-6")	24.7	**1.4**	NE	NE	221.67	**3.2**	968.31	**8.1**	BB	BB	281.92	**1.8**
CONM-600+12.5 (0-6")	BB	BB	BB	BB	67	0.96	BB	BB	BB	BB	427.1	**2.7**
CONM-650 (0-6")	21.65	**1.2**	NE	NE	43.99	0.63	BB	BB	BB	BB	360.44	**2.3**
CONM-700 (0-6")	11.975	0.67	BB	BB	77.44	**1.1**	BB	BB	BB	BB	239.77	**1.5**
CONM-750 (0-6")	92.56	**5.1**	6.72	0.21	315.38	**4.5**	1691.71	**14**	BB	BB	745.86	**4.7**
CONM-800 (0-6")	525.92	**29**	NE	NE	103.73	**1.5**	1898.68	**16**	BB	BB	106.65	0.67
CONM-800+25 (0-6")	23.2	**1.3**	NE	NE	101	**1.4**	BB	BB	BB	BB	325.4	**2.0**
CONM-850 (0-6")	63.09	**3.5**	NE	NE	297.27	**4.2**	397.89	**3.3**	1687.26	**7.7**	577.82	**3.6**
CONM-900 (0-6")	45.725	**2.5**	NE	NE	234.21	**3.3**	3580.49	**30**	BB	BB	814.67	**5.1**
CONM-900+12.5 (0-6")	10.45	0.58	NE	NE	146	**2.1**	BB	BB	1330	**6.0**	252.8	**1.6**
CONM-950 (0-6")	52.9	**2.9**	NE	NE	164.49	**2.3**	338.2	**2.8**	BB	BB	214.87	**1.3**
CONM-Comp 1 (0-6")	23.165	**1.3**	BB	BB	216.81	**3.1**	900.8	**7.5**	BB	BB	232.83	**1.5**
CONM-Comp 2 (0-6")	60.6	**3.4**	3.38	0.11	135.25	**1.9**	713.17	**5.9**	BB	BB	782.29	**4.9**
CONM-Pile 1 (0-6")	486.49	**27**	BB	BB	276.34	**3.9**	5934.86	**49**	BB	BB	258.66	**1.6**

TABLE D-6: TERRESTRIAL PLANT AND INVERTEBRATE HAZARD QUOTIENT SUMMARY TABLE, EU 6 - CONSOLATION MINE WASTE AREA (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

RECEPTOR / POINT ID	Arsenic Concentration (mg/kg)[1]	Arsenic HQ[2]	Cadmiuim Concentration (mg/kg)[1]	Cadmium HQ[2]	Copper Concentration (mg/kg)[1]	Copper HQ[2]	Lead Concentration (mg/kg)[1]	Lead HQ[2]	Manganese Concentration (mg/kg)[1]	Manganese HQ[2]	Zinc Concentration (mg/kg)[1]	Zinc HQ[2]
Screening Benchmark - Terrestrial Invertebrates (mg/kg)[3]	**60**		**140**		**80**		**1700**		**450**		**120**	
Terrestrial Invertebrates												
Reference Sites												
SHGBG-1	27.38	0.46	3.32	0.024	39.55	0.49	321.54	0.19	1470.06	**3.3**	290.52	**2.4**
SHGBG-2	16.06	0.27	2.46	0.018	58.61	0.73	32.69	0.019	1008.4	**2.2**	99.21	0.83
Consolation Mine												
CONM-000 (0-6")	30.84	0.51	NE	NE	40.59	0.51	206.08	0.12	BB	BB	224.53	**1.9**
CONM-100 (0-6")	17.075	0.28	NE	NE	141.5	**1.8**	552.46	0.32	BB	BB	330.88	**2.8**
CONM-100+25 (0-6")	26.4	0.44	NE	NE	51	0.64	346.1	0.20	1441	**3.2**	417.5	**3.5**
CONM-1000 (0-6")	71.92	**1.2**	NE	NE	186.92	**2.3**	1206.06	0.71	BB	BB	252.26	**2.1**
CONM-1000+35 (0-6")	29	0.48	NE	NE	233	**2.9**	407.1	0.24	BB	BB	315.8	**2.6**
CONM-150 (0-6")	35.37	0.59	NE	NE	57.97	0.72	BB	BB	BB	BB	335.43	**2.8**
CONM-200 (0-6")	33.01	0.55	NE	NE	41.93	0.52	BB	BB	BB	BB	349.92	**2.9**
CONM-250 (0-6")	1087.56	**18**	BB	BB	318.42	**4.0**	4696.69	**2.8**	BB	BB	494.42	**4.1**
CONM-250+25 (0-6")	73.3	**1.2**	3.2	0.023	178	**2.2**	872.6	0.51	1385	**3.1**	607.4	**5.1**
CONM-300 (0-6")	20.735	0.35	NE	NE	129.33	**1.6**	722.26	0.42	BB	BB	460.93	**3.8**
CONM-300+25 (0-6")	26.5	0.44	NE	NE	BB	BB	BB	BB	1180	**2.6**	378.7	**3.2**
CONM-350 (0-6")	18.905	0.32	NE	NE	216.87	**2.7**	546.01	0.32	BB	BB	249.12	**2.1**
CONM-350+50 (0-6")	29.9	0.50	NE	NE	61	0.76	BB	BB	2400	**5.3**	402.7	**3.4**
CONM-400 (0-6")	37.04	0.62	NE	NE	145.11	**1.8**	565.76	0.33	BB	BB	205.02	**1.7**
CONM-400+25 (0-6")	10.45	0.17	BB	BB	64	0.8	348.7	0.21	BB	BB	337.6	**2.8**
CONM-450 (0-6")	45.36	0.76	NE	NE	108.92	**1.4**	413.53	0.24	BB	BB	511.25	**4.3**
CONM-450+25 (0-6")	29.7	0.50	NE	NE	78	0.98	567.7	0.33	BB	BB	328.7	**2.7**
CONM-50 (0-6")	45.36	0.76	NE	NE	202.95	**2.5**	637.03	0.37	BB	BB	255.68	**2.1**
CONM-50+50 (0-6")	37.6	0.63	BB	BB	93	**1.2**	385.1	0.23	1525	**3.4**	479.9	**4.0**
CONM-500 (0-6")	21.73	0.36	NE	NE	BB	BB	BB	BB	BB	BB	143.28	**1.2**
CONM-550 (0-6")	12.985	0.22	NE	NE	58	0.73	336.38	0.2	BB	BB	388.19	**3.2**
CONM-600 (0-6")	24.7	0.41	NE	NE	221.67	**2.8**	968.31	0.57	BB	BB	281.92	**2.3**
CONM-600+12.5 (0-6")	BB	BB	BB	BB	67	0.84	BB	BB	BB	BB	427.1	**3.6**
CONM-650 (0-6")	21.65	0.36	NE	NE	43.99	0.55	BB	BB	BB	BB	360.44	**3.0**
CONM-700 (0-6")	11.975	0.20	BB	BB	77.44	0.97	BB	BB	BB	BB	239.77	**2.0**
CONM-750 (0-6")	92.56	**1.5**	6.72	0.048	315.38	**3.9**	1691.71	**1.0**	BB	BB	745.86	**6.2**
CONM-800 (0-6")	525.92	**8.8**	NE	NE	103.73	**1.3**	1898.68	**1.1**	BB	BB	106.65	0.89
CONM-800+25 (0-6")	23.2	0.39	NE	NE	101	**1.3**	BB	BB	BB	BB	325.4	**2.7**
CONM-850 (0-6")	63.09	**1.1**	NE	NE	297.27	**3.7**	397.89	0.23	1687.26	**3.7**	577.82	**4.8**
CONM-900 (0-6")	45.725	0.76	NE	NE	234.21	**2.9**	3580.49	**2.1**	BB	BB	814.67	**6.8**
CONM-900+12.5 (0-6")	10.45	0.17	NE	NE	146	**1.8**	BB	BB	1330	**3.0**	252.8	**2.1**
CONM-950 (0-6")	52.9	0.88	NE	NE	164.49	**2.1**	338.2	0.20	BB	BB	214.87	**1.8**
CONM-Comp 1 (0-6")	23.165	0.39	BB	BB	216.81	**2.7**	900.8	0.53	BB	BB	232.83	**1.9**
CONM-Comp 2 (0-6")	60.6	**1.0**	3.38	0.024	135.25	**1.7**	713.17	0.42	BB	BB	782.29	**6.5**
CONM-Pile 1 (0-6")	486.49	**8.1**	BB	BB	276.34	**3.5**	5934.86	**3.5**	BB	BB	258.66	**2.2**

Notes:

Bold values indicate HQs greater than 1.0.

1 Soil concentration from 0 to 6 inches below ground surface at point ID as measured by XRF 10 for all chemicals except cadmium. XRF 10 results were not available for cadmium, so laboratory results were used. Hazard quotients were not calculated for detected and non-detect soil concentrations measured below the minimum reference site concentration, as indicated by BB. For results that were measured at less than the detection limit, HQs were calculated using half of the detection limit.

2 HQs were calculated by dividing the site concentration by the plant or invertebrate screening benchmark.

3 Plant screening benchmarks are from EPA 2007. Invertebrate screening benchmarks are from EPA 2007, with the exception of the screening benchmark for arsenic, which is from Efroymson and others 1997.

BB	Below minimum background	ID	Identification
EPA	U.S. Environmental Protection Agency	mg/kg	Milligrams per kilogram
EU	Exposure Unit	NE	Not evaluated
HQ	Hazard quotient		

Sources:

Efroymson, R.A., M.E, Will, and G.W. Suter II. 1997. "Toxicological Benchmarks for Contaminants of Potential Concern for Effects on Soil and Litter Invertebrates and Heterotrophic Processes: 1997 Revision." Oak Ridge National Laboratory, Oak Ridge TN. ES/ER/TM-126/R2

EPA. 2007. Interim Ecological Soil Screening Levels. Available on-line at: http://www.epa.gov/ecotox/ecossl/

TABLE D-7: TERRESTRIAL PLANT AND INVERTEBRATE HAZARD QUOTIENT SUMMARY TABLE, EU 7 - MARY P. MINE WASTE PILE

Remedial Investigation Report

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

RECEPTOR / POINT ID	Arsenic Concentration (mg/kg)[1]	Arsenic HQ[2]	Cadmium Concentration (mg/kg)[1]	Cadmium HQ[2]	Copper Concentration (mg/kg)[1]	Copper HQ[2]	Lead Concentration (mg/kg)[1]	Lead HQ[2]	Manganese Concentration (mg/kg)[1]	Manganese HQ[2]	Zinc Concentration (mg/kg)[1]	Zinc HQ[2]
Screening Benchmark - Terrestrial Plants (mg/kg)[3]	**18**		**32**		**70**		**120**		**220**		**160**	
Plants												
Reference Site												
SGBG-1 (0-6")	34.57	**1.9**	0.28	0.0089	92.51	**1.3**	115.16	0.96	141.05	0.64	40.94	0.26
UBRBG-204 (0-6")	19.50	**1.1**	2.70	0.084	104.28	**1.5**	53.20	0.44	693.84	**3.2**	342.67	**2.1**
Mary P. Mine Waste Pile												
MPWA-0 (0-6")	41.21	**2.3**	0.90	0.028	572.87	**8.2**	3999.89	**33**	601.96	**2.7**	275.58	**1.7**
MPWA-50+39 (0-6")	44.64	**2.5**	NE	NE	392.44	**5.6**	591.37	**4.9**	960.77	**4.4**	513.71	**3.2**
MPWA-75+20 (0-6")	156.60	**8.7**	0.25	0.0078	146.94	**2.1**	326.06	**2.7**	634.86	**2.9**	81.84	0.51
MPWA-100+15 (0-6")	59.68	**3.3**	NE	NE	424.21	**6.1**	569.81	**4.7**	512.38	**2.3**	148.84	0.93
MPWA-100+25 (0-6")	11.66	0.65	NE	NE	279.24	**4.0**	332.68	**2.8**	877.72	**4.0**	260.31	**1.6**
MPWA-200+0 (0-6")	23.12	**1.3**	0.58	0.018	479.77	**6.9**	BB	BB	282.55	**1.3**	145.75	0.91
MPWA-200+25 (0-6")	35.95	**2**	NE	NE	87.34	**1.2**	141.85	**1.2**	871.50	**4.0**	194.64	**1.2**
MPWA-230+25 (0-6")	BB	BB	NE	NE	481.40	**6.9**	246.60	**2.1**	1084.53	**4.9**	162.55	**1.0**
Screening Benchmark - Terrestrial Invertebrates (mg/kg)[3]	**60**		**140**		**80**		**1700**		**450**		**120**	
Invertebrates												
Reference Site												
SGBG-1 (0-6")	34.57	0.58	0.28	0.002	92.51	**1.2**	115.16	0.068	141.05	0.31	40.94	0.34
UBRBG-204 (0-6")	19.50	0.33	2.70	0.019	104.28	**1.3**	53.20	0.031	693.84	**1.5**	342.67	**2.9**
Mary P. Mine Waste Pile												
MPWA-0 (0-6")	41.21	0.69	0.90	0.0064	572.87	**7.2**	3999.89	**2.4**	601.96	**1.3**	275.58	**2.3**
MPWA-50+39 (0-6")	44.64	0.74	NE	NE	392.44	**4.9**	591.37	0.35	960.77	**2.1**	513.71	**4.3**
MPWA-75+20 (0-6")	156.60	**2.6**	0.25	0.0018	146.94	**1.8**	326.06	0.19	634.86	**1.4**	81.84	0.68
MPWA-100+15 (0-6")	59.68	0.99	NE	NE	424.21	**5.3**	569.81	0.34	512.38	**1.1**	148.84	**1.2**
MPWA-100+25 (0-6")	11.66	0.19	NE	NE	279.24	**3.5**	332.68	0.20	877.72	**2.0**	260.31	**2.2**
MPWA-200+0 (0-6")	23.12	0.39	0.58	0.0041	479.77	**6.0**	BB	BB	282.55	0.63	145.75	**1.2**
MPWA-200+25 (0-6")	35.95	0.6	NE	NE	87.34	**1.1**	141.85	0.083	871.50	**1.9**	194.64	**1.6**
MPWA-230+25 (0-6")	BB	BB	NE	NE	481.40	**6.0**	246.60	0.15	1084.53	**2.4**	162.55	**1.4**

Notes:

Bold values indicate HQs greater than 1.0.

1 Soil concentration from 0 to 6 inches below ground surface at point ID as measured by XRF 10 for all chemicals except cadmium. XRF 10 results were not available for cadmium, so laboratory results were used. Hazard quotients were not calculated for detected and non-detect soil concentrations measured below the minimum reference site concentration, as indicated by BB. For results that were measured at less than the detection limit, HQs were calculated using half of the detection limit.

2 HQs were calculated by dividing the site concentration by the plant or invertebrate screening benchmark.

3 Plant screening benchmarks are from EPA 2007. Invertebrate screening benchmarks are from EPA 2007, with the exception of the screening benchmark for arsenic, which is from Efroymson and others 1997.

BB	Below minimum background reference site concentration	ID	Identification
EPA	U.S. Environmental Protection Agency	mg/kg	Milligrams per kilogram
EU	Exposure Unit	NE	Not evaluated
HQ	Hazard quotient		

Sources:

Efroymson, R.A., M.E, Will, and G.W. Suter II. 1997. "Toxicological Benchmarks for Contaminants of Potential Concern for Effects on Soil and Litter Invertebrates and Heterotrophic Processes: 1997 Revision." Oak Ridge National Laboratory, Oak Ridge TN. ES/ER/TM-126/R2

EPA. 2007. Interim Ecological Soil Screening Levels. Available on-line at: http://www.epa.gov/ecotox/ecossl/

TABLE D-8: TERRESTRIAL PLANT AND INVERTEBRATE HAZARD QUOTIENT SUMMARY TABLE, EU 8 - MIKE HORSE MINE WASTE PILES

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

RECEPTOR / POINT ID	Arsenic Concentration (mg/kg)[1]	Arsenic HQ[2]	Cadmium Concentration (mg/kg)[1]	Cadmium HQ[2]	Copper Concentration (mg/kg)[1]	Copper HQ[2]	Lead Concentration (mg/kg)[1]	Lead HQ[2]	Manganese Concentration (mg/kg)[1]	Manganese HQ[2]	Zinc Concentration (mg/kg)[1]	Zinc HQ[2]
Screening Benchmark - Terrestrial Plants (mg/kg)[3]	**18**		**32**		**70**		**120**		**220**		**160**	
Terrestrial Plants												
Reference Sites												
BCBG-1 (0-6")	15.33	0.85	1.57	0.049	32.77	0.47	83.98	0.7	864.53	**3.9**	297.33	**1.9**
MHBG-201	15.56	0.86	4.50	0.14	62.50	0.89	33.34	0.28	2432.05	**11**	52.30	0.33
MHBG-202	15.20	0.84	4.60	0.14	54.20	0.77	180.86	**1.5**	1472.87	**6.7**	48.38	0.3
Mike Horse Creek Channel Area Deposits												
AMHR-0 (0-6")	8.93	0.5	NE	NE	56.62	0.81	114.40	0.95	BB	BB	203.51	**1.3**
AMHR-200 (0-6")	8.79	0.49	BB	BB	52.99	0.76	110.86	0.92	BB	BB	134.45	0.84
AMHR-400 (0-6")	18.73	**1.0**	NE	NE	55.61	0.79	562.17	**4.7**	1383.59	**6.3**	558.19	**3.5**
AMHR-600 (0-6")	19.07	**1.1**	NE	NE	78.88	**1.1**	659.80	**5.5**	BB	BB	676.93	**4.2**
MHCS-00-E25 (0-6")	143.45	**8.0**	NE	NE	405.32	**5.8**	3869.36	**32**	6332.25	**29**	1830.97	**11**
MHCS-0-W25 (0-6")	15.74	0.87	NE	NE	71.78	**1.0**	446.11	**3.7**	1029.04	**4.7**	246.09	**1.5**
MHCS-0-W5 (0-6")	40.99	**2.3**	NE	NE	48.83	0.7	318.50	**2.7**	2769.55	**13**	236.52	**1.5**
MHCS-100-E25 (0-6")	411.61	**23**	NE	NE	556.94	**8**	5700.98	**48**	4490.45	**20**	1211.82	**7.6**
MHCS-100-W1 (0-6")	192.21	**11**	NE	NE	385.88	**5.5**	3891.43	**32**	4638.10	**21**	1278.74	**8**
MHCS-100-W25 (0-6")	14.43	0.8	NE	NE	50.63	0.72	341.56	**2.8**	BB	BB	175.96	**1.1**
MHCS-200-E10 (0-6")	112.51	**6.3**	NE	NE	216.33	**3.1**	1947.86	**16**	4074.31	**19**	929.21	**5.8**
MHCS-200-E25 (0-6")	22.60	**1.3**	BB	BB	BB	BB	102.61	0.86	BB	BB	202.26	**1.3**
MHCS-200-W10 (0-6")	12.75	0.71	NE	NE	77.65	**1.1**	291.84	**2.4**	1158.36	**5.3**	269.23	**1.7**
MHCS-525-E5 (0-6")	173.02	**9.6**	11.20	0.35	106.87	**1.5**	373.88	**3.1**	9058.73	**41**	2488.39	**16**
MHCS-525-W15 (0-6")	243.97	**14**	NE	NE	299.65	**4.3**	2733.62	**23**	4503.95	**20**	2350.79	**15**
MHCS-600-E10 (0-6")	135.42	**7.5**	NE	NE	208.93	**3**	3452.65	**29**	3472.38	**16**	1089.25	**6.8**
MHCS-600-W10 (0-6")	215.29	**12**	NE	NE	2848.96	**41**	3085.67	**26**	5016.67	**23**	3205.39	**20**
MHCS-700-E10 (0-6")	147.24	**8.2**	NE	NE	310.56	**4.4**	3027.21	**25**	5295.28	**24**	1374.02	**8.6**
MHCS-700-E25 (0-6")	32.52	**1.8**	BB	BB	47.11	0.67	178.38	**1.5**	BB	BB	257.55	**1.6**
MHCS-700-W10 (0-6")	150.30	**8.4**	NE	NE	1607.95	**23**	3308.55	**28**	11572.65	**53**	1549.04	**9.7**
MHCS-800-E15 (0-6")	18.50	**1.0**	NE	NE	BB	BB	166.42	**1.4**	1118.49	**5.1**	161.78	**1**
MHCS-800-E5 (0-6")	129.77	**7.2**	NE	NE	442.88	**6.3**	2633.50	**22**	7052.56	**32**	1628.09	**10**
MHCS-800-W5 (0-6")	85.11	**4.7**	NE	NE	657.76	**9.4**	1571.80	**13**	2265.69	**10**	637.07	**4.0**
MHCS-900-E15 (0-6")	22.05	**1.2**	NE	NE	BB	BB	130.54	**1.1**	BB	BB	308.59	**1.9**
MHCS-900-E5 (0-6")	173.14	**9.6**	NE	NE	434.98	**6.2**	2682.77	**22**	5129.02	**23**	1407.20	**8.8**
MHCS-900-W5 (0-6")	100.40	**5.6**	NE	NE	543.88	**7.8**	1771.29	**15**	3330.84	**15**	543.78	**3.4**
MHCS-1000-E10 (0-6")	50.42	**2.8**	NE	NE	35.09	0.5	303.08	**2.5**	BB	BB	618.63	**3.9**
MHCS-1000-W5 (0-6")	188.82	**10**	NE	NE	1374.83	**20**	3701.36	**31**	7156.68	**33**	2745.53	**17**
MHCS-1100-E10 (0-6")	57.39	**3.2**	NE	NE	135.59	**1.9**	240.71	**2.0**	6613.12	**30**	939.94	**5.9**
MHCS-1100-E35 (0-6")	20.70	**1.2**	NE	NE	BB	BB	109.29	0.91	BB	BB	159.28	**1.0**
MHCS-1200-E15 (0-6")	49.19	**2.7**	NE	NE	134.88	**1.9**	618.16	**5.2**	2256.24	**10**	754.20	**4.7**
MHCS-1200-E30 (0-6")	35.04	**1.9**	NE	NE	42.04	0.6	194.63	**1.6**	1725.30	**7.8**	202.30	**1.3**
MHCS-1300-E20 (0-6")	87.04	**4.8**	NE	NE	171.75	**2.5**	872.09	**7.3**	2389.45	**11**	1428.74	**8.9**
MHCS-1300-E35 (0-6")	16.56	0.92	NE	NE	161.19	**2.3**	342.51	**2.9**	2151.86	**9.8**	401.63	**2.5**
Waste Areas 1 and 2												
UMH1-00 (0-6")	31.91	**1.8**	NE	NE	118.89	**1.7**	1764.07	**15**	2266.76	**10**	897.44	**5.6**
UMH1-100 (0-6")	80.39	**4.5**	NE	NE	179.36	**2.6**	2181.51	**18**	6952.92	**32**	1659.67	**10**
UMH1-150 (0-6")	24.17	**1.3**	NE	NE	52.24	0.75	1032.57	**8.6**	2909.77	**13**	795.76	**5.0**
UMH1-200 (0-6")	30.61	**1.7**	NE	NE	17.19	0.25	49.48	0.41	BB	BB	101.77	0.64
UMH1-250 (0-6")	92.84	**5.2**	NE	NE	BB	BB	807.89	**6.7**	4489.50	**20**	965.78	**6.0**
UMH1-250+25 (0-6")	37.50	**2.1**	NE	NE	BB	BB	183.60	**1.5**	6021.00	**27**	410.00	**2.6**
UMH1-300 (0-6")	100.43	**5.6**	NE	NE	98.74	**1.4**	1698.17	**14**	8503.19	**39**	1463.65	**9.1**
UMH1-300+14 (0-6")	32.50	**1.8**	3.00	0.094	57.00	0.81	122.70	**1.0**	3286.00	**15**	288.40	**1.8**
UMH1-350 (0-6")	124.28	**6.9**	NE	NE	101.56	**1.5**	1977.50	**16**	7990.29	**36**	1522.20	**9.5**

TABLE D-8: TERRESTRIAL PLANT AND INVERTEBRATE HAZARD QUOTIENT SUMMARY TABLE, EU 8 - MIKE HORSE MINE WASTE PILES (Continued)
Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

RECEPTOR / POINT ID	Arsenic Concentration (mg/kg)[1]	Arsenic HQ[2]	Cadmium Concentration (mg/kg)[1]	Cadmium HQ[2]	Copper Concentration (mg/kg)[1]	Copper HQ[2]	Lead Concentration (mg/kg)[1]	Lead HQ[2]	Manganese Concentration (mg/kg)[1]	Manganese HQ[2]	Zinc Concentration (mg/kg)[1]	Zinc HQ[2]
Screening Benchmark - Terrestrial Plants (mg/kg)3	**18**		**32**		**70**		**120**		**220**		**160**	
Waste Areas 1 and 2												
UMH1-350+12.5 (0-6")	37.60	**2.1**	NE	NE	35.00	0.5	159.70	**1.3**	1656.00	**7.5**	476.90	**3.0**
UMH1-400 (0-6")	20.44	**1.1**	NE	NE	64.26	0.92	827.51	**6.9**	1544.00	**7.0**	754.37	**4.7**
UMH1-400+12.5 (0-6")	22.20	**1.2**	4.30	0.13	BB	BB	103.00	0.86	4445.00	**20**	787.30	**4.9**
UMH1-450 (0-6")	24.89	**1.4**	NE	NE	36.03	0.51	1163.46	**9.7**	1445.66	**6.6**	775.63	**4.8**
UMH1-450+12.5 (0-6")	30.18	**1.7**	NE	NE	BB	BB	87.22	0.73	BB	BB	774.50	**4.8**
UMH1-50 (0-6")	23.29	**1.3**	NE	NE	84.30	**1.2**	103.00	0.86	1610.82	**7.3**	753.82	**4.7**
UMH1-Comp (0-6")	130.25	**7.2**	9.74	0.3	120.05	**1.7**	1936.56	**16**	4218.67	**19**	1391.04	**8.7**
UMH2-00 (0-6")	498.62	**28**	NE	NE	396.32	**5.7**	6572.28	**55**	2276.89	**10**	887.75	**5.5**
UMH2-00+25 (0-6")	46.50	**2.6**	1.90	0.059	47.00	0.67	207.80	**1.7**	2413.00	**11**	383.30	**2.4**
UMH2-100 (0-6")	343.61	**19**	NE	NE	503.63	**7.2**	7300.29	**61**	4100.26	**19**	1615.43	**10**
UMH2-100+35 (0-6")	35.50	**2.0**	NE	NE	100.00	**1.4**	472.90	**3.9**	2368.00	**11**	412.20	**2.6**
UMH2-150 (0-6")	177.60	**9.9**	NE	NE	267.14	**3.8**	3370.59	**28**	1567.38	**7.1**	549.66	**3.4**
UMH2-150+60 (0-6")	10.15	0.56	NE	NE	104.00	**1.5**	409.60	**3.4**	BB	BB	157.80	0.99
UMH2-200 (0-6")	249.21	**14**	NE	NE	489.10	**7**	6826.62	**57**	5748.86	**26**	1612.04	**10**
UMH2-200+85 (0-6")	15.85	0.88	BB	BB	94.00	**1.3**	847.00	**7.1**	1306.00	**5.9**	272.60	**1.7**
UMH2-250 (0-6")	271.19	**15**	NE	NE	450.24	**6.4**	5398.81	**45**	4056.80	**18**	1573.59	**9.8**
UMH2-250+75 (0-6")	51.49	**2.9**	NE	NE	116.00	**1.7**	468.57	**3.9**	2307.65	**10**	388.05	**2.4**
UMH2-300 (0-6")	52.40	**2.9**	NE	NE	77.41	**1.1**	760.43	**6.3**	1012.97	**4.6**	677.89	**4.2**
UMH2-300+25 (0-6")	36.20	**2.0**	NE	NE	39.00	0.56	123.90	**1.0**	1075.00	**4.9**	1164.60	**7.3**
UMH2-350 (0-6")	39.90	**2.2**	NE	NE	53.44	0.76	580.80	**4.8**	BB	BB	720.69	**4.5**
UMH2-350+25 (0-6")	31.20	**1.7**	NE	NE	37.00	0.53	126.00	**1.1**	6086.00	**28**	1185.20	**7.4**
UMH2-400 (0-6")	52.07	**2.9**	NE	NE	BB	BB	604.25	**5.0**	BB	BB	297.70	**1.9**
UMH2-400+25 (0-6")	BB	BB	5.73	0.18	35.00	0.5	75.70	0.63	1527.00	**6.9**	732.80	**4.6**
UMH2-450 (0-6")	46.35	**2.6**	NE	NE	52.87	0.76	4247.16	**35**	977.94	**4.4**	397.76	**2.5**
UMH2-450+25 (0-6")	8.90	0.49	NE	NE	34.00	0.49	270.30	**2.3**	BB	BB	592.10	**3.7**
UMH2-50 (0-6")	45.88	**2.5**	NE	NE	125.43	**1.8**	652.02	**5.4**	2188.17	**9.9**	457.82	**2.9**
UMH2-50+25b (0-6")	47.63	**2.6**	NE	NE	35.46	0.51	BB	BB	1731.00	**7.9**	370.78	**2.3**
UMH2-500 (0-6")	338.24	**19**	NE	NE	463.31	**6.6**	8648.34	**72**	2802.84	**13**	823.28	**5.1**
UMH2-500+75 (0-6")	32.80	**1.8**	2.20	0.069	BB	BB	261.40	**2.2**	1811.00	**8.2**	610.70	**3.8**
UMH2-550 (0-6")	440.27	**24**	NE	NE	849.12	**12**	11060.14	**92**	7807.35	**35**	2418.11	**15**
UMH2-550+75 (0-6")	18.74	**1.0**	NE	NE	BB	BB	61.63	0.51	1959.96	**8.9**	393.64	**2.5**
UMH2-600 (0-6")	146.85	**8.2**	NE	NE	102.83	**1.5**	2711.28	**23**	2194.24	**10**	510.54	**3.2**
UMH2-600+25 (0-6")	33.90	**1.9**	BB	BB	BB	BB	115.40	0.96	1260.00	**5.7**	377.70	**2.4**
UMH2-650 (0-6")	156.35	**8.7**	NE	NE	186.19	**2.7**	3576.09	**30**	1967.95	**8.9**	472.11	**3.0**
UMH2-650+25 (0-6")	28.97	**1.6**	NE	NE	43.02	0.61	229.77	**1.9**	BB	BB	420.61	**2.6**
UMH2-Comp 1 (0-6")	263.56	**15**	4.65	0.15	474.55	**6.8**	7916.71	**66**	4565.28	**21**	1310.25	**8.2**
UMH2-Comp 2 (0-6")	356.08	**20**	9.12	0.29	934.65	**13**	10329.23	**86**	5564.43	**25**	1339.45	**8.4**
Waste Area 3												
UMH3-00 (0-6")	10.05	0.56	NE	NE	63.35	0.91	164.66	**1.4**	BB	BB	123.15	0.77
UMH3-100 (0-6")	37.62	**2.1**	NE	NE	54.13	0.77	224.49	**1.9**	BB	BB	231.61	**1.4**
UMH3-150 (0-6")	31.45	**1.7**	NE	NE	351.59	**5**	1892.01	**16**	BB	BB	547.02	**3.4**
UMH3-200 (0-6")	121.78	**6.8**	NE	NE	234.47	**3.3**	3029.14	**25**	1466.00	**6.7**	437.44	**2.7**
UMH3-250 (0-6")	454.93	**25**	NE	NE	784.14	**11**	11296.28	**94**	BB	BB	766.79	**4.8**
UMH3-300 (0-6")	8.99	0.5	NE	NE	35.71	0.51	145.72	**1.2**	BB	BB	198.73	**1.2**
UMH3-350 (0-6")	535.04	**30**	NE	NE	1317.30	**19**	16817.24	**140**	1697.15	**7.7**	1001.82	**6.3**
UMH3-350+75 (0-6")	20.90	**1.2**	BB	BB	51.00	0.73	171.10	**1.4**	1910.00	**8.7**	307.50	**1.9**
UMH3-400 (0-6")	260.15	**14**	NE	NE	642.35	**9.2**	9593.95	**80**	986.73	**4.5**	656.08	**4.1**
UMH3-400+25 (0-6")	28.10	**1.6**	BB	BB	77.00	**1.1**	369.10	**3.1**	BB	BB	270.60	**1.7**
UMH3-450 (0-6")	19.19	**1.1**	NE	NE	74.53	**1.1**	99.25	0.83	BB	BB	151.78	0.95

TABLE D-8: TERRESTRIAL PLANT AND INVERTEBRATE HAZARD QUOTIENT SUMMARY TABLE, EU 8 - MIKE HORSE MINE WASTE PILES (Continued)
Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

RECEPTOR / POINT ID	Arsenic Concentration (mg/kg)[1]	Arsenic HQ[2]	Cadmium Concentration (mg/kg)[1]	Cadmium HQ[2]	Copper Concentration (mg/kg)[1]	Copper HQ[2]	Lead Concentration (mg/kg)[1]	Lead HQ[2]	Manganese Concentration (mg/kg)[1]	Manganese HQ[2]	Zinc Concentration (mg/kg)[1]	Zinc HQ[2]
Screening Benchmark - Terrestrial Plants (mg/kg)3	**18**		**32**		**70**		**120**		**220**		**160**	
Waste Area 3												
UMH3-50 (0-6")	11.35	0.63	NE	NE	42.91	0.61	212.49	**1.8**	BB	BB	374.51	**2.3**
UMH3-50+50 (0-6")	9.74	0.54	NE	NE	54.86	0.78	314.40	**2.6**	1304.11	**5.9**	427.64	**2.7**
UMH3-500 (0-6")	71.85	**4.0**	NE	NE	141.08	**2**	1496.71	**12**	BB	BB	377.36	**2.4**
UMH3-550 (0-6")	418.39	**23**	NE	NE	993.80	**14**	12377.30	**100**	1525.85	**6.9**	1000.99	**6.3**
UMH3-600 (0-6")	904.30	**50**	NE	NE	1212.31	**17**	15449.31	**130**	1322.12	**6.0**	947.90	**5.9**
UMH3-650 (0-6")	401.34	**22**	NE	NE	946.94	**14**	15468.85	**130**	1491.37	**6.8**	869.37	**5.4**
UMH3-700 (0-6")	484.56	**27**	NE	NE	886.97	**13**	14940.59	**120**	BB	BB	649.66	**4.1**
UMH3-750 (0-6")	55.12	**3.1**	NE	NE	93.42	**1.3**	1141.04	**9.5**	BB	BB	285.15	**1.8**
UMH3-800 (0-6")	106.03	**5.9**	NE	NE	201.85	**2.9**	2104.21	**18**	1099.06	**5.0**	297.17	**1.9**
UMH3-Comp 1 (0-6")	19.74	**1.1**	NE	NE	85.96	**1.2**	730.29	**6.1**	BB	BB	197.63	**1.2**
UMH3-Comp 2 (0-6")	218.03	**12**	15.90	0.5	669.92	**9.6**	8725.32	**73**	BB	BB	772.78	**4.8**
UMH3-Comp 3 (0-6")	660.57	**37**	4.95	0.15	880.18	**13**	14375.43	**120**	1516.96	**6.9**	2246.32	**14**
Screening Benchmark - Terrestrial Invertebrates (mg/kg)[3]	**60**		**140**		**80**		**1700**		**450**		**120**	
Terrestrial Invertebrates												
Reference Sites												
BCBG-1 (0-6")	15.33	0.26	1.57	0.011	32.77	0.41	83.98	0.049	864.53	**1.9**	297.33	**2.5**
MHBG-201	15.56	0.26	4.50	0.032	62.50	0.78	33.34	0.02	2432.05	**5.4**	52.30	0.44
MHBG-202	15.20	0.25	4.60	0.033	54.20	0.68	180.86	0.11	1472.87	**3.3**	48.38	0.4
Mike Horse Creek Channel Area Deposits												
AMHR-0 (0-6")	8.93	0.15	NE	NE	56.62	0.71	114.40	0.067	BB	BB	203.51	**1.7**
AMHR-200 (0-6")	8.79	0.15	BB	BB	52.99	0.66	110.86	0.065	BB	BB	134.45	**1.1**
AMHR-400 (0-6")	18.73	0.31	NE	NE	55.61	0.7	562.17	0.33	1383.59	**3.1**	558.19	**4.7**
AMHR-600 (0-6")	19.07	0.32	NE	NE	78.88	0.99	659.80	0.39	BB	BB	676.93	**5.6**
MHCS-00-E25 (0-6")	143.45	**2.4**	NE	NE	405.32	**5.1**	3869.36	**2.3**	6332.25	**14**	1830.97	**15**
MHCS-0-W25 (0-6")	15.74	0.26	NE	NE	71.78	0.9	446.11	0.26	1029.04	**2.3**	246.09	**2.1**
MHCS-0-W5 (0-6")	40.99	0.68	NE	NE	48.83	0.61	318.50	0.19	2769.55	**6.2**	236.52	**2**
MHCS-100-E25 (0-6")	411.61	**6.9**	NE	NE	556.94	**7.0**	5700.98	**3.4**	4490.45	**10**	1211.82	**10**
MHCS-100-W1 (0-6")	192.21	**3.2**	NE	NE	385.88	**4.8**	3891.43	**2.3**	4638.10	**10**	1278.74	**11**
MHCS-100-W25 (0-6")	14.43	0.24	NE	NE	50.63	0.63	341.56	0.2	BB	BB	175.96	**1.5**
MHCS-200-E10 (0-6")	112.51	**1.9**	NE	NE	216.33	**2.7**	1947.86	**1.1**	4074.31	**9.1**	929.21	**7.7**
MHCS-200-E25 (0-6")	22.60	0.38	BB	BB	BB	BB	102.61	0.06	BB	BB	202.26	**1.7**
MHCS-200-W10 (0-6")	12.75	0.21	NE	NE	77.65	0.97	291.84	0.17	1158.36	**2.6**	269.23	**2.2**
MHCS-525-E5 (0-6")	173.02	**2.9**	11.20	0.08	106.87	**1.3**	373.88	0.22	9058.73	**20**	2488.39	**21**
MHCS-525-W15 (0-6")	243.97	**4.1**	NE	NE	299.65	**3.7**	2733.62	**1.6**	4503.95	**10**	2350.79	**20**
MHCS-600-E10 (0-6")	135.42	**2.3**	NE	NE	208.93	**2.6**	3452.65	**2.0**	3472.38	**7.7**	1089.25	**9.1**
MHCS-600-W10 (0-6")	215.29	**3.6**	NE	NE	2848.96	**36**	3085.67	**1.8**	5016.67	**11**	3205.39	**27**
MHCS-700-E10 (0-6")	147.24	**2.5**	NE	NE	310.56	**3.9**	3027.21	**1.8**	5295.28	**12**	1374.02	**11**
MHCS-700-E25 (0-6")	32.52	0.54	BB	BB	47.11	0.59	178.38	0.1	BB	BB	257.55	**2.1**
MHCS-700-W10 (0-6")	150.30	**2.5**	NE	NE	1607.95	**20**	3308.55	**1.9**	11572.65	**26**	1549.04	**13**
MHCS-800-E15 (0-6")	18.50	0.31	NE	NE	BB	BB	166.42	0.098	1118.49	**2.5**	161.78	**1.3**
MHCS-800-E5 (0-6")	129.77	**2.2**	NE	NE	442.88	**5.5**	2633.50	**1.5**	7052.56	**16**	1628.09	**14**
MHCS-800-W5 (0-6")	85.11	**1.4**	NE	NE	657.76	**8.2**	1571.80	0.92	2265.69	**5.0**	637.07	**5.3**
MHCS-900-E15 (0-6")	22.05	0.37	NE	NE	BB	BB	130.54	0.077	BB	BB	308.59	**2.6**
MHCS-900-E5 (0-6")	173.14	**2.9**	NE	NE	434.98	**5.4**	2682.77	**1.6**	5129.02	**11**	1407.20	**12**
MHCS-900-W5 (0-6")	100.40	**1.7**	NE	NE	543.88	**6.8**	1771.29	**1.0**	3330.84	**7.4**	543.78	**4.5**
MHCS-1000-E10 (0-6")	50.42	0.84	NE	NE	35.09	0.44	303.08	0.18	BB	BB	618.63	**5.2**

TABLE D-8: TERRESTRIAL PLANT AND INVERTEBRATE HAZARD QUOTIENT SUMMARY TABLE, EU 8 - MIKE HORSE MINE WASTE PILES (Continued)
Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

RECEPTOR / POINT ID	Arsenic Concentration (mg/kg)[1]	Arsenic HQ[2]	Cadmium Concentration (mg/kg)[1]	Cadmium HQ[2]	Copper Concentration (mg/kg)[1]	Copper HQ[2]	Lead Concentration (mg/kg)[1]	Lead HQ[2]	Manganese Concentration (mg/kg)[1]	Manganese HQ[2]	Zinc Concentration (mg/kg)[1]	Zinc HQ[2]
Screening Benchmark - Terrestrial Invertebrates (mg/kg)3	**60**		**140**		**80**		**1700**		**450**		**120**	
Mike Horse Creek Channel Area Deposits												
MHCS-1000-W5 (0-6")	188.82	**3.1**	NE	NE	1374.83	**17**	3701.36	**2.2**	7156.68	**16**	2745.53	**23**
MHCS-1100-E10 (0-6")	57.39	0.96	NE	NE	135.59	**1.7**	240.71	0.14	6613.12	**15**	939.94	**7.8**
MHCS-1100-E35 (0-6")	20.70	0.35	NE	NE	BB	BB	109.29	0.064	BB	BB	159.28	**1.3**
MHCS-1200-E15 (0-6")	49.19	0.82	NE	NE	134.88	**1.7**	618.16	0.36	2256.24	**5.0**	754.20	**6.3**
MHCS-1200-E30 (0-6")	35.04	0.58	NE	NE	42.04	0.53	194.63	0.11	1725.30	**3.8**	202.30	**1.7**
MHCS-1300-E20 (0-6")	87.04	**1.5**	NE	NE	171.75	**2.1**	872.09	0.51	2389.45	**5.3**	1428.74	**12**
MHCS-1300-E35 (0-6")	16.56	0.28	NE	NE	161.19	**2.0**	342.51	0.2	2151.86	**4.8**	401.63	**3.3**
Waste Areas 1 and 2												
UMH1-00 (0-6")	31.91	0.53	NE	NE	118.89	**1.5**	1764.07	**1.0**	2266.76	**5.0**	897.44	**7.5**
UMH1-100 (0-6")	80.39	**1.3**	NE	NE	179.36	**2.2**	2181.51	**1.3**	6952.92	**15**	1659.67	**14**
UMH1-150 (0-6")	24.17	0.4	NE	NE	52.24	0.65	1032.57	0.61	2909.77	**6.5**	795.76	**6.6**
UMH1-200 (0-6")	30.61	0.51	NE	NE	17.19	0.21	49.48	0.029	BB	BB	101.77	0.85
UMH1-250 (0-6")	92.84	**1.5**	NE	NE	BB	BB	807.89	0.48	4489.50	**10**	965.78	**8.0**
UMH1-250+25 (0-6")	37.50	0.63	NE	NE	BB	BB	183.60	0.11	6021.00	**13**	410.00	**3.4**
UMH1-300 (0-6")	100.43	**1.7**	NE	NE	98.74	**1.2**	1698.17	**1.0**	8503.19	**19**	1463.65	**12**
UMH1-300+14 (0-6")	32.50	0.54	3.00	0.021	57.00	0.71	122.70	0.072	3286.00	**7.3**	288.40	**2.4**
UMH1-350 (0-6")	124.28	**2.1**	NE	NE	101.56	**1.3**	1977.50	**1.2**	7990.29	**18**	1522.20	**13**
UMH1-350+12.5 (0-6")	37.60	0.63	NE	NE	35.00	0.44	159.70	0.094	1656.00	**3.7**	476.90	**4.0**
UMH1-400 (0-6")	20.44	0.34	NE	NE	64.26	0.8	827.51	0.49	1544.00	**3.4**	754.37	**6.3**
UMH1-400+12.5 (0-6")	22.20	0.37	4.30	0.031	BB	BB	103.00	0.061	4445.00	**9.9**	787.30	**6.6**
UMH1-450 (0-6")	24.89	0.41	NE	NE	36.03	0.45	1163.46	0.68	1445.66	**3.2**	775.63	**6.5**
UMH1-450+12.5 (0-6")	30.18	0.5	NE	NE	BB	BB	87.22	0.051	BB	BB	774.50	**6.5**
UMH1-50 (0-6")	23.29	0.39	NE	NE	84.30	**1.1**	103.00	0.061	1610.82	**3.6**	753.82	**6.3**
UMH1-Comp (0-6")	130.25	**2.2**	9.74	0.07	120.05	**1.5**	1936.56	**1.1**	4218.67	**9.4**	1391.04	**12**
UMH2-00 (0-6")	498.62	**8.3**	NE	NE	396.32	**5.0**	6572.28	**3.9**	2276.89	**5.1**	887.75	**7.4**
UMH2-00+25 (0-6")	46.50	0.78	1.90	0.014	47.00	0.59	207.80	0.12	2413.00	**5.4**	383.30	**3.2**
UMH2-100 (0-6")	343.61	**5.7**	NE	NE	503.63	**6.3**	7300.29	**4.3**	4100.26	**9.1**	1615.43	**13**
UMH2-100+35 (0-6")	35.50	0.59	NE	NE	100.00	**1.3**	472.90	0.28	2368.00	**5.3**	412.20	**3.4**
UMH2-150 (0-6")	177.60	**3.0**	NE	NE	267.14	**3.3**	3370.59	**2.0**	1567.38	**3.5**	549.66	**4.6**
UMH2-150+60 (0-6")	10.15	0.17	NE	NE	104.00	**1.3**	409.60	0.24	BB	BB	157.80	**1.3**
UMH2-200 (0-6")	249.21	**4.2**	NE	NE	489.10	**6.1**	6826.62	**4.0**	5748.86	**13**	1612.04	**13**
UMH2-200+85 (0-6")	15.85	0.26	BB	BB	94.00	**1.2**	847.00	0.5	1306.00	**2.9**	272.60	**2.3**
UMH2-250 (0-6")	271.19	**4.5**	NE	NE	450.24	**5.6**	5398.81	**3.2**	4056.80	**9.0**	1573.59	**13**
UMH2-250+75 (0-6")	51.49	0.86	NE	NE	116.00	**1.5**	468.57	0.28	2307.65	**5.1**	388.05	**3.2**
UMH2-300 (0-6")	52.40	0.87	NE	NE	77.41	0.97	760.43	0.45	1012.97	**2.3**	677.89	**5.6**
UMH2-300+25 (0-6")	36.20	0.6	NE	NE	39.00	0.49	123.90	0.073	1075.00	**2.4**	1164.60	**9.7**
UMH2-350 (0-6")	39.90	0.67	NE	NE	53.44	0.67	580.80	0.34	BB	BB	720.69	**6.0**
UMH2-350+25 (0-6")	31.20	0.52	NE	NE	37.00	0.46	126.00	0.074	6086.00	**14**	1185.20	**9.9**

TABLE D-8: TERRESTRIAL PLANT AND INVERTEBRATE HAZARD QUOTIENT SUMMARY TABLE, EU 8 - MIKE HORSE MINE WASTE PILES (Continued)
Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

RECEPTOR / POINT ID	Arsenic Concentration (mg/kg)[1]	Arsenic HQ[2]	Cadmium Concentration (mg/kg)[1]	Cadmium HQ[2]	Copper Concentration (mg/kg)[1]	Copper HQ[2]	Lead Concentration (mg/kg)[1]	Lead HQ[2]	Manganese Concentration (mg/kg)[1]	Manganese HQ[2]	Zinc Concentration (mg/kg)[1]	Zinc HQ[2]
Screening Benchmark - Terrestrial Invertebrates (mg/kg)3	**60**		**140**		**80**		**1700**		**450**		**120**	
Waste Areas 1 and 2												
UMH2-400 (0-6")	52.07	0.87	NE	NE	BB	BB	604.25	0.36	BB	BB	297.70	**2.5**
UMH2-400+25 (0-6")	BB	BB	5.73	0.041	35.00	0.44	75.70	0.045	1527.00	**3.4**	732.80	**6.1**
UMH2-450 (0-6")	46.35	0.77	NE	NE	52.87	0.66	4247.16	**2.5**	977.94	**2.2**	397.76	**3.3**
UMH2-450+25 (0-6")	8.90	0.15	NE	NE	34.00	0.43	270.30	0.16	BB	BB	592.10	**4.9**
UMH2-50 (0-6")	45.88	0.76	NE	NE	125.43	**1.6**	652.02	0.38	2188.17	**4.9**	457.82	**3.8**
UMH2-50+25b (0-6")	47.63	0.79	NE	NE	35.46	0.44	BB	BB	1731.00	**3.8**	370.78	**3.1**
UMH2-500 (0-6")	338.24	**5.6**	NE	NE	463.31	**5.8**	8648.34	**5.1**	2802.84	**6.2**	823.28	**6.9**
UMH2-500+75 (0-6")	32.80	0.55	2.20	0.016	BB	BB	261.40	0.15	1811.00	**4.0**	610.70	**5.1**
UMH2-550 (0-6")	440.27	**7.3**	NE	NE	849.12	**11**	11060.14	**6.5**	7807.35	**17**	2418.11	**20**
UMH2-550+75 (0-6")	18.74	0.31	NE	NE	BB	BB	61.63	0.036	1959.96	**4.4**	393.64	**3.3**
UMH2-600 (0-6")	146.85	**2.4**	NE	NE	102.83	**1.3**	2711.28	**1.6**	2194.24	**4.9**	510.54	**4.3**
UMH2-600+25 (0-6")	33.90	0.57	BB	BB	BB	BB	115.40	0.068	1260.00	**2.8**	377.70	**3.1**
UMH2-650 (0-6")	156.35	**2.6**	NE	NE	186.19	**2.3**	3576.09	**2.1**	1967.95	**4.4**	472.11	**3.9**
UMH2-650+25 (0-6")	28.97	0.48	NE	NE	43.02	0.54	229.77	0.14	BB	BB	420.61	**3.5**
UMH2-Comp 1 (0-6")	263.56	**4.4**	4.65	0.033	474.55	**5.9**	7916.71	**4.7**	4565.28	**10**	1310.25	**11**
UMH2-Comp 2 (0-6")	356.08	**5.9**	9.12	0.065	934.65	**12**	10329.23	**6.1**	5564.43	**12**	1339.45	**11**
Waste Area 3												
UMH3-00 (0-6")	10.05	0.17	NE	NE	63.35	0.79	164.66	0.097	BB	BB	123.15	**1**
UMH3-100 (0-6")	37.62	0.63	NE	NE	54.13	0.68	224.49	0.13	BB	BB	231.61	**1.9**
UMH3-150 (0-6")	31.45	0.52	NE	NE	351.59	**4.4**	1892.01	**1.1**	BB	BB	547.02	**4.6**
UMH3-200 (0-6")	121.78	**2.0**	NE	NE	234.47	**2.9**	3029.14	**1.8**	1466.00	**3.3**	437.44	**3.6**
UMH3-250 (0-6")	454.93	**7.6**	NE	NE	784.14	**9.8**	11296.28	**6.6**	BB	BB	766.79	**6.4**
UMH3-300 (0-6")	8.99	0.15	NE	NE	35.71	0.45	145.72	0.086	BB	BB	198.73	**1.7**
UMH3-350 (0-6")	535.04	**8.9**	NE	NE	1317.30	**16**	16817.24	**9.9**	1697.15	**3.8**	1001.82	**8.3**
UMH3-350+75 (0-6")	20.90	0.35	BB	BB	51.00	0.64	171.10	0.1	1910.00	**4.2**	307.50	**2.6**
UMH3-400 (0-6")	260.15	**4.3**	NE	NE	642.35	**8.0**	9593.95	**5.6**	986.73	**2.2**	656.08	**5.5**
UMH3-400+25 (0-6")	28.10	0.47	BB	BB	77.00	0.96	369.10	0.22	BB	BB	270.60	**2.3**
UMH3-450 (0-6")	19.19	0.32	NE	NE	74.53	0.93	99.25	0.058	BB	BB	151.78	**1.3**
UMH3-50 (0-6")	11.35	0.19	NE	NE	42.91	0.54	212.49	0.12	BB	BB	374.51	**3.1**
UMH3-50+50 (0-6")	9.74	0.16	NE	NE	54.86	0.69	314.40	0.18	1304.11	**2.9**	427.64	**3.6**
UMH3-500 (0-6")	71.85	**1.2**	NE	NE	141.08	**1.8**	1496.71	0.88	BB	BB	377.36	**3.1**
UMH3-550 (0-6")	418.39	**7.0**	NE	NE	993.80	**12**	12377.30	**7.3**	1525.85	**3.4**	1000.99	**8.3**
UMH3-600 (0-6")	904.30	**15**	NE	NE	1212.31	**15**	15449.31	**9.1**	1322.12	**2.9**	947.90	**7.9**
UMH3-650 (0-6")	401.34	**6.7**	NE	NE	946.94	**12**	15468.85	**9.1**	1491.37	**3.3**	869.37	**7.2**
UMH3-700 (0-6")	484.56	**8.1**	NE	NE	886.97	**11**	14940.59	**8.8**	BB	BB	649.66	**5.4**
UMH3-750 (0-6")	55.12	0.92	NE	NE	93.42	**1.2**	1141.04	0.67	BB	BB	285.15	**2.4**
UMH3-800 (0-6")	106.03	**1.8**	NE	NE	201.85	**2.5**	2104.21	**1.2**	1099.06	**2.4**	297.17	**2.5**
UMH3-Comp 1 (0-6")	19.74	0.33	NE	NE	85.96	**1.1**	730.29	0.43	BB	BB	197.63	**1.6**
UMH3-Comp 2 (0-6")	218.03	**3.6**	15.90	0.11	669.92	**8.4**	8725.32	**5.1**	BB	BB	772.78	**6.4**
UMH3-Comp 3 (0-6")	660.57	**11**	4.95	0.035	880.18	**11**	14375.43	**8.5**	1516.96	**3.4**	2246.32	**19**

TABLE D-8: TERRESTRIAL PLANT AND INVERTEBRATE HAZARD QUOTIENT SUMMARY TABLE, EU 8 - MIKE HORSE MINE WASTE PILES (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

Notes:

Bold values indicate HQs greater than 1.0.

1 Soil concentration from 0 to 6 inches below ground surface at point ID as measured by XRF 10 for all chemicals except cadmium. XRF 10 results were not available for cadmium, so laboratory results were used. Hazard quotients were not calculated for detected and non-detect soil concentrations measured below the minimum reference site concentration, as indicated by BB. For results that were measured at less than the detection limit, HQs were calculated using half of the detection limit.

2 HQs were calculated by dividing the site concentration by the plant or invertebrate screening benchmark.

3 Plant screening benchmarks are from EPA 2007. Invertebrate screening benchmarks are from EPA 2007, with the exception of the screening benchmark for arsenic, which is from Efroymson and others 1997.

BB	Below minimum background	ID	Identification
EPA	U.S. Environmental Protection Agency	mg/kg	Milligrams per kilogram
EU	Exposure Unit	NE	Not evaluated
HQ	Hazard quotient		

Sources:

Efroymson, R.A., M.E, Will, and G.W. Suter II. 1997. "Toxicological Benchmarks for Contaminants of Potential Concern for Effects on Soil and Litter Invertebrates and Heterotrophic Processes: 1997 Revision." Oak Ridge National Laboratory, Oak Ridge TN. ES/ER/TM-126/R2

EPA. 2007. Interim Ecological Soil Screening Levels. Available on-line at: http://www.epa.gov/ecotox/ecossl/

TABLE D-9: TERRESTRIAL PLANT AND INVERTEBRATE HAZARD QUOTIENT SUMMARY TABLE, EU 9 - PAYMASTER MINE WASTE AREAS
Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

RECEPTOR / POINT ID	Cadmium Concentration (mg/kg)[1,4]	Cadmium HQ[2]	Copper Concentration (mg/kg)[1]	Copper HQ[2]	Lead Concentration (mg/kg)[1]	Lead HQ[2]	Manganese Concentration (mg/kg)[1]	Manganese HQ[2]	Zinc Concentration (mg/kg)[1]	Zinc HQ[2]
Screening Benchmark - Terrestrial Plants (mg/kg)[3]	**32**		**70**		**120**		**220**		**220**	
Terrestrial Plants										
Reference Site										
PCBG-1 (0-6")	0.54	0.017	26.19	0.37	29.08	0.24	360.40	**1.6**	192.35	**1.2**
MGBG-1 (0-6")	4.44	0.14	82.15	1.2	311.02	2.6	6433.67	**29**	650.47	**4.1**
MGBG-2 (0-6")	3.59	0.11	228.19	3.3	235.04	2	1244.50	**5.7**	507.72	**3.2**
PCBG-201	2.20	0.069	507.47	7.2	378.37	3.2	989.32	**4.5**	66.86	0.42
PCBG-202	2.20	0.069	98.17	1.4	1113.82	9.3	576.93	**2.6**	125.27	0.78
Paymaster Mine Waste Area 1										
PMWA1-1 (0-6")	NE	NE	280.80	**4**	230.90	**1.9**	413.66	**1.9**	BB	BB
PMWA1-50 (0-6")	BB	BB	305.62	**4.4**	265.02	**2.2**	BB	BB	125.87	0.79
PMWA1-100 (0-6")	NE	NE	269.12	**3.8**	577.52	**4.8**	BB	BB	92.66	0.58
PMWA1-150 (0-6")	NE	NE	411.72	**5.9**	237.28	**2.0**	BB	BB	127.05	0.79
PMWA1-200 (0-6")	NE	NE	355.21	**5.1**	851.42	**7.1**	421.10	**1.9**	116.22	0.73
PMWA1-230 (0-6")	NE	NE	280.18	**4**	796.60	**6.6**	513.79	**2.3**	113.28	0.71
PMWA1-Comp 1 (0-6")	BB	BB	326.66	**4.7**	631.56	**5.3**	385.93	**1.8**	117.22	0.73
PMWA1-Comp 2 (0-6")	BB	BB	230.18	**3.3**	564.84	**4.7**	BB	BB	97.15	0.61
Paymaster Mine Waste Area 2										
PMWA2-0 (0-6")	NE	NE	166.88	**2.4**	178.32	**1.5**	BB	BB	130.67	0.82
PMWA2-50 (0-6")	NE	NE	88.85	**1.3**	153.52	**1.3**	916.34	**4.2**	157.60	0.99
PMWA2-100 (0-6")	NE	NE	601.18	**8.6**	222.72	**1.9**	526.29	**2.4**	78.72	0.49
PMWA2-150 (0-6")	BB	BB	336.71	**4.8**	281.23	**2.3**	BB	BB	128.84	0.81
PMWA2-200 (0-6")	NE	NE	315.78	**4.5**	644.74	**5.4**	460.91	**2.1**	119.90	0.75
PMWA2-Comp 1 (0-6")	0.69	0.022	300.12	**4.3**	592.10	**4.9**	418.17	**1.9**	100.15	0.63

TABLE D-9: TERRESTRIAL PLANT AND INVERTEBRATE HAZARD QUOTIENT SUMMARY TABLE, EU 9 - PAYMASTER MINE WASTE AREAS (Continued)
Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

RECEPTOR / POINT ID	Cadmium Concentration (mg/kg)[1,4]	Cadmium HQ[2]	Copper Concentration (mg/kg)[1]	Copper HQ[2]	Lead Concentration (mg/kg)[1]	Lead HQ[2]	Manganese Concentration (mg/kg)[1]	Manganese HQ[2]	Zinc Concentration (mg/kg)[1]	Zinc HQ[2]
Screening Benchmark - Terrestrial Invertebrates (mg/kg)[3]	**140**		**80**		**1700**		**450**		**120**	
Terrestrial Invertebrates										
Reference Site										
PCBG-1 (0-6")	0.54	0.0039	26.19	0.33	29.08	0.017	360.40	0.80	192.35	**1.6**
MGBG-1 (0-6")	4.44	0.032	82.15	**1.0**	311.02	0.18	6433.67	**14**	650.47	**5.4**
MGBG-2 (0-6")	3.59	0.026	228.19	**2.9**	235.04	0.14	1244.50	**2.8**	507.72	**4.2**
PCBG-201	2.20	0.016	507.47	**6.3**	378.37	0.22	989.32	**2.2**	66.86	0.56
PCBG-202	2.20	0.016	98.17	**1.2**	1113.82	0.66	576.93	**1.3**	125.27	**1.0**
Paymaster Mine Waste Area 1										
PMWA1-1 (0-6")	NE	NE	280.80	**3.5**	230.90	0.14	413.66	0.92	BB	BB
PMWA1-50 (0-6")	BB	BB	305.62	**3.8**	265.02	0.16	BB	BB	125.87	**1.0**
PMWA1-100 (0-6")	NE	NE	269.12	**3.4**	577.52	0.34	BB	BB	92.66	0.77
PMWA1-150 (0-6")	NE	NE	411.72	**5.1**	237.28	0.14	BB	BB	127.05	**1.1**
PMWA1-200 (0-6")	NE	NE	355.21	**4.4**	851.42	0.50	421.10	0.94	116.22	0.97
PMWA1-230 (0-6")	NE	NE	280.18	**3.5**	796.60	0.47	513.79	**1.1**	113.28	0.94
PMWA1-Comp 1 (0-6")	BB	BB	326.66	**4.1**	631.56	0.37	385.93	0.86	117.22	0.98
PMWA1-Comp 2 (0-6")	BB	BB	230.18	**2.9**	564.84	0.33	BB	BB	97.15	0.81
Paymaster Mine Waste Area 2										
PMWA2-0 (0-6")	NE	NE	166.88	**2.1**	178.32	0.1	BB	BB	130.67	**1.1**
PMWA2-50 (0-6")	NE	NE	88.85	**1.1**	153.52	0.09	916.34	**2**	157.60	**1.3**
PMWA2-100 (0-6")	NE	NE	601.18	**7.5**	222.72	0.13	526.29	**1.2**	78.72	0.66
PMWA2-150 (0-6")	BB	BB	336.71	**4.2**	281.23	0.17	BB	BB	128.84	**1.1**
PMWA2-200 (0-6")	NE	NE	315.78	**3.9**	644.74	0.38	460.91	**1**	119.90	**1.0**
PMWA2-Comp 1 (0-6")	0.69	0.0049	300.12	**3.8**	592.10	0.35	418.17	0.93	100.15	0.83

Notes:

Bold values indicate HQs greater than 1.0.

1 Soil concentration from 0 to 6 inches below ground surface at point ID as measured by XRF 10 for all chemicals except cadmium. XRF 10 results were not available for cadmium, so laboratory results were used. Hazard quotients were not calculated for detected and non-detect soil concentrations measured below the minimum reference site concentration, as indicated by BB. For results that were measured at less than the detection limit, HQs were calculated using half of the detection limit.

2 HQs were calculated by dividing the site concentration by the plant or invertebrate screening benchmark.

3 Plant and invertebrate screening benchmarks are from EPA 2007.

4 All detected results for Paymaster Mine Waste Area 1 were below the minimum background reference site concentration for cadmium.

BB	Below minimum background reference site location	ID	Identification
EPA	U.S. Environmental Protection Agency	mg/kg	Milligrams per kilogram
EU	Exposure Unit	NE	Not evaluated
HQ	Hazard quotient		

Sources: EPA. 2007. Interim Ecological Soil Screening Levels. Available on-line at: http://www.epa.gov/ecotox/ecossl/

TABLE D-10: TERRESTRIAL PLANT AND INVERTEBRATE HAZARD QUOTIENT SUMMARY TABLE, EU 10 - NUMBER 3 TUNNEL WASTE AREA

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

RECEPTOR / POINT ID	Arsenic Concentration (mg/kg)[1]	Arsenic HQ[2]	Cadmium Concentration (mg/kg)[1]	Cadmium HQ[2]	Copper Concentration (mg/kg)[1]	Copper HQ[2]	Lead Concentration (mg/kg)[1]	Lead HQ[2]	Manganese Concentration (mg/kg)[1]	Manganese HQ[2]	Zinc Concentration (mg/kg)[1]	Zinc HQ[2]
Screening Benchmark - Terrestrial Plants (mg/kg)[3]	**18**		**32**		**70**		**120**		**220**		**160**	
Terrestrial Plants												
Reference Site												
SGBG-1 (0-6")	34.57	**1.9**	0.28	0.0089	92.51	**1.3**	115.16	0.96	141.05	0.64	40.94	0.26
SGBG-201 (0-6")	16.56	0.92	2.20	0.069	71.85	**1.0**	62.21	0.52	130.88	0.59	333.04	**2.1**
UBRBG-201 (0-6")	11.09	0.62	2.10	0.066	199.80	**2.9**	307.73	**2.6**	791.91	**3.6**	106.96	0.67
No. 3 Tunnel Waste Area												
N3TA fine tail (0-6")	14.50	0.81	NE	NE	124.90	**1.8**	385.97	**3.2**	BB	BB	BB	BB
N3TA-0 (0-6")	6.84	0.38	NE	NE	224.07	**3.2**	70.77	0.59	BB	BB	BB	BB
N3TA-100 (0-6")	31.34	**1.7**	NE	NE	216.39	**3.1**	BB	BB	106.88	0.49	22.60	0.14
N3TA-1000 (0-6")	14.19	0.79	NE	NE	126.71	**1.8**	366.89	**3.1**	72.49	0.33	BB	BB
N3TA-1000-EOT (0-6")	18.74	**1.0**	0.36	0.011	BB	BB	102.07	0.85	BB	BB	66.62	0.42
N3TA-1050 (0-6")	12.90	0.72	NE	NE	176.23	**2.5**	261.86	**2.2**	334.93	**1.5**	143.70	0.90
N3TA-150 (0-6")	9.64	0.54	NE	NE	139.66	**2.0**	BB	BB	98.56	0.45	BB	BB
N3TA-200 (0-6")	10.56	0.59	NE	NE	140.42	**2.0**	68.08	0.57	99.54	0.45	20.75	0.13
N3TA-250 (0-6")	12.03	0.67	NE	NE	114.77	**1.6**	116.29	0.97	75.39	0.34	BB	BB
N3TA-300 (0-6")	37.41	**2.1**	NE	NE	168.31	**2.4**	83.67	0.7	72.59	0.33	BB	BB
N3TA-350 (0-6")	15.37	0.85	NE	NE	81.70	**1.2**	BB	BB	BB	BB	BB	BB
N3TA-400 (0-6")	22.00	**1.2**	NE	NE	103.84	**1.5**	62.78	0.52	68.22	0.31	BB	BB
N3TA-450 (0-6")	8.20	0.46	NE	NE	111.22	**1.6**	85.11	0.71	65.78	0.3	BB	BB
N3TA-50 (0-6")	13.20	0.73	NE	NE	216.12	**3.1**	78.56	0.65	129.91	0.59	22.12	0.14
N3TA-500 (0-6")	24.93	**1.4**	NE	NE	143.03	**2.0**	103.22	0.86	201.04	0.91	BB	BB
N3TA-550 (0-6")	19.85	**1.1**	NE	NE	172.57	**2.5**	108.00	0.9	BB	BB	BB	BB
N3TA-600 (0-6")	22.15	**1.2**	NE	NE	163.62	**2.3**	137.88	**1.1**	70.05	0.32	BB	BB
N3TA-650 (0-6")	19.56	**1.1**	NE	NE	179.61	**2.6**	94.66	0.79	72.40	0.33	BB	BB
N3TA-700 (0-6")	71.46	**4.0**	1.36	0.043	755.03	**11**	320.23	**2.7**	1865.34	**8.5**	185.89	**1.2**
N3TA-750 (0-6")	46.27	**2.6**	NE	NE	726.13	**10**	225.65	**1.9**	3323.06	**15**	275.71	**1.7**
N3TA-800 (0-6")	21.42	**1.2**	NE	NE	653.30	**9.3**	127.27	**1.1**	2676.19	**12**	697.46	**4.4**
N3TA-850 (0-6")	9.35	0.52	NE	NE	225.59	**3.2**	126.39	**1.1**	210.35	0.96	152.72	0.95
N3TA-900 (0-6")	9.49	0.53	NE	NE	90.18	**1.3**	167.82	**1.4**	244.47	**1.1**	73.98	0.46
N3TA-950 (0-6")	12.18	0.68	NE	NE	196.57	**2.8**	227.54	**1.9**	70.64	0.32	BB	BB
N3TA-Comp 1 (0-6")	25.20	**1.4**	BB	BB	157.25	**2.2**	BB	BB	187.00	0.85	BB	BB
N3TA-Comp 2 (0-6")	20.75	**1.2**	NE	NE	257.75	**3.7**	117.86	0.98	69.60	0.32	BB	BB
N3TA-Comp 3 (0-6")	32.22	**1.8**	NE	NE	279.79	**4.0**	814.17	**6.8**	1287.61	**5.9**	601.63	**3.8**
N3TA-Det Pond (0-6")	6.05	0.34	NE	NE	216.92	**3.1**	BB	BB	BB	BB	42.21	0.26
N3TA-Pile #1 (0-6")	28.27	**1.6**	NE	NE	989.82	**14**	164.90	**1.4**	6193.92	**28**	645.12	**4.0**
N3TA-Pile #2 (0-6")	8.55	0.47	NE	NE	103.98	**1.5**	125.74	**1.0**	480.57	**2.2**	86.61	0.54

TABLE D-10: TERRESTRIAL PLANT AND INVERTEBRATE HAZARD QUOTIENT SUMMARY TABLE, EU 10 - NUMBER 3 TUNNEL WASTE AREA (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

RECEPTOR / POINT ID	Arsenic Concentration (mg/kg)[1]	Arsenic HQ[2]	Cadmium Concentration (mg/kg)[1]	Cadmium HQ[2]	Copper Concentration (mg/kg)[1]	Copper HQ[2]	Lead Concentration (mg/kg)[1]	Lead HQ[2]	Manganese Concentration (mg/kg)[1]	Manganese HQ[2]	Zinc Concentration (mg/kg)[1]	Zinc HQ[2]
Screening Benchmark - Terrestrial Invertebrates (mg/kg)[3]	**60**		**140**		**80**		**1700**		**450**		**120**	
Terrestrial Invertebrates												
Reference Site												
SGBG-1 (0-6")	34.57	0.58	0.28	0.002	92.51	**1.2**	115.16	0.068	141.05	0.31	40.94	0.34
SGBG-201 (0-6")	16.56	0.28	2.20	0.016	71.85	0.90	62.21	0.037	130.88	0.29	333.04	**2.8**
UBRBG-201 (0-6")	11.09	0.18	2.10	0.015	199.80	**2.5**	307.73	0.18	791.91	**1.8**	106.96	0.89
No. 3 Tunnel Waste Area												
N3TA fine tail (0-6")	14.50	0.24	NE	NE	124.90	**1.6**	385.97	0.23	BB	BB	BB	BB
N3TA-0 (0-6")	6.84	0.11	NE	NE	224.07	**2.8**	70.77	0.042	BB	BB	BB	BB
N3TA-100 (0-6")	31.34	0.52	NE	NE	216.39	**2.7**	BB	BB	106.88	0.24	22.60	0.19
N3TA-1000 (0-6")	14.19	0.24	NE	NE	126.71	**1.6**	366.89	0.22	72.49	0.16	BB	BB
N3TA-1000-EOT (0-6")	18.74	0.31	0.36	0.0026	BB	BB	102.07	0.06	BB	BB	66.62	0.56
N3TA-1050 (0-6")	12.90	0.22	NE	NE	176.23	**2.2**	261.86	0.15	334.93	0.74	143.70	**1.2**
N3TA-150 (0-6")	9.64	0.16	NE	NE	139.66	**1.7**	BB	BB	98.56	0.22	BB	BB
N3TA-200 (0-6")	10.56	0.18	NE	NE	140.42	**1.8**	68.08	0.04	99.54	0.22	20.75	0.17
N3TA-250 (0-6")	12.03	0.2	NE	NE	114.77	**1.4**	116.29	0.068	75.39	0.17	BB	BB
N3TA-300 (0-6")	37.41	0.62	NE	NE	168.31	**2.1**	83.67	0.049	72.59	0.16	BB	BB
N3TA-350 (0-6")	15.37	0.26	NE	NE	81.70	**1.0**	BB	BB	BB	BB	BB	BB
N3TA-400 (0-6")	22.00	0.37	NE	NE	103.84	**1.3**	62.78	0.037	68.22	0.15	BB	BB
N3TA-450 (0-6")	8.20	0.14	NE	NE	111.22	**1.4**	85.11	0.05	65.78	0.15	BB	BB
N3TA-50 (0-6")	13.20	0.22	NE	NE	216.12	**2.7**	78.56	0.046	129.91	0.29	22.12	0.18
N3TA-500 (0-6")	24.93	0.42	NE	NE	143.03	**1.8**	103.22	0.061	201.04	0.45	BB	BB
N3TA-550 (0-6")	19.85	0.33	NE	NE	172.57	**2.2**	108.00	0.064	BB	BB	BB	BB
N3TA-600 (0-6")	22.15	0.37	NE	NE	163.62	**2.0**	137.88	0.081	70.05	0.16	BB	BB
N3TA-650 (0-6")	19.56	0.33	NE	NE	179.61	**2.2**	94.66	0.056	72.40	0.16	BB	BB
N3TA-700 (0-6")	71.46	**1.2**	1.36	0.0097	755.03	**9.4**	320.23	0.19	1865.34	**4.1**	185.89	**1.5**
N3TA-750 (0-6")	46.27	0.77	NE	NE	726.13	**9.1**	225.65	0.13	3323.06	**7.4**	275.71	**2.3**
N3TA-800 (0-6")	21.42	0.36	NE	NE	653.30	**8.2**	127.27	0.075	2676.19	**5.9**	697.46	**5.8**
N3TA-850 (0-6")	9.35	0.16	NE	NE	225.59	**2.8**	126.39	0.074	210.35	0.47	152.72	**1.3**
N3TA-900 (0-6")	9.49	0.16	NE	NE	90.18	**1.1**	167.82	0.099	244.47	0.54	73.98	0.62
N3TA-950 (0-6")	12.18	0.2	NE	NE	196.57	**2.5**	227.54	0.13	70.64	0.16	BB	BB
N3TA-Comp 1 (0-6")	25.20	0.42	BB	BB	157.25	**2.0**	BB	BB	187.00	0.42	BB	BB
N3TA-Comp 2 (0-6")	20.75	0.35	NE	NE	257.75	**3.2**	117.86	0.069	69.60	0.15	BB	BB
N3TA-Comp 3 (0-6")	32.22	0.54	NE	NE	279.79	**3.5**	814.17	0.48	1287.61	**2.9**	601.63	**5.0**
N3TA-Det Pond (0-6")	6.05	0.1	NE	NE	216.92	**2.7**	BB	BB	BB	BB	42.21	0.35
N3TA-Pile #1 (0-6")	28.27	0.47	NE	NE	989.82	**12**	164.90	0.097	6193.92	**14**	645.12	**5.4**
N3TA-Pile #2 (0-6")	8.55	0.14	NE	NE	103.98	**1.3**	125.74	0.074	480.57	**1.1**	86.61	0.72

TABLE D-10: TERRESTRIAL PLANT AND INVERTEBRATE HAZARD QUOTIENT SUMMARY TABLE, EU 10 - NUMBER 3 TUNNEL WASTE AREA (Continued)

Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

RECEPTOR / POINT ID	Arsenic Concentration (mg/kg)[1]	Arsenic HQ[2]	Cadmium Concentration (mg/kg)[1]	Cadmium HQ[2]	Copper Concentration (mg/kg)[1]	Copper HQ[2]	Lead Concentration (mg/kg)[1]	Lead HQ[2]	Manganese Concentration (mg/kg)[1]	Manganese HQ[2]	Zinc Concentration (mg/kg)[1]	Zinc HQ[2]

Notes:

Bold values indicate HQs greater than 1.0.

1 Soil concentration from 0 to 6 inches below ground surface at point ID as measured by XRF 10 for all chemicals except cadmium. XRF 10 results were not available for cadmium, so laboratory results were used. Hazard quotients were not calculated for detected and non-detect soil concentrations measured below the minimum reference site concentration, as indicated by BB. For results that were measured at less than the detection limit, HQs were calculated using half of the detection limit.

2 HQs were calculated by dividing the site concentration by the plant or invertebrate screening benchmark.

3 Plant screening benchmarks are from EPA 2007. Invertebrate screening benchmarks are from EPA 2007, with the exception of the screening benchmark for arsenic, which is from Efroymson and others 1997.

BB	Below minimum background reference site concentration	ID	Identification
EPA	U.S. Environmental Protection Agency	mg/kg	Milligrams per kilogram
EU	Exposure Unit	NE	Not evaluated
HQ	Hazard quotient		

Sources:

Efroymson, R.A., M.E, Will, and G.W. Suter II. 1997. "Toxicological Benchmarks for Contaminants of Potential Concern for Effects on Soil and Litter Invertebrates and Heterotrophic Processes: 1997 Revision." Oak Ridge National Laboratory, Oak Ridge TN. ES/ER/TM-126/R2

EPA. 2007. Interim Ecological Soil Screening Levels. Available on-line at: http://www.epa.gov/ecotox/ecossl/

TABLE D-11: TERRESTRIAL PLANT AND INVERTEBRATE HAZARD QUOTIENT SUMMARY TABLE, EU 11 - BEARTRAP CREEK DISPERSED TAILINGS DEPOSITS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK TAILINGS DEPOSITS AND FLOSSIE LOUISE MINE WASTE PILE

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

RECEPTOR / POINT ID	Arsenic Concentration (mg/kg)[1]	Arsenic HQ[2]	Cadmium Concentration (mg/kg)[1]	Cadmium HQ[2]	Copper Concentration (mg/kg)[1]	Copper HQ[2]	Lead Concentration (mg/kg)[1]	Lead HQ[2]	Manganese Concentration (mg/kg)[1]	Manganese HQ[2]	Zinc Concentration (mg/kg)[1]	Zinc HQ[2]
Screening Benchmark - Terrestrial Plants (mg/kg)[3]	**18**		**32**		**70**		**120**		**220**		**160**	
Terrestrial Plants												
Reference Sites												
ACBG-1 (0-6")	26.03	**1.4**	0.49	0.015	79.58	**1.1**	23.09	0.19	294.72	**1.3**	136.91	0.86
ACBG-2 (0-6")	18.33	**1.0**	0.52	0.016	250.03	**3.6**	38.26	0.32	997.31	**4.5**	83.93	0.52
BCBG-201 (0-6")	30.41	**1.7**	2.60	0.081	62.80	0.9	95.34	0.79	161.00	0.73	241.62	**1.5**
Inside Tailings Pile												
BCEOT-E0-12.5 (0-6")	125.57	**7**	NE	NE	121.43	**1.7**	572.41	**4.8**	1523.05	**6.9**	182.73	**1.1**
BCEOT-E1-12.5 (0-6")	116.94	**6.5**	NE	NE	162.51	**2.3**	467.50	**3.9**	3387.32	**15**	275.40	**1.7**
BCEOT-E2-8 (0-6")	129.22	**7.2**	NE	NE	102.88	**1.5**	448.48	**3.7**	1750.41	**8.0**	136.30	0.85
BCEOT-E3-8 (0-6")	65.52	**3.6**	NE	NE	152.20	**2.2**	376.17	**3.1**	1765.56	**8.0**	236.91	**1.5**
BCEOT-E4-12.5 (0-6")	105.56	**5.9**	NE	NE	100.01	**1.4**	404.78	**3.4**	1052.99	**4.8**	162.11	**1.0**
BCEOT-W4-12.5 (0-6")	89.56	**5.0**	NE	NE	139.43	**2.0**	423.63	**3.5**	1164.97	**5.3**	236.16	**1.5**
BCEOT-E5-25 (0-6")	25.92	**1.4**	NE	NE	76.43	**1.1**	131.57	**1.1**	582.51	**2.6**	95.61	0.6
BCEOT-W5-12.5 (0-6")	301.99	**17**	NE	NE	402.98	**5.8**	1644.80	**14**	2825.82	**13**	1160.83	**7.3**
BCEOT-E6-12.5 (0-6")	72.75	**4.0**	NE	NE	126.39	**1.8**	350.82	**2.9**	1224.39	**5.6**	192.82	**1.2**
BCEOT-W6-12.5 (0-6")	38.04	**2.1**	NE	NE	BB	BB	113.16	0.94	1046.31	**4.8**	BB	BB
BCEOT-E7-12.5 (0-6")	45.77	**2.5**	NE	NE	BB	BB	120.56	**1.0**	1260.65	**5.7**	111.46	0.7
BCEOT-W7-12.5 (0-6")	120.08	**6.7**	NE	NE	174.61	**2.5**	619.63	**5.2**	608.51	**2.8**	142.60	0.89
BCEOT-W8-12.5 (0-6")	202.38	**11**	NE	NE	225.45	**3.2**	2308.39	**19**	115.08	0.52	379.64	**2.4**
BCEOT-E9-12.5 (0-6")	161.92	**9.0**	NE	NE	160.23	**2.3**	715.50	**6**	582.99	**2.6**	260.64	**1.6**
BCEOT-W9-12.5 (0-6")	300.35	**17**	NE	NE	386.31	**5.5**	842.65	**7.0**	123.90	0.56	2800.76	**18**
BCEOT-E10-12.5 (0-6")	40.85	**2.3**	NE	NE	418.05	**6.0**	92.01	0.77	3723.44	**17**	253.90	**1.6**
BCEOT-W10-12.5 (0-6")	169.72	**9.4**	NE	NE	136.10	**1.9**	1010.95	**8.4**	712.48	**3.2**	240.70	**1.5**
BCEOT-E11-12.5 (0-6")	98.54	**5.5**	NE	NE	103.21	**1.5**	349.39	**2.9**	426.30	**1.9**	165.36	**1.0**
BCEOT-W11-12.5 (0-6")	198.93	**11**	NE	NE	425.87	**6.1**	713.77	**5.9**	600.09	**2.7**	1811.31	**11**
BCEOT-E12-12.5 (0-6")	61.31	**3.4**	NE	NE	201.90	**2.9**	237.81	**2.0**	1205.75	**5.5**	125.89	0.79
BCEOT-W12-12.5 (0-6")	242.83	**13**	NE	NE	288.51	**4.1**	2067.82	**17**	2650.92	**12**	1080.42	**6.8**
BCEOT-E13-12.5 (0-6")	113.49	**6.3**	NE	NE	154.61	**2.2**	619.34	**5.2**	610.40	**2.8**	220.05	**1.4**
BCEOT-W13-12.5 (0-6")	251.50	**14**	NE	NE	172.62	**2.5**	2111.73	**18**	323.42	**1.5**	576.55	**3.6**
BCEOT-W13-25 (0-6")	BB	BB	NE	NE	BB	BB	54.35	0.45	572.07	**2.6**	BB	BB
BCEOT-W14-12.5 (0-6")	64.22	**3.6**	NE	NE	84.00	**1.2**	286.92	**2.4**	2737.45	**12**	387.97	**2.4**
BCEOT-E15-8 (0-6")	76.38	**4.2**	NE	NE	199.51	**2.9**	554.77	**4.6**	889.72	**4.0**	227.59	**1.4**
BCEOT-W15-12.5 (0-6")	192.70	**11**	NE	NE	208.02	**3.0**	1261.63	**11**	122.05	0.55	391.75	**2.4**
BCEOT-E16-12.5 (0-6")	274.12	**15**	NE	NE	484.55	**6.9**	3352.90	**28**	716.34	**3.3**	3861.70	**24**
BCEOT-W16-12.5 (0-6")	239.15	**13**	NE	NE	556.93	**8.0**	1260.14	**11**	2318.06	**11**	1067.98	**6.7**
BCEOT-E17-12.5 (0-6")	732.62	**41**	NE	NE	2694.94	**38**	17431.72	**150**	8381.56	**38**	16182.16	**100**
BCEOT-W17-12.5 (0-6")	99.53	**5.5**	NE	NE	117.32	**1.7**	660.73	**5.5**	1149.22	**5.2**	504.59	**3.2**
BCEOT-W18-12.5 (0-6")	220.88	**12**	NE	NE	296.71	**4.2**	2309.56	**19**	83.60	0.38	387.94	**2.4**
BCEOT-E19-12.5 (0-6")	107.98	**6**	6.36	0.2	218.19	**3.1**	1175.78	**9.8**	1794.27	**8.2**	934.08	**5.8**
BCEOT-W19-12.5 (0-6")	69.33	**3.9**	NE	NE	82.19	**1.2**	339.83	**2.8**	1122.67	**5.1**	339.96	**2.1**
BCEOT-E20-12.5 (0-6")	163.28	**9.1**	NE	NE	236.55	**3.4**	1719.88	**14**	2274.27	**10**	571.98	**3.6**
BCEOT-W20-12.5 (0-6")	295.86	**16**	NE	NE	708.82	**10**	1576.27	**13**	10365.25	**47**	3627.62	**23**
BCEOT-E21-12.5 (0-6")	178.70	**9.9**	1.19	0.037	200.23	**2.9**	1595.97	**13**	2288.87	**10**	248.93	**1.6**
BCEOT-W21-12.5 (0-6")	150.65	**8.4**	NE	NE	186.90	**2.7**	1111.00	**9.3**	352.72	**1.6**	345.90	**2.2**
BCEOT-E22-12.5 (0-6")	265.08	**15**	NE	NE	355.77	**5.1**	2044.37	**17**	7488.88	**34**	1238.19	**7.7**
BCEOT-W22-12.5 (0-6")	165.57	**9.2**	72.20	**2.3**	1958.04	**28**	3486.92	**29**	41403.96	**190**	14604.84	**91**
BCEOT-E23-15 (0-6")	45.16	**2.5**	NE	NE	93.92	**1.3**	287.47	**2.4**	1375.86	**6.3**	272.74	**1.7**

TABLE D-11: TERRESTRIAL PLANT AND INVERTEBRATE HAZARD QUOTIENT SUMMARY TABLE, EU 11 - BEARTRAP CREEK DISPERSED TAILINGS DEPOSITS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK TAILINGS DEPOSITS AND FLOSSIE LOUISE MINE WASTE PILE (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

RECEPTOR / POINT ID	Arsenic Concentration (mg/kg)[1]	Arsenic HQ[2]	Cadmium Concentration (mg/kg)[1]	Cadmium HQ[2]	Copper Concentration (mg/kg)[1]	Copper HQ[2]	Lead Concentration (mg/kg)[1]	Lead HQ[2]	Manganese Concentration (mg/kg)[1]	Manganese HQ[2]	Zinc Concentration (mg/kg)[1]	Zinc HQ[2]
Screening Benchmark - Terrestrial Plants (mg/kg)3	**18**		**32**		**70**		**120**		**220**		**160**	
Inside Tailings Pile												
BCEOT-W23-12.5 (0-6")	281.19	**16**	NE	NE	954.34	**14**	2363.80	**20**	10297.96	**47**	3665.70	**23**
BCEOT-E24-12.5 (0-6")	25.24	**1.4**	NE	NE	BB	BB	125.41	**1.0**	364.76	**1.7**	106.86	0.67
BCEOT-W24-12.5 (0-6")	205.16	**11**	NE	NE	593.23	**8.5**	1615.50	**13**	9137.23	**42**	2809.17	**18**
BCEOT-E25-12.5 (0-6")	192.09	**11**	NE	NE	301.66	**4.3**	1442.36	**12**	1108.58	**5.0**	567.20	**3.5**
BCEOT-W25-12.5 (0-6")	176.90	**9.8**	18.10	0.57	607.17	**8.7**	1276.87	**11**	10653.23	**48**	1923.13	**12**
BCEOT-E26-12.5 (0-6")	104.26	**5.8**	NE	NE	71.80	**1.0**	657.80	**5.5**	600.57	**2.7**	198.62	**1.2**
BCEOT-W26-12.5 (0-6")	108.69	**6**	NE	NE	226.00	**3.2**	1033.36	**8.6**	83.53	0.38	309.06	**1.9**
BCEOT-W27-12.5 (0-6")	152.02	**8.4**	NE	NE	389.55	**5.6**	1222.40	**10**	7999.06	**36**	1735.69	**11**
At Edge of Tailings Pile												
BCEOT-E0-0 (0-6")	143.09	**7.9**	NE	NE	203.29	**2.9**	738.20	**6.2**	3056.56	**14**	272.94	**1.7**
BCEOT-E1-0 (0-6")	20.81	**1.2**	NE	NE	BB	BB	83.77	0.7	2640.12	**12**	185.27	**1.2**
BCEOT-E2-0 (0-6")	156.81	**8.7**	NE	NE	271.86	**3.9**	914.37	**7.6**	2245.72	**10**	509.31	**3.2**
BCEOT-E3-0 (0-6")	49.10	**2.7**	NE	NE	BB	BB	183.33	**1.5**	791.95	**3.6**	124.13	0.78
BCEOT-E4-0 (0-6")	BB	BB	NE	NE	BB	BB	136.07	**1.1**	1444.20	**6.6**	176.15	**1.1**
BCEOT-W4-0 (0-6")	37.39	**2.1**	NE	NE	BB	BB	96.38	0.8	761.24	**3.5**	88.45	0.55
BCEOT-E5-0 (0-6")	99.59	**5.5**	NE	NE	184.01	**2.6**	546.65	**4.6**	1187.20	**5.4**	237.08	**1.5**
BCEOT-W5-0 (0-6")	125.19	**7.0**	NE	NE	89.51	**1.3**	615.22	**5.1**	526.09	**2.4**	192.81	**1.2**
BCEOT-E6-0 (0-6")	59.55	**3.3**	NE	NE	71.83	**1.0**	294.85	**2.5**	846.08	**3.8**	169.47	**1.1**
BCEOT-W6-0 (0-6")	29.97	**1.7**	NE	NE	93.69	**1.3**	109.84	0.92	1108.51	**5.0**	108.82	0.68
BCEOT-E7-0 (0-6")	83.49	**4.6**	NE	NE	141.84	**2.0**	428.74	**3.6**	1215.76	**5.5**	169.39	**1.1**
BCEOT-W7-0 (0-6")	54.20	**3**	NE	NE	72.75	**1.0**	230.79	**1.9**	423.17	**1.9**	BB	BB
BCEOT-W8-0 (0-6")	BB	BB	NE	NE	BB	BB	45.97	0.38	413.71	**1.9**	BB	BB
BCEOT-E9-0 (0-6")	49.50	**2.8**	NE	NE	74.43	**1.1**	279.75	**2.3**	3156.97	**14**	226.64	**1.4**
BCEOT-W9-0 (0-6")	BB	BB	NE	NE	BB	BB	34.78	0.29	467.13	**2.1**	BB	BB
BCEOT-E10-0 (0-6")	48.87	**2.7**	NE	NE	440.34	**6.3**	105.29	0.88	5843.56	**27**	322.14	**2.0**
BCEOT-W10-0 (0-6")	BB	BB	NE	NE	BB	BB	55.59	0.46	440.87	**2.0**	BB	BB
BCEOT-E11-0 (0-6")	24.33	**1.4**	NE	NE	100.27	**1.4**	53.68	0.45	2860.96	**13**	144.15	0.90
BCEOT-W11-0 (0-6")	110.62	**6.1**	NE	NE	161.21	**2.3**	630.75	**5.3**	1395.96	**6.3**	322.53	**2.0**
BCEOT-E12-0 (0-6")	46.13	**2.6**	NE	NE	202.39	**2.9**	191.56	**1.6**	1472.17	**6.7**	161.40	**1.0**
BCEOT-W12-0 (0-6")	23.01	**1.3**	NE	NE	BB	BB	76.00	0.63	814.76	**3.7**	BB	BB
BCEOT-E13-0 (0-6")	24.51	**1.4**	NE	NE	105.41	**1.5**	49.10	0.41	1130.53	**5.1**	134.90	0.84
BCEOT-W13-0 (0-6")	BB	BB	BB	BB	BB	BB	83.45	0.7	958.52	**4.4**	153.77	0.96
BCEOT-E14-0 (0-6")	32.36	**1.8**	NE	NE	108.12	**1.5**	142.60	**1.2**	1120.30	**5.1**	123.38	0.77
BCEOT-W14-0 (0-6")	52.17	**2.9**	NE	NE	102.66	**1.5**	395.72	**3.3**	3746.14	**17**	735.46	**4.6**
BCEOT-E15-0 (0-6")	11.12	0.62	NE	NE	158.00	**2.3**	221.13	**1.8**	1265.96	**5.8**	262.78	**1.6**
BCEOT-W15-0 (0-6")	76.10	**4.2**	NE	NE	159.58	**2.3**	525.76	**4.4**	3541.57	**16**	771.56	**4.8**
BCEOT-E16-0 (0-6")	20.98	**1.2**	NE	NE	107.55	**1.5**	132.38	**1.1**	1416.96	**6.4**	182.62	**1.1**
BCEOT-W16-0 (0-6")	BB	BB	NE	NE	BB	BB	102.34	0.85	825.62	**3.8**	219.51	**1.4**
BCEOT-E17-0 (0-6")	98.37	**5.5**	NE	NE	190.58	**2.7**	550.68	**4.6**	1931.81	**8.8**	644.42	**4.0**
BCEOT-W17-0 (0-6")	49.31	**2.7**	NE	NE	112.92	**1.6**	278.16	**2.3**	1236.93	**5.6**	230.91	**1.4**
BCEOT-E18-0 (0-6")	41.92	**2.3**	NE	NE	115.59	**1.7**	231.15	**1.9**	1717.24	**7.8**	379.82	**2.4**
BCEOT-W18-0 (0-6")	32.07	**1.8**	NE	NE	82.85	**1.2**	70.55	0.59	1245.11	**5.7**	273.22	**1.7**
BCEOT-E19-0 (0-6")	24.31	**1.4**	NE	NE	65.22	0.93	96.37	0.8	1037.84	**4.7**	265.16	**1.7**
BCEOT-W19-0 (0-6")	38.18	**2.1**	NE	NE	65.06	0.93	157.33	**1.3**	2636.95	**12**	298.30	**1.9**
BCEOT-E20-0 (0-6")	22.70	**1.3**	NE	NE	BB	BB	29.24	0.24	363.37	**1.7**	132.38	0.83
BCEOT-W20-0 (0-6")	BB	BB	NE	NE	65.55	0.94	82.57	0.69	1032.89	**4.7**	271.21	**1.7**
BCEOT-E21-0 (0-6")	76.13	**4.2**	NE	NE	169.34	**2.4**	705.03	**5.9**	1420.23	**6.5**	267.27	**1.7**
BCEOT-W21-0 (0-6")	26.27	**1.5**	NE	NE	129.42	**1.8**	134.14	**1.1**	1172.24	**5.3**	308.57	**1.9**
BCEOT-E22-0 (0-6")	47.90	**2.7**	NE	NE	73.01	**1.0**	300.11	**2.5**	852.89	**3.9**	124.65	0.78

TABLE D-11: TERRESTRIAL PLANT AND INVERTEBRATE HAZARD QUOTIENT SUMMARY TABLE, EU 11 - BEARTRAP CREEK DISPERSED TAILINGS DEPOSITS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK TAILINGS DEPOSITS AND FLOSSIE LOUISE MINE WASTE PILE (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

RECEPTOR / POINT ID	Arsenic Concentration (mg/kg)[1]	Arsenic HQ[2]	Cadmium Concentration (mg/kg)[1]	Cadmium HQ[2]	Copper Concentration (mg/kg)[1]	Copper HQ[2]	Lead Concentration (mg/kg)[1]	Lead HQ[2]	Manganese Concentration (mg/kg)[1]	Manganese HQ[2]	Zinc Concentration (mg/kg)[1]	Zinc HQ[2]
Screening Benchmark - Terrestrial Plants (mg/kg)3	**18**		**32**		**70**		**120**		**220**		**160**	
At Edge of Tailings Pile												
BCEOT-W22-0 (0-6")	33.19	**1.8**	NE	NE	172.47	**2.5**	127.24	**1.1**	636.87	**2.9**	240.94	**1.5**
BCEOT-E23-0 (0-6")	BB	BB	NE	NE	BB	BB	45.42	0.38	470.07	**2.1**	90.17	0.56
BCEOT-W23-0 (0-6")	BB	BB	NE	NE	107.05	**1.5**	119.46	**1**	553.77	**2.5**	404.11	**2.5**
BCEOT-E24-0 (0-6")	33.28	**1.8**	NE	NE	BB	BB	112.09	0.93	537.89	**2.4**	146.30	0.91
BCEOT-W24-0 (0-6")	11.55	0.64	NE	NE	144.79	**2.1**	221.06	**1.8**	1173.13	**5.3**	247.41	**1.5**
BCEOT-E25-0 (0-6")	42.05	**2.3**	NE	NE	BB	BB	170.32	**1.4**	711.29	**3.2**	171.80	**1.1**
BCEOT-W25-0 (0-6")	14.40	0.8	NE	NE	150.50	**2.2**	297.22	**2.5**	1691.84	**7.7**	283.58	**1.8**
BCEOT-E26-0 (0-6")	27.15	**1.5**	NE	NE	75.20	**1.1**	253.65	**2.1**	1283.02	**5.8**	329.61	**2.1**
BCEOT-W26-0 (0-6")	11.08	0.62	1.62	0.051	70.96	**1.0**	187.50	**1.6**	1253.90	**5.7**	233.62	**1.5**
BCEOT-W27-0 (0-6")	11.68	0.65	NE	NE	98.01	**1.4**	232.82	**1.9**	1004.09	**4.6**	269.48	**1.7**
Outside Tailings Piles												
BCEOT-E0+25 (0-6")	91.31	**5.1**	NE	NE	87.14	**1.2**	390.91	**3.3**	926.77	**4.2**	204.68	**1.3**
BCEOT-E1+25 (0-6")	108.03	**6**	NE	NE	182.70	**2.6**	558.21	**4.7**	4559.02	**21**	428.46	**2.7**
BCEOT-E2+25 (0-6")	88.95	**4.9**	NE	NE	95.48	**1.4**	349.09	**2.9**	556.43	**2.5**	174.98	**1.1**
BCEOT-E3+25 (0-6")	27.47	**1.5**	NE	NE	BB	BB	108.36	0.9	1047.23	**4.8**	110.34	0.69
BCEOT-E4+25 (0-6")	50.48	**2.8**	NE	NE	107.16	**1.5**	156.44	**1.3**	2685.31	**12**	159.80	**1.0**
BCEOT-W4+25 (0-6")	53.81	**3**	NE	NE	104.87	**1.5**	186.09	**1.6**	672.51	**3.1**	145.73	0.91
BCEOT-E5+25 (0-6")	94.09	**5.2**	NE	NE	126.81	**1.8**	388.55	**3.2**	2321.07	**11**	421.24	**2.6**
BCEOT-W5+25 (0-6")	123.16	**6.8**	NE	NE	82.31	**1.2**	487.49	**4.1**	714.13	**3.2**	171.18	**1.1**
BCEOT-E6+25 (0-6")	66.67	**3.7**	NE	NE	79.19	**1.1**	370.19	**3.1**	574.12	**2.6**	152.49	0.95
BCEOT-W6+25 (0-6")	18.68	**1.0**	NE	NE	66.10	0.94	78.68	0.66	297.22	**1.4**	85.46	0.53
BCEOT-E7+25 (0-6")	28.94	**1.6**	NE	NE	107.57	**1.5**	124.64	**1.0**	2436.00	**11**	145.70	0.91
BCEOT-W7+25 (0-6")	BB	BB	NE	NE	BB	BB	40.68	0.34	832.67	**3.8**	123.05	0.77
FLWA-101 (0-6")	212.35	**12**	1.50	0.047	70.57	**1.0**	1865.23	**16**	241.52	**1.1**	283.71	**1.8**
BCEOT-W8+25 (0-6")	37.89	**2.1**	NE	NE	75.35	**1.1**	158.01	**1.3**	505.85	**2.3**	160.57	**1.0**
BCEOT-E9+25 (0-6")	102.42	**5.7**	NE	NE	148.70	**2.1**	517.71	**4.3**	1967.01	**8.9**	255.90	**1.6**
BCEOT-W9+25 (0-6")	20.89	**1.2**	NE	NE	BB	BB	101.18	0.84	2122.58	**9.6**	234.88	**1.5**
BCEOT-E10+25 (0-6")	24.35	**1.4**	NE	NE	386.59	**5.5**	41.08	0.34	2285.62	**10**	158.18	0.99
BCEOT-W10+25 (0-6")	BB	BB	BB	BB	BB	BB	32.09	0.27	380.04	**1.7**	BB	BB
BCEOT-E11+25 (0-6")	94.44	**5.2**	NE	NE	104.29	**1.5**	366.65	**3.1**	947.43	**4.3**	205.29	**1.3**
BCEOT-W11+25 (0-6")	45.38	**2.5**	NE	NE	69.15	0.99	177.18	**1.5**	633.61	**2.9**	86.40	0.54
BCEOT-E12+25 (0-6")	54.88	**3**	NE	NE	235.41	**3.4**	241.86	**2**	986.15	**4.5**	147.55	0.92
BCEOT-W12+25 (0-6")	BB	BB	NE	NE	BB	BB	23.80	0.2	1108.69	**5.0**	170.69	**1.1**
BCEOT-E13+25 (0-6")	91.72	**5.1**	NE	NE	233.65	**3.3**	369.12	**3.1**	877.13	**4.0**	155.88	0.97
BCEOT-E14+25 (0-6")	19.06	**1.1**	NE	NE	124.73	**1.8**	100.58	0.84	1235.68	**5.6**	94.45	0.59
BCEOT-W14+25 (0-6")	BB	BB	NE	NE	BB	BB	40.21	0.34	1754.65	**8.0**	171.91	**1.1**
BCEOT-E15+25 (0-6")	38.03	**2.1**	NE	NE	198.11	**2.8**	220.29	**1.8**	1545.64	**7.0**	258.99	**1.6**
BCEOT-W15+25 (0-6")	55.47	**3.1**	NE	NE	137.40	**2.0**	188.50	**1.6**	2742.72	**12**	266.10	**1.7**
BCEOT-E16+25 (0-6")	19.24	**1.1**	NE	NE	82.76	**1.2**	75.53	0.63	964.23	**4.4**	198.52	**1.2**
BCEOT-W16+25 (0-6")	BB	BB	NE	NE	BB	BB	28.35	0.24	610.89	**2.8**	152.05	0.95
BCEOT-E17+25 (0-6")	28.14	**1.6**	NE	NE	123.76	**1.8**	178.04	**1.5**	1219.22	**5.5**	377.79	**2.4**
BCEOT-W17+25 (0-6")	18.68	**1.0**	0.71	0.022	74.85	**1.1**	99.92	0.83	597.40	**2.7**	124.11	0.78
BCEOT-E18+12.5 (0-6")	683.17	**38**	NE	NE	2180.04	**31**	15717.30	**130**	7882.20	**36**	13646.53	**85**
BCEOT-E18+25 (0-6")	33.50	**1.9**	1.91	0.06	111.63	**1.6**	103.11	0.86	1276.15	**5.8**	287.34	**1.8**
BCEOT-W18+25 (0-6")	26.25	**1.5**	NE	NE	70.91	**1.0**	87.65	0.73	1310.76	**6.0**	205.98	**1.3**
BCEOT-E19+25 (0-6")	30.43	**1.7**	NE	NE	97.46	**1.4**	76.01	0.63	1245.40	**5.7**	250.49	**1.6**
BCEOT-W19+25 (0-6")	BB	BB	NE	NE	BB	BB	73.53	0.61	279.86	**1.3**	124.35	0.78
BCEOT-E20+25 (0-6")	22.15	**1.2**	1.04	0.033	BB	BB	33.66	0.28	1058.27	**4.8**	163.93	**1.0**
BCEOT-W20+25 (0-6")	BB	BB	NE	NE	105.11	**1.5**	77.15	0.64	795.99	**3.6**	197.69	**1.2**

TABLE D-11: TERRESTRIAL PLANT AND INVERTEBRATE HAZARD QUOTIENT SUMMARY TABLE, EU 11 - BEARTRAP CREEK DISPERSED TAILINGS DEPOSITS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK TAILINGS DEPOSITS AND FLOSSIE LOUISE MINE WASTE PILE (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

RECEPTOR / POINT ID	Arsenic Concentration (mg/kg)[1]	Arsenic HQ[2]	Cadmium Concentration (mg/kg)[1]	Cadmium HQ[2]	Copper Concentration (mg/kg)[1]	Copper HQ[2]	Lead Concentration (mg/kg)[1]	Lead HQ[2]	Manganese Concentration (mg/kg)[1]	Manganese HQ[2]	Zinc Concentration (mg/kg)[1]	Zinc HQ[2]
Screening Benchmark - Terrestrial Plants (mg/kg)3	**18**		**32**		**70**		**120**		**220**		**160**	
Outside Tailings Piles												
BCEOT-E21+25 (0-6")	24.55	**1.4**	NE	NE	BB	BB	129.70	**1.1**	517.56	**2.4**	188.45	**1.2**
BCEOT-W21+25 (0-6")	BB	BB	NE	NE	155.62	**2.2**	91.16	0.76	713.99	**3.2**	174.68	**1.1**
BCEOT-E22+25 (0-6")	148.30	**8.2**	NE	NE	128.00	**1.8**	1354.53	**11**	2456.98	**11**	201.37	**1.3**
BCEOT-E22+70 (0-6")	32.63	**1.8**	NE	NE	BB	BB	249.95	**2.1**	698.25	**3.2**	307.45	**1.9**
BCEOT-W22+25 (0-6")	20.77	**1.2**	NE	NE	132.78	**1.9**	71.29	0.59	312.99	**1.4**	160.14	**1.0**
BCEOT-E23+25 (0-6")	20.62	**1.1**	NE	NE	BB	BB	49.41	0.41	423.25	**1.9**	102.17	0.64
BCEOT-W23+25 (0-6")	19.16	**1.1**	0.55	0.017	134.42	**1.9**	106.83	0.89	592.16	**2.7**	192.38	**1.2**
BCEOT-E24+25 (0-6")	BB	BB	NE	NE	BB	BB	BB	BB	346.78	**1.6**	BB	BB
BCEOT-W24+25 (0-6")	11.02	0.61	NE	NE	117.61	**1.7**	200.06	**1.7**	550.48	**2.5**	309.90	**1.9**
BCEOT-E25+20 (0-6")	BB	BB	NE	NE	81.53	**1.2**	38.97	0.32	434.46	**2.0**	108.57	0.68
BCEOT-W25+25 (0-6")	10.41	0.58	NE	NE	66.45	0.95	164.16	**1.4**	302.60	**1.4**	269.71	**1.7**
BCEOT-E26+25 (0-6")	88.51	**4.9**	NE	NE	126.08	**1.8**	524.50	**4.4**	241.18	**1.1**	124.29	0.78
BCEOT-W26+25 (0-6")	82.51	**4.6**	NE	NE	295.03	**4.2**	135.20	**1.1**	5038.19	**23**	281.45	**1.8**
BCEOT-W27+25 (0-6")	27.71	**1.5**	NE	NE	91.90	**1.3**	144.43	**1.2**	1140.68	**5.2**	262.77	**1.6**
Screening Benchmark - Terrestrial Invertebrates (mg/kg)[3]	**60**		**140**		**80**		**1700**		**450**		**120**	
Terrestrial Invertebrates												
Reference Sites												
ACBG-1 (0-6")	26.03	0.43	0.49	0.015	79.58	0.99	23.09	0.014	294.72	0.65	136.91	**1.1**
ACBG-2 (0-6")	18.33	0.31	0.52	0.016	250.03	**3.1**	38.26	0.023	997.31	**2.2**	83.93	0.7
BCBG-201 (0-6")	30.41	**1.7**	2.60	0.081	62.80	0.9	95.34	0.79	161.00	0.73	241.62	**1.5**
Inside Tailings Pile												
BCEOT-E0-12.5 (0-6")	125.57	**2.1**	NE	NE	121.43	**1.5**	572.41	0.34	1523.05	**3.4**	182.73	**1.5**
BCEOT-E1-12.5 (0-6")	116.94	**1.9**	NE	NE	162.51	**2.0**	467.50	0.28	3387.32	**7.5**	275.40	**2.3**
BCEOT-E2-8 (0-6")	129.22	**2.2**	NE	NE	102.88	**1.3**	448.48	0.26	1750.41	**3.9**	136.30	**1.1**
BCEOT-E3-8 (0-6")	65.52	**1.1**	NE	NE	152.20	**1.9**	376.17	0.22	1765.56	**3.9**	236.91	**2.0**
BCEOT-E4-12.5 (0-6")	105.56	**1.8**	NE	NE	100.01	**1.3**	404.78	0.24	1052.99	**2.3**	162.11	**1.4**
BCEOT-W4-12.5 (0-6")	89.56	**1.5**	NE	NE	139.43	**1.7**	423.63	0.25	1164.97	**2.6**	236.16	**2.0**
BCEOT-E5-25 (0-6")	25.92	0.43	NE	NE	76.43	0.96	131.57	0.077	582.51	**1.3**	95.61	0.8
BCEOT-W5-12.5 (0-6")	301.99	**5**	NE	NE	402.98	**5.0**	1644.80	0.97	2825.82	**6.3**	1160.83	**9.7**
BCEOT-E6-12.5 (0-6")	72.75	**1.2**	NE	NE	126.39	**1.6**	350.82	0.21	1224.39	**2.7**	192.82	**1.6**
BCEOT-W6-12.5 (0-6")	38.04	0.63	NE	NE	BB	BB	113.16	0.067	1046.31	**2.3**	BB	BB
BCEOT-E7-12.5 (0-6")	45.77	0.76	NE	NE	BB	BB	120.56	0.071	1260.65	**2.8**	111.46	0.93
BCEOT-W7-12.5 (0-6")	120.08	**2**	NE	NE	174.61	**2.2**	619.63	0.36	608.51	**1.4**	142.60	**1.2**
BCEOT-W8-12.5 (0-6")	202.38	**3.4**	NE	NE	225.45	**2.8**	2308.39	**1.4**	115.08	0.26	379.64	**3.2**
BCEOT-E9-12.5 (0-6")	161.92	**2.7**	NE	NE	160.23	**2.0**	715.50	0.42	582.99	**1.3**	260.64	**2.2**
BCEOT-W9-12.5 (0-6")	300.35	**5**	NE	NE	386.31	**4.8**	842.65	0.5	123.90	0.28	2800.76	**23**

TABLE D-11: TERRESTRIAL PLANT AND INVERTEBRATE HAZARD QUOTIENT SUMMARY TABLE, EU 11 - BEARTRAP CREEK DISPERSED TAILINGS DEPOSITS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK TAILINGS DEPOSITS AND FLOSSIE LOUISE MINE WASTE PILE (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

RECEPTOR / POINT ID	Arsenic Concentration (mg/kg)[1]	Arsenic HQ[2]	Cadmium Concentration (mg/kg)[1]	Cadmium HQ[2]	Copper Concentration (mg/kg)[1]	Copper HQ[2]	Lead Concentration (mg/kg)[1]	Lead HQ[2]	Manganese Concentration (mg/kg)[1]	Manganese HQ[2]	Zinc Concentration (mg/kg)[1]	Zinc HQ[2]
Screening Benchmark - Terrestrial Invertebrates (mg/kg)3	**60**		**140**		**80**		**1700**		**450**		**120**	
Inside Tailings Pile												
BCEOT-E10-12.5 (0-6")	40.85	0.68	NE	NE	418.05	**5.2**	92.01	0.054	3723.44	**8.3**	253.90	**2.1**
BCEOT-W10-12.5 (0-6")	169.72	**2.8**	NE	NE	136.10	**1.7**	1010.95	0.59	712.48	**1.6**	240.70	**2.0**
BCEOT-E11-12.5 (0-6")	98.54	**1.6**	NE	NE	103.21	**1.3**	349.39	0.21	426.30	0.95	165.36	**1.4**
BCEOT-W11-12.5 (0-6")	198.93	**3.3**	NE	NE	425.87	**5.3**	713.77	0.42	600.09	**1.3**	1811.31	**15**
BCEOT-E12-12.5 (0-6")	61.31	**1**	NE	NE	201.90	**2.5**	237.81	0.14	1205.75	**2.7**	125.89	**1**
BCEOT-W12-12.5 (0-6")	242.83	**4**	NE	NE	288.51	**3.6**	2067.82	**1.2**	2650.92	**5.9**	1080.42	**9.0**
BCEOT-E13-12.5 (0-6")	113.49	**1.9**	NE	NE	154.61	**1.9**	619.34	0.36	610.40	**1.4**	220.05	**1.8**
BCEOT-W13-12.5 (0-6")	251.50	**4.2**	NE	NE	172.62	**2.2**	2111.73	**1.2**	323.42	0.72	576.55	**4.8**
BCEOT-W13-25 (0-6")	BB	BB	NE	NE	BB	BB	54.35	0.032	572.07	**1.3**	BB	BB
BCEOT-W14-12.5 (0-6")	64.22	**1.1**	NE	NE	84.00	**1.1**	286.92	0.17	2737.45	**6.1**	387.97	**3.2**
BCEOT-E15-8 (0-6")	76.38	**1.3**	NE	NE	199.51	**2.5**	554.77	0.33	889.72	**2.0**	227.59	**1.9**
BCEOT-W15-12.5 (0-6")	192.70	**3.2**	NE	NE	208.02	**2.6**	1261.63	0.74	122.05	0.27	391.75	**3.3**
BCEOT-E16-12.5 (0-6")	274.12	**4.6**	NE	NE	484.55	**6.1**	3352.90	**2**	716.34	**1.6**	3861.70	**32**
BCEOT-W16-12.5 (0-6")	239.15	**4**	NE	NE	556.93	**7.0**	1260.14	0.74	2318.06	**5.2**	1067.98	**8.9**
BCEOT-E17-12.5 (0-6")	732.62	**12**	NE	NE	2694.94	**34**	17431.72	**10**	8381.56	**19**	16182.16	**130**
BCEOT-W17-12.5 (0-6")	99.53	**1.7**	NE	NE	117.32	**1.5**	660.73	0.39	1149.22	**2.6**	504.59	**4.2**
BCEOT-W18-12.5 (0-6")	220.88	**3.7**	NE	NE	296.71	**3.7**	2309.56	**1.4**	83.60	0.19	387.94	**3.2**
BCEOT-E19-12.5 (0-6")	107.98	**1.8**	6.36	0.045	218.19	**2.7**	1175.78	0.69	1794.27	**4.0**	934.08	**7.8**
BCEOT-W19-12.5 (0-6")	69.33	**1.2**	NE	NE	82.19	**1.0**	339.83	0.2	1122.67	**2.5**	339.96	**2.8**
BCEOT-E20-12.5 (0-6")	163.28	**2.7**	NE	NE	236.55	**3.0**	1719.88	**1**	2274.27	**5.1**	571.98	**4.8**
BCEOT-W20-12.5 (0-6")	295.86	**4.9**	NE	NE	708.82	**8.9**	1576.27	0.93	10365.25	**23**	3627.62	**30**
BCEOT-E21-12.5 (0-6")	178.70	**3**	1.19	0.0085	200.23	**2.5**	1595.97	0.94	2288.87	**5.1**	248.93	**2.1**
BCEOT-W21-12.5 (0-6")	150.65	**2.5**	NE	NE	186.90	**2.3**	1111.00	0.65	352.72	0.78	345.90	**2.9**
BCEOT-E22-12.5 (0-6")	265.08	**4.4**	NE	NE	355.77	**4.4**	2044.37	**1.2**	7488.88	**17**	1238.19	**10**
BCEOT-W22-12.5 (0-6")	165.57	**2.8**	72.20	0.52	1958.04	**24**	3486.92	**2.1**	41403.96	**92**	14604.84	**120**
BCEOT-E23-15 (0-6")	45.16	0.75	NE	NE	93.92	**1.2**	287.47	0.17	1375.86	**3.1**	272.74	**2.3**
BCEOT-W23-12.5 (0-6")	281.19	**4.7**	NE	NE	954.34	**12**	2363.80	**1.4**	10297.96	**23**	3665.70	**31**
BCEOT-E24-12.5 (0-6")	25.24	0.42	NE	NE	BB	BB	125.41	0.074	364.76	0.81	106.86	0.89
BCEOT-W24-12.5 (0-6")	205.16	**3.4**	NE	NE	593.23	**7.4**	1615.50	0.95	9137.23	**20**	2809.17	**23**
BCEOT-E25-12.5 (0-6")	192.09	**3.2**	NE	NE	301.66	**3.8**	1442.36	0.85	1108.58	**2.5**	567.20	**4.7**
BCEOT-W25-12.5 (0-6")	176.90	**2.9**	18.10	0.13	607.17	**7.6**	1276.87	0.75	10653.23	**24**	1923.13	**16**
BCEOT-E26-12.5 (0-6")	104.26	**1.7**	NE	NE	71.80	0.90	657.80	0.39	600.57	**1.3**	198.62	**1.7**
BCEOT-W26-12.5 (0-6")	108.69	**1.8**	NE	NE	226.00	**2.8**	1033.36	0.61	83.53	0.19	309.06	**2.6**
BCEOT-W27-12.5 (0-6")	152.02	**2.5**	NE	NE	389.55	**4.9**	1222.40	0.72	7999.06	**18**	1735.69	**14**
At Edge of Tailings Pile						**34**						
BCEOT-E0-0 (0-6")	143.09	**2.4**	NE	NE	203.29	**2.5**	738.20	0.43	3056.56	**6.8**	272.94	**2.3**
BCEOT-E1-0 (0-6")	20.81	0.35	NE	NE	BB	BB	83.77	0.049	2640.12	**5.9**	185.27	**1.5**
BCEOT-E2-0 (0-6")	156.81	**2.6**	NE	NE	271.86	**3.4**	914.37	0.54	2245.72	**5.0**	509.31	**4.2**
BCEOT-E3-0 (0-6")	49.10	0.82	NE	NE	BB	BB	183.33	0.11	791.95	**1.8**	124.13	**1**
BCEOT-E4-0 (0-6")	BB	BB	NE	NE	BB	BB	136.07	0.08	1444.20	**3.2**	176.15	**1.5**
BCEOT-W4-0 (0-6")	37.39	0.62	NE	NE	BB	BB	96.38	0.057	761.24	**1.7**	88.45	0.74
BCEOT-E5-0 (0-6")	99.59	**1.7**	NE	NE	184.01	**2.3**	546.65	0.32	1187.20	**2.6**	237.08	**2.0**
BCEOT-W5-0 (0-6")	125.19	**2.1**	NE	NE	89.51	**1.1**	615.22	0.36	526.09	**1.2**	192.81	**1.6**
BCEOT-E6-0 (0-6")	59.55	0.99	NE	NE	71.83	0.90	294.85	0.17	846.08	**1.9**	169.47	**1.4**
BCEOT-W6-0 (0-6")	29.97	0.5	NE	NE	93.69	**1.2**	109.84	0.065	1108.51	**2.5**	108.82	0.91

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Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

RECEPTOR / POINT ID	Arsenic Concentration (mg/kg)[1]	Arsenic HQ[2]	Cadmium Concentration (mg/kg)[1]	Cadmium HQ[2]	Copper Concentration (mg/kg)[1]	Copper HQ[2]	Lead Concentration (mg/kg)[1]	Lead HQ[2]	Manganese Concentration (mg/kg)[1]	Manganese HQ[2]	Zinc Concentration (mg/kg)[1]	Zinc HQ[2]
Screening Benchmark - Terrestrial Invertebrates (mg/kg)3	**60**		**140**		**80**		**1700**		**450**		**120**	
At Edge of Tailings Pile						**0.91**						
BCEOT-E7-0 (0-6")	83.49	**1.4**	NE	NE	141.84	**1.8**	428.74	0.25	1215.76	**2.7**	169.39	**1.4**
BCEOT-W7-0 (0-6")	54.20	0.9	NE	NE	72.75	0.91	230.79	0.14	423.17	0.94	BB	BB
BCEOT-W8-0 (0-6")	BB	BB	NE	NE	BB	BB	45.97	0.027	413.71	0.92	BB	BB
BCEOT-E9-0 (0-6")	49.50	0.83	NE	NE	74.43	0.93	279.75	0.16	3156.97	**7.0**	226.64	**1.9**
BCEOT-W9-0 (0-6")	BB	BB	NE	NE	BB	BB	34.78	0.02	467.13	**1.0**	BB	BB
BCEOT-E10-0 (0-6")	48.87	0.81	NE	NE	440.34	**5.5**	105.29	0.062	5843.56	**13**	322.14	**2.7**
BCEOT-W10-0 (0-6")	BB	BB	NE	NE	BB	BB	55.59	0.033	440.87	0.98	BB	BB
BCEOT-E11-0 (0-6")	24.33	0.41	NE	NE	100.27	**1.3**	53.68	0.032	2860.96	**6.4**	144.15	**1.2**
BCEOT-W11-0 (0-6")	110.62	**1.8**	NE	NE	161.21	**2.0**	630.75	0.37	1395.96	**3.1**	322.53	**2.7**
BCEOT-E12-0 (0-6")	46.13	0.77	NE	NE	202.39	**2.5**	191.56	0.11	1472.17	**3.3**	161.40	**1.3**
BCEOT-W12-0 (0-6")	23.01	0.38	NE	NE	BB	BB	76.00	0.045	814.76	**1.8**	BB	BB
BCEOT-E13-0 (0-6")	24.51	0.41	NE	NE	105.41	**1.3**	49.10	0.029	1130.53	**2.5**	134.90	**1.1**
BCEOT-W13-0 (0-6")	BB	BB	BB	BB	BB	BB	83.45	0.049	958.52	**2.1**	153.77	**1.3**
BCEOT-E14-0 (0-6")	32.36	0.54	NE	NE	108.12	**1.4**	142.60	0.084	1120.30	**2.5**	123.38	**1**
BCEOT-W14-0 (0-6")	52.17	0.87	NE	NE	102.66	**1.3**	395.72	0.23	3746.14	**8.3**	735.46	**6.1**
BCEOT-E15-0 (0-6")	11.12	0.19	NE	NE	158.00	**2.0**	221.13	0.13	1265.96	**2.8**	262.78	**2.2**
BCEOT-W15-0 (0-6")	76.10	**1.3**	NE	NE	159.58	**2.0**	525.76	0.31	3541.57	**7.9**	771.56	**6.4**
BCEOT-E16-0 (0-6")	20.98	0.35	NE	NE	107.55	**1.3**	132.38	0.078	1416.96	**3.1**	182.62	**1.5**
BCEOT-W16-0 (0-6")	BB	BB	NE	NE	BB	BB	102.34	0.06	825.62	**1.8**	219.51	**1.8**
BCEOT-E17-0 (0-6")	98.37	**1.6**	NE	NE	190.58	**2.4**	550.68	0.32	1931.81	**4.3**	644.42	**5.4**
BCEOT-W17-0 (0-6")	49.31	0.82	NE	NE	112.92	**1.4**	278.16	0.16	1236.93	**2.7**	230.91	**1.9**
BCEOT-E18-0 (0-6")	41.92	0.7	NE	NE	115.59	**1.4**	231.15	0.14	1717.24	**3.8**	379.82	**3.2**
BCEOT-W18-0 (0-6")	32.07	0.53	NE	NE	82.85	**1.0**	70.55	0.042	1245.11	**2.8**	273.22	**2.3**
BCEOT-E19-0 (0-6")	24.31	0.41	NE	NE	65.22	0.82	96.37	0.057	1037.84	**2.3**	265.16	**2.2**
BCEOT-W19-0 (0-6")	38.18	0.64	NE	NE	65.06	0.81	157.33	0.093	2636.95	**5.9**	298.30	**2.5**
BCEOT-E20-0 (0-6")	22.70	0.38	NE	NE	BB	BB	29.24	0.017	363.37	0.81	132.38	**1.1**
BCEOT-W20-0 (0-6")	BB	BB	NE	NE	65.55	0.82	82.57	0.049	1032.89	**2.3**	271.21	**2.3**
BCEOT-E21-0 (0-6")	76.13	**1.3**	NE	NE	169.34	**2.1**	705.03	0.41	1420.23	**3.2**	267.27	**2.2**
BCEOT-W21-0 (0-6")	26.27	0.44	NE	NE	129.42	**1.6**	134.14	0.079	1172.24	**2.6**	308.57	**2.6**
BCEOT-E22-0 (0-6")	47.90	0.8	NE	NE	73.01	0.91	300.11	0.18	852.89	**1.9**	124.65	**1**
BCEOT-W22-0 (0-6")	33.19	0.55	NE	NE	172.47	**2.2**	127.24	0.075	636.87	**1.4**	240.94	**2.0**
BCEOT-E23-0 (0-6")	BB	BB	NE	NE	BB	BB	45.42	0.027	470.07	**1.0**	90.17	0.75
BCEOT-W23-0 (0-6")	BB	BB	NE	NE	107.05	**1.3**	119.46	0.07	553.77	**1.2**	404.11	**3.4**
BCEOT-E24-0 (0-6")	33.28	0.55	NE	NE	BB	BB	112.09	0.066	537.89	**1.2**	146.30	**1.2**
BCEOT-W24-0 (0-6")	11.55	0.19	NE	NE	144.79	**1.8**	221.06	0.13	1173.13	**2.6**	247.41	**2.1**
BCEOT-E25-0 (0-6")	42.05	0.7	NE	NE	BB	BB	170.32	0.1	711.29	**1.6**	171.80	**1.4**
BCEOT-W25-0 (0-6")	14.40	0.24	NE	NE	150.50	**1.9**	297.22	0.17	1691.84	**3.8**	283.58	**2.4**
BCEOT-E26-0 (0-6")	27.15	0.45	NE	NE	75.20	0.94	253.65	0.15	1283.02	**2.9**	329.61	**2.7**
BCEOT-W26-0 (0-6")	11.08	0.18	1.62	0.012	70.96	0.89	187.50	0.11	1253.90	**2.8**	233.62	**1.9**
BCEOT-W27-0 (0-6")	11.68	0.19	NE	NE	98.01	**1.2**	232.82	0.14	1004.09	**2.2**	269.48	**2.2**

TABLE D-11: TERRESTRIAL PLANT AND INVERTEBRATE HAZARD QUOTIENT SUMMARY TABLE, EU 11 - BEARTRAP CREEK DISPERSED TAILINGS DEPOSITS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK TAILINGS DEPOSITS AND FLOSSIE LOUISE MINE WASTE PILE (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

RECEPTOR / POINT ID	Arsenic Concentration (mg/kg)[1]	Arsenic HQ[2]	Cadmium Concentration (mg/kg)[1]	Cadmium HQ[2]	Copper Concentration (mg/kg)[1]	Copper HQ[2]	Lead Concentration (mg/kg)[1]	Lead HQ[2]	Manganese Concentration (mg/kg)[1]	Manganese HQ[2]	Zinc Concentration (mg/kg)[1]	Zinc HQ[2]
Screening Benchmark - Terrestrial Invertebrates (mg/kg)3	**60**		**140**		**80**		**1700**		**450**		**120**	
Outside Tailings Piles												
BCEOT-E0+25 (0-6")	91.31	**1.5**	NE	NE	87.14	**1.1**	390.91	0.23	926.77	**2.1**	204.68	**1.7**
BCEOT-E1+25 (0-6")	108.03	**1.8**	NE	NE	182.70	**2.3**	558.21	0.33	4559.02	**10**	428.46	**3.6**
BCEOT-E2+25 (0-6")	88.95	**1.5**	NE	NE	95.48	**1.2**	349.09	0.21	556.43	**1.2**	174.98	**1.5**
BCEOT-E3+25 (0-6")	27.47	0.46	NE	NE	BB	BB	108.36	0.064	1047.23	**2.3**	110.34	0.92
BCEOT-E4+25 (0-6")	50.48	0.84	NE	NE	107.16	**1.3**	156.44	0.092	2685.31	**6.0**	159.80	**1.3**
BCEOT-W4+25 (0-6")	53.81	0.9	NE	NE	104.87	**1.3**	186.09	0.11	672.51	**1.5**	145.73	**1.2**
BCEOT-E5+25 (0-6")	94.09	**1.6**	NE	NE	126.81	**1.6**	388.55	0.23	2321.07	**5.2**	421.24	**3.5**
BCEOT-W5+25 (0-6")	123.16	**2.1**	NE	NE	82.31	**1.0**	487.49	0.29	714.13	**1.6**	171.18	**1.4**
BCEOT-E6+25 (0-6")	66.67	**1.1**	NE	NE	79.19	0.99	370.19	0.22	574.12	**1.3**	152.49	**1.3**
BCEOT-W6+25 (0-6")	18.68	0.31	NE	NE	66.10	0.83	78.68	0.046	297.22	0.66	85.46	0.71
BCEOT-E7+25 (0-6")	28.94	0.48	NE	NE	107.57	**1.3**	124.64	0.073	2436.00	**5.4**	145.70	**1.2**
BCEOT-W7+25 (0-6")	BB	BB	NE	NE	BB	BB	40.68	0.024	832.67	**1.9**	123.05	**1**
FLWA-101 (0-6")	212.35	**3.5**	1.50	0.011	70.57	0.88	1865.23	**1.1**	241.52	0.54	283.71	**2.4**
BCEOT-W8+25 (0-6")	37.89	0.63	NE	NE	75.35	0.94	158.01	0.093	505.85	**1.1**	160.57	**1.3**
BCEOT-E9+25 (0-6")	102.42	**1.7**	NE	NE	148.70	**1.9**	517.71	0.3	1967.01	**4.4**	255.90	**2.1**
BCEOT-W9+25 (0-6")	20.89	0.35	NE	NE	BB	BB	101.18	0.06	2122.58	**4.7**	234.88	**2.0**
BCEOT-E10+25 (0-6")	24.35	0.41	NE	NE	386.59	**4.8**	41.08	0.024	2285.62	**5.1**	158.18	**1.3**
BCEOT-W10+25 (0-6")	BB	BB	BB	BB	BB	BB	32.09	0.019	380.04	0.84	BB	BB
BCEOT-E11+25 (0-6")	94.44	**1.6**	NE	NE	104.29	**1.3**	366.65	0.22	947.43	**2.1**	205.29	**1.7**
BCEOT-W11+25 (0-6")	45.38	0.76	NE	NE	69.15	0.86	177.18	0.1	633.61	**1.4**	86.40	0.72
BCEOT-E12+25 (0-6")	54.88	0.91	NE	NE	235.41	**2.9**	241.86	0.14	986.15	**2.2**	147.55	**1.2**
BCEOT-W12+25 (0-6")	BB	BB	NE	NE	BB	BB	23.80	0.014	1108.69	**2.5**	170.69	**1.4**
BCEOT-E13+25 (0-6")	91.72	**1.5**	NE	NE	233.65	**2.9**	369.12	0.22	877.13	**1.9**	155.88	**1.3**
BCEOT-E14+25 (0-6")	19.06	0.32	NE	NE	124.73	**1.6**	100.58	0.059	1235.68	**2.7**	94.45	0.79
BCEOT-W14+25 (0-6")	BB	BB	NE	NE	BB	BB	40.21	0.024	1754.65	**3.9**	171.91	**1.4**
BCEOT-E15+25 (0-6")	38.03	0.63	NE	NE	198.11	**2.5**	220.29	0.13	1545.64	**3.4**	258.99	**2.2**
BCEOT-W15+25 (0-6")	55.47	0.92	NE	NE	137.40	**1.7**	188.50	0.11	2742.72	**6.1**	266.10	**2.2**
BCEOT-E16+25 (0-6")	19.24	0.32	NE	NE	82.76	**1.0**	75.53	0.044	964.23	**2.1**	198.52	**1.7**
BCEOT-W16+25 (0-6")	BB	BB	NE	NE	BB	BB	28.35	0.017	610.89	**1.4**	152.05	**1.3**
BCEOT-E17+25 (0-6")	28.14	0.47	NE	NE	123.76	**1.5**	178.04	0.1	1219.22	**2.7**	377.79	**3.1**
BCEOT-W17+25 (0-6")	18.68	0.31	0.71	0.0051	74.85	0.94	99.92	0.059	597.40	**1.3**	124.11	**1**
BCEOT-E18+12.5 (0-6")	683.17	**11**	NE	NE	2180.04	**27**	15717.30	**9.2**	7882.20	**18**	13646.53	**110**
BCEOT-E18+25 (0-6")	33.50	0.56	1.91	0.014	111.63	**1.4**	103.11	0.061	1276.15	**2.8**	287.34	**2.4**
BCEOT-W18+25 (0-6")	26.25	0.44	NE	NE	70.91	0.89	87.65	0.052	1310.76	**2.9**	205.98	**1.7**
BCEOT-E19+25 (0-6")	30.43	0.51	NE	NE	97.46	**1.2**	76.01	0.045	1245.40	**2.8**	250.49	**2.1**
BCEOT-W19+25 (0-6")	BB	BB	NE	NE	BB	BB	73.53	0.043	279.86	0.62	124.35	**1**
BCEOT-E20+25 (0-6")	22.15	0.37	1.04	0.0074	BB	BB	33.66	0.02	1058.27	**2.4**	163.93	**1.4**
BCEOT-W20+25 (0-6")	BB	BB	NE	NE	105.11	**1.3**	77.15	0.045	795.99	**1.8**	197.69	**1.6**
BCEOT-E21+25 (0-6")	24.55	0.41	NE	NE	BB	BB	129.70	0.076	517.56	**1.2**	188.45	**1.6**
BCEOT-W21+25 (0-6")	BB	BB	NE	NE	155.62	**1.9**	91.16	0.054	713.99	**1.6**	174.68	**1.5**
BCEOT-E22+25 (0-6")	148.30	**2.5**	NE	NE	128.00	**1.6**	1354.53	0.8	2456.98	**5.5**	201.37	**1.7**
BCEOT-E22+70 (0-6")	32.63	0.54	NE	NE	BB	BB	249.95	0.15	698.25	**1.6**	307.45	**2.6**
BCEOT-W22+25 (0-6")	20.77	0.35	NE	NE	132.78	**1.7**	71.29	0.042	312.99	0.70	160.14	**1.3**
BCEOT-E23+25 (0-6")	20.62	0.34	NE	NE	BB	BB	49.41	0.029	423.25	0.94	102.17	0.85
BCEOT-W23+25 (0-6")	19.16	0.32	0.55	0.0039	134.42	**1.7**	106.83	0.063	592.16	**1.3**	192.38	**1.6**

TABLE D-11: TERRESTRIAL PLANT AND INVERTEBRATE HAZARD QUOTIENT SUMMARY TABLE, EU 11 - BEARTRAP CREEK DISPERSED TAILINGS DEPOSITS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK TAILINGS DEPOSITS AND FLOSSIE LOUISE MINE WASTE PILE (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

RECEPTOR / POINT ID	Arsenic Concentration (mg/kg)[1]	Arsenic HQ[2]	Cadmium Concentration (mg/kg)[1]	Cadmium HQ[2]	Copper Concentration (mg/kg)[1]	Copper HQ[2]	Lead Concentration (mg/kg)[1]	Lead HQ[2]	Manganese Concentration (mg/kg)[1]	Manganese HQ[2]	Zinc Concentration (mg/kg)[1]	Zinc HQ[2]
Screening Benchmark - Terrestrial Invertebrates (mg/kg)3	**60**		**140**		**80**		**1700**		**450**		**120**	
Outside Tailings Piles												
BCEOT-E24+25 (0-6")	BB	BB	NE	NE	BB	BB	BB	BB	346.78	0.77	BB	BB
BCEOT-W24+25 (0-6")	11.02	0.18	NE	NE	117.61	**1.5**	200.06	0.12	550.48	**1.2**	309.90	**2.6**
BCEOT-E25+20 (0-6")	BB	BB	NE	NE	81.53	**1.0**	38.97	0.023	434.46	1.0	108.57	0.9
BCEOT-W25+25 (0-6")	10.41	0.17	NE	NE	66.45	0.83	164.16	0.097	302.60	0.67	269.71	**2.2**
BCEOT-E26+25 (0-6")	88.51	**1.5**	NE	NE	126.08	**1.6**	524.50	0.31	241.18	0.54	124.29	**1**
BCEOT-W26+25 (0-6")	82.51	**1.4**	NE	NE	295.03	**3.7**	135.20	0.08	5038.19	**11**	281.45	**2.3**
BCEOT-W27+25 (0-6")	27.71	0.46	NE	NE	91.90	**1.1**	144.43	0.085	1140.68	**2.5**	262.77	**2.2**

Notes:

Bold values indicate HQs greater than 1.0.

1 Soil concentration from 0 to 6 inches below ground surface at point ID as measured by XRF 10 for all chemicals except cadmium. XRF 10 results were not available for cadmium, so laboratory results were used. Doses were not calculated for detected and non-detect soil concentrations measured below the minimum reference site concentration, as indicated by BB. For results that were measured at less than the detection limit, HQs were calculated using half of the detection limit.

2 HQs were calculated by dividing the site concentration by the plant or invertebrate screening benchmark.

3 Plant screening benchmarks are from EPA 2007. Invertebrate screening benchmarks are from EPA 2007, with the exception of the screening benchmark for arsenic, which is from Efroymson and others 1997.

BB	Below minimum background reference site concentration	HQ	Hazard quotient
EE/CA	Engineering Evaluation/Cost Analysis	ID	Identification
EPA	U.S. Environmental Protection Agency	mg/kg	Milligrams per kilogram
EU	Exposure Unit	NE	Not evaluated

Sources:

Efroymson, R.A., M.E, Will, and G.W. Suter II. 1997. "Toxicological Benchmarks for Contaminants of Potential Concern for Effects on Soil and Litter Invertebrates and Heterotrophic Processes: 1997 Revision." Oak Ridge National Laboratory, Oak Ridge TN. ES/ER/TM-126/R2

EPA. 2007. Interim Ecological Soil Screening Levels. Available on-line at: http://www.epa.gov/ecotox/ecossl/

TABLE D-12A: TERRESTRIAL PLANT AND INVERTEBRATE HAZARD QUOTIENT SUMMARY TABLE, EU 12 - UPPER MARSH

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

RECEPTOR / POINT ID	Arsenic Concentration (mg/kg)[1]	Arsenic HQ[2]	Cadmium Concentration (mg/kg)[1]	Cadmium HQ[2]	Copper Concentration (mg/kg)[1]	Copper HQ[2]	Lead Concentration (mg/kg)[1]	Lead HQ[2]	Manganese Concentration (mg/kg)[1]	Manganese HQ[2]	Zinc Concentration (mg/kg)[1]	Zinc HQ[2]
Screening Benchmark - Terrestrial Plants (mg/kg)	18		32		70		120		220		160	
Terrestrial Plants												
Reference Sites												
BRSD-5 (0-2")	17.2	0.96	0.619	0.019	39.2	0.56	64.7	0.54	320	**1.5**	107	0.67
BRSD-5 (2-6")	19.2	**1.1**	0.521	0.016	41.7	0.6	61.7	0.51	250	**1.10**	100	0.63
BRSD-5 (6-12")	24.6	**1.4**	0.471	0.015	45.3	0.65	79	0.66	244	**1.10**	97.8	0.61
PGBG-1 (0-2")	12.4	0.69	1.51	0.047	34.7	0.5	55	0.46	696	**3.20**	158	0.99
PGBG-1 (2-6")	9.12	0.51	1.44	0.045	37	0.53	101	0.84	199	0.90	174	**1.1**
PGBG-1 (6-12")	9.4	0.52	0.649	0.02	22	0.31	174	**1.5**	88	0.40	133	0.83
PGBG-2 (0-2")	18.8	**1.0**	1.84	0.058	52	0.74	105	0.88	586	**2.7**	263	**1.6**
PGBG-2 (2-6")	18.5	**1.0**	1.54	0.048	55	0.79	108	0.90	498	**2.3**	252	**1.6**
PGBG-2 (6-12")	32.3	**1.8**	1.57	0.049	67.4	0.96	113	0.94	293	**1.3**	275	**1.7**
Eastern Upper Marsh (0-2")												
UM-1000S-3500E (0-2")	238	**13**	2.19	0.068	221	**3.2**	1770	**15**	283	**1.3**	1720	**11**
BRSD-15 (0-2")	14.9	0.83	1.52	0.048	89.2	**1.3**	66.9	0.56	635	**2.9**	167	**1.0**
BRSD-4 (0-2")	BB	BB	0.759	0.024	62.3	0.89	111	0.93	210	0.95	181	**1.1**
UM-750S-3500E (0-2")	116	**6.4**	8	0.25	894	**13**	2240	**19**	7430	**34**	1250	**7.8**
BRSD-16 (0-2")	193	**11**	5.19	0.16	371	**5.3**	2100	**18**	1040	**4.7**	822	**5.1**
UM-750S-3000E (0-2")	164	**9.1**	10.7	0.33	405	**5.8**	1200	**10**	7110	**32**	2130	**13**
BRSD-3 (0-2")	38	**2.1**	3.62	0.11	1120	**16**	1090	**9.1**	1240	**5.6**	1020	**6.4**
UM-500S-3250E (0-2")	138	**7.7**	2.79	0.087	528	**7.5**	2210	**18**	2590	**12**	940	**5.9**
UM-500S-3000E (0-2")	87.4	**4.9**	9.1	0.28	438	**6.3**	2120	**18**	1180	**5.4**	1410	**8.8**
UM-500S-2750E (0-2")	156	**8.7**	11	0.34	504	**7.2**	1210	**10**	7160	**33**	2190	**14**
BRSD-25 (0-2)	66	**3.7**	6.25	0.2	265	**3.8**	836	**7.0**	1500	**6.8**	836	**5.2**
UM-250S-3000E (0-2")	107	**5.9**	17.9	0.56	971	**14**	1680	**14**	4400	**20**	4080	**26**
UM-250S-3250E (0-2")	BB	BB	14.3	0.45	315	**4.5**	168	**1.4**	1470	**6.7**	948	**5.9**
BRSD-24 (0-2)	193	**11**	13.7	0.43	392	**5.6**	1080	**9.0**	7990	**36**	2040	**13**
UM-250S-2750E (0-2")	165	**9.2**	7.05	0.22	273	**3.9**	968	**8.1**	7810	**36**	1510	**9.4**
UM-250S-2500E (0-2")	12.3	0.68	2.95	0.092	204	**2.9**	115	0.96	235	**1.1**	576	**3.6**
UM-0N-2500E (0-2")	117	**6.5**	23.1	0.72	510	**7.3**	2000	**17**	2050	**9.3**	3340	**21**
UM-0N-250E (0-2")	13	0.72	19.2	0.6	585	**8.4**	305	**2.5**	BB	BB	1500	**9.4**
BRSD-2 (0-2)	177	**9.8**	10.3	0.32	343	**4.9**	1290	**11**	7690	**35**	1750	**11**
UM-500N-2500E (0-2")	11.3	0.63	1.76	0.055	59.3	0.85	91.2	0.76	163	0.74	270	**1.7**
UM-250N-2500E (0-2")	96.9	**5.4**	14.3	0.45	555	**7.9**	1520	**13**	3800	**17**	2990	**19**
UM-250N-2250E (0-2)	177	**9.8**	12	0.38	364	**5.2**	1340	**11**	7620	**35**	2060	**13**
Western Upper Marsh (0-2")												
UM-500S-2500E (0-2")	12.2	0.68	1.25	0.039	373	**5.3**	BB	BB	BB	BB	222	**1.4**
UM-0N-2000E (0-2")	47.2	**2.6**	14.6	0.46	788	**11**	2480	**21**	4320	**20**	2760	**17**
UM-500S-2000E (0-2")	21	**1.2**	BB	BB	183	**2.6**	BB	BB	BB	BB	BB	BB
UM-250N-1750E (0-2)	12.6	0.7	0.552	0.017	153	**2.2**	96.2	0.80	126	0.57	126	0.79
UM-0N-1500E (0-2")	BB	BB	0.624	0.02	90.8	**1.3**	102	0.85	133	0.60	286	**1.8**

TABLE D-12A: TERRESTRIAL PLANT AND INVERTEBRATE HAZARD QUOTIENT SUMMARY TABLE, EU 12 - UPPER MARSH

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

RECEPTOR / POINT ID	Arsenic Concentration (mg/kg)[1]	Arsenic HQ[2]	Cadmium Concentration (mg/kg)[1]	Cadmium HQ[2]	Copper Concentration (mg/kg)[1]	Copper HQ[2]	Lead Concentration (mg/kg)[1]	Lead HQ[2]	Manganese Concentration (mg/kg)[1]	Manganese HQ[2]	Zinc Concentration (mg/kg)[1]	Zinc HQ[2]
Screening Benchmark - Terrestrial Plants (mg/kg)	18		32		70		120		220		160	
UM-250S-1500E (0-2")	33.3	**1.9**	16.4	0.51	571	**8.2**	1730	**14**	1170	**5.3**	2760	**17**
UM-250S-1250E (0-2")	BB	BB	BB	BB	91.1	**1.3**	94.8	0.79	BB	BB	98.8	0.62
BRSD-6 (0-2")	BB	BB	0.982	0.031	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-1000E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-750E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-500E (0-2")	10.1	0.56	2.1	0.066	450	**6.4**	163	**1.4**	BB	BB	218	**1.4**
UM-250S-500E (0-2")	BB	BB	0.868	0.027	80.8	**1.2**	70.1	0.58	BB	BB	148	0.93
UM-250S-250E (0-2")	14.5	0.81	0.809	0.025	240	**3.4**	131	**1.1**	BB	BB	131	0.82
BRSD-7 (0-2")	BB	BB	1.83	0.057	BB	BB	BB	BB	BB	BB	663	**4.1**
BRSD-8 (0-2")	BB	BB	5.64	0.18	194	**2.8**	226	**1.9**	493	**2.2**	521	**3.3**
UM-500S-500E (0-2")	11.8	0.66	1.06	0.033	96.3	**1.4**	66.4	0.55	97	0.44	188	**1.2**
BRSD-9 (0-2")	23	**1.3**	4.91	0.15	83.9	**1.2**	285	**2.4**	5550	**25**	652	**4.1**
BRSD-10 (0-2")	30.3	**1.7**	18	0.56	651	**9.3**	632	**5.3**	3410	**16**	2870	**18**
BRSD-11 (0-2")	14.7	0.82	5.55	0.17	133	**1.9**	92.4	0.77	1360	**6.2**	456	**2.9**
Eastern Upper Marsh (2-6")												
UM-1000S-3500E (2-6")	38.1	**2.1**	BB	BB	106	**1.5**	320	**2.7**	430	**2.0**	396	**2.5**
BRSD-15 (2-6")	15.6	0.87	1.29	0.04	97.4	**1.4**	112	0.93	1000	**4.5**	243	**1.5**
BRSD-4 (2-6")	9.85	0.55	0.671	0.021	129	**1.8**	114	0.95	95	0.43	214	**1.3**
UM-750S-3500E (2-6")	157	**8.7**	13.2	0.41	342	**4.9**	996	**8.3**	7090	**32**	3010	**19**
BRSD-16 (2-6")	507	**28**	34.7	**1.1**	1120	**16**	3130	**26**	10100	**46**	3890	**24**
UM-750S-3000E (2-6")	143	**7.9**	9.12	0.29	354	**5.1**	1070	**8.9**	7440	**34**	1770	**11**
BRSD-3 (2-6")	54.2	**3**	4.82	0.15	1420	**20**	2160	**18**	1690	**7.7**	1140	**7.1**
UM-500S-3250E (2-6")	150	**8.3**	0.824	0.026	286	**4.1**	1460	**12**	428	**1.9**	668	**4.2**
UM-500S-3000E (2-6")	22.6	**1.3**	1.82	0.057	82	**1.2**	138	**1.2**	317	**1.4**	265	**1.7**
UM-500S-2750E (2-6")	74.2	**4.1**	8.8	0.28	318	**4.5**	794	**6.6**	8360	**38**	1510	**9.4**
BRSD-25 (2-6)	60	**3.3**	8.84	0.28	402	**5.7**	1460	**12**	1060	**4.8**	1120	**7.0**
UM-250S-3000E (2-6")	162	**9**	20.7	0.65	801	**11**	1950	**16**	2570	**12**	3550	**22**
UM-250S-3250E (2-6")	BB	BB	3.27	0.1	81.8	**1.2**	93.5	0.78	129	0.59	760	**4.8**
BRSD-24 (2-6)	119	**6.6**	28	0.88	740	**11**	2660	**22**	2860	**13**	3450	**22**
UM-250S-2750E (2-6")	141	**7.8**	13.6	0.43	442	**6.3**	2080	**17**	5850	**27**	2010	**13**
UM-0N-2500E (2-6")	103	**5.7**	9.73	0.3	262	**3.7**	1260	**11**	3220	**15**	1460	**9.1**
BRSD-2 (2-6)	132	**7.3**	16.9	0.53	409	**5.8**	1590	**13**	6090	**28**	1990	**12**
UM-500N-2500E (2-6")	BB	BB	1.59	0.05	74.3	**1.1**	88.9	0.74	186	0.85	272	**1.7**
UM-250N-2500E (2-6")	116	**6.4**	14.4	0.45	512	**7.3**	1070	**8.9**	7980	**36**	2480	**16**
UM-250N-2250E (2-6)	BB	BB	3.38	0.11	143	**2**	192	**1.6**	279	**1.3**	640	**4.0**
Western Upper Marsh (2-6")												
UM-500S-2500E (2-6")	BB	BB	0.738	0.023	355	**5.1**	BB	BB	BB	BB	220	**1.4**
UM-0N-2000E (2-6")	49.4	**2.7**	12.5	0.39	711	**10**	2460	**21**	3820	**17**	2760	**17**
UM-500S-2000E (2-6")	17.9	0.99	0.548	0.017	237	**3.4**	92.2	0.77	BB	BB	111	0.69
UM-250N-1750E (2-6)	12.2	0.68	0.958	0.03	108	**1.5**	93.6	0.78	178	0.81	286	**1.8**

TABLE D-12A: TERRESTRIAL PLANT AND INVERTEBRATE HAZARD QUOTIENT SUMMARY TABLE, EU 12 - UPPER MARSH

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

RECEPTOR / POINT ID	Arsenic Concentration (mg/kg)[1]	Arsenic HQ[2]	Cadmium Concentration (mg/kg)[1]	Cadmium HQ[2]	Copper Concentration (mg/kg)[1]	Copper HQ[2]	Lead Concentration (mg/kg)[1]	Lead HQ[2]	Manganese Concentration (mg/kg)[1]	Manganese HQ[2]	Zinc Concentration (mg/kg)[1]	Zinc HQ[2]
Screening Benchmark - Terrestrial Plants (mg/kg)	18		32		70		120		220		160	
UM-0N-1500E (2-6")	BB	BB	1.13	0.035	135	**1.9**	111	0.93	131	0.60	255	**1.6**
UM-250S-1500E (2-6")	30.6	**1.7**	12.8	0.4	849	**12**	1660	**14**	1460	**6.6**	2010	**13**
UM-250S-1250E (2-6")	24.6	**1.4**	BB	BB	79.4	**1.1**	93.3	0.78	BB	BB	140	0.88
BRSD-6 (2-6")	BB	BB	0.898	0.028	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-1000E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-750E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-500E (2-6")	16.8	0.93	78	**2.4**	2760	**39**	522	**4.4**	BB	BB	2420	**15**
UM-250S-500E (2-6")	BB	BB	0.644	0.02	90.2	**1.3**	95.4	0.8	BB	BB	98.8	0.62
UM-0N-250E (2-6")	19.5	**1.1**	3.52	0.11	302	**4.3**	282	**2.4**	BB	BB	1670	**10**
UM-250S-250E (2-6")	9.58	0.53	1.4	0.044	208	**3**	121	**1**	89	0.41	172	**1.1**
BRSD-7 (2-6")	12	0.67	BB	BB	56.5	0.81	62.3	0.52	BB	BB	148	0.93
BRSD-8 (2-6")	BB	BB	8.6	0.27	188	**2.7**	332	**2.8**	1410	**6.4**	579	**3.6**
UM-500S-500E (2-6")	9.28	0.52	0.76	0.024	88.3	**1.3**	76.3	0.64	101	0.46	177	**1.1**
BRSD-9 (2-6")	17.4	0.97	2.44	0.076	52.9	0.76	58.8	0.49	2110	**9.6**	300	**1.9**
BRSD-10 (2-6")	35.8	**2**	15.8	0.49	690	**9.9**	804	**6.7**	3330	**15**	2340	**15**
BRSD-11 (2-6")	10.8	0.6	2.53	0.079	154	**2.2**	92.6	0.77	317	**1.4**	297	**1.9**
Eastern Upper Marsh (6-12")												
UM-1000S-3500E (6-12")	12.6	0.70	0.989	0.031	86.6	**1.2**	81.7	0.68	153	0.70	182	**1.1**
BRSD-915(6-12")	16.8	0.93	1.75	0.055	97.9	**1.4**	87	0.73	1310	**6.0**	282	**1.8**
BRSD-4 (6-12")	20.4	**1.1**	1.49	0.047	92.5	**1.3**	212	**1.8**	473	**2.2**	318	**2.0**
UM-750S-3500E (6-12")	138	**7.7**	18.3	0.57	409	**5.8**	1210	**10**	6350	**29**	2820	**18**
BRSD-16 (6-12)	92.8	**5.2**	18	0.56	568	**8.1**	3220	**27**	2380	**11**	2310	**14**
UM-750S-3000E (6-12")	142	**7.9**	9.13	0.29	343	**4.9**	1120	**9.3**	7280	**33**	1710	**11**
BRSD-3 (6-12")	19.9	**1.1**	2.34	0.073	1240	**18**	348	**2.9**	648	**2.9**	538	**3.4**
UM-500S-3250E (6-12")	100	**5.6**	1.15	0.036	214	**3.1**	608	**5.1**	276	**1.3**	573	**3.6**
UM-500S-3000E (6-12")	15.1	0.84	1.74	0.054	88.6	**1.3**	112	0.93	389	**1.8**	320	**2.0**
UM-500S-2750E (6-12")	67.8	**3.8**	7.13	0.22	290	**4.1**	678	**5.7**	8160	**37**	1340	**8.4**
BRSD-25 (6-12)	29	**1.6**	7.69	0.24	191	**2.7**	1050	**8.8**	174	0.79	1030	**6.4**
UM-250S-3000E (6-12")	183	**10**	15	0.47	730	**10**	1280	**11**	5000	**23**	2950	**18**
UM-250S-3250E (6-12")	10.5	0.58	3.48	0.11	86.9	**1.2**	107	0.89	220	**1.0**	652	**4.1**
BRSD-24 (6-12)	63.4	**3.5**	14.3	0.45	553	**7.9**	2290	**19**	1200	**5.5**	1740	**11**
UM-250S-2750E (6-12")	66	**3.7**	15.3	0.48	514	**7.3**	2410	**20**	1640	**7.5**	1930	**12**
UM-250S-2500E (6-12")	BB	BB	1.23	0.038	147	**2.1**	85.4	0.71	150	0.68	253	**1.6**
BRSD-2 (6-12)	73.1	**4.1**	27.2	0.85	918	**13**	4220	**35**	1230	**5.6**	4220	**26**
UM-500N-2500E (6-12")	11.6	0.64	0.809	0.025	32.7	0.47	76.4	0.64	206	0.94	176	**1.1**
UM-250N-2500E (6-12")	91.2	**5.1**	12.4	0.39	374	**5.3**	975	**8.1**	6740	**31**	1870	**12**
UM-250N-2250E (6-12)	9.93	0.55	1.99	0.062	180	**2.6**	194	**1.6**	347	**1.6**	390	**2.4**

TABLE D-12A: TERRESTRIAL PLANT AND INVERTEBRATE HAZARD QUOTIENT SUMMARY TABLE, EU 12 - UPPER MARSH

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

RECEPTOR / POINT ID	Arsenic Concentration (mg/kg)[1]	Arsenic HQ[2]	Cadmium Concentration (mg/kg)[1]	Cadmium HQ[2]	Copper Concentration (mg/kg)[1]	Copper HQ[2]	Lead Concentration (mg/kg)[1]	Lead HQ[2]	Manganese Concentration (mg/kg)[1]	Manganese HQ[2]	Zinc Concentration (mg/kg)[1]	Zinc HQ[2]
Screening Benchmark - Terrestrial Plants (mg/kg)	18		32		70		120		220		160	
Western Upper Marsh (6-12")												
UM-500S-2500E (6-12")	11	0.61	0.851	0.027	364	**5.2**	122	**1**	152	0.69	188	**1.2**
UM-0N-2000E (6-12")	59	**3.3**	19.6	0.61	1080	**15**	3280	**27**	7670	**35**	3110	**19**
UM-500S-2000E (6-12")	15.3	0.85	BB	BB	232	**3.3**	94	0.78	BB	BB	BB	BB
UM-250N-1750E (6-12)	11.6	0.64	BB	BB	143	**2**	98.7	0.82	100	0.45	99.5	0.62
UM-0N-1500E (6-12")	BB	BB	2.71	0.085	184	**2.6**	111	0.93	162	0.74	572	**3.6**
UM-250S-1500E (6-12")	17.5	0.97	3.13	0.098	513	**7.3**	931	**7.8**	446	**2.0**	882	**5.5**
UM-250S-1250E (6-12")	19	**1.1**	BB	BB	77.5	**1.1**	102	0.85	94	0.43	146	0.91
BRSD-6 (6-12")	BB	BB	0.964	0.03	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-1000E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-750E (6-12")	12.4	0.69	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-500E (6-12")	BB	BB	13.3	0.42	729	**10**	154	**1.3**	BB	BB	1740	**11**
UM-250S-500E (6-12")	17.7	0.98	BB	BB	114	**1.6**	98	0.82	BB	BB	112	0.7
UM-0N-250E (6-12")	14.7	0.82	6.01	0.19	344	**4.9**	269	**2.2**	97	0.44	1050	**6.6**
UM-250S-250E (6-12")	BB	BB	0.928	0.029	128	**1.8**	95.3	0.79	281	**1.3**	245	**1.5**
BRSD-7 (6-12")	BB	BB	BB	BB	48.6	0.69	115	0.96	BB	BB	116	0.73
BRSD-8 (6-12")	10.3	0.57	5.02	0.16	200	**2.9**	300	**2.5**	1130	**5.1**	590	**3.7**
UM-500S-500E (6-12")	BB	BB	0.55	0.017	82	**1.2**	72.6	0.61	101	0.46	175	**1.1**
BRSD-9 (6-12")	16.2	0.9	1.74	0.054	84.1	**1.2**	84.9	0.71	1760	**8.0**	352	**2.2**
BRSD-10 (6-12")	38.3	**2.1**	23.5	0.73	971	**14**	1370	**11**	4920	**22**	3620	**23**
BRSD-11 (6-12")	9.89	0.55	2.04	0.064	148	**2.1**	104	0.87	292	**1.3**	301	**1.9**
Middle Marsh (0-2)												
MMSD-201 (0-2")	BB	BB	9.5	0.3	435	**6.2**	504	**4.2**	2010	**9.10**	1470	**9.2**
MMSD-202 (0-2")	BB	BB	1.1	0.034	438	**6.3**	695	**5.8**	BB	**BB**	410	**2.6**
Middle Marsh (2-6)												
MMSD-201 (2-6")	BB	BB	14.8	0.46	600	**8.6**	622	**5.2**	1480	**6.7**	2060	**13**
MMSD-202 (2-6")	BB	BB	1.3	0.041	516	**7.4**	828	**6.9**	BB	BB	539	**3.4**
Middle Marsh (6-12)												
MMSD-201 (6-12")	BB	BB	18.4	0.58	726	**10**	967	**8.1**	1780	**8.1**	2590	**16**
MMSD-202 (6-12")	BB	BB	1.4	0.044	292	**4.2**	262	**2.2**	BB	BB	498	**3.1**
Lower Marsh (0-2)												
LMSD-201 (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	105	0.66
LMSD-202 (0-2")	BB	BB	1.5	0.047	BB	BB	BB	BB	BB	BB	353	**2.2**
LMSD-203 (0-2")	BB	BB	0.6	0.019	287	**4.1**	BB	BB	2040	**9**	521	**3.3**
LMSD-204 (0-2")	BB	BB	1	0.031	224	**3.2**	BB	BB	BB	BB	365	**2.3**
Lower Marsh (2-6)												
LMSD-201 (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	98	0.61
LMSD-202 (2-6")	BB	BB	1.2	0.038	BB	BB	BB	BB	BB	BB	390	**2.4**
LMSD-203 (2-6")	BB	BB	0.8	0.025	285	**4.1**	BB	BB	2300	**10**	511	**3.2**
LMSD-204 (2-6")	BB	BB	0.8	0.025	227	**3.2**	BB	BB	BB	BB	359	**2.2**

TABLE D-12A: TERRESTRIAL PLANT AND INVERTEBRATE HAZARD QUOTIENT SUMMARY TABLE, EU 12 - UPPER MARSH

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

RECEPTOR / POINT ID	Arsenic Concentration (mg/kg)[1]	Arsenic HQ[2]	Cadmium Concentration (mg/kg)[1]	Cadmium HQ[2]	Copper Concentration (mg/kg)[1]	Copper HQ[2]	Lead Concentration (mg/kg)[1]	Lead HQ[2]	Manganese Concentration (mg/kg)[1]	Manganese HQ[2]	Zinc Concentration (mg/kg)[1]	Zinc HQ[2]
Screening Benchmark - Terrestrial Plants (mg/kg)	**18**		**32**		**70**		**120**		**220**		**160**	
Lower Marsh (6-12)												
LMSD-201 (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
LMSD-202 (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	283	**1.8**
LMSD-203 (6-12")	BB	BB	2.8	0.088	360	**5.1**	BB	BB	7180	**33**	740	**4.6**
LMSD-204 (6-12")	BB	BB	0.6	0.019	226	**3.2**	BB	BB	BB	BB	336	**2.1**
Screening Benchmark - Terrestrial Invertebrates (mg/kg)[3]	**60**		**140**		**80**		**1700**		**450**		**120**	
Terrestrial Invertebrates												
Reference Sites												
BRSD-5 (0-2")	17.2	0.29	0.619	0.0044	39.2	0.49	64.7	0.038	320.0	0.71	107	0.89
BRSD-5 (2-6")	19.2	0.32	0.521	0.0037	41.7	0.52	61.7	0.036	250.0	0.56	100	0.83
BRSD-5 (6-12")	24.6	0.41	0.471	0.0034	45.3	0.57	79	0.046	244.0	0.54	97.8	0.82
PGBG-1 (0-2")	12.4	0.21	1.51	0.011	34.7	0.43	55	0.032	696.0	**1.5**	158	**1.3**
PGBG-1 (2-6")	9.12	0.15	1.44	0.01	37	0.46	101	0.059	199.0	0.44	174	**1.5**
PGBG-1 (6-12")	9.4	0.16	0.649	0.0046	22	0.28	174	0.1	88.0	0.2	133	**1.1**
PGBG-2 (0-2")	18.8	0.31	1.84	0.013	52	0.65	105	0.062	586.0	**1.3**	263	**2.2**
PGBG-2 (2-6")	18.5	0.31	1.54	0.011	55	0.69	108	0.064	498.0	**1.1**	252	**2.1**
PGBG-2 (6-12")	32.3	0.54	1.57	0.011	67.4	0.84	113	0.066	293.0	0.65	275	**2.3**
Eastern Upper Marsh (0-2")												
UM-1000S-3500E (0-2")	238	**4.0**	2.19	0.016	221	**2.8**	1770	**1**	283.0	0.63	1720	**14**
BRSD-15 (0-2")	14.9	0.25	1.52	0.011	89.2	**1.1**	66.9	0.039	635.0	**1.4**	167	**1.4**
BRSD-4 (0-2")	BB	BB	0.759	0.0054	62.3	0.78	111	0.065	210.0	0.47	181	**1.5**
UM-750S-3500E (0-2")	116	**1.9**	8	0.057	894	**11**	2240	**1.3**	7430.0	**17**	1250	**10**
BRSD-16 (0-2")	193	**3.2**	5.19	0.037	371	**4.6**	2100	**1.2**	1040.0	**2.3**	822	**6.9**
UM-750S-3000E (0-2")	164	**2.7**	10.7	0.076	405	**5.1**	1200	0.71	7110.0	**16**	2130	**18**
BRSD-3 (0-2")	38	0.63	3.62	0.026	1120	**14**	1090	0.64	1240.0	**2.8**	1020	**8.5**
UM-500S-3250E (0-2")	138	**2.3**	2.79	0.02	528	**6.6**	2210	**1.3**	2590.0	**5.8**	940	**7.8**
UM-500S-3000E (0-2")	87.4	**1.5**	9.1	0.065	438	**5.5**	2120	**1.2**	1180.0	**2.6**	1410	**12**
UM-500S-2750E (0-2")	156	**2.6**	11	0.079	504	**6.3**	1210	0.71	7160.0	**16**	2190	**18**
BRSD-25 (0-2)	66	**1.1**	6.25	0.045	265	**3.3**	836	0.49	1500.0	**3.3**	836	**7**
UM-250S-3000E (0-2")	107	**1.8**	17.9	0.13	971	**12**	1680	0.99	4400.0	**9.8**	4080	**34**
UM-250S-3250E (0-2")	BB	BB	14.3	0.1	315	**3.9**	168	0.099	1470.0	3.3	948	**7.9**
BRSD-24 (0-2)	193	**3.2**	13.7	0.098	392	**4.9**	1080	0.64	7990.0	**18**	2040	**17**
UM-250S-2750E (0-2")	165	**2.8**	7.05	0.05	273	**3.4**	968	0.57	7810.0	**17**	1510	**13**
UM-250S-2500E (0-2")	12.3	0.21	2.95	0.021	204	**2.6**	115	0.068	235.0	0.52	576	**4.8**
UM-0N-2500E (0-2")	117	**2.0**	23.1	0.17	510	**6.4**	2000	**1.2**	2050.0	**4.6**	3340	**28**

TABLE D-12A: TERRESTRIAL PLANT AND INVERTEBRATE HAZARD QUOTIENT SUMMARY TABLE, EU 12 - UPPER MARSH

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

RECEPTOR / POINT ID	Arsenic Concentration (mg/kg)[1]	Arsenic HQ[2]	Cadmium Concentration (mg/kg)[1]	Cadmium HQ[2]	Copper Concentration (mg/kg)[1]	Copper HQ[2]	Lead Concentration (mg/kg)[1]	Lead HQ[2]	Manganese Concentration (mg/kg)[1]	Manganese HQ[2]	Zinc Concentration (mg/kg)[1]	Zinc HQ[2]
Screening Benchmark - Terrestrial Invertebrates (mg/kg)[3]	**60**		**140**		**80**		**1700**		**450**		**120**	
UM-0N-250E (0-2")	13	0.22	19.2	0.14	585	**7.3**	305	0.18	BB	BB	1500	**13**
BRSD-2 (0-2)	177	**3.0**	10.3	0.074	343	**4.3**	1290	0.76	7690.0	**17**	1750	**15**
UM-500N-2500E (0-2")	11.3	0.19	1.76	0.013	59.3	0.74	91.2	0.054	163.0	0.36	270	**2.3**
UM-250N-2500E (0-2")	96.9	**1.6**	14.3	0.1	555	**6.9**	1520	0.89	3800.0	**8.4**	2990	**25**
UM-250N-2250E (0-2)	177	**3.0**	12	0.086	364	**4.6**	1340	0.79	7620.0	**17**	2060	**17**
Western Upper Marsh (0-2")												
UM-500S-2500E (0-2")	12.2	0.20	1.25	0.0089	373	**4.7**	BB	BB	BB	BB	222	**1.9**
UM-0N-2000E (0-2")	47.2	0.79	14.6	0.1	788	**9.9**	2480	**1.5**	4320.0	**9.6**	2760	**23**
UM-500S-2000E (0-2")	21	0.35	BB	BB	183	**2.3**	BB	BB	BB	BB	BB	BB
UM-250N-1750E (0-2)	12.6	0.21	0.552	0.0039	153	**1.9**	96.2	0.057	126.0	0.28	126	1.1
UM-0N-1500E (0-2")	BB	BB	0.624	0.0045	90.8	**1.1**	102	0.06	133.0	0.3	286	**2.4**
UM-250S-1500E (0-2")	33.3	0.56	16.4	0.12	571	**7.1**	1730	**1**	1170.0	**2.6**	2760	**23**
UM-250S-1250E (0-2")	BB	BB	BB	BB	91.1	**1.1**	94.8	0.056	BB	BB	98.8	0.82
BRSD-6 (0-2")	BB	BB	0.982	0.007	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-1000E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-750E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-500E (0-2")	10.1	0.17	2.1	0.015	450	**5.6**	163	0.096	BB	BB	218	**1.8**
UM-250S-500E (0-2")	BB	BB	0.868	0.0062	80.8	**1**	70.1	0.041	BB	BB	148	**1.20**
UM-250S-250E (0-2")	14.5	0.24	0.809	0.0058	240	**3**	131	0.077	BB	BB	131	1.1
BRSD-7 (0-2")	BB	BB	1.83	0.013	BB	BB	BB	BB	BB	BB	663	**5.5**
BRSD-8 (0-2")	BB	BB	5.64	0.04	194	**2.4**	226	0.13	493.0	1.1	521	**4.3**
UM-500S-500E (0-2")	11.8	0.20	1.06	0.0076	96.3	**1.2**	66.4	0.039	97.1	0.22	188	**1.6**
BRSD-9 (0-2")	23	0.38	4.91	0.035	83.9	**1**	285	0.17	5550.0	**12**	652	**5.4**
BRSD-10 (0-2")	30.3	0.51	18	0.13	651	**8.1**	632	0.37	3410.0	**7.6**	2870	**24**
BRSD-11 (0-2")	14.7	0.25	5.55	0.04	133	**1.7**	92.4	0.054	1360.0	**3**	456	**3.8**
Eastern Upper Marsh (2-6")												
UM-1000S-3500E (2-6")	38.1	0.64	BB	BB	106	**1.3**	320	0.19	430.0	0.96	396	**3.3**
BRSD-15 (2-6")	15.6	0.26	1.29	0.0092	97.4	**1.2**	112	0.066	1000.0	**2.2**	243	**2**
BRSD-4 (2-6")	9.85	0.16	0.671	0.0048	129	**1.6**	114	0.067	95.4	0.21	214	**1.8**
UM-750S-3500E (2-6")	157	**2.6**	13.2	0.094	342	**4.3**	996	0.59	7090.0	**16**	3010	**25**
BRSD-16 (2-6")	507	**8.5**	34.7	0.25	1120	**14**	3130	**1.8**	10100.0	**22**	3890	**32**
UM-750S-3000E (2-6")	143	**2.4**	9.12	0.065	354	**4.4**	1070	0.63	7440.0	**17**	1770	**15**
BRSD-3 (2-6")	54.2	0.90	4.82	0.034	1420	**18**	2160	**1.3**	1690.0	**3.8**	1140	**9.5**
UM-500S-3250E (2-6")	150	**2.5**	0.824	0.0059	286	**3.6**	1460	0.86	428.0	0.95	668	**5.6**
UM-500S-3000E (2-6")	22.6	0.38	1.82	0.013	82	**1**	138	0.081	317.0	0.7	265	**2.2**
UM-500S-2750E (2-6")	74.2	**1.2**	8.8	0.063	318	**4**	794	0.47	8360.0	**19**	1510	**13**

TABLE D-12A: TERRESTRIAL PLANT AND INVERTEBRATE HAZARD QUOTIENT SUMMARY TABLE, EU 12 - UPPER MARSH
Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

RECEPTOR / POINT ID	Arsenic Concentration (mg/kg)[1]	Arsenic HQ[2]	Cadmium Concentration (mg/kg)[1]	Cadmium HQ[2]	Copper Concentration (mg/kg)[1]	Copper HQ[2]	Lead Concentration (mg/kg)[1]	Lead HQ[2]	Manganese Concentration (mg/kg)[1]	Manganese HQ[2]	Zinc Concentration (mg/kg)[1]	Zinc HQ[2]
Screening Benchmark - Terrestrial Invertebrates (mg/kg)[3]	**60**		**140**		**80**		**1700**		**450**		**120**	
BRSD-25 (2-6)	60	**1.0**	8.84	0.063	402	**5**	1460	0.86	1060.0	**2.4**	1120	**9.3**
UM-250S-3000E (2-6")	162	**2.7**	20.7	0.15	801	**10**	1950	**1.1**	2570.0	**5.7**	3550	**30**
UM-250S-3250E (2-6")	BB	BB	3.27	0.023	81.8	**1**	93.5	0.055	129.0	0.29	760	**6.3**
BRSD-24 (2-6)	119	**2.0**	28	0.2	740	**9.3**	2660	**1.6**	2860.0	**6.4**	3450	**29**
UM-250S-2750E (2-6")	141	**2.4**	13.6	0.097	442	**5.5**	2080	**1.2**	5850.0	**13**	2010	**17**
UM-0N-2500E (2-6")	103	**1.7**	9.73	0.07	262	**3.3**	1260	0.74	3220.0	**7.2**	1460	**12**
BRSD-2 (2-6)	132	**2.2**	16.9	0.12	409	**5.1**	1590	0.94	6090.0	**14**	1990	**17**
UM-500N-2500E (2-6")	BB	BB	1.59	0.011	74.3	0.93	88.9	0.052	186.0	0.41	272	**2.3**
UM-250N-2500E (2-6")	116	**1.9**	14.4	0.1	512	**6.4**	1070	0.63	7980.0	**18**	2480	**21**
UM-250N-2250E (2-6)	BB	BB	3.38	0.024	143	**1.8**	192	0.11	279.0	0.62	640	**5.3**
Western Upper Marsh (2-6")												
UM-500S-2500E (2-6")	BB	BB	0.738	0.0053	355	**4.4**	BB	BB	BB	BB	220	**1.8**
UM-0N-2000E (2-6")	49.4	0.82	12.5	0.089	711	**8.9**	2460	**1.4**	3820.0	**8.5**	2760	**23**
UM-500S-2000E (2-6")	17.9	0.30	0.548	0.0039	237	**3**	92.2	0.054	BB	**BB**	111	0.93
UM-250N-1750E (2-6)	12.2	0.20	0.958	0.0068	108	**1.4**	93.6	0.055	178.0	0.4	286	**2.4**
UM-0N-1500E (2-6")	BB	BB	1.13	0.0081	135	**1.7**	111	0.065	131.0	0.29	255	**2.1**
UM-250S-1500E (2-6")	30.6	0.51	12.8	0.091	849	**11**	1660	0.98	1460.0	**3.2**	2010	**17**
UM-250S-1250E (2-6")	24.6	0.41	BB	BB	79.4	0.99	93.3	0.055	BB	**BB**	140	**1.2**
BRSD-6 (2-6")	BB	BB	0.898	0.0064	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-1000E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-750E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-500E (2-6")	16.8	0.28	78	0.56	2760	**35**	522	0.31	BB	**BB**	2420	**20**
UM-250S-500E (2-6")	BB	BB	0.644	0.0046	90.2	**1.1**	95.4	0.056	BB	BB	98.8	0.82
UM-0N-250E (2-6")	19.5	0.33	3.52	0.025	302	**3.8**	282	0.17	BB	**BB**	1670	**14**
UM-250S-250E (2-6")	9.58	0.16	1.4	0.01	208	**2.6**	121	0.071	89.1	0.2	172	**1.4**
BRSD-7 (2-6")	12	0.2	BB	BB	56.5	0.71	62.3	0.037	BB	**BB**	148	**1.2**
BRSD-8 (2-6")	BB	BB	8.6	0.061	188	**2.4**	332	0.2	1410.0	3.1	579	**4.8**
UM-500S-500E (2-6")	9.28	0.15	0.76	0.0054	88.3	**1.1**	76.3	0.045	101.0	0.22	177	**1.5**
BRSD-9 (2-6")	17.4	0.29	2.44	0.017	52.9	0.66	58.8	0.035	2110.0	**4.7**	300	**2.5**
BRSD-10 (2-6")	35.8	0.6	15.8	0.11	690	**8.6**	804	0.47	3330.0	**7.4**	2340	**20**
BRSD-11 (2-6")	10.8	0.18	2.53	0.018	154	**1.9**	92.6	0.054	317.0	0.7	297	**2.5**
Eastern Upper Marsh (6-12")												
UM-1000S-3500E (6-12")	12.6	0.21	0.989	0.0071	86.6	**1.1**	81.7	0.048	153.0	0.34	182	**1.5**
BRSD-915(6-12")	16.8	0.28	1.75	0.013	97.9	**1.2**	87	0.051	1310.0	**2.9**	282	**2.4**
BRSD-4 (6-12")	20.4	0.34	1.49	0.011	92.5	**1.2**	212	0.12	473.0	**1.1**	318	**2.7**
UM-750S-3500E (6-12")	138	**2.3**	18.3	0.13	409	**5.1**	1210	0.71	6350.0	**14**	2820	**24**

TABLE D-12A: TERRESTRIAL PLANT AND INVERTEBRATE HAZARD QUOTIENT SUMMARY TABLE, EU 12 - UPPER MARSH
Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

RECEPTOR / POINT ID	Arsenic Concentration (mg/kg)[1]	Arsenic HQ[2]	Cadmium Concentration (mg/kg)[1]	Cadmium HQ[2]	Copper Concentration (mg/kg)[1]	Copper HQ[2]	Lead Concentration (mg/kg)[1]	Lead HQ[2]	Manganese Concentration (mg/kg)[1]	Manganese HQ[2]	Zinc Concentration (mg/kg)[1]	Zinc HQ[2]
Screening Benchmark - Terrestrial Invertebrates (mg/kg)[3]	**60**		**140**		**80**		**1700**		**450**		**120**	
BRSD-16 (6-12)	92.8	**1.5**	18	0.13	568	**7.1**	3220	**1.9**	2380.0	**5.3**	2310	**19**
UM-750S-3000E (6-12")	142	**2.4**	9.13	0.065	343	**4.3**	1120	0.66	7280.0	**16**	1710	**14**
BRSD-3 (6-12")	19.9	0.33	2.34	0.017	1240	**16**	348	0.2	648.0	**1.4**	538	**4.5**
UM-500S-3250E (6-12")	100	**1.7**	1.15	0.0082	214	**2.7**	608	0.36	276.0	0.61	573	**4.8**
UM-500S-3000E (6-12")	15.1	0.25	1.74	0.012	88.6	**1.1**	112	0.066	389.0	0.86	320	**2.7**
UM-500S-2750E (6-12")	67.8	**1.1**	7.13	0.051	290	**3.6**	678	0.4	8160.0	**18**	1340	**11**
BRSD-25 (6-12)	29	0.48	7.69	0.055	191	**2.4**	1050	0.62	174.0	0.39	1030	**8.6**
UM-250S-3000E (6-12")	183	**3.1**	15	0.11	730	**9.1**	1280	0.75	5000.0	**11**	2950	**25**
UM-250S-3250E (6-12")	10.5	0.18	3.48	0.025	86.9	**1.1**	107	0.063	220.0	0.49	652	**5.4**
BRSD-24 (6-12)	63.4	**1.1**	14.3	0.1	553	**6.9**	2290	**1.3**	1200.0	**2.7**	1740	**15**
UM-250S-2750E (6-12")	66	**1.1**	15.3	0.11	514	**6.4**	2410	**1.4**	1640.0	**3.6**	1930	**16**
UM-250S-2500E (6-12")	BB	BB	1.23	0.0088	147	**1.8**	85.4	0.05	150.0	0.33	253	**2.1**
BRSD-2 (6-12)	73.1	**1.2**	27.2	0.19	918	**11**	4220	**2.5**	1230.0	**2.7**	4220	**35**
UM-500N-2500E (6-12")	11.6	0.19	0.809	0.0058	32.7	0.41	76.4	0.045	206.0	0.46	176	**1.5**
UM-250N-2500E (6-12")	91.2	**1.5**	12.4	0.089	374	**4.7**	975	0.57	6740.0	**15**	1870	**16**
UM-250N-2250E (6-12)	9.93	0.17	1.99	0.014	180	**2.3**	194	0.11	347.0	0.77	390	**3.3**
Western Upper Marsh (6-12")												
UM-500S-2500E (6-12")	11	0.18	0.851	0.0061	364	**4.6**	122	0.072	152.0	0.34	188	**1.2**
UM-0N-2000E (6-12")	59	0.98	19.6	0.14	1080	**14**	3280	**1.9**	7670.0	**17**	3110	**19**
UM-500S-2000E (6-12")	15.3	0.26	BB	BB	232	**2.9**	94	0.055	BB	**BB**	BB	BB
UM-250N-1750E (6-12)	11.6	0.19	BB	BB	143	**1.8**	98.7	0.058	99.6	0.22	99.5	0.62
UM-0N-1500E (6-12")	BB	BB	2.71	0.019	184	**2.3**	111	0.065	162.0	0.36	572	**3.6**
UM-250S-1500E (6-12")	17.5	0.29	3.13	0.022	513	**6.4**	931	0.55	446.0	0.99	882	**5.5**
UM-250S-1250E (6-12")	19	0.32	BB	BB	77.5	0.97	102	0.06	93.5	0.21	146	0.91
BRSD-6 (6-12")	BB	BB	0.964	0.0069	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-1000E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-750E (6-12")	12.4	0.21	BB	BB	BB	BB	BB	BB	BB	**BB**	BB	BB
UM-0N-500E (6-12")	BB	BB	13.3	0.095	729	**9.1**	154	0.091	BB	BB	1740	**11**
UM-250S-500E (6-12")	17.7	0.30	BB	BB	114	**1.4**	98	0.058	BB	**BB**	112	0.7
UM-0N-250E (6-12")	14.7	0.25	6.01	0.043	344	**4.3**	269	0.16	97.4	0.22	1050	**6.6**
UM-250S-250E (6-12")	BB	BB	0.928	0.0066	128	**1.6**	95.3	0.056	281.0	0.62	245	**1.5**
BRSD-7 (6-12")	BB	BB	BB	BB	48.6	0.61	115	0.068	BB	BB	116	0.73
BRSD-8 (6-12")	10.3	0.17	5.02	0.036	200	**2.5**	300	0.18	1130.0	**2.5**	590	**3.7**
UM-500S-500E (6-12")	BB	BB	0.55	0.0039	82	**1**	72.6	0.043	101.0	0.22	175	**1.1**
BRSD-9 (6-12")	16.2	0.27	1.74	0.012	84.1	**1.1**	84.9	0.05	1760.0	**3.9**	352	**2.2**
BRSD-10 (6-12")	38.3	0.64	23.5	0.17	971	**12**	1370	0.81	4920.0	**11**	3620	**23**
BRSD-11 (6-12")	9.89	0.16	2.04	0.015	148	**1.9**	104	0.061	292.0	0.65	301	**1.9**

TABLE D-12A: TERRESTRIAL PLANT AND INVERTEBRATE HAZARD QUOTIENT SUMMARY TABLE, EU 12 - UPPER MARSH
Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

RECEPTOR / POINT ID	Arsenic Concentration (mg/kg)[1]	Arsenic HQ[2]	Cadmium Concentration (mg/kg)[1]	Cadmium HQ[2]	Copper Concentration (mg/kg)[1]	Copper HQ[2]	Lead Concentration (mg/kg)[1]	Lead HQ[2]	Manganese Concentration (mg/kg)[1]	Manganese HQ[2]	Zinc Concentration (mg/kg)[1]	Zinc HQ[2]
Screening Benchmark - Terrestrial Invertebrates (mg/kg)[3]	**60**		**140**		**80**		**1700**		**450**		**120**	
Middle Marsh (0-2)												
MMSD-201 (0-2")	BB	BB	9.5	0.068	435	**5.4**	504	0.3	2010	**4.50**	1470	**9.2**
MMSD-202 (0-2")	BB	BB	1.1	0.0079	438	**5.5**	695	0.41	BB	BB	410	**2.6**
Middle Marsh (2-6)												
MMSD-201 (2-6")	BB	BB	14.8	0.11	600	**7.5**	622	0.37	1480	**3.30**	2060	**13**
MMSD-202 (2-6")	BB	BB	1.3	0.0093	516	**6.5**	828	0.49	BB	BB	539	**3.4**
Middle Marsh (6-12)												
MMSD-201 (6-12")	BB	BB	18.4	0.13	726	**9.1**	967	0.57	1780	**4.00**	2590	**16**
MMSD-202 (6-12")	BB	BB	1.4	0.01	292	**3.7**	262	0.15	BB	BB	498	**3.1**
Lower Marsh (0-2)												
LMSD-201 (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	105	0.66
LMSD-202 (0-2")	BB	BB	1.5	0.011	BB	BB	BB	BB	BB	BB	353	**2.2**
LMSD-203 (0-2")	BB	BB	0.6	0.0043	287	**3.6**	BB	BB	2040	**5**	521	**3.3**
LMSD-204 (0-2")	BB	BB	1	0.0071	224	**2.8**	BB	BB	BB	BB	365	**2.3**
Lower Marsh (2-6)												
LMSD-201 (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	98	0.61
LMSD-202 (2-6")	BB	BB	1.2	0.0086	BB	BB	BB	BB	BB	BB	390	**2.4**
LMSD-203 (2-6")	BB	BB	0.8	0.0057	285	**3.6**	BB	BB	2300	**5**	511	**3.2**
LMSD-204 (2-6")	BB	BB	0.8	0.0057	227	**2.8**	BB	BB	BB	BB	359	**2.2**
Lower Marsh (6-12)												
LMSD-201 (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	**BB**
LMSD-202 (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	283	**1.8**
LMSD-203 (6-12")	BB	BB	2.8	0.02	360	**4.5**	BB	BB	7180	**16**	740	**4.6**
LMSD-204 (6-12")	BB	BB	0.6	0.0043	226	**2.8**	BB	BB	BB	BB	336	**2.1**

Notes:

Bold values indicate HQs greater than 1.0.

1 Sediment concentration from specified depth below ground surface at point ID from laboratory analysis. Hazard quotients were not calculated for detected and non-detect soil concentrations measured below the minimum reference site concentration, as indicated by BB. For results that were measured at less than the detection limit, hazard quotients were calculated using half of the detection limit.

2 HQs were calculated by dividing the site concentration by the plant or invertebrate screening benchmark.

3 Plant screening benchmarks are from EPA 2007. Invertebrate screening benchmarks are from EPA 2007, with the exception of the screening benchmark for arsenic, which is from Efroymson and others 1997.

BB	Below minimum background reference site concentration	HQ	Hazard quotient
EPA	U.S. Environmental Protection Agency	ID	Identification
EU	Exposure Unit	mg/kg	Milligrams per kilogram

Sources:

Efroymson, R.A., M.E, Will, and G.W. Suter II. 1997. "Toxicological Benchmarks for Contaminants of Potential Concern for Effects on Soil and Litter Invertebrates and Heterotrophic Processes: 1997 Revision." Oak Ridge National Laboratory, Oak Ridge TN. ES/ER/TM-126/R2

EPA. 2007. Interim Ecological Soil Screening Levels. Available on-line at: http://www.epa.gov/ecotox/ecossl/

TABLE D-12B: AQUATIC INVERTEBRATE AND FISH HAZARD QUOTIENT SUMMARY TABLE, EU 12 - UPPER MARSH

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

RECEPTOR / POINT ID	Arsenic[1] (mg/kg)	Arsenic HQ (based on TEL[2])	Arsenic HQ (based on PEL[2])	Arsenic HQ (based on SEL[2])	Cadmium[1] (mg/kg)	Cadmium HQ (based on TEL[2])	Cadmium HQ (based on PEL[2])	Cadmium HQ (based on SEL[2])	Copper[1] (mg/kg)	Copper HQ (based on TEL[2])	Copper HQ (based on PEL[2])	Copper HQ (based on SEL[2])	Lead[1] (mg/kg)	Lead HQ (based on TEL[2])	Lead HQ (based on PEL[2])	Lead HQ (based on SEL[2])	Manganese[1] (mg/kg)	Manganese HQ (based on LEL[3])	Manganese HQ (based on SEL[2])	Zinc[1] (mg/kg)	Zinc HQ (based on TEL[2])	Zinc HQ (based on PEL[2])	Zinc HQ (based on SEL[2])
Screening Benchmark - Aquatic Invertebrates and Fish (mg/kg)	**TEL: 5.9; PEL: 17; SEL: 33**				**TEL: 0.596; PEL: 3.53; SEL: 10**				**TEL: 35.7; PEL: 197; SEL: 110**				**TEL: 35; PEL: 91.3; SEL: 250**				**LEL: 460; PEL: NA; SEL: 1100**			**TEL: 123; PEL: 315; SEL: 820**			
Aquatic Invertebrates and Fish Reference Sites																							
BRSD-5 (0-2)	17.2	**2.9**	**1.0**	0.52	0.619	**1.0**	0.18	0.062	39.2	**1.1**	0.2	0.36	64.7	**1.8**	0.71	0.26	320	0.70	0.29	107	0.87	0.34	0.13
BRSD-5 (2-6)	19.2	**3.3**	**1.1**	0.58	0.521	0.87	0.15	0.052	41.7	**1.2**	0.21	0.38	61.7	**1.8**	0.68	0.25	250	0.54	0.23	100	0.81	0.32	0.12
BRSD-5 (6-12)	24.6	**4.2**	**1.4**	0.75	0.471	0.79	0.13	0.047	45.3	**1.3**	0.23	0.41	79	**2.3**	0.87	0.32	244	0.53	0.22	97.8	0.8	0.31	0.12
PGBG-1 (0-2")	12.4	**2.1**	0.73	0.38	1.51	**2.5**	0.43	0.15	34.7	0.97	0.18	0.32	55	**1.6**	0.6	0.22	696	**1.5**	0.63	158	**1.3**	0.5	0.19
PGBG-1 (2-6")	9.12	**1.5**	0.54	0.28	1.44	**2.4**	0.41	0.14	37	**1.0**	0.19	0.34	101	**2.9**	**1.1**	0.40	199	0.43	0.18	174	**1.4**	0.55	0.21
PGBG-1 (6-12")	9.4	**1.6**	0.55	0.28	0.649	**1.1**	0.18	0.065	22	0.62	0.11	0.20	174	**5.0**	**1.9**	0.70	88	0.19	0.08	133	**1.1**	0.42	0.16
PGBG-2 (0-2")	18.8	**3.2**	**1.1**	0.57	1.84	**3.1**	0.52	0.18	52	**1.5**	0.26	0.47	105	**3.0**	**1.2**	0.42	586	**1.3**	0.53	263	**2.1**	0.83	0.32
PGBG-2 (2-6")	18.5	**3.1**	**1.1**	0.56	1.54	**2.6**	0.44	0.15	55	**1.5**	0.28	0.50	108	**3.1**	**1.2**	0.43	498	**1.1**	0.45	252	**2.0**	0.8	0.31
PGBG-2 (6-12")	32.3	**5.5**	**1.9**	0.98	1.57	**2.6**	0.44	0.16	67.4	**1.9**	0.34	0.61	113	**3.2**	**1.2**	0.45	293	0.64	0.27	275	**2.2**	0.87	0.34
Eastern Upper Marsh (0-2")																							
UM-1000S-3500E (0-2")	238	**40**	**14**	**7.2**	2.19	**3.7**	0.62	0.22	221	**6.2**	**1.1**	**2.0**	1770	**51**	**19**	**7.1**	283	0.62	0.26	1720	**14**	**5.5**	**2.1**
BRSD-15 (0-2")	14.9	**2.5**	0.88	0.45	1.52	**2.6**	0.43	0.15	89.2	**2.5**	0.45	0.81	66.9	**1.9**	0.73	0.27	635	**1.4**	0.58	167	**1.4**	0.53	0.2
BRSD-4 (0-2")	BB	BB	BB	BB	0.759	**1.3**	0.22	0.076	62.3	**1.7**	0.32	0.57	111	**3.2**	**1.2**	0.44	210	0.46	0.19	181	**1.5**	0.57	0.22
UM-750S-3500E (0-2")	116	**20**	**6.8**	**3.5**	8	**13**	**2.3**	0.80	894	**25**	**4.5**	**8.1**	2240	**64**	**25**	**9.0**	7430	**16**	**6.8**	1250	**10**	**4**	**1.5**
BRSD-16 (0-2")	193	**33**	**11**	**5.8**	5.19	**8.7**	**1.5**	0.52	371	**10**	**1.9**	**3.4**	2100	**60**	**23**	**8.4**	1040	**2.3**	0.95	822	**6.7**	**2.6**	**1.0**
UM-750S-3000E (0-2")	164	**28**	**9.6**	**5**	10.7	**18**	**3**	**1.1**	405	**11**	**2.1**	**3.7**	1200	**34**	**13**	**4.8**	7110	**15**	**6.5**	2130	**17**	**6.8**	**2.6**
BRSD-3 (0-2")	38	**6.4**	**2.2**	**1.2**	3.62	**6.1**	**1**	0.36	1120	**31**	**5.7**	**10**	1090	**31**	**12**	**4.4**	1240	**2.7**	**1.1**	1020	**8.3**	**3.2**	**1.2**
UM-500S-3250E (0-2")	138	**23**	**8.1**	**4.2**	2.79	**4.7**	0.79	0.28	528	**15**	**2.7**	**4.8**	2210	**63**	**24**	**8.8**	2590	**5.6**	**2.4**	940	**7.6**	**3.0**	**1.1**
UM-500S-3000E (0-2")	87.4	**15**	**5.1**	**2.6**	9.1	**15**	**2.6**	0.91	438	**12**	**2.2**	**4.0**	2120	**61**	**23**	**8.5**	1180	**2.6**	**1.1**	1410	**11**	**4.5**	**1.7**
UM-500S-2750E (0-2")	156	**26**	**9.2**	**4.7**	11	**18**	**3.1**	**1.1**	504	**14**	**2.6**	**4.6**	1210	**35**	**13**	**4.8**	7160	**16**	**6.5**	2190	**18**	**7.0**	**2.7**
BRSD-25 (0-2)	66	**11**	**3.9**	**2.0**	6.25	**10**	**1.8**	0.63	265	**7.4**	**1.3**	**2.4**	836	**24**	**9.2**	**3.3**	1500	**3.3**	**1.4**	836	**6.8**	**2.7**	**1.0**
UM-250S-3000E (0-2")	107	**18**	**6.3**	**3.2**	17.9	**30**	**5.1**	**1.8**	971	**27**	**4.9**	**8.8**	1680	**48**	**18**	**6.7**	4400	**9.6**	**4.0**	4080	**33**	**13**	**5.0**
UM-250S-3250E (0-2")	BB	BB	BB	BB	14.3	**24**	**4.1**	**1.4**	315	**8.8**	**1.6**	**2.9**	168	**4.8**	**1.8**	0.67	1470	**3.2**	**1.3**	948	**7.7**	**3.0**	**1.2**
BRSD-24 (0-2)	193	**33**	**11**	**5.8**	13.7	**23**	**3.9**	**1.4**	392	**11**	**2**	**3.6**	1080	**31**	**12**	**4.3**	7990	**17**	**7.3**	2040	**17**	**6.5**	**2.5**
UM-250S-2750E (0-2")	165	**28**	**9.7**	**5**	7.05	**12**	**2.0**	0.71	273	**7.6**	**1.4**	**2.5**	968	**28**	**11**	**3.9**	7810	**17**	**7.1**	1510	**12**	**4.8**	**1.8**
UM-250S-2500E (0-2")	12.3	**2.1**	0.72	0.37	2.95	**4.9**	0.84	0.30	204	**5.7**	**1.0**	**1.9**	115	**3.3**	**1.3**	0.46	235	0.51	0.21	576	**4.7**	**1.8**	0.70
UM-0N-2500E (0-2")	117	**20**	**6.9**	**3.5**	23.1	**39**	**6.5**	**2.3**	510	**14**	**2.6**	**4.6**	2000	**57**	**22**	**8.0**	2050	**4.5**	**1.9**	3340	**27**	**11**	**4.1**
UM-0N-250E (0-2")	13	**2.2**	0.76	0.39	19.2	**32**	**5.4**	**1.9**	585	**16**	**3**	**5.3**	305	**8.7**	**3.3**	**1.2**	BB	BB	BB	1500	**12**	**4.8**	**1.8**
BRSD-2 (0-2)	177	**30**	**10**	**5.4**	10.3	**17**	**2.9**	**1.0**	343	**9.6**	**1.7**	**3.1**	1290	**37**	**14**	**5.2**	7690	**17**	**7.0**	1750	**14**	**5.6**	**2.1**
UM-500N-2500E (0-2")	11.3	**1.9**	0.66	0.34	1.76	**3**	0.5	0.18	59.3	**1.7**	0.3	0.54	91.2	**2.6**	**1.0**	0.36	163	0.35	0.15	270	**2.2**	0.86	0.33
UM-250N-2500E (0-2")	96.9	**16**	**5.7**	**2.9**	14.3	**24**	**4.1**	**1.4**	555	**16**	**2.8**	**5.0**	1520	**43**	**17**	**6.1**	3800	**8.3**	**3.5**	2990	**24**	**9.5**	**3.6**
UM-250N-2250E (0-2)	177	**30**	**10**	**5.4**	12	**20**	**3.4**	**1.2**	364	**10**	**1.8**	**3.3**	1340	**38**	**15**	**5.4**	7620	**17**	**6.9**	2060	**17**	**6.5**	**2.5**
Western Upper Marsh (0-2")																							
UM-500S-2500E (0-2")	12.2	**2.1**	0.72	0.37	1.25	**2.1**	0.35	0.13	373	**10**	**1.9**	**3.4**	BB	BB	BB	BB	BB	BB	BB	222	**1.8**	0.7	0.27
UM-0N-2000E (0-2")	47.2	**8**	**2.8**	**1.4**	14.6	**24**	**4.1**	**1.5**	788	**22**	**4**	**7.2**	2480	**71**	**27**	**9.9**	4320	**9.4**	**3.9**	2760	**22**	**8.8**	**3.4**
UM-500S-2000E (0-2")	21	**3.6**	**1.2**	0.64	BB	BB	BB	BB	183	**5.1**	0.93	1.7	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-250N-1750E (0-2)	12.6	**2.1**	0.74	0.38	0.552	0.93	0.16	0.055	153	**4.3**	0.78	1.4	96.2	**2.7**	**1.1**	0.38	126	0.27	0.11	126	1.0	0.4	0.15
UM-0N-1500E (0-2")	BB	BB	**BB**	BB	0.624	1	0.18	0.062	90.8	**2.5**	0.46	0.83	102	**2.9**	**1.1**	0.41	133	0.29	0.12	286	**2.3**	0.91	0.35
UM-250S-1500E (0-2")	33.3	**5.6**	**2.0**	**1.0**	16.4	**28**	**4.6**	**1.6**	571	**16**	**2.9**	**5.2**	1730	**49**	**19**	**6.9**	1170	**2.5**	**1.1**	2760	**22**	**8.8**	**3.4**
UM-250S-1250E (0-2")	BB	BB	BB	BB	BB	BB	**BB**	BB	91.1	**2.6**	0.46	0.83	94.8	**2.7**	**1**	0.38	BB	BB	BB	98.8	0.8	0.31	0.12
BRSD-6 (0-2")	BB	BB	BB	BB	0.982	**1.6**	0.28	0.098	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-1000E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-750E (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-500E (0-2")	10.1	**1.7**	0.59	0.31	2.1	**3.5**	0.59	0.21	450	**13**	**2.3**	**4.1**	163	**4.7**	**1.8**	0.65	BB	BB	BB	218	**1.8**	0.69	0.27
UM-250S-500E (0-2")	BB	BB	BB	BB	0.868	**1.5**	0.25	0.087	80.8	**2.3**	0.41	0.73	70.1	**2.0**	0.77	0.28	BB	BB	BB	148	**1.2**	0.47	0.18
UM-250S-250E (0-2")	14.5	**2.5**	0.85	0.44	0.809	**1.4**	0.23	0.081	240	**6.7**	**1.2**	**2.2**	131	**3.7**	**1.4**	0.52	BB	BB	BB	131	**1.1**	0.42	0.16
BRSD-7 (0-2")	BB	BB	BB	BB	1.83	**3.1**	0.52	0.18	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	663	**5.4**	**2.1**	0.81
BRSD-8 (0-2")	BB	BB	BB	BB	5.64	**9.5**	**1.6**	0.56	194	**5.4**	0.98	**1.8**	226	**6.5**	**2.5**	0.9	493	**1.1**	0.45	521	**4.2**	**1.7**	0.64
UM-500S-500E (0-2")	11.8	**2.0**	0.69	0.36	1.06	**1.8**	0.3	0.11	96.3	**2.7**	0.49	0.88	66.4	**1.9**	0.73	0.27	97	0.21	0.088	188	**1.5**	0.60	0.23
BRSD-9 (0-2")	23	**3.9**	**1.4**	0.7	4.91	**8.2**	**1.4**	0.49	83.9	**2.4**	0.43	0.76	285	**8.1**	**3.1**	**1.1**	5550	**12**	**5.0**	652	**5.3**	**2.1**	0.8
BRSD-10 (0-2")	30.3	**5.1**	**1.8**	0.92	18	**30**	**5.1**	**1.8**	651	**18**	**3.3**	**5.9**	632	**18**	**6.9**	**2.5**	3410	**7.4**	**3.1**	2870	**23**	**9.1**	**3.5**
BRSD-11 (0-2")	14.7	**2.5**	0.86	0.45	5.55	**9.3**	**1.6**	0.56	133	**3.7**	0.68	**1.2**	92.4	**2.6**	**1**	0.37	1360	**3.0**	**1.2**	456	**3.7**	**1.4**	0.56

TABLE D-12B: AQUATIC INVERTEBRATE AND FISH HAZARD QUOTIENT SUMMARY TABLE, EU 12 - UPPER MARSH (Continued)

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

RECEPTOR / POINT ID	Arsenic[1] (mg/kg)	Arsenic HQ (based on TEL[2])	Arsenic HQ (based on PEL[2])	Arsenic HQ (based on SEL[2])	Cadmium[1] (mg/kg)	Cadmium HQ (based on TEL[2])	Cadmium HQ (based on PEL[2])	Cadmium HQ (based on SEL[2])	Copper[1] (mg/kg)	Copper HQ (based on TEL[2])	Copper HQ (based on PEL[2])	Copper HQ (based on SEL[2])	Lead[1] (mg/kg)	Lead HQ (based on TEL[2])	Lead HQ (based on PEL[2])	Lead HQ (based on SEL[2])	Manganese[1] (mg/kg)	Manganese HQ (based on LEL[3])	Manganese HQ (based on SEL[2])	Zinc[1] (mg/kg)	Zinc HQ (based on TEL[2])	Zinc HQ (based on PEL[2])	Zinc HQ (based on SEL[2])
Screening Benchmark - Aquatic Invertebrates and Fish (mg/kg)	**TEL: 5.9; PEL: 17; SEL: 33**				**TEL: 0.596; PEL: 3.53; SEL: 10**				**TEL: 35.7; PEL: 197; SEL: 110**				**TEL: 35; PEL: 91.3; SEL: 250**				**LEL: 460; PEL: NA; SEL: 1100**			**TEL: 123; PEL: 315; SEL: 820**			
Eastern Upper Marsh (2-6")																							
UM-1000S-3500E (2-6")	38.1	**6.5**	**2.2**	**1.2**	BB	BB	BB	BB	106	**3.0**	0.54	0.96	320	**9.1**	**3.5**	**1.3**	430	0.93	0.39	396	**3.2**	**1.3**	0.48
BRSD-15 (2-6")	15.6	**2.6**	0.92	0.47	1.29	**2.2**	0.37	0.13	97.4	**2.7**	0.49	0.89	112	**3.2**	**1.2**	0.45	1000	**2.2**	0.91	243	**2.0**	0.77	0.3
BRSD-4 (2-6")	9.85	**1.7**	0.58	0.3	0.671	**1.1**	0.19	0.067	129	**3.6**	0.65	**1.2**	114	**3.3**	**1.2**	0.46	95	0.21	0.087	214	**1.7**	0.68	0.26
UM-750S-3500E (2-6")	157	**27**	**9.2**	**4.8**	13.2	**22**	**3.7**	**1.3**	342	**9.6**	**1.7**	**3.1**	996	**28**	**11**	**4.0**	7090	**15**	**6.4**	3010	**24**	**9.6**	**3.7**
BRSD-16 (2-6")	507	**86**	**30**	**15**	34.7	**58**	**9.8**	**3.5**	1120	**31**	**5.7**	**10**	3130	**89**	**34**	**13**	10100	**22**	**9.2**	3890	**32**	**12**	**4.7**
UM-750S-3000E (2-6")	143	**24**	**8.4**	**4.3**	9.12	**15**	**2.6**	0.91	354	**9.9**	**1.8**	**3.2**	1070	**31**	**12**	**4.3**	7440	**16**	**6.8**	1770	**14**	**5.6**	**2.2**
BRSD-3 (2-6")	54.2	**9.2**	**3.2**	**1.6**	4.82	**8.1**	**1.4**	0.48	1420	**40**	**7.2**	**13**	2160	**62**	**24**	**8.6**	1690	**3.7**	**1.5**	1140	**9.3**	**3.6**	**1.4**
UM-500S-3250E (2-6")	150	**25**	**8.8**	**4.5**	0.824	**1.4**	0.23	0.082	286	**8.0**	**1.5**	**2.6**	1460	**42**	**16**	**5.8**	428	0.93	0.39	668	**5.4**	**2.1**	0.81
UM-500S-3000E (2-6")	22.6	**3.8**	**1.3**	0.68	1.82	**3.1**	0.52	0.18	82	**2.3**	0.42	0.75	138	**3.9**	**1.5**	0.55	317	0.69	0.29	265	**2.2**	0.84	0.32
UM-500S-2750E (2-6")	74.2	**13**	**4.4**	**2.2**	8.8	**15**	**2.5**	0.88	318	**8.9**	**1.6**	**2.9**	794	**23**	**8.7**	**3.2**	8360	**18**	**7.6**	1510	**12**	**4.8**	**1.8**
BRSD-25 (2-6)	60	**10**	**3.5**	**1.8**	8.84	**15**	**2.5**	0.88	402	**11**	**2.0**	**3.7**	1460	**42**	**16**	**5.8**	1060	**2.3**	0.96	1120	**9.1**	**3.6**	**1.4**
UM-250S-3000E (2-6")	162	**27**	**9.5**	**4.9**	20.7	**35**	**5.9**	**2.1**	801	**22**	**4.1**	**7.3**	1950	**56**	**21**	**7.8**	2570	**5.6**	**2.3**	3550	**29**	**11**	**4.3**
UM-250S-3250E (2-6")	BB	BB	BB	BB	3.27	**5.5**	0.93	0.33	81.8	**2.3**	0.42	0.74	93.5	**2.7**	**1.0**	0.37	129	0.28	0.12	760	**6.2**	**2.4**	0.93
BRSD-24 (2-6)	119	**20**	**7.0**	**3.6**	28	**47**	**7.9**	**2.8**	740	**21**	**3.8**	**6.7**	2660	**76**	**29**	**11**	2860	**6.2**	**2.6**	3450	**28**	**11**	**4.2**
UM-250S-2750E (2-6")	141	**24**	**8.3**	**4.3**	13.6	**23**	**3.9**	**1.4**	442	**12**	**2.2**	**4.0**	2080	**59**	**23**	**8.3**	5850	**13**	**5.3**	2010	**16**	**6.4**	**2.5**
UM-0N-2500E (2-6")	103	**17**	**6.1**	**3.1**	9.73	**16**	**2.8**	0.97	262	**7.3**	**1.3**	**2.4**	1260	**36**	**14**	**5**	3220	**7.0**	**2.9**	1460	**12**	**4.6**	**1.8**
BRSD-2 (2-6)	132	**22**	**7.8**	**4.0**	16.9	**28**	**4.8**	**1.7**	409	**11**	**2.1**	**3.7**	1590	**45**	**17**	**6.4**	6090	**13**	**5.5**	1990	**16**	**6.3**	**2.4**
UM-500N-2500E (2-6")	BB	BB	BB	BB	1.59	**2.7**	0.45	0.16	74.3	**2.1**	0.38	0.68	88.9	**2.5**	0.97	0.36	186	0.40	0.17	272	**2.2**	0.86	0.33
UM-250N-2500E (2-6")	116	**20**	**6.8**	**3.5**	14.4	**24**	**4.1**	**1.4**	512	**14**	**2.6**	**4.7**	1070	**31**	**12**	**4.3**	7980	**17**	**7.3**	2480	**20**	**7.9**	**3**
UM-250N-2250E (2-6)	BB	BB	BB	BB	3.38	**5.7**	0.96	0.34	143	**4.0**	0.73	**1.3**	192	**5.5**	**2.1**	0.77	279	0.61	0.25	640	**5.2**	**2**	0.78
Western Upper Marsh (2-6")																							
UM-500S-2500E (2-6")	BB	BB	**BB**	BB	0.738	**1.2**	0.21	0.074	355	**9.9**	**1.8**	**3.2**	BB	BB	BB	BB	BB	BB	BB	220	**1.8**	0.7	0.27
UM-0N-2000E (2-6")	49.4	**8.4**	**2.9**	**1.5**	12.5	**21**	**3.5**	**1.3**	711	**20**	**3.6**	**6.5**	2460	**70**	**27**	**9.8**	3820	**8.3**	**3.5**	2760	**22**	**8.8**	**3.4**
UM-500S-2000E (2-6")	17.9	**3.0**	**1.1**	0.54	0.548	0.92	0.16	0.055	237	**6.6**	**1.2**	**2.2**	92.2	**2.6**	**1**	0.37	BB	BB	BB	111	0.9	0.35	0.14
UM-250N-1750E (2-6)	12.2	**2.1**	0.72	0.37	0.958	**1.6**	0.27	0.096	108	**3**	0.55	0.98	93.6	**2.7**	**1**	0.37	178	0.39	0.16	286	**2.3**	0.91	0.35
UM-0N-1500E (2-6")	BB	BB	**BB**	BB	1.13	**1.9**	0.32	0.11	135	**3.8**	0.69	**1.2**	111	**3.2**	**1.2**	0.44	131	0.28	0.12	255	**2.1**	0.81	0.31
UM-250S-1500E (2-6")	30.6	**5.2**	**1.8**	0.93	12.8	**21**	**3.6**	**1.3**	849	**24**	**4.3**	**7.7**	1660	**47**	**18**	**6.6**	1460	**3.2**	**1.3**	2010	**16**	**6.4**	**2.5**
UM-250S-1250E (2-6")	24.6	**4.2**	**1.4**	0.75	BB	BB	BB	BB	79.4	**2.2**	0.4	0.72	93.3	**2.7**	**1**	0.37	BB	BB	BB	140	**1.1**	0.44	0.17
BRSD-6 (2-6")	BB	BB	BB	BB	0.898	**1.5**	0.25	0.09	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-1000E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-750E (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-500E (2-6")	16.8	**2.8**	0.99	0.51	78	**130**	**22**	**7.8**	2760	**77**	**14**	**25**	522	**15**	**5.7**	**2.1**	BB	BB	BB	2420	**20**	**7.7**	**3**
UM-250S-500E (2-6")	BB	BB	BB	BB	0.644	1.1	0.18	0.064	90.2	**2.5**	0.46	0.82	95.4	**2.7**	**1**	0.38	BB	BB	BB	98.8	0.8	0.31	0.12
UM-0N-250E (2-6")	19.5	**3.3**	**1.1**	0.59	3.52	**5.9**	**1**	0.35	302	**8.5**	**1.5**	**2.7**	282	**8.1**	**3.1**	**1.1**	BB	BB	BB	1670	**14**	**5.3**	**2.0**
UM-250S-250E (2-6")	9.58	**1.6**	0.56	0.29	1.4	**2.3**	0.4	0.14	208	**5.8**	**1.1**	**1.9**	121	**3.5**	**1.3**	0.48	89	0.19	0.081	172	**1.4**	0.55	0.21
BRSD-7 (2-6")	12	**2.0**	0.71	0.36	BB	BB	BB	BB	56.5	**1.6**	0.29	0.51	62.3	**1.8**	0.68	0.25	BB	BB	BB	148	**1.2**	0.47	0.18
BRSD-8 (2-6")	BB	BB	BB	BB	8.6	**14**	**2.4**	0.86	188	**5.3**	0.95	**1.7**	332	**9.5**	**3.6**	**1.3**	1410	**3.1**	**1.3**	579	**4.7**	**1.8**	0.71
UM-500S-500E (2-6")	9.28	**1.6**	0.55	0.28	0.76	**1.3**	0.22	0.076	88.3	**2.5**	0.45	0.8	76.3	**2.2**	0.84	0.31	101	0.22	0.092	177	**1.4**	0.56	0.22
BRSD-9 (2-6")	17.4	**2.9**	**1**	0.53	2.44	**4.1**	0.69	0.24	52.9	**1.5**	0.27	0.48	58.8	**1.7**	0.64	0.24	2110	**4.6**	**1.9**	300	**2.4**	0.95	0.37
BRSD-10 (2-6")	35.8	**6.1**	**2.1**	**1.1**	15.8	**27**	**4.5**	**1.6**	690	**19**	**3.5**	**6.3**	804	**23**	**8.8**	**3.2**	3330	**7.2**	**3.0**	2340	**19**	**7.4**	**2.9**
BRSD-11 (2-6")	10.8	**1.8**	0.64	0.33	2.53	**4.2**	0.72	0.25	154	**4.3**	0.78	**1.4**	92.6	**2.6**	**1**	0.37	317	0.69	0.29	297	**2.4**	0.94	0.36
Eastern Upper Marsh (6-12")																							
UM-1000S-3500E (6-12")	12.6	**2.1**	0.74	0.38	0.989	**1.7**	0.28	0.099	86.6	**2.4**	0.44	0.79	81.7	**2.3**	0.89	0.33	153	0.33	0.14	182	**1.5**	0.58	0.22
BRSD-915(6-12")	16.8	**2.8**	0.99	0.51	1.75	**2.9**	0.5	0.18	97.9	**2.7**	0.5	0.89	87	**2.5**	0.95	0.35	1310	**2.8**	**1.2**	282	**2.3**	0.9	0.34
BRSD-4 (6-12")	20.4	**3.5**	**1.2**	0.62	1.49	**2.5**	0.42	0.15	92.5	**2.6**	0.47	0.84	212	**6.1**	**2.3**	0.85	473	**1.0**	0.43	318	**2.6**	**1**	0.39
UM-750S-3500E (6-12")	138	**23**	**8.1**	**4.2**	18.3	**31**	**5.2**	**1.8**	409	**11**	**2.1**	**3.7**	1210	**35**	**13**	**4.8**	6350	**14**	**5.8**	2820	**23**	**9**	**3.4**
BRSD-16 (6-12)	92.8	**16**	**5.5**	**2.8**	18	**30**	**5.1**	**1.8**	568	**16**	**2.9**	**5.2**	3220	**92**	**35**	**13**	2380	**5.2**	**2.2**	2310	**19**	**7.3**	**2.8**
UM-750S-3000E (6-12")	142	**24**	**8.4**	**4.3**	9.13	**15**	**2.6**	0.91	343	**9.6**	**1.7**	**3.1**	1120	**32**	**12**	**4.5**	7280	**16**	**6.6**	1710	**14**	**5.4**	**2.1**
BRSD-3 (6-12")	19.9	**3.4**	**1.2**	0.6	2.34	**3.9**	0.66	0.23	1240	**35**	**6.3**	**11**	348	**9.9**	**3.8**	**1.4**	648	**1.4**	0.59	538	**4.4**	**1.7**	0.66
UM-500S-3250E (6-12")	100	**17**	**5.9**	**3**	1.15	**1.9**	0.33	0.12	214	**6.0**	**1.1**	**1.9**	608	**17**	**6.7**	**2.4**	276	0.6	0.25	573	**4.7**	**1.8**	0.7
UM-500S-3000E (6-12")	15.1	**2.6**	0.89	0.46	1.74	**2.9**	0.49	0.17	88.6	**2.5**	0.45	0.81	112	**3.2**	**1.2**	0.45	389	0.85	0.35	320	**2.6**	**1**	0.39
UM-500S-2750E (6-12")	67.8	**11**	**4**	**2.1**	7.13	**12**	**2**	0.71	290	**8.1**	**1.5**	**2.6**	678	**19**	**7.4**	**2.7**	8160	**18**	**7.4**	1340	**11**	**4.3**	**1.6**
BRSD-25 (6-12)	29	**4.9**	**1.7**	0.88	7.69	**13**	**2.2**	0.77	191	**5.4**	0.97	**1.7**	1050	**30**	**12**	**4.2**	174	0.38	0.16	1030	**8.4**	**3.3**	**1.3**
UM-250S-3000E (6-12")	183	**31**	**11**	**5.5**	15	**25**	**4.2**	**1.5**	730	**20**	**3.7**	**6.6**	1280	**37**	**14**	**5.1**	5000	**11**	**4.5**	2950	**24**	**9.4**	**3.6**
UM-250S-3250E (6-12")	10.5	**1.8**	0.62	0.32	3.48	**5.8**	0.99	0.35	86.9	**2.4**	0.44	0.79	107	**3.1**	**1.2**	0.43	220	0.48	0.2	652	**5.3**	**2.1**	0.8
BRSD-24 (6-12)	63.4	**11**	**3.7**	**1.9**	14.3	**24**	**4.1**	**1.4**	553	**15**	**2.8**	**5**	2290	**65**	**25**	**9.2**	1200	**2.6**	**1.1**	1740	**14**	**5.5**	**2.1**
UM-250S-2750E (6-12")	66	**11**	**3.9**	**2**	15.3	**26**	**4.3**	**1.5**	514	**14**	**2.6**	**4.7**	2410	**69**	**26**	**9.6**	1640	**3.6**	**1.5**	1930	**16**	**6.1**	**2.4**
UM-250S-2500E (6-12")	BB	BB	**BB**	BB	1.23	**2.1**	0.35	0.12	147	**4.1**	0.75	**1.3**	85.4	**2.4**	0.94	0.34	150	0.33	0.14	253	**2.1**	0.8	0.31
BRSD-2 (6-12)	73.1	**12**	**4.3**	**2.2**	27.2	**46**	**7.7**	**2.7**	918	**26**	**4.7**	**8.3**	4220	**120**	**46**	**17**	1230	**2.7**	**1.1**	4220	**34**	**13**	**5.1**
UM-500N-2500E (6-12")	11.6	**2**	0.68	0.35	0.809	**1.4**	0.23	0.081	32.7	0.92	0.17	0.3	76.4	**2.2**	0.84	0.31	206	0.45	0.19	176	**1.4**	0.56	0.21
UM-250N-2500E (6-12")	91.2	**15**	**5.4**	**2.8**	12.4	**21**	**3.5**	**1.2**	374	**10**	**1.9**	**3.4**	975	**28**	**11**	**3.9**	6740	**15**	**6.1**	1870	**15**	**5.9**	**2.3**
UM-250N-2250E (6-12)	9.93	**1.7**	0.58	0.3	1.99	**3.3**	0.56	0.2	180	**5.0**	0.91	**1.6**	194	**5.5**	**2.1**	0.78	347	0.75	0.32	390	**3.2**	**1.2**	0.48

TABLE D-12B: AQUATIC INVERTEBRATE AND FISH HAZARD QUOTIENT SUMMARY TABLE, EU 12 - UPPER MARSH (Continued)
Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

RECEPTOR / POINT ID	Arsenic[1] (mg/kg)	Arsenic HQ (based on TEL[2])	Arsenic HQ (based on PEL[2])	Arsenic HQ (based on SEL[2])	Cadmium[1] (mg/kg)	Cadmium HQ (based on TEL[2])	Cadmium HQ (based on PEL[2])	Cadmium HQ (based on SEL[2])	Copper[1] (mg/kg)	Copper HQ (based on TEL[2])	Copper HQ (based on PEL[2])	Copper HQ (based on SEL[2])	Lead[1] (mg/kg)	Lead HQ (based on TEL[2])	Lead HQ (based on PEL[2])	Lead HQ (based on SEL[2])	Manganese[1] (mg/kg)	Manganese HQ (based on LEL[3])	Manganese HQ (based on SEL[2])	Zinc[1] (mg/kg)	Zinc HQ (based on TEL[2])	Zinc HQ (based on PEL[2])	Zinc HQ (based on SEL[2])
Screening Benchmark - Aquatic Invertebrates and Fish (mg/kg)	**TEL: 5.9; PEL: 17; SEL: 33**				**TEL: 0.596; PEL: 3.53; SEL: 10**				**TEL: 35.7; PEL: 197; SEL: 110**				**TEL: 35; PEL: 91.3; SEL: 250**				**LEL: 460; PEL: NA; SEL: 1100**			**TEL: 123; PEL: 315; SEL: 820**			
Western Upper Marsh (6-12")																							
UM-500S-2500E (6-12")	11	**1.9**	0.65	0.33	0.851	**1.4**	0.24	0.085	364	**10**	**1.8**	**3.3**	122	**3.5**	**1.3**	0.49	152	0.33	0.14	188	**1.5**	0.6	0.23
UM-0N-2000E (6-12")	59	**10**	**3.5**	**1.8**	19.6	**33**	**5.6**	**2.0**	1080	**30**	**5.5**	**9.8**	3280	**94**	**36**	**13**	7670	**17**	**7.0**	3110	**25**	**9.9**	**3.8**
UM-500S-2000E (6-12")	15.3	**2.6**	0.9	0.46	BB	BB	BB	BB	232	**6.5**	**1.2**	**2.1**	94	**2.7**	**1.0**	0.38	BB	BB	BB	BB	BB	BB	BB
UM-250N-1750E (6-12)	11.6	**2.0**	0.68	0.35	BB	BB	BB	BB	143	**4**	0.73	**1.3**	98.7	**2.8**	**1.1**	0.39	100	0.22	0.091	99.5	0.81	0.32	0.12
UM-0N-1500E (6-12")	BB	BB	BB	BB	2.71	**4.5**	0.77	0.27	184	**5.2**	0.93	**1.7**	111	**3.2**	**1.2**	0.44	162	0.35	0.15	572	**4.7**	**1.8**	0.7
UM-250S-1500E (6-12")	17.5	**3.0**	**1.0**	0.53	3.13	**5.3**	0.89	0.31	513	**14**	**2.6**	**4.7**	931	**27**	**10**	**3.7**	446	0.97	0.41	882	**7.2**	**2.8**	**1.1**
UM-250S-1250E (6-12")	19	**3.2**	**1.1**	0.58	BB	BB	BB	BB	77.5	**2.2**	0.39	0.7	102	**2.9**	**1.1**	0.41	94	0.2	0.085	146	**1.2**	0.46	0.18
BRSD-6 (6-12")	BB	BB	BB	BB	0.964	**1.6**	0.27	0.096	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-1000E (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-750E (6-12")	12.4	**2.1**	0.73	0.38	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB
UM-0N-500E (6-12")	BB	BB	BB	BB	13.3	**22**	**3.8**	**1.3**	729	**20**	**3.7**	**6.6**	154	**4.4**	**1.7**	0.62	BB	BB	BB	1740	**14**	**5.5**	**2.1**
UM-250S-500E (6-12")	17.7	**3.0**	**1.0**	0.54	BB	BB	BB	BB	114	**3.2**	0.58	**1**	98	**2.8**	**1.1**	0.39	BB	BB	BB	112	0.91	0.36	0.14
UM-0N-250E (6-12")	14.7	**2.5**	0.86	0.45	6.01	**10**	**1.7**	0.6	344	**9.6**	**1.7**	**3.1**	269	**7.7**	**2.9**	**1.1**	97	0.21	0.089	1050	**8.5**	**3.3**	**1.3**
UM-250S-250E (6-12")	BB	BB	BB	BB	0.928	**1.6**	0.26	0.093	128	**3.6**	0.65	**1.2**	95.3	**2.7**	**1.0**	0.38	281	0.61	0.26	245	**2.0**	0.78	0.3
BRSD-7 (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	48.6	**1.4**	0.25	0.44	115	**3.3**	**1.3**	0.46	BB	BB	BB	116	0.94	0.37	0.14
BRSD-8 (6-12")	10.3	**1.7**	0.61	0.31	5.02	**8.4**	**1.4**	0.5	200	**5.6**	**1.0**	**1.8**	300	**8.6**	**3.3**	**1.2**	1130	**2.5**	**1.0**	590	**4.8**	**1.9**	0.72
UM-500S-500E (6-12")	BB	BB	BB	BB	0.55	0.92	0.16	0.055	82	**2.3**	0.42	0.75	72.6	**2.1**	0.8	0.29	101	0.22	0.092	175	**1.4**	0.56	0.21
BRSD-9 (6-12")	16.2	**2.7**	0.95	0.49	1.74	**2.9**	0.49	0.17	84.1	**2.4**	0.43	0.76	84.9	**2.4**	0.93	0.34	1760	**3.8**	**1.6**	352	**2.9**	**1.1**	0.43
BRSD-10 (6-12")	38.3	**6.5**	**2.3**	**1.2**	23.5	**39**	**6.7**	**2.4**	971	**27**	**4.9**	**8.8**	1370	**39**	**15**	**5.5**	4920	**11**	**4.5**	3620	**29**	**11**	**4.4**
BRSD-11 (6-12")	9.89	**1.7**	0.58	0.30	2.04	**3.4**	0.58	0.20	148	**4.1**	0.75	**1.3**	104	**3.0**	**1.1**	0.42	292	0.63	0.27	301	**2.4**	0.96	0.37
Middle Marsh (0-2")																							
MMSD-201 (0-2")	BB	BB	BB	BB	9.5	**16**	**2.7**	0.95	435	**12**	**2.2**	**4.0**	504	**14**	**5.5**	**2.0**	2010	**4.4**	**1.8**	1470	**12**	**4.7**	**1.8**
MMSD-202 (0-2")	BB	BB	BB	BB	1.1	**1.8**	0.31	0.11	438	**12**	**2.2**	**4.0**	695	**20**	**7.6**	**2.8**	BB	BB	BB	410	**3.3**	**1.3**	0.50
Middle Marsh (2-6")																							
MMSD-201 (2-6")	BB	BB	BB	BB	14.8	**25**	**4.2**	**1.5**	600	**17**	**3**	**5.5**	622	**18**	**6.8**	**2.5**	1480	**3.2**	**1.3**	2060	**17**	**6.5**	**2.5**
MMSD-202 (2-6")	BB	BB	BB	BB	1.3	**2.2**	0.37	0.13	516	**14**	**2.6**	**4.7**	828	**24**	**9.1**	**3.3**	BB	BB	BB	539	**4.4**	**1.7**	0.66
Middle Marsh (6-12")																							
MMSD-201 (6-12")	BB	BB	BB	BB	18.4	**31**	**5.2**	**1.8**	726	**20**	**3.7**	**6.6**	967	**28**	**11**	**3.9**	1780	**3.9**	**1.6**	2590	**21**	**8.2**	**3.2**
MMSD-202 (6-12")	BB	BB	BB	BB	1.4	**2.3**	0.4	0.14	292	**8.2**	**1.5**	**2.7**	262	**7.5**	**2.9**	**1.0**	BB	BB	BB	498	**4.0**	**1.6**	0.61
Lower Marsh (0-2")																							
LMSD-201 (0-2")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	105	0.85	0.33	0.13
LMSD-202 (0-2")	BB	BB	BB	BB	1.5	**2.5**	0.42	0.15	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	353	**2.9**	**1.1**	0.43
LMSD-203 (0-2")	BB	BB	BB	BB	0.6	**1.0**	0.17	0.060	287	**8.0**	**1.5**	**2.6**	BB	BB	BB	BB	2040	**4.4**	**1.9**	521	**4.2**	**1.7**	0.64
LMSD-204 (0-2")	BB	BB	BB	BB	1	**1.7**	0.28	0.10	224	**6.3**	**1.1**	**2.0**	BB	BB	BB	BB	BB	BB	BB	365	**3.0**	**1.2**	0.45
Lower Marsh (2-6")																							
LMSD-201 (2-6")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	98	0.8	0.31	0.12
LMSD-202 (2-6")	BB	BB	BB	BB	1.2	**2.0**	0.34	0.12	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	390	**3.2**	**1.2**	0.48
LMSD-203 (2-6")	BB	BB	BB	BB	0.8	**1.3**	0.23	0.080	285	**8.0**	**1.4**	**2.6**	BB	BB	BB	BB	2300	**5.0**	**2.1**	511	**4.2**	**1.6**	0.62
LMSD-204 (2-6")	BB	BB	BB	BB	0.8	**1.3**	0.23	0.080	227	**6.4**	**1.2**	**2.1**	BB	BB	BB	BB	BB	BB	BB	359	**2.9**	**1.1**	0.44
Lower Marsh (6-12")																							
LMSD-201 (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	**BB**	BB
LMSD-202 (6-12")	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	BB	283	**2.3**	0.9	0.35
LMSD-203 (6-12")	BB	BB	BB	BB	2.8	**4.7**	0.79	0.28	360	**10**	**1.8**	**3.3**	BB	BB	BB	BB	7180	**16**	**6.5**	740	**6.0**	**2.3**	0.90
LMSD-204 (6-12")	BB	BB	BB	BB	0.6	**1.0**	0.17	0.060	226	**6.3**	**1.1**	**2.1**	BB	BB	BB	BB	BB	BB	BB	336	**2.7**	**1.1**	0.41

Notes:

1 Sediment concentration from specified depth below ground surface at point ID from laboratory analysis. Hazard quotients were not calculated for detected and non-detect soil concentrations measured below the minimum reference site concentration, as indicated by BB. For results that were measured at less than the detection limit, hazard quotients were calculated using half of the detection limit.

2 HQs were calculated using the following equation: HQ = site concentration/[TEL or SEL]. HQs greater than 1.0 are indicated by **bold font.**

3 The LEL is substituted for the TEL for manganese. A PEL is not available for manganese.

BB	Below minimum background reference site concentration	mg/kg	Milligrams per kilogram
EU	Exposure Unit	PEL	Probable effect level - the level above which adverse effects are expected to occur frequently.
HQ	Hazard quotient	SEL	Severe effect level - the level of sediment contamination at which pronounced disturbance of the sediment-dwelling community can be expected; the concentration that would be detrimental to the majority of the benthic community.
ID	Identification	TEL	Threshold effect level - the level of sediment contamination below which adverse biological effects are expected to occur rarely.
LEL	Lowest effect level - the level of sediment contamination that can be tolerated by the majority of benthic organisms.		

Sources:

SAIC and Avocet Consulting. 2002. Development of Freshwater Sediment Quality Values in Washington State, Phase I Final Report. Prepared by SAIC, Bothell, WA and Avocet Consulting, Kenmore, WA for the Washington Department of Ecology, Olympia, WA. September.

SAIC and Avocet Consulting. 2003. Development of Freshwater Sediment Quality Values in Washington State, Phase II Report: Development and Recommendation of SQVs for Freshwater Sediments in Washington State. Prepared by SAIC, Bothell, WA and Avocet Consulting, Kenmore, WA for the Washington Department of Ecology, Olympia, WA. September.

TABLE D-13: AQUATIC INVERTEBRATE AND FISH HAZARD QUOTIENT SUMMARY TABLE, EU 13 - STREAM
Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

RECEPTOR / POINT ID	Arsenic Concentration[1] (mg/kg)	Arsenic HQ (based on TEL[2])	Arsenic HQ (based on PEL[2])	Arsenic HQ (based on SEL[2])	Cadmium Concentration[1] (mg/kg)	Cadmium HQ (based on TEL[2])	Cadmium HQ (based on PEL[2])	Cadmium HQ (based on SEL[2])	Copper Concentration[1] (mg/kg)	Copper HQ (based on TEL[2])	Copper HQ (based on PEL[2])	Copper HQ (based on SEL[2])	Lead Concentration[1] (mg/kg)	Lead HQ (based on TEL[2])	Lead HQ (based on PEL[2])	Lead HQ (based on SEL[2])	Manganese Concentration[1] (mg/kg)	Manganese HQ (based on LEL[3])	Manganese HQ (based on SEL[2])	Zinc Concentration[1] (mg/kg)	Zinc HQ (based on TEL[2])	Zinc HQ (based on PEL[2])	Zinc HQ (based on SEL[2])
Screening Benchmark - Aquatic Invertebrates and Fish (mg/kg)	TEL: 5.9; PEL: 17; SEL: 33				TEL: 0.596; PEL: 3.53; SEL: 10				TEL: 35.7; PEL: 197; SEL: 110				TEL: 35; PEL: 91.3; SEL: 250				LEL: 460; PEL: NA; SEL: 1100			TEL: 123; PEL: 315; SEL: 820			
Aquatic Invertebrates																							
Reference Sites																							
BRSW-6 SE (2007) (0-2)	5.6	0.94	0.33	0.17	0.50	0.84	0.14	0.050	41.9	**1.2**	0.21	0.38	21.9	0.63	0.24	0.088	271	0.59	0.25	65.7	0.53	0.21	0.080
BRSW-6 SE (2008) (0-2)	15.4	**2.6**	0.91	0.47	0.50	0.84	0.14	0.050	114	**3.2**	0.58	**1.0**	81.5	**2.3**	0.89	0.33	578	**1.3**	0.53	128	**1.0**	0.4	0.16
BRSW-11 SE (2007) (0-2)	7.9	**1.3**	0.46	0.24	0.50	0.84	0.14	0.050	29.4	0.82	0.15	0.27	47.5	**1.4**	0.52	0.19	408	0.89	0.37	136	**1.1**	0.43	0.17
Streambed Sediments (0-2")																							
BRSW-109 SE (2007) (0-2)	31.4	**5.3**	**1.8**	0.95	10.50	**18**	**3.0**	**1.1**	262	**7.3**	**1.3**	**2.4**	1330	**38**	**15**	**5.3**	3450	**7.5**	**3.1**	3240	**26**	**10**	**4.0**
BRSW-9 SE (2007) (0-2)	24.9	**4.2**	**1.5**	0.75	18.10	**30**	**5.1**	**1.8**	322	**9**	**1.6**	**2.9**	578	**17**	**6.3**	**2.3**	4380	**9.5**	**4.0**	4810	**39**	**15**	**5.9**
BRSW-108 SE (2007) (0-2)	59.2	**10**	**3.5**	**1.8**	0.63	**1.1**	0.18	0.063	283	**7.9**	**1.4**	**2.6**	395	**11**	**4.3**	**1.6**	336.0	0.73	0.31	194.0	**1.6**	0.62	0.24
BRSW-36 SE (2007) (0-2)	26.9	**4.6**	**1.6**	0.82	16.40	**28**	**4.6**	**1.6**	404	**11**	**2.1**	**3.7**	1500	**43**	**16**	**6.0**	3900	**8.5**	**3.5**	3540	**29**	**11**	**4.3**
BRSW-33 SE (2007) (0-2)	24.6	**4.2**	**1.4**	0.75	8.33	**14**	**2.4**	0.83	320	**9**	**1.6**	**2.9**	542	**15**	**5.9**	**2.2**	1960	**4.3**	**1.8**	1670	**14**	**5.3**	**2.0**
BRSW-12 SE (2007) (0-2)	19.0	**3.2**	**1.1**	0.58	10.40	**17**	**2.9**	**1.0**	253	**7.1**	**1.3**	**2.3**	530	**15**	**5.8**	**2.1**	2770	**6.0**	**2.5**	2000	**16**	**6.3**	**2.4**
BRSW-21 SE (2007) (0-2)	4.7	0.80	0.28	0.14	0.50	0.84	0.14	0.050	26.9	0.75	0.14	0.24	7.5	0.21	0.082	0.030	8.24	0.018	0.0075	8.5	0.069	0.027	0.010
BRSW-13 SE (2007) (0-2)	33.9	**5.7**	**2.0**	**1.0**	BB	BB	BB	BB	84	**2.3**	0.42	0.76	69	**2.0**	0.8	0.27	BB	BB	BB	BB	BB	BB	BB
BRSW-110 SE (2007) (0-2)	13.3	**2.3**	0.78	0.40	4.35	**7.3**	**1.2**	0.44	127	**3.6**	0.64	**1.2**	351	**10**	**3.8**	**1.4**	979	**2.1**	0.89	865	**7.0**	**2.7**	**1.1**
BRSW-107 SE (2007) (0-2)	20.9	**3.5**	**1.2**	0.63	10.50	**18**	**3**	**1.1**	620	**17**	**3.1**	**5.6**	716	**20**	**7.8**	**2.9**	2580	**5.6**	**2.3**	2350	**19**	**7.5**	**2.9**
BRSW-107 SE (2008) (0-2)	19.7	**3.3**	**1.2**	0.60	1.93	**3.2**	0.55	0.19	372	**10**	**1.9**	**3.4**	409	**12**	**4.5**	**1.6**	555	**1.2**	0.50	782	**6.4**	**2.5**	0.95
BRSW-31 SE (2007) (0-2)	7.7	**1.3**	0.46	0.23	8.80	**15**	**2.5**	0.88	262	**7.3**	**1.3**	**2.4**	244	**7.0**	**2.7**	0.98	2540	**5.5**	**2.3**	1710	**14**	**5.4**	**2.1**
BRSW-31 SE (2008) (0-2)	14.5	**2.5**	0.85	0.44	8.49	**14**	**2.4**	0.85	319	**8.9**	**1.6**	**2.9**	502	**14**	**5.5**	**2.0**	3080	**6.7**	**2.8**	1650	**13**	**5.2**	**2.0**
BRSW-106 SE (2007) (0-2)	9.5	**1.6**	0.56	0.29	5.19	**8.7**	**1.5**	0.52	193	**5.4**	0.98	**1.8**	177	**5.1**	**1.9**	0.71	1390	**3.0**	**1.3**	1180	**9.6**	**3.7**	**1.4**
BRSW-106 SE (2008) (0-2)	14.7	**2.5**	0.86	0.45	3.51	**5.9**	0.99	0.35	214	**6.0**	**1.1**	**1.9**	131	**3.7**	**1.4**	0.52	1270	**2.8**	**1.2**	878	**7.1**	**2.8**	**1.1**
BRSW-105 SE (2007) (0-2)	9.9	**1.7**	0.58	0.30	8.10	**14**	**2.3**	0.81	234	**6.6**	**1.2**	**2.1**	161	**4.6**	**1.8**	0.64	2060	**4.5**	**1.9**	2010	**16**	**6.4**	**2.5**
BRSW-105 SE (2008) (0-2)	14.2	**2.4**	0.84	0.43	7.49	**13**	**2.1**	0.75	251	**7.0**	**1.3**	**2.3**	198	**5.7**	**2.2**	0.79	2360	**5.1**	**2.1**	1660	**13**	**5.3**	**2.0**
BRSW-16 SE (2007) (0-2)	6.2	**1.1**	0.37	0.19	5.34	**9.0**	**1.5**	0.53	145	**4.1**	0.74	**1.3**	135	**3.9**	**1.5**	0.54	1500	**3.3**	**1.4**	1230	**10**	**3.9**	**1.5**
BRSW-16 SE (2008) (0-2)	10.6	**1.8**	0.62	0.32	2.75	**4.6**	0.78	0.28	140	**3.9**	0.71	**1.3**	184	**5.3**	**2.0**	0.74	934	**2.0**	0.85	516	**4.2**	**1.6**	0.63
BRSW-104 SE (2007) (0-2)	13.9	**2.4**	0.82	0.42	9.39	**16**	**2.7**	0.94	298	**8.3**	**1.5**	**2.7**	101	**2.9**	**1.1**	0.40	3760	**8.2**	**3.4**	1850	**15**	**5.9**	**2.3**
BRSW-104 SE (2008) (0-2)	16.9	**2.9**	0.99	0.51	18.20	**31**	**5.2**	**1.8**	2630	**74**	**13**	**24**	60	**1.7**	0.65	0.24	10100	**22**	**9.2**	2370	**19**	**7.5**	**2.9**
BRSW-103 SE (2007) (0-2)	BB	BB	BB	BB	0.87	**1.5**	0.25	0.087	103	**2.9**	0.52	0.94	32	0.90	0.35	0.13	BB	BB	BB	225	**1.8**	0.71	0.27
BRSW-103 SE (2008) (0-2)	BB	BB	BB	BB	BB	BB	BB	BB	79	**2.2**	0.4	0.72	31	0.89	0.34	0.13	293	0.64	0.27	119	0.97	0.38	0.15
BRSW-17 SE (2007) (0-2)	6.2	**1.1**	0.37	0.19	3.86	**6.5**	**1.1**	0.39	51	**1.4**	0.26	0.46	69	**2.0**	0.8	0.28	2280	**5.0**	**2.1**	936	**7.6**	**3.0**	**1.1**
BRSW-102 SE (2007) (0-2)	BB	BB	BB	BB	1.99	**3.3**	0.56	0.20	41	**1.1**	0.21	0.37	29	0.82	0.31	0.11	992	**2.2**	0.90	660	**5.4**	**2.1**	0.80
BRSW-102 SE (2008) (0-2)	BB	BB	**BB**	BB	1.21	**2.0**	0.3	0.12	47	**1.3**	0.24	0.42	28	0.79	0.3	0.11	750	**1.6**	0.68	481	**3.9**	**1.5**	0.59
BRSW-101 SE (2007) (0-2)	8.9	**1.5**	0.52	0.27	1.91	**3.2**	0.54	0.19	BB	BB	BB	BB	BB	BB	BB	BB	767	**1.7**	0.70	612	**5.0**	**1.9**	0.75
BRSW-101 SE (2008) (0-2)	9.9	**1.7**	0.58	0.3	0.84	**1.4**	0.24	0.084	36	**1**	0.18	0.33	29	0.83	0.32	0.12	589	**1.3**	0.54	396	**3.2**	**1.3**	0.48
BRSW-201 (0-2)	BB	BB	BB	BB	BB	BB	BB	BB	40	**1.1**	0.2	0.36	BB	BB	BB	BB	311	0.68	0.28	150	**1.2**	0.5	0.18
BRSW-202 (0-2)	BB	BB	BB	BB	BB	BB	BB	BB	35	0.98	0.18	0.32	BB	BB	BB	BB	BB	BB	BB	146	**1.2**	0.5	0.18
BRSW-203 (0-2)	BB	BB	BB	BB	BB	BB	BB	BB	41	**1.2**	0.21	0.37	BB	BB	BB	BB	BB	BB	BB	126	**1.0**	0.4	0.15
BRSW-204 (0-2)	BB	BB	BB	BB	BB	BB	BB	BB	30	0.83	0.15	0.27	BB	BB	BB	BB	BB	BB	BB	125	**1.0**	0.4	0.15
BRSW-205 (0-2)	8.0	**1.4**	0.47	0.24	BB	BB	BB	BB	30	0.84	0.15	0.27	BB	BB	BB	BB	396	0.86	0.36	202	**1.6**	0.6	0.25
BRSW-206 (0-2)	5.7	0.97	0.34	0.17	1.30	**2.2**	0.37	0.13	39	**1.1**	0.2	0.35	BB	BB	BB	BB	749	**1.6**	0.68	534	**4.3**	**1.7**	0.65
Streambed Sediments (2-6")																							
BRSW-12 SE (2007) (2-6)	21.7	**3.7**	**1.3**	0.66	13.30	**22**	**3.8**	**1.3**	334	**9.4**	**1.7**	**3.0**	474	**14**	**5.2**	**1.9**	3140	**6.8**	**2.9**	2350	**19**	**7.5**	**2.9**
BRSW-21 SE (2007) (2-6)	18.1	**3.1**	**1.1**	0.55	0.50	0.84	0.14	0.050	71	**2.0**	0.36	0.65	56.4	**1.6**	0.62	0.23	55	0.12	0.050	48.8	0.40	0.15	0.060
BRSW-13 SE (2007) (2-6)	86.8	**15**	**5.1**	**2.6**	0.55	0.92	0.16	0.055	178	**5.0**	0.9	**1.6**	235	**6.7**	**2.6**	0.94	BB	BB	BB	122	0.99	0.39	0.15
BRSW-110 SE (2007) (2-6)	12.9	2.2	0.76	0.39	5.48	**9.2**	**1.6**	0.55	158	**4.4**	0.8	**1.4**	395	**11**	**4.3**	**1.6**	1200	2.6	**1.1**	994	**8.1**	**3.2**	**1.2**
BRSW-106 SE (2007) (2-6)	8.9	**1.5**	0.52	0.27	4.62	**7.8**	**1.3**	0.46	181	**5.1**	0.92	**1.6**	120	**3.4**	**1.3**	0.48	1300	**2.8**	**1.2**	1120	**9.1**	**3.6**	**1.4**
BRSW-106 SE (2008) (2-6)	11.0	**1.9**	0.65	0.33	3.08	**5.2**	0.87	0.31	192	**5.4**	0.97	**1.7**	138	**3.9**	**1.5**	0.55	1190	**2.6**	**1.1**	852	**6.9**	**2.7**	**1.0**
BRSW-105 SE (2007) (2-6)	11.8	**2.0**	0.7	0.36	8.02	**13**	**2.3**	0.80	244	**6.8**	**1.2**	**2.2**	187	**5.3**	**2.0**	0.75	1830	**4.0**	**1.7**	1880	**15**	**6.0**	**2.3**
BRSW-105 SE (2008) (2-6)	14.1	**2.4**	0.83	0.43	6.97	**12**	**2.0**	0.70	231	**6.5**	**1.2**	**2.1**	293	**8.4**	**3.2**	**1.2**	2250	**4.9**	**2.0**	1560	**13**	**5.0**	**1.9**
BRSW-104 SE (2008) (2-6)	18.1	**3.1**	**1.1**	0.55	20.30	**34**	**5.8**	**2.0**	3030	**85**	**15**	**28**	67	**1.9**	0.73	0.27	11300	**25**	**10**	2350	**19**	**7.5**	**2.9**
BRSW-102 SE (2008) (2-6)	BB	BB	BB	BB	0.77	**1.3**	0.22	0.077	34	0.95	0.17	0.31	BB	BB	BB	BB	511	**1.1**	0.46	361	**2.9**	**1.1**	0.44

TABLE D-13: AQUATIC INVERTEBRATE AND FISH HAZARD QUOTIENT SUMMARY TABLE, EU 13 - STREAM
Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

RECEPTOR / POINT ID	Arsenic Concentration[1] (mg/kg)	Arsenic HQ (based on TEL[2])	Arsenic HQ (based on PEL[2])	Arsenic HQ (based on SEL[2])	Cadmium Concentration[1] (mg/kg)	Cadmium HQ (based on TEL[2])	Cadmium HQ (based on PEL[2])	Cadmium HQ (based on SEL[2])	Copper Concentration[1] (mg/kg)	Copper HQ (based on TEL[2])	Copper HQ (based on PEL[2])	Copper HQ (based on SEL[2])	Lead Concentration[1] (mg/kg)	Lead HQ (based on TEL[2])	Lead HQ (based on PEL[2])	Lead HQ (based on SEL[2])	Manganese Concentration[1] (mg/kg)	Manganese HQ (based on LEL[3])	Manganese HQ (based on SEL[2])	Zinc Concentration[1] (mg/kg)	Zinc HQ (based on TEL[2])	Zinc HQ (based on PEL[2])	Zinc HQ (based on SEL[2])
Streambed Sediments (6-12")																							
BRSW-12 SE (2007) (6-12)	26.2	**4.4**	**1.5**	0.79	9.97	**17**	**2.8**	**1.0**	268	**7.5**	**1.4**	**2.4**	502	**14**	**5.5**	**2.0**	2540	**5.5**	**2.3**	1890	**15**	**6.0**	**2.3**
BRSW-13 SE (2007) (6-12)	47.0	**8.0**	**2.8**	**1.4**	1.37	**2.3**	0.39	0.14	247	**6.9**	**1.3**	**2.2**	154	**4.4**	**1.7**	0.62	BB	BB	BB	275	**2.2**	0.87	0.34
BRSW-110 SE (2007) (6-12)	14.8	**2.5**	0.87	0.45	4.94	**8.3**	**1.4**	0.49	130	**3.6**	0.66	**1.2**	352	**10**	**3.9**	**1.4**	1160	**2.5**	**1.1**	908	**7.4**	**2.9**	**1.1**

Notes:

1 Sediment concentration from specified depth below ground surface at point ID from laboratory analysis. Hazard quotients were not calculated for detected and non-detect soil concentrations measured below the minimum reference site concentration, as indicated by BB. For results that were measured at less than the detection limit, hazard quotients were calculated using half of the detection limit.

2 HQs were calculated using the following equation: HQ = site concentration/[TEL or PEL or SEL]. HQs greater than 1.0 are indicated by **bold font.**

3 The LEL is substituted for the TEL for manganese. A PEL is not available for manganese.

BB	Below minimum background reference site concentration	mg/kg	Milligrams per kilogram
EU	Exposure Unit	PEL	Probable effect level - the level above which adverse effects are expected to occur frequently.
HQ	Hazard quotient	SEL	Severe effect level - the level of sediment contamination at which pronounced disturbance of the sediment-dwelling community can be expected; the concentration that would be detrimental to the majority of the benthic community.
ID	Identification	TEL	Threshold effect level - the level of sediment contamination below which adverse biological effects are expected to occur rarely.
LEL	Lowest effect level - the level of sediment contamination that can be tolerated by the majoirty of benthic organisms.		

Sources:

SAIC and Avocet Consulting. 2002. Development of Freshwater Sediment Quality Values in Washington State, Phase I Final Report. Prepared by SAIC, Bothell, WA and Avocet Consulting, Kenmore, WA for the Washington Department of Ecology, Olympia, WA. September.

SAIC and Avocet Consulting. 2003. Development of Freshwater Sediment Quality Values in Washington State, Phase II Report: Development and Recommendation of SQVs for Freshwater Sediments in Washington State. Prepared by SAIC, Bothell, WA and Avocet Consulting, Kenmore, WA for the Washington Department of Ecology, Olympia, WA. September.

TABLE D-14: SURFACE WATER CONCENTRATIONS AND HAZARD QUOTIENT SUMMARY TABLE, EU 13 - STREAM
Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

POINT ID	Hardness as CaCO3 - 2007 and 2011 (Low Flow Conditions) (mg/L)	Hardness as CaCO3 - 2008 (High Flow Conditions) (mg/L)	Aluminum -2007 and 2011 (Low Flow Conditions)					Aluminum - 2008 (High Flow Conditions)				
			Dissolved Concentration - 2007 (mg/L)	Acute Aquatic Life Criterion[1] (mg/L)	Chronic Aquatic Life Criterion[1] (mg/L)	HQ Acute[2,3]	HQ Chronic[2,3]	Dissolved Concentration - 2008 (mg/L)	Acute Aquatic Life Criterion[1] (mg/L)	Chronic Aquatic Life Criterion[1] (mg/L)	HQ Acute[2,3]	HQ Chronic[2,3]
Reference Sites												
BRSW-6 (2007 and 2008)	91	59	0.03	0.75	0.087	0.04	0.34	0.03	0.75	0.087	0.04	0.34
BRSW-11 (2007)	82	--	0.03	0.75	0.087	0.04	0.34	--	--	--	--	--
Blackfoot River Surface Water												
BRSW-4 (2007)	170	--	0.05	0.75	0.087	0.067	0.57	--	--	--	--	--
BRSW-4A (2008)	--	98	--	--	--	--	--	0.08	0.75	0.087	0.11	0.92
BRSW-44 (2007 and 2008)	198	96	BB	0.75	0.087	BB	BB	BB	0.75	0.087	BB	BB
BRSW-23 (2007)	161	--	BB	0.75	0.087	BB	BB	--	--	--	--	--
BRSW-39A (2007)	173	--	BB	0.75	0.087	BB	BB	--	--	--	--	--
BRSW-29 (2007)	130	--	BB	0.75	0.087	BB	BB	--	--	--	--	--
AW-003A (2007)	1500	--	0.13	0.75	0.087	0.17	**1.5**	--	--	--	--	--
BRSW-109 (2007)	183	--	BB	0.75	0.087	BB	BB	--	--	--	--	--
BRSW-9 (2007)	202	--	BB	0.75	0.087	BB	BB	--	--	--	--	--
BRSW-108 (2007 and 2008)	39	31	0.91	0.75	0.087	**1.2**	**10**	BB	0.75	0.087	BB	BB
BRSW-36 (2007)	221	--	BB	0.75	0.087	BB	BB	--	--	--	--	--
BRSW-33 (2007)	160	--	BB	0.75	0.087	BB	BB	--	--	--	--	--
BRSW-12 (2007)	156	--	BB	0.75	0.087	BB	BB	--	--	--	--	--
BRSW-21 (2007)	26	--	0.71	0.75	0.087	0.95	**8.2**	--	--	--	--	--
BRSW-13 (2007)	28	--	1.70	0.75	0.087	**2.3**	**20**	--	--	--	--	--
BRSW-110 (2007)	150	--	BB	0.75	0.087	BB	BB	--	--	--	--	--
BRSW-107 (2007 and 2008)	141	64	BB	0.75	0.087	BB	BB	BB	0.75	0.087	BB	BB
BRSW-31 (2007 and 2008)	136	61	BB	0.75	0.087	BB	BB	BB	0.75	0.087	BB	BB
BRSW-106 (2007 and 2008)	133	61	BB	0.75	0.087	BB	BB	BB	0.75	0.087	BB	BB
BRSW-105 (2007 and 2008)	136	59	BB	0.75	0.087	BB	BB	BB	0.75	0.087	BB	BB
BRSW-16 (2007 and 2008)	135	63	BB	0.75	0.087	BB	BB	BB	0.75	0.087	BB	BB
BRSW-104 (2007 and 2008)	134	60	BB	0.75	0.087	BB	BB	BB	0.75	0.087	BB	BB
BRSW-103 (2007 and 2008)	114	105	BB	0.75	0.087	BB	BB	BB	0.75	0.087	BB	BB
BRSW-17 (2007 and 2008)	118	71	BB	0.75	0.087	BB	BB	BB	0.75	0.087	BB	BB
BRSW-102 (2007 and 2008)	118	71	BB	0.75	0.087	BB	BB	BB	0.75	0.087	BB	BB
BRSW-101 (2007 and 2008)	119	72	BB	0.75	0.087	BB	BB	BB	0.75	0.087	BB	BB
BRSW-206 (2011)	109	--	BB	0.75	0.087	BB	BB	--	--	--	--	--
BRSW-205 (2011)	105	--	BB	0.75	0.087	BB	BB	--	--	--	--	--
BRSW-204 (2011)	122	--	BB	0.75	0.087	BB	BB	--	--	--	--	--
BRSW-203 (2011)	122	--	BB	0.75	0.087	BB	BB	--	--	--	--	--
BRSW-202 (2011)	121	--	BB	0.75	0.087	BB	BB	--	--	--	--	--
BRSW-201 (2011)	122	--	BB	0.75	0.087	BB	BB	--	--	--	--	--

TABLE D-14: SURFACE WATER CONCENTRATIONS AND HAZARD QUOTIENT SUMMARY TABLE, EU 13 - STREAM (Continued)
Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

	Arsenic - 2007 and 2011 (Low Flow Conditions)					Arsenic - 2008 (High Flow Conditions)				
POINT ID	Total Concentration - 2007 (mg/L)	Acute Aquatic Life Criterion[1] (mg/L)	Chronic Aquatic Life Criterion[1] (mg/L)	HQ Acute[2,3]	HQ Chronic[2,3]	Total Concentration - 2008 (mg/L)	Acute Aquatic Life Criterion[1] (mg/L)	Chronic Aquatic Life Criterion[1] (mg/L)	HQ Acute[2,3]	HQ Chronic[2,3]
Reference Sites										
BRSW-6 (2007 and 2008)	0.002	0.34	0.150	0.0059	0.013	0.003	0.34	0.150	0.0088	0.020
BRSW-11 (2007)	0.002	0.34	0.150	0.0059	0.013	--	--	--	--	--
Blackfoot River Surface Water										
BRSW-4 (2007)	BB	0.34	0.150	BB	BB	--	--	--	--	--
BRSW-4A (2008)	--	--	--	--	--	BB	0.34	0.150	BB	BB
BRSW-44 (2007 and 2008)	BB	0.34	0.150	BB	BB	BB	0.34	0.150	BB	BB
BRSW-23 (2007)	BB	0.34	0.150	BB	BB	--	--	--	--	--
BRSW-39A (2007)	BB	0.34	0.150	BB	BB	--	--	--	--	--
BRSW-29 (2007)	BB	0.34	0.150	BB	BB	--	--	--	--	--
AW-003A (2007)	BB	0.34	0.150	BB	BB	--	--	--	--	--
BRSW-109 (2007)	BB	0.34	0.150	BB	BB	--	--	--	--	--
BRSW-9 (2007)	BB	0.34	0.150	BB	BB	--	--	--	--	--
BRSW-108 (2007 and 2008)	BB	0.34	0.150	BB	BB	BB	0.34	0.150	BB	BB
BRSW-36 (2007)	BB	0.34	0.150	BB	BB	--	--	--	--	--
BRSW-33 (2007)	BB	0.34	0.150	BB	BB	--	--	--	--	--
BRSW-12 (2007)	BB	0.34	0.150	BB	BB	--	--	--	--	--
BRSW-21 (2007)	BB	0.34	0.150	BB	BB	--	--	--	--	--
BRSW-13 (2007)	BB	0.34	0.150	BB	BB	--	--	--	--	--
BRSW-110 (2007)	BB	0.34	0.150	BB	BB	--	--	--	--	--
BRSW-107 (2007 and 2008)	BB	0.34	0.150	BB	BB	BB	0.34	0.150	BB	BB
BRSW-31 (2007 and 2008)	BB	0.34	0.150	BB	BB	BB	0.34	0.150	BB	BB
BRSW-106 (2007 and 2008)	BB	0.34	0.150	BB	BB	BB	0.34	0.150	BB	BB
BRSW-105 (2007 and 2008)	BB	0.34	0.150	BB	BB	BB	0.34	0.150	BB	BB
BRSW-16 (2007 and 2008)	BB	0.34	0.150	BB	BB	BB	0.34	0.150	BB	BB
BRSW-104 (2007 and 2008)	BB	0.34	0.150	BB	BB	BB	0.34	0.150	BB	BB
BRSW-103 (2007 and 2008)	BB	0.34	0.150	BB	BB	BB	0.34	0.150	BB	BB
BRSW-17 (2007 and 2008)	BB	0.34	0.150	BB	BB	BB	0.34	0.150	BB	BB
BRSW-102 (2007 and 2008)	BB	0.34	0.150	BB	BB	BB	0.34	0.150	BB	BB
BRSW-101 (2007 and 2008)	BB	0.34	0.150	BB	BB	BB	0.34	0.150	BB	BB
BRSW-206 (2011)	BB	0.34	0.150	BB	BB	--	--	--	--	--
BRSW-205 (2011)	BB	0.34	0.150	BB	BB	--	--	--	--	--
BRSW-204 (2011)	BB	0.34	0.150	BB	BB	--	--	--	--	--
BRSW-203 (2011)	BB	0.34	0.150	BB	BB	--	--	--	--	--
BRSW-202 (2011)	BB	0.34	0.150	BB	BB	--	--	--	--	--
BRSW-201 (2011)	BB	0.34	0.150	BB	BB	--	--	--	--	--

TABLE D-14: SURFACE WATER CONCENTRATIONS AND HAZARD QUOTIENT SUMMARY TABLE, EU 13 - STREAM (Continued)
Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

	Cadmium - 2007 and 2011 (Low Flow Conditions)					Cadmium - 2008 (High Flow Conditions)				
POINT ID	Total Concentration - 2007 (mg/L)	Acute Aquatic Life Criterion[1] (mg/L)	Chronic Aquatic Life Criterion[1] (mg/L)	HQ Acute[2,3]	HQ Chronic[2,3]	Total Concentration - 2008 (mg/L)	Acute Aquatic Life Criterion[1] (mg/L)	Chronic Aquatic Life Criterion[1] (mg/L)	HQ Acute[2,3]	HQ Chronic[2,3]
Reference Sites										
BRSW-6 (2007 and 2008)	0.00008	0.0019	0.00025	0.041	0.32	0.00008	0.0012	0.00018	0.064	0.44
BRSW-11 (2007)	0.00008	0.0017	0.00023	0.046	0.34	--	--	--	--	--
Blackfoot River Surface Water										
BRSW-4 (2007)	0.0342	0.0037	0.00040	**9.3**	**85**	--	--	--	--	--
BRSW-4A (2008)	--	--	--	--	**77**	0.0204	0.0021	0.00027	**9.8**	**77**
BRSW-44 (2007 and 2008)	0.0199	0.0043	0.00045	**4.7**	**44**	0.0062	0.0020	0.00026	**3.0**	**24**
BRSW-23 (2007)	0.0033	0.0035	0.00039	0.95	**8.5**	--	--	--	--	--
BRSW-39A (2007)	0.0050	0.0037	0.00041	**1.3**	**12**	--	--	--	--	--
BRSW-29 (2007)	0.0043	0.0028	0.00033	**1.5**	**13**	--	--	--	--	--
AW-003A (2007)	0.0872	0.0087	0.00076	**10**	**120**	--	--	--	--	--
BRSW-109 (2007)	0.0063	0.0039	0.00042	**1.6**	**15**	--	--	--	--	--
BRSW-9 (2007)	0.0071	0.0044	0.00046	**1.6**	**16**	--	--	--	--	--
BRSW-108 (2007 and 2008)	0.0011	0.0008	0.00013	**1.3**	**8.2**	0.0004	0.0006	0.00011	0.65	**3.7**
BRSW-36 (2007)	0.0092	0.0048	0.00049	**1.9**	**19**	--	--	--	--	--
BRSW-33 (2007)	0.0058	0.0034	0.00038	**1.7**	**15**	--	--	--	--	--
BRSW-12 (2007)	0.0051	0.0034	0.00038	**1.5**	**14**	--	--	--	--	--
BRSW-21 (2007)	0.00012	0.0005	0.00010	0.22	**1.2**	--	--	--	--	--
BRSW-13 (2007)	0.0004	0.0006	0.00011	0.65	**3.6**	--	--	--	--	--
BRSW-110 (2007)	0.0032	0.0032	0.00037	0.98	**8.6**	--	--	--	--	--
BRSW-107 (2007 and 2008)	0.0023	0.0030	0.00035	0.75	**6.5**	0.0016	0.0014	0.00019	**1.2**	**8.4**
BRSW-31 (2007 and 2008)	0.0023	0.0029	0.00034	0.77	**6.6**	0.0015	0.0013	0.00019	**1.2**	**7.9**
BRSW-106 (2007 and 2008)	0.0019	0.0029	0.00033	0.68	**5.8**	0.0015	0.0013	0.00019	**1.1**	**7.8**
BRSW-105 (2007 and 2008)	0.0016	0.0029	0.00034	0.56	**4.8**	0.0014	0.0012	0.00018	**1.1**	**7.6**
BRSW-16 (2007 and 2008)	0.0014	0.0029	0.00034	0.47	**4**	0.0014	0.0013	0.00019	**1.1**	**7.3**
BRSW-104 (2007 and 2008)	0.0012	0.0029	0.00034	0.42	**3.6**	0.0013	0.0013	0.00019	**1.0**	**7.0**
BRSW-103 (2007 and 2008)	BB	0.0024	0.00030	BB	BB	0.0001	0.0022	0.00028	0.049	0.39
BRSW-17 (2007 and 2008)	BB	0.0025	0.00031	BB	BB	0.0005	0.0015	0.00021	0.35	**2.5**
BRSW-102 (2007 and 2008)	0.0011	0.0025	0.00031	0.42	**3.5**	0.0005	0.0015	0.00021	0.34	**2.4**
BRSW-101 (2007 and 2008)	0.0002	0.0025	0.00031	0.059	0.49	0.0005	0.0015	0.00021	0.33	**2.4**
BRSW-206 (2011)	0.0002	0.0023	0.00029	0.073	0.59	--	--	--	--	--
BRSW-205 (2011)	BB	0.0022	0.00028	BB	BB	--	--	--	--	--
BRSW-204 (2011)	BB	0.0026	0.00031	BB	BB	--	--	--	--	--
BRSW-203 (2011)	BB	0.0026	0.00031	BB	BB	--	--	--	--	--
BRSW-202 (2011)	BB	0.0026	0.00031	BB	BB	--	--	--	--	--
BRSW-201 (2011)	BB	0.0026	0.00031	BB	BB	--	--	--	--	--

TABLE D-14: SURFACE WATER CONCENTRATIONS AND HAZARD QUOTIENT SUMMARY TABLE, EU 13 - STREAM (Continued)
Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

	Copper - 2007 and 2011 (Low Flow Conditions)					Copper - 2008 (High Flow Conditions)				
POINT ID	Total Concentration - 2007 (mg/L)	Acute Aquatic Life Criterion[1] (mg/L)	Chronic Aquatic Life Criterion[1] (mg/L)	HQ Acute[2,3]	HQ Chronic[2,3]	Total Concentration - 2008 (mg/L)	Acute Aquatic Life Criterion[1] (mg/L)	Chronic Aquatic Life Criterion[1] (mg/L)	HQ Acute[2,3]	HQ Chronic[2,3]
Reference Sites										
BRSW-6 (2007 and 2008)	0.001	0.013	0.009	0.078	0.120	0.001	0.009	0.006	0.12	0.17
BRSW-11 (2007)	0.001	0.012	0.008	0.086	0.13	--	--	--	--	--
Blackfoot River Surface Water										
BRSW-4 (2007)	0.682	0.023	0.015	**30**	**46**	--	--	--	--	--
BRSW-4A (2008)	--	--	--	--	--	0.886	0.014	0.009	**65**	**97**
BRSW-44 (2007 and 2008)	0.093	0.027	0.017	**3.5**	**5.6**	0.085	0.013	0.009	**6.3**	**9.4**
BRSW-23 (2007)	0.014	0.022	0.014	0.64	**1.0**	--	--	--	--	--
BRSW-39A (2007)	0.009	0.023	0.015	0.38	0.60	--	--	--	--	--
BRSW-29 (2007)	0.006	0.018	0.012	0.33	0.51	--	--	--	--	--
AW-003A (2007)	0.226	0.052	0.030	**4.4**	**7.4**	--	--	--	--	--
BRSW-109 (2007)	0.015	0.025	0.016	0.61	0.96	--	--	--	--	--
BRSW-9 (2007)	0.018	0.027	0.017	0.66	**1.1**	--	--	--	--	--
BRSW-108 (2007 and 2008)	0.159	0.006	0.004	**28**	**38**	0.055	0.005	0.003	**12**	**16**
BRSW-36 (2007)	0.014	0.030	0.018	0.47	0.76	--	--	--	--	--
BRSW-33 (2007)	0.012	0.022	0.014	0.55	0.86	--	--	--	--	--
BRSW-12 (2007)	0.012	0.021	0.014	0.56	0.88	--	--	--	--	--
BRSW-21 (2007)	0.007	0.004	0.003	**1.8**	**2.4**	--	--	--	--	--
BRSW-13 (2007)	0.136	0.004	0.003	**32**	**43**	--	--	--	--	--
BRSW-110 (2007)	0.015	0.021	0.013	0.73	**1.1**	--	--	--	--	--
BRSW-107 (2007 and 2008)	0.027	0.019	0.013	**1.4**	**2.2**	0.013	0.009	0.006	**1.4**	**2.0**
BRSW-31 (2007 and 2008)	0.022	0.019	0.012	**1.2**	**1.8**	0.012	0.009	0.006	**1.4**	**2.0**
BRSW-106 (2007 and 2008)	0.015	0.018	0.012	0.82	**1.3**	0.012	0.009	0.006	**1.4**	**2.0**
BRSW-105 (2007 and 2008)	0.006	0.019	0.012	0.32	0.49	0.013	0.009	0.006	**1.5**	**2.2**
BRSW-16 (2007 and 2008)	0.005	0.019	0.012	0.27	0.41	0.010	0.009	0.006	**1.1**	**1.6**
BRSW-104 (2007 and 2008)	0.004	0.018	0.012	0.22	0.33	0.010	0.009	0.006	**1.2**	**1.7**
BRSW-103 (2007 and 2008)	0.002	0.016	0.010	0.13	0.19	0.004	0.015	0.010	0.27	0.41
BRSW-17 (2007 and 2008)	BB	0.016	0.011	BB	BB	0.003	0.010	0.007	0.30	0.43
BRSW-102 (2007 and 2008)	0.003	0.016	0.011	0.18	0.28	0.003	0.010	0.007	0.30	0.43
BRSW-101 (2007 and 2008)	BB	0.016	0.011	BB	BB	0.003	0.010	0.007	0.3	0.4
BRSW-206 (2011)	BB	0.015	0.010	BB	BB	--	--	--	--	--
BRSW-205 (2011)	BB	0.015	0.010	BB	BB	--	--	--	--	--
BRSW-204 (2011)	BB	0.017	0.011	BB	BB	--	--	--	--	--
BRSW-203 (2011)	BB	0.017	0.011	BB	BB	--	--	--	--	--
BRSW-202 (2011)	BB	0.017	0.011	BB	BB	--	--	--	--	--
BRSW-201 (2011)	BB	0.017	0.011	BB	BB	--	--	--	--	--

TABLE D-14: SURFACE WATER CONCENTRATIONS AND HAZARD QUOTIENT SUMMARY TABLE, EU 13 - STREAM (Continued)
Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

	Lead - 2007 and 2011 (Low Flow Conditions)					Lead - 2008 (High Flow Conditions)				
POINT ID	Total Concentration - 2007 (mg/L)	Acute Aquatic Life Criterion[1] (mg/L)	Chronic Aquatic Life Criterion[1] (mg/L)	HQ Acute[2,3]	HQ Chronic[2,3]	Total Concentration - 2008 (mg/L)	Acute Aquatic Life Criterion[1] (mg/L)	Chronic Aquatic Life Criterion[1] (mg/L)	HQ Acute[2,3]	HQ Chronic[2,3]
Reference Sites										
BRSW-6 (2007 and 2008)	0.0005	0.072	0.0028	0.0069	0.18	0.0005	0.042	0.0016	0.012	0.31
BRSW-11 (2007)	0.0005	0.063	0.0025	0.008	0.20	--	--	--	--	--
Blackfoot River Surface Water										
BRSW-4 (2007)	0.0481	0.160	0.0063	0.30	**7.7**	--	--	--	--	--
BRSW-4A (2008)	--	--	--	--	--	0.0798	0.080	0.0031	**1.0**	**26**
BRSW-44 (2007 and 2008)	0.0257	0.195	0.0076	0.13	**3.4**	0.0189	0.078	0.0030	0.24	**6.3**
BRSW-23 (2007)	0.0063	0.150	0.0058	0.042	**1.1**	--	--	--	--	--
BRSW-39A (2007)	0.0063	0.164	0.0064	0.038	0.99	--	--	--	--	--
BRSW-29 (2007)	0.0024	0.114	0.0044	0.021	0.54	--	--	--	--	--
AW-003A (2007)	BB	0.477	0.0186	BB	BB	--	--	--	--	--
BRSW-109 (2007)	0.0019	0.176	0.0069	0.011	0.28	--	--	--	--	--
BRSW-9 (2007)	0.0019	0.200	0.0078	0.010	0.24	--	--	--	--	--
BRSW-108 (2007 and 2008)	0.0012	0.025	0.0010	0.049	**1.3**	0.0010	0.018	0.0007	0.054	**1.4**
BRSW-36 (2007)	0.0013	0.224	0.0087	0.006	0.15	--	--	--	--	--
BRSW-33 (2007)	0.0031	0.149	0.0058	0.021	0.54	--	--	--	--	--
BRSW-12 (2007)	0.0019	0.144	0.0056	0.013	0.34	--	--	--	--	--
BRSW-21 (2007)	BB	0.015	0.0006	BB	BB	--	--	--	--	--
BRSW-13 (2007)	0.0062	0.016	0.0006	0.38	**9.9**	--	--	--	--	--
BRSW-110 (2007)	0.0156	0.137	0.0053	0.11	**2.9**	--	--	--	--	--
BRSW-107 (2007 and 2008)	0.0048	0.126	0.0049	0.038	0.97	0.0045	0.046	0.0018	0.10	**2.5**
BRSW-31 (2007 and 2008)	0.0055	0.121	0.0047	0.046	**1.2**	0.0042	0.044	0.0017	0.10	**2.5**
BRSW-106 (2007 and 2008)	0.0035	0.117	0.0046	0.030	0.77	0.0034	0.044	0.0017	0.078	**2.0**
BRSW-105 (2007 and 2008)	BB	0.121	0.0047	BB	BB	0.0040	0.042	0.0016	0.10	**2.5**
BRSW-16 (2007 and 2008)	0.0009	0.120	0.0047	0.008	0.19	0.0034	0.045	0.0018	0.075	**1.9**
BRSW-104 (2007 and 2008)	BB	0.119	0.0046	BB	BB	0.0037	0.043	0.0017	0.087	**2.2**
BRSW-103 (2007 and 2008)	0.0016	0.096	0.0038	0.017	0.43	0.0025	0.087	0.0034	0.029	0.74
BRSW-17 (2007 and 2008)	BB	0.101	0.0039	BB	BB	0.0006	0.053	0.0021	0.011	0.29
BRSW-102 (2007 and 2008)	0.0016	0.101	0.0039	0.016	0.41	0.0006	0.053	0.0021	0.011	0.29
BRSW-101 (2007 and 2008)	BB	0.102	0.0040	BB	BB	0.0006	0.054	0.0021	0.01	0.3
BRSW-206 (2011)	BB	0.091	0.0036	BB	BB	--	--	--	--	--
BRSW-205 (2011)	BB	0.087	0.0034	BB	BB	--	--	--	--	--
BRSW-204 (2011)	BB	0.105	0.0041	BB	BB	--	--	--	--	--
BRSW-203 (2011)	BB	0.105	0.0041	BB	BB	--	--	--	--	--
BRSW-202 (2011)	BB	0.104	0.0041	BB	BB	--	--	--	--	--
BRSW-201 (2011)	BB	0.105	0.0041	BB	BB	--	--	--	--	--

TABLE D-14: SURFACE WATER CONCENTRATIONS AND HAZARD QUOTIENT SUMMARY TABLE, EU 13 - STREAM (Continued)
Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

	Manganese - 2007 and 2011 (Low Flow Conditions)					Manganese - 2008 (High Flow Conditions)				
POINT ID	Total Concentration - 2007 (mg/L)	Acute Aquatic Life Criterion[1] (mg/L)	Chronic Aquatic Life Criterion[1] (mg/L)	HQ Acute[2,3,4]	HQ Chronic[2,3]	Total Concentration - 2008 (mg/L)	Acute Aquatic Life Criterion[1] (mg/L)	Chronic Aquatic Life Criterion[1] (mg/L)	HQ Acute[2,3]	HQ Chronic[2,3]
Reference Sites										
BRSW-6 (2007 and 2008)	0.003	2.3	0.12	0.0013	0.025		2.3	0.12	0.0022	0.042
BRSW-11 (2007)	0.126	2.3	0.12	0.055	**1.1**		--	--	--	--
Blackfoot River Surface Water										
BRSW-4 (2007)	1.39	2.3	0.12	0.6	**12**	--	--	--	--	--
BRSW-4A (2008)	--	--	--	--	--	1.19	2.3	0.12	0.52	**9.9**
BRSW-44 (2007 and 2008)	0.596	2.3	0.12	0.26	**5**	1.019	2.3	0.12	0.44	**8.5**
BRSW-23 (2007)	1.21	2.3	0.12	0.53	**10**	--	--	--	--	--
BRSW-39A (2007)	2.12	2.3	0.12	0.92	**18**	--	--	--	--	--
BRSW-29 (2007)	0.761	2.3	0.12	0.33	**6.3**	--	--	--	--	--
AW-003A (2007)	30.9	2.3	0.12	**13**	**260**	--	--	--	--	--
BRSW-109 (2007)	1.13	2.3	0.12	0.49	**9.4**	--	--	--	--	--
BRSW-9 (2007)	1.47	2.3	0.12	0.64	**12**	--	--	--	--	--
BRSW-108 (2007 and 2008)	0.374	2.3	0.12	0.16	**3.1**	0.137	2.3	0.12	0.060	**1.1**
BRSW-36 (2007)	1.31	2.3	0.12	0.57	**11**	--	--	--	--	--
BRSW-33 (2007)	0.341	2.3	0.12	0.15	**2.8**	--	--	--	--	--
BRSW-12 (2007)	0.33	2.3	0.12	0.14	**2.8**	--	--	--	--	--
BRSW-21 (2007)	0.30	2.3	0.12	0.13	**2.5**		--	--	--	--
BRSW-13 (2007)	0.354	2.3	0.12	0.15	**3**	--	--	--	--	--
BRSW-110 (2007)	0.278	2.3	0.12	0.12	**2.3**	--	--	--	--	--
BRSW-107 (2007 and 2008)	0.256	2.3	0.12	0.11	**2.1**	0.063	2.3	0.12	0.027	0.53
BRSW-31 (2007 and 2008)	0.273	2.3	0.12	0.12	**2.3**	0.055	2.3	0.12	0.024	0.46
BRSW-106 (2007 and 2008)	0.216	2.3	0.12	0.094	**1.8**	0.059	2.3	0.12	0.026	0.49
BRSW-105 (2007 and 2008)	0.139	2.3	0.12	0.06	**1.2**	0.051	2.3	0.12	0.022	0.43
BRSW-16 (2007 and 2008)	0.076	2.3	0.12	0.033	0.63	0.051	2.3	0.12	0.022	0.43
BRSW-104 (2007 and 2008)	0.039	2.3	0.12	0.017	0.33	0.05	2.3	0.12	0.022	0.42
BRSW-103 (2007 and 2008)	0.226	2.3	0.12	0.098	1.9	0.103	2.3	0.12	0.045	0.86
BRSW-17 (2007 and 2008)	0.111	2.3	0.12	0.048	0.93	0.019	2.3	0.12	0.0083	0.16
BRSW-102 (2007 and 2008)	0.012	2.3	0.12	0.0052	0.1	0.016	2.3	0.12	0.007	0.13
BRSW-101 (2007 and 2008)	0.004	2.3	0.12	0.0017	0.033	0.015	2.3	0.12	0.007	0.13
BRSW-206 (2011)	0.013	2.3	0.12	0.0057	0.11	--	--	--	--	--
BRSW-205 (2011)	0.007	2.3	0.12	0.003	0.058	--	--	--	--	--
BRSW-204 (2011)	0.008	2.3	0.12	0.0035	0.067	--	--	--	--	--
BRSW-203 (2011)	0.008	2.3	0.12	0.0035	0.067	--	--	--	--	--
BRSW-202 (2011)	0.003	2.3	0.12	0.0011	0.021	--	--	--	--	--
BRSW-201 (2011)	0.003	2.3	0.12	0.0011	0.021	--	--	--	--	--

TABLE D-14: SURFACE WATER CONCENTRATIONS AND HAZARD QUOTIENT SUMMARY TABLE, EU 13 - STREAM (Continued)
Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

	Zinc - 2007 and 2011 (Low Flow Conditions)					Zinc - 2008 (High Flow Conditions)				
POINT ID	Total Concentration - 2007 (mg/L)	Acute Aquatic Life Criterion[1] (mg/L)	Chronic Aquatic Life Criterion[1] (mg/L)	HQ Acute[2,3]	HQ Chronic[2,3]	Total Concentration - 2008 (mg/L)	Acute Aquatic Life Criterion[1] (mg/L)	Chronic Aquatic Life Criterion[1] (mg/L)	HQ Acute[2,3]	HQ Chronic[2,3]
Reference Sites										
BRSW-6 (2007 and 2008)	0.01	2.30	0.11	0.09	0.09	non-detect	2.30	0.08	0.13	0.13
BRSW-11 (2007)	0.01	2.30	0.10	0.10	0.10	--	--	--	--	--
Blackfoot River Surface Water										
BRSW-4 (2007)	4.01	2.30	0.19	**21**	**21**	--	--	--	--	--
BRSW-4A (2008)	--	--	--	--	--	0.00	2.30	0.12	**22**	**22**
BRSW-44 (2007 and 2008)	3.08	2.30	0.21	**14**	**14**	0.00	2.30	0.12	**9.6**	**9.6**
BRSW-23 (2007)	0.69	2.30	0.18	**3.8**	**3.8**	--	--	--	--	--
BRSW-39A (2007)	1.06	2.30	0.19	**5.6**	**5.6**	--	--	--	--	--
BRSW-29 (2007)	0.84	2.30	0.15	**5.6**	**5.6**	--	--	--	--	--
AW-003A (2007)	60.40	2.30	0.39	**160**	**160**	--	--	--	--	--
BRSW-109 (2007)	2.60	2.30	0.20	**13**	**13**	--	--	--	--	--
BRSW-9 (2007)	3.42	2.30	0.22	**16**	**16**	--	--	--	--	--
BRSW-108 (2007 and 2008)	0.22	2.30	0.05	**4.1**	**4.1**	0.00	2.30	0.04	**2.3**	**2.3**
BRSW-36 (2007)	3.61	2.30	0.23	**15**	**15**	--	--	--	--	--
BRSW-33 (2007)	1.67	2.30	0.18	**9.4**	**9.4**	--	--	--	--	--
BRSW-12 (2007)	1.75	2.30	0.17	**10**	**10**	--	--	--	--	--
BRSW-21 (2007)	0.06	2.30	0.04	**1.6**	**1.6**	--	--	--	--	--
BRSW-13 (2007)	0.07	2.30	0.04	**1.7**	**1.7**	--	--	--	--	--
BRSW-110 (2007)	1.04	2.30	0.17	**6.2**	**6.2**	--	--	--	--	--
BRSW-107 (2007 and 2008)	0.93	2.30	0.16	**5.8**	**5.8**	0.00	2.30	0.08	**5.1**	**5.1**
BRSW-31 (2007 and 2008)	0.81	2.30	0.16	**5.2**	**5.2**	0.00	2.30	0.08	**4.9**	**4.9**
BRSW-106 (2007 and 2008)	0.76	2.30	0.15	**5.0**	**5.0**	0.00	2.30	0.08	**4.9**	**4.9**
BRSW-105 (2007 and 2008)	0.72	2.30	0.16	**4.6**	**4.6**	0.00	2.30	0.08	**4.7**	**4.7**
BRSW-16 (2007 and 2008)	0.55	2.30	0.15	**3.6**	**3.6**	0.00	2.30	0.08	**5.2**	**5.2**
BRSW-104 (2007 and 2008)	0.52	2.30	0.15	**3.4**	**3.4**	0.00	2.30	0.08	**4.9**	**4.9**
BRSW-103 (2007 and 2008)	BB	2.30	0.13	BB	BB	0.00	2.30	0.12	0.24	0.24
BRSW-17 (2007 and 2008)	0.12	2.30	0.14	0.87	0.87	0.00	2.30	0.09	**2.6**	**2.6**
BRSW-102 (2007 and 2008)	0.10	2.30	0.14	0.73	0.73	0.00	2.30	0.09	**2.5**	**2.5**
BRSW-101 (2007 and 2008)	0.09	2.30	0.14	0.7	0.7	0.00	2.30	0.09	**2.6**	**2.6**
BRSW-110 (2007)	0.12	2.30	0.13	0.9	0.9	--	--	--	--	--
BRSW-110 (2007)	0.03	2.30	0.12	0.2	0.2	--	--	--	--	--
BRSW-110 (2007)	BB	2.30	0.14	BB	BB	--	--	--	--	--
BRSW-110 (2007)	BB	2.30	0.14	BB	BB	--	--	--	--	--
BRSW-110 (2007)	0.02	2.30	0.14	0.14	0.14	--	--	--	--	--
BRSW-110 (2007)	BB	2.30	0.14	BB	BB	--	--	--	--	--

Notes:

Bold values indicate an HQ greater than 1.0.

Results are presented in upstream-to-downstream order by sampling year.

1 The acute and chronic water quality criteria are from Montana Department of Environmental Quality (2010). Acute and chronic water quality criteria for cadmium, copper, and zinc a

2 HQs were not calculated for detected and non-detected surface water concentrations measured below the minimum reference site concentration for the corresponding year, as indicated by BB. For results that were measured at less than the detection limit, hazard quotients were calculated using half of the detection limit.

3 HQs were calculated using the following equation: HQ = surface water concentrations/acute water quality criteria or HQ = surface water concentrations/chronic water quality criteria

4 The acute aquatic life criterion for manganese is a secondary acute value, a conservative estimate of water quality criteria for chemicals for which available data are insufficient to d

-- Not evaluated
BB Below minimum background reference site concentration
$CaCO_3$ Calcium carbonate
EU Exposure Unit
HQ Hazard quotient
ID Identification
mg/L Milligrams per liter

Sources: Montana Department of Environmental Quality. 2010. Circular DEQ-7. Montana Numeric Water Quality Standards. August.

APPENDIX E
PRELIMINARY ECOLOGICAL REMEDIAL GOALS CALCULATIONS

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E-1 Site-Specific Ecological Remediation Goal Back-Calculations for EU 1 – Upper Anaconda Mine Waste Removal Areas and Waste Piles

E-2 Site-Specific Ecological Remediation Goal Back-Calculations for EU 2 – Blackfoot River Dispersed Tailings Associated with EE/CA Removal Action Area and Overbank Deposits

E-3 Site-Specific Ecological Remediation Goal Back-Calculations for EU 3 – Capital Mine Waste Area

E-4 Site-Specific Ecological Remediation Goal Back-Calculations for EU 4 – Carbonate Mine Waste Area

E-5 Site-Specific Ecological Remediation Goal Back-Calculations for EU 5 – Edith Mine Waste Areas

E-6 Site-Specific Ecological Remediation Goal Back-Calculations for EU 6 – Consolation Mine Waste Area

E-7 Site-Specific Ecological Remediation Goal Back-Calculations for EU 7 – Mary P. Mine Waste Pile

E-8 Site-Specific Ecological Remediation Goal Back-Calculations for EU 8 – Mike Horse Mine Waste Piles

E-9 Site-Specific Ecological Remediation Goal Back-Calculations for EU 9 – Paymaster Mine Waste Areas

E-10 Site-Specific Ecological Remediation Goal Back-Calculations for EU 10 – Number 3 Tunnel Waste Area

E-11 Site-Specific Ecological Remediation Goal Back-Calculations for EU 11 – Beartrap Creek Dispersed Tailings Deposits Associated with EE/CA Removal Action Area and Overbank Tailings Deposits and Flossie Louise Mine Waste Pile

E-12 Site-Specific Ecological Remediation Goal Back-Calculations for EU 12 – Upper Marsh, Terrestrial and Wetland Receptors

E-13 Site-Specific Ecological Remediation Goal Back-Calculations for EU 13 – Stream

TABLE E-1: SITE-SPECIFIC ECOLOGICAL REMEDIATION GOAL BACK-CALCULATIONS FOR EU 1 - UPPER ANACONDA MINE WASTE REMOVAL AREAS AND WASTE PILES

Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

Ecological Receptor/Chemical of Ecological Concern	Total Prey Ingestion Rate[1] (kg/day)	Plant Ingestion Rate[1] (kg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Plant BAF[2] (kg dry soil/kg dry tissue)	Invertebrate BAF[2] (kg dry soil/kg dry tissue)	Mammal BAF[2] (kg dry soil/kg dry tissue)	Soil Ingestion Rate [1] (kg/day)	SUF[3]	Body Weight[1] (kilogram)	TRV[4] (mg/kg/day)	Test Species Body Weight[4] (kilogram)	Allometrically Adjusted TRV[5,6] (mg/kg/day)	Risk-Based Ecological Goal[7] (mg/kg)
Site Area (Hectares)	**2.95**													
Mourning Dove														
Arsenic	0.006	0.006	NA	NA	0.00	NA	NA	0.0005	0.011	0.109	22.01	1.17	13.69	240,000
Cadmium	0.006	0.006	NA	NA	1.26	NA	NA	0.0005	0.011	0.109	1.00	1.13	0.63	770
Copper	0.006	0.006	NA	NA	0.78	NA	NA	0.0005	0.011	0.109	52.26	0.41	40.13	77,000
Lead	0.006	0.006	NA	NA	0.04	NA	NA	0.0005	0.011	0.109	8.75	0.80	5.88	72,000
Manganese	0.006	0.006	NA	NA	0.33	NA	NA	0.0005	0.011	0.109	776.00	0.197	689.98	2,700,000
Zinc	0.006	0.006	NA	NA	1.41	NA	NA	0.0005	0.011	0.109	172.00	0.96	111.47	120,000
Red-Tailed Hawk														
Arsenic	0.090	NA	NA	0.090	NA	NA	0.48	0.005	0.004	1.134	22.01	1.17	21.86	120,000
Cadmium	0.090	NA	NA	0.090	NA	NA	0.00	0.005	0.004	1.134	1.00	1.13	1.00	52,000
Copper	0.090	NA	NA	0.090	NA	NA	0.66	0.005	0.004	1.134	52.26	0.41	64.08	270,000
Lead	0.090	NA	NA	0.090	NA	NA	0.08	0.005	0.004	1.134	8.75	0.80	9.38	210,000
Manganese	0.090	NA	NA	0.090	NA	NA	0.06	0.005	0.004	1.134	776.00	0.197	1101.76	28,000,000
Zinc	0.090	NA	NA	0.090	NA	NA	10.3	0.005	0.004	1.134	172.00	0.96	178.00	51,000
American Kestrel														
Arsenic	0.014	NA	0.014	NA	NA	2.55	NA	0.0008	0.011	0.124	22.01	1.17	14.04	4,300
Cadmium	0.014	NA	0.014	NA	NA	7.00	NA	0.0008	0.011	0.124	1.00	1.13	0.64	73
Copper	0.014	NA	0.014	NA	NA	3.70	NA	0.0008	0.011	0.124	52.26	0.41	41.16	8,700
Lead	0.014	NA	0.014	NA	NA	1.55	NA	0.0008	0.011	0.124	8.75	0.80	6.03	3,000
Manganese	0.014	NA	0.014	NA	NA	1.48	NA	0.0008	0.011	0.124	776.00	0.197	707.74	370,000
Zinc	0.014	NA	0.014	NA	NA	8.31	NA	0.0008	0.011	0.124	172.00	0.96	114.34	11,000
Meadow Vole														
Arsenic	0.005	0.005	NA	NA	0.00	NA	NA	0.0001	1.00	0.031	4.70	0.110	5.1	1,400
Cadmium	0.005	0.005	NA	NA	1.26	NA	NA	0.0001	1.00	0.031	2.64	0.031	2.6	13
Copper	0.005	0.005	NA	NA	0.78	NA	NA	0.0001	1.00	0.031	632	0.025	623.5	5,100
Lead	0.005	0.005	NA	NA	0.04	NA	NA	0.0001	1.00	0.031	241	0.019	233.6	23,000
Manganese	0.005	0.005	NA	NA	0.33	NA	NA	0.0001	1.00	0.031	159	0.0297	158.8	2,900
Zinc	0.005	0.005	NA	NA	1.41	NA	NA	0.0001	1.00	0.031	411	0.175	456.8	2,100
White-Tailed Deer														
Arsenic	1.43	1.43	NA	NA	0.00	NA	NA	0.029	0.02	135	4.70	0.110	3.1	880,000
Cadmium	1.43	1.43	NA	NA	1.26	NA	NA	0.029	0.02	135	2.64	0.031	1.6	7,200
Copper	1.43	1.43	NA	NA	0.78	NA	NA	0.029	0.02	135	632	0.025	376.9	2,700,000
Lead	1.43	1.43	NA	NA	0.04	NA	NA	0.029	0.02	135	241	0.019	141.2	13,000,000
Manganese	1.43	1.43	NA	NA	0.33	NA	NA	0.029	0.02	135	159	0.0297	96.0	1,500,000
Zinc	1.43	1.43	NA	NA	1.41	NA	NA	0.029	0.02	135	411	0.175	276.1	1,100,000

TABLE E-1: SITE-SPECIFIC ECOLOGICAL REMEDIATION GOAL BACK-CALCULATIONS FOR EU 1 - UPPER ANACONDA MINE WASTE REMOVAL AREAS AND WASTE PILES (Continued)

Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

Ecological Receptor/Chemical of Ecological Concern	Total Prey Ingestion Rate[1] (kg/day)	Plant Ingestion Rate[1] (kg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Plant BAF[2] (kg dry soil/kg dry tissue)	Invertebrate BAF[2] (kg dry soil/kg dry tissue)	Mammal BAF[2] (kg dry soil/kg dry tissue)	Soil Ingestion Rate [1] (kg/day)	SUF[3]	Body Weight[1] (kilogram)	TRV[4] (mg/kg/day)	Test Species Body Weight[4] (kilogram)	Allometrically Adjusted TRV[5,6] (mg/kg/day)	Risk-Based Ecological Goal[7] (mg/kg)
Site Area (Hectares)	**2.95**													
Red Fox														
Arsenic	0.172	NA	NA	0.17	NA	NA	0.48	0.005	0.002	4.54	4.70	0.110	3.8	89,000
Cadmium	0.172	NA	NA	0.17	NA	NA	0.00	0.005	0.002	4.54	2.64	0.031	2.0	850,000
Copper	0.172	NA	NA	0.17	NA	NA	0.66	0.005	0.002	4.54	632	0.025	461.9	8,100,000
Lead	0.172	NA	NA	0.17	NA	NA	0.08	0.005	0.002	4.54	241	0.019	173.1	20,000,000
Manganese	0.172	NA	NA	0.17	NA	NA	0.06	0.005	0.002	4.54	159	0.0297	117.7	16,000,000
Zinc	0.172	NA	NA	0.17	NA	NA	10.35	0.005	0.002	4.54	411	0.175	338.4	400,000
Masked Shrew														
Arsenic	0.01	NA	0.01	NA	NA	2.55	NA	0.0011	1.00	0.01	4.70	0.11	5.63	1.4
Cadmium	0.01	NA	0.01	NA	NA	7.00	NA	0.0011	1.00	0.01	2.64	0.03	2.93	0.27
Copper	0.01	NA	0.01	NA	NA	3.70	NA	0.0011	1.00	0.01	631.58	0.02	691.14	120
Lead	0.01	NA	0.01	NA	NA	1.55	NA	0.0011	1.00	0.01	240.64	0.02	258.97	100
Manganese	0.01	NA	0.01	NA	NA	1.48	NA	0.0011	1.00	0.01	159.09	0.0297	176.03	71
Zinc	0.01	NA	0.01	NA	NA	8.31	NA	0.0011	1.00	0.01	411.43	0.18	506.36	39

Notes:

1 See Tables 3-1 through 3-13 for ingestion rates, foraging ranges used to calculate the SUF, and body weights.
2 BAFs were calculated by dividing site-collected tissue by collocated soil concentrations (BAFs are in dry weight). The maximum BAF from the terrestrial reference site was used for risk-based ecological goal calculations.
3 SUF based on site area divided by the foraging range of receptors (see note 1). SUFs for receptors with foraging ranges smaller than the site area are assumed to be 1.
4 The derivation of TRVs is described in Navy (1988) and DTSC (2009). The high TRV was used to calculate the risk-based ecological goal.
5 Allometrically adjusted TRVs for avian receptors were calculated using the following equation: Receptor Species TRV = (test species TRV) x (test species body weight / receptor species body weight)$^{(1-1.2)}$.
6 Allometrically adjusted TRVs for mammalian receptors were calculated using the following equation: Receptor Species TRV = (test species TRV) x (test species body weight / receptor species body weight)$^{(1-0.94)}$.
7 Site-specific goals were back-calculated using the following equation: Goal = [(allometrically adjusted TRV / SUF) * BW] / [IR_{soil} + (BAF_{food} * IR_{food})]. Values are reported to two significant figures.

BAF	Bioaccumulation factor	IR	Ingestion rate	NA	Not applicable
BW	Body weight	kg/day	Kilogram per day	Navy	Department of the Navy
DTSC	California Department of Toxic Substance Control	mg/kg	Milligram per kilogram	SUF	Site use factor
EU	Exposure Unit	mg/kg/day	Milligram per kilogram per day	TRV	Toxicity reference value

References:
Department of the Navy. 1998. "Development of Toxicity Reference Values for Conducting Ecological Risk Assessments at Naval Facilities in California, Interim Final." Prepared by Naval Facilities Engineering Command, Engineering Field Activity West (EFA West). San Bruno, California.

DTSC. 2009. HERD Ecological Risk Assessment Note 6. February. Available on-line at: http://www.dtsc.ca.gov/AssessingRisk/upload/CdEconote_Final.pdf.

TABLE E-2: SITE-SPECIFIC ECOLOGICAL REMEDIATION GOAL BACK-CALCULATIONS FOR EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND DISPERSED TAILINGS AND OVERBANK DEPOSITS

Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

Ecological Receptor/Chemical of Ecological Concern	Total Prey Ingestion Rate[1] (kg/day)	Plant Ingestion Rate[1] (kg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Plant BAF[2] (kg dry soil/kg dry tissue)	Invertebrate BAF[2] (kg dry soil/kg dry tissue)	Mammal BAF[2] (kg dry soil/kg dry tissue)	Soil Ingestion Rate [1] (kg/day)	SUF[3]	Body Weight[1] (kilogram)	TRV[4] (mg/kg/day)	Test Species Body Weight[4] (kilogram)	Allometrically Adjusted TRV[5,6] (mg/kg/day)	Risk-Based Ecological Goal[7] (mg/kg)
Site Area (Hectares)	**18.41**													
Mourning Dove														
Arsenic	0.006	0.006	NA	NA	0.00	NA	NA	0.0005	0.071	0.109	22.01	1.17	13.69	39,000
Cadmium	0.006	0.006	NA	NA	1.26	NA	NA	0.0005	0.071	0.109	1.00	1.13	0.63	120
Copper	0.006	0.006	NA	NA	0.78	NA	NA	0.0005	0.071	0.109	52.26	0.41	40.13	12,000
Lead	0.006	0.006	NA	NA	0.04	NA	NA	0.0005	0.071	0.109	8.75	0.80	5.88	11,000
Manganese	0.006	0.006	NA	NA	0.33	NA	NA	0.0005	0.071	0.109	776.00	0.197	689.98	430,000
Zinc	0.006	0.006	NA	NA	1.41	NA	NA	0.0005	0.071	0.109	172.00	0.96	111.47	20,000
Red-Tailed Hawk														
Arsenic	0.090	NA	NA	0.090	NA	NA	0.48	0.005	0.026	1.134	22.01	1.17	21.86	19,000
Cadmium	0.090	NA	NA	0.090	NA	NA	0.00	0.005	0.026	1.134	1.00	1.13	1.00	8,400
Copper	0.090	NA	NA	0.090	NA	NA	0.66	0.005	0.026	1.134	52.26	0.41	64.08	43,000
Lead	0.090	NA	NA	0.090	NA	NA	0.08	0.005	0.026	1.134	8.75	0.80	9.38	34,000
Manganese	0.090	NA	NA	0.090	NA	NA	0.06	0.005	0.026	1.134	776.00	0.197	1101.76	4,500,000
Zinc	0.090	NA	NA	0.090	NA	NA	10.3	0.005	0.026	1.134	172.00	0.96	178.00	8,200
American Kestrel														
Arsenic	0.014	NA	0.014	NA	NA	2.55	NA	0.0008	0.070	0.124	22.01	1.17	14.04	690
Cadmium	0.014	NA	0.014	NA	NA	7.00	NA	0.0008	0.070	0.124	1.00	1.13	0.64	12
Copper	0.014	NA	0.014	NA	NA	3.70	NA	0.0008	0.070	0.124	52.26	0.41	41.16	1,400
Lead	0.014	NA	0.014	NA	NA	1.55	NA	0.0008	0.070	0.124	8.75	0.80	6.03	480
Manganese	0.014	NA	0.014	NA	NA	1.48	NA	0.0008	0.070	0.124	776.00	0.197	707.74	59,000
Zinc	0.014	NA	0.014	NA	NA	8.31	NA	0.0008	0.070	0.124	172.00	0.96	114.34	1,700
Meadow Vole														
Arsenic	0.005	0.005	NA	NA	0.00	NA	NA	0.0001	1.00	0.031	4.70	0.110	5.1	1,400
Cadmium	0.005	0.005	NA	NA	1.26	NA	NA	0.0001	1.00	0.031	2.64	0.031	2.6	13
Copper	0.005	0.005	NA	NA	0.78	NA	NA	0.0001	1.00	0.031	632	0.025	623.5	5,100
Lead	0.005	0.005	NA	NA	0.04	NA	NA	0.0001	1.00	0.031	241	0.019	233.6	23,000
Manganese	0.005	0.005	NA	NA	0.33	NA	NA	0.0001	1.00	0.031	159	0.0297	158.8	2,900
Zinc	0.005	0.005	NA	NA	1.41	NA	NA	0.0001	1.00	0.031	411	0.175	456.8	2,100
White-Tailed Deer														
Arsenic	1.43	1.43	NA	NA	0.00	NA	NA	0.029	0.10	135	4.70	0.110	3.1	140,000
Cadmium	1.43	1.43	NA	NA	1.26	NA	NA	0.029	0.10	135	2.64	0.031	1.6	1,100
Copper	1.43	1.43	NA	NA	0.78	NA	NA	0.029	0.10	135	632	0.025	376.9	430,000
Lead	1.43	1.43	NA	NA	0.04	NA	NA	0.029	0.10	135	241	0.019	141.2	2,000,000
Manganese	1.43	1.43	NA	NA	0.33	NA	NA	0.029	0.10	135	159	0.0297	96.0	250,000
Zinc	1.43	1.43	NA	NA	1.41	NA	NA	0.029	0.10	135	411	0.175	276.1	180,000

TABLE E-2: SITE-SPECIFIC ECOLOGICAL REMEDIATION GOAL BACK-CALCULATIONS FOR EU 2 - BLACKFOOT RIVER DISPERSED TAILINGS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND DISPERSED TAILINGS AND OVERBANK DEPOSITS (Continued)

Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

Ecological Receptor/Chemical of Ecological Concern	Total Prey Ingestion Rate[1] (kg/day)	Plant Ingestion Rate[1] (kg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Plant BAF[2] (kg dry soil/kg dry tissue)	Invertebrate BAF[2] (kg dry soil/kg dry tissue)	Mammal BAF[2] (kg dry soil/kg dry tissue)	Soil Ingestion Rate [1] (kg/day)	SUF[3]	Body Weight[1] (kilogram)	TRV[4] (mg/kg/day)	Test Species Body Weight[4] (kilogram)	Allometrically Adjusted TRV[5,6] (mg/kg/day)	Risk-Based Ecological Goal[7] (mg/kg)
Site Area (Hectares)	**18.41**													
Red Fox														
Arsenic	0.172	NA	NA	0.17	NA	NA	0.48	0.005	0.014	4.54	4.70	0.110	3.8	14,000
Cadmium	0.172	NA	NA	0.17	NA	NA	0.00	0.005	0.014	4.54	2.64	0.031	2.0	140,000
Copper	0.172	NA	NA	0.17	NA	NA	0.66	0.005	0.014	4.54	632	0.025	461.9	1,300,000
Lead	0.172	NA	NA	0.17	NA	NA	0.08	0.005	0.014	4.54	241	0.019	173.1	3,200,000
Manganese	0.172	NA	NA	0.17	NA	NA	0.06	0.005	0.014	4.54	159	0.0297	117.7	2,600,000
Zinc	0.172	NA	NA	0.17	NA	NA	10.35	0.005	0.014	4.54	411	0.175	338.4	63,000
Masked Shrew														
Arsenic	0.01	NA	0.01	NA	NA	2.55	NA	0.0011	1.00	0.01	4.70	0.11	5.63	1.4
Cadmium	0.01	NA	0.01	NA	NA	7.00	NA	0.0011	1.00	0.01	2.64	0.03	2.93	0.27
Copper	0.01	NA	0.01	NA	NA	3.70	NA	0.0011	1.00	0.01	631.58	0.02	691.14	120
Lead	0.01	NA	0.01	NA	NA	1.55	NA	0.0011	1.00	0.01	240.64	0.02	258.97	100
Manganese	0.01	NA	0.01	NA	NA	1.48	NA	0.0011	1.00	0.01	159.09	0.0297	176.03	71
Zinc	0.01	NA	0.01	NA	NA	8.31	NA	0.0011	1.00	0.01	411.43	0.18	506.36	39

Notes:

1 See Tables 3-1 through 3-13 for ingestion rates, foraging ranges used to calculate the SUF, and body weights.
2 BAFs were calculated by dividing site-collected tissue by collocated soil concentrations (BAFs are in dry weight). The maximum BAF from the terrestrial reference site was used for risk-based ecological goal calculations.
3 SUF based on site area divided by the foraging range of receptors (see note 1). SUFs for receptors with foraging ranges smaller than the site area are assumed to be 1.
4 The derivation of TRVs is described in Navy (1988) and DTSC (2009). The high TRV was used to calculate the risk-based ecological goal.
5 Allometrically adjusted TRVs for avian receptors were calculated using the following equation: Receptor Species TRV = (test species TRV) x (test species body weight / receptor species body weight)$^{(1-1.2)}$.
6 Allometrically adjusted TRVs for mammalian receptors were calculated using the following equation: Receptor Species TRV = (test species TRV) x (test species body weight / receptor species body weight$^{(1-0.94)}$.
7 Site-specific goals were back-calculated using the following equation: Goal = [(allometrically adjusted TRV / SUF) * BW] / [IR_{soil} + (BAF_{food} * IR_{food})]. Values are reported to two significant figures.

BAF	Bioaccumulation factor	IR	Ingestion rate	NA	Not applicable
BW	Body weight	kg/day	Kilogram per day	Navy	Department of the Navy
DTSC	California Department of Toxic Substance Control	mg/kg	Milligram per kilogram	SUF	Site use factor
EE/CA	Engineering Evaluation/Cost Analysis	mg/kg/day	Milligram per kilogram per day	TRV	Toxicity reference value
EU	Exposure Unit				

References:

Department of the Navy. 1998. "Development of Toxicity Reference Values for Conducting Ecological Risk Assessments at Naval Facilities in California, Interim Final." Prepared by Naval Facilities Engineering Command, Engineering Field Activity West (EFA West). San Bruno, California.

DTSC. 2009. HERD Ecological Risk Assessment Note 6. February. Available on-line at: http://www.dtsc.ca.gov/AssessingRisk/upload/CdEconote_Final.pdf.

TABLE E-3: SITE-SPECIFIC ECOLOGICAL REMEDIATION GOAL BACK-CALCULATIONS FOR EU 3 - CAPITOL MINE WASTE AREA
Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

Ecological Receptor/Chemical of Ecological Concern	Total Prey Ingestion Rate[1] (kg/day)	Plant Ingestion Rate[1] (kg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Plant BAF[2] (kg dry soil/kg dry tissue)	Invertebrate BAF[2] (kg dry soil/kg dry tissue)	Mammal BAF[2] (kg dry soil/kg dry tissue)	Soil Ingestion Rate [1] (kg/day)	SUF[3]	Body Weight[1] (kilogram)	TRV[4] (mg/kg/day)	Test Species Body Weight[4] (kilogram)	Allometrically Adjusted TRV[5,6] (mg/kg/day)	Risk-Based Ecological Goal[7] (mg/kg)
Site Area (Hectares)	**0.13**													
Mourning Dove														
Arsenic	0.006	0.006	NA	NA	0.00	NA	NA	0.0005	0.0005	0.109	22.01	1.17	13.69	5,600,000
Cadmium	0.006	0.006	NA	NA	1.26	NA	NA	0.0005	0.0005	0.109	1.00	1.13	0.63	18,000
Copper	0.006	0.006	NA	NA	0.78	NA	NA	0.0005	0.0005	0.109	52.26	0.41	40.13	1,700,000
Lead	0.006	0.006	NA	NA	0.04	NA	NA	0.0005	0.0005	0.109	8.75	0.80	5.88	1,600,000
Manganese	0.006	0.006	NA	NA	0.33	NA	NA	0.0005	0.0005	0.109	776.00	0.197	689.98	61,000,000
Zinc	0.006	0.006	NA	NA	1.41	NA	NA	0.0005	0.0005	0.109	172.00	0.96	111.47	2,800,000
Red-Tailed Hawk														
Arsenic	0.090	NA	NA	0.090	NA	NA	0.48	0.005	0.00019	1.134	22.01	1.17	21.86	2,700,000
Cadmium	0.090	NA	NA	0.090	NA	NA	0.00	0.005	0.00019	1.134	1.00	1.13	1.00	1200000
Copper	0.090	NA	NA	0.090	NA	NA	0.66	0.005	0.00019	1.134	52.26	0.41	64.08	6000000
Lead	0.090	NA	NA	0.090	NA	NA	0.08	0.005	0.00019	1.134	8.75	0.80	9.38	4800000
Manganese	0.090	NA	NA	0.090	NA	NA	0.06	0.005	0.00019	1.134	776.00	0.197	1101.76	640000000
Zinc	0.090	NA	NA	0.090	NA	NA	10.3	0.005	0.00019	1.134	172.00	0.96	178.00	1200000
American Kestrel														
Arsenic	0.014	NA	0.014	NA	NA	2.55	NA	0.0008	0.00050	0.124	22.01	1.17	14.04	98000
Cadmium	0.014	NA	0.014	NA	NA	7.00	NA	0.0008	0.00050	0.124	1.00	1.13	0.64	1700
Copper	0.014	NA	0.014	NA	NA	3.70	NA	0.0008	0.00050	0.124	52.26	0.41	41.16	200000
Lead	0.014	NA	0.014	NA	NA	1.55	NA	0.0008	0.00050	0.124	8.75	0.80	6.03	68000
Manganese	0.014	NA	0.014	NA	NA	1.48	NA	0.0008	0.00050	0.124	776.00	0.197	707.74	8400000
Zinc	0.014	NA	0.014	NA	NA	8.31	NA	0.0008	0.00050	0.124	172.00	0.96	114.34	250000
Meadow Vole														
Arsenic	0.005	0.005	NA	NA	0.00	NA	NA	0.0001	1.00	0.031	4.70	0.110	5.1	1,400
Cadmium	0.005	0.005	NA	NA	1.26	NA	NA	0.0001	1.00	0.031	2.64	0.031	2.6	13
Copper	0.005	0.005	NA	NA	0.78	NA	NA	0.0001	1.00	0.031	632	0.025	623.5	5,100
Lead	0.005	0.005	NA	NA	0.04	NA	NA	0.0001	1.00	0.031	241	0.019	233.6	23,000
Manganese	0.005	0.005	NA	NA	0.33	NA	NA	0.0001	1.00	0.031	159	0.0297	158.8	2,900
Zinc	0.005	0.005	NA	NA	1.41	NA	NA	0.0001	1.00	0.031	411	0.175	456.8	2,100
White-Tailed Deer														
Arsenic	1.43	1.43	NA	NA	0.00	NA	NA	0.029	0.0007	135	4.70	0.110	3.1	20,000,000
Cadmium	1.43	1.43	NA	NA	1.26	NA	NA	0.029	0.0007	135	2.64	0.031	1.6	160,000
Copper	1.43	1.43	NA	NA	0.78	NA	NA	0.029	0.0007	135	632	0.025	376.9	61,000,000
Lead	1.43	1.43	NA	NA	0.04	NA	NA	0.029	0.0007	135	241	0.019	141.2	290,000,000
Manganese	1.43	1.43	NA	NA	0.33	NA	NA	0.029	0.0007	135	159	0.0297	96.0	35,000,000
Zinc	1.43	1.43	NA	NA	1.41	NA	NA	0.029	0.0007	135	411	0.175	276.1	25,000,000

TABLE E-3: SITE-SPECIFIC ECOLOGICAL REMEDIATION GOAL BACK-CALCULATIONS FOR EU 3 - CAPITOL MINE WASTE AREA (Continued)
Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

Ecological Receptor/Chemical of Ecological Concern	Total Prey Ingestion Rate[1] (kg/day)	Plant Ingestion Rate[1] (kg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Plant BAF[2] (kg dry soil/kg dry tissue)	Invertebrate BAF[2] (kg dry soil/kg dry tissue)	Mammal BAF[2] (kg dry soil/kg dry tissue)	Soil Ingestion Rate [1] (kg/day)	SUF[3]	Body Weight[1] (kilogram)	TRV[4] (mg/kg/day)	Test Species Body Weight[4] (kilogram)	Allometrically Adjusted TRV[5,6] (mg/kg/day)	Risk-Based Ecological Goal[7] (mg/kg)
Site Area (Hectares)	**0.13**													
Red Fox														
Arsenic	0.172	NA	NA	0.17	NA	NA	0.48	0.005	0.00010	4.54	4.70	0.110	3.8	2,000,000
Cadmium	0.172	NA	NA	0.17	NA	NA	0.00	0.005	0.00010	4.54	2.64	0.031	2.0	19,000,000
Copper	0.172	NA	NA	0.17	NA	NA	0.66	0.005	0.00010	4.54	632	0.025	461.9	180,000,000
Lead	0.172	NA	NA	0.17	NA	NA	0.08	0.005	0.00010	4.54	241	0.019	173.1	460,000,000
Manganese	0.172	NA	NA	0.17	NA	NA	0.06	0.005	0.00010	4.54	159	0.0297	117.7	370,000,000
Zinc	0.172	NA	NA	0.17	NA	NA	10.35	0.005	0.00010	4.54	411	0.175	338.4	9,000,000
Masked Shrew														
Arsenic	0.01	NA	0.01	NA	NA	2.55	NA	0.0011	0.33	0.01	4.70	0.11	5.63	4
Cadmium	0.01	NA	0.01	NA	NA	7.00	NA	0.0011	0.33	0.01	2.64	0.03	2.93	0.82
Copper	0.01	NA	0.01	NA	NA	3.70	NA	0.0011	0.33	0.01	631.58	0.02	691.14	360
Lead	0.01	NA	0.01	NA	NA	1.55	NA	0.0011	0.33	0.01	240.64	0.02	258.97	310
Manganese	0.01	NA	0.01	NA	NA	1.48	NA	0.0011	0.33	0.01	159.09	0.0297	176.03	220
Zinc	0.01	NA	0.01	NA	NA	8.31	NA	0.0011	0.33	0.01	411.43	0.18	506.36	120

Notes:
1 See Tables 3-1 through 3-13 for ingestion rates, foraging ranges used to calculate the SUF, and body weights.
2 BAFs were calculated by dividing site-collected tissue by collocated soil concentrations (BAFs are in dry weight). The maximum BAF from the terrestrial reference site was used for risk-based ecological goal calculations.
3 SUF based on site area divided by the foraging range of receptors (see note 1). SUFs for receptors with foraging ranges smaller than the site area are assumed to be 1.
4 The derivation of TRVs is described in Navy (1988) and DTSC (2009). The high TRV was used to calculate the risk-based ecological goal.
5 Allometrically adjusted TRVs for avian receptors were calculated using the following equation: Receptor Species TRV = (test species TRV) x (test species body weight / receptor species body weight)$^{(1-1.2)}$.
6 Allometrically adjusted TRVs for mammalian receptors were calculated using the following equation: Receptor Species TRV = (test species TRV) x (test species body weight / receptor species body weight$^{(1-0.94)}$.
7 Site-specific goals were back-calculated using the following equation: Goal = [(allometrically adjusted TRV / SUF) * BW] / [IR_{soil} + (BAF_{food} * IR_{food})]. Values are reported to two significant figures.

BAF	Bioaccumulation factor	IR	Ingestion rate	NA	Not applicable
BW	Body weight	kg/day	Kilogram per day	Navy	Department of the Navy
DTSC	California Department of Toxic Substance Control	mg/kg	Milligram per kilogram	SUF	Site use factor
EU	Exposure Unit	mg/kg/day	Milligram per kilogram per day	TRV	Toxicity reference value

References:
Department of the Navy. 1998. "Development of Toxicity Reference Values for Conducting Ecological Risk Assessments at Naval Facilities in California, Interim Final." Prepared by Naval Facilities Engineering Command, Engineering Field Activity West (EFA West). San Bruno, California.

DTSC. 2009. HERD Ecological Risk Assessment Note 6. February. Available on-line at: http://www.dtsc.ca.gov/AssessingRisk/upload/CdEconote_Final.pdf.

TABLE E-4: SITE-SPECIFIC ECOLOGICAL REMEDIATION GOAL BACK-CALCULATIONS FOR EU 4 - CARBONATE MINE WASTE AREA
Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

Ecological Receptor/Chemical of Ecological Concern	Total Prey Ingestion Rate[1] (kg/day)	Plant Ingestion Rate[1] (kg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Plant BAF[2] (kg dry soil/kg dry tissue)	Invertebrate BAF[2] (kg dry soil/kg dry tissue)	Mammal BAF[2] (kg dry soil/kg dry tissue)	Soil Ingestion Rate [1] (kg/day)	SUF[3]	Body Weight[1] (kilogram)	TRV[4] (mg/kg/day)	Test Species Body Weight[4] (kilogram)	Allometrically Adjusted TRV[5,6] (mg/kg/day)	Risk-Based Ecological Goal[7] (mg/kg)
Site Area (Hectares)	**1.09**													
Mourning Dove														
Arsenic	0.006	0.006	NA	NA	0.00	NA	NA	0.0005	0.004	0.109	22.01	1.17	13.69	660,000
Cadmium	0.006	0.006	NA	NA	1.26	NA	NA	0.0005	0.004	0.109	1.00	1.13	0.63	2,100
Copper	0.006	0.006	NA	NA	0.78	NA	NA	0.0005	0.004	0.109	52.26	0.41	40.13	210,000
Lead	0.006	0.006	NA	NA	0.04	NA	NA	0.0005	0.004	0.109	8.75	0.80	5.88	190,000
Manganese	0.006	0.006	NA	NA	0.33	NA	NA	0.0005	0.004	0.109	776.00	0.197	689.98	7,300,000
Zinc	0.006	0.006	NA	NA	1.41	NA	NA	0.0005	0.004	0.109	172.00	0.96	111.47	330,000
Red-Tailed Hawk														
Arsenic	0.090	NA	NA	0.090	NA	NA	0.48	0.005	0.002	1.134	22.01	1.17	21.86	330,000
Cadmium	0.090	NA	NA	0.090	NA	NA	0.00	0.005	0.002	1.134	1.00	1.13	1.00	140,000
Copper	0.090	NA	NA	0.090	NA	NA	0.66	0.005	0.002	1.134	52.26	0.41	64.08	720,000
Lead	0.090	NA	NA	0.090	NA	NA	0.08	0.005	0.002	1.134	8.75	0.80	9.38	570,000
Manganese	0.090	NA	NA	0.090	NA	NA	0.06	0.005	0.002	1.134	776.00	0.197	1101.76	76,000,000
Zinc	0.090	NA	NA	0.090	NA	NA	10.3	0.005	0.002	1.134	172.00	0.96	178.00	140,000
American Kestrel														
Arsenic	0.014	NA	0.014	NA	NA	2.55	NA	0.0008	0.004	0.124	22.01	1.17	14.04	12,000
Cadmium	0.014	NA	0.014	NA	NA	7.00	NA	0.0008	0.004	0.124	1.00	1.13	0.64	200
Copper	0.014	NA	0.014	NA	NA	3.70	NA	0.0008	0.004	0.124	52.26	0.41	41.16	24,000
Lead	0.014	NA	0.014	NA	NA	1.55	NA	0.0008	0.004	0.124	8.75	0.80	6.03	8,100
Manganese	0.014	NA	0.014	NA	NA	1.48	NA	0.0008	0.004	0.124	776.00	0.197	707.74	1,000,000
Zinc	0.014	NA	0.014	NA	NA	8.31	NA	0.0008	0.004	0.124	172.00	0.96	114.34	30,000
Meadow Vole														
Arsenic	0.005	0.005	NA	NA	0.00	NA	NA	0.0001	1.00	0.031	4.70	0.110	5.1	1,400
Cadmium	0.005	0.005	NA	NA	1.26	NA	NA	0.0001	1.00	0.031	2.64	0.031	2.6	13
Copper	0.005	0.005	NA	NA	0.78	NA	NA	0.0001	1.00	0.031	632	0.025	623.5	5,100
Lead	0.005	0.005	NA	NA	0.04	NA	NA	0.0001	1.00	0.031	241	0.019	233.6	23,000
Manganese	0.005	0.005	NA	NA	0.33	NA	NA	0.0001	1.00	0.031	159	0.0297	158.8	2,900
Zinc	0.005	0.005	NA	NA	1.41	NA	NA	0.0001	1.00	0.031	411	0.175	456.8	2,100
White-Tailed Deer														
Arsenic	1.43	1.43	NA	NA	0.00	NA	NA	0.029	0.006	135	4.70	0.110	3.1	2,400,000
Cadmium	1.43	1.43	NA	NA	1.26	NA	NA	0.029	0.006	135	2.64	0.031	1.6	19,000
Copper	1.43	1.43	NA	NA	0.78	NA	NA	0.029	0.006	135	632	0.025	376.9	7,300,000
Lead	1.43	1.43	NA	NA	0.04	NA	NA	0.029	0.006	135	241	0.019	141.2	34,000,000
Manganese	1.43	1.43	NA	NA	0.33	NA	NA	0.029	0.006	135	159	0.0297	96.0	4,200,000
Zinc	1.43	1.43	NA	NA	1.41	NA	NA	0.029	0.006	135	411	0.175	276.1	3,000,000

TABLE E-4: SITE-SPECIFIC ECOLOGICAL REMEDIATION GOAL BACK-CALCULATIONS FOR EU 4 - CARBONATE MINE WASTE AREA (Continued)
Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

Ecological Receptor/Chemical of Ecological Concern	Total Prey Ingestion Rate[1] (kg/day)	Plant Ingestion Rate[1] (kg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Plant BAF[2] (kg dry soil/kg dry tissue)	Invertebrate BAF[2] (kg dry soil/kg dry tissue)	Mammal BAF[2] (kg dry soil/kg dry tissue)	Soil Ingestion Rate [1] (kg/day)	SUF[3]	Body Weight[1] (kilogram)	TRV[4] (mg/kg/day)	Test Species Body Weight[4] (kilogram)	Allometrically Adjusted TRV[5,6] (mg/kg/day)	Risk-Based Ecological Goal[7] (mg/kg)
Site Area (Hectares)	**1.09**													
Red Fox														
Arsenic	0.172	NA	NA	0.17	NA	NA	0.48	0.005	0.001	4.54	4.70	0.110	3.8	240,000
Cadmium	0.172	NA	NA	0.17	NA	NA	0.00	0.005	0.001	4.54	2.64	0.031	2.0	2,300,000
Copper	0.172	NA	NA	0.17	NA	NA	0.66	0.005	0.001	4.54	632	0.025	461.9	22,000,000
Lead	0.172	NA	NA	0.17	NA	NA	0.08	0.005	0.001	4.54	241	0.019	173.1	55,000,000
Manganese	0.172	NA	NA	0.17	NA	NA	0.06	0.005	0.001	4.54	159	0.0297	117.7	44,000,000
Zinc	0.172	NA	NA	0.17	NA	NA	10.35	0.005	0.001	4.54	411	0.175	338.4	1,100,000
Masked Shrew														
Arsenic	0.01	NA	0.01	NA	NA	2.55	NA	0.0011	1.00	0.01	4.70	0.11	5.63	1.40
Cadmium	0.01	NA	0.01	NA	NA	7.00	NA	0.0011	1.00	0.01	2.64	0.03	2.93	0.27
Copper	0.01	NA	0.01	NA	NA	3.70	NA	0.0011	1.00	0.01	631.58	0.02	691.14	120
Lead	0.01	NA	0.01	NA	NA	1.55	NA	0.0011	1.00	0.01	240.64	0.02	258.97	100
Manganese	0.01	NA	0.01	NA	NA	1.48	NA	0.0011	1.00	0.01	159.09	0.0297	176.03	71
Zinc	0.01	NA	0.01	NA	NA	8.31	NA	0.0011	1.00	0.01	411.43	0.18	506.36	39

Notes:
1 See Tables 3-1 through 3-13 for ingestion rates, foraging ranges used to calculate the SUF, and body weights.
2 BAFs were calculated by dividing site-collected tissue by collocated soil concentrations (BAFs are in dry weight). The maximum BAF from the terrestrial reference site was used for risk-based ecological goal calculations.
3 SUF based on site area divided by the foraging range of receptors (see note 1). SUFs for receptors with foraging ranges smaller than the site area are assumed to be 1.
4 The derivation of TRVs is described in Navy (1988) and DTSC (2009). The high TRV was used to calculate the risk-based ecological goal.
5 Allometrically adjusted TRVs for avian receptors were calculated using the following equation: Receptor Species TRV = (test species TRV) x (test species body weight / receptor species body weight)$^{(1-1.2)}$.
6 Allometrically adjusted TRVs for mammalian receptors were calculated using the following equation: Receptor Species TRV = (test species TRV) x (test species body weight / receptor species body weight$^{(1-0.94)}$.
7 Site-specific goals were back-calculated using the following equation: Goal = [(allometrically adjusted TRV / SUF) * BW] / [IR_{soil} + (BAF_{food} * IR_{food})]. Values are reported to two significant figures.
8 Arsenic was not evaluated for EU 4 because all site concentrations were non-detect.

BAF	Bioaccumulation factor	kg/day	Kilogram per day	Navy	Department of the Navy
BW	Body weight	mg/kg	Milligram per kilogram	SUF	Site use factor
DTSC	California Department of Toxic Substance Control	mg/kg/day	Milligram per kilogram per day	TRV	Toxicity reference value
IR	Ingestion rate	NA	Not applicable		

References:
Department of the Navy. 1998. "Development of Toxicity Reference Values for Conducting Ecological Risk Assessments at Naval Facilities in California, Interim Final." Prepared by Naval Facilities Engineering Command, Engineering Field Activity West (EFA

DTSC. 2009. HERD Ecological Risk Assessment Note 6. February. Available on-line at: http://www.dtsc.ca.gov/AssessingRisk/upload/CdEconote_Final.pdf.

TABLE E-5: SITE-SPECIFIC ECOLOGICAL REMEDIATION GOAL BACK-CALCULATIONS FOR EU 5 - EDITH MINE WASTE AREAS
Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

Ecological Receptor/Chemical of Ecological Concern	Total Prey Ingestion Rate[1] (kg/day)	Plant Ingestion Rate[1] (kg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Plant BAF[2] (kg dry soil/kg dry tissue)	Invertebrate BAF[2] (kg dry soil/kg dry tissue)	Mammal BAF[2] (kg dry soil/kg dry tissue)	Soil Ingestion Rate [1] (kg/day)	SUF[3]	Body Weight[1] (kilogram)	TRV[4] (mg/kg/day)	Test Species Body Weight[4] (kilogram)	Allometrically Adjusted TRV[5,6] (mg/kg/day)	Risk-Based Ecological Goal[7] (mg/kg)
Site Area (Hectares)	**1.29**													
Mourning Dove														
Arsenic	0.006	0.006	NA	NA	0.00	NA	NA	0.0005	0.005	0.109	22.01	1.17	13.69	560,000
Cadmium	0.006	0.006	NA	NA	1.26	NA	NA	0.0005	0.005	0.109	1.00	1.13	0.63	1,800
Copper	0.006	0.006	NA	NA	0.78	NA	NA	0.0005	0.005	0.109	52.26	0.41	40.13	180,000
Lead	0.006	0.006	NA	NA	0.04	NA	NA	0.0005	0.005	0.109	8.75	0.80	5.88	160,000
Manganese	0.006	0.006	NA	NA	0.33	NA	NA	0.0005	0.005	0.109	776.00	0.197	689.98	6,100,000
Zinc	0.006	0.006	NA	NA	1.41	NA	NA	0.0005	0.005	0.109	172.00	0.96	111.47	280,000
Red-Tailed Hawk														
Arsenic	0.090	NA	NA	0.090	NA	NA	0.48	0.005	0.002	1.134	22.01	1.17	21.86	280,000
Cadmium	0.090	NA	NA	0.090	NA	NA	0.00	0.005	0.002	1.134	1.00	1.13	1.00	120,000
Copper	0.090	NA	NA	0.090	NA	NA	0.66	0.005	0.002	1.134	52.26	0.41	64.08	610,000
Lead	0.090	NA	NA	0.090	NA	NA	0.08	0.005	0.002	1.134	8.75	0.80	9.38	480,000
Manganese	0.090	NA	NA	0.090	NA	NA	0.06	0.005	0.002	1.134	776.00	0.197	1101.76	64,000,000
Zinc	0.090	NA	NA	0.090	NA	NA	10.3	0.005	0.002	1.134	172.00	0.96	178.00	120,000
American Kestrel														
Arsenic	0.014	NA	0.014	NA	NA	2.55	NA	0.0008	0.005	0.124	22.01	1.17	14.04	9,800
Cadmium	0.014	NA	0.014	NA	NA	7.00	NA	0.0008	0.005	0.124	1.00	1.13	0.64	170
Copper	0.014	NA	0.014	NA	NA	3.70	NA	0.0008	0.005	0.124	52.26	0.41	41.16	20,000
Lead	0.014	NA	0.014	NA	NA	1.55	NA	0.0008	0.005	0.124	8.75	0.80	6.03	6,800
Manganese	0.014	NA	0.014	NA	NA	1.48	NA	0.0008	0.005	0.124	776.00	0.197	707.74	840,000
Zinc	0.014	NA	0.014	NA	NA	8.31	NA	0.0008	0.005	0.124	172.00	0.96	114.34	25,000
Meadow Vole														
Arsenic	0.005	0.005	NA	NA	0.00	NA	NA	0.0001	1.00	0.031	4.70	0.110	5.1	1,400
Cadmium	0.005	0.005	NA	NA	1.26	NA	NA	0.0001	1.00	0.031	2.64	0.031	2.6	13
Copper	0.005	0.005	NA	NA	0.78	NA	NA	0.0001	1.00	0.031	632	0.025	623.5	5,100
Lead	0.005	0.005	NA	NA	0.04	NA	NA	0.0001	1.00	0.031	241	0.019	233.6	23,000
Manganese	0.005	0.005	NA	NA	0.33	NA	NA	0.0001	1.00	0.031	159	0.0297	158.8	2,900
Zinc	0.005	0.005	NA	NA	1.41	NA	NA	0.0001	1.00	0.031	411	0.175	456.8	2,100
White-Tailed Deer														
Arsenic	1.43	1.43	NA	NA	0.00	NA	NA	0.029	0.007	135	4.70	0.110	3.1	2,000,000
Cadmium	1.43	1.43	NA	NA	1.26	NA	NA	0.029	0.007	135	2.64	0.031	1.6	16,000
Copper	1.43	1.43	NA	NA	0.78	NA	NA	0.029	0.007	135	632	0.025	376.9	6,200,000
Lead	1.43	1.43	NA	NA	0.04	NA	NA	0.029	0.007	135	241	0.019	141.2	29,000,000
Manganese	1.43	1.43	NA	NA	0.33	NA	NA	0.029	0.007	135	159	0.0297	96.0	3,500,000
Zinc	1.43	1.43	NA	NA	1.41	NA	NA	0.029	0.007	135	411	0.175	276.1	2,500,000

TABLE E-5: SITE-SPECIFIC ECOLOGICAL REMEDIATION GOAL BACK-CALCULATIONS FOR EU 5 - EDITH MINE WASTE AREAS (Continued)
Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

Ecological Receptor/Chemical of Ecological Concern	Total Prey Ingestion Rate[1] (kg/day)	Plant Ingestion Rate[1] (kg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Plant BAF[2] (kg dry soil/kg dry tissue)	Invertebrate BAF[2] (kg dry soil/kg dry tissue)	Mammal BAF[2] (kg dry soil/kg dry tissue)	Soil Ingestion Rate [1] (kg/day)	SUF[3]	Body Weight[1] (kilogram)	TRV[4] (mg/kg/day)	Test Species Body Weight[4] (kilogram)	Allometrically Adjusted TRV[5,6] (mg/kg/day)	Risk-Based Ecological Goal[7] (mg/kg)
Site Area (Hectares)	**1.29**													
Red Fox														
Arsenic	0.172	NA	NA	0.17	NA	NA	0.48	0.005	0.001	4.54	4.70	0.110	3.8	200,000
Cadmium	0.172	NA	NA	0.17	NA	NA	0.00	0.005	0.001	4.54	2.64	0.031	2.0	1,900,000
Copper	0.172	NA	NA	0.17	NA	NA	0.66	0.005	0.001	4.54	632	0.025	461.9	19,000,000
Lead	0.172	NA	NA	0.17	NA	NA	0.08	0.005	0.001	4.54	241	0.019	173.1	46,000,000
Manganese	0.172	NA	NA	0.17	NA	NA	0.06	0.005	0.001	4.54	159	0.0297	117.7	37,000,000
Zinc	0.172	NA	NA	0.17	NA	NA	10.35	0.005	0.001	4.54	411	0.175	338.4	900,000
Masked Shrew														
Arsenic	0.01	NA	0.01	NA	NA	2.55	NA	0.0011	1.00	0.01	4.70	0.11	5.63	1
Cadmium	0.01	NA	0.01	NA	NA	7.00	NA	0.0011	1.00	0.01	2.64	0.03	2.93	0.27
Copper	0.01	NA	0.01	NA	NA	3.70	NA	0.0011	1.00	0.01	631.58	0.02	691.14	120
Lead	0.01	NA	0.01	NA	NA	1.55	NA	0.0011	1.00	0.01	240.64	0.02	258.97	100
Manganese	0.01	NA	0.01	NA	NA	1.48	NA	0.0011	1.00	0.01	159.09	0.0297	176.03	71
Zinc	0.01	NA	0.01	NA	NA	8.31	NA	0.0011	1.00	0.01	411.43	0.18	506.36	39

Notes:
1 See Tables 3-1 through 3-13 for ingestion rates, foraging ranges used to calculate the SUF, and body weights.
2 BAFs were calculated by dividing site-collected tissue by collocated soil concentrations (BAFs are in dry weight). The maximum BAF from the terrestrial reference site was used for risk-based ecological goal calculations.
3 SUF based on site area divided by the foraging range of receptors (see note 1). SUFs for receptors with foraging ranges smaller than the site area are assumed to be 1.
4 The derivation of TRVs is described in Navy (1988) and DTSC (2009). The high TRV was used to calculate the risk-based ecological goal.
5 Allometrically adjusted TRVs for avian receptors were calculated using the following equation: Receptor Species TRV = (test species TRV) x (test species body weight / receptor species body weight)$^{(1-1.2)}$.
6 Allometrically adjusted TRVs for mammalian receptors were calculated using the following equation: Receptor Species TRV = (test species TRV) x (test species body weight / receptor species body weight$^{(1-0.94)}$.
7 Site-specific goals were back-calculated using the following equation: Goal = [(allometrically adjusted TRV / SUF) * BW] / [IR_{soil} + (BAF_{food} * IR_{food})]. Values are reported to two significant figures.

BAF	Bioaccumulation factor	IR	Ingestion rate	NA	Not applicable
BW	Body weight	kg/day	Kilogram per day	Navy	Department of the Navy
DTSC	California Department of Toxic Substance Control	mg/kg	Milligram per kilogram	SUF	Site use factor
EU	Exposure Unit	mg/kg/day	Milligram per kilogram per day	TRV	Toxicity reference value

References:
Department of the Navy. 1998. "Development of Toxicity Reference Values for Conducting Ecological Risk Assessments at Naval Facilities in California, Interim Final." Prepared by Naval Facilities Engineering Command, Engineering Field Activity West (EFA

DTSC. 2009. HERD Ecological Risk Assessment Note 6. February. Available on-line at: http://www.dtsc.ca.gov/AssessingRisk/upload/CdEconote_Final.pdf.

TABLE E-6: SITE-SPECIFIC ECOLOGICAL REMEDIATION GOAL BACK-CALCULATIONS FOR EU 6 - CONSOLATION MINE WASTE AREA
Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

Ecological Receptor/Chemical of Ecological Concern	Total Prey Ingestion Rate[1] (kg/day)	Plant Ingestion Rate[1] (kg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Plant BAF[2] (kg dry soil/kg dry tissue)	Invertebrate BAF[2] (kg dry soil/kg dry tissue)	Mammal BAF[2] (kg dry soil/kg dry tissue)	Soil Ingestion Rate [1] (kg/day)	SUF[3]	Body Weight[1] (kilogram)	TRV[4] (mg/kg/day)	Test Species Body Weight[4] (kilogram)	Allometrically Adjusted TRV[5,6] (mg/kg/day)	Risk-Based Ecological Goal[7] (mg/kg)
Site Area (Hectares)	**0.70**													
Mourning Dove														
Arsenic	0.006	0.006	NA	NA	0.00	NA	NA	0.0005	0.003	0.109	22.01	1.17	13.69	1,000,000
Cadmium	0.006	0.006	NA	NA	1.26	NA	NA	0.0005	0.003	0.109	1.00	1.13	0.63	3,300
Copper	0.006	0.006	NA	NA	0.78	NA	NA	0.0005	0.003	0.109	52.26	0.41	40.13	320,000
Lead	0.006	0.006	NA	NA	0.04	NA	NA	0.0005	0.003	0.109	8.75	0.80	5.88	300,000
Manganese	0.006	0.006	NA	NA	0.33	NA	NA	0.0005	0.003	0.109	776.00	0.197	689.98	11,000,000
Zinc	0.006	0.006	NA	NA	1.41	NA	NA	0.0005	0.003	0.109	172.00	0.96	111.47	520,000
Red-Tailed Hawk														
Arsenic	0.090	NA	NA	0.090	NA	NA	0.48	0.005	0.001	1.134	22.01	1.17	21.86	510,000
Cadmium	0.090	NA	NA	0.090	NA	NA	0.00	0.005	0.001	1.134	1.00	1.13	1.00	220,000
Copper	0.090	NA	NA	0.090	NA	NA	0.66	0.005	0.001	1.134	52.26	0.41	64.08	1,100,000
Lead	0.090	NA	NA	0.090	NA	NA	0.08	0.005	0.001	1.134	8.75	0.80	9.38	880,000
Manganese	0.090	NA	NA	0.090	NA	NA	0.06	0.005	0.001	1.134	776.00	0.197	1101.76	120,000,000
Zinc	0.090	NA	NA	0.090	NA	NA	10.3	0.005	0.001	1.134	172.00	0.96	178.00	210,000
American Kestrel														
Arsenic	0.014	NA	0.014	NA	NA	2.55	NA	0.0008	0.003	0.124	22.01	1.17	14.04	18,000
Cadmium	0.014	NA	0.014	NA	NA	7.00	NA	0.0008	0.003	0.124	1.00	1.13	0.64	310
Copper	0.014	NA	0.014	NA	NA	3.70	NA	0.0008	0.003	0.124	52.26	0.41	41.16	37,000
Lead	0.014	NA	0.014	NA	NA	1.55	NA	0.0008	0.003	0.124	8.75	0.80	6.03	13,000
Manganese	0.014	NA	0.014	NA	NA	1.48	NA	0.0008	0.003	0.124	776.00	0.197	707.74	1,600,000
Zinc	0.014	NA	0.014	NA	NA	8.31	NA	0.0008	0.003	0.124	172.00	0.96	114.34	46,000
Meadow Vole														
Arsenic	0.005	0.005	NA	NA	0.00	NA	NA	0.0001	1.00	0.031	4.70	0.110	5.1	1,400
Cadmium	0.005	0.005	NA	NA	1.26	NA	NA	0.0001	1.00	0.031	2.64	0.031	2.6	13
Copper	0.005	0.005	NA	NA	0.78	NA	NA	0.0001	1.00	0.031	632	0.025	623.5	5,100
Lead	0.005	0.005	NA	NA	0.04	NA	NA	0.0001	1.00	0.031	241	0.019	233.6	23,000
Manganese	0.005	0.005	NA	NA	0.33	NA	NA	0.0001	1.00	0.031	159	0.0297	158.8	2,900
Zinc	0.005	0.005	NA	NA	1.41	NA	NA	0.0001	1.00	0.031	411	0.175	456.8	2,100
White-Tailed Deer														
Arsenic	1.43	1.43	NA	NA	0.00	NA	NA	0.029	0.004	135	4.70	0.110	3.1	3,700,000
Cadmium	1.43	1.43	NA	NA	1.26	NA	NA	0.029	0.004	135	2.64	0.031	1.6	30,000
Copper	1.43	1.43	NA	NA	0.78	NA	NA	0.029	0.004	135	632	0.025	376.9	11,000,000
Lead	1.43	1.43	NA	NA	0.04	NA	NA	0.029	0.004	135	241	0.019	141.2	54,000,000
Manganese	1.43	1.43	NA	NA	0.33	NA	NA	0.029	0.004	135	159	0.0297	96.0	6,500,000
Zinc	1.43	1.43	NA	NA	1.41	NA	NA	0.029	0.004	135	411	0.175	276.1	4,600,000

TABLE E-6: SITE-SPECIFIC ECOLOGICAL REMEDIATION GOAL BACK-CALCULATIONS FOR EU 6 - CONSOLATION MINE WASTE AREA (Continued)
Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

Ecological Receptor/Chemical of Ecological Concern	Total Prey Ingestion Rate[1] (kg/day)	Plant Ingestion Rate[1] (kg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Plant BAF[2] (kg dry soil/kg dry tissue)	Invertebrate BAF[2] (kg dry soil/kg dry tissue)	Mammal BAF[2] (kg dry soil/kg dry tissue)	Soil Ingestion Rate [1] (kg/day)	SUF[3]	Body Weight[1] (kilogram)	TRV[4] (mg/kg/day)	Test Species Body Weight[4] (kilogram)	Allometrically Adjusted TRV[5,6] (mg/kg/day)	Risk-Based Ecological Goal[7] (mg/kg)
Site Area (Hectares)	**0.70**													
Red Fox														
Arsenic	0.172	NA	NA	0.17	NA	NA	0.48	0.005	0.001	4.54	4.70	0.110	3.8	380,000
Cadmium	0.172	NA	NA	0.17	NA	NA	0.00	0.005	0.001	4.54	2.64	0.031	2.0	3,600,000
Copper	0.172	NA	NA	0.17	NA	NA	0.66	0.005	0.001	4.54	632	0.025	461.9	34,000,000
Lead	0.172	NA	NA	0.17	NA	NA	0.08	0.005	0.001	4.54	241	0.019	173.1	85,000,000
Manganese	0.172	NA	NA	0.17	NA	NA	0.06	0.005	0.001	4.54	159	0.0297	117.7	69,000,000
Zinc	0.172	NA	NA	0.17	NA	NA	10.35	0.005	0.001	4.54	411	0.175	338.4	1,700,000
Masked Shrew														
Arsenic	0.01	NA	0.01	NA	NA	2.55	NA	0.0011	1.00	0.01	4.70	0.11	5.63	1.4
Cadmium	0.01	NA	0.01	NA	NA	7.00	NA	0.0011	1.00	0.01	2.64	0.03	2.93	0.27
Copper	0.01	NA	0.01	NA	NA	3.70	NA	0.0011	1.00	0.01	631.58	0.02	691.14	120
Lead	0.01	NA	0.01	NA	NA	1.55	NA	0.0011	1.00	0.01	240.64	0.02	258.97	100
Manganese	0.01	NA	0.01	NA	NA	1.48	NA	0.0011	1.00	0.01	159.09	0.0297	176.03	71
Zinc	0.01	NA	0.01	NA	NA	8.31	NA	0.0011	1.00	0.01	411.43	0.18	506.36	39

Notes:

1 See Tables 3-1 through 3-13 for ingestion rates, foraging ranges used to calculate the SUF, and body weights.
2 BAFs were calculated by dividing site-collected tissue by collocated soil concentrations (BAFs are in dry weight). The maximum BAF from the terrestrial reference site was used for risk-based ecological goal calculations.
3 SUF based on site area divided by the foraging range of receptors (see note 1). SUFs for receptors with foraging ranges smaller than the site area are assumed to be 1.
4 The derivation of TRVs is described in Navy (1988) and DTSC (2009). The high TRV was used to calculate the risk-based ecological goal.
5 Allometrically adjusted TRVs for avian receptors were calculated using the following equation: Receptor Species TRV = (test species TRV) x (test species body weight / receptor species body weight)$^{(1-1.2)}$.
6 Allometrically adjusted TRVs for mammalian receptors were calculated using the following equation: Receptor Species TRV = (test species TRV) x (test species body weight / receptor species body weight$^{(1-0.94)}$.
7 Site-specific goals were back-calculated using the following equation: Goal = [(allometrically adjusted TRV / SUF) * BW] / [IR_{soil} + (BAF_{food} * IR_{food})]. Values are reported to two significant figures.

BAF	Bioaccumulation factor	IR	Ingestion rate	NA	Not applicable
BW	Body weight	kg/day	Kilogram per day	Navy	Department of the Navy
DTSC	California Department of Toxic Substance Control	mg/kg	Milligram per kilogram	SUF	Site use factor
EU	Exposure Unit	mg/kg/day	Milligram per kilogram per day	TRV	Toxicity reference value

References:

Department of the Navy. 1998. "Development of Toxicity Reference Values for Conducting Ecological Risk Assessments at Naval Facilities in California, Interim Final." Prepared by Naval Facilities Engineering Command, Engineering Field Activity West (EFA

DTSC. 2009. HERD Ecological Risk Assessment Note 6. February. Available on-line at: http://www.dtsc.ca.gov/AssessingRisk/upload/CdEconote_Final.pdf.

TABLE E-7: SITE-SPECIFIC ECOLOGICAL REMEDIATION GOAL BACK-CALCULATIONS FOR EU 7 - MARY P. MINE WASTE PILE
Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

Ecological Receptor/Chemical of Ecological Concern	Total Prey Ingestion Rate[1] (kg/day)	Plant Ingestion Rate[1] (kg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Plant BAF[2] (kg dry soil/kg dry tissue)	Invertebrate BAF[2] (kg dry soil/kg dry tissue)	Mammal BAF[2] (kg dry soil/kg dry tissue)	Soil Ingestion Rate [1] (kg/day)	SUF[3]	Body Weight[1] (kilogram)	TRV[4] (mg/kg/day)	Test Species Body Weight[4] (kilogram)	Allometrically Adjusted TRV[5,6] (mg/kg/day)	Risk-Based Ecological Goal[7] (mg/kg)
Site Area (Hectares)	**0.11**													
Mourning Dove														
Arsenic	0.006	0.006	NA	NA	0.00	NA	NA	0.0005	0.000	0.109	22.01	1.17	13.69	6,600,000
Cadmium	0.006	0.006	NA	NA	1.26	NA	NA	0.0005	0.000	0.109	1.00	1.13	0.63	21,000
Copper	0.006	0.006	NA	NA	0.78	NA	NA	0.0005	0.000	0.109	52.26	0.41	40.13	2,100,000
Lead	0.006	0.006	NA	NA	0.04	NA	NA	0.0005	0.000	0.109	8.75	0.80	5.88	1,900,000
Manganese	0.006	0.006	NA	NA	0.33	NA	NA	0.0005	0.000	0.109	776.00	0.197	689.98	72,000,000
Zinc	0.006	0.006	NA	NA	1.41	NA	NA	0.0005	0.000	0.109	172.00	0.96	111.47	3,300,000
Red-Tailed Hawk														
Arsenic	0.090	NA	NA	0.090	NA	NA	0.48	0.005	0.000	1.134	22.01	1.17	21.86	3,200,000
Cadmium	0.090	NA	NA	0.090	NA	NA	0.00	0.005	0.000	1.134	1.00	1.13	1.00	1,400,000
Copper	0.090	NA	NA	0.090	NA	NA	0.66	0.005	0.000	1.134	52.26	0.41	64.08	7,100,000
Lead	0.090	NA	NA	0.090	NA	NA	0.08	0.005	0.000	1.134	8.75	0.80	9.38	5,600,000
Manganese	0.090	NA	NA	0.090	NA	NA	0.06	0.005	0.000	1.134	776.00	0.197	1101.76	760,000,000
Zinc	0.090	NA	NA	0.090	NA	NA	10.3	0.005	0.000	1.134	172.00	0.96	178.00	1,400,000
American Kestrel														
Arsenic	0.014	NA	0.014	NA	NA	2.55	NA	0.0008	0.000	0.124	22.01	1.17	14.04	120,000
Cadmium	0.014	NA	0.014	NA	NA	7.00	NA	0.0008	0.000	0.124	1.00	1.13	0.64	2,000
Copper	0.014	NA	0.014	NA	NA	3.70	NA	0.0008	0.000	0.124	52.26	0.41	41.16	230,000
Lead	0.014	NA	0.014	NA	NA	1.55	NA	0.0008	0.000	0.124	8.75	0.80	6.03	80,000
Manganese	0.014	NA	0.014	NA	NA	1.48	NA	0.0008	0.000	0.124	776.00	0.197	707.74	9,900,000
Zinc	0.014	NA	0.014	NA	NA	8.31	NA	0.0008	0.000	0.124	172.00	0.96	114.34	290,000
Meadow Vole														
Arsenic	0.005	0.005	NA	NA	0.00	NA	NA	0.0001	1.00	0.031	4.70	0.110	5.1	1,400
Cadmium	0.005	0.005	NA	NA	1.26	NA	NA	0.0001	1.00	0.031	2.64	0.031	2.6	13
Copper	0.005	0.005	NA	NA	0.78	NA	NA	0.0001	1.00	0.031	632	0.025	623.5	5,100
Lead	0.005	0.005	NA	NA	0.04	NA	NA	0.0001	1.00	0.031	241	0.019	233.6	23,000
Manganese	0.005	0.005	NA	NA	0.33	NA	NA	0.0001	1.00	0.031	159	0.0297	158.8	2,900
Zinc	0.005	0.005	NA	NA	1.41	NA	NA	0.0001	1.00	0.031	411	0.175	456.8	2,100
White-Tailed Deer														
Arsenic	1.43	1.43	NA	NA	0.00	NA	NA	0.029	0.001	135	4.70	0.110	3.1	24,000,000
Cadmium	1.43	1.43	NA	NA	1.26	NA	NA	0.029	0.001	135	2.64	0.031	1.6	190,000
Copper	1.43	1.43	NA	NA	0.78	NA	NA	0.029	0.001	135	632	0.025	376.9	72,000,000
Lead	1.43	1.43	NA	NA	0.04	NA	NA	0.029	0.001	135	241	0.019	141.2	340,000,000
Manganese	1.43	1.43	NA	NA	0.33	NA	NA	0.029	0.001	135	159	0.0297	96.0	42,000,000
Zinc	1.43	1.43	NA	NA	1.41	NA	NA	0.029	0.001	135	411	0.175	276.1	30,000,000

TABLE E-7: SITE-SPECIFIC ECOLOGICAL REMEDIATION GOAL BACK-CALCULATIONS FOR EU 7 - MARY P. MINE WASTE PILE (Continued)
Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

Ecological Receptor/Chemical of Ecological Concern	Total Prey Ingestion Rate[1] (kg/day)	Plant Ingestion Rate[1] (kg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Plant BAF[2] (kg dry soil/kg dry tissue)	Invertebrate BAF[2] (kg dry soil/kg dry tissue)	Mammal BAF[2] (kg dry soil/kg dry tissue)	Soil Ingestion Rate [1] (kg/day)	SUF[3]	Body Weight[1] (kilogram)	TRV[4] (mg/kg/day)	Test Species Body Weight[4] (kilogram)	Allometrically Adjusted TRV[5,6] (mg/kg/day)	Risk-Based Ecological Goal[7] (mg/kg)
Site Area (Hectares)	**0.11**													
Red Fox														
Arsenic	0.172	NA	NA	0.17	NA	NA	0.48	0.005	0.000	4.54	4.70	0.110	3.8	2,400,000
Cadmium	0.172	NA	NA	0.17	NA	NA	0.00	0.005	0.000	4.54	2.64	0.031	2.0	23,000,000
Copper	0.172	NA	NA	0.17	NA	NA	0.66	0.005	0.000	4.54	632	0.025	461.9	220,000,000
Lead	0.172	NA	NA	0.17	NA	NA	0.08	0.005	0.000	4.54	241	0.019	173.1	540,000,000
Manganese	0.172	NA	NA	0.17	NA	NA	0.06	0.005	0.000	4.54	159	0.0297	117.7	440,000,000
Zinc	0.172	NA	NA	0.17	NA	NA	10.35	0.005	0.000	4.54	411	0.175	338.4	11,000,000
Masked Shrew														
Arsenic	0.01	NA	0.01	NA	NA	2.55	NA	0.0011	0.28	0.01	4.70	0.11	5.63	5
Cadmium	0.01	NA	0.01	NA	NA	7.00	NA	0.0011	0.28	0.01	2.64	0.03	2.93	0.97
Copper	0.01	NA	0.01	NA	NA	3.70	NA	0.0011	0.28	0.01	631.58	0.02	691.14	430
Lead	0.01	NA	0.01	NA	NA	1.55	NA	0.0011	0.28	0.01	240.64	0.02	258.97	360
Manganese	0.01	NA	0.01	NA	NA	1.48	NA	0.0011	0.28	0.01	159.09	0.0297	176.03	260
Zinc	0.01	NA	0.01	NA	NA	8.31	NA	0.0011	0.28	0.01	411.43	0.18	506.36	140

Notes:
1 See Tables 3-1 through 3-13 for ingestion rates, foraging ranges used to calculate the SUF, and body weights.
2 BAFs were calculated by dividing site-collected tissue by collocated soil concentrations (BAFs are in dry weight). The maximum BAF from the terrestrial reference site was used for risk-based ecological goal calculations.
3 SUF based on site area divided by the foraging range of receptors (see note 1). SUFs for receptors with foraging ranges smaller than the site area are assumed to be 1.
4 The derivation of TRVs is described in Navy (1988) and DTSC (2009). The high TRV was used to calculate the risk-based ecological goal.
5 Allometrically adjusted TRVs for avian receptors were calculated using the following equation: Receptor Species TRV = (test species TRV) x (test species body weight / receptor species body weight)$^{(1-1.2)}$.
6 Allometrically adjusted TRVs for mammalian receptors were calculated using the following equation: Receptor Species TRV = (test species TRV) x (test species body weight / receptor species body weight$^{(1-0.94)}$.
7 Site-specific goals were back-calculated using the following equation: Goal = [(allometrically adjusted TRV / SUF) * BW] / [IR_{soil} + (BAF_{food} * IR_{food})]. Values are reported to two significant figures.

BAF	Bioaccumulation factor	IR	Ingestion rate	NA	Not applicable
BW	Body weight	kg/day	Kilogram per day	Navy	Department of the Navy
DTSC	California Department of Toxic Substance Control	mg/kg	Milligram per kilogram	SUF	Site use factor
EU	Exposure Unit	mg/kg/day	Milligram per kilogram per day	TRV	Toxicity reference value

References:
Department of the Navy. 1998. "Development of Toxicity Reference Values for Conducting Ecological Risk Assessments at Naval Facilities in California, Interim Final." Prepared by Naval Facilities Engineering Command, Engineering Field Activity West (EFA

DTSC. 2009. HERD Ecological Risk Assessment Note 6. February. Available on-line at: http://www.dtsc.ca.gov/AssessingRisk/upload/CdEconote_Final.pdf.

TABLE E-8: SITE-SPECIFIC ECOLOGICAL REMEDIATION GOAL BACK-CALCULATIONS FOR EU 8 - MIKE HORSE MINE WASTE PILES
Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

Ecological Receptor/Chemical of Ecological Concern	Total Prey Ingestion Rate[1] (kg/day)	Plant Ingestion Rate[1] (kg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Plant BAF[2] (kg dry soil/kg dry tissue)	Invertebrate BAF[2] (kg dry soil/kg dry tissue)	Mammal BAF[2] (kg dry soil/kg dry tissue)	Soil Ingestion Rate [1] (kg/day)	SUF[3]	Body Weight[1] (kilogram)	TRV[4] (mg/kg/day)	Test Species Body Weight[4] (kilogram)	Allometrically Adjusted TRV[5,6] (mg/kg/day)	Risk-Based Ecological Goal[7] (mg/kg)
Site Area (Hectares)	**1.74**													
Mourning Dove														
Arsenic	0.006	0.006	NA	NA	0.00	NA	NA	0.0005	0.007	0.109	22.01	1.17	13.69	420,000
Cadmium	0.006	0.006	NA	NA	1.26	NA	NA	0.0005	0.007	0.109	1.00	1.13	0.63	1,300
Copper	0.006	0.006	NA	NA	0.78	NA	NA	0.0005	0.007	0.109	52.26	0.41	40.13	130,000
Lead	0.006	0.006	NA	NA	0.04	NA	NA	0.0005	0.007	0.109	8.75	0.80	5.88	120,000
Manganese	0.006	0.006	NA	NA	0.33	NA	NA	0.0005	0.007	0.109	776.00	0.197	689.98	4,600,000
Zinc	0.006	0.006	NA	NA	1.41	NA	NA	0.0005	0.007	0.109	172.00	0.96	111.47	210,000
Red-Tailed Hawk														
Arsenic	0.090	NA	NA	0.090	NA	NA	0.48	0.005	0.002	1.134	22.01	1.17	21.86	200,000
Cadmium	0.090	NA	NA	0.090	NA	NA	0.00	0.005	0.002	1.134	1.00	1.13	1.00	89,000
Copper	0.090	NA	NA	0.090	NA	NA	0.66	0.005	0.002	1.134	52.26	0.41	64.08	450,000
Lead	0.090	NA	NA	0.090	NA	NA	0.08	0.005	0.002	1.134	8.75	0.80	9.38	360,000
Manganese	0.090	NA	NA	0.090	NA	NA	0.06	0.005	0.002	1.134	776.00	0.197	1101.76	48,000,000
Zinc	0.090	NA	NA	0.090	NA	NA	10.3	0.005	0.002	1.134	172.00	0.96	178.00	87,000
American Kestrel														
Arsenic	0.014	NA	0.014	NA	NA	2.55	NA	0.0008	0.007	0.124	22.01	1.17	14.04	7,300
Cadmium	0.014	NA	0.014	NA	NA	7.00	NA	0.0008	0.007	0.124	1.00	1.13	0.64	120
Copper	0.014	NA	0.014	NA	NA	3.70	NA	0.0008	0.007	0.124	52.26	0.41	41.16	15,000
Lead	0.014	NA	0.014	NA	NA	1.55	NA	0.0008	0.007	0.124	8.75	0.80	6.03	5,100
Manganese	0.014	NA	0.014	NA	NA	1.48	NA	0.0008	0.007	0.124	776.00	0.197	707.74	630,000
Zinc	0.014	NA	0.014	NA	NA	8.31	NA	0.0008	0.007	0.124	172.00	0.96	114.34	19,000
Meadow Vole														
Arsenic	0.005	0.005	NA	NA	0.00	NA	NA	0.0001	1.00	0.031	4.70	0.110	5.1	1,400
Cadmium	0.005	0.005	NA	NA	1.26	NA	NA	0.0001	1.00	0.031	2.64	0.031	2.6	13
Copper	0.005	0.005	NA	NA	0.78	NA	NA	0.0001	1.00	0.031	632	0.025	623.5	5,100
Lead	0.005	0.005	NA	NA	0.04	NA	NA	0.0001	1.00	0.031	241	0.019	233.6	23,000
Manganese	0.005	0.005	NA	NA	0.33	NA	NA	0.0001	1.00	0.031	159	0.0297	158.8	2,900
Zinc	0.005	0.005	NA	NA	1.41	NA	NA	0.0001	1.00	0.031	411	0.175	456.8	2,100
White-Tailed Deer														
Arsenic	1.43	1.43	NA	NA	0.00	NA	NA	0.029	0.010	135	4.70	0.110	3.1	1,500,000
Cadmium	1.43	1.43	NA	NA	1.26	NA	NA	0.029	0.010	135	2.64	0.031	1.6	12,000
Copper	1.43	1.43	NA	NA	0.78	NA	NA	0.029	0.010	135	632	0.025	376.9	4,600,000
Lead	1.43	1.43	NA	NA	0.04	NA	NA	0.029	0.010	135	241	0.019	141.2	22,000,000
Manganese	1.43	1.43	NA	NA	0.33	NA	NA	0.029	0.010	135	159	0.0297	96.0	2,600,000
Zinc	1.43	1.43	NA	NA	1.41	NA	NA	0.029	0.010	135	411	0.175	276.1	1,900,000

TABLE E-8: SITE-SPECIFIC ECOLOGICAL REMEDIATION GOAL BACK-CALCULATIONS FOR EU 8 - MIKE HORSE MINE WASTE PILES (Continued)
Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

Ecological Receptor/Chemical of Ecological Concern	Total Prey Ingestion Rate[1] (kg/day)	Plant Ingestion Rate[1] (kg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Plant BAF[2] (kg dry soil/kg dry tissue)	Invertebrate BAF[2] (kg dry soil/kg dry tissue)	Mammal BAF[2] (kg dry soil/kg dry tissue)	Soil Ingestion Rate [1] (kg/day)	SUF[3]	Body Weight[1] (kilogram)	TRV[4] (mg/kg/day)	Test Species Body Weight[4] (kilogram)	Allometrically Adjusted TRV[5,6] (mg/kg/day)	Risk-Based Ecological Goal[7] (mg/kg)
Site Area (Hectares)	**1.74**													
Red Fox														
Arsenic	0.172	NA	NA	0.17	NA	NA	0.48	0.005	0.001	4.54	4.70	0.110	3.8	150,000
Cadmium	0.172	NA	NA	0.17	NA	NA	0.00	0.005	0.001	4.54	2.64	0.031	2.0	1,400,000
Copper	0.172	NA	NA	0.17	NA	NA	0.66	0.005	0.001	4.54	632	0.025	461.9	14,000,000
Lead	0.172	NA	NA	0.17	NA	NA	0.08	0.005	0.001	4.54	241	0.019	173.1	34,000,000
Manganese	0.172	NA	NA	0.17	NA	NA	0.06	0.005	0.001	4.54	159	0.0297	117.7	28,000,000
Zinc	0.172	NA	NA	0.17	NA	NA	10.35	0.005	0.001	4.54	411	0.175	338.4	670,000
Masked Shrew														
Arsenic	0.01	NA	0.01	NA	NA	2.55	NA	0.0011	1.00	0.01	4.70	0.11	5.63	1.4
Cadmium	0.01	NA	0.01	NA	NA	7.00	NA	0.0011	1.00	0.01	2.64	0.03	2.93	0.27
Copper	0.01	NA	0.01	NA	NA	3.70	NA	0.0011	1.00	0.01	631.58	0.02	691.14	120
Lead	0.01	NA	0.01	NA	NA	1.55	NA	0.0011	1.00	0.01	240.64	0.02	258.97	100
Manganese	0.01	NA	0.01	NA	NA	1.48	NA	0.0011	1.00	0.01	159.09	0.0297	176.03	71
Zinc	0.01	NA	0.01	NA	NA	8.31	NA	0.0011	1.00	0.01	411.43	0.18	506.36	39

Notes:

1 See Tables 3-1 through 3-13 for ingestion rates, foraging ranges used to calculate the SUF, and body weights.
2 BAFs were calculated by dividing site-collected tissue by collocated soil concentrations (BAFs are in dry weight). The maximum BAF from the terrestrial reference site was used for risk-based ecological goal calculations.
3 SUF based on site area divided by the foraging range of receptors (see note 1). SUFs for receptors with foraging ranges smaller than the site area are assumed to be 1.
4 The derivation of TRVs is described in Navy (1988) and DTSC (2009). The high TRV was used to calculate the risk-based ecological goal.
5 Allometrically adjusted TRVs for avian receptors were calculated using the following equation: Receptor Species TRV = (test species TRV) x (test species body weight / receptor species body weight)$^{(1-1.2)}$.
6 Allometrically adjusted TRVs for mammalian receptors were calculated using the following equation: Receptor Species TRV = (test species TRV) x (test species body weight / receptor species body weight$^{(1-0.94)}$.
7 Site-specific goals were back-calculated using the following equation: Goal = [(allometrically adjusted TRV / SUF) * BW] / [IR_{soil} + (BAF_{food} * IR_{food})]. Values are reported to two significant figures.

BAF	Bioaccumulation factor	IR	Ingestion rate	NA	Not applicable
BW	Body weight	kg/day	Kilogram per day	Navy	Department of the Navy
DTSC	California Department of Toxic Substance Control	mg/kg	Milligram per kilogram	SUF	Site use factor
EU	Exposure Unit	mg/kg/day	Milligram per kilogram per day	TRV	Toxicity reference value

References:

Department of the Navy. 1998. "Development of Toxicity Reference Values for Conducting Ecological Risk Assessments at Naval Facilities in California, Interim Final." Prepared by Naval Facilities Engineering Command, Engineering Field Activity West (EFA

DTSC. 2009. HERD Ecological Risk Assessment Note 6. February. Available on-line at: http://www.dtsc.ca.gov/AssessingRisk/upload/CdEconote_Final.pdf.

TABLE E-9: SITE-SPECIFIC ECOLOGICAL REMEDIATION GOAL BACK-CALCULATIONS FOR EU 9 - PAYMASTER MINE WASTE AREAS
Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

Ecological Receptor/Chemical of Ecological Concern	Total Prey Ingestion Rate[1] (kg/day)	Plant Ingestion Rate[1] (kg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Plant BAF[2] (kg dry soil/kg dry tissue)	Invertebrate BAF[2] (kg dry soil/kg dry tissue)	Mammal BAF[2] (kg dry soil/kg dry tissue)	Soil Ingestion Rate [1] (kg/day)	SUF[3]	Body Weight[1] (kilogram)	TRV[4] (mg/kg/day)	Test Species Body Weight[4] (kilogram)	Allometrically Adjusted TRV[5,6] (mg/kg/day)	Risk-Based Ecological Goal[7] (mg/kg)
Site Area (Hectares)	**0.125**													
Mourning Dove														
Arsenic	0.006	0.006	NA	NA	0.00	NA	NA	0.0005	0.000	0.109	22.01	1.17	13.69	5,800,000
Cadmium	0.006	0.006	NA	NA	1.26	NA	NA	0.0005	0.000	0.109	1.00	1.13	0.63	18,000
Copper	0.006	0.006	NA	NA	0.78	NA	NA	0.0005	0.000	0.109	52.26	0.41	40.13	1,800,000
Lead	0.006	0.006	NA	NA	0.04	NA	NA	0.0005	0.000	0.109	8.75	0.80	5.88	1,700,000
Manganese	0.006	0.006	NA	NA	0.33	NA	NA	0.0005	0.000	0.109	776.00	0.197	689.98	63,000,000
Zinc	0.006	0.006	NA	NA	1.41	NA	NA	0.0005	0.000	0.109	172.00	0.96	111.47	2,900,000
Red-Tailed Hawk														
Arsenic	0.090	NA	NA	0.090	NA	NA	0.48	0.005	0.000	1.134	22.01	1.17	21.86	2,800,000
Cadmium	0.090	NA	NA	0.090	NA	NA	0.00	0.005	0.000	1.134	1.00	1.13	1.00	1,200,000
Copper	0.090	NA	NA	0.090	NA	NA	0.66	0.005	0.000	1.134	52.26	0.41	64.08	6,300,000
Lead	0.090	NA	NA	0.090	NA	NA	0.08	0.005	0.000	1.134	8.75	0.80	9.38	4,900,000
Manganese	0.090	NA	NA	0.090	NA	NA	0.06	0.005	0.000	1.134	776.00	0.197	1101.76	670,000,000
Zinc	0.090	NA	NA	0.090	NA	NA	10.3	0.005	0.000	1.134	172.00	0.96	178.00	1,200,000
American Kestrel														
Arsenic	0.014	NA	0.014	NA	NA	2.55	NA	0.0008	0.000	0.124	22.01	1.17	14.04	100,000
Cadmium	0.014	NA	0.014	NA	NA	7.00	NA	0.0008	0.000	0.124	1.00	1.13	0.64	1,700
Copper	0.014	NA	0.014	NA	NA	3.70	NA	0.0008	0.000	0.124	52.26	0.41	41.16	210,000
Lead	0.014	NA	0.014	NA	NA	1.55	NA	0.0008	0.000	0.124	8.75	0.80	6.03	71,000
Manganese	0.014	NA	0.014	NA	NA	1.48	NA	0.0008	0.000	0.124	776.00	0.197	707.74	8,700,000
Zinc	0.014	NA	0.014	NA	NA	8.31	NA	0.0008	0.000	0.124	172.00	0.96	114.34	260,000
Meadow Vole														
Arsenic	0.005	0.005	NA	NA	0.00	NA	NA	0.0001	1.00	0.031	4.70	0.110	5.1	1,400
Cadmium	0.005	0.005	NA	NA	1.26	NA	NA	0.0001	1.00	0.031	2.64	0.031	2.6	13
Copper	0.005	0.005	NA	NA	0.78	NA	NA	0.0001	1.00	0.031	632	0.025	623.5	5,100
Lead	0.005	0.005	NA	NA	0.04	NA	NA	0.0001	1.00	0.031	241	0.019	233.6	23,000
Manganese	0.005	0.005	NA	NA	0.33	NA	NA	0.0001	1.00	0.031	159	0.0297	158.8	2,900
Zinc	0.005	0.005	NA	NA	1.41	NA	NA	0.0001	1.00	0.031	411	0.175	456.8	2,100
White-Tailed Deer														
Arsenic	1.43	1.43	NA	NA	0.00	NA	NA	0.029	0.001	135	4.70	0.110	3.1	21,000,000
Cadmium	1.43	1.43	NA	NA	1.26	NA	NA	0.029	0.001	135	2.64	0.031	1.6	170,000
Copper	1.43	1.43	NA	NA	0.78	NA	NA	0.029	0.001	135	632	0.025	376.9	64,000,000
Lead	1.43	1.43	NA	NA	0.04	NA	NA	0.029	0.001	135	241	0.019	141.2	300,000,000
Manganese	1.43	1.43	NA	NA	0.33	NA	NA	0.029	0.001	135	159	0.0297	96.0	37,000,000
Zinc	1.43	1.43	NA	NA	1.41	NA	NA	0.029	0.001	135	411	0.175	276.1	26,000,000

TABLE E-9: SITE-SPECIFIC ECOLOGICAL REMEDIATION GOAL BACK-CALCULATIONS FOR EU 9 - PAYMASTER MINE WASTE AREAS (Continued)
Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

Ecological Receptor/Chemical of Ecological Concern	Total Prey Ingestion Rate[1] (kg/day)	Plant Ingestion Rate[1] (kg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Plant BAF[2] (kg dry soil/kg dry tissue)	Invertebrate BAF[2] (kg dry soil/kg dry tissue)	Mammal BAF[2] (kg dry soil/kg dry tissue)	Soil Ingestion Rate [1] (kg/day)	SUF[3]	Body Weight[1] (kilogram)	TRV[4] (mg/kg/day)	Test Species Body Weight[4] (kilogram)	Allometrically Adjusted TRV[5,6] (mg/kg/day)	Risk-Based Ecological Goal[7] (mg/kg)
Site Area (Hectares)	**0.125**													
Red Fox														
Arsenic	0.172	NA	NA	0.17	NA	NA	0.48	0.005	0.000	4.54	4.70	0.110	3.8	2,100,000
Cadmium	0.172	NA	NA	0.17	NA	NA	0.00	0.005	0.000	4.54	2.64	0.031	2.0	20,000,000
Copper	0.172	NA	NA	0.17	NA	NA	0.66	0.005	0.000	4.54	632	0.025	461.9	190,000,000
Lead	0.172	NA	NA	0.17	NA	NA	0.08	0.005	0.000	4.54	241	0.019	173.1	480,000,000
Manganese	0.172	NA	NA	0.17	NA	NA	0.06	0.005	0.000	4.54	159	0.0297	117.7	390,000,000
Zinc	0.172	NA	NA	0.17	NA	NA	10.35	0.005	0.000	4.54	411	0.175	338.4	9,300,000
Masked Shrew														
Arsenic	0.01	NA	0.01	NA	NA	2.55	NA	0.0011	0.31	0.01	4.70	0.11	5.63	4.4
Cadmium	0.01	NA	0.01	NA	NA	7.00	NA	0.0011	0.31	0.01	2.64	0.03	2.93	0.85
Copper	0.01	NA	0.01	NA	NA	3.70	NA	0.0011	0.31	0.01	631.58	0.02	691.14	370
Lead	0.01	NA	0.01	NA	NA	1.55	NA	0.0011	0.31	0.01	240.64	0.02	258.97	320
Manganese	0.01	NA	0.01	NA	NA	1.48	NA	0.0011	0.31	0.01	159.09	0.0297	176.03	230
Zinc	0.01	NA	0.01	NA	NA	8.31	NA	0.0011	0.31	0.01	411.43	0.18	506.36	120

Notes:
1 See Tables 3-1 through 3-13 for ingestion rates, foraging ranges used to calculate the SUF, and body weights.
2 BAFs were calculated by dividing site-collected tissue by collocated soil concentrations (BAFs are in dry weight). The maximum BAF from the terrestrial reference site was used for risk-based ecological goal calculations.
3 SUF based on site area divided by the foraging range of receptors (see note 1). SUFs for receptors with foraging ranges smaller than the site area are assumed to be 1.
4 The derivation of TRVs is described in Navy (1988) and DTSC (2009). The high TRV was used to calculate the risk-based ecological goal.
5 Allometrically adjusted TRVs for avian receptors were calculated using the following equation: Receptor Species TRV = (test species TRV) x (test species body weight / receptor species body weight)$^{(1-1.2)}$.
6 Allometrically adjusted TRVs for mammalian receptors were calculated using the following equation: Receptor Species TRV = (test species TRV) x (test species body weight / receptor species body weight$^{(1-0.94)}$.
7 Site-specific goals were back-calculated using the following equation: Goal = [(allometrically adjusted TRV / SUF) * BW] / [IR_{soil} + (BAF_{food} * IR_{food})]. Values are reported to two significant figures.

BAF	Bioaccumulation factor	IR	Ingestion rate	NA	Not applicable
BW	Body weight	kg/day	Kilogram per day	Navy	Department of the Navy
DTSC	California Department of Toxic Substance Control	mg/kg	Milligram per kilogram	SUF	Site use factor
EU	Exposure Unit	mg/kg/day	Milligram per kilogram per day	TRV	Toxicity reference value

References:
Department of the Navy. 1998. "Development of Toxicity Reference Values for Conducting Ecological Risk Assessments at Naval Facilities in California, Interim Final." Prepared by Naval Facilities Engineering Command, Engineering Field Activity West (EFA

DTSC. 2009. HERD Ecological Risk Assessment Note 6. February. Available on-line at: http://www.dtsc.ca.gov/AssessingRisk/upload/CdEconote_Final.pdf.

TABLE E-10: SITE-SPECIFIC ECOLOGICAL REMEDIATION GOAL BACK-CALCULATIONS FOR EU 10 - NUMBER 3 TUNNEL WASTE AREA
Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

Ecological Receptor/Chemical of Ecological Concern	Total Prey Ingestion Rate[1] (kg/day)	Plant Ingestion Rate[1] (kg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Plant BAF[2] (kg dry soil/kg dry tissue)	Invertebrate BAF[2] (kg dry soil/kg dry tissue)	Mammal BAF[2] (kg dry soil/kg dry tissue)	Soil Ingestion Rate [1] (kg/day)	SUF[3]	Body Weight[1] (kilogram)	TRV[4] (mg/kg/day)	Test Species Body Weight[4] (kilogram)	Allometrically Adjusted TRV[5,6] (mg/kg/day)	Risk-Based Ecological Goal[7] (mg/kg)
Site Area (Hectares)	**1.09**													
Mourning Dove														
Arsenic	0.006	0.006	NA	NA	0.00	NA	NA	0.0005	0.004	0.109	22.01	1.17	13.69	660,000
Cadmium	0.006	0.006	NA	NA	1.26	NA	NA	0.0005	0.004	0.109	1.00	1.13	0.63	2,100
Copper	0.006	0.006	NA	NA	0.78	NA	NA	0.0005	0.004	0.109	52.26	0.41	40.13	210,000
Lead	0.006	0.006	NA	NA	0.04	NA	NA	0.0005	0.004	0.109	8.75	0.80	5.88	190,000
Manganese	0.006	0.006	NA	NA	0.33	NA	NA	0.0005	0.004	0.109	776.00	0.197	689.98	7,300,000
Zinc	0.006	0.006	NA	NA	1.41	NA	NA	0.0005	0.004	0.109	172.00	0.96	111.47	330,000
Red-Tailed Hawk														
Arsenic	0.090	NA	NA	0.090	NA	NA	0.48	0.005	0.002	1.134	22.01	1.17	21.86	330,000
Cadmium	0.090	NA	NA	0.090	NA	NA	0.00	0.005	0.002	1.134	1.00	1.13	1.00	140,000
Copper	0.090	NA	NA	0.090	NA	NA	0.66	0.005	0.002	1.134	52.26	0.41	64.08	720,000
Lead	0.090	NA	NA	0.090	NA	NA	0.08	0.005	0.002	1.134	8.75	0.80	9.38	570,000
Manganese	0.090	NA	NA	0.090	NA	NA	0.06	0.005	0.002	1.134	776.00	0.197	1101.76	76,000,000
Zinc	0.090	NA	NA	0.090	NA	NA	10.3	0.005	0.002	1.134	172.00	0.96	178.00	140,000
American Kestrel														
Arsenic	0.014	NA	0.014	NA	NA	2.55	NA	0.0008	0.004	0.124	22.01	1.17	14.04	12,000
Cadmium	0.014	NA	0.014	NA	NA	7.00	NA	0.0008	0.004	0.124	1.00	1.13	0.64	200
Copper	0.014	NA	0.014	NA	NA	3.70	NA	0.0008	0.004	0.124	52.26	0.41	41.16	24,000
Lead	0.014	NA	0.014	NA	NA	1.55	NA	0.0008	0.004	0.124	8.75	0.80	6.03	8,100
Manganese	0.014	NA	0.014	NA	NA	1.48	NA	0.0008	0.004	0.124	776.00	0.197	707.74	1,000,000
Zinc	0.014	NA	0.014	NA	NA	8.31	NA	0.0008	0.004	0.124	172.00	0.96	114.34	30,000
Meadow Vole														
Arsenic	0.005	0.005	NA	NA	0.00	NA	NA	0.0001	1.00	0.031	4.70	0.110	5.1	1,400
Cadmium	0.005	0.005	NA	NA	1.26	NA	NA	0.0001	1.00	0.031	2.64	0.031	2.6	13
Copper	0.005	0.005	NA	NA	0.78	NA	NA	0.0001	1.00	0.031	632	0.025	623.5	5,100
Lead	0.005	0.005	NA	NA	0.04	NA	NA	0.0001	1.00	0.031	241	0.019	233.6	23,000
Manganese	0.005	0.005	NA	NA	0.33	NA	NA	0.0001	1.00	0.031	159	0.0297	158.8	2,900
Zinc	0.005	0.005	NA	NA	1.41	NA	NA	0.0001	1.00	0.031	411	0.175	456.8	2,100
White-Tailed Deer														
Arsenic	1.43	1.43	NA	NA	0.00	NA	NA	0.029	0.006	135	4.70	0.110	3.1	2,400,000
Cadmium	1.43	1.43	NA	NA	1.26	NA	NA	0.029	0.006	135	2.64	0.031	1.6	19,000
Copper	1.43	1.43	NA	NA	0.78	NA	NA	0.029	0.006	135	632	0.025	376.9	7,300,000
Lead	1.43	1.43	NA	NA	0.04	NA	NA	0.029	0.006	135	241	0.019	141.2	34,000,000
Manganese	1.43	1.43	NA	NA	0.33	NA	NA	0.029	0.006	135	159	0.0297	96.0	4,200,000
Zinc	1.43	1.43	NA	NA	1.41	NA	NA	0.029	0.006	135	411	0.175	276.1	3,000,000

TABLE E-10: SITE-SPECIFIC ECOLOGICAL REMEDIATION GOAL BACK-CALCULATIONS FOR EU 10 - NUMBER 3 TUNNEL WASTE AREA (Continued)
Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

Ecological Receptor/Chemical of Ecological Concern	Total Prey Ingestion Rate[1] (kg/day)	Plant Ingestion Rate[1] (kg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Plant BAF[2] (kg dry soil/kg dry tissue)	Invertebrate BAF[2] (kg dry soil/kg dry tissue)	Mammal BAF[2] (kg dry soil/kg dry tissue)	Soil Ingestion Rate [1] (kg/day)	SUF[3]	Body Weight[1] (kilogram)	TRV[4] (mg/kg/day)	Test Species Body Weight[4] (kilogram)	Allometrically Adjusted TRV[5,6] (mg/kg/day)	Risk-Based Ecological Goal[7] (mg/kg)
Site Area (Hectares)	**1.09**													
Red Fox														
Arsenic	0.172	NA	NA	0.17	NA	NA	0.48	0.005	0.001	4.54	4.70	0.110	3.8	240,000
Cadmium	0.172	NA	NA	0.17	NA	NA	0.00	0.005	0.001	4.54	2.64	0.031	2.0	2,300,000
Copper	0.172	NA	NA	0.17	NA	NA	0.66	0.005	0.001	4.54	632	0.025	461.9	22,000,000
Lead	0.172	NA	NA	0.17	NA	NA	0.08	0.005	0.001	4.54	241	0.019	173.1	55,000,000
Manganese	0.172	NA	NA	0.17	NA	NA	0.06	0.005	0.001	4.54	159	0.0297	117.7	44,000,000
Zinc	0.172	NA	NA	0.17	NA	NA	10.35	0.005	0.001	4.54	411	0.175	338.4	1,100,000
Masked Shrew														
Arsenic	0.01	NA	0.01	NA	NA	2.55	NA	0.0011	1.00	0.01	4.70	0.11	5.63	1.4
Cadmium	0.01	NA	0.01	NA	NA	7.00	NA	0.0011	1.00	0.01	2.64	0.03	2.93	0.27
Copper	0.01	NA	0.01	NA	NA	3.70	NA	0.0011	1.00	0.01	631.58	0.02	691.14	120
Lead	0.01	NA	0.01	NA	NA	1.55	NA	0.0011	1.00	0.01	240.64	0.02	258.97	100
Manganese	0.01	NA	0.01	NA	NA	1.48	NA	0.0011	1.00	0.01	159.09	0.0297	176.03	71
Zinc	0.01	NA	0.01	NA	NA	8.31	NA	0.0011	1.00	0.01	411.43	0.18	506.36	39

Notes:
1 See Tables 3-1 through 3-13 for ingestion rates, foraging ranges used to calculate the SUF, and body weights.
2 BAFs were calculated by dividing site-collected tissue by collocated soil concentrations (BAFs are in dry weight). The maximum BAF from the terrestrial reference site was used for risk-based ecological goal calculations.
3 SUF based on site area divided by the foraging range of receptors (see note 1). SUFs for receptors with foraging ranges smaller than the site area are assumed to be 1.
4 The derivation of TRVs is described in Navy (1988) and DTSC (2009). The high TRV was used to calculate the risk-based ecological goal.
5 Allometrically adjusted TRVs for avian receptors were calculated using the following equation: Receptor Species TRV = (test species TRV) x (test species body weight / receptor species body weight)$^{(1-1.2)}$.
6 Allometrically adjusted TRVs for mammalian receptors were calculated using the following equation: Receptor Species TRV = (test species TRV) x (test species body weight / receptor species body weight$^{(1-0.94)}$.
7 Site-specific goals were back-calculated using the following equation: Goal = [(allometrically adjusted TRV / SUF) * BW] / [IR_{soil} + (BAF_{food} * IR_{food})]. Values are reported to two significant figures.

BAF	Bioaccumulation factor	IR	Ingestion rate	NA	Not applicable
BW	Body weight	kg/day	Kilogram per day	Navy	Department of the Navy
DTSC	California Department of Toxic Substance Control	mg/kg	Milligram per kilogram	SUF	Site use factor
EU	Exposure Unit	mg/kg/day	Milligram per kilogram per day	TRV	Toxicity reference value

References:
Department of the Navy. 1998. "Development of Toxicity Reference Values for Conducting Ecological Risk Assessments at Naval Facilities in California, Interim Final." Prepared by Naval Facilities Engineering Command, Engineering Field Activity West (EFA

DTSC. 2009. HERD Ecological Risk Assessment Note 6. February. Available on-line at: http://www.dtsc.ca.gov/AssessingRisk/upload/CdEconote_Final.pdf.

TABLE E-11: SITE-SPECIFIC ECOLOGICAL REMEDIATION GOAL BACK-CALCULATIONS FOR EU 11 - BEARTRAP CREEK DISPERSED TAILINGS DEPOSITS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK TAILINGS DEPOSITS AND FLOSSIE LOUISE MINE WASTE PILE

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

Ecological Receptor/Chemical of Ecological Concern	Total Prey Ingestion Rate[1] (kg/day)	Plant Ingestion Rate[1] (kg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Plant BAF[2] (kg dry soil/kg dry tissue)	Invertebrate BAF[2] (kg dry soil/kg dry tissue)	Mammal BAF[2] (kg dry soil/kg dry tissue)	Soil Ingestion Rate [1] (kg/day)	SUF[3]	Body Weight[1] (kilogram)	TRV[4] (mg/kg/day)	Test Species Body Weight[4] (kilogram)	Allometrically Adjusted TRV[5,6] (mg/kg/day)	Risk-Based Ecological Goal[7] (mg/kg)
Site Area (Hectares)	**4.98**													
Mourning Dove														
Arsenic	0.006	0.006	NA	NA	0.00	NA	NA	0.0005	0.019	0.109	22.01	1.17	13.69	150,000
Cadmium	0.006	0.006	NA	NA	1.26	NA	NA	0.0005	0.019	0.109	1.00	1.13	0.63	460
Copper	0.006	0.006	NA	NA	0.78	NA	NA	0.0005	0.019	0.109	52.26	0.41	40.13	45,000
Lead	0.006	0.006	NA	NA	0.04	NA	NA	0.0005	0.019	0.109	8.75	0.80	5.88	42,000
Manganese	0.006	0.006	NA	NA	0.33	NA	NA	0.0005	0.019	0.109	776.00	0.197	689.98	1,600,000
Zinc	0.006	0.006	NA	NA	1.41	NA	NA	0.0005	0.019	0.109	172.00	0.96	111.47	73,000
Red-Tailed Hawk														
Arsenic	0.090	NA	NA	0.090	NA	NA	0.48	0.005	0.007	1.134	22.01	1.17	21.86	71,000
Cadmium	0.090	NA	NA	0.090	NA	NA	0.00	0.005	0.007	1.134	1.00	1.13	1.00	31,000
Copper	0.090	NA	NA	0.090	NA	NA	0.66	0.005	0.007	1.134	52.26	0.41	64.08	160,000
Lead	0.090	NA	NA	0.090	NA	NA	0.08	0.005	0.007	1.134	8.75	0.80	9.38	120,000
Manganese	0.090	NA	NA	0.090	NA	NA	0.06	0.005	0.007	1.134	776.00	0.197	1101.76	17,000,000
Zinc	0.090	NA	NA	0.090	NA	NA	10.3	0.005	0.007	1.134	172.00	0.96	178.00	30,000
American Kestrel														
Arsenic	0.014	NA	0.014	NA	NA	2.55	NA	0.0008	0.019	0.124	22.01	1.17	14.04	2,500
Cadmium	0.014	NA	0.014	NA	NA	7.00	NA	0.0008	0.019	0.124	1.00	1.13	0.64	43
Copper	0.014	NA	0.014	NA	NA	3.70	NA	0.0008	0.019	0.124	52.26	0.41	41.16	5,200
Lead	0.014	NA	0.014	NA	NA	1.55	NA	0.0008	0.019	0.124	8.75	0.80	6.03	1,800
Manganese	0.014	NA	0.014	NA	NA	1.48	NA	0.0008	0.019	0.124	776.00	0.197	707.74	220,000
Zinc	0.014	NA	0.014	NA	NA	8.31	NA	0.0008	0.019	0.124	172.00	0.96	114.34	6,500
Meadow Vole														
Arsenic	0.005	0.005	NA	NA	0.00	NA	NA	0.0001	1.00	0.031	4.70	0.110	5.1	1,400
Cadmium	0.005	0.005	NA	NA	1.26	NA	NA	0.0001	1.00	0.031	2.64	0.031	2.6	13
Copper	0.005	0.005	NA	NA	0.78	NA	NA	0.0001	1.00	0.031	632	0.025	623.5	5,100
Lead	0.005	0.005	NA	NA	0.04	NA	NA	0.0001	1.00	0.031	241	0.019	233.6	23,000
Manganese	0.005	0.005	NA	NA	0.33	NA	NA	0.0001	1.00	0.031	159	0.0297	158.8	2,900
Zinc	0.005	0.005	NA	NA	1.41	NA	NA	0.0001	1.00	0.031	411	0.175	456.8	2,100
White-Tailed Deer														
Arsenic	1.43	1.43	NA	NA	0.00	NA	NA	0.029	0.028	135	4.70	0.110	3.1	520,000
Cadmium	1.43	1.43	NA	NA	1.26	NA	NA	0.029	0.028	135	2.64	0.031	1.6	4,200
Copper	1.43	1.43	NA	NA	0.78	NA	NA	0.029	0.028	135	632	0.025	376.9	1,600,000
Lead	1.43	1.43	NA	NA	0.04	NA	NA	0.029	0.028	135	241	0.019	141.2	7,500,000
Manganese	1.43	1.43	NA	NA	0.33	NA	NA	0.029	0.028	135	159	0.0297	96.0	920,000
Zinc	1.43	1.43	NA	NA	1.41	NA	NA	0.029	0.028	135	411	0.175	276.1	650,000

TABLE E-11: SITE-SPECIFIC ECOLOGICAL REMEDIATION GOAL BACK-CALCULATIONS FOR EU 11 - BEARTRAP CREEK DISPERSED TAILINGS DEPOSITS ASSOCIATED WITH EE/CA REMOVAL ACTION AREA AND OVERBANK TAILINGS DEPOSITS AND FLOSSIE LOUISE MINE WASTE PILE (Continued)
Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

Ecological Receptor/Chemical of Ecological Concern	Total Prey Ingestion Rate[1] (kg/day)	Plant Ingestion Rate[1] (kg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Plant BAF[2] (kg dry soil/kg dry tissue)	Invertebrate BAF[2] (kg dry soil/kg dry tissue)	Mammal BAF[2] (kg dry soil/kg dry tissue)	Soil Ingestion Rate[1] (kg/day)	SUF[3]	Body Weight[1] (kilogram)	TRV[4] (mg/kg/day)	Test Species Body Weight[4] (kilogram)	Allometrically Adjusted TRV[5,6] (mg/kg/day)	Risk-Based Ecological Goal[7] (mg/kg)
Site Area (Hectares)	**4.98**													
Red Fox														
Arsenic	0.172	NA	NA	0.17	NA	NA	0.48	0.005	0.004	4.54	4.70	0.110	3.8	53,000
Cadmium	0.172	NA	NA	0.17	NA	NA	0.00	0.005	0.004	4.54	2.64	0.031	2.0	500,000
Copper	0.172	NA	NA	0.17	NA	NA	0.66	0.005	0.004	4.54	632	0.025	461.9	4,800,000
Lead	0.172	NA	NA	0.17	NA	NA	0.08	0.005	0.004	4.54	241	0.019	173.1	12,000,000
Manganese	0.172	NA	NA	0.17	NA	NA	0.06	0.005	0.004	4.54	159	0.0297	117.7	9,700,000
Zinc	0.172	NA	NA	0.17	NA	NA	10.35	0.005	0.004	4.54	411	0.175	338.4	230,000
Masked Shrew														
Arsenic	0.01	NA	0.01	NA	NA	2.55	NA	0.0011	1.00	0.01	4.70	0.11	5.63	1.4
Cadmium	0.01	NA	0.01	NA	NA	7.00	NA	0.0011	1.00	0.01	2.64	0.03	2.93	0.27
Copper	0.01	NA	0.01	NA	NA	3.70	NA	0.0011	1.00	0.01	631.58	0.02	691.14	120
Lead	0.01	NA	0.01	NA	NA	1.55	NA	0.0011	1.00	0.01	240.64	0.02	258.97	100
Manganese	0.01	NA	0.01	NA	NA	1.48	NA	0.0011	1.00	0.01	159.09	0.0297	176.03	71
Zinc	0.01	NA	0.01	NA	NA	8.31	NA	0.0011	1.00	0.01	411.43	0.18	506.36	39

Notes:

1 See Tables 3-1 through 3-13 for ingestion rates, foraging ranges used to calculate the SUF, and body weights.
2 BAFs were calculated by dividing site-collected tissue by collocated soil concentrations (BAFs are in dry weight). The maximum BAF from the terrestrial reference site was used for risk-based ecological goal calculations.
3 SUF based on site area divided by the foraging range of receptors (see note 1). SUFs for receptors with foraging ranges smaller than the site area are assumed to be 1.
4 The derivation of TRVs is described in Navy (1988) and DTSC (2009). The high TRV was used to calculate the risk-based ecological goal.
5 Allometrically adjusted TRVs for avian receptors were calculated using the following equation: Receptor Species TRV = (test species TRV) x (test species body weight / receptor species body weight)$^{(1-1.2)}$.
6 Allometrically adjusted TRVs for mammalian receptors were calculated using the following equation: Receptor Species TRV = (test species TRV) x (test species body weight / receptor species body weight)$^{(1-0.94)}$.
7 Site-specific goals were back-calculated using the following equation: Goal = [(allometrically adjusted TRV / SUF) * BW] / [IR_{soil} + (BAF_{food} * IR_{food})]. Values are reported to two significant figures.

BAF	Bioaccumulation factor	IR	Ingestion rate	NA	Not applicable
BW	Body weight	kg/day	Kilogram per day	Navy	Department of the Navy
DTSC	California Department of Toxic Substance Control	mg/kg	Milligram per kilogram	SUF	Site use factor
EE/CA	Engineering Evaluation/Cost Analysis	mg/kg/day	Milligram per kilogram per day	TRV	Toxicity reference value
EU	Exposure Unit				

References:
Department of the Navy. 1998. "Development of Toxicity Reference Values for Conducting Ecological Risk Assessments at Naval Facilities in California, Interim Final." Prepared by Naval Facilities Engineering Command, Engineering Field Activity West (EFA

DTSC. 2009. HERD Ecological Risk Assessment Note 6. February. Available on-line at: http://www.dtsc.ca.gov/AssessingRisk/upload/CdEconote_Final.pdf.

TABLE E-12: SITE-SPECIFIC ECOLOGICAL REMEDIATION GOAL BACK-CALCULATIONS FOR EU 12 - MARSH

Baseline Ecological Risk Assessment

Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

Ecological Receptor/Chemical of Ecological Concern	Total Prey Ingestion Rate[1] (kg/day)	Plant Ingestion Rate[1] (kg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Plant BAF[2] (kg dry soil/kg dry tissue)	Invertebrate BAF[2] (kg dry soil/kg dry tissue)	Mammal BAF[2] (kg dry soil/kg dry tissue)	Sediment Ingestion Rate[1] (kg/day)	SUF[3]	Body Weight[1] (kilogram)	TRV[4] (mg/kg/day)	Test Species Body Weight[4] (kilogram)	Allometrically Adjusted TRV[5,6] (mg/kg/day)	Risk-Based Ecological Goal[7] (mg/kg)
Site Area (Hectares)	**118.73**													
Mourning Dove														
Aluminum	0.006	0.006	NA	NA	0.022	NA	NA	0.0005	0.458	0.109	1097	0.155	1022.79	370,000
Arsenic	0.006	0.006	NA	NA	0.00	NA	NA	0.0005	0.458	0.109	22.01	1.17	13.69	6,100
Cadmium	0.006	0.006	NA	NA	5.05	NA	NA	0.0005	0.458	0.109	1.00	1.13	0.63	5
Copper	0.006	0.006	NA	NA	1.42	NA	NA	0.0005	0.458	0.109	52.26	0.41	40.13	1,100
Lead	0.006	0.006	NA	NA	0.00	NA	NA	0.0005	0.458	0.109	8.75	0.80	5.88	2,600
Manganese	0.006	0.006	NA	NA	3.24	NA	NA	0.0005	0.458	0.109	776.00	0.197	689.98	8,600
Zinc	0.006	0.006	NA	NA	1.99	NA	NA	0.0005	0.458	0.109	172.00	0.96	111.47	2,200
Red-Tailed Hawk														
Aluminum	0.090	NA	NA	0.090	NA	NA	0.02	0.005	0.170	1.134	1097	0.155	1633.19	1,600,000
Arsenic	0.090	NA	NA	0.090	NA	NA	0.00	0.005	0.170	1.134	22.01	1.17	21.86	28,000
Cadmium	0.090	NA	NA	0.090	NA	NA	0.00	0.005	0.170	1.134	1.00	1.13	1.00	1,300
Copper	0.090	NA	NA	0.090	NA	NA	0.92	0.005	0.170	1.134	52.26	0.41	64.08	4,900
Lead	0.090	NA	NA	0.090	NA	NA	0.12	0.005	0.170	1.134	8.75	0.80	9.38	3,900
Manganese	0.090	NA	NA	0.090	NA	NA	0.11	0.005	0.170	1.134	776.00	0.197	1101.76	480,000
Zinc	0.090	NA	NA	0.090	NA	NA	5.46	0.005	0.170	1.134	172.00	0.96	178.00	2,400
American Kestrel														
Aluminum	0.014	NA	0.014	NA	NA	1.31	NA	0.0008	0.454	0.124	1097	0.155	1049.12	15,000
Arsenic	0.014	NA	0.014	NA	NA	3.04	NA	0.0008	0.454	0.124	22.01	1.17	14.04	90
Cadmium	0.014	NA	0.014	NA	NA	32.57	NA	0.0008	0.454	0.124	1.00	1.13	0.64	0.4
Copper	0.014	NA	0.014	NA	NA	12.55	NA	0.0008	0.454	0.124	52.26	0.41	41.16	65
Lead	0.014	NA	0.014	NA	NA	2.22	NA	0.0008	0.454	0.124	8.75	0.80	6.03	53
Manganese	0.014	NA	0.014	NA	NA	13.30	NA	0.0008	0.454	0.124	776.00	0.197	707.74	1,100
Zinc	0.014	NA	0.014	NA	NA	10.93	NA	0.0008	0.454	0.124	172.00	0.96	114.34	210
Meadow Vole														
Aluminum	0.005	0.005	NA	NA	0.022	NA	NA	0.0001	1.00	0.031	19.3	0.03	19.3	2,800
Arsenic	0.005	0.005	NA	NA	0.00	NA	NA	0.0001	1.00	0.031	4.70	0.110	5.1	1,400
Cadmium	0.005	0.005	NA	NA	5.05	NA	NA	0.0001	1.00	0.031	2.64	0.031	2.6	3.4
Copper	0.005	0.005	NA	NA	1.42	NA	NA	0.0001	1.00	0.031	632	0.025	623.5	2,800
Lead	0.005	0.005	NA	NA	0.00	NA	NA	0.0001	1.00	0.031	241	0.019	233.6	64,000
Manganese	0.005	0.005	NA	NA	3.24	NA	NA	0.0001	1.00	0.031	159	0.0297	158.8	320
Zinc	0.005	0.005	NA	NA	1.99	NA	NA	0.0001	1.00	0.031	411	0.175	456.8	1,500
White-Tailed Deer														
Aluminum	1.43	1.43	NA	NA	0.022	NA	NA	0.029	0.664	135	19.3	0.03	11.7	40,000
Arsenic	1.43	1.43	NA	NA	0.00	NA	NA	0.029	0.664	135	4.70	0.110	3.1	22,000
Cadmium	1.43	1.43	NA	NA	5.05	NA	NA	0.029	0.664	135	2.64	0.031	1.6	45
Copper	1.43	1.43	NA	NA	1.42	NA	NA	0.029	0.664	135	632	0.025	376.9	37,000
Lead	1.43	1.43	NA	NA	0.00	NA	NA	0.029	0.664	135	241	0.019	141.2	1,000,000
Manganese	1.43	1.43	NA	NA	3.24	NA	NA	0.029	0.664	135	159	0.0297	96.0	4,200
Zinc	1.43	1.43	NA	NA	1.99	NA	NA	0.029	0.664	135	411	0.175	276.1	20,000

TABLE E-12: SITE-SPECIFIC ECOLOGICAL REMEDIATION GOAL BACK-CALCULATIONS FOR EU 12 - MARSH (Continued)
Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

Ecological Receptor/Chemical of Ecological Concern	Total Prey Ingestion Rate[1] (kg/day)	Plant Ingestion Rate[1] (kg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Plant BAF[2] (kg dry soil/kg dry tissue)	Invertebrate BAF[2] (kg dry soil/kg dry tissue)	Mammal BAF[2] (kg dry soil/kg dry tissue)	Sediment Ingestion Rate[1] (kg/day)	SUF[3]	Body Weight[1] (kilogram)	TRV[4] (mg/kg/day)	Test Species Body Weight[4] (kilogram)	Allometrically Adjusted TRV[5,6] (mg/kg/day)	Risk-Based Ecological Goal[7] (mg/kg)
Site Area (Hectares)	**118.73**													
Red Fox														
Aluminum	0.172	NA	NA	0.17	NA	NA	0.02	0.005	0.088	4.54	19.3	0.03	14.3	93,000
Arsenic	0.172	NA	NA	0.17	NA	NA	0.00	0.005	0.088	4.54	4.70	0.110	3.8	40,000
Cadmium	0.172	NA	NA	0.17	NA	NA	0.00	0.005	0.088	4.54	2.64	0.031	2.0	21,000
Copper	0.172	NA	NA	0.17	NA	NA	0.92	0.005	0.088	4.54	632	0.025	461.9	150,000
Lead	0.172	NA	NA	0.17	NA	NA	0.12	0.005	0.088	4.54	241	0.019	173.1	350,000
Manganese	0.172	NA	NA	0.17	NA	NA	0.11	0.005	0.088	4.54	159	0.0297	117.7	250,000
Zinc	0.172	NA	NA	0.17	NA	NA	5.46	0.005	0.088	4.54	411	0.175	338.4	19,000
Masked Shrew														
Aluminum	0.008	NA	0.01	NA	NA	1.31	NA	0.0011	1.00	0.006	19.3	0.03	21.37	9.7
Arsenic	0.008	NA	0.01	NA	NA	3.04	NA	0.0011	1.00	0.006	4.70	0.11	5.63	1.2
Cadmium	0.008	NA	0.01	NA	NA	32.57	NA	0.0011	1.00	0.006	2.64	0.03	2.93	0.058
Copper	0.008	NA	0.01	NA	NA	12.55	NA	0.0011	1.00	0.006	631.58	0.02	691.14	35
Lead	0.008	NA	0.01	NA	NA	2.22	NA	0.0011	1.00	0.006	240.64	0.02	258.97	72
Manganese	0.008	NA	0.01	NA	NA	13.30	NA	0.0011	1.00	0.006	159.09	0.0297	176.03	8.5
Zinc	0.008	NA	0.01	NA	NA	10.93	NA	0.0011	1.00	0.006	411.43	0.18	506.36	30
Canada Goose														
Aluminum	0.857	0.857	NA	NA	0.022	NA	NA	0.0703	0.12	36.87	1097	0.155	3277.02	11,000,000
Arsenic	0.857	0.857	NA	NA	0.00	NA	NA	0.0703	0.12	36.87	22.01	1.17	43.87	190,000
Cadmium	0.857	0.857	NA	NA	5.05	NA	NA	0.0703	0.12	36.87	1.00	1.13	2.01	140
Copper	0.857	0.857	NA	NA	1.42	NA	NA	0.0703	0.12	36.87	52.26	0.41	128.58	30,000
Lead	0.857	0.857	NA	NA	0.00	NA	NA	0.0703	0.12	36.87	8.75	0.80	18.82	82,000
Manganese	0.857	0.857	NA	NA	3.24	NA	NA	0.0703	0.12	36.87	776.00	0.197	2210.69	240,000
Zinc	0.857	0.857	NA	NA	1.99	NA	NA	0.0703	0.12	36.87	172.00	0.96	357.16	61,000
Great Blue Heron														
Aluminum	0.132	NA	NA	0.132	NA	NA	0.018	0.004	1.00	2.39	1097	0.155	1895.92	760,000
Arsenic	0.132	NA	NA	0.132	NA	NA	0.00	0.004	1.00	2.39	22.01	1.17	25.38	17,000
Cadmium	0.132	NA	NA	0.132	NA	NA	0.00	0.004	1.00	2.39	1.00	1.13	1.16	780
Copper	0.132	NA	NA	0.132	NA	NA	0.92	0.004	1.00	2.39	52.26	0.41	74.39	1,400
Lead	0.132	NA	NA	0.132	NA	NA	0.12	0.004	1.00	2.39	8.75	0.80	10.89	1,300
Manganese	0.132	NA	NA	0.132	NA	NA	0.11	0.004	1.00	2.39	776.00	0.197	1278.99	170,000
Zinc	0.132	NA	NA	0.132	NA	NA	5.46	0.004	1.00	2.39	172.00	0.96	206.64	680
Mallard														
Aluminum	0.079	0.050	0.029	NA	0.022	1.31	NA	0.0026	0.385	1.143	1097	0.155	1635.87	120,000
Arsenic	0.079	0.050	0.029	NA	0.00	3.04	NA	0.0026	0.385	1.143	22.01	1.17	21.90	710
Cadmium	0.079	0.050	0.029	NA	5.05	32.57	NA	0.0026	0.385	1.143	1.00	1.13	1.00	2.5
Copper	0.079	0.050	0.029	NA	1.42	12.55	NA	0.0026	0.385	1.143	52.26	0.41	64.19	430
Lead	0.079	0.050	0.029	NA	0.00	2.22	NA	0.0026	0.385	1.143	8.75	0.80	9.40	410
Manganese	0.079	0.050	0.029	NA	3.24	13.30	NA	0.0026	0.385	1.143	776.00	0.197	1103.57	5,900
Zinc	0.079	0.050	0.029	NA	1.99	10.93	NA	0.0026	0.385	1.143	172.00	0.96	178.29	1,300

TABLE E-12: SITE-SPECIFIC ECOLOGICAL REMEDIATION GOAL BACK-CALCULATIONS FOR EU 12 - MARSH (Continued)
Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

Ecological Receptor/Chemical of Ecological Concern	Total Prey Ingestion Rate[1] (kg/day)	Plant Ingestion Rate[1] (kg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Plant BAF[2] (kg dry soil/kg dry tissue)	Invertebrate BAF[2] (kg dry soil/kg dry tissue)	Mammal BAF[2] (kg dry soil/kg dry tissue)	Sediment Ingestion Rate[1] (kg/day)	SUF[3]	Body Weight[1] (kilogram)	TRV[4] (mg/kg/day)	Test Species Body Weight[4] (kilogram)	Allometrically Adjusted TRV[5,6] (mg/kg/day)	Risk-Based Ecological Goal[7] (mg/kg)
Site Area (Hectares)	**118.73**													
Muskrat														
Aluminum	0.063	0.063	NA	NA	0.022	NA	NA	0.0015	1.00	0.873	19.3	0.03	15.8	4,800
Arsenic	0.063	0.063	NA	NA	0.00	NA	NA	0.0015	1.00	0.873	4.70	0.110	4.2	2,400
Cadmium	0.063	0.063	NA	NA	5.05	NA	NA	0.0015	1.00	0.873	2.64	0.031	2.2	5.9
Copper	0.063	0.063	NA	NA	1.42	NA	NA	0.0015	1.00	0.873	632	0.025	510.0	4,900
Lead	0.063	0.063	NA	NA	0.00	NA	NA	0.0015	1.00	0.873	241	0.019	191.1	110,000
Manganese	0.063	0.063	NA	NA	3.24	NA	NA	0.0015	1.00	0.873	159	0.0297	129.9	550
Zinc	0.063	0.063	NA	NA	1.99	NA	NA	0.0015	1.00	0.873	411	0.175	373.6	2,600
Mink														
Aluminum	0.043	NA	NA	0.04	NA	NA	0.018	0.0012	1.00	0.852	19.3	0.03	15.8	6,800
Arsenic	0.043	NA	NA	0.04	NA	NA	0.00	0.0012	1.00	0.852	4.70	0.110	4.16	3,000
Cadmium	0.043	NA	NA	0.04	NA	NA	0.00	0.0012	1.00	0.852	2.64	0.031	2.17	1,500
Copper	0.043	NA	NA	0.04	NA	NA	0.92	0.0012	1.00	0.852	632	0.025	510.7	11,000
Lead	0.043	NA	NA	0.04	NA	NA	0.12	0.0012	1.00	0.852	241	0.019	191.4	26,000
Manganese	0.043	NA	NA	0.04	NA	NA	0.11	0.0012	1.00	0.852	159	0.0297	130.1	18,000
Zinc	0.043	NA	NA	0.04	NA	NA	5.46	0.0012	1.00	0.852	411	0.175	374.1	1,400

Notes:

1 See Tables 3-1 through 3-13 for ingestion rates, foraging ranges used to calculate the SUF, and body weights.
2 BAFs were calculated by dividing site-collected tissue by collocated soil concentrations (BAFs are in dry weight). The maximum BAF from the upper marsh reference site was used for risk-based ecological goal calculations.
3 SUF based on site area divided by the foraging range of receptors (see note 1). SUFs for receptors with foraging ranges smaller than the site area are assumed to be 1.
4 The derivation of TRVs is described in Navy (1988) and DTSC (2009). The high TRV was used to calculate the risk-based ecological goal.
5 Allometrically adjusted TRVs for avian receptors were calculated using the following equation: Receptor Species TRV = (test species TRV) x (test species body weight / receptor species body weight)$^{(1-1.2)}$.
6 Allometrically adjusted TRVs for mammalian receptors were calculated using the following equation: Receptor Species TRV = (test species TRV) x (test species body weight / receptor species body weight)$^{(1-0.94)}$.
7 Site-specific goals were back-calculated using the following equation: Goal = [(allometrically adjusted TRV / SUF) * BW] / [$IR_{sediment}$ + (BAF_{food} * IR_{food})]. Values are reported to two significant figures.

BAF	Bioaccumulation factor	IR	Ingestion rate	NA	Not applicable
BW	Body weight	kg/day	Kilogram per day	Navy	Department of the Navy
DTSC	California Department of Toxic Substance Control	mg/kg	Milligram per kilogram	SUF	Site use factor
EU	Exposure Unit	mg/kg/day	Milligram per kilogram per day	TRV	Toxicity reference value

References:
Department of the Navy. 1998. "Development of Toxicity Reference Values for Conducting Ecological Risk Assessments at Naval Facilities in California, Interim Final." Prepared by Naval Facilities Engineering Command, Engineering Field Activity West (EFA West).
DTSC. 2009. HERD Ecological Risk Assessment Note 6. February. Available on-line at: http://www.dtsc.ca.gov/AssessingRisk/upload/CdEconote_Final.pdf.

TABLE E-13: SITE-SPECIFIC ECOLOGICAL REMEDIATION GOAL BACK-CALCULATIONS FOR EU 13 - STREAM
Baseline Ecological Risk Assessment
Upper Blackfoot Mining Complex, Lewis and Clark County, Montana

Ecological Receptor/Chemical of Ecological Concern	Total Prey Ingestion Rate[1] (kg/day)	Plant Ingestion Rate[1] (kg/day)	Invertebrate Ingestion Rate[1] (kg/day)	Mammal Ingestion Rate[1] (kg/day)	Plant BAF[2] (kg dry soil/kg dry tissue)	Invertebrate BAF[2] (kg dry soil/kg dry tissue)	Mammal BAF[2] (kg dry soil/kg dry tissue)	Sediment Ingestion Rate [1] (kg/day)	SUF[3]	Body Weight[1] (kilogram)	TRV[4] (mg/kg/day)	Test Species Body Weight[4] (kilogram)	Allometrically Adjusted TRV[5] (mg/kg/day)	Risk-Based Ecological Goal[8] (mg/kg)
Site Area (Hectares)	**13.80**													
Great Blue Heron														
Aluminum	0.132	NA	NA	0.132	NA	NA	0.01	0.004	1.00	2.39	1097	0.155	1895.92	910,000
Arsenic	0.132	NA	NA	0.132	NA	NA	0.48	0.004	1.00	2.39	22.01	1.17	25.38	900
Cadmium	0.132	NA	NA	0.132	NA	NA	0.00	0.004	1.00	2.39	1.00	1.13	1.16	780
Copper	0.132	NA	NA	0.132	NA	NA	0.66	0.004	1.00	2.39	52.26	0.41	74.39	2,000
Lead	0.132	NA	NA	0.132	NA	NA	0.08	0.004	1.00	2.39	8.75	0.80	10.89	1,900
Manganese	0.132	NA	NA	0.132	NA	NA	0.06	0.004	1.00	2.39	776.00	0.197	1278.99	270,000
Zinc	0.132	NA	NA	0.132	NA	NA	10.35	0.004	1.00	2.39	172.00	0.96	206.64	360
American Dipper														
Aluminum	0.011	NA	0.011	NA	NA	0.28	NA	0.002	1.00	0.055	1097	0.155	891.69	9,400
Arsenic	0.011	NA	0.011	NA	NA	0.57	NA	0.002	1.00	0.055	22.01	1.17	11.94	77
Cadmium	0.011	NA	0.011	NA	NA	0.00	NA	0.002	1.00	0.055	1.00	1.13	0.55	15
Copper	0.011	NA	0.011	NA	NA	0.99	NA	0.002	1.00	0.055	52.26	0.41	34.99	140
Lead	0.011	NA	0.011	NA	NA	0.26	NA	0.002	1.00	0.055	8.75	0.80	5.12	56
Manganese	0.011	NA	0.011	NA	NA	2.15	NA	0.002	1.00	0.055	776.00	0.197	601.54	1,300
Zinc	0.011	NA	0.011	NA	NA	7.66	NA	0.002	1.00	0.055	172.00	0.96	97.19	60

Notes:

1 See Tables 3-1 through 3-13 for ingestion rates, foraging ranges used to calculate the SUF, and body weights.
2 BAFs were calculated by dividing site-collected tissue by collocated sediment concentrations (BAFs are in dry weight). The maximum BAF from the stream reference site was used for risk-based ecological goal calculations.
3 SUF based on site area divided by the foraging range of receptors (see note 1). SUFs for receptors with foraging ranges smaller than the site area are assumed to be 1.
4 The derivation of TRVs is described in Navy (1988) and DTSC (2009). The high TRV was used to calculate the risk-based ecological goal.
5 Allometrically adjusted TRVs for avian receptors were calculated using the following equation: Receptor Species TRV = (test species TRV) x (test species body weight / receptor species body weight)$^{(1-1.2)}$.
6 Site-specific goals were back-calculated using the following equation: Goal = [(allometrically adjusted TRV / SUF) * BW] / [$IR_{sediment}$ + (BAF_{food} * IR_{food})]. Values are reported to two significant figures.

BAF	Bioaccumulation factor	IR	Ingestion rate	NA	Not applicable
BW	Body weight	kg/day	Kilogram per day	Navy	Department of the Navy
DTSC	California Department of Toxic Substance Control	mg/kg	Milligram per kilogram	SUF	Site use factor
EU	Exposure Unit	mg/kg/day	Milligram per kilogram per day	TRV	Toxicity reference value

References:

Department of the Navy. 1998. "Development of Toxicity Reference Values for Conducting Ecological Risk Assessments at Naval Facilities in California, Interim Final." Prepared by Naval Facilities Engineering Command, Engineering Field Activity West (EFA

DTSC. 2009. HERD Ecological Risk Assessment Note 6. February. Available on-line at: http://www.dtsc.ca.gov/AssessingRisk/upload/CdEconote_Final.pdf.

APPENDIX F
REPRESENTATIVE SPECIES PROFILES

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ACRONYMS AND ABBREVIATIONS

ha Hectare

km Kilometer

km^2 Square kilometer

m Meter

F1.0 BIRDS

F1.1 TERRESTRIAL RECEPTORS

F1.1.1 American Kestrel (*Falco sparverius*)

American kestrels are in the order Falconiformes, family Accipitridae. They feed on insects and small vertebrates (such as snakes, lizards, birds, mice, and occasionally bats). They feed primarily on birds and mice in their winter northern range. The kestrel forages from conspicuous perches or while in flight. In addition, they regularly hover in flight while they hunt.

Status	The kestrel is a protected, migratory nongame species.
Distribution and Home Range	The breeding range of American kestrels is from central Alaska and most of forested Canada, south through most of North, Central, and South America to Tierra del Fuego. They winter from the northern United States and locally in southern Canada, south through their breeding range to Panama. Home range diameters range from 0.5 to 2.4 square kilometers (km^2).
Habitat	American kestrels are found in open and partly open habitat, including shrub-steppe, wooded streams, burned forests, cultivated lands, farmland with scattered trees, open woodlands, along roads, and sometimes in cities. They are found from low deserts to high mountain meadows; American kestrels are found in nearly all habitats in Montana (Skaar 1969, as cited in Montana Field Guide).
Population Density	Population densities vary with nest-site availability (cavities and nest boxes) and probably with food supply.
Reproduction/ Breeding	American kestrels are cavity-nesting birds that readily use artificial nest boxes. Females usually lay four to five eggs (range = two to seven eggs). The male sometimes shares incubation duties. The eggs are incubated for 29 to 31 days. Nestlings are altricial and are able to fly at 29 to 31 days. The young may remain with the adults for 2 to 4 weeks after they fledge. Replacement and second clutches are not uncommon. Most young breed first during their first year (Groves and others 1997, Palmer 1988, both as cited in CH2M Hill and URS Corp. 2001).

F1.1.2 Mourning Dove (*Zenaida macroura*)

The mourning dove is in the order Columbiformes, family Columbidae. It is an herbivore that feeds on mostly seeds (99 percent); insignificant amounts of animal matter and green forage may be acquired incidentally. Principal food items vary by region and immediate locale. The

mourning dove feeds primarily on the ground. Mourning doves consume large quantities of grains, seeds, and fruits, which has a significant impact on the plant communities where they live. They may act as seed dispersers for certain fruiting plants that they feed on.

Status	Mourning doves are widespread and abundant and are not currently considered threatened.
Distribution and Home Range	Mourning doves are native only to the Neartic region. Their range is from southern Canada throughout the United States, and south to Panama. Mourning doves are found year-round throughout most of their range, but northern populations migrate south during the winter. Mourning doves can migrate south from their breeding grounds each fall to a more hospitable climate for the winter. During migration, these birds may fly more than 1,000 miles to reach their winter resting point.
Habitat	The species is very adaptable. It generally shuns deep woods or extensive forest and selects more open woodlands and edges between forest and prairie biomes for nesting. Human alteration of original vegetations is generally beneficial for this species, by creating openings in extensive forest and plowing grasslands for cereal-grain production. Additional habitat created when trees and shrubs are planted in cities, towns, and suburbs (Mirarchi and Baskett 1994, as cited in the Montana Field Guide).
Population Density	Adult mourning doves usually live about 1.5 years in the wild. Population densities vary with nest-site availability (cavities and nest boxes) and probably with food supply.
Reproduction/ Breeding	Mourning doves are monogamous; some pairs stay together through the winter. Males perform a number of displays, along with a courtship "coo," on a display perch. They will drive other males away from their display perch but do not otherwise establish a territory until after they mate. Females land near the male on his display perch, causing the male to begin an elaborate series of courtship maneuvers. If a pair bond is formed, the male and female remain together for a few days before they start to build a nest. After they find a mate, males begin selecting a nest site. Nest construction takes more than 10 hours and covers a span of 3 to 4 days. Female mourning doves generally lay two small, white eggs in an open nest. The young leave the nest about 15 days after hatching but remain nearby until they are more accomplished at flying, usually at about 30 days. Young are able to breed by 85 days old. Mourning doves have the longest breeding season of all North American birds (Mirachi and Baskett 1994, as cited in Montana Field Guide).

F1.1.3 Red-tailed Hawk (*Buteo jamaicensis*)

Red-tailed hawks belong to the order Faliconiformes and family Accipitridae. Red-tailed hawks eat primarily ground squirrels and other small rodents, but also feed on a wide variety of other animals. Red-tailed hawks often eat snakes, including rattlesnakes. They range in length from 19 to 25 inches and have a wingspan of 46 to 58 inches. Plumage is extremely variable, ranging from very light to dark. Krider's red-tail is a pale variant found in eastern Montana. They are mottled brown rust above and creamy below with faint barring. The typical color is dark brown above and white below, with a band of dark speckling across the belly, and a rusty-red tail.

Status The red-tailed hawk is listed with a lower conservation need. Although the species is important to wildlife diversity, these species, communities, and focus areas are abundant and widespread and it is believed that adequate conservation is already in place. Numbers are decreasing in the Fortine area in northeastern Montana, with the light phased reported most often.

Distribution and Home Range Territories ranged from 2.6 to 4.6 square miles. Red-tailed hawks migrate to the southern United States for the winter, although some winter in Montana. Krider's red-tail is found in the Great Plains, including eastern Montana, and red tails are seen year-round in western Montana. Other red-tail hawks, such as the Harlan's red-tail, breed in northern Canada and Alaska and can be seen in Montana during migration.

Habitat Red-tailed hawks nest in trees and on cliffs, and hunt over grasslands, open woodlands, and agricultural areas.

Reproduction/ Breeding One to three eggs are laid in April. Incubation lasts about a month. The young fly in June or July when they are 6 to 7 weeks old. Incubation has been observed as early as April 19, hatching in later June; with young still in nest late July. In the Gallatin valley in South Central Montana, 53 percent of nests are successful, with an average 2.34 young fledged. Infertility loss is 3.7 percent and nesting mortality is 5.9 percent.

F1.2 WETLAND RECEPTORS

F1.2.1 Great Blue Heron (*Ardea herodias*)[1]

Great blue herons are in the order Ciconiiformes, family Ardeidae. They are the largest heron in North America. Individuals are typically most active just before dawn and at dusk. They are usually solitary outside of the breeding season and they sometimes establish feeding territories during the winter. Some herons are year-round residents in Montana; others (especially in the

[1] The great blue heron was evaluated as a stream receptor as well as a wetland receptor.

north) are breeders or transients. They are opportunistic and feed on fishes, insects, crustaceans, amphibians, reptiles, and small mammals (Palmer 1962, Kushlan 1978, Verbeek and Butler 1989, all as cited in Montana Field Guide).

Status	The heron is a protected, migratory nongame species of concern.
Distribution and Home Range	The breeding range of great blue herons is from southeastern Alaska and southern Canada to southern Mexico. They winter from southeastern Alaska, central United States, and southern New England to northern South America. Some sub-adults may summer in the non-breeding range, and individuals wander widely outside of the usual range. Adult herons defend territories along rivers, creeks, marshes, and mudflats during the day and night. Mean of areas held was from 0.6 hectares (ha) in freshwater marshes to 8.4 ha along the shoreline. Breeding adults range within 30 kilometers (km) of the colony (Parker 1980, as cited in Montana Field Guide).
Habitat	Great blue herons are found along lakes, rivers, bays, and lagoons, on freshwater and brackish marshes and wetlands, and in fields and meadows. Great blue herons in northwestern Montana nest primarily in cottonwoods in riparian zones and also in drier, coniferous sites. Nesting trees are the largest available (Parker 1980, as cited in Montana Field Guide).
Population Density	Colonies vary in number of pairs. On the Great Lakes (Michigan), the number of pairs averaged 33, and in Illinois the average number of pairs in a colony was about 152. Active colonies are farther from rivers than inactive colonies. The number of nests in the colony corresponds to the distance from roads.
Reproduction/ Breeding	Great blue herons are mostly monogamous birds that choose new mates each year. It nests mostly in trees up to 30 meters (m) or more above the ground; it nests on the ground where trees are not available. The clutch size is two to six eggs, with rookery activity seen as early as March 23. Reproductive success was not affected by the number of breeding birds in the colony. Breeding begins in April, and young may still be in the nest in July (Butler 1992, Groves and others 1997, both as cited in CH2M Hill and URS Corp. 2001).

F1.2.2 Canada Goose (*Branta canadensis*)

Canada geese are in the order Anseriformes, family Anatidae. They are present throughout Montana throughout the year. They graze on marsh grasses and winter wheat sprouts in the spring and feed on grains in the fall. Plants Canada geese eat include clover, cattail, bulrush, and

pondweed. On the lower Yellowstone River, birds used winter wheat fields in the early fall, corn fields in mid-fall, and a variety of fields and crops in late fall.

Status	The goose is a migratory game species.
Distribution and Home Range	Canada geese breed from northern Alaska east to Labrador and Greenland and south to California, Utah, northern Arkansas, and southeastern Canada. They winter from Alaska and southern Canada, to northern Mexico, the Gulf Coast, and Florida. Many introduced, nonmigratory populations exist outside of the normal range in North America. In the Bozeman area, migration occurs from February 20 to April 15 and from October 15 to January 1, with peaks on March 15 and November 20 statewide (Skaar 1969, as cited in Montana Field Guide).
Habitat	They are found in a variety of habitats near water, including coastal and freshwater marshes, reservoirs, lakes, rivers, fields, and city parks. On the lower Yellowstone River, broods are reared on island grasslands and meadows along the river. Dense brush is used when they are not feeding. In north-central Montana, Canada geese nested on island 76 percent, in sagebrush 6 percent, in meadows 18 percent, and on reservoirs of 3.7 to 3.3 acres (McCarthy 1973, as cited in Montana Field Guide).
Reproduction/ Breeding	Most Canada geese begin breeding by age 3, although some begin as early as 2 years of age. Females usually lay five to six eggs (range = two to 11 eggs) and incubate them for 25 to 30 days. Nestlings are precocial and are tended by both parents. The young remain with the adults until the next spring. Eggs are laid from March to April, with hatching occurring in mid-April to late May. Clutch size averages 5, with 2 to 10 eggs laid (Groves and others 1997, as cited in CH2M Hill and URS Corp. 2001).

F1.2.3 Mallard (*Anas platyrhynchos*)

Mallards are in the order Anseriformes, family Anatidae. They are the most abundant duck species in North America. They feed on the seeds of aquatic plants and river bottom trees, aquatic plants, acorns, cultivated grains, insects, mollusks, amphibians, small fishes, and fish eggs. Adults feed primarily on vegetation, and young eat mainly invertebrates (Drilling, Tittman, and McKinney 2002, as cited in Montana Field Guide).

Status	The mallard is a migratory game species.
Distribution and Home Range	Mallards breed from Alaska and Maine to southern California, Mexico, Oklahoma, and Virginia. They winter from southern Alaska and southern Canada to the southern United States and Mexico and are found throughout Montana year round. In the Bozeman area, normal migration occurs in late March to late April and from October to January, with peaks on March 20 and December 1.
Habitat	Mallards dabble in shallow water, and a water depth of about 40 centimeters is considered optimal. They are found primarily on shallow waters of streams, ponds, lakes, marshes, and flooded fields. During migration and in winter, they are found on fresh water and cultivated fields and less commonly in brackish waters. The success of the mallard in North America is a result of its adaptability to varied habitats, its hardiness in cold climates, and its tolerance of human activities. Usual nest sites are in uplands close to water. Nests are found in a variety of habitats with dense cover, including grasslands, marshes, bogs, riverine floodplains, dikes and roadside ditches, pastures, cropland, shrubland, fence lines, rock piles, forests, and fragments of cover around farmsteads (Holm 1984, Drilling, Tittman, and McKinney 2002, both as cited in Montana Field Guide).
Population Density	Breeding density in the prairie pothole region of 2.3 to 9.5 birds/km^2 fluctuated with the abundance of ponds. Nesting density may reach 400 nest/ha on islands free of mammalian predators.
Reproduction/ Breeding	Most mallards begin breeding as yearlings. Active nests have been found from April 15 to July 21, and hatching dates have been reported from May 10 to August 10. Clutch sizes average about seven, with females building ground nests and an incubation of 26 to 30 days. Nestlings are precocial and fly at about 49 to 60 days (Groves and others 1997, as cited in CH2M Hill and URS Corp. 2001).

F1.3 STREAM RECEPTOR

F1.3.1 American Dipper (*Cinclus mexicanus*)

American dippers are in the order Passeriformes, family Cinclidae. They feed on insects and their larvae and also eat clams, snails, and some trout fry. They are solitary outside of the breeding season and are adapted for semi-aquatic foraging.

Status	The dipper is a protected, migratory nongame species.
Distribution and Home Range	American dippers are resident from parts of Alaska and western Canada, south through the mountains to southwestern South Dakota, and into southern California, the highlands of Mexico, and to western Panama. Dippers probably do not have home ranges because of territorial regime and linear habitat.
Habitat	American dippers are found along montane streams, up to the treeline. They prefer swift-flowing water but are occasionally found along mountain ponds and lakes and rocky seacoasts.
Population Density	American dipper densities vary with the quality of the stream habitat. In Montana, pre-breeding density was one dipper per 0.77 km of stream and post-breeding density was one dipper per 0.50 km of stream.
Reproduction/ Breeding	American dippers nest on cliff ledges, behind waterfalls, or on midstream boulders or on human-made structures such as dam spillways, culverts, or buildings. Females usually lay three to six eggs (range = four to five eggs) and incubate them for 15 to 17 days. Nestlings are altricial and are tended by both adults. The young leave the nest at 24 to 25 days (Groves and others 1997, Kingery 1996, as cited in CH2M Hill and URS Corp. 2001).

F2.0 MAMMALS

F2.1 TERRESTRIAL RECEPTORS

F2.1.1 Meadow Vole (*Microtus pennsylvanicus*)

Meadow voles are in the order Rodentia, family Muridae. They are active day and night and throughout the year. Voles are found in a variety of terrestrial habitats. They feed on vegetation including grasses, roots, and seeds.

Status	The vole is an unprotected, nongame species.
Distribution and Home Range	Meadow voles are the most widely distributed of the North American vole species. They are found throughout most of Alaska and Canada and down through the northern half of the United States to Oregon, northern Utah, central New Mexico, northern Missouri, and Georgia. The home range of meadow voles is usually no larger than 0.10 ha.

Habitat They are found in a variety of habitats, including pastures, swamps, marshes, and orchards. Meadow voles require loose organic soils for burrowing and prefer moist grasslands, woodlands, and meadows.

Population Density Populations fluctuate on a 2- to 5-year cycle with highest densities reaching about 50 to 60 voles/0.4 ha and an average density about 8 to 10 voles/0.4 ha.

Reproduction/ Breeding If snow provides an insulating layer, meadow voles may breed year–round, but their peak breeding activity occurs from April to October. Average litter size is four to five (one to nine young), with smaller litters in the fall and larger litters in the spring and summer. Gestation lasts about 21 days. Female meadow voles may produce five to 10 letters per year (Groves and others 1997, Tamarin 1985, both as cited in CH2M Hill and URS Corp. 2001).

F2.1.2 White-tailed Deer (*Odocoileus virginianus*)

White-tailed deer are in the order Artiodactyla, family Cervidae. They are mainly crepuscular, but they may be active day or night. Their diet changes seasonally in the north. In the spring, they feed mainly on grasses; in summer, they feed on forbs and leafy green browse; in the fall, they eat acorns and other fruit; and in the winter, they feed on evergreen woody browse.

Status The deer is a protected game species.

Distribution and Home Range White-tailed deer range from southern Canada, south through most of the United States and Mexico to South America. They are absent from much of the southwestern United States. Home range varies with season and conditions, and annual home ranges for sedentary populations average 59 to 520 ha.

Habitat White-tailed deer use a variety of habitats, from forests to fields with adjacent cover. In the northern parts of the range, white-tailed deer require stands of conifers for winter shelter, and they may be limited by the depth, duration, and quality of snow cover. White-tailed deer prefer low to intermediate elevations with dense deciduous woodlands and brush as well as marshy areas near water.

Reproduction/ Breeding White-tailed deer breed in October to mid-December and peak in November. Gestation lasts 187 to 222 days. Females usually give birth to one to two young mostly from May –through June. Young are weaned by 10 weeks. Females usually breed at 1.5 years but can breed as young as 6 to 7 months. Males reach sexual maturity at about 18 months (Groves and others 1997, Smith 1991, both as cited in CH2M Hill and URS Corp. 2001).

F2.1.3 Red Fox (*Vulpes vulpes*)

The red fox is of the order Carnivora and family Canidae. It has the appearance of a small dog, a total length of 39 to 43 inches and ranges from 10 to 15 pounds, a long, bushy tail with a white tip, pointed ears, a slender muzzle and slanted eyes. The red fox is primarily nocturnal and hunts by smell. It is an opportunistic predator that sometimes eats carrion and preys on small mammals, birds, eggs, and game birds. Its diet varies depending on what is available seasonally and locally. It feeds on both animal and plant material.

Status	The fox is classified as lower conservation need. Although it is important to Montana's wildlife diversity, these species, communities, and focus areas are abundant and widespread or are believed it is believed that adequate conservation is already in place.
Distribution and Home Range	The red fox is found throughout Montana year round; it is non-migratory. Their range is from less than 500 to more than 3,000 ha.
Habitat	The red fox can survive in a wider range of habitats. It prefers a mixture of forest and open country near water; they are seldom found far from permanent water and thrive in bushy successional areas where small mammals are abundant (Jones and others 1983, as cited in Montana Field Guide).
Population Density	Red fox may exhibit communal denning.
Reproduction/ Breeding	The red fox mates during winter, with a 51 to 53 day gestation and an average litter size of four to eight pups. In western Montana, the red fox breed from February to March and give birth in late March to April.

F2.1.4 Masked Shrew (*Sorex cinereus*)[2]

Masked shrews are in the order Insectivora, family Soricidae. They are active throughout the day year round in most terrestrial habitats. Masked shrews are most active on cloudy, rainy nights. They may use echolocation to detect insects and other invertebrates and small vertebrates. They also feed on carrion and some seeds. Masked shrews consume their own weight each day to maintain their high metabolic rate. Individuals rarely live beyond their second summer.

[2] The masked shrew was evaluated as a wetland receptor as well as a terrestrial receptor.

Status	The shrew is an unprotected, nongame species.
Distribution and Home Range	Masked shrews may be found from the Arctic tundra of Alaska and Canada down through the Rocky Mountains, northern Great Plains, and Appalachian Mountains.
Habitat	They are found in terrestrial habitats with some vegetation and are in both wet and dry coniferous forests. They may favor damp forests with thick leaf litter and adapt to major successional disturbances.
Population Density	Populations are usually scattered but locally abundant and are subject to large annual fluctuations. Estimates of density ranged from one to 12 shrews/0.4 ha. Home range for masked shrews is about 0.04 ha.
Reproduction/ Breeding	Breeding season for masked shrews may last from March to September and females may produce two to three litters per year. Average litter size is 7 (2 to 10 young) and gestation lasts about 18 days. Young are weaned in 3 weeks and young reach sexual maturity in 20 to 26 weeks (Groves and others 1997, Merritt and others 1994, both as cited in CH2M Hill and URS Corp. 2001).

F2.2 WETLAND RECEPTORS

F2.2.1 Muskrat (*Ondatra zibethicus*)

Muskrats are in the order Rodentia, family Muridae. They are mostly nocturnal but often are seen in daytime and are active year-round. Muskrats have two activity peaks daily: between 1600 and 1700 hours, and between 2200 and 2300 hours. They feed primarily on aquatic plants, especially cattails, cordgrass, and bulrush. They also eat crustaceans, mollusks, and in some areas feed on large numbers of mussels.

Status	The muskrat is an unprotected, game species.
Distribution and Home Range	Muskrats range throughout North America north of Mexico, except parts of southwestern United States and Florida. Home range is usually no larger than 11 m from the home site.
Habitat	Muskrats prefer fresh or brackish marshes, lakes, ponds, swamps, and other bodies of slow-moving water. They are most abundant in areas with cattails and they are rare or absent from large, artificial impoundments because fluctuating water levels reduce or eliminate their food supply (littoral zone plants). They are typically found in lowland ponds, lakes, marshes, and streams.

Population Density	Densities fluctuate but are generally less than or equal to 90 muskrat/ha.
Reproduction/ Breeding	Muskrat gestation lasts 28 to 30 days and parturition occurs in late May through August. Females usually give birth to seven young (range = one to 12 young). Young are weaned in about 30 days and reach sexual maturity in 4 to 6 months (Groves and others 1997, as cited in CH2M Hill and URS Corp. 2001).

F2.2.2 American Mink (*Mustela vison*)

American mink are in the order Carnivora, family Mustelidae. They are mainly nocturnal and crepuscular. They are strictly carnivorous and their diet reflects the local prey base. They feed on fish, amphibians (mostly frogs), crustaceans (crayfish and crabs), muskrats, and small- to medium-sized mammals, but also eat birds and their eggs, reptiles, aquatic insects, earthworms, snails, and carrion.

Status	The mink is an unprotected, game species.
Distribution and Home Range	Mink are found throughout North America north of Mexico, except in the southwestern United States Female home range is 8 to 20 ha and male home range is 769 ha or more.
Habitat	American mink prefer forested, permanent or seasonal wetlands that have abundant cover, marshes, and riparian zones. They prefer aquatic habitats at lower and middle elevations.
Population Density	Densities depend on habitat quality and prey abundance. In good habitat, densities may be nine to 22 mink/2.6 km^2.
Reproduction/ Breeding	American mink breed from late February through early May, and breeding peaks in March. Gestation lasts 51 days (range = 40 to 75 days) and parturition occurs in April through June. Females usually give birth to four to five young (range = two to eight young). Young are weaned in 8 to 9 weeks and may be tended by both parents. Young reach maturity in 10 months (Groves and others 1997, Larivier 1999, both as cited in CH2M Hill and URS Corp. 2001).

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